Navajo Nation
Western Navajo Pipeline Phase 1
LeChee Water System Improvements (WSI)

PROJECT MANUAL

VOLUME 1 OF 2

DIVISION 0 - BIDDING AND CONTRACTING REQUIREMENTS

Contract Documents

NAVAJO NATION

August 2024

Brown and Caldwell
6975 Union Park Center, Suite 490
Midvale, UT 84047

PROJECT MANUAL

FOR CONSTRUCTION OF

Navajo Nation
WESTERN NAVAJO PIPELINE PHASE 1
LECHEE WATER SYSTEM IMPROVEMENTS (WSI)

Volume 1 of 2
Division 0 – Bidding and Contracting Requirements

Navajo Nation

Prepared by:

Brown and Caldwell
6975 Union Park Center, Suite 490
Midvale, UT 84047

Project No. 150360

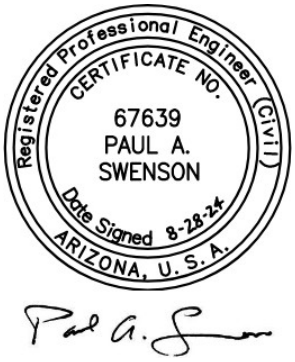


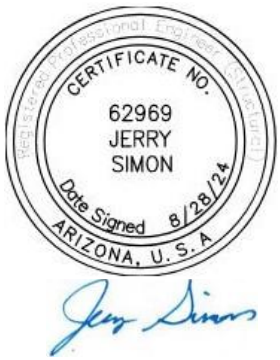
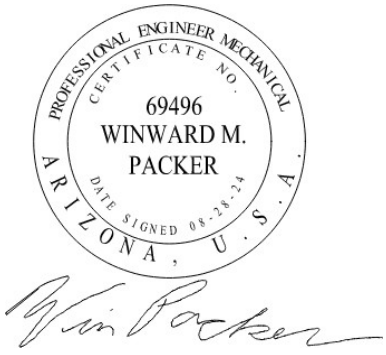
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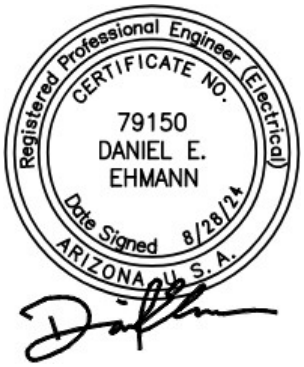
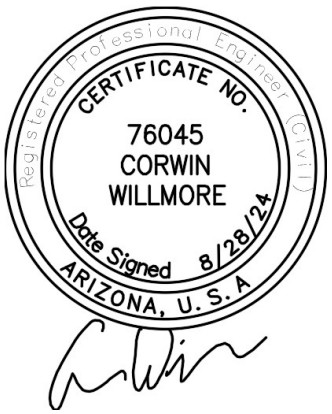
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WESTERN NAVAJO PIPELINE PHASE 1

LECHEE WATER SYSTEM IMPROVEMENTS (WSI)

ITEMS IN THIS PROJECT MANUAL	PREPARED BY
General Requirements Division 1	
	Steve Brenchley, P.E. Brown and Caldwell 6975 Union Park Center, Suite 490 Midvale, UT 84047
CIVIL AND INTAKE FACILITY PROCESS MECHANICAL Divisions 2, 31, 32, 33, 42 Sections 01 32 23, 01 55 26, 40 05 61.05, 40 05 78.13, 43 13 13, 43 23 92.01	
	Paul Swenson, P.E. DOWL 222 N 32nd St, Suite 700 Billings, MT 59101

STRUCTURAL Divisions 3, 5 Sections 01 73 24, 04 22 00, 07 91 26, 08 31 20, 33 16 13.13	
	Jerry Simon, P.E. Brown and Caldwell 1527 Cole Blvd., Suite 300 Lakewood, CO 80401
ARCHITECTURAL Divisions 6, 7, 8, 9, 10, and 12 Sections 04 23 00, 04 26 13	
	Gregory Short, AIA Short and Brennan Architects One Broadway, Suite A201 Denver, CO 80203
BUILDING MECHANICAL AND PLUMBING Divisions 22 and 23	
	Win Packer, P.E. WHW Engineering LLC. 8619 Sandy Pkwy, Unit 101 Sandy, UT 84070

ELECTRICAL Division 26	
	Daniel Ehmann, P.E. Brown and Caldwell 2 N. Central Avenue, Suite 1600 Phoenix, AZ 85004
INSTRUMENTATION AND CONTROLS Divisions 27, 40 Sections 01 99 90, 26 42 16.16	
	Ken Chandler, P.E. Brown and Caldwell 2 N. Central Avenue, Suite 1600 Phoenix, AZ 85004
CIVIL AND PUMP STATION NO. 3 PROCESS MECHANICAL Divisions 31, 32, 33 Sections 09 97 13.33, 26 42 16.16, 43 23 92.03	
	Corwin Willmore, P.E. Brown and Caldwell 6975 Union Park Center, Suite 490 Midvale, UT 84047

PROCESS MECHANICAL Divisions 40, 43, and 46 Sections 01 61 45,01 91 00, 09 90 00, 10 14 00, 33 16 13.13	
	Jake Himebaugh, P.E. Brown and Caldwell 6975 Union Park Center, Suite 490 Midvale, UT 84047

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END OF SECTION

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ADVERTISEMENT FOR BIDS[1]

Project Name: **Navajo Nation Western Navajo Pipeline Phase 1 – LeChee Water System Improvements (WSI) Project**

Owner: **Navajo Nation, through its Department of Water Resources Water Management Branch, Route 12 NE, NTUA Rd, Bldg. 2793, Fort Defiance, AZ 86504**

Funded by: **Navajo Nation**

Sealed Bids for the construction of the **Contract: LeChee Water System Improvements (WSI)**, **Navajo Nation Bid Number 24-07-3430LE** which includes:

- **LeChee Intake Facility:**
  - Demolition of existing equipment at existing Lake Powell Intake Facility including the removal of existing submersible pumps and booster pumps,
  - Install two new 700 gallon per minute (gpm) submersible and two 700 (gpm) booster pumps at existing Intake Facility,
  - Construct new control building with site improvements, miscellaneous telemetry system and backup generator,
- **LeChee Water Treatment Plant:**
  - Construct new 500,000-gallon raw water storage tank with meter and transducer vault,
  - Construct new 1 million gallon per day (1 MGD) Membrane Water Treatment Plant Building that includes chlorine feed system room, electrical room, process mechanical room, and administrative office area.
  - Construct new 320,000-gallon finished water tank,
  - Construct settling basin structure,
  - Construct solids settling vault and associated meter and valve vault,
  - Construct storm water retention basin,
  - Construct chemical drying beds,
  - Construct and Install yard piping, site improvements, and miscellaneous telemetry items.
- **LeChee Pump Station No. 3 and Pipeline:**
  - Construct approximately 30,936 LF of 12-inch potable water line,
  - Construct a 600 gpm Pump Station No. 3 and site improvements with miscellaneous telemetry items.
  - Construct and install yard piping and connection to existing LeChee tanks with miscellaneous telemetry items.

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Each bid response shall be submitted in accordance to Section 00200 Instructions to Bidders of the Bid Documents and received by Navajo Nation Water Management Branch (Lucinda Davis, 928-349-1194 Cell, 928-729-4003 Office, lgdavis@navajo-nsn.gov, P.O. Box 678, Fort Defiance, AZ 86504) until **4:00 p.m. local time on October 29, 2024**, and then at said office publicly opened and read aloud. No late, facsimiled, or electronic mailed bids will be accepted.

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

To ensure delivery by the due date and time, all bids should be addressed to:

PHYSICAL ADDRESS:
NNDNR - DWR Water Management Branch
ATTN: Lucinda Davis
Navajo Route 12 NE, NTUA Rd, Bldg. 2793
Fort Defiance, Arizona 86504

MAILING ADDRESS:
NNDNR- DWR Water Management Branch
P.O. Box 678
Fort Defiance, Arizona 86504

A mandatory Pre-Bid Conference and site visit will be held on **September 13, 2024 at 9:00 a.m.** MDT (8 a.m. Arizona time) at the LeChee Chapter House. Those that would like to attend can contact Steve Brenchley (sbrenchley@brwncald.com, 801-316-9813) or Corwin Willmore (cwillmore@brwncald.com, 801-316-9836). Attendance at the Pre-Bid Conference is mandatory to qualify to submit a Bid Proposal. Questions regarding bid documents are due to Brown and Caldwell on **September 27, 2024**. Answers to Questions will be provided by **October 11, 2024**.

Preference will be applied to qualified Indian-owned businesses in accordance with the Navajo Preference (NNBOA) laws as specified in the Navajo Business and Procurement Act (12 N.N.C. § 1501 et seq.); the Navajo Nation Procurement Act (12 N.N.C. § 301 et seq.); Navajo Business Opportunity Act (5 N.N.C. § 201 et seq.) and other applicable statutory and regulatory requirements.

Suppliers, brokers, agents, subsidiaries, successors, and assigns shall be fully subject to the requirements and provisions of the Navajo Nation Business Opportunity Act.

Electronic Copies of the Contract Documents may be obtained from Brown and Caldwell (Corwin Willmore, (801) 316-9836, cwillmore@brwncald.com), 6975 Union Park Center, Suite 490, Midvale, Utah.

Engineer: Brown and Caldwell, 6975 Union Park Center, Suite 490, Midvale, UT 84047

Advertised: **August 29, 2024**

END OF SECTION

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INSTRUCTIONS TO BIDDERS[1]

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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* – The office from which the Bidding Documents are to be issued and where bidding procedures are to be administered.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid may be obtained from the Issuing Office. The deposit will be refunded to each document holder of record who returns a complete set of Bidding Documents in good condition within 10 days after opening of Bids.

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 (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority or ability to obtain required authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, or evidence of Bidder's ability to obtain state contractor license, if applicable.

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

D. Bidder's Qualification Statement – Section 00451

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 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify:

a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.

b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.

d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

~~4. Geotechnical Baseline Report: The Bidding Documents contain a Geotechnical Baseline Report (GBR). The GBR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations ("Baseline Conditions"). The GBR is a Contract Document.~~

~~The Baseline Conditions in the GBR are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Baseline Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the GBR, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are baselined.~~

~~Nothing in the GBR is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.~~

B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *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.

C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.

D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *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.

4.05 *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. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

E. 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 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;

F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its 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;

G. 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;

H. 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;

I. 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

J. 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 required 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 **ten (10)** percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) 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. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

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 61 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, or the dates by which the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

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 the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract for the Work, ~~as~~ **if** awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids **in the case of a proposed substitute and 5 days prior in the case of a**

proposed "or-equal." Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. **Substitutes and "or-equal" materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.04 and 7.05 of the General Conditions 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.

11.03 **If an award is made, Contractor shall be allowed to submit proposed substitutes and "or-equals" in accordance with the General Conditions.**

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 A Bidder shall be prepared to retain specific ~~Subcontractors,~~ Suppliers~~, or other individuals or entities~~ for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such ~~Subcontractor,~~ Supplier~~, or other individual or entity,~~ and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.

~~12.02 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.~~

12.03 As required by the bid documents, ~~the apparent Successful Bidder, and any other Bidder so requested,~~ all Bidders shall ~~within five days after Bid opening~~, submit with its bid ~~to Owner~~ a list of the Subcontractors proposed for the following portions of the Work:

A. **Pipeline Installation**
B. **Electrical**
C. **Instrument and Controls**
D. **Welded Steel Storage Tank**
E. **Process Mechanical**
F. **Masonry**
G. **Concrete**
H. **Earthwork**
I. **Membranes**
J. **Chlorinator**
K. **Blower**
L. **Compressor**
M. **Granular Activated Treatment Vessels System**
N. **Pumps**
O. **Mixers**
P. **HVAC Mechanical**

Q. Plumbing Mechanical

R. Roofing

~~If requested by Owner, such~~ Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, 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.

The Owner/Engineer will request a list of Suppliers within 5 days of bid opening from the apparent Successful Bidder.

12.04 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.

12.05 Contractor shall not be required to employ a Subcontractor, Supplier, individual or entity against whom Contractor has reasonable objection.

12.06 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06.

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, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

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 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 official address of the firm shall be shown.

13.04 A Bid by an individual shall show the Bidder's name and official address.

13.05 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 official address of the joint venture shall be shown.

13.06 All names shall be printed in ink below the signatures.

13.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.08 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

13.09 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID

~~14.01 *Lump Sum*~~

~~A. Bidders shall submit a Bid on a lump sum basis as set forth in the Bid Form.~~

14.02 *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.

14.03 *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.

~~14.04 *Price Plus Time Bids*~~

~~A. The Owner will consider the time of Substantial Completion commitment made by the Bidder in the comparison of Bids.~~

~~B. Bidder shall designate the number of days required to achieve Substantial Completion of the Work and enter that number in the Bid Form as the total number of calendar days to substantially complete the Work.~~

~~C. The total number of calendar days for Substantial Completion designated by Bidder shall be less than or equal to a maximum of [_____], but not less than the minimum of [_____]. If Bidder purports to designate a time for Substantial Completion that is less than the allowed minimum, or greater than the allowed maximum, Owner will reject the Bid as nonresponsive.~~

~~D. The Agreement as executed will contain the Substantial Completion time designated in Successful Bidder's Bid, and the Contractor will be assessed liquidated damages at the rate stated in the Agreement for failure to attain Substantial Completion within that time.~~

E. ~~[Bidder shall also designate the time in which it will achieve Milestones, and achieve readiness for final payment. Such time commitments shall be consistent with the "Time of Substantial Completion" to which Bidder commits. The Agreement as executed will contain, as binding Contract Times, Successful Bidder's time commitments regarding Milestones, as applicable, and readiness for final payment.]~~

ARTICLE 15 – SUBMITTAL OF BID

15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.

15.02 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 sealed package marked **"DO NOT OPEN WESTERN NAVAJO PIPELINE, LECHEE WATER SYSTEM IMPROVEMENTS - CONTRACT"**. The package shall include the name and address of Bidder, **a statement that the Bidder is a Navajo Owned Business if applicable,** 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." A mailed Bid shall be addressed to Owner at address in Article 1.01 of Bid Form.

15.03 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.

A. Preference will be applied to qualified Navajo-owned businesses in accordance with the Navajo preference laws as specified in the Navajo Business and Procurement Act (12 N.N.C. § 1501 et seq.); the Navajo Nation Procurement Act (12 N.N.C. § 301 et seq.); Navajo Business Opportunity Act (5 N.N.C. § 201 et seq.) and other applicable statutory and regulatory requirements.

B. Navajo-owned business means any Navajo owned (as defined by the United States Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit: Provided, that such Indian ownership shall constitute not less than 51 per centum of the enterprise. Proposers must submit evidence of Indian ownership with their bid submittal.

C. Suppliers, brokers, agents, subsidiaries, successors, and assigns shall be fully subject to the requirements and provisions of the Navajo Nation Business Opportunity Act.

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. All bids submitted by qualified Navajo-owned businesses shall be opened first. Award shall be made to the qualified Navajo-owned business with the lowest responsive bid among qualified Indian-owned business provided the bid does not exceed the maximum feasible price.

B. If no qualified Indian-owned businesses is entitled to award, bids shall then be opened and award shall be given to qualified bidders with the lowest responsive bid provided the bid is less than or equal to the maximum feasible price.

C. 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.

D. 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, together with any lump sum items.

E. After determination of the Successful Bidder based on the Base Bid and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its Base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.

~~F. Bid prices will be compared after adjusting for differences in time of Substantial Completion (total number of calendar days to substantially complete the Work) designated by Bidders. The adjusting amount will be determined at the rate set forth in the Agreement for liquidated damages for failing to achieve Substantial Completion, or such other amount that Owner has designated in the Bid Form.~~

1. ~~The method for calculating the lowest bid for comparison will be the summation of the Bid price shown in the Bid Form plus the product of the Bidder specified time of Substantial Completion (in calendar days) times the rate for liquidated damages **[or other Owner-designated daily rate]** (in dollars per day).~~

2. ~~This procedure is only used to determine the lowest bid for comparison and contractor selection purposes. The Contract Price for compensation and payment purposes remains the Bid price shown in the Bid Form.~~

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 ten 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 – SALES AND USE TAXES

22.01 Bidder is advised to investigate and understand the applications of all taxes, including the Navajo Nation Business Activity Tax, prior to submitting a bid.

~~ARTICLE 23 – CONTRACTS TO BE ASSIGNED~~

ARTICLE 24 – WAGE RATE REQUIREMENTS

24.01 Navajo Preference in Employment Act (NPEA) applies to this contract. Requirements are included in Appendix B.

END OF SECTION

SECTION 00410

BID FORM[1]

Navajo Nation Western Navajo Pipeline Phase 1: LeChee Water System Improvements (WSI) Project

Contract: LeChee Water System Improvements (WSI)

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[1] **EJCDC® C-410 Bid Form for Construction Contracts. Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.**

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to: **Navajo Nation Water Management Branch**

Point of Contact: Lucinda Davis (928-349-1194)

Address: Navajo Route 12 NE, NTUA Rd, Bldg. 2793

Fort Defiance, Arizona 86504

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:

Addendum No.	Addendum Date

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 carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. 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.

F. 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.

G. 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.

H. 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.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. 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 anything 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 Document, (Refer to Measurement and Payments Section 01550 for specific details on bid items), for the following price(s):

Unit Price Bid Items for **LeChee Water System Improvements (WSI) Base Bid**

Schedule/ Item No.	Items Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
Mobilization					
Schedule A	Mobilization for Intake Facility, Water Treatment Plant, Pump Staton No. 3, and pipeline				
A1	Mobilization/Demobilization	LS	1		
A2	Bonds and Insurances	LS	1		
A3	General Requirements	LS	1		
	Schedule A Total				
Schedule B	LeChee Intake Facility and Control Building				
B1	Existing Intake Facility Demolition	LS	1		
B2	Site/Civil Including Structural Excavation and Backfill	LS	1		
B3	Control Building and Generator Structural	LS	1		
B4	Control Building Architectural	LS	1		
B5	Control Building HVAC	LS	1		
B6	Control Building Electrical and Instrumentation	LS	1		
B7	Control Building Standby Generator	LS	1		
B8	8-foot Chain Link Fencing and Gate	LS	1		
B9	Electrical Site Plan	LS	1		
B10	Booster Pump Skid Structural Pad	LS	1		
B11	Grundfos Booster Pump Skid	LS	1		
B12	Grundfos Submersible Pumps	LS	1		
B13	Quagga Mussel Chemical Feed Equipment	LS	1		

B14	Existing Intake Facility Process Mechanical Piping	LS	1		
B15	Existing Intake Facility Electrical and Instrumentation	LS	1		
	Schedule B Total				
Schedule C	Water Treatment Plant				
C1	Site/Civil. cut (approx. 7,220 CY), engineered fill (approx. 4,005 CY)	LS	1		
C2	Structural Fill Under Footing (Quantity is approximate for unit price)	CY	1,000		
C3	30" Pipeline Connection	EA	2		
C4	Yard piping	LS	1		
C5	HDPE Liner – Chemical Drying Beds (Area 50)	LS	1		
C6	Septic Tank and Drain Field	LS	1		
C7	Site Electrical and Instrumentation (Outside WTP Building)	LS	1		
C8	8-foot chain link fencing and gates	LS	1		
C9	Gravel Surface (approx. 52,465 SF)	LS	1		
C10	Site Concrete (Including Sidewalk, Wheel Stops, Bollards, and Headwalls)	LS	1		
C11	Asphalt Surface	LS	1		
C12	Site Riprap (approx. 2,629 SF)	LS	1		
C13	Erosion Control	LS	1		
C14	Raw Water Meter Vault (Area 10)	LS	1		
C15	Raw Water Welded-steel tank (500,000 gallons) (Area 10)	LS	1		
C16	Raw Water Steel tank concrete foundation (Area 10)	LS	1		

C17	Finished Water Welded-steel tank (320,000 gallons) (Area 30)	LS	1		
C18	Finished Water Steel tank concrete foundation (Area 30)	LS	1		
C19	Process Mechanical Equipment and Piping (Area 20) (Not Included with Vendor Supplied Equipment Included in this Bid Form)	LS	1		
C20	Water Treatment Plant Structural (Area 20)	LS	1		
C21	Water Treatment Plant Architectural (Area 20)	LS	1		
C22	Water Treatment Plant Plumbing (Area 20)	LS	1		
C23	Water Treatment Plant Electrical and Instrumentation (Area 20)	LS	1		
C24	Water Treatment Plant HVAC (Area 20)	LS	1		
C25	Membrane Filtration System (Area 20)	LS	1		
C26	Water Treatment Plant GAC Contactor System (Area 20)	LS	1		
C27	Water Treatment Plant Chlorine Gas Feed System and Containment (Area 20)	LS	1		
C28	Water Treatment Plant Backup Generator (Area 90)	LS	1		
C29	Water Treatment Plant Generator Pad (Area 90)				
C30	Settling Basin Structure (Area 40)	LS	1		
C31	Process Mechanical Equipment and Piping Outside Water Treatment Plant Building (Not defined as Separate Item on Bid Form).	LS	1		
C32	Solids Settling Vault and Associated Valve and Meter Vault (Area 70)	LS	1		
C33	Lamella Plates (Area 70)	LS	1		
	Schedule C Total				

Schedule D	Pump Station No. 3				
D1	Site/Civil (approx. 360 CY fill)	LS	1		
D2	Gravel Surface (approx. 7,555 SF)	LS	1		
D3	8-foot chain link fence and gates	LS	1		
D4	Access Road fence and gate	LS	1		
D5	Yard Piping	LS	1		
D6	Pump Station Building Structural	LS	1		
D7	Pump Station Building Architectural	LS	1		
D8	Pump Station Process Mechanical Piping	LS	1		
D9	Grundfos Booster Pump Skid	LS	1		
D10	Surge Tank	LS	1		
D11	Electrical and Instrumentation	LS	1		
D12	Building HVAC	LS	1		
	Schedule D Total				
Schedule E	Existing LeChee Tank Site				
E1	Yard Piping	LS	1		
E2	Steel Tank Connection	EA	2		
E3	Electrical and Instrumentation	LS	1		
	Schedule E Total				
Schedule F	12-inch Pipeline				
F1	Traffic Control	LS	1		
F2	Erosion Control	LS	1		

F3	Asphalt Removal and Replacement	LS	1		
F4	12-inch C-900 DR25 PVC Pipeline	LF	8,280		
F5	12-inch C-900 DR18 PVC Pipeline	LF	5,200		
F6	12-inch C-900 DR18 PVC Pipeline Restrained Joint	LF	700		
F7	12-inch C-900 DR14 PVC Pipeline	LF	15,180		
F8	Wash Crossing Horizontal Directional Bore (14" HDPE DR7 Pipe STA 56+78 to STA 64+74)	LF	801		
F9	Wash Crossing Horizontal Directional Bore (14" HPDE DR7 Pipe STA 74+44 to STA 76+86)	LF	242		
F10	Wash Crossing Horizontal Directional Bore (14" HPDE DR7 Pipe STA 202+64 to STA 214+41)	LF	1182		
F11	Navajo Route 20 Road Crossing (Jack and Bore 20" ID Steel Casing STA 9+68 to 11+10)	LF	142		
F12	Residential Road Crossing (20" ID Steel Casing STA 13+00 to 13+40)	LF	40		
F13	Residential Road Crossing (20" ID Steel Casing STA 23+23 to 23+63)	LF	40		
F14	Residential Road Crossing (20" ID Steel Casing STA 33+60 to 34+00)	LF	40		
F15	Residential Road Crossing (20" ID Steel Casing STA 43+42 to 43+82)	LF	40		
F16	Navajo Route 20 Road Crossing (Jack and Bore 20" ID Steel Casing STA 45+03 to 46+47)	LF	144		
F17	Arizona State Road SR-98 Road Crossing (Jack and Bore 20" ID Steel Casing STA 234+31 to 238+32)	LF	402		
F18	Antelope Canyon Tour Road Crossing (20" ID Steel Casing STA 260+85 to 261+46)	LF	61		

F19	Navajo Route 222 Road Crossing (Jack and Bore 20" ID Steel Casing STA 282+39 to 284+59)	LF	220		
F20	Imported Backfill	CY	5,900		
F21	12" Gate Valve	EA	19		
F22	2-inch Flush Valve Assembly	EA	9		
F23	Combination Air Valve Assembly	EA	12		
	Schedule F Total				
Subtotal All Unit Price Bid Items (Sum of Schedules A through F)					$
Navajo Nation Business Activity Tax (6%)					$

All Unit Price Bid Items are to be completed by bidder and shall be included in the Total Bid Price.

Total Bid + Navajo Nation Business Activity Tax $ _____

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts 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. Required Bid security in the form of a Bid Bond (Section 00430) or Certified Check (circle type of security provided);

B. List of Proposed Subcontractors (Section 00440);

C. List of Proposed Suppliers;

D. List of Project References;

E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;

F. Contractor's License No._____;

G. Required Bidder Qualification Statement with supporting data;

H. Signed Navajo Nation Certification Regarding Debarment and Suspension

I. Signed Affidavit of Responsibility for Subcontractors; and

J. Signed Affidavit of Non-Collusion

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – 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: _____

Fax Number: _____

Contact Name: _____

Contact e-mail address: _____

Bidder's License No.: _____

END OF SECTION

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SECTION 00430

BID BOND[1]

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER *(Name and Address)*:

SURETY *(Name, and Address of Principal Place of Business)*:

OWNER *(Name and Address)*:

BID

Bid Due Date:

Description *(Project Name - Include Location)*:

BOND

Bond Number:

Date:

Penal sum _____ $ _____

(Words) (Figures)

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

BIDDER	SURETY
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
_____	_____
Title	Title

Note: Addresses are to be used for giving any required notice.
Provide execution by any additional parties, such as joint venturers, if necessary.

[1] **EJCDC® C-430 Bid Bond (Penal Sum Form). Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.**

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

   3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

   3.2 All Bids are rejected by Owner, or

   3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

END OF SECTION

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SECTION 00440

LIST OF PROPOSED SUBCONTRACTORS

All Bidders shall complete this form for all proposed subcontracts. If the contractor fails to receive a bid for a category of work, the contractor shall designate on the listing form that no bid was received. If the contractor fails to receive more than one bid for a category of work, the contractor shall state on the listing form that only one bid was received, together with the name of the subcontractor.

Contractor:	

Subcontractor	Business Address	Phone/Fax Number	Arizona License#	Work Description

END OF SECTION

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SECTION 00451

QUALIFICATIONS STATEMENT[1]

THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT PERMITTED BY LAWS AND REGULATIONS

1. **SUBMITTED BY:**

   Official Name of Firm: _____

   Address: _____

   _____

   _____

2. **SUBMITTED TO:** _____

3. **SUBMITTED FOR:** _____

   Owner: _____

   Project Name: _____

   _____

   _____

   _____

   TYPE OF WORK: _____

   _____

   _____

4. **CONTRACTOR'S CONTACT INFORMATION**

   Contact Person: _____

   Title: _____

   Phone: _____

   Email: _____

[1] **EJCDC® C-451 Qualifications Statement. Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.**

5. AFFILIATED COMPANIES:

Name: _____

Address: _____

_____

_____

6. TYPE OF ORGANIZATION:

☐ SOLE PROPRIETORSHIP

Name of Owner: _____

Doing Business As: _____

Date of Organization: _____

☐ PARTNERSHIP

Date of Organization: _____

Type of Partnership: _____

Name of General Partner(s): _____

_____

_____

☐ CORPORATION

State of Organization: _____

Date of Organization: _____

Executive Officers:

- President: _____

- Vice President(s): _____

_____

_____

- Treasurer: _____

- Secretary: _____

☐ LIMITED LIABILITY COMPANY

State of Organization: _____

Date of Organization: _____

Members: _____

_____

_____

_____

☐ JOINT VENTURE

Sate of Organization: _____

Date of Organization: _____

Form of Organization: _____

Joint Venture Managing Partner

- Name: _____

- Address: _____

_____

_____

Joint Venture Managing Partner

- Name: _____

- Address: _____

_____

Joint Venture Managing Partner

- Name: _____

- Address: _____

_____

7. LICENSING

Jurisdiction: _____

Type of License: _____

License Number: _____

Jurisdiction: _____

Type of License: _____

License Number: _____

8. CERTIFICATIONS

CERTIFIED BY:

Disadvantage Business Enterprise: _____

Minority Business Enterprise: _____

Woman Owned Enterprise: _____

Small Business Enterprise: _____

Other (_____): _____

9. BONDING INFORMATION

Bonding Company: _____

Address: _____

_____

Bonding Agent: _____

Address: _____

_____

_____

Contact Name: _____

Phone: _____

Aggregate Bonding Capacity: _____

Available Bonding Capacity as of date of this submittal: _____

10. FINANCIAL INFORMATION

Financial Institution: _____

Address: _____

_____

Account Manager: _____

Phone: _____

INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE LAST 3 YEARS

11. CONSTRUCTION EXPERIENCE:

Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

12. SAFETY PROGRAM:

Name of Contractor's Safety Officer:_____

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Total Recordable Frequency Rate (TRFR) for the last 5 years:

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

Total number of man-hours worked for the last 5 Years:

YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____

Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____

13. EQUIPMENT:

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HEREWITH, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: _____

BY: _____

TITLE: _____

DATED: _____

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____, 20___

NOTARY PUBLIC - STATE OF _____

MY COMMISSION EXPIRES:_____

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.
5. Evidence of authority for individuals listed in Section 7 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 13.
8. Additional items as pertinent.

SCHEDULE A

CURRENT EXPERIENCE

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE C - LIST OF MAJOR EQUIPMENT AVAILABLE

ITEM	PURCHASE DATE	CONDITION	ACQUIRED VALUE

END OF SECTION

SECTION 00510

NOTICE OF AWARD

Date of Issuance:

Owner: **Navajo Nation Water Management Branch** Owner's Contract No.:

Engineer: **Brown and Caldwell** Engineer's Project No.: **150360**

Project: **Navajo Nation Western Navajo Pipeline Phase 1 LeChee Water System Improvements** Contract Name: **LeChee Water System Improvements**

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated _____ for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

_____ .

[describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is: $_____ *[note if subject to unit prices, or cost-plus]*

The unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

☐ a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner the signed counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): NA

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: **Navajo Nation**

Authorized Signature

By: Jason John
Title: Director

Copy: Engineer

END OF SECTION

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SECTION 00520

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)[1]

THIS AGREEMENT is by and between Navajo Nation ("Owner") and _____ ("Contractor").

Contract Start Date:
Contract End Date:

Owner and Contractor hereby agree as follows:

Navajo Nation Administrative Purposes Only

The Parties acknowledge the terms within this box section are referenced in the Contract but are for Navajo Nation governmental purposes. Except as provided in the Contract, changes to the terms within this box section will not require a modification.

Contract Number: _____
Contract Begin Date: Date in Notice to Proceed
Contract Term Ends: _____

Business Unit Number(s)	**Amount to Encumber**
_____	_____
_____	_____
_____	_____

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:

- LeChee Intake Facility and Control Building: Construction of a new electrical and controls building, site improvements; demolition and removal of existing pipes, pumps, and equipment at the existing Lake Powell Intake Facility, and installing two new 700 gallon per minute (gpm) submersible pumps in two existing shafts into Lake Powell, and new 700 gpm booster pump skid in existing intake facility building; and miscellaneous telemetry system improvements for the new control building and modified existing Lake Powell Intake facility.

[1] **EJCDC® C-520 Agreement between Owner and Contractor for Construction Contract (Stipulated Price). Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.**

- LeChee Water Treatment Plant: Installation of new one million gallon per day (1 MGD) LeChee Water Treatment Plant to treat raw water from Lake Powell to create treated culinary water for use by the Antelope Canyon area and the LeChee community. This includes connection to existing 30" pipelines; construction of raw water meter vault and transducer vault, new raw water tank, and finished water tank; construction of water treatment plant building, settling basin, solids settling vault and associated meter and valve vault, settling basin, retention basin, and chemical drying beds, site improvements, and miscellaneous telemetry system improvements for all structures.
- LeChee Pump Station No. 3 and Pipeline: Installation of new 600 gpm LeChee Pump Station No. 3, pump station site improvements, and miscellaneous telemetry system improvements for the pump station and existing LeChee water tanks. Installation of approximately 30,936 LF of 12" waterline.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: The overall project will provide additional water supply to the existing LeChee water tanks and the Antelope Canyon area by modifying the existing intake facility; adding a water treatment plant west of the Navajo Generating Station (NGS) site; adding a new booster pump station and pipeline to pump water up to the existing LeChee water tanks from the proposed water treatment plant site.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Brown and Caldwell.

3.02 The Owner has retained Brown and Caldwell ("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 **1,000 calendar** 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 **1,100 calendar** days after the date when the Contract Times commence to run.

~~B. Parts of the Work shall be substantially completed on or before the following Milestone(s):~~

4.03 *Contract Term*

A. The beginning and ending date of this Agreement are shown on the first page. This Agreement shall expire on the ending date shown unless earlier terminated or extended by modification in accordance with the C-800 Supplementary Conditions (modified to incorporate the Navajo Nation Supplementary General Conditions for EJCDC Construction Contracts).

4.04 *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 $2000 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 Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $1200 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.

~~4. Milestones: Contractor shall pay Owner $500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved.~~

~~B. *Bonus*: Contractor and Owner further recognize the Owner will realize financial and other benefits if the Work is completed prior to the time specified for Substantial Completion. Accordingly, Owner and Contractor agree that as a bonus for early completion, Owner shall pay Contractor $_____ for each day prior to the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract) that the Work is substantially complete. The maximum value of the bonus shall be limited to $_____.~~

4.05 *Special Damages*

[Deleted]

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, 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 **25th** 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. **95** 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. **95** percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion **of the entire construction to be provided under the Contract Documents**, 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 **100** 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 **1** 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 carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. 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.

F. 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.

G. 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.

H. 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.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. 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 (pages 1 to 8, inclusive).
2. Performance bond (pages 1 to 3, inclusive).
3. Payment bond (pages 1 to 3, inclusive).
4. ~~Other bonds.~~
   a. ~~___ (pages ___ to ___, inclusive).~~
5. General Conditions (pages 1 to 70, inclusive).
6. Supplementary Conditions (pages 1 to 28, inclusive).
7. Specifications as listed in the tables of contents of the Project Manual Volumes 1 and 2.

8. Drawings (not attached but incorporated by reference) consisting of:

   a. DRAWINGS FOR LECHEE INTAKE FACILITY AND CONTROL BUILDING,

   with each sheet bearing the following general title: **Volume 1 – LeChee Intake Facility and Control Building** the Drawings listed on the attached sheet index.

   b. DRAWINGS FOR LECHEE WATER TREATMENT PLANT,

   with each sheet bearing the following general title: **Volume 2 – LeChee Water Treatment Plant way-Gap Well, Tank and Pipeline** the Drawings listed on the attached sheet index.

   c. DRAWINGS FOR LECHEE PUMP STATION NO. 3 AND PIPELINE,

   with each sheet bearing the following general title: **Volume 3 – LeChee Pump Station No. 3 and Pipeline** the Drawings listed on the attached sheet index.

   d. VOLUME 4 DRAWINGS FOR WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN – RESULTS OF SURVEY

   with each sheet bearing the following general title: **Western Navajo LeChee Waterline Pipeline Design – Results of Survey** the Drawings listed on the attached sheet index.

9. Addenda (numbers ___ to ___, inclusive).

10. Exhibits to this Agreement (enumerated as follows):

    a. Contractor's Bid (pages ___ to ___, inclusive).

    b. All Rights-of-way and Easements (as found in Appendix C)

    c. All Permits (as found in Appendix D and E)

    ~~d. Documentation submitted by Contractor prior to Notice of Award (pages ___ to ___, inclusive~~

11. 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. Change Orders.

    c. 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).

NOTE(S) TO USER:

1. *See Article 21 of the Instructions to Bidders and correlate procedures for format and signing of the documents.*
2. *The Effective Date of the Contract stated above and the dates of any construction performance bond (EJCDC® C-610 or other) and construction payment bond (EJCDC® C-615 or other) should be the same, if possible. In no case should the date of any bonds be earlier then the Effective Date of the Contract.*

OWNER:	CONTRACTOR:
Navajo Nation	
By: Dr. Buu Nygren	By:
Title: President	Title:
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
	Attest:
	Title:
Address for giving notices:	Address for giving notices:
NNDNR -DWR Water Management Branch	
P.O. Box 678	
Fort Defiance, AZ 86504	
Navajo Nation Department of Justice	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.)	*NOTE TO USER: Use in those states or other jurisdictions where applicable or required.*

END OF SECTION

SECTION 00550

NOTICE TO PROCEED

Owner:	**Navajo Nation**	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	**Brown and Caldwell**	Engineer's Project No.:	**150360**
Project:	**Navajo Nation** **Western Navajo Pipeline Phase 1** **LeChee Water System Improvements**	Contract Name:	**LeChee Water System Improvements**
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20_____].

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____.

Before starting any Work at the Site, Contractor must comply with the following:

[Note any access limitations, security procedures, or other restrictions]

Owner: **Navajo Nation**

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

END OF SECTION

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SECTION 00610

PERFORMANCE BOND[1]

CONTRACTOR *(name and address)*:

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

OWNER:
Navajo Nation, through its NNDNR – DWR Water Management Branch
Route 12 NE, NTUA Road, Bldg. 2793, Fort Defiance, Arizona 86504

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 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)*	_____ *(seal)*
Contractor's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	**By:** _____
Signature	Signature *(attach power of attorney)*
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	**Attest:** _____
Signature	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] **EJCDC® C-610 Performance Bond. Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.**

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:

END OF SECTION

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SECTION 00615

PAYMENT BOND[1]

CONTRACTOR *(name and address)*:

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

OWNER:
Navajo Nation, through its NNDNR – DWR Water Management Branch
Route 12 NE, NTUA Road, Bldg. 2793, Fort Defiance, Arizona 86504

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)*	_____ *(seal)*
Contractor's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	**By:** _____
Signature	Signature *(attach power of attorney)*
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	**Attest:** _____
Signature	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]EJCDC® C-615 Payment Bond. Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

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:

END OF SECTION

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EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Contractor's Application for Payment No.

	Application Period:	Application Date:
To (Owner): **Navajo Nation Water Management Branch**	From (Contractor):	Via (Engineer): Brown and Caldwell
Project: **Navajo Nation LeChee Water System Improvements**	Contract: **LeChee Water System Improvements**	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.: **150360**

Application For Payment
Change Order Summary

Approved Change Orders

Number	Additions	Deductions
TOTALS (w/tax)		
NET CHANGE BY CHANGE ORDERS		

1. ORIGINAL CONTRACT PRICE (w/tax)	$
2. Net change by Change Orders (w/tax)	$
3. Current Contract Price (Line 1 ± 2) (w/tax)	$
4. TOTAL COMPLETED AND STORED TO DATE (w/tax) (Column F total on Progress Estimates)	$
5. RETAINAGE (w/tax):	
a. 5% X _____ Work Completed	$
b. 5% X _____ Stored Material	$
c. Total Retainage (Line 5.a + Line 5.b)	$
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c) (w/tax)	$
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application) (w/tax)	$
8. AMOUNT DUE THIS APPLICATION (w/tax)	$
9. NN TAX DUE THIS APPLICATION @ 6% (Line 8 - Line 8/1.06)	$
10. AMOUNT DUE THIS APPLICATION (wo/Tax (Line 8 - Line 9)	$
11. BALANCE TO FINISH, PLUS RETAINAGE (w/tax) (Column G total on Progress Estimates + Line 5.c above)	$

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:
(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;
(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and
(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor Signature

By:	Date:

Payment of: $ _____
Line 8 - includes amount to be paid Contractor (Line 10) plus amount to be paid NN Tax Commission (Line 9)

is recommended by: _____ _____
(Engineer) (Date)

Payment of: $ _____
(Line 12 or other - attach explanation of the other amount)

is approved by: _____ _____
(Owner) (Date)

Approved by: _____ _____
Funding or Financing Entity (if applicable) (Date)

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SECTION 00625

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	Navajo Nation	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	Brown and Caldwell	Engineer's Project No.:	150360
Project:	Navajo Nation Western Navajo Pipeline Phase 1 LeChee Water System Improvements	Contract Name:	LeChee Water System Improvements

This [preliminary] [final] Certificate of Substantial Completion applies to:

☐ All Work ☐ The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities:
☐ None
☐ As follows

Amendments to Contractor's responsibilities:
☐ None
☐ As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

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

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

END OF SECTION

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SECTION 00700

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT[1]

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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 Document*s—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirement*s—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.

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 Adjustment*s:

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 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 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, expediters, 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.

END OF SECTION

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SECTION 00800

SUPPLEMENTARY CONDITIONS[1]

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-*1.01.A.3* *Add the following language at the end of last sentence of Paragraph 1.01.A.3:*

The Application for Payment form to be used on this Project is EJCDC C-620 (see Section 00620). Owner must approve in writing pursuant to Paragraph SC-15.01.B.4.

SC-*1.01.A.8* *Add the following language at the end of last sentence of Paragraph 1.01.A.8:*

The Change Order form to be used on this Project is EJCDC C-941 (see Section 00941). Agency approval is required before a Change Order is effective.

SC-*1.01.A.14* *Add the following language at the end of last sentence of Paragraph 1.01.A.14:*

This is also known as the Original Contract Amount.

SC-*1.01.A.20* *Add the following language at the end of last sentence of Paragraph 1.01.A.20:*

Engineer's consultants on this project are: DOWL, Wood (now WSP), Short and Brennan Architects, ETD, WHW, Inc., and Maryboy Management Group.

SC-*1.01.A.32* *Add the following language at the end of last sentence of Paragraph 1.01.A.32:*

The term "Construction Manager," as used in the technical specifications, refers to the Resident Project Representative.

SC-*1.01.A.48* *Add the following language at the end of the last sentence of Paragraph 1.01.A.48:*

A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

SC-*1.01.A.49* *Add the following new Paragraph after Paragraph 1.01.A.48:*

49. *Abnormal Weather Conditions*—Conditions of extreme or unusual weather for a given region, elevation, or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered Abnormal Weather Conditions.

SC-*1.01.A.50* *Add the following new Paragraph after Paragraph 1.01.A.49:*

50. *Contract Number*—Upon Contract execution, the Navajo Nation shall assign a Contract Number which shall be shown in the "administrative purposes" box on page 1 of the Agreement. All invoices submitted for payment shall reference said Contract Number, the Project name and business unit number.

ARTICLE 2 – PRELIMINARY MATTERS

SC-*2.02.A Amend the first sentence of Paragraph 2.02.A. to read as follows:*

Owner shall furnish to Contractor two (2) printed copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one (1) copy in electronic portable document format (PDF).

SC-*2.07 Add the following new paragraphs immediately after Paragraph 2.06.C:*

SC-2.07 *Availability of Funds*

A. *Appropriations Required:* Pursuant to 2 N.N.C. § 223(A), the obligation of the Navajo Nation to pay the entire Original Contract Amount, or any portion thereof as invoiced, or any amounts under any and all Change Order(s), amendments or modifications to this Contract, shall be contingent upon the availability of funds, from whatever sources, for the Project which is the subject of this Contract.

B. *Subsequent Fiscal Periods:* Pursuant to 2 N.N.C. § 350(D), if funds adequate to support continuation of performance under this Contract are not appropriated or are otherwise unavailable for any fiscal period(s) subsequent to that period in/for which this Contract is entered into, then this Contract may, at the sole discretion of the Navajo Nation, be cancelled and Contractor shall be reimbursed only for the reasonable value of any non-recurring costs incurred as a direct result of work performed under this Contract.

SC-2.08 *Contract Templates and Software*

A. Contractor agrees to furnish all standard contract templates and draft documents necessary for all phases of the Project. Contractor also agrees to utilize any software necessary to generate a final clean version of all required contract documents for execution by Owner and Contractor, including any modifications, for all phases of the Project, and to generate the same for all attachments or exhibits thereto, and to certify by signature that the standard contract templates used for all phases of this Project have been modified in accordance with a valid licensing agreement with the template/software provider. Contractor agrees to indemnify and hold harmless the Navajo Nation, as provided in Paragraph SC-7.07, against any claims or actions by the holder of the template/software copyright for any unauthorized use of the standard contract templates or software resulting from Owner and Contractor entering into this Contract or any other contract for any of the phase of this Project, and any modifications, attachments, or exhibits thereto.

SC-2.09 *Right to Refuse Contract*

A. The Navajo Nation reserves its right to refuse to execute this Contract upon a written determination that any of the following has occurred prior to the Navajo Nation's execution of this Contract:

1. *Faulty procurement:* a document, procedure, decision, action, or other event pertaining to the procurement of this Contract, or to any related pre-procurement activities, is in violation of any application Navajo Nation, federal, or state laws or regulations governing said procurement; or

2. *Ancillary firm(s):* an ancillary firm is ineligible for the award of this Contract or is unavailable to perform on the Project, for any reason; in such case, the Navajo Nation may, in its discretion, either (1) reject the selected Proposal containing the ancillary firm's qualifications and refuse to execute this

Contract; or (2) decide not to reject the Proposal and consider only the license and relevant qualifications of Contractor standing alone; or (3) decide not to reject the Proposal and permit another equally/more qualified firm to perform those Contract services that would have been performed by the ineligible or unavailable firm; or

3. *Lack of funding availability:* when funding for the Scope of Work (SOW) has become wholly or partially unavailable; or
4. *Significant change to SOW or other requirements:* the SOW or any other mandatory requirements is required to be changed significantly; or
5. *Change to budget:* there has been a revision (whether increase or decrease) to the budget that was originally established by the Navajo Nation prior to the initiation of the procurement process for this Contract; or
6. *Protest filed:* a protest has been timely filed in accordance with 12 N.N.C. § 360(A), unless a determination has been made to proceed with a Contract award pursuant to 12 N.N.C. § 360(F); or
7. *Other reasons cited in Regulations:* any of the following pertains to this procurement:
8. Inadequate or ambiguous specifications were cited in the Request for Proposal (RFP)/Request for Qualification (RSQ);
9. The services contemplated under this Contract are no longer required;
10. The RFP/RSQ did not provide for consideration of all factors of cost to the Navajo Nation;
11. All Proposals received indicate that the needs of the Navajo Nation can be satisfied by a less expensive service differing from that described in the RFP/RSQ;
12. All fee Proposals received exceed the Maximum Feasible Price after opportunity for negotiation pursuant to 12 N.N.C. § 346(D);
13. The selected Proposal was collusive, contained fraudulent statements or information, contained any material misrepresentation, or was submitted in bad faith; or
14. Cancellation of the proposed Contract serves in the best interest of the Navajo Nation.

SC-2.10 *Private Contractor*

A. Contractor shall perform and conduct all activities under this Contract as a private independent contractor and shall not be considered as an employee of the Navajo Nation or receive any benefits to which the Navajo Nation's employees are entitled.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-*3.01.A Insert the following after the second clause of Paragraph 3.01.A:*

Any conflict between any provision(s) contained in the Contract Documents shall be resolved by reference and interpretation of these Supplementary Conditions which incorporated the Navajo Nation Supplemental General Conditions for EJCDC Construction Contracts.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC-*4.01.A Delete the second and third sentences of Paragraph 4.01.A and amend the first sentence of Paragraph 4.01.A to read as follows:*

The Contract Times will commence to run on the day indicated in the Notice to Proceed.

SC-*4.05.G Add the following new sentence to the end of Paragraph 4.05.G:*

Any adjustment in Contract Price or Contract times must also comply with the requirements of Article 11.

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

SC-*5.01.A Amend the second sentence of Paragraph 5.01.A by adding the following text to the end of the Paragraph:*

Rights-of-way and easements obtained by Owner specifically for this Project are included in Appendix C of the Contract Documents.

SC-*5.01.A.1 Add the following new paragraph immediately after Paragraph 5.01.A:*

1. In the performance of work or provision of services under this Contract, Contractor shall perform primarily within the LeChee Chapter of the Navajo Nation (AZ), and Contractor is authorized to travel at its sole expense.

SC-*5.03.C Add the following new paragraphs immediately after Paragraph 5.03.B:*

C. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:

1. Report dated July 10, 2021, prepared by Wood (now WSP USA) Environmental & Infrastructure Solutions, Inc., Albuquerque, NM, entitled: "Geotechnical Engineering Study Western Navajo Pipeline/LeChee Pipeline and Booster Pump Station LeChee, Arizona," consisting of 59 pages. The Technical Data contained in such report upon whose accuracy Contractor may rely are those indicated in the definition of Technical Data in the General Conditions.

2. Report dated June 29, 2022, prepared by Wood (now WSP USA) Environmental & Infrastructure Solutions, Inc., Albuquerque, NM, entitled: "Geotechnical Engineering Study Amendment Western Navajo Pipeline/LeChee Pipeline and Booster Pump Station LeChee, Arizona," consisting of 17 pages. The Technical Data contained in such report upon whose accuracy Contractor may rely are those indicated in the definition of Technical Data in the General Conditions.

D. The following drawings of physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities) are known to Owner:

1. Environmental Assessment has been completed and any issues pertinent to the project have been incorporated.

E. Contractor may examine copies of reports and drawings identified in SC-5.03.C and SC-5.03.D that were not included with the Bidding Documents by contacting

Navajo Nation Department of Water Resources – Water Management Branch during regular business hours, or may request copies from Engineer.

SC-*5.04.D.4* *Add the following sentence to the end of Paragraph 5.04.D.4:*

Any adjustment in Contract Price or Contract times must also comply with the requirements of Article 11.

SC-*5.05.E.3* *Add the following sentence to the end of Paragraph 5.05.E.3:*

Any adjustment in Contract Price or Contract times must also comply with the requirements of Article 11.

ARTICLE 6 – BONDS AND INSURANCE

SC-*6.01.A* *Add the following sentence to the end of Paragraph 6.01.A:*

Pursuant to 12 N.N.C. § 342, nothing in this Article 6 shall be construed to limit the authority of the Navajo Nation to require a performance bond or other security in addition to those bonds required herein.

SC-*6.03* *Delete Paragraphs 6.03.A through 6.03.J in their entirety and replace with the following paragraphs:*

A. Contractor shall, at its sole expense, procure and maintain adequate and sufficient insurance for all of Contractor's potential liabilities, in accordance with this Article, relating to any claims by any party for any injury to persons or damage to property arising out of or connected with any work performed or services provided by Contractor under this Contract.

B. *Minimum Insurance Coverages:* Contractor shall obtain and maintain for the duration of performance under this Contract, the minimum insurance coverages shown below:

1. Commercial General Liability – ISO CG 0001 Form or equivalent. Coverages shall include:
   - Premises and Operations
   - Personal/Advertising Injury
   - Products/Completed Operations
   - Liability assumed under an Insured Contract (including defense costs assumed under contract)
   - Broad Form Property Damage
   - Independent Contractors/Architects
2. Automobile Liability including all:
   - Architect/Owned Vehicles
   - Non-owned Vehicles
   - Rented/Hired Vehicles
   - Personal Injury Protection (where applicable)
3. Workers' Compensation:

- Statutory Benefits (Coverage A)
- Employers Liability (Coverage B)

4. Professional Liability – Errors and Omissions Liability. Contractor shall maintain Professional/Errors and Omissions Liability covering wrongful or negligent acts, errors and/or omissions for damage sustained by reason of or in the court of operations under this Contract.

C. *Limits required:* Contractor shall carry the limits of liability as required below (where "State Law" is indicated, such limits shall be in accordance with the laws and regulations of the State wherein this Contract shall be primarily performed):

Commercial General Liability	
General Aggregate	$ 2,000,000
Products/Completed Operations Aggregate	$ 2,000,000
Occurrence Basis/Per Each Occurrence Limit	$ 1,000,000
Personal/Advertising Injury	$ 1,000,000
Fire Damage (Any One Fire)	$ 50,000
Medical Payments (Any One Person)	$ 5,000
Automobile Liability	
Bodily Injury/Property Damage (Each Accident)	$ 1,000,000
Personal Injury Protection (If Applicable)	By State Law
Workers' Compensation	
Coverage A (Workers' Compensation)	By State Law
Coverage B (Employers Liability)	$ 500,000
Professional Liability (Errors and Omissions)	
Occurrence Basis/Per Each Occurrence Limit	$ 1,000,000
Aggregate Minimum	$ 2,000,000

D. *Per Occurrence Basis:* All policies must be written on a "per-occurrence" basis, unless otherwise approved by the Navajo Nation Risk Management Program.

E. *Claims-made Basis:* In the event that Contractor's professional liability insurance required by this Contract is written on a claims-made basis, Contractor shall warrant that any retroactive date under the policy shall precede the effective date of this Contract, and that either continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning as of the date that performance under this Contract is completed.

F. *Primary Coverage Basis:* For payment of any claims, Contractor's insurance coverage shall be on a primary, non-contributory basis with any other insurance coverages and/or self-insurance carried by the Navajo Nation or all other available sources.

G. *Required Language:* Contractor's General and Umbrella Liability policy shall be endorsed to include the following language: "The Navajo Nation, its elected officials, employees, agents, and volunteers are named as an Additional Insured with respect to liability arising out of the activities performed by the Insured [Contractor] pursuant to a Contract with the Navajo Nation." (ISO Form CG 2010, 2004 Edition or equivalent).

H. *Waiver of Subrogation:* Contractor's policy shall contain a waiver of subrogation in favor of the Navajo Nation, its divisions, departments, offices, agencies, boards, commissions, committees, enterprises and its employees, officers, officials, and agents for losses arising from work performed or services provided by Contractor pursuant to a Contract with the Navajo Nation.

I. *Separation of Insureds:* Contractor's policy shall include a "Separation of Insureds" clause (Cross Liability).

J. *Insurer Rating:* Contractor's insurance policy shall be issued by a licensed or approved insurer with an "A.M. Best" rating of not less than A-VII. The Navajo Nation in no way warrants that the above-required minimum insurer rating is sufficient to protect Contractor from potential insurer insolvency.

K. *Certificate of Insurance:* Contractor shall provide to the Navajo Nation certificates of insurance as required by this Contract. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. Each insurance policy required by this Contract must be in effect upon, or prior to, commencement of performance under this Contract and shall remain in effect until such time as all of its obligations under this Contract or any subsequence modifications have been fully and satisfactorily completed. Insurance certificates shall be sent to the Navajo Nation Department of Risk Management, P.O. Box 1690, Window Rock, Arizona, 86515. The Contract Number and a description of the work performed or services provided thereunder shall be indicated on such certificates.

L. *Subcontractors:* Contractor's subcontractors, if any, shall be included as insureds under Contractor's policy, or Contractor shall provide to the Navajo Nation separate certificates and endorsements for each of its subcontractors holding separate policies. All coverages for subcontractors shall be subject to the minimum policy amounts shown herein.

M. *Notification of Change Required:* The insurance policy required herein shall provide the required coverage and shall not be suspended, voided, canceled, or reduced in coverage or in limits except after thirty (30) calendar days prior written notice has been given to the Navajo Nation. Such notice shall be sent in accordance with SC-18.01.

N. *Approval of Modifications:* Any modification of the insurance requirements set forth herein shall be approved by the Navajo Nation Risk Management Program (NNRMP), whose decision shall be final. Such modification shall not require a formal Contract modification, but may be approved by administrative action of the NNRMP. Contractor may request, for itself or its subcontractors, that the insurance requirements shown herein be modified, provided that such request be delivered in writing to the NNRMP at least ten (10) days prior to contract execution or modification. Contractor shall include with such request a

justification for the modification with supporting documentation. Any modifications approved shall on a case-by-case basis and shall not affect the insurance requirements of other subcontractors for whom modifications have not been approved. Contractor shall not commence work under this Contract unless and until the NNRMP has approved any deviations from the standard requirements herein.

O. *Navajo Nation Disclaimers*: The insurance requirements and coverages set forth herein are minimum requirements only and in no way limit the indemnity covenants contained in this Contract. The Navajo Nation in no way warrants that the minimum limits herein are sufficient to protect Contractor or its subcontractors from any liabilities that might arise from the work performed or services provided under this contract, and Contractor and its subcontractors are free to purchase additional insurance. By requiring such minimum insurance, the Navajo Nation shall not be deemed to have assessed the risk that may be applicable to Contractor under the Contract. Contractor shall assess its own risks and if it deems appropriate and/or prudent, it may maintain higher limits and/or broader coverages. Contractor is not relieved of any liability or other obligations assumed or pursuant to this Contract by reason of its failure to obtain or maintain insurance in sufficient amounts, duration, or types.

P. *Insurance Documentation Required:* The Navajo Nation's Representative must receive written documentation of all required insurance prior to Contractor's commencement of work under this Contract. If Contractor is able to furnish such documentation prior to the Navajo Nation's execution of this contract, such documentation shall be made an exhibit to the Primary Contract. The Navajo Nation may terminate this Contract for a material breach if the Navajo Nation's Representative determines that Contractor has failed to submit the required documentation in a timely manner and that the Navajo Nation is unable to proceed with the Project in a timely manner.

SC-*6.06* *Retitle Paragraph 6.06 to "No Sovereign Immunity Waiver" and delete Paragraphs 6.06.A through 6.06.D in their entirety, and replace with the following paragraph:*

A. Owner and Contractor acknowledge and agree that the Navajo Nation is relying on, and does not waive or intend to waive by any provision of this Contract, the monetary limitations and other rights, immunities, and protections provided under 1 N.N.C. §§ 551 et. seq., as from time to time amended, or otherwise available to the Navajo Nation or its elected officials, employees, agents, and volunteers.

SC-*6.07* *Retitle Paragraph 6.07 to "Mutual Cooperation" and delete Paragraphs 6.07.A through 6.07.C in their entirety, and replace with the following paragraph:*

A. Owner and Contractor agree to cooperate with each other in good faith in the collection of any insurance proceeds which may be payable in the event of any loss, including the execution and delivery of any proof of loss or other actions required to effect recovery.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-*7.01.A Add the following sentences immediately after the last sentence of Paragraph 7.01.A:*

In the performance of work or provision of services under this Contract, Contractor shall at all times be under the supervision and direction of Owner's Authorized Representative named in the Agreement, or their successor or designee. Any cooperative or joint supervision, or joint approval authority involving person(s) other than Owner's Authorized Representative, whether Navajo Nation staff or other person(s), shall be conducted through a duly approved and executed cooperative agreement that sets forth the extent of decision-making, supervision, and approval authority of Owner's Authorized Representative and such other person(s).

SC-*7.02.C. Add the following new paragraph immediately after Paragraph 7.02.B:*

C. Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's Authorized Representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under SC-7.21.

SC-*7.04.A Amend the third sentence of Paragraph 7.04.A by striking out the following words:*

Unless the specification or description contains or is followed by words reading that no like, equivalent, or 'or-equal' item is permitted.

SC-*7.04.A.1 Amend the last sentence of Paragraph a.3 by striking out "and;" and adding a period at the end of Paragraph a.3.*

SC-*7.04.A.1 Delete Paragraph 7.04.A.1.a.4 in its entirety and insert the following in its place:*

4. [Deleted]

SC-*7.06.A Amend Paragraph 7.06.A by adding the following text to the end of the Paragraph:*

Contractor shall not award work valued at more than fifty percent (50%) of the Contract Price to Subcontractor(s) without prior written approval of the Owner.

SC-*7.06.B Delete paragraph 7.06.B in its entirety and insert the following in its place:*

B. [Deleted]

SC-*7.06.E Amend the second sentence of Paragraph 7.06.E by striking out "Owner may also require Contractor to retain specific replacements; provided, however, that".*

SC-*7.08.A Amend the second sentence of Paragraph 7.08.A by adding the following text to the end of the Paragraph:*

Permits obtained by the Owner specifically for this project are included in Appendix D of the Contract Documents.

SC-*7.09.B Add the following new paragraphs immediately after Paragraph 7.09.A:*

B. Contractor hereby acknowledges and agrees that all work performed and services provided within the territorial jurisdiction of the Navajo Nation is subject to the six percent (6%) Navajo Sales Tax, as outlined in 24 N.N.C. §§ 601 et. seq.

1. *Identification of Taxable Activity:* Contractor shall separately indicate, on each invoice submitted to the Navajo nation, any and all of its work performed or services provided within the Navajo Nation under this Contract, and shall itemize the Navajo Sales Tax.

2. *Withholding and Remittance:* Contractor acknowledges and agrees that the Navajo Nation shall withhold from each payment six percent (6%) of the amount associated with the work performed or services provided within the Navajo Nation under this Contract, and shall transfer such six percent (6%) amount to the Office of the Navajo Tax Commission (ONTC) on behalf of Contractor. Contractor shall indicate on its quarterly tax return filed with ONTC that the six percent (6%) amount of Navajo Sales Tax has been withheld and paid.

3. *Filing and Other Payments*: Contractor acknowledges that the Navajo Nation's withholding of tax amounts in no way removes Contractor's responsibility for timely filing of tax returns and payments of interest, penalties, or any other amounts relating to Contractor's tax obligations under the Navajo Nation's or any other jurisdiction.

SC-*7.11.B Insert the following new paragraphs after Paragraph 7.11.A:*

B. Copies of all work product documents, reports, related correspondence, and invoices regarding this Contract shall be provided, no later than thirty (30) days following the expiration or termination of this Contract, to the Navajo Nation's Representative. Contractor's final invoice shall be due thirty (30) days following expiration or termination of this Contract.

C. Pursuant to 12 N.N.C. § 352, Contractor shall keep and maintain books, records, documents or other materials related to performance under this Contract for a period of five (5) years from the date of issuance of final payment under this Contract. Upon issuance of a Notice of Audit to the Contractor, the Navajo Nation may audit any such documents and records at any time during the effective period of this Contract, up to the five (5) year period following final payment. The Contractor agrees to have an authorized individual execute and have notarized a release authorizing the Navajo Nation to release the Contractor's ledgers, books, records, documents or other materials related to performance under this Contract, as such information may be required by a governmental agency under an agreement with the Navajo Nation for purposes of an audit by such agency of such documents and records. The Contractor agrees that said executed release shall constitute permission for the disclosure of otherwise protected information pursuant to 2 N.N.C. § 85(A)(5)(d) and 2 N.N.C. § 86(C).

SC-*7.12 Insert the following after the second sentence of Paragraph 7.12.C:*

The following Owner safety programs are applicable to the Work: Navajo Occupational Safety & Health Administration.

SC-*7.18.A* *Delete Paragraph 7.18.A in its entirety and replace with the following:*

A. Contractor agrees to hold harmless and indemnify the Navajo nation and its divisions, departments, offices, agencies, boards, commissions, committees, enterprises, employees, officers, officials, and agents against any and all losses, costs, damages, claims, expenses, attorney's fees, or other liabilities whatsoever, for any injury, illness, disease or death to persons and for any damage to Navajo Nation property arising from the negligent acts or omissions by the Contractor, as defined herein, regardless of whether or not any liability is caused in part by an indemnified party.

SC-*7.20* *Add the following new paragraphs after Paragraph 7.19.E:*

SC-7.20 *Licensing & Registration Requirements*

A. *State License Required:* Contractor shall hold a current and valid license from an appropriate State Licensing Board or Agency for the type of work to be performed under this Contract, which license is customarily maintained in the ordinary course of Contractor's business. Said license must be maintained as active and current for the entire duration of performance under this Contract. Contractor shall indicate its business name, business address, and State license number in the Primary Contract. Contractor agrees to immediately notify the Navajo Nation if said license is suspended, revoked, expired, or otherwise not in effect.

B. *Business Registration:* Contractor shall be registered to do business with the State in which the Project is located. All documents regarding such registration shall be provided to the Navajo Nation prior to the execution of this Contract and must be active and valid for the effective duration of this Contract. Contractor shall immediately notify the Navajo Nation if such registration is suspended, revoked, expired, or otherwise not in effect.

C. *Documentation Required:* Contractor must submit written documentation of all required licenses and registrations to the Navajo Nation's Representative. The Navajo Nation may terminate this Contract for a material breach if the Navajo Nation's Representative determines that Contractor has failed to timely submit the required documentation.

D. *Licensed Subcontractors Required:* All subcontractors used by Contractor in its performance under this Contract shall be duly registered and licensed to practice their professions in the Navajo Nation and/or the State in which the Project is located. Use of unregistered or unlicensed subcontractors shall constitute a material breach and the Navajo Nation may terminate this Contract.

SC-7.21 *Debts Owed; Right to Offset*

A. Contractor acknowledges that pursuant to the Navajo Business and Procurement Act, 12 N.N.C. §§ 1501 *et. seq.*, Contractor, in its present form or in any other identifiable capacity as an individual, business, corporation, partnership, or other entity, is eligible to do business with the Navajo Nation as defined in 12 N.N.C. § 1503(A). Contractor further acknowledges that if Contractor has an outstanding money judgment against it in favor of the Navajo Nation, or there exists a delinquent accounts receivable debt which is due and owing to the Navajo Nation but Contractor or other such related individual or entity, then the Navajo Nation may, upon due notice to the Contractor, offset its money claim against any amount owed for work performed or services provided under this Contract.

SC-7.22 Work Product

A. The product(s) and title of all of Contractor's work performed and all services under this Contract shall be treated as instruments of service, and may be used solely by the Navajo Nation and its divisions, departments, offices, agencies, boards, commissions, committees, enterprises, employees, officers, officials, and agents strictly in accordance with the Primary Contract, and no portion thereof shall be released by the Navajo Nation, except: (1) upon prior written consent of the Contractor, (2) pursuant to a duly authorized and executed agreement with any other tribal, county, state or federal agency, or (3) pursuant to applicable law requiring such disclosure.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

SC-*9.01 Delete Article 9 in its entirety and replace with the following:*

[Deleted]

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

SC-*10.03.BAdd the following new paragraphs immediately after Paragraph 10.03.A:*

B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.

1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
4. Liaison:
    a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
    c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

6. Shop Drawings and Samples:

    a. Record date of receipt of Samples and Contractor-approved Shop Drawings.

    b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.

    c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.

7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.

8. Review of Work and Rejection of Defective Work:

    a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.

    b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

9. Inspections, Tests, and System Start-ups:

    a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.

    b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

10. Records:

    a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

    b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.

    c. Maintain records for use in preparing Project documentation.

11. Reports:

    a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.

    b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.

    c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

    a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.

    b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.

    c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.

5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

8. Authorize Owner to occupy the Project in whole or in part.

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

SC-*11.01* *Delete Paragraphs 11.01 through 11.07.B in their entirety and replace with the following paragraphs:*

SC-11.01 *Written Modification Required*

A. Any revisions, amendments, addendums, alterations, change orders, modifications, increases in payment over and above the Original Contract Amount, or changes whatsoever to any provision of the Contract documents, shall be made only by a duly approved written agreement deemed a modification signed by the signatories of the Contract or their authorized designee.

SC-11.02 *Prior Approval Required*

A. Owner's Authorized Representative shall determine that the modification is reasonably related to the scope of work for the Project; all modifications must be approved in writing by the Owner's Authorized Representative prior to consideration and execution by the Navajo Nation signatory.

SC-11.03 *Twenty Percent (20%) Limitation If Bid Used*

A. If the Original Contract Amount is based on a "Bid" submitted by the Contractor and accepted by the Navajo Nation, pursuant to 2 N.N.C. § 223(F), such modifications shall not exceed, in the aggregate, twenty percent (20%) of the accepted Bid.

ARTICLE 12 – CLAIMS

SC-*12* *Delete Paragraph 12.01 in its entirety and replace with the following paragraphs:*

SC-12.01 *Dispute Resolution*

A. Any claim, dispute, or other matter in question arising out of or relating to this Contract shall be resolved as follows:

1. *Negotiation:* Owner and Contractor shall first endeavor to resolve claims or disputes between them by informal good faith negotiation, which negotiation period shall not exceed thirty (30) calendar days, commencing as of the receipt by either Party of the other Party's "Notice to Invoke Dispute Resolution Procedures."

2. *Arbitration*: If the negotiation provided for in SC-12.01.A.1 herein does not result in resolution of the dispute within thirty (30) days of commencement of negotiation, then, unless Owner and Contract agree in writing to extend the time for negotiation, either Party may invoke arbitration by sending Notice of Intent to Commence Arbitration. Any Arbitration invoked against the

Navajo Nation shall be in accordance with the procedures referenced in the Navajo Sovereign Immunity Act, as amended, at 1 N.N.C. §§ 554(J) and 554(K), and as set forth in the Navajo Nation Arbitration Act, as amended, at 7 N.N.C. §§ 1101 *et. seq.* Any procedure not expressly provided for under Navajo law may be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association, except to the extent that any rules are modified by the following:

a. Unless otherwise agreed to in writing by the Parties, all arbitration procedures shall be held in Window Rock, Arizona; and

b. The arbitration shall be conducted by a single arbitrator selected by the Navajo Nation, unless one of the Parties' claims exceeds one million dollars ($1,000,000), exclusive of interest, costs, and feeds; in such case the arbitration shall be conducted by a panel consisting of three (3) arbitrators, one of which shall be chosen by each Party, with the two arbitrators choosing the third; at least one arbitrator shall possess at least ten (10) years of experience in Indian Law; and

c. If Contractor seeks to enforce an arbitration award against the Navajo Nation, a Notice of Intent to Invoke Arbitration shall be filed in strict compliance with the notice requirements of the Navajo Sovereign Immunity Act, at 1 N.N.C. § 555; and

d. Whether as a result of an arbitration provided for herein or of a judicial action to enforce an arbitration award resulting from such arbitration, any award against the Navajo Nation shall be in strict conformance with the provisions of 1 N.N.C. § 554(K); and

e. Whether in the context of an arbitration provided for herein or a judicial action to enforce an arbitration award resulting from arbitration, Navajo Nation laws shall exclusively govern the interpretation of this Contract, the arbitration provisions herein, the arbitration procedures conducted pursuant thereto, and the application of all provisions herein to Contractor; and

f. Pursuant to 1 N.N.C. § 554(K) and 7 N.N.C. § 1102, the appropriate Navajo Nation District Court shall have exclusive jurisdiction to compel the Navajo Nation's participation in an arbitration, and shall have exclusive jurisdiction to enforce, modify, or vacate an arbitration award against the Navajo Nation resulting from such arbitration; Contractor understands and agrees that domestication of a judgment against the Navajo Nation in any other court will violate the Navajo Sovereign Immunity Act such that the Navajo Nation will be able to assert the defense of sovereign immunity in any other foreign (federal, state, tribal) court; and

g. Neither Party can be awarded any attorney fees and costs.

B. *Exclusive Remedy:* The negotiation and arbitration provisions provided herein shall constitute the sole and exclusive remedy to any dispute or controversy arising from this Contract. This dispute resolution agreement shall be a complete defense to any suit, claim, action or proceeding in any federal, state, or tribal judicial or administrative tribunal; and

C. *Post-Termination; Post-Expiration*: Regarding any dispute or controversy arising from this Contract, the dispute resolution provisions herein shall survive the termination or expiration of this Contract.

D. *Challenges Limited*: By entering into and executing this Contract, Contractor expressly covenants and agrees that it shall not contest or challenge the territorial, administrative, legislative, executive or judicial jurisdiction of the Navajo Nation on the basis that such jurisdiction is inconsistent with the status of the Navajo Nation as an Indian Tribal Nation, or that the Navajo Nation government is not a government of general jurisdiction, or that the Navajo Nation government does not possess full police power (i.e. the power to legislate and regulate for the public's general health and welfare) over all lands, persons, activities, transactions, or occurrences within its territorial boundaries, or on any other basis not generally applicable in the context of a similar challenge to the jurisdiction of a state government.

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

SC-*13.02.C* *Delete Paragraph 13.02.C in its entirety and insert the following in its place:*

C. [Deleted]

SC-*13.03.E* *Delete Paragraph 13.03.E in its entirety and insert the following in its place:*

E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

1. if the extended price of a particular item of Unit Price Work amounts to five percent (5%) or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than twenty-five percent (25%) from the estimated quantity of such item indicated in the Agreement; and
2. if there is no corresponding adjustment with respect to any other item of Work; and
3. if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may seek an adjustment in the Contract Price. Any adjustment in Contract Price or Contract times must also comply with the requirements of Article 11.

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

SC-*14.02.B* *Delete Paragraph 14.02.B in its entirety and insert the following in its place:*

B. Contractor 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 the Contractor. Costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

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

SC-*15.01.B.1* *Amend the second sentence of Paragraph 15.01.B.1 by striking out the following text: "a bill of sale, invoice, or other."*

SC-*15.01.B.3* *Add the following language at the end of paragraph 15.01.B.3:*

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

SC-*15.01.B.4* *Add the following new Paragraph after Paragraph 15.01.B.3:*

4. The Application for Payment form to be used on this Project is EJCDC C-620 (see Section 00620). The Owner must approve all Applications for Payment before payment is made. No payment shall be authorized or remitted to Contractor unless and until the Owner's Authorized Representative, or successor or designee, approves in writing in advance the work performed or services provided under this Contract, and has given prior written approval of invoice(s), billing(s), or payment application(s) submitted to Owner. All invoices must be supported by adequate verification, documentation, and itemization of all required Project deliverables received by Owner. Contractor shall be solely responsible for all consideration, compensation, taxes, fees or any other expenses whatsoever, related to Contractor's use of any subcontractors, agents, representatives, employees or consultants in the performance of Contractor's obligation under this Contract.

SC-*15.01.D.1* *Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:*

1. The Application for Payment with Engineer's recommendations will be presented to the Owner for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due twenty (20) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-*15.02.A* *Amend Paragraph 15.02.A by striking out the following text: "no later than seven days after the time of payment by Owner" and insert "no later than the time of payment by Owner."*

SC-*15.03.B* *Add the following new subparagraph to Paragraph 15.03.B:*

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

SC-*17* *Delete Article 17 in its in entirety and replace with:*

[Deleted]. Refer to Article 12 for Dispute Resolution.

ARTICLE 18 – MISCELLANEOUS

SC-*18.01 Delete subparagraphs 18.01.A.1 and 2 in their entirety and replace subparagraph 18.01.A.1 with the following:*

mailed to the address identified in the Agreement via certified United States Postal Service mailing with return receipt requested, and shall be deemed issued or submitted to the receiving party as of the date of such certified mailing.

SC-*18.07 Delete paragraph 18.07 in its entirety and replace with the following:*

SC-18.07 *Governing Law; Compliance with Navajo Nation Laws; Navajo Nation Jurisdiction*

A. This agreement shall be construed and the legal relations between the parties determined in accordance with the laws of the Navajo Nation, without giving effect to any choice of law rules which may direct the application of the laws of any other jurisdiction.

B. Contractor shall comply with all other Navajo Nation laws and regulations and of the United States, now in force and effect or as hereafter may come into force and effect, applicable to the work to be performed or services to be provided under this Contract.

C. By voluntarily entering into and executing this Contract, Contractor expressly consents to the full territorial, administrative, legislative, executive and judicial jurisdiction of the Navajo Nation, including but not limited to, the jurisdiction to regulate, adjudicate disputes, and to levy fines or enter judgments for injunctive relief and/or compensatory and punitive damages, in connection with all activities conducted by Contractor within the Navajo Nation or which have proximate (legal) effect on persons or property within the Navajo Nation. Contractor hereby acknowledges and agrees that this Contract constitutes a voluntary consensual relationship between Contractor and the government of the Navajo Nation.

SC-*18.09 Add the following new paragraphs after Paragraph 18.08:*

SC-18.09 *Sovereign Immunity*

A. Nothing herein shall be considered a waiver, express or implied, of the sovereign immunity of the Navajo Nation, except to the limited extent provided for in the Navajo Sovereign Immunity Act, as amended, at 1 N.N.C. §§ 551 *et. seq*.

SC-18.10 *Requests for Information*

A. When requested by the Navajo Nation, Contractor shall submit proper verification of invoices, reports, documents, or any other information related to this Contract within ten (10) business days of the date of the request.

SC-18.11 *No Third Party Beneficiaries*

A. Notwithstanding any provision of Navajo Nation law, whether codified or uncodified, or any Navajo Nation common or fundamental law, no provision of this Contract shall be construed as conferring any rights to, and may not be invoked by or for the benefit of, any other person entity that is not one of the signatory parties hereto.

SC-18.12 *Assignment Restricted*

A. Contractor shall not in any matter whatsoever assign, convey, transfer, or sublet any rights to this Contract or any interest therein including any amendments or modifications thereto, any work product resulting from the work performed or services provided under this Contract including any amendments or modifications thereto, or any monetary claims against the Navajo Nation relating to this Contract or any amendments or modifications thereto, without the prior written consent of the Navajo Nation. Any attempted assignment without such prior consent shall be void; said consent may be granted, granted upon conditions, or withheld, at the Navajo Nation's sole discretion.

SC-18.13 *Successors*

A. All provisions, conditions and covenants contained in the Contract Documents shall extend to and be binding upon each of the Contractor's successors, heirs, assigns, executors, administrators, employees, officials and agents, including all of the Contractor's subcontractors, and the term "Contractor" whenever used herein, or in any other Contract document, attachment or exhibit, shall be deemed to include all such successors, heirs, assigns, executors, administrators, employees, designees, consultants, officials, agents, and subcontractors.

SC-18.14 *Right to Assurance*

A. If at any time prior to the completion of services, the Navajo Nation has reason to believe that Contractor does not intend to or is unable to complete the contracted services, the Navajo Nation may demand in writing that Contractor submit written assurance of intent to complete performance. Failure to provide such assurance within ten (10) business days shall be deemed as a response that Contractor will not complete services which will allow the Navajo Nation to terminate this Contract.

SC-18.15 *Severability*

A. If any provision of this Contract is determined, by a court of competent jurisdiction or arbitration decision, to be invalid, illegal or incapable of being enforced under any rule of law, all other conditions and provisions of this Contract shall nevertheless remain in full force and effect.

ARTICLE 19 – ENVIRONMENTAL REQUIREMENTS

SC-*19* *Add Article 19 titled "ENVIRONMENTAL REQUIREMENTS" and the following:*

SC-19.01 *Environmental Requirements*

A. When constructing a Project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental conditions:

1. Wetlands—When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

2. Floodplains—When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100-year floodplain areas (Standard Flood Hazard Area) delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, e.g., alluvial soils on NRCS Soil Survey Maps.

3. Historic Preservation—Any excavation by Contractor that uncovers an historical or archaeological artifact or human remains shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).

4. Endangered Species—Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.

5. Mitigation Measures—The following environmental mitigation measures are required on this Project:

    a. Soils: Under Section 402 of the Clean Water Act (CWA) all construction site operators engaged in clearing, grading and excavating activities that disturb one-half acre or more must obtain coverage under a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharges to minimize potential erosion and subsequent stream sedimentation. The General Contractor will be responsible for developing and implementing a Storm Water Pollution Prevention Plan (SWPPP) and obtaining permit from U.S. EPA. The SWPPP shall outline best management practice(s) for minimizing impacts to soil erosion. Thereafter, the impact to the soils will be minor and short term.

    b. Cultural Resources: Resource (AZ-P-20-37) must be flagged by a qualified archaeologist and will be avoided by a minimum of 50 feet.

    c. Biological Resources: If any proposed undertakings require the disturbance of vegetation, construction shall begin before the onset of the migratory bird breeding season extending from April 15 to August 15. Construction may extend into the breeding season if needed as birds will typically not establish a nest site with an active construction zone. If this seasonal avoidance recommendation is followed, the project will not result in the 'take of birds' protected under the MBTA. If the construction activities cannot avoid MBTA breeding season, the project sponsor may contact NFWD to determine if preconstruction surveys can be conducted to identify any nests that have been established.

    d. Water Quality: Identify best management practices to prevent surface runoff from the construction site. Develop a SWPPP and obtain coverage under a NPDES permit from the Navajo Nation in coordination with the U.S. EPA. As part of the operation and maintenance activities there will be occasional need to backwash the water system (i.e., discharge of small amount of water from the system). The contractor will be required to place discharge into a containment area for evaporation. This discharge is not considered toxic and there are no rules for this type of discharge under Navajo Nation jurisdiction.

ARTICLE 20 – NAVAJO PREFERENCE

SC-*20* *Add Article 20 titled "NAVAJO PREFERENCE" and the following:*

SC-20.01 *Navajo Preference*

A. In performing the work under this agreement, Contractor shall comply with all applicable laws, policies, rules and regulations of the Navajo Nation, including without limitation the Navajo Preference in Employment Law, codified at 15 N.N.C. §601, et seq., (the "NPEA"), and the Navajo Nation Business Opportunity Act, codified at 15 N.N.C. §201, et seq., (the "NNBOA"). The terms and provisions of the NPEA and NNBOA are specifically incorporated herein, and become a part of this Contract. Material breach by the Contractor of any terms and provisions of such law shall provide grounds for the suspension or termination of the Contract or other remedy as specified in the NPEA and NNBOA.

ARTICLE 21 – NAVAJO DEPARTMENT OF JUSTICE APPROVAL

SC-*20* *Add Article 21 titled "Navajo Department of Justice Approval" and the following:*

SC-21.01 *Department of Justice Approval*

A. Pursuant to 1 N.N.C. §§ 554(J)(2) and (K)(2), Navajo Nation Department of Justice approval is required for all agreements that include a limited waiver of sovereign immunity to compel or enforce arbitration under the Navajo Nation Arbitration Act, as amended, at 7 N.N.C. §§ 1101 *et. seq.*

B. Approval is indicated by the signature of the Navajo Nation Department of Justice on the Agreement Form 00520.

END OF SECTION

Change Order No. _____

Date of Issuance:		Effective Date:	
Owner:	**Navajo Nation**	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	**Brown and Caldwell**	Engineer's Project No.:	**150360**
Project:	**Navajo Nation Western Navajo Pipeline Phase 1: LeChee Water System Improvements**	Contract Name:	**LeChee Water System Improvements**

The Contract is modified as follows upon execution of this Change Order:
Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	**CHANGE IN CONTRACT TIMES** *[note changes in Milestones if applicable]*
Original Contract Price: $_____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: $_____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: $_____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: $_____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: $_____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____	By: _____	By: _____
Engineer (if required)	Owner (Authorized	Contractor (Authorized
Title: _____	Title: _____	Title: _____
Date: _____	Date _____	Date _____

Approved by Funding Agency (if applicable)

By: _____ Date:

Title: _____

END OF SECTION

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Field Order No. _____

Date of Issuance:		Effective Date:	
Owner:	**Navajo Nation**	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	**Brown and Caldwell**	Engineer's Project No.:	**150360**
Project:	**Navajo Nation Western Navajo Pipeline Phase 1: LeChee Water System Improvements**	Contract Name:	**LeChee Water System Improvements**

Contractor is hereby directed to promptly execute this Field Order, issued in accordance with General Conditions Paragraph 11.01, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, notify Engineer immediately and submit a change proposal before proceeding with this Work.

Reference: _____ Specification(s) _____ Drawing(s) / Detail(s)

Description:

Attachments:

ISSUED:	RECEIVED:
By: _____ Engineer (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____
Date: _____	Date: _____

Copy to: Owner

END OF SECTION

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Appendix A: NN Forms

AFFIDAVIT OF NON-COLLUSION

for _____ services for the _____ Project
(architectural, engineering, design-build, construction, etc.) (description of project)

located in the _____ Chapter of the Navajo Nation

State of _____) ss.

County of _____)

Affiant: _____, being first duly sworn, hereby deposes and says:

1. that he/she is the _____ of _____, the Business Entity
(owner, partner, officer, representative, agent) (company, firm, partnership, etc.)
that has submitted/is submitting to the Navajo Nation a Proposal or Statement of Qualifications (SOQ) or Bid for the above-named Project;
2. that Affiant is fully informed with respect to the preparation and contents of the Proposal/SOQ/Bid submitted by said Business Entity for the above-named Project, and with respect to all pertinent circumstances regarding the submission of said Proposal/SOQ/Bid to the Navajo Nation;
3. that he/she is authorized to represent said Business Entity for purposes of the declarations set forth herein, and that all such declarations are made on behalf of said Entity and all of its owners, partners, officers, members, employees, officials, agents, or parties-in-interest;
4. that said proposal/SOQ/bid is genuine and not collusive or sham;
5. that said Entity has not in any manner colluded, conspired, connived, or agreed, directly or indirectly, with any other entity, bidder, or person, to submit a sham Proposal/SOQ/Bid to the Navajo Nation in connection with the proposed Contract for which said Proposal/SOQ/Bid was submitted, or to refrain from submitting a Proposal/SOQ/Bid to the Navajo Nation in connection with the proposed Contract;
6. that said Entity has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any other entity, bidder, or person, to fix any price or fee relating to any Proposal/SOQ/Bid of Entity or of any other entity, bidder, or person, or to fix any price, overhead, profit, reimbursement, or cost element of said Proposal/SOQ/Bid, or of that of any other entity, bidder, or person;
7. that said Entity has not -through any collusion, conspiracy, connivance, or unlawful written or oral agreement- secured any advantage against the Navajo Nation or against any other entity, bidder or person interested in the proposed Contract for the above-named Project;
8. that all statements set forth herein, and in said Proposal/SOQ/Bid submitted to the Navajo Nation, are true.

signature of Affiant: _____

printed name of Affiant: _____

title of Affiant: _____

name of Business Entity: _____

_____

type of Entity (LLC, Partnership, etc.):_____

address of Business Entity: _____

_____

_____

Business Entity's EIN: _____

NOTARY:

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Signature _____

My commission expires _____, 20____.

AFFIDAVIT OF RESPONSIBILITY FOR SUBCONTRACTORS

For _____ services for the _____ Project
(architectural, engineering, design-build, construction, etc.) (description of project)
located in the _____ Chapter of the Navajo Nation.

State of _____
County of _____

Affiant: _____, being first duly sworn, herby deposes and says:

1. that he/she is the _____ of _____, the Business Entity
(owner, partner, officer, representative, agent) (company, firm, partnership, etc.)
that has submitted/is submitting to the Navajo Nation a Proposal or Statement of Qualifications (SOQ) or Bid for the above-named Project;
2. that he/she is authorized to represent said Business Entity for purposes of the declarations set forth herein, and that all such declarations are made on behalf of said Entity and all of its owners, partners, officers, members, employees, officials, agents, or parties-in-interest;
3. that, as of the date of signature below, said Entity intends to use the subcontractors listed on Exhibit A attached hereto, for the above-named Project;
4. that none of the subcontractors so listed are debarred, suspended, or otherwise ineligible to receive a contract from the Federal Government, any State Government, the Navajo Nation, or from any other Tribal Government in the United States;
5. that none of the subcontractors listed are the subject of any imminent debarment, suspension, or other determination of ineligibility from the Federal, any State, Navajo Nation, or Tribal Government;
6. no subcontractors are currently, or have been within the past ten (10) years, under any criminal indictment or under any civil complaint or charge by the Federal, any State, Navajo Nation, or other Tribal Government, for fraudulent activities, forgery, falsification, theft, bribery, destruction of records, obstruction of justice, receiving stolen property, or other offense related to the receipt or administration of a government contract;
7. no subcontractors have had a contract with such Government terminated, either for cause of convenience;
8. that the Entity named in Line 1 herein shall assume all legal responsibility for the work of all such subcontractors on the Project, and shall perform all subcontractors' duties as necessary, or shall replace any subcontractor as necessary, in order to guaranteed successful completion of all Contract duties for the Project;
9. that all statements set forth herein, and in said Proposal/SOQ/Bid submitted to the Navajo Nation, are true.

Affiant acknowledges and agrees that, if any statement herein is determined to be false or misleading, such will be grounds for immediate termination of the subject Contract or Agreement with the Navajo Nation, and that the Navajo Nation may pursue appropriate legal remedies related to such termination and any false or misleading statements.

Signature of Affiant: _____

Printed Name of Affiant: _____
Title of Affiant: _____
Name of Business Entity: _____
_____

Type of Entity (LLC, Partnership, etc.):
_____
Address of Business Entity: _____
_____
_____
Business Entity's EIN: _____

NOTARY:

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Signature: _____

My Commission expires _____, 20_____.

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

► **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ►

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here **Signature of U.S. person** ► **Date** ►

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting,* later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code,* later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships,* earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code,* later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester,* later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.SSA.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/Businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code,* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships,* earlier.

***Note:** The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov.* You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at *spam@uce.gov* or report them at *www.ftc.gov/complaint.* You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

NAVAJO NATION CERTIFICATION
Regarding Debarment and
Suspension

Applicant acknowledges that to the best of his/her knowledge that their company and principal participants on this contract:

1. Are not debarred, suspended, or otherwise slated for debarment, ineligible and/or excluded from participation on Federal, State, and Tribal Government contracts etc.

2. Are not presently nor have been under criminal indictment or civilly charged by a governmental entity (Federal, State, and Tribal Government) for fraud, forgery, falsification, theft, bribery, destruction of records, receiving stolen property and other criminal offenses in the administration of a government contract.

3. Have not been terminated for cause or convenience by a governmental entity in the administration of a government contract (Federal, State, and Tribal Government).

4. If the Navajo Nation determines that the Certificate provided herein is not true, it will be grounds to terminate the contract and pursue other legal remedies.

Applicant's Address

Name & Signature of Applicant

Type or Print Name

Signature Date

Appendix B: NN Labor Relation Documents

THE NAVAJO PREFERENCE IN EMPLOYMENT ACT

(Amended August 1, 1985)
(Amended October 25, 1990)
(Amended January 1, 2015)

Office of Navajo Labor Relations
The Navajo Nation
Post Office Box 1943
Window Rock, Arizona 86515
Phone (928) 871-6800

NAVAJO PREFERENCE IN EMPLOYMENT ACT
AMENDED JANUARY 1, 2015

SECTION 601. TITLE

A. This Act shall be cited as the Navajo Preference in Employment Act and is hereby codified as Title 15 Chapter 7 of the Navajo Nation Code.

SECTION 602. PURPOSE

A. The purposes of the Navajo Preference in Employment Act are:

1. To provide employment opportunities for the Navajo work force;

2. To provide training for the Navajo people;

3. To promote the economic development of the Navajo Nation;

4. To lessen the Navajo Nation's dependence upon off-reservation sources of employment, income, goods and services;

5. To foster the economic self-sufficiency of Navajo families;

6. To protect the health, safety, and welfare of Navajo workers; and

7. To foster cooperative efforts with employers to assure expanded employment opportunities for the Navajo work force.

B. It is the intention of the Navajo Nation Council that the provisions of this Act be construed and applied to accomplish the purposes set forth above.

SECTION 603. DEFINITIONS

A. The term "Commission" shall mean the Navajo Nation Labor Commission.

B. The term "employment" shall include, but is not limited to, the recruitment, hiring, promotion, transfer, training, upgrading, reduction-in-force, retention, and recall of employees.

C. The term "employer" shall include all persons, firms, associations, corporations, and the Navajo Nation and all of its agencies and instrumentalities, who engage the services of any person for compensation, whether as employee, agent, or servant.

D. The term "Navajo" means any enrolled member of the Navajo Nation.

E. The term "ONLR" means the Office of Navajo Labor Relations.

F. **The term "probable cause" shall mean a reasonable ground for belief in the existence of facts warranting the proceedings complained of.**

G. **The term "territorial jurisdiction" means the territorial jurisdiction of the Navajo Nation as defined in 7 N.N.C. § 254.**

H. **The term "counsel" or "legal counsel" shall mean: (a) a person who is an active member in good standing of the Navajo Nation Bar Association and duly authorized to practice law in the courts of the Navajo Nation; and (b) for the sole purpose of co-counseling in association with a person described in clause (a), an attorney duly authorized, currently licensed and in good standing to practice law in any State of the United States who has, pursuant to written request demonstrating the foregoing qualifications and good cause, obtained written approval of the Commission to appear and participate as co-counsel in a particular Commission proceeding.**

I. **The term "necessary qualifications" shall mean those job-related qualifications which are essential to the performance of the basic responsibilities designated for each employment position, including any essential qualifications concerning education, training and job-related experience, but excluding any qualifications relating to ability or aptitude to perform responsibilities in other employment positions. Demonstrated ability to perform essential and basic responsibilities shall be deemed satisfaction of necessary qualifications.**

J. **The term "qualifications" shall include the ability to speak and/or understand the Navajo language and familiarity with Navajo culture, customs, and traditions.**

K. **The term "person" shall include individuals; labor organizations; tribal, federal, state and local governments, their agencies, subdivisions, instrumentalities and enterprises; and private and public, profit and non-profit, entities of all kinds having recognized legal capacity or authority to act, whether organized as corporations, partnerships, associations, committees or in any other form.**

L. **The term "employee" means an individual employed by an employer.**

M. **The term "employment agency" means a person regularly undertaking, with or without compensation, to procure employees for an employer or to obtain for employees opportunities to work for an employer.**

N. **The term "labor organization" or "union" means an organization in which employees participate or by which employees are represented and which exists for the purpose, in while or in part, of dealing with employers concerning grievances, labor disputes, wages, rates of pay, hours or other**

terms and conditions of employment, including a national or international labor organization and any subordinate conference, general committee, joint or system board, or joint council.

O. The term "petitioner" means a person who files a complaint seeking to initiate a Commission proceeding under the Act.

P. The term "respondent" means the person against whom a complaint is filed by a petitioner.

Q. The term "Act" means the Navajo Preference in Employment Act.

SECTION 604. NAVAJO EMPLOYMENT PREFERENCE

A. All employers doing business within the territorial jurisdiction [or near the boundaries] of the Navajo Nation, or engaged in any contract with the Navajo Nation shall:

1. Give preference in employment to Navajos. Preference in employment shall include specific Navajo affirmative action plans and timetables for all phases of employment to achieve the Navajo Nation goal of employing Navajos in all job classifications including supervisory and management positions.

2. Within 90 days after the later of: (a) the effective date of this § 604(A)(2); or (b) the date on which an employer commences business within the territorial jurisdiction of the Navajo Nation, the employer shall file with ONLR a written Navajo affirmative action plan which complies with this Section and other provisions of the Act. In any case where a labor organization represents employees of the employer, the plan shall be jointly filed by the employer and labor organization. Any such associated labor organization shall have obligations under this Section equivalent to those of the employer as to employees represented by such organization. Failure to file such a plan within the prescribed time limit, submission of a plan which does not comply with the requirements of the Act, or failing to implement or comply with the terms of a conforming plan shall constitute violation of the Act. In the event of a required joint plan by an employer and associated labor organization, only the non-complying party shall be deemed in violation of the Act, as long as the other party has demonstrated a willingness and commitment to comply with the Act.

3. Subject to the availability of adequate resources, ONLR shall provide reasonable guidance and assistance to employers and associated labor organizations in connection with the development and implementation of a Navajo affirmative action plan. Upon request, ONLR shall either approve or disapprove any plan, in whole or in part. In the event of approval thereof by ONLR, no Charge shall be filed hereunder with respect to alleged unlawful

provisions or omissions in the plan, except upon 30 days prior written notice to the employer and any associated labor organization to enable voluntary correction of any stated deficiencies in such plan. No Charge shall be filed against an employer and any associated labor organization for submitting a non-conforming plan, except upon 30 days prior to notice by ONLR identifying deficiencies in the plan which require correction.

B. Specific Requirements for Navajo Preference:

1. **All employers shall include and specify a Navajo employment preference policy statement in all job announcements and advertisements and employer policies covered by this Act.**

2. **All employers shall post in a conspicuous place on its premises for its employees and applicants a Navajo preference policy notice prepared by ONLR.**

3. **Any seniority system of an employer shall be subject to this Act and all other labor laws of the Navajo Nation. Such a seniority system shall not operate to defeat nor prevent the application of the Act; provided, however, that nothing in this Act shall be interpreted as invalidating an otherwise lawful and bona fide seniority system which is used as a selection or retention criterion with respect to any employment opportunity where the pool of applicants or candidates is exclusively composed of Navajos or non-Navajos.**

4. **The Navajo Nation when contracting with the federal or state government or one of its entities shall include provisions for Navajo preference in all phases of employment as provided herein. When contracting with any federal agency, the term Indian preference may be substituted for Navajo preference for federal purposes; provided that any such voluntary substitution shall not be construed by the Navajo Nation that this Act is not fully applicable to the federal contract as a matter of law.**

5. **All employers shall utilize Navajo Nation employment sources and job services for employee recruitment and referrals; provided, however, those employers do not have the foregoing obligations in the event a Navajo is selected for the employment opportunity who is a current employee of the employer.**

6. **All employers shall advertise and announce all job vacancies in at least one newspaper and radio station serving the Navajo Nation; provided, however, that employers do not have the foregoing obligations in the event a Navajo is selected for the employment opportunity who is a current employee of the employer.**

7. **All employers shall use non-discriminatory job qualifications and selection criteria in employment.**

8. **All employers shall not penalize, discipline, discharge nor take any adverse action against any employee without just cause. A written notification to the employee citing such cause for any of the above actions is required in all cases. Provided, that this Subsection shall not apply to Division Directors, or to other employees and officials of the Navajo Nation who serve, pursuant to a specific provision of the Navajo Nation Code, at the pleasure of the Navajo Nation Council, the standing committees of the Navajo Nation Council, the President of the Navajo Nation, the Speaker of the Navajo Nation Council, the Chief Justice of the Navajo Nation, or those persons employed pursuant to 2 N.N.C. § 281(C) and 1009. This subsection shall not be used by a program director to challenge the withholding of his and her salary for failure to implement a corrective action plan of the Auditor General, as authorized by 12 N.N.C § 9(C), or for failure to fulfill a condition of appropriation, as authorized by 12 N.N.C § 820 (R) (2) and (3).**

9. **All employers shall maintain a safe and clean working environment and provide employment conditions which are free of prejudice, intimidation and including sexual harassment. The employee alleging a violation of this subsection shall have the burden of proof to show that violation by a preponderance of the evidence. An employee may not file an action under the Domestic Abuse Protection Act, 9 N.N.C. § 1601, *et seq.*, to seek to restrain a supervisor or coworker for a dispute arising out of the employment relationship.**

10. **Training shall be an integral part of the specific affirmative action plans or activities for Navajo preference in employment.**

11. **An employer-sponsored cross-cultural program shall be an essential part of the affirmative action plans required under the Act. Such program shall primarily focus on the education of non-Navajo employees, including management and supervisory personnel, regarding the cultural and religious traditions or beliefs of Navajos and their relationship to the development of employment policies which accommodate such traditions and beliefs. The cross-cultural program shall be developed and implemented through a process which involves the substantial and continuing participation of an employer's Navajo employees, or representative Navajo employees.**

12. **No fringe benefit plan addressing medical or other benefits, sick leave program or any other personnel policy of an employer, including policies jointly maintained by an employer and associated labor organization, shall discriminate against Navajos in terms or coverage as a result of Navajo cultural or religious traditions or beliefs. To the maximum extent feasible, all**

of the foregoing policies shall accommodate and recognize in coverage such Navajo traditions and beliefs.

C. Irrespective of the qualifications of any non-Navajo applicant or candidate, any Navajo applicant or candidate who demonstrates the necessary qualifications for any employment position:

1. Shall be selected by the employer in the case of hiring, promotion, transfer, upgrading, recall and other employment opportunities with respect to such positions; and

2. Shall be retained by the employer in the case of a reduction-in-force affecting such class of positions until all non-Navajos employed in the class of positions are laid-off, provided that any Navajo who is laid-off in compliance with this provision shall have the right to displace a non-Navajo in any other employment position for which the Navajo demonstrates necessary qualifications.

3. Among a pool of applicants or candidates who are solely Navajo and meet the necessary qualifications, the Navajo with the best qualifications shall be selected or retained, as the case may be.

D. All employers shall establish written necessary qualifications for each employment position in their work force, a copy of which shall be provided to applicants or candidates at the time they express an interest in such position.

SECTION 605. REPORTS

Except as otherwise provided herein, all employers doing business or engaged in any project or enterprise within the territorial jurisdiction of the Navajo Nation or pursuant to a contract with the Navajo Nation shall submit employment information and reports as required to ONLR. Such reports, in a form acceptable to ONLR, shall include all information necessary and appropriate to determine compliance with the provisions of this Act. All reports shall be filed with ONLR not later than 10 business days after the end of each calendar quarter, provided that ONLR shall have the right to require filing of reports on a weekly or monthly schedule with respect to part-time or full-time temporary employment.

SECTION 606. UNION AND EMPLOYMENT AGENCY ACTIVITIES/RIGHTS OF NAVAJO WORKERS

A. Subject to lawful provisions of applicable collective bargaining agreements, the basic rights of Navajo workers to organize, bargain collectively, strike, and peaceably picket to secure their legal rights, shall not be abridged in any way by any person. The right to strike and picket does not apply to employees of the Navajo Nation, its agencies, or enterprises.

B. **It shall be unlawful for any labor organization, employer or employment agency to take any action, including action by contract, which directly or indirectly causes or attempts to cause the adoption or use of any employment practice, policy or decision which violates the Act.**

SECTION 607. NAVAJO PREVAILING WAGE

A. **Definitions. For purpose of this Section, the following terms shall have the meanings indicated:**

1. **The term "prevailing wage" shall mean the wage paid to a majority (more than fifty percent (50%)) of the employees in the classification on similar construction projects in the area during a period not to exceed 24 months prior to the effective date of the prevailing wage rate set hereunder; provided that in the event the same wage is not paid to a majority of the employees in the classification, "prevailing wage" shall mean the average of the wages paid, weighted by the total number of employees in the classification.**

2. **The term "prevailing wage rate" shall mean the rate established by ONLR pursuant to this Section.**

3. **The term "wage" shall mean the total of:**

a. **The basic hourly rate; and**

b. **The amount of: (a) contributions irrevocably made by a contractor or subcontractor to a trustee or to a third person pursuant to a bona fide fringe benefit fund, plan or program for the benefit of employees; and (b) costs to the contractor or subcontractor which may be reasonably anticipated in providing bona fide fringe benefits to employees pursuant to an enforceable commitment to carry out a financially responsible plan or program which was communicated in writing to the employees affected. The types of fringe benefits contemplated hereunder include medical or hospital health care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing; unemployment benefits; life insurance, disability insurance, sickness insurance, or accident insurance; vacation or holiday pay; defraying costs of apprenticeships or other similar programs; or other bona fide fringe benefits.**

4. **The term "area" in determining the prevailing wage means the geographic area within the territorial jurisdiction of the Navajo Nation; provided that in the event of insufficient similar construction projects in the area during the period in question, "area" shall include the geographic boundaries of such contiguous municipal, county or state governments as ONLR may determine**

necessary to secure sufficient wage information on similar construction projects.

5. **The term "classifications" means all job positions in which persons are employed, exclusive of classifications with assigned duties which are primarily administrative, executive or clerical, and subject to satisfaction of the conditions prescribed in Sections 607(E)(7) and (8), exclusive of "apprentice" and "trainee" classifications as those terms are defined herein.**

6. **"Apprentice" means: (a) a person employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with an Apprenticeship Agency administered by a State or Indian Tribe and recognized by the Bureau, or (b) a person in the first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State or Tribal Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.**

7. **"Trainee" means a person: (a) registered and receiving on-the-job training in a construction occupation under a program which has been approved in advance by the U.S. Department of Labor, Employment and Training Administration, as meeting its standards for on-the-job training programs and which has been so certified by that Administration; or (b) employed and/or receiving on-the-job training under a public employment or work experience program which is approved and funded by the Navajo Nation.**

8. **The term "construction" shall mean all activity performed under a contract which relates to: (a) the building, development, rehabilitation, repair, alternation or installation of structures and improvements of all types, including without limitation buildings, bridges, dams, plants, highways, sewers, water mains, power lines and other structures; (b) drilling, blasting, excavating, clearing and landscaping, painting and decorating; (c) transporting materials and supplies to or from the site of any of the activities referred to in (a) or (b) by employees of the contractor or subcontractor; and (d) manufacturing or finishing materials, articles, supplies or equipment at the construction site of any of the foregoing activities by employees of the contractor or subcontractor.**

9. **The term "contract" shall mean the prime construction contract and all subcontracts of any tier thereunder entered into by parties engaged in commercial, business or governmental activities (whether or not such activities are conducted for profit).**

B. Establishment of Wage Rates.

1. **For all construction reasonably anticipated to occur in the area on a regular basis, ONLR shall establish a general prevailing wage rate for each classification within specified types of construction. ONLR shall define classifications and types of construction in accordance with guidelines generally recognized in the construction industry. In all cases where construction is contemplated for which prevailing wage rates have not been set, the contract letting entity shall submit to ONLR a written request for a project prevailing wage scale. Such request shall be submitted not less than 60 days prior to the scheduled date for bid solicitation and shall include detailed information on the anticipated construction classifications, nature of the project and completion plans. ONLR shall use its best efforts to provide a project prevailing wage scale for each classification involved in the project construction within 60 days after receipt of a request therefore.**

2. **In settings prevailing wage rates, ONLR shall conduct such surveys and collect such data as it deems necessary and sufficient to arrive at a wage determination. Wage data may be collected from contractors, contractors' associations, labor organizations, public officials and other sources which reflect wage rates paid in classifications on types of construction in the area, including the names and addresses of contractors and subcontractors; the locations, approximate costs, dates and types of construction; the number of workers employed in each classification on the project; and the wage rates paid such workers. Wage rate data for the area may be provided, and considered in making wage determinations, in various forms including signed statements, collective bargaining agreements and prevailing wage rates established by federal authorities for federally-assisted construction projects.**

3. **Any classification of workers not listed in a prevailing wage rate and which is to be used under a construction contract shall be classified in conformance with the prevailing wage determination issued and applicable to the project; provided that an additional classification and prevailing wage rate therefore will be established in the event each of the following criteria are satisfied:**

    a. **The work performed by the proposed classification is not performed by a classification within the existing prevailing wage scale;**

    b. **The proposed classification is utilized in the area by the construction industry; and**

    c. **The wage set for the proposed classification bear a reasonable relationship to the wage rates contained in the existing scale for other classifications.**

4. **Subject to the prior written approval thereof by the Director of ONLR, a general prevailing wage rate shall be effective on the date notice of such rate is published in a newspaper in general circulation in the Navajo Nation. The notice shall contain the following information:**

   (1) The fact a prevailing wage rate has been set and approved in writing by the Director of ONLR;

   (2) The type of construction for which the rate was established;

   (3) The effective date, described as the date of publication of the notice or other specified date;

   (4) The address and telephone number of ONLR; and

   (5) A statement that ONLR will provide a copy of the full wage determination on request, and respond to any reasonable questions regarding such determination or its application.

      a. General prevailing wage rates shall continue in effect until such time as any modifications are adopted.

      b. A prevailing wage rate for a particular project shall be effective on the date of issuance to the requesting party of a written wage determination approved by the Director of ONLR. The wage determination shall continue in effect for the duration of the project; provided that any such determination may be modified by ONLR in the event the period of time from the effective date of the determination to the date bids are solicited exceeds 180 days and the estimated date of completion of the project is more than one year after the effective date of the determination.

      c. Project and general wage determinations may be modified from time to time, in whole or in part, to adjust rates in conformity with current conditions, subject to special conditions applicable to project determinations. Such modifications become effective upon the same terms and conditions which are applicable to original determinations.

      d. Fringe Benefits. The fringe benefit amount of wages reflected in a prevailing wage rate shall be paid in cash to the employee, and shall not be deducted from such employee's wages, unless each of the following conditions is satisfied:

         (1) The deductions is not contrary to applicable law;

(2) **A voluntary and informed written consent authorizing the deduction is obtained from the employee in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining or continuing employment;**

(3) **No profit or other benefit is obtained as a result of deduction, directly or indirectly, by the contractor, subcontractor or any person affiliated with them in the form of a commission, dividend or other consideration; and**

(4) **The deduction serves the convenience and interests of the employee.**

C. **No contract-letting entity, contractor or subcontractor shall proceed with a construction contract subject to this Section in the absence of a contractual requirement for payment of prevailing wages pursuant to a specified wage determination issued by ONLR. Violation of this obligation shall render the contract-letting entity, and the employer contractor or subcontractor, jointly and severally liable for the difference between wages actually paid and the prevailing wage rate, together with interest thereon (or if no prevailing wage rates have been set, such wage rates as may be issued by ONLR during the course, or after the completion, of the construction project).**

1. **Failure by any employer, contractor or subcontractor to pay prevailing wages shall render such employer liable for the difference between the amount of wages actually paid and the prevailing rate, together with interest thereon.**

2. **Any deduction of fringe benefits by an employer contractor or subcontractor in violation of § 607(C) shall render such employer liable for the amount of such deduction, together with interest thereon.**

3. **Upon written request of ONLR, a contract-letting entity or contractor, as the case may be, shall withhold from any monies payable on account of work performed by an employer contractor or subcontractor under construction contract such sums as may be determined by ONLR as necessary to satisfy any liabilities of such contractor or subcontractor for unpaid prevailing wages or wrongful deduction of fringe benefits.**

4. **If following a hearing under § 611, a contract-letting entity (other than the Navajo Nation), contractor or subcontractor is found to have willfully violated this Section the Commission may enter a debarment order disqualifying such party from receiving any contract, or subcontract thereunder, with the Navajo Nation for a period not to exceed three years.**

5. **The liabilities described in this § 607(C) shall not foreclose the Commission form awarding such other relief or imposing such other civil penalties as may be appropriate following a hearing conducted under § 611.**

D. Exemptions. This Section shall not apply to:

1. **A contract associated with a construction activity which relates to the provision of architect, engineer, legal or consultant services, or, except as provided under § 607(A)(8)(d), the manufacturing or furnishing of materials or performance of services and maintenance work by persons not employed by a prime contractor or any of its subcontractors.**

2. **A construction contract relating to a project having a total cost of two thousand dollars ($2,000) or less.**

3. **A construction contract which is let by a natural person who is an owner or person legally authorized to let such contract, for such person's personal, family or household purposes.**

4. **A construction contract to the extent the work thereunder is performed by employees of the owner, or employees of the person or entity legally authorized to let the prime contract.**

5. **A construction contract for a project receiving federal financial assistance to the extent the prevailing wage is set by federal authorities pursuant to the Davis-Bacon Act, 40 U.S.C., §§ 276a et seq., (as amended), or other federal law applicable to such project.**

6. **A construction contract to the extent such contract requires payment of wages pursuant to wage scale established under a collective bargaining agreement between any contractor or subcontractor and a labor organization.**

7. **With the exception of the provisions of § 607(C), an apprentice provided that the apprentice is paid not less than: (a) the basic hourly rate prescribed in the registered program for the apprentice's level of progress, expressed as a percentage of the applicable journeyman rate specified in the prevailing wage rate; and (b) the fringe benefit amount prescribed in the registered program or, if not specified, the fringe benefit amount set in the prevailing wage rate for the applicable journeyman classification. An apprentice who is not enrolled in a registered program (within the meaning of § 607(A)(6)), shall be paid wages in a amount not less than the level prescribed for the applicable journeyman classification specified in the prevailing wage rate.**

8. **With the exception of the provisions of § 607(C), a trainee provided that the trainee is paid not less than: (a) the basic hourly rate prescribed in the**

approved program for the trainee's level of progress, expressed as a percentage of the applicable journeyman rate specified in the prevailing wage rate; and (b) the fringe benefit amount prescribed in the approved program or, if not specified and as to federally approved programs only, the fringe benefit amount set in the prevailing wage rate for the applicable journeyman classification. A trainee who is not enrolled in an approved program (within the meaning of § 607(A)(7)(8)), shall be paid wages in an amount not less than level prescribed for the applicable journeyman classification specified in the prevailing wage rate.

SECTION 608. HEALTH AND SAFETY OF NAVAJO WORKERS

Employers shall, with respect to business conducted within the territorial jurisdiction of the Navajo Nation, adopt and implement work practices which conform to occupational safety and health standards imposed by law.

SECTION 609. CONTRACT COMPLIANCE

A. **All transaction documents, including without limitation, leases, subleases, contracts, subcontracts, permits, and collective bargaining agreements between employers and labor organization (herein collectively "transaction documents"), which are entered into by or issued to any employer and which are to be performed with the territorial jurisdiction of the Navajo Nation shall contain a provision pursuant to which the employer and any other contracting party affirmatively agree to strictly abide by all requirements of this Act. With respect to any transaction document which does not contain the foregoing provision, the terms and provisions of this Act are incorporated therein as a matter of law and the requirements of the Act shall constitute affirmative contractual obligations of the contracting parties. In addition to the sanctions prescribed by the Act, violation of the Act shall also provide grounds for the Navajo Nation to invoke such remedies for breach as may be available under the transaction document or applicable law. To the extent of any inconsistency or conflict between a transaction document and the Act, the provision of the transaction document in question shall be legally invalid and unenforceable and the Act shall prevail and govern the subject of the inconsistency or conflict.**

B. **Every bid solicitation, request for proposals and associated notices and advertisements which relate to prospective contracts to be performed within the territorial jurisdiction of the Navajo Nation shall expressly provide that the contract shall be performed in strict compliance with this Act. With respect to any such solicitation, request, notice or advertisement which does not contain the foregoing provision, the terms provisions of this Act are incorporated therein as a matter of law.**

SECTION 610. MONITORING AND ENFORCEMENT

A. Responsible Agency. Except as otherwise provided herein, compliance with the Act shall be monitored and enforced by ONLR.

B. Charges.

1. Charging Party. Except as otherwise provided herein, any Navajo may file a charge ("Individual Charge") claiming a violation of his or her rights under the Act. ONLR, on its own initiative, may file a charge ("ONLR Charge") claiming a violation of rights under the Act held by identified Navajos or a class of Navajos, including a claim that respondent is engaging in a pattern of conduct or practice in violation of rights guaranteed by the Act. An Individual Charge and ONLR Charge are collectively referred to herein as a "Charge".

2. Form and Content. A Charge shall be in writing, signed by the charging party (which shall be the Director of ONLR in the case of any ONLR Charge), and contain the following information:

a. The name, address and any telephone number of the charging party;

b. The name and address or business location of the respondent against whom the Charge is made;

c. A clear and concise statement of the facts constituting the alleged violation of the Act, including the dates of each violation and other pertinent events and the names of individuals who committed, participated in or witnessed the acts complained of;

d. With respect to a Charge alleging a pattern or practice in violation of the Act, the period of time during which such pattern or practice has existed and whether it continues on the date of the Charge;

e. The specific harm sustained by the charging party in the case of an Individual Charge or the specific harm sustained by specified Navajos or a class of Navajos with respect to an ONLR Charge;

f. A statement disclosing whether proceedings involving the alleged violation have been initiated before any court or administrative agency or within any grievance process maintained by the respondent, including the date of commencement, the court, agency or process and the status of the proceeding; and

g. ONLR shall provide assistance to persons who wish to file Individual Charges. Notwithstanding the foregoing provisions, a Charge shall be

deemed sufficient if it contains a reasonably precise identification of the charging party and respondent, and the action, pattern or practice which are alleged to violate the Act.

3. **Place of Filing. Individual Charges may be filed in any ONLR office. An ONLR Charge shall be filed in ONLR's administrative office in Window Rock.**

4. **Date of Filing. Receipt of each Individual Charge shall be acknowledged by the dated signature of an ONLR employee which shall be deemed the date on which the Individual Charge is filed. The date on which an ONLR Charge is signed by the ONLR Director shall be deemed the date of filing for such Charge.**

5. **Amendment. A Charge may be amended by filing, in the office where the Charge was first submitted, a written instrument which sets forth the amendment and any portions of the original Charge revised thereby. To the extent the information reflected in the amendment arose out of the subject matter of the original Charge, the amendment shall relate back and be deemed filed as of the filing date of such Charge. Any portion of the amendment which does not qualify for relation back treatment shall constitute a new Charge.**

6. **Time Limitation. A Charge shall be filed within one year after accrual of the claim which constitutes the alleged violation of the Act. The date of accrual of a claim shall be the earlier of:**

   a. **The date on which the charging party had actual knowledge of the claim, or**

   b. **Taking into account the circumstances of the charging party, the date on which the charging party should reasonably have been expected to know of the existence of the claim; provided, however, that a Charge relating to a continuing, or pattern or practice, violation of the Act shall be filed within one year after the later of:**

      (1) **The date of termination of such violation, pattern or practice; or**

      (2) **The date of accrual of the claim to which the Charge relates. Failure to file a Charge within the time limitations prescribed herein shall bar proceedings on the related claim before the Commission or in any Court of the Navajo Nation; provided, however, that nothing herein shall be interpreted as foreclosing proceedings before any Navajo Court or administrative body (other than the Commission) on any claim which also arises**

under applicable common, statutory or other law independent of this Act.

7. **Notice of Respondent. Within 20 days after a Charge is filed, ONLR shall serve a copy thereof on respondent; provided, however, that if in ONLR's judgment service of a copy of the Charge would impede its enforcement functions under the Act, ONLR may in lieu of a copy serve on respondent a notice of the Charge which contains the date, place and summary of relevant facts relating to the alleged violation, together with the identity of the charging party unless withheld for the reason stated above. Service of any amendment to the Charge shall be accomplished within 20 days after the amendment is filed. Failure of ONLR to serve a copy of a Charge or notice thereof within the prescribed time period shall not be a ground for dismissal of the Charge or any subsequent proceedings thereon.**

8. **Withdrawal of Charge.**

   a. **ONLR may, in its discretion, withdraw any ONLR Charge upon written notice thereof to respondent and each person identified in the Charge whose rights under the Act were alleged to have been violated. Any person receiving notice of withdrawal or any other person who asserts a violation of his or her rights as a result of the violation alleged in the withdrawn ONLR Charge may file any Individual Charge which, if filed within 90 days after the issuance date of ONLR's withdrawal notice, shall relate back to the filing date of the ONLR Charge.**

   b. **Any charging party may, in his or her discretion, withdraw an Individual Charge by filing a written notice of withdrawal with the ONLR office where the Charge was submitted, with a copy thereof filed with the ONLR administrative office in Window Rock. ONLR shall, within 20 days after receiving the notice, transmit a copy to the respondent. Within 90 days after receipt of the withdrawal notice, ONLR may file an ONLR Charge relating in whole or part to the violations alleged in the withdrawn Individual Charge. Any filing of an ONLR Charge within the prescribed time period shall relate back to the filing date of the withdrawn Charge.**

9. **Overlapping Charges. Nothing herein shall be construed as prohibiting the filing of any combination of Individual Charges and an ONLR Charge which, in whole or part, contain common allegations of violations of the Act.**

10. **Informants. Irrespective of whether a person is otherwise eligible to file an Individual Charge, any such person or any organization may in lieu of filing a Charge submit to ONLR written or verbal information concerning alleged violations of the Act and may further request ONLR to file an ONLR Charge**

thereon. In addition to other limitations on disclosure provided in § 610(M), and in the absence of the written consent of the informant, neither the identity of the informant nor any information provided by such informant shall be disclosed to the respondent, agents or legal counsel for the respondent, or the public, either voluntarily by ONLR or pursuant to any discovery or other request for, or order relating to, such information during the course of any judicial or non-judicial proceeding, including a proceeding before the Commission or any subsequent appeal or challenge to a Commission or appellate decision; provided, however, that in the event the informant is called as a witness by ONLR at a Commission proceeding involving the information provided by the informant:

a. The informant's name may be disclosed, but his or her status as an informant shall remain privileged and confidential and shall not be disclosable through witness examination or otherwise, and

b. With the exception of the witness status as any informer, information provided by the informant is disclosable in accordance with the procedures outlined under § 610(M).

C. Investigation of Charges.

1. ONLR shall conduct such investigation of a Charge as it deems necessary to determine whether there is probable cause to believe the Act has been violated.

2. Subpoenas.

a. The Director of ONLR shall have the authority to sign and issue a subpoena compelling the disclosure by any person evidence relevant to a Charge, including a subpoena ordering, under oath as may be appropriate:

(1) The attendance and testimony of witnesses;

(2) Responses to written interrogatories;

(3) The production of evidence, including without limitation books, records, correspondence or other documents (or lists or summaries thereof) in the subpoenaed person's possession, custody or control or which are lawfully obtainable by such person; and

(4) Access to evidence for the purposes of examination and copying. Neither an individual charging party nor a respondent shall have a right to demand issuance of a

subpoena prior to the initiation of any proceedings on the Charge before the Commission, in which event subpoenas are issuable only pursuant to the procedures governing such proceedings.

b. **Service of the subpoena shall be effected by one of the methods prescribed in § 610(O). A subpoena directed to a natural person shall be served either on the person at his or her residence or office address or, in the case of personal delivery, at such residence or office either on the person subpoenaed or on anyone at least 18 years of age (and in the case of office service, a person who is also an employee of such office). Service of a subpoena directed to any other person shall be addressed or delivered to either the statutory agent (if any) of such person or any employee occupying a managerial or supervisory position at any office of the person maintained within or outside the territorial jurisdiction of the Navajo Nation. Personal service may be performed by a natural person at least 18 years of age, including an employee of ONLR.**

c. **The subpoena shall set a date, time and place for the attendance of a witness or production of or access to evidence, as the case may be, provided that the date for compliance shall be not less than 30 days after the date on which service of the subpoena was affected.**

d. **Any person served with a subpoena intending not to fully comply therewith shall, within five business days after service, serve on the Director of ONLR a petition requesting the modification or revocation of the subpoena and identifying with particularity each portion of the subpoena which is challenged and the reasons therefore. To the extent any portion of the subpoena is not challenged, the unchallenged parts shall be complied with in accordance with the terms of the subpoena as issued. The ONLR Director shall issue and serve on petitioner a decision and reasons therefore within eight business days following receipt of the petition, and any failure to serve a decision within such period shall be deemed a denial of the petition. In the event the Director's decision reaffirms any part of the subpoena challenged in the petition, the Director may extend the date for compliance with such portion for a period not to exceed 10 business days. Any petitioner dissatisfied with the decision of the ONLR Director shall either:**

(1) **Comply with the subpoena (with any modifications thereto reflected in the Director's decision); or**

(2) **Within five business days following receipt of the Director's decision or the date such decision was due, file a petition with**

the Commission (with a copy concurrently served on the ONLR Director) seeking modification or revocation of the subpoena and stating with particularity therein each portion of the subpoena challenged and the reasons therefore. A copy of the ONLR Director's decision, if any, shall be attached to the petition.

e. In the event a person fails to comply with a served subpoena, ONLR may petition the Commission for enforcement of the subpoena. For purpose of awarding any relief to petitioner, the Commission may issue any order appropriate and authorized in a case where it is established that a Commission order has been violated. A copy of the petition shall be concurrently served on the non-complying person.

f. Beginning on the first day of non-compliance with a subpoena served on a respondent, or any employee or agent of respondent, until the date of full compliance therewith, there shall be a tolling of all periods of limitation set forth in this Section.

D. Dismissal of Charges.

1. Individual Charges. ONLR shall dismiss an Individual Charge upon reaching any one or more of the following determinations:

a. The Individual Charge, on its face or following an ONLR investigation, fails to demonstrate that probable cause exists to believe a violation of the Act has occurred;

b. The Individual Charge was not filed within the time limits prescribed by § 610(B)(6);

c. The charging party has failed to reasonably cooperate in the investigation of, or attempt to settle, the Individual Charge;

d. The charging party has refused, within 30 days of receipt, to accept a settlement offer agreed to by respondent and approved by ONLR, which accords substantially full relief for the harm sustained by such party; or

e. The Charge has been settled pursuant to § 610(G).

2. ONLR Charges. ONLR shall dismiss an ONLR Charge upon determining that:

a. No probable cause exists to believe a violation of the Act has occurred;

b. **The Charge was not filed within the time limits prescribed by § 610(B)(6); or**

c. **The Charge had been settled pursuant to § 610(G).**

3. **Partial Dismissal. In the event a portion of a Charge is dismissible on one or more of the foregoing grounds, only such portion of the Charge shall be dismissed and the remainder retained by ONLR for final disposition.**

4. **Notice. Written notice of dismissal, stating the grounds therefore, shall be served on respondent and the individual charging party in the case of an Individual Charge or, in the case of any ONLR Charge, on the respondent and any person known to ONLR who claims to be aggrieved by the violations alleged in such Charge. Such notice shall be accompanied by a right to sue authorization pursuant to § 610(H).**

E. **Probable Cause Determination. Following its investigation of a Charge and in the absence of a settlement or dismissal required under § 610(D), ONLR shall issue written notice of its determination that probable cause exists to believe a violation of the Act has occurred or is occurring. Such notice shall identify each violation of the Act for which probable cause has been found, and copies thereof shall be promptly sent to the respondent, the charging party in the case of an Individual Charge, and, in the case of an ONLR Charge, each person identified by ONLR whose rights are believed to have been violated. Any probable cause determination shall be based on, and limited to, the evidence obtained by ONLR and shall not be deemed a judgment by ONLR on the merits of allegations not addressed in the determination.**

F. **Conciliation. If, following its investigation of a Charge, ONLR determines there is probable cause to believe the Act has been or is being violated, ONLR shall make a good faith effort to secure compliance and appropriate relief by informal means through conference, conciliation and persuasion. In the event there is a failure to resolve the matter informally as to any allegations in an Individual Charge for which probable cause has been determined, ONLR shall either issue the notice prescribed in § 610(H) or initiate a Commission proceeding under § 610(I) concerning unresolved allegations. A successful resolution of any such allegation shall be committed to writing in the form required under § 610(G). Nothing herein shall be construed as prohibiting ONLR from initiating or participating in efforts to informally resolve a Charge prior to issuance of probable cause determination.**

G. **Settlement.**

1. **Settlement agreements shall be committed to writing and executed by respondent, the individual charging party if any and, in the case of any Charge, by the Director of ONLR. Refusal of an individual charging party to execute a settlement agreement subjects the Individual Charge to dismissal under the conditions set forth in § 610(D)(1)(d). Settlement agreements may**

also be signed by those aggrieved persons identified as having a claim with respect to an ONLR Charge.

2. Settlement agreements hereunder shall be enforceable among the parties thereto in accordance with the terms of the agreement. Any member of a class of persons affected by the settlement who is not a signatory to the agreement shall have the right to initiate proceedings before the Commission pursuant to the procedure in § 610(H)(2)(a)(3).

3. Each settlement agreement shall provide for the dismissal of the Charge to the extent the violations alleged therein are resolved under the agreement.

4. Any breach of a settlement agreement by respondent shall present grounds for filing a Charge under this Section. A charging party asserting a claim for breach may either seek:

a. Enforcement of that portion of the settlement agreement alleged to have been breached; or

b. In the case of a material breach as to any or all terms, partial or total rescission of the agreement, as the case may be, and such other further relief as may have been available in the absence of settlement. A Charge asserting a breach of a settlement agreement with respect to any original allegation in the Charge covered by such agreement shall, for purposes of all time limitations in this Section, be deemed to arise on the accrual date of the breach.

H. Individual Right to Sue.

1. Individual Charges.

a. Prior to the expiration of 180 days following the date an Individual Charge was filed, ONLR, by notice to the individual charging party, shall authorize such individual to initiate a proceeding before the Commission in accordance with the procedures prescribed in § 610(J), if:

(1) The Individual Charge had been dismissed by ONLR pursuant to § 610(D)(1);

(2) ONLR has issued a probable cause determination under § 610(E), there has been a failure of conciliation contemplated by § 610(F), and ONLR has determined not to initiate a Commission proceeding on behalf of the individual charging party; or

(3) **Notwithstanding the absence of a probable cause determination or conclusion of conciliation efforts, ONLR certifies it will be unable to complete one or both of these steps within 180 days after the date on which the Individual Charge was filed.**

b. **After the expiration of 180 days following the date an Individual Charge was filed, the individual charging party shall have the right to initiate a proceeding before the Commission irrespective of whether ONLR has issued a notice of right to sue, made a probable cause determination, or commenced or concluded conciliation efforts.**

2. **ONLR Charges.**

a. **Prior to the expiration of 180 days following the date an ONLR Charge was filed, ONLR, by notice to any person known to it who claims to be aggrieved by the allegations presented in such Charge, shall authorize such person to initiate a proceeding before the Commission in accordance with the procedures prescribed in § 610(J), if:**

(1) **The ONLR Charge has been dismissed by ONLR pursuant to § 610(D)(2);**

(2) **ONLR has issued a probable cause determination under § 610(E), there has been a failure of conciliation contemplated by § 610(F), and ONLR has determined not to initiate a Commission proceeding on the Charge;**

(3) **ONLR has entered into a settlement agreement under § 610(G) to which such aggrieved person is not a party; or**

(4) **Notwithstanding the absence of a probable cause determination or conclusion of conciliation efforts, ONLR certifies it will be unable to complete one or both of these steps within 180 days after the date on which the ONLR Charge was filed.**

b. **After the expiration of 180 days following the date an ONLR Charge was filed and prior to the date on which ONLR commences a Commission proceeding, any person claiming to be aggrieved by the allegations presented in such Charge shall have the right to initiate a proceeding before the Commission irrespective of whether ONLR has issued a notice of right to sue, made a probable cause determination or commenced or concluded conciliation efforts.**

3. **Content of Notice. A notice of right to sue shall include the following information:**

   a. **Authorization to the individual charging party or aggrieved person to initiate a proceeding before the Commission pursuant to and within the time limits prescribed by § 610(J);**

   b. **A summary of the procedures applicable to the institution of such proceeding, or a copy of the Act containing such procedures;**

   c. **A copy of the Charge; and**

   d. **A copy of any written determination of ONLR with respect to such Charge.**

4. **ONLR Assistance. Authorization to commence Commission proceedings hereunder shall not prevent ONLR from assisting any individual charging party or aggrieved person in connection with Commission proceedings or other efforts to remedy the alleged violations of the Act.**

I. **ONLR Right to Sue.**

1. **Individual Charges. ONLR shall have the right to initiate proceedings before the Commission based on the allegations of an Individual Charge with respect to which ONLR has issued a probable cause determination under § 610(E) and there has been a failure of conciliation contemplated by § 610(F). ONLR shall have such right notwithstanding that the individual charging party has concurrent right to sue hereunder which has not been exercised. ONLR's right to sue shall continue until such time as the individual charging party commences a Commission proceeding and, in that case, shall be revived in the event the proceeding is dismissed or concluded for reasons unrelated to the merits. Initiation of Commission proceedings by ONLR shall terminate the right to sue of an individual charging party, subject to revival of such right in the event the proceeding is dismissed or concluded for reasons unrelated to the merits. Nothing herein shall be construed as foreclosing ONLR from exercising its right to intervene in a Commission proceeding under § 610(L).**

2. **ONLR Charges. ONLR shall have the right to initiate proceedings before the Commission based on the allegations of an ONLR Charge with respect to which ONLR has issued a probable determination under § 610(E) and there been a failure of conciliation contemplated by § 610(F). ONLR shall have such right notwithstanding that a person claiming to be aggrieved as a result of the allegations in the ONLR Charge has a concurrent right to sue hereunder which has not been exercised. In the event an aggrieved person first initiates a Commission proceeding in an authorized manner, ONLR's**

right to sue shall only expire as to such person and shall revive in the event that aggrieved person's proceeding is dismissed or concluded for reasons unrelated to the merits. Nothing herein shall be construed as foreclosing ONLR from exercising its right to intervene in a Commission proceeding under § 610(L).

J. Initiate of Commission Proceedings. Proceedings before the Commission shall be initiated upon the filing of a written complaint by a petitioner with the Commission.

1. Complaints shall satisfy each of the following conditions:

a. The petitioner is authorized to file the Complaint under the terms and condition prescribed by this Section;

b. The underlying Charge was filed within the time limits prescribed in § 610(B)(6); and

c. The complaint was filed within 360 days following the date on which the underlying Charge was filed.

2. Upon motion of respondent and a showing that any one or more of the foregoing conditions has not been satisfied, the Commission shall dismiss the complaint; provided, however, that no complaint shall be dismissed under (b) above as to any allegation of a pattern of conduct or practice in violation of the Act to the extent such pattern or practice continued to persist during the time limit prescribed in § 610(B)(6); and provided further that, in the absence of dismissal or conclusion of Commission proceedings on the merits, nothing herein shall be construed as prohibiting the refiling of a Charge alleging the same or comparable pattern or practice violations of the Act which continued to persist during the time limits prescribed in § 610(B)(6) for re-filing such Charge.

K. Preliminary Relief. Prior to the initiation of Commission proceedings on a Charge and notwithstanding the failure to satisfy any precondition to such proceedings, either ONLR, an individual charging party or aggrieved person may, upon notice to respondent, petition the Commission for appropriate temporary or preliminary relief in the form of an injunction or other equitable remedy on the ground that prompt action is necessary to carry out the purposes of the Act, including the preservation and protection of rights thereunder. Nothing herein shall be construed as foreclosing a petition which seeks comparable relief subsequent to the commencement of Commission proceedings.

L. Intervention in Commission Proceedings. Within three business days after the date on which any complaint, or petition pursuant to § 610(K), is filed with the Commission, other than a complaint or petition filed by ONLR, the Commission shall cause copies thereof to be sent to the ONLR Director and the Attorney General

of the Navajo Nation. ONLR shall have an unconditional right to intervene in the Commission proceeding initiated by such complaint or petition upon the timely application by motion accompanied by a pleading setting forth the claims for which intervention is sought.

M. Confidentiality.

1. Conciliation. In the absence of written consent of the persons concerned, statements or offers of settlement made, documents provided or conduct by participants in conciliation efforts under § 610(F) shall not be admissible in any Commission or other proceeding relating to the Charge which is that subject of conciliation, to prove liability for or invalidity of the Charge or the amount or nature of relief therefore; provided, however, that nothing herein shall be construed as requiring the exclusion of such evidence merely because it was presented in the court of conciliation if:

a. The evidence is otherwise discoverable; or

b. The evidence is offered for another purpose, including without limitation, proving bias or prejudice of a witness, negativing a contention of undue delay, or proving an effort to obstruct a criminal investigation or prosecution.

2. Charge, Records and Information.

a. Prior to the institution of Commission proceedings thereon, and in the absence of the written consent of the persons concerned, ONLR shall not disclose as a matter of public information any Charge, response thereto, any statements or other information obtained in the course of its investigation of the Charge, except that nothing herein shall prevent earlier disclosure of such information by ONLR in its discretion:

(1) To charging parties or their attorneys, respondents or their attorneys, witnesses or other interested persons where the disclosure is deemed by ONLR to be necessary for securing a resolution of the Charge, including appropriate relief therefore; or

(2) To employees or representatives of the Navajo Nation or employees or representatives of federal, state or local authorities who have a government interest in the subject matter of the Charge; or

(3) To persons for the purpose of publishing data derived from such information in a form which does not reveal the identity

of charging parties, aggrieved persons, respondents or persons supplying the information.

b. Except as otherwise provided herein, any person to whom a permissible disclosure is made hereunder shall be bound to maintain the confidentiality of such information from further disclosure and shall use the information solely for the purpose for which it was disclosed.

3. Privilege Information. Neither ONLR, charging parties, aggrieved persons, respondents, witnesses or persons supplying information in connection with a Charge shall be compelled, either before or after commencement of Commission proceedings, to disclose any information which represents the opinions or conclusions formed by ONLR during the course of its investigation of a Charge, or any information which is protected by the attorney-client privilege, the informer's privilege referred to in § 610(B)(10), or any other absolute or limited privilege recognized under the laws of the Navajo Nation. To the extent justice requires, the Commission may, balancing the rights of parties and affected persons, prohibit or limit the disclosure of any other information for good cause shown, including a showing that disclosure would impede enforcement of the Act, jeopardize rights guaranteed thereunder, or cause annoyance, embarrassment, oppression, or undue burden or expense to parties or affected persons.

N. Non-retaliation. It shall be unlawful for any employer, labor organization, joint labor-management committee involved in apprenticeship or other matters relating to employment, employment agency or other person to, directly or indirectly, take or attempt to induce another person to take, any action adversely affecting:

1. The terms and conditions of any person's employment or opportunities associated with such employment;

2. An applicant's opportunity for employment;

3. The membership of any employee or applicant for employment in a labor organization; or

4. Any other right, benefit, privilege or opportunity unrelated to employment, because such person has opposed an employment practice subject to this Act or has made a charge, testified, or assisted or participated in any matter in an investigation, proceeding or hearing under the Act.

O. Service of Documents. Service of any notice, determination or other document required to be transmitted under this Section shall be accomplished by personal delivery or certified mail, return receipt requested.

SECTION 611. HEARING

A. **The Commission shall schedule a hearing within 60 days of the filing of a written complaint by a petitioner with the Commission. The hearing shall be held at a location designated by the Commission.**

1. **Notice. The Commission shall issue a notice of hearing. The time and place of the hearing shall be clearly described in the notice. The notice shall also set forth in clear and simple terms the nature of the alleged violations and shall state that: (a) the violations may be contested at a hearing before the Commission; and (b) any party may appear by counsel and cross-examine adverse witnesses.**

2. **Upon application by a party to the Commission or on the Commissions' own motion, the Commission may issue subpoenas compelling the disclosure by any person evidence relevant to the complaint, including a subpoena ordering, under oath as may be appropriate:**

a. **The attendance and testimony of witnesses;**

b. **Responses to written interrogatories;**

c. **The production of evidence; and**

d. **Access to evidence for the purpose of examination and copying.**

3. **The Commission is authorized to administer oaths and compel attendance of any person at a hearing and to compel production of any documents.**

4. **In the event a party does not make an appearance on the day set for hearing or fails to comply with the rules of procedure set forth by the Commission for the conduct of hearings, the Commission is authorized to enter a default determination against the non-appearing and/or non-complying party.**

B. **Burden of proof. In any hearing, the employee alleging violation shall have the burden of proof to show violation by preponderance of the evidence.**

C. **Hearing. The Commission shall conduct the hearing in a fair and orderly manner and extend to all parties the right to be heard.**

1. **The Commission shall not be bound by any formal rules of evidence.**

2. **The respondent shall have the opportunity to answer the complaint and the parties shall have the right to legal counsel, to present witnesses, and to cross-examine adverse witnesses.**

3. **The Commission shall issue its decision by a majority vote of a quorum present which shall be signed by the Chairperson of the Commission.**

4. **Copies of the decision shall be sent to all parties of record in the proceeding by certified mail, return receipt.**

5. **The proceeding shall be recorded. Any party may request a transcript of the proceeding at their own expense.**

6. **The decision of the Commission shall be final with a right of appeal only on questions of law to the Navajo Nation Supreme Court.**

SECTION 612. REMEDIES AND SANCTIONS

A. **If, following notice and hearing, the Commission finds that respondent has violated the Act, the Commission shall:**

1. **Issue one or more remedial orders, including without limitation, directed hiring, reinstatement, displacement of non-Navajo employees, back-pay, front-pay, injunctive relief, mandated corrective action to cure the violation within a reasonable period of time and/or upon a finding of intentional violation, imposition of civil fines; provided that liability for back-pay or other forms compensatory damages shall not accrue from a date more than two years prior to the date of filing of the Charge which is the basis for the complaint.**

2. **In the case of an individual suit initiated pursuant to § 610(H) award costs and attorneys' fees if the respondent's position was not substantially justified.**

3. **Refer matters involving respondent contracts, agreements, leases and permits to the Navajo Nation Attorney General for appropriate action.**

B. **In the absence of a showing of good cause thereof, if any party to a proceeding under this Act fails to comply with a subpoena or order issued by the Commission, the Commission may impose such actions as are just, including without limitation any one or more of the following:**

1. **In the case of non-compliance with a subpoena of documents or witnesses:**

a. **An order that the matters for which the subpoena was issued or any other designated facts shall be deemed established for the purposes of the proceeding and in accordance with the claim of the party obtaining the order;**

b. **An order refusing to allow the disobedient party to support or oppose designated claims or defenses, or prohibiting that party from introducing designated matters in evidence; or**

c. **An order striking pleadings or parts thereof, or staying further proceedings until the subpoena is obeyed, or dismissing the action or proceeding or any part thereof, or rendering a judgment by default against the disobedient party.**

2. **In the case of non-compliance by a party or non-party with a Commission subpoena of documents or witnesses or with any other order of the Commission:**

a. **An order holding the disobedient person in contempt of the Commission and imposing appropriate sanctions therefore, including a civil fine; or**

b. **An order directing the disobedient person to pay the reasonable costs and/or attorneys' fees caused by the non-compliance.**

C. **The person or party in whose favor a Commission's decision providing for remedial action is entered shall have the right to seek legal and/or equitable relief in the District Courts of the Navajo Nation to enforce the remedial action; provided that the Commission itself shall have the right to seek legal and/or equitable relief in the District Courts of the Navajo Nation to enforce civil fines or sanctions imposed by the Commission against a person or party. In both instances that Attorney General of the Navajo Nation shall have an unconditional right to intervene on behalf of the Navajo Nation.**

SECTION 613. APPEAL AND STAY OF EXECUTION

A. **Any party may appeal a decision of the Commission to the Navajo Nation Supreme Court by lodging a written notice of appeal, in the form prescribed by the Navajo Rules of Civil Appellate Procedure and within 10 days after receipt of the Commission's decision.**

B. **In the absence of a stipulation by the parties approved by the Commission, a stay of execution of the decision from which the appeal is taken shall only be granted upon written application of the appellant to the Commission and an opportunity for response by appellee. The application for a stay shall be filed within the period prescribed for appeal in Subsection (A) hereof. No stay shall be issued unless the appellant presents a clear and convincing showing that each of the following requirements has been satisfied:**

1. **Appellant is likely to prevail on the merits of the appeal;**

2. **Appellant will be irreparably harmed in the absence of a stay;**

3. **Appellee and interested persons will not be substantially harmed by a stay;**

4. **The public interest will be served by a stay; and**

5. **An appeal bond or other security, in the amount and upon the terms prescribed by Subsection (C) below, has been filed with and approved by the Commission; provided that no appeal bond shall be required of ONLR, the Navajo Nation or any government agency or enterprise of the Navajo Nation.**

C. **The appeal bond shall be issued by a duly authorized and responsible surety which shall obligate itself to pay to appellee, or any other person in whose favor an award is made by the Commission decision, the amounts specified or described in the bond upon conclusion of the appeal and failure of appellant, following written demand by appellee, to satisfy the foregoing obligations.**

1. **The amount or nature of liability assumed by the surety shall be specified in the bond and shall include:**

   a. **The total amount of all monetary awards made in the Commission decision, together with such interest thereon as may be prescribed in the Commission's decision;**

   b. **Costs of appeal and attorneys' fees incurred by appellee in defending the appeal and which may be awarded to appellee by the Navajo Nation Supreme Court;**

   c. **Damages sustained by appellee or other recipients of a Commission award for delay in satisfaction of the Commission decision caused by the appeal; and**

   d. **Such other amount or liability reasonably required to be secured to protect the interests of the appellee or other award recipients.**

2. **The bond shall provide that the surety submits to the jurisdiction of the Commission and the Courts of the Navajo Nation, and irrevocably appoints the Commission as the surety's agent upon whom any papers affecting the surety's liability on the bond may be served. The surety's liability may be enforced on motion of the appellee filed with the Commission, with copies thereof served on the surety and appellant.**

3. **In lieu of posting an appeal bond, appellant may, with the approval of the Commission, post a cash bond and undertaking in the amount and upon the terms which are required above with respect to an appeal bond.**

4. No appeal bond or cash bond and undertaking, nor the liabilities of the surety or appellant thereunder, shall be exonerated or released until all amounts and liabilities prescribed therein have been fully paid and satisfied.

D. Within three business days following the filing with the Navajo Nation Supreme Court of any appeal from a Commission proceeding, the Clerk of such Court shall, in all cases other than those in which ONLR is not either the appellant or appellee, cause copies of the notice of appeal and all other documents filed in connection therewith to be sent to the ONLR Director and the Attorney General of the Navajo Nation. ONLR shall have an unconditional right to intervene and participate as amicus in the appeal proceedings upon timely application therefore by motion lodged with the Navajo Nation Supreme Court. ONLR's right of participation shall be coextensive with that of the parties to the appeal, including the rights to file opening, answering and reply briefs, and the right to present oral argument to the Court.

SECTION 614. GRIEVANCE PROCEDURE FOR NAVAJO NATION GOVERNMENT EMPLOYEES

A. Any employee of the Navajo Nation Executive or Legislative Branch or a non-Local Governance Act Certified Chapter, or applicant for employment with the Navajo Nation Executive or Legislative Branch or non-Local Act Certified Chapter, who alleges a violation of this Act shall file a grievance as provided by the Navajo Nation Personnel Policies Manuel. The hearing officer may award the employee or applicant any remedy authorized by Section 612(A) of this Act. Directed verdict shall be discouraged in favor of a hearing to hear evidence from all parties.

B. Any employee of the Navajo Nation Judicial Branch or an applicant for employment with the Navajo Nation Judicial Branch who alleges a violation of the Act shall file a grievance as provided by the Navajo Nation Personnel Policies & Procedures. The hearing board may award the employee or applicant any remedy authorized by Section 612(A) of this Act.

C. Except as otherwise provided in this Act, in any compliance review hearing, the employee alleging violation shall have the burden of proof to show violation by a preponderance of evidence. Directed verdict shall be discouraged in favor of a hearing to hear evidence from all parties.

D. Any party to the grievance may appeal a final decision of the hearing officer or hearing board to the Navajo Nation Supreme Court within ten (10) calendar days of receipt of the decision. The employee or applicant shall file a notice of appeal with the Navajo Nation Supreme Court and the hearing officer or hearing board.

E. Transcripts and record for appeals.

1. If considered necessary, the party appealing a decision shall file a transcript of the proceeding with the Navajo Nation Supreme Court within thirty (30) calendar days from the filing of the notice of appeal.

2. If a transcript is considered unnecessary, within ten (10) calendar days of the filing of the notice of appeal, the party appealing a decision shall give notice to the Navajo Nation Supreme Court and the appellee that the appellant will not file a transcript.

3. If the appellant fails to file a transcript or notice that the appellant will not file a transcript within the required time, the Navajo Nation Supreme Court shall dismiss the appeal.

4. The hearing officer of hearing board shall submit the record of the proceeding within ten (10) calendar days of filing of the notice of appeal. Failure of the hearing officer or hearing board to file the record within that time period shall not be grounds for dismissal of the appeal.

F. The Navajo Nation Supreme Court shall review and decide the appeal within thirty (30) days of the filing of the transcript of the notice that appellant will not file a transcript. If a decision within that time is not feasible, at the request of a party or by its own order, the Navajo Nation Supreme Court may extend that time up to sixty (60) days. The Navajo Nation Supreme Court shall create expedited rules of appellate procedure to decide the appeal within the required time period.

G. Remedies; enforcement of awards.

1. If the employee or applicant prevails on his or her grievance, and the Navajo Nation program does not appeal the decision, the program and Navajo Nation Controller shall pay the monetary remedies awarded within thirty (30) calendar days of receipt of the final decision of the hearing officer or board.

2. If the hearing officer or board directs reinstatement of the employee to his or her position of directs the hiring of the applicant for employment, and the Navajo Nation program does not appeal the decision, the program shall initiate the processing of all documentation necessary to reinstate the employee or hire the applicant within tem (10) calendar days of the decision.

3. The filing of an appeal by the Navajo Nation program under subsection (C) shall automatically stay the payment of monetary remedies or the remedies of reinstatement or hire pending the decision by the Navajo Nation Supreme Court.

However, any monetary remedy, such as back-pay, will continue to accrue until the decision is issued, unless otherwise ordered by the Supreme Court. If the employee of applicant prevails on appeal, the Navajo Nation program will fulfill the award within the time periods set out in Subsection (1) and (2), calculated from the date of receipt of the Navajo Nation Supreme Court's decision.

4. **If the Navajo program fails to perform its obligations within the time periods in Subsection (1) through (3), the employee or applicant may file an action under Section 554 (G) of the Navajo Sovereign Immunity Act to enforce the award. If the employee or applicant prevails in that action, he or she may receive the original award of the hearing officer or board and any additional relief authorized by 1 N.N.C. § 554 (G) (1).**

H. **The remedies set forth in this Section are the exclusive remedies for employees of or applicants for employment with the Navajo Nation Executive, Legislative and Judicial Branches and non-Local Governance Certified Chapters for violations of the alleged violations of the Act by the Navajo Nation Executive, Legislative and Judicial Branches and non-local Governance Certified Chapters.**

SECTION 615. NON-NAVAJO SPOUSES

A. **When a non-Navajo is legally married to a Navajo, he or she shall be entitled to preference in employment under the Act. Proof of marriage by a valid marriage certificate shall be required. In addition, such non-Navajo spouses shall be required to have resided within the territorial jurisdiction of the Navajo Nation for a continuous one year period immediately preceding the application for Navajo preference consideration.**

B. **Upon meeting the above requirements, such consideration shall be limited to preference in employment where the spouse would normally be in a pool of non-Navajo workers. In this instance, Navajo preference would place the non-Navajo spouse in the applicant pool of Navajos for consideration. However, preference priority shall be given to all Navajo applicants who meet the necessary job qualifications within that pool.**

C. **Non-Navajo spouses having a right to secondary preference under this Section shall also have and enjoy all other employment rights granted to Navajos under the Act, it being understood that Navajos retain a priority right with respect to provisions of the Act concerning preferential treatment in employment opportunities.**

SECTION 616. POLYGRAPH TEST

A. **No person shall request or require any employee or prospective employee to submit to, or take a polygraph examination as a condition of obtaining employment or of continuing employment or discharge or discipline in any manner an employee for failing, refusing, or declining to submit to or take a polygraph examination.**

B. **For purpose of this Section, "polygraph" means any mechanical or electrical instrument or device of any type used or allegedly used to examine, test, or question individuals for the purpose of determining truthfulness. This provision shall not apply to federal or state government employees.**

SECTION 617. RULES AND REGULATIONS

The Health, Education and Human Services Committee of the Navajo Nation Council is authorized to promulgate rules and regulations necessary for the enforcement and implementation of the provisions of this Act. The Commission is hereby delegated the authority to adopt and implement, on it own initiative and without any approval, rules of procedure and practice governing the conduct of proceedings under § 611 of the Act, provided that such rules are consistent with the provisions of the Act.

SECTION 618. PRIOR INCONSISTENT LAW REPEALED

All prior Navajo Nation laws, rules, regulations, and provisions of the Navajo Nation Code previously adopted which are inconsistent with this Act are hereby repealed.

SECTION 619. EFFECTIVE DATE AND AMENDMENT OF THE ACT

A. **The effective date of this Act shall be 60 days after the passage of the Act by the Navajo Nation Council and shall remain in effect until amended or repealed by the Navajo Nation Council.**

B. **Any amendment or repeal of the Act shall only be effective upon approval of the Navajo Nation Council, and shall not be valid if it has the effect of amending, modifying, limiting, expanding or waiving the Act for the benefit or to the detriment of a particular person.**

C. **Any amendment to the Act, unless the amendment expressly states otherwise, shall be effective 60 days after the passage thereof by the Navajo Nation Council.**

D. **The time limits prescribed in § 610 relating to filing a Charge and subsequent proceedings thereon were added by amendment adopted by the Navajo Nation Council subsequent to the effective date of the original Act. Notwithstanding an actual accrual date for any alleged violation of the Act which is prior to the effective date of the amendment which added the time limits in § 610 hereof, such alleged violation shall be deemed to accrue on the effective date of the foregoing amendment for purposes of all time limits set forth in § 610.**

SECTION 620. SEVERABILITY OF THE ACT

If any provision of this Act or the application thereof to any person, association, entity or circumstances is held invalid, such invalidity shall not affect the remaining provisions or applications thereof.

CS-52-17

**RESOLUTION OF THE
NAVAJO NATION COUNCIL**

23RD NAVAJO NATION COUNCIL - THIRD YEAR, 2017

AN ACT

RELATING TO THE LAW AND ORDER, HEALTH, EDUCATION, AND HUMAN SERVICES, BUDGET AND FINANCE, NAABIK'ÍYÁTI' COMMITTEES, AND THE NAVAJO NATION COUNCIL; AMENDING 12 N.N.C. § 810 AND § 820 OF THE APPROPRIATIONS ACT; AMENDING § 604 OF THE NAVAJO PREFERENCE IN EMPLOYMENT ACT

BE IT ENACTED:

Section One. Authority

A. The Law and Order Committee of the Navajo Nation Council is empowered to review and make recommendations to the Navajo Nation Council on proposed amendments to and enactments to the Navajo Nation Code. 12 N.N.C. § 601(B)(14).

B. The Health, Education, and Human Services Committee is empowered to oversee over employment matters. 2 N.N.C. § 401(C)(6).

C. The Budget and Finance Committee exercises oversight authority of budget and finance matters for the purposes of "recommend[ing] to the Navajo Nation Council the adoption of resolutions designed to strengthen the fiscal and financial position of the Navajo Nation and to promote the efficient use of the fiscal and financial resources of the Navajo Nation." 2 N.N.C. §300 (C)(3).

D. The Naabik'íyáti' Committee is a standing committee of the Navajo Nation Council. A proposed resolution that requires final action by the Navajo Nation Council shall be assigned the standing committee having authority over the subject matter at issue and the Naabik'íyáti' Committee. 2 N.N.C. §§ 164(A)(9) and 700(A).

E. The Navajo Nation Council must review and approve enactments or amendments of positive law. 2 N.N.C. §§ 164(A).

F. The Appropriations Act may be amended upon recommendation from the Budget and Finance Committee. 12 N.N.C. § 880.

G. Approval of this resolution by the Budget and Finance Committee constitutes a recommendation for the purposes of section 880 of the Appropriations Act.

Section Two. Findings.

A. A Task Force was created to discuss the use of Conditions of Appropriations in the Navajo Nation's Comprehensive Budget. The Condition of Appropriation Task Force (Task Force) is comprised of members of the Executive and Legislative Branch in accordance with the Budget and Finance Committee Resolution, BFAP-15-17.

B. The Navajo Nation Council has the authority to issue Conditions of Appropriation as part of the Navajo Nation Comprehensive Budget. This authority is provided in the Appropriations Act at 12 N.N.C. § 810 (I).

C. The Office of the President and Vice President presented recommendations to the Task Force for consideration. The objective of these recommendations was to make efficient use of the authority granted to the Navajo Nation Council in the Appropriations Act, while avoiding conflicts with the exercise of the President's line-item veto authority.

D. The proposed amendments to the Appropriations Act (12 N.N.C. §800 *et seq.*) and the Navajo Preference in Employment Act (15 N.N.C. § 601 *et seq.*) are the results of additional input by Task Force members.

E. The current version of the Navajo Preference in Employment Act (NPEA) provides Navajo Nation employees with the opportunity to file grievances under a general harassment provision. The unintended effect of this provision is that supervisors are perceived as harassing employees when providing feedback or task direction to employees. Additionally, employees have used the protections provided in the Domestic Abuse Protection Act (9 N.N.C. §1601 *et seq.*) to obtain restraining orders against supervisors where a dispute has arisen in the context of an employment relationship.

F. The proposed amendments to the NPEA are needed in order to ensure program managers have the ability to require employees to perform the tasks necessary to fulfill and implement a Condition of Appropriation.

Section Three. Amendments to Title 12

The Navajo Nation amends the Navajo Nation Code 12 N.N.C. §§ 810 and 820, as follows:

NAVAJO NATION CODE ANNOTATED

TITLE 12. FISCAL MATTERS

CHAPTER 7. APPROPRIATIONS

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§ 810. Definitions

I. "Condition of Appropriation" ~~or Expenditure~~" means a condition ~~specific contingency~~, placed on an appropriation or expenditure by the Navajo Nation Council at the time the appropriation or expenditure is made, which requires performance of specific tasks by a program within a specific time period within the fiscal year. ~~creating legal conditions precedent to the expenditure of funds.~~ The condition may require that failure to perform the specific tasks within the time period set out by the Navajo Nation Council will result in restrictions on future expenditure of ~~Appropriated funds or any other funds received by the Navajo Nation on which a condition of appropriation or expenditure is placed may not be lawfully expended~~ the funds until the condition ~~of appropriation or expenditure~~ is met. ~~It is the responsibility of the Controller to ensure that funds are expended in accordance with the conditions placed on the appropriation or expenditure.~~

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§ 820. Overall budget policies

R. Condition of Appropriation.

1. The Navajo Nation Council may include one or more Condition of Appropriation in a resolution approving the comprehensive budget.

2. A Condition of Appropriation will only be directed to the specific program having direct responsibility to fulfill the required task or tasks, and not to a general branch or division.

3. A condition may require a freeze on the expenditure of travel funds of the program, or a withholding of up to ten percent (10%) of the gross salary of the program director of the program tasked with fulfilling the condition, if the condition is not performed within a specified time period within the fiscal year. The restriction on expenditures will continue until the condition is fulfilled, as found by the Budget and Finance Committee pursuant to Subsection 5. A program director's salary cannot be withheld if his or her salary is already being withheld for failure of the program to fulfill another Condition of Appropriation, or for failure to implement a corrective action plan issued by the Auditor General pursuant to 12 N.N.C. § 9(C). The withholding of salary shall not apply to a program director hired after the Budget and Finance Committee has imposed salary withholding on the prior program director's salary unless, after consultation with the new program director, the Office of the Controller, and the Office of Management and Budget, and upon recommendation of the appropriate Council committee with oversight over the program, the Budget and Finance Committee, by resolution, votes to impose such withholding. The director may grieve that action by filing a complaint with the Office of Hearings and Appeals within ten (10) working days of the Budget and Finance Committee's action. The decision of the Office of Hearings and Appeals will be final, and there shall be no right of appeal to any court.

4. Prior to the approval of a Condition of Appropriation, the Navajo Nation Council shall consult with the director of the program required to fulfill the condition, as well as the Office of the Controller, and the Office of Management and Budget. The consultation shall include a discussion of the feasibility of the program fulfilling the Condition, including within the time period proposed by the Council, and any alternatives to the proposed Condition.

5. If a Condition of Appropriation is not fulfilled within the time period required, the Budget and Finance Committee, after consultation with the program director, the Office of the Controller, and the Office of Management and Budget, and upon the recommendation of the appropriate Council committee with oversight over the program, may, by resolution, vote to (1) implement the restriction on the program's expenditures authorized by Subsection 3, (2) extend the time period for the program to fulfill the condition, or (3) vacate the condition if it is infeasible for the program to fulfill. If the Budget and Finance Committee requires the withholding of

the program director's salary, the withholding shall be effective only after the Committee's action, and cannot be applied retroactively to withhold salary already earned by the program director.

6. If, pursuant to Subsection 3, the Budget and Finance Committee approves the withholding of the program director's salary, the director may grieve that action by filing a complaint with the Office of Hearings and Appeals within ten (10) working days of the Budget and Finance Committee's action. The decision of the Office of Hearings and Appeals will be final, and there shall be no right of appeal to any court.

7. If, after imposition of a restriction authorized by Subsection 3, the program believes it has fulfilled the Condition of Appropriation, it shall present evidence of fulfillment of the condition to the Budget and Finance Committee through presentation of a report. If, after consultation with the Office of the Controller and the Office of Management and Budget, the evidence provided shows fulfillment of the condition, the Budget and Finance Committee shall, by resolution, vote to declare the condition fulfilled, and lift the restriction. Any accrued amount of salary withheld from the program director will then be returned to the director. If the Budget and Finance Committee decides the condition is not fulfilled, it shall make such finding and, by resolution, vote to continue or lift the restriction. If the Budget and Finance Committee votes to continue any withholding of a program director's salary, the director may grieve that action by filing a complaint with the Office of Hearings and Appeals within ten (10) working days of the Budget and Finance Committee's action. The decision of the Office of Hearings and Appeals will be final, and there shall be no right of appeal to any court.

8. If, at the end of the fiscal year, the condition has not been met, any salary withheld from the program director shall be forfeited. There shall be no challenge to any forfeiture.

***

Section Four. Amendments to Title 15

The Navajo Nation amends the Navajo Nation Code 15 N.N.C. § 604, as follows:

NAVAJO NATION CODE ANNOTATED

TITLE 15. LABOR

CHAPTER 7. NAVAJO PREFERENCE IN EMPLOYMENT ACT

***

§ 604 Navajo Employment Preference

***

B. Specific requirements for Navajo preference:

***

8. All employers shall not penalize, discipline, discharge nor take any adverse action against any Navajo employee without just cause. A written notification to the employee citing such cause for any of the above actions is required in all cases. Provided, that this Subsection shall not apply to Division Directors, or to other employees and officials of the Navajo Nation who serve, pursuant to a specific provision of the Navajo Nation Code, at the pleasure of the Navajo Nation Council, the standing committees of the Navajo Nation Council, the President of the Navajo Nation, the Speaker of the Navajo Nation Council, the Chief Justice of the Navajo Nation, or those persons employed pursuant to 2 N.N.C. §§ 281(C) and 1009. This subsection shall not be used by a program director to challenge the withholding of his or her salary for failure to implement a corrective action plan of the Auditor General, as authorized by 12 N.N.C. § 9(C), or for failure to fulfill a condition of appropriation, as authorized by 12 N.N.C. § 820(R)(2) and (3).

9. All employers shall maintain a safe and clean working environment and provide employment conditions which are free of prejudice, intimidation and including sexual harassment. The employee alleging a violation of this subsection shall have the burden of proof to show that violation by a preponderance of the evidence. An employee may not file an action under the Domestic Abuse Protection Act, 9 N.N.C. § 1601, *et seq.*, to seek to restrain a supervisor or co-worker for a dispute arising out of the employment relationship.

***

Section Five. Codification

The provisions of the Act which amend or adopt new sections of the Navajo Nation Code shall be codified by the Office of Legislative Counsel. The Office of Legislative Counsel shall incorporate such amended provisions in the next codification of the Navajo Nation Code.

Section Six. Saving Clause

Should any provision of this Act be determined invalid by the Navajo Nation Supreme Court or the District Courts of the Navajo Nation, without appeal to the Navajo Nation Supreme Court, the remainder of the Act shall remain the law of the Navajo Nation.

Section Seven. Effective Date

The provisions of the amendments to the Appropriations Act and the Navajo Preference in Employment Act are effective in accordance with 2 N.N.C. § 221(B).

CERTIFICATION

I hereby certify that the foregoing resolution was duly considered by the Navajo Nation Council at a duly called meeting in Window Rock, Navajo Nation (Arizona) at which a quorum was present and that the same was passed by a vote of 13 in Favor and 03 Opposed, this 11th day of September, 2017.

LoRenzo C. Bates, Speaker
Navajo Nation Council

9-21-17
Date

Motion: Honorable Leonard Tsosie
Second: Honorable Seth A. Damon

ACTION BY THE NAVAJO NATION PRESIDENT:

1. I hereby sign into law the foregoing legislation, pursuant to 2 N.N.C. §1005 (c)(10), on this 1st day of October 2017.

Russell Begaye, President
Navajo Nation

2. I hereby veto the foregoing legislation, pursuant to 2 N.N.C. §1005 (c)(11), on this _____ day of _____ 2017 for reason(s) expressed in the attached letter to the Speaker

Russell Begaye, President
Navajo Nation

CMA-13-16

RESOLUTION OF THE
NAVAJO NATION COUNCIL

23rd NAVAJO NATION COUNCIL - Second Year, 2016

AN ACTION

RELATING TO LAW AND ORDER, HEALTH, EDUCATION AND HUMAN SERVICES, AND NAABIK'ÍYÁTI' COMMITTEES AND NAVAJO NATION COUNCIL; AMENDING THE NAVAJO PREFERENCE IN EMPLOYMENT ACT AT 15 N.N.C. §§ 604, 611 AND 614

BE IT ENACTED:

Section One. Findings

A. The Navajo Nation empowered the Navajo Nation Law and Order Committee to review and recommend proposed Navajo Nation Code enactments and amendments. 2 N.N.C. § 601(B)(14)(2012); *see* also CJA-03-13.

B. The Health, Education and Human Services Committee exercises oversight over employment matters. 2 N.N.C. § 401(C)(6)(2012).

C. The Navajo Nation Council Speaker shall assign "[a] proposed resolution that requires final action by the Navajo Nation Council to…the Naabik'íyáti' Committee"; this resolution proposes a positive law amendment and requires the Navajo Nation Council's approval. 2 N.N.C. § 164 (A)(9) (2012) and 2 N.N.C. § 164 (A) (2012) see also CO-45-12.

D. Currently, the general burden under the Navajo Preference in Employment Act ("NPEA") is on the employer to prove by a preponderance of the evidence that the law was not violated. 15 N.N.C. § 611(B). Preponderance of the evidence is defined as "just enough evidence to make it more likely than not that the fact the claimant seeks to prove is true." *See* http://legal-dictionary.thefreedictionary.com

E. When an employee makes a grievance under 15 N.N.C. § 604(B)(9) specifically claiming harassment, the burden of proof is unclear.

F. Under current Labor Commission rules, the employee alleging harassment has the burden to establish first that the employer harassed him or her. See Labor Commission Rules attached as Exhibit A.

G. The proposed revision to 15 N.N.C. § 604(B)(9) would make it clear that in harassment cases the employee has the burden to establish the violation based on the unique nature of such a claim.

H. The proposed revision to 15 N.N.C. § 611(B) would shift the burden of proof from the respondent to a burden of proof that both parties - petitioner and respondent - share equally.

I. The proposed revision to 15 N.N.C. § 614 would apply the same shared burden of proof to cases filed by Navajo Nation Government Employees.

Section Two. Amendments to Title 15 of the Navajo Nation Code

The Navajo Nation hereby amends the Navajo Nation Code, Title 15, §§ 604, 611 and 614 as follows:

TITLE 15. LABOR

CHAPTER 5. NAVAJO PREFERENCE IN EMPLOYMENT ACT

***

§ 604. Navajo employment preference

***

B. Specific requirements for Navajo preference:

***

9. All employers shall maintain a safe and clean working environment and provide employment conditions which are free of prejudice, intimidation and <u>including sexual</u> harassment. <u>The employee alleging a violation of this subsection shall have the burden of proof to show that violation by a preponderance of the evidence.</u>

***

§ 611. Hearings

***

B. Burden of proof. ~~In any compliance review, complain proceeding, investigation or hearing, the burden of proof shall be upon the respondent to show compliance with the provisions of this Act by a preponderance of the evidence.~~ In any hearing, the employee alleging violation shall have the burden of proof to show violation by a preponderance of evidence.

***

§ 614. Grievance Procedure for Navajo Nation Government Employees

A. An employee of the Navajo Nation Executive or Legislative Branch or a non-Local Governance Act Certified Chapter, or applicant for employment with the Navajo Nation Executive or Legislative Branch or non-Local Governance Act Certified Chapter, who alleges a violation of this Act shall file a grievance as provided by the Navajo Nation Personnel Policies Manual. The hearing officer may award the employee or applicant any remedy authorized by Section 612(A) of this Act. Directed verdict shall be discouraged in favor of a hearing to hear evidence from all parties.

B. Any employee of the Navajo Nation Judicial Branch or an applicant for employment with the Navajo Nation Judicial Branch who alleges a violation of the Act shall file a grievance as provided by the Judicial Branch Employee Policies & Procedures. The hearing board may award the employee or applicant any remedy authorized by Section 612(A) of this Act.

C. Except as otherwise provided in this Act, in any compliance review hearing, the employee alleging violation shall have the burden of proof to show violation by a preponderance of evidence. Directed verdict shall be discouraged in favor of a hearing to hear evidence from all parties.

~~C.~~ D. Any party to the grievance may appeal a final decision of the hearing officer or hearing board to the Navajo Nation Supreme Court within ten (10) calendar days of receipt of the decision. The employee or applicant shall file a notice of appeal with the Navajo Nation Supreme Court and the hearing officer or hearing board.

***

Section Three. Effective Date

The Navajo Nation Code amendment enacted herein shall be effective pursuant to 2 N.N.C. § 221(B).

Section Four. Codification

The provisions of this Act which amend or adopt new sections of the Navajo Nation Code shall be codified by the Office of Legislative Counsel. The Office of Legislative Counsel shall incorporate such amended provisions in the next codification of the Navajo Nation Code.

Section Five. Savings Clause

Should any provisions of this ordinance be determined invalid by the Navajo Nation Supreme Court, or the District Courts of the Navajo Nation, without appeal to the Navajo Nation Supreme Court, those portions of this ordinance which are not determined invalid shall remain the law of the Navajo Nation.

CMA-13-16

CERTIFICATION

I hereby certify that the foregoing resolution was duly considered by the Navajo Nation Council at a duly called meeting in Window Rock, Navajo Nation (Arizona) at which a quorum was present and that the same was passed by a vote of 15 in favor and 1 opposed, this 23rd day of March 2016.

LoRenzo Bates, Speaker
Navajo Nation Council

4-1-16
Date

Motion: Honorable Jonathan L. Hale
Second: Honorable Seth Damon

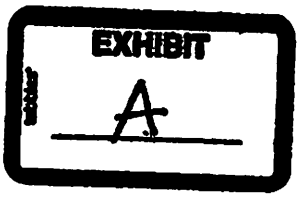
ACTION BY THE NAVAJO NATION PRESIDENT:

1. I hereby sign into law the foregoing legislation, pursuant to 2 N.N.C. §1005 (C)(10), on this 6th day of April 2016.

Russell Begaye, President
Navajo Nation

2. I hereby veto the foregoing legislation, pursuant to 2 N.N.C. §1005 (C) (11), this _____ day of _____ 2016 for the reason(s) expressed in the attached letter to the Speaker.

Russell Begaye, President
Navajo Nation



AMENDED RULES OF PROCEDURE FOR THE NAVAJO NATION LABOR COMMISSION

1. **APPLICABILITY:** These rules shall apply to all proceedings before the Navajo Nation Labor Commission ("Commission") pursuant to the Navajo Preference in Employment Act ("NPEA") 15 N.N.C. §301 and §601 et. seq. These rules shall be cited as LCRP.

2. **PARTIES:** The Office of Navajo Labor Relations ("ONLR") or the individual party filing the complaint ~~shall be~~ is the Petitioner and the person alleged to have committed the violations of NPEA ~~shall be~~ is the Respondent. Petitioner shall be present at all stages of the proceedings. Respondent shall have a representative(s) present at all stages of the proceedings who has the authority to negotiate and approve a settlement agreement.

3. **INITIATION OF PROCEEDINGS:** Commission ~~P~~ proceedings ~~before the Commission shall~~ be initiated when Petitioner ~~upon the filings~~ of a written complaint ~~by a Petitioner~~ pursuant to 15 N.N.C. §610(J). A non- refundable filing fee of $25.00 made payable to the Navajo Nation is required to initiate the processing of the complaint. The filing fee may be waived upon a written request to the Commission.

4. **REQUEST FOR PRELIMINARY INJUNCTION:** ~~Prior to filing a Charge with the ONLR,~~ Petitioner must file an ONLR Charge prior to filing a Petition for Preliminary Injunction for ~~Petitioner, upon notice to the Respondent, may petition the Commission~~ for preliminary relief pursuant to 15 N.N.C. §610(K). This petition shall meet the recognized requirements for an injunction. The moving party must show that he/she: (1) has a protectable interest; (2) has a high likelihood of success on the merits; (3) that irreparable injury, loss, or injury is likely to occur if the preliminary injunction is not issued; (4) that the threatened injury, loss or damage is substantial in nature; and (5) does not have an adequate remedy at law.

   Petitioner shall serve the petition for preliminary injunction on the Respondent within 5 (five) days of filing the petition with the Commission.

   A hearing shall be held within fifteen (15) business days of the filing of the petition for preliminary injunction.

5. **CONTENTS OF COMPLAINT:** The ~~C~~complaint ~~shall~~ must be in writing, ~~doubled spaced, and shall not exceed ten (10) pages. and~~ The Complaint shall contain:

(a) a statement that Petitioner is authorized to file the complaint under the terms and conditions prescribed in 15 N.N.C. §610(J)(1)(a)-(c);

(b) a statement that Petitioner is: (1)is an enrolled member of the Navajo Nation; ~~, or, (2)~~ is legally married to an enrolled member of the Navajo Nation and meets the conditions prescribed in 15 N.N.C. §614 ~~including a copy of a valid marriage certificate and proof that he/she has resided within the Navajo Nation continuously for one year, or,~~ (3) ~~he/she~~ is eligible to file the complaint pursuant to *Staff Relief vs. Palacca*, 8 Nav. R. 49 (Nav. Sup. Ct. 2000).

(c) Petitioner and Respondent's valid mailing address and telephone numbers. All mail sent to the parties at the address(es) provided shall be deemed served. If Respondent is a corporation, Petitioner shall provide the name and address of the corporation's registered agent to insure that Respondent receives notice of the filing of the Complaint.

(d) the identification of the person(s) alleged to have violated the NPEA;

(e) the date(s) on which the violations occurred, or where such acts are of a continuing nature, the period of time when the acts occurred;

(f) a statement of the facts constituting the alleged violation(s);

(g) all Section 604(B)(9) allegations of hostile work environment, harassment, humiliation, or intimidation shall be specifically plead and shall include specific name(s), date(s),place, and a brief description of the event(s);

(h) the relief sought by Petitioner. ~~in accordance with the NPEA;~~

(i) a copy of the Charge filed with ONLR ~~shall~~ must be attached to the complaint.

6. **FILING OF DOCUMENTS:** The complaint may be filed in person with at

the Commission office located off Morgan Boulevard, Training Center, Window Rock, Navajo Nation, Arizona or by certified mail, addressed to: Post Office Box 3450, Window Rock, Arizona 86515. All other documents may be sent by First Class mail to the address listed above. Only those documents consisting of ~~7~~ ten (10) pages or less may be filed by facsimile at (928) 871-7415. Parties will pay $2.00 per page for each faxed document that exceeds ten (10) pages.

7. **NOTICE OF HEARING:** A hearing shall be scheduled within sixty (60) calendar days of filing the complaint, but a hearing need not be held within sixty (60) calendar days of the filing of the complaint. A notice of hearing, a copy of the complaint, and these rules will be sent by certified mail to the parties or counsel of record. Petitioner may personally serve the complaint on a Respondent Corporation to insure that proper notice has occurred.

NOTE: The Commission is only obligated to send a copy of the complaint and notice of hearing to the Respondent upon the initial filing of the complaint. If the notice by certified mail is not delivered to the Respondent for any reason, Petitioner will be responsible for effecting service on the Respondent.

8. **SERVICE; FILING ~~OF~~ OTHER PLEADINGS AND PAPERS:**

(a) Except as otherwise required in these rules, every pleading, motion or other papers filed after the original complaint shall be served by the filer upon all the parties or counsel of record within three (3) business days of filing said documents with the Commission. All pleadings and every paper filed with the Commission shall contain a certificate of service showing the date and manner of service.

(b) Additional Time After Service by Mail. Whenever a party is required to do some act or take some proceedings within a prescribed time after the service of a notice or other paper upon him and the notice or paper is served by mail, five (5) days shall be added to the prescribed time.

(c) Proposed exhibits shall be filed with the Commission and served on the opposing party, no later than ten (10) business days prior to the initial hearing. Exhibits ~~shall not be~~ filed by facsimile will not be accepted. Petitioner's exhibits shall be marked in alphabetical order. Respondent's exhibits shall be marked in numerical order. Exhibits in

excess of ten (10) or more ~~shall~~ must be tabbed, indexed and put in a 3-ring binder. Acceptance of supplemental exhibits filed less than ten (10) business days prior to the hearing is discretionary. ~~The parties shall submit complete exhibits at the evidentiary hearing.~~

(d) The parties shall file their list of witnesses along with their address, phone number, and e-mail address, no later than ten (10) business days prior to the hearing.

(e) The parties shall file one (1) original and eight (8) copies of the Complaint, all pleadings, exhibits, and written documents with the Commission. The parties~~, however,~~ need only file one copy of subpoenas or proposed order(s).

(f) All motions, briefs, or memorandums must be answered within ten (10) calendar days after receipt by a party. Application of this rule may vary depending on whether a party is represented by counsel.

(g) The Commission may impose sanction(s) when a party fails to comply with any of the provisions prescribed by this rule.

9. **TIME:** In computing time under these rules, by order of the Commission, or as mandated by the NPEA, the date of the act, or default from which the designated period of time begins to run shall not be included. The last day of the period so computed shall be included, unless it is a Saturday, a Sunday, or a holiday, in which event, the period runs until the end of the next business day which is not a Saturday, Sunday or a holiday.

10. **CONTINUANCE OF HEARING DATE:** A hearing may be extended upon a written request showing good cause. The moving party shall indicate whether the opposing party has consented to the continuance and how much additional time is needed. A request for a continuance must be made ten (10) business days prior to the hearing date. Thereafter, no requests for continuances shall be considered, unless there is a showing of exigent or unforeseeable circumstances.

11. **ANSWER:** The Respondent shall file an written Answer to the complaint within twenty (20) calendar days after the receipt of the notice of hearing. ~~Failure to file a written Answer shall be deemed an admission of the allegations~~

~~contained in the complaint.~~ The Answer shall be limited to three (3) pages. NOTE: A Respondent who files a motion to dismiss for lack of jurisdiction is not required to file an Answer until ten (10) days after the Commission rules on the motion to dismiss. An Answer must be filed within the prescribed time where a motion to dismiss is filed on any other grounds except for lack of subject matter jurisdiction.

12. **AMENDMENTS:** An amended complaint may be filed before an Answer is served on Petitioner. An amended Answer may be filed twenty (20) calendar days after the Answer has been served on Petitioner. Otherwise, a complaint or Answer may only be amended by leave of the Commission or by written consent of the adverse party. Leave to amend shall be freely given when justice requires. Respondent shall file an Answer to an amended complaint within 15 (fifteen) calendar days of being served with the amended complaint.

13. **DEFAULT JUDGMENT:** Upon Respondent's failure to file a timely Answer, the party entitled to a default determination shall: (1) file a motion for an entry of default showing that the opposing party is in default and attaching proof of service of the complaint; (2) give notice of the motion for entry of default to the party claimed to be in default by certified mail.

An entry of default shall not be made until ten (10) calendar days after the filing and receipt of the notification of motion for entry of default judgment by the opposing party who is allegedly in default. A default shall not be entered if the party claimed to be in default pleads or otherwise defends as provided by these rules prior to the expiration of the ten (10) calendar days from the filing and notification of the motion for entry of default. A judgment by default may be issued after an entry of default has been entered by the Commission.

This rule does not apply where the Navajo Nation or any public entity, officer, employee or agent of the Navajo Nation is the Respondent. *See* 1 N.N.C. §555(B). Exceptions may apply where the Navajo Nation fails to participate in proceedings or fails to honor orders of the Commission. *Loley v. Dept. of Employment & Training*, 7 Nav. R. 406, 409 (Nav. Sup. Ct. 1999).

14. **SUBPOENAS:** All requests for subpoenas by a party, or on the initiative of the Commission shall be in writing. The Commission may issue a subpoena compelling the disclosure by any person evidence relevant to the complaint, including a subpoena ordering (a) the attendance and testimony of witnesses at

a deposition or hearing; (b) responses to written interrogatories; (c) the production of evidence including any relevant documents; and (d) access to evidence for the purpose of examination and copying. ~~NOTE:~~

A subpoena is not required to serve interrogatories. A ~~notice~~ certificate of service ~~showing the date and manner of service of the interrogatories~~ must be filed with the Commission before or at the ~~time it~~ interrogatories are served. Parties must respond to the requests for interrogatories within twenty (20) calendar days of receipt of the interrogatories. Interrogatories shall be limited to fifteen (15) questions including subparts.

Requests for subpoenas shall be filed no later than fifteen (15) business days prior to a scheduled hearing. The recipient shall have five (5) business days after receipt of the request to object to the subpoena. Upon receipt of the request and response to the subpoena, the Commission shall grant or deny the request for subpoena. The Commission has discretion to grant requests for subpoenas not made within this time period. All discovery must be completed no later than fifteen (15) days prior to the hearing.

The party requesting issuance of subpoenas shall arrange for service. A subpoena compelling the appearance of a witness for a hearing or deposition shall be served by a Navajo Police Officer or by any other person who is not a party and not less than 18 years of age, who shall execute a Return of Service. All other subpoenas may be served by certified mail. A subpoena served by ordinary first class mail shall be invalid. Parties are required to confer with each other prior to filing discovery objections or motions to compel discovery.

~~NOTE: Commission~~ P proceedings ~~before the Commission is are~~ intended to afford the parties a prompt, informal and inexpensive process for to resolve ing employment disputes. ~~As such, Commission~~ These proceedings require lesser formalities than those required by both the Navajo Nation and federal discovery practice to foster the intent of the NPEA. Parties are strongly urged to refrain from engaging in extensive and costly discovery. Parties are strongly encouraged to initiate discovery as early as possible after an Answer has been filed to avoid delay.

15. **CONDUCT OF HEARING:**

A. The Chairperson shall preside at the hearing at which a quorum of three (3) members of the Commission are present. The Vice-Chairperson shall serve in the absence of the Chairperson. In the absence of the Chairperson, and Vice-Chairperson, the Secretary shall preside at the hearing.

B. Either party may file a written motion to disqualify a member of the Commission from hearing a case. The motion must be supported by an affidavit or by relevant, adequate evidence to show that actual bias exists.

C. A Commissioner shall disclose that she/he has a past or present relationship to a party/ witness. If a party objects to that Commissioner's participation, the Commissioner shall consider whether she/he can remain fair and impartial despite the relationship. However, recusal shall not result in losing a quorum so as to deny a party access to a hearing.

D. The Chairperson of the Commission shall regulate the course of the hearing, shall conduct the hearing in a fair and orderly manner and shall extend to all parties the right to be heard.

E. Oaths shall be administered by the Clerk of the Commission.

F. Use of a Navajo interpreter.

~~(1) A party that wishes to present his/her case in the Navajo language shall declare such intention in the original petition, or Answer. A written request will be considered if timely filed ten (10) days prior to the hearing.~~

(2) A certified Navajo interpreter is preferred. The party requesting ~~that his/her case be presented in the Navajo language~~ a Navajo interpreter is ~~shall be~~ responsible for compensating the interpreter and providing notice to the opposing party that he/she intends to use an interpreter.

G. Representation: Parties shall have the right to appear *pro se* or be represented by counsel who is a member in good standing with the Navajo Nation Bar Association ("NNBA"). Counsel shall file an entry

of appearance. ~~which states that they are a member in good standing with the NNBA.~~ A non- resident attorney, who is a member in good standing with any state bar, may participate in one case per year before the Commission by filing ~~The non-resident attorney(s) shall submit~~ a written request to appear and shall associate with a NNBA member.

~~If~~ A Respondent ~~is a~~ corporation, ~~it~~ is required to be represented by counsel who is a member of the NNBA. *Perry v. N~~av.~~N Labor Commission & anc. Utah Nav. Dev. Corp.*, No. SV-CV-50-05, slip op. (Nav. Sup. Ct. Aug. 7, 2007).

H. The Commission shall not be bound by any formal rules of evidence. The Chairperson may exclude evidence that is irrelevant, immaterial, or unduly repetitious.

I. Each party may call, examine, and cross examine witnesses. The Commission may question any of the witnesses upon conclusion of their testimony. Either party may question those witnesses regarding only the issues raised by the Commission's inquiry.

J. Each party shall have an opportunity to give an opening statement prior to the presentation of their case.

K. Order of Proceedings: The Respondent has the burden of going forward with evidence that they did not violate the NPEA. After the Respondent has rested, the Petitioner may present evidence to support of his/her claim. EXCEPTION: The Petitioner has the initial burden of going forward with evidence that Respondent created a hostile work environment and/ or harassed, humiliated or intimidated Petitioner in violation of 15 N.N.C. §604(B)(9). The burden will then shift to the Respondent to show no violation of 15 N.N.C. §604(B)(9). The Petitioner may rebut the evidence presented by the Respondent.

L. Each party may give closing arguments upon conclusion of presentation of the evidence.

M. A party may move for a Directed Verdict at the close of the evidence offered by an opponent. A motion for directed verdict shall state specific grounds. The opponent shall have an opportunity to respond to the

motion.

N. Motions for Summary Judgment are not allowed.

O. The burden of proof shall be on the Respondent to show compliance with the provisions of the NPEA by a preponderance of the evidence.

P. In the event a party does not make an appearance on the day set for hearing, the Commission may enter a default determination against the non-appearing party.

Q. Witnesses shall be excluded from the hearing room prior to the presentation of their testimony.

R. All hearings ~~shall be~~ are recorded. Any party may request a copy of the ~~tapes~~ a recording of the proceedings at their own expense.

S. A party may record the proceedings via any electronic audio recording device that does not interfere or obstruct the proceedings. A party may employ a court reporter upon notice to the opposing party. All transcripts generated from the foregoing are unofficial and may not be substituted as an official record of the Commission.

T. A ~~damages~~ remedies hearing may be held where the prevailing party ~~shall have~~ has the burden of proof to show that he/ she is entitled to the remedial relief requested. Opposing party will have an opportunity to respond to the remedial relief requested.

16. ~~STIPULATION OF PARTIES:~~ SETTLEMENT AGREEMENTS: All ~~stipulations~~ settlement agreements executed by the parties or counsel of record shall be submitted in writing as soon as practical. If a ~~stipulated~~ settlement agreement is made within five (5) calendar days prior to the hearing, the terms of the agreement shall be presented at the scheduled hearing, unless otherwise ordered by the Commission. All confidential settlement agreements must be filed with the Commission which will be sealed and will remain unavailable to the public.

17. **DECISION:** The decision shall be reduced to writing, signed by the Chairperson or designee. Copies of the decision shall be sent by certified mail

to all parties of record.

18. **APPEAL:** The decision of the Commission shall be final with a right of appeal to the Navajo Nation Supreme Court. An appeal must be filed with the Navajo Nation Supreme Court within ten (10) calendar days after receipt of the decision.

19. **MODIFICATION:** The Commission reserves the right to modify these rules.

20. **EFFECTIVE DATE:** These Rules shall be in effect on and after _____, 5:00 P.M.

Rules Of Procedures for Proceedings Before the Navajo Nation Labor Commission, *adopted* May 10, 1991. *Amended* January 30, 2001 by Res. NNLC-JAN-74-01. *Amended* October 09, 2001 by Res. NNLC- OCT-78-01. *Amended* October 9, 2001 by Res. NNLC-OCT-78-01. *Amended* October 12, 2005 by Res. NNLC-SEPT-03-05. *Amended* December 19, 2006 by Res. NNLC-DEC-01-06. *Amended* September 25, 2007 by Res. NNLC- SEPT-01-07. *Amended* December 3, 2009 by Res. NNLC-DEC-01-2009. *Amended* October 12, 2011 by Res. NNLC-OCT-01-2011. *Amended* June 28, 2012 by Res. NNLC-JUN-02-2012. *Amended* September 5, 2013 by Res. NNLC-SEPT-02-2013. Pending Amendment, , by Res. NNLC- - 2015.

NAVAJO NATION

RCS# 392

3rd
Winter Session

3/23/2016
01:42:30 PM

PASSED
FAILED

Amd# to Amd#

Legis 0419-15 (as amended)
Amending the Navajo Preference in Employment Act of 15 N N C Sections 604, 609 & 614

MOT Hale
SEC Damon

Yea : 15 **Nay : 1** **Not Voting : 6**

Yea : 15

Begay, NM	Fred	Phelps	Tso
BeGaye, N	Jack	Shepherd	Witherspoon
Bennett	Perry	Slim	Yazzie
Daniels	Pete	Smith	

Nay : 1

Crotty

Not Voting : 6

Bates	Begay, M	Chee	Hale
Begay, K	Brown	Damon	Tsosie

CO-48-14

RESOLUTION OF THE
NAVAJO NATION COUNCIL

22nd NAVAJO NATION COUNCIL - Fourth Year, 2014

AN ACT

RELATING TO LAW AND ORDER, HEALTH, EDUCATION AND HUMAN SERVICES, NAABIK'ÍYÁTI' AND NAVAJO NATION COUNCIL; AMENDING NAVAJO PREFERENCE IN EMPLOYMENT ACT AT 15 N.N.C. §§ 605, 610 AND 612; ENACTING NEW SECTION 614; AND REDESIGNATING SECTIONS 615 THROUGH 620

BE IT ENACTED:

Section 1. Findings and Purposes

A. Pursuant to 15 N.N.C. § 602, the purposes of the *Navajo Preference in Employment Act* include providing training and employment opportunities for Navajos and promoting economic development within the Navajo Nation.

B. It is necessary to amend the Navajo Preference in Employment Act generally for purposes of ensuring efficiency and economy.

Section 2. Amending Navajo Preference in Employment Act

The Navajo Nation hereby amends the *Navajo Preference in Employment Act* as follows:

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§ 605. Reports

Except as otherwise provided herein, ~~A~~all employers doing business or engaged in any project or enterprise within the territorial jurisdiction of the Navajo Nation or pursuant to a contract with the Navajo Nation shall submit employment information and reports as required to ONLR. Such reports, in a form acceptable to ONLR, shall include all information necessary and appropriate to determine compliance with the provisions of this Act. All reports shall be filed with ONLR not later than 10 business days after the end of each calendar quarter, provided that ONLR shall have the right to require filing of reports on a weekly or monthly schedule with respect to part-time or full-time temporary employment.

****

§ 610. Monitoring and enforcement

A. Responsible Agency. Except as otherwise provided herein, Ccompliance with the Act shall be monitored and enforced by ONLR.

B. Charges.

1. Charging Party. Except as otherwise provided herein, Aany Navajo may file a charge ("Individual Charge") claiming a violation of his or her rights under the Act. ONLR, on its own initiative, may file a charge ("ONLR Charge") claiming a violation of rights under the Act held by identified Navajos or a class of Navajos, including a claim that respondent is engaging in a pattern of conduct or practice in violation of rights guaranteed by the Act. An Individual Charge and ONLR Charge are collectively referred to herein as a "Charge".

****

J. Initiation of Commission Proceedings. Proceedings before the Commission shall be initiated upon the filing of a written complaint by a petitioner with the Commission.

1. Complaints shall satisfy each of the following conditions:

a. The petitioner is authorized to file the Complaint under the terms and conditions prescribed by this ~~Section~~ Act;

****

§ 612. Remedies and sanctions

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C. The person or party in whose favor a Commission's decision providing for remedial action is entered shall have the right to seek legal and/or equitable relief in the District Courts of the Navajo Nation to enforce the remedial action; provided that the Commission itself shall have the right to seek legal and/or equitable relief in the District Courts of the Navajo Nation to enforce civil fines or sanctions imposed by the Commission against a person or party. In both instances the Attorney

General of the Navajo Nation shall have an unconditional right to intervene on behalf of the Navajo Nation. ~~Any attempted enforcement of a Commission order or decision directing payment of money by the Navajo Nation or any of its governmental entities shall, with respect to the extent of any liability be governed by the Navajo Sovereign Immunity Act, 1 N.N.C. § 551 et seq., as amended.~~

****

§ 614. Grievance Procedure For Navajo Nation Government Employees

A. Any employee of the Navajo Nation Executive or Legislative Branch or a non-Local Governance Act Certified Chapter, or applicant for employment with the Navajo Nation Executive or Legislative Branch or non-Local Governance Act Certified Chapter, who alleges a violation of this Act shall file a grievance as provided by the Navajo Nation Personnel Policies Manual. The hearing officer may award the employee or applicant any remedy authorized by Section 612(A) of this Act.

B. Any employee of the Navajo Nation Judicial Branch or an applicant for employment with the Navajo Nation Judicial Branch who alleges a violation of the Act shall file a grievance as provided by the Judicial Branch Employee Policies & Procedures. The hearing board may award the employee or applicant any remedy authorized by Section 612(A) of this Act.

C. Any party to the grievance may appeal a final decision of the hearing officer or hearing board to the Navajo Nation Supreme Court within ten (10) calendar days of receipt of the decision. The employee or applicant shall file a notice of appeal with the Navajo Nation Supreme Court and the hearing officer or hearing board.

D. Transcripts and record for appeals.

1. If considered necessary, the party appealing a decision shall file a transcript of the proceeding with the Navajo Nation Supreme Court within thirty (30) calendar days from the filing of the notice of appeal.

2. If a transcript is considered unnecessary, within ten (10) calendar days of the filing of the notice of appeal, the party appealing a decision shall give notice to the Navajo Nation Supreme Court and the appellee that the appellant will not file a transcript

3. If the appellant fails to file a transcript or notice that the appellant will not file a transcript within the required time, the Navajo Nation Supreme Court shall dismiss the appeal.

4. The hearing officer or hearing board shall submit the record of the proceeding within ten (10) calendar days of the filing of the notice of appeal. Failure of the hearing officer or hearing board to file the record within that time period shall not be grounds for dismissal of the appeal.

E. The Navajo Nation Supreme Court shall review and decide the appeal within thirty (30) days of the filing of the transcript or the notice that appellant will not file a transcript. If a decision within that time is not feasible, at the request of a party or by its own order, the Navajo Nation Supreme Court may extend that time up to sixty (60) days. The Navajo Nation Supreme Court shall create expedited rules of appellate procedure to decide the appeal within the required time period.

F. Remedies; enforcement of awards.

1. If the employee or applicant prevails on his or her grievance, and the Navajo Nation program does not appeal the decision, the program and Navajo Nation Controller shall pay the monetary remedies awarded within thirty (30) calendar days of receipt of the final decision of the hearing officer or board.

2. If the hearing officer or board directs reinstatement of the employee to his or her position or directs the hiring of the applicant for employment, and the Navajo Nation program does not appeal the decision, the program shall initiate the processing of all documentation necessary to reinstate the employee or hire the applicant within ten (10) calendar days of the decision.

3. The filing of an appeal by the Navajo Nation program under Subsection (C) shall automatically stay the payment of monetary remedies or the remedies of reinstatement or hire pending the decision by the Navajo Nation Supreme Court.

However, any monetary remedy, such as back-pay, will continue to accrue until the decision is issued, unless otherwise ordered by the Supreme Court. If the employee or applicant prevails on appeal, the Navajo Nation program will fulfill the award within the time periods set out in Subsections (1) and (2), calculated from the date of receipt of the Navajo Nation Supreme Court's decision.

4. If the Navajo Nation program fails to perform its obligations within the time periods in Subsections (1) through (3), the employee or applicant may file an action under Section 554(G) of the Navajo Sovereign Immunity Act to enforce the award. If the employee or applicant prevails in that action, he or she may receive the original award of the hearing officer or board and any additional relief authorized by 1 N.N.C. § 554(G)(1).

G. The remedies set forth in this Section are the exclusive remedies for employees of or applicants for employment with the Navajo Nation Executive, Legislative, and Judicial Branches and non-Local Governance Certified Chapters for violations of the Act. ONLR and the Commission shall have no jurisdiction over alleged violations of the Act by the Navajo Nation Executive, Legislative or Judicial Branch or non-Local Governance Certified Chapters.

§ ~~614~~ 615 . Non-Navajo spouses

****

§ ~~615~~ 616. Polygraph test

****

§ ~~616~~ 617. Rules and regulations

****

§ ~~617~~ 618. Prior inconsistent law repealed

****

§ ~~618~~ 619. Effective date and amendment of the Act

****

§ ~~619~~ 620. Severability of the Act

****

Section 3. Effective date

The amendments enacted herein shall be effective on January 1, 2015, pursuant to 2 N.N.C. §221.

Section 4. Codification

The provisions of these amendments which amend or adopt new sections of the Navajo Nation Code shall be codified by the Office of Legislative Counsel. The Office of Legislative Counsel shall incorporate such amended provisions in the next codification of the Navajo Nation Code.

Section 5. Savings Clause

Should any provision of these amendments be determined invalid by the Navajo Nation Supreme Court, or the District Courts of the Navajo Nation without appeal to the Navajo Nation Supreme Court, those provisions which are not determined invalid shall remain the law of the Nation.

CERTIFICATION

I hereby certify that the foregoing resolution was duly considered by the Navajo Nation Council at a duly called meeting in Window Rock, Navajo Nation (Arizona) at which a quorum was present and that the same was passed by a vote of 13 in favor and 0 opposed, this 23rd day of October 2014.

LoRenzo Bates, Pro Tem Speaker
Navajo Nation Council

Nov. 7, 2014
Date

Motion: Honorable Russell Begaye
Second: Honorable Lorenzo Curley

ACTION BY THE NAVAJO NATION PRESIDENT:

1. I hereby sign into law the foregoing legislation, pursuant to 2 N.N.C. § 1005 (C)(10), on this _____ day of NOV 17 2014 2014.

Ben Shelly, President
Navajo Nation

2. I hereby veto the foregoing legislation, pursuant to 2 N.N.C. §1005 (C)(11), this _____ day of _____ 2014, for the reason(s) expressed in the attached letter to the Speaker.

Ben Shelly, President
Navajo Nation

NAVAJO PREFERENCE IN EMPLOYMENT ACT

NPEA ORIENTATION
Check List

INITIAL	EXHIBIT	DESCRIPTION
_____	(A)	Navajo Preference in Employment Act (information) • NPEA Requirement Letter • Navajo Preference in Employment Act Poster
_____	(B)	Office of Navajo Labor Relations (information) • ONLR Office w/ Staffs
_____	(C)	Start New Workers Out Right
_____	(D)	Manpower Projection Report (Start/End Dates: _____)
_____	(E)	List of All Subcontractors (Start/End Dates: _____)
_____	(F)	Job Description – Non-Discriminatory
_____	(G)	Newspaper and Radio Station Advertisement • Navajo Preference Statement • Job Services
_____	(H)	Affirmative Action Regulation
_____	(I)	Notification for use of non-Navajo • Employer Interview Report • Justification
_____	(J)	Conditions for Employment Expressed to Applicant – Orientation on Employer Policies
_____	(K)	Written Notification for any Employee Action
_____	(L)	Weekly Manpower Reports
_____	(M)	Weekly Certified Payroll Reports
_____	(N)	Contractors/Subcontractor's Reports • Construction Progress Report (bi-weekly) • Project Completion Report
_____	(O)	Wage Rates (Decision #: _____) ***Submit copy of issued wage decision to ONLR***

_____
Company Name (**please print**)

_____
Company Representative – Name and Title (**please print**)

_____
Company Representative Signature

_____
Project Name and Location

Revised 01/18/24 ma

OFFICE OF NAVAJO LABOR RELATIONS

A

NAVAJO PREFERENCE IN EMPLOYMENT ACT

PACKET INCLUDES:

Forms and Information

1. Employer Interviews Report.
2. "Start New Workers Out Right" sheet.
3. Navajo Preference in Employment Act Poster – **Post at Job Site.**
4. Contractor/Subcontractor's Manpower Projection Report.
5. Weekly Manpower Reports.
6. Weekly Certified Payroll Reports.
7. Project Completion Report Form.

The ONLR strongly recommends that all contractors use apprentices or trainees as well as female applicants on the project. Interested parties should call the ONLR for more information. The ONLR strongly recommends that contractors make every effort to recruit and hire Navajos (see NPEA, Section 4.A.(1.) and Section 4.B.(6.)).

Contractors found in non-compliance of the NPEA shall be notified by the ONLR. Attempts will be made to resolve disputes or discrepancies informally. If no resolution can be reached, the ONLR will take whatever administrative action(s) or remedies necessary. Should this occur, the contractor will be notified in writing. If no response is received by the specified date, the ONLR will proceed with other actions including filing an ONLR Charge.

Contractors are responsible for hiring Navajo workers. All contractors are required to advertise in the area using a radio station and newspaper including the Navajo Preference Statement in the advertisement. Contractors will advertise vacancies 7–10 days.

1. Contractor(s) or subcontractor(s) shall provide a detailed job summary or description, along with wage rates or salary, for all or any position considered "specialized" by the employer.

2. The contractor and its subcontractor(s) shall retain the right to reject any job applicants; however, if the contractor or its subcontractor(s) is unable to recruit or hire Navajo, the contractor shall have:

   (a) the burden to justify the rejection of every Navajo applicant in each employee craft or category in which the contractor or its subcontractor(s) was unable to meet its requirements; and

   (b) the burden of substantiating the criteria used in hiring such employee craft on category as relevant to the job being performed.

At least **two weeks prior to completion of project**, the contractor shall complete the Project Completion Report form and submit to the ONLR (the form is provided in this packet).

PLEASE CALL IF THERE ARE ANY QUESTIONS OR CONCERNS. THANK YOU.

DATE CHRONO No.

Name, Title
Company Name
Mailing Address
City, State, Zip Code

RE: NPEA REQUIREMENT LETTER
Project Title

Dear Mr./Ms.:

Thank you for contacting our office regarding your upcoming project.

Enclosed is the NPEA Requirement Letter along with the NPEA Orientation Checklist.

If you have any other questions, please call our office at (928) 871-6800.

Sincerely,

Name, Title
Office of Navajo Labor Relations
DIVISION OF HUMAN RESOURCES

cc: Window Rock ONLR
Chrono File

ATTACHMENT

Date CHRONO No.

Name, Title
Company Name
Mailing Address
City, State, Zip Code

RE: NPEA REQUIREMENT LETTER
Project Title

Dear Mr./Ms.:

The Office of Navajo Labor Relations ("ONLR") monitors construction projects on the Navajo Nation to ensure all contractors and / or subcontractors comply with the Navajo Preference in Employment Act ("NPEA"). The requirements are as follows:

A. Give preference in employment to enrolled members of the Navajo Nation:

1. Advertise all job vacancies in at least one newspaper and radio station serving the Navajo Nation. Note: All job announcements and advertisements shall specify a Navajo employment preference statement.

B. Establish written necessary qualifications / job descriptions for each employment position in their work force, a copy of which shall be provided to applicants or candidates at the time they express an interest in such position.

C. Use non-discriminatory job qualifications and selection criteria in employment. Any Navajo applicant or candidate who demonstrates the necessary qualifications for an employment position:

1. Is to be selected by the employer in the case of hiring, promotion, transfer, upgrading, recall and other employment opportunities with respect to such position;

2. To be retained by the employer in the case of the reduction-in-force affecting such class of positions until all non-Navajos employed in that class of position are laid off; and

3. Among of pool of applicants or candidates who are solely Navajos, the Navajo with the best qualifications is to be selected or retained.

D. Provide a fringe benefit plan that does not discriminate against Navajos in terms of coverage due to Navajo cultural or religious traditions or beliefs.

E. File with the ONLR a written Navajo Affirmative Action Plan (Program). An employer-sponsored cross-cultural program shall be an essential part of the affirmative action plans required by the NPEA. Such program shall primarily focus on the education of non-Navajo employees, including management and supervisory personnel, regarding the cultural and religious traditions or beliefs of Navajos, and their relationships to the development of employment policies that accommodate such traditions and beliefs.

F. Maintain a safe and clean working environment free of prejudice, intimidation, and harassment.

G. Not penalize, discipline, discharge, nor take any adverse action against any employee without a written notice showing just cause. This notice shall be given to the employee at the time of the adverse action.

H. Post in a conspicuous place on its premises, a Navajo preference policy notice.

I. For each Contractor/Subcontractor to be utilized on the project, the ONLR will require the following information:

1. Contractor/Subcontractor Manpower Projection Report. A list of all classifications and number of workers that will be required. This shall be submitted two weeks before start of work.

2. Job Description for each classification, listing experience, tool requirements, etc.

3. Name of Individual who will conduct the interview and hiring.

4. Employer Interview Report shall be submitted with the first certified payroll report.

5. Weekly Manpower Report shall be submitted with each week's certified payroll report.

6. Certified Payroll Report shall be submitted with each week's manpower report.

7. Navajo Affirmative Action Program shall be submitted two weeks before start of work.

8. Location of office and telephone number(s).

9. Name of Individual designated as contact person at the job site.

10. List of Key Personnel the contractor anticipates on bringing to the job site. These positions are usually the project superintendent and / or an individual with signatory authority. The contractors and / or subcontractors will be required to justify other positions not normally considered "key" personnel.

11. Job Summary and Duration of the Project.

The ONLR will provide an overview of NPEA requirements and in-depth orientation for all contractors. If you have any questions, call our office at (928) 871-6800.

Sincerely,

Name, Title
Office of Navajo Labor Relations
DIVISION OF HUMAN RESOURCES

cc: Chrono File
Project File

NOTICE OF THE
NAVAJO PREFERENCE IN EMPLOYMENT ACT

Employers must post this notice in a conspicuous place on its premises where notices to employees and job applicants are customarily posted.

Title 15 N.N.C. Chapter 7 requires that all employers doing business within the boundaries of the Navajo Nation or engaged in any contracts with the Navajo Nation, shall give preference in employment to enrolled members of the Navajo Nation and submit an affirmative action program.

Navajo Preference in Employment Act ("NPEA") applies to:

* Hiring	* Termination	* Transfers	* Recalls
* Promotion	* Reduction-in-force	* Training	* Recruitment

NPEA requires employers doing business within the territorial jurisdiction of the Navajo Nation to:

- Provide applicant with written job descriptions.
- Provide training to enhance the skills of Navajo Employees.
- Not discipline or discharge Navajo employees without just cause and written notification.
- Provide a work place free of prejudice, intimidation and harassment.
- Pay established Prevailing Wages for construction work.
- Provide Navajo Affirmative Action Program to employ Navajos in all job classifications including supervisory and management positions.

The ONLR requires employers to receive a NPEA orientation prior to commencing work on the Navajo Nation.

If you think your rights have been violated or see other possible violations of the Navajo Preference, call or write to the Office of Navajo Labor Relations for more information.

OFFICE OF NAVAJO LABOR RELATIONS

Post Office Box 1943 * Window Rock, Arizona 86515
Phone: (928) 871-6800 * Fax: (928) 871-7088

Copy of the **Navajo Preference in Employment Act** are available at the above office and at WWW.ONLR.NAVAJO-NSN.GOV

OFFICE OF NAVAJO LABOR RELATIONS

B

The purpose of the Office of Navajo Labor Relations is as follows:

A. To monitor and enforce the NAVAJO PREFERENCE IN EMPLOYMENT ACT (NPEA), Title 15 NNC Chapter 7.

B. To implement and carry out the labor policies of the Navajo Nation as established by the Navajo Nation Council.

C. To act as administrative agency for matter relating to employment preference in hiring, recruitment, promotion, lay-off, termination, transfer and other areas of employment.

D. To gather information from employers, employees, labor organization and governmental agencies relating to employment, compensation and working conditions.

E. To recommend and propose policies, rules, regulations, specific Navajo Preference Plans to the Health, Education and Human Services Committee of the Navajo Nation Council.

OFFICE OF NAVAJO LABOR RELATIONS

WINDOW ROCK ONLR OFFICE
Post Office Box 1943
Window Rock, Arizona 86515
Telephone: (928) 871-6800
Fax: (928) 871-7088
Website: http://www.onlr.navajo-nsn.gov

OFFICE OF NAVAJO LABOR RELATIONS

ADMINISTRATION STAFF

PROGRAM MANAGER I
Ronald M. Curtis
Phone Number: (928) 871-6545
Email: **rmcurtis@navajo-nsn.gov**

ADMINISTRATIVE ASSISTANT
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CONSTRUCTION EMPLOYMENT ANALYST
Michael Armijo
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OFFICE SPECIALIST
Dorinda Bryan
Phone Number: (928) 871-6800
Email: **dorinda.bryan@navajo-nsn.gov**

LABOR COMPLIANCE OFFICER
Gililand Damon
Phone Number: (928) 871-7431
Email: **gililanddamon@navajo-nsn.gov**

LABOR COMPLIANCE OFFICER
VACANT
Phone Number:
Email:

OUR MAILING ADDRESS
Post Office Box 1943
Window Rock, AZ 86515
Telephone: (928) 871-6800
Fax: (928) 871-7088
Website: **http://www.onlr.navajo-nsn.gov**

OUR PHYSICAL ADDRESS
Morgan Blvd. Bldg. #9748
Window Rock, AZ 86515

GENERAL DIRECTIONS TO OUR OFFICE

When driving to Navajo Nations President's Office you will pass the Navajo Nation Police Department, Fire Station and Administration Building One and Two. About ¼ mile you will turn west on Morgan Blvd. and you will see Education Center our office is directly across on the north side of Morgan Blvd. in a Blue Triple Wide Modular Building. You can call our office for directions at (928) 871-6800.

START NEW WORKERS OUT RIGHT

C

EXECUTIVE SUMMARY

The safer construction top-management, project-management and foreman give more orientation to their workers new to the job than less safe managers. Research proves that attention to new workers is a key characteristic of safe, productive management. This information shows:

WHY orientating workers increases profits
HOW to develop a new workers program tailored to your company

WHY NEW WORKERS PROGRAM INCREASES PROFITS

The facts show that construction companies which are putting their workers right to work without any orientation are spending needless dollars for accident costs, lost time, damaged materials and machinery, etc. These new workers are the ones who are having the accidents, accidents, which cost thousands in workers compensation costs.

The common construction practice of putting new workers directly on the job with no orientation is creating a very high accident rate for workers in their first few days and weeks on the job.

For most construction companies, it is their new workers – no matter how experienced they are – who are having the accidents. And these accidents are costing company profits.

Accidents to new workers can be substantially reduced by an orientation for employees new to the job. The investment of time to start a new worker out right will be repaid many times over when that worker works safely and does not have an accident.

Every accident creates many costs for your company. Insurance costs are one of the major costs. A recent study by Prof. Raymond Levitt of Stanford University, of 23 construction firms engaged in highway, heavy building, industrial and specialty trade construction found that companies with formal safety orientation programs for all new hires had an average insurance modification rates, 25% lower than their competitors who did not have any such programs. These reduced costs give a distinct advantage in the bidding process and allow for greater profits. Beyond these obvious costs yet equally important, is the fact that accidents have a very adverse impact on project morale and company reputation.

Orientation will pay off by reducing accidents. Few accidents mean more profits.

HOW TO DEVELOP YOUR COMPANY'S ORIENTATION PROGRAM

A successful company orientation program includes all new workers regardless of the number of years worked in the industry. It covers every worker new to the company, new to a particular job site or only new to a crew. This means that your new worker program needs three parts – each important.

1. Top management communication to new worker of company, commitments on safety, health, and expectations for each employee.

2. Project management orientation, including the special requirements for each project.

3. Foreman orientation to job and crew.

The worker who is new to the company is also new to the project and to the crew. Such people need the most orientation. They are unfamiliar with company policies and procedures. They are unfamiliar with job site conditions. They are unfamiliar with superintendents, foremen and fellow employees. They feel that they must prove themselves to the company, the superintendent, the foreman, and their fellow workers and to themselves.

Safety orientation, however, cannot stop with them. All employees, even those with company seniority, should receive safety orientation every time they are transferred to a new job site or crew. The particular organization and layout of the work and therefore the particular safety hazards at the job site are as unfamiliar to them as to a brand new employee. On many sites, even when there is no turnover in crews on the job, conditions change so much during the course of the job that all site employees need constant update orientation. Very productive safe superintendents stop their project workers for briefing sessions every time the work changes.

TOP MANAGEMENT'S ROLE IN ORIENTATION

Your company needs to develop two programs:

1. A New Worker Orientation-to-the-Company Program
2. A Management Training System to Insure Project and Crew Level Orientation

ESSENTIALS OF A COMPANY ORIENTATION PROGRAM

Your company program must be developed by upper management to suit the company. After a program is implemented, it needs to be reviewed and updated to guarantee that it is functioning as designed. The type of work and number of employees will govern the extent and formality of each company's program.

NEW WORKER ACTION STEPS:

Everyone new to your crew (no matter how experienced) is a new worker

1. Ask about last job.
2. Describe the new job.
3. Show worker around site; point out hazards.
4. Introduce worker to others
5. Describe your rules.
6. Give worker a test run on tools and equipment.
7. Keep an eye on the new worker during the first few days.
8. Check back to see how the worker is coming along.

Foremen and superintendents will be more willing to spend the necessary time on a new worker orientation if they are held accountable for accidents as part of their supervisory responsibilities.

START NEW WORKERS OUT RIGHT is only the first part of the **SAFER** program. The greatest reduction in accidents and the greatest increase in savings will result from combining orientation with the other four basic points of the safer program.

1. Account for all accidents – so foremen and supervisors know that safety is an important part of their job performance.

2. Foremen and Managers plan safety into each job so the safety is an integral part of job operations.

3. Every week a toolbox/tailgate meeting is held so that what the new worker hears and learns in orientation is constantly backed up and emphasized.

4. Reinforce safe performance so that the new workers and all the others realize that foremen, supervisors, and the companies back their interest in safety with recognition of those who do a good job on safety.

Your company's program should also include:

1. An introductory letter to each employee from the company president welcoming the new worker, emphasizing the importance of safety to the company and to the president, and describing the worker's responsibility to help maintain a safe working environment.

2. A Company Safety Practices handbook issued to each new worker, which spells out the particular rules and requirements of your company.

In addition, there are a number of additional methods which construction companies have used successfully such as audio-visual presentations (films, slides, videotapes) to be viewed by each worker covering company safety policy, new employees checklists which are read by the employee before the worker begins work and which require the employee's signature of the compliance on their employment application, short booklets describing company project information, and company procedures including workweek, absentee and pay procedures, rules on safety and other basic company policies.

THE COMPANY PLANS FOR JOB SUPERINTENDENT AND FOREMAN ORIENTATION

While a company orientation program developed from the elements just described is effective in reducing accidents and accident costs, even more effective is company program combined with a strong program on the project and crew level. The most effective orientation programs depend upon the key personnel directly in contact with the new worker. The superintendent and foreman are committed to orientating the new hire.

The job superintendent has two responsibilities for orientation. First, he must communicate a project-wide commitment to safety and a continuing awareness and involvement in safety performances as well as productivity and quality. Secondly, he must be certain that the foremen understand the importance of orientation and are trained to carry it our properly. The superintendent should also take an active interest in the new worker, ensuring that the necessary safety information has been provided and that the new worker is adjusting well to the job.

The foreman is typically the most closely involved with the new worker and thus is a critical person in the orientation process. The company should expect the foreman to spend sufficient time with the new worker to start the new worker out right. Foremen who save their company money and their crewmembers' personal and economic loss by orienting their new crewmembers have well-developed methods for starting a new worker. These methods can be taught successfully to other foremen. Stanford Construction Safety Management Safety and Health Project have developed a foreman pocket card listing the new worker action steps. This card reminds the foremen what to do.

IMPORTANT NOTICE: Contractor to Complete and return this form to ONLR **PRIOR** to start of work.

D

SAMPLE
(Use Company Letterhead)

CONTRACTOR/SUBCONTRACTOR'S MANPOWER PROJECTION REPORT

CONTRACTOR: _____ DATE: _____

PROJECT: _____ LOCATION: _____

ANTICIPATED START DATE: _____ END DATE: _____

CRAFT	NUMBER REQUIRED	REMARKS	CRAFT	NUMBER REQUIRED	REMARKS
Carpenter			Cement Finisher		
Electrician			Boilermaker		
Laborer			Bricklayer		
Drywall Installer/ Taper			Equipment Operator		
Pipefitter			Truck Driver		
Plumber			Ironworker		
Roofer			Painter		
Insulator			Soft Tile Setter		
Millwright			Sheet Metal Worker		

(**Note:** any special qualifications, i.e., 125-Ton Crane Operator, Testing Requirements, Journeyman or Apprenticeship/Trainee, etc.):

_____

_____

_____

Important Notice: All Contractors having subcontractors shall submit a sub-contractor listing, which shall include the name and address of each sub-contractors, telephone number and contact person.

Name: _____
(Authorized Company Representative & Title) **PRINTED**

Signature: _____

Send to: OFFICE OF NAVAJO LABOR RELATIONS
Attn: Michael Armijo, CEA
Post Office Box 1943
Window Rock, Arizona 86515

SUBCONTRACTORS LISTING

E

Information Required:

1. Name and addresses of all subcontractors. Include telephone numbers.

2. Name and title of position of company representative.

3. Brief description of what type of work the subcontractor will perform.

4. A Manpower Projection is required prior to start of work and a projected start and end date should be noted.

NOTE: A pre-construction conference is required **BEFORE** any work is started. It is the subcontractor's responsibility to contact ONLR to arrange for a separate meeting before any work begins.

JOB DESCRIPTION

F

1. Brief description or narrative picture of the job that highlights its general characteristics. The job summary should provide enough information stating the major functions and activities.

2. Avoid using ambiguous words, or those that leave themselves open to a number of possible interpretations.

3. Avoid using technical words unless you are sure they will be easily understood. If you must use them anyway, explain.

4. All employers (contractors and subcontractors) shall use non-discriminatory job qualification and selection criteria in employment.

5. Job descriptions shall contain those job-related qualifications which are essential to the performance of the basic responsibilities designated for each employment position, including any essential qualification concerning education, training and job-related experience, but excluding any qualifications relating to ability or aptitude to perform responsibilities in other employment positions. Demonstrated ability to perform essential and basic responsibilities shall be deemed satisfaction of "necessary qualifications".

NOTE: A copy of a job description shall be provided to the applicants or candidates at the time they express an interest in such position (15 NNC 604.D.).

G

RADIO STATIONS

KNDN RADIO STATION
1515 West Main Street
Farmington, New Mexico 87401
Telephone: (505) 325-1996
Telefax: (505) 327-2019

KTNN RADIO STATIO
Post Office Box 2569
Window Rock, Arizona 86515
Telephone: (928) 871-2582
Telefax: (928) 871-3479

NEWSPAPER

DAILY TIMES
Post Office Box 450
Farmington, New Mexico 87499
Telephone: (505) 325-4545
Telefax: (505) 564-4567

NAVAJO TIMES
Post Office Box 310
Window Rock, Arizona 86515
Telephone: (928) 871-1130
Telefax: (928) 871-1159

GALLUP INDEPENDENT
Post Office Box 1210
Gallup, New Mexico 87305
Telephone: (505) 863-6811
Telefax: (505) 722-5750

NAVAJO/HOPI OBSERVER
2224 East Cedar Avenue
Flagstaff, Arizona 86004
Telephone: (928) 226-9696
Telefax: (928) 226-1115

NAVAJO PREFERENCE STATEMENT

NPEA Section 4(B). Specific Requirements for Navajo Preference

1. "All employers shall include and specify a Navajo employment preference policy statement in all job announcements and advertisements and employer policies covered by this Act".

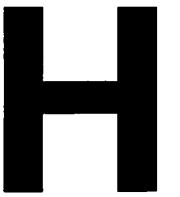
JOB SERVICE

New Mexico Dept. of Labor
503 West Highway 66, Suite 13, 14, 16
Gallup, New Mexico 87301
(505) 863-8884/Fax: (505) 863-8995

New Mexico Dept. of Labor
600 West Arrington Street
Farmington, New Mexico 87401
(505) 327-6126/Fax: (505) 326-6006

NPEA Section 4(B)(5): "All employers shall utilize Navajo Nation employment sources and job services for employee recruitment and referrals; provided, however, that employers do not have the foregoing obligations in the event a Navajo is selected for the employment who is a current employee of the employer."

AFFIRMATIVE ACTION REGULATIONS



I. INTRODUCTION

A. Pursuant to the ***Navajo Preference in Employment Act*** ("NPEA"), "all employers doing business within the territorial jurisdiction of the Navajo Nation, or engaged in any contract with the Navajo Nation shall give preference in employment to Navajos. Preference in employment shall include specific Navajo affirmative action plans and timetables for all phases of employment to achieve the tribal goals of employing Navajos in all job classifications including supervisory and management positions."

II. POLICY STATEMENT

A. The employer's policy statement shall indicate the Owner/Chief Executive Officer's position on the subject matters; assign overall responsibility, reporting and monitoring procedure. Specific items to be mentioned, should include, but are not limited to:

1. Providing employment and training opportunities for Navajo workers, including supervisory and management positions.

2. Employment decisions and personnel actions shall be based on the principles, intent and purposes of the ***Navajo Preference in Employment Act*** ("NPEA").

III. APPOINTMENT OF A MANAGEMENT OFFICIAL TO IMPLEMENT NAVAJO AFFIRMATIVE ACTION PROGRAM

A. A management official who has decision-making authority shall be appointed to implement and monitor the Affirmative Action Plan Program. His/Her responsibility will include, but are not limited to the following:

1. Developing Navajo Affirmative Action Plan Program, policy statement, goals and objectives, and internal and external communication procedures.

2. Identifying and/or assisting in the identification of problem areas in Section V. D.

3. Determining and implementing corrective solution(s) identified under Section V. D. with the assistance of line supervisors.

4. Designing and implementing audit and reporting systems that will:

   a. Measure effectiveness of the employer's program.

   b. Indicate and determine the need for remedial action(s).

c. Determine the degree to which the employer's goal and objectives have been accomplished.

5. Serve as liaison between the employer and the Office of Navajo Labor Relations ("ONLR").

IV. ESTABLISHMENT OF GOALS AND TIMELINES

A. The goals and timelines developed by the employers should be attainable based on analysis of the following:

1. All positions/classifications currently held by non-Navajos,

2. Qualifications required by the positions/classifications,

3. Timelines for Navajo worker(s) to obtain qualifications for positions/classification(s) held by non-Navajos, and

4. Identification of resources internally and externally to implement the plan.

V. WORKFORCE ANALYSIS

A. The affirmative action plan should contain a workforce analysis, defined as a listing of each job title as it appears in applicable collective bargaining agreements or payroll records ranked from the lowest paid to the highest paid within each department or organizational unit including mid-management and top-management. Lines of progression for each unit or department must be identified through which employees could move upward. Where there are no formal progression lines or lines or usual promotional sequences, job titles should be listed in order of wages/salary ranges.

B. An analysis of all positions/classifications of the employer, should be included, with explanation if Navajos are currently being under-utilized in any positions/classifications, "Under-utilization" is defined as having a fewer Navajos in any position/classification than would be expected by the availability of qualified Navajo workers.

C. An in-depth analysis of the following shall be made:

1. Composition of Navajo and non-Navajo employees by positions/classifications.

2. Composition of applicant flow of Navajos and non-Navajos.

3. Selection process including recruitment, job descriptions, interview criteria, written tests and final selection.

4. Retention, promotion, transfer, reduction in force and recall.

5. Apprenticeship program/trainings.

6. Company training – formal and informal.

D. If any of the following are identified in the analysis, a plan of corrective action must be established immediately:

1. An under-utilization of Navajo employees.

2. Vertical movement of Navajos occurs at a lesser rate than that of non-Navajos.

3. The selection process eliminates a significantly higher percentage of Navajos than non-Navajos.

4. Position/job descriptions are inaccurate in relation to actual duties and function.

5. Testing and/or test forms having adverse impact at a higher rate on Navajos than non-Navajos.

6. Non-support of the company's affirmative action policy by employees' supervisors or managers.

7. No formal criteria established for evaluating the effectiveness of the affirmative action program.

VI. UNIONS AND LABOR ORGANIZATIONS

A. Where employers are signatory to collective bargaining agreements, the union organizations and the employer shall file a joint employer – union affirmative action plan to the Office of Navajo Labor Relations pursuant to NPEA, Section 4.A.2.

B. The joint employer – union affirmative action policy shall specifically include a clause that the employer and the labor organization will provide preference in employment to Navajos.

C. When providing preference in employment to Navajos, the affirmative action policy shall require the following:

1. The employer shall specifically request Navajo workers for work to be done on the Navajo Nation. The employer shall not accept referrals of non-Navajos for work on the Navajo Nation, so long as potentially qualified Navajos are available, through respective local union halls.

2. The labor organization shall first refer all Navajos on the labor organization's referral list (s), regardless of their relative position on those lists.

3. The labor organization shall take necessary steps to recruit additional Navajo members so as to meet manpower requests for work to be conducted on the Navajo Nation.

VII. ENFORCEMENT

A. The designated company management official shall be responsible for compliance with the requirements of these Rules and Regulations.

B. Employers and organizations not in compliance will be subjected to formal charges in accordance with provisions of the ***Navajo Preference in Employment Act***.

C. Failure to comply with these Rules and Regulations or failure to submit an affirmative action policy may result, in addition to formal charges, corrective action by the Office of Navajo Labor Relations, including but not limited to, compelled hiring and/or training of Navajo workers.

VIII. EFFECTIVE DATE

A. These Regulations shall become effective 180 days from the date of approval by the Health, Education and Human Services Committee of the Navajo Nation Council.

B. Within 90 days of the effective date, employers must have submitted an affirmative action plan to the Office of Navajo Labor Relations.

IX. AMENDMENT

A. This regulation shall be amended from time to time as deemed necessary by the Health, Education and Human Services Committee of the Navajo Council.

ONLR/01-01-18

OFFICE OF NAVAJO LABOR RELATIONS
EMPLOYER INTERVIEW REPORT

Project

*N = Navajo
NN= Non-Navajo

Contractor

Location

Position

DATE	APPLICANT	N/NN	ADDRESS/TELEPHONE	INTERVIEWER	RESULTS

J

CONDITION FOR EMPLOYMENT EXPRESSED TO APPLICANT

1. Explain or inform worker what's expected of him/her. The work rules or conducts.

2. Each employee should know what their position is; rate of pay, and given a written personnel action form.

3. Thorough orientation on company/employer policies and procedures.

K

WRITTEN NOTIFICATION FOR ANY EMPLOYEE ACTION

1. "All employers shall not penalize, discipline, discharge nor take any adverse action against any employee without just cause. A written notification to the employee citing such cause for any of the above actions is required in all cases." (15 NNC 604.B.(8.))

L

SAMPLE
(Use Company Letterhead)

Date: _____

Company Name
Company Address
Company City, State, Zip Code
Telephone Number
Fax Number

RE: WEEKLY MANPOWER REPORT FOR WEEK ENDING: _____

Duration of Project: Start Date: _____

Completion Date: _____

Contract Number: _____

Project Title: _____

Project Stage of Completion (%): _____

Total Work Force (*): _____

*Justification for hiring non-Navajo employee:

_____

_____

_____

Important Notice: Each Weekly Manpower shall have a corresponding Certified Payroll Report attached.

_____
Representative Name & Title (Printed)

_____
Signature

Copy to: OFFICE OF NAVAJO LABOR RELATIONS
Attn: Michael Armijo, CEA
Post Office Box 1943
Window Rock, Arizona 86515

WEEKLY MANPOWER REPORT

For Week Ending: _____

	NAVAJO		NON-NAVAJO	
	Male	Female	Male	Female
Project Superintendent				
Project Foreman				
Carpenter				
Electrician				
Laborer				
Drywaller Installer/Taper				
Plumber				
Pipefitter				
Truck Driver				
Equipment Operator				
Ironworker				
Roofer				
Painter				
Soft Tilesetter				
Insulator				
Cement Mason				
Apprentice				
Other (Specify Craft)				
_____				
_____				
TOTALS:				

(List Only those Classifications Utilized During that Week)

OFFICE OF NAVAJO LABOR RELATIONS
CERTIFIED PAYROLL

M

NAME OF CONTRACTOR OR SUBCONTRACTOR:	ADDRESS/ TELEPHONE NO.:	WAGE DECISION NO.
PAYROLL NO.	FOR WEEK ENDING:	PROJECT NAME:	LOCATION:	CONTRACT NO.

(1) NAME OF EMPLOYEE	(2) *N/NN	(3) WORK CLASSIFICATION	OT/ST	(4) DAY AND DATE S	M	T	W	T	F	S	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS FICA	WITH-HOLDING TAX	OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
				HOURS WORKED EACH DAY														
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(2) * N / Navajo or NN / non-Navajo (PLEASE INDICATE)

PAYROLL STATEMENT OF COMPLIANCE

Date _____

I,_____ _____
(Name of signatory party) (Title)
do hereby state:

(1) That I pay or supervise the payment of the persons employed by _____

_____ on the_____
(Contractor or subcontractor) (Building or work)

_____; that during the payroll period commencing on the _____
day of_____, 20____ and ending the_____day of_____ 20_____
all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or subcontractor)
weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions ad defined in Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat 967; 75 Stat 357; 40 U.S.C. 267c), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract require to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with the State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

ف – In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in Section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

ف –Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in Section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO A CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

SAMPLE

(Use Company Letterhead)

PROJECT STATUS REPORT

Date: _____

PROJECT TITLE: _____

Duration of Project: START: _____ Completion: _____

Job Location: _____

Check Appropriate Spaces:

_____ Complete – No employees or workers on site.

_____ Near Completion, will be completed by: _____

_____ Other: _____

Additional Work Project: FROM: _____ TO: _____

Description of additional work required:

_____

_____

Company: _____

Representative Name: _____

Title: _____

IMPORTANT NOTICE

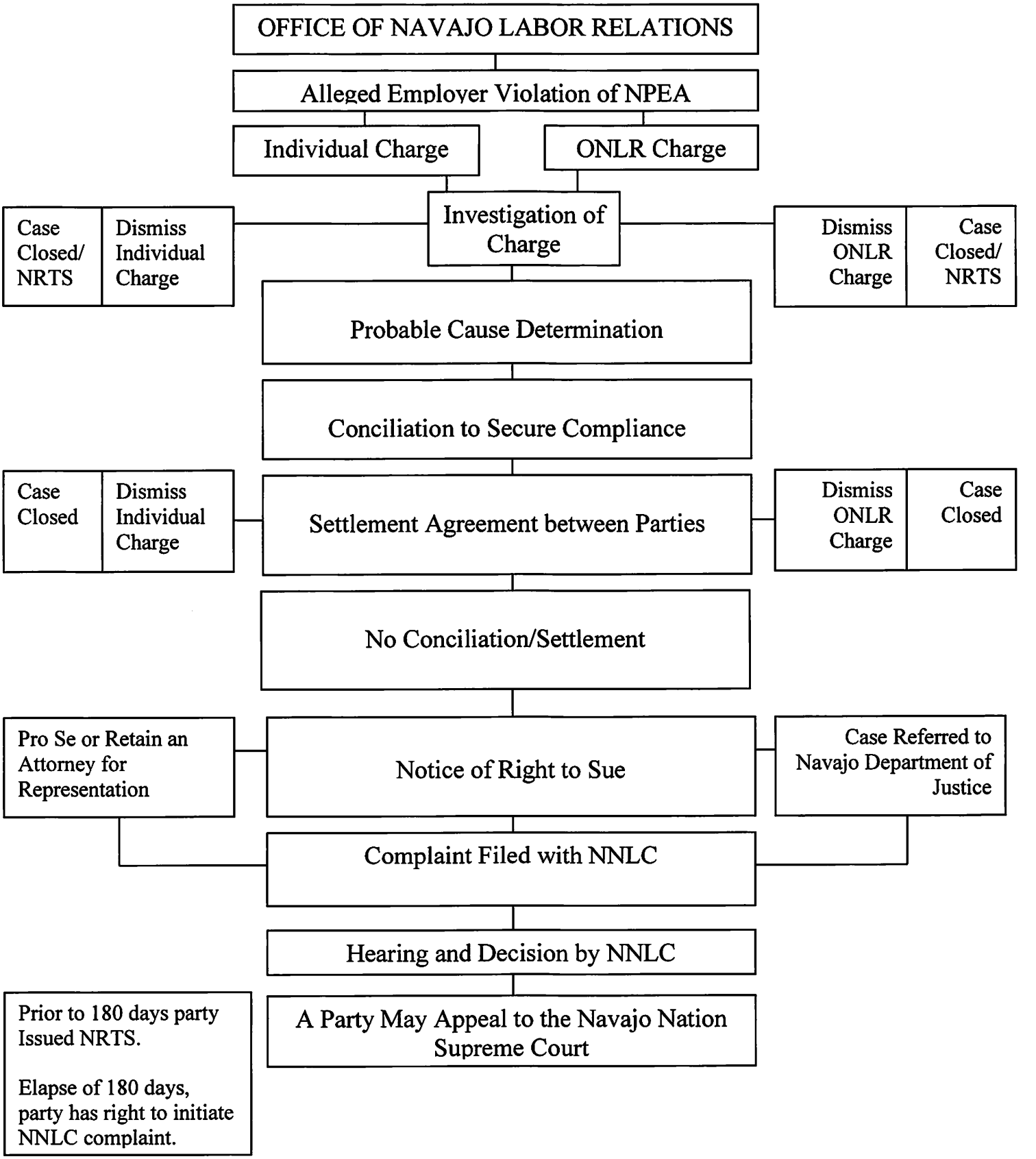
In the event contractor/subcontractor returns to perform additional work on this project, Office of Navajo Labor Relations must be contacted and a manpower projection report shall be submitted to ONLR before any work is to start. Form can be faxed to the Office of Navajo Labor Relations at:

Office of Navajo Labor Relations
at (928) 871-7088

NOTE: Please fill out this form within two weeks of completion of project.

Copy to: OFFICE OF NAVAJO LABOR RELATIONS
Attn: Michael Armijo, CEA
Post Office Box 1943
Window Rock, Arizona 86515

INVESTIGATION PROCESS FLOW CHART



June 7, 2024 AD24-416

Jason John, Director
NNDWR – WATER MANAGEMENT BRANCH
Post Office Box 678
Fort Defiance, Arizona 86504

RE: WESTERN NAVAJO PIPELINE PHASE I – LECHEE WATER SYSTEM IMPROVEMENTS

Dear Mr. John:

The Office of Navajo Labor Relations (ONLR) received your request for prevailing wage rates for the above reference project. Please find attached the ONLR wage rates which are applicable to the Pipeline/Water construction project.

Pursuant to the NPEA Section 607(B)(1) "...In all cases where construction is contemplated for which prevailing wage rates have not been set, the contract letting entity shall submit to ONLR a written request for a project prevailing wage scale. Such request shall be submitted not less than 60 days prior to the scheduled date for bid solicitation and shall include detailed information on the anticipated construction classifications, nature' of the project and completion plans...."

The ONLR respectfully requests that NNDWR – Water Management Branch to review the requirements of the Navajo Preference in Employment Act (NPEA) before any work begins. If a Pre-Construction Conference is scheduled, the ONLR Office at (928) 871-6800 is to be notified and a representative will explain the applicable laws to the general contractor and subcontractors, where necessary.

Should you have any questions, contact our office at (928) 871-6800. Thank You.

Sincerely,

Michael Armijo, CEA
OFFICE OF NAVAJO LABOR RELATIONS

CONCURRENCE:

Ronald M. Curtis, Program Manager I

ATTACHMENTS

OFFICE OF NAVAJO LABOR RELATIONS
PREVAILING WAGE

Wage Decision: ONLR24-0684P Date Issued: June 7, 2024

PIPELINE CONSTRUCTION

Pipeline Construction includes the construction, demolition, rehabilitation or repairs of gas, oil and water pipelines, gas and oil pumping stations and compressor station work.

WESTERN NAVAJO PIPELINE PHASE I – LECHEE WATER SYSTEM IMPROVEMENTS
NNDWR – WATER MANAGEMENT BRANCH

Effective January 1, 2024

Trade Classifications:	Hourly Rate:
Carpenter	$ 28.13
Cement Mason	$ 24.40
Concrete Finisher	$ 24.46
Derrick / Floor Hand	$ 25.86
Electrician	$ 25.26
Grouting Technician	$ 25.81
Insulator	$ 24.74
Ironworker	$ 26.40
Laborer	$ 21.13
Mechanic	$ 23.41
Painter	$ 21.77
Pipefitter / Pipe Layer	$ 27.41
Pumper	$ 27.72
Roustabout	$ 25.86
Sheet Metal	$ 26.78
Welder	$ 41.19
Rig time will be determined between Employer and Employee(s) at time of need.	
Welder's Helper	$ 27.10
Truck Drivers:	**Hourly Rate:**
Truck / Trailer	$ 23.07
Water Truck	$ 22.74
Equipment Operators:	**Hourly Rate:**
Backhoe	$ 24.33

Boom	$ 33.27
Bulldozer	$ 25.10
Compactor (Rubber/Steel)	$ 22.74
Crane	$ 27.21
Driller	$ 29.88
Forklift	$ 24.12
Front End Loader	$ 24.54
Motor Grader	$ 25.63
Rig	$ 26.93
Scraper	$ 25.89
Track Hoe	$ 26.92
Trencher	$ 25.63

The rates listed above are required minimum ONLR Prevailing Wage Rates. Contractors may pay rates above these rates. The ONLR Director will add wage rates for unlisted classifications needed for work only after review and approval. Overtime is one and one - half time the basic rate for hours worked over forty hours in one week. Foremen will receive an additional $7.41 per hour. **Where Federal Funds are involved, the Davis-Bacon rates apply.** Other exceptions may apply in accordance with the *Navajo Preference in Employment Act (NPEA),* Section 7(E). Apprentices must be enrolled in a recognized apprenticeship program as required by Section 7(A)(6) of the NPEA. The appropriate apprenticeship program as outlined by the NPEA Section 7(E)(7) will govern wage rates for such apprentices. These wages apply only to the **WESTERN NAVAJO PIPELINE PHASE I – LECHEE WATER SYSTEM IMPROVEMENTS** construction project.

APPROVED:

Ronald M. Curtis, Program Manager I

6/7/24
Date

REVISED 01/02/2024 marmijo

REQUEST FOR PREVAILING WAGE RATE DECISION

1 Project Title: Western Navajo Pipeline Phase I - LeChee Water System Improvements

2 Physical Location of Jobsite (including county)

Physical Address: Latitude 36.911845° Longitude -111.400280°

City/State/Zip Code: LeChee, Arizona 86040

County: Coconino

3 Estimated Bid Opening Date: September 18, 2024

4 Funding Source (who is funding the project): Navajo Nation

5 Estimated Cost of the Classification of Construction

Highway/Utilities: _____

Building: _____

Residential: _____

Heavy Engineering: $41,094,947.00

6 Description/Scope of Work (be specific): Construction of new One MGD Water Treatment Plant, Lake Powell Intake Facility, Booster Pump Station, and 6 miles of 12-inch Pipeline

7 Duration of Construction Project

Beginning Date: November 4, 2024

Ending Date: November 3, 2027

8 Address to where wage detemination should be sent to

Contact Person/Title: Jason John, Director

Name of Contracting Agency: NNDWR - Water Management Branch

Address: P.O. Box 678

City/State/Zip Code: Fort Defiance, AZ 86504

Telephone Number: 928-729-4003

Fax Number: 928-729-4029

Email Address: jasonjohn@navajo-nsn.gov

Appendix C: TAA-ROW

THE NAVAJO NATION
DEPARTMENT OF WATER RESOURCES
P.O. Box 678 • Fort Defiance Arizona 86504 • (928) 729-4003 • FAX: (928) 729-4129

BUU NYGREN
PRESIDENT

RICHELLE MONTOYA
VICE PRESIDENT

February 26, 2024

Malik H. Scott, Leasing Agent
Navajo Nation General Land Development Department
P.O. Box 2249
Window Rock, Arizona 86515 [150360]

Subject: Western Navajo Pipeline Phase 1 – LeChee Water System Improvements Project

Dear Malik:

Navajo Water Management Branch, Navajo Nation Department of Water Resources has prepared the Land Withdrawal Designation (LWD) application for the construction, operation, and maintenance of the LeChee Water System Improvements Project. The project building locations are south of Highway 98 and east of the Antelope Drainage Wash for booster Pump Station No. 3, just northwest of the former Navajo Generating Station (NGS) for the LeChee Water Treatment Plant, and at the existing Lake Powell Intake Facility for the Control Building and Existing Intake Facility Building. The application package for the LWD is in accordance with RDCJN-33-15. The improvements for the project are listed below.

New LWD Establishment:

1. Construct a new control building for the former NGS Lake Powell Intake Facility and repurpose the infrastructure inside the existing intake structure to accommodate the proposed culinary water demand. An existing pipeline between the Intake Facility and the Proposed Water Treatment Plant (WTP) site will be utilized. See Results of Survey drawings for location.
2. Construct a water treatment plant just northwest of the existing NGS with capacity of 1 MGD with the capability of expanding to 2 MGD in the future. See Results of Survey drawings for location.
3. Construct a booster station to pump water from the WTP to the existing water tanks that currently serve the community of LeChee. See Results of Survey and Legal Description for pipeline and booster pump station site.

The project will provide treated water supply and a transmission main for delivery of water to the LeChee water system. Note that at the completion of construction and inspection, Water Management Branch will transfer the facilities to Navajo Tribal Utility Authority for operation and maintenance.

Included with this letter of application are the following:

1. Letter of Application
2. Results of Survey
3. LeChee Chapter Support Resolution.
4. Environmental Assessment that includes:
    a. Biological Resources Compliance Form
    b. Cultural Resource Compliance Form

The timeline for the project is as follows.

1. Secure Right-of-Way by mid-March 2024.
2. Begin bidding in April 2024.
3. Award bid to contractor in June 2024.
4. Start Construction in August 2024.

Regards,

Jason John, Director
Navajo Nation Department of Water Resources

cc: Navajo Nation General Land Development Department
Steven Brenchley, Project Manager, Brown and Caldwell
Ettie Anderson Abasta, Department Manager, Navajo Land Department

Attachments:

1. Attachment A: Volume 1 LeChee Intake Structure and Control Building Vicinity Map; PDF FILE
2. Attachment B: Volume 2 LeChee Water Treatment Plant Vicinity Map; PDF FILE
3. Attachment C: Western Navajo LeChee Waterline Pipeline Design Results of Survey; PDF File
4. Attachment D: LeChee Chapter Support Resolution; PDF File
5. Attachment E: Environmental Assessment: Western Navajo Pipeline, Phase 1 LeChee Water System Improvements Project; This document contains the Biological and Cultural Compliance in Appendix A and B.
6. Proposed facility ROW kmz files sent in attached electronic submittal

NNDFW Review No. 23jefhg104

BIOLOGICAL RESOURCES COMPLIANCE FORM
NAVAJO NATION DEPARTMENT OF FISH & WILDLIFE
P.O. BOX 1480, WINDOW ROCK, ARIZONA 86515-1480

It is the Department's opinion the project described below, with applicable conditions, is in compliance with Tribal & Federal laws protecting biological resources including the Navajo Endangered Species & Environmental Policy Codes, U.S. Endangered Species, Migratory Bird Treaty, Eagle Protection & National Environmental Policy Acts. This form does not preclude or replace consultation with the U.S. Fish & Wildlife Service if a Federally-listed species is affected.

PROJECT NAME & NO.: Lechee Waste Water System ROW Adjustments

DESCRIPTION: The Navajo Nation Department of Water Resources, Water Management Branch proposes to install a water treatment plant (WTP), two associated booster pump stations (BPSs), and a waterline extending north from an existing water source in LeChee then northeast to the BPSs and WTP west of the Navajo Generating Station within the LeChee Chapter

LOCATION:
Area 1: T41N, R9E, Sec. 15, 3.5 acres Lat: 36°57'7.57"N, Long: 111°24'53.36"W
Area 2: T41N, R9E, Sec. 35, 11.3 acres Lat: 36°54'42.98"N, Long: 111°24'1.93"W
Area 3: T41N, R9E, Sec.34, & T40N, R9E, Sec. 3 Lat: 36°54'16.84"N, Long: 111°24'32.67"W
Area 4: T40N, R9E, Sec. 2 Lat: 36°53'32.28"N, Long: 111°24'13.63"W
Area 5: T40N, R9E, Sec. 16, 17 & 20
BOP: Lat: 36°51'56.91"N, Long: 111°26'36.70"W
EOP: Lat: 36°51'21.81"N, Long: 111°26'37.60"W

REPRESENTATIVE: Jean Marie Rieck, JE Fuller

ACTION AGENCY: Navajo Nation Department of Water Resources

B.R. REPORT TITLE/ DATE/PREPARER: Request for Biological Review & Compliance/ 1 MAY 2023/JE Fuller

SIGNIFICANT BIOLOGICAL RESOURCES FOUND: Area 3, Low Wildlife Sensitivity

POTENTIAL IMPACTS

NESL SPECIES POTENTIALLY IMPACTED: NA

FEDERALLY-LISTED SPECIES POTENTIALLY IMPACTED: NA
OTHER SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES: NA

AVOIDANCE / MITIGATION MEASURES:

1. NNHP recommends that the project sponsor shall implement Best Management Practices for erosion control and invasive weed prevention and mitigation. NNHP also recommends that temporary disturbances areas shall be reseeded with a native species mix that matches the species in surrounding non-disturbed areas.

Page 1 of 2

NNDFW –B.R.C.F.: FORM REVISED 04 MAR 2022

NNDFW Review No. 21lanc102

BIOLOGICAL RESOURCES COMPLIANCE FORM
NAVAJO NATION DEPARTMENT OF FISH AND WILDLIFE
P.O. BOX 1480, WINDOW ROCK, ARIZONA 86515-1480

It is the Department's opinion the project described below, with applicable conditions, is in compliance with Tribal and Federal laws protecting biological resources including the Navajo Endangered Species and Environmental Policy Codes, U.S. Endangered Species, Migratory Bird Treaty, Eagle Protection and National Environmental Policy Acts. This form does not preclude or replace consultation with the U.S. Fish and Wildlife Service if a Federally-listed species is affected.

PROJECT NAME & NO.: Western Navajo Pipeline LeChee Treatment Plant and Waterline Project / 1059-21

DESCRIPTION: The proposal includes the installation and construction of 5.8 miles of waterlines, a water treatment plant and two booster pump stations from the existing water tank in LeChee to the proposed treatment plant in Page, AZ.

LOCATION: T40N, R9E, Sections 2, 3, 10, 15, 16, 17, 20, 21; T41N, R9E, Sections 34, and 35, LeChee Chapter, Coconino County, Arizona

REPRESENTATIVE: Lynn A Neal - LA Neal Consulting, LLC

ACTION AGENCY: NNDWR - Water Management Branch

B.R. REPORT TITLE / DATE / PREPARER: Request for review and compliance /22 April 2021 / Lynn A Neal

SIGNIFICANT BIOLOGICAL RESOURCES FOUND: RCP Area 3

POTENTIAL IMPACTS

NESL SPECIES POTENTIALLY IMPACTED: (1) Aquila chrysaetos (Golden Eagle), G3;

FEDERALLY-LISTED SPECIES AFFECTED: NA

OTHER SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES: NA

AVOIDANCE / MITIGATION MEASURES: NA

CONDITIONS OF COMPLIANCE*: 1. All areas disturbed by the construction of the project shall be revegetated with a locally appropriate (i.e., native) seed mix that is free of invasive, noxious and undesirable plant species. Revegetation of the disturbed areas shall also include proper watering, mulching/straw and erosion controls so that the post construction areas is restored to suitable wildlife habitat.

2. Revegetation monitoring and reporting: Areas revegetated by this project shall monitor the site(s) for a time period of at least 3 years. If reseeding/plantings fail during the 3-year time period additional plantings or corrective actions shall be taken to ensure reseeding/planting success. Annual reports shall be submitted to the Navajo Natural Heritage Program detailing the success or failure of reseeding and corrective actions (if applicable). At the completion of monitoring (i.e., year 3) a final monitoring report shall be submitted for review and written approval by NNHP.

Page 1 of 2
NNDFW –B.R.C.F.: FORM REVISED 12 NOV 2009

3. All construction activities shall avoid the migratory bird breeding season (March 1 - August 15, of any year). A pre-construction survey should be performed if work occurs during this time period.

4. All above ground utility poles shall conform to a design standard(s) that comply with the Raptor Electrocution Prevention Regulations, RCS-43-08, September 10, 2008. So as to avoid unintentional electrocution of raptors that may perch on the utility pole(s).

FORM PREPARED BY / DATE: Brent Powers/ 1 Nov 2021

COPIES TO: (add categories as necessary)

☐ _____ ☐ _____

2 NTC § 164 Recommendation:	Signature	Date
☐Approval ☒Conditional Approval (with memo) ☐Disapproval (with memo) ☐Categorical Exclusion (with request letter) ☐None (with memo)	David Mikesic Gloria M. Tom, Director, Navajo Nation Department of Fish and Wildlife	11/1/2021

*I understand and accept the conditions of compliance, and acknowledge that lack of signature may be grounds for
the Department not recommending the above described project for approval to the Tribal Decision-maker.

Page 2 of 2
NNDFW –B.R.C.F.: FORM REVISED 12 NOV 2009

THE NAVAJO NATION

JONATHAN NEZ | PRESIDENT MYRON LIZER | VICE PRESIDENT

1 November, 2021
DR # 21lanc102

Lynn A Neal
LA Neal Consulting, LLC (LANC)
3038 Shonto Trail
Flagstaff, AZ 86005

Dear Lynn,

The Navajo Nation Department of Fish and Wildlife (NNDFW) reviewed LA Neal Consulting, LLC's request for review and compliance for the proposed "Western Navajo Pipeline LeChee Treatment Plant and Waterline Project / 1059-21" project. The proposal includes the installation and construction of 5.8 miles of waterlines, a water treatment plant and two booster pump stations from the existing water tank in LeChee to the proposed treatment plant in Page, AZ. The purpose of this letter is to inform you that the Navajo Nation is granting the proposed project ***Conditional Approval***.

The **Conditional Approval conditions** are as follows for the Western Navajo Pipeline LeChee Treatment Plant and Waterline project:

1. All areas disturbed by the construction of the project shall be revegetated with a locally appropriate (i.e., native) seed mix that is free of invasive, noxious and undesirable plant species. Revegetation of the disturbed areas shall also include proper watering, mulching/straw and erosion controls so that the post construction areas is restored to suitable wildlife habitat.

2. Revegetation monitoring and reporting: Areas revegetated by this project shall monitor the site(s) for a time period of at least 3 years. If reseeding/plantings fail during the 3-year time period additional plantings or corrective actions shall be taken to ensure reseeding/planting success. Annual reports shall be submitted to the Navajo Natural Heritage Program detailing the success or failure of reseeding and corrective actions (if applicable). At the completion of monitoring (i.e., year 3) a final monitoring report shall be submitted for review and written approval by NNHP.

Recommended Mitigation of Conditional Approvals for the Western Navajo Pipeline LeChee

Treatment Plant and Waterline project:

3. All construction activities shall avoid the migratory bird breeding season (March 1 - August 15, of any year). A pre-construction survey could be performed if work occurs during this time period.

4. All above ground utility poles shall conform to a design standard(s) that comply with the Raptor Electrocution Prevention Regulations, RCS-43-08, September 10, 2008. So as to avoid unintentional electrocution of raptors that may perch on the utility pole(s).

Survey protocols and habitat descriptions for the species listed above can be found in the species accounts available on NNHP's website at https://www.nndfw.org/nnhp/sp_account.htm. Surveys must be conducted during the appropriate time of year (for plants, during the fruiting/flowering season) by an experienced biologist who is permitted by the Navajo Nation. See here for a list of permitted consultants (https://www.nndfw.org/bi_consult_list_2014.pdf).

Survey reports need to be sent to NNHP prior to construction activities taking place. The survey contractor shall consult with the NNHP botanist and zoologist for positive identification and development of mitigation strategies if NESL plants and or wildlife species are found during surveys.

Please contact Leanna Begay via email at lbegay@nndfw.org with any questions that you have concerning the review of this project.

Sincerely,

Leanna Begay, Wildlife Manager
Navajo Natural Heritage Program
Department of Fish and Wildlife

CONCURENCE

11/1/2021

Gloria Tom, Director
Department of Fish and Wildlife

Date

NAVAJO NATION OFFICE OF THE PRESIDENT AND VICE PRESIDENT
POST OFFICE BOX 7440 · WINDOW ROCK, AZ 86515 · PHONE: (928) 871-7000 · FAX: (928) 871-4025

THE NAVAJO NATION

JONATHAN NEZ | PRESIDENT MYRON LIZER | VICE PRESIDENT

MEMORANDUM

TO : David Mikesic, Zoologist
Department of Fish and Wildlife
DIVISION OF NATURAL RESOURCES

FROM : Gloria M. Tom
Gloria M. Tom, Department Manager
III Department of Fish and Wildlife
DIVISION OF NATURAL RESOURCES

DATE : November 1, 2021

SUBJECT : DELEGATION OF AUTHORITY

I will be on leave from Monday, November 1, 2021 to Friday, November 05, 2021. I am hereby delegating you to act in the capacity of the Department Manager III, Department of Fish and Wildlife, effective 8:00 a.m. on Monday, November 1, 2021. This delegation shall end at 5:00 p.m. on Friday, November 05, 2021.

Your authority will cover the review and signing off on all routine documents pertaining to the Department of Fish and Wildlife, except for issues that you feel should have the attention of the Department Manager III.

ACKNOWLEDGEMENT:

David Mikesic 11/1/2021
David Mikesic, Zoologist
Department of Fish and Wildlife
DIVISION OF NATURAL RESOURCE

NAVAJO NATION OFFICE OF THE PRESIDENT AND VICE PRESIDENT
POST OFFICE BOX 7440 · WINDOW ROCK, AZ 86515 · PHONE: (928) 871-7000 · FAX: (928) 871-4025

General Land Development Department
PO Box 69 | St. Michaels, AZ 86511
928-871-6447 | gldd.org

Environmental Compliance Determination

Project Information

Title:	NWR LWD "LeChee Water System Improvements Project"
Size:	**Water Treatment** ± 492,904 Square Feet and/or ± 11.32 Acres, **Booster Station** ± 52,400 Square Feet and/or ± 1.20 Acres, **Utility Easement** ± 958,700 Square Feet and/or ± 22.01 Acres
Legal Description:	Sections 35 of Township 41 North, Range 9 East, G.S.R.M., LeChee, Coconino County, Arizona & Section 2 of Township 40 North, Range 9 East, G.S.R.M., LeChee, Coconino County, Arizona & Sections 2, 3, 10, 15, 16, 17, 20, & 21 of Township 40 North, Range 9 East & Sections 34 & 35 of Township 41 North, Range 9 East, G.S.R.M., LeChee, Coconino County, Arizona

Environmental Compliance Determination

The proposed TAA will be lawfully granted by the Navajo Nation through the authority of 25 C.F.R. §169.4(b)(3)(iii) and RDCJN-17-20, only granted to an independent legal entity wholly-owned and operated by the Navajo tribe that owns one hundred percent of the trust or restricted interest in the land.

The General Land Development Department's environmental compliance determination (ECD) confirms the above-mentioned Tribal Authorization Access (TAA) application meets the environmental clearance criteria of the Navajo Nation General Leasing Regulations (16 N.N.C. § 2301 et. Seq.). The proposed TAA and its apurtanances poses no significant impact(s) to the cultural, biological and the natural environments of the Navajo Nation.

Environmental Clearance Reviews

If at any time any historical properties, archeological resources, human remains, or other cultural items not previously reported are encountered, all activity will cease and the Navajo Nation Historic and Heritage Preservation Department will be contacted immediately. Furthermore, the aforementioned TAA applicant will also consult with the Navajo Nation EPA to ensure compliance with all Navajo Nation Environmental laws and permits (4 N.N.C. § 901 et. Seq.) that will be enforced after said TAA is granted. If at any time over the duration of the TAA an environmental taking or violation occurs, the grantee may be subject to disciplinary actions and possible cancellation of the authorization.

This ECD is valid so long as the "Effect/Conditions of Compliance" and "Standard Conditions" out-lined on the "Cultural Resource Compliance Form (HPD-23-773)" and "Biological Resource Compliance Form (23jefhg104) are implemented.

Approved by

Steven Chischilly Jr, Environmental Specialist GLDD

3/4/2024
Date

General Land Development Department
PO Box 69 | St. Michaels, AZ 86511
928-871-6447 | gldd.org

Environmental Compliance Determination

Project Information

Title:	NWR TAA "LeChee Water System Improvements Project"
Size:	**Water Treatment** ± 492,904 Square Feet and/or ± 11.32 Acres, **Booster Station** ± 52,400 Square Feet and/or ± 1.20 Acres, **Utility Easement** ± 958,700 Square Feet and/or ± 22.01 Acres
Legal Description:	Sections 35 of Township 41 North, Range 9 East, G.S.R.M., LeChee, Coconino County, Arizona & Section 2 of Township 40 North, Range 9 East, G.S.R.M., LeChee, Coconino County, Arizona & Sections 2, 3, 10, 15, 16, 17, 20, & 21 of Township 40 North, Range 9 East & Sections 34 & 35 of Township 41 North, Range 9 East, G.S.R.M., LeChee, Coconino County, Arizona

Environmental Compliance Determination

The proposed TAA will be lawfully granted by the Navajo Nation through the authority of 25 C.F.R. §169.4(b)(3)(iii) and RDCJN-17-20, only granted to an independent legal entity wholly-owned and operated by the Navajo tribe that owns one hundred percent of the trust or restricted interest in the land.

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Environmental Clearance Reviews

If at any time any historical properties, archeological resources, human remains, or other cultural items not previously reported are encountered, all activity will cease and the Navajo Nation Historic and Heritage Preservation Department will be contacted immediately. Furthermore, the aforementioned TAA applicant will also consult with the Navajo Nation EPA to ensure compliance with all Navajo Nation Environmental laws and permits (4 N.N.C. § 901 et. Seq.) that will be enforced after said TAA is granted. If at any time over the duration of the TAA an environmental taking or violation occurs, the grantee may be subject to disciplinary actions and possible cancellation of the authorization.

This ECD is valid so long as the "Effect/Conditions of Compliance" and "Standard Conditions" out-lined on the "Cultural Resource Compliance Form (HPD-23-773)" and "Biological Resource Compliance Form (23jefhg104) are implemented.

Approved by

Steven Chischilly Jr, Environmental Specialist GLDD

3/4/2024
Date

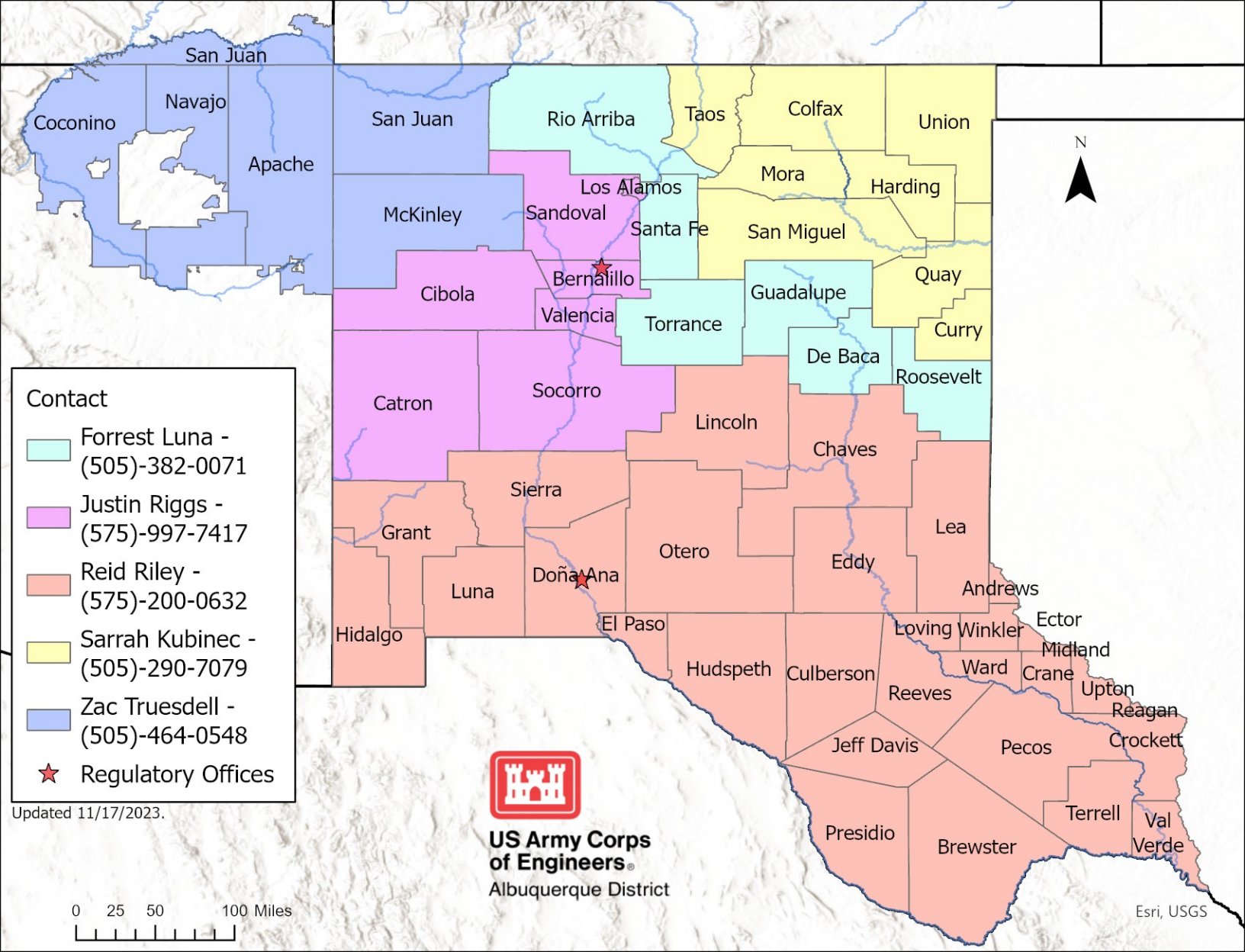

San Juan
Navajo
Coconino
Apache
San Juan
Rio Arriba
Taos
Colfax
Union
Mora
Harding
Los Alamos
Sandoval
McKinley
Santa Fe
San Miguel
Quay
Bernalillo
Cibola
Guadalupe
Valencia
Torrance
Curry
De Baca
Roosevelt
Catron
Socorro
Lincoln
Chaves
Sierra
Grant
Otero
Lea
Eddy
Doña Ana
Luna
Andrews
Ector
El Paso
Loving
Winkler
Midland
Hidalgo
Hudspeth
Culberson
Ward
Crane
Upton
Reeves
Reagan
Crockett
Jeff Davis
Pecos
Terrell
Presidio
Brewster
Val Verde
N
Contact
Forrest Luna - (505)-382-0071
Justin Riggs - (575)-997-7417
Reid Riley - (575)-200-0632
Sarrah Kubinec - (505)-290-7079
Zac Truesdell - (505)-464-0548
Regulatory Offices
Updated 11/17/2023.
US Army Corps of Engineers
Albuquerque District
0 25 50 100 Miles
Esri, USGS

EXHIBIT "B"

NAVAJO NATION TRIBAL AUTHORIZATION ACCESS (TAA) TERMS AND CONDITIONS

Navajo Nation Department of Water Resources (NNDWR)

1. The term of the TAA shall be in Twenty (20) years, beginning on the date the TAA is authorized by the Navajo Nation.

2. Consideration for the TAA is assessed at $ 21,451,192.60 and shall be paid to the Controller of the Navajo Nation, in lawful money of the United States, and a copy of the receipt for such payment provided to the Navajo Nation Minerals Department, or its successor, within TEN (10) days of approval of consent by the Navajo Nation.

   If consideration has been waived, the Navajo Nation contributes the amount listed above to the project because the project serves a public purpose and will benefit Navajo residents.

3. The Assignee may develop, use and occupy the TAA for the purpose(s) of CONSTRUCTING, OPERATING, AND MAINTAINING the LeChee Water System Improvements Project in LeChee Chapter, Coconino County, AZ, EOR 22250.
   The Assignee may not develop, use or occupy the TAA for any other purpose, nor allow others to use or occupy the TAA for any other purpose, without the prior written approval of the Navajo Nation. The approval of the Navajo Nation may be granted, granted upon conditions or withheld in the sole discretion of the Navajo Nation. The Assignee may not develop, use or occupy the TAA for any unlawful purpose.

4. In all activities conducted by the Assignee within the Navajo Nation, the Assignee shall abide by all laws and regulations of the Navajo Nation and of the United States, now in force and effect or as hereafter may come into force and effect, including but not limited to the following:

   a. Title 25, Code of Federal Regulations, Part 169.4 (b); subject to the terms of this TAA.

   b. All applicable federal and Navajo Nation antiquities laws and regulations, with the following additional condition: In the event of a discovery, all operations in the immediate vicinity of the discovery must cease and the Navajo Nation Heritage and Historic Preservation Department must be notified immediately. As used herein, "discovery" means any previously unidentified or incorrectly identified cultural resources, including but not limited to archeological deposits, human remains, or location reportedly associated with Native American religious/traditional beliefs or practices;

   c. The Navajo Preference in Employment Act, 15 N.N.C. §§ 601 et. seq., and the Navajo Nation Business Opportunity Act, 5 N.N.C. §§ 201 et. seq.; and

   d. The Navajo Nation Water Code, 22 N.N.C. § 1101 et seq., Assignee shall apply for and submit all applicable permits and information to the Navajo Nation Water Resources Department, or its successor.

5. The Assignee shall ensure that the air quality of the Navajo Nation is not jeopardized due to violation of applicable laws and regulations by its operations pursuant to the TAA.

6. The Assignee shall clear and keep clear the lands within the TAA to the extent compatible with the purpose, and shall dispose of all vegetation and other materials cut, uprooted, or otherwise accumulated during any surface disturbance activities.

7. The Assignee shall reclaim all surface lands disturbed related to the TAA, as outlined in a restoration and re-vegetation plan, which shall be approved by Navajo Nation Environmental Protection Agency (NNEPA). The Assignee shall comply with all provisions of such restoration and re-vegetation plan and shall notify the Director of the NNEPA immediately upon completion of the surface disturbance activities so that a site inspection is made.

8. The Assignee shall at all times during the term and at the **Assignee** sole cost and expense, maintain the land subject to the TAA and all improvements located thereon and make all necessary and reasonable repairs.

9. The Assignee shall obtain prior written permission to cross-existing TAA or rights-of-way, if any, from the appropriate parties.

10. The Assignee shall be responsible for and promptly pay all damages when they are sustained.

11. The Assignee shall indemnify and hold harmless the Navajo Nation, and respective authorized agents, employees and occupants, against any liability for loss of life, personal injury and property damages arising from the development, use or occupancy or use of TAA by the Assignee.

12. The Assignee shall not assign, convey, transfer or sublet, in any manner whatsoever, the TAA or any interest therein, or in or to any of the improvements on the land subject to the TAA, without the prior written consent of the Navajo Nation. Any such attempted assignment, conveyance or transfer without such prior written consent shall be void and of no effect. The consent of the Navajo Nation may be granted, granted upon conditions or withheld in the sole discretion of the Navajo Nation.

13. The Navajo Nation may terminate the TAA for violation of any of the terms and conditions stated herein. In addition, the TAA shall be terminable in whole or part by the Navajo Nation for any of the following causes:
    a. Failure to comply with any terms and conditions of the gran or of applicable laws or regulations;
    b. A non-use of the TAA for the purpose for which it is granted for a consecutive two-year period; and
    c. The use of the land subject to the TAA for any purpose inconsistent with the purpose for which the TAA is authorized.
    d. An abandonment of the TAA.

14. At the termination of this TAA, the Assignee shall peaceably and without legal process deliver up the possession of the premises, in good condition, usual wear and tear accepted. Upon the written request of the Navajo Nation, the Assignee shall provide the Navajo Nation, at the Assignee sole cost and expense, with an environmental audit assessment of the premises at lease sixty (60) days prior to delivery of said premises.

15. Holding over by the Assignee after the termination of the TAA shall not constitute a renewal or extension thereof or give the Assignee any rights hereunder or in to the land subject to the TAA or to any improvements located thereon.

16. The Navajo Nation shall have the right, at any reasonable time during the term of the TAA, to enter upon the premises, or any part thereof, to inspect the same and any improvements located thereon.

17. By acceptance of the TAA, the Assignee consents to the full territorial legislative, executive and judicial jurisdiction of the Navajo Nation, to levy fines and to enter judgements for compensatory and punitive damages and injunctive relief, in connection with all activities conducted by the Assignee within the Navajo Nation or which have a proximate (legal) effect on persons or property within the Navajo Nation.

18. By acceptance of the TAA, the Assignee covenants and agrees never to contest or challenge the legislative, executive or judicial jurisdiction of the Navajo Nation of the basis that such jurisdiction is inconsistent with the status of the Navajo Nation as an Indian nation, or that the Navajo Nation government is not a government of general jurisdiction, or that the Navajo Nation government does not possess full police power (i.e., the power to legislate and regulate for the general health and welfare) over all lands, persons and activities within its territorial boundaries, or on any other basis not generally applicable to a similar challenge to the jurisdiction of a state government. Nothing contained in this provision shall be construed to negate or impair federal responsibilities with respect to the land subject to the TAA or to the Navajo Nation.

19. Any action or proceeding brought by the Assignee against the Navajo Nation in connection with or arising out of the terms and conditions of the TAA shall be brought only in the Courts of the Navajo Nation, and no such action or proceeding shall be brought by the Assignee against the Navajo Nation in any court of any state.

20. Nothing contained herein shall be interpreted as constituting a waiver, express or implied, of the sovereign immunity of the Navajo Nation.

21. Except as prohibited by applicable federal law, the laws of the Navajo Nation shall govern the construction, performance and enforcement of the terms and conditions contained herein.

22. The terms and conditions contained herein shall extend to and be binding upon the successors, heirs, assigns, executors, administrators, employees and agents, including all contractors and subcontractors, of the Assignee and the term “Assignee,” whenever used herein, shall be deemed to include all such successors, heirs, assigns, executors, administrators, employees and agents.

23. There is expressly reserved to the Navajo Nation full territorial legislative, executive and judicial jurisdiction over the TAA and all lands burdened by the TAA, including without limitation over all persons, including the public, and all activities conducted or otherwise occurring within the TAA; and the TAA and all lands burdened by the TAA shall be and forever remain Navajo Indian Country for purposes of Navajo Nation jurisdiction.

24. The Navajo Nation reserves the right to grant TAA within a TAA or right-of-way referenced herein for utilities, provided that such the TAA or rights-of-way do not unreasonable interfere with the Assignee’s use of the TAA or right-of-way.

Jason John, Director
Navajo Nation Department of Water Resource
PO Box 678
Fort Defiance, AZ 86504

July 16, 2024

Dear Mr. John,

Pursuant to RDCJN-33-15 the Resources and Development Committee delegates authority to the Manager of the Navajo Land Department to approve Land Withdrawals on the Navajo Nation.

The Land Withdrawal Designation consists of a 11.48± acres tract on Navajo Nation Trust Lands otherwise known as the *Navajo Nation Water Management Branch LeChee Water System Improve Project Phase 1,* is **granted approval**. The Land Withdrawn is in Section 15 and 35 of Township 41 North, Range 9 East, Gila and Salt River Meridian, LeChee, Coconino County, Arizona. The Navajo Nation Water Management Branch is authorized to proceed with construction, operation, and maintenance. Once construction is completed, the Water Management Branch will transfer the facilities to Navajo Tribal Utility Authority (NTUA) for operation and maintenance.

Thank you for your application to the Navajo Land Department / General Land Development Department. If you have any questions or inquiries, please contact the General Land Development Department at (928) 871-6447.

Sincerely,

THE NAVAJO NATION

Byron Bitsoie Sr., *Department Manager III*
Navajo Land Department
Division of Natural Resources

Jason John, Director
Navajo Nation Department of Water Resources
PO Box 678
Fort Defiance, AZ 86504

May 9, 2024

Dear Mr. John,

Pursuant to RDCJN-17-20 and 25 CFR 169.4 (b) (3) (iii) the Tribal Authorization Access (TAA) can be authorized to a wholly owned and operated Navajo Nation entity without the Bureau of Indian Affairs approval. This Resolution from the Resources and Development Committee authorizes the Manager of the Navajo Land Department to grant approval for Tribal Authorization Access projects.

The Utility Easement consists of 5.8± miles and/or 23.21± acres across Navajo Nation Trust Lands otherwise known as the *Navajo Nation Water Management Branch: Western Navajo Pipeline Phase 1,* is **granted approval**. The project is in Sections 35 of Township 41 North, Range 9 East; Section 2 of Township 40 North, Range 9 East; Sections 2, 3, 10, 15, 16, 17, 20, & 21 of Township 40 North, Range 9 East, and Sections 34 & 35 of Township 41 North, Range 9 East, G.S.R.M., LeChee, Coconino County, Arizona.

Pursuant to RDCMA-13-24 (G) the Manager of Navajo Land Department can waive the consideration for assessment amount for Tribal Authorization Access when it serves a public purpose, the project serves the community of LeChee. The Manager of Navajo Land Department hereby waives the assessment amount. The Navajo Nation Department of Water Resources is authorized to construct, operate, and maintain said Navajo Trust Land for twenty (20) years under the terms and conditions herein as **Exhibit B**.

Thank you for your application to the Navajo Land Department / General Land Development Department. If you have any questions or inquiries, please contact the General Land Development Department at (928) 871-6447.

Sincerely,

THE NAVAJO NATION

Byron Bitsoie Sr., *Department Manager III*
Navajo Land Department
Division of Natural Resources

Appendix D: Construction Permit

Navajo Tribal Utility Authority
100 Edgewater Drive
Tuba City, AZ 86504

JUN 11 2024

Re: Drinking Water Permit WCP-0229 for NTUA Western Navajo Pipeline Phase 1- LeChee Water Improvements System

Dear NTUA,

The Engineering Section of the Public Water Systems Supervision Program has completed a review of the above referenced project. The construction permit is approved and attached herewith. Please note and consider our comments that are attached to the permit.

1. **After completion of the construction** NTUA must verify/confirm, by field measurements, the design/control measures for the different construction activities associated with the approved projects versus the design parameters/assumptions as per regulations. This will assure compliance with the minimum design requirements per Navajo Nation Primary Drinking Water Regulations.

NTUA can proceed with the construction work. **Please submit** a construction completion report and schedule a field inspection after the construction is complete.

Attached is Invoice# 511005-24-2452 for $6,195.70 there was a 6% Navajo Nation tax charge added as indicated on the invoice. If you have any question, please email the Engineering Section of Public Water Systems Supervision Program at info@navajopublicwater.org.

Sincerely,

Yolanda Barney, Department Director
Surface and Groundwater Protection Department
Navajo Nation Environmental Protection Agency

Attachments: Fee Schedule of Public Water Construction Permit
Invoice of Public Water Construction Permit Fee
Public Water Construction Permit

Invoice

Invoice #: 511005-24-2452

Invoice Date: June 10, 2024

Bill To:

Navajo Tribal Utility Authority
Attn: Accounts Payable
P.O. Box 170
Ft. Defiance, AZ 865004

Return To:

Navajo Nation EPA
PWSS Program
P.O. Box 339
Window Rock, AZ 86515

Item	PWSID#	Description	Total
Construction Permit WCP-0229	NN0403006	Public Water Construction Permit WCP – 0229 for LeChee Water Systems-Western Navajo Pipeline Ph1	$ 6,195.70
		Subtotal:	$ 5,845.00
		Navajo Nation Tax @ 6%:	$ 350.70
		Balance Due:	$ 6,195.70

Please remit to address below within 30 days.

**For Credit Card Payments call (928) 871-6307 NN Cashiers for payment processing and submit copy of receipt. Use Acct# 511005.1869
**Submit copy of receipt when payment has been made with NN Cashiers

Company Check/Money Order or Cashier's Check ONLY:
Navajo EPA-PWSS Program
PO Box 339
Window Rock, Arizona 86515
Phone: (928)871-7755
Fax: (928)871-7818
Email: info@navajopublicwater.org

Invoice #: 511005-24-2452 Construction Permit # WCP – 0229

Navajo Nation Environmental Protection Agency
Public Water Systems Supervision Program
P.O. Box 339
Window Rock, Arizona 86515
Phone #: (928) 871-7755 Fax #: (928) 871-7818
Website: http://www.NavajoPublicWater.org E-mail: Engineers@NavajoPublicWater.org

Construction Permit for Public Water System

Project Name/Number: Western Navajo Pipeline Phase 1-LeChee Water Improvements System
PWSSP File: NN0403006
Project Location: LeChee, AZ

Project Type: (Check all that apply)

- [ ] New Public Water System
- [X] Extension/Modification to Existing System
- [ ] New Ground/Surface Water Source
- [X] Water Treatment Plant
- [ ] Bottle Water System
- [X] Water Line and Appurtenances
- [X] Booster Station
- [ ] Other

PWS Name: NTUA LeChee Water System PWSID: NN0403006

Project Owner:

Name	Navajo Tribal Utility Authority (NTUA)
Address	100 Edgewater Drive, Tuba City, AZ 86504
Contact Person	
Phone/Fax	(800) 528-5011

Project Engineer:

Name	Corwin Willmore
Company	Brown & Caldwell
Address	6975 Union Park Center Suite 490, Midvale, UT 84047
Phone/Fax	(801) 316-9800

This is to certify that the application package of the above-mentioned project has been reviewed by the Engineering Section of the Public Water Systems Supervision Program of the Navajo Nation Environmental Protection Agency and is found to comply with the Navajo Nation Safe Drinking Water Act and the Navajo Nation Primary Drinking Water Regulations. The project is approved for the construction on this day of JUN 11 2024 with the conditions set forth on the cover letter dated JUN 11 2024.

Yolanda Barney, Department Director
Navajo Nation Environmental Protection Agency

Construction Permit #: WCP - 0229

Attachment: Conditions for the Construction Permit

1. The construction permit shall be void if the construction does not start within one year of the approval date, or is halted for more than one year, or is not completed within three years after the date construction begins, unless a permit extension is obtained from the NNEPA.

2. The NNEPA must be notified of the construction start date at least seven (7) days in advance of construction.

3. The NNEPA personnel may enter the construction site at any time to conduct inspection and sampling.

4. Any deviation from the approved plans and specifications which could change hydraulic conditions and operation of the public water system must be approved by the Director prior to making such deviation in the field.

5. The construction permit shall not diminish the duty of owner, operator, and the project engineer to comply with the applicable acts and regulations and industry standards and to provide adequate system design and performance.

Yolanda Barney, Department Director
Navajo Nation Environmental Protection Agency

Appendix E: Water Use Permit

Department of Water Resources
Technical, Construction and Operations Branch
P.O. Box 678
Fort Defiance, Arizona 86504
Ph. No. (928) 729-4132/Fax No. (928) 729-4421
www.watercode.navajo-nsn.gov

WATER USE PERMIT

WUP NO: _____

VALID FROM _____to _____

NOTE: This permit is valid only upon signature of the Branch Director, Technical, Construction and Operations Branch (TCOB), or Director, Department of Water Resources (DWR) or Division Director, Division of Natural Resources (DNR). Please read Water Use Permit information sheet before completing this form.

APPLICANT: _____
LAST NAME **FIRST; OR COMPANY NAME**

MAILING ADDRESS: _____

CITY: _____ STATE: _____ ZIP CODE: _____

CONTACT PERSON: _____ TELEPHONE NO: _____

EMAIL ADDRESS: _____

* * * *

WUP NO:_____

LAND STATUS

( ) TRUST ( ) FEE ( ) LEASE ( ) ALLOTMENT ( ) OTHER_____
WATERSHED NAME: _____ USGS WATERSHED CODE NO._____

CONSUMPTIVE WATER USE NEEDED FOR

PRIMARY:

( ) Domestic **( ) Recreational**
( ) Municipal **( ) Industrial**
( ) Livestock **( ) Mining**
( ) Irrigation Agriculture **( ) Commercial**
( ) Wildlife and Fish **( ) Other _____**

*** * * \

CONDITIONS

1. Purpose of definition the Technical Construction and Operations Branch (TCOB), Navajo Nation Department of Water Resources (Department) and "Permittee" means entity, company, water user and its successors.

2. Permittee agrees to comply with the terms and conditions of the Water Use Permit and the Navajo Nation Water Code. Permittee understands and agrees that failure to comply with the permit shall result in forfeiture of this permit.

3. This permit may be revoked if:

   A. Permittee is not in compliance with any conditions set forth in this permit.
   B. Permittee is in violation of any provision of the Navajo Nation Water Code.
   C. Insufficient water supplies are present for whatever reason or terms.
   D. For any other due cause as a result of negative findings from investigation that is performed by both department and permittee.

4. Permit is valid only for the terms specified and shall expire at the end of the term or at the completion of the proposed project or required water usage, whichever comes first. Permittee's rights to obtain water will be limited to the allocated amount. Permittee does not have authority to transfer, convey, or allocate the water subject to this permit to any third party or for any other project not specified herein. It is further agreed between the parties that this permit does not give the Permittee the right to haul water for hire on the Navajo Reservation, or on land subject to the jurisdiction of the Navajo Nation.

5. Permittee agrees to pay for the water used at the applicable water use rate fee. Payment must be made by Permittee within ten working days of receipt of the invoice. The fees for this permit will be adjusted annually over the next five (5) years by multiplying the fee amount that is in effect at the time of an adjustment by the CPI change. The new fee amount shall take effect immediately. CPI change means the amount reported as the "12 months Percent Change" under the column for "Annual" in the Consumer Price Index All Urban Consumers, U.S. City Average, All Items, Base Periods 1982-84=100 (not seasonally adjusted), as published by the Bureau of Labor Statistics of the United States Department of Labor ("BLS") for the calendar year prior to the year in which the CPI Adjustment is being made. If the applicable BLS publication ceases to be compiled or published, then such other available data or index as the Navajo Nation determines would be the most comparable to such index shall be used. An Annual Consumer Price Index adjustment from the Bureau of Labor Statistics will be used for the compounded water use rate and current effective annual interest rate. The annual billing period will be from January through December. Any restructuring of water use fees or water rate increase by the Resources and Development Committee of the Navajo Nation Council will be effective immediately.

6. Permittee agrees to submit meter readings or other evidence showing the quantity of water withdrawn pursuant to this permit to the TCOB office at the end of the term or at the completion of the proposed project or required water usage, whichever comes first. The water use data will be submitted by the Permittee.

7. Any breach of this permit or any failure to pay in full for the water used by due date will be a breach of this permit and the Navajo Nation may terminate this permit upon any breach by giving the Permittee notice of such termination in writing not less than ten (10) days prior to the effective date of termination, provided that if, Permittee remedies any such breach within said ten (10) days period, the permit will remain in effect. Said notice shall state the grounds upon which the termination is being made. It will be a breach of this permit and grounds for termination thereof, if Permittee obtains, or attempts to obtain any other water from any source within the jurisdiction of the Navajo Nation other than the source or sources permitted in this permit.

8. Permittee agrees to obtain a Water Use Permit for each place of withdrawal of water in conjunction with the place of use prior to making use of such source. Authorization granted under this permit is only for the stated use of the indicated water source location. Permittee is responsible for obtaining any applicable permit from the appropriate department/agency that may be required for the proposed work

9. Permittee agrees to hold harmless and indemnify the Navajo Nation against any and all losses, costs, damages, claims, expenses or other liability whatsoever, rising out of, or connected with Permittee's services under this permit including but not limited to, any accident or injury to person or property.

CONDITIONS

10. All disputes arising from the subject matter of this permit or the performance thereof will be settled in the Navajo Nation Courts and under the laws of the Navajo Nation. Nothing herein shall be construed as a waiver of the sovereign immunity of the Navajo Nation, pursuant to 1 N.T.C. §351 et seq.

11. Permittee agrees to maintain the immediate area in a safe and sanitary manner, free of unnecessary debris.

12. If permittee hires sub-contractors to haul water covered by Water Use Permit, Permittee must notify the Navajo TCOB office of sub-contractors in writing.

13. In case of a Tribal Well, no more than two-thirds of the water in the water tank will be withdrawn. Before further withdrawals are to be made from a water tank, the water level in the tank must be allowed to rise back to the original level.

14. It is agreed that the Department of Water Resources reserves the right to limit the quantity of water that can be taken under this permit to the above stated amount or less, to limit or restrict the sources of the Navajo Nation and in the best interests of the Navajo Nation. Such limitation will be imposed at the discretion of the Director, Department of Water Resources.

15. Permittee agrees to allow reasonable entry upon their premises by Navajo Nation Employees engaged in the administration of this permit.

16. When insufficient water supplies are present for whatever reason or terms, the following priority of uses shall be considered in the order in which they are listed: 1) Domestic and municipal uses 2) Stock watering uses 3) Agriculture uses 4) Instream needs, for fish, wildlife conservation and recreation uses 5) Economic development uses including industrial and power uses.

Permittee's Signature _____ **Date** _____

OFFICIAL USE ONLY

( ) Yes ( ) No _____ **Date** _____
Technical Reviewer

Approved/Disapproved: _____ **Date** _____
Branch Director, TCOB, DWR, DNR

If Disapproved State Reasons:

Revised 08/10/17

Appendix F: NTUA Forms

Navajo Tribal Utility Authority
Certificate of House Wiring/Meter Loop Compliance

NTUA requires that a certification be made by a registered or licensed electrician concerning the installation of meter loop(s) prior to service being connected by NTUA. The certificate of the installation acknowledges the existence of NTUA standards as applicable portions of the National Electric Code (NEC). NTUA complies with the latest edition of the NEC at the time of meter loop installation. One form is required for each residence involved.

Consumer Name:_____

Mailing Address:_____

Physical Address:_____

Home/Building Description:_____

Color:_____ TYPE: House [ ] Mobile Home [ ] Hogan [ ] Business [ ] Pole [ ] Other:_____

Nearest Neighbor:_____

Chapter/Project Name:_____

I certify that the wiring referenced above was performed under my supervision and is in compliance with the (year) _____ issue of the National Electric Code, the NTUA Standards and the standards of the State of _____ and residence is ready for electric with a _____Amp Service.

It is understood that the installation is controlled by the most restrictive code or regulation.

ACKNOWLEDGED by Licensed Electrician
:

_____
(print name)

_____
(signature) (date)

License #:_____

State: _____

Company:_____

Telephone:_____

Mailing Address:_____

_____

Wiring Project Started (date):_____

Wiring Project Completed (date):_____

NAVAJO TRIBAL UTILITY AUTHORITY

Project Request

Title
Location
Description of Residence/Structure
[ ] House [ ] Hogan [ ] Trailer [ ] Permanent Foundation [ ] Other:

Customer Name
Address
Phone No.

Work Order Check List	Dist C.R.R/SC	Dist Engr	Dist. Foreman
Wiring/Piping Affidavit From:			
Service Entrance Inspected by:			
Approved by: Date Approved:			
AMPS: VOLTS: TYPE:			
Field Survey by:			
Designed by: Estimated by:			
Bill of Material			
Deposit: Downpayment: P.O.:			
Land User Consent:			
Arch Survey: Encroachment Permits:			
"As Built" Information			
District CRR Reviewed			

Work Order Cost Summary	Preliminary Estimate	Final Estimate
Number of Customers		
Construction Cost		
Removal Cost		
Salvage Credit		
Total W.O. Cost		
Less NTUA System Improvement		
Less NTUA Contribution		
Less Meter & Transformer Cost		
Subtotal		
Other Contributions		
Customer Down Payment		
Installment Contract		

Remarks/Comments

Applicant agrees to comply with rules and regulations as set forth in the N.T.U.A. Tariff and grants to N.T.U.A. and it's employees access to the premises to perform services as requested.

Customer Signature Date

Request Taken By: Date

Date:	
BP No.:	
Contract No.:	
Notification No. to Engineering Technician:	
ZPT1 No.:	
TECO'ed by	Date
Project I.D. No.:	
AUC Asset No.:	
TECO'ed by	Date
ZCAP - ES & D:	
TECO'ed by	Date
Notification No.:	
ZCAP - Construction:	
TECO'ed by	Date
Notification No.:	
ZRET for Removal No.:	
TECO'ed by	Date
Notification No.:	
Transformer Installation No.:	
Device No.:	
TECO'ed by	Date
Notification No.:	
Meter Installation No.:	
Device No.:	
TECO'ed by	Date
ZCAP - Field Inspection:	
TECO'ed by	Date
Order Package Close:	
TECO'ed by	Date

NAVAJO TRIBAL UTILITY AUTHORITY

UTILITIES RIGHT-OF-WAY AGREEMENT

_____ hereby grants to the Navajo Tribal Utility Authority, a permanent right-of-way for construction, operation and maintenance of _____ service, thirty (30) feet in width and _____ feet in length; over, across, and upon the lands described in the accompanying map attached hereto and by this reference made a part hereof.

In consideration of the grant herein made, the Navajo Tribal Utility Authority hereby agrees to:

1. Construct and maintain the Right-of-Way in a workmanlike manner.
2. To restore the lands as nearly as may be possible to their original condition upon the completion of construction.

_____, grantor(s), hereby agrees to allow free access to and from right-of-way within and between the points herein before mentioned during all reasonable hours as may be deemed necessary by the Navajo Tribal Utility Authority.

In WITNESS HEREOF, the parties to these present have executed this Agreement this _____ day of _____, _____.

Project I.D. No.: _____

Job Order No. _____

Detailed Location _____

Chapter _____

Navajo Tribal Utility Authority

Verified by:

Name: _____

Title _____

District: _____

Address: _____

City: _____ State: _____ Zip _____

_____ C# _____

Grantor (Signature)

_____

Address

Grazing Permit/Homesite No: _____

_____ C# _____

Grantor (Signature)

_____

Address

Grazing Permit/Homesite No: _____

Home Office:	KAYENTA	TUBA CITY	SHIPROCK	CHINLE	FORT DEFIANCE	DILCON	CROWNPOINT
P.O. BOX 170	P.O. BOX 37	P.O. BOX 398	P.O. BOX 1749	P.O. BOX 549	P.O. BOX 587	HC 63 BOX D	P.O. BOX 1825
FT. DEFIANCE, AZ 86504	KAYENTA, AZ 86033	TUBA CITY, AZ 86045	SHIPROCK, NM 87420	CHINLE, AZ 86503	FT. DEFIANCE, AZ 86504	WINSLOW, AZ 86047	CROWNPOINT, NM 87313
(928) 729-5721	(928) 697-3574	(928) 283-5421	(505) 368-4639	(928) 674-5470	(928) 729-5727	(928) 657-3258	(505) 786-5566

This institution is an equal opportunity provider and employer.

(Please fill out form completely)

WATER LINE TEST CERTIFICATION Page _____ of _____

GENERAL LOCATION OF LINE TESTED: _____
(Vicinity/State)

DATE(S) TEST WAS CONDUCTED ON: _____

TEST SECTION LOCATION IS BASED ON: _____
Project Drawing's Name & Project Number

_____ _____
Drafting Agency Date of Drawings

STANDARD LENGTH OF PIPE USED ON THIS PROJECT IS _____ FEET

TEST INFORMATION CERTIFIED BY:

Signature: _____

Name, Organization: _____

Address, Telephone Number: _____

Date of this Report: _____

TEST RESULTS: APPROVED (√) _____
DISAPPROVED (√) _____

TEST REVIEWED AND RETURNED TO SENDER BY:

_____ _____
NTUA Headquarters Operations Date

COMMENTS:

_____

_____

_____

_____

_____

_____

PRESSURE TEST DATA SHEET

Date: _____ Page _____ of _____

Gage's Manufacturer Name and Model Number (2 required): 1. _____

2. _____

Conducted by: _____ Observed by: _____

(contractor/NECA representative) (NTUA/IHS representative)

Test Section Line Designation (Sta. to Sta.)	Pipe Pressure Rating (psi)	Test Pressure at Pump (psi)	Gage Response Check (√)	Observed Test Pressure Range at Pump (psi)	Total Leakage (gallons/2 hr)	Allowable Leakage (gallons/2 hr)

Highest Point in Elevation = _____ Lowest Point in Elevation = _____ Test Pump Elevation = _____

Description of Test Pump Location _____

Differential in Elevation from Highest Point to Lowest Point = _____ feet x 0.433 = _____ psi

Differential in Elevation from Pump Location to Lowest Point = _____ feet x 0.433 = _____ psi (A)

Test Pressure at Pump = _____ psi − _____ psi = _____ psi

(pipe press rating) (A) (test press at pump)

$Q = (N \bullet D \bullet P^{½}) \div 7400$

Where: Q = Allowable leakage
N = Number of Joints of Pipes Being Tested
D = Nominal Pipe Diameter in Inches
P = Pipe Pressure Rating

For _____ inch (PVC/PE/DI) Q = [( ) • ( ) • ( )] ÷ 7400 = _____ gal/hr

For _____ inch (PVC/PE/DI) Q = [( ) • ( ) • ( )] ÷ 7400 = _____ gal/hr

For _____ inch (PVC/PE/DI) Q = [( ) • ( ) • ( )] ÷ 7400 = _____ gal/hr

SUM TOTAL = _____ gal/hr

TOTAL ALLOWABLE LEAKAGE FOR TEST SECTION = SUM TOTAL X 2 = _____ gal/2 hrs

Nov 98

PERMISSION TO TAP AN EXISTING NTUA WATER LINE

1. REQUESTER.

NAME : _____
TITLE : _____
ORGANIZATION : _____
a. ADDRESS : _____
_____
_____
TELEPHONE NUMBER : _____
b. ADDRESS : _____
_____
_____
TELEPHONE NUMBER : _____

2. PERSON RESPONSIBLE FOR TAP CONSTRUCTION AND ITS ACCEPTANCE BY NAVAJO TRIBAL UTILITY AUTHORITY.

NAME : _____
TITLE : _____
ORGANIZATION : _____
ADDRESS : _____
_____
_____
TELEPHONE NUMBER : _____

3. PERSON RESPONSIBLE FOR PAYING NAVAJO TRIBAL UTILITY AUTHORITY FOR SERVICE AFTER THE CONSTRUCTION IS COMPLETED AND APPROVED.

NAME : _____
TITLE : _____
ORGANIZATION : _____
ADDRESS : _____
_____
_____
TELEPHONE NUMBER : _____

4. DATE REQUEST IS SUBMITTED TO NAVAJO TRIBAL UTILITY AUTHORITY.

DATE : _____

5. SUBMITTED TO.

NAME : _____
TITLE : _____
NTUA OFFICE : _____

6. SPECIFICATIONS AND DRAWINGS OF PROPOSED CONSTRUCTION ATTACHED.

_____ YES _____ NO

7. ACTUAL SERVICES.

ACTUAL NUMBER : _____
METER SIZE : _____
TYPE OF SERVICE : _____

8. WATER DEMAND/CUSTOMER REQUESTED FLOW AND MINIMUM DELIVERY PRESSURE AT THE METER OUTLET.

NORMAL : _____ gpm
PEAK : _____ gpm
PRESSURE : _____ psi
@ ELEVATION OF : _____ feet above MSL

9. FIRE FLOW DEMAND IS NOT GUARANTEED AND IS ONLY WHAT THE SYSTEM WILL PROVIDE.

FOR NTUA INFORMATION: Flow and minimum delivery pressure at the meter outlet.

	Sprinkler System	Total Fire Hydrant Flow	
QUANTITY :	_____	_____	gpm
DURATION :	_____	_____	minutes
PRESSURE :	_____	_____	psi
SIMULTANEOUS USE :	_____		(YES/NO)

10. REQUESTED TIME(S) AND DATE(S) OF ACTUAL EXECUTION OF THE TAP.

TIME(S)/DATE(S) : _____

11. I AGREE TO THE APPLICATION OF NAVAJO TRIBAL UTILITY AUTHORITY (NTUA) CONSTRUCTION METHODS, MATERIAL STANDARDS, LINE TEST PROCEDURES, DISINFECTION REQUIREMENTS, "CONSTRUCTION WATER" POLICY, AS-BUILT DRAWING REQUIREMENTS, AND TARIFF REQUIREMENTS AS THEY PERTAIN TO TAPPING THE EXISTING NTUA WATER LINE, CONSTRUCTING UTILITIES TO BE TRANSFERRED TO NTUA FOR OPERATIONS AND MAINTENANCE, AND SERVICES PROVIDED BY NTUA THEREAFTER.

_____ _____
SIGNATURE DATE

_____ _____
SIGNATURE DATE

_____ _____
SIGNATURE DATE

12. ASSIGNED NTUA INSPECTOR'S NAME.

INSPECTOR NAME : _____

13. IS THIS SERVICE DOWNSTREAM FROM A PREVIOUSLY MASTER METERED AREA?

_____ YES _____ NO

14. REVIEWED BY.

DISTRICT MANAGER OR:
SUB-OFFICE SUPV. _____ NAME _____ DATE

15. SPECIFICATIONS AND PROPOSED CONSTRUCTION DRAWINGS REVIEWED AND APPROVED BY.

_____ SIGNATURE _____ TITLE _____ DATE

16. APPROVED TIME(S) AND DATE(S) OF EXECUTION OF THE TAP.

TIME(S)/DATE(S) : _____

17. PERMISSION TO TAP APPROVED BY.

_____ NTUA OPERATIONS DEPARTMENT _____ DATE

Appendix G: Hydrostatic Test-Disinfection

NAVAJO AREA STANDARDS
&
CONSTRUCTION REQUIREMENTS

Reviewed by
NAVAJO NATION and IHS STANDARDS COMMITTEE

TECHNICAL SPECIFICATIONS
FOR
MATERIALS AND WORKMANSHIP
FOR WATER AND WASTEWATER FACILITIES

MARCH 2002

TECHNICAL SPECIFICATIONS FOR MATERIALS AND WORKMANSHIP OF WATER AND WASTEWATER FACILITIES

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DRAWING STANDARDS AND LEGEND

Definition of Terms

Owner: The organization or its representative authorizing and administering the construction project.

Contractor: The organization or its representative performing the construction.

Operating Utility: The organization or its representative operating the water and wastewater utility affected by the construction.

Roadway Authority: The authority or agency with jurisdiction over the roadway.

Approved Equal: A substitute in materials that is considered by the **Operating Utility** to be equal to the item listed in the specifications or standards.

inch diameter PVC-DWV pipe shall be cut so that the top of the adapter extends 3 to 6-inches above ground surface.

3.08 Water Service Line Installation

Water service lines and appurtenances shall be installed in accordance with TP 1.0, Excavation, Trenching, and Backfilling for Water and Sewer Utilities, and TP 2.0, Water and Sewer Line Separation Requirements. A minimum of 3 feet of cover is required for water service lines.

Service lines shall be cut using tools specifically designed to leave a smooth, even, and square end on the pipe. The cut ends shall be reamed to the full inside diameter of the pipe. Pipe ends are to be connected using fittings which seal to the outside surface of the pipe which shall be cleaned to a sound smooth finish before installation. Splices shall be kept to a minimum and no splices shall be made within 10 feet of any sewer line.

All 1-inch service connections to water mains 4-inches or larger shall be made using saddles (tap tees are permitted for new construction). Service connections to 2-inch pipe shall be made using tees. Particular care shall be exercised to assure that the main is not damaged by the installation of the saddle. The saddle shall be aligned on the water main so that it is at a 45 degree angle above the springline of the pipe. The hole drilled into the pipe through the saddle shall be no smaller than 1/8-inch less than the size of the saddle.

Where required, the Contractor shall reconnect existing water service connections to the new water mains using materials specified herein. Individual pressure reducing valves, where required, shall be installed on a tandem meter yoke as shown on the standard detail. Prior to installation of the meter and connection to the building or house, the entire water service line and appurtenances shall be flushed.

3.09 Pressure Tests

Where any section of a waterline is provided with concrete thrust blocking for fittings or hydrants, the pressure tests shall not be made until at least 48 hours after installation of the concrete thrust blocking unless otherwise approved by the Owner.

3.09.01 Pressure Test

All test equipment, labor, water for testing, appurtenances and material, and performance of all operations in accordance with the specifications are the responsibility of the Contractor.

All pipelines shall be tested for water tightness up to the individual service meter or domestic stop. The test equipment will not be provided, but is subject

to inspection by the Owner. Arrangements for water used in pipeline testing and payment for the water shall be coordinated with the Operating Utility. Pressure gauges used in testing shall be graduated at a maximum in 5 psi increments. Two gauges will be used simultaneously for verification of the gauges' functionality. Prior to the test, the pipeline will be pressured to 10 psi above the test pressure. The pressure will then be decreased to the test pressure so that gauge responsiveness can be observed.

The test pressure shall be at least 160 psi measured at the lowest point of elevation in the test section. No section shall be tested that is greater than one mile in length or that has greater than 25 psi pressure change due to elevation. The test shall be conducted in such a manner that existing mains, services lines, and service user's plumbing are not damaged. Damage caused by testing shall be corrected at the expense of the Contractor. All connections, blow-offs, hydrants, house services up to the meter yoke or domestic stop, and valves shall be tested with the main as far as is practicable. When testing piping systems designed to operate above 160 psi, special considerations shall be arranged with the Operating Utility.

No air testing shall be allowed.

The test section shall be filled slowly with potable water and all air shall be vented from the line. The test shall not begin until the pipe has been filled with water for at least 24 hours to allow for absorption. The test shall have a minimum duration of two hours with the two hour period beginning when the test pressure is attained and the pump ceases operation.

No pipe installed shall be accepted if the leakage is greater than that determined by the following formula:

$$Q = \frac{N*D*(P)^{1/2}}{7400}$$

in which,

Q = allowable leakage in gallons per hour

N = number of joints in the pipeline being tested, this "N" being the standard length of pipe furnished divided into the length being tested with no allowance for double gasket joint caused by use of couplings instead of integral bell pipe or for joints at branches, blow-offs, fittings, etc.

D = nominal diameter of pipe in inches

P = the test pressure in psi gauge as discussed in the third paragraph of this procedure

During the test, the test pressure should not lose more than 5 psig without being pumped back up to the test pressure. The totals of the gallons of water required to hold the test pressure during the two hours plus the amount of water required to return the line to the test pressure at the end of the test period is the total leakage. If the total leakage is less than the allowable, the line can be accepted. All visible leaks will be repaired regardless of the amount of leakage. Should the test on any section of the pipeline show leakage greater than the allowable leakage, the Contractor shall locate and repair the defective pipe, fitting, or joint until the leakage is within the allowable leakage for the two hour test duration.

3.09.02 Observation of Tests

The Owner is to witness the pressure testing of waterlines. Prior to the test, the Contractor shall have all equipment set up completely, ready for operation and shall have previously successfully performed the test to verify that the test section will pass. The Contractor shall notify both the Owner and the Operating Utility a minimum of three working days in advance of the date that the Contractor plans to perform the pressure tests.

The Owner shall observe the testing to verify that the testing was performed according to the specifications and that the test data were properly and accurately recorded. The Owner will complete the required certification forms and submit them to the Operating Utility for approval. A letter of approval or disapproval of the test results will be sent from the Operating Utility to the Contractor.

3.10 Disinfection

A liquid chlorine solution shall be introduced continuously into one end of the system and allowed to flow along and through all lines and appurtenances to be disinfected until a minimum of 50 ppm of chlorine is detected at representative points throughout the line. A contact period of 24 hours shall be maintained before the system is flushed out with clean water until a maximum of 0.4 ppm chlorine residual is detected. All valves shall be operated several times during the 24 hour contact period.

After disinfection, the Contractor shall collect bacteriological samples for testing at his expense. The analysis shall be performed by a laboratory certified by the State Health Department or the U.S. Environmental Protection Agency. If a positive result (unsatisfactory bacteriological test) is obtained, the system shall be disinfected and retested by the Contractor. This shall be repeated until a negative result (satisfactory bacteriological test) is obtained. Disinfection by introducing granular or tablet chlorine compounds in each pipe length is not an acceptable method of disinfection.

EXHIBIT A OF TP-3
WATER LINE PRESSURE TEST CERTIFICATION

Location of Line Tested:
A) _____ (Vicinity/State)
B) _____ (Project's Drawing Name)
C) _____ (Project's Sheet No.)
D) _____ (Project's Drawing No.)

Date of Test: _____

Gauges Manufacturer & Model: 1) _____

2) _____

Standard Length of Pipe in Test Section: _____ Feet.

Test Section _____
(Parcel, Line No., etc.)

Length (Sta.-Sta.)	Line Size (Inch)	Pipe Pressure Rating (Psi)	Test Pressure (Psig)	Observed Pressure Range (Psig)	Total Leakage (gal./ 2hrs.)	Total Leakage (gal./ 2hrs.)

The above test information is certified by:

Signature : _____

Name, Organization : _____

Address, Telephone No. : _____

: _____

Date of this Report : _____

Certification Received by : _____ On _____
Operating Utility Engineering Date

Test Results Checked by : _____
Passed ( ) Failed ( ) _____

Copy of Approval of the test sent to: _____
On _____ By _____
Date Operating Utility Engineering

EXHIBIT A OF TP-3

Allowable Leakage:

$$Q = \frac{ND(P)^{1/2}}{7400}$$

Q = Gallon per Hour

N = Total Length of Line Being Tested (ft) / Standard Length of Pipe (ft) = _____ = _____

D = Nominal Diameter of Pipe (inches) = _____

P = Test Pressure (psig) = _____

Allowable Leakage (2 Hour Test) = 2Q = $\frac{ND(P)^{1/2}}{7400}$ X 2 = _____ (Gal.)

Are the pressure gauges graduated at a maximum of 5 psi increments? _____

Was the line pressured to 10 psi above the test pressure so that the gauge responsiveness could be observed? _____

Is the length of the test section less than one mile? _____

Is the elevation difference between the highest and lowest points in the test section less than 57 feet? _____

Are the pipes in the test section the same pressure rating? _____

Time - Description of Activity	Gauge Reading	Amount of Water Added
Total Time: hrs.		Total: gals.

Verified By: _____

Operating Utility's Representative/Date

_____

Title

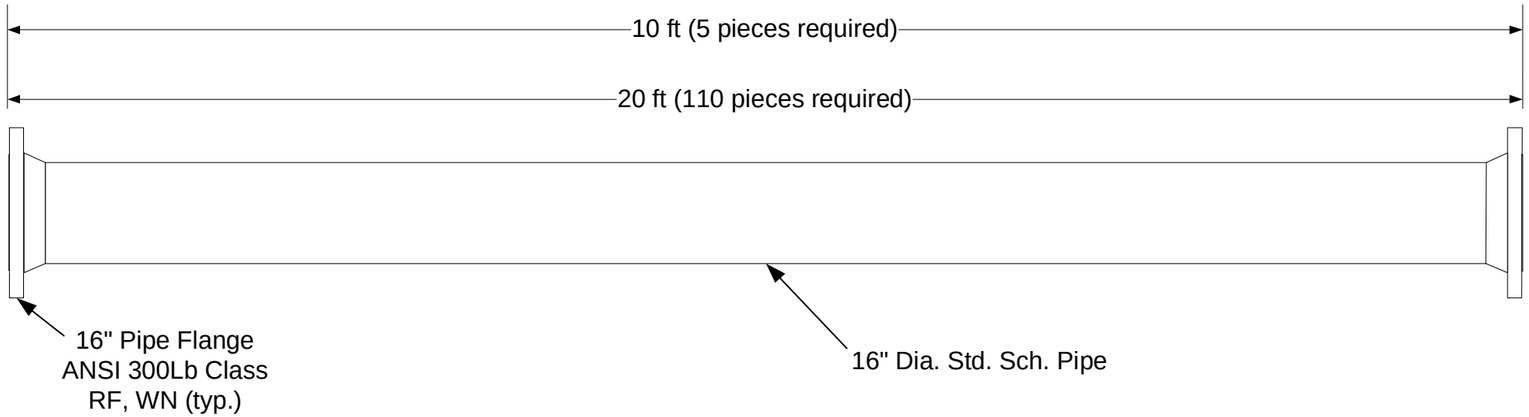
EXHIBIT A OF TP-3

Test Section: _____

(Parcel, Line No., Etc.)

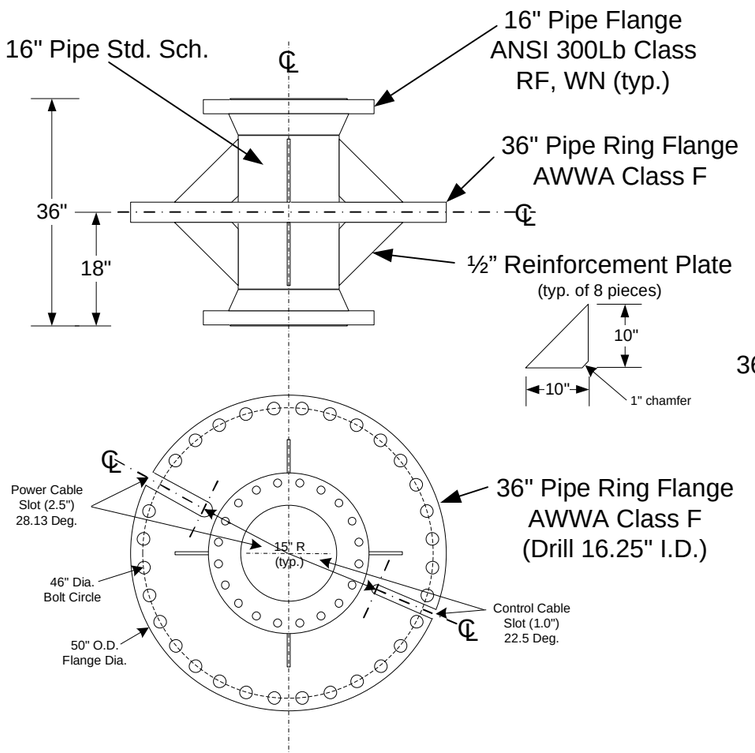
Length (sta.-sta.)	Line Size (inch)	Pipe Pressure Rating (psi)	Test Pressure (psig)	Observed Pressure Range (psig)	Total Leakage (gal./ 2hrs.)	Total Leakage (gal./ 2hrs.)

Appendix H: Intake As-Builts



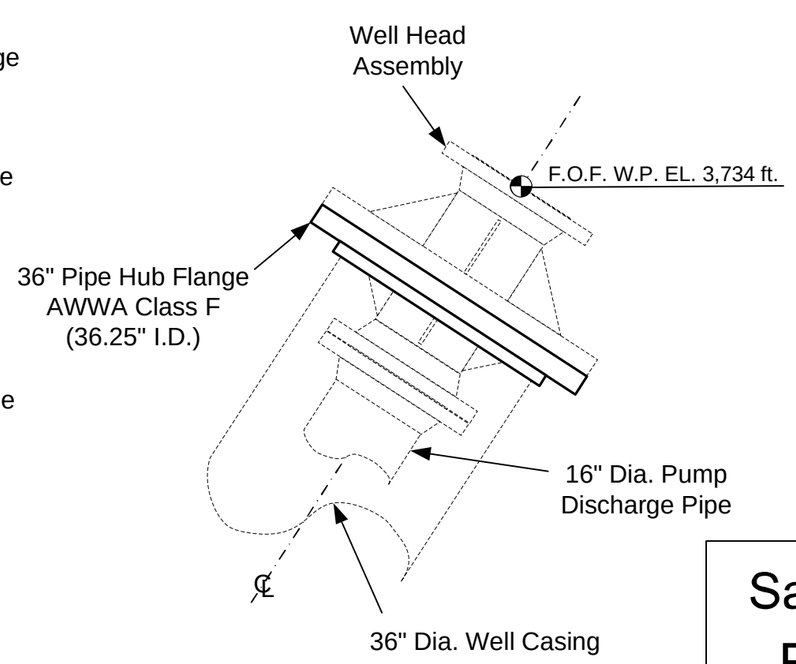
SUBMERSIBLE PUMP DISCHARGE PIPING – TYPICAL SPOOL PIECE

Bill of Materials	
Qty	**Description**
2300 ft	16" Pipe, Std. Sch, ASTM A106 Gr. B or A53 Gr. B Smls.
250	16" Flange, Class 300Lb, WN, RF, ASTM A105
125	16" Flexitalic Gasket, Style CG 300lb
5	36" Ring Flange, AWWA Class F, 16.25in. I.D., ASTM A36
5	36" Hub Flange, AWWA Class F, 36.25in. I.D., ASTM A36
200	2"x 10" - 4.5NC, Hex Head Bolt, ASTM A307 Gr. B
200	2" - 4.5NC, Hex Head Nut, ASTM A194 Gr. 2
400	2" Washer, Type A Plain
5000	1-1/4"x 7"-7NC, Hex Head Bolt, ASTM A307 Gr. B
5000	1-1/4" - 7NC, Hex Head Nut, ASTM A194 Gr. 2
10000	1-1/4" Washer, Type A Plain
1	1/2" Plate, ASTM A36 (4' x 4' sheet)



WELL HEAD ASSEMBLY

(5 Assemblies Required)



WELL HEAD FLANGE DETAIL

(5 Hub Flanges Required)

General Notes:

1. MCM to fabricate all pipe spool pieces and well head assemblies.
2. Power & Control cable slots noted on ring flange to be machined by MCM.
3. Welding details for pipe spool pieces and weld head assembly are noted on SRP SK-005/2.
4. Contractor to weld hub flanges on weld head casings.
5. SRP will order all items noted on BOM.
6. Reference SK-005/3 for AWWA Flange information

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
4	Installation Record	09/23/09	P. Prinsze
3	Revised Pipe Spool Lengths	06/02/09	P. Prinsze
2	Revised Material Specifications	05/18/09	P. Prinsze
1	Revised Pipe Spool Lengths	05/06/09	P. Prinsze
0	Issued for Construction	04/28/08	P. Prinsze

Salt River Project

Generation Engineering

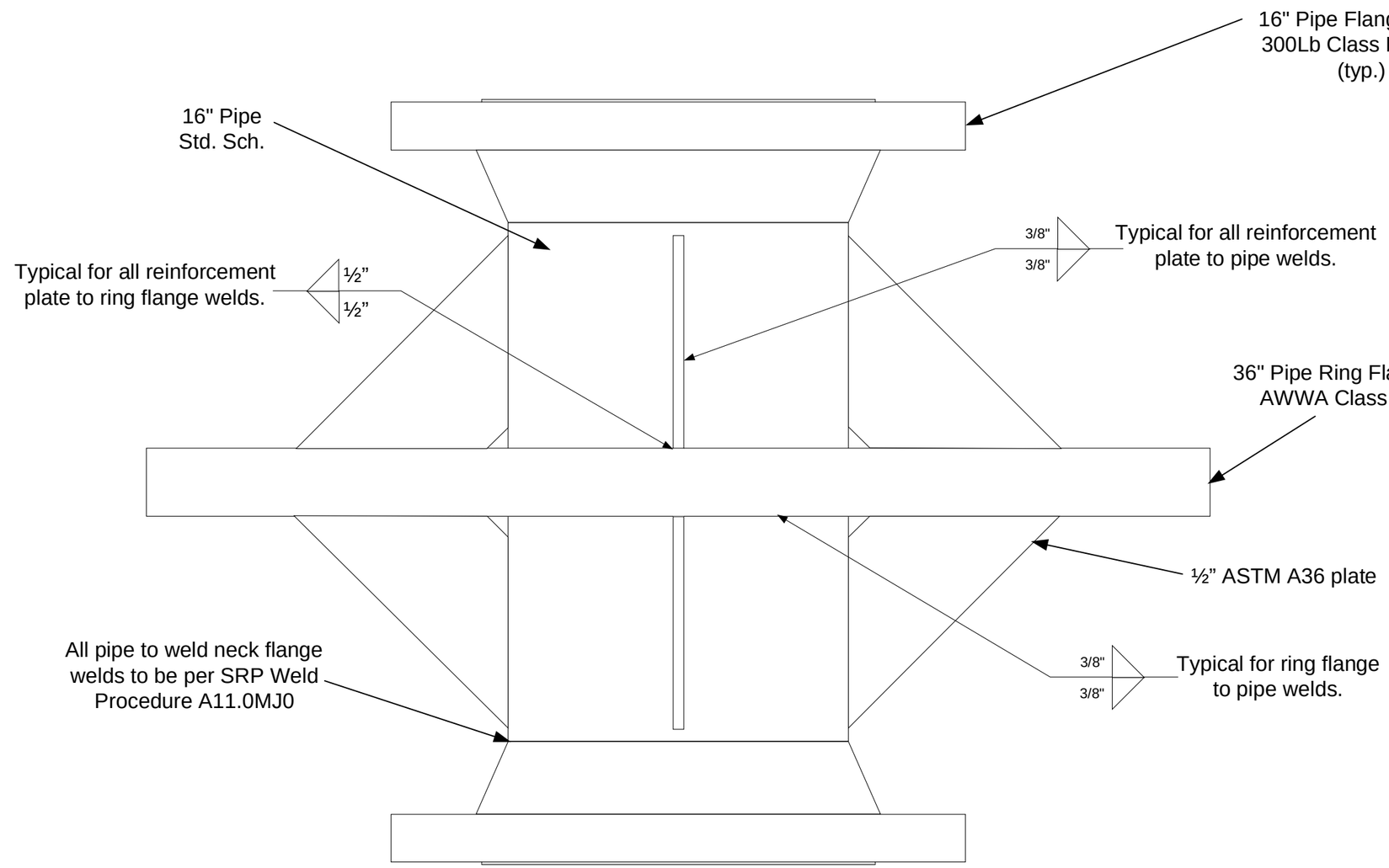
Mechanical, Electrical, & Controls

NAVAJO GENERATING STATION

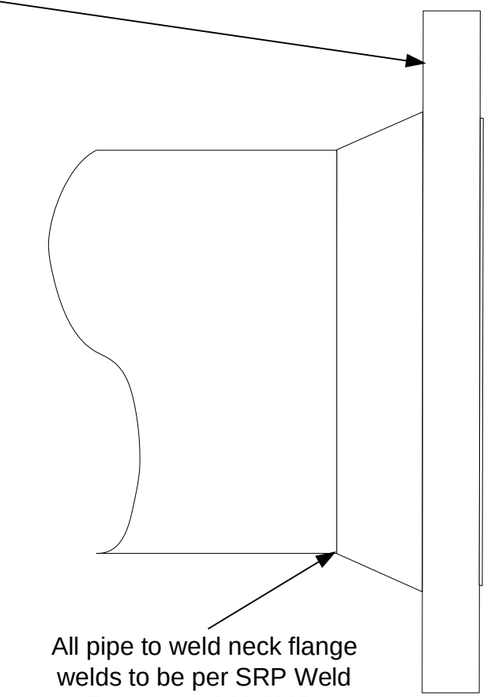
Submersible Lake Pump - 16" Discharge Piping
Spool Piece, Weld Head Details, & BOM

SIZE	Charge Number	DWG NO	REV
B	P2510264-16	SK2009-001	4

SCALE	1in. = 2 ft.	Peter Prinsze	SHEET	1 OF 10



WELL HEAD ASSEMBLY WELD DETAIL



16" PIPE TO FLANGE WELD

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	Installation Record	09/23/09	P. Prinsze
0	Issue for Construction	04/29/09	P. Prinsze

Salt River Project

Generation Engineering

Mechanical, Electrical, & Controls

NAVAJO GENERATING STATION

Submersible Lake Pump
Well Head - Weld Details

SIZE	Charge Number	DWG NO	REV
B	P2510264-16	SK2009-001	1

SCALE	1in. = 6 in.	Peter Prinsze	SHEET	2 OF 10

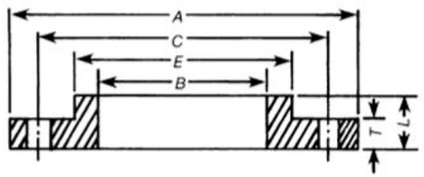


Table 6 AWWA Standard Steel Hub Flanges, Class F* (300 psi)

Nominal Pipe Size *in.*	OD of Flange (*A*) *in.*	ID of Flange (*B*†) *in.*	Number of Bolts	Diam. of Bolt Circle (*C*) *in.*	Diam. of Bolts‡ *in.*	Flange Dimensions *in.* (*T*)	(*L*)	(*E*)
4	10.00	4.57	8	7.88	0.750	1.25	1.88	5.75
5	11.00	5.66	8	9.25	0.750	1.38	2.00	7.00
6	12.50	6.72	12	10.62	0.750	1.44	2.06	8.13
8	15.00	8.72	12	13.00	0.875	1.63	2.44	10.25
10	17.50	10.88	16	15.25	1.000	1.88	2.63	12.63
12	20.50	12.88	16	17.75	1.125	2.00	2.88	14.75
14	23.00	14.14	20	20.25	1.125	2.13	3.00	16.75
16	25.50	16.16	20	22.50	1.250	2.25	3.25	19.00
18	28.00	18.18	24	24.75	1.250	2.38	3.50	21.00
20	30.50	20.20	24	27.00	1.250	2.50	3.75	23.13
24	36.00	24.25	24	32.00	1.500	2.75	4.19	27.63
30	43.00		28	39.25	1.750	3.00	5.00	32.56
36	50.00	*36.25"*	32	46.00	2.000	3.38	5.38	39.00
42	57.00		36	52.75	2.000	3.69	5.63	45.44
48	65.00		40	60.75	2.000	4.00	6.00	54.00

*Notes:
1) Dimensions and drilling conform to ANSI B16.1, class 250, to the extent covered herein, except bolt holes are ⅛-in. larger in diameter than the nominal diameter of the bolt for all sizes. In sizes 24 in. and smaller they also conform to ANSI B16.5.
2) Flange material conforms to ASTM A105 or ASTM A181, grade 1.
3) When bolting to cast-iron valves or fittings, service pressure rating for all sizes is 300 psi at atmospheric temperature in accordance with ANSI B16.1.
4) When flanges are to be used as companion flanges (not mated to cast-iron valves or fittings), the small raised face diameters are recommended. Higher pressure ratings may be assignable (check with forged flange manufacturers).
†The purchaser should specify the ID of the flange, dimension *B*, for nominal pipe sizes 26 in. and larger.
‡Bolt holes shall be drilled ⅛-in. larger in diameter than the nominal diameter of the bolt as stated in Sec. 3.3.

AWWA HUB FLANGE CLASS F - DETAILS

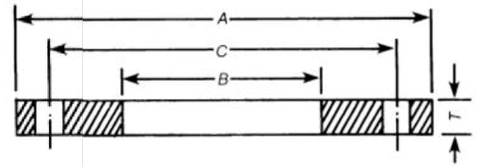


Table 5 AWWA Standard Steel Ring Flanges, Class F* (300 psi)

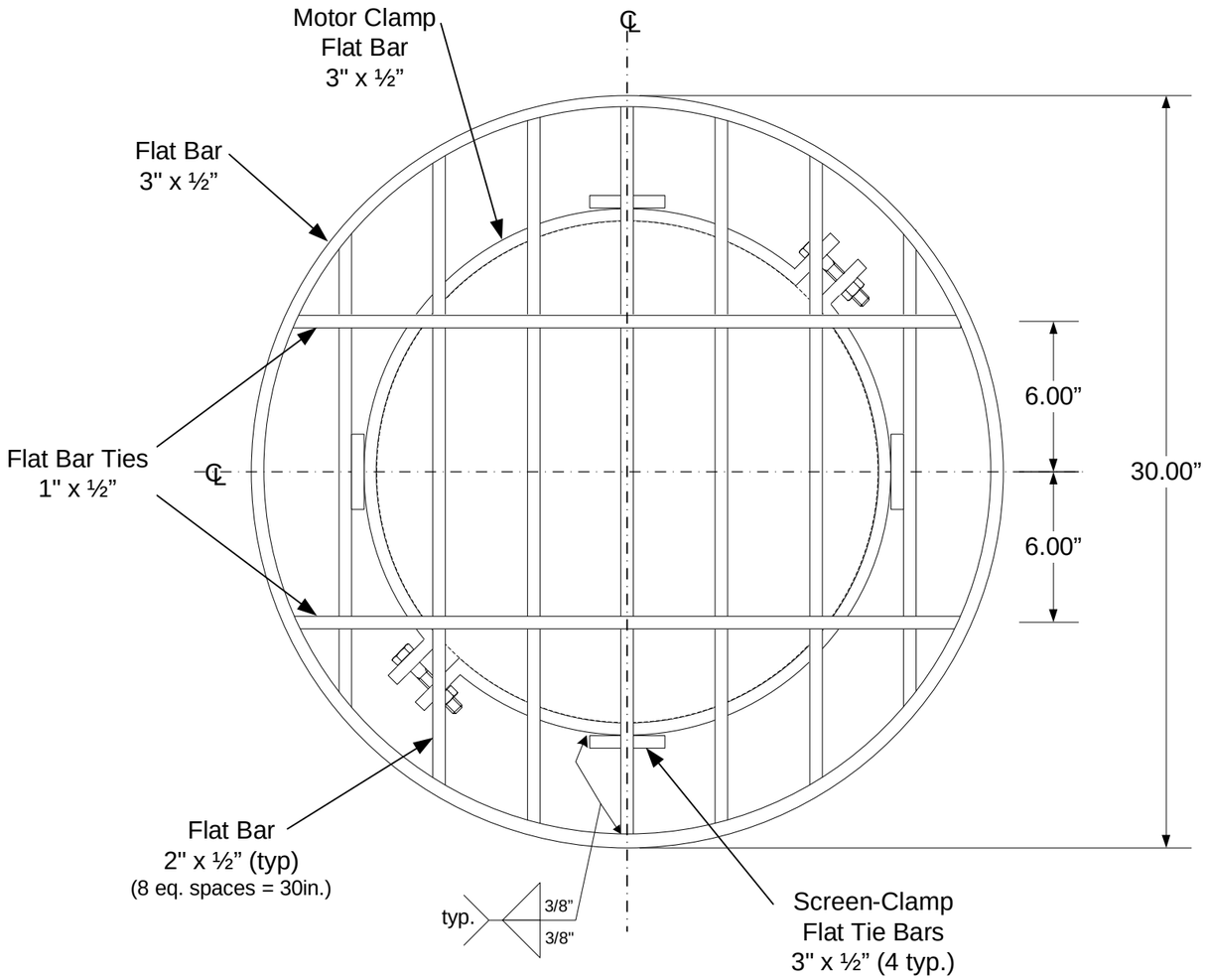
Nominal Pipe Size *in.*	OD of Flange (*A*) *in.*	ID of Flange (*B*†) *in.*	Number of Bolts	Diam. of Bolt Circle (*C*) *in.*	Diam. of Bolts‡ *in.*	Thickness of Flange (*T*) *in.*
4	10.00	4.57	8	7.88	0.750	1.125
5	11.00	5.66	8	9.25	0.750	1.188
6	12.50	6.72	12	10.62	0.750	1.375
8	15.00	8.72	12	13.00	0.875	1.563
10	17.50	10.88	16	15.25	1.000	1.625
12	20.50	12.88	16	17.75	1.125	1.825
14	23.00	14.19	20	20.25	1.125	1.938
16	25.50	16.19	20	22.50	1.250	2.063
18	28.00	18.19	24	24.75	1.250	2.188
20	30.50	20.19	24	27.00	1.250	2.438
24	36.00	24.19	24	32.00	1.500	2.688
30	43.00		28	39.25	1.750	2.938
36	50.00	*16.25"*	32	46.00	2.000	3.188
42	57.00		36	52.75	2.000	3.438
48	65.00		40	60.75	2.000	3.563

*Pressure rating at atmospheric temperature is 300 psi. These flanges have the same diameter and drilling as ANSI B16.1, class 250 cast-iron pipe and flanged fittings.
†The purchaser should specify the ID of the flange, dimension *B*, for nominal pipe sizes 26 in. and larger. It is recommended that this dimension be ⅛-in. larger in diameter than the nominal OD of the pipe.
‡Bolt holes shall be drilled ⅛-in. larger in diameter than the nominal diameter of the bolt as stated in Sec. 3.3.

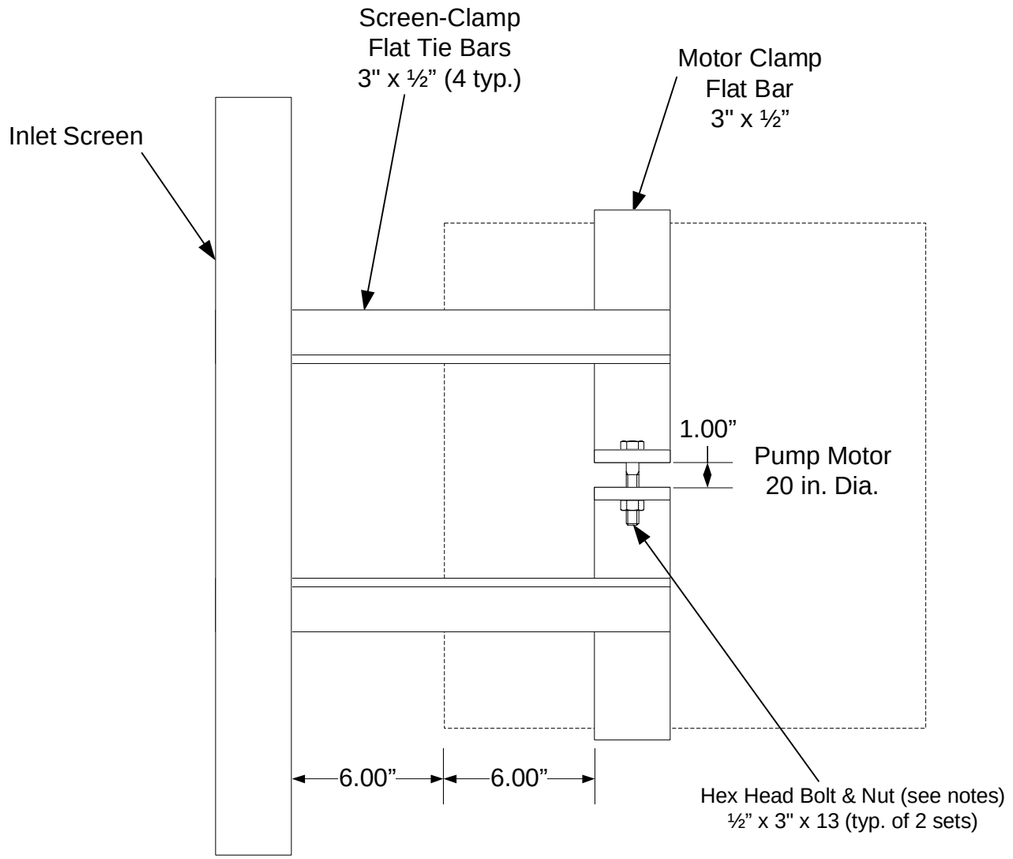
AWWA RING FLANGE CLASS F - DETAILS

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	Issue for Construction	04/29/09	P. Prinsze

Salt River Project	NAVAJO GENERATING STATION			
	Submersible Lake Pump Well Head - AWWA Flange Details			
Generation Engineering	SIZE: B	Charge Number: P2510264-16	DWG NO: SK2009-001	REV: 0
Mechanical, Electrical, & Controls	SCALE: NTS	Peter Prinsze	SHEET: 3 OF 10	



WELL INLET SCREEN – FRONT VIEW



WELL INLET SCREEN – SIDE VIEW

(rotated 45 degrees for clarity)

General Notes:

1. Flat bar material is ASTM A479 Gr. TP316L.
2. Hex bolt material is ASTM A193 Gr. B8M
3. Hex nut material is ASTM A194 Gr. 8M

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
2	Installation Record	09/23/09	P. Prinsze
1	Revised Material Specifications	05/6/09	P. Prinsze
0	Issue for Construction	05/6/09	P. Prinsze

Salt River Project

Generation Engineering

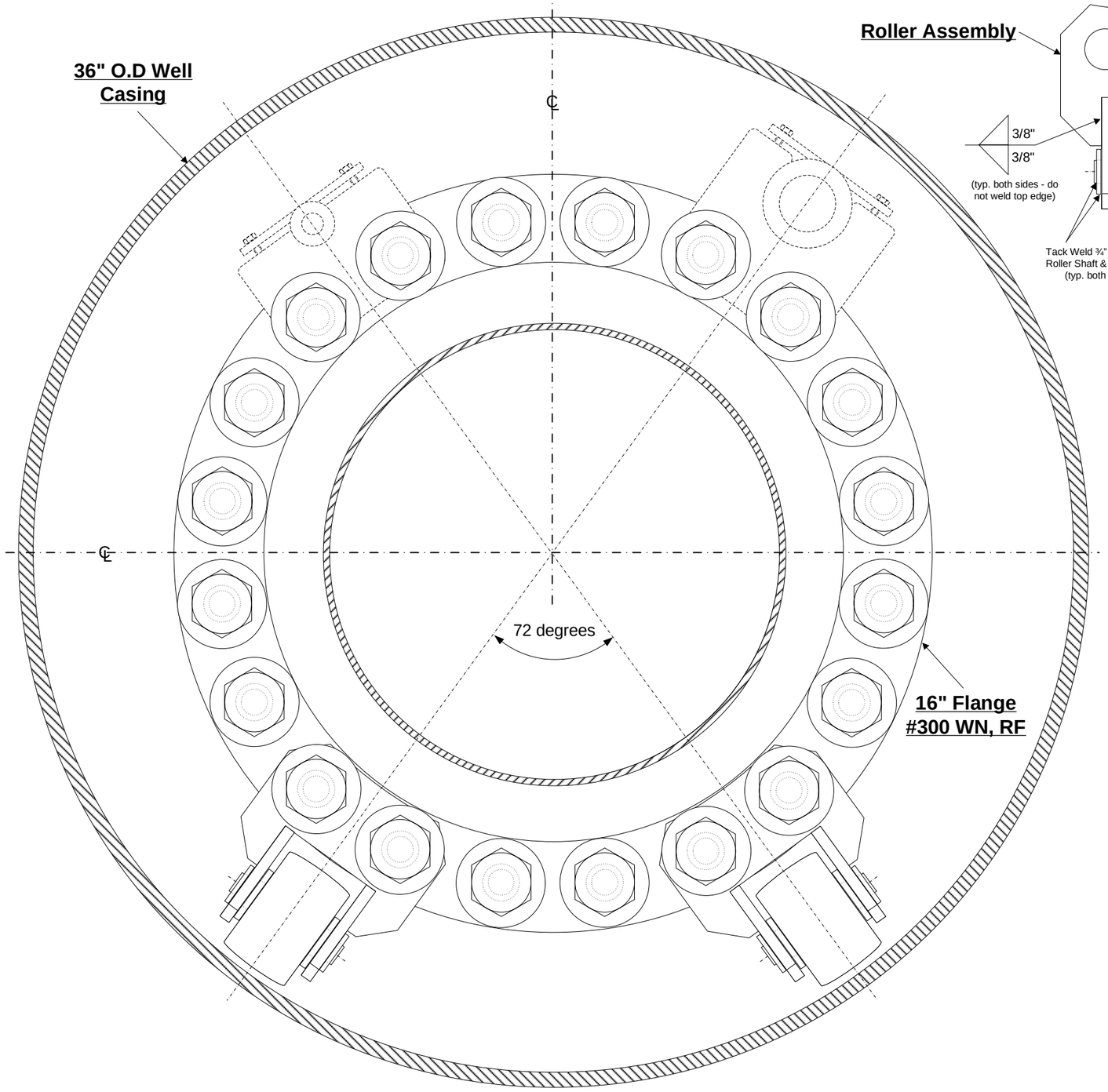
Mechanical, Electrical, & Controls

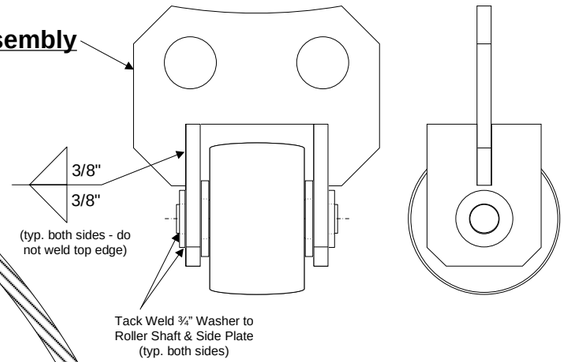
NAVAJO GENERATING STATION

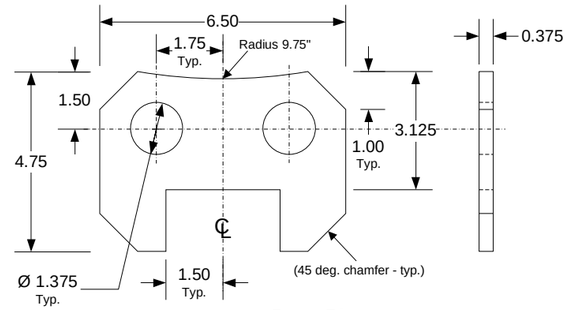
Submersible Lake Pump
Well Inlet - Screen Details

SIZE	Charge Number	DWG NO	REV
B	P2510264-16	SK2009-001	2

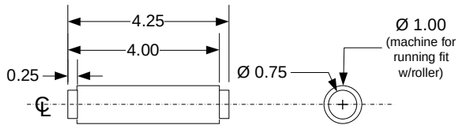
SCALE	1in. = 6in.	Peter Prinsze	SHEET	4 OF 10



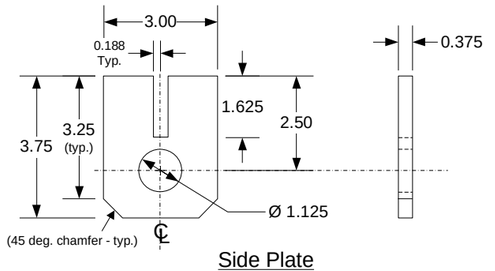




Base Plate
1 req. per assembly (ASTM A36)



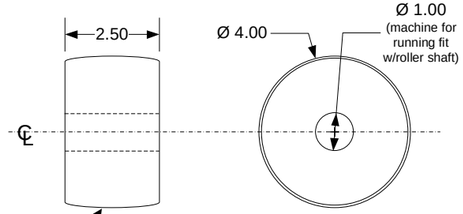
Roller Shaft
1 req. per assembly (ASTM A479 Gr. TP316)



Side Plate
2 req. per assembly (ASTM A36)



1" Spacer & ¾" Retention Washers
2 ea. req. per assembly (Type A Plain – 316SS)



Roller
1 req. per assembly (ASTM B505, C86300)

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
2	Installation Record	09/23/09	P.Prinsze
1	Eliminated Roller Bushing	06/26/09	P.Prinsze
0	Issued for Construction	06/15/09	P. Prinsze

Salt River Project

NAVAJO GENERATING STATION

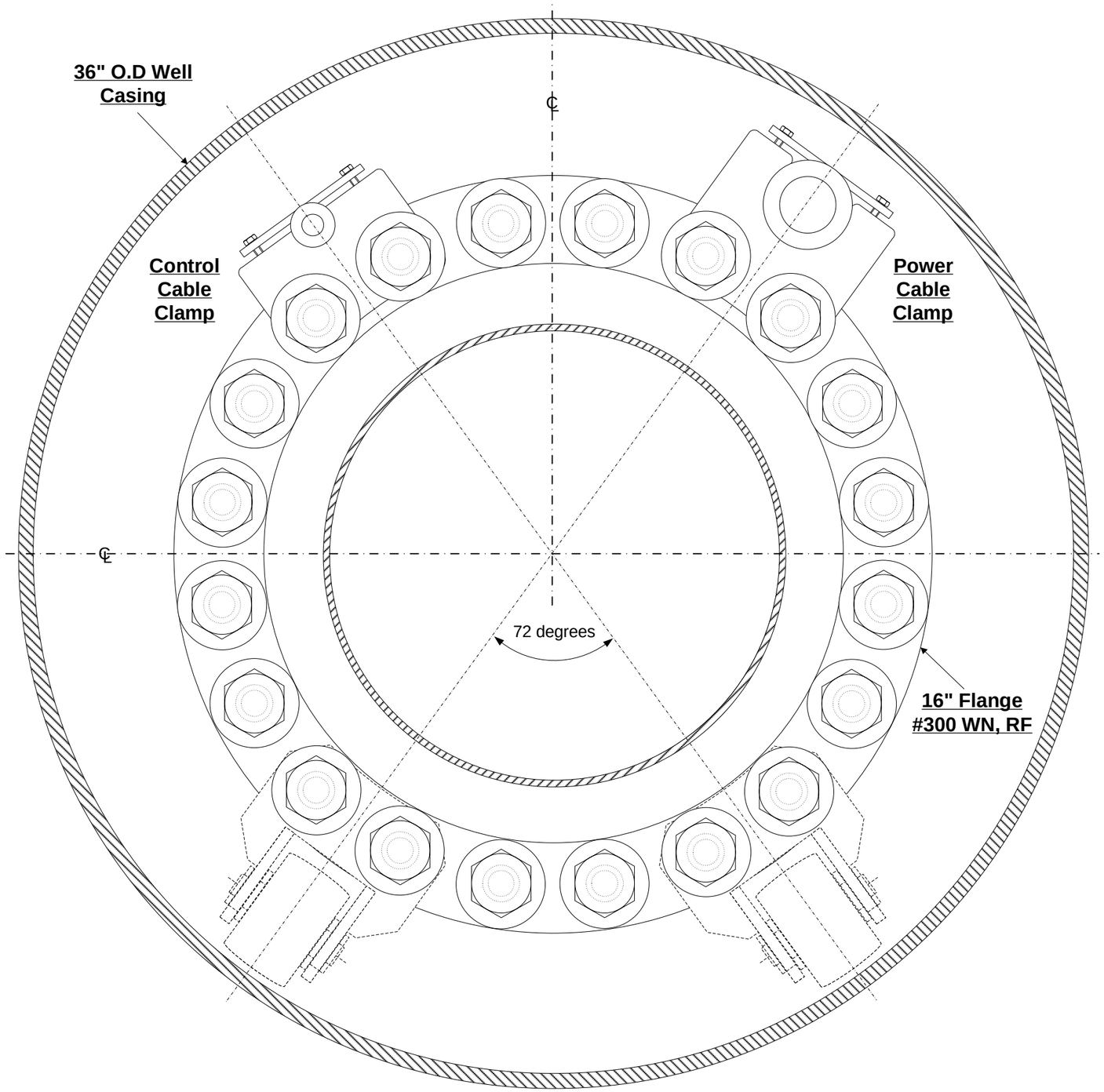
Submersible Lake Pump
16" Discharge Piping - Roller Assembly Details

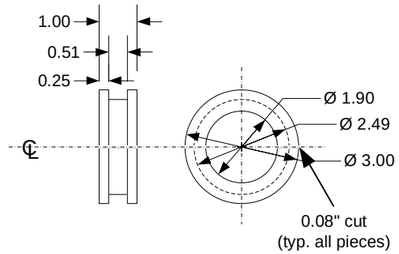
Generation Engineering

Mechanical, Electrical, & Controls

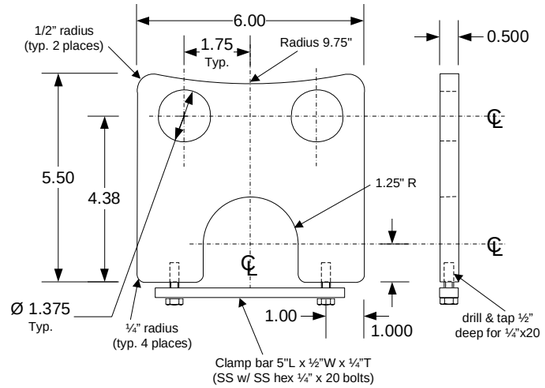
SIZE	Charge Number	DWG NO	REV
B	P2510264-16	SK2009-001	2

SCALE	1in. = 4in.	Peter Prinsze	SHEET	5 OF 10

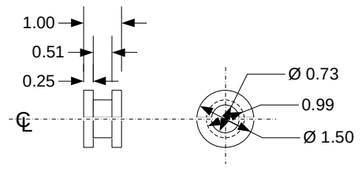




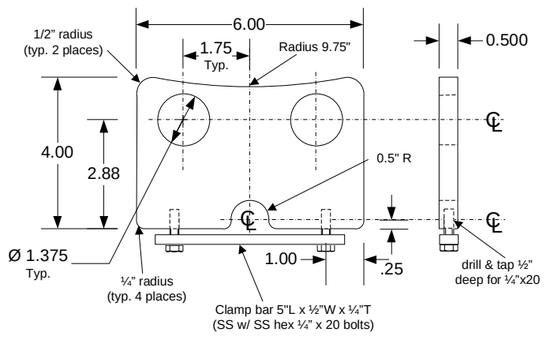
Power Cable Bushing
1 req. per assembly (Nylon)



Power Cable Base Plate
1 req. per assembly (ASTM A36 Powder Coated)



Control Cable Bushing
1 req. per assembly (Nylon)



Control Cable Base Plate
1 req. per assembly (ASTM A36)

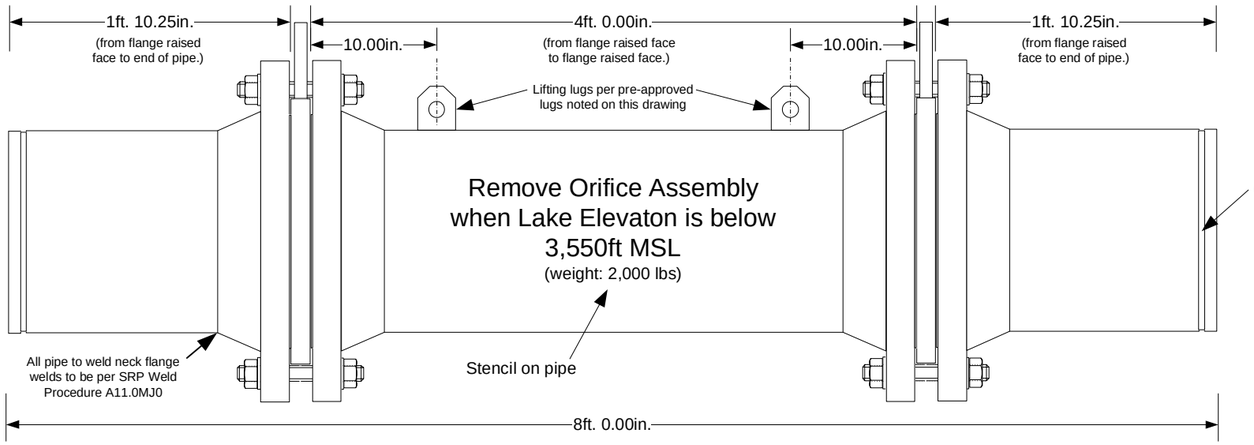
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	Added Cable Cut-Out Dimension	5/9/11	P. Prinsze
0	Installation Record (Vendor Supplied Base Plates)	09/25/09	P. Prinsze

Salt River Project

NAVAJO GENERATING STATION

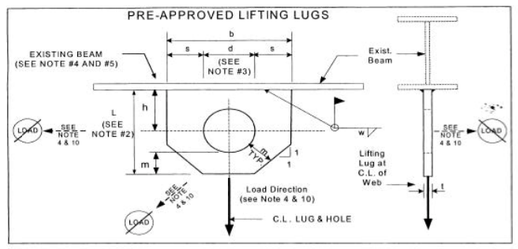
Submersible Lake Pump
16' Discharge Piping - Cable Clamp Assembly Details

Generation Engineering	SIZE	Charge Number	DWG NO	REV
	B	P2510264-16	SK2009-001	1
Mechanical, Electrical, & Controls	SCALE 1in. = 4in.	Peter Prinsze	SHEET 6 OF 10	



Orifice Assembly Detail

Bill of Materials	
Qty	**Description**
40 ft	16" Pipe, Std. Sch, ASTM A106 Gr. B or A53 Gr. B Smls.
20	16" Flange, Class 300Lb, SO, RF, ASTM A105
20	16" Flexitalic Gasket, Style CG 300lb (0.125" thickness)
3	1-1/2" Plate, ASTM A240 Gr. 316L (4' x 4' sheet)
1	1"x 1-1/2"x 36" Bar, ASTM A479 Gr. TP316L
220	1-1/4"x 10"-7NC, Stud, ASTM A307 Gr. B
440	1-1/4" - 7NC, Hex Head Nut, ASTM A194 Gr. 2
440	1-1/4" Washer, Type A Plain

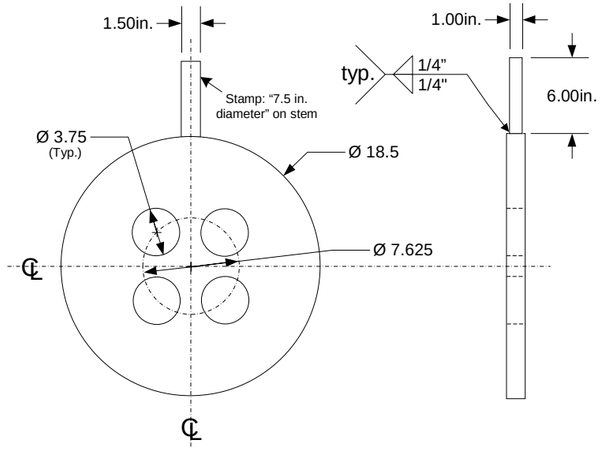


Load Capacity (Kips)	Thickness of Lug t (inches)	Width of Lug b (inches)	Nominal Shackle Pin Dia. (inches)	Hole Diameter d (inches)	m (inches)	h (inches)	s (inches)	L (inches)	Minimum size of Fillet Weld w (inches)
4.6	1/2	3	7/8	1 1/4	1 1/4	1 5/8	7/8	3 1/2	3/16
9	1/2	4 1/2	1 1/4	1 5/8	1 5/8	2 7/16	1 7/16	4 1/2	1/4
12	5/8	5	1 1/2	1 7/8	2 1/8	2 7/16	1 9/16	5 1/2	1/4
15	3/4	6	2	2 3/8	2 1/2	2 13/16	1 13/16	6 1/2	1/4
18	7/8	7	2 1/4	2 5/8	3	3 3/16	2 3/16	7 1/2	1/4
29	1	8	2 1/4	2 5/8	3 5/8	3 3/16	2 11/16	8 1/8	5/16

NOTES:

1. PLATES & SHAPES – ASTM A36; WELDING ROD – E7018 AND WELD PER AWS D1.1
2. DO NOT CHANGE DIMENSION "L" WITHOUT ENGINEERING APPROVAL.
3. DRILL OR PUNCH HOLE.
4. LOADING MUST BE IN THE PLANE OF THE LIFTING LUG. ENGINEERING REVIEW OF THE EXISTING STRUCTURE IS NECESSARY TO ENSURE THAT EXISTING STEEL HAS RESERVE CAPACITY TO CARRY ADDITIONAL LOADS.
5. FOR LUG SIZES NOT SHOWN, CONTACT ENGINEERING FOR DESIGN.
6. WELD SIZE GOVERNS THE LOAD CAPACITY OF LIFTING LUGS.
7. WELD SIZE NEED NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.
8. STAMP LOAD CAPACITY ON LIFTING LUGS.
9. REF. " DESIGN AND CONSTRUCTION OF LIFTING BEAMS" BY DAVID RICKER ENGINEERING JOURNAL, FOURTH QUARTER, 1991
10. LIFTING LOAD SHALL ONLY BE APPLIED VERTICALLY. LOAD APPLICATION IN ANY ALTERNATE DIRECTION REQUIRES SPECIAL LIFTING LUG DESIGN. CONTACT ENGINEERING.

11/17/2004	Revised Table – Added Dimen. "s"	By JP Appd. GL
2/9/2006	Revised dimen. Per latest design info. See Note # 9	By JP Appd. GL



Orifice Plate Detail

General Notes:

1. Five orifice assemblies required (one per pump discharge).
2. Center orifice place between flanges.
3. Slip-on flanges can be substituted for weld neck flanges.
4. Locate orifice stem at top of assembly (12 o'clock).
5. Orifice assembly will be removed when lake elevation is below 3,550 ft (MSL) and replaced with plain 16" dia. by 8ft long pipe spool piece.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
2	Installation Record	09/23/09	P. Prinsze
1	Revised to Show Weld Neck Flanges	08/03/09	P. Prinsze
0	Issued for Construction	07/30/09	P. Prinsze

Salt River Project

Generation Engineering

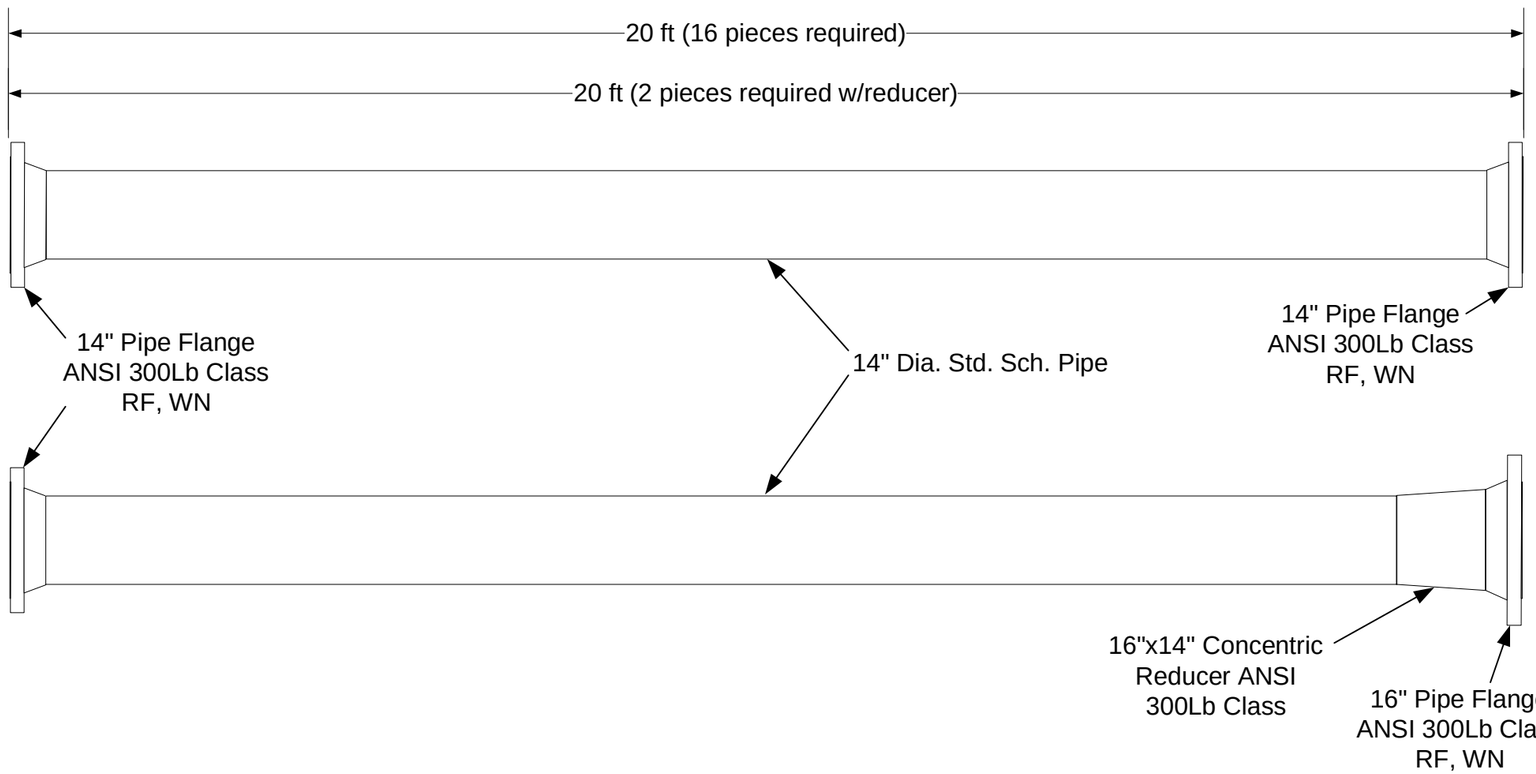
Mechanical, Electrical, & Controls

NAVAJO GENERATING STATION

Submersible Lake Pump
16" Discharge Piping - Orifice Assembly Details

SIZE	Charge Number	DWG NO	REV
B	P2510264-16	SK2009-001	2

SCALE	1in. = 1ft.	Peter Prinsze	SHEET	7 OF 10



Bill of Materials	
Qty	Description
360 ft	14" Pipe, Std. Sch, ASTM A106 Gr. B or A53 Gr. B Smls.
36	14" Flange, Class 300Lb, WN, RF, ASTM A105
30	14" Flexitalic Gasket, Style CG 300lb
2	16" x 14"Conc. Reducer, Class 300Lb, ASTM A216 WCB
2	16" Flange, Class 300Lb, WN, RF, ASTM A105
4	16" Flexitalic Gasket, Style CG 300lb
750	1-1/8"x 7-1/2"-7NC, Hex Head Bolt, ASTM A307 Gr. B
750	1-1/8" - 7NC, Hex Head Nut, ASTM A194 Gr. 2
1500	1-1/8" Washer, Type A Plain
50	1-1/4"x 7-1/2"-7NC, Hex Head Bolt, ASTM A307 Gr. B
50	1-1/4" - 7NC, Hex Head Nut, ASTM A194 Gr. 2
100	1-1/4" Washer, Type A Plain

General Notes:

1. MCM to fabricate all pipe spool pieces assemblies.
2. SRP will order all items noted on BOM.

14" SUBMERSIBLE PUMP DISCHARGE PIPING – TYPICAL SPOOL PIECE

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	Installation Record	12/2/11	P. Prinsze
0	Issued for Construction	04/28/11	P. Prinsze

Salt River Project

Generation Engineering

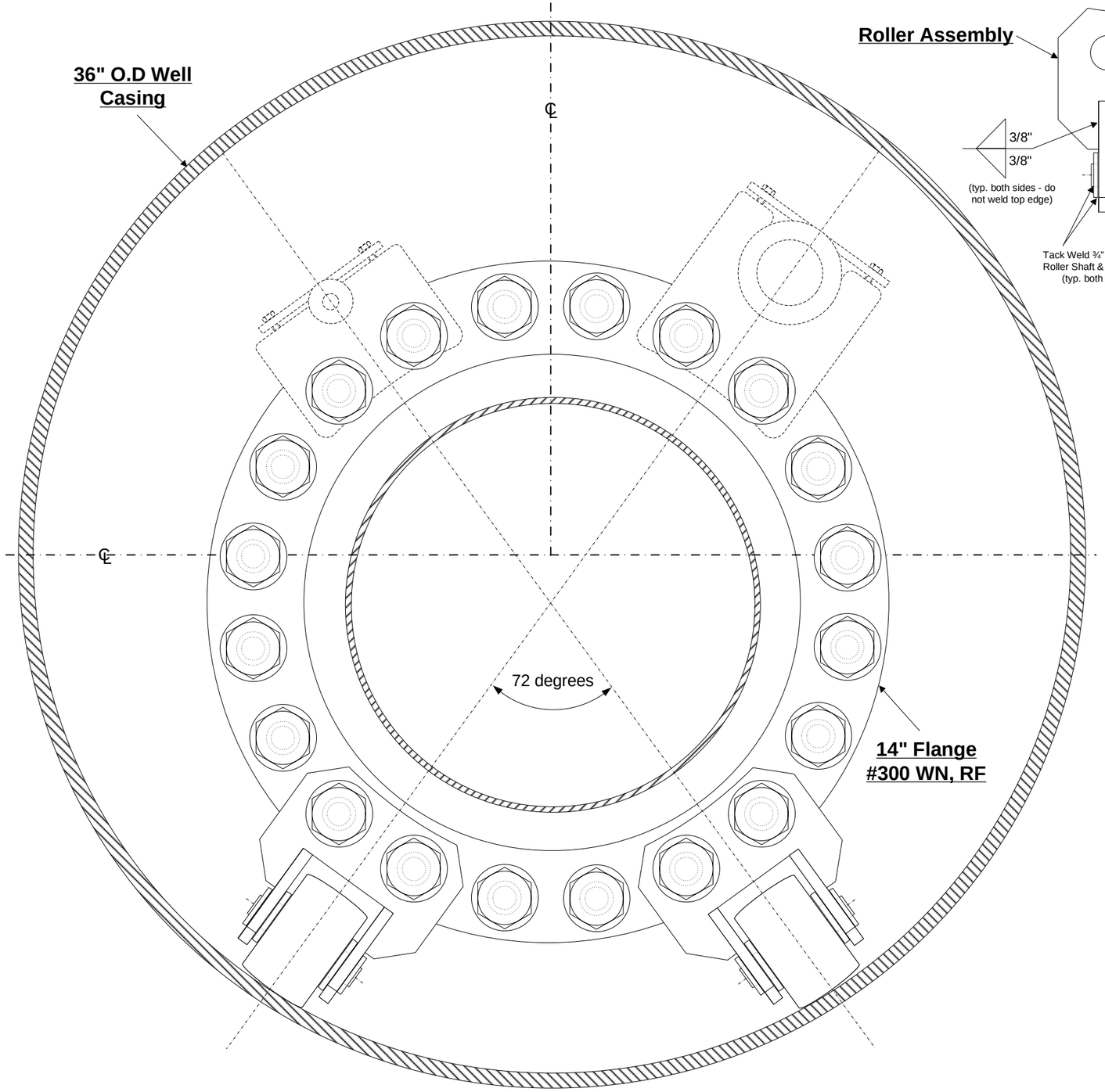
Mechanical, Electrical, & Controls

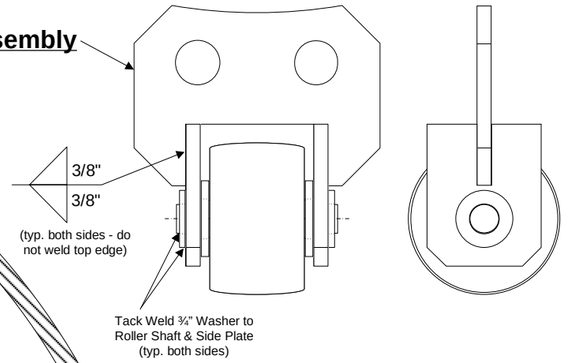
NAVAJO GENERATING STATION

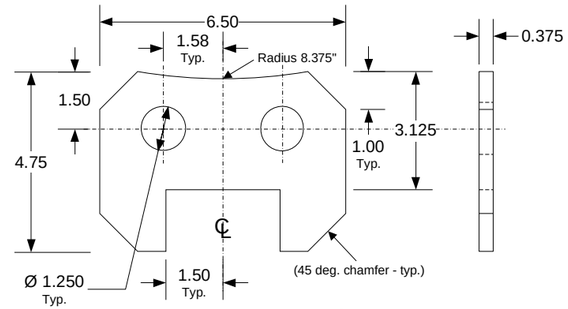
Submersible Lake Pump
14" Discharge Piping - Spool Piece & BOM

SIZE	Charge Number	DWG NO	REV
B	P3152155	SK2009-001	1

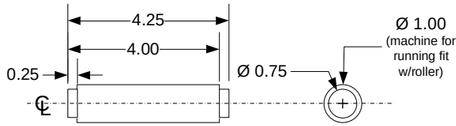
SCALE	1in. = 2 ft.	Peter Prinsze	SHEET	8 OF 10



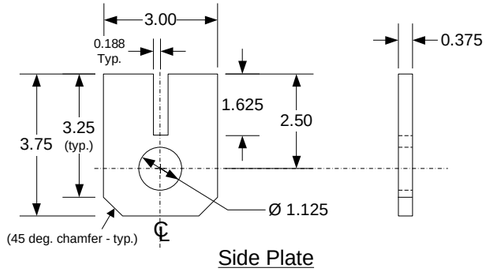




Base Plate
1 req. per assembly (ASTM A36)

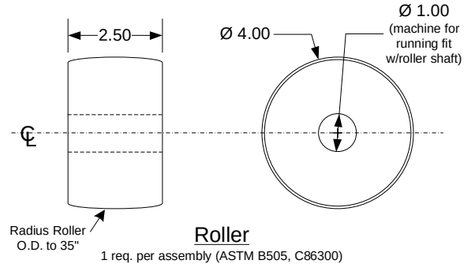


Roller Shaft
1 req. per assembly (ASTM A479 Gr. TP316)



Side Plate
2 req. per assembly (ASTM A36)

1" Spacer & ¾" Retention Washers
2 ea. req. per assembly (Type A Plain – 316SS)



Roller
1 req. per assembly (ASTM B505, C86300)

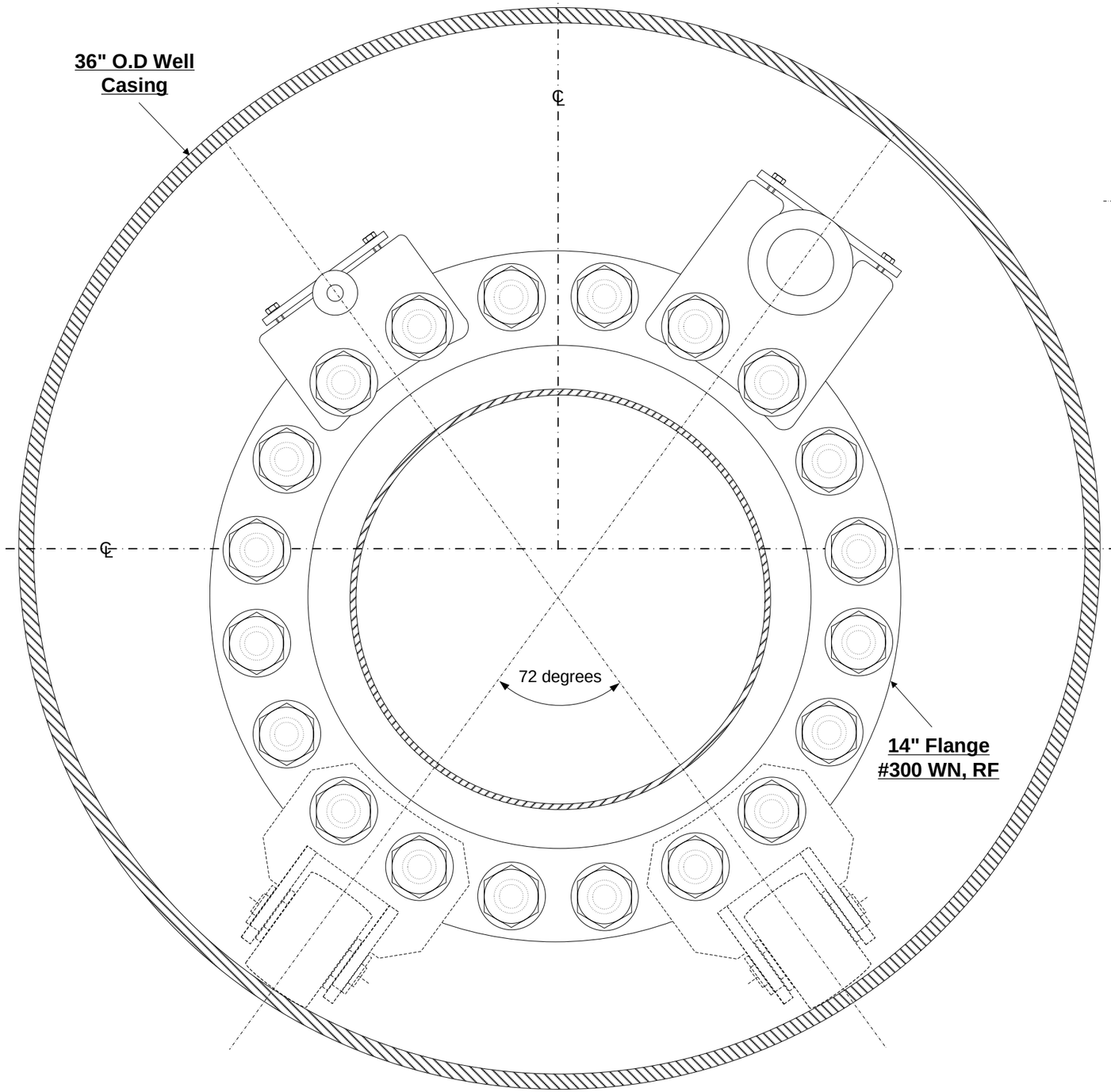
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	Installation Record	12/2/11	P. Prinsze
0	Issued for Construction	05/5/11	P. Prinsze

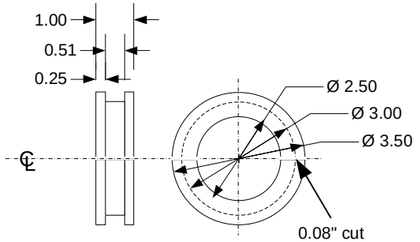
Salt River Project

NAVAJO GENERATING STATION

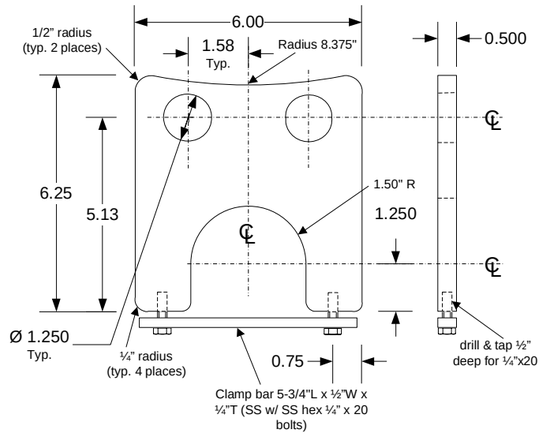
Submersible Lake Pump
14" Discharge Piping - Roller Assembly Details

	SIZE	Charge Number	DWG NO	REV
Generation Engineering	B	P3152155	SK2009-001	1
Mechanical, Electrical, & Controls	SCALE 1in. = 4in.	Peter Prinsze	SHEET 9 OF 10	

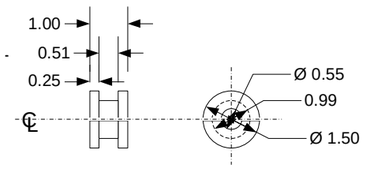




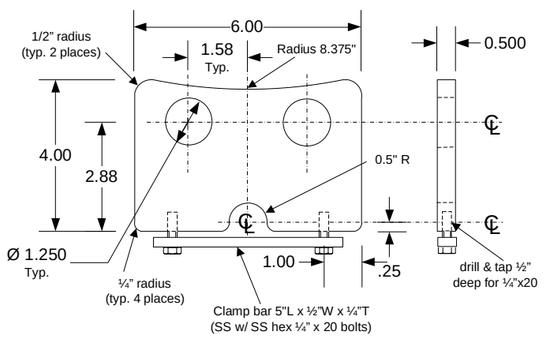
Power Cable Bushing
1 req. per assembly (Nylon)



Power Cable Base Plate
1 req. per assembly (ASTM A36 Powder Coated)



Control Cable Bushing
1 req. per assembly (Nylon)



Control Cable Base Plate
1 req. per assembly (ASTM A36 Poweder Coated)

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	Installation Record	12/2/11	P. Prinsze
0	Issued for Construction	05/5/11	P. Prinsze

Salt River Project	NAVAJO GENERATING STATION			
	Submersible Lake Pump 14" Discharge Piping - Cable Clamps - Assembly Details			
Generation Engineering	SIZE B	Charge Number P3152155	DWG NO SK2009-001	REV 1
Mechanical, Electrical, & Controls	SCALE 1in. = 4in.	Peter Prinsze	SHEET 10 OF 10	

Appendix I: ADOT Utility Guide

ADOT USE ONLY							
Encroachment Permits Tracking Id.	T128193	Date:	3/1/2024	Permit Type	UNDR	Review Type	#3 Substantive
Date submittal received:(PT)	4/4/2024	Requested Return Date		4/18/2024	Comments To applicant		
Route(s).	SR-98	Milepost	299.47				
Encroachment Owner & Contact	Navajo Dept of Water Resources- Jason John						
Engineer & Contact	Brown and Caldwell- Corwin Willmore						
Contractor(s)/Applicant:							

Work Description- Permit Purpose:
Install a 12-inch water pipeline that will encroach ROW. It will cross SR-98 near the intersection of Navajo Route 222 and SR-98. The pip will be installed by Jack and Bore method with casing to avoid any disturbance to traffic and highway.

Request for reviews from:		Name of Reviewer:	Request for reviews from:		Name of Reviewer:
	District Admin. - Engineer			Permits Supervisor	
	Regional Traffic Engineer			Roadside Dev.	
	Roadway Eng. - Drainage			Construction	
	Environmental Coord.			Right of way	
	Traffic Control				

Attachments. If not attached available at Drive - Use link below:							
X	Construction Plans		Traffic Control Plans		Drainage Report		Application
	Permit Tech. Comments		Traffic Study		Landscape Plans		Other:
	Other:		Other:		Other:		Other:
	ADOT Share Folder Web Link:						

Return Comments to:							
	Yvonnie Giltner Supervisor 928-779-7529 Ygiltner@azdot.gov	X	Rebekah Wilkes Technician 928-779-7549 Rwilkes@azdot.gov		"Sky" Skylene Crank Technician 928-779-7520 Scrank@azdot.gov		Chuck King Technician 928-779-7558 Cking2@azdot.gov

Plan or Document & Page No.	*Review Comment No.*	ADOT Comments	Applicants Response
Name of Reviewer: Rebekah Wilkes Date of Review:_____ Hours Spent on Review:_____			
Reminder	1	Contractor to provide a Certificate of Insurance (COI) along with all applicable endorsement sheets https://azdot.gov/sites/default/files/2023-11/Encroachment-Permit-Insurance-requirements.pdf	
Name of Reviewer :___Francisco Yanes____ Date of Review: ___4/5/24_____ Hours Spent on Review:_____			
Summary of Comments 3-1-24 submittal	1	All my comments for the previous submission dated 3-1-24 have been addressed. I also reviewed the documents provided C-229 and C-230 and these look good.	
	2	I have no further comments.	

ARIZONA DEPARTMENT OF TRANSPORTATION

GUIDELINE FOR ACCOMMODATING

UTILITIES

ON

HIGHWAY RIGHTS-OF-WAY

Prepared by the Utility and Railroad Engineering Section

Updated August 2015

ENGLISH UNITS

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1. GUIDELINE ON THE ACCOMMODATIONS OF UTILITIES WITHIN STATE OF ARIZONA HIGHWAYS RIGHT-OF-WAY

1.1. INTRODUCTION

1.1.1. BACKGROUND

Highway users have made a very substantial investment in the construction and maintenance of this nation's highways for the public good of all. The high level of service and degree of safety provided by our highway system must be preserved. It is the responsibility of the Arizona Department of Transportation (ADOT) to maintain the optimum degree of safety and traffic carrying capacity of all State and Federal highways under its control.

1.1.2. UTILITY ACCOMMODATION

Utilities are afforded the opportunity to apply for permission to occupy highway right-of-way through the permit or lease process, as appropriate. Each request for permit or lease will be reviewed in detail based on the criteria contained herein. Generally, if the request for permit or lease is in accordance with this guideline, it will be given favorable consideration. For permits, if at anytime hereafter the right of way, or any portion thereof, occupied by the Licensee may be needed or required by the Licensor, any permit or license granted in pursuance of this application may be revoked by the Licensor and all rights thereunder terminated, and upon sufficient notice, the Licensee shall and will remove property belonging to said Licensee.

1.1.3. PRIOR RIGHTS

This manual is not intended to delineate whether or not prior rights exist. A utility which has prior rights will be accommodated via an Agreement. If no prior rights exist, the utility owner will relocate the utility facility at its own expense when the corridor is needed for highway purposes by ADOT. This guideline shall govern the manner and the location of the accommodation of utilities within the highway right-of-way, but some provisions contained herein may not be applicable in prior rights situations.

1.2. AUTHORITY OF THE DIRECTOR

All uses of State highway right-of-way are under the control of the Director of ADOT pursuant to *A.R.S. 28-363,* and *Administrative Rule R17-3-502* (Title 17, Chapter 3).

1.3. STATEMENT OF GUIDELINE

1.3.1. UTILITIES TO WHICH GUIDELINE APPLIES

The principles set forth in this guideline apply to all public and private utilities including but not limited to communication, electricity, water, gas, petroleum products, steam, wastewater, cable TV, irrigation, and similar facilities. Such utilities may involve underground, surface or overhead facilities, either singularly or in combination.

1.3.2. HIGHWAY UTILITIES

This guideline shall apply to all utilities located within State highway rights-of-way except utility lines required for highway operations.

1.3.3. PROTECTION OF THE HIGHWAY

Utility installations and adjustments are to be made with primary consideration to the safety of highway users and the integrity of the highway and giving consideration to utility costs.

1.4. NEW UTILITY INSTALLATION ALONG HIGHWAYS

1.4.1. UNCONTROLLED ACCESS HIGHWAYS AND OUTSIDE OF CONTROL OF ACCESS ON CONTROLLED ACCESS HIGHWAYS

New utilities may be installed longitudinally within the rights-of-way outside the control of access lines of state highways provided the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with, or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. The preferred location of any utility is outside the roadway pavement, but if it is necessary to locate a utility under the pavement, any lane disturbed will be replaced full width.

F. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

1.4.2. INSIDE CONTROL OF ACCESS

New utilities will not be permitted to be installed longitudinally within the control of access lines of any highway, except in ADOT established utility corridors. In special cases, installations of utilities may be permitted under strictly controlled conditions. In such a case, the utility must show that:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT right-of-way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. The utility facilities will not be constructed and/or maintained by direct access from any traffic lane or connecting ramp within the controlled access;

G. Individual service connections, valves, manholes, switches or other items requiring access will not be allowed inside the control of access except in established utility corridors.

1.5. EXISTING UTILITIES ALONG PROPOSED CONTROLLED ACCESS HIGHWAYS

1.5.1. EXISTING UTILITIES ON NEW CONTROLLED ACCESS HIGHWAYS

Where a utility exists within the proposed right-of-way of a controlled-access highway and it can be serviced, maintained and operated without access from the controlled access traffic roadways or ramps; it may remain, provided it does not adversely affect the safety, design, construction, operation, maintenance or stability of the highway. Otherwise, it shall be relocated pursuant to the provisions stated herein.

1.5.2. EXISTING UTILITIES ON NEW CONTROLLED ACCESS HIGHWAYS WITH FRONTAGE ROADS

Where a controlled access highway with frontage roads is to be constructed which displaces an existing roadway, existing longitudinal utilities may be relocated between the frontage roads and the right-of-way line. Access to maintain and operate these utilities will not be permitted from the controlled access traffic lanes and ramps.

1.5.3. LIMITED RIGHT-OF-WAY

Under circumstances where rights-of-way widths are severely constricted due to development, natural features, cultural resources or other sensitive environmental concerns, utility relocations will be considered beneath frontage road pavements and may be permitted under strictly controlled conditions. Justifications will be required, showing evidence of financial or other hardship if utility is not allowed to remain, and must be accompanied by maintenance access plan, complete with planned traffic control measures.

1.5.4. UTILITY LOCATION

In all cases, longitudinal facilities will be located as near highway right-of-way line as possible.

1.5.5. PREFERRED UTILITY LOCATION

The preferred location of longitudinal utilities within highway right-of-way will be between highway open channel drainage facility and right-of-way fence.

1.6. UTILITY CORRIDORS

New or relocated utilities will be considered in ADOT established longitudinal corridors where sufficient right-of-way exists. Preferred locations of utility corridors will be where drainage channels, retaining walls, fences, or other such physical features delineate acceptable corridors for such purposes.

1.7. UTILITIES THROUGH OR AFFIXED TO EXISTING BRIDGES

1.7.1. EXISTING UTILITY ON EXISTING BRIDGE

Any utility carried on or through an existing bridge at the time the highway route is improved may continue to be so carried provided the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

1.7.2. NEW UTILITY ON EXISTING BRIDGE

A new utility will not be permitted to be installed on, within or through an existing bridge after the time the highway route is improved, except in existing ducts or for special cases as covered in *Section 1.4.*

1.8. UTILITIES THROUGH OR AFFIXED TO NEW BRIDGES

1.8.1. UTILITIES ON NEW BRIDGES

Utilities will be considered through or affixed to new ADOT bridges, provided the utility pays all additional design, construction and maintenance costs. Such utilities will not be permitted to be attached to the railing, curb, exterior portions of the bridges outward from the exterior girders or below the bottom of the girders.

1.8.1.1. FLEXIBLE LINES

Utility facilities shall be placed in ducts which do not adversely affect the structural integrity of the bridge or terminate or have access in the roadway pavement.

1.8.1.2. RIGID LINES

Generally, no rigid utility lines will be permitted to be attached to bridge structures. This guideline applies to any grade separation, traffic interchange, ramp, viaduct or stream crossing structure. ADOT may allow exceptions on a case-by-case basis where it can be demonstrated that there are no reasonable and prudent alternatives to the attachment of the rigid utility line on a structure. These special cases will generally be limited to major river crossings, within long sections of depressed freeways, or on projects involving bridge rehabilitation or replacement where there is an existing rigid utility attachment.

When gas or flammable liquid lines are approved for attachment to a bridge, special provisions for safety will be required, and the utility will be responsible for the additional costs.

1.9. UTILITIES CROSSING HIGHWAYS

1.9.1. NEW UTILITY CROSSINGS

New utility installations and adjustments or relocations of existing utilities may be allowed to cross a highway, generally perpendicular and under the highway alignment where practical.

1.9.1.1. MAINTENANCE OUTSIDE CONTROL OF ACCESS

Where a utility follows a crossroad or street which is carried over or under a highway, provision shall be made for the utility to cross the highway on the locations of the crossroad or street in such manner that the utility shall only be maintained from outside the control of access. Generally, the utilities are to be located within the right-of-way of the crossroad or street.

1.9.1.2. OVERHEAD UTILITY CROSSING VERTICAL CLEARANCE

The vertical clearance to overhead utility lines crossing highways shall be determined by *the National Electrical Safety Code, ANSI C2, Institute of Electrical and Electronics Engineers, Inc., and "Arizona Encroachments in Highway Rights-of-Way, Rule No. R17-3-502*" (Title 17, Chapter 3).

1.9.1.3. OVERHEAD UTILITY CROSSINGS IN INTERCHANGE AREAS

When practical, utility support facilities shall be placed outside the controlled access. Where not practical, facilities will be accommodated inside the controlled access only when all of the following conditions are met:

A. *A clear zone will be provided with respect to the freeway lanes and ramps in accordance with AASHTO "Roadside Design Guide;"*

B. Design sight distance is not impaired;

C. The conditions of Section *1.11.1* "Access for Maintaining Utilities," are satisfied.

1.9.1.4. OVERHEAD UTILITY CROSSINGS OUTSIDE OF INTERCHANGE AREAS

Utility lines crossing a highway at points removed from grade separation structures, or those crossing near a grade separation but not within the right-of-way of a crossroad or street, shall be placed so that supporting structures are located outside the control of access line.

1.9.1.5. UNDERGROUND UTILITY CROSSINGS

Access for maintenance will not be allowed from within the control of access lines on controlled access highways.

On uncontrolled access roadways, manholes, valves, and other points of access to utility facilities preferably will be located outside the roadway prism.

1.9.1.6. IRRIGATION DITCHES AND WATER CANALS

Canals and irrigation ditches will be permitted transversely, but longitudinal installations will only be permitted in special cases and as covered by *Section 1.4.*

Crossings may be made by inverted siphon, or by irrigation culverts or bridges as appropriate to the size of canal, topographic conditions, and highway safety aspects.

1.9.1.7. PROVISIONS FOR EXPANSION OF UTILITIES

When existing utilities are relocated or adjusted in conjunction with construction of a highway, provision may be made for expansion of the utility facilities. They shall be planned to avoid interference with current and planned future traffic.

1.9.1.8. UTILITY CROSSING STRUCTURES

Where crossroads at freeways or highways are so congested with existing and planned utilities as to compromise highway construction, schedules, costs and traffic phasing, ADOT, with the concurrence of the affected utilities, may construct crossings at approximately quarter or half mile locations to accommodate the utility crossings and remove conflicts from the crossroad area. Such crossings may be funded jointly by the utilities or leased from ADOT under the guidelines in *Section 1.14*.

1.9.1.9. UTILITIES IN DRAINAGE STRUCTURES

Utilities will not be allowed inside of drainage structures except in emergency cases, and must be removed as soon as permanent facilities can be constructed.

1.10. UTILITIES IN VEHICULAR TUNNELS

New utilities will not be permitted to occupy vehicular tunnels on highways, except in special cases and as covered by *Section 1.4*. Utility facilities which transport flammable

or hazardous materials shall not be allowed in a vehicular tunnel under any circumstance.

1.11. PERMIT FOR UTILITY MAINTENANCE

A permit is required for all utility maintenance within highway right-of-way.

1.11.1. ACCESS FOR MAINTAINING UTILITIES ON CONTROLLED ACCESS HIGHWAYS

Access for maintaining a utility along or across a controlled access highway should be limited to access via:

A. Frontage roads where provided,

B. Nearby, adjacent or cross public roads and streets,

C. Maintenance roads along or near the highway right-of-way lines, connecting only to an intersecting road or adjacent property, or

D. Turnouts constructed to limited access roadways for utility access through the ADOT permit procedures.

1.11.2. CONTROLLING UTILITY ACCESS

Means for controlling utility access will include but not be limited to fences, walls, landscaping and drainage channels. Violations of these strict access requirements may result in revocation of the permit and removal of the utility at the utility owner's expense.

1.11.3. EMERGENCY MAINTENANCE

The utility shall make prior arrangements with the ADOT District Office for emergency maintenance procedures.

1.12. CONSTRUCTION AND LOCATION DETAILS

1.12.1. PLANS REVIEW

ADOT shall review and approve the location of all utility installations and adjustments within the highway right-of-way and issue permits for the approved work.

1.12.2. TRAFFIC CONTROL

When utilities are performing construction or maintenance of facilities within ADOT Right-of-Way, the utility must obtain a permit and shall comply with MUTCD for traffic control.

1.12.3. INTERFERENCE WITH ADOT CONTRACTOR

After ADOT notifies the utility of a conflict, the utility may be subject to a back charge for any contractor delays and relocation costs incurred by ADOT if the utility did not meet its commitment schedule for relocation. This reimbursement is subject to the appeal process in *Section 1.15*.

1.13. UTILITY PERMIT REQUIREMENTS

All utilities who obtain permits to occupy ADOT Highway Rights-of-Way will be subject to the "*Arizona Encroachments in Highway Rights of Way, Rule No. R-17-3-502"* (Title 17, Chapter 3) and the following additional provisions:

1.13.1. INSTALLATION DRAWINGS and INSTALLATION DRAWING BOND

The utility shall provide drawings reflecting the horizontal location and vertical elevation, as of the time of installation of its facilities, within 90 days of the completion of the work. Such drawings are not intended as a substitute for marking the location of the facilities as required under *A.R.S. § 40-360.21,* et seq. ADOT reserves the right to require a bond for new permits after written notice to a Permittee of non-compliance with the timely submission of acceptable installation drawings. The amount of the bond shall be based on the estimated cost of verifying the location of a utility's facilities. The utility may be required to provide a bond upon a demonstrated history of non-compliance with the installation drawing requirements and a failure to correct such non-compliance within a reasonable time after written notice from ADOT. The bond will be refunded upon compliance with the installation drawing requirements. Failure to comply may result in forfeiture of the bond required for the permit.

1.13.2. LIABILITY

Neither the State nor any of its departments, officers, or employees shall be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility’s use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

1.13.3. INSURANCE

The utility shall provide insurance in accordance with ADOT insurance requirements in the amount of $1,000,000 per occurrence for as long as the encroachment is within ADOT Right-of-Way, with the State and ADOT as additional named insured, or shall provide documentation of self-insurance providing the State with protection against any and all claims arising through association with said utility occupying public right-of-way for the same period. The coverage needs to provide for bodily injury, property damage to others as a result of accidents from premises or operations of the permittee,

products/completed operations, contractual, broad form property damage and personal injury. The permit will have a hold harmless clause.

1.14. LEASE OF ADOT RIGHTS-OF-WAY OF CONTROLLED ACCESS HIGHWAYS

1.14.1. LEASE ON CONTROLLED ACCESS HIGHWAYS

On controlled access highway rights-of-way, longitudinal utility installations may be located in a utility corridor leased to them pursuant to authority granted by Arizona law.

1.14.2. LONGITUDINAL CORRIDOR OR TRANSVERSE STRUCTURE FOR LEASE

Such leases shall be limited to longitudinal utility corridors as established by ADOT or transverse facilities if ADOT constructs facilities for the exclusive use of the utilities. Sub-leasing of ADOT Highway Right-of-Way will not be allowed without ADOT approval.

1.15. SPECIAL CASES AND APPEALS

1.15.1. APPEALS

Upon disapproval of any request that may result in unique, extraordinary hardship or disagreement an appeal will be allowed, providing the utility submits in writing the reasons why an exemption should be granted.

1.15.2. APPEAL PROCESS

Appeals, except permit appeals, shall be in writing to ADOT Utility and Railroad Engineering Section requesting a review by the Assistant State Engineer for Engineering Technical Group. Permit appeals shall be submitted to the appropriate District Engineer for review.

1.15.3. FINAL APPEAL

In the event the utility is not satisfied with the decision of the appeal, it may submit a written request through the original appeal channels for a review by the State Engineer or review panel. The State Engineer's decision is final.

2. GENERAL INFORMATION

2.1. DEFINITION OF TERMS

2.1.1. "AASHTO" - American Association of State Highway and Transportation Officials.

2.1.2. "AC" - Asphaltic Concrete, asphalt pavement.

2.1.3. "ADOT" - Arizona Department of Transportation.

2.1.4. "Bridge Engineer" - ADOT's Engineer in charge of ADOT's Structure Section.

2.1.5. "Clear Zone" - A specific distance from the edge of a travel lane free of above ground obstacles as determined by ADOT and the AASHTO "Roadside Design Guide.

2.1.6. "Controlled Access Highway" - Means a highway with access controlled by the public authority having jurisdiction over the highway, street or roadway.- Example: Interstate highway, urban freeway, expressway, parkway

2.1.7. "Controlled Access Line" - The line on ADOT plans which denotes the access boundary on a controlled access highway. The line is usually coincident with the right-of-way line.

2.1.8. "Control of Access" - Locations where owners or occupants of abutting lands and other persons have no legal right of access.

2.1.9. "Depth of Cover" - The minimum depth at which utility facilities may be installed at time of installation. In paved areas, depth is measured between sub grade and the top of utility facilities. In unpaved areas, depth is measured between finish grade and the top of utility facilities.

2.1.10. "Engineer" - The State Engineer, acting by and under the authority of the laws of the State of Arizona, or the State Engineer's representative in matters relating to construction activities.

2.1.11. "Established Utility Corridor" - A longitudinal strip of right-of-way designated by ADOT for utility facility placement.

2.1.12. "Freeway" - A controlled access highway with access limited to ramps, and all traffic crossings are by grade separations.

2.1.13. "Frontage Road" - A local street or road auxiliary to and located on the side of a highway for service to abutting property and adjacent areas and for control of access to the main roadway.

2.1.14. "Hazardous Material" - Materials or substances defined as "hazardous substances", "hazardous material", or "toxic substances", as defined in any applicable state or federal law.

2.1.15. "Highway" - A general term denoting public way for the principal purposes of vehicular traffic.

2.1.16. "Highway Right-of-Way" - As used herein, general term denoting land, property, or interest therein, usually in a strip, acquired for highway purposes.

2.1.17. "Interchange" - An intersection of at least two roads which are separated by grade and have ramps to move from one road to the other.

2.1.18. "Installation Drawings" - A drawing showing the horizontal location and vertical elevation of installed facilities as of the day constructed referenced to ADOT control points.

2.1.19. "Lane Width" - Paved section of the roadway from pavement centerline or lane line stripe to pavement lane line, edge line stripe or without edge line stripe to curb or edge of pavement.

2.1.20. "MUTCD" - Manual on Uniform Traffic Control Devices.

2.1.21. "Uncontrolled Access Highway" - Means a highway to which owners or occupants of abutting lands and other persons have legal right of access.- Example: Non-freeway State primary and secondary highways.

2.1.22. "Open Cut" - Any excavation in the right-of-way larger than 300 mm x 300 mm.

2.1.23. "PCCP" - Portland Cement Concrete Pavement, white pavement.

2.1.24. "Permit" - An ADOT issued document specifying the conditions under which an entity's facilities may utilize a portion of ADOT right-of-way. Any references to "permit" shall include encroachment permit and/or utility permit.

2.1.25. "Pothole" - A hole cut in the surface within the right-of-way with a maximum size of 300mm x 300mm to access underground utility facilities.

2.1.26. "Ramp" - A roadway providing access to or from a controlled access highway. When a ramp and frontage road merge the resulting roadway is also defined as a ramp.

2.1.27. "Roadway Prism" - That portion of the right-of-way required for the highway, limited by the outside edges of slopes, including ditches, and all appurtenant structures.

2.1.28. "State" - State of Arizona.

2.1.29. "Utility" - An entity which transmits or distributes communications, cable television, electricity, light, heat, gas, oil, crude products, water, sewer, waste or any other similar commodity which directly or indirectly serves the public.

2.2. AUTHORITY

2.2.1. DIRECTOR'S AUTHORITY

A.R.S. 28-363 and *A.R.S 28-7045* gives the Director of the Department of Transportation complete and exclusive operational control and jurisdiction over the use of State highways and routes, and to prescribe such rules and regulations regarding such use as he deems necessary.

2.2.2. ENCROACHMENT

A.R.S. 28-7053 and *A.R.S 28-7054* covers right-of-way encroachments and penalties. *A.R.S. 28-7055* covers right-of-way fence controls.

2.2.3. PERMIT AUTHORITY

Administrative Rule R17-3-502 (Title 17, Chapter 3) covers permits for encroachments in highway rights-of-way.

2.3. CONDITIONS FOR UTILITY PERMITS WITHIN THE HIGHWAY RIGHT-OF-WAY

2.3.1. PERMIT REQUIRED

All utility encroachments within the highway right-of-way require a valid permit from ADOT. All permits shall be revocable as specified on the permit form.

2.3.2. NON-TRANSFERABILITY OF PERMIT

No party other than the named permittee (utility) or contractor of the permittee (utility) are authorized to work under this permit.

2.3.3. ACCEPTANCE OF PROVISIONS

Any work performed pursuant to an ADOT permit shall constitute an acceptance of the terms and conditions specified on the permit.

2.3.4. PRECEDENT

Permits are issued with the understanding that any particular action taken is not to be considered as establishing a precedent for future requests.

2.3.5. NOTICE PRIOR TO STARTING WORK

Before starting work on which either full or partial inspection is required by the terms of the permit, the permittee shall notify the ADOT District Engineer or other designated employee three (3) days excluding Saturdays, Sundays and legal holidays in advance of the date work is to begin.

2.3.6. POSTING PERMIT

The permit or a copy thereof, shall be kept at the site of the work, and must be shown to any representative of the ADOT or any enforcement officer on demand.

2.3.7. PROTECTION OF TRAFFIC

Adequate provisions shall be made for the protection of the traveling public before any work can start. All warning signs, lights, barricades and other safety devices and other measures required for the public safety, shall conform to and follow the requirements of the current "*Manual on Uniform Traffic Control Devices*" and the current "*Arizona Department of Transportation Traffic Control Supplement*."

2.3.8. STORAGE OF MATERIAL AND EQUIPMENT

Except as specified herein, no construction material shall be stored, nor equipment parked during non-work periods, within the highway controlled access during the performance of the permittee's work on completed sections of freeways. On incomplete sections of freeways and uncontrolled access highways, material and equipment may be stored and parked under controlled conditions.

2.3.9. RIGHT OF WAY

A utility (permittee) shall, upon completion of the work, remove all excess construction material and debris, repair any damage to ADOT property such as fences, structures or pipes, and restore landscaping to its original condition.

2.3.10. ACCESS

Temporary or permanent access gates may be installed in right-of-way fences on uncontrolled access roads if provided for in the permit. New access gates will not be permitted on an existing freeway. Existing gates are permitted but must be locked at all times. Any rights of access are not transferable or assignable by the utility.

2.3.11. CONSTRUCTION

All work performed within highway rights of way shall conform to recognized standards of utility construction and "*Arizona Department of Transportation Standard Specifications for Road and Bridge Construction*", and all conditions on the permit.

2.3.12. ROUTINE MAINTENANCE

A permit is required before a utility company performs routine maintenance within highway right-of-way. Blanket permits may be granted for minor maintenance work on uncontrolled access highways only, and for street light maintenance on controlled access highways.

2.3.13. EMERGENCY CONDITIONS

The utility shall make prior arrangements with the ADOT District Office for emergency maintenance procedures. The utility shall notify the Department of Public Safety (DPS) and the ADOT District Engineer or his representative immediately or as soon as possible. The utility shall perform all necessary repairs to restore facilities and take all necessary action to protect the traveling public during the performance of their work under emergency conditions. All acts committed by the utility or its representatives under these conditions shall be the sole responsibility of the utility and subject to conditions of its prior arrangements or follow-up permit.

2.3.14. LIABILITY

State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

2.3.15. ADOT PLANS REVIEW

ADOT will review the proposed location and design of all utility installations and adjustments located within highway right-of-way for their compatibility with planned and present use of the highway.

2.3.16. REQUEST FOR PERMITS

Request for permits shall include the following items before a request will be processed:

A. Highway right-of-way lines;

B. Highway controlled access lines;

C. Highway center line;

D. Ties from new facilities to Highway center line, stationing and mileposts;

E. Minimum clearance above finished roadway surface or structures for proposed aerial lines;

F. Type, size, number and voltage of conductors;

G. The size, class, grade and wall thickness of conduit, amount of cover as described in *Section 2.1.9* type of backfill material, voltage and operating pressure if applicable, of underground lines;

H. The size of cables and number of pairs for communication lines;

I. Plan and profile drawings for all conduit systems crossing controlled access

J. Any change to the design, location or construction of an approved permit's plans will require ADOT approval prior to the change taking place.

2.3.17. INSTALLATION DRAWING

The utility shall provide drawings reflecting the horizontal location and vertical elevation, as of the time of installation of its facilities, within ninety (90) days of the completion of the work. Such drawings are not intended as a substitute for marking the location of the facilities as required under *A.R.S. § 40-360.21,*

2.3.18. INSTALLATION DRAWING BOND

ADOT reserves the right to require a bond for new permits after written notice to a Permittee of non-compliance with *Section 2.3.17.* The amount of the bond shall be based on the estimated cost of verifying the location of a utility's facilities. The utility may be required to provide a bond upon a demonstrated history of non-compliance with *Section 2.3.17* and a failure to correct such non-compliance within a reasonable time after written notice from ADOT.

The bond will be refunded upon compliance with *Section 2.3.17*. Failure to comply may result in forfeiture of the bond required for the permit.

2.3.19. NON-COMPLIANCE

Failure to comply with the terms and conditions, as specified herein or on the permit may be cause for revocation of permit.

2.4. ADEQUATE SPACE IN RIGHT-OF-WAY FOR UTILITY ACCOMMODATIONS

When adequate space is limited within the highway right-of-way to safely accommodate several utilities, the following guideline will be used:

A. During design process of a new roadway or roadway improvements, utility accommodations may be designed along with the project with concurrence and involvement of the affected utilities;

B. After construction of the highway or highway improvement utility installations will be allowed on "first come, first considered" guideline. Consideration will be given to the compatibility of the affected utilities.

3. UTILITY GUIDELINES IN CONTROLLED ACCESS HIGHWAY

3.1. ELECTRICAL LINES

3.1.1. CONFLICTS

The State assumes no liability for conflicts with existing underground or overhead utilities. It is further understood the utility will, at its expense (except when the utility has prior rights), remove, relocate, or alter its facilities within the right-of-way when required by ADOT.

3.1.2. EXISTING ELECTRIC LINE ALONG PROPOSED CONTROLLED ACCESS HIGHWAYS

Where an electric line already exists within the proposed right-of-way of a controlled-access highway and it can be serviced, maintained and operated without access from the controlled access traffic roadways or ramps, it may remain provided it does not adversely affect the safety, design, construction, operation, maintenance or stability of the highway. Otherwise, it must be relocated.

3.1.3. POTHOLES

Potholes will not be allowed on any completed section of the highway or ramp paved area. Potholes in unpaved areas and on frontage roads will be allowed. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8”) inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requirements of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

3.1.4. OPEN CUTS

Open cuts will not be permitted on any completed section of the highway or ramps. Open cuts may be permitted where the roadway surfacing has not been completed. Open cuts in unpaved areas may be permitted outside the control of access. Open cuts on frontage or cross roads require pavement replacement with the same type material as the existing roadway.

3.1.4.1. BACKFILL MATERIAL

All installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism areas shall be backfilled as per the pothole requirements in *Section 3.1.3.*

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay or other objectionable material.

Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	**PERCENT PASSING**
3 inches	**100**
¾ inches	**60-100**
No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.

The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90.

The required test results will be provided by the utility to ADOT.

3.1.4.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than 3 inches shall be removed from the excavation before backfill is placed.

Where a utility structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4’) feet in depth. The maximum water content of the slurry mixture shall be 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

3.1.4.3. COMPACTION OF BACKFILL

In pavement areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

3.1.4.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

Asphaltic Concrete Pavement minimum replacement will be 100 feet along the center line of the highway, 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

The Asphaltic Concrete material will be hot material conforming to Section 409 of the current "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for the payment provision.

3.1.4.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement will be replaced six (6”) inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1’) foot each side. The surface texture and grade will match the existing pavement surface. Any existing PCCP slab disturbed will be replaced in full.

Portland Cement Concrete Pavement will conform to Section 401, of the current "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for payment provision.

3.1.5. DEPTH OF COVER

Direct burial cable shall have a minimum cover of (48”) forty-eight inches. Underground electric lines located within conduit or ducts shall have a minimum cover of (36”) thirty-six inches.

3.1.6. CONTROL OF ACCESS

Utility structures, manholes, guys or other appurtenances will not be permitted within the control of access area, except in ADOT Established Utility Corridors.

3.1.7. MANHOLES

No manholes will be allowed inside the control of access except in Department established utility corridors. No manholes will be allowed outside the control of access in the pavement surface.

3.1.8. CROSSINGS

Transmission and distribution electric lines may be permitted to cross over or under all controlled access highways, where the utility can be serviced without access from inside the control of access. The electric lines should cross the highway generally perpendicular to the highway alignment where practical.

3.1.8.1. ELECTRIC LINES ALONG CROSSROADS

Where an electric line follows a crossroad or street which is carried over or under a controlled access highway, provision should be made for the electric line to cross the highway at the location of the crossroad or street in such manner that the electric line can be serviced without access from inside the control of access. Generally, electric lines should be located within the crossroad or street right-of-way. Where distinct advantage and appreciable cost savings can be affected by locating electric lines outside the crossroad or street right-of-way, they may be so located providing safety and controlled access requirements are met.

3.1.8.2. OVERHEAD ELECTRIC LINE CROSSINGS

The vertical clearance to overhead electric lines crossing highways shall be determined by the *National Electrical Safety Code, ANSI C2, Institute of Electrical and Electronics Engineers, Inc.*, and "*Arizona Encroachments in Highway Rights of Way, Rule No. R-17-3-502"* (Title 17, Chapter 3).

A. Interchange Areas: When practical, electric poles shall be placed outside the control of access. Where not practical, electric poles may be accommodated inside the control of access only when all of the following conditions are met:

i. A clear zone will be provided with respect to the highway lanes and ramps as determined by ADOT;

ii. The design sight distance is not impaired;

iii. Access for servicing a utility along or across a controlled access highway should be limited to access via:

a. Frontage roads where provided;

b. Nearby, adjacent or cross public roads and streets;

c. Maintenance roads along or near the highway right-of-way lines, connecting only to an intersecting road or adjacent property, or;

d. Turnouts constructed to limited access roadways for utility access through the ADOT permit procedures.

B. Outside of Interchange Areas: Electric lines crossing a highway at points removed from grade separation structures, or those crossing near a grade separation but not within the right-of-way of a crossroad or street, shall be adjusted so that supporting structures are located outside the control of access line.

3.1.8.3. UNDERGROUND ELECTRIC LINE CROSSINGS

Underground electric line crossings are preferred but must have all service or maintenance from outside the control of access lines.

3.1.8.4. ELECTRIC CABINETS & TRANSFORMERS

Electric cabinets, transformers and other ground mounted appurtenances shall be located outside the control of access lines.

3.1.9. ELECTRIC LINES THROUGH OR AFFIXED TO EXISTING BRIDGES

Any electrical conduit or duct carried on or through an existing bridge at the time the highway route is improved may continue to be so carried provided the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT right-of-way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

F. New utilities will be allowed in existing ducts or conduits but new utility conduit or ducts will not be permitted to be installed on, within or through an existing bridge after the time the highway bridge structure is improved.

3.1.10. ELECTRIC LINES THROUGH OR AFFIXED TO NEW BRIDGES

Electric line crossings will be considered in conduit or ducts through new bridges, provided the utility company pays all additional design, construction and maintenance costs. Such utilities will not be permitted to be attached to any part of the exterior of the bridge.

Electric lines will be limited to conduits or ducts which do not adversely affect the structural integrity of the bridge.

3.1.10.1. BRIDGE ENGINEER

The Bridge Engineer shall determine the location of all lines installed within a structure, and shall design the access openings as required.

3.1.11. JACKING OR BORING

3.1.11.1. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

3.1.11.2. BENTONITE SLURRY BORING

Conduit may be Bentonite clay slurry bored or drilled under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

3.1.11.3. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

3.1.11.4. JACKING INSIDE 30 FEET

Jacking or boring pits will not be permitted in the median within 30 feet of a traveled lane. Jacking or boring pit may be allowed within 30 feet of the edge of the right shoulder with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure.

3.1.11.5. OVERBREAKAGE

Extreme care must be taken during jacking or boring operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreakage shall be pressure grouted.

3.1.12. LONGITUDINAL ELECTRIC LINES INSIDE THE CONTROL OF ACCESS

New longitudinal electric lines will not be permitted to be installed within the control of access lines in any location other than within ADOT established utility corridors except in special cases. Installations of longitudinal electric lines may be permitted only under strictly controlled conditions. In each of these special cases, the utility owner must show that:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the present use or planned future expansion of the highway;

C. Any alternative location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. Electric lines will not be allowed longitudinally under paved lanes;

G. The accommodation will not be constructed and/or maintained by direct access from any traffic lane or connecting ramp within the controlled access;

H. Individual service connections, manholes, switches, transformer, or other items requiring access will not be allowed inside the control of access except in established utility corridors or to service ADOT facilities;

I. The underground installation does not require extensive permanent removal or alteration of trees, landscaping or other natural features.

3.1.13. LONGITUDINAL ELECTRIC LINES OUTSIDE THE CONTROL OF ACCESS

Electric lines will be allowed to be installed longitudinally within the rights-of-way outside the control of access lines of State highways provided the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the present use or planned future expansion of the highway;

C. Any alternative location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation.

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the

ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

F. Overhead guys, anchors or stub poles will not be permitted within *the clear zone of traffic lane as described in AASHTO "Roadside Design Guide"*.

3.1.14. PREFERRED LONGITUDINAL LOCATION

The preferred location of longitudinal utilities within highway rights-of-way will be between highway open channel drainage facility and right-of-way fence or as close to the right-of-way line as is practical.

3.1.15. GATES

3.1.15.1. EXISTING GATES

Existing gates may be permitted to remain, except in areas where the utility company has other means of access to their facilities by an access road or frontage road from an interchange. Existing gates must be locked at all times. Any rights of access are not transferable or assignable by the utility. Abuse of this privilege will be just cause for removal of existing gates.

3.1.15.2. NEW GATES

New access gates will not be permitted on existing controlled access highways except where there are no other means of access to the facilities from outside the control of access.

3.2. WATER & SEWER LINES IN CONTROLLED ACCESS HIGHWAY

3.2.1. CONFLICTS

The State assumes no liability for conflicts with existing underground or overhead utilities. It is further understood the permittee will at its expense (except when the utility has prior rights), remove, relocate, or alter its facilities within the right-of-way when required by ADOT

3.2.2. POTHOLES

Potholes will not be allowed on any completed section of the highway or ramp paved area. Potholes in unpaved areas and on frontage roads will be allowed. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8") inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requirements of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

3.2.3. OPEN CUTS

Open cuts will not be permitted on any completed section of the highway or ramps. Open cuts may be permitted where the roadway surfacing has not been completed. Open cuts in unpaved areas may be permitted outside the control of access. Open cuts on frontage or cross roads require pavement replacement with the same type material as the existing roadway.

3.2.3.1. BACKFILL MATERIAL

All installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism areas shall be backfilled as per the pothole requirements in *Section 3.2.2.*

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay or other objectionable material.
Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	PERCENT PASSING
3 inches	**100**

¾ inches	**60–100**
No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.

The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90

The required test results will be provided by the utility to ADOT.

3.2.3.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than 3 inches shall be removed from the excavation before backfill is placed. Where a utility structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4’) feet in depth. The maximum water content of the slurry mixture shall be 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly

mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

3.2.3.3. COMPACTION OF BACKFILL

In pavement areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

3.2.3.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

Asphaltic Concrete Pavement minimum replacement will be 100 feet along the center line of the highway, 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

The Asphaltic Concrete material will be hot material conforming to Section 409, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for the payment provision.

3.2.3.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement will be replaced six (6”) inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1’) foot each side. The surface texture and grade will match the existing pavement surface. Any existing PCCP slab disturbed will be replaced in full.

Portland Cement Concrete Pavement will conform to Section 401 of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for payment provision.

3.2.4. DEPTH OF COVER

All water or sewer lines located within the controlled access right-of-way shall have minimum of thirty-six (36”) inches of cover except as stated in *Section 3.2.8.2*.

3.2.5. WATER METER & SERVICE LINES

Water meters and service lines serving private facilities will not be permitted within the highway control of access.

3.2.6. FIRE HYDRANTS

Fire hydrants may be installed within controlled access highway rights of way in urban areas, under all of the following conditions:

A. Where there is no other means of serving the area;

B. Where a frontage road exists;

C. Outside the Control of Access.

3.2.7. MANHOLES

Sewer manholes will not be allowed inside the control of access except in Department established utility corridors. Manholes outside the control of access should not be located inside the roadway pavement.

3.2.8. CROSSINGS

3.2.8.1. GUIDELINES

Water mains, water service lines and sewer lines may be permitted to cross under all controlled access highways with the following conditions:

A. No individual service connections, valves, manholes or other items requiring access will be allowed inside the control of access except in established utility corridors;

B. May be installed in open cuts during highway construction prior to paving;

C. Water lines may be installed in a jacked or bored sleeve after highway construction;

D. Gravity Sewer lines may be installed by direct jacking or boring or in a jacked or bored sleeve after highway construction;

E. Must be maintained from outside the control of access;

F. Water lines must have shut off valves at each right-of-way line.

3.2.8.2. WATER LINES CROSSINGS

There are three types of water lines crossing of freeways: (a) freeway is elevated at an “at grade” crossroad, (b) freeway is elevated with no freeway crossroad, and (c) freeway depressed.

A. **FREEWAY IS ELEVATED AT AN "AT GRADE" CROSSROAD** Water lines will be accommodated crossing the freeway as follows: Un-sleeved freeway crossings with pipelines up to 48 inches Ductile Iron Pipe with Restrained Joints (DIPRJ) will be allowed within the crossroad area. The pipelines shall be placed in the parkway back of the sidewalk, under the sidewalk or under the outside (slow) lane of the crossroad with a minimum of 6 feet of cover. When larger pipelines are required, they shall not be jointed or gasketed design and shall be placed in the same location mentioned above at a minimum ten (10) feet of cover. Protection of the bridge structure in the vicinity of drilled shafts and spread footings may be required. Backfill shall be one-sack slurry to the springline and have warning tape placed in the trench above the pipeline.

B. **FREEWAY IS ELEVATED WITH NO FREEWAY CROSSROAD** - All pipelines (including DIPRJ) placed in areas where crossroads do not exist shall be sleeved under the freeway pavement/embankment from Controlled Access line to Controlled Access line (preferred) or roadway prism (minimum) with the sleeve plugged at each end and the sleeve vented to the surface to enable positive leak detection. Access points shall be from outside the Controlled Access. (To facilitate maintenance, the Controlled Access line locations may be adjusted during the design phase of each project.) Placement of the lines in areas remote from the crossroad is preferred.

C. **FREEWAY IS DEPRESSED** - All pipelines (including DIPRJ) placed in the areas where the freeway is depressed shall be sleeved under the freeway roadway prism from Controlled Access line to Controlled Access line (preferred) or roadway prism (minimum) with the sleeve plugged at each end and the sleeve vented to the surface to enable positive leak detection. Access points shall be from outside the Controlled Access lines. (To facilitate maintenance the Controlled Access line locations may be adjusted during the design phase of each project.) Placement of the lines in areas remote from the crossroad is preferred.

3.2.8.3. GRAVITY SEWER LINES CROSSINGS

Gravity Sewer lines may use casings. Whether or not casings are used, no access for maintenance will be allowed within the Controlled Access.

3.2.8.4. FORCED SEWER MAINS CROSSING

Forced sewer mains should be treated as water lines in *Section 3.2.8.2.*

3.2.9. STORM DRAINS

Water or sewer lines will not be permitted within any drainage structure, except under temporary emergency conditions.

3.2.10. WATER OR SEWER LINES THROUGH OR AFFIXED TO EXISTING BRIDGES

3.2.10.1. GUIDELINES

Any water or sewer line carried on or through an existing bridge at the time the highway route is improved may continue to be so carried provided the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration,

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

F. Water or sewer lines will not be allow inside closed cells of a bridge, but may be accommodated only in open areas of bridges/structures, i.e. between girders or between the bays of box girders if the design of the structures permits.

3.2.10.2. NEW WATER OR SEWER LINE ON EXISTING BRIDGE

A new water or sewer line will not be permitted to be installed on, within or through an existing bridge after the time the highway route is improved, except for special cases.

3.2.10.3. SPECIAL CASES

These special cases will generally be limited to major river crossings, within long sections of depressed highway, or on projects involving bridge rehabilitation or replacement where there is an existing water line attachment.

3.2.11. WATER OR SEWER LINES THROUGH OR AFFIXED TO NEW BRIDGES

3.2.11.1. GENERAL GUIDELINE

It is the general guideline that no water or sewer lines will be permitted to be attached to bridge structures. This guideline applies to any grade separation, traffic interchange, ramp, viaduct or stream crossing structure. However, ADOT will consider exceptions to the general guideline on a case-by-case basis where it can be demonstrated that there are no reasonable and prudent alternatives to the attachment of the rigid utility line on a structure. Water or sewer lines will not be allow inside closed cells of a bridge, but may be accommodated only in open areas of bridges/structures, i.e. between girders or between the bays of box girders if the design of the structures permits.

3.2.11.2. SPECIAL CASES

These special cases will generally be limited to major river crossings, within long sections of depressed highway, or on projects involving bridge rehabilitation or replacement where there is an existing water or sewer line attachment.

3.2.11.3. PAY ADDITIONAL COSTS

If water or sewer line crossings are considered through or affixed to new bridges, the utility owner must pay all additional design, construction and maintenance costs.

3.2.11.4. DESIGN

The utility owner shall be responsible for the design of utility facilities and to supply the Bridge Engineer with the following information:

A. Size and schedule of pipe;

B. Size and schedule of casings and sleeves as well as location and method of relief on the casing or sleeve;

C. Total combined weight of transmission and carrier pipe, casings, hangers, supports, expansion joints and other related items as well as the water or sewage.

3.2.11.5. POINTS OF ACCESS

Valves, manholes and other points of access will be outside the controlled access limits.

3.2.11.6. CASING ON STRUCTURES

All water or sewer lines installed on or within a structure shall be inserted within a casing and vented outside the bridge, and beyond the approach slab, unless in the opinion of the Bridge Engineer it would not be required.

3.2.11.7. BRIDGE ENGINEER

The ADOT Bridge Engineer shall determine the size and final location of all lines installed within a structure, and shall design the access openings as required.

3.2.11.8. ATTACHMENTS (Bridge)

Water or sewer lines, supports, brackets, or other related items, will not be permitted to be suspended below or attached to the exterior of any new or existing structure.

3.2.12. CASINGS

Under all completed sections of the highway and ramp roads casings shall be jacked or bored. Transverse casings shall be continuous within the control of access. The utility owner will submit the casing size and material to ADOT for approval before completing the design and permit request.

3.2.13. JACKING OR BORING

Casing will be required for jacked or bored roadway crossings.

3.2.13.1. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

3.2.13.2. BENTONITE SLURRY BORING

Bentonite clay slurry boring or drilling will be allowed under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of .2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

3.2.13.3. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

3.2.13.4. JACKING INSIDE 30 FEET

Jacking or boring pits will not be permitted in the median within 30 feet of a traveled lane. Jacking or boring pit may be allowed within 30 feet of the edge of the right shoulder with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure;

E. Access to bore holes or pits off the right shoulder of the roadway will not be permitted from the traveled portion of the highway;

F. Access to bore holes or pits in the median will require the aid of a Highway Patrol officer if accessed from the highway.

3.2.13.5. OVERBREAKAGE

Extreme care must be taken during jacking or boring operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreakages shall be pressure grouted.

3.2.14. LONGITUDINAL WATER OR SEWER LINES INSIDE THE CONTROL OF ACCESS

New longitudinal water or sewer lines will not be permitted to be installed within the control of access lines in any location other than within an ADOT established utility corridor, except in special cases installations of longitudinal water or sewer lines may be permitted only under strictly controlled conditions. In each of these cases, the utility owner must show that:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic, and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. The accommodation will not be constructed and/or maintained by direct access from any traffic lane or connecting ramp within the controlled access;

G. Individual service connections, valves, manholes, or other items requiring access will not be allowed inside the control of access except in established utility corridors.

3.2.15. LONGITUDINAL WATER OR SEWER LINES OUTSIDE OF CONTROL OF ACCESS ON CONTROLLED ACCESS HIGHWAY

New water or sewer lines will be allowed to be installed longitudinally within the rights-of-way outside the control of access lines provided the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property,

including third parties, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. Individual service connections, valves, manholes or other items requiring access will not be allowed in frontage road pavement surface or inside the control of access except in established utility corridors.

3.2.16. PREFERRED LONGITUDINAL LOCATION

The preferred location of longitudinal utilities within highway rights-of-way will be between highway open channel drainage facility and right-of-way fence or as close to the right-of-way line as is practical.

3.2.17. GATES

3.2.17.1. EXISTING GATES

Existing gates may be permitted to remain, except in areas where the water or sewer owner has other means of access to their facilities by an access road or frontage road from an interchange. Existing gates must be locked at all times. Any rights of access are not transferable or assignable by the utility. Abuse of this privilege will be just cause for removal of existing gates.

3.2.17.2. NEW GATES

New access gates will not be permitted on existing controlled access highways except where there are no other means of access to the facilities from outside the control of access.

3.3. GAS LINES, PRODUCT LINES (VOLATILE FLUIDS) IN CONTROLLED ACCESS HIGHWAY

3.3.1. CODES

All high pressure pipelines shall comply with the safety regulation in *U.S. Department of Transportation, Title 49 of Code of Federal Regulation, Chapter 601* and all other applicable Federal, State, county and city codes.

3.3.2. CONFLICTS

The State assumes no liability for conflicts with existing underground or overhead utilities. It is further understood the utility will at its expense (except when the utility has prior rights), remove, relocate, or alter its facilities within the right-of-way when required by ADOT.

3.3.3. POTHOLES

Potholes will not be allowed on any completed section of the highway or ramp paved area. Potholes in unpaved areas and on frontage roads will be allowed. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8") inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requirements of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

3.3.4. OPEN CUTS

Open cuts will not be permitted on any completed section of the highway or ramps. Open cuts may be permitted where the roadway surfacing has not been completed. Open cuts in unpaved areas may be permitted outside the control of access. Open cuts on frontage or cross roads require pavement replacement with the same type material as the existing roadway.

3.3.4.1. BACKFILL MATERIAL

All pipe installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism shall be backfilled as per the pothole requirements in *Section 3.3.3.*

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay

or other objectionable material.
Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	PERCENT PASSING
3 inches	**100**
¾ inches	**60–100**
No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90
Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.
The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	Percent Passing
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90
The required test results will be provided by the utility to ADOT.

3.3.4.2. PLACEMENT OF BACKFILL

All earth material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than three (3”) inches shall be removed from the excavation before backfill is placed.

Where a utility structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4”) inches in depth. The maximum water content of the slurry mixture shall be 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

3.3.4.3. COMPACTION OF BACKFILL

In paved areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

3.3.4.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

Asphaltic Concrete Pavement minimum replacement will be 100 feet along the center line of the highway, 50 feet either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

The Asphaltic Concrete material will be hot material conforming to Section 409 of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for the payment provision.

3.3.4.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement will be replaced six (6”) inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1’) foot. Any existing PCCP slab disturbed will be replaced in full. The surface texture and grade will match the existing pavement surface.

Portland Cement Concrete Pavement will conform to Section 401 of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for payment provision.

3.3.5. DEPTH OF COVER

The minimum installation cover as defined in *Section 2.1.9* for a gas line or product lines is as follows:

3.3.5.1. High Pressure Gas or Volatile Fluids (60 psi and up):

A. 60 inches;

B. Reinforced concrete floating slab, two (2') feet wider than the gas line trench, may reduce the required cover to 36 inches;

3.3.5.2. Low Pressure Gas or Volatile Fluids (under 60psi):

A. 48 inches;

B. Reinforced concrete floating slab, two (2') feet wider than the gas line trench, may reduce the required cover to 36 inches;

3.3.6. FLOATING SLABS - (PROTECTIVE SLAB)

3.3.6.1. REINFORCED CONCRETE SLAB

A 6 inches thick reinforced concrete slab one (1') foot wider on each side of the pipeline trench may be used on an existing or new pipeline for the protection against traffic, dead loads or highway construction operations and maintenance as a substitute for some of the required cover. The top of the slab will not protrude into the sub grade.

3.3.6.2. OWNER OPTION

The installation of a floating slab shall be at the option of the pipeline owner.

3.3.7. POINTS OF ACCESS

3.3.7.1. VENTS AND DRAINS

Vents and or drains shall be located and constructed so as not to interfere with the highway construction, operation or maintenance. The preferable location is outside the control of access.

3.3.7.2. VALVES AND MANHOLES

Individual service connections, valves, manholes or other items requiring access will not be allowed in frontage road pavement surfaces or inside the control of access except in established utility corridors.

3.3.8. CROSSINGS

Gas lines or Product line will be permitted to cross under the controlled access highway with following the conditions:

A. No individual service connections will be allowed inside the control of access;

B. Crossings may be installed by open cuts during highway construction prior to paving;

C. Crossings may be installed by jacking or boring after highway construction is complete and open to traffic;

D. Must be maintained from outside the control of access;

E. Must have shut off valves at each right-of-way line.

3.3.9. STRUCTURES

It is the general guideline that no rigid gas or product lines will be permitted to be attached to bridge structures. However, ADOT will consider exceptions to the general guideline on a case-by-case basis where it can be demonstrated that there are no reasonable and prudent alternatives to the attachment of the rigid gas or product line on a structure. These special cases will generally be limited to major river crossings, within long sections of depressed highways, or on projects involving bridge rehabilitation or replacement where there is an existing rigid gas or product attachment.

Flexible gas and product lines may be placed in sealed sleeves which are vented to the outside of the bridge if it does not adversely affect the structural integrity or safety of the bridge.

When gas or product lines are approved for attachment to a bridge, provision must be made during the design of the structure to provide for casings, sleeves, access openings and other appurtenances and special provisions for safety will be required, and the utility company will be responsible for the additional costs.

Manholes or points of access will not be permitted at the ends of bridges in the roadway pavement.

3.3.10. JACKING OR BORING

3.3.10.1. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

3.3.10.2. BENTONITE SLURRY BORING

Bentonite clay slurry boring or drilling will be allowed under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

3.3.10.3. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

3.3.10.4. JACKING INSIDE 30 FEET

Jacking or boring pits will not be permitted in the median within 30 feet of a traveled lane. Jacking or boring pit may be allowed within 30 feet of the edge of the right shoulder with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure.

3.3.10.5. OVERBREAKAGE

Extreme care must be taken during jacking or boring operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreaks shall be pressure grouted.

3.3.11. LONGITUDINAL GAS OR PRODUCT LINES INSIDE THE CONTROL OF ACCESS

New longitudinal gas or product lines will not be permitted to be installed within the control of access lines in any location other than within an ADOT established utility corridor, except in special cases installations of longitudinal gas or product lines may be permitted only under strictly controlled conditions. In each of these special cases, the utility owner must show that:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. The accommodation will not be constructed and/or maintained by direct access from any traffic lane or connecting ramp within the controlled access;

G. Individual service connections, valves, manholes, or other items requiring access will not be allowed inside the control of access except in established utility corridors;

H. Vents and drains shall be located and constructed so as not to interfere with the highway construction operation and maintenance. The preferable location is outside the control of access near the control of access lines or right-of-way line.

3.3.12. LONGITUDINAL GAS LINES OR PRODUCT LINES OUTSIDE OF CONTROL OF ACCESS ON CONTROLLED ACCESS HIGHWAYS

New gas and volatile fluids lines will be allowed to be installed longitudinally within the rights-of-way outside the control of access lines provided the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the

ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. Individual service connections, valves, manholes or other items requiring access will not be allowed in frontage roads pavement surface or inside the control of access except in established utility corridors.

3.3.13. TUNNELS

Gas lines or flammable liquid lines will not be permitted in any vehicular tunnel under any circumstances.

3.3.14. GATES

3.3.14.1. EXISTING GATES

Existing gates may be permitted to remain, except in areas where the pipeline company has other means of access to their facilities by an access road or frontage road from an interchange. Existing gates must be locked at all times. Any rights of access are not transferable or assignable by the utility. Abuse of this privilege will be just cause for removal of existing gates.

3.3.14.2. NEW GATES

New access gates will not be permitted on an existing controlled access highway except where there are no other means of access to the facilities from outside the control of access.

3.4. TELEPHONE AND TV CABLE/ FIBER OPTICS IN CONTROLLED ACCESS HIGHWAY

3.4.1. CONFLICTS

The State assumes no liability for conflicts with existing underground or overhead utilities. It is further understood the utility will, at its expense (except when the utility has prior rights), remove, relocate, or alter its facilities within the right-of-way when required by ADOT.

3.4.2. POTHOLES

Potholes will not be allowed on any completed section of the highway or ramp paved area. Potholes in unpaved areas and on frontage roads will be allowed. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8") inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requirements of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

3.4.3. OPEN CUTS

Open cuts will not be permitted on any completed section of the highway or ramps. Open cuts may be permitted where the roadway surfacing has not been completed. Open cuts in unpaved areas may be permitted outside the control of access. Open cuts on frontage or cross roads require pavement replacement with the same type material as the existing roadway.

3.4.3.1. BACKFILL MATERIAL

All installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism areas shall be backfilled as per the pothole requirements in *Section 3.4.2.*

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay or other objectionable material.
Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	PERCENT PASSING
3 inches	**100**
¾ inches	**60–100**

No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.

The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90

The required test results will be provided by the utility to ADOT.

3.4.3.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than 3 inches shall be removed from the excavation before backfill is placed.

Where a utility structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4’) feet in depth. The maximum water content of the slurry mixture shall be 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

3.4.3.3. COMPACTION OF BACKFILL

In pavement areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

3.4.3.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

Asphaltic Concrete Pavement minimum replacement will be 100 feet along the center line of the highway, 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

The Asphaltic Concrete material will be hot material conforming to Section 409 of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for the payment provision.

3.4.3.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement will be replaced six (6”) inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1’) foot each side. Any existing PCCP slab disturbed will be replaced in full. The surface texture and grade will match the existing pavement surface.

Portland Cement Concrete Pavement will conform to Section 401 of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for payment provision.

3.4.4. DEPTH OF COVER

Direct burial cable shall have a minimum installation cover of 48” forty-eight inches as defined in section *2.1.9.* Conduit or ducts shall have a minimum depth of cover of (36”) thirty-six inches as defined in section *2.1.9.* The conduit or ducts shall be continuous within the control of access

3.4.5. MANHOLES

Individual service connections, manholes, or other items requiring access will not be allowed inside the control of access except in established utility corridors. Maintenance vehicles accessing manholes will not be permitted within any controlled access right-of-way, the traveled portion of any bridge, crossroad, frontage, or ramp road.

3.4.6. CROSSINGS

3.4.6.1. GENERAL

Telephone and TV cables may be permitted to cross over or under all highways, with the following conditions:

A. No individual service connections, manholes or other items requiring access will be allowed inside the control of access except in established utility corridors;

B. Direct burial cable, conduit or ducts may be installed in open cuts during highway construction prior to paving;

C. May be installed in a jacked or bored conduit or duct after highway construction;

D. Must be maintained from outside the control of access.

3.4.6.2. UNDERGROUND

Underground installation is preferred.

3.4.6.3. VERTICAL CLEARANCE

Aerial crossings shall comply with the vertical clearances specified in the *National Electrical Safety Code, Institute of Electrical and Electronics Engineers, Inc.*, "Safety Rules for the Installation and Maintenance of Electrical Supply and Communications Lines" and "*Arizona Encroachments in Highway Rights of Way, Rule No. R-17-3-502"* (Title 17, Chapter 3). When on joint use poles with electric lines, the vertical clearances must comply with the *National Electric Safety Code (NESC), ANSI C2, and the Institute of Electrical and Electronic Engineers (IEEE)*.

3.4.7. JACKING OR BORING

3.4.7.1. CONDUIT

Conduit will be required for jacked or bored roadway crossings.

3.4.7.2. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

3.4.7.3. BENTONITE SLURRY BORING

Conduit may be Bentonite clay slurry bored or drilled under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

3.4.7.4. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area;

3.4.7.5. JACKING INSIDE 30 FEET

Jacking or boring pits will not be permitted in the median within 30 feet of a traveled lane. Jacking or boring pit may be allowed within 30 feet of the edge of the right shoulder with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure;

3.4.7.6. OVERBREAKAGE

Extreme care must be taken during jacking or boring operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreaks shall be pressure grouted.

3.4.8. STRUCTURES

Provisions may be made during the design of a structure to provide for cable or conduit crossing where the design of the structure will permit such installation and when approved by Bridge Engineer. The utility owner will be responsible for all additional costs.

3.4.8.1. DESIGN

The utility owner shall be responsible for the design of utility facilities and to supply the Bridge Engineer with the following information:

A. Number and size of conduits and/or casings;

B. Total combined weight of conduit, cable, casing, location of all conduit runs within the structure and shall design the access openings as required;

C. Telephone or Cable TV conduit, supports, brackets, or other related items will not be permitted to be suspended below the structure, or attached to the exterior of any existing or new structure;

D. Points of access to the conduit, duct or cable must not interfere with traffic. Manholes from bridge crossings will not be in the traveled roadway including cross street.

3.4.9. LONGITUDINAL TELEPHONE OR TV CABLE

3.4.9.1. INSIDE OF CONTROL OF ACCESS

New longitudinal telephone or TV cable lines will not be permitted to be installed within the control of access lines in any location other than within an ADOT established utility corridor except in special cases installations of longitudinal telephone or TV cable lines may be permitted only under strictly controlled conditions. In each of these special cases, the utility owner must show that:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic, and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility’s use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. The accommodation will not be constructed and/or maintained by direct access from any traffic lane or connecting ramp within the controlled access;

G. Individual service connections, valves, manholes, or other items requiring access will not be allowed inside the control of access except in established utility corridors;

H. No above ground facility is within the clear zone.

3.4.9.2. OUTSIDE OF CONTROL OF ACCESS ON CONTROLLED ACCESS HIGHWAYS

New telephone or TV cable will be allowed to be installed longitudinally within the rights-of-way outside the control of access lines of state highways provided the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic, and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. Individual service connections, manholes, or other items requiring access will not be allowed in frontage road pavement surfaces or inside the control of access except in established utility corridors;

G. Overhead guys, anchors, or stub poles will not be permitted within the clear zone of the controlled access traffic lane as described in *AASHTO "Roadside Design Guide"*.

3.4.10. PREFERRED LONGITUDINAL LOCATION

The preferred location of longitudinal utilities within highway rights-of-way will be between highway open channel drainage facility and right-of-way fence or as close to the right-of-way line as is practical.

3.5. IRRIGATION IN CONTROLLED ACCESS HIGHWAY

3.5.1. CONFLICTS

The State assumes no liability for conflicts with existing underground or overhead utilities. It is further understood the utility will at its expense (except when the utility has prior rights), remove, relocate, or alter its facilities within the right-of-way when required by ADOT.

3.5.2. POTHOLES

Potholes will not be allowed on any completed section of the highway or ramp paved area. Potholes in unpaved areas and on frontage roads will be allowed. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requires of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

3.5.3. OPEN CUTS

Open cuts will not be permitted on any completed section of the highway or ramps. Open cuts may be permitted where the roadway surfacing has not been completed. Open cuts in unpaved areas may be permitted outside the control of access. Open cuts on frontage or cross roads require pavement replacement with the same type material as the existing roadway

3.5.3.1. BACKFILL MATERIAL

All installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism shall be backfilled as per the pothole requirements in *Section 3.5.2.*

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay or other objectionable material.
Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	**PERCENT PASSING**
3 inches	**100**

¾ inches	**60–100**
No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.

The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90

The required test results will be provided by the utility to ADOT.

3.5.3.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than three (3”) inches shall be removed from the excavation before backfill is placed.

Where an irrigation structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4”) inches in depth. The maximum water content of the slurry mixture shall be 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

3.5.3.3. COMPACTION OF BACKFILL

In paved areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

3.5.3.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

Asphaltic Concrete Pavement minimum replacement will be 100 feet along the center line of the highway, 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

The Asphaltic Concrete material will be hot material conforming to Section 409, except for the payment provision, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*".

3.5.3.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement will be replaced six (6”) inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1’) foot. Any existing PCCP slab disturbed will be replaced in full. The surface grade and texture will match the existing pavement surface.

Portland Cement Concrete Pavement will conform to Section 401, except for payment provision, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*".

3.5.4. POINTS OF ACCESS

Valves, manholes, irrigation gates and other facilities requiring access will not be permitted inside the control of access, except in ADOT Established Utility Corridors, but will be allowed outside the control of access.

3.5.5. CROSSINGS

3.5.5.1. OPEN DITCH IRRIGATION:

A. Open ditch irrigation crossings will not be allowed within controlled access lines;

B. Open ditch irrigation crossings will be allowed outside the controlled access lines at least thirty (30') feet from any traveled lanes.

3.5.5.2. PIPED IRRIGATION

Piped irrigation crossings will be allowed with three (3') feet minimum cover with appropriate 'D' load pipe.

3.5.6. IRRIGATION ON ROADWAY BRIDGES

Irrigation facilities will not be allowed on bridges used by the traveling public

3.5.7. JACKING OR BORING

3.5.7.1. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

3.5.7.2. BENTONITE SLURRY BORING

Bentonite clay slurry boring or drilling will be allowed under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

3.5.7.3. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

3.5.7.4. JACKING INSIDE 30 FEET

Jacking or boring pits will not be permitted in the median within 30 feet of a traveled lane. Jacking or boring pit may be allowed within 30 feet of the edge of the right shoulder with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure.

3.5.7.5. OVERBREAKAGE

Extreme care must be taken during jacking or boring operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreaks shall be pressure grouted.

3.5.8. LONGITUDINAL IRRIGATION DITCHES OR PIPE LINES

3.5.8.1. INSIDE OF CONTROL OF ACCESS

Longitudinal irrigation ditches or pipe lines will not be permitted inside the control of access.

3.5.8.2. OUTSIDE OF CONTROL OF ACCESS

Longitudinal irrigation facilities will be allowed outside control of access under the following conditions:

A. Open ditches will be allowed at least 30 feet from traveled lane or outside clear zone;

B. Pipe line will be allowed with the following conditions:

i. Connection with open ditches must be at least 30 feet from traveled lane or outside clear zone;

ii. Control gates, valves and other points of access must not interfere with the roadway, its use or clear zone.

C. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

D. The accommodation will not interfere with or impair the planned future expansion of the highway;

E. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic, and economic effects of the locations under consideration.

F. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

G. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

H. The accommodation will not be constructed and/or maintained by direct access from any traffic lane or connecting ramp within the controlled access;

I. No above ground facility is within the clear zone.

4. UTILITY GUIDELINES IN UNCONTROLLED ACCESS HIGHWAYS

4.1. ELECTRIC LINES IN UNCONTROLLED ACCESS HIGHWAYS

4.1.1. OVERHEAD ELECTRIC LINE CODES

The vertical clearance to overhead electric lines crossing highways shall be determined by the *National Electrical Safety Code, ANSI C2, Institute of Electrical and Electronics Engineers, Inc.*, and *Arizona Encroachments in Highway Rights of Way, Rule No. R-17-3-502"* (Title 17, Chapter 3).

4.1.2. CONFLICTS

The State assumes no liability for conflicts with existing or proposed utilities upon approving a permit for any overhead or underground utility. It is further understood the utility will, at its expense (except when the utility has prior rights), relocate, or alter its facilities within the right-of-way when required by ADOT.

4.1.3. POTHOLES

Potholes in paved and unpaved areas on uncontrolled access highways will be allowed with a permit. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8") inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requires of alternate method (2) under Open Cuts. The pavement will be replaced in kind.

4.1.4. OPEN CUTS

Open cuts on uncontrolled access highways including their right-of-way will be allowed. Open cuts in paved area will require pavement replacement with the same type and thickness material as the existing roadway.

4.1.4.1. BACKFILL MATERIAL

All installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism areas shall be backfilled as per the pothole requirements in *Section 4.1.3.*

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay or other objectionable material.
Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	**PERCENT PASSING**
3 inches	**100**
¾ inches	**60–100**
No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.
The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90
The required test results will be provided by the utility to ADOT.

4.1.4.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than 3 inches shall be removed from the excavation before backfill is placed.

Where a structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4’) feet in depth. The maximum water content of the slurry mixture shall be 35 gallon of water per ton of backfill material. Aggregate slurry shall be thoroughly mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

4.1.4.3. COMPACTION OF BACKFILL

In paved areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

4.1.4.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

The Asphaltic Concrete material will be hot material conforming to Section 409, except for the payment provision, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*".

A. STANDARD ASPHALTIC CONCRETE PAVEMENT REPLACEMENT - Asphaltic Concrete Pavement roadways require a minimum replacement of 100 feet of the Asphaltic Concrete Pavement along the centerline of the highway 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

B. EXCEPTIONS MAY BE GRANTED BY THE DISTRICT ENGINEER - For Asphaltic Concrete Pavement in congested areas, the District Engineer may allow the pavement to be repaired with patches two (2’) feet larger than the excavation on all sides of open cut.

C. LONGITUDINAL OPEN CUTS IN ASPHALTIC CONCRETE PAVEMENT - Longitudinal utility open cuts on Asphaltic Concrete Pavement roadways will require the Asphaltic Concrete Pavement be replaced a minimum of 100 feet along the centerline of the highway, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

4.1.4.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement (PCCP) will be replaced six (6”) inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1’) foot. Any existing PCCP slab disturbed will be replaced in full. The surface grade and texture will match the existing pavement surface.

Portland Cement Concrete Pavement will conform to Section 401, except for payment provision, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*."

4.1.5. DEPTH OF COVER

Direct burial cable shall have a minimum cover of forty-eight (48”) inches. Underground electric lines located within conduit or concrete ducts shall have a minimum cover of thirty-six (36”) inches.

4.1.6. GROUND MOUNTED EQUIPMENT

All ground mounted equipment shall be installed in such a manner that sidewalks or walkways are not obstructed, traffic vision is not obscured, and damage from vehicles and vandalism is minimized.

4.1.7. METERS

Meters, switches, and other appurtenances serving private individuals or business shall be located as close to the right-of-way line as possible.

4.1.8. VAULTS AND MANHOLES

All manholes and underground vault access shall be located outside of any traveled portion of the highway. Service vehicles for manholes and vaults shall not interfere with any traffic lane.

4.1.9. URBAN AREAS

In areas where sidewalks have been installed, all poles, structures, and guys shall be placed behind the sidewalk, if possible. Not under any circumstances shall any pole, structure or guy be placed within twenty-four (24”) inches from the face of curb. If they are placed within the sidewalk there must be sufficient room for a wheelchair to pass on the sidewalk.

4.1.10. UNDERGROUND ELECTRIC CABLE

Underground electric cable may be placed within the right-of-way of uncontrolled access highway, provided it does not interfere with the normal maintenance and operation of the highway.

4.1.11. CROSSINGS

Crossings will be permitted on all uncontrolled access highways providing they comply with *Section 4.1.13, A-D*. They should cross on a line generally perpendicular and under the highway alignment where practical.

4.1.12. JACKING AND BORING

4.1.12.1. CONDUIT

Conduit will be required for jacked or bored roadway crossings.

4.1.12.2. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

4.1.12.3. BENTONITE SLURRY BORING

Conduit may be Bentonite clay slurry bored or drilled under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

4.1.12.4. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

4.1.12.5. JACKING INSIDE 30 FEET

Jacking or boring pit may be allowed within 30 feet of the edge of the traveled lane with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure.

4.1.12.6. OVERBREAKAGE

Extreme care must be taken during jacking or boring operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreaks shall be pressure grouted.

4.1.13. LONGITUDINAL ENCROACHMENTS

Electric distribution lines may be permitted longitudinally along an uncontrolled access highway providing the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility’s use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. Electric facilities will be placed as close to the right-of-way line as possible within the National Electrical Safety Code, and State, City or County Codes. Where possible, underground electric lines should occupy the same trench with gas lines, underground telephone, and TV cables in urban areas;

G. Where other pole lines exist within the right-of-way joint use poles will be utilized with telephone and cable TV, where possible.

4.2. WATER & SEWER LINES IN UNCONTROLLED ACCESS HIGHWAYS

4.2.1. CONFLICTS

The State assumes no liability for conflicts with existing underground or overhead utilities. It is further understood the permittee will at its expense remove, relocate, or alter its facilities within the right-of-way when required by ADOT.

4.2.2. POTHOLES

Potholes will be allowed in paved and unpaved areas on uncontrolled access highways with a permit. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8") inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requires of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

4.2.3. OPEN CUTS

Open cuts will be allowed on uncontrolled access highways and their right-of-way. Open cuts in paved area will require pavement replacement with the same type and thickness material as the existing roadway.

4.2.3.1. BACKFILL MATERIAL

All pipe installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism shall be backfilled as per the pothole requirements in *Section 4.2.2.*

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay or other objectionable material.
Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	PERCENT PASSING
3 inches	**100**
¾ inches	**60–100**
No. 8	**35-80**

No. 200 0-12.0

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.

The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 – 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90

The required test results will be provided by the utility to ADOT.

4.2.3.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than three (3”) inches shall be removed from the excavation before backfill is placed.

Where a structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4’) feet in depth. The maximum water content of the slurry mixture shall be 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

4.2.3.3. COMPACTION OF BACKFILL

In paved areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

4.2.3.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

The Asphaltic Concrete material will be hot material conforming to Section 409, except for the payment provision, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*".

A. STANDARD ASPHALTIC CONCRETE PAVEMENT REPLACEMENT - Asphaltic Concrete Pavement roadways require a minimum replacement of 100 feet of the Asphaltic Concrete Pavement along the centerline of the highway, 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

B. EXCEPTIONS MAY BE GRANTED BY THE DISTRICT ENGINEER - For Asphaltic Concrete Pavement in congested areas, the District Engineer may allow the pavement to be repaired with patches two (2') feet larger than the excavation on all sides of open cut.

C. LONGITUDINAL OPEN CUTS IN ASPHALTIC CONCRETE PAVEMENT - Longitudinal utility open cuts on Asphaltic Concrete Pavement roadways will require the Asphaltic Concrete Pavement be replaced a minimum of 100 feet along the centerline of the highway, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

4.2.3.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement will be replaced six (6") inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1'). The surface texture and grade will match the existing pavement surface. Any existing PCCP slab disturbed will be replaced in full.

Portland Cement Concrete Pavement will conform to Section 401, except for payment provision, of the "*State of Arizona Department of*

Transportation Highways Division Standard Specifications for Road and Bridge Construction".

4.2.4. DEPTH OF COVER

All water or sewer lines located within the right-of-way shall have a minimum cover, as defined in *Section 2.1.9* of thirty-six (36") inches.

4.2.5. WATER METERS

Water meters shall be located as close to the right-of-way line as possible.

4.2.6. FIRE HYDRANTS

Fire hydrants shall be located behind the sidewalk, six (6") feet from the curb return, except for downtown areas and business centers where the sidewalk extends to the right-of-way line. In those instances, the hydrants shall have at least two (2') feet of clearance behind the curb. If placed within the sidewalk sufficient room must be provided to allow a wheelchair to pass on the sidewalk.

4.2.7. MANHOLES

Where possible manholes should be placed outside the roadway pavement.

4.2.8. CROSSINGS

Crossings will be permitted on all uncontrolled access highways if they comply with *4.2.13.1, A - C, E & F*. They shall cross on a line generally perpendicular to the highway where practical.

4.2.9. STORM DRAINS

Water or sewer lines will not be permitted within any drainage structure, except under temporary emergency conditions.

4.2.10. WATER OR SEWER LINES THROUGH OR AFFIXED TO EXISTING BRIDGES

4.2.10.1. GENERAL

Any water or sewer line carried on or through an existing bridge at the time the highway route is improved may continue to be so carried provided that the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and

indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or properties, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

4.2.10.2. AFTER HIGHWAY BRIDGE IMPROVEMENT

A new water or sewer line will not be permitted to be installed on, within or through an existing bridge after the time the highway route is improved, except for special cases.

4.2.10.3. SPECIAL CASES

These special cases will generally be limited to major river crossings, within long sections of depressed highway, or on projects involving bridge rehabilitation or replacement where there is an existing water or sewer line attachment.

4.2.11. JACKING OR BORING

Conduit or sleeve will be required for jacked or bored roadway crossings.

4.2.11.1. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

4.2.11.2. BENTONITE SLURRY BORING

Bentonite clay slurry boring or drilling will be allowed under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

4.2.11.3. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

4.2.11.4. JACKING INSIDE 30 FEET

Jacking or boring pit may be allowed within 30 feet of the edge of the traveled lane with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure.

4.2.11.5. OVERBREAKAGE

Extreme care must be taken during jacking or boring operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreaks shall be pressure grouted.

4.2.12. WATER OR SEWER LINES THROUGH OR AFFIXED TO NEW BRIDGES

4.2.12.1. GENERAL GUIDELINE

It is the general guideline that no water or sewer lines will be permitted to be attached to bridge structures. However, ADOT will consider exceptions to the general guideline on a case-by-case basis where it can be demonstrated that there are no reasonable and prudent alternatives to the attachment of the rigid utility line on a structure.

4.2.12.2. SPECIAL CASES

These special cases will generally be limited to major river crossing, or on projects involving bridge rehabilitation or replacement where there is an existing water or sewer line attachment.

4.2.12.3. UTILITY OWNER PAY

If water or sewer line crossings are considered through or affixed to new bridges, the utility owner must pay all additional design, construction and maintenance costs.

4.2.12.4. DESIGN

The utility owner shall be responsible for the design of utility facilities and to supply the Bridge Engineer with the following information:

A. Size and schedule of pipe;

B. Size and schedule of casings and sleeves as well as location and method of relief on the casing or sleeve;

C. Total combined weight of transmission and carrier pipe, casings, hangers, supports, expansion joints and other related items as well as the water or sewerage.

4.2.12.5. ACCESS

Valves, manholes and other points of access will not be near the bridge, which would impair traffic.

4.2.12.6. CASINGS

All water or sewer lines installed on or within a structure shall be inserted within a casing and vented outside the bridge, unless in the opinion of the Bridge Engineer it would not be required.

4.2.12.7. BRIDGE ENGINEER

The ADOT Bridge Engineer shall determine the final location of all lines installed within a structure, and shall design the access openings as required.

4.2.12.8. ATTACHMENTS (Bridge)

Water or sewer lines, supports, brackets, or other related items, will not be permitted to be suspended below the girders or attached outside of the exterior girder of any new or existing structure.

4.2.13. LONGITUDINAL ENCROACHMENTS

4.2.13.1. GUIDELINES

Water or sewer lines may be permitted longitudinally along uncontrolled access highways providing the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Water mains shall be located as close to the right-of-way line as possible, except in urban areas where permission may be granted to place the lines under the traveled portion of the roadway;

E. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

F. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT Right-of-Way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents.

4.3. GAS LINES & PRODUCT LINES (VOLATILE FLUIDS) IN UNCONTROLLED ACCESS HIGHWAYS

4.3.1. GAS AND VOLATILE FLUID LINES

All Gas and Volatile fluid lines will follow safety regulations in U. S. Department of Transportation *Title 49 of the Code of Federal Regulations Chapter 601*.

4.3.2. CONFLICTS

The State assumes no liability for conflicts with existing or proposed utilities upon approving a permit for any overhead or underground utility. It is further understood the utility will, at its expense (except when the utility has prior rights), remove, relocate, or alter its facilities within the right-of-way when required by ADOT.

4.3.3. POTHOLES

Potholes will be allowed in paved and unpaved areas on uncontrolled access highways with a permit. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8") inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requires of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

4.3.4. OPEN CUTS

Open cuts will be allowed on uncontrolled access highways and their right-of-way. Open cuts in paved area will require pavement replacement with the same type and thickness material as the existing roadway. Open cuts in unpaved areas may be backfilled with existing material as per the pothole requirements.

4.3.4.1. BACKFILL MATERIAL

All installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism shall be backfilled as per the pothole requirements in *Section 4.3.3.*

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay

or other objectionable material.

Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	**PERCENT PASSING**
3 inches	**100**
¾ inches	**60–100**
No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.

The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90

The required test results will be provided by the utility to ADOT.

4.3.4.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than three (3”) inches shall be removed from the excavation before backfill is placed.

Where a structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4') feet in depth. The maximum water content of the slurry mixture shall be 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

4.3.4.3. COMPACTION OF BACKFILL

In paved areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

4.3.4.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

The Asphaltic Concrete material will be hot material conforming to Section 409, except for the payment provision, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*".

A. STANDARD ASPHALTIC CONCRETE PAVEMENT REPLACEMENT - Asphaltic Concrete Pavement roadways require a minimum replacement of 100 feet of the Asphaltic Concrete Pavement along the centerline of the highway, 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

B. EXCEPTIONS MAY BE GRANTED BY THE DISTRICT ENGINEER - For Asphaltic Concrete Pavement in congested areas, the District Engineer may allow the pavement to be repaired with patches two (2') feet larger than the excavation on all sides of open cut.

C. LONGITUDINAL OPEN CUTS IN ASPHALTIC CONCRETE PAVEMENT - Longitudinal utility open cuts on Asphaltic Concrete Pavement roadways will require the Asphaltic Concrete Pavement be replaced a minimum of 100feet along the centerline of the highway, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

4.3.4.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement will be replaced six (6”) inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1’) foot. Any existing PCCP slab disturbed will be replaced in full. The surface texture and grade will match the existing pavement surface. Portland Cement Concrete Pavement will conform to Section 401, except for payment provision, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction.*"

4.3.5. DEPTH OF COVER

The minimum installation cover as defined in *Section 2.1.9* for a gas line or product lines is as follows:

4.3.5.1. High Pressures Gas or Volatile Fluids (60 psi and up):

A. Sixty (60”) inches;

B. Reinforced concrete floating slab two (2’) feet wider than the gas line trench may be substituted for twenty-four (24”) inches of the required cover;

4.3.5.2. Low Pressure Gas or Volatile Fluids (under 60 psi):

A. Forty-eight (48”) inches;

B. Reinforced concrete floating slab, two (2’) feet wider than the gas line trench, may reduce the required cover to three (3’) feet;

4.3.6. FLOATING SLABS (PROTECTIVE SLABS)

4.3.6.1. REINFORCED CONCRETE SLAB

A six (6”) inches thick reinforced concrete slab, one (1’) foot wider on each side of the pipeline trench, may be used on an existing or new pipeline for the protection against traffic, dead loads or highway construction operations and maintenance as a substitute for some of the required cover.

4.3.6.2. OWNERS OPTION

The installation of a floating slab shall be at the option of the pipeline owner.

4.3.7. GAS METERS

Gas meters shall be located as close to the right-of-way line as possible.

4.3.8. CROSSINGS

Crossings will be permitted on all uncontrolled access highways if they comply with *4.3.5*, *4.3.6* and *4.3.12 A, B, C, D and E*. They shall cross on a line generally perpendicular to the highway where practical.

4.3.9. STORM DRAINS

Gas or volatile lines will not be permitted within any drainage structure, except under temporary emergency conditions.

4.3.10. STRUCTURES

It is the general guideline that no rigid gas or volatile fluid lines will be permitted to be attached to bridge structures. However, ADOT may consider exceptions to the general guideline on a case-by-case basis where it can be demonstrated that there are no reasonable and prudent alternatives to the attachment of the rigid utility line on structure.

Flexible gas and volatile fluid lines may be placed in sealed sleeves which are vented to the outside of the bridge if it does not adversely affect the structural integrity or safety of the bridge.

When gas or volatile fluid lines are approved for attachment to a bridge, provision must be made during the design of the structure to provide for casings, sleeves, access openings and other appurtenances and special provisions for safety will be required, and the utility company will be responsible for the additional costs.

Manholes or points of access will not be permitted at the ends of bridges in the roadway pavement.

4.3.10.1. SPECIAL CASES

These special cases will generally be limited to a major river crossing, or on projects involving bridge rehabilitation or replacement where there is an existing gas line attachment.

4.3.10.2. SAFETY AND COST

When gas or flammable liquid lines are approved for attachment to a bridge, special provisions for safety will be required, and the utility will be responsible for the additional costs.

4.3.11. JACKING OR BORING

4.3.11.1. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

4.3.11.2. BENTONITE SLURRY BORING

Bentonite clay slurry boring or drilling will be allowed under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

4.3.11.3. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

4.3.11.4. JACKING INSIDE 30 FEET

Jacking or boring pit may be allowed within 30 feet of the edge of the traveled lane with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure.

4.3.11.5. OVERBREAKAGE

Extreme care must be taken during jacking or boring operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreaks shall be pressure grouted.

4.3.12. LONGITUDINAL ENCROACHMENTS

Gas lines and product lines (volatile fluids) may be permitted longitudinally along an uncontrolled access highway providing the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT right-of-way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. Gas distribution lines are to be located as close to the right-of-way line as possible on uncontrolled access highways except in urban areas where permission may be granted to place the lines under the traveled portion of the roadway. Where possible, gas lines should occupy the same trench with underground telephone, electric cables and TV cables in urban areas.

4.3.13. TUNNELS

Gas lines or flammable liquid lines will not be permitted in any vehicular tunnel under any circumstances.

4.4. TELEPHONE LINES AND TV CABLES/FIBER OPTICS IN UNCONTROLLED ACCESS HIGHWAYS

4.4.1. CONFLICTS

The State assumes no liability for conflicts with existing or proposed utilities upon approving a permit for any overhead or underground utility. It is further understood the utility will, at its expense (except when the utility has prior rights), remove, relocate, or alter its facilities within the right-of-way when required by ADOT.

4.4.2. POTHOLES

Potholes will be allowed in paved and unpaved areas on uncontrolled access highways with a permit. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8") inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requires of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

4.4.3. OPEN CUTS

Open cuts will be allowed on uncontrolled access highways and their right-of-way. Open cuts in paved area will require pavement replacement with the same type and thickness material as the existing roadway. Open cuts in unpaved areas may be backfilled with existing material as per the pothole requirements.

4.4.3.1. BACKFILL MATERIAL

All installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism shall be backfilled as per the pothole requirements in *Section 4.4.2*.

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay or other objectionable material.
Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	PERCENT PASSING

3 inches	**100**
¾ inches	**60–100**
No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.

The required test results will be provided by the utility to ADOT.

B. (Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90

The required test results will be provided by the utility to ADOT.

4.4.3.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than three (3”) inches shall be removed from the excavation before backfill is placed.

Where a structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4’) feet in depth. The maximum water content of the slurry mixture shall be 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly

mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

4.4.3.3. COMPACTION OF BACKFILL

In paved areas backfill material shall be compacted to at least 100 per cent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

4.4.3.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

The Asphaltic Concrete material will be hot material conforming to Section 409 of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for the payment provision.

A. STANDARD ASPHALTIC CONCRETE PAVEMENT REPLACEMENT - Asphaltic Concrete Pavement roadways require a minimum replacement of 100 feet of the Asphaltic Concrete Pavement along the centerline of the highway, 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

B. EXCEPTIONS MAY BE GRANTED BY THE DISTRICT ENGINEER - For Asphaltic Concrete Pavement in congested areas, the District Engineer may allow the pavement to be repaired with patches two (2') feet larger than the excavation on all sides of open cut.

C. LONGITUDINAL OPEN CUTS IN ASPHALTIC CONCRETE PAVEMENT - Longitudinal utility open cuts on Asphaltic Concrete Pavement roadways will require the Asphaltic Concrete Pavement be replaced a minimum of 100 feet along the centerline of the highway, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

4.4.3.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement (PCCP) will be replaced 6 inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1') foot. Any existing PCCP slab disturbed will be replaced in full. The surface grade and texture will match the existing pavement surface.

Portland Cement Concrete Pavement will conform to Section 401of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*", except for payment provision.

4.4.4. DEPTH OF COVER

Direct burial cable shall have a minimum installation cover as defined in *Section 2.1.9* of forty-eight (48”) inches and conduit or ducts shall have a minimum depth of cover of three (3’) feet.

4.4.5. UNDERGROUND CABLE

Underground cable or conduit may be placed within the right-of-way of any uncontrolled access highway or within any structure (except drainage), provided it does not interfere with the normal maintenance and operation of the highway.

4.4.6. MANHOLES AND VAULTS

All manholes and underground vault access shall be located outside of any traveled portion of the highway. Vehicles and equipment when accessing the underground facilities will not interfere with traffic.

4.4.7. URBAN AREAS

In urban areas where sidewalks have been installed, all poles, structures, and guys shall be placed behind the sidewalk, if possible. Under no circumstances shall any pole, structure or guy be placed within twenty-four (24”) inches from the face of curb or obstruct the sidewalk area. If placed within the sidewalk sufficient room must be provided to allow a wheelchair to pass on the sidewalk.

4.4.8. CROSSINGS

Crossings will be permitted on all uncontrolled access highways providing they comply with *Sections 4.4.11, A - D, F, and G*. They should cross on a line generally perpendicular and under the highway alignment where practical.

4.4.9. JACKING OR BORING

4.4.9.1. CONDUIT

Conduit will be required for jacked or bored roadway crossings.

4.4.9.2. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

4.4.9.3. BENTONITE SLURRY BORING

Conduit may be betonies clay slurry bored or drilled under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

4.4.9.4. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

4.4.9.5. JACKING INSIDE 30 FEET

Jacking or boring pit may be allowed within 30 feet of the edge of the traveled lane with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure.

4.4.9.6. OVERBREAKAGE

Extreme care must be taken during this operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreaks and/or borings shall be pressure grouted.

4.4.10. STRUCTURES

The utility shall design all hangers and/or other supports required for the installation of its cable on or within any structure. The Bridge Engineer shall approve and recommend any changes required in the design of the utility company's hangers and/or supports. Any cable, conduit, hangers or supports shall be furnished and installed by the utility company unless otherwise noted on plans. No facility will be allowed below the girders or outside the exterior girder.

4.4.11. LONGITUDINAL ENCROACHMENTS

Telephone and or TV cable line may be permitted longitudinally along uncontrolled access highways providing the following conditions are met:

A. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

B. The accommodation will not interfere with or impair the planned future expansion of the highway;

C. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic and economic effects of the locations under consideration;

D. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

E. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility’s use of the ADOT right-of-way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

F. Poles or structures shall be located as close to the right-of-way line as possible;

G. Where other pole lines exist within the right-of-way joint use poles will be utilized with electric, telephone and cable TV, where possible.

4.5. IRRIGATION IN UNCONTROLLED ACCESS HIGHWAYS

4.5.1. CONFLICTS

The State assumes no liability for conflicts with existing or proposed utilities upon approving a permit for any overhead or underground utility. It is further understood the permittee will, at its expense (except when the utility has prior rights), remove, relocate, or alter its facilities within the right-of-way when required by ADOT.

4.5.2. POTHOLES

Potholes will be allowed in paved and unpaved areas on uncontrolled access highways with a permit. Potholes may be backfilled with the existing material and compacted in lifts, not to exceed eight (8") inches before compaction, with pneumatic or mechanical tamping devices or with slurry conforming to the requires of alternate method (2) under Open Cuts. The pavement will be replaced in-kind.

4.5.3. OPEN CUTS

Open cuts will be allowed on uncontrolled access highways and their right-of-way. Open cuts in paved area will require pavement replacement with the same type and thickness material as the existing roadway. Open cuts in unpaved areas may be backfilled with existing material as per the pothole requirements.

4.5.3.1. BACKFILL MATERIAL

All installations must have adequate protection from the soil conditions encountered.

Open cuts outside the roadway prism shall be backfilled as per the pothole requirements in *Section 4.5.2*.

Open cuts in the roadway prism will be backfilled with Alternate Method 1 or 2.

A. (Alternate Method 1):

Backfill material may be selected from excavation or from a source selected by the utility. It shall not contain frozen lumps, stones larger than three (3") inches in diameter, chunks of clay or other objectionable material.
Backfill material shall conform to the following gradation (Arizona Test Method 201):

SIEVE SIZE	PERCENT PASSING
3 inches	**100**

¾ inches	**60–100**
No. 8	**35-80**
No. 200	**0-12.0**

The plasticity index shall not exceed 12 when tested in accordance with the requirements of AASHTO T 90.

Backfill material to be used for unprotected metal pipe shall have a value of resistivity not less than 2000 ohm-cm. and shall have a pH value between 6.0 and 9.0. Tests for pH and resistivity shall be in accordance with the requirements of Arizona Test Method 236.

The required test results will be provided by the utility to ADOT.

B.(Alternate Method 2):

As an alternate to the material requirements of Alternate Method 1, the Engineer may allow material conforming to the following gradation to be used in a slurry mixture in situations where the slurry will be confined by free-draining soil (Arizona Test Method 201):

Sieve size	**Percent Passing**
1 ½ inches	**100**
1 inches	**90 – 100**
No. 8	**35 - 80**
No. 200	**0 - 8.0**

The plasticity index shall not exceed 8 when tested in accordance with the requirements of AASHTO T 90

The required test results will be provided by the utility to ADOT.

4.5.3.2. PLACEMENT OF BACKFILL

All material which has loosened or collapsed into the excavation from the adjacent ground and all trash, forms, and rock larger than three (3”) inches shall be removed from the excavation before backfill is placed.

Where an irrigation structure is located within a paved area, all backfill material above finished sub grade elevation shall conform to the requirements of the typical pavement section.

Backfill included in Alternate Method 1 shall be compacted by pneumatic or mechanical tamping devices, and shall be placed in layers not more than eight (8”) inches in depth before compaction.

Backfill included in Alternate Method 2 (slurry) shall be placed in uniform horizontal layers not exceeding four (4’) feet in depth. The maximum water content of the slurry mixture shall 35 gallons of water per ton of backfill material. Aggregate slurry shall be thoroughly mixed in a mixer approved by the Engineer. Unless otherwise approved by the Engineer, the slurry shall be compacted with internal vibrators.

4.5.3.3. COMPACTION OF BACKFILL

In paved areas backfill material shall be compacted to at least 100 percent of the maximum density as determined in accordance with the requirements of Arizona Test Methods Manual. In unpaved areas backfill material shall be compacted to at least 95 percent of the maximum density as determined in the above test methods. The Utility must supply the test result to ADOT.

4.5.3.4. ASPHALTIC CONCRETE PAVEMENT REPLACEMENT

The Asphaltic Concrete material will be hot material conforming to Section 409, except for the payment provision, of the "*State of Arizona Department of Transportation Highways Division Standard Specifications for Road and Bridge Construction*".

A. STANDARD ASPHALTIC CONCRETE PAVEMENT REPLACEMENT- Asphaltic Concrete Pavement roadways require a minimum replacement of 100 feet of the Asphaltic Concrete Pavement along the centerline of the highway, 50 feet on either side of the excavation, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

B. EXCEPTIONS MAY BE GRANTED BY THE DISTRICT ENGINEER - For Asphaltic Concrete Pavement in congested areas, the District Engineer may allow the pavement to be repaired with patches two (2') feet larger than the excavation on all sides of open cut.

C. LONGITUDINAL OPEN CUTS IN ASPHALTIC CONCRETE PAVEMENT- Longitudinal utility open cuts on Asphaltic Concrete Pavement roadways will require the Asphaltic Concrete Pavement be replaced a minimum of 100 feet along the centerline of the highway, by one lane width. If any Asphaltic Concrete Pavement is disturbed in a lane, the total width of the lane will be replaced. Asphaltic Concrete will be laid with a vibrating or tamper bar screed paving machine only.

4.5.3.5. PORTLAND CEMENT CONCRETE PAVEMENT REPLACEMENT

Portland Cement Concrete Pavement will be replaced six (6") inches thicker than the existing PCCP and keyed under all adjacent PCCP one (1') foot. Any existing PCCP slab disturbed will be replaced in full. The surface grade and texture will match the existing pavement surface.

Portland Cement Concrete Pavement will conform to Section 401, except for payment provision, of the "*State of Arizona Department of*

Transportation Highways Division Standard Specifications for Road and Bridge Construction".

4.5.4. DEPTH OF COVER

Irrigation pipe will have a three (3') feet minimum cover as defined in *Section 2.1.9* with the proper 'D' load pipe.

4.5.5. OPEN DITCH IRRIGATION

Open ditch irrigation may be allowed thirty (30') feet from travel lane or outside the clear zone, whichever is less.

4.5.6. PIPED IRRIGATION

Piped Irrigation may be allowed with a three (3') feet minimum cover with the proper 'D' load pipe.

4.5.7. JACKING OR BORING

4.5.7.1. WATER BORING

Water boring will not be allowed. Water may be used to lubricate and cool drilling tools, if used in small quantities.

4.5.7.2. BENTONITE SLURRY BORING

Bentonite clay slurry boring or drilling will be allowed under the following conditions:

A. Bentonite slurry must be controlled for the existing soil conditions;

B. Drilling system shall not deposit more than one (1) part drilling fluid per one (1) part soil excavated (by volume) to prevent erosion and/or saturation of the soil;

C. Drilling fluid shall contain a minimum of 0.2 pounds per gallon concentration of suspended Bentonite clay;

D. No other drilling fluid will be allowed.

4.5.7.3. JACKING OUTSIDE 30 FEET

Jacking or boring pit will be allowed outside of 30 feet from the traveled roadway with the following condition:

A. The jacking or boring pit area will be fenced to keep the public out of the pit;

B. All work vehicles and equipment will be restricted to the fenced area.

4.5.7.4. JACKING INSIDE 30 FEET

Jacking or boring pit may be allowed within 30 feet of the edge of the traveled lane with the following restrictions:

A. The jacking or boring pit will be protected from the approaching traffic by existing guardrail, existing or Temporary Concrete Barrier wall or other ADOT approved barrier;

B. The jacking or boring pit area will be fenced to keep the public out of the pit;

C. All work vehicles and equipment will be restricted to the fenced area;

D. The jacking or boring pit will be located outside the pavement structure.

4.5.7.5. OVERBREAKAGE

Extreme care must be taken during this operation to guard against the impairment of the earth structure under the pavement and shoulders. All overbreaks and/or borings shall be pressure grouted.

4.5.8. LONGITUDINAL IRRIGATION ENCROACHMENTS

Longitudinal irrigation facilities will be allowed on uncontrolled access highways with the following restrictions:

A. Irrigation will not normally be allowed under a roadway longitudinally except in extreme cases.

B. Open ditches may be allowed thirty 30 feet minimum from traveled lane or clear zone, whichever is more;

C. Control gates, valves and other points of access must not interfere with the roadway, its use or clear zone;

D. The accommodation will not adversely affect the safety, design, construction, operation, maintenance or stability of the highway;

E. The accommodation will not interfere with or impair the planned future expansion of the highway;

F. Any alternate location would be contrary to the public interest. This determination may require an evaluation of the direct and indirect environmental, aesthetic, and economic effects of the locations under consideration;

G. Except in prior rights cases, ADOT will not incur any unreimbursed additional expense or maintenance costs associated with the utility installation;

H. State shall not be liable for any claims, demands, costs or expenses, including all legal expenses, for loss, damages or injury to any person or property, including third parties' persons or property, due to the Utility's use of the ADOT right-of-way, unless caused by the willful or negligent acts or omissions of ADOT, its officers, or agents;

I. The accommodation will not be constructed and/or maintained by direct access from any traffic lane or connecting ramp within the controlled access;

J. No above ground facility is within the clear zone.

5. UTILITY ABANDONMENT IN CONTROLLED AND UNCONTROLLED ACCESS HIGHWAYS

5.1. GENERAL

5.1.1. ABANDONMENT OF UTILITY FACILITIES

Abandonment of Utility Facilities (Abandonment) means the decision by the Utility to no longer use its facilities and notification of such decision to the Arizona Department of Transportation (ADOT). Abandonment shall not be construed to mean any changes in ownership of the facility.

5.1.2. MAINTENANCE OF ABANDONED UTILITY FACILITIES

The maintenance of abandoned Utility facilities within ADOT right-of-way shall be governed by laws, guidelines, and regulations adopted by regulatory agencies.

5.1.3. OWNERSHIP

The Utility facility owner shall continue to own, map, locate and mark its abandoned facilities in accordance with the requirements of Arizona Revised Statutes *A.R.S Sections 40-360.21 through 40-360.32* and by standards adopted by industry organizations.

5.1.4. LEGAL RESPONSIBILITY

Nothing contained in this guideline shall alter the legal responsibility for compliance with laws regulating construction and installation of Utility facilities within ADOT right-of-way and adherence to environmental laws or regulations.

5.1.5. STATE LIABILITY

The State assumes no liability for conflicts with utility facilities which are allowed to be abandoned within its right-of-way unless prior rights exist.

5.1.6. COORDINATE FOR DESIGNING INSTALLATIONS

The Utility facility owner and ADOT shall coordinate for designing installations of new facilities in a manner that minimizes the need to abandon the facility in the future.

5.2. ABANDONED UTILITIES

5.2.1. PERMITTED ABANDONMENT

ADOT will allow underground facilities operators to abandon facilities within its right of way provided that the abandoned facility maintains a separation distance of a minimum of five feet horizontal and two feet vertical between the abandoned facility and any new or proposed highway feature or as defined under the definition of the zone of disruption.

Underground facility operators shall remove conflicting portions of their abandoned facilities not maintaining a separation distance of at least five feet horizontal and two feet vertical for projects in the State Transportation Implementation Plan (STIP) or immediate or planned maintenance needs.

For the purpose of this guideline, “highway feature” means: ADOT owned and maintained structures.

For the purpose of this guideline, “zone of disruption” means: only those areas to be excavated to install highway features.

5.2.2. NOTICE TO ABANDON UTILITY FACILITIES

Upon planned abandonment of underground facilities, the utility shall provide notice to ADOT. Upon notification, ADOT will amend the existing permit to show the underground facilities as abandoned and send a copy of the amended permit to the utility operator. If there is no existing permit, ADOT will issue a permit to show the underground facilities as abandoned and send a copy of the permit to the utility operator.

5.2.3. AS-BUILT RECORDS

The Utility shall provide, upon ADOT request, as-built records for the location of facilities that are approved for abandonment.

5.2.4. REMOVAL OF ALL ABOVE-GROUND APPURTENANCES

The Utility shall remove all above-ground appurtenances to all facilities approved for abandonment. These appurtenances may include such items as, pads, foundations, vents, lift stations, cabinets, pole stubs, etc.

5.2.5. PURGING AND CAPPING

The Utility shall purge and cap or plug the ends of all facilities approved for abandonment and shall provide warning markers or any other warning devices as required by the appropriate regulatory agency. Slurry filling of the facility may be required. The means of terminating facilities not covered by a regulatory agency shall be coordinated with ADOT.

5.2.6. ABANDON COSTS

The Utility shall be responsible for all of the costs associated with the maintenance or removal of its abandoned facilities within highway right-of-way.

5.3. ABANDONED UTILITY FACILITIES

5.3.1. COORDINATE ACTIVITIES WITH ADOT

If the Utility owner decides to remove the abandoned Utility facility, it shall coordinate its activities with ADOT so as to not interfere with the ADOT construction project.

5.3.2. INCLUDE WORK IN ADOT'S CONSTRUCTION CONTRACT-

A Utility's request to include the work in ADOT's construction contract shall be made in sufficient time to allow any special conditions to be placed into the ADOT contract documents.

5.3.3. UTILITY WITHOUT PRIOR RIGHTS TO REIMBURSE ADOT

If the Utility facility has no prior rights, and elects to have the ADOT contractor remove the abandoned facilities under its contract, the Utility owner shall reimburse ADOT for all costs associated with the removal and disposal of the facility, including reasonable costs for construction oversight.

Appendix J: N20 TCP

Department of the Interior
Bureau of Indian Affairs
Navajo Region Branch of Transportation (NRBOT)

Application for Permission to work within BIA Road Right-of-Way
For other than driveways or utility installations
(Authorization: 23 USC Part 111, 23 CFR
Sub-Chapter A, Part 1.23, 25 CFR Part 169.52 & 52)
Rev: 07/13/2023

Background *(to be filled out by the Agency Branch of Road Maintenance Office)*:

Agency: 3N373
Route No.: N20
Project No.: 3N373-0020-WROW-0038
(Filled in from applicant info or Agency BORM Office)

Date received: 2/21/2024
Permit No.: 3N373-0020-WROW-0038
(Assigned by Agency BORM Office)

Section (A) (*to be filled out by applicant)*:

APPLICATION is hereby made by *(owner)*: Water Management Branch of Navajo Department of Water Resources, address: P.O. Box 678 Fort Defiance, AZ 86504, email: jasonjohn@navajo-nsn.gov, phone: (928) 729-6250 at the following location(s): BIA Route N-20 in LeChee
Latitude: 36°51'23.95"N Longitude: 111°26'38.22"W Latitude: 36°51'56.61"N Longitude: 111°26'35.77"W
(attach location map) adjacent to or on BIA Route No.: N20 Street: Coppermine Road
for the purpose of *(access to)* ☐ residence ☑ business *(name)*: NTUA
☐ School: ☑ Work area (acres/ft): 2.55 acres
The work shall be carried out by the applicant or its contractor on or by *(date)* July 1, 2024 and shall take 60 calendar days to complete. The work involves *(include a detailed map with coordinates of locations)*: Installing a waterline that will be in the BIA right of way of Highway N-20 crossing the road twice and parallel to the road for 3,370 Linear feet. See attached plan and profile design and survey right of way documents.

The Applicant further agrees to comply with all the conditions, restrictions, and applicable regulations of both the BIA Navajo Branch of Transportation (NRBOT) and the Navajo Nation including the requirements of Section (B) thru (E) below.

Section (B) (*to be filled out by Agency BOT Engineer)***:**

The above work shall require the following appurtenances which the Applicant and its Contractors agrees to install in accordance with the BIA NRBOT applicable design and construction standards including the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP), latest edition or approved equivalent. By signing this permit, the applicant assumes all costs and liability for the work carried out and the proper installation and maintenance of the temporary features and appurtenances installed within the BIA roadway right-of-way. The Applicant and its Contractor further agrees to maintain *(at their entire expense)* these temporary or permanent appurtenances in good repair for the safety of the traveling public unless otherwise specified in Section E.

The above location(s) shall require the following:

- ☐ Cattle guard unit: None
- ☐ Gate type: None
- ☐ Fencing type: None
- ☑ Signs and/or other traffic control in accordance with the MUTCD manual, latest edition, and NRBOT traffic control installation standards as maybe attached. See Section C.
- ☐ Drainage structures in accordance with BIA NRBOT standards attached with minimum size of 24 inch diameter CSPC with aluminum galvanizing. Drainage analysis will be required.
- ☐ The work area(s) shall require construction of ☐ PCC curbing ☐ PCC gutter ☐ PCC sidewalk ☐ Gravel plating of shoulders
- ☐ Pavement *(specify)*: _____ in accordance with BIA NRBOT standards.

The Applicant and its Contractors shall further comply with the following: Contractor is installing a waterline by crossing BIA Route N20 and staying within the Right-of-Way and then cross the road again.

Section (C) (*to be filled out by NRBOT Office – check all that applies)***:**

The above described work shall require the following entirely at the applicant's expense:

- ☐ Drainage Analysis and report.
- ☑ Design Plans, specifications, CAD drawings, and all calculations.
- ☐ Geotechnical Analysis and Surfacing recommendations as may be required
- ☐ Archaeological Compliance as may be required by BIA
- ☐ CWA 401/404 Permits may be required by BIA, ACOE, USEPA, and NNEPA

- ☐ Biological Compliance may be required by BIA
- ☐ Containment System for Hazardous Waste
- ☑ Construction yard/staging area plans
- ☑ Temporary and/or permanent Traffic Control Plan and/or Traffic Impact Analysis
- ☐ Permanent Traffic Control Design Details
- ☑ Weekly maintenance of project site and haul roads
- ☐ SWPPP may be required by USEPA, Section 402
- ☑ Safety Plan with a copy to the Agency BOT Engineer before any work begins
- ☑ Permission from underlying Landowner (i.e. Navajo Nation, allotted, fee, state, and BLM landowner) in writing
- ☑ Coordination of work with Agency BOT Engineer and/or NRBOT Engineers

Unless Section (D8) applies, the design plans, drainage analysis, geotechnical work, traffic analysis, and traffic control plans, etc. shall be performed by a registered professional engineer licensed in the field for which the analysis is required. The analysis required above shall conform to the NRBOT design standards which may be furnished upon request. Do not implement any work until all the above engineering requirements are approved in writing by the BIA NRBOT. The recommendations furnished in the analysis report(s) shall be implemented by the applicant at the time the work is started. **In no case shall any work involving paving be structurally less than the adjoining roadway surfacing unless specifically waived or otherwise addressed in Section (B & E)**.

Section (D) (general construction requirements)**:**

The Applicant and its Contractors Performance of Work shall not, in a safe manner, impede *(at their entire expense)* traffic while performing any construction and/or work activities as approved by the BIA NRBOT in the construction or maintenance plans. The work shall conform to the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP), latest edition, or equivalent industry standards as approved, and the following:

1. Once the work is completed, the subgrade shoulder and ditch lines shall be reshaped to the existing design slopes and grades with proper compaction and re-seeded and mulched as directed by the Agency BOT Engineer or NRBOT Engineer (see 3 and 8 below).

2. Any damage to existing roadway pavement, sidewalk, curb and gutter shall be repaired to its original condition at the permittee's expense.

3. Re-seeding and mulching of the area may be required at the direction of the Agency BOT Engineer if the are disturbed is ½ acre or greater. The Agency BOT Engineer will provide the specifications on the type of seeding and rate of application. If such work is done under a BIA contract, then comply with the contract requirements.

4. No work shall be carried out without a safety plan in place with a copy provided to the Agency BOT Engineer and/or NRBOT Engineer.

5. The Applicant and its Contractors shall notify the Agency BOT Engineer at least three (3) days prior to start of work (not associated with a BIA road/bridge construction contracts) and upon completion of work within the BIA right-of-way. For road/bridge construction project, comply with the construction contract requirements.

6. The Applicant and its Contractors shall be responsible for developing and implementing a Traffic Control Plan that meets the requirements of the Manual on Uniform Traffic Control Devices, MUTCD, latest edition. Properly maintain this plan for all work within the BIA right-of-way regardless of the type of work being performed.

7. For non BIA contract work that is within the BIA right-of-way, the Applicant and its Contractors shall coordinate the final inspection with the Agency and NRBOT Engineers at least three (3) working days before final completion. Provide all supporting test results and materials certifications to the Agency BOT Engineer at least one (1) week before the inspection. The Agency BOT Engineer will provide a written inspection report to the applicant for compliance and non-compliance work. If there are non-compliant work found, the permittee must diligently complete the repairs before another field inspection is conducted. The Applicant and its Contractors shall make all necessary corrective work at their own expense based on the inspection made by the NRBOT Engineers. This includes the Applicant's removal of all temporary features, staging areas, and/or appurtenances. Upon acceptance of the work, the Agency BOT Engineer will provide a written acceptance letter relieving the permittee of any further responsibilities.

8. If the construction or maintenance work was under a maintenance work order or construction contract prepared and issued by the BIA or entity representing the BIA NRBOT, then acceptance will be based on the work order/contract requirements. DO NOT deviate from the BIA approved construction plans unless approved otherwise by the NRBOT Manager or Engineer of Record. If deviation were done by the Applicant/Contractor without BIA NRBOT approval, the Applicant will be responsible for correcting these deviations at their entire expense before acceptance. Provide all supporting test results and material certifications to the NRBOT Engineer of Record immediately upon request and at least one (1) week before any field inspections.

9. The Applicant/Permittee agrees to assume all liability and maintenance responsibility of the work, features, or appurtenances installed within BIA right-of-way. This includes all accidents/incidents from installation of work, or malfunction of these features or appurtenances placed within the BIA right-of-way until such time as the features and appurtenances are repaired and accepted in writing before the transfer of accepted work over to the BIA (as required) in writing (under Item 7 and/or 8 above).

The applicant shall further comply with the following: Haul roads damaged by project activities shall be repaired at the owner's expense and shall coordinate the work with the Western Agency Road Engineer.

Section (E) *(to be filled in by NRBOT Office)**:***

The Regional Branch of Transportation hereby grants the following exception(s) to this work permit request:_____

_____

_____

BOT *(initials)**:*** ARJ

Section (F) *(approvals)**:***

Signed:

Jason John

Name of Owner (print)

2-21-2024

Applicant (owner) signature *Date*

Principal Engineer

Applicant Title

Recommend for Approval:

HENRY BEGAY Digitally signed by HENRY BEGAY Date: 2024.02.26 13:30:56 -07'00' 2/23/2024

Agency BOT Engineer *Date*

Concurred by:

ALFRED REED Digitally signed by ALFRED REED Date: 2024.02.26 16:16:42 -07'00' 2/26/2024

NRBOT Manager *Date*

Approved by:

DEBORAH SHIRLEY Digitally signed by DEBORAH SHIRLEY Date: 2024.02.27 18:46:45 -07'00'

Regional Director *Date*

Permit Instructions
Rev: -11-03-2022

Background Section:

At the time the applicant requests for a utility or other infrastructure permit application, the Agency BOT Engineer shall fill in this section with the appropriate agency office name, project number (if applicable), and BIA route number.

The date and permit number will be filled in by the Agency BOT Engineer when the permit has been reviewed and found to be complete. The Agency BOT Engineer will sign the permit and email to the Regional Office for further processing.

If the BIA NRBOT office finds additional information or data is required, the office will be in contact with the applicant to furnish such additional information which may become part of the final permit issued.

Section (A):

When the applicant receives the permit application, the applicant shall fill out this section for the fillable form without attempting to modify it and attach all documents that are required by the box in Section (C) with any other location maps and data that may help in the processing of the permit such as:

> *For Utility Permits, **Exact Location** shown on a U.S.G.S. or other approved map with Latitude & Longitude coordinates at the exact location of the centerline of road and/or shoulder ditch where the utility will cross For lines paralleling the road, the applicant will provide Latitude & Longitude coordinates for the beginning and end of the line with depth and cannot be placed no closer to the edge of roadway of 15 feet or 10 feet from the ROW line toward the roadway. These dimensions may be changed at the discretion of the BIA Regional BOT for safety reasons. Do not put unrealistic construction dates in this section as it will be rejected. Applicant must properly plan the work so that the permit with all the required documents can be submitted no more than 2 weeks before the work is to begin.*
>
> *For proposed Driveway or Turnout Permits, provide the exact location at the center of the driveway or turnout on a map with **Exact** Latitude & Longitude coordinates and show which part of the road it is on with a short length of the BIA route clearly shown. Google earth maps are best for this purpose, or you can use a GIS map from the various internet sites that have such maps to show the location in question. If this information is not provided, the permit will be*

returned to the applicant for corrections. Do not enter unrealistic dates of when the driveway/turnout is to be constructed. Applicant must plan out the work so that the permit with all the required documents is submitted no sooner than 2 weeks before construction begins.

For access to economic development type projects, or schools, hospitals, stores, gas stations, and fast food markets the applicant must conduct a Traffic Impact Analysis (TIA) but before doing so consult with the NRBOT Engineer and provide a plan layout of the development so the NRBOT Engineer can determine if a TIA is warranted.

For proposed "Work within ROW" permits, the applicant must provide detailed maps with the area to be working in clearly identified with boundaries and area shown in square feet and/or acres. Provide a written explanation as to the purpose of working in a BIA right-of-way. Provide the exact locations or area points with Latitude & Longitude coordinates on a detailed drawing of the area. Do not enter unrealistic dates of when work is to begin. Applicant must plan out the work so that the permit with all the required documents is submitted no sooner than 2 weeks before construction begins.

The detailed drawing shall include the roadways in question from ROW line to ROW line with pertinent dimensions of the proposed work area within the BIA ROW which includes utility lines depths, locations, and overhead clearance as measured from the centerline of the road or centerline of the shoulder ditches and other important features that may interfere with the work shown.

Other required documents or site visits by the Agency BOT Engineer for a given permit not included in the permit due to the nature of the work may require:

- *Details of the proposed construction.*
- *Other Type of Compliance documents.*
- *Engineering analysis such as drainage structural, traffic impacts, pedestrian movement as required.*
- *Environmental documents.*
- *False work plans.*
- *Use of large equipment that can cause a safety hazard; and*

The applicant permit request cover letter may raise further concerns before a permit can be issued. It is important the applicant provide as many details as possible about their need for a permit in their letter so that the permit process can move along quickly. So DO NOT leave out important data or information in your request.

BE ADVISED the applicant/owner of the utility, turnout, or work in the BIA ROW must include the following statement in their cover letter, if the applicant cannot digitally sign the permit in Section (F):

> *"I HEREBY ACCEPT ALL THE TERMS AND CONDITIONS OF THIS PERMIT AND WILL COMPLY WITH SUCH REQUIREMENTS FOR AS LONG AS THE PERMIT IS IN EFFECT AND WILL DILLIGENTLY COMPLETE SUCH WORK WITHIN THE TIMELINES PROVIDED AND PERFORM ANY REQUIRED MAINTENANCE TO AVOID ANY PENALTIES."*

The Agency BOT Engineer shall email the applicant for any additional data or information which the applicant must promptly furnish so that the permit can continue with its processing.

If the applicant needs assistance in filling out this section, please contact the appropriate Agency BOT Engineer.

Be advised:

- *The applicant must have all the required documents attached to the permits before submitting to the Agency BOT Engineer for review. If there are missing documents, the Agency BOT Engineer will notify the applicant. If the applicant does not response within 3 business days, the entire permit package will be returned to start the process over again.*

- *Applicants must make a formal request for a permit application to the Agency BOT Engineer. Once the request is received and logged in, a pdf fill-in permit will be emailed back to the applicant to fill out the appropriate information.*

- *DO NOT use previous permits submitted for other utility, driveway, or work within the ROW as this will be rejected and the entire permit package will be returned to start the process over again. Only current permits granted by the Reginal BOT will be accepted. This is tracked by updating the internal permit log to ensure each applicant has been given the correct and up-to-date permit.*

- *DO NOT submit any applications to the BIA Reginal BOT office as this will only result in delays of processing your request. Applicants must directly contact the Agency BOT Engineer for processing.*

- *Any other required documents included in the submission shall be on a separate pdf file.*

Section (B):

Once the applicant submits the permit application (along with supporting documentation) to the Agency BOT Engineer, the Agency BOT office will review the application, fill out this section of the permit and (if approved) sign and forward to the NRBOT office, by memo, with any special recommendations to be considered by the NRBOT office in finalizing the permits. A copy of the final approved permit will be forwarded to the applicant for their records by the NRBOT Engineer with a copy to the Agency BOT Engineer. If the Agency BOT Engineer is not satisfied

with the application package, then the package shall be returned to the applicant for corrections, additions, or other pertinent information with a written explanation as to shy the application cannot be further process for approval. This includes a response to any analysis or other pertinent documentation as outlined in Section (C) below and as indicated by the applicant in Section (A) of the application.

The applicant can then review the package and resubmit with the appropriate information needed to complete the review and approval process.

Section (C):

Once the application package is sent into the NRBOT office, the package will be logged in and submitted to the Engineering Section for further review and recommendations. It is at this level of review the applicant may be required to submit additional information (i.e. engineering analysis, compliance documents, and engineering drawings or TIAs) in which case the NRBOT office will send out a notice to the applicant requesting such information in order to complete the review process.

Section (D):

Once the additional information is provided under Section (C), and accepted, the NRBOT office will complete this section with any additional requirements such as standard details to be used, typical sections, special provisions, and/or other pertinent stipulations necessary to insure the proper construction of the facility and the safety of the traveling public.

The NRBOT Engineer shall make a recommendation to the NRBOT Manager to ***Approve/Disapprove*** *the permit application submitted with written justification (as necessary) pointing out any extenuating circumstances to be considered by the NRBOT Manager during his final review.*

Section (E):

In reviewing the final permit package, the NRBOT Manager will determine if portions of the permit requirements are to be waived. If so, the NRBOT Manager shall indicate in this section. If this section is left bland, then all requirements as shown in the permit shall apply and be enforceable (i.e. no waivers are to be allowed).

Section (F):

Once Section (E) is completed, the NRBOT Manager signs the permit application and forwards the package to the BIA Regional Director for signature.

*Once the permit is signed by the Regional Director***,** *the NRBOT office dates the permit and enters the permit into the Region BOT database. The BOT clerk will forward the completed permit tot the NRBOT Engineer who will electronically achieve the permit and send a copy out to the applicant and Agency BOT Engineer.*

AGENCY	SUPV. HIGHWAY ENGINEER	
2N373-SHIPROCK AGENCY Branch of Transportation 304 N. Auburn Ave Suite E Farmington, NM 87401	Alfred Reed, Jr. BIA Cell No.: (505) 258-7172 Program Support Assistant – Esther L. BIA Cell No.: (505) 258-7174	Stanford Litson BIA Cell No.: (505) 409-0391
3N373-WESTERN NAVAJO Branch of Transportation East Highway 160 & Warrior Dr. P.O. Box 127 Tuba City, AZ 86045	Henry Begay, Jr. BIA Cell No.: (505) 488-3812 Office No.: (928) 283-2298 Program Support Assistant – Alberta M. Office No.: (928) 283-2297 FAX No.: (928) 283-2227	Randolph Laughter BIA Cell No.: (505) 726-3489 Office No.: (928) 283-2301
4N373-EASTERN NAVAJO Branch of Transportation P.O. Box 328 Crownpoint, NM 87313	Daniel Largo – Superintendent's Office Office No.: (505) 786-6036/6032 Program Support Assistant – Jackie F. Office No.: (505) 786-6192 FAX No.: (505) 786-6111	Aaron Jim BIA Cell No.: (505) 593-3359 Office No.: (505) 786-6181
5N373-CHINLE AGENCY Branch of Transportation Navajo Route 7, Bldg. 136-C P.O. Box 7H Chinle, AZ 86503	Norton Emerson BIA Cell No.: (505) 979-0017 Office No.: (928) 674-5176 Program Support Assistant – Office No.: (928) 674-5175 FAX No.: (928) 674-5184	Roger Hadley BIA Cell No.: (505) 387-2602 Johnson Greyeyes BIA Cell No.: (505) 409-0712
6N373-FT. DEFIANCE AGENCY Branch of Transportation Bldg No. 40, Blue Canyon Road P.O. Box 1983 Ft. Defiance, AZ 86504	Clarence Tsosie BIA Cell No.: (505) 399-1813 Office No.: (928) 729-7222 Program Support Assistant Office No.: (928) 729-7334 FAX No.: (928) 729-7225	Vincent Morgan BIA Cell No. (505) 387-2480 Office No.: (928) 729-7332
N373-FARMINGTON SECTION Branch of Transportation 9996 Hwy 371, Bldg. 17 P.O. Box 1983 Farmington, NM 87499	Lorenzo Dugi BIA Cell No.: (505) 387-6272 Office No.: (505) 863-8277	Derrick Billie BIA Cell No.: (505) 320-1307 David Slim BIA Cell No.: (505) 387-6275 Office No.: (505) 960-7372/0871
N373-NEWLANDS Branch of Transportation 1-40 Eastbound ½ Mile SE of Exit 325 P.O. Box 369 Chambers, AZ 86502	Lorenzo Dugi BIA Cell No.: (505) 387-6272 Office No.: (505) 863-8277	Victor Castillo BIA Cell No.: (505) 399-8116 Office No.: (928) 688-2928 Deswood Tsosie BIA Cell No.: (505) 726-3808 FAX No.: (928) 688-2412

Revised: 03/23/2022

THE NAVAJO NATION
DEPARTMENT OF WATER RESOURCES
P.O. Box 678 • Fort Defiance Arizona 86504 • (928) 729-4003 • FAX: (928) 729-4129

BUU NYGREN
PRESIDENT

RICHELLE MONTOYA
VICE PRESIDENT

February 14, 2024

Henry Begay, Jr., Highway Engineer
Department of the Interior
Bureau of Indian Affairs
Navajo Region Branch of Transportation (NRBOT)
East Highway 160 & Warrior Dr.
P.O. Box 127
Tuba City, Arizona 86045

Subject: Western Navajo Pipeline Phase 1 – LeChee Water System Improvements Project

Dear Henry:

Navajo Water Management Branch (WMB), Navajo Nation Department of Water Resources has prepared the Application for Permission to work within the BIA Road Right-of-Way for the construction of the LeChee Water System Improvements Project. The project waterline locations within the N-20 Right of Way are listed in Section (A) of the attached application and shown on the attached design drawings. Permits are required by WMB to bid the project and select a contractor. After a contractor has been selected, any information needed by the BIA from the contractor will be provided to NRBOT.

WMB has also prepared the Application for Permission for Utility crossing within BIA Highway Right-of-Way application where the waterline is designed to cross Navajo Route 222. This crossing location is listed in Section (A) of the attached application and shown on the attached design drawings.

Note that at the completion of construction and inspection, Water Management Branch will transfer the facilities to Navajo Tribal Utility Authority (NTUA) for operation and maintenance. Ownership transfer applications will then be submitted to NRBOT.

Included with this letter of application are the following:

1. Letter of Application
2. NRBOT Application for Permission to work within BIA Road Right-of-Way
3. NRBOT Application for Permission for Utility crossing within BIA Highway Right-of-Way
4. Western Navajo LeChee Waterline Pipeline Design Results of Survey
5. Design Drawings where construction will occur within the N-20 ROW and NR-222
6. Environmental Assessment that includes:
    a. Biological Resources Compliance Form
    b. Cultural Resource Compliance Form
7. Traffic Control Plan Specification
8. Stormwater Pollution Prevention Plan Specification
9. Trenching, Backfilling and Compacting for Utilities Specification

10. Earthwork Specification
11. Casing Pipe Specification
12. Excavation Support System Specification

The timeline for the project is as follows:

1. Secure Right-of-Way and Permitting by mid-March 2024.
2. Begin bidding May 2024.
3. Award bid to contractor June 2024.
4. Start Construction July 2024.

Traffic control plan drawings are currently under design and will be submitted when complete.

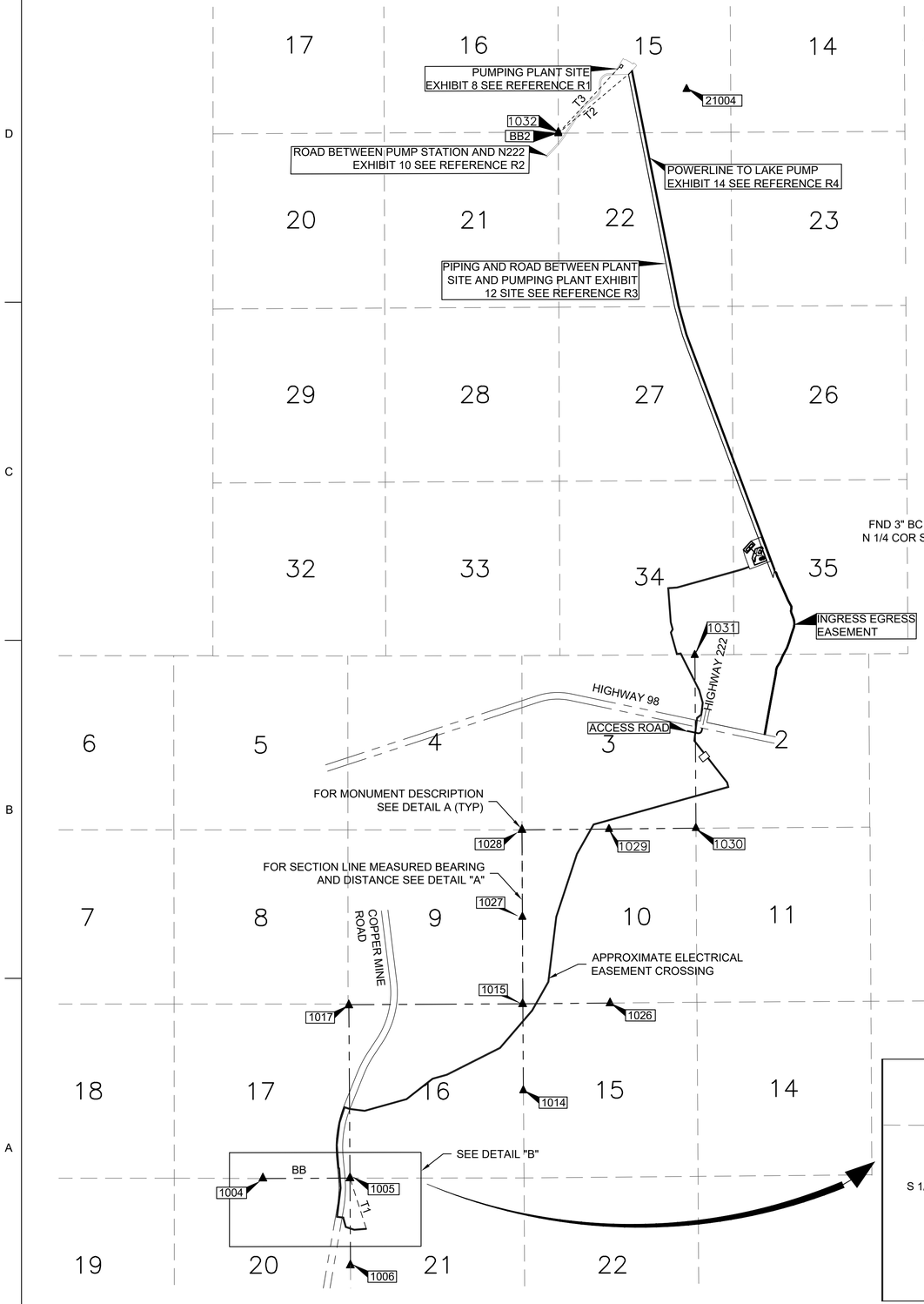
Regards,



Jason John, Director
Navajo Nation Department of Water Resources

cc: Steven Brenchley, Project Manager, Brown and Caldwell

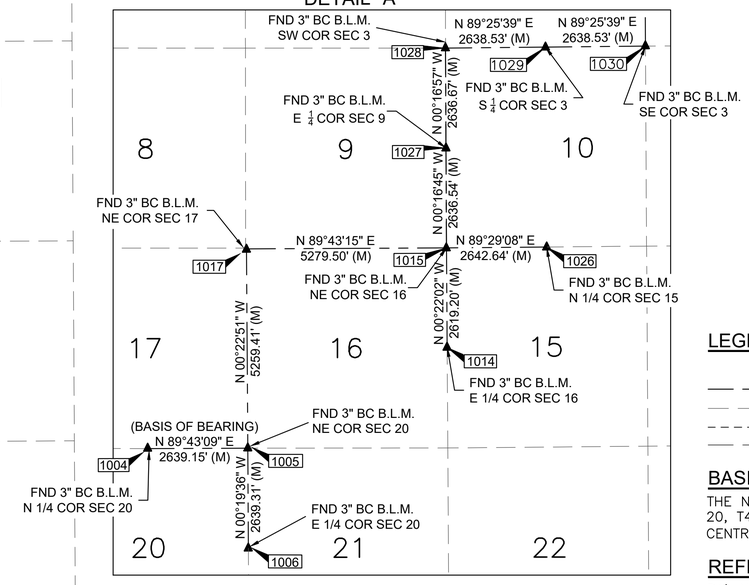
Attachments:
1. Attachment A: Western Navajo LeChee Waterline Pipeline Design Results of Survey; PDF File
2. Attachment B: Plan and Profile Design Drawings within N-20 and N-22 ROW; PDF FILE
3. Attachment C: Environmental Assessment: Western Navajo Pipeline, Phase 1 LeChee Water System Improvements Project; This document contains the Biological and Cultural Compliance in Appendix A and B.
4. Attachment D: Technical Specifications listed above; PDF File
5. Attachment E: Geotechnical Report
6. Proposed LeChee Water line ROW kmz file sent in attached electronic submittal



RESULTS OF SURVEY

LECHEE 30' WIDE WATERLINE UTILITY EASEMENT
LOCATED WITHIN PROTRACTED TOWNSHIP 40 NORTH, RANGE 9 EAST, SECTION 2, PROTRACTED SECTIONS 3, 10, 15, 16, 17, 20, AND 21, AND LOCATED WITHIN PROTRACTED TOWNSHIP 41 NORTH, RANGE 9 EAST, SECTION 15, PROTRACTED SECTIONS 22, 26, 27, 34, AND 35, GILA AND SALT RIVER MERIDIAN, NAVAJO INDIAN RESERVATION, COCONINO COUNTY, ARIZONA

DETAIL "A"



FOUND MONUMENT COORDINATE TABLE

PNT#	NORTHING	EASTING	DESCRIPTION
1004	2132635.447	835893.288	FND BC N S20
1005	2132648.386	838532.401	FND BC NE S20
1006	2130009.115	838547.449	FND BC E S20
1014	2135314.260	843793.663	FND BC E S16
1015	2137933.409	843776.881	FND BC NE S20
1017	2137907.681	838497.442	FND BC NE S16
1026	2137957.133	846419.416	FND BC N S15
1027	2140569.921	843764.038	FND BC E S9
1028	2143206.556	843751.033	FND BC NE S9
1029	2143232.922	846389.432	FND BC N S10
1030	2143259.540	849028.436	FND BC NE S10
1031	2148516.232	848997.519	FND BC NE S3
1032	2164366.317	844852.899	FND BC NE S21

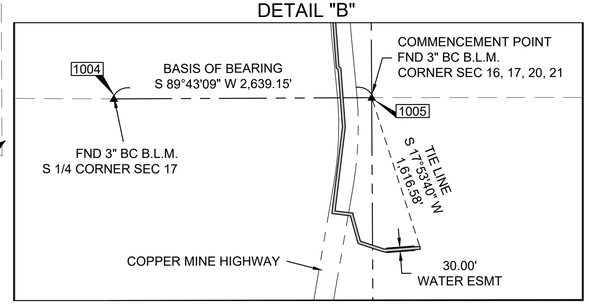
FOUND BENCHMARK COORDINATE TABLE

PNT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
21004	2165662.404	848746.410	3834.84	FND USGS BENCHMARK ET A5 1959

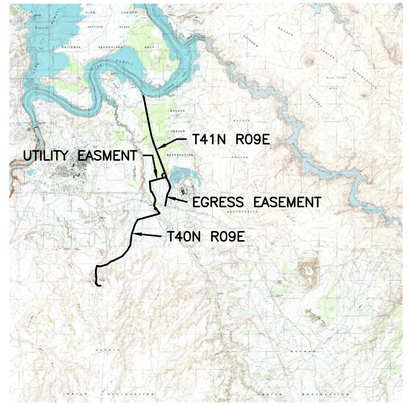
BASIS OF BEARING
AND TIE LINE TABLE

LINE	BEARING	DISTANCE
BB	S 89°43'09" W	2639.15'
T1	S 17°53'40" E	1616.58'
BB2	N 00°10'03" W	34.38'
T2	N 49°58'00" E	2842.23'
T3	N 42°45'45" E	2731.53'

DETAIL "B"



VICINITY MAP



LEGEND:

- FOUND B.L.M.SECTION MONUMENT AS NOTED
- SECTION LINE
- PROTRACTED SECTION LINE
- TIE LINE
- HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 20, T40N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF S 89°43'09" W.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

CERTIFICATION:

I HEREBY CERTIFY THAT THE SURVEY SHOWN ON THIS DRAWING WAS PERFORMED UNDER MY DIRECTION AND INFORMATION SHOWN IS CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS DRAWING WAS PREPARED UNDER MY DIRECTION.

MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

- THIS SURVEY IS BASED ON NAD 83 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET.
- SURVEY ELEVATIONS ARE BASED ON NAVD 88
- SHOWN MEASUREMENTS ARE AT GRID VALUES. TO OBTAIN SPC GROUND VALUES MULTIPLY THE DISTANCES SHOWN BY THE COMBINED SPC GRID FACTOR OF 1.000270

GRAPHIC SCALE

2000 0 1000 2000 4000 8000
(IN FEET)
1 inch = 2000 ft.

Brown AND Caldwell
SALT LAKE CITY, UTAH

RLF CONSULTING
LAND SURVEY • MAPPING SOLUTIONS
WWW.RLFCONSULTING.COM • 480-442-2252
1101 West Grant Road, Suite 208 Tucson, AZ 85705

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35113
MICHAEL E.
FONDREN
DATE SIGNED 11/30/23
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO
LECHEE
WATERLINE
PIPELINE DESIGN

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

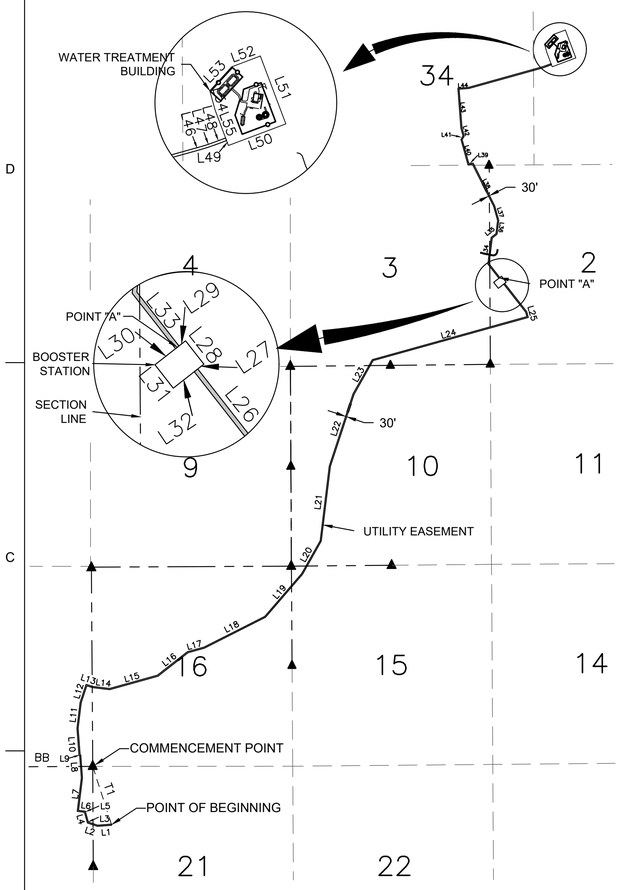
DESIGNED:
DRAWN: M. BAKER
CHECKED:
CHECKED:
APPROVED: M.FONDREN
FILENAME
15004023 SURVEY-LECHEE WATERLINE.DWG
BC PROJECT NUMBER
CLIENT PROJECT NUMBER
15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 1 OF 5



UTILITY EASEMENT LINE TABLES

LINE TABLE

LINE	BEARING	DISTANCE
L1	S 85°42'29" W	368.84'
L2	N 71°47'31" W	268.97'
L3	N 60°32'31" W	1.25'
L4	N 15°32'31" W	294.47'
L5	N 06°57'29" E	1.63'
L6	N 83°02'31" W	186.20'
L7	N 06°57'29" E	878.82'
L8	N 04°17'31" W	596.99'
L9	N 49°17'31" W	25.50'
L10	N 04°17'31" W	697.86'
L11	N 06°57'29" E	680.91'
L12	N 18°12'29" E	489.95'
L13	S 71°47'31" E	165.26'
L14	S 83°02'31" E	457.51'
L15	N 74°27'29" E	1317.68'
L16	N 51°57'29" E	1005.71'
L17	N 74°27'29" E	450.30'
L18	N 63°12'29" E	1804.93'
L19	N 40°42'30" E	1493.55'
L20	N 29°27'29" E	1000.11'
L21	N 06°57'29" E	1986.97'
L22	N 18°12'29" E	2004.74'
L23	N 29°27'29" E	1028.60'
L24	N 74°27'29" E	4242.63'
L25	N 15°32'31" W	140.93'
L26	N 38°02'31" W	942.32'
L27	N 51°57'06" E	67.52'
L28	N 38°02'54" W	200.00'
L29	S 51°57'06" W	71.07'
L30	S 51°57'06" W	190.93'

LINE TABLE

LINE	BEARING	DISTANCE
L31	S 38°02'54" E	200.00'
L32	N 51°57'06" E	194.48'
L33	N 38°02'33" W	467.23'
L34	N 06°57'29" E	697.71'
L35	N 51°57'29" E	161.36'
L36	N 06°57'29" E	361.44'
L37	N 15°32'31" W	391.44'
L38	N 26°47'31" W	1250.30'
L39	S 86°00'29" W	117.94'
L40	N 15°32'31" W	670.27'
L41	N 29°27'29" E	112.14'
L42	N 15°32'31" W	219.13'
L43	N 04°17'31" W	1038.67'
L44	N 85°42'29" E	270.58'
L45	N 74°27'29" E	1963.42'
L46	N 73°12'16" E	87.51'
L47	N 70°41'51" E	87.51'
L48	N 69°26'38" E	128.90'
L49	S 20°36'25" E	72.34'
L50	N 69°23'35" E	665.52'
L51	N 20°36'25" W	786.08'
L52	S 69°23'35" W	332.15'
L53	S 42°30'18" W	351.76'
L54	S 15°32'20" E	222.25'
L55	S 20°36'25" E	333.27'

LEGAL DESCRIPTION

LEGAL DESCRIPTION

A 30-FOOT-WIDE UTILITY EASEMENT 15 FEET ON EITHER SIDE PURPOSE OF WATER DISTRIBUTION, LYING WITHIN PROTRACTED TOWNSHIP 40 NORTH, RANGE 9 EAST, SECTIONS 2, 3, 10, 15, 16, 17, 20, AND 21, AND LOCATED WITHIN TOWNSHIP 41 NORTH, RANGE 9 EAST, SECTIONS 34, AND 35, GILA AND SALT RIVER MERIDIAN, NAVAJO INDIAN RESERVATION, COCONINO COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CADASTRAL SURVEY 3" BRASS CAP SURVEY MONUMENT MARKING THE NORTHEAST CORNER OF SECTION 20 T40N R09E FROM WHICH A FOUND U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CADASTRAL SURVEY 3" BRASS CAP SURVEY MONUMENT MARKING THE NORTH QUARTER CORNER OF SAID SECTION 20 T40N R09E, BEARS SOUTH 89°43'09" WEST (BASIS OF BEARING), A DISTANCE OF 2639.15 FEET:

THENCE SOUTH 17°53'40" EAST, A DISTANCE OF 1616.58 TO THE POINT OF BEGINNING (P.O.B.) OF THE 30 FOOT WATER UTILITY EASEMENT 15 FEET ON EITHER SIDE;

THENCE SOUTH 85°42'29" WEST, A DISTANCE OF 368.84 FEET;

THENCE NORTH 71°47'31" WEST, A DISTANCE OF 268.97 FEET;

THENCE NORTH 60°32'31" WEST, A DISTANCE OF 1.25 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 294.47 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 1.63 FEET;

THENCE NORTH 83°02'31" WEST, A DISTANCE OF 186.20 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 878.82 FEET;

THENCE NORTH 04°17'31" WEST, A DISTANCE OF 596.99 FEET;

THENCE NORTH 49°17'31" WEST, A DISTANCE OF 25.50 FEET;

THENCE NORTH 04°17'31" WEST, A DISTANCE OF 697.86 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 680.91 FEET;

THENCE NORTH 18°12'29" EAST, A DISTANCE OF 489.95 FEET;

THENCE SOUTH 71°47'31" EAST, A DISTANCE OF 165.26 FEET;

THENCE SOUTH 83°02'31" EAST, A DISTANCE OF 457.51 FEET;

THENCE NORTH 74°27'29" EAST, A DISTANCE OF 1317.68 FEET;

THENCE NORTH 51°57'29" EAST, A DISTANCE OF 1005.71 FEET;

THENCE NORTH 74°27'29" EAST, A DISTANCE OF 450.30 FEET;

THENCE NORTH 63°12'29" EAST, A DISTANCE OF 1804.93 FEET;

THENCE NORTH 40°42'30" EAST, A DISTANCE OF 1493.55 FEET;

THENCE NORTH 29°27'29" EAST, A DISTANCE OF 1000.11 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 1986.97 FEET;

THENCE NORTH 18°12'29" EAST, A DISTANCE OF 2004.74 FEET;

THENCE NORTH 29°27'29" EAST, A DISTANCE OF 1028.60 FEET;

THENCE NORTH 74°27'29" EAST, A DISTANCE OF 4242.63 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 140.93 FEET;

THENCE NORTH 38°02'31" WEST, A DISTANCE OF 942.32 FEET TO THE SOUTH PERIMETER LINE OF THE BOOSTER PUMP STATION BUILDING EASEMENT;

THENCE ALONG THE PERIMETER OF THE BOOSTER STATION NORTH 51°57'06" EAST, A DISTANCE OF 67.52 FEET;

THENCE NORTH 38°02'54" WEST, A DISTANCE OF 200.00 FEET;

THENCE SOUTH 51°57'06" WEST, A DISTANCE OF 71.07 FEET TO A POINT KNOWN AS POINT "A";

LEGAL DESCRIPTION - CONTINUED

THENCE SOUTH 51°57'06" WEST, A DISTANCE OF 190.93 FEET;

THENCE SOUTH 38°02'54" EAST, A DISTANCE OF 200.00 FEET;

THENCE NORTH 51°57'06" EAST, A DISTANCE OF 194.48 FEET;

THE ABOVE DESCRIBED BOOSTER STATION OF THE UTILITY EASEMENT CONTAINS APPROXIMATELY 52,400 SQUARE FEET OR 1.20 ACRES MORE OR LESS.

COMMENCING FROM POINT "A", ALONG A 30-FOOT-WIDE UTILITY EASEMENT 15 FEET ON EITHER SIDE, NORTH 38°02'33" WEST, A DISTANCE OF 467.23 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 697.71 FEET;

THENCE NORTH 51°57'29" EAST, A DISTANCE OF 161.36 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 361.44 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 391.44 FEET;

THENCE NORTH 26°47'31" WEST, A DISTANCE OF 1250.30 FEET;

THENCE SOUTH 86°00'29" WEST, A DISTANCE OF 117.94 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 670.27 FEET;

THENCE NORTH 29°27'29" EAST, A DISTANCE OF 112.14 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 219.13 FEET;

THENCE NORTH 04°17'31" WEST, A DISTANCE OF 1038.67 FEET;

THENCE NORTH 85°42'29" EAST, A DISTANCE OF 270.58 FEET;

THENCE NORTH 74°27'29" EAST, A DISTANCE OF 1963.42 FEET;

THENCE NORTH 73°12'16" EAST, A DISTANCE OF 87.51 FEET;

THENCE NORTH 70°41'51" EAST, A DISTANCE OF 87.51 FEET;

THENCE NORTH 69°26'38" EAST, A DISTANCE OF 128.90 FEET TO THE WEST PERIMETER LINE OF THE WATER TREATMENT BUILDING EASEMENT;

THENCE ALONG THE SAID LINE SOUTH 20°36'25" EAST, A DISTANCE OF 72.34 FEET;

THENCE NORTH 69°23'35" EAST, A DISTANCE OF 665.52 FEET;

THENCE NORTH 20°36'25" WEST, A DISTANCE OF 786.08 FEET;

THENCE SOUTH 69°23'35" WEST, A DISTANCE OF 332.15 FEET;

THENCE SOUTH 42°30'18" WEST, A DISTANCE OF 351.76 FEET;

THENCE SOUTH 15°32'20" EAST, A DISTANCE OF 222.25 FEET;

THENCE SOUTH 20°36'25" EAST, A DISTANCE OF 333.27 FEET;

THE ABOVE DESCRIBED WATER TREATMENT BUILDING OF THE UTILITY EASEMENT CONTAINS APPROXIMATELY 492,904 SQUARE FEET OR 11.32 ACRES MORE OR LESS.

THE ABOVE DESCRIBED 30 FOOT UTILITY EASEMENT CONTAINS APPROXIMATELY 958,700 SQUARE FEET OR 22.01 ACRES MORE OR LESS.

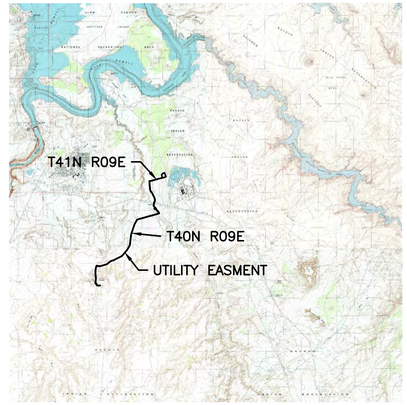
GRAPHIC SCALE

2000 0 1000 2000 4000 8000

(IN FEET)
1 inch = 2000 ft.

rlf

VICINITY MAP



LEGEND:

△	FOUND B.L.M.SECTION MONUMENT AS NOTED
— — ——— — —	SECTION LINE
— — — — — —	PROTRACTED SECTION LINE
- - - - - - - -	TIE LINE
——— — — ———	HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 20, T40N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF S 89°43'09" W.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE
EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

CERTIFICATION:

I HEREBY CERTIFY THAT THE SURVEY SHOWN ON THIS DRAWING WAS PERFORMED UNDER MY DIRECTION AND INFORMATION SHOWN IS CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS DRAWING WAS PREPARED UNDER MY DIRECTION.

MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

- THIS SURVEY IS BASED ON NAD 83 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET.
- SURVEY ELEVATIONS ARE BASED ON NAVD 88.
- SHOWN MEASUREMENTS ARE AT GRID VALUES. TO OBTAIN SPC GROUND VALUES MULTIPLY THE DISTANCES SHOWN BY THE COMBINED SPC GRID FACTOR OF 1.000270

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SALT LAKE CITY, UTAH

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1101 West Grant Road, Suite 208 Tucson, AZ 85705

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35113
MICHAEL E.
FONDREN
Date Signed 11/30/23
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:
DRAWN: M. BAKER
CHECKED:
CHECKED:
APPROVED: M.FONDREN

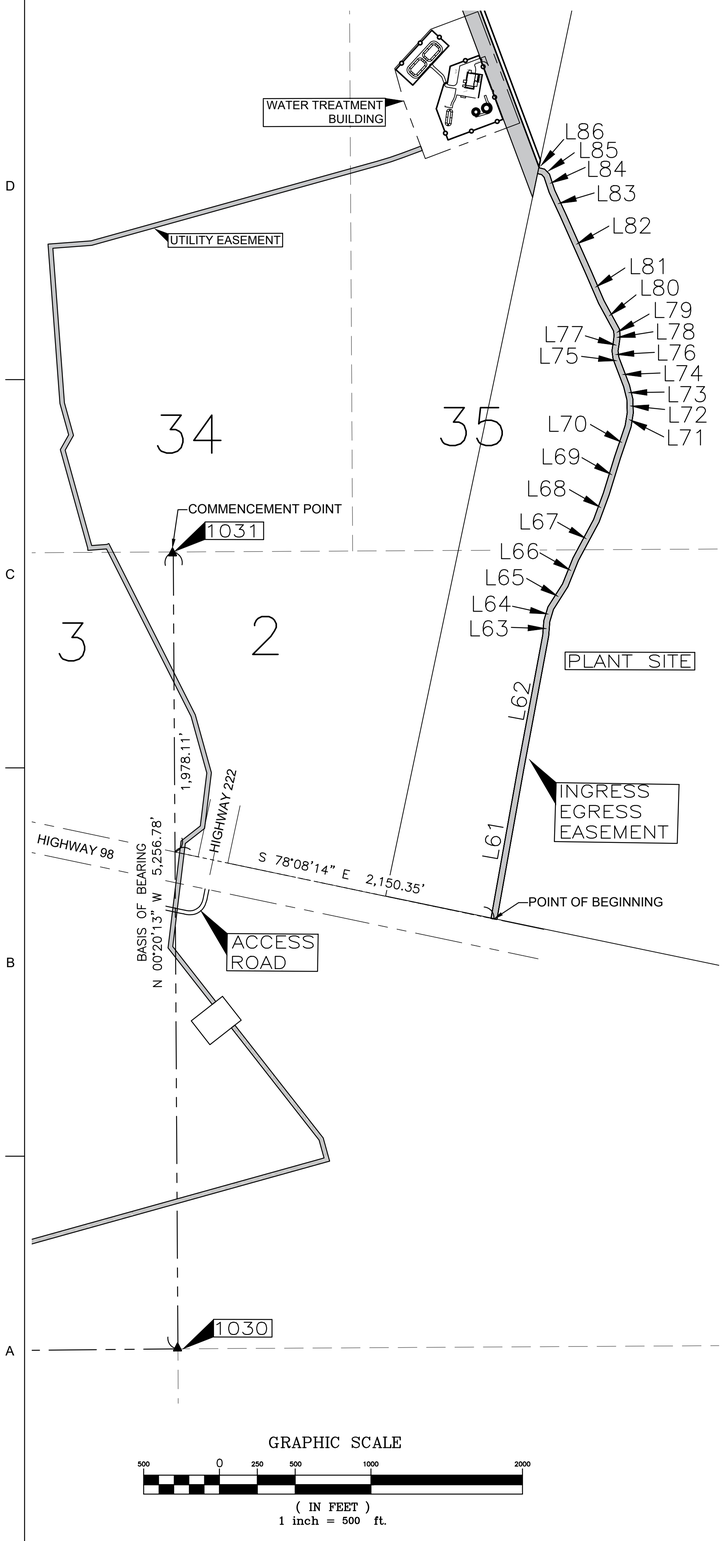
FILENAME
15004023 SURVEY-LECHEE WATERLINE.DWG
BC PROJECT NUMBER
CLIENT PROJECT NUMBER
15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 2 OF 5



GRAPHIC SCALE

500 0 250 500 1000 2000

(IN FEET)

1 inch = 500 ft.

LEGAL DESCRIPTION

LEGAL DESCRIPTION

A 40-FOOT-WIDE INGRESS EGRESS EASEMENT 20 FEET ON EITHER SIDE PURPOSE OF ACCESSING WATER DISTRIBUTION UTILITIES, LYING WITHIN TOWNSHIP 41 NORTH, RANGE 9 EAST, SECTION 35, AND WITHIN TOWNSHIP 40 NORTH RANGE 9 EAST SECTIONS 2, GILA AND SALT RIVER MERIDIAN, NAVAJO INDIAN RESERVATION, COCONINO COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CADASTRAL SURVEY 3" BRASS CAP SURVEY MONUMENT BEING AT THE NORTHWEST CORNER OF SECTION 2, TOWNSHIP 40 NORTH, RANGE 9 EAST, FROM WHICH A FOUND U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CADASTRAL SURVEY 3" BRASS CAP SURVEY MONUMENT BEING AT THE SOUTHWEST CORNER OF SAID SECTION 2, BEARS SOUTH 00°20'13" EAST (BASIS OF BEARING), A DISTANCE OF 5256.78 FEET:

THENCE ALONG THE EAST LINE OF SECTION 3 SOUTH 00°20'13" EAST, A DISTANCE OF 1978.11 FEET TO A POINT OF IN INTERSECT WITH THE NORTH RIGHT OF WAY LINE OF HIGHWAY 98 SHOWN IN MAP NO. D-3-T-606 DATED 7/22/76;

THENCE ALONG THE NORTH RIGHT OF WAY LINE OF HIGHWAY 98 SOUTH 78 08'14" EAST, A DISTANCE OF 2150.35 FEET TO THE POINT OF BEGINNING (P.O.B.) OF THE 40 FOOT INGRESS EGRESS EASEMENT;

THENCE NORTH 10°08'27" EAST, A DISTANCE OF 1003.60 FEET;

THENCE NORTH 10°35'37" EAST, A DISTANCE OF 896.51 FEET;

THENCE NORTH 04°27'46" EAST, A DISTANCE OF 96.37 FEET;

THENCE NORTH 16°41'56" EAST, A DISTANCE OF 89.47 FEET;

THENCE NORTH 32°22'45" EAST, A DISTANCE OF 178.31 FEET;

THENCE NORTH 21°59'25" EAST, A DISTANCE OF 186.25 FEET;

THENCE NORTH 28°11'31" EAST, A DISTANCE OF 287.83 FEET;

THENCE NORTH 20°10'57" EAST, A DISTANCE OF 188.14 FEET;

THENCE NORTH 17°12'04" EAST, A DISTANCE OF 250.04 FEET;

LEGAL DESCRIPTION - CONTINUED

THENCE NORTH 18°45'15" EAST, A DISTANCE OF 219.63 FEET;

THENCE NORTH 09°07'46" EAST, A DISTANCE OF 89.06 FEET;

THENCE NORTH 01°42'16" WEST, A DISTANCE OF 90.41 FEET;

THENCE NORTH 13°50'03" WEST, A DISTANCE OF 89.92 FEET;

THENCE NORTH 20°48'12" WEST, A DISTANCE OF 161.32 FEET;

THENCE NORTH 20°47'38" WEST, A DISTANCE OF 35.07 FEET;

THENCE NORTH 08°01'31" WEST, A DISTANCE OF 48.92 FEET;

THENCE NORTH 08°47'25" EAST, A DISTANCE OF 73.56 FEET;

THENCE NORTH 04°32'59" EAST, A DISTANCE OF 30.65 FEET;

THENCE NORTH 06°03'13" WEST, A DISTANCE OF 34.53 FEET;

THENCE NORTH 28°28'39" WEST, A DISTANCE OF 210.24 FEET;

THENCE NORTH 23°24'35" WEST, A DISTANCE OF 210.33 FEET;

THENCE NORTH 23°59'38" WEST, A DISTANCE OF 413.56 FEET;

THENCE NORTH 24°54'42" WEST, A DISTANCE OF 176.09 FEET;

THENCE NORTH 18°11'49" WEST, A DISTANCE OF 108.93 FEET;

THENCE NORTH 44°34'08" WEST, A DISTANCE OF 34.59 FEET;

THENCE NORTH 76°18'08" WEST, A DISTANCE OF 76.15 FEET;

THENCE NORTH 62°04'48" WEST, A DISTANCE OF 28.11 FEET;

THENCE NORTH 37°10'52" WEST, A DISTANCE OF 34.83 FEET;

THENCE NORTH 19°55'39" WEST, A DISTANCE OF 258.20 FEET TO A POINT ON THE SOUTH BOUNDARY LINE OF THE WATER TREATMENT BUILDING;

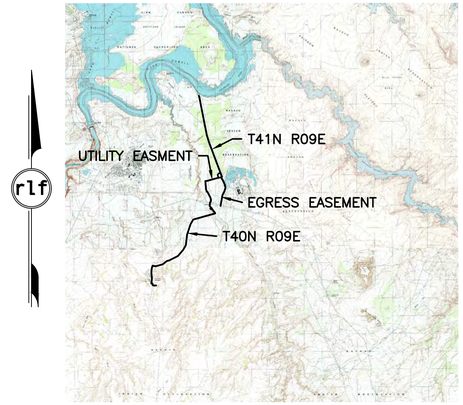
THE ABOVE DESCRIBED FIRST PORTION OF THE UTILITY EASEMENT CONTAINS APPROXIMATELY 209,464 SQUARE FEET OR 4.81 ACRES MORE OR LESS.

INGRESS EGRESS EASEMENT LINE TABLES

LINE TABLE

LINE	BEARING	DISTANCE
L61	N 10°08'27" E	1003.60'
L62	N 10°35'37" E	896.51'
L63	N 04°27'46" E	96.37'
L64	N 16°41'56" E	89.47'
L65	N 32°22'45" E	178.31'
L66	N 21°59'25" E	186.25'
L67	N 28°11'31" E	287.83'
L68	N 20°10'57" E	188.14'
L69	N 17°12'04" E	250.04'
L70	N 18°45'15" E	219.63'
L71	N 09°07'46" E	89.06'
L72	N 01°42'16" W	90.41'
L73	N 13°50'03" W	89.92'
L74	N 20°48'12" W	161.32'
L75	N 20°47'38" W	35.07'
L76	N 08°01'31" W	48.92'
L77	N 08°47'25" E	73.56'
L78	N 04°32'59" E	30.65'
L79	N 06°03'13" W	34.53'
L80	N 28°28'39" W	210.24'
L81	N 23°24'35" W	210.33'
L82	N 23°59'38" W	413.56'
L83	N 24°54'42" W	176.09'
L84	N 18°11'49" W	108.93'
L85	N 44°34'08" W	34.59'
L86	N 76°18'08" W	33.28'

VICINITY MAP



LEGEND:

△	FOUND B.L.M.SECTION MONUMENT AS NOTED
— — — ——— — — —	SECTION LINE
——— ——— ——— ———	PROTRACTED SECTION LINE
- - - - - - - - - - - - - - - -	TIE LINE
——— — — ——— — — ———	HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE WEST LINE OF THE SECTION 2, T40N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF S 00°20'13" E.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE
EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

CERTIFICATION:

I HEREBY CERTIFY THAT THE SURVEY SHOWN ON THIS DRAWING WAS PERFORMED UNDER MY DIRECTION AND INFORMATION SHOWN IS CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS DRAWING WAS PREPARED UNDER MY DIRECTION.

MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

- THIS SURVEY IS BASED ON NAD 83 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET.
- SURVEY ELEVATIONS ARE BASED ON NAVD 88.
- SHOWN MEASUREMENTS ARE AT GRID VALUES. TO OBTAIN SPC GROUND VALUES MULTIPLY THE DISTANCES SHOWN BY THE COMBINED SPC GRID FACTOR OF 1.000270

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1101 West Grant Road, Suite 208 Tucson, AZ 85705

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35113
MICHAEL E.
FONDREN
DATE SIGNED 11/30/23
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:
DRAWN: M. BAKER
CHECKED:
CHECKED:
APPROVED: M.FONDREN

FILENAME
15004023 SURVEY-LECHEE WATERLINE.DWG

BC PROJECT NUMBER

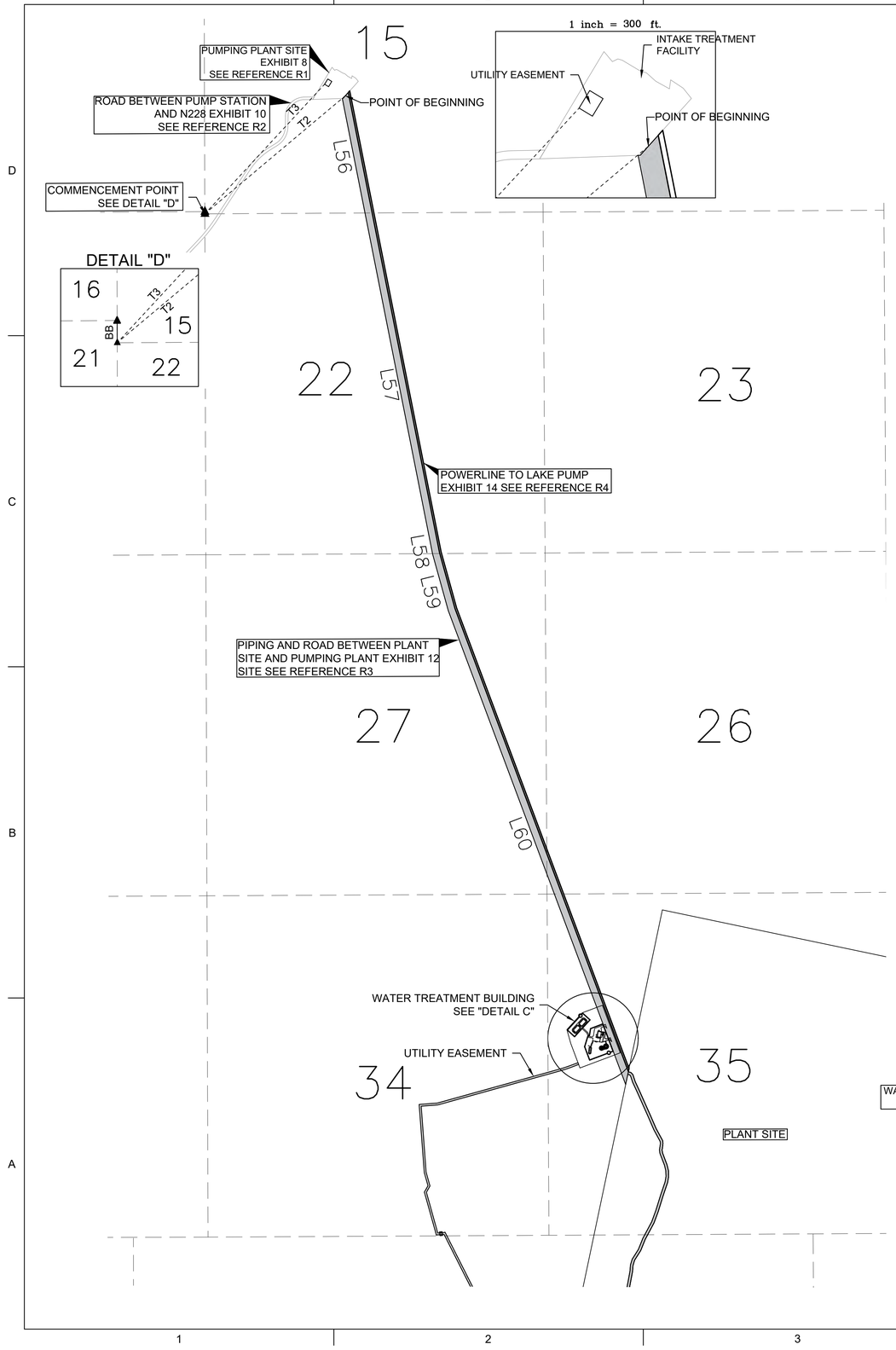
CLIENT PROJECT NUMBER
15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 3 OF 5



1 inch = 300 ft.

DETAIL "D"

LEGAL DESCRIPTION

A 110-FOOT-WIDE UTILITY EASEMENT 55 FOOT WIDE ON EITHER SIDE FOR THE PURPOSE OF WATER DISTRIBUTION ALSO BEING THE PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE EXHIBIT 12 REFERENCED FROM THE NAVAJO GENERATING STATION LANDS, BEING WITHIN TOWNSHIP 41 NORTH, RANGE 9 EAST, SECTIONS 15, 22, 26, 27, 34, AND 35, GILA AND SALT RIVER MERIDIAN, NAVAJO INDIAN RESERVATION, COCONINO COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 22, TOWNSHIP 41 NORTH, RANGE 9 EAST, BEING A BUREAU OF LAND MANAGEMENT BRASS CAP, FROM WHICH THE NORTHEAST CORNER OF SAID SECTION 21, TOWNSHIP 41 NORTH, RANGE 9 EAST, BEARS NORTH 00°10'03" WEST (BASIS OF BEARING), A DISTANCE OF 34.38 FEET;

THENCE NORTH 49°58'00" EAST, A DISTANCE OF 2842.23 FEET TO THE POINT OF BEGINNING;

THENCE SOUTH 11°13'04" EAST, A DISTANCE OF 1850.18 FEET TO THE NORTH LINE OF SECTION 22;

THENCE SOUTH 11°13'04" EAST, A DISTANCE OF 5371.19 FEET;

THENCE SOUTH 15°28'28" EAST, A DISTANCE OF 1.75 FEET TO THE SOUTH LINE OF SECTION 22;

THENCE SOUTH 15°28'28" EAST, A DISTANCE OF 900.21 FEET;

THENCE SOUTH 20°31'52" EAST, A DISTANCE OF 7741.09 FEET TO THE WESTERLY BOUNDARY OF PLANT SITE RIGHT OF WAY, ALSO BEING THE THE POINT OF TERMINUS OF THE SECOND WATERLINE EASEMENT;

THE ABOVE DESCRIBED SECOND PORTION OF THE UTILITY EASEMENT CONTAINS APPROXIMATELY 1,744,538 SQUARE FEET OR 40.05 ACRES MORE OR LESS.

BASIS OF BEARING
AND TIE LINE TABLE

LINE	BEARING	DISTANCE
BB	N 00°10'03" W	34.38'
T2	N 49°58'00" E	2842.23'
T3	N 42°45'45" E	2731.53'

LINE TABLE

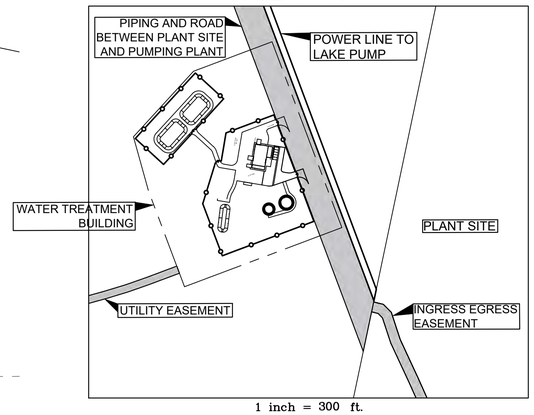
LINE	BEARING	DISTANCE
L56	S 11°13'04" E	1850.18'
L57	S 11°13'04" E	5371.19'
L58	S 15°28'28" E	1.75'
L59	S 15°28'28" E	900.21'
L60	S 20°31'52" E	7741.09'

GRAPHIC SCALE

1000 0 500 1000 2000 4000

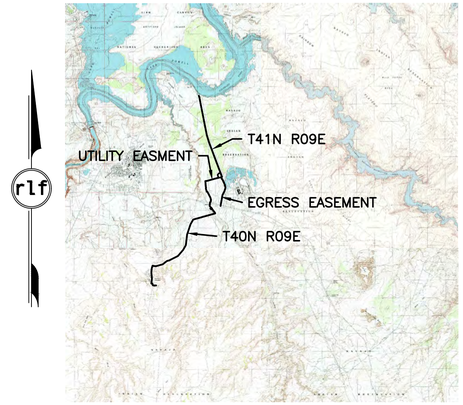
(IN FEET)
1 inch = 1000 ft.

DETAIL "C"



1 inch = 300 ft.

VICINITY MAP



LEGEND:

△	FOUND B.L.M.SECTION MONUMENT AS NOTED
— — ——— — — —	SECTION LINE
— — — — — — —	PROTRACTED SECTION LINE
- - - - - - - - - - - - - - - -	TIE LINE
— — ——— — — —	HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE WEST LINE OF THE SECTION 15, T41N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF N 00°10'03" W.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

CERTIFICATION:

I HEREBY CERTIFY THAT THE SURVEY SHOWN ON THIS DRAWING WAS PERFORMED UNDER MY DIRECTION AND INFORMATION SHOWN IS CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS DRAWING WAS PREPARED UNDER MY DIRECTION.

MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

- THIS SURVEY IS BASED ON NAD 83 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET.
- SURVEY ELEVATIONS ARE BASED ON NAVD 88.
- SHOWN MEASUREMENTS ARE AT GRID VALUES. TO OBTAIN SPC GROUND VALUES MULTIPLY THE DISTANCES SHOWN BY THE COMBINED SPC GRID FACTOR OF 1.000270

Brown AND Caldwell

SALT LAKE CITY, UTAH

RLF CONSULTING
LAND SURVEY • MAPPING SOLUTIONS
WWW.RLFCONSULTING.COM • +1 520 445 2252
1101 West Grant Road, Suite 208 Tucson, AZ 85705

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35113
MICHAEL E.
FONDREN
Date Signed 11/30/23
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

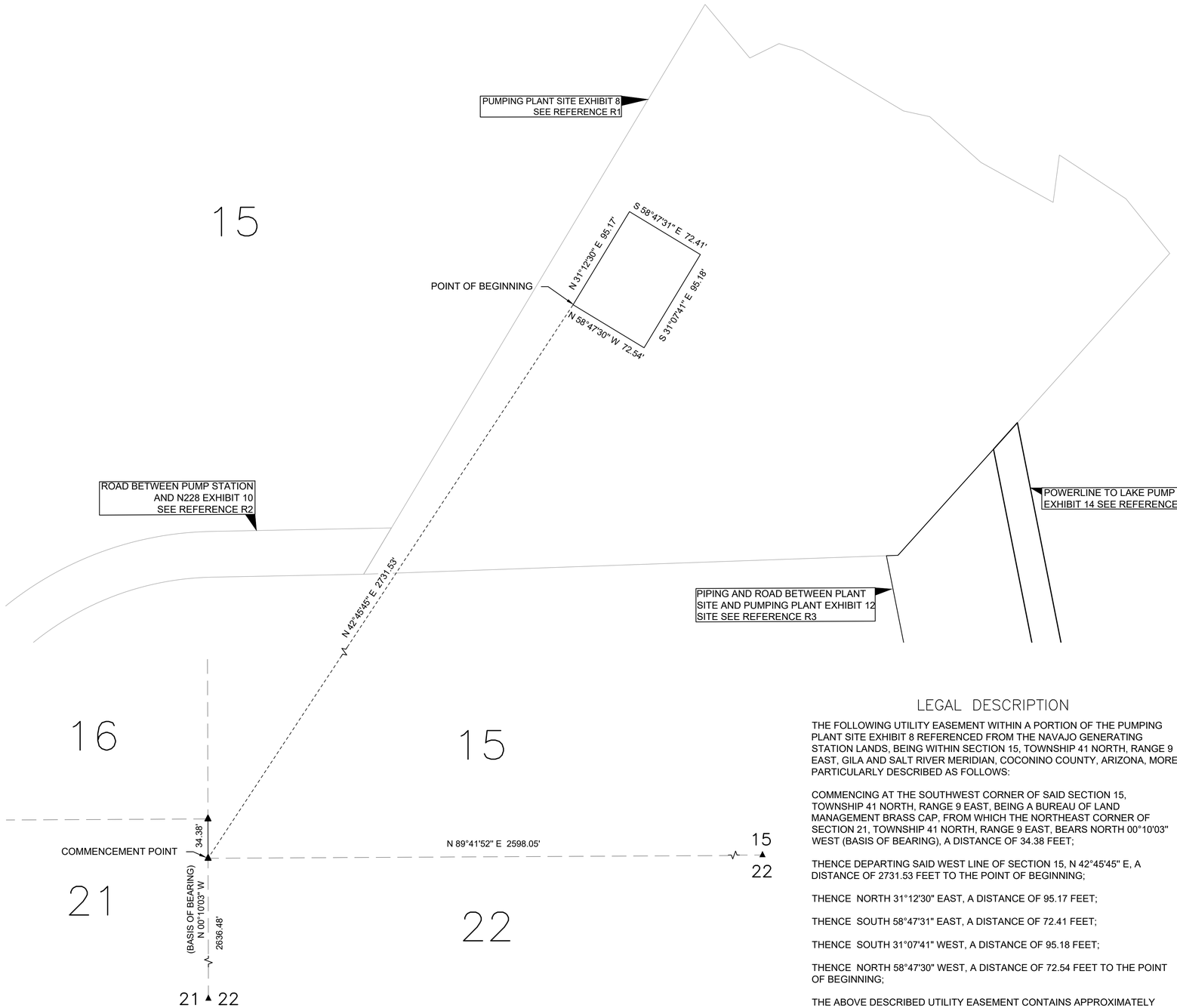
DESIGNED:
DRAWN: M. BAKER
CHECKED:
CHECKED:
APPROVED: M.FONDREN
FILENAME 15004023 SURVEY-LECHEE WATERLINE.DWG
BC PROJECT NUMBER
CLIENT PROJECT NUMBER 15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 4 OF 5



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

LEGAL DESCRIPTION

THE FOLLOWING UTILITY EASEMENT WITHIN A PORTION OF THE PUMPING PLANT SITE EXHIBIT 8 REFERENCED FROM THE NAVAJO GENERATING STATION LANDS, BEING WITHIN SECTION 15, TOWNSHIP 41 NORTH, RANGE 9 EAST, GILA AND SALT RIVER MERIDIAN, COCONINO COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 15, TOWNSHIP 41 NORTH, RANGE 9 EAST, BEING A BUREAU OF LAND MANAGEMENT BRASS CAP, FROM WHICH THE NORTHEAST CORNER OF SECTION 21, TOWNSHIP 41 NORTH, RANGE 9 EAST, BEARS NORTH 00°10'03" WEST (BASIS OF BEARING), A DISTANCE OF 34.38 FEET;

THENCE DEPARTING SAID WEST LINE OF SECTION 15, N 42°45'45" E, A DISTANCE OF 2731.53 FEET TO THE POINT OF BEGINNING;

THENCE NORTH 31°12'30" EAST, A DISTANCE OF 95.17 FEET;

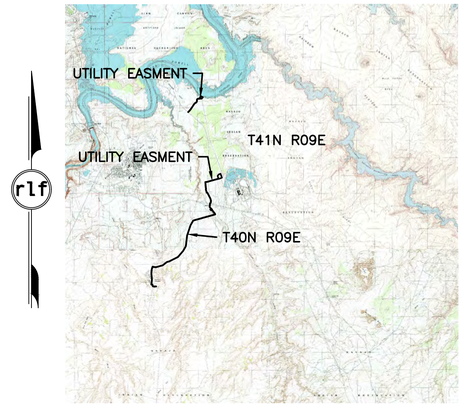
THENCE SOUTH 58°47'31" EAST, A DISTANCE OF 72.41 FEET;

THENCE SOUTH 31°07'41" WEST, A DISTANCE OF 95.18 FEET;

THENCE NORTH 58°47'30" WEST, A DISTANCE OF 72.54 FEET TO THE POINT OF BEGINNING;

THE ABOVE DESCRIBED UTILITY EASEMENT CONTAINS APPROXIMATELY 6,898 SQUARE FEET OR 0.16 ACRES MORE OR LESS.

VICINITY MAP



LEGEND:

△	FOUND B.L.M.SECTION MONUMENT AS NOTED
— — — ——— — — —	SECTION LINE
— — — — — — — —	PROTRACTED SECTION LINE
- - - - - - - - - - - - - - - -	TIE LINE
—— — — ——— — — ——	HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE WEST LINE OF THE SECTION 15, T41N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF N 00°10'03" W.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

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GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

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DRAWN: M. BAKER
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SURVEY

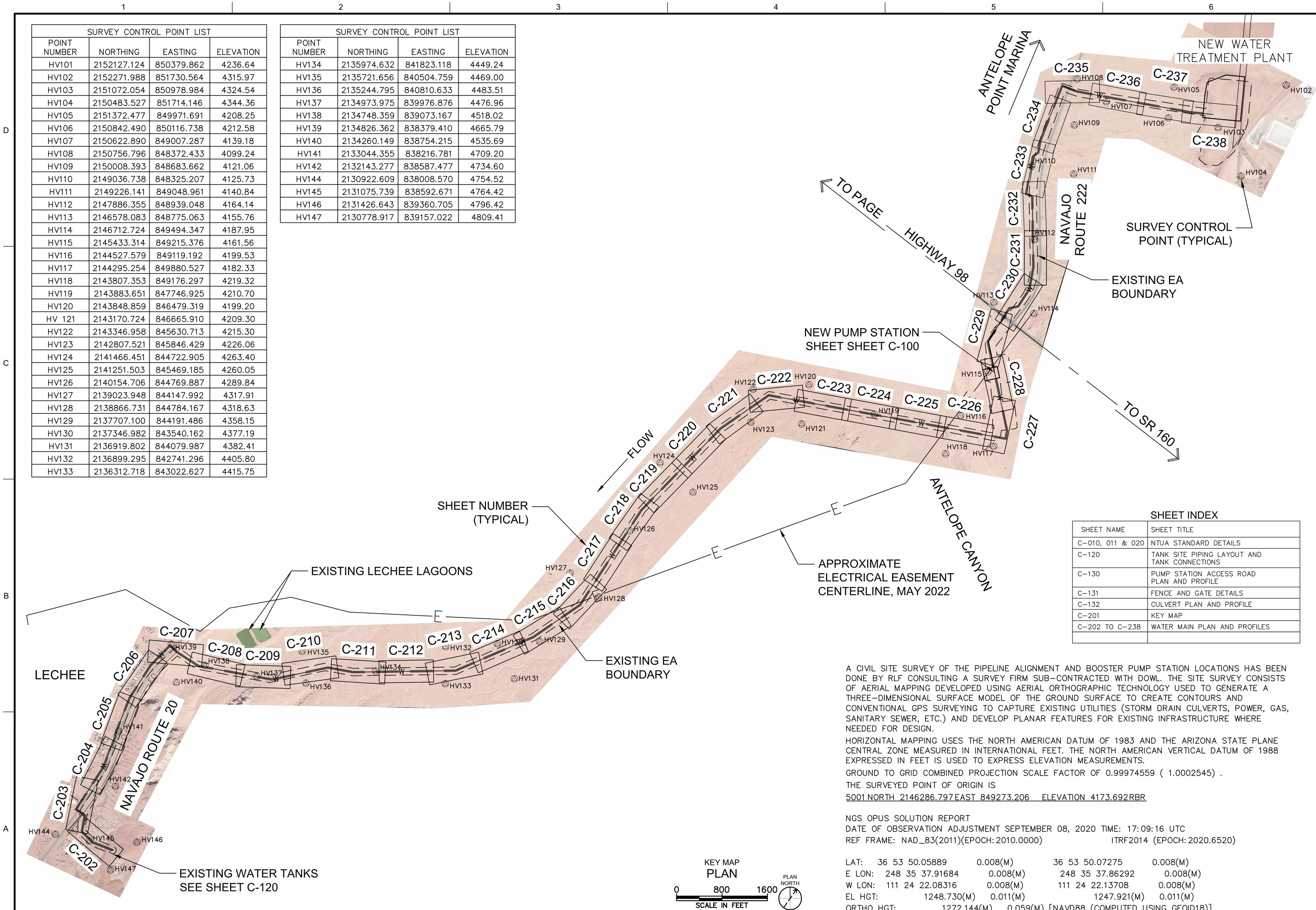
RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 5 OF 5

SURVEY CONTROL POINT LIST			
POINT NUMBER	NORTHING	EASTING	ELEVATION
HV101	2152127.124	850379.862	4236.64
HV102	2152271.988	851730.564	4315.97
HV103	2151072.054	850978.984	4324.54
HV104	2150483.527	851714.146	4344.36
HV105	2151372.477	849971.691	4208.25
HV106	2150842.490	850116.738	4212.58
HV107	2150622.890	849007.287	4139.18
HV108	2150756.796	848372.433	4099.24
HV109	2150008.393	848683.662	4121.06
HV110	2149036.738	848325.207	4125.73
HV111	2149226.141	849048.961	4140.84
HV112	2147886.355	848939.048	4164.14
HV113	2146578.083	848775.063	4155.76
HV114	2146712.724	849494.347	4187.95
HV115	2145433.314	849215.376	4161.56
HV116	2144527.579	849119.192	4199.53
HV117	2144295.254	849880.527	4182.33
HV118	2143807.353	849176.297	4219.32
HV119	2143883.651	847746.925	4210.70
HV120	2143848.859	846479.319	4199.20
HV 121	2143170.724	846665.910	4209.30
HV122	2143346.958	845630.713	4215.30
HV123	2142807.521	845846.429	4226.06
HV124	2141466.451	844722.905	4263.40
HV125	2141251.503	845469.185	4260.05
HV126	2140154.706	844769.887	4289.84
HV127	2139023.948	844147.992	4317.91
HV128	2138866.731	844784.167	4318.63
HV129	2137707.100	844191.486	4358.15
HV130	2137346.982	843540.162	4377.19
HV131	2136919.802	844079.987	4382.41
HV132	2136899.295	842741.296	4405.80
HV133	2136312.718	843022.627	4415.75

SURVEY CONTROL POINT LIST			
POINT NUMBER	NORTHING	EASTING	ELEVATION
HV134	2135974.632	841823.118	4449.24
HV135	2135721.656	840504.759	4469.00
HV136	2135244.795	840810.633	4483.51
HV137	2134973.975	839976.876	4476.96
HV138	2134748.359	839073.167	4518.02
HV139	2134826.362	838379.410	4665.79
HV140	2134260.149	838754.215	4535.69
HV141	2133044.355	838216.781	4709.20
HV142	2132143.277	838587.477	4734.60
HV144	2130922.609	838008.570	4754.52
HV145	2131075.739	838592.671	4764.42
HV146	2131426.643	839360.705	4796.42
HV147	2130778.917	839157.022	4809.41



KEY MAP
PLAN
0 800 1600
SCALE IN FEET
PLAN NORTH

SHEET INDEX

SHEET NAME	SHEET TITLE
C-010, 011 & 020	NTUA STANDARD DETAILS
C-120	TANK SITE PIPING LAYOUT AND TANK CONNECTIONS
C-130	PUMP STATION ACCESS ROAD PLAN AND PROFILE
C-131	FENCE AND GATE DETAILS
C-132	CULVERT PLAN AND PROFILE
C-201	KEY MAP
C-202 TO C-238	WATER MAIN PLAN AND PROFILES

A CIVIL SITE SURVEY OF THE PIPELINE ALIGNMENT AND BOOSTER PUMP STATION LOCATIONS HAS BEEN DONE BY RLF CONSULTING A SURVEY FIRM SUB-CONTRACTED WITH DOWL. THE SITE SURVEY CONSISTS OF AERIAL MAPPING DEVELOPED USING AERIAL ORTHOGRAPHIC TECHNOLOGY USED TO GENERATE A THREE-DIMENSIONAL SURFACE MODEL OF THE GROUND SURFACE TO CREATE CONTOURS AND CONVENTIONAL GPS SURVEYING TO CAPTURE EXISTING UTILITIES (STORM DRAIN CULVERTS, POWER, GAS, SANITARY SEWER, ETC.) AND DEVELOP PLANAR FEATURES FOR EXISTING INFRASTRUCTURE WHERE NEEDED FOR DESIGN.

HORIZONTAL MAPPING USES THE NORTH AMERICAN DATUM OF 1983 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET. THE NORTH AMERICAN VERTICAL DATUM OF 1988 EXPRESSED IN FEET IS USED TO EXPRESS ELEVATION MEASUREMENTS.

GROUND TO GRID COMBINED PROJECTION SCALE FACTOR OF 0.99974559 (1.0002545) .

THE SURVEYED POINT OF ORIGIN IS

5001 NORTH 2146286.797 EAST 849273.206 ELEVATION 4173.692 RBR

NGS OPUS SOLUTION REPORT
DATE OF OBSERVATION ADJUSTMENT SEPTEMBER 08, 2020 TIME: 17:09:16 UTC
REF FRAME: NAD_83(2011)(EPOCH: 2010.0000) ITRF2014 (EPOCH: 2020.6520)

LAT:	36 53 50.05889	0.008(M)	36 53 50.07275	0.008(M)
E LON:	248 35 37.91684	0.008(M)	248 35 37.86292	0.008(M)
W LON:	111 24 22.08316	0.008(M)	111 24 22.13708	0.008(M)
EL HGT:	1248.730(M)	0.011(M)	1247.921(M)	0.011(M)
ORTHO HGT:	1272.144(M)	0.059(M)	[NAVD88 (COMPUTED USING GEOID18)]	

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SALT LAKE CITY, UTAH

DOWL
WWW.DOWL.COM
222 N. 32nd Street, #700
Billings, Montana 59101
406-656-6399

Registered Professional Surveyor (Retired)
CERTIFICATE NO.
67639
PAUL A. SWENSON
Date Signed 09/30/2020
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:
DRAWN:
CHECKED:
CHECKED:
APPROVED:

FILENAME
SC-CU-KM-LECHEE.DWG
BC PROJECT NUMBER
150360
CLIENT PROJECT NUMBER
CO 10232

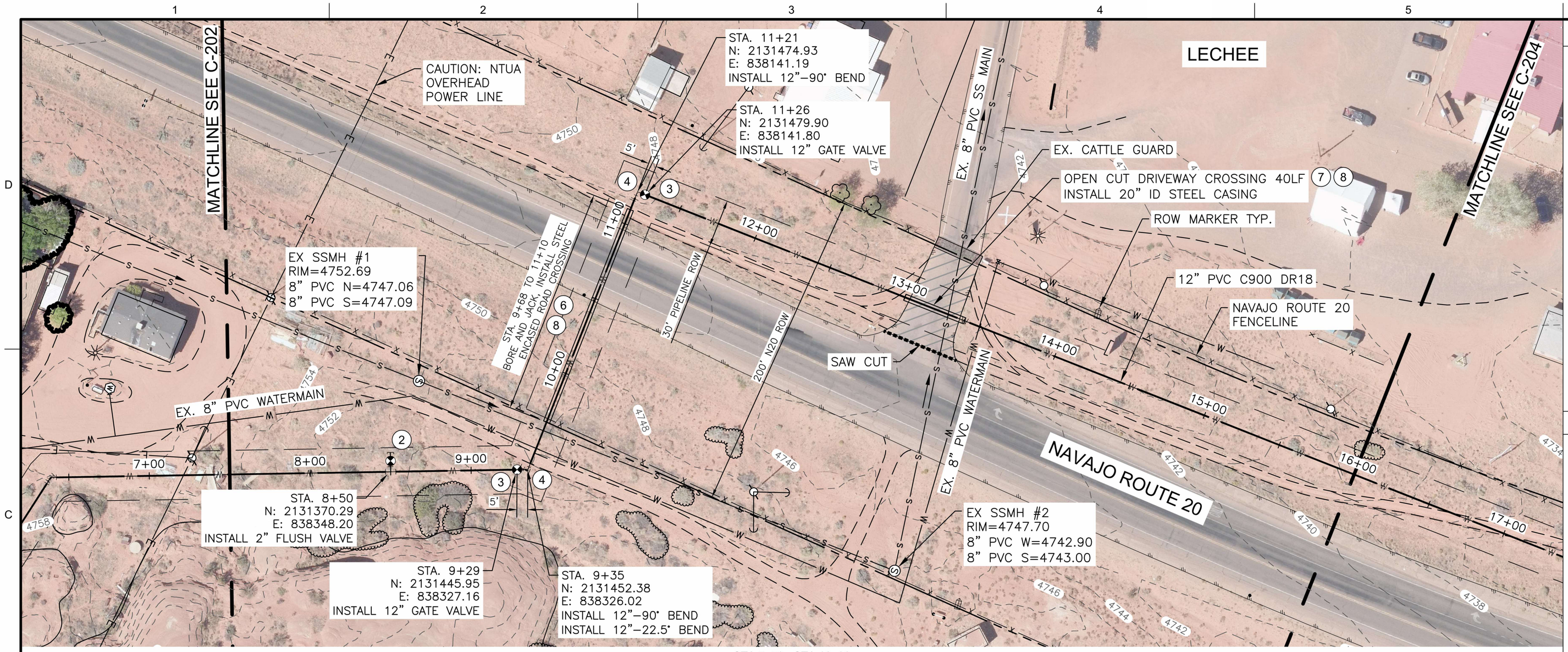
GENERAL

KEY MAP

DRAWING NUMBER
C-201

SHEET NUMBER
10 OF XX

Path: \\BIL-FS\BIL-PROJECTS\280\21254-01165\CAD\CIVIL FILENAME: SC-CU-KM-LECHEE.DWG PLOT DATE: 2/20/2024 2:02 PM CAD USER: JOHN BRIDGEWATER

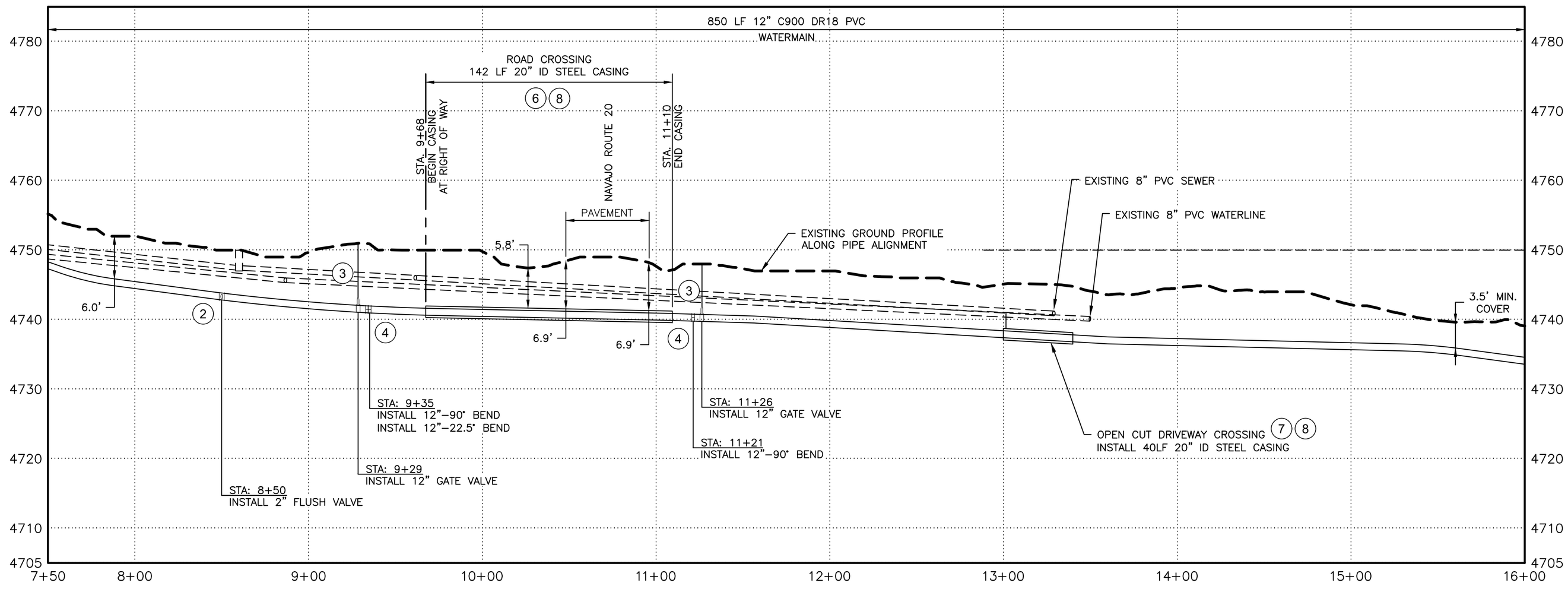


STA 7+50 - STA 16+00

PLAN

SCALE: 1" = 40'
2' CONTOUR INTERVAL

PAVEMENT REPLACEMENT 3" AC WITH 12" BASE @ 95% RC. CONTRACTOR TO REMOVE AND DISPOSE OF ALL EXISTING PAVEMENT PER STATE REQUIREMENTS.



PROFILE

SCALE H: 1" = 40'
V: 1" = 10'

GENERAL NOTES

1. ALL LOCATIONS OF EXISTING UTILITIES ARE SHOWN APPROXIMATELY. CONTRACTOR TO FIELD VERIFY AND POTHOLE AS REQUIRED TO COMPLETE THE WORK. POTHOLE 300 FEET AHEAD OF THE WORK TO VERIFY EXISTING WATER LINE LOCATIONS AND OTHER BURIED UTILITIES.
2. CONTRACTOR TO FIELD VERIFY PHYSICAL LOCATIONS, ELEVATIONS, AND INVERTS OF ALL FEATURES.
3. CONTRACTOR TO INSTALL PIPE TRENCH PER NTUA STD. DRAWING WS-15; DWG No. C-010.
4. CONTRACTOR TO INSTALL MARKER POSTS AT ALL GATE VALVES, AIR VALVES, TEES, BENDS, AND GRADE CHANGES AS DIRECTED PER NTUA STD. DRAWING WS-1; DWG No. C-010.
5. CONTRACTOR TO PROVIDE THRUST BLOCKS AT ALL BENDS, TEES, CAPS, AND CROSSES PER NTUA STD. DRAWING WS-19 AND 19A; DWG No. C-011. FOR REDUCERS, PROVIDE THRUST BLOCKS WITH THE SAME BEARING AREA AS 22.5-DEG BENDS BASED ON THE LARGEST DIAMETER.
6. EASEMENT DIMENSIONS AND PIPELINE OFFSETS ARE SHOWN IN DETAIL A ON SHEET C-002.
7. DEFLECT PIPE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS NECESSARY.

KEY NOTES

1. AIR VALVE PER NTUA STD. DWG WS-10 DWG No. C-010.
2. 2" FLUSH VALVE PER NTUA STD. DWG WS-11 DWG No. C-010.
3. GATE VALVE PER NTUA STD. DWG WS-14 DWG No. C-010.
4. ALL BENDS SHALL BE ANSI/AWWA C153 DUCTILE IRON MECHANICAL JOINT FITTINGS, UNLESS CALLED OUT SPECIFICALLY.
5. WATER BAR PER SPEC. SECTION 02200.
6. STEEL ENCASED ROAD CROSSING PER IHS STD. DWG W-35 AND NTUA STD. DWG WS-17a AND WS-18.
7. STEEL ENCASED ROAD CROSSING PER NTUA STD. DWG WS-18
8. CONTRACTOR TO SUBMIT A ROAD CROSSING TRAFFIC PLAN FOR REVIEW AND APPROVAL.
9. HDPE WASH CROSSING PER NTUA STD. DWG W-33; DWG. No. C-020.

LEGEND

- HV000 — CONTROL POINT SEE SHEET C-201
- W — EXISTING WATER LINE
- EXISTING WATER VALVE
- EXISTING CURB STOP
- S — S — EXISTING SEWER
- EXISTING SEWER MANHOLE
- E — EXISTING POWER LINE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- X — X — EXISTING FENCE
- EXISTING RIGHT OF WAY
- EXISTING EA BOUNDARY
- EXISTING TREE
- EXISTING BUSH OUTLINE
- W — PROPOSED WATER LINE
- PROPOSED WATER VALVE
- PROPOSED 2" FLUSH VALVE
- PROPOSED AIR RELEASE VALVE
- PROPOSED WATER BEND
- PROPOSED WATER TEE
- FO — PROPOSED FIBER OPTIC (BY OTHERS)

PLAN NORTH

0 40 80
SCALE IN FEET

Call at least two full working days before you begin excavation.

ARIZONA 811 Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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CERTIFICATE NO.
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PAUL A. SWENSON
Date Signed 03/20/2024
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:	AM
DRAWN:	JB
CHECKED:	RS/PS
CHECKED:	SB/CW
APPROVED:	

FILENAME
SC-WA-PF-LECHEE.DWG
BC PROJECT NUMBER
150360
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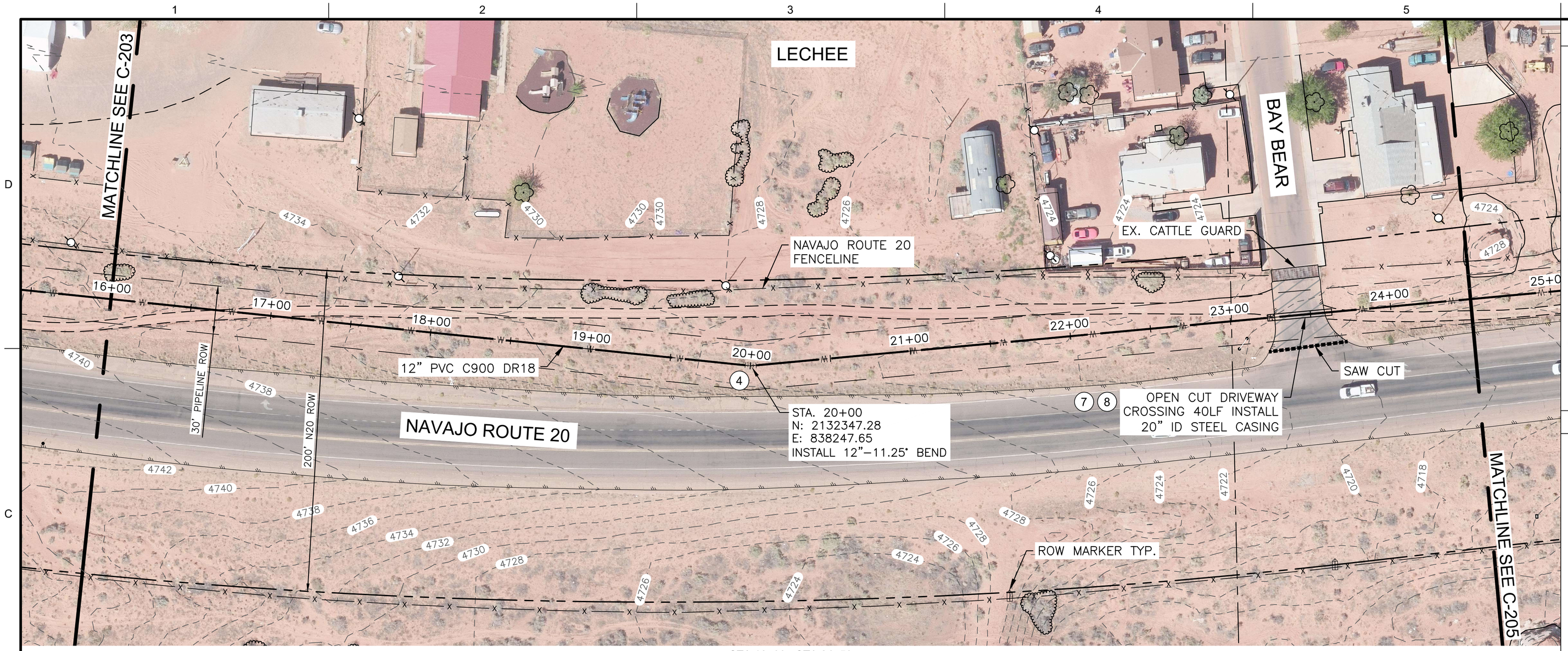
CIVIL

WATER MAIN PLAN & PROFILE STA 7+50 TO 16+00

DRAWING NUMBER
C-203

SHEET NUMBER
10 OF XX

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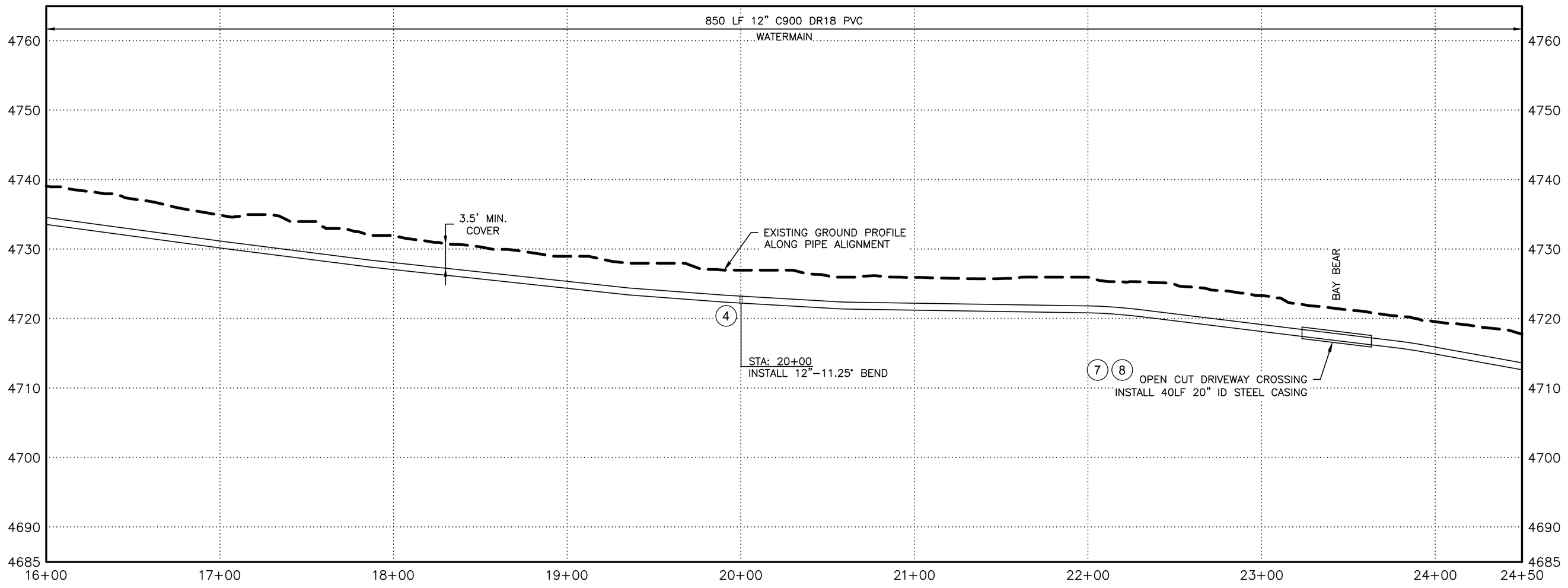
STA 16+00 - STA 24+50

PLAN

SCALE: 1" = 40'

2' CONTOUR INTERVAL

PAVEMENT REPLACEMENT 3" AC WITH 12" BASE @ 95% RC. CONTRACTOR TO REMOVE AND DISPOSE OF ALL EXISTING PAVEMENT PER STATE REQUIREMENTS.



PROFILE

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7. STEEL ENCASED ROAD CROSSING PER NTUA STD. DWG WS-18
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GREAT SEAL OF THE NAVAJO NATION

VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

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CLIENT PROJECT NUMBER
CO 10232

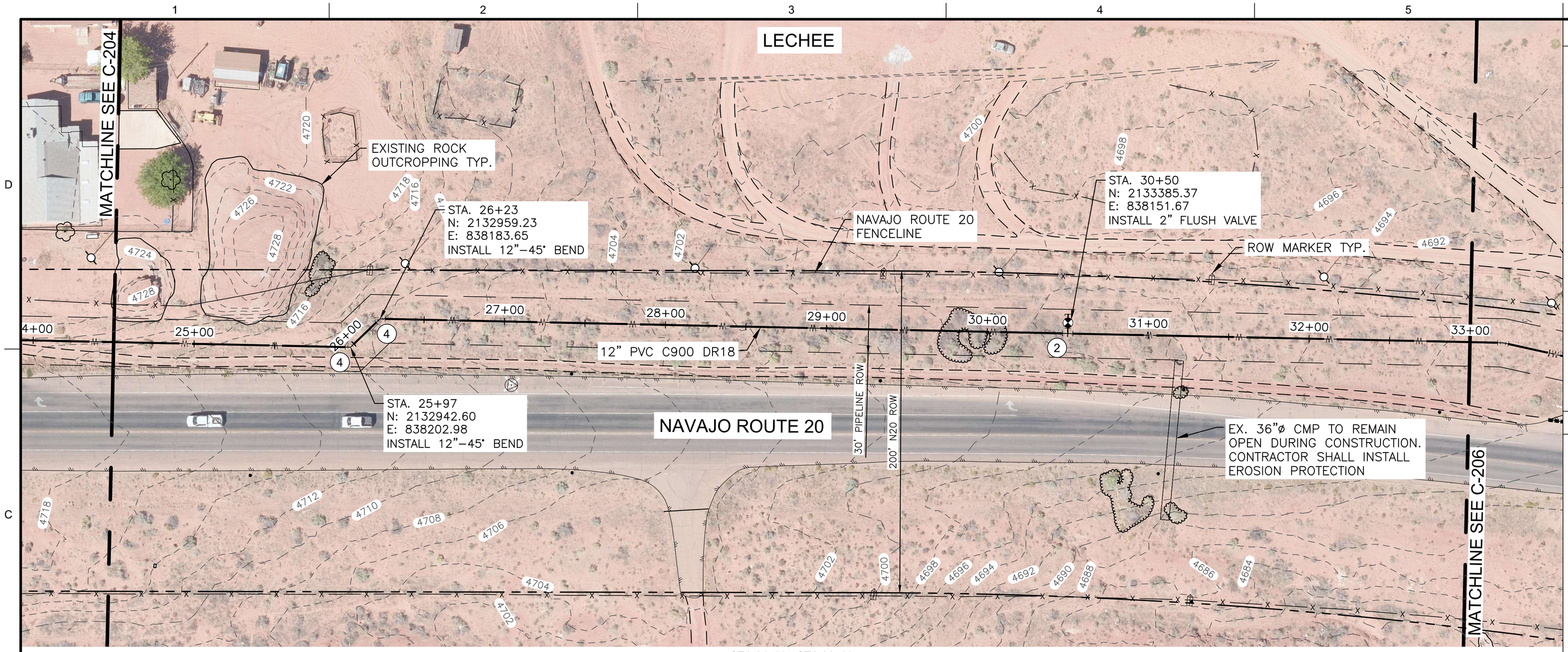
CIVIL

WATER MAIN PLAN & PROFILE STA 16+00 TO 24+50

DRAWING NUMBER
C-204

SHEET NUMBER
11 OF XX

Path: \\LAR-FS\BIL-PROJECTS\28\21254-01\65CAD\CIVIL FILENAME: SC-WA-PF-LECHEE.DWG PLOT DATE: 2/21/2024 7:47 AM CAD USER: JOHN BRIDGEWATER

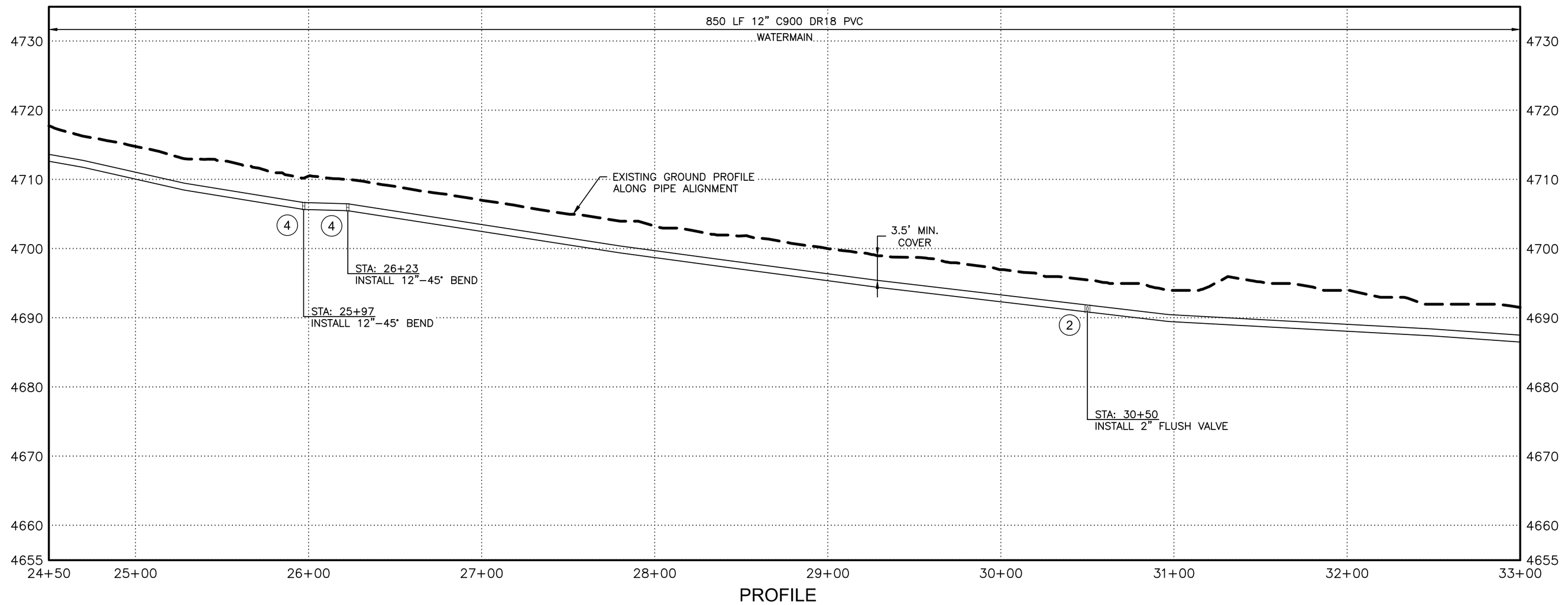


STA 24+50 - STA 33+00

PLAN

SCALE: 1" = 40'

2' CONTOUR INTERVAL



PROFILE

SCALE H: 1" = 40'

V: 1" = 10'

GENERAL NOTES

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6. EASEMENT DIMENSIONS AND PIPELINE OFFSETS ARE SHOWN IN DETAIL A ON SHEET C-002.
7. DEFLECT PIPE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS NECESSARY.

KEY NOTES

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2. 2" FLUSH VALVE PER NTUA STD. DWG WS-11 DWG No. C-010.
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8. CONTRACTOR TO SUBMIT A ROAD CROSSING TRAFFIC PLAN FOR REVIEW AND APPROVAL.
9. HDPE WASH CROSSING PER NTUA STD. DWG W-33; DWG. No. C-020.

LEGEND

- HV000 — CONTROL POINT SEE SHEET C-201
- W — EXISTING WATER LINE
- EXISTING WATER VALVE
- EXISTING CURB STOP
- S — S — EXISTING SEWER
- S — EXISTING SEWER MANHOLE
- E — EXISTING POWER LINE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- X — X — EXISTING FENCE
- EXISTING RIGHT OF WAY
- EXISTING EA BOUNDARY
- EXISTING TREE
- EXISTING BUSH OUTLINE
- W — PROPOSED WATER LINE
- PROPOSED WATER VALVE
- PROPOSED 2" FLUSH VALVE
- PROPOSED AIR RELEASE VALVE
- PROPOSED WATER BEND
- PROPOSED WATER TEE
- FO — PROPOSED FIBER OPTIC (BY OTHERS)

0 40 80 SCALE IN FEET

PLAN NORTH

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Billings, Montana 59101
406-656-6399

Registered Professional Engineer (Civil) CERTIFICATE NO. 67639 PAUL A. SWENSON Date Signed 03/22/2024 ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:	AM
DRAWN:	JB
CHECKED:	RS/PS
CHECKED:	SB/CW
APPROVED:	

FILENAME
SC-WA-PF-LECHEE.DWG

BC PROJECT NUMBER
150360

CLIENT PROJECT NUMBER
CO 10232

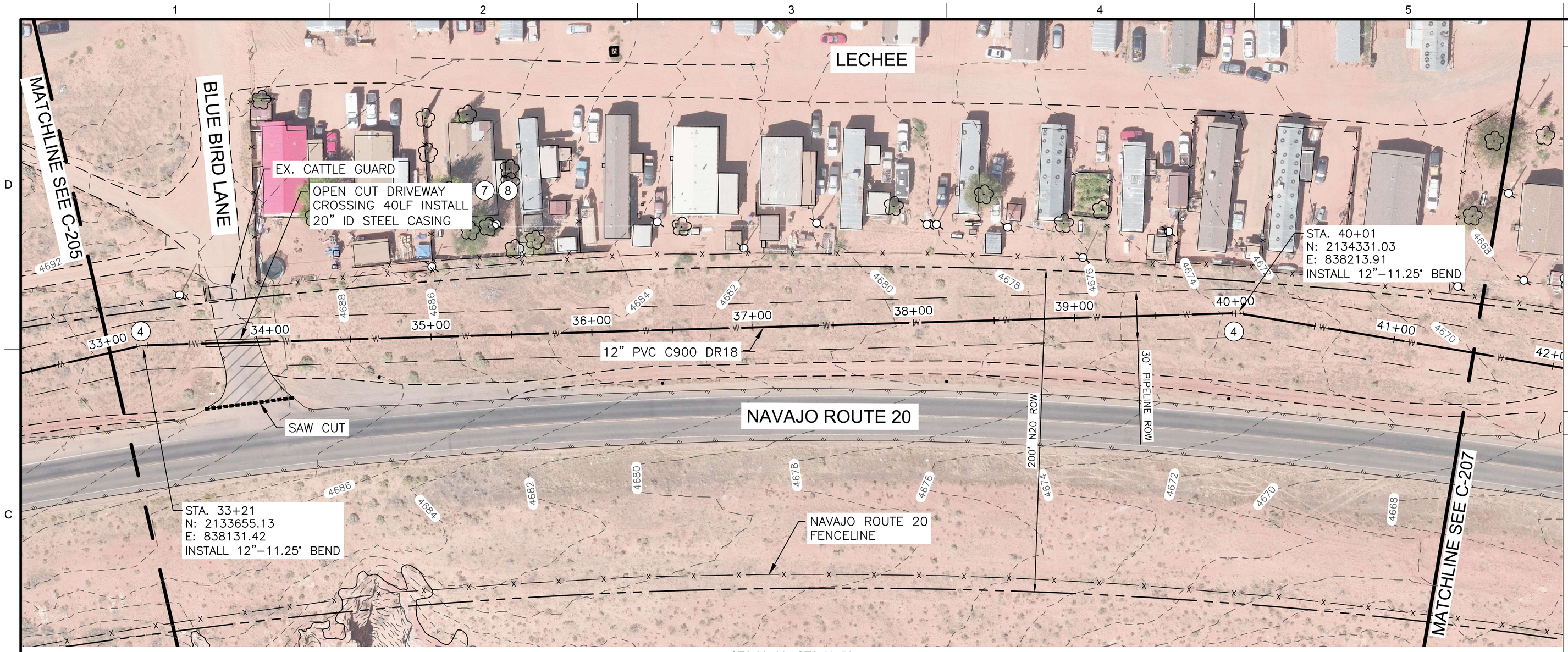
CIVIL

WATER MAIN PLAN & PROFILE STA 24+50 TO 33+00

DRAWING NUMBER
C-205

SHEET NUMBER
12 OF XX

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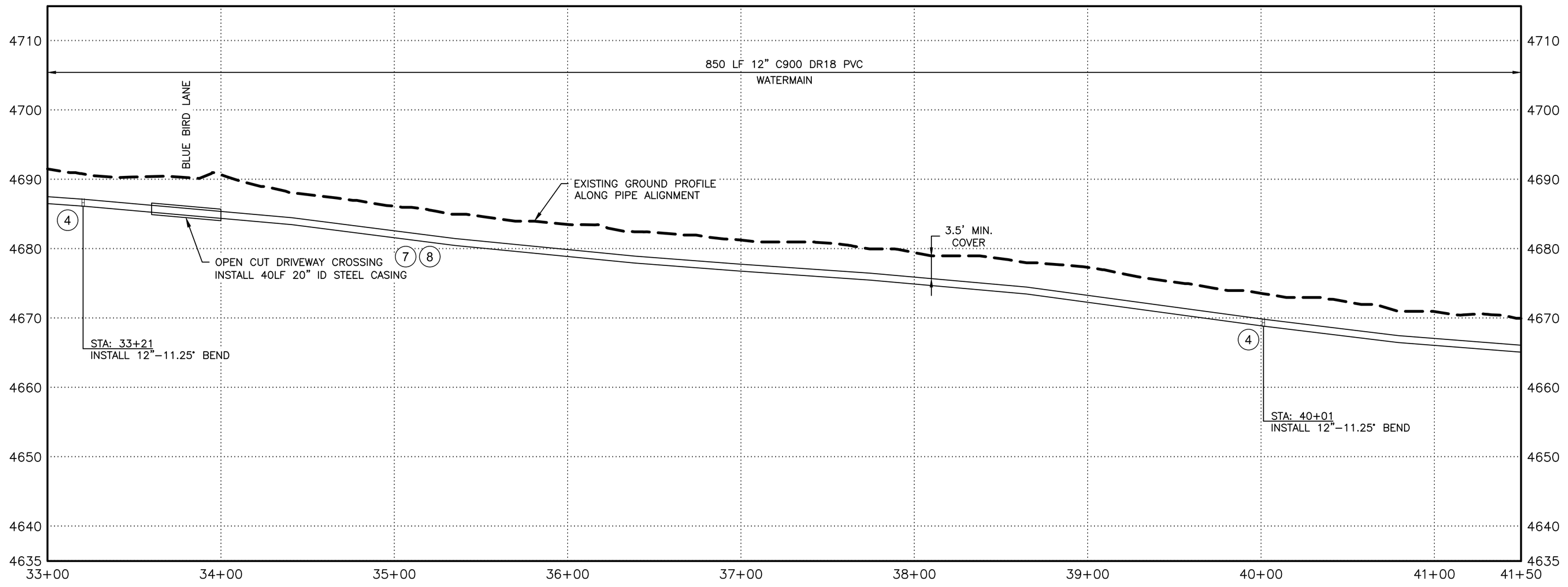


STA 33+00 - STA 41+50

PLAN

SCALE: 1" = 40'
2' CONTOUR INTERVAL

PAVEMENT REPLACEMENT 3" AC WITH 12" BASE @ 95% RC. CONTRACTOR TO REMOVE AND DISPOSE OF ALL EXISTING PAVEMENT PER STATE REQUIREMENTS.



PROFILE

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0 40 80
SCALE IN FEET

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Registered Professional Engineer (Civil)
CERTIFICATE NO.
67639
PAUL A. SWENSON
Date Signed 09/20/2024
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

REVISIONS		
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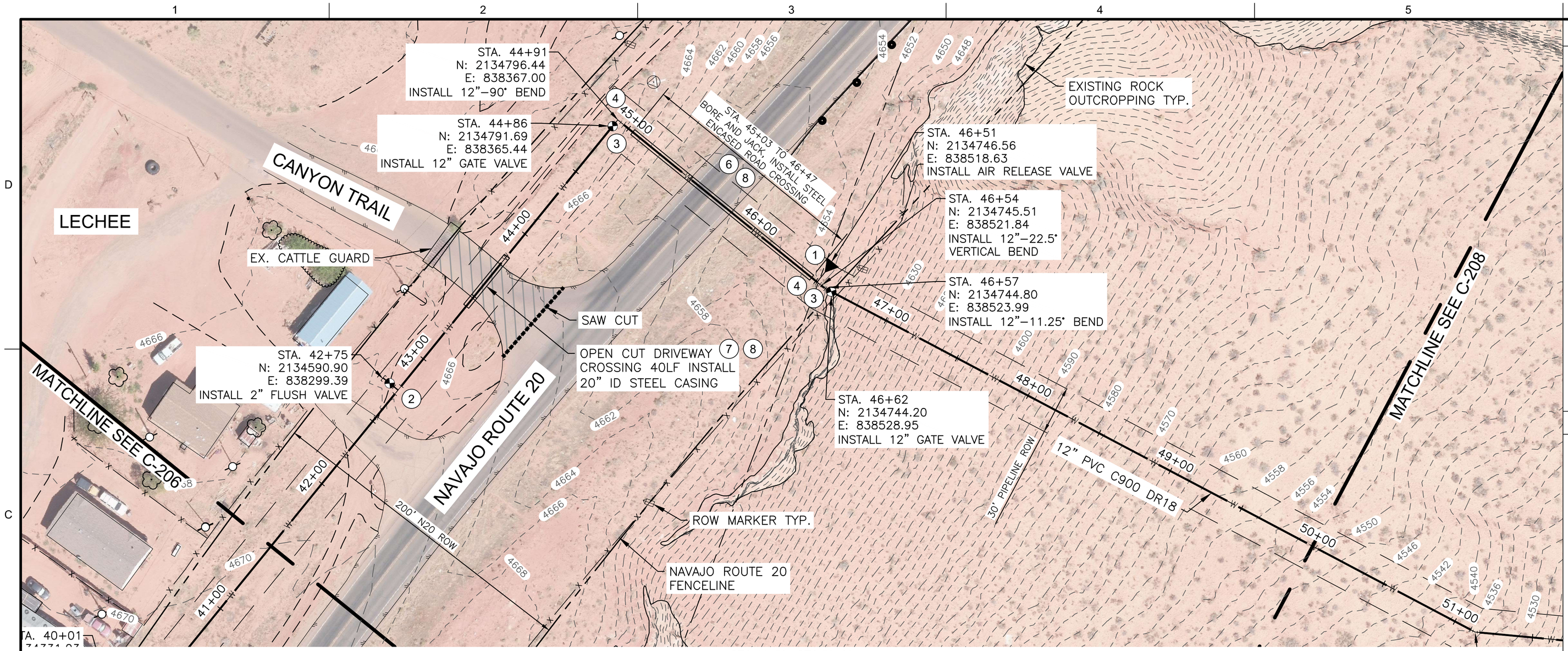
FILENAME
SC-WA-PF-LECHEE.DWG
BC PROJECT NUMBER
150360
CLIENT PROJECT NUMBER
CO 10232

CIVIL

WATER MAIN PLAN & PROFILE STA 33+00 TO 41+50

DRAWING NUMBER
C-206
SHEET NUMBER
13 OF XX

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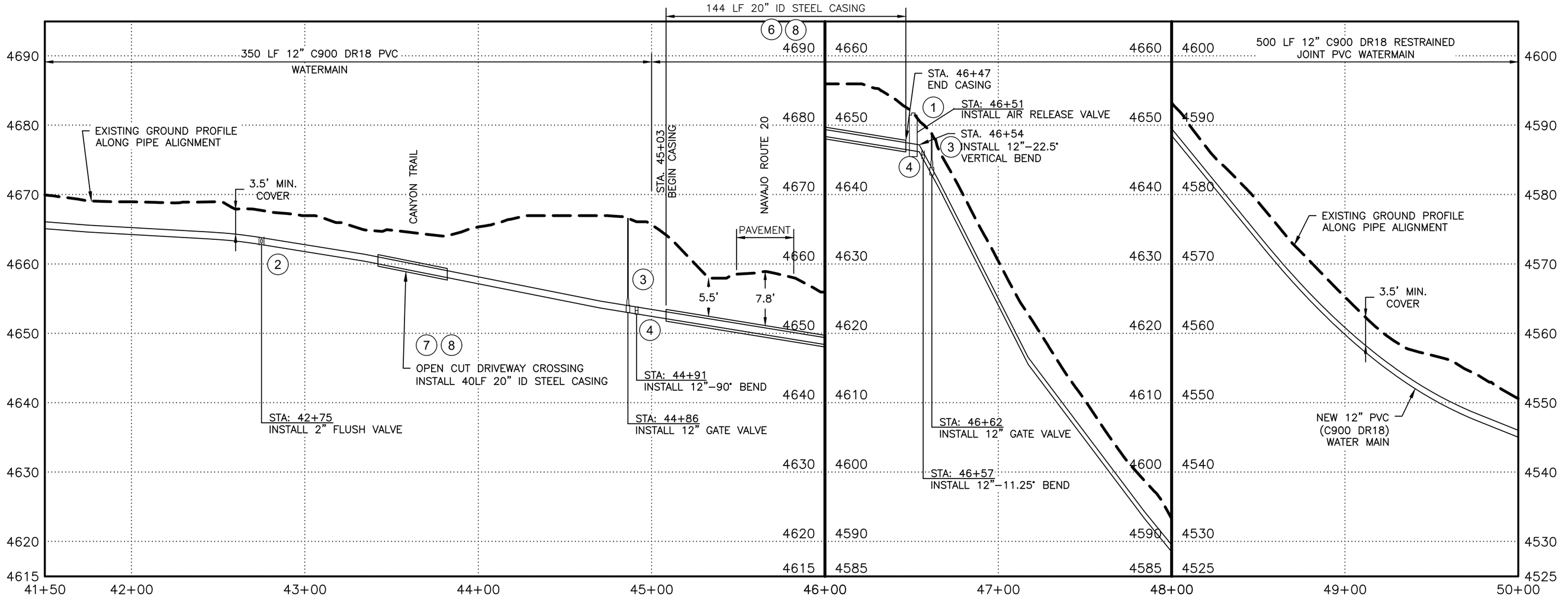


STA 41+50 - STA 50+00

PLAN

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CLIENT PROJECT NUMBER	CO 10232

CIVIL

WATER MAIN PLAN & PROFILE STA 41+50 TO 50+00

DRAWING NUMBER
C-207

SHEET NUMBER
14 OF XX

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SECTION 01 55 26

TRAFFIC CONTROL

PART 1 GENERAL

1.01 REQUIREMENTS

A. The Work specified in this Section consists of providing safe and effective work areas, alternate traffic corridors, and to warn, control, protect, and expedite vehicular and pedestrian traffic through the construction zone. It shall be the sole responsibility of the CONTRACTOR to provide for the safety of the traveling public within the limits of the project and on private property. The CONTRACTOR shall provide all labor, equipment, materials and services necessary.

B. CONTRACTOR shall indemnify and hold harmless the OWNER, ENGINEER, and the CONSTRUCTION MANAGER for any safety violation or noncompliance with governing bodies and their regulations, and for accidents, deaths, injuries, or damage at the site during occupancy or partial occupancy of the site by CONTRACTOR's workforce or equipment while performing any part of the Work.

C. In this Section, reference to the Public is to include the OWNER's personnel, representatives, and/or facilities.

D. Traffic control shall meet the requirements of the government agency (i.e., ADOT, etc.) with jurisdiction of the right-of-way in which the Work is completed and as specified in this Section. In the case of conflict between the listed Agency's requirements and as required herein, the requirements affording the greatest protection to the Public and/or OWNER shall apply, as determined by the CONSTRUCTION MANAGER.

E. The CONTRACTOR shall maintain all required traffic control devices and trenches within the right-of-way at all times, 24 hours per day, 7 days per week including nights, holidays, and weekends.

1.02 DEFINITIONS

A. LANE CLOSURE: Lane closure shall be defined as denying any lane or any portion of a lane to traffic. A lane reduced to less than 11 feet is considered a lane closure.

1.03 REFERENCES

A. This Section includes references to the following standards. They are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements affording the greatest protection to the OWNER shall apply, as determined by the CONSTRUCTION MANAGER.

Reference	Title
MUTCD	Manual on Uniform Traffic Control Devices, United States Department of Transportation, Federal Highway Administration (latest edition): herein referred to as MUTCD
ADOT	Arizona Department of Transportation (ADOT) Temporary Traffic Control Design Guidelines – Traffic Engineering Group 2019

1.04 SUBMITTALS

A. Submittals in accordance with the General Conditions and Section 01 33 00.

B. Project-specific Traffic Control Plan shall be submitted by the CONTRACTOR to the respective governmental agency with jurisdiction of the right-of-way for acceptance. Traffic Control Plans within ADOT ROW shall be prepared and stamped by a registered State of Arizona Traffic Engineer.

C. A Traffic Control Plan shall be required for each phase or segment of the construction. Each Traffic Control Plan shall be considered separately.

D. Submit two copies of the approved Traffic Control Plan to the CONSTRUCTION MANAGER within 48 hours of approval by government agencies.

1.05 BARRICADES AND ENCLOSURES

A. Protection of Workmen and Public: CONTRACTOR shall erect and maintain at all times during the prosecution of the Work, barriers and lights necessary for the protection of workmen and the public. CONTRACTOR shall provide suitable barricades, lights, signs, and watchmen at all places where the Work causes obstructions to the normal traffic or constitutes in any way a hazard to the public.

B. Barricades and Lights: CONTRACTOR shall protect all streets, roads, highways, and other public thoroughfares that are partially closed to traffic and use effective barricades that display acceptable warning signs. CONTRACTOR shall locate barricades as required by the government agency controlling the right-of-way in accordance with an approved Traffic Control Plan.

C. Statutory Requirements: CONTRACTOR shall install and maintain all barricades, signs, lights, and other protective devices within rights-of-way in strict conformity with applicable statutory requirements by the government agency having jurisdiction in accordance with an approved Traffic Control Plan.

1.06 TRAFFIC CONTROL DEVICES

A. All traffic control devices not in use, or that will not be used for a period greater than 24 hours, shall be removed by the CONTRACTOR from the work area. The sidewalk area shall not be used at any time to store unused traffic control devices unless the sidewalk is closed, and an approved barricade plan is provided for rerouting pedestrians.

B. CONTRACTOR shall maintain all barricades and other traffic control devices in clean and effective condition and replace devices in poor condition immediately.

C. CONTRACTOR shall begin placing barricades in the direction of traffic and remove them in the direction of opposing traffic.

D. Text message boards: Fixed at each end of the project set and two moveable boards within the project setup area.

1.07 FLAGGERS

A. As may be required by ADOT and respective governmental agency with jurisdiction of the right-of-way to complete the Work.

PART 2 PRODUCTS

2.01 MATERIALS

A. Materials shall conform to the MUTCD, ADOT Standard Specifications and Drawings as applicable, and as specified in this section.

2.02 TEMPORARY STRIPING

A. Temporary pavement marking shall conform to the government agency with jurisdiction of the right-of-way, as applicable.

2.03 TRAFFIC CONTROL PLAN

A. At a minimum, the Traffic Control Plan shall provide, for each phase of the work, the placement and spacing of all traffic control devices (including signs, markings, channelizing devices, lighting devices, flaggers, etc.) and spacing of these meeting the requirements of the MUTCD within the following traffic control areas:
   1. Advance warning signs
   2. Transition areas
   3. Buffer spaces
   4. Work area
   5. Termination areas

B. Additionally, the Traffic Control Plan must clearly show the following minimum information:
   1. Method for protecting excavations, work sites, and school zone crosswalks
   2. Method of barricading at intersections
   3. Driveway access plan
   4. Provisions for emergency vehicle access
   5. All set-up changes to accommodate different phasing of the work
   6. Lane widths and transitions
   7. 24-hour emergency contact information
   8. Business access signs
   9. Sidewalk "closed/cross here" signs, if applicable
   10. No parking signs
   11. Project signs

12. Fresh oil signs, if applicable
13. Duration of traffic control and barricade plan
14. All advance warning signs
15. Lane closures
16. Placement of "double penalty in work zones" warning signs
17. Detour locations
18. Contractor Staging Areas
19. Excavation locations

C. Within 48 hours after installation of new or modified control, CONTRACTOR shall inspect and certify that controls are installed and operating as intended. Certification shall consist of a signed affidavit stating that the traffic control has been inspected and found to be in conformance with the Traffic Control Plan and contract requirements were provided to the government agency with jurisdiction of the right-of-way. A copy of the certification shall be provided to the CONSTRUCTION MANAGER within 48 hours of submittal to government agencies.

D. Review and comment on the Traffic Control Plan by the government agency with jurisdiction of the right-of-way shall in no way relieve the CONTRACTOR of the responsibility for traffic and safety requirements. Such acceptance shall in no way be construed as confirmation of the technical accuracy or adequacy of the contents of the Traffic Control Plan and shall not relieve the CONTRACTOR of the obligation to institute traffic control measures in full compliance with contract requirements and in conformance with local agency requirements.

PART 3 EXECUTION

3.01 GENERAL

A. All traffic control within public rights-of-way shall conform to the requirements of the encroachment permits and traffic control plans approved by the government agency with jurisdiction in the right-of-way.

B. All traffic control on private property shall warn, control, protect, and expedite vehicular and pedestrian traffic through the private property.

C. The CONTRACTOR shall not restrict access to private and public buildings along the pipeline or temporary piping alignment.

D. If, during the execution of the work, the CONTRACTOR determines that the traffic control is not functioning as intended, the CONTRACTOR shall make revisions to the Traffic Control Plan as necessary, provided that the local agencies with jurisdiction have accepted the changes. Submit two copies and digital files of the approved revised Traffic Control Plan to the CONSTRUCTION MANAGER within 48 hours of approval by government agencies.

3.02 TEMPORARY SURFACES

A. Temporary gravel surface shall not be permitted.

B. All temporary detours and/or bypasses shall be hard surfaced with asphalt-concrete pavement (minimum thickness of a 12" base course and 3" asphalt pavement) and maintained in a smooth and usable condition at all times for the duration of the detour and/or bypass.

C. The CONTRACTOR shall be required to provide temporary surfacing of all excavated areas immediately after completing the backfilling of any section of the Work. If permitted by the government agency with jurisdiction of the right-of-way, the CONTRACTOR may be allowed to leave excavations open provided that traffic control devices, approved by the governmental agency maintaining the right-of-way, are in place and maintained, and excavations are covered with steel plates at the close of each working day. The temporary steel plates shall comply with the requirements of the governmental agency controlling the right-of-way.

3.03 TEMPORARY STRIPING

A. Placement of temporary pavement striping shall be by pilot line method and use shall be limited to 14 calendar days and spaced every 40 feet. The double yellow line shall have two pieces of tape side by side with a 4-inch space between and spaced to the above increments.

B. Painted temporary striping shall be 4 inches wide and shall be continuous or intermittent in accordance with the MUTCD. Painted temporary striping shall not be used on the existing pavement or on final wearing course of pavement.

C. Existing pavement markings, either painted or raised pavement markers, which are not applicable or are within the transverse limits of the temporary travel lanes shall be removed to the satisfaction of the CONSTRUCTION MANAGER. Painting over existing markings is not permitted.

END OF SECTION

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SECTION 01 57 23

TEMPORARY STORM WATER POLLUTION CONTROL

PART 1 GENERAL

1.01 DEFINITIONS

A. The Storm Water Pollution Prevention Plan (SWPPP) is defined as the improving of water quality by reducing pollutants in stormwater discharges from the construction site.

B. The Storm Water Pollution Prevention Plan shall be developed in accordance with the EPA guidebook, "Storm Water Management for Construction Activities, Developing Pollution Plans and Best Management Practices" (EPA publication number 823-R-92-005). The guidebook is a reference for information relating to the different methods of stormwater pollution prevention presented in this SWPPP.

C. Waste disposal from the construction site for construction wastes, sanitary wastes, chemicals, and dust abatement shall be conducted per the requirements of the following SWPPP sections.

1.02 SUBMITTALS

A. The CONTRACTOR shall submit an approved SWPPP to the CONSTRUCTION MANAGER.

1.03 CONTRACTOR'S RESPONSIBILITIES

A. The CONTRACTOR shall complete a Storm Water Pollution Prevention Plan (SWPPP) that complies with all state, local, and national requirements.

B. The CONTRACTOR's storage yard and construction trailer shall be located within the confines of the construction staging areas as defined in the Contract Documents. The areas designated for the CONTRACTOR's use shall contain construction materials, chemicals used during construction and their containment, and other waste materials.

C. Construction Wastes: The CONTRACTOR is responsible for proper disposal of all construction wastes. All construction wastes shall be disposed of in a proper manner via use of an on-site dumpster supplied by the CONTRACTOR. The CONTRACTOR shall provide removal services by a licensed solid waste management firm. The dumpster shall be emptied a minimum of once per week or more often if necessary. Burial of construction wastes on-site is not permitted. The CONTRACTOR shall ensure that the CONTRACTOR on-site work crews and subcontractors are trained in the proper manner of disposal for construction wastes. Disposal of solid waste from the construction site shall meet all applicable Federal, State, and local codes.

D. Sanitary Wastes: The CONTRACTOR shall hire a properly licensed sanitary waste management firm for the disposal of the sanitary waste from the construction site, including from the CONTRACTOR's trailers. Disposal of sanitary waste from the construction site shall meet all applicable Federal, State, and local codes.

E. Hazardous Wastes: All hazardous materials used for the construction shall be stored, handled, and applied per the manufacturer's printed instructions and per all applicable

Federal, State, and local codes. The CONTRACTOR shall ensure that the on-site work crews and subcontractors are trained in the proper manner of disposal for hazardous wastes. The disposal of hazardous wastes from the construction site shall be the responsibility of the CONTRACTOR and shall be performed by a licensed hazardous wastes management firm.

F. The construction access to the CONTRACTOR's storage yard shall be stabilized to prevent the removal of sediment from the construction site onto the adjacent property or paved road. The stabilized access roadway shall be wide enough to handle the anticipated truck traffic to and from the construction site.

1.04 MAINTENANCE AND INSPECTION

A. Any erosion control structures and stabilization practices will be inspected by the CONSTRUCTION MANAGER on a weekly basis at a minimum and after any storm event of ½-inch or greater, unless otherwise specified. A copy of the inspection report will be provided to the CONTRACTOR.

B. All erosion control structures and stabilization practices shall be maintained in good working condition throughout the duration of the construction project.

C. Repair of the damage to any erosion control structure shall commence within 24 hours of discovery of the damage.

D. In locations where silt fences are used around catch basins, sediment trapped by the silt fence shall be removed by the CONTRACTOR when one-third of the height of the silt fence is covered by sediment.

E. All areas which undergo temporary and final stabilization with seeding or sodding shall be inspected for lack of growth and bare spots to ensure healthy growth.

F. The inspector of stormwater management controls shall be knowledgeable of the proper construction of the controls, be aware of the requirements of SWPPP, be aware of spill control practices and notification requirements, and maintain clear and accurate inspection reports. A copy of the inspection reports will be maintained and kept on-site with the latest version of the SWPPP and will be provided for the CONTRACTOR's records.

1.05 NON-STORM WATER DISCHARGES

A. Flushing of Pipelines: Pipelines shall be flushed after installation. The CONTRACTOR shall direct flushing water to a nearby storm drain system. The CONTRACTOR shall maintain siltation protection during flushing of the pipelines. If the flushing water is contaminated or if the water is suspected of having been contaminated by a regulated compound, testing may be ordered by the CONSTRUCTION MANAGER to determine contamination. Contamination is defined as having either a pH less than 5.0 or greater than 10.0, evidence of hydrocarbon contamination, or presence of free chlorine residual.

B. If testing is ordered, the OWNER shall pay for the testing. If the testing indicates the water is contaminated and this occurred due to construction activities under the control of the CONTRACTOR, the CONTRACTOR shall reimburse the OWNER for all costs associated with the testing. The OWNER will be the sole judge of whether the flushing water is contaminated. Depending on the type of contamination, the flow shall be

directed to the sanitary sewer system or otherwise disposed of as approved by the CONSTRUCTION MANGER.

C. Dewatering of Uncontaminated Groundwater: Water from dewatering activities during the construction of this project shall be directed to the storm drain system. The CONTRACTOR shall maintain siltation protection during disposal of water from dewatering activities. The CONTRACTOR shall be responsible for obtaining all necessary permits required for the dewatering activities.

D. Irrigation Water: Irrigation water shall be used for boundary landscaping and temporary stabilization seeding. The grading of the area shall be such that the irrigation water is directed to a retention pond or other storm drain system component. Irrigation of landscaped areas and berms shall be such that the irrigation water runoff does not permit washout of the topsoil.

E. Miscellaneous Washdown Water for Pavement: Washdown of structures and pavement shall occur in areas having no sign of contamination of hazardous substances, such as vehicle oil or fuel. Washdown water shall be directed to the storm drain system via proper grading of the site, particularly in the area of the washdown.

F. Equipment Testing: Water from equipment testing shall be discharged to an on-site retention pond if the water is uncontaminated. Water which contains contaminants shall be disposed through the sanitary sewer, via deep injection well located on the utility site, or by another manner depending on the type of contaminant(s). The method of disposal shall be as approved by the CONSTRUCTION MANGER prior to commencement of the equipment testing.

1.06 SPILL PREVENTION

A. Only materials used for this construction project shall be stored on-site. These materials shall be stored in quantities reasonable for use on this project.

B. Materials shall be stored in a neat and orderly fashion in their original containers. The materials shall be protected from the elements.

C. The handling and storage of all materials shall follow the Manufacturer's written instructions, the project Specifications, or applicable governmental codes; whichever is most stringent.

D. Construction material storage containers shall be disposed in a proper manner and, if possible, only after all the contents have been used.

E. The CONTRACTOR shall keep on-site all manufacturers' printed recommendations for the storage, handling, use, and disposal of construction materials.

F. The CONTRACTOR shall inspect the materials storage area on a daily basis to ensure that proper precautions are utilized for material storage.

G. The CONTRACTOR shall maintain an inventory of construction materials stored on-site. The inventory shall be kept on the site and be available for inspection by the CONSTRUCTION MANGER.

H. When transferring or unloading materials, the CONTRACTOR shall ensure that the area is protected from stormwater and that the materials transfer operation shall not cause contamination to stormwater due to runoff from the materials transfer location.

I. During adverse weather, as described in the General Conditions of the Contract Documents, and against the possibility thereof, the CONTRACTOR shall take all necessary precautions to ensure the protection of the construction materials storage area.

J. Hazardous Materials: The following additional precautions shall be followed for hazardous construction materials:

1. Hazardous materials shall be stored separately from non-hazardous material on-site.
2. Products shall remain in their original containers with the original legible product label attached to the container.
3. All products shall be used before disposal of the container.
4. Hazardous materials, including diesel fuel, must be stored in contained areas which are able to contain 150 percent of the volume of the largest container's contents. If the area is not exposed to stormwater, the volume of the containment area shall be 110 percent of the volume of the largest container's contents. Each hazardous material shall be stored in its own containment area. Under no circumstances shall hazardous materials be used or stored within 100-feet of any water supply well, unless specifically permitted by the CONSTRUCTION MANGER and governing Federal, State, or local agency.

   At a minimum, the containment area shall be constructed with dikes and lined with a material resistant to the properties of the hazardous material being contained. Before removal of any stormwater from the containment area, a representative sample of water shall be tested for contamination by the hazardous material stored in that containment area. For example, if the hazardous material is an acid, the pH of the rainwater shall be measured prior to disposal. Disposal of non-contaminated stormwater shall be directed to the nearest storm drain system component. If the stormwater is found to be contaminated, the CONTRACTOR shall follow the spill control measures for this hazardous material.

5. The CONTRACTOR shall keep the Material Safety Data Sheets of all hazardous materials at the Site.

1.07 PRODUCT SPECIFIC PRACTICES

A. Petroleum-Based Products: All on-site vehicles shall be properly maintained and checked for any leaks of fluid or petroleum-based products. If a leak is found, the vehicle shall be repaired immediately or removed from the Site. Diesel fuel shall be considered a hazardous material and shall be stored in a containment area as indicated above.

B. Acid and Base Chemicals: All acid and base chemicals are considered hazardous materials and shall be stored in containment areas as described above. Disposal of acid or base chemicals shall, under no circumstances, occur via the storm drain system, but instead through proper hazardous materials disposal procedures.

C. Paints, Thinners and Solvents: Paints, thinners, and solvents shall be stored in their original containers. Unused paints, thinners, and solvents shall not be dumped on-site or

disposed through the sanitary or storm sewer system. Disposal of unused paints, thinners, and solvents shall be through proper hazardous materials disposal procedures.

D. Fertilizers and Pesticides: Fertilizers and pesticides shall be applied at the minimum rate recommended by the manufacturer. Before spraying any pesticide, a certified pesticide applicator shall receive a permit for spraying of the pesticide in a well field. Storage of fertilizers shall be transferred to sealable containers to prevent spillage and exposure to stormwater. Fertilizer shall be worked into the soil upon application in a landscaped area.

E. Concrete Trucks: The washdown of concrete trucks or the disposal of unused or unacceptable concrete from a concrete truck will be permitted on-site only if the CONTRACTOR has set aside a specific area, with dikes to prevent contact between excess concrete and washdown water or stormwater. After the solids in the area have hardened, the CONTRACTOR shall dispose of the solids in a proper manner as approved by the CONSTRUCTION MANGER.

1.08 SPILL CONTROL PRACTICES

A. In addition to the precautionary practices described above, the following practices shall be followed for spill prevention, control, cleanup, and notification:
   1. Any spills shall be cleaned up immediately.
   2. The CONTRACTOR shall notify the CONSTRUCTION MANGER, OWNER, and all applicable governmental agencies if a spill occurs.
   3. Manufacturer's printed instructions for the cleanup of a spill shall be kept on-site by the CONTRACTOR at all times. The CONTRACTOR's work crews and subcontractors shall be required to be familiar with the requirements and procedures for spill cleanup. Equipment necessary for spill cleanup, such as gloves, metal containers, mops, etc., shall be maintained on-site by the CONTRACTOR. The cleanup equipment shall be kept on-site by the CONTRACTOR during construction activities.
   4. Workers involved in the cleanup of a spill shall be properly protected by protective suits, ventilation masks, goggles, and other necessary equipment, prior to contact with the spilled material.
   5. The CONTRACTOR shall name an employee who will be on-site full-time throughout the duration of the project as the spill cleanup coordinator. The spill cleanup coordinator will be responsible for notifying the proper personnel and agencies of a spill and obtaining the proper equipment and personnel to clean up the spill. The name and phone number where the spill cleanup coordinator can be reached at all times shall be posted on the Site. The spill cleanup coordinator shall be properly trained in spill cleanup procedures.
   6. The CONTRACTOR shall maintain Material Data Safety Sheets (MSDS) on-site for all hazardous materials. The spill cleanup coordinator shall have access to the MSDSs at all times during construction. The CONTRACTOR shall provide the CONSTRUCTION MANAGER with a copy of all MSDSs.
   7. After a spill is contained and cleaned up, a spill occurrence report shall be completed by the on-site inspector and the SWPPP shall be modified to prevent a reoccurrence of a spill.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 31 21 33

TRENCHING, BACKFILLING, AND COMPACTING FOR UTILITIES

PART 1 GENERAL

1.01 SUMMARY

A. Section specifies excavation, trenching, backfilling and compacting for underground utilities and appurtenances.

B. The CONTRACTOR shall provide all labor, materials, equipment, supervision, and testing necessary to construct the improvements.

C. Excavating, trenching, bedding and backfill shall be performed as specified herein and in accordance with the requirements of the Agency with jurisdiction over the rights-of-way in which the Work is performed. In the case of conflict between the Agency's requirements and these specifications, the requirements affording the greatest protection to the OWNER shall apply, as determined by the CONSTRUCTION MANAGER.

D. Work must be performed in accordance with OSHA and all local, state and federal requirements.

1.02 REFERENCES

A. Referenced Standards: This Section incorporates by reference the latest revision of the following documents. These references are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.

1. ASTM International (ASTM):
    a. C33, Standard Specification for Concrete Aggregates.
    b. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3).
    c. D2487, Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).
    d. D4253, Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
    e. D4254, Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
    f. D6938, Standard Test Methods for In-Place Density and Water Content of Soil and Soil Aggregate by Nuclear Method (Shallow Method).

1.03 QUALIFICATIONS:

A. Hire an independent ADOT certified soils laboratory to conduct source materials testing and compaction testing.

1.04 SUBMITTALS

A. Procedures: Section 01 33 00 Submittal Procedures.

B. Product technical data per Section 31 23 00, Earthwork.

C. Contractor's Safety Plan for personnel.

D. Contractor-obtained permits.

E. Qualifications: Name(s) and qualifications of trenching and excavation Competent Person(s). To qualify as a Competent Person, he or she shall have completed the equivalent of 10-hour Arizona OSHA (ADOSH) Construction Safety Training within the last five (5) years.

F. The following information shall be provided prior to beginning Work:
   1. Excavation sheeting, shoring, and bracing system design in accordance with Section 33 05 25.
   2. Qualification information of excavation support system designer (Professional Engineer registered in the State of Arizona) in accordance with Section 33 05 25.

G. Submit report from a testing laboratory verifying that material conforms to the specified gradations or characteristics for pipe zone and trench backfill material including sand, rock refill for foundation stabilization, and water. Include laboratory moisture-density relations of soils.

H. Submit method of compaction in pipe zone including removal sequence of shoring where used.

I. Submit mix designs for controlled low strength material (CLSM, aka flowable fill). Comply with CLSM cold weather placement as specified herein.

J. Submit excavation plans for worker protection and dewatering plans.

1.05 SITE CONDITIONS

A. Plan for and provide work zone traffic control to meet ADOT and governing local agency requirements.

B. Avoid overloading or surcharge a sufficient distance back from edge of excavation to prevent slides or caving.

C. Maintain and trim excavated materials in such manner to be as little inconvenience as possible to public and adjoining property owners.

D. Provide full access to public and private premises to prevent interruption of travel.

E. Protect and maintain benchmarks, monuments or other established points and reference points and if disturbed or destroyed, replace items to full satisfaction of the Owner and controlling agency.

F. Verify location of existing underground utilities and comply with the rules of the Blue Stakes of Arizona 811.

1.06 TESTING FOR COMPACTION

A. Test for compaction as described in Section 31 23 00, Earthwork.

B. Where compaction tests indicate a failure to meet the specified compaction, the Contractor shall take additional tests every 10 feet in each direction until the extent of the failing area is identified. Rework the entire failed area until the specified compaction has been achieved.

1.07 DEFINITIONS

A. PAVEMENT ZONE

1. The pavement zone includes the asphalt concrete and aggregate base pavement section placed over the street zone.

B. ROAD ZONE OR STREET ZONE

1. The road zone (street zone) is the top 12 inches of the trench immediately below the pavement zone in paved areas.

C. TRENCH ZONE

1. The trench zone includes the portion of the trench from the top of the pipe zone to the bottom of the street zone in paved areas or to the existing surface in unpaved areas or 6 inches below existing or finished grade where topsoil is required, unless noted otherwise.

D. PIPE ZONE

1. Unless noted otherwise, the pipe zone shall include the full width of trench from the bottom of the pipe base or bedding to a horizontal level above the top of the pipe, as specified below. Where multiple pipes or conduits are placed in the same trench, the pipe zone shall extend from the bottom of the lowest pipes to a horizontal level above the top of the highest or topmost pipe. Thickness of pipe zone above the highest top of pipe shall be as follows unless otherwise shown on Drawings or otherwise described in the Specifications for the particular type of pipe installed. For electric ducts and duct banks, trench wall clearances and pipe zone dimensions are shown on Drawings.

Pipe Diameter	Thickness of Pipe Zone Above Top of Pipe
6 inches or smaller	6 inches
8 inches and larger	12 inches

E. PIPE BASE OR BEDDING

1. The pipe base or bedding shall be defined as a layer of material immediately below the bottom of the pipe or conduit and extending across the full trench width in which the pipe is bedded. Thickness of pipe base shall be as follows unless otherwise shown on Drawings or otherwise described in the specifications for the particular type of pipe installed.

Pipe Diameter	Thickness of Pipe Base Below Bottom of Pipe
12 inches and smaller	4 inches
14 inches and larger	6 inches

PART 2 PRODUCTS

2.01 MATERIALS

A. Per Section 31 23 00, Earthwork.

B. Marking tape:
   1. Marking Tape (Nondetectable):
      a. Inert polyethylene, impervious to known alkalis, acids, chemical reagents, and solvents likely to be encountered in soil.
      b. Thickness: Minimum 4 mils.
      c. Width: 12 inches.
      d. Color: Blue (for water) and Orange for Cathodic Protection test wires.
      e. Lettering: Minimum 1-inch high, permanent black lettering imprint continuously over entire length.
         1) Text shall be: “High Pressure Waterline Buried Below” for water and “WBWCD CP Test Wires” for cathodic protection wire.
         2) Provide over other utilities exposed if utility owner requires.
         3) Provide over WBWCD cathodic protection wires.
      f. Manufacturers and Products:
         1) Reef Industries; Terra Tape.
         2) Allen; Markline.

PART 3 EXECUTION

3.01 GENERAL

A. Excavate and dispose of all materials of whatever nature encountered, including all obstructions that would interfere with the proper execution and completion of the Work. The removal of these materials shall conform to the lines and grades indicated or ordered.

B. Shoring system designer shall certify in writing that the excavation support systems are constructed per the applicable stamped, dated, and signed excavation support system of the designer including any modifications by Contractor during construction.

3.02 PROTECTION

A. Protect existing surface and subsurface features on-site and adjacent to site. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing items indicated to remain in place.

B. Protect existing utilities from damage or disturbance. Immediately notify utility whose facilities have been damage or disturbed. At utility owner’s option, repair damaged utility or compensate utility owner for completed repairs.

C. Perform trenching and excavating operations in such a manner to protect personnel and the public from the dangers associated with trenching and excavation.

3.03 EXCAVATION

A. Follow applicable health and safety OSHA standards and requirements.

B. Remove rock, soil, organics, pavement, hard pan, loose shale, loose stone, and other obstructions as required to completed the Work or as directed by the Construction Manager.

C. Trench Excavation:
   1. All excavation for pipelines and structures shall be done to the dimensions and levels indicated on the Drawings or specified herein. Excavate to such width outside the lines of the pipeline and structure to be constructed as may be required for proper working methods, the erection of forms and the protection of the Work.
   2. Take care to preserve the native subgrade surfaces in an undisturbed condition. If the Contractor over excavates or disturbs the subgrade surfaces, without written authorization of the Construction Manager, Contractor shall replace such subgrade material with material approved by the Construction Manager in a manner that will show by test an equal subgrade or foundation bearing value with the undisturbed foundation material. No additional payment will be made for the added quantity of materials used because of over excavation.
   3. Inspection of Excavation: Notify the Construction Manager when excavation for the pipeline structure is complete. No geotextiles, imported material layers, forms, reinforcing steel, concrete, or precast structure shall be placed until the excavation subgrade and subsequent import material compacted surfaces have been inspected by the Construction Manager.
   4. Where unsatisfactory material is encountered at the subgrade level below the pipe and structural excavations, it shall be removed and replaced as directed by the Construction Manager and compacted as specified. Payment for removal and replacement of such unsatisfactory material directed by the Construction Manager shall be made in accordance with the appropriate provisions of the Contract Documents.
   5. Perform all excavation regardless of type, groundwater or other conditions per Section 31 23 00, Earthwork. Excavate the trench to the lines and grades shown on Drawings with allowance for pipe thickness, sheeting and shoring if used, and for pipe base or special bedding. If the trench is excavated beyond (horizontally or vertically) that required on Drawings and Specifications, refill any part of the over-excavated trench at no additional cost to the Owner with the same material required in the plans and specs, or foundation stabilization material, where required by the Construction Manager.
   6. Excavate trenches by open cut method (when possible) to depth shown on Drawings and necessary to accommodate work.
      a. Verify location of utilities and protect as necessary.
      b. Support existing utility where proposed work crosses at a lower elevation.
      c. Stabilize excavation to prevent undermining of existing utility.
   7. Open trench limits:
      a. Limit length of open trench to no more than shown on the Drawings or specified.
      b. Reduce limits of open trench as weather conditions or groundwater infiltration dictate.

c. At Owner's discretion, any excavation, trench, or portion of a trench which is opened and remains idle, shall be backfilled, if directed by the Construction Manager.
    1) If backfilled at Construction Manager's direction, trench or excavation may not be reopened until Construction Manager is satisfied that work associated with the trench or excavation will be performed immediately.
d. Trenches left open must be protected from traffic and to prevent public access.
    1) Within unpaved areas limit the length of open trench to 500 feet in advance of pipe laying or the amount of pipe installed in one working day. Complete backfilling not more than 500 feet in the rear of pipe laying.
    2) Open trenches allowed within a traveled way (vehicular or pedestrian) or within 25 feet of a traveled way or occupied structure that is not barricaded off from the public traveled way using ADOT-approved jersey barriers shall be fully backfilled at the end of each day or covered with steel plates or other acceptable covers capable of supporting AASHTO HS-20 traffic loads. Maximum length of trench that may be covered with steel plates shall not exceed 200 feet.

8. Observe following trenching criteria:
    a. Trench size:
        1) Excavate width to provide adequate working room given the work area restrictions.
        2) Refer to drawings for trench maximum width dimensions. Comply with 29CFR Part 1926 Subpart P, Excavations. Trench width at the top of the trench will be limited to the width of the shoring for the excavation and should not undercut adjacent structures and footing. In such case, width of trench shall be such that there is at least 2 feet between the top edge of the trench and the structure or footing.
        3) Cut trench walls vertically from bottom of trench to minimum 1 foot above top of pipe.
        4) Keep trenches free of surface water runoff and groundwater seepage to a minimum 12 inches below the bottom of the trench, as required by Section 31 23 19, Dewatering.
9. Sloping, sheeting, shoring, and bracing of trenches:
    a. Trenches shall have sloping, sheeting, shoring, and bracing conforming with 29CFR1926, Subpart P - Excavations, OSHA requirements, and General Conditions.
    b. Provide shoring protection in accordance with Section 33 05 25, Excavation Support Systems.
        1) Shoring/bracing shall be designed and maintained so that soil does not migrate from behind the structural system creating voids. Shoring/bracing systems shall be removed such that compacted backfill is not disturbed.
        2) Address ground settlement and utility shearing/settlement during installation and removal of shoring. If shoring methods are damaging utilities or services, change shoring methods or provide alternate construction methods so utilities and services are in acceptable and functional condition during and after construction.

10. Trench excavation in backfill and embankment areas:
    a. Conduct trenching in fill areas after primary settlement is achieved and rough grading completed.
    b. Where top of pipe is above existing grade, place and compact fills to 12 inches above top of pipe before excavating trench. Fills above top of pipe may be placed after pipe installation.
    c. Excavate trench in the compacted backfill or embankment. Place pipe base material, install pipe or conduit, and backfill with pipe zone material. Compact backfill above the pipe zone to the same relative compaction as the adjacent embankment as specified in Section 31 23 00, Earthwork.
11. Location of excavated material:
    a. See Drawings for designated stockpile areas.
    b. During trench excavation, place the excavated material only within the working area or within the construction and permanent easements and stockpile areas shown on Drawings unless letters of authorization from land owners (and land owner signed release forms at the end of the Project) are submitted to the Construction Manager authorizing work outside construction limits.
    c. Locate stockpiles for excavated trench materials outside of street rights of way. Do not obstruct any roadways or streets. Conform to federal, state, and local codes governing the safe loading of trenches with excavated material.
    d. Excavated topsoil shall be removed and stored separately. Unless otherwise noted, replace topsoil in the top 6 inches of the trench zone. Strip, stockpile, and spread existing top soils per ADOT Standard Specifications.
    e. Trench spoil piles shall be located at least 5 feet from the tops of the slopes of trenches. Cranes and other equipment shall not be operated on the same side of the trench as the spoil piles.
    f. Where natural cross-slopes exceed 15 degrees, trench spoil shall not be located uphill of the excavation unless stability is assessed through analysis by a registered professional engineer and authorized by the Construction Manager.
    g. Dispose of excess excavated native trench materials per Section 31 23 00, Earthwork.

3.04 PREPARATION OF FOUNDATION FOR PIPE LAYING

A. Regular Trench Excavation:
    1. Excavate minimum of 6 inches below bottom exterior surface of the pipe.
    2. Remove soft, loose, or previously disturbed or otherwise unsuitable material or soil from the bottom of the trench.
    3. Install pipe bedding material.
    4. Form welder access holes in trench bottom (where required).
    5. Support pipe.

B. Over-Excavation and Subgrade Stabilization:
    1. Observe the following requirements when unstable trench bottom materials are encountered.
        a. Notify Construction Manager when unstable materials are encountered.
        b. Remove unstable trench bottom.

c. Backfill to the grade of the bottom of the pipe bedding with flowable fill material and compact.

2. Any over-excavation carried below the grade ordered or indicated or if caused by Contractor's operations or failure to dewater or maintain a dry trench, shall be performed by the Contractor at no additional cost to the Owner.
3. Over excavation, if field-initiated by Construction Manager, shall include the removal of all material that exists directly beneath the pipeline to a width 24 inches (minimum) greater than the pipe outside diameter and to the depth required.
   a. Backfill the trench to subgrade of pipe base with rock refill material for foundation stabilization. Place the foundation stabilization material over the full width of the trench and compact in layers not exceeding 8 inches deep to the required grade. Compact each layer with a track-hoe roller head to the satisfaction of the Construction Manager. Rock refill used by the Contractor for his/her convenience will not receive any additional payment.
   b. Where over excavation and rock refill are not required on Drawings, foundation stabilization work shall be executed only by change order when unacceptably soft (as determined by the Construction manager) subgrade materials are encountered in the trench. In such areas, after the required excavation has been completed, the Construction Manager will inspect the exposed subgrade to determine the need for any additional excavation. It is the intent that additional excavation be conducted in all areas within the influence of the pipeline where unacceptable materials exist at the exposed subgrade.

3.05 INSTALLING BURIED PIPING

A. Store, handle, and install pipe per Section 33 05 25, and per the detailed piping specifications for the particular type of pipe, and per the following:
   1. Handle pipe in such a manner as to avoid damage to the pipe. Do not drop or dump pipe into trenches under any circumstances.
   2. Inspect each pipe and fitting before lowering the buried pipe or fitting into the trench. Inspect the interior and exterior protective coatings. Patch damaged areas in the field with material recommended by the protective coating manufacturer. Clean ends of pipe thoroughly. Remove foreign matter and dirt from inside of pipe and keep clean during and after installation.

B. Grade trench bottom to line and grade allowing for pipe thickness and bedding. Remove hard spots that would prevent a uniform bedding thickness. Place specified bedding thickness over full trench width. Grade and compact the top of bedding before pipelaying to provide firm, continuous, uniform support along full pipe length, and compact to the relative compaction specified. Before laying each section of the pipe, check the grade with a straightedge and correct any irregularities.

C. Excavate bell hole at each joint to permit proper assembly and inspection of entire joint.

D. Line and Grade: As shown on the Drawings.

E. After pipe has been bedded, place pipe zone material simultaneously on both sides of the pipe, in maximum 8-inch lifts, keeping the level of backfill the same on each side. Carefully place the material around the pipe so that the pipe barrel is completely supported and that no voids or uncompacted areas are left beneath the pipe. Use particular care in placing material on the underside of the pipe to prevent lateral movement during subsequent backfilling.

F. Compact each lift to the relative compaction specified herein. Compact trench backfill to the specified relative compaction. Compact by using mechanical compaction, or hand tamping.
   1. Compact material placed within 12 inches of the outer surface of the pipe by hand operated tampers or other equipment that will not damage the pipe.
   2. Do not use any axle-driven or tractor-drawn compaction equipment within 5 feet of building walls, foundations, and other structures.

G. Push the backfill material carefully onto the backfill previously placed in the pipe zone. Do not permit free fall of the material until at least 2 feet of cover is provided over the top of the pipe. Do not drop sharp, heavy pieces of material directly onto the pipe or the tamped material around the pipe. Do not operate heavy equipment over the pipe until at least 3 feet of backfill has been placed and compacted over the pipe.

H. When the pipelaying is not in progress, including the noon hours, close the open ends of pipe. Do not allow trench water, animals, or foreign material to enter the pipe.

I. Remove and dispose of all water entering the trench during the process of pipelaying. Keep the trench dry until the pipelaying and jointing are completed.

J. To avoid jarring pipe off grade, after setting (surveying) pipe to grade, do not MOVE shoring until after joint welding, coating and initial CLSM pipe zone set. After initial set, lift shoring panels to fill all shoring voids with CLSM and bring up backfill uniformly on both side of the pipe.

3.06 BACKFILLING METHODS

A. Do not backfill until tests to be performed on pipe show system is in full compliance with specifications.

B. Backfill shall be placed after all water is removed from the excavation, and the trench sidewalls and bottom have been dried to a moisture content suitable for compaction.

C. Lift trench shields and trench boxes during placement of backfill. Ensure that each lift of backfill material makes full contact with earth trench sides prior to compacting the lift of backfill.

D. Pipe Zone:
   1. The CONTRACTOR shall not proceed with bedding placement or pipe installation in excavated areas until the subgrade has been inspected.
   2. Bedding material shall be placed in the bottom of the trench, leveled and compacted over the full width of the trench. Grade the top of the bedding ahead of the pipe laying to provide a firm, uniform support along the full length of pipe.

3. Backfill material shall be carefully placed and compacted around the pipe to ensure the pipe barrel is completely supported and that no voids or uncompacted areas are left beneath the pipe or below the haunches. Fill material shall be placed simultaneously on both sides of the pipe, keeping the level of backfill the same on each side.
4. Backfill around and over pipe shall be compacted using light hand operated, vibratory compactors and rollers. The use of a jetting and backhoe mounted compaction wheel is prohibited within the pipe zone above the top of the pipe. Care shall be exercised in placing material to prevent movement of the pipe during backfilling and to prevent gouging, denting or crushing of pipe or laterals.
5. Contractor shall be responsible for properly protecting pipe and appurtenances during backfill operations utilizing flowable backfill and providing measures as approved by the Construction Manager to prevent flotation.
6. Avoid displacing pipe joints and appurtenances or causing any horizontal or vertical misalignment, separation, or distortion.
7. Comply with pipe manufacturer's recommendations regarding backfilling and compaction.

E. Trench Zone and Final Backfill:
1. After the Pipe Zone material has been placed, compacted, inspected and accepted by the Construction Manager, backfill in the Trench Zone may proceed.
2. Care shall be exercised in the moving or removal of trench supports to prevent the caving or collapse of the excavation face. Voids between the native material, bedding and backfill must be filled and compacted to the satisfaction of the Construction Manager, ADOT, or Agency with jurisdiction of the right-of-way.
3. Place backfill in lift thicknesses capable of being compacted to density specified, but in no case exceeding 18-inch loose thickness.
4. Comply with pipe manufacturer's recommendations regarding backfilling and compaction.
5. Avoid displacing pipe joints and appurtenances or causing any horizontal or vertical misalignment, separation, or distortion.
6. Backfill to finished grade as shown on the Drawings and as follows:
    a. In paved areas, backfill shall be placed in accordance with requirements for pavement restoration.
    b. In unpaved or landscaped area, place topsoil as necessary to maintain the surface of the backfilled trench level with the adjacent ground surface.

F. Water flushing for consolidation is not permitted unless allowed in writing from Construction Manager.

G. If a moveable trench shield is used during excavation, pipe installation, and backfill operations, the shield shall be moved by lifting the shield free of the trench bottom or as backfill material is being placed and compacted and then moving the shield horizontally. Do not drag trench shields along the trench causing damage or displacement to the trench sidewalls, the pipe, or the bedding and backfill.

H. Cold weather limitations in placing fill and backfill
   1. Unless allowed in the authorized Cold Weather Construction Plan, earth fills and backfills requiring 95 percent or higher relative compaction shall not be placed when either atmospheric temperature, or the temperature of the existing ground or the fill being placed, are below 35 degrees Fahrenheit unless both the existing ground and the fill being placed are both non-frost susceptible materials.
   2. Earth fills and backfills requiring 90 percent or lower relative compaction may be placed when temperatures are below 35 degrees Fahrenheit if the required compaction is achieved. If the required compaction is not achieved, the work shall be removed and re-compacted.
   3. Do not place any fill or backfill materials which require 95 percent, or higher, relative compaction if the excavation or subgrade contains frozen moisture (snow, ice, sleet, etc.), frozen earthen materials, or earthen materials which have been deposited in the excavation due to freezing, thawing, precipitation, or other inappropriate means.
   4. Do not place fill materials which contain frozen moisture (snow, ice, sleet, etc.) except as allowed in the paragraphs above.
   5. Work performed outside the required temperature limitations is subject to rejection, removal and replacement.

I. Remove and replace any trenching and backfilling material which does not meet the Specifications, at the Contractor's expense.

3.07 COMPACTION REQUIREMENTS

A. Unless otherwise shown on Drawings or otherwise described in the Specifications for the particular type of pipe installed, relative compaction in pipe trenches shall be as follows (relative compaction values are per ASTM D1557 and per Section 31 23 00, Earthwork):
   1. Pipe Bedding (except CLSM): 90 percent relative compaction.
   2. Pipe Zone (except CLSM): 90 percent relative compaction.
   3. Backfill in Trench Zone not Beneath Paving: 95 percent relative compaction.
   4. Backfill in Trench Zone and Street Zone in Paved Areas: 95 percent relative compaction.
   5. Backfill in Pavement Zone under Asphalt: 95 percent relative compaction.
   6. Rock Refill for Contractor Over-excavation and for Foundation Stabilization: With a track-hoe roller head to the satisfaction of the Construction Manager.
   7. Topsoil Replaced: Match density of adjacent topsoil.
   8. Beneath Vaults, Manholes, and Other Structures: 95 percent relative compaction.
   9. All backfill placed soil for compaction shall be between 4 percent below and 2 percent above optimum moisture content unless noted otherwise.

3.08 PLACEMENT OF CLSM – NOT USED

3.09 INSTALLING MARKING TAPE

A. Install marking tape where shown in the trench details on Drawings. Secure marking tape to prevent movement during backfill. Marking tape is required over fiber optic ducts, water pipes, and cathodic test wires.

3.10 FIELD QUALITY ASSURANCE

A. Materials Testing:

1. The Contractor shall perform and be responsible for all sampling and testing of materials as required for quality assurance/control of the Work. The Contractor shall pay for all costs associated with the day-to-day quality assurance/control to maintain all material within specified or approved limits. The Contractor shall retain a registered geotechnical engineer, independent from the Contractor, and a testing laboratory, whose qualifications are each acceptable to the Construction Manager by submittal, to perform all compliance testing described below. The Construction Manager may have an independent testing laboratory perform additional tests at no cost to the Contractor, however the Contractor shall provide materials for testing at no additional cost to the Owner.
2. Perform particle size analysis of soils and aggregates in accordance with ASTM C 136 Sieve Analysis of Fine and Coarse Aggregate and ASTM C 117 Materials Finer than No. 200 Sieve in Mineral Aggregate by Washing.
3. Determine sand equivalent in accordance with ASTM D 2419. Unified Soil Classification System: References to soil classification types and standards shall have the meanings and definitions indicated in ASTM D 2487. The Contractor shall be bound by all applicable provisions of ASTM D 2487 in the interpretation of soil classifications.
4. Where soil material is required to be compacted to a percentage of maximum dry density, the maximum dry density at optimum moisture content will be determined in accordance with ASTM D 1557. In the field, determine the density of soil in place by the sand cone method, ASTM D 1556 or by nuclear methods, ASTM D 6938 and D 3017.
5. Apply rock correction factors as applicable. In case the test of the fill or backfill shows non-compliance with the required density, perform remedies as may be required to insure compliance. Subsequent testing to show compliance shall be by a testing laboratory selected by the Construction Manager and paid for by the Contractor.
6. Compaction tests shall be performed for each lift or layer. If nuclear methods are used for in-place density determination, verify the accuracy with one sand cone test, and one maximum laboratory dry density test, for every 2 weeks nuclear tests are used if the backfill material is processed fill or visually consistent. The Construction Manager shall be the sole judge of visual consistency. More sand cone and dry density tests will be required if the backfill material is visually variable. The minimum depth for the sand cone test hole shall be 12 inches. The minimum size shall be 8 inches and size 16/30 or 10/20 silica sand shall be used.
7. Determine laboratory moisture-density relations of soils by ASTM D 1557. If nuclear methods are used for in-place density determination, the compaction test results for maximum dry density and optimum water content shall be adjusted in accordance with ASTM D 4718. This will be required for determination of percent relative compaction and moisture variation from optimum.
8. Determine the relative density of cohesion-less soils by ASTM D 4253 and D 4254. Sample backfill materials by ASTM D 75. "Relative Compaction" is the ratio, expressed as a percentage, of the in-place dry density to the laboratory maximum dry density.

B. Testing Frequency:
   1. After an acceptable compaction procedure is established, compaction tests shall be taken at 300-foot intervals along the trench and at vertical intervals for every other lift at random locations and not necessarily vertical in line. A minimum of two tests will be required for each production day in the trench. Tests shall also be taken near structures, manholes, etc., and where designated by the Construction Manager. Embankment and fill areas shall have at least one compaction test performed each production day and no fewer than one test for each 1,000 cubic yards. Copies of all test reports shall be submitted to the Construction Manager by the next working day.
   2. Location for compaction tests shall be prepared and submitted to the Construction Manager for approval prior to testing.
   3. Compaction and other tests may be taken by the Construction Manager at intervals along the trench as described above to verify compliance with these requirements. Accommodate the Construction Manager in conducting these tests. Provide access and exploratory excavation as required to collect samples or conduct tests. Allot sufficient time during construction for the performance of any such compaction testing.
   4. Compaction shall be deemed to comply with the specifications when no compaction test falls below the specified relative compaction. Pay the costs of any retesting of work not conforming to the specifications. Should the compaction methods used fail to achieve the required degree of compaction, revise compaction method to achieve the required compaction.
   5. If a compaction fails to meet the specified requirements, remove and replace the backfill at proper density or bring the density up to specified level by other means acceptable to the Construction Manager. Pay for all subsequent tests required to confirm and verify that the reconstructed backfill has been brought up to specified density. Frequency of confirmation tests for remedial work shall be double that amount specified for initial confirmation tests.

C. Costs associated with necessary corrective work resulting from failed tests or inspections shall be paid by Contractor. Should any originally scheduled quality assurance test or inspection fail to meet requirements of the Contract Documents, the Contractor shall be responsible for the cost of retesting or re-inspection of Work including inspector's and tester's time and trips.

D. Should any compaction density test or subgrade inspection fail to meet requirements, perform corrective work as necessary to bring the material into conformance with the requirement of the Contract Documents.

END OF SECTION

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SECTION 33 05 07.24

CASING PIPE

PART 1 GENERAL

1.01 DESCRIPTION

A. Scope:

1. This section specifies the minimum requirements for steel casing pipe including the grade of steel, diameter, and cylinder thickness, complete with welded joint ends and pressure grout couplings.

B. Design Requirements:

1. Steel casing shall be provided to the minimum inside diameter, minimum thickness and with the minimum separation between casing and carrier pipe specified.
2. The CONTRACTOR may select a higher yield strength, greater diameter or thickness based on the installation method and forces as determined by the Contractor at no additional cost to the OWNER.

1.02 QUALITY ASSURANCE

A. References:

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM A36/A36M	Standard Specification for Carbon Structural Steel
ASTM A53	SSF Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
ASTM A283	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
ASTM A515	Standard Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate and Higher Temperature Service
ASTM A572	Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

Reference	Title
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
AWWA C206	Field Welding of Steel Water Pipe
AWWA C222	Polyurethane Coatings for Interior and Exterior of Steel Water Pipe and Fittings.
AWS D1.1	Structural Welding Code

B. Welding shall be performed by skilled welders, welding operators and tackers who have adequate experience in the type of materials to be used.
   1. Employ only welders qualified under the provisions of ANSI/AWS D1.1 by an independent, local, approved testing agency not more than 6 months prior to commencing Work on the casing or pipeline.
   2. Perform qualification tests using machines and electrodes similar to those to be used in the Work. Provide welding procedures including longitudinal and girth or special welds for pipe cylinders, casing joint welds, reinforcing plates and grout coupling connections.

1.03 SUBMITTALS

A. Procedures: Section 01 33 00.

B. ACTION SUBMITTALS
   1. A copy of this specification section, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (☐) shall denote full compliance with a paragraph. If deviations from the specifications are requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a written explanation that reasons the requested deviation. The Owner (or Owner's representative) shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for requested deviations to the specification requirements shall be sufficient cause for rejection of the entire submittal with no further consideration.

   2. Provide an affidavit of compliance that the pipe conforms to the requirements of this section.

   3. Provide design calculations stamped by a Professional Engineer registered in the State of Arizona that demonstrate the casing pipe to be provided is suitable for in-service conditions (e.g. earth loads, live loads, groundwater, and appropriate surcharge loading) and capable of sustaining the maximum stresses to be imposed during installation.
      a. For trenchless casings, provide calculations that consider jacking forces, eccentric forces due to steering, BREAKOUT LOADS, and any other loads that may be reasonably anticipated during construction.
      b. Clearly state all load case assumptions and safety factors.

4. Shop Drawings:
    a. Provide Fabrication drawings for the casing pipe including pipe dimensions (spool length, outside, inside diameter, wall thickness, separation between pipe) and welding details.
    b. Provide Shop drawings for grout ports, their location and plug details.

5. Provide Welder Qualifications and field welding procedures including testing.

6. Manufacturer's Product Data and GHS Safety Data Sheets
    a. Shop and Field Applied Linings and Coatings.

7. For prefabricated steel casing pipe:
    a. Submit affidavit of compliance that the proprietary pipe joints/connections are suitable for jacking and can withstand the maximum anticipated jacking load, including breakout loads and joint restraint.

C. INFORMATIONAL SUBMITTALS
1. Provide metallurgical test reports for steel and provide chemical and physical test reports from each sheet of steel that indicate conformance with the specified steel and applicable ASTM requirements.

D. CLOSEOUT SUBMITTALS
1. Provide the surveyed position (x, y, z) of the installed casing at each end based on coordinates as specified by Engineer or Owner. For casings greater than 100 feet in length, provide additional locations at mid-point for each additional 50 feet in length.
2. Provide the casing pipe diameter, thickness, material; lining and coatings, thickness, product and manufacturer; and appurtenances provided, spacers, end seals, etc. with manufacturer and model.

E. SAMPLES [NOT USED]

PART 2 PRODUCTS

2.01 CASING PIPE MATERIAL

A. Casing pipe shall be shop fabricated with interior seams grounded to a smooth finish. Spiral welding of seams will not be allowed.

B. Pipe shall be specifically designed for jacking or ramming as appropriate to the installation method, and accommodating of a cutting shoe, upsizing components (e.g., weld on reaming heads or swivel assembly), and other ancillary tunneling equipment as appropriate to meet the installation requirements.

C. Steel casing pipe shall, as a minimum, conform to the requirements of ASTM A283, Grade B, C, or D. Minimum yield strength shall be 35,000 psi, and minimum tensile strength shall be 60,000 psi. Provide increased yield strength as required for the maximum anticipated jacking load.

D. Casing section joints are to be butt-welded; lap-welded or welded using butt straps in the field providing watertight field joints. Prepare each end of the casing for butt-welding by providing a ¼-inch by 45-degree chamfer on the outside edges.

2.02 CASING PIPE

A. Pipe shall be manufactured to the following dimensional tolerances:
   1. Roundness: Do not allow the pipe diameter as measured along any single plane to vary more than 1 percent from the specified diameter.
   2. Circumference: Do not allow the outside circumference to vary more than ±1 percent from the nominal circumference based on the specified diameter, or ±3/4-inch maximum.
   3. Wall Thickness: Do not allow the actual wall thickness of the steel pipe sections to vary more than 5 percent under the nominal wall thickness specified.
   4. Straightness: Maximum allowable straightness deviation in any 10-foot length is 1/8 inches. Maximum allowable straightness deviation in fabricated section up to 40 feet in length is 3/8 inches.

2.03 LAYING LENGTHS: MAXIMUM PIPE LAYING LENGTHS SHALL NOT BE LIMITED UNLESS SPECIFIED.PREFABRICATED PIPE WITH PROPREITARY CONNECTORS

A. Prefabricated casing yield strength per requirements of Paragraph 2.01.

B. Prefabricated pipe shall be manufactured to the following requirements:
   1. Pipe shall be manufactured by the rolled and welded cylinder method utilizing the double submerged arc welded process in sections of not less than 8 feet long, except as needed to achieve the final finished length of the pipe.
   2. Manufacturer shall test and certify that one reduced section tension test specimen for each lot of 1,000 feet of each size and wall thickness, shows a tensile strength of not less than 95 percent of the minimum strength specified for the grade of steel used.
   3. Connectors shall be suited of the installation application with flush joints and yield strength of the pipe. Connectors shall be full penetration butt-welded square to ends of section and profiled directly on the finished sections at the option of the manufacturer.
   4. Connectors shall be examined prior to shipment to verify that they are free of injurious defects. Damaged or defective section will be rejected, repaired or replaced prior to shipping.

C. Evaluate one reduced section tension test specimen for each lot of 1,000 feet of each size and wall thickness to verify tensile strength of not less than 95 percent of the minimum strength specified for the grade of steel used. Complete pipe manufacturing shall be performed at a single pipe producing facility. Partial production at one facility and the completion at another will not be acceptable.

D. APPROVED PREFABRICATED CASINGS
   1. Permalok or OWNER-approved equal.

2.04 GROUT HOLES

A. Provide grout/lubrication ports for all casings that are installed using trenchless methods that are greater than or equal to 36-inches in diameter.
   1. Provide grout holes with 1-1/2-inch minimum diameter opening using Schedule 40 pipe (ASTM A53) with threaded plugs.
   2. Locate holes near the crown and at both sides halfway up between the invert and springline.
   3. Space holes regularly at 10 feet on center. Longitudinal spacing between the connections may be decreased to provide more extensive grouting, but not less than 5 feet.

2.05 PIPE MARKING

A. Mark legibly in English, using English units, the exterior of casing pipe sections with the manufacturer's name, manufacturer's job number, customer name, pipe outside diameter, pipe wall thickness, and pipe weight per foot.

2.06 [LINING AND COATING]

A. [At a minimum, protect pipe inside and out with factory-applied rust inhibitors, or provided with linings and coating as specified.]

2.07 [CATHODIC PROTECTION]

PART 3 EXECUTION

3.01 DELIVERY, STORAGE AND HANDLING

A. Packaging, handling and shipping shall be in accordance with the manufacturer recommendations.

B. Prior to unloading, inspect each piece visually and note any damage or abnormalities on the carrier's documentation.

C. Use dunnage (or 4'x4's) to stage pieces of casing pipe. Do not lay the pipe on the ground.

D. Do not remove temporary interior casing supports (stulls) until"
   1. Casing pipe is fitted up, aligned, and axially concentric, and tack-welded ready for full penetration welding.
   2. Casing pipe is fitted up, aligned, and axially concentric ready for press-fitting the joint.

3.02 INSTALLATION

A. OPEN CUT
   1. Install the steel casing to line and grade as specified in accordance with Section 31 23 00 EXCAVATION AND FILL and Section 31 21 33, Trenching, Backfilling, And Compacting for Utilities.

B. TRENCHLESS INSTALATION

1. Install the steel casing in accordance with the requirements of [specification for Trenchless Method]

C. Install Prefabricated Steel Casing in accordance with the Manufacturer's requirements. Deviations from the recommended procedures shall be provided in the CONTRACTOR's Installation plan

3.03 WELDING

A. All welding shall be performed by qualified welders in accordance with the requirements of ANSI/AWS D1.1. Welds shall be pre-qualified or qualified by testing.

3.04 TESTING AND INSPECTION

A. Prior to demobilization of trenchless equipment or carrier pipe installation, confirm the installed line and grade of the casing. Provide the surveyed position (x, y, z) of the installed casing for review by the Owner's Representative.

3.05 RECORD DOCUMENTS

A. Provide the surveyed position (x, y, z) of the installed casing at each end based on coordinates as specified by Engineer or Owner.

B. Provide pipe outside diameter (inches), pipe wall thickness (inches), and materials of construction (pipe and protective coatings or linings).

END OF SECTION

SECTION 33 05 25

EXCAVATION SUPPORT SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements for sheeting, shoring, and bracing of trenches greater than five (5) feet in depth. The CONTRACTOR shall provide all labor, equipment, materials, and services necessary.

B. The CONTRACTOR shall design sheeting, shoring, and bracing in accordance with OSHA safety regulations (29 CFR, Part 1926, Subpart P, Excavations) for sloping the sides of excavations, using shoring and bracing, and for using other safety features.

1.02 REFERENCES

A. This Section includes references to the following standards. They are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements affording the greatest protection to the OWNER shall apply, as determined by the CONSTRUCTION MANAGER.

Reference	Title
APWA	Standard Specifications for Municipal Public Works Construction, Prepared by Arizona State Chapter of the American Public Works Association, latest edition.
MUTCD	Manual on Uniform Traffic Control Devices, United States Department of Transportation, Federal Highway Administration (latest edition)
OSHA	OSHA Safety Regulations (29 CFR, Part 1926, Subpart P. Excavations)
ADOT	Arizona Department of Transportation (ADOT) 2021 Standard Specification and Drawings for Road and Bridge Construction

1.03 SUBMITTALS

A. Submittals in accordance with the General Conditions and Section 01 33 00.

B. Submit design calculations, shop drawings, and detail drawings that demonstrate conformity with OSHA regulations and suitability for design loads and installation methodology. The design shall be stamped and signed by a Registered Professional Engineer of the State of Arizona.

C. Submit shop drawings showing dimensions, elevation, and structural details for each utilized excavation support system. Include on the drawings any required construction sequence, loading, testing, monitoring, and re-bracing/removal requirements. The design shall be stamped and signed by a Registered Professional Engineer of the State of Arizona.

D. Submit excavation plans for worker protection in pipe trenches and other excavations. Submittal of excavation plans shall be for records only. Other than to verify that slide rail shoring is being used, submittals will not be reviewed by the Construction Manager as they are the sole responsibility of the Contractor and the Registered Engineer who signs and seals said plans.

E. Informational Submittals:
   1. Trench excavation plan addressing following topics:.
      a. Details of shoring, bracing, sloping, or other provisions for worker protection from hazards of caving ground.
      b. Design assumptions and calculations.
      c. Methods and sequencing of installing excavation support.
      d. Proposed locations of stockpiled excavated material.
      e. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.
      f. Anticipated difficulties and proposed resolutions.
   2. Movement measurement and data and reduced results indicating movement trends.
   3. The excavation support plan and the trench excavation plan shall be sealed by a professional engineer licensed in the State of Arizona.
   4. Stamped Calculations

F. Action Submittals: Name and qualifications of the Professional Engineer(s) registered in the State of Arizona responsible for trench excavation support design.

1.04 DESIGN REQUIREMENTS

A. Design excavation support systems to withstand earth pressures, hydrostatic pressures, bottom heave, equipment loads, applicable traffic and construction loads, and other surcharge loads to allow safe construction without movement or settlement of the ground and to prevent damage to or movement of adjacent structures, streets, and utilities. Design each member or support element with appropriate safety factors.

B. Acceptable excavation support methods include the use of trench boxes, suitable moving support systems, steel sheet pilings, soldier piles and lagging, jet grouted structures, secant pile structures, structural steel wales and struts, liner plates, and timber. If soldier piles are used, insert in predrilled holes. Horizontal strutting below the barrel of a pipe and the use of pipe as support are not acceptable.

C. Provide construction stage loadings for a staged removal of the support system that conforms to the pipe, structure placement, and indicated backfill.

D. Compaction of foundation, bedding, haunching, and backfill shall extend to the undisturbed trench wall during staged removal of the support system.

1.05 QUALITY ASSURANCE

A. Provide surveys to monitor movements of critical facilities.

B. Trench excavation support systems shall be designed by a professional engineer registered in the State of Arizona who has a minimum of 5 years of experience in the design of retaining structures.

PART 2 PRODUCTS

2.01 SHORING PROTECTION

A. Slide rail shoring is required in several locations along the alignment to navigate steep slopes and cross slopes, protect existing buildings and utilities, and cross the highway. Acceptable slide rail shoring suppliers include the following, or equal:
   1. GME (Griswold Machine and Engineering)
   2. Pro-Tec Equipment, Inc
   3. Efficiency Production, Inc.
   4. SHB, Double Slide Rail, Series 750.

B. Support and protect from damage PacifiCorp poles and foundations and protect power lines. Provide PacifiCorp with calculations and construction methods sufficient to obtain PacifiCorp approval. Address clearances from power lines. Provide a copy of the PacifiCorp-approved special shoring and methods to the Construction Manager. Use PacifiCorp-approved shoring and methods within 30 feet of their poles and foundations

C. Structural Steel: ASTM A36 or better, unless otherwise approved.

PART 3 EXECUTION

3.01 GENERAL

A. Design, provide, and maintain shoring, sheeting, and bracing as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed the Work.

B. Before beginning construction, install, and survey monitoring points as required, adequately protect existing structures, utilities, trees, shrubs, and other existing facilities. The repair of or compensation for damage to existing facilities will be at no cost to the Owner.

C. All welding will conform to the applicable provisions of ANSI/AWS D1.1.

D. Provide, place, and maintain supports, shoring, and sheeting as may be required for sides of excavations. Support excavations in a safe manner in accordance with applicable regulatory safety requirements.

E. The construction of sheeting, shoring, and bracing shall not disturb the state of soil adjacent to the trench and below the excavation bottom.

3.02 SEQUENCE

A. Trench excavation shall not be started until the design for trench support has been accepted by the CONSTRUCTION MANAGER.

3.03 TRENCHES

A. For trench excavation exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable local construction safety orders, and OSHA requirements.

B. At any time, Contractor's personnel are not present within the immediate vicinity of the Work, open excavations shall be plated, barricaded, or fenced, as necessary, to protect the public and worker safety.

3.04 REMOVAL OF SUPPORT SYSTEM

A. Excavation support shall not be removed until support can be removed without damage to existing facilities, completed Work, or adjacent property.

B. As a minimum, excavation support shall be removed between the existing adjacent surface grade and 5 feet below the adjacent surface grade. As-built Drawings will be prepared showing location of temporary shoring and bracing that remains in place.

C. Excavation support shall be removed in a manner that will maintain support as excavation is backfilled and will not leave voids in backfill. Removal of the support system shall be performed in a manner that will not disturb the pipeline, the compacted backfill, or adjacent construction or facilities.

D. Any void left by shoring system or voids created by the removal of the shoring system will be filled with controlled low strength material (CLSM) or cement grout, as approved by the Construction Manager, to provide soil support between backfill zone and the native soil.

E. Sheet piling removal shall be performed in a manner that will not result in "vibro consolidation" of sandy or granular material below the excavation that could lead to settlement of the pipeline or other works of construction.

F. The support system removed from the excavation shall remain the property of the Contractor and shall be removed from the Site.

END OF SECTION

Department of the Interior
Bureau of Indian Affairs
Navajo Region Branch of Transportation (NRBOT)

Application for Permission for Utility crossing within
BIA Highway Right-of-Way
(Authorization: 23 USC Part 123, 23 CFR Part 645
Subpart A & B, 25 CFR Part 170, 25 CFR 169.51, 52, & 128)
Rev: 03/23/2022

Background *(to be filled out by the Agency Branch of Road Maintenance Office)*:

Agency: 3N373
Route No.: N222
Project No.: 3N373-0222-UTIL-0037
(Filled in from applicant info or Agency BORM Office)

Date received: 2/21/2024
Permit No.: 3N373-0222-UTIL-0037
(Assigned by Agency BORM Office)

Section (A) (*to be filled out by applicant)*:

APPLICATION is hereby made by *(owner)*: Water Management Branch of Navajo Department of Water Resources, address: P.O. Box 678, Fort Defiance, AZ 86504, email: jasonjohn@navajo-nsn.gov, phone: (928) 729-4003 to construct underground and/or overhead utilities at the following location(s): North of the entrance to Lower Antelope Canyon Latitude: 36°54'32.12" Longitude: 111°24'34.94" Latitude: 36°54'32.26 Longitude: 111°24'32.46" *(attach location map)* adjacent to, under, or overhead BIA Route No.: 222 Street: Antelope Marina Road for the purpose of *(supplying service to)*
☐ residence ☐ business *(name)*: ☐ School:
☑ Other: LeChee Community The *(type of utility)* Waterline shall be constructed by the applicant on or by *(date)* July 1, 2024 and shall take 60 calendar days to complete *(attach appropriate engineering drawings of each utility location)*. The applicant further agrees (*at their entire expense)* to comply with all the conditions, restrictions, and applicable regulations of both the state and the Navajo Nation Laws including the requirements of Section (B) thru (F) below including the following:

1. All proposed underground utility installations (on asphalt or concrete surfaced roads) shall cross the roadways by a boring method with a minimum cover depth of (3) three feet below the lowest ditch line elevation unless otherwise specified in Section (E) below. All proposed overhead utilities shall have a minimum of (18) eighteen feet clearance above the roadway surface.

2. A traffic control plan shall be prepared and submitted for approval as required in Section (C) below. This traffic control plan must be implemented prior to any work performed within the roadway right-of-way and shall meet the requirements of the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition.

3. The Utility Owner accepts full responsibility for the safety of the traveling public during the utility installations and maintenance and shall always maintain at least one lane of traffic open for the public during such activities.

4. All components of the above utility installations shall comply with applicable federal, state, tribal, and other local governing body laws and regulations and industry codes.

5. All damages to the roadway right-of-way and appurtenances shall be repaired and/or replaced to the satisfaction of the NRBOT Manager and Agency BOT Engineer.

6. The applicant shall restore the lands within the roadway right-of-way to its natural conditions including drainage, re-seeding, and mulching.

7. Relocate (at the owner's expense) all existing utilities within the roadway right-of-way if the NRBOT Manager or Agency BOT Engineer determines that the utility crossing will interfere with future roadway construction and maintenance or poses a safety hazard to the traveling public.

8. Construct exposed utility lines, poles, anchors, and facility appurtenances outside the clear recovery zones of the roadway as determined by the NRBOT Manager *(preferably next to the right-of-way lines whenever possible or behind the sidewalk back face two feet)*.

9. All proposed under roadway utility line crossings shall be installed in a casing pipe per BRBOT standard details *(provided upon request)* or NRBOT approved utility company standards and buried at least three (3) feet below ditch-lines. Casing pipe shall be steel, ductile iron, or reinforced concrete or other approved material. Electrical, cable TV, or telephone lines may be encased in non-metallic conduit or placed on poles with the required clearance of eighteen (18) feet. High pressure and/or hazardous liquid utility lines may call for additional protection requirements from the NRBOT Manager in coordination with the utility company in advance.

10. Mark all proposed utility crossings with approved permanent markers next to the road right-of-way lines and outside the clear recovery zone form edge of roadway shoulder.

11. Maintain all utilities and appurtenances, always so as not to allow a condition to exist which would be a safety hazard to the traveling public and/or maintenance problem to the roadway or associated structures. Promptly repair any damages to any BIA facilities with an emergency traffic control plan implemented in accordance with the procedures outlined in the MUTCD Manual, latest edition. Prior to any utility repairs or maintenance, the utility owner must notify the appropriate Agency BOT Engineer as soon as possible after any emergency is discovered or 3 days in advance of all other routine maintenance work.

12. For Chapter type utility projects, the Agency BOT maintenance office may assist the Navajo Nation chapter in the mergence maintenance activities of chapter installed utilities and other appurtenances such as streetlights, traffic signs, school crossings, signals, etc. subject to their work schedules and funds availability. The applicant is still responsible for those utilities in BIA ROW unless the NRBOT Manager and Agency BOT Engineer assumes this responsibility in writing to the Chapter. The Chapter is required to budget sufficient funds for this purpose.

13. Should at any time in the future the utilities and appurtenances, stated herein are no longer to be used, these utility facilities and appurtenances shall be removed as directed by the Agency BOT Engineer. The applicant shall then submit a letter to the NRBOT Manager and Agency BOT Engineer requesting the owner/applicant be relieved of the future requirements of this permit. The Agency BOT Engineer shall promptly forward with his/her recommendation request to the NRBOT Manager for action. All overhead mast arms and poles, utilities, and appurtenances shall be removed from the roadway right-of-way limits by the owner/applicant using an approved Traffic Control Plan submitted to the Agency BOT Engineer and NRBOT Manager.

14. The utility owner agrees to budget adequate funding each year for the installation and maintenance for the utilities and associated appurtenances. If the BIA NRBOT finds that the utility line is not being properly maintained the BIA NRBOT will send a written notice to the utility owner to remove those utilities from the ROW at their expense within one (1) week of receiving the written notice and face legal action.

Section (B) (*to be filled out by Agency BOT Engineer – check all that applies)***:**

The above utility encroachment(s) shall require the following appurtenances which the applicant agrees to install in accordance with BIA NRBOT design and construction standards.

The above utilities encroachment(s) shall require:_____

☑ 220 feet of casing 20 inches diameter/size (min)

☑ Manholes, valves, or streetlight poles offset 100 feet from roadway shoulder or back of sidewalk

☑ Markers for identification purposes

☑ Constructed crossing at 90° to the roadway

☑ As-Built drawings in accordance with NRBOT standards or NRBOT approved utility company standards.

The Applicant shall further comply with the following:_____

_____

_____

Section (C) (*to be filled out by NRBOT Office – check all that applies)***:**

The above described utilities shall require the following entirely at the applicant's expense:

- [✔] Complete set of utility drawings reflecting clearances, depth of cover, all pertinent dimensions of proposed facility with respect to the roadway, shoulder ditches, sidewalk, and road rights-of-way lines.
- [ ] For streetlights provide structural details, break-a-way pole bases if the streetlights are to be placed within the clear recovery zone.
- [ ] Structural analysis for all proposed structural features as required.
- [✔] Traffic Control Plan meeting the requirements of the MUTCD, latest edition.
- [ ] Geotechnical analysis for proposed foundations is required.
- [ ] Utility installation requirements for serving proposed or existing streetlights or signal lights as required
- [✔] Archeological and Environmental compliance/clearance documents for work within the BIA ROW.
- [✔] Consent from the Navajo Nation ([1]) if utility is on Tribal Trust Land.
- [ ] Consent from the State of New Mexico ([1]) if utility is on State Land.
- [ ] Consent from the Indian Allotted ([1]) if utility is on Allotment Parcel.
- [ ] Consent from Private Landowner ([1]) if utility is placed on private fee land.
- [✔] Safety Plan to be prepared and included in the permit package.

(1) Consent from the underlying landowner must be acquired in writing if the utilities are to crossing such land.

All analyses shall be performed by a registered professional licensed in the state for which the analysis or documentation is required. The analysis required above shall conform to the NRBOT applicable standards which shall be furnished upon request if one if not attached by the utility owner herein for review and acceptance. The recommendations furnished in the analysis report(s) shall be implemented by the owner/applicant at the time the facilities are constructed. For paved roads **in no case shall the roadway surfacing be structurally less than the adjoining roadway surfacing unless specifically waived or otherwise addressed in Section (E) below before installing service utilities in open cut trenches.**

Section (D) (general construction requirements)**:**

The applicant shall *(at their entire expense)* install the utilities and appurtenances to the lines and grades as shown on the approved design drawings furnished by the applicant/owner. The work shall conform to the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP), latest edition, or equivalent industry standards as approved. The following shall apply along with the NRBOT utility standards, relevant federal, state, tribal, or local codes:

- Open trenches for utilities shall be backfilled and compacted at a minimum of 90% maximum density. Boring pits/holes for utility, signal, or streetlight pole installations, and other excavations shall be backfilled and compacted as per applicants approved drawings and in accordance with the latest edition of the FP under Section 209.

- The top six (6) inches of natural ground and the subgrade at the utility crossing shall be scarified, adjusted for optimum moisture, and compacted in accordance with applicable provisions of Section 204 of the FP, latest edition. All subgrade construction shall be in accordance with Section 204 of the FP.

- If the natural ground underneath the proposed utility shows unstable material, the area shall be excavated to the depths required and stabilized with structural backfill before setting the utility line and/or pole foundations in accordance with Section 704 and/or Section 213 of the FP.

- The applicant shall furnish test results, certifications for all materials, and copies of all pertinent inspection records to the Agency BOT Engineer for review before the Agency acceptance of the work in writing to the utility owner.

- The applicant shall notify the Agency BOT Engineer at least 5 working days prior to start of work and upon completion of work within the right-of-way for spot and final inspections.

- The applicant shall be responsible for implementing and maintaining its approved Traffic Control Plan until final inspection is given by the Agency BOT Engineer.

- Any buried non-metallic utility lines shall have a metallic tape or other approved method of effectively locating the lines.

The applicant shall further comply with the following:_____

_____

_____

Section (E) *(to be filled in by NRBOT Office)**:***

The Regional Branch of Transportation hereby grants the following exception(s) to this utility crossing permit request:_____

_____

_____

BOT *(initials)***:** ARJ

Section (F) *(approvals)**:***

This permit is hereby issued to the foregoing applicant for the expressed purpose set forth in this application and upon expressed condition that every requirement herein is faithfully performed and all the work to be performed in accordance with the plans, specifications, and requirements stipulated herein.

*This permit shall have a term of **perpetuity** from the date approved below or unless item (12) of Section (A) where the BIA NRBOT assumes ownership of the facility is executed in writing. This permit shall be canceled if installation within the road right-of-way is not completed by* August 30, 2024 *. This permit is transferable and enforceable to current, and all future owners/heirs/successors of the utilities and appurtenances described above.*

Signed:

Jason John, Navajo Department of Water Resources

Name of Owner (print)

3/5/2024

Applicant (owner) signature *Date*

Applicant Title

Recommend for Approval:

HENRY BEGAY Digitally signed by HENRY BEGAY Date: 2024.03.06 11:24:38 -07'00' 3/6/2024

Agency BOT Engineer *Date*

Concurred by:

ALFRED REED Digitally signed by ALFRED REED Date: 2024.03.06 19:06:50 -07'00' 3/6/2024

NRBOT Manager *Date*

Approved by:

DEBORAH SHIRLEY Digitally signed by DEBORAH SHIRLEY Date: 2024.03.07 18:00:42 -07'00'

Regional Director *Date*

Permit Instructions
Rev: -11-03-2022

Background Section:

At the time the applicant requests for a utility or other infrastructure permit application, the Agency BOT Engineer shall fill in this section with the appropriate agency office name, project number (if applicable), and BIA route number.

The date and permit number will be filled in by the Agency BOT Engineer when the permit has been reviewed and found to be complete. The Agency BOT Engineer will sign the permit and email to the Regional Office for further processing.

If the BIA NRBOT office finds additional information or data is required, the office will be in contact with the applicant to furnish such additional information which may become part of the final permit issued.

Section (A):

When the applicant receives the permit application, the applicant shall fill out this section for the fillable form without attempting to modify it and attach all documents that are required by the box in Section (C) with any other location maps and data that may help in the processing of the permit such as:

> *For Utility Permits, **Exact Location** shown on a U.S.G.S. or other approved map with Latitude & Longitude coordinates at the exact location of the centerline of road and/or shoulder ditch where the utility will cross For lines paralleling the road, the applicant will provide Latitude & Longitude coordinates for the beginning and end of the line with depth and cannot be placed no closer to the edge of roadway of 15 feet or 10 feet from the ROW line toward the roadway. These dimensions may be changed at the discretion of the BIA Regional BOT for safety reasons. Do not put unrealistic construction dates in this section as it will be rejected. Applicant must properly plan the work so that the permit with all the required documents can be submitted no more than 2 weeks before the work is to begin.*
>
> *For proposed Driveway or Turnout Permits, provide the exact location at the center of the driveway or turnout on a map with **Exact** Latitude & Longitude coordinates and show which part of the road it is on with a short length of the BIA route clearly shown. Google earth maps are best for this purpose, or you can use a GIS map from the various internet sites that have such maps to show the location in question. If this information is not provided, the permit will be*

returned to the applicant for corrections. Do not enter unrealistic dates of when the driveway/turnout is to be constructed. Applicant must plan out the work so that the permit with all the required documents is submitted no sooner than 2 weeks before construction begins.

For access to economic development type projects, or schools, hospitals, stores, gas stations, and fast food markets the applicant must conduct a Traffic Impact Analysis (TIA) but before doing so consult with the NRBOT Engineer and provide a plan layout of the development so the NRBOT Engineer can determine if a TIA is warranted.

For proposed "Work within ROW" permits, the applicant must provide detailed maps with the area to be working in clearly identified with boundaries and area shown in square feet and/or acres. Provide a written explanation as to the purpose of working in a BIA right-of-way. Provide the exact locations or area points with Latitude & Longitude coordinates on a detailed drawing of the area. Do not enter unrealistic dates of when work is to begin. Applicant must plan out the work so that the permit with all the required documents is submitted no sooner than 2 weeks before construction begins.

The detailed drawing shall include the roadways in question from ROW line to ROW line with pertinent dimensions of the proposed work area within the BIA ROW which includes utility lines depths, locations, and overhead clearance as measured from the centerline of the road or centerline of the shoulder ditches and other important features that may interfere with the work shown.

Other required documents or site visits by the Agency BOT Engineer for a given permit not included in the permit due to the nature of the work may require:

- *Details of the proposed construction.*
- *Other Type of Compliance documents.*
- *Engineering analysis such as drainage structural, traffic impacts, pedestrian movement as required.*
- *Environmental documents.*
- *False work plans.*
- *Use of large equipment that can cause a safety hazard; and*

The applicant permit request cover letter may raise further concerns before a permit can be issued. It is important the applicant provide as many details as possible about their need for a permit in their letter so that the permit process can move along quickly. So DO NOT leave out important data or information in your request.

BE ADVISED the applicant/owner of the utility, turnout, or work in the BIA ROW must include the following statement in their cover letter, if the applicant cannot digitally sign the permit in Section (F):

> *"I HEREBY ACCEPT ALL THE TERMS AND CONDITIONS OF THIS PERMIT AND WILL COMPLY WITH SUCH REQUIREMENTS FOR AS LONG AS THE PERMIT IS IN EFFECT AND WILL DILLIGENTLY COMPLETE SUCH WORK WITHIN THE TIMELINES PROVIDED AND PERFORM ANY REQUIRED MAINTENANCE TO AVOID ANY PENALTIES."*

The Agency BOT Engineer shall email the applicant for any additional data or information which the applicant must promptly furnish so that the permit can continue with its processing.

If the applicant needs assistance in filling out this section, please contact the appropriate Agency BOT Engineer.

Be advised:

- *The applicant must have all the required documents attached to the permits before submitting to the Agency BOT Engineer for review. If there are missing documents, the Agency BOT Engineer will notify the applicant. If the applicant does not response within 3 business days, the entire permit package will be returned to start the process over again.*
- *Applicants must make a formal request for a permit application to the Agency BOT Engineer. Once the request is received and logged in, a pdf fill-in permit will be emailed back to the applicant to fill out the appropriate information.*
- *DO NOT use previous permits submitted for other utility, driveway, or work within the ROW as this will be rejected and the entire permit package will be returned to start the process over again. Only current permits granted by the Reginal BOT will be accepted. This is tracked by updating the internal permit log to ensure each applicant has been given the correct and up-to-date permit.*
- *DO NOT submit any applications to the BIA Reginal BOT office as this will only result in delays of processing your request. Applicants must directly contact the Agency BOT Engineer for processing.*
- *Any other required documents included in the submission shall be on a separate pdf file.*

Section (B):

Once the applicant submits the permit application (along with supporting documentation) to the Agency BOT Engineer, the Agency BOT office will review the application, fill out this section of the permit and (if approved) sign and forward to the NRBOT office, by memo, with any special recommendations to be considered by the NRBOT office in finalizing the permits. A copy of the final approved permit will be forwarded to the applicant for their records by the NRBOT Engineer with a copy to the Agency BOT Engineer. If the Agency BOT Engineer is not satisfied

with the application package, then the package shall be returned to the applicant for corrections, additions, or other pertinent information with a written explanation as to shy the application cannot be further process for approval. This includes a response to any analysis or other pertinent documentation as outlined in Section (C) below and as indicated by the applicant in Section (A) of the application.

The applicant can then review the package and resubmit with the appropriate information needed to complete the review and approval process.

Section (C):

Once the application package is sent into the NRBOT office, the package will be logged in and submitted to the Engineering Section for further review and recommendations. It is at this level of review the applicant may be required to submit additional information (i.e. engineering analysis, compliance documents, and engineering drawings or TIAs) in which case the NRBOT office will send out a notice to the applicant requesting such information in order to complete the review process.

Section (D):

Once the additional information is provided under Section (C), and accepted, the NRBOT office will complete this section with any additional requirements such as standard details to be used, typical sections, special provisions, and/or other pertinent stipulations necessary to insure the proper construction of the facility and the safety of the traveling public.

The NRBOT Engineer shall make a recommendation to the NRBOT Manager to ***Approve/Disapprove*** *the permit application submitted with written justification (as necessary) pointing out any extenuating circumstances to be considered by the NRBOT Manager during his final review.*

Section (E):

In reviewing the final permit package, the NRBOT Manager will determine if portions of the permit requirements are to be waived. If so, the NRBOT Manager shall indicate in this section. If this section is left bland, then all requirements as shown in the permit shall apply and be enforceable (i.e., no waivers are to be allowed).

Section (F):

Once Section (E) is completed, the NRBOT Manager signs the permit application and forwards the package to the BIA Regional Director for signature.

*Once the permit is signed by the Regional Director***,** *the NRBOT office dates the permit and enters the permit into the Region BOT database. The BOT clerk will forward the completed permit tot the NRBOT Engineer who will electronically achieve the permit and send a copy out to the applicant and Agency BOT Engineer.*

AGENCY	SUPV. HIGHWAY ENGINEER	
2N373-SHIPROCK AGENCY Branch of Transportation 304 N. Auburn Ave Suite E Farmington, NM 87401	Alfred Reed, Jr. BIA Cell No.: (505) 258-7172 Program Support Assistant – Esther L. BIA Cell No.: (505) 258-7174	Stanford Litson BIA Cell No.: (505) 409-0391
3N373-WESTERN NAVAJO Branch of Transportation East Highway 160 & Warrior Dr. P.O. Box 127 Tuba City, AZ 86045	Henry Begay, Jr. BIA Cell No.: (505) 488-3812 Office No.: (928) 283-2298 Program Support Assistant – Alberta M. Office No.: (928) 283-2297 FAX No.: (928) 283-2227	Randolph Laughter BIA Cell No.: (505) 726-3489 Office No.: (928) 283-2301
4N373-EASTERN NAVAJO Branch of Transportation P.O. Box 328 Crownpoint, NM 87313	Daniel Largo – Superintendent's Office Office No.: (505) 786-6036/6032 Program Support Assistant – Jackie F. Office No.: (505) 786-6192 FAX No.: (505) 786-6111	Aaron Jim BIA Cell No.: (505) 593-3359 Office No.: (505) 786-6181
5N373-CHINLE AGENCY Branch of Transportation Navajo Route 7, Bldg. 136-C P.O. Box 7H Chinle, AZ 86503	Norton Emerson BIA Cell No.: (505) 979-0017 Office No.: (928) 674-5176 Program Support Assistant – Office No.: (928) 674-5175 FAX No.: (928) 674-5184	Roger Hadley BIA Cell No.: (505) 387-2602 Johnson Greyeyes BIA Cell No.: (505) 409-0712
6N373-FT. DEFIANCE AGENCY Branch of Transportation Bldg. No. 40, Blue Canyon Road P.O. Box 1983 Ft. Defiance, AZ 86504	Clarence Tsosie BIA Cell No.: (505) 399-1813 Office No.: (928) 729-7222 Program Support Assistant Office No.: (928) 729-7334 FAX No.: (928) 729-7225	Vincent Morgan BIA Cell No. (505) 387-2480 Office No.: (928) 729-7332
N373-FARMINGTON SECTION Branch of Transportation 9996 Hwy 371, Bldg. 17 P.O. Box 1983 Farmington, NM 87499	Lorenzo Dugi BIA Cell No.: (505) 387-6272 Office No.: (505) 863-8277	Derrick Billie BIA Cell No.: (505) 320-1307 David Slim BIA Cell No.: (505) 387-6275 Office No.: (505) 960-7372/0871
N373-NEWLANDS Branch of Transportation 1-40 Eastbound ½ Mile SE of Exit 325 P.O. Box 369 Chambers, AZ 86502	Lorenzo Dugi BIA Cell No.: (505) 387-6272 Office No.: (505) 863-8277	Victor Castillo BIA Cell No.: (505) 399-8116 Office No.: (928) 688-2928 Deswood Tsosie BIA Cell No.: (505) 726-3808 FAX No.: (928) 688-2412

Revised: 03/23/2022

THE NAVAJO NATION
DEPARTMENT OF WATER RESOURCES
P.O. Box 678 • Fort Defiance Arizona 86504 • (928) 729-4003 • FAX: (928) 729-4129

BUU NYGREN
PRESIDENT

RICHELLE MONTOYA
VICE PRESIDENT

February 14, 2024

Henry Begay, Jr., Highway Engineer
Department of the Interior
Bureau of Indian Affairs
Navajo Region Branch of Transportation (NRBOT)
East Highway 160 & Warrior Dr.
P.O. Box 127
Tuba City, Arizona 86045

Subject: Western Navajo Pipeline Phase 1 – LeChee Water System Improvements Project

Dear Henry:

Navajo Water Management Branch (WMB), Navajo Nation Department of Water Resources has prepared the Application for Permission to work within the BIA Road Right-of-Way for the construction of the LeChee Water System Improvements Project. The project waterline locations within the N-20 Right of Way are listed in Section (A) of the attached application and shown on the attached design drawings. Permits are required by WMB to bid the project and select a contractor. After a contractor has been selected, any information needed by the BIA from the contractor will be provided to NRBOT.

WMB has also prepared the Application for Permission for Utility crossing within BIA Highway Right-of-Way application where the waterline is designed to cross Navajo Route 222. This crossing location is listed in Section (A) of the attached application and shown on the attached design drawings.

Note that at the completion of construction and inspection, Water Management Branch will transfer the facilities to Navajo Tribal Utility Authority (NTUA) for operation and maintenance. Ownership transfer applications will then be submitted to NRBOT.

Included with this letter of application are the following:

1. Letter of Application
2. NRBOT Application for Permission to work within BIA Road Right-of-Way
3. NRBOT Application for Permission for Utility crossing within BIA Highway Right-of-Way
4. Western Navajo LeChee Waterline Pipeline Design Results of Survey
5. Design Drawings where construction will occur within the N-20 ROW and NR-222
6. Environmental Assessment that includes:
    a. Biological Resources Compliance Form
    b. Cultural Resource Compliance Form
7. Traffic Control Plan Specification
8. Stormwater Pollution Prevention Plan Specification
9. Trenching, Backfilling and Compacting for Utilities Specification

10. Earthwork Specification
11. Casing Pipe Specification
12. Excavation Support System Specification

The timeline for the project is as follows:

1. Secure Right-of-Way and Permitting by mid-March 2024.
2. Begin bidding May 2024.
3. Award bid to contractor June 2024.
4. Start Construction July 2024.

Traffic control plan drawings are currently under design and will be submitted when complete.

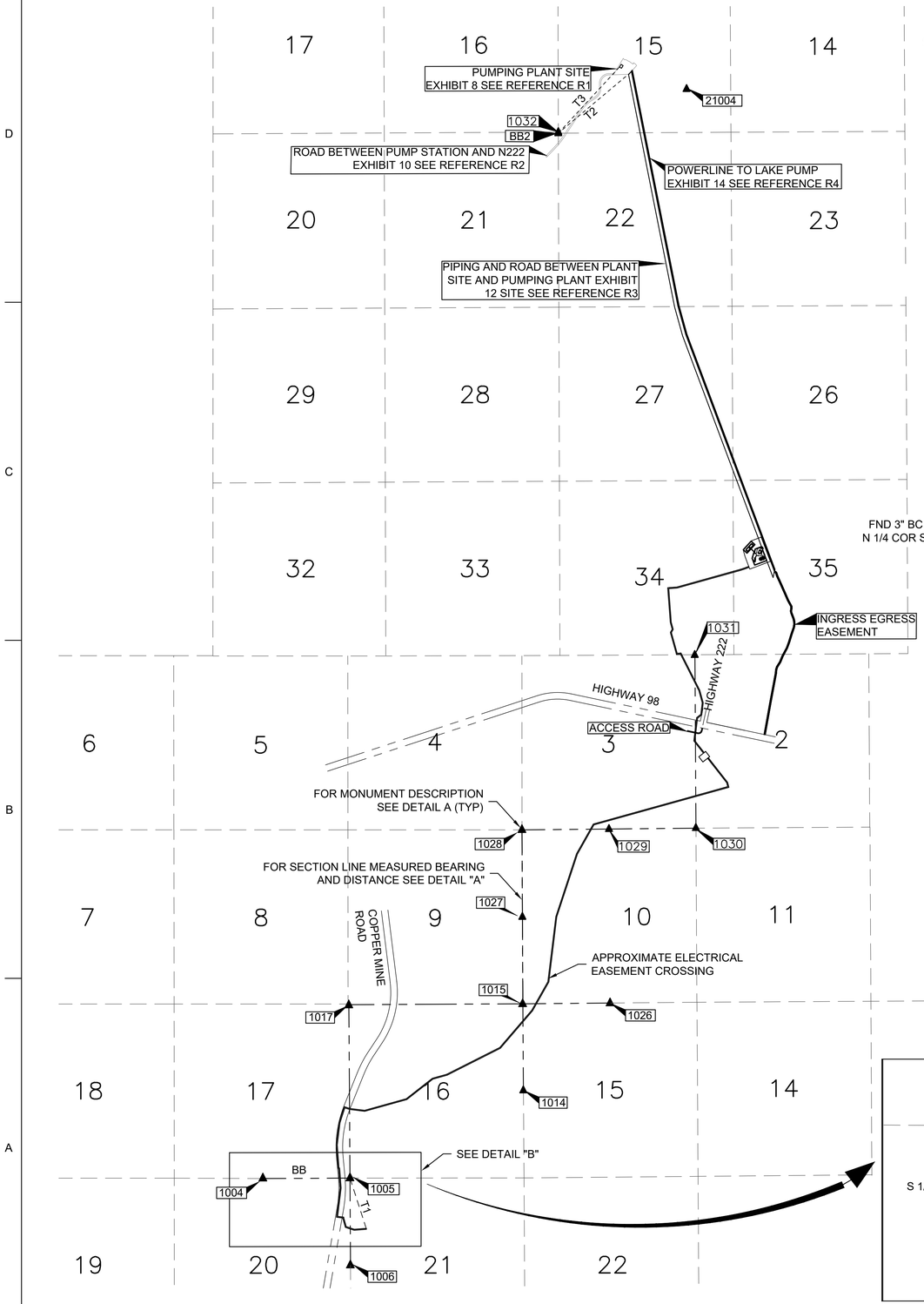
Regards,



Jason John, Director
Navajo Nation Department of Water Resources

cc: Steven Brenchley, Project Manager, Brown and Caldwell

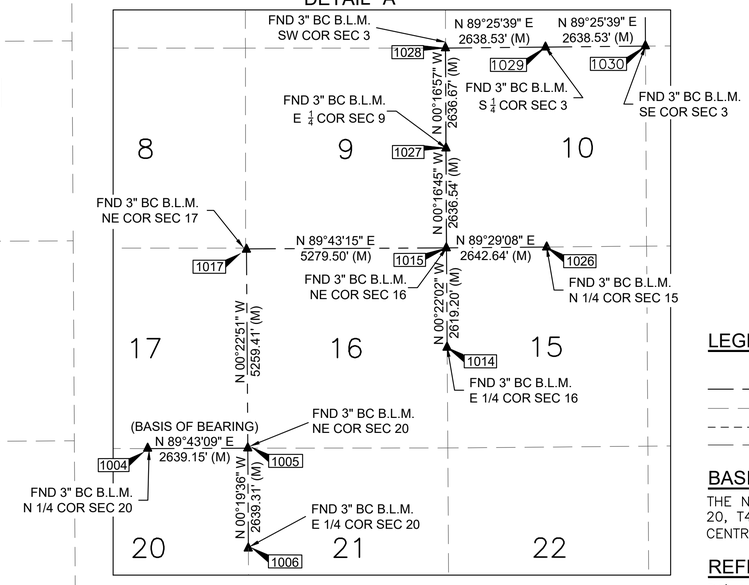
Attachments:
1. Attachment A: Western Navajo LeChee Waterline Pipeline Design Results of Survey; PDF File
2. Attachment B: Plan and Profile Design Drawings within N-20 and N-22 ROW; PDF FILE
3. Attachment C: Environmental Assessment: Western Navajo Pipeline, Phase 1 LeChee Water System Improvements Project; This document contains the Biological and Cultural Compliance in Appendix A and B.
4. Attachment D: Technical Specifications listed above; PDF File
5. Attachment E: Geotechnical Report
6. Proposed LeChee Water line ROW kmz file sent in attached electronic submittal



RESULTS OF SURVEY

LECHEE 30' WIDE WATERLINE UTILITY EASEMENT
LOCATED WITHIN PROTRACTED TOWNSHIP 40 NORTH, RANGE 9 EAST, SECTION 2, PROTRACTED SECTIONS 3, 10, 15, 16, 17, 20, AND 21, AND LOCATED WITHIN PROTRACTED TOWNSHIP 41 NORTH, RANGE 9 EAST, SECTION 15, PROTRACTED SECTIONS 22, 26, 27, 34, AND 35, GILA AND SALT RIVER MERIDIAN, NAVAJO INDIAN RESERVATION, COCONINO COUNTY, ARIZONA

DETAIL "A"



FOUND MONUMENT COORDINATE TABLE

PNT#	NORTHING	EASTING	DESCRIPTION
1004	2132635.447	835893.288	FND BC N S20
1005	2132648.386	838532.401	FND BC NE S20
1006	2130009.115	838547.449	FND BC E S20
1014	2135314.260	843793.663	FND BC E S16
1015	2137933.409	843776.881	FND BC NE S20
1017	2137907.681	838497.442	FND BC NE S16
1026	2137957.133	846419.416	FND BC N S15
1027	2140569.921	843764.038	FND BC E S9
1028	2143206.556	843751.033	FND BC NE S9
1029	2143232.922	846389.432	FND BC N S10
1030	2143259.540	849028.436	FND BC NE S10
1031	2148516.232	848997.519	FND BC NE S3
1032	2164366.317	844852.899	FND BC NE S21

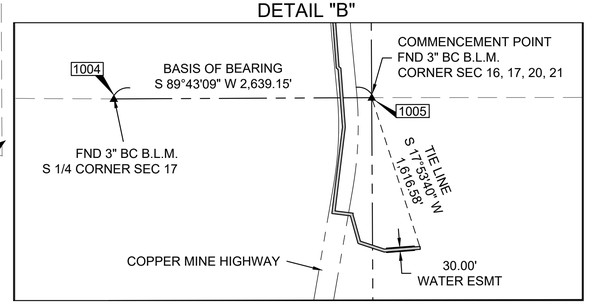
FOUND BENCHMARK COORDINATE TABLE

PNT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
21004	2165662.404	848746.410	3834.84	FND USGS BENCHMARK ET A5 1959

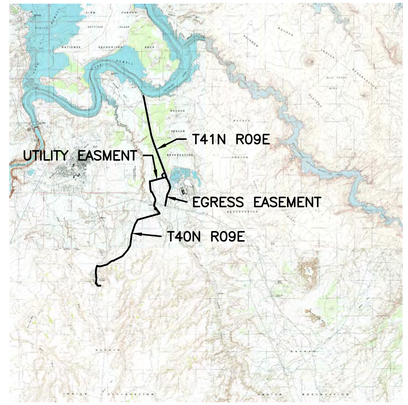
BASIS OF BEARING
AND TIE LINE TABLE

LINE	BEARING	DISTANCE
BB	S 89°43'09" W	2639.15'
T1	S 17°53'40" E	1616.58'
BB2	N 00°10'03" W	34.38'
T2	N 49°58'00" E	2842.23'
T3	N 42°45'45" E	2731.53'

DETAIL "B"



VICINITY MAP



LEGEND:

- FOUND B.L.M.SECTION MONUMENT AS NOTED
- SECTION LINE
- PROTRACTED SECTION LINE
- TIE LINE
- HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 20, T40N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF S 89°43'09" W.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

CERTIFICATION:

I HEREBY CERTIFY THAT THE SURVEY SHOWN ON THIS DRAWING WAS PERFORMED UNDER MY DIRECTION AND INFORMATION SHOWN IS CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS DRAWING WAS PREPARED UNDER MY DIRECTION.

MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

- THIS SURVEY IS BASED ON NAD 83 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET.
- SURVEY ELEVATIONS ARE BASED ON NAVD 88
- SHOWN MEASUREMENTS ARE AT GRID VALUES. TO OBTAIN SPC GROUND VALUES MULTIPLY THE DISTANCES SHOWN BY THE COMBINED SPC GRID FACTOR OF 1.000270

GRAPHIC SCALE

2000 0 1000 2000 4000 8000
(IN FEET)
1 inch = 2000 ft.

Brown AND Caldwell
SALT LAKE CITY, UTAH

RLF CONSULTING
LAND SURVEY • MAPPING SOLUTIONS
WWW.RLFCONSULTING.COM • 480-442-2252
1101 West Grant Road, Suite 208 Tucson, AZ 85705

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35113
MICHAEL E.
FONDREN
DATE SIGNED 11/30/23
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO
LECHEE
WATERLINE
PIPELINE DESIGN

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

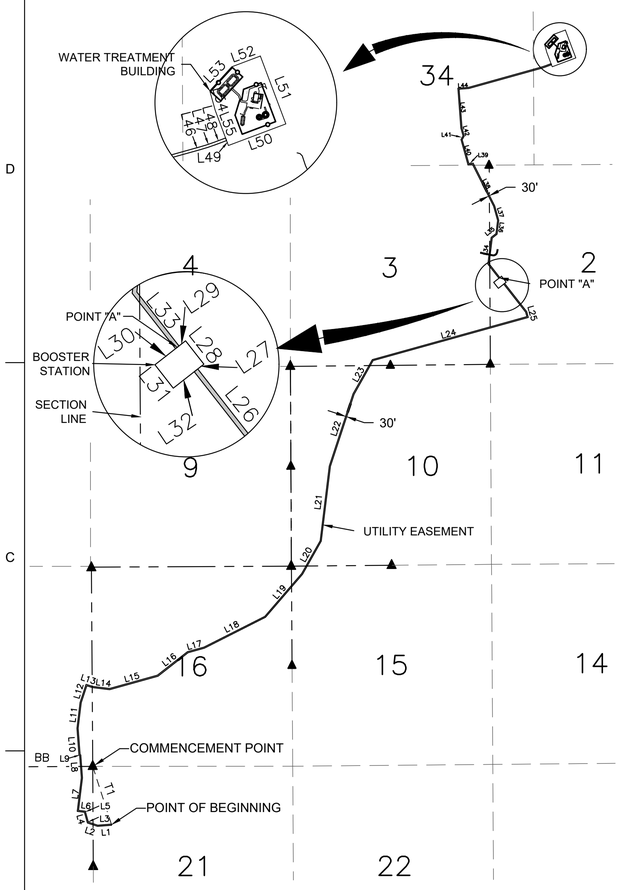
DESIGNED:
DRAWN: M. BAKER
CHECKED:
CHECKED:
APPROVED: M.FONDREN
FILENAME
15004023 SURVEY-LECHEE WATERLINE.DWG
BC PROJECT NUMBER
CLIENT PROJECT NUMBER
15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 1 OF 5



UTILITY EASEMENT LINE TABLES

LINE TABLE

LINE	BEARING	DISTANCE
L1	S 85°42'29" W	368.84'
L2	N 71°47'31" W	268.97'
L3	N 60°32'31" W	1.25'
L4	N 15°32'31" W	294.47'
L5	N 06°57'29" E	1.63'
L6	N 83°02'31" W	186.20'
L7	N 06°57'29" E	878.82'
L8	N 04°17'31" W	596.99'
L9	N 49°17'31" W	25.50'
L10	N 04°17'31" W	697.86'
L11	N 06°57'29" E	680.91'
L12	N 18°12'29" E	489.95'
L13	S 71°47'31" E	165.26'
L14	S 83°02'31" E	457.51'
L15	N 74°27'29" E	1317.68'
L16	N 51°57'29" E	1005.71'
L17	N 74°27'29" E	450.30'
L18	N 63°12'29" E	1804.93'
L19	N 40°42'30" E	1493.55'
L20	N 29°27'29" E	1000.11'
L21	N 06°57'29" E	1986.97'
L22	N 18°12'29" E	2004.74'
L23	N 29°27'29" E	1028.60'
L24	N 74°27'29" E	4242.63'
L25	N 15°32'31" W	140.93'
L26	N 38°02'31" W	942.32'
L27	N 51°57'06" E	67.52'
L28	N 38°02'54" W	200.00'
L29	S 51°57'06" W	71.07'
L30	S 51°57'06" W	190.93'

LINE TABLE

LINE	BEARING	DISTANCE
L31	S 38°02'54" E	200.00'
L32	N 51°57'06" E	194.48'
L33	N 38°02'33" W	467.23'
L34	N 06°57'29" E	697.71'
L35	N 51°57'29" E	161.36'
L36	N 06°57'29" E	361.44'
L37	N 15°32'31" W	391.44'
L38	N 26°47'31" W	1250.30'
L39	S 86°00'29" W	117.94'
L40	N 15°32'31" W	670.27'
L41	N 29°27'29" E	112.14'
L42	N 15°32'31" W	219.13'
L43	N 04°17'31" W	1038.67'
L44	N 85°42'29" E	270.58'
L45	N 74°27'29" E	1963.42'
L46	N 73°12'16" E	87.51'
L47	N 70°41'51" E	87.51'
L48	N 69°26'38" E	128.90'
L49	S 20°36'25" E	72.34'
L50	N 69°23'35" E	665.52'
L51	N 20°36'25" W	786.08'
L52	S 69°23'35" W	332.15'
L53	S 42°30'18" W	351.76'
L54	S 15°32'20" E	222.25'
L55	S 20°36'25" E	333.27'

LEGAL DESCRIPTION

LEGAL DESCRIPTION

A 30-FOOT-WIDE UTILITY EASEMENT 15 FEET ON EITHER SIDE PURPOSE OF WATER DISTRIBUTION, LYING WITHIN PROTRACTED TOWNSHIP 40 NORTH, RANGE 9 EAST, SECTIONS 2, 3, 10, 15, 16, 17, 20, AND 21, AND LOCATED WITHIN TOWNSHIP 41 NORTH, RANGE 9 EAST, SECTIONS 34, AND 35, GILA AND SALT RIVER MERIDIAN, NAVAJO INDIAN RESERVATION, COCONINO COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CADASTRAL SURVEY 3" BRASS CAP SURVEY MONUMENT MARKING THE NORTHEAST CORNER OF SECTION 20 T40N R09E FROM WHICH A FOUND U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CADASTRAL SURVEY 3" BRASS CAP SURVEY MONUMENT MARKING THE NORTH QUARTER CORNER OF SAID SECTION 20 T40N R09E, BEARS SOUTH 89°43'09" WEST (BASIS OF BEARING), A DISTANCE OF 2639.15 FEET:

THENCE SOUTH 17°53'40" EAST, A DISTANCE OF 1616.58 TO THE POINT OF BEGINNING (P.O.B.) OF THE 30 FOOT WATER UTILITY EASEMENT 15 FEET ON EITHER SIDE;

THENCE SOUTH 85°42'29" WEST, A DISTANCE OF 368.84 FEET;

THENCE NORTH 71°47'31" WEST, A DISTANCE OF 268.97 FEET;

THENCE NORTH 60°32'31" WEST, A DISTANCE OF 1.25 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 294.47 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 1.63 FEET;

THENCE NORTH 83°02'31" WEST, A DISTANCE OF 186.20 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 878.82 FEET;

THENCE NORTH 04°17'31" WEST, A DISTANCE OF 596.99 FEET;

THENCE NORTH 49°17'31" WEST, A DISTANCE OF 25.50 FEET;

THENCE NORTH 04°17'31" WEST, A DISTANCE OF 697.86 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 680.91 FEET;

THENCE NORTH 18°12'29" EAST, A DISTANCE OF 489.95 FEET;

THENCE SOUTH 71°47'31" EAST, A DISTANCE OF 165.26 FEET;

THENCE SOUTH 83°02'31" EAST, A DISTANCE OF 457.51 FEET;

THENCE NORTH 74°27'29" EAST, A DISTANCE OF 1317.68 FEET;

THENCE NORTH 51°57'29" EAST, A DISTANCE OF 1005.71 FEET;

THENCE NORTH 74°27'29" EAST, A DISTANCE OF 450.30 FEET;

THENCE NORTH 63°12'29" EAST, A DISTANCE OF 1804.93 FEET;

THENCE NORTH 40°42'30" EAST, A DISTANCE OF 1493.55 FEET;

THENCE NORTH 29°27'29" EAST, A DISTANCE OF 1000.11 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 1986.97 FEET;

THENCE NORTH 18°12'29" EAST, A DISTANCE OF 2004.74 FEET;

THENCE NORTH 29°27'29" EAST, A DISTANCE OF 1028.60 FEET;

THENCE NORTH 74°27'29" EAST, A DISTANCE OF 4242.63 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 140.93 FEET;

THENCE NORTH 38°02'31" WEST, A DISTANCE OF 942.32 FEET TO THE SOUTH PERIMETER LINE OF THE BOOSTER PUMP STATION BUILDING EASEMENT;

THENCE ALONG THE PERIMETER OF THE BOOSTER STATION NORTH 51°57'06" EAST, A DISTANCE OF 67.52 FEET;

THENCE NORTH 38°02'54" WEST, A DISTANCE OF 200.00 FEET;

THENCE SOUTH 51°57'06" WEST, A DISTANCE OF 71.07 FEET TO A POINT KNOWN AS POINT "A";

LEGAL DESCRIPTION - CONTINUED

THENCE SOUTH 51°57'06" WEST, A DISTANCE OF 190.93 FEET;

THENCE SOUTH 38°02'54" EAST, A DISTANCE OF 200.00 FEET;

THENCE NORTH 51°57'06" EAST, A DISTANCE OF 194.48 FEET;

THE ABOVE DESCRIBED BOOSTER STATION OF THE UTILITY EASEMENT CONTAINS APPROXIMATELY 52,400 SQUARE FEET OR 1.20 ACRES MORE OR LESS.

COMMENCING FROM POINT "A", ALONG A 30-FOOT-WIDE UTILITY EASEMENT 15 FEET ON EITHER SIDE, NORTH 38°02'33" WEST, A DISTANCE OF 467.23 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 697.71 FEET;

THENCE NORTH 51°57'29" EAST, A DISTANCE OF 161.36 FEET;

THENCE NORTH 06°57'29" EAST, A DISTANCE OF 361.44 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 391.44 FEET;

THENCE NORTH 26°47'31" WEST, A DISTANCE OF 1250.30 FEET;

THENCE SOUTH 86°00'29" WEST, A DISTANCE OF 117.94 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 670.27 FEET;

THENCE NORTH 29°27'29" EAST, A DISTANCE OF 112.14 FEET;

THENCE NORTH 15°32'31" WEST, A DISTANCE OF 219.13 FEET;

THENCE NORTH 04°17'31" WEST, A DISTANCE OF 1038.67 FEET;

THENCE NORTH 85°42'29" EAST, A DISTANCE OF 270.58 FEET;

THENCE NORTH 74°27'29" EAST, A DISTANCE OF 1963.42 FEET;

THENCE NORTH 73°12'16" EAST, A DISTANCE OF 87.51 FEET;

THENCE NORTH 70°41'51" EAST, A DISTANCE OF 87.51 FEET;

THENCE NORTH 69°26'38" EAST, A DISTANCE OF 128.90 FEET TO THE WEST PERIMETER LINE OF THE WATER TREATMENT BUILDING EASEMENT;

THENCE ALONG THE SAID LINE SOUTH 20°36'25" EAST, A DISTANCE OF 72.34 FEET;

THENCE NORTH 69°23'35" EAST, A DISTANCE OF 665.52 FEET;

THENCE NORTH 20°36'25" WEST, A DISTANCE OF 786.08 FEET;

THENCE SOUTH 69°23'35" WEST, A DISTANCE OF 332.15 FEET;

THENCE SOUTH 42°30'18" WEST, A DISTANCE OF 351.76 FEET;

THENCE SOUTH 15°32'20" EAST, A DISTANCE OF 222.25 FEET;

THENCE SOUTH 20°36'25" EAST, A DISTANCE OF 333.27 FEET;

THE ABOVE DESCRIBED WATER TREATMENT BUILDING OF THE UTILITY EASEMENT CONTAINS APPROXIMATELY 492,904 SQUARE FEET OR 11.32 ACRES MORE OR LESS.

THE ABOVE DESCRIBED 30 FOOT UTILITY EASEMENT CONTAINS APPROXIMATELY 958,700 SQUARE FEET OR 22.01 ACRES MORE OR LESS.

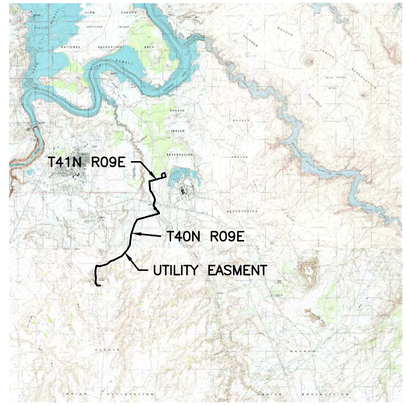
GRAPHIC SCALE

2000 0 1000 2000 4000 8000

(IN FEET)
1 inch = 2000 ft.

rlf

VICINITY MAP



LEGEND:

△	FOUND B.L.M.SECTION MONUMENT AS NOTED
— — ——— — —	SECTION LINE
— — — — — —	PROTRACTED SECTION LINE
- - - - - - - -	TIE LINE
——— — — ———	HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 20, T40N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF S 89°43'09" W.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE
EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

CERTIFICATION:

I HEREBY CERTIFY THAT THE SURVEY SHOWN ON THIS DRAWING WAS PERFORMED UNDER MY DIRECTION AND INFORMATION SHOWN IS CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS DRAWING WAS PREPARED UNDER MY DIRECTION.

MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

- THIS SURVEY IS BASED ON NAD 83 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET.
- SURVEY ELEVATIONS ARE BASED ON NAVD 88.
- SHOWN MEASUREMENTS ARE AT GRID VALUES. TO OBTAIN SPC GROUND VALUES MULTIPLY THE DISTANCES SHOWN BY THE COMBINED SPC GRID FACTOR OF 1.000270

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1101 West Grant Road, Suite 208 Tucson, AZ 85705

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35113
MICHAEL E.
FONDREN
Date Signed 11/30/23
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:
DRAWN: M. BAKER
CHECKED:
CHECKED:
APPROVED: M.FONDREN

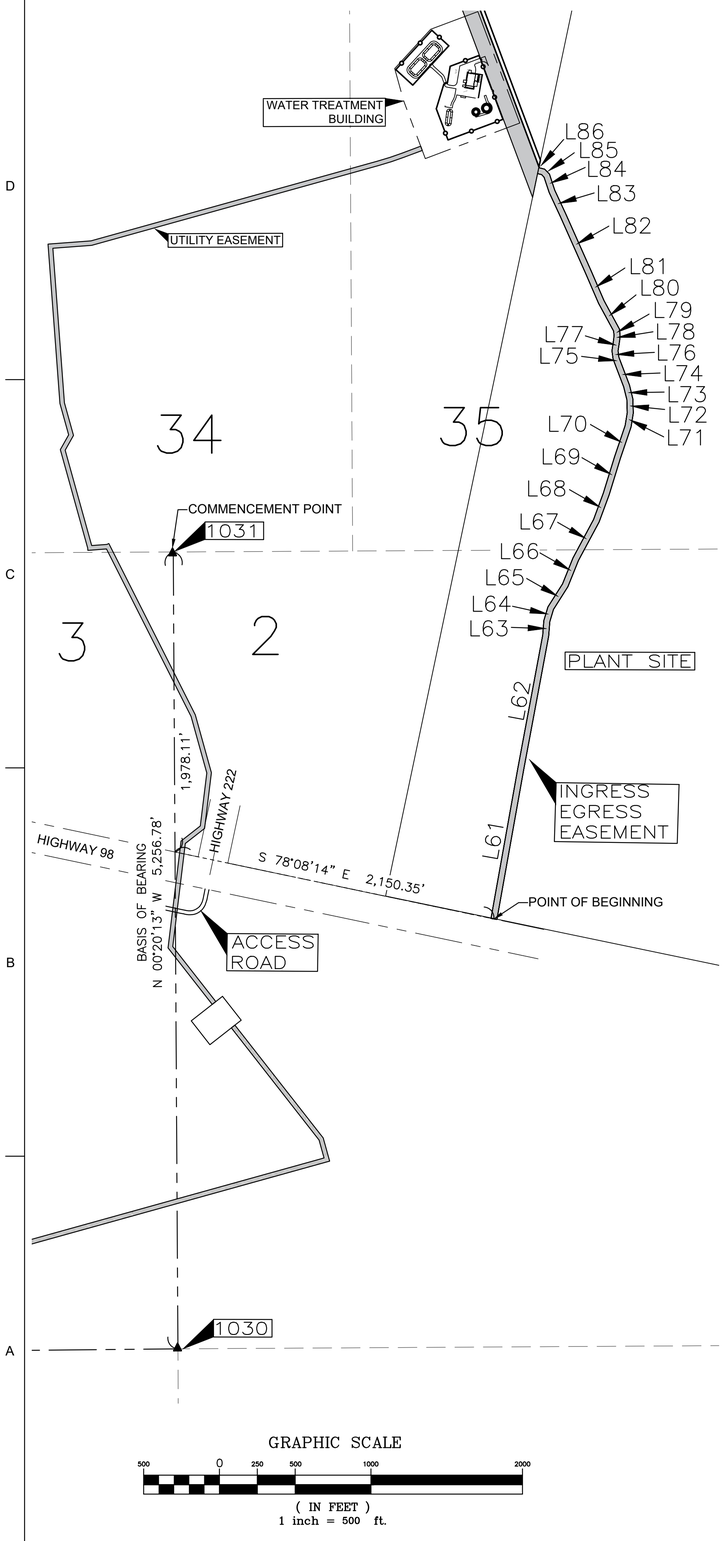
FILENAME
15004023 SURVEY-LECHEE WATERLINE.DWG
BC PROJECT NUMBER
CLIENT PROJECT NUMBER
15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 2 OF 5



GRAPHIC SCALE

500 0 250 500 1000 2000

(IN FEET)

1 inch = 500 ft.

LEGAL DESCRIPTION

LEGAL DESCRIPTION

A 40-FOOT-WIDE INGRESS EGRESS EASEMENT 20 FEET ON EITHER SIDE PURPOSE OF ACCESSING WATER DISTRIBUTION UTILITIES, LYING WITHIN TOWNSHIP 41 NORTH, RANGE 9 EAST, SECTION 35, AND WITHIN TOWNSHIP 40 NORTH RANGE 9 EAST SECTIONS 2, GILA AND SALT RIVER MERIDIAN, NAVAJO INDIAN RESERVATION, COCONINO COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CADASTRAL SURVEY 3" BRASS CAP SURVEY MONUMENT BEING AT THE NORTHWEST CORNER OF SECTION 2, TOWNSHIP 40 NORTH, RANGE 9 EAST, FROM WHICH A FOUND U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CADASTRAL SURVEY 3" BRASS CAP SURVEY MONUMENT BEING AT THE SOUTHWEST CORNER OF SAID SECTION 2, BEARS SOUTH 00°20'13" EAST (BASIS OF BEARING), A DISTANCE OF 5256.78 FEET:

THENCE ALONG THE EAST LINE OF SECTION 3 SOUTH 00°20'13" EAST, A DISTANCE OF 1978.11 FEET TO A POINT OF IN INTERSECT WITH THE NORTH RIGHT OF WAY LINE OF HIGHWAY 98 SHOWN IN MAP NO. D-3-T-606 DATED 7/22/76;

THENCE ALONG THE NORTH RIGHT OF WAY LINE OF HIGHWAY 98 SOUTH 78 08'14" EAST, A DISTANCE OF 2150.35 FEET TO THE POINT OF BEGINNING (P.O.B.) OF THE 40 FOOT INGRESS EGRESS EASEMENT;

THENCE NORTH 10°08'27" EAST, A DISTANCE OF 1003.60 FEET;

THENCE NORTH 10°35'37" EAST, A DISTANCE OF 896.51 FEET;

THENCE NORTH 04°27'46" EAST, A DISTANCE OF 96.37 FEET;

THENCE NORTH 16°41'56" EAST, A DISTANCE OF 89.47 FEET;

THENCE NORTH 32°22'45" EAST, A DISTANCE OF 178.31 FEET;

THENCE NORTH 21°59'25" EAST, A DISTANCE OF 186.25 FEET;

THENCE NORTH 28°11'31" EAST, A DISTANCE OF 287.83 FEET;

THENCE NORTH 20°10'57" EAST, A DISTANCE OF 188.14 FEET;

THENCE NORTH 17°12'04" EAST, A DISTANCE OF 250.04 FEET;

LEGAL DESCRIPTION - CONTINUED

THENCE NORTH 18°45'15" EAST, A DISTANCE OF 219.63 FEET;

THENCE NORTH 09°07'46" EAST, A DISTANCE OF 89.06 FEET;

THENCE NORTH 01°42'16" WEST, A DISTANCE OF 90.41 FEET;

THENCE NORTH 13°50'03" WEST, A DISTANCE OF 89.92 FEET;

THENCE NORTH 20°48'12" WEST, A DISTANCE OF 161.32 FEET;

THENCE NORTH 20°47'38" WEST, A DISTANCE OF 35.07 FEET;

THENCE NORTH 08°01'31" WEST, A DISTANCE OF 48.92 FEET;

THENCE NORTH 08°47'25" EAST, A DISTANCE OF 73.56 FEET;

THENCE NORTH 04°32'59" EAST, A DISTANCE OF 30.65 FEET;

THENCE NORTH 06°03'13" WEST, A DISTANCE OF 34.53 FEET;

THENCE NORTH 28°28'39" WEST, A DISTANCE OF 210.24 FEET;

THENCE NORTH 23°24'35" WEST, A DISTANCE OF 210.33 FEET;

THENCE NORTH 23°59'38" WEST, A DISTANCE OF 413.56 FEET;

THENCE NORTH 24°54'42" WEST, A DISTANCE OF 176.09 FEET;

THENCE NORTH 18°11'49" WEST, A DISTANCE OF 108.93 FEET;

THENCE NORTH 44°34'08" WEST, A DISTANCE OF 34.59 FEET;

THENCE NORTH 76°18'08" WEST, A DISTANCE OF 76.15 FEET;

THENCE NORTH 62°04'48" WEST, A DISTANCE OF 28.11 FEET;

THENCE NORTH 37°10'52" WEST, A DISTANCE OF 34.83 FEET;

THENCE NORTH 19°55'39" WEST, A DISTANCE OF 258.20 FEET TO A POINT ON THE SOUTH BOUNDARY LINE OF THE WATER TREATMENT BUILDING;

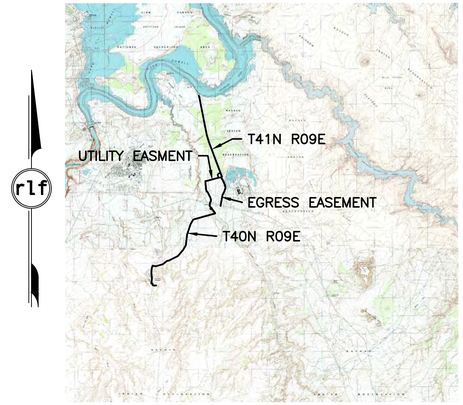
THE ABOVE DESCRIBED FIRST PORTION OF THE UTILITY EASEMENT CONTAINS APPROXIMATELY 209,464 SQUARE FEET OR 4.81 ACRES MORE OR LESS.

INGRESS EGRESS EASEMENT LINE TABLES

LINE TABLE

LINE	BEARING	DISTANCE
L61	N 10°08'27" E	1003.60'
L62	N 10°35'37" E	896.51'
L63	N 04°27'46" E	96.37'
L64	N 16°41'56" E	89.47'
L65	N 32°22'45" E	178.31'
L66	N 21°59'25" E	186.25'
L67	N 28°11'31" E	287.83'
L68	N 20°10'57" E	188.14'
L69	N 17°12'04" E	250.04'
L70	N 18°45'15" E	219.63'
L71	N 09°07'46" E	89.06'
L72	N 01°42'16" W	90.41'
L73	N 13°50'03" W	89.92'
L74	N 20°48'12" W	161.32'
L75	N 20°47'38" W	35.07'
L76	N 08°01'31" W	48.92'
L77	N 08°47'25" E	73.56'
L78	N 04°32'59" E	30.65'
L79	N 06°03'13" W	34.53'
L80	N 28°28'39" W	210.24'
L81	N 23°24'35" W	210.33'
L82	N 23°59'38" W	413.56'
L83	N 24°54'42" W	176.09'
L84	N 18°11'49" W	108.93'
L85	N 44°34'08" W	34.59'
L86	N 76°18'08" W	33.28'

VICINITY MAP



LEGEND:

△	FOUND B.L.M.SECTION MONUMENT AS NOTED
— — — ——— — — —	SECTION LINE
——— ——— ——— ———	PROTRACTED SECTION LINE
- - - - - - - - - - - - - - - -	TIE LINE
——— — — ——— — — ———	HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE WEST LINE OF THE SECTION 2, T40N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF S 00°20'13" E.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE
EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

CERTIFICATION:

I HEREBY CERTIFY THAT THE SURVEY SHOWN ON THIS DRAWING WAS PERFORMED UNDER MY DIRECTION AND INFORMATION SHOWN IS CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS DRAWING WAS PREPARED UNDER MY DIRECTION.

MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

- THIS SURVEY IS BASED ON NAD 83 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET.
- SURVEY ELEVATIONS ARE BASED ON NAVD 88.
- SHOWN MEASUREMENTS ARE AT GRID VALUES. TO OBTAIN SPC GROUND VALUES MULTIPLY THE DISTANCES SHOWN BY THE COMBINED SPC GRID FACTOR OF 1.000270

Brown AND Caldwell

SALT LAKE CITY, UTAH

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1101 West Grant Road, Suite 208 Tucson, AZ 85705

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35113
MICHAEL E.
FONDREN
DATE SIGNED 11/30/23
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:
DRAWN: M. BAKER
CHECKED:
CHECKED:
APPROVED: M.FONDREN

FILENAME
15004023 SURVEY-LECHEE WATERLINE.DWG

BC PROJECT NUMBER

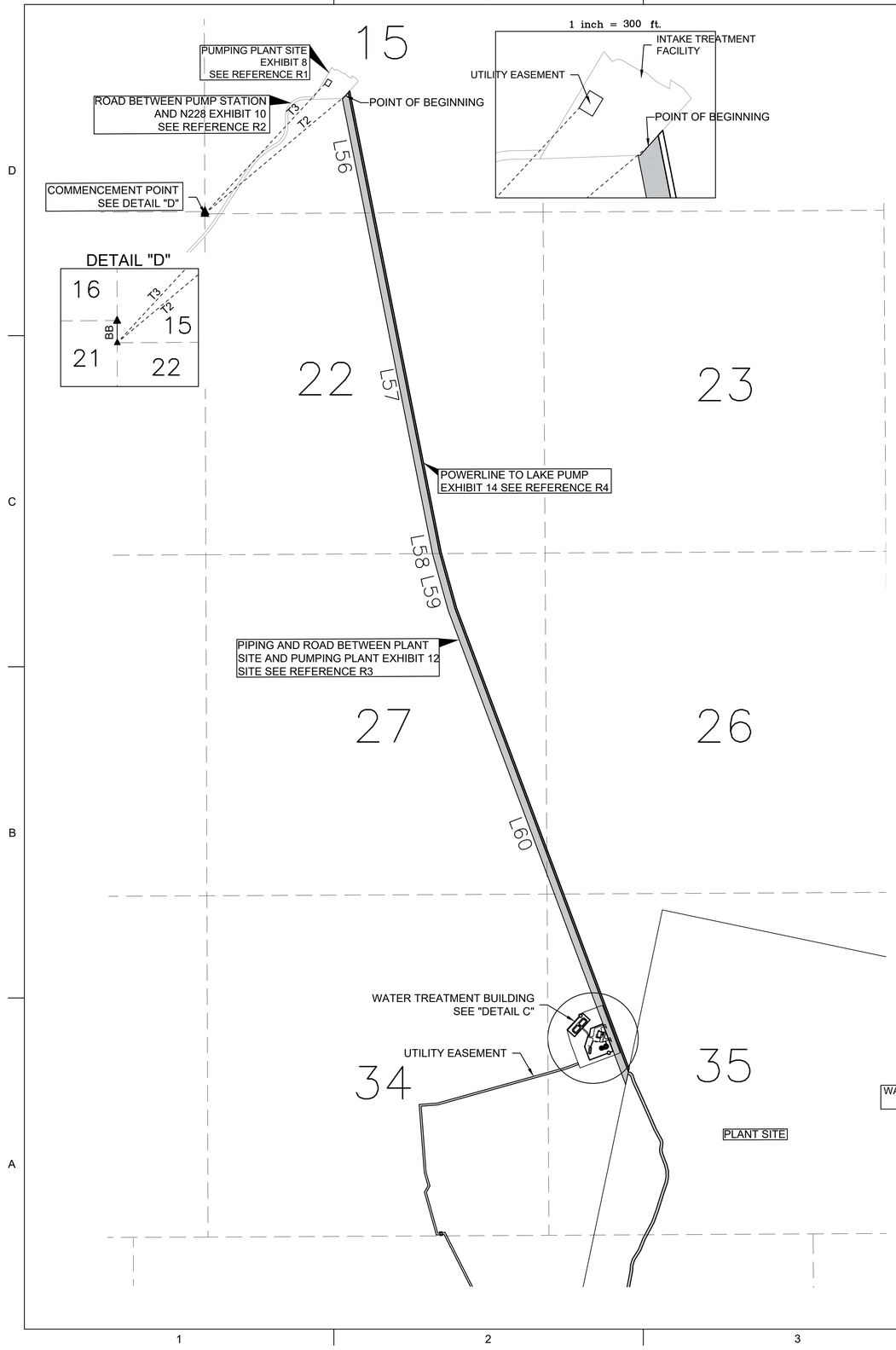
CLIENT PROJECT NUMBER
15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 3 OF 5



1 inch = 300 ft.

DETAIL "D"

LEGAL DESCRIPTION

A 110-FOOT-WIDE UTILITY EASEMENT 55 FOOT WIDE ON EITHER SIDE FOR THE PURPOSE OF WATER DISTRIBUTION ALSO BEING THE PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE EXHIBIT 12 REFERENCED FROM THE NAVAJO GENERATING STATION LANDS, BEING WITHIN TOWNSHIP 41 NORTH, RANGE 9 EAST, SECTIONS 15, 22, 26, 27, 34, AND 35, GILA AND SALT RIVER MERIDIAN, NAVAJO INDIAN RESERVATION, COCONINO COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 22, TOWNSHIP 41 NORTH, RANGE 9 EAST, BEING A BUREAU OF LAND MANAGEMENT BRASS CAP, FROM WHICH THE NORTHEAST CORNER OF SAID SECTION 21, TOWNSHIP 41 NORTH, RANGE 9 EAST, BEARS NORTH 00°10'03" WEST (BASIS OF BEARING), A DISTANCE OF 34.38 FEET;

THENCE NORTH 49°58'00" EAST, A DISTANCE OF 2842.23 FEET TO THE POINT OF BEGINNING;

THENCE SOUTH 11°13'04" EAST, A DISTANCE OF 1850.18 FEET TO THE NORTH LINE OF SECTION 22;

THENCE SOUTH 11°13'04" EAST, A DISTANCE OF 5371.19 FEET;

THENCE SOUTH 15°28'28" EAST, A DISTANCE OF 1.75 FEET TO THE SOUTH LINE OF SECTION 22;

THENCE SOUTH 15°28'28" EAST, A DISTANCE OF 900.21 FEET;

THENCE SOUTH 20°31'52" EAST, A DISTANCE OF 7741.09 FEET TO THE WESTERLY BOUNDARY OF PLANT SITE RIGHT OF WAY, ALSO BEING THE THE POINT OF TERMINUS OF THE SECOND WATERLINE EASEMENT;

THE ABOVE DESCRIBED SECOND PORTION OF THE UTILITY EASEMENT CONTAINS APPROXIMATELY 1,744,538 SQUARE FEET OR 40.05 ACRES MORE OR LESS.

BASIS OF BEARING
AND TIE LINE TABLE

LINE	BEARING	DISTANCE
BB	N 00°10'03" W	34.38'
T2	N 49°58'00" E	2842.23'
T3	N 42°45'45" E	2731.53'

LINE TABLE

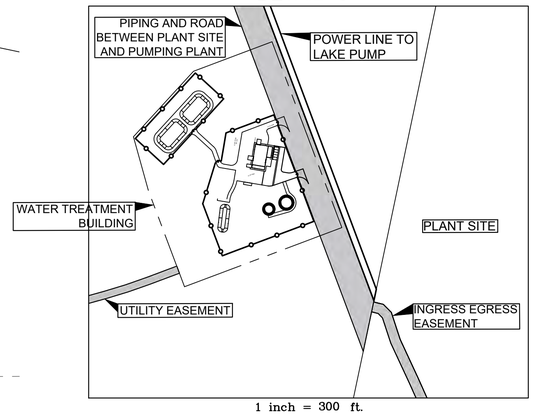
LINE	BEARING	DISTANCE
L56	S 11°13'04" E	1850.18'
L57	S 11°13'04" E	5371.19'
L58	S 15°28'28" E	1.75'
L59	S 15°28'28" E	900.21'
L60	S 20°31'52" E	7741.09'

GRAPHIC SCALE

1000 0 500 1000 2000 4000

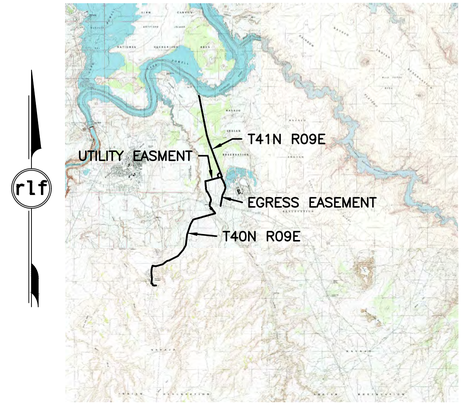
(IN FEET)
1 inch = 1000 ft.

DETAIL "C"



1 inch = 300 ft.

VICINITY MAP



LEGEND:

△	FOUND B.L.M.SECTION MONUMENT AS NOTED
— — ——— — — —	SECTION LINE
— — — — — — —	PROTRACTED SECTION LINE
- - - - - - - - - - - - - - - -	TIE LINE
— — ——— — — —	HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE WEST LINE OF THE SECTION 15, T41N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF N 00°10'03" W.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
ROAD BETWEEN PUMP STATION AND N228 EXHIBITS 9 & 10
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R3) NAVAJO GENERATING STATION LANDS;
PIPING AND ROAD BETWEEN PLANT SITE AND PUMPING PLANT SITE EXHIBIT 11 & 12
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R4) NAVAJO GENERATING STATION LANDS;
POWER LINE TO LAKE PUMP EXHIBITS 13 & 14
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

CERTIFICATION:

I HEREBY CERTIFY THAT THE SURVEY SHOWN ON THIS DRAWING WAS PERFORMED UNDER MY DIRECTION AND INFORMATION SHOWN IS CORRECTLY DESCRIBED. I FURTHER CERTIFY THAT THIS DRAWING WAS PREPARED UNDER MY DIRECTION.

MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

- THIS SURVEY IS BASED ON NAD 83 AND THE ARIZONA STATE PLANE CENTRAL ZONE MEASURED IN INTERNATIONAL FEET.
- SURVEY ELEVATIONS ARE BASED ON NAVD 88.
- SHOWN MEASUREMENTS ARE AT GRID VALUES. TO OBTAIN SPC GROUND VALUES MULTIPLY THE DISTANCES SHOWN BY THE COMBINED SPC GRID FACTOR OF 1.000270

Brown AND Caldwell

SALT LAKE CITY, UTAH

RLF CONSULTING
LAND SURVEY • MAPPING SOLUTIONS
WWW.RLFCONSULTING.COM • +1 520 445 2252
1101 West Grant Road, Suite 208 Tucson, AZ 85705

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35113
MICHAEL E.
FONDREN
Date Signed 11/30/23
ARIZONA, U.S.A.

GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

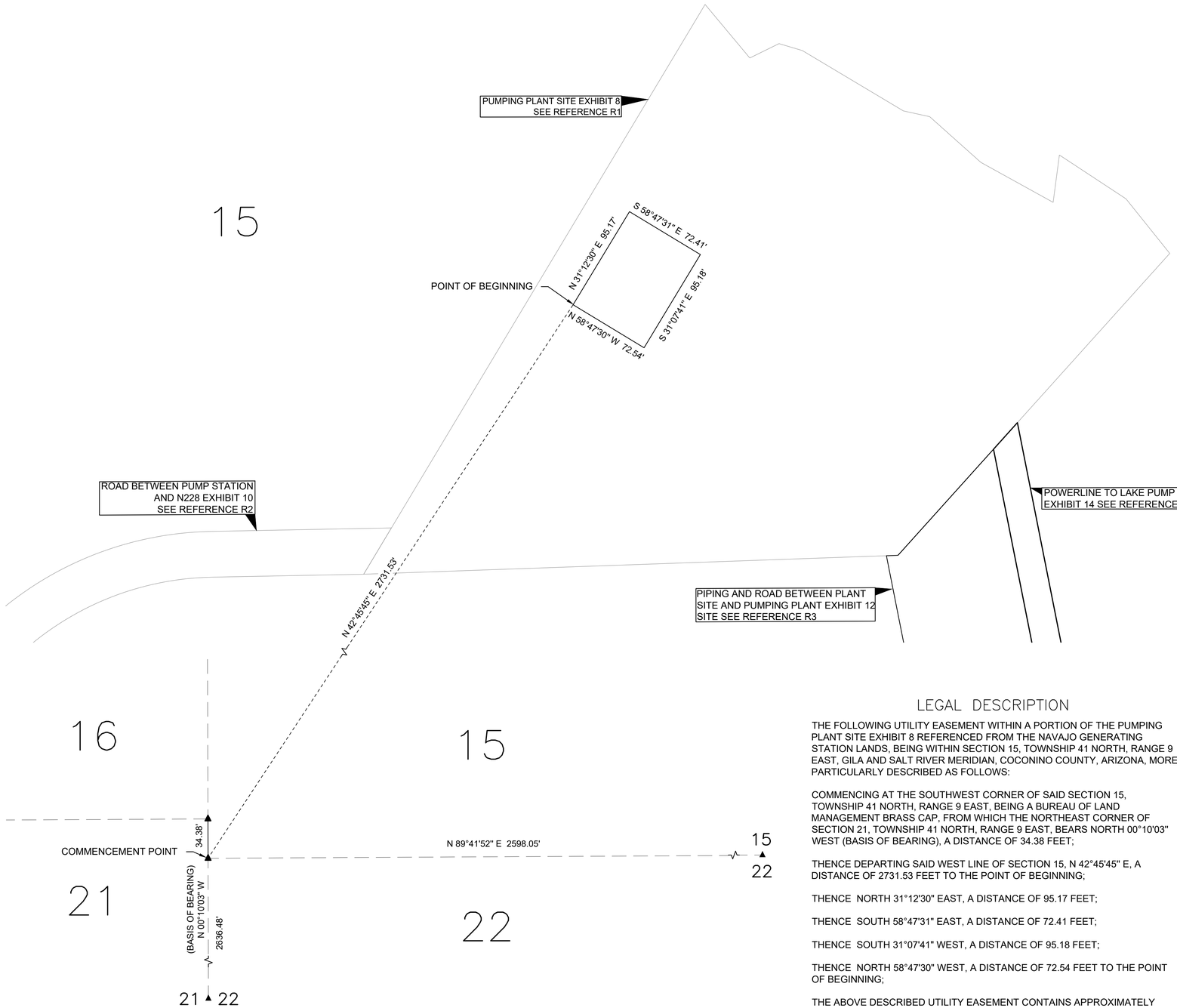
DESIGNED:
DRAWN: M. BAKER
CHECKED:
CHECKED:
APPROVED: M.FONDREN
FILENAME 15004023 SURVEY-LECHEE WATERLINE.DWG
BC PROJECT NUMBER
CLIENT PROJECT NUMBER 15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 4 OF 5



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

LEGAL DESCRIPTION

THE FOLLOWING UTILITY EASEMENT WITHIN A PORTION OF THE PUMPING PLANT SITE EXHIBIT 8 REFERENCED FROM THE NAVAJO GENERATING STATION LANDS, BEING WITHIN SECTION 15, TOWNSHIP 41 NORTH, RANGE 9 EAST, GILA AND SALT RIVER MERIDIAN, COCONINO COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 15, TOWNSHIP 41 NORTH, RANGE 9 EAST, BEING A BUREAU OF LAND MANAGEMENT BRASS CAP, FROM WHICH THE NORTHEAST CORNER OF SECTION 21, TOWNSHIP 41 NORTH, RANGE 9 EAST, BEARS NORTH 00°10'03" WEST (BASIS OF BEARING), A DISTANCE OF 34.38 FEET;

THENCE DEPARTING SAID WEST LINE OF SECTION 15, N 42°45'45" E, A DISTANCE OF 2731.53 FEET TO THE POINT OF BEGINNING;

THENCE NORTH 31°12'30" EAST, A DISTANCE OF 95.17 FEET;

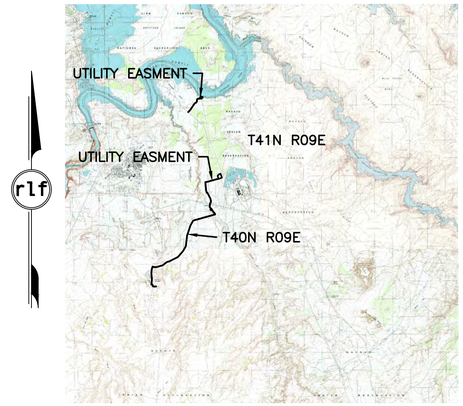
THENCE SOUTH 58°47'31" EAST, A DISTANCE OF 72.41 FEET;

THENCE SOUTH 31°07'41" WEST, A DISTANCE OF 95.18 FEET;

THENCE NORTH 58°47'30" WEST, A DISTANCE OF 72.54 FEET TO THE POINT OF BEGINNING;

THE ABOVE DESCRIBED UTILITY EASEMENT CONTAINS APPROXIMATELY 6,898 SQUARE FEET OR 0.16 ACRES MORE OR LESS.

VICINITY MAP



LEGEND:

△	FOUND B.L.M.SECTION MONUMENT AS NOTED
— — — ——— — — —	SECTION LINE
— — — — — — — —	PROTRACTED SECTION LINE
- - - - - - - - - - - - - - - -	TIE LINE
—— — — ——— — — ——	HIGHWAY RIGHT OF WAY LINE

BASIS OF BEARING

THE WEST LINE OF THE SECTION 15, T41N, R9E, WITH ARIZONA STATE PLANE COORDINATE CENTRAL ZONE GRID BEARING OF N 00°10'03" W.

REFERENCES:

R1) NAVAJO GENERATING STATION LANDS;
PUMPING PLANT SITE EXHIBITS 7 & 8
SRP SURVEY DIVISION LAND DEPARTMENT DATED: 04/12/2017

R2) NAVAJO GENERATING STATION LANDS;
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MICHAEL E. FONDREN, RLS
REGISTERED LAND SURVEYOR
RLS NUMBER 35113

GENERAL NOTE

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GREAT SEAL OF THE NAVAJO NATION

WESTERN NAVAJO LECHEE WATERLINE PIPELINE DESIGN

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:
DRAWN: M. BAKER
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FILENAME 15004023 SURVEY-LECHEE WATERLINE.DWG
BC PROJECT NUMBER
CLIENT PROJECT NUMBER 15004023

SURVEY

RESULTS OF SURVEY

DRAWING NUMBER
15004023

SHEET NUMBER
SURVEY 5 OF 5

SECTION 01 55 26

TRAFFIC CONTROL

PART 1 GENERAL

1.01 REQUIREMENTS

A. The Work specified in this Section consists of providing safe and effective work areas, alternate traffic corridors, and to warn, control, protect, and expedite vehicular and pedestrian traffic through the construction zone. It shall be the sole responsibility of the CONTRACTOR to provide for the safety of the traveling public within the limits of the project and on private property. The CONTRACTOR shall provide all labor, equipment, materials and services necessary.

B. CONTRACTOR shall indemnify and hold harmless the OWNER, ENGINEER, and the CONSTRUCTION MANAGER for any safety violation or noncompliance with governing bodies and their regulations, and for accidents, deaths, injuries, or damage at the site during occupancy or partial occupancy of the site by CONTRACTOR's workforce or equipment while performing any part of the Work.

C. In this Section, reference to the Public is to include the OWNER's personnel, representatives, and/or facilities.

D. Traffic control shall meet the requirements of the government agency (i.e., ADOT, etc.) with jurisdiction of the right-of-way in which the Work is completed and as specified in this Section. In the case of conflict between the listed Agency's requirements and as required herein, the requirements affording the greatest protection to the Public and/or OWNER shall apply, as determined by the CONSTRUCTION MANAGER.

E. The CONTRACTOR shall maintain all required traffic control devices and trenches within the right-of-way at all times, 24 hours per day, 7 days per week including nights, holidays, and weekends.

1.02 DEFINITIONS

A. LANE CLOSURE: Lane closure shall be defined as denying any lane or any portion of a lane to traffic. A lane reduced to less than 11 feet is considered a lane closure.

1.03 REFERENCES

A. This Section includes references to the following standards. They are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements affording the greatest protection to the OWNER shall apply, as determined by the CONSTRUCTION MANAGER.

Reference	Title
MUTCD	Manual on Uniform Traffic Control Devices, United States Department of Transportation, Federal Highway Administration (latest edition): herein referred to as MUTCD
ADOT	Arizona Department of Transportation (ADOT) Temporary Traffic Control Design Guidelines – Traffic Engineering Group 2019

1.04 SUBMITTALS

A. Submittals in accordance with the General Conditions and Section 01 33 00.

B. Project-specific Traffic Control Plan shall be submitted by the CONTRACTOR to the respective governmental agency with jurisdiction of the right-of-way for acceptance. Traffic Control Plans within ADOT ROW shall be prepared and stamped by a registered State of Arizona Traffic Engineer.

C. A Traffic Control Plan shall be required for each phase or segment of the construction. Each Traffic Control Plan shall be considered separately.

D. Submit two copies of the approved Traffic Control Plan to the CONSTRUCTION MANAGER within 48 hours of approval by government agencies.

1.05 BARRICADES AND ENCLOSURES

A. Protection of Workmen and Public: CONTRACTOR shall erect and maintain at all times during the prosecution of the Work, barriers and lights necessary for the protection of workmen and the public. CONTRACTOR shall provide suitable barricades, lights, signs, and watchmen at all places where the Work causes obstructions to the normal traffic or constitutes in any way a hazard to the public.

B. Barricades and Lights: CONTRACTOR shall protect all streets, roads, highways, and other public thoroughfares that are partially closed to traffic and use effective barricades that display acceptable warning signs. CONTRACTOR shall locate barricades as required by the government agency controlling the right-of-way in accordance with an approved Traffic Control Plan.

C. Statutory Requirements: CONTRACTOR shall install and maintain all barricades, signs, lights, and other protective devices within rights-of-way in strict conformity with applicable statutory requirements by the government agency having jurisdiction in accordance with an approved Traffic Control Plan.

1.06 TRAFFIC CONTROL DEVICES

A. All traffic control devices not in use, or that will not be used for a period greater than 24 hours, shall be removed by the CONTRACTOR from the work area. The sidewalk area shall not be used at any time to store unused traffic control devices unless the sidewalk is closed, and an approved barricade plan is provided for rerouting pedestrians.

B. CONTRACTOR shall maintain all barricades and other traffic control devices in clean and effective condition and replace devices in poor condition immediately.

C. CONTRACTOR shall begin placing barricades in the direction of traffic and remove them in the direction of opposing traffic.

D. Text message boards: Fixed at each end of the project set and two moveable boards within the project setup area.

1.07 FLAGGERS

A. As may be required by ADOT and respective governmental agency with jurisdiction of the right-of-way to complete the Work.

PART 2 PRODUCTS

2.01 MATERIALS

A. Materials shall conform to the MUTCD, ADOT Standard Specifications and Drawings as applicable, and as specified in this section.

2.02 TEMPORARY STRIPING

A. Temporary pavement marking shall conform to the government agency with jurisdiction of the right-of-way, as applicable.

2.03 TRAFFIC CONTROL PLAN

A. At a minimum, the Traffic Control Plan shall provide, for each phase of the work, the placement and spacing of all traffic control devices (including signs, markings, channelizing devices, lighting devices, flaggers, etc.) and spacing of these meeting the requirements of the MUTCD within the following traffic control areas:
   1. Advance warning signs
   2. Transition areas
   3. Buffer spaces
   4. Work area
   5. Termination areas

B. Additionally, the Traffic Control Plan must clearly show the following minimum information:
   1. Method for protecting excavations, work sites, and school zone crosswalks
   2. Method of barricading at intersections
   3. Driveway access plan
   4. Provisions for emergency vehicle access
   5. All set-up changes to accommodate different phasing of the work
   6. Lane widths and transitions
   7. 24-hour emergency contact information
   8. Business access signs
   9. Sidewalk "closed/cross here" signs, if applicable
   10. No parking signs
   11. Project signs

12. Fresh oil signs, if applicable
13. Duration of traffic control and barricade plan
14. All advance warning signs
15. Lane closures
16. Placement of "double penalty in work zones" warning signs
17. Detour locations
18. Contractor Staging Areas
19. Excavation locations

C. Within 48 hours after installation of new or modified control, CONTRACTOR shall inspect and certify that controls are installed and operating as intended. Certification shall consist of a signed affidavit stating that the traffic control has been inspected and found to be in conformance with the Traffic Control Plan and contract requirements were provided to the government agency with jurisdiction of the right-of-way. A copy of the certification shall be provided to the CONSTRUCTION MANAGER within 48 hours of submittal to government agencies.

D. Review and comment on the Traffic Control Plan by the government agency with jurisdiction of the right-of-way shall in no way relieve the CONTRACTOR of the responsibility for traffic and safety requirements. Such acceptance shall in no way be construed as confirmation of the technical accuracy or adequacy of the contents of the Traffic Control Plan and shall not relieve the CONTRACTOR of the obligation to institute traffic control measures in full compliance with contract requirements and in conformance with local agency requirements.

PART 3 EXECUTION

3.01 GENERAL

A. All traffic control within public rights-of-way shall conform to the requirements of the encroachment permits and traffic control plans approved by the government agency with jurisdiction in the right-of-way.

B. All traffic control on private property shall warn, control, protect, and expedite vehicular and pedestrian traffic through the private property.

C. The CONTRACTOR shall not restrict access to private and public buildings along the pipeline or temporary piping alignment.

D. If, during the execution of the work, the CONTRACTOR determines that the traffic control is not functioning as intended, the CONTRACTOR shall make revisions to the Traffic Control Plan as necessary, provided that the local agencies with jurisdiction have accepted the changes. Submit two copies and digital files of the approved revised Traffic Control Plan to the CONSTRUCTION MANAGER within 48 hours of approval by government agencies.

3.02 TEMPORARY SURFACES

A. Temporary gravel surface shall not be permitted.

B. All temporary detours and/or bypasses shall be hard surfaced with asphalt-concrete pavement (minimum thickness of a 12" base course and 3" asphalt pavement) and maintained in a smooth and usable condition at all times for the duration of the detour and/or bypass.

C. The CONTRACTOR shall be required to provide temporary surfacing of all excavated areas immediately after completing the backfilling of any section of the Work. If permitted by the government agency with jurisdiction of the right-of-way, the CONTRACTOR may be allowed to leave excavations open provided that traffic control devices, approved by the governmental agency maintaining the right-of-way, are in place and maintained, and excavations are covered with steel plates at the close of each working day. The temporary steel plates shall comply with the requirements of the governmental agency controlling the right-of-way.

3.03 TEMPORARY STRIPING

A. Placement of temporary pavement striping shall be by pilot line method and use shall be limited to 14 calendar days and spaced every 40 feet. The double yellow line shall have two pieces of tape side by side with a 4-inch space between and spaced to the above increments.

B. Painted temporary striping shall be 4 inches wide and shall be continuous or intermittent in accordance with the MUTCD. Painted temporary striping shall not be used on the existing pavement or on final wearing course of pavement.

C. Existing pavement markings, either painted or raised pavement markers, which are not applicable or are within the transverse limits of the temporary travel lanes shall be removed to the satisfaction of the CONSTRUCTION MANAGER. Painting over existing markings is not permitted.

END OF SECTION

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SECTION 01 57 23

TEMPORARY STORM WATER POLLUTION CONTROL

PART 1 GENERAL

1.01 DEFINITIONS

A. The Storm Water Pollution Prevention Plan (SWPPP) is defined as the improving of water quality by reducing pollutants in stormwater discharges from the construction site.

B. The Storm Water Pollution Prevention Plan shall be developed in accordance with the EPA guidebook, "Storm Water Management for Construction Activities, Developing Pollution Plans and Best Management Practices" (EPA publication number 823-R-92-005). The guidebook is a reference for information relating to the different methods of stormwater pollution prevention presented in this SWPPP.

C. Waste disposal from the construction site for construction wastes, sanitary wastes, chemicals, and dust abatement shall be conducted per the requirements of the following SWPPP sections.

1.02 SUBMITTALS

A. The CONTRACTOR shall submit an approved SWPPP to the CONSTRUCTION MANAGER.

1.03 CONTRACTOR'S RESPONSIBILITIES

A. The CONTRACTOR shall complete a Storm Water Pollution Prevention Plan (SWPPP) that complies with all state, local, and national requirements.

B. The CONTRACTOR's storage yard and construction trailer shall be located within the confines of the construction staging areas as defined in the Contract Documents. The areas designated for the CONTRACTOR's use shall contain construction materials, chemicals used during construction and their containment, and other waste materials.

C. Construction Wastes: The CONTRACTOR is responsible for proper disposal of all construction wastes. All construction wastes shall be disposed of in a proper manner via use of an on-site dumpster supplied by the CONTRACTOR. The CONTRACTOR shall provide removal services by a licensed solid waste management firm. The dumpster shall be emptied a minimum of once per week or more often if necessary. Burial of construction wastes on-site is not permitted. The CONTRACTOR shall ensure that the CONTRACTOR on-site work crews and subcontractors are trained in the proper manner of disposal for construction wastes. Disposal of solid waste from the construction site shall meet all applicable Federal, State, and local codes.

D. Sanitary Wastes: The CONTRACTOR shall hire a properly licensed sanitary waste management firm for the disposal of the sanitary waste from the construction site, including from the CONTRACTOR's trailers. Disposal of sanitary waste from the construction site shall meet all applicable Federal, State, and local codes.

E. Hazardous Wastes: All hazardous materials used for the construction shall be stored, handled, and applied per the manufacturer's printed instructions and per all applicable

Federal, State, and local codes. The CONTRACTOR shall ensure that the on-site work crews and subcontractors are trained in the proper manner of disposal for hazardous wastes. The disposal of hazardous wastes from the construction site shall be the responsibility of the CONTRACTOR and shall be performed by a licensed hazardous wastes management firm.

F. The construction access to the CONTRACTOR's storage yard shall be stabilized to prevent the removal of sediment from the construction site onto the adjacent property or paved road. The stabilized access roadway shall be wide enough to handle the anticipated truck traffic to and from the construction site.

1.04 MAINTENANCE AND INSPECTION

A. Any erosion control structures and stabilization practices will be inspected by the CONSTRUCTION MANAGER on a weekly basis at a minimum and after any storm event of ½-inch or greater, unless otherwise specified. A copy of the inspection report will be provided to the CONTRACTOR.

B. All erosion control structures and stabilization practices shall be maintained in good working condition throughout the duration of the construction project.

C. Repair of the damage to any erosion control structure shall commence within 24 hours of discovery of the damage.

D. In locations where silt fences are used around catch basins, sediment trapped by the silt fence shall be removed by the CONTRACTOR when one-third of the height of the silt fence is covered by sediment.

E. All areas which undergo temporary and final stabilization with seeding or sodding shall be inspected for lack of growth and bare spots to ensure healthy growth.

F. The inspector of stormwater management controls shall be knowledgeable of the proper construction of the controls, be aware of the requirements of SWPPP, be aware of spill control practices and notification requirements, and maintain clear and accurate inspection reports. A copy of the inspection reports will be maintained and kept on-site with the latest version of the SWPPP and will be provided for the CONTRACTOR's records.

1.05 NON-STORM WATER DISCHARGES

A. Flushing of Pipelines: Pipelines shall be flushed after installation. The CONTRACTOR shall direct flushing water to a nearby storm drain system. The CONTRACTOR shall maintain siltation protection during flushing of the pipelines. If the flushing water is contaminated or if the water is suspected of having been contaminated by a regulated compound, testing may be ordered by the CONSTRUCTION MANAGER to determine contamination. Contamination is defined as having either a pH less than 5.0 or greater than 10.0, evidence of hydrocarbon contamination, or presence of free chlorine residual.

B. If testing is ordered, the OWNER shall pay for the testing. If the testing indicates the water is contaminated and this occurred due to construction activities under the control of the CONTRACTOR, the CONTRACTOR shall reimburse the OWNER for all costs associated with the testing. The OWNER will be the sole judge of whether the flushing water is contaminated. Depending on the type of contamination, the flow shall be

directed to the sanitary sewer system or otherwise disposed of as approved by the CONSTRUCTION MANGER.

C. Dewatering of Uncontaminated Groundwater: Water from dewatering activities during the construction of this project shall be directed to the storm drain system. The CONTRACTOR shall maintain siltation protection during disposal of water from dewatering activities. The CONTRACTOR shall be responsible for obtaining all necessary permits required for the dewatering activities.

D. Irrigation Water: Irrigation water shall be used for boundary landscaping and temporary stabilization seeding. The grading of the area shall be such that the irrigation water is directed to a retention pond or other storm drain system component. Irrigation of landscaped areas and berms shall be such that the irrigation water runoff does not permit washout of the topsoil.

E. Miscellaneous Washdown Water for Pavement: Washdown of structures and pavement shall occur in areas having no sign of contamination of hazardous substances, such as vehicle oil or fuel. Washdown water shall be directed to the storm drain system via proper grading of the site, particularly in the area of the washdown.

F. Equipment Testing: Water from equipment testing shall be discharged to an on-site retention pond if the water is uncontaminated. Water which contains contaminants shall be disposed through the sanitary sewer, via deep injection well located on the utility site, or by another manner depending on the type of contaminant(s). The method of disposal shall be as approved by the CONSTRUCTION MANGER prior to commencement of the equipment testing.

1.06 SPILL PREVENTION

A. Only materials used for this construction project shall be stored on-site. These materials shall be stored in quantities reasonable for use on this project.

B. Materials shall be stored in a neat and orderly fashion in their original containers. The materials shall be protected from the elements.

C. The handling and storage of all materials shall follow the Manufacturer's written instructions, the project Specifications, or applicable governmental codes; whichever is most stringent.

D. Construction material storage containers shall be disposed in a proper manner and, if possible, only after all the contents have been used.

E. The CONTRACTOR shall keep on-site all manufacturers' printed recommendations for the storage, handling, use, and disposal of construction materials.

F. The CONTRACTOR shall inspect the materials storage area on a daily basis to ensure that proper precautions are utilized for material storage.

G. The CONTRACTOR shall maintain an inventory of construction materials stored on-site. The inventory shall be kept on the site and be available for inspection by the CONSTRUCTION MANGER.

H. When transferring or unloading materials, the CONTRACTOR shall ensure that the area is protected from stormwater and that the materials transfer operation shall not cause contamination to stormwater due to runoff from the materials transfer location.

I. During adverse weather, as described in the General Conditions of the Contract Documents, and against the possibility thereof, the CONTRACTOR shall take all necessary precautions to ensure the protection of the construction materials storage area.

J. Hazardous Materials: The following additional precautions shall be followed for hazardous construction materials:

1. Hazardous materials shall be stored separately from non-hazardous material on-site.
2. Products shall remain in their original containers with the original legible product label attached to the container.
3. All products shall be used before disposal of the container.
4. Hazardous materials, including diesel fuel, must be stored in contained areas which are able to contain 150 percent of the volume of the largest container's contents. If the area is not exposed to stormwater, the volume of the containment area shall be 110 percent of the volume of the largest container's contents. Each hazardous material shall be stored in its own containment area. Under no circumstances shall hazardous materials be used or stored within 100-feet of any water supply well, unless specifically permitted by the CONSTRUCTION MANGER and governing Federal, State, or local agency.

   At a minimum, the containment area shall be constructed with dikes and lined with a material resistant to the properties of the hazardous material being contained. Before removal of any stormwater from the containment area, a representative sample of water shall be tested for contamination by the hazardous material stored in that containment area. For example, if the hazardous material is an acid, the pH of the rainwater shall be measured prior to disposal. Disposal of non-contaminated stormwater shall be directed to the nearest storm drain system component. If the stormwater is found to be contaminated, the CONTRACTOR shall follow the spill control measures for this hazardous material.

5. The CONTRACTOR shall keep the Material Safety Data Sheets of all hazardous materials at the Site.

1.07 PRODUCT SPECIFIC PRACTICES

A. Petroleum-Based Products: All on-site vehicles shall be properly maintained and checked for any leaks of fluid or petroleum-based products. If a leak is found, the vehicle shall be repaired immediately or removed from the Site. Diesel fuel shall be considered a hazardous material and shall be stored in a containment area as indicated above.

B. Acid and Base Chemicals: All acid and base chemicals are considered hazardous materials and shall be stored in containment areas as described above. Disposal of acid or base chemicals shall, under no circumstances, occur via the storm drain system, but instead through proper hazardous materials disposal procedures.

C. Paints, Thinners and Solvents: Paints, thinners, and solvents shall be stored in their original containers. Unused paints, thinners, and solvents shall not be dumped on-site or

disposed through the sanitary or storm sewer system. Disposal of unused paints, thinners, and solvents shall be through proper hazardous materials disposal procedures.

D. Fertilizers and Pesticides: Fertilizers and pesticides shall be applied at the minimum rate recommended by the manufacturer. Before spraying any pesticide, a certified pesticide applicator shall receive a permit for spraying of the pesticide in a well field. Storage of fertilizers shall be transferred to sealable containers to prevent spillage and exposure to stormwater. Fertilizer shall be worked into the soil upon application in a landscaped area.

E. Concrete Trucks: The washdown of concrete trucks or the disposal of unused or unacceptable concrete from a concrete truck will be permitted on-site only if the CONTRACTOR has set aside a specific area, with dikes to prevent contact between excess concrete and washdown water or stormwater. After the solids in the area have hardened, the CONTRACTOR shall dispose of the solids in a proper manner as approved by the CONSTRUCTION MANGER.

1.08 SPILL CONTROL PRACTICES

A. In addition to the precautionary practices described above, the following practices shall be followed for spill prevention, control, cleanup, and notification:
   1. Any spills shall be cleaned up immediately.
   2. The CONTRACTOR shall notify the CONSTRUCTION MANGER, OWNER, and all applicable governmental agencies if a spill occurs.
   3. Manufacturer's printed instructions for the cleanup of a spill shall be kept on-site by the CONTRACTOR at all times. The CONTRACTOR's work crews and subcontractors shall be required to be familiar with the requirements and procedures for spill cleanup. Equipment necessary for spill cleanup, such as gloves, metal containers, mops, etc., shall be maintained on-site by the CONTRACTOR. The cleanup equipment shall be kept on-site by the CONTRACTOR during construction activities.
   4. Workers involved in the cleanup of a spill shall be properly protected by protective suits, ventilation masks, goggles, and other necessary equipment, prior to contact with the spilled material.
   5. The CONTRACTOR shall name an employee who will be on-site full-time throughout the duration of the project as the spill cleanup coordinator. The spill cleanup coordinator will be responsible for notifying the proper personnel and agencies of a spill and obtaining the proper equipment and personnel to clean up the spill. The name and phone number where the spill cleanup coordinator can be reached at all times shall be posted on the Site. The spill cleanup coordinator shall be properly trained in spill cleanup procedures.
   6. The CONTRACTOR shall maintain Material Data Safety Sheets (MSDS) on-site for all hazardous materials. The spill cleanup coordinator shall have access to the MSDSs at all times during construction. The CONTRACTOR shall provide the CONSTRUCTION MANAGER with a copy of all MSDSs.
   7. After a spill is contained and cleaned up, a spill occurrence report shall be completed by the on-site inspector and the SWPPP shall be modified to prevent a reoccurrence of a spill.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 31 21 33

TRENCHING, BACKFILLING, AND COMPACTING FOR UTILITIES

PART 1 GENERAL

1.01 SUMMARY

A. Section specifies excavation, trenching, backfilling and compacting for underground utilities and appurtenances.

B. The CONTRACTOR shall provide all labor, materials, equipment, supervision, and testing necessary to construct the improvements.

C. Excavating, trenching, bedding and backfill shall be performed as specified herein and in accordance with the requirements of the Agency with jurisdiction over the rights-of-way in which the Work is performed. In the case of conflict between the Agency's requirements and these specifications, the requirements affording the greatest protection to the OWNER shall apply, as determined by the CONSTRUCTION MANAGER.

D. Work must be performed in accordance with OSHA and all local, state and federal requirements.

1.02 REFERENCES

A. Referenced Standards: This Section incorporates by reference the latest revision of the following documents. These references are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.

1. ASTM International (ASTM):
    a. C33, Standard Specification for Concrete Aggregates.
    b. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3).
    c. D2487, Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).
    d. D4253, Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
    e. D4254, Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
    f. D6938, Standard Test Methods for In-Place Density and Water Content of Soil and Soil Aggregate by Nuclear Method (Shallow Method).

1.03 QUALIFICATIONS:

A. Hire an independent ADOT certified soils laboratory to conduct source materials testing and compaction testing.

1.04 SUBMITTALS

A. Procedures: Section 01 33 00 Submittal Procedures.

B. Product technical data per Section 31 23 00, Earthwork.

C. Contractor's Safety Plan for personnel.

D. Contractor-obtained permits.

E. Qualifications: Name(s) and qualifications of trenching and excavation Competent Person(s). To qualify as a Competent Person, he or she shall have completed the equivalent of 10-hour Arizona OSHA (ADOSH) Construction Safety Training within the last five (5) years.

F. The following information shall be provided prior to beginning Work:
   1. Excavation sheeting, shoring, and bracing system design in accordance with Section 33 05 25.
   2. Qualification information of excavation support system designer (Professional Engineer registered in the State of Arizona) in accordance with Section 33 05 25.

G. Submit report from a testing laboratory verifying that material conforms to the specified gradations or characteristics for pipe zone and trench backfill material including sand, rock refill for foundation stabilization, and water. Include laboratory moisture-density relations of soils.

H. Submit method of compaction in pipe zone including removal sequence of shoring where used.

I. Submit mix designs for controlled low strength material (CLSM, aka flowable fill). Comply with CLSM cold weather placement as specified herein.

J. Submit excavation plans for worker protection and dewatering plans.

1.05 SITE CONDITIONS

A. Plan for and provide work zone traffic control to meet ADOT and governing local agency requirements.

B. Avoid overloading or surcharge a sufficient distance back from edge of excavation to prevent slides or caving.

C. Maintain and trim excavated materials in such manner to be as little inconvenience as possible to public and adjoining property owners.

D. Provide full access to public and private premises to prevent interruption of travel.

E. Protect and maintain benchmarks, monuments or other established points and reference points and if disturbed or destroyed, replace items to full satisfaction of the Owner and controlling agency.

F. Verify location of existing underground utilities and comply with the rules of the Blue Stakes of Arizona 811.

1.06 TESTING FOR COMPACTION

A. Test for compaction as described in Section 31 23 00, Earthwork.

B. Where compaction tests indicate a failure to meet the specified compaction, the Contractor shall take additional tests every 10 feet in each direction until the extent of the failing area is identified. Rework the entire failed area until the specified compaction has been achieved.

1.07 DEFINITIONS

A. PAVEMENT ZONE

1. The pavement zone includes the asphalt concrete and aggregate base pavement section placed over the street zone.

B. ROAD ZONE OR STREET ZONE

1. The road zone (street zone) is the top 12 inches of the trench immediately below the pavement zone in paved areas.

C. TRENCH ZONE

1. The trench zone includes the portion of the trench from the top of the pipe zone to the bottom of the street zone in paved areas or to the existing surface in unpaved areas or 6 inches below existing or finished grade where topsoil is required, unless noted otherwise.

D. PIPE ZONE

1. Unless noted otherwise, the pipe zone shall include the full width of trench from the bottom of the pipe base or bedding to a horizontal level above the top of the pipe, as specified below. Where multiple pipes or conduits are placed in the same trench, the pipe zone shall extend from the bottom of the lowest pipes to a horizontal level above the top of the highest or topmost pipe. Thickness of pipe zone above the highest top of pipe shall be as follows unless otherwise shown on Drawings or otherwise described in the Specifications for the particular type of pipe installed. For electric ducts and duct banks, trench wall clearances and pipe zone dimensions are shown on Drawings.

Pipe Diameter	Thickness of Pipe Zone Above Top of Pipe
6 inches or smaller	6 inches
8 inches and larger	12 inches

E. PIPE BASE OR BEDDING

1. The pipe base or bedding shall be defined as a layer of material immediately below the bottom of the pipe or conduit and extending across the full trench width in which the pipe is bedded. Thickness of pipe base shall be as follows unless otherwise shown on Drawings or otherwise described in the specifications for the particular type of pipe installed.

Pipe Diameter	Thickness of Pipe Base Below Bottom of Pipe
12 inches and smaller	4 inches
14 inches and larger	6 inches

PART 2 PRODUCTS

2.01 MATERIALS

A. Per Section 31 23 00, Earthwork.

B. Marking tape:
   1. Marking Tape (Nondetectable):
      a. Inert polyethylene, impervious to known alkalis, acids, chemical reagents, and solvents likely to be encountered in soil.
      b. Thickness: Minimum 4 mils.
      c. Width: 12 inches.
      d. Color: Blue (for water) and Orange for Cathodic Protection test wires.
      e. Lettering: Minimum 1-inch high, permanent black lettering imprint continuously over entire length.
         1) Text shall be: “High Pressure Waterline Buried Below” for water and “WBWCD CP Test Wires” for cathodic protection wire.
         2) Provide over other utilities exposed if utility owner requires.
         3) Provide over WBWCD cathodic protection wires.
      f. Manufacturers and Products:
         1) Reef Industries; Terra Tape.
         2) Allen; Markline.

PART 3 EXECUTION

3.01 GENERAL

A. Excavate and dispose of all materials of whatever nature encountered, including all obstructions that would interfere with the proper execution and completion of the Work. The removal of these materials shall conform to the lines and grades indicated or ordered.

B. Shoring system designer shall certify in writing that the excavation support systems are constructed per the applicable stamped, dated, and signed excavation support system of the designer including any modifications by Contractor during construction.

3.02 PROTECTION

A. Protect existing surface and subsurface features on-site and adjacent to site. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing items indicated to remain in place.

B. Protect existing utilities from damage or disturbance. Immediately notify utility whose facilities have been damage or disturbed. At utility owner’s option, repair damaged utility or compensate utility owner for completed repairs.

C. Perform trenching and excavating operations in such a manner to protect personnel and the public from the dangers associated with trenching and excavation.

3.03 EXCAVATION

A. Follow applicable health and safety OSHA standards and requirements.

B. Remove rock, soil, organics, pavement, hard pan, loose shale, loose stone, and other obstructions as required to completed the Work or as directed by the Construction Manager.

C. Trench Excavation:
   1. All excavation for pipelines and structures shall be done to the dimensions and levels indicated on the Drawings or specified herein. Excavate to such width outside the lines of the pipeline and structure to be constructed as may be required for proper working methods, the erection of forms and the protection of the Work.
   2. Take care to preserve the native subgrade surfaces in an undisturbed condition. If the Contractor over excavates or disturbs the subgrade surfaces, without written authorization of the Construction Manager, Contractor shall replace such subgrade material with material approved by the Construction Manager in a manner that will show by test an equal subgrade or foundation bearing value with the undisturbed foundation material. No additional payment will be made for the added quantity of materials used because of over excavation.
   3. Inspection of Excavation: Notify the Construction Manager when excavation for the pipeline structure is complete. No geotextiles, imported material layers, forms, reinforcing steel, concrete, or precast structure shall be placed until the excavation subgrade and subsequent import material compacted surfaces have been inspected by the Construction Manager.
   4. Where unsatisfactory material is encountered at the subgrade level below the pipe and structural excavations, it shall be removed and replaced as directed by the Construction Manager and compacted as specified. Payment for removal and replacement of such unsatisfactory material directed by the Construction Manager shall be made in accordance with the appropriate provisions of the Contract Documents.
   5. Perform all excavation regardless of type, groundwater or other conditions per Section 31 23 00, Earthwork. Excavate the trench to the lines and grades shown on Drawings with allowance for pipe thickness, sheeting and shoring if used, and for pipe base or special bedding. If the trench is excavated beyond (horizontally or vertically) that required on Drawings and Specifications, refill any part of the over-excavated trench at no additional cost to the Owner with the same material required in the plans and specs, or foundation stabilization material, where required by the Construction Manager.
   6. Excavate trenches by open cut method (when possible) to depth shown on Drawings and necessary to accommodate work.
      a. Verify location of utilities and protect as necessary.
      b. Support existing utility where proposed work crosses at a lower elevation.
      c. Stabilize excavation to prevent undermining of existing utility.
   7. Open trench limits:
      a. Limit length of open trench to no more than shown on the Drawings or specified.
      b. Reduce limits of open trench as weather conditions or groundwater infiltration dictate.

c. At Owner's discretion, any excavation, trench, or portion of a trench which is opened and remains idle, shall be backfilled, if directed by the Construction Manager.
    1) If backfilled at Construction Manager's direction, trench or excavation may not be reopened until Construction Manager is satisfied that work associated with the trench or excavation will be performed immediately.
d. Trenches left open must be protected from traffic and to prevent public access.
    1) Within unpaved areas limit the length of open trench to 500 feet in advance of pipe laying or the amount of pipe installed in one working day. Complete backfilling not more than 500 feet in the rear of pipe laying.
    2) Open trenches allowed within a traveled way (vehicular or pedestrian) or within 25 feet of a traveled way or occupied structure that is not barricaded off from the public traveled way using ADOT-approved jersey barriers shall be fully backfilled at the end of each day or covered with steel plates or other acceptable covers capable of supporting AASHTO HS-20 traffic loads. Maximum length of trench that may be covered with steel plates shall not exceed 200 feet.

8. Observe following trenching criteria:
    a. Trench size:
        1) Excavate width to provide adequate working room given the work area restrictions.
        2) Refer to drawings for trench maximum width dimensions. Comply with 29CFR Part 1926 Subpart P, Excavations. Trench width at the top of the trench will be limited to the width of the shoring for the excavation and should not undercut adjacent structures and footing. In such case, width of trench shall be such that there is at least 2 feet between the top edge of the trench and the structure or footing.
        3) Cut trench walls vertically from bottom of trench to minimum 1 foot above top of pipe.
        4) Keep trenches free of surface water runoff and groundwater seepage to a minimum 12 inches below the bottom of the trench, as required by Section 31 23 19, Dewatering.
9. Sloping, sheeting, shoring, and bracing of trenches:
    a. Trenches shall have sloping, sheeting, shoring, and bracing conforming with 29CFR1926, Subpart P - Excavations, OSHA requirements, and General Conditions.
    b. Provide shoring protection in accordance with Section 33 05 25, Excavation Support Systems.
        1) Shoring/bracing shall be designed and maintained so that soil does not migrate from behind the structural system creating voids. Shoring/bracing systems shall be removed such that compacted backfill is not disturbed.
        2) Address ground settlement and utility shearing/settlement during installation and removal of shoring. If shoring methods are damaging utilities or services, change shoring methods or provide alternate construction methods so utilities and services are in acceptable and functional condition during and after construction.

10. Trench excavation in backfill and embankment areas:
    a. Conduct trenching in fill areas after primary settlement is achieved and rough grading completed.
    b. Where top of pipe is above existing grade, place and compact fills to 12 inches above top of pipe before excavating trench. Fills above top of pipe may be placed after pipe installation.
    c. Excavate trench in the compacted backfill or embankment. Place pipe base material, install pipe or conduit, and backfill with pipe zone material. Compact backfill above the pipe zone to the same relative compaction as the adjacent embankment as specified in Section 31 23 00, Earthwork.
11. Location of excavated material:
    a. See Drawings for designated stockpile areas.
    b. During trench excavation, place the excavated material only within the working area or within the construction and permanent easements and stockpile areas shown on Drawings unless letters of authorization from land owners (and land owner signed release forms at the end of the Project) are submitted to the Construction Manager authorizing work outside construction limits.
    c. Locate stockpiles for excavated trench materials outside of street rights of way. Do not obstruct any roadways or streets. Conform to federal, state, and local codes governing the safe loading of trenches with excavated material.
    d. Excavated topsoil shall be removed and stored separately. Unless otherwise noted, replace topsoil in the top 6 inches of the trench zone. Strip, stockpile, and spread existing top soils per ADOT Standard Specifications.
    e. Trench spoil piles shall be located at least 5 feet from the tops of the slopes of trenches. Cranes and other equipment shall not be operated on the same side of the trench as the spoil piles.
    f. Where natural cross-slopes exceed 15 degrees, trench spoil shall not be located uphill of the excavation unless stability is assessed through analysis by a registered professional engineer and authorized by the Construction Manager.
    g. Dispose of excess excavated native trench materials per Section 31 23 00, Earthwork.

3.04 PREPARATION OF FOUNDATION FOR PIPE LAYING

A. Regular Trench Excavation:
    1. Excavate minimum of 6 inches below bottom exterior surface of the pipe.
    2. Remove soft, loose, or previously disturbed or otherwise unsuitable material or soil from the bottom of the trench.
    3. Install pipe bedding material.
    4. Form welder access holes in trench bottom (where required).
    5. Support pipe.

B. Over-Excavation and Subgrade Stabilization:
    1. Observe the following requirements when unstable trench bottom materials are encountered.
        a. Notify Construction Manager when unstable materials are encountered.
        b. Remove unstable trench bottom.

c. Backfill to the grade of the bottom of the pipe bedding with flowable fill material and compact.

2. Any over-excavation carried below the grade ordered or indicated or if caused by Contractor's operations or failure to dewater or maintain a dry trench, shall be performed by the Contractor at no additional cost to the Owner.
3. Over excavation, if field-initiated by Construction Manager, shall include the removal of all material that exists directly beneath the pipeline to a width 24 inches (minimum) greater than the pipe outside diameter and to the depth required.
   a. Backfill the trench to subgrade of pipe base with rock refill material for foundation stabilization. Place the foundation stabilization material over the full width of the trench and compact in layers not exceeding 8 inches deep to the required grade. Compact each layer with a track-hoe roller head to the satisfaction of the Construction Manager. Rock refill used by the Contractor for his/her convenience will not receive any additional payment.
   b. Where over excavation and rock refill are not required on Drawings, foundation stabilization work shall be executed only by change order when unacceptably soft (as determined by the Construction manager) subgrade materials are encountered in the trench. In such areas, after the required excavation has been completed, the Construction Manager will inspect the exposed subgrade to determine the need for any additional excavation. It is the intent that additional excavation be conducted in all areas within the influence of the pipeline where unacceptable materials exist at the exposed subgrade.

3.05 INSTALLING BURIED PIPING

A. Store, handle, and install pipe per Section 33 05 25, and per the detailed piping specifications for the particular type of pipe, and per the following:
   1. Handle pipe in such a manner as to avoid damage to the pipe. Do not drop or dump pipe into trenches under any circumstances.
   2. Inspect each pipe and fitting before lowering the buried pipe or fitting into the trench. Inspect the interior and exterior protective coatings. Patch damaged areas in the field with material recommended by the protective coating manufacturer. Clean ends of pipe thoroughly. Remove foreign matter and dirt from inside of pipe and keep clean during and after installation.

B. Grade trench bottom to line and grade allowing for pipe thickness and bedding. Remove hard spots that would prevent a uniform bedding thickness. Place specified bedding thickness over full trench width. Grade and compact the top of bedding before pipelaying to provide firm, continuous, uniform support along full pipe length, and compact to the relative compaction specified. Before laying each section of the pipe, check the grade with a straightedge and correct any irregularities.

C. Excavate bell hole at each joint to permit proper assembly and inspection of entire joint.

D. Line and Grade: As shown on the Drawings.

E. After pipe has been bedded, place pipe zone material simultaneously on both sides of the pipe, in maximum 8-inch lifts, keeping the level of backfill the same on each side. Carefully place the material around the pipe so that the pipe barrel is completely supported and that no voids or uncompacted areas are left beneath the pipe. Use particular care in placing material on the underside of the pipe to prevent lateral movement during subsequent backfilling.

F. Compact each lift to the relative compaction specified herein. Compact trench backfill to the specified relative compaction. Compact by using mechanical compaction, or hand tamping.
   1. Compact material placed within 12 inches of the outer surface of the pipe by hand operated tampers or other equipment that will not damage the pipe.
   2. Do not use any axle-driven or tractor-drawn compaction equipment within 5 feet of building walls, foundations, and other structures.

G. Push the backfill material carefully onto the backfill previously placed in the pipe zone. Do not permit free fall of the material until at least 2 feet of cover is provided over the top of the pipe. Do not drop sharp, heavy pieces of material directly onto the pipe or the tamped material around the pipe. Do not operate heavy equipment over the pipe until at least 3 feet of backfill has been placed and compacted over the pipe.

H. When the pipelaying is not in progress, including the noon hours, close the open ends of pipe. Do not allow trench water, animals, or foreign material to enter the pipe.

I. Remove and dispose of all water entering the trench during the process of pipelaying. Keep the trench dry until the pipelaying and jointing are completed.

J. To avoid jarring pipe off grade, after setting (surveying) pipe to grade, do not MOVE shoring until after joint welding, coating and initial CLSM pipe zone set. After initial set, lift shoring panels to fill all shoring voids with CLSM and bring up backfill uniformly on both side of the pipe.

3.06 BACKFILLING METHODS

A. Do not backfill until tests to be performed on pipe show system is in full compliance with specifications.

B. Backfill shall be placed after all water is removed from the excavation, and the trench sidewalls and bottom have been dried to a moisture content suitable for compaction.

C. Lift trench shields and trench boxes during placement of backfill. Ensure that each lift of backfill material makes full contact with earth trench sides prior to compacting the lift of backfill.

D. Pipe Zone:
   1. The CONTRACTOR shall not proceed with bedding placement or pipe installation in excavated areas until the subgrade has been inspected.
   2. Bedding material shall be placed in the bottom of the trench, leveled and compacted over the full width of the trench. Grade the top of the bedding ahead of the pipe laying to provide a firm, uniform support along the full length of pipe.

3. Backfill material shall be carefully placed and compacted around the pipe to ensure the pipe barrel is completely supported and that no voids or uncompacted areas are left beneath the pipe or below the haunches. Fill material shall be placed simultaneously on both sides of the pipe, keeping the level of backfill the same on each side.
4. Backfill around and over pipe shall be compacted using light hand operated, vibratory compactors and rollers. The use of a jetting and backhoe mounted compaction wheel is prohibited within the pipe zone above the top of the pipe. Care shall be exercised in placing material to prevent movement of the pipe during backfilling and to prevent gouging, denting or crushing of pipe or laterals.
5. Contractor shall be responsible for properly protecting pipe and appurtenances during backfill operations utilizing flowable backfill and providing measures as approved by the Construction Manager to prevent flotation.
6. Avoid displacing pipe joints and appurtenances or causing any horizontal or vertical misalignment, separation, or distortion.
7. Comply with pipe manufacturer's recommendations regarding backfilling and compaction.

E. Trench Zone and Final Backfill:
1. After the Pipe Zone material has been placed, compacted, inspected and accepted by the Construction Manager, backfill in the Trench Zone may proceed.
2. Care shall be exercised in the moving or removal of trench supports to prevent the caving or collapse of the excavation face. Voids between the native material, bedding and backfill must be filled and compacted to the satisfaction of the Construction Manager, ADOT, or Agency with jurisdiction of the right-of-way.
3. Place backfill in lift thicknesses capable of being compacted to density specified, but in no case exceeding 18-inch loose thickness.
4. Comply with pipe manufacturer's recommendations regarding backfilling and compaction.
5. Avoid displacing pipe joints and appurtenances or causing any horizontal or vertical misalignment, separation, or distortion.
6. Backfill to finished grade as shown on the Drawings and as follows:
    a. In paved areas, backfill shall be placed in accordance with requirements for pavement restoration.
    b. In unpaved or landscaped area, place topsoil as necessary to maintain the surface of the backfilled trench level with the adjacent ground surface.

F. Water flushing for consolidation is not permitted unless allowed in writing from Construction Manager.

G. If a moveable trench shield is used during excavation, pipe installation, and backfill operations, the shield shall be moved by lifting the shield free of the trench bottom or as backfill material is being placed and compacted and then moving the shield horizontally. Do not drag trench shields along the trench causing damage or displacement to the trench sidewalls, the pipe, or the bedding and backfill.

H. Cold weather limitations in placing fill and backfill
   1. Unless allowed in the authorized Cold Weather Construction Plan, earth fills and backfills requiring 95 percent or higher relative compaction shall not be placed when either atmospheric temperature, or the temperature of the existing ground or the fill being placed, are below 35 degrees Fahrenheit unless both the existing ground and the fill being placed are both non-frost susceptible materials.
   2. Earth fills and backfills requiring 90 percent or lower relative compaction may be placed when temperatures are below 35 degrees Fahrenheit if the required compaction is achieved. If the required compaction is not achieved, the work shall be removed and re-compacted.
   3. Do not place any fill or backfill materials which require 95 percent, or higher, relative compaction if the excavation or subgrade contains frozen moisture (snow, ice, sleet, etc.), frozen earthen materials, or earthen materials which have been deposited in the excavation due to freezing, thawing, precipitation, or other inappropriate means.
   4. Do not place fill materials which contain frozen moisture (snow, ice, sleet, etc.) except as allowed in the paragraphs above.
   5. Work performed outside the required temperature limitations is subject to rejection, removal and replacement.

I. Remove and replace any trenching and backfilling material which does not meet the Specifications, at the Contractor's expense.

3.07 COMPACTION REQUIREMENTS

A. Unless otherwise shown on Drawings or otherwise described in the Specifications for the particular type of pipe installed, relative compaction in pipe trenches shall be as follows (relative compaction values are per ASTM D1557 and per Section 31 23 00, Earthwork):
   1. Pipe Bedding (except CLSM): 90 percent relative compaction.
   2. Pipe Zone (except CLSM): 90 percent relative compaction.
   3. Backfill in Trench Zone not Beneath Paving: 95 percent relative compaction.
   4. Backfill in Trench Zone and Street Zone in Paved Areas: 95 percent relative compaction.
   5. Backfill in Pavement Zone under Asphalt: 95 percent relative compaction.
   6. Rock Refill for Contractor Over-excavation and for Foundation Stabilization: With a track-hoe roller head to the satisfaction of the Construction Manager.
   7. Topsoil Replaced: Match density of adjacent topsoil.
   8. Beneath Vaults, Manholes, and Other Structures: 95 percent relative compaction.
   9. All backfill placed soil for compaction shall be between 4 percent below and 2 percent above optimum moisture content unless noted otherwise.

3.08 PLACEMENT OF CLSM – NOT USED

3.09 INSTALLING MARKING TAPE

A. Install marking tape where shown in the trench details on Drawings. Secure marking tape to prevent movement during backfill. Marking tape is required over fiber optic ducts, water pipes, and cathodic test wires.

3.10 FIELD QUALITY ASSURANCE

A. Materials Testing:

1. The Contractor shall perform and be responsible for all sampling and testing of materials as required for quality assurance/control of the Work. The Contractor shall pay for all costs associated with the day-to-day quality assurance/control to maintain all material within specified or approved limits. The Contractor shall retain a registered geotechnical engineer, independent from the Contractor, and a testing laboratory, whose qualifications are each acceptable to the Construction Manager by submittal, to perform all compliance testing described below. The Construction Manager may have an independent testing laboratory perform additional tests at no cost to the Contractor, however the Contractor shall provide materials for testing at no additional cost to the Owner.
2. Perform particle size analysis of soils and aggregates in accordance with ASTM C 136 Sieve Analysis of Fine and Coarse Aggregate and ASTM C 117 Materials Finer than No. 200 Sieve in Mineral Aggregate by Washing.
3. Determine sand equivalent in accordance with ASTM D 2419. Unified Soil Classification System: References to soil classification types and standards shall have the meanings and definitions indicated in ASTM D 2487. The Contractor shall be bound by all applicable provisions of ASTM D 2487 in the interpretation of soil classifications.
4. Where soil material is required to be compacted to a percentage of maximum dry density, the maximum dry density at optimum moisture content will be determined in accordance with ASTM D 1557. In the field, determine the density of soil in place by the sand cone method, ASTM D 1556 or by nuclear methods, ASTM D 6938 and D 3017.
5. Apply rock correction factors as applicable. In case the test of the fill or backfill shows non-compliance with the required density, perform remedies as may be required to insure compliance. Subsequent testing to show compliance shall be by a testing laboratory selected by the Construction Manager and paid for by the Contractor.
6. Compaction tests shall be performed for each lift or layer. If nuclear methods are used for in-place density determination, verify the accuracy with one sand cone test, and one maximum laboratory dry density test, for every 2 weeks nuclear tests are used if the backfill material is processed fill or visually consistent. The Construction Manager shall be the sole judge of visual consistency. More sand cone and dry density tests will be required if the backfill material is visually variable. The minimum depth for the sand cone test hole shall be 12 inches. The minimum size shall be 8 inches and size 16/30 or 10/20 silica sand shall be used.
7. Determine laboratory moisture-density relations of soils by ASTM D 1557. If nuclear methods are used for in-place density determination, the compaction test results for maximum dry density and optimum water content shall be adjusted in accordance with ASTM D 4718. This will be required for determination of percent relative compaction and moisture variation from optimum.
8. Determine the relative density of cohesion-less soils by ASTM D 4253 and D 4254. Sample backfill materials by ASTM D 75. "Relative Compaction" is the ratio, expressed as a percentage, of the in-place dry density to the laboratory maximum dry density.

B. Testing Frequency:
   1. After an acceptable compaction procedure is established, compaction tests shall be taken at 300-foot intervals along the trench and at vertical intervals for every other lift at random locations and not necessarily vertical in line. A minimum of two tests will be required for each production day in the trench. Tests shall also be taken near structures, manholes, etc., and where designated by the Construction Manager. Embankment and fill areas shall have at least one compaction test performed each production day and no fewer than one test for each 1,000 cubic yards. Copies of all test reports shall be submitted to the Construction Manager by the next working day.
   2. Location for compaction tests shall be prepared and submitted to the Construction Manager for approval prior to testing.
   3. Compaction and other tests may be taken by the Construction Manager at intervals along the trench as described above to verify compliance with these requirements. Accommodate the Construction Manager in conducting these tests. Provide access and exploratory excavation as required to collect samples or conduct tests. Allot sufficient time during construction for the performance of any such compaction testing.
   4. Compaction shall be deemed to comply with the specifications when no compaction test falls below the specified relative compaction. Pay the costs of any retesting of work not conforming to the specifications. Should the compaction methods used fail to achieve the required degree of compaction, revise compaction method to achieve the required compaction.
   5. If a compaction fails to meet the specified requirements, remove and replace the backfill at proper density or bring the density up to specified level by other means acceptable to the Construction Manager. Pay for all subsequent tests required to confirm and verify that the reconstructed backfill has been brought up to specified density. Frequency of confirmation tests for remedial work shall be double that amount specified for initial confirmation tests.

C. Costs associated with necessary corrective work resulting from failed tests or inspections shall be paid by Contractor. Should any originally scheduled quality assurance test or inspection fail to meet requirements of the Contract Documents, the Contractor shall be responsible for the cost of retesting or re-inspection of Work including inspector's and tester's time and trips.

D. Should any compaction density test or subgrade inspection fail to meet requirements, perform corrective work as necessary to bring the material into conformance with the requirement of the Contract Documents.

END OF SECTION

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SECTION 33 05 07.24

CASING PIPE

PART 1 GENERAL

1.01 DESCRIPTION

A. Scope:

1. This section specifies the minimum requirements for steel casing pipe including the grade of steel, diameter, and cylinder thickness, complete with welded joint ends and pressure grout couplings.

B. Design Requirements:

1. Steel casing shall be provided to the minimum inside diameter, minimum thickness and with the minimum separation between casing and carrier pipe specified.
2. The CONTRACTOR may select a higher yield strength, greater diameter or thickness based on the installation method and forces as determined by the Contractor at no additional cost to the OWNER.

1.02 QUALITY ASSURANCE

A. References:

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM A36/A36M	Standard Specification for Carbon Structural Steel
ASTM A53	SSF Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
ASTM A283	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
ASTM A515	Standard Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate and Higher Temperature Service
ASTM A572	Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

Reference	Title
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
AWWA C206	Field Welding of Steel Water Pipe
AWWA C222	Polyurethane Coatings for Interior and Exterior of Steel Water Pipe and Fittings.
AWS D1.1	Structural Welding Code

B. Welding shall be performed by skilled welders, welding operators and tackers who have adequate experience in the type of materials to be used.
   1. Employ only welders qualified under the provisions of ANSI/AWS D1.1 by an independent, local, approved testing agency not more than 6 months prior to commencing Work on the casing or pipeline.
   2. Perform qualification tests using machines and electrodes similar to those to be used in the Work. Provide welding procedures including longitudinal and girth or special welds for pipe cylinders, casing joint welds, reinforcing plates and grout coupling connections.

1.03 SUBMITTALS

A. Procedures: Section 01 33 00.

B. ACTION SUBMITTALS
   1. A copy of this specification section, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (☐) shall denote full compliance with a paragraph. If deviations from the specifications are requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a written explanation that reasons the requested deviation. The Owner (or Owner's representative) shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for requested deviations to the specification requirements shall be sufficient cause for rejection of the entire submittal with no further consideration.

   2. Provide an affidavit of compliance that the pipe conforms to the requirements of this section.

   3. Provide design calculations stamped by a Professional Engineer registered in the State of Arizona that demonstrate the casing pipe to be provided is suitable for in-service conditions (e.g. earth loads, live loads, groundwater, and appropriate surcharge loading) and capable of sustaining the maximum stresses to be imposed during installation.
      a. For trenchless casings, provide calculations that consider jacking forces, eccentric forces due to steering, BREAKOUT LOADS, and any other loads that may be reasonably anticipated during construction.
      b. Clearly state all load case assumptions and safety factors.

4. Shop Drawings:
    a. Provide Fabrication drawings for the casing pipe including pipe dimensions (spool length, outside, inside diameter, wall thickness, separation between pipe) and welding details.
    b. Provide Shop drawings for grout ports, their location and plug details.

5. Provide Welder Qualifications and field welding procedures including testing.

6. Manufacturer's Product Data and GHS Safety Data Sheets
    a. Shop and Field Applied Linings and Coatings.

7. For prefabricated steel casing pipe:
    a. Submit affidavit of compliance that the proprietary pipe joints/connections are suitable for jacking and can withstand the maximum anticipated jacking load, including breakout loads and joint restraint.

C. INFORMATIONAL SUBMITTALS
1. Provide metallurgical test reports for steel and provide chemical and physical test reports from each sheet of steel that indicate conformance with the specified steel and applicable ASTM requirements.

D. CLOSEOUT SUBMITTALS
1. Provide the surveyed position (x, y, z) of the installed casing at each end based on coordinates as specified by Engineer or Owner. For casings greater than 100 feet in length, provide additional locations at mid-point for each additional 50 feet in length.
2. Provide the casing pipe diameter, thickness, material; lining and coatings, thickness, product and manufacturer; and appurtenances provided, spacers, end seals, etc. with manufacturer and model.

E. SAMPLES [NOT USED]

PART 2 PRODUCTS

2.01 CASING PIPE MATERIAL

A. Casing pipe shall be shop fabricated with interior seams grounded to a smooth finish. Spiral welding of seams will not be allowed.

B. Pipe shall be specifically designed for jacking or ramming as appropriate to the installation method, and accommodating of a cutting shoe, upsizing components (e.g., weld on reaming heads or swivel assembly), and other ancillary tunneling equipment as appropriate to meet the installation requirements.

C. Steel casing pipe shall, as a minimum, conform to the requirements of ASTM A283, Grade B, C, or D. Minimum yield strength shall be 35,000 psi, and minimum tensile strength shall be 60,000 psi. Provide increased yield strength as required for the maximum anticipated jacking load.

D. Casing section joints are to be butt-welded; lap-welded or welded using butt straps in the field providing watertight field joints. Prepare each end of the casing for butt-welding by providing a ¼-inch by 45-degree chamfer on the outside edges.

2.02 CASING PIPE

A. Pipe shall be manufactured to the following dimensional tolerances:
   1. Roundness: Do not allow the pipe diameter as measured along any single plane to vary more than 1 percent from the specified diameter.
   2. Circumference: Do not allow the outside circumference to vary more than ±1 percent from the nominal circumference based on the specified diameter, or ±3/4-inch maximum.
   3. Wall Thickness: Do not allow the actual wall thickness of the steel pipe sections to vary more than 5 percent under the nominal wall thickness specified.
   4. Straightness: Maximum allowable straightness deviation in any 10-foot length is 1/8 inches. Maximum allowable straightness deviation in fabricated section up to 40 feet in length is 3/8 inches.

2.03 LAYING LENGTHS: MAXIMUM PIPE LAYING LENGTHS SHALL NOT BE LIMITED UNLESS SPECIFIED.PREFABRICATED PIPE WITH PROPREITARY CONNECTORS

A. Prefabricated casing yield strength per requirements of Paragraph 2.01.

B. Prefabricated pipe shall be manufactured to the following requirements:
   1. Pipe shall be manufactured by the rolled and welded cylinder method utilizing the double submerged arc welded process in sections of not less than 8 feet long, except as needed to achieve the final finished length of the pipe.
   2. Manufacturer shall test and certify that one reduced section tension test specimen for each lot of 1,000 feet of each size and wall thickness, shows a tensile strength of not less than 95 percent of the minimum strength specified for the grade of steel used.
   3. Connectors shall be suited of the installation application with flush joints and yield strength of the pipe. Connectors shall be full penetration butt-welded square to ends of section and profiled directly on the finished sections at the option of the manufacturer.
   4. Connectors shall be examined prior to shipment to verify that they are free of injurious defects. Damaged or defective section will be rejected, repaired or replaced prior to shipping.

C. Evaluate one reduced section tension test specimen for each lot of 1,000 feet of each size and wall thickness to verify tensile strength of not less than 95 percent of the minimum strength specified for the grade of steel used. Complete pipe manufacturing shall be performed at a single pipe producing facility. Partial production at one facility and the completion at another will not be acceptable.

D. APPROVED PREFABRICATED CASINGS
   1. Permalok or OWNER-approved equal.

2.04 GROUT HOLES

A. Provide grout/lubrication ports for all casings that are installed using trenchless methods that are greater than or equal to 36-inches in diameter.
   1. Provide grout holes with 1-1/2-inch minimum diameter opening using Schedule 40 pipe (ASTM A53) with threaded plugs.
   2. Locate holes near the crown and at both sides halfway up between the invert and springline.
   3. Space holes regularly at 10 feet on center. Longitudinal spacing between the connections may be decreased to provide more extensive grouting, but not less than 5 feet.

2.05 PIPE MARKING

A. Mark legibly in English, using English units, the exterior of casing pipe sections with the manufacturer's name, manufacturer's job number, customer name, pipe outside diameter, pipe wall thickness, and pipe weight per foot.

2.06 [LINING AND COATING]

A. [At a minimum, protect pipe inside and out with factory-applied rust inhibitors, or provided with linings and coating as specified.]

2.07 [CATHODIC PROTECTION]

PART 3 EXECUTION

3.01 DELIVERY, STORAGE AND HANDLING

A. Packaging, handling and shipping shall be in accordance with the manufacturer recommendations.

B. Prior to unloading, inspect each piece visually and note any damage or abnormalities on the carrier's documentation.

C. Use dunnage (or 4'x4's) to stage pieces of casing pipe. Do not lay the pipe on the ground.

D. Do not remove temporary interior casing supports (stulls) until"
   1. Casing pipe is fitted up, aligned, and axially concentric, and tack-welded ready for full penetration welding.
   2. Casing pipe is fitted up, aligned, and axially concentric ready for press-fitting the joint.

3.02 INSTALLATION

A. OPEN CUT
   1. Install the steel casing to line and grade as specified in accordance with Section 31 23 00 EXCAVATION AND FILL and Section 31 21 33, Trenching, Backfilling, And Compacting for Utilities.

B. TRENCHLESS INSTALATION

1. Install the steel casing in accordance with the requirements of [specification for Trenchless Method]

C. Install Prefabricated Steel Casing in accordance with the Manufacturer's requirements. Deviations from the recommended procedures shall be provided in the CONTRACTOR's Installation plan

3.03 WELDING

A. All welding shall be performed by qualified welders in accordance with the requirements of ANSI/AWS D1.1. Welds shall be pre-qualified or qualified by testing.

3.04 TESTING AND INSPECTION

A. Prior to demobilization of trenchless equipment or carrier pipe installation, confirm the installed line and grade of the casing. Provide the surveyed position (x, y, z) of the installed casing for review by the Owner's Representative.

3.05 RECORD DOCUMENTS

A. Provide the surveyed position (x, y, z) of the installed casing at each end based on coordinates as specified by Engineer or Owner.

B. Provide pipe outside diameter (inches), pipe wall thickness (inches), and materials of construction (pipe and protective coatings or linings).

END OF SECTION

SECTION 33 05 25

EXCAVATION SUPPORT SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements for sheeting, shoring, and bracing of trenches greater than five (5) feet in depth. The CONTRACTOR shall provide all labor, equipment, materials, and services necessary.

B. The CONTRACTOR shall design sheeting, shoring, and bracing in accordance with OSHA safety regulations (29 CFR, Part 1926, Subpart P, Excavations) for sloping the sides of excavations, using shoring and bracing, and for using other safety features.

1.02 REFERENCES

A. This Section includes references to the following standards. They are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements affording the greatest protection to the OWNER shall apply, as determined by the CONSTRUCTION MANAGER.

Reference	Title
APWA	Standard Specifications for Municipal Public Works Construction, Prepared by Arizona State Chapter of the American Public Works Association, latest edition.
MUTCD	Manual on Uniform Traffic Control Devices, United States Department of Transportation, Federal Highway Administration (latest edition)
OSHA	OSHA Safety Regulations (29 CFR, Part 1926, Subpart P. Excavations)
ADOT	Arizona Department of Transportation (ADOT) 2021 Standard Specification and Drawings for Road and Bridge Construction

1.03 SUBMITTALS

A. Submittals in accordance with the General Conditions and Section 01 33 00.

B. Submit design calculations, shop drawings, and detail drawings that demonstrate conformity with OSHA regulations and suitability for design loads and installation methodology. The design shall be stamped and signed by a Registered Professional Engineer of the State of Arizona.

C. Submit shop drawings showing dimensions, elevation, and structural details for each utilized excavation support system. Include on the drawings any required construction sequence, loading, testing, monitoring, and re-bracing/removal requirements. The design shall be stamped and signed by a Registered Professional Engineer of the State of Arizona.

D. Submit excavation plans for worker protection in pipe trenches and other excavations. Submittal of excavation plans shall be for records only. Other than to verify that slide rail shoring is being used, submittals will not be reviewed by the Construction Manager as they are the sole responsibility of the Contractor and the Registered Engineer who signs and seals said plans.

E. Informational Submittals:
   1. Trench excavation plan addressing following topics:.
      a. Details of shoring, bracing, sloping, or other provisions for worker protection from hazards of caving ground.
      b. Design assumptions and calculations.
      c. Methods and sequencing of installing excavation support.
      d. Proposed locations of stockpiled excavated material.
      e. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.
      f. Anticipated difficulties and proposed resolutions.
   2. Movement measurement and data and reduced results indicating movement trends.
   3. The excavation support plan and the trench excavation plan shall be sealed by a professional engineer licensed in the State of Arizona.
   4. Stamped Calculations

F. Action Submittals: Name and qualifications of the Professional Engineer(s) registered in the State of Arizona responsible for trench excavation support design.

1.04 DESIGN REQUIREMENTS

A. Design excavation support systems to withstand earth pressures, hydrostatic pressures, bottom heave, equipment loads, applicable traffic and construction loads, and other surcharge loads to allow safe construction without movement or settlement of the ground and to prevent damage to or movement of adjacent structures, streets, and utilities. Design each member or support element with appropriate safety factors.

B. Acceptable excavation support methods include the use of trench boxes, suitable moving support systems, steel sheet pilings, soldier piles and lagging, jet grouted structures, secant pile structures, structural steel wales and struts, liner plates, and timber. If soldier piles are used, insert in predrilled holes. Horizontal strutting below the barrel of a pipe and the use of pipe as support are not acceptable.

C. Provide construction stage loadings for a staged removal of the support system that conforms to the pipe, structure placement, and indicated backfill.

D. Compaction of foundation, bedding, haunching, and backfill shall extend to the undisturbed trench wall during staged removal of the support system.

1.05 QUALITY ASSURANCE

A. Provide surveys to monitor movements of critical facilities.

B. Trench excavation support systems shall be designed by a professional engineer registered in the State of Arizona who has a minimum of 5 years of experience in the design of retaining structures.

PART 2 PRODUCTS

2.01 SHORING PROTECTION

A. Slide rail shoring is required in several locations along the alignment to navigate steep slopes and cross slopes, protect existing buildings and utilities, and cross the highway. Acceptable slide rail shoring suppliers include the following, or equal:
   1. GME (Griswold Machine and Engineering)
   2. Pro-Tec Equipment, Inc
   3. Efficiency Production, Inc.
   4. SHB, Double Slide Rail, Series 750.

B. Support and protect from damage PacifiCorp poles and foundations and protect power lines. Provide PacifiCorp with calculations and construction methods sufficient to obtain PacifiCorp approval. Address clearances from power lines. Provide a copy of the PacifiCorp-approved special shoring and methods to the Construction Manager. Use PacifiCorp-approved shoring and methods within 30 feet of their poles and foundations

C. Structural Steel: ASTM A36 or better, unless otherwise approved.

PART 3 EXECUTION

3.01 GENERAL

A. Design, provide, and maintain shoring, sheeting, and bracing as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed the Work.

B. Before beginning construction, install, and survey monitoring points as required, adequately protect existing structures, utilities, trees, shrubs, and other existing facilities. The repair of or compensation for damage to existing facilities will be at no cost to the Owner.

C. All welding will conform to the applicable provisions of ANSI/AWS D1.1.

D. Provide, place, and maintain supports, shoring, and sheeting as may be required for sides of excavations. Support excavations in a safe manner in accordance with applicable regulatory safety requirements.

E. The construction of sheeting, shoring, and bracing shall not disturb the state of soil adjacent to the trench and below the excavation bottom.

3.02 SEQUENCE

A. Trench excavation shall not be started until the design for trench support has been accepted by the CONSTRUCTION MANAGER.

3.03 TRENCHES

A. For trench excavation exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable local construction safety orders, and OSHA requirements.

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Navajo Regional Office
P.O. Box 1060
Gallup, New Mexico 87301

MEMORANDUM

TO: Supervisory Highway Engineer, Northern Agency

FROM: Supervisory Highway Engineer, Western Navajo

SUBJECT: BIA Route N222 – Application for permission for Utility crossing within BIA Highway Right-of-Way

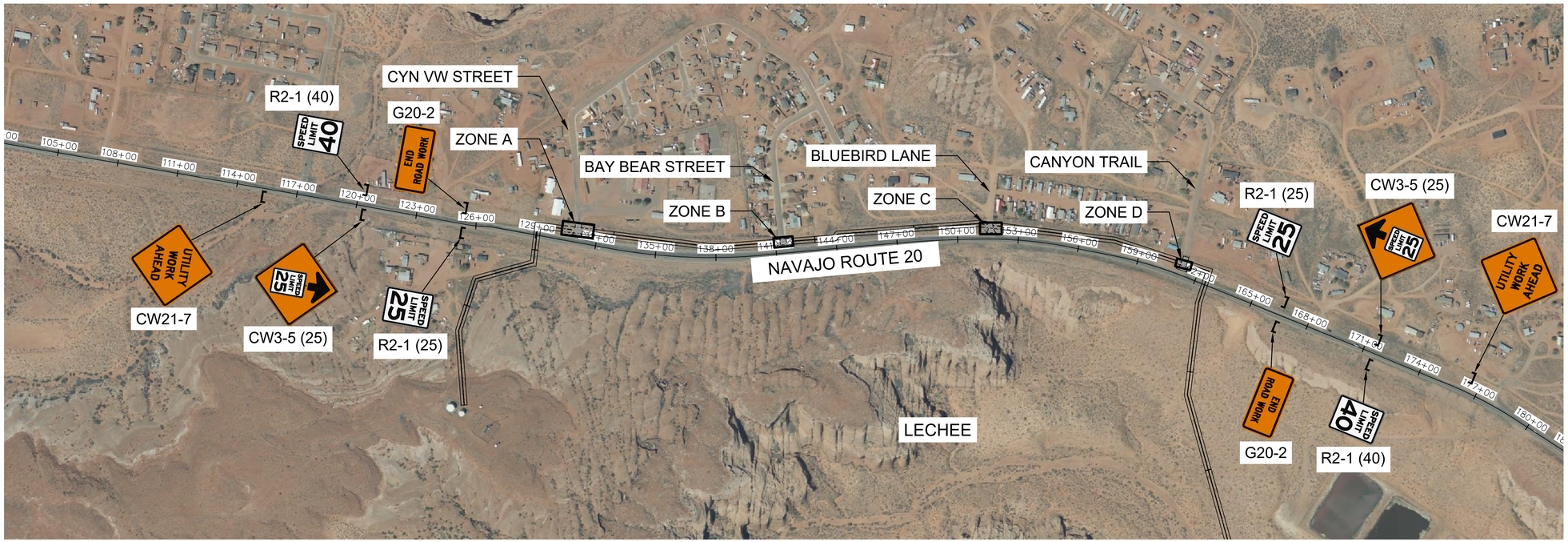
The Bureau of Indian Affairs (BIA), Western Navajo Agency (WNA)-Branch of Transportation (BOT) has received an email from Jason John of the Navajo Nation Department of Water Resources (NNDOWR) on February 21, 2024. The email consisted of an Application for Permission for Utility crossing within BIA Highway Right-of-Way permit package for a proposed water line project in LeChee, Coconino County, Arizona. The proposed crossing is within the BIA Route N20 right of way easement.

WNA-BOT has reviewed the Application for Permission for Utility crossing within BIA Highway Right-of-Way package and finds the package to be complete and approved at the Agency Level. NNDOWR will be sending additional documents required for this permit after the contract has been awarded. The WNA-BOT is forwarding the Utility crossing within the BIA ROW Permit package to NR-DOT for further review and approval.

If you have any questions, please contact Mr. Henry Begay, at (928) 283-2298 or email at [henry.begay@bia.gov]. Thank you.

Henry Begay

Attachments:
WNA-DOT Cover Letter
NNDOWR Cover Letter
Application for Permission for Utility crossing within BIA Highway Right-of-Way
NNDOWR Design Plan and Profile Drawing and Survey
Location Map
SWPP Plan
Environmental Assessment
Cultural Resource Compliance Form
Biological Resource Compliance Form



GENERAL NOTES

1. DRAWING IS SCHEMATIC ONLY AND NOT TO SCALE. SIGN SPACING PER MUTCD REQUIREMENTS.
2. MAINTAIN ADVANCE WARNING SIGNING AND SHOULDER CLOSURE FOR THE DURATION OF THE WORK ADJACENT TO NAVAJO ROUTE 20.
3. SEE SHEETS 2 THRU 5 FOR INDIVIDUAL ZONE CLOSURES.

LEGEND

- WORK AREA
- PORTABLE SIGN
- 3 TYPE III BARRICADE (LIGHTED)
- 2 TYPE II BARRICADE

KEY MAP
PLAN

0 300 600
SCALE IN FEET

PLAN NORTH

Brown AND Caldwell

SALT LAKE CITY, UTAH

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Billings, Montana 59101
406-656-6399

GREAT SEAL OF THE NAVAJO NATION

VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:
DRAWN:
CHECKED:
CHECKED:
APPROVED:

FILENAME
SC-CU-TCP-LECHEE.DWG

BC PROJECT NUMBER
150360

CLIENT PROJECT NUMBER
CO 10232

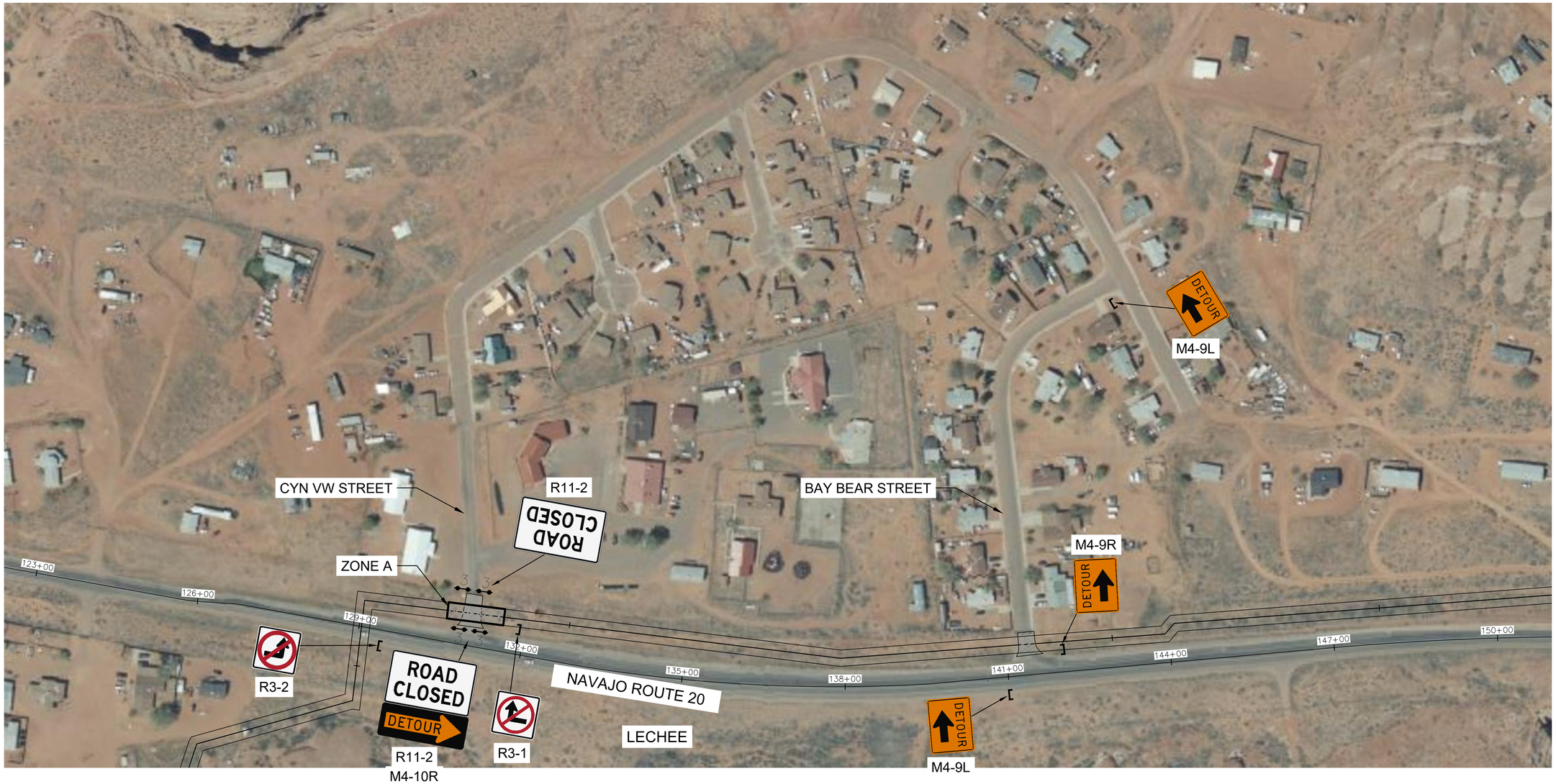
OVERALL SITE MAP, ZONE MAP, AND ADVANCE WARNING SIGNING

DRAWING NUMBER

FIGURE 1

SHEET NUMBER
1 OF 5

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GENERAL NOTES

1. DRAWING IS SCHEMATIC ONLY AND NOT TO SCALE. SIGN SPACING PER MUTCD REQUIREMENTS.

LEGEND

- WORK AREA
- PORTABLE SIGN
- 3 TYPE III BARRICADE (LIGHTED)
- 2 TYPE II BARRICADE

TYPE III BARRICADES (LIGHTED) (TYPICAL CLOSURE)

KEY MAP
PLAN
0 100 200
SCALE IN FEET
PLAN NORTH

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APPROVED:

FILENAME
SC-CU-TCP-LECHEE.DWG

BC PROJECT NUMBER
150360

CLIENT PROJECT NUMBER
CO 10232

ZONE A DETAIL

DRAWING NUMBER
FIGURE 2

SHEET NUMBER
2 OF 5

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GENERAL NOTES

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LEGEND

- WORK AREA
- PORTABLE SIGN
- 3 TYPE III BARRICADE (LIGHTED)
- 2 TYPE II BARRICADE

TYPE III BARRICADES
(LIGHTED)
(TYPICAL CLOSURE)

KEY MAP
PLAN

0 100 200
SCALE IN FEET

PLAN NORTH

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VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

REVISIONS

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DESIGNED:
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FILENAME
SC-CU-TCP-LECHEE.DWG

BC PROJECT NUMBER
150360

CLIENT PROJECT NUMBER
CO 10232

ZONE B DETAIL

DRAWING NUMBER

FIGURE 3

SHEET NUMBER
3 OF 5

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GENERAL NOTES

1. DRAWING IS SCHEMATIC ONLY AND NOT TO SCALE. SIGN SPACING PER MUTCD REQUIREMENTS.

LEGEND

- WORK AREA
- PORTABLE SIGN
- 3 TYPE III BARRICADE (LIGHTED)
- 2 TYPE II BARRICADE

TYPE III BARRICADES
(LIGHTED)
(TYPICAL CLOSURE)

KEY MAP
PLAN

0 100 200
SCALE IN FEET

PLAN NORTH

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VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE

DESIGNED:
DRAWN:
CHECKED:
CHECKED:
APPROVED:

FILENAME
SC-CU-TCP-LECHEE.DWG

BC PROJECT NUMBER
150360

CLIENT PROJECT NUMBER
CO 10232

ZONE C DETAIL

DRAWING NUMBER
FIGURE 4

SHEET NUMBER
4 OF 5

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GENERAL NOTES

1. DRAWING IS SCHEMATIC ONLY AND NOT TO SCALE. SIGN SPACING PER MUTCD REQUIREMENTS.

LEGEND

- WORK AREA
- PORTABLE SIGN
- 3 TYPE III BARRICADE (LIGHTED)
- 2 TYPE II BARRICADE

TYPE III BARRICADES (LIGHTED) (TYPICAL CLOSURE)

KEY MAP
PLAN
0 100 200
SCALE IN FEET
PLAN NORTH

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GREAT SEAL OF THE NAVAJO NATION

VOLUME 3 - LECHEE PUMP STATION NO. 3 AND PIPELINE

REVISIONS		
REV	DATE	DESCRIPTION

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FILENAME	SC-CU-TCP-LECHEE.DWG
BC PROJECT NUMBER	150360
CLIENT PROJECT NUMBER	CO 10232

ZONE D DETAIL

DRAWING NUMBER
FIGURE 5

SHEET NUMBER
5 OF 5

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Exhibit A: Geotechnical Investigation Report

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Wood Environment & Infrastructure Solutions, Inc.
8519 Jefferson Street N.E.
Albuquerque, New Mexico 87113
T: 505-821-1801
www.woodplc.com

June 10, 2021
Wood Job No. 17-517-00016.001

Brown and Caldwell
6975 Union Park Center, Suite 90
Midvale, Utah 84047-4135

RE: GEOTECHNICAL ENGINEERING STUDY
WESTERN NAVAJO PIPELINE / LECHEE PIPELINE
AND BOOSTER PUMP STATION
LECHEE, ARIZONA

Attn: Mr. Steven Brenchley, P.E.

Our Geotechnical Engineering Study Report on the referenced project is enclosed. The report includes the results of test drilling, laboratory analyses and recommended criteria for foundation design, slab support and related earthwork.

Should any questions arise concerning this report, we would be pleased to discuss them with you.

Respectfully submitted,

Wood Environment & Infrastructure Solutions, Inc.

Rosanne Klaus for

Carlton Pine
Geotechnical Specialist

Reviewed by:

CARLO F. EVANGELISTI NEW MEXICO 17392 PROFESSIONAL ENGINEER 6/10/21

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1. INTRODUCTION

This report is submitted pursuant to a geotechnical engineering study made by this firm for the proposed waterline, booster pump stations, and water treatment facility in Lechee, Arizona. The objectives of this study were to evaluate the physical properties of the soils underlying the site and provide recommendations for foundation design, slab support, and related earthwork.

2. PROPOSED CONSTRUCTION

We understand the project to consist of approximately 18,600 linear feet of new waterline, a new single-story concrete masonry unit (CMU) water treatment building, and a new booster pump station. The distribution pipes will be embedded about 4 feet below finished grade.

Should final design details vary significantly from those outlined above, the Project Manager should be notified for review and possible modification of recommendations.

3. INVESTIGATION

3.1 Subsurface Investigation

Twenty-two (22) exploratory boreholes were drilled along the pipeline alignment to depths of 10 feet below existing grade, or auger refusal. Two (2) boreholes were drilled at the booster pump station to a depth of 20 feet. Four (4) boreholes were drilled at the water treatment facility to at a depth of 9 feet, or auger refusal. Site plans, showing the borehole locations, are presented in Appendix A.

Boreholes were advanced with a truck-mounted Central Mine Equipment Company (CME) rotary drill rig, equipped with an 8-inch outer-diameter (O.D.) hollow-stem auger. Standard penetration testing and open-end drive sampling (using a standard-split spoon or a modified sampler with ring liners) was performed at selected intervals. During the drilling, soils were continuously examined, visually classified, and logged. Results of the field study are presented as borehole logs in Appendix B.

During location staking of the borehole locations, the Wood field engineer eliminated three (3) water line boreholes due to terrain and access difficulties and the booster pump station boreholes (BPS-1/BPS-2) had to be adjusted due to terrain issues. The locations were drilled 120 to 155 feet from their planned location. Eliminated and relocated boreholes are noted on the Boring Location Diagram in Appendix A.

3.2 Laboratory Analysis

Moisture content determinations were made on all recovered, open-end drive samples. Dry densities were determined on selected, relatively undisturbed, ring samples. Grain-size analysis and Atterberg limits tests were performed on selected samples to aid in soil classification. Three consolidation/expansion tests were

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performed on a ring samples. Results of laboratory soil testing are presented in Appendix C and noted on the borehole logs.

4. SITE CONDITIONS & GEOTECHNICAL PROFILE

4.1 Site Conditions

The waterline alignment terrain is undeveloped, flat to rolling hills. Vegetation consisted of moderate to heavy growth of native grasses, weeds, shrubs, and sparse cedar trees. Sandstone outcrops were observed throughout the area.

The water treatment facility borehole was located on top of a mesa that was relatively flat and sloped gradually to the west. Vegetation throughout the site consisted of sparse to moderate growths of native grasses, weeds, and shrubs.

Boreholes 20, 21, and 22, were within the existing Navajo Generating Station (NGS) intake pipeline alignment. The pipeline alignment runs approximately 2.5 miles north to south from Lake Powell to the NGS powerplant. Vegetation throughout the site consisted of sparse to moderate growths of native grasses, weeds, and shrubs.

4.2 Geotechnical Profile

The subsurface consisted of sand and silt (SP-SM), clayey sand (SC), and relatively clean sand (SP) overlying sandstone bedrock. The SP-SM is generally was non-plastic, and moderately firm to hard. The clayey-silty-sand was of low plasticity and hard. The SP contained some silt, was fine- to medium-grained, non-plastic, and medium dense to very dense.

The sandstone bedrock, encountered from 2.0 and 10.0 feet below existing grade, was fine-grained, and moderately weathered. The sandstone was typically drillable with the hollow-stem augers, to depths of 10 feet below grade, with exceptions at boreholes B-03 and B-04, with auger refusal at 3 feet below grade surface (bgs); and B-18 and B-19, with auger refusal at 6 feet bgs. The boreholes at the water treatment facility encountered refusal from 3 to 9 feet below grade. Siltstone was encountered at the surface in WTP-1, WTP-2, WTP-3, and WTP-4, resulted in clayey sand from the surface to depths of 2 to 5 feet, indicating the top of moderately weathered siltstone or sandstone.

4.3 Soil Moisture & Groundwater Conditions

Groundwater was not encountered in any of the boreholes. Measured soil moisture contents ranged from 1 to 7 percent.

5. DISCUSSION & RECOMMENDATIONS

5.1 Analysis of Results

Some of the near-surface native soils are soft and moisture sensitive, which are not suitable for foundation materials, unless excavated, moisture conditioned, and recompacted. Detailed recommendations for foundation design are presented in the following sections of this report. The site preparation and moisture-protection provisions are required for the validity of the foundation system recommendations.

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5.2 Foundations – Booster Pump Station and Water Treatment Facility

It is recommended that the booster pump station and Water Treatment Facility be supported on shallow foundations. This includes spread, continuous, and/or monolithic footings and a concrete slab on grade.

The bottom of the foundation footings shall be constructed at uniform depth, on near-surface bedrock or structural fill extending to bedrock, or a minimum of 3.0 feet of structural fill overlying native soils. Structural fill should extend laterally away from the footings a depth equal to ⅔ of the thickness of the fill below the footing or a minimum of 2.0 feet.

A soil bearing pressure of no greater than 3,000 psf is recommended for the design of the shallow foundation system. This pressure may be increased by one-third for total loads, including wind or seismic forces. Table 1 provides minimum foundation dimensions.

Table 1. Minimum Foundation Width

Shallow Foundation Type	Minimum Width (feet)
square	2.0
continuous	1.3
monolithic	1.0

Settlement of footings, designed as recommended, is estimated not to exceed 1 inch. Differential settlement is estimated to be 50% of the total. Increases in moisture content of subsurface soils could create additional movements. The site drainage and moisture protection provisions recommended in Section 5.5 are critical design considerations.

5.3 Lateral Earth Pressures

The ultimate passive soil resistance against edges of footings, stem walls, etc., with properly compacted backfill, is estimated as the force exerted by a fluid of 350 pounds per cubic foot unit weight. Temporary retaining structures should be designed using at-rest earth pressures of 55 pounds per cubic foot (pcf) for rigid walls, and 35 pcf for flexible walls. The type of earth pressure used for design depends on the ability of the wall to yield in response to the earth loads. For walls that are free to translate or rotate (i.e., flexible walls), active pressures could be used in the retained soil. Flexible walls are further defined as being able to displace laterally at least 0.001H, where H is the height of the wall. Standard Plan (cantilevered) reinforced concrete walls and anchored walls are generally considered to be flexible retaining walls. Non-yielding walls should use at-rest earth pressure parameters. Non-yielding walls include integral abutment walls, wall corners, and braced walls (i.e., walls that are cross braced to another wall or structure)., respectively (WSDOT Geotechnical Design Manual [GDM] 15-4.8 p. 15-17. 2020).

An allowable passive pressure equivalent to an earth pressure of 350 pcf is recommended for anchor blocks. No increase in the allowable passive pressure is recommended for "test" conditions.

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5.4 Frictional Resistance

A coefficient of friction of 0.40 is recommended for computing lateral resistance between the base of footings and slabs, and fill soils, in analyzing lateral loads. For smooth surfaced pipelines, such as PVC, a frictional resistance of 0.2 is recommended. For pipelines with somewhat roughened surfaces, such as concrete coated pipes, a coefficient of friction of 0.3 may be used. In addition, concrete anchor blocks may use a coefficient of friction of 0.35. It is not recommended that frictional resistance be combined with passive resistance for stability analysis of pressure pipelines.

5.5 Fill Materials

5.5.1 Structural Fill

Structural fill shall have the following particle-size gradation:

Sieve size (square openings)	Percent passing by dry weight
3 inches	100
¾ inch	70 - 100
No. 4	40 - 100
No. 200	15 - 50

The plasticity index of the material, as determined in accordance with ASTM D 4318, shall not exceed 12. The material shall be free from roots, grass, other vegetable matter, clay lumps, rocks larger than 3 inches in any dimension, or other deleterious materials.

Compaction requirements for structural fill are presented in Section 5.8.1.

5.5.2 Granular Base for Floor Slabs

The use of granular base for structural support of lightly loaded slabs is not considered necessary. However, should it be desired as a working surface, granular base can be placed beneath concrete floor slabs. Where used, granular base should meet the following grading requirements:

Sieve size (square openings)	Percent passing by dry weight
1 inch	100
¾ inch	85-100
No. 4	45-95
No. 200	0-8

The granular base should have a plasticity index of no greater than 3 when tested in accordance with ASTM D4318. The coarse aggregate should have a percent of wear, when subjected to the Los Angeles Abrasion Test (ASTM C131), of no greater than 50.

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Compaction requirements for floor slab granular base are presented in Section 5.8.4.

5.5.3 Granular Pipe Bedding

Pipe bedding shall consist of cohesionless, granular, material that conforms to the following particle-size gradation:

Sieve size (square openings)	Percent passing by dry weight
¾ inch	100
½ inch	90 - 100
⅜ inch	40 -70
No. 4	0 - 15
No. 80	0 - 5

The material shall be non-plastic as determined in accordance with ASTM D 4318. The material shall be free from roots, grass or other vegetable matter, clay lumps, or other deleterious materials.

Compaction requirements for pipe bedding are presented in Section 5.8.3.

5.5.4 Trench Backfill

Material shall consist of soil that conforms to the following physical characteristics:

Sieve size (square openings)	Percent passing by dry weight
No. 4	100
No. 200	0 - 25

The plasticity index of the material, as determined in accordance with ASTM D4318, shall not exceed 12. The trench backfill material shall be free from roots, grass, or other vegetable matter, clay lumps or other deleterious materials. Trench backfill, from the top of pipe bedding to three feet below finished grade, shall be constructed as common fill (see Section 5.8.2). The remaining zone, three feet below finished grade, should be constructed as structural fill (see Section 5.7).

It is anticipated that most of the soils encountered along the alignment will satisfy the requirements for backfill material. Additionally, some blending of native soils may be performed to achieve a greater percentage of materials that satisfy the requirements for backfill.

5.5.5 Site Soil

Site soil from cuts may be used as backfill, provided the material meets the requirements of paragraphs 5.5.1, 5.5.2, 5.5.3, or 5.5.4. The results of this soil study indicate that some of the soils encountered along the

pipeline alignment will meet the requirements for structural fill and backfill materials. Import will likely be required for bedding materials required for the project. Some blending of native materials may be required to meet the requirements for structural fill and trench backfill.

5.5.6 Borrow

When the quantity of suitable material required for backfill or embankments are not available within the limits of the job site, the contractor shall provide sufficient materials to construct the fills and embankments to the lines, elevations and cross sections as shown on the drawings from borrow areas. The contractor shall obtain from owners of said borrow areas, the right to excavate material, shall pay all royalties and other charges involved, and shall pay all expenses in developing the source including the cost of right-of-way required for hauling the material.

5.6 Fill Placement

5.6.1 Foundations

Site preparation shall consist of over-excavating the native soils. Areas for slab foundations shall be over-excavated to provide for a minimum of 1.0 foot of structural fill. Soils at the base of excavation shall be scarified to a depth of 8 inches, or exposure of bedrock. The moisture content of the scarified soil shall be adjusted to 0.0 to +2.0 percent of the modified, optimum moisture content (OMC) and compacted to a minimum of 95 percent of the modified, maximum dry density (ASTM D1557).

5.6.2 Pipeline

Site preparation for the installation of the pipeline shall consist of scarifying the native soil to a depth of 8 inches, watering as necessary to bring the soil within ± 2 percent of modified, OMC. A minimum of 12 inches of granular pipe bedding material shall be placed and compacted along the top and sides of the pipes. A minimum of 6 inches of granular bedding material shall be placed and compacted below the pipes.

5.7 Site Drainage & Moisture Protection

Moisture increases in the native subsoils may increase foundation and floor slab movements. Proper moisture protection measures are a critical design feature. Positive site drainage should be provided during construction and maintained thereafter. The ground surface, within 15.0 feet of the perimeter of structures, should be sloped away at a minimum grade of 4.0 percent. In no case should long-term ponding of water be allowed within 20 feet of the perimeter of the structures. Moisture infiltration beneath the well house, in the event of plumbing leaks, should be considered in the design and inspection of underground water conduits.

All backfill should be compacted as recommended in Section 5.8. This is necessary to minimize infiltration and lateral migration of water along loosely backfilled areas.

5.8 Compaction of Backfill

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5.8.1 Structural Fill

Structural fill soil shall be spread in loose layers, moisture conditioned, and constructed in lifts no greater than eight-inches compacted thickness. Moisture content at the time of compaction shall be within ± 2 percent of modified, optimum moisture content (ASTM D1557). Structural fill shall be compacted a minimum density of 95 percent of modified, maximum dry density.

5.8.2 Common Fill

Fill outside of paved areas, or not required to support structural loadings, shall be constructed in lifts no greater than eight-inches compacted thickness. Moisture content at the time of compaction shall be within ± 2 percent of modified, optimum moisture content (ASTM D1557). Common fill shall be compacted to a minimum density of 90 percent of modified, maximum dry density. Where vibratory compaction equipment is used, it shall be the contractor's responsibility to ensure that the vibrations do not damage nearby buildings or other adjacent properties.

5.8.3 Pipe Bedding Material

Pipe bedding material shall be compacted to a density of not less than 90 percent of the modified, maximum dry density (ASTM D1557). Pipe bedding material shall be constructed in lifts no greater than eight-inches compacted thickness.

5.8.4 Granular Base

Granular base should be compacted to at least 95 percent of the modified, maximum dry density (ASTM D1557), or 70 percent of the maximum relative density (ASTM D4253), as applicable.

5.9 Weather Limitations

Controlled fill shall not be constructed when the atmospheric temperature is below 35 degrees F. When the temperature falls below 35 degrees, it shall be the responsibility of the contractor to protect all areas of completed surface against any detrimental effects of ground freezing by methods approved by the geotechnical engineer. Any areas that are damaged by freezing shall be reconditioned, reshaped and compacted by the contractor in conformance with the requirements of this specification without additional cost to the owner.

5.10 Soil Support and Installation

It is our understanding that the pipeline will be installed using open-trench excavation methods. As indicated by the exploration boreholes, the soils encountered along the alignment should provide adequate support for the pipes. Additional compactive effort will be required where loose soils are encountered at the pipe embedment elevation. Differential settlement in the pipes should not exceed ¾ of an inch for 20-foot pipe sections if the recommended site preparation and backfill requirements outlined are followed.

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5.11 Excavation Conditions and Slopes

The soils throughout the project area that will be encountered during earthwork are generally non-to slightly cemented and can be excavated with normal earth moving equipment. However, the weathered sandstone may require heavy excavation equipment capable of ripping or a hydraulic rock breaker. It should be noted that more dense sandstone bedrock was encountered along the pipeline alignment at Borehole Nos. 8 through 11.

Also, some areas of loose silty sand were noted, which are prone to significant caving and sloughing in open excavations. Groundwater was not encountered during the field study and therefore dewatering efforts are not anticipated to be required.

Based upon the results of our study, the sandy soils encountered along the majority of the alignment classify as OSHA Type C soils and side slopes of the short-term trench excavations should be no steeper than 1.5 to 1 (horizontal to vertical) to a depth of 10 feet. Although not anticipated for this project, trench excavations greater than 20 feet in depth will require a special design by a registered engineer. Short term excavations are those that are open less than 72 hours. Long term trench excavation in Type C soils should be no steeper than 2 to 1 to a depth of 10 feet. These conditions can reduce the overall stability of the excavations leading to a slope failure. The contractor should be prepared to bench excavations beyond the 1.5:1 slope or provide alternate methods of soil support such as trench shields or shoring systems should unstable conditions exist. Cuts in the sandstone bedrock can be made with 1-1/4:1 side slopes.

It appears the alignment has appreciable space to allow for open excavations with the recommended slope angles without impacting nearby structures. However, should the alignment encroach upon existing structures; a shoring system can be used. Trench shields will be the preferred method of trench stabilization, sheet piles or other methods (such as pneumatic or hydraulic systems) may be designed by the contractor's engineer. All shoring, including trench shields, should be designed using lateral loads described in Section 5.3.

It is recommended that a representative of the geotechnical engineer periodically observe temporary cut slopes at the time of excavation to assess their stability. All excavations should be provided with berms or other installations to prevent surface runoff from entering the excavation or impacting the excavation slopes. Construction equipment and materials, including soil stockpiles should not be placed within five feet or one half of the total excavation depth; whichever is greater, from the edge of trench excavations. The exception to this recommendation is the presence of small soil berms constructed for temporary drainage purposes.

The above recommendations for temporary excavation slopes are based on geotechnical considerations only. These recommendations do not consider requirements that might be imposed by OSHA, or other governmental agencies. For all open excavations and trenches OSHA and other governing entities' regulations should be followed in the process of planning.

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6. CONSTRUCTION OBSERVATION & TESTING

Recommendations presented in this report are predicated on continuous observation and testing by the geotechnical engineer during earthwork operations. Verification of recommended excavation, site grading, and required degree of compaction should be documented.

The recommendations presented in this report are based upon a limited number of subsurface samples obtained from sampling locations. The samples may not fully indicate the nature and extent of the variations that exist between sampling locations. For that reason, among others, we recommend Wood be retained to observe earthwork construction. It should be noted if variations or other latent conditions become evident during earthwork construction, it will be necessary for Wood to review these conditions and modify its recommendations.

6.1 INSPECTION & TESTS

6.1.1 Field Inspection & Testing

The owner shall employ the services of a registered, licensed geotechnical engineer for consultation during all controlled earthwork operations. The geotechnical engineer shall provide continuous on-site observation and testing by experienced personnel during construction of controlled earthwork. The contractor shall notify the engineer at least two working days in advance of any field operations of the controlled earthwork, or of any resumption of operations after stoppages. Tests of fill materials and embankments will be made at the following suggested minimum rates:

(1) One field density test for each 1,000 lineal feet of prepared trench per 8-inch lift in nonstructural areas. In structural areas, one field density test for each 250 lineal feet of prepared trench per 8-inch lift.

(2) One field density test in the building area for each 2,500 square feet of original ground surface prior to placing fill.

(3) One field density test for each 500 square feet of prepared subgrade and each 8-inch lift of structural fill below foundations and slabs.

(4) One moisture-density curve for each type of material used, as indicated by sieve analysis and plasticity index.

6.1.2 Report of Field Density Tests

The geotechnical engineer shall submit, daily, the results of field density tests required by these specifications.

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6.1.3 Costs of Tests & Inspection

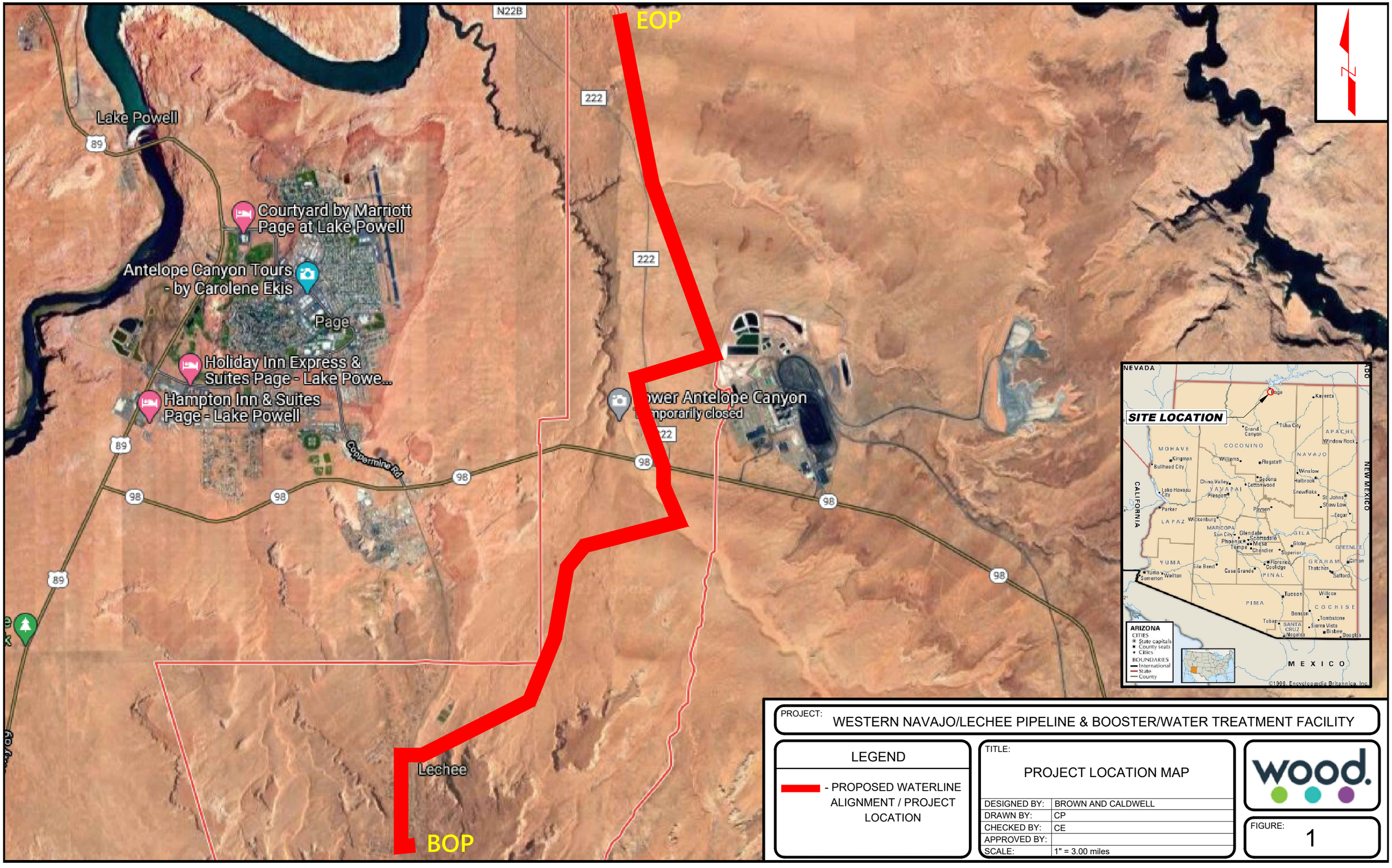
The costs of tests, inspection and engineering, as specified in this section of the specifications, shall be borne by the owner

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Appendix A





PROJECT: WESTERN NAVAJO/LECHEE PIPELINE & BOOSTER/WATER TREATMENT FACILITY

LEGEND

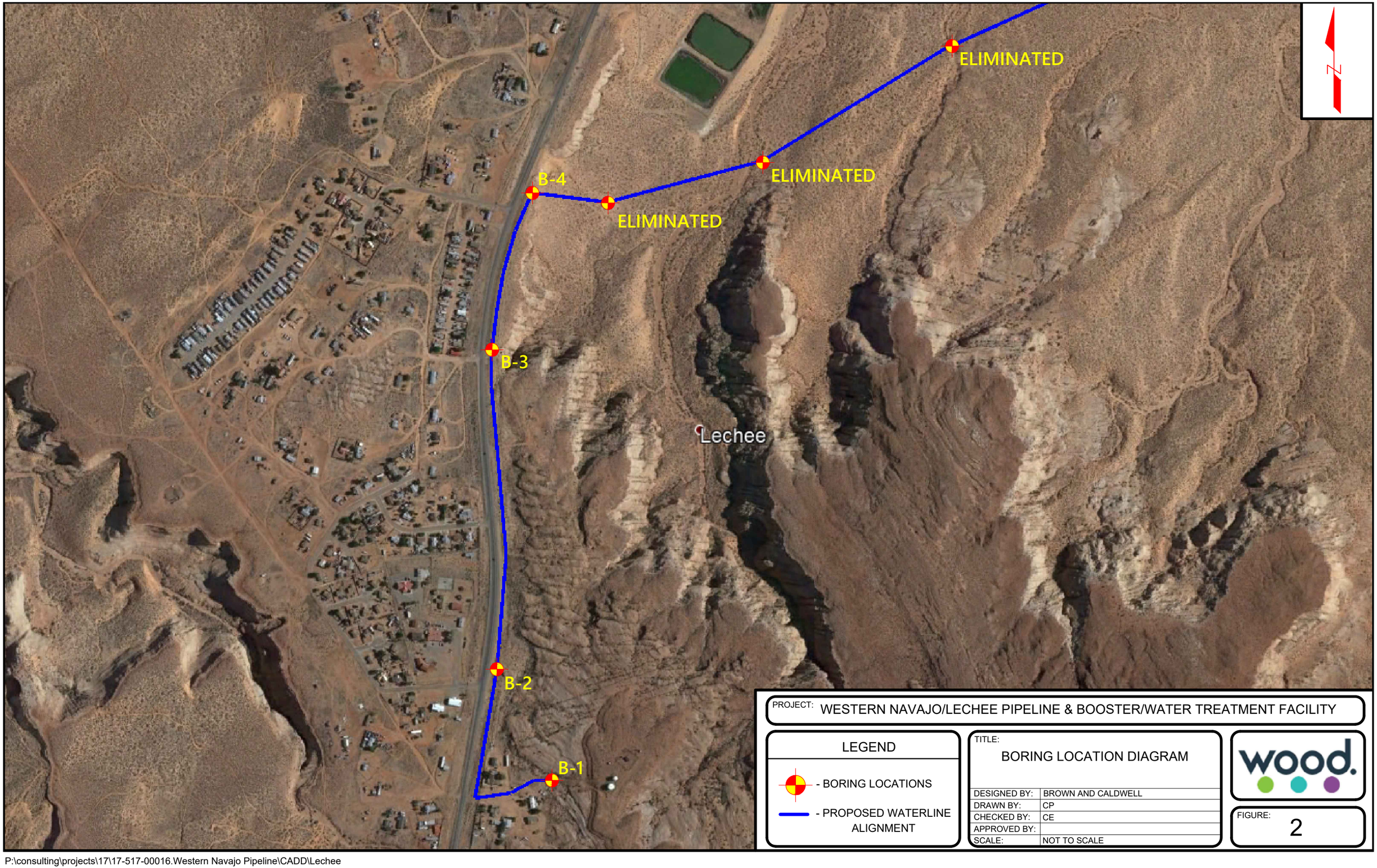
- PROPOSED WATERLINE ALIGNMENT / PROJECT LOCATION

TITLE: PROJECT LOCATION MAP

DESIGNED BY:	BROWN AND CALDWELL
DRAWN BY:	CP
CHECKED BY:	CE
APPROVED BY:	
SCALE:	1" = 3.00 miles

FIGURE: 1

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PROJECT: WESTERN NAVAJO/LECHEE PIPELINE & BOOSTER/WATER TREATMENT FACILITY

LEGEND

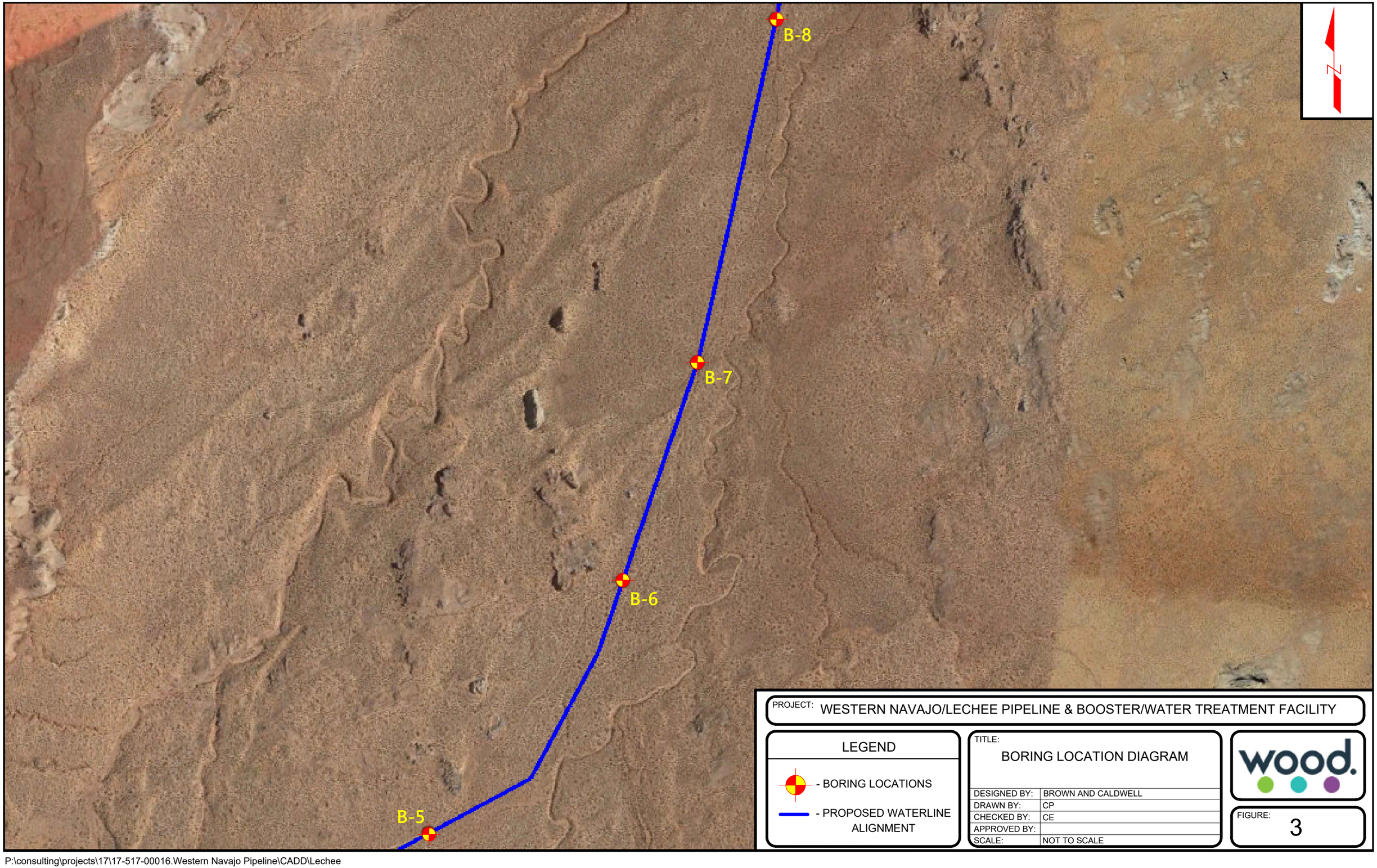
- BORING LOCATIONS
- PROPOSED WATERLINE ALIGNMENT

TITLE: BORING LOCATION DIAGRAM

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CHECKED BY:	CE
APPROVED BY:	
SCALE:	NOT TO SCALE

FIGURE: 2

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PROJECT: WESTERN NAVAJO/LECHEE PIPELINE & BOOSTER/WATER TREATMENT FACILITY

LEGEND

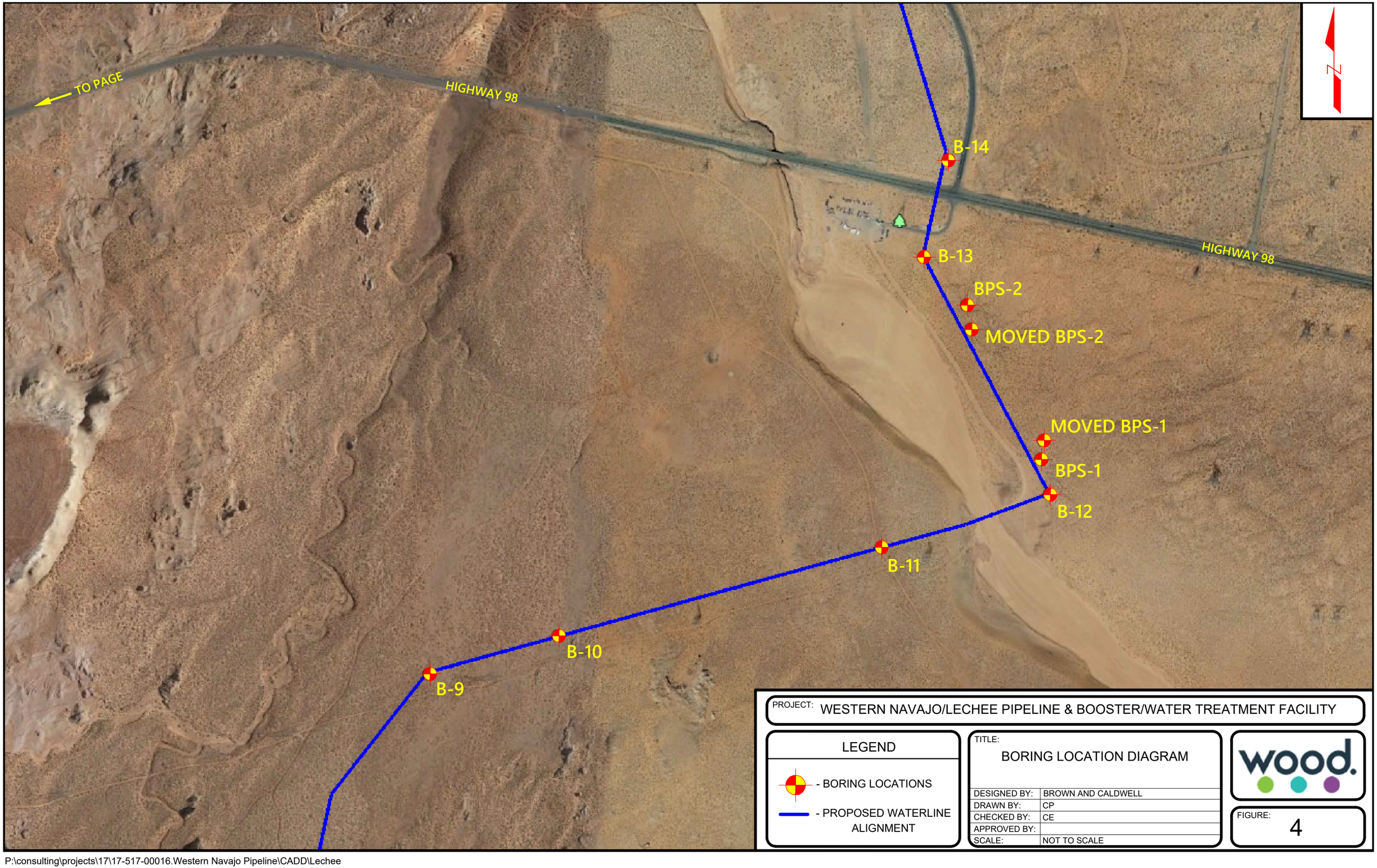
- BORING LOCATIONS
- PROPOSED WATERLINE ALIGNMENT

TITLE: BORING LOCATION DIAGRAM

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FIGURE: 3

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PROJECT: WESTERN NAVAJO/LECHEE PIPELINE & BOOSTER/WATER TREATMENT FACILITY

LEGEND

- BORING LOCATIONS
- PROPOSED WATERLINE ALIGNMENT

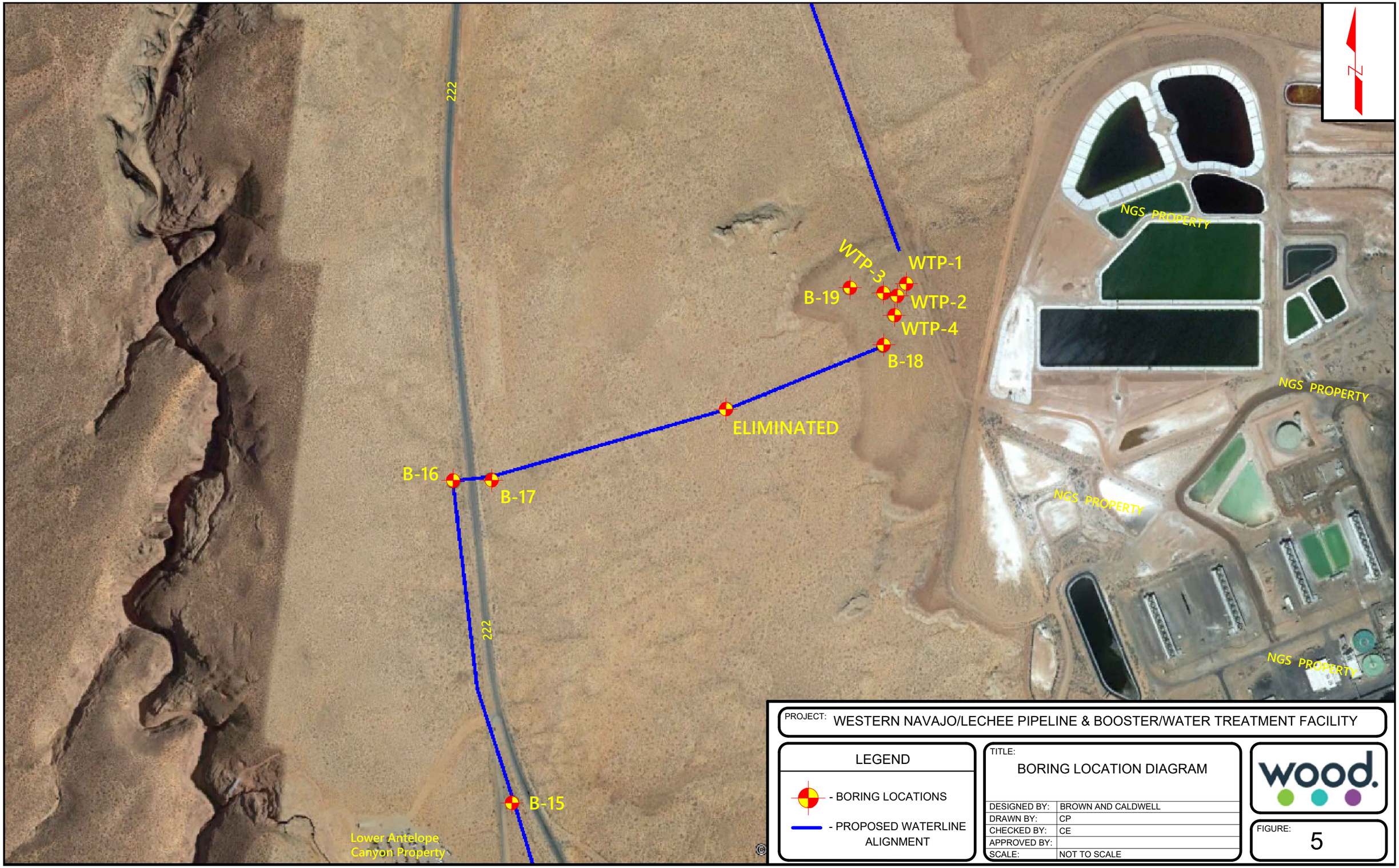
TITLE: BORING LOCATION DIAGRAM

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FIGURE: 4

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PROJECT: WESTERN NAVAJO/LECHEE PIPELINE & BOOSTER/WATER TREATMENT FACILITY

LEGEND

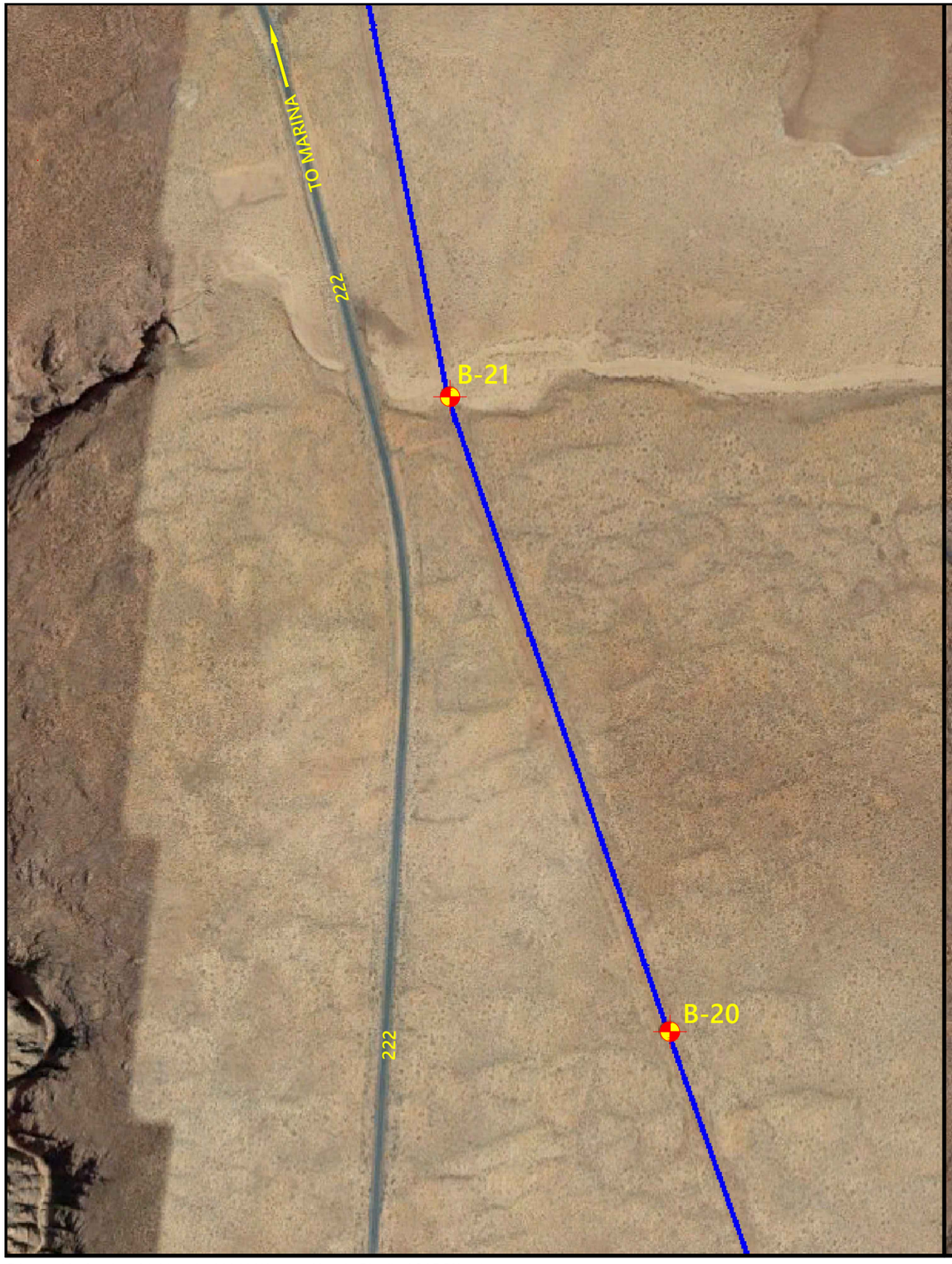
- BORING LOCATIONS
- PROPOSED WATERLINE ALIGNMENT

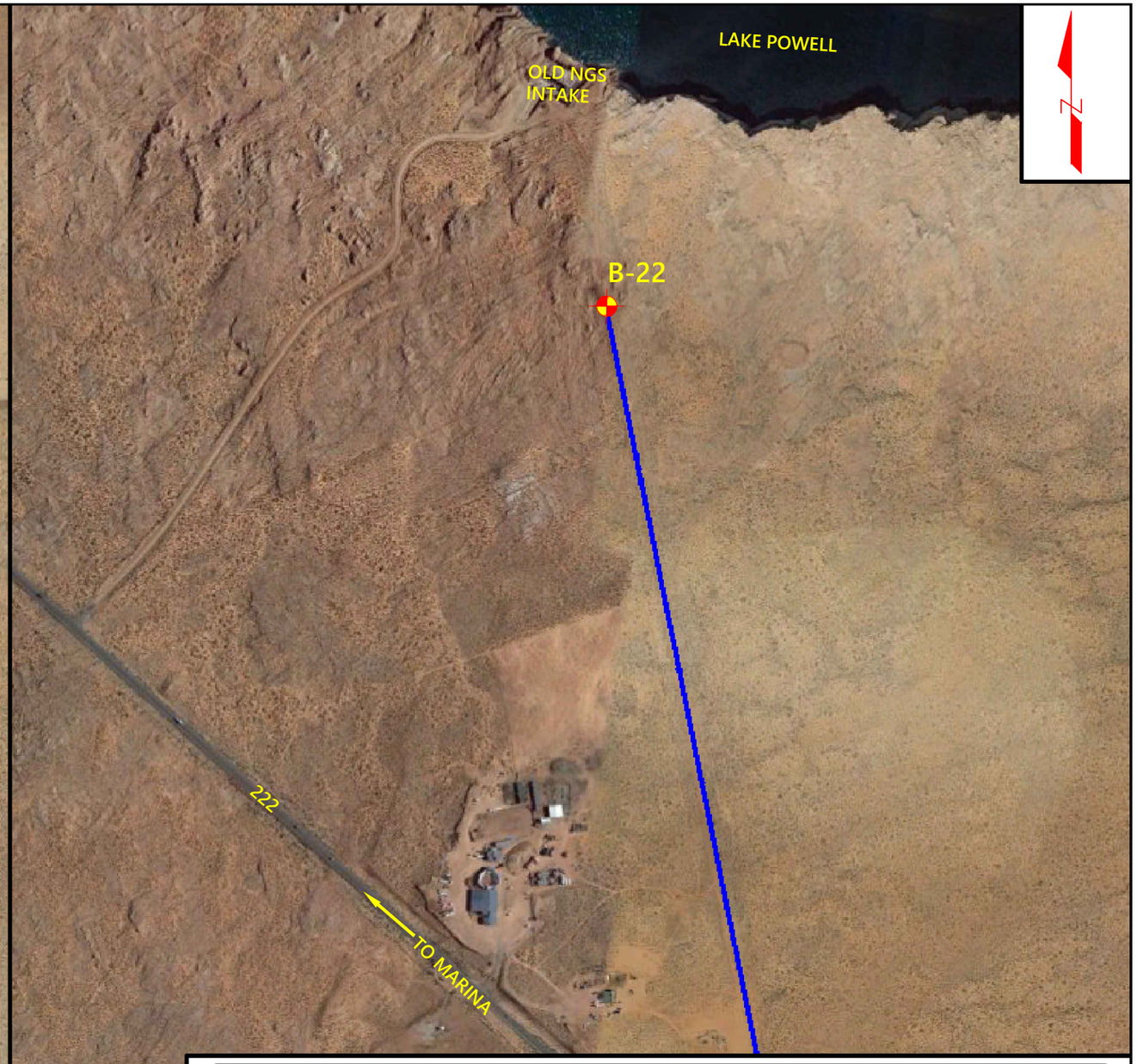
TITLE: BORING LOCATION DIAGRAM

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FIGURE: 5

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PROJECT: WESTERN NAVAJO/LECHEE PIPELINE & BOOSTER/WATER TREATMENT FACILITY

LEGEND

- BORING LOCATIONS
- PROPOSED WATERLINE ALIGNMENT

TITLE: BORING LOCATION DIAGRAM

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FIGURE: 6

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Appendix B



PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-01

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A				SM	medium dense	**SILTY SAND** fine grained, trace gravel to 3/4", sub-angular, yellowish red, non-plastic
				SS	50/4"		2			
								SANDSTONE	strong	**SANDSTONE** strong, slightly weathered, yellowish brown, fine to medium grained
5				SS	50/3"		4			
				SS	50/3"		5			
10				SS	50/4"		6			
										Stopped auger at 10.0' Stopped sampler at 10.3'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-02

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A				SP-SM	loose	**SAND WITH SILT** predominantly fine grained, yellowish red, non-plastic
							SANDSTONE		strong	**SANDSTONE** strong, slightly weathered, yellowish brown to tan, fine grained
				SS	50/3"		2			
5				SS	50/4"		4			
				SS	50/3"		6			
10				SS	50/2"		3			Stopped auger at 10.0' Stopped sampler at 10.1'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-03

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SC	loose	**SAND WITH SILT** predominantly fine grained, yellowish red, non-plastic
				SS	50/2"		1			
										Refusal at 3.0' Due to sandstone
5										
10										
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-04

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A				SP-SM	loose to medium dense	**SAND WITH SILT** predominantly fine grained, trace gravel to 3", sub-angular, yellowish brown, non-plastic,
				SS	50/3"		6			
5										Refusal at 4.0' Due to sandstone
10										
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-05

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	loose to medium dense	**SAND WITH SILT** fine to medium grained, yellowish brown, non-plastic
				SS	19		1			
5				SS	19		1			
				SS	20		1			
10				SS	50/3"		1	SANDSTONE	very strong	**SANDSTONE** slightly weathered, yellowish brown, fine grained
										Stopped auger at 10.0'
										Stopped sampler at 10.75'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-06

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	loose to medium dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	18		1			
5				SS	26		2			
				U	14	107	1			
10				SS	19					
										Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-07

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A				SP-SM	medium dense	**SAND WITH SILT** predominantly fine grained, yellowish brown, non-plastic
				SS	18		1			
5				U	9		1		loose to medium dense	
				SS	14		1			
10				SS	18		1			
										Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-08

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	loose to medium dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	18		1			
5				SS	12		1			
				U	16	104	1			
10				SS	14		1			
										Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-09

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	loose to medium dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	14		1			
5				SS	17		1			
				SS	9		1		loose to medium dense	
10				SS	11		1			
										Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-10

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	medium dense to dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	16		2			
5				SS	34		2			
								SANDSTONE	medium strong to strong	**SANDSTONE** highly weathered, yellowish brown, non-plastic
				SS	50/2"		0			
10				SS	50/3"		0			Stopped auger at 10.0' Stopped sampler at 10.2'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-11

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A			1	SP-SM	medium dense to loose	**SAND WITH SILT** predominantly fine grained, yellowish brown, non-plastic
				SS	13		1			
5				SS	15		2			
				SS	9		2			
10				U	3	109	2			Stopped auger at 10.0' Stopped sampler at 11.0'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-12

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	medium dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	14		1			
5				SS	13		1			
				SS	36		1			with gravel, sub-round
10				SS	19		1			
										Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-13

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A			1	SP	loose	**SAND** fine grained, yellowish brown, non-plastic
								SANDSTONE	strong	**SANDSTONE** fine to medium grained, slightly weathered, yellowish brown, non-plastic
				SS	50/6"		1			
5				SS	50/3"		1			
				SS	50/2"		1			
10				SS	50/2"	NR				Stopped auger at 10.0' Stopped sampler at 10.1'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-14

JOB NO. 17-517-00016.01 **DATE** 2/23/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SW	loose to medium dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	15		1			
5				SS	22		1			
				SS	15		1			
10				SS	14		1			
										Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-15

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	loose to medium dense	**SAND WITH SILT** fine to medium grained, yellowish brown, non-plastic
				SS	14		1			
5				SS	8		1			
				U	10	106	5			
10				SS	12		1			
										Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-16

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A			1	SP-SM	dense to medium dense	**SAND WITH SILT** fine to medium grained, yellowish brown, non-plastic
				SS	41		2			
5				SS	25		2			
				U	13	112	1			
10				SS	15		1			
										Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-17

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A			1	SP-SM	medium dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	23		1			
5				SS	20		1			
				SS	14		1			
10				U	6	111	1			Stopped auger at 10.0' Stopped sampler at 11.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

	DEPTH	HOUR	DATE
▽	None		2/23/2021
▼			

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-18

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A				SP-SM	loose	**SAND WITH SILT** fine grained, trace gravel, sub-round, red, non-plasic
								SILTSTONE	strong	**SILT STONE** trace gravel, moderately weathered, dark red
				SS	60		4			
5				SS	50/3"		5			
										Refusal at 6.0' Due to Silt stone
10										
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-19

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	loose to medium dense	**SAND WITH SILT** fine grained, trace sandstone fragments, yellowish brown, non-plastic
								SANDSTONE	strong	**SANDSTONE** slightly weathered, fine to medium grained, yellowish brown
				SS	50/5"		2			
5				SS	50/4"		4			
										Refusal at 6.0' Due to Sandstone
10										
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-20

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A			4	SC	very dense to medium dense	**CLAYEY SAND** with gravel to 3", trace cobbles, fine to medium grained, yellowish brown, medium plasticity
				SS	22		2			
5				SS	11		1	SP	medium dense	**SAND** fine to medium grained, brown, non-plastic
				SS	11		1			
10				SS	50/6"		2			Sandstone at the bottom
										Stopped auger at 10.0'
										Stopped sampler at 10.5'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-21

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	medium dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	12		1			
5				SS	8		2			
				SS	18		1			
								SANDSTONE	strong	**SANDSTONE** slightly weathered, yellowish brown, fine to medium grained
10				SS	50/5"		1			
										Stopped auger at 10.0' Stopped sampler at 10.4'
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. B-22

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SC	pervious excavated area - medium dense	**CLAYEY SAND** fine to medium grained, with gravel to 3", dark red, non-plastic
				SS	16		1			
5				SS	6		1			
								FILL	loose	**FILL-SAND** medium grained, tan, non-plastic, possible pipe cover material
										Terminated boring due to fill material.
10										
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. BPS-1

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	medium dense to dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	14		1			
5				SS	14		1			
				U	22	110	1			
10				SS	32		1			
15				SS	22		2			
								SANDSTONE	medium strong	**SANDSTONE** highly weathered, yellowish brown, medium grained, non-plastic
20				SS	27		1			
										Stopped auger at 20.0' Stopped sampler at 21.5'

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. BPS-2

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SP-SM	loose to medium dense	**SAND WITH SILT** fine grained, yellowish brown, non-plastic
				SS	9		1			
5				SS	12		1			
				U	13	113	1			with gravel, sub-round
10				SS	22		1			
								SANDSTONE	Medium strong	**SANDSTONE** highly weathered, yellowish brown, medium grained, non-plastic
15				SS	50/2"		1			
20				SS	50/1"					Stopped auger at 20.0' Stopped sampler at 20.1'

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. WTP-1

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SILTSTONE	Weak to strong	**SILTSTONE** moderately weathered, course gravel, dark red
			SS	SS	50/2		1			
										Refusal at 3.0' Due to Siltstone
5										
10										
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. WTP-2

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				A			3	SC	loose	**CLAYEY SAND** fine grained, yellowish brown, low plasticity
				SS	61		2			
5				SS	50/6"		4	SANDSTONE	medium strong to strong	**SANDSTONE** moderately weathered, medium grained, dark red, non-plastic
								SILTSTONE	strong	**SILTSTONE** slightly weathered, fine grained, dark red
				SS	50/5"		7			
10										Refusal at 9.0' Due to Siltstone
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. WTP-3

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SC	loose	**CLAYEY SAND** fine grained, yellowish brown, low plasticity
				SS	50/1"		2			
										Refusal at 3.0' Due to Sandstone
5										
10										
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

PROJECT Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, AZ

BORING NO. WTP-4

JOB NO. 17-517-00016.01 **DATE** 2/24/21

LOCATION See Boring Location Diagram
DRILLING CO. EDI
RIG TYPE CME-75
BORING TYPE 6" H.S.A
SURFACE ELEV. N/A

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/ft. 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SC	loose	**CLAYEY SAND** fine grained, with gravel to 3", yellowish brown, low plasticity
				SS	26		5	SILTSTONE	medium strong to strong	**SILTSTONE** slightly weathered, fine grained, dark red
5				SS	50/9"	121	3			
				SS	50/5"		6			
10										Refusal at 9.0' Due to Siltstone
15										
20										

GEOTECH_BH 17-517-00016.1WESTERN NAVAJO PIPELINE LECHEE WATERLINE.GPJ RANT 2017.GDT 4/8/21

GROUNDWATER

DEPTH	HOUR	DATE
None		2/23/2021

SAMPLE TYPE

A - Auger cuttings; NR-No Recovery
SS - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. Thin-walled Shelby Tube

Appendix C

'Wood' is a trading name for John Wood Group PLC and its subsidiaries

Client: Brown & Caldwell Consultants
PO Box 8045
Walnut Creek, CA 94596

Attention: Julia Pierson

Project Name: Western Navajo Pipeline Phase I
Lechee Waterline Exploration/Lake Powell Intake WNP Re

Project Manager: John Leeper

Report Date: March 29, 2021

Project #: 17-517-00016.01
Work Order #: 1
Sampled By: Carlton Pine
Date Sampled: 2/24/2021

Sieve Analysis (ASTM C117-17/C136-14)
Plasticity Index (ASTM D4318-17)
Soil Classification (ASTM D2487-17)

SOILS / AGGREGATES

Lab Number	Sample Location	Soil Class.	L.L.	P.I.	D10	D20	D30	D50	D60	D70	CC	CU	Cmu
21-0069-005	B-1 @ 0-4'	SM	NV	NP	0	0.080	0.093	0.127	0.148	0.273	0	0	3.405
21-0069-010	B-2 @ 0-5'	SP-SM	NV	NP	0	0.083	0.095	0.124	0.141	0.209	0	0	2.518
21-0069-024	B-7 @ 0-7'	SP-SM	NV	NP	0.078	0.099	0.125	0.185	0.22	0.261	0.907	2.809	2.641
21-0069-041	B-11 @ 0-7'	SP-SM	NV	NP	0.079	0.103	0.134	0.198	0.236	0.282	0.96	2.997	2.747
21-0069-049	B-13 @ 0-2'	SP-SM	NV	NP	0.082	0.104	0.132	0.19	0.223	0.263	0.94	2.712	2.528
21-0069-062	B-16 @ 0-5'	SP-SM	NV	NP	0.075	0.091	0.11	0.161	0.198	0.243	0.808	2.625	2.676
21-0069-067	B-17 @ 0-5'	SP-SM	NV	NP	0.077	0.096	0.119	0.18	0.219	0.267	0.834	2.839	2.79
21-0069-076	B-20 @ 0-5'	SC	30	16	0	0	0	0.133	0.288	1.693	0	0	0
21-0069-082	B-22 @ 5.0'	SP	NV	NP	0.307	0.331	0.357	0.414	0.446	0.480	0.929	1.454	1.452
21-0069-087	WTP-2 @ 0-5'	SC	25	9	0	0	0.074	0.144	0.193	0.256	0	0	0
21-0069-094	BPS-1 @ 7.5'	SP-SM	NV	NP	0.086	0.12	0.159	0.228	0.273	0.326	1.07	3.153	2.722
21-0069-100	BPS-2 @ 7.5'	SP	NV	NP	0.091	0.127	0.165	0.238	0.287	0.37	1.041	3.150	2.904

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

Wood.
8519 Jefferson St. NE
Albuquerque, NM 87113
Tel 5058211801
Fax 5058217371
www.woodplc.com

Client: Brown & Caldwell Consultants
PO Box 8045
Walnut Creek, CA 94596

Attention: Julia Pierson

Project Name: Western Navajo Pipeline Phase I
Lechee Waterline Exploration/Lake Powell Intake WNP Re

Project Manager: John Leeper

Report Date: March 29, 2021

Project #: 17-517-00016.01
Work Order #: 1
Sampled By: Carlton Pine
Date Sampled: 2/24/2021

Sieve Analysis (ASTM C117-17/C136-14)
Plasticity Index (ASTM D4318-17)
Soil Classification (ASTM D2487-17)

SOILS / AGGREGATES

				Sieve Sizes																			Sieve Result are as Percent Passing.
Sample Location	**Soil Class.**	**L.L.**	**P.I.**	**#200**	**#100**	**#50**	**#40**	**#30**	**#16**	**#10**	**#8**	**#4**	**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1 1/4"**	**1 1/2"**	**2"**	**2 1/2"**	**3"**	**6"**	**12"**	**Lab Number**
B-1 @ 0-4'	SM	NV	NP	15	61	71	75	79	86	93	95	98		100											21-0069-005
B-2 @ 0-5'	SP-SM	NV	NP	11	64	76	80	83	88	96	97	100													21-0069-010
B-7 @ 0-7'	SP-SM	NV	NP	7.4	38	78	92	99	99	100															21-0069-024
B-11 @ 0-7'	SP-SM	NV	NP	7.5	34	73	91	98	99	100															21-0069-041
B-13 @ 0-2'	SP-SM	NV	NP	5.2	36	77	94	99	99	100															21-0069-049
B-16 @ 0-5'	SP-SM	NV	NP	8.8	47	80	92	98	99	99	99	100													21-0069-062
B-17 @ 0-5'	SP-SM	NV	NP	7.9	41	75	90	98	99	100															21-0069-067
B-20 @ 0-5'	SC	30	16	38	52	60	63	65	68	71	72	77		86	95	100									21-0069-076
B-22 @ 5.0'	SP	NV	NP	1.2	2	6	51	99	100																21-0069-082
WTP-2 @ 0-5'	SC	25	9	30	51	75	82	86	89	90	90	92		96	100										21-0069-087
BPS-1 @ 7.5'	SP-SM	NV	NP	5.1	27	65	84	94	97	99	100														21-0069-094
BPS-2 @ 7.5'	SP	NV	NP	3.7	25	62	75	82	84	86	87	94		99	100										21-0069-100

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

Wood.
8519 Jefferson St. NE
Albuquerque, NM 87113
Tel 5058211801
Fax 5058217371
www.woodplc.com

wood.

Client: Brown & Caldwell Consultants
PO Box 8045
Walnut Creek, CA 94596

Attn: Julia Pierson

Project Name: Western Navajo Pipeline Phase I
Lechee Waterline Exploration/Lake Powell Intake WNP Re

Report Date: March 30, 2021

Project #: 17-517-00016.01
Report #: 2380
Work Order #: 1
Sampled By: Carlton Pine
Date Sampled: 2/24/2021

Project Manager: John Leeper

SOILS / AGGREGATES

MOISTURE CONTENT OF SOIL (ASTM D2216-19) AND IN-SITU DENSITY

Lab #	Color & Type of Material	Sample Source	Test Method	Oven Temp. (C)	Mass less than Min Req.	Material Type *	Moisture (%)	Dry Density (pcf)
21-0069-001	See Boring Log	B-1 @ 2.5'	B	110	☐	☐	1.7	
21-0069-002	See Boring Log	B-1 @ 5.0'	B	110	☐	☐	3.6	
21-0069-003	See Boring Log	B-1 @ 7.5'	B	110	☐	☐	5.3	
21-0069-004	See Boring Log	B-1 @ 10.0'	B	110	☐	☐	6.4	
21-0069-005	See Boring Log	B-1 @ 0-4'	B	110	☐	☐	1.6	
21-0069-006	See Boring Log	B-2 @ 2.5'	B	110	☐	☐	1.6	
21-0069-007	See Boring Log	B-2 @ 5.0'	B	110	☐	☐	4.1	
21-0069-008	See Boring Log	B-2 @ 7.5'	B	110	☐	☐	6.4	
21-0069-009	See Boring Log	B-2 @ 10.0'	B	110	☐	☐	2.9	
21-0069-010	See Boring Log	B-2 @ 0-5'	B	110	☐	☐	2.1	
21-0069-011	See Boring Log	B-3 @ 2.5'	B	110	☐	☐	1.2	
21-0069-012	See Boring Log	B-4 @ 2.5'	B	110	☐	☐	5.5	
21-0069-013	See Boring Log	B-5 @ 2.5'	B	110	☐	☐	0.9	
21-0069-014	See Boring Log	B-5 @ 5.0'	B	110	☐	☐	0.9	
21-0069-015	See Boring Log	B-5 @ 7.5'	B	110	☐	☐	1.2	
21-0069-016	See Boring Log	B-5 @ 10.0'	B	110	☐	☐	0.8	
21-0069-017	See Boring Log	B-6 @ 2.5'	B	110	☐	☐	1.1	
21-0069-018	See Boring Log	B-6 @ 5.0'	B	110	☐	☐	1.5	
21-0069-019	See Boring Log	B-6 @ 7.5'	B	110	☐	☐	1.2	106.9
21-0069-020	See Boring Log	B-7 @ 2.5'	B	110	☐	☐	0.9	
21-0069-021	See Boring Log	B-7 @ 5.0'	B	110	☐	☐	0.9	
21-0069-022	See Boring Log	B-7 @ 7.5'	B	110	☐	☐	0.9	
21-0069-023	See Boring Log	B-7 @ 10.0'	B	110	☐	☐	0.9	
21-0069-024	See Boring Log	B-7 @ 0-7'	B	110	☐	☐	0.7	
21-0069-025	See Boring Log	B-8 @ 2.5'	B	110	☐	☐	1.3	
21-0069-026	See Boring Log	B-8 @ 5.0'	B	110	☐	☐	0.8	
21-0069-027	See Boring Log	B-8 @ 7.5'	B	110	☐	☐	0.7	103.5
21-0069-028	See Boring Log	B-8 @ 10.0'	B	110	☐	☐	1.0	
21-0069-029	See Boring Log	B-9 @ 2.5'	B	110	☐	☐	0.7	
21-0069-030	See Boring Log	B-9 @ 5.0'	B	110	☐	☐	1.2	
21-0069-031	See Boring Log	B-9 @ 7.5'	B	110	☐	☐	1.1	

***Sample contains more than one type of material.**

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

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8519 Jefferson St. NE
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Client: Brown & Caldwell Consultants
PO Box 8045
Walnut Creek, CA 94596

Attn: Julia Pierson

Project Name: Western Navajo Pipeline Phase I
Lechee Waterline Exploration/Lake Powell Intake WNP Re

Report Date: March 30, 2021

Project #: 17-517-00016.01
Report #: 2380
Work Order #: 1
Sampled By: Carlton Pine
Date Sampled: 2/24/2021

Project Manager: John Leeper

SOILS / AGGREGATES

MOISTURE CONTENT OF SOIL (ASTM D2216-19) AND IN-SITU DENSITY

Lab #	Color & Type of Material	Sample Source	Test Method	Oven Temp. (C)	Mass less than Min Req.	Material Type *	Moisture (%)	Dry Density (pcf)
21-0069-032	See Boring Log	B-9 @ 10.0'	B	110	☐	☐	1.0	
21-0069-033	See Boring Log	B-10 @ 2.5'	B	110	☐	☐	2.1	
21-0069-034	See Boring Log	B-10 @ 5.0'	B	110	☐	☐	2.4	
21-0069-035	See Boring Log	B-10 @ 7.5'	B	110	☐	☐	0.4	
21-0069-036	See Boring Log	B-10 @ 10.0'	B	110	☐	☐	0.4	
21-0069-037	See Boring Log	B-11 @ 2.5'	B	110	☐	☐	1.0	
21-0069-038	See Boring Log	B-11 @ 5.0'	B	110	☐	☐	1.7	
21-0069-039	See Boring Log	B-11 @ 7.5'	B	110	☐	☐	2.2	
21-0069-040	See Boring Log	B-11 @ 10.0'	B	110	☐	☐	1.5	108.9
21-0069-041	See Boring Log	B-11 @ 0-7'	B	110	☐	☐	1.0	
21-0069-042	See Boring Log	B-12 @ 2.5'	B	110	☐	☐	1.1	
21-0069-043	See Boring Log	B-12 @ 5.0'	B	110	☐	☐	0.8	
21-0069-044	See Boring Log	B-12 @ 7.5'	B	110	☐	☐	1.2	
21-0069-045	See Boring Log	B-12 @ 10.0'	B	110	☐	☐	1.1	
21-0069-046	See Boring Log	B-13 @ 2.5'	B	110	☐	☐	0.5	
21-0069-047	See Boring Log	B-13 @ 5.0'	B	110	☐	☐	0.8	
21-0069-048	See Boring Log	B-13 @ 7.5'	B	110	☐	☐	0.8	
21-0069-049	See Boring Log	B-13 @ 0-2'	B	110	☐	☐	0.6	
21-0069-050	See Boring Log	B-14 @ 2.5'	B	110	☐	☐	0.8	
21-0069-051	See Boring Log	B-14 @ 5.0'	B	110	☐	☐	1.1	
21-0069-052	See Boring Log	B-14 @ 7.5'	B	110	☐	☐	1.0	
21-0069-053	See Boring Log	B-14 @ 10.0'	B	110	☐	☐	1.1	
21-0069-054	See Boring Log	B-15 @ 2.5'	B	110	☐	☐	1.0	
21-0069-055	See Boring Log	B-15 @ 5.0'	B	110	☐	☐	1.2	
21-0069-056	See Boring Log	B-15 @ 7.5'	B	110	☐	☐	5.1	105.5
21-0069-057	See Boring Log	B-15 @ 10.0'	B	110	☐	☐	1.3	
21-0069-058	See Boring Log	B-16 @ 2.5'	B	110	☐	☐	1.5	
21-0069-059	See Boring Log	B-16 @ 5.0'	B	110	☐	☐	2.3	
21-0069-060	See Boring Log	B-16 @ 7.5'	B	110	☐	☐	1.1	112.2
21-0069-061	See Boring Log	B-16 @ 10.0'	B	110	☐	☐	1.0	
21-0069-062	See Boring Log	B-16 @ 0-5'	B	110	☐	☐	1.1	

***Sample contains more than one type of material.**

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Attn: Julia Pierson

Project Name: Western Navajo Pipeline Phase I
Lechee Waterline Exploration/Lake Powell Intake WNP Re

Report Date: March 30, 2021

Project #: 17-517-00016.01
Report #: 2380
Work Order #: 1
Sampled By: Carlton Pine
Date Sampled: 2/24/2021

Project Manager: John Leeper

SOILS / AGGREGATES

MOISTURE CONTENT OF SOIL (ASTM D2216-19) AND IN-SITU DENSITY

Lab #	Color & Type of Material	Sample Source	Test Method	Oven Temp. (C)	Mass less than Min Req.	Material Type *	Moisture (%)	Dry Density (pcf)
21-0069-063	See Boring Log	B-17 @ 2.5'	B	110	☐	☐	1.4	
21-0069-064	See Boring Log	B-17 @ 5.0'	B	110	☐	☐	1.3	
21-0069-065	See Boring Log	B-17 @ 7.5'	B	110	☐	☐	0.9	
21-0069-066	See Boring Log	B-17 @ 10.0'	B	110	☐	☐	0.9	110.5
21-0069-067	See Boring Log	B-17 @ 0-5'	B	110	☐	☐	0.9	
21-0069-068	See Boring Log	B-18 @ 2.5'	B	110	☐	☐	4.3	
21-0069-069	See Boring Log	B-18 @ 5.0'	B	110	☐	☐	4.6	
21-0069-070	See Boring Log	B-19 @ 2.5'	B	110	☐	☐	2.1	
21-0069-071	See Boring Log	B-19 @ 5.0'	B	110	☐	☐	4.2	
21-0069-072	See Boring Log	B-20 @ 2.5'	B	110	☐	☐	2.3	
21-0069-073	See Boring Log	B-20 @ 5.0'	B	110	☐	☐	1.1	
21-0069-074	See Boring Log	B-20 @ 7.5'	B	110	☐	☐	1.0	
21-0069-075	See Boring Log	B-20 @ 10.0'	B	110	☐	☐	1.5	
21-0069-076	See Boring Log	B-20 @ 0-5'	B	110	☐	☐	4.2	
21-0069-077	See Boring Log	B-21 @ 2.5'	B	110	☐	☐	1.3	
21-0069-078	See Boring Log	B-21 @ 5.0'	B	110	☐	☐	1.5	
21-0069-079	See Boring Log	B-21 @ 7.5'	B	110	☐	☐	1.9	
21-0069-080	See Boring Log	B-21 @ 10.0'	B	110	☐	☐	1.1	
21-0069-081	See Boring Log	B-22 @ 2.5'	B	110	☐	☐	0.9	
21-0069-082	See Boring Log	B-22 @ 5.0'	B	110	☐	☐	0.6	
21-0069-083	See Boring Log	WTP-1 @ 2.5'	B	110	☐	☐	0.9	
21-0069-084	See Boring Log	WTP-2 @ 2.5'	B	110	☐	☐	1.5	
21-0069-085	See Boring Log	WTP-2 @ 5.0'	B	110	☐	☐	4.1	
21-0069-086	See Boring Log	WTP-2 @ 7.5'	B	110	☐	☐	6.6	
21-0069-087	See Boring Log	WTP-2 @ 0-5'	B	110	☐	☐	3.3	
21-0069-088	See Boring Log	WTP-3 @ 2.5'	B	110	☐	☐	1.5	
21-0069-089	See Boring Log	WTP-4 @ 2.5'	B	110	☐	☐	5.4	
21-0069-090	See Boring Log	WTP-4 @ 5.0'	B	110	☐	☐	3.4	121.4
21-0069-091	See Boring Log	WTP-4 @ 7.5'	B	110	☐	☐	5.9	
21-0069-092	See Boring Log	BPS-1 @ 2.5'	B	110	☐	☐	0.9	
21-0069-093	See Boring Log	BPS-1 @ 5.0'	B	110	☐	☐	0.6	

***Sample contains more than one type of material.**

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Project Name: Western Navajo Pipeline Phase I
Lechee Waterline Exploration/Lake Powell Intake WNP Re

Report Date: March 30, 2021

Project #: 17-517-00016.01
Report #: 2380
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Sampled By: Carlton Pine
Date Sampled: 2/24/2021

Project Manager: John Leeper

SOILS / AGGREGATES

MOISTURE CONTENT OF SOIL (ASTM D2216-19) AND IN-SITU DENSITY

Lab #	Color & Type of Material	Sample Source	Test Method	Oven Temp. (C)	Mass less than Min Req.	Material Type *	Moisture (%)	Dry Density (pcf)
21-0069-094	See Boring Log	BPS-1 @ 7.5'	B	110	☐	☐	0.6	109.9
21-0069-095	See Boring Log	BPS-1 @ 10.0'	B	110	☐	☐	1.0	
21-0069-096	See Boring Log	BPS-1 @ 15.0'	B	110	☐	☐	1.5	
21-0069-097	See Boring Log	BPS-1 @ 20.0'	B	110	☐	☐	1.3	
21-0069-098	See Boring Log	BPS-2 @ 2.5'	B	110	☐	☐	1.0	
21-0069-099	See Boring Log	BPS-2 @ 5.0'	B	110	☐	☐	1.1	
21-0069-100	See Boring Log	BPS-2 @ 7.5'	B	110	☐	☐	0.5	112.7
21-0069-101	See Boring Log	BPS-2 @ 10.0'	B	110	☐	☐	1.3	
21-0069-102	See Boring Log	BPS-2 @ 15.0'	B	110	☐	☐	1.1	

***Sample contains more than one type of material.**

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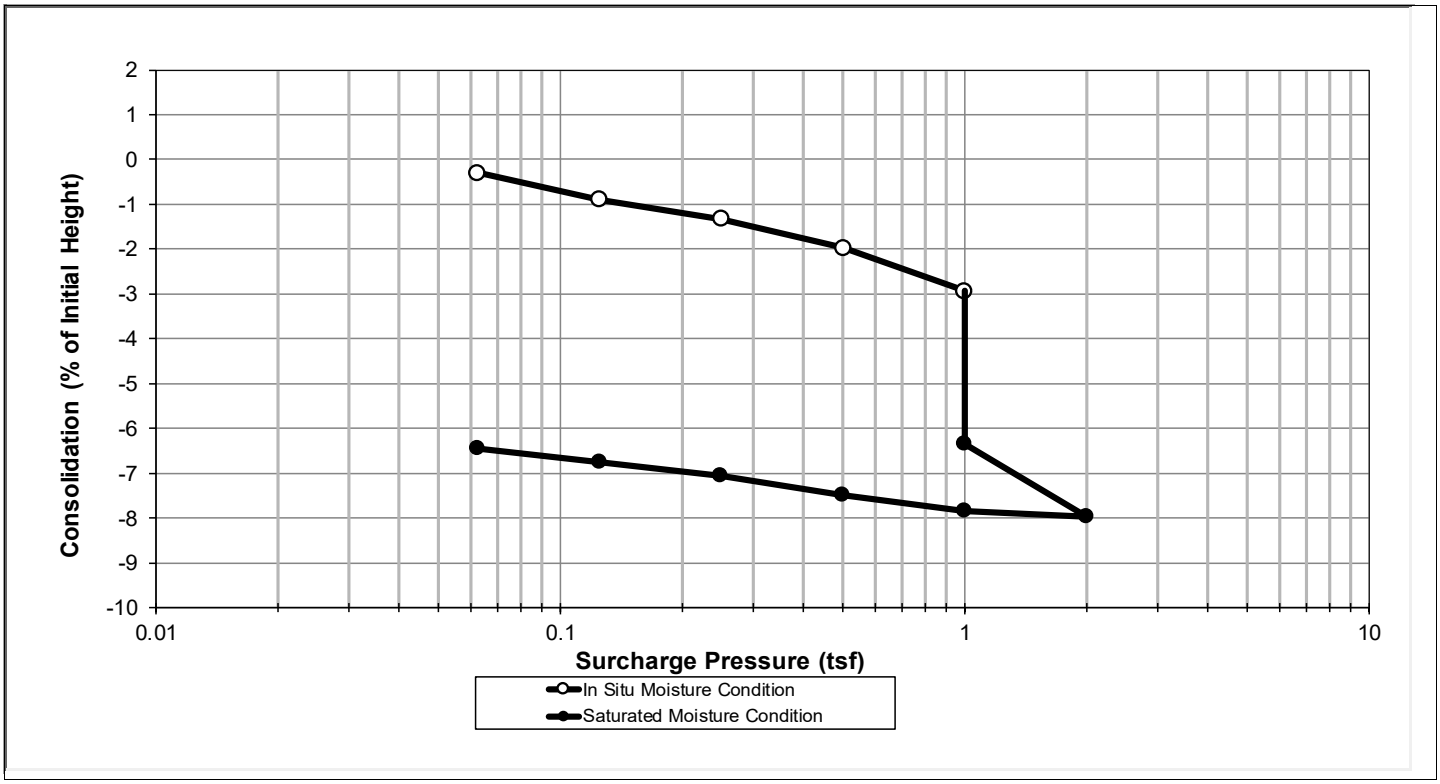
Report Date: March 31, 2021

Project #: 17-517-00016.01
Work Order #: 1
Lab #: 21-0069-090
Sampled By: Carlton Pine
Date Sampled: 2/24/2021
Visual Description of Material: See Boring Log
Sample Source: WTP-4 @ 5.0'

SOILS / AGGREGATES

Measurement of Collapse Potential of Soils (ASTM D5333-03)

Initial Volume (cu.in.):	4.60	**Final Volume (cu.in.):**	4.32
Initial Moisture (%):	4.6%	**Final Moisture (%):**	13.5%
Initial Dry Density (pcf):	116.3	**Final Dry Density (pcf):**	123.9
Initial Degree of Saturation:	29%	**Final Degree Saturation:**	108%
Initial Void Ratio:	0.42	**Final Void Ratio:**	0.34
Estimated Specific Gravity:	2.651	**Saturated at:**	1 tsf
Soil Classification:		**Consolidation at Max Load:**	7.97%



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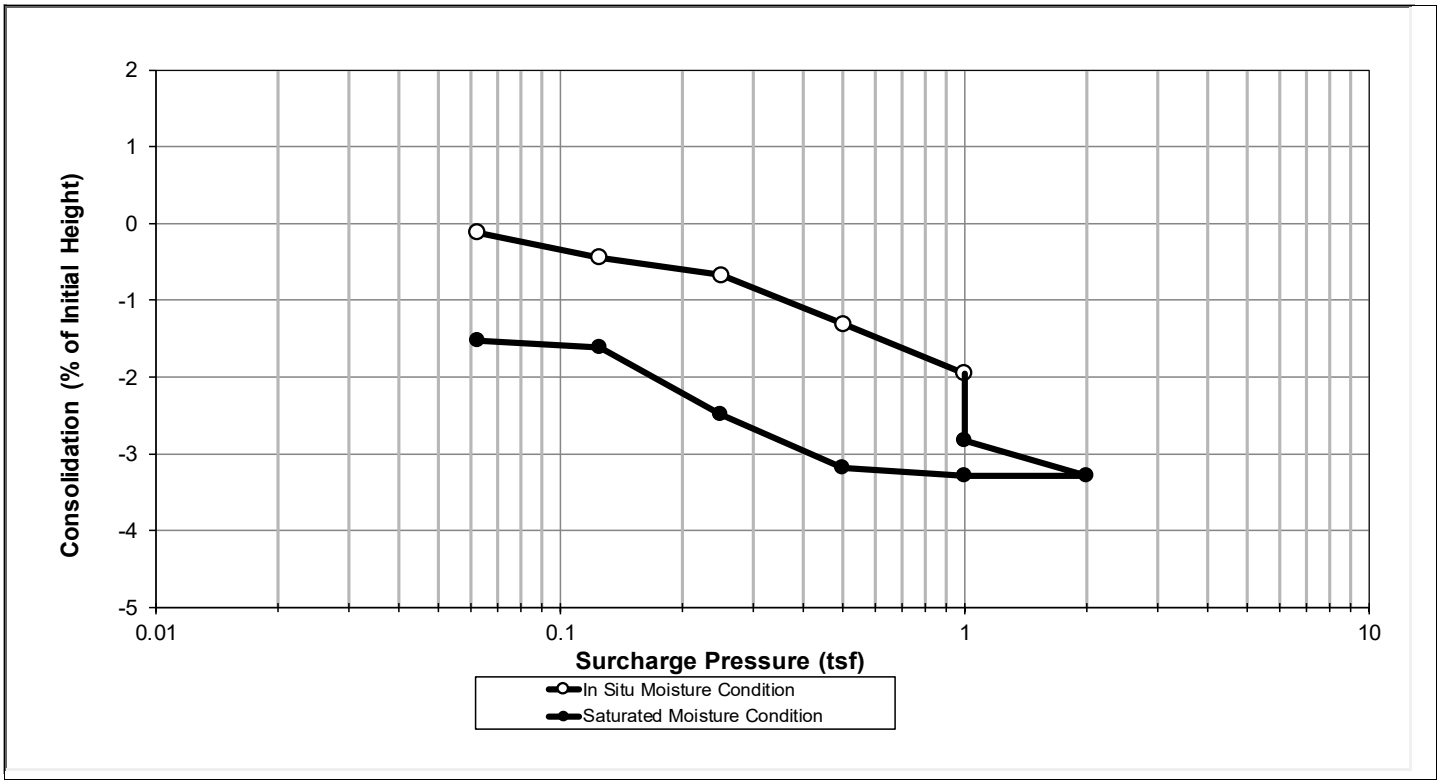
Report Date: March 31, 2021

Project #: 17-517-00016.01
Work Order #: 1
Lab #: 21-0069-094
Sampled By: Carlton Pine
Date Sampled: 2/24/2021
Visual Description of Material: See Boring Log
Sample Source: BPS-1 @ 7.5'

SOILS / AGGREGATES

Measurement of Collapse Potential of Soils (ASTM D5333-03)

Initial Volume (cu.in.):	4.60	**Final Volume (cu.in.):**	4.54
Initial Moisture (%):	2.5%	**Final Moisture (%):**	20.5%
Initial Dry Density (pcf):	106.3	**Final Dry Density (pcf):**	107.8
Initial Degree of Saturation:	12%	**Final Degree Saturation:**	102%
Initial Void Ratio:	0.56	**Final Void Ratio:**	0.54
Estimated Specific Gravity:	2.651	**Saturated at:**	1 tsf
Soil Classification:	SP-SM	**Consolidation at Max Load:**	3.29%



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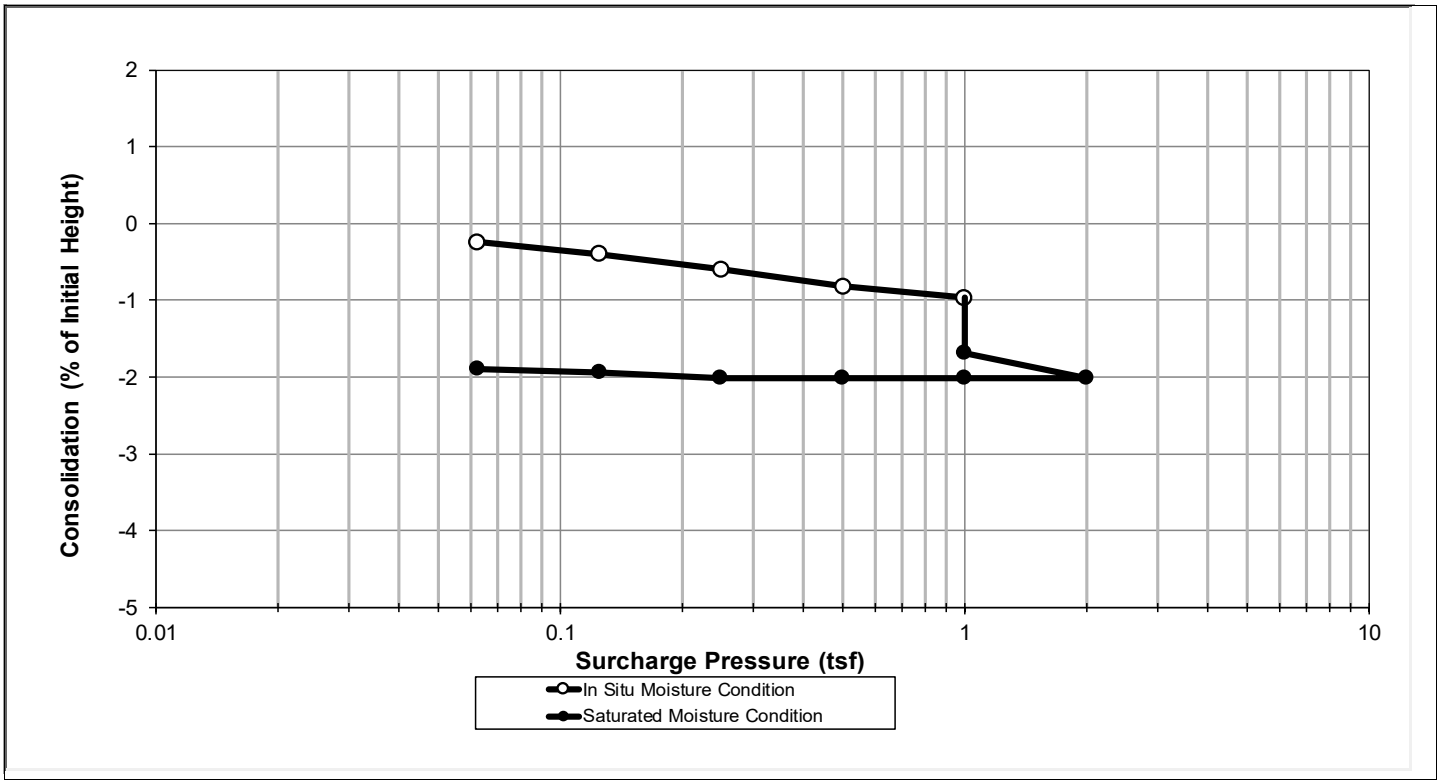
Report Date: March 31, 2021

Project #: 17-517-00016.01
Work Order #: 1
Lab #: 21-0069-100
Sampled By: Carlton Pine
Date Sampled: 2/24/2021
Visual Description of Material: See Boring Log
Sample Source: BPS-2 @ 7.5'

SOILS / AGGREGATES

Measurement of Collapse Potential of Soils (ASTM D5333-03)

Initial Volume (cu.in.):	4.60	**Final Volume (cu.in.):**	4.52
Initial Moisture (%):	2.3%	**Final Moisture (%):**	20.8%
Initial Dry Density (pcf):	106.7	**Final Dry Density (pcf):**	108.4
Initial Degree of Saturation:	11%	**Final Degree Saturation:**	106%
Initial Void Ratio:	0.55	**Final Void Ratio:**	0.53
Estimated Specific Gravity:	2.651	**Saturated at:**	1 tsf
Soil Classification:	SP	**Consolidation at Max Load:**	2.01%



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June 29, 2022
Wood Job No. 17-517-00016.001

Brown and Caldwell
6975 Union Park Center, Suite 90
Midvale, Utah 84047-4135

RE: GEOTECHNICAL ENGINEERING STUDY AMENDMENT
WESTERN NAVAJO/LECHEE PIPELINE
AND BOOSTER PUMP STATION
LECHEE, ARIZONA

Attn: Mr. Steven Brenchley, P.E.

Our Amendment to the Geotechnical Engineering Study Report for the referenced project is enclosed. This amendment includes the results of the test pit excavations, Cone Penetrometer Testing (CPTu), and shear wave velocity testing. Also attached are the laboratory test results. This amendment includes ASCE 7-16 site class, modulus of subgrade reaction for slab on grade design, sulfate soil testing, soil corrosivity testing, site drainage recommendations, lateral seismic soil pressure magnitude, and recommended loading shape.

Should any questions arise concerning this report, we would be pleased to discuss them with you.

Respectfully submitted,

Wood Environment & Infrastructure Solutions, Inc.

Jacob S. Hays, P.E.
Geotechnical Engineer

Reviewed by:

R. Eric Pease, Ph.D., P.E.
Associate Geotechnical Engineer

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APPENDIX A Site Location and Borehole Plan

APPENDIX B Laboratory Soil Testing Results

APPENDIX C Lateral Loading Distribution Sketches

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1. INTRODUCTION

This amended report is submitted pursuant to the supplemental geotechnical engineering study performed the week of April 18, 2022. The objective of this study was to estimate seismic site class, modulus of subgrade reaction for concrete slab-on-grade design, sulfate soil testing, soil corrosivity testing, site drainage recommendations, lateral seismic soil pressure magnitude, and recommended loading shape. The site investigation included test pit excavations to evaluate depth to, and excavatability of bedrock; Cone Penetrometer Testing (CPTu) to evaluate the properties of the in-situ overburden soils; and shear wave velocity measurements to evaluate site class and examine the properties of bedrock.

2. PROPOSED CONSTRUCTION

This supplemental study supports the design of the proposed masonry pumphouse, near the intake structure, retention ponds, drying bed structure, and the two 32-foot tall, welded steel tanks (approximately 30-foot height of water for both tanks). One of the tanks is approximately 54-feet in diameter, and the other is approximately 44-feet in diameter (500,000 gallons and 340,000 gallons, respectively).

Should final design details vary significantly from those outlined above, the Project Manager should be notified for review and possible modification of recommendations.

3. INVESTIGATION

3.1 Test Pit Excavations

Wood excavated four (4) test pits, to collect soil samples and determine the depth of excavatable materials. A rubber-tired backhoe tractor (8,000 lbs) was used to perform the excavations. The exposed soils were logged during excavation, and the depth to bedrock was measured. The surficial soils classified as non-plastic, silty sand (SM), brown in color, with traces of gravels, and whitish cemented material. The table below summarizes the depths to bedrock recorded during the investigation:

Table 1. Depths to bedrock

Location	H-1	H-2	H-3	H-4
Depth to Bedrock	3.0-feet	1.0-feet	4.0-feet	2.5-feet

Locations H1 and H2 are within the footprint of the proposed retention ponds, on the north side of the project site. H3 and H4 are in the southwestern quadrant of the site.

3.2 Cone Penetrometer Testing (CPTu)

CPTu soundings were advanced with an electric penetrometer cone per ASTMD 5778-12, using a track mounted rig operated by an independent firm working under subcontract to Wood. Four (4) soundings were attempted; one at the proposed tanks (B-T1), one at the drying bed structure (B-DB), one at the northeast corner of the wastewater treatment plant building (B-WTP), and one east of the intake structure for a new utility building (B-IS). Shallow bedrock and/or cemented soils prevented penetration of the cone at B-T1, B-DB, and B-IS. At location B-WTP, it was possible to collect CPTu data to the depth of bedrock (3-feet).

3.3 Seismic Site Characterization

Seismic site class was estimated by measuring the response of generated waves across an array using P-wave geophones. A total of three (3) locations were analyzed; two (2) near the proposed tanks, and one

(1) near the intake structure. A test was performed near the intake structure pump house since the CPTu testing was not possible at other locations due to shallow bedrock.

3.4 Laboratory Analysis

Laboratory tests were performed on selected soil samples collected from our test pit excavations. Moisture content, particle-size analysis, and Atterberg limits, were performed on a soil sample from each test pit. Sulfates content, chloride content, electrical resistivity, and pH testing, were performed on one combined sample from the four locations. The soils soil had consistent classifications, so the aggregated sample was representative of the whole site. Results of laboratory soil testing are presented in Appendix C.

4. DISCUSSION & RECOMMENDATIONS

4.1 Analysis of Shallow Bedrock

The results of the test pit excavations, CPTu soundings, and seismic site characterization, revealed shallow depth to bedrock at the location of the water treatment plant and intake structure pump house. The test pit excavations and CPTu soundings indicate common earthmoving equipment can be used to excavate surficial soils above bedrock. The depth of excavatable overburden/surficial soils ranged from 1 to 4 feet at the site of the wastewater treatment plant, and less than 1 foot at the site of the intake structure pump house.

Seismic site characterization tests (arrays 1, 2, and 4), indicate that bedrock is present at the ground surface. Tests estimated a p-wave velocity of 7481 feet per second (ft/sec) south of the proposed drying bed structure, 5603 ft/sec south of the proposed pond on the northwest side of the site, and 5,929 ft/sec at the proposed pumphouse near the intake structure. Review of ripper performance, from the Caterpillar Performance Handbook, indicates that the sandstone near the surface is '*rippable*' to '*marginally rippable*' with a D8R/D8T multi- or single shank no. 8 ripper. All rock materials encountered are '*rippable*' with a D10T2 multi- or single shank no. 10 ripper.

4.2 Site Class

A seismic Site Class A is appropriate for this site, in accordance with the 2015 IBC. The calculated, average, shear-wave velocity for 100-foot depth is 7724 ft/s. This rating considers the exposed rock at the surface is free of fractures and weathering, otherwise a Site Class B is recommended.

4.3 Modulus of Subgrade Reaction

The modulus of subgrade support (k), for slabs and pavements, was estimated using the general relationship between California Bearing Ratio (CBR) and modulus of subgrade reaction from UFC 3-260-03 United Facilities Criteria (UFC) Airfield Pavement Evaluation. The site soils classify as silty sands (SM), which are '*medium*' to '*good*' quality and have a corresponding CBR value of 10. The k value using the correlation is 200 pounds per cubic inch (pci); the recommended value used for design of slabs on grade and pavement is 200 pci.

For foundations, the modulus of subgrade reaction (k_s) is a function of the Young's Modulus (E) and the Poisson's Ratio ($\boldsymbol{\nu}$) of the soil. Using Vesic's method, the modulus of subgrade reaction can be approximated by:

$$k_s = \left(\frac{0.65}{B}\right)\left(\frac{EB^4}{E_f I_f}\right)^{1/12}\left(\frac{E}{1-\nu^2}\right)$$

where:
E_f = foundation's Young's modulus

I_f = the foundation moment of inertia
E_fI_f = foundation stiffness

Using the CPTu data collected from location B-WTP, the Young's modulus of the site soils is approximately 250 tons per square foot (tsf) with a Poisson's ratio of 0.25. The value of k_s is a function of the footing properties. The value of k_s is 60.2 pounds per cubic inch (pci) assuming a footing width of 3 feet, a footing thickness of 1 foot, and a concrete modulus of elasticity of 4,000,000 psi. The value of k_s will change with different footing width (B) and thickness.

4.4 Chemical and Electrical Testing

The purpose of this testing was to evaluate corrosive potential of metal piping and the concrete sulfate exposure class (per ACI 318-14 Chapter 19) for materials in contact with these soils. Test results of a bulk sample, combining the soils from the four test pit locations, are summarized in Table 2. The tests performed for this study included Laboratory Electrical Resistivity (AASHTO T288), pH (AASHTO T289), Sulfate Content (AASTHO T290), and Chloride Content (AASHTO T291).

Table 2. Chemical and Electrical Testing and Analysis

Sample Description	Soil Resistivity	pH of Soils	Soluble Sulfate, SO_4 (ppm)[1]	Soluble Chloride, Cl (ppm)[1]
H1, H2, H3, and H4 Combined (1-4 foot depth)	8000 Ωcm[2]	8.0	10	4

[1] parts per million
[2] ohm-centimeter

The sulfate results were 10 ppm, which indicates a '*negligible*' potential for sulfate reaction with the concrete. A Type I cement (ASTM C150) may be used at this site.

Laboratory test results indicate a minimum electrical resistivity of 8000 Ω·cm^2, a pH value of 8.0, and chloride content of 4 ppm. Corrosion of metals is an electrochemical process which involves oxidation and reduction reactions on the surface. For metals in soils and water, corrosion is typically a result of contact with soluble salts or an acidic (pH of 4.5 or less) environment. The soil chloride content (4 ppm) and sulfate content (10 ppm) are low, and do not have significant potential to create acidic conditions within the soils when saturated. The electrical resistivity (8000 Ω·cm^2) classifies as '*moderately corrosive*.'

4.5 Lateral Seismic Soil Pressures

Static and dynamic lateral loads have been calculated, using the Mononobe-Okabe equation, for the drying beds at the wastewater treatment plant. The analysis considers a cast-in-place wall retaining 4-feet of fill with 100 psf surcharge. Wall movement at the top of floor elevation is assumed to be restrained.

A peak ground acceleration (PGA) was selected from the United States Geological Survey (USGS). The selected acceleration represents a 2-percent chance of occurring in 50 years. Soil properties for the lateral analysis were selected based on in-situ test results determined from the CPTu analysis. A design soil friction angle of 34 degrees was selected for this analysis. The wet unit weight of the soil is expected to range between 120 and 135 pounds per cubic foot. Table 3 summarizes the design input:

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Table 3. Lateral Design Parameters

Design Parameter	Value for Analysis
Peak Ground Acceleration	0.148
Estimated Moist Unit Weight (γ_m)	120 pcf
Friction angle (Φ)	34 degrees

Static analysis was performed for determination of active earth pressure, at-rest earth, and surcharge loading pressure. The total lateral seismic active earth force was then calculated using the Mononobe-Okabe equation for each condition. The Mononobe-Okabe lateral seismic earth pressure encompasses both the static, active, earth pressure and the lateral, earthquake effect; the static, active, earth pressure was subtracted from the Mononobe-Okabe lateral, earth pressure to determine just the earthquake load. Being that the retaining walls are constrained at the surface, the selected static lateral coefficient for earth pressure and surcharge was the '*at-rest*' coefficient (k_o). The loading recommended for each condition is presented in Table 4.

Table 4. Load Summary

Resultant Lateral Load	Drying Bed Retaining Wall (H = 4 feet)
At-Rest Earth Load	423.2 lbs/ft*
Surcharge Load	176.3 lbs/ft*
Earthquake Lateral Load	41.9 lbs/ft*

**Loading is given in pounds force per foot of wall length, see load distribution in attached file.*

4.6 Amended Site Drainage Recommendations

Moisture increases in the native subsoils could cause foundation and floor slab movements. Proper moisture-protection measures are a critical design feature. Positive site drainage should be provided during construction and maintained thereafter. The ground surface, within 15.0 feet of the perimeter of structures, should be sloped away at a minimum grade of 2.0 percent for foundations bearing on bedrock, and 4% for foundations bearing on engineered fill. In no case should long term ponding of water be allowed within 20 feet of the perimeter of the structures. Moisture infiltration beneath the well house, in the event of plumbing leaks, should be considered in the design and inspection of underground water conduits.

4.7 Foundations

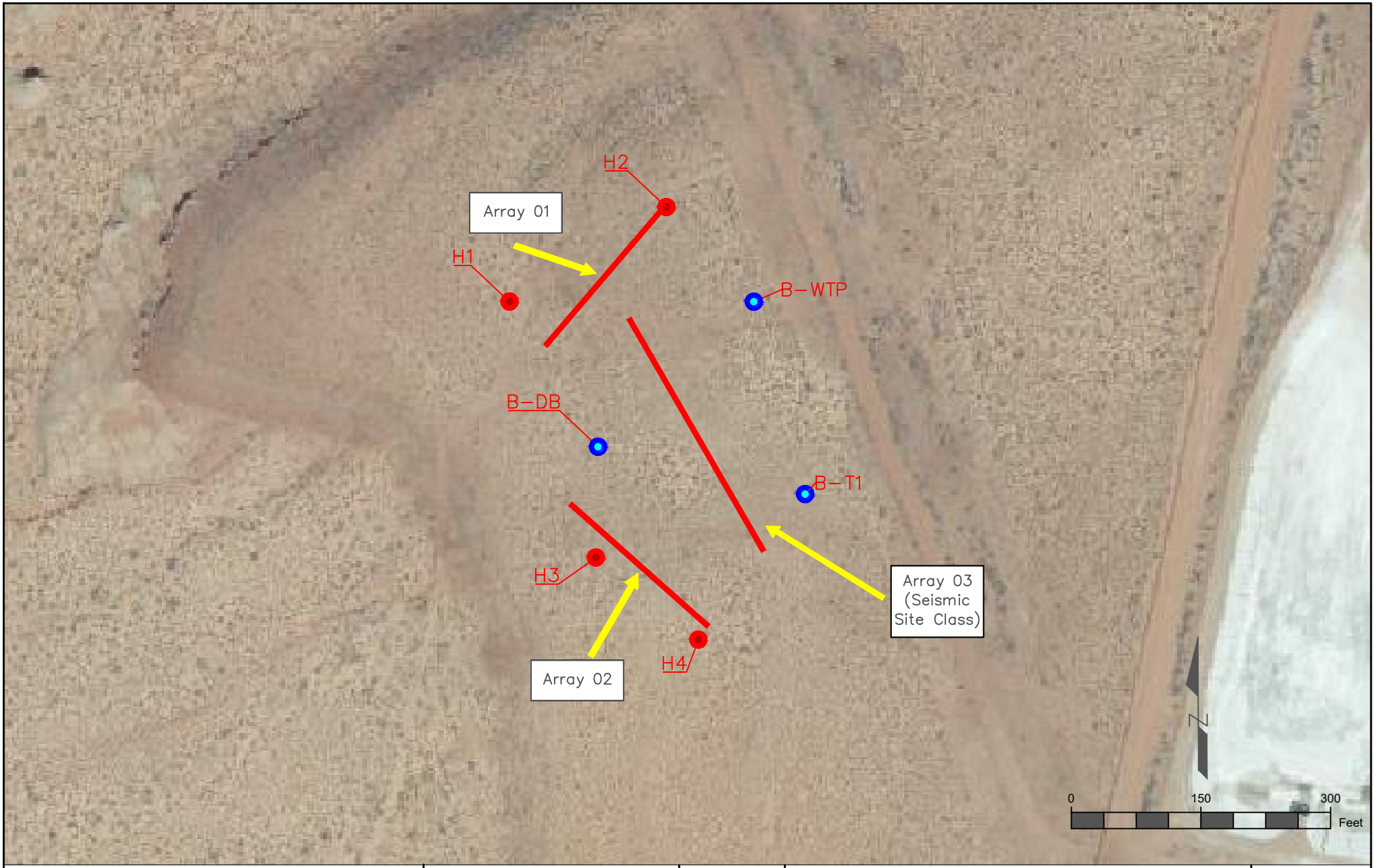
We recommend that the bottoms of foundations be constructed at uniform depth, on top of the near-surface bedrock. Soil beneath structural slabs on grade, or flexible tank foundations, should be excavated to the bedrock surface, then constructed back to the desired grade in loose lifts not exceeding 8-inches in thickness, per the Geotechnical Engineering Report.

A soil bearing pressure of no greater than 3,000 psf is recommended for the design of the shallow foundations. This pressure may be increased by one-third for total loads, including wind or seismic forces.

Settlement of footings, constructed as recommended, should not exceed 1 inch. Differential settlement is estimated to be 50% of the total. Increases in moisture content of subsurface soils could create additional movements.

'Wood' is a trading name for John Wood Group PLC and its subsidiaries

Appendix A



CLIENT:

Brown and Caldwell

wood.

Environment and Infrastructure, Inc.
8519 Jefferson, N.E.
Albuquerque, NM 87113

LEGEND

	CPTu Location
	Test Pit Excavations
B-T1	Proposed Tanks
B-DB	Drying Bed Structure
B-WTP	Wastewater Treatment Plant Building
	Array XX

DWN BY:	JT
CHK'D BY:	AK
DATUM:	N/A
PROJECTION:	N/A
SCALE:	AS SHOWN

PROJECT:

Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, Arizona

TITLE:

Site and Exploration Plan

REV. NO.:	
DATE:	06/29/2022
PROJECT NO:	1751700016
TASK ORDER NO:	
SUB-CONTRACT NO:	
FIGURE NO:	1



CLIENT:

Brown and Caldwell

wood.

Environment and Infrastructure, Inc.
8519 Jefferson, N.E.
Albuquerque, NM 87113

LEGEND

CPTu Location

B-IS Intake Structure

Array XX

DWN BY:	JT
CHK'D BY:	AK
DATUM:	N/A
PROJECTION:	N/A
SCALE:	AS SHOWN

PROJECT:

Western Navajo Pipeline / Lechee Pipeline and Booster Pump Station
Lechee, Arizona

TITLE:

Site and Exploration Plan

REV. NO.:	
DATE:	06/29/2022
PROJECT NO:	1751700016
TASK ORDER NO:	
SUB-CONTRACT NO:	
FIGURE NO:	2

Appendix A

wood.

Client: Brown & Caldwell Consultants
PO Box 8045
Walnut Creek, CA 94596

Attention: Julia Pierson

Project Name: Western Navajo Pipeline Phase I.WNP Geotech Services

PO Number: G248

Project Manager: John Leeper

Report Date: May 03, 2022

Project #: 17-517-00016.05

Work Order #: 1

Sampled By: Jacob Hays

Date Sampled:

Sieve Analysis (ASTM C117-17/C136-19)
Plasticity Index (ASTM D4318-17)
Soil Classification (ASTM D2487-17)

SOILS / AGGREGATES

				Sieve Sizes																				Sieve Result are as Percent Passing.
Sample Location	**Soil Class.**	**L.L.**	**P.I.**	**#200**	**#100**	**#50**	**#40**	**#30**	**#16**	**#10**	**#8**	**#4**	**1/4"**	**3/8"**	**1/2"**	**3/4'**	**1"**	**1 1/4"**	**1 1/2"**	**2"**	**2 1/2"**	**3"**	**6"**	**12"**	**Lab Number**
BH-1, 0-3.0'	SM	NV	NP	28	52	73	84	92	94	95	95	97		99	99	100									22-0157-01
BH-2, 0-1.0'	SM	NV	NP	13	35	63	72	79	81	82	82	86		93	95	97	98	100							22-0157-02
BH-3, 0-4.0'	SM	NV	NP	25	54	78	88	95	96	97	97	98		99	99	100									22-0157-03
BH-4, 0-2.5'	SP-SM	NV	NP	8.8	30	64	78	85	86	87	87	90		93	94	96	98	100							22-0157-04

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

Wood.
8519 Jefferson St. NE
Albuquerque, NM 87113
Tel 5058211801
Fax 5058217371
www.woodplc.com

wood.

Client: Brown & Caldwell Consultants
PO Box 8045
Walnut Creek, CA 94596

Attn: Julia Pierson

Project Name: Western Navajo Pipeline Phase I.WNP Geotech Services

Report Date: May 03, 2022

Project #: 17-517-00016.05
Report #: 2470
Work Order #: 1
Sampled By: Jacob Hays
Date Sampled:

PO Number: G248
Project Manager: John Leeper

SOILS / AGGREGATES

MOISTURE CONTENT OF SOIL (ASTM D2216-19) AND IN-SITU DENSITY

Lab #	Color & Type of Material	Sample Source	Test Method	Oven Temp. (C)	Mass less than Min Req.	Material Type *	Moisture (%)	Dry Density (pcf)
22-0157-01	See Boring Log	BH-1, 0-3.0'	B	110	☐	☐	3.3	
22-0157-02	See Boring Log	BH-2, 0-1.0'	B	110	☐	☐	1.8	
22-0157-03	See Boring Log	BH-3, 0-4.0'	B	110	☐	☐	3.3	
22-0157-04	See Boring Log	BH-4, 0-2.5'	B	110	☐	☐	1.6	

***Sample contains more than one type of material.**

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

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8519 Jefferson St. NE
Albuquerque, NM 87113
Tel 5058211801
Fax 5058217371
www.woodplc.com

Client:	Brown & Caldwell Consultants PO Box 8045 Walnut Creek, CA 94596	**Report Date:**	May 03, 2022
		Project #:	17-517-00016.05
		Work Order #:	1
Attn:	Julia Pierson	**Lab #:**	22-0157-05
Project Name:	Western Navajo Pipeline Phase I.WNP Geotech Services	**Sampled By:**	Jacob Hays
		Date Sampled:	
		Visual Description of Material:	See Boring Log
PO Number:	G248	**Sample Source:**	Combined: BH-1, BH-2, BH-3, & BH-4
Project Manager:	John Leeper		

SOILS / AGGREGATES

pH of Soils (ASTM D4972)

Method Used: A

pH Value Tested In Water: 8.0

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

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8519 Jefferson St. NE
Albuquerque, NM 87113
Tel 5058211801
Fax 5058217371
www.woodplc.com

Client:	Brown & Caldwell Consultants PO Box 8045 Walnut Creek, CA 94596	**Report Date:**	May 03, 2022
		Project #:	17-517-00016.05
		Work Order #:	1
Attn:	Julia Pierson	**Lab #:**	22-0157-05
Project Name:	Western Navajo Pipeline Phase I.WNP Geotech Services	**Sampled By:**	Jacob Hays
		Date Sampled:	
		Visual Description of Material:	See Boring Log
PO Number:	G248	**Sample Source:**	Combined: BH-1, BH-2, BH-3, & BH-4
Project Manager:	John Leeper	**SOILS / AGGREGATES**	

Determining Minimum Laboratory Soil Resistivity (AASHTO T288-16)

Soil Resistivity: 8000 Ωcm

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

Wood.
8519 Jefferson St. NE
Albuquerque, NM 87113
Tel 5058211801
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MOTZZ LABORATORY, INC.

Laboratory Analysis Report

Wood
Jesse Boam
8519 Jefferson NE
Albuquerque, NM 87113

Project: 17-517-00016
Date Received: 5/18/2022
Date Reported: 5/19/2022

PO Number: 1751700016

Lab Number: 941993-1 **22-0157-05 BH-1 to BH-4**

Test Parameter	Method	Result	Units	Levels
Sulfate	AASHTO T290	10	ppm	
Chloride	AASHTO T291	4	ppm	

Appendix C

Project: Western Navajo Pipeline
Project Number: 17-517-00016
Purpose: Load Distribution for analysis

Client: Brown and Caldwell
Calc. By: J. Hays **Date:** 6/27/22
Reviewed By: J. Lommler **Date:**

Given: Static and Earthquake calculations for the **Drying Bed Retaining Walls (H=4 feet)**:

RESULTANT LATERAL LOADS

Retaining Wall Height:	$H := 4\ ft$	
At Rest Earth Resultant:	$EH := 423.2\ lbf$	***Acting @ H/3 From Base**
Live Load Surcharge Resultant:	$LS := 176.3\ lbf$	***Acting @ H/2 From Base**
Earthquake Lateral Force Resultant:	$EQ := 41.9\ lbf$	***Acting @ 3H/5 From Base**

Find: Provide recommended load distribution.

Solution:

Lateral Load Distribution

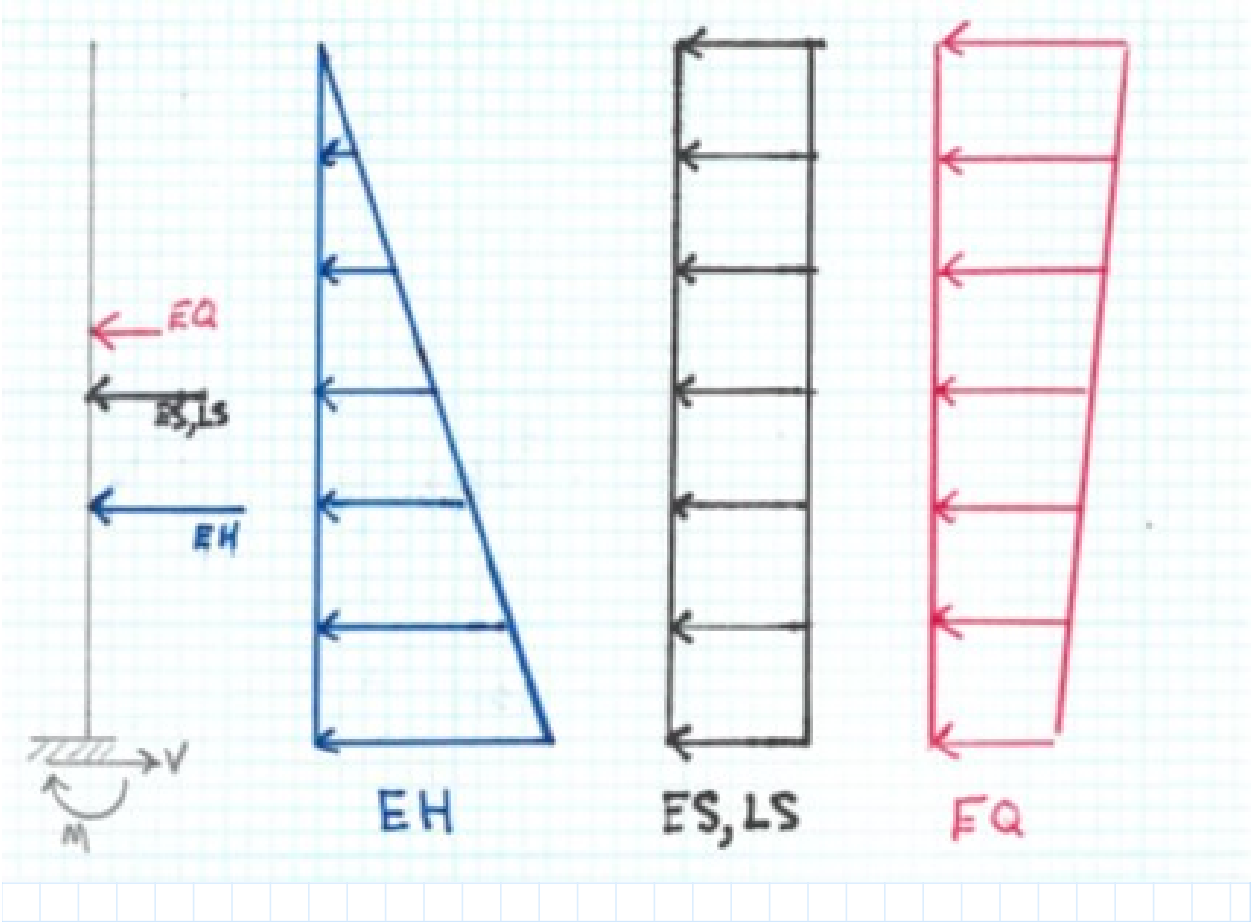
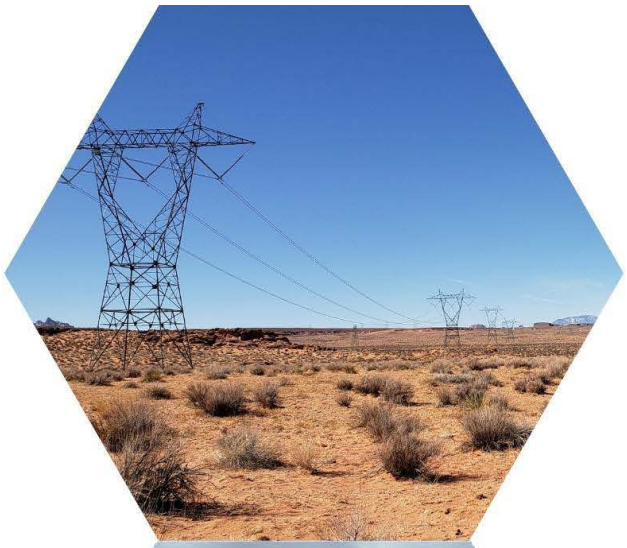


Exhibit B: Environmental Assessment

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2023

Environmental Assessment: LeChee Water System Improvements Project

ETD INC

"Brightening the future for Native American communities"

Environmental Assessment:
LeChee Water System Improvements Project

LeChee Chapter, Navajo Nation, Coconino County, Arizona

December 2023

PREPARED FOR:

Brown & Caldwell
6975 Union Park Center, Suite 490
Midvale, Utah 84047

LEAD AGENCY:

Navajo Nation General Land Development Department
2B Taylor Road
St. Michaels, Arizona 86511

PREPARED BY:

ETD, Inc.
2501 N. 4th Street, Suite 24
Flagstaff, Arizona 86004

CONTACT:

Eunice Tso
Principal
Tel: (928) 266-0044

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Figure 2. Aerial photo showing proposed project alignment.

Figure 3. View from WTP looking southwest.
Figure 4. Geologic cross section of project area.
Figure 5. Map showing wetlands identified in the project area.

LIST OF ACRONYMS:

ADOT	Arizona Department of Transportation
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effect
BE	Biological Evaluation
BIA	Bureau of Indian Affairs
BPS	Booster Pump Station
BRCF	Biological Resource Compliance Form
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRI	Cultural Resources Inventory
CWA	Clean Water Act
EA	Environmental Assessment
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NESL	Navajo Endangered Species List
NGS	Navajo Generating Station
NHPA	National Historic Preservation Act
NNDFW	Navajo Nation Department of Fish and Wildlife
NNEPA	Navajo Nation Environmental Protection Agency
NNHHPD	Navajo Nation Heritage & Historic Preservation Department
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NTUA	Navajo Tribal Utility Authority
NWMB	Navajo Water Management Branch
RCRA	Resource Conservation and Recovery Act
ROW	Right-of-Way
SWPPP	Stormwater Pollution Protection Plan
TCP	Traditional Cultural Property
TES	Threatened, Endangered, and Sensitive
TSCA	Toxic Substances Control Act
UST	Underground Storage Tank
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WMB	Navajo Nation Water Management Branch
WTP	Water Treatment Plant

1 Introduction

1.1 Summary

The Navajo Nation Water Management Branch (WMB) is seeking a Tribal Authorization Access (TAA) from the Navajo Nation for the *Lechee Water System Improvements Project* that includes construction of a control building, water treatment plant, a 5.8-mile pipeline delivery system, and pump station. The project is the first phase of the conceptual Western Navajo Pipeline. It builds upon the existing Lake Powell Water Intake Facility formerly owned and operated by the Navajo Generating Station (NGS). The project is situated in LeChee Chapter, Western Agency, Navajo Nation. The purpose of the project is to convey Lake Powell water to LeChee Chapter, and in the future, to other Western Navajo Chapters. The proposed Right of Way (ROW) encompasses 34.69 acres.

NTUA is an independent legal entity wholly owned and operated by the Navajo Nation. In accordance with *25 C.F.R. Part 169: Rights-of-way Over Indian Land*-Subpart, a ROW is not needed if "An independent legal entity wholly owned and operated by the tribe that owns 100% of the trust land…." In such cases a TAA rule is used instead of typical ROW approval; however, this EA references the project corridor as ROW. The TAA requires compliance with relevant federal and tribal statutory and regulatory requirements, such as Endangered Species Act (ESA)–Section 7 evaluation and consultation, National Historic Preservation Act (NHPA)–Section 106 consultation, and related Tribal statutes and regulations. This EA was prepared to assess impacts of the proposed action on the surrounding natural and human environment, with specific resource surveys and compliance documents with Section 7 ESA and Section 106 NHPA included (i.e., Biological Resource Compliance Form and Cultural Resource Compliance Form). This EA reveals there will be no significant effects to surrounding human and natural environment due to the proposed action as described in Chapter 2.

1.2 Purpose and Need

Currently, LeChee Chapter obtains its water supply from the City of Page's water system, which includes a water intake facility located at the Glen Canyon Dam and a pipeline from the Dam to the City of Page's water treatment plant (WTP). From there it is piped up to LeChee. Due to the condition of the current system, it is unable to support the water capacity needed for current and future growth in LeChee Chapter. For this reason, LeChee Chapter cannot continue to rely on this water. The proposed project will provide new intake and main pipeline leading to existing water tanks in LeChee, and in the future, to other Western Navajo Chapters that rely on limited groundwater supplies.

According to a Navajo Nation Council Press Release, dated July 22, 2021, the Western Navajo Pipeline Project will connect water to communities of the western regions of the Navajo Nation. "Since the closure of the NGS, the pipeline project provides a unique opportunity to repurpose the Lake Powell NGS Intake from industrial use to municipal use for Navajo communities. These infrastructure projects will be a driving catalyst for economic vitality, sustainability, and increased job creation."

If the project TAA (ROW) is not approved, the community of LeChee Chapter will be unable to grow. A new water supply would be unavailable for Western Navajo chapters that currently rely on limited ground water resources.

1.3 Location

The *LeChee Water Systems Improvements Project* is situated in LeChee Chapter of the Navajo Nation. The Chapter is bordered to the north and northwest by Lake Powell and the Colorado River. The proposed ROW lies entirely on Navajo Tribal Trust land. The areas fall on *Page, Arizona* and *White Dome, Arizona USGS 7.5-Minute Quadrangles.* The legal description is as follows: Sections 15, 34, and 35 of Township 41 North, Range 9 East; and Sections 2, 3, 10, 15, 16, 17, 20, and 21 of Township 40 North, Range 9 East. See **Figure 1** for a general location map.

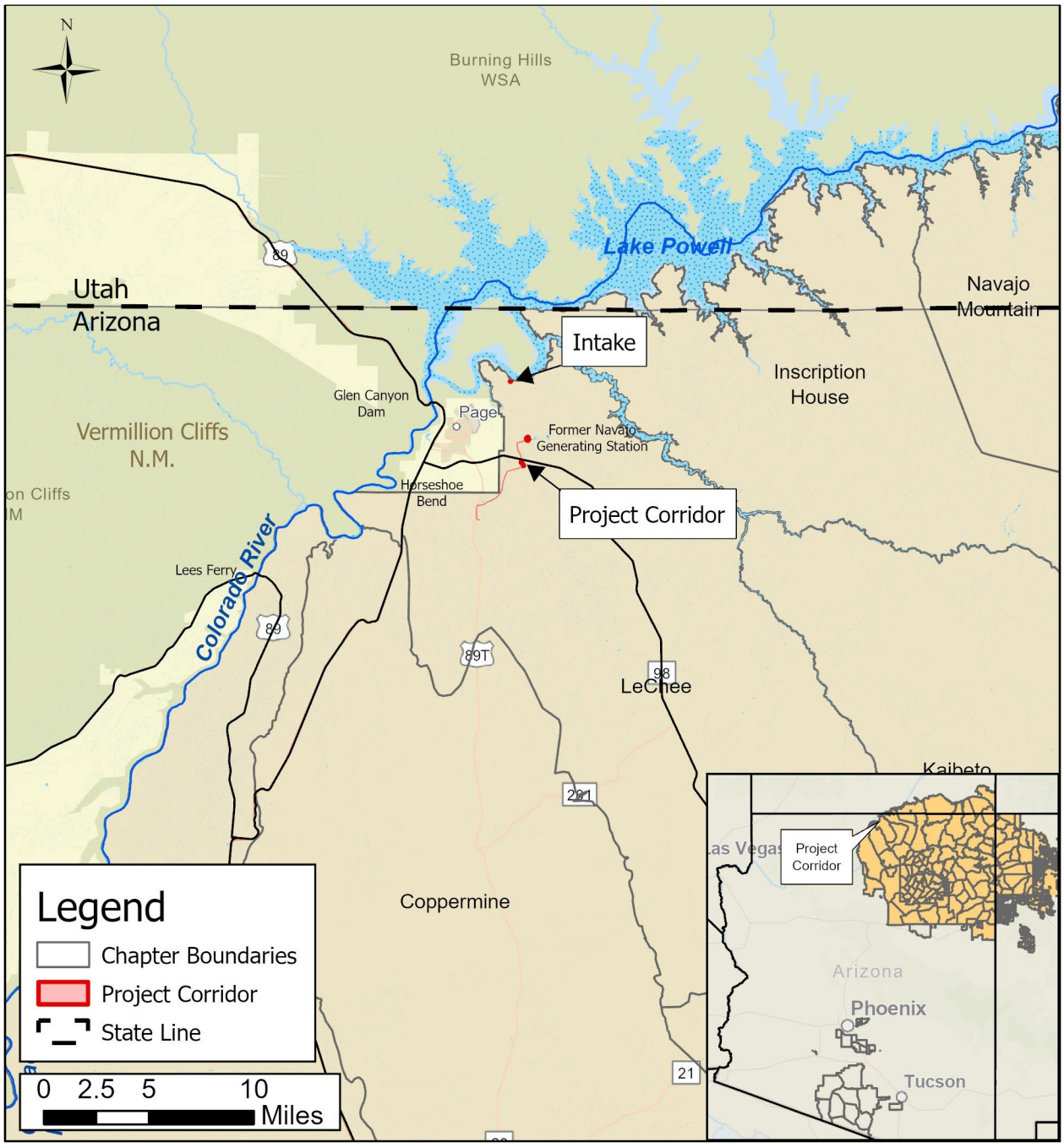


FIGURE 1. MAP SHOWING GENERAL PROJECT LOCATION.

2 Proposed Action and No Action Alternative

This section describes the Proposed Action and No Action Alternative. Eight alternative routes for the project were developed by DOWL LLC in the preliminary planning phases (DOWL, 2018). However, after additional analysis, all the alternatives were eliminated for various reasons. In 2022, ROW adjustments were made at 5 locations. This EA focuses on the final design.

2.1 Proposed Action

Under the proposed action, the project activities include retrofitting the intake facility, constructing a water treatment plant, and installing a 5.8-mile pipeline delivery system with pump station. The project is the first phase of the Western Navajo Pipeline. It builds upon the existing Lake Powell Water Intake Facility formerly owned and operated by the NGS and an existing pipeline between the Intake Facility and the proposed WTP, which will have the capacity to treat one million gallons of water per day. The new water line will begin at the WTP site to the LeChee water tanks. The water pipeline will cross underneath State Route 98 with directional drilling before it traverses up the mesa to the water tanks. At the top of the mesa, it will follow Navajo Route 20 inside its ROW. **Figure 2** presents an aerial map showing the proposed ROW components. Two booster pump sites are shown, but only one will be selected and utilized. Once the project is constructed, the system will be handed over to NTUA to own, operate, and maintain.

The total ROW for the proposed project will cover **34.69 acres**. A breakdown of the acres is as follows: The water intake facility covers 0.16 acres; the proposed WTP portion of the ROW covers 11.32-acres; the pipeline ROW will cover 22.01 acres (31,959-feet length by 30-feet width); and the booster pump station ROW will be 1.20 acres. All project activities will occur with the ROW. No additional staging area or borrowed material will be required for the project. The construction timeline is 24 months. Construction activities will require the following approvals/permits:

- BIA Road Crossing Permits (Encroachment Permit) for N-20
- Arizona Department of Transportation (ADOT) Road Crossing Permit
- U.S. Environmental Protection Agency (USEPA) National Discharge Elimination System Permit (NPDES) for pump station floor drain
- NNEPA Operating Permit (when the WTP is complete and ready to become operational)

2.2 No Action Alternative

Under the No Action Alternative, the BIA would not approve the proposed ROW for the LeChee Water System Improvements Project. There would be limited opportunities for future economic development, housing, and public facilities in LeChee Chapter and other chapters of the Western Navajo region. Under the no action, there would be no adverse impacts to the land, vegetation, wildlife and other resources, and no beneficial impact to residents, businesses, and livestock owners.

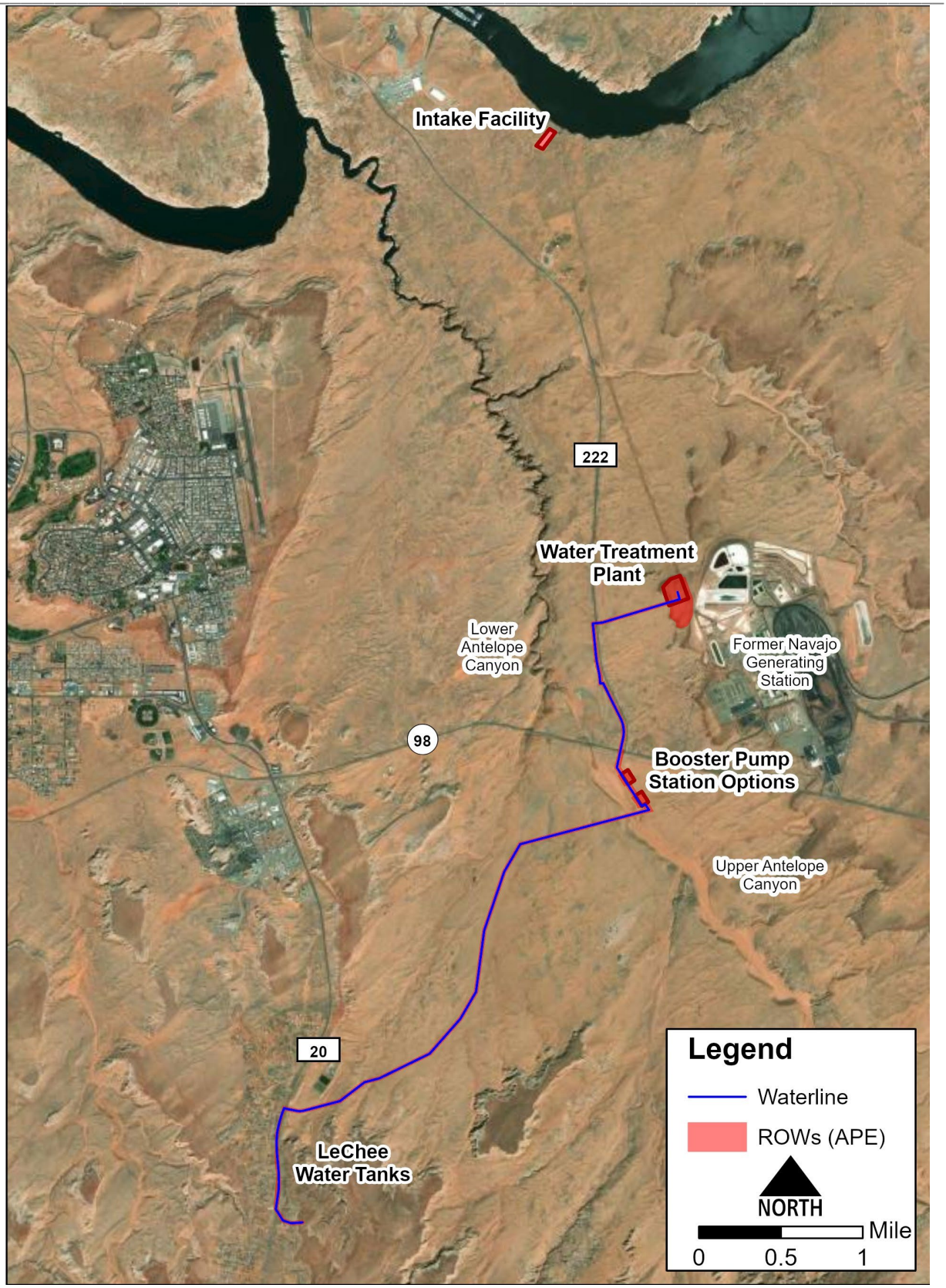


FIGURE 2. AERIAL PHOTO SHOWING PROPOSED PROJECT ALIGNMENT.

3 Affected Environment

This chapter describes the affected environment by resource and provides the baseline data upon which the analysis of potential environmental consequences is based on in **Chapter 4**.

3.1 Land Resources: Geology, Topography, Soils and Farmlands

This section describes the affected land resources. The study area lies in the southwestern region of the Colorado Plateau physiographic province which is characterized by relatively flat-lying and laterally continuous Paleozoic and Mesozoic sedimentary formations that have been sculped by erosion to form mesas and plateaus (BOR, 2016). This area is part of the Western Navajo Uplands Hydrogeologic Subdivision described by Cooley and others (1969) as dune-covered plains that are interrupted by prominent mesas and peaks throughout the landscape, as well as intricately dissected by many canyons. The City of Page, the former NGS site, and the LeChee residential community lie on separate mesas. **Figure 3** presents a photo showing the view from the WTP site toward LeChee community located on the mesa shown in the background.



FIGURE 3. VIEW OF THE TERRAIN LOOKING SOUTHWEST FROM THE WTP SITE.

Exposed geologic rock units in the study area include the following rock units in ascending order, the Navajo Sandstone, Page Sandstone, and Carmel Formation. The Navajo Sandstone is a fine- to medium-grained quartz, pale red and white, sandstone with large-scale cross bedding that forms prominent cliffs. The overlying Page Sandstone looks very similar to the Navajo Sandstone; however, it was determined that the units are separated by a major regional Jurassic unconformity showing that deposition was not continuous from the Navajo Sandstone to the Page Sandstone. The Carmel Formation caps the three mesas. It is composed of siltstone, claystone, and silty calcareous and gypsiferous sandstone. It is distinguished from the Navajo and Page Sandstones by its reddish-brown color (BOR 2017). **Figure 4** illustrates a geologic cross section from the City of Page (A) to the former NGS site and to Lake Powell (A').

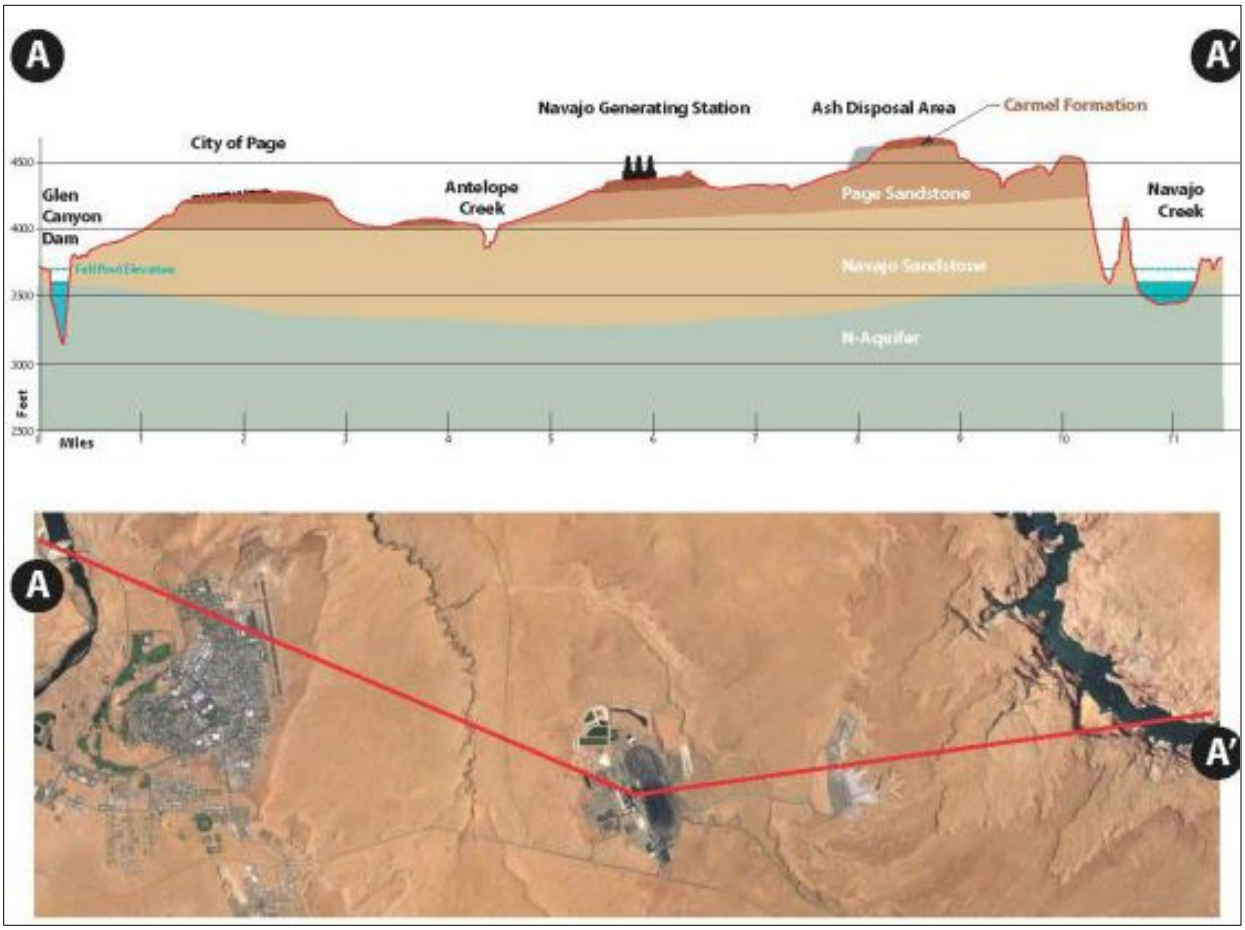


FIGURE 4. GEOLOGIC CROSS SECTION OF PROJECT AREA.

Topography. The project area is part of the Kaibeto Plateau, a low-relief feature that extends westward from Lake Powell to Black Mesa. Water and wind have carved remarkable slot canyons such as Upper and Lower Antelope Canyon, Honey Draw Canyon, and Water Holes Canyon that orient northward to Lake Powell and Colorado River. In between these canyons are flat mesas. The highest elevations of the Kaibeto Plateau are near 7,000 feet, 40 miles to the south, and the lowest elevations are near 3,100 feet along the shores of Lake Powell. Along the proposed ROW, the elevations range from 4,315 feet at the WTP to 4,050 feet near State Highway 98 and N-222, and 4,813 feet along N-20 in the southern part of the proposed ROW.

Soils. Soils at the project site were identified using the Natural Resource Conservation Service (NRCS) Web Soil Survey (NRCS, 2021). Due to the large scale of the project, there are five soil map units found throughout the project area. Starting with the most prominent soil unit, they are as follows: *Sheppard sand* (90.5%), *Urban Land-Sheppard-Typic Torriorthents complex* (6.8%), *Rock Outcrop-Mido-Mido, loamy substratum complex* (1.6%), *Riverwash-Sheppard complex* (0.9%), and *Rock Outcrop-Needle complex* (0.2%). None of the soil units are considered "hydric" and none have any frequency of flooding or ponding (NRCS, 2021). None of the soils in the project APE have been classified by USDA as prime farmlands, unique farmlands, or farmlands of statewide importance, which are protected under the Farmland Protection Policy Act, which discourages federal activities from converting farmland to nonagricultural purposes.

3.2 Water Resources

This section describes the streams, wetlands, floodplains, and groundwater resources found in the project area that may be affected by the proposed action. **Figure 5** presents a map showing water resources in the project area.

Surface Water. Lake Powell was formed by the waters of the Colorado River behind Glen Canyon Dam built in the 1960s. It extends through the main corridor of Glen Canyon as well as into over 90 side canyons that extend outward. On June 22, 1980, Lake Powell reached an elevation of 3,700 feet above sea level with a total capacity of over 26 million-acre feet of water (BOR 2017).

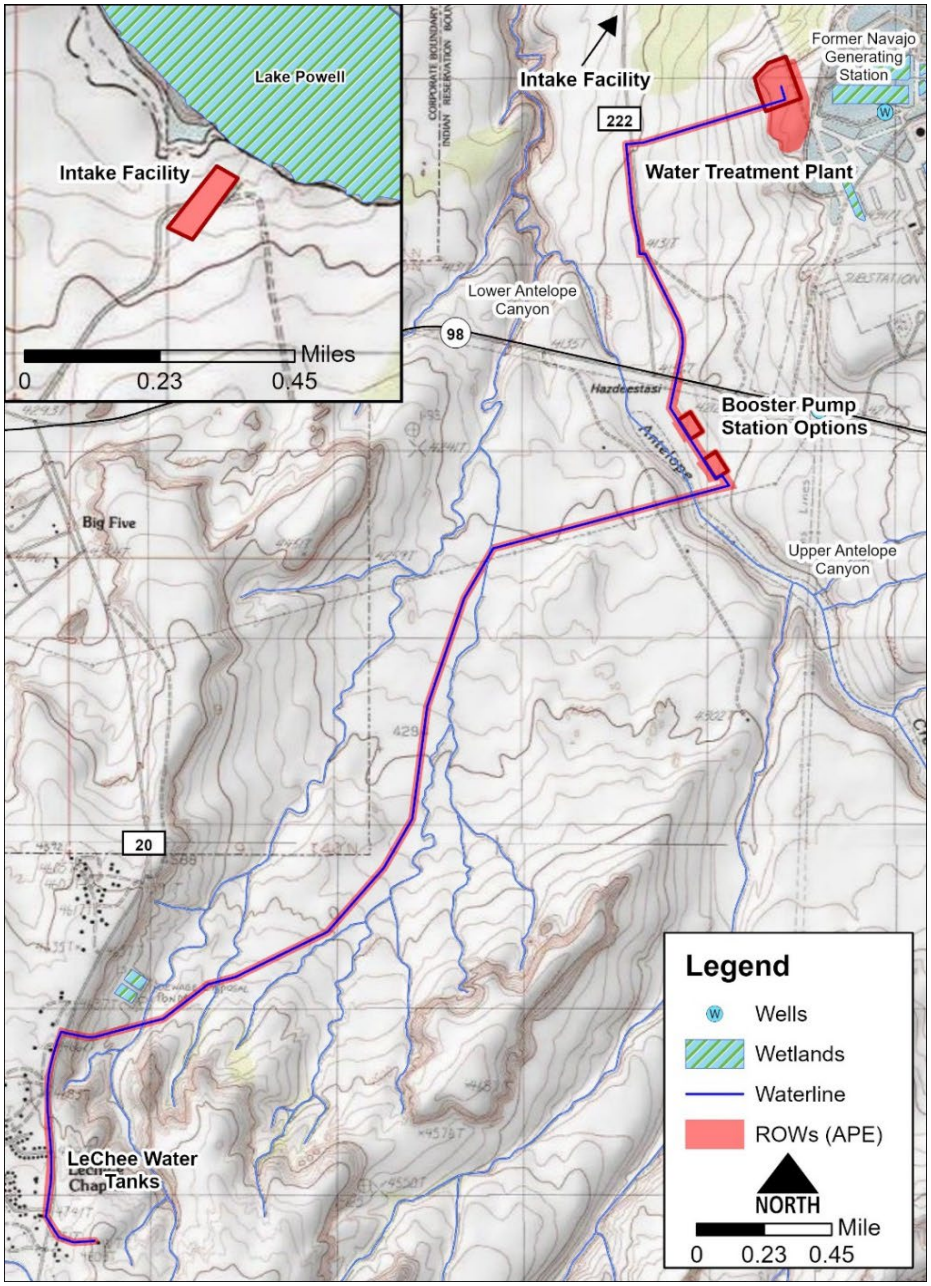


FIGURE 5. MAP SHOWING WATER RESOURCES IDENTIFIED IN THE PROJECT AREA.

Lake Powell provides municipal and domestic water supplies to this region. The Navajo Nation holds a permit from the Arizona Department of Water Resources for 950-acre feet per year but uses a significantly lower amount. The side canyons, including Antelope Canyon, channel run off to Lake Powell. During intense thunderstorms, local canyons and drainage channels can experience flash floods. These water systems are dry most of the year.

Wetlands. The National Wetlands Inventory Map (USFWS, 2020) identifies canyons and ephemeral streambeds (usually dry stream beds) as wetlands, as well as the community sewer lagoon. According to the soil's descriptions, soils at the project site are not "hydric" and have no frequency of flooding or ponding (USDA, 2021).

Floodplains. Floodplain maps are unavailable for the project area. According to FEMA FIRM Panels 04005C0400G and 04005C0775G, the project is located within an area designated as Zone D defined as areas with possible, yet undetermined flood hazards, and no analysis of flood hazards is available. The NRCS soil survey, however, indicates soils along the project corridor are "alluvial" and have no frequency of flooding or ponding (NRCS, 2021).

Groundwater. The Navajo Sandstone hosts the N-aquifer, a principal aquifer that is used extensively throughout the region (Cooley et al. 1969). The N-aquifer consists of water-bearing sandstone units of the Glen Canyon Group. It is named for the primary sandstone unit-the Navajo Sandstone. It underlies approximately 5,400 square miles of the Little Colorado River Basin, primarily beneath the Navajo and Hopi Reservations, but it does extend outside of the Little Colorado River Basin to the north into Utah. Recharge occurs east and southeast of the project region in the Shonto and Ganado areas, and on the Kaibito Plateau (BOR 2006).

The Navajo Nation Water Management Branch well data base reveals there are eight (8) wells in Lechee used for livestock. These wells draw water from the Navajo Sandstone at depths ranging from 350 feet to 1,540 feet below ground surface. Surrounding Chapters including Kaibeto, Coppermine, Tuba City, and Shonto rely more extensively on ground water from the N-aquifer for domestic and livestock uses. The N-aquifer has not been designated as a sole source aquifer by the USEPA because it does not supply at least 50% of the drinking water consumed in the area overlying the aquifer.

3.3 Air Quality, Visibility, and Climate

This section describes the air quality, visibility, and climate found in the project region. The Clean Air Act (CAA) requires establishment of National Ambient Air Quality Standards (NAAQS) for seven criteria air pollutants across the U.S., including primary standards to protect the health of the citizens and secondary standards to protect other welfare-related values.

Air Quality/Visibility. The Navajo Nation Environmental Protection Agency (NNEPA) monitors air quality around the Navajo Nation. According to maps posted on the U.S. Environmental Protection Agency (USEPA) website (USEPA, 2022a), the Navajo Nation is "unclassified" under NAAQS, but is assumed to be in-attainment of these standards. Despite regional sources of air pollutants, including windblown dust and regional haze, air quality on the Navajo Nation is generally good. The recent closure of NGS has improved the regional air quality. On August 29, 2023, the current air quality index was "good," according to the government website: airnow.gov.

Climate. Climate is the description of the long-term pattern of weather in a place. It is the average of weather over time. In Page, the summers are hot and mostly clear, the winters are very cold and partly cloudy, and it is dry year-round. Throughout the year, the temperature typically varies from 30°F to 97°F and is rarely below 22°F or above 103°F. The maximum average daytime temperature is 108°F in June and July (WRCC, 2023). The minimum average daytime temperature is 1°F in January (2019).

Moisture-laden air from the Gulf of California and the eastern Pacific Ocean appears in July, bringing more than two months of irregular but sometimes heavy thundershowers that are locally referred to as the "summer monsoon." Between 1958 and 2012, the Western Regional Climate Center website reveals the project area had an average annual precipitation of 6.44 inches, mostly from rain. The average annual snowfall accumulation was 4.3 inches, primarily from November through March (WRCC, 2012).

Prevailing winds in the study area are generally from the north-northwest and the highest average wind speeds are about 7 miles per hour in April and May (WRCC, 2023).

3.4 Biotic Resources

This section describes the vegetation, wildlife, and threatened, endangered, and sensitive (TES) species found in the project area. It summarizes two reports that were conducted in 2021 and 2023: *Biological Evaluation of LeChee Water Improvement Projects, LeChee Chapter, Coconino County, Arizona*, by Lynn Neal, of LA Neal Consulting (Neal, 2021a) and *LeChee Water System Right-of-Way Adjustments* by Jean Marie Rieck, of JE Fuller/ Hydrology and Geomorphology (Rieck, 2023)

The biotic community throughout the project area is Great Basin Desertscrub (Brown 1994). Great Basin Desertscrub differs from the communities in other Arizona deserts in having an uncharacteristically low species diversity, with large areas often dominated by a single shrub species such as big sagebrush or fourwing saltbush. Grasses and forbs are present but rarely form the dominant species across the landscape, and cactus species typically constitute a small part of the community.

Vegetation and Wildlife. The project area's vegetation is largely intact for most of the ROW. The specific vegetation species observed in the project area include fourwing saltbush (*Atriplex canescens*), sand sagebrush (*Artemisia filifolia*), broom snakeweed (*Gutierrezia sarothrae*), blackbrush (*Coleogyne ramosissima*), Mormon tea (*Ephedra sp*.), rubber rabbitbrush (*Ericameria nauseosa*), sticky brittlebush (*Encelia resinifera*), pale evening primrose (*Oenothera pallida*), fragment sumac (*Rhus aromatica*), prickly pear cactus (*Opuntia sp*.), Navajo yucca (*Yucca baileyi*), desert trumpet (*Eriogonum inflatum*), and various grasses and forbs (including *sixweeks fescue/Vulpia octoflora, tansyleaftansyaster/ Machaeranthera tanacetifolia, Indian ricegrass/Achnatherum hymenoides*). Non-native species noted in disturbed areas were red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*), redstem stork's bill (*Erodium cicutarium*), and prickly lettuce (*Lactuca serriola*). In addition, five invasive plant species were observed including Russian thistle (*Salsola tragus)*. These invasives were found in disturbed areas, i.e., along roadways, powerlines, and adjacent to developed areas.

Rodent burrows were the primary sign detected along with desert cottontail (*Sylvilagus audubonii*), Brewer's sparrow (*Spizella breweri*), common raven (*Corvus corax*), whiptail lizard (*Aspidoscelis sp*.), and coyote (*Canis latrans*). Dogs were noted in the vicinity of LeChee, and cow patties and sheep dung plus livestock trailing were commonly observed. All grasses where dung was noted showed evidence of grazing as did some shrubs.

TES species. In 2021, Lynn Neal evaluated 10 TES species with potential to occur or have habitat in the vicinity of the project based on a data request (DR#21lanc102) that included species under the Endangered Species Act and the Navajo Nation's Endangered Species List (NESL). They include: golden eagle (*Aquila chrysaetos*), known to occur within three miles of the proposed ROW, and the following nine special-status species with potential to occur in the project area: ferruginous hawk (*Buteo regalis*), peregrine falcon (*Falco peregrinus*), American dipper (*Cinclus mexicanus*), southwestern willow flycatcher (*Empidonax traillii extimus*), Welsh's milkweed (*Asclepias welshii*), Atwood's camissonia (*Camissonia atwoodii*), mottled sculpin (*Cottus bairdi*), razorback sucker (*Xyrauchen texanus*), and northern leopard frog (*Lithobates pipiens*).

In the subsequent ROW adjustments, Jean Marie Rieck evaluated 16 TES species to assess habitat and determine the potential effects, if any, that use of the project site may have on special-status species.

Under Data Request #23jefhg104 by Rieck, NNDFW provided a list of 10 species plus six additional species listed by the U.S. Fish and Wildlife Service (USFWS) and the Arizona Game and Fish Department (AGFD). **Table 1** presents a summary of the TES species, their preferred habitat description, and habitat potential.

Following the initial analysis of the potential habitat, 10 species were dropped from further analysis due to limited suitable habitat. The remaining 6 species were further analyzed including: golden eagle, ferruginous hawk, bald eagle, California condor, Monarch butterfly, and Welsh's milkweed. **Table 1** reveals which species were" further analyzed" with the remaining species being eliminated from further analysis. The effects to these species are discussed in Chapter 4.

Table 1. TES Species Evaluated by Neal (2021) and Rieck (2023)

Common Name and *Scientific Name*	**Status**	**Preferred Habitat Description**	**Potential Habitat (*further analyzed)**
Golden eagle *Aquila chrysaetos*	NESL G3, BGEPA, MBTA	Nests on steep cliffs with less than 30 meters in height adjacent to foraging habitat of desert grasslands or desertscrub.	*Yes, known to occur within 3 miles; therefore, further analyzed
ferruginous hawk *Buteo regalis*	NESL G3, MBTA	Nests near clear, unpolluted streams usually less than 15 meters in width and less than 2 meters in depth, with a variety of riffles, pools, waterfalls, with substrate of rocks, sand, and rubble.	*No, but listed as having potential habitat in the vicinity; therefore, further analyzed
American dipper *Cinclus mexicanus*	NESL G3, MBTA	Nests near clear, unpolluted streams usually less than 15 meters in width and less than 2 meters in depth, with a variety of riffles, pools, waterfalls, with substrate of rocks, sand, and rubble.	No habitat, no further analysis
Southwestern willow flycatcher *Empidonax traillii extimus*	ESA FE, NESL G2, MBTA	Found in dense riparian thickets of trees such as willow, cottonwood, and tamarisk.	No, but listed as having potential habitat in the vicinity or region. No further analysis.
Peregrine falcon *Falco peregrinus*	NESL G4, MBTA	Nests on steep cliffs less than 30 meters tall in a scrape on sheltered ledges or potholes. Foraging habitat quality is important factor; often extensive wetland &/or forest habitat within falcon's hunting range of about or less than 12 kilometers. Variability in topographic features such as elevation & slope may indicate prey availability.	No habitat and foraging habitat limited, therefore, no further analysis
California condor *Gymnogyps californianus*	EXPN, NESL G4	California condors are not listed as having potential habitat within or near the project area by the NNDFW, but habitat may be present in the region or vicinity. AGFD documents this species as occurring within 3 miles of the project area. This species roosts and nests in crevices and ledges on tall, steep cliff faces within desertscrub, grasslands, or major river canyon walls, with easy approach from the air and protection from terrestrial predators. Once extirpated from their historic habitat in Arizona, a breeding population has been established via annual introductions of captive-bred individuals at Vermillion Cliffs. This species now ranges over limited areas of the western Navajo Nation.	*Yes, documented as occurring within 3 miles of the project area.
Bald eagle *Haliaeetus leucocephalus*	NESL G2, BGEPA	Bald eagles occur in Arizona both during the breeding season and as winter migrants with a few records of nesting near lakes on the Navajo Nation. Nests generally occur in tall trees, and mature forests near open water for foraging. Perches for shelter, roosting, foraging and guarding are important habitat components. Their diet is comprised mainly of fish, with small mammals, carrion,	*Yes, documented as occurring within 3 miles of the project area.

		birds and reptiles eaten to a lesser extent during the breeding season. Wintering eagles are known to occur along the San Juan and Colorado Rivers. Due to the presence of potentially suitable habitat and documented presence in the project vicinity, this species is retained for further analysis.	
Monarch butterfly *Danaus plexippus*	C	Monarch butterfly breeding areas are virtually all patches of milkweed in North America. Monarchs in Arizona migrate to known overwintering destinations in both Mexico and California; small numbers overwinter in the lower deserts of southwestern Arizona. The monarch is listed as potentially occurring within or near the project area. The habitat evaluation was conducted during the winter and no milkweed species were identified. This species is retained for analysis.	*****No but listed as having potential habitat in the vicinity or region; therefore, further analyzed.
Mexican spotted owl *Strix occidentalis lucida*	NESL G3, LT	Mexican spotted owl is usually found in cool microclimates of rocky canyons and dense closed-canopy forests. Forests used for roosting and nesting are generally dominated by Douglas fir and/or white fir, with codominant species including southwestern white pine, limber pine, and ponderosa pine. The understory often contains the above coniferous species and broadleaved species such as Gambel oak, maples, boxelder, and New Mexico locust. On the Navajo Nation, this species occupies the following three habitat types: 1) mid-aged to mature mixed conifer stands dominated by Douglas fir typically on mountain slopes with moderate to dense canopies and multiple canopy layers; 2) steep-walled, narrow canyons often with riparian vegetation and cool microclimates, and 3) moderately sloped drainages with Douglas fir, in pinyon-juniper woodland areas. The owl will use pinyon-juniper and clearings for foraging. No cool microclimate narrow canyon or multi-storied mixed conifer forest habitats representing suitable nesting habitat for this species occur in or near the project area. No further analysis of this species is provided.	No, but listed as having potential habitat in the vicinity or region. Not further analyzed.
Yellow-billed cuckoo *Coccyzus americanus*	LT	Yellow-billed cuckoos are found mainly in mature cottonwood-willow stands, and to a lesser extent in willows or isolated cottonwoods mixed with tall mesquites. The species is also found in streamside cottonwood, willow groves, and larger mesquite bosques for migrating and breeding. It is rarely transient in xeric desert or urban settings. Breeding may occur at all elevations on the Navajo Nation but is currently only known to occur along the San Juan River. Potential habitat may also occur along other canyons and streams with appropriate habitat. Although the Intake Facility is 300 feet south of Navajo Canyon of Lake Powell, the shoreline is barren and devoid of the appropriate riparian habitat for the species. The closest suitable habitat exists 3.75 miles southwest of the Intake Facility along the Colorado River below Glen Canyon Dam, where the riparian vegetation forms a narrow corridor (less than 60 meters wide in most places). The other four project areas are in dry, upland locations with no potential for the presence of cuckoo or its habitat.	No, but listed as having potential habitat in the vicinity or region. No further analysis
Welsh's milkweed *Asclepias welshii*	ESA FT, NESL G3	Active sand dunes derived from Navajo Sandstone in sagebrush, juniper, ponderosa pine communities; known populations occur from 5,000–6,230 feet elevation.	*****No but listed as having potential habitat in the vicinity or region; therefore, further analyzed.

Atwood's camissonia *Camissonia atwoodii*	NESL G4	Occurs in clay soils of Tropic Shale & Carmel Formations within salt desertscrub community; known populations between 4,060- and 5,000-feet elevation; not yet known to occur on Navajo Nation.	No habitat, no further analysis
Mottled sculpin *Cottus bairdi*	NESL G4	Nonindigenous species found in gravel or rocky rubble substrates in swift waters of headwaters, creeks, & small rivers; occasionally in lakes, reservoirs, springs in rocky substrate.	No habitat, not further analysis
Razorback sucker *Xyrauchen texanus*	ESA FE, NESL G2	Occur in mainstream portions of rivers; irrigation canals & ponds connected to San Juan River may be potential habitat.	No, but listed as having potential habitat in the vicinity or region. No habitat, no further analysis.
Northern leopard frog *Lithobates pipiens*	NESL G2	Breeds in wetlands usually with permanent water & aquatic vegetation ranging from irrigation ditches & small streams to rivers, small ponds & marshes to lakes or reservoirs.	No habitat, not further analyzed
Northern Mexican gartersnake *Thamnophis eques*		Northern Mexican gartersnake is generally known to occur between 3,000- and 5,000-feet elevation but may venture up to 8,000 ft. It is found in both lotic and lentic habitats such as cienegas and stock tanks, as well as river habitat pools and backwaters. The gartersnake forages along the banks of waterbodies feeding primarily upon fish and adult and larval frogs. This species is likely extant in fragmented populations within the middle/upper Verde River drainage, middle/lower Tonto Creek, and the Cienega Creek drainage, as well as a small number of isolated wetland habitats in southeastern Arizona. There are no suitable riparian or streamside habitats within the project vicinity that represent suitable habitat for the species.	No, but listed as having potential habitat in the vicinity or region. Not further analyzed.
Bonytail *Gila elegans*		Formerly widespread and common in much of the Colorado River basin; bonytail is now widely extirpated and very rare, with no known self-sustaining populations. Decline of bonytail apparently has been caused mainly by the effects of dams and exotic fishes, and these continue to threaten the species with extinction. Bonytail is a warm-water species that appears to favor main-stem rivers regardless of turbidity, usually in or near deep swift water, in flowing pools and eddies just outside the main current. Suitable habitats include river channels and flooded, ponded, or inundated riverine habitats, especially those where competition from non-native fishes is absent or reduced. The Intake Facility is approximately 300 feet south of Lake Powell body of water. However, it is in an upland area with no anticipated impacts to the Colorado River or its warm water tributaries representing appropriate habitat for the species.	No, but listed as having potential habitat in the vicinity or region. No further analysis.
Status Acronyms: BGEPA (Bald and Golden Eagle Protection Act) LE (ESA Listed Endangered) LT (ESA Listed Threatened) C (ESA Candidate) NESL (Navajo Endangered Species List) NESL G3 (Group 3): "Endangered" — survival/recruitment likely to be in jeopardy in near future NESL G4 (Group 4): Not enough info for listing in Group 2/3 but sufficient reason for concern			

3.5 Cultural Resources

This section summarizes two cultural resource investigations (CRI) conducted by *LA Neal Consulting* and *MBurke Consulting*. The first report is entitled A *Cultural Resources Inventory of Proposed LeChee Water Improvement Projects, LeChee Chapter, Coconino County, Arizona* (Neal, 2021b). The second report is entitled *MBC-23-044: A Cultural Resource Inventory of Modifications for the Proposed Western Navajo*

Pipeline – Phase I LeChee Water Improvement Projects located in LeChee Chapter, Coconino County, Arizona (MBurke, 2023).

3.5.1 Affected Environment

At the outset of the CRI, Neal conducted an archival review at the Navajo Nation Heritage and Historic Preservation Department (NNHHPD) office in Window Rock, Arizona. The records search revealed that 3 CRIs were previously conducted in areas that cover or parallel significant portions of the project APE. The portion of the project following N-20 had been covered during an August 2017 survey by *EnviroSystems Management* for the initial LeChee Waterline (HPD-17-848). N-222 was realigned following 1986 and 1989 surveys (filed under NABR-86-295.1 but includes NABR-87-307) and subsequent archaeological site mitigation (NABR-86-295.3/NNAD-90-180/HPD-92-066.1). Other previous CRI surveys occurring within 100 meters of the project APE are HPD numbers: 89-163, 91-245, 91-612, 01- 036, and 02-614 that relate to homesites, roads, and sewage ponds installation.

The field survey resulted in re-identification of one historic archaeological site (Site AZ-K-12-31) previously determined ineligible to the National Register of Historic Places (NRHP) and discovery and documentation of 11 Incidental Occurrences (IOs) pertaining to pre-1970 historic cultural resources. Site AZ-K-12-31 consists of a masonry structure built of shaped sandstone blocks and two concrete foundations situated adjacent to N-20 about 1,000 feet northwest of the LeChee water tanks. It represents an inactive well site (1T-510) that once had an associated windmill. Construction and drilling of the well started on February 3, 1961, and was completed on March 15, 1961. It remains uncertain when the well was decommissioned. NNHHPD determined the site to be NRHP ineligible. The site falls within the current survey area but is situated entirely outside the project APE and N-20 ROW, and as such, it should be avoided by the proposed project undertaking (Neal, 2021b).

Following the previous CRI, modifications were made to 6 areas along the waterline, requiring additional investigations. This second CRI was conducted by Mathilda Burke of MBurke Consulting. A check of NNHHPD records indicated that 6 cultural surveys were previously conducted within a 100-meter radius of the project area with 1 site (AZ-K-5-30) recorded. According to NNHHPD Traditional Cultural Program files and an ethnographic interview, no known TCPs occur within 1 mile of the modified areas. A Class III pedestrian inventory of the modified areas with a 50-foot buffer was conducted by Mathilda Burke, using parallel pedestrian transects no more than 15 meters apart. During the survey, 6 in-use areas were encountered, including water storage tanks, church and storage building, Chapter tract and TCRHCC LeChee Clinic, Canyon View NHA Subdivision, trailer court, and water intake facility. These areas were determined not eligible for the NRHP or protection under the American Indian Religious Freedom Act or Native American Graves Protection and Repatriation Act (MBurke, 2023).

3.6 Socioeconomic Conditions

Demographics and Trends. Navajo people continue to live a combination of traditional and modern lifestyles and their language is still thriving. Many have contemporary occupations both on and off the Navajo Nation while maintaining aspects of their culture, customs, and traditional lifestyles.

In 2010, the population of LeChee Chapter was 1,660. By 2020, the population declined to 1,517, representing a negative growth rate of 8.6% (-8.6%) between 2010 and 2020. The number of occupied housing units increased by 6.2% during this time. The average household size decreased from 4.59 in 2010 to 4.05 in 2020 (U.S. Census Bureau, 2020).

Economics. NGS was a large employer of residents in LeChee Chapter. Since it closed in 2019, many employees have transferred to other power plants, and some have switched careers. Tourism is now the major source of revenue due to its proximity to Upper and Lower Antelope Canyons, Lake Powell, Glen Canyon National Recreation Area, Lee's Ferry, Vermillion Cliffs, and other historic and outdoor attractions. Residents also work in hotels and restaurants in the City of Page, Wahweap Lodge and Marina, and Antelope Point Marina. Many Navajo owned businesses along provide economic opportunities. These businesses support hundreds of local, well-paying jobs. According to the 2020 Census Data, LeChee Chapter's top 3 industries include 1) arts/entertainment/recreation/food services, 2) educational services/health care/social assistance, and 3) construction. In 2010, the median household income was $42,222 and in 2020 it rose to $54,196. Interestingly, poverty rate rose from 17.4% to 19% during this same period (U.S. Census Bureau, 2020).

Environmental Justice. Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations - was issued by President William J. Clinton in 1994. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. The proposed project will benefit minority and low-income families. No environmental justice issues have been identified for this project.

3.7 Indian Trust Resources

Indian Trust Resources includes property and interests in property: "(1) that are held in trust by the U.S. for the benefit of a tribe or individual Indians; or (2) that are subject to restrictions upon alienation," (25 CFR Part 1000.352). The proposed project is located on Navajo Tribal Trust land. Under the Navajo Nation Trust Leasing Act, the Navajo Nation has authority to issue leases without approval of the secretary of Interior. No other Trust resources are identified for the Proposed Action.

3.8 Environmental Module: RCRA and CERCA/Superfund Sites

This section describes the any hazardous materials, contamination, toxic chemicals and gases, and radioactive substances. These types of sites are regulated under the Resource Conservation and Recovery Act (RCRA, Comprehensive Environmental Response, Compensation, and Liability Act (CECLA), and the Toxic Substance and Control Act (TSCA). Information contained herein is from EPA's NEPAssist (USEPA, 2022a) and underground storage tanks finder website (USEPA, 2022b). No RCRA, CERCLA, or TSCA are identified within 0.5 miles of the APE (See **Appendix C**).

RCRA. RCRA sets forth a framework for the management of hazardous and non-hazardous solid wastes. Below we discuss Subtitle C (hazardous waste), Subtitle D (non-hazardous solid waste), and Subtitle I (underground storage tanks, or USTs). According to NEPAssist, the nearest RCRA-Subtitle C site is the former NGS site. Though SRP has five years to decommission NGS, it is expected to take three years to complete all major activities (SRP, 2020).

NEPAssist identified no RCRA Subtitle D sites within a half-mile of the project area (USEPA, 2022b). The nearest site that handles non-hazardous solid waste is a transfer station in Page, located about 1.1 miles west of the project site at its closest point (2022b). The facility is operated by Republic Services, Inc. From its facility, Republic Services hauls waste to Cinder Lakes landfill in Flagstaff, Arizona.

As for underground storage tanks, one site is identified at the old NGS (USEPA, 2020c). It is over one-half mile from the proposed ROW (See **Appendix C**).

CERCLA/Superfund. CERCLA of 1980 is a U.S. federal government program designed to fund the cleanup of sites contaminated with hazardous substances and pollutants. Sites managed under this program are referred to as "Superfund" sites. No sites occur in the region.

TSCA. No TSCA sites occur in this region.

3.9 Land Use Patterns: Transportation, Land Use Plans, Agriculture, Recreation/Fishing and Hunting, Timber Harvesting

Transportation. The primary highways in LeChee Chapter are State Route 98, which extends east and south from Page to Kaibeto and beyond, and Navajo Route 20 ("Coppermine Road"), which extends north from Bodaway-Gap into Page. There is no available traffic data for Navajo Route 20 through Navajo Department of Transportation (NDOT), but the Arizona Department of Transportation (ADOT) has average annual daily traffic counts along State Route 98. Between Navajo Route 20/Coppermine Road and NGS, the most recent average annual daily traffic count was 8,944 (ADOT, 2019). By 2040, ADOT expects that traffic will increase by 166%, or to an average annual daily count of 14,876 (2019).

Land Use Plans. The Navajo Nation passed the Navajo Nation Local Governance Act (Title 26 of the Navajo Nation Code) to recognize Chapter-level governance on the Nation. Under this act, Chapters can develop community-based land use plans that designate specific land uses supported by local ordinances. ETD, Inc. prepared a Land Use Plan for LeChee Chapter in 2016. The project area is in a "future growth area" as designated by the Land Use Planning Committee. The current land uses in and around the project site include open rangelands, scattered residential homes, and commercial/tourism business sites.

Agriculture. LeChee Chapter has not historically been a farming community. The USDA's National Agricultural Statistics Service provides data on agricultural activities for Navajo chapters. According to the data, there are eight small farms (gardens) that grow corn, vegetables, and watermelon. LeChee Chapter's livestock includes cattle/calves, sheep/lambs, /horses/ponies, and goats. The total inventory for livestock in 2017 was 3,805 (USDA, 2017).

Recreation/Fishing and Hunting. Lake Powell and the Colorado River provide fishing and recreation. NNDFW issues fishing licenses for the Navajo Nation side, while the Arizona Game and Fish Department provides licenses for off reservation. Fishing and recreation areas are not on or near the project area. No hunting occurs in this area.

Timber Harvesting. The Navajo Nation Forestry Department (NNFD) is responsible for regulating the Nation's forests. The project area does not contain forestlands nor woodlands.

3.10 Other Values: Wilderness Areas, Noise, Public Health and Safety, Visual Setting

Wilderness Areas. The Wilderness Act of 1964 (16 U.S.C. 1131-1136, P.L. 88-577) established the National Wilderness Preservation System, which protects federally managed wilderness areas designated for preservation in their natural condition. The National Park Service, U.S. Forest Service, USFWS, and Bureau of Land Management manage wilderness areas. The nearest wilderness area is the Paria Canyon-Vermillion Cliffs, five miles west of the project site (at its closest point). The Bureau of Land Management manages this 112,500-acre wilderness area.

Sound and Noise. While the Noise Control Act of 1972 (42 U.S.C. §4901 et seq.) was passed to preserve the health and welfare of the U.S. population, particularly in urban areas, noise is primarily controlled by State and local governments. The Navajo Nation does not have any noise regulations or requirements that would be applicable to this project. Man-made sound and natural noise sources in the study area include helicopters and aircraft flying overhead, traffic along US 89 and local roads, nearby homes, and natural phenomena such as wind, thunder, and rain.

Visual Setting. As development in rural areas increases in scope and complexity, aesthetic or visual impacts may be a concern for the public. In many instances, landscapes that have remained undisturbed are now being considered for development. LeChee and Page are particularly known for their colorful geology and picturesque canyons. According to the Navajo Nation's Environmental Protection Act (§903): "The Navajo Nation shall employ its governmental authority pursuant to section 2 hereof, using all practicable means consistent with other essential government functions, for the following purposes: … (B) To assure for all residents or and visitors to the Navajo Nation a safe, healthful, productive, **aesthetically pleasing and culturally appropriate environment**; … (F) To preserve important... natural aspects of the Navajo Nation."

4.0 Environmental Consequences, and Mitigation

This section describes the environmental consequences that may occur as a result of the proposed action. Impacts are described as direct, indirect, or cumulative. Direct effects occur at the same time and place as the action. Unless otherwise stated, impacts are direct. Indirect impacts occur later in time or farther away in distance but are still reasonably foreseeable. Impacts (effects) may have both beneficial and detrimental effects. Mitigation Measures and/or Conditions of Compliance are identified where appropriate. They are meant to minimize or eliminate effects.

4.1 Land Resources: Geology, Topography, Soils and Farmlands

Section 402 of the Clean Water Act requires contractors to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) General Construction Permit if one or more acres of land is disturbed. The NPDES permit requires a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP addresses water pollution from various sources, including sand and dredged soils, and oil and gas leaks or spills from heavy equipment.

4.1.1 Effects

Under the proposed action, there will be trenching and excavations of soils and bedrock in some areas using heavy equipment, and surficial disturbances from vehicles moving people in and out of the construction areas. With the SWPPP in place, there will be direct, minor, and short-term impacts to soils. Under the no action alternative, there will be no change to soil resources, therefore, no impact.

4.1.2 Mitigation

The general contractor shall obtain coverage under EPA's National Pollution Discharge Elimination System (NPDES)-General Construction Permit through the USEPA Region IX. The SWPPP will involve controlling stormwater discharges by installing and maintaining erosion barriers, as well as contamination controls due to oil or gas spills.

4.2 Water Resources: Streams, Wetlands, Floodplains, and Groundwater

The primary impacts to water resources relate to possible water quality degradation in streams and drainageways from temporary construction activities. As discussed above, Section 402 sets forth requirements for the NPDES General Construction Permit as discussed above. In addition, Executive Order 11990-Protection of Wetlands sets forth a policy to avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands. Also, Executive Order 11988-Floodplain Management requires federal agencies to avoid actions, to the extent practicable, which will result in the location of facilities in floodplains and/or affect floodplain values.

4.2.2 Effects

Surface Water. Water quality degradation can occur from temporary construction activities, such as grading, trenching, excavating. During rainstorms, run-off from a non-stabilized construction site can pick up trash, debris, sediments, loose soils, and pollutants such as oil, grease, and other toxins, from the construction site and deposit them into nearby washes. Under Section 402 of the Clean Water Act, the proposed project requires a SWPPP and coverage under an NPDES. With the SWPPP in place, the direct impacts to water quality will be minor to negligible and short-term. Under the no action alternative, there will be no change, therefore no impact.

Wetlands. The project will completely avoid stream channels (also considered wetlands) by using horizontal drilling/boring methods beneath Antelope Creek and other streambeds. This system will mitigate water quality impacts to wetlands and waters of the Navajo Nation and the U.S. The project is not subject to Section 401 or 404 permits under the Clean Water Act. The direct impact to wetlands quality will be minor, and short-term. Under the no action alternative, there will be no change, therefore no impact.

Groundwater. The proposed project activities will not utilize groundwater sources during or after construction. Construction activities do not excavate or drill to depths of the existing groundwater table. As a result, there will be no impact to groundwater resources from construction activities. Indirectly, the proposed action would benefit the N-aquifer and other groundwater resources by providing another water source to Western Navajo. Under the no action alternative, there will be no change, therefore no impact.

Floodplains. By using horizontal/drilling method, the water pipeline installation process will not disturb the surficial soil deposits and will be buried adequately so that it would not be impacted by flooding along drainage channels. There will be no effect on or from flooding as a result of the proposed action. Under the no action alternative, there will be no change, therefore no impact.

4.2.2 Mitigation

General Contractor will be required to obtain coverage under an NPDES–General Construction Permit. This permit requires a SWPPP that will identify best management practices to prevent construction site surface runoff from depositing into washes. Refer to 3.1.3.

4.3 Air Resources: Air Quality and Visibility/Climate

The Clean Air Act (CAA) requires establishment of National Ambient Air Quality Standards (NAAQS) for seven criteria air pollutants across the U.S., including primary standards to protect the health of the citizens and secondary standards to protect other welfare-related values. During earthmoving activities, soils in non-stabilized construction sites become loose and leads to windblown dust. During windy days, which is typical for the area, the potential for airborne dusts increases, temporarily impacting the quality/visibility at the work site and surrounding area. Best management practices such as applying water can minimize dust. Exhaust emissions (carbon monoxide) from heavy equipment will degrade air quality locally, however, it will not exceed the NAAQS. Impacts to air quality will be minor and short-term. However, once construction activities are complete, there will be no impact to the air quality and visibility. Under the no action alternative, there will be no change, therefore no impact.

4.4 Biotic Resources: Vegetation and Threatened and Endangered (TES) Species

4.4.1 Effects

The biologists concluded reports with the following impact determinations indicating no effect to the 6 species that were further analyzed. A summary of the analysis for each species is provided below.

Golden Eagle**.** Large cliffs representing suitable habitat occur east N-20 and could be used for nesting and/or foraging golden eagles. However, the study area lacks trees or steep cliffs considered requisite for the species. Given the proximity of a documented golden eagle, project construction activities could impact nesting or roosting golden eagles. Potential prey items could occur within the vicinity of the

ROW, and there could be short-term effects to prey availability during and after project construction. However, the proposed project would not result in take as defined by the BGEPA and prey abundance would likely return to current levels after construction. Given that there are vast extents of better habitat nearby in the region, it is unlikely that golden eagles would utilize the project area, except possibly opportunistically when passing through on route to more suitable habitat. **Project activities may affect individual golden eagles but are not likely to adversely affect the species or its habitat**.

Ferruginous Hawk**.** No ferruginous hawks or nests were detected during the habitat evaluation survey, but whitewash was observed along the cliffs of the proposed pipeline ROW along N-20. It is unlikely that ferruginous hawks would be nesting or roosting on the cliffs immediately adjacent to the project area due to the heavy human activity in the area. Canyon walls at the south end of the project corridor are short but could provide an appropriate habitat. Potential forage items may occur within the northern and southern portions of the project area and there could be short-term noise disturbance during construction. However, given the abundance of undisturbed habitat in the region surrounding the project area, it is unlikely that the proposed project would have a measurable impact on nesting or foraging ferruginous hawks. **Therefore, it is determined that the project may affect individuals, but not likely to affect species or its habitat.**

Bald Eagle**.** The habitat evaluation survey identified no evidence (stick nests or droppings) of bald eagle activity. While the Colorado River and nearby Lake Powell may provide foraging habitat for bald eagles, there are no tall trees or snags to provide perching, hunting or nesting sites in the project area. Potential forage items may occur near Lake Powell near the intake facility; however, the proposed project would not result in take as defined by the BGEPA. Given the abundance of undisturbed habitat in the region surrounding the project area, it is unlikely that the proposed project would have a measurable impact on nesting or foraging bald eagles. **Therefore, the proposed project would have no effect on the bald eagle or its habitat.**

California Condor**.** The habitat evaluation survey identified no evidence (whitewash or nesting crevices) of condor activity. There are large sheer cliffs rising up from Lake Powell north of the project area, but they would not be directly affected by proposed infrastructure. Potential nesting sites may occur along the canyon walls of Navajo Canyon on Lake Powell but the cliffs along N-20 did not appear to offer sufficient height or habitat characteristics for this species. JE Fuller has not been notified of any nests in the vicinity of the five project locations. Heavy human activity occurs in the surrounding vicinity of the project areas. Potential forage items may occur near the project area (as a result of roadkill), and there could be short-term noise disturbance to condors foraging during construction. However, given the abundance of undisturbed habitat in the region surrounding the project area, **the proposed project would not have an adverse impact on nesting or foraging California condors** that are known in the area or its habitat, **but may impact individuals opportunistically passing through or foraging**.

Monarch Butterfly**.** No milkweed species have been documented as occurring within 6 miles of the project area and there were no monarchs or nectar producing milkweed species observed within or near the project area or the surrounding vicinity. Although several species of flowering forbs were observed onsite, it should be noted the survey occurred in April, and limited flowers were observed blooming at the time. Should a monarch pass through the area and prefer to feed from any of these species, there are likely vast quantities or similar habitat in the vicinity of the project area. Therefore, given the lack of milkweed species documented in the project vicinity and the vast quantity of project-similar habitat in the nearby vicinity, **the proposed action would have no effect on the species or its habitat**.

Welsh's Milkweed**.** This species is not known to occur within 3 miles of the project corridor but was identified as having potential habitat in the vicinity due to the presence of nearby dune formations. The habitat evaluation survey was conducted in the spring before the height of flowering season for this species; however suitable habitat can be identified throughout the year. No individual Welsh's milkweed plants were encountered, and no suitable habitat was identified. Although the NRCS and geological descriptions for the project area note that the soil/substrate is composed of sand and dune field features, there are no active dunes present. All sandy areas or "dunes" were largely stabilized by vegetation within the project corridor. Some areas had less vegetative cover than others, but these areas were small in area, infrequently spaced, and did not appear to offer enough open habitat for Welsh's milkweed to establish in the project area. **Therefore, the proposed project would have no effect on the species or its habitat**.

4.4.2. Mitigation Measures/Conditions of Compliance:

NNDFW reviewed the biologists' reports and issued Biological Resource Compliance Forms for the initial ROW and amended ROW with specific mitigation measures (See **Appendix A**). The initial BRCF (NNDFW Review No. 21lanc102) contained the following mitigation measures:

1. All areas disturbed by the construction of the project shall be revegetated with a locally appropriate (i.e., native) seed mix that is free of invasive, noxious and undesirable plant species. Revegetation of the disturbed areas shall also include proper watering, mulching/straw and erosion controls so that the post construction areas is restored to suitable wildlife habitat.

2. Revegetation monitoring and reporting: Areas revegetated by this project shall monitor the site(s) for a time period of at least 3 years. If reseeding/plantings fail during the 3-year time period additional plantings or corrective actions shall be taken to ensure reseeding/planting success. Annual reports shall be submitted to the Navajo Natural Heritage Program detailing the success or failure of reseeding and corrective actions (if applicable). At the completion of monitoring (i.e., year 3) a final monitoring report. shall be submitted for review and written approval by NNHP.

3. All construction activities shall avoid the migratory bird breeding season (March 1 - August 15, of any year). A pre-construction survey should be performed if work occurs during this time period.

4. All above ground utility poles shall conform to a design standard(s) that comply with the Raptor Electrocution Prevention Regulations, RCS-43-08, September 10, 2008, so as to avoid unintentional electrocution of raptors that may perch on the utility pole(s).

The BRCF for amended ROW (NNDFW Review No. 23jefhg104) contained the following mitigation measures:

1. NNHP recommends that the project sponsor shall implement BMPs for erosion control and invasive weed prevention and mitigation. NNHP also recommends that temporarily disturbed areas shall be reseeded with a native species mix that matches the species in surrounding non-disturbed areas.

2. NNHP strongly recommends that the project sponsor shall implement BMPs for invasive weed prevention and mitigation across all areas where ground disturbance or vegetation removal occurs.

4.5 Cultural Resources

The inventory by Neal resulted in re-identification of one historic site (AZ-K-12-31), documentation of 11 IOs of cultural material, and no TCPs within more than 1 mile of the project area. Site AZ-K-12-31 was determined ineligible to the NRHP by NNHHPD following the site's documentation in 2017. Additionally, the proposed waterline centerline is within the N-20 ROW west of the site, and as such, the site and its structural remnants are likely to be avoided. Documentation of the 11 IOs have exhausted their information potential, so they too are not considered eligible to the NRHP and do not require further management consideration. Since no historic properties, TCPs, or other significant cultural resources will be adversely impacted in the project APE, a determination of no historic properties affected was recommended for the proposed undertaking.

The inventory conducted by Burke resulted in the identification of 6 in use areas. These areas were recommended to be ineligible to the NRHP. No TCPs were identified. Since no historic properties, TCPs, or other significant cultural resources will be adversely impacted by the amended areas of the proposed project, a determination of "no historic properties affected" was recommended for the proposed undertaking. It was recommended that the client be allowed to proceed with construction as planned.

NNHHPD concurred with the findings of both investigations and issued two cultural resource compliance forms (CRCFs) in June of 2021 (HPD-21-648) and October of 2023 (HPD-23-773). These CRCFs are presented in **Appendix B**. However, these forms also issued a standard discovery clause:

In the event of a discovery ["discovery means any previously unidentified or incorrectly identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices], all operations in the immediate vicinity of the discovery must cease, and the NNHHPD must be notified at (928) 871-7148.

4.6 Socioeconomic Conditions: Employment/Income, Lifestyles, Infrastructure, and Environmental Justice

The proposed project will have no direct effect to employment, income, demographics, or trends within the LeChee Chapter. However, there will be future indirect beneficial effects by having available water supply for housing and commercial developments. It will allow Navajo-owned tour businesses to extend service lines to their business sites and provide opportunities for future business development. Under the no-action alternative, limited water supply and inadequate infrastructure will not be addressed. As a result, there will be long-term negative impact to LeChee Chapter and Western Navajo chapters, limiting development and economic opportunities.

4.7 Environmental Module: RCRA and CERCA/Superfund Sites

This section describes the any hazardous materials, contamination, toxic chemicals and gases, and radioactive substances. These types of sites are regulated under the Resource Conservation and Recovery Act (RCRA, Comprehensive Environmental Response, Compensation, and Liability Act (CECLA), and the Toxic Substance and Control Act (TSCA). Information contained herein is from EPA's NEPAssist

(USEPA, 2022a) and Underground storage tanks Finder websites (USEPA, 2022b). No RCRA, CERCLA, or TSCA are identified within 0.5 miles of the APE (See **Appendix C**).

The project will not generate, transport, store, or dispose of any hazardous waste. Any solid waste generated during construction will be transported to a nearby designated landfill by the construction contractor. As a result, there will be no effects from hazardous waste as a result of the Proposed Action and the no-action alternative.

4.8 Land Use Patterns: Transportation, Land Use Plans, Agriculture, Recreation/Fishing and Hunting, Timber Harvesting

The project will use existing transportation infrastructure to access various parts of the project area. The project sponsors will obtain an encroachment permit from NDOT and ADOT if necessary for work along Navajo Route 20 and State Route 98. No new roads will be created as a result of the proposed project. There may be minor and short-term delays in traffic along State Route 98 and Navajo Route 20 when construction takes place along those corridors. There will no effect under the no-action alternative.

4.9 Other Values: Wilderness Areas, Noise, Public Health and Safety, Visual Setting

Wilderness Areas. There will be no effect to Wilderness Areas under the proposed action or nor action alternative.

Noise. There will be slight noise increase during construction activities but for a short-term under the proposed action or nor action alternative.

Visual Setting. Except for the WTP, booster pump station, and intake structure control building, the majority of the infrastructure will be underground. The impact to the visual setting will be minor but long-term impact from these structures. There will be no effect to the visual setting under the no-action alternative.

4.10 Cumulative Impacts

Cumulative impacts result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency or person undertakes these actions. The proposed action is a major water project planned for LeChee Chapter; no other water infrastructure plans have been identified in LeChee. However, as additional water supply is available, there will be potential for more residential and commercial developments. New businesses can create new jobs and bring in new revenue to the Chapter and Navajo Nation lease fees and taxes, at the same time they could create environmental impacts if the project is not properly evaluated prior to construction.

5. Preparer's Credentials and Signature

This document has been prepared by Eunice L. Tso, Environmental Specialist, of ETD, Inc. Ms. Tso has over 25 years of experience in environmental regulatory compliance in Indian Country and is an expert in the environmental policies and regulations that affect development in Indian country. She holds an M.S. Degree in Environmental Geology from Northern Arizona University.



12/5/2023

Eunice L. Tso, M.S. Geology
Environmental Specialist

Date

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Appendix A: Biological Resources Clearance Form

NNDFW Review No. 21lanc102

BIOLOGICAL RESOURCES COMPLIANCE FORM
NAVAJO NATION DEPARTMENT OF FISH AND WILDLIFE
P.O. BOX 1480, WINDOW ROCK, ARIZONA 86515-1480

It is the Department's opinion the project described below, with applicable conditions, is in compliance with Tribal and Federal laws protecting biological resources including the Navajo Endangered Species and Environmental Policy Codes, U.S. Endangered Species, Migratory Bird Treaty, Eagle Protection and National Environmental Policy Acts. This form does not preclude or replace consultation with the U.S. Fish and Wildlife Service if a Federally-listed species is affected.

PROJECT NAME & NO.: Western Navajo Pipeline LeChee Treatment Plant and Waterline Project / 1059-21

DESCRIPTION: The proposal includes the installation and construction of 5.8 miles of waterlines, a water treatment plant and two booster pump stations from the existing water tank in LeChee to the proposed treatment plant in Page, AZ.

LOCATION: T40N, R9E, Sections 2, 3, 10, 15, 16, 17, 20, 21; T41N, R9E, Sections 34, and 35, LeChee Chapter, Coconino County, Arizona

REPRESENTATIVE: Lynn A Neal - LA Neal Consulting, LLC

ACTION AGENCY: NNDWR - Water Management Branch

B.R. REPORT TITLE / DATE / PREPARER: Request for review and compliance /22 April 2021 / Lynn A Neal

SIGNIFICANT BIOLOGICAL RESOURCES FOUND: RCP Area 3

POTENTIAL IMPACTS

NESL SPECIES POTENTIALLY IMPACTED: (1) Aquila chrysaetos (Golden Eagle), G3;

FEDERALLY-LISTED SPECIES AFFECTED: NA

OTHER SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES: NA

AVOIDANCE / MITIGATION MEASURES: NA

CONDITIONS OF COMPLIANCE*: 1. All areas disturbed by the construction of the project shall be revegetated with a locally appropriate (i.e., native) seed mix that is free of invasive, noxious and undesirable plant species. Revegetation of the disturbed areas shall also include proper watering, mulching/straw and erosion controls so that the post construction areas is restored to suitable wildlife habitat.

2. Revegetation monitoring and reporting: Areas revegetated by this project shall monitor the site(s) for a time period of at least 3 years. If reseeding/plantings fail during the 3-year time period additional plantings or corrective actions shall be taken to ensure reseeding/planting success. Annual reports shall be submitted to the Navajo Natural Heritage Program detailing the success or failure of reseeding and corrective actions (if applicable). At the completion of monitoring (i.e., year 3) a final monitoring report shall be submitted for review and written approval by NNHP.

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3. All construction activities shall avoid the migratory bird breeding season (March 1 - August 15, of any year). A pre-construction survey should be performed if work occurs during this time period.

4. All above ground utility poles shall conform to a design standard(s) that comply with the Raptor Electrocution Prevention Regulations, RCS-43-08, September 10, 2008. So as to avoid unintentional electrocution of raptors that may perch on the utility pole(s).

FORM PREPARED BY / DATE: Brent Powers/ 1 Nov 2021

COPIES TO: (add categories as necessary)

☐ _____ ☐ _____

2 NTC § 164 Recommendation:	Signature	Date
☐Approval ☒Conditional Approval (with memo) ☐Disapproval (with memo) ☐Categorical Exclusion (with request letter) ☐None (with memo)	David Mikesic Gloria M. Tom, Director, Navajo Nation Department of Fish and Wildlife	11/1/2021

*I understand and accept the conditions of compliance, and acknowledge that lack of signature may be grounds for
the Department not recommending the above described project for approval to the Tribal Decision-maker.

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THE NAVAJO NATION

JONATHAN NEZ | PRESIDENT MYRON LIZER | VICE PRESIDENT

1 November, 2021
DR # 21lanc102

Lynn A Neal
LA Neal Consulting, LLC (LANC)
3038 Shonto Trail
Flagstaff, AZ 86005

Dear Lynn,

The Navajo Nation Department of Fish and Wildlife (NNDFW) reviewed LA Neal Consulting, LLC's request for review and compliance for the proposed "Western Navajo Pipeline LeChee Treatment Plant and Waterline Project / 1059-21" project. The proposal includes the installation and construction of 5.8 miles of waterlines, a water treatment plant and two booster pump stations from the existing water tank in LeChee to the proposed treatment plant in Page, AZ. The purpose of this letter is to inform you that the Navajo Nation is granting the proposed project ***Conditional Approval***.

The **Conditional Approval conditions** are as follows for the Western Navajo Pipeline LeChee Treatment Plant and Waterline project:

1. All areas disturbed by the construction of the project shall be revegetated with a locally appropriate (i.e., native) seed mix that is free of invasive, noxious and undesirable plant species. Revegetation of the disturbed areas shall also include proper watering, mulching/straw and erosion controls so that the post construction areas is restored to suitable wildlife habitat.

2. Revegetation monitoring and reporting: Areas revegetated by this project shall monitor the site(s) for a time period of at least 3 years. If reseeding/plantings fail during the 3-year time period additional plantings or corrective actions shall be taken to ensure reseeding/planting success. Annual reports shall be submitted to the Navajo Natural Heritage Program detailing the success or failure of reseeding and corrective actions (if applicable). At the completion of monitoring (i.e., year 3) a final monitoring report shall be submitted for review and written approval by NNHP.

Recommended Mitigation of Conditional Approvals for the Western Navajo Pipeline LeChee

Treatment Plant and Waterline project:

3. All construction activities shall avoid the migratory bird breeding season (March 1 - August 15, of any year). A pre-construction survey could be performed if work occurs during this time period.

4. All above ground utility poles shall conform to a design standard(s) that comply with the Raptor Electrocution Prevention Regulations, RCS-43-08, September 10, 2008. So as to avoid unintentional electrocution of raptors that may perch on the utility pole(s).

Survey protocols and habitat descriptions for the species listed above can be found in the species accounts available on NNHP's website at https://www.nndfw.org/nnhp/sp_account.htm. Surveys must be conducted during the appropriate time of year (for plants, during the fruiting/flowering season) by an experienced biologist who is permitted by the Navajo Nation. See here for a list of permitted consultants (https://www.nndfw.org/bi_consult_list_2014.pdf).

Survey reports need to be sent to NNHP prior to construction activities taking place. The survey contractor shall consult with the NNHP botanist and zoologist for positive identification and development of mitigation strategies if NESL plants and or wildlife species are found during surveys.

Please contact Leanna Begay via email at lbegay@nndfw.org with any questions that you have concerning the review of this project.

Sincerely,

Leanna Begay, Wildlife Manager
Navajo Natural Heritage Program
Department of Fish and Wildlife

CONCURENCE

11/1/2021

Gloria Tom, Director
Department of Fish and Wildlife

Date

NAVAJO NATION OFFICE OF THE PRESIDENT AND VICE PRESIDENT
POST OFFICE BOX 7440 · WINDOW ROCK, AZ 86515 · PHONE: (928) 871-7000 · FAX: (928) 871-4025

THE NAVAJO NATION

JONATHAN NEZ | PRESIDENT MYRON LIZER | VICE PRESIDENT

MEMORANDUM

TO : David Mikesic, Zoologist
Department of Fish and Wildlife
DIVISION OF NATURAL RESOURCES

FROM : Gloria M. Tom
Gloria M. Tom, Department Manager
III Department of Fish and Wildlife
DIVISION OF NATURAL RESOURCES

DATE : November 1, 2021

SUBJECT : DELEGATION OF AUTHORITY

I will be on leave from Monday, November 1, 2021 to Friday, November 05, 2021. I am hereby delegating you to act in the capacity of the Department Manager III, Department of Fish and Wildlife, effective 8:00 a.m. on Monday, November 1, 2021. This delegation shall end at 5:00 p.m. on Friday, November 05, 2021.

Your authority will cover the review and signing off on all routine documents pertaining to the Department of Fish and Wildlife, except for issues that you feel should have the attention of the Department Manager III.

ACKNOWLEDGEMENT:

David Mikesic 11/1/2021
David Mikesic, Zoologist
Department of Fish and Wildlife
DIVISION OF NATURAL RESOURCE

NAVAJO NATION OFFICE OF THE PRESIDENT AND VICE PRESIDENT
POST OFFICE BOX 7440 · WINDOW ROCK, AZ 86515 · PHONE: (928) 871-7000 · FAX: (928) 871-4025

NNDFW Review No. 23jefhg104

BIOLOGICAL RESOURCES COMPLIANCE FORM
NAVAJO NATION DEPARTMENT OF FISH & WILDLIFE
P.O. BOX 1480, WINDOW ROCK, ARIZONA 86515-1480

It is the Department's opinion the project described below, with applicable conditions, is in compliance with Tribal & Federal laws protecting biological resources including the Navajo Endangered Species & Environmental Policy Codes, U.S. Endangered Species, Migratory Bird Treaty, Eagle Protection & National Environmental Policy Acts. This form does not preclude or replace consultation with the U.S. Fish & Wildlife Service if a Federally-listed species is affected.

PROJECT NAME & NO.: Lechee Waste Water System ROW Adjustments

DESCRIPTION: The Navajo Nation Department of Water Resources, Water Management Branch proposes to install a water treatment plant (WTP), two associated booster pump stations (BPSs), and a waterline extending north from an existing water source in LeChee then northeast to the BPSs and WTP west of the Navajo Generating Station within the LeChee Chapter

LOCATION:
Area 1: T41N, R9E, Sec. 15, 3.5 acres Lat: 36°57'7.57"N, Long: 111°24'53.36"W
Area 2: T41N, R9E, Sec. 35, 11.3 acres Lat: 36°54'42.98"N, Long: 111°24'1.93"W
Area 3: T41N, R9E, Sec.34, & T40N, R9E, Sec. 3 Lat: 36°54'16.84"N, Long: 111°24'32.67"W
Area 4: T40N, R9E, Sec. 2 Lat: 36°53'32.28"N, Long: 111°24'13.63"W
Area 5: T40N, R9E, Sec. 16, 17 & 20
BOP: Lat: 36°51'56.91"N, Long: 111°26'36.70"W
EOP: Lat: 36°51'21.81"N, Long: 111°26'37.60"W

REPRESENTATIVE: Jean Marie Rieck, JE Fuller

ACTION AGENCY: Navajo Nation Department of Water Resources

B.R. REPORT TITLE/ DATE/PREPARER: Request for Biological Review & Compliance/ 1 MAY 2023/JE Fuller

SIGNIFICANT BIOLOGICAL RESOURCES FOUND: Area 3, Low Wildlife Sensitivity

POTENTIAL IMPACTS

NESL SPECIES POTENTIALLY IMPACTED: NA

FEDERALLY-LISTED SPECIES POTENTIALLY IMPACTED: NA
OTHER SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES: NA

AVOIDANCE / MITIGATION MEASURES:

1. NNHP recommends that the project sponsor shall implement Best Management Practices for erosion control and invasive weed prevention and mitigation. NNHP also recommends that temporary disturbances areas shall be reseeded with a native species mix that matches the species in surrounding non-disturbed areas.

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NNDFW –B.R.C.F.: FORM REVISED 04 MAR 2022

Appendix B: Cultural Resource Compliance Forms

HPD-21-648

THE NAVAJO NATION
Heritage & Historic Preservation Department
P.O. Box 4950 • Window Rock, Arizona 86515
(928) 871-7198 (tel) • (928) 871-7886 (fax)

CULTURAL RESOURCE COMPLIANCE FORM

NNHHPD NO.: HPD-21-648 **CONSULTANT REPORT NO.: LANC 1059-21**

PROJECT TITLE: Cultural Resources Inventory for Proposed Western Navajo Pipeline-Phase 1 LeChee Water Improvement Projects, LeChee Chapter, Coconino County, Arizona.

LEAD AGENCY: BIA/NRO

SPONSOR: ETD, Inc. , 2101 North Fourth Street, Suite 201, Flagstaff, AZ, 86004

PROJECT DESCRIPTION: As a component of the Western Navajo Pipeline Project-Phase 1 (WNP) or the LeChee Water Improvement Projects, the Navajo Nation Department of Water Resources (NNDWR), Water Management Branch (WMB) proposes to install a water treatment plant (WTP), two associated booster pump stations (BPSs), and a 5.7-milelong waterline extending north from an existing water source in LeChee, then northeast to the BPSs and WTP west of the Navajo Generating Station. The overall area of potential effects (APE) is 35.6 acres, 10.3 acres for the WTP, 4.6 acres for the BPSs (2.3 acres for each one), and 20.7 acres for the waterline. Access to the project components would be contained within the defined APE and along existing roadways.

PROJECT ARCHAEOLOGIST: Lynn A. Neal, M.A., RPA
NAVAJO ANTIQUITIES PERMIT NO.: B21021 **TOTAL ACREAGE INSPECTED:** 122.0
DATE INSPECTED: 2/20/2021 **DATE OF REPORT:** 4/30/2021
METHOD OF INVESTIGATION: Class III pedestrian inventory with transects spaced 15 m apart
LAND STATUS: NN Tribal Trust Land **CHAPTER:** LeChee
Number of Eligible Properties: 0 **Number of Non-Eligible Properties:** 1
Number of Unevaluated Properties: 0 **Number of Burials:** 0
Number of TCPs: 0 **Number of Isolated Occurrences:** 11
Number of In-Use Sites: 0
EFFECT/CONDITIONS OF COMPLIANCE: No Historic Properties Affected
PROCEED RECOMMENDED: Yes
CONDITIONS: No
Site AZ-K-12-31:
Site is sufficiently documented. No further work is required.
In the event of a discovery ["discovery" means any previously unidentified or incorrectly identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices], all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Historic Preservation Department must be notified at (928) 871-7148.

FORM PREPARED BY: Tamara Billie **FINALIZED:** 6/15/2021

Richard M. Begay, Department Manager/THPO
Navajo Nation Heritage and Historic Preservation Department

06/15/2021
Date

Navajo Region Approval:

Bartholomew Stevens, Navajo Regional Director

Date

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HPD Number.: HPD-21-648 **PAGE 1**

SPONSORS
ETD, Inc.

LOCATION INFORMATION
LAND STATUS: NN Tribal Trust Land
STATE: AZ
DATUM: NAD83
ZONE: 12

COUNTY	QUAD
Coconino	Page, AZ
	White Dome, AZ

CHAPTER
LeChee

Township	Range	Sections
T40N	R9E	2, 3, 10, 15, 16, 17, 20, 21
T41N	R9E	34, 35

UTM N	UTM E
4078956	460653
4080068	460504
4082671	462787
4082987	463970
4083426	463735
4084840	463500
4085053	464265
4085282	464396
4083403	463845
4083361	463780
4083083	464065

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HPD-23-773

THE NAVAJO NATION

Heritage & Historic Preservation Department
P.O. Box 4950 • Window Rock, Arizona 86515
(928) 871-7198 (tel) • (928) 871-7886 (fax)

CULTURAL RESOURCES COMPLIANCE FORM

NNHHPD NO.: HPD-23-773 **CONSULTANT REPORT NO.: MBC-23-044**

PROJECT TITLE: MBC-23-044: A Cultural Resource Inventory of Modifications for the Proposed Western Navajo Pipeline - Phase I LeChee Water Improvement Projects located in LeChee Chapter, Coconino County, Arizona.
LEAD AGENCY: The Navajo Nation
SPONSOR: Eunice Tso, ETD, Inc., 2501 N. Fourth Street #24 Flagstaff, AZ 86004
PROJECT DESCRIPTION: The Navajo Department of Water Resources (NNDWR) previously had a survey completed for the proposed Western Navjo Pipeline Project-Phase 1 known as the LeChee Water Improvement Projects. However modifications were made to six (6) areas along the waterline alignment requiring additional surveys to accommodate the modification and changes to the waterline and associated facilities for the project. The modifications include moving approximately 0.87-mile of waterline alignment, installing two (2) Booster pumps Stations, installing a Water Intake Facility, installing a Water Treatment Plant and moving approximately 0.16 mile of waterline alignment. Surface and subsurface disturbances will extensive and include mechanical trenching, installation of waterline and associated facilities, backfilling within the the 25.27 acres/10.22 hectares area of effect.

PROJECT ARCHAEOLOGIST: Mathilda Burke
NAVAJO ANTIQUITIES PERMIT NO.: B23278 **TOTAL ACREAGE INSPECTED:** 47.25
DATE INSPECTED: 4/19/2023 **DATE OF REPORT:** 7/24/2023
METHOD OF INVESTIGATION: Class III pedestrian inventory with transects spaced 15 m apart
LAND STATUS: NN Tribal Trust Land **CHAPTER:** LeChee
LOCATION: Township: 40N Range: 9E Section: UP **QUAD:** White Dome, AZ G&SRPM
UTM: Northing: 4080101 Easting: 460461 **DATUM:** NAD83 Zone 12
NUMBER OF ELIGIBLE PROPERTIES: 0 **NUMBER OF NON-ELIGIBLE PROPERTIES:** 0
NUMBER OF UNEVALUATED PROPERTIES: 0 **NUMBER OF ISOLATED OCCURRENCES:** 0
NUMBER OF TCPs: 0
NUMBER OF IN-USE SITES: 6
EFFECT/CONDITIONS OF COMPLIANCE: No Historic Properties Affected
PROCEED RECOMMENDED: Yes
CONDITIONS: No

In the event of a discovery ["discovery" means any previously unidentified or incorrectly identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices], all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Heritage and Historic Preservation Department must be notified at (928) 871-7198.

FORM PREPARED BY: Olsen John **FINALIZED:** 10/10/2023

Richard M. Begay, Department Manager/THPO
Navajo Nation Heritage and Historic Preservation Department

10/10/23
Date

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HPD Number: HPD-23-773 **PAGE 1**

SPONSORS

Eunice Tso, ETD, Inc.

LOCATION INFORMATION

LAND STATUS: NN Tribal Trust Land DATUM: NAD83 ZONE: 12

STATE(S): AZ

COUNTY	QUADRANGLE(S)	UTM N	UTM E
Coconino	White Dome, AZ	4080101	460461
	Page, AZ	4079084	460367
		4078970	460429
		4078995	460468
		4079096	460406
		4080055	460477
		4080046	460517
		4080083	460528
		4084513	463513
		4084332	463549
		4084231	463557
		4084233	463592
		4084184	463613
		4084198	463650
		4084268	463618
		4084269	463600
		4084328	463595
		4084512	463552
		4083037	464001
		4083016	464009
		4082989	463906
		4082954	463931
		4082993	464096
		4083071	464050
		4085198	464188
		4085016	464249
		4085086	464441

CHAPTER	TOWNSHIP	RANGE	SECTIONS
LeChee	40N	9E	UP

HPD Number: HPD-23-773 **PAGE 2**

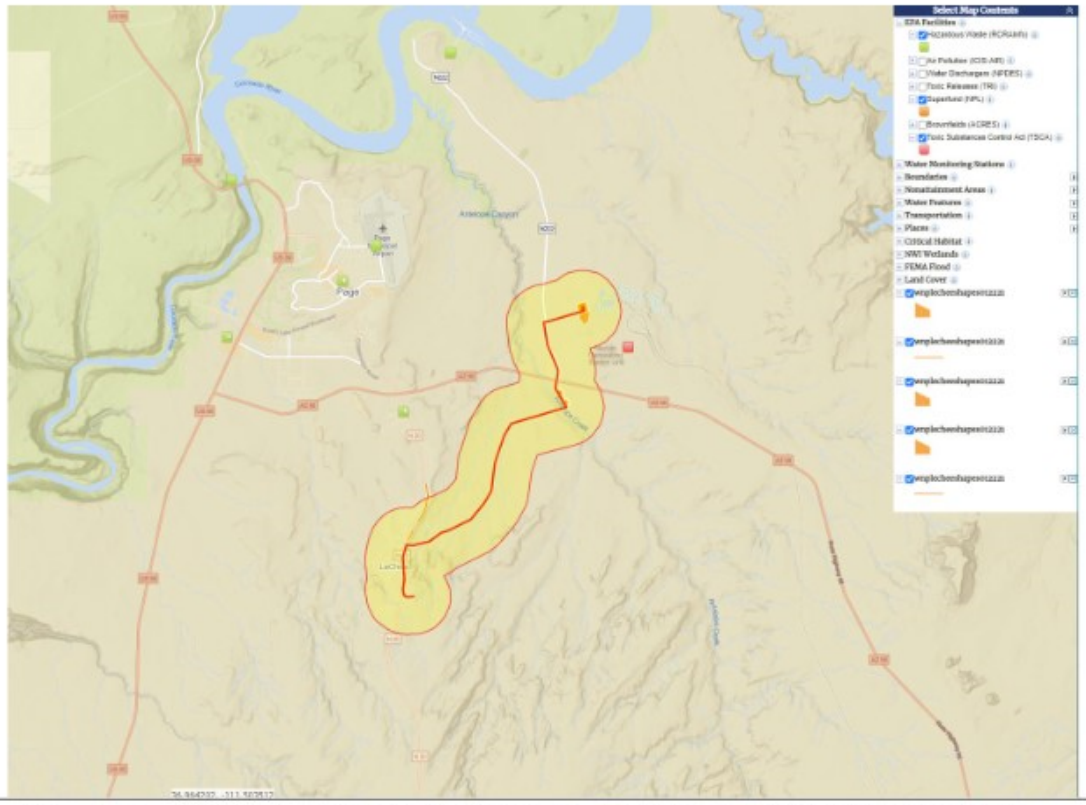
4085312	464358
4085277	464262
4089700	463075
4089534	462943
4089502	463010
4089668	463132
4083678	463769
4083650	463737
4083423	463713

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Appendix C: NEPAssist and UST Documentation

NEPAssist Report

Western Navajo Pipeline



Input Coordinates: 36.911685,-111.400402,36.911046,-111.400159,36.908942,-111.408675,36.908855,-111.409726,36.905795,-111.409331,36.904466,-111.408963,36.903454,-111.408478,36.900401,-111.406582,36.899689,-111.406313,36.898856,-111.406304,36.896112,-111.407031,36.892951,-111.404507,36.892333,-111.404238,36.892168,-111.404363,36.889280,-111.417631,36.886837,-111.419374,36.881627,-111.421557,36.876181,-111.422428,36.873802,-111.424135,36.870698,-111.427504,36.868499,-111.433011,36.868139,-111.434664,36.866458,-111.437367,36.865566,-111.441482,36.865559,-111.442012,36.865724,-111.443108,36.864467,-111.443710,36.863396,-111.443961,36.862670,-111.443979,36.859177,-111.443638,36.856812,-111.443997,36.856144,-111.443763,36.855863,-111.443593,36.855619,-111.442703,36.855691,-111.441437

Length of digitized line	5.79 mi
Within 0.5 miles of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no

Within 0.5 miles of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 0.5 miles of a Federal Land?	no
Within 0.5 miles of an impaired stream?	no
Within 0.5 miles of an impaired waterbody?	no
Within 0.5 miles of a waterbody?	yes
Within 0.5 miles of a stream?	yes
Within 0.5 miles of an NWI wetland?	Available Online
Within 0.5 miles of a Brownfields site?	no
Within 0.5 miles of a Superfund site?	no
Within 0.5 miles of a Toxic Release Inventory (TRI) site?	no
Within 0.5 miles of a water discharger (NPDES)?	no
Within 0.5 miles of a hazardous waste (RCRA) facility?	no
Within 0.5 miles of an air emission facility?	no
Within 0.5 miles of a school?	no
Within 0.5 miles of an airport?	no
Within 0.5 miles of a hospital?	no
Within 0.5 miles of a designated sole source aquifer?	no
Within 0.5 miles of a historic property on the National Register of Historic Places?	no
Within 0.5 miles of a Toxic Substances Control Act (TSCA) site?	no
Within 0.5 miles of a Land Cession Boundary?	yes
Within 0.5 miles of a tribal area (lower 48 states)?	yes
Within 0.5 miles of the service area of a mitigation or conservation bank?	no
Within 0.5 miles of the service area of an In-Lieu-Fee Program?	yes

Created on: 2/22/2022 10:39:18 AM