NEW HORIZONS
Building Tomorrow's Infrastructure Today

US-AK-5280 GULL LAKE COMMUNICATION TOWER CONDITIONAL USE PERMIT APPLICATION

November 18, 2024 (resubmittal)

Prepared For
Matanuska-Susitna Borough

Structure Owner
Vertical Bridge Development, LLC

Authorized Agent
New Horizons Telecom, Inc.

Project Narrative

This application seeks a Conditional Use Permit (CUP) in accordance with Matanuska-Susitna Borough (MSB) 17.67 Tall Structures for the construction of a communications tower to enhance wireless service in the area. The construction of this tower will allow the anchor tenant, Verizon Wireless, to fill a significant gap in coverage with the primary objective of enhancing public safety and well-being through improved cell service and wireless broadband. The proposed tower, a 155' self-support tower with a 10' lightning rod for a maximum height of 165', will serve a large area, including residential and public areas widely recreated by tourists and locals alike.

Site Selection:
Before proposing the construction of a new tower to support Verizon's service, New Horizons initially investigated colocation options. No existing tower structures in the area would provide the desired coverage outcomes, and a search began for a suitable new tower location, ultimately resulting in a ground lease agreement between Vertical Bridge and the property owner.

The chosen site, located at 4075 Lindsey Avenue, has been carefully considered for its ability to meet technical requirements, coverage needs, and compatibility with the surrounding residential landscape. Alternative sites were evaluated, and the selected location was deemed suitable, allowing optimal coverage while minimizing visual impact.

Zoning Compliance:
The installation of this tower requires a Conditional Use Permit (CUP) because the proposed height is above the MSB-defined threshold of 125 feet. The site is in an unzoned, general-use area. The proposed tower aligns with the community's goals, particularly in addressing the crucial need for improved cellular service to the area, which will enhance public safety and support recreational activities. The selected location of the tower site on the parcel allows it to meet setbacks required in the MSB code, such as equipment compound distance from property lines (17.55) and minimum setback distance equal to the height of the tower (17.67.090.A.2).

Please note: Setbacks have been revised and/or added to the drawings in Attachment B to reflect measurements to all property lines (north, east, south, west) and are measured from the outer perimeter of the tower base. Additional dimensions have also been added to show setback distances from shed/outbuilding and prior housing structures on the property.

Regarding the decision to not utilize breakpoint technology in the tower's design at this site: Breakpoint technology is typically incorporated in tower designs to limit structural failure to a predetermined point, minimizing the risk of harm to surrounding properties. However, for this specific site:

- *The primary use of the public right-of-way (ROW) along S. Lindsey Circle is recreational (ATVs) rather than high-volume vehicular or pedestrian traffic. This reduces the likelihood of harm to the public even in an unlikely tower failure event.*
- *While the certified site plan indicates residential structures near the eastern side of the proposed tower location, the nearest structure is dilapidated, uninhabited, and has not been in use for several years. Therefore, no immediate safety concern exists for residential occupants.*
- *Although full setback requirements are not completely met due to the inclusion of portions of the public ROW in the fall zone, the current design closely adheres to*

standards, and the risk is mitigated by the low likelihood of tower failure and the limited activity in the surrounding area.

Height and Design:
The proposed tower will have a maximum height of 165 ft., consisting of a 155 ft. self-support lattice tower and a 10' lightning rod. The tower's height of 155 feet is required to meet service coverage objectives. The structure color will be natural grey/steel color and the non-reflective/matte finish will avoid unnecessary attention and will blend in with the area's natural surroundings. In addition, the open lattice structure of the tower allows the tower to visually "disappear" against the backdrop of trees, mountains or open sky. The open structure reduces the perception of bulk and mass, in an attempt to make it less visually obtrusive.

The location has been chosen to minimize its prominence in the landscape, sited away from major view corridors. The area surrounding the base of the tower compound will include keeping natural vegetation that is consistent with the surrounding area, softening the appearance of the tower base and ground equipment from the road, allowing it to blend seamlessly into the environment.

The site, consisting of a 100 ft. x 100 ft. leased area with a 75 ft. x 75 ft. secure fenced compound, will be offset from the driveway to visually screen the site from the public right-of-way as much as possible. The leased area includes a ~50x40' parking and turnaround area in accordance with parking requirements noted in MSB 17.67.0900(B)(1). This can be seen on the attached Zoning Drawings with Certified Site Plan. A driveway permit from the Mat-Su Borough will be obtained in accordance with MSB 11.12 Driveway Standards for development of the tower site driveway prior to construction.

A sign/placard will be placed on the outside of the fence per Vertical Bridge standard practice which will also address MSB 17.67.090(C)(a)(b)(c) for sign requirements. The placard includes owner/operator contact and emergency information, site name and number, as well as the FCC Tower ID as applicable. There is no requirement for a high-voltage sign/warning associated with this tower.

Included with this application in Attachment C are the current PE stamped Tower and Foundation Design Drawings providing certification of the structural integrity of the tower structure and its foundation. The foundation design provided allows for (2) options for construction: a pad and pier concrete foundation design, or a pile driven foundation.

Environmental Impact:
The tower is expected to have little to no effects on the local environment. Vegetation clearing will be minimized to the extent possible and will stay within the Vertical Bridge lease area and access driveway. A vegetative buffer will remain inside the lease area surrounding the equipment compound.

<u>Please note</u>: Additional details requested from the MSB asked to identify any public parks, recognized trails, water bodies from which the tower may be visible. New Horizons conducted a high-level viewshed analysis using desktop tools to determine potential view impacts from popular recreational areas. The locations of trails and recreational areas identified is based on those included Matanuska-Susitna Borough's Recreational Trails Plan (August 2016 version). The viewshed analysis focuses on locations within a 2.5-mile radius from the site because generally towers become less noticeable beyond 2-3 miles in flatter terrain. However, visibility may be amplified if the viewer is located at a higher elevation than the

tower. Locations with higher elevation of 200'-300' above mean sea level (AMSL) such as the Butte Summit and Burnt Butte may see the most visual impact compared to other locations included on the map in Attachment H. While the best way to minimize visual impact would be to not install lighting on the tower, given that there are potential aircraft safety concerns in the near vicinity of the site, the tower is proposed to be lit.

Public Benefit:
The proposed communications tower will significantly benefit the public by ensuring reliable communication to increase public safety, emergency response, and overall community well-being. Improved cell service can facilitate real-time and efficient coordination and connections while also supporting economic development and tourism and providing a platform for community engagement and sharing of information.

Community Engagement:
Outreach efforts have occurred to engage with the local community regarding the proposed project. Public concerns are considered, and adjustments to the project have or will be made to accommodate community feedback where feasible. A summary of community engagement to date has been compiled into a Citizen Participation Report submitted alongside this application. *Please note:* No additional public comments have been received since the initial citizen participation report was compiled.

Technical Specifications:
While initially supporting the anchor tenant, Verizon Wireless, the tower will have at least two additional colocation spaces for other carriers who may need to provide service to the area. The structure will support state-of-the-art technology, providing robust and reliable cellular coverage. Radiofrequency (RF) emissions will be within regulatory limits, ensuring the safety of nearby residents. The estimated Verizon service coverage area is provided in the attachments.

Please note: The tower is designed to meet or exceed the applicable structural standards set by the TIA-222 (Telecommunications Industry Association) and local building codes. This ensures the tower can withstand high winds, seismic activity, and other environmental forces common to the area.

Regulatory Compliance:
The project complies with relevant federal, state, and local regulations, including those set forth by The Federal Communications Commission (FCC). An FAA Obstruction Evaluation Study (No. 2023-AAL-377-OE) is complete and has determined that the proposed tower is no hazard to air navigation. This study also indicates that the FAA does not require the tower to have aircraft hazard lighting.

Please note: while the FAA (regulation authority) does not require this tower to be lit, Vertical Bridge has elected to add lighting to the tower due to considerations of a nearby heli-pad used recreationally and for tourism purposes. Given this heli-pad does not appear to be registered through the FAA, the FAA review did not take this into account. In addition, the projects decision to install lighting also considers the recreational nature of the area and proximity to the Butte Airport which is located approximately .95 miles from the site "as the bird flies", as well as the Knik River which is used as a major aircraft recreational corridor. We are not aware of any other airports within a 3-mile radius of the proposed site. Every attempt will be made to install shielded or directional lighting as necessary to reduce light pollution and preserve the natural nightscape.

Maintenance and Decommissioning Plans:
A plan for regular maintenance and inspection of the tower and associated equipment is in place. Additionally, clear procedures for decommissioning and site restoration are in place should it become necessary.

Legal and Financial Considerations:
Necessary legal agreements and easements have or will be secured, and the applicant is committed to covering all costs associated with construction, maintenance, and potential removal of the tower. The lease agreement, which includes a 30-foot access and utility easement required and described on the site plan/drawings has already been obtained during the site acquisition process.

In conclusion, the proposed communications tower aligns with the community's goals and addresses a critical need for improved cellular coverage, particularly in areas of high recreational activity. **The following pages address specific requirements in the Matanuska-Susitna Borough code for Tall Structures.**

We appreciate your consideration of this application and look forward to the opportunity to discuss any further requirements or address any concerns. Thank you for your time and attention to this matter.

17.67.070 GENERAL APPLICATION REQUIREMENTS FOR ADMINISTRATIVE AND CONDITIONAL USE PERMITS.

(A) An application for a conditional use or administrative permit to construct a new tall structure may be initiated by a property owner or the owner's authorized agent and shall include:
(1) completed application form provided by the department and signed by the property owner or authorized agent;
(2) design drawings for the proposed tall structure, drawn to scale, and certified by a registered engineer or architect;
(3) fee in the amount designated in MSB 17.99;
(4) citizen participation report in accordance with MSB 17.67.050(B);
(5) a certified site plan;
(6) copy of a determination of no hazard to air navigation from the Federal Aviation Administration; and
(7) if breakpoint technology is intended to be utilized, a written statement specifying the height at which the engineered structural weakness will be located.
(Ord. 15-016, § 2 (part), 2015)

Vertical Bridge Statement of Compliance:
This Conditional Use application for Tall Structures provides the required documentation outlined in items (1) through (6) above. The tower does not intend to utilize breakpoint technology outlined in item (7), therefore no written statement is provided.

17.67.080 STANDARDS FOR APPROVAL OF NEW TALL STRUCTURES.

(A) A permit for a new tall structure may only be approved if it meets the requirements of this section in addition to any other applicable standards required by this chapter.

(B) In granting or denying a permit, the commission or director shall make findings on whether the applicant has demonstrated that:

(1) To the extent that is technically feasible and potentially available, the location of the tall structure is such that its negative effects on the visual and scenic resources of all surrounding properties have been minimized;

(2) Visibility of the tall structure from public parks, trails recognized within adopted borough plans, and water bodies has been minimized to the extent that is technically feasible and potentially available;

(3) The tall structure will not interfere with the approaches to any existing airport or airfield that are identified in the borough's regional aviation system plan or by the Alaska State Aviation System Plan; and

(4) Granting the permit will not be harmful to the public health, safety, convenience, and welfare.

(Ord. 15-016, § 2 (part), 2015)

Vertical Bridge Statement of Compliance:

The proposed development for the communications tower aligns with the standards outlined in MSB 17.67.080 for the approval of new tall structures. If there are any specific questions or further information required, please let us know for prompt clarification.

1. The location of the tall structure has been chosen to minimize negative effects on the visual and scenic resources of surrounding properties to the extent technically feasible and potentially available.
2. Visibility of the tall structure from public parks, trails recognized within adopted borough plans, and water bodies has been minimized to the extent technically feasible and potentially available.
3. The tall structure will not interfere with the approaches to any existing airport or airfield identified in the borough's regional aviation system plan or by the Alaska State Aviation System Plan.
4. Granting the permit for the proposed communications tower will not be harmful to the public health, safety, convenience, and welfare. The tower will comply with local, state and federal regulations.

17.67.090 OPERATION STANDARDS FOR NEW TALL STRUCTURES.

(A) The following setback requirements shall apply to all new telecommunications towers regulated under this chapter:

(1) The equipment compound shall meet minimum setback distances from all property lines in accordance with MSB 17.55.

(2) Minimum setback for the tower base shall be a distance equal to the height of the tower.

(a) The commission, or director if it is an administrative permit, may reduce the setback to a distance less than the height of the tower, if the applicant demonstrates there is no risk to public health, safety, or welfare of adjacent property owners.

(3) Setbacks shall be determined from the dimensions of the entire lot, even though the tower may be located on lease areas within the lot.

(B) For all tall structures regulated under this chapter, adequate vehicle parking shall be provided on the subject property, outside of public use easements and rights-of-way, to enable emergency vehicle access.

(1) No more than two spaces per provider shall be required.

(C) The following requirements apply to all new and existing telecommunication towers and wind energy conversion systems regulated under this chapter:

(1) The following signage shall be visibly posted at the equipment compound:

(a) Informational signs for the purpose of identifying the tower such as the antenna structure registration number required by the Federal Communications Commission, as well as the party responsible for the operation and maintenance of the facility;

(b) If more than 220 volts are necessary for the operation of the facility, warning signs shall be located at the base of the facility and shall display in large, bold, high contrast letters the following: "HIGH VOLTAGE – DANGER"; and

(c) a 24-hour emergency contact number.

(2) A fence or wall not less than six feet in height with a secured gate shall be maintained around the base of the tower.

(Ord. 15-016, § 2 (part), 2015)

Vertical Bridge Statement of Compliance:

The proposed development for the communications tower has diligently addressed and met all relevant requirements outlined in MSB 17.67.090, including tower height and design specifications, setbacks meeting or exceeding MSB 17.55 standards, adherence to FAA (AC 70/7460-1) regulations documented in 2023-AAL-377-OE, community outreach documented in the Citizen Participation Report, and the inclusion of certified site plans, zoning, and tower design drawings.

If there are any specific questions or clarifications needed regarding how each requirement has been satisfied, please let us know.

Signatures:

Vertical Bridge Acting Agent

Sierra Larson

Sierra Larson, Project Manager, New Horizons Telecom, Inc.

Attachment A:
Matanuska-Susitna Borough
Application for Tall Structures

MATANUSKA-SUSITNA BOROUGH
Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822 • Fax (907) 861-8158
Email: permitcenter@matsugov.us

APPLICATION FOR A TALL STRUCTURE – MSB 17.67

Carefully read instructions and applicable borough code. Fill out forms completely. Attach information as needed. Incomplete applications will not be processed.

Application fee must be attached:
__✓__ **$1,500** for **Conditional Use Permit** - > 125 feet in height
_____ **$ 500** for **Administrative Permit** – 85' to 125' in height
_____ **$ 100** for **Network Improvement Permit** – In accordance with MSB 17.67.110.

*Prior to the public hearing, the applicant must also pay the mailing and advertising fees associated with the application. Applicants will be provided with a statement of advertising and mailing charges. Payment must be made **prior** to the application presentation before the Borough Planning Commission or Planning Director decision.*

Subject Property Township: 17N, Range: 3E, Section: 30, Meridian Seward
MSB Tax Account # 117N03E30A012 PARCEL ID 26807
SUBDIVISION: _____ BLOCK(S): _____, LOT(S): A12
STREET ADDRESS: 4075 S. Lindsey Circle
(US Survey, Aliquot Part, Lat. /Long. etc) 61° 32' 11.926" N, 148° 58' 44.364" W

Ownership A *written authorization by the owner must be attached for an agent or contact person, if the owner is using one for the application.* Is authorization attached? (o) **Yes** o **No** o **N/A**

Name of Property Owner
Jeff Cotterman
Address: 13818 E Hay Wagon Way
Phne: Hm _____ Fax _____
Wk _____ Cell 907-602-9573
E-mail butteboy@gmail.com

Name of Agent/ Contact for application
Sierra Larson, New Horizons Telecom
Address: 901 Cope Industrial Way, Palmer, AK 99645
Phne: Hm _____ Fax _____
Wk 907-761-6054 Cell 907-223-7803
E-mail slarson@nhtiusa.com

Special Land Use District *(if applicable)*: N/A

Pre-Application Requirements for New Tall Structures that Require a Conditional Use Permit	
Prior to applying for a conditional use permit for a new tall structure, the applicant shall hold at least one community meeting.	
1. The meeting shall be held at the nearest facility where community council meetings are regularly scheduled. If the facility is not available, the nearest available public facility that is capable of seating a minimum of 20 people shall be utilized.	
2. The meeting shall be held at least 15 calendar days after mailing of the notification.	
3. The meeting shall not start prior to 5:00 p.m. and no later than 7:00 p.m.	
4. Notification of the meeting shall, at a minimum, include the following: • Legal description and map of the general parcel, or parcels, within the coverage area under consideration for the telecommunication facility. • Description of the proposed development including height, design, lighting, potential access to the site and proposed service. • Date, time, and location of the informational meeting. • Contact name, telephone number, and address of applicant. • Comment form created by the borough that has a comment submittal deadline and provides options for submitting comments.	
5. At a minimum, the notification area for the meeting shall include the following: • Property owners within one-half mile of the parcels under consideration for the proposed tall structure. • The nearest community council and any community council whose boundary is within 1200 feet of the parcels under consideration for the tall structure.	
A written report summarizing the results of the community meeting shall be prepared that includes the following information:	**Attached**
1. Dates and locations of all meetings where citizens were invited to discuss the potential applicant's proposal.	✓
2. Content, dates mailed, and numbers of mailings, including letters, meeting notices, newsletters and other publications.	✓
3. Sign-in sheet(s) used at the meeting, that includes places for names, address, phone numbers and other contact information such as e-mail addresses.	✓
4. A list of residents, property owners, and interested parties who have requested in writing that they keep informed of the proposed development through notices, newsletters, or other written materials.	✓
5. The number of people who attended meetings.	✓
6. Copies of written comments received at the meeting.	✓
7. A certificate of mailing identifying all who were notified of the meeting.	✓
8. A written summary that addresses the following: • The substance of the public's written concerns, issues, and problems. • How the applicant has addressed, or intends to address, concerns, issues and problems expressed during the process. • Concerns issues, and problems the applicant has not addressed or does not intend to address and why.	✓

General application requirements for Administrative and Conditional Use Permits	**Attached**
1. Design drawings for the proposed tall structure, drawn to scale, and certified by a registered engineer or architect.	✓
2. Citizen participation report *(if applying for a Conditional Use Permit)*	✓
3. Certified site plan *(As defined in MSB 17.125.010)*	✓
4. Copy of a determination of no hazard to air navigation from the Federal Aviation Administration.	✓
5. If breakpoint technology is intended to be utilized, a written statement specifying the height at which the engineered structural weakness will be located.	✓

In order to grant a Conditional Use Permit or Administrative Permit the Planning Commission or Planning Director must find that each of the following criteria has been met. Explain the following in detail:	**Attached**
1. To the extent that is technically feasible and potentially available, the location of the tall structure is such that its negative effects on the visual and scenic resources of all surrounding properties have been minimized.	✓
2. Visibility of the tall structure from public parks, trails recognized within adopted MSB plans, and waterbodies has been minimized to the extent that is technically feasible and potentially available.	✓
3. The tall structure will not interfere with the approaches to any existing airport or airfield that are identified in the MSB Regional Aviation System Plan or by the Alaska State Aviation System Plan.	✓
4. That granting the permit will not be harmful to the public health, safety, convenience, and welfare.	✓

Application requirements for a Network Improvement Permit	**Attached**
1. A description of the proposed modifications to the telecommunication tower, including a description of the height, type, and lighting of the new or modified structure and the existing structure.	
2. A certified site *(as defined in MSB 17.125.010)* for purposes of setback verification.	
3. Design drawings for the proposed modified or new structure, drawn to scale, and certified by a registered engineer or architect.	

In order to grant a Network Improvement Permit the Planning Director must find that each of the following criteria has been met. Explain the following in detail.	**Attached**
1. The proposed development conforms to setback requirements of MSB 17.55.	
2. The telecommunication tower being extended was lawfully constructed at the time of application for a Network Improvement Permit.	
3. The proposed modification does not violate permit conditions of any valid permits that have been issued to the existing facility, provided that the condition being violated does not limit height of the structure.	

Operation Standards for New Tall Structures – Conditional Use Permit, Administrative Permit, and Network Improvement Permit	**Attached**
1. The equipment compound shall meet minimum setback distances from all property lines in accordance with MSB 17.55	✓
2. Setbacks shall be determined from the dimensions of the entire lot, even though the tower may be located on lease areas within the lot.	✓
3. Adequate vehicle parking shall be provided on the subject property, outside of public use easements and rights-of-way to enable emergency vehicle access. No more than two spaces per provider shall be required.	✓
4. Information signs for the purpose of identifying the tower such as the antenna structure registration number required by the Federal Communications Commission, as well as the party responsible for the operation and maintenance of the facility shall be visibly posted at the equipment compound.	✓
5. If more than 220 volts are necessary for the operation of the facility, warning signs shall be located at the base of the facility and shall display in large, bold, high contrast letters the following: "HIGH VOLTAGE – DANGER".	N/A
6. A 24-hour emergency contact number shall be visibly posted at the equipment compound.	✓
7. A fence or wall not less than six (6) feet in height with a secured gate shall be maintained around the base of the tower.	✓

Additional Standards for Wind Energy Conversion Systems (WECS) – In addition to the operations standards for new tall structures, the following standards shall apply to WECS	**Attached**
1. WECS shall be equipped with an automatic overspeed control device designed to protect the system form sustaining structural failure such as splintered or thrown blades and the overturning or breaking of towers due to an uncontrolled condition brought on by high winds.	
2. WECS shall have a manually operable method that assures the WECS can be brought to a safe condition in high winds. Acceptable methods include mechanical or hydraulic brakes or tailvane deflection systems which turn the rotor out of the wind.	

OWNER'S STATEMENT: I am owner of the following property:

MSB Tax parcel ID #(s) 26807 and,
I hereby apply for approval conditional use permit on that property as described in this application.

I understand all activity must be conducted in compliance with all applicable standards of MSB 17.67 and with all other applicable borough, state or federal laws.

I understand that other rules such as local, state and federal regulations, covenants, plat notes, and deed restrictions may be applicable and other permits or authorization may be required. I understand that the borough may also impose conditions and safeguards designed to protect the public's health, safety and welfare and ensure the compatibility of the use with other adjacent uses.

I understand that it is my responsibility to identify and comply with all applicable rules and conditions, covenants, plat notes, and deed restrictions, including changes that may occur in such requirements.

I understand that this permit and zoning status may transfer to subsequent owners of this land and that it is my responsibility to disclose the requirements of this status to the buyer when I sell the land.

I understand that changes from the approved conditional use permit may require further authorization by the Borough Planning Commission. I understand that failure to provide applicable documentation of compliance with approved requirements, or violation of such requirements will nullify legal status, and may result in penalties.

I grant permission for borough staff members to enter onto the property as needed to process this application and monitor compliance. Such access will at a minimum, be allowed when the activity is occurring and, with prior notice, at other times necessary to monitor compliance.

The information submitted in this application is accurate and complete to the best of my knowledge.

Signature: Property Owner	Jeff Cotterman Printed Name	11/9/2024 Date
Signature: Agent	Sierra Larson Printed Name	1/9/2024 Date

Re-submittal date w/ additional information provided: 11/18/2024

MSB USE ONLY

Date application submitted:

Date application determined complete: _____

MAT -SU BOROUGH

Other Permits Master (/kmm/Lists/OtherPermitsMaster)

Permit ID	4075 S. Lindsey Circle CUP
Date Created	1/10/2024 11:01 AM
Customer Name	New Horizons Telecom/Vertical Bridge
Customer Id	
Order Number	
Order Placed On	
Order Total	$1,500.00
ConfirmationNumber	
PermitCreatedDate	
Payment Status	Paid
PermitStatus	
PermitAmount	$1,500.00
Order Item Id	
PermitObjectID	
Ordered Product Details	
Customer Phone	907-761-6054
Facility Name (Optional)	Gull Lake Communications Tower

Content Type: Other Permits
Version: 3.0
Created at 1/10/2024 11:01 AM by Sierra Larson (/kmm/_layouts/15/listform.aspx?PageType=4&ListId={47131ed3-ca79-485a-807e-26d5f921a524}&ID=36014)
Last modified at 1/10/2024 11:30 AM by System Account (/kmm/_layouts/15/listform.aspx?PageType=4&ListId={47131ed3-ca79-485a-807e-26d5f921a524}&ID=1073741823)

Close

Attachment B:
Zoning Drawings

vertical bridge

US-AK-5280

PRELIMINARY CONSTRUCTION DRAWINGS GULL LAKE

4075 S LINDSEY CIRCLE
PALMER, AK 99645

61° 32' 11.926" N, 148° 58' 44.366" W

(FAA 1A CERTIFICATE)

PROJECT SUMMARY

CONSTRUCT NEW 75'x75' TOWER COMPOUND CENTERED WITHIN A 100'x100' LEASE AREA WITH A 155' SELF-SUPPORT TOWER AT CENTER OF COMPOUND.

PROJECT INFORMATION

SITE OWNER:	VERTICAL BRIDGE
OWNER SITE NAME:	GULL LAKE
OWNER SITE NUMBER:	US-AK-5280
TOWER HEIGHT:	155 FT
OVERALL HEIGHT:	165 FT
FCC TOWER ID:	TBD
PARCEL OWNER:	JEFF COTTERMAN
TAX PARCEL ID #:	26807
LEGAL DESCRIPTION:	LOT A12, E1/2 SW1/4 SW1/4 NE1/4 AND SE1/4 NW1/4 SW1/4 NE1/4 OF SEC 30, T17N, R3E, S.M., AK

CONTACT INFORMATION

SITE ACQUISITION & ENGINEERING:
NEW HORIZONS TELECOM, INC
901 COPE INDUSTRIAL WAY
PALMER, AK 99645
(907) 761-6000
LICENSE # AECC610

CIVIL
JENNIFER C MORIGEAU, PE
(907) 761-6052
JMORIGEAU@NHTIUSA.COM

ELECTRICAL
PATRICK T GOODYEAR, PE
(907) 761-6070
PGOODYEAR@NHTIUSA.COM

PROJECT MANAGER
SIERRA G LARSON
(907) 761-6054
SLARSON@NHTIUSA.COM

TOWER OWNER:
THE TOWERS, LLC
750 PARK OF COMMERCE DR
SUITE 200
BOCA RATON, FL 33487

REGIONAL OPERATIONS MANAGER
SKIP SONGER
(907) 717-8284
SSONGER@VERTICALBRIDGE.COM

PROJECT MANAGER
PAUL DANNEBERG
(206) 375-3798
PAUL.DANNEBERG@VERTICALBRIDGE.COM

VICINITY MAP

DRIVING DIRECTIONS

FROM ANCHORAGE TAKE THE GLENN HWY (AK-1) TOWARDS PALMER/WASILLA (34 MI FROM MP 0, WEST END OF MERRILL FIELD)
TAKE THE AK-1 E (GLENN HIGHWAY) EXIT TOWARD PALMER/GLENNALLEN (1.0 MI)
CONTINUE ONTO AK-1 N (GLENN HIGHWAY) (6.7 MI)
TURN RIGHT ONTO E ARCTIC AVE (1.2 MI)
CONTINUE ONTO N OLD GLENN HWY (5.3 MI)
TURN LEFT ONTO S GEORGE PLUMLEY RD (1.3 MI)
TURN RIGHT ONTO S CAUDILL RD (0.5 MI)
TURN LEFT ONTO WALLING RD (0.5 MI)
TURN LEFT ONTO S LINDSEY CIR (0.2 MI)
SITE ON RIGHT

CODE INFORMATION

JURISDICTION:	MATANUSKA-SUSITNA BOROUGH*
ZONING CLASSIFICATION:	NONE
FEMA FLOOD ZONE:	ZONE X (AREA OF MINIMAL FLOOD HAZARD)
APPLICABLE CODES:	2021 IBC W/ AK ADOPTED AMENDMENTS 2020 NEC W/ AK ADOPTED AMENDMENTS
CONSTRUCTION:	V-B
OCCUPANCY:	U

*THIS PROJECT ADHERES TO MSB CODE INCLUDING ALL ZONING, LAND USE, AND BUILDING REGULATIONS

DRAWING INDEX

ATTACHED REFERENCE DRAWINGS

DESCRIPTION**

EXISTING CONDITIONS SURVEY (1 SHEET)
TOWER FOUNDATION DESIGN (2 SHEETS)

**SEE G1.0 FOR ADDITIONAL DOCUMENT DETAILS

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE CONSTRUCTION DRAWINGS GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

TITLE SHEET

T1.0

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\T1.0 TITLE SHEET.DWG | PLOT DATE: 24120

REFERENCE DOCUMENTS:

1. SURVEY: EXISTING SITE CONDITIONS SURVEY FOR US-AK-5280 GULL LAKE TOWER BY EDGE SURVEY AND DESIGN, LLC, STAMPED 10/5/23 (PROJECT # 23-203)
2. GEOTECH: GEOTECHNICAL INVESTIGATION REPORT FOR GULL LAKE BY DELTA OAKS GROUP, REV 0, STAMPED 01/31/24 (PROJECT # GE024-20636-08)
3. TOWER DESIGN: TOWER STRUCTURAL ANALYSIS FOR A653 – GULL LAKE BY B+T GROUP, STAMPED 12/28/23
4. FOUNDATION DESIGN: FOUNDATION CONSTRUCTION DRAWINGS FOR GULL LAKE BY ANDREW ADAMS, PE CONSULTING ENGINEER, REV 0, STAMPED 9/3/24 (PROJECT # 240901A)
5. RFDS: VERIZON RFDS FOR GULL LAKE, BY JEFF CULLEY, DATED 09/14/23, TITLED "RFDS_GULL_LAKE_14092023"

GENERAL NOTES:

1. ALL WORK TO COMPLY WITH APPLICABLE CODES AND STANDARDS ADOPTED BY THE LOCAL GOVERNING AGENCY.
2. ALL GIVEN AZIMUTHS AND DEPICTED ORIENTATIONS REFERENCE TRUE NORTH.
3. DRAWINGS ARE BASED ON REFERENCE DOCUMENTS. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND LOCATIONS AND REPORT ANY DISCREPANCIES PRIOR TO PRECEDING WITH WORK.
4. ANY REPLACEMENT OR SUBSTITUTION OF MATERIALS SHALL BE APPROVED BY THE EOR PRIOR TO PROCEEDING WITH WORK.
5. TOWER FOUNDATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH REFERENCED TOWER FOUNDATION DRAWINGS.
6. TOWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH MANUFACTURER PROVIDED TOWER ERECTION DRAWINGS AND REFERENCED TOWER STRUCTURAL ANALYSIS.
7. EQUIPMENT, MOUNTS AND CABLES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
8. CONTRACTOR TO PROPERLY SECURE CABLE RUNS TO MEET OR EXCEED INDUSTRY STANDARDS AND MANUFACTURER'S DATA.
9. CONTRACTOR TO MINIMIZE DISTURBANCE AND PROTECT EXISTING IMPROVEMENTS AND STRUCTURES SURROUNDING THE SITE. ANY DAMAGE TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
10. UNDERGROUND UTILITY ROUTING SHOWN IS BASED ON FINAL POWER AND FIBER UCR, SUBJECT TO CHANGE PENDING UTILITY LOCATES.
11. CONTRACTOR TO COORDINATE UTILITY LOCATES AND IDENTIFY POTENTIAL CONFLICTS PRIOR TO CONSTRUCTION.
12. ALL UTILITY ROUTING TO MEET APPLICABLE UTILITY PROVIDER STANDARDS, NESC, AND ANY APPLICABLE CODES AND STANDARDS ADOPTED BY THE LOCAL GOVERNING AGENCY.

CONCRETE NOTES:

1. CONCRETE SHALL OBTAIN A 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI (F'c = 4,500 PSI). THE MIX SHALL CONTAIN A MINIMUM OF 6 SACKS CEMENT PER CUBIC YARD OF CONCRETE.
2. CEMENT SHALL CONFORM TO ASTM C150 TYPE I OR II.
3. AGGREGATE SHALL CONFORM TO ASTM C33. MAXIMUM AGGREGATE SIZE SHALL BE 3/4 INCH.
4. SLUMP SHALL BE BETWEEN 3 – 5 INCHES.
5. ADMIXTURE SHALL BE PROVIDED AS REQUIRED TO PROVIDE 4.5% – 7.5% AIR ENTRAINMENT WITH A MAXIMUM WATER/CEMENT RATIO OF 0.45.
6. CONCRETE SHALL BE KEPT FROM FREEZING FOR THE FIRST SEVEN DAYS AFTER PLACING. SURFACES TO RECEIVE CONCRETE SHALL BE NOT LESS THAN 40° F. THE TEMPERATURE OF THE CONCRETE WHEN PLACED SHALL NOT BE LESS THAN 50° F OR GREATER THAN 80° F.

CONCRETE ANCHORAGE:

1. ALL CONCRETE ANCHOR RODS TO BE GALVANIZED ASTM F1554 GRADE 36 OR EQUAL.
2. INSTALL ANCHORS PER MANUFACTURER'S INSTRUCTIONS.

REINFORCING STEEL:

1. ALL REINFORCING BARS SHALL BE DEFORMED AND CONFORM TO ASTM A615, GRADE 60.
2. ALL BOTTOM MAT REINFORCING BARS SHALL BE ACCURATELY PLACED AND SUPPORTED BY GALVANIZED METAL CHAIRS OR CONCRETE BLOCKS (WOODEN STAKES SHALL NOT BE USED).
3. MINIMUM CONCRETE COVER FOR REBAR WHERE CONCRETE IS PLACED IN DIRECT CONTACT WITH SOIL IS 3 INCHES CLEAR, FOR ALL OTHER FORMED SURFACES IS 1.5 INCHES.
4. ALL REBAR SPLICES SHALL BE LAPPED 48 BAR DIAMETERS.

STRUCTURAL MATERIALS:

1. STRUT CHANNEL SHALL BE UNISTRUT P1000-HG OR EQUIVALENT, WITH 3/8"ø HARDWARE (UNO). CAPS SHALL BE PLACED ON ALL EXPOSED FREE ENDS.
2. STEEL MATERIAL SPECIFICATIONS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

MEMBER TYPE	ASTM SPECIFICATION
CHANNELS & ANGLES	A36
BASE PLATES	A36
W-SHAPES	A992
PIPES	A53 GR. B
THREADED ROD	A36
ANCHOR RODS	F1554 GR. 36
NON-STRUCTURAL BOLTS	A307
STRUCTURAL BOLTS	F3125 GR. A325
U-BOLTS	SAE J429 GR-2

3. ALL EXTERIOR STEEL MEMBERS AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 AND ASTM A153 RESPECTIVELY (UNO).
4. FOR GALVANIZED MEMBERS, ANY EXPOSED METAL FROM WELDING, CUTTING, DRILLING OR GENERAL DAMAGE SHALL BE TOUCHED UP WITH 95% ZINC RICH GALVANIZING PAINT (ZRC GALVILITE OR EQUIVALENT) IN ACCORDANCE WITH ASTM A780.
5. ALL BOLTED CONNECTIONS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION, UNLESS NOTED OTHERWISE.

ABBREVIATIONS

ABP	ABOVE BASE PLATE
AGL	ABOVE GROUND LEVEL
APPROX	APPROXIMATELY
AZ	AZIMUTH
BLDG	BUILDING
CL	CENTERLINE
DIA	DIAMETER
(E)	EXISTING
EA	EACH
EOR	ENGINEER OF RECORD
(F)	FUTURE
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
HT	HEIGHT
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IN	INCH
INT	INTERIOR
LBS	POUNDS
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
N/A	NOT APPLICABLE
NFS	NON-FROST SUSCEPTIBLE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
QTY	QUANTITY
RAD	RADIATION CENTER
REF	REFERENCE
REQ	REQUIRED
ROW	RIGHT-OF-WAY
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
W/	WITH
W/O	WITHOUT

ENTITY ABBREVIATIONS

MEA	MATANUSKA ELECTRIC ASSOCIATION
VB	VERTICAL BRIDGE
VZW	VERIZON

GENERAL LEGEND:

—— UF ——	UNDERGROUND FIBER (N)
—— UF ——	UNDERGROUND FIBER (E)
—— UP ——	UNDERGROUND POWER (N)
—— UP ——	UNDERGROUND POWER (E)
—— ELEC ——	UNDERGROUND ELECTRIC (E)
—— COM ——	UNDERGROUND COMMUNICATION (E)
—— GAS ——	UNDERGROUND GAS (E)
—— UC ——	UNDERGROUND CONDUIT (N)

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE CONSTRUCTION DRAWINGS GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

GENERAL NOTES

G1.0

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\G1.0 GENERAL NOTES.DWG | PLOT DATE: 241220

EROSION & SEDIMENT CONTROL:

1. THIS SITE DOES NOT REQUIRE A STORM WATER POLLUTION PREVENTION PLAN.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY NEED FOR, AND IMPLEMENT BEST MANAGEMENT PRACTICES (BMPs) FOR, EROSION AND SEDIMENT CONTROL MEASURES THROUGH ALL STAGES OF CONSTRUCTION.
3. EROSION CONTROL DEVICES, WHERE NECESSARY, SHALL BE INSTALLED BEFORE GROUND DISTURBANCE OCCURS.
4. BEST MANAGEMENT PRACTICES SHALL BE USED AS REQUIRED TO MINIMIZE SEDIMENT LEAVING THE SITE.
5. CONTRACTOR SHALL REMOVE ALL EROSION & SEDIMENT CONTROL MEASURES AFTER COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER.

EARTHWORK MATERIAL SPECIFICATIONS:

1. AGGREGATE AND GEOTEXTILE SEPARATION FABRIC REFERENCED IN THIS CONSTRUCTION DRAWINGS PACKAGE SHALL ADHERE TO ADOT&PF STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2020 EDITION.

GENERAL EXCAVATION AND GRADING:

1. CONTRACTOR SHALL CALL 811 ALASKA DIG LINE FOR UTILITY LOCATES. LOCATE ALL UTILITIES PRIOR TO EXCAVATION.
2. ALL TRENCH EXCAVATION SHALL BE SHORED OR SLOPED AS REQUIRED BY OSHA REGULATIONS FOR CONSTRUCTION.
3. REMOVE VEGETATION, TOPSOIL, DEBRIS, UNSATISFACTORY SOILS AND DELETERIOUS MATERIAL FROM GROUND SURFACE PRIOR TO PLACING FILL.
4. WHERE OVER EXCAVATION IS REQUIRED, FILL WITH ADDITIONAL SUBBASE MATERIAL AS SPECIFIED ON THE APPLICABLE CROSS SECTION.
5. PROOF ROLL SUBBASE PRIOR TO PLACING FILL.
6. ALL FILL SHALL BE PLACED IN LAYERS NOT TO EXCEED 9 INCHES LOOSE DEPTH. EACH LAYER SHALL BE COMPACTED TO A DRY DENSITY NOT LESS THAN 95% OF MAXIMUM DRY DENSITY MODIFIED PROCTOR AS DETERMINED BY ASTM D 1557.
7. FINISHED GRADE SHALL ALLOW WATER TO FLOW IN THE GENERAL DIRECTION AS INDICATED ON THE GRADING PLAN AND SHALL NOT CREATE DEPRESSED AREAS PRONE TO PONDING ONSITE OR IN SURROUNDING AREAS.
8. USE SWALES AND/OR DRAINAGE DITCHES FOR PROPER WATER RUNOFF AS NEEDED.
9. PROTECT GRAVEL SURFACING AND SUBGRADE IN AREAS WHERE EQUIPMENT LOADS WILL OPERATE. USE PLANKING OR OTHER SUITABLE MATERIALS DESIGNED TO SPREAD EQUIPMENT LOADS. REPAIR DAMAGE TO GRAVEL SURFACING OR SUBGRADE WHERE SUCH DAMAGE IS DUE TO THE CONTRACTOR'S OPERATIONS. DAMAGED GRAVEL SURFACING SHALL BE RESTORED TO MATCH THE ADJACENT UNDAMAGED GRAVEL SURFACING AND SHALL BE OF THE SAME THICKNESS.
10. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS OUTSIDE OF THE GRAVEL ACCESS AND COMPOUND AREAS TO MATCH THE EXISTING SURFACE AND/OR VEGETATION OF SURROUNDING AREAS. THIS MAY INCLUDE BUT IS NOT LIMITED TO GRADING, TOPSOIL, AND SEEDING.
11. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM 2 HORIZONTAL TO 1 VERTICAL UNLESS NOTED OTHERWISE.

COMPOUND GRADING:

1. COMPOUND SLOPE NOT TO EXCEED 5%.
2. SUB-GRADE SHALL BE COMPACTED BY SHEEPS FOOT VIBRATOR OR RUMMBER TIRED ROLLERS WEIGHING AT LEAST EIGHT TONS.
3. FINISHED GRADE SHALL BE COMPACTED BY SMOOTH DRUM VIBRATOR ROLLERS WEIGHT AT LEAST EIGHT TONS.

ACCESS DRIVEWAY:

1. DRIVEWAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MATANUSKA-SUSITNA BOROUGH (MSB) DRIVEWAY STANDARDS AND AN APPROVED DRIVEWAY PERMIT.
2. CULVERT (IF REQUIRED) DIAMETER AND LENGTH SHALL BE AS DEFINED BY THE MSB DRIVEWAY PERMIT.

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

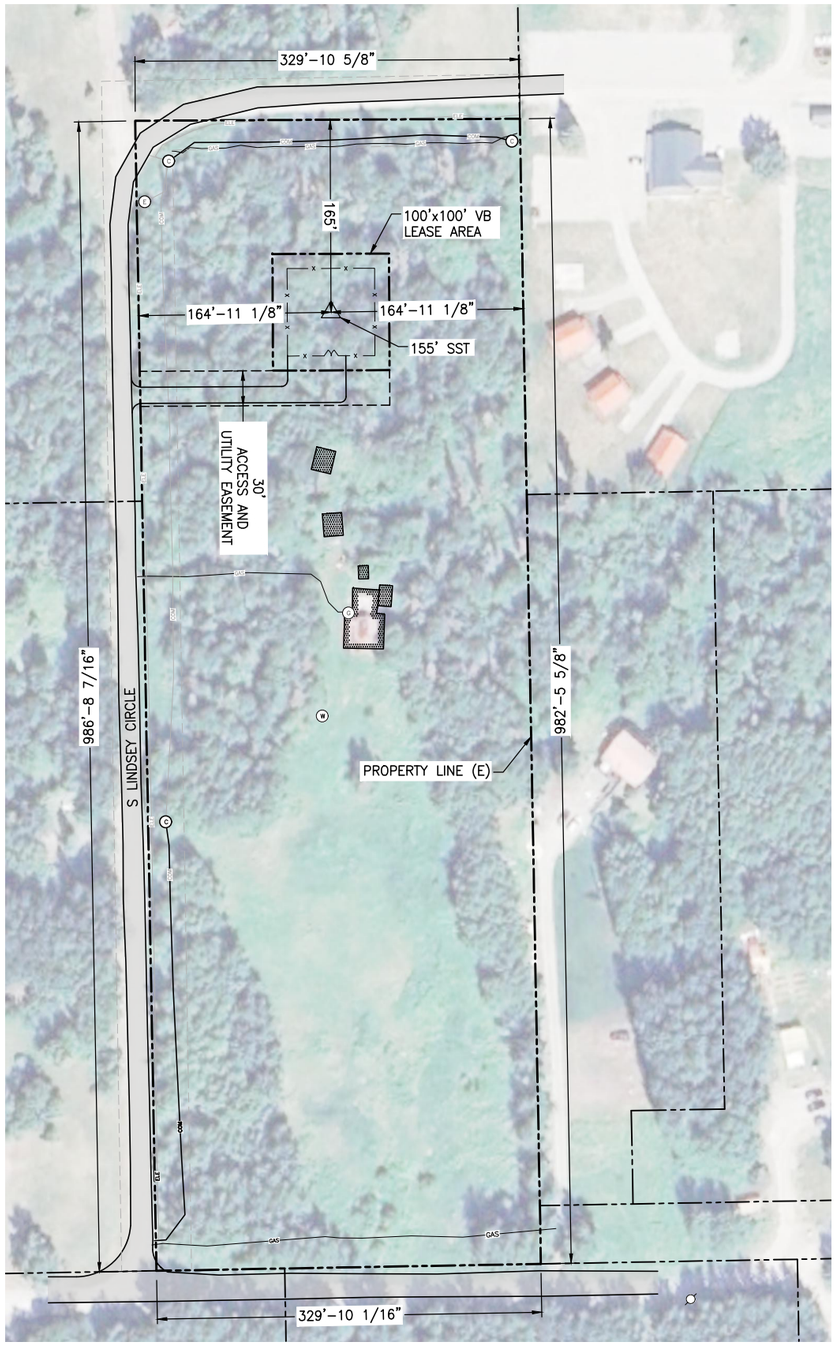
VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

GRADING & EXCAVATING NOTES

G1.1

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\G1.1 GRADING & EXCAVATING NOTES.DWG | PLOT DATE: 241220



1 / C1.0 AREA PLAN
SCALE: 1" = 130'

SCALE: 1" = 130'
0 65 130 260

NOTES:

1. SEE REFERENCED SURVEY FOR ADDITIONAL PROPERTY INFORMATION AND EASEMENTS (NOT SHOWN ON THIS SHEET FOR CLARITY).

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

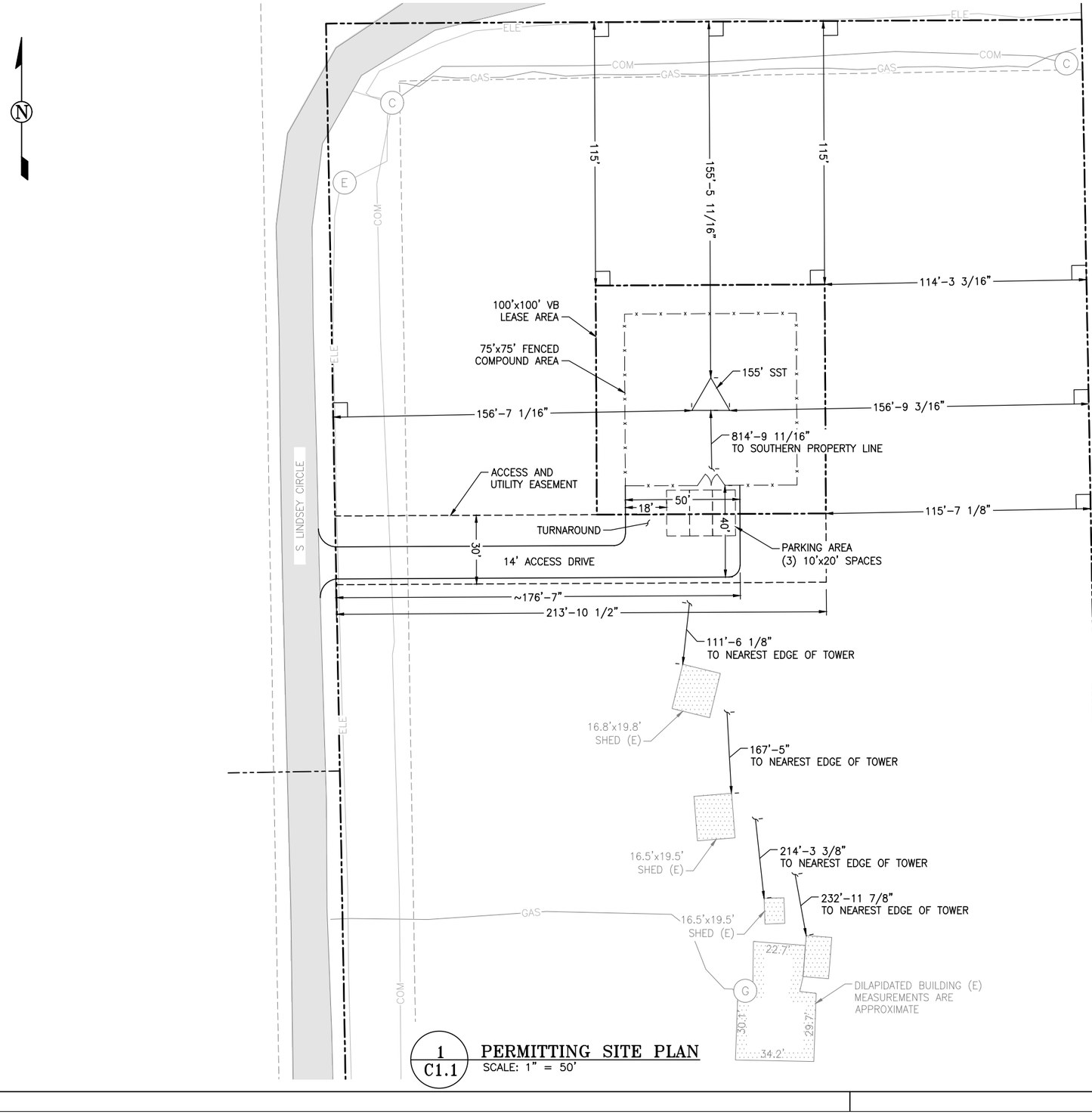
VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

AREA
PLAN

C1.0

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C1.0 AREA PLAN.DWG | PLOT DATE: 241220



1 C1.1 PERMITTING SITE PLAN
SCALE: 1" = 50'

SCALE: 1" = 50'
0 25 50 100

NOTES:

1. THIS PERMITTING SITE PLAN PROVIDED TO ADDRESS SPECIFIC DIMENSIONAL REQUESTS FROM THE MSB PLANNING DEPARTMENT PERMITTING REVIEW.
2. SEE REFERENCED SURVEY FOR ADDITIONAL PROPERTY INFORMATION AND EASEMENTS (NOT SHOWN ON THIS SHEET FOR CLARITY).

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

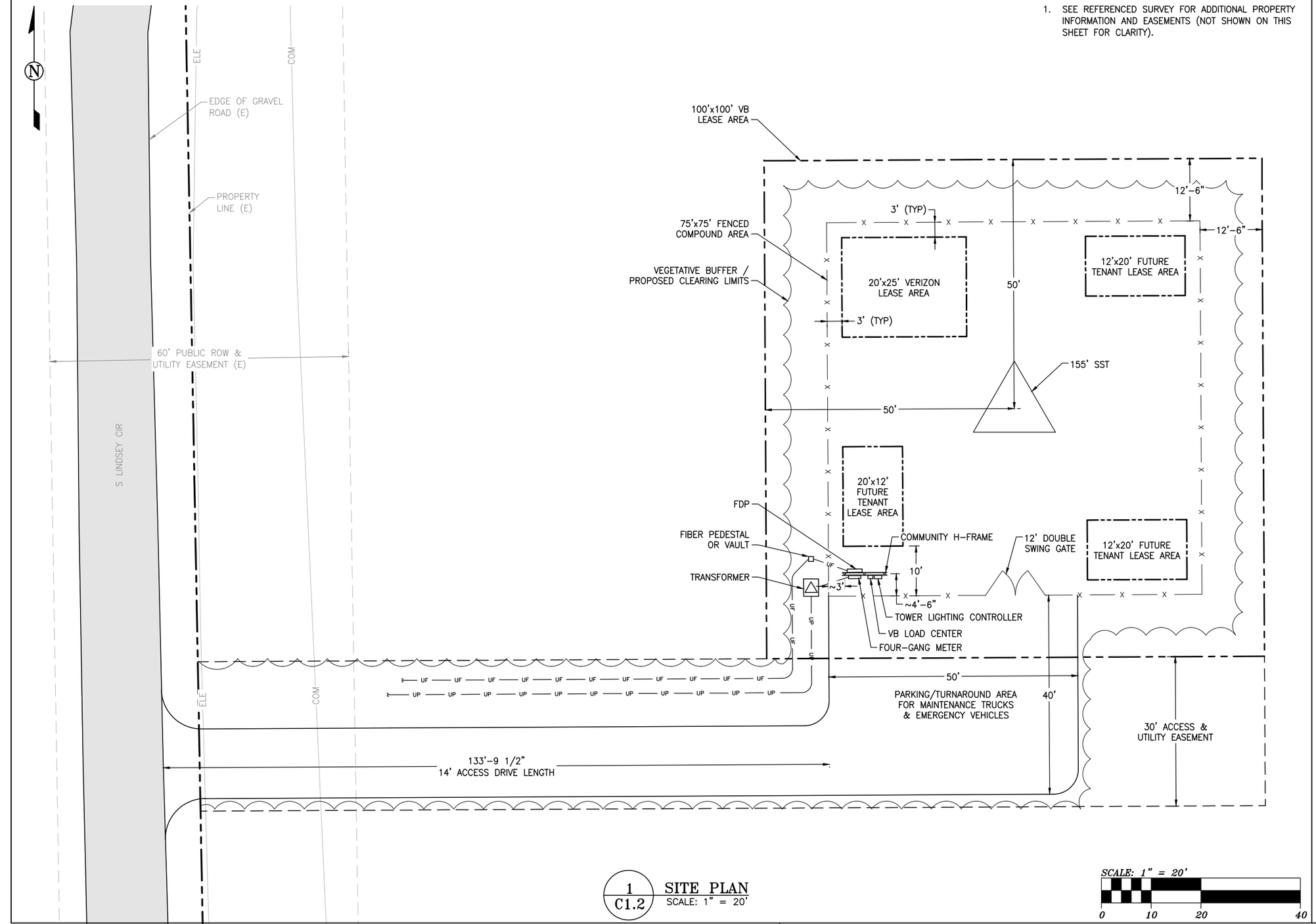
PERMITTING
SITE PLAN

C1.1

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C1.1 PERMITTING SITE PLAN.DWG | PLOT DATE: 241220

NOTES:

1. SEE REFERENCED SURVEY FOR ADDITIONAL PROPERTY INFORMATION AND EASEMENTS (NOT SHOWN ON THIS SHEET FOR CLARITY).



1 / C1.2 SITE PLAN
SCALE: 1" = 20'

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

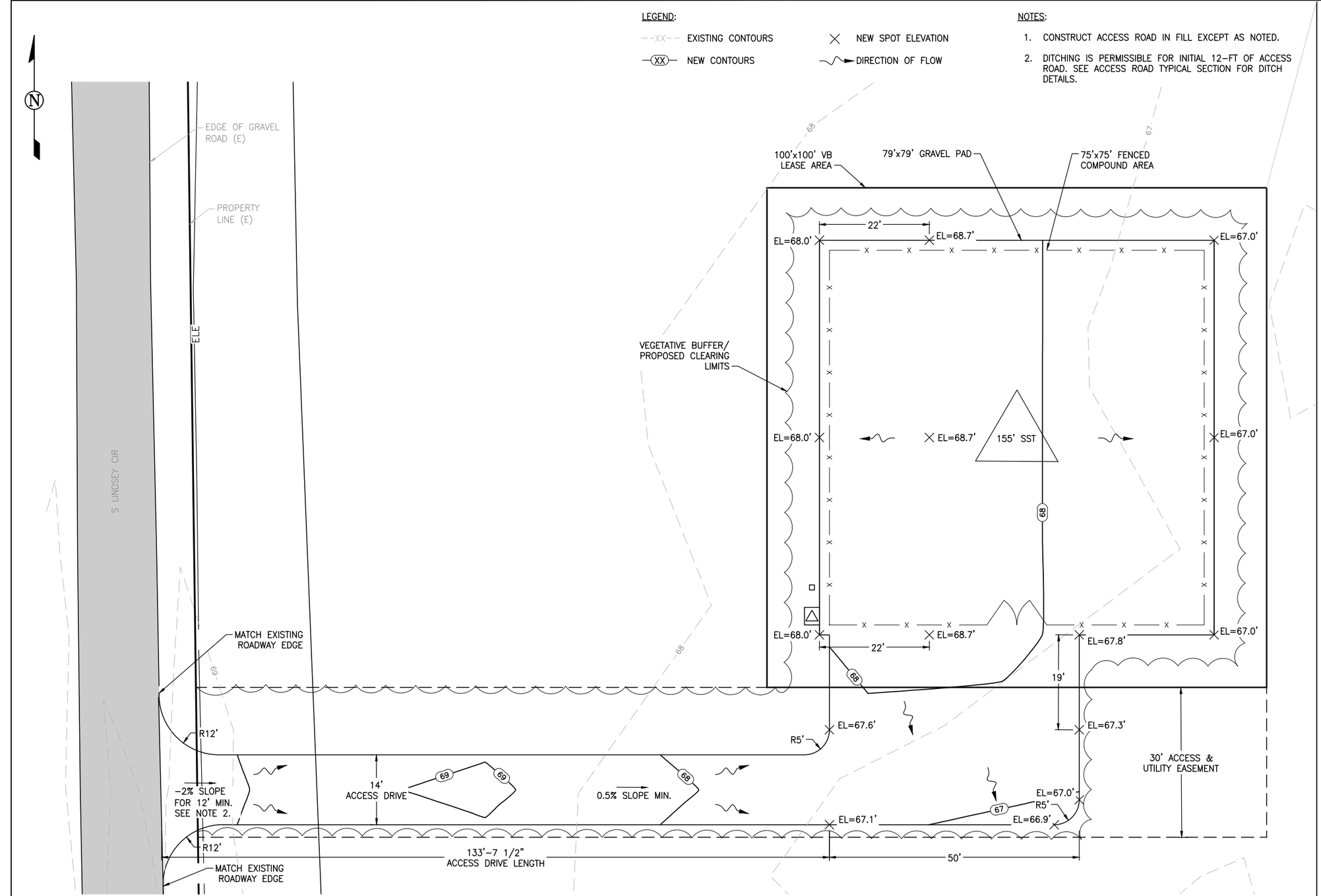
VERTICAL BRIDGE CONSTRUCTION DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

SITE PLAN

C1.2

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C1.2 SITE PLAN.DWG | PLOT DATE: 24220



1 / C1.3 GRADING PLAN
SCALE: 1" = 20'

SCALE: 1" = 20'
0 10 20 40

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

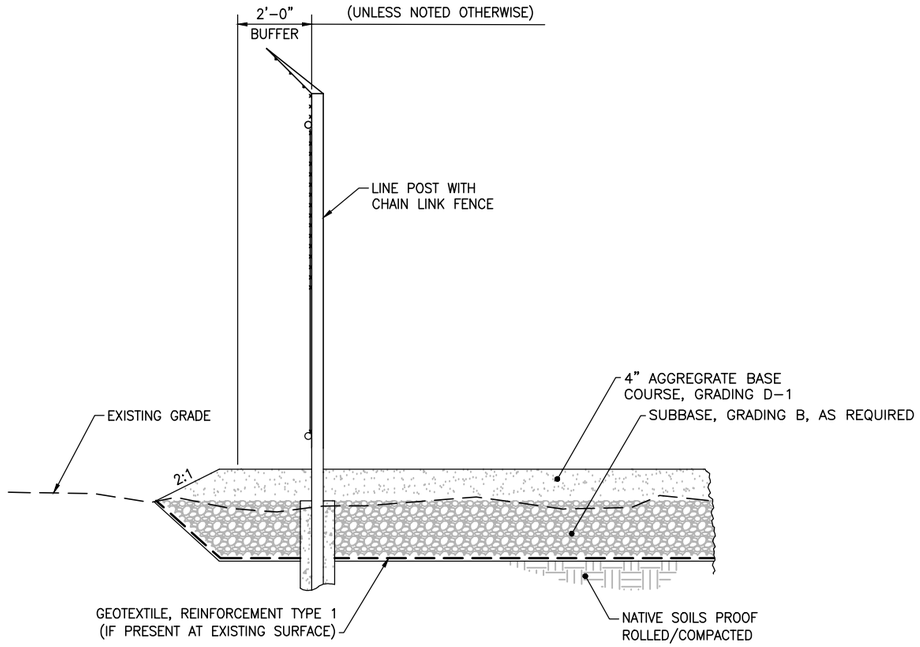
VERTICAL BRIDGE CONSTRUCTION DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

GRADING PLAN

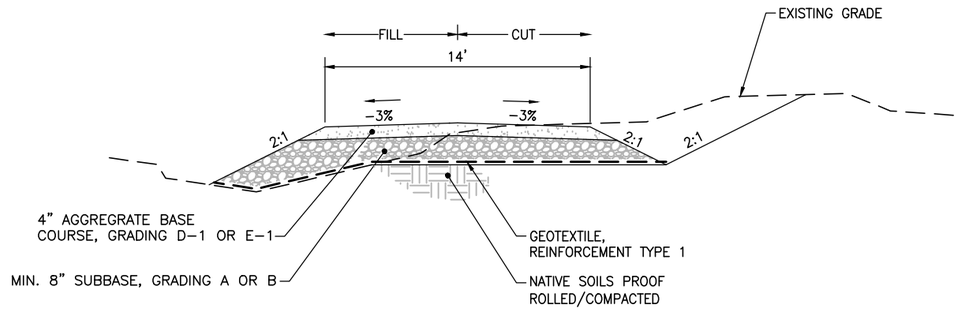
C1.3

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 FOR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C1.3 GRADING PLAN_RECOVER.DWG | PLOT DATE: 241220

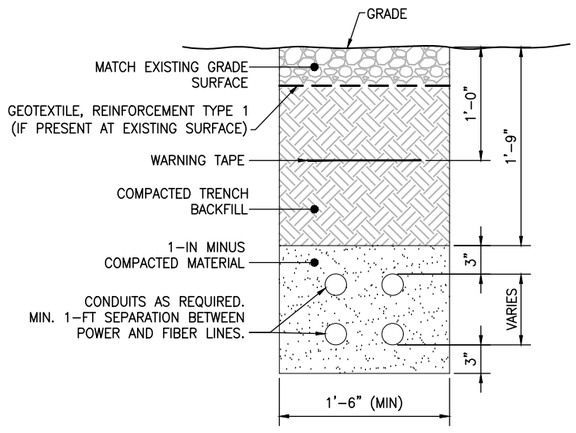


1 / C1.4 SITE COMPOUND SURFACING DETAIL
SCALE: NTS

NOTE:
ACCESS ROAD TO BE CONSTRUCTED IN FILL
EXCEPT AS NOTED IN THE PLANS.



2 / C1.4 ACCESS ROAD TYPICAL SECTION
SCALE: NTS



3 / C1.4 ELECTRICAL/UTILITY COMMUNICATION TRENCH SECTION
SCALE: NTS

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

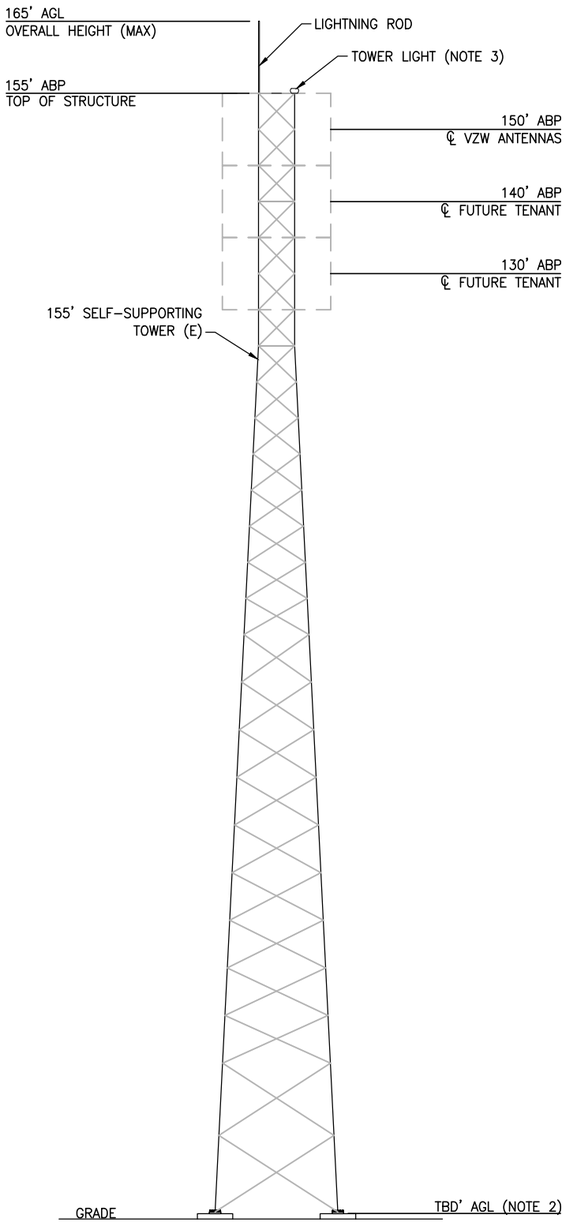
VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

TYPICAL SECTIONS
& TRENCHING
DETAILS

C1.4

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C1.4 TYPICAL SECTIONS & TRENCHING DETAILS.DWG | PLOT DATE: 241220



A / C2.0 TOWER ELEVATION
SCALE: 1" = 20'

NOTES:

1. ELEVATIONS SHOWN ARE ABOVE BASE PLATE (ABP) AND ABOVE GROUND LEVEL (AGL).
2. HEIGHT AGL OF TOWER BASE PLATE PENDING SELECTION OF TOWER FOUNDATION TYPE.
   PILE = 2'-3 1/2",
   PAD AND PIER = ~6"
3. TOWER LIGHTING IS NOT REQUIRED PER FAA STUDY 2023-AAL-377-OE; HOWEVER, WILL BE ADDED BASED ON COMMUNITY CONCERNS REGARDING HEAVY AVIATION TRAFFIC IN THE AREA.
4. SEE REFERENCE DOCUMENTS LISTED ON G1.0 FOR REFERENCED TOWER AND FOUNDATION DESIGNS.

SCALE: 1" = 20'

0 10 20 40

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 230720		A

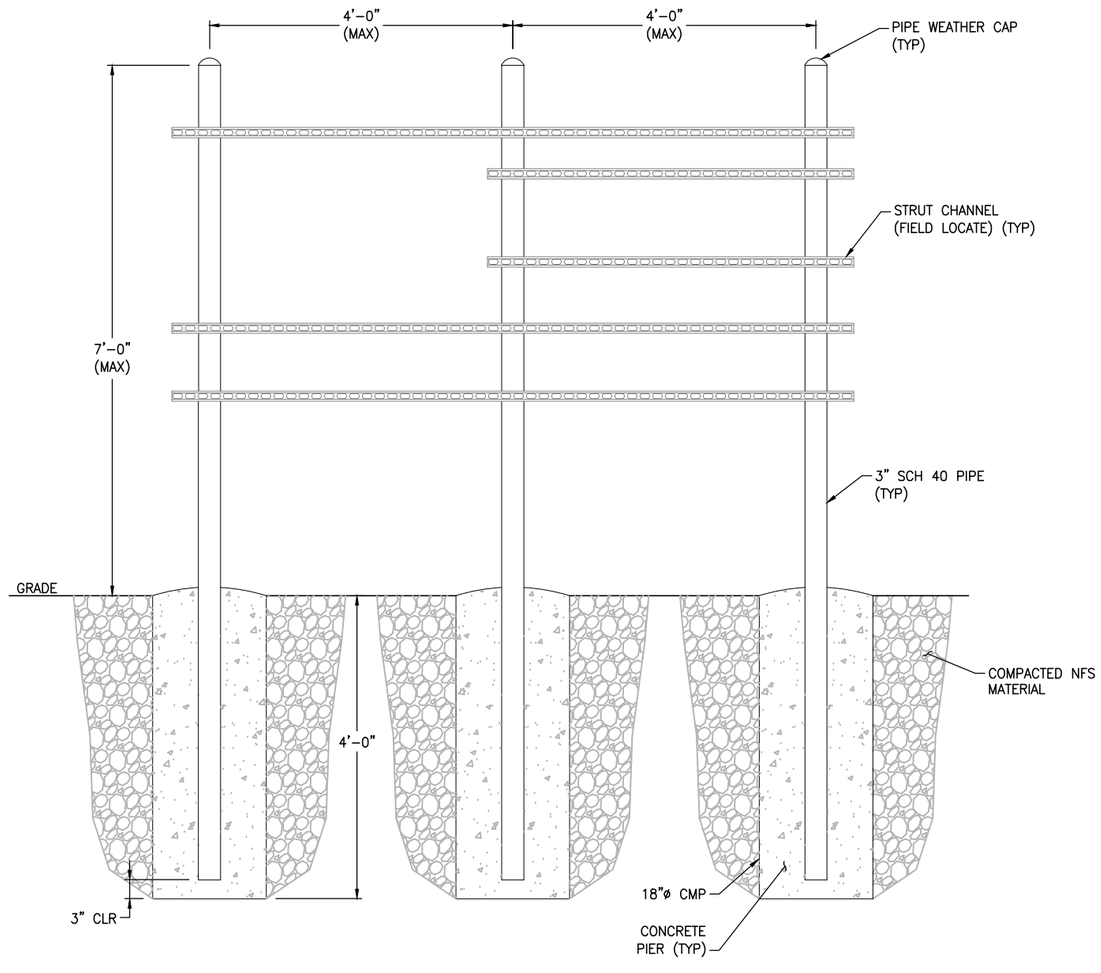
TOWER
ELEVATION

C2.0

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C2.0 TOWER ELEVATION.DWG | PLOT DATE: 241216

NOTE:

1. SEE ELECTRICAL DRAWINGS FOR EQUIPMENT INSTALLATION.
2. SEE G1.0 FOR MATERIAL SPECIFICATIONS AND EARTHWORK NOTES.



1 / C3.0 H-FRAME DETAIL
SCALE: NONE

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

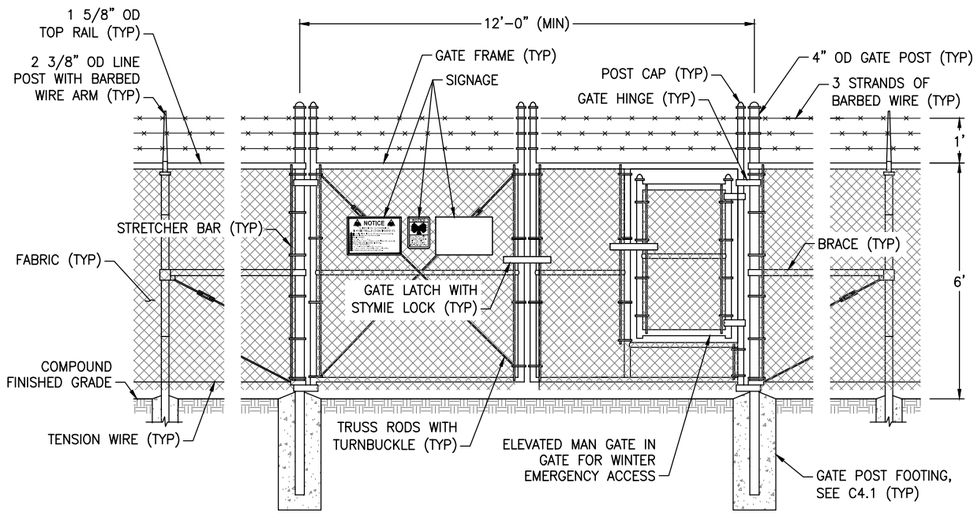
VERTICAL BRIDGE CONSTRUCTION DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

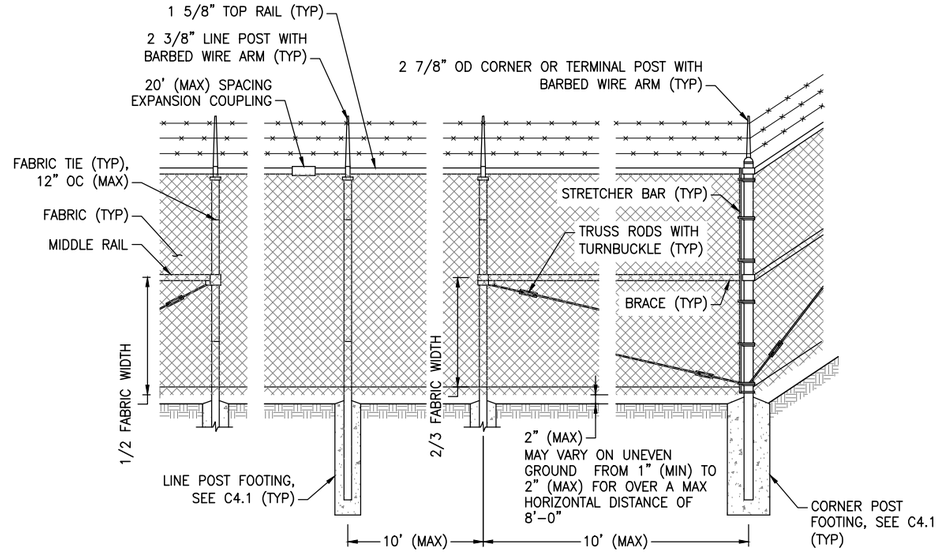
H-FRAME DETAIL

C3.0

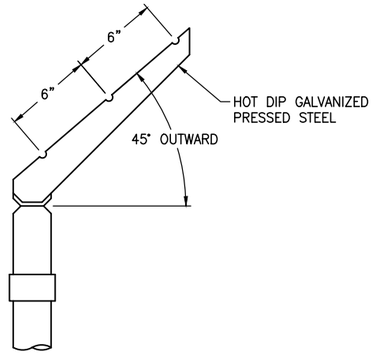
FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C3.0 H-FRAME DETAIL.DWG | PLOT DATE: 241220



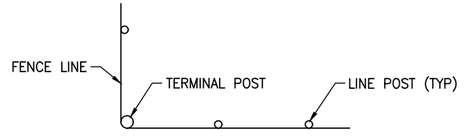
1 C4.0 **VEHICLE GATE ARRANGEMENT**
SCALE: DO NOT SCALE



2 C4.0 **POST/CORNER POST ARRANGEMENT**
SCALE: DO NOT SCALE



3 C4.0 **BARBED WIRE ARM OF LINE POST**
SCALE: DO NOT SCALE



4 C4.0 **INSTALLATION AT CORNERS**
SCALE: DO NOT SCALE

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

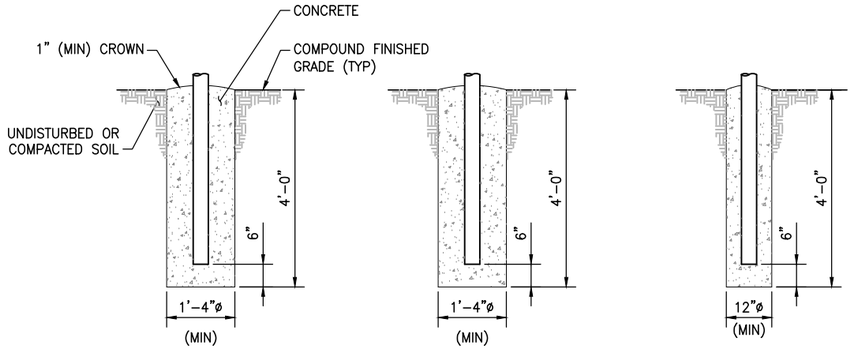
VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

FENCE
DETAILS 01

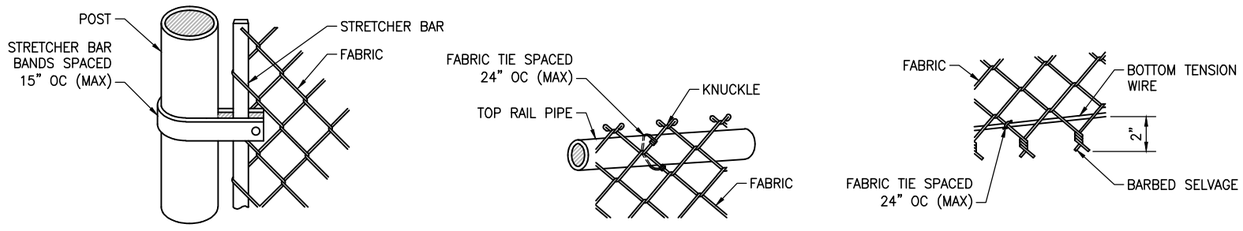
C4.0

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C4.0 FENCE DETAILS 01.DWG | PLOT DATE: 241220



TERMINAL OR CORNER POST | GATE POST | LINE POST

1 / C4.1 **FENCE POST FOOTINGS**
SCALE: NONE



METHOD OF FASTENING STRETCHER BAR TO POST | METHOD OF TYING FABRIC TO PIPE | METHOD OF TYING FABRIC TO TENSION WIRE

2 / C4.1 **FABRIC/BAR CONNECTIONS**
SCALE: NONE

NOTES:

1. ZINC COATING – THE WEIGHT OF THE COATING SHALL NOT BE LESS THAN 1.2 OUNCES PER SQUARE FOOT OF ACTUAL SURFACE COVERED. ALL FERROUS METALS USED AS PART OF THE FENCE INSTALLATION SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL. ALL SCREWS, BOLTS, LOCK WASHERS, NUTS, ETC. SHALL BE HOT DIP GALVANIZED OR MADE OF STAINLESS STEEL.
2. FABRIC – STANDARD INDUSTRIAL GRADE #9 GAUGE WITH 2 INCH MESH ZINC COATED CHAIN LINK WITH A BREAKING STRENGTH OF NOT LESS THAN 1290 POUNDS SHALL BE USED. THE FABRIC SHALL BE ZINC COATED BY THE HOT DIP PROCESS AFTER FABRICATION.
3. METAL POSTS – METAL POSTS (LINE, CORNER, TERMINAL, GATE POSTS, MIDDLE RAILS, BRACES AND TOP RAIL) SHALL BE HOT DIP GALVANIZED SCHEDULE 40 STEEL PIPE, ASTM F1083, REGULAR GRADE (30,000 PSI YIELD) WITH AN OUTSIDE DIAMETER AS INDICATED ON THIS DRAWING. A POST TOP FITTING OF GALVANIZED STEEL WILL BE INSTALLED TO EXCLUDE MOISTURE.
4. POST CAPS – ALL POST CAPS TO USE THE BARBED WIRE OUTRIGGER BRACKET AND SHALL BE ATTACHED TO THE POST WITH TAMPER RESISTANT SCREWS, BRADS, OR BOLTS.
5. TOP RAIL – A MINIMUM OF ONE COUPLING IN EACH STRAIGHT RUN OF TOP RAIL, SHALL HAVE A HEAVY SPRING INSERTED WITHIN THE COUPLING TO TAKE UP EXPANSION AND CONTRACTION OF THE TOP RAIL. THE TOP RAIL SHALL BE FASTENED TO TERMINAL POSTS WITH PRESSED STEEL CONNECTIONS.
6. MIDDLE RAIL – THE MIDDLE RAIL SHALL BE OF THE SAME MATERIAL AS THE TOP RAIL AND INSTALLED WITH HOT DIP GALVANIZED FITTINGS ATTACHED TO THE POSTS.
7. BRACE RAIL – BRACE RAIL MATERIAL SHALL BE OF THE MATERIAL AS THE TOP RAIL AND LOCATED 2/3 OF THE DISTANCE UP FROM THE BOTTOM OF THE FABRIC. BRACE RAILS SHALL BE SECURELY FASTENED TO POSTS BY SUITABLE PRESSED STEEL CONNECTIONS.
8. TRUSS RODS – SHALL BE 3/8" ROUND GALVANIZED STEEL RODS WITH GALVANIZED TURNBUCKLES. THE ZINC COATING SHALL BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.
9. TENSION WIRE – THE TENSION WIRE SHALL BE OF #7 GAUGE HOT DIP GALVANIZED SPRING TENSION WIRE WITH A BREAKING STRENGTH OF NOT LESS THAN 1900 POUNDS. THIS WIRE SHALL BE KEPT TAUT WITH GALVANIZED TURNBUCKLES AND ATTACHED TO POSTS WITH GALVANIZED HARDWARE OR CABLE CLAMPS.
10. FABRIC TIES – THE FABRIC TIES SHALL BE ALUMINUM WIRE. NOT LESS THAN #9 GAGE.
11. STRETCHER BARS – THE STRETCHER BARS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THAN 5/16" X 3/4" AND NOT LESS THAN 2" SHORTER THAN THE FABRIC. STRETCHER BAR BANDS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THAN 5/16" X 1 1/2" WITH 5/16" DIAMETER GALVANIZED CARRIAGE BOLT.
12. BARBED WIRE – BARBED WIRE OF GALVANIZED STEEL (OR ALUMINUM) CONSISTING OF 12 1/2 GAUGE WIRE WITH 4-POINT BARBS OF 14 GAUGE WIRE SPACED 5 INCHES APART.
13. GATE FRAMES SHALL BE CONSTRUCTED OF 2 7/8 INCH OUTSIDE DIAMETER HEAVY DUTY GALVANIZED STEEL PIPE. THE GATES SHALL BE ASSEMBLED USING CORNER FITTINGS OF HEAVY PRESSED STEEL OR MALLEABLE CASTINGS OR MAY BE WELDED IF THE ENTIRE GATE FRAME IS HOT DIP GALVANIZED AFTER THE WELDING. ALL GATES SHALL BE EQUIPPED WITH HEAVY DUTY GALVANIZED STEEL TYPE HINGES WITH LARGE BEARING SURFACES OF ADEQUATE STRENGTH TO SUPPORT THE GATE. THE HINGES SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. GATES WILL PROVIDE A FULL RANGE OF MOTION AND BE EASILY OPENED AND CLOSED BY ONE PERSON. GATE LATCH SHALL BE CARGO PROTECTORS, INC. MODEL FL-100. LATCH SHALL BE EQUIPPED TO RECEIVE A PADLOCK.
14. PROVIDE RADIO FREQUENCY WARNING SIGNAGE ON ALL GATES.
15. PROVIDE VERTICAL BRIDGE SITE ID SIGN ON MAIN GATE.
16. NUTS ON ALL BOLTS SHALL BE TOWARD THE INTERIOR OF THE COMPOUND.

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

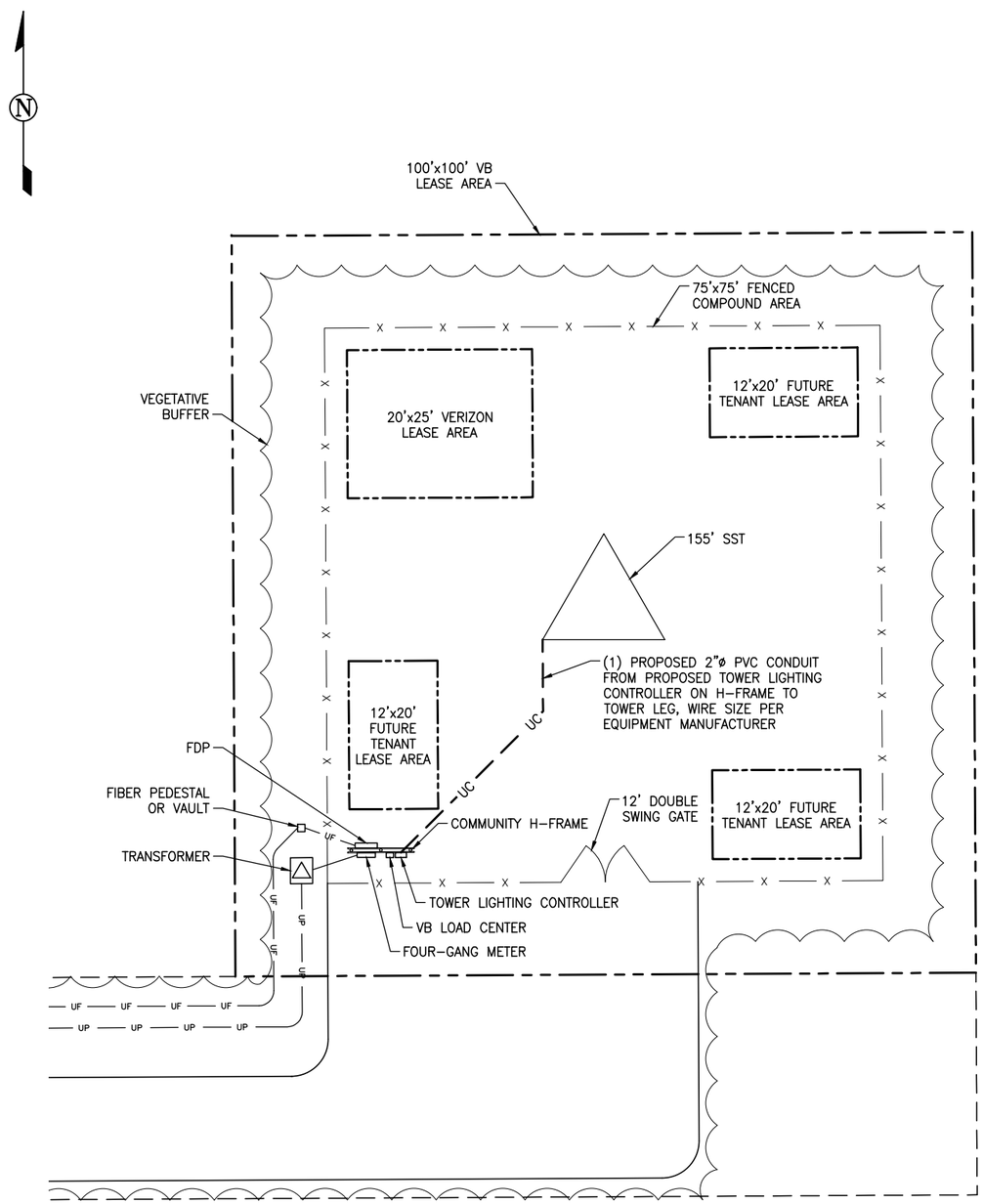
VERTICAL BRIDGE CONSTRUCTION DRAWINGS
GULL LAKE

DWN: JAA	DSN: JCM	APP: JCM	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

FENCE DETAILS 02

C4.1

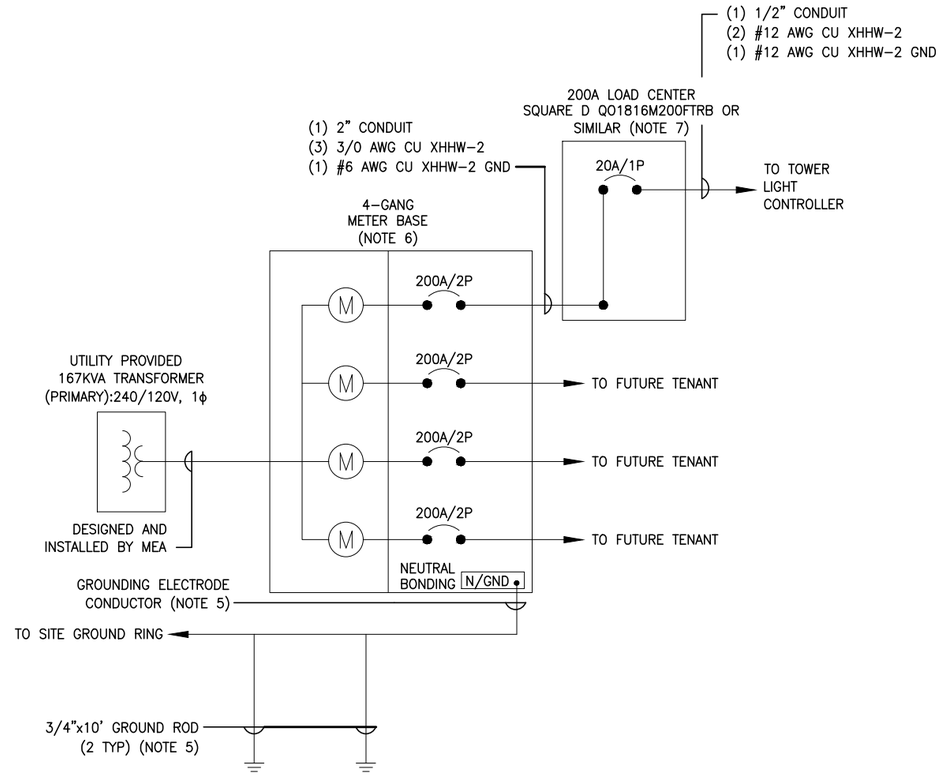
FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\C4.1 FENCE DETAILS 02.DWG | PLOT DATE: 241220



1 E0.1 ELECTRICAL SITE PLAN
SCALE: 1" = 20'

NOTES:

1. ALL WORK WILL COMPLY WITH CURRENTLY ADOPTED VERSIONS OF THE NATIONAL ELECTRIC CODE (NEC) AND THE NATIONAL ELECTRIC SAFETY CODE (NESC) APPLICABLE TO THE LOCATION OF THE WORK.
2. REFERENCE MEA DOCUMENT SERVICE GUIDE 2020 EDITION.
3. COORDINATE SELECTION OF METER BASE WITH MATANUSKA ELECTRIC ASSOCIATION.
4. ALL MATERIALS SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
5. SEE E1.0 & E1.1 FOR FURTHER GROUNDING DETAILS AND GROUNDING ELECTRODE CONDUCTOR SIZE.
6. SEE E1.1 FOR METER SPECIFICATIONS.
7. SEE 2/E1.2 FOR PANEL SCHEDULE.



2 E0.1 AC ONE-LINE DIAGRAM
SCALE: NTS

SCALE: 1" = 20'
0 10 20 40

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

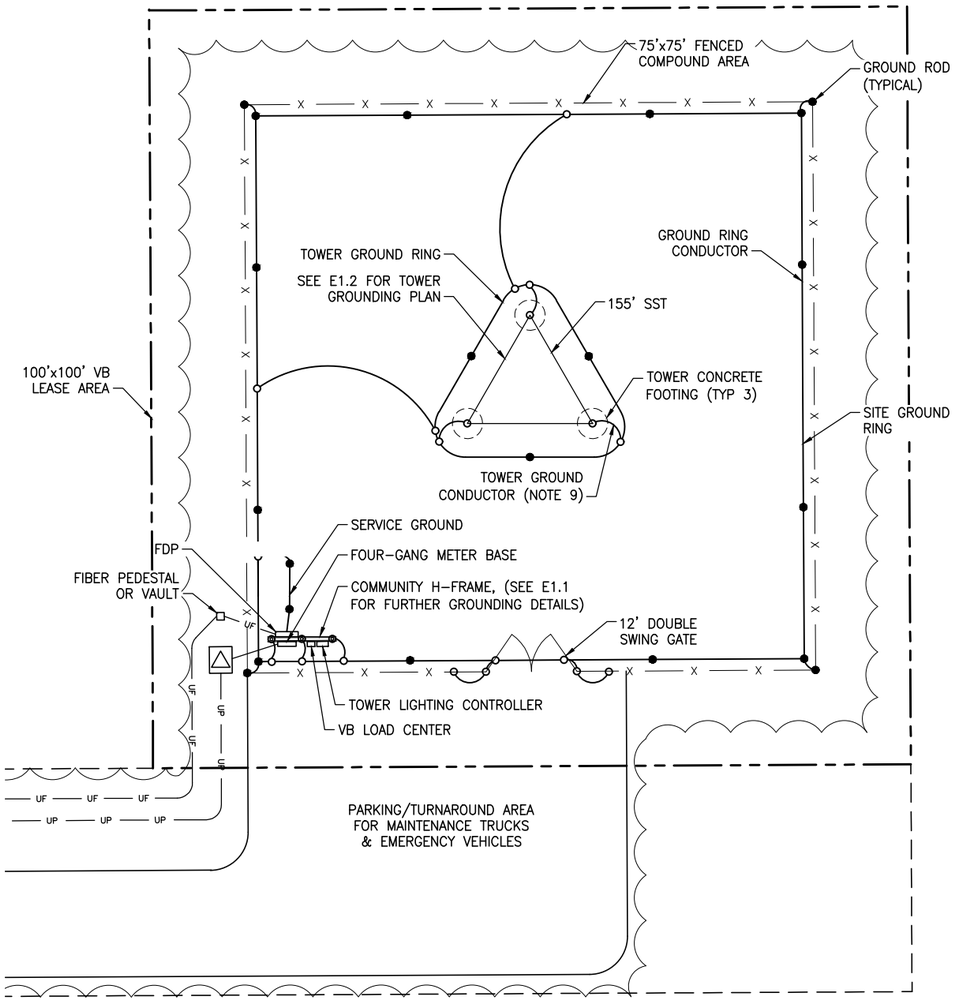
DWN: JAA	DSN: ECO	APP: PTG	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

ELECTRICAL
SITE PLAN &
ONE-LINE

E0.1

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\E0.1 ELECTRICAL SITE PLAN & ONE-LINE_RECOVER.DWG | PLOT DATE: 241220

Recieved by Current Planner 12/20/2024



1 / E1.0 SITE GROUNDING PLAN
SCALE: 1" = 20'

NOTES:

1. ALL WORK WILL COMPLY WITH CURRENTLY ADOPTED VERSIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL ELECTRICAL SAFETY CODE (NESC) APPLICABLE TO THE LOCATION OF THE WORK.
2. ALL MATERIALS SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
3. ALL CONDUCTORS TO BE #2 AWG SOLID BARE TINNED COPPER (SBTC) UNLESS OTHERWISE NOTED.
4. ALL BELOW GRADE BONDS TO BE EXOTHERMIC WELDS. ABOVE GRADE BONDS TO BE COMPRESSION LUG CONNECTION OR EXOTHERMIC WELDS.
5. GROUND RINGS TO BE BURIED A MINIMUM OF 30IN BELOW GRADE. EXOTHERMICALLY WELD GROUND RING TO GROUND RODS.
6. GROUND RODS TO BE MINIMUM 3/4IN x 10FT COPPER CLAD AND TO BE DRIVEN VERTICALLY 30IN BELOW FINAL GRADE.
7. GROUND RING GROUND RODS TO BE SPACED A MINIMUM OF 20FT APART.
8. ALL EXPOSED GROUNDING CONDUCTORS BETWEEN GRADE AND 6FT ABOVE GRADE TO BE PROTECTED FROM DAMAGE WITH NON-METALLIC LIQUID TIGHT.
9. CONNECT THE MONOPOLE/TOWER GROUND CONDUCTORS TO MONOPOLE/TOWER BY EXOTHERMIC WELD. MONOPOLE/TOWER GROUND CONDUCTORS WILL BE #2/0 AWG STRANDED BARE TINNED COPPER.
10. ALL METAL FENCE POSTS TO BE ELECTRICALLY CONNECTED VIA EXOTHERMIC WELD TO SITE GROUND RING.
11. ATTACH GROUNDING JUMPERS BETWEEN GATES AND CHAIN LINK FENCE.

LEGEND:

- ● 3/4"x10' COPPER CLAD GROUND ROD EXOTHERMICALLY WELDED TO GROUND RING
- ○ EXOTHERMIC WELD OR COMPRESSION LUG (NOTE 4)

SCALE: 1" = 20'
0 10 20 40

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE CONSTRUCTION DRAWINGS
GULL LAKE

DWN: JAA	DSN: ECO	APP: PTG	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

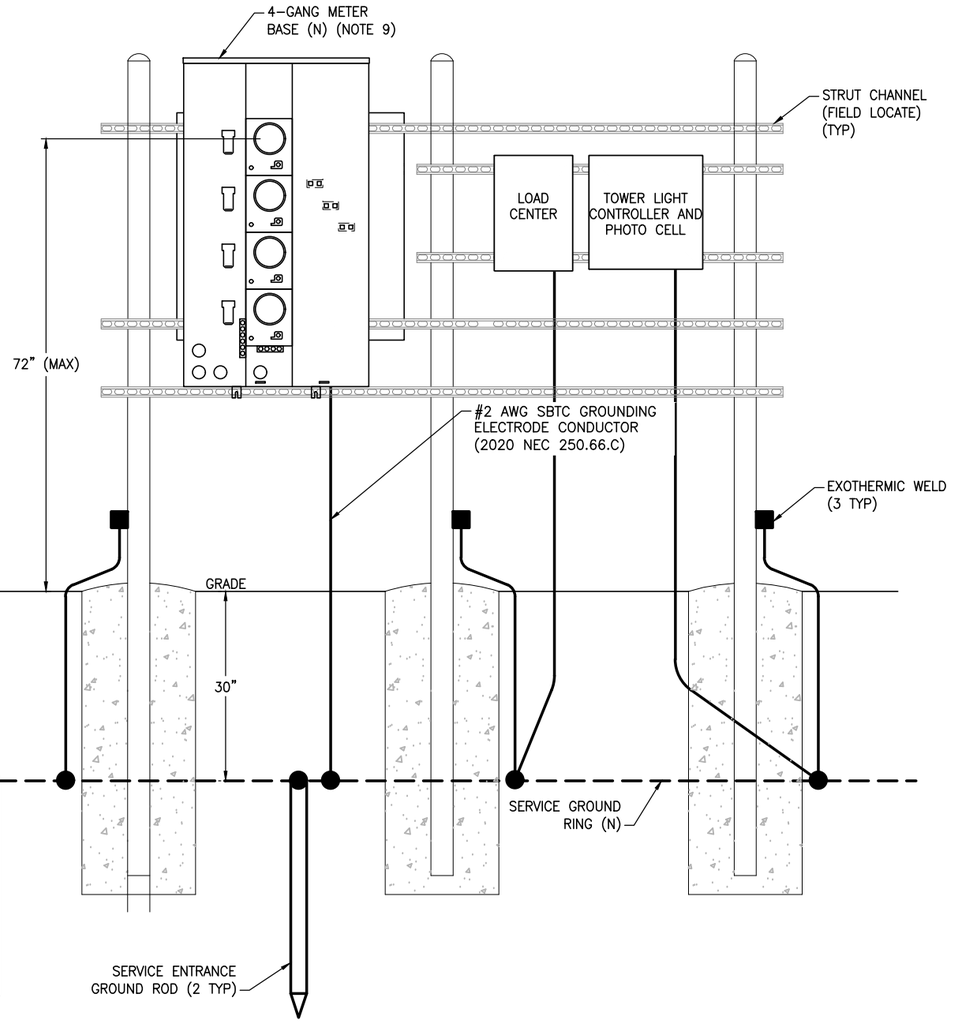
SITE GROUNDING PLAN

E1.0

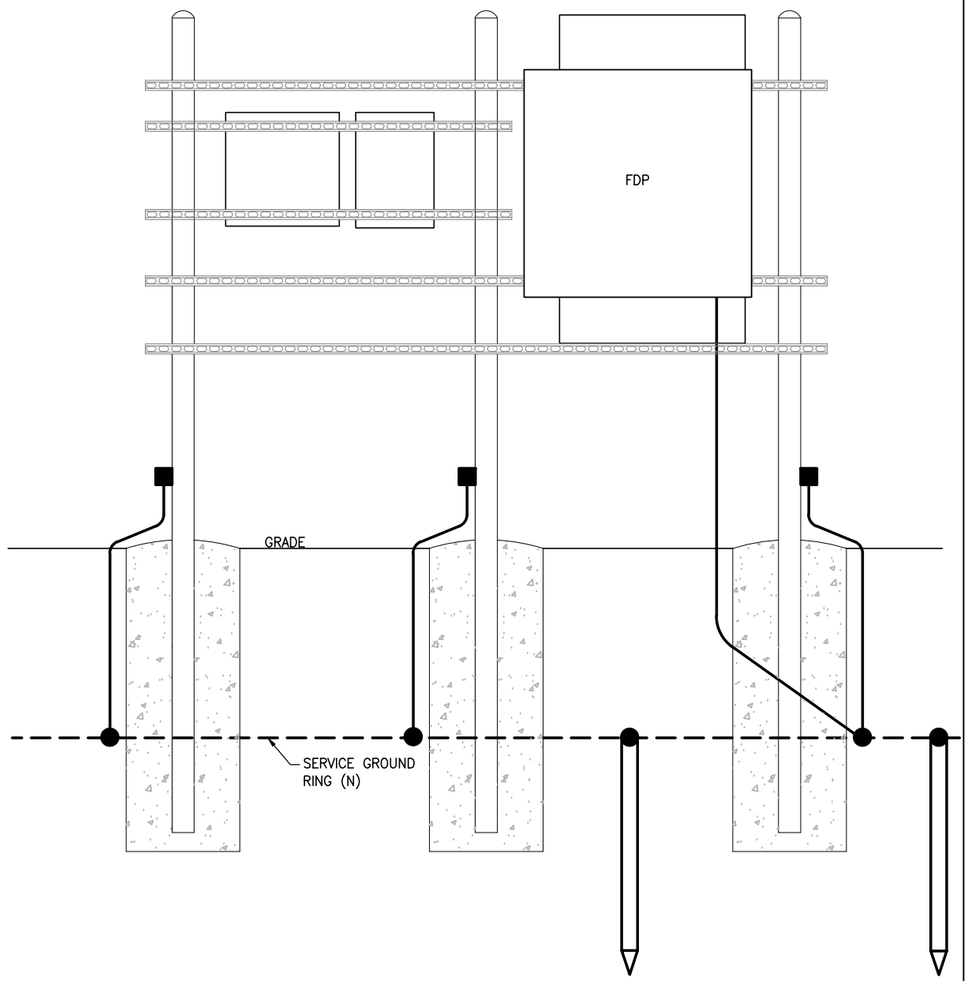
FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\E1.0 SITE GROUNDING PLAN_RECOVER.DWG | PLOT DATE: 241220

NOTES:

1. ALL WORK WILL COMPLY WITH CURRENTLY ADOPTED VERSIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL ELECTRICAL SAFETY CODE (NESC) APPLICABLE TO THE LOCATION OF THE WORK.
2. REFERENCE MEA DOCUMENT SERVICE GUIDE 2020 EDITION.
3. ALL MATERIALS SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
4. ALL GROUND RING CONDUCTORS AND GROUNDING ELECTRODE CONDUCTOR TO BE #2 AWG SOLID BARE TINNED COPPER (SBTC) .
5. ALL BELOW GRADE BONDS TO BE EXOTHERMIC WELDS. ABOVE GRADE BONDS TO BE COMPRESSION LUG CONNECTION OR EXOTHERMIC WELDS.
6. GROUND RING TO BE BURIED A MINIMUM OF 30IN BELOW GRADE. EXOTHERMICALLY WELD GROUND RING TO GROUND RODS.
7. ALL EXPOSED GROUNDING CONDUCTORS BETWEEN GRADE AND 6FT ABOVE GRADE TO BE PROTECTED FROM DAMAGE WITH NON-METALLIC LIQUID TIGHT.
8. GROUND RODS NEAREST TO SERVICE EQUIPMENT SHALL BE SPACED A MINIMUM OF THE SUM OF THE LENGTHS OF THE GROUND RODS (IEEE STD 142-1991, TABLE 9) AND LEFT EXPOSED FOR UTILITY INSPECTION (NEC 250.53).
9. PROVIDE METER BASE THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS: 120/240V, 1ϕ, 800A BUS RATING, 4X200A RING STYLE METER SOCKETS, WITH A NEMA 3R RATED ENCLOSURE.
10. CONNECT METER BASE NEUTRAL DIRECTLY TO GROUND RING.
11. GROUND H-FRAME MOUNTED METAL ENCLOSURES TO GROUND RING ACCORDING TO EQUIPMENT MANUFACTURER'S SPECIFICATIONS.
12. ALL GROUND CONDUCTORS BETWEEN H-FRAME ENCLOSURE/ EQUIPMENT AND THE GROUND RING TO BE #2 AWG BARE COPPER.



1 / E1.1 H-FRAME DETAIL (FRONT)
SCALE: NONE



2 / E1.1 H-FRAME DETAIL (BACK)
SCALE: NONE

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

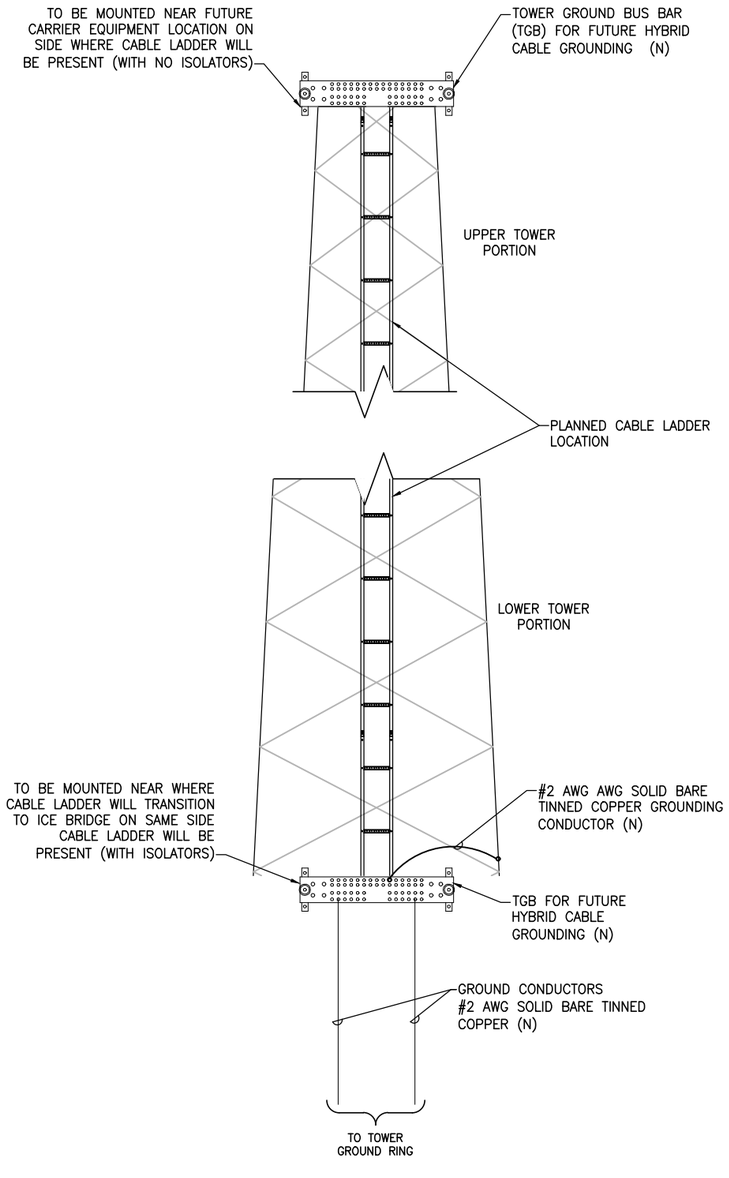
REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

DWN: JAA	DSN: ECO	APP: PTG	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

H-FRAME & METER BASE GROUNDING DETAILS & METER SPECIFICATIONS
E1.1

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 FOR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\E1.1 H-FRAME GROUNDING DETAIL_RECOVER.DWG | PLOT DATE: 241220



1 E1.2 TOWER GROUNDING DETAILS
SCALE: NTS

NOTES:

1. GROUND BARS TO BE MOUNTED DIRECTLY TO THE TOWER.
2. NEW GROUND BARS TO BE PROVIDED PER VERTICAL BRIDGE STANDARDS.
3. ALL BELOW GRADE BONDS TO BE EXOTHERMIC WELDS. ABOVE GRADE BONDS TO BE COMPRESSION LUG CONNECTION OR EXOTHERMIC WELDS.

LEGEND:

o EXOTHERMIC WELD OR COMPRESSION LUG (NOTE 3)

PANEL:	VERTICAL BRIDGE LOAD CENTER
LOCATION:	SITE COMMUNITY H-FRAME
TYPE:	QO1816M200FTRB OR SIMILAR
FEEDER SIZE:	(1) 2" CONDUIT (3) 3/0 AWG CU XHHW-2 (1) #6 AWG CU XHHW-2 GND
BUS RATING:	200 Amps
SHORT CIRCUIT RATING:	22 kA
CONFIGURATION:	1Ø, 240/120V, 3W, 60 Hz
FED FROM:	200A Meter Main

kVA per Leg

LOAD DESCRIPTION	LOAD TYPE	KVA	LF	BKR	CKT		L1	L2	CKT		BKR	LF	KVA	LOAD TYPE	LOAD DESCRIPTION
TOWER LIGHT	CONTINUOUS	1.54	1.25	20A/1P	1	L1	1.93		L1	2					
			1.00		3	L2		0.00	L2	4					
			1.00		5	L1	0.00		L1	6					
			1.00		7	L2		0.00	L2	8					
			1.00		9	L1	0.00		L1	10					
			1.00		11	L2		0.00	L2	12					
			1.00		13	L1	0.00		L1	14					
			1.00		15	L2		0.00	L2	16					

KVA PER LINE:	**1.93**	**0.00**
TOTAL CONNECTED LOAD (KVA):	**1.93**	
AMPS PER LINE:	**16.0**	**0.0**
TOTAL AMPS:	**8.0**	
NEUTRAL AMPS:	**16.0**	

2 E2.0 VERTICAL BRIDGE LOAD CENTER PANEL SCHEDULE
SCALE: NTS

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

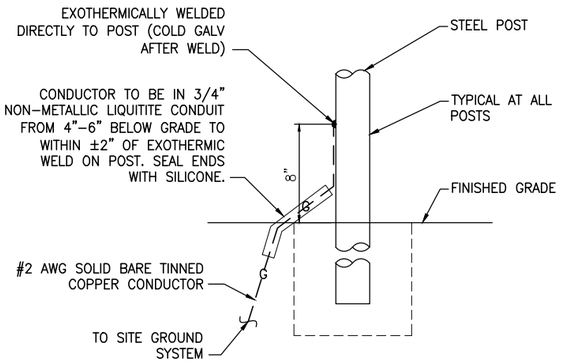
REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE CONSTRUCTION DRAWINGS
GULL LAKE

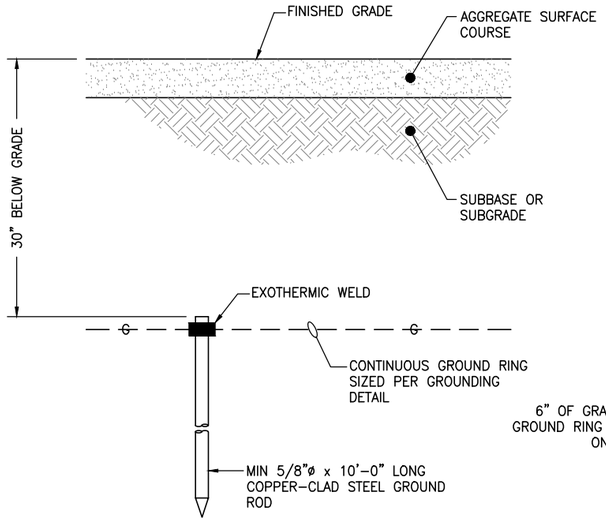
DWN: JAA	DSN: ECO	APP: PTG	REV A
JOB #: 23-0057-20	DATE: 24xxxx		

TOWER GROUNDING & PANEL SCHEDULE
E1.2

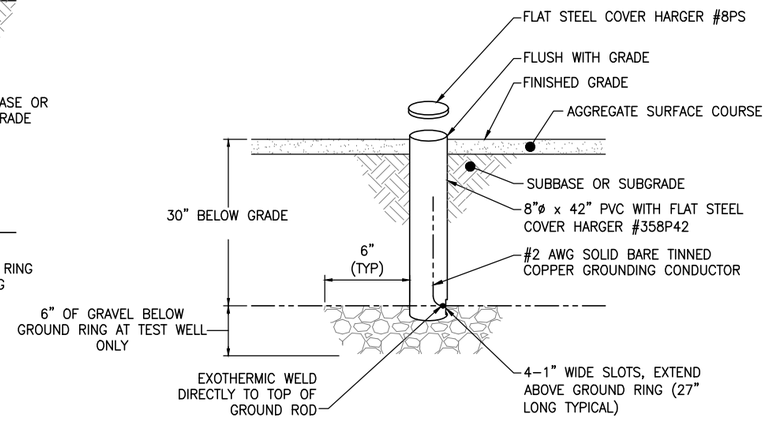
FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\E1.2 TOWER GROUNDING.DWG | PLOT DATE: 241219



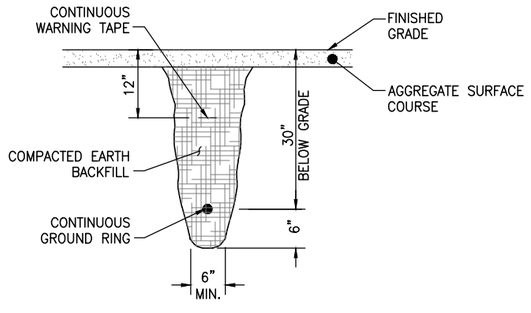
1 E1.3 POST GROUNDING DETAIL
SCALE: NONE



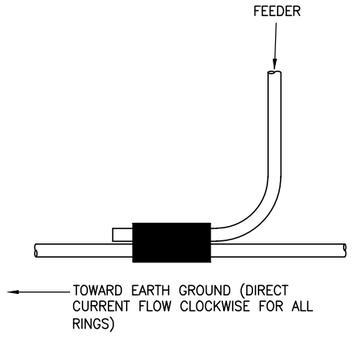
2 E1.3 GROUND ROD DETAIL
SCALE: NONE



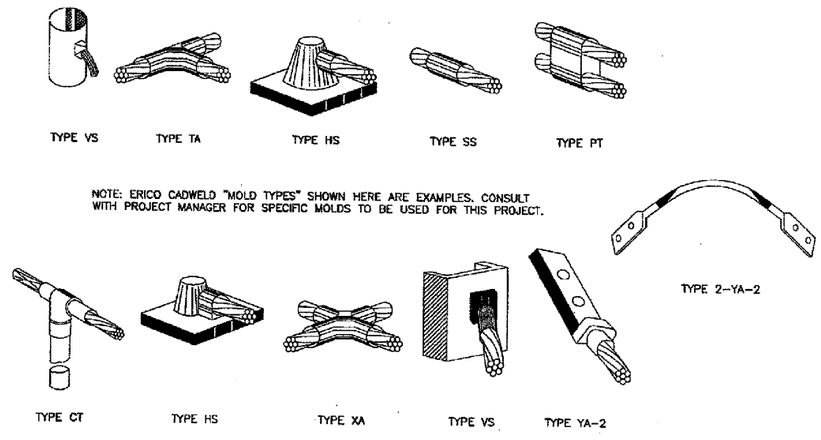
3 E1.3 GROUND TEST WELL DETAIL
SCALE: NONE



4 E1.3 TRENCH DETAIL FOR GROUND RING
SCALE: NONE



5 E1.3 GROUND CONDUCTOR CONNECTION
SCALE: NONE



6 E1.3 EXOTHERMIC WELD DETAILS
SCALE: NONE

NEW HORIZONS

vertical bridge

NOT FOR CONSTRUCTION

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

VERTICAL BRIDGE CONSTRUCTION DRAWINGS GULL LAKE

DWN: JAA	DSN: ECO	APP: PTG	REV
JOB #: 23-0057-20	DATE: 24xxxx		A

GROUNDING DETAILS

E1.3

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\E1.3 GROUNDING DETAILS_RECOVER.DWG | PLOT DATE: 241220

NOTES:

1. IF UTILITY TRANSFORMER NAMEPLATE CAPACITY IS IN EXCESS OF 167kVA, IF TRANSFORMER IMPEDANCE IS LESS THAN 2.5%, OR SERVICE CONDUCTORS ARE LARGER THAN 350 KCMIL, OR SERVICE CONDUCTOR LENGTH IS SHORTER THAN 18 FEET, PLEASE CONTACT ENGINEER TO RECALCULATE AVAILABLE FAULT CURRENT MAXIMUMS.
2. METER/MAINS SHALL BE MARKED WITH AVAILABLE FAULT CURRENT PER NEC 110.24 (A). MARKING ON METER/MAIN SHALL BE A DURABLE PLACARD STATING: "MAXIMUM AVAILABLE FAULT CURRENT IS 39.1kA, CALCULATED ON 12/13/2024".
3. CALCULATED AVAILABLE FAULT CURRENT AT METER/ MAIN IS 39.1kA.
4. CALCULATED AVAILABLE FAULT CURRENT AT VERTICAL BRIDGE LOAD CENTER IS 34.3kA.

Available Fault Current At Service Transformer				
Line to Line Voltage	E_{L-L}	=	240V	
Transformer Power Rating	S	=	167.0kVA	
Transformer Impedance	%Z	=	2.50%	
Full Load Amps	$I_{F.L.A.}$	=	696A	$I_{F.L.A.} = kVA \times 1000 \div E_{L-L}$
Transformer Multiplier	Multiplier	=	44.4	Multiplier = 100 ÷ (%Z x 0.9) for XFMR > 25KVA
Available Short Circuit Current (L-L)	I_{L-L}	=	34.0kA	I_{L-L}= Multiplier × $I_{F.L.A}$ x 1.1
Available Short Circuit Current (L-N)	I_{L-N}	=	51.0kA	I_{L-N}=1.5 x I_{L-L}

Available Fault Current At Meter/Main				
Line to Line Voltage (L-L)	E_{L-L}	=	240V	
Line to Neutral Voltage (L-N)	E_{L-N}	=	120V	
Conductor Material		=	AL	Copper, CU, or Aluminum, AL
Conductor Size		=	350 kcmil	AWG or kcmil
Conduit Type		=	Direct Bury or Nonmetallic	
Conductors Constant	C	=	16813	350 kcmil AL Direct Bury or in Nonmetallic conduit
Number of Conductors Per Phase	n	=	3	3 runs
Length of Conductors	L	=	18ft	Approximate
"f" Factor (L-L)	f_{L-L}	=	0.101	$f_{L-L} = 2 \times L \times I_{F.C.(L-L)} \div C \div n \div E_{L-L}$
"f" Factor (L-N)	f_{L-N}	=	0.304	$f_{L-N} = 2 \times L \times I_{F.C.(L-N)} \div C \div n \div E_{L-N}$
Short Circuit Multiplier (L-L)	M_{L-L}	=	0.908	$M_{L-L} = 1 \div (1 + f_{L-L})$
Short Circuit Multiplier (L-N)	M_{L-N}	=	0.767	$M_{L-N} = 1 \div (1 + f_{L-N})$
Available Fault Current At Meter/Main (L-L)	I_{L-L}	=	30.9kA	$I_{L-L} = M_{L-L} \times I_{F.C.(L-L)}$
Available Fault Current At Meter/Main (L-N)	I_{L-N}	=	39.1kA	$I_{L-N} = M_{L-N} \times I_{F.C.(L-N)}$

Available Fault Current At VB Load Center				
Line to Line Voltage (L-L)	E_{L-L}	=	240V	
Line to Neutral Voltage (L-N)	E_{L-N}	=	120V	
Conductor Material		=	CU	Copper, CU, or Aluminum, AL
Conductor Size		=	# 3/0 AWG	AWG or kcmil
Conduit Type		=	Direct Bury or Nonmetallic	
Conductors Constant	C	=	13923	# 3/0 AWG CU Direct Bury or in Nonmetallic conduit
Number of Conductors Per Phase	n	=	1	1 Run
Length of Conductors	L	=	3ft	Approximate
"f" Factor (L-L)	f_{L-L}	=	0.06	$f_{L-L} = 2 \times L \times I_{F.C.(L-L)} \div C \div n \div E_{L-L}$
"f" Factor (L-N)	f_{L-N}	=	0.14	$f_{L-N} = 2 \times L \times I_{F.C.(L-N)} \div C \div n \div E_{L-N}$
Short Circuit Multiplier (L-L)	M_{L-L}	=	0.947	$M_{L-L} = 1 \div (1 + f_{L-L})$
Short Circuit Multiplier (L-N)	M_{L-N}	=	0.877	$M_{L-N} = 1 \div (1 + f_{L-N})$
Available Fault Current At VzW Load Center (L-L)	I_{L-L}	=	29.3kA	$I_{L-L} = M_{L-L} \times I_{F.C.(L-L)}$
Available Fault Current At VzW Load Center (L-N)	I_{L-N}	=	34.3kA	$I_{L-N} = M_{L-N} \times I_{F.C.(L-N)}$

1 / E1.4 VB AIC CALCULATIONS
SCALE: NTS

NEW HORIZONS

vertical bridge

PRELIMINARY

REV	DESCRIPTION	DATE
A	INTERNAL REVIEW	24xxxx

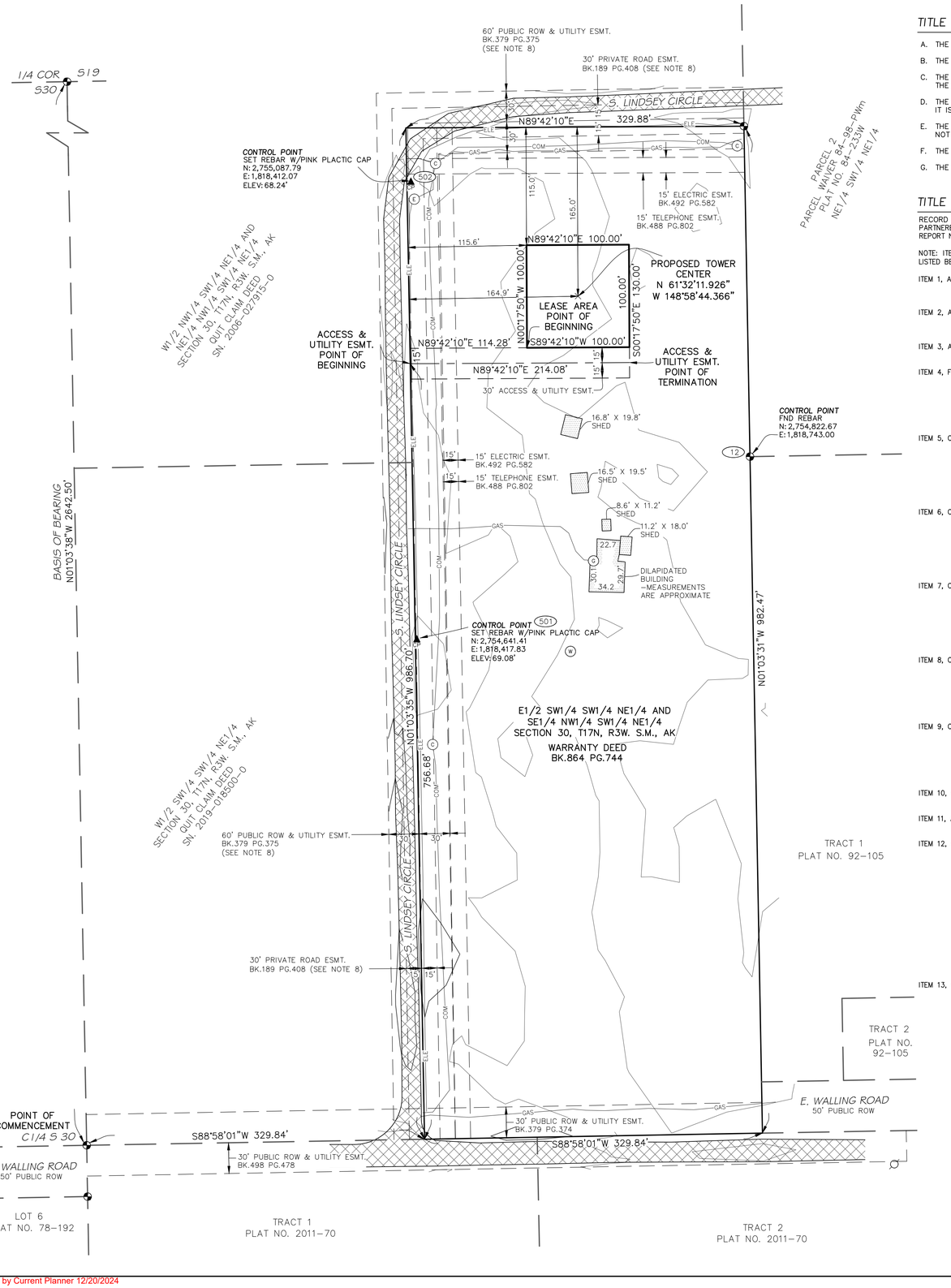
VERTICAL BRIDGE
CONSTRUCTION
DRAWINGS
GULL LAKE

DWN: JAA	DSN:	APP:	REV
JOB #: 23-0057-20	DATE: 230720		A

AIC
CALCULATIONS

E1.4

FILE: X:\23 JOBS\23-0057-20 VB - GULL LAKE US-AK-5280 POR\05-ENGR\CAD\03 - CONSTRUCTION DRAWINGS\E1.4 AIC CALCULATIONS.DWG | PLOT DATE: 241213



TITLE EXCEPTION STATEMENTS

A. THE EXCEPTION IS A STANDARD EXCEPTION AND NOT THE TYPE TO BE DEPICTED HEREON

B. THE EXCEPTION IS NOT LOCATED WITHIN THE PARENT PARCEL

C. THE EXCEPTION IS LOCATED WITHIN THE PARENT PARCEL, BUT IS NOT LOCATED WITHIN THE LEASE AREA OR ANY VB EASEMENTS

D. THE EXCEPTION IS LOCATED WITHIN THE PARENT PARCEL AND THE VB EASEMENTS, BUT IT IS NOT LOCATED WITHIN THE LEASE AREA

E. THE EXCEPTION IS LOCATED WITHIN THE PARENT PARCEL AND THE LEASE AREA, BUT IS NOT LOCATED WITHIN THE VB EASEMENTS

F. THE EXCEPTION IS BLANKET IN NATURE AND IS NOT PLOTTABLE

G. THE EXCEPTION DOES NOT HAVE THE SUFFICIENT DATA TO DETERMINE ITS LOCATION

TITLE REVIEW SUMMARY

RECORD INFORMATION BELOW PER TITLE REPORT NO. VTB-157733-C ISSUED BY TOWER TITLE PARTNERED WITH STEWART TITLE GUARANTEE COMPANY & MAT-SU TITLE AGENCY. HAVING A REPORT NO. OF MS219697, EFFECTIVE DATED JULY 20, 2023.

NOTE: ITEMS LISTED CORRESPOND WITH A LETTER THAT REFERS TO THE TITLE EXEMPTION STATEMENTS. LISTED BELOW, EG "ITEM 1, A" REFERS TO "THE EXEMPTION IS A STANDARD..."

ITEM 1, A: RESERVATIONS AND EXCEPTIONS AS CONTAINED IN THE UNITED STATES PATENT AND/OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF, SAID PATENT WAS RECORDED JANUARY 10, 1985 IN BOOK 398 AT PAGE 719.

ITEM 2, A: RESERVATIONS AND EXCEPTIONS AS CONTAINED IN THE STATE OF ALASKA PATENT AND/OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF, SAID PATENT WAS RECORDED APRIL 11, 1973 IN BOOK 71 AT PAGE 40.

ITEM 3, A: TAXES AND/OR ASSESSMENTS, IF ANY, DUE THE MATANUSKA-SUSITNA BOROUGH. TAX ACCOUNT NO.:117N03E30A012

ITEM 4, F: EASEMENT FOR ELECTRICAL TRANSMISSION AND/OR TELEPHONE DISTRIBUTION AND INCIDENTAL PURPOSES, INCLUDING TERMS AND PROVISIONS THEREOF:

GRANTED TO: MATANUSKA ELECTRIC ASSOCIATION,INC.
RECORDED: OCTOBER 6, 1961
BOOK: 39 PAGE: 312
AFFECTS: BLANKET EASEMENT

ITEM 5, C: EASEMENT, INCLUDING TERMS AND PROVISIONS THEREOF, FOR THE PURPOSE SET OUT THEREIN, TO THE RECORD OF WHICH REFERENCE IS HEREBY MADE:

IN FAVOR OF:LEONARD R. PAYNE
FOR:ROADWAY
RECORDED: APRIL 26, 1979
BOOK: 189 PAGE: 408
AFFECTS: A 30 FOOT EASEMENT AS DESCRIBED THEREIN

ITEM 6, C: EASEMENT, INCLUDING TERMS AND PROVISIONS THEREOF, FOR THE PURPOSE SET OUT THEREIN, TO THE RECORD OF WHICH REFERENCE IS HEREBY MADE:

IN FAVOR OF:MATANUSKA-SUSITNA BOROUGH
FOR:PUBLIC RIGHT OF WAY
RECORDED: SEPTEMBER 18, 1984
BOOK: 379 PAGE: 374
AFFECTS: THE SOUTH 30 FEET

ITEM 7, C: EASEMENT, INCLUDING TERMS AND PROVISIONS THEREOF, FOR THE PURPOSE SET OUT THEREIN, TO THE RECORD OF WHICH REFERENCE IS HEREBY MADE:

IN FAVOR OF:MATANUSKA-SUSITNA BOROUGH
FOR:PUBLIC RIGHT OF WAY
RECORDED: SEPTEMBER18, 1984
BOOK: 379 PAGE: 375
AFFECTS: A 60 FOOT EASEMENT AS FURTHER DESCRIBED THEREIN

ITEM 8, C: EASEMENT FOR ELECTRICAL TRANSMISSION AND/OR TELEPHONE DISTRIBUTION AND INCIDENTAL PURPOSES, INCLUDING TERMS AND PROVISIONS THEREOF:

GRANTED TO:MATANUSKA TELEPHONE ASSOCIATION,INC.
RECORDED: OCTOBER 15, 1986
BOOK: 488 PAGE: 802
AFFECTS: AS DESCRIBED THEREIN

ITEM 9, C: EASEMENT FOR ELECTRICAL TRANSMISSION AND/OR TELEPHONE DISTRIBUTION AND INCIDENTAL PURPOSES, INCLUDING TERMS AND PROVISIONS THEREOF:

GRANTED TO:MATANUSKA ELECTRIC ASSOCIATION,INC.
RECORDED: NOVEMBER 14, 1986
BOOK: 492 PAGE: 582
AFFECTS: AS DESCRIBED THEREIN

ITEM 10, A: RIGHTS OF THE PUBLIC AND/OR GOVERNMENTAL AGENCIES, IN AND TO ANY PORTION OF SAID LAND LYING WITHIN THE BOUNDARIES OF S. LINDSEY CIRCLE AND E. WALLING ROAD.

ITEM 11, A: UNRECORDED LEASES, SUBLEASES AND/OR RENTAL AGREEMENTS, INCLUDING TERMS AND PROVISIONS THEREOF.

ITEM 12, A: WE HAVE BEEN ADVISED THE POLICY TO BE ISSUED WILL INSURE A LEASEHOLD ESTATE. UPON CREATION OF THE LEASEHOLD ESTATE, WE WILL AMEND OUR COMMITMENT TO REFLECT A LEASEHOLD DESCRIPTION. ADDITIONAL EXCEPTIONS OR REQUIREMENTS MAY BE MADE AT THAT TIME. THE FINAL POLICY TO BE ISSUED WILL CONTAIN AN ALTA 13-06 ENDORSEMENT, A SAMPLE IS AVAILABLE UPON REQUEST.

NOTE: THE FOLLOWING EXCEPTIONS WILL APPEAR ON THE LEASEHOLD POLICY TO BE ISSUED:

A) ANY FACTS, RIGHTS, INTERESTS OR CLAIMS WHICH ARE NOT SHOWN BY THE PUBLIC RECORD BUT WHICH COULD BE ASCERTAINED BY MAKING INQUIRY OF THE LESSORS IN THE LEASE OR LEASES DESCRIBED OR REFERRED TO IN THE DESCRIPTION CAPTION HEREIN.

B) TERMS, CONDITIONS AND PROVISIONS TO THE LEASE OR LEASES DESCRIBED IN THE DESCRIPTION CAPTION HEREIN.

ITEM 13, A: PROOF THAT THE TOWERS, LLC IS AN ENTITY CAPABLE OF HOLDING TITLE. THE COMPANY HEREIN WILL REQUIRE SUBMISSION OF THE DOCUMENTS CREATING THE ABOVE ENTITY FOR ITS REVIEW. UPON SAID REVIEW, ADDITIONAL EXCEPTIONS OR REQUIREMENTS MAY BE ADDED.

NOTE 1: THE STREET ADDRESS OF THE PROPERTY DESCRIBED HEREIN ACCORDING TO THE MATANUSKA SUSITNA BOROUGH RECORDS IS AS FOLLOWS:
4075 S. LINDSEY CIRCLE, PALMER,AK 99645
TAX ACCOUNT NUMBER: 117N03E30A012

NOTE NO. 2: 30 YEAR CHAIN OF TITLE AS DISCLOSED BY DEED RECORDED AUGUST 12, 1991 IN BOOK658 AT PAGE 888 AND DEED RECORDED SEPTEMBER 12, 1996 IN BOOK 864 AT PAGE 744, A COPY OF WHICH IS ATTACHED TO THE ORIGINAL PRELIMINARY TITLE COMMITMENT.

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY TO: VERTICAL BRIDGE REIT, LLC, A DELAWARE LIMITED LIABILITY COMPANY, ITS SUBSIDIARIES, AND THEIR RESPECTIVE SUCCESSORS AND/OR ASSIGNS; AND (ii) TORONTO DOMINION (TEXAS) LLC, AS ADMINISTRATIVE AGENT, FOR ITSELF AND ON BEHALF OF THE LENDERS PARTIES FROM THE TIME TO TIME THAT CERTAIN SECOND AMENDED AND RESTATED LOAN AGREEMENT DATED JUNE 17, 2016 WITH VERTICAL BRIDGE HOLDCO, LLC AS BORROWER, AND VERTICAL BRIDGE HOLDCO PARENT, LLC, AS PARENT, AS MAY BE AMENDED, RESTATED, MODIFIED OR RENEWED, THEIR SUCCESSORS AND ASSIGNS AS THEIR INTERESTS MAY APPEAR; AND STEWART TITLE OF KENAI PENINSULA.

10/5/2023

MARK A. AIMONETTI
AKPLS 13022

DATE

DESCRIPTION OF SUBJECT PROPERTY: (PER TITLE REPORT)

INFORMATION PER TITLE REPORT NO. VTB-157733-C ISSUED BY TOWER TITLE PARTNERED WITH STEWART TITLE GUARANTEE COMPANY & MAT-SU TITLE AGENCY. HAVING A REPORT NO. OF MS219697, EFFECTIVE DATED JULY 20, 2023.

TITLE IS VESTED IN:

JEFF COTTERMAN, A SINGLE MAN

THE EAST ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (E1/2 SW1/4 SW1/4 NE1/4) AND THE SOUTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NW1/4 SW1/4 NE1/4) OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 3 EAST, SEWARD MERIDIAN, LOCATED IN THE PALMER RECORDING DISTRICT,THIRD JUDICIAL DISTRICT, STATE OF ALASKA.

TAX ACCOUNT NO.:117N03E30A012

LEGAL DESCRIPTIONS

LEASE SITE NO. US-AK-5280 GULL TOWER

BEING A PORTION OF LAND LOCATED IN THE EAST 1/2 OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (E1/2 SW1/4 SW1/4 NE1/4) AND THE SOUTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NW1/4 SW1/4 NE1/4) OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 3 EAST, SEWARD MERIDIAN, ALASKA, AS DESCRIBED IN WARRANTY DEED RECORDED SEPTEMBER 12, 1996 IN THE PALMER RECORDING DISTRICT, THIRD JUDICIAL DISTRICT, STATE OF ALASKA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER SECTION CORNER OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 3 EAST, SEWARD MERIDIAN, ALASKA; THENCE ALONG THE CENTER SECTION LINE, NORTH 88°58'01" WEST A DISTANCE OF 329.84 FEET TO THE SOUTHWEST CORNER OF THE EAST 1/2 OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (E1/2 SW1/4 SW1/4 NE1/4); THENCE ALONG THE WEST LINE THEREOF NORTH 01°03'35" WEST A DISTANCE OF 771.68 FEET; THENCE DEPARTING SAID WEST LINE ON A BEARING PARALLEL WITH AND 215.00 FEET SOUTH OF THE NORTH LINE OF SAID SOUTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NW1/4 SW1/4 NE1/4) OF SECTION 30 NORTH 89°42'10" EAST A DISTANCE OF 114.28 FEET TO THE POINT OF BEGINNING; THENCE FROM SAID POINT OF BEGINNING THE FOLLOWING FOUR COURSES AND DISTANCES:

1. NORTH 00°17'50" WEST A DISTANCE OF 100.00 FEET;
2. NORTH 89°42'10" EAST A DISTANCE OF 100.00 FEET;
3. SOUTH 00°17'50" EAST A DISTANCE OF 100.00 FEET; AND
4. SOUTH 89°42'35" WEST A DISTANCE OF 100.00 FEET TO THE POINT OF BEGINNING.

SAID LEASE AREA CONTAINING 10,000 SQUARE FEET, MORE OR LESS.

ACCESS & UTILITY EASEMENT FOR LEASE SITE NO. US-AK-5280 GULL TOWER

BEING A THIRTY FOOT (30') STRIP OF LAND MEASURED FIFTEEN FEET (15') ON EACH SIDE OF A CENTERLINE LOCATED IN THE EAST 1/2 OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (E1/2 SW1/4 SW1/4 NE1/4) AND THE SOUTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NW1/4 SW1/4 NE1/4) OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 3 EAST, SEWARD MERIDIAN, ALASKA, AS DESCRIBED IN WARRANTY DEED RECORDED SEPTEMBER 12, 1996 IN THE PALMER RECORDING DISTRICT, THIRD JUDICIAL DISTRICT, STATE OF ALASKA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER SECTION CORNER OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 3 EAST, SEWARD MERIDIAN, ALASKA; THENCE ALONG THE CENTER SECTION LINE, NORTH 88°58'01" WEST A DISTANCE OF 329.84 FEET TO THE SOUTHWEST CORNER OF THE EAST 1/2 OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (E1/2 SW1/4 SW1/4 NE1/4); THENCE ALONG THE WEST LINE THEREOF NORTH 01°03'35" WEST A DISTANCE OF 756.68 FEET TO THE POINT OF BEGINNING; THENCE DEPARTING SAID WEST LINE ON A BEARING PARALLEL WITH AND 230.00 FEET SOUTH OF THE NORTH LINE OF SAID SOUTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NW1/4 SW1/4 NE1/4) OF SECTION 30 NORTH 89°42'10" EAST A DISTANCE OF 214.08 FEET, BEING THE POINT OF TERMINATION FOR THIS DESCRIPTION.

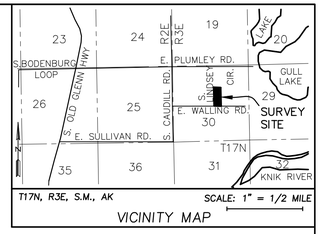
SIDELINES ARE EXTENDED OR SHORTENED TO TERMINATE AT SAID WEST LINE AND THE EXTENSION OF THE EAST LINE OF THE LEASE AREA.

SAID LEASE AREA CONTAINING 6,450 SQUARE FEET, MORE OR LESS.

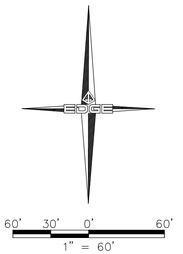
THE BASIS OF BEARINGS FOR BOTH DESCRIPTIONS IS ALASKA STATE PLANE COORDINATE, ZONE 4, (NAD83(2011) EPOCH 2010.000 IN U.S. FEET AS MEASURED BETWEEN THE TWO FOUND MONUMENTS ON THE CENTER SECTION LINE OF SECTION 30, T17N, R3E, S.M., AK AND HAVING A BEARING N01°03'38"W

NOTES

1. THIS DRAWING IS BASED ON A FIELD SURVEY PERFORMED BY EDGE SURVEY AND DESIGN, LLC ON AUGUST 28, 2023.
2. ELEVATIONS SHOWN HEREON ARE NAVD88 ORTHOMETRIC HEIGHTS, GEOID 12B AS DETERMINED BY A NGS OPUS SOLUTION.
3. COORDINATES SHOWN HEREON ARE ALASKA STATE PLANE COORDINATE ZONE 4, NAD83(2011), EPOCH 2010.000 IN US SURVEY FEET DERIVED FROM AN OPUS SOLUTION OF CONTROL POINT 501.
4. THE BASIS OF BEARINGS FOR IS ALASKA STATE PLANE COORDINATE SYSTEM, ZONE 4 AS MEASURED BETWEEN THE TWO FOUND MONUMENTS ON THE CENTER SECTION LINE OF SECTION 30, T17N, R3E, S.M., AK AND HAVING A BEARING OF N01°03'38"W.
5. SITE NUMBER: US-AK-5280
   SITE NAME: GULL LAKE
   SITE ADDRESS: 4075 LINDSEY CIRCLE, BUTTE, AK 99645
6. LEASE AREA IS UNDISTURBED NATURAL TERRAIN WITH 1' UNDULATIONS COVERED WITH MATURE; SPRUCE, BIRCH AND COTTONWOOD TREES.
7. BY GRAPHIC PLOTTING ONLY, THIS PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. THIS PROPERTY IS IN ZONE X, AN AREA THAT IS OUTSIDE THE 0.2% CHANCE FLOODPLAIN; FLOOD INSURANCE RATE MAP IDENTIFIED AS MAP NO. 02170C8190F BEARING AN EFFECTIVE DATE OF MARCH 17, 2011 WAS USED TO DETERMINE THE FLOOD ZONE. EXACT DESIGNATION CAN ONLY BE DETERMINED BY AN ELEVATION CERTIFICATE.
8. THE CENTERLINE OF THE 60' ROAD & UTILITY EASEMENT PER BK.378 PG.375 AND 30' PRIVATE ROAD EASEMENT PER BK.189 PG.408 ARE NOT CENTERED ON NORTH & WEST LINE OF THE SUBJECT PARCEL. THE EXISTING ROAD FALLS ENTIRELY WITHIN SAID EASEMENTS AS SHOWN HEREON.
9. AT THE TIME OF THE SURVEY, NO VISIBLE ENCROACHMENTS WERE EVIDENT ONTO OR BEYOND THE LEASE AREA OR ANY VB EASEMENTS.
10. ACCESS AND UTILITY EASEMENTS GO TO S. LINDSEY CIRCLE, A RECORDED PUBLIC RIGHT-OF-WAY EASEMENT. SEE ITEM 7.
11. ALL LEASE AREA AND EASEMENTS ARE WITHIN THE PARENT PARCEL.
12. IT IS RECOMMENDED THAT THE CONTRACTOR CALLS 811 PRIOR TO CONSTRUCTION.



VICINITY MAP



LEGEND

●	FOUND MONUMENT AS NOTED
▲ CP	SURVEY CONTROL POINT
	UTILITY POLE
C	MISC. COMMUNICATION PEDESTAL
W	WELL
E	ELECTRIC VAULT
G	GAS METER
###	POINT NUMBER
ROW	RIGHT-OF-WAY
ESMT.	EASEMENT
	PROPERTY LINE
	ADJACENT PROPERTY LINE
	EASEMENT LINE
X X X X X X	EDGE OF ROAD
GAS	UNDERGROUND GAS
ELE	UNDERGROUND ELECTRIC
COM	UNDERGROUND COMMUNICATION
	BUILDING
100'	CONTOUR LINE
	LEASE BOUNDARY
	PROPOSED EASEMENT

FAA 1A CERTIFICATE INFORMATION

THE COORDINATES BELOW ARE ACCURATE TO WITHIN 20± FEET HORIZONTALLY AND THAT THE GROUND ELEVATION IS ACCURATE TO WITHIN 3± FEET VERTICALLY.

PROPOSED TOWER LATITUDE: NORTH 61°32'11.926"

PROPOSED TOWER LONGITUDE: WEST 148°58'44.364"

EXISTING GROUND ELEVATION: 67.4'

EDGE
SURVEY AND DESIGN, LLC
8000 KING STREET ANCHORAGE, AK 99518
Phone (907) 344-5990 Fax (907) 344-7794
ACEL # 1392 WWW.EDGESURVEY.NET

US-AK-5280 GULL LAKE TOWER
4075 LINDSEY CIRCLE, BUTTE, ALASKA
EXISTING CONDITIONS SURVEY
SE1/4 SW1/4 SW1/4 NE1/4 AND
SE1/4 NW1/4 SW1/4 NE1/4
SECTION 30, T17N, R3W. S.M., AK
PALMER RECORDING DISTRICT, THIRD JUDICIAL DISTRICT

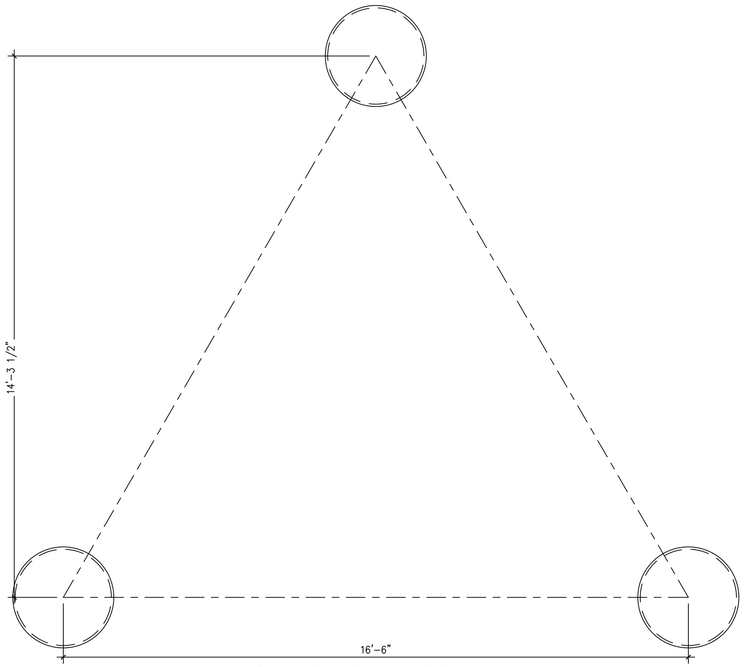
DRAWN BY:	DATE:	PROJECT NO:
SH/VB	10/5/2023	23-203
CHECKED BY:	SCALE:	SHEET:
MA	1" = 60'	1 OF 1

STATE OF ALASKA 49TH
Mark A. Aimonetti
No. 13022 - S
10/5/2024
REGISTERED PROFESSIONAL LAND SURVEYOR

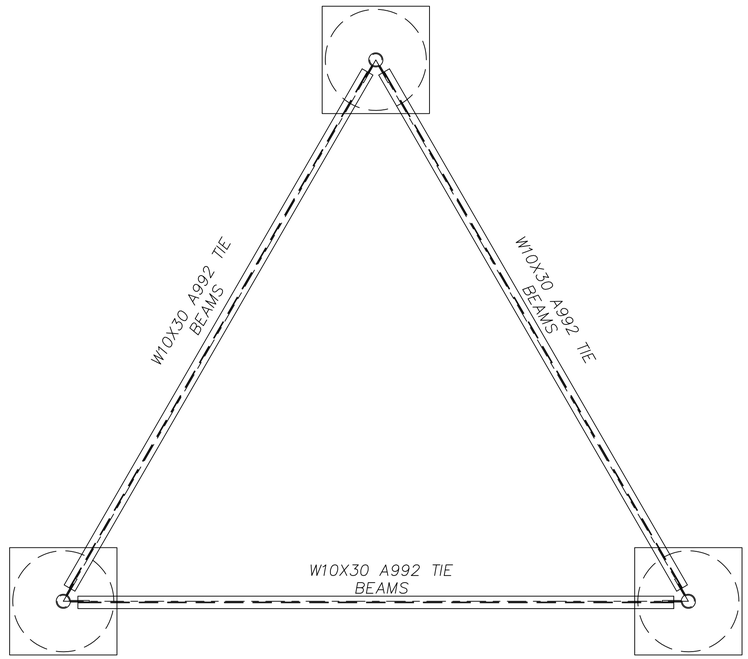
vertical bridge

CERTIFIED CARBON NEUTRAL company
CarbonNeutral.com

Recieved by Current Planner 12/20/2024



1 S1 PILE FOUNDATION PLAN
SCALE: 1/2":1'



2 S1 FOUNDATION FRAME
SCALE: 1/2":1'

1.0 GENERAL LOADING

BUILDING CODES:
INTERNATIONAL BUILDING CODE 2021
TIA-222-H
AMERICAN INSTITUTE OF STEEL CONSTRUCTION, 13TH EDITION
DESIGN LEG REACTIONS
MAX LEG SHEAR: 31 KIPS
MAX LEG UPLIFT: 346 KIPS
MAX COMPRESSION: 396 KIPS

2.0 GENERAL CONDITIONS

THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND SECTIONS AND REPORT ANY DISCREPANCY TO THE ENGINEER PRIOR TO THE FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.
THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORTS THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
THE PROJECT SPECIFICATIONS SHALL BE CONSIDERED AN INTEGRAL PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REVIEW THE SPECIFICATIONS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REQUIREMENTS AND PUBLIC AGENCIES SAFETY ORDINANCES.
DESIGN BASED ON B+T GROUP, DESIGN A653 – GULL LAKE, DATED 12/28/23.
SOIL REPORT BASED ON DELTA OAKS GROUP PROJECT GE024-20636-08, DATED 1/31/2024.

3.0 STEEL

MONOPOLE FOUNDATION PILE SHALL BE 32" DIA X 3/4" WALL ASTM A252 GR 3, 50 KSI YIELD MIN.

ALL STRUCTURAL STEEL SHALL BE ASTM A992 GR B, 50 KSI U.N.O..

SPECIAL INSPECTION BY QUALIFIED REPRESENTATIVE IS REQUIRED.

ALL WELDING SHALL BE PERFORMED BY AWS D1.1 QUALIFIED WELDERS USING QUALIFIED PROCEDURES.

ALL STRUCTURAL STEEL FOR THE TOWER FOUNDATION SHALL BE PROTECTED WITH A THREE PART COATING SYSTEM APPLIED AFTER FABRICATION AS FOLLOWS:
–SHOP PREPARATION: CLEAN ALL SURFACES ACCORDING TO SSPC-10 NEAR WHITE BALST-CLEANING. SURFACES SHALE HAVE A 2 TO 3 MIL SURFACE PROFILE WITH SHARP PATTERN,
– SHOP PRIMER: 2-4 MIL COAT OF DEVOE CATHA-COAT 302H.
– SHOP PAINT: TWO 4-8 MIL COATES DEVOE BAR-RUST 235.
– TOP COAT: 2-3 MIL COAT DEVOE DEVTHANE 389.
– FIELD PAINT EXPOSED PILE, WELDS, TOUCH UP AND REPAIRS AS REQUIRED.

4.0 PILE DRIVING

48 HOUR PRIOR NOTICE REQUIRED FOR PILE HAMMER TYPE APPROVAL BY THE ENGINEER OF RECORD.

THE PILE HAMMER SHALL HAVE A MINIMUM RATING OF 40,000 FT-LBS. IF PILE ENCOUNTERS REFUSAL PRIOR TO ACHIEVING MINIMUM DEPTH, CONTACT THE ENGINEER OR RECORD.

PILE TOLERANCE SHALL NOT EXCEED ½" PER 10 FEET VERTICAL AND +/- 3" HORIZONTAL.

5.0 SITE PREPARATION

SITE GRADING SHALL BE DESIGNED TO ROUTE SURFACE WATER AROUND AND AWAY FROM THE TOWER BASE.

6.0 INSPECTIONS

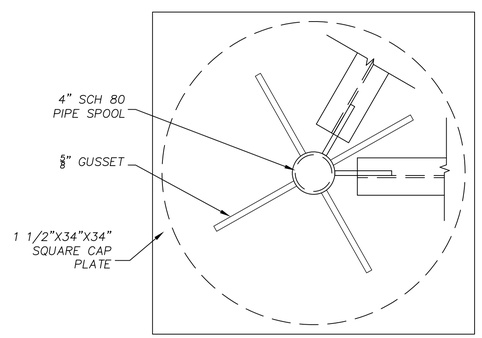
THE CONTRACTOR IS RESPONSIBLE FOR ALL SPECIAL INSPECTIONS AND FIELD REPORTS. SUBMIT TO THE ENGINEER OF RECORD FOR APPROVAL.

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

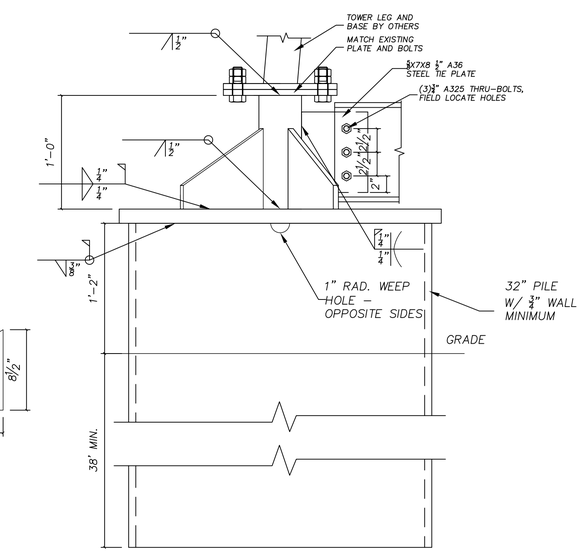
VERIFICATION AND INSPECTION	FREQUENCY	INSPECTION
INSPECTION OF STEEL TYPE AND GRADE.	PERIODIC	INSPECT PRIOR TO FABRICATION
INSPECTION OF WELDS < 3/8"	PERIODIC	PER IBC 1704 AND D1.1
INSPECTION OF WELDS > 3/8"	CONTINUOUS	PER IBC 1704 AND D1.1
BOLTED CONNECTIONS	PERIODIC	PER IBC 1704

REQUIRED VERIFICATION AND INSPECTION OF DRIVEN DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION	FREQUENCY	INSPECTION
VERIFY ELEMENT MATERIALS, SIZES AND LENGTHS COMPLY WITH THE REQUIREMENTS.	ONE TIME	INSPECTED PRIOR TO INSTALLATION
OBSERVE DRIVING OPERATIONS AND MAINTAIN ENGINEER COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	CONTINUOUS	PROVIDE LOGS TO OF RECORD



A S1 PILE CAP
SCALE: 1 1/2":1'



B S1 PILE CONNECTIONS
SCALE: 1 1/2":1'

vertical bridge
750 Park of Commerce Drive,
Boca Raton, FL 33487
(561) 948-6367

ANDREW P. ADAMS, PE
CONSULTING ENGINEER
PO BOX 876303
WASILLA, AK 99687
CONTACT: 907-947-9303

STATE OF ALASKA 49 TH
Andrew P. Adams
No. SE13603
REGISTERED PROFESSIONAL ENGINEER
9/3/2024

SITE NAME - GULL LAKE
US-AK-5280

4075 S LINDSEY CIRCLE
PALMER, ALASKA 99645
LAT: 61° 32' 11.926" N
LONG: 148° 58' 44.364" W

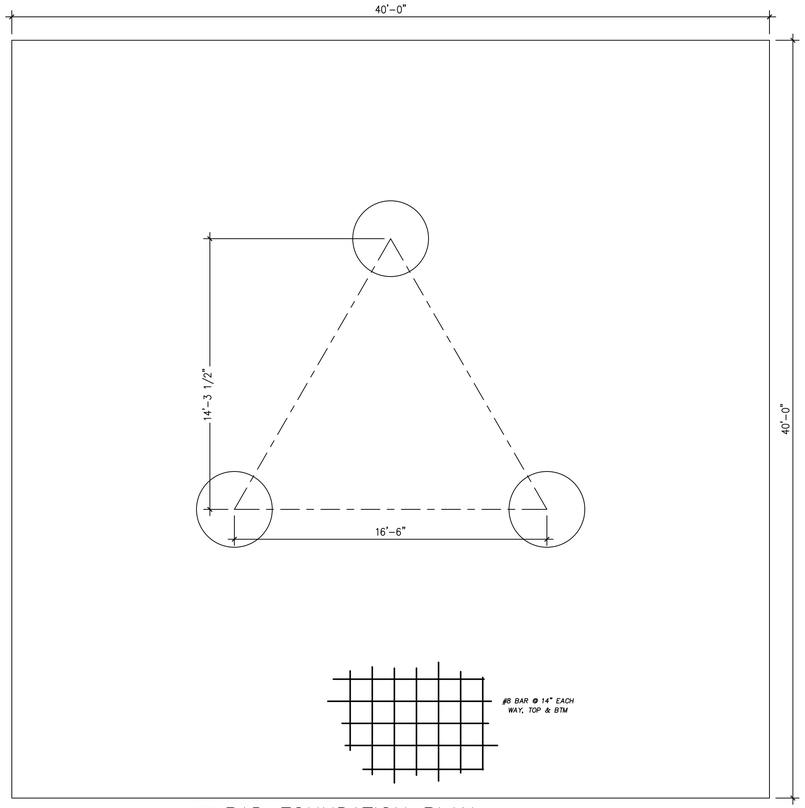
REVISION SCHEDULE		
REV	DATE	ISSUED FOR
A	9/2/24	REVIEW
0	9/3/24	CONSTRUCTION

PERMIT NUMBER: TBD
PROJECT NUMBER: 240901A
DATE ISSUED: 9/2/2024
DRAWN BY: AA CHECKED BY: PD
SHEET TITLE
PILING FOUNDATION

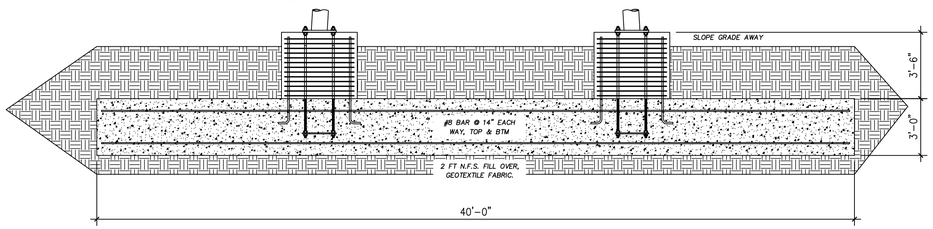
SHEET NO. S1
REVISION A

FOR CONSTRUCTION

PLOT DATE: 9/3/2024
THIS DRAWING IS PLOTTED FOR ANSI-D (22x34)



1 S2 PAD FOUNDATION PLAN
SCALE: 1/4":1'



2 S2 FOUNDATION SECTION
SCALE: 3/8":1'

1.0 GENERAL LOADING

BUILDING CODES:
INTERNATIONAL BUILDING CODE 2021
TIA-222-H
AMERICAN INSTITUTE OF STEEL CONSTRUCTION 13TH ED.
DESIGN LEG REACTIONS
MAX LEG SHEAR: 31 KIPS
MAX LEG UPLIFT: 346 KIPS
MAX COMPRESSION: 396 KIPS

2.0 GENERAL CONDITIONS

THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND SECTIONS AND REPORT ANY DISCREPANCY TO THE ENGINEER PRIOR TO THE FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.
THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORTS THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
THE PROJECT SPECIFICATIONS SHALL BE CONSIDERED AN INTEGRAL PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REVIEW THE SPECIFICATIONS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REQUIREMENTS AND PUBLIC AGENCIES SAFETY ORDINANCES.

3.0 STEEL

ALL REBAR TO BE GRADE 60.

4.0 CONCRETE

STRUCTURAL CONCRETE SHALL COMPLY WITH AMERICAN CONCRETE INSTITUTE (ACI) CODES 318 AND 530, LATEST EDITION

CONCRETE SHALL HAVE 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
AGGREGATE: ASTM C33, 3/4" MAX
CEMENT: ASTM C150, TYPE I OR II
WATER: CLEAR, POTABLE
AIR ENTRAINMENT: ASTM C260, 3% – 6%

CONCRETE TO HAVE 3" COVER WHEN EXPOSED TO EARTH, AND 2" COVER ELSEWHERE.

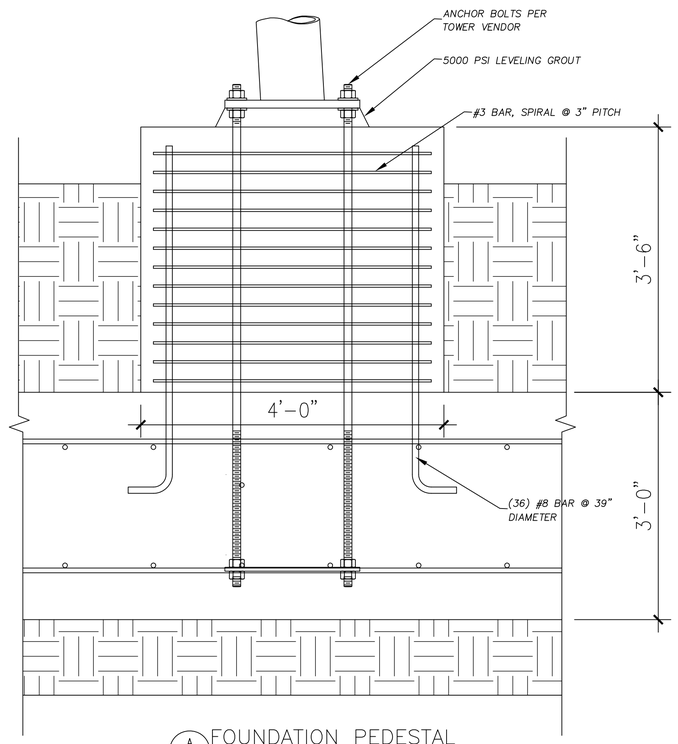
5.0 SAFETY

CONTRACTOR TO PROVIDE BRACING AND STABILIZATION PLAN FOR CONSTRUCTION.
ALL UTILITIES SHOULD BE LOCATED PRIOR TO CONSTRUCTION IF EXCAVATION IS REQUIRED. CALL-BEFORE-YOU DIG 811.
NECESSARY FALL PROTECTION EQUIPMENT IS REQUIRED DURING MODIFICATION OPERATIONS.

6.0 SITE PREPARATION

RECOMMEND EXCAVATION TO A DEPTH SUFFICIENT TO PLACE 2 FEET OF COMPACTED STRUCTURAL FILL BENEATH THE FOUNDATION. EXCAVATION WILL BE NEAR 8 FEET IN DEPTH. ANTICIPATE SANDY SOILS WITH TRACES OF SILT WILL BE PRESENT IN THE BASE OF THE EXCAVATION. INSTALL A GEOTEXTILE SEPARATOR. THE BASE OF THE EXCAVATION AFTER SUBGRADE PREPARATION TO SEPARATE THE GRAVEL FILL FROM THE UNDERLYING SOIL, AND TO LIMIT THE POTENTIAL FOR FINES TO MIGRATE UP INTO THE NON-FROST SUSCEPTIBLE (NFS) FILL. THE SEPARATOR FABRIC WILL ALSO IMPROVE FOUNDATION PERFORMANCE AS THE UNDERLYING COMPRESSIBLE SOILS CONSOLIDATE.

THE LIMITS OF EXCAVATION SHOULD INCLUDE THE ENTIRE FOUNDATION FOOTPRINT AND EXTEND LATERALLY AT LEAST 4 FEET BEYOND THE OUTSIDE EDGES OF THE FOUNDATION.



A S2 FOUNDATION PEDESTAL
SCALE: 1":1'

FOR CONSTRUCTION

vertical bridge
750 Park of Commerce Drive,
Boca Raton, FL 33487
(561) 948-6367

ANDREW P. ADAMS, PE
CONSULTING ENGINEER
PO BOX 876303
WASILLA, AK 99687
CONTACT: 907-947-9303

STATE OF ALASKA 49TH
Andrew P. Adams
No. SE13603
REGISTERED PROFESSIONAL ENGINEER
9/3/2024

SITE NAME - GULL LAKE
US-AK-5280

4075 S LINDSEY CIRCLE
PALMER, ALASKA 99645
LAT: 61° 32' 11.926" N
LONG: 148° 58' 44.364" W

REVISION SCHEDULE		
REV	DATE	ISSUED FOR
A	9/2/24	REVIEW
0	9/3/24	CONSTRUCTION

PERMIT NUMBER: TBD
PROJECT NUMBER: 240901A
DATE ISSUED: 9/2/2024
DRAWN BY: AA | CHECKED BY: PD

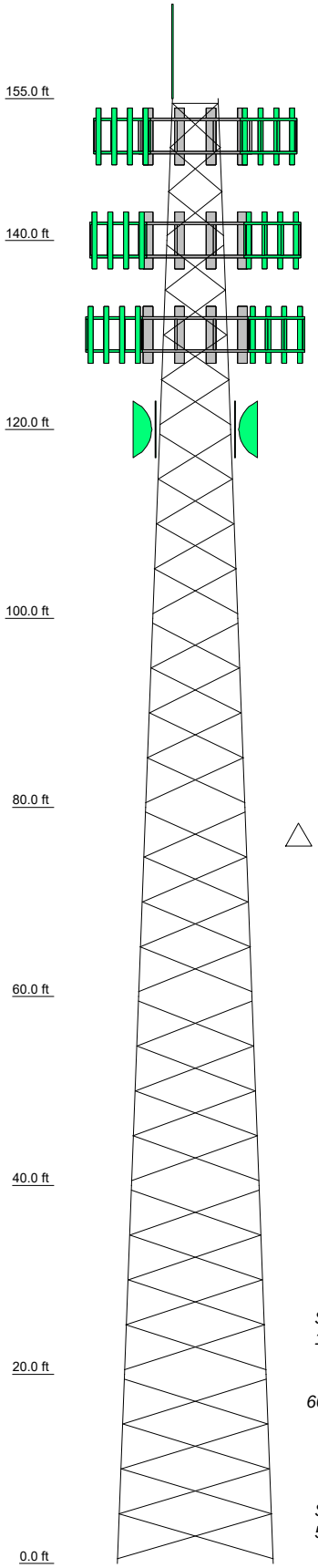
SHEET TITLE
PAD FOUNDATION

SHEET NO. S2 | REVISION A

PLOT DATE: 9/3/2024
THIS DRAWING IS PLOTTED FOR ANSI-D (22x34)

Attachment C:
Tower and Foundation Design Drawings

Section		T1	T2	T3	T4	T5	T6	T7	T8
Legs		SR 1 3/4	SR 2 1/4	SR 2 3/4	SR 3	SR 3 1/4	SR 3 1/2	SR 3 3/4	SR 4
Leg Grade		A529-50							
Diagonals		L1 3/4x1 3/4x3/16	L2x2x3/16	L2 1/2x2 1/2x3/16			L3x3x3/16		L3x3x1/4
Diagonal Grade		A36M-50							
Top Girts		L1 3/4x1 3/4x3/16	N.A.						
Face Width (ft)	16.5	6	7.5	9	10.5	12	13.5	15	
# Panels @ (ft)		3 @ 4.66667				28 @ 4.75			
Weight (K)	20.0	4.875	1.3	1.9	2.2	2.6	3.2	3.6	4.5
	0.7								



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 1"x10'	155	Sector1(CaAa=10000 Sq.in)No Ice (Carrier 3)	130
Sector1(CaAa=14000 Sq.in)No Ice (Carrier 1)	151	Sector2(CaAa=10000 Sq.in)No Ice (Carrier 3)	130
Sector2(CaAa=14000 Sq.in)No Ice (Carrier 1)	151	Sector3(CaAa=10000 Sq.in)No Ice (Carrier 3)	130
Sector3(CaAa=14000 Sq.in)No Ice (Carrier 1)	151	4 1/2" OD Dish Mount (Carrier 4)	120
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 2)	140	4 1/2" OD Dish Mount (Carrier 4)	120
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2)	140	6' MW Dish (Carrier 4)	120
Sector3(CaAa=10000 Sq.in)No Ice (Carrier 2)	140	6' MW Dish (Carrier 4)	120

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A529-50	50 ksi	65 ksi	A36M-50	50 ksi	65 ksi

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 121 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 60 mph basic wind with 0.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.000 ft
7. Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity.

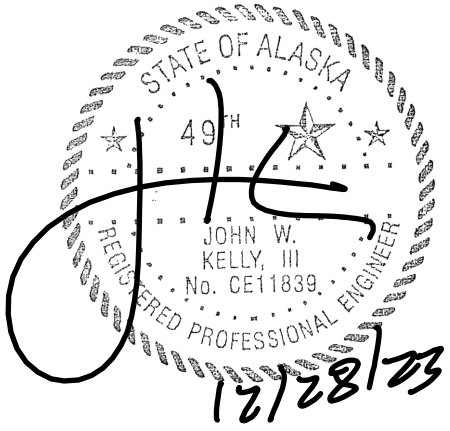
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 396 K
SHEAR: 31 K

UPLIFT: -346 K
SHEAR: 29 K

AXIAL 80 K
SHEAR 16 K *MOMENT 1654 kip-ft*
TORQUE 3 kip-ft
60 mph WIND - 0.500 in ICE

AXIAL 52 K
SHEAR 53 K *MOMENT 5418 kip-ft*
TORQUE 8 kip-ft
REACTIONS - 121 mph WIND

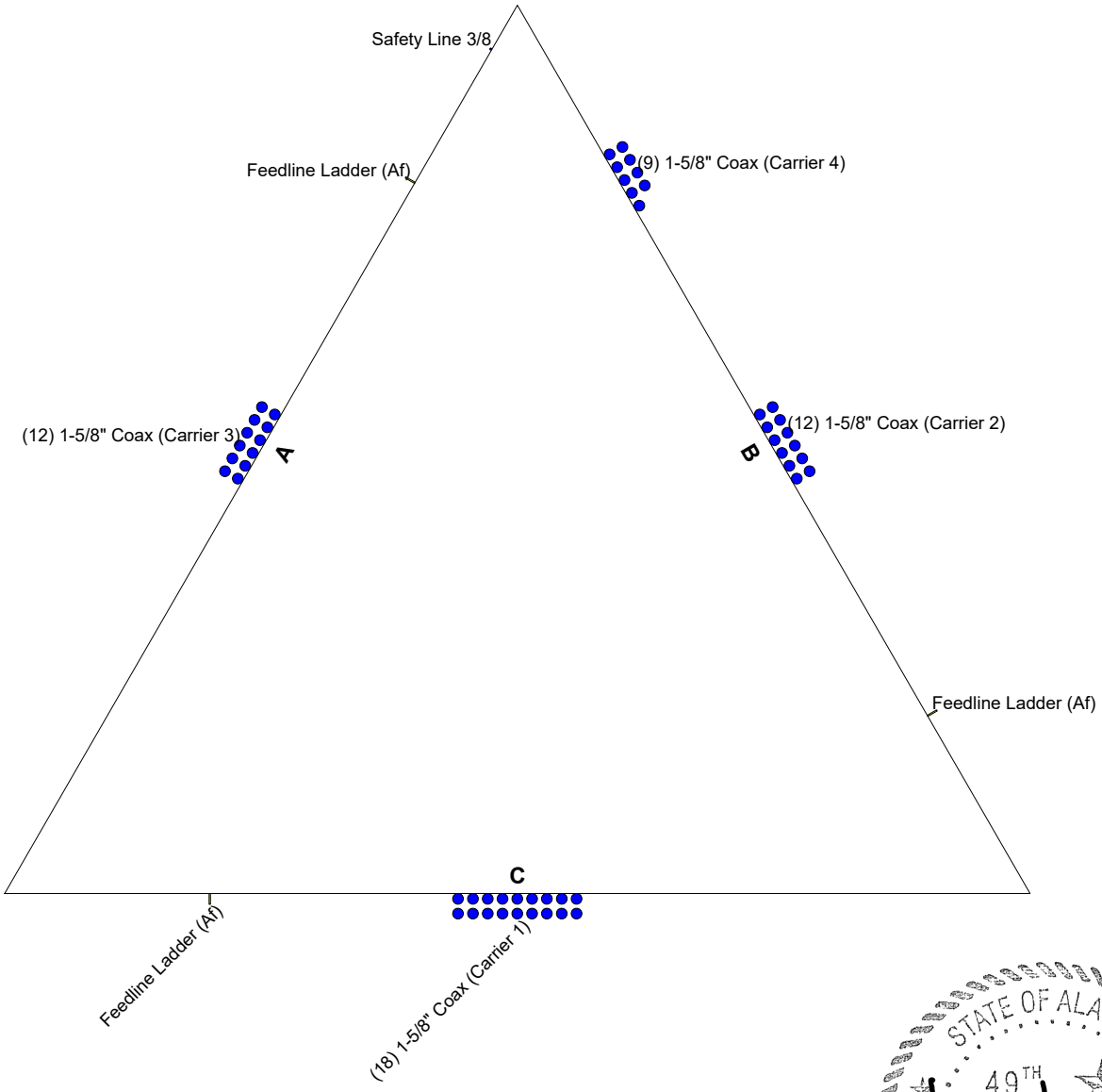


ARCOSA
TELECOM STRUCTURES

B+T GRP
B+T Group
1717 S Boulder Ave, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: A653 - Gull Lake (Site# US-AK-5280)			
Project: 155' SST/61.536646, -148.97899			
Client: Vertical Bridge	Drawn by: luke.antloger	App'd:	
Code: TIA-222-H	Date: 12/28/23	Scale: NTS	
Path: S:\Projects\Arcosa Telecom Structures\169347_A653_Gull Lake\Engineering\tnxTower\1223-064_155SST_Gull Lake.eri		Dwg No. E-1	

Feed Line Plan



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Job: ***A653 - Gull Lake (Site# US-AK-5280)***		
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Path: S:\Projects\Arcosa Telecom Structures\169347_A653_Gull Lake\Engineering\tnxTower\1223-064_155SST_Gull Lake.eri		Dwg No. E-7

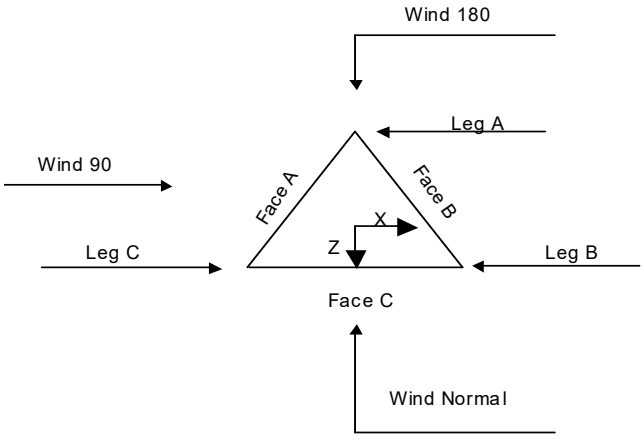
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 155.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 4.875 ft at the top and 16.500 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 66.000 ft.
Basic wind speed of 121 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 0.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 60 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Horizontals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Consider Moments - Diagonals	√	Use Clear Spans For Wind Area	√	SR Leg Bolts Resist Compression
	Use Moment Magnification	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Stress Ratios		Retension Guys To Initial Tension		Offset Girt At Foundation
√	Use Code Safety Factors - Guys	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Escalate Ice	√	Use Azimuth Dish Coefficients	√	Include Angle Block Shear Check
	Always Use Max Kz	√	Project Wind Area of Appurtenances		Use TIA-222-H Bracing Resist. Exemption
	Use Special Wind Profile		Alternative Appurt. EPA Calculation		Use TIA-222-H Tension Splice Exemption
√	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Poles
√	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Include Shear-Torsion Interaction
√	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Always Use Sub-Critical Flow
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Use Top Mounted Sockets
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Pole Without Linear Attachments
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole With Shroud Or No Appurtenances
	Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules		Outside and Inside Corner Radii Are Known



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	155.000-140.000			4.875	1	15.000
T2	140.000-120.000			6.000	1	20.000
T3	120.000-100.000			7.500	1	20.000
T4	100.000-80.000			9.000	1	20.000
T5	80.000-60.000			10.500	1	20.000
T6	60.000-40.000			12.000	1	20.000
T7	40.000-20.000			13.500	1	20.000
T8	20.000-0.000			15.000	1	20.000

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	155.000-140.000	4.667	X Brace	No	No	6.000	6.000
T2	140.000-120.000	4.750	X Brace	No	No	6.000	6.000
T3	120.000-100.000	4.750	X Brace	No	No	6.000	6.000
T4	100.000-80.000	4.750	X Brace	No	No	6.000	6.000
T5	80.000-60.000	4.750	X Brace	No	No	6.000	6.000
T6	60.000-40.000	4.750	X Brace	No	No	6.000	6.000
T7	40.000-20.000	4.750	X Brace	No	No	6.000	6.000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T8	20.000-0.000	4.750	X Brace	No	No	6.000	6.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 155.000-140.000	Solid Round	1 3/4	A529-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T2 140.000-120.000	Solid Round	2 1/4	A529-50 (50 ksi)	Equal Angle	L2x2x3/16	A36M-50 (50 ksi)
T3 120.000-100.000	Solid Round	2 3/4	A529-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36M-50 (50 ksi)
T4 100.000-80.000	Solid Round	3	A529-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36M-50 (50 ksi)
T5 80.000-60.000	Solid Round	3 1/4	A529-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36M-50 (50 ksi)
T6 60.000-40.000	Solid Round	3 1/2	A529-50 (50 ksi)	Equal Angle	L3x3x3/16	A36M-50 (50 ksi)
T7 40.000-20.000	Solid Round	3 3/4	A529-50 (50 ksi)	Equal Angle	L3x3x3/16	A36M-50 (50 ksi)
T8 20.000-0.000	Solid Round	4	A529-50 (50 ksi)	Equal Angle	L3x3x1/4	A36M-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 155.000-140.000	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)	Solid Round		A36M-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 155.000-140.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T2 140.000-120.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T3 120.000-100.0	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
00									
T4 100.000-80.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T5 80.000-60.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T6 60.000-40.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T7 40.000-20.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T8 20.000-0.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 155.000-140.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 140.000-120.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 120.000-100.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 100.000-80.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 80.000-60.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 60.000-40.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 40.000-20.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 20.000-0.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 155.000-140.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 140.000-120.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 120.000-100.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 100.000-80.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T5 80.000-60.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 60.000-40.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T7 40.000-20.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 20.000-0.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 155.000-140.000	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T2 140.000-120.000	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T3 120.000-100.000	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T4 100.000-80.000	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T5 80.000-60.000	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T6 60.000-40.000	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T7 40.000-20.000	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T8 20.000-0.000	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 155.000-140.000	Flange	0.000 A325N	0	0.625 A325X	1	0.625 A325X	1	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T2 140.000-120.000	Flange	0.750 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T3 120.000-100.000	Flange	0.750 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T4 100.000-80.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T5 80.000-60.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T6 60.000-40.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T7 40.000-20.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T8 20.000-0.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
1-5/8" Coax (Carrier 1) **	C	No	No	Ar (CaAa)	151.000 - 10.000	0.000	0	18	9	0.750	1.980		0.001
1-5/8" Coax (Carrier 2) **	B	No	No	Ar (CaAa)	140.000 - 10.000	0.000	0	12	6	0.750	1.980		0.001
1-5/8" Coax (Carrier 3) **	A	No	No	Ar (CaAa)	130.000 - 10.000	0.000	0	12	6	0.750	1.980		0.001
1-5/8" Coax (Carrier 4) **	B	No	No	Ar (CaAa)	120.000 - 10.000	0.000	-0.3	9	5	0.750	1.980		0.001
Safety Line 3/8 **	A	No	No	Ar (CaAa)	155.000 - 10.000	0.000	0.45	1	1	0.375	0.375		0.000
Feedline Ladder (Af)	C	No	No	Af (CaAa)	151.000 - 10.000	0.000	0.3	1	1	3.000	0.250		0.008
Feedline Ladder (Af)	B	No	No	Af (CaAa)	140.000 - 10.000	0.000	0.3	1	1	3.000	0.250		0.008
Feedline Ladder (Af) **	A	No	No	Af (CaAa)	130.000 - 10.000	0.000	0.3	1	1	3.000	0.250		0.008

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
**								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	155.000-140.000	A	0.000	0.000	0.562	0.000	0.003
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	39.662	0.000	0.255
T2	140.000-120.000	A	0.000	0.000	24.927	0.000	0.187
		B	0.000	0.000	48.353	0.000	0.365
		C	0.000	0.000	72.113	0.000	0.463
T3	120.000-100.000	A	0.000	0.000	49.103	0.000	0.369
		B	0.000	0.000	83.993	0.000	0.512
		C	0.000	0.000	72.113	0.000	0.463
T4	100.000-80.000	A	0.000	0.000	49.103	0.000	0.369
		B	0.000	0.000	83.993	0.000	0.512
		C	0.000	0.000	72.113	0.000	0.463
T5	80.000-60.000	A	0.000	0.000	49.103	0.000	0.369
		B	0.000	0.000	83.993	0.000	0.512
		C	0.000	0.000	72.113	0.000	0.463
T6	60.000-40.000	A	0.000	0.000	49.103	0.000	0.369
		B	0.000	0.000	83.993	0.000	0.512
		C	0.000	0.000	72.113	0.000	0.463
T7	40.000-20.000	A	0.000	0.000	49.103	0.000	0.369
		B	0.000	0.000	83.993	0.000	0.512
		C	0.000	0.000	72.113	0.000	0.463
T8	20.000-0.000	A	0.000	0.000	24.552	0.000	0.185
		B	0.000	0.000	41.997	0.000	0.256
		C	0.000	0.000	36.057	0.000	0.232

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	155.000-140.000	A	0.581	0.000	0.000	2.305	0.000	0.013
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	37.022	0.000	0.653
T2	140.000-120.000	A	0.573	0.000	0.000	26.820	0.000	0.445
		B		0.000	0.000	47.552	0.000	0.855
		C		0.000	0.000	67.239	0.000	1.183
T3	120.000-100.000	A	0.564	0.000	0.000	50.459	0.000	0.869
		B		0.000	0.000	85.439	0.000	1.342
		C		0.000	0.000	67.144	0.000	1.178
T4	100.000-80.000	A	0.553	0.000	0.000	50.298	0.000	0.864
		B		0.000	0.000	85.250	0.000	1.335
		C		0.000	0.000	67.032	0.000	1.172
T5	80.000-60.000	A	0.539	0.000	0.000	50.101	0.000	0.858

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	85.018	0.000	1.325
		C		0.000	0.000	66.895	0.000	1.165
T6	60.000-40.000	A	0.521	0.000	0.000	49.845	0.000	0.850
		B		0.000	0.000	84.717	0.000	1.313
		C		0.000	0.000	66.716	0.000	1.155
T7	40.000-20.000	A	0.495	0.000	0.000	49.473	0.000	0.839
		B		0.000	0.000	84.279	0.000	1.296
		C		0.000	0.000	66.457	0.000	1.142
T8	20.000-0.000	A	0.444	0.000	0.000	24.367	0.000	0.409
		B		0.000	0.000	41.705	0.000	0.631
		C		0.000	0.000	32.971	0.000	0.558

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	155.000-140.000	-0.102	2.802	-0.407	1.990
T2	140.000-120.000	1.267	-2.768	1.198	-2.456
T3	120.000-100.000	0.968	-9.334	0.900	-8.717
T4	100.000-80.000	1.049	-10.326	0.976	-9.665
T5	80.000-60.000	1.120	-11.200	1.043	-10.509
T6	60.000-40.000	1.106	-11.242	1.046	-10.733
T7	40.000-20.000	1.154	-11.853	1.093	-11.353
T8	20.000-0.000	0.725	-7.546	0.690	-7.265

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	1-5/8" Coax	140.00 - 151.00	0.6000	0.6000
T1	9	Safety Line 3/8	140.00 - 155.00	0.6000	0.6000
T1	11	Feedline Ladder (Af)	140.00 - 151.00	0.6000	0.6000
T2	1	1-5/8" Coax	120.00 - 140.00	0.6000	0.6000
T2	3	1-5/8" Coax	120.00 - 140.00	0.6000	0.6000
T2	5	1-5/8" Coax	120.00 - 130.00	0.6000	0.6000
T2	9	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T2	11	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T2	12	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T2	13	Feedline Ladder (Af)	120.00 - 130.00	0.6000	0.6000
T3	1	1-5/8" Coax	100.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			120.00		
T3	3	1-5/8" Coax	100.00 - 120.00	0.6000	0.6000
T3	5	1-5/8" Coax	100.00 - 120.00	0.6000	0.6000
T3	7	1-5/8" Coax	100.00 - 120.00	0.6000	0.6000
T3	9	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T3	11	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	12	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	13	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T4	1	1-5/8" Coax	80.00 - 100.00	0.6000	0.6000
T4	3	1-5/8" Coax	80.00 - 100.00	0.6000	0.6000
T4	5	1-5/8" Coax	80.00 - 100.00	0.6000	0.6000
T4	7	1-5/8" Coax	80.00 - 100.00	0.6000	0.6000
T4	9	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T4	11	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T4	12	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T4	13	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T5	1	1-5/8" Coax	60.00 - 80.00	0.6000	0.6000
T5	3	1-5/8" Coax	60.00 - 80.00	0.6000	0.6000
T5	5	1-5/8" Coax	60.00 - 80.00	0.6000	0.6000
T5	7	1-5/8" Coax	60.00 - 80.00	0.6000	0.6000
T5	9	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T5	11	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T5	12	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T5	13	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T6	1	1-5/8" Coax	40.00 - 60.00	0.6000	0.6000
T6	3	1-5/8" Coax	40.00 - 60.00	0.6000	0.6000
T6	5	1-5/8" Coax	40.00 - 60.00	0.6000	0.6000
T6	7	1-5/8" Coax	40.00 - 60.00	0.6000	0.6000
T6	9	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T6	11	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T6	12	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T6	13	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T7	1	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T7	3	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T7	5	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T7	7	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T7	9	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T7	11	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T7	12	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T7	13	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	1	1-5/8" Coax	10.00 - 20.00	0.6000	0.6000
T8	3	1-5/8" Coax	10.00 - 20.00	0.6000	0.6000
T8	5	1-5/8" Coax	10.00 - 20.00	0.6000	0.6000
T8	7	1-5/8" Coax	10.00 - 20.00	0.6000	0.6000
T8	9	Safety Line 3/8	10.00 - 20.00	0.6000	0.6000
T8	11	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T8	12	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T8	13	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 1"x10'	C	From Leg	0.000 0.000 5.000	0.000	155.000	No Ice 1/2" Ice	1.000 2.017	1.000 2.017	0.040 0.049
**									
Sector1(CaAa=14000 Sq.in)No Ice (Carrier 1)	A	From Leg	4.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice	97.222 121.527	65.138 81.423	3.333 4.167
Sector2(CaAa=14000 Sq.in)No Ice (Carrier 1)	B	From Leg	4.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice	97.222 121.527	65.138 81.423	3.333 4.167
Sector3(CaAa=14000 Sq.in)No Ice (Carrier 1)	C	From Leg	4.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice	97.222 121.527	65.138 81.423	3.333 4.167
**									
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 2)	A	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice	69.444 86.805	46.527 58.159	0.700 1.400
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2)	B	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice	69.444 86.805	46.527 58.159	0.700 1.400
Sector3(CaAa=10000 Sq.in)No Ice (Carrier 2)	C	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice	69.444 86.805	46.527 58.159	0.700 1.400
**									
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 3)	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice	69.444 86.805	46.527 58.159	0.700 1.400
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 3)	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice	69.444 86.805	46.527 58.159	0.700 1.400
Sector3(CaAa=10000 Sq.in)No Ice (Carrier 3)	C	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice	69.444 86.805	46.527 58.159	0.700 1.400
**									
4 1/2" OD Dish Mount (Carrier 4)	C	From Leg	0.500 0.000 0.000	0.000	120.000	No Ice 1/2" Ice	1.690 2.207	1.690 2.207	0.057 0.074
4 1/2" OD Dish Mount (Carrier 4)	B	From Leg	0.500 0.000 0.000	0.000	120.000	No Ice 1/2" Ice	1.690 2.207	1.690 2.207	0.057 0.074
**									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
6' MW Dish (Carrier 4)	C	Paraboloid w/o Radome	From Leg	1.000 0.000 0.000	0.000		120.000	6.000	No Ice 1/2" Ice	28.270 29.050	0.143 0.292
6' MW Dish (Carrier 4)	B	Paraboloid w/o Radome	From Leg	1.000 0.000 0.000	0.000		120.000	6.000	No Ice 1/2" Ice	28.270 29.050	0.143 0.292
**											

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service

Comb. No.	Description
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	155 - 140	Leg	Max Tension	15	18.907	1.315	0.004
			Max. Compression	2	-26.360	0.853	0.002
			Max. Mx	14	-4.030	1.943	0.001
			Max. My	6	-3.986	0.509	1.626
			Max. Vy	2	-4.694	0.853	0.002
			Max. Vx	18	-2.246	-0.652	1.006
		Diagonal	Max Tension	4	5.587	0.000	0.000
			Max. Compression	4	-5.861	0.000	0.000
			Max. Mx	20	1.819	0.016	0.002
			Max. My	20	-5.781	0.006	0.019
			Max. Vy	36	-0.011	0.014	0.002
			Max. Vx	20	-0.006	0.000	0.000
		Top Girt	Max Tension	22	0.964	0.000	0.000
			Max. Compression	11	-0.693	0.000	0.000
			Max. Mx	26	0.110	-0.014	0.000
			Max. My	34	-0.104	0.000	0.000
			Max. Vy	26	0.012	0.000	0.000
			Max. Vx	34	-0.000	0.000	0.000
T2	140 - 120	Leg	Max Tension	15	75.501	2.528	-0.004
			Max. Compression	2	-88.123	1.636	-0.006
			Max. Mx	2	-27.218	4.049	0.008
			Max. My	2	6.017	-1.976	1.853
			Max. Vy	2	-9.815	1.636	-0.006
			Max. Vx	14	-4.166	0.772	0.455
		Diagonal	Max Tension	4	10.271	0.000	0.000
			Max. Compression	4	-9.514	0.000	0.000
			Max. Mx	2	2.109	0.056	-0.001
			Max. My	8	-8.654	0.002	-0.070
			Max. Vy	22	0.019	0.000	0.000
			Max. Vx	8	0.018	0.000	0.000
T3	120 - 100	Leg	Max Tension	15	133.397	3.605	-0.013
			Max. Compression	2	-151.926	0.988	-0.005
			Max. Mx	2	-88.127	6.851	-0.018
			Max. My	6	-46.333	3.080	-2.842
			Max. Vy	2	-11.565	0.988	-0.005
			Max. Vx	6	4.995	3.080	-2.842
		Diagonal	Max Tension	8	10.871	0.000	0.000
			Max. Compression	20	-11.533	0.000	0.000
			Max. Mx	2	2.332	0.070	0.002
			Max. My	8	-11.480	-0.007	-0.068
			Max. Vy	2	0.022	0.070	0.002
			Max. Vx	8	0.015	0.000	0.000
T4	100 - 80	Leg	Max Tension	15	183.352	3.909	-0.019
			Max. Compression	2	-207.760	0.999	-0.005
			Max. Mx	2	-151.948	6.740	-0.029
			Max. My	6	-77.928	3.029	-2.440
			Max. Vy	2	-12.480	0.999	-0.005

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	6	4.347	3.029	-2.440
		Diagonal	Max Tension	16	10.105	0.000	0.000
			Max. Compression	20	-10.597	0.000	0.000
			Max. Mx	4	5.351	0.050	-0.000
			Max. My	20	-10.534	-0.010	0.034
			Max. Vy	28	0.022	0.032	0.003
			Max. Vx	20	-0.007	0.000	0.000
T5	80 - 60	Leg	Max Tension	15	228.465	4.172	-0.024
			Max. Compression	2	-258.841	1.073	-0.007
			Max. Mx	2	-207.782	7.210	-0.040
			Max. My	4	-13.476	0.128	-2.437
			Max. Vy	2	-13.278	1.073	-0.007
			Max. Vx	4	4.326	0.016	-0.492
		Diagonal	Max Tension	16	10.158	0.000	0.000
			Max. Compression	16	-10.488	0.000	0.000
			Max. Mx	4	5.256	0.044	0.001
			Max. My	16	-10.411	-0.006	-0.022
			Max. Vy	28	0.025	0.037	0.003
			Max. Vx	16	0.004	0.000	0.000
T6	60 - 40	Leg	Max Tension	15	270.415	4.602	-0.031
			Max. Compression	2	-307.144	1.037	-0.006
			Max. Mx	2	-258.866	7.682	-0.049
			Max. My	4	-16.235	0.128	-2.658
			Max. Vy	2	-14.215	1.037	-0.006
			Max. Vx	4	4.601	0.016	-0.450
		Diagonal	Max Tension	16	10.539	0.000	0.000
			Max. Compression	16	-10.703	0.000	0.000
			Max. Mx	4	4.472	0.062	0.003
			Max. My	16	-10.591	-0.007	-0.020
			Max. Vy	28	0.033	0.053	0.004
			Max. Vx	16	0.003	0.000	0.000
T7	40 - 20	Leg	Max Tension	7	310.089	4.839	-0.057
			Max. Compression	2	-353.404	1.245	-0.009
			Max. Mx	2	-307.171	8.121	-0.054
			Max. My	4	-18.969	0.134	-2.753
			Max. Vy	2	-15.028	1.245	-0.009
			Max. Vx	4	4.866	0.026	-0.644
		Diagonal	Max Tension	16	10.819	0.000	0.000
			Max. Compression	16	-11.015	0.000	0.000
			Max. Mx	27	2.255	0.061	-0.005
			Max. My	16	-10.879	0.004	-0.017
			Max. Vy	29	0.034	0.059	0.005
			Max. Vx	16	0.003	0.000	0.000
T8	20 - 0	Leg	Max Tension	7	347.455	6.002	-0.080
			Max. Compression	2	-397.360	0.000	0.000
			Max. Mx	2	-353.433	8.731	-0.061
			Max. My	4	-21.695	0.156	-3.079
			Max. Vy	2	-15.747	0.000	0.000
			Max. Vx	4	4.869	0.156	-3.079
		Diagonal	Max Tension	16	11.228	0.000	0.000
			Max. Compression	16	-11.461	0.000	0.000
			Max. Mx	27	1.314	0.113	-0.007
			Max. My	16	-11.253	0.018	-0.015
			Max. Vy	29	0.047	0.113	0.007
			Max. Vx	16	0.002	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	388.995	26.008	-15.215
	Max. H_x	18	388.995	26.008	-15.215
	Max. H_z	5	-308.017	-20.803	15.141
	Min. Vert	7	-346.459	-24.738	14.502
	Min. H_x	7	-346.459	-24.738	14.502
	Min. H_z	18	388.995	26.008	-15.215
Leg B	Max. Vert	10	379.711	-25.261	-14.675
	Max. H_x	23	-336.919	23.911	13.894
	Max. H_z	25	-299.723	20.079	14.633
	Min. Vert	23	-336.919	23.911	13.894
	Min. H_x	10	379.711	-25.261	-14.675
	Min. H_z	10	379.711	-25.261	-14.675
Leg A	Max. Vert	2	396.496	0.083	30.562
	Max. H_x	19	-162.947	4.911	-13.944
	Max. H_z	2	396.496	0.083	30.562
	Min. Vert	15	-346.117	-0.094	-28.588
	Min. H_x	9	19.396	-4.676	1.033
	Min. H_z	15	-346.117	-0.094	-28.588

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	43.304	0.000	0.000	-0.072	-1.054	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	51.965	0.000	-53.186	-5418.186	-1.281	2.535
0.9 Dead+1.0 Wind 0 deg - No Ice	38.973	0.000	-53.186	-5408.246	-0.961	2.533
1.2 Dead+1.0 Wind 30 deg - No Ice	51.964	26.295	-43.905	-4495.743	-2711.069	-2.719
0.9 Dead+1.0 Wind 30 deg - No Ice	38.973	26.296	-43.905	-4487.475	-2705.797	-2.723
1.2 Dead+1.0 Wind 60 deg - No Ice	51.964	43.286	-24.797	-2554.939	-4467.056	-5.439
0.9 Dead+1.0 Wind 60 deg - No Ice	38.973	43.286	-24.797	-2550.237	-4458.543	-5.444
1.2 Dead+1.0 Wind 90 deg - No Ice	51.964	49.156	-0.759	-91.686	-5068.795	-3.887
0.9 Dead+1.0 Wind 90 deg - No Ice	38.973	49.157	-0.759	-91.522	-5059.155	-3.893
1.2 Dead+1.0 Wind 120 deg - No Ice	51.965	44.541	24.200	2451.221	-4564.215	-5.005
0.9 Dead+1.0 Wind 120 deg - No Ice	38.973	44.541	24.201	2446.724	-4555.519	-5.008
1.2 Dead+1.0 Wind 150 deg - No Ice	51.964	24.500	42.362	4376.764	-2533.565	-7.088
0.9 Dead+1.0 Wind 150 deg - No Ice	38.973	24.500	42.362	4368.705	-2528.563	-7.088
1.2 Dead+1.0 Wind 180 deg - No Ice	51.964	0.000	49.724	5140.903	-1.279	-2.535
0.9 Dead+1.0 Wind 180 deg - No Ice	38.973	0.000	49.724	5131.451	-0.960	-2.533
1.2 Dead+1.0 Wind 210 deg - No Ice	51.964	-25.383	43.892	4493.811	2598.601	5.883
0.9 Dead+1.0 Wind 210 deg -	38.973	-25.383	43.892	4485.586	2594.139	5.887

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
No Ice 1.2 Dead+1.0 Wind 240 deg - No Ice	51.965	-46.068	25.082	2518.642	4678.469	7.969
0.9 Dead+1.0 Wind 240 deg - No Ice	38.973	-46.069	25.082	2514.049	4670.244	7.974
1.2 Dead+1.0 Wind 270 deg - No Ice	51.964	-49.156	-0.759	-91.686	5066.252	3.887
0.9 Dead+1.0 Wind 270 deg - No Ice	38.973	-49.157	-0.759	-91.523	5057.250	3.893
1.2 Dead+1.0 Wind 300 deg - No Ice	51.964	-41.758	-23.915	-2487.502	4347.727	2.475
0.9 Dead+1.0 Wind 300 deg - No Ice	38.973	-41.758	-23.915	-2482.896	4340.019	2.479
1.2 Dead+1.0 Wind 330 deg - No Ice	51.964	-25.412	-42.376	-4378.696	2640.949	3.924
0.9 Dead+1.0 Wind 330 deg - No Ice	38.973	-25.412	-42.376	-4370.595	2636.411	3.924
1.2 Dead+1.0 Ice+1.0 Temp	79.922	-0.000	-0.000	-2.429	-4.038	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	79.922	-0.000	-15.843	-1653.930	-4.067	0.654
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	79.922	7.865	-13.206	-1385.077	-831.449	-1.889
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	79.922	13.076	-7.500	-791.637	-1381.395	-1.782
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	79.922	14.878	-0.193	-25.741	-1571.095	-0.539
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	79.922	13.351	7.324	758.628	-1402.925	-1.786
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	79.922	7.416	12.827	1350.987	-786.766	-3.079
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	79.922	-0.000	15.028	1583.285	-4.069	-0.654
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	79.922	-7.634	13.203	1379.846	795.297	2.692
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	79.922	-13.727	7.541	775.290	1423.655	2.424
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	79.922	-14.878	-0.193	-25.740	1562.963	0.540
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	79.922	-12.700	-7.283	-774.970	1344.398	1.144
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	79.922	-7.648	-12.830	-1356.218	806.653	2.276
Dead+Wind 0 deg - Service	43.304	-0.000	-13.078	-1330.719	-1.059	0.623
Dead+Wind 30 deg - Service	43.304	6.466	-10.796	-1104.159	-666.597	-0.658
Dead+Wind 60 deg - Service	43.304	10.643	-6.097	-627.523	-1097.833	-1.338
Dead+Wind 90 deg - Service	43.304	12.087	-0.187	-22.590	-1245.609	-0.966
Dead+Wind 120 deg - Service	43.304	10.952	5.951	601.960	-1121.686	-1.233
Dead+Wind 150 deg - Service	43.304	6.024	10.416	1074.876	-622.942	-1.733
Dead+Wind 180 deg - Service	43.304	-0.000	12.226	1262.534	-1.059	-0.623
Dead+Wind 210 deg - Service	43.304	-6.241	10.792	1103.630	637.427	1.437
Dead+Wind 240 deg - Service	43.304	-11.328	6.167	618.525	1148.261	1.962
Dead+Wind 270 deg - Service	43.304	-12.087	-0.187	-22.590	1243.492	0.966
Dead+Wind 300 deg - Service	43.304	-10.268	-5.880	-610.957	1067.024	0.609
Dead+Wind 330 deg - Service	43.304	-6.248	-10.420	-1075.403	647.878	0.955

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-43.304	0.000	-0.000	43.304	-0.000	0.000%
2	0.000	-51.964	-53.187	-0.000	51.965	53.186	0.002%
3	0.000	-38.973	-53.187	-0.000	38.973	53.186	0.002%
4	26.296	-51.964	-43.906	-26.295	51.964	43.905	0.002%
5	26.296	-38.973	-43.906	-26.296	38.973	43.905	0.001%
6	43.287	-51.964	-24.798	-43.286	51.964	24.797	0.001%
7	43.287	-38.973	-24.798	-43.286	38.973	24.797	0.001%
8	49.158	-51.964	-0.759	-49.156	51.964	0.759	0.002%
9	49.158	-38.973	-0.759	-49.157	38.973	0.759	0.001%
10	44.542	-51.964	24.201	-44.541	51.965	-24.200	0.002%
11	44.542	-38.973	24.201	-44.541	38.973	-24.201	0.002%
12	24.501	-51.964	42.363	-24.500	51.964	-42.362	0.002%
13	24.501	-38.973	42.363	-24.500	38.973	-42.362	0.001%
14	0.000	-51.964	49.725	-0.000	51.964	-49.724	0.001%
15	0.000	-38.973	49.725	-0.000	38.973	-49.724	0.001%
16	-25.384	-51.964	43.893	25.383	51.964	-43.892	0.002%
17	-25.384	-38.973	43.893	25.383	38.973	-43.892	0.001%
18	-46.070	-51.964	25.083	46.068	51.965	-25.082	0.002%
19	-46.070	-38.973	25.083	46.069	38.973	-25.082	0.002%
20	-49.158	-51.964	-0.759	49.156	51.964	0.759	0.002%
21	-49.158	-38.973	-0.759	49.157	38.973	0.759	0.001%
22	-41.759	-51.964	-23.916	41.758	51.964	23.915	0.001%
23	-41.759	-38.973	-23.916	41.758	38.973	23.915	0.001%
24	-25.413	-51.964	-42.377	25.412	51.964	42.376	0.002%
25	-25.413	-38.973	-42.377	25.412	38.973	42.376	0.001%
26	0.000	-79.922	0.000	0.000	79.922	0.000	0.000%
27	0.000	-79.922	-15.843	0.000	79.922	15.843	0.001%
28	7.865	-79.922	-13.207	-7.865	79.922	13.206	0.001%
29	13.076	-79.922	-7.500	-13.076	79.922	7.500	0.001%
30	14.879	-79.922	-0.193	-14.878	79.922	0.193	0.001%
31	13.351	-79.922	7.324	-13.351	79.922	-7.324	0.001%
32	7.417	-79.922	12.827	-7.416	79.922	-12.827	0.001%
33	0.000	-79.922	15.029	0.000	79.922	-15.028	0.001%
34	-7.634	-79.922	13.203	7.634	79.922	-13.203	0.001%
35	-13.727	-79.922	7.541	13.727	79.922	-7.541	0.001%
36	-14.879	-79.922	-0.193	14.878	79.922	0.193	0.001%
37	-12.700	-79.922	-7.283	12.700	79.922	7.283	0.001%
38	-7.648	-79.922	-12.831	7.648	79.922	12.830	0.001%
39	0.000	-43.304	-13.078	0.000	43.304	13.078	0.001%
40	6.466	-43.304	-10.796	-6.466	43.304	10.796	0.001%
41	10.644	-43.304	-6.097	-10.643	43.304	6.097	0.000%
42	12.087	-43.304	-0.187	-12.087	43.304	0.187	0.000%
43	10.952	-43.304	5.951	-10.952	43.304	-5.951	0.001%
44	6.024	-43.304	10.416	-6.024	43.304	-10.416	0.001%
45	0.000	-43.304	12.227	0.000	43.304	-12.226	0.000%
46	-6.242	-43.304	10.793	6.241	43.304	-10.792	0.001%
47	-11.328	-43.304	6.168	11.328	43.304	-6.167	0.001%
48	-12.087	-43.304	-0.187	12.087	43.304	0.187	0.000%
49	-10.268	-43.304	-5.880	10.268	43.304	5.880	0.000%
50	-6.249	-43.304	-10.420	6.248	43.304	10.420	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001

2	Yes	10	0.00000001	0.00009249
3	Yes	10	0.00000001	0.00007155
4	Yes	10	0.00000001	0.00008106
5	Yes	10	0.00000001	0.00006072
6	Yes	10	0.00000001	0.00006978
7	Yes	10	0.00000001	0.00004962
8	Yes	10	0.00000001	0.00008101
9	Yes	10	0.00000001	0.00006062
10	Yes	10	0.00000001	0.00009176
11	Yes	10	0.00000001	0.00007082
12	Yes	10	0.00000001	0.00008175
13	Yes	10	0.00000001	0.00006129
14	Yes	10	0.00000001	0.00006994
15	Yes	10	0.00000001	0.00004972
16	Yes	10	0.00000001	0.00008167
17	Yes	10	0.00000001	0.00006128
18	Yes	10	0.00000001	0.00009193
19	Yes	10	0.00000001	0.00007103
20	Yes	10	0.00000001	0.00008102
21	Yes	10	0.00000001	0.00006063
22	Yes	10	0.00000001	0.00007015
23	Yes	10	0.00000001	0.00004993
24	Yes	10	0.00000001	0.00008114
25	Yes	10	0.00000001	0.00006074
26	Yes	6	0.00000001	0.00001498
27	Yes	10	0.00000001	0.00011718
28	Yes	10	0.00000001	0.00011342
29	Yes	10	0.00000001	0.00011015
30	Yes	10	0.00000001	0.00011345
31	Yes	10	0.00000001	0.00011699
32	Yes	10	0.00000001	0.00011387
33	Yes	10	0.00000001	0.00011060
34	Yes	10	0.00000001	0.00011381
35	Yes	10	0.00000001	0.00011703
36	Yes	10	0.00000001	0.00011346
37	Yes	10	0.00000001	0.00011024
38	Yes	10	0.00000001	0.00011349
39	Yes	10	0.00000001	0.00006524
40	Yes	10	0.00000001	0.00006251
41	Yes	10	0.00000001	0.00006008
42	Yes	10	0.00000001	0.00006253
43	Yes	10	0.00000001	0.00006511
44	Yes	10	0.00000001	0.00006283
45	Yes	10	0.00000001	0.00006030
46	Yes	10	0.00000001	0.00006273
47	Yes	10	0.00000001	0.00006508
48	Yes	10	0.00000001	0.00006254
49	Yes	10	0.00000001	0.00006025
50	Yes	10	0.00000001	0.00006262

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	155 - 140	4.751	39	0.239	0.074
T2	140 - 120	3.992	39	0.232	0.068
T3	120 - 100	2.958	39	0.207	0.040
T4	100 - 80	2.072	39	0.172	0.024
T5	80 - 60	1.351	39	0.134	0.015

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T6	60 - 40	0.791	39	0.096	0.009
T7	40 - 20	0.390	39	0.061	0.005
T8	20 - 0	0.126	39	0.029	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
155.000	Lightning Rod 1"x10'	39	4.751	0.239	0.074	148618
151.000	Sector1(CaAa=14000 Sq.in)No Ice	39	4.550	0.238	0.073	148618
140.000	Sector1(CaAa=10000 Sq.in)No Ice	39	3.992	0.232	0.068	60857
130.000	Sector1(CaAa=10000 Sq.in)No Ice	39	3.468	0.222	0.055	80119
120.000	6' MW Dish	39	2.958	0.207	0.040	24219

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	155 - 140	19.417	2	0.977	0.304
T2	140 - 120	16.305	2	0.951	0.277
T3	120 - 100	12.075	2	0.845	0.162
T4	100 - 80	8.455	2	0.702	0.100
T5	80 - 60	5.511	2	0.544	0.062
T6	60 - 40	3.225	2	0.391	0.035
T7	40 - 20	1.592	2	0.248	0.019
T8	20 - 0	0.513	2	0.118	0.007

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
155.000	Lightning Rod 1"x10'	2	19.417	0.977	0.304	36776
151.000	Sector1(CaAa=14000 Sq.in)No Ice	2	18.596	0.973	0.300	36776
140.000	Sector1(CaAa=10000 Sq.in)No Ice	2	16.305	0.951	0.277	15123
130.000	Sector1(CaAa=10000 Sq.in)No Ice	2	14.161	0.906	0.223	20062
120.000	6' MW Dish	2	12.075	0.845	0.162	5976

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	155	Diagonal	A325X	0.625	1	5.587	9.598	0.582 ✔	1	Member Block Shear
		Top Girt	A325X	0.625	1	0.964	9.598	0.100 ✔	1	Member Block Shear
T2	140	Leg	A325N	0.750	6	3.150	30.101	0.105 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	10.271	10.740	0.956 ✔	1	Member Block Shear
T3	120	Leg	A325N	0.750	6	12.589	30.101	0.418 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	10.871	13.025	0.835 ✔	1	Member Block Shear
T4	100	Leg	A325N	1.000	6	22.231	54.517	0.408 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	10.104	13.025	0.776 ✔	1	Member Block Shear
T5	80	Leg	A325N	1.000	6	30.556	54.517	0.560 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	10.158	13.025	0.780 ✔	1	Member Block Shear
T6	60	Leg	A325N	1.000	6	38.075	54.517	0.698 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	10.539	14.168	0.744 ✔	1	Member Block Shear
T7	40	Leg	A325N	1.250	6	45.066	87.220	0.517 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	10.819	14.168	0.764 ✔	1	Member Block Shear
T8	20	Leg	A325N	1.250	6	51.679	87.220	0.593 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	11.461	17.257	0.664 ✔	1	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $P_u / \phi P_n$
T1	155 - 140	1 3/4	15.014	4.671	128.1 K=1.00	2.405	-22.173	33.103	0.670 [1] ✔
T2	140 - 120	2 1/4	20.019	4.754	101.4 K=1.00	3.976	-81.035	84.331	0.961 [1] ✔
T3	120 - 100	2 3/4	20.019	4.754	83.0 K=1.00	5.940	-144.666	161.540	0.896 [1] ✔
T4	100 - 80	3	20.019	4.754	76.1 K=1.00	7.069	-200.936	208.347	0.964 [1] ✔
T5	80 - 60	3 1/4	20.019	4.754	70.2 K=1.00	8.296	-252.312	260.312	0.969 [1] ✔
T6	60 - 40	3 1/2	20.019	4.754	65.2 K=1.00	9.621	-300.746	317.273	0.948 [1] ✔
T7	40 - 20	3 3/4	20.019	4.754	60.9 K=1.00	11.045	-347.139	379.106	0.916 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T8	20 - 0	4	20.019	4.754	57.1 K=1.00	12.566	-391.250	445.717	0.878 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	155 - 140	L1 3/4x1 3/4x3/16	7.166	3.605	125.9 K=1.00	0.621	-5.861	11.206	0.523 [1] ✔
T2	140 - 120	L2x2x3/16	8.697	4.343	132.3 K=1.00	0.715	-9.296	11.697	0.795 [1] ✔
T3	120 - 100	L2 1/2x2 1/2x3/16	9.987	4.964	120.3 K=1.00	0.902	-9.725	17.824	0.546 [1] ✔
T4	100 - 80	L2 1/2x2 1/2x3/16	11.329	5.625	136.4 K=1.00	0.902	-9.458	13.885	0.681 [1] ✔
T5	80 - 60	L2 1/2x2 1/2x3/16	12.706	6.303	152.8 K=1.00	0.902	-9.691	11.057	0.876 [1] ✔
T6	60 - 40	L3x3x3/16	14.108	6.994	140.8 K=1.00	1.090	-10.137	15.733	0.644 [1] ✔
T7	40 - 20	L3x3x3/16	15.529	7.694	154.9 K=1.00	1.090	-10.587	13.000	0.814 [1] ✔
T8	20 - 0	L3x3x1/4	16.963	8.401	170.3 K=1.00	1.440	-10.921	14.213	0.768 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	155 - 140	L1 3/4x1 3/4x3/16	4.913	4.767	166.5 K=1.00	0.621	-0.693	6.409	0.108 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	155 - 140	1 3/4	15.014	0.500	13.7	2.405	18.907	108.238	0.175 [1] ✔
T2	140 - 120	2 1/4	20.019	0.500	10.7	3.976	75.501	178.924	0.422 [1] ✔
T3	120 - 100	2 3/4	20.019	0.500	8.7	5.940	133.397	267.281	0.499 [1] ✔
T4	100 - 80	3	20.019	0.500	8.0	7.069	183.352	318.086	0.576 [1] ✔
T5	80 - 60	3 1/4	20.019	0.500	7.4	8.296	228.465	373.310	0.612 [1] ✔
T6	60 - 40	3 1/2	20.019	0.500	6.9	9.621	270.415	432.951	0.625 [1] ✔
T7	40 - 20	3 3/4	20.019	0.500	6.4	11.045	310.089	497.010	0.624 [1] ✔
T8	20 - 0	4	20.019	0.500	6.0	12.566	347.455	565.487	0.614 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	155 - 140	L1 3/4x1 3/4x3/16	7.435	3.736	83.5	0.360	5.587	17.567	0.318 [1] ✔
T2	140 - 120	L2x2x3/16	8.697	4.343	84.5	0.431	10.271	21.001	0.489 [1] ✔
T3	120 - 100	L2 1/2x2 1/2x3/16	9.061	4.505	69.5	0.571	10.871	27.838	0.391 [1] ✔
T4	100 - 80	L2 1/2x2 1/2x3/16	11.329	5.625	86.8	0.571	10.104	27.838	0.363 [1] ✔
T5	80 - 60	L2 1/2x2 1/2x3/16	12.706	6.303	97.2	0.571	10.158	27.838	0.365 [1] ✔
T6	60 - 40	L3x3x3/16	14.108	6.994	89.4	0.712	10.539	34.712	0.304 [1] ✔
T7	40 - 20	L3x3x3/16	15.529	7.694	98.3	0.712	10.819	34.712	0.312 [1] ✔
T8	20 - 0	L3x3x1/4	16.963	8.401	108.4	0.939	11.228	45.794	0.245 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	155 - 140	L1 3/4x1 3/4x3/16	4.913	4.767	106.5	0.360	0.964	17.567	0.055 [1] ✔

[1] P_u / ϕP_n controls

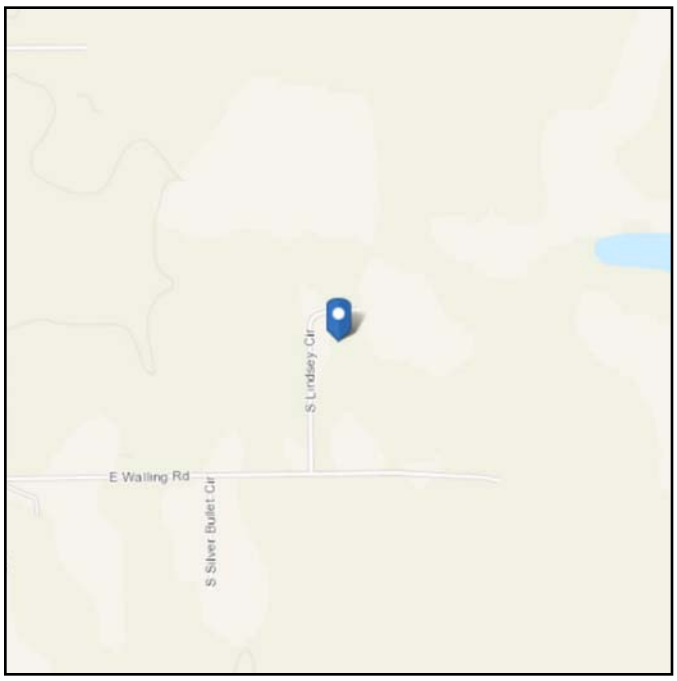
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	155 - 140	Leg	1 3/4	3	-22.173	33.103	67.0	Pass
T2	140 - 120	Leg	2 1/4	27	-81.035	84.331	96.1	Pass
T3	120 - 100	Leg	2 3/4	54	-144.666	161.540	89.6	Pass
T4	100 - 80	Leg	3	81	-200.936	208.347	96.4	Pass
T5	80 - 60	Leg	3 1/4	108	-252.312	260.312	96.9	Pass
T6	60 - 40	Leg	3 1/2	135	-300.746	317.273	94.8	Pass
T7	40 - 20	Leg	3 3/4	162	-347.139	379.106	91.6	Pass
T8	20 - 0	Leg	4	189	-391.250	445.717	87.8	Pass
T1	155 - 140	Diagonal	L1 3/4x1 3/4x3/16	17	-5.861	11.206	52.3 58.2 (b)	Pass
T2	140 - 120	Diagonal	L2x2x3/16	33	-9.296	11.697	79.5 95.6 (b)	Pass
T3	120 - 100	Diagonal	L2 1/2x2 1/2x3/16	55	-9.725	17.824	54.6 83.5 (b)	Pass
T4	100 - 80	Diagonal	L2 1/2x2 1/2x3/16	87	-9.458	13.885	68.1 77.6 (b)	Pass
T5	80 - 60	Diagonal	L2 1/2x2 1/2x3/16	114	-9.691	11.057	87.6	Pass
T6	60 - 40	Diagonal	L3x3x3/16	141	-10.137	15.733	64.4 74.4 (b)	Pass
T7	40 - 20	Diagonal	L3x3x3/16	168	-10.587	13.000	81.4	Pass
T8	20 - 0	Diagonal	L3x3x1/4	195	-10.921	14.213	76.8	Pass
T1	155 - 140	Top Girt	L1 3/4x1 3/4x3/16	6	-0.693	6.409	10.8	Pass
							Summary	
						Leg (T5)	96.9	Pass
						Diagonal (T2)	95.6	Pass
						Top Girt (T1)	10.8	Pass
						Bolt Checks	95.6	Pass
						RATING =	**96.9**	**Pass**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Latitude:**	61.536646
Risk Category:	II	**Longitude:**	-148.97899
Soil Class:	D - Default (see Section 11.4.3)	**Elevation:**	66.33937101721676 ft (NAVD 88)



Wind

Results:

Wind Speed	121 Vmph
10-year MRI	87 Vmph
25-year MRI	94 Vmph
50-year MRI	99 Vmph
100-year MRI	106 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Thu Dec 14 2023

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Seismic

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.5	S_{D1} :	N/A
S_1 :	0.697	T_L :	16
F_a :	1.2	PGA :	0.5
F_v :	N/A	PGA_M :	0.6
S_{MS} :	1.8	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.2	C_v :	1.4

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Thu Dec 14 2023

Date Source: USGS Seismic Design Maps

Ice

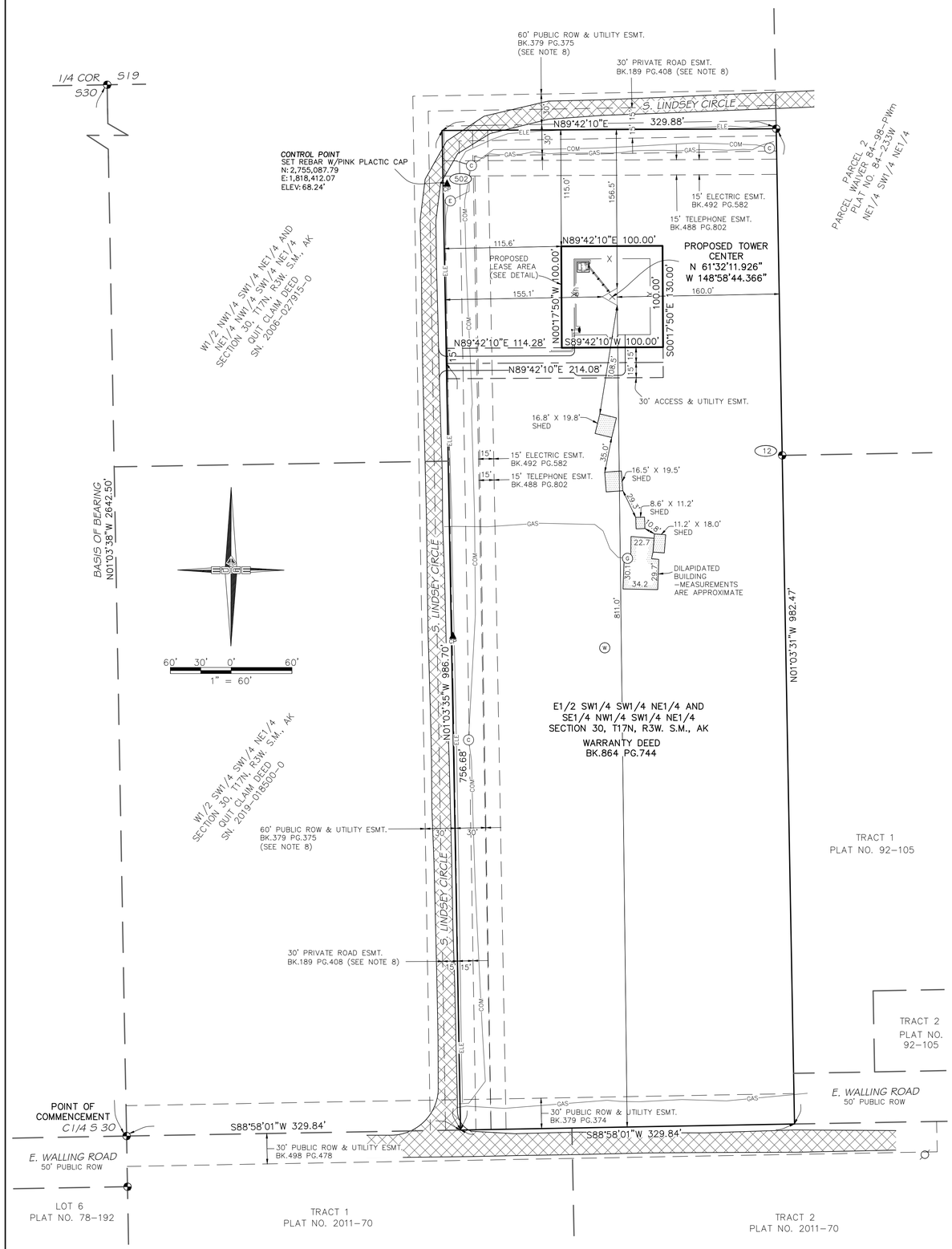
Results:

Ice Thickness:	0.50 in.
Concurrent Temperature:	-15 F
Gust Speed	60 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Dec 14 2023

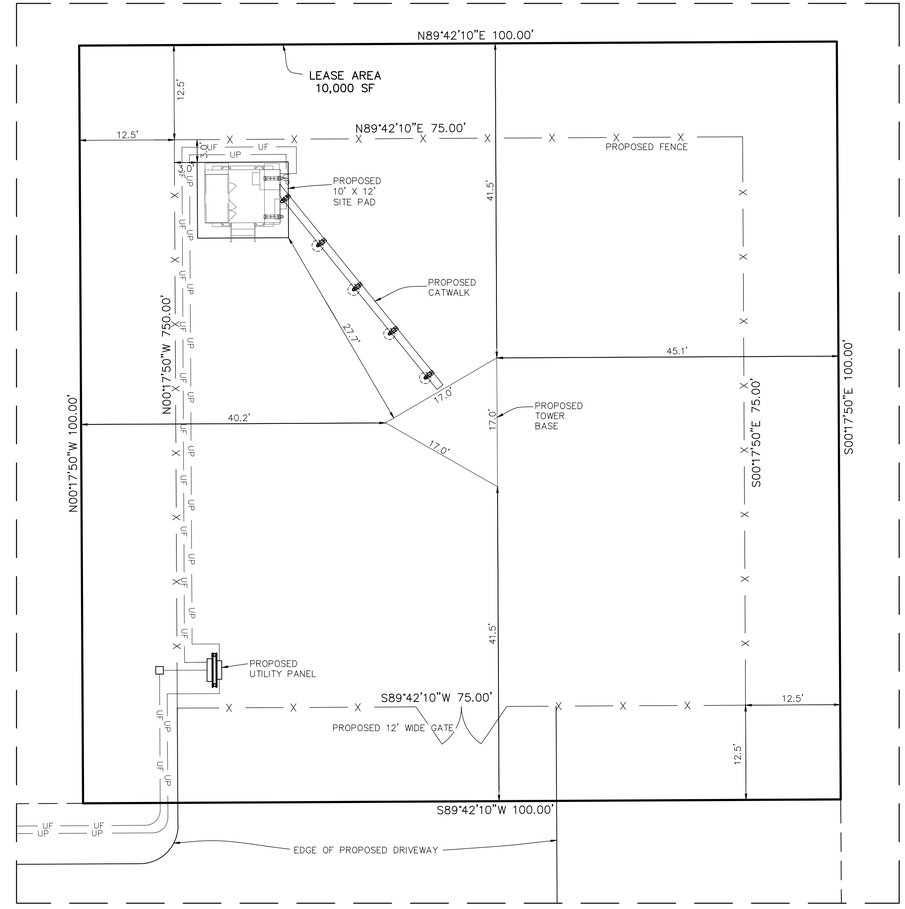
Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

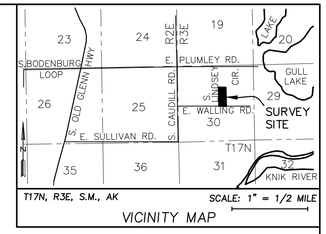
Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Attachment D:
Certified Site Plan



LEASE AREA / COMPOUND DETAIL — SCALE = 1"=10'





LEGEND

- FOUND MONUMENT AS NOTED
- SURVEY CONTROL POINT
- UTILITY POLE
- (C) MISC. COMMUNICATION PEDESTAL
- (W) WELL
- (E) ELECTRIC VAULT
- (G) GAS METER
- (###) POINT NUMBER
- ROW RIGHT-OF-WAY
- ESMT. EASEMENT
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- EDGE OF ROAD
- GAS UNDERGROUND GAS
- ELE UNDERGROUND ELECTRIC
- COM UNDERGROUND COMMUNICATION
- BUILDING
- 100' CONTOUR LINE
- LEASE BOUNDARY
- PROPOSED EASEMENT

NOTES

1. THIS DRAWING IS BASED ON A FIELD SURVEY PERFORMED BY EDGE SURVEY & DESIGN, LLC ON AUGUST 28, 2023 AND PREPARED FOR THE TOWERS LLC.
2. ELEVATIONS SHOWN HEREON ARE NAVD88 ORTHOMETRIC HEIGHTS, GEOID 12B AS DETERMINED BY A NGS OPUS SOLUTION.
3. THE BASIS OF BEARINGS FOR IS ALASKA STATE PLANE COORDINATE SYSTEM, ZONE 4 AS MEASURED BETWEEN THE TWO FOUND MONUMENTS ON THE CENTER SECTION LINE OF SECTION 30, T17N, R3E, S.M., AK AND HAVING A BEARING OF N01°03'38"W.
4. SITE NUMBER: US-AK-5280
   SITE NAME: GULL LAKE
   SITE ADDRESS: 4075 LINDSEY CIRCLE, BUTTE, AK 99645
5. LEASE AREA IS UNDISTURBED NATURAL TERRAIN WITH 1' UNDULATIONS COVERED WITH MATURE; SPRUCE, BIRCH AND COTTONWOOD TREES.
6. BY GRAPHIC PLOTTING ONLY, THIS PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, THIS PROPERTY IS IN ZONE X, AN AREA THAT IS OUTSIDE THE 0.2% CHANCE FLOODPLAN; FLOOD INSURANCE RATE MAP IDENTIFIED AS MAP NO. 02170C8190F BEARING AN EFFECTIVE DATE OF MARCH 17, 2011 WAS USED TO DETERMINE THE FLOOD ZONE. EXACT DESIGNATION CAN ONLY BE DETERMINED BY AN ELEVATION CERTIFICATE.
7. THE CENTERLINE OF THE 60' ROAD & UTILITY EASEMENT PER BK.378 PG.375 AND 30' PRIVATE ROAD EASEMENT PER BK.189 PG.408 ARE NOT CENTERED ON NORTH & WEST LINE OF THE SUBJECT PARCEL. THE EXISTING ROAD FALLS ENTIRELY WITHIN SAID EASEMENTS AS SHOWN HEREON.
8. AT THE TIME OF THE SURVEY, NO VISIBLE ENCROACHMENTS WERE EVIDENT ONTO OR BEYOND THE LEASE AREA OR ANY VB EASEMENTS.
9. ACCESS AND UTILITY EASEMENTS GO TO S. LINDSEY CIRCLE, A RECORDED PUBLIC RIGHT-OF-WAY EASEMENT.
10. ALL LEASE AREA AND EASEMENTS ARE WITHIN THE PARENT PARCEL.
11. IT IS RECOMMENDED THAT THE CONTRACTOR CALLS 811 PRIOR TO CONSTRUCTION.

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THIS DRAWING REPRESENTS THE PROPOSED LOCATION AND DIMENSIONS OF THE STRUCTURE(S) SHOWN HEREON AND IS INTENDED FOR THE SOLE PURPOSE OF OBTAINING A BUILDING PERMIT. OTHER INFORMATION SHOWN HEREON IS BASED ON A FIELD SURVEY OF THE SITE AND/OR OTHER PROPOSED IMPROVEMENTS FROM A CIVIL SITE PLAN FOR THE SUBJECT PROPERTY. THE SURVEYOR MAKES NO GUARANTEES THAT THIS INFORMATION INCLUDES ALL IMPROVEMENTS, INCLUDING UTILITIES, EITHER EXISTING OR ABANDONED ON THE SUBJECT PROPERTY.

MARK A. AIMONETTI
AKPLS 13022

05/14/2024
DATE

STATE OF ALASKA 49TH
Mark A. Aimonetti
No. 13022 - S
05/14/2024
REGISTERED PROFESSIONAL LAND SURVEYOR

vertical bridge

CERTIFIED CARBON NEUTRAL COMPANY
CarbonNeutral.com

EDGE
SURVEY AND DESIGN, LLC
8000 KING STREET ANCHORAGE, AK 99518
Phone (907) 344-5990 Fax (907) 344-7794
ACEL # 1392 WWW.EDGESURVEY.NET

PLOT PLAN
US-AK-5280 GULL LAKE TOWER
4075 LINDSEY CIRCLE, BUTTE, ALASKA
SE1/4 SW1/4 SW1/4 NE1/4 AND
SE1/4 NW1/4 SW1/4 NE1/4
SECTION 30, T17N, R3W. S.M., AK
PALMER RECORDING DISTRICT, THIRD JUDICIAL DISTRICT

DRAWN BY:	DATE:	PROJECT NO:
SH/VB	05/14/2024	23-203
CHECKED BY:	SCALE:	SHEET:
MA	1" = 60'	1 OF 1

Attachment E:
FAA Determination Letter
Study 2023-AAL-377-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2023-AAL-377-OE

Issued Date: 12/20/2023

Julie Heffernan
The Towers, LLC
7500 Park of Commerce Dr
Suite 200
Boca Raton, FL 33487

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Antenna Tower US-AK-5280 Gull Lake
Location:	Palmer, AK
Latitude:	61-32-11.93N NAD 83
Longitude:	148-58-44.37W
Heights:	67 feet site elevation (SE)
	165 feet above ground level (AGL)
	232 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 06/20/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination does not constitute authority to transmit on the frequency(ies) identified in this study. The proponent is required to obtain a formal frequency transmit license from the Federal Communications Commission (FCC) or National Telecommunications and Information Administration (NTIA), prior to on-air operations of these frequency(ies).

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (206) 231-2993, or lynnette.farrell@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2023-AAL-377-OE.

Signature Control No: 600599522-607744902 (DNE)
Lynnette Farrell
Technician

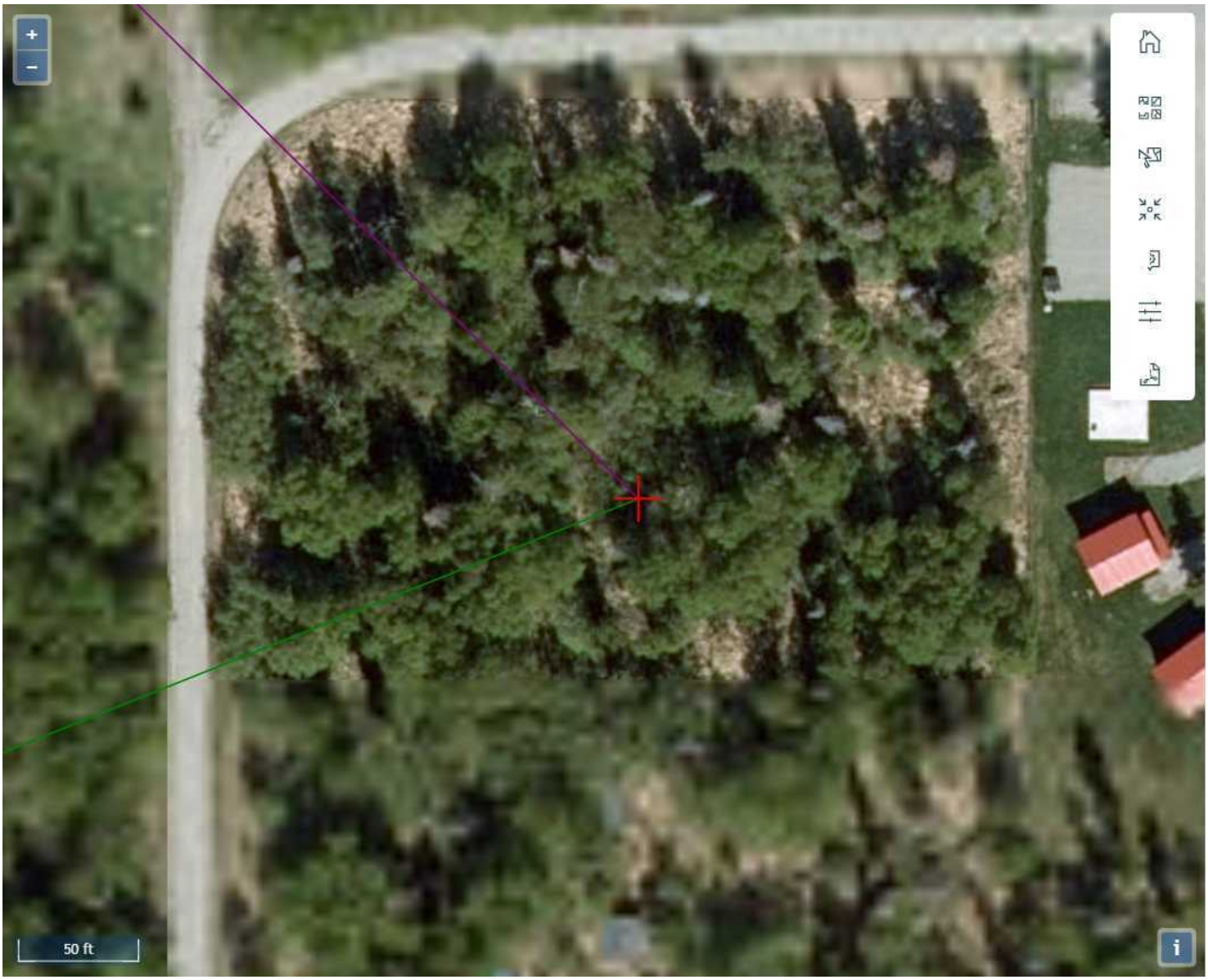
Attachment(s)
Frequency Data
Map(s)

cc: FCC

Frequency Data for ASN 2023-AAL-377-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W

Verified Map for ASN 2023-AAL-377-OE



Attachment F:
Estimated Verizon Service Area Plots

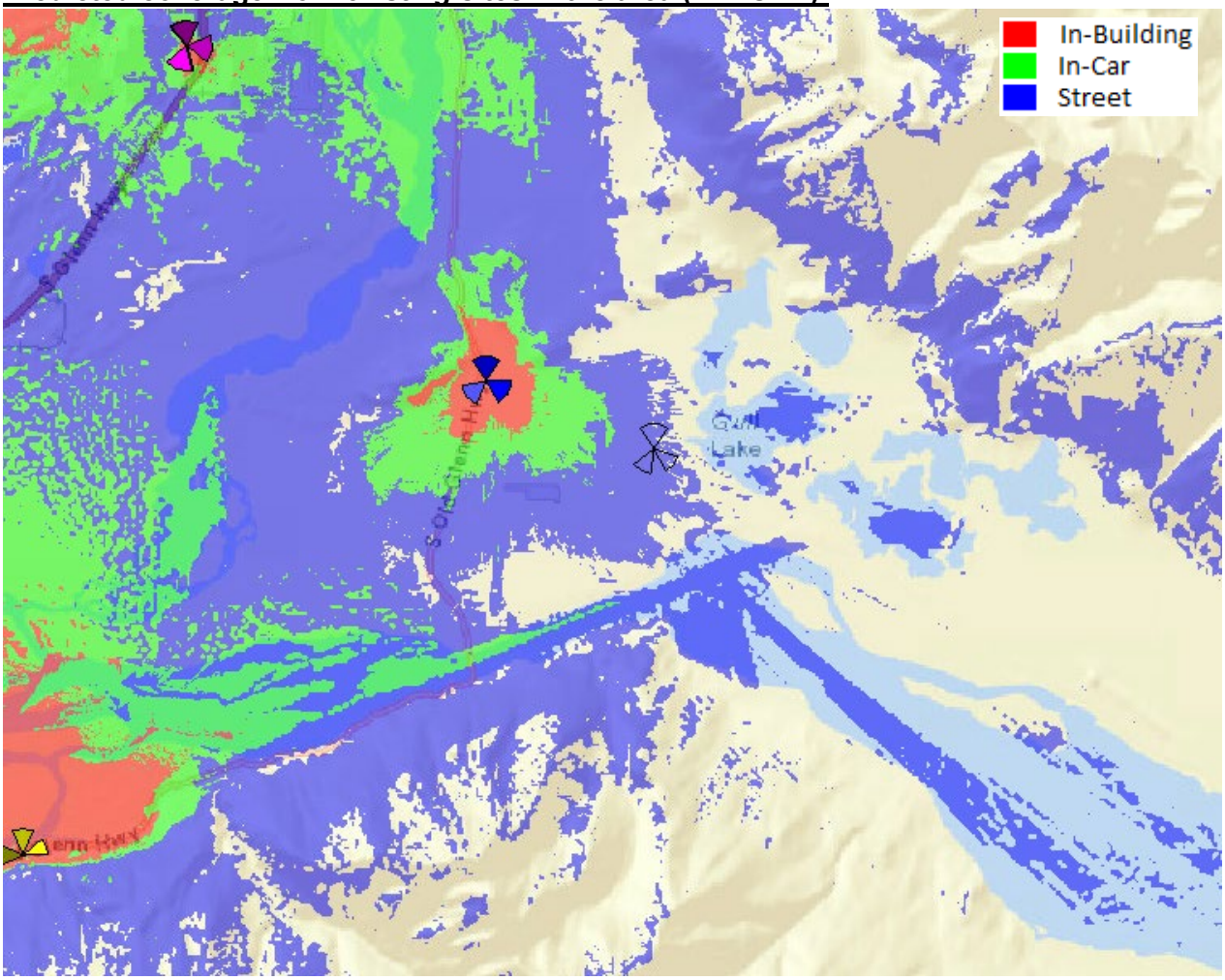
Overview of Cellular Service Coverage

Proposed "Gull Lake" Communications Tower

Legend:

- Red areas indicate a high probability of having in-building coverage
- Green areas indicate probable coverage in-building and good coverage in vehicles
- Blue areas indicate street coverage with questionable coverage in-buildings
- Areas without color indicates questionable coverage

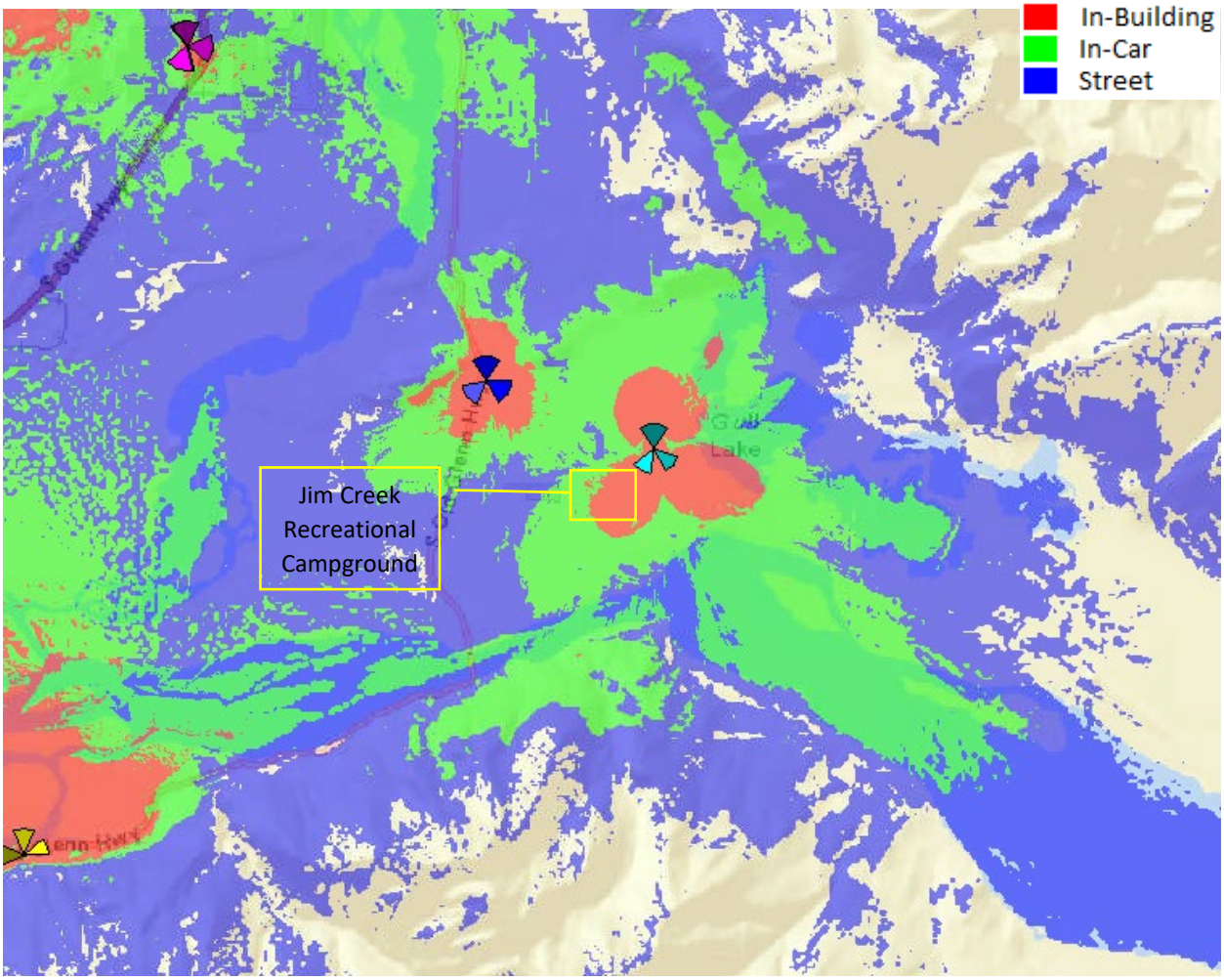
Predicted coverage from *existing* sites in the area (BEFORE):



Legend:

- Red areas indicate a high probability of having in-building coverage
- Green areas indicate probable coverage in-building and good coverage in vehicles
- Blue areas indicate street coverage with questionable coverage in-buildings
- Areas without color indicates questionable coverage

Predicted coverage including the proposed "GULL_LAKE" site (AFTER):



Attachment G:
Memorandum of Option to Lease
Subject Property

ALASKA
2023-016022-0
Recording Dist: 311 - Palmer
9/5/2023 11:43 AM Pages: 1 of 5

(Above 3" Space for Recorder's Use Only)

Upon Recording Return to:

The Towers, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, Florida 33487
Attn: Daniel Marinberg

Site Name: Gull Lake
Site Number: US-AK-5280
Commitment #: VTB-157733-C

MEMORANDUM OF OPTION TO LEASE

This Memorandum of Option to Lease ("**Memorandum**") evidences an Option and Lease Agreement (the "**Agreement**") between **Jeff Cotterman**, a single man ("**Landlord**"), whose address is 13818 E Hay Wagon Way, Palmer, AK 99645, and **The Towers, LLC**, a Delaware limited liability company, whose mailing address is 750 Park of Commerce Drive, Suite 200, Boca Raton, Florida 33487 ("**Tenant**"), dated August 25th, 2023 (the "**Effective Date**"), for a portion (the "**Premises**") of the real property (the "**Property**") described in Exhibit A attached hereto.

Pursuant to the Agreement, Landlord has granted Tenant an exclusive option to lease the Premises (the "**Option**"). The Option commenced as of the Effective Date and shall continue in effect for a period of four (4) years from the Effective Date.

Landlord ratifies, restates and confirms the Agreement and, upon exercise of the Option, shall lease to Tenant the Premises, subject to the terms and conditions of the Agreement. The Agreement provides for the lease by Landlord to Tenant of the Premises for an initial term of five (5) years with nine (9) renewal option(s) of an additional five (5) years each, and further provides:

1. Landlord may assign the Agreement only in its entirety and only to a purchaser of the fee interest of the Property;

2. Under certain circumstances, Tenant has a right of first refusal to acquire the Premises or the Property from Landlord;

3. Under certain circumstances, Landlord may not subdivide the Property without Tenant's prior written consent; and

4. The Agreement restricts Landlord's ability to utilize or allow the utilization of the Property or real property owned by Landlord which is adjacent or contiguous to the Property for the construction, operation and/or maintenance of the Communications Facilities (as defined in the Agreement).

This Memorandum is not intended to amend or modify and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the Agreement. In the event of a conflict between the provisions of this Memorandum and the provisions of the Agreement, the provisions of the Agreement shall control. The Agreement shall be binding upon and inure to the benefit of Landlord and Tenant and shall inure to the benefit of their respective heirs, successors, and assigns, subject to the provisions of the Agreement.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK; SIGNATURES BEGIN ON NEXT PAGE]

IN WITNESS WHEREOF, the parties hereto have executed this MEMORANDUM OF OPTION TO LEASE effective as of the date last signed by a party hereto.

WITNESSES:

_____

Name:_____

_____

Name:_____

LANDLORD:

_____

Jeff Cotterman

Date: 8/23/23

STATE OF Alaska

COUNTY OF Mat Su Borough

The foregoing instrument was acknowledged before me this 23 day of August _____, 20 23 by Jeff Cotterman.

_____

Notary Public

Print Name: Morgan Hull

My Commission Expires: April 19, 2027

Serial Number, if any: 230419007

NOTARY PUBLIC
MORGAN HULL
STATE OF ALASKA
MY COMMISSION EXPIRES APR. 19, 2027

(Tenant's Signature Page to Memorandum of Option to Lease)

WITNESSES:

Name: Edward Davis

Name: Christopher Antoun

TENANT:

The Towers, LLC
a Delaware limited liability company

By: Tim Tuck
Name:
Title: Vice President - Lease Administration
Date: 08/25/2023

Leasing Ops DS LG

STATE OF FLORIDA

COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this 25th day of August, 2023, by Tim Tuck (signing party), the VP-LA (title of signatory) of The Towers, LLC, a Delaware limited liability company, on behalf of said company.

Notary Public

Print Name: Vanessa Sanchez

My Commission Expires: April 20, 2025

Serial Number, if any: HH 119583

VANESSA SANCHEZ
MY COMMISSION EXPIRES
APRIL 20, 2025
#HH 119583
Bonded thru Notary Public Underwriters
NOTARY PUBLIC, STATE OF FLORIDA

EXHIBIT A
(TO MEMORANDUM OF OPTION TO LEASE)

The Property
(may be updated by Tenant upon receipt of final legal description from title)

The land referred to herein below is situated in the Palmer Recording District, Third Judicial District, State of Alaska and is described as follows:

The East one-half of the Southwest one-quarter of the Southwest one-quarter of the Northeast one-quarter (E1/2 SW1/4 SW1/4 NE1/4) and the Southeast one-quarter of the Northwest one-quarter of the Southwest one-quarter of the Northeast one-quarter (SE1/4 NW1/4 SW1/4 NE1/4) of Section 30, Township 17 North, Range 3 East, Seward Meridian, located in the Palmer Recording District, Third Judicial District, State of Alaska.

Tax Account No.: 117N03E30A012

Access and utilities serving the Premises (as defined in the Agreement) includes all easements of record as well as that portion of the Property designated by Landlord and Tenant for Tenant (and Tenant's guests, agents, customers, subtenants, licensees and assigns) ingress, egress, and utility purposes to and from a public right-of-way.

Attachment H:
Google Earth Viewshed Analysis

NEW HORIZONS

Building Tomorrow's Infrastructure Today

Corporate Headquarters
901 Cope Industrial Way
Palmer, Alaska 99645
907.761.6000

www.nhtiusa.com

NEW HORIZONS
Building Tomorrow's Infrastructure Today

December 11, 2023

Rick Benedict, Current Planner
Development Services Division
Matanuska-Susitna Borough
350 E. Dahlia Avenue
Palmer, Alaska 99645

Subject: Proposed Gull Lake Communications Tower – Citizen Participation Report

Dear Mr. Benedict:

This is a citizien participation report in accordance with MSB 17.67.050(B) which summarizes the notifications and results of the community meeting that was held prior to submittal of the Conditional Use Permit (CUP) application for Tall Structures under MSB 17.67.

On November 3rd, New Horizons sent out notification of the community meeting to discuss the proposed development to 67 landowners located within ½ mile of the proposed tower site, as well as a copy to the Butte Community Council. The list was created using the MSBs Mailing List GIS Application. The application provided results for 77 parcel owners; however, due to several landowners owning multiple pieces of land, the actual number of mailings came to 67. Attachment A contains a copy of the USPS certificate of mailing and list of landowners who received notifications. Mailings included a copy of the community meeting notification letter, Mat-Su Borough public comment form, as well as a graphic depicting estimate service coverage of the subject tower. All documents mailed to landowners can be found in Attachment B. In addition, local citizens published copies of the mailings to two local Palmer Facebook pages, increasing awareness of the proposed development and community meeting date.

The community meeting was coordinated with the Butte Community Council President and was held on November 27th, 2023 at 6:00 p.m. at the Butte Community Center, 3881 Butte Road, Palmer, AK 99654. The meeting was in-person only due to the community center not having internet connectivity. At the meeting, New Horizons provided copies of all the material already published, as well as copies of the zoning drawings and additional graphics (google earth overlay) showing the proposed service area.

There were four people in attendance at the meeting, two of which live in the neighborhood in which the tower is proposed to be located. The sign-in sheet for the meeting is located in Attachment C. No property owners have requested updates in writing regarding the proposed development, nor were any written comments provided at the meeting.

New Horizons Telecom, Inc.
901 Cope Industrial Way
Palmer, Alaska 99645
www.nhtiusa.com

907.761.6000 (phone)
907.761.6091 (fax)

In the notification letter, and re-stated during the meeting, New Horizons requested a deadline of December 1st for submittal of written comments to be included in the citizen participation report. Several written comments were submitted to the MSB utilizing the public comment forms that were mailed out or provided at the meeting, and they are included in Attachment D. Three comments were submitted prior to the deadline, and one comment was received several days later, but is also discussed in this report. A summary of public comments received to-date is below, including responses on how the comments have been addressed, are being addressed, or are not intended to be addressed.

Summary of Comment #1 received 11/8/23
The comment expressed support for the proposed tower, emphasizing its potential to enhance area communications and safety. They acknowledge the importance of minimizing aerial obstructions given the proximity to Butte Airport and the Knik River's significance as a major aircraft recreational corridor, suggesting careful consideration of tower lighting due to low-flying air traffic in the area.

Vertical Bridge has requested an Obstruction Evaluation Study from the Federal Aviation Administation (FAA), assigned number 2023-AAL-377-OE. The outcome of this study will determine whether or not the proposed tower will require hazard lighting.

Summary of Comment #2 received 11/14/23
The commenter, residing near the proposed tower site for 25 years without cellular coverage, expresses inconvenience and safety concerns, highlighting the Jim Creek Recreational Area's lack of reliable cell service. They emphasize the potential benefits of improved communication for the safety of residents and visitors and express full support for the proposed tower, hoping their letter will contribute to the discussion, as they cannot attend the community center meeting in person.

There is no specific concerns to address in this comment. The proposed project will vastly contribute to increased cellular coverage in the area, including areas widely used for recreation, thus increasing public safety and enjoyment.

Summary of Comment #3 received 12/1/23
The commenter strongly opposes the installation of the Gull Lake cell tower, expressing concern about the commercialization of the rural area they value for its beauty and serenity. They question the proposal, particularly since the landowner, who does not live there, will not be negatively affected by the cell tower on their property. The commenter emphasizes the importance of their opinion in the decision-making process.

While it is unfortunate that the commenter has had to endure several instances of large development near or adjacent to her long-time residence that was once undeveloped, we do not intend to address this comment with any changes to the proposal. The benefits the proposed tower will bring to the area outweigh any perceived negatives and the project complies with local, state and federal regulations.

Summary of Comment #4 received after the comment submittal deadline
The commenter has concerns about radiation and the safety of their family and pets regarding the proposed cell tower, and they worry about restrictions on local businesses' expansion. They also find the tower to be an eyesore and note that their cell phone currently works fine.

No changes are being made to the proposed development based on this comment. The tower will comply with local, state and federal safety regulations, including the Federal Communications Commission (FCC) limits on human exposure to radiofrequency (RF)

radiation. We are unaware of any restrictions to local business that would occur from the proposed project.

If you require any further information or have any questions, please do not hesitate to contact me at 907-761-6054 or slarson@nhtiusa.com.

Sincerely,

Sierra Larson

Sierra Larson
Project Manager, New Horizons Telecom, Inc.

Attachment(s):
A - USPS Certificate of Mailing and List of Landowners from MSB Mailing Application
B - Copy of Mailing sent to Landowners
C - Community Meeting Sign-In Sheet
D - Public Comments Received To-Date

Attachment A

UNITED STATES POSTAL SERVICE®

Certificate of Bulk Mailing — Domestic

Fee for Certificate

Up to 1,000 pieces (1 certificate for total number)

For each additional 1,000 pieces, or fraction thereof

Duplicate Copy ☐

Use Current Price List (Notice 123)

Number of Identical Weight Pieces	Class of Mail	Postage for Each Mailpiece Paid	Number of Pieces to the Pound
67	First	☐ Verified	67

Total Number of Pounds	Total Postage Paid for Mailpieces	Fee Paid
4.187	$42.21	$9.30

Mailed For	Mailed By

Postmaster's Certification

It is hereby certified that the number of mailpieces presented and the associated postage and fee were verified. This certificate does not provide evidence that a piece was mailed to a particular address.

(Postmaster or Designee)

Postage: Mailers must affix meter, PC Postage®, or (uncanceled) postage stamps here in payment of total fee due.

NOV – 3 2023

Acceptance employee must cancel postage affixed (by round-date) at the time of mailing.

If payment of total fee due is being paid by Permit Imprint, include the *PostalOne!*® Transaction Number here:

PALMER AK 99645
NOV – 3 2023
USPS

PS Form **3606-D,** January 2016 PSN 7530-17-000-5548

See Reverse for Instructions

Instructions for Certificate of Bulk Mailing — Domestic Service

This service is available only at the time of mailing and is used to specify only the number of identical-weight pieces mailed; it does *not* provide evidence that a piece was mailed to a particular address. This certificate is available for domestic mailings of First-Class Mail®, First-Class Package Service®, Priority Mail®, USPS Retail Ground™, Media Mail®, Library Mail, Bound Printed Matter, Standard Mail® (excluding Customized MarketMail® and Marketing Parcels), and Parcel Select® (including Parcel Select Lightweight®) items.

1. Pay postage as appropriate — affix meter, PC Postage, or (uncanceled) postage stamps in payment of total fee due in the postage area, or if paying fee by permit imprint, enter information in the postage area at the top right of the form.

2. Present PS Form 3606-D and the mailing as follows:

   - When the mailing has fewer than 50 mailpieces *and* less than 50 pounds, present the form and mailing at a retail Post Office™ location.
   - When the mailing has at least 50 mailpieces *or* at least 50 pounds, present the form and mailing at a business mail entry unit (BMEU) or USPS-authorized detached mail unit (DMU).

3. The Postal Service™ certifies and postmarks (round-dates) the PS Form 3606-D at the time of mailing and then returns it to the mailer as the mailer's receipt.

Certificate of Bulk Mailing — Domestic service does not provide a record of delivery, and the Postal Service does not retain any copies of PS Form 3606-D. The mailer cannot use PS Form 3606-D as a certificate of mailing for individual mailpieces or itemized lists.

Roxanne Pedersen
PO Box 2261
Palmer, AK 99645

Milton & Kelley Barker
4030 S Aurora View Circle
Palmer, AK 99645

Deanna Gratrix
4111 S. Silver Bullet Circle
Palmer, AK 99645

Mark & Carol Symonds
PO Box 2254
Palmer, AK 99645

Daniel & Elizabeth Truett
4404 S. Silver Bullet Circle
Palmer, AK 99645

Dorene Heit
18036 E Walling Rd.
Palmer, AK 99645

Christopher & Lynn Humphrey
18149 E Merry Circle
Palmer, AK 99645

Jeff Cotterman
13818 E Hay Wagon Way
Palmer, AK 99645

Kimberly Hopkins
PO Box 3795
Palmer, AK 99645

John Dixon & Christine Erdle
PO Box 771296
Eagle River, AK 99577

Amanda Starr
18164 E. Pine Needle Way
Palmer, AK 99645

Nathan & Krystal Erickson
PO Box 3875
Palmer, AK 99645

Keith & Ann Nelson
PO Box 1222
Palmer, AK 99645

Todd & Robyn Bjork
PO Box 532
Palmer, AK 99645

Jene Mobley & Deanna Gratrix-Mobley
4111 S Silver Bullet Circle
Palmer, AK 99645

Jasmine Felthauser
PO Box 4509
Palmer, AK 99645

Joshua Hale
6105 N Wolverine Rd
Palmer, AK 99645

Matthew & Sarah Joseph
1150 S Colony Way Ste 3 PMB 312
Palmer, AK 99645

Amy Jeffery
500 S Cobb St #468
Palmer, AK 99645

Crispin & Mary Gentry
4064 S. Aurora View Circle
Palmer, AK 99645

Dale & Lorie Koppenberg
PO Box 2344
Palmer, AK 99645

Mckenna Properties, LLC
PO Box 240007
Anchorage, AK 99524

Randall & Patti Sandvik
PO Box 3412
Palmer, AK 99645

Christopher Garner & Jennifer Dushane
3655 Old Glenn Hwy PMB 206
Palmer, AK 99645

Dennis & Jeanette Ray
4307 Alexa Circle
Palmer, AK 99645

Todd & Cynthia McCaw
18084 E. Walling Rd
Palmer, AK 99645

Troy & Emily Deel
PO Box 2574
Palmer, AK 99645

Tracy Rogers
PO Box 190092
Anchorage, AK 99519

Stephen Conklin
18037 E. Walling Rd
Palmer, AK 99645

Starr Trucking Co. Inc.
1405 N Smith Rd
Palmer, AK 99645

Clint Nelson
PO Box 3660
Palmer, AK 99645

Connie Smith
18332 E Plumley Rd 6A-9
Palmer, AK 99645

Koresa Gratrix
4256 S Silver Bullet Circle
Palmer, AK 99645

Brian & Krista Dewees
3853 S Caudill Rd
Palmer, AK 99645

Kristie Besemer
3972 S Lindsey Circle
Palmer, AK 99645

Eklutna, Inc. & Great Land Trust, Inc.
16515 Centerfield Dr. Ste 201
Eagle River, AK 99577

Brendan Trevors
PO Box 767
Palmer, AK 99645

Jesse Jens
18444 E Walling Rd
Palmer, AK 99645

Marty & Cynthia Rapp
PO Box 2213
Palmer, AK 99645

Lucille Frey
3353 S Caudill Rd
Palmer, AK 99645

Ryan & Jennifer Raben
18799 E Walling Rd
Palmer, AK 99645

Eklutna, Inc.
16515 Centerfield Dr. Ste 201
Eagle River, AK 99577

John & Gerrie Deal
18542 E Plumley Rd
Palmer, AK 99645

Robert Braun
18075 E Pine Needle Way
Palmer, AK 99645

Amy Jeffrey
PO Box 468
Palmer, AK 99645

Bunee Amble
18637 E Walling Rd
Palmer, AK 99645

Bernard Considine
16605 E Spruce St.
Palmer, AK 99645

Daniel & Merry Duame
18146 E Merry Circle
Palmer, AK 99645

Kenneth & Cynthia Roediger
4264 S Alexa Circle
Palmer, AK 99645

Gary & Susan Lacy
PO Box 2664
Palmer, AK 99645

Michael Connelly
4306 S Alexa Circle
Palmer, AK 99645

Matthew & Rhonda Wirtanen
4225 S Alexa Circle
Palmer, AK 99645

Zachary & Diana Berrier
4115 S Aurora View Circle
Palmer, AK 99645

Brian & Leslie Bagley
4006 S Aurora View Circle
Palmer, AK 99645

Scott & Terri Siler
425 S Main St
Newkirk, OK 74647

Rikki Gatrix
6643 S Sparrow Ave
Tucson, AZ 85746

Brenda Smith
18130 E Walling Rd
Palmer, AK 99645

Calvin Hall
4009 S Aurora View Circle
Palmer, AK 99645

Brandin & Tyra Bignall
18112 E Pine Needle Way
Palmer, AK 99645

Nicholas & Brittany Johnston
PO Box 2301
Palmer, AK 99645

Alaska Backcountry Cottages, LLC
PO Box 2588
Palmer, AK 99645

Garrett Dunne
4061 S Caudill Rd
Palmer, AK 99645

Stephen & Jean Kelley
18276 E Walling Rd
Palmer, AK 99645

Steven Charron
PO Box 2013
Palmer, AK 99645

Nathan & Darcy Hickman
4042 S Aurora View Circle
Palmer, AK 99645

Rodney & Victoria Schultz
18085 E Walling Rd
Palmer, AK 99645

Butte Community Center
3881 Butte Rd
Palmer, AK 99645

UNITED STATES POSTAL SERVICE.

PALMER
500 S COBB ST
PALMER, AK 99645-9998
(800)275-8777

11/03/2023 12:35 PM

Product	Qty	Unit Price	Price
$5 Floral Geo	1	$5.00	$5.00
$2 Floral Geo	2	$2.00	$4.00
10c Pears	3	$0.10	$0.30
Grand Total:			$9.30

Credit Card Remit $9.30
Card Name: MasterCard
Account #: XXXXXXXXXXXX6082
Approval #: 003050
Transaction #: 768
AID: A0000000041010 Chip
AL: Mastercard
PIN: Not Required

Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

Now hiring - go to www.usps.com/careers

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

or call 1-800-410-7420.

UFN: 026747-0646
Receipt #: 840-59950065-1-5195658-1
Clerk: 07

Attachment B

NEW HORIZONS
Building Tomorrow's Infrastructure Today

October 27, 2023

RE: Notification of Community Meeting – Proposed Communication Tower

Dear Neighbor,

We hope this letter finds you well. This letter is being sent to invite you to a community meeting to discuss details regarding a proposed communication tower in your vicinity. Your input is valued in shaping this project to align with the community's needs. We encourage you to attend the meeting, submit your comments, and be a part of the approval process.

Meeting Details:

Date: November 27, 2023
Time: 6:00 PM
Location: Butte Community Center, 3881 Butte Rd., Palmer, AK 99645
Tower Site: 4075 S. Lindsey Circle, Palmer, AK 99645

Description of the Proposed Development:

The proposed communication tower is designed to improve cellular coverage in the area, addressing a significant gap in the community's ability to stay connected and ensuring public safety. The proposed tower will have the following features:

- **Height:** 155'
- **Design:** Self-Support (Lattice) Tower
- **Lighting:** TBD pending FAA Study No. 2023-AAL-377-OE
- **Service Area:** Please see Overview of Service Coverage enclosed

Public Comment Form:

In order to better gather your feedback, we have included a public comment form from the local borough. You can use this form to submit your comments, questions, or concerns about the proposed communication tower directly to the Mat-Su Borough. Deadline for comments to be included in the citizen participation report is December 1, 2023.

Options for Submitting Comments:

1. Mail or Hand-Deliver the Form to the Matanuska Susitna Borough, Development Services Division, at 350 East Dahlia, Palmer, Alaska 99645.
2. Email the Form to: permitcenter@matsugov.us

Applicant Contact Information:

If you have questions or need more information, please reach out to the applicant: Sierra Larson, Project Manager at New Horizons Telecom, Inc. at slarson@nhtiusa.com or 907-761-6054.

Thank you,

Sierra Larson

Sierra Larson, Project Manager
New Horizons Telecom, Inc.

Enclosures:

- Mat-Su Borough Public Comment Form
- Proposed Service Area of Communication Tower

New Horizons Telecom, Inc.
901 Cope Industrial Way
Palmer, Alaska 99645
www.nhtiusa.com

907.761.6000 (phone)
907.761.6001 (fax)

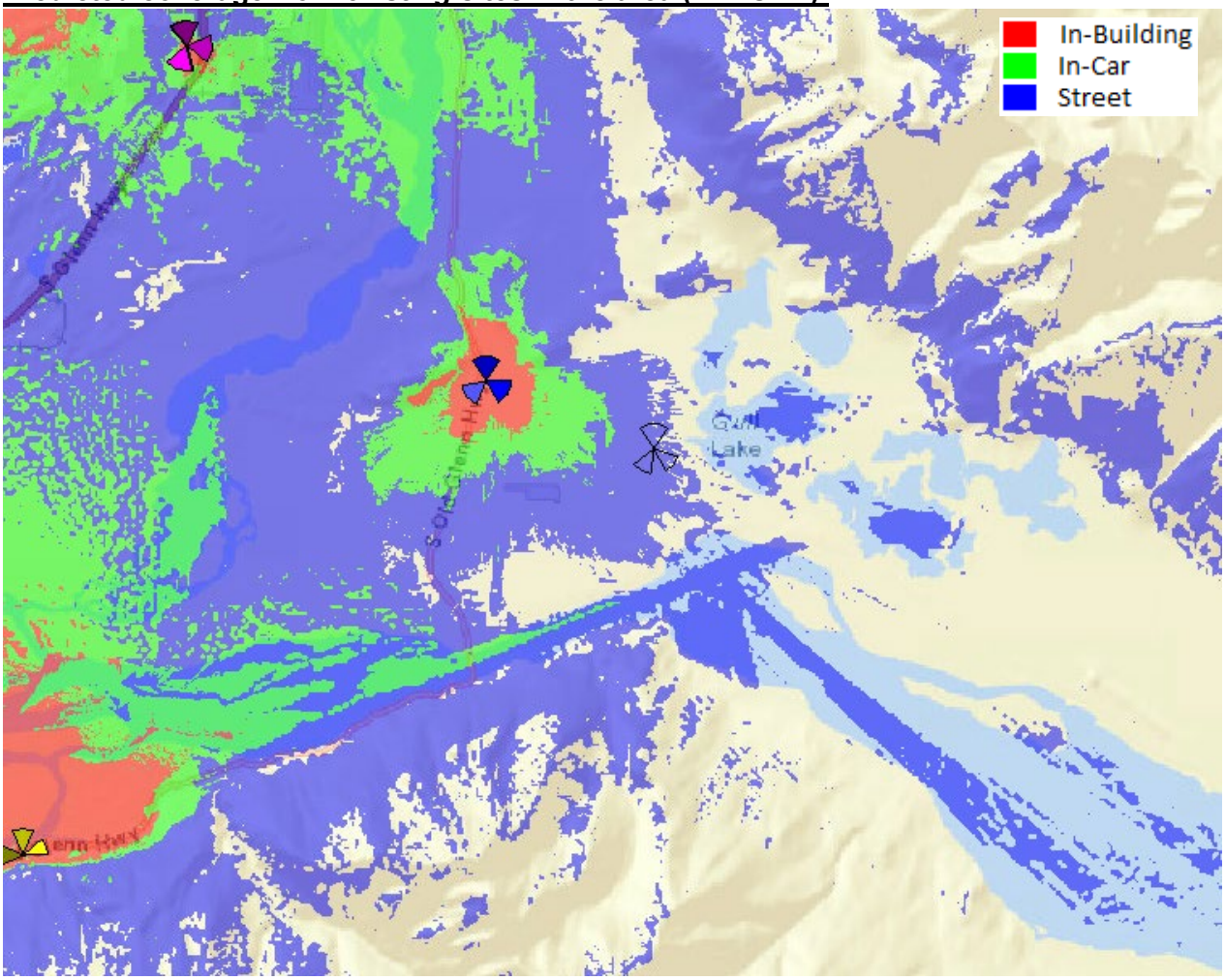
Overview of Cellular Service Coverage

Proposed "Gull Lake" Communications Tower

Legend:

- Red areas indicate a high probability of having in-building coverage
- Green areas indicate probable coverage in-building and good coverage in vehicles
- Blue areas indicate street coverage with questionable coverage in-buildings
- Areas without color indicates questionable coverage

Predicted coverage from *existing* sites in the area (BEFORE):



Legend:

- Red areas indicate a high probability of having in-building coverage
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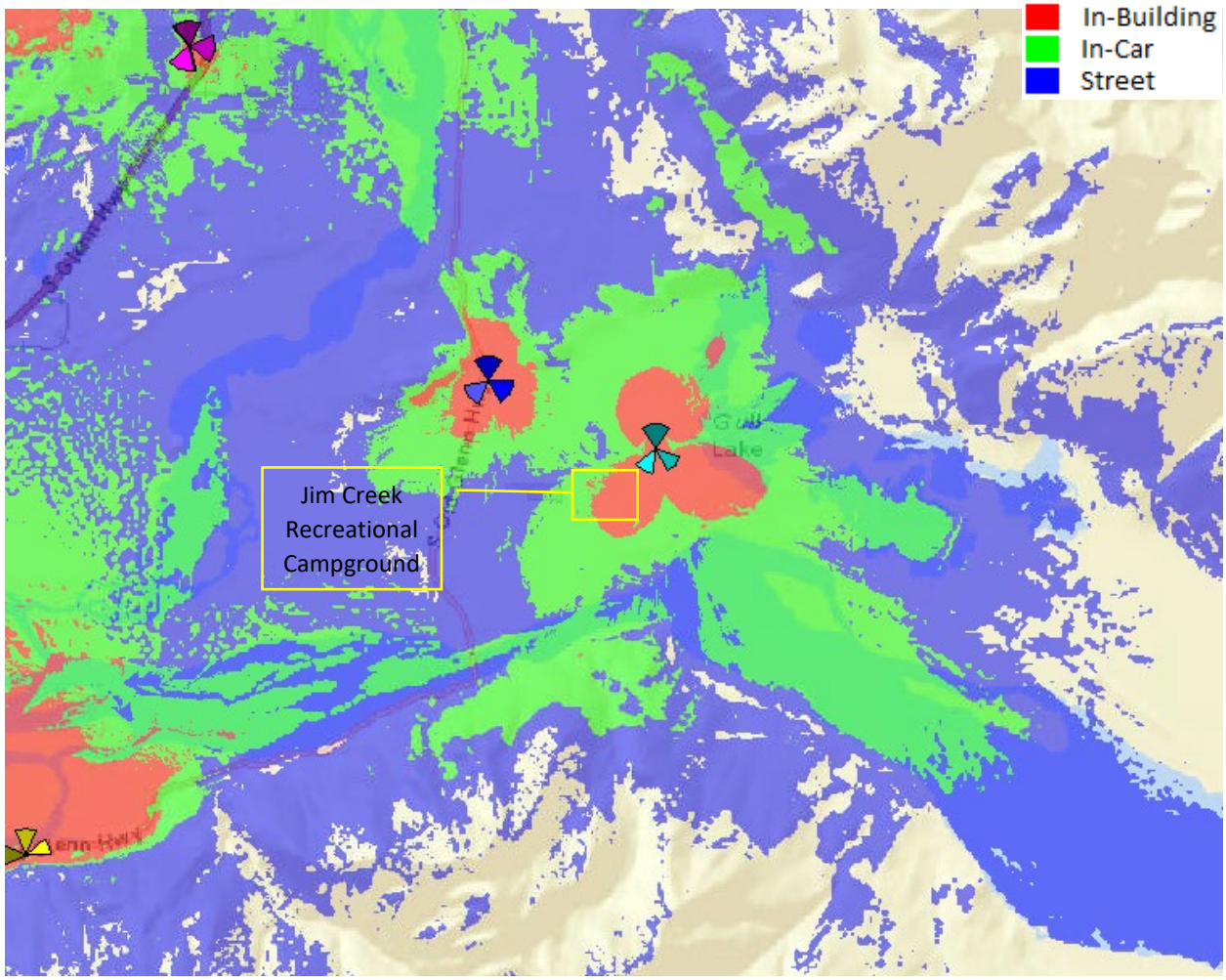
- Blue areas indicate street coverage with questionable coverage in-buildings
- Areas without color indicates questionable coverage

Predicted coverage including the proposed "GULL_LAKE" site (AFTER):



Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FIRST CLASS MAIL

Matanuska-Susitna Borough Code Section: MSB 17.67 – Tall Structures

Location/Legal Description of Parcel or Parcels: 4075 S. Lindsey Circle, Palmer, AK 99645

Application or Item: 155' Self-Support Communications Tower (Conditional Use Permit)

Applicant: New Horizons Telecom, Inc.

Contact Person: Sierra Larson, Project Manager

Applicant/Contact Person Phone#: 907-761-6054

Applicant Address: 901 Cope Industrial Way, Palmer, AK 99645

Meeting Date & Time: November 27, 2023, 6:00 PM.

Meeting Location: Butte Community Center, 3881 Butte Rd., Palmer, AK 99645

Summary of Project:
The proposed communication tower is designed to improve cellular coverage in the Butte area, addressing a significant gap in service. The proposed tower is a 155' Self-Support (lattice) tower.

If you have any questions or would like to send us comments concerning the proposed action, this form may be used for your convenience by filling in the information below and mailing it to the Matanuska-Susitna Borough, Development Services Division, 350 East Dahlia, Palmer, Alaska 99645. You may e-mail comments to *permitcenter@matsugov.us*. Comments received prior to December 1, 2023 will be included in the citizen participation report. Please be advised that comments received from the public after that date will not be included in the citizen participation report but will be included in the staff report to the Planning Commission. If there is not enough room below, please attach this sheet to another piece of paper.

Name:_____ ***Address:***_____

Location/Legal Description of your property:_____

Comments:_____

Note: Vicinity Map Located On Reverse Side

Attachment C

MEETING SIGN IN SHEET

Meeting Title: Gull Lake Communications Tower – Community Meeting

Organizer: New Horizons Telecom, Inc.

Location: Butte Community Center, 3881 Butte Road, Palmer, AK 99645

Date:
11/27/2023
Time:
6:00 pm

Name of Attendee	Address	Phone Number	Email
Rod Schultz	18085 E Wallingford	907746-1948	akbutties@ilj.com
Kris Besemer	3972 S. Lindsey Cir Palmer, AK 99645	907-746-2240	N/A
Ron Johnson	3350 S. Martin Palmer	841-6605	ronjohnson@gci.net
Janet Johnson	"	841-6604	janetjohnsonak907@gmail.com

Attachment D

Kelsey Bartley

From: fknapp alarmspro.com <fknapp@alarmspro.com>
Sent: Wednesday, November 8, 2023 11:30 AM
To: permitcenter@matsugov.us
Subject: Proposed 155' Self-Support (Lattice) Tower

Hello

FAA Study No. 2023-AAL-377-OE

My wife and I, both born in Palmer, are local land owners and pilots living on Maud Road. We frequent the Knik river with both ground based vehicles and aircraft.

The proposed new tower location will greatly improve area communications and safety, we support the tower and its location. Because we are pilots it is a concern to limit aerial obstructions, this tower is well below the 200' level however tower lighting should be carefully considered due to the proximity to the Butte Airport and the amount of **low flying air traffic in the area**.. the Knik is one of the major aircraft recreational corridors. With the tower placed near the east of any population there is no requirement for aircraft to maintain altitude and as a result they may be very low when approaching from the East.

Thank you
Frank and Kristine Knapp
907-841-0298

Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FIRST CLASS MAIL

Matanuska-Susitna Borough Code Section: MSB 17.67 – Tall Structures

Location/Legal Description of Parcel or Parcels: 4075 S. Lindsey Circle, Palmer, AK 99645

Application or Item: 155' Self-Support Communications Tower (Conditional Use Permit)

Applicant: New Horizons Telecom, Inc.

Contact Person: Sierra Larson, Project Manager

Applicant/Contact Person Phone#: 907-761-6054

Applicant Address: 901 Cope Industrial Way, Palmer, AK 99645

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Name: KEITH R & ANN F NELSON ***Address:*** 18747 E WALWIG RD.

Location/Legal Description of your property: HAMMER HEAD TRACT 1

Comments: ATTACHED

Note: Vicinity Map Located On Reverse Side

November 7, 2023

Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division

re: Proposed Communications Tower at 4075 Lindsey Circle, Palmer AK

To whom it may concern:

Our property shares a border with the proposed site and as such will be affected by the installation of the tower as much as anyone. We have lived in our home for approximately 25 years and have had to get by without cellular coverage the entire time. This is not the greatest of inconveniences, but in the times we live in it certainly is an inconvenience.

We also view this as a safety concern. The Jim Creek Recreational Area is basically in our backyard, and we use it often, as do tens of thousands of others. The area's cellular service is close to non-existent and the potential for injured or lost individuals is always present. It goes without saying that cell service would be of great assistance in those situations.

We will be out of town on the date of the meeting at the community center so we hope this letter will be of as much influence as testimony at the meeting.

We are in full support of this proposal.

Keith R Nelson
PO Box 1222
18747 E Walling Rd.
Palmer, AK 99645

Ann F Nelson

Legal Description - Hammerhead Tract 1

Kris Besemer
3972 S. Lindsey Cir.
Palmer, AK 99645

Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FIRST CLASS MAIL

Matanuska-Susitna Borough Code Section: MSB 17.67 – Tall Structures

Location/Legal Description of Parcel or Parcels: 4075 S. Lindsey Circle, Palmer, AK 99645

Application or Item: 155' Self-Support Communications Tower (Conditional Use Permit)

Applicant: New Horizons Telecom, Inc.

Contact Person: Sierra Larson, Project Manager

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Name: Kris Besemer ***Address:*** 3972 S. Lindsey Cir. Palmer 99645

Location/Legal Description of your property: _____

Comments: I am adamantly opposed to the installation of the Gull Lake cell tower. I purchased my property for the beauty and serenity of the area. I'm not in favor of the commercialization of this rural location. While I believe owner's have a right to develop their land appropriately, I question this proposal. He doesn't/hasn't lived here. He is not to be negatively impacted. I would hope my opinion matters as well

KB

Note: Vicinity Map Located On Reverse Side

Trueth
4404 S Silver Bullet
Palmer, AK 99645

Matanuska-Susitna Borough
Development Services

DEC 05 2023

Received

Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FIRST CLASS MAIL

Matanuska-Susitna Borough Code Section: MSB 17.67 – Tall Structures

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Name: Elizabeth Trueth ***Address:*** 4404 S Silver Bullet Cir

Location/Legal Description of your property: Loa's Acres lot 4

Comments: I have concerns with radiation and the safety of my family & pets. Local businesses would have restrictions in expanding. It's a eye sore. My cell phone works fine.

Note: Vicinity Map Located On Reverse Side

Close Print

Proposed Case for AK: 2023-AAL-377-OE

For information only.
This proposal has not yet been studied. Study outcomes will be posted at a later date.
Public comments are not requested, and will not be considered at this time.

Overview

Study (ASN): 2023-AAL-377-OE
Prior Study:
Status: Work In Progress

Received Date: 09/29/2023
Entered Date: 09/29/2023
Map: View Map

Construction Info

Notice Of: CONSTR
Duration: PERM (Months: 0 Days: 0)
Work Schedule:

Structure Summary

Structure Type: Antenna Tower
Structure Name: US-AK-5280 Gull Lake
FCC Number:

Structure Details

Latitude (NAD 83): 61° 32' 11.93" N
Longitude (NAD 83): 148° 58' 44.37" W
Datum: NAD 83
City: Palmer
State: AK
Nearest County: Matanuska-Susitna

Height and Elevation

	Proposed
Site Elevation:	67
Structure Height:	165
Total Height (AMSL):	232

Frequencies

Low Freq	High Freq	Unit	ERP	Unit
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	2000	W
614	698	MHz	1000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W

	929	932	MHz	3500	W
	930	931	MHz	3500	W
	931	932	MHz	3500	W
	932	932.5	MHz	17	dBW
	935	940	MHz	1000	W
	940	941	MHz	3500	W
	1670	1675	MHz	500	W
	1710	1755	MHz	500	W
	1850	1910	MHz	1640	W
	1850	1990	MHz	1640	W
	1930	1990	MHz	1640	W
	1990	2025	MHz	500	W
	2110	2200	MHz	500	W
	2305	2360	MHz	2000	W
	2305	2310	MHz	2000	W
	2345	2360	MHz	2000	W
	2496	2690	MHz	500	W
	3700	3980	MHz	3280	W

Previous Back to Search Result Next

From:	Sierra Larson
To:	Permit Center
Cc:	Rick Benedict; Paul Danneberg; Chris Mullis; Kristina Buckley
Subject:	Driveway Permit Application - 4075 S Lindsey Circle - Gull Lake Communications Tower
Date:	Friday, January 10, 2025 4:38:13 PM
Attachments:	250110 VB Gull Lake Driveway-Application.pdf 241220 VB GULL LAKE PRELIMINARY REV A.pdf

---

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]

Good Afternoon,

Attached please find a driveway permit application for the above referenced property/site. I've also attached a copy of our preliminary construction drawings. Please review and let me know if you have any questions/concerns or changes required.

Thank you!

Sierra Larson, Project Manager
New Horizons Telecom, Inc.
Palmer, Alaska | 907.761.6054
nhtiusa.com

NEW HORIZONS
Building Tomorrow's Infrastructure Today

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department

Development Services Division

350 East Dahlia Avenue, Palmer, Alaska 99645

(907) 861-7822 Fax (907) 861-8158

E-mail: PermitCenter@matsugov.us

Driveway Permit Application

Permit Fee $200 ($150 Refundable if completed within 3 years) PERMIT NO. _____

Property Owner: (Name) The Towers, LLC. (Vertical Bridge)	Applicant/Agent: (Name) Sierra Larson (New Horizons Telecom), agent for Vertical Bridge
Mailing Address 750 Park of Commerce Drive, Suite 200	Mailing Address 901 Cope Industrial Way
City: Boca Raton State: FL Zip Code: 33487	City: Palmer State: AK Zip Code: 99645
Phone: 206-375-3798 (M) Cell (*optional*):	Phone: 907-761-6054 Cell (*optional*):
E-mail *(optional)* paul.danneberg@verticalbridge.com	E-mail *(optional)* slarson@nhtiusa.com
Site Address: 4075 S. Lindsey Cir.	Driveway Location Will Be Marked With: Survey tape
Property Tax ID #: 26807	Expected Completion Date: August 1, 2025 Driveway Surface Type: Gravel
Road You Are Applying For Access Onto: Lindsey Circle	Distances: Left: 228' Width: 14' Right: 744'
Only Corrugated Metal Pipe Culvert is Allowed Culvert Length: 0' / N/A Diameter: N/A	Pathway or sidewalk dimension (if applicable) N/A

Intended Use:

☐ Single Family ☐ Multi-Family # of units _____

☒ Commercial - Type: Telecommunications Tower Site Estimated "peak hours" trips per day: 2

IF ACCESS IS ONTO A PAVED ROAD, APRON LENGTH TO BE 2 FEET MINIMUM

The Permittee certifies that he/she is the owner, lessee, or authorized agent of the property, that the conditions, restrictions and regulations of the borough will be complied with and that he/she will maintain the driveway in accordance with the provisions and standards attached to this permit, and any applicable code. I hereby certify that the information submitted on this application is complete and accurate to the best of my knowledge and that I am the applicant or agent of the same as stated in the attached documentation. By signing this permit I acknowledge and agree to accept the Driveway Standards and Provisions attached to this permit.

PERMITEE: _____ DATE: 01/10/2025

Signature of Permitee

PERMIT GRANTED BY: _____ DATE: _____

Borough Representative

Revised 12/9/2020

LOW VOLUME DRIVEWAY STANDARDS

High volume driveway accesses shall follow the standards in MSB 11.12.070

A. Driveway width as measured at the property boundary, or at the outside edge of the borough right-of-way, should be a minimum of 10 feet wide and a maximum of 25 feet wide for a residential driveway. Return curves shall be a minimum of 6 feet and maximum of 20 feet. Driveways wider than 25 feet shall be designed by a professional civil engineer registered in the state of Alaska.

B. Driveways to corner lots shall be located 60 feet from the projected point of intersection or property corner. Driveways to corner lots or lots that border two roadways shall gain access from the right-of-way of lowest classification when rights-of-way of multiple classifications bound a lot.

C. Driveway edge clearance shall be equal to or greater than the radius of the driveway curve return. Edge clearance for flag lots with flag poles 40 feet wide or less shall have a minimum edge clearance of 5 feet.

D. Driveways shall not drain onto the roadway. The first 10 feet from road shoulder shall be -2% (negative two percent) slope away from roadway. Where a negative slope away from the roadway is not feasible due to topographical constraints, the driveway shall be constructed in a manner that prevents water from flowing onto the roadway.

E. Driveways shall have a minimum 10 foot landing measured from the outside edge of the road shoulder. The driveway landing shall be installed perpendicular to the roadway. A driveway may intersect the roadway at an angle no less than 60 degrees, upon approval by the Borough, if required by topographical or physical constraints.

F. Unless otherwise specified, a minimum 12" diameter corrugated metal pipe culvert shall be used, and shall be sloped to match the ditch gradient with at least one foot of culvert visible at the toe of the side slopes on each side of the driveway.

G. Permittee shall be responsible for maintenance of the culvert, including thawing, to ensure proper drainage.

H. Driveways shall be installed and maintained to provide the required sight distance triangles. Driveway maintenance is the responsibility of the property owner, including culvert cleaning and thawing, and snow removal. Snow from driveway shall not be placed in or pushed across the roadway but should be stored on property where it does not obstruct traffic signage, address numbers, or sight triangles and placed in such a way as to not interfere with road maintenance.

I. Fill or cut slopes within the right-of-way shall not exceed 2H:1V (2 horizontal:1 vertical) unless designed by a professional civil engineer registered in the state of Alaska.

DRIVEWAY PROVISIONS

1. A driveway constructed within the right-of-way of a public roadway is an encroachment into that right-of-way and requires a written permit. This permit shall not grant the Permittee exclusive right to use the area encroached upon. All driveways or road approaches shall be constructed to Borough Standards.

2. The Permittee is responsible for removal of snow berms placed in driveway during road maintenance activities. Snow removed from driveway by Permittee shall not be placed in the roadway so as to cause interference with road maintenance activities.

3. All driveways or road approaches constructed under this permit within any Borough lands or rights-of-way shall be the property of the Borough. All costs and liability in their connection or in connection with their maintenance shall be at the sole expense of those lands served and/or persons served.

4. Such facilities shall be constructed and maintained in such a manner that the highway and all its appurtenances or facilities including, but not limited to, all drainage pipe, culverts, utilities and their safety shall not be impaired or endangered in any way by the construction or maintenance of this facility.

5. The Permittee shall adjust, relocate or remove this facility without cost or liability to the Borough, if, at any time, or from time to time the use or safety of the roadway requires this to be done.

6. The Permittee shall assume all liability or costs in connection with the facilities and shall hold the Borough or its officers, agents, employees and contractors harmless in matters pertaining to the facilities.

7. The Borough has the right to inspect and/or reject materials or workmanship, to stop work until corrections are made or to require removal of the facility and to charge time and equipment to the Permittee to correct the facility if it is not installed to Borough Standards.

8. The Permittee certifies that the minimum clearance between the proposed finished driveway grade and the lowest aerial utility conductor is in accordance with the requirements of the National Electrical Safety Code (Sec. 23).

9. This Driveway Permit shall belong to the property it serves and the terms and conditions shall be binding upon the Permittee, owner of the property, all new owners, and/lessee. It is the Permittee's responsibility to inform the property owner, new owner, or lessee of the Driveway Permit and conditions.

PERMIT CENTER – FEE RECEIPT FORM

Property Location: D32060 Applicant: Cotterman

	USE PERMITS (100.000.000.341.300)	Fee
	8.35 Public Display of Fireworks	$25.00
	8.40.010 Liquor License - Alcohol & Marijuana Control Office (AMCO) Referrals for Matanuska Susitna Borough Review of Issuance, renewal or transfer (location, owner)	$100.00
	8.40.060 Liquor License Relocation	$500.00
	8.41.010 Marijuana License - Alcohol & Marijuana Control Office (AMCO) Referrals for Matanuska Susitna Borough Review of Issuance, renewal or transfer (location, owner)	$100.00
	8.52 Temporary Noise Permit	$1000.00
	8.55 Special Events Permit 500 – 1000 Attendees 1000+ Attendees 8.55 Special Events Permit Site Monitor Fee / Per Day	 $500.00 $1,000.00 $300.00
	17.02 Mandatory Land Use Permits Commercial	$50.00
	17.04 Nancy Lake Special Land Use District CUP	$1,500.00
	17.06 Electrical Generating & Delivery Facility Application	$500.00
	17.08 Hay Flats Special Land Use District Exception Applica	$1000.00
	17.17 Denali State Park Conditional Use Permit	$1500.00
	17.18 Chickaloon Special Land Use District CUP	$1500.00
	17.19 Glacier View Special Land Use District CUP	$1500.00
	17.23 Port MacKenzie Development Permit	$1000.00
	17.25 Talkeetna Special Land Use CUP	$1500.00
	17.25 Talkeetna Conditional Use Permit – Variance	$1500.00
	17.27 Sutton Special Land Use District CUP	$1500.00
	17.29 Flood Damage Prevention Development Permit	$100.00
	17.29 Flood Damage Prevention Development Permit –Va	$500.00
	17.30.040 Earth Materials Extraction Admin. Permit	$1000.00
	17.30.050 Earth Materials Extraction CUP	$1500.00
	17.36 Residential Planned Unit Development Application – Concept Plan – up to 50 Lots Additional Lots or tracts being created – Per Lot	 $500.00 $100.00
	17.48 Mobile Home Park Application	$500.00
	17.52 Residential Land Use District App (Rezone)	$1,000.00
	17.52 Residential Land Use District CUP	$1,500.00
	17.55 Shoreline Setback Exception Application	$300.00
	17.60 Conditional Use Permit Application	$1500.00
	17.60 Transfer of Junkyard CUP	$500.00

Permit Center
350 E DAHLIA AVE
PALMER AK 99645-6411
907-8618630
Mon 01/13/2025 3:23 PM

Customer: RANDI K BERNIER

Driveway Deposit $150.00
Driveway Applicati $50.00
Sub Total: $200.00
Total: $200.00

PURCHASE
APPROVED 013008

Txn ID:#62313e40 Order ID:#610ae24b
Order Number:450 Type:CREDIT
Card Type:Mastercard Number:*7958
Entry Mode: Chip
SIGNATURE
A0000000041010 Issuer
TAD:01106070032200 TVR:0000008000
ATC:0004 TSI:EC00
UN:6FDF2C32 TC:4F33578F94C77B26

THANK YOU

	17.61 Commercial/Industrial Core Area Conditional Use Permit	$1500.00
	17.62 Coal Bed Methane Conditional Use Permits	$1500.00
	17.63 Racetracks Conditional Use Permit	$1500.00
	17.64 Waste Incinerator Conditional Use Permit	
	17.65 Variance	$1500.00
	17.67 Tall Structures - Network Improvement Permit Nonconforming Use Administrative Permit Conditional Use Permit	$100.00 $200.00 $500.00 $1500.00
	17.70 Regulation of Alcoholic Beverage Conditional Use Permit	$1500.00
	17.73 Multi-Family Land Use Permit – add $25.00 for each additional unit beyond 5 units.	$500.00
	17.75 Single-Family Residential Land Use District CUP	$1500.00
	17.76 Large Lot Single-Family Residential Land Use District	$1500.00
	17.80 Nonconforming Structures (Amnesty) Pre-Existing Legal Nonconforming (Grandfather)	$300.00 $300.00
	17.90 Regulation of Adult Businesses – Conditional Use Permit	$1500.00

	RIGHT-OF-WAY FEES:	
✓	Driveway	$50.00
☐ ✓	Driveway Deposit {100.226.100}	$150.00
	Construction	$200.00
	Utility (Application Fee = $100 ~ Distance Fee $0.25/per lineal foot)	
	Encroachment	$150.00
	Construction Bond {100.227.000}	

	PLATTING PRE-APPLICATION CONFERENCE:	
	Pre-Application Fee	$50.00

	FEES:	
	Flood Plain Development Survey CD	$10.00
	CD/DVD/DVD-R	$7.50
	Construction Manual/Title 43	$5.00
	Plat Map/Tax Map Copies/Mylar	$5.00
	Color Maps	$12.00
	Xerox Copies (B/W = $0.25 ~ Color $1.00/page 11X17 Color $1.75/page)	
	Advertising Fees	
	Cultural Resources Books or Maps	
☐	Citation Payment (If sent to collections – use total due from Courtview)	
	Thumb Drive 8GB = $10; 16GB = $15; 32GB = $20	

$_____ Amount Paid Date:_____ Receipt #_____ By:_____

NEW HORIZONS
Building Tomorrow's Infrastructure Today

December 11, 2023

Rick Benedict, Current Planner
Development Services Division
Matanuska-Susitna Borough
350 E. Dahlia Avenue
Palmer, Alaska 99645

Subject: Proposed Gull Lake Communications Tower – Citizen Participation Report

Dear Mr. Benedict:

This is a citizien participation report in accordance with MSB 17.67.050(B) which summarizes the notifications and results of the community meeting that was held prior to submittal of the Conditional Use Permit (CUP) application for Tall Structures under MSB 17.67.

On November 3rd, New Horizons sent out notification of the community meeting to discuss the proposed development to 67 landowners located within ½ mile of the proposed tower site, as well as a copy to the Butte Community Council. The list was created using the MSBs Mailing List GIS Application. The application provided results for 77 parcel owners; however, due to several landowners owning multiple pieces of land, the actual number of mailings came to 67. Attachment A contains a copy of the USPS certificate of mailing and list of landowners who received notifications. Mailings included a copy of the community meeting notification letter, Mat-Su Borough public comment form, as well as a graphic depicting estimate service coverage of the subject tower. All documents mailed to landowners can be found in Attachment B. In addition, local citizens published copies of the mailings to two local Palmer Facebook pages, increasing awareness of the proposed development and community meeting date.

The community meeting was coordinated with the Butte Community Council President and was held on November 27th, 2023 at 6:00 p.m. at the Butte Community Center, 3881 Butte Road, Palmer, AK 99654. The meeting was in-person only due to the community center not having internet connectivity. At the meeting, New Horizons provided copies of all the material already published, as well as copies of the zoning drawings and additional graphics (google earth overlay) showing the proposed service area.

There were four people in attendance at the meeting, two of which live in the neighborhood in which the tower is proposed to be located. The sign-in sheet for the meeting is located in Attachment C. No property owners have requested updates in writing regarding the proposed development, nor were any written comments provided at the meeting.

New Horizons Telecom, Inc.
901 Cope Industrial Way
Palmer, Alaska 99645
www.nhtiusa.com

907.761.6000 (phone)
907.761.6091 (fax)

In the notification letter, and re-stated during the meeting, New Horizons requested a deadline of December 1st for submittal of written comments to be included in the citizen participation report. Several written comments were submitted to the MSB utilizing the public comment forms that were mailed out or provided at the meeting, and they are included in Attachment D. Three comments were submitted prior to the deadline, and one comment was received several days later, but is also discussed in this report. A summary of public comments received to-date is below, including responses on how the comments have been addressed, are being addressed, or are not intended to be addressed.

Summary of Comment #1 received 11/8/23
The comment expressed support for the proposed tower, emphasizing its potential to enhance area communications and safety. They acknowledge the importance of minimizing aerial obstructions given the proximity to Butte Airport and the Knik River's significance as a major aircraft recreational corridor, suggesting careful consideration of tower lighting due to low-flying air traffic in the area.

Vertical Bridge has requested an Obstruction Evaluation Study from the Federal Aviation Administation (FAA), assigned number 2023-AAL-377-OE. The outcome of this study will determine whether or not the proposed tower will require hazard lighting.

Summary of Comment #2 received 11/14/23
The commenter, residing near the proposed tower site for 25 years without cellular coverage, expresses inconvenience and safety concerns, highlighting the Jim Creek Recreational Area's lack of reliable cell service. They emphasize the potential benefits of improved communication for the safety of residents and visitors and express full support for the proposed tower, hoping their letter will contribute to the discussion, as they cannot attend the community center meeting in person.

There is no specific concerns to address in this comment. The proposed project will vastly contribute to increased cellular coverage in the area, including areas widely used for recreation, thus increasing public safety and enjoyment.

Summary of Comment #3 received 12/1/23
The commenter strongly opposes the installation of the Gull Lake cell tower, expressing concern about the commercialization of the rural area they value for its beauty and serenity. They question the proposal, particularly since the landowner, who does not live there, will not be negatively affected by the cell tower on their property. The commenter emphasizes the importance of their opinion in the decision-making process.

While it is unfortunate that the commenter has had to endure several instances of large development near or adjacent to her long-time residence that was once undeveloped, we do not intend to address this comment with any changes to the proposal. The benefits the proposed tower will bring to the area outweigh any perceived negatives and the project complies with local, state and federal regulations.

Summary of Comment #4 received after the comment submittal deadline
The commenter has concerns about radiation and the safety of their family and pets regarding the proposed cell tower, and they worry about restrictions on local businesses' expansion. They also find the tower to be an eyesore and note that their cell phone currently works fine.

No changes are being made to the proposed development based on this comment. The tower will comply with local, state and federal safety regulations, including the Federal Communications Commission (FCC) limits on human exposure to radiofrequency (RF)

radiation. We are unaware of any restrictions to local business that would occur from the proposed project.

If you require any further information or have any questions, please do not hesitate to contact me at 907-761-6054 or slarson@nhtiusa.com.

Sincerely,

Sierra Larson

Sierra Larson
Project Manager, New Horizons Telecom, Inc.

Attachment(s):
A - USPS Certificate of Mailing and List of Landowners from MSB Mailing Application
B - Copy of Mailing sent to Landowners
C - Community Meeting Sign-In Sheet
D - Public Comments Received To-Date

Attachment A

UNITED STATES POSTAL SERVICE®

Certificate of Bulk Mailing — Domestic

Fee for Certificate

Up to 1,000 pieces (1 certificate for total number)

For each additional 1,000 pieces, or fraction thereof

Duplicate Copy ☐

Use Current Price List (Notice 123)

Number of Identical Weight Pieces	Class of Mail	Postage for Each Mailpiece Paid	Number of Pieces to the Pound
67	First	☐ Verified	67

Total Number of Pounds	Total Postage Paid for Mailpieces	Fee Paid
4.187	$42.21	$9.30

Mailed For	Mailed By

Postmaster's Certification

It is hereby certified that the number of mailpieces presented and the associated postage and fee were verified. This certificate does not provide evidence that a piece was mailed to a particular address.

(Postmaster or Designee)

Postage: Mailers must affix meter, PC Postage®, or (uncanceled) postage stamps here in payment of total fee due.

NOV – 3 2023

Acceptance employee must cancel postage affixed (by round-date) at the time of mailing.

If payment of total fee due is being paid by Permit Imprint, include the *PostalOne!*® Transaction Number here:

PALMER AK 99645
NOV – 3 2023
USPS

PS Form **3606-D,** January 2016 PSN 7530-17-000-5548

See Reverse for Instructions

Instructions for Certificate of Bulk Mailing — Domestic Service

This service is available only at the time of mailing and is used to specify only the number of identical-weight pieces mailed; it does *not* provide evidence that a piece was mailed to a particular address. This certificate is available for domestic mailings of First-Class Mail®, First-Class Package Service®, Priority Mail®, USPS Retail Ground™, Media Mail®, Library Mail, Bound Printed Matter, Standard Mail® (excluding Customized MarketMail® and Marketing Parcels), and Parcel Select® (including Parcel Select Lightweight®) items.

1. Pay postage as appropriate — affix meter, PC Postage, or (uncanceled) postage stamps in payment of total fee due in the postage area, or if paying fee by permit imprint, enter information in the postage area at the top right of the form.

2. Present PS Form 3606-D and the mailing as follows:

   - When the mailing has fewer than 50 mailpieces *and* less than 50 pounds, present the form and mailing at a retail Post Office™ location.
   - When the mailing has at least 50 mailpieces *or* at least 50 pounds, present the form and mailing at a business mail entry unit (BMEU) or USPS-authorized detached mail unit (DMU).

3. The Postal Service™ certifies and postmarks (round-dates) the PS Form 3606-D at the time of mailing and then returns it to the mailer as the mailer's receipt.

Certificate of Bulk Mailing — Domestic service does not provide a record of delivery, and the Postal Service does not retain any copies of PS Form 3606-D. The mailer cannot use PS Form 3606-D as a certificate of mailing for individual mailpieces or itemized lists.

Roxanne Pedersen
PO Box 2261
Palmer, AK 99645

Milton & Kelley Barker
4030 S Aurora View Circle
Palmer, AK 99645

Deanna Gratrix
4111 S. Silver Bullet Circle
Palmer, AK 99645

Mark & Carol Symonds
PO Box 2254
Palmer, AK 99645

Daniel & Elizabeth Truett
4404 S. Silver Bullet Circle
Palmer, AK 99645

Dorene Heit
18036 E Walling Rd.
Palmer, AK 99645

Christopher & Lynn Humphrey
18149 E Merry Circle
Palmer, AK 99645

Jeff Cotterman
13818 E Hay Wagon Way
Palmer, AK 99645

Kimberly Hopkins
PO Box 3795
Palmer, AK 99645

John Dixon & Christine Erdle
PO Box 771296
Eagle River, AK 99577

Amanda Starr
18164 E. Pine Needle Way
Palmer, AK 99645

Nathan & Krystal Erickson
PO Box 3875
Palmer, AK 99645

Keith & Ann Nelson
PO Box 1222
Palmer, AK 99645

Todd & Robyn Bjork
PO Box 532
Palmer, AK 99645

Jene Mobley & Deanna Gratrix-Mobley
4111 S Silver Bullet Circle
Palmer, AK 99645

Jasmine Felthauser
PO Box 4509
Palmer, AK 99645

Joshua Hale
6105 N Wolverine Rd
Palmer, AK 99645

Matthew & Sarah Joseph
1150 S Colony Way Ste 3 PMB 312
Palmer, AK 99645

Amy Jeffery
500 S Cobb St #468
Palmer, AK 99645

Crispin & Mary Gentry
4064 S. Aurora View Circle
Palmer, AK 99645

Dale & Lorie Koppenberg
PO Box 2344
Palmer, AK 99645

Mckenna Properties, LLC
PO Box 240007
Anchorage, AK 99524

Randall & Patti Sandvik
PO Box 3412
Palmer, AK 99645

Christopher Garner & Jennifer Dushane
3655 Old Glenn Hwy PMB 206
Palmer, AK 99645

Dennis & Jeanette Ray
4307 Alexa Circle
Palmer, AK 99645

Todd & Cynthia McCaw
18084 E. Walling Rd
Palmer, AK 99645

Troy & Emily Deel
PO Box 2574
Palmer, AK 99645

Tracy Rogers
PO Box 190092
Anchorage, AK 99519

Stephen Conklin
18037 E. Walling Rd
Palmer, AK 99645

Starr Trucking Co. Inc.
1405 N Smith Rd
Palmer, AK 99645

Clint Nelson
PO Box 3660
Palmer, AK 99645

Connie Smith
18332 E Plumley Rd 6A-9
Palmer, AK 99645

Koresa Gratrix
4256 S Silver Bullet Circle
Palmer, AK 99645

Brian & Krista Dewees
3853 S Caudill Rd
Palmer, AK 99645

Kristie Besemer
3972 S Lindsey Circle
Palmer, AK 99645

Eklutna, Inc. & Great Land Trust, Inc.
16515 Centerfield Dr. Ste 201
Eagle River, AK 99577

Brendan Trevors
PO Box 767
Palmer, AK 99645

Jesse Jens
18444 E Walling Rd
Palmer, AK 99645

Marty & Cynthia Rapp
PO Box 2213
Palmer, AK 99645

Lucille Frey
3353 S Caudill Rd
Palmer, AK 99645

Ryan & Jennifer Raben
18799 E Walling Rd
Palmer, AK 99645

Eklutna, Inc.
16515 Centerfield Dr. Ste 201
Eagle River, AK 99577

John & Gerrie Deal
18542 E Plumley Rd
Palmer, AK 99645

Robert Braun
18075 E Pine Needle Way
Palmer, AK 99645

Amy Jeffrey
PO Box 468
Palmer, AK 99645

Bunee Amble
18637 E Walling Rd
Palmer, AK 99645

Bernard Considine
16605 E Spruce St.
Palmer, AK 99645

Daniel & Merry Duame
18146 E Merry Circle
Palmer, AK 99645

Kenneth & Cynthia Roediger
4264 S Alexa Circle
Palmer, AK 99645

Gary & Susan Lacy
PO Box 2664
Palmer, AK 99645

Michael Connelly
4306 S Alexa Circle
Palmer, AK 99645

Matthew & Rhonda Wirtanen
4225 S Alexa Circle
Palmer, AK 99645

Zachary & Diana Berrier
4115 S Aurora View Circle
Palmer, AK 99645

Brian & Leslie Bagley
4006 S Aurora View Circle
Palmer, AK 99645

Scott & Terri Siler
425 S Main St
Newkirk, OK 74647

Rikki Gatrix
6643 S Sparrow Ave
Tucson, AZ 85746

Brenda Smith
18130 E Walling Rd
Palmer, AK 99645

Calvin Hall
4009 S Aurora View Circle
Palmer, AK 99645

Brandin & Tyra Bignall
18112 E Pine Needle Way
Palmer, AK 99645

Nicholas & Brittany Johnston
PO Box 2301
Palmer, AK 99645

Alaska Backcountry Cottages, LLC
PO Box 2588
Palmer, AK 99645

Garrett Dunne
4061 S Caudill Rd
Palmer, AK 99645

Stephen & Jean Kelley
18276 E Walling Rd
Palmer, AK 99645

Steven Charron
PO Box 2013
Palmer, AK 99645

Nathan & Darcy Hickman
4042 S Aurora View Circle
Palmer, AK 99645

Rodney & Victoria Schultz
18085 E Walling Rd
Palmer, AK 99645

Butte Community Center
3881 Butte Rd
Palmer, AK 99645

UNITED STATES POSTAL SERVICE.

PALMER
500 S COBB ST
PALMER, AK 99645-9998
(800)275-8777

11/03/2023 12:35 PM

Product	Qty	Unit Price	Price
$5 Floral Geo	1	$5.00	$5.00
$2 Floral Geo	2	$2.00	$4.00
10c Pears	3	$0.10	$0.30
Grand Total:			$9.30

Credit Card Remit $9.30
Card Name: MasterCard
Account #: XXXXXXXXXXXX6082
Approval #: 003050
Transaction #: 768
AID: A0000000041010 Chip
AL: Mastercard
PIN: Not Required

Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

Now hiring - go to www.usps.com/careers

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

or call 1-800-410-7420.

UFN: 026747-0646
Receipt #: 840-59950065-1-5195658-1
Clerk: 07

Attachment B

NEW HORIZONS
Building Tomorrow's Infrastructure Today

October 27, 2023

RE: Notification of Community Meeting – Proposed Communication Tower

Dear Neighbor,

We hope this letter finds you well. This letter is being sent to invite you to a community meeting to discuss details regarding a proposed communication tower in your vicinity. Your input is valued in shaping this project to align with the community's needs. We encourage you to attend the meeting, submit your comments, and be a part of the approval process.

Meeting Details:

Date: November 27, 2023
Time: 6:00 PM
Location: Butte Community Center, 3881 Butte Rd., Palmer, AK 99645
Tower Site: 4075 S. Lindsey Circle, Palmer, AK 99645

Description of the Proposed Development:

The proposed communication tower is designed to improve cellular coverage in the area, addressing a significant gap in the community's ability to stay connected and ensuring public safety. The proposed tower will have the following features:

- **Height:** 155'
- **Design:** Self-Support (Lattice) Tower
- **Lighting:** TBD pending FAA Study No. 2023-AAL-377-OE
- **Service Area:** Please see Overview of Service Coverage enclosed

Public Comment Form:

In order to better gather your feedback, we have included a public comment form from the local borough. You can use this form to submit your comments, questions, or concerns about the proposed communication tower directly to the Mat-Su Borough. Deadline for comments to be included in the citizen participation report is December 1, 2023.

Options for Submitting Comments:

1. Mail or Hand-Deliver the Form to the Matanuska Susitna Borough, Development Services Division, at 350 East Dahlia, Palmer, Alaska 99645.
2. Email the Form to: permitcenter@matsugov.us

Applicant Contact Information:

If you have questions or need more information, please reach out to the applicant: Sierra Larson, Project Manager at New Horizons Telecom, Inc. at slarson@nhtiusa.com or 907-761-6054.

Thank you,

Sierra Larson

Sierra Larson, Project Manager
New Horizons Telecom, Inc.

Enclosures:

- Mat-Su Borough Public Comment Form
- Proposed Service Area of Communication Tower

New Horizons Telecom, Inc.
901 Cope Industrial Way
Palmer, Alaska 99645
www.nhtiusa.com

907.761.6000 (phone)
907.761.6001 (fax)

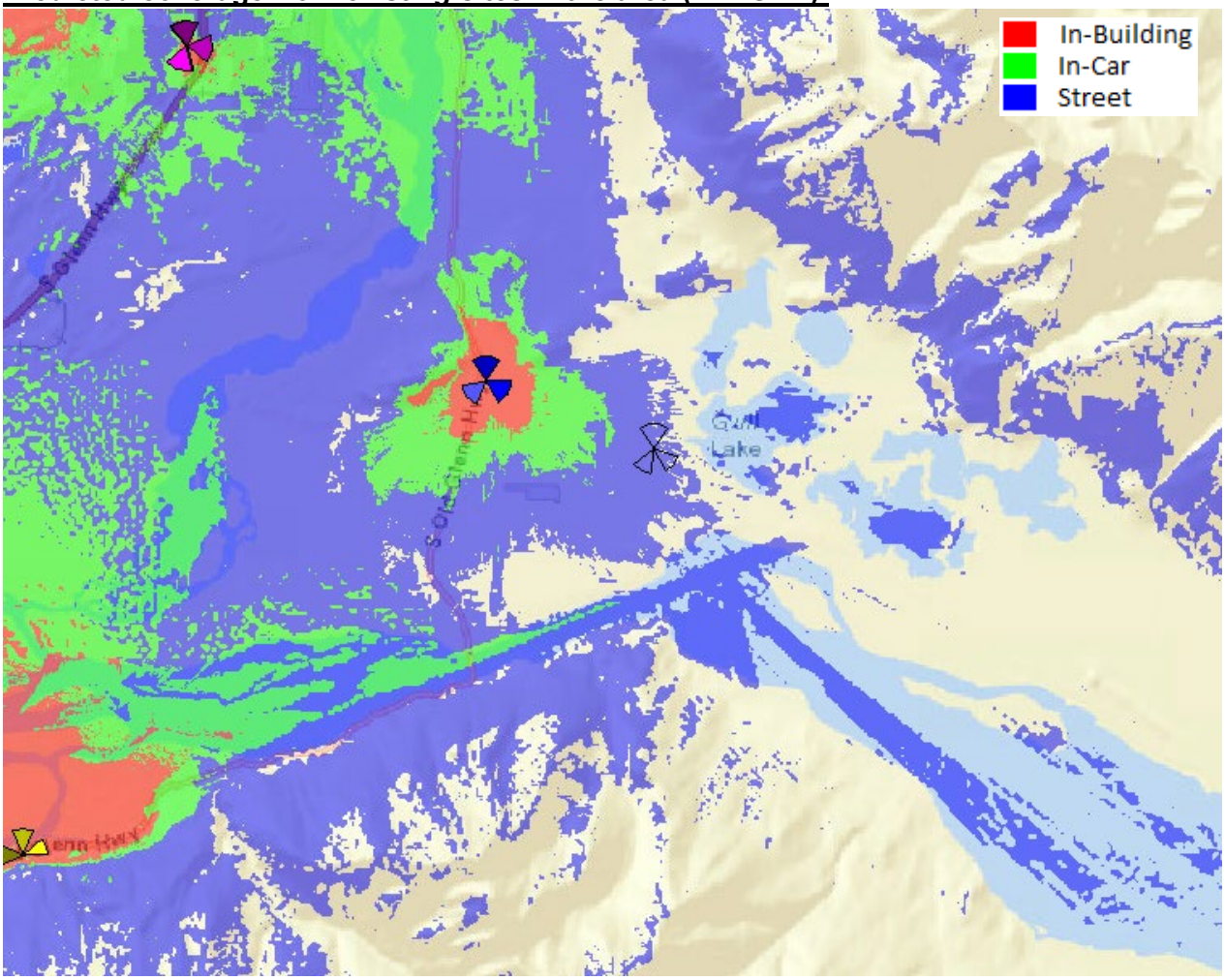
Overview of Cellular Service Coverage

Proposed "Gull Lake" Communications Tower

Legend:

- Red areas indicate a high probability of having in-building coverage
- Green areas indicate probable coverage in-building and good coverage in vehicles
- Blue areas indicate street coverage with questionable coverage in-buildings
- Areas without color indicates questionable coverage

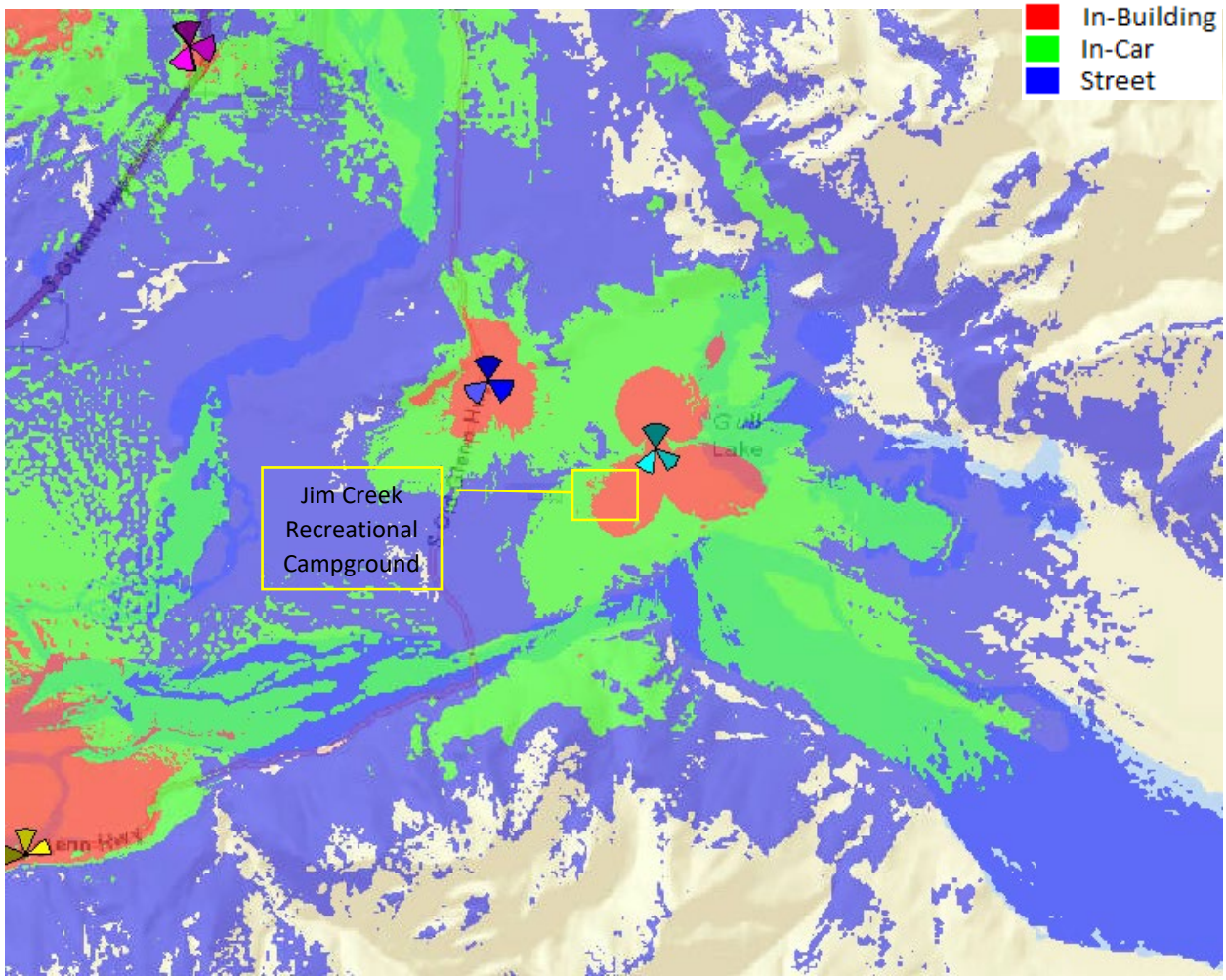
Predicted coverage from *existing* sites in the area (BEFORE):



Legend:

- Red areas indicate a high probability of having in-building coverage
- Green areas indicate probable coverage in-building and good coverage in vehicles
- Blue areas indicate street coverage with questionable coverage in-buildings
- Areas without color indicates questionable coverage

Predicted coverage including the proposed "GULL_LAKE" site (AFTER):



Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FIRST CLASS MAIL

Matanuska-Susitna Borough Code Section: MSB 17.67 – Tall Structures

Location/Legal Description of Parcel or Parcels: 4075 S. Lindsey Circle, Palmer, AK 99645

Application or Item: 155' Self-Support Communications Tower (Conditional Use Permit)

Applicant: New Horizons Telecom, Inc.

Contact Person: Sierra Larson, Project Manager

Applicant/Contact Person Phone#: 907-761-6054

Applicant Address: 901 Cope Industrial Way, Palmer, AK 99645

Meeting Date & Time: November 27, 2023, 6:00 PM.

Meeting Location: Butte Community Center, 3881 Butte Rd., Palmer, AK 99645

Summary of Project:
The proposed communication tower is designed to improve cellular coverage in the Butte area, addressing a significant gap in service. The proposed tower is a 155' Self-Support (lattice) tower.

If you have any questions or would like to send us comments concerning the proposed action, this form may be used for your convenience by filling in the information below and mailing it to the Matanuska-Susitna Borough, Development Services Division, 350 East Dahlia, Palmer, Alaska 99645. You may e-mail comments to *permitcenter@matsugov.us*. Comments received prior to December 1, 2023 will be included in the citizen participation report. Please be advised that comments received from the public after that date will not be included in the citizen participation report but will be included in the staff report to the Planning Commission. If there is not enough room below, please attach this sheet to another piece of paper.

Name:_____ ***Address:***_____

Location/Legal Description of your property:_____

Comments:_____

Note: Vicinity Map Located On Reverse Side

Attachment C

MEETING SIGN IN SHEET

Meeting Title: Gull Lake Communications Tower – Community Meeting

Organizer: New Horizons Telecom, Inc.

Location: Butte Community Center, 3881 Butte Road, Palmer, AK 99645

Date:
11/27/2023
Time:
6:00 pm

Name of Attendee	Address	Phone Number	Email
Rod Schultz	18085 E Wallingford	907746-1948	akbutties@ilj.com
Kris Besemer	3972 S. Lindsey Cir Palmer, AK 99645	907-746-2240	N/A
Ron Johnson	3350 S. Martin Palmer	841-6605	ronjohnson@gci.net
Janet Johnson	"	841-6604	janetjohnsonak907@gmail.com

Attachment D

Kelsey Bartley

From: fknapp alarmspro.com <fknapp@alarmspro.com>
Sent: Wednesday, November 8, 2023 11:30 AM
To: permitcenter@matsugov.us
Subject: Proposed 155' Self-Support (Lattice) Tower

Hello

FAA Study No. 2023-AAL-377-OE

My wife and I, both born in Palmer, are local land owners and pilots living on Maud Road. We frequent the Knik river with both ground based vehicles and aircraft.

The proposed new tower location will greatly improve area communications and safety, we support the tower and its location. Because we are pilots it is a concern to limit aerial obstructions, this tower is well below the 200' level however tower lighting should be carefully considered due to the proximity to the Butte Airport and the amount of **low flying air traffic in the area**.. the Knik is one of the major aircraft recreational corridors. With the tower placed near the east of any population there is no requirement for aircraft to maintain altitude and as a result they may be very low when approaching from the East.

Thank you
Frank and Kristine Knapp
907-841-0298

Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FIRST CLASS MAIL

Matanuska-Susitna Borough Code Section: MSB 17.67 – Tall Structures

Location/Legal Description of Parcel or Parcels: 4075 S. Lindsey Circle, Palmer, AK 99645

Application or Item: 155' Self-Support Communications Tower (Conditional Use Permit)

Applicant: New Horizons Telecom, Inc.

Contact Person: Sierra Larson, Project Manager

Applicant/Contact Person Phone#: 907-761-6054

Applicant Address: 901 Cope Industrial Way, Palmer, AK 99645

Meeting Date & Time: November 27, 2023, 6:00 PM.

Meeting Location: Butte Community Center, 3881 Butte Rd., Palmer, AK 99645

Summary of Project:
The proposed communication tower is designed to improve cellular coverage in the Butte area, addressing a significant gap in service. The proposed tower is a 155' Self-Support (lattice) tower.

If you have any questions or would like to send us comments concerning the proposed action, this form may be used for your convenience by filling in the information below and mailing it to the Matanuska-Susitna Borough, Development Services Division, 350 East Dahlia, Palmer, Alaska 99645. You may e-mail comments to *permitcenter@matsugov.us*. Comments received prior to December 1, 2023 will be included in the citizen participation report. Please be advised that comments received from the public after that date will not be included in the citizen participation report but will be included in the staff report to the Planning Commission. If there is not enough room below, please attach this sheet to another piece of paper.

Name: KEITH R & ANN F NELSON ***Address:*** 18747 E WALWIG RD.

Location/Legal Description of your property: HAMMER HEAD TRACT 1

Comments: ATTACHED

Note: Vicinity Map Located On Reverse Side

November 7, 2023

Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division

re: Proposed Communications Tower at 4075 Lindsey Circle, Palmer AK

To whom it may concern:

Our property shares a border with the proposed site and as such will be affected by the installation of the tower as much as anyone. We have lived in our home for approximately 25 years and have had to get by without cellular coverage the entire time. This is not the greatest of inconveniences, but in the times we live in it certainly is an inconvenience.

We also view this as a safety concern. The Jim Creek Recreational Area is basically in our backyard, and we use it often, as do tens of thousands of others. The area's cellular service is close to non-existent and the potential for injured or lost individuals is always present. It goes without saying that cell service would be of great assistance in those situations.

We will be out of town on the date of the meeting at the community center so we hope this letter will be of as much influence as testimony at the meeting.

We are in full support of this proposal.

Keith R Nelson
PO Box 1222
18747 E Walling Rd.
Palmer, AK 99645

Ann F Nelson

Legal Description - Hammerhead Tract 1

Kris Besemer
3972 S. Lindsey Cir.
Palmer, AK 99645

Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FIRST CLASS MAIL

Matanuska-Susitna Borough Code Section: MSB 17.67 – Tall Structures

Location/Legal Description of Parcel or Parcels: 4075 S. Lindsey Circle, Palmer, AK 99645

Application or Item: 155' Self-Support Communications Tower (Conditional Use Permit)

Applicant: New Horizons Telecom, Inc.

Contact Person: Sierra Larson, Project Manager

Applicant/Contact Person Phone#: 907-761-6054

Applicant Address: 901 Cope Industrial Way, Palmer, AK 99645

Meeting Date & Time: November 27, 2023, 6:00 PM.

Meeting Location: Butte Community Center, 3881 Butte Rd., Palmer, AK 99645

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Name: Kris Besemer ***Address:*** 3972 S. Lindsey Cir. Palmer 99645

Location/Legal Description of your property: _____

Comments: I am adamantly opposed to the installation of the Gull Lake cell tower. I purchased my property for the beauty and serenity of the area. I'm not in favor of the commercialization of this rural location. While I believe owner's have a right to develop their land appropriately, I question this proposal. He doesn't/hasn't lived here. He is not to be negatively impacted. I would hope my opinion matters as well

KB

Note: Vicinity Map Located On Reverse Side

Trueth
4404 S Silver Bullet
Palmer, AK 99645

Matanuska-Susitna Borough
Development Services

DEC 05 2023

Received

Matanuska-Susitna Borough
Planning & Land Use Department
Development Services Division
350 East Dahlia Avenue
Palmer, Alaska 99645

FIRST CLASS MAIL

Matanuska-Susitna Borough Code Section: MSB 17.67 – Tall Structures

Location/Legal Description of Parcel or Parcels: 4075 S. Lindsey Circle, Palmer, AK 99645

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Applicant: New Horizons Telecom, Inc.

Contact Person: Sierra Larson, Project Manager

Applicant/Contact Person Phone#: 907-761-6054

Applicant Address: 901 Cope Industrial Way, Palmer, AK 99645

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Name: Elizabeth Trueth ***Address:*** 4404 S Silver Bullet Cir

Location/Legal Description of your property: Loa's Acres lot 4

Comments: I have concerns with radiation and the safety of my family & pets. Local businesses would have restrictions in expanding. It's a eye sore. My cell phone works fine.

Note: Vicinity Map Located On Reverse Side