MATANUSKA-SUSITNA BOROUGH
ADMINISTRATIVE HEARING AGENDA

Edna DeVries, Mayor

PLANNING & LAND USE DIRECTOR
Alex Strawn

PLANNING DEPARTMENT
ADMIN. SPECIALIST
Lacie Olivieri

Lower-Level Conference Room of the
Dorothy Swanda Jones Building
350 E. Dahlia Avenue, Palmer

Michael Brown, Borough Manager

PLANNING & LAND USE DEPARTMENT
Jason Ortiz, Planning and Land Use Deputy Director
Wade Long, Development Services Manager
Fred Wagner, Platting Officer

March 26, 2026
REGULAR MEETING
9:00 A.M.

Ways to participate in the Administrative Permit meetings:

IN-PERSON: You will have 3 minutes to present your oral comment.

IN WRITING: You can submit written comments to the Planning Department Admin. at planning@matsugov.us.

TELEPHONIC TESTIMONY:

- Dial 1-855-290-3803; you will hear "Joining conference" when you are admitted to the meeting.
- You will be automatically muted and able to listen to the meeting.
- When the Chair announces audience participation or a public hearing you would like to speak to, press *3; you will hear, "Your hand has been raised."
- When it is your turn to testify, you will hear, "Your line has been unmuted."
- State your name for the record, spell your last name, and provide your testimony.

I. PLEDGE OF ALLEGIANCE

II. PUBLIC HEARINGS

III. UNFINISHED BUSINESS

A. An Administrative Permit In Accordance With MSB 17.67 – Tall Structures Including Telecommunication Facilities, Wind Energy Conversion Systems, and Other Tall Structures, For A Cell Tower Located at 27950 E Knik River, Tax ID# 8274000L001A. (Strumpher, Helmundt, on behalf of ATLAS; Staff: Rebecca Skjothaug, Current Planner)

IV. ADJOURNMENT

Disabled persons needing reasonable accommodation in order to participate in a Meeting should contact the Borough ADA Coordinator at 861-8432 at least one week in advance of the meeting.

Staff Report

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822
www.matsu.gov

DEVELOPMENT SERVICES DIVISION STAFF REPORT

Date:	February 26, 2026
File Number:	TOWER-2025-010039
Applicant:	Strumpher, Helmundt, on behalf of ATLAS
Property Owner:	ATLAS
Request:	Administrative Permit in accordance with MSB 17.67 – Tall Structures Including Telecommunication Facilities, Wind Energy Conversion Systems, and Other Tall Structures
Location:	27950 E Knik River Rd, Tax ID# 8274000L001A
Size of Property:	Approximately 1.35 acres
Proposed Lease Area:	Approximately 50’ x 50’ within Tax ID# 8274000L001A
Reviewed By:	Wade Long, Development Services Manager
Staff:	Rebecca Skjothaug, Current Planner
Staff Recommendation:	Approval – with conditions

EXECUTIVE SUMMARY

An Administrative Permit application under MSB 17.67 – Tall Structures Including Telecommunication Facilities, Wind Energy Conversion Systems, and Other Tall Structures, has been submitted to construct a 125-foot-tall, lattice tower on the above-referenced property within a 50’ x 50’ leased area.

A tall structure exceeding 85 feet in height is only permitted upon the issuance of an Administrative or Conditional Use Permit. Unless this type of use is maintained under and in accordance with a lawfully issued permit, a tall structure is declared to be a public nuisance. The operation of such a land use without a permit is prohibited.

LAND USE

Existing Land Use:
The subject property, located at 27950 E. Knik River Road (Tax ID #8274000L001A), is situated in an unincorporated area of the Matanuska-Susitna Borough within the LAUX 4 subdivision. The parcel is approximately 10 acres in size and is developed with residential uses, including a primary dwelling and a cabin.

Surrounding Land Use:
The surrounding area along this segment of E. Knik River Road is characterized by large lot, rural residential development, consisting primarily of single-family homes, cabins, and accessory structures. Adjacent and nearby parcels are similarly developed for residential use and typically rely on on-site wells and septic systems. No commercial or industrial land uses were identified in the immediate vicinity, and the overall land use pattern reflects a low-density, rural residential character consistent with existing development in the area.

REVIEW OF APPLICABLE CRITERIA AND FINDINGS

MSB 17.03 – Public Notification
The public notice mailed 51 notices to all property owners within approximately ½ mile radius of the subject property and to the South Knik River Community Council on February 6, 2026. The Frontiersman published the public hearing announcement in the February 6, 2026, edition. Staff posted the application material on the Borough website for public review on February 26, 2026. Staff received three responses from the public approving the tower due to lack of cell coverage in the area. Staff received a response from the public opposing the proposed tower.

Section 17.67.040 Types of Permits Available

(A) There are three types of permits available for tall structures:

(1) Administrative permit: new tall structures that are greater than 85 feet but less than or equal to 125 feet. The applicant may request that the decision on an administrative permit be made by the planning commission. The request shall be in writing at the time of application and all requirements for a conditional use permit shall be followed.

(2) Conditional use permit: new tall structures greater than 125 feet; or tall structures that exceed the height threshold at which a conditional use permit within a special land use district is required.

(3) Network improvement permit: allows legally constructed telecommunication towers to be increased in height in accordance with MSB 17.67.110.

Findings of Fact:

1. According to the application material, the proposed tall structure will be a 125-foot-tall, lattice tower telecommunications tower.
2. The applicant has not requested that the Planning Commission decide on this Administrative Permit application.

Conclusion of Law: Based on the above findings, the proposed use meets the criteria to qualify for an Administrative Permit for the construction of a 125-foot-tall structure (MSB 17.67.040(A)(1)).

Section 17.60.080 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;

Findings of Fact:

1. According to the application material, the proposed tall structure equipment compound will be located approximately 1,221 feet from the northern property line, 217 feet from the eastern property line, 140 feet from the southern property line, and 348 feet from the western property line.
2. According to the application materials the base of the equipment compound will be approximately 474 feet from the residential structure on the property
3. The closest residential structure to beyond the property is approximately 580 feet from the proposed tower.
4. All other structures are greater than 600 feet from the proposed tower.
5. Adjacent parcels to the north, east, south, and west range in size from approximately 4 to 78 acres and are single family residential or undeveloped.
6. Private residential Nystrom, John W and Julie L own the adjacent parcel to the west.
7. Private residential Arvidson, Kevin owns the adjacent parcels to the northwest.
8. Private residential Sprehe, Brian and Melanie own the adjacent parcels to the north.
9. Private residential Weslow, Brian J owns the adjacent parcel to the east.
10. Private residential Cichossz, Jeffrey A and Winnie S own the adjacent parcel to the south.
11. East Kink River Road abuts the subject property to the east, approximately 414 feet from the base of the proposed location.
12. The subject parcel is near the mile marker 9 on E Knik River Rd.
13. The tower location would be on the southern part of the parcel within the existing tree lines, minimizing the visual impacts on the surrounding parcels.

Conclusion of Law: Based on the above findings, 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 (MSB 17.67.080(B)(1)).

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(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;

Findings of Fact:

1. According to the application there are two small landing strips/airports near the site. Hunter Creek's airstrip, 2.4 miles away, is not directly in-line with our tower site and will not cause approach issues. The Alaska Glacier Lodge's airstrip, 3.7 miles away, is also not in-line with the proposed location and will not cause approach issues.
2. According to the application the nearest trailhead, noted as 166 - Hunter Creek on MSB trail plans, is approx. 1.75 miles to the South.
3. According to the application the nearest water body, Knik River, is approx. 1.5 miles to the north. It is possible the very tip of the tower would be visible, however from this distance it would likely be difficult to spot.
4. The proposed tower location is at an elevation of 300 feet above sea level, E Knik River Rd is approximately 226 feet above sea level. This indicates that the tower will be visible from the road, but visibility will be minimized due to the existing vegetation on the subject parcel.
5. Site visit photos indicate that a few surrounding parcel owners may have limited visibility to the proposed tower depending on the time of year and foliage coverage from the existing tree line.
6. The tower location would be on the southern part of the parcel within the existing tree lines, minimizing the visual impacts on the surrounding parcels.

Conclusion of Law: Based on the above findings, the proposed tall structures' visibility from public parks and trails has been minimized (MSB 17.67.080(B)(2)).

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(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

Findings of Fact:

1. According to the application there are two small landing strips/airports near the site. Hunter Creek's airstrip, 2.4 miles away, is not directly in-line with our tower site and will not cause approach issues. The Alaska Glacier Lodge's airstrip, 3.7 miles away, is also not in-line with the proposed location and will not cause approach issues.
2. According to the application the nearest trailhead, noted as 166 - Hunter Creek on MSB trail plans, is approx. 1.75 miles to the South.
3. According to the Regional Aviation System Plan there are over 200 private airstrips in the Matanuska-Susitna Borough (RASP 2017).

Conclusion of Law: Based on the above findings, the proposed tall structure will not interfere with the approaches to any existing airport or airfield (MSB 17.67.080(B)(3)).

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

Findings of Fact:

1. The subject parcel is privately-owned, approximately 10.03 acres in size, and is situated in an unincorporated area of the Matanuska-Susitna Borough within the LAUX 4 subdivision
2. On February 12, 2026, one comment opposing the proposed tower was received from the public.
3. According to the application material, the proposed tall structure equipment compound will be located approximately 1,221 feet from the northern property line, 217 feet from the eastern property line, 140 feet from the southern property line, and 348 feet from the western property line.
4. According to the application materials the base of the equipment compound will be approximately 474 feet from the residential structure on the property.
5. According to the application materials the eastern side of the property is fenced and does not allow the public to enter the area of the proposed tower location.
6. Access to the tower equipment compound is made via existing state-permitted driveways on 27964 E Kink River Road, Tax ID#8274000L002C via an access easement agreement.
7. Access to the equipment compound is secured by an eight-foot external fence.
8. According to the application material, the proposed tower is located within an eight-foot-tall chain link fence.
9. According to the application material, the gate providing access to the equipment compound will be secured by chain link fence.
10. The applicant submitted site plans for the proposed tower and compound, which contains certified drawings from Adam M. Amortnont, an Alaska Registered Structural Engineer.
11. The applicant submitted structural design criteria for the proposed tower by Adam M. Amortnont, an Alaska Registered Structural Engineer with NELLO, indicating the tower can sustain basic wind speeds of 120 mph or 60 mph with a ½ inch radial ice build-up.
12. The closest residential structure to beyond the property is approximately 580 feet from the proposed tower.
13. All other structures are greater than 600 feet from the proposed tower.
14. Adjacent parcels to the north, east, south, and west range in size from 4 to 78 acres and are single family residential or undeveloped.
15. Private residential Nystrom, John W and Julie L own the adjacent parcel to the west.
16. Private residential Arvidson, Kevin owns the adjacent parcels to the northwest.
17. Private residential Sprehe, Brian and Melanie own the adjacent parcels to the north.
18. Private residential Weslow, Brian J owns the adjacent parcel to the east.
19. Private residential Cichossz, Jeffrey A and Winnie S own the adjacent parcel to the south.
20. East Kink River Road abuts the subject property to the east, approximately 414 feet from the base of the proposed location.
21. The subject parcel is near the mile marker 9 on E Knik River Rd.

22. According. to the application material, the proposed tower will expand coverage and improve cellular and data performance in the area.
23. The applicant provided information obtained from the Federal Aviation Administration's (FAA) online Notice Criteria Tool indicating that the proposed tower does not require a determination of no hazard to air navigation because it does not exceed thresholds requiring notice to the FAA.
24. According to the application material, the FAA does not require lighting on the proposed tower.
25. The applicant submitted documentation demonstrating that the Federal Communications Commission (FCC) has approved the proposed telecommunications tower at the location identified in the application material.

Discussion: Staff received one comment opposing the proposed tower from a residential property approximately .5 miles away. The residents noted their objection to the proposed tower due to its potential to negatively affect property values and expose the public to Radiofrequency (RF) Electromagnetic Radiation (EMR). This public comment also highlighted the Ancient Tree Subdivision Covenants.

The United States Congress adopted the Telecommunications Act of 1996 (TA96), which requires cellular towers to comply with the Federal Communication Commission (FCC) health and safety standards for RF-EMR emissions. TA96 also preempts local governments from making zoning and land use decisions based on the environmental effects of RF-EMF emissions. As such, this review does not contemplate the potential environmental effects of electromagnetic radiation. In addition, there is no evidence to support that the proposed tower will negatively affect surrounding property values.

Conclusion of Law: Based on the above findings, and with conditions, the proposed tower will not be harmful to public health, safety, convenience, and welfare (MSB 17.60.080(B)(4)).

Section 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.

Findings of Fact:

1. The subject parcel is privately-owned, approximately 10.03 acres in size, and is situated in an unincorporated area of the Matanuska-Susitna Borough within the LAUX 4 subdivision
2. According to the application material, the proposed tall structure equipment compound will be located approximately 1,221 feet from the northern property line, 217 feet from the eastern property line, 140 feet from the southern property line, and 348 feet from the western property line.
3. According to the application materials the base of the equipment compound will be approximately 474 feet from the residential structure on the property.

4. According to the application material, the proposed tower and compound will be within a 50’ x 50’ leased area on the subject property.

Conclusion of Law: Based on the above findings, and with conditions, the proposed equipment compound meets the minimum setback distances from all property lines in accordance with MSB 17.55 (MSB 17.67.090(A)(1)).

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(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.

Findings of Fact:

1. The subject parcel is privately-owned, approximately 10.03 acres in size, and is situated in an unincorporated area of the Matanuska-Susitna Borough within the LAUX 4 subdivision
2. On February 12, 2026, one comment opposing the proposed tower was received from the public.
3. According to the application material, the proposed tall structure equipment compound will be located approximately 1,221 feet from the northern property line, 217 feet from the eastern property line, 140 feet from the southern property line, and 348 feet from the western property line.
4. According to the application materials the base of the equipment compound will be approximately 474 feet from the residential structure on the property.
5. According to the application materials the eastern side of the property is fenced and does not allow the public to enter the area of the proposed tower location.
6. Access to the tower equipment compound is made via existing state-permitted driveways on 27964 E Kink River Road, Tax ID#8274000L002C via an access easement agreement.
7. Access to the equipment compound is secured by an eight-foot external fence.
8. According to the application material, the proposed tower is located within an eight-foot-tall secure and fenced area with slats for screening.
9. According to the application material, the gate providing access to the equipment compound will be secured by chain link fence.
10. The applicant submitted site plans for the proposed tower and compound, which contains certified drawings from Adam M. Amortnont, an Alaska Registered Structural Engineer.
11. The applicant submitted structural design criteria for the proposed tower by Adam M. Amortnont, an Alaska Registered Structural Engineer with NELLO, indicating the tower can sustain basic wind speeds of 120 mph or 60 mph with a ½ inch radial ice build-up.
12. The closest residential structure to beyond the property is approximately 580 feet from the proposed tower.
13. All other structures are greater than 600 feet from the proposed tower.

14. Adjacent parcels to the north, east, south, and west range in size from 4 to 78 acres and are single family residential or undeveloped.

Conclusion of Law: Based on the above findings, the applicant has demonstrated there is no risk to the public health, safety, or welfare of adjacent property owners (MSB 17.67.090(A)(2)(a)).

(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.

Findings of Fact:

1. According to the application material, two parking spaces are provided at the proposed tower location.

Conclusion of Law: Based on the above finding, adequate vehicle parking has been provided (MSB 17.67.090(B)(1)).

(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 (FCC), as well as the party responsible for the operation and maintenance of the facility;

Findings of Fact:

1. According to the application material, signage will be posted identifying the tower's FCC registration number and the party responsible for the operation and maintenance.

Conclusion of Law: Based on the above finding, adequate signage has been provided (MSB 17.67.090(C)(1)(a)).

(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

Findings of Fact:

The proposed tower shall be secured with a locked 8' chain fencing with an additional 1' of barbed wire on top to prevent unauthorized visitors. The proposed facility will operate at 220 Volts and will not require a sign.

Conclusion of Law: Based on the above findings, a "*HIGH VOLTAGE - DANGER*" sign is not required to be displayed on the equipment compound (MSB 17.67.090(C)(1)(b)).

(c) a 24-hour emergency contact number.

Findings of Fact:

1. According to the application material, signage identifying the tower and the party responsible for the operation and maintenance will be posted.
2. According to the application material, a 24-hour contact number will be posted at the proposed tower location.
3. The ATLAS Phone # is (303) 448-8896. This is the 24/7 phone contact phone number and will be displayed on the fence surrounding the equipment compound.

Conclusion of Law: Based on the above findings, a 24-hour emergency contact number has been provided (MSB 17.67.090(C)(1)(c))

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(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.

Findings of Fact:

1. According to the application material, the proposed tower is located within an eight-foot-tall secured and fenced area.
2. According to the application material, the gate providing access to the equipment compound will be secured by a chain link fence.

Conclusion of Law: Based on the findings above, a fence not less than six feet in height with a secured gate, is being provided (MSB 17.67.090(C)(2)).

STAFF RECOMMENDATIONS

Staff recommends approval of the Administrative Permit to construct a 125-foot-tall, a 125-foot-tall, lattice tower on the above-referenced property within a 50' x 50' leased area. The application meets all the applicable standards of MSB 17.67, and staff recommends approval of this request with the following conditions:

1. All aspects of the operation shall comply with the description detailed in the application material and with the conditions of this permit. Before any change of the conditional use, an amendment to the Administrative Permit shall be required.
2. The operation shall comply with all federal, state, and local regulations.
3. Borough-authorized representatives shall be allowed to inspect the site and related records at reasonable times to monitor compliance with all permit conditions. Upon reasonable notice from the Borough, the permittee shall provide necessary assistance to facilitate authorized inspections (MSB 17.67.300(D)).
4. The operation shall obtain a Network Improvement Permit from the Borough to increase the overall height or location of the telecommunications tower on the site in accordance with MSB 17.67.110.
5. The equipment compound and telecommunications tower shall be removed, at the owner's expense within 90 days after abandonment or termination of the permit in accordance with MSB 17.67.130(A)(1).

6. The permittee shall record the access easement presented with the application at the Alaska Department of Natural Resources, prior to construction.

Application

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:
_____ **$1,500** for **Conditional Use Permit** - > 125 feet in height
__X__ **$ 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: _____, Range: _____, Section: _____, Meridian____
MSB Tax Account # 58274000L001A
SUBDIVISION: LAVX 4 BLOCK(S): _____, LOT(S): 1A
STREET ADDRESS: 27950 E Knik River Rd, Palmer, AK 99645
(US Survey, Aliquot Part, Lat. /Long. etc) _____

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
PAUL LAVX
Address: 27950 E Knik River Rd
Palmer, AK 99645
Phne: Hm _____ Fax _____
Wk _____ Cell 907 982 6595
E-mail _____

Name of Agent/ Contact for application
Helmundt Strumpher Atlas Towers 1, LLC
Address: 2500 30th Street, Suite 304,
Boulder, CO, 80301
Phne: Hm _____ Fax _____
Wk 303 448 8896 Cell 720-667-6652
E-mail hstrumpher@atlastowers.com

Special Land Use District *(if applicable)*: _____

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 <u>Administrative</u> and <u>Conditional Use Permits</u>	**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)*	N/A
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.	N/A

In order to grant a <u>Conditional Use Permit</u> or <u>Administrative Permit</u> 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 <u>Network Improvement Permit</u>	**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 <u>Network Improvement Permit</u> 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".	
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) 542093 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	Printed Name	Date
	Helmundt Strumpher	6/6/2025
Signature: Agent	Printed Name	Date

MSB USE ONLY

Date application submitted:

Date application determined complete: _____

GCI

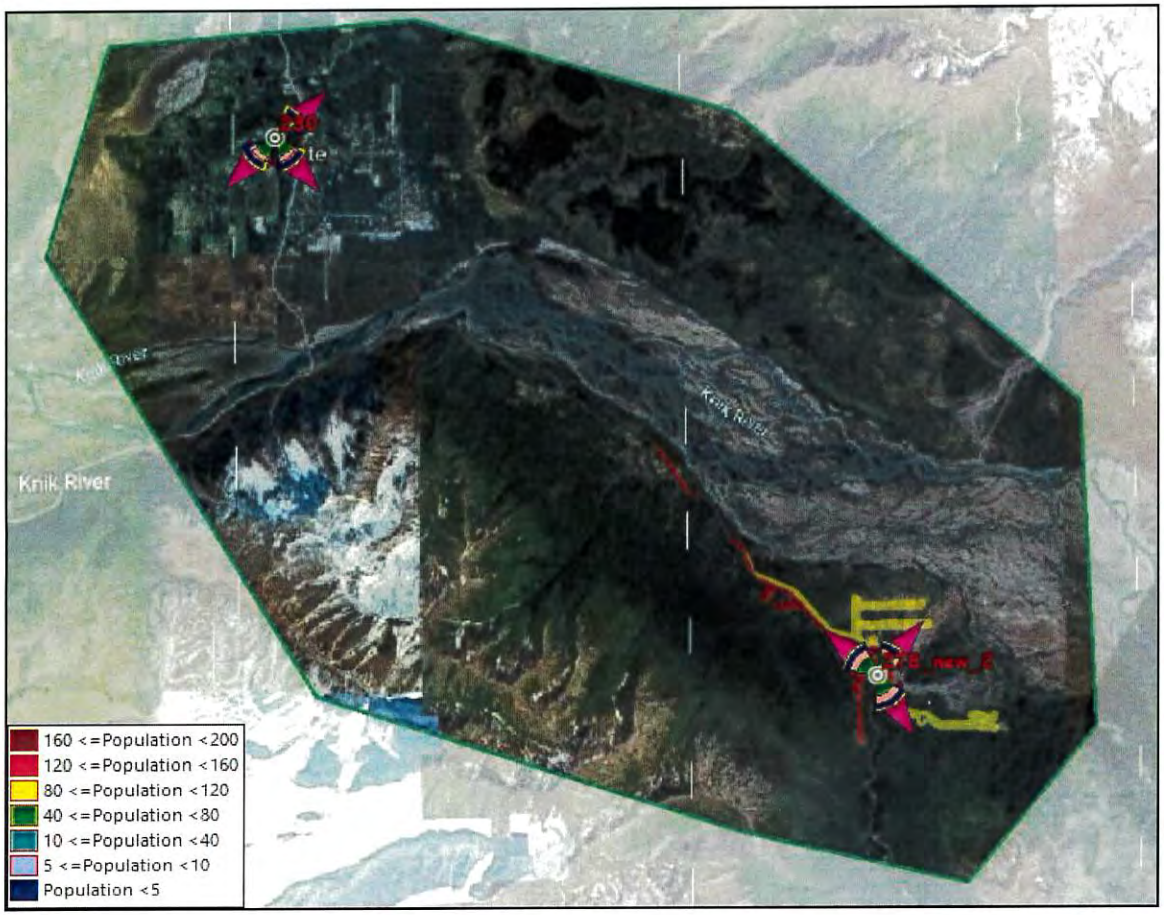
Wireless Site ID = 278

Knik Glacier

Coverage Analysis for Zoning

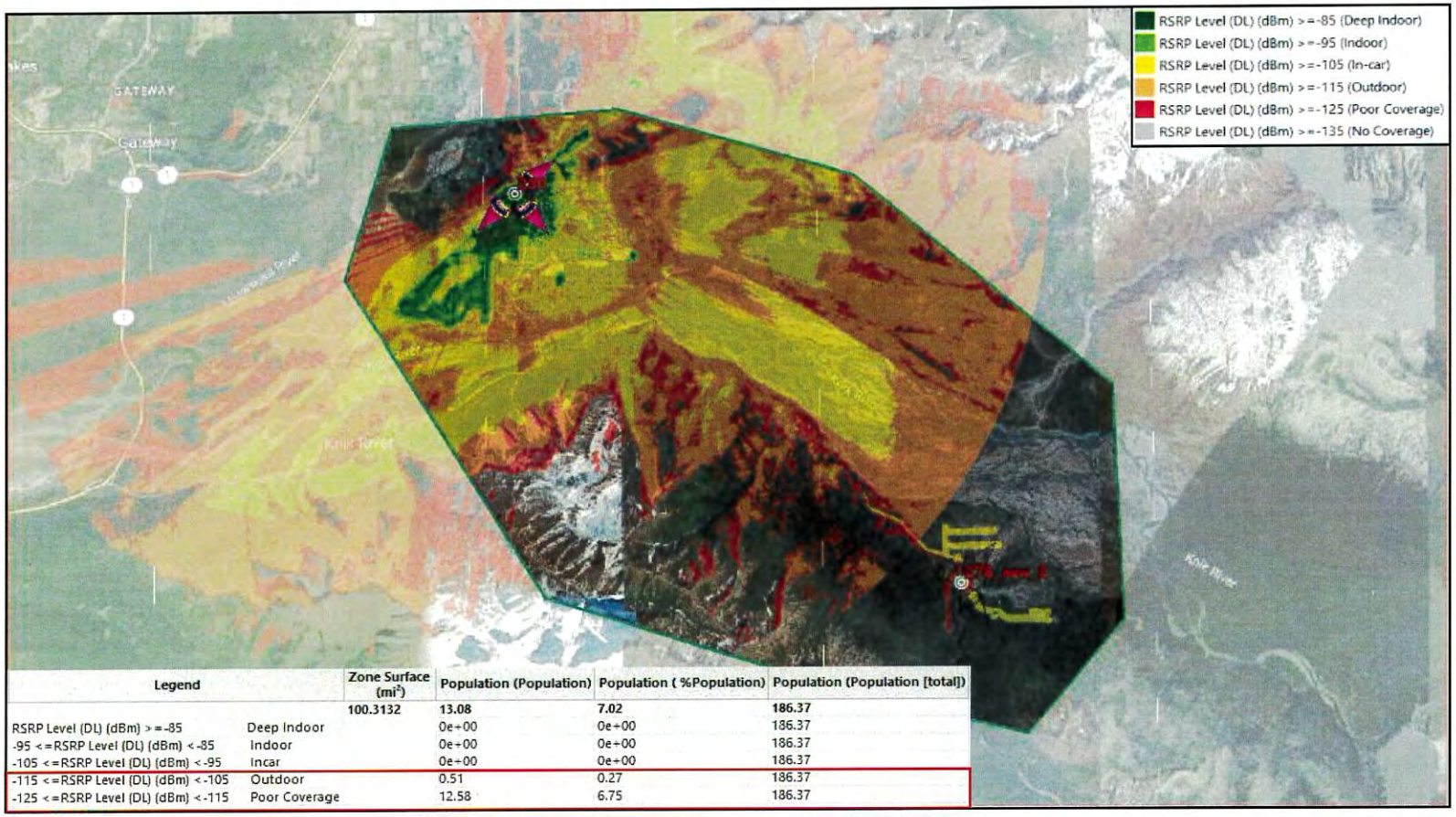
GCI

Site Layout for 3 GS Sites to be selected for green field site
Initial Azimuths 40/150/310
ITF Design Analysis



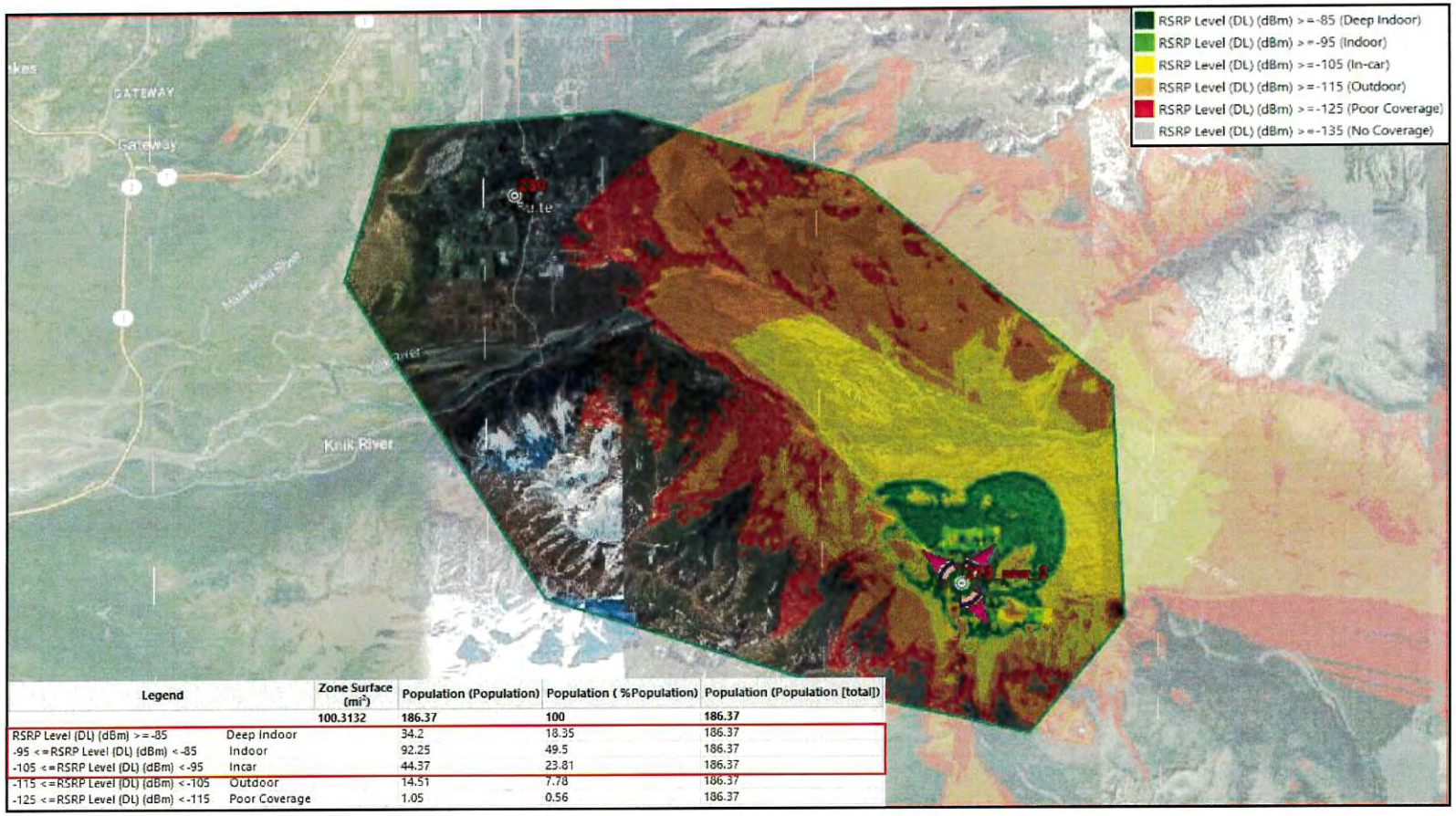
Polygon for coverage and population analysis

- Site 230 is an exiting site
- Site 278 is the propose new site to increase or coverage footprint to meet FCC requirements (new location).
  - Name Site Name Longitude Latitude
  - 278 Knik Glacier -148.813561 61.444219
  - RAD Center = 120 ft



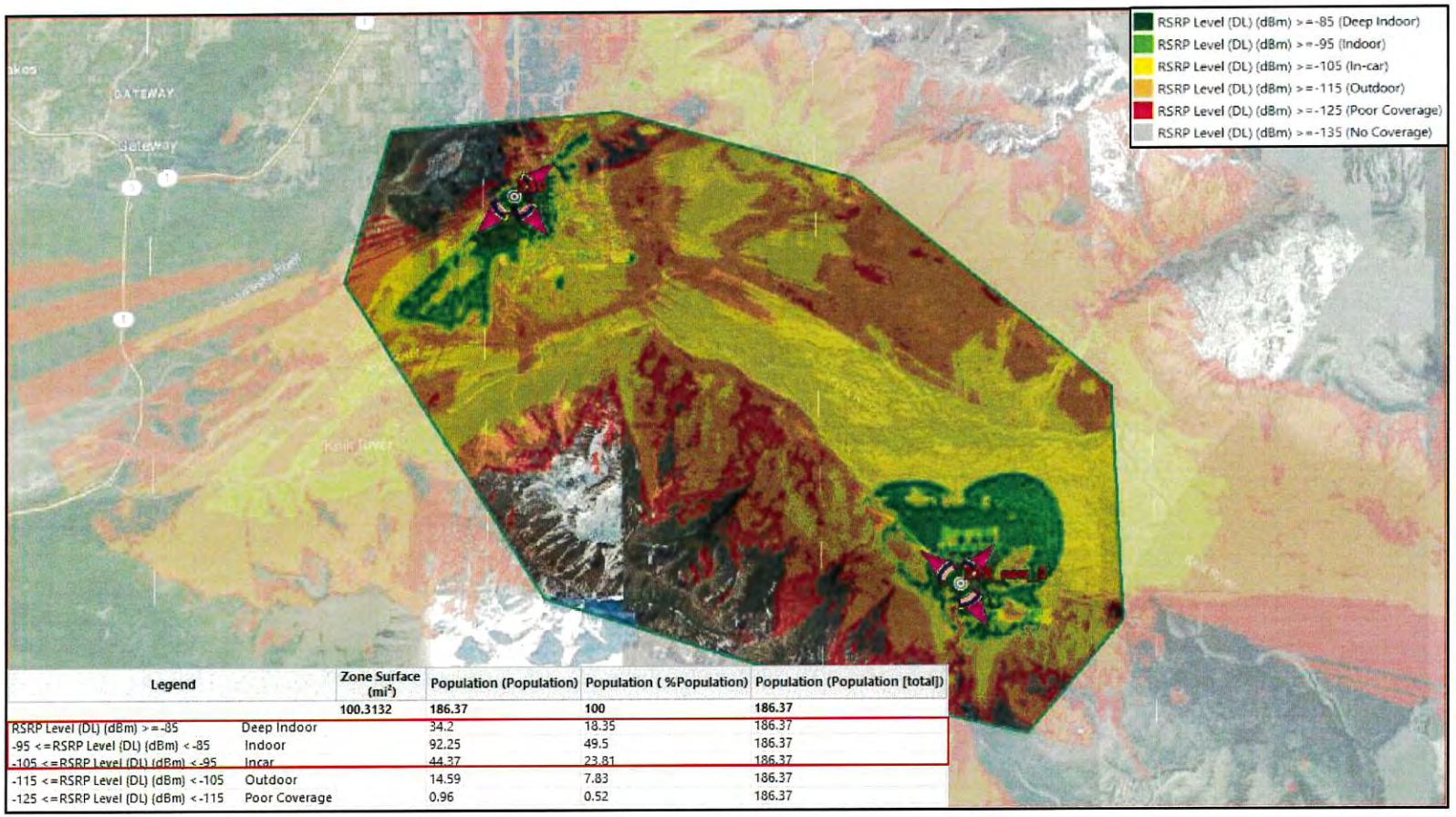
Legend		Zone Surface (mi^2)	Population (Population)	Population (%Population)	Population (Population [total])
		100.3132	13.08	7.02	186.37
RSRP Level (DL) (dBm) >=-85	Deep Indoor		0e+00	0e+00	186.37
-95 <=RSRP Level (DL) (dBm) <-85	Indoor		0e+00	0e+00	186.37
-105 <=RSRP Level (DL) (dBm) <-95	Incar		0e+00	0e+00	186.37
-115 <=RSRP Level (DL) (dBm) <-105	Outdoor		0.51	0.27	186.37
-125 <=RSRP Level (DL) (dBm) <-115	Poor Coverage		12.58	6.75	186.37

Without the new site we are not providing In-car coverage, we provide on Outdoor and Poor coverage to 6.75% of population(12.58 POPs)



Legend		Zone Surface (mi^2)	Population (Population)	Population (%Population)	Population (Population [total])
		100.3132	186.37	100	186.37
RSRP Level (DL) (dBm) >=-85	Deep Indoor		34.2	18.35	186.37
-95 <=RSRP Level (DL) (dBm) <-85	Indoor		92.25	49.5	186.37
-105 <=RSRP Level (DL) (dBm) <-95	Incar		44.37	23.81	186.37
-115 <=RSRP Level (DL) (dBm) <-105	Outdoor		14.51	7.78	186.37
-125 <=RSRP Level (DL) (dBm) <-115	Poor Coverage		1.05	0.56	186.37

With the new location of the site 278 only, we are providing In-car coverage to 92% of population(170.82 POPs)



Legend		Zone Surface (mi^2)	Population (Population)	Population (%Population)	Population (Population [total])
		100.3132	186.37	100	186.37
RSRP Level (DL) (dBm) >=-85	Deep Indoor		34.2	18.35	186.37
-95 <=RSRP Level (DL) (dBm) <-85	Indoor		92.25	49.5	186.37
-105 <=RSRP Level (DL) (dBm) <-95	Incar		44.37	23.81	186.37
-115 <=RSRP Level (DL) (dBm) <-105	Outdoor		14.59	7.83	186.37
-125 <=RSRP Level (DL) (dBm) <-115	Poor Coverage		0.96	0.52	186.37

With the new and existing site, we are providing In-car coverage to 92% of population(170.82 POPs), the existing site 230 is adding Outdoor and Poor coverage for a total of 100% (186.37 POPs).

Conclusion

Greenfield candidate in the new proposed location shared by Atlas will provide significant better coverage and meet our requirements, even comparing with the two other previous locations analyzed.

New Tower Location: .

- GPS Coordinates: -148.813561, 61.444219
- RAD Center: 120'
- Azimuths of 40, 150 and 310 Degrees are suggested based on Initial Design.

Atlas Tower 1, LLC
2500 30th Street, Suite 304
Boulder, CO 80301
(303) 448-8896

ATLAS TOWER

June 5, 2025

Matanuska-Susitna Borough Development Services Division
350 E. Dahlia Ave
Palmer, AK 99645

RE: Administrative Permit Narrative for Telecommunications Facility
Site Name: Palmer

To Whom It May Concern:

Atlas Tower 1, LLC is submitting an Administrative Permit Application to the Matanuska-Susitna Borough Development Services Division for review of a new proposed wireless telecommunications facility build on the property of 27950 E KNIK RIVER RD, Palmer, AK, 99645, Parcel #: **542093**. This letter shall serve as a narrative for the proposed **125' Lattice** telecommunications facility and how this project will provide the needed mobile network coverage while reducing the need for additional cellular facilities in the future. This project is being proposed and this justification is being provided in an effort to alleviate current mobile network voice, data, and first responder issues in an area that is severely lacking reliable network coverage and capacity.

SITE DETAILS

Land Owner: Paul Laux 27950 E Knik River Rd Palmer, AK, 99645	**Site Address:** 27950 E Knik River Rd Palmer, AK, 99645 Parcel #: **542093**
Applicant: Atlas Tower 1, LLC 2500 30th St., Suite 304 Boulder, CO 80301	**Coordinates:** Latitude: 61.44422 Longitude: -148.81356 Ground Elevation: 141'
Zoning: General-Use	**Lease Area:** 50 x 50

PROPOSAL SUMMARY

The purpose of this request is to build a 125' self support telecommunications tower within a 50 x 50 wireless facility. This facility will provide critical wireless coverage to the surrounding area. The proposed site is zoned as General-Use where coverage is lacking, and the capacity of the existing infrastructure is reaching its limit. As the area develops further, and the existing users demand more data for their existing devices, existing infrastructure will reach capacity limits and be unable to meet coverage needs. This tower and facility will be used for structural support of up to four wireless providers. Each provider will install antennas and on-the-ground base-station equipment.

WIRELESS TELECOMMUNICATION FACILITY CHARACTERISTICS

Visual Effect

We strive to design our facilities and locate parcels that create the least amount of community disturbance. The surrounding area is a largely wooded rural area with low density residential zones nearby. The proposed site is chosen to maximize visual aesthetic and distance from residential homes. Photo sims have been included with views from the adjacent highway.

Proximity to Airports, Trails and Waterbodies

The closest airport, AK1 - Butte Municipal Airport, is roughly 9 miles to the NW. The site is not in line with any of the runways and does not pose a hazard to air navigation. The nearest trailhead, noted as 166 - Hunter Creek on MSB trail plans, is approx. 1.75 miles to the South. Due to the topography and trees, the tower is not expected to be visible from the trail. The next nearest trails are 061 - Knik Glacier (aka Jim Creek) and 083 - Pioneer Ridge/Austin Helmers; they are about 3 and 4 miles to the NE and NW, respectively, and should not have visibility of the tower. The nearest water body, Knik River, is approx. 1.5 miles to the north. It is possible the very tip of the tower would be visible, however from this distance it would likely be difficult to spot.

Frequency Of Maintenance Work On The Proposed Facility

On average, after initial installation, a carrier or its contactors would likely visit the facility about one to four times a year for maintenance, though this number could vary depending on the specific circumstances of the facility.

The Average Number Of Vehicles Visiting The Facility and Average Duration of Facility Work

The average maintenance visit by a carrier or its contractors would likely involve one pickup truck. On average, one to two visits a year are made for each carrier. For typical maintenance visits, a carrier or its contactors would only be at the site a few hours, but this number could increase depending on the work that needed to be completed at the site.

Expected Noise Levels

Telecommunications facilities are essentially silent. This would be true whether there were one or four carriers. A generator could be operated on site in the rare instance that power went out. The generator would create noise, but it would not be noticeable or audible in the location the telecommunications facility is proposed to be.

Setback Compliance

The proposed tower has been setback 160' from any property lines in order to maintain compliance with the Matanuska Susitna Borough Code requirements.

Site Security

The proposed tower shall be secured with a locked 8' chain link fencing with an additional 1' of barbed wire on top to prevent unauthorized visitors.

Building Codes; Safety Standards

Atlas Tower will ensure the structural integrity of towers, ensure that it is maintained in compliance with standards contained in applicable state or local building codes and the applicable standards for towers that are published by the Electronic Industries Association, as amended from time to time. Granting of this permit will not be harmful to the public health, safety, convenience, or welfare. If, upon inspection,

Matanuska-Susitna Borough concludes that a tower fails to comply with such codes and standards and constitutes a danger to persons or property, then upon notice being provided to the owner of the tower, the owner shall have thirty (30) days to bring such tower into compliance with such standards, unless a longer time is reasonably necessary. Failure to bring such tower into compliance within said thirty (30) days shall constitute grounds for the removal of the tower or antenna at the owner's expense.

FAA/FCC Compliance

Applicant has submitted the appropriate applications with the FAA & FCC but has yet to receive a determination. The proposed facility shall conform to the requirements of this title, this code, and other laws, including pertinent federal regulations of the Federal Communications Commission (FCC) and the Federal Aviation Administration (FAA) when determined.

This narrative represents required and supplementary information to document the technological, economic, and social necessity and benefits of a new 125' self support telecommunications tower in Palmer. The information provided highlights the advantages associated with a telecommunications facility at our proposed site. See attached documents including our survey and tower drawings.

Atlas Tower 1, LLC respectfully requests the acceptance of our application for a Zoning for the proposed communications tower facility.

Best Regards,

Helmundt Strumpher
720-667-6652
www.atlastowers.com
2500 30th St. Suite 304
Boulder, CO 80301

← Home
Dashboard
Reports
Search
Download
Pre-Screening Tool
Tools
FAQ & Resources

File Notice

Form Approved OMB No.2120-0001
Expiration Date: 05/31/2026

Privacy Act Statement (5 U.S.C. § 552a(e)(3)): Authority: Information solicited by the Federal Aviation Administration (FAA) Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) is authorized by 49 U.S.C. § 44718 and 47101 Purpose: The FAA OE/AAA is an application used to evaluate all structures that may affect the national airspace system and defend against potential hazards to the safety and efficient use of the navigable airspace. The information collected is used to allow a user access to the OE/AAA and to administer the Aeronautical Study Process. Routine Uses: In accordance with the Privacy Act system of records notice, DOT/ALL 16 Mailing Management System and DOT/FAA 826 Petitions for Exemptions, Other than Medical Exemptions this information may be disclosed to officials within the federal government and the public in general. DOT/ALL 13 - Internet/Intranet Activity and Access Records, this information is routinely used; • To provide information to any person(s) authorized to assist in an approved investigation of improper access or usage of DOT computer systems; • To an actual or potential party or his or her authorized representative for the purpose of negotiation or discussion of such matters as settlement of the case or matter, or informal discovery proceedings; • To contractors, grantees, experts, consultants, detailees, and other non-DOT employees performing or working on a contract, service, grant cooperative agreement, or other assignment from the Federal government, when necessary to accomplish an agency function related to this system of records; and • To other government agencies where required by law.

Disclosure: Submission of the information is voluntary, however, failure to submit requested information will result in FAA's inability to grant you access to the system and may result in an inability of the FAA to process the notice or administer the aeronautical study process for the construction, alteration, activation, or deactivation proposed.

Failure to Provide All Requested Information May Delay Processing of your Notice

U.S. Department of Transportation
Federal Aviation Administration

Notice of Proposed Construction or Alteration

FOR FAA USE ONLY

Aeronautical Study Number
2025-AAL-342-OE

Status: Reviewing

1. Sponsor

Name:	ATLAS TOWER 1, LLC				
Attn of:	MIKE POWERS				
Address:	2500 30th St Suite 304				
City:	Boulder	State:	CO	Zip:	80301
Country:	US				
Phone:	tel:+1-1-303-448-8896		Fax:		

2. Sponsor's Representative

Name:	CORNELIUS WHITEHEAD				
Attn of:	JOCELYN GIFFORD				
Address:	2500 30th St Ste 304				
City:	Boulder	State:	CO	Zip:	80301
Country:	US				
Phone:	tel:+1-1-303-887-0752		Fax:		

9. Latitude: See Collected Point(s)

10. Longitude: See Collected Point(s)

11. Datum: See Collected Point(s)

12. Nearest: City: Palmer State: Alaska

13. Nearest *Public-use* or Military Airport or Heliport: BUTTE MUNI(AK1)

14. Distance from #13. *to Structure*: 47549 ft.

15. Direction from #13. *to Structure*: 131 deg

16. Site Elevation *(SE)*: See Collected Point(s)

17. Structure Height *(AGL)*: See Collected Point(s)

18. Overall Height (#16 + #17) *(AMSL)*: See Collected Point(s)

Current Overall Height (#16 + #17) *(AMSL)*: See Collected Point(s)

19. Previous FAA Aeronautical Study Number *(if applicable)*:

20. Description of Location:

3. Notice of: Construction

4. Duration: Permanent (Months: Days:)

5. Work Schedule: N/A

6a. Type: Antenna Tower 6b. Name: Palmer - Laux

7. Preferred Marking/Lighting: Not Marked/No Lighting

Current Marking/Lighting:

8. FCC Antenna Registration Number *(if applicable)*:

27950 E Knik River Rd, Palmer, AK 99645

Processed 7460-2 Forms :

Supplemental Form 7460-2 : Add 7460-2

21. Description of Proposal:
125' wireless communications facility (lattice) contained within a 50' x 50' fenced compound

Frequencies:

LOW	HIGH	ERP
6	7 GHz	42 dBW
6	7 GHz	55 dBW
10	11.7 GHz	42 dBW
10	11.7 GHz	55 dBW
17.7	19.7 GHz	42 dBW
17.7	19.7 GHz	55 dBW
21.2	23.6 GHz	42 dBW
21.2	23.6 GHz	55 dBW
614	698 MHz	1000 W
614	698 MHz	2000 W
698	806 MHz	1000 W
806	824 MHz	500 W
806	901 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

Specific Frequencies:

LOW	HIGH	ERP

LOW	HIGH	ERP
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

Collected Point(s):

Label	Latitude	Longitude	Datum	AGL	SE	SE Validation	SE Comments
pt-1	61 26 39.19N	148 48 48.82W	WGS 84	125 ft	230 ft	PASSED	

Notice is required by 14 Code of Federal Regulations, part 77 pursuant to 49 U.S.C., Section 44718. Persons who knowingly and willingly violate the notice requirements of part 77 are subject to a civil penalty of $1,000 per day until the notice is received, pursuant to 49 U.S.C., Section 46301(a)

I hereby certify that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to mark and/or light the structure in accordance with established marking & lighting standards as necessary.

This FAA Form 7460-1 was submitted electronically on 06/05/2025 at 16:06 PM EDT.

Title	Type	File
Letter	Date	

ATLAS TOWER

USA • INTERNATIONAL

SITE NAME: PALMER

PROPOSED 125' LATTICE TOWER

11245 S NYSTROM WAY
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

TEP

PHOTO RENDERED BY TEP OPCO, LCC

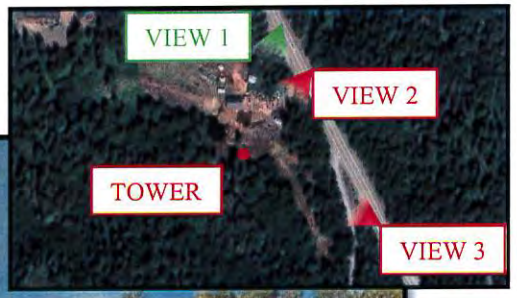
TEP


Legend
Palmer Tower
Photo Location (PL)
E Knik River Rd
PL 1
PL 2
PL 3
Tower
Hunter Creek
N
700 ft
Google Earth
Image © 2025 Airbus

EXISTING VIEW: LOCATION 1

ATLAS TOWER
USA • INTERNATIONAL

SITE #:
SITE NAME: PALMER
ADDRESS: 11245 S NYSTROM WAY
PALMER, AK 99645
COUNTY: MATANUSKA SUSITNA BOROUGH



TEP

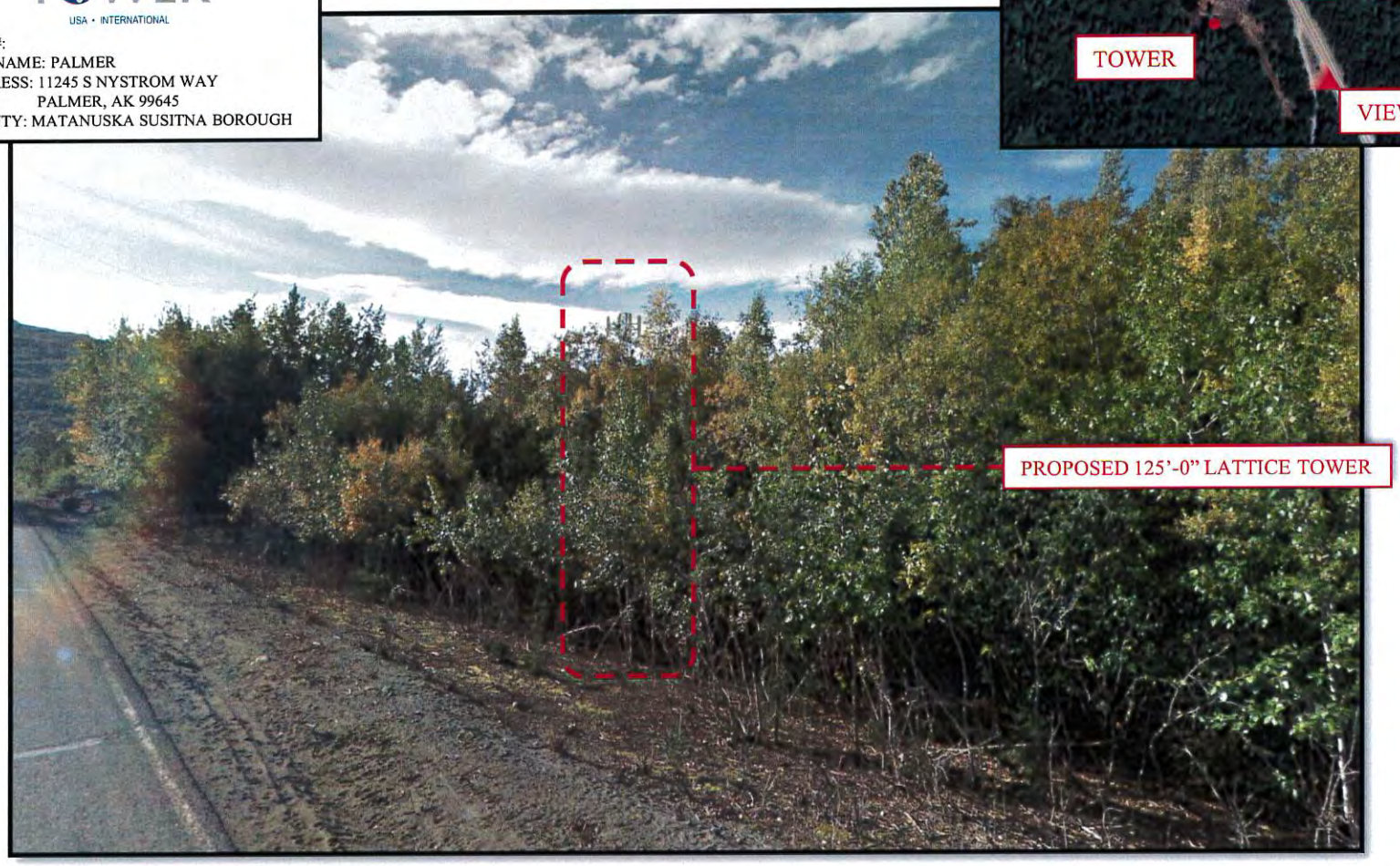
PHOTO RENDERED BY TEP OPCO, LCC

TEP

PROPOSED VIEW: LOCATION 1

ATLAS TOWER
USA • INTERNATIONAL

SITE #:
SITE NAME: PALMER
ADDRESS: 11245 S NYSTROM WAY
PALMER, AK 99645
COUNTY: MATANUSKA SUSITNA BOROUGH



TEP

PHOTO RENDERED BY TEP OPCO, LCC

TEP

EXISTING VIEW: LOCATION 2

ATLAS TOWER
USA • INTERNATIONAL

SITE #:
SITE NAME: PALMER
ADDRESS: 11245 S NYSTROM WAY
PALMER, AK 99645
COUNTY: MATANUSKA SUSITNA BOROUGH

TEP

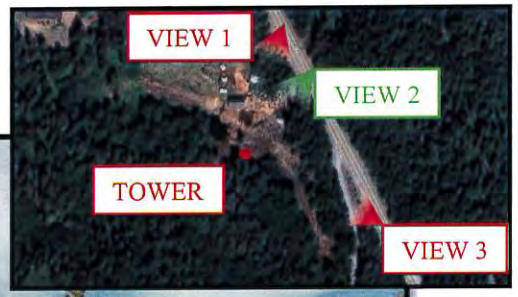
PHOTO RENDERED BY TEP OPCO, LCC

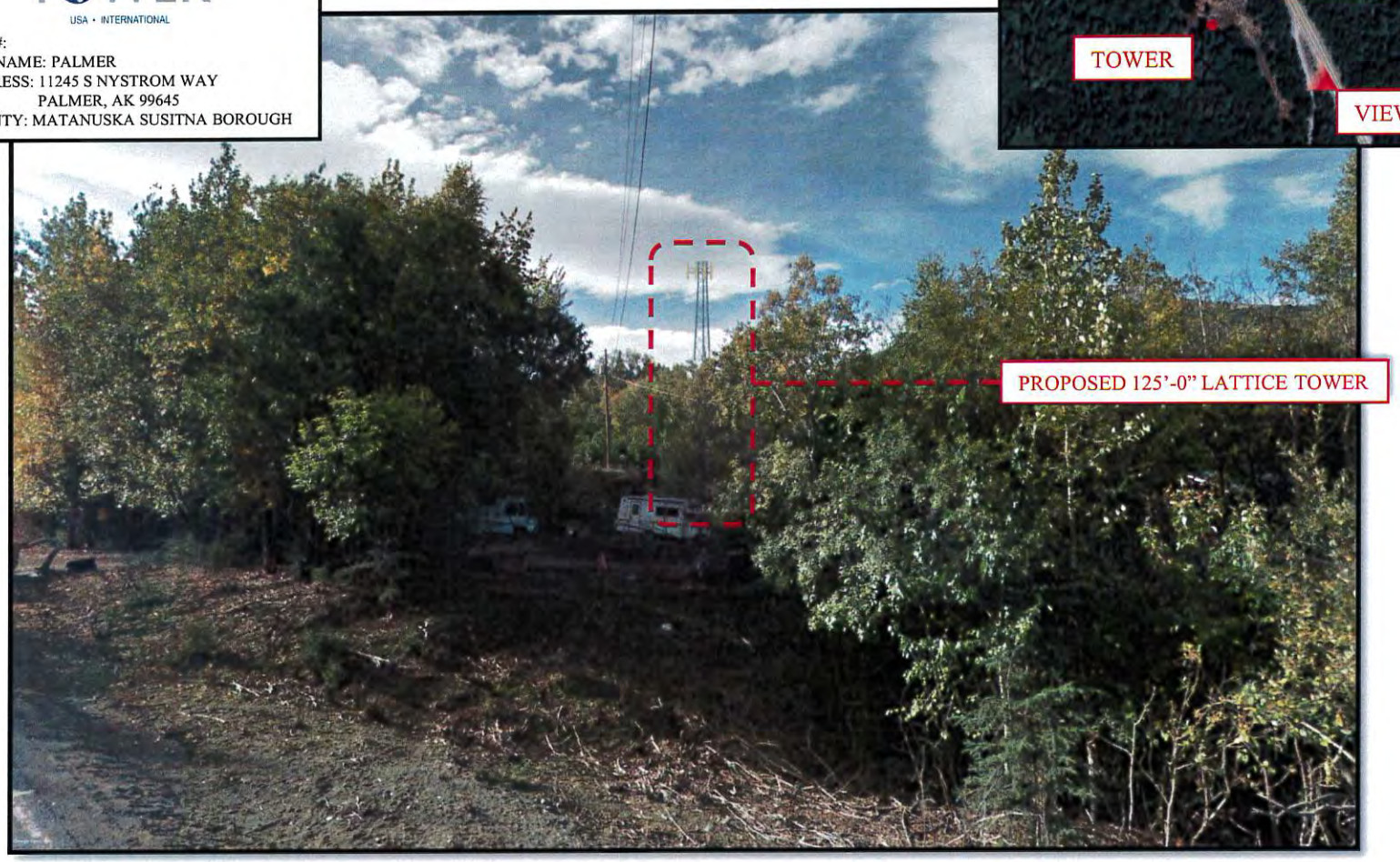
TEP

PROPOSED VIEW: LOCATION 2

ATLAS TOWER
USA • INTERNATIONAL

SITE #:
SITE NAME: PALMER
ADDRESS: 11245 S NYSTROM WAY
PALMER, AK 99645
COUNTY: MATANUSKA SUSITNA BOROUGH





TEP

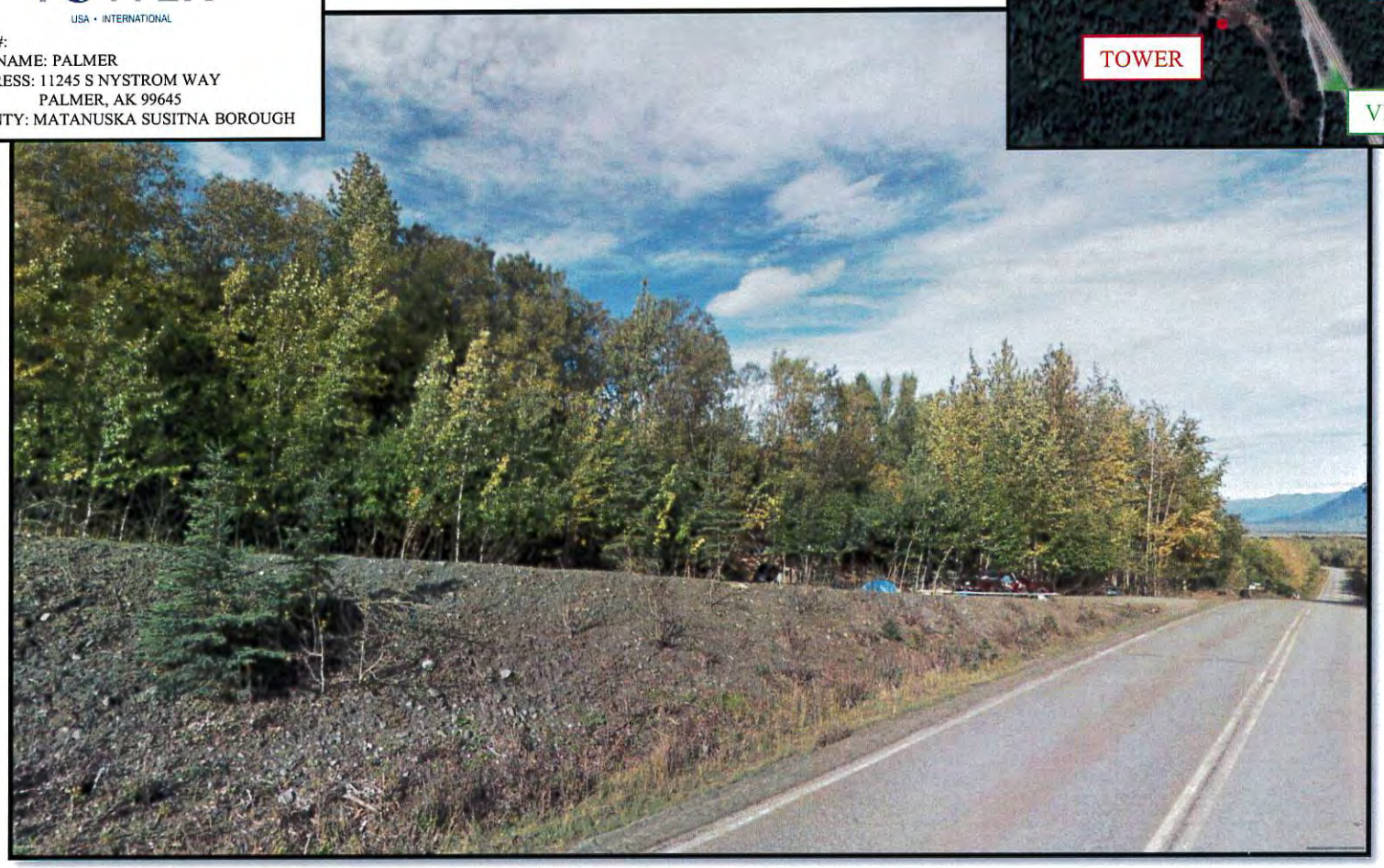
PHOTO RENDERED BY TEP OPCO, LCC

TEP

EXISTING VIEW: LOCATION 3

ATLAS TOWER
USA • INTERNATIONAL

SITE #:
SITE NAME: PALMER
ADDRESS: 11245 S NYSTROM WAY
PALMER, AK 99645
COUNTY: MATANUSKA SUSITNA BOROUGH



TEP

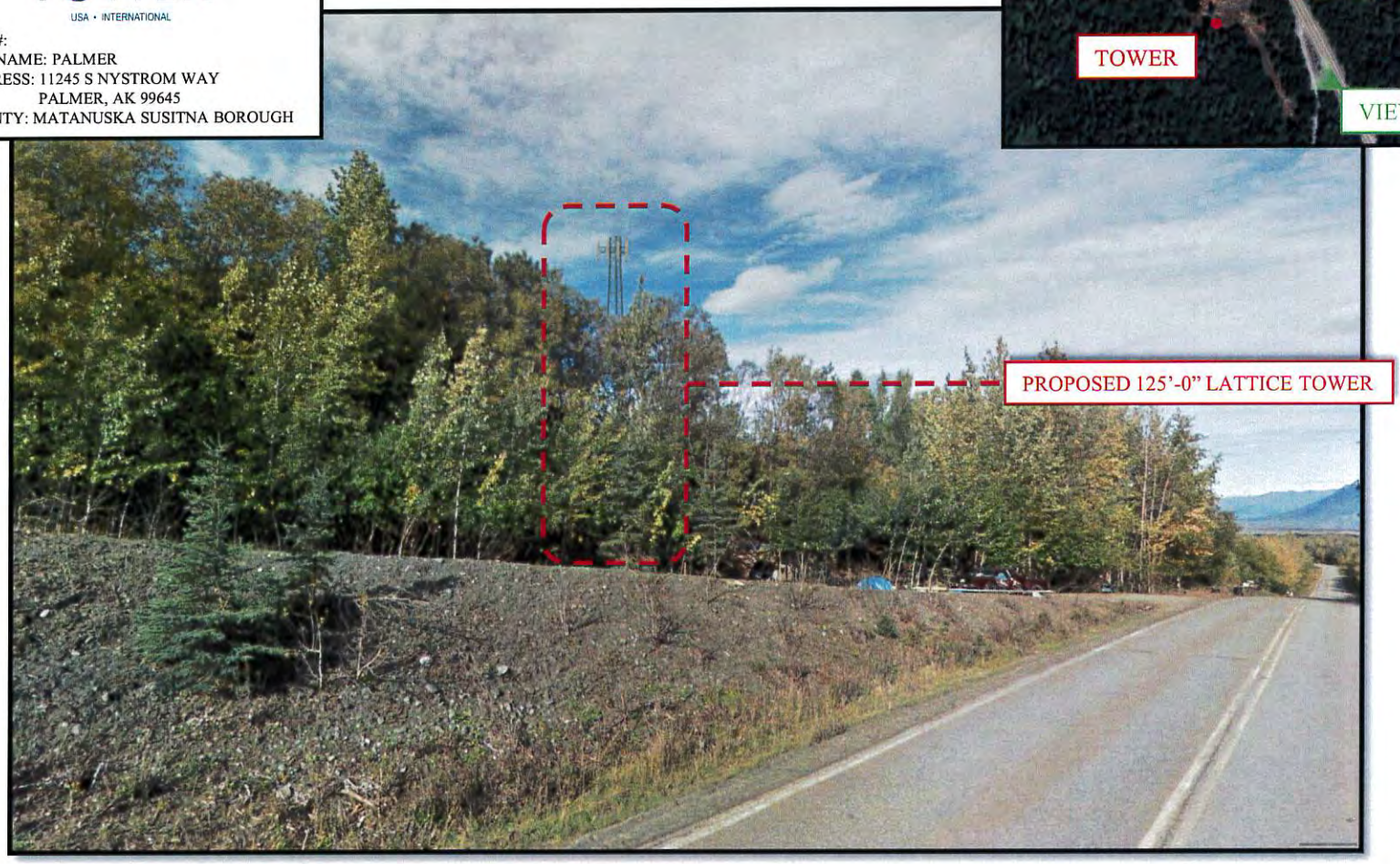
PHOTO RENDERED BY TEP OPCO, LCC

TEP

PROPOSED VIEW: LOCATION 3

ATLAS TOWER
USA • INTERNATIONAL

SITE #:
SITE NAME: PALMER
ADDRESS: 11245 S NYSTROM WAY
PALMER, AK 99645
COUNTY: MATANUSKA SUSITNA BOROUGH



TEP

PHOTO RENDERED BY TEP OPCO, LCC

TEP

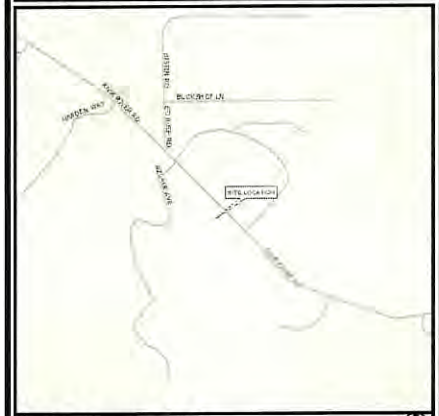
ATLAS TOWER

SITE NAME:	PALMER - ALT 2
PROJECT DESCRIPTION:	PROPOSED TELECOMMUNICATIONS FACILITY
TOWER TYPE:	125' LATTICE TOWER
SITE ADDRESS:	27950 E KNIK RIVER RD PALMER, AK 99645 (MATANUSKA SUSITNA BOROUGH)
AREA OF CONSTRUCTION:	2500 ± SQ. FT. (LEASE AREA)
PRESENT OCCUPANCY TYPE:	RESIDENTIAL
JURISDICTION	MATANUSKA SUSITNA BOROUGH
ZONING:	General Use
PROPERTY ACCOUNT:	8274000L001A
PARCEL#:	542093

PROJECT INFORMATION

LATITUDE	N 61° 26' 39.1878"	(NAD '83) *
LONGITUDE	W 148° 48' 48.8154"	(NAD '83) *

SITE COORDINATES



LOCATION MAP

FROM TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT, TAKE W NORTHERN LIGHTS BLVD AND W BENSON BLVD TO AK-1 N/E 5TH AVE, HEAD NORTHWEST ON POSTMARK DR/SATELLITE DR TOWARD TOM WARDLEIGH DR, TURN RIGHT ONTO LAKE HOOD DR, TURN RIGHT ONTO W NORTHERN LIGHTS BLVD, CONTINUE ONTO W BENSON BLVD, TURN LEFT ONTO AK-1 N, USE THE RIGHT 2 LANES TO TURN RIGHT ONTO E 5TH AVE, FOLLOW AK-1 N TO S OLD GLENN HWY, TAKE THE OLD GLENN HWY EXIT FROM AK-1 N, CONTINUE ONTO AK-1 N/E 5TH AVE, TAKE THE OLD GLENN HWY EXIT, SLIGHT RIGHT ONTO THE RAMP TO PALMER, DRIVE TO E KNIK RIVER RD IN KNIK RIVER, MERGE WITH S OLD GLENN HWY, SLIGHT RIGHT ONTO E KNIK RIVER RD.

DRIVING DIRECTIONS

SITE NAME: PALMER - ALT 2
27950 E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

CALL FOR UNDERGROUND UTILITIES PRIOR TO DIGGING

(800) 478-3121

EMERGENCY:

CALL 911

811 Know what's below. Call before you dig.

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

1. INTERNATIONAL BUILDING CODE (2021 EDITION)
2. INTERNATIONAL CODE COUNCIL
3. ANSI/TIA/EIA-222-H
4. NATIONAL ELECTRIC CODE (2020 EDITION)
5. LOCAL BUILDING CODE
6. CITY/COUNTY ORDINANCES

CODE COMPLIANCE

CONSTRUCTION OF A TELECOMMUNICATION FACILITY, CONSISTING OF ANTENNAS & ASSOCIATED APPURTENANCES ON A PROPOSED LATTICE TOWER, FENCED COMPOUND & SERVICE EQUIPMENT FOR FUTURE CARRIERS. NO WATER OR SEWER IS REQUIRED.

1. FACILITY DESIGNED IN ACCORDANCE WITH THE MATANUSKA-SUSITNA BOROUGH REGULATIONS.
2. THIS IS AN UNMANNED FACILITY WHICH WILL NOT REQUIRE ANY WATER OR SEWER FACILITIES.
3. TRAFFIC WILL CONSIST ONLY OF MAINTENANCE PERSONNEL, VISITING THE SITE APPROXIMATELY TWICE A MONTH.

PROJECT DESCRIPTION & NOTES

SITE CONSTRUCTION MANAGER:

NAME:	WiBLUE, INC.
CONTACT:	COREY BONNER
PHONE:	(986) 206-7071

SITE APPLICANT:

NAME:	WiBLUE, INC.
ADDRESS:	2500 30TH ST, SUITE 304
CITY, STATE, ZIP:	BOULDER, CO 80302
CONTACT:	SANDRA LAYTON
PHONE:	(801) 732-0624

ORIGINAL SURVEYOR:

NAME:	T.B.D.
ADDRESS:	T.B.D.
CITY, STATE, ZIP:	T.B.D.
CONTACT:	T.B.D.
PHONE:	T.B.D.

CIVIL ENGINEER:

NAME:	TEP OPCO, LLC
ADDRESS:	326 TRYON ROAD
CITY, STATE, ZIP:	RALIEGH, NC 27603
CONTACT:	ANDREW T. HALDANE, P.E.
PHONE:	(919) 661-6351

ELECTRICAL ENGINEER:

NAME:	TEP OPCO, LLC
ADDRESS:	326 TRYON ROAD
CITY, STATE, ZIP:	RALEIGH, NC 27603
CONTACT:	ANDREW T. HALDANE, P.E.
PHONE:	(919) 661-6351

PROPERTY OWNER:

NAME:	LAUX PAUL J
ADDRESS:	27950 E KNIK RIVER RD,
CITY, STATE, ZIP:	PALMER, AK 99645

UTILITIES:

POWER COMPANY:	T.B.D.
ADDRESS:	UNKNOWN
PHONE:	UNKNOWN
WO#:	T.B.D.

FACILITY OWNER:

NAME:	ATLAS TOWER 1, LLC
ADDRESS:	2500 30TH ST, SUITE 304
CITY, STATE, ZIP:	BOULDER, CO 80302

CONTACT INFORMATION

SHEET	DESCRIPTION	REV
T1	TITLE SHEET	0
N1	GENERAL NOTES	0
C1	AREA PLAN	0
C2	SITE PLAN	0
C3	COMPOUND DETAIL	0
C4	TOWER ELEVATON	0
C5	FENCE DETAILS	0
C6	DRIVEWAY DETAILS	0
C7	SIGNAGE DETAILS	0
E1	ELECTRICAL NOTES	0
E2	POWER PLAN & ONE-LINE DIAGRAM	0
E3	SERVICE RACK DETAILS	0
E4	GROUNDING PLAN & DETAILS	0
E5	GROUNDING DETAILS	0
E6	TOWER FOUNDATION GROUNDING DETAILS	0

INDEX OF SHEETS

PLANS PREPARED BY:

TEP

4570 IVY STREET, SUITE B-100
DENVER, CO 80216
OFFICE: (303) 566-9914
www.tepgroup.net

REV	DATE	ISSUED FOR:
0	06-17-25	PRELIMINARY

DRAWN BY: RBK | CHECKED BY: KES

SEAL:

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SEAL:

SHEET NUMBER:	REVISION:
T-1	0

TEP #:349563.111711

GENERAL NOTES:

1. ALL REFERENCES TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED ATLAS TOWER 1, LLC, OR ITS DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF ALASKA.
3. STRUCTURE IS DESIGNED IN ACCORDANCE WITH ANSI/TIA/EIA-222-H. THIS CONFORMS TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, 2021 EDITION.
4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2021 EDITION.
5. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
6. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERCEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
7. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND IT'S COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
9. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR. CONTRACTOR SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.
13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
14. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
15. THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE. AFTER REWORKING, IF THE MATERIAL REMAINS UNSUITABLE, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFTER MATERIAL SHALL BE REWORKED OR REPLACED.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPES, DITCHES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.
17. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
18. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

STRUCTURAL STEEL NOTES:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.
2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
   A. STRUCTURAL STEEL, ASTM DESIGNATION A36 OR A992 GR50.
   B. ALL BOLTS, ASTM A325 TYPE I GALVANIZED HIGH STRENGTH BOLTS.
   C. ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.
   D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
3. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.
4. HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
5. HOT-DIP GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED, AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING: ASTM A123, ASTM A153/A153M OR ASTM A653/A653M, G90, AS APPLICABLE.
6. REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTE MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED, WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS IN STICK OR PASTED; SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL.
7. A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
8. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
9. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
10. ALL ASSEMBLY BOLTS ARE TO BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN SECTION 8.1 OF THE AISC, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", DATED JUNE 30, 2004.
11. FLAT WASHERS ARE TO BE INSTALLED WITH BOLTS OVER SLOTTED HOLES.
12. DO NOT OVER TORQUE ASSEMBLY BOLTS. GALVANIZING ON BOLTS, NUTS, AND STEEL PARTS MAY ACT AS A LUBRICANT, THUS OVER TIGHTENING MAY OCCUR AND MAY CAUSE BOLTS TO CRACK AND SNAP OFF.
13. PAL NUTS ARE TO BE INSTALLED AFTER NUTS ARE TIGHT AND WITH EDGE LIP OUT. PAL NUTS ARE NOT REQUIRED WHEN SELF-LOCKING NUTS ARE PROVIDED.
14. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
15. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1-2010 STRUCTURAL WELDING CODE - STEEL.

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
BOULDER, CO 80301
Office: (303) 448-8896

PLANS PREPARED BY:

TEP

4570 IVY STREET, SUITE B-100
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SEAL:

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REV	DATE	ISSUED FOR:
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DRAWN BY: RBK | CHECKED BY: KES

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER: **N-1**

REVISION: **0**

TEP #: 349563.111711

SITE COORDINATES

LATITUDE:	N 61° 26' 39.1878" (NAD '83)
LONGITUDE:	W 148° 48' 48.8154" (NAD '83)

LEGEND

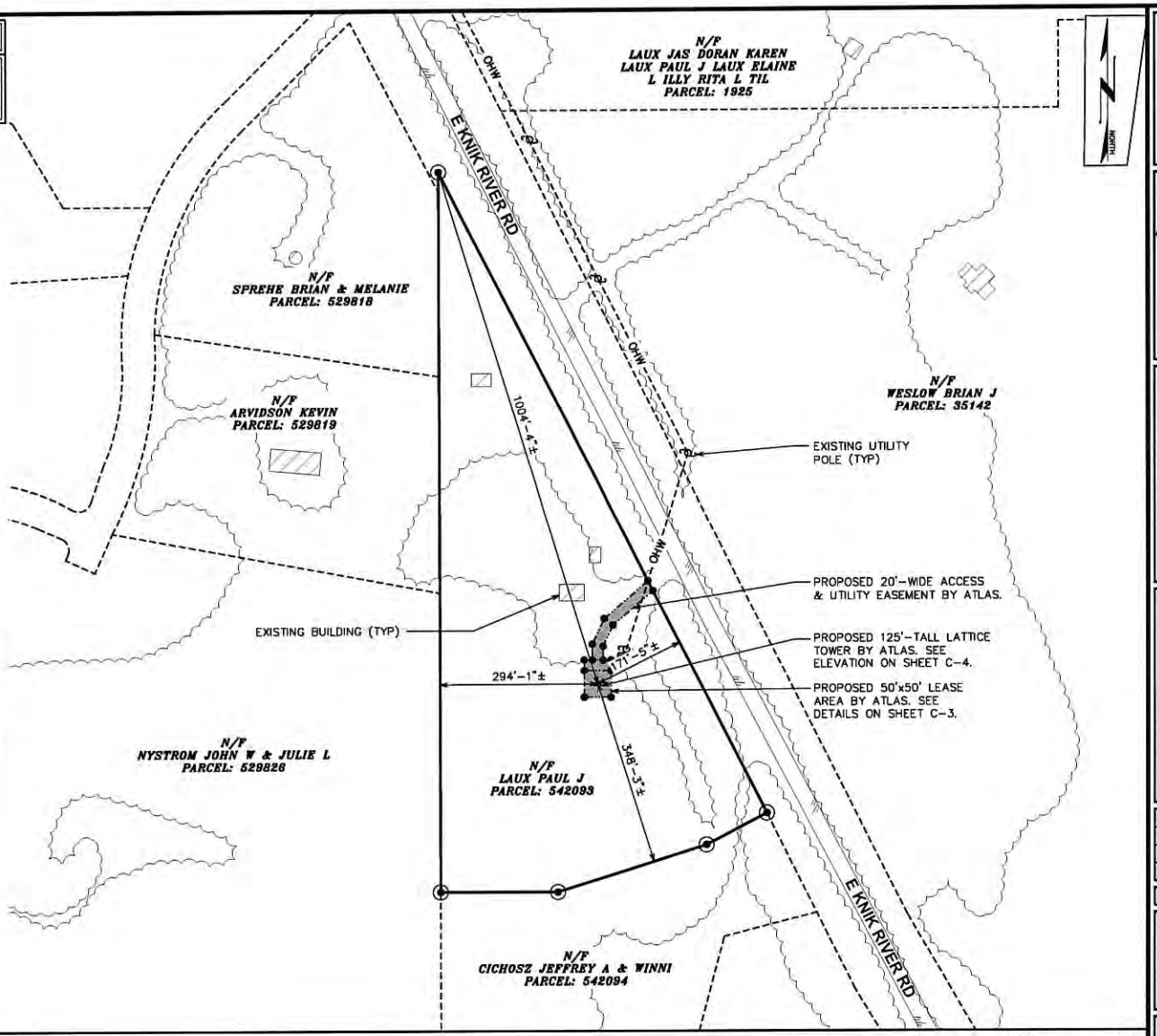
- PARENT PROPERTY LINE
- ADJACENT PROPERTY LINE
- EASEMENT/LEASE CORNER
- EXIST. METER
- EXIST. TRANSFORMER
- EXIST. UTILITY POLE
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- --4650-- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ----F---- BURIED FIBER
- ----G---- GAS LINE
- ---R/W--- RIGHT-OF-WAY
- ——X—— FENCE
- EXISTING TREE LINE

TOWER SETBACKS

PROPERTY LINE	REQUIRED	PROPOSED
NORTH	125'-0"	1004'-4"±
EAST	125'-0"	171'-5"±
SOUTH	125'-0"	348'-3"±
WEST	125'-0"	294'-1"±

NOTES:

1. SITE PLAN WAS PREPARED USING AERIAL IMAGERY AND DATA FROM MATANUSKA-SUSITNA BOROUGH. FOR CORRECTIVE ACTION, PLEASE CONTACT TEP.
2. THE TOWER IS LOCATED IN AN AREA UNMAPPED BY FEMA TO DETERMINE FLOOD HAZARD RISK.



AREA PLAN

SCALE: 1" = 200'

PROJECT INFORMATION:

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E KNIK RIVER RD
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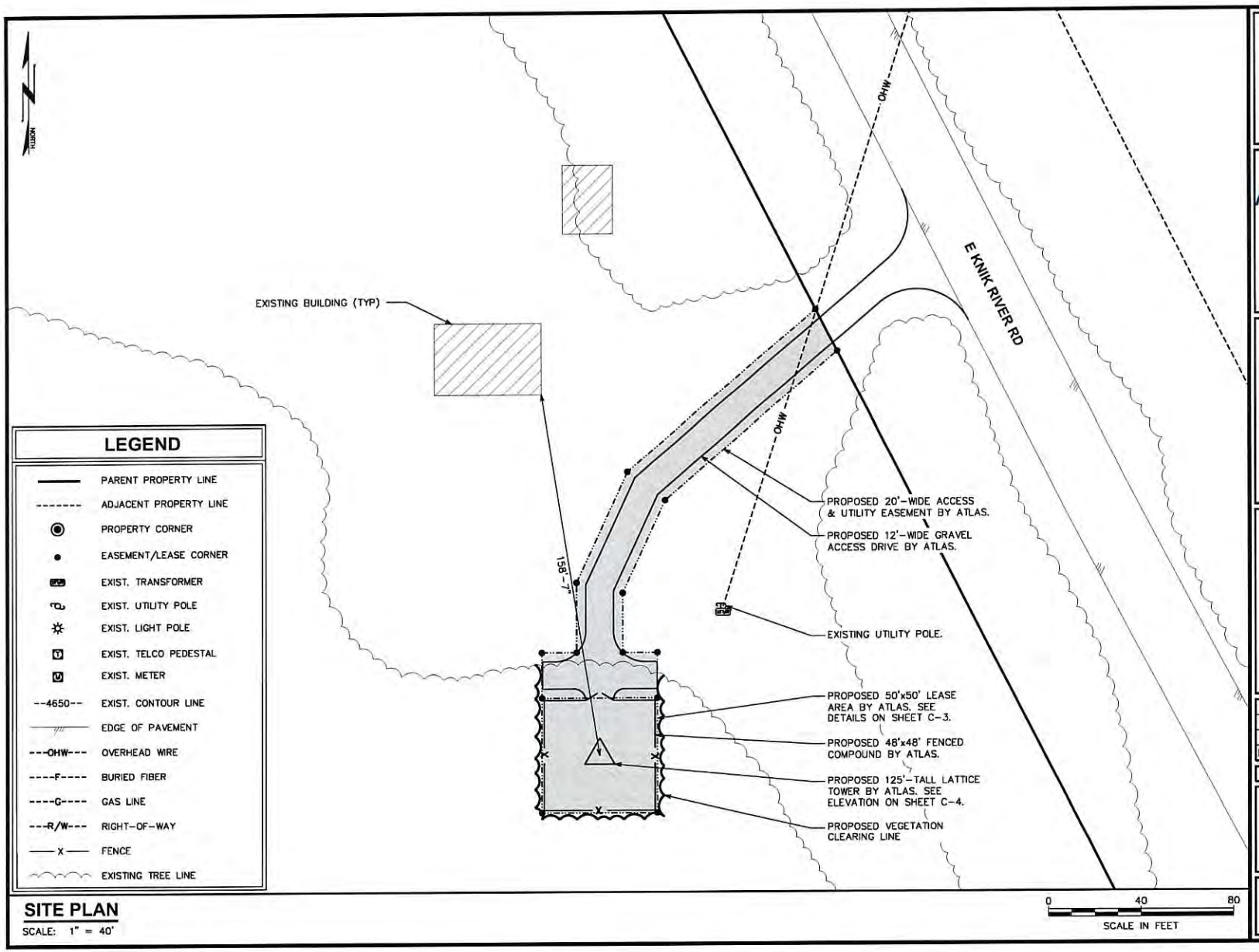
SHEET TITLE:

AREA PLAN

SHEET NUMBER: **C-1**

REVISION: 0

TEP#: 349563.111711



SITE PLAN
SCALE: 1" = 40'

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
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(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

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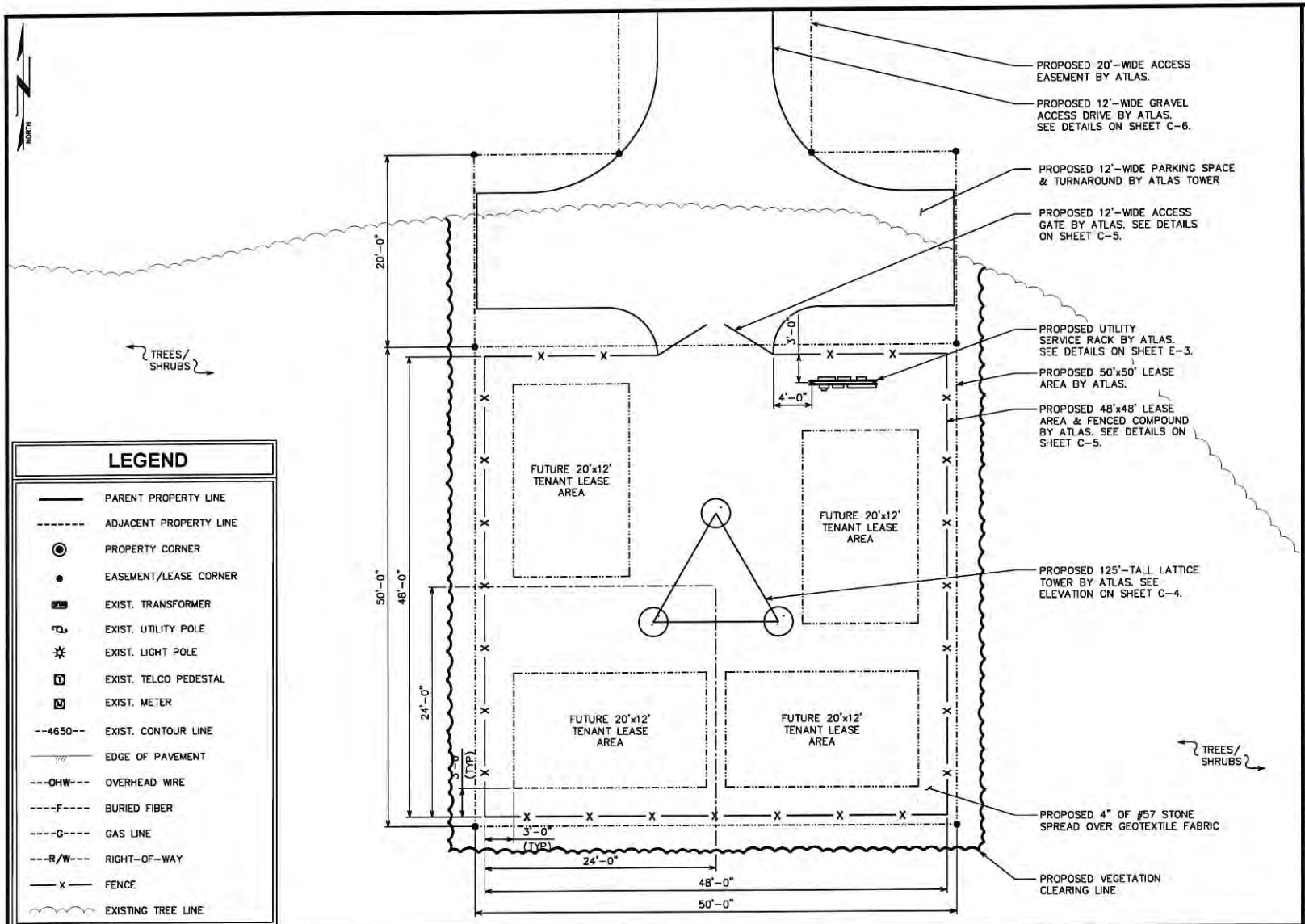
SHEET TITLE:

SITE PLAN

SHEET NUMBER: **C-2**

REVISION: 0

TEP#: 349563.111711



COMPOUND DETAIL

SCALE: 1" = 10'

0 10 20

SCALE IN FEET

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

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2500 30TH ST, SUITE 304
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SHEET TITLE:

COMPOUND DETAIL

SHEET NUMBER: **C-3**

REVISION: **0**

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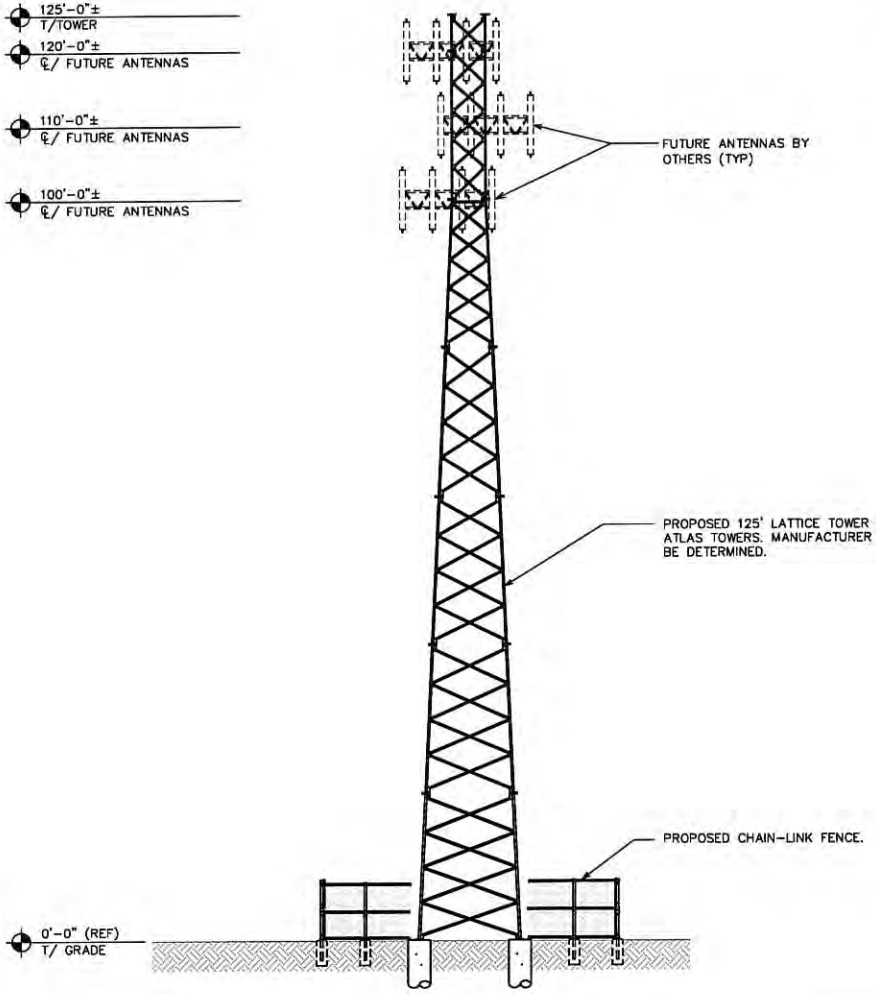

NOTES:

1. TOWER TO REMAIN A GALVANIZED COLOR.
2. TOWER SHALL BE LIT ONLY IF REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION.
3. PROPOSED COAX TO BE ROUTED UP WAVEGUIDE LADDER. (PROVIDED BY TOWER MANUFACTURER)
4. TOWER TO INCLUDE SAFETY CABLE. DO NOT INCLUDE SAFETY CLIMB MECHANISM.
5. TOWER EQUIPMENT LOADING AND CENTERLINES ARE SHOWN FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE.

TOWER ELEVATION

SCALE: 1/16" = 1'-0"

0 16 32

SCALE IN FEET

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
PALMER, AK 99645
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SHEET TITLE:

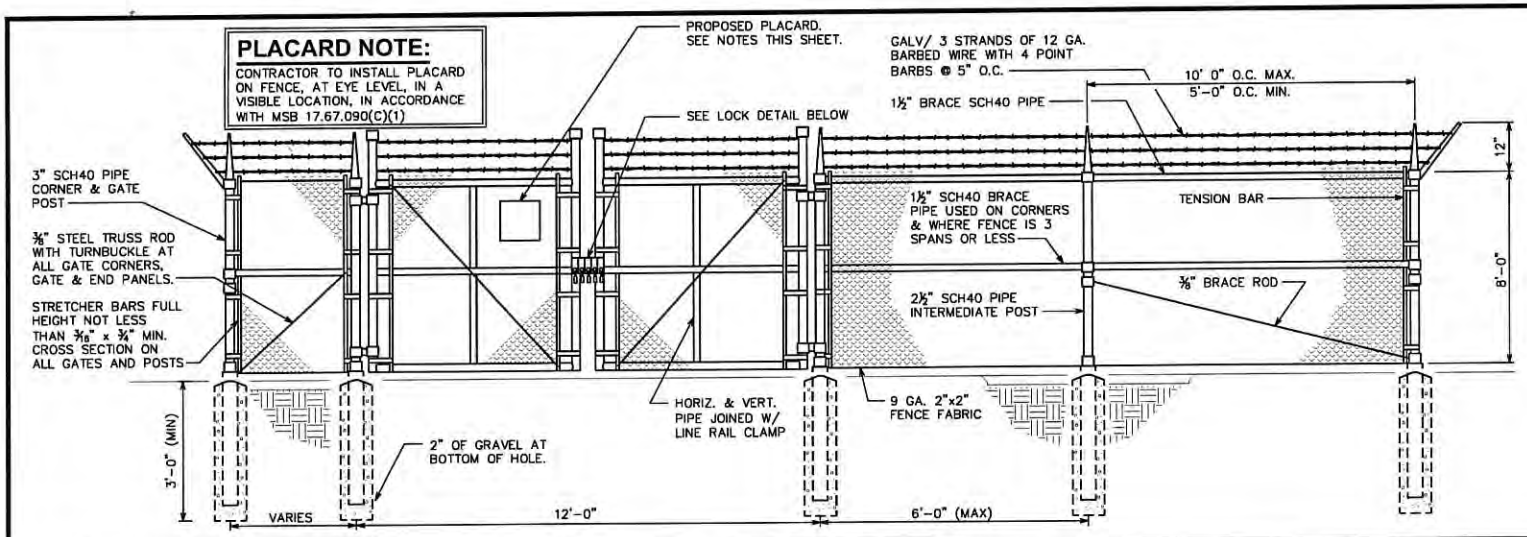
TOWER ELEVATION

SHEET NUMBER: **C-4**

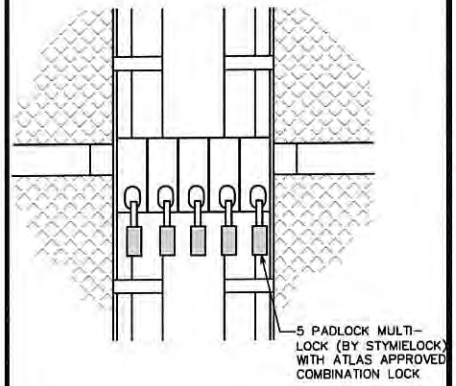
REVISION: **0**

TEP#:349563.111111

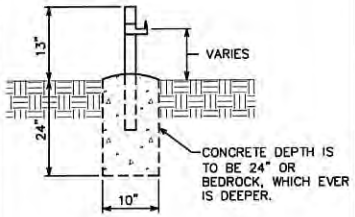
PLACARD NOTE:
CONTRACTOR TO INSTALL PLACARD ON FENCE, AT EYE LEVEL, IN A VISIBLE LOCATION, IN ACCORDANCE WITH MSB 17.67.090(C)(1)



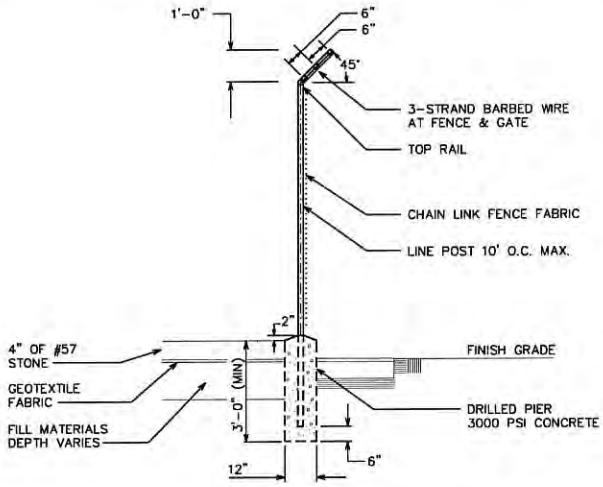
TYPICAL FENCE ELEVATION
SCALE: N.T.S.



GATE LOCK DETAIL
SCALE: N.T.S.



GATE STOP/KEEPER DETAIL
SCALE: N.T.S.



FENCE / BARBED WIRE ARM DETAIL
SCALE: N.T.S.

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
PALMER, AK 99645
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PLANS PREPARED FOR:

ATLAS TOWER

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SHEET TITLE:

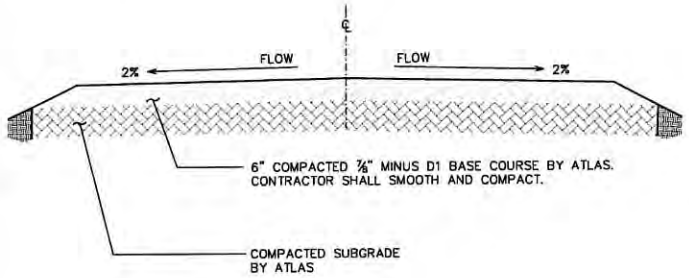
FENCE DETAILS

SHEET NUMBER: **Z-5**

REVISION: 0

TEP #: 349563.111711

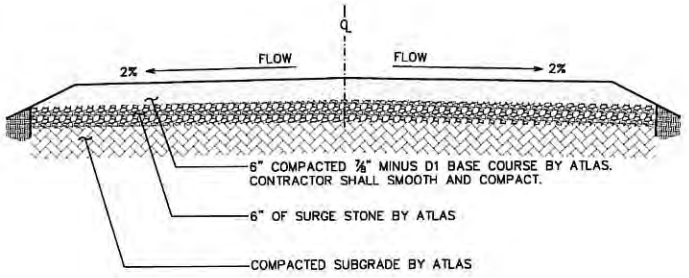
NOTE:
ROAD TO BE DESIGNED IN ACCORDANCE WITH M.S.B. 11.12.060 LOW VOLUME DRIVEWAY STANDARDS



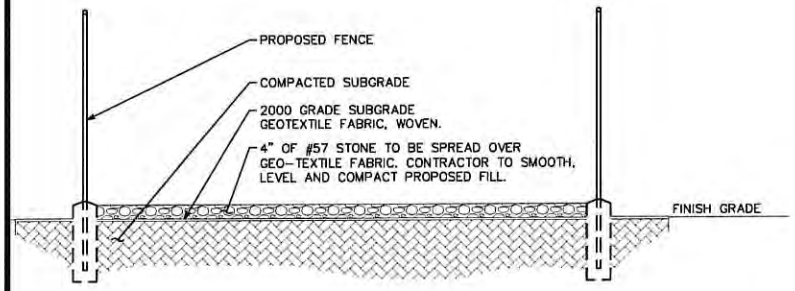
STANDARD ROAD SECTION (GOOD SUBGRADE)
SCALE: ⅜" = 1'-0"

NOT USED
SCALE: N.T.S.

NOTE:
ROAD TO BE DESIGNED IN ACCORDANCE WITH M.O.A. 11.12.060 LOW VOLUME DRIVEWAY STANDARDS



STANDARD ROAD SECTION (POOR SUBGRADE)
SCALE: ⅜" = 1'-0"



COMPOUND SECTION VIEW
SCALE: N.T.S.

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
PALMER, AK 99645
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SHEET TITLE:

DRIVEWAY DETAILS

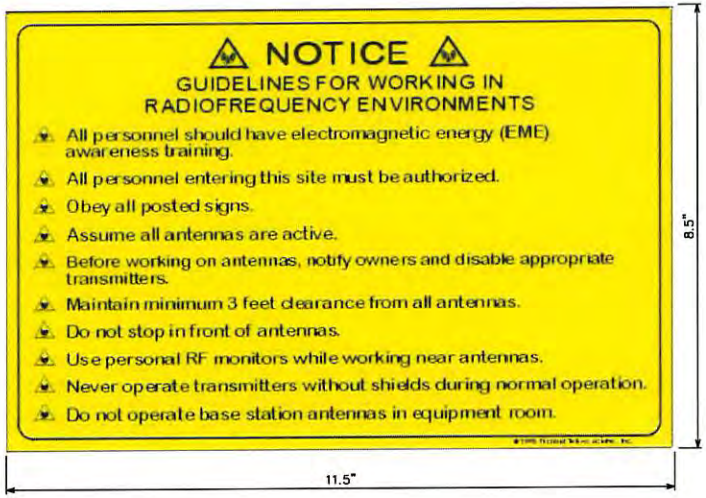
SHEET NUMBER: **C-6**

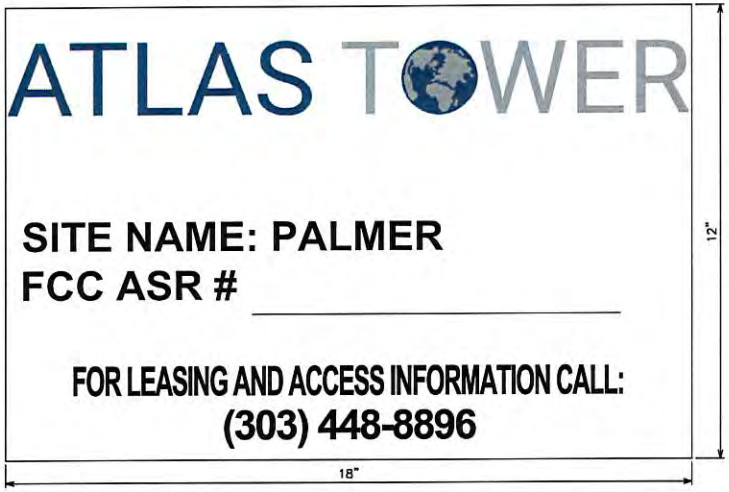
REVISION: **0**

TEP #: 349563.111711

NOTES:

- ALL SIGNS TO BE HUNG ON FENCE USING HOG RINGS OR ALUMINUM FENCE TIES. ZIP TIES OR REBAR WIRE WILL NOT BE ACCEPTABLE
- THE RED WARNING SIGN SHALL BE PLACED ON THE TOWER, IDEALLY AT THE BASE OF THE SAFETY CLIMB.





SIGNAGE DETAILS

PROJECT INFORMATION:

PALMER - ALT 2

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PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

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ATLAS TOWER

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SHEET TITLE:

SIGNAGE DETAILS

SHEET NUMBER: **C-7**

REVISION: **0**

TEP#:349563.111711

ELECTRICAL NOTES:

SCOPE:

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

CODES:

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
   A. THE NATIONAL ELECTRICAL SAFETY CODE
   B. THE NATIONAL ELECTRIC CODE – NFPA–70
   C. REGULATIONS OF THE SERVING UTILITY COMPANY
   D. LOCAL AND STATE AMENDMENTS
   E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)
2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.
3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:

1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

GUARANTEE:

1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
2. THE WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

UTILITY CO-ORDINATION:

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

EXAMINATION OF SITE:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

CUTTING, PATCHING AND EXCAVATION:

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

RACEWAYS / CONDUITS GENERAL:

1. CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE COMPLETE BEFORE INSTALLING CONDUCTORS.
2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

EXTERIOR CONDUIT:

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
2. WHERE INSTALLED ON EXTERIOR STRUCTURES OR EXPOSED TO DAMAGE, THE CONDUIT SHALL BE RIGID STEEL.
3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

INTERIOR CONDUIT:

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT.
2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

CONDUCTORS:

1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
   A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
   B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
   C. CONNECTION FOR #10 AWG #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
   D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP–ON SLEEVES WITH NYLON INSULATOR.
3. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.

UL COMPLIANCE:

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

1. ELECTRICAL NEUTRALS, RACEWAYS AND NON–CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 – "LIGHTNING PROTECTION" AS A MINIMUM.
4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

ABBREVIATIONS AND LEGEND

A	–	AMPERE
AFG	–	ABOVE FINISHED GRADE
ATS	–	AUTOMATIC TRANSFER SWITCH
AWG	–	AMERICAN WIRE GAUGE
BCW	–	BARE COPPER WIRE
BFG	–	BELOW FINISHED GRADE
BKR	–	BREAKER
C	–	CONDUIT
CKT	–	CIRCUIT
DISC	–	DISCONNECT
EGR	–	EXTERNAL GROUND RING
EMT	–	ELECTRIC METALLIC TUBING
FSC	–	FLEXIBLE STEEL CONDUIT
GEN	–	GENERATOR
GPS	–	GLOBAL POSITIONING SYSTEM
GRD	–	GROUND
IGB	–	ISOLATED GROUND BAR
IGR	–	INTERIOR GROUND RING (HALO)
KW	–	KILOWATTS
NEC	–	NATIONAL ELECTRIC CODE
PCS	–	PERSONAL COMMUNICATION SYSTEM
PH	–	PHASE
PNL	–	PANEL
PNLBD	–	PANELBOARD
PVC	–	RIGID NON–METALLIC CONDUIT
RGS	–	RIGID GALVANIZED STEEL CONDUIT
SW	–	SWITCH
TGB	–	TOWER GROUND BAR
UL	–	UNDERWRITERS LABORATORIES
V	–	VOLTAGE
W	–	WATTS
XFMR	–	TRANSFORMER
XMTR	–	TRANSMITTER

-----E-----	UNDERGROUND ELECTRICAL CONDUIT
-----T-----	UNDERGROUND TELEPHONE CONDUIT
	KILOWATT–HOUR METER
----------	UNDERGROUND BONDING AND GROUNDING CONDUCTOR.
Ø	GROUND ROD
●	CADWELD
⊠	GROUND ROD WITH INSPECTION WELL

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
BOULDER, CO 80301
Office: (303) 448–8896

PLANS PREPARED BY:

TEP

4570 IVY STREET, SUITE B-100
DENVER, CO 80216
OFFICE: (303) 566-9914
www.tepgroup.net

SEAL:

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REV	DATE	ISSUED FOR:
0	06-17-25	PRELIMINARY

DRAWN BY: RBK | CHECKED BY: NMC

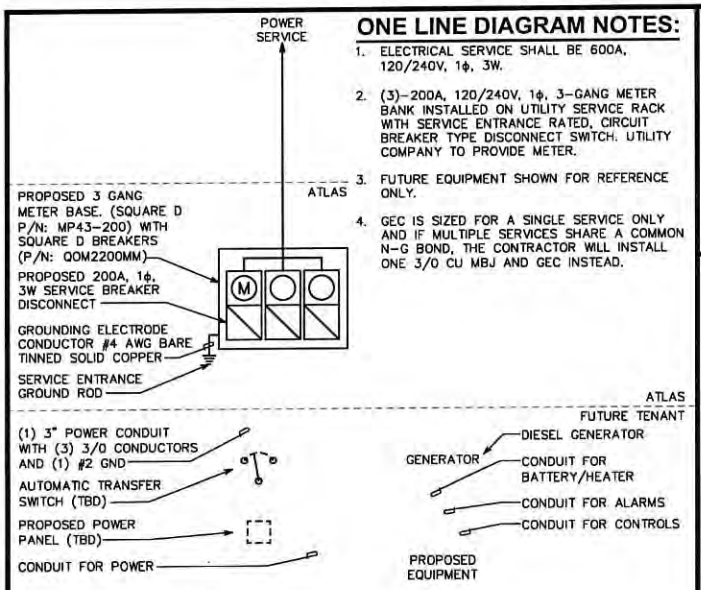
SHEET TITLE:

ELECTRICAL NOTES

SHEET NUMBER: **E-1**

REVISION: 0

TEP#:349563.1117.1.1



ONE LINE DIAGRAM NOTES:

1. ELECTRICAL SERVICE SHALL BE 600A, 120/240V, 1ϕ, 3W.
2. (3)-200A, 120/240V, 1ϕ, 3-GANG METER BANK INSTALLED ON UTILITY SERVICE RACK WITH SERVICE ENTRANCE RATED, CIRCUIT BREAKER TYPE DISCONNECT SWITCH. UTILITY COMPANY TO PROVIDE METER.
3. FUTURE EQUIPMENT SHOWN FOR REFERENCE ONLY.
4. GEC IS SIZED FOR A SINGLE SERVICE ONLY AND IF MULTIPLE SERVICES SHARE A COMMON N-G BOND, THE CONTRACTOR WILL INSTALL ONE 3/0 CU MBJ AND GEC INSTEAD.

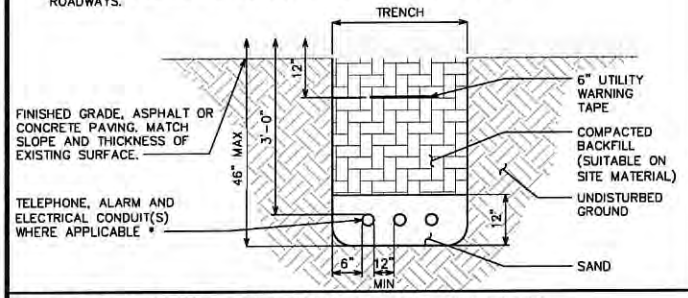
ONE-LINE DETAIL

SCALE: N.T.S.

NOTES:

1. ACTUAL SEPARATION OF CONDUITS TO BE DETERMINED BY SITE SPECIFIC REQUIREMENTS.
2. PROVIDE PVC CONDUIT BELOW GRADE EXCEPT AS NOTED BELOW.
3. PROVIDE RGS CONDUIT AND ELBOWS AT STUB UP LOCATIONS (I.E. SERVICE POLES, EQUIPMENT, ETC.)
4. PROVIDE RGS CONDUIT FOR INSTALLATIONS BELOW PARKING LOTS AND ROADWAYS.

* SEPARATION DIMENSIONS TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.

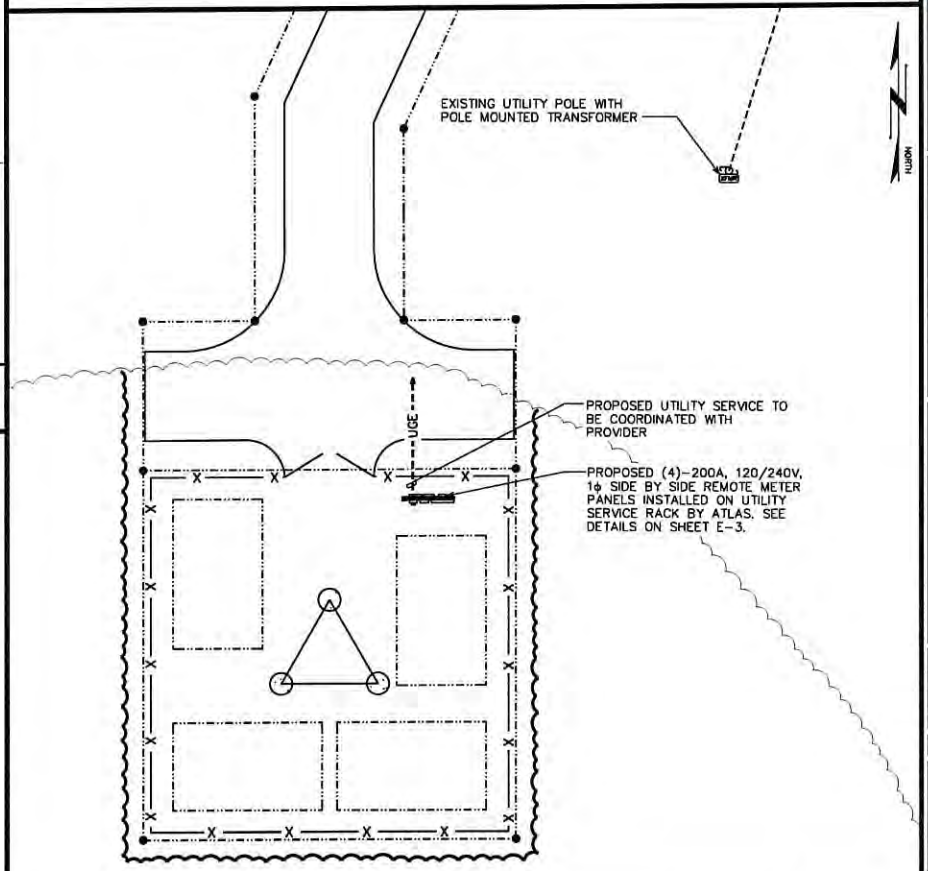


UNDERGROUND CONDUIT(S) TRENCH DETAIL

SCALE: N.T.S.

NOTES:

1. ALL TELCO CONDUITS ARE TO BE STUBBED IN D-MARC LOCATION.
2. ALL POWER CONDUITS ARE TO BE TERMINATED AT THE METER CENTER.
3. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO TRENCHING. ANY DAMAGE CAUSED TO THE EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
4. ALL CONDUITS SHALL BE INSTALLED PRIOR TO FINISH GRADING, GEOFABRIC, AND STONE INSTALLATION.
5. CONTRACTOR SHALL INSTALL SWEEPS AT ALL CONDUIT DIRECTION CHANGES.



POWER PLAN

SCALE: 1/16" = 1'-0"

0 16 32

SCALE IN FEET

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
BOULDER, CO 80301
Office: (303) 448-8896

PLANS PREPARED BY:

TEP

4570 IVY STREET, SUITE B-100
DENVER, CO 80216
OFFICE: (303) 565-9914
www.tepgroup.net

SEAL:

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REV	DATE	ISSUED FOR:
0	06-17-25	PRELIMINARY

DRAWN BY: KES | CHECKED BY: KES

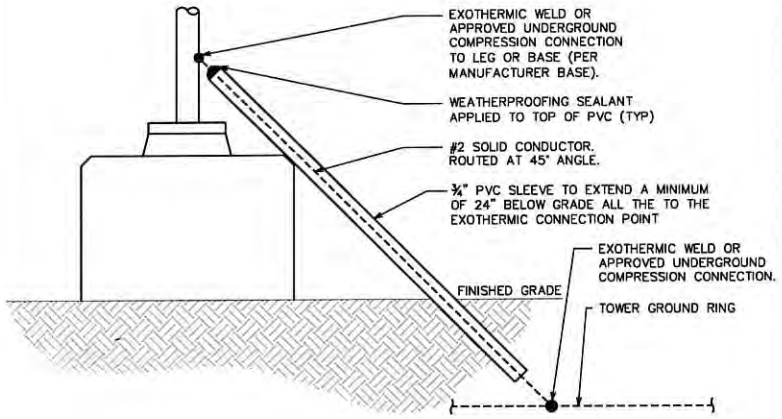
SHEET TITLE:

POWER PLAN AND ONE-LINE DIAGRAM

SHEET NUMBER: **E-2**

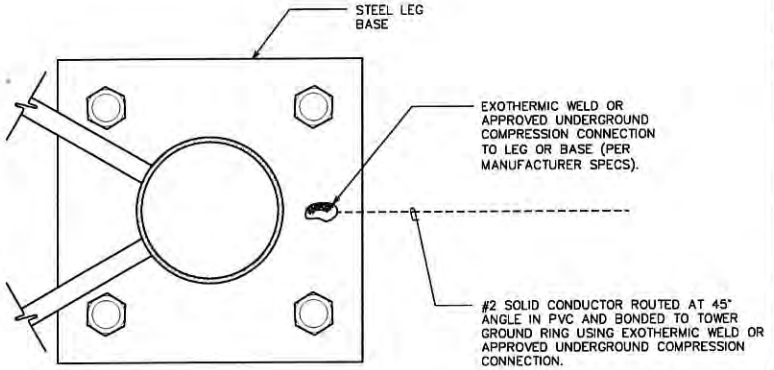
REVISION: 0

TEP#:349563.111711



TYPICAL TOWER BASE GROUNDING DETAIL

SCALE: N.T.S.



TYPICAL TOWER GROUNDING

SCALE: N.T.S.

PROJECT INFORMATION:

PALMER - ALT 2

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
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SEAL:

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REV	DATE	ISSUED FOR:
0	06-17-25	PRELIMINARY

DRAWN BY: RBK | CHECKED BY: NMC

SHEET TITLE:

TOWER FOUNDATION GROUNDING DETAILS

SHEET NUMBER: **E-6**

REVISION: 0

TEP#:349563.111711

Updated Information

MATANUSKA-SUSITNA BOROUGH

Planning and Land Use Department
Development Services Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822
www.matsugov.us

July 9, 2025

Atlas Towers 1, LLC
Attn: Helmundt Strumpher
2500 30th Street, Suite 304,
Bouder, CO, 80301

SUBJECT: Administrative Permit Application – Request for Required Information
LOCATION: 29750 E. Knik River Road, Tax ID #8274000L001A

Dear Mr. Strumpher,

Borough staff have reviewed the application material and site plan(s) submitted via mail on June 25, 2025, requesting an Administrative Permit for a Tall Structure on the above-referenced property. It has been determined that the following information needs to be provided and/or clarified to process this request:

1. MSB 17.67.070(A)(6) requires a determination of no hazard to air navigation from the Federal Aviation Administration (FAA).
    a. Please provide the FAA documentation upon receival. It is indicated within the application that the determination is applied for.

2. MSB 17.67.070(A)(2) Provide design drawings for the proposed tall structure, drawn to scale, and certified by a registered engineer or architect.
    a. Indicate engineers report on structural integrity (wind speed, ice accumulation).
    b. Provide certified engineering plans for the built-in structural weaknesses if breakpoint technology will be utilized in the proposed tower. MSB 17.67.070(A)(7)
3. MSB 17.67.080(A)(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;
    a. The proposed location is within 2.4 miles of the Hunter Creek Airport and 3.7 miles of the Alaska Glacier Lodge Airport, indicate within the narrative that the proposed tower will not interfere with the approaches.

4. As per MSB 17.125.010 a *"certified site plan": means a site plan that is prepared and sealed by an architect, professional engineer, or land surveyor, authorized to engage in that profession by the state of Alaska. The certified site plan shall be at a scale of one-inch equals 50 feet (or less) showing dimensions and locations of all existing and proposed development*

on the site in relationship to all property lines." Note, the plan provided is almost sufficient but it will need to be certified to meet all application requirements. See additional information requested below.

   a. Within the certified site plan please identify distances from the base of the tall structure to the nearest utility pole.

5. A driveway is proposed from E Knik River Road. Alaska Department of Transportation (ADOT) driveway permit is required for access on the E Knik River Road. Provide a copy of the applicable driveway permit.

6. Provide lease details for the site area authorizing Atlas Tower 1, LLC to construct a tall structure and associated development on the subject property.

Once an application has been determined complete, staff will begin the public notice process. Should you have any questions or require additional information, please contact me by phone or email. Thank you for your time and consideration on this matter.

Respectfully,

Rebecca Skjothaug

Rebecca Skjothaug
Current Planner
Matanuska-Susitna Borough

Atlas Tower 1, LLC
2500 30th Street, Suite 304
Boulder, CO 80301
(303) 448-8896

June 5, 2025

Matanuska-Susitna Borough Development Services Division
350 E. Dahlia Ave
Palmer, AK 99645

RE: Administrative Permit Narrative for Telecommunications Facility
Site Name: Palmer

To Whom It May Concern:

Atlas Tower 1, LLC is submitting an Administrative Permit Application to the Matanuska-Susitna Borough Development Services Division for review of a new proposed wireless telecommunications facility build on the property of 27950 E KNIK RIVER RD, Palmer, AK, 99645, Parcel #: **542093**. This letter shall serve as a narrative for the proposed **125' Lattice** telecommunications facility and how this project will provide the needed mobile network coverage while reducing the need for additional cellular facilities in the future. This project is being proposed and this justification is being provided in an effort to alleviate current mobile network voice, data, and first responder issues in an area that is severely lacking reliable network coverage and capacity.

SITE DETAILS

Land Owner: Paul Laux 27950 E Knik River Rd Palmer, AK, 99645	**Site Address:** 27950 E Knik River Rd Palmer, AK, 99645 Parcel #: **542093**
Applicant: Atlas Tower 1, LLC 2500 30th St., Suite 304 Boulder, CO 80301	**Coordinates:** Latitude: 61.44422 Longitude: -148.81356 Ground Elevation: 141'
Zoning: General-Use	**Lease Area:** 50 x 50

PROPOSAL SUMMARY

The purpose of this request is to build a 125' self support telecommunications tower within a 50 x 50 wireless facility. This facility will provide critical wireless coverage to the surrounding area. The proposed site is zoned as General-Use where coverage is lacking, and the capacity of the existing infrastructure is reaching its limit. As the area develops further, and the existing users demand more data for their existing devices, existing infrastructure will reach capacity limits and be unable to meet coverage needs. This tower and facility will be used for structural support of up to four wireless providers. Each provider will install antennas and on-the-ground base-station equipment.

WIRELESS TELECOMMUNICATION FACILITY CHARACTERISTICS

Visual Effect
We strive to design our facilities and locate parcels that create the least amount of community disturbance. The surrounding area is a largely wooded rural area with low density residential zones nearby. The proposed site is chosen to maximize visual aesthetic and distance from residential homes. Photo sims have been included with views from the adjacent highway.

Proximity to Airports, Trails and Waterbodies
There are two small landing strips/airports near the site. Hunter Creek's airstrip, 2.4 miles away, is not directly in-line with our tower site and will not cause approach issues. The Alaska Glacier Lodge's airstrip, 3.7 miles away, is also not in-line with the proposed location and will not cause approach issues. The closest large airport, AK1 - Butte Municipal Airport, is roughly 9 miles to the NW. The site is not in line with any of the runways and does not pose a hazard to air navigation. The nearest trailhead, noted as 166 - Hunter Creek on MSB trail plans, is approx. 1.75 miles to the South. Due to the topography and trees, the tower is not expected to be visible from the trail. The next nearest trails are 061 - Knik Glacier (aka Jim Creek) and 083 - Pioneer Ridge/Austin Helmers; they are about 3 and 4 miles to the NE and NW, respectively, and should not have visibility of the tower. The nearest water body, Knik River, is approx. 1.5 miles to the north. It is possible the very tip of the tower would be visible, however from this distance it would likely be difficult to spot.

Frequency Of Maintenance Work On The Proposed Facility
On average, after initial installation, a carrier or its contactors would likely visit the facility about one to four times a year for maintenance, though this number could vary depending on the specific circumstances of the facility.

The Average Number Of Vehicles Visiting The Facility and Average Duration of Facility Work
The average maintenance visit by a carrier or its contractors would likely involve one pickup truck. On average, one to two visits a year are made for each carrier. For typical maintenance visits, a carrier or its contactors would only be at the site a few hours, but this number could increase depending on the work that needed to be completed at the site.

Expected Noise Levels
Telecommunications facilities are essentially silent. This would be true whether there were one or four carriers. A generator could be operated on site in the rare instance that power went out. The generator would create noise, but it would not be noticeable or audible in the location the telecommunications facility is proposed to be.

Site Security and Warnings
The proposed tower shall be secured with a locked 8' chain link fencing with an additional 1' of barbed wire on top to prevent unauthorized visitors. The proposed facility will operate at 220 Volts and will not require a sign.

Building Codes; Safety Standards
Atlas Tower will ensure the structural integrity of towers, ensure that it is maintained in compliance with standards contained in applicable state or local building codes and the applicable standards for towers that are published by the Electronic Industries Association, as amended from time to time. Granting of this permit will not be harmful to the public health, safety, convenience, or welfare. If, upon inspection,

Matanuska-Susitna Borough concludes that a tower fails to comply with such codes and standards and constitutes a danger to persons or property, then upon notice being provided to the owner of the tower, the owner shall have thirty (30) days to bring such tower into compliance with such standards, unless a longer time is reasonably necessary. Failure to bring such tower into compliance within said thirty (30) days shall constitute grounds for the removal of the tower or antenna at the owner's expense.

FAA/FCC Compliance

The proposed facility shall conform to the requirements of this title, this code, and other laws, including pertinent federal regulations of the Federal Communications Commission (FCC) and the Federal Aviation Administration (FAA) when determined.

This narrative represents required and supplementary information to document the technological, economic, and social necessity and benefits of a new 125' self support telecommunications tower in Palmer. The information provided highlights the advantages associated with a telecommunications facility at our proposed site. See attached documents including our survey and tower drawings.

Atlas Tower 1, LLC respectfully requests the acceptance of our application for a Zoning for the proposed communications tower facility.

Best Regards,

Helmundt Strumpher
720-667-6652
www.atlastowers.com
2500 30th St. Suite 304
Boulder, CO 80301

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

Aeronautical Study No.
2025-AAL-342-OE

Issued Date: 07/02/2025

ATLAS TOWER 1, LLC
MIKE POWERS
2500 30th St
Suite 304
Boulder, CO 80301

**** 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 Palmer - Laux
County, State: Matanuska-Susitna, Alaska

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
pt-1	61-26-39.19N	148-48-48.82W	230 Ft	125 Ft	355 Ft

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:

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 Change 1.

This determination expires on 01/02/2027 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 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 1-206-231-2993, or lynnette.farrell@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2025-AAL-342-OE.

Signature Control No: 662162325-668340433 (DNE)
lynnette.farrell@faa.gov
Technician

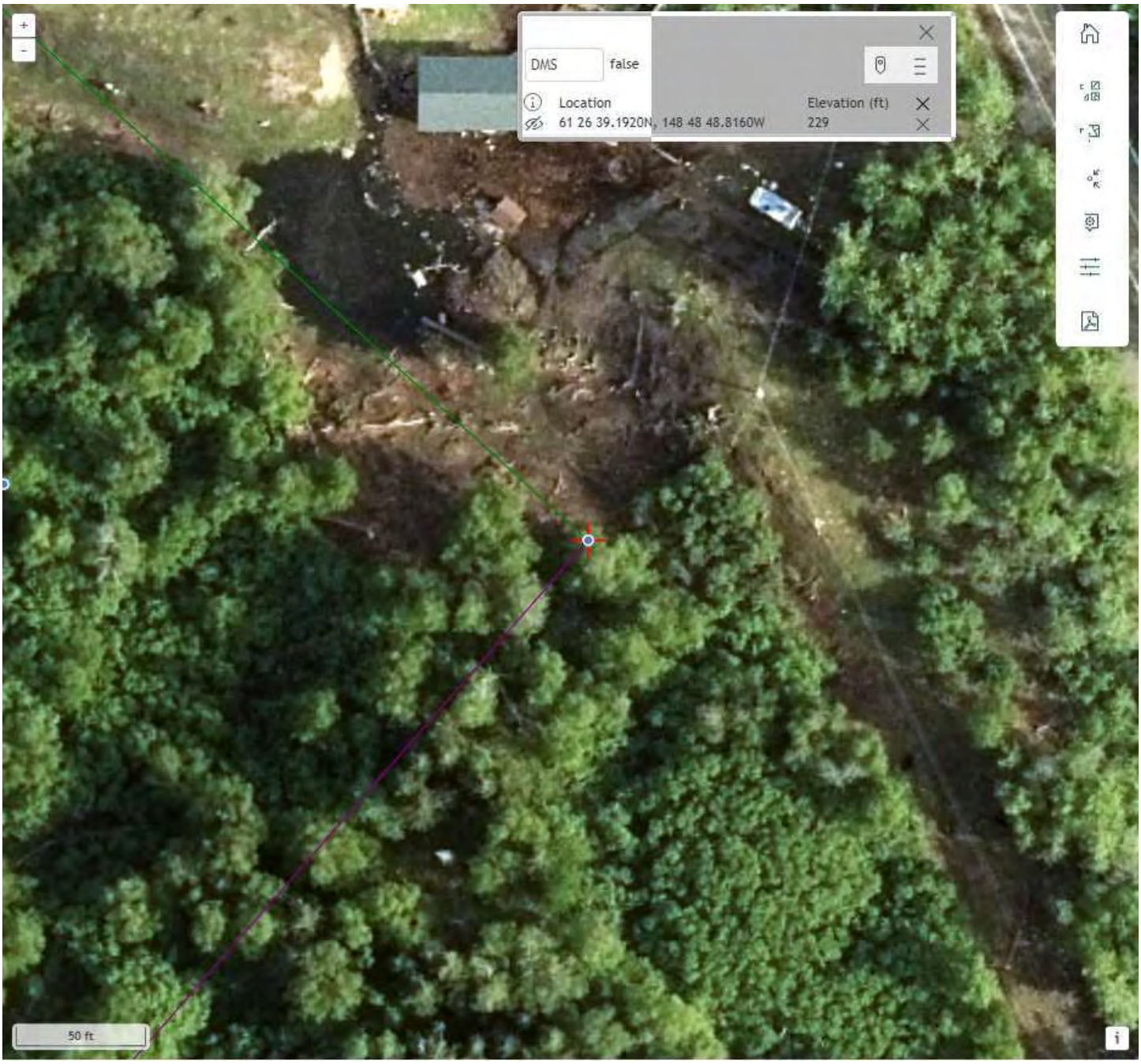
Attachment(s)
Frequency Data
Map(s)

cc: FCC

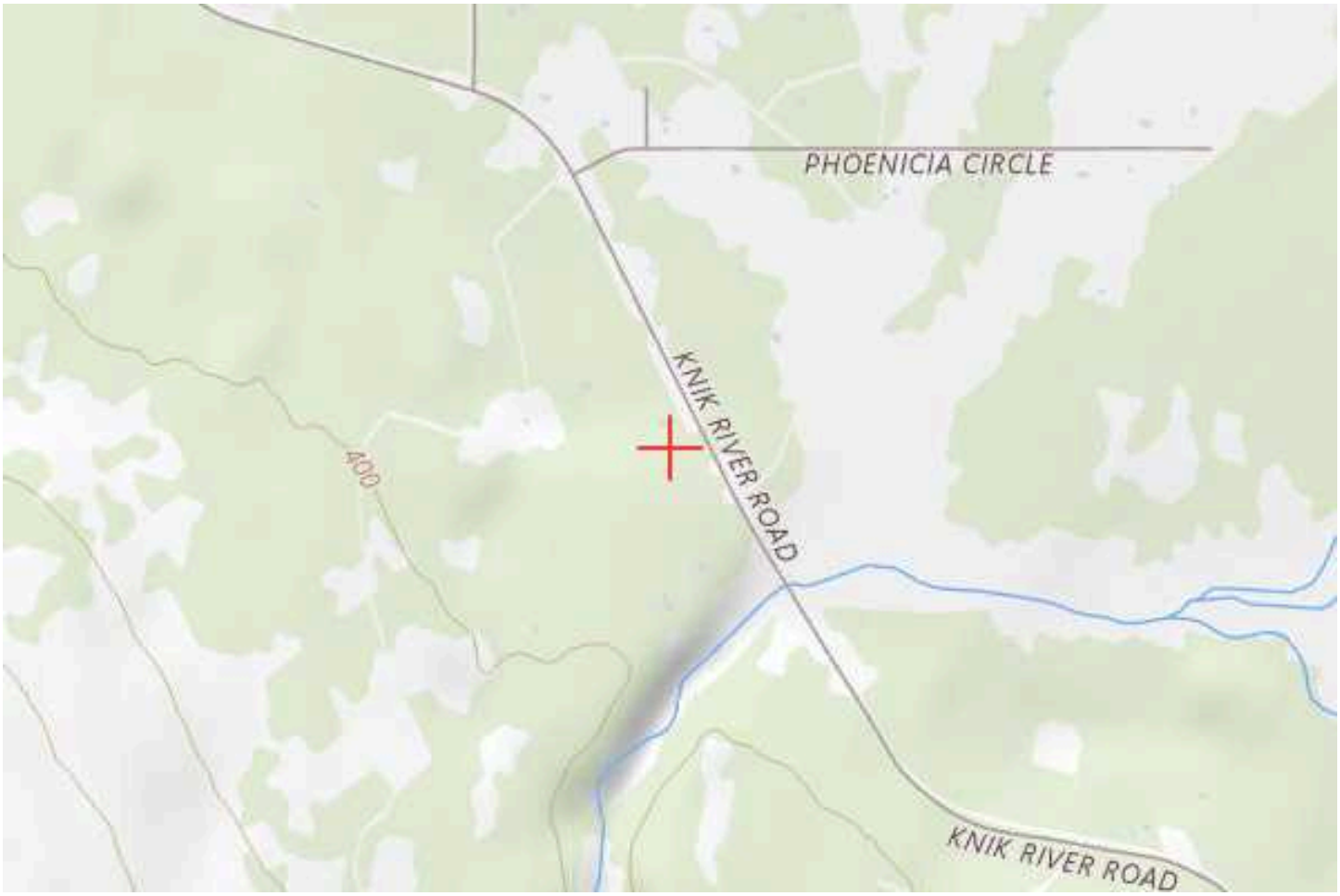
Frequency Data for ASN 2025-AAL-342-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	42	dBW
6	7	GHz	55	dBW
10	11.7	GHz	42	dBW
10	11.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
21.2	23.6	GHz	42	dBW
21.2	23.6	GHz	55	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	824	MHz	500	W
806	901	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 2025-AAL-342-OE



TOPO Map for ASN 2025-AAL-342-OE



Design Supporting Calculations

Sales Order:	SO33695
Drawing Number(s)	
Tower:	803223
Order Description:	NSX 12.5' x 125.9'
Site Name:	Palmer - Laux / ATAK0034
Location:	Matanuska-Susitna Borough, AK
	Prepared For:
Customer:	Atlas Tower
Contact:	Parker Bingham
Date:	8/22/2025

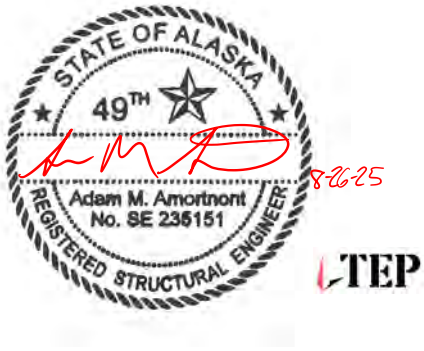
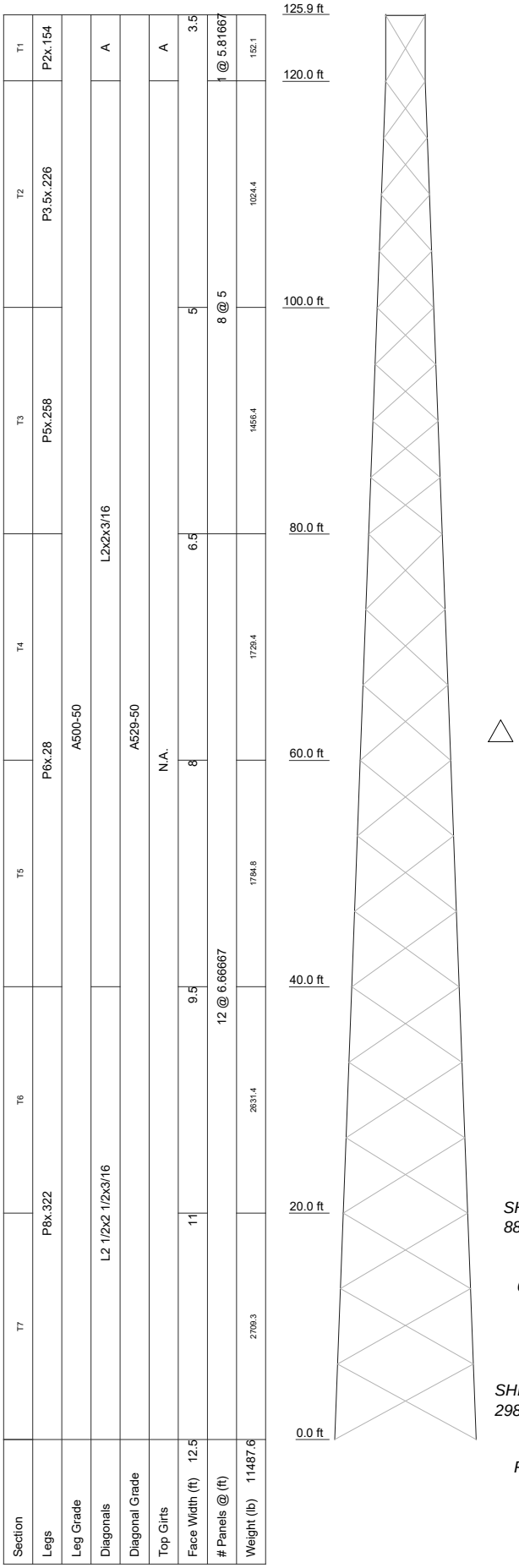


Table of Contents



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
30,000 sq in CaAa	120	6' Solid w/Radome	100
30,000 sq in CaAa	110	Dish Pipe Mount	90
Dish Pipe Mount	100	6' Solid w/Radome	90

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x1/8		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A529-50	50 ksi	65 ksi

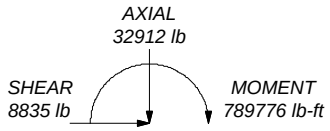
TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 123 mph ultimate 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 0.00 ft
7. TOWER RATING: 83.4%

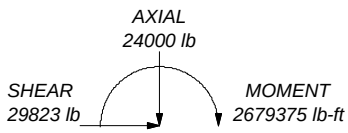
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 255509 lb
SHEAR: 19052 lb

UPLIFT: -234692 lb
SHEAR: 17802 lb



TORQUE 562 lb-ft
60 mph WIND - 0.5000 in ICE



TORQUE 2251 lb-ft
REACTIONS - 123 mph WIND

Nello Corporation
1201 S. Sheridan Street
South Bend, IN 46619
Phone: 800-806-3556
FAX:

Job:	***SO33695; Tower 803223; Foundation 803224***
Project:	***NS 125.9' - Palmer - Laux / ATAK0034 - Matanuska-Susitna Borough, AK***
Client: Atlas Tower	Drawn by: AJK — App'd:
Code: TIA-222-H	Date: 08/13/25 — Scale: NTS
Path: N:\eri\8032\803223.eri	Dwg No. E-1

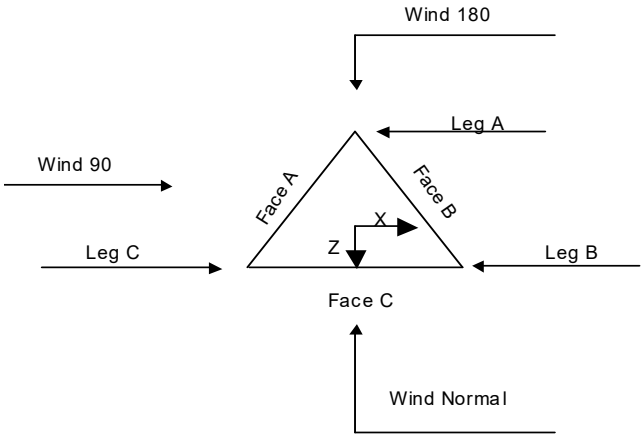
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 125.90 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.50 ft at the top and 12.50 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: 0.00 ft.
Ultimate wind speed of 123 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 0.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 60 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
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		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate	√	Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area	√	SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r	√	All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice		Bypass Mast Stability Checks		Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
√	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
√	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)	√	Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
√	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					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	125.90-120.00			3.50	1	5.90
T2	120.00-100.00			3.50	1	20.00
T3	100.00-80.00			5.00	1	20.00
T4	80.00-60.00			6.50	1	20.00
T5	60.00-40.00			8.00	1	20.00
T6	40.00-20.00			9.50	1	20.00
T7	20.00-0.00			11.00	1	20.00

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	125.90-120.00	5.82	X Brace	No	No	1.0000	0.0000
T2	120.00-100.00	5.00	X Brace	No	No	0.0000	0.0000
T3	100.00-80.00	5.00	X Brace	No	No	0.0000	0.0000
T4	80.00-60.00	6.67	X Brace	No	No	0.0000	0.0000
T5	60.00-40.00	6.67	X Brace	No	No	0.0000	0.0000
T6	40.00-20.00	6.67	X Brace	No	No	0.0000	0.0000
T7	20.00-0.00	6.67	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 125.90-120.00	Pipe	P2x.154	A500-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x1/8	A529-50 (50 ksi)
T2 120.00-100.00	Pipe	P3.5x.226	A500-50 (50 ksi)	Equal Angle	L2x2x3/16	A529-50 (50 ksi)
T3 100.00-80.00	Pipe	P5x.258	A500-50 (50 ksi)	Equal Angle	L2x2x3/16	A529-50 (50 ksi)
T4 80.00-60.00	Pipe	P6x.28	A500-50 (50 ksi)	Equal Angle	L2x2x3/16	A529-50 (50 ksi)
T5 60.00-40.00	Pipe	P6x.28	A500-50 (50 ksi)	Equal Angle	L2x2x3/16	A529-50 (50 ksi)
T6 40.00-20.00	Pipe	P8x.322	A500-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T7 20.00-0.00	Pipe	P8x.322	A500-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (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 125.90-120.00	Equal Angle	L1 3/4x1 3/4x1/8	A529-50 (50 ksi)	Solid Round		A529-50 (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 125.90-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T2 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T3 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T4 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T5 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T6 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T7 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000

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	No	Yes	1	1	1	1	1	1	1	1
125.90-120.00				1	1	1	1	1	1	1
T2	No	Yes	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T3	No	Yes	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T4	No	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T5	No	Yes	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T6	No	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T7 20.00-0.00	No	Yes	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	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
125.90-120.00														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
120.00-100.00														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
100.00-80.00														
T4 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	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	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
125.90-120.00														
T2	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
120.00-100.00														

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
T3 100.00-80.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 80.00-60.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 60.00-40.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 40.00-20.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 20.00-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM)	C	No	Yes	Ar (CaAa)	120.00 - 0.00	4	2	0.2700 0.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	No	Yes	Ar (CaAa)	110.00 - 0.00	4	2	0.2700 0.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	No	Yes	Ar (CaAa)	100.00 - 0.00	1	1	0.2700 0.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	No	Yes	Ar (CaAa)	90.00 - 0.00	1	1	0.2700 0.0000	1.9800		0.82

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 lb
T1	125.90-120.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T2	120.00-100.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	7.920	0.000	32.80
		C	0.000	0.000	15.840	0.000	65.60
T3	100.00-80.00	A	0.000	0.000	3.960	0.000	16.40
		B	0.000	0.000	15.840	0.000	65.60
		C	0.000	0.000	17.820	0.000	73.80
T4	80.00-60.00	A	0.000	0.000	3.960	0.000	16.40
		B	0.000	0.000	15.840	0.000	65.60
		C	0.000	0.000	19.800	0.000	82.00
T5	60.00-40.00	A	0.000	0.000	3.960	0.000	16.40
		B	0.000	0.000	15.840	0.000	65.60
		C	0.000	0.000	19.800	0.000	82.00
T6	40.00-20.00	A	0.000	0.000	3.960	0.000	16.40
		B	0.000	0.000	15.840	0.000	65.60
		C	0.000	0.000	19.800	0.000	82.00
T7	20.00-0.00	A	0.000	0.000	3.960	0.000	16.40
		B	0.000	0.000	15.840	0.000	65.60
		C	0.000	0.000	19.800	0.000	82.00

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 lb
T1	125.90-120.00	A	0.570	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T2	120.00-100.00	A	0.564	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.236	0.000	82.86
		C		0.000	0.000	18.472	0.000	165.71
T3	100.00-80.00	A	0.553	0.000	0.000	6.171	0.000	50.61
		B		0.000	0.000	18.393	0.000	164.13
		C		0.000	0.000	21.478	0.000	189.43
T4	80.00-60.00	A	0.539	0.000	0.000	6.116	0.000	49.58
		B		0.000	0.000	18.296	0.000	162.20
		C		0.000	0.000	24.412	0.000	211.78
T5	60.00-40.00	A	0.521	0.000	0.000	6.045	0.000	48.25
		B		0.000	0.000	18.170	0.000	159.70
		C		0.000	0.000	24.215	0.000	207.95
T6	40.00-20.00	A	0.495	0.000	0.000	5.941	0.000	46.35
		B		0.000	0.000	17.986	0.000	156.09
		C		0.000	0.000	23.927	0.000	202.44
T7	20.00-0.00	A	0.444	0.000	0.000	5.735	0.000	42.68
		B		0.000	0.000	17.622	0.000	149.02
		C		0.000	0.000	23.357	0.000	191.70

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	1	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T2	2	LDF7-50A (1-5/8 FOAM)	100.00 - 110.00	0.6000	0.6000
T3	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T3	2	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T3	3	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T3	4	LDF7-50A (1-5/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T4	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T4	2	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T4	3	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T4	4	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T5	1	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T5	2	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T5	3	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T5	4	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T6	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T6	2	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T6	3	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T6	4	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T7	1	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T7	2	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T7	3	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T7	4	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
30,000 sq in CaAa	C	None		0.0000	120.00	No Ice	208.00	208.00	3536.00
						1/2" Ice	250.00	250.00	4738.00
30,000 sq in CaAa	B	None		0.0000	110.00	No Ice	208.00	208.00	3536.00
						1/2" Ice	250.00	250.00	4738.00
Dish Pipe Mount	A	From Leg	0.00 0.00 0.00	0.0000	100.00	No Ice	0.00	1.80	103.00
						1/2" Ice	0.00	2.10	119.00
Dish Pipe Mount	C	From Leg	0.00 0.00 0.00	0.0000	90.00	No Ice	0.00	1.80	103.00
						1/2" Ice	0.00	2.10	119.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
6' Solid w/Radome	A	Paraboloid w/Radome	From Leg	0.00 0.00 0.00	0.0000		100.00	6.00	No Ice	28.27	162.00
									1/2" Ice	29.07	321.00
6' Solid w/Radome	C	Paraboloid w/Radome	From Leg	0.00 0.00 0.00	0.0000		90.00	6.00	No Ice	28.27	162.00
									1/2" Ice	29.07	321.00

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	122.95	1.322	44	21.818	A	2.350	2.335	2.335	49.85	0.000	0.000
125.90-120.00					B	2.350	2.335		49.85	0.000	0.000
					C	2.350	2.335		49.85	0.000	0.000
T2	110.00	1.291	43	91.671	A	8.070	13.346	13.346	62.32	0.000	0.000
120.00-100.00					B	8.070	13.346		62.32	7.920	0.000
					C	8.070	13.346		62.32	15.840	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T3	90.00	1.238	41	124.278	A	9.346	18.561	18.561	66.51	3.960	0.000
100.00-80.00					B	9.346	18.561		66.51	15.840	0.000
					C	9.346	18.561		66.51	17.820	0.000
T4 80.00-60.00	70.00	1.174	39	156.049	A	9.103	22.104	22.104	70.83	3.960	0.000
					B	9.103	22.104		70.83	15.840	0.000
					C	9.103	22.104		70.83	19.800	0.000
T5 60.00-40.00	50.00	1.094	36	186.049	A	10.309	22.104	22.104	68.19	3.960	0.000
					B	10.309	22.104		68.19	15.840	0.000
					C	10.309	22.104		68.19	19.800	0.000
T6 40.00-20.00	30.00	0.982	32	219.385	A	14.215	28.777	28.777	66.94	3.960	0.000
					B	14.215	28.777		66.94	15.840	0.000
					C	14.215	28.777		66.94	19.800	0.000
T7 20.00-0.00	10.00	0.85	28	249.385	A	15.856	28.777	28.777	64.47	3.960	0.000
					B	15.856	28.777		64.47	15.840	0.000
					C	15.856	28.777		64.47	19.800	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	122.95	1.322	10	0.5703	22.378	A	2.350	4.988	3.457	47.11	0.000	0.000
125.90-120.00						B	2.350	4.988		47.11	0.000	0.000
						C	2.350	4.988		47.11	0.000	0.000
T2	110.00	1.291	10	0.5640	93.553	A	8.070	21.661	17.109	57.55	0.000	0.000
120.00-100.00						B	8.070	21.661		57.55	9.236	0.000
						C	8.070	21.661		57.55	18.472	0.000
T3 100.00-80.00	90.00	1.238	10	0.5528	126.122	A	9.346	27.415	22.249	60.52	6.171	0.000
						B	9.346	27.415		60.52	18.393	0.000
						C	9.346	27.415		60.52	21.478	0.000
T4 80.00-60.00	70.00	1.174	9	0.5390	157.848	A	9.103	30.608	25.701	64.72	6.116	0.000
						B	9.103	30.608		64.72	18.296	0.000
						C	9.103	30.608		64.72	24.412	0.000
T5 60.00-40.00	50.00	1.094	9	0.5212	187.788	A	10.309	30.955	25.582	62.00	6.045	0.000
						B	10.309	30.955		62.00	18.170	0.000
						C	10.309	30.955		62.00	24.215	0.000
T6 40.00-20.00	30.00	0.982	8	0.4953	221.037	A	14.215	37.714	32.082	61.78	5.941	0.000
						B	14.215	37.714		61.78	17.986	0.000
						C	14.215	37.714		61.78	23.927	0.000
T7 20.00-0.00	10.00	0.85	7	0.4437	250.865	A	15.856	37.367	31.738	59.63	5.735	0.000
						B	15.856	37.367		59.63	17.622	0.000
						C	15.856	37.367		59.63	23.357	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	122.95	1.322	10	21.818	A	2.350	2.335	2.335	49.85	0.000	0.000
125.90-120.00					B	2.350	2.335		49.85	0.000	0.000
					C	2.350	2.335		49.85	0.000	0.000
T2	110.00	1.291	10	91.671	A	8.070	13.346	13.346	62.32	0.000	0.000
120.00-100.00					B	8.070	13.346		62.32	7.920	0.000
					C	8.070	13.346		62.32	15.840	0.000
T3	90.00	1.238	10	124.278	A	9.346	18.561	18.561	66.51	3.960	0.000
100.00-80.00					B	9.346	18.561		66.51	15.840	0.000
					C	9.346	18.561		66.51	17.820	0.000
T4 80.00-60.00	70.00	1.174	9	156.049	A	9.103	22.104	22.104	70.83	3.960	0.000
					B	9.103	22.104		70.83	15.840	0.000
					C	9.103	22.104		70.83	19.800	0.000
T5 60.00-40.00	50.00	1.094	9	186.049	A	10.309	22.104	22.104	68.19	3.960	0.000
					B	10.309	22.104		68.19	15.840	0.000
					C	10.309	22.104		68.19	19.800	0.000
T6 40.00-20.00	30.00	0.982	8	219.385	A	14.215	28.777	28.777	66.94	3.960	0.000
					B	14.215	28.777		66.94	15.840	0.000
					C	14.215	28.777		66.94	19.800	0.000
T7 20.00-0.00	10.00	0.85	7	249.385	A	15.856	28.777	28.777	64.47	3.960	0.000
					B	15.856	28.777		64.47	15.840	0.000
					C	15.856	28.777		64.47	19.800	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	152.09	A	0.215	2.548	44	1	1	3.698	348.43	59.06	C
125.90-120.00			B	0.215	2.548		1	1	3.698			
			C	0.215	2.548		1	1	3.698			
T2	98.40	1024.40	A	0.234	2.488	43	1	1	15.526	1733.98	86.70	C
120.00-100.00			B	0.234	2.488		1	1	15.526			
			C	0.234	2.488		1	1	15.526			
T3	155.80	1456.39	A	0.225	2.516	41	1	1	18.712	2183.26	109.16	C
100.00-80.00			B	0.225	2.516		1	1	18.712			
			C	0.225	2.516		1	1	18.712			
T4	164.00	1729.37	A	0.2	2.596	39	1	1	19.278	2207.28	110.36	C
80.00-60.00			B	0.2	2.596		1	1	19.278			
			C	0.2	2.596		1	1	19.278			
T5	164.00	1784.76	A	0.174	2.684	36	1	1	20.395	2200.21	110.01	C
60.00-40.00			B	0.174	2.684		1	1	20.395			
			C	0.174	2.684		1	1	20.395			
T6	164.00	2631.37	A	0.196	2.61	32	1	1	26.977	2405.98	120.30	C
40.00-20.00			B	0.196	2.61		1	1	26.977			
			C	0.196	2.61		1	1	26.977			
T7 20.00-0.00	164.00	2709.25	A	0.179	2.668	28	1	1	28.345	2206.22	110.31	C
			B	0.179	2.668		1	1	28.345			
			C	0.179	2.668		1	1	28.345			
Sum Weight:	910.20	11487.63						OTM	788832.30 lb-ft	13285.36		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	152.09	A	0.215	2.548	44	0.8	1	3.228	304.15	51.55	C
125.90-120.00			B	0.215	2.548		0.8	1	3.228			
			C	0.215	2.548		0.8	1	3.228			
T2	98.40	1024.40	A	0.234	2.488	43	0.8	1	13.912	1588.90	79.44	A
120.00-100.00			B	0.234	2.488		0.8	1	13.912			
			C	0.234	2.488		0.8	1	13.912			
T3	155.80	1456.39	A	0.225	2.516	41	0.8	1	16.843	2020.36	101.02	C
100.00-80.00			B	0.225	2.516		0.8	1	16.843			
			C	0.225	2.516		0.8	1	16.843			
T4	164.00	1729.37	A	0.2	2.596	39	0.8	1	17.458	2052.00	102.60	C
80.00-60.00			B	0.2	2.596		0.8	1	17.458			
			C	0.2	2.596		0.8	1	17.458			
T5	164.00	1784.76	A	0.174	2.684	36	0.8	1	18.333	2030.81	101.54	C
60.00-40.00			B	0.174	2.684		0.8	1	18.333			
			C	0.174	2.684		0.8	1	18.333			
T6	164.00	2631.37	A	0.196	2.61	32	0.8	1	24.134	2202.06	110.10	C
40.00-20.00			B	0.196	2.61		0.8	1	24.134			
			C	0.196	2.61		0.8	1	24.134			
T7 20.00-0.00	164.00	2709.25	A	0.179	2.668	28	0.8	1	25.174	2004.99	100.25	C
			B	0.179	2.668		0.8	1	25.174			
			C	0.179	2.668		0.8	1	25.174			
Sum Weight:	910.20	11487.63						OTM	725298.92 lb-ft	12203.27		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	152.09	A	0.215	2.548	44	0.85	1	3.345	315.22	53.43	C
125.90-120.00			B	0.215	2.548		0.85	1	3.345			
			C	0.215	2.548		0.85	1	3.345			
T2	98.40	1024.40	A	0.234	2.488	43	0.85	1	14.316	1625.17	81.26	A
120.00-100.00			B	0.234	2.488		0.85	1	14.316			
			C	0.234	2.488		0.85	1	14.316			
T3	155.80	1456.39	A	0.225	2.516	41	0.85	1	17.310	2064.59	103.23	A
100.00-80.00			B	0.225	2.516		0.85	1	17.310			
			C	0.225	2.516		0.85	1	17.310			
T4	164.00	1729.37	A	0.2	2.596	39	0.85	1	17.913	2094.15	104.71	A
80.00-60.00			B	0.2	2.596		0.85	1	17.913			
			C	0.2	2.596		0.85	1	17.913			
T5	164.00	1784.76	A	0.174	2.684	36	0.85	1	18.849	2076.26	103.81	A
60.00-40.00			B	0.174	2.684		0.85	1	18.849			
			C	0.174	2.684		0.85	1	18.849			
T6	164.00	2631.37	A	0.196	2.61	32	0.85	1	24.844	2255.82	112.79	A
40.00-20.00			B	0.196	2.61		0.85	1	24.844			
			C	0.196	2.61		0.85	1	24.844			
T7 20.00-0.00	164.00	2709.25	A	0.179	2.668	28	0.85	1	25.967	2057.71	102.89	A
			B	0.179	2.668		0.85	1	25.967			
			C	0.179	2.668		0.85	1	25.967			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
Sum Weight:	910.20	11487.63						OTM	741993.27 lb-ft	12488.92		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	297.11	A	0.328	2.224	10	1	1	5.383	105.39	17.86	C
125.90-120.00			B	0.328	2.224		1	1	5.383			
			C	0.328	2.224		1	1	5.383			
T2	248.57	1581.88	A	0.318	2.25	10	1	1	21.168	511.80	25.59	C
120.00-100.00			B	0.318	2.25		1	1	21.168			
			C	0.318	2.25		1	1	21.168			
T3	404.17	2122.34	A	0.291	2.319	10	1	1	25.694	666.31	33.32	C
100.00-80.00			B	0.291	2.319		1	1	25.694			
			C	0.291	2.319		1	1	25.694			
T4	423.55	2406.08	A	0.252	2.433	9	1	1	27.020	693.38	34.67	C
80.00-60.00			B	0.252	2.433		1	1	27.020			
			C	0.252	2.433		1	1	27.020			
T5	415.90	2480.54	A	0.22	2.531	9	1	1	28.208	685.86	34.29	C
60.00-40.00			B	0.22	2.531		1	1	28.208			
			C	0.22	2.531		1	1	28.208			
T6	404.89	3499.69	A	0.235	2.483	8	1	1	36.145	734.17	36.71	C
40.00-20.00			B	0.235	2.483		1	1	36.145			
			C	0.235	2.483		1	1	36.145			
T7 20.00-0.00	383.40	3529.17	A	0.212	2.556	7	1	1	37.406	665.23	33.26	C
			B	0.212	2.556		1	1	37.406			
			C	0.212	2.556		1	1	37.406			
Sum Weight:	2280.49	15916.81						OTM	240730.08 lb-ft	4062.13		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	297.11	A	0.328	2.224	10	0.8	1	4.913	96.19	16.30	C
125.90-120.00			B	0.328	2.224		0.8	1	4.913			
			C	0.328	2.224		0.8	1	4.913			
T2	248.57	1581.88	A	0.318	2.25	10	0.8	1	19.554	480.57	24.03	A
120.00-100.00			B	0.318	2.25		0.8	1	19.554			
			C	0.318	2.25		0.8	1	19.554			
T3	404.17	2122.34	A	0.291	2.319	10	0.8	1	23.825	630.58	31.53	C
100.00-80.00			B	0.291	2.319		0.8	1	23.825			
			C	0.291	2.319		0.8	1	23.825			
T4	423.55	2406.08	A	0.252	2.433	9	0.8	1	25.200	658.75	32.94	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
80.00-60.00			B	0.252	2.433		0.8	1	25.200			
			C	0.252	2.433		0.8	1	25.200			
T5	415.90	2480.54	A	0.22	2.531	9	0.8	1	26.146	647.85	32.39	C
60.00-40.00			B	0.22	2.531		0.8	1	26.146			
			C	0.22	2.531		0.8	1	26.146			
T6	404.89	3499.69	A	0.235	2.483	8	0.8	1	33.302	687.99	34.40	C
40.00-20.00			B	0.235	2.483		0.8	1	33.302			
			C	0.235	2.483		0.8	1	33.302			
T7 20.00-0.00	383.40	3529.17	A	0.212	2.556	7	0.8	1	34.235	619.36	30.97	C
			B	0.212	2.556		0.8	1	34.235			
			C	0.212	2.556		0.8	1	34.235			
Sum Weight:	2280.49	15916.81						OTM	226780.70 lb-ft	3821.29		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	297.11	A	0.328	2.224	10	0.85	1	5.031	98.49	16.69	C
125.90-120.00			B	0.328	2.224		0.85	1	5.031			
			C	0.328	2.224		0.85	1	5.031			
T2	248.57	1581.88	A	0.318	2.25	10	0.85	1	19.957	488.38	24.42	A
120.00-100.00			B	0.318	2.25		0.85	1	19.957			
			C	0.318	2.25		0.85	1	19.957			
T3	404.17	2122.34	A	0.291	2.319	10	0.85	1	24.292	640.35	32.02	A
100.00-80.00			B	0.291	2.319		0.85	1	24.292			
			C	0.291	2.319		0.85	1	24.292			
T4	423.55	2406.08	A	0.252	2.433	9	0.85	1	25.655	668.20	33.41	A
80.00-60.00			B	0.252	2.433		0.85	1	25.655			
			C	0.252	2.433		0.85	1	25.655			
T5	415.90	2480.54	A	0.22	2.531	9	0.85	1	26.662	658.09	32.90	A
60.00-40.00			B	0.22	2.531		0.85	1	26.662			
			C	0.22	2.531		0.85	1	26.662			
T6	404.89	3499.69	A	0.235	2.483	8	0.85	1	34.012	700.19	35.01	A
40.00-20.00			B	0.235	2.483		0.85	1	34.012			
			C	0.235	2.483		0.85	1	34.012			
T7 20.00-0.00	383.40	3529.17	A	0.212	2.556	7	0.85	1	35.028	631.40	31.57	A
			B	0.212	2.556		0.85	1	35.028			
			C	0.212	2.556		0.85	1	35.028			
Sum Weight:	2280.49	15916.81						OTM	230461.03 lb-ft	3885.10		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	152.09	A	0.215	2.548	10	1	1	3.698	82.91	14.05	C
125.90-120.00			B	0.215	2.548		1	1	3.698			
			C	0.215	2.548		1	1	3.698			
T2	98.40	1024.40	A	0.234	2.488	10	1	1	15.826	419.02	20.95	C
120.00-100.00			B	0.234	2.488		1	1	15.826			
			C	0.234	2.488		1	1	15.826			
T3	155.80	1456.39	A	0.225	2.516	10	1	1	20.097	548.23	27.41	C
100.00-80.00			B	0.225	2.516		1	1	20.097			
			C	0.225	2.516		1	1	20.097			
T4	164.00	1729.37	A	0.2	2.596	9	1	1	21.801	576.43	28.82	C
80.00-60.00			B	0.2	2.596		1	1	21.801			
			C	0.2	2.596		1	1	21.801			
T5	164.00	1784.76	A	0.174	2.684	9	1	1	22.918	572.88	28.64	C
60.00-40.00			B	0.174	2.684		1	1	22.918			
			C	0.174	2.684		1	1	22.918			
T6	164.00	2631.37	A	0.196	2.61	8	1	1	30.367	630.38	31.52	C
40.00-20.00			B	0.196	2.61		1	1	30.367			
			C	0.196	2.61		1	1	30.367			
T7 20.00-0.00	164.00	2709.25	A	0.179	2.668	7	1	1	32.214	583.40	29.17	C
			B	0.179	2.668		1	1	32.214			
			C	0.179	2.668		1	1	32.214			
Sum Weight:	910.20	11487.63						OTM	199366.67 lb-ft	3413.25		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	152.09	A	0.215	2.548	10	0.8	1	3.228	72.37	12.27	C
125.90-120.00			B	0.215	2.548		0.8	1	3.228			
			C	0.215	2.548		0.8	1	3.228			
T2	98.40	1024.40	A	0.234	2.488	10	0.8	1	14.212	384.50	19.23	A
120.00-100.00			B	0.234	2.488		0.8	1	14.212			
			C	0.234	2.488		0.8	1	14.212			
T3	155.80	1456.39	A	0.225	2.516	10	0.8	1	18.227	509.47	25.47	C
100.00-80.00			B	0.225	2.516		0.8	1	18.227			
			C	0.225	2.516		0.8	1	18.227			
T4	164.00	1729.37	A	0.2	2.596	9	0.8	1	19.980	539.48	26.97	C
80.00-60.00			B	0.2	2.596		0.8	1	19.980			
			C	0.2	2.596		0.8	1	19.980			
T5	164.00	1784.76	A	0.174	2.684	9	0.8	1	20.857	532.57	26.63	C
60.00-40.00			B	0.174	2.684		0.8	1	20.857			
			C	0.174	2.684		0.8	1	20.857			
T6	164.00	2631.37	A	0.196	2.61	8	0.8	1	27.524	581.86	29.09	C
40.00-20.00			B	0.196	2.61		0.8	1	27.524			
			C	0.196	2.61		0.8	1	27.524			
T7 20.00-0.00	164.00	2709.25	A	0.179	2.668	7	0.8	1	29.043	535.52	26.78	C
			B	0.179	2.668		0.8	1	29.043			
			C	0.179	2.668		0.8	1	29.043			
Sum Weight:	910.20	11487.63						OTM	184248.67 lb-ft	3155.76		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	0.00	152.09	A	0.215	2.548	10	0.85	1	3.345	75.01	12.71	C
125.90-120.00			B	0.215	2.548		0.85	1	3.345			
			C	0.215	2.548		0.85	1	3.345			
T2	98.40	1024.40	A	0.234	2.488	10	0.85	1	14.616	393.13	19.66	A
120.00-100.00			B	0.234	2.488		0.85	1	14.616			
			C	0.234	2.488		0.85	1	14.616			
T3	155.80	1456.39	A	0.225	2.516	10	0.85	1	18.695	519.99	26.00	A
100.00-80.00			B	0.225	2.516		0.85	1	18.695			
			C	0.225	2.516		0.85	1	18.695			
T4	164.00	1729.37	A	0.2	2.596	9	0.85	1	20.436	549.51	27.48	A
80.00-60.00			B	0.2	2.596		0.85	1	20.436			
			C	0.2	2.596		0.85	1	20.436			
T5	164.00	1784.76	A	0.174	2.684	9	0.85	1	21.372	543.38	27.17	A
60.00-40.00			B	0.174	2.684		0.85	1	21.372			
			C	0.174	2.684		0.85	1	21.372			
T6	164.00	2631.37	A	0.196	2.61	8	0.85	1	28.235	594.65	29.73	A
40.00-20.00			B	0.196	2.61		0.85	1	28.235			
			C	0.196	2.61		0.85	1	28.235			
T7 20.00-0.00	164.00	2709.25	A	0.179	2.668	7	0.85	1	29.836	548.06	27.40	A
			B	0.179	2.668		0.85	1	29.836			
			C	0.179	2.668		0.85	1	29.836			
Sum Weight:	910.20	11487.63						OTM	188221.15 lb-ft	3223.74		

Mast Vectors - No Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	125.90-120.00	0	Wind Normal	348.43	0.00	-348.43	-42840.02	0.00	0.00
		30	Wind 90	315.22	157.61	-272.99	-33564.33	-19378.37	0.00
		60	Wind 60	304.15	263.40	-152.08	-18697.83	-32385.59	0.00
		90	Wind 90	315.22	315.22	0.00	0.00	-38756.75	0.00
		120	Wind Normal	348.43	301.75	174.22	21420.01	-37100.55	0.00
		150	Wind 90	315.22	157.61	272.99	33564.33	-19378.37	0.00
		180	Wind 60	304.15	0.00	304.15	37395.66	0.00	0.00
		210	Wind 90	315.22	-157.61	272.99	33564.33	19378.37	0.00
		240	Wind Normal	348.43	-301.75	174.22	21420.01	37100.55	0.00
		270	Wind 90	315.22	-315.22	0.00	0.00	38756.75	0.00
		300	Wind 60	304.15	-263.40	-152.08	-18697.83	32385.59	0.00
		330	Wind 90	315.22	-157.61	-272.99	-33564.33	19378.37	0.00
T2	120.00-100.00	0	Wind Normal	1733.98	0.00	-1733.98	-190737.28	0.00	0.00
		30	Wind 90	1625.17	812.58	-1407.44	-154818.02	-89384.22	0.00
		60	Wind 60	1583.41	1371.27	-791.71	-87087.59	-150840.14	0.00
		90	Wind 90	1614.19	1614.19	0.00	0.00	-177561.15	0.00
		120	Wind Normal	1723.00	1492.16	861.50	94764.99	-164137.78	0.00
		150	Wind 90	1619.68	809.84	1402.68	154295.24	-89082.40	0.00
		180	Wind 60	1588.90	0.00	1588.90	174778.84	0.00	0.00

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		210	Wind 90	1625.17	-812.58	1407.44	154818.02	89384.22	0.00
		240	Wind Normal	1728.49	-1496.91	864.24	95066.82	164660.56	0.00
		270	Wind 90	1614.19	-1614.19	0.00	0.00	177561.15	0.00
		300	Wind 60	1577.92	-1366.52	-788.96	-86785.77	150317.36	0.00
		330	Wind 90	1619.68	-809.84	-1402.68	-154295.24	89082.40	0.00
T3	100.00-80.00	0	Wind Normal	2183.26	0.00	-2183.26	-196493.52	0.00	0.00
		30	Wind 90	2064.59	1032.30	-1787.99	-160918.87	-92906.55	0.00
		60	Wind 60	2020.36	1749.68	-1010.18	-90916.05	-157471.22	0.00
		90	Wind 90	2054.07	2054.07	0.00	0.00	-184866.17	0.00
		120	Wind Normal	2172.74	1881.65	1086.37	97773.30	-169348.32	0.00
		150	Wind 90	2054.07	1027.03	1778.88	160098.80	-92433.09	0.00
		180	Wind 60	2020.36	0.00	2020.36	181832.11	0.00	0.00
		210	Wind 90	2064.59	-1032.30	1787.99	160918.87	92906.55	0.00
		240	Wind Normal	2183.26	-1890.76	1091.63	98246.76	170168.38	0.00
		270	Wind 90	2054.07	-2054.07	0.00	0.00	184866.17	0.00
		300	Wind 60	2009.84	-1740.57	-1004.92	-90442.59	156651.16	0.00
		330	Wind 90	2054.07	-1027.03	-1778.88	-160098.80	92433.09	0.00
T4	80.00-60.00	0	Wind Normal	2207.28	0.00	-2207.28	-154509.35	0.00	0.00
		30	Wind 90	2094.15	1047.07	-1813.58	-126950.89	-73295.13	0.00
		60	Wind 60	2052.00	1777.09	-1026.00	-71820.05	-124395.98	0.00
		90	Wind 90	2084.17	2084.17	0.00	0.00	-145891.72	0.00
		120	Wind Normal	2197.30	1902.92	1098.65	76905.40	-133204.06	0.00
		150	Wind 90	2084.17	1042.08	1804.94	126345.94	-72945.86	0.00
		180	Wind 60	2052.00	0.00	2052.00	143640.11	0.00	0.00
		210	Wind 90	2094.15	-1047.07	1813.58	126950.89	73295.13	0.00
		240	Wind Normal	2207.28	-1911.56	1103.64	77254.68	133809.02	0.00
		270	Wind 90	2084.17	-2084.17	0.00	0.00	145891.72	0.00
		300	Wind 60	2042.02	-1768.44	-1021.01	-71470.78	123791.02	0.00
		330	Wind 90	2084.17	-1042.08	-1804.94	-126345.94	72945.86	0.00
T5	60.00-40.00	0	Wind Normal	2200.21	0.00	-2200.21	-110010.50	0.00	0.00
		30	Wind 90	2076.26	1038.13	-1798.09	-89904.61	-51906.45	0.00
		60	Wind 60	2030.81	1758.73	-1015.40	-50770.22	-87936.60	0.00
		90	Wind 90	2066.96	2066.96	0.00	0.00	-103348.06	0.00
		120	Wind Normal	2190.91	1897.39	1095.46	54772.83	-94869.33	0.00
		150	Wind 90	2066.96	1033.48	1790.04	89502.05	-51674.03	0.00
		180	Wind 60	2030.81	0.00	2030.81	101540.44	0.00	0.00
		210	Wind 90	2076.26	-1038.13	1798.09	89904.61	51906.45	0.00
		240	Wind Normal	2200.21	-1905.44	1100.11	55005.25	95271.89	0.00
		270	Wind 90	2066.96	-2066.96	0.00	0.00	103348.06	0.00
		300	Wind 60	2021.51	-1750.68	-1010.76	-50537.80	87534.03	0.00
		330	Wind 90	2066.96	-1033.48	-1790.04	-89502.05	51674.03	0.00
T6	40.00-20.00	0	Wind Normal	2405.98	0.00	-2405.98	-72179.42	0.00	0.00
		30	Wind 90	2255.82	1127.91	-1953.60	-58608.02	-33837.36	0.00
		60	Wind 60	2202.06	1907.04	-1101.03	-33030.91	-57211.22	0.00
		90	Wind 90	2247.47	2247.47	0.00	0.00	-67424.25	0.00
		120	Wind Normal	2397.63	2076.41	1198.82	35964.48	-62292.30	0.00
		150	Wind 90	2247.47	1123.74	1946.37	58391.11	-33712.12	0.00
		180	Wind 60	2202.06	0.00	2202.06	66061.83	0.00	0.00
		210	Wind 90	2255.82	-1127.91	1953.60	58608.02	33837.36	0.00
		240	Wind Normal	2405.98	-2083.64	1202.99	36089.71	62509.21	0.00
		270	Wind 90	2247.47	-2247.47	0.00	0.00	67424.25	0.00
		300	Wind 60	2193.71	-1899.81	-1096.86	-32905.68	56994.31	0.00
		330	Wind 90	2247.47	-1123.74	-1946.37	-58391.11	33712.12	0.00
T7	20.00-0.00	0	Wind Normal	2206.22	0.00	-2206.22	-22062.20	0.00	0.00
		30	Wind 90	2057.71	1028.85	-1782.03	-17820.29	-10288.55	0.00
		60	Wind 60	2004.99	1736.38	-1002.50	-10024.97	-17363.76	0.00
		90	Wind 90	2050.48	2050.48	0.00	0.00	-20504.85	0.00
		120	Wind Normal	2199.00	1904.39	1099.50	10994.98	-19043.86	0.00
		150	Wind 90	2050.48	1025.24	1775.77	17757.72	-10252.42	0.00
		180	Wind 60	2004.99	0.00	2004.99	20049.95	0.00	0.00
		210	Wind 90	2057.71	-1028.85	1782.03	17820.29	10288.55	0.00

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		240	Wind Normal	2206.22	-1910.64	1103.11	11031.10	19106.43	0.00
		270	Wind 90	2050.48	-2050.48	0.00	0.00	20504.85	0.00
		300	Wind 60	1997.77	-1730.12	-998.89	-9988.85	17301.20	0.00
		330	Wind 90	2050.48	-1025.24	-1775.77	-17757.72	10252.42	0.00

Mast Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-13285.36	-788832.30	0.00	0.00
30	6244.46	-10815.72	-642585.02	-370996.64	0.00
60	10563.59	-6098.89	-362347.63	-627604.51	0.00
90	12432.57	0.00	0.00	-738352.95	0.00
120	11456.66	6614.51	392595.99	-679996.20	0.00
150	6219.03	10771.68	639955.19	-369478.30	0.00
180	0.00	12203.27	725298.92	0.00	0.00
210	-6244.46	10815.72	642585.02	370996.64	0.00
240	-11500.71	6639.94	394114.33	682626.04	0.00
270	-12432.57	0.00	0.00	738352.95	0.00
300	-10519.55	-6073.46	-360829.30	624974.68	0.00
330	-6219.03	-10771.68	-639955.19	369478.30	0.00

Mast Vectors - With Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	125.90-120.00	0	Wind Normal	105.39	0.00	-105.39	-12958.13	0.00	0.00
		30	Wind 90	98.49	49.25	-85.30	-10487.33	-6054.86	0.00
		60	Wind 60	96.19	83.31	-48.10	-5913.46	-10242.42	0.00
		90	Wind 90	98.49	98.49	0.00	0.00	-12109.73	0.00
		120	Wind Normal	105.39	91.27	52.70	6479.06	-11222.07	0.00
		150	Wind 90	98.49	49.25	85.30	10487.33	-6054.86	0.00
		180	Wind 60	96.19	0.00	96.19	11826.93	0.00	0.00
		210	Wind 90	98.49	-49.25	85.30	10487.33	6054.86	0.00
		240	Wind Normal	105.39	-91.27	52.70	6479.06	11222.07	0.00
		270	Wind 90	98.49	-98.49	0.00	0.00	12109.73	0.00
		300	Wind 60	96.19	-83.31	-48.10	-5913.46	10242.42	0.00
		330	Wind 90	98.49	-49.25	-85.30	-10487.33	6054.86	0.00
T2	120.00-100.00	0	Wind Normal	511.80	0.00	-511.80	-56297.57	0.00	0.00
		30	Wind 90	488.38	244.19	-422.95	-46524.47	-26860.91	0.00
		60	Wind 60	479.27	415.06	-239.63	-26359.80	-45656.52	0.00
		90	Wind 90	485.77	485.77	0.00	0.00	-53434.55	0.00
		120	Wind Normal	509.18	440.97	254.59	28005.14	-48506.33	0.00
		150	Wind 90	487.07	243.54	421.82	46400.07	-26789.09	0.00
		180	Wind 60	480.57	0.00	480.57	52863.25	0.00	0.00
		210	Wind 90	488.38	-244.19	422.95	46524.47	26860.91	0.00
		240	Wind Normal	510.49	-442.10	255.25	28076.96	48630.73	0.00
		270	Wind 90	485.77	-485.77	0.00	0.00	53434.55	0.00
		300	Wind 60	477.96	-413.93	-238.98	-26287.98	45532.12	0.00
		330	Wind 90	487.07	-243.54	-421.82	-46400.07	26789.09	0.00

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T3	100.00-80.00	0	Wind Normal	666.31	0.00	-666.31	-59967.73	0.00	0.00
		30	Wind 90	640.35	320.17	-554.56	-49910.16	-28815.64	0.00
		60	Wind 60	630.58	546.10	-315.29	-28376.16	-49148.96	0.00
		90	Wind 90	637.84	637.84	0.00	0.00	-57405.96	0.00
		120	Wind Normal	663.80	574.87	331.90	29871.20	-51738.44	0.00
		150	Wind 90	637.84	318.92	552.39	49715.02	-28702.98	0.00
		180	Wind 60	630.58	0.00	630.58	56752.33	0.00	0.00
		210	Wind 90	640.35	-320.17	554.56	49910.16	28815.64	0.00
		240	Wind Normal	666.31	-577.04	333.15	29983.86	51933.57	0.00
		270	Wind 90	637.84	-637.84	0.00	0.00	57405.96	0.00
		300	Wind 60	628.08	-543.93	-314.04	-28263.50	48953.82	0.00
		330	Wind 90	637.84	-318.92	-552.39	-49715.02	28702.98	0.00
T4	80.00-60.00	0	Wind Normal	693.38	0.00	-693.38	-48536.31	0.00	0.00
		30	Wind 90	668.20	334.10	-578.68	-40507.42	-23386.97	0.00
		60	Wind 60	658.75	570.50	-329.38	-23056.31	-39934.69	0.00
		90	Wind 90	665.82	665.82	0.00	0.00	-46607.72	0.00
		120	Wind Normal	691.00	598.42	345.50	24185.04	-41889.73	0.00
		150	Wind 90	665.82	332.91	576.62	40363.47	-23303.86	0.00
		180	Wind 60	658.75	0.00	658.75	46112.61	0.00	0.00
		210	Wind 90	668.20	-334.10	578.68	40507.42	23386.97	0.00
		240	Wind Normal	693.38	-600.48	346.69	24268.15	42033.68	0.00
		270	Wind 90	665.82	-665.82	0.00	0.00	46607.72	0.00
		300	Wind 60	656.38	-568.44	-328.19	-22973.19	39790.74	0.00
		330	Wind 90	665.82	-332.91	-576.62	-40363.47	23303.86	0.00
T5	60.00-40.00	0	Wind Normal	685.86	0.00	-685.86	-34293.05	0.00	0.00
		30	Wind 90	658.09	329.04	-569.92	-28496.09	-16452.23	0.00
		60	Wind 60	647.85	561.05	-323.92	-16196.21	-28052.66	0.00
		90	Wind 90	655.88	655.88	0.00	0.00	-32793.84	0.00
		120	Wind Normal	683.65	592.06	341.82	17091.22	-29602.86	0.00
		150	Wind 90	655.88	327.94	568.01	28400.30	-16396.92	0.00
		180	Wind 60	647.85	0.00	647.85	32392.43	0.00	0.00
		210	Wind 90	658.09	-329.04	569.92	28496.09	16452.23	0.00
		240	Wind Normal	685.86	-593.97	342.93	17146.53	29698.65	0.00
		270	Wind 90	655.88	-655.88	0.00	0.00	32793.84	0.00
		300	Wind 60	645.64	-559.14	-322.82	-16140.91	27956.87	0.00
		330	Wind 90	655.88	-327.94	-568.01	-28400.30	16396.92	0.00
T6	40.00-20.00	0	Wind Normal	734.17	0.00	-734.17	-22024.96	0.00	0.00
		30	Wind 90	700.19	350.10	-606.38	-18191.55	-10502.89	0.00
		60	Wind 60	687.99	595.81	-343.99	-10319.79	-17874.40	0.00
		90	Wind 90	698.21	698.21	0.00	0.00	-20946.19	0.00
		120	Wind Normal	732.18	634.09	366.09	10982.68	-19022.56	0.00
		150	Wind 90	698.21	349.10	604.66	18139.93	-10473.10	0.00
		180	Wind 60	687.99	0.00	687.99	20639.58	0.00	0.00
		210	Wind 90	700.19	-350.10	606.38	18191.55	10502.89	0.00
		240	Wind Normal	734.17	-635.81	367.08	11012.48	19074.18	0.00
		270	Wind 90	698.21	-698.21	0.00	0.00	20946.19	0.00
		300	Wind 60	686.00	-594.09	-343.00	-10289.99	17822.78	0.00
		330	Wind 90	698.21	-349.10	-604.66	-18139.93	10473.10	0.00
T7	20.00-0.00	0	Wind Normal	665.23	0.00	-665.23	-6652.34	0.00	0.00
		30	Wind 90	631.40	315.70	-546.81	-5468.09	-3157.00	0.00
		60	Wind 60	619.36	536.38	-309.68	-3096.79	-5363.80	0.00
		90	Wind 90	629.68	629.68	0.00	0.00	-6296.81	0.00
		120	Wind Normal	663.51	574.62	331.76	3317.57	-5746.20	0.00
		150	Wind 90	629.68	314.84	545.32	5453.20	-3148.41	0.00
		180	Wind 60	619.36	0.00	619.36	6193.59	0.00	0.00
		210	Wind 90	631.40	-315.70	546.81	5468.09	3157.00	0.00
		240	Wind Normal	665.23	-576.11	332.62	3326.17	5761.09	0.00
		270	Wind 90	629.68	-629.68	0.00	0.00	6296.81	0.00
		300	Wind 60	617.64	-534.89	-308.82	-3088.20	5348.92	0.00
		330	Wind 90	629.68	-314.84	-545.32	-5453.20	3148.41	0.00

Mast Totals - With Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-4062.13	-240730.08	0.00	0.00
30	1942.55	-3364.60	-199585.11	-115230.51	0.00
60	3308.21	-1909.99	-113318.53	-196273.45	0.00
90	3871.69	0.00	0.00	-229594.80	0.00
120	3506.30	2024.36	119931.93	-207728.19	0.00
150	1936.50	3354.12	198959.33	-114869.22	0.00
180	0.00	3821.29	226780.70	0.00	0.00
210	-1942.55	3364.60	199585.11	115230.51	0.00
240	-3516.78	2030.41	120293.22	208353.97	0.00
270	-3871.69	0.00	0.00	229594.80	0.00
300	-3297.73	-1903.94	-112957.24	195647.67	0.00
330	-1936.50	-3354.12	-198959.33	114869.22	0.00

Mast Vectors - Service

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	125.90-120.00	0	Wind Normal	82.91	0.00	-82.91	-10193.94	0.00	0.00
		30	Wind 90	75.01	37.50	-64.96	-7986.75	-4611.15	0.00
		60	Wind 60	72.37	62.68	-36.19	-4449.22	-7706.27	0.00
		90	Wind 90	75.01	75.01	0.00	0.00	-9222.31	0.00
		120	Wind Normal	82.91	71.80	41.46	5096.97	-8828.21	0.00
		150	Wind 90	75.01	37.50	64.96	7986.75	-4611.15	0.00
		180	Wind 60	72.37	0.00	72.37	8898.43	0.00	0.00
		210	Wind 90	75.01	-37.50	64.96	7986.75	4611.15	0.00
		240	Wind Normal	82.91	-71.80	41.46	5096.97	8828.21	0.00
		270	Wind 90	75.01	-75.01	0.00	0.00	9222.31	0.00
		300	Wind 60	72.37	-62.68	-36.19	-4449.22	7706.27	0.00
		330	Wind 90	75.01	-37.50	-64.96	-7986.75	4611.15	0.00
T2	120.00-100.00	0	Wind Normal	419.02	0.00	-419.02	-46092.53	0.00	0.00
		30	Wind 90	393.13	196.57	-340.46	-37450.84	-21622.25	0.00
		60	Wind 60	383.20	331.86	-191.60	-21075.76	-36504.29	0.00
		90	Wind 90	390.52	390.52	0.00	0.00	-42957.22	0.00
		120	Wind Normal	416.41	360.62	208.21	22902.62	-39668.51	0.00
		150	Wind 90	391.83	195.91	339.33	37326.44	-21550.43	0.00
		180	Wind 60	384.50	0.00	384.50	42295.16	0.00	0.00
		210	Wind 90	393.13	-196.57	340.46	37450.84	21622.25	0.00
		240	Wind Normal	417.72	-361.75	208.86	22974.45	39792.91	0.00
		270	Wind 90	390.52	-390.52	0.00	0.00	42957.22	0.00
		300	Wind 60	381.89	-330.73	-190.94	-21003.94	36379.89	0.00
		330	Wind 90	391.83	-195.91	-339.33	-37326.44	21550.43	0.00
T3	100.00-80.00	0	Wind Normal	548.23	0.00	-548.23	-49340.87	0.00	0.00
		30	Wind 90	519.99	260.00	-450.33	-40529.49	-23399.71	0.00
		60	Wind 60	509.47	441.21	-254.73	-22926.07	-39709.11	0.00
		90	Wind 90	517.49	517.49	0.00	0.00	-46574.10	0.00
		120	Wind Normal	545.73	472.61	272.86	24557.77	-42535.31	0.00
		150	Wind 90	517.49	258.74	448.16	40334.35	-23287.05	0.00
		180	Wind 60	509.47	0.00	509.47	45852.13	0.00	0.00
		210	Wind 90	519.99	-260.00	450.33	40529.49	23399.71	0.00

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		240	Wind Normal	548.23	-474.78	274.12	24670.43	42730.45	0.00
		270	Wind 90	517.49	-517.49	0.00	0.00	46574.10	0.00
		300	Wind 60	506.96	-439.04	-253.48	-22813.40	39513.97	0.00
		330	Wind 90	517.49	-258.74	-448.16	-40334.35	23287.05	0.00
T4	80.00-60.00	0	Wind Normal	576.43	0.00	-576.43	-40350.17	0.00	0.00
		30	Wind 90	549.51	274.76	-475.89	-33312.35	-19232.90	0.00
		60	Wind 60	539.48	467.21	-269.74	-18881.89	-32704.40	0.00
		90	Wind 90	547.14	547.14	0.00	0.00	-38299.57	0.00
		120	Wind Normal	574.06	497.15	287.03	20091.97	-34800.32	0.00
		150	Wind 90	547.14	273.57	473.83	33168.40	-19149.78	0.00
		180	Wind 60	539.48	0.00	539.48	37763.79	0.00	0.00
		210	Wind 90	549.51	-274.76	475.89	33312.35	19232.90	0.00
		240	Wind Normal	576.43	-499.20	288.22	20175.08	34944.27	0.00
		270	Wind 90	547.14	-547.14	0.00	0.00	38299.57	0.00
		300	Wind 60	537.11	-465.15	-268.55	-18798.78	32560.45	0.00
		330	Wind 90	547.14	-273.57	-473.83	-33168.40	19149.78	0.00
T5	60.00-40.00	0	Wind Normal	572.88	0.00	-572.88	-28643.78	0.00	0.00
		30	Wind 90	543.38	271.69	-470.58	-23529.08	-13584.52	0.00
		60	Wind 60	532.57	461.22	-266.28	-13314.15	-23060.78	0.00
		90	Wind 90	541.17	541.17	0.00	0.00	-27058.43	0.00
		120	Wind Normal	570.66	494.21	285.33	14266.59	-24710.45	0.00
		150	Wind 90	541.17	270.58	468.67	23433.29	-13529.21	0.00
		180	Wind 60	532.57	0.00	532.57	26628.30	0.00	0.00
		210	Wind 90	543.38	-271.69	470.58	23529.08	13584.52	0.00
		240	Wind Normal	572.88	-496.12	286.44	14321.89	24806.24	0.00
		270	Wind 90	541.17	-541.17	0.00	0.00	27058.43	0.00
		300	Wind 60	530.35	-459.30	-265.18	-13258.84	22964.99	0.00
		330	Wind 90	541.17	-270.58	-468.67	-23433.29	13529.21	0.00
T6	40.00-20.00	0	Wind Normal	630.38	0.00	-630.38	-18911.41	0.00	0.00
		30	Wind 90	594.65	297.33	-514.98	-15449.46	-8919.75	0.00
		60	Wind 60	581.86	503.90	-290.93	-8727.86	-15117.09	0.00
		90	Wind 90	592.66	592.66	0.00	0.00	-17779.90	0.00
		120	Wind Normal	628.39	544.21	314.20	9425.91	-16326.15	0.00
		150	Wind 90	592.66	296.33	513.26	15397.85	-8889.95	0.00
		180	Wind 60	581.86	0.00	581.86	17455.71	0.00	0.00
		210	Wind 90	594.65	-297.33	514.98	15449.46	8919.75	0.00
		240	Wind Normal	630.38	-545.93	315.19	9455.71	16377.77	0.00
		270	Wind 90	592.66	-592.66	0.00	0.00	17779.90	0.00
		300	Wind 60	579.87	-502.18	-289.94	-8698.06	15065.47	0.00
		330	Wind 90	592.66	-296.33	-513.26	-15397.85	8889.95	0.00
T7	20.00-0.00	0	Wind Normal	583.40	0.00	-583.40	-5833.97	0.00	0.00
		30	Wind 90	548.06	274.03	-474.63	-4746.33	-2740.29	0.00
		60	Wind 60	535.52	463.77	-267.76	-2677.58	-4637.70	0.00
		90	Wind 90	546.34	546.34	0.00	0.00	-5463.40	0.00
		120	Wind Normal	581.68	503.75	290.84	2908.39	-5037.48	0.00
		150	Wind 90	546.34	273.17	473.14	4731.44	-2731.70	0.00
		180	Wind 60	535.52	0.00	535.52	5355.15	0.00	0.00
		210	Wind 90	548.06	-274.03	474.63	4746.33	2740.29	0.00
		240	Wind Normal	583.40	-505.24	291.70	2916.99	5052.37	0.00
		270	Wind 90	546.34	-546.34	0.00	0.00	5463.40	0.00
		300	Wind 60	533.80	-462.28	-266.90	-2668.98	4622.81	0.00
		330	Wind 90	546.34	-273.17	-473.14	-4731.44	2731.70	0.00

Mast Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-3413.25	-199366.67	0.00	0.00
30	1611.87	-2791.84	-163004.30	-94110.58	0.00
60	2731.84	-1577.23	-92052.52	-159439.64	0.00
90	3210.33	0.00	0.00	-187354.93	0.00
120	2944.35	1699.92	99250.22	-171906.43	0.00
150	1605.82	2781.36	162378.52	-93749.28	0.00
180	0.00	3155.76	184248.67	0.00	0.00
210	-1611.87	2791.84	163004.30	94110.58	0.00
240	-2954.83	1705.97	99611.52	172532.21	0.00
270	-3210.33	0.00	0.00	187354.93	0.00
300	-2721.36	-1571.18	-91691.22	158813.86	0.00
330	-1605.82	-2781.36	-162378.52	93749.28	0.00

Discrete Appurtenance Pressures - No Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
30,000 sq in CaAa	0.0000	3536.00	0.00	0.00	120.00	1.315	43	208.00	208.00
30,000 sq in CaAa	0.0000	3536.00	0.00	0.00	110.00	1.291	43	208.00	208.00
Dish Pipe Mount	0.0000	103.00	0.00	-2.89	100.00	1.266	42	0.00	1.80
Dish Pipe Mount	240.0000	103.00	-2.87	1.66	90.00	1.238	41	0.00	1.80
	Sum Weight:	7278.00							

Discrete Appurtenance Vectors - No Ice

30,000 sq in CaAa - Elevation 120 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	7654.63	0.00	0.00	-7654.63	-918555.19	0.00	0.00
30	7654.63	0.00	3827.31	-6629.10	-795492.13	-459277.59	0.00
60	7654.63	0.00	6629.10	-3827.31	-459277.59	-795492.13	0.00
90	7654.63	0.00	7654.63	0.00	0.00	-918555.19	0.00
120	7654.63	0.00	6629.10	3827.31	459277.59	-795492.13	0.00
150	7654.63	0.00	3827.31	6629.10	795492.13	-459277.59	0.00
180	7654.63	0.00	0.00	7654.63	918555.19	0.00	0.00
210	7654.63	0.00	-3827.31	6629.10	795492.13	459277.59	0.00
240	7654.63	0.00	-6629.10	3827.31	459277.59	795492.13	0.00
270	7654.63	0.00	-7654.63	0.00	0.00	918555.19	0.00
300	7654.63	0.00	-6629.10	-3827.31	-459277.59	795492.13	0.00
330	7654.63	0.00	-3827.31	-6629.10	-795492.13	459277.59	0.00

30,000 sq in CaAa - Elevation 110 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	7515.68	0.00	0.00	-7515.68	-826725.26	0.00	0.00
30	7515.68	0.00	3757.84	-6508.77	-715965.08	-413362.63	0.00
60	7515.68	0.00	6508.77	-3757.84	-413362.63	-715965.08	0.00
90	7515.68	0.00	7515.68	0.00	0.00	-826725.26	0.00

30,000 sq in CaAa - Elevation 110 - None B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
120	7515.68	0.00	6508.77	3757.84	413362.63	-715965.08	0.00
150	7515.68	0.00	3757.84	6508.77	715965.08	-413362.63	0.00
180	7515.68	0.00	0.00	7515.68	826725.26	0.00	0.00
210	7515.68	0.00	-3757.84	6508.77	715965.08	413362.63	0.00
240	7515.68	0.00	-6508.77	3757.84	413362.63	715965.08	0.00
270	7515.68	0.00	-7515.68	0.00	0.00	826725.26	0.00
300	7515.68	0.00	-6508.77	-3757.84	-413362.63	715965.08	0.00
330	7515.68	0.00	-3757.84	-6508.77	-715965.08	413362.63	0.00

Dish Pipe Mount - Elevation 100 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	0.00	0.00	0.00	-297.34	0.00	0.00
30	0.00	31.87	31.87	0.00	-297.34	-3187.38	-92.01
60	0.00	55.21	55.21	0.00	-297.34	-5520.70	-159.37
90	0.00	63.75	63.75	0.00	-297.34	-6374.75	-184.02
120	0.00	55.21	55.21	0.00	-297.34	-5520.70	-159.37
150	0.00	31.87	31.87	0.00	-297.34	-3187.38	-92.01
180	0.00	0.00	0.00	0.00	-297.34	0.00	0.00
210	0.00	31.87	-31.87	0.00	-297.34	3187.38	92.01
240	0.00	55.21	-55.21	0.00	-297.34	5520.70	159.37
270	0.00	63.75	-63.75	0.00	-297.34	6374.75	184.02
300	0.00	55.21	-55.21	0.00	-297.34	5520.70	159.37
330	0.00	31.87	-31.87	0.00	-297.34	3187.38	92.01

Dish Pipe Mount - Elevation 90 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	54.00	-27.00	-46.76	-4037.60	2725.94	-179.25
30	0.00	31.17	-15.59	-27.00	-2258.85	1698.98	-103.49
60	0.00	0.00	0.00	0.00	170.97	296.12	0.00
90	0.00	31.17	15.59	27.00	2600.78	-1106.73	103.49
120	0.00	54.00	27.00	46.76	4379.53	-2133.69	179.25
150	0.00	62.35	31.17	54.00	5030.60	-2509.59	206.98
180	0.00	54.00	27.00	46.76	4379.53	-2133.69	179.25
210	0.00	31.17	15.59	27.00	2600.78	-1106.73	103.49
240	0.00	0.00	0.00	0.00	170.97	296.12	0.00
270	0.00	31.17	-15.59	-27.00	-2258.85	1698.98	-103.49
300	0.00	54.00	-27.00	-46.76	-4037.60	2725.94	-179.25
330	0.00	62.35	-31.17	-54.00	-4688.66	3101.84	-206.98

Discrete Appurtenance Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-27.00	-15217.07	-1749615.38	2725.94	-179.25
30	7601.44	-13164.87	-1514013.39	-874128.62	-195.50
60	13193.08	-7585.16	-872766.59	-1516681.78	-159.37
90	15249.65	27.00	2303.45	-1752761.93	-80.53

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
120	13220.08	7631.92	876722.42	-1519111.59	19.88
150	7648.20	13191.87	1516190.47	-878337.19	114.97
180	27.00	15217.07	1749362.64	-2133.69	179.25
210	-7601.44	13164.87	1513760.65	874720.87	195.50
240	-13193.08	7585.16	872513.86	1517274.03	159.37
270	-15249.65	-27.00	-2556.18	1753354.18	80.53
300	-13220.08	-7631.92	-876975.16	1519703.84	-19.88
330	-7648.20	-13191.87	-1516443.20	878929.44	-114.97

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
30,000 sq in CaAa	0.0000	4903.64	0.00	0.00	120.00	1.315	10	255.79	255.79	0.5689
30,000 sq in CaAa	0.0000	4891.79	0.00	0.00	110.00	1.291	10	255.37	255.37	0.5640
Dish Pipe Mount	0.0000	120.88	0.00	-2.89	100.00	1.266	10	0.00	2.14	0.5586
Dish Pipe Mount	240.0000	120.69	-2.87	1.66	90.00	1.238	10	0.00	2.13	0.5528
	Sum Weight:	10036.99								

Discrete Appurtenance Vectors - With Ice

30,000 sq in CaAa - Elevation 120 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	2239.92	0.00	0.00	-2239.92	-268790.45	0.00	0.00
30	2239.92	0.00	1119.96	-1939.83	-232779.36	-134395.22	0.00
60	2239.92	0.00	1939.83	-1119.96	-134395.22	-232779.36	0.00
90	2239.92	0.00	2239.92	0.00	0.00	-268790.45	0.00
120	2239.92	0.00	1939.83	1119.96	134395.22	-232779.36	0.00
150	2239.92	0.00	1119.96	1939.83	232779.36	-134395.22	0.00
180	2239.92	0.00	0.00	2239.92	268790.45	0.00	0.00
210	2239.92	0.00	-1119.96	1939.83	232779.36	134395.22	0.00
240	2239.92	0.00	-1939.83	1119.96	134395.22	232779.36	0.00
270	2239.92	0.00	-2239.92	0.00	0.00	268790.45	0.00
300	2239.92	0.00	-1939.83	-1119.96	-134395.22	232779.36	0.00
330	2239.92	0.00	-1119.96	-1939.83	-232779.36	134395.22	0.00

30,000 sq in CaAa - Elevation 110 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	2195.70	0.00	0.00	-2195.70	-241527.34	0.00	0.00
30	2195.70	0.00	1097.85	-1901.53	-209168.81	-120763.67	0.00
60	2195.70	0.00	1901.53	-1097.85	-120763.67	-209168.81	0.00
90	2195.70	0.00	2195.70	0.00	0.00	-241527.34	0.00
120	2195.70	0.00	1901.53	1097.85	120763.67	-209168.81	0.00
150	2195.70	0.00	1097.85	1901.53	209168.81	-120763.67	0.00
180	2195.70	0.00	0.00	2195.70	241527.34	0.00	0.00
210	2195.70	0.00	-1097.85	1901.53	209168.81	120763.67	0.00

30,000 sq in CaAa - Elevation 110 - None B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	2195.70	0.00	-1901.53	1097.85	120763.67	209168.81	0.00
270	2195.70	0.00	-2195.70	0.00	0.00	241527.34	0.00
300	2195.70	0.00	-1901.53	-1097.85	-120763.67	209168.81	0.00
330	2195.70	0.00	-1097.85	-1901.53	-209168.81	120763.67	0.00

Dish Pipe Mount - Elevation 100 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	0.00	0.00	0.00	-348.94	0.00	0.00
30	0.00	9.00	9.00	0.00	-348.94	-899.68	-25.97
60	0.00	15.58	15.58	0.00	-348.94	-1558.29	-44.98
90	0.00	17.99	17.99	0.00	-348.94	-1799.35	-51.94
120	0.00	15.58	15.58	0.00	-348.94	-1558.29	-44.98
150	0.00	9.00	9.00	0.00	-348.94	-899.68	-25.97
180	0.00	0.00	0.00	0.00	-348.94	0.00	0.00
210	0.00	9.00	-9.00	0.00	-348.94	899.68	25.97
240	0.00	15.58	-15.58	0.00	-348.94	1558.29	44.98
270	0.00	17.99	-17.99	0.00	-348.94	1799.35	51.94
300	0.00	15.58	-15.58	0.00	-348.94	1558.29	44.98
330	0.00	9.00	-9.00	0.00	-348.94	899.68	25.97

Dish Pipe Mount - Elevation 90 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	15.22	-7.61	-13.18	-985.64	1031.70	-50.51
30	0.00	8.78	-4.39	-7.61	-484.39	742.30	-29.16
60	0.00	0.00	0.00	0.00	200.33	346.98	0.00
90	0.00	8.78	4.39	7.61	885.05	-48.34	29.16
120	0.00	15.22	7.61	13.18	1386.29	-337.74	50.51
150	0.00	17.57	8.78	15.22	1569.76	-443.66	58.33
180	0.00	15.22	7.61	13.18	1386.29	-337.74	50.51
210	0.00	8.78	4.39	7.61	885.05	-48.34	29.16
240	0.00	0.00	0.00	0.00	200.33	346.98	0.00
270	0.00	8.78	-4.39	-7.61	-484.39	742.30	-29.16
300	0.00	15.22	-7.61	-13.18	-985.64	1031.70	-50.51
330	0.00	17.57	-8.78	-15.22	-1169.11	1137.62	-58.33

Discrete Appurtenance Totals - With Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-7.61	-4448.80	-511652.36	1031.70	-50.51
30	2222.42	-3848.97	-442781.49	-255316.27	-55.14
60	3856.95	-2217.81	-255307.50	-443159.47	-44.98
90	4458.01	7.61	536.11	-512165.48	-22.78
120	3864.55	2230.99	256196.25	-443844.19	5.53
150	2235.59	3856.58	443168.99	-256502.23	32.36
180	7.61	4448.80	511355.14	-337.74	50.51
210	-2222.42	3848.97	442484.27	256010.23	55.14

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	-3856.95	2217.81	255010.28	443853.43	44.98
270	-4458.01	-7.61	-833.33	512859.44	22.78
300	-3864.55	-2230.99	-256493.47	444538.15	-5.53
330	-2235.59	-3856.58	-443466.21	257196.19	-32.36

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
30,000 sq in CaAa	0.0000	3536.00	0.00	0.00	120.00	1.315	10	208.00	208.00
30,000 sq in CaAa	0.0000	3536.00	0.00	0.00	110.00	1.291	10	208.00	208.00
Dish Pipe Mount	0.0000	103.00	0.00	-2.89	100.00	1.266	10	0.00	1.80
Dish Pipe Mount	240.0000	103.00	-2.87	1.66	90.00	1.238	10	0.00	1.80
	Sum Weight:	7278.00							

Discrete Appurtenance Vectors - Service

30,000 sq in CaAa - Elevation 120 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1821.45	0.00	0.00	-1821.45	-218573.51	0.00	0.00
30	1821.45	0.00	910.72	-1577.42	-189290.21	-109286.76	0.00
60	1821.45	0.00	1577.42	-910.72	-109286.76	-189290.21	0.00
90	1821.45	0.00	1821.45	0.00	0.00	-218573.51	0.00
120	1821.45	0.00	1577.42	910.72	109286.76	-189290.21	0.00
150	1821.45	0.00	910.72	1577.42	189290.21	-109286.76	0.00
180	1821.45	0.00	0.00	1821.45	218573.51	0.00	0.00
210	1821.45	0.00	-910.72	1577.42	189290.21	109286.76	0.00
240	1821.45	0.00	-1577.42	910.72	109286.76	189290.21	0.00
270	1821.45	0.00	-1821.45	0.00	0.00	218573.51	0.00
300	1821.45	0.00	-1577.42	-910.72	-109286.76	189290.21	0.00
330	1821.45	0.00	-910.72	-1577.42	-189290.21	109286.76	0.00

30,000 sq in CaAa - Elevation 110 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1788.38	0.00	0.00	-1788.38	-196722.25	0.00	0.00
30	1788.38	0.00	894.19	-1548.79	-170366.47	-98361.13	0.00
60	1788.38	0.00	1548.79	-894.19	-98361.13	-170366.47	0.00
90	1788.38	0.00	1788.38	0.00	0.00	-196722.25	0.00
120	1788.38	0.00	1548.79	894.19	98361.13	-170366.47	0.00
150	1788.38	0.00	894.19	1548.79	170366.47	-98361.13	0.00
180	1788.38	0.00	0.00	1788.38	196722.25	0.00	0.00
210	1788.38	0.00	-894.19	1548.79	170366.47	98361.13	0.00
240	1788.38	0.00	-1548.79	894.19	98361.13	170366.47	0.00
270	1788.38	0.00	-1788.38	0.00	0.00	196722.25	0.00
300	1788.38	0.00	-1548.79	-894.19	-98361.13	170366.47	0.00
330	1788.38	0.00	-894.19	-1548.79	-170366.47	98361.13	0.00

Dish Pipe Mount - Elevation 100 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	0.00	0.00	0.00	-297.34	0.00	0.00
30	0.00	7.58	7.58	0.00	-297.34	-758.45	-21.89
60	0.00	13.14	13.14	0.00	-297.34	-1313.67	-37.92
90	0.00	15.17	15.17	0.00	-297.34	-1516.90	-43.79
120	0.00	13.14	13.14	0.00	-297.34	-1313.67	-37.92
150	0.00	7.58	7.58	0.00	-297.34	-758.45	-21.89
180	0.00	0.00	0.00	0.00	-297.34	0.00	0.00
210	0.00	7.58	-7.58	0.00	-297.34	758.45	21.89
240	0.00	13.14	-13.14	0.00	-297.34	1313.67	37.92
270	0.00	15.17	-15.17	0.00	-297.34	1516.90	43.79
300	0.00	13.14	-13.14	0.00	-297.34	1313.67	37.92
330	0.00	7.58	-7.58	0.00	-297.34	758.45	21.89

Dish Pipe Mount - Elevation 90 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	12.85	-6.42	-11.13	-830.48	874.31	-42.65
30	0.00	7.42	-3.71	-6.42	-407.22	629.94	-24.63
60	0.00	0.00	0.00	0.00	170.97	296.12	0.00
90	0.00	7.42	3.71	6.42	749.15	-37.69	24.63
120	0.00	12.85	6.42	11.13	1172.41	-282.06	42.65
150	0.00	14.84	7.42	12.85	1327.33	-371.50	49.25
180	0.00	12.85	6.42	11.13	1172.41	-282.06	42.65
210	0.00	7.42	3.71	6.42	749.15	-37.69	24.63
240	0.00	0.00	0.00	0.00	170.97	296.12	0.00
270	0.00	7.42	-3.71	-6.42	-407.22	629.94	-24.63
300	0.00	12.85	-6.42	-11.13	-830.48	874.31	-42.65
330	0.00	14.84	-7.42	-12.85	-985.40	963.75	-49.25

Discrete Appurtenance Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-6.42	-3620.96	-416423.57	874.31	-42.65
30	1808.79	-3132.63	-360361.23	-207776.39	-46.52
60	3139.34	-1804.92	-207774.25	-360674.23	-37.92
90	3628.71	6.42	451.82	-416850.35	-19.16
120	3145.77	1816.04	208522.96	-361252.41	4.73
150	1819.92	3139.05	360686.68	-208777.83	27.36
180	6.42	3620.96	416170.84	-282.06	42.65
210	-1808.79	3132.63	360108.50	208368.64	46.52
240	-3139.34	1804.92	207521.51	361266.48	37.92
270	-3628.71	-6.42	-704.55	417442.60	19.16
300	-3145.77	-1816.04	-208775.69	361844.66	-4.73
330	-1819.92	-3139.05	-360939.42	209370.08	-27.36

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
100.00	6' Solid w/Radome	0.0000	162.00	0.00	-2.89	1.266	28.27	42
90.00	6' Solid w/Radome	240.0000	162.00	-2.87	1.66	1.238	28.27	41
		Sum Weight:	324.00					

Dish Vectors - No Ice

6' Solid w/Radome - Elevation 100 - From Leg A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.001770	0.000000	0.000000	-692.23	0.00	0.00	0.00	-692.23	-69690.59	0.00	0.00
30	-0.001330	-0.000700	-0.000132	-520.15	-273.76	-309.74	273.76	-520.15	-52482.63	-27376.30	-1100.03
60	-0.000420	-0.000890	-0.000404	-164.26	-348.07	-948.00	348.07	-164.26	-16893.44	-34807.02	-1952.79
90	0.000340	-0.001040	-0.000390	132.97	-406.73	-915.15	406.73	132.97	12829.41	-40673.37	-2089.29
120	0.001070	-0.001280	0.000002	418.47	-500.60	4.69	500.60	418.47	41378.98	-50059.53	-1440.40
150	0.001950	-0.001050	0.000277	762.63	-410.64	649.99	410.64	762.63	75794.91	-41064.46	-535.44
180	0.002210	0.000000	0.000000	864.31	0.00	0.00	0.00	864.31	85963.25	0.00	0.00
210	0.001950	0.001050	-0.000277	762.63	410.64	-649.99	-410.64	762.63	75794.91	41064.46	535.44
240	0.001070	0.001280	-0.000002	418.47	500.60	-4.69	-500.60	418.47	41378.98	50059.53	1440.40
270	0.000340	0.001040	0.000390	132.97	406.73	915.15	-406.73	132.97	12829.41	40673.37	2089.29
300	-0.000420	0.000890	0.000404	-164.26	348.07	948.00	-348.07	-164.26	-16893.44	34807.02	1952.79
330	-0.001330	0.000700	0.000132	-520.15	273.76	309.74	-273.76	-520.15	-52482.63	27376.30	1100.03

6' Solid w/Radome - Elevation 90 - From Leg C

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.001070	-0.001280	0.000002	409.29	-489.61	4.59	109.65	-628.66	-56310.60	-9402.36	-1620.81
30	0.001950	-0.001050	0.000277	745.90	-401.64	635.73	445.15	-720.78	-64600.86	-39597.45	-697.60
60	0.002210	0.000000	0.000000	845.35	0.00	0.00	732.09	-422.67	-37771.79	-65422.66	0.00
90	0.001950	0.001050	-0.000277	745.90	401.64	-635.73	846.78	-25.12	-1991.97	-75744.72	697.60
120	0.001070	0.001280	-0.000002	409.29	489.61	-4.59	599.26	219.37	20012.62	-53467.59	1620.81
150	0.000340	0.001040	0.000390	130.05	397.81	895.08	311.54	279.49	25422.80	-27572.43	2215.71
180	-0.000420	0.000890	0.000404	-160.65	340.43	927.21	31.09	375.15	34032.60	-2332.03	2057.37
210	-0.001330	0.000700	0.000132	-508.74	267.76	302.95	-306.70	486.25	44031.80	28068.96	1191.84
240	-0.001770	0.000000	0.000000	-677.04	0.00	0.00	-586.34	338.52	30735.88	53236.11	0.00
270	-0.001330	-0.000700	-0.000132	-508.74	-267.76	-302.95	-574.46	22.48	2292.54	52167.14	-1191.84
300	-0.000420	-0.000890	-0.000404	-160.65	-340.43	-927.21	-309.35	-214.50	-19035.89	28307.08	-2057.37
330	0.000340	-0.001040	-0.000390	130.05	-397.81	-895.08	-86.28	-409.54	-36589.82	8230.57	-2215.71

Dish Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	109.65	-1320.89	-126001.20	-9402.36	-1620.81
30	718.91	-1240.92	-117083.50	-66973.76	-1797.63
60	1080.16	-586.93	-54665.23	-100229.68	-1952.79
90	1253.52	107.85	10837.44	-116418.08	-1391.68
120	1099.85	637.84	61391.61	-103527.12	180.41
150	722.18	1042.11	101217.71	-68636.89	1680.28
180	31.09	1239.46	119995.85	-2332.03	2057.37

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
210	-717.35	1248.88	119826.71	69133.42	1727.28
240	-1086.93	756.99	72114.86	103295.63	1440.40
270	-981.19	155.46	15121.94	92840.51	897.45
300	-657.42	-378.76	-35929.33	63114.10	-104.57
330	-360.04	-929.69	-89072.46	35606.88	-1115.69

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf	t_z in
100.00	6' Solid w/Radome	0.0000	339.64	0.00	-2.89	1.266	29.16	10	0.5586
90.00	6' Solid w/Radome	240.0000	337.78	-2.87	1.66	1.238	29.15	10	0.5528
		Sum Weight:	677.42						

Dish Vectors - With Ice

6' Solid w/Radome - Elevation 100 - From Leg A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.001770	0.000000	0.000000	-169.92	0.00	0.00	0.00	-169.92	-17972.41	0.00	0.00
30	-0.001330	-0.000700	-0.000132	-127.68	-67.20	-76.03	67.20	-127.68	-13748.42	-6719.98	-270.02
60	-0.000420	-0.000890	-0.000404	-40.32	-85.44	-232.70	85.44	-40.32	-5012.45	-8543.97	-479.35
90	0.000340	-0.001040	-0.000390	32.64	-99.84	-224.64	99.84	32.64	2283.53	-9983.97	-512.85
120	0.001070	-0.001280	0.000002	102.72	-122.88	1.15	122.88	102.72	9291.51	-12287.96	-353.57
150	0.001950	-0.001050	0.000277	187.20	-100.80	159.55	100.80	187.20	17739.48	-10079.97	-131.43
180	0.002210	0.000000	0.000000	212.16	0.00	0.00	0.00	212.16	20235.47	0.00	0.00
210	0.001950	0.001050	-0.000277	187.20	100.80	-159.55	-100.80	187.20	17739.48	10079.97	131.43
240	0.001070	0.001280	-0.000002	102.72	122.88	-1.15	-122.88	102.72	9291.51	12287.96	353.57
270	0.000340	0.001040	0.000390	32.64	99.84	224.64	-99.84	32.64	2283.53	9983.97	512.85
300	-0.000420	0.000890	0.000404	-40.32	85.44	232.70	-85.44	-40.32	-5012.45	8543.97	479.35
330	-0.001330	0.000700	0.000132	-127.68	67.20	76.03	-67.20	-127.68	-13748.42	6719.98	270.02

6' Solid w/Radome - Elevation 90 - From Leg C

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.001070	-0.001280	0.000002	100.43	-120.15	1.13	26.91	-154.27	-13323.32	-1450.41	-397.73
30	0.001950	-0.001050	0.000277	183.03	-98.56	156.00	109.23	-176.87	-15357.66	-8859.96	-171.18
60	0.002210	0.000000	0.000000	207.44	0.00	0.00	179.65	-103.72	-8774.10	-15197.18	0.00
90	0.001950	0.001050	-0.000277	183.03	98.56	-156.00	207.79	-6.16	5.88	-17730.10	171.18
120	0.001070	0.001280	-0.000002	100.43	120.15	-1.13	147.05	53.83	5405.57	-12263.54	397.73
150	0.000340	0.001040	0.000390	31.91	97.62	219.64	76.45	68.58	6733.17	-5909.15	543.71
180	-0.000420	0.000890	0.000404	-39.42	83.54	227.53	7.63	92.06	8845.92	284.57	504.86
210	-0.001330	0.000700	0.000132	-124.84	65.70	74.34	-75.26	119.32	11299.61	7744.65	292.46
240	-0.001770	0.000000	0.000000	-166.14	0.00	0.00	-143.88	83.07	8036.94	13920.39	0.00
270	-0.001330	-0.000700	-0.000132	-124.84	-65.70	-74.34	-140.97	5.52	1057.25	13658.08	-292.46
300	-0.000420	-0.000890	-0.000404	-39.42	-83.54	-227.53	-75.91	-52.64	-4176.51	7803.08	-504.86
330	0.000340	-0.001040	-0.000390	31.91	-97.62	-219.64	-21.17	-100.50	-8484.05	2876.52	-543.71

Dish Totals - With Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.91	-324.19	-31295.73	-1450.41	-397.73
30	176.43	-304.55	-29106.08	-15579.93	-441.21
60	265.09	-144.04	-13786.55	-23741.15	-479.35
90	307.63	26.48	2289.41	-27714.07	-341.67
120	269.93	156.55	14697.07	-24551.50	44.16
150	177.25	255.78	24472.65	-15989.11	412.28
180	7.63	304.22	29081.39	284.57	504.86
210	-176.06	306.52	29039.09	17824.61	423.90
240	-266.76	185.79	17328.45	26208.35	353.57
270	-240.81	38.16	3340.78	23642.04	220.39
300	-161.35	-92.96	-9188.96	16347.05	-25.51
330	-88.37	-228.18	-22232.48	9596.50	-273.69

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
100.00	6' Solid w/Radome	0.0000	162.00	0.00	-2.89	1.266	28.27	10
90.00	6' Solid w/Radome	240.0000	162.00	-2.87	1.66	1.238	28.27	10
		Sum Weight:	324.00					

Dish Vectors - Service

6' Solid w/Radome - Elevation 100 - From Leg A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.001770	0.000000	0.000000	-164.72	0.00	0.00	0.00	-164.72	-16939.50	0.00	0.00
30	-0.001330	-0.000700	-0.000132	-123.77	-65.14	-73.70	65.14	-123.77	-12844.80	-6514.29	-261.76
60	-0.000420	-0.000890	-0.000404	-39.09	-82.82	-225.58	82.82	-39.09	-4376.23	-8282.45	-464.67
90	0.000340	-0.001040	-0.000390	31.64	-96.78	-217.76	96.78	31.64	2696.43	-9678.37	-497.15
120	0.001070	-0.001280	0.000002	99.58	-119.12	1.12	119.12	99.58	9489.90	-11911.84	-342.75
150	0.001950	-0.001050	0.000277	181.47	-97.71	154.67	97.71	181.47	17679.30	-9771.44	-127.41
180	0.002210	0.000000	0.000000	205.67	0.00	0.00	0.00	205.67	20098.89	0.00	0.00
210	0.001950	0.001050	-0.000277	181.47	97.71	-154.67	-97.71	181.47	17679.30	9771.44	127.41
240	0.001070	0.001280	-0.000002	99.58	119.12	-1.12	-119.12	99.58	9489.90	11911.84	342.75
270	0.000340	0.001040	0.000390	31.64	96.78	217.76	-96.78	31.64	2696.43	9678.37	497.15
300	-0.000420	0.000890	0.000404	-39.09	82.82	225.58	-82.82	-39.09	-4376.23	8282.45	464.67
330	-0.001330	0.000700	0.000132	-123.77	65.14	73.70	-65.14	-123.77	-12844.80	6514.29	261.76

6' Solid w/Radome - Elevation 90 - From Leg C

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.001070	-0.001280	0.000002	97.39	-116.51	1.09	26.09	-149.59	-13194.40	-1882.40	-385.68
30	0.001950	-0.001050	0.000277	177.49	-95.57	151.27	105.92	-171.51	-15167.09	-9067.43	-166.00
60	0.002210	0.000000	0.000000	201.15	0.00	0.00	174.20	-100.58	-8783.02	-15212.63	0.00
90	0.001950	0.001050	-0.000277	177.49	95.57	-151.27	201.50	-5.98	-269.08	-17668.80	166.00
120	0.001070	0.001280	-0.000002	97.39	116.51	-1.09	142.60	52.20	4966.99	-12367.88	385.68
150	0.000340	0.001040	0.000390	30.95	94.66	212.99	74.13	66.51	6254.36	-6206.04	527.24
180	-0.000420	0.000890	0.000404	-38.23	81.01	220.63	7.40	89.27	8303.09	-199.99	489.56
210	-0.001330	0.000700	0.000132	-121.06	63.71	72.09	-72.98	115.71	10682.44	7034.03	283.60
240	-0.001770	0.000000	0.000000	-161.11	0.00	0.00	-139.52	80.55	7518.63	13022.65	0.00

6' Solid w/Radome - Elevation 90 - From Leg C											
Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
270	-0.001330	-0.000700	-0.000132	-121.06	-63.71	-72.09	-136.69	5.35	750.43	12768.28	-283.60
300	-0.000420	-0.000890	-0.000404	-38.23	-81.01	-220.63	-73.61	-51.04	-4324.74	7090.70	-489.56
330	0.000340	-0.001040	-0.000390	30.95	-94.66	-212.99	-20.53	-97.45	-8501.77	2313.42	-527.24

Dish Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.09	-314.31	-30133.90	-1882.40	-385.68
30	171.07	-295.28	-28011.90	-15581.72	-427.75
60	257.03	-139.66	-13159.25	-23495.09	-464.67
90	298.28	25.66	2427.35	-27347.18	-331.16
120	261.71	151.78	14456.89	-24279.73	42.93
150	171.85	247.97	23933.66	-15977.47	399.83
180	7.40	294.93	28401.99	-199.99	489.56
210	-170.70	297.18	28361.74	16805.47	411.01
240	-258.64	180.13	17008.53	24934.49	342.75
270	-233.48	36.99	3446.86	22446.66	213.55
300	-156.44	-90.13	-8700.97	15373.15	-24.88
330	-85.67	-221.22	-21346.57	8827.71	-265.48

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	7925.66					
Bracing Weight	3561.97					
Total Member Self-Weight	11487.63			-325.12	761.87	
Total Weight	19999.83			-325.12	761.87	
Wind 0 deg - No Ice		82.65	-29823.32	-2664448.88	-6676.41	-1800.07
Wind 30 deg - No Ice		14564.81	-25221.52	-2273681.91	-1312099.01	-1993.14
Wind 60 deg - No Ice		24836.84	-14270.98	-1289779.45	-2244515.97	-2112.16
Wind 90 deg - No Ice		28935.73	134.85	13140.89	-2607532.96	-1472.22
Wind 120 deg - No Ice		25776.59	14884.26	1330710.02	-2302634.92	200.30
Wind 150 deg - No Ice		14589.41	25005.66	2257363.36	-1316452.37	1795.25
Wind 180 deg - No Ice		58.08	28659.81	2594657.41	-4465.72	2236.62
Wind 210 deg - No Ice		-14563.25	25229.47	2276172.38	1314850.93	1922.78
Wind 240 deg - No Ice		-25780.72	14982.08	1338743.05	2303195.70	1599.77
Wind 270 deg - No Ice		-28663.41	128.46	12565.76	2584547.64	977.98
Wind 300 deg - No Ice		-24397.05	-14084.14	-1273733.78	2207792.62	-124.46
Wind 330 deg - No Ice		-14227.27	-24893.24	-2245470.85	1284014.61	-1230.66
Member Ice	4429.18					
Total Weight Ice	28911.71			-568.40	1318.10	
Wind 0 deg - Ice		19.30	-8835.12	-783678.17	-418.71	-448.24
Wind 30 deg - Ice		4341.40	-7518.12	-671472.68	-386126.72	-496.34
Wind 60 deg - Ice		7430.24	-4271.85	-382412.58	-663174.08	-524.33
Wind 90 deg - Ice		8637.34	34.08	2825.52	-769474.35	-364.45
Wind 120 deg - Ice		7640.78	4411.90	390825.25	-676123.88	49.69
Wind 150 deg - Ice		4349.34	7466.48	666600.97	-387360.57	444.64
Wind 180 deg - Ice		15.24	8574.31	767217.23	-53.16	555.37

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Wind 210 deg - Ice		-4341.03	7520.09	671108.47	389065.36	479.03
Wind 240 deg - Ice		-7640.49	4434.01	392631.95	678415.75	398.55
Wind 270 deg - Ice		-8570.51	30.55	2507.45	766096.29	243.17
Wind 300 deg - Ice		-7323.63	-4227.89	-378639.67	656532.88	-31.04
Wind 330 deg - Ice		-4260.46	-7438.87	-664658.01	381661.91	-306.05
Total Weight	19999.83			-325.12	761.87	
Wind 0 deg - Service		19.67	-7348.52	-645924.14	-1008.09	-428.33
Wind 30 deg - Service		3591.73	-6219.75	-551377.43	-317468.69	-474.27
Wind 60 deg - Service		6128.21	-3521.81	-312986.01	-543608.95	-502.60
Wind 90 deg - Service		7137.31	32.09	2879.17	-631552.45	-350.32
Wind 120 deg - Service		6351.83	3667.74	322230.07	-557438.56	47.66
Wind 150 deg - Service		3597.58	6168.38	546998.86	-318504.59	427.19
Wind 180 deg - Service		13.82	7071.66	628821.50	-482.05	532.21
Wind 210 deg - Service		-3591.35	6221.64	551474.54	319284.69	457.53
Wind 240 deg - Service		-6352.81	3691.02	324141.56	558733.17	380.67
Wind 270 deg - Service		-7072.51	30.57	2742.31	627244.18	232.71
Wind 300 deg - Service		-6023.56	-3477.35	-309167.89	536031.67	-29.62
Wind 330 deg - Service		-3511.41	-6141.63	-544664.51	311947.08	-292.84

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

Comb. No.	Description
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
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 lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	125.9 - 120	Leg	Max Tension	18	891.70	0.03	-0.02
			Max. Compression	14	-946.93	1.69	-50.11
			Max. Mx	20	-21.03	-123.22	3.12
			Max. My	4	-21.75	59.94	-110.65
			Max. Vy	20	47.02	0.03	-0.00
			Max. Vx	2	42.10	0.00	0.03
		Diagonal	Max Tension	18	1254.35	0.00	0.00
			Max. Compression	14	-1289.25	0.00	0.00
			Max. Mx	14	-1283.74	14.21	-0.43
			Max. My	16	-119.84	2.32	5.60
			Max. Vy	14	5.84	14.21	-0.43
			Max. Vx	16	1.65	0.00	0.00
		Top Girt	Max Tension	14	604.37	0.00	0.00
			Max. Compression	2	-588.41	0.00	0.00
			Max. Mx	26	2.13	-6.15	0.00
			Max. My	6	-297.36	0.00	0.00
			Max. Vy	26	-7.03	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
T2	120 - 100	Leg	Max Tension	7	48032.32	-60.02	4.64
			Max. Compression	2	-54156.13	478.24	-1.53
			Max. Mx	2	-54156.13	478.24	-1.53
			Max. My	16	-1582.34	-26.50	871.51
			Max. Vy	14	-2701.91	-50.11	-1.69
			Max. Vx	8	2417.38	3.14	-121.23
		Diagonal	Max Tension	8	7070.94	0.00	0.00
			Max. Compression	4	-7208.32	0.00	0.00
			Max. Mx	10	6061.69	42.10	3.08
			Max. My	16	-4330.79	-0.97	-32.64
			Max. Vy	10	-16.40	42.10	3.08
			Max. Vx	16	11.17	0.00	0.00
T3	100 - 80	Leg	Max Tension	15	104216.75	-748.67	-8.12
			Max. Compression	18	-112580.49	848.92	2.26
			Max. Mx	18	-112580.49	848.92	2.26
			Max. My	16	-3875.05	-5.16	895.40
			Max. Vy	6	-320.99	-629.00	1.18
			Max. Vx	24	445.14	2.22	629.61

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Diagonal	Max Tension	12	6465.02	0.00	0.00
			Max. Compression	16	-6562.86	0.00	0.00
			Max. Mx	14	4524.48	32.93	-0.78
			Max. My	14	-5235.09	-7.80	-4.52
			Max. Vy	2	-13.21	32.20	0.16
			Max. Vx	6	-1.36	0.00	0.00
T4	80 - 60	Leg	Max Tension	15	144232.57	-1208.01	0.48
			Max. Compression	2	-154969.84	1202.66	2.14
			Max. Mx	2	-141267.35	1233.39	1.92
			Max. My	16	-4258.16	-12.60	1327.39
			Max. Vy	14	116.56	-1201.87	-2.69
			Max. Vx	8	-127.88	-16.31	1318.90
		Diagonal	Max Tension	4	6307.72	0.00	0.00
			Max. Compression	4	-6515.25	0.00	0.00
			Max. Mx	2	4634.30	33.39	0.75
			Max. My	14	-5432.06	-5.58	-4.54
			Max. Vy	33	14.74	20.40	-1.78
			Max. Vx	14	1.16	0.00	0.00
T5	60 - 40	Leg	Max Tension	15	177529.88	-1060.74	3.67
			Max. Compression	2	-190904.77	1733.01	14.23
			Max. Mx	2	-190904.77	1733.01	14.23
			Max. My	12	-5002.86	-0.52	-1578.26
			Max. Vy	2	-161.78	1733.01	14.23
			Max. Vx	16	-101.28	-20.81	1400.85
		Diagonal	Max Tension	4	5550.14	0.00	0.00
			Max. Compression	4	-5809.54	0.00	0.00
			Max. Mx	2	4150.38	35.19	1.07
			Max. My	14	-4826.36	-1.93	-3.51
			Max. Vy	33	16.85	24.26	-2.23
			Max. Vx	14	0.85	0.00	0.00
T6	40 - 20	Leg	Max Tension	15	205559.58	-1951.64	3.55
			Max. Compression	2	-222247.01	2095.55	4.34
			Max. Mx	2	-201898.88	2306.90	2.11
			Max. My	16	-6440.84	-11.08	2260.30
			Max. Vy	14	159.99	-2275.80	4.10
			Max. Vx	12	129.34	-18.23	-2247.18
		Diagonal	Max Tension	4	5158.71	0.00	0.00
			Max. Compression	4	-5361.36	0.00	0.00
			Max. Mx	2	4329.53	46.43	2.05
			Max. My	14	-4458.05	1.71	-3.75
			Max. Vy	33	23.38	35.75	-3.03
			Max. Vx	27	0.94	0.00	0.00
T7	20 - 0	Leg	Max Tension	15	230235.49	-2001.26	6.41
			Max. Compression	2	-250279.60	-0.00	-0.00
			Max. Mx	35	-78393.56	3276.10	-0.71
			Max. My	16	-7583.69	-85.78	3540.50
			Max. Vy	33	-673.45	-2264.31	-0.13
			Max. Vx	16	589.64	-85.78	3540.50
		Diagonal	Max Tension	5	5532.68	0.00	0.00
			Max. Compression	4	-5787.26	0.00	0.00
			Max. Mx	2	4181.84	50.63	3.04
			Max. My	13	-5460.84	-5.19	-4.97
			Max. Vy	33	25.56	47.86	-3.67
			Max. Vx	33	1.07	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	18	255470.47	16459.54	-9588.95
	Max. H_x	18	255470.47	16459.54	-9588.95
	Max. H_z	7	-234139.50	-15352.87	8978.29
	Min. Vert	7	-234139.50	-15352.87	8978.29
	Min. H_x	7	-234139.50	-15352.87	8978.29
	Min. H_z	18	255470.47	16459.54	-9588.95
Leg B	Max. Vert	10	255027.57	-16473.83	-9499.31
	Max. H_x	23	-230435.81	15146.18	8738.82
	Max. H_z	23	-230435.81	15146.18	8738.82
	Min. Vert	23	-230435.81	15146.18	8738.82
	Min. H_x	10	255027.57	-16473.83	-9499.31
	Min. H_z	10	255027.57	-16473.83	-9499.31
Leg A	Max. Vert	2	255509.24	-84.76	19052.16
	Max. H_x	21	4833.33	1140.35	246.37
	Max. H_z	2	255509.24	-84.76	19052.16
	Min. Vert	15	-234692.02	104.06	-17801.40
	Min. H_x	9	4780.47	-1175.49	240.87
	Min. H_z	15	-234692.02	104.06	-17801.40

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	19999.83	0.00	0.00	-324.96	761.78	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	23999.79	82.65	-29823.32	-2679366.83	-6537.27	-1814.22
0.9 Dead+1.0 Wind 0 deg - No Ice	17999.84	82.65	-29823.32	-2675492.50	-6760.54	-1810.54
1.2 Dead+1.0 Wind 30 deg - No Ice	23999.79	14564.81	-25221.52	-2286477.79	-1319282.30	-1992.61
0.9 Dead+1.0 Wind 30 deg - No Ice	17999.84	14564.81	-25221.52	-2283146.00	-1317645.11	-1988.59
1.2 Dead+1.0 Wind 60 deg - No Ice	23999.79	24836.84	-14270.98	-1297104.44	-2256947.82	-2125.29
0.9 Dead+1.0 Wind 60 deg - No Ice	17999.84	24836.84	-14270.98	-1295165.72	-2253978.83	-2121.81
1.2 Dead+1.0 Wind 90 deg - No Ice	23999.79	28935.74	134.84	13117.30	-2621979.32	-1495.31
0.9 Dead+1.0 Wind 90 deg - No Ice	17999.84	28935.74	134.85	13201.29	-2618500.00	-1493.26
1.2 Dead+1.0 Wind 120 deg - No Ice	23999.79	25776.59	14884.26	1338064.62	-2315313.52	201.21
0.9 Dead+1.0 Wind 120 deg - No Ice	17999.84	25776.59	14884.26	1336276.86	-2312281.88	201.10
1.2 Dead+1.0 Wind 150 deg - No Ice	23999.79	14589.41	25005.66	2269971.24	-1323646.47	1819.80
0.9 Dead+1.0 Wind 150 deg - No Ice	17999.84	14589.41	25005.66	2266851.14	-1322006.41	1817.55
1.2 Dead+1.0 Wind 180 deg - No Ice	23999.79	58.08	28659.81	2609173.00	-4311.76	2250.57
0.9 Dead+1.0 Wind 180 deg - No Ice	17999.84	58.08	28659.81	2605567.03	-4537.97	2246.97
1.2 Dead+1.0 Wind 210 deg - No Ice	23999.79	-14563.25	25229.48	2288853.29	1322376.46	1922.28
0.9 Dead+1.0 Wind 210 deg - No Ice	17999.84	-14563.25	25229.48	2285710.73	1320275.42	1918.25

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
1.2 Dead+1.0 Wind 240 deg - No Ice	23999.79	-25780.72	14982.08	1346123.35	2316197.02	1613.21
0.9 Dead+1.0 Wind 240 deg - No Ice	17999.84	-25780.72	14982.08	1344325.95	2312702.15	1609.64
1.2 Dead+1.0 Wind 270 deg - No Ice	23999.79	-28663.41	128.46	12544.50	2599196.06	1001.10
0.9 Dead+1.0 Wind 270 deg - No Ice	17999.84	-28663.41	128.46	12629.01	2595285.80	998.85
1.2 Dead+1.0 Wind 300 deg - No Ice	23999.79	-24397.05	-14084.14	-1280968.04	2220375.20	-125.18
0.9 Dead+1.0 Wind 300 deg - No Ice	17999.84	-24397.05	-14084.14	-1279048.93	2216987.73	-125.08
1.2 Dead+1.0 Wind 330 deg - No Ice	23999.79	-14227.27	-24893.24	-2258119.32	1291399.36	-1255.14
0.9 Dead+1.0 Wind 330 deg - No Ice	17999.84	-14227.28	-24893.24	-2254825.03	1289335.18	-1252.69
1.2 Dead+1.0 Ice+1.0 Temp	32911.67	0.00	0.00	-633.00	1470.02	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	32911.67	19.30	-8835.11	-789577.21	-257.52	-455.05
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	32911.67	4341.40	-7518.11	-676550.18	-388844.39	-503.73
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	32911.67	7430.24	-4271.84	-385342.05	-667965.73	-530.60
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	32911.67	8637.33	34.08	2772.08	-775052.21	-368.14
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	32911.67	7640.78	4411.90	393662.50	-680990.75	49.95
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	32911.67	4349.34	7466.48	671510.73	-390086.64	448.77
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	32911.67	15.24	8574.31	772884.77	111.07	561.91
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	32911.67	-4341.02	7520.09	676045.50	392130.24	486.46
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	32911.67	-7640.48	4434.01	395479.88	683623.48	405.13
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	32911.67	-8570.51	30.55	2452.75	771978.66	246.92
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	32911.67	-7323.63	-4227.89	-381543.88	661609.30	-31.25
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	32911.67	-4260.47	-7438.87	-669691.51	384678.74	-310.22
Dead+Wind 0 deg - Service	19999.83	19.67	-7348.52	-648932.76	-1008.45	-431.22
Dead+Wind 30 deg - Service	19999.83	3591.73	-6219.75	-553954.28	-318948.55	-478.16
Dead+Wind 60 deg - Service	19999.83	6128.21	-3521.81	-314453.10	-546149.00	-505.27
Dead+Wind 90 deg - Service	19999.83	7137.31	32.09	2888.96	-634500.73	-351.08
Dead+Wind 120 deg - Service	19999.83	6351.83	3667.74	323729.59	-560031.32	47.82
Dead+Wind 150 deg - Service	19999.83	3597.58	6168.38	549558.01	-319989.34	428.22
Dead+Wind 180 deg - Service	19999.83	13.82	7071.66	631765.90	-479.90	535.06
Dead+Wind 210 deg - Service	19999.83	-3591.35	6221.64	554050.55	320779.97	461.45
Dead+Wind 240 deg - Service	19999.83	-6352.81	3691.02	325648.04	561337.27	383.42
Dead+Wind 270 deg - Service	19999.83	-7072.51	30.57	2752.01	630181.08	233.51
Dead+Wind 300 deg - Service	19999.83	-6023.56	-3477.35	-310618.76	538547.95	-29.76
Dead+Wind 330 deg - Service	19999.83	-3511.41	-6141.63	-547213.90	313412.00	-293.91

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-19999.83	0.00	0.00	19999.83	-0.00	0.000%
2	82.65	-23999.79	-29823.32	-82.65	23999.79	29823.32	0.000%
3	82.65	-17999.84	-29823.32	-82.65	17999.84	29823.32	0.000%
4	14564.81	-23999.79	-25221.52	-14564.81	23999.79	25221.52	0.000%
5	14564.81	-17999.84	-25221.52	-14564.81	17999.84	25221.52	0.000%
6	24836.84	-23999.79	-14270.98	-24836.84	23999.79	14270.98	0.000%
7	24836.84	-17999.84	-14270.98	-24836.84	17999.84	14270.98	0.000%
8	28935.73	-23999.79	134.85	-28935.74	23999.79	-134.84	0.000%
9	28935.73	-17999.84	134.85	-28935.74	17999.84	-134.85	0.000%
10	25776.59	-23999.79	14884.26	-25776.59	23999.79	-14884.26	0.000%
11	25776.59	-17999.84	14884.26	-25776.59	17999.84	-14884.26	0.000%
12	14589.41	-23999.79	25005.66	-14589.41	23999.79	-25005.66	0.000%
13	14589.41	-17999.84	25005.66	-14589.41	17999.84	-25005.66	0.000%
14	58.08	-23999.79	28659.81	-58.08	23999.79	-28659.81	0.000%
15	58.08	-17999.84	28659.81	-58.08	17999.84	-28659.81	0.000%
16	-14563.25	-23999.79	25229.47	14563.25	23999.79	-25229.48	0.000%
17	-14563.25	-17999.84	25229.47	14563.25	17999.84	-25229.48	0.000%
18	-25780.72	-23999.79	14982.08	25780.72	23999.79	-14982.08	0.000%
19	-25780.72	-17999.84	14982.08	25780.72	17999.84	-14982.08	0.000%
20	-28663.41	-23999.79	128.46	28663.41	23999.79	-128.46	0.000%
21	-28663.41	-17999.84	128.46	28663.41	17999.84	-128.46	0.000%
22	-24397.05	-23999.79	-14084.14	24397.05	23999.79	14084.14	0.000%
23	-24397.05	-17999.84	-14084.14	24397.05	17999.84	14084.14	0.000%
24	-14227.27	-23999.79	-24893.24	14227.27	23999.79	24893.24	0.000%
25	-14227.27	-17999.84	-24893.24	14227.28	17999.84	24893.24	0.000%
26	0.00	-32911.67	0.00	-0.00	32911.67	-0.00	0.000%
27	19.30	-32911.67	-8835.12	-19.30	32911.67	8835.11	0.000%
28	4341.40	-32911.67	-7518.12	-4341.40	32911.67	7518.11	0.000%
29	7430.24	-32911.67	-4271.85	-7430.24	32911.67	4271.84	0.000%
30	8637.34	-32911.67	34.08	-8637.33	32911.67	-34.08	0.000%
31	7640.78	-32911.67	4411.90	-7640.78	32911.67	-4411.90	0.000%
32	4349.34	-32911.67	7466.48	-4349.34	32911.67	-7466.48	0.000%
33	15.24	-32911.67	8574.31	-15.24	32911.67	-8574.31	0.000%
34	-4341.03	-32911.67	7520.09	4341.02	32911.67	-7520.09	0.000%
35	-7640.49	-32911.67	4434.01	7640.48	32911.67	-4434.01	0.000%
36	-8570.51	-32911.67	30.55	8570.51	32911.67	-30.55	0.000%
37	-7323.63	-32911.67	-4227.89	7323.63	32911.67	4227.89	0.000%
38	-4260.46	-32911.67	-7438.87	4260.47	32911.67	7438.87	0.000%
39	19.67	-19999.83	-7348.52	-19.67	19999.83	7348.52	0.000%
40	3591.73	-19999.83	-6219.75	-3591.73	19999.83	6219.75	0.000%
41	6128.21	-19999.83	-3521.81	-6128.21	19999.83	3521.81	0.000%
42	7137.31	-19999.83	32.09	-7137.31	19999.83	-32.09	0.000%
43	6351.83	-19999.83	3667.74	-6351.83	19999.83	-3667.74	0.000%
44	3597.58	-19999.83	6168.38	-3597.58	19999.83	-6168.38	0.000%
45	13.82	-19999.83	7071.66	-13.82	19999.83	-7071.66	0.000%
46	-3591.35	-19999.83	6221.64	3591.35	19999.83	-6221.64	0.000%
47	-6352.81	-19999.83	3691.02	6352.81	19999.83	-3691.02	0.000%
48	-7072.51	-19999.83	30.57	7072.51	19999.83	-30.57	0.000%
49	-6023.56	-19999.83	-3477.35	6023.56	19999.83	3477.35	0.000%
50	-3511.41	-19999.83	-6141.63	3511.41	19999.83	6141.63	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001

2	Yes	4	0.00000001	0.00000001
3	Yes	4	0.00000001	0.00000001
4	Yes	4	0.00000001	0.00000165
5	Yes	4	0.00000001	0.00000164
6	Yes	4	0.00000001	0.00000001
7	Yes	4	0.00000001	0.00000001
8	Yes	4	0.00000001	0.00000190
9	Yes	4	0.00000001	0.00000186
10	Yes	4	0.00000001	0.00000001
11	Yes	4	0.00000001	0.00000001
12	Yes	4	0.00000001	0.00000195
13	Yes	4	0.00000001	0.00000192
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00000001
16	Yes	4	0.00000001	0.00000168
17	Yes	4	0.00000001	0.00000168
18	Yes	4	0.00000001	0.00000001
19	Yes	4	0.00000001	0.00000001
20	Yes	4	0.00000001	0.00000184
21	Yes	4	0.00000001	0.00000180
22	Yes	4	0.00000001	0.00000001
23	Yes	4	0.00000001	0.00000001
24	Yes	4	0.00000001	0.00000186
25	Yes	4	0.00000001	0.00000181
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000001
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00000001
38	Yes	4	0.00000001	0.00000001
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000001
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	125.9 - 120	3.991	39	0.2765	0.0115
T2	120 - 100	3.652	39	0.2776	0.0115
T3	100 - 80	2.503	47	0.2438	0.0114
T4	80 - 60	1.557	47	0.1879	0.0072
T5	60 - 40	0.847	47	0.1344	0.0041

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T6	40 - 20	0.373	47	0.0770	0.0021
T7	20 - 0	0.107	39	0.0384	0.0009

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
120.00	30,000 sq in CaAa	39	3.652	0.2776	0.0115	67437
110.00	30,000 sq in CaAa	39	3.066	0.2667	0.0118	55059
100.00	6' Solid w/Radome	47	2.503	0.2438	0.0114	18659
90.00	6' Solid w/Radome	47	1.999	0.2161	0.0094	19292

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	125.9 - 120	16.606	2	1.1532	0.0483
T2	120 - 100	15.189	2	1.1579	0.0483
T3	100 - 80	10.396	2	1.0159	0.0481
T4	80 - 60	6.456	2	0.7822	0.0305
T5	60 - 40	3.504	2	0.5582	0.0174
T6	40 - 20	1.540	2	0.3191	0.0088
T7	20 - 0	0.438	2	0.1589	0.0038

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
120.00	30,000 sq in CaAa	2	15.189	1.1579	0.0483	16061
110.00	30,000 sq in CaAa	2	12.747	1.1123	0.0497	13152
100.00	6' Solid w/Radome	2	10.396	1.0159	0.0481	4456
90.00	6' Solid w/Radome	2	8.296	0.9000	0.0396	4605

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	125.9 - 120	P2x.154	5.90	5.82	88.7 K=1.00	1.0745	-946.93	27210.00	0.035 [1] ✔
T2	120 - 100	P3.5x.226	20.02	5.00	44.9 K=1.00	2.6795	-54156.10	104034.00	0.521 [1] ✔
T3	100 - 80	P5x.258	20.02	5.00	32.0 K=1.00	4.2999	-112580.00	179551.00	0.627 [1] ✔
T4	80 - 60	P6x.28	20.02	6.67	35.7 K=1.00	5.5813	-154970.00	228860.00	0.677 [1] ✔
T5	60 - 40	P6x.28	20.02	6.67	35.7 K=1.00	5.5813	-190905.00	228860.00	0.834 [1] ✔
T6	40 - 20	P8x.322	20.02	6.67	27.3 K=1.00	8.3993	-222247.00	357982.00	0.621 [1] ✔
T7	20 - 0	P8x.322	20.02	6.67	27.3 K=1.00	8.3993	-250280.00	357982.00	0.699 [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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	125.9 - 120	L1 3/4x1 3/4x1/8	6.79	3.20	110.8 K=1.00	0.4219	-1289.25	9835.20	0.131 [1] ✔
T2	120 - 100	L2x2x3/16	6.69	3.24	98.8 K=1.00	0.7150	-7208.32	20509.10	0.351 [1] ✔
T3	100 - 80	L2x2x3/16	8.05	3.85	117.3 K=1.00	0.7150	-6057.58	14878.40	0.407 [1] ✔
T4	80 - 60	L2x2x3/16	10.22	4.91	149.6 K=1.00	0.7150	-5995.73	9140.81	0.656 [1] ✔
T5	60 - 40	L2x2x3/16	11.40	5.52	168.0 K=1.00	0.7150	-5461.43	7252.55	0.753 [1] ✔
T6	40 - 20	L2 1/2x2 1/2x3/16	12.65	6.05	146.7 K=1.00	0.9020	-5356.45	12004.30	0.446 [1] ✔
T7	20 - 0	L2 1/2x2 1/2x3/16	13.95	6.71	162.6 K=1.00	0.9020	-5787.26	9765.99	0.593 [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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	125.9 - 120	L1 3/4x1 3/4x1/8	3.50	3.30	114.3 K=1.00	0.4219	-588.41	9249.83	0.064 [1] ✔

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	125.9 - 120	P2x.154	5.90	5.82	88.7	1.0745	891.70	48353.90	0.018 [1] ✔
T2	120 - 100	P3.5x.226	20.02	5.00	44.9	2.6795	48032.30	120579.00	0.398 [1] ✔
T3	100 - 80	P5x.258	20.02	5.00	32.0	4.2999	104217.00	193494.00	0.539 [1] ✔
T4	80 - 60	P6x.28	20.02	6.67	35.7	5.5813	144233.00	251161.00	0.574 [1] ✔
T5	60 - 40	P6x.28	20.02	6.67	35.7	5.5813	177530.00	251161.00	0.707 [1] ✔
T6	40 - 20	P8x.322	20.02	6.67	27.3	8.3993	205560.00	377967.00	0.544 [1] ✔
T7	20 - 0	P8x.322	20.02	6.67	27.3	8.3993	230235.00	377967.00	0.609 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	125.9 - 120	L1 3/4x1 3/4x1/8	6.79	3.20	70.4	0.3164	1254.35	15424.80	0.081 [1] ✔
T2	120 - 100	L2x2x3/16	6.69	3.24	63.1	0.5363	7070.94	26142.20	0.270 [1] ✔
T3	100 - 80	L2x2x3/16	7.21	3.44	66.9	0.5363	6465.02	26142.20	0.247 [1] ✔
T4	80 - 60	L2x2x3/16	9.49	4.56	88.6	0.5363	6307.72	26142.20	0.241 [1] ✔
T5	60 - 40	L2x2x3/16	10.61	5.12	99.7	0.5363	5550.14	26142.20	0.212 [1] ✔
T6	40 - 20	L2 1/2x2 1/2x3/16	12.23	5.84	90.1	0.6765	5158.71	32979.40	0.156 [1] ✔
T7	20 - 0	L2 1/2x2 1/2x3/16	13.95	6.71	103.4	0.6765	5532.68	32979.40	0.168 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
									✔

[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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	125.9 - 120	L1 3/4x1 3/4x1/8	3.50	3.30	72.6	0.3164	604.37	15424.80	0.039 [1] ✔

[1] P_u / ϕP_n controls

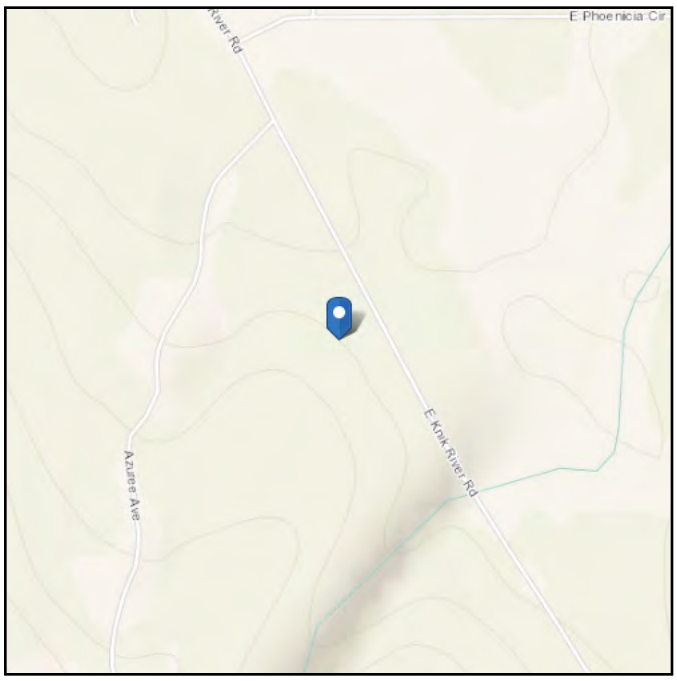
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	125.9 - 120	Leg	P2x.154	3	-946.93	27210.00	3.5	Pass
		Diagonal	L1 3/4x1 3/4x1/8	7	-1289.25	9835.20	13.1	Pass
		Top Girt	L1 3/4x1 3/4x1/8	4	-588.41	9249.83	6.4	Pass
T2	120 - 100	Leg	P3.5x.226	15	-54156.10	104034.00	52.1	Pass
		Diagonal	L2x2x3/16	26	-7208.32	20509.10	35.1	Pass
T3	100 - 80	Leg	P5x.258	40	-112580.00	179551.00	62.7	Pass
		Diagonal	L2x2x3/16	47	-6057.58	14878.40	40.7	Pass
T4	80 - 60	Leg	P6x.28	69	-154970.00	228860.00	67.7	Pass
		Diagonal	L2x2x3/16	74	-5995.73	9140.81	65.6	Pass
T5	60 - 40	Leg	P6x.28	90	-190905.00	228860.00	83.4	Pass
		Diagonal	L2x2x3/16	95	-5461.43	7252.55	75.3	Pass
T6	40 - 20	Leg	P8x.322	111	-222247.00	357982.00	62.1	Pass
		Diagonal	L2 1/2x2 1/2x3/16	116	-5356.45	12004.30	44.6	Pass
T7	20 - 0	Leg	P8x.322	132	-250280.00	357982.00	69.9	Pass
		Diagonal	L2 1/2x2 1/2x3/16	137	-5787.26	9765.99	59.3	Pass
							Summary	
						Leg (T5)	83.4	Pass
						Diagonal (T5)	75.3	Pass
						Top Girt (T1)	6.4	Pass
						RATING =	**83.4**	**Pass**

ASCE Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Latitude:**	61.44422
Risk Category:	II	**Longitude:**	-148.81356
Soil Class:	D - Stiff Soil	**Elevation:**	229.65684759508187 ft (NAVD 88)



Seismic

Site Soil Class: D - Stiff Soil

Results:

S_S :	1.5	S_{D1} :	N/A
S_1 :	0.704	T_L :	16
F_a :	1	PGA :	0.5
F_v :	N/A	PGA_M :	0.55
S_{MS} :	1.5	F_{PGA} :	1.1
S_{M1} :	N/A	I_e :	1
S_{DS} :	1	C_v :	1.4

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

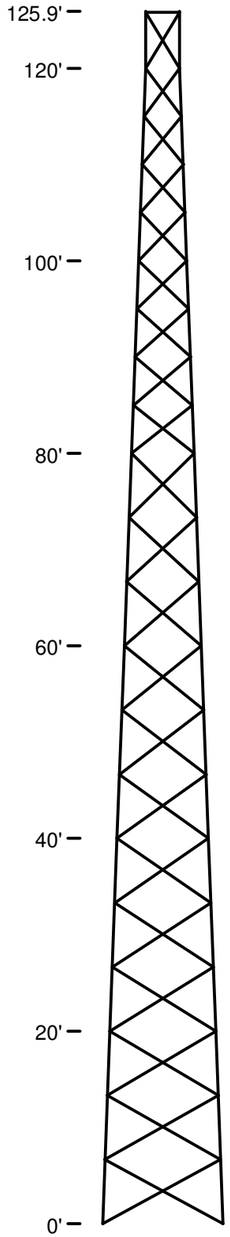
Data Accessed: Thu Aug 21 2025

Date Source: USGS Seismic Design Maps

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE Hazard Tool.



Self-Supporting Tower Section Data

Section Number	Bottom Elevation (ft)	Top Elevation (ft)	Model	Bottom Face Width (ft)	Top Face Width (ft)	Number of Panels	Leg Size (in)	Diagonal Size (in)	Girt Size (in)	Mid-Horizontal Size (in)	Redundant Horizontal Size (in)	Redundant Diagonal Size (in)
7	120	125.9	NSX	3.5	3.5	1	P2x.154	L1 3/4x1 3/4x1/8	L1 3/4x1 3/4x1/8			
6	100	120	NSX	5.0	3.5	4	P3.5x.226	L2x2x3/16				
5	80	100	NSX	6.5	5.0	4	P5x.258	L2x2x3/16				
4	60	80	NSX	8.0	6.5	3	P6x.28	L2x2x3/16				
3	40	60	NSX	9.5	8.0	3	P6x.28	L2x2x3/16				
2	20	40	NSX	11.0	9.5	3	P8x.322	L2 1/2x2 1/2x3/16				
1	0	20	NSX	12.5	11.0	3	P8x.322	L2 1/2x2 1/2x3/16				

Tower Reactions

No Ice
Shear: 29.8 kips
Moment: 2679.37 ft-kips
Weight: 24.0 kips

With Ice
Shear: 8.8 kips
Moment: 789.78 ft-kips
Weight: 32.9 kips

Leg Reactions
Compression: 255.5 kips
Uplift: -234.7 kips
Shear: 19.1 kips

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 8/13/2025
DWG NO: 803223
DWG. PROG: v2.05
SHEET: 1 OF 6

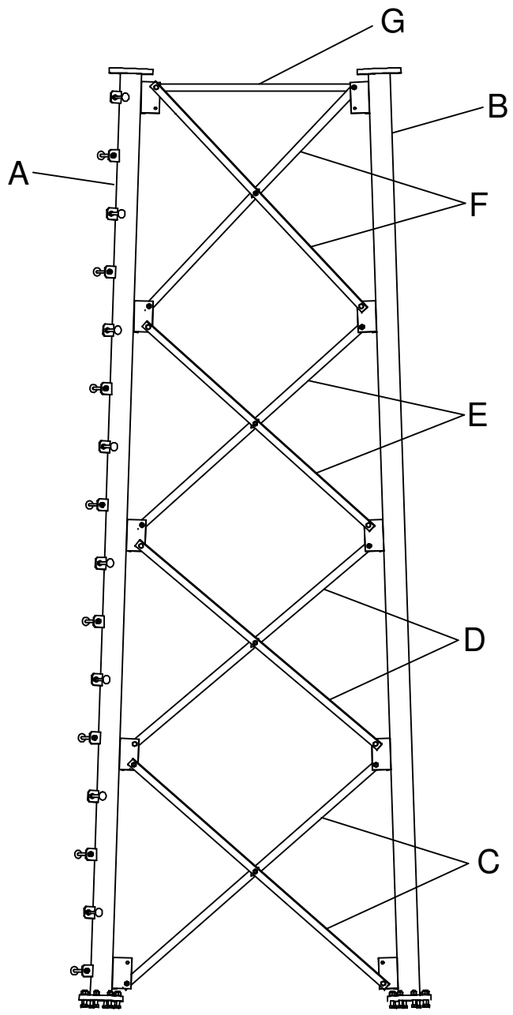
STATE OF ALASKA 49TH
Adam M. Amortnont
No. SE 235151
REGISTERED STRUCTURAL ENGINEER
8-26-25

TEP

TITLE:
Atlas Tower
NSX 12.5' X 125.9'
Palmer - Laux / ATAK0034
Matanuska-Susitna Borough, AK

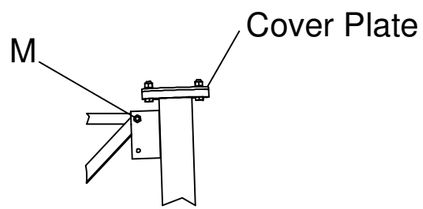
NELLO
1201 S. Sheridan St.
South Bend, IN 46619
Bus: (574)288-3632
Fax: (574)288-5860

NSX Section Legend:
A. Climbing Leg
B. Non-Climbing Leg
C. Diag., Panel 1
D. Diag., Panel 2
E. Diag., Panel 3
F. Diag., Panel 4
G. Top Girt
H. Spacer
J. Leg Bolts
K. Diagonal Bolts
L. Stitch Bolts
M. Top Girt Bolts



NSX Section Detail

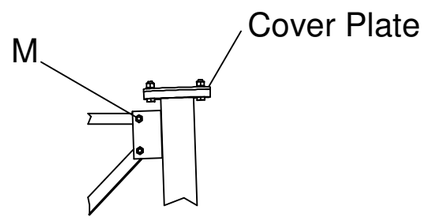
1. A part number is stamped on the bottom footpad of each leg.
2. A part number is stamped and /or labeled on the bottom end of each angle.
3. Be sure to place diagonal bracing angles in correct positions, angles in the top panel may be longer than they are in the middle panel.
4. The bolt head must bear against the angle bracing.



One plain nut and one lockwasher per bolt.

Detail A: NSX Top Connection

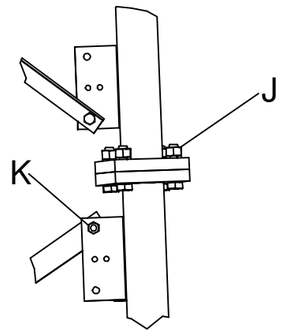
*Applicable to all 20 ft Sections.
*Applicable to all Sections Shorter than 20 ft and are Straight.



One plain nut and one lockwasher per bolt.

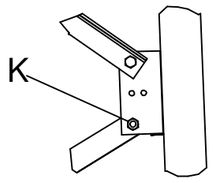
Detail B: NSX Top Connection

*Applicable to all Sections Shorter than 20 ft that are Tapered Sections.



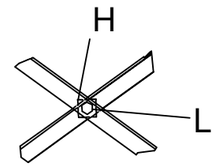
One plain nut and one lockwasher per bolt.

NSX Leg Connection



One plain nut and one lockwasher per bolt.

NSX Bracing Detail



One plain nut and one lockwasher per bolt.

NSX Spacer Detail

STATE OF ALASKA
49TH
Adam M. Amortnont
No. SE 235151
REGISTERED STRUCTURAL ENGINEER
8-2025

TEP

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 8/13/2025
DWG NO: 803223
DWG. PROG: v2.05
SHEET: 2 OF 6

TITLE:
Atlas Tower
NSX 12.5' X 125.9'
Palmer - Laux / ATAK0034
Matanuska-Susitna Borough, AK

NELLO
1201 S. Sheridan St.
South Bend, IN 46619
Bus: (574)288-3632
Fax: (574)288-5860

NSX Section Part Numbers

Item	Elevation	Climbing Leg (A)	Non-Climbing Leg (B)	Diagonal - Panel 1 (C)	Diagonal - Panel 2 (D)	Diagonal - Panel 3 (E)	Diagonal - Panel 4 (F)	Top Girt (G)	Spacer (H)
7	120' - 125.9'	189718	189717	167310				167379	132233
6	100' - 120'	141436	141435	167333	167334	167335	167336		132233
5	80' - 100'	141422	141421	167008	167009	167010	167011		132233
4	60' - 80'	141267		167216	167217	167218			132233
3	40' - 60'	129729		166855	166856	166857			132233
2	20' - 40'	129695		167170	167171	167172			132233
1	0' - 20'	129701		168102	168103	168104			132233

NSX Section Hardware

Item	Elevation	Leg Bolts (J)	Diagonal Bolts (K)	Stitch Bolts (L)	Top Girt Bolts (M)	Section Weight (Lbs.)
7	120' - 125.9'	(24) 3/4" x 3-1/2"	(12) 1/2" x 1-1/2"	(3) 1/2" x 1-1/2"	(6) 1/2" x 1-1/2"	330
6	100' - 120'	(24) 3/4" x 3-1/2"	(48) 5/8" x 2-1/2"	(12) 5/8" x 2-1/2"		1300
5	80' - 100'	(24) 3/4" x 3-1/2"	(48) 5/8" x 2-1/2"	(12) 5/8" x 2-1/2"		1700
4	60' - 80'	(24) 3/4" x 3-1/2"	(36) 5/8" x 2-1/2"	(9) 5/8" x 2-1/2"		1970
3	40' - 60'	(24) 1" x 3-3/4"	(36) 5/8" x 2-1/2"	(9) 5/8" x 2-1/2"		2080
2	20' - 40'	(24) 1" x 3-3/4"	(36) 3/4" x 2-1/4"	(9) 3/4" x 2-1/4"		2950
1	0' - 20'	0	(36) 3/4" x 2-1/4"	(9) 3/4" x 2-1/4"		3020

STATE OF ALASKA
49TH
Adam M. Amortnont
No. SE 235151
REGISTERED STRUCTURAL ENGINEER
8/6/25

LTEP

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 8/13/2025
DWG NO: 803223
DWG. PROG: v2.05
SHEET: 3 OF 6

TITLE:
Atlas Tower
NSX 12.5' X 125.9'
Palmer - Laux / ATAK0034
Matanuska-Susitna Borough, AK

NELLO
1201 S. Sheridan St.
South Bend, IN 46619
Bus: (574)288-3632
Fax: (574)288-5860

GENERAL NOTES:

1. ALL REFERENCES TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED ATLAS TOWER 1, LLC, OR ITS DESIGNATED REPRESENTATIVE.

2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF ALASKA.

3. STRUCTURE IS DESIGNED IN ACCORDANCE WITH ANSI/TIA/EIA-222-H. THIS CONFORMS TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, 2021 EDITION.

4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2021 EDITION.

5. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.

6. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERCEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.

7. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND IT'S COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.

8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.

9. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.

11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.

12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR. CONTRACTOR SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.

13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.

14. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.

15. THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE. AFTER REWORKING, IF THE MATERIAL REMAINS UNSUITABLE, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFTER MATERIAL SHALL BE REWORKED OR REPLACED.

16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPES, DITCHES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.

17. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.

18. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

STRUCTURAL STEEL NOTES:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.

2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
   A. STRUCTURAL STEEL, ASTM DESIGNATION A36 OR A992 GR50.
   B. ALL BOLTS, ASTM A325 TYPE I GALVANIZED HIGH STRENGTH BOLTS.
   C. ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.
   D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.

3. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.

4. HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.

5. HOT-DIP GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED, AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING: ASTM A123, ASTM A153/A153M OR ASTM A653/A653M, G90, AS APPLICABLE.

6. REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTE MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED, WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS IN STICK OR PASTED; SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL.

7. A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.

8. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.

9. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.

10. ALL ASSEMBLY BOLTS ARE TO BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN SECTION 8.1 OF THE AISC, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", DATED JUNE 30, 2004.

11. FLAT WASHERS ARE TO BE INSTALLED WITH BOLTS OVER SLOTTED HOLES.

12. DO NOT OVER TORQUE ASSEMBLY BOLTS. GALVANIZING ON BOLTS, NUTS, AND STEEL PARTS MAY ACT AS A LUBRICANT, THUS OVER TIGHTENING MAY OCCUR AND MAY CAUSE BOLTS TO CRACK AND SNAP OFF.

13. PAL NUTS ARE TO BE INSTALLED AFTER NUTS ARE TIGHT AND WITH EDGE LIP OUT. PAL NUTS ARE NOT REQUIRED WHEN SELF-LOCKING NUTS ARE PROVIDED.

14. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.

15. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1-2010 STRUCTURAL WELDING CODE - STEEL.

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
BOULDER, CO 80301
Office: (303) 448-8896

PLANS PREPARED BY:

TEP

4570 IVY STREET, SUITE B-100
DENVER, CO 80216
OFFICE: (303) 566-9914
www.tepgroup.net

SEAL:

STATE OF ALASKA
49TH
Andrew T. Haldane
No. AEL CE 11742
12/1/2025
REGISTERED PROFESSIONAL ENGINEER

December 1, 2025

REV	DATE	ISSUED FOR:
5	12-01-25	ISSUED FOR PERMITTING
4	11-03-25	PRELIMINARY
3	08-25-25	CONSTRUCTION

DRAWN BY: RBK | CHECKED BY: KES

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER: **N-1**

REVISION: **5**

TEP #: 349563.481070

SITE COORDINATES

LATITUDE:	N 61° 26' 36.9204" (NAD '83)
LONGITUDE:	W 148° 48' 49.5894" (NAD '83)

LEGEND

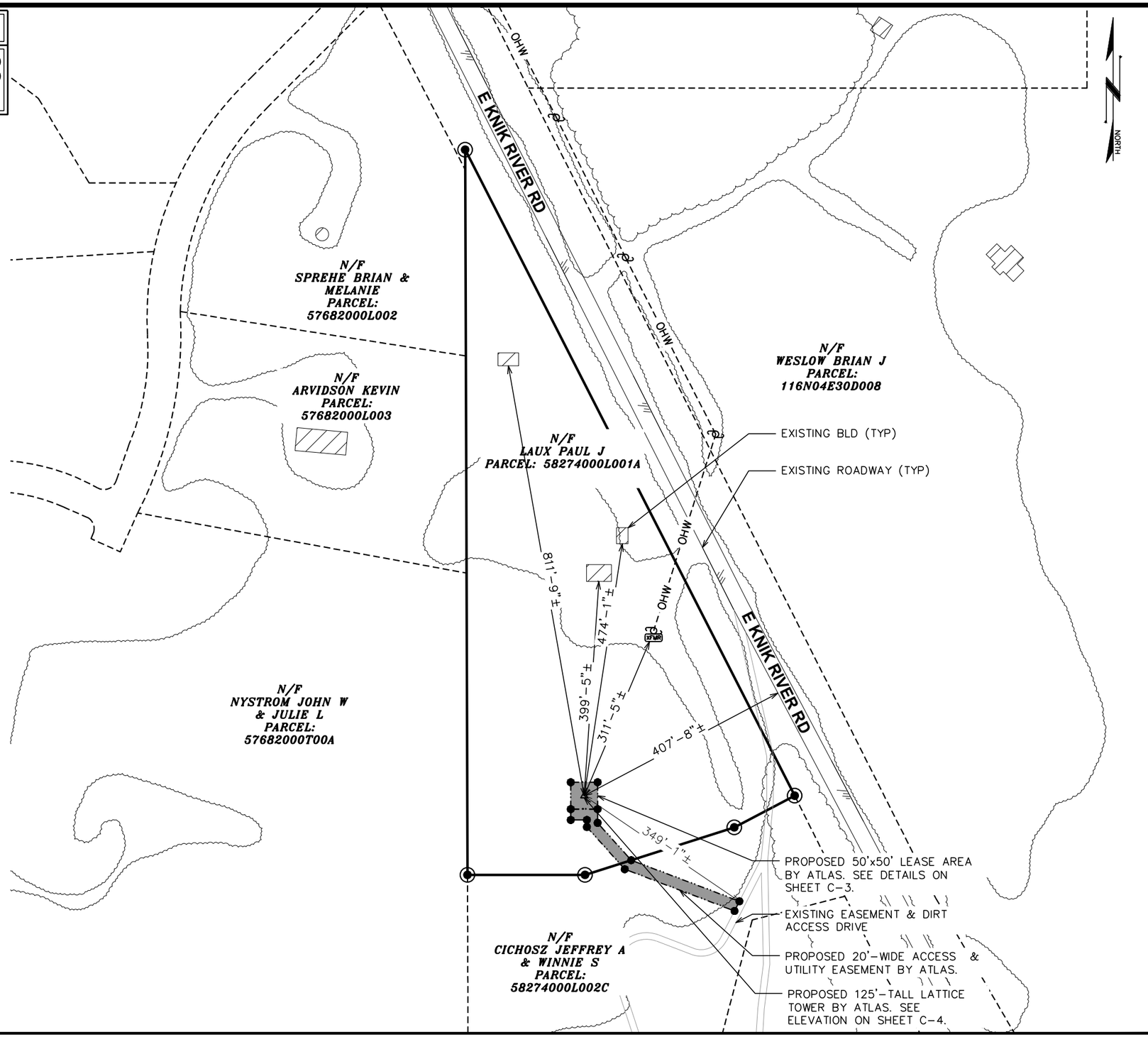
- PARENT PROPERTY LINE
- ADJACENT PROPERTY LINE
- EASEMENT/LEASE CORNER
- EXIST. METER
- EXIST. TRANSFORMER
- EXIST. UTILITY POLE
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- --4650-- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ----F---- BURIED FIBER
- ----G---- GAS LINE
- ---R/W--- RIGHT-OF-WAY
- —— X —— FENCE
- EXISTING TREE LINE

TOWER SETBACKS

PROPERTY LINE	REQUIRED	PROPOSED
NORTH	125'-0"	1221'-6"±
EAST	125'-0"	348'-10"±
SOUTH	125'-0"	147'-0"±
WEST	125'-0"	217'-7±

NOTES:

1. SITE PLAN WAS PREPARED USING AERIAL IMAGERY AND DATA FROM MATANUSKA-SUSITNA BOROUGH. FOR CORRECTIVE ACTION, PLEASE CONTACT TEP.



OVERALL SITE PLAN

SCALE: 1" = 200'

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
BOULDER, CO 80301
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PLANS PREPARED BY:

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SEAL:

STATE OF ALASKA
49TH
Andrew T. Haldane
No. AEL CE 11742
12/29/2025
REGISTERED PROFESSIONAL ENGINEER
December 29, 2025

REV	DATE	ISSUED FOR:
6	12-29-25	ISSUED FOR PERMITTING
5	12-01-25	ISSUED FOR PERMITTING
4	11-03-25	PRELIMINARY

DRAWN BY: TRV | CHECKED BY: KES

SHEET TITLE:

OVERALL SITE PLAN

SHEET NUMBER: **M-1**

REVISION: **6**

TEP #: 349563.481070

SITE COORDINATES

LATITUDE:	N 61° 26' 36.9204" (NAD '83)
LONGITUDE:	W 148° 48' 49.5894" (NAD '83)

LEGEND

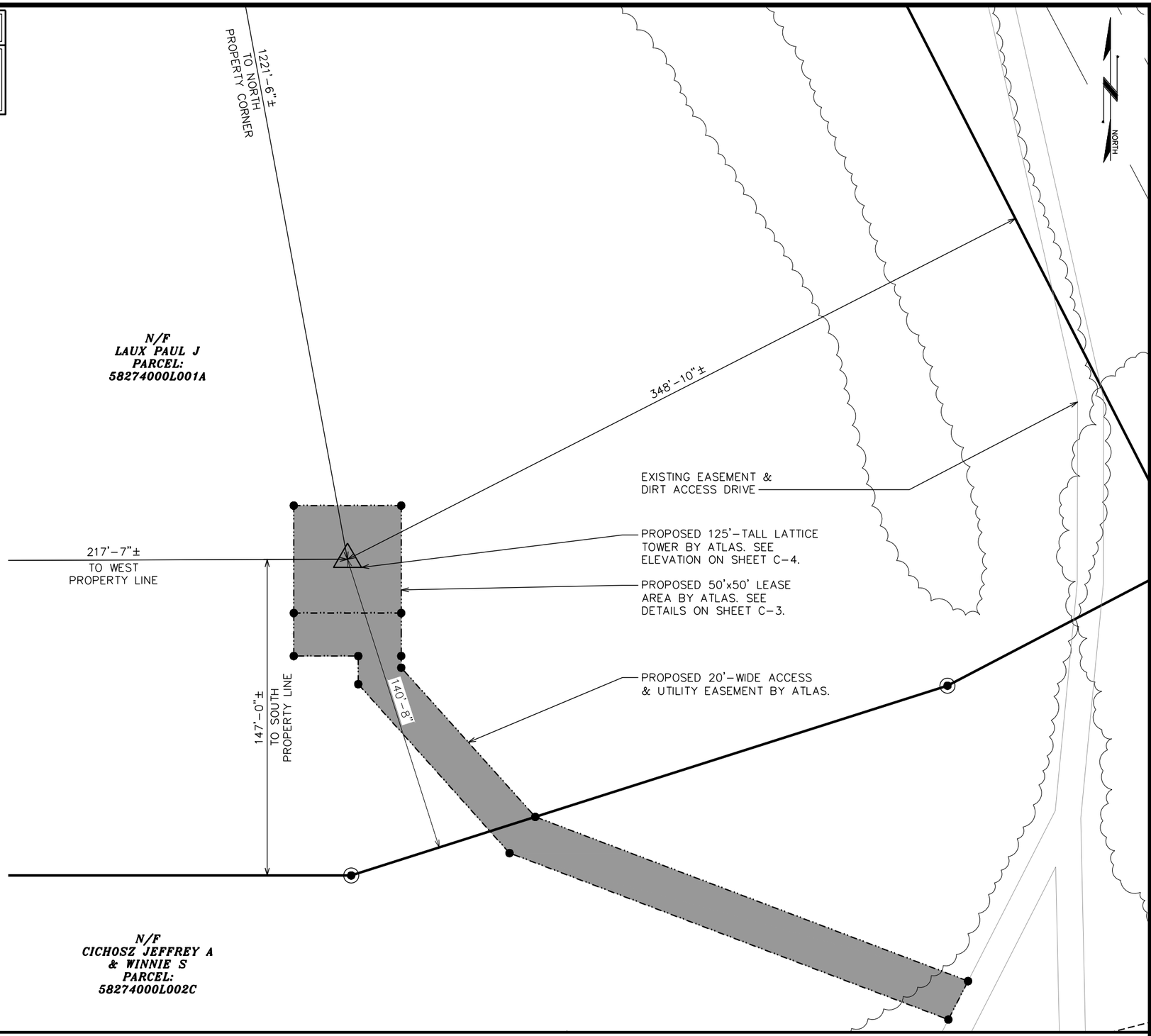
———	PARENT PROPERTY LINE
- - - - - - -	ADJACENT PROPERTY LINE
●	EASEMENT/LEASE CORNER
M	EXIST. METER
XFMR	EXIST. TRANSFORMER
	EXIST. UTILITY POLE
T	EXIST. TELCO PEDESTAL
	PROPERTY CORNER
--4650--	EXIST. CONTOUR LINE
	EDGE OF PAVEMENT
---OHW---	OVERHEAD WIRE
----F----	BURIED FIBER
----G----	GAS LINE
---R/W---	RIGHT-OF-WAY
——— X ———	FENCE
	EXISTING TREE LINE

TOWER SETBACKS

PROPERTY LINE	REQUIRED	PROPOSED
NORTH	125'-0"	1221'-6"±
EAST	125'-0"	348'-10"±
SOUTH	125'-0"	147'-0"±
WEST	125'-0"	217'-7±±

NOTES:

1. SITE PLAN WAS PREPARED USING AERIAL IMAGERY AND DATA FROM MATANUSKA-SUSITNA BOROUGH. FOR CORRECTIVE ACTION, PLEASE CONTACT TEP.
2. THE TOWER IS LOCATED IN AN AREA UNMAPPED BY FEMA TO DETERMINE FLOOD HAZARD RISK.



AREA PLAN

SCALE: 1" = 50'

PROJECT INFORMATION:

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E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

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ATLAS TOWER

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PLANS PREPARED BY:

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SEAL:

STATE OF ALASKA
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Andrew T. Haldane
No. ASL CE 11742
12/1/2025
REGISTERED PROFESSIONAL ENGINEER

December 1, 2025

REV	DATE	ISSUED FOR:
5	12-01-25	ISSUED FOR PERMITTING
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3	08-25-25	CONSTRUCTION

DRAWN BY: KES | CHECKED BY: KES

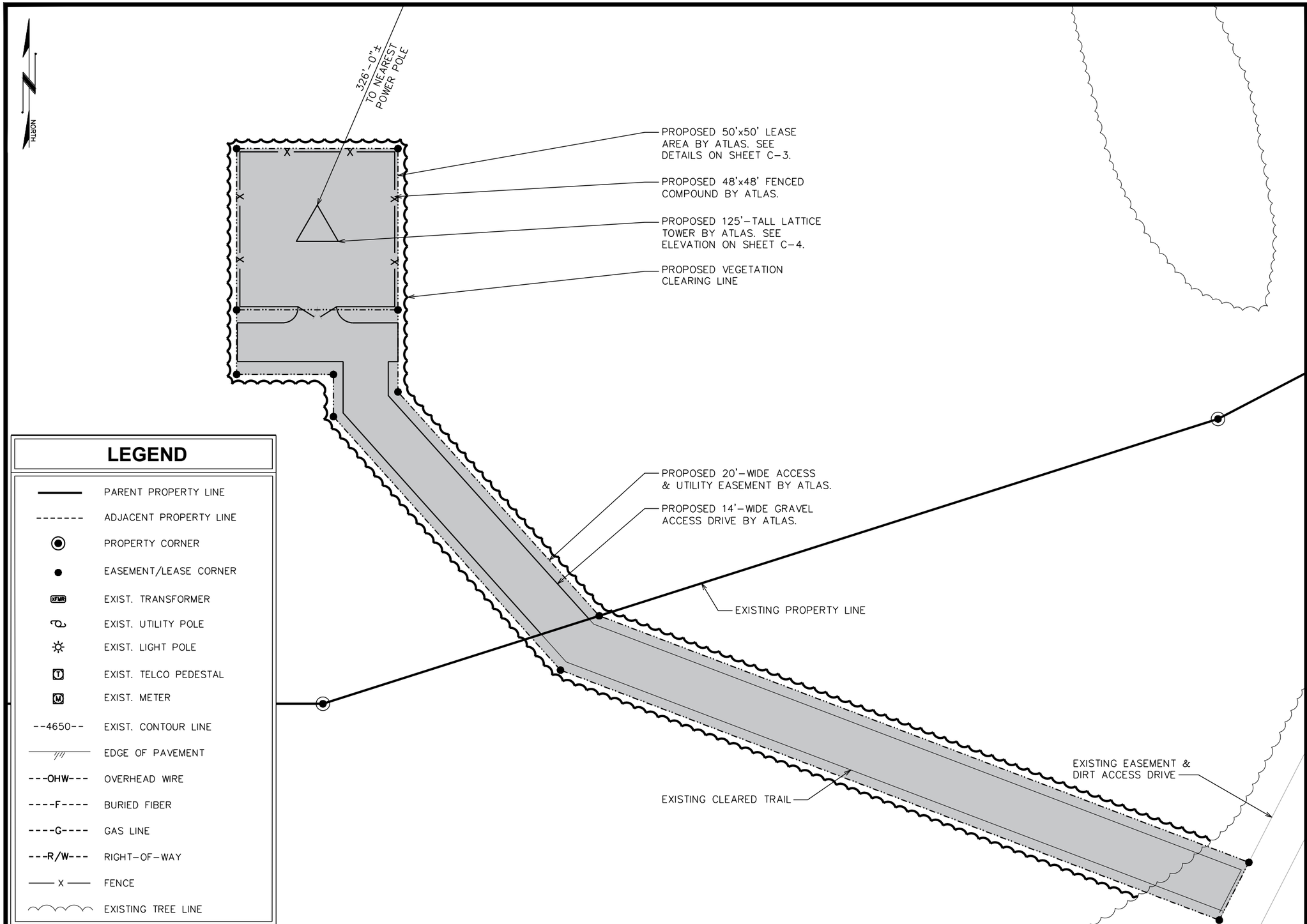
SHEET TITLE:

AREA PLAN

SHEET NUMBER: **C-1**

REVISION: 5

TEP#: 349563.481070



LEGEND

- PARENT PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPERTY CORNER
- EASEMENT/LEASE CORNER
- EXIST. TRANSFORMER
- EXIST. UTILITY POLE
- EXIST. LIGHT POLE
- EXIST. TELCO PEDESTAL
- EXIST. METER
- --4650-- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ----F---- BURIED FIBER
- ----G---- GAS LINE
- ---R/W--- RIGHT-OF-WAY
- ——— X ——— FENCE
- EXISTING TREE LINE

SITE PLAN

SCALE: 1" = 30'

0 30 60

SCALE IN FEET

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
BOULDER, CO 80301
Office: (303) 448-8896

PLANS PREPARED BY:

TEP

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SEAL:

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Andrew T. Haldane
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12/1/2025
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REV	DATE	ISSUED FOR:
5	12-01-25	ISSUED FOR PERMITTING
4	11-03-25	PRELIMINARY
3	08-25-25	CONSTRUCTION

DRAWN BY: KES CHECKED BY: ARB

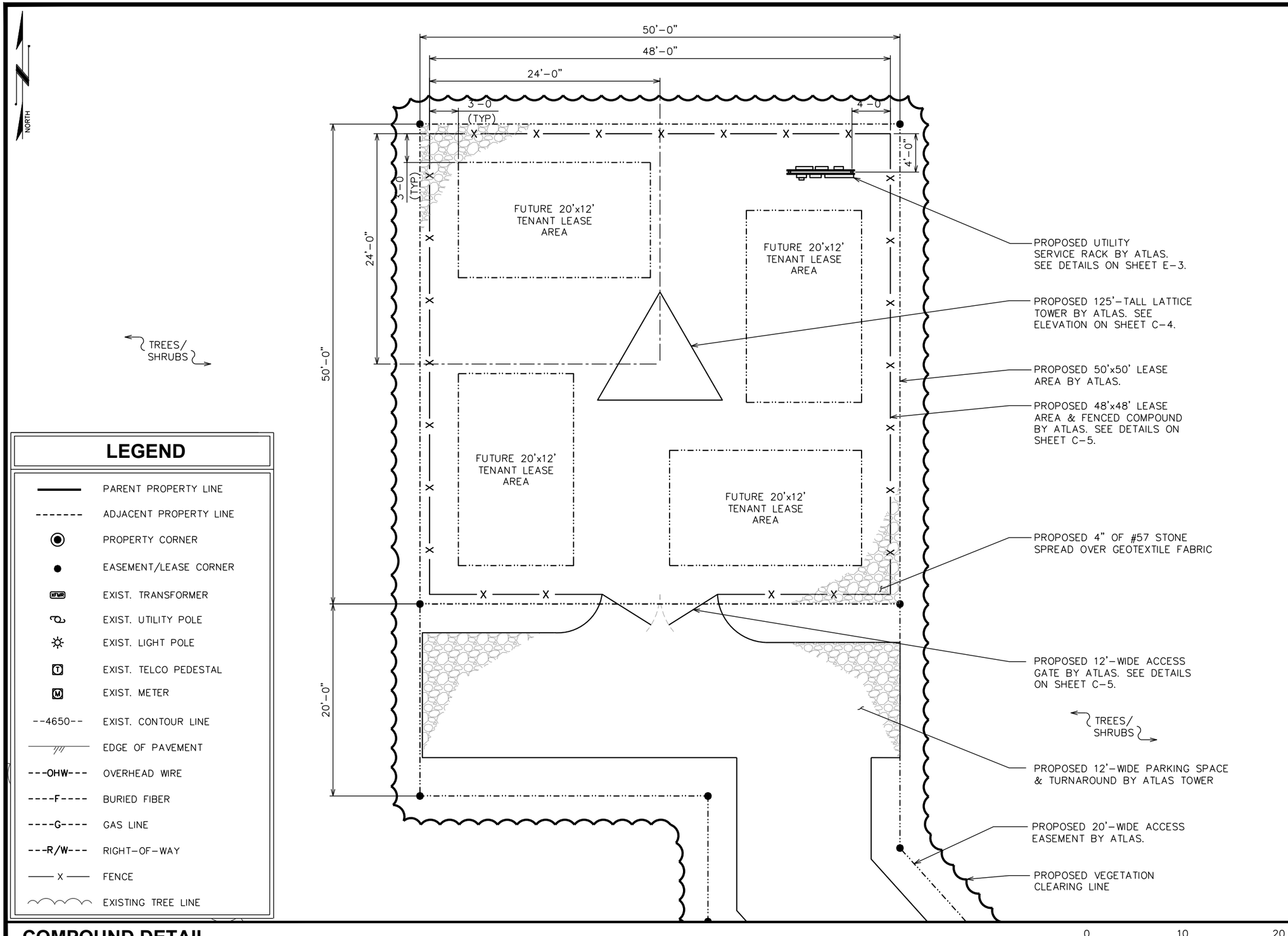
SHEET TITLE:

SITE PLAN

SHEET NUMBER: **C-2**

REVISION: **5**

TEP #: 349563.481070



LEGEND

- PARENT PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPERTY CORNER
- EASEMENT/LEASE CORNER
- EXIST. TRANSFORMER
- EXIST. UTILITY POLE
- EXIST. LIGHT POLE
- EXIST. TELCO PEDESTAL
- EXIST. METER
- --4650-- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ----F---- BURIED FIBER
- ----G---- GAS LINE
- ---R/W--- RIGHT-OF-WAY
- —— X —— FENCE
- EXISTING TREE LINE

COMPOUND DETAIL

SCALE: 1" = 10'

0 10 20

SCALE IN FEET

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
BOULDER, CO 80301
Office: (303) 448-8896

PLANS PREPARED BY:

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DRAWN BY: KES CHECKED BY: KES

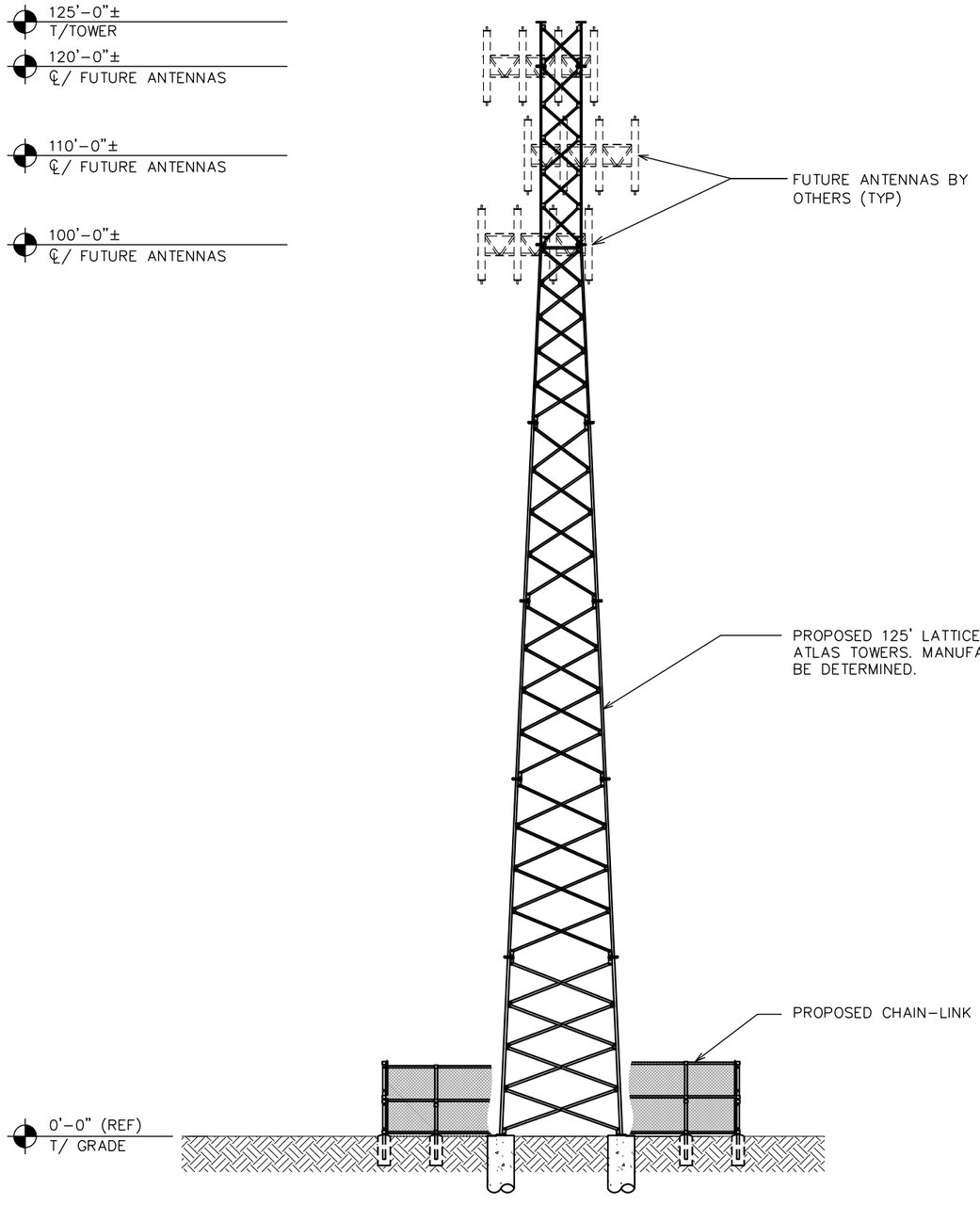
SHEET TITLE:

COMPOUND DETAIL

SHEET NUMBER: **C-3**

REVISION: **5**

TEP#: 349563.481070



NOTES:

1. TOWER TO REMAIN A GALVANIZED COLOR.
2. TOWER SHALL BE LIT ONLY IF REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION.
3. PROPOSED COAX TO BE ROUTED UP WAVEGUIDE LADDER. (PROVIDED BY TOWER MANUFACTURER)
4. TOWER TO INCLUDE SAFETY CABLE. DO NOT INCLUDE SAFETY CLIMB MECHANISM.
5. TOWER EQUIPMENT LOADING AND CENTERLINES ARE SHOWN FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE.

TOWER ELEVATION

SCALE: 1/16" = 1'-0"

0 16 32

SCALE IN FEET

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
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ATLAS TOWER

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DRAWN BY: RBK | CHECKED BY: KES

SHEET TITLE:

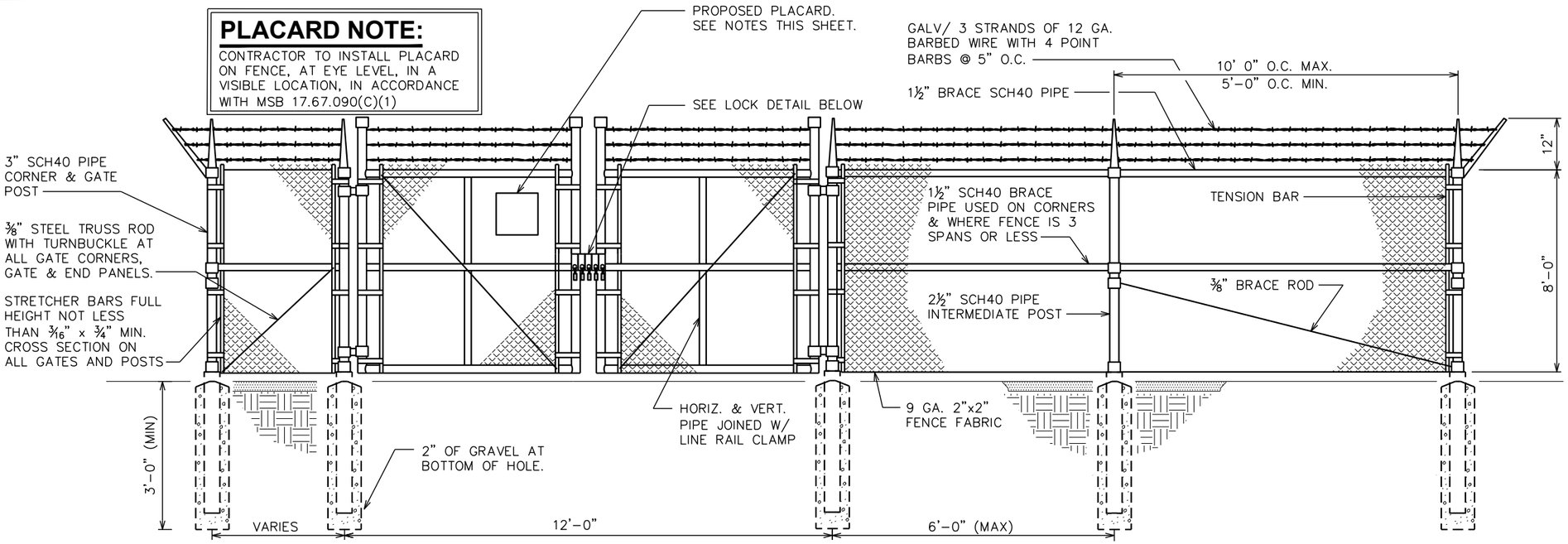
TOWER ELEVATION

SHEET NUMBER: **C-4**

REVISION: **5**

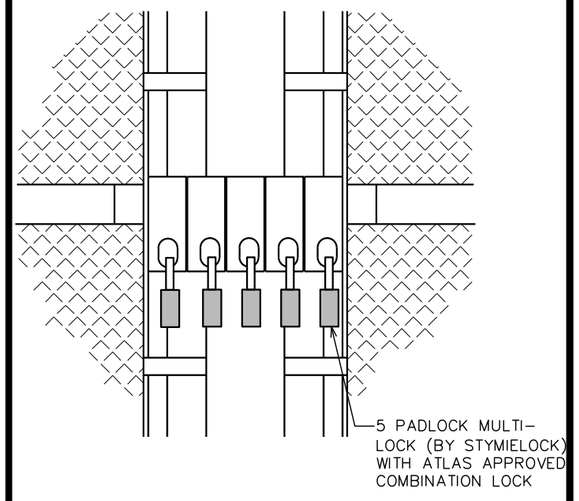
TEP #: 349563.481070

PLACARD NOTE:
CONTRACTOR TO INSTALL PLACARD ON FENCE, AT EYE LEVEL, IN A VISIBLE LOCATION, IN ACCORDANCE WITH MSB 17.67.090(C)(1)



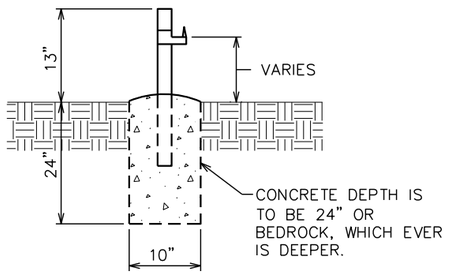
TYPICAL FENCE ELEVATION

SCALE: N.T.S.



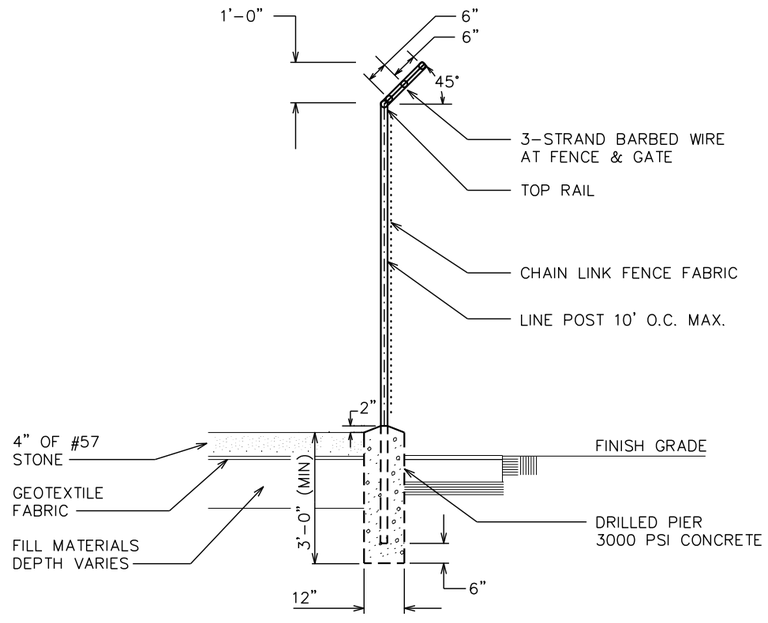
GATE LOCK DETAIL

SCALE: N.T.S.



GATE STOP/KEEPER DETAIL

SCALE: N.T.S.



FENCE / BARBED WIRE ARM DETAIL

SCALE: N.T.S.

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
BOULDER, CO 80301
Office: (303) 448-8896

PLANS PREPARED BY:

TEP

4570 IVY STREET, SUITE B-100
DENVER, CO 80216
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www.tepgroup.net

SEAL:

STATE OF ALASKA 49TH Andrew T. Haldane No. AELCE 11742 REGISTERED PROFESSIONAL ENGINEER
December 1, 2025

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5	12-01-25	ISSUED FOR PERMITTING
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3	08-25-25	CONSTRUCTION

DRAWN BY: RBK CHECKED BY: KES

SHEET TITLE:

FENCE DETAILS

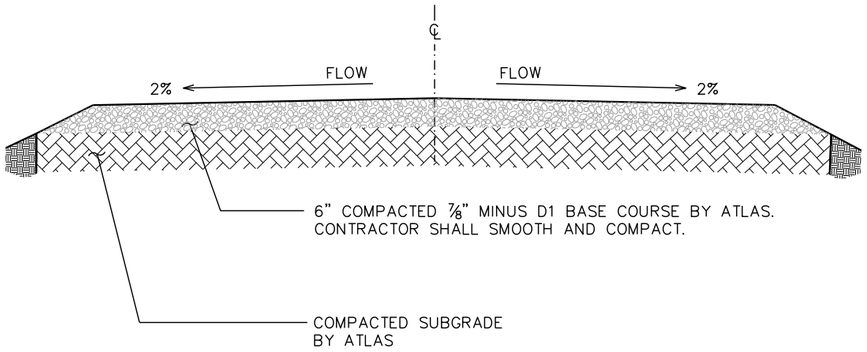
SHEET NUMBER: **Z-5**

REVISION: 5

TEP #: 349563.481070

NOTE:

ROAD TO BE DESIGNED IN ACCORDANCE
WITH M.S.B. 11.12.060 LOW VOLUME
DRIVEWAY STANDARDS



STANDARD ROAD SECTION (GOOD SUBGRADE)

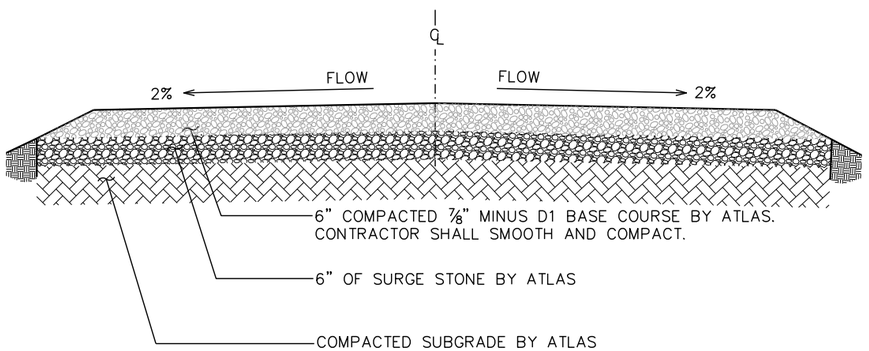
SCALE: 3/8" = 1'-0"

NOT USED

SCALE: N.T.S.

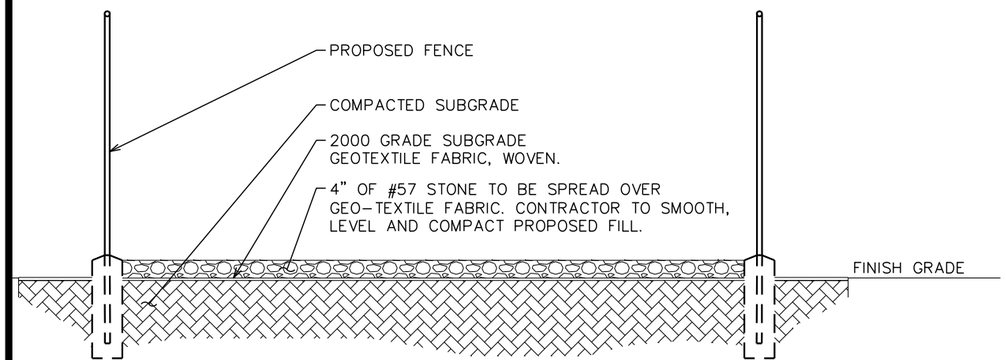
NOTE:

ROAD TO BE DESIGNED IN ACCORDANCE
WITH M.O.A. 11.12.060 LOW VOLUME
DRIVEWAY STANDARDS



STANDARD ROAD SECTION (POOR SUBGRADE)

SCALE: 3/8" = 1'-0"



COMPOUND SECTION VIEW

SCALE: N.T.S.

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

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BOULDER, CO 80301
Office: (303) 448-8896

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SEAL:

STATE OF ALASKA
49TH
Andrew T. Haldane
No. AELI CE 11742
12/1/2025
REGISTERED PROFESSIONAL ENGINEER

December 1, 2025

REV	DATE	ISSUED FOR:
5	12-01-25	ISSUED FOR PERMITTING
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3	08-25-25	CONSTRUCTION

DRAWN BY: RBK | CHECKED BY:

SHEET TITLE:

DRIVEWAY DETAILS

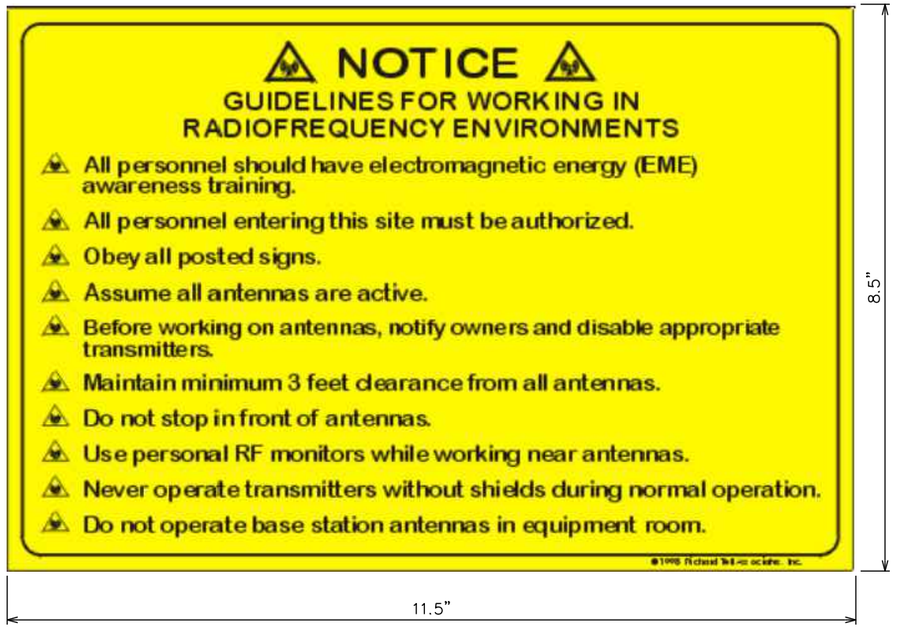
SHEET NUMBER: **C-6**

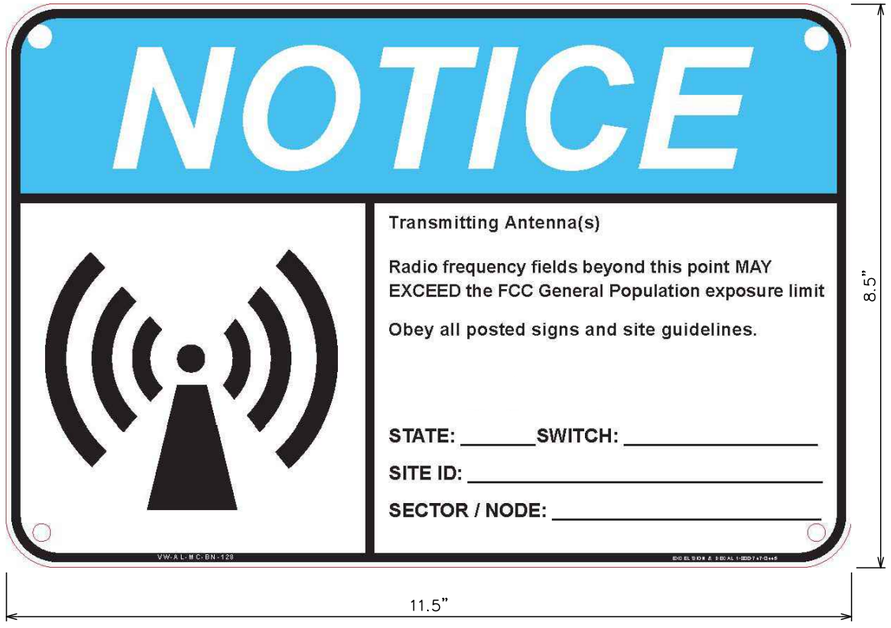
REVISION: **5**

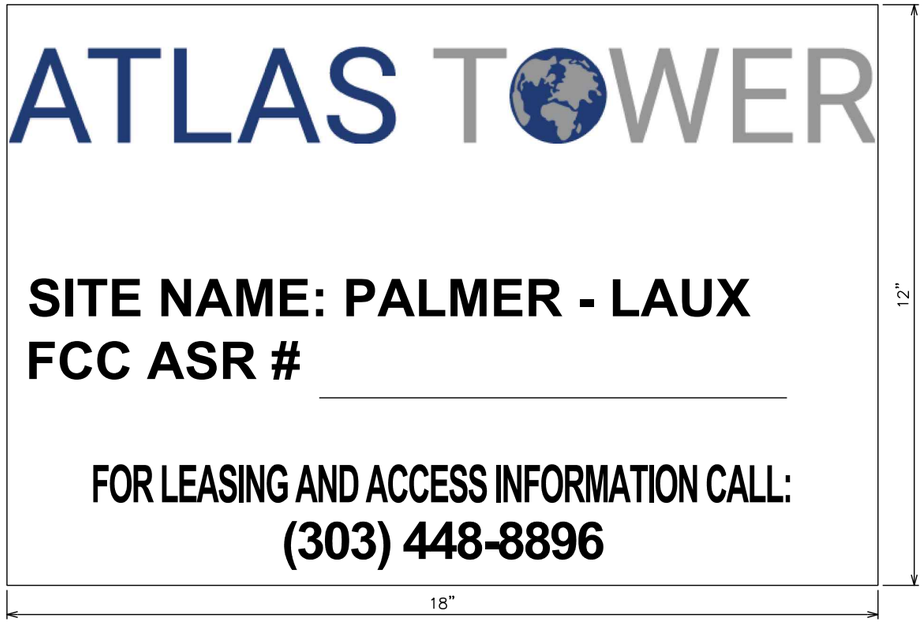
TEP #: 349563.481070

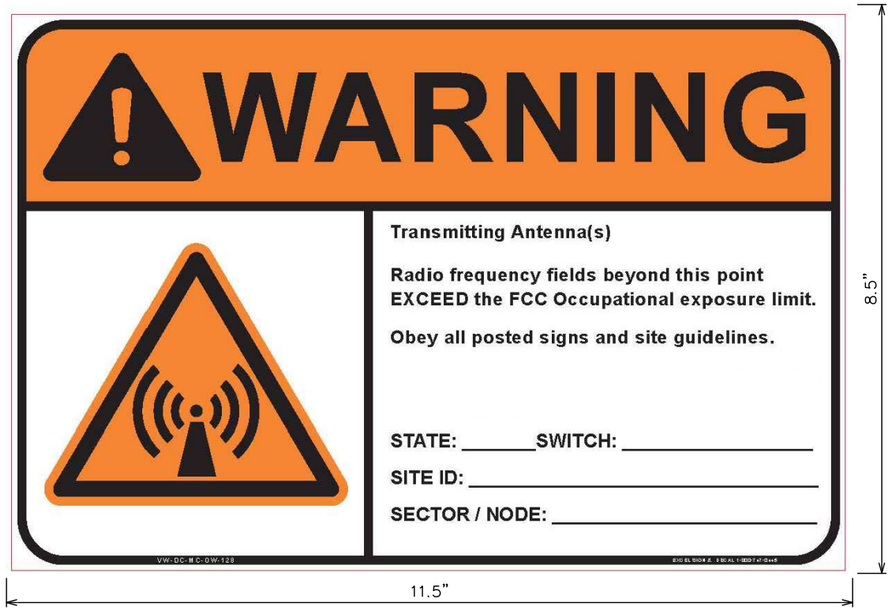
NOTES:

- ALL SIGNS TO BE HUNG ON FENCE USING HOG RINGS OR ALUMINUM FENCE TIES. ZIP TIES OR REBAR WIRE WILL NOT BE ACCEPTABLE
- THE RED WARNING SIGN SHALL BE PLACED ON THE TOWER, IDEALLY AT THE BASE OF THE SAFETY CLIMB.









SIGNAGE DETAILS

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

2500 30TH ST, SUITE 304
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Office: (303) 448-8896

PLANS PREPARED BY:

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SEAL:

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December 1, 2025

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DRAWN BY: RBK | CHECKED BY: KES

SHEET TITLE:

SIGNAGE DETAILS

SHEET NUMBER: **C-7**

REVISION: **5**

TEP#: 349563.481070

ELECTRICAL NOTES:

SCOPE:

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

CODES:

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
   A. THE NATIONAL ELECTRICAL SAFETY CODE
   B. THE NATIONAL ELECTRIC CODE – NFPA–70
   C. REGULATIONS OF THE SERVING UTILITY COMPANY
   D. LOCAL AND STATE AMENDMENTS
   E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)
2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.
3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:

1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

GUARANTEE:

1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
2. THE WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

UTILITY CO-ORDINATION:

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

EXAMINATION OF SITE:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

CUTTING, PATCHING AND EXCAVATION:

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

RACEWAYS / CONDUITS GENERAL:

1. CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE BEFORE INSTALLING CONDUCTORS.
2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

EXTERIOR CONDUIT:

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
2. WHERE INSTALLED ON EXTERIOR STRUCTURES OR EXPOSED TO DAMAGE, THE CONDUIT SHALL BE RIGID STEEL.
3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

INTERIOR CONDUIT:

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT.
2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

CONDUCTORS:

1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
   A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
   B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
   C. CONNECTION FOR #10 AWG #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
   D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP–ON SLEEVES WITH NYLON INSULATOR.
4. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.

UL COMPLIANCE:

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

1. ELECTRICAL NEUTRALS, RACEWAYS AND NON–CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 – "LIGHTNING PROTECTION" AS A MINIMUM.
4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

ABBREVIATIONS AND LEGEND

A	–	AMPERE
AFG	–	ABOVE FINISHED GRADE
ATS	–	AUTOMATIC TRANSFER SWITCH
AWG	–	AMERICAN WIRE GAUGE
BCW	–	BARE COPPER WIRE
BFG	–	BELOW FINISHED GRADE
BKR	–	BREAKER
C	–	CONDUIT
CKT	–	CIRCUIT
DISC	–	DISCONNECT
EGR	–	EXTERNAL GROUND RING
EMT	–	ELECTRIC METALLIC TUBING
FSC	–	FLEXIBLE STEEL CONDUIT
GEN	–	GENERATOR
GPS	–	GLOBAL POSITIONING SYSTEM
GRD	–	GROUND
IGB	–	ISOLATED GROUND BAR
IGR	–	INTERIOR GROUND RING (HALO)
KW	–	KILOWATTS
NEC	–	NATIONAL ELECTRIC CODE
PCS	–	PERSONAL COMMUNICATION SYSTEM
PH	–	PHASE
PNL	–	PANEL
PNLBD	–	PANELBOARD
PVC	–	RIGID NON–METALLIC CONDUIT
RGS	–	RIGID GALVANIZED STEEL CONDUIT
SW	–	SWITCH
TGB	–	TOWER GROUND BAR
UL	–	UNDERWRITERS LABORATORIES
V	–	VOLTAGE
W	–	WATTS
XFMR	–	TRANSFORMER
XMTR	–	TRANSMITTER

----E----	UNDERGROUND ELECTRICAL CONDUIT
----T----	UNDERGROUND TELEPHONE CONDUIT
	KILOWATT–HOUR METER
---------	UNDERGROUND BONDING AND GROUNDING CONDUCTOR.
⌀	GROUND ROD
●	EXOTHERMIC WELD
⊠	GROUND ROD WITH INSPECTION WELL

PROJECT INFORMATION:

PALMER - LAUX

E KNIK RIVER RD
PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

PLANS PREPARED FOR:

ATLAS TOWER

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Office: (303) 448–8896

PLANS PREPARED BY:

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STATE OF ALASKA 49TH
Andrew T. Haldane
No. AELOE 11742
12/1/2025
REGISTERED PROFESSIONAL ENGINEER

December 1, 2025

REV	DATE	ISSUED FOR:
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DRAWN BY: RBK | CHECKED BY: NMC

SHEET TITLE:

ELECTRICAL NOTES

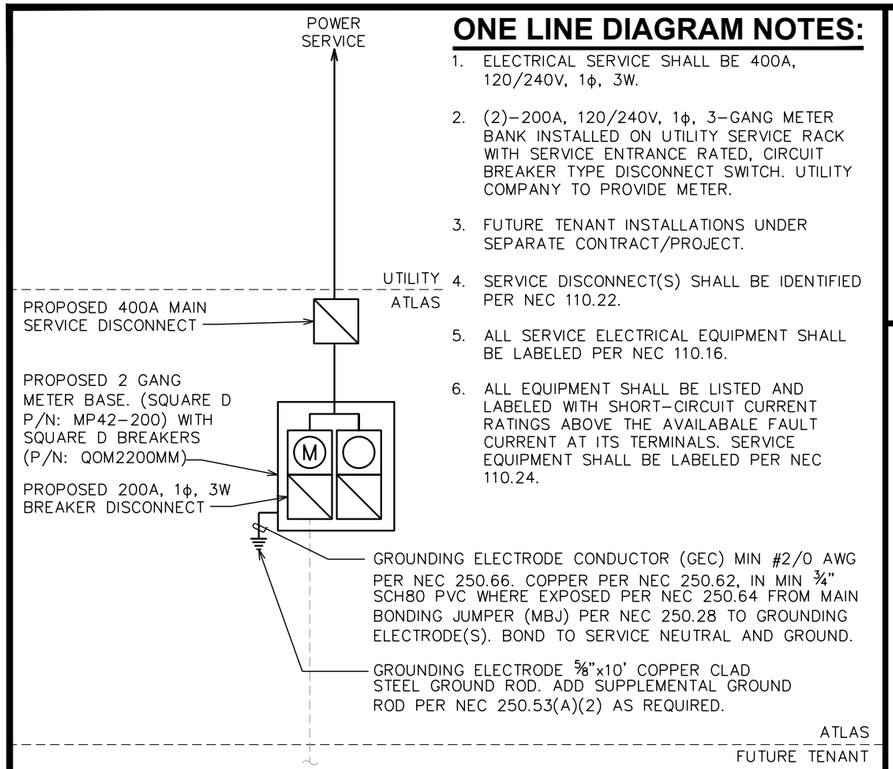
SHEET NUMBER: **E-1**

REVISION: **5**

TEP #: 349563.481070

ONE LINE DIAGRAM NOTES:

1. ELECTRICAL SERVICE SHALL BE 400A, 120/240V, 1ϕ, 3W.
2. (2)–200A, 120/240V, 1ϕ, 3–GANG METER BANK INSTALLED ON UTILITY SERVICE RACK WITH SERVICE ENTRANCE RATED, CIRCUIT BREAKER TYPE DISCONNECT SWITCH. UTILITY COMPANY TO PROVIDE METER.
3. FUTURE TENANT INSTALLATIONS UNDER SEPARATE CONTRACT/PROJECT.
4. SERVICE DISCONNECT(S) SHALL BE IDENTIFIED PER NEC 110.22.
5. ALL SERVICE ELECTRICAL EQUIPMENT SHALL BE LABELED PER NEC 110.16.
6. ALL EQUIPMENT SHALL BE LISTED AND LABELED WITH SHORT–CIRCUIT CURRENT RATINGS ABOVE THE AVAILABALE FAULT CURRENT AT ITS TERMINALS. SERVICE EQUIPMENT SHALL BE LABELED PER NEC 110.24.

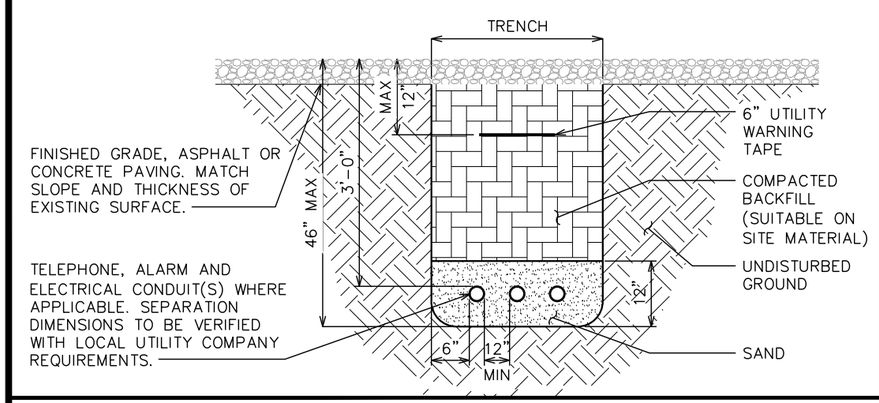


ONE-LINE DETAIL

SCALE: N.T.S.

NOTES:

1. ACTUAL SEPARATION OF CONDUITS TO BE DETERMINED BY SITE SPECIFIC REQUIREMENTS.
2. PROVIDE PVC CONDUIT BELOW GRADE EXCEPT AS NOTED BELOW.
3. PROVIDE RGS CONDUIT AND ELBOWS AT STUB UP LOCATIONS (I.E. SERVICE POLES, EQUIPMENT, ETC.)
4. PROVIDE RGS CONDUIT FOR INSTALLATIONS BELOW PARKING LOTS AND ROADWAYS.

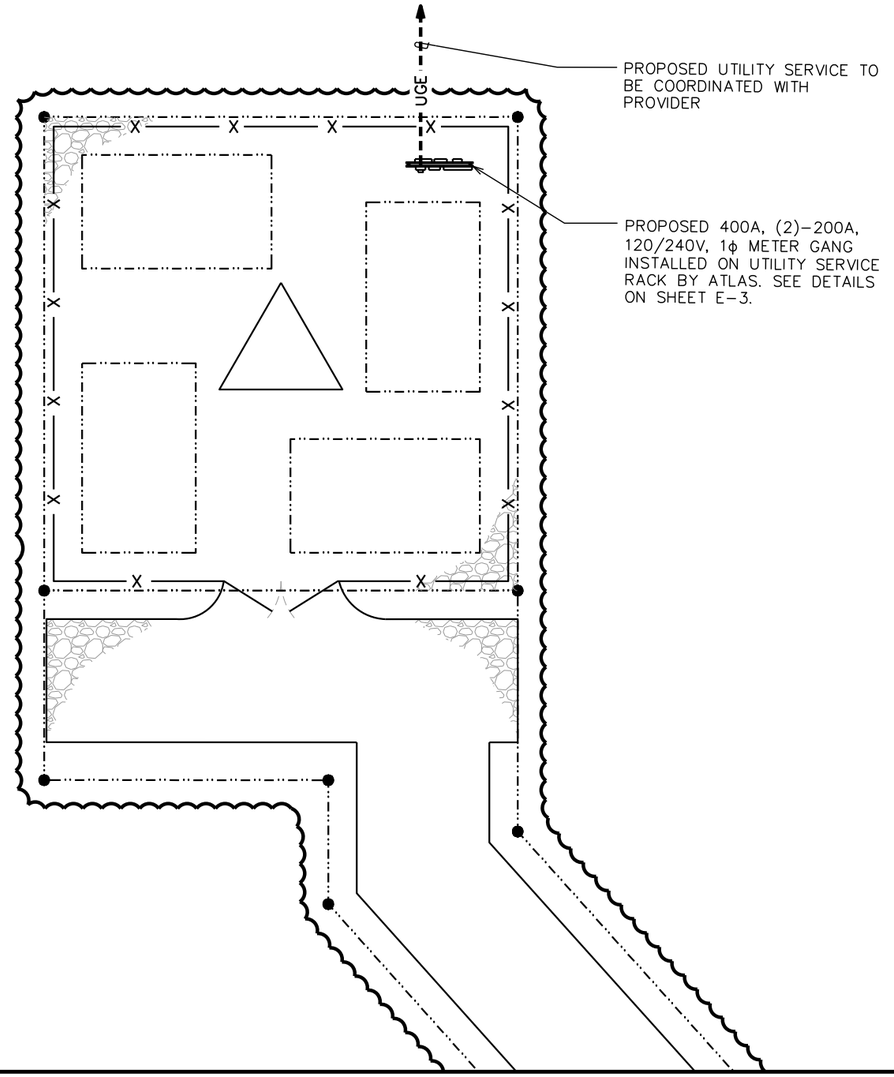


UNDERGROUND CONDUIT(S) TRENCH DETAIL

SCALE: N.T.S.

NOTES:

1. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO TRENCHING. ANY DAMAGE CAUSED TO THE EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
2. ALL CONDUITS SHALL BE INSTALLED PRIOR TO FINISH GRADING, GEOFABRIC, AND STONE INSTALLATION.
3. CONTRACTOR SHALL INSTALL SWEEPS AT ALL CONDUIT DIRECTION CHANGES.



POWER PLAN

SCALE: 1/16" = 1'–0"

0 16 32
SCALE IN FEET

PROJECT INFORMATION:

PALMER - LAUX

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PALMER, AK 99645
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December 1, 2025

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DRAWN BY: KES | CHECKED BY: KES

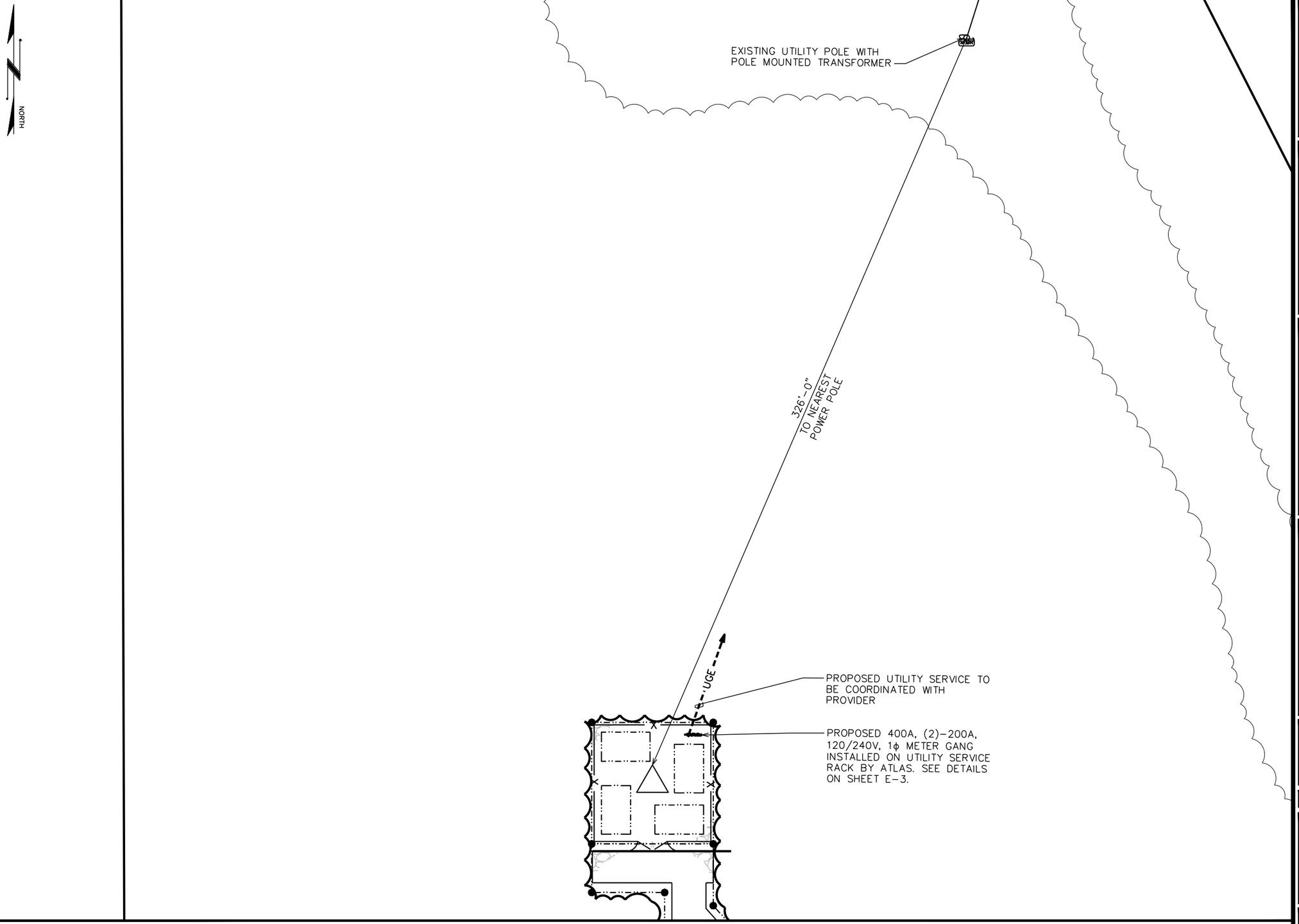
SHEET TITLE:

POWER PLAN AND ONE-LINE DIAGRAM

SHEET NUMBER: **E-2**

REVISION: 5

TEP #: 349563.481070



ENLARGED POWER PLAN

SCALE: 1" = 40'

0 40 80

SCALE IN FEET

PROJECT INFORMATION:

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DRAWN BY: KES CHECKED BY: KES

SHEET TITLE:

EXTENDED POWER PLAN

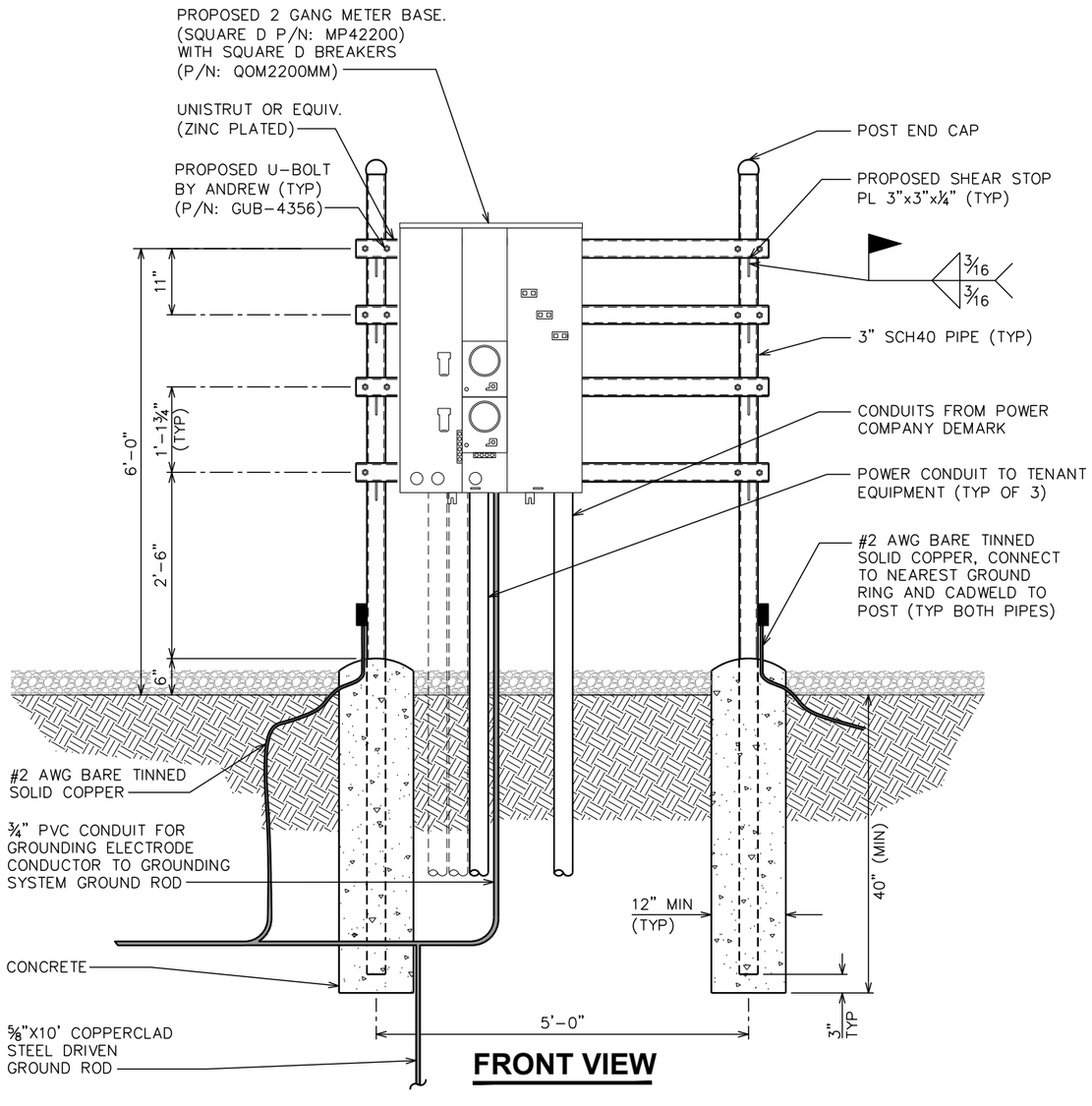
SHEET NUMBER: **E-2A**

REVISION: 5

TEP#: 349563.481070

NOTES:

1. REFER TO THE SITE LAYOUT PLAN FOR THE EXACT LOCATION OF THE H-FRAME.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR METER.
3. UTILITY COMPANY TO PROVIDE AND INSTALL METER SOCKET.
4. CONTRACTOR TO ENSURE METER RACK WORKING SPACES REQUIRED BY THE NEC (ART. 110.26), STATE, OR LOCAL CODES ARE MAINTAINED BOTH ON THE FRONT SIDE AND THE BACK SIDE OF THE H-FRAME PRIOR TO INSTALLATION.
5. SHOW LOCATION (INCLUDING DIMENSIONS) OF ALL CAPPED UNDERGROUND CONDUIT ON FINAL AS-BUILT DRAWINGS SUBMITTED TO OWNER.
6. COORDINATE EXACT LOCATION OF UNDERGROUND FEEDERS AND CIRCUITRY WITH THE OWNER.
7. CONTRACTOR SHALL COORDINATE EFFORTS WITH (LOCAL, ELECTRICAL) AUTHORITY HAVING JURISDICTION (AHJ) AND OTHER TRADES TO DETERMINE "FROST" LINE, AND TYPE(S) OF RACEWAYS REQUIRED FOR INSTALLATION.
8. BOND ALL ELECTRICAL EQUIPMENT TO RACK.
9. DIMENSIONS SHOWN ARE APPROXIMATE AND MAY BE ALTERED IN THE FIELD AS APPROVED BY OWNER TO BETTER SUIT ACTUAL CONDITIONS OR EQUIPMENT RECEIVED.



FRONT VIEW

SERVICE RACK DETAILS

SCALE: ½" = 1'-0"

0 2 4

SCALE IN FEET

PROJECT INFORMATION:

PALMER - LAUX

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DRAWN BY: KES | CHECKED BY: ARB

SHEET TITLE:

SERVICE RACK DETAILS

SHEET NUMBER: **E-3**

REVISION: **5**

TEP#: 349563.481070

DRAWING NOTES:

1. 5/8"x10' COPPER GROUND ROD (TYP).
2. GATE POST BONDING. SEE DETAIL ON THIS SHEET.
3. FENCE GATE BONDING. SEE DETAIL ON THIS SHEET.
4. PROPOSED INSPECTION WELL. SEE DETAIL ON SHEET E-5.
5. PROPOSED TOWER GROUND RING. #2 COPPER CONDUCTOR-BARE TINNED BURIED 30" BFG BY ATLAS TOWER.
6. FENCE POST BOND
7. EXOTHERMIC WELD GROUND CONNECTION. SEE DETAIL ON SHEET E-5.
8. PROPOSED COMPOUND GROUND RING, #2 SOLID BARE TINNED COPPER, 30" BFG BY ATLAS TOWER.

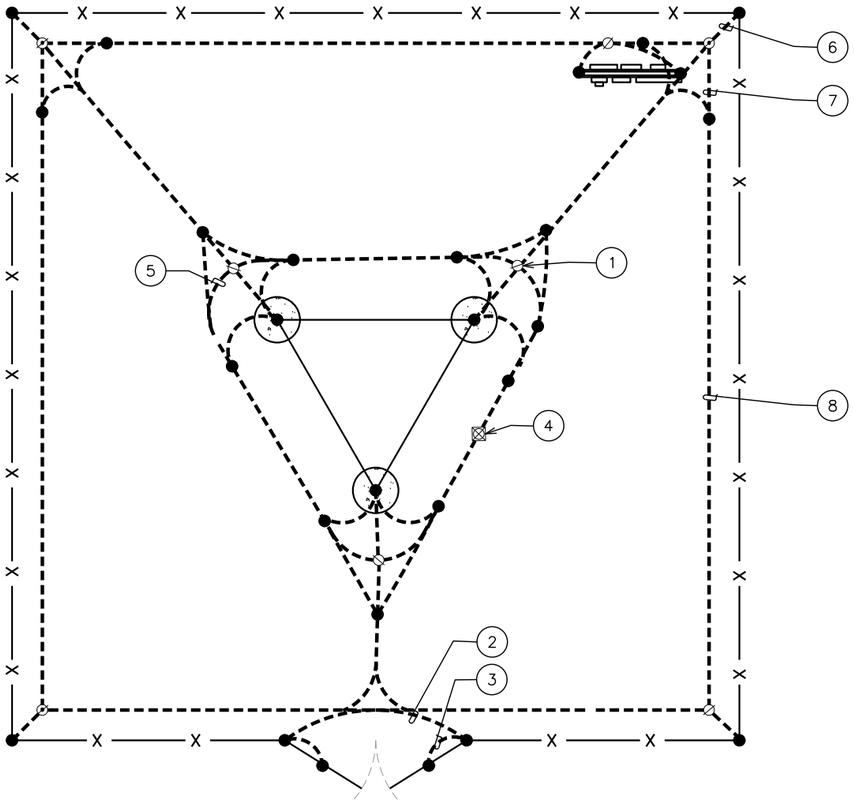
LEGEND

⌀	GROUND ROD
●	EXOTHERMIC WELD
⊠	GROUND ROD WITH INSPECTION WELL

NORTH

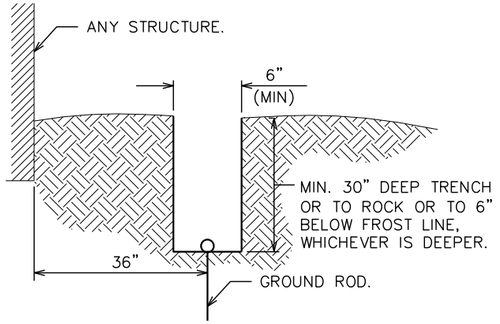
GROUNDING NOTES

1. GROUNDING ELECTRODES SHALL BE CONNECTED IN A RING USING #2 SOLID CONDUCTOR. THE TOP OF THE GROUND RODS AND THE CONDUCTOR SHALL BE 30" (MIN) BELOW FINISHED GRADE. GROUNDING ELECTRODES SHALL BE DRIVEN ON 10'-0" CENTERS. (6'-0" MINIMUM; 16'-0" MAXIMUM)
2. BONDING OF THE GROUNDED CONDUCTOR (NEUTRAL) AND THE GROUNDING CONDUCTOR SHALL BE AT THE SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250.30.
3. ROUND SHELTER TO GROUND RING PER NSTD46 CELL SITE GROUNDING AND LIGHTING PROTECTION, ISSUED 2/1/11.



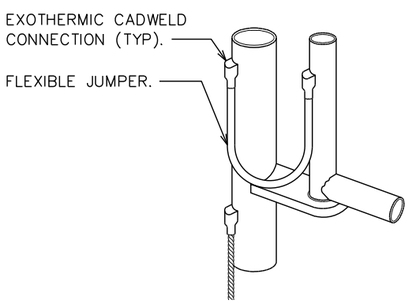
TYPICAL GROUNDING PLAN

SCALE: N.T.S.



TRENCH DETAIL

SCALE: N.T.S.



GROUNDING AT GATE POST

SCALE: N.T.S.

PROJECT INFORMATION:

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DRAWN BY: RBK | CHECKED BY: ARB

SHEET TITLE:

GROUNDING PLAN AND DETAILS

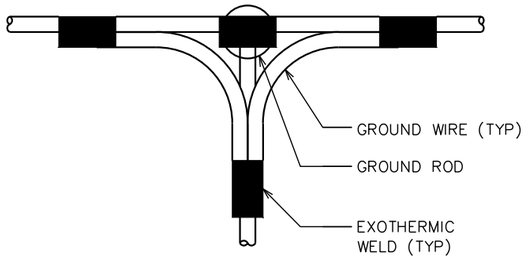
SHEET NUMBER: **E-4**

REVISION: 5

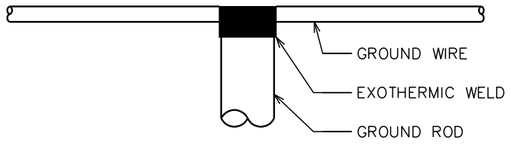
TEP #: 349563.481070

NOTE:

MINIMUM SPACING OF 12" BETWEEN ALL EXOTHERMIC WELDS



TOP VIEW

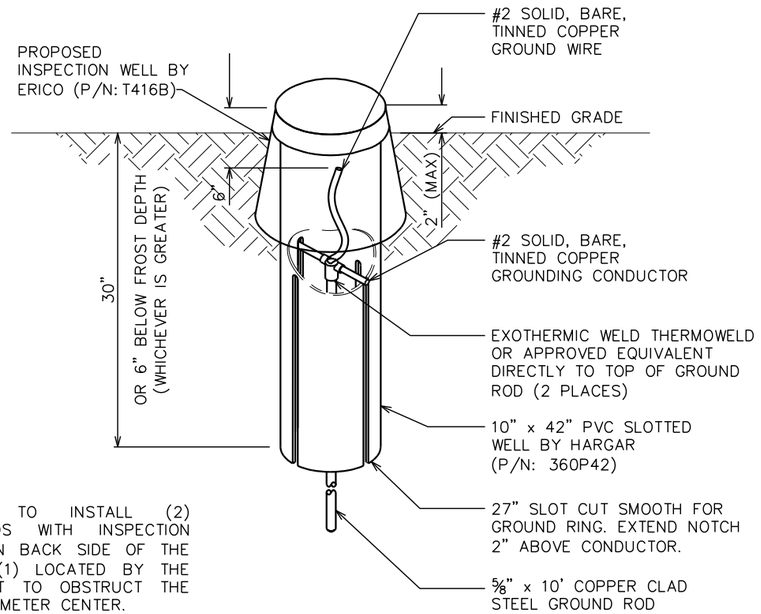


SIDE VIEW

EXOTHERMIC WELD GROUNDING DETAIL

SCALE: N.T.S.

NOT USED

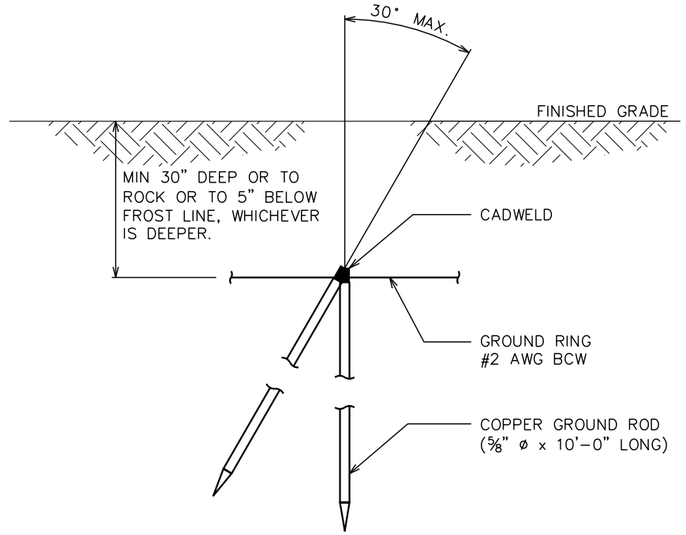


NOTE:

CONTRACTOR TO INSTALL (2) GROUND RODS WITH INSPECTION WELLS. (1) ON BACK SIDE OF THE TOWER AND (1) LOCATED BY THE H-FRAME NOT TO OBSTRUCT THE PATH TO THE METER CENTER.

INSPECTION WELL DETAIL

SCALE: N.T.S.



COPPER-CLAD STEEL GROUND ROD

SCALE: N.T.S.

PROJECT INFORMATION:

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DRAWN BY: AKP CHECKED BY: NMC

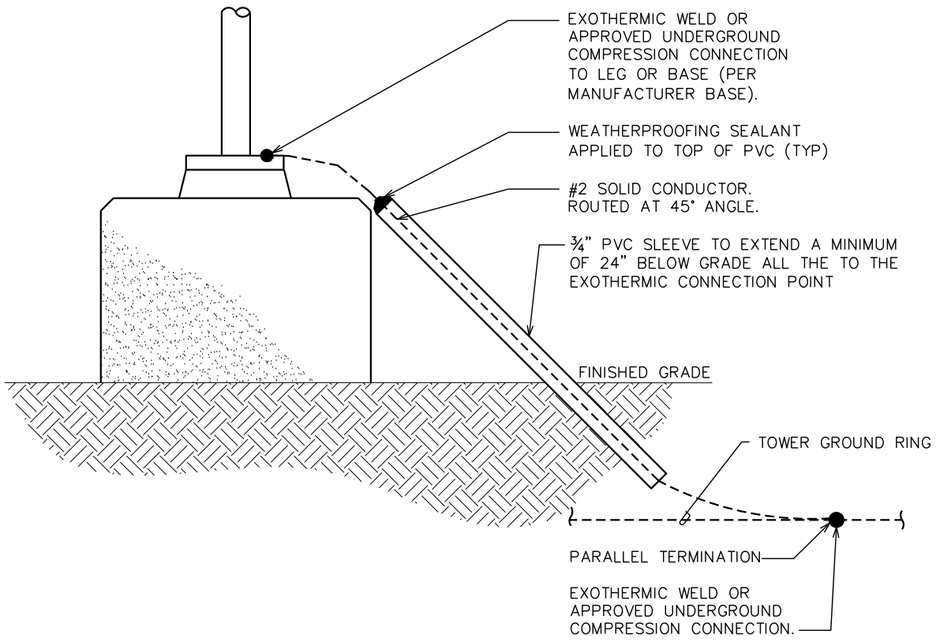
SHEET TITLE:

GROUNDING DETAILS

SHEET NUMBER: **E-5**

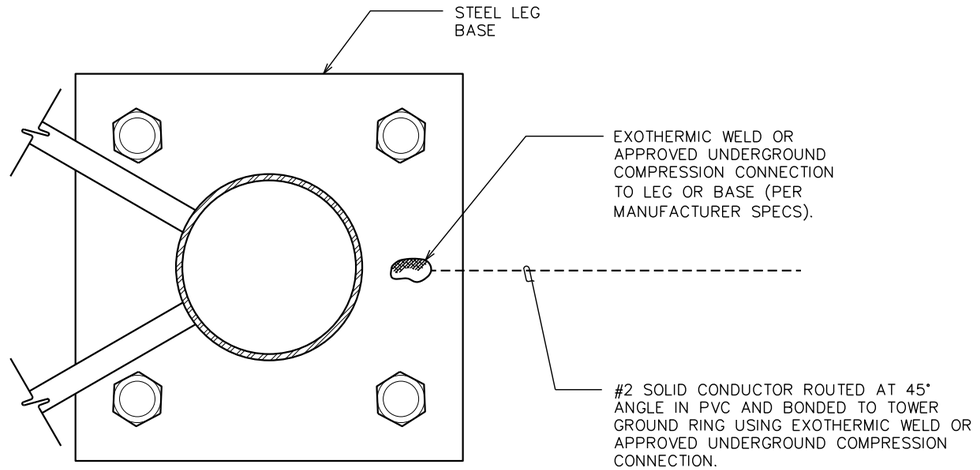
REVISION: **5**

TEP #: 349563.481070



TYPICAL TOWER BASE GROUNDING DETAIL

SCALE: N.T.S.



TYPICAL TOWER GROUNDING

SCALE: N.T.S.

PROJECT INFORMATION:

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PALMER, AK 99645
(MATANUSKA SUSITNA BOROUGH)

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12/1/2025
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DRAWN BY: KES | CHECKED BY: NMC

SHEET TITLE:

TOWER FOUNDATION GROUNDING DETAILS

SHEET NUMBER: **E-6**

REVISION: 5

TEP#: 349563.481070

3. Grantor reserves the right to use the surface of the Easement area for any purpose which does not unreasonably interfere with the easement hereby granted, including but not limited to, the right to grant other easements on, under, over and across the Easement herein granted.

4. The Easement is granted for the express purpose of providing access to the Neighboring Property and accordingly, this Easement shall be perpetual and run with the land and be binding upon and inure to the benefit of the Grantor, its heirs, successors and assigns.

5. ***Notices:*** Wherever in this Agreement it shall be required or permitted that notice or demand be given or served by either party, such notice or demand shall be given or served, and shall not be deemed to have been duly given or served, unless in writing and sent by certified mail, postage prepaid, return receipt requested, addressed as follows:

If to Grantor:

Jeffrey and Winnie Cichosz
P.O. BOX 242554
ANCHORAGE, ALASKA
99524

If to Grantee:

Atlas Tower 1, LLC
2500 30th St, Suite 304
Boulder, CO 80301

All official notice shall be sent via registered mail with delivery confirmation. Such addresses may be changed from time to time by any party serving written notice to the others as above provided.

6. **Compensation for Easement Access**

Payment Structure. In consideration for the Easement granted herein, Grantee shall pay to Grantor the total sum of Twenty-Five Thousand Dollars ($25,000), payable in five (5) equal annual installments of Five Thousand Dollars ($5,000) each ("Annual Payment"). Each Annual Payment shall be due on or before the anniversary of the Effective Date for a period of five (5) consecutive years.

Easement Effective Upon Initial Payment. The Easement rights granted under this Agreement shall not become effective unless and until Grantor has received the first Annual Payment. Upon receipt of the first Annual Payment, the Easement shall be deemed fully effective as of that date.

Failure to Pay; Cure Period. If Grantee fails to timely make any Annual Payment, Grantor shall provide written notice of such non-payment to Grantee. Grantee shall have ninety (90) days from receipt of such notice to cure the non-payment ("Cure Period"). If Grantee fails to cure within the Cure Period, the overdue amount shall accrue interest from the original payment due date at the lesser of (a) ten percent (10%) per annum, or (b) the maximum rate permitted by applicable law, until paid in full.

7. ***Entire Agreement and Modification:*** This Agreement represents the full and complete agreement between the parties regarding the subject matter hereof and the possible sale of the Premises. The terms and conditions of this Agreement merge with and supersede any prior or contemporaneous, oral or written, statements or agreements. This Agreement may only be modified or amended by a written instrument signed by both parties hereto.

8. ***Further Assurances:*** Grantee, at the request of Grantor, shall execute and deliver to Grantor any necessary instruments, agreements, and documents reasonably required by Grantor, and Grantee shall do such other acts as may be reasonably requested by Grantor, all to effect the purposes of this Agreement. Conversely, Grantor, at the request of Grantee, shall execute and deliver to Grantee any necessary instruments, agreements, and documents reasonably required by Grantee, and Grantor shall do such other acts as may be reasonably requested by Grantee, all to effect the purposes of this Agreement.

9. ***Counterpart Agreements:*** This Agreement may be executed in any number of counterparts and shall be binding upon all owners of an interest in the Property who execute the same or a counterpart hereof, whether or not named herein as one of the parties, and whether or not the owners of the aforesaid interest have executed other counterparts or have not entered into this Agreement.

10. ***Construction:*** Paragraph headings in this Agreement are inserted for convenience only, and shall not be considered a part of this Agreement, or used in its interpretation. Unless otherwise provided, or unless the context shall otherwise require, words importing the singular number shall include the plural number, words importing the masculine gender shall include the feminine gender, and vice versa. This Agreement shall not be construed against either party merely or solely because of the draftsmanship hereof.

11. ***Governing Law:*** This Agreement shall be governed by and construed in accordance with the laws of the State of Alaska, without regard to its conflicts of law principles.

12. ***Severance:*** Should any portion of this Agreement be declared invalid and unenforceable, then such portion shall be deemed to be severed from this Agreement and shall not affect the remainder thereof.

13. ***Binding Affect:*** All the terms, conditions, reservations, covenants and restrictions of this Agreement shall survive closing and shall be binding upon and shall inure to the benefit of any previously approved successors and assigns, respectively, of each of the parties hereto.

14. ***Brokers/Agents:*** Grantee and Grantor represent that neither has engaged the services of a broker or agent, and any fees incurred by Grantee and Grantor are to be paid by the respective party.

(signature pages follow)

IN WITNESS WHEREOF, Grantor and Grantee have executed this Agreement in counterparts effective as the date first above written.

GRANTOR:

By: _____
Name: ~~JEFFREY~~ CICHOSZ
Title: OWNER

By: _____
WINNIE CICHOSZ
OWNER

STATE OF ALASKA)
) ss.
CITY AND COUNTY OF Anchorage)

The foregoing instrument was acknowledged before me this 13th **day of** December**, 2025, by** Jeffrey Cichosz**, the** ~~Winnie Cichosz~~ **of Jeffrey and Winnie Cichosz**

_____
Notary Public

State of Alaska
NOTARY PUBLIC
Fua Ueselani
My Commission Expires 02/02/28

Address 115 N. Bragaw St Anchorage, AK 99508

My Commission expires: 02/02/28

GRANTEE:

Atlas Tower 1, LLC

By: _____
Name: Helmundt Strumpher
Title: COO

STATE OF COLORADO)
) ss.
CITY AND COUNTY OF Boulder)

The foregoing instrument was acknowledged before me this 22 **day of** Dec, 2025 **by** Helmundt Strumpher **the** COO **of Atlas Tower 1, LLC, a Colorado limited liability company.**

Jocelyn Gifford
Notary Public

JOCELYN GIFFORD
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20154037235
MY COMMISSION EXPIRES NOVEMBER 19, 2029

Address 2500 30th St, Ste 304
Boulder CO 80301

My Commission expires: Nov. 19, 2029

Return to:
Atlas Tower 2, LLC
2500 30th Street, Suite 304
Boulder, CO 80301

MEMORANDUM OF LEASE AGREEMENT

This Memorandum of Lease evidences a Lease ("Lease") is made upon the date of the last signee, in the recording district of Matanuska-Susitna County, AK, by and between, LAUX PAUL J (the "Landlord"), whose address is 27950 E KNIK RIVER RD PALMER, AK 99645, and Atlas Tower 2, LLC (the "Tenant"), whose address is 2500 30th Street, Suite 304, Boulder, CO 80301, commencing upon the earlier of (1) the election of Tenant by sending Notice of Commencement to Landlord or (2) on the first day of the month following site construction completion (the "Commencement Date"), which shall be confirmed in writing from Tenant to Landlord, for certain real property (the "Premises"), as described in Exhibit 1 attached hereto.

Landlord ratifies, restates and confirms the Lease and hereby grants to Tenant the option to lease the Premises, subject to the terms and conditions of the Lease. The Lease provides for the Lease by the Landlord to Tenant of the Premises for [a/an initial] term of 360 Months with Four 5-year Extensions each, and further provides:

1. Landlord will attorn to any mortgagee of Tenant and will subordinate any Landlord's lien to the liens of Tenant's mortgagees;

2. The Lease restricts Landlord's ability to utilize, or allow the utilization of its adjacent property for the construction, operation and/or maintenance of communications towers and related facilities;

3. The Premises may be used exclusively by Tenant for all legal purposes, including without limitation, erecting, installing, operating and maintaining radio and communications towers, buildings, and equipment;

4. Tenant is entitled to sublease and/or sublicense the Premises, including any communications tower located thereon; and,

5. Under certain circumstances, Tenant has a right of first refusal to acquire the Premises from Landlord.

6. Landlord authorizes Tenant, and any of Tenants agents or representatives, to seek, applies for, and secure any and all permits related to the installation of a wireless communications tower and facility.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK, SIGNATURES BEGIN ON NEXT TWO PAGES]

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

LANDLORD:

LAUX PAUL J

Signature: Paul J Laux

Printed Name: Paul J Laux

Title: Landlord

Date: 5/13/25

State of Alaska
County of Matanuska-Susitna

On this 13th day of May, 2025, before me personally appeared Paul Joshua Laux, to me known (or proved to me on the basis of satisfactory evidence) to be the persons described in and who executed the foregoing instrument and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and Official Seal at office this 13th day of May, 2025.

Notary Public

My Commission Expires: 04/26/26

OFFICIAL SEAL
Jeremiah Mengel
Notary Public-State of Alaska
My Comm. Expires: 04/26/2026

TENANT:

Atlas Tower 2, LLC

Signature: _____

Printed Name: HELMUNDT STRUMPHER

Title: COO

Date: 5/23/2025

State of Colorado
County of Boulder

On this 23rd day of May, 2025, before me personally appeared Helmundt Strumpher, the COO of Atlas Tower 2, LLC, to me known (or proved to me on the basis of satisfactory evidence) to be the persons described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

WITNESS my hand and Official Seal at office this 23rd day of May, 2025.

_____
Notary Public

My Commission Expires:
9/9/29

AARON BUHLE SITHOLE
NOTARY PUBLIC - STATE OF COLORADO
NOTARY ID 20214035824
MY COMMISSION EXPIRES SEP 9, 2025

Exhibit 1

Description of Parent Tract

Real property with parcel number 8274000L001A and an assessor legal description of LAUX 4 LOT 1A.

EXHIBIT 2

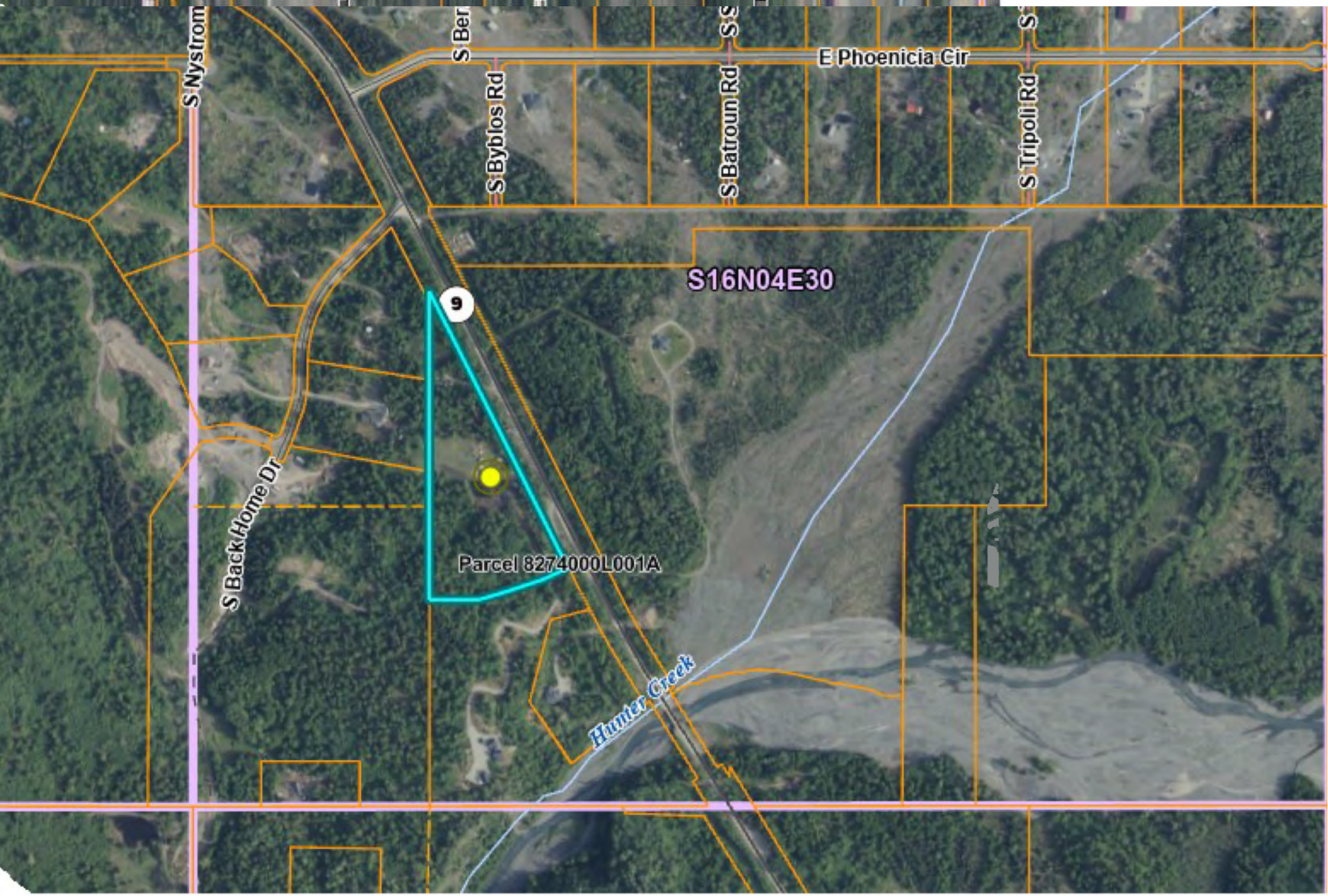
The Premises is depicted/described as follows: (50 feet x 50 feet, measuring 2500 sq. feet.) and will be replaced by a surveyed legal description when available. The Premises may be located anywhere on the Property so long as it is contained within the shaded space depicted below:

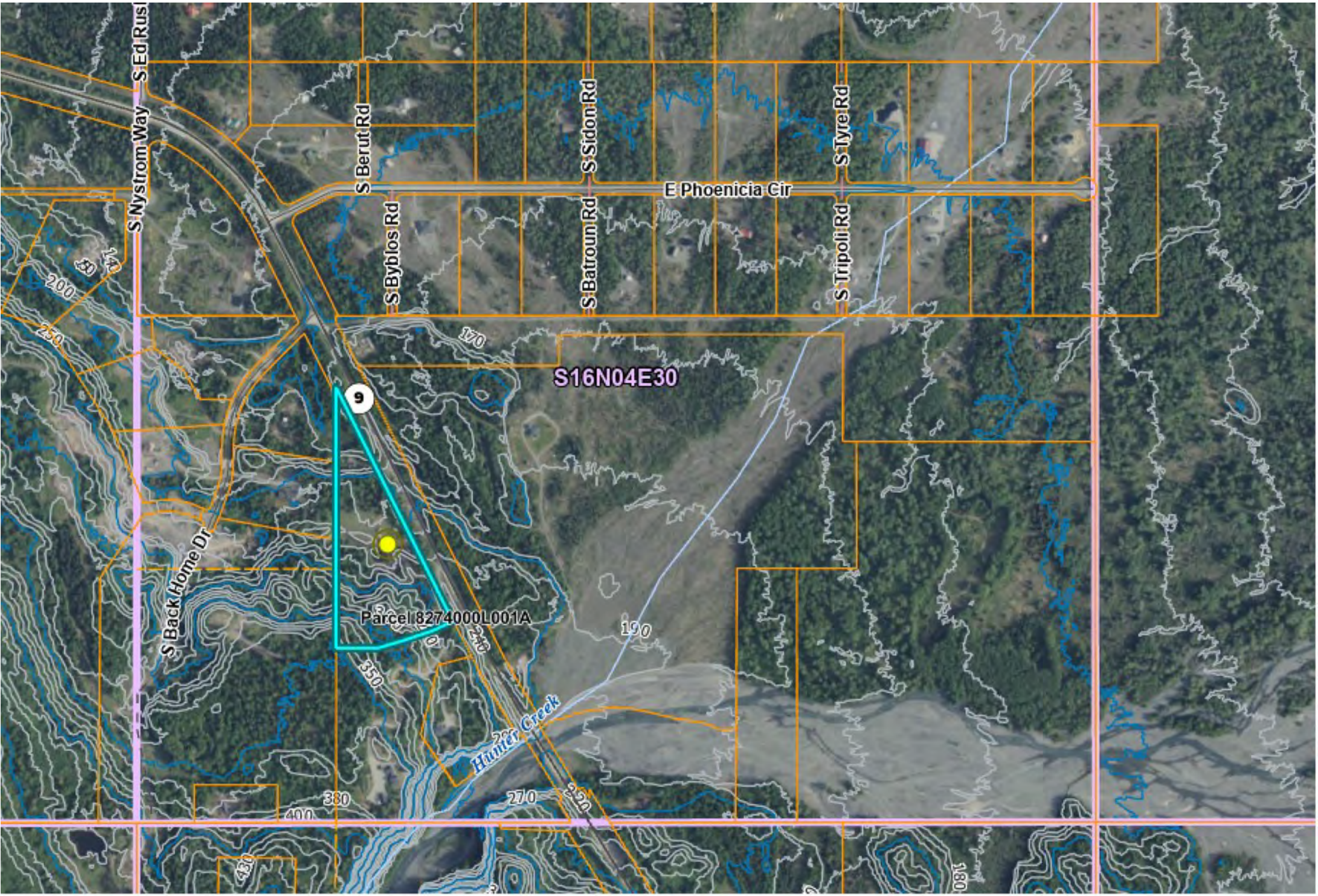
TO BE DETERMINED

Exhibit A ("Tower Site – Access Agreement")

Photos and Maps

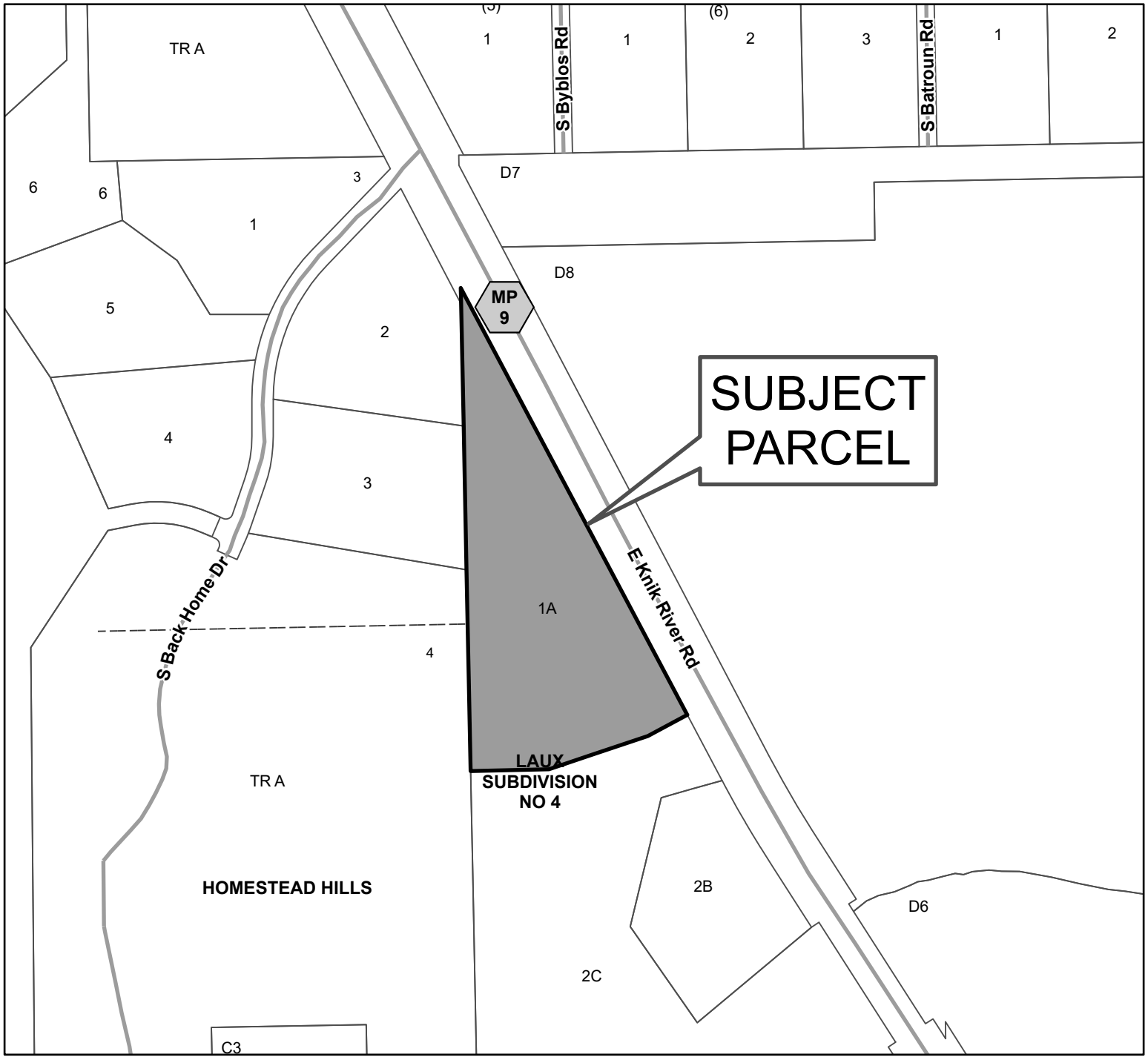

E Knik River Rd
27050


S Nystrom
S Ber
S Byblos Rd
S Batroun Rd
S Tripoli Rd
E Phoenicia Cir
S16N04E30
9
S Back Home Dr
Parcel 8274000L001A
Hunter Creek

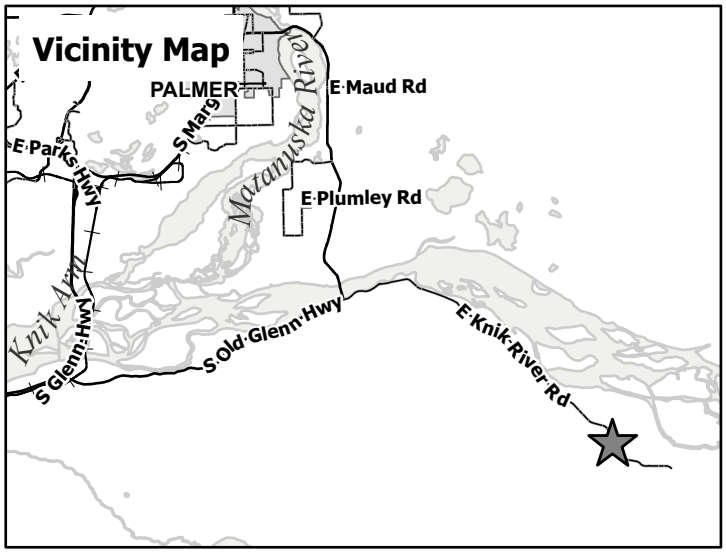

S Ed Rust
S Nystrom Way
S Berut Rd
S Sidon Rd
S Tyre Rd
E Phoenicia Cir
S Byblos Rd
S Batroun Rd
S Tripoli Rd
S16N04E30
9
S Back Home Dr
Parcel 8274000L001A
Hunter Creek
170
200
250
190
350
270
380
400
180


S Back Home
11495
11561
27050
28011
1A
2
3
4
9
D8
E Knik River Rd
30' UTILITY ESMT
Parcel 8274000L001A

Public Notice



8274000L001A

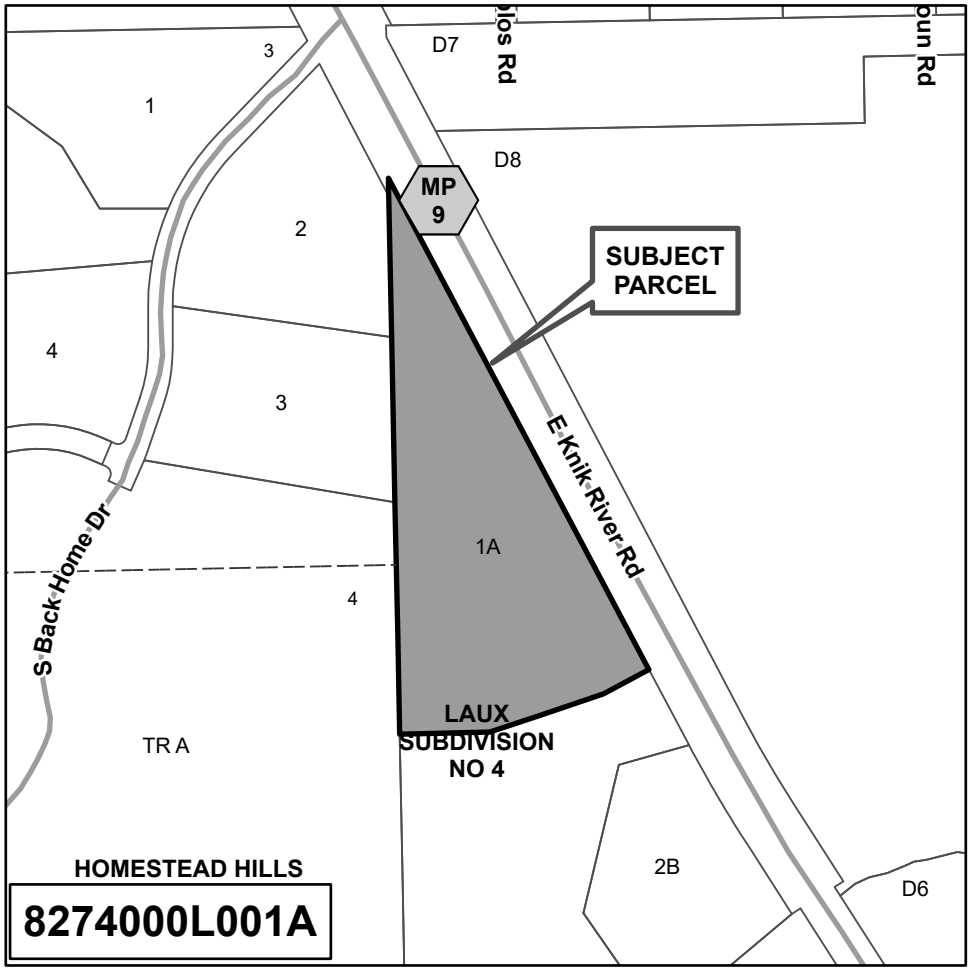


N

This map is for informational purposes only. The Borough makes no express or implied warranties with respect to the character, function, or capabilities of the map or the suitability of the map for any particular purpose beyond those originally intended by the Borough. For information regarding the full disclaimer and policies related to acceptable uses of this map, please contact the Matanuska-Susitna Borough GIS Division at 907-861-7858.

MSB Information Technology/GIS
January 26, 2026

0 1,000 Feet


D7
D8
MP
9
SUBJECT
PARCEL
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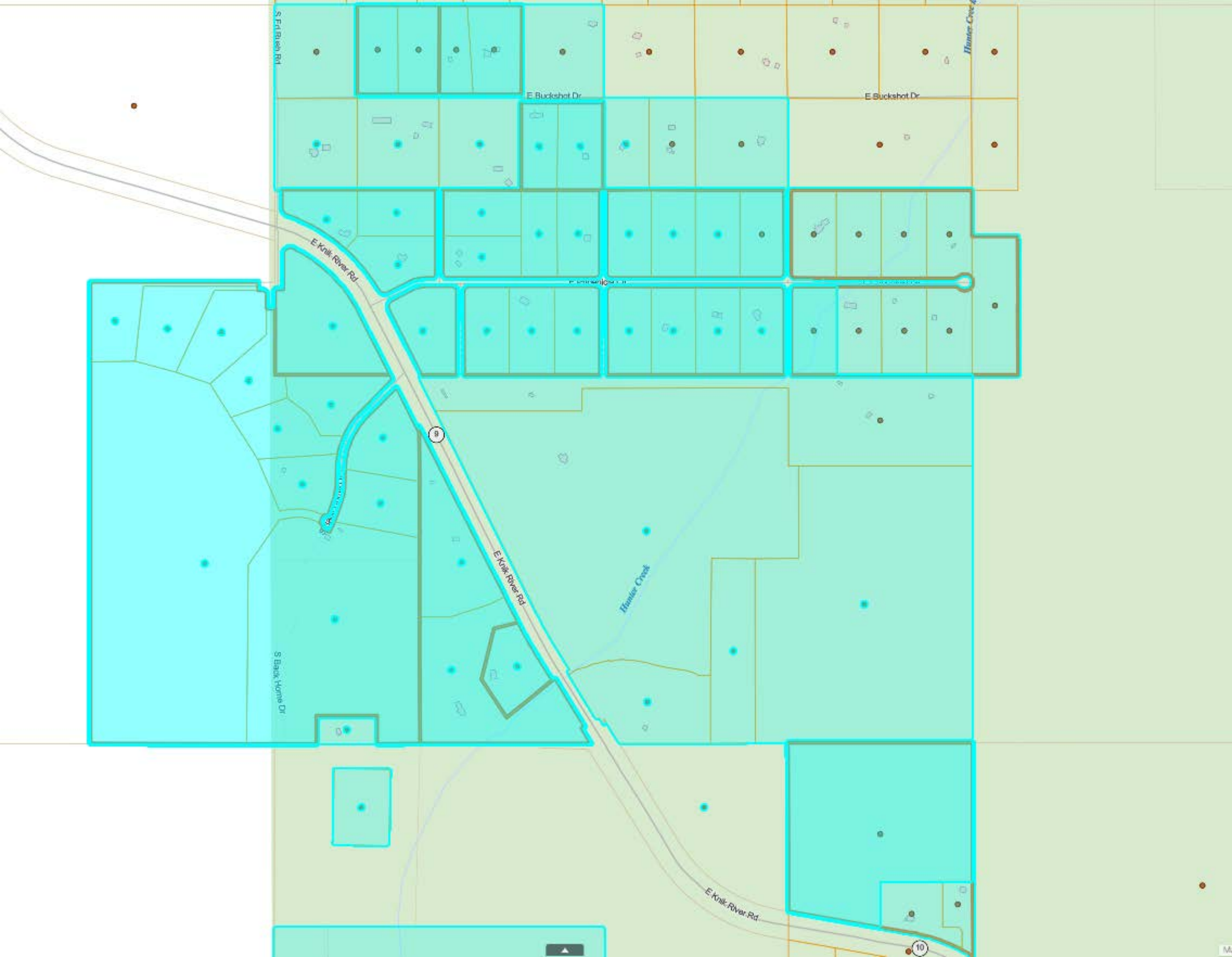
1A
TR A
LAUX
SUBDIVISION
NO 4
2B
D6
E Knik River Rd
S Back Home Dr
HOMESTEAD HILLS
8274000L001A


S Fred Rieth Rd
E Buckshot Dr
E Buckshot Dr
E Knik River Rd
9
E Knik River Rd
Hunter Creek
S Back Home Dr
E Knik River Rd
10

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)

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

US POSTAGE™ PITNEY BOWES
ZIP 99645 $ 013.50⁰
02 7W
0008035337 FEB 06 2026

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: _____

Number of Identical Weight Pieces	Class of Mail	Postage for Each Mailpiece Paid	Number of Pieces to the Pound
51	1st	☐ Verified	45

Total Number of Pounds	Total Postage Paid for Mailpieces	Fee Paid
11lb 1.1oz	37.74	$13.50

Mailed For	Mailed By
Permit Center	Betty Jean Black

USPS PALMER, AK 99645 FEB 6 2026

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)

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:

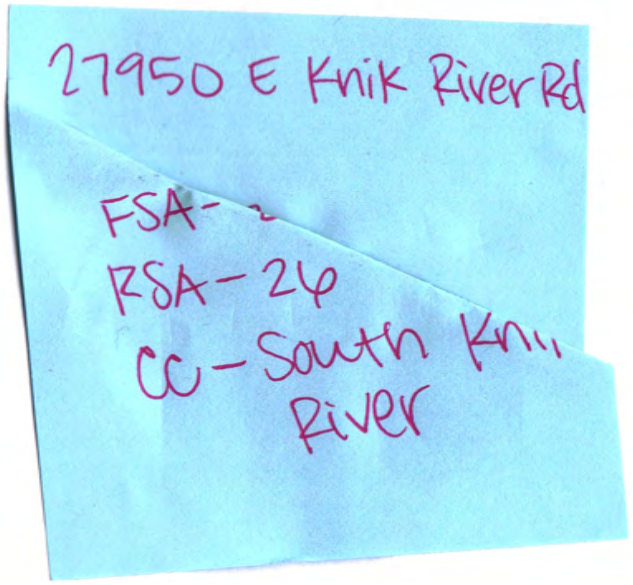
   - When the mailing has fewer than 50 mailpieces *and* less than 50 pounds, present the form and mailing at a retail Post Office™ location.
   - When the mailing has at least 50 mailpieces *or* at least 50 pounds, present the form and mailing at a business mail entry unit (BMEU) or USPS-authorized detached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

#	Owner 1	Owner 2	Mailing Address Line 2	Mailing Address Line 1	Mailing Address City	Mailing Address State	Mailing Address Zipcode
1	APPLEBEE ROBERT E & ANN L			25311 E BUCKSHOT DR	PALMER	AK	99645-8206
2	ARVIDSON KEVIN			11561 S BACK HOME DR	PALMER	AK	99645-9578
3	BAKER ISAAC & ANGELA			28169 E KNIK RIVER RD	PALMER	AK	99645
4	BELLRINGER MARJORIE D	FREITAG JIM L		25655 E BUCKSHOT DR	PALMER	AK	99645
5	BLOOM JONAH & AMY			PO BOX 2046	PALMER	AK	99645
6	BOUSLAUGH RICKY A			PO BOX 203	PALMER	AK	99645
7	BOWERS JOSEPH B & MARGUERITE A			PO BOX 4146	PALMER	AK	99645-4146
8	BRATCHER ELISSA	MCALPINE TRAVIS	%AKA LISA R SOLARI	8753 E ADOBE CIR UNIT 12	PALMER	AK	99645-8355
9	BUNESS DALTON	HUTCHINGS MACKINZIE A	STE 3 PMB 413	1150 S COLONY WAY	PALMER	AK	99645-6972
10	CHIAVETTA CHRISTIAN J			11245 S NYSTROM WAY	PALMER	AK	99645
11	CICHOSZ JEFFREY A & WINNIE S			PO BOX 242554	ANCHORAGE	AK	99524-2554
12	COCKLE MARY ANN			25224 E BUCKSHOT DR	PALMER	AK	99645
13	DADOUN GABRIEL			25487 E BUCKSHOT DR	PALMER	AK	99645-8206
14	DOOLEY IAN S	MEYER ELVINA		11290 S NYSTROM WAY	PALMER	AK	99645-9266
15	EBERHARDT BERNARD J			PO BOX 682	PALMER	AK	99645-0682
16	ELKINS COLTON			27301 E KNIK RIVER RD	PALMER	AK	99645
17	FETTERMAN JAMES C II			25559 E BUCKSHOT DR	PALMER	AK	99645
18	FLOWERS JOHNATHAN W & AMY E			25980 E PHOENICIA CIR	PALMER	AK	99645
19	GAMRADT RAYMOND & KIRSTEN			761 S GULKANA ST	PALMER	AK	99645-6679
20	GEARY DOUG & NANCY			21846 WOOD PL	LEAD	SD	57754
21	GILPIN TYLER W			25920 E PHOENICIA CIR	PALMER	AK	99645
22	GRUBB RYAN & KRISTIN			PO BOX 2697	PALMER	AK	99645
23	HALPIN ROBERT R & KARIN			25530 E PHOENICIA CIR	PALMER	AK	99645
24	HANKINS JOSEPH			26086 E PHOENICIA CIR	PALMER	AK	99645
25	HENRY DONALD J JR& CAROLE			PO BOX 4400	PALMER	AK	99645-4400
26	JOHNSEN KEVIN D			25695 E PHOENICIA CIR	PALMER	AK	99645
27	KADUCE DANIEL B			7711 STEESE HWY	FAIRBANKS	AK	99712-1744
28	KILHEFFER JAMES F & KELLY V			11235 S BERUT RD	PALMER	AK	99645
29	LAUX JAS DORAN KAREN	LAUX PAUL J LAUX ELAINE LILLY RITA L TIL		4469 WILLIAMS VALLEY RD	CLAYTON	WA	99110-9745
30	LAUX PAUL J			27950 E KNIK RIVER RD	PALMER	AK	99645
31	LENA AMIR			9921 CHELATNA CIR	ANCHORAGE	AK	99515
32	LEONARD JOHN			25349 E BUCKSHOT DR	PALMER	AK	96645-8206
33	MOBLEY CHRISTOPHER ROBERT	MOBLEY KAREN LAWSON		11230 S BERUT RD	PALMER	AK	99645-8366
34	NORD AVRAM & JANNICKA			11157 S BERUT RD	PALMER	AK	99645
35	NYSTROM JOHN W & JULIE L			27638 E KNIK RIVER RD	PALMER	AK	99645
36	OSENTOSKI DAN		SPC 416	1200 W DIMOND BLVD	ANCHORAGE	AK	99515
37	PAHNKE LAURIE		PO BOX 117	58 ARMSTRONG CT	UNALASKA	AK	99685-0117
38	PHILLIPS FAMILY TR			PO BOX 2457	PALMER	AK	99645
39	PILGREEN JAMES J & ERIN C		STE 3 PMB 348	1150 S COLONY WAY	PALMER	AK	99645-6972
40	POWELL PAUL TRAVIS			109 W MERCER ST	SEATTLE	WA	98119
41	POWELL PAUL TRAVIS			4585 PRINCETON RD	HAMILTON	OH	45011
42	READ AMY E & READ JANET G	READ JOEL LYNN JR MULLINS LALLIE JILL		28883 E KNIK RIVER RD	PALMER	AK	99645
43	SAYER DENNIS J & KATHLEEN			25690 E BUCKSHOT DR	PALMER	AK	99645
44	SCHENKER ROBERT A	FILE MARCY L		PO BOX 520	PALMER	AK	99645-0520
45	SCHILLINGER MAX A & KRISTINE M			PO BOX 4207	PALMER	AK	99645
46	SIGSWORTH ANNE			25628 E BUCKSHOT DR	PALMER	AK	99645-8207
47	SPREHE BRIAN & MELANIE			11495 S BACK HOME DR	PALMER	AK	99645
48	STARK ROBERT G III & NICOLE A			25480 E BUCKSHOT DR	PALMER	AK	99645
49	WESLOW BRIAN J			PO BOX 4630	PALMER	AK	99645-4630

50	ZIEMKE IRREVOCABLE TR	PO BOX 1411	PALMER	AK	99645
51	SOUTH KNIK RIVER COMMUNITY COUNCIL	17958 E KNIK RIVER RD	PALMER	AK	99645



Becca Skjothaug

From: Jannicka Nord <jannickanord@gmail.com>
Sent: Thursday, February 12, 2026 12:58 PM
To: Becca Skjothaug
Subject: Telecommunications Tower at 27950 E Knik River Rd Tax ID#8274000L001A

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

Avram & Jannicka Nord
11157 S Berut Rd
Palmer, AK 99645
Cedars Block 2 Lot 2

To Whom It May Concern:

We are writing to formally protest the proposed building of a telecommunications tower in our area—27950 E Knik River Road, Tax ID# 8274000L001A. We do not want nor need a telecommunications tower out here. We moved to this area to get away from that. We are deeply concerned about the negative health impacts that these towers inflict upon the surrounding homes, people, and animals. We protest the building of these towers out in nature and request this permit to be denied.

Thank you for your time.

Respectfully,

Avram and Jannicka Nord

Communications

Cc: Natasha Heindel <Natasha.Heindel@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Perfect, thank you for the update!

I also wanted to check on the Talkeetna project and see if there was any feedback on that review? Also I understand if the timing does not allow for it but would that also be able to grouped into the Feb 26th meeting?

Please let me know, thanks!

Best,

Parker

On Mon, Feb 2, 2026 at 10:37 AM Becca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Good morning, Parker,
>
> I was able to schedule a hearing on February 26, at 9:00 am Alaska time. I will be working through the public notice documents today and will send you the details of the meeting tomorrow.
>
> Happy Monday!
>
> ***Becca Skjothaug***
>
> *Current Planner*
>
> Desk Phone (907)861-7862

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Monday, February 2, 2026 6:16 AM
To: Becca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Cc: Natasha Heindel <Natasha.Heindel@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Good morning Becca,

Just wanted to check in this week and see if you had any updates regarding the public hearing dates? Thanks!

Best,

Parker

On Tue, Jan 27, 2026 at 12:25 PM Parker Bingham <pbingham@atlastowers.com> wrote:

> Thank you Becca for the update!
>
> On Tue, Jan 27, 2026 at 12:11 PM Becca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:
>
> > Hi Parker,
> >
> > Just wanted to chime in really quick and give you an update on our end. Public notice documents are ready to be submitted to our local newspaper for Palmer and Willow, I am just waiting on a confirmation from the Planning Director for the public hearing date. Natasha and I planned on doing site visits to all three locations this week, unfortunately we have received about a foot of snow over

the last day, and it continues. Once the roads are safe, we will be doing our site visits. I will keep you posted about the public hearing date for Palmer and Willow.

Becca Skjothaug

Current Planner

Desk Phone (907)861-7862

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Tuesday, January 27, 2026 10:05 AM
To: Natasha Heindel <Natasha.Heindel@matsugov.us>
Cc: Becca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Hi Natasha,

I have uploaded the sealed site drawings to the folder link. Please let me know if that is sufficient to deem the application complete. I have also sent in our driveway permit as requested.

Can you please also provide an update on the Talkeetna application? Thanks!

Best,

Parker

On Tue, Jan 20, 2026 at 1:52 PM Parker Bingham <pbingham@atlastowers.com> wrote:

Thank you very much for the update!

On Tue, Jan 20, 2026 at 1:51 PM Natasha Heindel <Natasha.Heindel@matsugov.us> wrote:

Hi Parker,

Yes the application for the tower on University of Alaska land was received and is being reviewed.

We will have an update to you this week on the status.

Talk to you soon,

Natasha Heindel

Current Planner

Mat-Su Borough Planning Department

350 E. Dahlia Ave. Palmer, Alaska 99645

Desk: (907) 861-8606

Natasha.Heindel@matsugov.us

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Tuesday, January 20, 2026 11:21 AM
To: Becca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Cc: Natasha Heindel <Natasha.Heindel@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Thank you for the update!

We can get the plans certified and I will apply for the driveway permit promptly. I also wanted to check on the status of an additional permit application that was sent 12/12/25 and see if it was received? It is for another communications tower on land owned by the University of Alaska. Please let me know if that is received and in review or if I need to apply online. Thanks!

Best,

Parker

On Tue, Jan 20, 2026 at 10:49 AM Becca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Hi Parker,
>
> Just wanted to reach back out about the Willow tower application. The site plan will need to be certified before the application is considered complete. Also, you will need to apply for a driveway permit through the Borough for access to the parcel from Serenity Drive. The driveway permit can just be applied for and does not have to be issued for the tower application to move to the next phase. Just the site plan certification is holding it up.
>
> Let me know if you have any question.
>
> ***Becca Skjothaug***
>
> *Current Planner*
>
> Desk Phone (907)861-7862
>
> 
>
>
> **From:** Parker Bingham <pbingham@atlastowers.com>
> **Sent:** Tuesday, January 13, 2026 10:27 AM
> **To:** Becca Skjothaug <Rebecca.Skjothaug@matsugov.us>

Cc: Natasha Heindel <Natasha.Heindel@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Hi Becca,

This is great, thanks for letting me know! As a side note regarding the access easement, we are getting that recorded with the state. It has been sent out so should just be a few weeks on that.

Also, I just want to confirm that this is just for the Palmer project on Mr. Laux's property that is moving into public notice. Is the Willow project on Mr. Jonrowe's property also complete and able to move forward or did you still need additional information? Please let me know, and if possible to schedule Palmer and Willow together for one meeting that would be fantastic. Let me know what you think.

Otherwise, I'm more than happy to attend virtually. Would this meeting take place before or after the public notice? Let me know and based on that I can provide you with preferred dates. Thanks!

Best,

Parker

On Tue, Jan 13, 2026 at 12:21 PM Becca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Hi Parker,
>
> I have reviewed all the information provided, and it looks good. I am going to begin the public notice process. This process usually takes around 8-10 weeks to receive a complete permit. Our public administrative meetings are scheduled with the director who is the governing official over this matter. He has a little bit of flexibility when it comes to scheduling a meeting. It is requested that you call into the meeting to represent Atlas, you do not have to be available in person. Is there a date and time that is preferred?

Becca Skjothaug

Current Planner

Desk Phone (907)861-7862

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Tuesday, December 30, 2025 5:45 AM
To: Becca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Cc: Natasha Heindel <Natasha.Heindel@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Good morning Becca,

I hope you had a nice holiday break. Please find the updated Palmer drawings that include the requested measurements. I have also added them to the google drive folder.

Please let me know if you have any questions or need anything else to continue this review. Thank you!

https://drive.google.com/drive/folders/1vdhnEyHKejUvis7qyspORDjnc98T1gLv?usp=sharing

Best,

Parker

On Mon, Dec 22, 2025 at 9:24 AM Parker Bingham <pbingham@atlastowers.com> wrote:

Hi Becca,

Please find the access easement attached below that we have with the neighboring parcel. As shown, we will be utilizing their driveway to access the southern portion of Mr. Laux's parcel. Additionally I have included documentation from the neighbor for the approved access via E Knik river rd. If you need anything else to show this, please let me know. The neighbor is also searching for the actual AK DOT permit but as shown below the plat was approved with the notion that this driveway access was included.

The drawings are still being updated to show the entire parcel and the requested measurements. If you'll be needing anything else for this, please let me know!

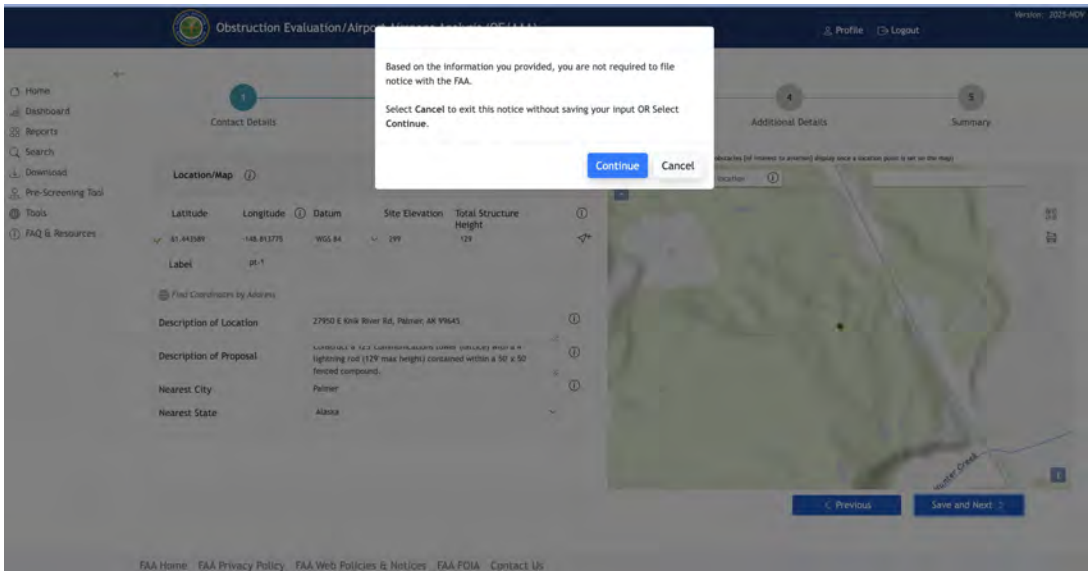
Thank you!

Best,

Parker

On Fri, Dec 12, 2025 at 8:16 AM Parker Bingham <pbingham@atlastowers.com> wrote:

> Hi Becca,
>
> I'll work on getting these updates incorporated, thank you for pointing those out.
>
> In regards to the driveway access, we are obtaining the recorded copy of the private easement we have with the neighboring land owner. We'll also supply the AK DOT permit once I've received that as well.
>
> Regarding the FAA, I have attached below the filing for the new location and it is in review. Additionally, if it helps, I have included a screenshot from the FAA system noting that this location (based on the lat/longs provided) does not require FAA study. But regardless we have filed notice with them and can supply a determination when we receive one.



Ill get everything else prepared for you and sent over when I can. Thank you!

Best,

Parker

On Tue, Dec 9, 2025 at 2:15 PM Becca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Hi Parker,
>
> After reviewing the stamped documents, I have some concerns regarding the materials submitted. Since the initial application, the site plan has changed significantly. While revisions are acceptable, the updated plan no longer meets the application requirements. The revised site plan must address the entire parcel and clearly show distances to all existing structures, utility easements, and the adjacent roadway.
>
> I am also concerned about the proposed access route to the tower location. The access shown appears to cross private property and a private driveway that is not owned by the subject parcel's owner. This is not permissible without a recorded private access easement agreement. In addition, driveway access from Alaska DOT requires proper permitting. I will need documentation confirming that Alaska DOT has approved access from E. Knik River Drive.

Another preliminary concern is the FFA document longitude and latitude do not match the site plan. Please make sure all of the documents have corroborating information for review.

Becca Skjothaug

Current Planner

Desk Phone (907)861-7862

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Monday, December 8, 2025 6:33 AM
To: Becca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Cc: Natasha Heindel <Natasha.Heindel@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Good morning Becca and Natasha,

I wanted to follow up and see if it was possible to get a review date set this month? Please let me know what options we have or the soonest we could do this if you have the required documents. Thank you!

Best,

Parker

On Tue, Dec 2, 2025 at 12:35 PM Parker Bingham <pbingham@atlastowers.com> wrote:

Thank you Becca!

I just recieved Palmer's stamped drawings which I have uploaded to the google folder. Please let me know if it meets your requirements.

Zoning Packets - Atlas Tower

As for Willow, I do also now have the tower drawings and calculations, uploaded to the google folder.

Please let me know if there is anything else you need from me in order to start looking into final reviews and hearing dates.

I know its a tight timeline, but at the request of GCI we would like to get a hearing date set in 2025 so we can be ready to go in 2026. If this is at all possible, potentially with a conditional approval, please let me know as I would be available to make the visit for a hearing this month. Thank you for your understanding on this and hopefully we can get something in, or at the very least in early Jan. Thank you!

Best,

Parker

On Wed, Nov 26, 2025 at 1:15 PM Becca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Hi Parker,
>
> Happy Thanksgiving. I was reviewing the file for the proposed tower in Palmer. The documents look good so far, except the site plan needs to be certified.

As per MSB 17.125.010 a *"certified site plan": means a site plan that is prepared and sealed by an architect, professional engineer, or land surveyor, authorized to engage in that profession by the state of Alaska.*

The site plan submitted is indicated as only preliminary and from a company in Colorado. This will not meet MSB standards.

Please let me know how I can help assist you further.

Becca Skjothaug

Current Planner

Desk Phone (907)861-7862

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Tuesday, November 18, 2025 11:38 AM
To: Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Cc: Natasha Heindel <Natasha.Heindel@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Hi Rebecca and Natasha,

I wanted to check in on these sites, especially Palmer, and see if there was any feedback? If possible we would like to get a zoning hearing date set this year. Can you please advise on this, what you would need, and how that may look? Thank you!

Best,

Parker

On Tue, Nov 4, 2025 at 2:40 PM Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Thank you, Parker. I will look into that tomorrow! Have a great day.
>
> ***Rebecca Skjothaug***
>
> *Current Planner*
>
> Desk Phone (907)861-7862
>
> 
>
>
> **From:** Parker Bingham <pbingham@atlastowers.com>
> **Sent:** Tuesday, November 4, 2025 11:51 AM
> **To:** Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
> **Cc:** Natasha Heindel <Natasha.Heindel@matsugov.us>
> **Subject:** Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039
>
> [**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
>
> Hello Rebecca,
>
> Just wanted to let you know that I have uploaded the latest site plans for Palmer on that link I had shared. I'll let you know once we receive more on these, thanks!
>
> Best,

Parker

On Fri, Oct 24, 2025 at 9:44 AM Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Good morning, Parker,
>
> I apologize for my delay in responding, I was in training this week. As far as the property in Palmer is concerned this will not require any resubmittal of the entire plan. Most of the information would remain the same outside of the specified area that the tower will be located. If the site plans are updated to reflect the approved placement of the tower that would be sufficient.
>
> I will be happy to get with finance today and provide an update regarding the checks. If it is easier, we can invoice you through our EPL website and the application can be paid online. Please let us know if that would be of interest for you.
>
> Happy Friday!
>
> ***Rebecca Skjothaug***
>
> *Current Planner*
>
> Desk Phone (907)861-7862

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Friday, October 24, 2025 6:54 AM
To: Natasha Heindel <Natasha.Heindel@matsugov.us>
Cc: Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Good morning Natasha,

I wanted to further update you on our site developments. We had some conversations with our construction team regarding the viability of the tower placement for the Palmer - Paul Laux site. As of now, we are looking into shifting the placement on Pauls property. We're being cognizant of setbacks in this regard but we are still finalizing that shift and updating our site plans.

At this point we will need to resubmit a bulk of the documents for this site so I wanted to let you know so you don't spend more time on it.

Would you please advise if this would require a resubmittal entirely, or how we should proceed? I was also informed by our finance team that both of the checks for review you received were not cashed yet, so they expired. We will need to resend so please advise if you'd like those now or later. Thanks!

Best,

Parker

On Thu, Oct 16, 2025 at 7:07 PM Natasha Heindel <Natasha.Heindel@matsugov.us> wrote:

> Hi Parker,
>
> Thank you for the updated documents.
>
> We will be in touch as we review the updated materials.
>
> Talk to you soon,

Natasha Heindel

Current Planner

Mat-Su Borough Planning Department

350 E. Dahlia Ave. Palmer, Alaska 99645

Desk: (907) 861-8606

Natasha.Heindel@matsugov.us

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Wednesday, October 15, 2025 7:35 AM
To: Natasha Heindel <Natasha.Heindel@matsugov.us>
Cc: Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Subject: Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

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

Good morning Natasha,

Please use this link to access the files. Also I had thought we had our Willow tower drawings finished but those will still take another week or two.

Zoning Packets - Atlas Tower

I'll let you know once I have added those and any driveway permits. Thanks!

Best,

Parker

On Fri, Oct 10, 2025 at 3:36 PM Natasha Heindel <Natasha.Heindel@matsugov.us> wrote:

> Hello Parker,
>
> Good to hear from you. Thank you for the update, and yes please!
>
> Please send any updated information you have for the proposed towers. If it is indeed just the driveway permit that is outstanding, it's possible that it can be a condition of approval prior to operating.
>
> Once we receive and review the updated materials we can confirm if it is appropriate to move forward with scheduling hearing dates and get something on the books.
>
> Talk to you soon,
>
> Natasha Heindel
>
> Current Planner
>
> Mat-Su Borough Planning Department
>
> 350 E. Dahlia Ave. Palmer, Alaska 99645
>
> Desk: (907) 861-8606
>
> Natasha.Heindel@matsugov.us
>
> ---
>
> **From:** Parker Bingham <pbingham@atlastowers.com>
> **Sent:** Friday, October 10, 2025 8:18 AM
> **To:** Natasha Heindel <Natasha.Heindel@matsugov.us>; Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
> **Subject:** Re: FW: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039
>
> [**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]

Good morning Natasha and Rebecca,

I hope you have been well since we last spoke. I wanted to provide you with some updates on these sites and let you know that we are still pursuing these two permits for the Palmer and Willow towers. I apologize for the long time to get these materials aligned for these, but we are 99% there. We have received our tower drawings and updated plans, as well as addressed the concerns brought up in the RFAI.

At this point, the only item we are lacking are applicable driveway permits. This has been a struggle, as AK DOT is rolling out a new system and the current one has some issues. This has delayed these permits being processed and issued. We are working on getting these, but I wanted to see if it was possible to send along everything else we have on these projects and request that the driveway permits are listed as a conditional requirement before any permit issuance.

Ideally we would like to get these reviewed, pending the driveway permits, and get a date set for the Hearings. In the meantime we will continue to push AK DOT for what we need. I just wanted to see if this was a possibility to keep these moving along. Thanks!

Please let me know if there are any questions!

Best,

Parker

On Tue, Aug 19, 2025 at 11:58 AM Natasha Heindel <Natasha.Heindel@matsugov.us> wrote:

> Hello Parker & Helmundt,
>
> Please see the attached request for outstanding items needed to progress with the tower permit.
>
> The application only indicated Helmundt's email as a contact. In the future, you are welcome to include as many contacts as needed.

Talk to you soon,

Natasha Heindel

Current Planner

Mat-Su Borough Planning Department

350 E. Dahlia Ave. Palmer, Alaska 99645

Desk: (907) 861-8606

Natasha.Heindel@matsugov.us

From: Natasha Heindel
Sent: Wednesday, July 9, 2025 4:40 PM
To: hstrumpher@atlastowers.com
Subject: Request for Additional Information – Atlas for Jonrowe Admin Tower, #TOWER-2025-10039

Hello Helmundt,

Thank you for submitting your recent application for an administrative Tall Structure permit.

Upon initial review, there are some items needing correction prior to application acceptance; please see the attached “Request for Additional Information”.

Please let us know if there are any items we can clarify together.

Talk to you soon,

Natasha Heindel

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Friday, July 25, 2025 9:06 AM
To: Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Subject: Re: Tall Tower Applications - Atlas Tower

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

Hi Rebecca,

Could you please confirm that this was what you found for **29750 E. Knik River Road**, Tax ID #8274000L001A? The Bogard road and creekview drive locations you reference appear as 20 miles away from our site.

Please advise, thank you!

Best,

Parker

On Fri, Jul 25, 2025 at 10:49 AM Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Good morning, Parker.
>
> Thank you for your patience, I wanted to ensure that I was able to obtain the correct information for you. Alaska DOT does require a driveway permit. It is possible that the owner was not provided one when acquiring the property, but it is possible to gather that information by calling 907-269-0700.
>
> After doing some research, there is some extensive upgrades to the Bogard Road and Seward Meridian at the intersection of 3600 E Bogard. From information that I have gathered around our office that driveway could potentially be closed because the intersection will be moved over. It would be worth while to confirming that with ADOT. Here is a link to a brief project description https://dot.alaska.gov/creg/seward-meridian/.

Good news, the property does have a driveway permit that is in process off Creekview Drive. I would suggest indicating in your narrative that the driveway from Creekview will be used instead of Bogard.

Rebecca Skjothaug

Current Planner

Desk Phone (907)861-7862

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Thursday, July 24, 2025 7:35 AM
To: Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Subject: Re: Tall Tower Applications - Atlas Tower

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

Good morning Rebecca,

Were you able to track down any more information on this? Thanks!

Best,

Parker

On Wed, Jul 23, 2025 at 10:10 AM Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Good morning Parker,

I will follow up on this question with someone who has a little more experience in driveway permitting. I can provide an answer by the end of the day!

Rebecca Skjothaug

Current Planner

Desk Phone (907)861-7862

From: Parker Bingham <pbingham@atlastowers.com>
Sent: Tuesday, July 22, 2025 6:24 AM
To: Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
Subject: Re: Tall Tower Applications - Atlas Tower

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

Good morning Rebecca,

I am finalizing on getting you the requested items for the application and had a quick question regarding the driveway permit.

The land owner says that when he bought the property, AK state was the one responsible for installing the existing driveway/approach. They never provided him with a permit, nor told him it would be required. I wanted to check and see if this parcel was perhaps grandfathered in before permitting, or something similar?

Of course, we are happy to get that driveway permit, I just wanted to see if there was any knowledge of exceptions due to state installations. Thank you!

Best,

Parker

On Wed, Jul 9, 2025 at 6:21 PM Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Hi Parker,
>
> My sincere apologies, please refer to the attached document dated 7-9-25. I attached the wrong file before.
>
> Thank you for understanding.
>
> *Rebecca Skjothaug*
>
> *Current Planner*
>
> Desk Phone (907)861-7862
>
> ---
>
> **From:** Parker Bingham <pbingham@atlastowers.com>
> **Sent:** Wednesday, July 9, 2025 12:26 PM
> **To:** Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
> **Subject:** Re: Tall Tower Applications - Atlas Tower
>
> [**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
>
> Sounds good, thanks for the clarification and confirmation!
>
> Best,
>
> Parker

On Wed, Jul 9, 2025 at 9:58 AM Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us> wrote:

> Good morning, Parker,
>
> Thank you for the information regarding the application and not being able to view progress in Civic Access. It is a new system, and we are working through all the IT glitches still. This is very important feedback. To my dislike, the new system will not allow for direct communications to the applicants. At this point we will be communicating directly with you through email. I will be processing **TOWER-2025-010038**, and my colleague Natasha Heindel will be processing the other.
>
> I do have and RFAI for you regarding 27950 E. Knik River Rd; I am going to proofread it one last time and will send the information by lunch today. 😊 Happy to help move process forward.
>
> Thank you,
>
> ***Rebecca Skjothaug***
>
> *Current Planner*
>
> Desk Phone (907)861-7862
>
> **From:** Parker Bingham <pbingham@atlastowers.com>
> **Sent:** Wednesday, July 9, 2025 5:47 AM
> **To:** Rebecca Skjothaug <Rebecca.Skjothaug@matsugov.us>
> **Subject:** Tall Tower Applications - Atlas Tower
>
> [**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
>
> Good morning Rebecca,

My name is Parker with Atlas Tower and I am helping Helmundt out with getting our project through zoning. About two weeks ago, he forwarded me a message from you saying that you had received our application for **27950 E. Knik River Road**. Our permit number is **TOWER-2025-010038.**

I attempted to access our application through the portal, inputting the permit number, but it did not show up. Do we have to wait for the first round of comments before we can view?

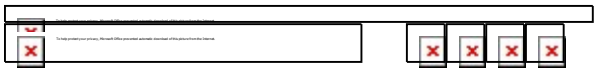
I wanted to also check and see if your office received a second application for a tall structure, for **36596 W Parks Hwy**? They were both mailed out at the same time.

Thanks for checking on this for me, let me know if you have any questions!

Best,

--

Parker Bingham
Project Manager
(916) 505-1017
pbingham@atlastowers.com
www.atlastowers.com
2500 30th St. Ste 304, Boulder, CO 80301



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