



Telecommunications Structures Development RFP for the Navajo Nation Addendum #1

BID NO 24-07-3432GC

Prepared by:
Navajo Nation Broadband Office
Digital Equity Initiative
Office of the President and Vice President of the Navajo Nation

**Bid Responses to this RFP has been extended to December 12, 2024,
at 3:00 pm MST.**

All dates in the timeline were updated accordingly.

See the attached RFP for additional updates.

Telecommunications Structures Development RFP for the Navajo Nation – Version 9.2

BID NUMBER: 24-07-3432GC

Document Version: 9.2



October 17, 2024

Prepared for:
The Navajo Nation



Prepared by:
Navajo Nation Broadband Office
Digital Equity Initiative
Office of the President and The Vice-President of the Navajo Nation

Table of Contents

Document History.....	1
1.0 General information about the Telecommunications Structures Development RFP for the Navajo Nation – Version 9.2	2
1.1 Issuing office.....	2
1.2 RFP Title.....	2
1.3 RFP General Schedule of Activities	2
1.4 Project Overview.....	5
1.5 Purpose of the RFP.....	6
1.6 Advertisement and Submission.....	6
1.7 Background.....	6
1.8 Contractual Provisions:.....	6
1.8.1 Governing Law and Dispute Resolution:.....	6
1.8.2 Navajo Nation Sales Tax:.....	7
1.8.3 Navajo Nation Procurement:.....	7
2.0 Scope of Work of the RFP	8
2.1 Summarized Scope of Work	8
2.1.1 Tower Construction:.....	8
2.1.2 Foundation Installation:.....	8
2.1.3 Landscaping and Fencing:.....	9
2.1.4 Grounding:	9
2.1.5 Accessory structures:	9
2.1.6 Construction Standards and Funding.....	9
2.1.7 General Contractual Rights:	9
2.1.8 Ownership and Operations:.....	9
2.1.9 Engineering and Design:	10
2.1.10 Summarized Tower Specifications:	10
2.1.11 Antenna and Equipment Loading:	10
2.1.12 Compliance with Federal Standards:	11
3.0 Technical Specifications of the RFP.....	12
3.1 General System Description.....	12
3.2 Design Requirements	12
3.2.1 Applicable Codes and Standards:	12

3.2.2	Structure Classification:	12
3.2.3	Wind Load Specifications:	12
3.2.4	Seismic loads Specifications:	13
3.2.5	Topographic Category:	13
3.3	Products and Components	13
3.4	Erection and Installation Procedures	14
3.5	Tower Grounding	14
3.6	Landscaping and Fencing:	15
3.7	Delivery, Storage, and Handling	15
3.8	Submittals	16
4.0	Proposal Submission and Evaluation Criteria	17
4.1	Submission Requirements:	17
4.2	Proposal Submission Format:	18
4.2.1	Cover Letter	18
4.2.2	Executive Summary	18
4.2.3	Table of Contents	18
4.2.4	Appendices	18
4.2.5	Signature Page	18
4.3	Bid Selection and Scoring Criteria	18
4.3.1	Qualification and Experience (25 Points)	18
4.3.2	Navajo Preference (20 Points)	19
4.3.3	Financial Qualifications (20 Points)	19
4.3.4	Project Plan (25 Points)	19
4.3.5	Insurance (10 Points)	19
4.4	Volume Incentives	20
4.5	Technical Acceptance Compliance	20
5.0	Cost Proposal	21
5.1	Cost Proposal Format:	21
5.1.1	Tower Identification:	21
5.1.2	Itemized Cost Breakdown:	21
5.1.3	Total Cost:	21
5.1.4	Payment Schedule:	21
5.1.5	Additional Costs and Contingencies:	21

6.0	Annexes.....	23
6.1	New Proposed Sites List:.....	23
6.2	Map.....	23
6.3	Generic Tower Elevation and Site Plan:.....	23
6.4	Generic Tower Loading:.....	23
6.5	Summarized Cost Table:.....	23
6.6	Purpose of Annexes:	23
6.1	Annex - New Proposed Sites List	25
6.2	Annex – Map.....	28
6.3	Annex - Generic Construction Drawing.....	30
6.4	Annex - Generic Tower Loading.....	39
6.5	Annex - Summarized Cost Table:	41

Document History

Version	Description	Date	Author
1.0	First Draft	04/15/2024	DEI
2.0	First Version for Internal Review	04/25/2024	DEI
3.0	Second Version for Internal Review	04/30/2024	DEI-NNBO
4.0	Edits for Internal Review	05/1/2024	BG, JO, OC, MF
5.0	Consolidated revision for Final Internal Review	05/02/2024	CC
6.0	Draft Version for Release	05/02/2024	DEI-NNBO
7.0	Draft Version for Release – Updated BID criteria	05/05/2024	DEI-NNBO
8.1	Version for Release – Internal Review	09/12/2024	DEI
9.1	Version for Public Release	09/16/2024	All
9.2	Amendment including Bonds Info and other corrections	10/17/2024	All

1.0 General information about the Telecommunications Structures Development RFP for the Navajo Nation – Version 9.2

1.1 Issuing office

Navajo Nation Broadband Office
1575E State Hwy 264
Tse Bonito, New Mexico
Website: www.broadband.navajo-nsn.gov

1.2 RFP Title

NNBO Telecommunications Structures Development RFP BID No: 24-07-3432GC–
Version 9.2

1.3 RFP General Schedule of Activities

Advertisement Period:

September 16, 2024 – December 12, 2024, 3 pm MST.

RFP Close date & time:

December 12, 2024, 3 pm MST.
Late submissions will not be considered.

RFP Meetings:

Initial Meeting: September 30, 2024.

Q&A Session 1: November 8, 2024, at 9 am MST

TEAMS Meeting link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_OTUzNGI0YWQZWE0Zi00OGE0LTg0NWYtNjg4NzBiM2ZhNTlh%40thread.v2/0?context=%7b%22id%22%3a%2297131bfb-3c23-4f43-a7e3-ff4d249bdbab%22%2c%22oid%22%3a%2232545cdb-8dec-4f0d-9e52-85ffbadac1d9%22%7d

Meeting ID: 243 978 834 378
Passcode: y9mqFs

Dial in by phone
[+1 972-301-8157,,354031020#](tel:+19723018157354031020) United States, Richardson
[Find a local number](#)
Phone conference ID: 354 031 020#

Q&A Session 2: November 22, 2024, at 9 am MST

TEAMS Meeting link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_YmJiN2MyNzctMzEzYS00NzA2LTg0YjctZThiMDI1MDkwY2Qy%40thread.v2/0?context=%7b%22Tid%22%3a%2297131bfb-3c23-4f43-a7e3-ff4d249bdbab%22%2c%22Oid%22%3a%2232545cdb-8dec-4f0d-9e52-85ffbadac1d9%22%7d

Meeting ID: 250 175 708 440
Passcode: gUkvXm

Dial in by phone
[+1 972-301-8157,,954518101#](tel:+19723018157954518101) United States, Richardson
[Find a local number](#)
Phone conference ID: 954 518 101#

Bid Opening (NOT OPEN TO THE PUBLIC or OFFERORS):
Friday, December 13, 2024, at 9 am MST.

Questions/Feedback and Comments Due:
Questions will be accepted from September 16 to November 29, 2024, at 5 pm MST.

All feedback is to be submitted electronically via email with the subject RFPNNBO_ BID NUMBER: 24-07-3432GC _Entity Name (where Entity name is the name of the entity sending the email communications).

Submit questions to:

Sonia Nez, Department Manager

Email: sonianez@navajo-nsn.gov

Bernardo Portilla, DEI

Email: bportilla@americasrf.com

Libardo Melo

Email: lmelo@americasrf.com

Answers to Questions:

Ongoing within 3 business days of receiving the questions. Questions will be tracked and answered online and will be updated accordingly. The Q&A tracker can be found at

<https://americasrf-my.sharepoint.com/:x/p/lmelo/EWxt9E7Do0lCnTfRBv8MtkAB66fot1A2BfUL0Zyg3fUjfw?rttime=iGbJK3n3Eg>

All the questions received will be published and answered, if any entity has issues with sharing their questions they MUST note when submitting the question that the information is confidential.

Points of Contact:

Sonia Nez, Department Manager

Email: sonianez@navajo-nsn.gov

Phone: 928-810-9205

www.broadband.navajo-nsn.gov

Bernardo Portilla, DEI

Email: bportilla@americasrf.com

Phone: 602-881-3147

Additional note: Awards are anticipated by the first quarter of 2025, with pre-construction set to commence shortly thereafter. Completion is projected in alignment with the BEAD program timeline.

1.4 Project Overview

The Navajo Nation Broadband Office (NNBO) invites detailed proposals for the construction of 78 multi-tenant telecommunication towers to enhance fixed wireless broadband and 5G services access for all Broadband Serviceable Locations (BSLs) within underserved or unserved areas of the Navajo Nation. This strategic initiative is designed to significantly enhance digital connectivity and support future technological advancements across the Navajo Nation. Phase I will include tower construction of 36 towers. Phase II will include the construction of the remaining towers. However, NNBO reserves the right to change the number of towers to be awarded dependent on bid results and/or if additional funding becomes available ensuring that the project can progress toward the goal of completing all 78 towers.

The project is supported by a feasibility study focused on addressing the coverage needs across the Navajo Nation, which will serve as a critical foundation for supporting the Broadband Equity, Access, and Deployment (BEAD) program and the expansion of 5G services throughout the region. The selection of proposed tower sites is based on current information collected during the 2020 inventory of assets within the Navajo Nation, supplemented by additional data from the NNBO and the Navajo Telecommunications Regulatory Commission (NTRC). Feedback from existing service providers and infrastructure owners is also being solicited to ensure that the project aligns with ongoing and planned expansions, avoiding redundancy and leveraging existing assets wherever possible.

The initiative aims not only to provide immediate improvements in broadband fixed and mobile access but also to establish a robust infrastructure that will support the rapid deployment of emerging technologies and enhance the economic, educational, and healthcare opportunities for the Navajo people. By integrating advanced telecommunications infrastructure, the NNBO intends to foster a more connected and technologically equipped Navajo Nation, capable of supporting a wide range of digital services and applications. Furthermore, the Navajo Nation is committed to assisting the deployment by expediting land regulatory requirements. This means all permitting and land-related items are handled by the NN team, and GC licenses will be required based on state requirements for construction to ensure compliance and smooth progress through regulatory processes, allowing infrastructure to be deployed without undue delays.

1.5 Purpose of the RFP

The purpose of this Request for Proposals (RFP) is to select the most suitable contractor(s) who can undertake the construction of telecommunications towers as specified in the RFP. The selected contractor(s) will be responsible for meeting all technical specifications, regulatory requirements, and completing the project within the designated timelines. This project is essential for laying a strong foundation for the upcoming Broadband Equity, Access, and Deployment (BEAD) program, providing the Navajo people access to technologies widely available outside of the Navajo Nation such as 5G, and paving the way for the deployment of subsequent technologies. Additionally, it seeks to incentivize competition and provide more affordable options to the people.

1.6 Advertisement and Submission

The RFP will be advertised on the official Navajo Nation Office of the Controller website at www.nnooc.org and NNBO website at www.broadband.navajo-nsn.gov to ensure adequate public notice and to encourage a wide range of proposals. Details of the advertisement, including the bidding number, will be as follows:

Bidding Number: BID NUMBER: 24-07-3432GC

Platforms: NNOOC website, NNBO website

1.7 Background

In recent assessments, numerous regions within the Navajo Nation have been identified as lacking adequate telecommunications infrastructure, particularly in fixed wireless broadband and 5G networks. This project is part of a broader strategy to close these gaps and to ensure that all members of the Navajo Nation have access to reliable, high-speed internet services, which are crucial for education, business, healthcare, and communication. Additionally, it seeks to incentivize more competition from national carriers to provide more affordable options to the Navajo people.

1.8 Contractual Provisions:

In order for the Navajo Nation to contract for services of this nature, the successful proposer must agree to include the following provisions as part of the Agreement:

1.8.1 Governing Law and Dispute Resolution:

Navajo Nation Law and Courts shall govern the contract. No provision of the contract shall constitute a waiver of sovereign immunity of the Navajo Nation.

Disputes arising under the contract shall be resolved exclusively in Navajo Nation courts.

1.8.2 Navajo Nation Sales Tax:

The successful proposer must include the Navajo Nation's 6% sales tax within their cost proposal and be responsible for remitting the tax to the Navajo Nation. The Navajo Nation Sales Tax applies to all goods and services, including materials, labor services, engineering, etc.

1.8.3 Navajo Nation Procurement:

Preference will be applied in accordance with 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.); the Navajo Nation Business Opportunity Act (5 N.N.C. § 201 et seq.), and other relevant statutory and regulatory requirements. Proposers must provide evidence of their Navajo Preference Priority Certification if applicable. Navajo Nation Procurement states that proposers must provide evidence of their Navajo Preference Priority Certification if applicable. This certification is required to demonstrate that the proposer is eligible for preference under the Navajo Business and Procurement Act, the Navajo Nation Procurement Act, the Navajo Nation Business Opportunity Act, and other relevant statutory and regulatory requirements.

1.8.4 RFP Submission – Not a Contract

The Navajo Nation is not bound to enter into a contract under this RFP and may issue a subsequent RFP for the same services.

1.8.5 Bonds and Bid Security

Construction and construction related contracts require the payment of a performance bond, payment bond, and bid security. Bonds may be delivered upon execution of a contract with the Navajo Nation.

The offeror shall deliver to the Navajo Nation a performance bond in a form satisfactory to the Controller of the Navajo Nation underwritten by a surety company authorized to do business within the Navajo Nation in amount equal to one hundred percent (100%) of the price specified in the contract; and a payment bond for the protection of all persons supplying labor and material to the contractor or its subcontractor for the performance of the work provided in the contract equal to 100% of the price specified in the contract.

Bid security shall be required for all construction or construction-related contracts when the total amount is estimated to be greater than \$50,000 and the amount shall be equal to ten percent (10%) of the amount of the bid.

Acceptable bid security shall be limited to: (i) an annual or one-time bond in a form satisfactory to the Controller of the Navajo Nation underwritten by a surety company authorized to do business within the Navajo Nation; or (ii) the equivalent in cash, a bank certified check, or cashier's check payable to the Navajo Nation.

More information on bid security and bonds: [Navajo Nation Procurement Regulations, Section 4.K](#)

2.0 Scope of Work of the RFP

2.1 Summarized Scope of Work

2.1.1 Tower Construction:

Provide materials for the construction and installation of self-supported tower based on technical design requirements provided under project scope.

Design and Construct towers following International Building Code and Telecommunications Standards adopted by Navajo Nation or latest version whichever is more stringent.

2.1.2 Foundation Installation:

Provide materials and installation for tower foundation based on three options:

- Pier foundation for standard soil.
- Mat+Pier Foundation for standard soil.
- Mat foundation for hard/rock soil.

A site-specific soil report is not provided with the RFP, Proposers shall respond based on normal soil as the best-case scenario and rocky terrain (hard soil) as the worst-case scenario. The foundation installation should account for three options: pier foundation and mat+pier foundation for standard soil and mat foundation for worst case/hard soil conditions.

There may be conditions of soils that require a customized foundation, those conditions will be considered once soils reports become available and proper engineering is in place.

2.1.3 Landscaping and Fencing:

Provide landscaping to cover the tower ground space, including an additional 10 ft around the fenced area for the two ground space options: 50 ft x 50 ft and 100 ft x 100 ft.

Provide fencing for the tower ground space, with two options: a 50 ft x 50 ft fenced area and an optional 100 ft x 100 ft fenced area. Ensure that both options include secure fencing to meet project requirements.

2.1.4 Grounding:

Provide grounding system for the tower and site.

2.1.5 Accessory structures:

Do not include or provide ancillary and accessory structures, such as ice bridges, telco or power H-frames, etc., as such structures are not part of this RFP.

2.1.6 Construction Standards and Funding

Building Codes and Standards: All construction activities must adhere to the International Building Code, as amended by State and local agencies, and to Telecommunications Standards. If applicable, the codes adopted by the Navajo Nation will apply, with the most stringent standards prevailing to ensure compliance and safety. Section 3 provides further technical specifications in detail.

Funding: The Navajo Nation will provide primary funding for the infrastructure. Bidders are encouraged to offer discretionary matching funding or partnership options, which will be considered a significant factor in project selection.

2.1.7 General Contractual Rights:

Project Assignment Rights: The Navajo Nation Broadband Office (NNBO) retains the exclusive rights to assign single, partial, or full projects to one or multiple entities based on strategic requirements and bidder qualifications.

2.1.8 Ownership and Operations:

Infrastructure Ownership: Ownership of the infrastructure to be built will be determined post-construction, with the Navajo Nation retaining full or partial ownership, however bidders are encouraged to suggest options.

Operations Partnership: NNBO seeks partners for the operation and maintenance of the infrastructure, aiming for long-term sustainability and operational efficiency.

2.1.9 Engineering and Design:

Engineering Responsibility: The engineering of the towers is the responsibility of the NNBO, meaning that the Navajo Nation Broadband Office manages the design and technical specifications to ensure that all requirements for functionality and safety are met. However, others may participate during the final design phase. **Site Selection Collaboration:** Final tower location selection will be conducted collaboratively with the chosen bidder to optimize each site's potential.

Plans and Drawings: A generic Construction Drawings addressing the items requested in the scope of work is presented as an annex to this document . Full plans for each site will not be provided at this time. Response to this RFP should be based on the Scope of Work (SOW) and the relevant drawings depicting the scope of work . Detailed construction drawings will become available before construction starts.

Note: Proposers may offer their engineering services as an optional service in response to this proposal. An Engineering Design Package will be provided by the NNBO, if applicable, to ensure standardization for the project in the event of multiple awards.

2.1.10 Summarized Tower Specifications:

- **Multi-tenant Towers:** Each tower is designed to support various telecommunication needs, accommodating multiple tenants.
- **Ground Space Requirements:** Each tower site requires a cleared area of 150 ft x 150 ft, with a securely fenced area of 50 ft x 50 ft. Additionally, a 100 ft x 100 ft fenced area is required as an option.

2.1.11 Antenna and Equipment Loading:

- **Public Safety and Two-Way Radio Elements:** Includes arrays of Omni antennas at 185' and 110' centerline points for wide coverage.
- **Broadband Antenna Arrays:** Four arrays configured for three sectors at heights of 175', 160', 145', and 130', designed to support about 200 sq ft of frontal loading per array.
- **Microwave Antenna Arrays:** Consists of four arrays of microwave antennas, each with two 6' antennas, positioned at 100', 80', 60', and 40'.
- Refer to the generic construction drawing provided with this RFP for additional information and the generic antenna loading provided.

Note: The loading of equipment that may be placed in the future by carriers and service providers is addressed within the generic loading for the tower.

2.1.12 Compliance with Federal Standards:

Build America, Buy America (BABA) Act:

Overview: Mandates the use of American-made products and labor in federally funded infrastructure projects to support domestic industries and employment.

Application: Requires that all materials and labor used in tower construction are sourced from the United States.

Importance: Compliance is critical for eligibility for federal funding and aligns with national economic objectives.

Resources and Guidelines: For detailed compliance guidelines, visit the U.S. Department of Transportation's official page: [U.S. DOT BABA Act Guidelines](#).

Documentation: Bidders must provide comprehensive documentation proving compliance, including certificates of origin for materials and labor documentation.

3.0 Technical Specifications of the RFP

3.1 General System Description

System Overview: The scope of this project includes constructing self-supporting steel towers designed for optimal support of the specified load. These towers must include foundations robust enough to manage specified loads and a comprehensive electrical grounding system designed to ensure safety and functionality over long periods. In addition, miscellaneous installation such as accessory structures, landscaping elements, site features and fencing will be included.

A sample of a generic construction drawing is supplied for bidding purposes included in the annexes of the RFP as "Generic Construction Drawing."

3.2 Design Requirements

Proposers can suggest changes, however the design criteria, including loading and structural requirements, are predetermined to ensure the towers meet the project's functional and safety standards. Keep in mind non-penetrating/ballasted structures are an option if compliance with loading requirements is achieved.

3.2.1 Applicable Codes and Standards:

Building Code Compliance: All tower constructions must adhere to the 2021 International Building Code (IBC) as adapted or amended by the local State and local agencies, reflecting the latest safety and engineering standards.

National Design Standard: Towers will be built in accordance with TIA-222-H, which sets the structural standard for antenna supporting structures and antennas. This includes ensuring all structures can withstand specified wind and weight loads.

3.2.2 Structure Classification:

Classified under Risk Category III, this classification highlights the importance of the towers in sustaining critical communications and implies a high standard of resilience against environmental and operational stresses.

3.2.3 Wind Load Specifications:

Designs must conform to the requirements of TIA-222-H for Wind Load, with special attention to local code amendments which may include additional safeguards due to regional climatic conditions.

Risk Category III, Exposure Category C, which deals with wind exposure in open terrain with scattered obstructions and dictates specific structural resistances.

Towers must also meet requirements set by federal agencies such as the US Forest Service, Bureau of Land Management (BLM) and National Parks, ensuring compliance across all jurisdictional boundaries.

3.2.4 Seismic loads Specifications:

Risk Category III, seismic design category D.

3.2.5 Topographic Category:

The responder shall use appropriate topographic category based on site location.

3.3 Products and Components

Preferred Manufacturers: The preferred manufacture should be sourced products from industry-recognized manufacturers like Rohn, Sabre, Valmont or equivalents that meet the specified standards. Component shall comply with the Build America, Buy America (BABA) Act.

Tower Components: Comprising self-supporting triangular steel tube sections with 'X' cross brace construction, engineered in 10-foot increments, this is for the spacing of the cross bracing. Tower sections are expected to be 20 ft sections. All components require corrosion-resistant treatment, primarily through hot dip galvanization after fabrication to extend the lifespan under harsh environmental conditions.

Tower Lighting for FAA-Regulated Sites: Although all towers currently specified are less than 200 feet, some may still require lighting due to their specific locations, such as proximity to airports or within designated flight paths. The FAA mandates lighting for certain towers under 200 feet based on surrounding terrain and airspace considerations.

Key requirements:

- Red lights for nighttime visibility and white lights for day and night use, depending on the location.
- Compliance with FAA guidelines (AC 70/7460-1L) is essential to ensure aircraft safety.

Foundation: Foundations are to be designed by the supplier, signed, and stamped by a PE structural engineer, made of reinforced concrete suited for the load specifics of each tower and the seismic and wind conditions of the site. Concrete strength should be at least 4500 PSI in accordance with ACI 318-14 and all reinforcing steel to conform with ASTM specification A615 Grade 60.

Grounding: The electrical grounding system must be robust, designed to protect the structure and equipment from lightning strikes and other electrical hazards and stamped by a PE electrical engineer.

3.4 Erection and Installation Procedures

Erection Standards: The erection of the towers must follow strict guidelines to ensure safety and structural integrity, complying with both manufacturer specifications and TIA-222-H, TIA-322 and ANSI-TIA-1019-A Standards (latest versions).

The tower erection guidelines and specifications must be detailed in the tower erection book and PE stamped by the structural engineer.

Includes specific requirements for plumbness, overall height tolerance, and twist limits to ensure that the towers are erected without compromising their designed capabilities.

Quality Assurance : Engineers responsible for the design and oversight must be registered professionals licensed in the local State with proven experience in similar projects.

The erector must have a record of successfully erecting at least five towers of similar design and complexity within the last five years, ensuring skilled workmanship and adherence to safety protocols.

3.5 Tower Grounding

Grounding System Design: Towers must incorporate a robust grounding system designed to mitigate the risks associated with lightning strikes and electrical surges. The grounding system shall comply with IEEE Std 142 and NFPA 70 (National Electrical Code).

The grounding system design shall include ground rods, ground rings, and grounding conductors installed in a manner that ensures low impedance paths to

earth and effectively dissipates electrical charges. A continuous grounding ring shall be installed around the tower base, interconnecting all ground rods and grounding conductors. The grounding ring shall be buried at a required depth based on grounding design.

Testing and Inspection: Upon completion of the grounding system installation, a comprehensive testing and inspection process shall be conducted to verify the effectiveness of the grounding system. This shall include soil resistivity testing, ground resistance testing, and continuity testing of all grounding components. Testing procedures shall be performed by qualified electrical engineers or technicians using calibrated equipment in accordance with IEEE Std 81 and IEEE Std 81.2.

Grounding System Design: Chem-Rods: In areas with high soil resistivity or challenging soil conditions, a Chem-Rod grounding system may be utilized to enhance grounding performance. The Chem-Rod system will be integrated into the overall grounding design of the site.

3.6 Landscaping and Fencing:

The finished grade shall be uniform and leveled with base gravel, slope away from the tower and compound area.

The landscaping shall cover the tower ground space, including an additional 10 ft around the fenced area for the two ground space options: 50 ft x 50 ft and 100 ft x 100 ft.

Fencing for the tower ground space will include two options: a 50 ft x 50 ft fenced area and an optional 100 ft x 100 ft fenced area. The fence shall be 7 feet tall with 1 foot of barbed and concertina razor wire on top, and a 10-foot double swing gate. The final design and construction of the compound may change based on specific requirements and available space at each site. Ensure that both options include secure fencing to meet project requirements.

3.7 Delivery, Storage, and Handling

Handling Requirements: All components must be handled meticulously to prevent any damage that might compromise the structural integrity. This includes careful

tagging and storage practices to ensure that parts are not misplaced or incorrectly used.

3.8 Submittals

- A. Tower manufacture’s literature and technical data.
- B. Structural calculations stamped by a professional engineer licensed in the state of (AZ/NM/UT):
 - 1. Complete analysis and design of structural components and connections in accordance with design requirements indicated and with equipment mounted as shown on the tower loading table.
 - 2. Foundation design calculations.
 - 3. Clearly identify all assumptions.
- C. Construction drawings Stamped by a Professional Engineer licensed in the State of tower location. Drawings shall be specifically prepared for the Project. Do not include details that do not apply to specific Project.
 - 1. Include the location and orientation of the tower, accessory structures, landscaping elements and site features.
 - 2. Property boundaries, setbacks, and easements, if applicable.
 - 3. Dimensions for structures and spaces.
 - 4. Elevations of tower indicating location of all specified antennas.
 - 5. Electrical system plans and details, if applicable.
 - 6. Electrical grounding system plans and details
 - 7. Enlarged views of specific, tower component, building components or connections.
- D. Erection and foundation drawings Stamped by a Professional Engineer licensed in the State of (AZ/NM/UT)
 - 1. Shall include complete information necessary for the erection of the structure, including the location and orientation of every piece and subassembly.
 - 2. Base plate details showing anchor bolt size and bolt layout, foundation details, elevations of tower indicating location of all ladders and sections and details for all components and accessories. Identification numbers and a detailed description shall be shown in these drawings.
 - 3. The sequence to be used in erecting the tower.
 - 4. The required limits on plumpness of the structure.
 - 5. Show detailed bill of material (Bill of Material).

4.0 Proposal Submission and Evaluation Criteria

This section outlines the structured format and evaluation criteria for submissions to the Navajo Nation RFP, designed to ensure a fair and comprehensive assessment of each proposal. Proposals must be clear, well-documented, and demonstrate a thorough understanding of the project's scope and requirements. The evaluation will assign points reflecting the importance of each section, focusing on the proposer's qualifications, project approach, financial stability, and commitment to the Navajo Preference in Employment Act.

4.1 Submission Requirements:

Priority Status: If the offeror has Priority Status under the Navajo Nation Business Opportunity Act (NBOA), include "PRIORITY STATUS [1 or 2]" at the start of the subject line. Offeror must be prepared to provide proof as outlined in Section 1.8.3.

The response to the NNBO Telecommunications Structures Development RFP BID No: 24-07-3432GC must be submitted in two separate emails. The first email will contain the main response, submitted electronically via email with the subject line: RFPNNBO_ BID NUMBER: 24-07-3432GC _Entity Name_MainResponse (where "Entity Name" is the name of the entity sending the email). Please note that this email shall not contain any pricing information.

The second email will contain the pricing information, submitted electronically via email with the subject line: RFPNNBO_ BID NUMBER: 24-07-3432GC _Entity Name_Price Response (where "Entity Name" is the name of the entity sending the email). This email shall contain all pricing information.

Both emails must be submitted to Sonia Nez, Department Manager, via email at sonianez@navajo-nsn.gov. For any inquiries, you may contact her at 928-810-9205. Please also carbon copy (CC) to bportilla@americasrf.com and lmelo@americasrf.com

Responders are responsible for ensuring that the emails are sent and received by the Navajo Nation point of contact (POC) by the due date. The NNBO will not accept late submissions and is not responsible for any other problems related to delays that may affect the timely delivery of responses.

4.2 Proposal Submission Format:

4.2.1 Cover Letter

Introduction of the proposer, including contact details.

Statement of intent to participate and a summary of the proposer's qualifications.

4.2.2 Executive Summary

A concise overview that highlights key points of the proposal and its alignment with the project goals.

4.2.3 Table of Contents

A clear organization of the proposal contents with corresponding page numbers.

4.2.4 Appendices

Additional supporting documents, licenses, and certificates.

4.2.5 Signature Page

Authorized signature confirming the proposal's accuracy and acceptance of terms.

4.3 Bid Selection and Scoring Criteria

Bidders participating in the Request for Proposal (RFP) process follow the Navajo Nation Business Opportunity Act, ensuring fairness and transparency. This Act supports economic development within the Navajo Nation by establishing a structured framework for bid evaluation. Bids are assessed comprehensively, considering factors like cost, quality, and alignment with project requirements. The selection process aims to identify the most qualified bidder, promoting economic growth and opportunities within the Navajo Nation community. Eligible bids will follow the evaluation criteria below:

4.3.1 Qualification and Experience (25 Points)

Detailed evidence of relevant project experience and administrative and technical capabilities.

Provide a reference list of at least three (3) projects completed in the last three years, with contact information and project descriptions.

Include at least two (2) verifiable references for similar projects, highlighting the proposer's capability.

Emphasis on experience exceeding five years in the relevant field.

4.3.2 Navajo Preference (20 Points)

Proposers must provide proof of Navajo Preference certification, including details regarding Navajo ownership and control. If applicable, Navajo Priorities will influence contract awards. To demonstrate eligibility for preference under the Navajo Business and Procurement Act, the Navajo Nation Procurement Act, the Navajo Nation Business Opportunity Act, and other relevant laws, proposers must submit evidence of their Navajo Preference Priority Certification.

4.3.3 Financial Qualifications (20 Points)

Detailed budget and evidence of financial health, including audited financial statements. Demonstrations of financial stability and the capability to adhere to project timelines.

Financial Information should be provided for the company responding to the RFP. The required Financial Statements (Audited statements not required however if proposer is preselected audited statements and additional financial information may be required):

- Balance Sheets (last 2 years)
- Income Statements (last 2 years)
- Cash Flow Statements (last 2 years) "

4.3.4 Project Plan (25 Points)

Resumes of team members, detailing skills relevant to the project scope. A comprehensive plan and timeline that adheres to the RFP's scope and technical specifications.

Commitment to a "not to exceed cost price" agreement.

4.3.5 Insurance (10 Points)

Valid insurance certificates and additional insured endorsements as required, including:

- General Property Liability
- \$1,000,000 Professional Liability Insurance

- Worker's Compensation
- Motor Vehicle Insurance
- The Navajo Nation must be named as additionally insured.

4.4 Volume Incentives

Volume discounts can be presented in response to the RFP. Given the scope of 78 towers or more, and each could be assigned separately, provide incentives for volume assignments. Include a detailed pricing model with discounts based on the number of towers, service enhancements, and economic benefits for the Navajo Nation. Highlight your ability to scale operations and manage multiple assignments efficiently. Pricing Structure: Detailed pricing model that includes discounts or adjustments based on the number of towers assigned.

Service Enhancements: Additional services or enhancements offered as the volume of assigned work increases.

Economic Benefits: Economic benefits for the Navajo Nation through volume-based incentives, such as expedited timelines, reduced costs, or improved resource allocation.

Scalability and Capability: Ability to scale operations and manage multiple simultaneous assignments efficiently.

4.5 Technical Acceptance Compliance

By responding to this RFP, the proposer agrees to fully accept and comply with all technical specifications and the scope of work as detailed in the RFP.

Complete Compliance: Affirmation of meeting all technical specifications and scope requirements.

Exceptions and Deviations: Detailed specification of any deviations from the RFP standards, including justifications and proposed solutions.

Evaluation Criteria: Points will be assigned based on completeness, feasibility, and adherence to the specified requirements of the proposal.

This section also provides the Navajo Nation with the initial acceptance of the proposal before the cost proposal is opened. Once the proposer is accepted as

reliable, the cost and any economic benefits brought to the Navajo Nation will be evaluated, including discretionary matching funding or economic development opportunities.

5.0 Cost Proposal

This section outlines the cost proposal for each of the 78 individual towers specified in the project. Each tower will be treated as a separate cost entity, allowing for precise budgeting and cost allocation.

5.1 Cost Proposal Format:

For each tower, proposers are required to submit a detailed cost breakdown that includes the following:

5.1.1 Tower Identification:

Clearly indicate the tower number or identifier for reference.

5.1.2 Itemized Cost Breakdown:

Provide a comprehensive breakdown of all costs associated with the construction of the respective tower. This should include but is not limited to:

- Labor costs
- Material costs
- Equipment rental or purchase costs
- Permitting and regulatory compliance fees
- Transportation and logistics costs
- Any other relevant expenses

5.1.3 Total Cost:

Summarize the total cost for the construction of each tower, including all items listed in the cost breakdown. Please use template provided in Annex 6.5.

5.1.4 Payment Schedule:

Outline the proposed payment schedule, indicating milestones or phases of work completion and corresponding payment amounts.

5.1.5 Additional Costs and Contingencies:

Additional costs or contingencies may arise during the construction process, such as unforeseen subsurface investigations for the foundations if the Geotechnical Report (GEO) is not provided.

Note: Pricing forms will be issued to proposers, and proposers are encouraged to suggest alternative pricing forms.

6.0 Annexes

This section includes additional annexes and supporting documents to complement the proposal submission.

6.1 New Proposed Sites List:

A comprehensive list of all proposed new tower sites, including detailed site descriptions, coordinates, and any relevant information regarding access, utilities, or infrastructure.

6.2 Map

A detailed map outlines the proposed tower sites, surrounding areas, access routes, and key geographical features, based on a comprehensive engineering feasibility study. This study considers existing telecommunications infrastructure, access roads, power availability, and other site-specific factors to optimize deployment costs. While these initial tower locations are the result of thorough engineering assessments, they may be adjusted due to unforeseen field conditions, coverage requirements, or other factors encountered during final engineering and implementation.

6.3 Generic Tower Elevation and Site Plan:

The simplified Construction Drawings shows the generic tower elevation, site plan, grounding plan and other information used to understand the scope of work.

6.4 Generic Tower Loading:

The table shows the tower loading for dimensioning and design of the structure.

6.5 Summarized Cost Table:

Bidder shall use the attached cost table to provide cost information. Provide one cost table for option 50'x50' site plan and one for 100'x100' site plan option.

6.6 Purpose of Annexes:

Enhanced Understanding: The annexes provide additional context and information to enhance the evaluators' understanding of the proposal.

Visual Representation: Maps and site lists offer visual representations of the proposed project locations, aiding in the assessment of feasibility and logistical considerations.

Comprehensive Documentation: By including relevant documents and information as annexes, proposers ensure the completeness and thoroughness of their submissions.

6.1 Annex - New Proposed Sites List

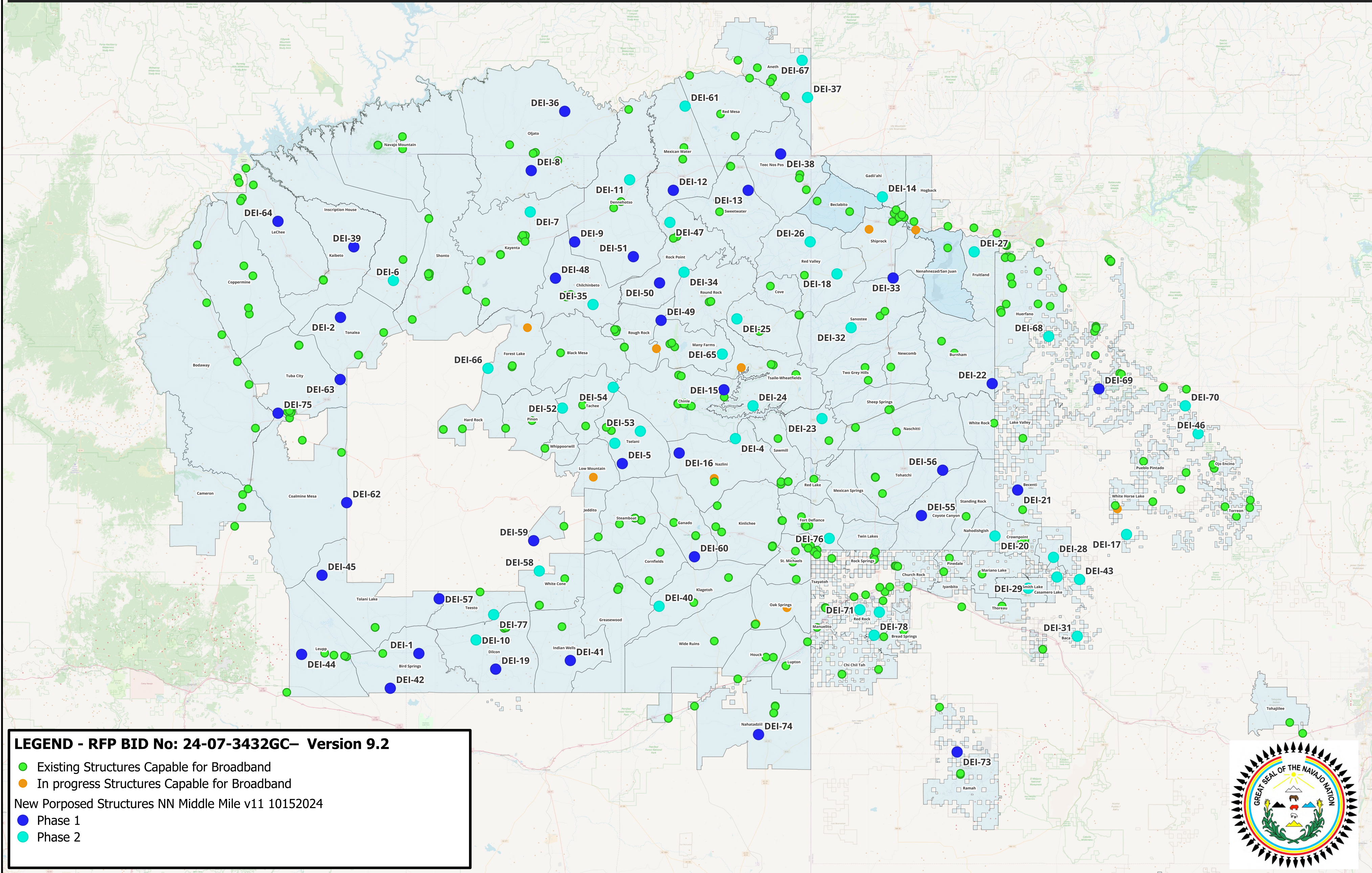
Project ID	FullName	Short Name	Latitude	Longitude	Tower height	Chapter Location	Phase
1	DEI-1_Bird Springs Chapter	DEI-1	35.305258	-110.6973846	180	Bird Springs Chapter	1
2	DEI-2_Tonalea Chapter	DEI-2	36.45278	-111.027656	180	Tonalea Chapter	1
5	DEI-5_Tselani Chapter	DEI-5	35.9556863	-109.8404045	180	Tselani Chapter	1
8	DEI-8_Oljato Chapter	DEI-8	36.9487773	-110.2240662	180	Oljato Chapter	1
9	DEI-9_Dennehotso Chapter	DEI-9	36.70816195	-110.0411366	180	Dennehotso Chapter	1
12	DEI-12_Mexican Water Chapter	DEI-12	36.8823032	-109.6255198	180	Mexican Water Chapter	1
13	DEI-13_Sweetwater Chapter	DEI-13	36.8821697	-109.3101987	180	Sweetwater Chapter	1
15	DEI-15_Chinle Chapter	DEI-15	36.2070679	-109.4124722	180	Chinle Chapter	1
16	DEI-16_Nazlini Chapter	DEI-16	35.9916448	-109.6008183	180	Nazlini Chapter	1
19	DEI-19_Dilcon Chapter	DEI-19	35.2515188	-110.3738155	180	Dilcon Chapter	1
21	DEI-21_Becenti Chapter	DEI-21	35.8654264	-108.174994	180	Becenti Chapter	1
22	DEI-22_Burnham Chapter	DEI-22	36.2280038	-108.2822946	180	Burnham Chapter	1
33	DEI-33_Shiprock Chapter	DEI-33	36.5860713	-108.6995948	180	Shiprock Chapter	1
36	DEI-36_Oljato Chapter	DEI-36	37.1479905	-110.0829275	180	Oljato Chapter	1
38	DEI-38_Teec Nos Pos Chapter	DEI-38	37.0047699	-109.1735015	180	Teec Nos Pos Chapter	1
39	DEI-39_Kaibeto Chapter	DEI-39	36.6915939	-110.9713479	180	Kaibeto Chapter	1
41	DEI-41_Indian Wells Chapter	DEI-41	35.2812532	-110.0593439	180	Indian Wells Chapter	1
42	DEI-42_Bird Springs Chapter	DEI-42	35.185665	-110.817815	180	Bird Springs Chapter	1
44	DEI-44_Leupp Chapter	DEI-44	35.30218639	-111.1912886	180	Leupp Chapter	1
45	DEI-45_Tolani Lake Chapter	DEI-45	35.5739186	-111.1054102	180	Tolani Lake Chapter	1
48	DEI-48_Chilchinbeto Chapter	DEI-48	36.5855135	-110.1219914	180	Chilchinbeto Chapter	1
49	DEI-49_Rough Rock Chapter	DEI-49	36.4427597	-109.6770607	180	Rough Rock Chapter	1
50	DEI-50_Rock Point Chapter	DEI-50	36.569431	-109.6835434	180	Rock Point Chapter	1
51	DEI-51_Dennehotso Chapter	DEI-51	36.6583273	-109.7938677	180	Dennehotso Chapter	1
55	DEI-55_Coyote Canyon Chapter	DEI-55	35.7781946	-108.5803697	180	Coyote Canyon Chapter	1
56	DEI-56_Tohatchi Chapter	DEI-56	35.933056	-108.4908727	180	Tohatchi Chapter	1
57	DEI-57_Teesto Chapter	DEI-57	35.4933065	-110.611845	180	Teesto Chapter	1
59	DEI-59_Jeddito Chapter	DEI-59	35.69218	-110.21375	180	Jeddito Chapter	1
60	DEI-60_Ganado Chapter	DEI-60	35.6373052	-109.5365337	180	Ganado Chapter	1
62	DEI-62_Coalmine Mesa Chapter	DEI-62	35.822337	-111.00133	180	Coalmine Mesa Chapter	1
63	DEI-63_Tuba City Chapter	DEI-63	36.2420186	-111.0288995	180	Tuba City Chapter	1
64	DEI-64_LeChee Chapter	DEI-64	36.7775919	-111.2908369	180	LeChee Chapter	1
69	DEI-69_Nageezi	DEI-69	36.21019901	-107.8327547	180	May be Outside Chapter Boundary	1
73	DEI-73_Ramah	DEI-73	34.96589565	-108.4300245	180	May be Outside Chapter Boundary	1
74	DEI-74_Nahatadziiil Chapter	DEI-74	35.02607566	-109.2665531	180	Nahatadziiil Chapter	1
75	DEI-75_Tuba City Chapter	DEI-75	36.12738911	-111.2905452	180	Tuba City Chapter	1
3	DEI-3_Tselani Chapter	DEI-3	36.02486012	-109.8722451	180	Tselani Chapter	2
4	DEI-4_Chinle Chapter	DEI-4	36.040869	-109.3640604	180	Chinle Chapter	2
6	DEI-6_Inscription House Chapter	DEI-6	36.57777525	-110.8048078	180	Inscription House Chapter	2
7	DEI-7_Kayenta Chapter	DEI-7	36.8092801	-110.2283391	180	Kayenta Chapter	2
10	DEI-10_Dilcon Chapter	DEI-10	35.3519269	-110.4565073	180	Dilcon Chapter	2
11	DEI-11_Dennehotso Chapter	DEI-11	36.9176313	-109.809603	180	Dennehotso Chapter	2
14	DEI-14_Gadii'ahi Chapter	DEI-14	36.8602043	-108.7449967	180	Gadii'ahi Chapter	2
17	DEI-17_White Horse Lake Chapter	DEI-17	35.71360827	-107.7164839	180	White Horse Lake Chapter	2
18	DEI-18_Red Valley Chapter	DEI-18	36.59993593	-108.9362895	180	Red Valley Chapter	2
20	DEI-20_Nahodishgish Chapter	DEI-20	35.7082043	-108.2707483	180	Nahodishgish Chapter	2
23	DEI-23_Crystal Chapter	DEI-23	36.10905136	-108.9994558	180	Crystal Chapter	2
24	DEI-24_Tsaile-Wheatfields Chapter	DEI-24	36.15243418	-109.2901789	180	Tsaile-Wheatfields Chapter	2
25	DEI-25_Lukachukai Chapter	DEI-25	36.4477632	-109.3577502	180	Lukachukai Chapter	2
26	DEI-26_Red Valley Chapter	DEI-26	36.70848511	-109.0491842	180	Red Valley Chapter	2
27	DEI-27_Fruitland Chapter	DEI-27	36.67466801	-108.3582984	180	Fruitland Chapter	2
28	DEI-28_Littlewater Chapter	DEI-28	35.63524993	-108.0241293	180	Littlewater Chapter	2
29	DEI-29_Smith Lake Chapter	DEI-29	35.52946883	-108.1311655	180	Smith Lake Chapter	2
30	DEI-30_	DEI-30	35.56787662	-108.009406	180	May be Outside Chapter Boundary	2
31	DEI-31_Baca Chapter	DEI-31	35.36457114	-107.9237922	180	Baca Chapter	2
32	DEI-32_Sanostee Chapter	DEI-32	36.41798	-108.8766051	180	Sanostee Chapter	2
34	DEI-34_Rock Point Chapter	DEI-34	36.6058616	-109.5806565	180	Rock Point Chapter	2

Project ID	FullName	Short Name	Latitude	Longitude	Tower height	Chapter Location	Phase
35	DEI-35_Chilchinbeto Chapter	DEI-35	36.496381	-109.9639406	180	Chilchinbeto Chapter	2
37	DEI-37_Aneth Chapter	DEI-37	37.19454129	-109.0602113	180	Aneth Chapter	2
40	DEI-40_Klagetoh Chapter	DEI-40	35.46746485	-109.6855615	180	Klagetoh Chapter	2
43	DEI-43_Littlewater Chapter	DEI-43	35.5595574	-107.9146221	180	Littlewater Chapter	2
46	DEI-46_Counselor Chapter	DEI-46	36.05766929	-107.4150149	180	Counselor Chapter	2
47	DEI-47_Rock Point Chapter	DEI-47	36.7740446	-109.6400601	180	Rock Point Chapter	2
52	DEI-52_Tachee Chapter	DEI-52	36.1447167	-110.0928284	180	Tachee Chapter	2
53	DEI-53_Tselani Chapter	DEI-53	36.0659987	-109.7645055	180	Tselani Chapter	2
54	DEI-54_Tachee Chapter	DEI-54	36.21553307	-109.8790599	180	Tachee Chapter	2
58	DEI-58_White Cone Chapter	DEI-58	35.5885953	-110.1901532	180	White Cone Chapter	2
61	DEI-61_Mexican Water Chapter	DEI-61	37.1654561	-109.5760882	180	Mexican Water Chapter	2
65	DEI-65_Many Farms Chapter	DEI-65	36.3281992	-109.4196676	180	Many Farms Chapter	2
66	DEI-66_Forest Lake Chapter	DEI-66	36.27988565	-110.406404	180	Forest Lake Chapter	2
67	DEI-67_Aneth Chapter	DEI-67	37.31887305	-109.083019	180	Aneth Chapter	2
68	DEI-68_	DEI-68	36.38789195	-108.0445082	180	May be Outside Chapter Boundary	2
70	DEI-70_	DEI-70	36.15248889	-107.4690495	180	May be Outside Chapter Boundary	2
71	DEI-71_Red Rock Chapter	DEI-71	35.45572203	-108.8398552	180	Red Rock Chapter	2
72	DEI-72_	DEI-72	35.44727577	-108.7578442	180	May be Outside Chapter Boundary	2
76	DEI-76_Fort Defiance Chapter	DEI-76	35.7001166	-108.9688794	180	Fort Defiance Chapter	2
77	DEI-77_Teesto Chapter	DEI-77	35.43880655	-110.3823765	180	Teesto Chapter	2
78	DEI-78_Red Rock Chapter	DEI-78	35.36802333	-108.779992	180	Red Rock Chapter	2

6.2 Annex – Map

ANNEX 6.2 - NN DEI - Navajo Nation New Telecommunications Infrastructure - Structures

Telecommunications Structures Development RFP for the Navajo Nation RFP BID No: 24-07-3432GC– Version 9.2



LEGEND - RFP BID No: 24-07-3432GC– Version 9.2

- Existing Structures Capable for Broadband
- In progress Structures Capable for Broadband

New Porposed Structures NN Middle Mile v11 10152024

- Phase 1
- Phase 2



Disclaimer:
Data Collected up to 2020 and public information available as of today



6.3 Annex - Generic Construction Drawing

Copyright © ABN Engineering (ABNE), 2024. This document is a proprietary item of ABNE and contains information solely for use on a specific project. It cannot be used, disclosed or reproduced in any format without ABNE's prior written permission. Only our customer has the right to use the information contained in this document for construction purpose of this project up to 12 months from seal & stamped date on this document. The user agrees to indemnify defend, & hold harmless ABNE from all claims, suits, liability, demands, judgments, or expenses arising from or related to the use or re-use of the electronic files. All rights reserved.

GENERAL NOTES

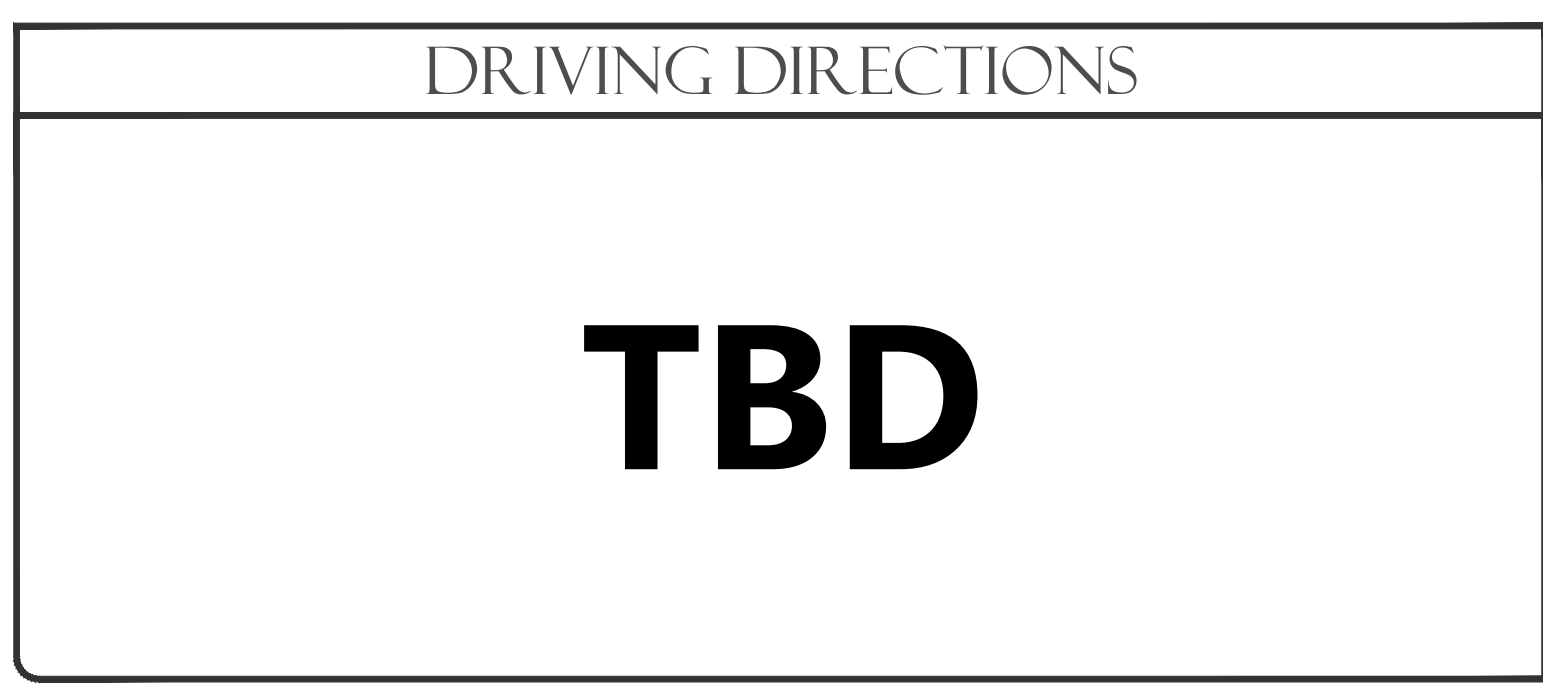
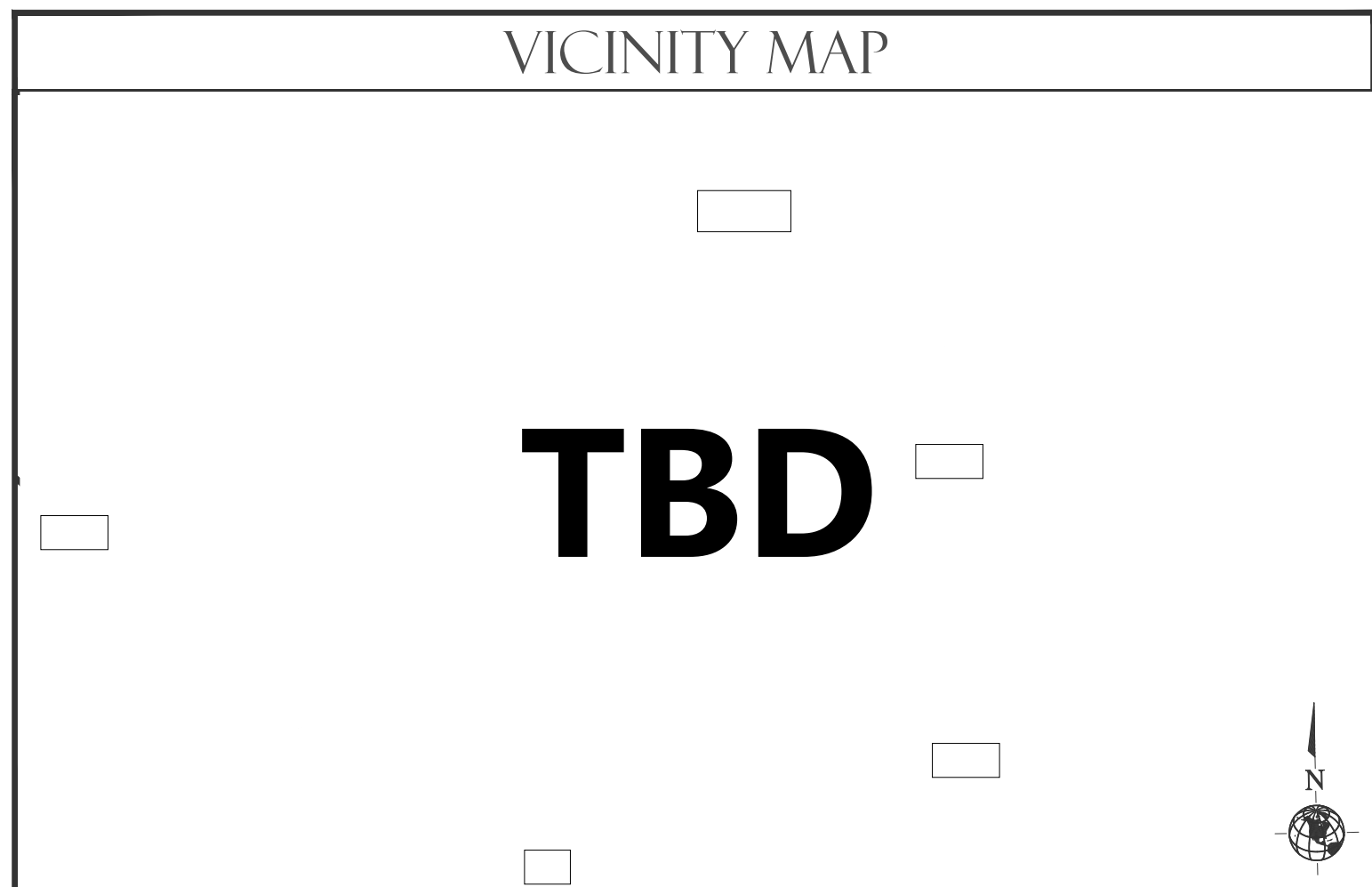
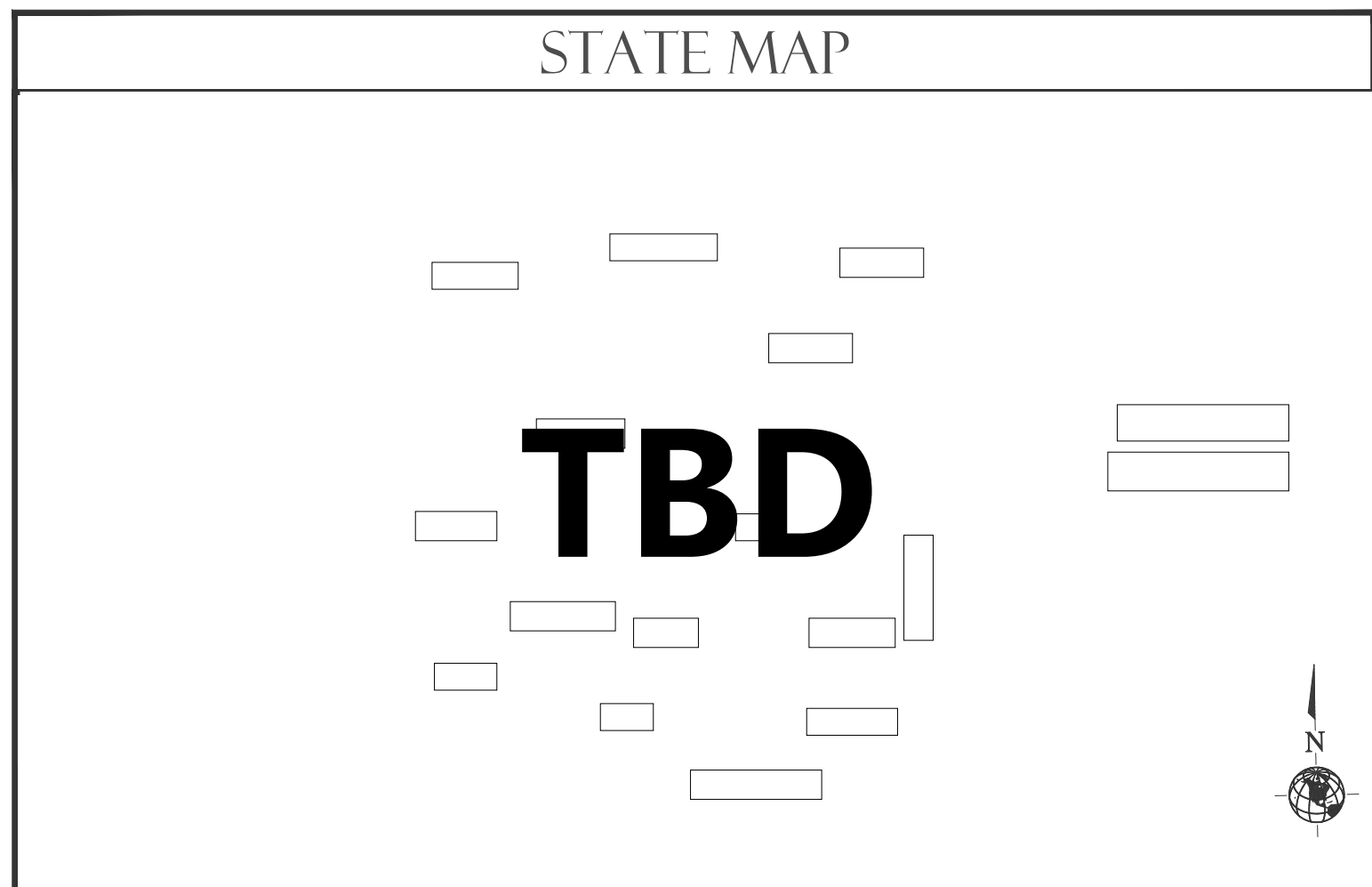
THE ARCHITECTS/ENGINEERS HAVE MADE EVERY EFFORT AS SET FORTH IN THE CONSTRUCTION DRAWINGS, CONTRACT DOCUMENTS AND THE COMPLETE SCOPE OF WORK. CONTRACTORS BIDDING THE JOB ARE NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. THE BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE ARCHITECT/ENGINEER OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK UNLESS OTHERWISE DIRECTED.

CODE COMPLIANCE

ALL WORK SHALL COMPLY IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING JURISDICTION/AUTHORITY AND APPLICABLE CODE AMENDMENTS.

2021 INTERNATIONAL BUILDING CODE (IBC)
 2021 INTERNATIONAL PLUMBING CODE (IPC)
 2021 INTERNATIONAL FUEL GAS CODE (IFGC)
 2021 INTERNATIONAL MECHANICAL CODE (IMC)
 2020 NATIONAL ELECTRICAL CODE (NEC)
 ANSI/TIA-222-H STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS AND SMALL WIND TURBINE SUPPORT STRUCTURES
 LOCAL BUILDING CODE(S)
 LOCAL TRIBAL AUTHORITY/CITY AND/OR COUNTY ADDENDA & ADDITIONS

JURISDICTION: NAVAJO NATION



SITE NAME:
 TEMPLATE RFP

ADDRESS:
 TBD
 TBD

PROJECT TEAM

PROJECT OWNER: TBD

PROJECT MANAGER: TBD

RF ENGINEER: NAVAJO NATION BROADBAND OFFICE
 1575E STATE HWY 264
 TSE BONITO, NEW MEXICO

CONTACT: SONIA NEZ, DEPARTMENT MANAGER
 PHONE: 928-810-9205
 EMAIL: SONIANEZ@NAVAJO-NSN.GOV

CIVIL ENGINEER: Abn ENGINEERING, LLC
 1337 E. DESERT FLOWER LANE
 PHOENIX, AZ 85048
 CONTACT: SANDEEP A. MANE, P.E.
 PHONE: (480) 213-8524
 EMAIL: smane@abneng.com

TOWER OWNER: TBD

TOWER MANUFACTURER: TBD

UTILITY TABLE

UTILITY:	PROVIDER:
ELECTRICAL	TBD
TELEPHONE/FIBER	TBD
POLICE	TBD
FIRE	TBD

APPROVAL BOX

DEPARTMENT:	SIGNATURE:	DATE:
PROJECT MANAGER		
TOWER REPRESENTATIVE		
LAND OWNER/USER REPRESENTATIVE		
PROJECT MANAGER - AMERICAS		
RF ENGINEER - AMERICAS		

PROJECT INFORMATION

SITE NAME: TEMPLATE RFP

SITE ADDRESS: TBD
 TBD

SITE COORDINATES: TBD

APPLICANT: NAVAJO NATION BROADBAND OFFICE
 1575E STATE HWY 264
 TSE BONITO, NEW MEXICO

CONTACT: SONIA NEZ, DEPARTMENT MANAGER
 PHONE: 928-810-9205
 EMAIL: SONIANEZ@NAVAJO-NSN.GOV

PROPERTY OWNER: TBD

APN NUMBER: TBD

CURRENT ZONING: TBD

CONSTRUCTION TYPE: VB

OCCUPANCY: U

CURRENT USE: TRUST LAND

(N) USE: UNMANNED TELECOMMUNICATIONS FACILITY

LEASE AREA: 50'x50'x7' HIGH

PROJECT DESCRIPTION

- INSTALLATION OF NEW 180'-0" TALL SELF-SUPPORT TOWER.
- INSTALLATION OF NEW ANTENNA ARRAYS / MW DISHES.
- INSTALLATION OF NEW 50'X50'X7' CHAIN LINK FENCE WITH RAZOR WIRE & 1' BARBED WIRE ON TOP, AND A 20' WIDE DOUBLE SWING GATES.



SHEET INDEX

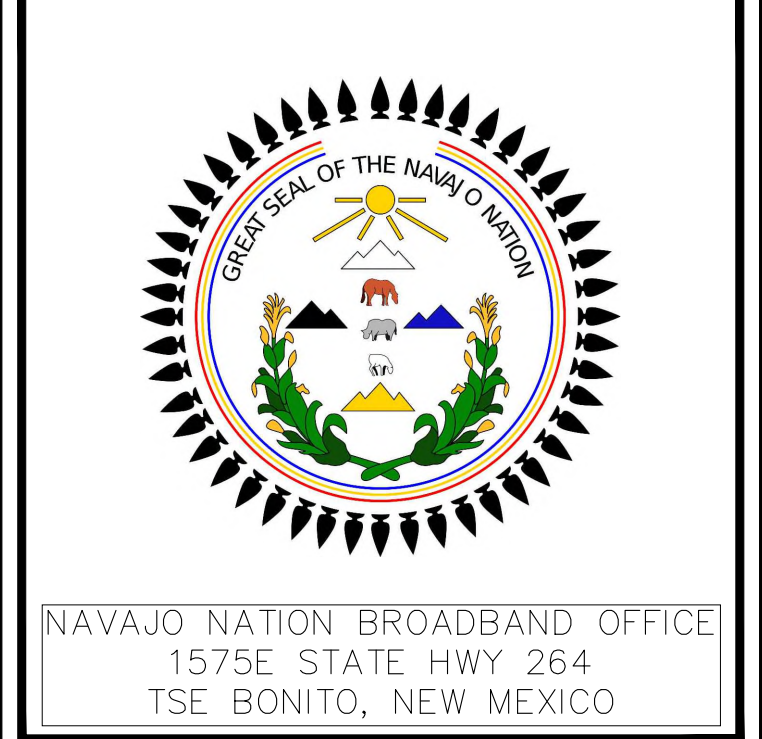
TITLE:	DESCRIPTION:
T-1	TITLE SHEET & PROJECT INFORMATION
GN-1	GENERAL NOTES
A-1	LEGEND & OVERALL SITE PLAN
A-2	ENLARGED SITE PLAN
A-3	ELEVATION
A-4	CONSTRUCTION DETAILS
G-1	GROUNDING PLAN
G-2	GROUNDING DETAILS
ATTACHMENT:	
DWG	REFER TOWER DESIGN PACKAGE SUPPLIED BY TOWER MANUFACTURER

SPECIAL INSPECTION

PURSUANT TO CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE AND PROJECT REQUIREMENTS, THE FOLLOWING WORK REQUIRES SPECIAL INSPECTION:

- TOWER FOUNDATION SCOPE - DRILLED PIER OR MAT FOUNDATION
- REINFORCING STEEL AND CONCRETE
- ANCHOR BOLTS AND HIGH STRENGTH BOLTING
- OTHER INSPECTION ITEMS IDENTIFIED IN THE PROJECT RFP
- DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
 - THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.
 - THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE ENGINEER. UPON COMPLETION OF THE ASSIGNED WORK THE ENGINEER OR OWNER SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT TO THE BEST OF HIS KNOWLEDGE THE WORK IS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

IT IS HIGHLY RECOMMENDED TO HAVE INSPECTION SCOPE REVIEWED AND APPROVED BY DESIGN ENGINEER OF RECORD (EOR) LISTED ON THESE CONSTRUCTION DRAWINGS. IF DESIGN EOR IS NOT INVOLVED IN INSPECTION REVIEW-APPROVAL PROCESS THEN IT SHALL NOT ASSUME ANY RESPONSIBILITY FOR ANY POTENTIAL CLAIMS THAT MAY ARISE DURING OR AFTER CONSTRUCTION AS A RESULT OF MISUSE OR MISINTERPRETATION OF THESE PLANS. DESIGN EOR MAY CEASE THE RESPONSIBILITY OF DESIGN ENGINEER OF RECORD BASED ON CIRCUMSTANCES.



PE SEAL

DESIGNER: JN

LEAD EE: N/A

LEAD CE/SE: SM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
A	8/18/24	REVIEW	SM
B	8/26/2024	COMMENTS	SM
C	8/28/2024	COMMENTS	SM

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO NTUA WIRELESS IS STRICTLY PROHIBITED.

SITE NAME:
 TEMPLATE RFP

SITE ADDRESS:
 LAT: TBD
 LONG: TBD
 TBD
 TBD

SHEET TITLE:
 TITLE SHEET

SHEET NUMBER:
 1-1

Copyright ©ABN Engineering (ABNE), 2024. This document is a proprietary item of ABNE and contains information solely for use on a specific project. It cannot be used, disclosed or reproduced in any format without ABNE's prior written permission. Only our customer has the right to use the information contained in this document for construction purposes of this project up to 12 months from seal & stamped date on this document. The user agrees to indemnify defend, & hold harmless ABNE from all claims, suits, judgments, demands, liabilities, or expenses arising from or related to the use or re-use of the electronic files. All rights reserved.

DIVISION 1 - STANDARD PROVISIONS

PART 1 GENERAL

- 1.1 INTENT
- A. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR THE CONSTRUCTION OF THIS PROJECT.
- B. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED ON BOTH.
- C. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
- D. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
- E. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

1.2 CONFLICTS

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATIONS SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. WHICH MAY BE FOUND, SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
- B. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS.

1.3 CONTRACTORS AND WARRANTIES

- A. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.

1.4 STORAGE

- A. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.
- B. G. AND SURPLUS MATERIALS AND SHALL LEAVE HIS WORK EXTERIOR; VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
 - 1. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
 - 2. IF NECESSARY TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR THE STRUCTURE.
- C. INTERIOR: VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS/FLOOR/CEILING.
 - 1. REMOVE ALL TRACES OF SPLASH MATERIALS FROM ADJACENT SURFACES.
 - 2. REMOVE PAINT DROPPINGS, SPOTS, STAINS AND DIRT FROM FINISHED SURFACES.

1.5 CLEAN UP

- A. THE CONTRACTORS SHALL AT ALL TIMES KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY HIS EMPLOYEES AT WORK; HE SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL HIS TOOLS, SCAFFOLDING AND READY FOR USE.
- B. G. AND SURPLUS MATERIALS AND SHALL LEAVE HIS WORK EXTERIOR; VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
 - 1. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
 - 2. IF NECESSARY TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR THE STRUCTURE.
- C. INTERIOR: VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS/FLOOR/CEILING.
 - 1. REMOVE ALL TRACES OF SPLASH MATERIALS FROM ADJACENT SURFACES.
 - 2. REMOVE PAINT DROPPINGS, SPOTS, STAINS AND DIRT FROM FINISHED SURFACES.

1.6 CHANGE ORDER PROCEDURE

- A. THE CONTRACTOR, UPON VERBAL REQUEST FROM AMERICAS COMMUNICATIONS SHALL PREPARE A WRITTEN PROPOSAL DESCRIBING THE CHANGES IN WORK OR MATERIALS AND ANY CHANGES IN THE CONTRACT AMOUNT AND PRESENT TO AMERICAS COMMUNICATIONS FOR APPROVAL. SUBMIT REQUESTS FOR SUBSTITUTIONS IN THE FORM AND IN ACCORDANCE WITH PROCEDURES REQUIRED FOR CHANGE ORDER PROPOSALS. ANY CHANGES IN SCOPE OF WORK OR MATERIALS WHICH ARE PERFORMED BY THE CONTRACTOR WITHOUT WRITTEN CHANGE ORDER AS DESCRIBED SHALL PLACE FULL RESPONSIBILITY OF THESE ACTIONS ON THE CONTRACTOR.

1.7 RELATED DOCUMENTS & COORDINATION

- A. GENERAL CONSTRUCTION, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS, ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.8 SHOP DRAWINGS

- A. CONTRACTOR TO SUBMIT SHOP DRAWING AS REQUIRED FOR APPROVAL PRIOR TO FABRICATION.

1.9 QUALITY ASSURANCE

- A. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE BUT NOT BE LIMITED TO THE LATEST VERSION OF THE ANSI/ISA, BUILDING CODE (NEC), UNDERWRITER LABORATORIES APPROVED ELECTRICAL PRODUCTS AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS (AISC), AND LIFE SAFETY CODE NFPA.

1.10 ADMINISTRATION

- A. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THE PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE AMERICAS COMMUNICATIONS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- B. PRIOR TO COMMENCING CONSTRUCTION, AMERICAS COMMUNICATIONS SHALL SCHEDULE AN "ON-SITE" MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE (THOUGH NOT LIMITED TO) THE OWNER, LOCAL TELEPHONE COMPANY, LOCAL POWER COMPANY.
- C. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. THE CONTRACTOR MUST COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS AND ALL CLIENTS SAFETY REQUIREMENTS.
- D. PROVIDE DAILY UPDATES ON SITE PROGRESS, EITHER VERBAL OR WRITTEN.
- E. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
- F. AMERICAS COMMUNICATIONS SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND SHELTER PLACEMENTS.

1.11 INSURANCE AND BONDS

- A. CONTRACTOR SHALL AT HIS OWN EXPENSE CARRY AND MAINTAIN FOR THE DURATION OF THE PROJECT ALL INSURANCE AS REQUIRED AND SHALL NOT COMMENCE WITH HIS WORK UNTIL HE HAS PRESENTED A CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE CONTRACTOR WHO SHALL, IN TURN: FORWARD A COPY OF ALL CERTIFICATES TO AMERICAS COMMUNICATIONS.

1.12 TEMPORARY FACILITIES

- A. SANITARY: PROVIDE TEMPORARY TOILETS AS REQUIRED BY LOCAL AUTHORITIES. DO NOT USE OWNER FACILITIES.

DIVISION 2 - SITE WORK AND DRAINAGE

PART 1 GENERAL

2.1 WORK INCLUDED

- A. REFER TO THE SURVEY AND ARCHITECTURAL SITE PLAN FOR WORK INCLUDED.

2.2 RELATED WORK

- A. CONSTRUCTION FOR BUILDING FOUNDATION
- B. INSTALLATION OF ANTENNA SYSTEM
- C. ERECTION OF FENCE
- D. ACCESS ROAD

2.3 DESCRIPTIONS

- A. ACCESS ROAD, TURNAROUNDS AREAS, AND SITES ARE CONSTRUCTED TO PROVIDE A WELL-DRAINED, EASILY MAINTAINED, EVEN SURFACE FOR MATERIAL AND EQUIPMENT DELIVERIES AND MAINTENANCE PERSONNEL ACCESS AND SHALL COMPLY WITH LOCAL DEPARTMENT OF TRANSPORTATION STANDARDS.

2.4 QUALITY ASSURANCE

- A. APPLY SOIL STERILIZER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION (USE AS NEEDED).
- B. VEGETATION AND LANDSCAPING, IF REQUIRED WITH THE CONTRACT, WILL BE PLACED AND MAINTAINED AS RECOMMENDED BY NURSERY INDUSTRY STANDARDS.

2.5 SEQUENCING

- A. CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION.
- B. THE COMPLETE ROAD AND SITE AREA WILL BE CLEARED OF HEAVY GROWTH OF GRASS, TREES, SHRUBS AND TOPSOIL PRIOR TO FOUNDATION CONSTRUCTION OR PLACEMENT OF BACKFILL OR SUB-BASE MATERIALS.
- C. CONSTRUCT TEMPORARY CONSTRUCTION ZONE ALONG ACCESS DRIVE.
- D. THE SITE AREA WILL BE BROUGHT TO SUB-BASE COURSE ELEVATION PRIOR TO FORMING FOUNDATIONS.
- E. APPLY SOIL HERBICIDE PRIOR TO PLACING BASE MATERIALS.
- F. IF REQUIRED GRADE, SEED, FERTILIZE AND MULCH DISTURBED AREA IMMEDIATELY AFTER BRINGING THE SITE AND ACCESS ROAD TO BASE COURSE ELEVATION. WATER TO ENSURE GROWTH.
- G. REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE.
- H. AFTER APPLICATIONS OF FINAL SURFACES, APPLY SOIL HERBICIDE TO THE STONE SURFACES.

2.6 WARRANTY

- A. IN ADDITION TO THE WARRANTY ON ALL CONSTRUCTION COVERED IN THE CONTRACT DOCUMENTS: THE CONTRACTOR SHALL REPAIR ALL DAMAGE OF SURROUNDING PROPERTY CAUSED BY CONSTRUCTION.
- B. SOIL HERBICIDE APPLICATION WILL GUARANTEE VEGETATION FREE ROAD AND SITE AREA FOR ONE YEAR FROM DATE OF FINAL INSPECTION.
- C. DISTURBED AREAS WILL REFLECT GROWTH OF NEW GRASS COVER PRIOR TO FINAL INSPECTION.
- D. LANDSCAPING, IF INCLUDED WITHIN THE SCOPE OF THE CONTRACT, WILL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL INSPECTION.

2.7 MATERIALS

- A. ROAD AND SITE MATERIALS; FILL MATERIAL - ACCEPTABLE SELECT FILL SHALL BE IN ACCORDANCE WITH LOCAL DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- B. SOIL HERBICIDE SHALL BE EPA REGISTERED OF LIQUID COMPOSITION AND OF PRE-EMERGENCE DESIGN.
- C. SOIL STABILIZER FABRIC SHALL BE MIRAFI - 500X OR APPROVED EQUAL.
- D. REFER TO SOILS REPORT FOR FURTHER OR OVERRIDING SPECIFICATIONS WHEN APPLICABLE.

2.8 EQUIPMENT

- A. COMPACTION SHALL BE ACCOMPLISHED BY MECHANICAL MEANS.
 - 1. LARGER AREAS ALL SHALL BE COMPACTED BY SHEEPS FOOT, VIBRATORY OR RUBBER TIRED ROLLERS WEIGHING AT LEAST FIVE TONS.
 - 2. SMALLER AREAS SHALL BE COMPACTED BY POWER - DRIVER, HAND HELD TAMPERS.
 - 3. REFER TO SOILS REPORT FOR FURTHER OR OVERRIDING SPECIFICATIONS WHEN APPLICABLE.

PART 3 EXCAVATION

2.9 INSPECTIONS

- A. LOCAL BUILDING INSPECTION SHALL RECEIVE ADEQUATE NOTIFICATION IN ADVANCE OF CONCRETE POURS.

2.10 PREPARATION

- A. CLEAR TREES, BRUSH AND DEBRIS FROM SITE AREA AND ACCESS ROAD RIGHT OF WAY (IF REQUIRED).
- B. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION EFFORTS CLEAR SITE OF ORGANIC MATERIAL TO MINIMUM OF SIX INCHES BELOW ORIGINAL GROUND LEVEL.
- C. UNLESS OTHERWISE INSTRUCTED BY THE OWNER, REMOVE TREES, BRUSH, AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL OR PER LOCAL REGULATIONS.
- D. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, PROOF ROLL THE SOIL.
- E. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, COVER CLEARED AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.

2.11 INSTALLATION

- A. THE SITE AND TURNAROUND AREAS SHALL BE AT THE SUB-BASE COURSE ELEVATION PRIOR TO FORMING FOUNDATIONS. GRADE OR FILL THE SITE AND ACCESS ROAD AS REQUIRED IN ORDER THAT THERE IS EVEN DISTRIBUTION OF SPOILS RESULTING FROM FOUNDATION EXCAVATIONS. THE RESULTING GRADE WILL CORRESPOND WITH SAID SUB-BASE COURSE. ELEVATIONS ARE TO BE CALCULATED FROM FINISHED GRADES OR SLOPES, INDICATED.
- B. IF ANY EXCESS SPOILS WILL BE CLEARED FROM JOB SITE AND NOT SPREAD BEYOND THE LIMITS OF AMERICAS COMMUNICATIONS LEASED PROPERTY UNLESS AUTHORIZED BY OWNER.
- C. THE ACCESS ROAD SHALL BE BROUGHT TO BASE COURSE ELEVATION PRIOR TO FOUNDATION CONSTRUCTION TO PERMIT USE. COMPACTION SHALL BE DONE DURING CONSTRUCTION OF THE SITE.
- D. AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.
- E. THE CONTRACT SHALL BE ASSUMED TO INCLUDE GRADING, BANKING, DITCHING, AND UNLESS OTHERWISE INDICATED, COVERING WITH TWO INCHES OF SURFACE COURSE ALL ROADS OR ROUTES UTILIZED FOR ACCESS TO THE OWNER SITE, COMMENCING AT THE POINT OF INTERSECTION WITH THE NEAREST PUBLIC THOROUGHFARE.
- F. WHEN IMPROVING AN EXISTING ACCESS ROAD, GRADE THE EXISTING ROAD TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILM OR STONE.
- G. THE FINISH GRADE, INCLUDING TOP SURFACE COURSE, SHALL EXTEND A MAXIMUM OF FOUR INCHES BEYOND THE SITE FENCE AND SHALL COVER THE AREA AS INDICATED.
- H. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES NOR CULVERTS BE PLACED SO THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SITE. IF OWNER DESIGNS OR ELEVATIONS CONFLICT WITH HIS GUIDANCE, THE OWNER SHOULD BE ADVISED IMMEDIATELY.
- I. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS BY WATERING UP TO THE POINT RELEASE FROM THE CONTRACT. CONTINUE TO RE-WORK BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

2.12 FIELD QUALITY CONTROL

- A. COMPACTION SHALL BE AT LEAST 95% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE.
- B. ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACT WILL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE AND SECURED TO 2 INCH X 2 INCH X 4 FOOT WOODEN STAKES EXTENDING TWO FEET INTO THE GROUND ON FOUR SIDES OF THE TREE.
- C. ALL EXPOSED AREAS SHALL BE PROTECTED AGAINST WASHOUTS AND SOIL EROSION.
- D. REFER TO SOILS REPORT FOR FURTHER OR OVERRIDING SPECIFICATIONS WHEN APPLICABLE.

DIVISION 3 - FENCE

PART 1 GENERAL

3.1 WORK INCLUDED

- A. REFER TO THE SITE PLAN FOR SIZE AND LOCATION OF FENCE AND GATES TO BE INSTALLED.

3.2 RELATED WORK

- A. COORDINATE FENCE GROUNDING WITH ELECTRICAL CONTRACTOR.
- B. REFER TO DIVISION 2 - CONCRETE FOR SPECIFICATION OF CONCRETE AND GROUT.
- C. REFER TO SITE PLAN FOR APPLICABLE LOCATIONS OF ACCESS ROAD GATES.

3.3 DESCRIPTION

- A. A SECURITY FENCE IS PROVIDED IN ORDER TO INHABIT UNAUTHORIZED ACCESS TO THE SITE AREA.

3.4 QUALITY ASSURANCE

- A. ALL STEEL MATERIALS UTILIZED IN CONJUNCTION WITH THIS SPECIFICATION WILL BE GALVANIZED OR STAINLESS STEEL. WEIGHT OF ZINC COATING ON THE FABRIC SHALL BE NOT LESS THAN 1 OUNCE PER SQUARE FOOT OF MATERIAL COVERED, ASTM A392, CLASS 1. POSTS SHALL BE HOT-DIPPED IN GRADE "E" ZINC, 1.8 OUNCES PER SQUARE FOOT.

3.5 SEQUENCING

- A. IF THE SITE AREA HAS BEEN BROUGHT UP TO SURFACE COURSE ELEVATION PRIOR TO FENCE CONSTRUCTION, FENCE POST EXCAVATION SPOILS MUST BE CONTROLLED TO PRECLUDE CONTAMINATION OF SURFACE COURSE.

PART 2 PRODUCTS

3.6 FENCE MATERIAL

- A. ALL FABRIC WIRE, RAILS, POLES, HARDWARE AND OTHER STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
- B. FABRIC SHALL BE EIGHT-FOOT HIGH, TWO-INCH CHAIN LINK MESH OF NO. 9 GAUGE OF (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP AND BOTTOM SELVAGES, FABRIC SHALL CONFORM THE SPECIFICATIONS OF ASTM A-392 CLASS 1.
- C. BARBED WIRE SHALL BE DOUBLE-STRAND, 12-1/2 GAUGE TWISTED WIRE, WITH 14 GAUGE 4 POINT ROUND BARBS SPACED ON FIVE-INCH CENTERS.
- D. ALL POST SHALL BE SCHEDULE - 40 GALVANIZED STEEL PIPE AND AND SHALL BE ASTM F1083, TYPE 1.
- E. GATEPOSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.

- F. ALL TOP AND BRACE RAILS SHALL BE 1 5/8" DIAMETER SCHEDULE - 40 PIPE. FRAMES SHALL HAVE WELDED CORNERS.
- G. GATE FRAMES SHALL BE A FULL - WIDTH HORIZONTAL BRACE, WELDED WITH 3 COATS COLD GALVANIZED TO CLEANED SURFACES.
- H. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, DEGREE ATTACHMENT.
- I. THE GUIDE (LATCH ASSEMBLY) SHALL BE MERCHANT'S METAL MODEL 2083.
- J. LATCHES, STOPS AND KEEPERS SHALL BE PROVIDED FOR ALL GATES.
- K. ALL STOPS SHALL HAVE KEEPERS CAPABLE OF HOLDING THE GATE LEAF IN HTE OPEN POSITION.

- L. DOUBLE GATES SHALL HAVE A FULL HEIGHT PLUNGER BAR WITH DOME CAP 1.
- M. A NO. 9 GAUGE ZINC COATED MARCELLED TENSION WIRE ASTM A824, TYPE LL, SHALL BE USED AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BAND CLIPS AT CORNERS AND GATE POSTS.
- N. STRETCHER BARS SHALL BE HOT DIPPED GALVANIZED STEEL 3/16" X 3/4" OR HAVE EQUIVALENT CROSS SECTIONAL AREA.
- O. ALL CORNER GATE AND END PANELS SHALL HAVE A 3/8 INCH TRUSS ROD WITH TURNBUCKLES IF LONGER THAN 50'.
- P. ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAPE AND BARBED WIRE SUPPORTING ARM. GATE POSTS SHALL HAVE A DOPE CAP.

- Q. OTHER HARDWARE INCLUDES BUT MAY NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS IN CONFORMANCE WITH CLFMI MANUAL.
- R. BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
- S. BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL OR CAST IRON, ASTM F626, WITH SET BOLT LOCK WIRE IN THE ARM.
- T. ALL CAPS SHALL BE FABRICATED FROM PRESSED STEEL OR CAST STEEL, ASTM F626, OR ALUMINUM.

3.7 EQUIPMENT

- A. ALL POST HOLE EXCAVATION WILL BE BY USE OF MECHANICAL AUGER EQUIPMENT.

PART 3 EXECUTION

3.8 INSPECTION

- A. TO CONFIRM PROPER DEPTH AND DIAMETER OF THE POST HOLE EXCAVATIONS. ALL POST HOLES WILL BE EXCAVATED AS PER CONSTRUCTION DOCUMENTS.

3.9 INSTALLATION

- A. INSTALL FENCE TO COMPLY WITH ASTM F567.
- B. ALL FENCE POSTS SHALL BE SET IN A VERTICAL POSITION PLUMB AND IN-LINE.
- C. POST FOUNDATIONS SHALL HAVE A MINIMUM SIX-INCH CONCRETE COVER UNDER POST.
- D. AT CORNER POSTS, GATE POSTS AND SIDES OF GATE, FRAME FABRIC SHALL BE ATTACHED WITH STRETCHER AND TENSION BAND - CLIPS AT 15 INCH INTERVALS.
- E. AT LINE POSTS, FABRIC SHALL BE ATTACHED WITH TIE-CLIPS AT 15 INCH INTERVALS.
- F. FABRIC SHALL BE ATTACHED TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH TIE-CLIPS AT TWO FOOT INTERVALS.
- G. A MAXIMUM GAP OF 2" WILL BE PERMITTED BETWEEN THE CHAIN LINK FABRIC AND THE FINAL GRADE.
- H. GATES SHALL BE INSTALLED SO LOCKS ARE ACCESSIBLE FROM BOTH SIDES.
- I. GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
- J. CONCRETE STRENGTH TO BE A MINIMUM OF 2,500 PSI.

BUILDING CODE:

2018 EDITION OF THE INTERNATIONAL BUILDING CODE.

FOUNDATIONS:

CONTINUOUS FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL 18" MIN. BELOW LOWEST ADJACENT FINISHED GRADE WITHIN 5 FEET. DESIGN SOIL BEARING VALUE = 4,500 PSF.

GEOTECHNICAL REPORT BY WESTERN TECHNOLOGIES, INC., JOB # 3120JS074-S DATED SEPTEMBER 24, 2020.

CONCRETE:

GENERAL:
REFER STRUCTURAL DRAWINGS PROVIDED BY OTHERS.
MINIMUM 4,000 PSI GRADE.

ALL CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ACI MANUAL OF CONCRETE CONSTRUCTION. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED FOR CONCRETE WITHOUT PLASTICIZER, MAXIMUM SLUMP 4 1/2" AT POINT OF PLACEMENT. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON STRUCTURAL ENGINEER'S APPROVAL.

THE EMBEDMENT OF CONDUITS, PIPES SLEEVES, ETC. OF ANY MATERIAL SHALL NOT BE PERMITTED WITHIN ANY CONCRETE STRUCTURAL ELEMENT WITHOUT THE EXPRESSED APPROVAL OF THE STRUCTURAL ENGINEER.

FLY ASH SHALL BE LIMITED TO 18% OF CEMENTITIOUS MATERIALS AND SHALL HAVE A REPLACEMENT FACTOR OF 1.2 RELATIVE TO CEMENT REPLACED. NO FLY ASH ADDITIVES SHALL BE USED IN FLATWORK OR ARCHITECTURALLY EXPOSED CONCRETE.

REINFORCING:

ALL REINFORCING PER CRSI SPECIFICATIONS AND HANDBOOK. ASTM A615 (Fy = 60 KSI / GRADE 60) DEFORMED BARS FOR ALL BARS #5 AND LARGER. ASTM A615 (Fy = 40 / GRADE 40) DEFORMED BARS FOR ALL BARS #4 AND SMALLER. LATEST ACI CODE AND DETAILING MANUAL APPLY. CLEAR CONCRETE COVERAGE AS FOLLOWS:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
EXPOSED TO EARTH OR WEATHER 1 1/2"

FLAT SLAB 3/4"
ALL OTHER PER LATEST EDITION OF ACI 318

ALL REINFORCING SHALL BE CHAIRED TO ENSURE PROPER CLEARANCES. SUPPORT OF FOUNDATION REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE/CORROSION BY USE OF A PLASTIC OR CONCRETE CHAIR. DUCT-TAPE COVERED REINFORCING IS NOT AN ACCEPTABLE CHAIR.

ALL DIMENSIONS REFERENCED IN DRAWINGS AS "CLEAR" SHALL BE FROM FACE OF STRUCTURE TO EDGE OF REINFORCING, AND SHALL NOT BE LESS THAN STATED, NOR GREATER THAN "CLEAR" DIMENSION PLUS 3/8". ALL OTHERS SHALL BE PLUS OR MINUS 1/4" TYPICAL.

FIELD BENDING OR STRAIGHTENING OF DEFORMED BARS SHALL BE LIMITED TO #5 BARS AND SMALLER AND SHALL BE FIELD BENT OR STRAIGHTENED ONLY ONCE. ANY BEND SHALL BE LIMITED TO 90 DEGREES.

LAP SPLICES IN CONCRETE:

ALL SPLICE LOCATION SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER FOUNDATION PLAN. REINFORCING BAR SPACING SPECIFIED ARE MAXIMUMS. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

LAP SPLICES SHALL BE CLASS "B" TENSION LAP SPLICES PER LATEST EDITION OF ACI 318. STAGGER SPLICES A MINIMUM OF ONE LAP LENGTH.

LAPS IN WELDED WIRE FABRIC SHALL BE MADE SO THAT THE OVERLAP, MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET, IS NOT LESS THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES.

GENERAL NOTES:

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA. ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF A REGISTERED ENGINEER RECOGNIZED BY THE BUILDING CODE JURISDICTION OF THIS PROJECT.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS. THE GREATER REQUIREMENTS SHALL GOVERN.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE DESIGNER. ESTABLISHED AND VERIFY ALL OPENINGS AND INSERT FOR ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL ITEMS WITH THE APPROPRIATE TRADE DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

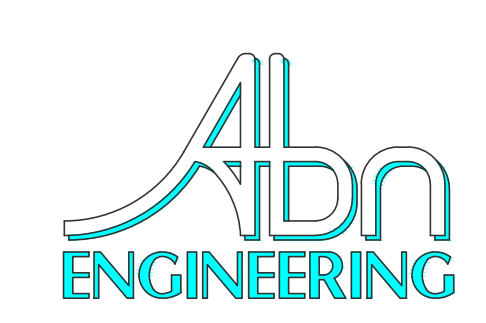
CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

SPECIAL INSPECTIONS:

REFER SHEET T-1



NAVAJO NATION BROADBAND OFFICE
1575E STATE HWY 264
TSE BONITO, NEW MEXICO



1337 E DESERT FLOWER LANE
PHOENIX, AZ 85048
PHONE: (480) 213-8524

PE SEAL

DESIGNER: JN

LEAD EE: N/A

LEAD CE/SE: SM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
A	8/18/24	REVIEW	SM
B	8/26/2024	COMMENTS	SM
C	8/28/2024	COMMENTS	SM

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO NUA WIRELESS IS STRICTLY PROHIBITED.

SITE NAME

TEMPLATE RFP

SITE ADDRESS

LAT: TBD
LONG: TBD
TBD
TBD



















SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1

Copyright © ABN Engineering (ABNE), 2024. This document is a proprietary item of ABNE and contains information solely for use on a specific project. It cannot be used, disclosed or reproduced in any format without ABNE's prior written permission. Only our customer has the right to use the information contained in this document for construction purpose of this project up to 12 months from seal & stamped date on this document. The user agrees to indemnify defend, & hold harmless ABNE from all claims, suits, judgments, demands, judgments, or expenses arising from or related to the use or re-use of the electronic files. All rights reserved.

NORTH ARROW

ANTENNA

GROUND ACCESS WELL

GROUND ROD

GROUND BUS BAR

MECHANICAL GRND. CONN.

EXOTHERMIC WELD

ELECTRIC BOX

TELEPHONE BOX

LIGHT POLE

FND. MONUMENT

SPOT ELEVATION

SET POINT

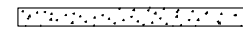


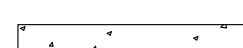


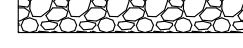
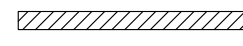
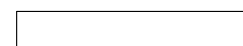



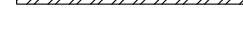

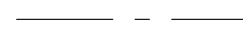





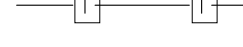
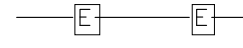
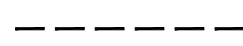



REVISION

KEYED NOTE

DETAIL REFERENCE

ELEVATION REFERENCE

SECTION REFERENCE

GROUT OR PLASTER

EXISTING BRICK

EXISTING MASONARY

CONCRETE

EARTH

GRAVEL

PLYWOOD

SAND

WOOD CONT.

WOOD BLOCKING

STEEL

CENTERLINE

PROPERTY/LEASE LINE

RIGHT OF WAY

MATCH LINE

WORK POINT

GROUND CONDUCTOR

TELEPHONE CONDUIT

ELECTRICAL CONDUIT

COAXIAL CABLE

OVERHEAD SERVICE CONDUCTORS

CHAIN LINK FENCING

RET (REMOTE ELECTRICAL TILT)

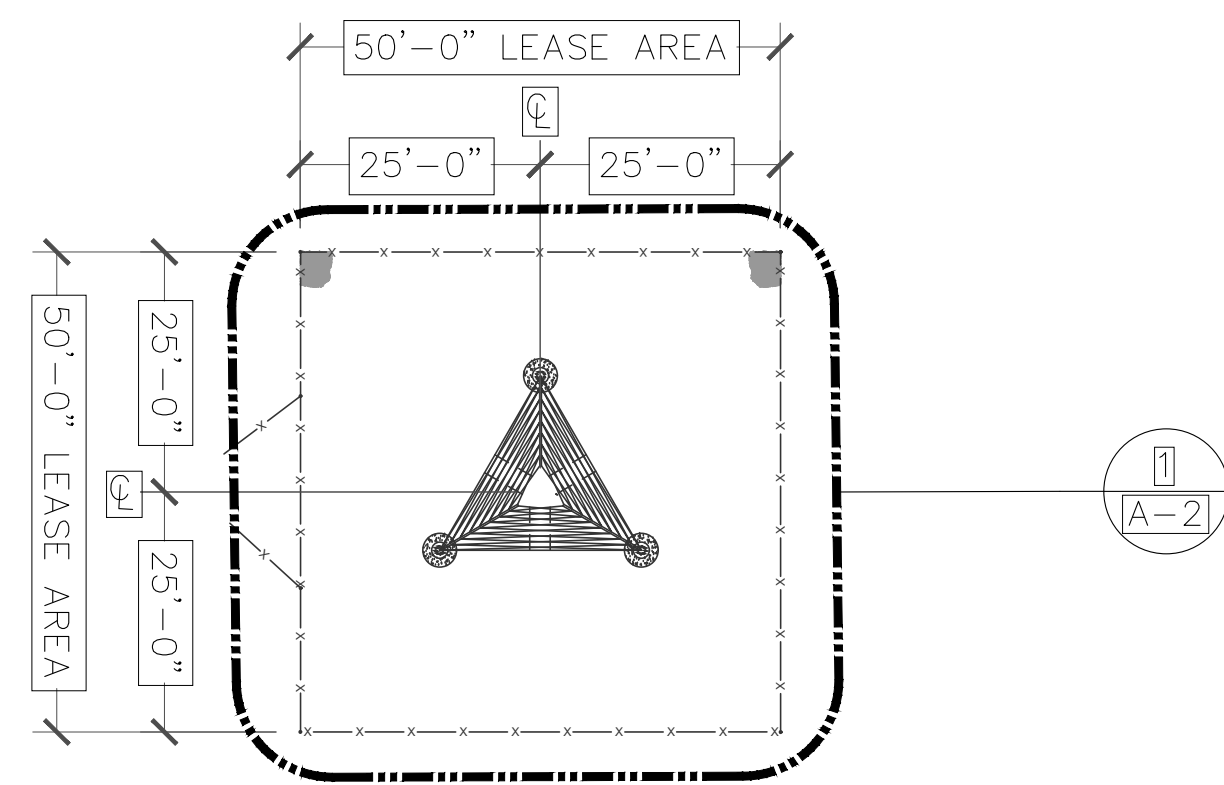

PDU (POWER DISTRIBUTION UNIT)

ALARM

RAILROAD TRACKS



Call Toll Free
1-800-782-5348
2 Working Days Before You Dig
ARIZONA BLUE STAKE, INC.

NAVAJO NATION BROADBAND OFFICE
1575E STATE HWY 264
TSE BONITO, NEW MEXICO



1337 E DESERT FLOWER LANE
PHOENIX, AZ 85048
PHONE: (480) 213-8524

DESIGNER: JN

LEAD EE: N/A

LEAD CE/SE: SM

REV.	DATE	DESCRIPTION	BY
A	8/18/24	REVIEW	SM
B	8/26/2024	COMMENTS	SM
C	8/28/2024	COMMENTS	SM

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO NTUA WIRELESS IS STRICTLY PROHIBITED.

SITE NAME
TEMPLATE RFP

SITE ADDRESS
LAT: TBD
LONG: TBD
TBD
TBD

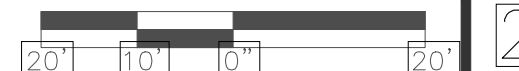
SHEET TITLE
LEGEND & OVERALL SITE PLAN

SHEET NUMBER
A-1

LEGEND

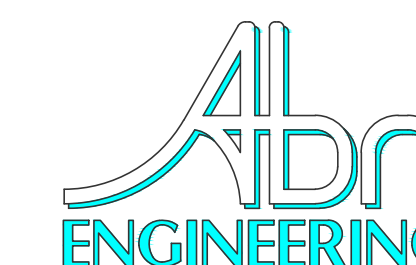
1 OVERALL SITE PLAN

22"x34" SCALE: 1" = 20'-0"
11"x17" SCALE: 1" = 40'-0"





NAVAJO NATION BROADBAND OFFICE
1575E STATE HWY 264
TSE BONITO, NEW MEXICO



1337 E DESERT FLOWER LANE
PHOENIX, AZ 85048
PHONE: (480) 213-8524

PE SEAL

DESIGNER: JN

LEAD EE: N/A

LEAD CE/SE: SM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
A	8/18/24	REVIEW	SM
B	8/26/2024	COMMENTS	SM
C	8/28/2024	COMMENTS	SM

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO NTUA WIRELESS IS STRICTLY PROHIBITED.

SITE NAME

TEMPLATE RFP

SITE ADDRESS

LAT: TBD
LONG: TBD
TBD
TBD

SHEET TITLE

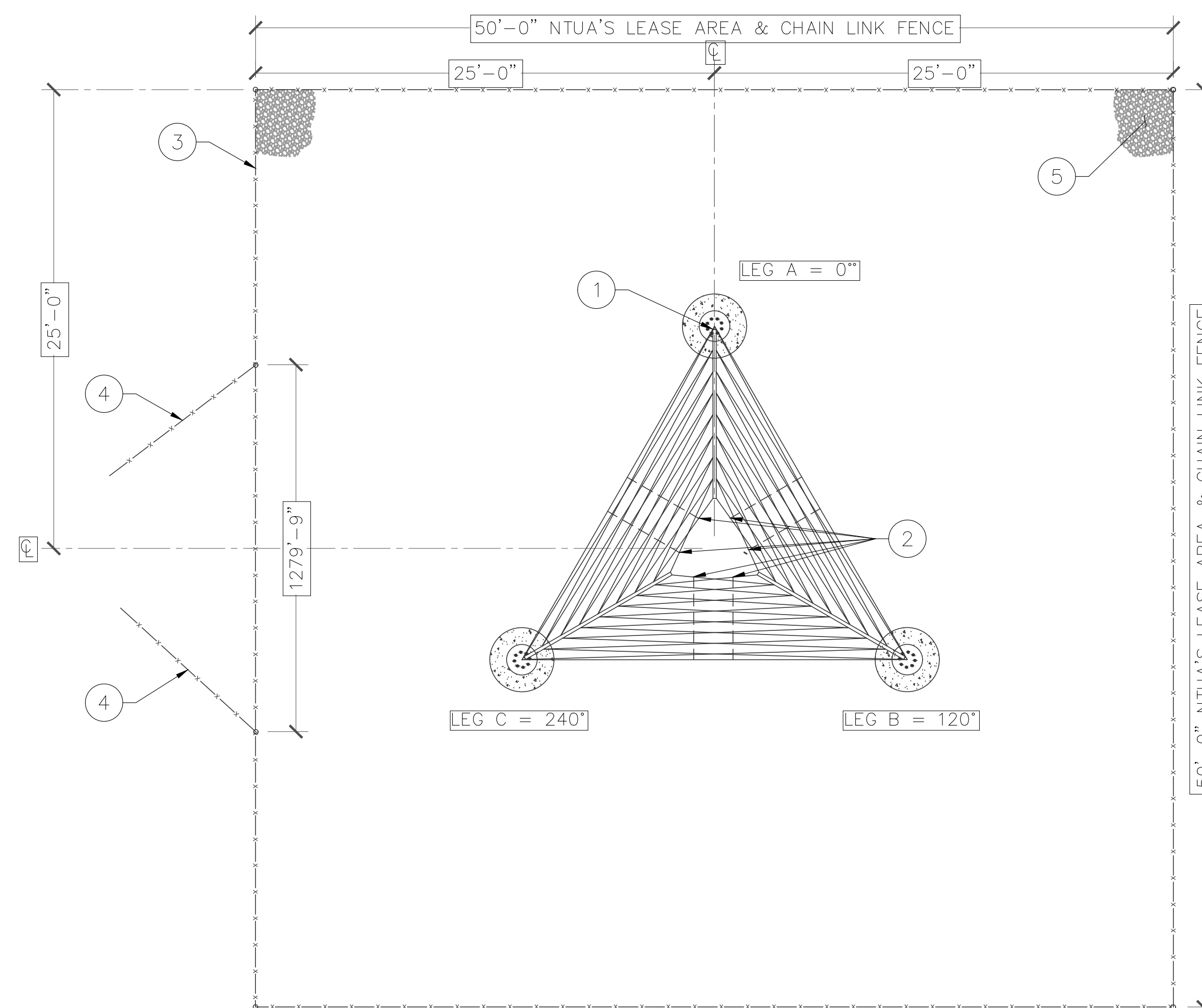
ENLARGED SITE PLAN

SHEET NUMBER

A-2

ENLARGED SITE PLAN KEY NOTES: #

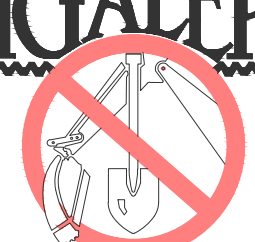
- (N) 180'-0" SELF-SUPPORT TOWER, LEG A 0', LEG B 120' AND LEG C 240' TRUE NORTH ORIENTED PER MANUFACTURER DRAWINGS
- (N) VERTICAL CABLE LADDER (TYP.)
- (N) 50'X50'X7' TALL CHAIN LINK FENCED COMPOUND WITH 1' RAZOR WIRE AND BARBED WIRE ON TOP (OVERALL 8' TALL) REFER TO DETAIL 1 ON SHEET A-4
- (N) (2) 10' WIDE ACCESS SWING GATES, REFER TO DETAIL 1 ON SHEET A-4
- (N) GRAVEL, REFER TO DETAIL 2 ON SHEET A-5



NOTES:

- ANTENNAS ARE NOT SHOWN FOR CLARITY.
- PRIOR TO ANY WORK, CONTRACTOR TO VERIFY THE TOWER FOUNDATION DESIGN ALONG WITH ALL UNDERGROUND RUNS OF ALL UTILITIES AND GROUNDING AND FOUNDATION OF CONCRETE PAD AND ICE BRIDGE POST TO AVOID ANY CONFLICT WITH RESPECTIVE INSTALLATION OF THOSE RESPECTIVE ITEMS AND RELATED EXCAVATION.

DIGALERT



Call Toll Free
1-800-782-5348
2 Working Days Before You Dig
ARIZONA BLUE STAKE, INC.

ENLARGED SITE PLAN

22"x34" SCALE: 3/16" = 1'-0"
11"x17" SCALE: 3/32" = 1'-0"



1

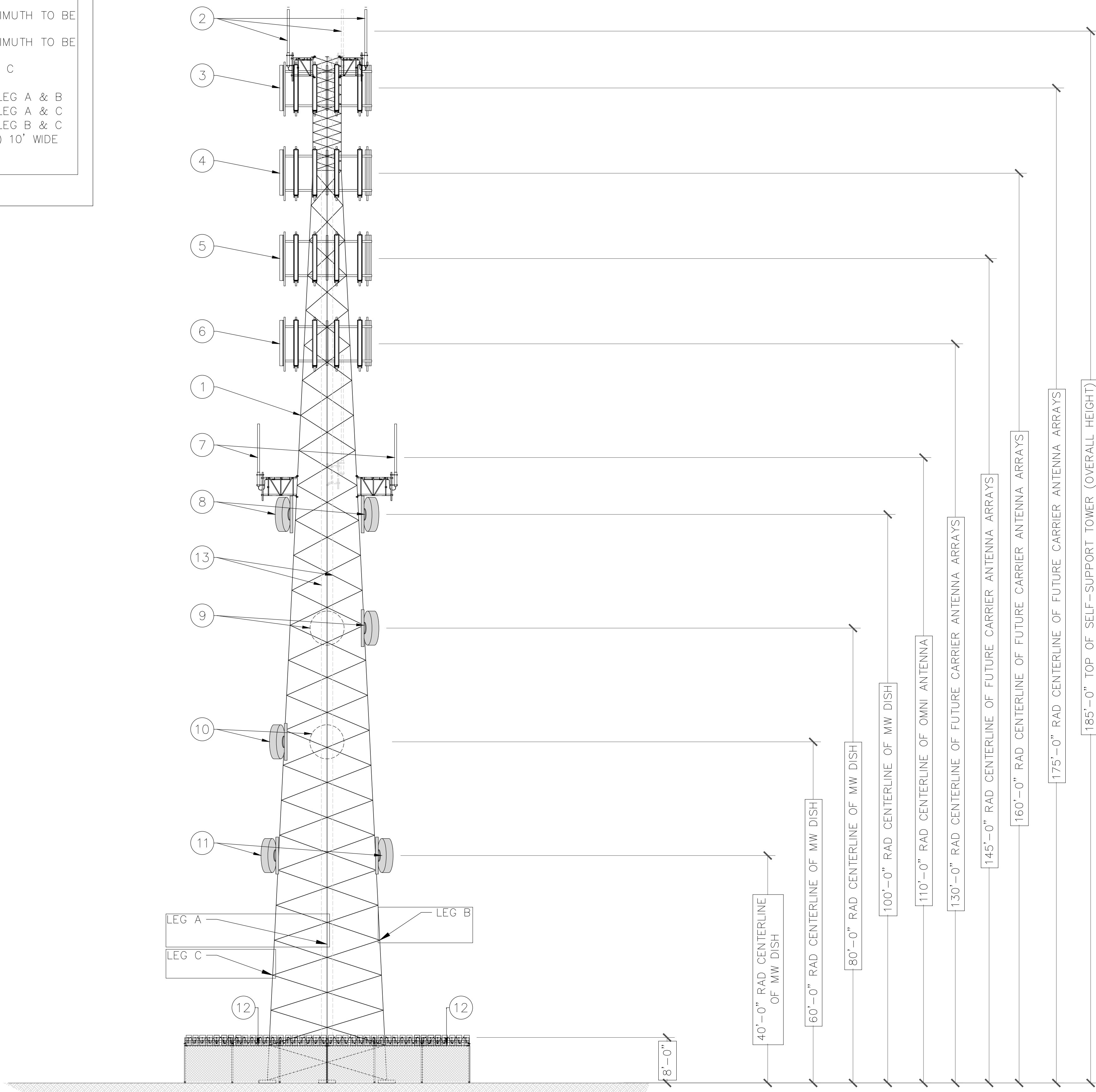
Copyright © ABNE Engineering (ABNE), 2024. This document is a proprietary item of ABNE and contains information solely for use on a specific project. It cannot be used, disclosed or reproduced in any format without ABNE's prior written permission. Only our customer has the right to use the information contained in this document for construction purpose of this project up to 12 months from seal & stamped date on this document. The user agrees to indemnify defend, & hold harmless ABNE from all claims, suits, liability, demands, judgments, or expenses arising from or related to the use or re-use of the electronic files. All rights reserved.

ELEVATION KEY NOTES: #

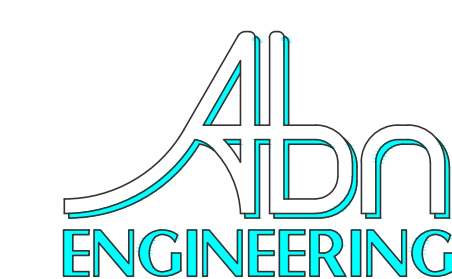
1. (N) 180'-0" SELF-SUPPORT TOWER
2. (N) (3) - 10' OMNI ANTENNAS (10') ON STANDOFFS MOUNTED @ 185'-0" RAD CENTERLINE ON LEG A, B & C
3. (N) (3) SECTORS - 10' ENVELOPE, TOTAL LOADING: 200 SQ FT. MOUNTED @ 175'-0" RAD CENTERLINE, AZIMUTH TO BE DETERMINED, REFER TO TOWER DRAWINGS AND RF DESIGN PROVIDED BY OTHERS
4. (N) (3) SECTORS - 10' ENVELOPE, TOTAL LOADING: 200 SQ FT. MOUNTED @ 160'-0" RAD CENTERLINE, AZIMUTH TO BE DETERMINED, REFER TO TOWER DRAWINGS AND RF DESIGN PROVIDED BY OTHERS
5. (N) (3) SECTORS - 10' ENVELOPE, TOTAL LOADING: 200 SQ FT. MOUNTED @ 145'-0" RAD CENTERLINE, AZIMUTH TO BE DETERMINED, REFER TO TOWER DRAWINGS AND RF DESIGN PROVIDED BY OTHERS
6. (N) (3) SECTORS - 10' ENVELOPE, TOTAL LOADING: 200 SQ FT. MOUNTED @ 130'-0" RAD CENTERLINE, AZIMUTH TO BE DETERMINED, REFER TO TOWER DRAWINGS AND RF DESIGN PROVIDED BY OTHERS
7. (N) (3) - 10' OMNI ANTENNAS (10') ON STANDOFFS MOUNTED @ 110'-0" RAD CENTERLINE ON LEG A, B & C
8. (N) 6' DIA. MW DISH ANTENNAS MOUNTED @ 100'-0" RAD CENTERLINE, ON TOWER LEG B & C
9. (N) 6' DIA. MW DISH ANTENNAS MOUNTED @ 80'-0" RAD CENTERLINE, ONE MW DISH ANTENNA ON TOWER LEG A & B
10. (N) 6' DIA. MW DISH ANTENNAS MOUNTED @ 60'-0" RAD CENTERLINE, ONE MW DISH ANTENNA ON TOWER LEG A & C
11. (N) 6' DIA. MW DISH ANTENNAS MOUNTED @ 40'-0" RAD CENTERLINE, ONE MW DISH ANTENNA ON TOWER LEG B & C
12. (N) 7' TALL CHAIN LINK FENCE WITH RAZOR WIRE AND BARBED WIRE ON TOP, 8' OVERALL HEIGHT, AND (2) 10' WIDE SWING ACCESS GATES
13. (N) VERTICAL CABLE LADDER (TYP.)

NOTES:

1. ANTENNA CONFIGURATION IS SUBJECT TO CHANGE. VERIFY ANTENNA HEIGHT AND AZIMUTH WITH RF ENGINEER.
2. MICROWAVE DISH AND ANTENNA MUST HAVE STIFF ARM TIE BACKS TO TOWER STRUCTURE.



NAVAJO NATION BROADBAND OFFICE
1575E STATE HWY 264
TSE BONITO, NEW MEXICO



1337 E DESERT FLOWER LANE
PHOENIX, AZ 85048
PHONE: (480) 213-8524

PE SEAL

DESIGNER: JN

LEAD EE: N/A

LEAD CE/SE: SM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
A	8/18/24	REVIEW	SM
B	8/26/2024	COMMENTS	SM
C	8/28/2024	COMMENTS	SM

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO NTUA WIRELESS IS STRICTLY PROHIBITED.

SITE NAME

TEMPLATE RFP

SITE ADDRESS

LAT: TBD
LONG: TBD
TBD
TBD

SHEET TITLE

ELEVATION

SHEET NUMBER

A-3

SOUTH ELEVATION

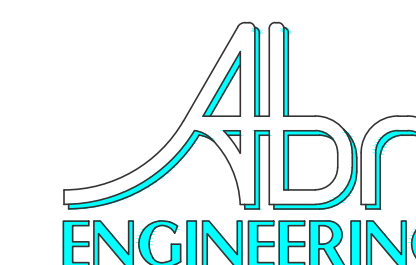
22"x34" SCALE: 3/32" = 1'-0"
11"x17" SCALE: 3/64" = 1'-0"



1



NAVAJO NATION BROADBAND OFFICE
1575E STATE HWY 264
TSE BONITO, NEW MEXICO



1337 E DESERT FLOWER LANE
PHOENIX, AZ 85048
PHONE: (480) 213-8524

PE SEAL

DESIGNER: JN

LEAD EE: N/A

LEAD CE/SE: SM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
A	8/18/24	REVIEW	SM
B	8/26/2024	COMMENTS	SM
C	8/28/2024	COMMENTS	SM

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO NTUA WIRELESS IS STRICTLY PROHIBITED.

SITE NAME

TEMPLATE RFP

SITE ADDRESS

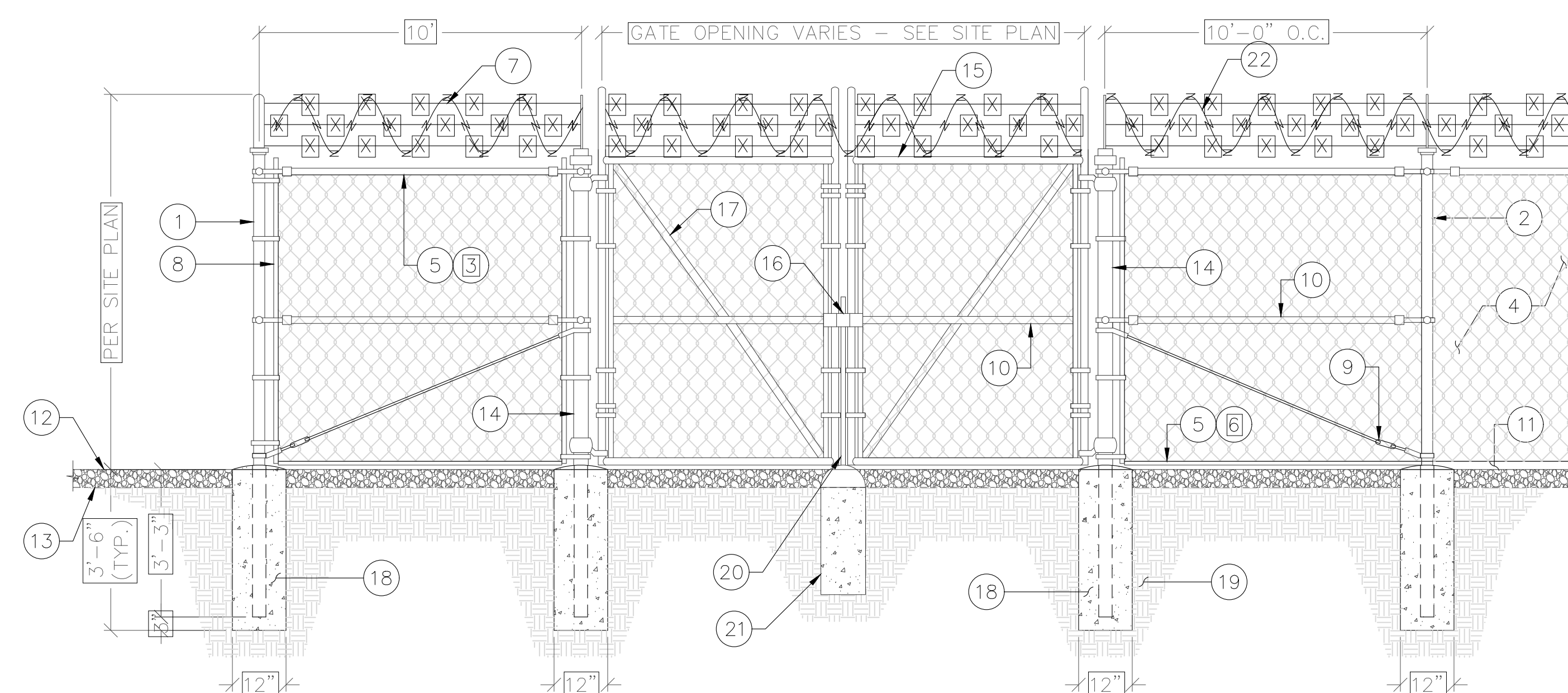
LAT: TBD
LONG: TBD
TBD
TBD

SHEET TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

A-4

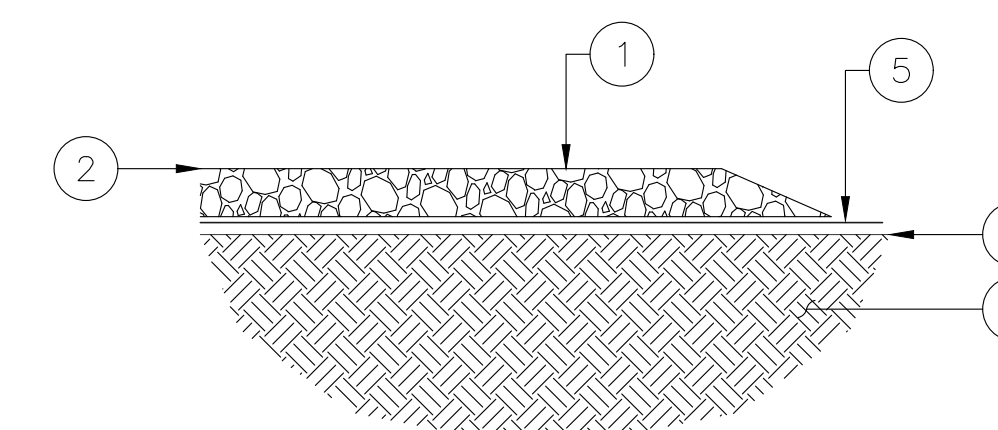


TYPICAL CHAIN LINK FENCE KEY NOTES: (#)

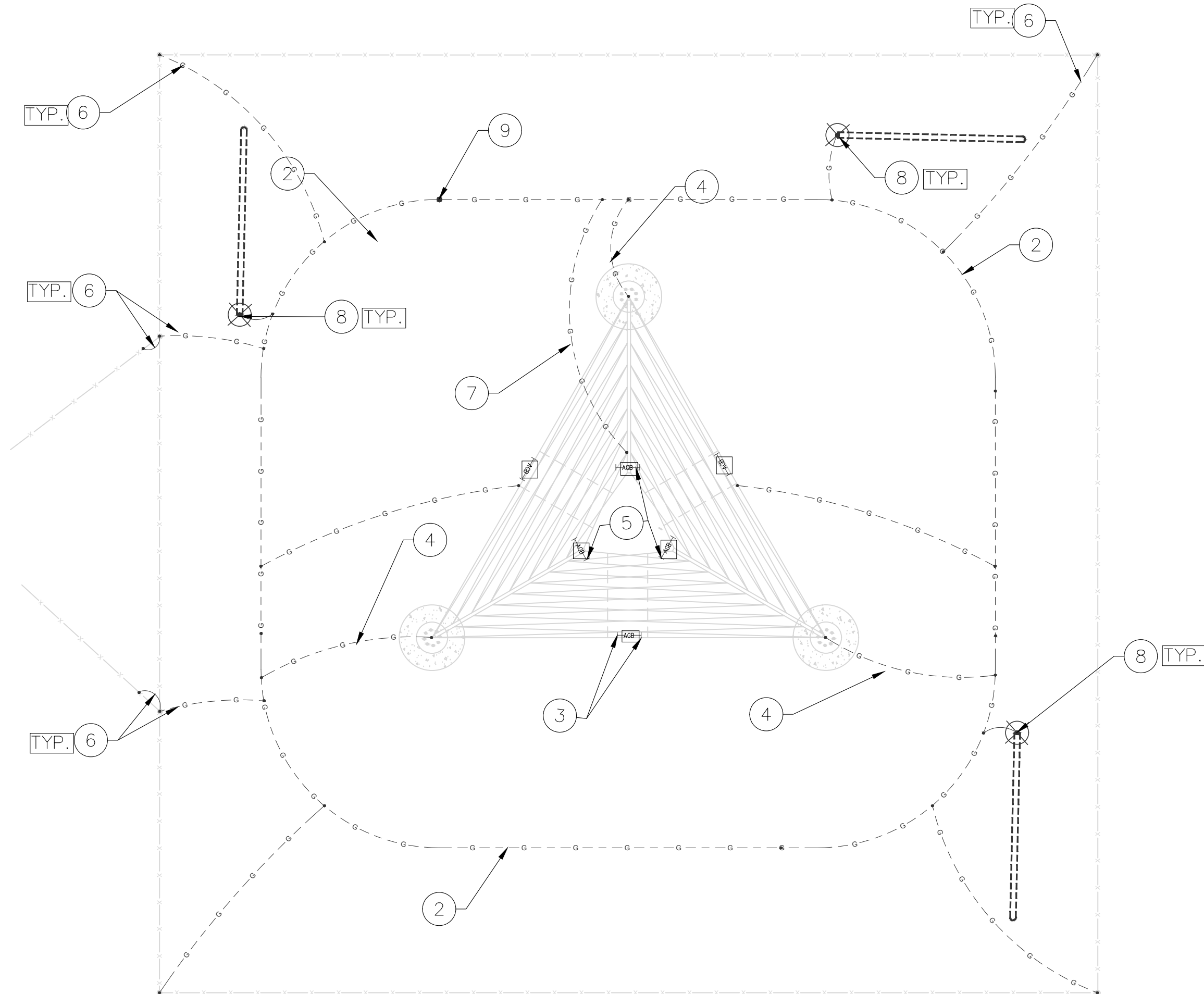
- 4" NOMINAL CORNER POST SCHEDULE 40 PIPE.
- LINE POST: 2½" SCHEDULE 40 PIPE, PER ASTM-F1083 SPACED AT MAXIMUM 10'-0" O.C.
- TOP RAIL & BRACE RAIL: 1½" PIPE, PER ASTM-F1083.
- FABRIC: 9 GA. CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392.
- TIE WIRE: MIN. 11 GA. GALVANIZED STEEL AT POSTS AND RAILS SINGLE WRAP OF FABRIC TIE AND AT TENSION WIRE BY HOG-RINGS SPACED MAX. 24" INTERVALS.
- TENSION WIRE: 9 GA. GALVANIZED STEEL.
- BARBED WIRE: DOUBLE STRAND 12½" O.D. TWISTED WIRE TO MATCH WITH FABRIC 14 GA., 4 PT. BARBS SPACED ON APPROXIMATELY 5" ON CENTER.
- STRETCHER BAR.
- ⅝" DIAGONAL ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD.
- POST BRACE: 1½" DIA. AT CORNERS AND GATES
- 1½" MAXIMUM CLEARANCE FROM GRADE.
- FINISHED GRADE SHALL BE UNIFORM AND LEVEL
- SUB-GRADE
- GATE POST 4" SCHEDULE 40 PIPE, FOR GATE WIDTHS UP TO 7 FEET USE SINGLE SWING GATE PER ASTM-F1083.
- GATE FRAME: 1½" PIPE, PER ASTM-F1083.
- TYP. GATE LATCH VERIFY IN FIELD
- GATE DIAGONAL GALVANIZED STEEL 1½" PIPE.
- POST CONCRETE FOUNDATION (3000 PSI)
- NATURAL SOIL
- DROP ROD
- CONCRETE MUSHROOM
- CBT-65 GALVANIZED CONCERTINA RAZOR WIRE

GRAVEL KEY NOTES: (#)

- 3"-4" OF 1" BASE GRAVEL; SLOPE AWAY FROM SHELTER & TOWER (VERIFY IN FIELD)
- FINISHED GRADE LEVEL
- NATURAL SOIL
- NATURAL SUB-GRADE
- (1) LAYER OF GEO-FABRIC (MIRAFI 500X OR EQUAL)



Copyright ©ABN Engineering (ABNE), 2024. This document is a proprietary item of ABNE and contains information solely for use on a specific project. It cannot be used, disclosed or reproduced in any format without ABNE's prior written permission. Only our customer has the right to use the information contained in this document for construction purpose of this project up to 12 months from seal & stamped date on this document. The user agrees to indemnify defend, & hold harmless ABNE from all claims, suits, liability, demands, judgments, or expenses arising from or related to the use or re-use of the electronic files. All rights reserved.



LEGEND:

	TINNED SOLID ALLOY 110 COPPER TOWER /ANTENNA BUS BAR BONDED TO TOWER STEEL.
	10' LONG CHEMICAL/ELECTROLYTIC GROUND ROD (L-SHAPE), REFER TO DETAIL 8 ON SHEET G-2.
	5/8" DIA. x 10' COPPER CLAD GROUND ROD. REFER TO DETAIL 7 ON SHEET G-2.
	GROUND RING, REFER TO DETAIL 6 ON SHEET G-2.
	EXOTHERMIC WELD OR IRREVERSIBLE HIGH-COMPRESSION CRIMP.
	MECHANICAL CONNECTION.

GENERAL NOTES:

- THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
- INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
- PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
- REFER TO G-2 FOR GROUNDING DETAILS.
- ALL METALLIC SURFACES SHALL BE PREPARED PRIOR TO BONDING, COLD GALV. SPRAY SHALL BE USED ON ANY EXOTHERMIC WELD TO PREVENT CORROSION, ANY AREA TO BE COLD GALV. SPRAY SHALL BE TAPED OFF PRIOR TO APPLICATION.

CONSTRUCTION KEY NOTES: #

- GROUNDING ELECTRODE CONDUCTOR SYSTEM (TOWER GROUND RING), #2 AWG SOLID BARE TINNED COPPER CONDUCTOR. GROUNDING ELECTRODE CONDUCTOR SHALL BE BURIED 30" BELOW GRADE WHERE APPLICABLE. ABOVE GRADE GROUNDING ELECTRODE CONDUCTOR TO BE ROUTED IN FLEXIBLE NON-METALLIC LIQUID TIGHT CONDUIT & FASTENED TO CONCRETE SURFACE EVERY 3' MAX. FASTENERS SHALL BE FLEXIBLE CONDUIT HALF STRAPS W/ 1/4"Ø x 2" (L) RED HEAD HAMMER-SET NAIL DRIVE ANCHOR OR EQUIV. (TYP.)
- 5/8" DIA. x 10' LONG SERVICE COPPER CLAD GROUND ROD PLACED MINIMUM EVERY 10' APART (TYP.). REFER TO DETAIL 7 ON SHEET G-2.
- TOWER GROUND BUS BAR. BOND TO GROUND RING WITH #2 AWG SOLID TINNED BARE COPPER CONDUCTOR. BOND TO TOWER GROUND BUS BAR DIRECTLY TO TOWER STEEL (TYP.). REFER TO DETAIL 11 ON SHEET G-2.
- BOND TOWER LEG (AT MANUFACTURER INSTALLED BONDING TAB) TO GROUND RING. UNDER NO CIRCUMSTANCES WILL EXOTHERMIC WELDING BE PERMITTED ON THE TOWER LEG MEMBER, TYPICAL 3 LOCATIONS. REFER TO DETAIL 9 ON SHEET G-2.
- BOND ANTENNA TO ANTENNA GROUND BUS BAR (TYP.). REFER TO DETAIL 4 ON SHEET G-2.
- BOND FENCE FABRIC, SUPPORT POST AND GATE POST TO GROUND RADIAL (TYP.), REFER TO DETAIL 3 ON SHEET G-2.
- BOND SAFETY LADDER TO GROUND RING, SAFETY LADDER LOCATION TO BE VERIFY AT FIELD
- 10' LONG CHEMICAL/ELECTROLYTIC GROUND ROD (L-SHAPE) INSTALLED PER MANUFACTURER'S SPECS (TYP.). REFER TO DETAIL 8 ON SHEET G-2
- TEST WELL

NOTES:

- ANTENNAS ARE NOT SHOWN FOR CLARITY.
- PRIOR TO ANY WORK, CONTRACTOR TO VERIFY THE TOWER FOUNDATION DESIGN ALONG WITH ALL UNDERGROUND RUNS OF ALL UTILITIES AND GROUNDING AND FOUNDATION OF CONCRETE PAD AND ICE BRIDGE POST TO AVOID ANY CONFLICT WITH RESPECTIVE INSTALLATION OF THOSE RESPECTIVE ITEMS AND RELATED EXCAVATION.



DESIGNER: JN
 LEAD EE: N/A
 LEAD CE/SE: SM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
A	8/18/24	REVIEW	SM
B	8/26/2024	COMMENTS	SM
C	8/28/2024	COMMENTS	SM

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO NTUA WIRELESS IS STRICTLY PROHIBITED.

SITE NAME
 TEMPLATE RFP

SITE ADDRESS
 LAT: TBD
 LONG: TBD
 TBD
 TBD

SHEET TITLE
 GROUNDING PLAN

SHEET NUMBER
 G-1

GROUNDING PLAN

22"x34" SCALE: 3/16" = 1'-0"
 11"x17" SCALE: 3/32" = 1'-0"
 1

Copyright © ABNE Engineering (ABNE), 2024. This document is a proprietary item of ABNE and contains information solely for use on a specific project. It cannot be used, disclosed or reproduced in any format without ABNE's prior written permission. Only our customer has the right to use the information contained in this document for construction purpose of this project up to 12 months from seal & stamped date on this document. The user agrees to indemnify defend, & hold harmless ABNE from all claims, suits, judgments, demands, liability, or expenses arising from or related to the use or re-use of the electronic files. All rights reserved.

NOTE:
 ERICO CADWELD "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH PROJECT MANAGER OR CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.

TYPE VS TYPE TA TYPE HS TYPE SS TYPE PT
 TYPE GT TYPE HS TYPE XA TYPE VS TYPE YA-2
 TYPE 2-YA-2

EXOTHERMIC WELD DETAILS SCALE: N.T.S. **1**

GROUNDING CONDUCTOR SIZING	
CONDUCTOR LENGTH IN LINEAR FT	CONDUCTOR SIZE IN AWG/MCM
< 33	2
34 - 41	1
42 - 53	1/0
54 - 66	2/0
67 - 84	3/0
85 - 105	4/0
106 - 125	250 MCM
126 - 150	300 MCM
151 - 175	350 MCM
176 - 250	500 MCM
251 - 300	600 MCM
> 300	750 MCM

ANTENNA GROUNDING KEY NOTES: (#)

- RF TRANSMISSION LINES (COAX) FROM ANTENNA
- 1/2" COAX JUMPER FROM ANTENNA
- CONNECTOR WEATHERPROOFING KIT REFER TO DETAIL 12 ON THIS SHEET
- ANDREW "SUREGROUND" GROUND KIT (TYP.), REFER TO DETAIL 12 ON THIS SHEET FOR WEATHERPROOFING DETAILS
- ANTENNA CABLE TO SHELTER (TYP.)
- #6 AWG THHN COPPER CONDUCTOR
- TINNED SOLID ALLOY 110 COPPER ANTENNA GROUND BUS BAR (OPTIONAL BOND DIRECTLY TO TOWER STEEL WITH ANGLE ADAPTER IF NO ANTENNA BUS BAR IS AVAILABLE)

NOTE:
 DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

ANTENNA GROUNDING DETAIL SCALE: N.T.S. **4**

GROUND LUG KEY NOTES: (#)

- NUT
- LOCK WASHER
- FLAT WASHER
- BOLT
- BURNDY GROUND LUG (SEE TABLE FOR SIZE AND MODEL)
- HEAT SHRINK (CLEAR)
- GROUNDING CONDUCTOR
- GROUND BUS BAR OR METALLIC BONDING SURFACE
- BURNDY 2-HOLE LUG W/ LONG BARREL FOR #6 AWG STRANDED
- BARE WIRE TO BE NO-OXED AT BOTH ENDS
- HEAT SHRINK
- #6 AWG THHN COPPER WIRE

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG	YA6C-2TC38	3/8" - 16 NC S 3 BOLT
#2 AWG SOLID	YA3C-2TC38	3/8" - 16 NC S 3 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 3 BOLT
#2/0 AWG	YA26-2TC38	3/8" - 16 NC S 3 BOLT
#4/0 AWG	YA28-2N	1/2" - 16 NC S 3 BOLT

GRND. CONDUCTOR SIZE DETAIL SCALE: N.T.S. **2**

CORNER FENCE GROUNDING (#)
KEYED NOTES:

- ERICO EXOTHERMIC WELD CONNECTION "VB" OR EQUIVALENT
- DETERRENT WIRE GROUNDING CLAMP (HARGER FGC2) TRIM LEAD AS CLOSE TO GROUNDING CLAMP AS POSSIBLE
- ERICO EXOTHERMIC WELD CONNECTION "HA" OR EQUIVALENT
- #2 AWG SOLID TINNED BARE COPPER WIRE, BOND FENCE FABRIC TO GROUND CONDUCTOR
- FENCE FABRIC GROUNDING CLAMP (TYP.)
- GROUND CONDUCTOR WITH ERICO EXOTHERMIC WELD "VS" OR EQUIVALENT
- CONNECT FENCE BONDING CONDUCTOR TO EXTERNAL GROUNDING ELECTRODE SYSTEM USING EXOTHERMIC WELD OR IRREVERSIBLE HIGH COMPRESSION FITTING
- ERICO EXOTHERMIC WELD CONNECTION "PC" OR EQUIVALENT TO GROUND RING
- GROUNDING RADIAL TO SYSTEM GROUND RING
- GATE JUMPER WITH ERICO EXOTHERMIC WELD "VS" OR EQUIVALENT

GROUND RING TRENCH KEY NOTES: (#)

- BACKFILL PER SPECIFICATIONS
- FINISHED GRADE
- #2 AWG SOLID TINNED BARE COPPER WIRE

NOTES:

- DEPTH TO BE 30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.
- GROUND RINGS SHOULD CONSIST OF AT LEAST 20' OF #2 AWG OR LARGER BARE COPPER CONDUCTOR.
- BURY THE RINGS IN DIRECT CONTACT WITH SOIL.

GROUND ROD INSTALLATION KEY NOTES: (#)

- FINISHED GRADE
- EXOTHERMIC CONNECTION (TYPE GT)
- 5/8" x 10' LONG COPPER CLAD GROUND ROD WITH EXOTHERMIC CONNECTION TO GROUND RING
- #2 AWG SOLID TINNED BARE COPPER WIRE (GROUND RING 30" BELOW GRADE)
- EXOTHERMIC CONNECTION TO GROUND RING (TYPE PT)
- #2 AWG SOLID TINNED BARE COPPER WIRE GROUND CONDUCTOR ROUTED IN FLEXIBLE NON-METALLIC LIQUID TIGHT CONDUIT (CARFLEX)

GROUND ROD DETAIL SCALE: N.T.S. **7**

"L" SHAPED ELECTROLYTIC GROUND ROD KEY NOTES: (#)

- SLOTTED COVER
- PROTECTIVE COVER BOX
- FINISHED GRADE
- LYNCONITE II BACKFILL OR EQUIVALENT
- WEEP HOLE (TYP.)
- END CAP
- 12" WIDE TRENCH BACKFILLED; SLOPE TRENCH TOWARD END CAP
- #2 AWG SOLID TINNED BARE COPPER CONDUCTOR (TO GROUND RING)
- EXOTHERMIC WELD
- BREATHING HOLE
- UL NAME PLATE

TOWER GROUNDING DETAIL SCALE: N.T.S. **9**

SELF SUPPORT TOWER GROUNDING KEY NOTES: (#)

- EXOTHERMIC WELD TO MANUFACTURER INSTALLED BONDING TAB (TYP. FOR EACH LEG)
- PVC OR FLEXIBLE NON-METALLIC CONDUIT (CARFLEX)
- #2 AWG SOLID TINNED BARE COPPER CONDUCTOR (GROUND RING)
- EXOTHERMIC WELD OR IRREVERSIBLE HIGH COMPRESSION FITTING
- 5/8" x 10' LONG COPPER CLAD GROUND ROD
- WEEP HOLE

NOTES:

- REFER TO TOWER MANUFACTURER SPECIFICATIONS FOR ADDITIONAL BONDING AND GROUNDING REQUIREMENTS
- UNDER NO CIRCUMSTANCES WILL EXOTHERMIC WELDING BE PERMITTED ON THE TOWER LEG

ICE BRIDGE KEY NOTES: (#)

- EXOTHERMIC WELD TYPE HA (TYP.)
- #2 AWG SOLID TINNED BARE COPPER CONDUCTOR (TYP.) ROUTED IN FLEXIBLE NON-METALLIC LIQUID TIGHT CONDUIT (CARFLEX)
- FINISHED GRADE
- #2 AWG SOLID TINNED BARE COPPER WIRE (GROUND RING 30" BELOW GRADE)
- EXOTHERMIC WELD TYPE GT (TYP.)
- 5/8" x 10' LONG COPPER CLAD GROUND ROD (TYP.)
- CONCRETE FOUNDATION (TYP.)
- #6 JACKETED BONDING JUMPER MECHANICALLY CONNECTED WITH 2-HOLE LUG TO EACH CHANNEL, CROSS BRACE, AND PIPE SUPPORT (TYP.)
- ICE/CABLE BRIDGE STRUCTURAL SUPPORT

TOWER GROUND BUS BAR DETAIL SCALE: N.T.S. **11**

COAX CABLE GROUNDING KEY NOTES: (#)

- COAX
- COAX GROUNDING KIT
- HEX BOLTS; APPROVED TWO HOLE LUG CONNECTION WITH STAINLESS HARDWARE
- EXOTHERMIC WELD 1/0 AWG STRANDED BARE TINNED COPPER
- TINNED COPPER TOWER BUS BAR
- INSTALL ISOLATER FOR THE CONNECTION BETWEEN GROUND BAR AND TOWER STRUCTURES (GROUNDING KIT HARDWARE, TYP.)

WEATHERPROOF DETAIL SCALE: N.T.S. **12**

WEATHERPROOFING KEY NOTES: (#)

- COAX
- COAX TO JUMPER CONNECTION (TYP.)
- JUMPER (TYP.)
- 3M SCOTCH SUPER 33+ VINYL ELECTRICAL TAPE (OR EQUIVALENT)
- VAPOR WRAP SEALANT

NAVAJO NATION BROADBAND OFFICE
 1575E STATE HWY 264
 TSE BONITO, NEW MEXICO

1337 E DESERT FLOWER LANE
 PHOENIX, AZ 85048
 PHONE: (480) 213-8524

DESIGNER: JN
 LEAD EE: N/A
 LEAD CE/SE: SM

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
A	8/18/24	REVIEW	SM
B	8/26/2024	COMMENTS	SM
C	8/28/2024	COMMENTS	SM

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO NTUA WIRELESS IS STRICTLY PROHIBITED.

SITE NAME: _____
 TEMPLATE RFP

SITE ADDRESS:
 LAT: TBD
 LONG: TBD
 TBD
 TBD

SHEET TITLE:
 GROUNDING DETAILS

SHEET NUMBER:
 G-2

6.4 Annex - Generic Tower Loading

Generic 180' SST - Loading V3 - 04/30/2024									
ITEM #	Element Size	Element Type	Element Qty	Center Line	Azimuth	Mounting Type	Tx Line	Element Size	Space in Tower (ft)
1	10	Omni Array #1	3	185	0°,120°,240°	3ft Stand Off Mount	1x7/8"	10	180-190
2	10	Center Line #1 10' Envelope, 200 sq ft	3 Sectors	175	0°,120°,240°	12' T-Arm Mount	6 x 5/8" 6 x 1/4"	10	170-180
3	10	Center Line #2 10' Envelope, 200 sq ft	3 Sectors	160	0°,120°,240°	12' T-Arm Mount	6 x 5/8" 6 x 1/4"	10	155-165
4	10	Center Line #3 10' Envelope, 200 sq ft	3 Sectors	145	0°,120°,240°	12' T-Arm Mount	6 x 5/8" 6 x 1/4"	10	140-150
5	10	Center Line #4 10' Envelope, 200 sq ft	3 Sectors	130	0°,120°,240°	12' T-Arm Mount	6 x 5/8" 6 x 1/4"	10	125-135
6	10	Omni Array #2	3	110	0°,120°,240°	3ft Stand Off Mount	1x7/8"	10	105-115
7	6	MW Array #1	2	100	Leg B: 120° Leg C: 240°	Universal Pipe Mount	4 x LMR400 - 1/2"	6	97-103
8	6	MW Array #2	2	80	Leg A: 0° Leg B: 120°	Universal Pipe Mount	4 x LMR400 - 1/2"	6	77-83
9	6	MW Array #3	2	60	Leg A: 0° Leg C: 240°	Universal Pipe Mount	4 x LMR400 - 1/2"	6	57-63
10	6	MW Array #4	2	40	Leg B: 120° Leg C: 240°	Universal Pipe Mount	4 x LMR400 - 1/2"	6	37-43

NOTES:

- Loading represents 75% of total structure capacity.
- Generic Loading for multitenant tower

6.5 Annex - Summarized Cost Table:

Project ID	FullName	Tower height	Engineering	Materials	Installation Services	Shipping	Navajo Nation Sales Tax	Total	Bidding Y/N
1	DEI-1_Bird Springs Chapter	180							
2	DEI-2_Tonalea Chapter	180							
3	DEI-3_Tselani Chapter	180							
4	DEI-4_Chinle Chapter	180							
5	DEI-5_Tselani Chapter	180							
6	DEI-6_Inscription House Chapter	180							
7	DEI-7_Kayenta Chapter	180							
8	DEI-8_Oljato Chapter	180							
9	DEI-9_Dennehotso Chapter	180							
10	DEI-10_Dilcon Chapter	180							
11	DEI-11_Dennehotso Chapter	180							
12	DEI-12_Mexican Water Chapter	180							
13	DEI-13_Sweetwater Chapter	180							
14	DEI-14_Gadii'ahi Chapter	180							
15	DEI-15_Chinle Chapter	180							
16	DEI-16_Nazlini Chapter	180							
17	DEI-17_White Horse Lake Chapter	180							
18	DEI-18_Red Valley Chapter	180							
19	DEI-19_Dilcon Chapter	180							
20	DEI-20_Nahodishgish Chapter	180							
21	DEI-21_Becenti Chapter	180							
22	DEI-22_Burnham Chapter	180							
23	DEI-23_Crystal Chapter	180							
24	DEI-24_Tsaile-Wheatfields Chapter	180							
25	DEI-25_Lukachukai Chapter	180							
26	DEI-26_Red Valley Chapter	180							
27	DEI-27_Fruitland Chapter	180							
28	DEI-28_Littlewater Chapter	180							
29	DEI-29_Smith Lake Chapter	180							
30	DEI-30_	180							
31	DEI-31_Baca Chapter	180							
32	DEI-32_Sanostee Chapter	180							
33	DEI-33_Shiprock Chapter	180							
34	DEI-34_Rock Point Chapter	180							
35	DEI-35_Chilchinbeto Chapter	180							
36	DEI-36_Oljato Chapter	180							
37	DEI-37_Aneth Chapter	180							
38	DEI-38_Teec Nos Pos Chapter	180							
39	DEI-39_Kaibeto Chapter	180							
40	DEI-40_Klagetoh Chapter	180							
41	DEI-41_Indian Wells Chapter	180							
42	DEI-42_Bird Springs Chapter	180							
43	DEI-43_Littlewater Chapter	180							
44	DEI-44_Leupp Chapter	180							
45	DEI-45_Tolani Lake Chapter	180							
46	DEI-46_Counselor Chapter	180							

Project ID	FullName	Tower height	Engineering	Materials	Installation Services	Shipping	Navajo Nation Sales Tax	Total	Bidding Y/N
47	DEI-47_Rock Point Chapter	180							
48	DEI-48_Chilchinbeto Chapter	180							
49	DEI-49_Rough Rock Chapter	180							
50	DEI-50_Rock Point Chapter	180							
51	DEI-51_Dennehotso Chapter	180							
52	DEI-52_Tachee Chapter	180							
53	DEI-53_Tselani Chapter	180							
54	DEI-54_Tachee Chapter	180							
55	DEI-55_Coyote Canyon Chapter	180							
56	DEI-56_Tohatchi Chapter	180							
57	DEI-57_Teesto Chapter	180							
58	DEI-58_White Cone Chapter	180							
59	DEI-59_	180							
60	DEI-60_Ganado Chapter	180							
61	DEI-61_Mexican Water Chapter	180							
62	DEI-62_	180							
63	DEI-63_Tuba City Chapter	180							
64	DEI-64_LeChee Chapter	180							
65	DEI-65_Many Farms Chapter	180							
66	DEI-66_Forest Lake Chapter	180							
67	DEI-67_Aneth Chapter	180							
68	DEI-68_	180							
69	DEI-69_	180							
70	DEI-70_	180							
71	DEI-71_Red Rock Chapter	180							
72	DEI-72_	180							
73	DEI-73_	180							
74	DEI-74_Nahatadziil Chapter	180							
75	DEI-75_Tuba City Chapter	180							
76	DEI-76_Fort Defiance Chapter	180							
77	DEI-77_Teesto Chapter	180							
78	DEI-78_Red Rock Chapter	180							