

Agenda

Planning Commission - Regular Meeting City and Borough of Juneau

April 14, 2020

Telephonic Meeting Only. (907)713-2140, PID# 813893

7:00 PM

I. ROLL CALL

II. REQUEST FOR AGENDA CHANGES AND APPROVAL OF AGENDA

III. APPROVAL OF MINUTES

- A. February 25, 2020 Draft Minutes, Regular Planning Commission - APPROVED
- B. March 10, 2020 Draft Minutes, Regular Planning Commission - APPROVED
- C. March 10, 2020 Draft Minutes, Planning Commission Committee of the Whole - APPROVED

IV. BRIEF REVIEW OF THE RULES FOR PUBLIC PARTICIPATION

V. WRITTEN AGENCY AND PUBLIC COMMENTS POST DEADLINE

- A. Additional Materials for April 14, 2020 Planning Commission Meeting

VI. PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

VII. ITEMS FOR RECONSIDERATION

VIII. CONSENT AGENDA

- A. USE2019 0022: A Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek - APPROVED WITH CHANGES

IX. UNFINISHED BUSINESS

X. REGULAR AGENDA

- A. USE2020 0002: A Conditional Use Permit for an accessory apartment on an undersized lot - APPROVED WITH CHANGES
- B. PWP2020 0001: Parking waiver for one parking space for an accessory apartment related to USE2020 0002 - APPROVED WITH CHANGES
- C. WCF2019 0009: A Wireless Communication Facility Permit to install new, unlit 150-foot communication tower - APPROVED WITH CHANGES
- D. WCF2019 0010: A Wireless Communication Facility Permit to install new, unlit 150-foot communication tower - APPROVED WITH CHANGES

XI. BOARD OF ADJUSTMENT

XII. OTHER BUSINESS

XIII. STAFF REPORTS

XIV. COMMITTEE REPORTS

XV. LIAISON REPORT

XVI. CONTINUATION OF PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

XVII. PLANNING COMMISSION COMMENTS AND QUESTIONS

XVIII. EXECUTIVE SESSION

XIX. ADJOURNMENT

Agenda
Planning Commission
Regular Meeting
CITY AND BOROUGH OF JUNEAU
Nathaniel Dye, Acting Chairman
February 25, 2020

I. ROLL CALL

Nathaniel Dye, Acting Chairman, called the Regular Meeting of the City and Borough of Juneau (CBJ) Planning Commission (PC), held in the Assembly Chambers of the Municipal Building, to order at 7:00 p.m.

Commissioners present: Nathaniel Dye, Acting Chairman; Paul Voelckers, Clerk; Ken Alper, Dan Hickok, Weston Eiler, Josh Winchell; Michael LeVine (by phone)

Commissioners absent: Travis Arndt, Assistant Clerk;

Staff present: Jill Maclean, CDD Director; Alex Pierce, CDD; Laurel Christian, CDD; Tim Felstead, CDD; Allison Eddins, CDD; Emily Wright, Law

Assembly members: Greg Smith

II. REQUEST FOR AGENDA CHANGES AND APPROVAL OF AGENDA - None

III. APPROVAL OF MINUTES

A. January 28, 2020 Draft Minutes – Regular Planning Commission Meeting

MOTION: *by Mr. Alper to approve the Planning Commission January 28, 2020, Regular meeting minutes.*

The motion passed with no objection.

IV. BRIEF REVIEW OF THE RULES FOR PUBLIC PARTICIPATION - Mr. Dye explained to the audience the rules of public testimony

V. PUBLIC PARTICIPATION ON NON-AGENDA ITEMS - None

VI. ITEMS FOR RECONSIDERATION - None

VII. CONSENT AGENDA

SMP2019 0003: A preliminary plat approval for a phased major subdivision creating fourteen (14) lots and one (1) large tract (15 lots total)
Applicant: Bicknell Inc.
Location: Yandukin Drive

MOTION: *by Mr. Winchell to move SMP2019 0003 to the Regular Agenda.*

The motion passed with no objection and SMP2019 0003 moved as the new Item A.

USE2020 0001: A Conditional Use Permit for a new campus building at UAS
Applicant: NorthWind Architects, LLC
Location: 11305 Glacier Highway

Commissioner Eiler declared a substantial conflict of interest with USE2020 0001 as his day job is government relations for the University of Alaska system.

Staff Recommendation

It is recommended that the Planning Commission adopt the Director's analysis and findings and grant the requested Conditional Use permit. The permit would allow the development of a new campus building at the University of Alaska Southeast campus.

The approval is subject to the following conditions:

1. CBJ-approved signage shall be posted for the accessible parking space prior to commencement of the proposed use.
2. Wheel stops or striping shall be placed in the parking lot to define the location of parking spaces prior to commencement of the proposed use.
3. All pavement markings, including directional arrows, parking space stripes, and other markings shown on the project site plan shall be applied to the parking and circulation area as shown on the site plan in a medium designed for such purposes prior to the issuance of a Certificate of Occupancy.
4. A shared parking agreement must be approved by the CBJ Community Development Department and CBJ Law Department, and must be recorded in the State Recorder's Office prior to issuance of a building permit for the proposed structure. The parking agreement must clearly state that it may be nullified only when the CBJ Community Development Department Director has approved the nullification of the agreement on an instrument that is recorded with the State Recorder's Office.
5. Prior to issuance of a building permit the developer shall submit to the CBJ Engineering Department, a detailed drainage plan which includes provisions for managing storm water run-off during construction and which details the drainage facilities to be included as part of the development. No building permit shall be issued until such plans are deemed adequate and

- approved by the CBJ Engineering Department.
6. Prior to the issuance of a building permit, the applicant shall submit a revised site plan showing snow storage location(s).
 7. Prior to issuance of a building permit, the applicant shall submit a lighting plan illustrating the location and type of exterior lighting proposed for the development. Exterior lighting shall be designed and located to minimize offsite glare. Approval of the plan shall at the discretion of the Community Development Department, according to the requirements of CBJ 49.40.230(d).
 8. Prior to the issuance of a Temporary Certificate of Occupancy for the proposed structure, the applicant shall dedicate a public pedestrian access easement to the mouth of Auke Creek. When a viable alternative access is provided, the easement across the University property could be vacated. A floating easement could be used with route determined by UAS.

MOTION: *by Mr. Voelckers to adopt USE2020 0001* and approve it with Directors analysis and findings.

The motion passed with no objection

VIII. UNFINISHED BUSINESS - None

IX. REGULAR AGENDA

- A. **SMP2019 0003:** A preliminary plat approval for a phased major subdivision creating fourteen (14) lots and one (1) large tract (15 lots total)

Applicant: Bicknell Inc.
Location: Yandukin Drive

Staff Recommendation

Staff recommends that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the Preliminary Plat for Honsinger Pond Subdivision Phase 1. This approval would allow the applicant to submit for the Final Plat Application. The approval is subject to the following conditions:

1. Prior to approval of the final plat, Certification from the CBJ Treasurer is required showing that all real property taxes and special assessments levied against the property for the year of recording have been paid.
2. Prior to approval of a final plat, the applicant shall submit a complete set of construction plans for all required improvements to the Community Development Department for review by the director of Engineering & Public Works for compliance with CBJ 49.35.140.
3. Prior to approval of the final plat, the applicant has constructed all required improvements or provided a financial guarantee in accordance with CBJ 49.55.010.
4. The developer shall utilize Best Management Practices to treat or reduce any harmful particulates that may arise from the development.

5. The developer shall utilize Best Management Practices for storm water runoff to prevent sediment run-off from construction activities into neighboring waterbodies.
6. The developer shall submit a final drainage plan to be approved by CBJ Engineering & Public Works prior to final plat approval. This drainage plan must be signed and stamped by an Alaskan licensed engineer in accordance with CBJ 49.35.510.
7. Prior to construction plan approval, the applicant shall submit a lighting plan meeting applicable CBJ standards.
8. Prior to final plat approval, the Memorandum of Agreement for the USS 3800 Accretions, which demonstrates that publically maintained access is provided to the subject property, shall be signed by all applicable parties and a fully executed copy must be provided to the Community Development Department.

Laurel Christian, CDD Planner gave a brief presentation explaining **SMP2019 0003** and CDD recommendations.

QUESTIONS FOR STAFF:

Mr. Levine had questions regarding the current status of the memorandum of agreement (MOA) negotiations and what would happen if the MOA was not able to be negotiated. Ms. Christian explained the MOA is currently under review at CBJ.

Mr. Levine additionally wondered why the Commission is reviewing the preliminary plat now rather than waiting until the final MOA is completed. Ms. Maclean explained that there is currently not publically maintained access to the subdivision. The MOA states the access to the subdivision will be publicly maintained in accordance with 49.35.

Mr. Alper had questions about the pond in the subdivision. Ms. Christian explained that it will be filled. Ms. Pierce explained that further questions about the pond area would be better answered by the applicant.

There was discussion concerning Mapleston Way and why the applicant would be building a new road for access rather than using Mapleston Way. It was explained that Mapleston Way is not a CBJ right of way and would require an agreement from the airport and FAA for use of the property. Prior attempts to get access have been unsuccessful.

There were concerns regarding impacts to traffic and to safety with the two roads near to each other.

APPLICANT PRESENTATION:

Mark Pusich, representing PDC Engineers and Spike Bicknell, Applicant came forward to discuss the Permit and answer Commission questions.

Mr. Pusich explained the plans to fill the pond and discussed the right of way issues with Mapleston Way. He added that their access road would improve safety and that it allows for an acceleration lane.

The expected clientele and businesses would include boat condos and businesses but no contracts have

been signed as of yet.

Mr. Dye noticed it appears pedestrian flow appears to go to where there is no pedestrian access towards Egan Drive. Mr. Pusich explained there is no pedestrian link in either direction (east or west). They may alter the sidewalk slightly by the time the plat is finalized. The sidewalk is currently on the east side due to the placement of utilities in the area.

Mr. Voelckers had questions about the electrical service to the subdivision. Mr. Pusich explained their electrical engineer is working on that and would be responsible for any permits as needed as they come up.

PUBLIC TESTIMONY:

- **Michael Schuler 1705 Willow Dr**

Mr. Schuler works as Property Management Officer for DOTPF, South Coast Region, and is available for questions.

Mr. Voelckers asked about DOTPF's position regarding Mapleston Way. Mr. Schuler explained Mapleston is the preferred access but the airport will not allow it. Without Mapleston, the new road is required.

QUESTIONS FOR APPLICANT – NONE

ADDITIONAL QUESTIONS FOR STAFF

Mr. Voelckers asked for clarification of the traffic question and the process when there is a subdivision and then incremental increases to that subdivision. At what point would it become a major change?

Ms. Maclean explained CBJ is limited in what they can require stating they cannot require an applicant to install a traffic light on DOT property. It was noted for the record that the commission has a persistent desire to consider areas holistically rather than incrementally.

Mr. Levine wondered if there was a situation in which another access could be required or if Mapleston Way could be required to be used. Ms. Maclean answered that CBJ cannot require the use of Mapleston Way and if the applicant is refused access to their property then it would be deemed a taking by CBJ.

MOTION: *by Mr. Voelckers to adopt SMP2019 0003* and APPROVE it with Directors analysis and findings.

MOTION: *by Mr. Winchell to the amend condition 6 to change the verbiage from "This drainage plan must be signed and stamped by an Alaskan engineer" to "This drainage plan must be prepared by an Alaskan licensed engineer and approved by the director of engineering and public works ..."*

The motion to amend passed with no objection

MOTION: *by Mr. Voelckers to adopt SMP2019 0003* as amended and APPROVE it with Directors analysis and findings.

The motion passed with no objection

Recess 8:14 to 8:22

- B. **CSP2020 0001:** Reconstruction of Capital Avenue from W. Willoughby Avenue to W. 9th Avenue, to include addition of sidewalk, reduction to one traffic lane with a south-to-north traffic flow, and intersection improvements

Applicant: City & Borough of Juneau

Location: Capital Avenue from W. Willoughby Avenue to W. 9th Avenue

Staff Recommendation

Staff recommends that the Planning Commission adopt the above analysis and findings, and recommend to the Assembly the reconstruction of Capital Avenue from Willoughby Avenue to West Ninth Street.

Staff presentation

Alex Pierce, CDD Planner gave a brief presentation explaining **CSP2020 0001** and CDD recommendations.

Capital Avenue is currently a two-way street running in north to south direction. **CSP2020 0001** proposed to change it to a one-way street with a sidewalk. Capital Avenue is a poorly lit narrow drive, with poor drainage, poor road conditions, ending in a blind corner with Willoughby Avenue on one end and a four-way stop at the West Ninth Street intersection on the other end.

QUESTIONS FOR STAFF:

Mr. Alper inquired as to why the proposal was for Northbound rather than a Southbound one-way and asked which direction was more supported in the public comments received. Ms. Pierce explained the public comments mostly supported the northbound direction and Ms. Maclean added that given the two choices, the southbound terminus with Willoughby Avenue is a blind corner and is the more dangerous option for vehicles as well as pedestrians.

QUESTIONS FOR APPLICANT:

Alan Steffert – CBJ Engineering came forward to answer any questions.

Mr. Voelckers asked if there is any place for on street parking. Mr. Steffert said it is possible they may move one of the AELP fences back a bit and be able to add some parking spaces but it will require easements from AELP.

Further discussion centered on the northbound versus southbound options and how northbound came to be the preferred route.

PUBLIC TESTIMONY

- **ROBERT ROYS -315 W 11TH**

Mr. Roys spoke in support of the preferred alternative. He uses this road as a car driver, a biker and as a pedestrian. He added he would like to see a Totem Pole added along the route somewhere.

Mr. Winchell asked when Mr. Roys notices the most traffic and in which direction does it flow? What does he use that route for and at what times? Mr. Roys said he uses it mostly during lunch time to go to and from Foodland. He also travels it late night. He says it gets traffic (vehicle and pedestrian) at all hours.

- **Robert Mell – 850 BASIN ROAD**

Mr. Mell spoke in favor of maintaining the corridor as a two-way road. He spoke against adding a sidewalk stating sidewalks will make the road more narrow and in winter when snowed on, sidewalks are not maintained regularly. When sidewalks are blocked with snow, pedestrians will walk in the road anyway. He agreed that adding a rain gutter would be an improvement and stated installing a larger mirror at the Willoughby intersection would be helpful.

- **KAY MELL – 850 BASIN ROAD**

Ms. Mell also spoke in favor of maintaining the corridor as a two-way road. She believes the narrow road promotes watchfulness, courtesy, and respect and it slows traffic. In her opinion, Capital Avenue should remain a two-way one-lane road. She said sidewalks are a nice idea but if they are not cleared, pedestrians are forced to walk in the street.

- **ROB CADMUS 809 B STREET**

Mr. Cadmus thanked Alan Steffert and the contractor for their efforts to inform the public of this project by contacting residents and running the public meeting. He supports the planned northbound one way with sidewalk.

Mr. Winchell asked Mr. Cadmus for his opinion on how to encourage use of 8th Avenue. Mr. Cadmus said right now it is uninviting and rather scary looking. Adding greenery, lighting and a pedestrian walking area would all be helpful.

- **KATE GLOVER – 809 B STREET**

Ms. Glover strongly supports the proposal. She particularly supports the proposed lighting improvements and moving the crossing to the lighted area.

- **Peter Metcalfe – 354 DISTIN**

Mr. Metcalfe spoke in support of the plan. He supports the planned lighting, sidewalk, and one-way flow of traffic but would prefer it flow southbound because of the complexities of making a left turn at the 9th Street intersection. He also feel strongly that the 4-way stop remains in place.

- **STAN LEE – 361 Destin Avenue**

Mr. Lee owns the property but does not reside there. He agrees that the road should be one way and stated that while they do travel it southbound more than northbound, the direction of traffic on the one-way ultimately is not important to him. He feels the sidewalks and lighting are very important. He pointed out that this road is highly utilized as part of a tourist walking tour in the summer. He would like to see a retaining wall on the uphill side as well as some landscaping. He added he does not support adding parking spaces as it attracts abandoned vehicles.

Mr. Steffert came up to speak to the comments. He added that CBJ plans to be moving the downtown transit hub from the federal building. area to the SLAM in the near future.

Mr. Levine thanked CBJ staff and public testifiers for taking the time and putting in the efforts to bring this project forward.

MOTION: *by Mr. Levine to adopt CSP2020 0001* and APPROVE it with Directors analysis and findings.

Mr. Eiler objected. Mr. Alper objected stating he would prefer the southbound option.

ROLL CALL VOTE:

YES - Hickok, Alper, Winchell, Voelckers, Levine, Dye

NO - Eiler

The motion passed

Recess 9:17-9:23

Mr. Voelckers left during the recess due to illness

C. **CSP2019 0012:** Planning Commission recommendations for FY2021-2026 Capital Improvement Program

Applicant: City & Borough of Juneau

Location: Borough-wide

Staff Recommendation

It is recommended that the Planning Commission report to the Assembly and its relevant committees that the CIP projects recommended for funding in Draft FY2021, as listed in the attached Draft Resolution 2877 (Dated January 31, 2019), conform to the policies of the Comprehensive Plan.

If additional projects, including the expected projects for Bartlett Regional Hospital, are added by Assembly sub-committees then the Planning Commission review should be updated prior to adoption by the Assembly.

STAFF PRESENTATION -

Tim Felstead, CDD staff, explained the components of the CIP plan and the process to approve CIP plan through Assembly and Planning Commission. The CIP is a six-year program but the Commission is looking at the FY21 portion only at this point.

QUESTIONS FOR STAFF

Mr. Alper had questions about funding for the Capital Avenue project. He noticed the CIP plan shows \$100,000 for this project but it is a more than \$700,000 overall project. Where is the rest of the money? John Bohan, CBJ Engineering, explained that \$600,000 of the project was part of the already approved FY20 CIP funding. The \$100,000 in this FY21 plan will be in addition to that.

Mr. Alper also asked about the Parks & Recreation deferred maintenance and repair item and questioned what, specifically, those funds would pay for and he asked what portion of CIP funds go to cover staff costs on projects.

Mr. Bohan explained the deferred maintenance line item is composed of several small projects for Parks & Recreation facilities. He added that overall, staff costs make up 10% or less of CIP costs.

Mr. Winchell asked about the line item for the Augustus Brown Pool Deferred Maintenance and what projects are included in that. Mr. Bohan explained that particular project was added with voter approval and the entire facility needs an overhaul.

Mr. Hickok asked for clarification of the Commission's directive. Do they have the option to line item veto one project or another? Is the Assembly just looking for Commission approval? Mr. Dye answered that if they were to veto a line item, they would have to be able to demonstrate how the item is not in accordance with the comprehensive plan.

After further discussion, Ms. Pierce explained for the new commissioners the role of the Commission is to review the list for consistency with adopted plans.

MOTION: *by Mr. Eiler to recommend to the Assembly CSP2019 0012.*

The motion passed with no objection

X. **BOARD OF ADJUSTMENT** - None

XI. **OTHER BUSINESS**

AME2019 0015: South Douglas / West Juneau Area Plan Steering Committee
Appointments

Applicant: City & Borough of Juneau

Location: South Douglas/West Juneau

DISCUSSION AND QUESTIONS FOR STAFF:

Mr. Levine noted the qualified applicant pool and questioned the possibility of accepting more than the nine applicants selected. Staff explained that with more members than the nine, it becomes challenging to meet quorum.

Mr. Alper asked about the review criteria and how applicants were selected. Ms. Eddins explained they were looking for diversity to represent as many groups as possible. There are home owners, renters, and landlords with different backgrounds and interests from different locations in the area. Mr. Dye asked if West Juneau was represented. Staff explained that there was only one applicant listing their address as West Juneau and that one was not selected. In spite of staff efforts, they did not get any more West Juneau applicants. Mr. Dye asked if the lack of representation from West Juneau, would that affect the outcome and if West Juneau will still remain in the study area? Staff said it would. Staff added that although there may not be a person on the committee from that area, residents will have opportunity to participate as all meetings are public meetings and they can testify at those meetings as well as communicating with the committee via email or voicemail.

MOTION: *by Mr. Eiler to APPROVE AME2019 0015*

Mr. Dye did not object but did express for the record his concerns that West Juneau was not represented.

Mr. Levine stated for the record that there are two or three applicants that he does not understand why they were not included.

The motion passed with no objection

XII. **STAFF REPORTS**

Maclean reported

- Title 49 Committee is scheduled to meet March 5th at noon
- Auke Bay Committee is scheduled to meet next week
- The Housing Forum will be held this Friday at EP Hall
- Lands Committee is meeting Monday and will be presenting Upstairs Downtown
- Committee of the Whole meetings –
 - o March 10 – Overview of Auke Bay plan and two new zoning districts
 - o March 24 – Public testimony on Auke Bay plan
- Nonconforming Ordinance, Subdivision Review Committee, Historic and Cultural Preservation Plan are on the Assembly schedule for public hearing on March 16
- Downtown zoning will be at Title 49 on March 5
- There has been interest in training for board members. Would the Commission be willing to do so on a Saturday?

XIII. COMMITTEE REPORTS - None

XIV. LIAISON REPORT – Greg Smith reported on recent Assembly activities. This year is the 50-year anniversary of Juneau/Douglas consolidation and they are working on planning a celebration of that.

XV. CONTINUATION OF PUBLIC PARTICIPATION ON NON-AGENDA ITEMS - None

XVI. PLANNING COMMISSION COMMENTS AND QUESTIONS

Mr. Dye reminded members to inform himself, Mr. Levine and Ms. Maclean as soon as possible if they will not be able to attend a meeting.

Mr. Eiler said he and Mr. Winchell attended the Alaska Planning Conference in Anchorage and it was a good experience.

XVII. EXECUTIVE SESSION - None

XVIII. ADJOURNMENT – 10:29

Minutes
Planning Commission
Regular Meeting
 CITY AND BOROUGH OF JUNEAU
Nathaniel Dye, Acting Chairman
 March 10, 2020

I. ROLL CALL

Nathaniel Dye, Acting Chairman, called the Regular Meeting of the City and Borough of Juneau (CBJ) Planning Commission (PC), held in the Assembly Chambers of the Municipal Building, to order at 7:05 p.m.

Commissioners present: Nathaniel Dye, Acting Chairman; Paul Voelckers; Travis Arndt; Joshua Winchell; Weston Eiler; Ken Alper

Commissioners absent: Michael Levine, Chairman; Dan Hickok

Staff present: Jill Maclean, CDD Director; Allison Eddins, Planner; Emily Wright, Law; Scott Ciambor, CBJ Housing Officer

Assembly members: Greg Smith

II. REQUEST FOR AGENDA CHANGES AND APPROVAL OF AGENDA

III. APPROVAL OF MINUTES

- A. January 28, 2020 Draft Minutes, Regular Planning Commission
- B. February 4, 2020 Draft Minutes, Special Planning Commission

MOTION: by Mr. Voelckers to approve the January 28 and February 4, 2020 Planning Commission Regular and Special Meeting minutes with noted correction to January 28 minutes and any staff corrections or commissioner comments.

The motion passed with no objection.

IV. PUBLIC PARTICIPATION ON NON-AGENDA ITEMS - none

V. ITEMS FOR RECONSIDERATION - none

VI. CONSENT AGENDA - none

VII. UNFINISHED BUSINESS - none

VIII. REGULAR AGENDA

- USE2020 0002:** A Conditional Use Permit for an accessory apartment on an undersized lot
Applicant: Andrew Heist
Location: 407 Irwin St
- PWP2020 0001:** Parking waiver for one parking space for an accessory apartment related to USE2020 0002
Applicant: Andrew Heist
Location: 407 Irwin St

Ms. Maclean asked the Commission for a continuance until the March 24 regular meeting.

MOTION: by Mr. Eiler to grant a continuance of USE2020 0002 and PWP2020 0001 until the March 24 Regular Meeting.

The motion passed with no objection.

IX. BOARD OF ADJUSTMENT - none

X. OTHER BUSINESS

Presentation on Upstairs Downtown Project

Scott Ciambor, CBJ Housing Officer, presented the current status of the Upstairs Downtown Project explaining the project priorities and goals and introducing the new page on the Juneau.org website that has been built to illustrate and explain the status of potential housing downtown.

Currently, there are about 181 units in the subject area with about 1.8 persons per household as compared to the average of 2.6 elsewhere. Population data came from different sources but relied heavily on 2010 Census Data.

The website includes information on which properties are locally owned, which are privately or publicly owned, when they were built, how many people live in them, and barriers to improving or adding more units. Regulatory considerations and barriers to developing housing in the area include avalanche zones, flood zones, parking requirements, historic districts, and zoning.

Mr. Voelckers thought the study was to quantify an inventory of how many unoccupied apartments are out there that could be utilized. Mr. Ciambor said that it was part of the project and they are still working on that.

Mr. Alper asked how to find the website. Mr. Ciambor said it will be accessed through the CDD webpage and there will be live in the next day or two.

Mr. Ciambor invited the Commission to please send any questions, concerns, suggestions to himself or CDD staff.

Continuation of Auke Bay Rezone and Overlay District discussion from COW

Mr. Alper had questions about the parking requirements. Ms. Eddins answered that there are a lot of variables concerning parking. For example, requiring more parking can mean there is not room to build enough units affordably but on the other hand allowing too little parking can be a detriment as well. Mr. Dye added when the committee was developing this rezone and overlay, they took into consideration how adding units by adding height and other factors could affect parking requirements.

Mr. Winchell commented that when planning the parking, if the parking availability is too limited then he can see people overusing the CBJ parking areas and using the parking permits as permanent parking spaces thereby making the parking situation even worse.

XI. STAFF REPORTS

Ms. Maclean reminded the commissioners to return the surveys regarding training topics and the poll regarding training date/time preferences.

- The next Planning Commission COW is scheduled for March 24 at 5pm
- There will be a joint meeting with the Assembly on March 31 at 6pm
- Downtown Juneau ADOD Zoning and Downtown Douglas ADOD are getting close to completion
- The HRC committee is meeting to interview Planning Commission applicants on April 30
- The Assembly COW has tasked CDD and the Planning Commission to review and revise parking regulations and the Fee in Lieu

Mr. Dye asked for commission input on whether to start future COW meetings at 5:00 or 5:30.

XII. COMMITTEE REPORTS - none

XIII. LIAISON REPORTS

Assembly Liaison Greg Smith gave a brief update on Assembly activities.

- Housing has been a big topic
- Parks & Rec is in the process of moving the Thane campground closer to town near the AELP facility with the intent being to shelter homeless.
- The Assembly COW have seen Mr. Ciambor's Upstairs Downtown presentation

- There are negotiations in progress regarding land to extend the seawalk
- The Assembly has been discussing parking
- The Museum project to occupy the archipelago lot has been 'slowed' as they are looking for community feedback
- Coronavirus and the Westerdam have been the focus this last week

XIV. CONTINUATION OF PUBLIC PARTICIPATION ON NON-AGENDA ITEMS - none

XV. PLANNING COMMISSION COMMENTS AND QUESTIONS

Mr. Voelckers asked if the Archipelago appeal period has passed yet. Ms. Maclean answered that it has.

Mr. Alper asked if living in an area where the resident would not need a car would mean it is 'affordable'. Mr. Ciambor explained the definition(s) of 'affordable' is(are) based on income level.

XVI. EXECUTIVE SESSION - none

XVII. ADJOURNMENT – 822 pm

Minutes
Planning Commission
Committee of the Whole
 CITY AND BOROUGH OF JUNEAU
Nathaniel Dye, Acting Chairman
 March 10, 2020

I. ROLL CALL

Nathaniel Dye, Acting Chairman, called the Committee of the Whole Meeting of the City and Borough of Juneau (CBJ) Planning Commission (PC), held in the Assembly Chambers of the Municipal Building, to order at 5:09 p.m.

Commissioners present: Nathaniel Dye, Acting Vice Chairman; Paul Voelckers; Travis Arndt; Joshua Winchell; Weston Eiler; Ken Alper (joined at 5:27pm)

Commissioners absent: Michael LeVine, Chairman; Dan Hickok

Staff present: Jill Maclean, CDD Director; Allison Eddins, Planner; Alex Pierce, Planning Manager; Emily Wright, Law;

Assembly members: Greg Smith (joined at 5:57pm)

II. REGULAR AGENDA

AME2020 0001: Amending CBJ Land Use Code to create Mixed Use 3 (MU3) & Neighborhood Commercial (NC) Zoning Districts

Applicant: City and Borough of Juneau

Location: Auke Bay and Borough wide

Planner Allison Eddins gave a brief presentation of AME2020 0001 and explained the types and reasons for the new proposed zoning districts.

The MU3 zoning district is intended to place greater emphasis on the integration of small-scale commercial with residential at densities of thirty dwelling units per acre. The NC zoning district is intended to encourage the development of mixed-use neighborhoods that are compact and walkable with an emphasis on densities of up to fifteen dwelling units per acre with neighborhood scale commercial activity that is less intense than is currently allowed in other commercial and mixed-use districts.

Discussion and Questions for Staff:

Mr. Voelckers was concerned that an existing single-family home in the proposed zoning district, if it were to become MU3, would be considered nonconforming and what the ramifications would be if the homeowner were to refinance, reconstruct, or sell the home. Would lending institutions allow it to be financed? Ms. Maclean said currently, they would be allowed but lending institutions are able to change their rules and CBJ cannot control that.

Mr. Dye asked for an example of medium manufacturing in Juneau. Staff explained that Alaska Brewery may be medium manufacturing.

Mr. Eiler asked for explanation on the figures and the rationale CDD used in determining the standards for NC and MU3, specifically the reasoning for minimum density. Ms. Eddins explained the process and rationale used by the ad hoc committee. Ms. Maclean added the residents in the area had input as well and they wanted to encourage more of a village atmosphere as opposed to a downtown atmosphere. The minimum density is a new concept as a method of encouraging development in that area.

Mr. Alper liked the concept of making walkable neighborhoods but minimum density of three seems small. He asked why it is not larger. Ms. Eddins explained they arrived at three as a good number to start with and reminded the commissioners that this is a minimum.

Further discussion centered on the setback requirements and height limits described in the new districts.

Recess 6:11 pm until 6:18 pm

AME2015 0010: Rezone of approximately 105 acres (approximately 75 acres owned by CBJ) in Auke Bay from a mixture of residential and commercial districts to MU3 and NC and the creation of the Auke Bay Overlay District

Applicant: City and Borough of Juneau

Location: Auke Bay and Borough wide

Planner Eddins gave a presentation of AME2015 0010 and explained the steering committee process that created the Auke Bay Area Plan and she describe some of the current zoning in the area. The public process for this began in 2013 with a Steering Committee of 19 members. The process started and stalled over time due to turnover of staff and steering committee members.

The creation of this proposed overlay district is in compliance with Auke Bay Area Plan recommendations to implement the Plan through design standards and the development of

bonuses to promote the creation of a neighborhood feel in the area through the use of wayfinding, lighting, and multi-modal transportation in well-connected routes.

There was some discussion regarding the overlay and the bonus points. However, it was decided to carry the topic into the regular meeting in the interest of time.

III. **OTHER BUSINESS** - none

IV. **REPORT OF REGULAR AND SPECIAL COMMITTEES** - none

V. **ADJOURNMENT** – 6:57

DRAFT

Additional Materials

Regular Planning Commission Meeting

Assembly Chambers
7:00 P.M.
Meeting Date: April 14, 2020

- 1. Cancellation of Committee of the Whole Meeting and revised agenda for Regular Planning Commission Meeting**
- 2. Suspension of Planning Commission Rules of Order**
- 3. USE2019 0022:**
 - a. Memo to the Planning Commission
 - b. PowerPoint Presentation
- 4. USE2020 0002 & PWP2020 0001:**
 - a. PowerPoint Presentation
- 5. WCF2019 0009:**
 - a. PowerPoint Presentation
 - b. Public Comment – Aimée Richards, 4.4.20
 - c. Public Comment – Audra Henderson, 4.6.20
- 6. WCF2019 0010:**
 - a. PowerPoint Presentation
- 7. WCF Towers**
 - a. Public Comment – Stefan Paddock, 4.2.20
 - b. Public Comment – Beth Dobson, 4.3.20

Planning Commission Meetings

April 14, 2020

Please note that the Committee of the Whole meeting scheduled for 6:30 P.M. on April 14, 2020 has been cancelled. However, Commissioners will still prepare for the Regular Planning Commission meeting starting at 6:30 P.M.

Please note that the agenda order for the Regular Planning Commission meeting has been adjusted from the original packet sent out. Attached is the revised agenda.

Agenda

Planning Commission - Regular Meeting City and Borough of Juneau

April 14, 2020
Assembly Chambers
7:00 PM

I. ROLL CALL

II. REQUEST FOR AGENDA CHANGES AND APPROVAL OF AGENDA

III. APPROVAL OF MINUTES

- A. February 25, 2020 Draft Minutes, Regular Planning Commission
- B. March 10, 2020 Draft Minutes, Regular Planning Commission
- C. March 10, 2020 Draft Minutes, Planning Commission Committee of the Whole

IV. BRIEF REVIEW OF THE RULES FOR PUBLIC PARTICIPATION

V. PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

VI. ITEMS FOR RECONSIDERATION

VII. CONSENT AGENDA

- A. USE2019 0022: A Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek

VIII. UNFINISHED BUSINESS

IX. REGULAR AGENDA

- A. USE2020 0002: A Conditional Use Permit for an accessory apartment on an undersized lot
- B. PWP2020 0001: Parking waiver for one parking space for an accessory apartment related to USE2020 0002
- C. WCF2019 0009: A Wireless Communication Facility Permit to install new, unlit 150-foot communication tower
- D. WCF2019 0010: A Wireless Communication Facility Permit to install new, unlit 150-foot communication tower

X. BOARD OF ADJUSTMENT

XI. OTHER BUSINESS

XII. STAFF REPORTS

XIII. COMMITTEE REPORTS

XIV. LIAISON REPORT

XV. CONTINUATION OF PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

XVI. PLANNING COMMISSION COMMENTS AND QUESTIONS

XVII. EXECUTIVE SESSION

XVIII.ADJOURNMENT

Suspension of Planning Committee Rules of Procedure in response to Federal, State, and Local Declarations of Emergency Due to COVID-19.

WHEREAS, COVID-19 or coronavirus is a contagious virus that is actively spreading across the world, including in the United States; and,

WHEREAS, Declarations of Emergency at the Federal, State, and Local level have been enacted; and

WHEREAS, the Governor and Assembly have issued multiple Health Mandates and Resolutions requiring social distancing and restricting group gatherings; and

WHEREAS, the Planning Commission is reviewing proposed agendas to ensure that meetings occur only regarding essential business; and

WHEREAS, consistent with State and Local guidance the Assembly, advisory boards, commissions, and committees have temporarily moved to telephonic participation to ensure the safety of our community; and

WHEREAS, upon balancing the health risks of COVID-19 and transparent government principles, the Planning Commission finds it necessary to temporarily change to how public meetings are conducted;

NOW, THEREFORE, THE PLANNING COMMISSION SUSPENDS AND MODIFIES ITS RULES OF PROCEDURE EFFECTIVE APRIL 14, 2020 THROUGH NOVEMBER 24, 2020; AS SET FORTH BELOW.

The following Rule are Suspended:

Rules 9(F), 10(A)(3), 10(B)(2)(a), 10(B)(3), 16(A), and 16(B).

The Suspended Rules are Replaced by the Following Process:

1. Telephonic participation is mandatory for any commissioners and members of the public attending the meeting;
2. The call-in number will be provided to the commissioners and the public with the Agenda Packet and will be published online;
3. Members of the public wishing to comment on non-agenda items are encouraged to call-in within 5 minutes of the meeting start time to ensure their testimony is taken;
4. Materials must be submitted electronically to CDD no later than the Thursday before the meeting, if it is not possible to submit materials electronically, the applicant is directed to call CDD to arrange delivery of materials;
5. Public comment will be received via email until the close of the public comment period on an individual item.

Michael LeVine, Planning Commission Chair



(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

TO: Planning Commission

FROM: Teri Camery, Senior Planner 

DATE: April 6, 2020

SUBJECT: USE2019-0022 A Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek; deletion of proposed advisory condition.

Staff recommends deletion of Advisory Condition 14, regarding covered truck loads in conformance with CBJ Code 36.30.070. This regulation is enforced by the Juneau Police Department. The applicant is aware of the requirement, and advisory conditions are not recommended.

USE2019-0022

A Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek

April 14, 2020

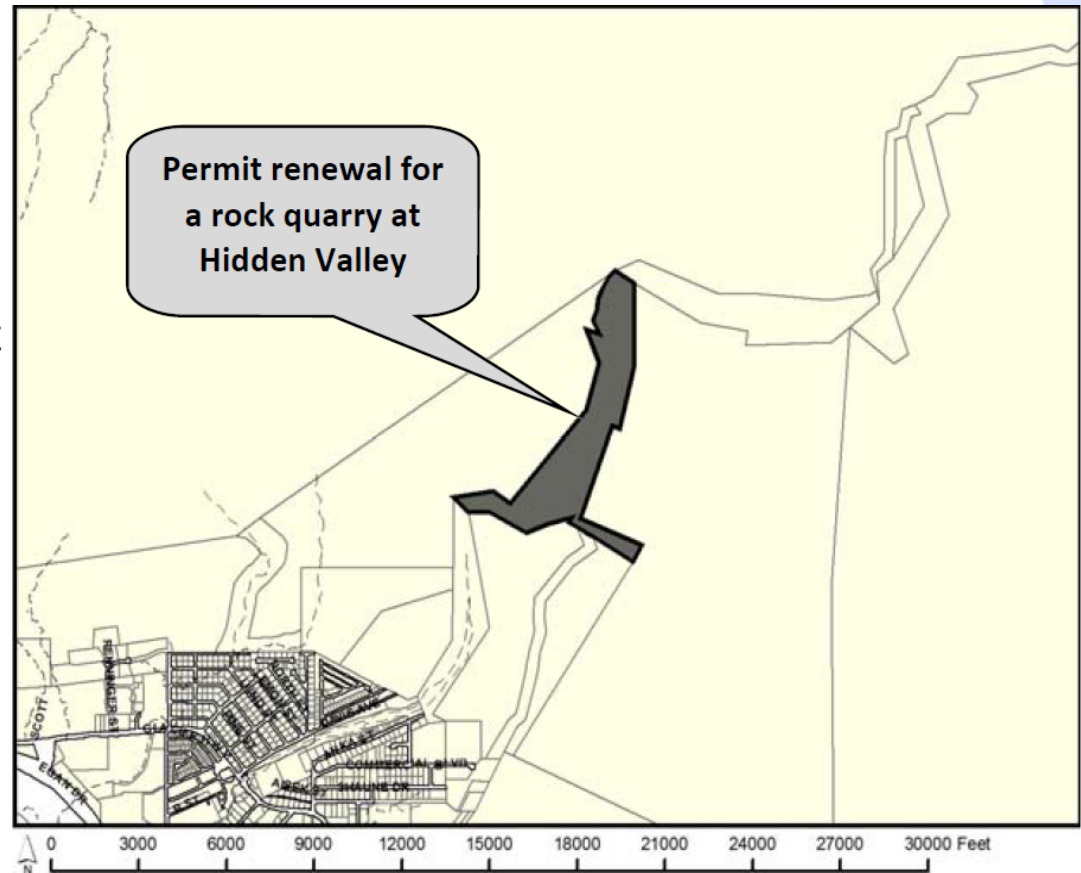
Staff recommends that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Conditional Use Permit for an existing rock quarry with conditions.

(packet p. 21)

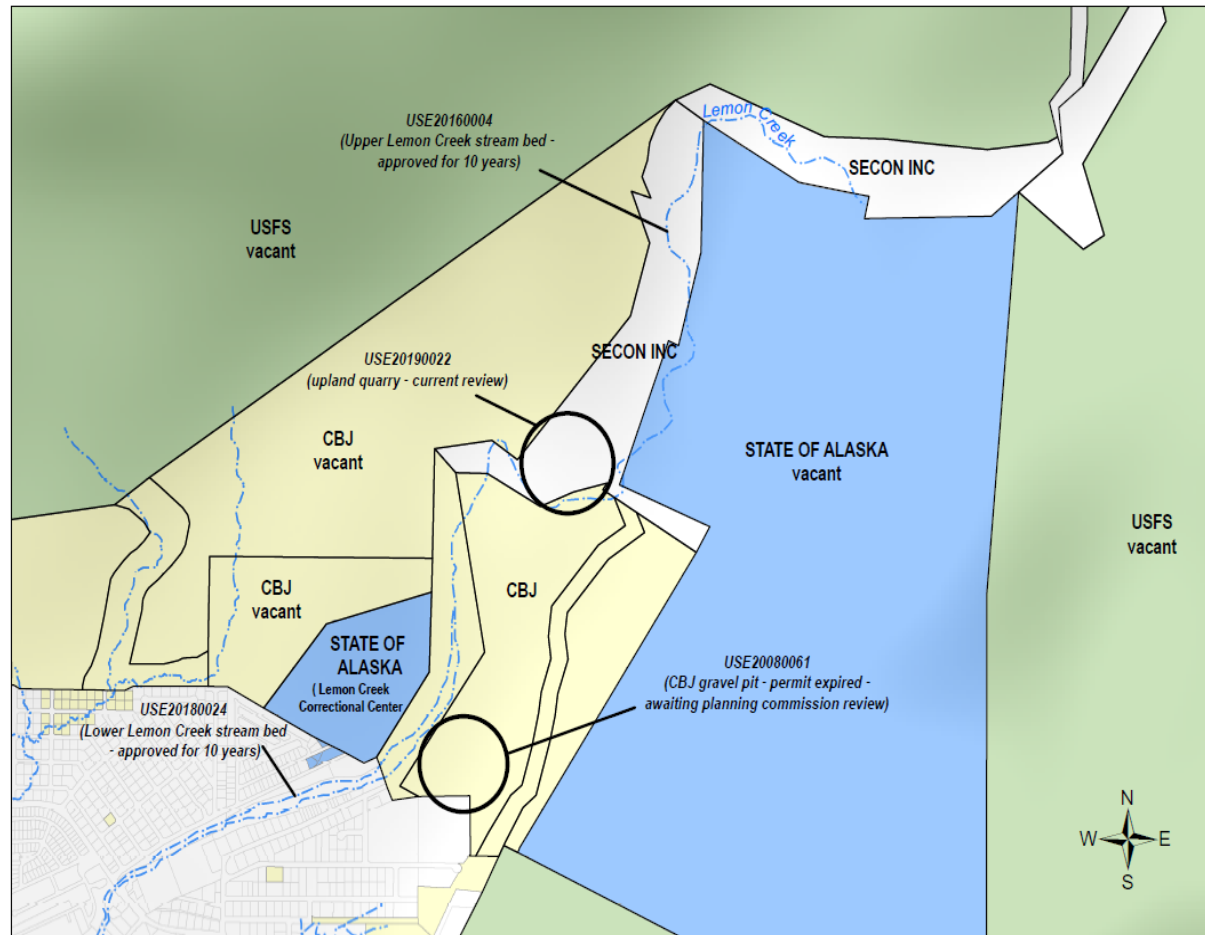
Project Description

The applicant requests a Conditional Use Permit for an existing rock quarry

- Zoned Rural Reserve
- 2013 Comprehensive Plan Designation is Resource Development
- Site size 113.29 acres



Adjacent Uses and Land Ownership(packet p. 24)



3 LEMON CREEK EXTRACTION PERMITS & LAND OWNERSHIP

Scope of Review

The development requires review of two code sections:

- 1) CBJ 49.65.200, Sand and Gravel;
- and
- 2) CBJ 49.15.430, Conditional Use Permit

(packet p. 25)

Project Description

Quarry operations include gravel and rock extraction, blasting, and rock-crushing.

Changes from past operations include relocation of the quarry entrance and road alignment, an updated reclamation plan, and a change in the bond amount.

Background (packet p. 23)

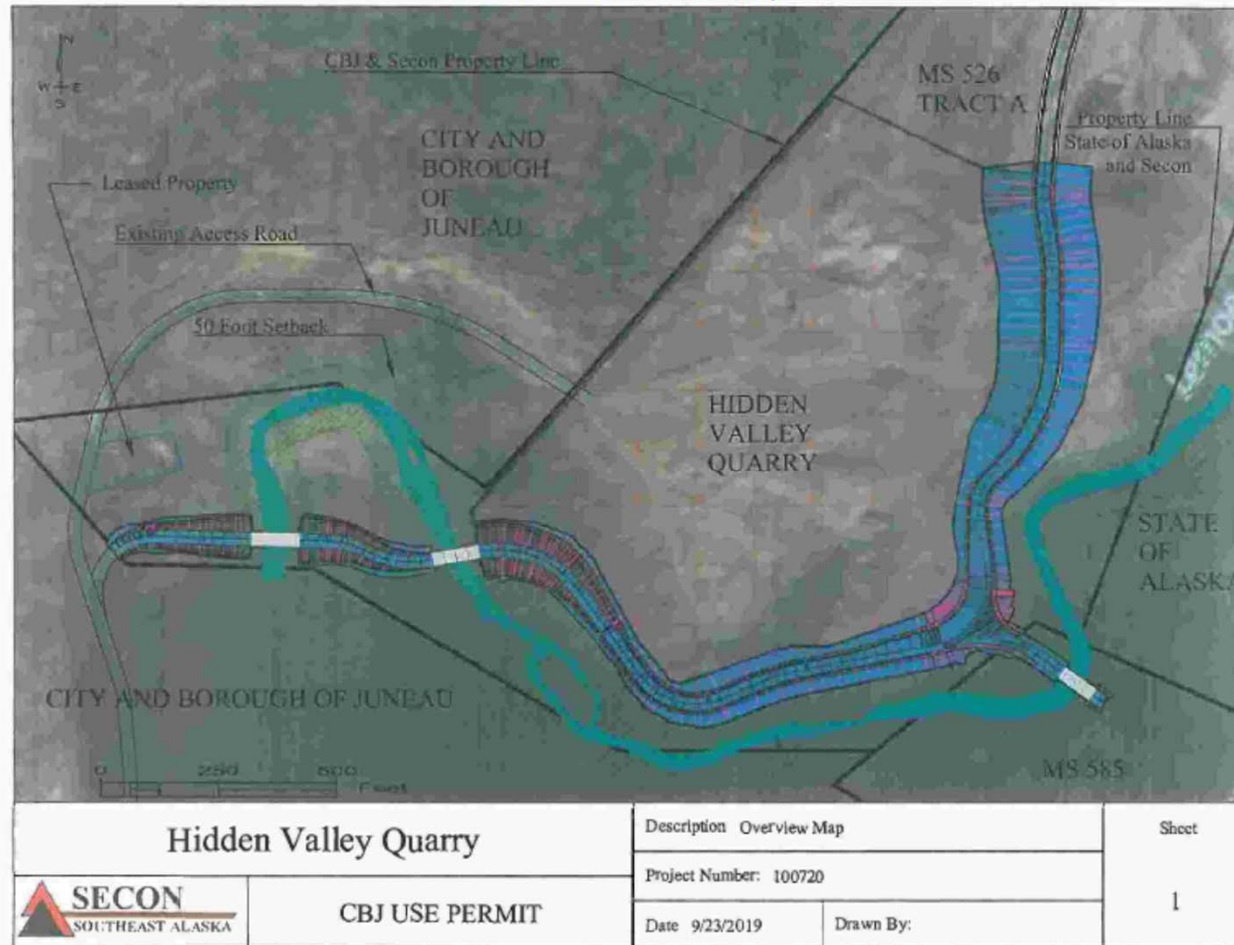
- Quarry operations began in the 1980s
- First Conditional Use Permit for quarry issued in 1984
- Second Conditional Use Permit issued in 1996
- Third Conditional Use Permit issued in 2009; expired in April 2019.

- Additional Conditional Use Permits have allowed storage of explosives
- Last explosives permit, USE2009-00019, expired in July 2019.
- A new explosives permit is currently under review; until approved, explosives storage is prohibited.

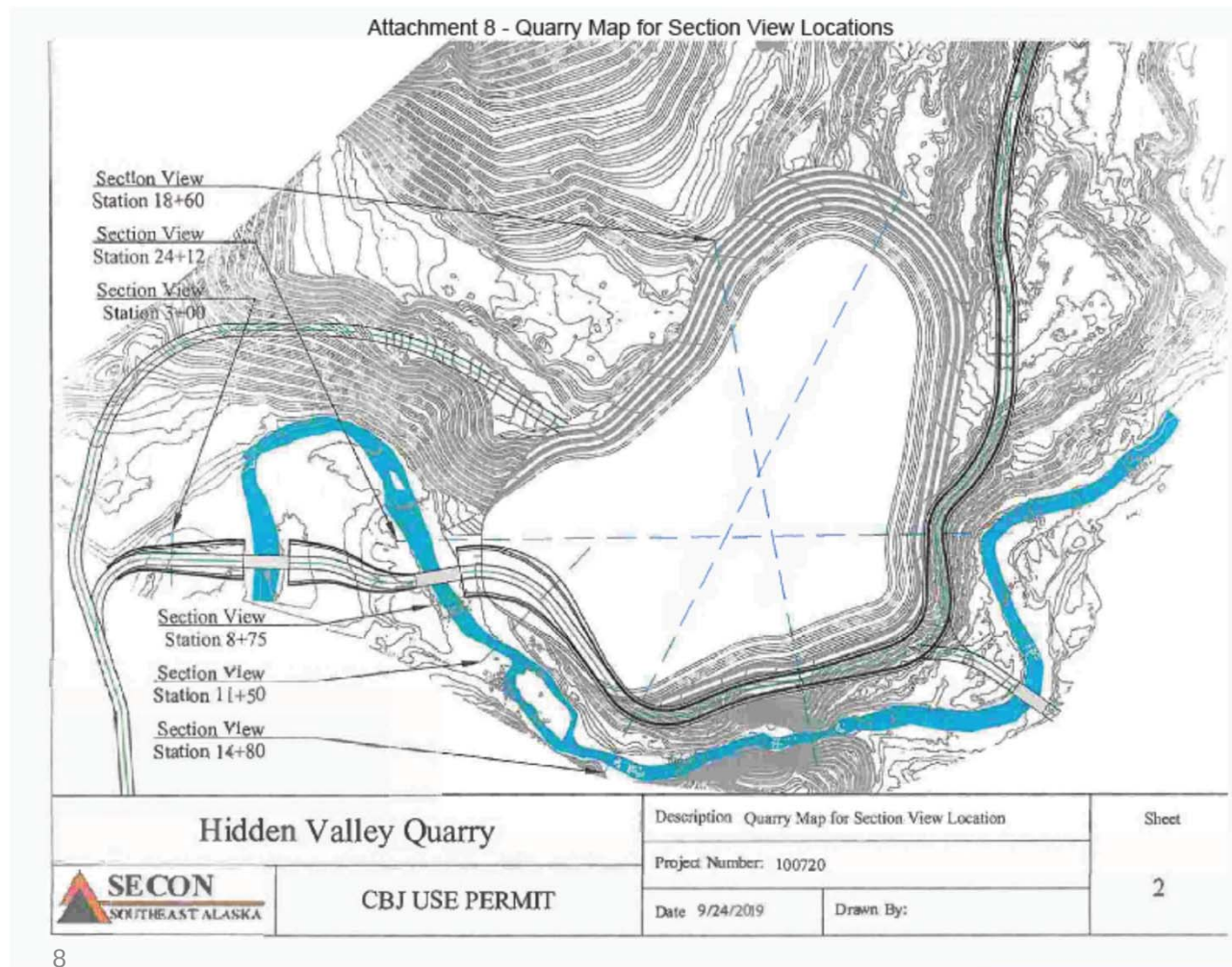
- SECON has two additional Conditional Permits for gravel extraction in the creek bed in both upper and Lower Lemon Creek, shown on the previous map.

Site Plans (packet p. 70)

Attachment 6 - Overview Map



Site Plans (packet p. 76)



Hidden Valley Property: 113.29 Acres

Hidden Valley Quarry: 83 Acres

No structures on site.

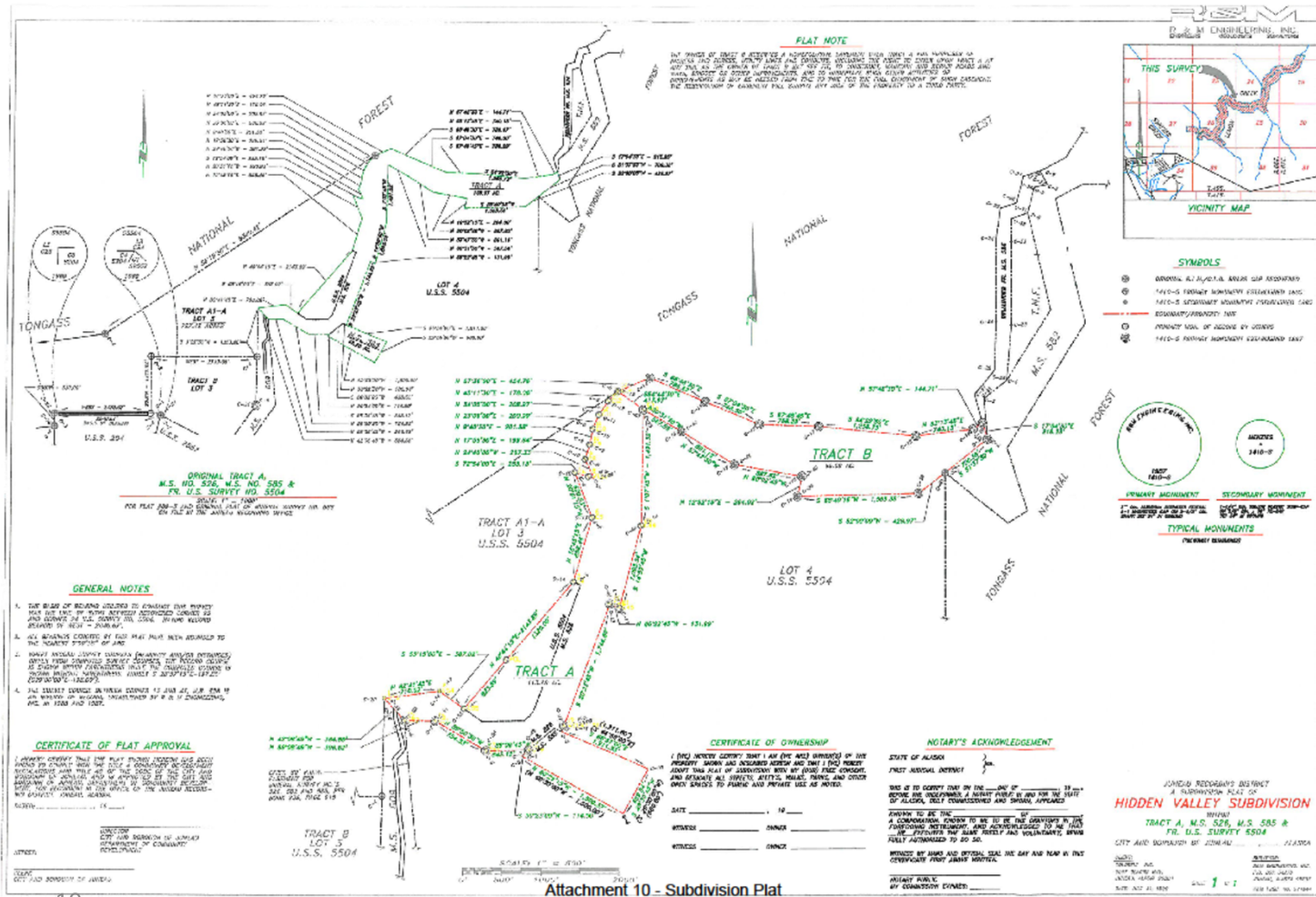
Lemmon Creek has TMDL for turbidity.

There is not a storm sewer system in the area.

Non storm water discharges include water sprayed to control dust.

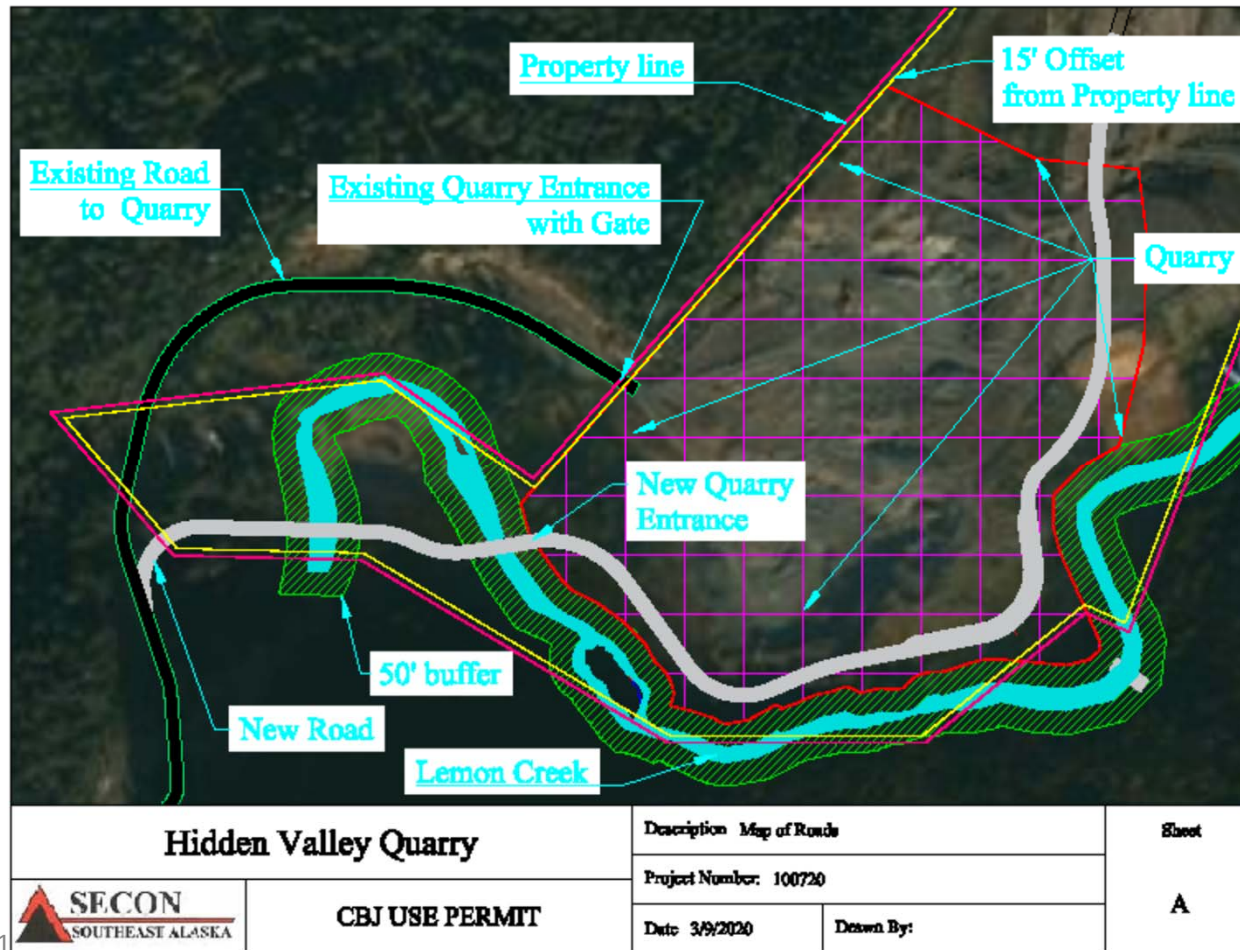
SECON SOUTHEAST ALASKA		<i>Hidden Valley</i>	
DRAWN JANUARY	DATE MAY 17, 2016	SHEET NO. ONE	
CHECKED JANUARY	DATE MAY 17, 2016	PROJECT NO. HVS-16-001	
TITLE HVS-16-001	SHEET ONE		

Subdivision Plat (packet p. 79)



Road Realignment (packet p. 100)

Attachment 19 - Map with new and proposed roads



11



CBJ USE PERMIT



Drainage (Packet p. 27, 33, 34)

- Stormwater from the operation is regulated by the Alaska Department of Environmental Conservation (ADEC) Multi-Sector General Permit (MSGP) for Industrial Activities, which requires an approved Storm Water Pollution Prevention Plan.
- The MSGP and SWPPP expire on March 31, 2020, however permit requirements remain in place until the permit is renewed.
- CBJ Engineering has reviewed and accepted these plans, provided that the SWPPP is adhered to.

Drainage

To ensure ongoing compliance with the SWPPP as recommended by CBJ Engineering, staff has proposed the following condition:

- 1) The applicant shall provide the Community Development with the annual SWPPP report no later than February 15th each year.

Restoration and Bond Amount (packet p. 36-37)

The quarry is expected to continue operating for approximately 50 years. Restoration is ongoing.

CBJ Engineering requested an updated bond amount. Engineering accepted the applicant's reduction of the bond amount from the previous \$230,000 to \$101,000, as addressed in the following condition:

The applicant shall submit and maintain a performance bond in an amount no less than \$101,000 for restoration/reclamation of the site, as required by CBJ 49.65.240. The bond must be final prior to the start of operation.

Agency and Public Comments (packet p. 39)

- Comments were received from CBJ Lands regarding bank heights, addressed in the staff report.
- CBJ Engineering reviewed drainage, the bond amount, and traffic/property impacts.
- No other comments were received from agencies or the public.

Conformity With Adopted Plans (packet p. 39-42)

2013 Juneau Comprehensive Plan

- o Conforms with general policies regarding industrial development and gravel resources.

2018 Lemon Creek Area Plan

- o Conforms with policies regarding responsible resource extraction

2015 Juneau Economic Development Plan

- o Substantially complies with economic development planning concepts.

Findings (packet p. 42-43)

1. The application is complete.
2. The use is appropriate according to the Table of Permissible Uses.
3. The development complies with other requirements of this chapter including all public notice requirements.
4. The proposed development will not materially endanger the public health or safety.
5. The development will not substantially decrease the value of or be out of harmony with property in the neighboring area
6. The proposed development is in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans.

Recommendation (packet p 43-45)

Staff recommends that the Planning Commission adopt the Director's analysis and findings and grant the requested Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek. The approval is subject to the following conditions:

Hours of Operation and Permit Expiration

- 1) Hours of operation shall be 7 a.m. to 10 p.m. Monday through Friday, and 9 a.m. to 10 p.m. on Saturday and Sunday, April through November.
- 2) All blasting operations shall be conducted during daylight hours. No blasting operations shall be conducted on Saturday or Sunday or on official local, federal, or state holidays.
- 3) The extraction permit shall expire ten years from the date of Planning Commission approval.

Recommendation

Site Restoration

- 4) Seed mixes utilized for revegetation in restoration efforts shall be free from non-native, noxious weeds.
- 5) The applicant shall submit and maintain a performance bond in an amount no less than \$101,000 for restoration/reclamation of the site, as required by CBJ 49.65.240. The bond must be final prior to the start of operation.

Recommendation

Blasting

- 6) Explosives shall not be stored on site, except that which is immediately necessary for the next blast.
- 7) The development shall not generate sound levels which exceed 65 dBa at the property line during the day or 55 dBa at night, per CBJ§49.15.330(g)(11).
- 8) Blasting operations shall be conducted by an Alaska Department of Labor certified powder-man and all operations shall conform to MSHA, ATF, and OSHA standards, as applicable, and all other applicable standards.
- 9) 24 hours' notice shall be provided to the Juneau Flight Service Station and the Police and Fire Departments.

Recommendation

10) The applicant shall comply with the CBJ Standard Specifications for Civil Engineering Projects and Subdivision Improvements, as modified by the following:

- a) Warning signs with the time and date of the blast will be posted 24 hours prior to blasting on Anka St. and at the Lemon Creek trailhead.
- b) 24 hours' notice will be provided to the Juneau Flight Service Station and the Police and Fire Departments prior to blasting.
- c) Public Service Announcements will be broadcast on local radio 24 hours prior to blasting.
- d) Three air horn blasts will be made at 5 minutes prior to blasting.

Recommendation

Required Conditions, per CBJ§49.65.235:

11) A strip of land at the existing topographic level, and not less than 15 feet in width, shall be retained at the periphery of the site wherever the site abuts a public way. This periphery strip shall not be altered except as authorized for access points. This section does not alter the applicant's duty to maintain subjacent support.

Recommendation

Required Conditions Continued:

12) If the bank of any extraction area within the permit area is above the high water line or water table, it shall be left upon termination of associated extraction operations with a slope no greater than the angle of repose for unconsolidated material of the kind composing it, or such other angle as the commission may prescribe. If the extraction operations cause ponding or retained water in the excavated area, the slope of the submerged working face shall not exceed a slope of 3:1 from the edge of the usual water line to the water depth of seven feet. This slope ratio may not be exceeded during extraction operations unless casual or easy access to the site is prevented by a fence, natural barriers, or both.

Recommendation

Other

13) The applicant shall provide the Community Development with the annual SWPPP report no later than February 15th each year.

Recommendation

USE2020 0002 & PWP2020 0001

Conditional Use Permit for an accessory apartment on
an undersized lot and associated parking waiver.

PC Presentation April 14, 2020

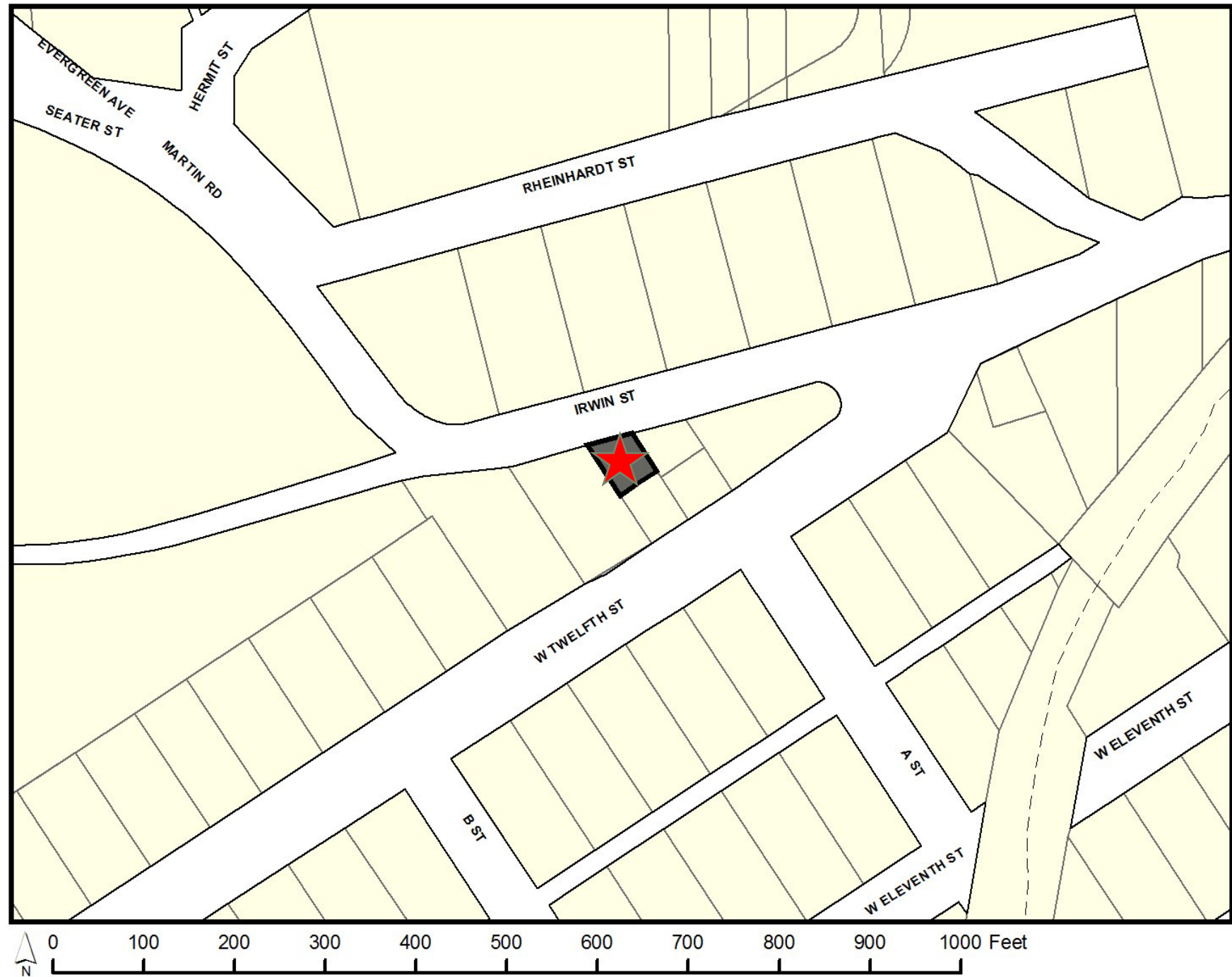
Recommendations

- USE2020 0002: Staff recommends the Planning Commission **APPROVE WITH CONDITIONS** the requested Conditional Use Permit for an accessory apartment on an undersized lot. (Packet Page No. 112)
- PWP2020 0001: Staff recommends the Planning Commission **GRANT** the requested parking waiver for one (1) required parking space. (Packet Page No. 131)

Background Information

Address	407 Irwin Street
Lot Size	775 Square feet
Zoning District	D5 Single-family/Duplex Residential
Comp. Plan Future Land Use Designation	Medium Density Residential, Single Family (MDRSF)
Utilities	Public Water & Sewer
Year Built	1914

Vicinity Map



[illegible]

PLANT DATE	10.00
WATER DATE	2

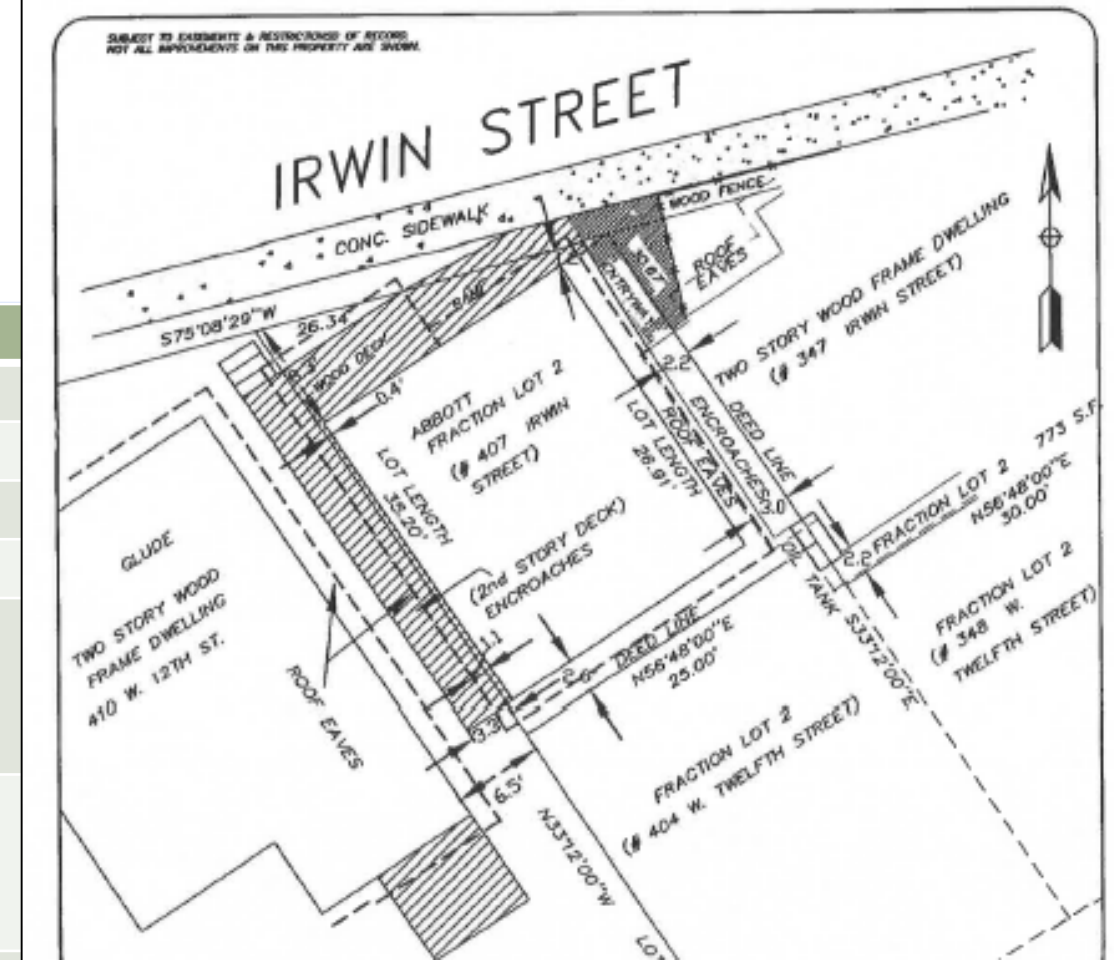


CITY AND BOROUGH OF
JUNEAU
ALASKA'S CAPITAL CITY

Project Site

		D5 Required	Existing
Minimum Lot Area		7,000 square feet	775 square feet
Minimum Lot Width		70 feet	25 feet
Minimum Lot Depth		85 feet	31 feet
Maximum Lot Coverage		50%	64%
Setbacks	Front (North)	20 feet	1.2 feet to dwelling Ramp and deck encroach into ROW
	Rear (South)	10 feet [Reduced per 49.25.430(4)(J)]	2.6 feet
	Side (West)	5 feet	1.1 feet to dwelling Deck encroaches into adjoining lot
	Side (East)	5 feet	2.2 feet

(Packet Page No. 107)



Subject parcel is nonconforming for lot area, structure setbacks, lot coverage, and parking.

Parking

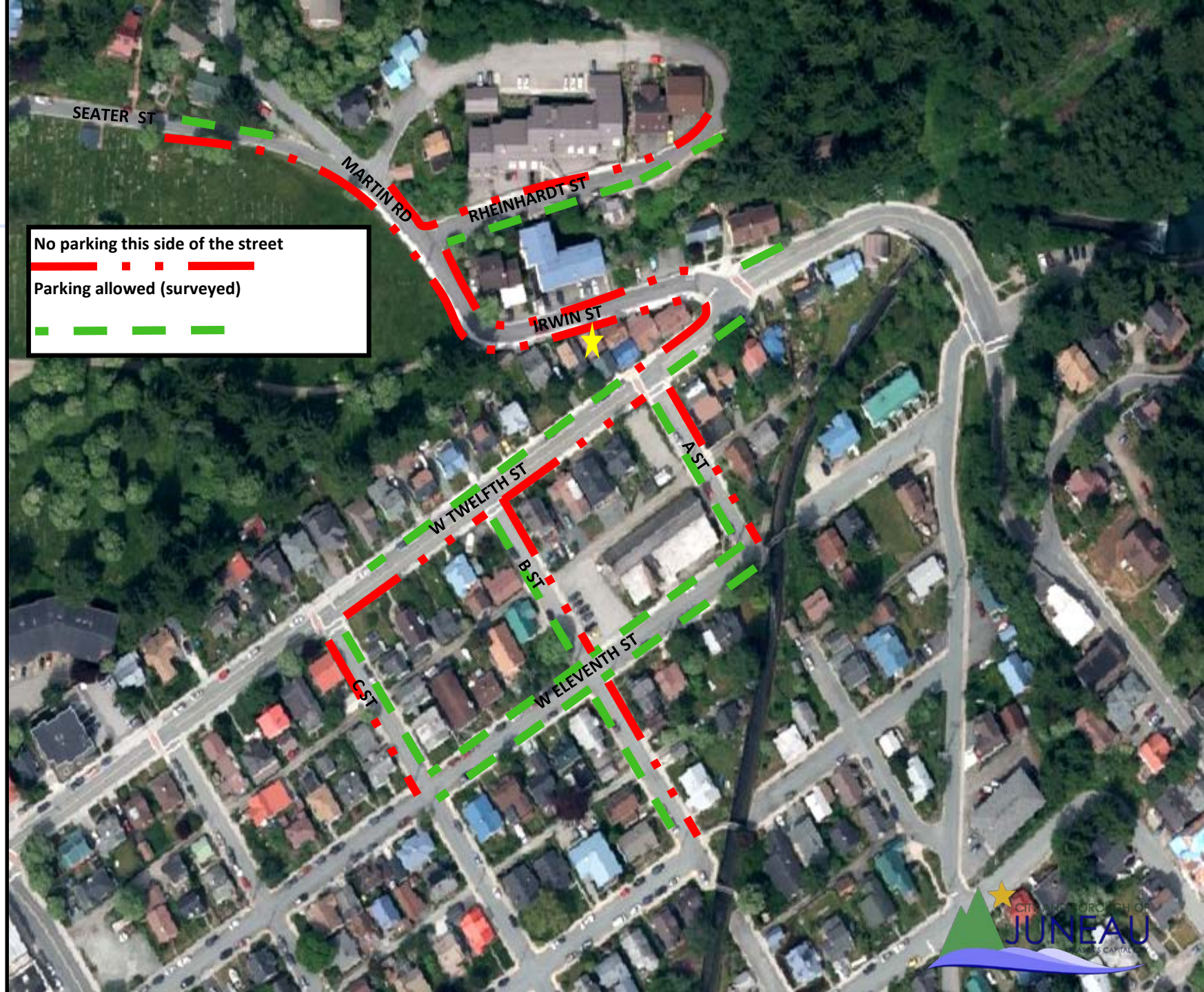
- Spaces required for a single-family dwelling: **2**
 - No parking is provided on the site.
 - The single-family dwelling was constructed in 1914 prior to zoning/parking requirements and is nonconforming to current parking requirements.
No parking is required for the existing dwelling on the site.
- Spaces required for an accessory apartment: **1**
 - Applicant requests a parking waiver for the 1 required parking space.

Parking Study

Staff performed a parking study to evaluate the potential impacts on nearby on-street parking.

The complete study can be found in Attachment C of the PWP2020 0001 staff report. (Packet Page No. 136-148)

Staff performed parking counts in the morning, afternoon, and evenings on March 3, 5, 7, 9, and 11. On March 8, staff performed parking counts in the late morning and evening.



Parking Study Results

**The complete study can be found in Attachment C of the staff report for PWP2020 0001 (Packet Page No. 136-148).
There are approximately 103 on-street spaces in the study area.**

Time	Highest Count	Lowest Count
Morning	65	41
Afternoon	51	36
Evening	61	44

The addition of one (1) on-street parking space will not have a significant negative impact on available parking in the area.

Proximity to Public Transportation

Site is approximately a quarter mile walk to the nearest bus stops along Glacier Avenue.

A pedestrian path runs through Evergreen Cemetery and sidewalks are provided along W Twelfth Street.



Agency & Public Comments

- An agency review period was held between January 27 and February 10, 2020. No issues were raised during this agency review period.
- Staff received one (1) public comments regarding the proposed development.
 - Jim Donaghey, February 6, 2020 – Mr. Donaghey expressed concerns about the density of the area and the lack of parking. Mr. Donaghey included photos of on-street parking in the area and requests that all future development be provided adequate parking. Complete comments are found in Attachment C.
 - (Packet Page No. 149)

Conformity with Adopted Plans

- As described in the staff reports for USE2020 0002 and PWP2020 0001 staff finds the proposed development is in general conformity with:
 - The 2013 Comprehensive Plan
 - The 2016 Housing Action Plan
- See Packet Page No. 109-110 and 130-131

USE2020 0002 Findings

(Packet Page No. 110-112)

1. Is the application for the requested conditional use permit complete?

Yes. Staff finds the application contains the information necessary to conduct full review of the proposed operations. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.15.

2. Is the proposed use appropriate according to the Table of Permissible Uses?

Yes. The requested permit is appropriate according to the Table of Permissible Uses. The permit is listed at CBJ 49.25.300, Section 1.130 for the D5 zoning district.

3. Will the proposed development comply with the other requirements of this chapter?

Yes. The proposed development complies with the other requirements of this chapter. Public notice of this project was provided in the February 28, 2020; March 8, 2020; March 13, 2020; and March 22, 2020 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 500 feet of the subject parcel. Moreover, a Public Notice Sign was posted on the subject parcel, visible from the public Right of Way.

4. Will the proposed development materially endanger the public health or safety?

No. There is no evidence that the proposed development will materially endanger the public health or safety.

USE2020 0002 Findings Continued

(Packet Page No. 110-112)

5. Will the proposed development substantially decrease the value of or be out of harmony with property in the neighboring area?

No. There is no evidence that the proposed development will substantially decrease the value or be out of harmony with property in the neighboring area.

6. Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?

Yes. Staff finds the proposed development is in general conformity with the CBJ Comprehensive Plan and the Housing Action Plan.

7. Will the proposed development comply with the Juneau Coastal Management Program?

N/A.

USE2020 0002 Recommendation

(Packet Page No. 112)

It is recommended that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Conditional Use permit. The permit would allow the development of an accessory apartment on an undersized lot.

The approval is subject to the following conditions:

1. Prior to issuance of a building permit, the applicant must submit documentation to demonstrate that all applicable parking code requirements have been met, in conformance with CBJ 49.40.200.
2. Prior to the issuance of a building permit, the applicant must submit a revised site plan showing vegetative cover on the site.

PWP2020 0001 Findings

(Packet Page No. 131)

1. The granting of the waiver would result in more benefits than detriments to the community as a whole as identified by the Comprehensive Plan.

Yes. As discussed above, housing is an identified need by the Comprehensive Plan and other adopted plans. If the waiver is granted, the proposed accessory apartment would add one rental unit to Juneau's rental housing stock.

2. The development is located outside the PD-1 parking district, the PD-2 parking district, and the Downtown Fee-in-lieu of Parking District map areas.

Yes. The development is located outside the above parking overlay districts.

3. Granting the waiver will not result in adverse impacts to property in the neighboring area.

Yes. Per the analysis above, there is no evidence that the proposed development would have an adverse impact to neighboring properties.

4. The waiver will not materially endanger public health, safety, and welfare.

Yes. Per the analysis above, there is no evidence that the proposed development will materially endanger the public health, safety, or welfare.

PWP2020 0001 Recommendation

(Packet Page No. 131)

Staff recommends the Planning Commission adopt staffs recommendations and findings and **GRANT** the requested parking waiver for the one (1) required off-street parking space associated with the proposed accessory apartment (USE2020 0002).

WCF2019 0009

A Wireless Communication Facility Permit to install new,
unlit 150-foot communication tower

PC Presentation April 14, 2020

Staff recommends the Planning Commission adopt the Directors analysis
and findings and **APPROVE WITH CONDTIONS** the requested Special Use
Permit. (Packet Page No. 162)

Project Description

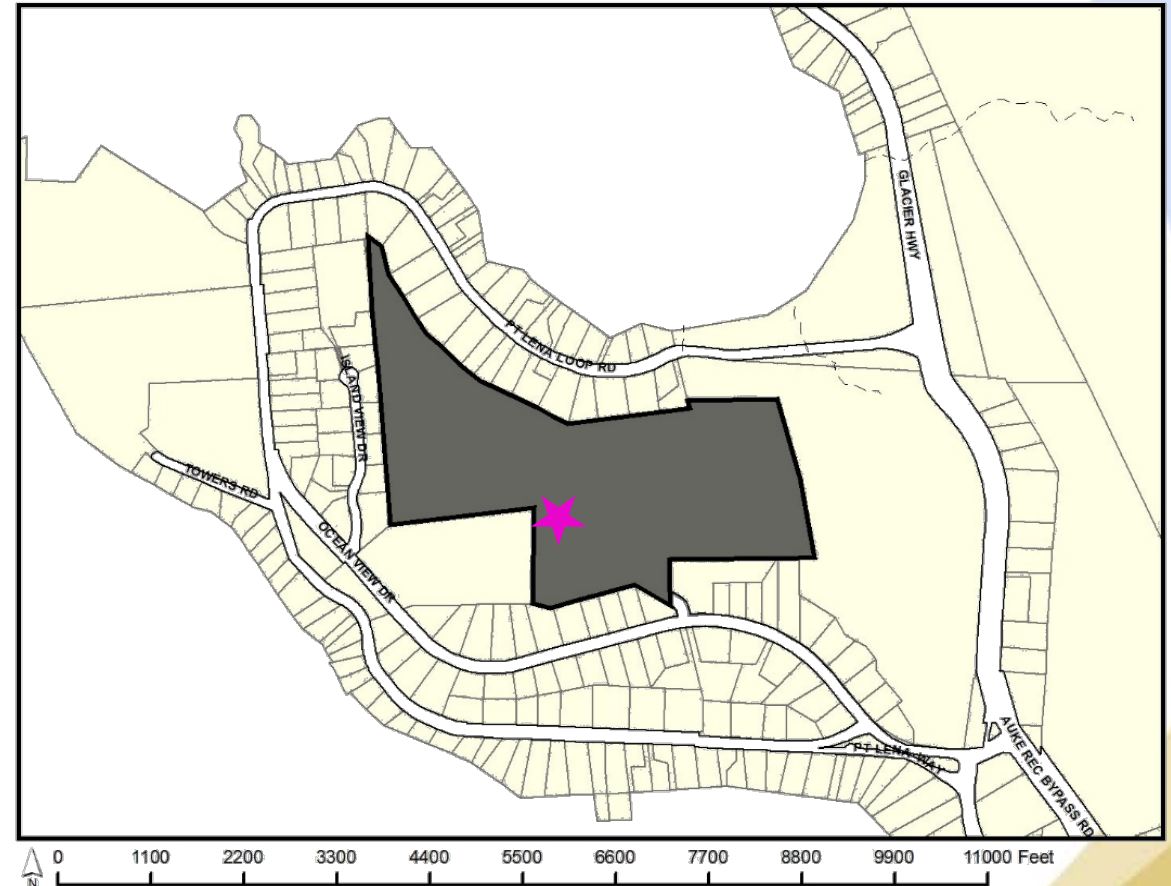
155-foot tall, freestanding lattice tower with lightening rod. The tower is 150 feet tall, and the rod adds 5 feet.

- There will be no antenna adding to the height of the tower.
- The tower is proposed to be unlit

Staff recommends that the tower be constructed as a monopole, rather than lattice-style, and painted matte dark green to minimize visual impacts, and be reduced to a lesser height

- The following analysis evaluates the impacts resulting from the applicant's proposal.

See Packet Page No. 153



Agency Review and Public Comment

Staff requested review from the CBJ Assessor's Office, Building Division, Capital City Fire and Rescue, Engineering and Public Works Department, Lands and Resources Division, and the Juneau International Airport (JIA). (Packet Page No. 309-311)

- Building Division, and Engineering and Public Works expressed that they had no concerns.
- JIA noted that the applicant will need to file FAA 7460. This form must be filed at least 45 days prior to the start date of proposed construction.
- Staff did not receive other comments.

Several public comments expressed concerns about 5G service being detrimental to health. (Packet Page No. 312-323)

- Staff's review takes into account whether the applicant meets regulatory standards set by the Federal Communication Commission (FCC).
- The applicant has submitted a FCC Compliance Assessment which states that as the tower is designed, it meets FCC regulations (Packet Page No. 182-195)

Project Site

The project site is a 64.34 acre parcel located in a D3 zoning district.

- The site currently accommodates a 44-foot tall water reservoir. The water reservoir is 90 feet from the location of the proposed tower.

There are two towers on Point Lena, within 680 – 2000 feet from the proposed tower.

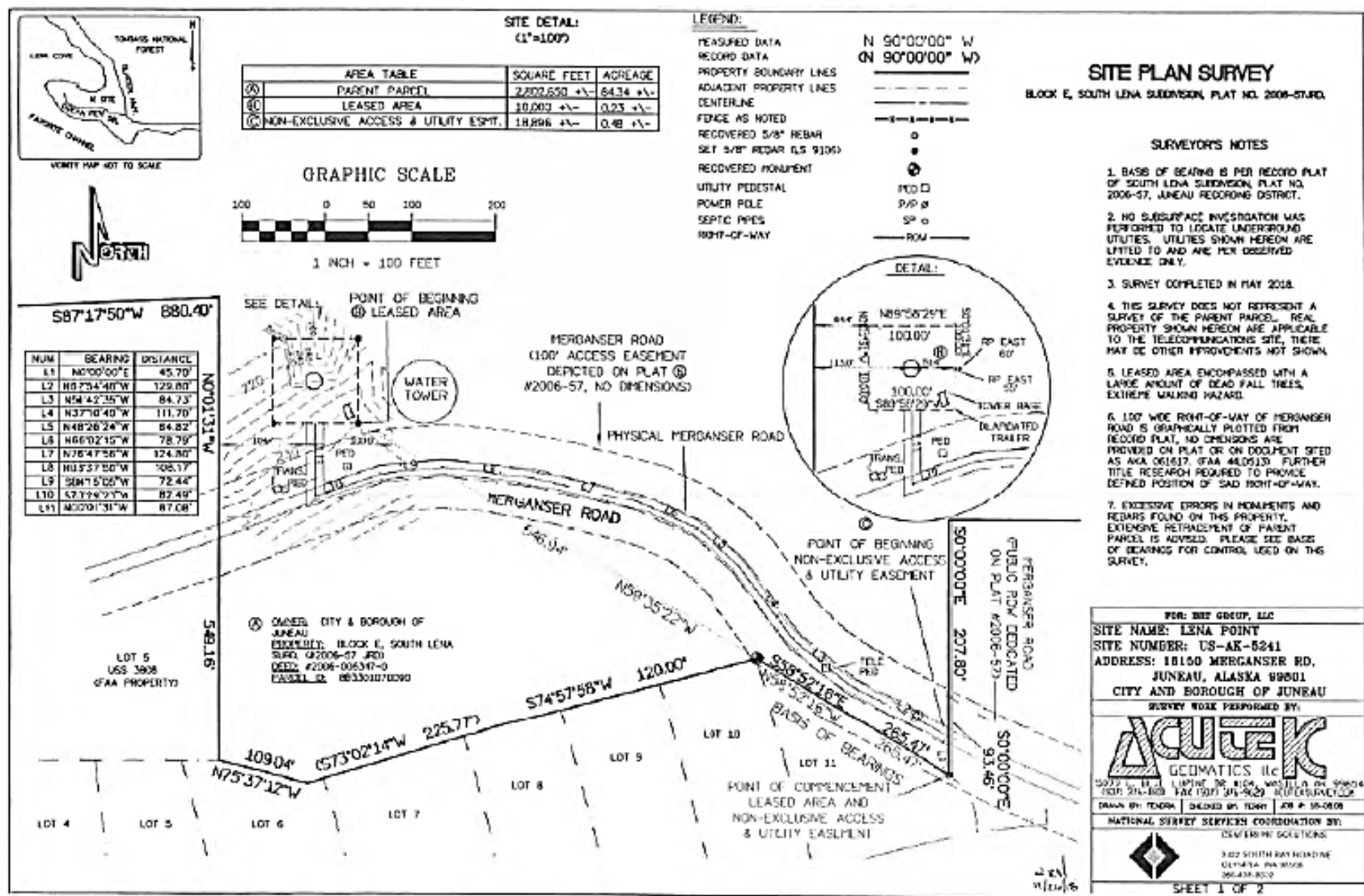
- According to the Wireless Telecommunications Master Plan, Site 2 at 17099 Point Lena Loop Road hosts a 220-foot lattice tower owned by AT&T and Alascom.
- Site 3 at 16800 Point Lena Loop Road has an 80-foot lattice tower owned by the Federal Aviation Administration (FAA).

The applicant reasons that collocation onto private towers will not be cost effective or support desired performance.

- The applicant has not provided documentation to demonstrate the cost effectiveness, nor if cost effectiveness should be considered in allowing a new tower, rather than requiring collocation.
- The FAA prohibits private carriers from collocating onto its facilities.

See Packet Page No. 155

Project Site



**Packet Page
No. 286**

1. LIGHTNING ROD
 2. TOP OF LIGHTNING ROD
 3. TOP OF LATTICE TOWER
 4. 100'-0"
 5. 100'-0"
 6. 100'-0"
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- There will be a 6-foot tall, barbed chain link fence with barbed wire and a locking gate.
- Signage cautioning entry on premises and posting contact information will be affixed onto the fence.

- The FAA does not require lighting for the tower.

- CBJ 49.65.930(e)(1) requires WCFs between 121 feet and 150 to accommodate no fewer than five antenna arrays. The proposed tower will accommodate five antenna arrays.
- Staff recommends that, if a height of 150 feet is approved, more than five antenna arrays must be accommodated.



Project Design

Setbacks

- The tower meets setbacks. The tower has a breakpoint that is 70 feet from the top of the tower. Per CBJ 49.65.930(f)(2), the minimum setback distance shall be equal to 110 percent of the distance from the top of the structure to the breakpoint level of the structure
- Given the location of the breakpoint, the minimum setback is 77 feet. The site plan shows the tower 113 feet from the nearest property line and more than 350 feet from the next nearest property line.
- The water reservoir is 90 feet from the location of the proposed tower.

Structural Assessment

- A professional engineer certifies all construction drawings for the proposed tower.
- Another professional engineer has confirmed that subsurface conditions are suitable for the tower foundation.

Propagation Study and RF Emissions Compliance

- The submitted statement confirming that radio frequency emissions will comply with FCC standards is consistent with the requirements of CBJ 49.65.960(d).
- The propagation study shows increased service coverage.

See Packet Page No. 156-157

Project Design

Visual Impact Study

- The proposed site for the tower does not obstruct view sheds identified in the 2013 Comprehensive Plan.
- Dense vegetation surrounds the tower location. The surrounding trees are approximately 60 feet to 90 feet tall. The proposed tower consists of a galvanized steel lattice that is distinguishable from the surrounding vegetation. Staff recommends a decrease in height, and a monopole-style tower in a matte dark green to blend better with the surrounding vegetation.
- The applicant has included photo-simulations of the tower viewed from multiple vantage points used in the zone of visibility study.
- Existing coniferous trees and other vegetation provides screening.
- The balloon test meets the requirements of CBJ 49.65.930(2)(D). The study shows six vantage points around Ocean View Drive and Point Lena Loop Road

See Packet Page No. 156-157 and 273-284

Traffic, Parking, Circulation

Traffic

- Staff does not anticipate the proposed use to add traffic to the existing site, excluding the limited traffic during construction and periodic maintenance.

Parking and Circulation

- The site has more than 60 square-feet of area for parking and is accessed from Merganser Road. Merganser Road is not accessible by the public. The FAA determines permission for using the road.
- Access to the project site will be addressed during the land lease process.

See Packet Page No. 157

Other External Impacts

Noise

- Staff does not anticipate that the tower will generate noise. The site is separated from residential homes by a dense vegetation.

Public Health or Safety

- No evidence indicates that there are any public health or safety impacts from the proposed project. The applicant provided a Radio Frequency Emissions Compliance Report signed by a qualified professional, whose credentials are included.

Habitat

- The proposal does not affect habitat protected by Title 49.

Property Value or Neighborhood Harmony

- The proposed tower will not generate noise, traffic, or visual impact that is inconsistent with neighboring residential uses. The nearest dwelling is approximately 500-550 feet from the proposed tower.

- **See Packet Page No. 157**

Conformity With Adopted Plans

The proposal complies with the 2013 Comprehensive Plan and the Wireless Telecommunications Master Plan

- The subject property has a Comprehensive Land Use designation of Urban Low Density Residential. WCFs are deemed appropriate to the zoning due to their low noise and traffic impact. While the tower is not similarly scaled to single-family residential development, the tower's isolation is anticipated to mitigate conflicts with neighborhood harmony.

See Packet Page No. 158

Findings and Recommendation

**Staff findings can be found on WCF20190009 Staff Report Pages 8-11
(Packet Page No. 159-162)**

Staff recommends the Planning Commission adopt the Director's analysis and findings and approve the requested Special Use Permit for a WCF tower with the following conditions:

1. The WCF must be constructed as a monopole;
2. The WCF must be matte dark green in color;
3. The WCF cannot have lighting, and if in the future the FAA requires lighting, a modification to the Special Use permit must be approved by the Planning Commission;
4. The site security and required signage must be installed and maintained according to the plan;
5. The WCF must accommodate more than five (5) antenna arrays.

From: [Aimée Richards](#)
To: [PC_Comments](#)
Subject: new comment for submission on proposed Merganser Rd communication tower
Date: Saturday, April 4, 2020 9:45:57 PM

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Dear Planning Commission,

I am not able to testify at the hearing on April 14th regarding the 150ft communication tower on Merganser Road. Please consider this email as my testimony.

As a resident of the Lena Point neighborhood (Ocean View Drive) I am writing to oppose the proposed location of a new communication tower on Merganser Way.

Our family is very concerned about the potential negative health effects of 5G systems. We have two young children, considered as a "vulnerable" population by scientists currently studying the potential ill effects of 5G signals on human health. The proposed tower would be in our backyard. We therefore oppose the proposed tower on Merganser.

Through the Council of Europe, known from the *European Convention on Human Rights*, over 180 scientists and doctors from 36 countries have warned of the potential dangers of exposure to electromagnetic radiation emitted by 5G systems. These scientists and many others around the world, including the U.S. are calling on governments to halt installation of 5G systems until independent studies are conducted to determine the risks to human health. The following is an excerpt from their request.

"We, the undersigned scientists, recommend a moratorium on the roll-out of the fifth generation, 5G, for telecommunication until potential hazards for human health and the environment have been fully investigated by scientists independent from industry. 5G will substantially increase exposure to radiofrequency electromagnetic fields (RF-EMF) on top of the 2G, 3G, 4G, WiFi etc. for telecommunications already in place. RF-EMF has been proven to be harmful for humans and the environment."

Dr. L. Hardell, Professor of Oncology at Örebro University in Sweden states, *"The telecom industry is trying to roll out technology that may have very real, unintended harmful consequences. Scientific studies, both recently and over many years, have identified harmful effects on health when testing wireless products under realistic conditions. We are very concerned that the increase in radiation exposure by 5G leads to damage that cannot be reversed"*.

As a tax-payer and parent of two young children I call on you to delay approvals for any new communication tower in the Lena Point area until such a time when independent studies have been conducted around the potential health risks of 5G structures. I beg of you, please do not take the chance of hoping the radiation emitted

from a new tower would not harm the growth, development and overall health of my children. Other cities, cantons and even countries have halted the installment of such systems until such a time as they can prove the health of their citizens will not be compromised for the benefit of telecommunication companies. I urge you to do the same and oppose the installment of yet **another** communications tower in the Lena area.

Aimee Richards
16450 Ocean View Drive
Juneau

From: [audra](#)
To: [PC_Comments](#)
Subject: 5G tower at Lena
Date: Monday, April 6, 2020 9:21:44 AM

Packet Page 83 of 643

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Hello. I would like to submit public comments against the proposed 5G tower at Lena. While I understand the need for towers, from a public health perspective, a tower this close to residential homes poses many health risks and I propose that it be relocated to a less populated area.

While it is commonly accepted that exposure to high frequency EMFs is correlated with cancer and DNA damage, lower frequency EMFs are still being researched. Even so, The International Agency for Research on Cancer, the NHI and CDC have classified even cellphones as **possibly carcinogenic**. If that's the case, what health problems might towers close to homes pose??

National Health Institute:

"Currently, scientific evidence has not conclusively linked cell phone use with any adverse human health problems, although scientists admit that more research is needed."

Even the CDC has had mixed recommendations at agrees that more research and time is needed. https://www.nytimes.com/2016/01/02/technology/at-cdc-a-debate-behind-recommendations-on-cellphone-risk.html?_r=3

Mobile phone radiation might alter protein expression in human skin.

<https://www.ncbi.nlm.nih.gov/pubmed/18267023>

Electromagnetic fields and DNA damage.

<https://www.ncbi.nlm.nih.gov/pubmed/19264461>

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Alteration of diurnal rhythms of blood pressure and heart rate to workers exposed to radiofrequency electromagnetic fields.

<https://www.ncbi.nlm.nih.gov/pubmed/10212373>

Audra Henderson

MPH, Nutritional Therapy Practitioner

E_ info@audrawellness.com

W_ www.audrawellness.com

WCF20190010

A Wireless Communication Facility Permit to install new,
unlit 150-foot communication tower

PC Presentation April 14, 2020

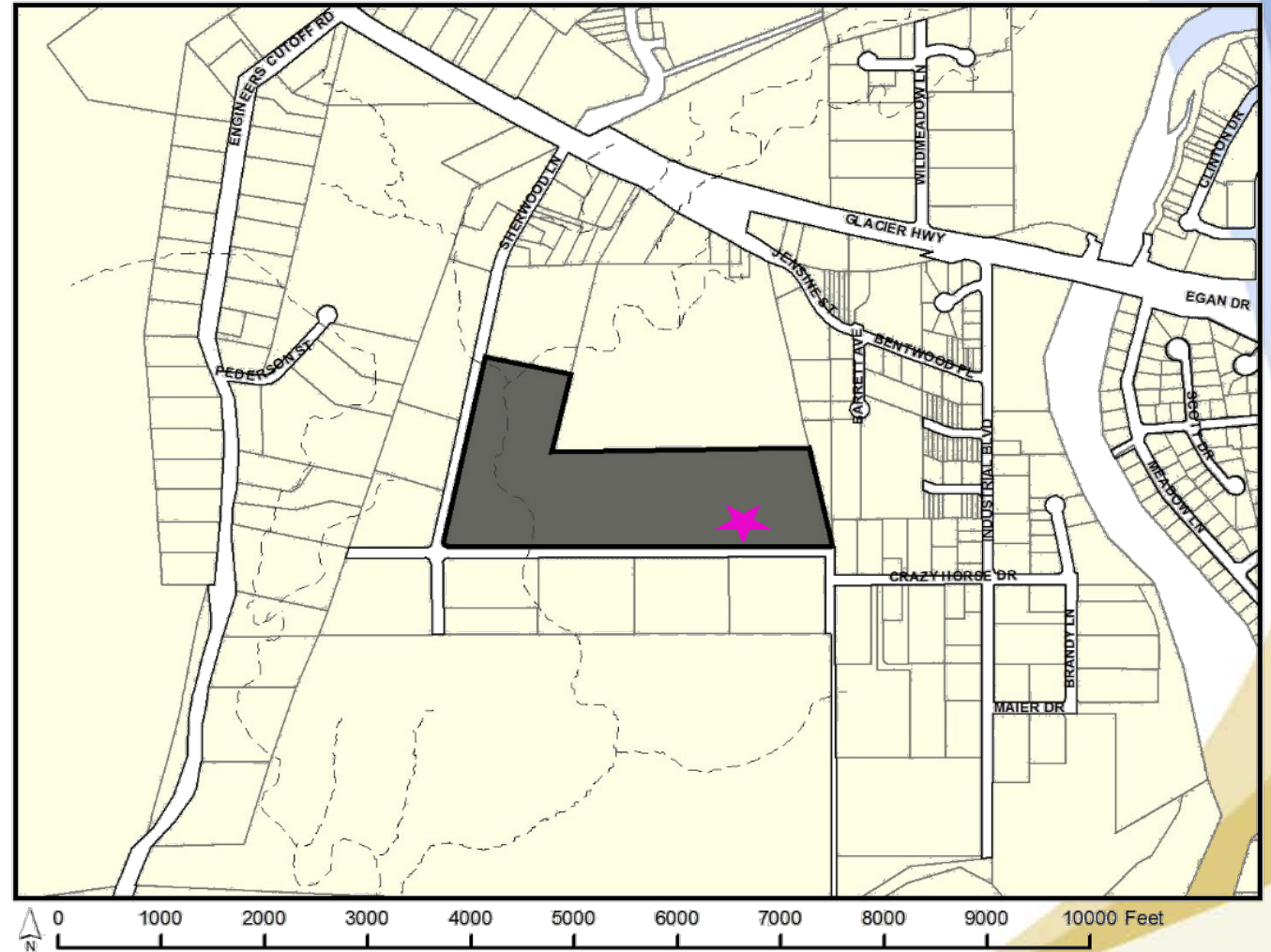
Staff recommends the Planning Commission adopt the
Directors analysis and findings and **APPROVE WITH
CONDITIONS** the requested Special Use Permit.

Project Description

New 150-foot tall, freestanding monopole tower with 5-foot lightning rod.

- There will be no antenna adding to the height of the tower.
- The tower is proposed to be unlit

Packet Page No. 330



Agency Review and Public Comment

Staff requested review from the CBJ Assessor's Office, Building Division, Capital City Fire and Rescue, Engineering and Public Works Department, Lands and Resources Division, and the Juneau International Airport (JIA). (Packet Page No. 459-461)

- Building Division, and Engineering and Public Works expressed that they had no concerns.
- JIA noted that the applicant will need to file FAA 7460. This form must be filed at least 45 days prior to the start date of proposed construction.
- Staff did not receive other comments.

Several public comments expressed concerns about 5G service being detrimental to health. (Packet Page No. 462-465)

- Staff's review takes into account whether the applicant meets regulatory standards set by the Federal Communication Commission (FCC).
- The applicant has FCC Compliance Assessments which states that as designed, the proposed tower will meet FCC regulations (Packet Page No. 382-385)

Project Site

The project site is a 31.97-acre parcel located in an Industrial zoning district.

- The tower location is approximately 28 feet north and 190 feet west of Southeast Alaska Food Bank

There are three towers within a 1,000-foot vicinity of the proposed tower's location.

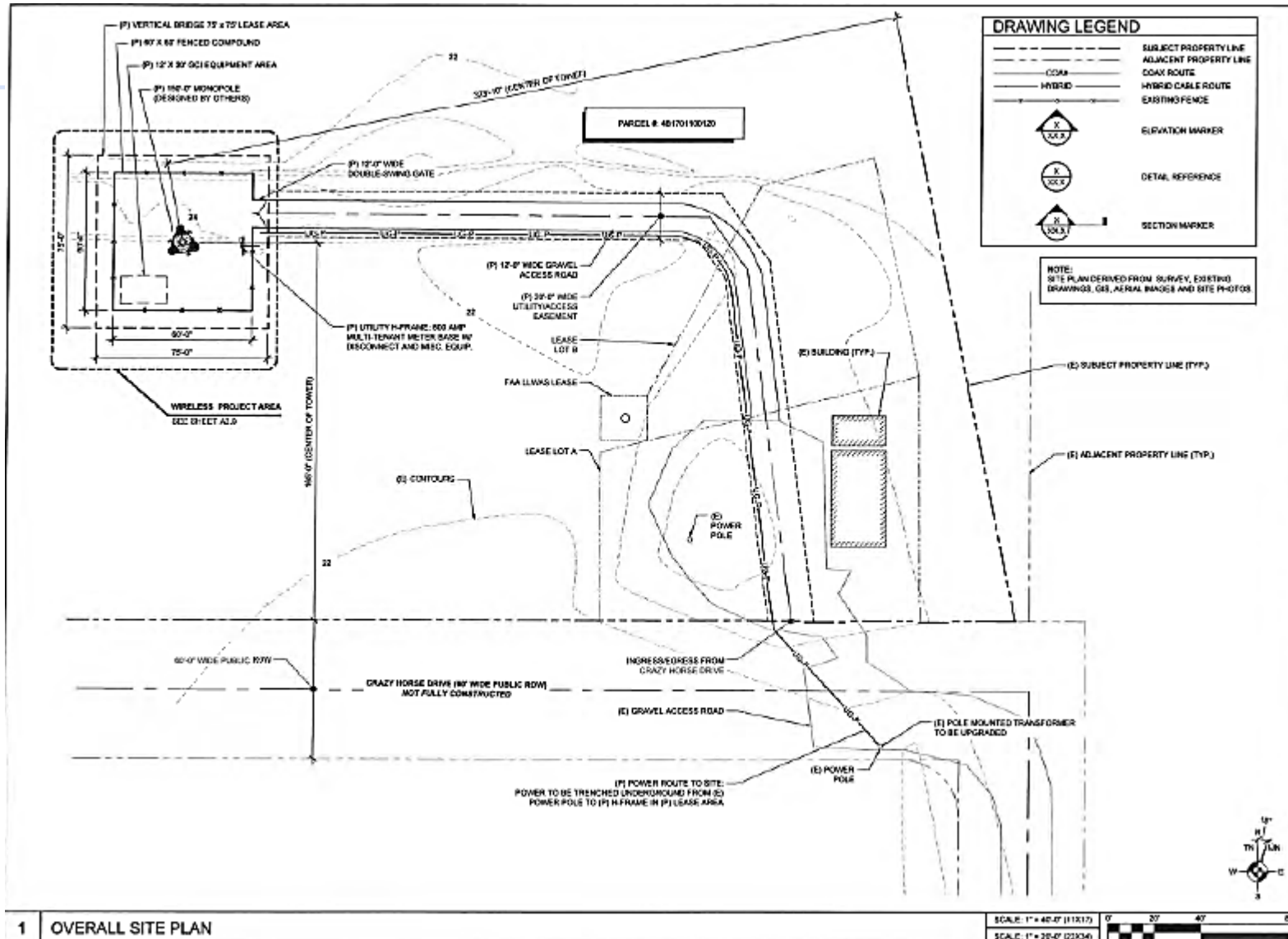
- Site 16 and Site 17 are located along Bentwood Plaza, and owned by Alascom and AT&T respectively. The former is a 158-foot lattice tower, and the latter is a 60-foot monopole.
- Site 18 hosts a 120-foot Federal Aviation Administration (FAA) tower west of the applicant's proposed site along Crazy Horse Drive.

The applicant reasons that collocation onto private towers will not be cost effective or support desired performance.

- The applicant has not provided documentation to demonstrate the cost effectiveness, nor if cost effectiveness should be considered in allowing a new tower, rather than requiring collocation.
- The FAA prohibits private carriers from collocating onto its facilities.

See Packet Page No. 332

Project Site



Project Design

Security and signage

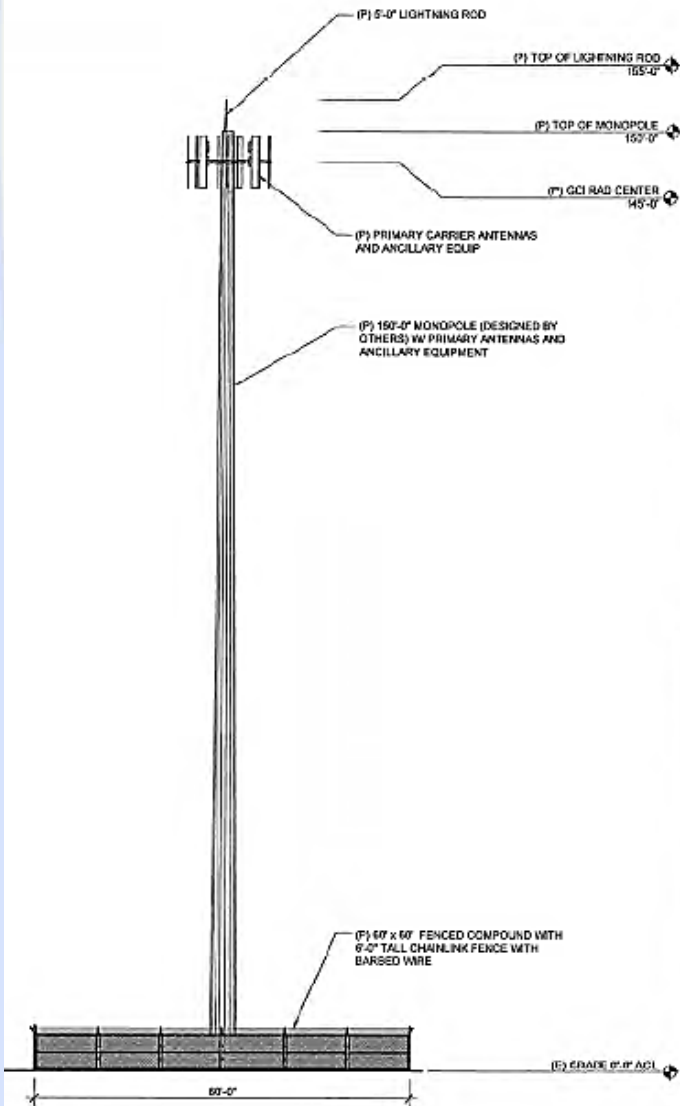
- There will be a 6-foot tall, barbed chain link fence with barbed wire and a locking gate.
- Signage cautioning entry on premises and posting contact information will be affixed onto the fence.

Lighting

- The FAA does not require lighting for the tower.

Arrays

- CBJ 49.65.930(e)(1) requires WCFs between 121 feet and 150 to accommodate no fewer than five antenna arrays. The proposed tower will accommodate five antenna arrays.
- Staff recommends that, if a height of 150 feet is approved, more than five antenna arrays must be accommodated.



Project Design

Setbacks

- The tower meets setbacks. The tower will not have a breakpoint. CBJ 49.65.930(f)(1) requires a tower without breakpoints to have a minimum setback distance from the nearest property line at least equal to the height of the tower.
- The tower height is 150 feet. The tower location is more than 300 feet from the north, the east, and the west lot lines. The distance from the south property line is 165 feet.

Structural Assessment

- A professional engineer certifies all construction drawings for the proposed tower.
- Another professional engineer has confirmed that subsurface conditions are suitable for the tower foundation.

Propagation Study and RF Emissions Compliance

- The submitted statement confirming that radio frequency emissions will comply with FCC standards is consistent with the requirements of CBJ 49.65.960(d).
- The propagation study shows increased service coverage.

See Packet Page No. 332-334

Project Design

Visual Impact Study

- The application includes a zone of visibility map that meets the requirements of CBJ 49.65.970(c)(2)(B)(i). The proposed site for the tower does not obstruct view sheds identified in the 2013 Comprehensive Plan.
- The development meets the requirements of CBJ 49.65.930(2)(B)(i) and minimizes adverse effects on the surrounding landscape, as it is located more than a quarter mile from residences. The tower consists of a galvanized steel, which appears mottled grey that is consistent with the local industrial streetscape. Staff recommends as a condition of approval that the monopole is matte grey in color.
- Simulated Renderings of WCF: The applicant has included photo-simulations of the tower viewed from multiple vantage points used in the zone of visibility study.
- Existing trees and other vegetation provide screening at the base of the tower. While grading and backfill will be performed at the tower location, the surrounding vegetation will remain largely intact.
- The balloon test meets the requirements of CBJ 49.65.930(2)(D). The study shows six vantage points: Brandy Lane and Crazy Horse Drive, Industrial Boulevard and Bentwood Plaza, Glacier Highway and Jensine Street, 2331 Engineers Cutoff Road, and the Mendenhall Golf Course Parking Lot.

See Packet Page No. 333 and

Traffic, Parking, Circulation

Traffic

- Staff does not anticipate the proposed use to add traffic to the existing site, excluding the limited traffic during construction and periodic maintenance.

Parking and Circulation

- The site has area for parking and is accessed from Crazy Horse Drive.

See Packet Page No. 334

Other External Impacts

Noise

- Staff does not anticipate that the tower will generate noise. The site is separated from residential homes by a dense vegetation.

Public Health or Safety

- No evidence indicates that there are any public health or safety impacts from the proposed project. The applicant provided a Radio Frequency Emissions Compliance Report signed by a qualified professional, whose credentials are included.

Habitat

- The proposal does not affect habitat protected by Title 49.

Property Value or Neighborhood Harmony

- The proposed tower will not generate noise, traffic, or visual impact that is inconsistent with existing towers or neighboring residential uses.

See Packet Page No. 334

Conformity With Adopted Plans

The proposal complies with the 2013 Comprehensive Plan and the Wireless Telecommunications Master Plan

- The subject property has a Comprehensive Land Use designation of Urban Low Density Residential. WCFs are deemed appropriate to the zoning due to their low noise and traffic impact. While the tower is not similarly scaled to single-family residential development, the tower's isolation is anticipated to mitigate conflicts with neighborhood harmony.

See Packet Page No. 334-335

Findings and Recommendation

**Staff findings can be found on WCF20190010 Staff Report pages 7-11
(Packet Pages 335-339)**

Staff recommends the Planning Commission adopt the Director's analysis and findings and approve the requested Special Use Permit for a 150-foot tall communication tower with a 5-foot lightning rod with the following conditions:

1. The WCF must be constructed as a monopole;
2. The WCF must be matte grey in color;
3. The WCF cannot have lighting, and if in the future the FAA requires lighting, a modification to the Special Use permit must be approved by the Planning Commission;
4. The site security and required signage must be installed and maintained according to the plan;
5. The WCF must accommodate more than five (5) antenna arrays.

From: [Stefann Paddock](#)
To: [PC_Comments](#)
Subject: Concerns about 5G
Date: Thursday, April 2, 2020 10:10:21 AM

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

To whom it may concern,

My name is Stefann Paddock and I served in the U.S. Navy as an I.T. specializing in radio and satellite communications. I am qualified in 6 radio and satellite communication systems. I want to start off by sharing an anecdote and then finishing up with some scientific research in regard to 5G.

Its interesting, while going through Navy I.T. "A"-school they didn't teach us much about H.E.R.P. or Hazard of Electromagnetic Radiation to Personnel. But after I was sent out to the fleet it was a massive concern within my division. It was well known that over time, exposure caused impairments in the immune system as well as brain damage. We were ordered to take proper precautions and avoid exposure as much as possible. Additionally, there were reports that we would file, in regards to our equipment's effect on the environment. Our pollution footprint was well within what was considered "safe" for the environment, but the navy standard for safe was powerful enough to disrupt, within a certain radius, the ability for certain animals to navigate properly. Animals like bugs, birds, sea turtles, and whales. This was deemed acceptable by the government.

I remember when 4G was rolling out, hundreds of peer reviewed studies showed the negative effect 4G had on the bee population. In case you aren't aware, the diminishing bee population is still a concern today. Considering this, what do you think 5G will do to the bees, which at its baseline is 4 times as powerful as 4G with the ability to ramp up to 1000 times as powerful?

There is also a lot of studies of 5G out there right now, showing extremely adverse effects on us people, especially the young.

Here is a link to the Environmental Health Trust.

<https://ehtrust.org/scientific-research-on-5g-and-health/>

There is enough there to get you started.

Please do not allow these 5G towers to be built. In fact, if you care about people or the environment, you would advocate for banning 5G all together. That is just my opinion based on the evidence I have found.

Best Regards,

Stefann M. Paddock

CEO-Sovereign Cigar Co. LLC

CEO-Eton Flash Wholesale and Delivery

Creator-Bamrock Brewing Education Project 501(c)3

From: [Matt and Beth Dobson](#)
To: [PC_Comments](#)
Subject: 5G towers - April 14 meeting
Date: Friday, April 3, 2020 6:48:03 PM

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Dear Juneau Assembly and Planning Commission,

Thank you for all you do and all the additional time and energies that you have been putting in during the COVID-19 pandemic. I know your job is larger than many of us outside of government even fully understand. So, thank you very much for your thoughtful and intentional decision making.

I understand you will soon be considering placement of two 5G towers in Juneau. One of them is close to my neighborhood. I have many concerns about 5G. I do not claim to be an authority on telecommunications or 5G, but I am unable to find reassurance that 5G is safe or healthy for us.

I am a pharmacist and our medications have to go through trials to determine safety before being allowed into general use. Then they are further considered by each prescriber with safety and appropriateness for each individual patient. It seems to me that 5G technology, which would have a much broader impact, should prove similar safety. The wave radiation transmitted by these towers will have the potential to reach every person in Juneau. Once we have these towers, it would be very difficult to remove them. Is the benefit presented worth the potential risk at this time? Could we wait to see if it is proven safe? That is what I am asking of the assembly. I would like to see data towards safety,

Please see the link to this to an November 2019 article in Scientific America that warns that 5G is unsafe.

<https://blogs.scientificamerican.com/observations/we-have-no-reason-to-believe-5g-is-safe/>

And also see "5G Appeal". This is a group of scientists and doctors that are calling for a moratorium on the roll-out of 5G. You can click on the NEWS tab that will link you to many articles about 5G that researchers have been documenting around the world.

<http://www.5gappeal.eu/>

I ask that you consider proof of the safety of 5G for all our citizens before allowing 5G towers in our community.

Thank you.

Beth Dobson



(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

DATE: March 13, 2020

TO: Planning Commission

FROM: Teri Camery, Senior Planner 
Community Development Department

CASE NO.: USE2019 0022

PROPOSAL: A Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek

GENERAL INFORMATION

Applicant: SECON

Property Owner: SECON

Property Address: Hidden Valley

Legal Description: Hidden Valley TR A

Parcel Code Number: 3M000LEMCCK2

Site Size: 113.29 acres

Comprehensive Plan
Land Use Designation: Resource Development

Zoning: Rural Reserve

Utilities: On site water

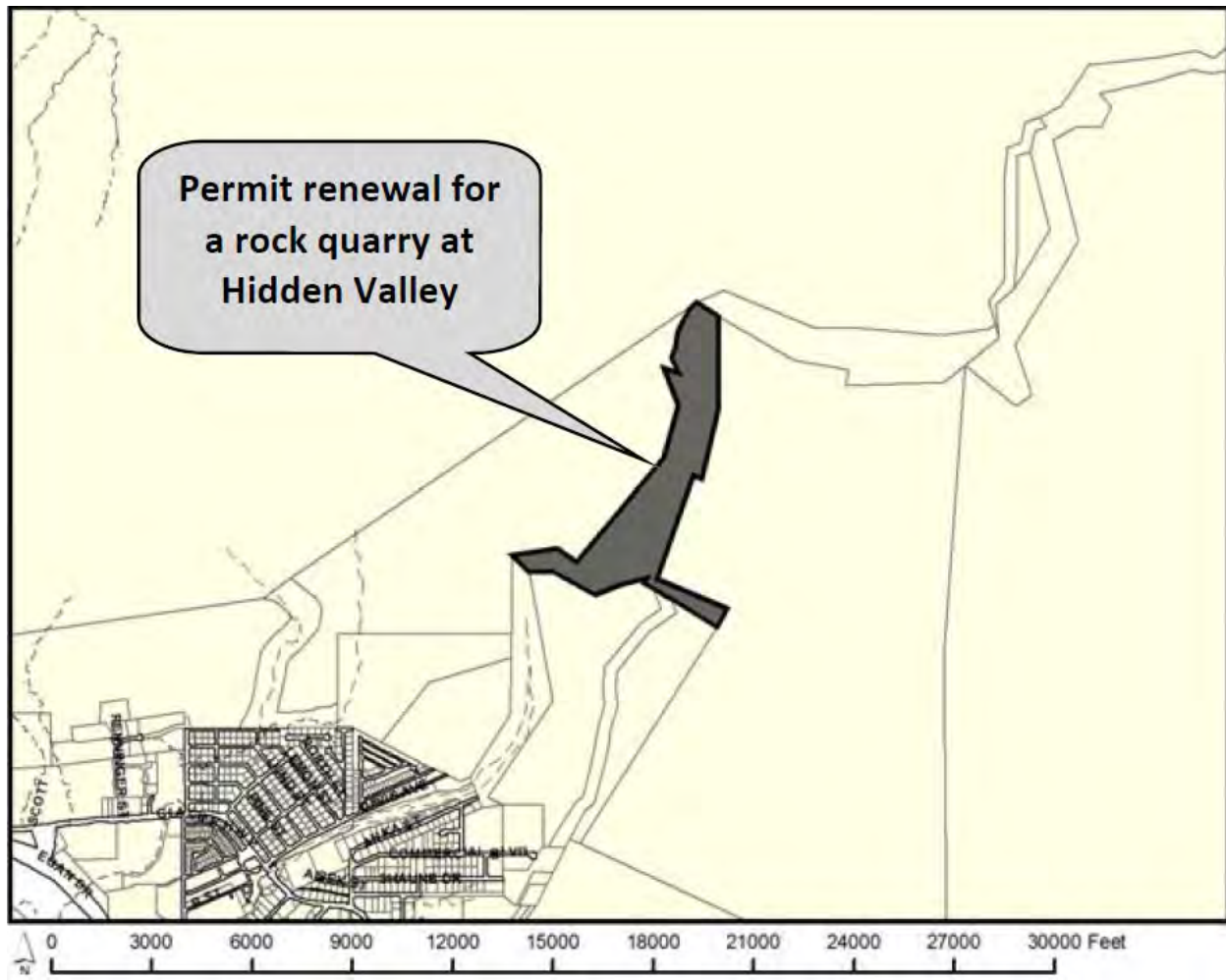
Access: Hidden Valley Haul Road

Existing Land Use: Existing quarry

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Surrounding Land Use: North - RR, Rural Reserve, Undeveloped
 South - RR, Rural Reserve, Undeveloped
 East - RR, Rural Reserve, Lemon Creek Trail
 West - RR, Rural Reserve, Undeveloped

VICINITY MAP



ATTACHMENTS

Attachment 1 Development Permit Application
Attachment 2 Conditional Use Permit Application
Attachment 3 Pre-application meeting notes
Attachment 4 Project Narrative 2-4-20
Attachment 5 Topographic Map with Ownership
Attachment 6 Overview Map

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Attachment 7 Section views
Attachment 8 Quarry Map for Section View Locations
Attachment 9 LiDAR view with proposed access road
Attachment 10 Subdivision Plat
Attachment 11 SWPPP layout
Attachment 12 Applicant response to Section 49.65.210 application contents
Attachment 13 USE2009 0004 Notice of Decision
Attachment 14 Agency Review Comments
Attachment 15 Noise Ordinance and Performance Standards
Attachment 16 Wetlands Review Board draft minutes
Attachment 17 Bond Estimate and CBJ Engineering concurrence
Attachment 18 Flood zone map
Attachment 19 Map with new and proposed roads

PROJECT DESCRIPTION

The applicant requests a Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek. The quarry was last approved as USE2009-0004. This permit expired on April 14, 2019 (Attachment 8). Quarry operations include gravel and rock extraction, blasting, and rock-crushing. The applicant's Project Narrative, Attachment 4, provides a full description of the development.

The only significant change from past operations is the relocation of the entrance, as noted on pages 5-6 of the Project Narrative. The applicant intends to change the entrance to the mine site by moving the road off CBJ property and onto SECON's property. The new road alignment would depart from the existing road at the southwest corner and run along the southern property line to the lower quarry entrance. After the lower quarry access has been established to provide safe access, the upper haul road access would be vacated.

The application also provides an updated reclamation plan. Because the operation is expected to continue for approximately 50 more years, reclamation is ongoing. This will be discussed in later sections of this report.

BACKGROUND

The Lemon Creek area has a history of placer mining from the 1870s through the early 1900s. Logging occurred in upper Lemon Creek/Hidden Valley area until the 1980s. Quarry operations first began sometime during the early 1980s. The first Conditional Use permit for the quarry was issued in June 1984 as CU-25-84 for Hidden Valley Associates. In 1996 Goldbelt, Inc. requested a Conditional Use permit to continue the operation, which was approved as CU-45-96 in May 1997. The property was sold to SECON, Inc. in May 2000.

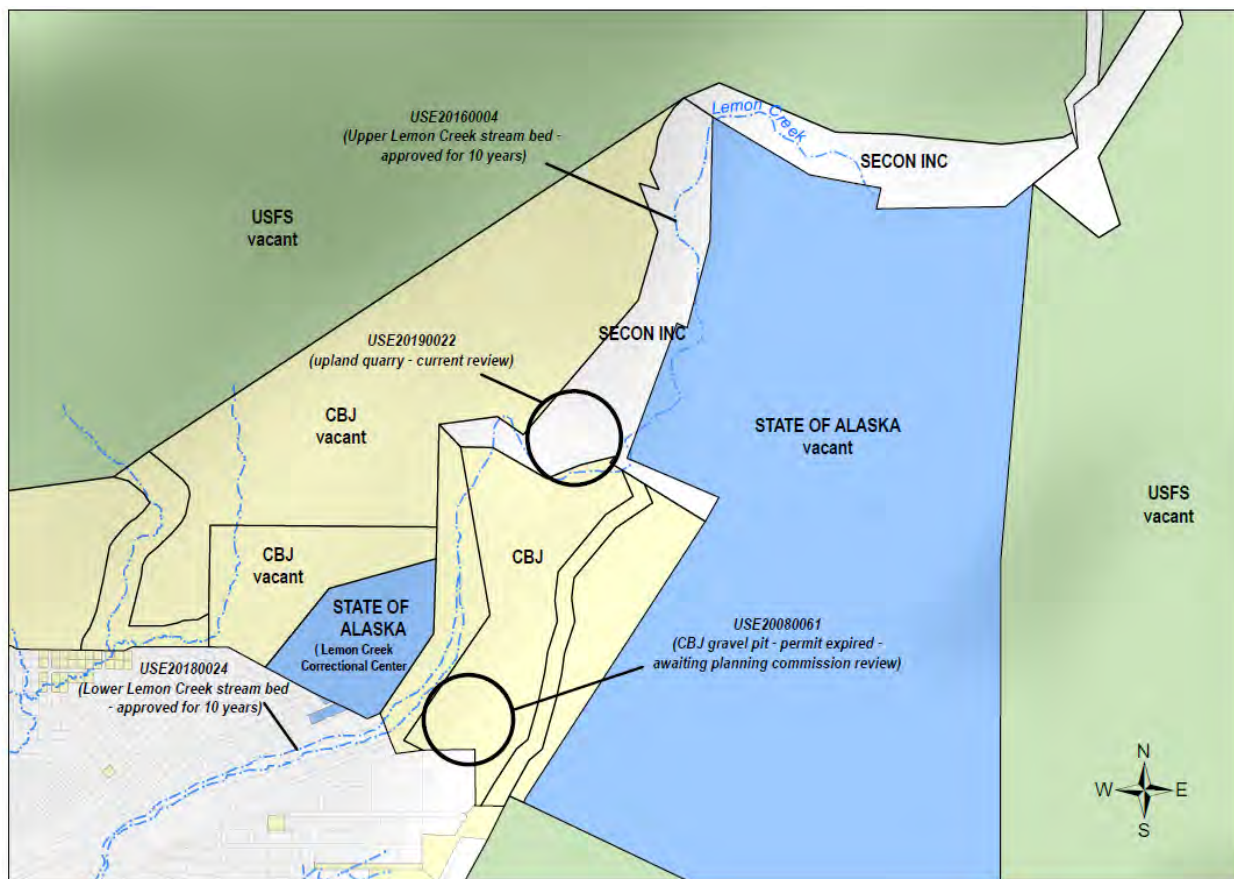
In conjunction with the Conditional Use permits to extract rock, there have been a number of

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Conditional Use permits issued to allow storage of explosives and equipment on this property. The most recent permit, USE2009-00019, expired on July 14, 2019. The applicant recently applied for a new Conditional Use permit to allow explosive storage, which is currently under departmental review and will come before the Planning Commission this spring. Until that permit is approved, explosive storage is prohibited.

As noted earlier, the quarry was last approved as USE2009-0004. This permit expired on April 14, 2019. (Attachment 13)

In addition to the current development under review, SECON has two approved stream mining developments in the area, as shown in the map below with the Conditional Use Permit numbers. Both permits are valid for 10 years from the date of issuance. The map also notes the adjacent CBJ gravel pit, which was last permitted as USE2008-00061. CBJ's permit expired on January 13, 2019, and is currently under internal review by the Community Development Department. CBJ's gravel pit development will be scheduled for Planning Commission review in the coming months.



LEMON CREEK EXTRACTION PERMITS & LAND OWNERSHIP
SCOPE OF REVIEW

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The development requires review of two code sections: 1) CBJ 49.65.200, Sand and Gravel; and 2) CBJ 49.15.430, Conditional Use Permit. Section 49.65.200, Sand and Gravel, is addressed first.

SAND AND GRAVEL ANALYSIS, CBJ 49.65.200

49.65.200 Extraction permit required.

(a) The use of property for the excavation, removal or other extraction of stone, sand, gravel, clay or other natural deposits and formations, including the processing of the materials, may be authorized in any district only under a conditional use permit issued by the Commission under the procedures set forth in chapter 49.15, article III, as modified by this article. (Emphasis Added)

As required with every Sand and Gravel permit, the applicant shall provide the following description list for Planning Commission review.

49.65.210 Contents of application.

Each person who requires a permit under this article [Article II Sand & Gravel] shall file an application with the department. The application shall contain a plan for the excavation operation, storage, on-site processing if permitted in the district, and site restoration. The plan shall include (see items 1-7 below):

Attachments 4 – 12 include a project narrative and site plans from the applicant responding to the criteria listed below. Attachment 13 specifically responds to the application requirements point by point.

(1) A graphic and legal description of the property;

The property is documented in the maps of Attachments 5, 8, and 10. The site is 113.29 acres. The legal description is Hidden Valley TR A. Access is from the Hidden Valley Haul Road.

(2) A topographic map showing the existing topography, vegetation, drainage features, ground water level, structures, significant natural and artificial conditions of the land, on-site and off-site geophysical hazards which may affect or be affected by the proposed operation, proposed structures, roads, stockpiling and operation;

A topographic map and drainage plan documenting the features above is shown in the Stormwater Pollution Prevention Plan (SWPPP) layout, Attachment 11. This plan shows stockpiling, material processing, and equipment storage areas, as well as vegetative buffers. There are no structures on the site. The plan also shows drainage features, noting flow patterns, ditches and check dams. There are no outfalls from the site.

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CBJ Engineering has requested more information regarding geophysical hazards in the area. This will be addressed in a later section of this report. In addition, CBJ Engineering has stated that the USE permit and future grading permits must adhere to the SWPPP to manage water quality, and noted that the SWPPP expires on March 31, 2020 (Attachment 14). Conformance with the SWPPP is critical for ensuring conformance with the CBJ Manual of Stormwater Best Management Practices and other engineering standards. In an email response the applicant has explained that ADEC is not able to approve a new Multi-Sector General Permit and associated SWPPP due to a court case with the Environmental Protection Agency. The applicant has cited language in the permit under "Continuation of the Expired General Permit" which states, "If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 18 AAC 83.155 and remain in force and effect for discharges that were covered prior to expiration." (Attachment 18)

(3) A topographic map and a typical cross section showing the proposed finished contour on the land, vegetation, drainage features, limits of overburden clearing, structures, and significant natural and artificial conditions of the property which will exist upon completion of the site restoration plan;

Attachment 11 notes these features, as described in item 2 above. The Attachment 12 narrative notes that the quarry is expected to be an active mining site for at least 50 more years. Section Views in Attachment 7 show the anticipated quarry rock excavations. As the quarry is developed the stripped material and exposed earthen side slopes are seeded for stabilization per the requirements of the Stormwater Pollution Prevention Plan. As noted earlier, there is no stormwater discharge from the quarry. If the quarry develops a discharge point in the future the SWPPP will be updated, Best Management Practices will be implemented, and sampling will be performed as required by the Alaska Department of Environmental Conservation (ADEC) under the SWPPP.

The CBJ Lands Division questioned the 40-foot benches on the back wall of the quarry, citing a potential public safety hazard. The applicant responded that the Alaska Department of Transportation uses 60-foot back walls, and therefore 40 feet is more conservative. CBJ Lands then responded that the maximum bench height at CBJ's Stabler's Quarry is 30 feet, and suggested that if the applicant doesn't want to change the wall height, it may be appropriate to require fencing and signage to warn the public. The applicant has continued to disagree regarding wall heights and has noted the fencing and signage that already exists for security. This issue will be addressed in the public safety section of the report.

(4) Topographic mapping required in subsections (2) and (3) of this section for areas having a slope of less than five percent shall show spot elevations at all breaks in grade, drainage channels or swales and at selected points not more than 100 feet apart in all directions. For areas having a slope of greater than five percent, contours shall be shown at an interval of not more than five feet where the ground slope is regular: however, contour intervals of not more

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than two feet may be required where necessary to adequately show irregular land features or drainage details;

The development is a hard rock quarry. The details above apply to sand and gravel quarries and are not applicable to the proposed development due to the difference in source material.

(5) The plan shall include a map showing ingress and egress points for trucks and other equipment;

An ingress and egress map, which includes the existing versus proposed road, is included in Attachment 19.

(6) The plan shall include a map showing all buildings and structures to be located on the site; and

There are no buildings or structures on the property; therefore no map has been provided.

(7) A narrative statement describing the operation, on-site processing, stockpiling, and site restoration shall be included showing:

A narrative statement describing the operation and restoration plan is included in Attachment 4.

(A) A site drainage plan;

Stormwater from the operation is regulated by the Alaska Department of Environmental Conservation (ADEC) Multi-Sector General Permit (MSGP) for Industrial Activities, which requires an approved Storm Water Pollution Prevention Plan. The drainage pattern is included in the SWPPP plans, Attachment 11. In Attachment 12 the applicant has explained that the site is designed in a way that allows all run-off from the site to drain through rock. This filters the run-off naturally, so a drainage plan is not necessary.

Item two of this section explains that the MSGP and SWPPP expire on March 31, 2020, however permit requirements remain in place until the permit is renewed.

CBJ Engineering has reviewed and accepted these plans. CBJ Engineering comments are included in Attachment 14.

(B) A method of securing the area, including installation of gates at access points, posting, and fencing;

The single access point to the site is a locked gate on the private haul road. No trespassing signs are also in place. (Attachments 4 and 12)

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(C) Methods to be used to minimize noise pollution and visual blight;

No permanent on-site lighting is proposed for the development, as noted in Attachments 4 and 12. Portable lights will be brought to the site for occasional operations after dark. The site is located behind a 500-foot tall hill. The applicant states that light will not be visible beyond this natural barrier, nor will daily operations create sound levels high enough to surpass the barrier. When blasting is necessary, the applicant provides 24 hours' notice at the nearby Lemon Creek trailhead, to local radio, and to the Federal Aviation Administration (FAA). The FAA is also notified when blasting has been completed. Blasting conditions will be addressed in the next section.

(D) The proposed hours and days of operation during the year;

The applicant has provided slightly different hours of operations in Attachments 4 and 12. Staff has confirmed with the applicant that the hours listed in Attachment 4, the Project Narrative, should apply. These hours are 7 a.m. to 10 p.m. Monday through Friday, and 9 a.m. to 10 p.m. on Saturday and Sunday. The quarry will open in early spring and close in late fall. For the purposes of project conditions, addressed in the next section, staff defines this period as April through November.

(E) The estimated amount and general type of material present and to be removed from the site;

The applicant estimates that the quarry contains 1.5 million cubic yards of rock. Depending on city and state demand, the applicant anticipates mining approximately 30,000,000 cubic yards each year. (Attachment 12)

(F) The results of test holes which show the water table level, if any, and the general type and location of materials to be removed;

The applicant states that the quarry has been operating since at least the early 1980s, before the current sand and gravel regulations were adopted into code. SECON has no record of test holes on the site drilled at the quarry. (Attachment 12)

(G) The date by which it is anticipated the extraction and processing operation will be completed;

The applicant estimates that the quarry will operate for at least 50 more years. (Attachment 12)

(H) A schedule for completion of necessary site restoration work;

The applicant has explained that restoration work is completed on an ongoing basis each year as rock is removed from the quarry. All areas that have been mined are stabilized and seeded each

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season. Due to the expected 50-year life of the quarry, a site restoration schedule is not feasible at this time. (Attachment 12)

(I) Operating procedures for control of airborne particulates and other pollutant emissions from the site and equipment used at the site that may affect areas beyond the site boundaries;

SECON complies with all Alaska Department of Environmental Conservation Air Quality permitting regulations for all equipment used within the quarry. (Attachment 12)

(J) The identification of any geophysical hazards which may affect or be affected by the proposed operation. A statement of the possible impact of the hazard on the operation and of the operation on the hazard including methods of reducing the impact shall be included;

CBJ Engineering specifically requested that the applicant provide details on geophysical hazards in conformance with this section, noting the concerns in the previous Conditional Use Permit review regarding bank stabilization. Those concerns resulted in conditions 5 and 9 in the last Notice of Decision, Attachment 13.

In an email dated March 9, 2020, the applicant responded with the following statement:

I currently do not see any potential geophysical hazards. This does not mean that an event cannot happen. Earthquakes, tidal waves and extreme storms happen and have happened throughout history. The property is in a creek bottom and is worked seasonally. Secon knows that Lemon Creek floods and we also know to keep our equipment out of harm's way. There are no structures on the property.

Erosion monitoring? Is that not what the SWPPP is for? Storm Water Pollution Prevention Plan (SWPPP) is to manage the land activates from the potential of erosion which is a State enforcement (ADEC) authorized by the Federal government (EPA). If reporting on site conditions is needed than I suggest the Secon submits to CBJ their annual SWPPP report which is filed with ADEC.

This issue will be addressed further in the next section regarding Commission Action.

The project site is outside of current and proposed flood zones, as shown in Attachment 18.

(K) The date of establishment of the operation and history of adjacent land development; and

The applicant has noted that the quarry has been operating since the 1980s. The Background section of this staff report notes that the first Conditional Use permit was approved in 1984. The operation is surrounded by vacant U.S. Forest Service, State of Alaska, and CBJ properties, as shown in the map on page 5 of this staff report in the Background section. The applicant reports

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that the nearest habitable structure is the Lemon Creek Correctional Center, approximately 2,000,000 feet from the severance area, while the nearest private residence is 4,000 feet away.

(L) Such additional relevant information as the Commission or Department may request.

Not applicable.

49.65.215 Staff action on application (excerpted)

(a) Upon receipt of an application and the required filing fee, the department shall review the submission for completeness....Upon receipt of a complete application and the required fee, the department shall submit a copy of the application to the engineering department for a report containing an evaluation of the information in the application and shall include recommendations relating to the effect the proposed extraction and expected traffic will have upon the streets and other improvements of the City and Borough, whether such streets and improvements are existing or projected; the water table, water quality, and drainage; and all properties within the area of influence of the proposed operation.

(b) The department shall review the application and the engineering department report and shall transmit the report along with its own report and recommendations to the commission and the applicant....The department shall comment on the compatibility of the proposed operation with present and future development of the neighborhood, roads, utilities and public services in the surrounding area, and on provisions for dealing with traffic congestion, noise, dust, aesthetic deterioration, drainage, geophysical hazards, water pollution and other adverse environmental effects.

The proposed development has been operating since the 1980s, with approved 10-year Conditional Use permits in 1984, 1997, and 2009. The operation is surrounded by vacant land and compatible with adjacent roads, utilities, and public services provided that appropriate conditions are placed. These conditions will be addressed in following sections.

CBJ Engineering comments and recommendations are included in Attachment 14. Engineering has stated that there are no known issues affecting streets and traffic, and that this type of quarry should not have an effect on the water table. No concerns have been raised regarding compatibility of the proposed operation with present and future development of the neighborhood, roads, utilities and public services in the surrounding area, noise, dust, or aesthetic deterioration. Regarding drainage, Engineering has noted that the all work under the Conditional Use permit and future grading permits must adhere to the Alaska Department of Environmental Conservation (ADEC) SWPPP. Regarding

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geophysical hazards, Engineering has requested more information per Item J in the following list.

49.65.230 Commission Action on Application

The Commission may grant the permit, but shall first consider each of the following areas (as listed below) and may impose restrictions as may be necessary to protect the public health, safety, and welfare.

(1) The hours, days, and times of year of operation;

Proposed hours of operation are 7 a.m. to 10 p.m. Monday through Friday, and 9 a.m. to 10 p.m. on Saturday and Sunday. The quarry will open in early spring and close in late fall. For the purposes of project conditions, staff defines this period as April through November.

The previous Notice of Decision (Attachment 13) limited hours of operation from 7 a.m. to 7 p.m. Monday through Saturday, and prohibited blasting operations on Saturdays, Sundays, and official local, state, and federal holidays. Because the development is not adjacent to residential or commercial areas, and is surrounded by vacant land with significant natural buffers, staff concludes that the previous restrictions are not needed. Staff therefore proposes a condition confirming the applicant's proposed hours and season of operation, as follows:

- 1) Hours of operation shall be 7 a.m. to 10 p.m. Monday – Friday and 9 a.m. to 10 p.m. on Saturday and Sunday, from April through November.

(2) Screening, whether natural or artificial, to reduce or eliminate adverse visual, audible or other impacts of the operation;

Vegetated berms and buffers limit visibility of the site from adjacent roads. Previous Conditional Use permits have implemented and established the mandatory buffering condition from CBJ 49.65. 235, as follows:

- (1) A strip of land at the existing topographic level, and not less than 15 feet in width, shall be retained at the periphery of the site wherever the site abuts a public way. This periphery strip shall not be altered except as authorized for access points. This section does not alter the applicant's duty to maintain subjacent support.

This condition is not relevant to the proposed development but will be included as required, and may be enforced if surrounding ownership changes in the future.

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(3) Measures to protect the public from the dangers of the operation or site, to prevent casual or easy access to the area, or to prevent the operation or area from being an unprotected attractive nuisance;

The site is secured with a locked gate and fencing. CBJ Lands has indicated a public safety concern in regards to the 40-foot high quarry walls, and recommends that either the wall height be reduced to 30 feet or that additional signage be required. The applicant has responded that Stabler's Point has quarry walls higher than 30 feet, the U.S. Forest Service uses 40 feet for their back walls, and the Alaska Department of Transportation and Public Facilities uses 60 feet for back walls. The applicant has also explained site security as follows:

The site is gated and posted as no trespassing, it is also posted as a Quarry/Mine Site. There are currently two gates prior to accessing the property. One just east of the bridge for CBJ's Lemon Creek Sand Pit branches off from the Hidden Valley road. The second gate at the quarry is about 0.7 miles from first gate. The last 1,500 feet along the road prior to the quarry is posted with no trespassing signs. At the second gate is signed as a Quarry/Mine site and is post no trespassing.

Staff concludes that this public safety concern has been adequately addressed and no additional conditions are needed regarding this issue.

Staff notes that the Conditional Use permit that authorized explosive storage, USE2009-0019, has expired. Therefore staff recommends the following basic security measure:

- 1) Explosives shall not be stored on site, except that which is immediately necessary for the next blast.

(4) Final and working slope ratios of the face of any extraction area to the extent necessary to protect abutting public and private property, and to protect the future beneficial uses of the property as described in the applicant's plan for development and restoration;

In Attachments 4 and 12 the applicant has explained that restoration is ongoing as areas are excavated, since the operation is expected to continue for at least 50 more years. Page 6 of the Project Narrative describes the reclamation plan and final slopes. Specifically, the quarry floor will be graded for drainage to one or more discharge points. The floor gradient will be between one and six percent. The area will be seeded. A berm and/or rock barrier at least four feet high will be place at the access road and anywhere that motorized access could occur, while the road and bridges will remain in place for property access.

Staff recommends an additional condition, consistent with other gravel operations and the 2013 Juneau Comprehensive Plan, Policy 7.2 regarding protection from invasive species:

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- 1) Seed mixes utilized for revegetation in restoration efforts shall be free from non-native, noxious weeds.

(5) Measures to protect private and public property adjoining the operation and to guarantee orderly and safe traffic circulation both on the public streets and within the permit application area;

The operation utilizes a private haul road which then links to established truck routes on Anka Street, Glacier Highway, Vanderbilt Hill Road, and Egan Drive. The operation is surrounded by vacant city, state, and federal lands. No measures to protect private and public property appear to be necessary.

(6) Measures which will ensure adequate drainage or collection and storage of surface waters to protect surrounding property, eliminate dangers to the public, or to protect the future beneficial use of the property as described in the applicant's plan for development and restoration;

Drainage issues and the ongoing requirements of the Stormwater Pollution Prevention Plan have been addressed in previous sections.

CBJ Engineering has recommended continuing the bank stabilization conditions in the previous Conditional Use permit Notice of Decision (Attachments 13 and 14).

Specifically, those two conditions are:

- 1) By February 1st, each year, the applicant shall submit to the Community Development Department a report that includes
 - a. Documentation of all the erosion inspections completed the previous year;
 - b. A report of bank destabilization (if destabilization occurred);
 - c. A report of bank protection/stabilization measures if merited;
 - d. Documentation of the volume of material removed; and
 - e. A map of area worked.
- 2) Prior to operation or by May 29th, the applicant shall schedule an inspection with the Community Development Department to determine the limits of the Bank Erosion Monitoring Area.

Staff researched the issue, and found no record of the Community Development Department determining the Bank Erosion Monitoring Area. Staff found one report that was submitted by SECON the following year in May 2010, which noted one area of erosion along Lemon Creek that was addressed with rip rap.

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In the current review, the applicant has stated that there are no geophysical hazards in the area (see Item J in the previous section of this report). The applicant has also explained that the ADEC SWPPP addresses erosion, and suggests that SECON's annual SWPPP report be provided to CDD to address the reporting suggested in the first condition.

Staff therefore recommends discontinuing the previous conditions in the NOD, and to address the need to have yearly information regarding erosion by obtaining the SWPPP annual report as suggested by the applicant. Specifically, staff recommends the following condition:

- 1) The applicant shall provide the Community Development with the annual SWPPP report no later than February 15th each year.

(7) Measures to protect the water level and water quality;

Item (6) and item (7) overlap regarding drainage considerations. As described in the Project Narrative, Attachment 4, page 4, the quarry is permitted with an Alaska Department of Environmental Conservation Multi-Sector General Permit, with an approved Stormwater Pollution Prevention Plan. Surface water on the site drains naturally through rock; there is no surface outfall. The area immediately to the north of the quarry has two outflows that are monitored. The north side of the quarry has rock-lined ditches and check dams to control and settle solids, as shown in the SWPPP layout in Attachment 11. The Multi-Sector General Permit and SWPPP expire on March 31, 2020, but will continue to be enforced until the permit has been renewed, as explained in previous sections.

CBJ Engineering comments are included in Attachment 14. CBJ Engineering has listed the triggers that would require a grading permit, and has explained that the USE permit and all grading permits must adhere to the SWPPP. Engineering has also noted that this type of quarry should not have an effect on the water table.

(8) Measures to minimize or eliminate airborne particulates, visual blight, noise and other adverse environmental effects;

SECON complies with all Alaska Department of Environmental Conservation Air Quality permitting regulations for all equipment used within the quarry. (Attachment 12)

The development must comply with the CBJ Noise Ordinance and Industrial Performance Standards, included in Attachment 15.

(9) Restoration measures and schedule;

As described in previous sections, quarry operations are expected to continue for 50 years, and therefore restoration measures on ongoing. No additional conditions appear to be necessary.

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(10) Other measures designed to protect the public health, safety and welfare, including preservation of neighboring property; and

Staff recommends a condition regarding the expiration of the operation, as follows:

- 1) The extraction permit shall expire ten years from the date of Planning Commission approval.

Staff recommends continuing the previous conditions in the USE2009-0004 Notice of Decision regarding blasting, as follows:

- 2) Blasting operations shall be conducted by an Alaska Department of Labor certified powder-man and all operations shall conform to MSHA, ATF, and OSHA standards, as applicable, and all other applicable standards.
- 3) All blasting operations shall be conducted during daylight hours of operation. No Blasting operations will be permitted on Saturdays and Sunday or official Local, Federal and State holidays.
- 4) The proposed project shall not generate sound levels, which exceed 65 dBa at the property line during the day or 55 dBa at night, per CBJ§49.15.330(g)(11).
- 5) The applicant shall comply with the CBJ Standard Specifications for Civil Engineering Projects and Subdivision Improvements, as modified by the following:
 - o Warning signs with the time and date of the blast will be posted 24-hours prior to blasting on Anka St. and at the Lemon Creek trailhead.
 - o 24-hour notice will be provided to the Juneau Flight Service Station and the Police and Fire Departments prior to blasting.
 - o Public Service Announcements will be broadcast on local radio 24-hours prior to blasting.
 - o Three air horn blasts will be made at 5 minutes prior to blasting.

(11) Present development and past history of the neighboring property.

Present development and past history of the neighboring property have been discussed in the background section of this report. No additional measures appear to be necessary.

49.65.235 - Mandatory conditions of permit.

Unless specifically waived by the Commission, the requirements of this article shall be a condition of all permits issued. The Commission may not waive or modify any of the following requirements except upon a finding that the requirement would serve no useful purpose. Such finding must be

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supported by substantial evidence in the record of the hearing before the Commission:

- (1) A strip of land at the existing topographic level, and not less than 15 feet in width, shall be retained at the periphery of the site wherever the site abuts a public way. This periphery strip shall not be altered except as authorized for access points. This section does not alter the applicant's duty to maintain subjacent support.
- (2) If the bank of any extraction area within the permit area is above the high water line or water table, it shall be left upon termination of associated extraction operations with a slope no greater than the angle of repose for unconsolidated material of the kind composing it, or such other angle as the Commission may prescribe. If extraction operations cause ponding or retained water in the excavated area, the slope of the submerged working face shall not exceed a slope of 3:1 from the edge of the usual water line to a water depth of seven feet. This slope ratio may not be exceeded during extraction operations unless casual or easy access to the site is prevented by a fence, natural barriers, or both.

These conditions have been added to the staff recommendation, as required by code.

49.65.240 - Guarantee.

No permit granted under this article shall become effective until there has been filed with the City and Borough a performance bond or other guarantee such as a cash deposit, royalty deposit, a primary security interest in real property or transfer of real property to the City and Borough, or other instrument approved as to form and type by the city attorney in an amount determined by the engineering department to be adequate to cover the cost of site restoration, completion of the project, and the performance of other required work. The amount of the guarantee shall be increased from time to time as determined by the engineering department to take into account inflation. A permit shall terminate if the permittee fails, within 90 days of permit issuance, to provide the guarantee required by this section or fails, within 30 days of notice thereof, to provide the increased coverage required by the engineering department. For good cause shown, the manager or the manager's designee may extend the 90-day period. The amount of a guarantee may be reduced to the extent the engineering department determines permit conditions have been performed.

The current bond for the development was finalized in 2009 for \$230,000. CBJ Engineering requested an analysis to determine whether the bond amount needed to be revised. The engineering report included in Attachment 17 includes an itemized bond estimate for \$101,000. CBJ Engineering has accepted this analysis. Staff therefore recommends the following condition:

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- 1) The applicant shall submit and maintain a performance bond in an amount no less than \$101,000 for restoration/reclamation of the site, as required by CBJ 49.65.240. The bond must be final prior to the start of operation.

CONDITIONAL USE PERMIT ANALYSIS CBJ 49.15.430

Project Site and Project Design

The project site and design has been described in detail in previous sections of this report.

Noise

Noise impacts have been addressed in previous sections of this report. The quarry is surrounded by vacant city, state, and federal land. The nearest private residence is approximately 4,000 feet from the site. The operation must comply with the CBJ Noise Ordinance, and Performance Standards, included in Attachment 15. No evidence suggests that the development will have significant noise impacts on surrounding properties.

Drainage

Drainage has been described and addressed in previous sections of this report. The Multi-Sector General Permit and SWPPP, though expiring on March 31, 2020, will remain in effect. CBJ Engineering has indicated that the proposed development meets CBJ standards provided that the applicant adheres to the requirements of the SWPPP. (Attachment 14)

Public Health or Safety

As described in previous sections, staff has evaluated concerns regarding bank heights and determined that no additional measures are necessary due to extensive security measures on site. The development is not within any current or proposed mapped flood zones. A condition has been recommended to prohibit explosive storage until the applicant obtains a new Conditional Use permit to allow the activity. Staff is unaware of any evidence to suggest that the proposed development would endanger public health and safety.

Lighting

The Project Narrative notes that no permanent on-site lighting is proposed.

Property Value or Neighborhood Harmony

Previous sections of this staff report, including the Background Section and Project Site above, provide a description of surrounding properties. This area has an established history of industrial use and is surrounded by vacant rural reserve properties. Property values are not expected to be affected from the proposed continuation of this Conditional Use Permit. No comments were

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received from the CBJ Assessors Office or from adjacent property owners.

Traffic

The applicant has discussed traffic in the Project Narrative, Attachment 4, page 4. When hauling occurs, the rate would be 250 loads per day or less, in trucks with a capacity of up to 20 cubic yards. The haul route is from the quarry on the private haul road to the established truck route on Anka Street and Glacier Highway. From Glacier Highway, the truck route proceeds to either SECON's Aggpro Yard on Concrete Way, or to Egan Highway via Vanderbilt Hill Road.

CBJ Code 49.40.300 establishes the standards for a traffic impact analysis. Section 49.40.300(2) states that a development projected to generate fewer than 250 Average Daily Trips shall not be required to have a traffic impact analysis. The proposed development is below this threshold.

Parking and Circulation

The CBJ Land Use Code does not have a parking requirement for quarries. In the Project Narrative, Attachment 4, the applicant explains that parking locations and internal circulation patterns are designated by the operations manager and change frequently depending the current mining needs.

Habitat

The development does not affect wetlands, and maintains the 50-foot buffer from Lemon Creek at all locations, as required by CBJ 49.70.310(a) and (b). Specifically, the quarry is 50-75 feet from Lemon Creek on the east side, and 100 feet on the west side. Lemon Creek has Coho and Dolly Varden, and is one of five impaired salmon streams within CBJ.

The Wetlands Review Board reviewed the project in its advisory role at the October 17, 2019 regular meeting. Draft minutes have been included in Attachment 16. The Board expressed concerns regarding the new road alignment and the increased number of stream crossings, and passed the following motion:

The Wetlands Review Board recommends that the applicant explore alternatives that would avoid building the proposed new road, and recommends accessing the existing quarry using existing roads to avoid sensitive floodplain habitat and loss of riparian areas.

At the meeting the applicant explained that the road alignment was being changed to provide better access for continued development of the quarry. The applicant also explained that SECON would need to purchase additional CBJ property to change the route. For this reason, staff has not recommended including the Board's advisory recommendation as a project condition.

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Staff did not receive comments from the Alaska Department of Fish and Game or the Alaska Department of Environmental Conservation regarding habitat issues. Issues regarding stormwater management have been addressed in previous sections of this report.

AGENCY AND PUBLIC COMMENTS

The 15-day agency review period, required by CBJ Code for all Conditional Use Permits, was conducted from October 13 through October 20, 2019. The CBJ Lands Division commented at a later date, as noted in previous sections. Comments were received from CBJ Engineering, also previously noted. Capital City Fire and Rescue replied that they had no concerns. The Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, CBJ Assessors Office, CBJ Building Division, and other standard review agencies did not provide comments.

No public comments have been received at this writing.

CONFORMITY WITH ADOPTED PLANS

2013 Juneau Comprehensive Plan

The 2013 Juneau Comprehensive Plan designates the subject parcel on Subarea 5, Map H as Resource Development. Resource Development is defined in the plan as:

Lands to be managed primarily to identify and conserve natural resources until specific land uses are identified and developed. The area outside the study area of this Comprehensive Plan is considered to be designated Resource Development. As resources are identified or extracted from these lands, they should be re-designated and re-zoned appropriately.

Hidden Valley is identified as a gravel resource in this subarea. Guidelines and Considerations for this area mention the need to identify sufficient land to accommodate commercial and industrial uses. Guidelines also refer to development of the Lemon Creek Area Plan. Policies of the Lemon Creek Area Plan will be addressed later in this section.

Chapter Five of the Comprehensive Plan discusses industrial development and the need for industrial properties. Policy 5.11 states:

To encourage the location and growth of locally-based basic sector industries that provide year-round, full-time employment and provide tax revenues that support public services.

Policy 5.13 states:

To support the extraction and processing of mineral resources in an environmentally-sound manner, giving property recognition of the unique values of this community.

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In addition, Chapter 7 discusses the importance of gravel resources in the community and includes Policy 7.16 which states:

To conserve known gravel resources and to protect them from conflicting land uses.

The proposed development substantially conforms to these designations and policies.

Lemon Creek Area Plan

The Lemon Creek Area Plan was adopted on January 8, 2018, with Ordinance 2017-0034.

The plan acknowledges the two gravel mining operations in the upper and lower Lemon Creek stream beds in Chapter 6, the Natural Resources and Recreation chapter. However, the plan does not mention the upland quarry subject to this review.

Goal One of this chapter states:

Protect, restore, and maintain the area's natural resources.

The action relevant to the proposed project states:

Implement Stormwater Best Management Practices (BMPs) to reduce pollutants in area streams and wetlands.

Measures to protect water quality and reduce pollutants in Lemon Creek from the proposed operation are addressed in previous sections which address the drainage plan and Stormwater Pollution Prevention Plan. CBJ Engineering has accepted these plans provided that the SWPPP is adhered to.

Goal Two of Chapter 6 states:

Promote responsible resource extraction.

Actions stemming from this goal include:

- *Ensure that resource extraction addresses neighborhood harmony concerns.*
- *Provide greater scrutiny to ensure compliance of water standards and erosion control.*
- *Enforce conditions to limit negative impacts of activity on the surrounding areas, such as dust control, street sweeping, and cover loads.*
- *Protect resource extraction as a critical industry and educate the public on its benefits to the community, such as lower development costs and flood protection.*

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Many of these actions were developed largely in response to gravel extraction in Lower Lemon Creek, which is adjacent to a residential area. The upland quarry subject to this review is surrounded by vacant land. Road impacts from gravel hauling are addressed in the proposed advisory condition, carried over from the previous Notice of Decision, as follows:

1. **ADVISORY:** No operator shall allow their load, its fumes or odors, or any containers or coverings from becoming loose or detached or from dropping, blowing away, sifting, leaking, or otherwise escaping or in any manner creating a hazard or nuisance to other users of the highway, per CBJ§36.30.070.

Chapter Five, Transportation and Infrastructure, lists as Goal number four:

Reduce the impacts of industrial and commercial uses in the Lemon Creek area.

Relevant actions under this goal include:

- *Reduce impacts of dust by enforcing the application of dust control methods on industrial and commercial lots.*
- *Reduce impacts of dust on surrounding uses, bicyclists, and pedestrians by requiring and enforcing dust control methods on industrial and commercial vehicles.*

The applicant uses water trucks as needed when dust is an issue.

The development substantially complies with the Lemon Creek Area Plan.

2015 Juneau Economic Development Plan

The 2015 Juneau Economic Development Plan is incorporated into the Comprehensive Plan in CBJ Code 49.05.200(b)(1)(N). The proposed development does not specifically address any of the eight economic development initiatives identified in the plan. However, the development indirectly addresses one of the economic development planning concepts and practices listed in Chapter Two, as follows:

Land availability - an adequate supply of appropriately zoned land is available for commerce and industry, as well as residential development. This includes access to the land needed to support commercial, industrial, and other development. This also includes zoning that supports neighborhood-based small business growth that creates jobs and provides services which area residents and the community need. This type of small business development and growth also supports quality of life and walkable mixed-use neighborhoods.

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The proposed development supports small business growth and industrial use.

FINDINGS

CBJ 49.15.330 (e)(1), Review of Director's Determinations, states that the Planning Commission shall review the Director's report to consider:

1. Whether the application is complete;
2. Whether the proposed use is appropriate according to the Table of Permissible Uses; and,
3. Whether the development as proposed will comply with the other requirements of this chapter.

The Commission shall adopt the Director's determination on the three items above unless it finds, by a preponderance of the evidence, that the Director's determination was in error, and states its reasoning for each finding with particularity.

CBJ 49.15.330 (f), Commission Determinations, states that even if the Commission adopts the Director's determination, it may nonetheless deny or condition the permit if it concludes, based upon its own independent review of the information submitted at the public hearing, that the development will more probably than not:

1. Materially endanger the public health or safety;
2. Substantially decrease the value of or be out of harmony with property in the neighboring area; or,
3. Not be in general conformity with the comprehensive plan, thoroughfare plan, or other officially adopted plans.

Per CBJ 49.15.330 (e) & (f), Review of Director's & Commission's Determinations, the Director makes the following findings on the proposed development:

1. Is the application for the requested conditional use permit complete?

Yes. Staff finds the application contains the information necessary to conduct full review of the proposed operations. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.15.

2. Is the proposed use appropriate according to the Table of Permissible Uses?

Yes. The requested permit is appropriate according to the Table of Permissible Uses. The permit is listed at CBJ 49.25.300, Section 14.400 for the RR zoning district.

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3. Will the proposed development comply with the other requirements of this chapter?

Yes. The proposed development complies with the other requirements of this chapter. Public notice of this project was provided in the March 13, 2020 and March 20, 2020 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 500 feet of the subject parcel.

4. Will the proposed development materially endanger the public health or safety?

No. Based on the preceding analysis and with recommended conditions, no evidence indicates that the proposed development will materially endanger the public health or safety.

5. Will the proposed development substantially decrease the value of or be out of harmony with property in the neighboring area?

No. Based on the preceding analysis and with recommended conditions no evidence indicates that the proposed development will substantially decrease the value of or be out of harmony with property in the neighboring area.

6. Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?

Yes. Based on the preceding analysis, the proposed development is in general conformity with adopted plans including the 2013 Juneau Comprehensive Plan, 2018 Lemon Creek Area Plan, and the 2015 Juneau Economic Development Plan.

Per CBJ 49.70.900 (b)(3), General Provisions, the Director makes the following Juneau Coastal Management Program consistency determination:

7. Will the proposed development comply with the Juneau Coastal Management Program?

Yes. The proposed development complies with the Juneau Coastal Management Program with the associated drainage plans and ongoing adherence to the requirements of the Alaska Department of Environmental Conservation Stormwater Pollution Prevention Plan.

RECOMMENDATION

Staff recommends that the Planning Commission adopt the Director's analysis and findings and grant the requested Conditional Use Permit. The permit would allow continuation of an existing quarry. The approval is subject to the following conditions:

Hours of Operation and Permit Expiration

- 1) Tours of operation shall be 7 a.m. to 10 p.m. Monday through Friday, and 9 a.m. to 10

Planning Commission
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March 13, 2020
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p.m. on Saturday and Sunday, April through November.

- 2) All blasting operations shall be conducted during daylight hours. No blasting operations shall be conducted on Saturday or Sunday or on official local, federal, or state holidays.
- 3) The extraction permit shall expire ten years from the date of Planning Commission approval.

Site Restoration

- 4) Seed mixes utilized for revegetation in restoration efforts shall be free from non-native, noxious weeds.
- 5) The applicant shall submit and maintain a performance bond in an amount no less than \$101,000 for restoration/reclamation of the site, as required by CBJ 49.65.240. The bond must be final prior to the start of operation.

Blasting

- 6) Explosives shall not be stored on site, except that which is immediately necessary for the next blast.
- 7) The development shall not generate sound levels which exceed 65 dBa at the property line during the day or 55 dBa at night, per CBJ§49.15.330(g)(11).
- 8) Blasting operations shall be conducted by an Alaska Department of Labor certified powder-man and all operations shall conform to MSHA, ATF, and OSHA standards, as applicable, and all other applicable standards.
- 9) 24 hours' notice shall be provided to the Juneau Flight Service Station and the Police and Fire Departments.
- 10) The applicant shall comply with the CBJ Standard Specifications for Civil Engineering Projects and Subdivision Improvements, as modified by the following:
 - a. Warning signs with the time and date of the blast will be posted 24 hours prior to blasting on Anka St. and at the Lemon Creek trailhead.
 - b. 24 hours' notice will be provided to the Juneau Flight Service Station and the Police and Fire Departments prior to blasting.
 - c. Public Service Announcements will be broadcast on local radio 24 hours prior to blasting.
 - d. Three air horn blasts will be made at 5 minutes prior to blasting.

Required Conditions, per CBJ§49.65.235:

- 11) A strip of land at the existing topographic level, and not less than 15 feet in width, shall be retained at the periphery of the site wherever the site abuts a public way. This periphery strip shall not be altered except as authorized for access points. This section does not alter the applicant's duty to maintain subjacent support.
- 12) If the bank of any extraction area within the permit area is above the high water line or water table, it shall be left upon termination of associated extraction operations with a slope no greater than the angle of repose for unconsolidated material of the kind composing it, or such other angle as the commission may prescribe. If the extraction

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operations cause ponding or retained water in the excavated area, the slope of the submerged working face shall not exceed a slope of 3:1 from the edge of the usual water line to the water depth of seven feet. This slope ratio may not be exceeded during extraction operations unless casual or easy access to the site is prevented by a fence, natural barriers, or both.

Other

- 13) The applicant shall provide the Community Development with the annual SWPPP report no later than February 15th each year.

Advisory

- 14) **ADVISORY:** No operator shall allow their load, its fumes or odors, or any containers or coverings from becoming loose or detached or from dropping, blowing away, sifting, leaking, or otherwise escaping or in any manner creating a hazard or nuisance to other users of the highway, per CBJ§36.30.070.

DEVELOPMENT PERMIT APPLICATION

Project Number <u>1152990022</u>	CITY and BOROUGH of JUNEAU	Date Received: <u>9/30/19</u>
Project Name (City Staff to Assign Name)		

INFORMATION

PROJECT / APPLICANT

Project Description <u>Quarry Rock and extract gravel, process (crush & screen) material and/or transport to Agopro yard.</u>		
PROPERTY LOCATION		
Street Address <u>End of Anka Road</u>		City/Zip <u>Juneau</u>
Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot) <u>HIDDEN VALLEY TR A</u>		
Assessor's Parcel Number(s) <u>3M000LEMCRK2</u>		
LANDOWNER/ LESSEE		
Property Owner's Name <u>Secon Inc.</u>	Contact Person: <u>Tim Dudley</u>	Work Phone: <u>(907) 780-5145</u>
Mailing Address <u>P.O. Box 32159, Juneau AK 99803</u>	Home Phone:	Fax Number: <u>(907) 780-5896</u>
E-mail Address	Other Contact Phone Number(s):	
LANDOWNER/ LESSEE CONSENT		
****Required for Planning Permits, not needed on Building/ Engineering Permits****		
I am (we are) the owner(s) or lessee(s) of the property subject to this application and I (we) consent as follows:		
A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission.		
B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.		
X	<u>Tim Dudley</u> Landowner/Lessee Signature	<u>5/16/2019</u> Date
X	_____ Landowner/Lessee Signature	_____ Date
NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.		
APPLICANT		
If the same as OWNER, write "SAME" and sign and date at X below		
Applicant's Name <u>Secon</u>	Contact Person: <u>Michael Short</u>	Work Phone: <u>(907) 780-5145</u>
Mailing Address <u>P.O. Box 32159, Juneau AK 99803</u>	Home Phone:	Fax Number: <u>(907) 780-5896</u>
E-mail Address <u>MShort@alaska.com</u>	Other Contact Phone Number(s): <u>(907) 378-4767</u>	
X	_____ Applicant's Signature	<u>5/16/19</u> Date of Application

OFFICE USE ONLY BELOW THIS LINE

STAFF APPROVALS

Permit Type	Fee	Date Received	Application Number(s)
☒ Building/Grading Permit			
City/State Project Review and City Land Action			
Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)			
Mining Case (Small, Large, Rural, Extraction, Exploration)			
Sign Approval (If more than one, fill in all applicable permit #'s)			
Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)			
Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)			
Variance Case (De Minimis and all other Variance case types)			
Wetlands Permits			
Zone Change Application			
Other (Describe)			
Comments:			
***Public Notice Sign Form filled out and in the file.			
Permit Intake Initials			



ALLOWABLE/CONDITIONAL USE PERMIT APPLICATION

See reverse side for more information regarding the permitting process and the materials required for a complete application.

NOTE: Must be accompanied by a DEVELOPMENT PERMIT APPLICATION form.

PROJECT SUMMARY

Quarry Rock and extract gravel, process (crush & screen) material and/or transport to Aggpro yard.

TYPE OF ALLOWABLE OR CONDITIONAL USE PERMIT REQUESTED

- ☐ Accessory Apartment – Accessory Apartment Application (AAP)
☒ Use Listed in 49.25.300 – Table of Permissible Uses (USE)
 Table of Permissible Uses Category: 14.400

IS THIS A MODIFICATION or EXTENSION OF AN EXISTING APPROVAL?

☐ YES – Case # _____ ☒ NO

UTILITIES PROPOSED

WATER: ☐ Public ☐ On Site

SEWER: ☐ Public ☐ On Site

SITE AND BUILDING SPECIFICS

Total Area of Lot _____ square feet Total Area of Existing Structure(s) _____ square feet

Total Area of Proposed Structure(s) _____ square feet

EXTERNAL LIGHTING

Existing to remain
Proposed

☒ No
☒ No

☐ Yes – Provide fixture information, cutoff sheets, and location of lighting fixtures
☐ Yes – Provide fixture information, cutoff sheets, and location of lighting fixtures

ALL REQUIRED DOCUMENTS ATTACHED

☒ Narrative including:

- ☒ Current use of land or building(s)
☒ Description of project, project site, circulation, traffic etc.
☒ Proposed use of land or building(s)
☐ How the proposed use complies with the Comprehensive Plan

If this is a modification or extension include:

- ☐ Notice of Decision and case number
☐ Justification for the modification or extension
☐ Application submitted at least 30 days before expiration date

☒ Plans including:

- ☒ Site plan
☐ Floor plan(s)
☐ Elevation view of existing and proposed buildings
☐ Proposed vegetative cover
☐ Existing and proposed parking areas and proposed traffic circulation
☒ Existing physical features of the site (e.g.: drainage, habitat, and hazard areas)

-----DEPARTMENT USE ONLY BELOW THIS LINE-----

ALLOWABLE/CONDITIONAL USE FEES		Check No.	Receipt	Date
	Fees			
Application Fees	\$ _____			
Admin. of Guarantee	\$ _____			
Adjustment	\$ _____			
Pub. Not. Sign Fee	\$ _____			
Pub. Not. Sign Deposit	\$ _____			
Total Fee	\$ _____			

This form and all documents associated with it are public record once submitted.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

For assistance filling out this form, contact the Permit Center at 586-0770.

Case Number <u>USE-20 90022</u>	Date Received <u>9/30/19</u>
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To be completed by Applicant



(907) 586-0715
 CDD, Admin@juneau.org
 www.juneau.org/CDD
 155 S. Seward Street • Juneau, AK 99801

Hidden Valley Gravel Extraction Renewal

Case Number: PAC2019 0043

Applicant: Mike Short

Property Owner: SECON Inc.

Property Address: Hidden Valley

Parcel Code Number: 3M000LEMCRK2

Site Size: 113.29 acres

Zoning: Rural Reserve

Existing Land Use: Quarry

Conference Date:	June 19, 2019
Report Issued:	REVISED AND FINAL July 10, 2019

List of attendees

Note: Copies of the Pre-Application Conference Report will be emailed, instead of mailed, to participants who have provided their email address below.

Name	Title	Email address
Mike Short	Applicant	mshort@colaska.com
Teri Camery	Planning	teri.camery@juneau.org
Tim Felstead	Planning	tim.felstead@juneau.org
Mark Millay	General Engineering	mark.millay@juneau.org
Kyle Paw	Permit Tech	Kyle.paw@juneau.org

Pre-Application Conference Final Report

Conference Summary

Questions/issues/agreements identified at the conference that weren't identified in the attached reports.

The following is a list of issues, comments and proposed actions, and requested technical submittal items that were discussed at the pre-application conference.

Planning Division:

1. **Zoning** – Rural Reserve
2. **Setbacks** – 25 feet front and rear; 15 feet sides
3. **Height** – 45 feet
4. **Access** – Anka Street
5. **Parking & Circulation**– on-site
6. **Lot Coverage** – 20 percent conditional uses; 10 percent permissible uses
7. **Vegetative Coverage** – No minimum vegetative cover requirement. Site restoration will be required as part of Sand and Gravel special Use and slopes should be stabilized which may require vegetation
8. **Lighting** – To be addressed in the Project Narrative as noted below.
9. **Noise** – To be addressed in the Project Narrative as noted below.
10. **Flood** – not applicable
11. **Hazard/Mass Wasting/Avalanche/Hillside Endorsement** – not applicable
12. **Wetlands** – not applicable
13. **Habitat** – Impacts to stream habitat will be reviewed in the Conditional Use Permit and must be addressed on the site plan and in the project narrative.
14. **Plat or Covenant Restrictions** – n/a
15. **Traffic** – To be addressed in the Project Narrative as noted below.

Building Division:

16. **Building** – N/a
17. **Outstanding Permits** – N/a

General Engineering/Public Works:

18. **Engineering** –comments will be made when grading permit is applied for.
19. **Drainage** – n/a
20. **Utilities** – (water, power, sewer, etc.) n/a

Fire Marshal:

21. **Fire Items/Access** – n/a

Other Applicable Agency Review: Attachment 3 - Pre-application meeting notes

Pre-Application Conference Final Report

22. DOT&PF / Alcohol Beverage Control Board / Army Corps / DEC (wastewater) / DNR / USF&W / F&G / FAA / Corrections...

Conditional Use Permit Application requirements

The Project Narrative and site plans should include the following:

- A point by point response to all requirements of the Sand and Gravel section of the CBJ Land Use Code, CBJ 49.65.210
- When not duplicative to requirements 49.65.20, the narrative should also address a description of site operations and structures; lighting; security; noise; parking and circulation and specifically truck traffic volumes; description of the proposed road corridors; days, hours, and seasons of operation; number of employees; description of noise impacts; description of habitat protection measures for Lemon Creek and/or how any negative habitat impacts will be mitigated; copies of required agency permits including ADFG, ADEC, and others, including a link to the SWPPP; and a description of how the project meets the CBJ Manual of Stormwater Best Management Practices. You may wish to use the previous Staff Report as a guide for the things to be considered and addressed in the narrative and site plan.
- Please note that the proposed road must be constructed entirely outside of the 50-foot setback from Lemon Creek, including grading, unless the road receives an approved Variance, which would have to be approved concurrently with the Conditional Use Permit.
- Similarly, gravel extraction activity within the 50-foot setback would require a Variance.

List of required applications

Based upon the information submitted for pre-application review, the following list of applications must be submitted in order for the project to receive a thorough and speedy review.

1. Conditional Use Permit application
2. Development Permit application

Additional submittal requirements:

Submittal of additional information, given the specifics of the development proposal and site, are listed below. These items will be required in order for the application to be determined Counter Complete.

1. A copy of this pre-application conference report.

Exceptions to submittal requirements:

Submittal requirements staff has determined **not** to be applicable or **not** required, given the specifics of the development proposal, are listed below. These items will **not** be required in order for the application to be reviewed.

1. n/a

Fee estimates

The preliminary plan review fees listed below can be found in the CBJ code section 49.85.

Pre-Application Conference Final Report

Based upon the project plan submitted for pre-application review, staff has attempted to provide an accurate estimate for the permits and permit fees which will be triggered by your proposal.

1. Class V Conditional Use Permit, \$1600.
2. Sign fee and deposit.

For informational handouts with submittal requirements for development applications, please visit our website at www.juneau.org/cdd.

Submit your completed application

You must submit your application(s) in person with payment to:

City/Borough of Juneau
Permit Center
230 S. Franklin Street,
Fourth Floor Marine View Center
Juneau, AK 99801

Phone: (907) 586-0715
Fax: (907) 586-4529
Web: www.juneau.org/cdd



Hidden Valley Quarry Site



CBJ Conditional Use Application

February 4, 2020

Michael Short

Hidden Valley

Hidden Valley is Located about 5 miles North Northwest of Juneau Alaska and has a drainage basin area of approximately 15,730 acres. Lemon Creek's headwaters originate from two glaciers, Ptarmigan Glacier and Lemon Creek Glacier. Lemon Creek is roughly 8 miles in length and terminates 4.6 miles Northwest of Juneau into Gastineau Channel.

HISTORY OF LEMON CREEK

This area has a history of placer mining from 1870's to the early 1900's. John Lemon prospected and placer mined this creek in the 1870's hence the naming of the creek. Starting in 1884 placer claims were being recorded with the land office in Sitka. Mining continued for many years although not very productive.

Logging with a sawmill operation was active in the Lemon Creek area until the 1980's. The patient lands from the mining claims were logged during this time.

Gravel extraction in Lower Lemon Creek for aggregate started during World War II. The mining of gravel occurred in several events until mid-1980.

CBJ currently has a Conditional Use Permit 2003-00045 for extracting 1.6 million yards of gravel. This site is located northwest and is adjacent to Hidden Valley Quarry.

OWNERSHIP AND LEGAL DESCRIPTION

Recording of the mining claims for Lemon Creek started in the start early part of 1900. A copy of the original plats are displayed in figure 1.

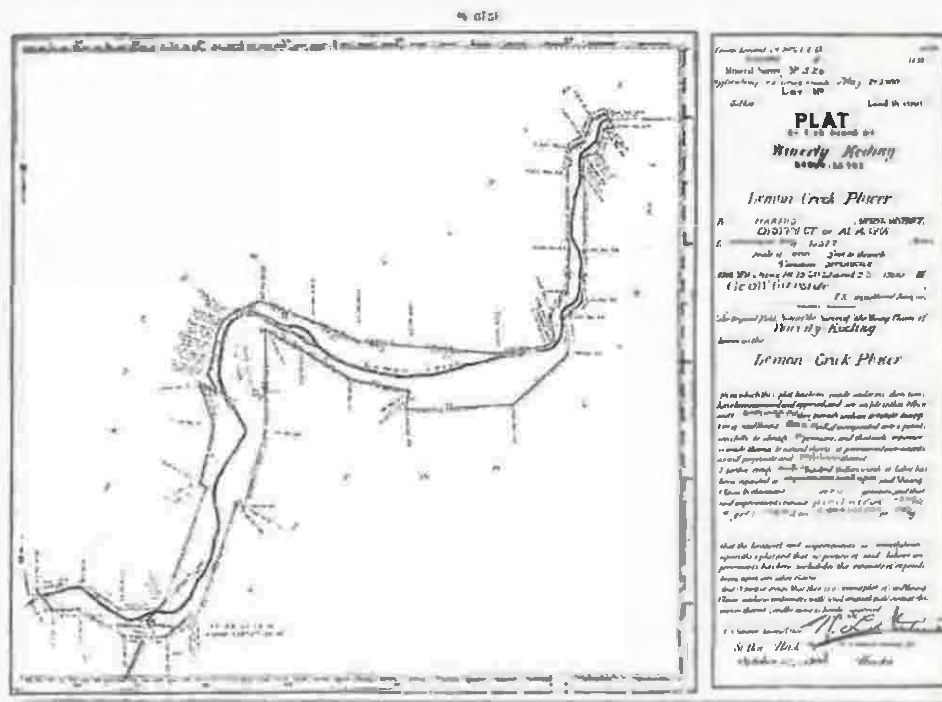


Figure 1 -- Hidden Valley Plat

Hidden Valley Subdivision was created by Goldbelt Inc. in 1999. It separated Mineral Survey 526 into two tracts and portion label it Remained FR. M.S. 526. Tract A has 133 acres

Colaska Inc. dba Secon is in ownership of Hidden Valley Subdivision Tract B of Mineral Survey 526 and Mineral Survey 582 of former U.S. Survey 5504.

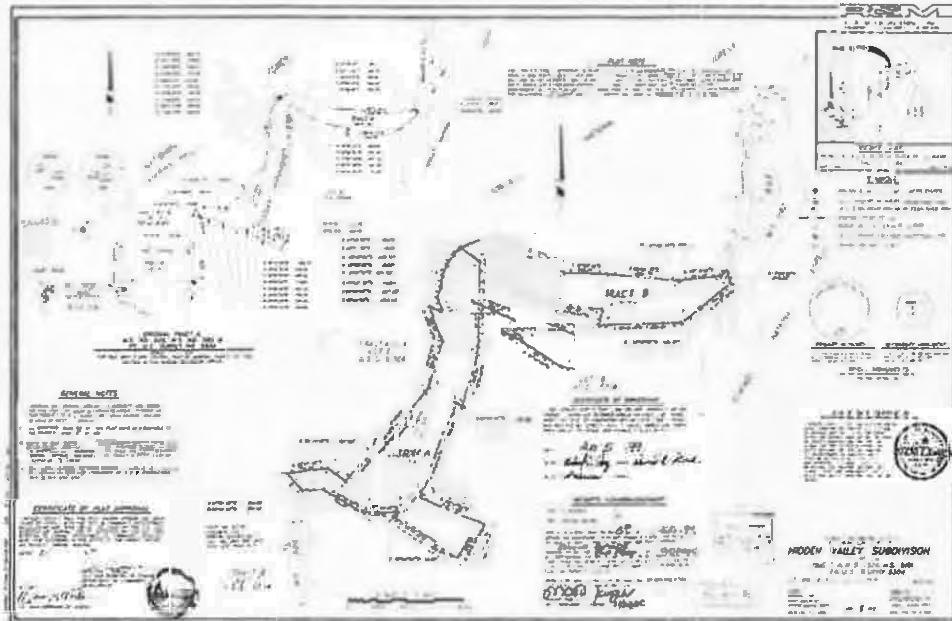


Figure 2 - Hidden Valley Subdivision Plat

LOCATION; FEATURES; TOPOGRAPHY

The property is located at Township 40 South, Range 66 East, SE quadrant of Section 23 and Section 26. It is located in Upper Hidden Valley, which is 2.34 miles north of the intersection of Glacier Highway and Anka Street in the City and Borough of Juneau, Alaska.

The nearest habitual structure is the building at the gun range north of the Lemon Creek State Penitentiary. It is roughly 2,600 feet southwest from the severance area. The nearest private residence is 4,000 feet away.

The location of the quarry is in the southern portion of MS 526. The quarry borders CBJ Conditional Use Permit to the northwest and Lemon Creek forms the southern boundary.

It is an outcropping of black rock. Most of the original surface rock has been mined, thus leaving the lower levels that are being "bench" in the mining process.

Zoning

Juneau Assessors office identifies the parcel as 3M000LEMCRK2 and designates the zoning as Rural Reserve.

Current Use

This site has been use for an aggregate source for roughly 35 years.

Hidden Valley Associates received the first Conditional Use permit (CU-25-84) to extract rock and gravel from the site in June of 1984. Goldbelt, Inc. purchased the property in 1996. Goldbelt, Inc. subsequently requested a Conditional Use permit to continue the rock and gravel extraction operation, CU-45-96. The property was then subdivided creating Tracts A and B. Tract A was then sold to Secon, Inc. in May of 2000. In 2008 Secon applied for the Conditional Use Permit 2009-00004 to continue mining rock from the site.

Currently the site is a hard rock mine and aggregate crushing facility. The site has in the last ten years produce several hundred thousand tons of aggregate for Juneau's roads and airport infrastructure along with commercial and private development.

Proposal

SECON is in pursuance of extending the rock quarry site conditional use permit for another 10 years. The quarry has roughly 1.5 million tons of rock on the premises yet to be mined. Mining operations will continue the same as in the previous Use Permit.

Hours of operation would be from 7:00 AM to 10:00 PM Monday through Saturday and 9:00 AM to 10:00PM Sunday. This would be a seasonal operation, closing in the late fall and opening in early spring. Holidays of Memorial Day, Independence Day, Labor Day and Thanksgiving Day would be observed.

There are no structures, utilities or permanent lighting. Lighting is portable and is used as needed. Parking is designated by the operations manager. Where parking is today maybe a stockpile of material or an extraction zone next month. Traffic pattern is determined by the current mining operations.

The site has a locked gate at the entrance of the Quarry. With berms, Lemon Creek and the nature of the terrain access is limited to the easement road. No trespassing signs are posted. All visitors are to contact the main office at 1836 Anka Drive for access to the site on an "as needed" bases. Personnel Protective Equipment (safety vest, steel toed boots and hard hat, also ear plugs and eye protection as needed) is required when on-site. When crushing operations are active in the quarry, the quarry is then under MSHA rules.

Hidden Valley Quarry is permitted with a DEC MSGP SWPPP AKR06AB4S. The Quarry site proper has no outfall, all surface water that enters the quarry extraction area has no surface outflow. The area immediately to the North of the quarry has two outflows that are monitored. The north side of the quarry has rock lined ditches and check dams to control and settle solids. The slopes have been hydro seeded for erosion control. The outfalls are sampled for TSS, pH and nitrate/nitrites.

Noise from the site is muted by distance, vegetation and terrain. The nearest neighbor is over 1/2 miles in distance. Large trees with undergrowth cover most of the land surface between the quarry and Lower Lemon Creek Flats. Mountain and hills form a nature barrier in regards to sight and sound movement.

Truck traffic would remain the same on Anka Drive and Glacier Highway as in the previous conditional use permit. When hauling is occurring the rate would be 250 loads per day or less. The trucks are highway legal and varying in capacity of up to 20 cubic yards per load.

The haul route is from the quarry on a private easement road. The private easement road is a Perpetual Easement for the Patient landowners of USMS 526 (Lemon Creek Placer), USMS 582 (Glacier Placer) and

USMS 585 (Keystone No.3 Placer). The easement road ties into Anka Drive a few hundred feet north of Ralph Way intersection. Anka Drive is a truck designated route that will be used to access Glacier Highway. Once on Glacier Highway the truck route will proceed either to Aggpro Yard on Concrete Way or to Egan Highway via Vanderbilt Hill Road.

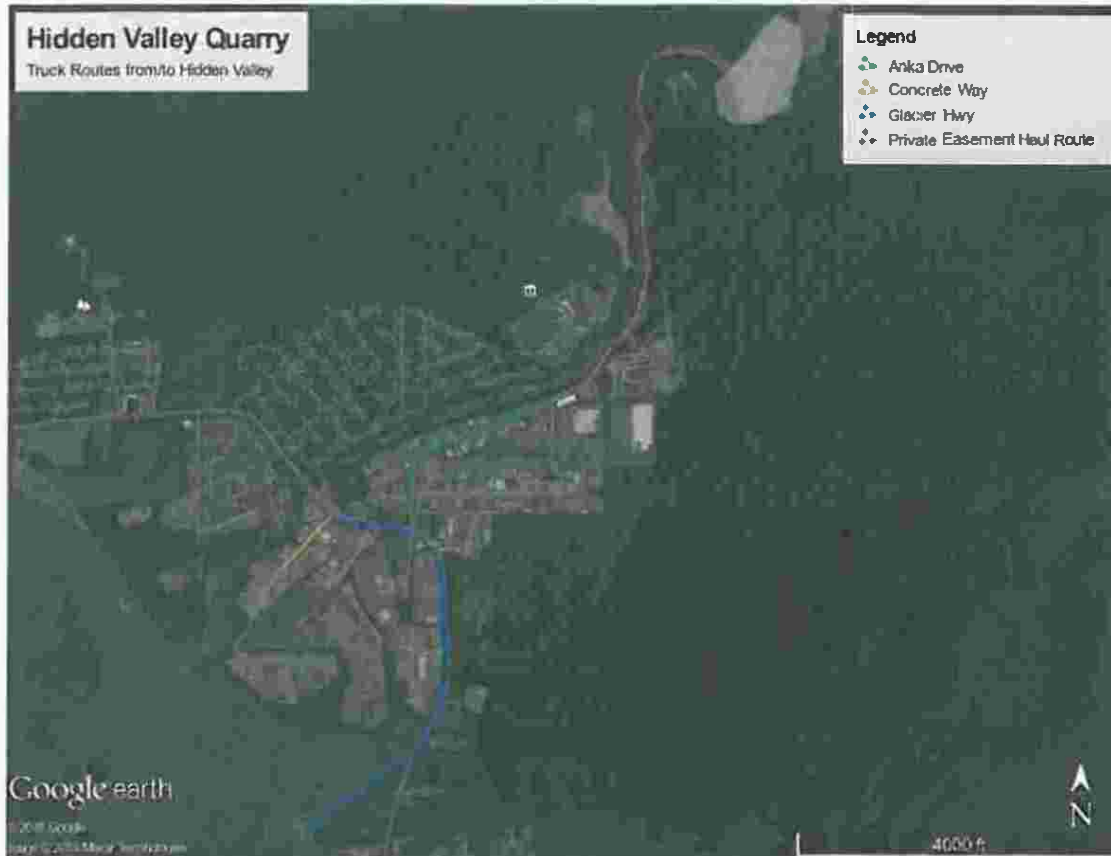


Figure 3 – Truck Routes

Relocate Entrance to Quarry

Secon is changing the entrance to the mine site by moving the road off from CBJ property and onto Secon's property. The new road alignment would depart from the existing road at the southwest corner upon enter USMS 526 just after crossing the haul road bridge. The road would run along the southern property line, crossing Lemon Creek and landing on a vegetative gravel reach. The new alignment would continue, proceeding across the gravel reach and crossing Lemon Creek again. The new alignment would enter the Hidden Valley Quarry at about 10 feet above Lemon Creek's gravel bed. This would establish the new lower floor level for the quarry.

The current haul road to the upper area would remain in place. Providing access for mining operations and leased properties business needs. Once the lower quarry access is established and can provided safe access to other party's needs, the upper haul road access would vacated. As the Quarry finishes expanding to its mining limits for viable rock and/or reaches the property setback the current entrance

road will become unusable due to the increased grade to access the quarries lower levels. Especially when the current lower level floor is lowered another 40 feet.

The road would be built with shoulder berms where there is no ditch to contain surface stormwater. The berms would form rock lined ditches thereby diverting the flows into catchment basins. The basins would have rock spillways for outfalls and hydro seeded with grass.

Bridges will be installed and rated for the equipment requirements. Rip Rap would be placed to protect the abutments.

A new gate would be install at the beginning of the new alignment upon exiting the existing haul road.

The lower quarry entrance would be developed over time, removing rock as projects and sales occur. A catchment swale would be developed at the quarry entrance to detain any stormwater exiting the site and settle suspended solids.

Reclamation Plan

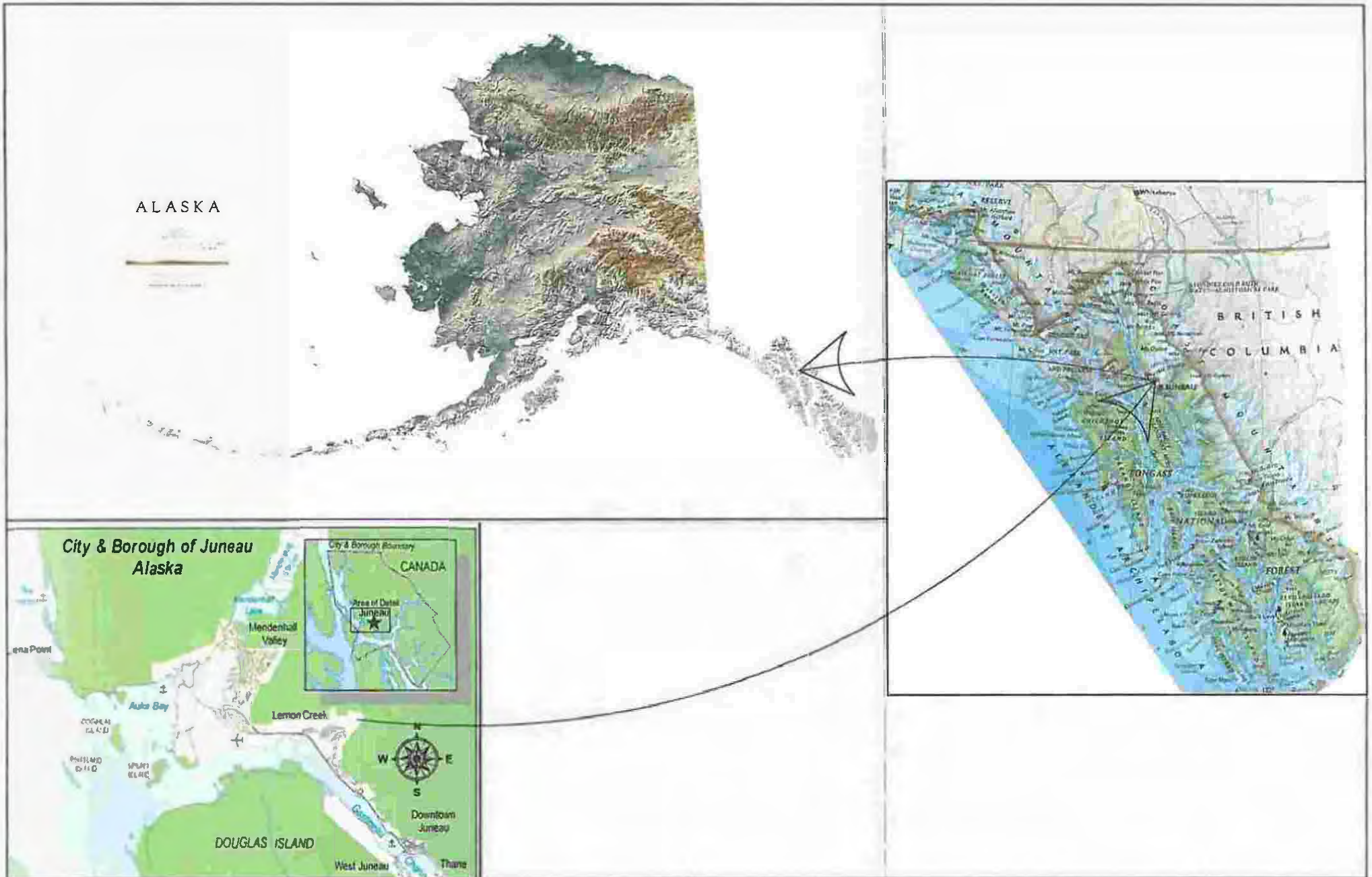
During the mining of the quarry the rock faces will be benched so that no face is greater than 40 feet between the top to bench; bench to bench; bench to 2:1 sloped overburden or floor.

At the completion of mining in the quarry the reclamation of the site will be finalized.

- The quarry floor will be graded for drainage to one or more discharge points. The floor gradient will be between 1% as a minimum and 6% as a maximum.
- Stripped overburden will be graded across the surface at a minimum 2 inches to a maximum of ½ foot deep. The remainder of the stripped material will be slope up to the back wall at a 2:1 slope. All placed overburden will be seeded with grass. Exposed rock faces will not be seeded.
- A berm and/or rock barrier with dimensions of at least 4 feet in height will be placed at the upper access road and anywhere that motorized access can occur.
- The road and bridges will be left in place for property access.

Attachments:

- Quarry site drawings



Hidden Valley Quarry

Description Location of Hidden Valley Quarry

Sheet

Project Number: 100720

1

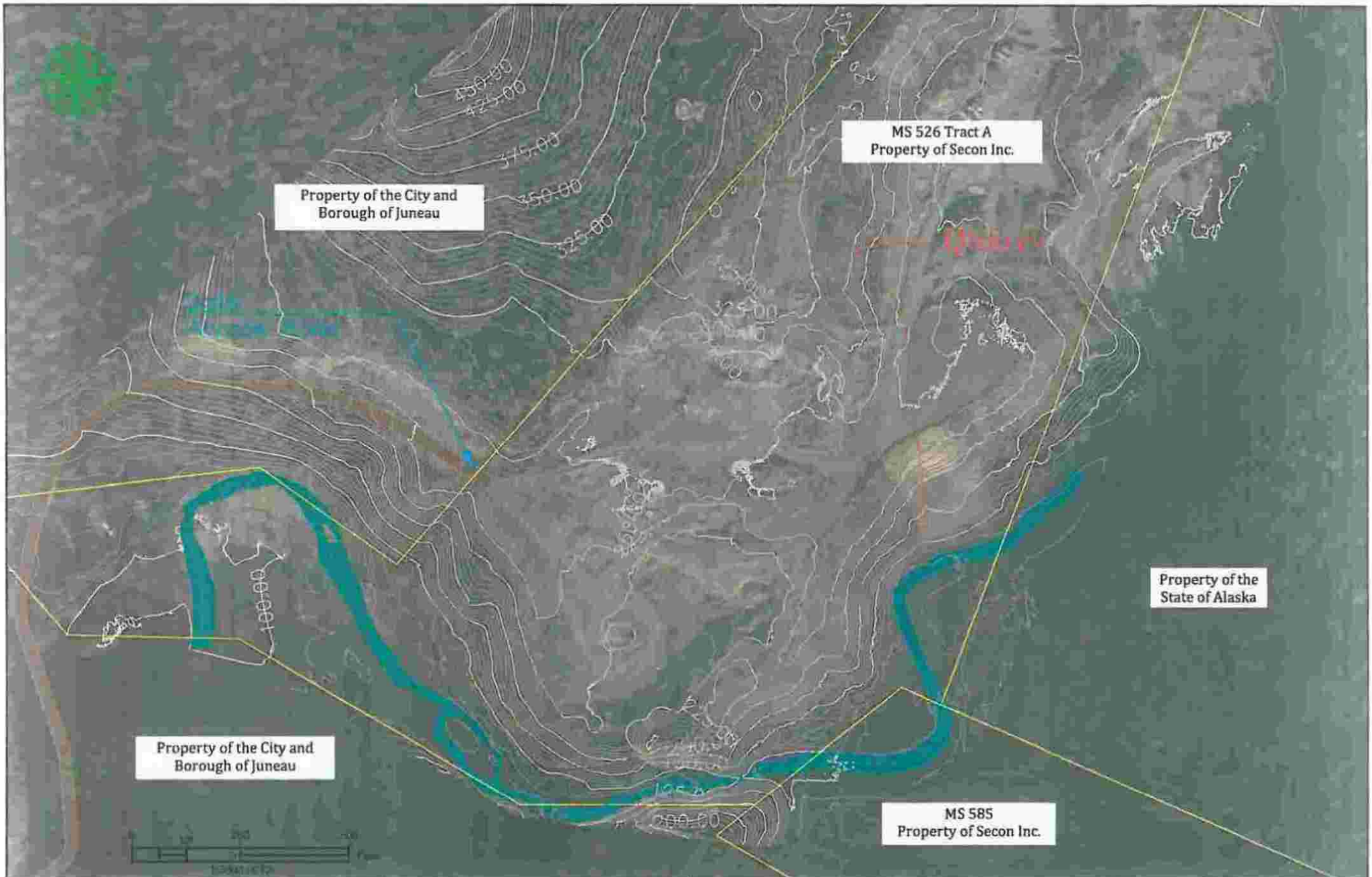
CBJ USE PERMIT

Attachment 4 - Project No.

Date: 2/4/2020

4-20

Drawn By:



Hidden Valley Quarry

Description Topographic Map with Ownership

Sheet

Project Number: 100720

2

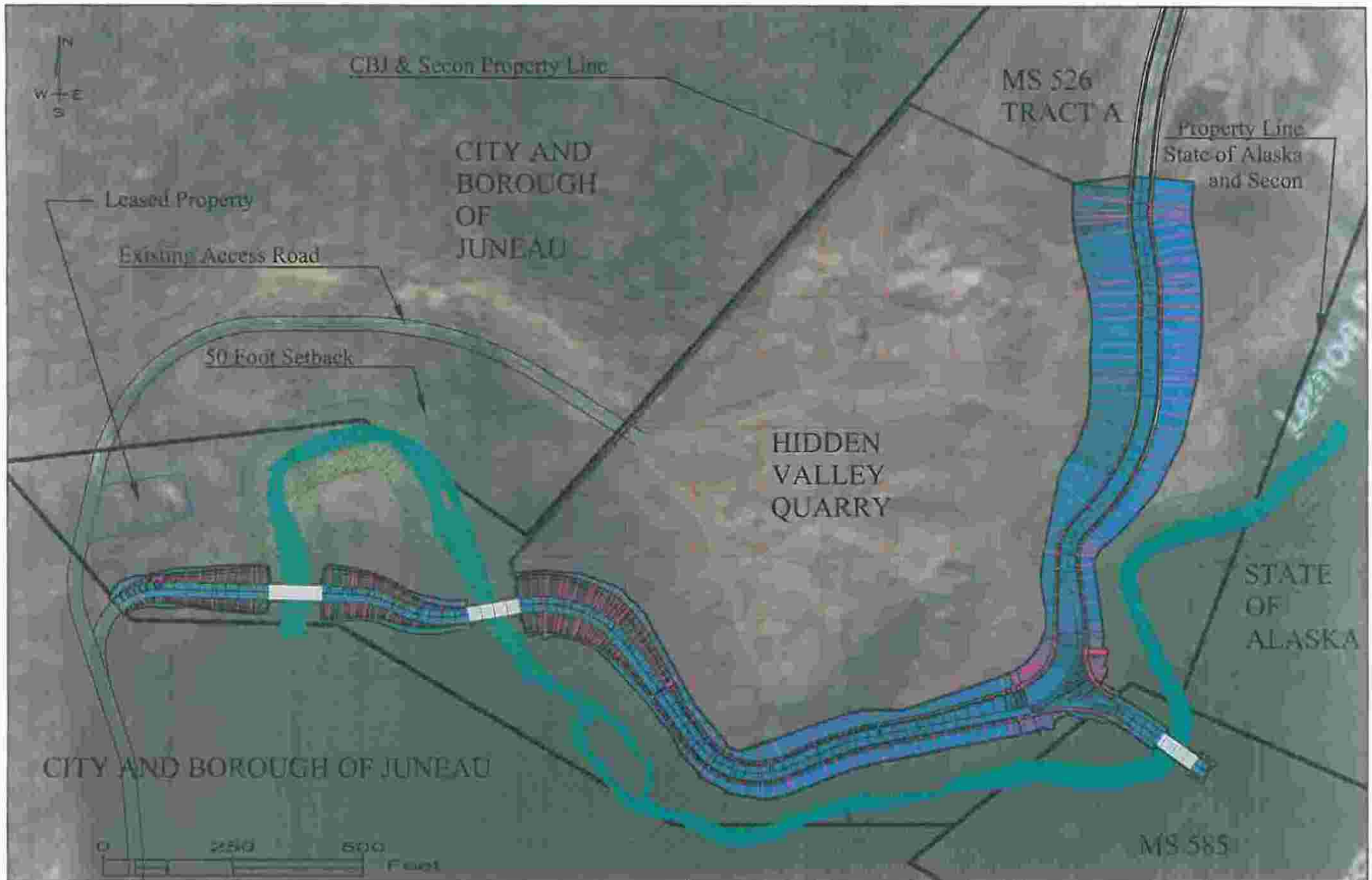
CBJ USE Permit

Date 2/4/2020

Drawn By:

Attachment 4 - Project Narrative 2-4-20





Hidden Valley Quarry

Description Overview Map

Sheet

Project Number: 100720

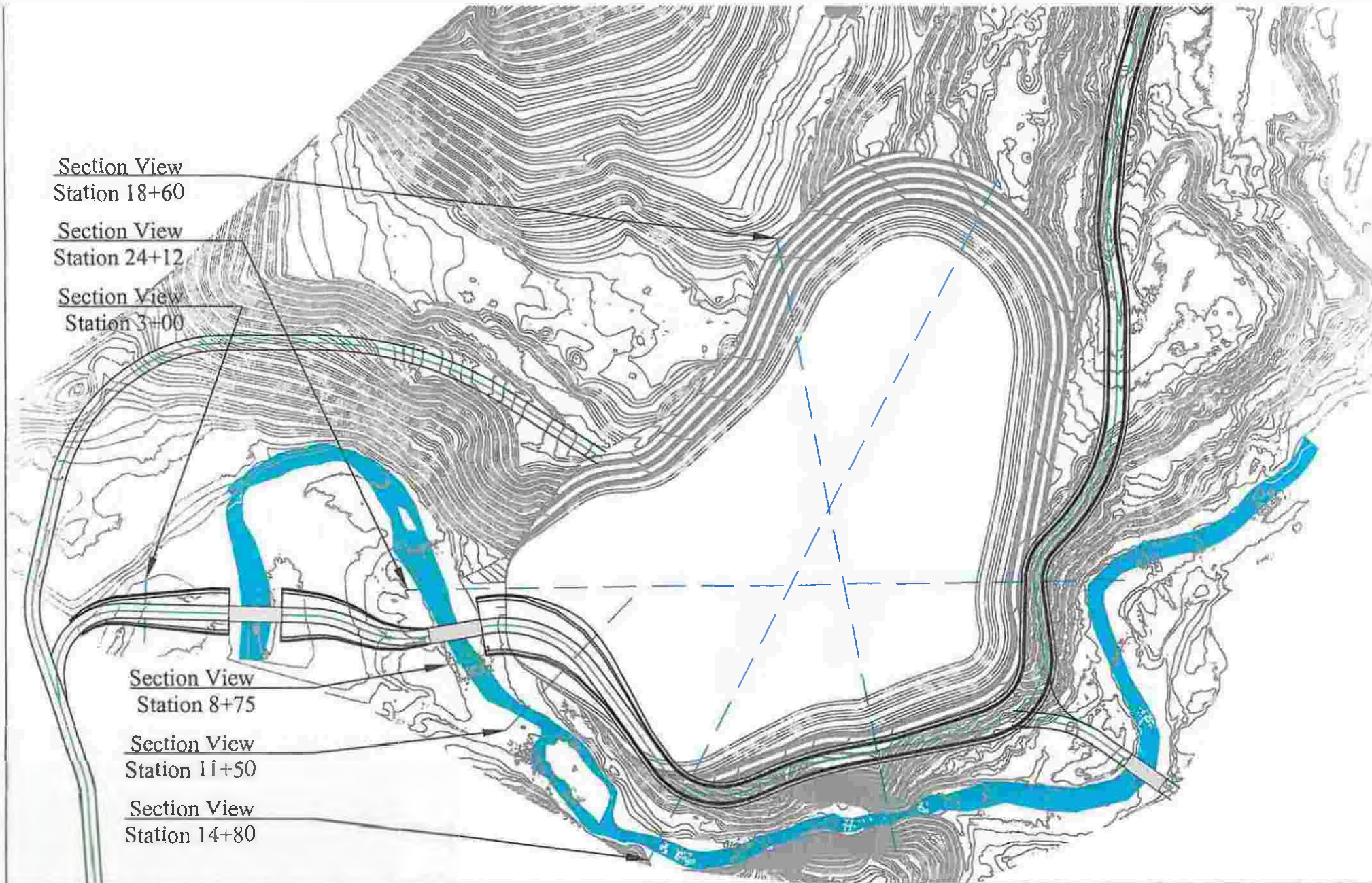
3

CBJ USE PERMIT

Attachment 4 - Project N 2/4/2020 2-4-20

Drawn By:





Hidden Valley Quarry

Description Quarry Map for Section View Location

Sheet

Project Number: 100720



CBJ USE PERMIT

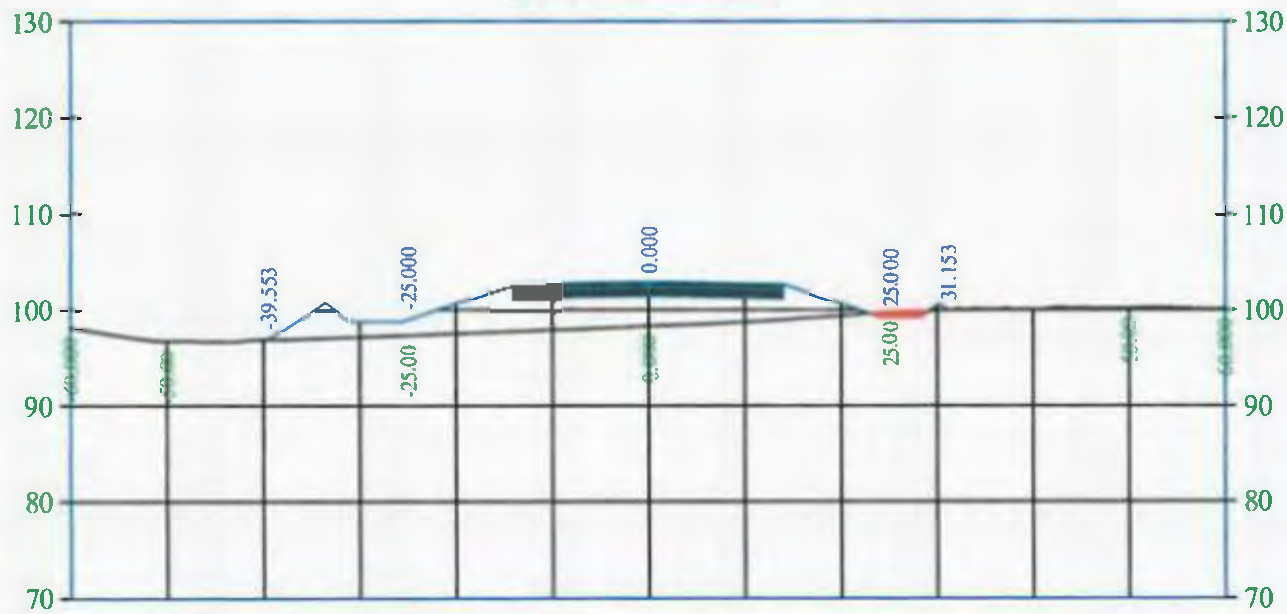
Date 2/4/2020

Drawn By:

Attachment 4 - Project Narrative 2-4-20

4

3+00.00



Hidden Valley Quarry

Description Section View Station 3+00.00

Sheet

Project Number: 100720

5

CBJ USE Permit

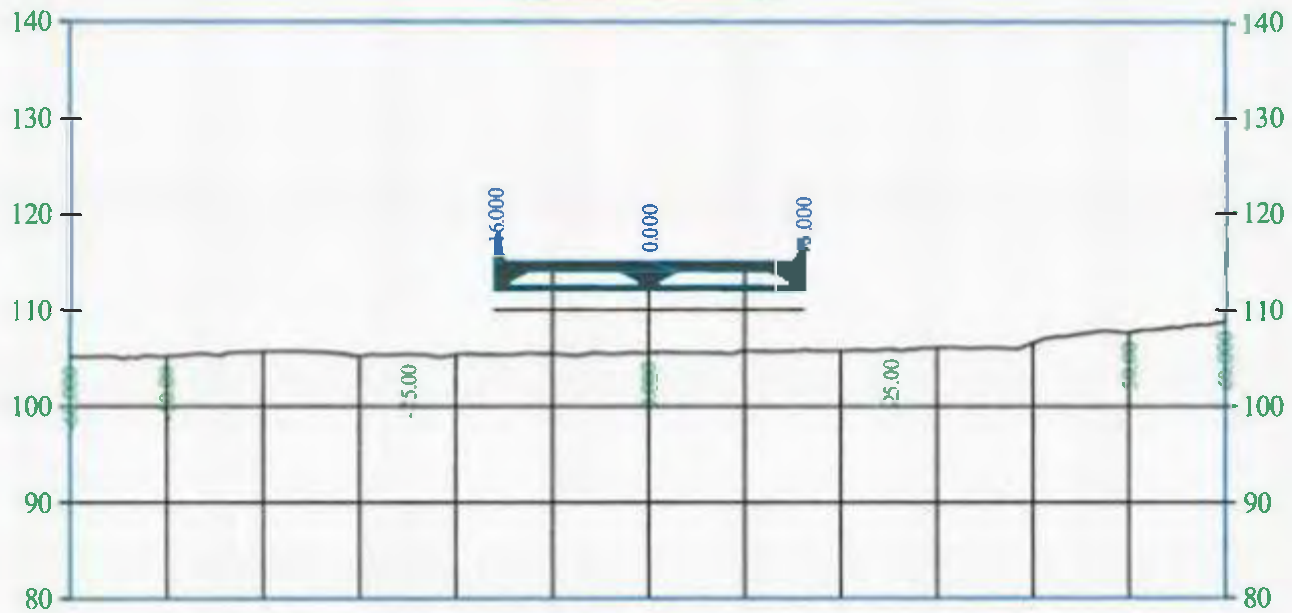
Attachment 4 - Project No

Date 2/4/2020 2-4-20

Drawn By:



8+75.00



Hidden Valley Quarry

Description Section View Station 8+75.00

Sheet

Project Number: 100720

6

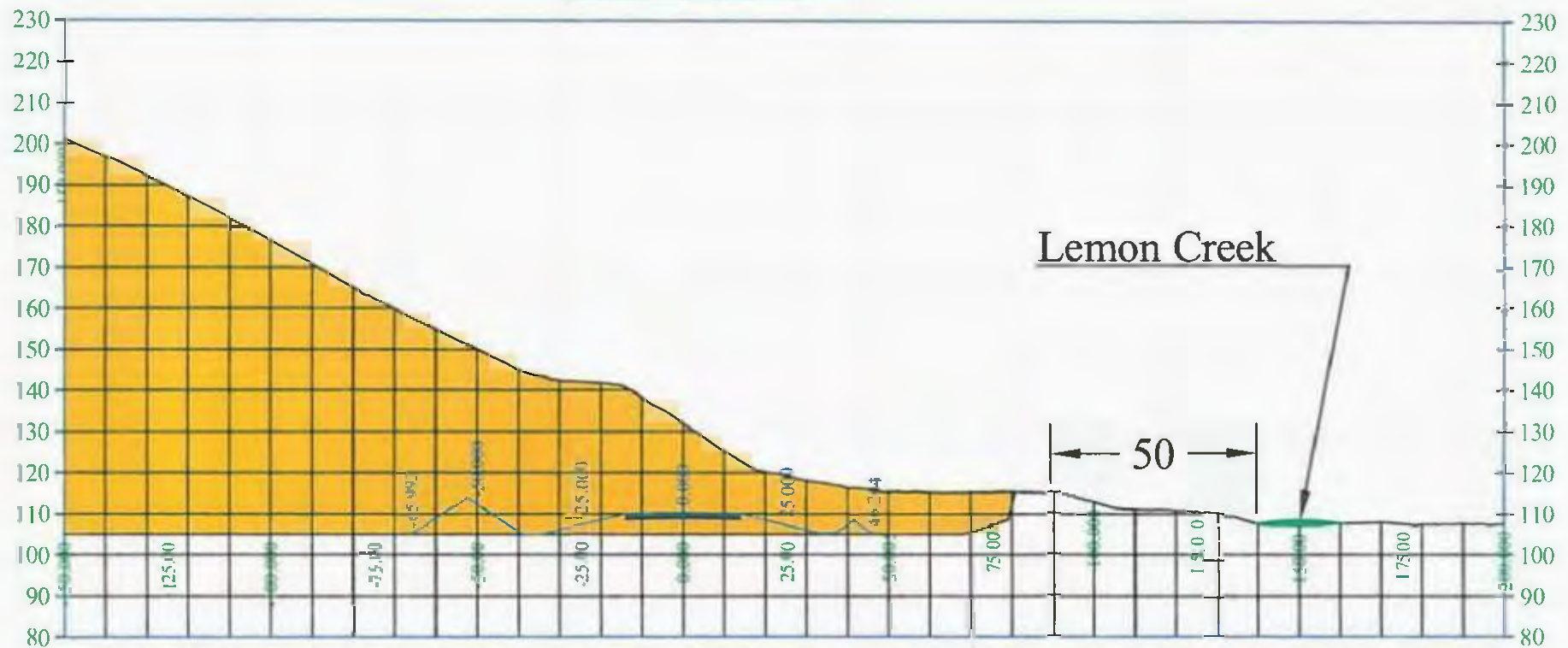


CBJ USE PERMIT

Attachment 4 - Project N: 2/4/2020 2-4-20

Drawn By:

11+50.00



Hidden Valley Quarry

Description Section View Station 10+00.00

Sheet

Project Number: 100720

7

CBJ USE PERMIT

Attachment 4 - Project No: 2-4-20

Drawn By:



14+80.00

Hidden Valley Quarry

Lemon Creek
Southwest of Quarry

50

39.681

5.00

1.500

Benched Backwall

Hidden Valley Quarry

Description Section View Station 14+80.00

Sheet

Project Number: 100720

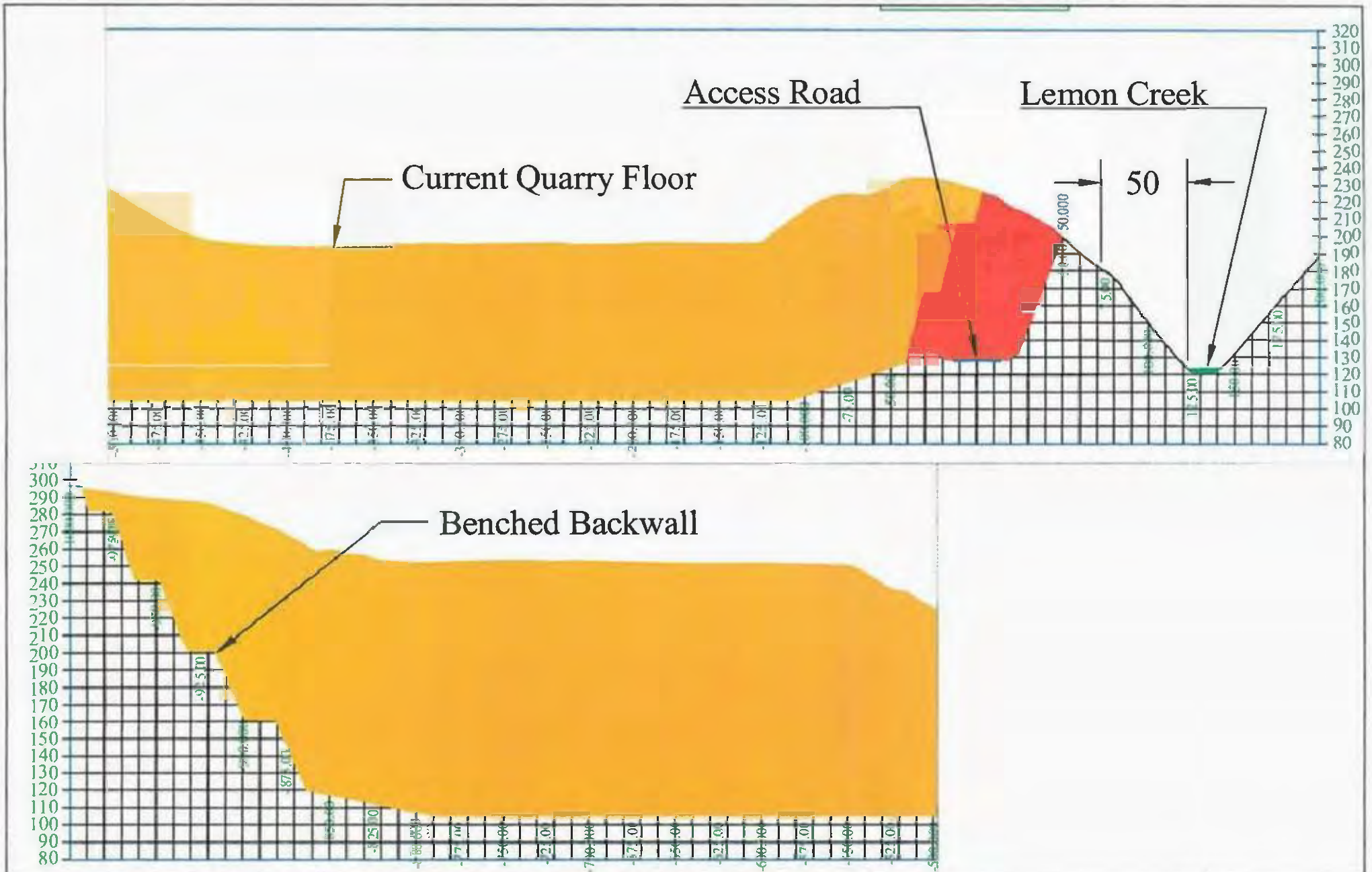
8

CBJ USE PERMIT

Attachment 4 - Project N. 2/4/2020 2-4-20

Drawn By:





Hidden Valley Quarry

Description Section View Station 7+00.00

Sheet

Project Number: 100720

9

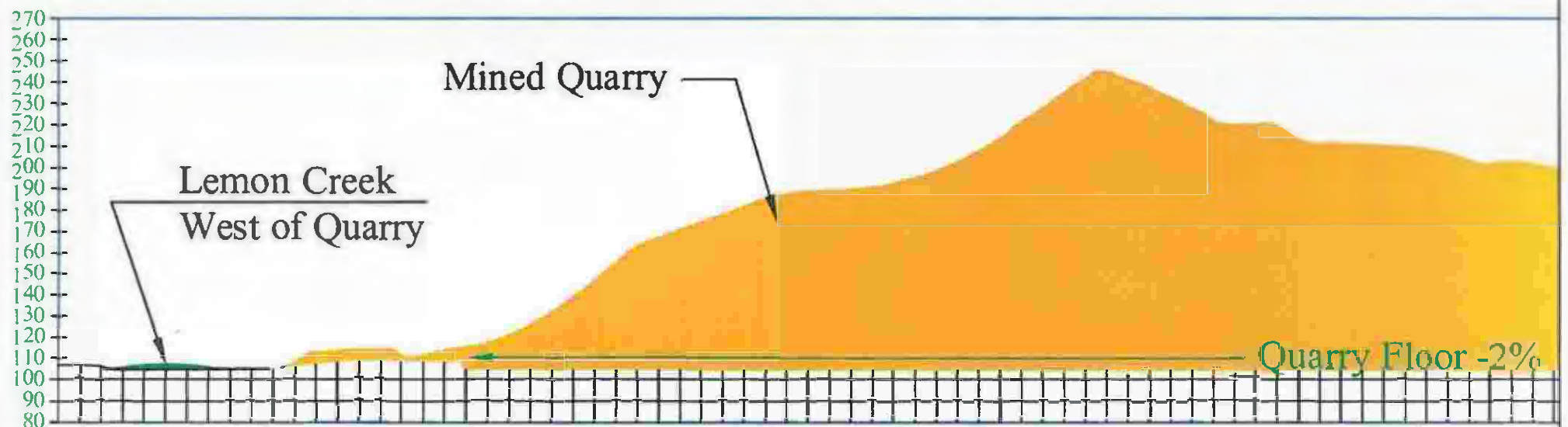
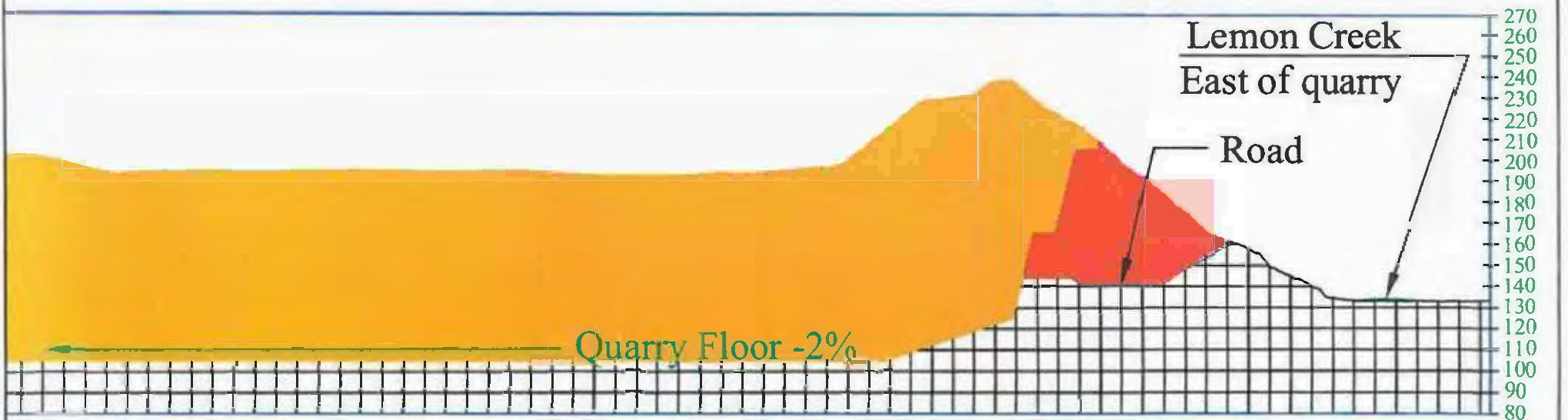
CBJ USE PERMIT

Attachment 4 - Project N: 2/4/2020 2-4-20

Drawn By:



24+12.00



Hidden Valley Quarry

Description Section View Station 24+12.00

Sheet

Project Number: 100720

CBJ USE PERMIT

Attachment 4 - Project No. 2-4-2020 Date: 2/4/2020 Drawn By:

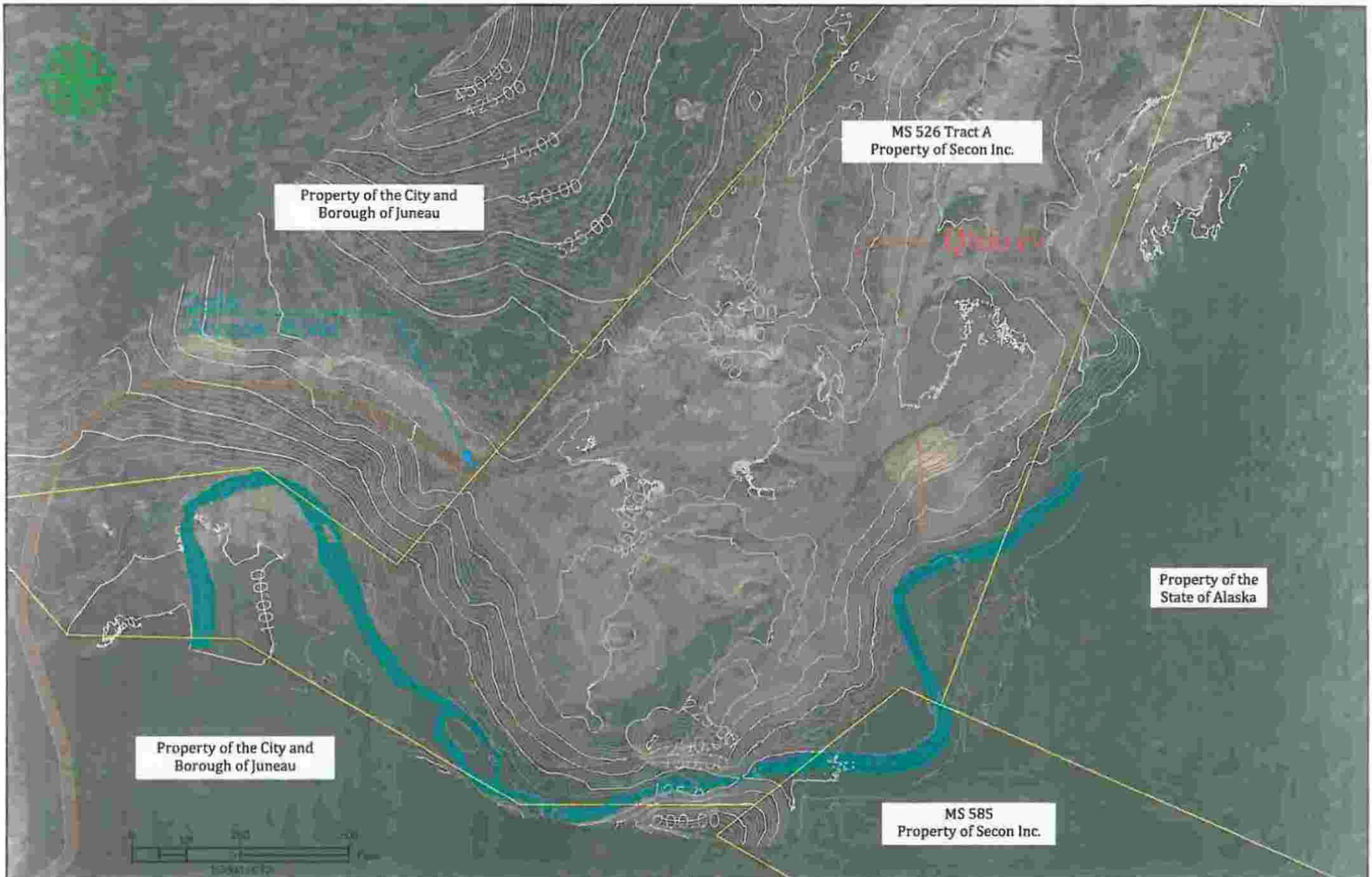


10



Hidden Valley Quarry		Description LiDAR View with proposed Access Road		Sheet 11
	CBJ USE PERMIT	Project Number: 100720		
		Date 2/4/2020	Drawn By:	

Attachment 5 - Topographic Map with Ownership



Hidden Valley Quarry

Description Topographic Map with Ownership

Sheet

Project Number: 100720

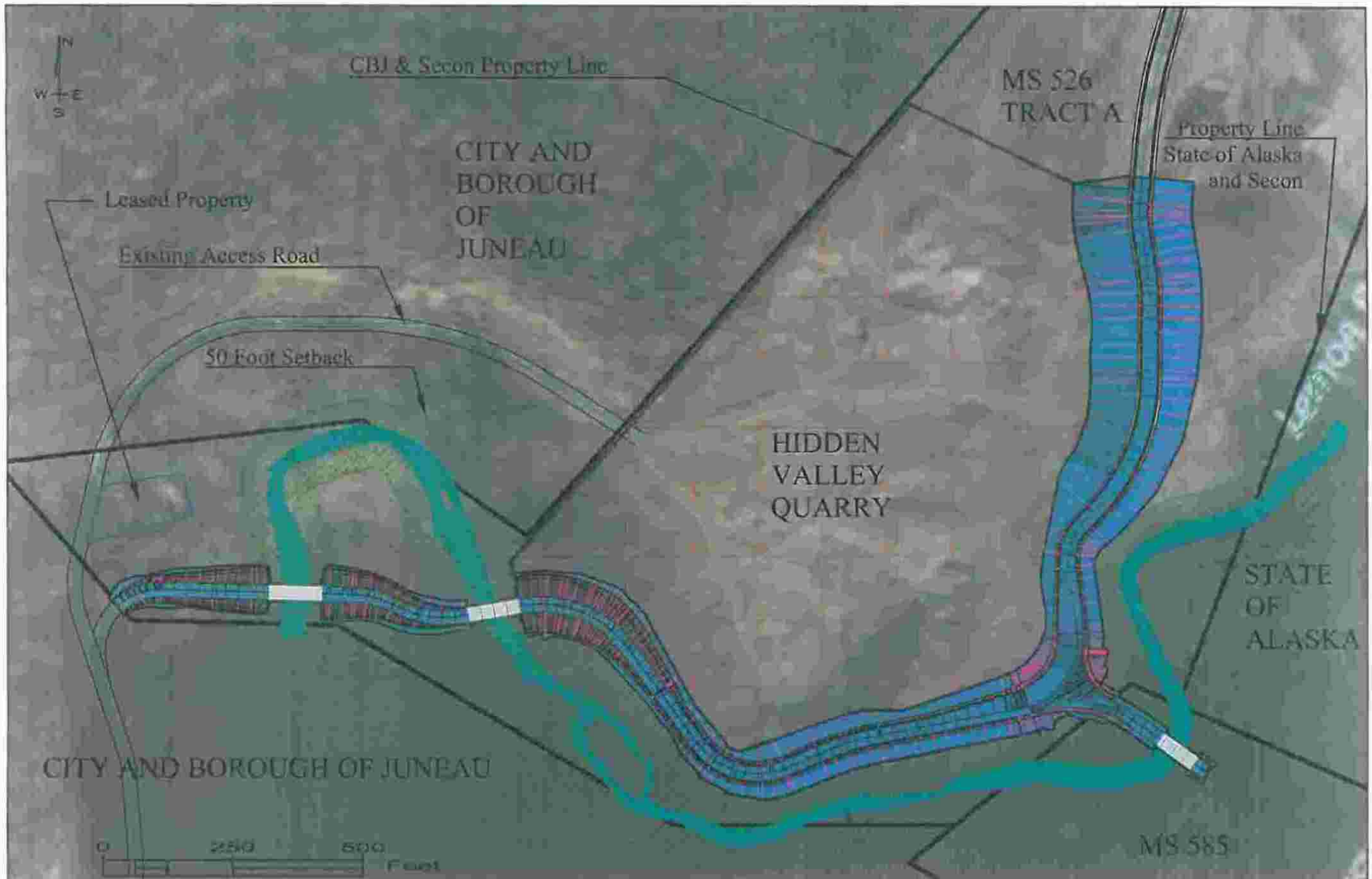
2

CBJ USE Permit

Date 2/4/2020

Drawn By:





Hidden Valley Quarry

CBJ USE PERMIT

Description Overview Map

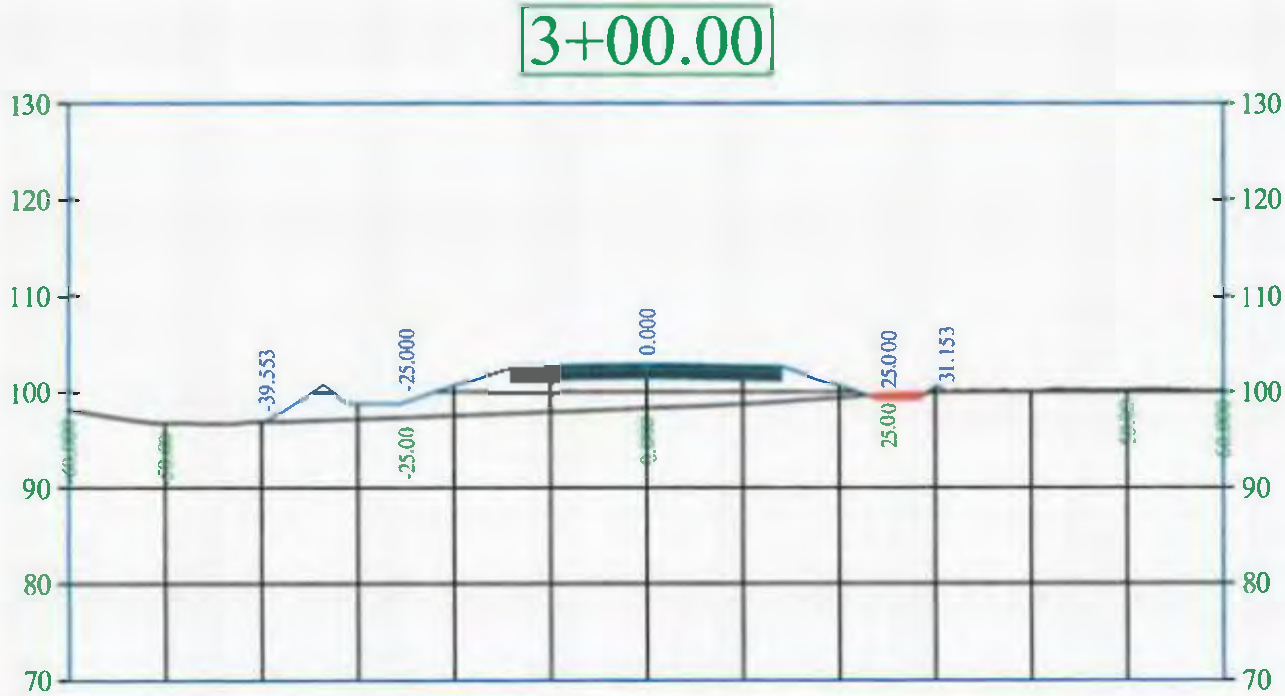
Project Number: 100720

Date 2/4/2020

Drawn By:

Sheet

3



Hidden Valley Quarry

Description Section View Station 3+00.00

Sheet

Project Number: 100720

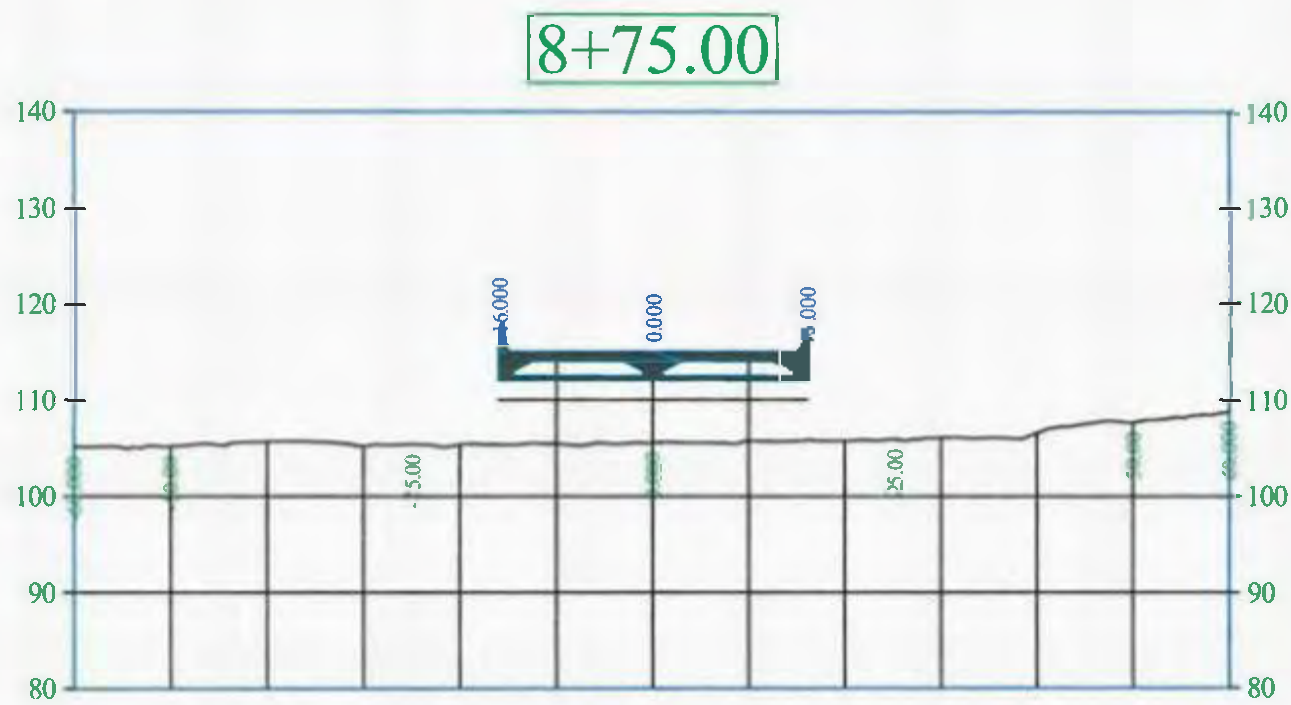
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CBJ USE Permit

Date 2/4/2020

Drawn By:





Hidden Valley Quarry

Description Section View Station 8+75.00

Sheet

Project Number: 100720

Date 2/4/2020

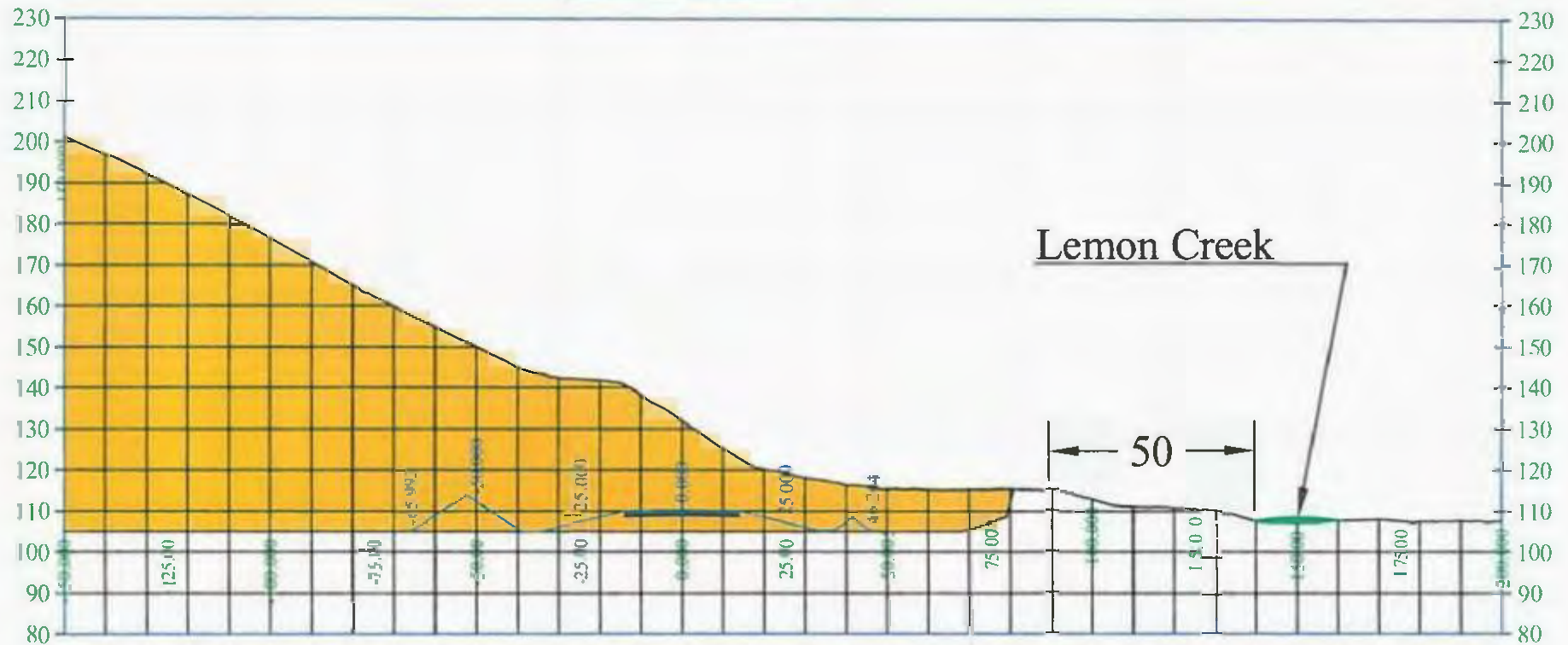
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CBJ USE PERMIT

6



11+50.00



Hidden Valley Quarry

Description Section View Station 10+00.00

Sheet

Project Number: 100720

7

CBJ USE PERMIT

Date 2/4/2020

Drawn By:

14+80.00

Hidden Valley Quarry

Lemon Creek
Southwest of Quarry

50

39.681

5.00

1.500

Benched Backwall

Hidden Valley Quarry

Description Section View Station 14+80.00

Sheet

Project Number: 100720

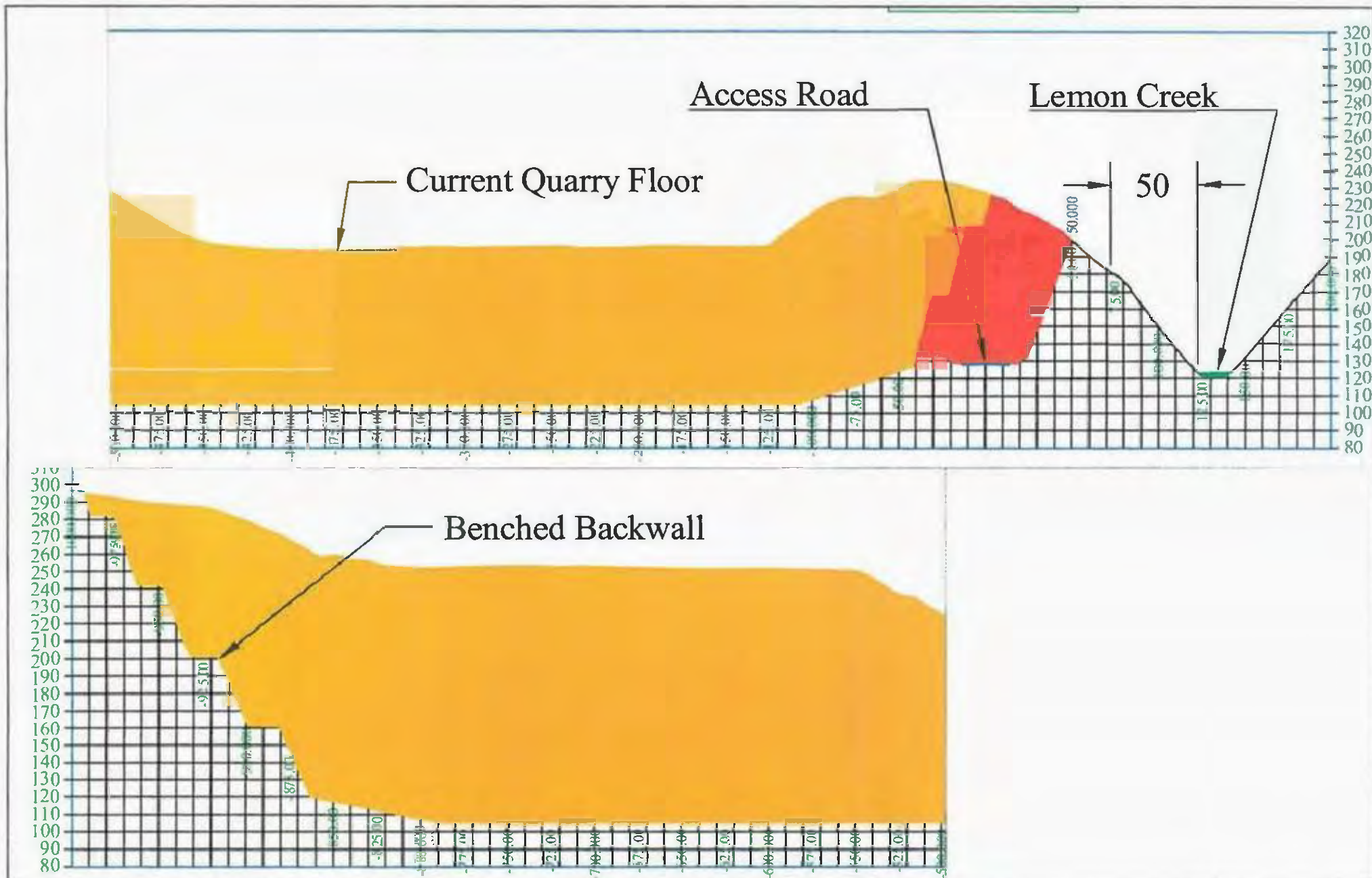
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Date 2/4/2020

Drawn By:



CBJ USE PERMIT



Hidden Valley Quarry

Description Section View Station 7+00.00

Sheet

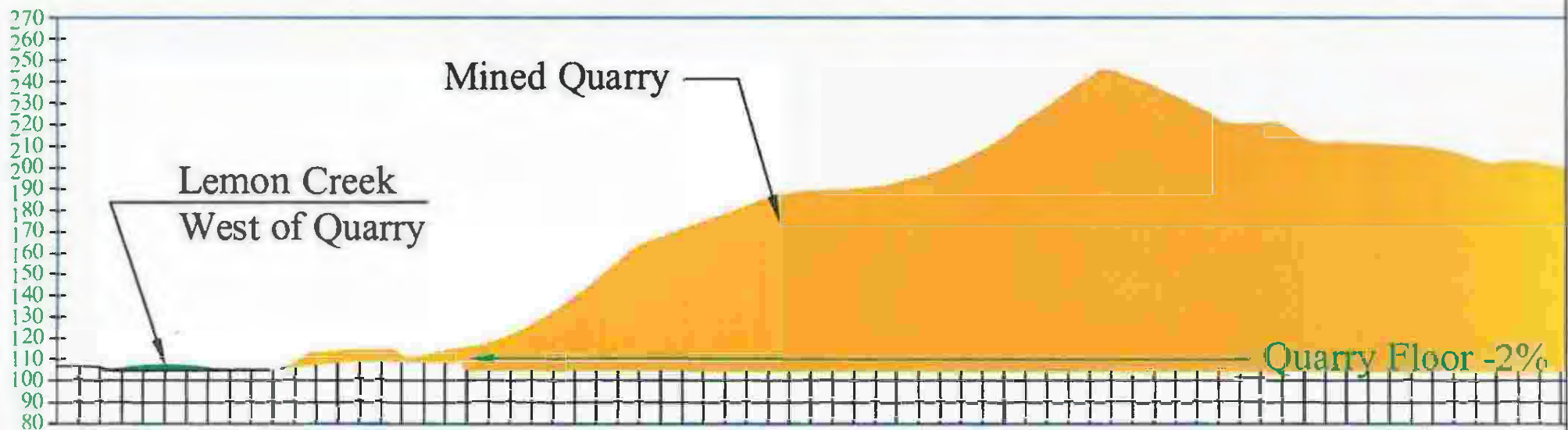
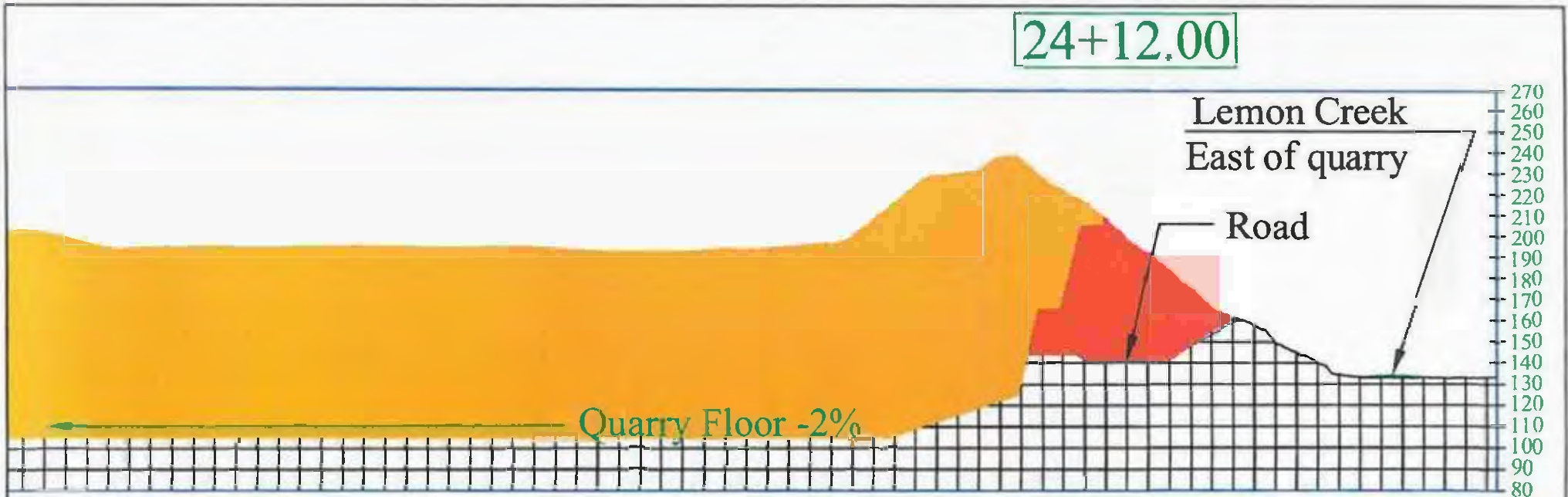
Project Number: 100720

9

CBJ USE PERMIT

Date 2/4/2020

Drawn By:



Hidden Valley Quarry

Description Section View Station 24+12.00

Sheet

Project Number: 100720

10

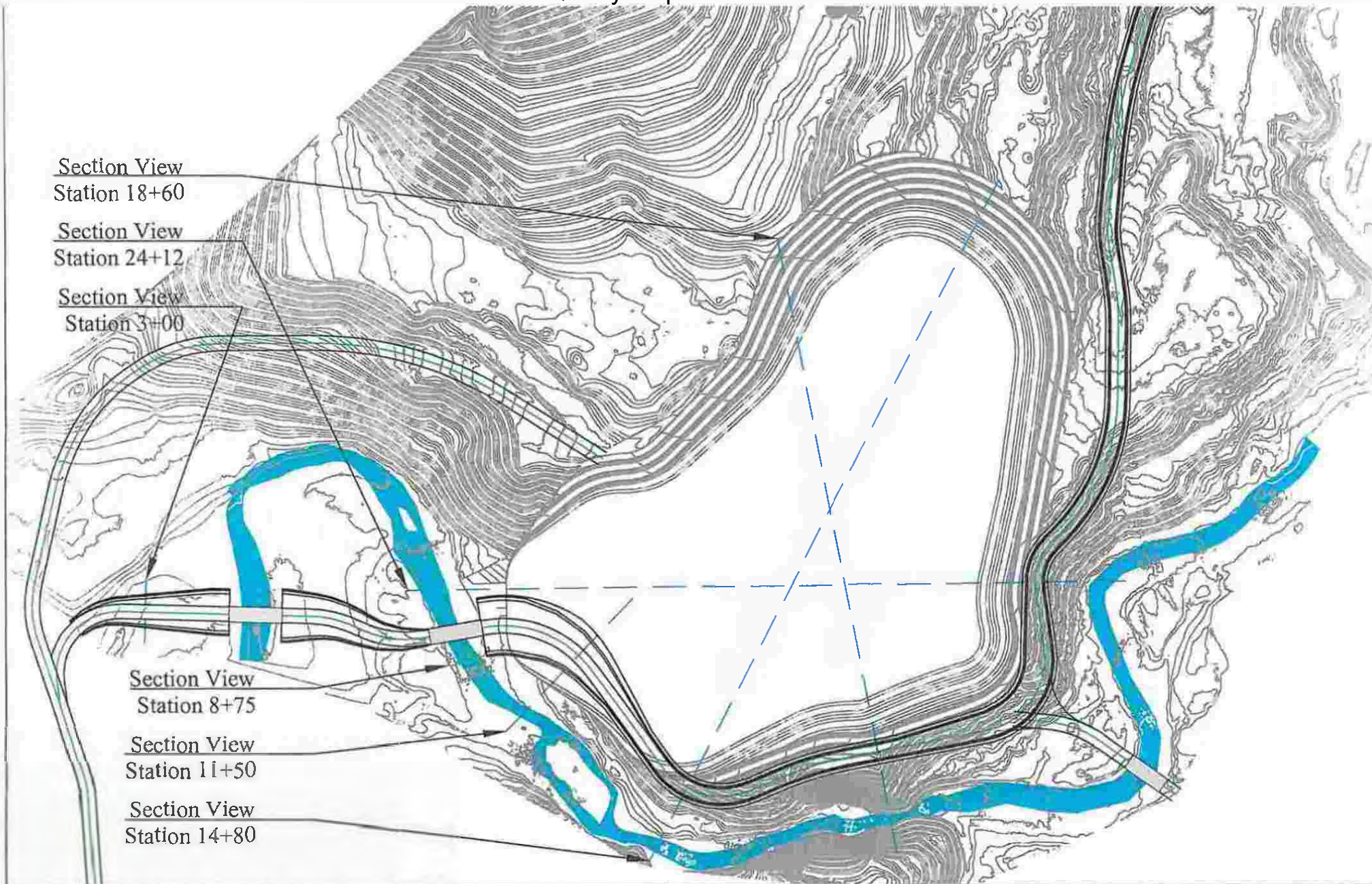
CBJ USE PERMIT

Date 2/4/2020

Drawn By:



Attachment 8 - Quarry Map for Section View Locations



Hidden Valley Quarry

Description Quarry Map for Section View Location

Sheet

Project Number: 100720

Date 2/4/2020

Drawn By:



CBJ USE PERMIT

4



Hidden Valley Quarry

Description LiDAR View with proposed Access Road

Sheet

Project Number: 100720

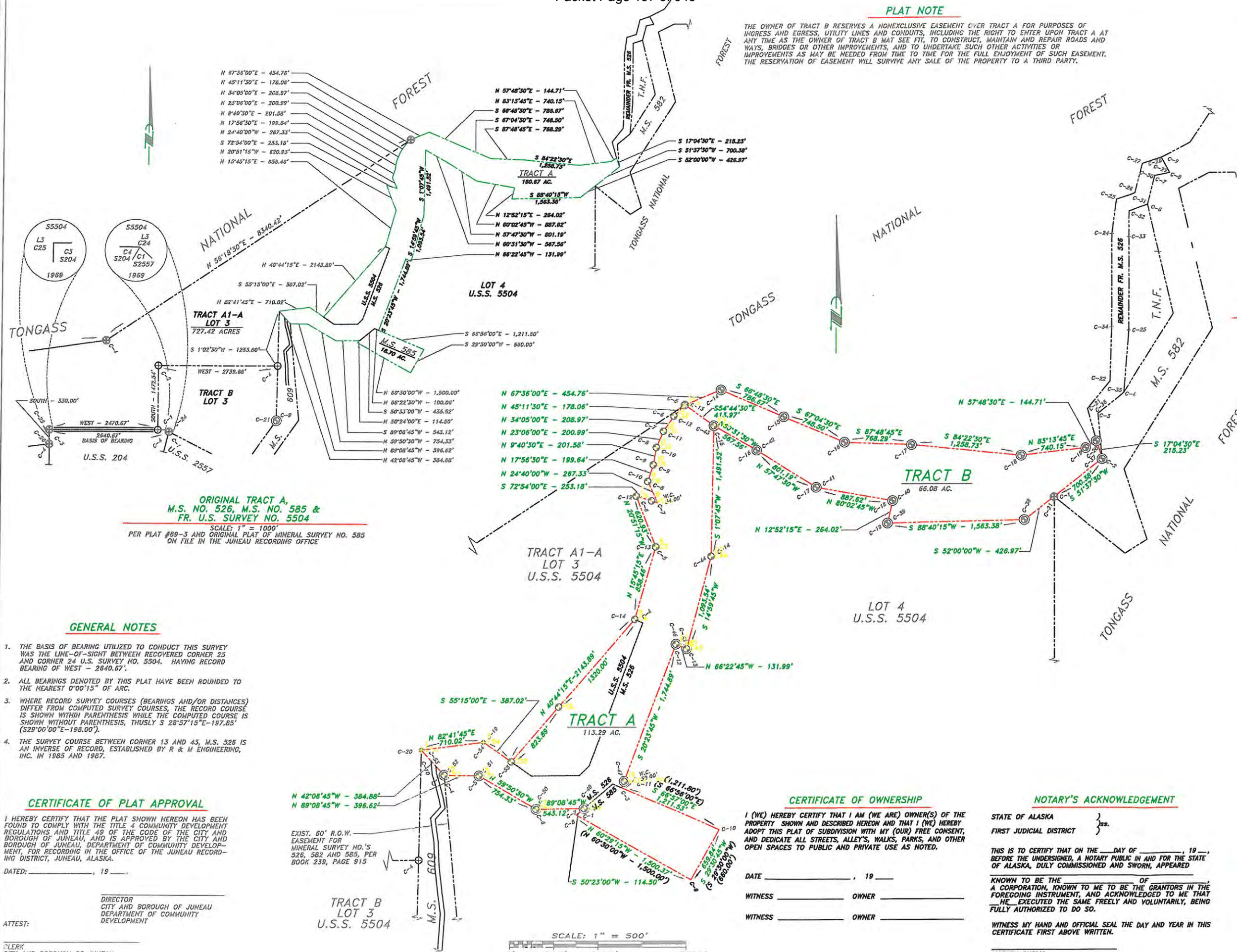
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CBJ USE PERMIT

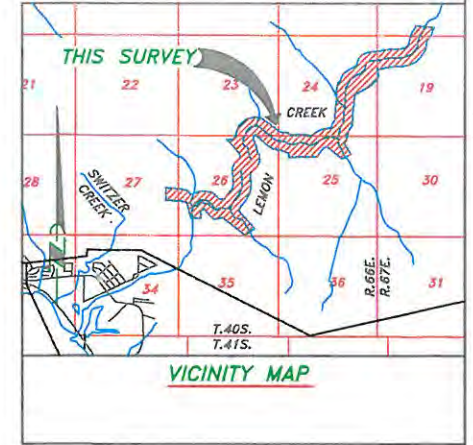
Date 2/4/2020

Drawn By:



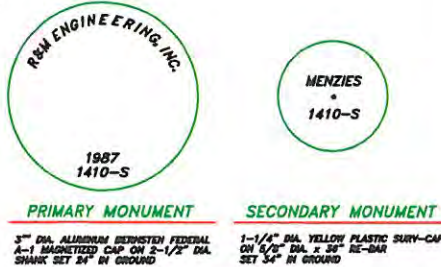
PLAT NOTE

THE OWNER OF TRACT B RESERVES A NONEXCLUSIVE EASEMENT OVER TRACT A FOR PURPOSES OF INGRESS AND EGRESS, UTILITY LINES AND CONDUITS, INCLUDING THE RIGHT TO ENTER UPON TRACT A AT ANY TIME AS THE OWNER OF TRACT B MAY SEE FIT, TO CONSTRUCT, MAINTAIN AND REPAIR ROADS AND WAYS, BRIDGES OR OTHER IMPROVEMENTS, AND TO UNDERTAKE SUCH OTHER ACTIVITIES OR IMPROVEMENTS AS MAY BE NEEDED FROM TIME TO TIME FOR THE FULL ENJOYMENT OF SUCH EASEMENT. THE RESERVATION OF EASEMENT WILL SURVIVE ANY SALE OF THE PROPERTY TO A THIRD PARTY.



SYMBOLS

- ⊙ ORIGINAL B.L.M./G.L.O. BRASS CAP RECOVERED
- ⊙ 1410-S PRIMARY MONUMENT ESTABLISHED 1985
- ⊙ 1410-S SECONDARY MONUMENT ESTABLISHED 1985
- BOUNDARY/PROPERTY LINE
- ⊙ PRIMARY MON. OF RECORD BY OTHERS
- ⊙ 1410-S PRIMARY MONUMENT ESTABLISHED 1987



GENERAL NOTES

1. THE BASIS OF BEARING UTILIZED TO CONDUCT THIS SURVEY WAS THE LINE-OF-SIGHT BETWEEN RECOVERED CORNER 25 AND CORNER 24 U.S. SURVEY NO. 5504, HAVING RECORD BEARING OF WEST - 2840.67'.
2. ALL BEARINGS DENOTED BY THIS PLAT HAVE BEEN ROUNDED TO THE NEAREST 0'00"15" OF ARC.
3. WHERE RECORD SURVEY COURSES (BEARINGS AND/OR DISTANCES) DIFFER FROM COMPUTED SURVEY COURSES, THE RECORD COURSE IS SHOWN WITHIN PARENTHESIS WHILE THE COMPUTED COURSE IS SHOWN WITHOUT PARENTHESIS, THUSLY S 28°57'15"E-197.85' (S29°00'00"E-198.00').
4. THE SURVEY COURSE BETWEEN CORNER 13 AND 43, M.S. 526 IS AN INVERSE OF RECORD, ESTABLISHED BY R & M ENGINEERING, INC. IN 1985 AND 1987.

CERTIFICATE OF PLAT APPROVAL

I HEREBY CERTIFY THAT THE PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE TITLE 4 COMMUNITY DEVELOPMENT REGULATIONS AND TITLE 49 OF THE CODE OF THE CITY AND BOROUGH OF JUNEAU, AND IS APPROVED BY THE CITY AND BOROUGH OF JUNEAU, DEPARTMENT OF COMMUNITY DEVELOPMENT, FOR RECORDING IN THE OFFICE OF THE JUNEAU RECORDING DISTRICT, JUNEAU, ALASKA.

DATE: _____, 19 ____.

DIRECTOR
CITY AND BOROUGH OF JUNEAU
DEPARTMENT OF COMMUNITY DEVELOPMENT

ATTEST:

CLERK
CITY AND BOROUGH OF JUNEAU

CERTIFICATE OF OWNERSHIP

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I (WE) HEREBY ADOPT THIS PLAT OF SUBDIVISION WITH MY (OUR) FREE CONSENT, AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS, AND OTHER OPEN SPACES TO PUBLIC AND PRIVATE USE AS NOTED.

DATE _____, 19 ____
WITNESS _____ OWNER _____
WITNESS _____ OWNER _____

NOTARY'S ACKNOWLEDGEMENT

STATE OF ALASKA }
FIRST JUDICIAL DISTRICT }

THIS IS TO CERTIFY THAT ON THE _____ DAY OF _____, 19 ____, BEFORE THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR THE STATE OF ALASKA, DULY COMMISSIONED AND SWORN, APPEARED

KNOWN TO BE THE _____ OF _____
A CORPORATION, KNOWN TO ME TO BE THE GRANTORS IN THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FREELY AND VOLUNTARILY, BEING FULLY AUTHORIZED TO DO SO.

WITNESS MY HAND AND OFFICIAL SEAL THE DAY AND YEAR IN THIS CERTIFICATE FIRST ABOVE WRITTEN.

NOTARY PUBLIC
MY COMMISSION EXPIRES: _____

JUNEAU RECORDING DISTRICT
A SUBDIVISION PLAT OF
HIDDEN VALLEY SUBDIVISION
WITHIN
TRACT A, M.S. 526, M.S. 585 & FR. U.S. SURVEY 5504
CITY AND BOROUGH OF JUNEAU, ALASKA

CLIENTS:
GOLDBELT, INC.
9097 GLACIER HWY.
JUNEAU, ALASKA 99801
DATE: JULY 31, 1999

SURVEYORS:
R&M ENGINEERING, INC.
P.O. BOX 34278
JUNEAU, ALASKA 99803
R&M PROJ. NO. 971844

SHEET 1 OF 1

ARTICLE II.- SAND AND GRAVEL

49.65.210 - Contents of application

1. *A graphic and legal description of the property;*

Hidden Valley is Located about 5 miles North Northwest of Juneau Alaska and has a drainage basin area of approximately 15,730 acres. Lemon Creek's headwaters originate from two glaciers, Ptarmigan Glacier and Lemon Creek Glacier. Lemon Creek is roughly 8 miles in length and terminates 4.6 miles Northwest of Juneau into Gastineau Channel.

An approximate land ownership map is attached to this document.

2. *A topographic map showing the existing topography, vegetation, drainage features, ground water level, structures, significant natural and artificial conditions of the land, on-site and off-site geophysical hazards which may affect or be affected by the proposed operation, proposed structures, roads, stockpiling and operation;*

A topographic map attached to this document.

3. *A topographic map and a typical cross section showing the proposed finished contour on the land, vegetation, drainage features, limits of overburden clearing, structures, and significant natural and artificial conditions of the property which will exist upon completion of the site restoration plan;*

This quarry is expected to be an active mining site for at least another 50 years. As such, it is improbable that any "finished contour" that SECON would provide would be disingenuous. Plan sheets 6 through 8 detail the anticipated quarry rock excavation. The sheets attempt to show benched back walls and a graded floor that slopes to the quarry entrance for storm water discharge. As the quarry is developed the stripped material and exposed earthen side slopes are seeded for stabilization per the SWPPP. Currently there is no storm water discharge from the quarry. If in the future the quarry develops a discharge the SWPPP will be updated, BMP's will be installed per the SWPPP and sampling will be performed as required by the SWPPP.

4. *Topographic mapping required in subsections (2) and (3) of this section for areas having a slope of less than five percent shall show spot elevations at all breaks in grade, drainage channels or swales and at selected points not more than 100 feet apart in all directions. For areas having a slope of greater than five percent, contours shall be shown at an interval of not more than five feet where the ground slope is regular; however, contour intervals of not more than two feet may be required where necessary to adequately show irregular land features or drainage details;*

This quarry is a Hard Rock Quarry. The above mentioned details apply to a sand and gravel quarries and cannot be applied here due to the difference in source material.

5. *The plan shall include a map showing ingress and egress points for trucks and other equipment;*

An ingress and egress map attached. The current access has been in place since 1984.

6. *The plan shall include a map showing all buildings and structures to be located on the site;*

No buildings or structures are located on this property. No map provided.

7. *A narrative statement describing the operation, on-site processing, stockpiling, and site restoration shall be included showing:*

An informative narrative has been attached.

- a. *A site drainage plan;*

The site is designed in a way that all water run off drains through rock, which filters the run off to the point that no drainage plan is necessary.

- b. *A method of securing the area, including installation of gates at access points, posting, and fencing;*

The only access point is secured with a gate.

- c. *Methods to be used to minimize noise pollution and visual blight;*

The site is located behind a 500-foot tall cliff/hill that blocks all noise or light pollution that might arise from daily operations.

There are no built-in/permanent light sources installed on location. Sometimes portable light plants will be brought on site for after dark operations. These plants are not powerful enough to surpass the protection that the natural landscape provides to the surrounding areas.

Daily operations do not create high enough levels of sound to surpass natural barriers. In the event of blasting being necessary, we provide 24 hours' notice at the nearby trailhead, to local radio, and Federal Aviation Administration (FAA). We also provide FAA notice when blasting has been completed.

- d. *The proposed hours and days of operation during the year;*

This quarry will operate between 6 am to 9 pm from April to November of 2020.

- e. *The estimated amount and general type of material present and to be removed from the site;*

Metamorphic rocks are found in Hidden Valley. The quarry is a source for hard rock that is crushed into usable aggregates. Hidden Valley Quarry is estimated to contain 1.5 million cubic yards of rock. Depending on local state and city projects an estimated 30,000 cubic yards could be mined this year.

- f. The results of test holes which show the water table level, if any, and the general type and location of materials to be removed;*

This site has been in operation since at least the early 1980s. This is before these regulations were published. We have no records of test being drilled before, or at the inception of this quarry.

- g. The date by which it is anticipated the extraction and processing operation will be completed;*

We believe that this quarry could be operational for at least another 50 years.

- h. A schedule for completion of necessary site restoration work;*

Restoration work is completed as necessary each year based on the amount and placement of rock that is removed from the quarry. All areas mined are stabilized and seeded each season. Due to the expected life of this quarry, it is difficult to determine a complete restoration plan.

- i. Operating procedures for control of airborne particulates and other pollutant emissions from the site and equipment used at the site that may affect areas beyond the site boundaries;*

Secon complies with all Alaska Department of Environmental Conservation Air Quality permitting regulations for all equipment used within the quarry.

- j. The identification of any geophysical hazards which may affect or be affected by the proposed operation. A statement of the possible impact of the hazard on the operation and of the operation on the hazard including methods of reducing the impact shall be included;*

All geophysical hazards are minimized or negated entirely by the natural landscape of Hidden Valley, the low water flow of Lemon Creek, and the relatively small drainage area that feeds into Lemon Creek.

- k. The date of establishment of the operation and history of adjacent land development; and*

No adjacent land is developed or at immediate risk of being developed. Either the State of Alaska or the City and Borough of Juneau own all adjacent lands.

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PLANNING COMMISSION
NOTICE OF DECISION

Date: April 15, 2009

File No.: USE2009-00004

Secon, Inc.
P.O. Box 32159
Juneau, AK 99803

Application For: A Conditional Use permit for the continuation of a rock and gravel extraction operation at Secon's Hidden Valley Quarry.

Legal Description: Hidden Valley Tract A

Parcel Code No.: 3-M00-0-LEM-CRK-2

Hearing Date: April 14, 2009

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated April 7, 2009, and approved the Conditional Use permit for the continuation of a rock and gravel extraction operation at Secon's Hidden Valley Quarry, to be conducted as described in the project description and project drawings submitted with the application and with the following conditions:

Required Conditions, per CBJ§49.65.235:

1. A strip of land at the existing topographic level, and not less than 15-feet in width, shall be retained at the periphery of the site wherever the site abuts a public way. This periphery strip shall not be altered except as authorized for access points. This section does not alter the applicant's duty to maintain subjacent support.
2. If the bank of any extraction area within the permit area is above the high water line or water table, it shall be left upon termination of associated extraction operations with a slope no greater than the angle of repose for unconsolidated material of the kind composing it, or such other angle as the commission may prescribe. If the extraction operations cause ponding or retained water in the excavated area, the slope of the submerged working face shall not exceed a slope of 3:1 from the edge of the usual water line to the water depth of seven feet. This slope ratio may not be exceeded during extraction operations unless casual or easy access to the site is prevented by a fence, natural barriers, or both.

Staff Conditions:

3. Prior to the commencement of extraction operations, the applicant shall post a performance bond in the amount of \$230,000, to ensure all requirements of the project as described are adhered to and for pit reclamation, in accordance with CBJ§49.65.240 *Guarantee*.
4. For the life of this operation, regardless of the location of Lemon Creek, the applicant shall maintain a 50-foot habitat setback between the extraction area and the ordinary high water mark of Lemon Creek, per CBJ49.70.310(a)(4) *Habitat*.

Secon, Inc.
File No.: USE2009-00004
April 15, 2009
Page 2 of 3

5. By February 1st, each year, the applicant shall submit to the Community Development Department a report that includes
 - Documentation of all the erosion inspections completed the previous year;
 - A report of bank destabilization (if destabilization occurred);
 - A report of bank protection/stabilization measures if merited;
 - Documentation of the volume of material removed; and
 - Map of area worked.
6. The applicant shall limit the hours of operation between 7am to 7pm, Monday through Saturday.
7. All blasting operations shall be conducted during the day light hours of operation. No Blasting operations will be permitted on Saturdays and Sunday or official Local, Federal and State holidays.
8. The proposed project shall not generate sound levels, which exceed 65 dBa at the property line during the day or 55 dBa at night, per CBJ§49.15.330(g)(11).
9. Prior to operation or by May 29th, the application shall schedule an inspection with the Community Development Department to determine the limits of the Bank Erosion Monitoring Area.
10. Within 30-day of filing the Notice of Intent and permit application for the Multi-Sector General Permit-2008, the applicant shall submit to the Community Development Department copies of this information for review to verify that aspects of the proposed operation have not changed.
11. The applicant shall comply with the CBJ Standard Specifications for Civil Engineering Projects and Subdivision Improvements, as modified by the following:
 - Warning signs with the time and date of the blast will be posted 24-hours prior to blasting on Anka St. and at the Lemon Creek trailhead.
 - 24-hour notice will be provided to the Juneau Flight Service Station and the Police and Fire Departments prior to blasting.
 - Public Service Announcement's will be broadcast on local radio 24-hours prior to blasting.
 - Three air horn blasts will be made at 5 minutes prior to blasting.
12. The applicant shall use Best Management Practices to minimize sedimentation into Lemon Creek.
13. **ADVISORY:** No operator shall allow their load, its fumes or odors, or any containers or coverings from becoming loose or detached or from dropping, blowing away, sifting, leaking, or otherwise escaping or in any manner creating a hazard or nuisance to other users of the highway, per CBJ§36.30.070.
14. **ADVISORY:** The applicant shall submit a Notice of Intent and permit application for the Multi-Sector General Permit-2008 with the Alaska Department of Environmental Conservation.

Secon, Inc.
File No.: USE2009-00004
April 15, 2009
Page 3 of 3

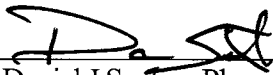
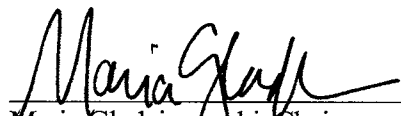
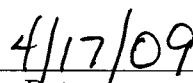
Attachments: April 7, 2009, memorandum from Daniel J. Sexton, Community Development, to the CBJ Planning Commission regarding USE2009-00004.

This Notice of Decision does not authorize construction activity. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ §01.50.030. Appeals must be filed by 4:30 P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ §01.50.030 (c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ §49.20.120).

Effective Date: The permit is effective upon approval by the Commission, April 14, 2009.

Expiration Date: The permit will expire ten-years from the effective date, April 14, 2019

Project Planner:  Daniel J Sexton, Planner Community Development Department	 Maria Gladyszewski, Chair Planning Commission
 Filed With City Clerk	 Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ-adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.



Engineering & Public Works Department

155 South Seward Street

Juneau, Alaska 99801

Phone: 907-586-0800 | Fax: 907-463-2606

DATE: February 14, 2020

TO: Teri Camery, Community Development Department
Alexandra Pierce, Community Development Department

FROM: Autumn Sapp, Engineering & Public Works Department

RE: USE20190022 – Hidden Valley Quarry – Hidden Valley, Tract A – Engineering Report

Recommendations-

As this is a renewal of existing operations on an existing site, traffic impacts upon CBJ streets and the CBJ system will not change. Currently there are no known issues effecting street and traffic. The type of quarry should not have an effect upon the water table.

A Grading Permit will be required for all construction outside of the quarry site when the following conditions occur: excavating or importing 50 cy of material or more or a change in the drainage. A grading permit will apply for all roads constructed that are outside of platted right-of-ways. This is a separate process from the Use permit, but it is important to make the applicant aware of the requirement at this time.

The following items that should be taken into consideration during the Use permit process:

1. All work under the Use and future grading permits shall adhere to issued ADEC SWPPP to manage water quality. The current SWPPP with ADEC expires March 31, 2020.
2. As required by 49.65.210 (7)(J), the narrative does not address the identification of any geophysical hazards which may affect or be affected by the proposed operation. A statement of the possible impact of the hazard on the operation and of the operation on the hazard including methods of reducing the impact shall be included. This is specifically a concern based on a previous issue of bank stabilization. It is recommended that the continuation of erosion and bank destabilization monitoring and reporting are included in this permit following suite with the NOD for USE2009-00004.

42.20.095 Disturbing the peace.

(a)

General.

(1)

It is unlawful for any person willfully to make or continue to make, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the area. The standards which shall be considered in determining whether a violation of the provisions of this section exists shall include the following:

(A)

The volume of noise;

(B)

The intensity of the noise;

(C)

Whether the nature of the noise is usual or unusual;

(D)

Whether the origin of the noise is natural or unnatural;

(E)

The volume and intensity of the background noise, if any;

(F)

The proximity of the noise to residential sleeping facilities;

(G)

The nature and zoning of the area within which the noise emanates;

(H)

The density of the inhabitation of the area within which the noise emanates;

(I)

The time of the day or night the noise occurs;

(J)

The duration of the noise;

(K)

Whether the noise is recurrent, intermittent or constant;

(L)

Whether the noise is produced by a commercial or noncommercial activity;

(M)

Whether the noise contains pure tones.

(2)

Liability. In a prosecution under this section, it shall be a rebuttable presumption that the owner, tenant, or person in charge of real property from which noise emanates in violation of this section has caused or allowed to be caused the noise which violates this section.

(b)

Construction of buildings and projects. It is unlawful to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or similar heavy construction equipment, before 7:00 a.m. or after 10:00 p.m., Monday through Friday, or before 9:00 a.m. or after 10:00 p.m., Saturday and Sunday, unless a permit shall first be obtained from the City and Borough building official. Such permit shall be issued by the building official only upon a determination that such operation during hours not otherwise permitted under this section is necessary and will not result in unreasonable disturbance to surrounding residents.

(c)

Noise emanating from vehicles.

(1)

Policy. It is unlawful for any person to play, continue to play, or allow to be played, any sound system from, within, or on any motor vehicle so that any sound, music, or vibration emanating therefrom can be heard at a distance of more than 30 feet between the hours of 10:00 p.m. and 9:00 a.m., unless the vehicle is a sound truck operating pursuant to a permit issued under [section 72.10.150](#)

(2)

Liability. In a prosecution under this section, it shall be rebuttable presumption that the registered owner of a vehicle from which emanates noise in violation of this section has played or allowed to be played the sound system causing the noise.

(d)

[Reserved.]

(e)

Defenses. It is an affirmative defense to a charge under subsection (a) of this section that the noise is a normal result of a kennel authorized in an industrial zone under [title 49](#) of this Code.

(f)

Disturbing the peace is an infraction.

(Serial No. 78-36, § 3, 1978; Serial No. 85-56, § 45, 1985; Serial No. 2000-44am, § 2, 1-22-2001; Serial No. 2006-18(b), § 3, 6-5-2006)

State law reference— *Disorderly conduct, AS 11.61.110.*

04 CBJAC 050.020 Performance standards.

- (a) The noise emanating from premises used for industrial activities shall be muffled so as to not become objectionable due to rhythm, intensity, pitch, or timbre, and where a use adjoins a residential district, the volume measured at the boundary line shall not exceed 55 dba's between the hours of 11:30 p.m. and 6:00 a.m., and 70 dba's at other hours.
- (b) Industrial and exterior lighting shall not be used in a manner that produces glare on public highways or neighboring property.
- (c) Arc welding, acetylene torch cutting or similar processes shall be performed so as not to be seen from outside of the property.
- (d) Provisions shall be made for necessary shielding or other preventive measures against interference caused by mechanical, electrical, electronic and nuclear equipment.
- (e) The emission of obnoxious odors or toxic or corrosive fumes or gases shall not be permitted. Dust or vapor created by an industrial operation shall not be exhausted directly into the atmosphere.
- (f) The storage of liquid or solid waste which attracts vermin or otherwise creates a health hazard is prohibited. No waste products shall be visible from eye level from any property line.
- (g) All open storage, excluding outside merchandising, shall conform to the front yard setback requirement of the zoning district in which it is located and shall be enclosed by a sight obscuring fence or planting at least six feet high.

DRAFT MINUTES
WETLANDS REVIEW BOARD
October 17, 2019 5:15 pm CBJ Assembly Chambers

Meeting Summary

Roll Call

Board Members Present: Ken Alper, Lucas Chambers, Chip McMillan, John Hudson, , Emily Haynes, Michelle Burlin

Board Members Absent: Dan Hickok, Ryan Bare, Percy Frisby

A quorum was present.

Staff Members Present: Teri Camery, Senior Planner;

Public Present: Mike Short, SECON; Gretchen Pikul, ADEC

Meeting called to order at 5: 35 p.m.

II. Minutes approved for the August 15, 2019 Regular Meeting

III. Agenda approved

IV. Public Participation on Non-Agenda Items.
None.

V. Board Comments.
None.

VI. **Agenda Items**

1) USE2019 0022 Hidden Valley Quarry.

Mr. Chambers recused himself from participating in the review. Mr. Hudson took the role as Board Chair.

Ms. Camery explained that the development was adjacent to Lemon Creek and therefore subject to conformance with CBJ Code Section 49.70.950(c)(7), which states:

Rivers, lakes, and streams shall be managed so as to protect natural vegetation, water quality, important fish or wildlife habitat, and natural waterflow.

She explained that SECON has two other Conditional Use Permits: one for the streambed in Upper Lemon Creek (Hidden Valley), and one for the streambed in Lower Lemon Creek. The current upland quarry subject to review has a long history of operation. The existing Conditional Use Permit expired recently.

Ms. Camery said that draft minutes and the Board's final motion would be included in the Community Development Department's staff report to the Planning Commission.

Mr. Short provided an overview of the project, and noted the distances of the development from Lemon Creek: 50-75 feet on the east side, and 100 feet on the west side. This section of Lemon Creek has coho and dolly varden.

Several board members expressed repeated concern regarding the number of stream crossings (three) and the cumulative encroachment into the Lemon Creek floodplain. Mr. Short explained the reasons for the location of the road corridor and crossings, and said that SECON would need to purchase additional property from CBJ to change the routes.

Mr. Macmillan asked Ms. Pikul about groundwater. Ms. Pikul said it was unlikely to reach the surface. Mr. Macmillan also asked about the flooding history on the site. Mr. Short explained that even the most extreme event would not reach the quarry. Ms. Camery noted that the project area was not within a FEMA-mapped floodplain and was not subject to FEMA floodplain management regulations.

Board members continued to discuss the road corridor and alternative road alignments. Mr. Short explained that loose material was an issue and that alternative routes might not be stable.

Mr. Hudson noted that alluvial fans have great habitat and an ability to form new channels. Mr. Short agreed but also noted that alluvial fans also eliminate habitat on a regular basis as aggregate comes down and changes channels.

MOTION:

The Wetlands Review Board recommends that the applicant explore alternatives that would avoid building the proposed new road, and recommends accessing the existing quarry using existing roads to avoid sensitive floodplain habitat and loss of riparian areas.

Approved without objection.

2) Enforcement discussion

Ms. Camery said that Mr. Watts, the CBJ Compliance Officer, was not able to attend. She said she would try to put this item on the November agenda. She requested that Board members send her questions regarding enforcement in advance so she and Mr. Watts could prepare.

VII. Updates

none

VIII. Planning Commission Liaison Update.

Mr. Alper explained that the Planning Commission had not reviewed any projects recently that affected wetlands.

IX. Next meeting:

Regular Meeting. Thursday November 21, 5:15 pm, Valley Library Large Conference Room.

The meeting was adjourned at approximately 6:50 p.m.

Conditional USE Permit

Site Restoration and Stabilization

As this quarry is developed with the stripping of overburden and the removal of rock it is stabilized per Alaska Department of Conservation (ADEC) and Federal Mine Safety and Health Act (MSHA). Alaska Department of Conservation MSPP sets requirements for Erosion Control or Hazardous Substances potential in accessing the Water of the United States. MSHA has mine safety regulation for back walls, benches, elevated work areas and/or roads within the quarry.

If stripping occurs to expose more rock surface the mining operations the stripping piles/slopes will be stabilized per the MSPP.

As the quarry is mined of rock the sides benches and floors will be cleaned, bermed and graded per MSHA requirements.

Now or in the future when the site is finished mining, the restoration of the site will be minimal.

The prices below are to completely shape and seed the 24 acre quarry site. The fully developed quarry floor will be about 14 acres. There will be about 6 acres of rock face. This leaves 4 acres of overburden soil stabilization. There is more acreage of slope/soil stabilization than 4 acres list here. This additional acreage has already been stabilized with grass and trees.

Broadcast Seeding		14 Acres			
Seeding		\$9.09 /Lbs	35 Lbs/Acre	\$4,452.47	
Labor	2 Ea	14.00 Hr	\$75 /HR	\$2,100	
					\$6,553.00
Hydro Seeding Slopes		4 Acres			
Seeding		\$9.09 /Lbs	35 Lbs/Acre	\$1,272	
Mulch		\$0.64 /Lbs	3000 Lbs/Acre	\$7,680	
Hydro seeder	4.00 Hr	\$65 /HR		\$260	
Labor	8.00 Hr	\$75 /HR		\$600	
					\$9,813.00
Site Grading		20 Acres	2.00 Hours/Acre		
Dump Truck	4 Ea	40.00 Hr	\$175 /HR	\$28,000	
Excavator 450	1 Ea	40.00 Hr	\$180 /HR	\$7,200	
Excavator 200	1 Ea	40.00 Hr	\$120 /HR	\$4,800	
Dozer D8	1 Ea	40.00 Hr	\$225 /HR	\$9,000	
Dozer D6	1 Ea	40.00 Hr	\$150 /HR	\$6,000	
Labor	8 Ea	40.00 Hr	\$75 /HR	\$24,000	
					\$79,000.00
Management/Supervision/Overhead					\$5,634.00
Total Cost					\$101,000.00



Michael Short
 Engineering Manager

2/10/2020

P.O. Box 32159
 Juneau AK, 99803

From: [Autumn Sapp](#)
To: [Emily Wright](#); [Teri Camery](#)
Cc: [Alexandra Pierce](#)
Subject: RE: SECON Quarry
Date: Wednesday, February 26, 2020 4:48:37 PM
Attachments: [RE Hidden Valley Restoration Quote.msg](#)

Please see attached.

Thanks,

Autumn Sapp

City and Borough of Juneau

Engineering & Public Works

Business Manager

907-586-0917

From: Emily Wright
Sent: Wednesday, February 26, 2020 4:20 PM
To: Teri Camery
Cc: Alexandra Pierce ; Autumn Sapp
Subject: RE: SECON Quarry
 Thanks!!

Emily

From: Teri Camery <Teri.Camery@juneau.org>
Sent: Wednesday, February 26, 2020 4:20 PM
To: Emily Wright <Emily.Wright@juneau.org>
Cc: Alexandra Pierce <Alexandra.Pierce@juneau.org>; Autumn Sapp <Autumn.Sapp@juneau.org>
Subject: Re: SECON Quarry

Autumn, can you send Emily the email you sent me confirming that you agree with SECON's revised amount of 100k something? I can't get to that from this distance. That came after I sent in the RLS otherwise I would have already included it.

Thanks!

On Feb 26, 2020, at 6:44 PM, Emily Wright <Emily.Wright@juneau.org> wrote:

In order to review the bond, I need a copy of the new CUP app and information and I need information from Engineering regarding the amount.

Emily

Emily Wright

Assistant Municipal Attorney

City and Borough of Juneau Law Department

155 S. Seward Street

Juneau, Alaska 99801

Ph: (907) 586-0273

Fax: (907) 586-1147

This email (including attachments) is covered by the Electronic Communications Privacy Act, 18 U.S.C. Sections 2510-2521, is confidential and may be legally privileged. It is intended for the sole use of the addressee only. If you are not the intended recipient, any review, retransmission, disclosure, dissemination, reliance upon or other use of this information is prohibited and may be unlawful. If you received this in error,

please contact the sender and delete the material.

From: [Autumn Sapp](#)
To: [Teri Camery](#)
Cc: [Alexandra Pierce](#)
Subject: RE: Hidden Valley Restoration Quote
Date: Wednesday, February 12, 2020 12:10:00 PM
Attachments: [image002.jpg](#)
[image003.jpg](#)

Good afternoon,

After reviewing with our staff Engineers the bond amount of \$101,000 is accurate.

Let me know if you have any questions on the bond. I am still drafting up my review on the rest of the submittal.

Thank you,

Autumn Sapp
 City and Borough of Juneau
 Engineering & Public Works
 Business Manager
 907-586-0917

From: Teri Camery <Teri.Camery@juneau.org>
Sent: Monday, February 10, 2020 1:17 PM
To: Autumn Sapp <Autumn.Sapp@juneau.org>
Cc: Alexandra Pierce <Alexandra.Pierce@juneau.org>
Subject: FW: Hidden Valley Restoration Quote

Hello Autumn,

Per your 10/29/19 request for an itemized estimate for site restoration and stabilization, here is SECON's response.

Please note that the current bond is for \$230,000. We do not have paperwork anywhere to indicate what that number was based on.

Please let me know at your earliest convenience whether Engineering accepts this amount. If you cannot reply before Friday February 14, please respond to Alix Pierce and cc me, because I will be on leave and Alix will need to wrap up the staff report.

I would also appreciate your response on SECON's revised plans that I sent to you last week. These include drainage plans and a more detailed restoration plan, described in an updated project narrative and plans. Again if you're not able to reply before Friday 2/14 please respond to Alix.

Thanks very much,
 Teri

Teri Camery | Senior Planner, CFM

Community Development Department | City & Borough of Juneau, AK

Location: 230 S. Franklin Street, 4th Floor Marine View Building

Office: 907.586.0755

CBJ_EmailLargeColorLogo



From: SHORT, Michael (JUNSC) <mshort@colaska.com>

Sent: Monday, February 10, 2020 1:01 PM

To: Teri Camery <Teri.Camery@juneau.org>

Cc: MOLNAR, Noah (JUNSC) <nmolnar@colaska.com>

Subject: Hidden Valley Restoration Quote

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Teri

Cost of restoration attached.

Michael Short

Engineering Manager

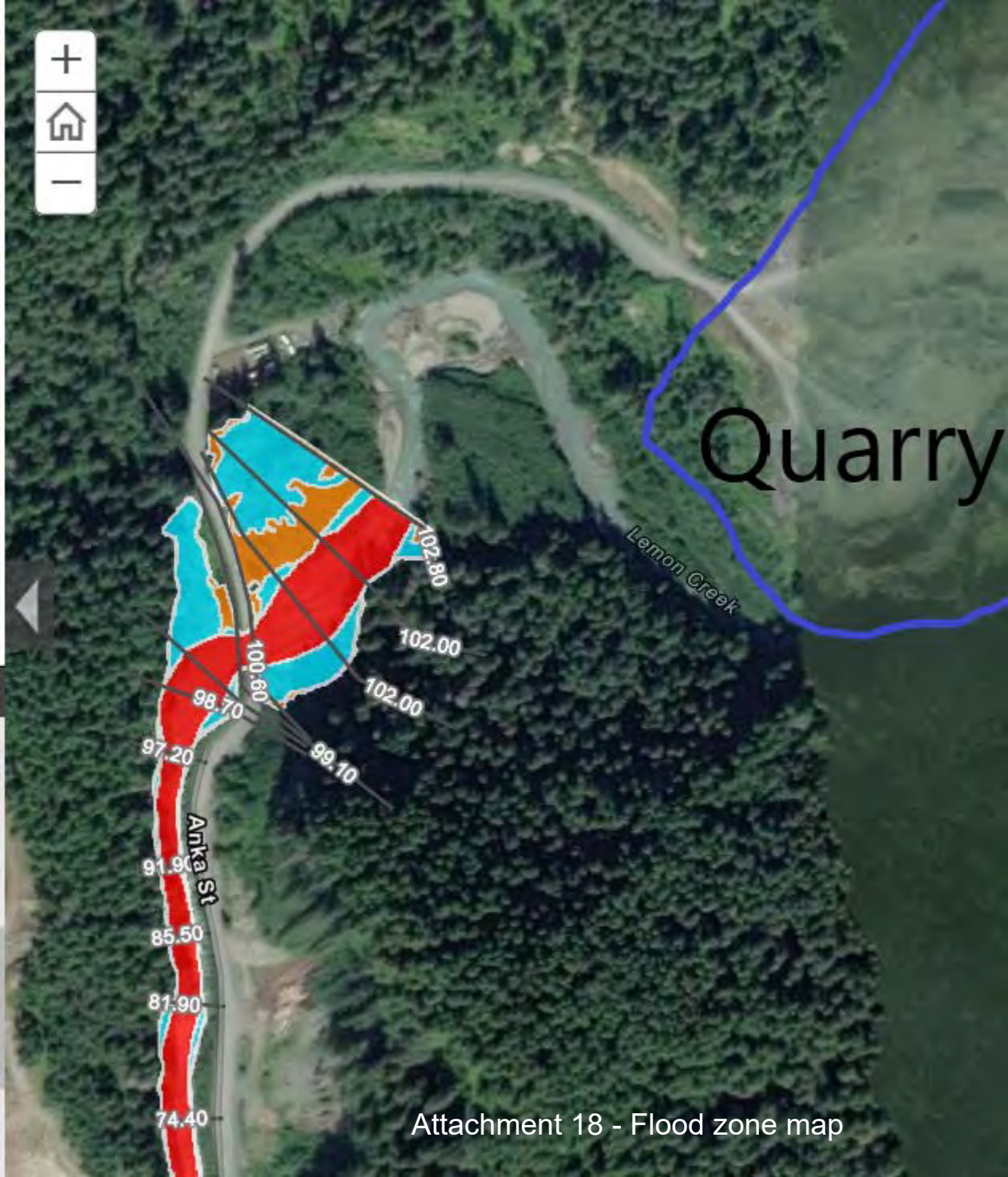
SECON LOGO vector3



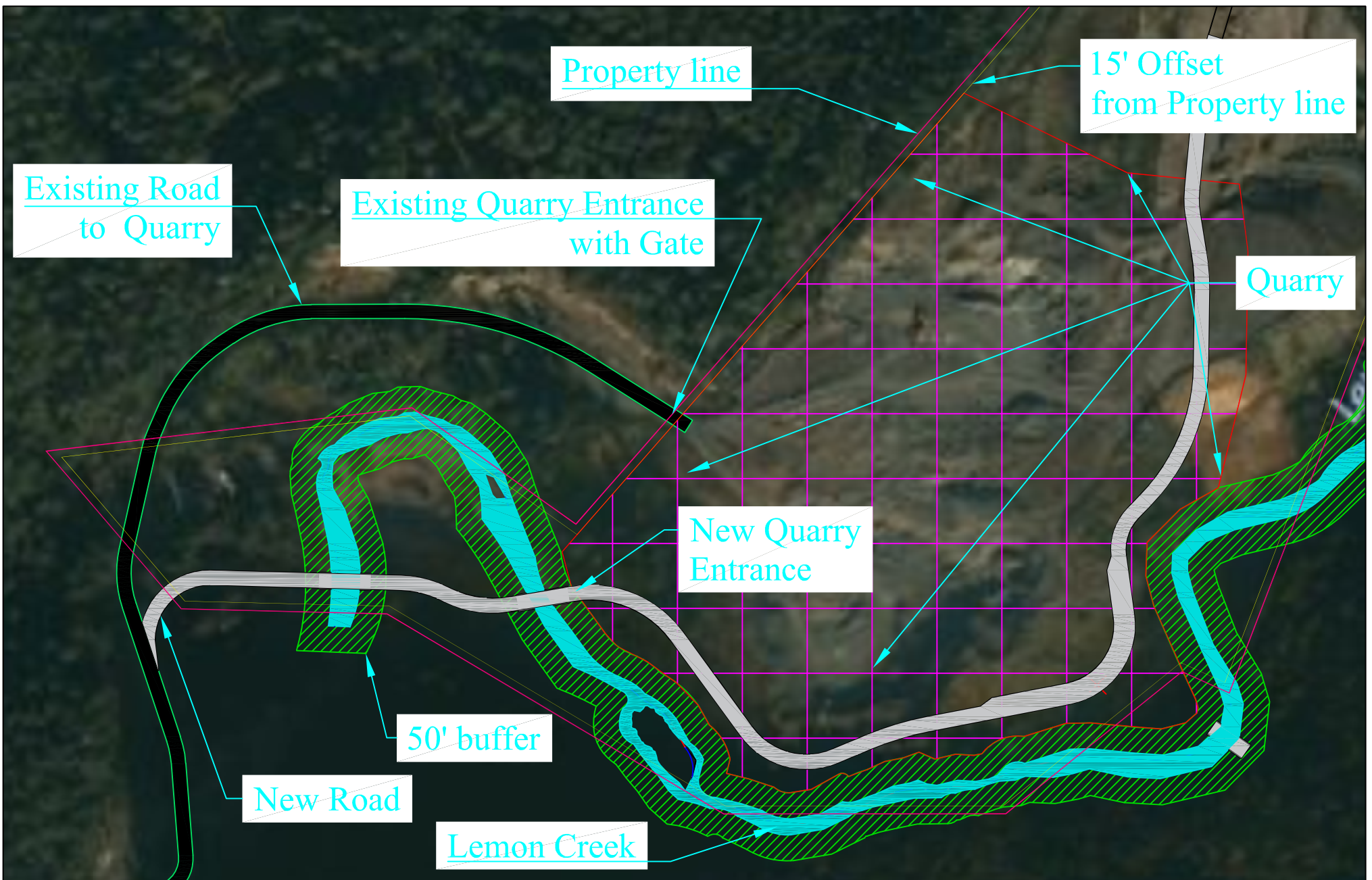
P.O. Box 32159

Juneau, AK 99803

(907) 780-5145



Attachment 18 - Flood zone map



Hidden Valley Quarry

Description Map of Roads

Sheet

Project Number: 100720

Date 3/9/2020

Drawn By:

A



CBJ USE PERMIT



(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

April 15, 2020

MEMORANDUM

From: Teri Camery 

To: FILE

Case Number: USE2019 0022

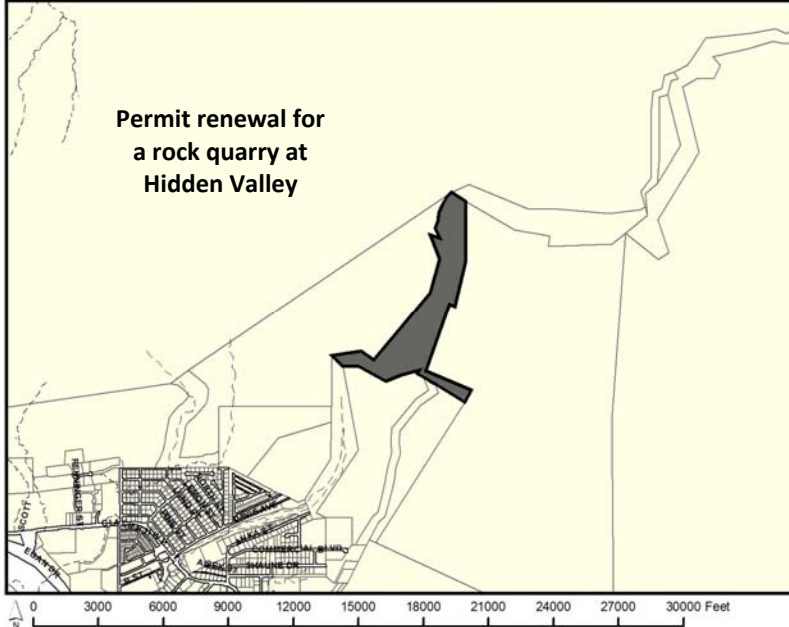
SUBJECT: USE2019 0022 – A Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek

The staff report contains two errors:

1. Page 8, Section E should state that the applicant anticipates mining approximately 30,000 cubic yards each year.
2. Page 10, Section K should state that the nearest habitable structure is approximately 2,000 feet from the severance area.

Invitation to Comment

On a proposal to be heard by the CBJ Planning Commission
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

An application has been submitted for consideration and public hearing by the Planning Commission for a **Conditional Use Permit for an existing rock quarry** located at **Hidden Valley, Lemon Creek** in a **Rural Reserve zone**.

TIMELINE

Staff Report expected to be posted **Monday, February 17** at <https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through February 3

Comments received during this period will be sent to the Planner, **Teri Camery**, to be included in the staff report.

February 4 through 12 noon, February 21

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, February 25, 2020

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

February 26

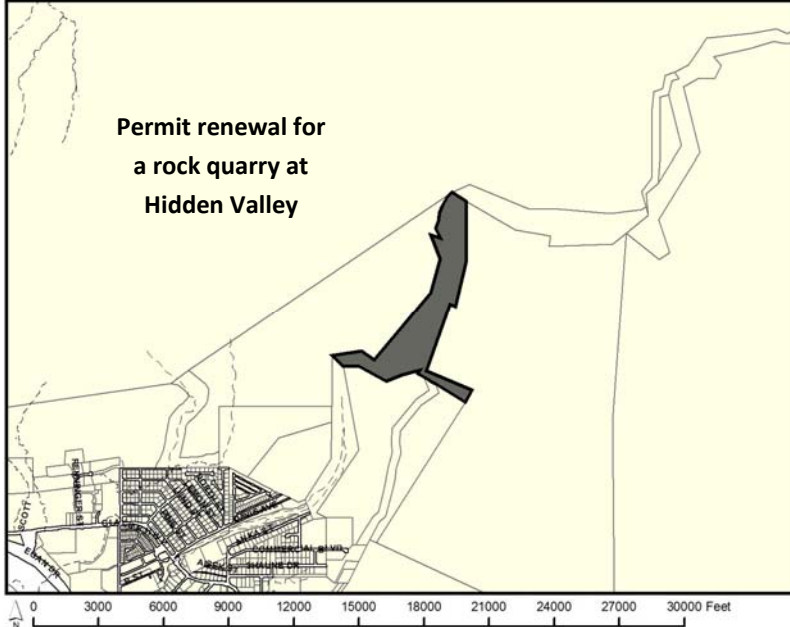
The results of the hearing will be posted online.

Phone: **(907)586-0715** ♦ Email: pc_comments@juneau.org
Mail: **Community Development, 155 S. Seward St, Juneau AK 99801**

Case No.: USE2019 0022
Parcel No.: 3M000LEMCRK2
CBJ Parcel Viewer: <http://epv.juneau.org>

Revised Notice

Re: Permit renewal for a rock quarry at Hidden Valley
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

RESCHEDULED

You received this notice regarding an application being heard by the Planning Commission for a Conditional Use Permit for an existing rock quarry located at Hidden Valley, Lemon Creek in a Rural Reserve zone. Originally, the hearing was set for February 25, 2020.

The hearing has been rescheduled for March 10, 2020.

TIMELINE

Staff Report expected to be posted **Monday, March 2, 2020** at <https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through February 17

Comments received during this period will be sent to the Planner, **Teri Camery**, to be included in the staff report.

Feb. 18 through 12 noon, March 6

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, March 10, 2020

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

March 11

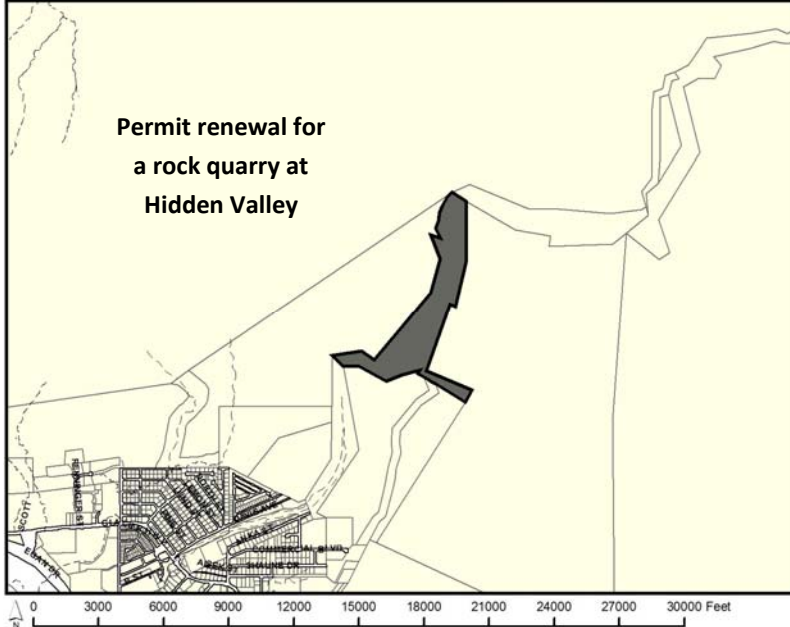
The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: USE2019 0022
Parcel No.: 3M000LEMCRK2
CBJ Parcel Viewer: <http://epv.juneau.org>

SECOND Revised Notice

Re: Permit renewal for a rock quarry at Hidden Valley
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

THIS ITEM HAS BEEN RESCHEDULED

You received this notice regarding an application being heard by the Planning Commission for a Conditional Use Permit for an existing rock quarry located at Hidden Valley, Lemon Creek in a Rural Reserve zone. Originally, the hearing was set for March 10, 2020.

The hearing has been rescheduled for March 24, 2020.

REVISED TIMELINE

Staff Report expected to be posted **Monday, March 16, 2020** at
<https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through March 2

Comments received during this period will be sent to the Planner, **Teri Camery**, to be included in the staff report.

March 3 through 12 noon, March 20

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, March 24, 2020

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

March 25

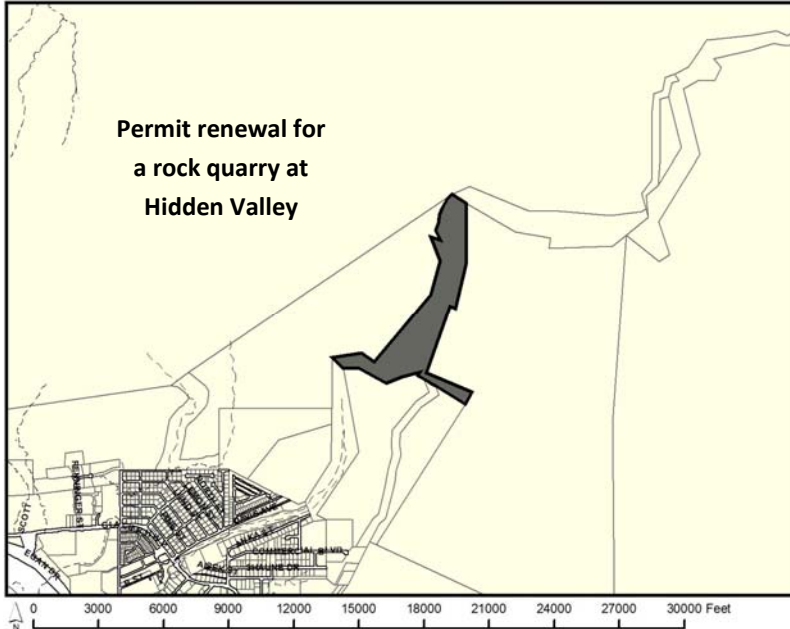
The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: USE2019 0022
Parcel No.: 3M000LEMCRK2
CBJ Parcel Viewer: <http://epv.juneau.org>

THIRD Revised Notice

Re: Permit renewal for a rock quarry at Hidden Valley
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

THIS ITEM HAS BEEN RESCHEDULED

An application is being heard by the Planning Commission for a Conditional Use Permit for an existing rock quarry located at Hidden Valley, Lemon Creek in a Rural Reserve zone.

The hearing has been rescheduled for April 14, 2020.

REVISED TIMELINE

Staff Report are posted at:

<https://beta.juneau.org/assembly/assembly-minutes-and-agendas>

Find hearing results, meeting minutes and more here as well.

Now through 12 noon, April 10

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, April 14, 2020

Members of the public wishing to call in to testify can dial 907-713-2140 and entering Participant ID number 813893. **The caller should provide their name and state that they are calling in for the Planning Commission meeting.** Public lines will be muted by default but will be unmuted by CBJ staff when it is that individual's turn to testify.

April 15

The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: USE2019 0022
Parcel No.: 3M000LEMCRK2
CBJ Parcel Viewer: <http://epv.juneau.org>

USE2019-0022

A Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek

April 14, 2020

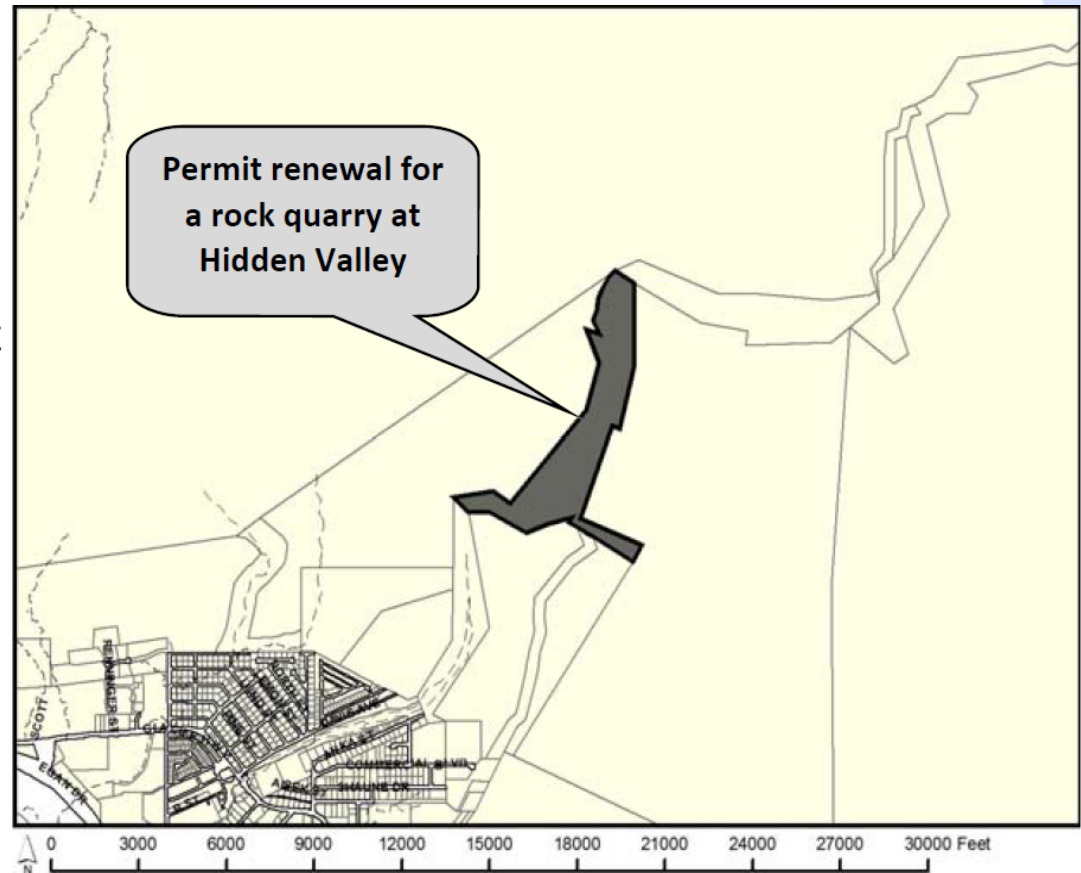
Staff recommends that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Conditional Use Permit for an existing rock quarry with conditions.

(packet p. 21)

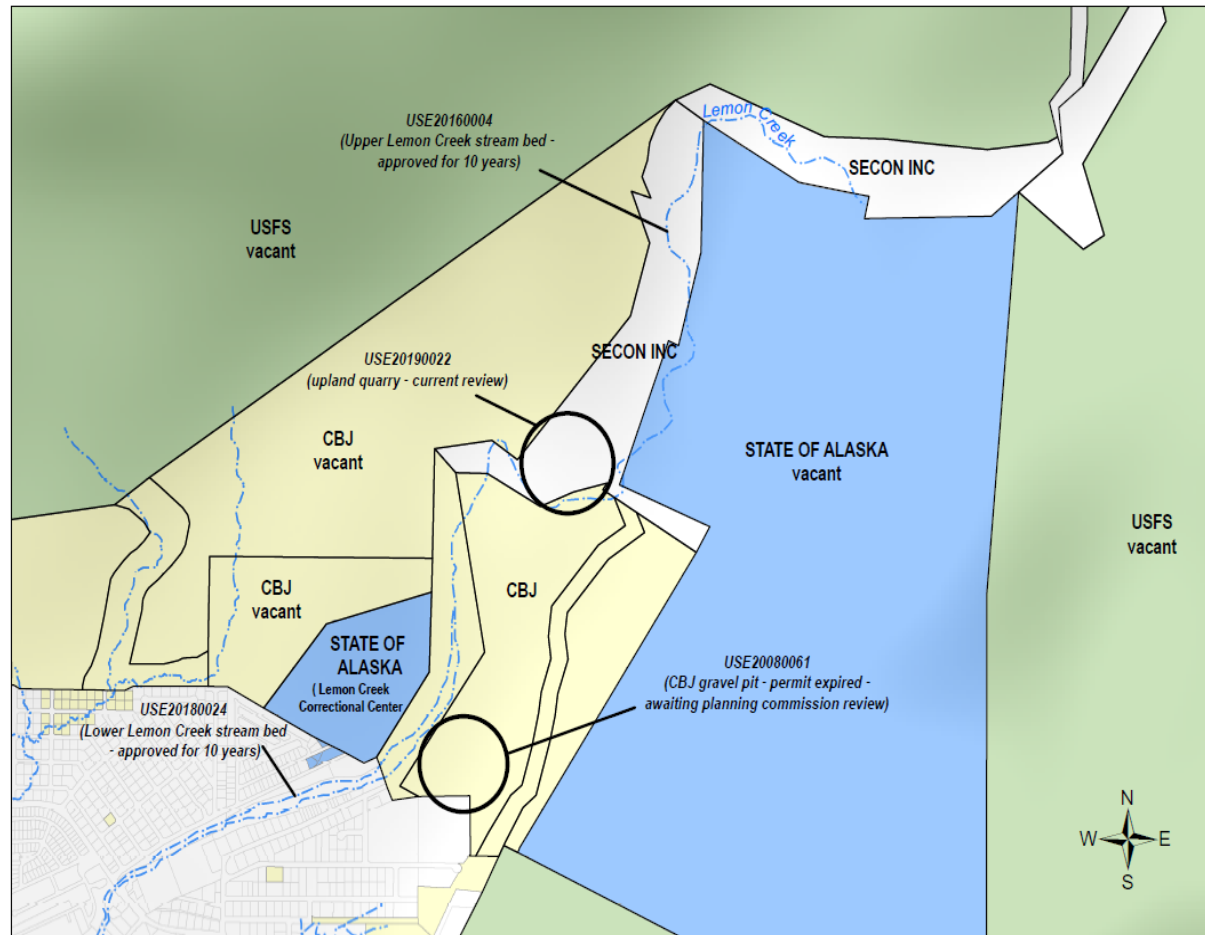
Project Description

The applicant requests a Conditional Use Permit for an existing rock quarry

- Zoned Rural Reserve
- 2013 Comprehensive Plan Designation is Resource Development
- Site size 113.29 acres



Adjacent Uses and Land Ownership(packet p. 24)



3 LEMON CREEK EXTRACTION PERMITS & LAND OWNERSHIP

Scope of Review

The development requires review of two code sections:

- 1) CBJ 49.65.200, Sand and Gravel;
- and
- 2) CBJ 49.15.430, Conditional Use Permit

(packet p. 25)

Project Description

Quarry operations include gravel and rock extraction, blasting, and rock-crushing.

Changes from past operations include relocation of the quarry entrance and road alignment, an updated reclamation plan, and a change in the bond amount.

Background (packet p. 23)

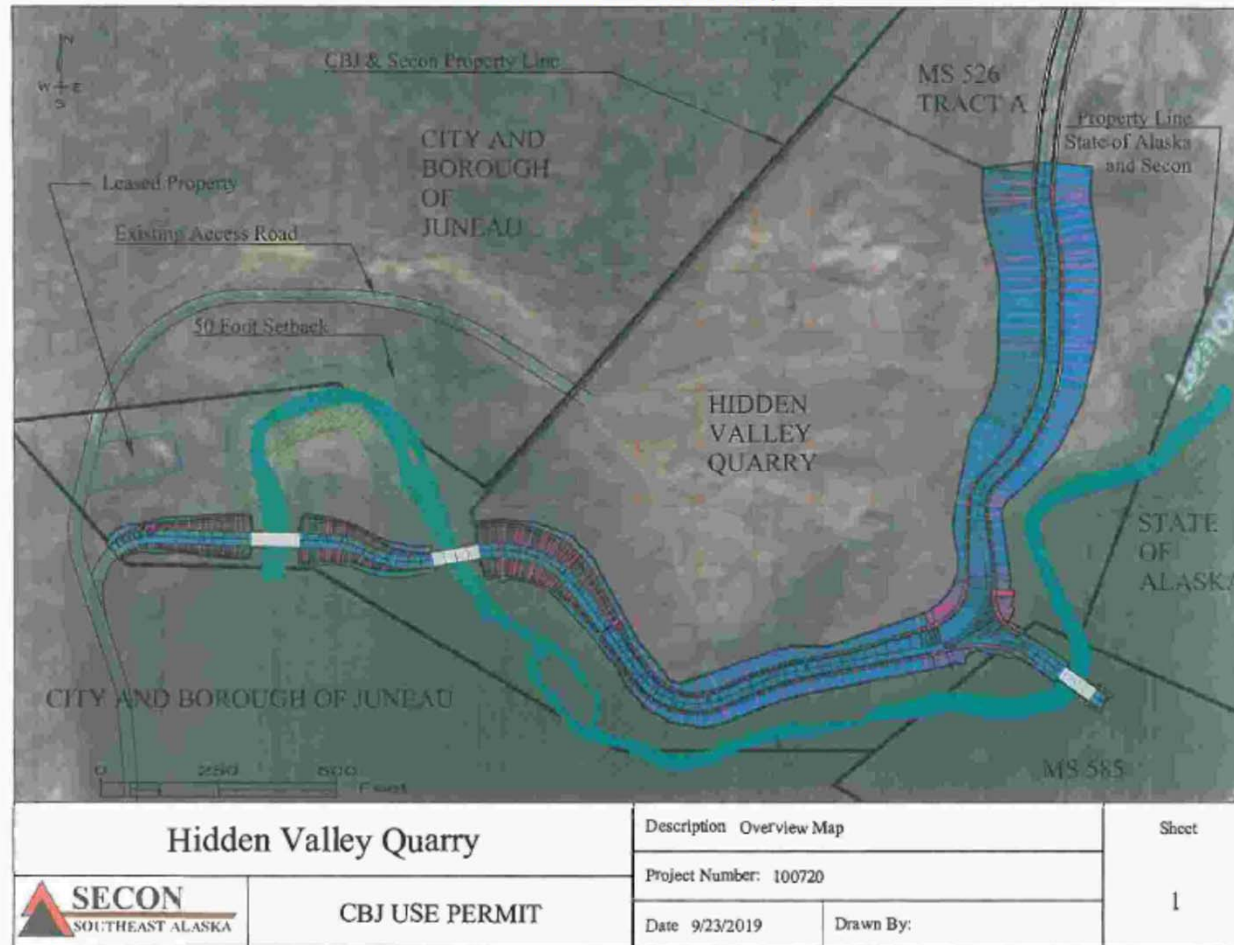
- Quarry operations began in the 1980s
- First Conditional Use Permit for quarry issued in 1984
- Second Conditional Use Permit issued in 1996
- Third Conditional Use Permit issued in 2009; expired in April 2019.

- Additional Conditional Use Permits have allowed storage of explosives
- Last explosives permit, USE2009-00019, expired in July 2019.
- A new explosives permit is currently under review; until approved, explosives storage is prohibited.

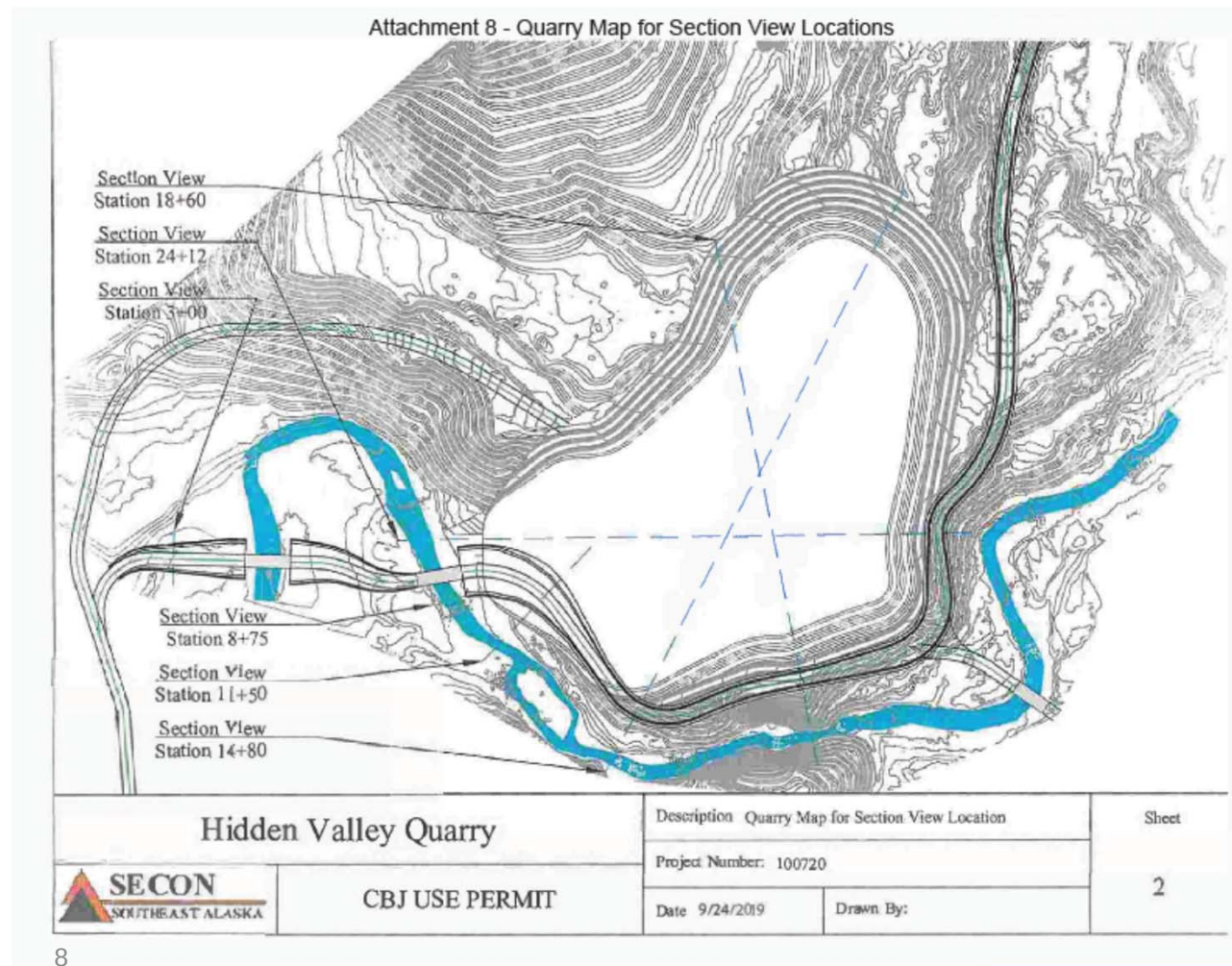
- SECON has two additional Conditional Permits for gravel extraction in the creek bed in both upper and Lower Lemon Creek, shown on the previous map.

Site Plans (packet p. 70)

Attachment 6 - Overview Map



Site Plans (packet p. 76)



Hidden Valley Property: 113.29 Acres
Hidden Valley Quarry: 33 Acres
 No structures on site.
 Lemon Creek has TMDL for turbidity.
 There is not a storm sewer system in the area.
 Non storm water discharges include water sprayed to control dust.

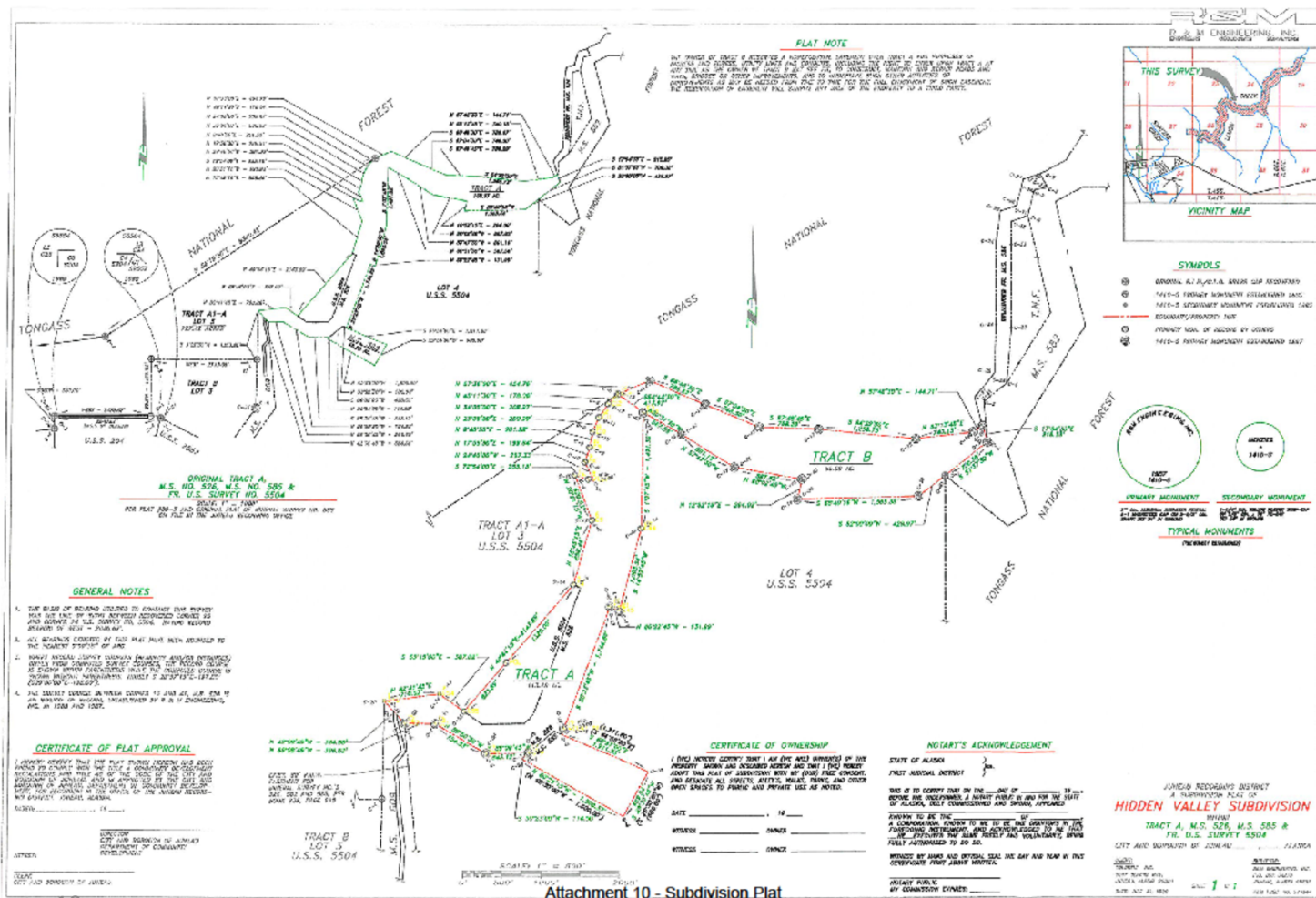
SECON
 SOUTHEAST ALASKA

1338 Ave. Street
 Anchorage, AK 99503
 (907) 786-5140

Hidden Valley

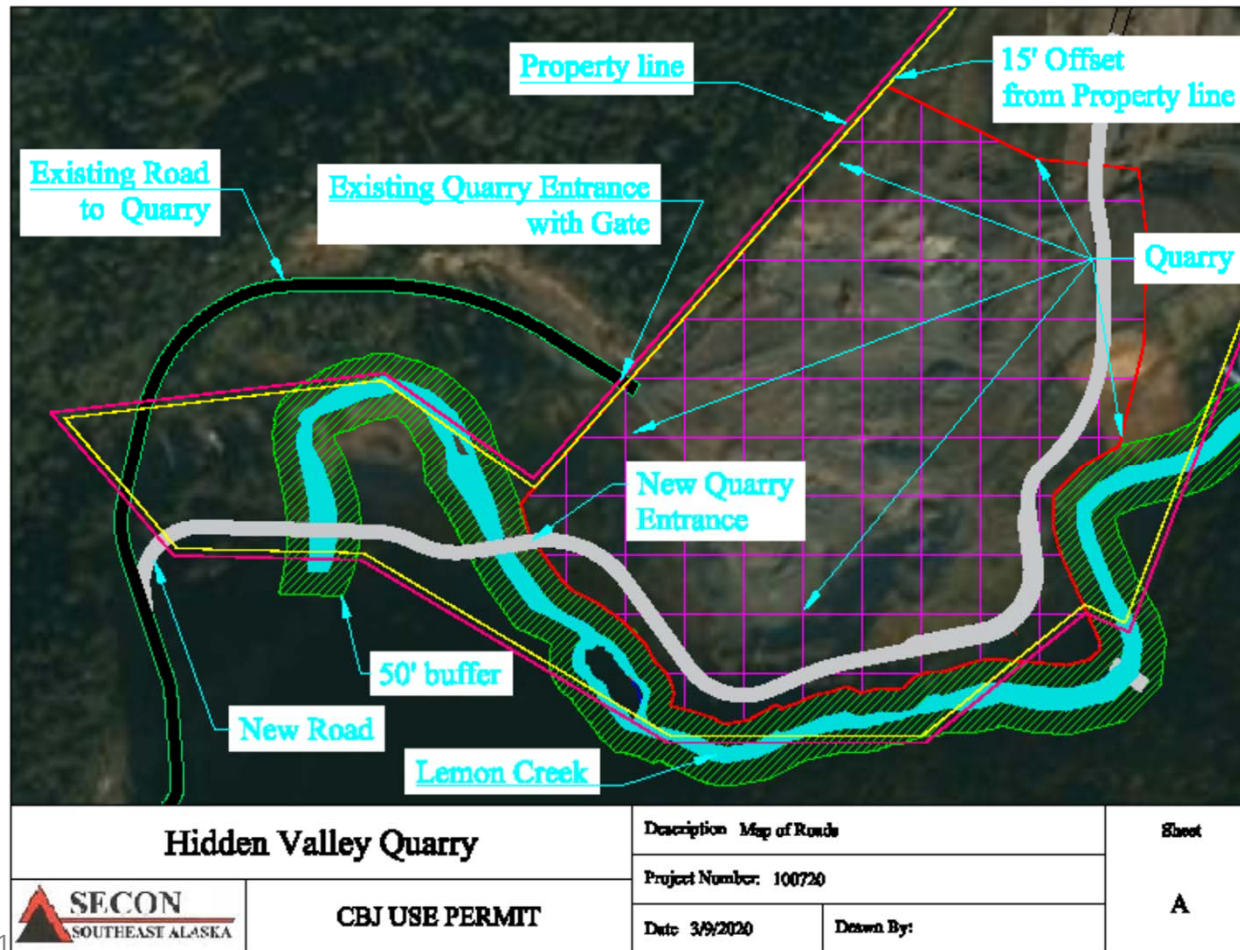
OWNER	DATE	FILE NO.
CONTRACTOR	REVISION	
ROAD	SHEET	PROJECT NO.

10



Road Realignment (packet p. 100)

Attachment 19 - Map with new and proposed roads



11



CBJ USE PERMIT



Drainage (Packet p. 27, 33, 34)

- Stormwater from the operation is regulated by the Alaska Department of Environmental Conservation (ADEC) Multi-Sector General Permit (MSGP) for Industrial Activities, which requires an approved Storm Water Pollution Prevention Plan.
- The MSGP and SWPPP expire on March 31, 2020, however permit requirements remain in place until the permit is renewed.
- CBJ Engineering has reviewed and accepted these plans, provided that the SWPPP is adhered to.

Drainage

To ensure ongoing compliance with the SWPPP as recommended by CBJ Engineering, staff has proposed the following condition:

- 1) The applicant shall provide the Community Development with the annual SWPPP report no later than February 15th each year.

Restoration and Bond Amount (packet p. 36-37)

The quarry is expected to continue operating for approximately 50 years. Restoration is ongoing.

CBJ Engineering requested an updated bond amount. Engineering accepted the applicant's reduction of the bond amount from the previous \$230,000 to \$101,000, as addressed in the following condition:

The applicant shall submit and maintain a performance bond in an amount no less than \$101,000 for restoration/reclamation of the site, as required by CBJ 49.65.240. The bond must be final prior to the start of operation.

Agency and Public Comments (packet p. 39)

- Comments were received from CBJ Lands regarding bank heights, addressed in the staff report.
- CBJ Engineering reviewed drainage, the bond amount, and traffic/property impacts.
- No other comments were received from agencies or the public.

Conformity With Adopted Plans (packet p. 39-42)

2013 Juneau Comprehensive Plan

- o Conforms with general policies regarding industrial development and gravel resources.

2018 Lemon Creek Area Plan

- o Conforms with policies regarding responsible resource extraction

2015 Juneau Economic Development Plan

- o Substantially complies with economic development planning concepts.

Findings (packet p. 42-43)

1. The application is complete.
2. The use is appropriate according to the Table of Permissible Uses.
3. The development complies with other requirements of this chapter including all public notice requirements.
4. The proposed development will not materially endanger the public health or safety.
5. The development will not substantially decrease the value of or be out of harmony with property in the neighboring area
6. The proposed development is in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans.

Recommendation (packet p 43-45)

Staff recommends that the Planning Commission adopt the Director's analysis and findings and grant the requested Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek. The approval is subject to the following conditions:

Hours of Operation and Permit Expiration

- 1) Hours of operation shall be 7 a.m. to 10 p.m. Monday through Friday, and 9 a.m. to 10 p.m. on Saturday and Sunday, April through November.
- 2) All blasting operations shall be conducted during daylight hours. No blasting operations shall be conducted on Saturday or Sunday or on official local, federal, or state holidays.
- 3) The extraction permit shall expire ten years from the date of Planning Commission approval.

Recommendation

Site Restoration

- 4) Seed mixes utilized for revegetation in restoration efforts shall be free from non-native, noxious weeds.
- 5) The applicant shall submit and maintain a performance bond in an amount no less than \$101,000 for restoration/reclamation of the site, as required by CBJ 49.65.240. The bond must be final prior to the start of operation.

Recommendation

Blasting

- 6) Explosives shall not be stored on site, except that which is immediately necessary for the next blast.
- 7) The development shall not generate sound levels which exceed 65 dBa at the property line during the day or 55 dBa at night, per CBJ§49.15.330(g)(11).
- 8) Blasting operations shall be conducted by an Alaska Department of Labor certified powder-man and all operations shall conform to MSHA, ATF, and OSHA standards, as applicable, and all other applicable standards.
- 9) 24 hours' notice shall be provided to the Juneau Flight Service Station and the Police and Fire Departments.

Recommendation

10) The applicant shall comply with the CBJ Standard Specifications for Civil Engineering Projects and Subdivision Improvements, as modified by the following:

- a) Warning signs with the time and date of the blast will be posted 24 hours prior to blasting on Anka St. and at the Lemon Creek trailhead.
- b) 24 hours' notice will be provided to the Juneau Flight Service Station and the Police and Fire Departments prior to blasting.
- c) Public Service Announcements will be broadcast on local radio 24 hours prior to blasting.
- d) Three air horn blasts will be made at 5 minutes prior to blasting.

Recommendation

Required Conditions, per CBJ§49.65.235:

11) A strip of land at the existing topographic level, and not less than 15 feet in width, shall be retained at the periphery of the site wherever the site abuts a public way. This periphery strip shall not be altered except as authorized for access points. This section does not alter the applicant's duty to maintain subjacent support.

Recommendation

Required Conditions Continued:

12) If the bank of any extraction area within the permit area is above the high water line or water table, it shall be left upon termination of associated extraction operations with a slope no greater than the angle of repose for unconsolidated material of the kind composing it, or such other angle as the commission may prescribe. If the extraction operations cause ponding or retained water in the excavated area, the slope of the submerged working face shall not exceed a slope of 3:1 from the edge of the usual water line to the water depth of seven feet. This slope ratio may not be exceeded during extraction operations unless casual or easy access to the site is prevented by a fence, natural barriers, or both.

Recommendation

Other

13) The applicant shall provide the Community Development with the annual SWPPP report no later than February 15th each year.

Recommendation



Planning Commission

(907) 586-0715
PC_Comments@juneau.org
www.juneau.org/plancomm
155 S. Seward Street • Juneau, AK 99801

PLANNING COMMISSION NOTICE OF DECISION

Date: April 15, 2020
Case No.: USE2019 0022

SECON

ATTN: Michael Short, Noah Molnar
P.O. Box 32159
Juneau, AK 99803

Proposal: A Conditional Use Permit for an existing rock quarry in Hidden Valley,
Upper Lemon Creek

Property Address: Hidden Valley

Legal Description: Hidden Valley TR A

Parcel Code No.: 3M000LEMCRK2

Hearing Date: April 14, 2020

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated March 13, 2020, and approved the Conditional Use Permit for an existing rock quarry in Hidden Valley, Upper Lemon Creek to be conducted as described in the project description and project drawings submitted with the application (and with the following conditions:)

Hours of Operation and Permit Expiration

- 1) Tours of operation shall be 7 a.m. to 10 p.m. Monday through Friday, and 9 a.m. to 10 p.m. on Saturday and Sunday, April through November.
- 2) All blasting operations shall be conducted during daylight hours. No blasting operations shall be conducted on Saturday or Sunday or on official local, federal, or state holidays.
- 3) The extraction permit shall expire ten years from the date of Planning Commission approval.

SECON

Case No.: USE2019 0022

April 15, 2020

Page 2 of 3

Site Restoration

- 4) Seed mixes utilized for revegetation in restoration efforts shall be free from non-native, noxious weeds.
- 5) The applicant shall submit and maintain a performance bond in an amount no less than \$101,000 for restoration/reclamation of the site, as required by CBJ 49.65.240. The bond must be final prior to the start of operation.

Blasting

- 6) Explosives shall not be stored on site, except that which is immediately necessary for the next blast.
- 7) The development shall not generate sound levels which exceed 65 dBa at the property line during the day or 55 dBa at night, per CBJ§49.15.330(g)(11).
- 8) Blasting operations shall be conducted by an Alaska Department of Labor certified powder-man and all operations shall conform to MSHA, ATF, and OSHA standards, as applicable, and all other applicable standards.
- 9) 24 hours' notice shall be provided to the Juneau Flight Service Station and the Police and Fire Departments.
- 10) The applicant shall comply with the CBJ Standard Specifications for Civil Engineering Projects and Subdivision Improvements, as modified by the following:
 - a. Warning signs with the time and date of the blast will be posted 24 hours prior to blasting on Anka St. and at the Lemon Creek trailhead.
 - b. 24 hours' notice will be provided to the Juneau Flight Service Station and the Police and Fire Departments prior to blasting.
 - c. Public Service Announcements will be broadcast on local radio 24 hours prior to blasting.
 - d. Three air horn blasts will be made at 5 minutes prior to blasting.

Required Conditions, per CBJ§49.65.235:

- 11) A strip of land at the existing topographic level, and not less than 15 feet in width, shall be retained at the periphery of the site wherever the site abuts a public way. This periphery strip shall not be altered except as authorized for access points. This section does not alter the applicant's duty to maintain subjacent support.
- 12) If the bank of any extraction area within the permit area is above the high water line or water table, it shall be left upon termination of associated extraction operations with a slope no greater than the angle of repose for unconsolidated material of the kind composing it, or such other angle as the commission may prescribe. If the extraction operations cause ponding or retained water in the excavated area, the slope of the submerged working face shall not exceed a slope of 3:1 from the edge of the usual water line to the water depth of seven feet. This slope ratio may not be exceeded during extraction operations unless casual or easy access to the site is prevented by a fence, natural barriers, or both.

SECON

Case No.: USE2019 0022

April 15, 2020

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Other

- 13) The applicant shall provide the Community Development with the annual SWPPP report no later than February 15th each year.

Attachments: March 13, 2020, memorandum from Teri Camery, Community Development, to the CBJ Planning Commission regarding USE20190022.

This Notice of Decision does not authorize construction activity. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ 01.50.030. Appeals must be filed by 4:30 P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ 01.50.030 (c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ 49.20.120).

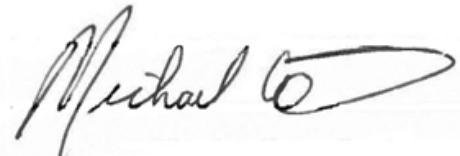
Effective Date: The permit is effective upon approval by the Commission, April 14, 2020.

Expiration Date: The permit will expire 18 months after the effective date, or October 14, 2020, if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the development permit was authorized. Application for permit extension must be submitted thirty days prior to the expiration date.

Project Planner:



Teri Camery, Senior Planner
Community Development Department



Michael LeVine, Chair
Planning Commission



Filed With Municipal Clerk

4/20/2020

Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ-adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.



(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

DATE: March 12, 2020

TO: Planning Commission

FROM: Laurel Christian, Planner
Community Development Department

CASE NO.: USE2020 0002

PROPOSAL: Conditional Use Permit for an accessory apartment on an undersized lot.

A handwritten signature in black ink that reads 'Laurel Christian'.

GENERAL INFORMATION

Applicant: Erin & Andrew Heist

Property Owner: Erin & Andrew Heist

Property Address: 407 Irwin St

Legal Description: Casey Shattuck Block 206 Lot 2 FR

Parcel Code Number: 1C030C060040

Site Size: 775 square feet

Comprehensive Plan Future Land Use Designation: Medium Density Residential, Single-family Detached (MDR-SF)

Zoning: D5 Single-family/Duplex

Utilities: Public Water & Sewer

Access: Irwin Street

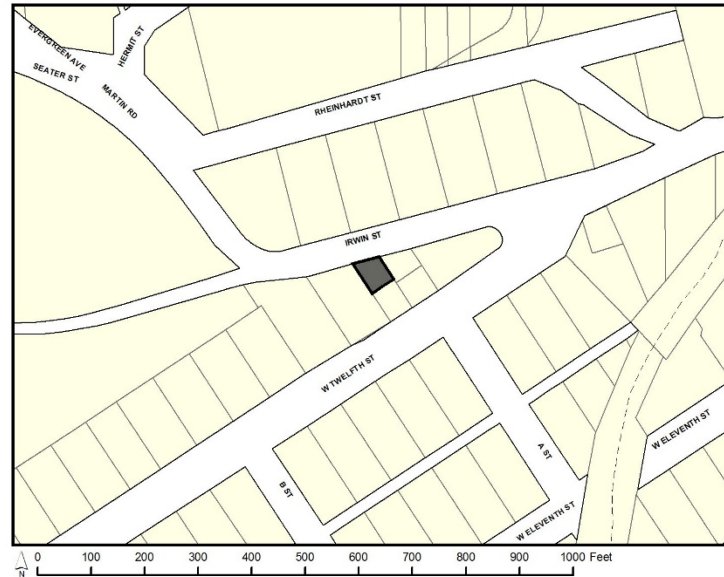
Existing Land Use: Single-family Dwelling

Surrounding Land Use: North - D18 Zoning, Condominiums

Planning Commission
Case No.: USE 2020 0002
March 12, 2020
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South	- D5 Zoning, Single-family Dwelling
East	- D5 Zoning, Single-family Dwelling
West	- D5 Zoning, Single-family Dwelling

VICINITY MAP



ATTACHMENTS

Attachment A – Application Packet for USE2020 0002
Attachment B – Public Comment

PROJECT DESCRIPTION

The applicant requests a Conditional Use Permit for the development of an accessory apartment on an undersized lot in the D5 zoning District (USE2020 0002). The application packet for USE2020 0002 can be found in Attachment A.

The applicant has also applied for a parking waiver for the one (1) required additional parking space (see PWP2020 0001).

BACKGROUND

The subject parcel was originally platted in 1913 through the Casey Shattuck Addition to Juneau, prior to the establishment of zoning in Juneau. The subject parcel measures 775 square feet and is non-conforming for lot area. According to the CBJ Assessors database, the dwelling on the

Planning Commission
Case No.: USE 2020 0002
March 12, 2020
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subject parcel was constructed in 1914. The structure on the subject parcel is nonconforming for setbacks, lot coverage, and parking. This will be discussed further in the analysis section of this report.

ANALYSIS

Project Site and Design – The subject parcel measures 775 square feet. The existing structure on the subject parcel is a two-story single-family dwelling with an unfinished basement. The table below describes dimensional standards for the D5 zoning district in relation to the existing structure. Because the dwelling was constructed prior to zoning requirements, it is considered nonconforming to current zoning requirements. The proposed development does not aggravate nonconforming relating dimensional standards, as the accessory apartment will be located in the basement of the existing structure. An as-built survey can be found in Attachment A.

		D5 Required	Existing
Minimum Lot Area		7,000 square feet	775 square feet
Minimum Lot Width		70 feet	25 feet
Minimum Lot Depth		85 feet	31 feet
Maximum Lot Coverage		50%	64%
Setbacks	Front (North)	20 feet	1.2 feet to dwelling Ramp and deck encroach into ROW
	Rear (South)	10 feet [Reduced per 49.25.430(4)(J)]	2.6 feet
	Side (West)	5 feet	1.1 feet to dwelling Deck encroaches into adjoining lot
	Side (East)	5 feet	2.2 feet

The proposed accessory apartment will measure 428 square feet and contain one (1) bedroom, a living room and kitchen area, and a bathroom. Floor plans for the proposed accessory apartment can be found in Attachment A. The existing two-story single-family dwelling measures 879 square feet, excluding the un-finished basement area. According to CBJ 49.25.510(k)(E)(ii)(a) accessory apartments are allowed on lots that are less than the minimum lot size for the zoning district with an approved Conditional Use Permit. The proposed accessory apartment measures less than 600 square feet and will be located within a single-family dwelling.

Traffic – According to the ITE trip generation manual, single-family dwellings generate 9.52 average daily trips (ADTs) and apartments generate 6.65 ADTs. No traffic impact analysis is required. Traffic is not expected to be out of character with the existing neighborhood.

Parking and Circulation – The subject parcel currently has no parking for the single-family dwelling. As discussed above, the dwelling was constructed prior to zoning requirements and takes up most of the lot. Parking for the single-family dwelling is nonconforming and is not required. Per CBJ 49.40.210(a), one (1) off-street parking space is required for an accessory

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March 12, 2020
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apartment.

According to CBJ 49.40.200(4)(A), off-street parking facilities for single-family dwellings shall be located on the same lot as the building served; this includes uses accessory to single-family dwellings. Because the applicant cannot accommodate parking on-site, they must meet parking by an alternative method. The applicant has applied for a parking waiver (PWP2020 0001). If the waiver is not granted, the applicant could apply for a variance to the parking requirement. A recommended condition of approval for USE2020 0002 is that prior to the issuance of a building permit, the applicant must demonstrate that all applicable parking code requirements have been met.

Staff performed a parking study, which is discussed in the staff report associated with PWP2020 0001.

Proximity to Public Transportation – The nearest bus stops are located along Glacier Avenue, which is approximately a quarter-mile walk from the subject parcel. There are sidewalks the entire route to the bus stop along W. Twelfth Street and Glacier Avenue. There is a pedestrian route through the Evergreen Cemetery from Irwin Street to Glacier Avenue. The proposed development would not cause an undue burden on existing public transportation.

Vegetative Cover and Landscaping – The minimum vegetative cover requirement in the D5 zoning district is 20% the lot area. The site measures 775 square feet, so 155 square feet would be required. Site plans provided by the applicant do not show vegetative cover. It is likely that the subject parcel is nonconforming to this requirement, as the lot and single-family dwelling were created prior to zoning requirements. The proposed development will not aggravate the nonconforming situation (lot, structure). It is recommended as a condition of approval that the applicant submit a site plan showing vegetative cover on the site.

Lighting – The applicants propose the addition of one (1) small light fixture on the exterior of the building for the entrance of the apartment. The proposed light fixture can be found in Attachment A. According to CBJ 49.40.230(d) all lighting fixtures shall be “full cutoff” design. This will be verified during building permit review.

Noise – Noise is not expected to be out of character with the existing neighborhood.

Public Health or Safety – There is no evidence that the proposed development will negatively harm the public health or safety.

Property Value or Neighborhood Harmony – There is no evidence that the proposed development will be out of character with the existing neighborhood or that the proposed development will significantly decrease property values.

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Agency Comments – An agency review period was held between January 27 and February 10, 2020. Staff invited CBJ Engineering & Public Works, Capital City Fire and Rescue, the CBJ Building Division, and the CBJ Streets Division to comment on the proposed development. No issues were raised through the agency review process.

Public Comments – At time of writing this staff report, one public comment regarding the proposed development was received. Public comment can be found in Attachment C.

Jim Donaghey, February 6, 2020 – Mr. Donaghey expressed concerns about the density of the area and the lack of parking. Mr. Donaghey included photos of on-street parking in the area and requests that all future development be provided adequate parking. Complete comments are found in Attachment C.

Conformity with Adopted Plans – Staff finds the proposed development is in general conformity with policies and guidelines found in the CBJ Comprehensive Plan and the Housing Action Plan.

2013 Comprehensive Plan – The 2013 Comprehensive Plan addresses housing and development patterns in Chapter 3, Policy 3.2, which specifically addresses compact urban development:

Policy 3.2 to promote compact urban development within the designated urban service area to ensure efficient utilization of land resources and to facilitate cost effective provision of community services and facilities while balancing protection of natural resources, fish and wildlife habitat and scenic corridors.

The proposed development is located in the urban service area and would be connected to public utilities. There are no known negative impacts to natural resources or sensitive habitat. Chapter 4 of the Comprehensive Plan addresses the need for various types of housing within the borough:

Policy 4.2 to facilitate the provision of an adequate supply of various housing types and sizes to accommodate present and future housing needs for all economic groups.

The subject parcel is within *Subarea 6, Juneau*, and has a future land use designation of *Medium Density Residential, Single-family Detached*. According to the plan, the community form of *Subarea 6* is Urban. Guidelines and considerations for *Subarea 6*, applicable to the proposed development include:

Guideline 1. Preserve the scale and densities of the older single-family neighborhoods in the downtown area, including the Casey-Shattuck “flats” and Star Hill historic districts, Chicken Ridge, Basin Road, Mt. Maria, the highlands, and the higher density apartments and homes in the vicinity of the Federal Building.

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Guideline 2. Encourage the retention of existing dwelling units in or near the older residential neighborhoods to avoid exacerbating traffic and parking congestion and to preserve the privacy and quiet of those neighborhoods.

The purpose of the *Medium Density Residential, Single-Family Detached* land use designation is:

These lands are characterized by single-family detached homes at densities ranging from 10 to 20 units per acre. Only single-family detached homes, single-family detached homes with accessory apartments, cottage houses and bungalow houses are permitted within this zone...

The proposed development is within a single-family dwelling in the Casey Shattuck “Flats” neighborhood. The proposed development is not expected to have a significant impact on traffic and parking congestion.

2016 Housing Action Plan – The 2016 Housing Action Plan identifies a need for various housing types in Juneau. An action item identified in the plan to help solve this problem is to create housing for workforce, seniors, and young families. The proposal is consistent with the Plan as it would add a year-round rental to the housing stock in Juneau.

FINDINGS

CBJ 49.15.330 (e)(1), Review of Director's Determinations, states that the Planning Commission shall review the Director's report to consider:

1. Whether the application is complete;
2. Whether the proposed use is appropriate according to the Table of Permissible Uses; and,
3. Whether the development as proposed will comply with the other requirements of this chapter.

The Commission shall adopt the Director's determination on the three items above unless it finds, by a preponderance of the evidence, that the Director's determination was in error, and states its reasoning for each finding with particularity.

CBJ 49.15.330 (f), Commission Determinations, states that even if the Commission adopts the Director's determination, it may nonetheless deny or condition the permit if it concludes, based upon its own independent review of the information submitted at the public hearing, that the development will more probably than not:

1. Materially endanger the public health or safety;
2. Substantially decrease the value of or be out of harmony with property in the neighboring area; or,

Planning Commission
Case No.: USE 2020 0002
March 12, 2020
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3. Not be in general conformity with the comprehensive plan, thoroughfare plan, or other officially adopted plans.

Per CBJ 49.15.330 (e) & (f), Review of Director's & Commission's Determinations, the Director makes the following findings on the proposed development:

1. Is the application for the requested conditional use permit complete?

Yes. Staff finds the application contains the information necessary to conduct full review of the proposed operations. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.15.

2. Is the proposed use appropriate according to the Table of Permissible Uses?

Yes. The requested permit is appropriate according to the Table of Permissible Uses. The permit is listed at CBJ 49.25.300, Section 1.130 for the D5 zoning district.

3. Will the proposed development comply with the other requirements of this chapter?

Yes. The proposed development complies with the other requirements of this chapter. Public notice of this project was provided in the February 28, 2020; March 8, 2020; March 13, 2020; and March 22, 2020 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 500 feet of the subject parcel. Moreover, a Public Notice Sign was posted on the subject parcel, visible from the public Right of Way.

4. Will the proposed development materially endanger the public health or safety?

No. There is no evidence that the proposed development will materially endanger the public health or safety.

5. Will the proposed development substantially decrease the value of or be out of harmony with property in the neighboring area?

No. There is no evidence that the proposed development will substantially decrease the value or be out of harmony with property in the neighboring area.

6. Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?

Yes. Staff finds the proposed development is in general conformity with the CBJ Comprehensive Plan and the Housing Action Plan.

Planning Commission
Case No.: USE 2020 0002
March 12, 2020
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Per CBJ 49.70.900 (b)(3), General Provisions, the Director makes the following Juneau Coastal Management Program consistency determination:

7. Will the proposed development comply with the Juneau Coastal Management Program?

N/A.

RECOMMENDATION

It is recommended that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Conditional Use permit. The permit would allow the development of an accessory apartment on an undersized lot.

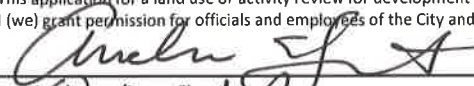
The approval is subject to the following conditions:

1. Prior to issuance of a building permit, the applicant must submit documentation to demonstrate that all applicable parking code requirements have been met, in conformance with CBJ 49.40.200.
2. Prior to the issuance of a building permit, the applicant must submit a revised site plan showing vegetative cover on the site.



DEVELOPMENT PERMIT APPLICATION

NOTE: Development Permit Application forms must accompany all other Community Development Department land use applications.

To be completed by Applicant	PROPERTY LOCATION		
	Physical Address 407 Irwin Street		
	Legal Description(s) (Subdivision, Survey, Block, Tract, Lot) CASEY SHATTUCK BL 206 LT 2 FR		
	Parcel Number(s) 1C030C060040		
	☒ This property located in the downtown historic district ☐ This property located in a mapped hazard area, if so, which _____		
	LANDOWNER/ LESSEE		
	Property Owner Erin & Andrew Heist		Contact Person Erin Heist
	Mailing Address 712 Basin Rd, Juneau, AK 99801		Phone Number(s) 907-957-1728, 907-723-1977
	E-mail Address erinaheist@gmail.com		
	LANDOWNER/ LESSEE CONSENT Required for Planning Permits, not needed on Building/ Engineering Permits		
I am (we are) the owner(s) or lessee(s) of the property subject to this application and I (we) consent as follows: A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission. B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.			
X  Landowner/Lessee Signature		17 JAN 2020 Date	
X  Landowner/Lessee Signature		1/17/20 Date	
NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.			
APPLICANT If the same as OWNER, write "SAME"			
Applicant SAME		Contact Person	
Mailing Address		Phone Number(s)	
E-mail Address			
X _____ Applicant's Signature		_____ Date of Application	

-----DEPARTMENT USE ONLY BELOW THIS LINE-----

This form and all documents associated with it are public record once submitted.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

For assistance filling out this form, contact the Permit Center at 586-0770.

Intake Initials AL	
Case Number USE 2020-002	Date Received 1/17/2020



ALLOWABLE/CONDITIONAL USE PERMIT APPLICATION

See reverse side for more information regarding the permitting process and the materials required for a complete application.

NOTE: Must be accompanied by a DEVELOPMENT PERMIT APPLICATION form.

PROJECT SUMMARY

This application is for a 1 bed 1 bath accessory apartment in the aboveground basement of 407 Irwin Street. There will be no changes to setbacks, height, or lot coverage and the apartment will be confined to the original footprint of the house.

TYPE OF ALLOWABLE OR CONDITIONAL USE PERMIT REQUESTED

☒ Accessory Apartment – Accessory Apartment Application (AAP)

☐ Use Listed in 49.25.300 – Table of Permissible Uses (USE)

Table of Permissible Uses Category: _____

IS THIS A MODIFICATION or EXTENSION OF AN EXISTING APPROVAL?

☐ YES – Case # _____

☒ NO

UTILITIES PROPOSED

WATER: ☒ Public ☐ On Site

SEWER: ☒ Public ☐ On Site

SITE AND BUILDING SPECIFICS

Total Area of Lot 775 square feet

Total Area of Existing Structure(s) 1,324 square feet

Total Area of Proposed Structure(s) 1,324 square feet

EXTERNAL LIGHTING

Existing to remain

☒ No

☐ Yes – Provide fixture information, cutoff sheets, and location of lighting fixtures

Proposed

☐ No

☒ Yes – Provide fixture information, cutoff sheets, and location of lighting fixtures

ALL REQUIRED DOCUMENTS ATTACHED

☒ Narrative including:

- ☒ Current use of land or building(s)
- ☒ Description of project, project site, circulation, traffic etc.
- ☒ Proposed use of land or building(s)
- ☒ How the proposed use complies with the Comprehensive Plan

If this is a modification or extension include:

- ☐ Notice of Decision and case number
- ☐ Justification for the modification or extension
- ☐ Application submitted at least 30 days before expiration date

☒ Plans including:

- ☒ Site plan
- ☒ Floor plan(s)
- ☒ Elevation view of existing and proposed buildings
- ☒ Proposed vegetative cover
- ☒ Existing and proposed parking areas and proposed traffic circulation
- ☒ Existing physical features of the site (e.g.: drainage, habitat, and hazard areas)

DEPARTMENT USE ONLY BELOW THIS LINE

ALLOWABLE/CONDITIONAL USE FEES

	Fees	Check No.	Receipt	Date
Application Fees	\$ _____			
Admin. of Guarantee	\$ _____			
Adjustment	\$ _____			
Pub. Not. Sign Fee	\$ _____			
Pub. Not. Sign Deposit	\$ _____			
Total Fee	\$ _____			

This form and all documents associated with it are public record once submitted.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

For assistance filling out this form, contact the Permit Center at 586-0770.

Case Number

Date Received

Allowable/Conditional Use Permit Application Instructions

Allowable Use permits are outlined in CBJ 49.15.320, Conditional Use permits are outline in CBJ 49.15.330

Pre-Application Conference: A pre-application conference is required prior to submitting an application. There is no fee for a pre-application conference. The applicant will meet with City & Borough of Juneau and Agency staff to discuss the proposed development, the permit procedure, and to determine the application fees. To schedule a pre-application conference, please contact the Permit Center at 586-0770 or via e-mail at permits@juneau.org.

Application: An application for an Allowable/Conditional Use Permit will not be accepted by the Community Development Department until it is determined to be complete. The items needed for a complete application are:

1. **Forms:** Completed Allowable/Conditional Use Permit Application and Development Permit Application forms.
2. **Fees:** Fees generally range from \$350 to \$1,600. Any development, work, or use done without a permit issued will be subject to double fees. All fees are subject to change.
3. **Project Narrative:** A detailed narrative describing the project.
4. **Plans:** All plans are to be drawn to scale and clearly show the items listed below:
 - A. Site plan, floor plan and elevation views of existing and proposed structures
 - B. Existing and proposed parking areas, including dimensions of the spaces, aisle width and driveway entrances
 - C. Proposed traffic circulation within the site including access/egress points and traffic control devices
 - D. Existing and proposed lighting (including cut sheets for each type of lighting)
 - E. Existing and proposed vegetation with location, area, height and type of plantings
 - F. Existing physical features of the site (i.e. drainage, eagle trees, hazard areas, salmon streams, wetlands, etc.)

Document Format: All materials submitted as part of an application shall be submitted in either of the following formats:

1. Electronic copies in the following formats: .doc, .txt, .xls, .bmp, .pdf, .jpg, .gif, .xlm, .rtf (other formats may be preapproved by the Community Development Department).
2. Paper copies 11" X 17" or smaller (larger paper size may be preapproved by the Community Development Department).

Application Review & Hearing Procedure: Once the application is determined to be complete, the Community Development Department will initiate the review and scheduling of the application. This process includes:

Review: As part of the review process the Community Development Department will evaluate the application for consistency with all applicable City & Borough of Juneau codes and adopted plans. Depending on unique characteristics of the permit request the application may be required to be reviewed by other municipal boards and committees. During this review period, the Community Development Department also sends all applications out for a 15-day agency review period. Review comments may require the applicant to provide additional information, clarification, or submit modifications/alterations for the proposed project.

Hearing: All Allowable/Conditional Use Permit Applications must be reviewed by the Planning Commission for vote. Once an application has been deemed complete and has been reviewed by all applicable parties the Community Development Department will schedule the requested permit for the next appropriate meeting.

Public Notice Responsibilities: Allowable/Conditional Use requests must be given proper public notice as outlined in CBJ 49.15.230:

The Community Development Department will give notice of the pending Planning Commission meeting and its agenda in the local newspaper a minimum of 10-days prior to the meeting. Furthermore, CDD will mail notices to all property owners within 500-feet of the project site.

The Applicant will post a sign on the site at least 14 days prior to the meeting. The sign shall be visible from a public right-of-way or where determined appropriate by CDD. Signs may be produced by the Community Development Department for a preparation fee of \$50, and a \$100 deposit that will be refunded in full if the sign is returned within seven days of the scheduled hearing date. If the sign is returned between eight and 14 days of the scheduled hearing \$50 may be refunded. The Applicant may make and erect their own sign. Please contact the Community Development Department for more information.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

Conditional Use Permit - Narrative

407 Irwin St.

Andrew & Erin Heist

erinaheist@gmail.com

907-957-1728

Current use of land or building(s)

This property is currently a single family home in the Casey Shattuck neighborhood. It was sold as a one bedroom one bath and has been used in that way for many years. However the aboveground basement has a separate entrance and included a shower, toilet, and sink, indicating that at one point in the house's history the basement had been used as a separate apartment.

Description of project, project site, circulation, traffic, etc.

This application is for an accessory apartment in the aboveground basement. This will be a one bedroom, one bath apartment with a small kitchen and living room. This remodel will not include any changes to the property or footprint. There will be no changes to setbacks, height, or lot coverage. There will be no impacts on circulation or traffic in the neighborhood due to the small size of the project.

Proposed use of land or building(s)

This will be a single family dwelling with an accessory apartment.

How the proposed use complies with the Comprehensive Plan

The City and Borough of Juneau Comprehensive Plan specifically sites a need for increased housing. This remodel will add a high-quality modern rental in a highly desirable neighborhood and does not include any change to the setbacks, height, or lot coverage of the property. Accessory apartments are common in this neighborhood.

External Lighting

We plan to install a small lighting fixture on the exterior of the apartment entrance. Fixture information attached.

1/17/2020

Hampton Bay Bronze Outdoor LED Wall Lantern Sconce-IZH1691L-2 - The Home Depot

[Home](#) / [Lighting](#) / [Outdoor Lighting](#) / [Outdoor Wall Lighting](#) / [Outdoor Sconces](#)

Internet #206811505 Model # IZH1691L-2 Store SKU #1001804456



Live Chat

[Save to Favorites](#)

Hampton Bay

Bronze Outdoor LED Wall Lantern Sconce

★★★★★ (62) [Write a Review](#)

\$39⁹⁷

Save up to \$100⁰ on your qualifying purchase.
[Apply for a Home Depot Consumer Card](#)

☐ **LET'S PROTECT THIS.**
Add a 2-year Home Depot Protection Plan for **\$6.00**
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Quantity

Pick Up In Store Today

Aisle 50, Bay 018 [Text to Me](#)

6 in stock at Juneau

[Add to Cart](#)

[Check Nearby Stores](#)

1/17/2020

Hampton Bay Bronze Outdoor LED Wall Lantern Sconce-IZH1691L-2 - The Home Depot

\$59⁹⁹\$59⁹⁷\$89⁹⁷

\$

Current Item

Add To Cart

Add To Cart

Add To Cart

[

Product Overview



9.61 in. Outdoor Wall Lantern that complements exterior décor
Bronze Finish with Metal construction and Weather Resistant
Integrated LED produces 630 Lumens and 60-watt equivalence

Model #: IZH1691L-2**Sku #:** 1001804456**Internet #:** 206811505

Live Chat

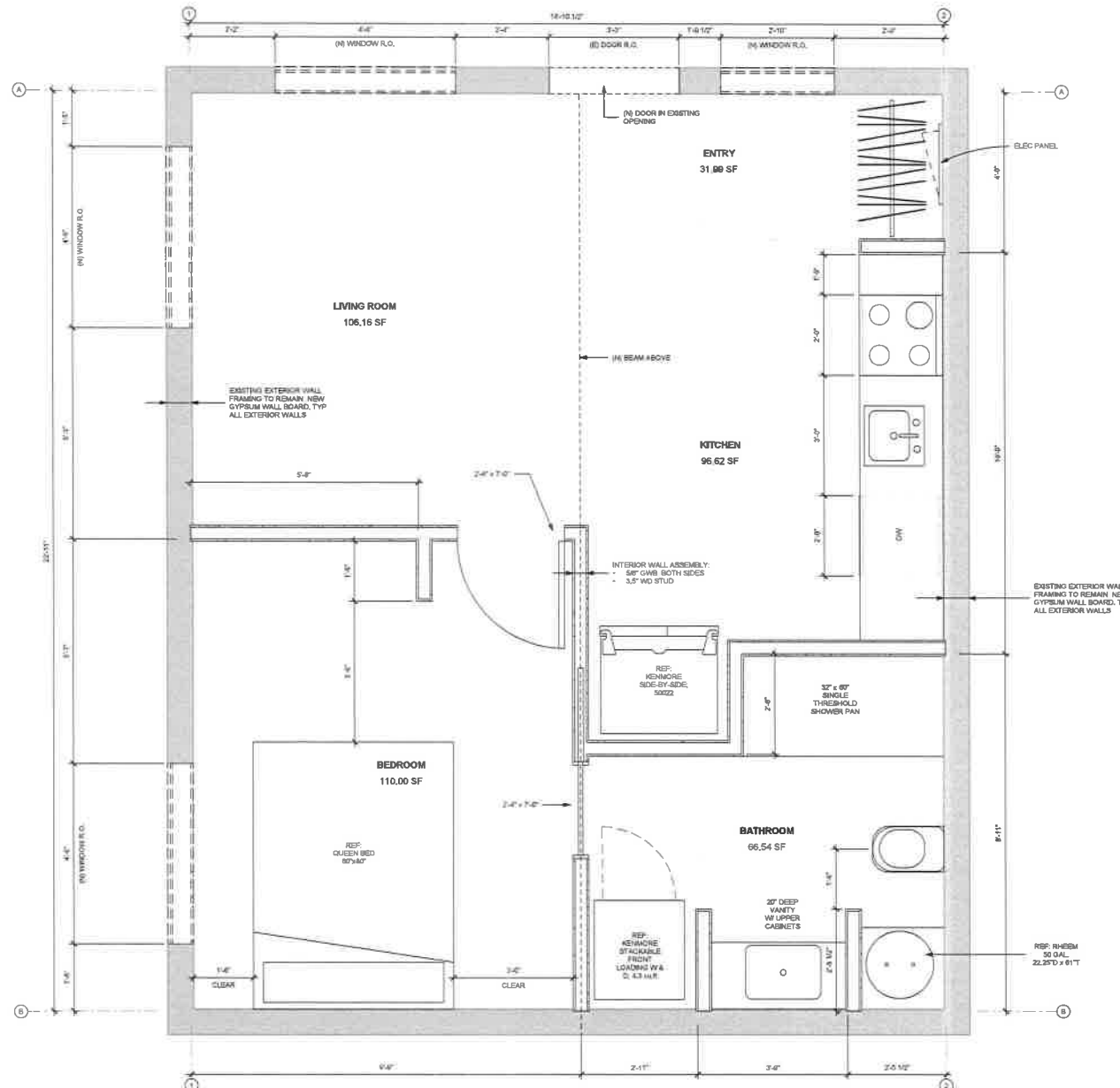
The outdoor LED wall lantern is uniquely designed with a contemporary feel. Its durable metal construction with hand painted bronze finish gives a sophisticated look. This uniquely designed fixture is the choice of discriminating yet value conscious homeowners who want to enrich their home.

- Darksy certified
- 630 Lumens
- Light color is 3000K (bright white)
- 80 CRI and uses only 8-Watt
- Instruction manual included for easy installation and setup
- UL listed
- Installation hardware included
- Not dimmable
- [Click here to learn more about exclusive Hampton Bay patio products](#)
- [Click here to learn more about Eco Options and Energy Efficiency](#)
- [Click here for more information on Electronic Recycling Programs](#)

Info & Guides

- [Energy Guide](#)
- [Instructions / Assembly](#)
- [Warranty](#)

Attachment A - Application Packet for USE2020 0002



PROJECT DESCRIPTION

ADDRESS: 407 IRWIN ST., JUNEAU, AK

SCOPE: 429 SF - PHASE 1

CODE: 2012 IRC

GENERAL DESCRIPTION: 1614 ONE AND A HALF STORY FRONT GABLE WOOD FRAME BUILDING WITH SHED ROOFED WALL CORNER ON RIGHT SIDE AND SHED ROOFED OPEN PORCH ROOF. STANDING RBM METAL ROOFING. HORIZONTAL WOOD LAP SIDING WITH WOOD SHINGLE SIDING IN GABLES. CONCRETE FOUNDATION. PARTIAL BASEMENT.

PROPOSED SCOPE OF WORK INCLUDES THE ADAPTIVE RENOVATION OF THE EXISTING STRUCTURE INTO TWO RENTAL APARTMENT UNITS. WORK WILL BE BROKEN INTO TWO PHASES: A & B.

- A. UNFINISHED PARTIAL BASEMENT: FAIR ON THE EXTERIOR AND NONEXISTENT ON THE INTERIOR. THE INTERIOR WILL BE FULLY FINISHED INTO A 429 SF ONE-BEDROOM APARTMENT.
 - EXTERIOR WORK LIMITED TO REPAIRING EXISTING SIDING AND ADDITION OF FOUR WINDOWS - NO WORK BEYOND EXISTING FOOTPRINT OF BUILDING.
 - STRUCTURAL WORK LIMITED TO RBM BEAM TO STABILIZE FLOOR ABOVE.
- B. MAIN LEVEL: + HALF STORY. TBD 2 BEDROOM APARTMENT.

GENERAL NOTES

- CONSTRUCTION IS TO BE IN COMPLIANCE WITH ALL LOCAL & FEDERAL BUILDING CODES.
- SPRINKLER & FIRE ALARM SYSTEM TO BE DESIGNED/BUILD BY CONTRACTOR.
- NEW WORK IS BASED ON RECORD DOCUMENTS PROVIDED BY THE BUILDING OWNER AND FIELD VERIFICATION. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
- ALL DIMENSIONS ARE TO FACE OR CENTERLINE OF FRAMING.

CONSTRUCTION LEGEND

NEW (N) CONSTRUCTION
 EXISTING (EX) CONSTRUCTION



IF THE ABOVE DIMENSION DOES NOT BEARING ONE (1) EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED AFFECTING ALL LABELS.

407 IRWIN ST. RENOVATION

JUNEAU
 ALASKA

SHEET TITLE
**PHASE A
 APARTMENT**

NAME	DATE	DESCRIPTION
CHECKED:		
DRAWN:	BK	

SHEET # **A1.0**
 PLOT DATE 19.09.07
 ISSUE DATE XXX

Archipelago Appraisals LLC
SKETCH ADDENDUM

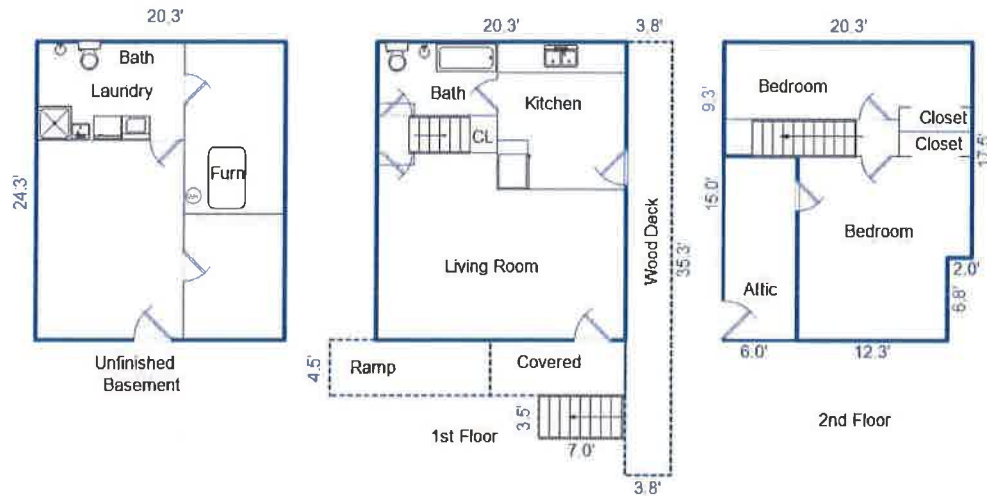
File No. 7817
 Case No. 5870000374

Borrower Heist, Andrew & Heist, Erin

Property Address 407 Irwin St

City Juneau County City & Borough of Juneau State AK Zip Code 99801

Lender/Client Cornerstone Home Lending, Inc. Address 9105 Mendenhall Mall Rd, Juneau, AK 99801



Comments:
 All calculations are approximate. Room and utility layout is estimated for visualization.

Sketch by Apex Sketch

AREA CALCULATIONS SUMMARY					AREA CALCULATIONS BREAKDOWN				
Code	Description	Factor	Net Size	Perimeter	Net Totals	Name	Base x	Height x	Width = Area
GLA1	First Floor	1.0	491.1	89.0	491.1	First Floor	24.3 x	11.0 =	266.8
GLA2	Second Floor	1.0	387.6	89.0	387.6	Second Floor	24.3 x	9.3 =	224.3
BSMT	Unfinished BSMT	1.0	491.1	89.0	491.1		24.3 x	12.3 =	297.1
OTH	Attic Storage	1.0	90.0	42.0	90.0		17.5 x	2.0 =	35.0
P/P	Wood Deck	1.0	132.2	78.0			9.3 x	6.0 =	55.5
	Wood Deck	1.0	58.5	35.0					
	Wood Deck	1.0	156.7	92.0					
	Covered Area	1.0	49.5	31.0	396.9				
Net LIVABLE					(rounded) 879	5 total items (rounded) 879			

IRWIN STREET



Douglas Finley Land Surveying
April 24, 2001

BOOK 0562 PAGE 106

AN EASEMENT FOR EAVES AND FOR A SECOND STORY DECK

Grantor William Glude, as owner of Lot 3, Block 206 Casey Shattuck Addition to the Juneau, Alaska Townsite, Juneau Recording District, State of Alaska ("410 West Twelfth Street" Property), hereby grants an easement for eaves and a second story deck to Grantees Charles and Anna Abbott, as owners of a portion of Lot 2, Block 206, Casey Shattuck Addition to the Juneau, Alaska Townsite ("407 Irwin Street" Property). The portion of said Lot 2 favored by this easement ("407 Irwin Street" Property) is described as follows: "Begin at the Northwest corner of said lot, run thence S33°12'E, on the Southwest line of said lot, 35.20 feet; thence N56°48'E, parallel with the Southeast line of said lot, 25.00 feet; thence N33°12'W, 26.00 feet to the Northerly line of said lot; thence S75°13'W, on the Northerly line 26.95 feet to the point of beginning." The easement is perpetual and runs with the property.

The portion of Lot 3 Block 206 encumbered by this easement is described as follows:

Beginning at the common corner of Lots 2 and 3 Block 206 on the right-of-way of Irwin Street; thence S75°08'29"W along said right of way of Irwin Street, 3.67 feet; thence S33°12'E parallel with the line between said Lots 2 and 3, Block 206, 35.30 feet; thence N56°48'E, 3.31 feet to a point on the line between said Lots 2 and 3, Block 206; thence N33°12'W along said boundary between Lots 2 and 3, Block 206, 34.13 feet to the point of beginning; containing 118 Square Feet.

Grantor William Glude grants as well, a right of reasonable and necessary access to the roof eaves and second story deck for maintenance purposes.

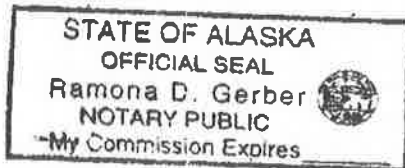
William J. Glude

William Glude, GRANTOR

STATE OF ALASKA)

FIRST JUDICIAL DISTRICT)

The foregoing instrument was acknowledged before me on this 4th day of May, 2001, by William Glude, GRANTOR, of said instrument.



Ramona D. Gerber

Notary Public for Alaska

My Commission Expires: 2/7/04

Return To:

Charles and Anna Abbott
407 Irwin Street
Juneau AK 99801

0005681
 2001 MAY 15 00
 JUNE 17 - 9 AM 8:36
 REQUESTED BY D. Finley

Douglas Finley Land Surveying

820 Sixth Street
Juneau, AK 99801

Phone (907) 586-4253

June 29, 2001

Charles and Anna Abbott
407 Irwin Street
Juneau, Alaska 99801

STATEMENT : SURVEYING & MAPPING SERVICES

Subject Properties: Fraction Lot 2 Casey Shattuck Addition
407 Irwin Street

Lot 3 Casey Shattuck Addition

410 W 12th Street Property

Survey House Locations
As Built Survey Plat
Write Legal Descriptions
Record Easement for Deck
Provide CBJ Inspector with documentation for Easment for Fire Egress

Fee for Services:	\$390
Paid on Account 4/25/2001	-\$200
Due	\$190

No Sales Tax. Bldg Permit

PAID IN FULL

7-06-01

Douglas Finley

From: [Jim Donaghey](#)
 To: [PC Comments](#)
 Cc: [James Donaghey](#)
 Subject: Case No.: CSP2020 0002
 Date: Thursday, February 6, 2020 10:10:15 AM

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

This has reference to "Invitation to Comment" On the above subject Case No.: CSP2020 0002/PWP2020 0001

I am absolutely against allowing a Conditional Use Permit for an accessory apartment and a waiver for required parking.
 It appears there is five dwellings on these six lots on this piece of land between Irwin St and 12th Street.
 None of them have any on lot parking plus there is no on street parking on any section of Irwin St adjacent to these lots.



Additionally., due to the extreme shortage of parking in the "Flats" neighborhood I strongly recommend the following.

- That in the future all applications for all Conditional Use Permits for an accessory apartments must include not only at least one off street parking spot for the apartment but must include at least one parking spot for the current owner/occupant.
- Further, any future permits for any type of major dwelling construction be it new or remodel must include at least one parking spot for the current owner/occupant.

This will not only mitigate many of the parking hassles but also go a long way to improve street maintenance i.e. snow removal/sweeping etc.

Community Development and the Planning Commission should be more than approving or not approving various permits there should be a intentional movement toward correcting the sins of our forbearers. More housing may be necessary but let us not encourage any more "Slum Lords".

Thank you for asking.

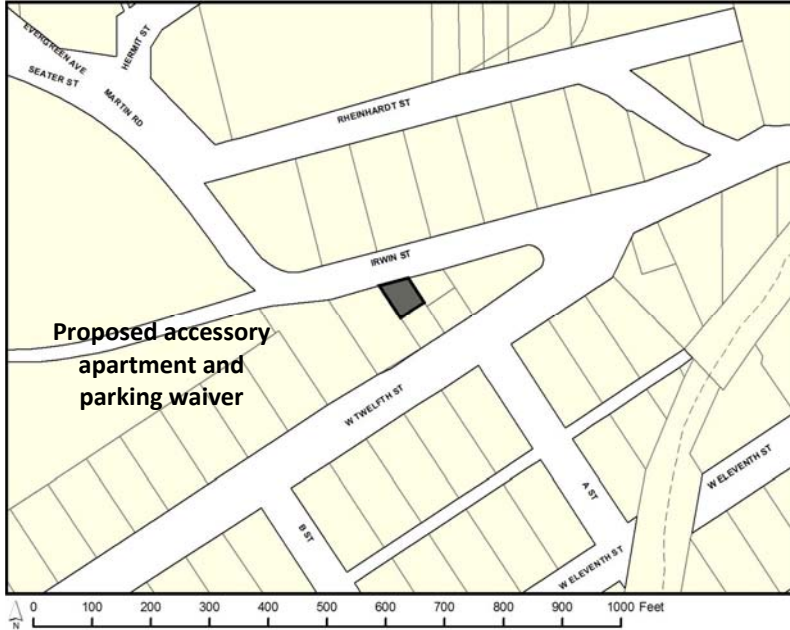
Kind regards, *Jim*

James M. Donaghey
 1029 A Street
 Juneau AK 99801

Cell (907) 209-2560
 Email donaghey@gci.net

Invitation to Comment

On a proposal to be heard by the CBJ Planning Commission
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

An application has been submitted for consideration and public hearing by the Planning Commission for a **Conditional Use Permit for an accessory apartment on an undersized lot and a parking waiver for the one (1) required parking space** located at **407 Irwin St** in a **D5 zone**.

TIMELINE

Staff Report expected to be posted **Monday, March 2** at
<https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through February 17

Comments received during this period will be sent to the Planner, **Laurel Christian**, to be included in the staff report.

Feb. 8 through 12 noon, March 6

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, March 10, 2020

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

March 11

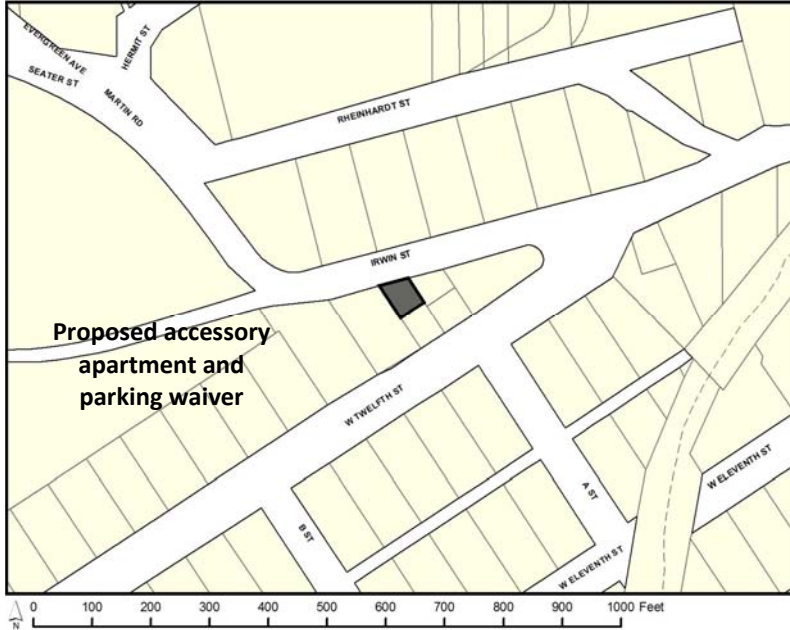
The results of the hearing will be posted online.

Phone: **(907)586-0715** ♦ Email: **pc_comments@juneau.org**
Mail: **Community Development, 155 S. Seward St, Juneau AK 99801**

Case No.: USE2020 0002/PWP2020 0001
Parcel No.: 1C030C060040
CBJ Parcel Viewer: <http://epv.juneau.org>

Hearing Rescheduled

On a proposal to be heard by the CBJ Planning Commission
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

THIS ITEM HAS BEEN RESCHEDULED

An application has been submitted for consideration and public hearing by the Planning Commission for a Conditional Use Permit for an accessory apartment on an undersized lot and a parking waiver for the one (1) required parking space located at 407 Irwin St in a D5 zone.

The hearing has been rescheduled for April 14, 2020.

TIMELINE

Staff Report are posted at:

<https://beta.juneau.org/assembly/assembly-minutes-and-agendas>

Find hearing results, meeting minutes and more here as well.

Now through 12 noon, April 10

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, April 14, 2020

Members of the public wishing to call in to testify can dial 907-713-2140 and entering Participant ID number 813893. **The caller should provide their name and state that they are calling in for the Planning Commission meeting.** Public lines will be muted by default but will be unmuted by CBJ staff when it is that individual's turn to testify.

April 15

The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: USE2020 0002/PWP2020 0001
Parcel No.: 1C030C060040
CBJ Parcel Viewer: <http://epv.juneau.org>

USE2020 0002 & PWP2020 0001

Conditional Use Permit for an accessory apartment on
an undersized lot and associated parking waiver.

PC Presentation April 14, 2020

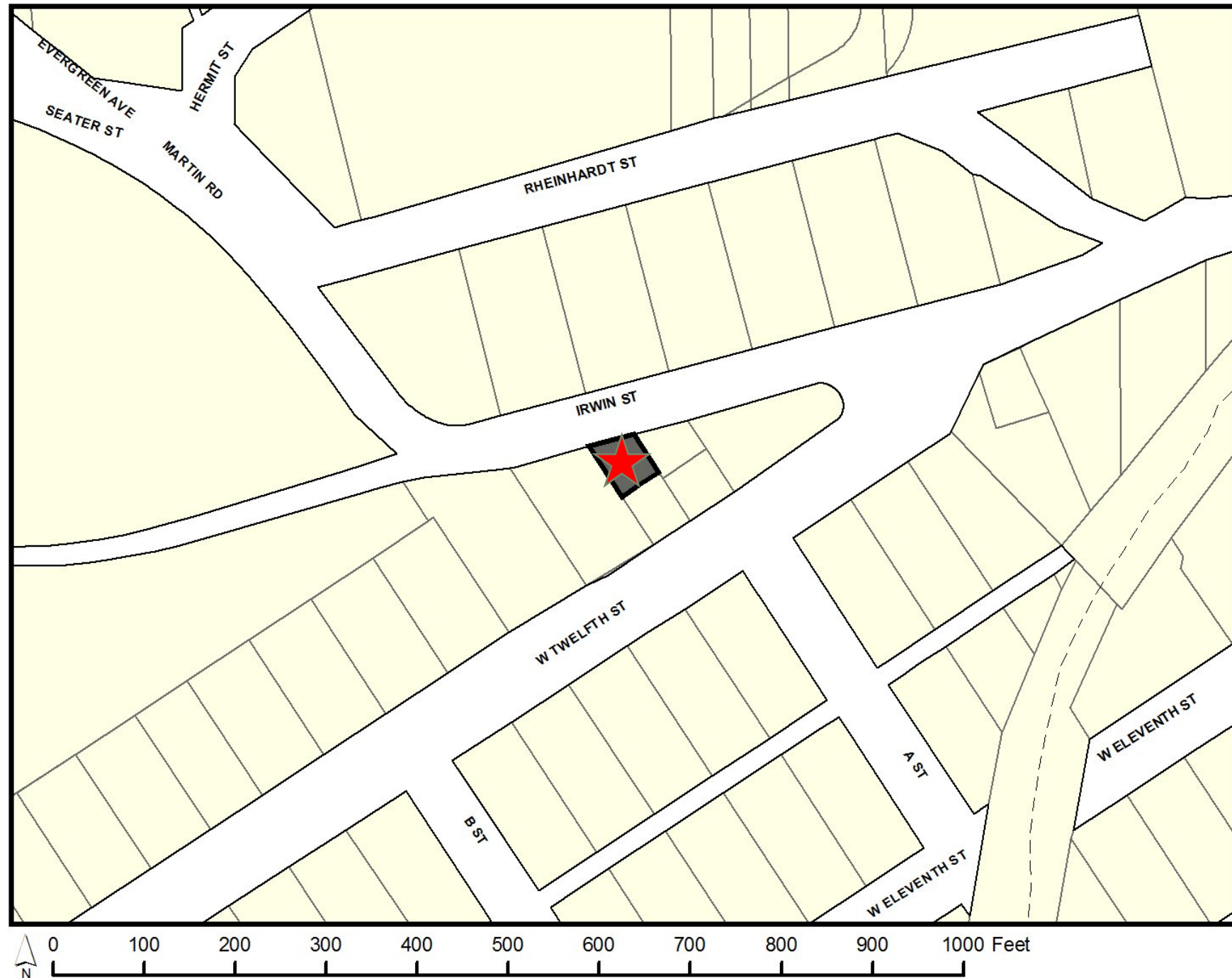
Recommendations

- USE2020 0002: Staff recommends the Planning Commission **APPROVE WITH CONDITIONS** the requested Conditional Use Permit for an accessory apartment on an undersized lot. (Packet Page No. 112)
- PWP2020 0001: Staff recommends the Planning Commission **GRANT** the requested parking waiver for one (1) required parking space. (Packet Page No. 131)

Background Information

Address	407 Irwin Street
Lot Size	775 Square feet
Zoning District	D5 Single-family/Duplex Residential
Comp. Plan Future Land Use Designation	Medium Density Residential, Single Family (MDRSF)
Utilities	Public Water & Sewer
Year Built	1914

Vicinity Map



[illegible]

SHEET # **A1.0**
 PLOT DATE 10.08.07
 ISSUE DATE XXXX

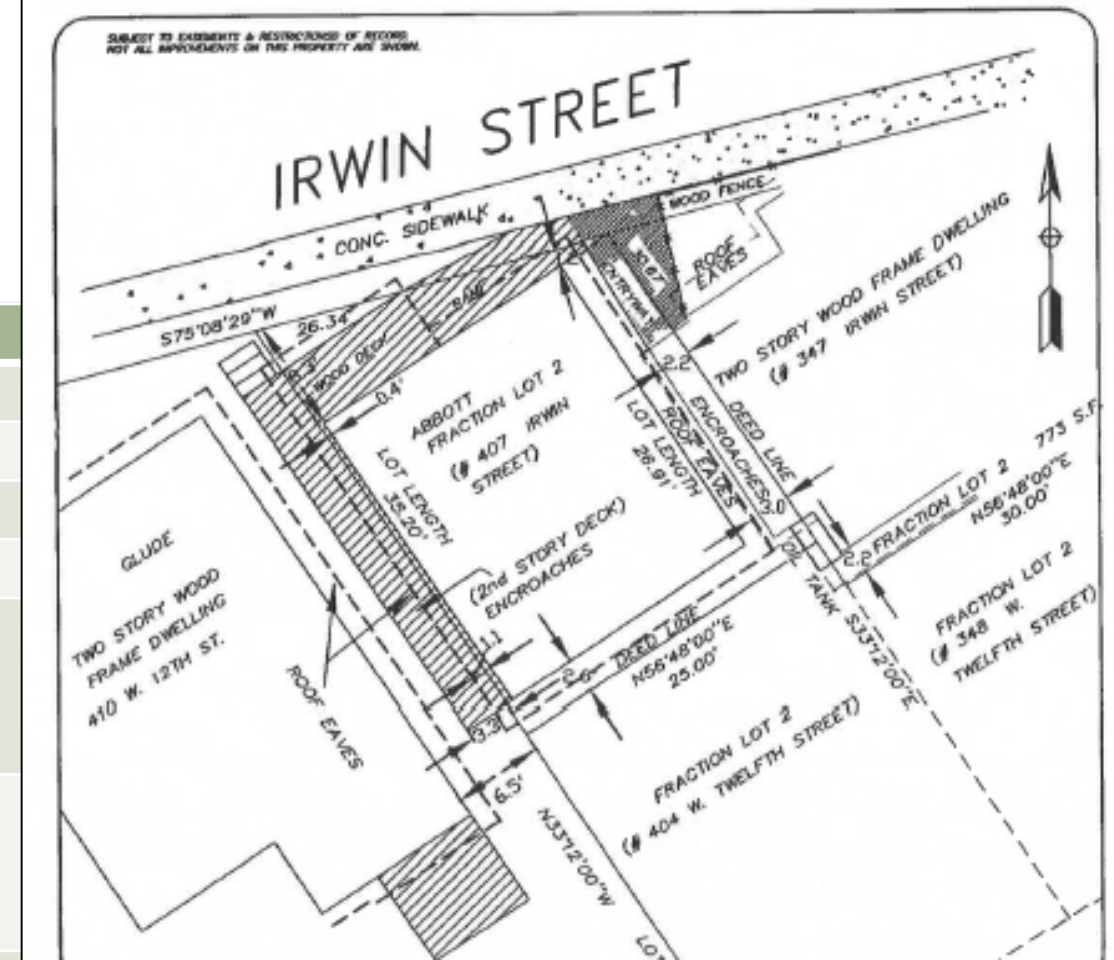


CITY AND BOROUGH OF
JUNEAU
ALASKA'S CAPITAL CITY

Project Site

		D5 Required	Existing
Minimum Lot Area		7,000 square feet	775 square feet
Minimum Lot Width		70 feet	25 feet
Minimum Lot Depth		85 feet	31 feet
Maximum Lot Coverage		50%	64%
Setbacks	Front (North)	20 feet	1.2 feet to dwelling Ramp and deck encroach into ROW
	Rear (South)	10 feet [Reduced per 49.25.430(4)(J)]	2.6 feet
	Side (West)	5 feet	1.1 feet to dwelling Deck encroaches into adjoining lot
	Side (East)	5 feet	2.2 feet

(Packet Page No. 107)



Subject parcel is nonconforming for lot area, structure setbacks, lot coverage, and parking.

Parking

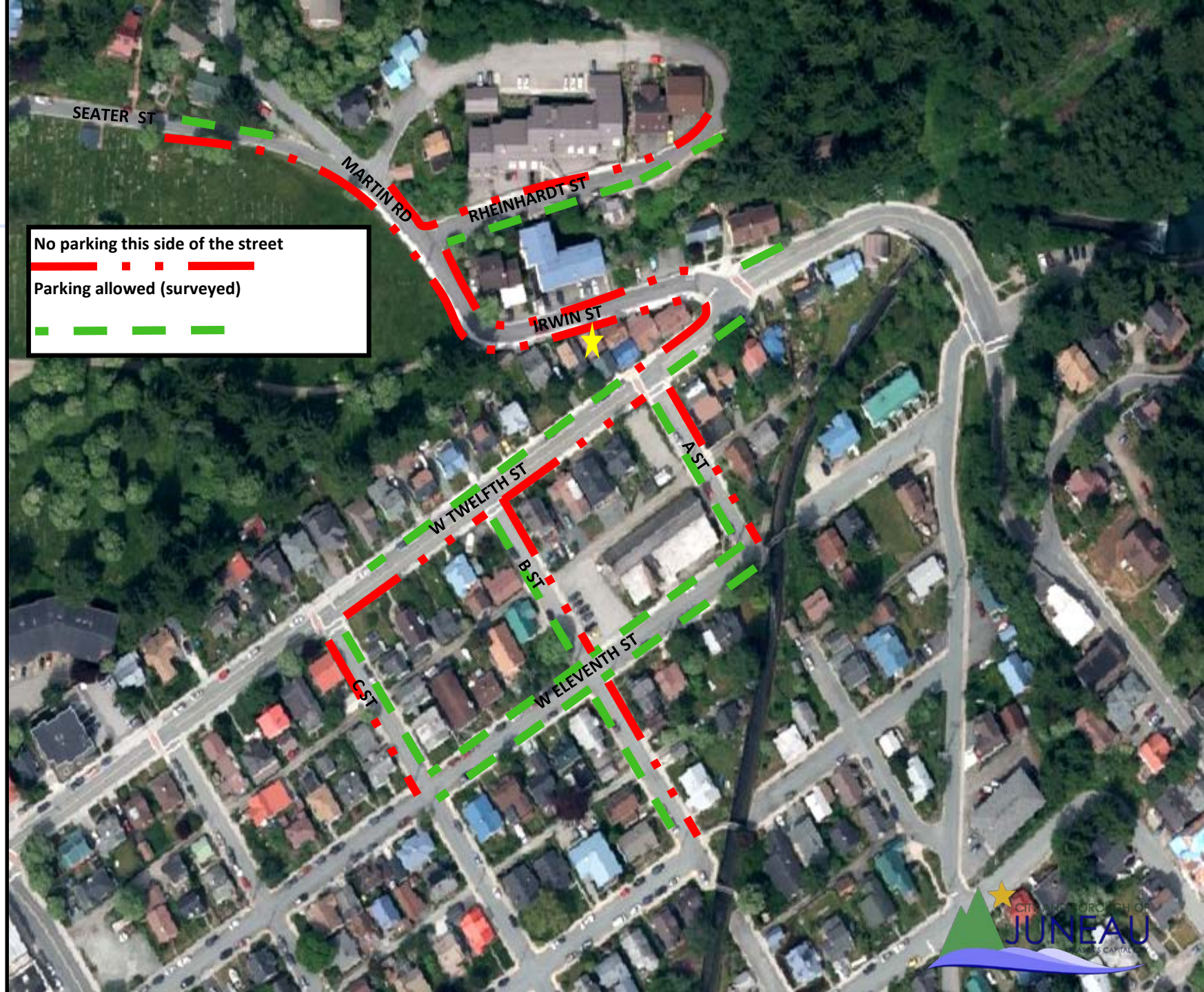
- Spaces required for a single-family dwelling: **2**
 - No parking is provided on the site.
 - The single-family dwelling was constructed in 1914 prior to zoning/parking requirements and is nonconforming to current parking requirements.
No parking is required for the existing dwelling on the site.
- Spaces required for an accessory apartment: **1**
 - Applicant requests a parking waiver for the 1 required parking space.

Parking Study

Staff performed a parking study to evaluate the potential impacts on nearby on-street parking.

The complete study can be found in Attachment C of the PWP2020 0001 staff report. (Packet Page No. 136-148)

Staff performed parking counts in the morning, afternoon, and evenings on March 3, 5, 7, 9, and 11. On March 8, staff performed parking counts in the late morning and evening.



Parking Study Results

**The complete study can be found in Attachment C of the staff report for PWP2020 0001 (Packet Page No. 136-148).
There are approximately 103 on-street spaces in the study area.**

Time	Highest Count	Lowest Count
Morning	65	41
Afternoon	51	36
Evening	61	44

The addition of one (1) on-street parking space will not have a significant negative impact on available parking in the area.

Proximity to Public Transportation

Site is approximately a quarter mile walk to the nearest bus stops along Glacier Avenue.

A pedestrian path runs through Evergreen Cemetery and sidewalks are provided along W Twelfth Street.



Agency & Public Comments

- An agency review period was held between January 27 and February 10, 2020. No issues were raised during this agency review period.
- Staff received one (1) public comments regarding the proposed development.
 - Jim Donaghey, February 6, 2020 – Mr. Donaghey expressed concerns about the density of the area and the lack of parking. Mr. Donaghey included photos of on-street parking in the area and requests that all future development be provided adequate parking. Complete comments are found in Attachment C.
 - (Packet Page No. 149)

Conformity with Adopted Plans

- As described in the staff reports for USE2020 0002 and PWP2020 0001 staff finds the proposed development is in general conformity with:
 - The 2013 Comprehensive Plan
 - The 2016 Housing Action Plan
- See Packet Page No. 109-110 and 130-131

USE2020 0002 Findings

(Packet Page No. 110-112)

1. Is the application for the requested conditional use permit complete?

Yes. Staff finds the application contains the information necessary to conduct full review of the proposed operations. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.15.

2. Is the proposed use appropriate according to the Table of Permissible Uses?

Yes. The requested permit is appropriate according to the Table of Permissible Uses. The permit is listed at CBJ 49.25.300, Section 1.130 for the D5 zoning district.

3. Will the proposed development comply with the other requirements of this chapter?

Yes. The proposed development complies with the other requirements of this chapter. Public notice of this project was provided in the February 28, 2020; March 8, 2020; March 13, 2020; and March 22, 2020 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 500 feet of the subject parcel. Moreover, a Public Notice Sign was posted on the subject parcel, visible from the public Right of Way.

4. Will the proposed development materially endanger the public health or safety?

No. There is no evidence that the proposed development will materially endanger the public health or safety.

USE2020 0002 Findings Continued

(Packet Page No. 110-112)

5. Will the proposed development substantially decrease the value of or be out of harmony with property in the neighboring area?

No. There is no evidence that the proposed development will substantially decrease the value or be out of harmony with property in the neighboring area.

6. Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?

Yes. Staff finds the proposed development is in general conformity with the CBJ Comprehensive Plan and the Housing Action Plan.

7. Will the proposed development comply with the Juneau Coastal Management Program?

N/A.

USE2020 0002 Recommendation

(Packet Page No. 112)

It is recommended that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Conditional Use permit. The permit would allow the development of an accessory apartment on an undersized lot.

The approval is subject to the following conditions:

1. Prior to issuance of a building permit, the applicant must submit documentation to demonstrate that all applicable parking code requirements have been met, in conformance with CBJ 49.40.200.
2. Prior to the issuance of a building permit, the applicant must submit a revised site plan showing vegetative cover on the site.

PWP2020 0001 Findings

(Packet Page No. 131)

1. The granting of the waiver would result in more benefits than detriments to the community as a whole as identified by the Comprehensive Plan.

Yes. As discussed above, housing is an identified need by the Comprehensive Plan and other adopted plans. If the waiver is granted, the proposed accessory apartment would add one rental unit to Juneau's rental housing stock.

2. The development is located outside the PD-1 parking district, the PD-2 parking district, and the Downtown Fee-in-lieu of Parking District map areas.

Yes. The development is located outside the above parking overlay districts.

3. Granting the waiver will not result in adverse impacts to property in the neighboring area.

Yes. Per the analysis above, there is no evidence that the proposed development would have an adverse impact to neighboring properties.

4. The waiver will not materially endanger public health, safety, and welfare.

Yes. Per the analysis above, there is no evidence that the proposed development will materially endanger the public health, safety, or welfare.

PWP2020 0001 Recommendation

(Packet Page No. 131)

Staff recommends the Planning Commission adopt staffs recommendations and findings and **GRANT** the requested parking waiver for the one (1) required off-street parking space associated with the proposed accessory apartment (USE2020 0002).



Planning Commission

(907) 586-0715
PC_Comments@juneau.org
www.juneau.org/plancomm
155 S. Seward Street • Juneau, AK 99801

PLANNING COMMISSION NOTICE OF DECISION

Date: April 17, 2020
Case No.: USE2020 0002

Erin & Andrew Heist
712 Basin Rd,
Juneau, AK 99801

Proposal: Conditional use for an accessory apartment on a substandard sized lot
Property Address: 407 Irwin St
Legal Description: Casey Shattuck Block 206 Lot 2 FR
Parcel Code No.: 1C030C060040
Hearing Date: April 14, 2020

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated March 12, 2020, and APPROVED the Conditional Use Permit for an accessory apartment on an undersized lot, to be conducted as described in the project description and project drawings submitted with the application and with the following conditions:

1. Prior to issuance of a building permit, the applicant must submit documentation to demonstrate that all applicable parking code requirements have been met, in conformance with CBJ 49.40.200.

Attachments: March 12, 2020, memorandum from Laurel Christian, Community Development, to the CBJ Planning Commission regarding USE2020 0002.

This Notice of Decision does not authorize construction activity. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ 01.50.030. Appeals must be filed by 4:30 P.M. on the

Erin & Andrew Heist
Case No.: USE2020 0002
April 17, 2020
Page 2 of 2

day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ 01.50.030 (c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ 49.20.120).

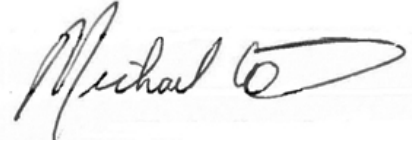
Effective Date: The permit is effective upon approval by the Commission, April 14, 2020.

Expiration Date: The permit will expire 18 months after the effective date, or October 14, 2021, if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the development permit was authorized. Application for permit extension must be submitted thirty days prior to the expiration date.

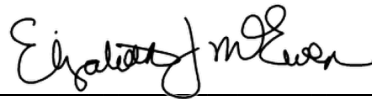
Project Planner:



Laurel Christian, Planner
Community Development Department



Michael LeVine, Chair
Planning Commission



Filed With Municipal Clerk

4/20/2020

Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ-adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.



(907) 586-0715
 CDD_Admin@juneau.org
 www.juneau.org/CDD
 155 S. Seward Street • Juneau, AK 99801

DATE: March 12, 2020

TO: Planning Commission

FROM: Laurel Christian, Planner
 Community Development Department

FILE NO.: PWP2020 0001

PROPOSAL: Parking waiver for one (1) parking space for an accessory apartment related to USE2020 0002

Laurel Christian

GENERAL INFORMATION

Applicant: Erin & Andrew Heist

Property Owner: Erin & Andrew Heist

Property Address: 407 Irwin St

Legal Description: Casey Shattuck Block 206 Lot 2 FR

Parcel Code No.: 1C030C060040

Site Size: 775 square feet

Comprehensive Plan Land Use Designation: Medium Density Residential, Single-family Detached (MDR-SF)

Zoning: D5

Utilities: Public Water & Sewer

Access: Irwin Street

Existing Land Use: Single-family Dwelling

Surrounding Land Use:
 North - D18 Zoning, Condominiums
 South - D5 Zoning, Single-family Dwelling
 East - D5 Zoning, Single-family Dwelling
 West - D5 Zoning, Single-family Dwelling

VICINITY MAP



ATTACHMENTS

Attachment A – Application
Attachment B – Parking Study
Attachment C – Public Comment

PROJECT DESCRIPTION

The applicant has requested a Conditional Use Permit for an accessory apartment on an undersized lot in the D5 zoning District (USE2020 0002). The proposed accessory apartment requires one (1) off-street parking space. The applicant requests a parking waiver to the off-street parking requirement.

BACKGROUND

The subject parcel was originally platted in 1913 through the Casey Shattuck Addition to Juneau, prior to the establishment of zoning in Juneau. The subject parcel measures 775 square feet and is non-conforming for lot area. According to the CBJ Assessors database, the dwelling on the subject parcel was constructed in 1914. The structure on the subject parcel is nonconforming for setbacks, lot coverage, and parking.

The applicant proposes to provide zero off-street parking spaces for the proposed development. According to CBJ 49.30.400, nonconforming situations may not be aggravated. If the parking waiver were granted, providing zero off-street parking spaces for the proposed development would not be considered an aggravation to the existing nonconforming parking situation. The parking waiver process is an acceptable exception process, and, if granted, would not be considered an aggravation according to CBJ 49.30.400(a).

ANALYSIS

Project Location – The subject parcel is located on Irwin Street, in the downtown residential “Flats” neighborhood. The subject parcel is in the D5 zoning district and neighbored by D18, D10, and Rural Reserve zoning districts. Nearby uses include single-family dwellings, multi-family dwellings, a church, and the Evergreen Cemetery. The subject parcel is located outside of the PD1, PD2, and Fee-in-Lieu of Parking Districts.

Impacts on Nearby On-Street Parking – Staff performed a parking study to evaluate the potential impacts on nearby on-street parking. The complete study can be found in Attachment B. Staff performed parking counts in the morning, afternoon, and evenings on March 3, 5, 7, 9, and 11. On March 8, staff performed parking counts in the late morning and evening. The following map demonstrates where on-street parking was evaluated (see Attachment B for color version).



Within this study area, there are approximately 103 on-street parking spaces. Staff measured each street segment then divided it by 22 feet, which is the length required for a parallel parking space [CBJ49.40.210(b)(1)]. Block length excludes driveways and alleys.

During this parking study, staff observed ample on-street parking spaces. The highest number of parked vehicles was counted at 11A.M., Sunday morning on March 8; 65 vehicles were counted in the study area during this time. Even at this peak time, there were 38 available parking spaces within the study area. During the afternoon parking counts, the highest number of parked vehicles was counted around 12:30P.M., on Wednesday, March 11; 51 vehicles were counted within the study area at this time. In the evening, the highest number of vehicles counted in the study area was around 6:00P.M. on March 11; 61 vehicles were counted in the study area at this time.

Based on information from the parking study, the addition of one (1) on-street parking space will not have a significant impact on available on-street parking.

Proximity to Public Transportation – The nearest bus stops are located along Glacier Avenue, which is approximately a quarter mile walk from the subject parcel. There are sidewalks the entire route to the bus stop along W. Twelfth Street and Glacier Avenue. There is a pedestrian route through the Evergreen Cemetery from Irwin Street to Glacier Avenue. The proposed development would not cause an undue burden on existing public transportation.

Agency Comments – An agency review period was held between January 27 and February 10, 2020. Staff invited CBJ Engineering & Public Works, Capital City Fire and Rescue, the CBJ Building Division, and the CBJ Streets Division to comment on the proposed development. No issues were raised through the agency review process.

Public Comments – At time of writing this staff report, one public comment regarding the proposed development was received. Public comment can be found in Attachment C.

Jim Donaghey, February 6, 2020 – Mr. Donaghey expressed concerns about the density of the area and the lack of parking. Mr. Donaghey included photos of on-street parking in the area and requests that all future development be provided adequate parking. Complete comments are found in Attachment C.

HABITAT

There are no known habitats regulated by the Land Use Code on the subject parcel.

CONFORMITY WITH ADOPTED PLANS

Staff finds the proposed development is in general conformity with policies and guidelines found in the CBJ Comprehensive Plan and the Housing Action Plan.

2013 Comprehensive Plan – The 2013 Comprehensive Plan addresses housing and development patterns in Chapter 3, Policy 3.2, which specifically addresses compact urban development:

Policy 3.2 to promote compact urban development within the designated urban service area to ensure efficient utilization of land resources and to facilitate cost effective provision of community services and facilities while balancing protection of natural resources, fish and wildlife habitat and scenic corridors.

The proposed development is located in the Urban Service Area, and would be connected to public utilities. There are no known negative impacts to natural resources or sensitive habitat. Chapter 4 of the Comprehensive Plan addresses the need for various types of housing within the Borough:

Policy 4.2 to facilitate the provision of an adequate supply of various housing types and sizes to accommodate present and future housing needs for all economic groups.

As discussed above, the proposed accessory apartment is within an approximately quarter mile walk to transit. Additionally, on-street parking is available in the surrounding area. Chapter 10 of

the Comprehensive Plan identifies the need to facilitate residential development when public facilities and transportation is available:

POLICY 10.3. TO FACILITATE RESIDENTIAL DEVELOPMENTS OF VARIOUS TYPES AND DENSITIES THAT ARE APPROPRIATELY LOCATED IN RELATION TO SITE CONDITIONS, SURROUNDING LAND USES, AND CAPACITY OF PUBLIC FACILITIES AND TRANSPORTATION SYSTEMS.

2016 Housing Action Plan – The 2016 Housing Action Plan identifies a need for various housing types in Juneau. An action item identified in the plan to help solve this problem is to create housing for workforce, seniors, and young families. The proposal is consistent with the plan as it would add a year-round rental to the housing stock in Juneau.

The Housing Action Plan also calls for the development of housing downtown. The plan specifically recommends addressing parking as a barrier to development in the downtown area (pg. 51). The proposed development would be consistent with this goal.

FINDINGS

Per CBJ 49.40.210(D)(6), the Director makes the following findings on the proposed parking waiver:

- 1. The granting of the waiver would result in more benefits than detriments to the community as a whole as identified by the Comprehensive Plan.**

Yes. As discussed above, housing is an identified need by the Comprehensive Plan and other adopted plans. If the waiver is granted, the proposed accessory apartment would add one rental unit to Juneau's rental housing stock.

- 2. The development is located outside the PD-1 parking district, the PD-2 parking district, and the Downtown Fee-in-lieu of Parking District map areas.**

Yes. The development is located outside the above parking overlay districts.

- 3. Granting the waiver will not result in adverse impacts to property in the neighboring area.**

Yes. Per the analysis above, there is no evidence that the proposed development would have an adverse impact to neighboring properties.

- 4. The waiver will not materially endanger public health, safety, and welfare.**

Yes. Per the analysis above, there is no evidence that the proposed development will materially endanger the public health, safety, or welfare.

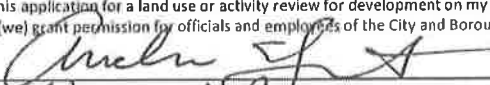
RECOMMENDATION

Staff recommends the Planning Commission adopt staffs recommendations and findings and GRANT the requested parking waiver for the one (1) required off-street parking space associated with the proposed accessory apartment (USE2020 0002).



DEVELOPMENT PERMIT APPLICATION

NOTE: Development Permit Application forms must accompany all other Community Development Department land use applications.

To be completed by Applicant	PROPERTY LOCATION		
	Physical Address 407 Irwin Street		
	Legal Description(s) (Subdivision, Survey, Block, Tract, Lot) CASEY SHATTUCK BL 206 LT 2 FR		
	Parcel Number(s) 1C030C060040		
	☒ This property located in the downtown historic district ☐ This property located in a mapped hazard area, if so, which _____		
	LANDOWNER/ LESSEE		
	Property Owner Erin & Andrew Heist	Contact Person Erin Heist	Phone Number(s) 907-957-1728, 907-723-1977
	Mailing Address 712 Basin Rd, Juneau, AK 99801		
	E-mail Address erinaheist@gmail.com		
	LANDOWNER/ LESSEE CONSENT Required for Planning Permits, not needed on Building/ Engineering Permits		
I am (we are) the owner(s) or lessee(s) of the property subject to this application and I (we) consent as follows: A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission. B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.			
X  Landowner/Lessee Signature		17 JAN 2020 Date	
X  Landowner/Lessee Signature		1/17/20 Date	
NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.			
APPLICANT If the same as OWNER, write "SAME"			
Applicant SAME		Contact Person	
Mailing Address		Phone Number(s)	
E-mail Address			
X _____ Applicant's Signature		_____ Date of Application	

DEPARTMENT USE ONLY BELOW THIS LINE

This form and all documents associated with it are public record once submitted.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

For assistance filling out this form, contact the Permit Center at 586-0770.

Intake Initials AL	Case Number 230201-002
Date Received 1/17/2020	



PARKING WAIVER APPLICATION

See reverse side for more information regarding the permitting process and the materials required for a complete application.

NOTE: Must be accompanied by a DEVELOPMENT PERMIT APPLICATION form.

To be completed by Applicant	PROJECT SUMMARY This application is for a 1 bed 1 bath accessory apartment in the aboveground basement of 407 Irwin Street. There will be no changes to setbacks, height, or lot coverage and the apartment will be confined to the original footprint of the house.
	TYPE OF PARKING WAIVER REQUESTED (check one) MINOR DEVELOPMENT ☒ Parking Waiver Departmental Review (PWD) MAJOR DEVELOPMENT ☐ Parking Waiver Planning Commission Review (PWP)
	DEVELOPMENT FOR WHICH THE PARKING IS REQUIRED (check one) ☒ Existing ☐ Proposed – Related Case Number: _____
	NUMBER OF REQUIRED PARKING SPACES PER CBJ 49.40.210(A) ☒ For Residential Uses: <u>1</u> spaces ☐ For Non-Residential Uses: _____ spaces
	NUMBER OF PARKING SPACES THAT WILL BE PROVIDED ☒ For Residential Uses: <u>0</u> spaces ☐ For Non-Residential Uses: _____ spaces
ALL REQUIRED MATERIALS ATTACHED ☒ Complete application per CBJ 49.15 and CBJ 49.40.210(d)(6) ☒ Narrative including: ☒ Why the parking waiver is being requested? ☒ How the requested waiver meets items 1-4 on page 2	

DEPARTMENT USE ONLY BELOW THIS LINE

PARKING WAIVER FEES			
Residential Spaces	<u>1</u>	Non-Residential Spaces	<u>0</u>
Residential Fee	\$ _____	Non-Residential Fee	\$ _____
Total Residential	\$ <u>320.00</u>	Total Non-Residential	\$ _____
(Submitted w/ CUP)		Total Fee	\$ <u>320.00</u>

This form and all documents associated with it are public record once submitted.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

For assistance filling out this form, contact the Permit Center at 586-0770.

Case Number	Date Received
<u>PWD 20200001</u>	<u>1/17/20</u>

Attachment A - Application

Parking Waiver Information

Parking waivers are outlined in CBJ 49.40.210(d)(6)

Parking Waivers are pursuant to 49.40.210(d) Exceptions (6) Parking Waivers. The required number of non-accessible parking spaces required by this section may be reduced if the requirements of this subsection are met. The determination of whether these requirements are met, with or without conditions, deemed necessary for consistency with this title, shall be made by the Director of the Community Development Department in the case of minor development; the Planning Commission in the case of major development; and the Planning Commission if the application relates to a series of applications for minor developments that, taken together, constitute major development, as determined by the director.

Any waiver granted under this subsection shall be in writing and shall include the following required findings and any conditions, such as public amenities, imposed by the director or commission that are consistent with the purpose of this title:

- (1) The granting of the waiver would result in more benefits than detriments to the community as a whole as identified by the comprehensive plan;
 - (2) The development is located outside of the PD-1 parking district, PD-2 parking district, and Downtown Fee in Lieu of Parking District Map areas;
 - (3) Granting the waiver will not result in adverse impacts to property in the neighboring area; and
 - (4) The waiver will not materially endanger public health, safety, or welfare.
- Applications for parking waivers shall be on a form specified by the director and shall be accompanied by a one-time fee of \$400. If the application is filed in conjunction with a major development permit, the fee shall be reduced by 20 percent.
 - The director shall mail notice of any complete parking waiver application to the owners of record of all property located within a 250 foot radius of the site seeking the waiver. If the parking waiver application is filed in conjunction with a major development permit, notice of both applications shall be made concurrently in accordance with CBJ 49.15.230.

Approved parking waivers shall expire upon a change in use.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

Parking Waiver Application - Narrative

407 Irwin St.

Andrew & Erin Heist

erinaheist@gmail.com

907-957-1728

Why the parking waiver is being requested

As a historic home in the Casey Shattuck neighborhood, this house was built with no onsite parking. The original layout of the house made it clear that the basement had once been used as an apartment, although it has not been used in that way in several decades. This parking waiver application is associated with an Accessory Apartment Application and Conditional Use Permit to remodel the aboveground basement of 407 Irwin to add a 1 bedroom, 1 bath accessory apartment to the property.

The granting of the waiver would result in more benefits than detriments to the community as a whole as identified by the comprehensive plan.

The City and Borough of Juneau Comprehensive Plan specifically sites a need for increased housing. This remodel will add a high-quality rental in a highly desirable neighborhood and does not include any change to the setbacks, height, or lot coverage of the property. Accessory apartments are common in this neighborhood, and the request for a parking waiver for one parking spot will not have an adverse impact on the community.

The development is located outside of the PD-1 parking district, PD-2 parking district, and Downtown Fee in Lieu of Parking District Map areas.

The development is zoned D5 and is in the Casey Shattuck district.

Granting the waiver will not result in adverse impacts to the property in the neighboring area.

This remodel does not include any exterior changes to the house or property in setbacks, height, or lot coverage and will have no impacts on the surrounding properties.

The waiver will not materially endanger public health, safety, or welfare.

This waiver will not endanger public health, safety, or welfare.

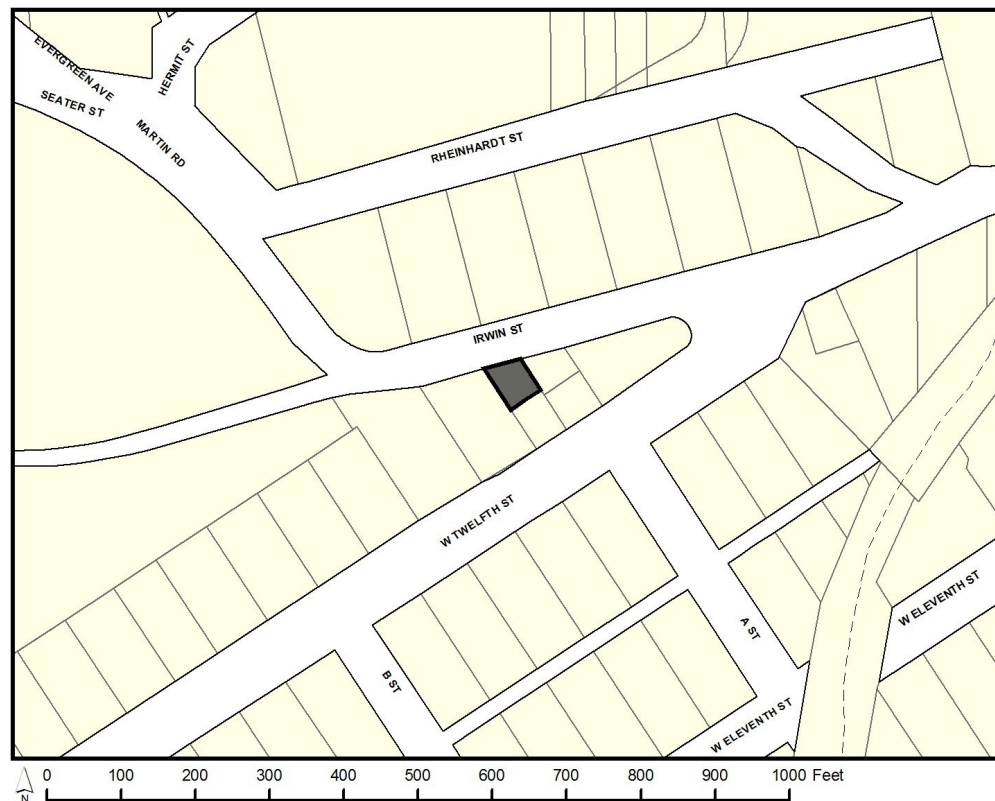


(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

Parking Study

USE2020 0002 & PWP2020 0001

Completed by: Laurel Christian, Planner, Community Development Department



Schedule

Morning Counts

Tuesday, March 3, 2020

Thursday March 5, 2020

Saturday, March 7, 2020

Sunday, March 8, 2020

Monday, March 9, 2020

Wednesday, March 11, 2020

Afternoon Counts

Tuesday, March 3, 2020

Thursday, March 5, 2020

Saturday, March 7, 2020

Monday, March 9, 2020

Wednesday, March 11, 2020

Evening Counts

Tuesday, March 3, 2020

Thursday, March 5, 2020

Saturday, March 7, 2020

Sunday, March 8, 2020

Monday, March 9, 2020

Wednesday, March 11, 2020



407 Irwin Street



Irwin Street

Background Information

Site Size: 775 Square Feet

Zoning: D5 Single-family/Duplex

Utilities: Public Water & Sewer

Access: Pedestrian Access via Irwin Street.

No Vehicular Access.

Proposed Development:

Current use of the site is a single-family dwelling. The applicant proposes to develop an accessory apartment within the basement of the existing dwelling. No parking will be provided on-site.

Original survey materials and photographs are on file with the Community Development Department and available upon request.



Available on-street parking spaces within the study area:

Segment	Length (Excludes Driveways)	Spaces (22' Length)	Notes
Irwin Street <i>Martin Road to W Twelfth Street</i>	48'	2.18	No parking is allowed on Irwin Street with the exception of 2 spaces near the intersection of Irwin Street and W Twelfth Street.
Martin Road <i>Irwin Street to Seater Street</i>	NO Parking	0	
Seater Street <i>Martin Road to First 200' on Seater Street</i>	200'	9.09	
Rheinhardt Street <i>Martin Road to End</i>	339'	15.4	
W Twelfth Street <i>Irwin Street to C Street</i>	387	17.59	
W Eleventh Street <i>Capital Avenue to C Street</i>	733 (Both sides of the street)	33.31	
A Street <i>W Twelfth Street to W Eleventh Street</i>	172'	7.8	
B Street <i>W Twelfth Street to W Tenth Street</i>	320'	14.54	Two blocks of B Street were counted.
C Street <i>W Twelfth Street to W Eleventh Street</i>	142'	6.45	
TOTAL: 103 Parking Spaces			For the purposes of this study, staff rounded down to the nearest whole parking space.

Morning Count Totals

		Vehicles Parked					
Segment	Total Spaces	3/3/2020	3/5/2020	3/7/2020	3/8/2020	3/9/2020	3/11/2020
Irwin Street <i>Martin Road to W Twelfth Street</i>	2	2	2	3	3	1	1
Martin Road <i>Irwin Street to Seater Street</i>	0	0	0	0	0	0	0
Seater Street <i>Martin Road to First 200' on Seater Street</i>	9	2	2	4	0	1	4
Rheinhardt Street <i>Martin Road to End</i>	15	7	6	12	7	6	7
W Twelfth Street <i>Irwin Street to C Street</i>	17	13	12	12	13	16	13
W Eleventh Street <i>Capital Avenue to C Street</i>	33	10	4	10	22	8	9
A Street <i>W Twelfth Street to W Eleventh Street</i>	7	4	5	3	6	3	3
B Street <i>W Twelfth Street to W Tenth Street</i>	14	11	5	8	10	7	8
C Street <i>W Twelfth Street to W Eleventh Street</i>	6	5	5	4	4	5	5
TOTALS:	103	54	41	56	65	47	50

Afternoon Count Totals

		Vehicles Parked					
Segment	Total Spaces	3/3/2020	3/5/2020	3/7/2020	3/8/2020	3/9/2020	3/11/2020
Irwin Street Road to W Twelfth Street	2	2	2	3	NA	1	2
Martin Road to Seater Street	0	0	0	0	NA	0	0
Seater Street to First 200' on Seater Street	9	0	2	1	NA	0	1
Rheinhardt Street to End	15	2	4	5	NA	4	4
W Twelfth Street to C Street	17	4	7	11	NA	9	12
W Eleventh Street nue to C Street	33	13	11	9	NA	14	14
A Street Street to W Eleventh Street	7	3	2	3	NA	2	4
B Street Street to W Tenth Street	14	7	9	6	NA	7	7
C Street Street to W Eleventh Street	6	5	3	3	NA	3	7
TOTALS:	103	36	40	41	0	40	51

Evening Count Totals

		Vehicles Parked					
Segment	Total Spaces	3/3/2020	3/5/2020	3/7/2020	3/8/2020	3/9/2020	3/11/2020
Irwin Street <i>Martin</i> Road to W Twelfth Street	2	3	3	3	3	3	2
Martin Road <i>Irwin</i> Street to Seater Street	0	0	0	0	0	0	0
Seater Street <i>Martin</i> Road to First 200' on Seater Street	9	5	3	1	2	1	4
Rheinhardt Street <i>Martin</i> Road to End	15	4	5	7	6	6	6
W Twelfth Street <i>Irwin</i> Street to C Street	17	8	12	10	15	10	11
W Eleventh Street <i>Capital</i> Avenue to C Street	33	15	9	14	8	8	15
A Street <i>W</i> Twelfth Street to W Eleventh Street	7	5	3	5	7	3	5
B Street <i>W</i> Twelfth Street to W Tenth Street	14	8	9	7	7	8	12
C Street <i>W</i> Twelfth Street to W Eleventh Street	6	4	4	3	5	5	6
TOTALS:	103	52	48	50	53	44	61



Irwin Street
Tuesday, March 3, 2020. 5:46PM





Rheinhardt Street
Saturday, March 7, 2020. 12:27PM



C Street
Monday, March 9, 2020. 1:33PM









W Eleventh Street
Sunday, March 8, 2020. 11:07AM



W Eleventh Street
Sunday, March 8, 2020. 11:07AM



W Eleventh Street
Thursday, March 5, 2020. 5:53PM



W Eleventh Street
Monday, March 9, 2020. 5:37PM



W Twelfth Street
Saturday, March 7, 2020. 7:30AM



From: [Jim Donaghey](#)
 To: [PC Comments](#)
 Cc: [James Donaghey](#)
 Subject: Case No.: CSP2020 0002
 Date: Thursday, February 6, 2020 10:10:15 AM

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

This has reference to "Invitation to Comment" On the above subject Case No.: CSP2020 0002/PWP2020 0001

I am absolutely against allowing a Conditional Use Permit for an accessory apartment and a waiver for required parking.

It appears there is five dwellings on these six lots on this piece of land between Irwin St and 12th Street.

None of them have any on lot parking plus there is no on street parking on any section of Irwin St adjacent to these lots.



Additionally., due to the extreme shortage of parking in the "Flats" neighborhood I strongly recommend the following.

- That in the future all applications for all Conditional Use Permits for an accessory apartments must include not only at least one off street parking spot for the apartment but must include at least one parking spot for the current owner/occupant.
- Further, any future permits for any type of major dwelling construction be it new or remodel must include at least one parking spot for the current owner/occupant.

This will not only mitigate many of the parking hassles but also go a long way to improve street maintenance i.e. snow removal/sweeping etc.

Community Development and the Planning Commission should be more than approving or not approving various permits there should be a intentional movement toward correcting the sins of our forbearers. More housing may be necessary but let us not encourage any more "Slum Lords".

Thank you for asking.

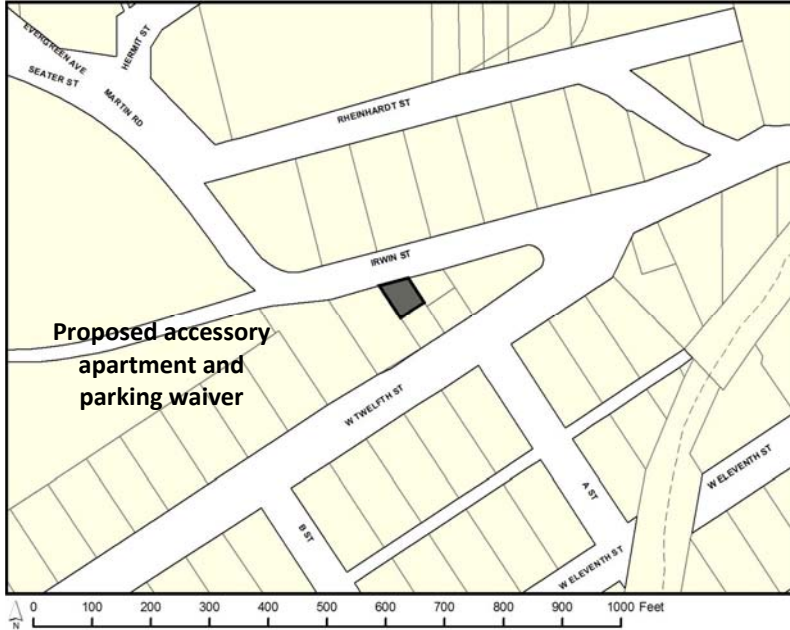
Kind regards, *Jim*

James M. Donaghey
 1029 A Street
 Juneau AK 99801

Cell (907) 209-2560
 Email donaghey@gci.net

Invitation to Comment

On a proposal to be heard by the CBJ Planning Commission
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

An application has been submitted for consideration and public hearing by the Planning Commission for a **Conditional Use Permit for an accessory apartment on an undersized lot and a parking waiver for the one (1) required parking space** located at **407 Irwin St** in a **D5 zone**.

TIMELINE

Staff Report expected to be posted **Monday, March 2** at
<https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through February 17

Comments received during this period will be sent to the Planner, **Laurel Christian**, to be included in the staff report.

Feb. 8 through 12 noon, March 6

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, March 10, 2020

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

March 11

The results of the hearing will be posted online.

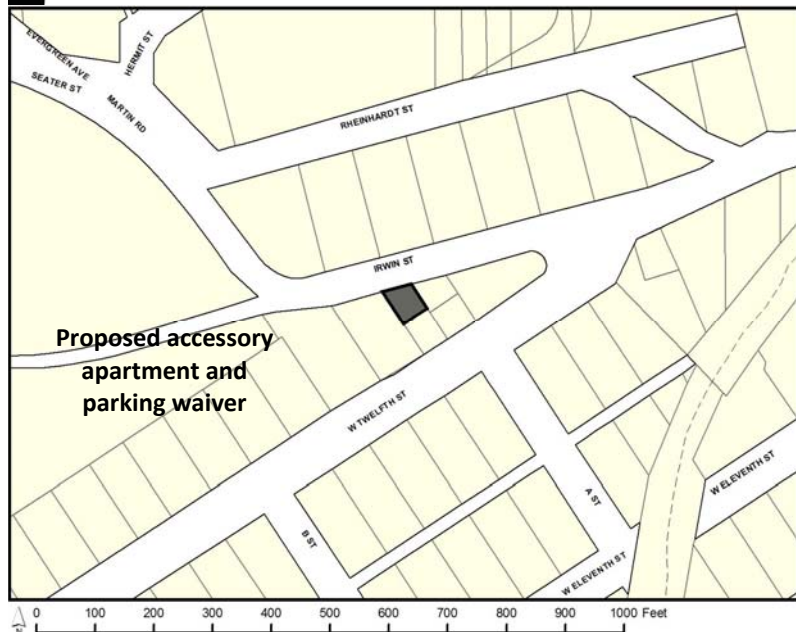
Phone: **(907)586-0715** ♦ Email: **pc_comments@juneau.org**
Mail: **Community Development, 155 S. Seward St, Juneau AK 99801**

Case No.: USE2020 0002/PWP2020 0001
Parcel No.: 1C030C060040
CBJ Parcel Viewer: <http://epv.juneau.org>

Hearing Rescheduled

On a proposal to be heard by the CBJ Planning Commission

Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

THIS ITEM HAS BEEN RESCHEDULED

An application has been submitted for consideration and public hearing by the Planning Commission for a Conditional Use Permit for an accessory apartment on an undersized lot and a parking waiver for the one (1) required parking space located at 407 Irwin St in a D5 zone.

The hearing has been rescheduled for April 14, 2020.

TIMELINE

Staff Report are posted at:

<https://beta.juneau.org/assembly/assembly-minutes-and-agendas>

Find hearing results, meeting minutes and more here as well.

Now through 12 noon, April 10

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, April 14, 2020

Members of the public wishing to call in to testify can dial 907-713-2140 and entering Participant ID number 813893. **The caller should provide their name and state that they are calling in for the Planning Commission meeting.** Public lines will be muted by default but will be unmuted by CBJ staff when it is that individual's turn to testify.

April 15

The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: USE2020 0002/PWP2020 0001
Parcel No.: 1C030C060040
CBJ Parcel Viewer: <http://epv.juneau.org>

USE2020 0002 & PWP2020 0001

Conditional Use Permit for an accessory apartment on
an undersized lot and associated parking waiver.

PC Presentation April 14, 2020

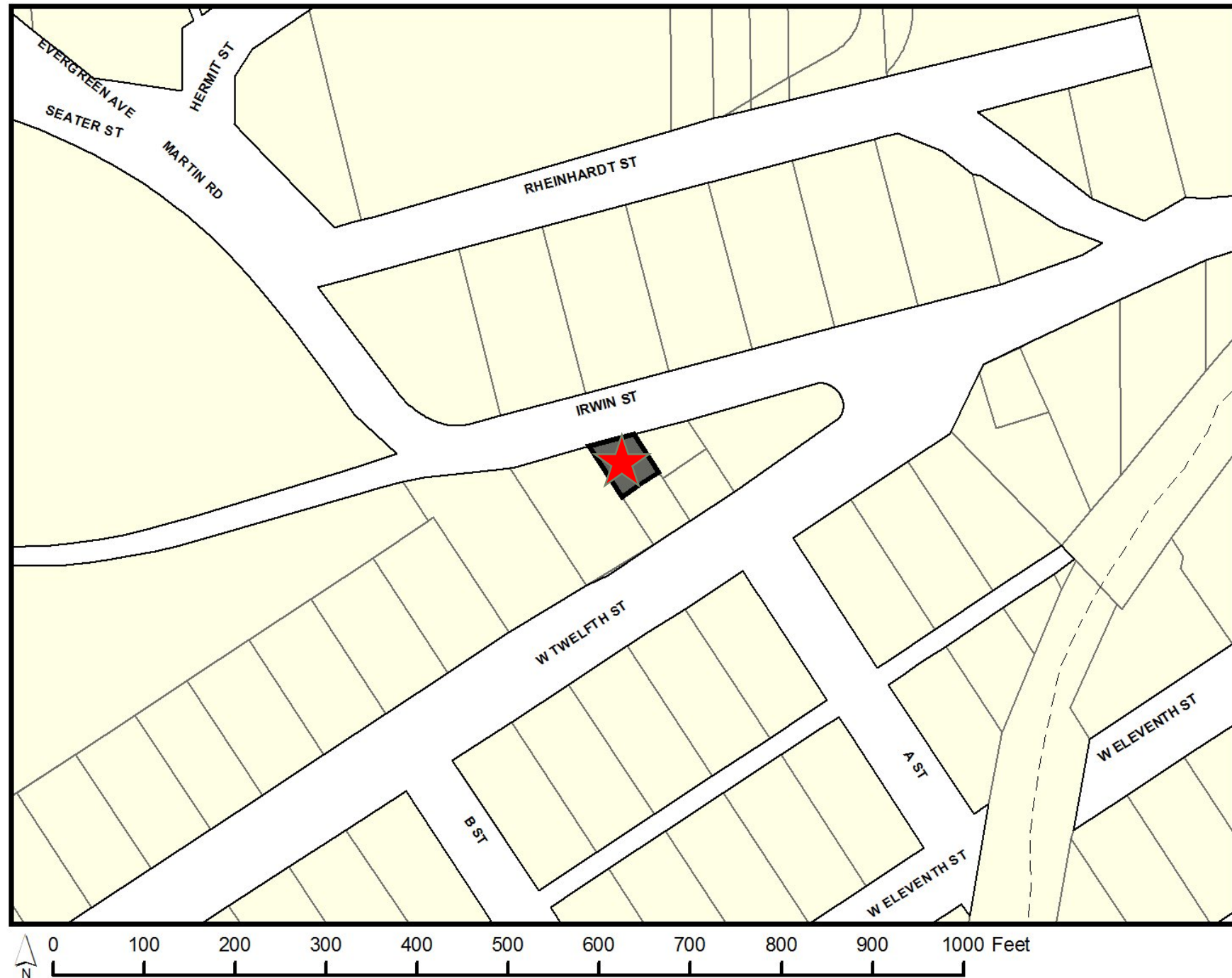
Recommendations

- USE2020 0002: Staff recommends the Planning Commission **APPROVE WITH CONDITIONS** the requested Conditional Use Permit for an accessory apartment on an undersized lot. (Packet Page No. 112)
- PWP2020 0001: Staff recommends the Planning Commission **GRANT** the requested parking waiver for one (1) required parking space. (Packet Page No. 131)

Background Information

Address	407 Irwin Street
Lot Size	775 Square feet
Zoning District	D5 Single-family/Duplex Residential
Comp. Plan Future Land Use Designation	Medium Density Residential, Single Family (MDRSF)
Utilities	Public Water & Sewer
Year Built	1914

Vicinity Map



[illegible]

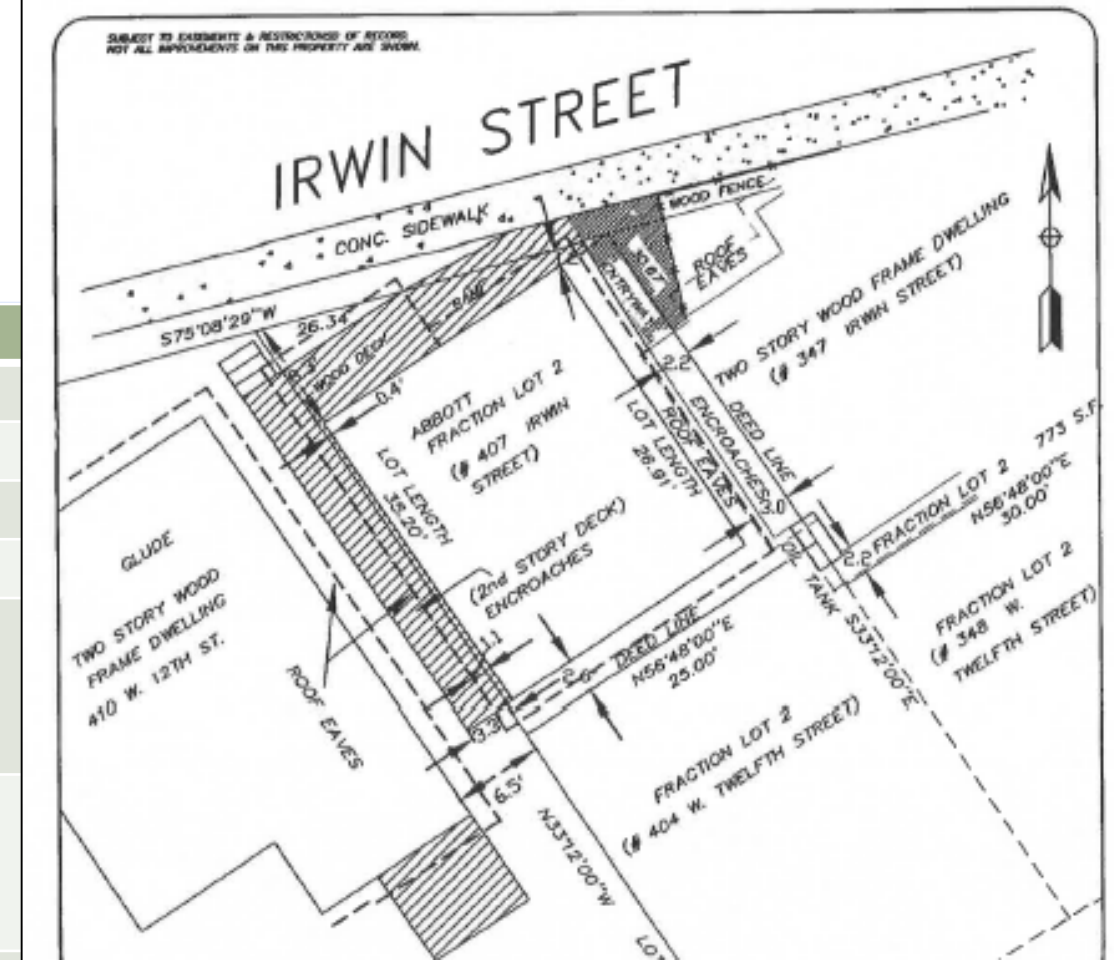
SHEET # **A1.0**
 PLOT DATE 10.08.07
 ISSUE DATE XXXX

(Packet Page No. 107)

Project Site

		D5 Required	Existing
Minimum Lot Area		7,000 square feet	775 square feet
Minimum Lot Width		70 feet	25 feet
Minimum Lot Depth		85 feet	31 feet
Maximum Lot Coverage		50%	64%
Setbacks	Front (North)	20 feet	1.2 feet to dwelling Ramp and deck encroach into ROW
	Rear (South)	10 feet [Reduced per 49.25.430(4)(J)]	2.6 feet
	Side (West)	5 feet	1.1 feet to dwelling Deck encroaches into adjoining lot
	Side (East)	5 feet	2.2 feet

(Packet Page No. 107)



Subject parcel is nonconforming for lot area, structure setbacks, lot coverage, and parking.

Parking

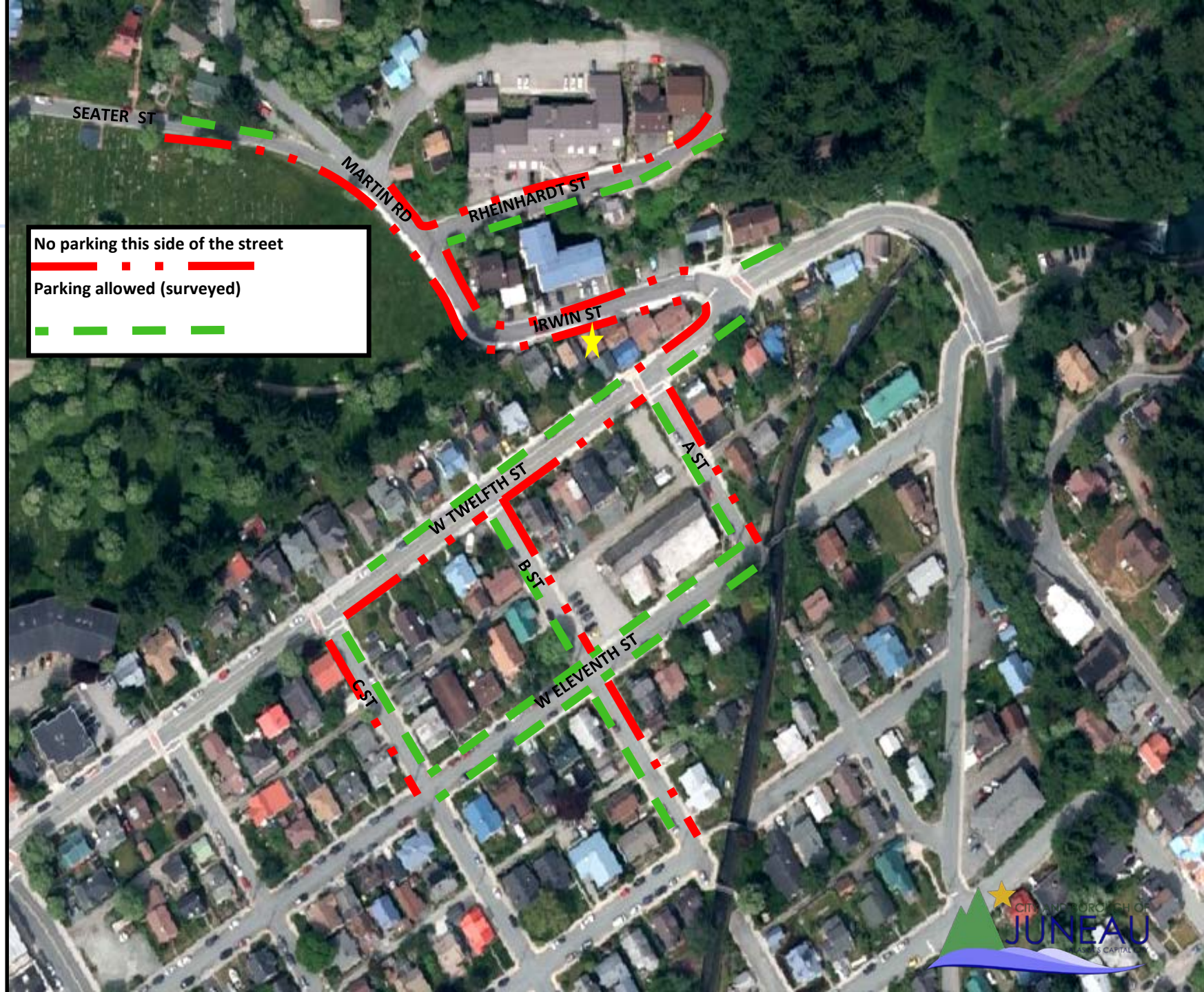
- Spaces required for a single-family dwelling: **2**
 - No parking is provided on the site.
 - The single-family dwelling was constructed in 1914 prior to zoning/parking requirements and is nonconforming to current parking requirements.
No parking is required for the existing dwelling on the site.
- Spaces required for an accessory apartment: **1**
 - Applicant requests a parking waiver for the 1 required parking space.

Parking Study

Staff performed a parking study to evaluate the potential impacts on nearby on-street parking.

The complete study can be found in Attachment C of the PWP2020 0001 staff report. (Packet Page No. 136-148)

Staff performed parking counts in the morning, afternoon, and evenings on March 3, 5, 7, 9, and 11. On March 8, staff performed parking counts in the late morning and evening.



Parking Study Results

**The complete study can be found in Attachment C of the staff report for PWP2020 0001 (Packet Page No. 136-148).
There are approximately 103 on-street spaces in the study area.**

Time	Highest Count	Lowest Count
Morning	65	41
Afternoon	51	36
Evening	61	44

The addition of one (1) on-street parking space will not have a significant negative impact on available parking in the area.

Proximity to Public Transportation

Site is approximately a quarter mile walk to the nearest bus stops along Glacier Avenue.

A pedestrian path runs through Evergreen Cemetery and sidewalks are provided along W Twelfth Street.



Agency & Public Comments

- An agency review period was held between January 27 and February 10, 2020. No issues were raised during this agency review period.
- Staff received one (1) public comments regarding the proposed development.
 - Jim Donaghey, February 6, 2020 – Mr. Donaghey expressed concerns about the density of the area and the lack of parking. Mr. Donaghey included photos of on-street parking in the area and requests that all future development be provided adequate parking. Complete comments are found in Attachment C.
 - (Packet Page No. 149)

Conformity with Adopted Plans

- As described in the staff reports for USE2020 0002 and PWP2020 0001 staff finds the proposed development is in general conformity with:
 - The 2013 Comprehensive Plan
 - The 2016 Housing Action Plan
- See Packet Page No. 109-110 and 130-131

USE2020 0002 Findings

(Packet Page No. 110-112)

1. Is the application for the requested conditional use permit complete?

Yes. Staff finds the application contains the information necessary to conduct full review of the proposed operations. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.15.

2. Is the proposed use appropriate according to the Table of Permissible Uses?

Yes. The requested permit is appropriate according to the Table of Permissible Uses. The permit is listed at CBJ 49.25.300, Section 1.130 for the D5 zoning district.

3. Will the proposed development comply with the other requirements of this chapter?

Yes. The proposed development complies with the other requirements of this chapter. Public notice of this project was provided in the February 28, 2020; March 8, 2020; March 13, 2020; and March 22, 2020 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 500 feet of the subject parcel. Moreover, a Public Notice Sign was posted on the subject parcel, visible from the public Right of Way.

4. Will the proposed development materially endanger the public health or safety?

No. There is no evidence that the proposed development will materially endanger the public health or safety.

USE2020 0002 Findings Continued

(Packet Page No. 110-112)

5. Will the proposed development substantially decrease the value of or be out of harmony with property in the neighboring area?

No. There is no evidence that the proposed development will substantially decrease the value or be out of harmony with property in the neighboring area.

6. Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?

Yes. Staff finds the proposed development is in general conformity with the CBJ Comprehensive Plan and the Housing Action Plan.

7. Will the proposed development comply with the Juneau Coastal Management Program?

N/A.

USE2020 0002 Recommendation

(Packet Page No. 112)

It is recommended that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Conditional Use permit. The permit would allow the development of an accessory apartment on an undersized lot.

The approval is subject to the following conditions:

1. Prior to issuance of a building permit, the applicant must submit documentation to demonstrate that all applicable parking code requirements have been met, in conformance with CBJ 49.40.200.
2. Prior to the issuance of a building permit, the applicant must submit a revised site plan showing vegetative cover on the site.

PWP2020 0001 Findings

(Packet Page No. 131)

1. The granting of the waiver would result in more benefits than detriments to the community as a whole as identified by the Comprehensive Plan.

Yes. As discussed above, housing is an identified need by the Comprehensive Plan and other adopted plans. If the waiver is granted, the proposed accessory apartment would add one rental unit to Juneau's rental housing stock.

2. The development is located outside the PD-1 parking district, the PD-2 parking district, and the Downtown Fee-in-lieu of Parking District map areas.

Yes. The development is located outside the above parking overlay districts.

3. Granting the waiver will not result in adverse impacts to property in the neighboring area.

Yes. Per the analysis above, there is no evidence that the proposed development would have an adverse impact to neighboring properties.

4. The waiver will not materially endanger public health, safety, and welfare.

Yes. Per the analysis above, there is no evidence that the proposed development will materially endanger the public health, safety, or welfare.

PWP2020 0001 Recommendation

(Packet Page No. 131)

Staff recommends the Planning Commission adopt staffs recommendations and findings and **GRANT** the requested parking waiver for the one (1) required off-street parking space associated with the proposed accessory apartment (USE2020 0002).



Planning Commission

(907) 586-0715
PC_Comments@juneau.org
www.juneau.org/plancomm
155 S. Seward Street • Juneau, AK 99801

PLANNING COMMISSION NOTICE OF DECISION

Date: April 17, 2020
File No.: PWP2020 0001

Erin & Andrew Heist
712 Basin Rd
Juneau, AK 99801

Proposal: Parking waiver for one (1) parking space for an accessory apartment related to USE2020 0002

Property Address: 407 Irwin St

Legal Description: CASEY SHATTUCK BL 206 LT 2 FR

Parcel Code No.: 1C030C060040

Hearing Date: April 14, 2020

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated March 12, 2020 and APPROVED the waiver of the requirement for one (1) parking space to be conducted as described in the project description and project drawings submitted with the application.

Attachments: March 12, 2020 memorandum from Laurel Christian, Planner, Community Development to the CBJ Planning Commission regarding PWP2020 0001.

This Notice of Decision does not authorize any construction activity. Prior to starting any development project, it is the applicant's responsibility to obtain a building permit for any and all improvements requiring such.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ 01.50.030. Appeals must be filed by 4:30 PM on the day twenty days from the date the decision is filed.

Erin & Andrew Heist
File No.: PWP2020 0001
April 17, 2020
Page 2 of 2

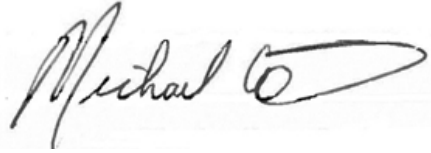
Effective Date: The waiver is effective upon approval by the Planning Commission, April 14, 2020.

Expiration Date: Approved Parking Waivers shall expire upon a change of use.

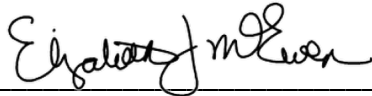
Project Planner:



Laurel Christian, Planner
Community Development Department



Michael LeVine, Chair
Planning Commission



Filed With Municipal Clerk

4/20/2020

Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ - adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center 1 (800) 949-4232, or fax (360) 438-3208.



(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

DATE: March 16, 2020

TO: Planning Commission

FROM: Amy Liu, Planner 
Community Development Department

FILE NO.: WCF2019 0009

PROPOSAL: A Wireless Communication Facility Permit to install new, unlit
150-foot communication tower

GENERAL INFORMATION

Applicant: Vertical Bridge, LLC

Property Owner: CBJ Lands & Resources

Property Address: 16150 Merganser Road

Legal Description: South Lena Block E

Parcel Code Number: 8B3301070090

Site Size: 64.34 acres

**Comprehensive Plan Future
Land Use Designation:** Urban Low Density Residential

Zoning: D3

Utilities: Public water, no sewer

Access: Merganser Road

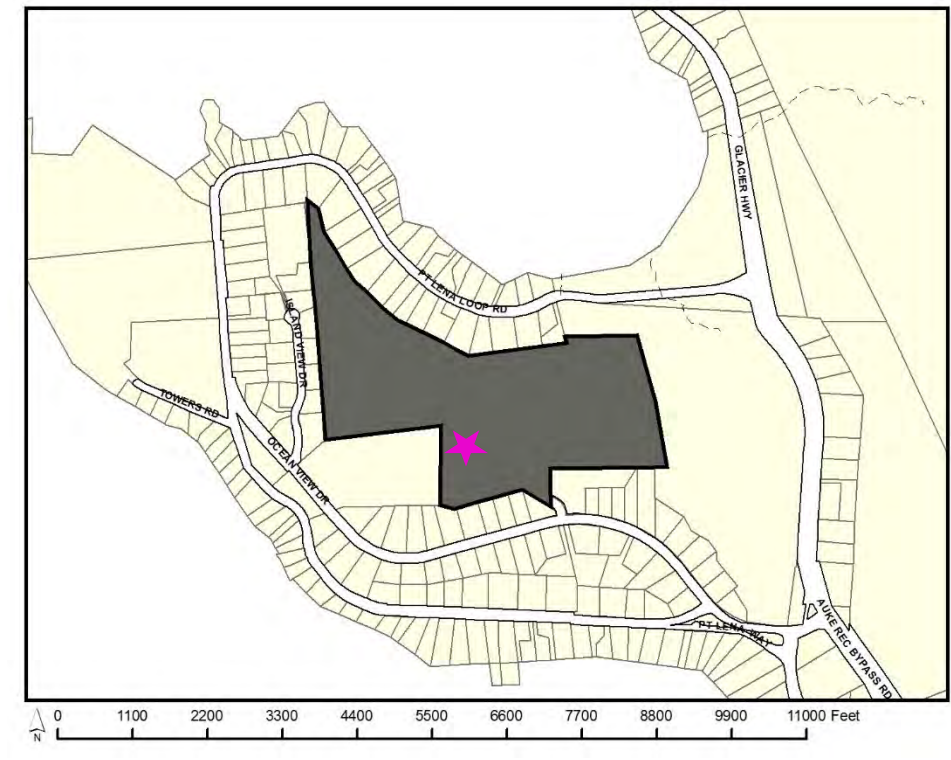
Existing Land Use: Water reservoir

Surrounding Land Use: North – Residential

Planning Commission
 File No.: WCF 2019 0009
 March 16, 2020
 Page 2 of 11

South – Residential
 East – Vacant
 West – Residential

VICINITY MAP



ATTACHMENTS

Attachment A Application
 Attachment B Agency Comments
 Attachment C Public Comments

PROJECT DESCRIPTION

The applicant requests a Special Use Permit (SUP) for the development of a Wireless Communication Facility (WCF) to construct a 155-foot tall, freestanding lattice tower with lightening rod. The tower is 150 feet tall, and the rod adds 5 feet. There will be no antenna adding to the height of the tower. The tower is proposed to be unlit, and will occupy a 10,000 square foot site on land leased from CBJ to the applicant. The purpose of the tower is support multiple wireless carriers. CBJ 49.65.930(e)(1) requires WCFs between 121 feet and 150 feet to accommodate no fewer than five antenna arrays.

Planning Commission
File No.: WCF 2019 0009
March 16, 2020
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A Special Use Permit (SUP) is required for WCF that do not fall under the categories of *CBJ 49.65.950, Table 1*. This application requires an SUP for a new non-concealed tower greater than 120 feet in height in the D3 zone.

This staff report analyzes the proposed tower's compliance with Title 49. Staff recommends that the tower be constructed as a monopole, rather than lattice-style, and painted matte dark green to minimize visual impacts, and be reduced to a lesser height, as the applicant has not adequately demonstrated the need for a height of 150 feet. The following analysis evaluates the impacts resulting from the applicant's proposal.

AGENCY REVIEW

Staff requested review from the CBJ Assessor's Office, Building Division, Capital City Fire and Rescue, Engineering and Public Works Department, Lands and Resources Division, and the Juneau International Airport (JIA).

Building Division, and Engineering and Public Works expressed that they had no concerns. JIA noted that the applicant will need to file FAA 7460. This form must be filed at least 45 days prior to the start date of proposed construction. Staff did not receive other comments. (Attachment B)

PUBLIC COMMENT

Several public comments expressed concerns about 5G service being detrimental to health. Staff's review takes into account whether the applicant meets regulatory standards set by the Federal Communication Commission (FCC). (Attachment C)

ANALYSIS

The purpose of Specified Use Provisions Article IX. Wireless Communication Facilities (CBJ 49.65.900), is to establish reasonable regulations for the placement, construction and modification of wireless communication facilities (WCF) consistent with the Telecommunications Act of 1996 and applicable law and to:

- (a) Promote the health, safety, and general welfare of the public and the City and Borough;
- (b) Minimize the impacts of WCFs by establishing standards for siting, design and screening and by requiring consistency with the City and Borough's wireless telecommunications master plan;
- (c) Encourage the collocation of antennas on existing structures thereby minimizing new visual impacts and reducing the need for new towers;
- (d) Maintain the natural surroundings and character of the City and Borough;

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- (e) Preserve neighborhood harmony and scenic viewsheds and corridors as indicated in the Comprehensive Plan of the City and Borough of Juneau;
- (f) Accommodate the growing need and demand for wireless communications services;
- (g) Respond to the policies embodied in the Telecommunications Act of 1996 in such a manner as not to unreasonably discriminate between providers of functionally equivalent personal wireless services or to prohibit or have the effect of prohibiting personal wireless services; and
- (h) Respond to the policies embodied in Section 6409(a) of the Spectrum Act (P.L. 112-96).

Because the Director has found that the project is not an Eligible Facility Request per CBJ 49.65.950 Table 1, the project must demonstrate compliance with the requirements of a Special Use Permit.

Project Site / Zoning District – The project site is a 64.34 acre parcel located in a D3 zoning district. The site currently accommodates a 44-foot tall water reservoir. The water reservoir is 90 feet from the location of the proposed tower. The applicant states in the narrative that the site is industrial because the water tower is located on the same tract of land. This is a misrepresentation of the site. The site is D3, and almost entirely vegetated with evergreen trees.

There are two towers on Point Lena, within 680 – 2000 feet from the proposed tower. According to the Wireless Telecommunications Master Plan, Site 2 at 17099 Point Lena Loop Road hosts a 220-foot lattice tower owned by AT&T and Alascom. Site 3 at 16800 Point Lena Loop Road has an 80-foot lattice tower owned by the Federal Aviation Administration (FAA). The applicant reasons that collocation onto private towers will not be cost effective or support desired performance. The applicant has not provided documentation to demonstrate the cost effectiveness, nor if cost effectiveness should be considered in allowing a new tower, rather than requiring collocation. The FAA prohibits private carriers from collocating onto its facilities. The proposed location is advantageous because of existing road access and power. (Attachment A, pg. 144-146)

Project Design –

- Security and signage: There will be a chain link fence with barbed wire and a locking gate. The chain link is six feet in height, and the barbed wire above the fence adds one foot in height. The fence will form a 60-foot by 60-foot square around the tower. (Attachment A, pg. 128) Signage cautioning entry on premises and posting contact information will be affixed onto the fence. (Attachment A, pg. 31)
- Lighting: The FAA does not require lighting for the tower. (Attachment A, pg. 106-110)

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- Design criteria: The tower without the lightening rod is 150-feet tall. *CBJ 49.65.930(e)(1)* requires WCFs between 121 feet and 150 to accommodate no fewer than five antenna arrays. The proposed tower will accommodate five antenna arrays. Staff recommends that, if a height of 150 feet is approved, more than five antenna arrays must be accommodated. (Attachment A, pg. 129)
- Setbacks: The tower has a breakpoint that is 70 feet from the top of the tower. Per *CBJ 49.65.930(f)(2)*, if the tower has been constructed with a breakpoint, the minimum setback distance shall be equal to 110 percent of the distance from the top of the structure to the breakpoint level of the structure or the minimum yard setback requirements, whichever is greater. A breakpoint is defined as the engineering design of a monopole wherein a specified point on the monopole is designed to be at least five percent more susceptible to failure than any other point along the monopole so that in the event of structural failure, the failure will occur at the breakpoint rather than at the base plate, anchor bolts, or any other point on the monopole.

Given the location of the breakpoint, the minimum setback is 77 feet. The site plan shows the tower 113 feet from the nearest property line and more than 350 feet from the next nearest property line. (Attachment A, pg. 131)

As previously mentioned, the water reservoir is 90 feet from the location of the proposed tower. Front, side, and rear setbacks for the D3 zoning district are 25 feet, 10 feet, and 25 feet respectively. These setbacks do not apply to the WCF, which is subject to greater setback requirements.

- Structural Assessment: A professional engineer certifies all construction drawings for the proposed tower. Another professional engineer has confirmed that subsurface conditions are suitable for the tower foundation. (Attachment A, pg. 32, 90-105)
- Visual Impact Assessment:
 - Zone of Visibility Map: The application includes a zone of visibility map that meets the requirements of *CBJ 49.65.970(c)(2)(B)(i)*. The proposed site for the tower does not obstruct view sheds identified in the 2013 Comprehensive Plan. (Attachment A, pg. 112)
 - Siting for Least Adverse Impact: As proposed, the development does not fully meet the requirements of *CBJ 49.65.930(2)(B)(i)* and minimize adverse effects on the surrounding landscape. Dense vegetation surrounds the tower location. The surrounding trees are approximately 60 feet to 90 feet tall. The proposed tower consists of a galvanized steel lattice that is distinguishable from the surrounding vegetation. Staff recommends a

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decrease in height, and a monopole-style tower in a matte dark green to blend better with the surrounding vegetation.

- Simulated Renderings of WCF: The applicant has included photo-simulations of the tower viewed from multiple vantage points used in the zone of visibility study. (Attachment A, pg. 132-136)
- Screening of Base: Existing coniferous trees and other vegetation provides screening. (Attachment A, pg. 114)
- Balloon Test: The balloon test meets the requirements of *CBJ 49.65.930(2)(D)*. The study shows six vantage points: 16371, 16491, and 16580 Ocean View Drive, (17009 Island View Drive, and 17690 and 17860 Point Lena Loop Road. Photos of the balloon from these positions show that the tower will have minimal visual impact. (Attachment A, pg. 113-122)
- Propagation Study/Radio Frequency Emissions Compliance Report: The submitted statement confirming that radio frequency emissions will comply with FCC standards is consistent with the requirements of *CBJ 49.65.960(d)*. (Attachment A, pg. 15-31) The propagation study shows increased service coverage. (Attachment A, pg. 136-143)

Traffic – Staff does not anticipate the proposed use to add traffic to the existing site, excluding the limited traffic during construction and periodic maintenance.

Parking and Circulation – The site has more than 60 square-feet of area for parking and is accessed from Merganser Road. Merganser Road is not accessible by the public. The FAA determines permission for using the road.

Noise – Staff does not anticipate that the tower will generate noise. The site is separated from residential homes by a dense vegetation.

Public Health or Safety – No evidence indicates that there are any public health or safety impacts from the proposed project. The applicant provided a Radio Frequency Emissions Compliance Report signed by a qualified professional, whose credentials are included.

Habitat – The proposal does not affect habitat protected by Title 49.

Property Value or Neighborhood Harmony – The proposed tower will not generate noise, traffic, or visual impact that is inconsistent with neighboring residential uses. The nearest dwelling is approximately 500-550 feet from the proposed tower.

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CONFORMITY WITH ADOPTED PLANS

2013 Comprehensive Plan:

POLICY 12.11. TO PLAN FOR AND TO ESTABLISH LAND USE CONTROLS ON WIRELESS COMMUNICATIONS FACILITIES IN A MANNER THAT IS APPROPRIATE FOR THE COMMUNITY AND WITHIN THE PARAMETERS ESTABLISHED BY FEDERAL LAW.

The subject property has a Comprehensive Land Use designation of Urban Low Density Residential (ULDR). WCFs are deemed appropriate to the zoning due to their low noise and traffic impact. While the tower is not similarly scaled to single-family residential development, the tower's isolation is anticipated to mitigate conflicts with neighborhood harmony. The ULDR land use designation is defined as follows:

These lands are characterized by urban or suburban residential lands with detached single-family units, duplex, cottage or bungalow housing, zero-lot-line dwelling units and manufactured homes on permanent foundations at densities of one to six units per acre. Any commercial development should be of a scale consistent with a single-family residential neighborhood, as regulated in the Table of Permissible Uses (CBJ 49.25.300).

Wireless Telecommunications Master Plan (WMP):

The WMP is a document that guides future development of wireless telecommunication facilities. The project generally complies with the Wireless Telecommunications Master Plan.

POLICY 1. TO ENSURE THE PROTECTION OF THE HEALTH AND SAFETY OF THE PUBLIC WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

POLICY 2. TO PROTECT AVIATION SAFETY BY COORDINATING WITH FEDERAL AVIATION ADMINISTRATION (FAA) WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

POLICY 3. TO PROTECT THE NATURAL ENVIRONMENT WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

POLICY 5. PROMOTE LAND USE EFFICIENCY WITH THE COLLOCATION OF WIRELESS COMMUNICATION FACILITIES TO EXISTING STRUCTURES.

POLICY 6. TO PRESERVE THE SCENIC VIEWSHEDS AND CORRIDORS LISTED IN THE 2013 COMPREHENSIVE PLAN WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

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FINDINGS

CBJ 49.65.970(d) and (e), Director's Review, states that the director shall review the application for completeness.

1. The director shall review the application for completeness.
2. Incomplete applications shall be rejected and the applicant notified in writing within 30 days of receipt of the initial submission. If rejected, the director's decision shall identify the deficiencies in the application, which, if cured, would make the application complete.
3. Once an application is deemed complete, the director shall schedule it for a hearing before the planning commission, and shall give notice to the applicant and the public in accordance with subsection (e).

CBJ 49.65.970(f), Planning Commission Determination, states that the Planning Commission is authorized to review, analyze, evaluate and make decisions with respect to reviewing special use permits for WCFs.

1. The Planning Commission may impose any conditions on a special use permit:
 - a. Required to ensure compliance with the design criteria specified in section 49.65.930; and
 - b. That are consistent with the purposes of this article, which may include conditions related to the aesthetic effect of the WCF and compatibility with the surrounding area. Factors relevant to aesthetic effects are: the protection of the view in sensitive or particularly scenic areas, scenic corridors/viewsheds identified in the Comprehensive Plan of the City and Borough of Juneau and in the historic district; the concentration of WCFs in the proposed area; and whether the height, design, placement or other characteristics of the proposed facility could be modified to have a less intrusive visual impact.
2. The Planning Commission may deny an application for any of the following reasons:
 - a. Conflict with safety and safety-related codes and requirements;
 - b. Conflict with the purpose of a specific zoning, overlay, or land use designation;
 - c. Presence of another approved WCF or WCF application within the geographic search area that is available to the applicant;
 - d. The proposed site is on, or eligible to be on, the National Register of Historic Places;
 - e. The proposed site is in an area commonly valued by the community as a whole for its natural or scenic properties.

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- f. For a proposed freestanding tower, the applicant fails to demonstrate that no existing structure or tower can accommodate the applicant's proposed use without increasing the height of the existing tower or structure or otherwise creating a greater visual impact; or that use of such existing facilities is technically infeasible or commercially impracticable; and
 - g. Conflicts with the provisions of this article.
3. The Planning Commission shall deny any application for WCF in the following locations:
 - a. State or local wildlife refuges;
 - b. In any area designated as a public park, unless screened so as to minimize visual and noise impacts, and as long as public use will not be disrupted; and
 - c. In any area designated as a scenic corridor/viewshed identified in the Comprehensive Plan of the City and Borough of Juneau.
 - d. In any area that fully or partially obstructs the view of the Mendenhall Glacier from the waterfront roadway from the North Douglas boat launch facility to False Outer Point.
 4. The Planning Commission shall condition a permit on a requirement to construct the WCF within a reasonable period of time, which may not exceed 18 months.

Per CBJ 49.65.970(d) and (f), Review of Director's and Commission's Determinations, the Director makes the following findings on the proposed development:

1. *Is the application for the requested special use permit complete?*

Yes. The application contains the information necessary to conduct a full review of the proposed wireless communications facility. The proposal consists of a narrative, visual impact assessment, confirmation that the facility will serve a necessary function for the provider's network, and confirmation that emitted electromagnetic radiation will meet FCC requirements. The proposal was preceded by a pre-application meeting, summarized in PAC2019 0035. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.65.900.

2. *Is the proposed project consistent with safety and safety-related codes and requirements?*

Yes. The permit does not conflict with safety and safety-related codes and requirements.

3. *Is the proposed use appropriate according to the Table of Permissible Uses and other specific zoning, overlay, or land use designation?*

Yes. The requested permit is appropriate according to the Table of Permissible Uses and

Planning Commission
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 March 16, 2020
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ARTICLE IX - Wireless Communication Facilities.

4. *Is the presence of another approved WCF or WCF application within the geographic search area that is available to the applicant?*

Yes. There are two towers in Point Lena. According to the Wireless Telecommunications Master Plan, Site 2 at 17099 Point Lena Loop Road hosts a 220-foot lattice tower owned by AT&T and Alascom. Site 3 at 16800 Point Lena Loop Road has an 80-foot lattice tower owned by the FAA.

5. *Was Public Notice of the Planning Commission consideration in compliance with CBJ 49.65.970(e)?*

Yes. Public notice of this project was provided in the March 13, 2020 and March 22, 2020 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 1500 feet of the subject parcel as well as all neighborhood associations. Three public notice signs were posted on March 10, 2020, one at the end of Merganser Road nearest Point Lena Loop Road, and one at each intersection of Glacier Highway and Point Lena Loop Road. The signs were posted to be visible from the public right-of-way.

6. *Is the proposed site on, or eligible to be on, the National Register of Historic Places?*

No. The development site does not meet the National Register of Historic Places criteria for evaluation.

7. *Is the proposed site in an area commonly valued by the community as a whole for its natural or scenic properties?*

No. The development site is located in a residential neighborhood.

8. *For a proposed freestanding tower, did the applicant demonstrate that no existing structure or tower can accommodate the applicant's proposed use without increasing the height of the existing tower or structure or otherwise creating a greater visual impact; or that use of such existing facilities is technically infeasible or commercially impracticable?*

No. If staff's recommendations on reduced height, color, and type of tower are adopted, the tower's appearance may mitigate visual impact while meeting the FAA's minimum requirements.

9. *Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?*

Yes. The development is in general conformity with Title 49, the 2013 Comprehensive Plan, and the Wireless Telecommunications Master Plan, if staff's recommendations on reduced height, color and type of tower are adopted.

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10. Is the proposed development located on State or local wildlife refuges?

No. The proposed development is located on CBJ property in the D3 zoning district.

11. Is the proposed development in any area designated as a public park, unless screened so as to minimize visual and noise impacts, and as long as public use will not be disrupted?

No. The proposed development is located on CBJ property in the D3 zoning district.

12. Is the development in any area designated as a scenic corridor/viewshed identified in the Comprehensive Plan of the City and Borough of Juneau?

No. The proposed development is not located any area designated as a scenic corridor or viewshed.

13. Is the development in any area that fully or partially obstructs the view of the Mendenhall Glacier from the waterfront roadway from the North Douglas boat launch facility to False Outer Point?

No. The proposed development would not visually impact views of the Mendenhall Glacier.

The Planning Commission may deny a Special Use Permit according to the process pursuant to 49.65.970(f)(2). The Planning Commission shall deny a Special Use Permit for a project listed in areas of the borough, as indicated in 49.65.970(f)(3). The Commission cannot deny the permit outside of those listed items.

RECOMMENDATION

Staff recommends the Planning Commission adopt the Director's analysis and findings and approve the requested Special Use Permit for a WCF tower with the following conditions:

1. The WCF must be constructed as a monopole;
2. The WCF must be matte dark green in color;
3. The WCF cannot have lighting, and if in the future the FAA requires lighting, a modification to the Special Use permit must be approved by the Planning Commission;
4. The site security and required signage must be installed and maintained according to the plan;
5. The WCF must accommodate more than five (5) antenna arrays.

WCF 19-09

Bid 19-427.

DEVELOPMENT PERMIT APPLICATION

Project Number	CITY and BOROUGH of JUNEAU	Date Received:
Project Name (City Staff to Assign Name)		

INFORMATION	Project Description <i>Vertical Bridge to construct new 150' communications tower at 16150 Merganser Rd at Lena Pt. Construction to include land clearing + excavation with backfill materials.</i>		
	PROPERTY LOCATION		
	Street Address <i>16150 Merganser Rd</i>		City/Zip <i>Juneau, AK 99801</i>
	Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot) <i>South Lena BL E</i>		
PROJECT / APPLICANT	Assessor's Parcel Number(s) <i>8B3301670090</i>		
	LANDOWNER/ LESSEE		
	Property Owner's Name <i>PT Lands</i>		Contact Person: <i>Dan</i>
	Mailing Address <i>155 S Seward St</i>		Work Phone: <i>0224</i>
	E-mail Address <i>dan.bleidorn@juneau.org</i>		Home Phone: Fax Number:
	Other Contact Phone Number(s):		
	LANDOWNER/ LESSEE CONSENT ****Required for Planning Permits, not needed on Building/ Engineering Permits****		
	I am (we are) the owner(s) or lessee(s) of the property subject to this application and I (we) consent as follows: A This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission B I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application		
	X <i>[Signature]</i> Landowner/Lessee Signature		<i>7/23/11</i> Date
	X _____ Landowner/Lessee Signature		_____ Date
NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.			
APPLICANT If the same as OWNER, write "SAME" and sign and date at X below			
Applicant's Name <i>Vertical Bridge, LLC</i>		Contact Person: <i>Gary Brekke</i>	
Mailing Address <i>6510 Beechcraft Rd. Wasilla, AK 99654</i>		Home Phone: Fax Number:	
E-mail Address <i>aa51lc15@gmail.com</i>		Other Contact Phone Number(s): <i>516-400-4094</i> <i>907 331 8311</i>	
X _____ Applicant's Signature		_____ Date of Application	

OFFICE USE ONLY BELOW THIS LINE

STAFF APPROVALS	☒	Permit Type	**SIGN	Date Received	Application Number(s)
		Building/Grading Permit			
		City/State Project Review and City Land Action			
		Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)			
		Mining Case (Small, Large, Rural, Extraction, Exploration)			
		Sign Approval (If more than one, fill in all applicable permit #'s)			
		Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)			
		Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)			
		Variance Case (De Minimis and all other Variance case types)			
		Wetlands Permits			
	Zone Change Application				
	Other (Describe)				
Comments: _____					Permit Intake Initials <i>AL</i>

NOTE: DEVELOPMENT PERMIT APPLICATION FORMS MUST ACCOMPANY ALL OTHER COMMUNITY DEVELOPMENT DEPARTMENT APPLICATIONS



WIRELESS COMMUNICATION FACILITY APPLICATION

See reverse side for more information regarding the permitting process and the materials required for a complete application.

NOTE: Must be accompanied by a DEVELOPMENT PERMIT APPLICATION form.

To be completed by Applicant	PROJECT SUMMARY: Vertical Bridge, LLC of Boca Raton, FL proposes to construct a new 150' communications tower at 16150 Merganser Rd at Lena Pt. The construction will include land clearing and excavation with backfill materials. The site will have a locking gate and security fencing and will be posted with required identification and contact information signage	
	ZONING DISTRICT: D3, South Lena BL E, 8B3301070090	
	PROPOSED WCF TYPE ☐ Colocation ☒ New Tower ☐ Attached WCF ☐ Eligible Facility Request	
	LIGHTING Proposed ☐ YES (this application requires all items under 49.65.950 and 49.65.970, it will go through the Special Use Permit process) ☒ NO Existing ☐ YES ☒ NO	
	STRUCTURE HEIGHT (in feet) 150'	
	Does the requested facility meet the criteria listed in Table 1 (CBJ 49.65.950(a))? ☐ Yes Does the facility qualify as a substantial Change per 49.65.950(b)(1-6)? ☐ Yes – Submit items under 49.65.960 with your application ☐ No – this application meets Table 1 (49.65.950(a)) with no substantial changes ☒ No – Submit items under 49.65.950 and 49.65.970. Proceed with the Special Use Permit process.	
ALL REQUIRED MATERIALS ATTACHED ☒ Complete submittal checklist		

-----DEPARTMENT USE ONLY BELOW THIS LINE-----

REQUIRED PERMIT Building Permit Project falls under Table 1 (49.65.950) Special Use Permit Project <i>does not</i> fall under Table 1																													
REVIEW APPROVALS <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;">Initials</th> <th style="width: 20%; text-align: center;">Date</th> </tr> </thead> <tbody> <tr> <td>Building _____</td> <td></td> <td></td> </tr> <tr> <td>Engineering _____</td> <td></td> <td></td> </tr> <tr> <td>Planning _____</td> <td></td> <td></td> </tr> </tbody> </table>						Initials	Date	Building _____			Engineering _____			Planning _____															
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Total	\$ _____																												

This form and all documents associated with it are public record once submitted.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

For assistance filling out this form, contact the Permit Center at 586-0770.

Case Number	Date Received 7/25/19
-------------	--



WIRELESS COMMUNICATION FACILITY CHECKLIST

Juneau Permit Center

• 230 S. Franklin Street

• (907) 586-0770

This checklist is required to complete an application for a Wireless Communication Facility (WCF) permit. There are two types of WCF permits. See below.

- A. WCF qualifies as Eligible Facility Request (Streamlined Review)
 - a. Submit items 1-12
- B. WCF requires Special Use permit
 - a. Submit items 2-21

* 49.65.930 (e)
ambanno
≥ 6 arrays?

* (i) breakpoint?

Required Items (please label each item with the corresponding number on plans)

- ☒ 1) Completed Building Permit Application
- ☒ 2) Completed WCF Application
- ☐ 3) Fees (contact the Permit Center at (907) 586-0770 to determine amount)
- ☒ 4) A statement certifying that radio frequency emissions from the antenna array(s), both individually and cumulatively, will comply with FCC standards (considering any other WCF located on or immediately adjacent to the proposed WCF). This statement must be signed by a qualified person and accompanied with a statement of that person's professional qualifications
- ☒ 5) Site address and CBJ Parcel Identification Number (tax ID number)
- ☒ 6) Site size and dimensions
- ☒ 7) Site plan showing all existing and proposed structures, buildings, fences (their height) and landscaping
- ☒ 8) Proposed WCF type and design, lighting, height above grade, material, number of, color, any accessory structures, and number of collocations it can accommodate, if applicable
- ☒ 9) Certification that proposal complies with applicable laws pertaining to service offered
- ☒ 10) The following documents from a licensed Alaska Professional Engineer:
 - ☒ Signed and stamped letter indicating the proposed WCF will be constructed, repaired, modified or restored in compliance with all current applicable technical, safety, and safety-related laws of the CBJ, State of Alaska, and Federal government
 - ☒ Signed and stamped letter indicating the proposed WCF is in compliance with industry practices of the National Association of Tower Erectors
- ☒ 11) Letter indicating compliance with FAA regulations in 14 CFR Part 77 (if applicable)
- ☒ 12) Location of any dwelling(s) within distance of tower equal to the height of tower (if applicable), disclosure of any agreements which limit and/or preclude the proposed WCF from being shared with new WCFs

* color?

WIRELESS COMMUNICATION FACILITY CHECKLIST

- ☒ 13) Signed and stamped letter from a licensed Alaska Professional Engineer indicating the foundation and attachments meet EIA/TIA 222 G and local building code structure requirements for loads, including wind, snow, and ice (this shall also address the total number of required accommodated collocations, when applicable)

- ☐ 14) A narrative describing compliance with subsections under 49.65.930:

- See construction plans*
- | | |
|---|--|
| ☒ Concealed & Non-concealed antenna | ☐ Affects to mapped |
| ☒ Security | ☒ Viewsheds |
| ☒ Signage | ☐ WCF Master Plan |
| ☒ Lighting | ☐ Structural Assessment |
| ☒ Design Criteria | |
| ☒ Setbacks | |

- ☒ 15) Visual Impact Study consisting of:

Zone of Visibility Map

Analysis demonstrating how the proposed WCF will be sited to be of least adverse impact on environment and its character while meeting applicant's network objectives

Illustration showing before and after views of proposed WCF from roadways, parks, public lands, historic districts and any other location where the site is visible to many people

Description of visual impact

Narrative or drawing describing how the base of the tower and accessory structures will be screened from view

- NA pics shown web*
☒ 16) For lighted towers:

Description of type of light and how it complies with 49.65.930(d)
(if required by FAA, the minimum intensity allowed by FAA)

How it will not project directly onto adjacent surrounding property
(use of buffers, louvers, etc.)

- ☐ 17) Narrative indicating that the design height is the minimum necessary for effective functioning of provider's network

- ☒ 18) Visual impact assessment according to 49.65.970(c)(2)(B)

- ☒ 19) Balloon Test according to 49.65.970(c)(2)(D)

- ☒ 20) Propagation study



BUILDING PERMIT APPLICATION

NOTE: THIS IS NOT A BUILDING PERMIT

NOTE: "Building Permit" is a generic term which includes Building Safety Inspections, Grading Permits, and permits for Electrical, Plumbing and Mechanical work.

Case No: **BLD20190427**

Case Description: New Tower and compound.

Site Address: **16150 MERGANSER RD**

Check No. of Existing Dwelling Units:

Parcel No: 8B3301070090

No. of New Dwelling Units:

Legal Description: SOUTH LENA BL E

No. of Removed Dwelling Units:

Applicant : VERTICAL BRIDGE
6510 BEECHCRAFT RD
WASILLA AK 99654

PH1

331-8311

Owner: CITY AND BOROUGH OF JUNEAU
LANDS AND RESOURCES
155 S SEWARD ST
JUNEAU AK 99801

Contractor: VERTICAL BRIDGE
6510 BEECHCRAFT RD
WASILLA AK 99654

PH: _____ FAX: _____

Valuation for Permit Fee Calculations:

S.F. Type

Rate

Amount

400,000.00

Total Valuation:

\$400,000.00

Associated Cases:

None.

Parcel Tags:

Notes and Conditions:

Applicant's Signature

(Owner, Contractor or Authorized Agent)

Date

Staff Acceptance

I hereby certify that I have read and examined this application and know the same to be true and correct. I further certify that all provisions of laws and ordinances governing this type of work will be complied with whether specified herein or not. I understand that the granting of a permit does not presume to give authority to violate or cancel the provisions of any other federal, state or local law regulating construction or the performance of construction.

Staff Review Sheet

Planner

Permit Intake Initials: _____

FIRE ZONE ENG WAT SEW ARCH STRUC PLUM MECH ELEC ACCESS SPEC/INSP

7/18/2019

Case No: **BLD20190427**

Site Address: 16150 MERGANSER RD

Parcel No: 8B3301070090

Desc: New Tower and compound.

Commercial _____ REP _____ New Dwelling Units: _____ 0
 FCC Code: _____ 329 _____ Existing Dwelling Units: _____ 0
 Type of Construction: _____ VB _____ Occupancy Class: _____
 Sprinkler Substitute for Type A Construction: YES NO
 Sprinkler System: FULL PARTIAL NONE Required: YES NO
 Alarm System: FULL PARTIAL NONE Required: YES NO
 Code Edition: _____ Code Review by: _____ Date: _____

Valuation for Permit Fee Calculations:

S.F.	Type	Rate	Amount
			400,000.00
Total Valuation:			\$400,000.00

LAND USE

ZONE/UNITS D3 /
 WETLAND _____
 FLOOD ELEV _____
 FIRM ZONE _____
 FIRM MAP _____
 LOT SIZE 2,802,650 SF
 64.3 ACRES

SETBACKS

Front 25
 Rear 25
 Side 10
 Other _____

PARKING

ANADROMOUS

EAGLES NEST

Coverage Permissible/Conditional

HEIGHT Permissible/Accessory

VEGETATION

HAZARD

ENGINEERING/PUB WORKS

Dwelling Units: _____
 CITY WATER:
 Permit #: _____
 Use: _____
 Assessment: _____
 Service Size: _____
 Line Size: _____
 Meter Size: _____
 CITY SEWER:
 Permit #: _____
 Use: _____
 Assessment: _____
 Fixture Units: _____

LAND USE PERMITS

ADR Case #: _____

PLAN REVIEW APPROVALS

	Initials	Date
Fire	_____	_____
Zoning	_____	_____
Engineering	_____	_____
Water	_____	_____
Sewer	_____	_____
Architectural	_____	_____
Structural	_____	_____
Plumbing	_____	_____
Mechanical	_____	_____
Electrical	_____	_____
Access	_____	_____
Spcl Insp Form	_____	_____

APPROVED FOR ISSUANCE

Signature

Date

PERMIT ISSUANCE FEES

Grading Plan Review Fee	\$ _____
Adjusted Plan Review Fee	\$ _____
Fast Track Fee	\$ _____
Early Start Fee	\$ _____
Building Permit Fee	\$ _____
Water Assessment Fee	\$ _____
Sewer Assessment Fee	\$ _____
Sewer Inspection Fee	\$ _____
Grading Permit Fee	\$ _____
Driveway Permit Fee	\$ _____
Bond for	\$ _____
Other	\$ _____
Total Issuance Fees	\$ _____

PERMIT ISSUANCE PAYMENTS

Date	Receipt	Check	Amount
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____

Parcel Tags:

CONDITIONS AND HOLDS ON PERMIT: (Continued on back of sheet)

BUILDING PERMIT APPLICATION (Continued)

Page 2 of 2

TYPES OF INSPECTIONS

The Work Codes below contain standard inspections for the permit type. Circle additional inspections if required.

Work Codes -

B-Building Safety Inspection
 B-Commercial Addition
 B-Demolition
 B-Grading
 B-Manufactured Home Placement
 B-Oil/Gas Piping
 B-Porches/Decks/Carports
 B-Reroof
 B-Residential Electrical Service
 B-Single Family Dwelling
 E-ROW- Water & Sewer Service
 E-ROW- Water Main
 E-ROW-Driveway
 E-ROW-Fire Line
 E-ROW-Sewer Main
 E-ROW-Sewer Main & Service
 E-ROW-Sewer Service
 E-ROW-Water Main & Service
 E-ROW-Water Main & Sewer Main
 E-ROW-Water Service
 E-UTL- Sewer Main
 E-UTL-Fire Line
 E-UTL-Fire Line & Water Line
 E-UTL-Fire Line & Water Main
 E-UTL-OWTDS
 E-UTL-Sewer Line
 E-UTL-Pressure Sewer Line
 E-UTL-Sewer Line w/ Decomm
 E-UTL-Pressure Sewer Line w/Decomm
 E-UTL-Water Line
 E-UTL-Water Main

Building-

B-Appliance/Chimney
 B-Bonding
 B-Building Final
 B-Building Service
 B-Combustion Air
 B-Commercial Hoods
 B-Conduit & Raceway Systems
 B-Cross Connection Control
 B-Demo Electric Safed Off
 B-Demo Excavation Filled
 B-Demo Sewer/Water Capped
 B-Demolition Final
 B-Devices and Equipment
 B-Electrical Final
 B-Fire Dampers/Sprinklers
 B-Fire Separation/Rated Assemb
 B-Foundation, Forms & Reinf Steel
 B-Framing
 B-Grounding
 B-Heat Piping
 B-Insulation/Vapor Barrier
 B-Masonry
 B-Mechanical Final
 B-Meter Yoke
 B-Meter Yoke with Meter
 B-MH Foundation
 B-MH Utilities
 B-Mobile Home Final
 B-Plumbing Final
 B-Oil & Gas Piping/Tanks
 B-Rough Electrical
 B-Rough Plumbing
 B-Service/Panel
 B-Setback Verification
 B-Smoke/Carbon Monoxide Detec
 B-Special Inspection
 B-Specialty Piping
 B-Temporary Power
 B-Under Slab Utilities
 B-Ventilation/Plenums & Ducts
 B-Vents (Bath, Dryer, Kitchen, etc.)
 B-Yellow Tag Electrical
 B-Zoning Final

Enforcement -

ENF - Enforcement Status Check

Miscellaneous -

M-Site Visit

Fire -

F-Address and Required Signage
 F-Alarm Panel/Transmitter
 F-Alarm Zones
 F-Blasting on Individual Lot
 F-Childcare/Daycare Inspection
 F-Commercial Dev Land Clearing
 F-Courtesy Inspection
 F-Emergency Lighting Test
 F-Events in Mall Hallways
 F-Explosives Shipment-Unest Loc
 F-FDC Location
 F-Fire Extinguishers
 F-Fire Final
 F-Fire Hydrant Placement
 F-Fire Related Inspection
 F-Fixed Welding Inspection
 F-Flammable/Combustible Material
 F-Hazardous Material Storage
 F-Kitchen Hood Suppression Test
 F-Liquor License Renewal
 F-Open Burning Inspection
 F-Paint Booth Inspection
 F-Proper Sprinkler System Bracing
 F-Roof/Tar Kettle Inspection
 F-Special Event Structure
 F-Sprinkler Head Placement
 F-Sprinkler Hydrostatic Test
 F-Subdivision Land Clearing
 F-Subdivision/Road Blasting
 F-System Acceptance Test
 F-Temporary Welding Inspection
 F-Underground Fire Line Flush

Engineering -

E-Access to Curb Stop Valve
 E-ADEC on-site Sewer Final
 E-ADEC on-site Water Main Final
 E-Asbuilt Survey Required
 E-Bacteriological Test
 E-Bedding / Backfill
 E-Billing Authorization
 E-Blasting Verification
 E-Bore Flush
 E-CBJ Waste Water Department
 E-CBJ Water Department
 E-Chlorination Test
 E-Cleanouts
 E-Continuity
 E-Cross Connection Control
 E-Culvert
 E-Curb Box
 E-Curb Cut Final
 E-Curb Cut Reinforcement
 E-Curb Stop
 E-Depth
 E-Electrical Utility
 E-Final
 E-Fire Hydrants
 E-Fire Line Final
 E-General Engineering Final
 E-Grade
 E-Grading/Drainage
 E-Headwalls
 E-Installation of Access & Ports
 E-Installation of Insulation
 E-Location
 E-Manhole Tap
 E-Manholes - Sewer Main
 E-Material
 E-OWTDS Inspection
 E-Pressure Test
 E-Pump Ticket
 E-Residual / Free Chlorine
 E-Retaining Walls
 E-ROW - Final
 E-ROW Restoration
 E-Septic Decommission
 E-Sewer Connection
 E-Sewer Disconnect
 E-Sewer Final
 E-Sewer Main Final
 E-Sewer Service Tap
 E-Sewer System
 E-Sidewalk Final
 E-Sidewalk Reinforcement
 E-Size
 E-Soil
 E-State D.O.T. Approval
 E-Storm Drains
 E-Street Patch
 E-Streets
 E-Telephone Utility
 E-Thaw Waiver
 E-Thaw Wire
 E-Thrust Blocks
 E-Turn Water OFF
 E-Turn Water ON
 E-TV Cable
 E-Utility Ribbon
 E-Utility Trench
 E-Water Final
 E-Water Meter Required
 E-Water Meter/Yoke
 E-Water Service Tap
 E-Water System
 E-Water Tap
 E-Width

ADDITIONAL CONDITIONS AND HOLDS (STAFF)

6/27/2019

Gary R. Brekke
Alaska Aerial Survey, LLC
6510 Beechcraft Rd
Wasilla, AK 99654

Vertical Bridge, LLC Proposed Lena Pt Cell Tower

Vertical Bridge, LLC proposes to construct a new communication facility site at 16150 Merganser Rd on Lena Pt. The site location is adjacent to the CBJ owned water tank also located on Merganser drive and across the road from the existing FAA tower.

The proposed site is to be a 100' X 100' square. There will be a short access drive constructed from Merganser Rd. The space will require substantial clearing, excavation and appropriate fill material in order to make the location suitable for tower, shelter and equipment construction. This site will not be a storage area for any ancillary or other equipment.

There will be a chain-link security fence installed on the perimeter of the leased space with a locked security gate installed as well. This gate will also have installed on it the appropriate and required signage that details ownership, site id and contact information in case of emergency.

The site location was selected based on Network RF Engineering requirements as determined by the primary client of Vertical Bridge. The tower height of 150' and load design capability has been engineered to be sufficient to accommodate not only the primary client, but to also accommodate additional clients loads and future growth.

An FAA Determination has specified that no tower lighting of any kind is required.

The design of the tower, tower foundation and general facility meets all standard engineering requirements and is typical of communications facilities currently being constructed in Alaska and nationwide.

The tower was not designed with stealth technology because the natural vegetation adequately provides sufficient concealment as demonstrated in the Visual Impact and Balloon Test documentation. The tower height was selected for minimal visual impact while providing a structure for multiple other communications carriers to utilize.

All setbacks were determined during the surveying of the property and the site laid out to meet or exceed the setback requirements.

Kyle Paw

WCF19-09 Bid19-

From: "domadmin@juneau.org" <domadmin@juneau.org>
Sent: Thursday, June 27, 2019 10:20 AM
To: Permits
Subject: Online Permit Application

Categories: Kyle

Project Description**Permit Type**

Building Permit

Project Address or Legal Description

16150 Merganser Rd. South Lena BL E, 8B3301070090 Juneau, AK 99801

Describe Proposed Project in Detail

Vertical Bridge, LLC proposes to build a new communications facility at the above location. It is directly adjacent to the CBJ owned water tank on Merganser Rd. VB has applied to Lands for a leased space of 100' X 100'. The area is heavily wooded and will require clearing, excavation and backfill to make the site level and useable as a communications facility. The tower and site has been designed to accommodate multiple wireless carriers. The 100' X 100' space will have a chain link security fence surrounding it on the perimeter with a locked security access gate as well. The tower foundation is designed as a concrete slab below grade with integrated concrete pillars that the tower legs will attach to. All are reinforced with rebar. Per FAA Determination, no tower lighting is required.

Value of Work (Materials + Labor)

\$400,000

Applicant Information**Applicant Name**

Gary Brekke representing Vertical Bridge, LLC

Applicant Address

6510 Beechcraft Rd Wasilla, AK 99654,

Primary Phone

(907) 331-8311

Emailaasllc15@gmail.com**Owner Information****Owner's Name**

Vertical Bridge, LLC Vertical Bridge, LLC

Owner's Address

750 Park of Commerce Dr, Boca Raton, FL 33487

Owner Phone

(561) 406-4094

Contractor Information

$\$1000.00 + 2264.34$
 $+ 1471.84$
 APP 850
 Notice 150
 4736.18
 - Amy intake # of
 7/8/19 need DPA MAX
 NARRATIVE ANTENNA

Contractor Name (or Owner/Builder)

TBD

Joel Negrón

From: Matthew Grugan
Sent: Tuesday, July 9, 2019 12:19 PM
To: Joel Negrón
Cc: Matthew Grugan
Subject: Check Request - US-AK-5241 Lena Point - City of Juneau Alaska
Attachments: DPA.pdf; bldpermit_app.pdf; Tower Drgs_Lena Point_150'SST_PEDwgs_Sealed.pdf
Importance: High

Hi Joel,

I have a check request for the City & Borough of Juneau AK that I need help processing. Below is the information.

Fee for the total check request - **\$1,000.00**. Breakdown of which is as follows:

- \$850.00 for the application
- \$150.00 for sign notice (\$100.00 is refundable with an on time return of sign)

The check needs to be made out to: **City & Borough of Juneau, AK**.

Send check to:

Community Development Department, City & Borough of Juneau, AK

Attn: Kyle Paw - 907.586.0773

230 S. Franklin Street, 4th Floor Marine View Building

Thanks Joel!



(907) 586-0715
 CDD_Admin@juneau.org
 www.juneau.org/CDD
 155 S. Seward Street • Juneau, AK 99801

Lena Cell tower

Case Number: PAC20180075

Applicant: Gary Brekke

Property Owner: CBJ

Property Address: 161050 Merganser Rd

Parcel Code Number: 8B3301070090

Zoning: D3

Existing Land Use: vacant CBJ property

Conference Date: November 14, 2018

Report Issued: January 9, 2019

List of attendees

Note: Copies of the Pre-Application Conference Report will be emailed, instead of mailed, to participants who have provided their email address below.

Name	Title	Email address
Gary Brekke	Applicant	aasllc15@gmail.com
Jay Rasmusson	Construction contractor	JRasmusson@centerlinesolutions.com
Teri Camery	Senior Planner	teri.camery@juneau.org
Dan Bleidorn	Deputy Lands Manager	dan.bleidorn@juneau.org

Pre-Application Conference Final Report

Conference Summary

Questions/issues/agreements identified at the conference that weren't identified in the attached reports.

The following is a list of issues, comments and proposed actions, and requested technical submittal items that were discussed at the pre-application conference.

Planning Division:

1. **Zoning** – (check special districts – ADOD / Historic)

The proposed 150 foot tower, not concealed and without lighting, requires a City Project review, with the applicant as the CBJ Lands Division, because it is located on city land. In addition the project requires a Special Use Permit and must meet the requirements listed in CBJ Code 49.65.700, including a visual impact analysis and balloon test. The six points within a 1500 foot radius required for the visual impact analysis, as approved by the CDD Director, are included in the attached map with latitude/longitude measures. The City Project Review and Special Use Permit need to be reviewed and approved concurrently at the same Planning Commission meeting. Please allow three months review time after we receive a complete application.

2. **Setbacks** – n/a

3. **Height** – no height limit, 150' tower proposed

4. **Access** – Merganser Road

5. **Parking** – n/a

6. **Lot Coverage** – n/a

7. **Vegetative Coverage** – n/a

8. **Lighting** – no lighting proposed

9. **Noise** – n/a

10. **Flood** – the project site is not within a floodplain.

11. **Hazard/Mass Wasting/Avalanche/Hillside Endorsement** – n/a

12. **Wetlands** – n/a

13. **Habitat** — n/a

14. **Plat or Covenant Restrictions** – n/a

Building Division:

15. **Building** – A building permit may be required. The building division was not present at the meeting.

Fire Marshal:

16. **Fire Items/Access** – N/A

Other Applicable Agency Review:

17. We may need confirmation from FAA that no lighting is required.

Pre-Application Conference Final Report

List of required applications

Based upon the information submitted for pre-application review, the following list of applications must be submitted in order for the project to receive a thorough and speedy review.

1. Development Permit Application
2. Wireless Communication Facility Application and Checklist
3. Development Permit Application and City Project Review application from the CBJ Lands Division.

All forms are available on-line at <http://www.juneau.org/cddftp/landpermit.php>

Additional submittal requirements:

Submittal of additional information, given the specifics of the development proposal and site, are listed below. These items will be required in order for the application to be determined Counter Complete.

1. A copy of this pre-application conference report.
2. Analysis required in 49.65.970 including a narrative on design criteria, visual impact assessment, evidence that the facility meets minimum height requirements for functioning, balloon test, and propagation study.

Fee estimates

The preliminary plan review fees listed below can be found in the CBJ code section 49.85.

Based upon the project plan submitted for pre-application review, staff has attempted to provide an accurate estimate for the permits and permit fees which will be triggered by your proposal.

1. \$850 Special Use Permit fee plus sign fee and sign deposit

For informational handouts with submittal requirements for development applications, please visit our website at www.juneau.org/cdd.

Submit your completed application

You must submit your application(s) in person with payment to:

City/Borough of Juneau
Permit Center
230 S. Franklin Street,
Fourth Floor Marine View Center
Juneau, AK 99801

Phone: (907) 586-0715
Fax: (907) 586-4529
Web: www.juneau.org/cdd



2550 Denali Street, Suite 1000, Anchorage Alaska 99503

Proposed Lena Point FCC RF Exposure Limits & Issues

According to the Federal Communications Commission OET Bulletin 65, Edition 97-01:

"...out of an abundance of caution, the FCC requires that tower-mounted installations be evaluated if antennas are mounted lower than 10 meters above ground and the total power of all channels being used is over 1000 Watts effective radiated power..."

"For antennas mounted higher than 10 meters, measurement data for cellular facilities have indicated that ground-level power densities are typically hundreds to thousands of times below the new MPE (Maximum Permissible Exposure) limits."

<http://www.naic.edu/~phil/hardware/rfmonitor/fccGuidelines.pdf>

The following paragraphs are excerpts from the most recent FCC guidelines publication that explain the FCC's rationale in determining the MPE limits for general public exposure and for occupational/controlled exposure:

"In reaching its decision on adopting new guidelines, the Commission carefully considered the large number of comments submitted in its rule-making proceeding, and particularly those submitted by the U.S. Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), and other federal health and safety agencies. The new guidelines are based substantially on the recommendations of those agencies, and it is the Commission's belief that they represent a consensus view of the federal agencies responsible for matters relating to public safety and health."

"The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based are derived from criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 Watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The new MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist they do not arise from a fundamental change in the RF safety

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criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk."

"The new FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. As indicated by Table 1 {shown on page 3}, the most restrictive limits occur in the frequency range of 30-300 MHz where whole body absorption of RF energy by human beings is most efficient. At other frequencies whole-body absorption is less efficient, and, consequently, the MPE limits are less restrictive.

Note that if both of the criteria in the first paragraph are not met (i.e. antenna height less than 10 meters **and** the total power of all channels used is over 1000 Watts), a detailed engineering evaluation of the RF field strengths at or near the site is not required unless specifically requested. A detailed MPE study has been conducted of this proposed structure and equipment at the request of interested parties. A copy of the MPE report which includes a summary as well as calculation methodology for the cumulative emissions of all equipment to be installed and operated by GCI is included with this statement.

All wireless facilities to be installed by GCI will be in compliance with the above criteria as well as the MPE limits for the general public in areas for which the general population has access (i.e. behind site fences or gates). In addition, GCI will comply with all FCC requirements for signage which serves to both identify the site (FCC licensing) and the presence of RF radiation at the site.

Mark Schott

 6/5/19

Staff Engineer, GCI Wireless RF Engineering
GCI Wireless

Attachment A - Application

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100.000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100.000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

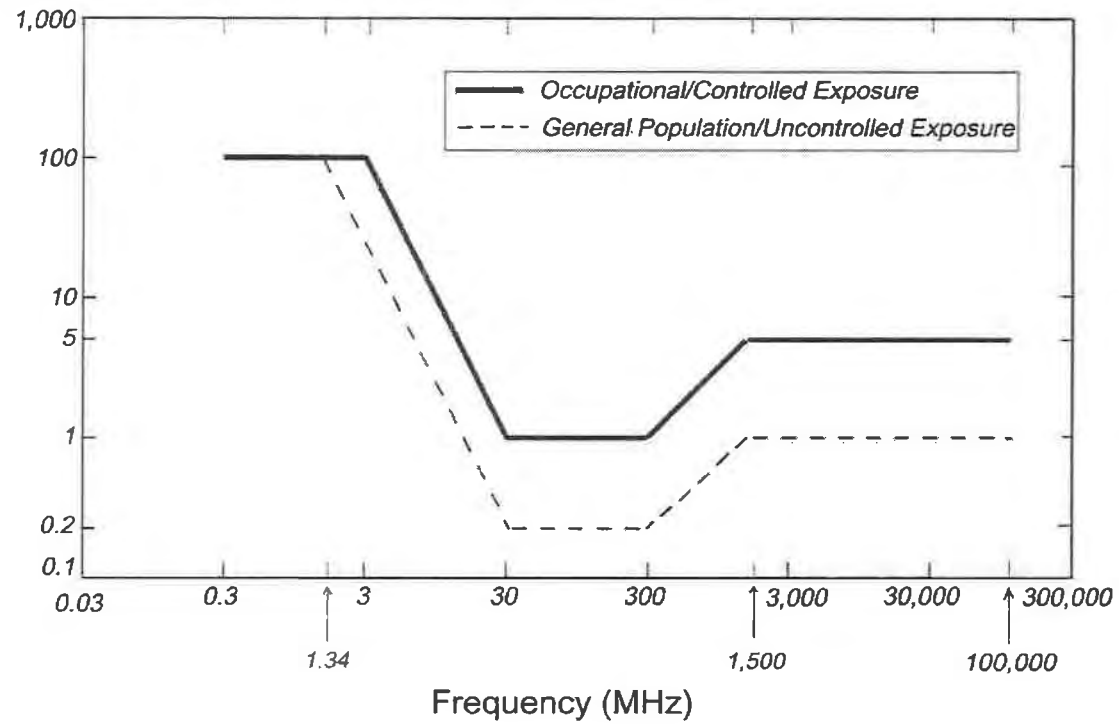
NOTE 1: **Occupational/controlled** limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2: **General population/uncontrolled** exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

 6/5/19

Attachment A - Application

Figure 1. *FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density*



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Lena Point New Tower (577) Radio Frequency (RF) Site Compliance Report



Lena Beach, Juneau, AK, USA

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6/5/19



Radio Frequency Exposure Report FCC Compliance Assessment

Site Specific Information			
Site Name	Lena Point New Tower (577)	Categorically Excluded?	No
Street Address	Lena Beach		
City, State, Zip	Juneau, AK, USA	5% Contributor to Areas Requiring Mitigation?	No
Multi-License Facility	N/A	GCI's Max % MPE (Predictive - Occupational)	0.00%
Structure Type	Tower	GCI's Max % MPE (Measured - Occupational)	N/A
Broadcast Equipment	No	Assessment Date	05/23/2019
# of Access Points		N/A	

Compliance Status	COMPLIANT AS DESIGNED
-------------------	------------------------------

☒	Worst-case RF power density levels are BELOW the MPE for General Population/Uncontrolled Environments in accessible areas.
☐	Worst-case RF power density levels are ABOVE the MPE for General Population/Uncontrolled Environments but BELOW the MPE for Occupational/Controlled environments.
☐	Worst-case RF power density levels are ABOVE the MPE for Occupational/Controlled Environments but BELOW 10x the MPE for Occupational/Controlled environments.
☐	Worst-case RF power density levels are ABOVE 10x the MPE for Occupational/Controlled environments.

<u>Compliance Requirements</u>	 Guidelines	 Notice	 Caution	 Warning	 NOC Information	 Barrier/Marker
	Access Point	☒ [1]	☐ [#]	☐ [#]	☐ [#]	☐ [#]
Alpha	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐
Beta	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐
Gamma	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐

Additional Compliance Requirements(s):			
Consultant Legal Name	GCB Services	Phone/Fax	(703) 564-2297
Address	8201 Greensboro Drive, Suite 300, McLean, VA 22102		

2 Confidential & proprietary material for authorized GCI personnel only. Use, disclosure or distribution of this material is not permitted to any unauthorized persons or third parties except by written agreement. | GCB

6/5/19

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1. Summary

GCI has contracted with GCB Services, an independent consulting firm, to conduct a Radio Frequency Exposure Compliance Assessment of the **Lena Point New Tower (577)** cell site. This report contains a detailed summary of the Radio Frequency environment as it relates to Federal Communications Commission (FCC) and Occupational Safety & Health Administration (OSHA) Rules and Regulations for all individuals.

This compliance assessment and report has been prepared by:

Preparer	
Name	Bipin Kumar
Title	RF Associate
Date	05/23/2019

This report utilizes the following **for predictive modeling of the ambient RF environment**:

MPE Modeling Program: ROOFMASTER 10.0.3.20.15

Required Modeling Assumptions: 100% Duty Cycle and Maximum Total Power Output.

Additional Modeling Assumptions:

For this report, in the simulation we have shown the maximum RF energy density considering worst-case analysis by assuming that all antennas are operating at full power all times.

In OET-65, the Cylindrical Model is presented as an approach to determine the spatially averaged power density in the near field directly in front of an antenna. In order to implement this model in all directions, RoofMaster™ utilizes the antenna manufacturer horizontal pattern data. Additionally, RoofMaster™ incorporates factors that reduce the power density by the inverse square of horizontal and vertical distance beyond the near field region.

For areas on the rooftop where MPE levels are more than 20% occupational, reports shows location of signage and barriers around restricted areas. These restricted areas should not be entered without taking proper steps towards reducing carrier power or tuning the site down. Personal accessing these restricted areas should carry a personal RF monitor.

For unknown antennas on the rooftop, GCB will use generic antennas listed as "Unknown". We will use max output power to model the site. Operating frequency information for unknown antenna will be selected such as to get per max antenna gain.

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2. Site Characteristics**a. Access information**

- No site visit was done. This report is for desktop study only.

All access points locked at time of assessment?

N/A

b. Structure

Description	GCI antennas are installed at the height of 145' & 150' from ground level. This site has three sectors (ALPHA, BETA and GAMMA) are mounted on Azimuth 0°, 90 °and 185° respectively.
Site Latitude (NAD 83)	58.394411°
Site Longitude (NAD 83)	-134.769039°
Overall Structure Height	N/A



C. Antenna Inventory

Ant #	Carrier Name	Freq.(MHz)	ERP(Watts)	Manufacturer	Model	(ft) X	(ft) Y	(ft) Z	Gain(dbd)	Azimuth	HBW	Downtilt	Length(m)
1	GCI	UMTS 1952.5	567	Kathrein	80010891	21.8	23.2	145	15.35	0	63	0	1.99
1	GCI	LTE 2127.5	2100	Kathrein	80010891	21.8	23.2	145	15.35	0	62	0	1.99
1	GCI	LTE 885	1120	Kathrein	80010891	21.8	23.2	145	14.35	0	64	0	1.99
2	GCI	UMTS 1952.5	567	Kathrein	80010891	23.4	1.6	145	15.35	90	63	0	1.99
2	GCI	LTE 2127.5	2100	Kathrein	80010891	23.4	1.6	145	15.35	90	62	0	1.99
2	GCI	LTE 885	1120	Kathrein	80010891	23.4	1.6	145	14.35	90	64	0	1.99
3	GCI	UMTS 1952.5	567	Kathrein	80010891	1.5	0.4	145	15.35	185	63	0	1.99
3	GCI	LTE 2127.5	2100	Kathrein	80010891	1.5	0.4	145	15.35	185	62	0	1.99
3	GCI	LTE 885	1120	Kathrein	80010891	1.5	0.4	145	14.35	185	64	0	1.99
4	GCI	CDMA 1967.5	245	Commscope	DB910CE-M	1.6	21.6	150	9.95	0	360	0	1.95

Ground level

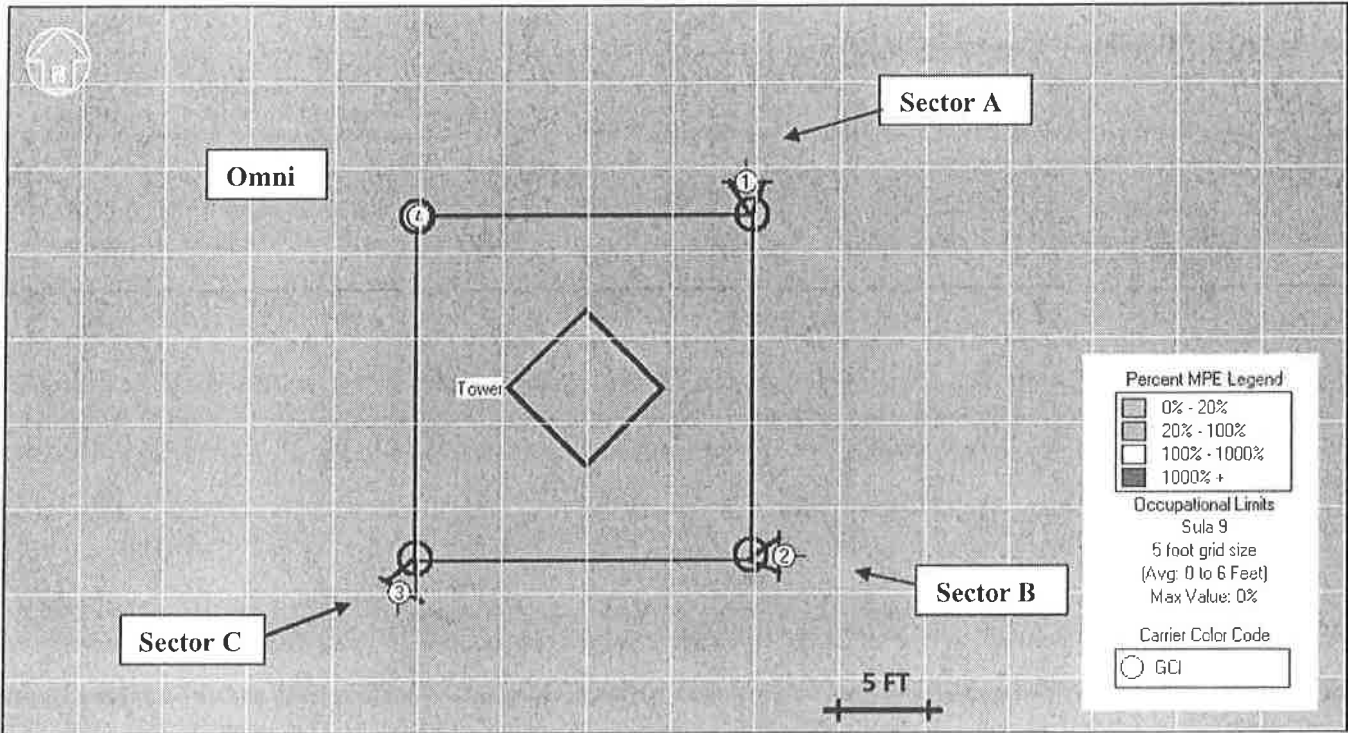
Z height = 145' & 150'

- a. The Centerline of the GCI antennas from ground level are 145' & 150'.

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6/5/19

3. Theoretical Study

a. Predictive Model: All Transmitters at Ground Level

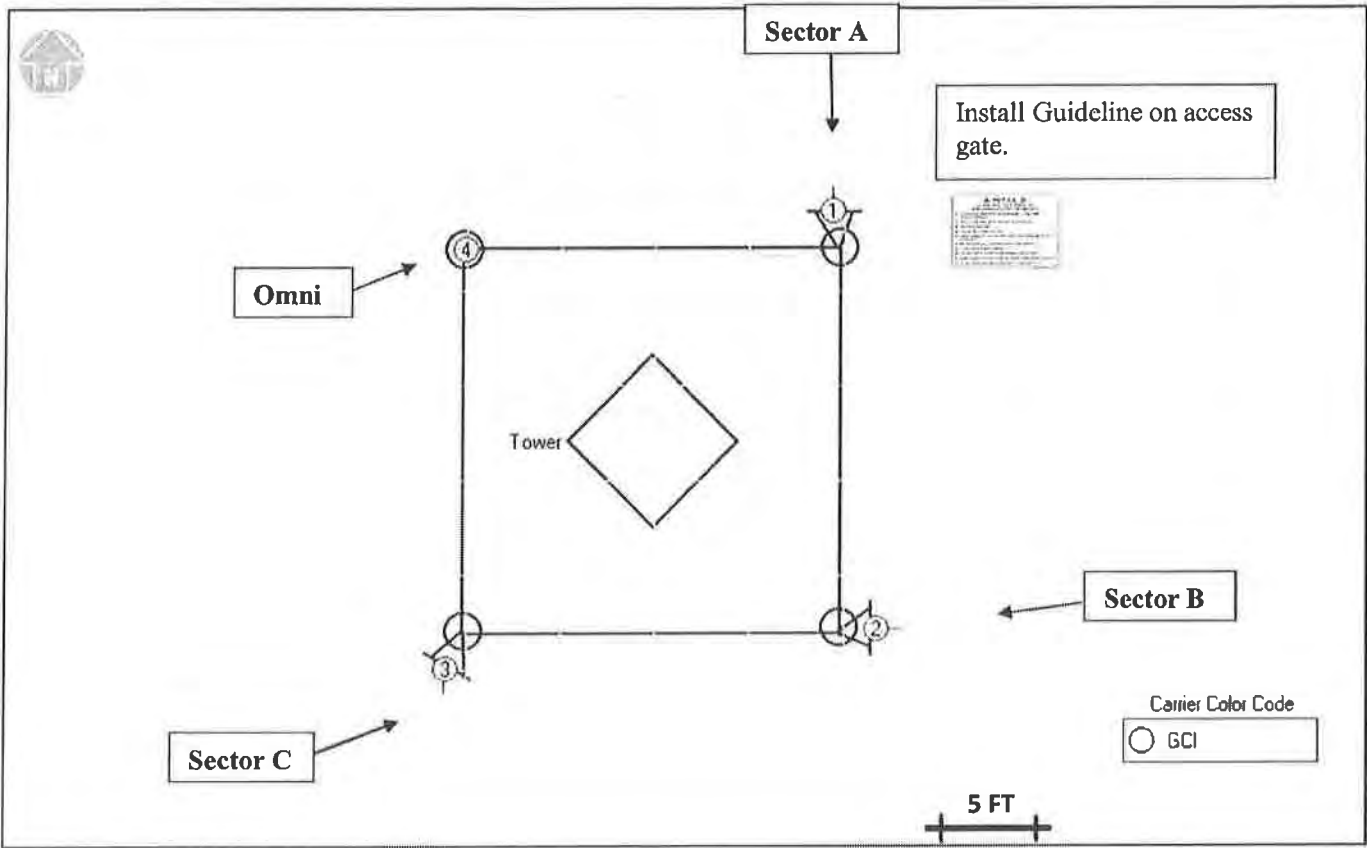


4. Conclusion from theoretical analysis and field visit**a. Narrative****Description of MPE-Limit Exceeding Areas:****Ground Level**

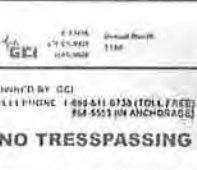
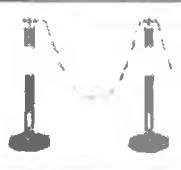
Simulation result based on the worst-case conditions for all existing antennas at this level show MPE 0.00% of the Occupational limits. No mitigation required.

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b. GCI Signage/Barrier Diagram



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GCI Signage Details						
	Guidelines	Notice	Caution	Warning	NOC Information	Barrier/Marker
Access Point	☒ [1]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐
Alpha	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐
Beta	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐
Gamma	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐

c. Signage/Barrier Installation Detail

Access

Install Guidelines signs on the access gate.

Sector Antennas

No Action required.

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5. Appendix A: RF Consultant Certifications**a. Preparer Certification**

I, Bipin Kumar, the preparer of this report, am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I am also fully aware of and familiar with the GCI Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

Bipin Kumar**b. Reviewer Certification**

I, Gyan Pandey, the reviewer and approved of this report, am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I am also fully aware of and familiar with the GCI Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

Gyan Pandey

6. Appendix B: Reference Information

a. FCC Rules & Regulations

The Federal Communications Commission (FCC) has established safety guidelines relating to RF exposure from cell sites. The FCC developed those standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The FCC explains that its standards "incorporate prudent margins of safety." The following represents explanations of the most applicable information:

Two Classifications for Exposure Limits

<u>Occupational</u> – Applies to situations in which persons are "exposed as a consequence of their <i>employment</i> " and are " <i>fully aware of the potential for exposure and can exercise control over their exposure</i> ".	<u>General Population</u> – Applies to situations in which persons are "exposed as a consequence of their employment <i>may not be made fully aware of the potential for exposure or cannot exercise control over their exposure</i> ". Generally speaking, those without significant and documented RF Safety & Awareness training would be in the General Population classification.
--	--

Environment Classification

<u>Controlled</u> – Applies to environments that are restricted or "controlled" in order to prevent access from members of the General Population classification.	<u>Uncontrolled</u> – Applies to environments that are unrestricted or "uncontrolled" that allow access from members of the General Population classification.
---	--

<i>Limits for Occupational/Controlled Exposure</i>		
Frequency	Power Density	Averaging Time
Range	(S)	$ E ^2$, $ H ^2$, or S
(MHz)	(mW/cm ²)	(minutes)
300-1500	$f/300$	6
1500-100,000	5	6
<i>Limits for General Population/Uncontrolled Exposure</i>		
Frequency	Power Density	Averaging Time
Range	(S)	$ E ^2$, $ H ^2$, or S
(MHz)	(mW/cm ²)	(minutes)
300-1500	$f/1500$	30
1500-100,000	1	30
<i>f = frequency in MHz</i>		

Significant Contribution to the RF Environment

Any carrier contributing an aggregate MPE percentage of 5 or more (to the applicable RF Environment Classification) is defined as a significant contributor. This means that if any area is determined to be out of compliance with FCC rules, all significant contributors are jointly responsible for correcting any deficiencies.

b. Occupational Safety and Health Administration (OSHA) Requirements

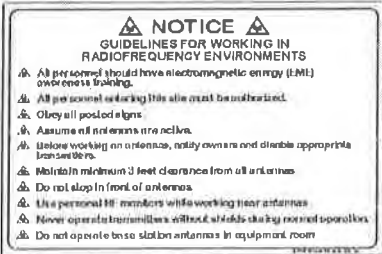
A formal adopter of FCC Standards, OSHA stipulates that those in the Occupational classification must complete training in the following: RF Safety, RF Awareness, and Utilization of Personal Protective Equipment. OSHA also provides options for Hazard Prevention and Control:

Hazard Prevention	Control
- Utilization of good equipment - Enact control of hazard areas - Limit exposures - Employ medical surveillance and accident response	- Employ Lockout/Tag out - Utilize personal alarms & protective clothing - Prevent access to hazardous locations - Develop or operate an administrative control program

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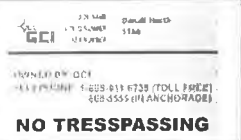
c. RF Signage

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines. These areas must be demarcated by conspicuously posted signage that identifies the potential exposure. Signage MUST be viewable regardless of the viewer's position.

GUIDELINES	NOTICE	CAUTION	WARNING
This sign will inform anyone of the basic precautions to follow when entering an area with transmitting radiofrequency equipment.	This sign indicates that RF emissions may exceed the FCC General Population MPE limit.	This sign indicates that RF emissions may exceed the FCC Occupational MPE limit.	This sign indicates that RF emissions may exceed at least 10x the FCC Occupational MPE limit.
 NOTICE GUIDELINES FOR WORKING IN RADIOFREQUENCY ENVIRONMENTS - All personnel should have electromagnetic energy (EME) awareness training. - All personnel entering this site must be authorized. - Obey all posted signs. - Assume all antennas are active. - Before working on antennas, notify owners and disable appropriate transmitters. - Maintain minimum 3 feet clearance from all antennas. - Do not stop in front of antennas. - Use personal RF monitors while working near antennas. - Never operate transmitters without shields shielding personnel. - Do not operate base station antennas in equipment room.	 NOTICE Radio frequency fields beyond this point may exceed the FCC general public exposure limit. Obey all posted signs and the guidelines for working in radio frequency environments.	 CAUTION Beyond this point, radio frequency fields at this site may exceed FCC rules for human exposure. For your safety, obey all posted signs and the guidelines for working in radio frequency environments.	 WARNING Beyond this point, radio frequency fields at this site exceed the FCC rules for human exposure. Please obey all posted signs and the guidelines for working in radio frequency environments.

INFORMATION SIGN

Information signs are used as a means to provide contact information for any questions or concerns. They will include specific cell site identification information and the GCI Wireless Network Operations Center phone number.



d. Physical Barriers

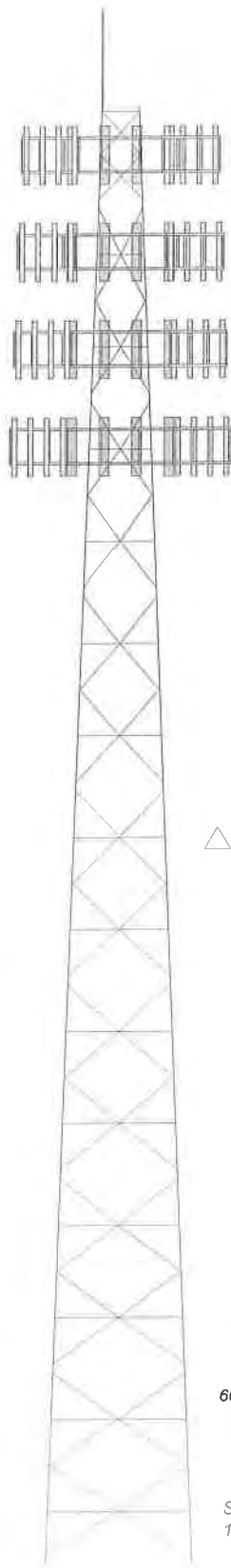
Physical barriers are control measures that require awareness and participation of personnel. Physical barriers are employed as an additional administration control to complement RF signage and physically demarcate an area in which RF exposure levels may exceed the FCC General Population limit.

e. Indicative Markers

Indicative markers are visible control measures that require awareness and participation of personnel, as they cannot physically prevent someone from entering an area of potential concern. Indicative markers are employed as an additional administration control to complement RF signage and visually demarcate an area in which RF exposure levels may exceed the FCC General Population limit. Example:

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Section	T1	T2	T3	T4	T5	T6	T7	T8	Height (ft)
Legs	SR 1 3/4	SR 2 1/2	SR 3 1/4	SR 3 3/4	SR 4 1/4	SR 4 1/2	SR 5		
Leg Grade					A529-50				
Diagonals	A				2L2 1/2x2 1/2x3/16x3/8		2L3x3x3/16x3/8		
Diagonal Grade					A36M-50				
Top Chords	A				N.A.				
Horizontals	N.A.								
Inner Bracing	N.A.				2L1 3/4x1 3/4x3/16x3/8		2L2x2x3/16x3/8		
Face Width (ft)	4.5	6	7.5	9	10.5	12	13.5	15	
# Panels @ (ft)	2 @ 4.5				28 @ 4.75				
Weight (K)	0.4	2.0	2.8	3.4	4.2	4.7	5.6	6.0	29.1



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 1"x10"	150	Sector1(CaAa=13333.33 Sq.in)No Ice (Carrier 3)	125
Sector1(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	145	Sector2(CaAa=13333.33 Sq.in)No Ice (Carrier 3)	125
Sector2(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	145	Sector3(CaAa=13333.33 Sq.in)No Ice (Carrier 3)	125
Sector3(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	145	Sector1(CaAa=10000 Sq.in)No Ice (Carrier 4)	115
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 2)	135	Sector2(CaAa=10000 Sq.in)No Ice (Carrier 4)	115
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2)	135	Sector2(CaAa=10000 Sq.in)No Ice (Carrier 4)	115
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2)	135		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x3/16		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Juneau County, Alaska.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 108 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 60 mph basic wind with 0.25 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 3 with Crest Height of 278.00 ft
8. Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity.
9. Design is preliminary and subject to change.

ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 765 K
SHEAR: 60 K

UPLIFT: -714 K
SHEAR: 58 K

AXIAL
87 K

SHEAR
25 K

MOMENT
2426 kip-ft

TORQUE 8 kip-ft
60 mph WIND - 0.2500 in ICE

AXIAL
54 K

SHEAR
102 K

MOMENT
9703 kip-ft

TORQUE 43 kip-ft
REACTIONS - 108 mph WIND



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

Job: **EII # 1118-65 - Lena Point, (Site# AK-5241)**
Project: **150' SST - JUNEAU County, AK**
Client: **Vertical Bridge** Drawn by: **T. Cheriyan** App'd:
Code: **TIA-222-G** Date: **11/27/18** Scale: **NTS**
Path: **Dwg No. E-1**

Attachment A - Application Feed Line Plan

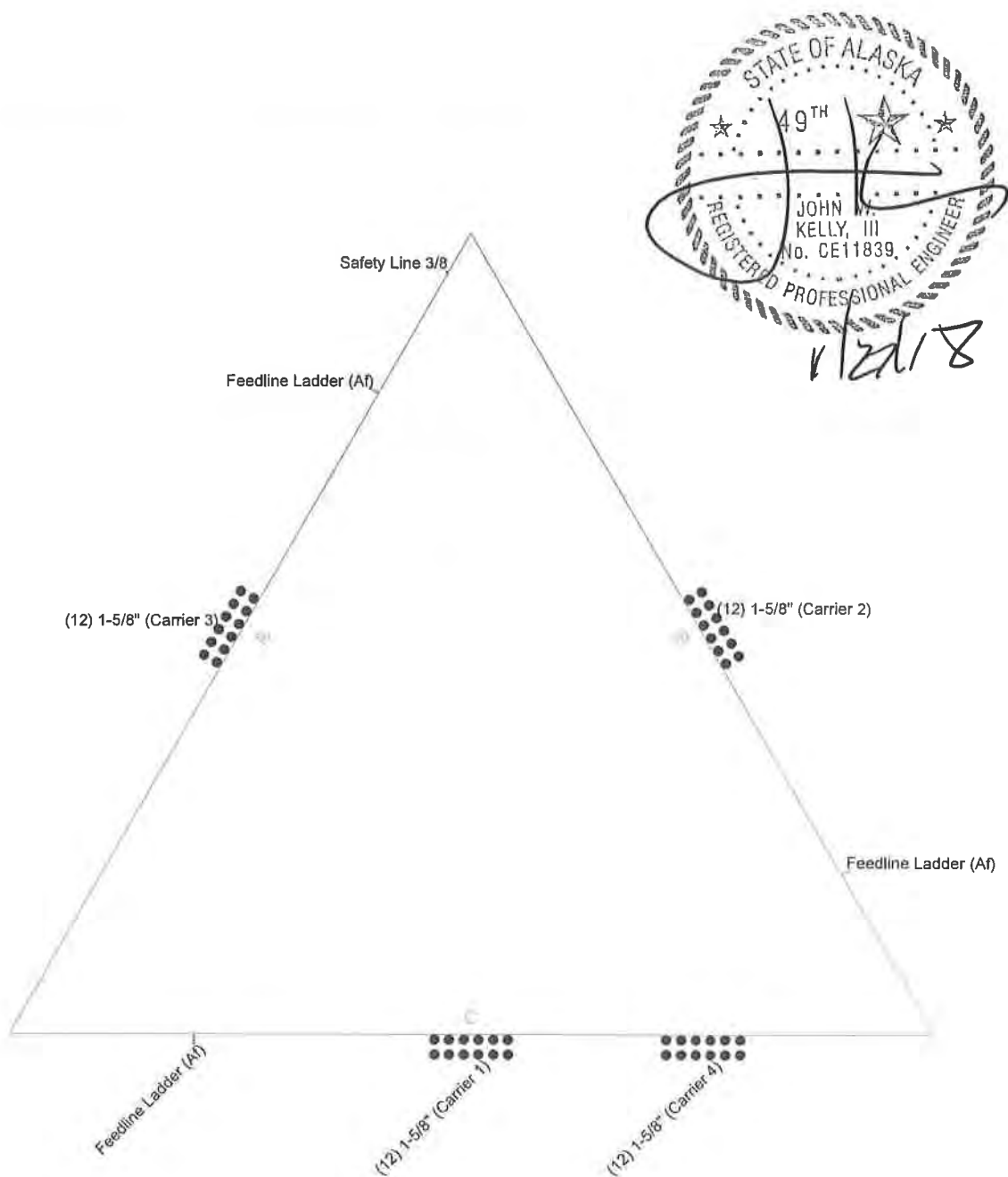
Packet Page 340 of 643

Round

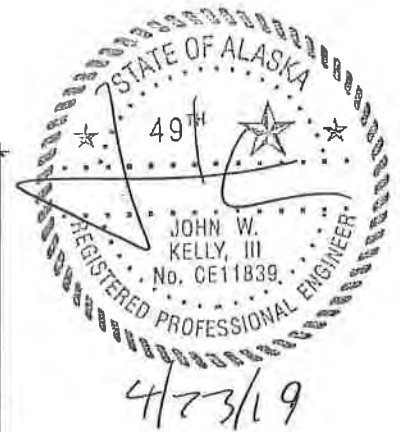
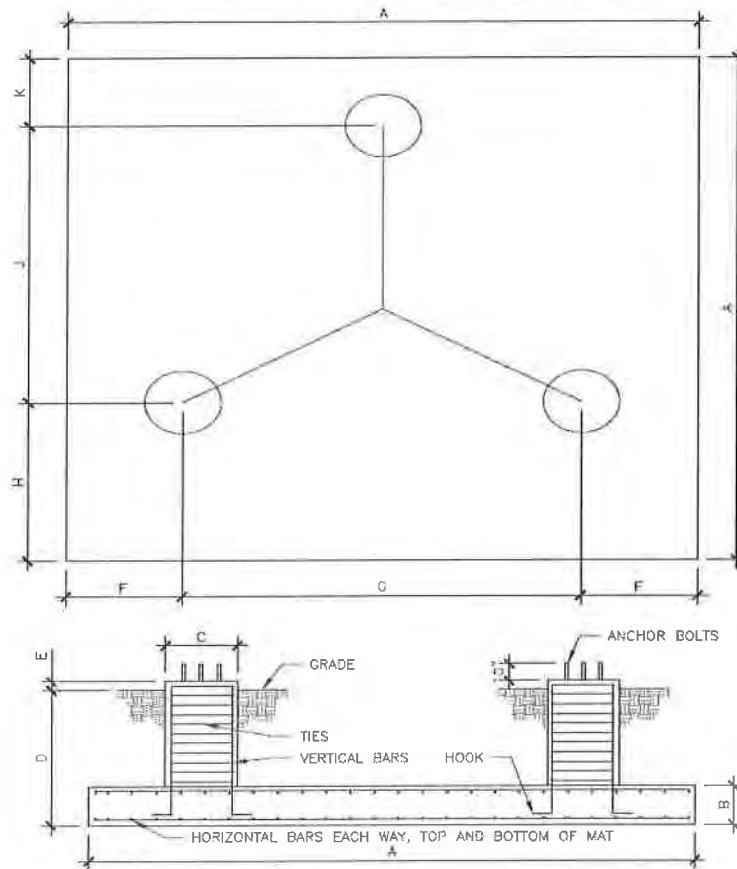
Flat

App In Face

App Out Face



 B+T GROUP	B+T Group	Job: EII # 1118-65 - Lena Point, (Site# AK-5241)		
	1717 S. Boulder Ave, Ste 300	Project: 150' SST - JUNEAU County, AK		
	Tulsa, OK 74119	Client: Vertical Bridge	Drawn by: T. Cheriyan	App'd:
	Phone: (918) 587-4630	Code: TIA-222-G	Date: 11/27/18	Scale: NTS
	FAX: (918) 295-0265	Path:		Dwg No. E-7

COMBINED FOOTING DESIGN

A (ft)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	J (in)	K (in)
40	27	48	84	6	150	180	188 1/16	155 7/8	136 1/16
Rebar Schedule									
Each Pier (3 req'd)		Use (16) #9 vertical bars w/ 16" hook w/ #4 ties @ 6" c/c.							
Pad		Use (28) #10 bars equally spaced, each way, top and bottom of mat. (112 bars total)							

General Notes:

1. Concrete Shall be placed in accordance with ACI 318-14 Latest Revision.
2. Concrete shall have a minimum 28 day compressive strength of 4,000 PSI, in accordance with ACI 318-14.
3. Rebar to conform to ASTM specification A615 grade 60, except ties may be grade 40.
4. All rebar to have a minimum of 3" clear cover.
5. Bottom and front surfaces shall rest on undisturbed soil.
6. Backfill shall be compacted to 95% of maximum Proctor density.
7. Contractor shall be responsible to review and follow all recommendations of the geotechnical report.
8. Concrete mixtures shall meet the durability requirements of Chapter 19 of the ACI 318-14.
9. Total estimated concrete volume = 140.67 cubic yards.

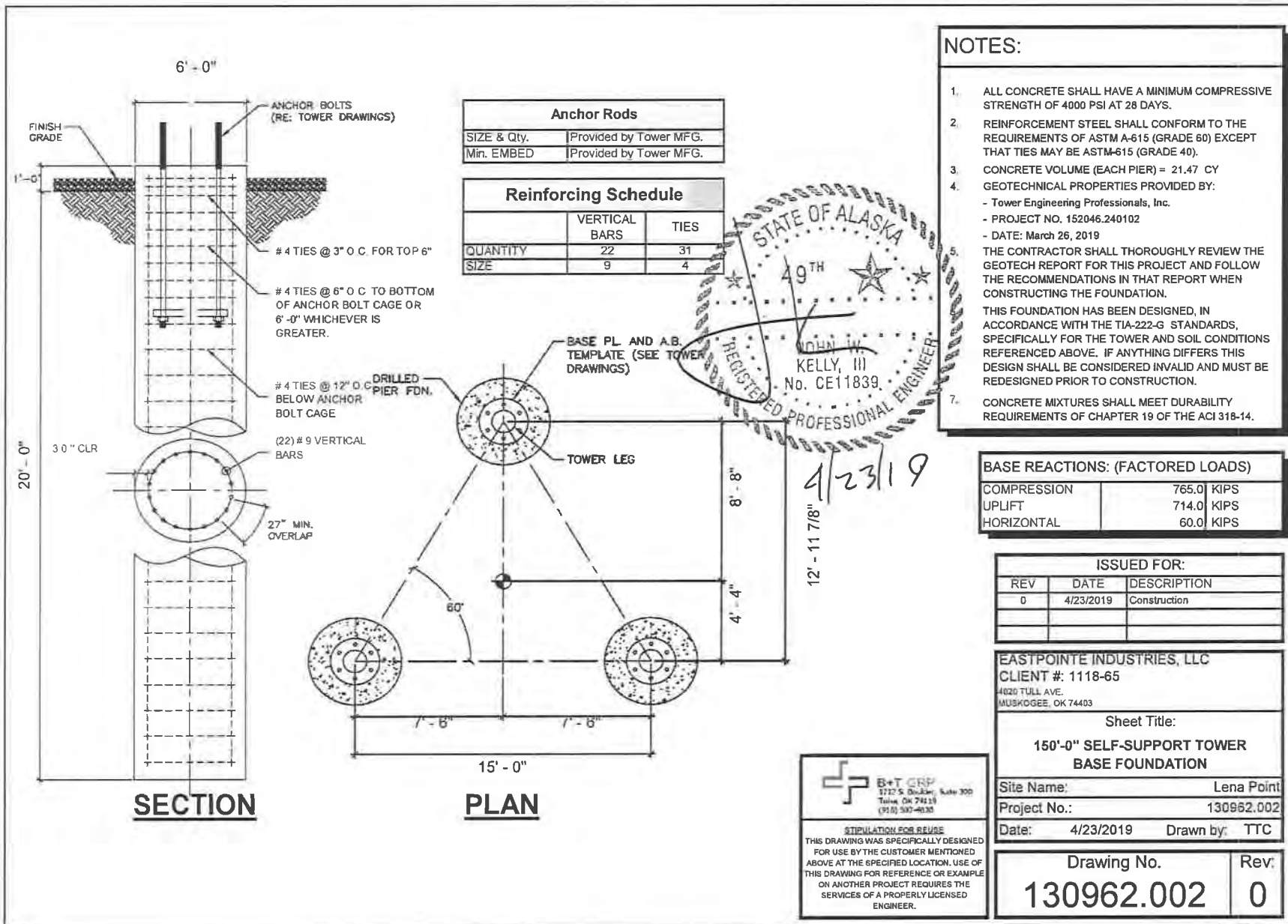
Supplemental Notes:

Soil values obtained from Tower Engineering Professionals, Inc., Project No. 152046.240102, Dated 03/26/2019

Anchor bolts provided by others

 B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74159 (918) 587-4630	Date:	4/23/2019	 Eastpointe Industries 4020 Tull Ave Muskogee, OK 74403 (918) 683-2169
	Site:	1118-65-Lena Point	
	Project:	150' Self-Supporter	
	Job:	130962.002	
	Scale:	NTS	
		Drawn By:	TTC

Attachment A - Application



tnxTower B+T Group 1717 S. Boulder Ave, Ste 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	Page
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	Project	Date
	150' SST - JUNEAU County, AK	11:09:38 04/23/19
	Client	Designed by
	Vertical Bridge	T. Cheriyan

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 150.00 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 3.75 ft at the top and 15.00 ft at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Juneau County, Alaska.

Basic wind speed of 108 mph.

Structure Class II.

Exposure Category C.

Topographic Category 3.

Crest Height 278.00 ft.

Nominal ice thickness of 0.2500 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.

Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

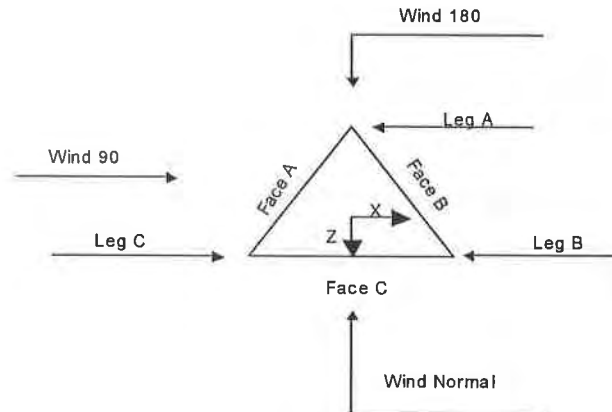
Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|-------------------------------------|--------------------------------------|---|
| Consider Moments - Legs | 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-G Bracing Resist. Exemption |
| ✓ Include Bolts In Member Capacity | Autocalc Torque Arm Areas | Use TIA-222-G 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 |

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	Vertical Bridge	T. Cheriyan

Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	150.00-140.00			3.75	1	10.00
T2	140.00-120.00			4.50	1	20.00
T3	120.00-100.00			6.00	1	20.00
T4	100.00-80.00			7.50	1	20.00
T5	80.00-60.00			9.00	1	20.00
T6	60.00-40.00			10.50	1	20.00
T7	40.00-20.00			12.00	1	20.00
T8	20.00-0.00			13.50	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	150.00-140.00	4.50	X Brace	No	No	6.0000	6.0000
T2	140.00-120.00	4.75	Double K	No	Yes	6.0000	6.0000
T3	120.00-100.00	4.75	Double K	No	Yes	6.0000	6.0000
T4	100.00-80.00	4.75	Double K	No	Yes	6.0000	6.0000
T5	80.00-60.00	4.75	Double K	No	Yes	6.0000	6.0000
T6	60.00-40.00	4.75	Double K	No	Yes	6.0000	6.0000
T7	40.00-20.00	4.75	Double K	No	Yes	6.0000	6.0000
T8	20.00-0.00	4.75	Double K	No	Yes	6.0000	6.0000

tnxTower B+T Group 1717 S. Boulder Ave, Ste 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	EII # 1118-65 - Lena Point, (Site# AK-5241)	Page	3 of 26
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Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 150.00-140.00	Solid Round	1 3/4	A529-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T2 140.00-120.00	Solid Round	2 1/2	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T3 120.00-100.00	Solid Round	3 1/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T4 100.00-80.00	Solid Round	3 3/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T5 80.00-60.00	Solid Round	4 1/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T6 60.00-40.00	Solid Round	4 1/2	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T7 40.00-20.00	Solid Round	5	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T8 20.00-0.00	Solid Round	5	A529-50 (50 ksi)	Double Angle	2L3x3x3/16x3/8	A36M-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 150.00-140.00	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)	Solid Round		A529-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T2 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T3 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T4 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T5 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T6 60.00-40.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T7 40.00-20.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T8 20.00-0.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2x2x3/16x3/8	A36M-50 (50 ksi)

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	Vertical Bridge	T. Cheriyan

Tower Section Geometry (cont'd)

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
<i>ft</i>						
T2 140.00-120.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T3 120.00-100.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T4 100.00-80.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T5 80.00-60.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T6 60.00-40.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T7 40.00-20.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T8 20.00-0.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
<i>ft</i>	<i>ft²</i>	<i>in</i>					<i>in</i>	<i>in</i>	<i>in</i>
T1 150.00-140.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 140.00-120.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T3 120.00-100.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T4 100.00-80.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T5 80.00-60.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T6 60.00-40.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T7 40.00-20.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T8 20.00-0.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
<i>ft</i>				X Y	X Y	X Y	X Y	X Y	X Y	X Y
T1 150.00-140.00	No	No	1	1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1

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	Vertical Bridge	T. Cheriyan

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹							
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
140.00-120.00				1	1	1	1	1	1	1
T3	No	No	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T5	No	No	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T6	No	No	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T7	No	No	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T8 20.00-0.00	No	No	1	1	1	1	1	1	1	1

¹Note: 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
150.00-140.00														
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
140.00-120.00														
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
120.00-100.00														
T4	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														
T5 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
T6 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
T7 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
T8 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 Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1	Flange	0.0000	0	0.6250	1	0.6250	1	0.0000	0	0.6250	0	0.0000	0	0.6250	0
150.00-140.00		A325N		A325X		A325N		A325N		A325X		A325X		A325N	
T2	Flange	0.7500	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	1	0.6250	0
140.00-120.00		A325N		A325X		A325N		A325N		A325N		A325X		A325N	

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Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T3 120.00-100.00	Flange	0.7500	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	1	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T4 100.00-80.00	Flange	1.0000	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	1	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T5 80.00-60.00	Flange	1.2500	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	1	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T6 60.00-40.00	Flange	1.2500	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	1	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T7 40.00-20.00	Flange	1.5000	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	1	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T8 20.00-0.00	Flange	1.5000	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	1	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
1-5/8" (Carrier 1) **	C	No	No	Ar (CaAa)	145.00 - 10.00	0.0000	0	12	6	0.7500	1.9800		0.00
1-5/8" (Carrier 2) **	B	No	No	Ar (CaAa)	135.00 - 10.00	0.0000	0	12	6	0.7500	1.9800		0.00
1-5/8" (Carrier 3) **	A	No	No	Ar (CaAa)	125.00 - 10.00	0.0000	0	12	6	0.7500	1.9800		0.00
1-5/8" (Carrier 4) **	C	No	No	Ar (CaAa)	115.00 - 10.00	0.0000	-0.25	12	6	0.7500	1.9800		0.00
Safety Line 3/8 **	A	No	No	Ar (CaAa)	150.00 - 10.00	0.0000	0.45	1	1	0.3750	0.3750		0.00
Feedline Ladder (Af)	C	No	No	Af (CaAa)	145.00 - 10.00	0.0000	0.3	1	1	3.0000	0.2500		0.01
Feedline Ladder (Af)	B	No	No	Af (CaAa)	135.00 - 10.00	0.0000	0.3	1	1	3.0000	0.2500		0.01
Feedline Ladder (Af)	A	No	No	Af (CaAa)	125.00 - 10.00	0.0000	0.3	1	1	3.0000	0.2500		0.01

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A ₁ In Face ft ²	C _A A ₁ Out Face ft ²	Weight K
T1	150.00-140.00	A	0.000	0.000	0.375	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	12.088	0.000	0.09
T2	140.00-120.00	A	0.000	0.000	12.838	0.000	0.09

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Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	$C_A A_A$ In Face ft^2	$C_A A_A$ Out Face ft^2	Weight K
T3	120.00-100.00	B	0.000	0.000	36.265	0.000	0.26
		C	0.000	0.000	48.353	0.000	0.34
		A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
T4	100.00-80.00	C	0.000	0.000	83.993	0.000	0.47
		A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
		C	0.000	0.000	95.873	0.000	0.51
T5	80.00-60.00	A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
		C	0.000	0.000	95.873	0.000	0.51
		A	0.000	0.000	49.103	0.000	0.35
T6	60.00-40.00	B	0.000	0.000	48.353	0.000	0.34
		C	0.000	0.000	95.873	0.000	0.51
		A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
T7	40.00-20.00	C	0.000	0.000	95.873	0.000	0.51
		A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
		C	0.000	0.000	95.873	0.000	0.51
T8	20.00-0.00	A	0.000	0.000	24.552	0.000	0.17
		B	0.000	0.000	24.177	0.000	0.17
		C	0.000	0.000	47.937	0.000	0.26

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	$C_A A_A$ In Face ft^2	$C_A A_A$ Out Face ft^2	Weight K
T1	150.00-140.00	A	0.654	0.000	0.000	1.682	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	12.096	0.000	0.22
T2	140.00-120.00	A	0.655	0.000	0.000	15.467	0.000	0.24
		B		0.000	0.000	36.295	0.000	0.65
		C		0.000	0.000	48.394	0.000	0.86
T3	120.00-100.00	A	0.656	0.000	0.000	51.778	0.000	0.89
		B		0.000	0.000	48.405	0.000	0.86
		C		0.000	0.000	82.117	0.000	1.36
T4	100.00-80.00	A	0.656	0.000	0.000	51.784	0.000	0.89
		B		0.000	0.000	48.409	0.000	0.86
		C		0.000	0.000	93.361	0.000	1.53
T5	80.00-60.00	A	0.655	0.000	0.000	51.765	0.000	0.88
		B		0.000	0.000	48.396	0.000	0.86
		C		0.000	0.000	93.339	0.000	1.52
T6	60.00-40.00	A	0.650	0.000	0.000	51.691	0.000	0.88
		B		0.000	0.000	48.343	0.000	0.86
		C		0.000	0.000	93.253	0.000	1.52
T7	40.00-20.00	A	0.635	0.000	0.000	51.484	0.000	0.88
		B		0.000	0.000	48.193	0.000	0.86
		C		0.000	0.000	93.012	0.000	1.51
T8	20.00-0.00	A	0.587	0.000	0.000	25.399	0.000	0.43
		B		0.000	0.000	23.849	0.000	0.42
		C		0.000	0.000	46.106	0.000	0.74

Feed Line Center of Pressure

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	Vertical Bridge	T. Cheriyan

Section	Elevation	CP _X	CP _Z	CP _X Ice	CP _Z Ice
	ft	in	in	in	in
T1	150.00-140.00	-0.0822	1.6754	-0.3308	0.8892
T2	140.00-120.00	1.3189	-1.0865	1.1738	-0.9131
T3	120.00-100.00	3.2965	-2.0649	2.8373	-1.8494
T4	100.00-80.00	4.7462	-1.8285	4.0892	-1.5821
T5	80.00-60.00	5.3885	-2.0490	4.5939	-1.7602
T6	60.00-40.00	5.9930	-2.2579	5.0774	-1.9322
T7	40.00-20.00	6.5484	-2.4479	5.4998	-2.0785
T8	20.00-0.00	4.2276	-1.5358	3.5961	-1.3275

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	1	1-5/8"	140.00 - 145.00	0.6000	0.6000
T1	9	Safety Line 3/8	140.00 - 150.00	0.6000	0.6000
T1	11	Feedline Ladder (Af)	140.00 - 145.00	0.6000	0.6000
T2	1	1-5/8"	120.00 - 140.00	0.6000	0.6000
T2	3	1-5/8"	120.00 - 135.00	0.6000	0.6000
T2	5	1-5/8"	120.00 - 125.00	0.6000	0.6000
T2	9	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T2	11	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T2	12	Feedline Ladder (Af)	120.00 - 135.00	0.6000	0.6000
T2	13	Feedline Ladder (Af)	120.00 - 125.00	0.6000	0.6000
T3	1	1-5/8"	100.00 - 120.00	0.6000	0.6000
T3	3	1-5/8"	100.00 - 120.00	0.6000	0.6000
T3	5	1-5/8"	100.00 - 120.00	0.6000	0.6000
T3	7	1-5/8"	100.00 - 115.00	0.6000	0.6000
T3	9	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T3	11	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	12	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	13	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T4	1	1-5/8"	80.00 - 100.00	0.6000	0.6000
T4	3	1-5/8"	80.00 - 100.00	0.6000	0.6000
T4	5	1-5/8"	80.00 - 100.00	0.6000	0.6000
T4	7	1-5/8"	80.00 - 100.00	0.6000	0.6000
T4	9	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T4	11	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
Lightning Rod 1"x10'	C	From Leg	0 00 0 00 5 00	0 0000	150 00	No Ice 1/2" Ice	1.00 2.02	1.00 2.02	0 04 0 05
**									
Sector1(CaAa=13333.33 Sq in)No Ice (Carrier 1)	A	From Leg	4 00 0 00 0 00	0 0000	145 00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0 70 1 40
Sector2(CaAa=13333.33 Sq in)No Ice (Carrier 1)	B	From Leg	4 00 0 00 0 00	0 0000	145 00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0 70 1 40
Sector3(CaAa=13333.33)	C	From Leg	4 00	0 0000	145 00	No Ice	92.60	62.04	0 70

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K	
Sq.in)No Ice (Carrier 1) **			0.00 0.00		1/2" Ice	115.75	77.55	1.40	
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 2)	A	From Leg	4.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2)	B	From Leg	4.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2) **	C	From Leg	4.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector1(CaAa=13333.33 Sq.in)No Ice (Carrier 3)	A	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0.70 1.40
Sector2(CaAa=13333.33 Sq.in)No Ice (Carrier 3)	B	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0.70 1.40
Sector3(CaAa=13333.33 Sq.in)No Ice (Carrier 3) **	C	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0.70 1.40
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 4)	A	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 4)	B	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 4) **	C	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice

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Comb. No.	Description
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	150 - 140	Leg	Max Tension	15	16.66	1.37	0.00
			Max. Compression	2	-18.11	1.47	0.01
			Max. Mx	14	16.43	-1.47	-0.00
			Max. My	24	-1.03	-0.03	0.94
			Max. Vy	2	-5.75	1.47	0.01
			Max. Vx	24	4.27	0.00	0.00
		Diagonal	Max Tension	4	6.93	0.00	0.00
			Max. Compression	4	-6.18	0.00	0.00
			Max. Mx	2	-0.92	0.06	-0.00
			Max. My	4	-6.18	-0.01	0.06
			Max. Vy	2	0.02	0.06	-0.00
			Max. Vx	4	-0.02	0.00	0.00
		Top Girt	Max Tension	14	3.23	0.00	0.00
			Max. Compression	2	-3.19	0.00	0.00
			Max. Mx	26	0.04	-0.01	0.00
			Max. My	34	0.06	0.00	0.00

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	Vertical Bridge	T. Cheriyan

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	140 - 120	Leg	Max. Vy	26	0.01	0.00	0.00
			Max. Vx	34	0.00	0.00	0.00
			Max Tension	15	111.91	4.12	-0.00
			Max. Compression	2	-118.46	3.63	-0.02
			Max. Mx	2	-118.46	-5.23	0.01
			Max. My	24	-1.04	-0.08	2.35
		Diagonal	Max. Vy	2	-17.70	3.63	-0.02
			Max. Vx	4	6.75	-0.05	-2.00
			Max Tension	4	23.02	0.00	0.00
			Max. Compression	4	-22.03	0.00	0.00
			Max. Mx	34	5.82	0.03	0.00
			Max. My	27	-0.42	0.00	-0.00
		Horizontal	Max. Vy	34	-0.02	0.00	0.00
			Max. Vx	27	0.00	0.00	0.00
			Max Tension	6	5.78	0.00	0.00
			Max. Compression	18	-5.73	0.03	-0.02
			Max. Mx	17	-4.70	0.03	-0.04
			Max. My	2	2.28	-0.03	0.05
		Inner Bracing	Max. Vy	2	-0.02	-0.03	0.05
			Max. Vx	2	-0.02	-0.03	0.05
			Max Tension	2	0.03	0.00	0.00
			Max. Compression	14	-0.06	0.00	0.00
			Max. Mx	26	-0.00	-0.00	0.00
			Max. My	2	0.00	0.00	-0.00
T3	120 - 100	Leg	Max. Vy	26	0.01	0.00	0.00
			Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	246.24	7.33	-0.04
			Max. Compression	2	-259.10	1.92	-0.04
			Max. Mx	2	-118.51	12.38	-0.04
			Max. My	4	-3.96	-0.07	-5.38
		Diagonal	Max. Vy	2	-22.43	1.92	-0.04
			Max. Vx	4	8.41	-0.06	-1.78
			Max Tension	24	24.64	0.00	0.00
			Max. Compression	4	-24.39	0.00	0.00
			Max. Mx	34	6.16	0.03	0.00
			Max. My	27	-0.28	0.00	-0.00
		Horizontal	Max. Vy	34	0.02	0.00	0.00
			Max. Vx	27	-0.00	0.00	0.00
			Max Tension	2	4.35	0.00	0.00
			Max. Compression	2	-4.35	0.00	-0.00
			Max. Mx	2	1.11	-0.03	0.01
			Max. My	10	1.15	-0.02	0.01
		Inner Bracing	Max. Vy	35	0.02	-0.02	0.00
			Max. Vx	10	-0.00	-0.02	0.01
			Max Tension	15	0.00	0.00	0.00
			Max. Compression	6	-0.03	0.00	0.00
			Max. Mx	26	-0.00	-0.01	0.00
			Max. My	2	-0.01	0.00	-0.00
T4	100 - 80	Leg	Max. Vy	26	0.01	0.00	0.00
			Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	360.95	8.21	-0.11
			Max. Compression	2	-379.85	1.20	-0.06
			Max. Mx	2	-259.12	13.11	-0.16
			Max. My	4	-6.69	-0.08	-6.00
		Diagonal	Max. Vy	2	-22.68	1.20	-0.06
			Max. Vx	4	8.64	-0.06	-2.08
			Max Tension	24	24.33	0.00	0.00
			Max. Compression	24	-25.09	0.00	0.00
			Max. Mx	34	5.42	0.04	0.00
			Max. My	27	-0.01	0.00	-0.00
			Max. Vy	34	-0.03	0.00	0.00

tnxTower B+T Group 1717 S. Boulder Ave, Ste 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	EII # 1118-65 - Lena Point, (Site# AK-5241)	Page	13 of 26
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	Client	Vertical Bridge	Designed by	T. Cheriyan

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T5	80 - 60	Horizontal	Max. Vx	27	0.00	0.00	0.00
			Max Tension	2	6.13	0.00	0.00
			Max. Compression	2	-6.13	-0.01	-0.00
			Max. Mx	35	-0.21	-0.02	-0.00
			Max. My	14	-3.10	0.00	0.01
			Max. Vy	35	0.02	-0.02	-0.00
		Inner Bracing	Max. Vx	14	0.00	0.00	0.01
			Max Tension	15	0.00	0.00	0.00
			Max. Compression	3	-0.01	0.00	0.00
			Max. Mx	26	-0.00	-0.01	0.00
			Max. My	2	-0.00	0.00	-0.00
			Max. Vy	26	0.01	0.00	0.00
		Leg	Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	460.70	10.07	-0.19
			Max. Compression	2	-486.50	-0.36	-0.04
			Max. Mx	2	-379.88	12.55	-0.28
			Max. My	4	-8.78	-0.09	-6.41
			Max. Vy	2	-23.87	-0.36	-0.04
		Diagonal	Max. Vx	4	9.04	-0.05	-1.95
			Max Tension	24	22.05	0.00	0.00
			Max. Compression	2	-22.91	0.00	0.00
			Max. Mx	34	5.23	0.06	0.00
			Max. My	27	0.24	0.00	-0.00
			Max. Vy	34	-0.03	0.00	0.00
		Horizontal	Max. Vx	27	0.00	0.00	0.00
			Max Tension	2	7.95	0.00	0.00
			Max. Compression	2	-7.95	-0.02	-0.00
			Max. Mx	27	-0.27	-0.03	-0.00
			Max. My	14	3.99	-0.01	0.01
			Max. Vy	27	-0.03	-0.02	0.00
		Inner Bracing	Max. Vx	14	0.00	-0.01	0.01
			Max Tension	15	0.00	0.00	0.00
			Max. Compression	4	-0.01	0.00	0.00
			Max. Mx	26	-0.00	-0.02	0.00
			Max. My	2	-0.01	0.00	-0.00
			Max. Vy	26	0.01	0.00	0.00
T6	60 - 40	Leg	Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	551.15	10.16	-0.24
			Max. Compression	2	-584.54	0.49	-0.08
			Max. Mx	2	-584.51	-12.30	0.32
			Max. My	4	-11.02	-0.08	-6.48
			Max. Vy	2	-25.56	0.49	-0.08
		Diagonal	Max. Vx	4	9.53	-0.04	-2.47
			Max Tension	25	21.25	0.00	0.00
			Max. Compression	2	-22.24	0.00	0.00
			Max. Mx	32	5.48	0.07	0.00
			Max. My	27	0.53	0.00	-0.00
			Max. Vy	32	-0.04	0.00	0.00
		Horizontal	Max. Vx	27	0.00	0.00	0.00
			Max Tension	2	9.68	0.00	0.00
			Max. Compression	2	-9.68	-0.02	-0.00
			Max. Mx	27	-0.32	-0.04	-0.00
			Max. My	14	4.85	-0.01	0.01
			Max. Vy	27	-0.03	-0.03	0.00
		Inner Bracing	Max. Vx	14	0.00	-0.01	0.01
			Max Tension	15	0.00	0.00	0.00
			Max. Compression	4	-0.01	0.00	0.00
			Max. Mx	26	-0.00	-0.02	0.00
			Max. My	2	-0.01	0.00	-0.00
			Max. Vy	26	0.01	0.00	0.00
			Max. Vx	2	0.00	0.00	0.00

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	Client	Vertical Bridge	Designed by	T. Cheriyan

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T7	40 - 20	Leg	Max Tension	15	636.31	12.61	-0.34
			Max. Compression	2	-678.29	-1.43	-0.05
			Max. Mx	2	-678.25	-15.30	0.43
			Max. My	4	-13.37	-0.07	-7.24
			Max. Vy	2	-27.73	-1.43	-0.05
			Max. Vx	4	9.95	-0.00	-1.76
		Diagonal	Max Tension	25	22.02	0.00	0.00
			Max. Compression	2	-22.56	0.00	0.00
			Max. Mx	32	5.99	0.08	0.00
			Max. My	27	1.03	0.00	-0.00
			Max. Vy	32	-0.04	0.00	0.00
			Max. Vx	27	0.00	0.00	0.00
		Horizontal	Max Tension	2	11.30	0.00	0.00
			Max. Compression	2	-11.30	-0.03	-0.00
			Max. Mx	27	-0.37	-0.05	-0.00
			Max. My	14	5.66	-0.02	0.01
			Max. Vy	27	0.03	-0.05	-0.00
			Max. Vx	14	0.00	-0.02	0.01
		Inner Bracing	Max Tension	5	0.00	0.00	0.00
			Max. Compression	4	-0.01	0.00	0.00
			Max. Mx	26	-0.00	-0.03	0.00
			Max. My	2	-0.01	0.00	-0.00
			Max. Vy	26	0.02	0.00	0.00
			Max. Vx	2	0.00	0.00	0.00
T8	20 - 0	Leg	Max Tension	15	715.68	12.29	-0.39
			Max. Compression	2	-766.69	0.00	0.00
			Max. Mx	2	-766.65	-15.07	0.49
			Max. My	4	-15.93	-0.03	-6.75
			Max. Vy	2	-30.12	0.00	0.00
			Max. Vx	4	9.97	-0.03	-6.75
		Diagonal	Max Tension	15	22.13	0.00	0.00
			Max. Compression	2	-23.47	0.00	0.00
			Max. Mx	27	6.22	0.12	0.00
			Max. My	27	2.04	0.00	-0.00
			Max. Vy	27	-0.05	0.00	0.00
			Max. Vx	27	-0.00	0.00	0.00
		Horizontal	Max Tension	2	12.85	0.00	0.00
			Max. Compression	2	-12.85	-0.04	-0.00
			Max. Mx	27	-0.50	-0.07	-0.00
			Max. My	14	6.42	-0.02	0.01
			Max. Vy	27	0.04	-0.07	-0.00
			Max. Vx	14	0.00	-0.02	0.01
		Inner Bracing	Max Tension	3	0.01	0.00	0.00
			Max. Compression	2	-0.01	0.00	0.00
			Max. Mx	29	-0.00	-0.03	0.00
			Max. My	14	-0.01	0.00	0.00
			Max. Vy	29	-0.02	0.00	0.00
			Max. Vx	14	-0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	739.24	49.96	-28.16
	Max. H _y	18	739.24	49.96	-28.16
	Max. H _z	7	-687.57	-48.22	27.07

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	Vertical Bridge	T. Cheriyan

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg B	Min. Vert	7	-687.57	-48.22	27.07
	Min. H _x	7	-687.57	-48.22	27.07
	Min. H _z	18	739.24	49.96	-28.16
	Max. Vert	10	735.50	-49.56	-28.37
	Max. H _x	23	-683.18	47.77	27.31
	Max. H _z	25	-610.50	41.34	27.94
	Min. Vert	23	-683.18	47.77	27.31
	Min. H _x	10	735.50	-49.56	-28.37
Leg A	Min. H _z	10	735.50	-49.56	-28.37
	Max. Vert	2	764.93	0.81	59.98
	Max. H _x	21	13.25	7.23	0.29
	Max. H _z	2	764.93	0.81	59.98
	Min. Vert	15	-713.71	-0.92	-58.12
	Min. H _x	9	13.25	-7.23	0.29
	Min. H _z	15	-713.71	-0.92	-58.12

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	44.90	0.00	0.00	3.27	-2.32	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	53.88	-0.00	-102.09	-9703.45	-2.89	22.54
0.9 Dead+1.6 Wind 0 deg - No Ice	40.41	-0.00	-102.09	-9695.64	-2.19	22.53
1.2 Dead+1.6 Wind 30 deg - No Ice	53.88	48.82	-84.57	-8158.89	-4715.87	42.85
0.9 Dead+1.6 Wind 30 deg - No Ice	40.41	48.83	-84.57	-8152.44	-4710.88	42.84
1.2 Dead+1.6 Wind 60 deg - No Ice	53.88	80.71	-46.60	-4553.41	-7896.50	16.44
0.9 Dead+1.6 Wind 60 deg - No Ice	40.41	80.71	-46.60	-4550.22	-7888.56	16.43
1.2 Dead+1.6 Wind 90 deg - No Ice	53.88	92.35	-0.00	3.88	-9036.78	-7.46
0.9 Dead+1.6 Wind 90 deg - No Ice	40.41	92.35	-0.00	2.88	-9027.78	-7.47
1.2 Dead+1.6 Wind 120 deg - No Ice	53.88	83.83	48.40	4662.34	-8071.32	5.88
0.9 Dead+1.6 Wind 120 deg - No Ice	40.41	83.83	48.40	4657.10	-8063.26	5.87
1.2 Dead+1.6 Wind 150 deg - No Ice	53.88	48.62	84.21	8120.17	-4688.59	10.74
0.9 Dead+1.6 Wind 150 deg - No Ice	40.41	48.62	84.21	8111.79	-4683.62	10.74
1.2 Dead+1.6 Wind 180 deg - No Ice	53.88	-0.00	98.08	9455.96	-2.88	-22.54
0.9 Dead+1.6 Wind 180 deg - No Ice	40.41	-0.00	98.08	9446.37	-2.18	-22.53
1.2 Dead+1.6 Wind 210 deg - No Ice	53.88	-48.82	84.57	8167.00	4709.90	-42.85
0.9 Dead+1.6 Wind 210 deg - No Ice	40.41	-48.82	84.57	8158.57	4706.30	-42.84
1.2 Dead+1.6 Wind 240 deg - No Ice	53.88	-84.18	48.60	4689.11	8112.01	-16.44
0.9 Dead+1.6 Wind 240 deg - No Ice	40.41	-84.18	48.60	4683.84	8105.30	-16.43

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.6 Wind 270 deg - No Ice	53.88	-92.35	-0.00	3.87	9031.19	7.46
0.9 Dead+1.6 Wind 270 deg - No Ice	40.41	-92.35	-0.00	2.88	9023.60	7.47
1.2 Dead+1.6 Wind 300 deg - No Ice	53.88	-80.36	-46.39	-4526.72	7844.60	-5.88
0.9 Dead+1.6 Wind 300 deg - No Ice	40.41	-80.36	-46.39	-4523.55	7838.10	-5.87
1.2 Dead+1.6 Wind 330 deg - No Ice	53.88	-48.62	-84.21	-8112.19	4683.17	-10.73
0.9 Dead+1.6 Wind 330 deg - No Ice	40.41	-48.62	-84.21	-8105.78	4679.60	-10.73
1.2 Dead+1.0 Ice+1.0 Temp	86.65	-0.00	-0.00	12.14	-9.66	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	86.65	-0.00	-25.34	-2425.99	-9.68	4.63
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	86.65	12.26	-21.24	-2054.20	-1202.70	8.46
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	86.65	20.51	-11.84	-1151.73	-2025.61	3.22
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	86.65	23.50	-0.00	12.16	-2319.96	-1.60
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	86.65	21.06	12.16	1193.37	-2055.58	0.81
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	86.65	12.22	21.17	2069.48	-1197.47	1.73
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	86.65	-0.00	24.63	2405.20	-9.67	-4.63
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	86.65	-12.26	21.24	2078.54	1183.34	-8.46
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	86.65	-21.13	12.20	1198.60	2045.28	-3.22
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	86.65	-23.50	-0.00	12.16	2300.62	1.60
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	86.65	-20.44	-11.80	-1146.51	1997.21	-0.81
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	86.65	-12.22	-21.17	-2045.15	1178.12	-1.73
Dead+Wind 0 deg - Service	44.90	-0.00	-19.69	-1868.29	-2.33	4.35
Dead+Wind 30 deg - Service	44.90	9.42	-16.31	-1570.51	-910.97	8.27
Dead+Wind 60 deg - Service	44.90	15.57	-8.99	-875.36	-1524.19	3.17
Dead+Wind 90 deg - Service	44.90	17.81	-0.00	3.28	-1744.04	-1.45
Dead+Wind 120 deg - Service	44.90	16.17	9.34	901.41	-1557.92	1.13
Dead+Wind 150 deg - Service	44.90	9.38	16.24	1568.06	-905.75	2.08
Dead+Wind 180 deg - Service	44.90	-0.00	18.92	1825.61	-2.33	-4.35
Dead+Wind 210 deg - Service	44.90	-9.42	16.31	1577.08	906.30	-8.27
Dead+Wind 240 deg - Service	44.90	-16.24	9.38	906.56	1562.19	-3.17
Dead+Wind 270 deg - Service	44.90	-17.81	-0.00	3.28	1739.39	1.45
Dead+Wind 300 deg - Service	44.90	-15.50	-8.95	-870.21	1510.61	-1.13
Dead+Wind 330 deg - Service	44.90	-9.38	-16.24	-1561.49	901.10	-2.08

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-44.90	0.00	-0.00	44.90	-0.00	0.000%
2	0.00	-53.88	-102.09	0.00	53.88	102.09	0.003%

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	Vertical Bridge	T. Cheriyan

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
3	0.00	-40.41	-102.09	0.00	40.41	102.09	0.002%
4	48.83	-53.88	-84.57	-48.82	53.88	84.57	0.003%
5	48.83	-40.41	-84.57	-48.83	40.41	84.57	0.002%
6	80.71	-53.88	-46.60	-80.71	53.88	46.60	0.002%
7	80.71	-40.41	-46.60	-80.71	40.41	46.60	0.002%
8	92.35	-53.88	0.00	-92.35	53.88	0.00	0.003%
9	92.35	-40.41	0.00	-92.35	40.41	0.00	0.002%
10	83.83	-53.88	48.40	-83.83	53.88	-48.40	0.003%
11	83.83	-40.41	48.40	-83.83	40.41	-48.40	0.002%
12	48.62	-53.88	84.21	-48.62	53.88	-84.21	0.003%
13	48.62	-40.41	84.21	-48.62	40.41	-84.21	0.002%
14	0.00	-53.88	98.08	0.00	53.88	-98.08	0.002%
15	0.00	-40.41	98.08	0.00	40.41	-98.08	0.002%
16	-48.83	-53.88	84.57	48.82	53.88	-84.57	0.003%
17	-48.83	-40.41	84.57	48.82	40.41	-84.57	0.002%
18	-84.19	-53.88	48.60	84.18	53.88	-48.60	0.003%
19	-84.19	-40.41	48.60	84.18	40.41	-48.60	0.002%
20	-92.35	-53.88	0.00	92.35	53.88	0.00	0.003%
21	-92.35	-40.41	0.00	92.35	40.41	0.00	0.002%
22	-80.36	-53.88	-46.39	80.36	53.88	46.39	0.002%
23	-80.36	-40.41	-46.39	80.36	40.41	46.39	0.002%
24	-48.62	-53.88	-84.21	48.62	53.88	84.21	0.003%
25	-48.62	-40.41	-84.21	48.62	40.41	84.21	0.002%
26	0.00	-86.65	0.00	0.00	86.65	0.00	0.000%
27	0.00	-86.65	-25.34	0.00	86.65	25.34	0.000%
28	12.26	-86.65	-21.24	-12.26	86.65	21.24	0.000%
29	20.51	-86.65	-11.84	-20.51	86.65	11.84	0.000%
30	23.50	-86.65	0.00	-23.50	86.65	0.00	0.000%
31	21.06	-86.65	12.16	-21.06	86.65	-12.16	0.000%
32	12.22	-86.65	21.17	-12.22	86.65	-21.17	0.000%
33	0.00	-86.65	24.63	0.00	86.65	-24.63	0.000%
34	-12.26	-86.65	21.24	12.26	86.65	-21.24	0.000%
35	-21.13	-86.65	12.20	21.13	86.65	-12.20	0.000%
36	-23.50	-86.65	0.00	23.50	86.65	0.00	0.000%
37	-20.44	-86.65	-11.80	20.44	86.65	11.80	0.000%
38	-12.22	-86.65	-21.17	12.22	86.65	21.17	0.000%
39	0.00	-44.90	-19.69	0.00	44.90	19.69	0.001%
40	9.42	-44.90	-16.31	-9.42	44.90	16.31	0.001%
41	15.57	-44.90	-8.99	-15.57	44.90	8.99	0.001%
42	17.81	-44.90	0.00	-17.81	44.90	0.00	0.001%
43	16.17	-44.90	9.34	-16.17	44.90	-9.34	0.001%
44	9.38	-44.90	16.24	-9.38	44.90	-16.24	0.001%
45	0.00	-44.90	18.92	0.00	44.90	-18.92	0.001%
46	-9.42	-44.90	16.31	9.42	44.90	-16.31	0.001%
47	-16.24	-44.90	9.38	16.24	44.90	-9.38	0.001%
48	-17.81	-44.90	0.00	17.81	44.90	0.00	0.001%
49	-15.50	-44.90	-8.95	15.50	44.90	8.95	0.001%
50	-9.38	-44.90	-16.24	9.38	44.90	16.24	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	8	0.00000001	0.00014938
3	Yes	8	0.00000001	0.00011594

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	Vertical Bridge	T. Cheriyan

4	Yes	8	0.00000001	0.00013660
5	Yes	8	0.00000001	0.00010339
6	Yes	8	0.00000001	0.00012359
7	Yes	8	0.00000001	0.00009028
8	Yes	8	0.00000001	0.00013680
9	Yes	8	0.00000001	0.00010351
10	Yes	8	0.00000001	0.00014902
11	Yes	8	0.00000001	0.00011550
12	Yes	8	0.00000001	0.00013658
13	Yes	8	0.00000001	0.00010340
14	Yes	8	0.00000001	0.00012308
15	Yes	8	0.00000001	0.00008988
16	Yes	8	0.00000001	0.00013661
17	Yes	8	0.00000001	0.00010340
18	Yes	8	0.00000001	0.00014928
19	Yes	8	0.00000001	0.00011575
20	Yes	8	0.00000001	0.00013681
21	Yes	8	0.00000001	0.00010352
22	Yes	8	0.00000001	0.00012358
23	Yes	8	0.00000001	0.00009028
24	Yes	8	0.00000001	0.00013659
25	Yes	8	0.00000001	0.00010340
26	Yes	6	0.00000001	0.00003802
27	Yes	9	0.00000001	0.00005850
28	Yes	9	0.00000001	0.00005778
29	Yes	9	0.00000001	0.00005708
30	Yes	9	0.00000001	0.00005783
31	Yes	9	0.00000001	0.00005853
32	Yes	9	0.00000001	0.00005774
33	Yes	9	0.00000001	0.00005696
34	Yes	9	0.00000001	0.00005779
35	Yes	9	0.00000001	0.00005859
36	Yes	9	0.00000001	0.00005785
37	Yes	9	0.00000001	0.00005706
38	Yes	9	0.00000001	0.00005775
39	Yes	8	0.00000001	0.00011021
40	Yes	8	0.00000001	0.00010800
41	Yes	8	0.00000001	0.00010583
42	Yes	8	0.00000001	0.00010820
43	Yes	8	0.00000001	0.00011032
44	Yes	8	0.00000001	0.00010794
45	Yes	8	0.00000001	0.00010553
46	Yes	8	0.00000001	0.00010802
47	Yes	8	0.00000001	0.00011043
48	Yes	8	0.00000001	0.00010823
49	Yes	8	0.00000001	0.00010581
50	Yes	8	0.00000001	0.00010796

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 140	4.558	39	0.2442	0.0281
T2	140 - 120	4.012	39	0.2447	0.0284
T3	120 - 100	2.954	39	0.2206	0.0266
T4	100 - 80	2.030	39	0.1817	0.0233
T5	80 - 60	1.298	39	0.1389	0.0190
T6	60 - 40	0.746	39	0.1003	0.0142
T7	40 - 20	0.356	39	0.0632	0.0093

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T8	20 - 0	0.108	39	0.0321	0.0042

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Lightning Rod 1"x10'	39	4.558	0.2442	0.0281	458997
145.00	Sector1(CaAa=13333.33 Sq.in)No Ice	39	4.285	0.2452	0.0283	458997
135.00	Sector1(CaAa=10000 Sq.in)No Ice	39	3.741	0.2416	0.0282	93184
125.00	Sector1(CaAa=13333.33 Sq.in)No Ice	39	3.210	0.2289	0.0273	42475
115.00	Sector1(CaAa=10000 Sq.in)No Ice	39	2.707	0.2115	0.0259	30012

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 140	23.700	2	1.2713	0.1454
T2	140 - 120	20.858	2	1.2729	0.1467
T3	120 - 100	15.353	2	1.1462	0.1378
T4	100 - 80	10.548	2	0.9437	0.1205
T5	80 - 60	6.743	2	0.7214	0.0984
T6	60 - 40	3.875	2	0.5210	0.0739
T7	40 - 20	1.847	2	0.3284	0.0482
T8	20 - 0	0.562	2	0.1668	0.0217

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Lightning Rod 1"x10'	2	23.700	1.2713	0.1454	87764
145.00	Sector1(CaAa=13333.33 Sq.in)No Ice	2	22.277	1.2759	0.1464	87764
135.00	Sector1(CaAa=10000 Sq.in)No Ice	2	19.446	1.2564	0.1459	17849
125.00	Sector1(CaAa=13333.33 Sq.in)No Ice	2	16.684	1.1899	0.1412	8118
115.00	Sector1(CaAa=10000 Sq.in)No Ice	2	14.069	1.0992	0.1340	5754

Bolt Design Data

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	150	Diagonal	A325X	0.6250	1	6.93	9.60	0.722 ✓	1	Member Block Shear
		Top Girt	A325X	0.6250	1	3.23	9.60	0.337 ✓	1	Member Block Shear
T2	140	Leg	A325N	0.7500	6	2.77	29.82	0.093 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	23.02	26.05	0.884 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	5.78	19.20	0.301 ✓	1	Member Block Shear
T3	120	Leg	A325N	0.7500	6	18.65	29.82	0.625 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	24.64	26.05	0.946 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	4.35	19.20	0.226 ✓	1	Member Block Shear
T4	100	Leg	A325N	1.0000	6	41.04	53.01	0.774 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	24.33	26.05	0.934 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	6.13	19.20	0.319 ✓	1	Member Block Shear
T5	80	Leg	A325N	1.2500	6	60.16	82.83	0.726 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	22.05	26.05	0.846 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	7.95	19.20	0.414 ✓	1	Member Block Shear
T6	60	Leg	A325N	1.2500	6	76.78	82.83	0.927 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	21.25	26.05	0.816 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	9.68	19.20	0.504 ✓	1	Member Block Shear
T7	40	Leg	A325N	1.5000	6	91.86	119.28	0.770 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	22.02	26.05	0.845 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	11.30	19.20	0.589 ✓	1	Member Block Shear
T8	20	Leg	A325N	1.5000	6	106.05	119.28	0.889 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	23.47	29.25	0.802 ✓	1	Member Bearing
		Horizontal	A325X	0.6250	1	12.85	21.48	0.598 ✓	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _n ft	Kl/r	A in ²	P _n K	φP _n K	Ratio $\frac{\phi P_n}{P_u}$
T1	150 - 140	1 3/4	10.01	4.50	123.5 K=1.00	2.4053	-10.79	35.60	0.303 ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T2	140 - 120	2 1/2	20.02	4.75	91.3 K=1.00	4.9087	-86.28	120.11	0.718 ¹ ✓
T3	120 - 100	3 1/4	20.02	4.75	70.2 K=1.00	8.2958	-225.21	260.31	0.865 ¹ ✓
T4	100 - 80	3 3/4	20.02	4.75	60.9 K=1.00	11.0447	-350.31	379.11	0.924 ¹ ✓
T5	80 - 60	4 1/4	20.02	4.75	53.7 K=1.00	14.1863	-458.83	517.03	0.887 ¹ ✓
T6	60 - 40	4 1/2	20.02	4.75	50.7 K=1.00	15.9043	-558.37	593.00	0.942 ¹ ✓
T7	40 - 20	5	20.02	4.75	45.6 K=1.00	19.6350	-652.22	758.73	0.860 ¹ ✓
T8	20 - 0	5	20.02	4.75	45.6 K=1.00	19.6350	-741.35	758.73	0.977 ¹ ✓

¹ P_u / φP_u controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T1	150 - 140	L1 3/4x1 3/4x3/16	6.22	3.13	109.3 K=1.00	0.6211	-6.18	11.68	0.529 ¹ ✓
T2	140 - 120	2L2 1/2x2 1/2x3/16x3/8	5.61	5.41	85.6 K=1.00	1.8000	-22.03	47.35	0.465 ¹ ✓
T3	120 - 100	2L 'a' > 30.9968 in - 29 2L2 1/2x2 1/2x3/16x3/8	6.04	5.82	92.1 K=1.00	1.8000	-24.11	43.54	0.554 ¹ ✓
T4	100 - 80	2L 'a' > 33.3379 in - 66 2L2 1/2x2 1/2x3/16x3/8	6.06	5.84	92.3 K=1.00	1.8000	-25.09	43.40	0.578 ¹ ✓
T5	80 - 60	2L 'a' > 33.4223 in - 132 2L2 1/2x2 1/2x3/16x3/8	7.07	6.83	108.0 K=1.00	1.8000	-21.43	34.50	0.621 ¹ ✓
T6	60 - 40	2L 'a' > 39.0963 in - 144 2L2 1/2x2 1/2x3/16x3/8	7.64	7.40	117.1 K=1.00	1.8000	-21.29	29.67	0.718 ¹ ✓
T7	40 - 20	2L 'a' > 42.3694 in - 183 2L2 1/2x2 1/2x3/16x3/8	8.24	7.98	126.3 K=1.00	1.8000	-22.56	25.48	0.885 ¹ ✓
T8	20 - 0	2L 'a' > 45.7189 in - 222 2L3x3x3/16x3/8	8.86	8.62	114.6 K=1.00	2.1800	-23.47	36.77	0.638 ¹ ✓
		2L 'a' > 49.2164 in - 261							

¹ P_u / φP_u controls

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	Vertical Bridge	T. Cheriyan

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T2	140 - 120	2L1 3/4x1 3/4x3/16x3/8	5.61	2.70	60.3 K=1.00	1.2422	-5.73	42.84	0.134 ¹ ✓
T3	120 - 100	2L 'a' > 15.5372 in - 22 2L1 3/4x1 3/4x3/16x3/8	7.11	3.42	76.4 K=1.00	1.2422	-4.35	36.49	0.119 ¹ ✓
T4	100 - 80	2L 'a' > 19.6748 in - 64 2L1 3/4x1 3/4x3/16x3/8	8.61	4.15	92.7 K=1.00	1.2422	-6.13	29.83	0.205 ¹ ✓
T5	80 - 60	2L 'a' > 23.8725 in - 103 2L1 3/4x1 3/4x3/16x3/8	10.11	4.88	109.0 K=1.00	1.2422	-7.95	23.46	0.339 ¹ ✓
T6	60 - 40	2L 'a' > 28.0701 in - 142 2L1 3/4x1 3/4x3/16x3/8	11.61	5.62	125.5 K=1.00	1.2422	-9.68	17.82	0.543 ¹ ✓
T7	40 - 20	2L 'a' > 32.3277 in - 181 2L1 3/4x1 3/4x3/16x3/8	13.11	6.34	141.8 K=1.00	1.2422	-11.30	13.96	0.810 ¹ ✓
T8	20 - 0	2L 'a' > 36.5253 in - 220 2L2x2x3/16x3/8	14.61	7.09	138.8 K=1.00	1.4300	-12.85	16.77	0.766 ¹ ✓
		2L 'a' > 40.7749 in - 259							

¹ P_u / φP_u controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T1	150 - 140	L1 3/4x1 3/4x3/16	3.79	3.64	127.2 K=1.00	0.6211	-3.19	8.67	0.368 ¹ ✓

¹ P_u / φP_u controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T2	140 - 120	L1 3/4x1 3/4x3/16	2.80	2.80	97.9 K=1.00	0.6211	-0.06	13.86	0.005 ¹ ✓
T3	120 - 100	L1 3/4x1 3/4x3/16	3.20	3.20	111.7 K=1.00	0.6211	-0.03	11.23	0.003 ¹ ✓
T4	100 - 80	L1 3/4x1 3/4x3/16	3.95	3.95	137.9 K=1.00	0.6211	-0.01	7.38	0.002 ¹ ✓

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	Vertical Bridge	T. Cheriyan

Section No.	Elevation	Size	L	L _n	KI/r	A	P _n	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_n}{\phi P_n}$
T5	80 - 60	L1 3/4x1 3/4x3/16	4.70	4.70	164.1 K=1.00	0.6211	-0.01	5.21	0.002 ¹ ✓
T6	60 - 40	L1 3/4x1 3/4x3/16	5.45	5.45	190.3 K=1.00	0.6211	-0.01	3.87	0.003 ¹ ✓
T7	40 - 20	L1 3/4x1 3/4x3/16	6.55	6.55	229.0 K=1.00	0.6211	-0.01	2.68	0.004 ¹ ✓
T8	20 - 0	L1 3/4x1 3/4x3/16	6.95	6.95	242.7 K=1.00	0.6211	-0.01	2.38	0.006 ¹ ✓

¹ P_n / φP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L _n	KI/r	A	P _n	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_n}{\phi P_n}$
T1	150 - 140	1 3/4	10.01	0.50	13.7	2.4053	16.66	108.24	0.154 ¹ ✓
T2	140 - 120	2 1/2	20.02	0.50	9.6	4.9087	111.91	220.89	0.507 ¹ ✓
T3	120 - 100	3 1/4	20.02	0.50	7.4	8.2958	246.24	373.31	0.660 ¹ ✓
T4	100 - 80	3 3/4	20.02	0.50	6.4	11.0447	360.95	497.01	0.726 ¹ ✓
T5	80 - 60	4 1/4	20.02	0.50	5.7	14.1863	460.70	638.38	0.722 ¹ ✓
T6	60 - 40	4 1/2	20.02	0.50	5.3	15.9043	551.15	715.69	0.770 ¹ ✓
T7	40 - 20	5	20.02	0.50	4.8	19.6350	636.31	883.57	0.720 ¹ ✓
T8	20 - 0	5	20.02	0.50	4.8	19.6350	715.68	883.57	0.810 ¹ ✓

¹ P_n / φP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation	Size	L	L _n	KI/r	A	P _n	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_n}{\phi P_n}$
T1	150 - 140	L1 3/4x1 3/4x3/16	6.22	3.13	69.9	0.3604	6.93	17.57	0.395 ¹ ✓
T2	140 - 120	2L2 1/2x2 1/2x3/16x3/8	5.61	5.41	83.5	1.1391	23.02	55.53	0.414 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T3	120 - 100	2L 'a' > 30.9968 in - 30 2L2 1/2x2 1/2x3/16x3/8	6.04	5.82	89.8	1.1391	24.64	55.53	0.444 ¹ ✓
T4	100 - 80	2L 'a' > 33.3379 in - 65 2L2 1/2x2 1/2x3/16x3/8	6.06	5.84	90.0	1.1391	24.33	55.53	0.438 ¹ ✓
T5	80 - 60	2L 'a' > 33.4223 in - 133 2L2 1/2x2 1/2x3/16x3/8	6.56	6.32	97.4	1.1391	22.05	55.53	0.397 ¹ ✓
T6	60 - 40	2L 'a' > 36.1764 in - 172 2L2 1/2x2 1/2x3/16x3/8	7.64	7.40	114.1	1.1391	21.25	55.53	0.383 ¹ ✓
T7	40 - 20	2L 'a' > 42.3694 in - 182 2L2 1/2x2 1/2x3/16x3/8	8.24	7.98	123.1	1.1391	22.02	55.53	0.397 ¹ ✓
T8	20 - 0	2L 'a' > 45.7189 in - 221 2L3x3x3/16x3/8	8.86	8.62	110.1	1.4241	22.13	69.42	0.319 ¹ ✓
		2L 'a' > 49.2164 in - 261							✓

¹ P_u / φP_u controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T2	140 - 120	2L1 3/4x1 3/4x3/16x3/8	5.61	2.70	60.3	0.7207	5.78	35.13	0.165 ¹ ✓
T3	120 - 100	2L 'a' > 15.5372 in - 22 2L1 3/4x1 3/4x3/16x3/8	7.11	3.42	76.4	0.7207	4.35	35.13	0.124 ¹ ✓
T4	100 - 80	2L 'a' > 19.6748 in - 64 2L1 3/4x1 3/4x3/16x3/8	8.61	4.15	92.7	0.7207	6.13	35.13	0.174 ¹ ✓
T5	80 - 60	2L 'a' > 23.8725 in - 106 2L1 3/4x1 3/4x3/16x3/8	10.11	4.88	109.0	0.7207	7.95	35.13	0.226 ¹ ✓
T6	60 - 40	2L 'a' > 28.0701 in - 145 2L1 3/4x1 3/4x3/16x3/8	11.61	5.62	125.5	0.7207	9.68	35.13	0.275 ¹ ✓
T7	40 - 20	2L 'a' > 32.3277 in - 184 2L1 3/4x1 3/4x3/16x3/8	13.11	6.34	141.8	0.7207	11.30	35.13	0.322 ¹ ✓
T8	20 - 0	2L 'a' > 36.5253 in - 223 2L2x2x3/16x3/8	14.61	7.09	138.0	0.8616	12.85	42.00	0.306 ¹ ✓
		2L 'a' > 40.7749 in - 262							✓

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 $^1 P_u / \phi P_n$ controls

Top Girt 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	K	K	ϕP_n
T1	150 - 140	L1 3/4x1 3/4x3/16	3.79	3.64	81.4	0.3604	3.23	17.57	0.184 ¹ ✓

 $^1 P_u / \phi P_n$ controls

Inner Bracing 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	K	K	ϕP_n
T2	140 - 120	L1 3/4x1 3/4x3/16	2.45	2.45	54.7	0.6211	0.03	27.95	0.001 ¹ ✓
T3	120 - 100	L1 3/4x1 3/4x3/16	3.55	3.55	79.4	0.6211	0.00	27.95	0.000 ¹ ✓
T4	100 - 80	L1 3/4x1 3/4x3/16	4.30	4.30	96.2	0.6211	0.00	27.95	0.000 ¹ ✓
T5	80 - 60	L1 3/4x1 3/4x3/16	5.05	5.05	112.9	0.6211	0.00	27.95	0.000 ¹ ✓
T6	60 - 40	L1 3/4x1 3/4x3/16	5.80	5.80	129.7	0.6211	0.00	27.95	0.000 ¹ ✓
T7	40 - 20	L1 3/4x1 3/4x3/16	6.55	6.55	146.5	0.6211	0.00	27.95	0.000 ¹ ✓
T8	20 - 0	L1 3/4x1 3/4x3/16	7.30	7.30	163.2	0.6211	0.01	27.95	0.000 ¹ ✓

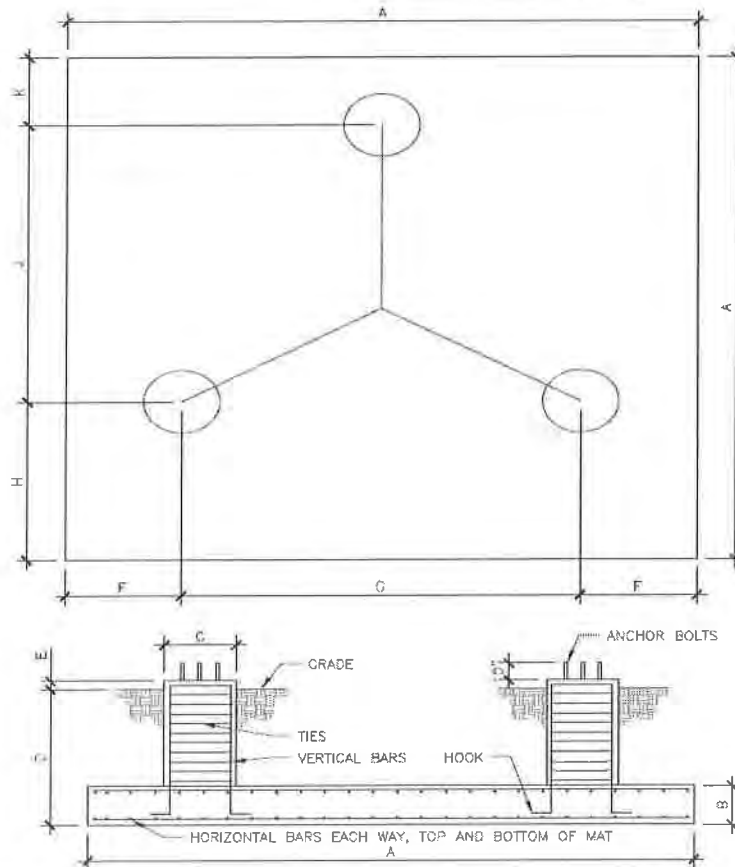
 $^1 P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	150 - 140	Leg	1 3/4	3	-10.79	35.60	30.3	Pass
T2	140 - 120	Leg	2 1/2	21	-86.28	120.11	71.8	Pass
T3	120 - 100	Leg	3 1/4	60	-225.21	260.31	86.5	Pass
T4	100 - 80	Leg	3 3/4	99	-350.31	379.11	92.4	Pass
T5	80 - 60	Leg	4 1/4	138	-458.83	517.03	88.7	Pass
T6	60 - 40	Leg	4 1/2	177	-558.37	593.00	94.2	Pass
T7	40 - 20	Leg	5	216	-652.22	758.73	86.0	Pass
T8	20 - 0	Leg	5	255	-741.35	758.73	97.7	Pass
T1	150 - 140	Diagonal	L1 3/4x1 3/4x3/16	11	-6.18	11.68	52.9	Pass
							72.2 (b)	
T2	140 - 120	Diagonal	2L2 1/2x2 1/2x3/16x3/8	29	-22.03	47.35	46.5	Pass

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	Vertical Bridge	T. Cheriyan

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T3	120 - 100	Diagonal	2L2 1/2x2 1/2x3/16x3/8	66	-24.11	43.54	88.4 (b) 55.4	Pass
T4	100 - 80	Diagonal	2L2 1/2x2 1/2x3/16x3/8	132	-25.09	43.40	94.6 (b) 57.8	Pass
T5	80 - 60	Diagonal	2L2 1/2x2 1/2x3/16x3/8	144	-21.43	34.50	93.4 (b) 62.1	Pass
T6	60 - 40	Diagonal	2L2 1/2x2 1/2x3/16x3/8	183	-21.29	29.67	84.6 (b) 71.8	Pass
T7	40 - 20	Diagonal	2L2 1/2x2 1/2x3/16x3/8	222	-22.56	25.48	81.6 (b) 88.5	Pass
T8	20 - 0	Diagonal	2L3x3x3/16x3/8	261	-23.47	36.77	63.8	Pass
T2	140 - 120	Horizontal	2L1 3/4x1 3/4x3/16x3/8	22	5.78	35.13	80.2 (b) 16.5	Pass
T3	120 - 100	Horizontal	2L1 3/4x1 3/4x3/16x3/8	64	4.35	35.13	30.1 (b) 12.4	Pass
T4	100 - 80	Horizontal	2L1 3/4x1 3/4x3/16x3/8	103	-6.13	29.83	22.6 (b) 20.5	Pass
T5	80 - 60	Horizontal	2L1 3/4x1 3/4x3/16x3/8	142	-7.95	23.46	31.9 (b) 33.9	Pass
T6	60 - 40	Horizontal	2L1 3/4x1 3/4x3/16x3/8	181	-9.68	17.82	41.4 (b) 54.3	Pass
T7	40 - 20	Horizontal	2L1 3/4x1 3/4x3/16x3/8	220	-11.30	13.96	81.0	Pass
T8	20 - 0	Horizontal	2L2x2x3/16x3/8	259	-12.85	16.77	76.6	Pass
T1	150 - 140	Top Girt	L1 3/4x1 3/4x3/16	4	-3.19	8.67	36.8	Pass
T2	140 - 120	Inner Bracing	L1 3/4x1 3/4x3/16	32	-0.06	13.86	0.5	Pass
T3	120 - 100	Inner Bracing	L1 3/4x1 3/4x3/16	90	-0.03	11.23	0.3	Pass
T4	100 - 80	Inner Bracing	L1 3/4x1 3/4x3/16	128	-0.01	7.38	0.2	Pass
T5	80 - 60	Inner Bracing	L1 3/4x1 3/4x3/16	166	-0.01	5.21	0.2	Pass
T6	60 - 40	Inner Bracing	L1 3/4x1 3/4x3/16	205	-0.01	3.87	0.3	Pass
T7	40 - 20	Inner Bracing	L1 3/4x1 3/4x3/16	226	-0.01	2.68	0.4	Pass
T8	20 - 0	Inner Bracing	L1 3/4x1 3/4x3/16	284	-0.01	2.38	0.6	Pass
							Summary	
							Leg (T8)	97.7
							Diagonal (T3)	94.6
							Horizontal (T7)	81.0
							Top Girt (T1)	36.8
							Inner Bracing (T8)	0.6
							Bolt Checks	94.6
							RATING =	97.7

COMBINED FOOTING DESIGN

A (ft)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	J (in)	K (in)
40	27	48	84	6	150	180	188 1/16	155 7/8	136 1/16
Rebar Schedule									
Each Pier (3 req'd)		Use (16) #9 vertical bars w/ 16" hook w/ #4 ties @ 6" c/c.							
Pad		Use (28) #10 bars equally spaced, each way, top and bottom of mat. (112 bars total)							

General Notes:

1. Concrete Shall be placed in accordance with ACI 318-14 Latest Revision.
2. Concrete shall have a minimum 28 day compressive strength of 4,000 PSI, in accordance with ACI 318-14.
3. Rebar to conform to ASTM specification A615 grade 60, except ties may be grade 40.
4. All rebar to have a minimum of 3" clear cover.
5. Bottom and front surfaces shall rest on undisturbed soil.
6. Backfill shall be compacted to 95% of maximum Proctor density.
7. Contractor shall be responsible to review and follow all recommendations of the geotechnical report.
8. Concrete mixtures shall meet the durability requirements of Chapter 19 of the ACI 318-14.
9. Total estimated concrete volume = 140.67 cubic yards.

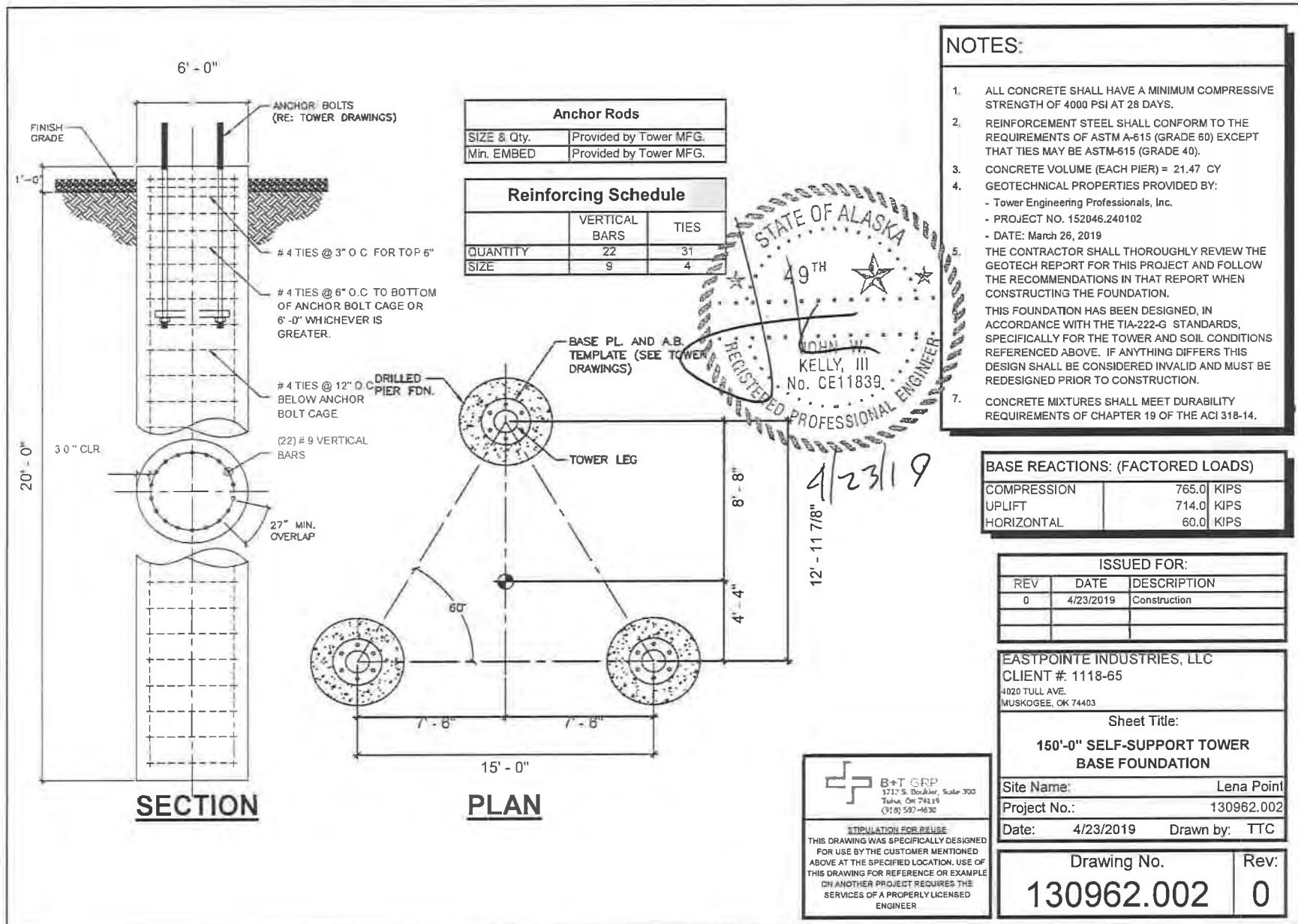
Supplemental Notes:

Soil values obtained from Tower Engineering Professionals, Inc., Project No. 152046.240102, Dated 03/26/2019

Anchor bolts provided by others

	B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74159 (918) 587-4630	Date:	4/23/2019		Eastpointe Industries 4020 Tull Ave Muskogee, OK 74403 (918) 683-2169
		Site:	1118-65-Lena Point		
		Project:	150' Self-Supporter		
		Job:	130962.002		
		Scale:	NTS	Drawn By:	TTC

Attachment A - Application



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	Client	Designed by
	Vertical Bridge	T. Cheriyan

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 150.00 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 3.75 ft at the top and 15.00 ft at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Juneau County, Alaska.

Basic wind speed of 108 mph.

Structure Class II.

Exposure Category C.

Topographic Category 3.

Crest Height 278.00 ft.

Nominal ice thickness of 0.2500 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.

Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

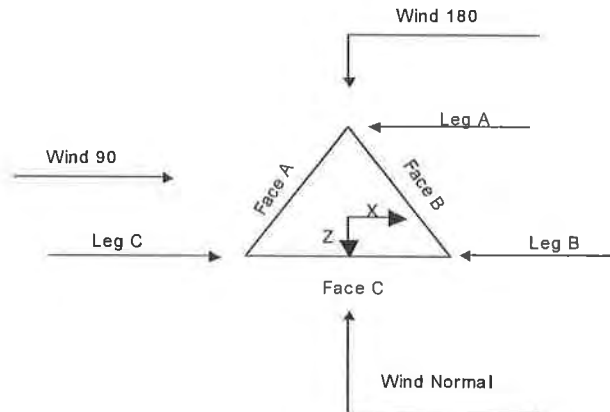
Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|-------------------------------------|--------------------------------------|--|
| Consider Moments - Legs | 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-G Bracing Resist Exemption |
| √ Include Bolts In Member Capacity | Autocalc Torque Arm Areas | Use TIA-222-G 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 |

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Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	150.00-140.00			3.75	1	10.00
T2	140.00-120.00			4.50	1	20.00
T3	120.00-100.00			6.00	1	20.00
T4	100.00-80.00			7.50	1	20.00
T5	80.00-60.00			9.00	1	20.00
T6	60.00-40.00			10.50	1	20.00
T7	40.00-20.00			12.00	1	20.00
T8	20.00-0.00			13.50	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				m	m
T1	150.00-140.00	4.50	X Brace	No	No	6.0000	6.0000
T2	140.00-120.00	4.75	Double K	No	Yes	6.0000	6.0000
T3	120.00-100.00	4.75	Double K	No	Yes	6.0000	6.0000
T4	100.00-80.00	4.75	Double K	No	Yes	6.0000	6.0000
T5	80.00-60.00	4.75	Double K	No	Yes	6.0000	6.0000
T6	60.00-40.00	4.75	Double K	No	Yes	6.0000	6.0000
T7	40.00-20.00	4.75	Double K	No	Yes	6.0000	6.0000
T8	20.00-0.00	4.75	Double K	No	Yes	6.0000	6.0000

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Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 150.00-140.00	Solid Round	1 3/4	A529-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T2 140.00-120.00	Solid Round	2 1/2	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T3 120.00-100.00	Solid Round	3 1/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T4 100.00-80.00	Solid Round	3 3/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T5 80.00-60.00	Solid Round	4 1/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T6 60.00-40.00	Solid Round	4 1/2	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T7 40.00-20.00	Solid Round	5	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T8 20.00-0.00	Solid Round	5	A529-50 (50 ksi)	Double Angle	2L3x3x3/16x3/8	A36M-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 150.00-140.00	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)	Solid Round		A529-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T2 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T3 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T4 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T5 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T6 60.00-40.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T7 40.00-20.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T8 20.00-0.00	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2x2x3/16x3/8	A36M-50 (50 ksi)

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Tower Section Geometry (cont'd)

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
ft						
T2 140.00-120.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T3 120.00-100.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T4 100.00-80.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T5 80.00-60.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T6 60.00-40.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T7 40.00-20.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T8 20.00-0.00	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_j	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
T1 150.00-140.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 140.00-120.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T3 120.00-100.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T4 100.00-80.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T5 80.00-60.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T6 60.00-40.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T7 40.00-20.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T8 20.00-0.00	0.00	0.3750	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors [†]							
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
T1 150.00-140.00	No	No	1	1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1

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Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹							
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
140.00-120.00										
T3	No	No	1	1	1	1	1	1	1	1
120.00-100.00										
T4	No	No	1	1	1	1	1	1	1	1
100.00-80.00										
T5	No	No	1	1	1	1	1	1	1	1
80.00-60.00										
T6	No	No	1	1	1	1	1	1	1	1
60.00-40.00										
T7	No	No	1	1	1	1	1	1	1	1
40.00-20.00										
T8 20.00-0.00	No	No	1	1	1	1	1	1	1	1

¹Note: 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
150.00-140.00														
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
140.00-120.00														
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
120.00-100.00														
T4	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														
T5 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
T6 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
T7 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
T8 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 Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1	Flange	0.0000	0	0.6250	1	0.6250	1	0.0000	0	0.6250	0	0.0000	0	0.6250	0
150.00-140.00		A325N		A325X		A325X		A325N		A325N		A325X		A325N	
T2	Flange	0.7500	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	1	0.6250	0
140.00-120.00		A325N		A325X		A325N		A325N		A325N		A325X		A325N	

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Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T3 120.00-100.00	Flange	0.7500 A325N	6	0.6250 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325X	1	0.6250 A325N	0
T4 100.00-80.00	Flange	1.0000 A325N	6	0.6250 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325X	1	0.6250 A325N	0
T5 80.00-60.00	Flange	1.2500 A325N	6	0.6250 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325X	1	0.6250 A325N	0
T6 60.00-40.00	Flange	1.2500 A325N	6	0.6250 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325X	1	0.6250 A325N	0
T7 40.00-20.00	Flange	1.5000 A325N	6	0.6250 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325X	1	0.6250 A325N	0
T8 20.00-0.00	Flange	1.5000 A325N	6	0.6250 A325X	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325X	1	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
1-5/8" (Carrier 1) **	C	No	No	Ar (CaAa)	145.00 - 10.00	0.0000	0	12	6	0.7500	1.9800		0.00
1-5/8" (Carrier 2) **	B	No	No	Ar (CaAa)	135.00 - 10.00	0.0000	0	12	6	0.7500	1.9800		0.00
1-5/8" (Carrier 3) **	A	No	No	Ar (CaAa)	125.00 - 10.00	0.0000	0	12	6	0.7500	1.9800		0.00
1-5/8" (Carrier 4) **	C	No	No	Ar (CaAa)	115.00 - 10.00	0.0000	-0.25	12	6	0.7500	1.9800		0.00
Safety Line 3/8 **	A	No	No	Ar (CaAa)	150.00 - 10.00	0.0000	0.45	1	1	0.3750	0.3750		0.00
Feedline Ladder (Af)	C	No	No	Af (CaAa)	145.00 - 10.00	0.0000	0.3	1	1	3.0000	0.2500		0.01
Feedline Ladder (Af)	B	No	No	Af (CaAa)	135.00 - 10.00	0.0000	0.3	1	1	3.0000	0.2500		0.01
Feedline Ladder (Af)	A	No	No	Af (CaAa)	125.00 - 10.00	0.0000	0.3	1	1	3.0000	0.2500		0.01

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C ₁ A ₁ In Face ft ²	C ₁ A ₁ Out Face ft ²	Weight K
T1	150.00-140.00	A	0.000	0.000	0.375	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	12.088	0.000	0.09
T2	140.00-120.00	A	0.000	0.000	12.838	0.000	0.09

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{IAA} In Face ft ²	C_{IAA} Out Face ft ²	Weight K
T3	120.00-100.00	B	0.000	0.000	36.265	0.000	0.26
		C	0.000	0.000	48.353	0.000	0.34
		A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
T4	100.00-80.00	C	0.000	0.000	83.993	0.000	0.47
		A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
		C	0.000	0.000	95.873	0.000	0.51
T5	80.00-60.00	A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
		C	0.000	0.000	95.873	0.000	0.51
		A	0.000	0.000	49.103	0.000	0.35
T6	60.00-40.00	B	0.000	0.000	48.353	0.000	0.34
		C	0.000	0.000	95.873	0.000	0.51
		A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
T7	40.00-20.00	C	0.000	0.000	95.873	0.000	0.51
		A	0.000	0.000	49.103	0.000	0.35
		B	0.000	0.000	48.353	0.000	0.34
		C	0.000	0.000	95.873	0.000	0.51
T8	20.00-0.00	A	0.000	0.000	24.552	0.000	0.17
		B	0.000	0.000	24.177	0.000	0.17
		C	0.000	0.000	47.937	0.000	0.26

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_{IAA} In Face ft ²	C_{IAA} Out Face ft ²	Weight K
T1	150.00-140.00	A	0.654	0.000	0.000	1.682	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	12.096	0.000	0.22
T2	140.00-120.00	A	0.655	0.000	0.000	15.467	0.000	0.24
		B		0.000	0.000	36.295	0.000	0.65
		C		0.000	0.000	48.394	0.000	0.86
T3	120.00-100.00	A	0.656	0.000	0.000	51.778	0.000	0.89
		B		0.000	0.000	48.405	0.000	0.86
		C		0.000	0.000	82.117	0.000	1.36
T4	100.00-80.00	A	0.656	0.000	0.000	51.784	0.000	0.89
		B		0.000	0.000	48.409	0.000	0.86
		C		0.000	0.000	93.361	0.000	1.53
T5	80.00-60.00	A	0.655	0.000	0.000	51.765	0.000	0.88
		B		0.000	0.000	48.396	0.000	0.86
		C		0.000	0.000	93.339	0.000	1.52
T6	60.00-40.00	A	0.650	0.000	0.000	51.691	0.000	0.88
		B		0.000	0.000	48.343	0.000	0.86
		C		0.000	0.000	93.253	0.000	1.52
T7	40.00-20.00	A	0.635	0.000	0.000	51.484	0.000	0.88
		B		0.000	0.000	48.193	0.000	0.86
		C		0.000	0.000	93.012	0.000	1.51
T8	20.00-0.00	A	0.587	0.000	0.000	25.399	0.000	0.43
		B		0.000	0.000	23.849	0.000	0.42
		C		0.000	0.000	46.106	0.000	0.74

Feed Line Center of Pressure

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Section	Elevation	CP _X	CP _Z	CP _X Ice	CP _Z Ice
	ft	in	in	in	in
T1	150.00-140.00	-0.0822	1.6754	-0.3308	0.8892
T2	140.00-120.00	1.3189	-1.0865	1.1738	-0.9131
T3	120.00-100.00	3.2965	-2.0649	2.8373	-1.8494
T4	100.00-80.00	4.7462	-1.8285	4.0892	-1.5821
T5	80.00-60.00	5.3885	-2.0490	4.5939	-1.7602
T6	60.00-40.00	5.9930	-2.2579	5.0774	-1.9322
T7	40.00-20.00	6.5484	-2.4479	5.4998	-2.0785
T8	20.00-0.00	4.2276	-1.5358	3.5961	-1.3275

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	1	1-5/8"	140.00 - 145.00	0.6000	0.6000
T1	9	Safety Line 3/8	140.00 - 150.00	0.6000	0.6000
T1	11	Feedline Ladder (Af)	140.00 - 145.00	0.6000	0.6000
T2	1	1-5/8"	120.00 - 140.00	0.6000	0.6000
T2	3	1-5/8"	120.00 - 135.00	0.6000	0.6000
T2	5	1-5/8"	120.00 - 125.00	0.6000	0.6000
T2	9	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T2	11	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T2	12	Feedline Ladder (Af)	120.00 - 135.00	0.6000	0.6000
T2	13	Feedline Ladder (Af)	120.00 - 125.00	0.6000	0.6000
T3	1	1-5/8"	100.00 - 120.00	0.6000	0.6000
T3	3	1-5/8"	100.00 - 120.00	0.6000	0.6000
T3	5	1-5/8"	100.00 - 120.00	0.6000	0.6000
T3	7	1-5/8"	100.00 - 115.00	0.6000	0.6000
T3	9	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T3	11	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	12	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	13	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T4	1	1-5/8"	80.00 - 100.00	0.6000	0.6000
T4	3	1-5/8"	80.00 - 100.00	0.6000	0.6000
T4	5	1-5/8"	80.00 - 100.00	0.6000	0.6000
T4	7	1-5/8"	80.00 - 100.00	0.6000	0.6000
T4	9	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T4	11	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment	Placement ft		C _a A _f Front ft ²	C _a A _f Side ft ²	Weight K
Lightning Rod 1"x10'	C	From Leg	0.00 0.00 5.00	0.0000	150.00	No Ice 1/2" Ice	1.00 2.02	1.00 2.02	0.04 0.05
**									
Sector1(CaAa=13333 33 Sq in)No Ice (Carrier 1)	A	From Leg	4.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0.70 1.40
Sector2(CaAa=13333 33 Sq in)No Ice (Carrier 1)	B	From Leg	4.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0.70 1.40
Sector3(CaAa=13333 33	C	From Leg	4.00	0.0000	145.00	No Ice	92.60	62.04	0.70

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K	
Sq.in)No Ice (Carrier 1) **			0.00 0.00		1/2" Ice	115.75	77.55	1.40	
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 2) **	A	From Leg	4.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2) **	B	From Leg	4.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2) **	C	From Leg	4.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector1(CaAa=13333.33 Sq.in)No Ice (Carrier 3) **	A	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0.70 1.40
Sector2(CaAa=13333.33 Sq.in)No Ice (Carrier 3) **	B	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0.70 1.40
Sector3(CaAa=13333.33 Sq.in)No Ice (Carrier 3) **	C	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	92.60 115.75	62.04 77.55	0.70 1.40
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 4) **	A	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 4) **	B	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 4) **	C	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	69.44 86.80	46.52 58.16	0.70 1.40

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice

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Comb. No.	Description
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	150 - 140	Leg	Max Tension	15	16.66	1.37	0.00
			Max. Compression	2	-18.11	1.47	0.01
			Max. Mx	14	16.43	-1.47	-0.00
			Max. My	24	-1.03	-0.03	0.94
			Max. Vy	2	-5.75	1.47	0.01
		Diagonal	Max. Vx	24	4.27	0.00	0.00
			Max Tension	4	6.93	0.00	0.00
			Max. Compression	4	-6.18	0.00	0.00
			Max. Mx	2	-0.92	0.06	-0.00
			Max. My	4	-6.18	-0.01	0.06
			Max. Vy	2	0.02	0.06	-0.00
			Max. Vx	4	-0.02	0.00	0.00
		Top Girt	Max Tension	14	3.23	0.00	0.00
			Max. Compression	2	-3.19	0.00	0.00
			Max. Mx	26	0.04	-0.01	0.00
			Max. My	34	0.06	0.00	0.00

inxTower B+T Group 1717 S. Boulder Ave, Ste 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	ELL # 1118-65 - Lena Point, (Site# AK-5241)	Page	12 of 26
	Project	150' SST - JUNEAU County, AK	Date	11:09:38 04/23/19
	Client	Vertical Bridge	Designed by	T. Cheriyan

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	140 - 120	Lcg	Max. Vy	26	0.01	0.00	0.00
			Max. Vx	34	0.00	0.00	0.00
			Max Tension	15	111.91	4.12	-0.00
			Max. Compression	2	-118.46	3.63	-0.02
			Max. Mx	2	-118.46	-5.23	0.01
			Max. My	24	-1.04	-0.08	2.35
		Diagonal	Max. Vy	2	-17.70	3.63	-0.02
			Max. Vx	4	6.75	-0.05	-2.00
			Max Tension	4	23.02	0.00	0.00
			Max. Compression	4	-22.03	0.00	0.00
			Max. Mx	34	5.82	0.03	0.00
			Max. My	27	-0.42	0.00	-0.00
		Horizontal	Max. Vy	34	-0.02	0.00	0.00
			Max. Vx	27	0.00	0.00	0.00
			Max Tension	6	5.78	0.00	0.00
			Max. Compression	18	-5.73	0.03	-0.02
			Max. Mx	17	-4.70	0.03	-0.04
			Max. My	2	2.28	-0.03	0.05
		Inner Bracing	Max. Vy	2	-0.02	-0.03	0.05
			Max. Vx	2	-0.02	-0.03	0.05
			Max Tension	2	0.03	0.00	0.00
			Max. Compression	14	-0.06	0.00	0.00
			Max. Mx	26	-0.00	-0.00	0.00
			Max. My	2	0.00	0.00	-0.00
T3	120 - 100	Leg	Max. Vy	26	0.01	0.00	0.00
			Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	246.24	7.33	-0.04
			Max. Compression	2	-259.10	1.92	-0.04
			Max. Mx	2	-118.51	12.38	-0.04
			Max. My	4	-3.96	-0.07	-5.38
		Diagonal	Max. Vy	2	-22.43	1.92	-0.04
			Max. Vx	4	8.41	-0.06	-1.78
			Max Tension	24	24.64	0.00	0.00
			Max. Compression	4	-24.39	0.00	0.00
			Max. Mx	34	6.16	0.03	0.00
			Max. My	27	-0.28	0.00	-0.00
		Horizontal	Max. Vy	34	0.02	0.00	0.00
			Max. Vx	27	-0.00	0.00	0.00
			Max Tension	2	4.35	0.00	0.00
			Max. Compression	2	-4.35	0.00	-0.00
			Max. Mx	2	1.11	-0.03	0.01
			Max. My	10	1.15	-0.02	0.01
		Inner Bracing	Max. Vy	35	0.02	-0.02	0.00
			Max. Vx	10	-0.00	-0.02	0.01
			Max Tension	15	0.00	0.00	0.00
			Max. Compression	6	-0.03	0.00	0.00
			Max. Mx	26	-0.00	-0.01	0.00
			Max. My	2	-0.01	0.00	-0.00
T4	100 - 80	Leg	Max. Vy	26	0.01	0.00	0.00
			Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	360.95	8.21	-0.11
			Max. Compression	2	-379.85	1.20	-0.06
			Max. Mx	2	-259.12	13.11	-0.16
			Max. My	4	-6.69	-0.08	-6.00
		Diagonal	Max. Vy	2	-22.68	1.20	-0.06
			Max. Vx	4	8.64	-0.06	-2.08
			Max Tension	24	24.33	0.00	0.00
			Max. Compression	24	-25.09	0.00	0.00
			Max. Mx	34	5.42	0.04	0.00
			Max. My	27	-0.01	0.00	-0.00
			Max. Vy	34	-0.03	0.00	0.00

tnxTower B+T Group 1717 S. Boulder Ave, Ste 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	EII # 1118-65 - Lena Point, (Site# AK-5241)	Page	13 of 26
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	Client	Vertical Bridge	Designed by	T. Cheriyan

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T5	80 - 60	Horizontal	Max. Vx	27	0.00	0.00	0.00
			Max Tension	2	6.13	0.00	0.00
			Max. Compression	2	-6.13	-0.01	-0.00
			Max. Mx	35	-0.21	-0.02	-0.00
		Inner Bracing	Max. My	14	-3.10	0.00	0.01
			Max. Vy	35	0.02	-0.02	-0.00
			Max. Vx	14	0.00	0.00	0.01
			Max Tension	15	0.00	0.00	0.00
		Leg	Max. Compression	3	-0.01	0.00	0.00
			Max. Mx	26	-0.00	-0.01	0.00
			Max. My	2	-0.00	0.00	-0.00
			Max. Vy	26	0.01	0.00	0.00
		Diagonal	Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	460.70	10.07	-0.19
			Max. Compression	2	-486.50	-0.36	-0.04
			Max. Mx	2	-379.88	12.55	-0.28
		Horizontal	Max. My	4	-8.78	-0.09	-6.41
			Max. Vy	2	-23.87	-0.36	-0.04
			Max. Vx	4	9.04	-0.05	-1.95
			Max Tension	24	22.05	0.00	0.00
		Inner Bracing	Max. Compression	2	-22.91	0.00	0.00
			Max. Mx	34	5.23	0.06	0.00
			Max. My	27	0.24	0.00	-0.00
			Max. Vy	34	-0.03	0.00	0.00
		Leg	Max. Vx	27	0.00	0.00	0.00
			Max Tension	2	7.95	0.00	0.00
			Max. Compression	2	-7.95	-0.02	-0.00
			Max. Mx	27	-0.27	-0.03	-0.00
		Diagonal	Max. My	14	3.99	-0.01	0.01
			Max. Vy	27	-0.03	-0.02	0.00
			Max. Vx	14	0.00	-0.01	0.01
			Max Tension	15	0.00	0.00	0.00
		Horizontal	Max. Compression	4	-0.01	0.00	0.00
			Max. Mx	26	-0.00	-0.02	0.00
			Max. My	2	-0.01	0.00	-0.00
			Max. Vy	26	0.01	0.00	0.00
T6	60 - 40	Leg	Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	551.15	10.16	-0.24
			Max. Compression	2	-584.54	0.49	-0.08
			Max. Mx	2	-584.51	-12.30	0.32
		Diagonal	Max. My	4	-11.02	-0.08	-6.48
			Max. Vy	2	-25.56	0.49	-0.08
			Max. Vx	4	9.53	-0.04	-2.47
			Max Tension	25	21.25	0.00	0.00
		Horizontal	Max. Compression	2	-22.24	0.00	0.00
			Max. Mx	32	5.48	0.07	0.00
			Max. My	27	0.53	0.00	-0.00
			Max. Vy	32	-0.04	0.00	0.00
		Inner Bracing	Max. Vx	27	0.00	0.00	0.00
			Max Tension	2	9.68	0.00	0.00
			Max. Compression	2	-9.68	-0.02	-0.00
			Max. Mx	27	-0.32	-0.04	-0.00
		Leg	Max. My	14	4.85	-0.01	0.01
			Max. Vy	27	-0.03	-0.03	0.00
			Max. Vx	14	0.00	-0.01	0.01
			Max Tension	15	0.00	0.00	0.00
		Diagonal	Max. Compression	4	-0.01	0.00	0.00
			Max. Mx	26	-0.00	-0.02	0.00
			Max. My	2	-0.01	0.00	-0.00
			Max. Vy	26	0.01	0.00	0.00
		Horizontal	Max. Vx	2	0.00	0.00	0.00
			Max Tension	15	551.15	10.16	-0.24
			Max. Compression	2	-584.54	0.49	-0.08
			Max. Mx	2	-584.51	-12.30	0.32

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T7	40 - 20	Leg	Max Tension	15	636.31	12.61	-0.34
			Max. Compression	2	-678.29	-1.43	-0.05
			Max. Mx	2	-678.25	-15.30	0.43
			Max. My	4	-13.37	-0.07	-7.24
			Max. Vy	2	-27.73	-1.43	-0.05
			Max. Vx	4	9.95	-0.00	-1.76
		Diagonal	Max Tension	25	22.02	0.00	0.00
			Max. Compression	2	-22.56	0.00	0.00
			Max. Mx	32	5.99	0.08	0.00
			Max. My	27	1.03	0.00	-0.00
			Max. Vy	32	-0.04	0.00	0.00
			Max. Vx	27	0.00	0.00	0.00
		Horizontal	Max Tension	2	11.30	0.00	0.00
			Max. Compression	2	-11.30	-0.03	-0.00
			Max. Mx	27	-0.37	-0.05	-0.00
			Max. My	14	5.66	-0.02	0.01
			Max. Vy	27	0.03	-0.05	-0.00
			Max. Vx	14	0.00	-0.02	0.01
		Inner Bracing	Max Tension	5	0.00	0.00	0.00
			Max. Compression	4	-0.01	0.00	0.00
			Max. Mx	26	-0.00	-0.03	0.00
			Max. My	2	-0.01	0.00	-0.00
			Max. Vy	26	0.02	0.00	0.00
			Max. Vx	2	0.00	0.00	0.00
T8	20 - 0	Leg	Max Tension	15	715.68	12.29	-0.39
			Max. Compression	2	-766.69	0.00	0.00
			Max. Mx	2	-766.65	-15.07	0.49
			Max. My	4	-15.93	-0.03	-6.75
			Max. Vy	2	-30.12	0.00	0.00
			Max. Vx	4	9.97	-0.03	-6.75
		Diagonal	Max Tension	15	22.13	0.00	0.00
			Max. Compression	2	-23.47	0.00	0.00
			Max. Mx	27	6.22	0.12	0.00
			Max. My	27	2.04	0.00	-0.00
			Max. Vy	27	-0.05	0.00	0.00
			Max. Vx	27	-0.00	0.00	0.00
		Horizontal	Max Tension	2	12.85	0.00	0.00
			Max. Compression	2	-12.85	-0.04	-0.00
			Max. Mx	27	-0.50	-0.07	-0.00
			Max. My	14	6.42	-0.02	0.01
			Max. Vy	27	0.04	-0.07	-0.00
			Max. Vx	14	0.00	-0.02	0.01
		Inner Bracing	Max Tension	3	0.01	0.00	0.00
			Max. Compression	2	-0.01	0.00	0.00
			Max. Mx	29	-0.00	-0.03	0.00
			Max. My	14	-0.01	0.00	0.00
			Max. Vy	29	-0.02	0.00	0.00
			Max. Vx	14	-0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	739.24	49.96	-28.16
	Max. H _y	18	739.24	49.96	-28.16
	Max. H _x	7	-687.57	-48.22	27.07

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg B	Min. Vert	7	-687.57	-48.22	27.07
	Min. H _x	7	-687.57	-48.22	27.07
	Min. H _z	18	739.24	49.96	-28.16
	Max. Vert	10	735.50	-49.56	-28.37
	Max. H _x	23	-683.18	47.77	27.31
	Max. H _z	25	-610.50	41.34	27.94
Leg A	Min. Vert	23	-683.18	47.77	27.31
	Min. H _x	10	735.50	-49.56	-28.37
	Min. H _z	10	735.50	-49.56	-28.37
	Max. Vert	2	764.93	0.81	59.98
	Max. H _x	21	13.25	7.23	0.29
	Max. H _z	2	764.93	0.81	59.98
	Min. Vert	15	-713.71	-0.92	-58.12
	Min. H _x	9	13.25	-7.23	0.29
	Min. H _z	15	-713.71	-0.92	-58.12

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	44.90	0.00	0.00	3.27	-2.32	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	53.88	-0.00	-102.09	-9703.45	-2.89	22.54
0.9 Dead+1.6 Wind 0 deg - No Ice	40.41	-0.00	-102.09	-9695.64	-2.19	22.53
1.2 Dead+1.6 Wind 30 deg - No Ice	53.88	48.82	-84.57	-8158.89	-4715.87	42.85
0.9 Dead+1.6 Wind 30 deg - No Ice	40.41	48.83	-84.57	-8152.44	-4710.88	42.84
1.2 Dead+1.6 Wind 60 deg - No Ice	53.88	80.71	-46.60	-4553.41	-7896.50	16.44
0.9 Dead+1.6 Wind 60 deg - No Ice	40.41	80.71	-46.60	-4550.22	-7888.56	16.43
1.2 Dead+1.6 Wind 90 deg - No Ice	53.88	92.35	-0.00	3.88	-9036.78	-7.46
0.9 Dead+1.6 Wind 90 deg - No Ice	40.41	92.35	-0.00	2.88	-9027.78	-7.47
1.2 Dead+1.6 Wind 120 deg - No Ice	53.88	83.83	48.40	4662.34	-8071.32	5.88
0.9 Dead+1.6 Wind 120 deg - No Ice	40.41	83.83	48.40	4657.10	-8063.26	5.87
1.2 Dead+1.6 Wind 150 deg - No Ice	53.88	48.62	84.21	8120.17	-4688.59	10.74
0.9 Dead+1.6 Wind 150 deg - No Ice	40.41	48.62	84.21	8111.79	-4683.62	10.74
1.2 Dead+1.6 Wind 180 deg - No Ice	53.88	-0.00	98.08	9455.96	-2.88	-22.54
0.9 Dead+1.6 Wind 180 deg - No Ice	40.41	-0.00	98.08	9446.37	-2.18	-22.53
1.2 Dead+1.6 Wind 210 deg - No Ice	53.88	-48.82	84.57	8167.00	4709.90	-42.85
0.9 Dead+1.6 Wind 210 deg - No Ice	40.41	-48.82	84.57	8158.57	4706.30	-42.84
1.2 Dead+1.6 Wind 240 deg - No Ice	53.88	-84.18	48.60	4689.11	8112.01	-16.44
0.9 Dead+1.6 Wind 240 deg - No Ice	40.41	-84.18	48.60	4683.84	8105.30	-16.43

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	Client	Designed by
	Vertical Bridge	T. Cheriyan

Load Combination	Vertical K	Shear _x K	Shear _y K	Overturning Moment, M _x kip-ft	Overturning Moment, M _y kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.6 Wind 270 deg - No Ice	53.88	-92.35	-0.00	3.87	9031.19	7.46
0.9 Dead+1.6 Wind 270 deg - No Ice	40.41	-92.35	-0.00	2.88	9023.60	7.47
1.2 Dead+1.6 Wind 300 deg - No Ice	53.88	-80.36	-46.39	-4526.72	7844.60	-5.88
0.9 Dead+1.6 Wind 300 deg - No Ice	40.41	-80.36	-46.39	-4523.55	7838.10	-5.87
1.2 Dead+1.6 Wind 330 deg - No Ice	53.88	-48.62	-84.21	-8112.19	4683.17	-10.73
0.9 Dead+1.6 Wind 330 deg - No Ice	40.41	-48.62	-84.21	-8105.78	4679.60	-10.73
1.2 Dead+1.0 Ice+1.0 Temp	86.65	-0.00	-0.00	12.14	-9.66	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	86.65	-0.00	-25.34	-2425.99	-9.68	4.63
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	86.65	12.26	-21.24	-2054.20	-1202.70	8.46
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	86.65	20.51	-11.84	-1151.73	-2025.61	3.22
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	86.65	23.50	-0.00	12.16	-2319.96	-1.60
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	86.65	21.06	12.16	1193.37	-2055.58	0.81
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	86.65	12.22	21.17	2069.48	-1197.47	1.73
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	86.65	-0.00	24.63	2405.20	-9.67	-4.63
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	86.65	-12.26	21.24	2078.54	1183.34	-8.46
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	86.65	-21.13	12.20	1198.60	2045.28	-3.22
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	86.65	-23.50	-0.00	12.16	2300.62	1.60
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	86.65	-20.44	-11.80	-1146.51	1997.21	-0.81
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	86.65	-12.22	-21.17	-2045.15	1178.12	-1.73
Dead+Wind 0 deg - Service	44.90	-0.00	-19.69	-1868.29	-2.33	4.35
Dead+Wind 30 deg - Service	44.90	9.42	-16.31	-1570.51	-910.97	8.27
Dead+Wind 60 deg - Service	44.90	15.57	-8.99	-875.36	-1524.19	3.17
Dead+Wind 90 deg - Service	44.90	17.81	-0.00	3.28	-1744.04	-1.45
Dead+Wind 120 deg - Service	44.90	16.17	9.34	901.41	-1557.92	1.13
Dead+Wind 150 deg - Service	44.90	9.38	16.24	1568.06	-905.75	2.08
Dead+Wind 180 deg - Service	44.90	-0.00	18.92	1825.61	-2.33	-4.35
Dead+Wind 210 deg - Service	44.90	-9.42	16.31	1577.08	906.30	-8.27
Dead+Wind 240 deg - Service	44.90	-16.24	9.38	906.56	1562.19	-3.17
Dead+Wind 270 deg - Service	44.90	-17.81	-0.00	3.28	1739.39	1.45
Dead+Wind 300 deg - Service	44.90	-15.50	-8.95	-870.21	1510.61	-1.13
Dead+Wind 330 deg - Service	44.90	-9.38	-16.24	-1561.49	901.10	-2.08

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-44.90	0.00	-0.00	44.90	-0.00	0.000%
2	0.00	-53.88	-102.09	0.00	53.88	102.09	0.003%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
3	0.00	-40.41	-102.09	0.00	40.41	102.09	0.002%
4	48.83	-53.88	-84.57	-48.82	53.88	84.57	0.003%
5	48.83	-40.41	-84.57	-48.83	40.41	84.57	0.002%
6	80.71	-53.88	-46.60	-80.71	53.88	46.60	0.002%
7	80.71	-40.41	-46.60	-80.71	40.41	46.60	0.002%
8	92.35	-53.88	0.00	-92.35	53.88	0.00	0.003%
9	92.35	-40.41	0.00	-92.35	40.41	0.00	0.002%
10	83.83	-53.88	48.40	-83.83	53.88	-48.40	0.003%
11	83.83	-40.41	48.40	-83.83	40.41	-48.40	0.002%
12	48.62	-53.88	84.21	-48.62	53.88	-84.21	0.003%
13	48.62	-40.41	84.21	-48.62	40.41	-84.21	0.002%
14	0.00	-53.88	98.08	0.00	53.88	-98.08	0.002%
15	0.00	-40.41	98.08	0.00	40.41	-98.08	0.002%
16	-48.83	-53.88	84.57	48.82	53.88	-84.57	0.003%
17	-48.83	-40.41	84.57	48.82	40.41	-84.57	0.002%
18	-84.19	-53.88	48.60	84.18	53.88	-48.60	0.003%
19	-84.19	-40.41	48.60	84.18	40.41	-48.60	0.002%
20	-92.35	-53.88	0.00	92.35	53.88	0.00	0.003%
21	-92.35	-40.41	0.00	92.35	40.41	0.00	0.002%
22	-80.36	-53.88	-46.39	80.36	53.88	46.39	0.002%
23	-80.36	-40.41	-46.39	80.36	40.41	46.39	0.002%
24	-48.62	-53.88	-84.21	48.62	53.88	84.21	0.003%
25	-48.62	-40.41	-84.21	48.62	40.41	84.21	0.002%
26	0.00	-86.65	0.00	0.00	86.65	0.00	0.000%
27	0.00	-86.65	-25.34	0.00	86.65	25.34	0.000%
28	12.26	-86.65	-21.24	-12.26	86.65	21.24	0.000%
29	20.51	-86.65	-11.84	-20.51	86.65	11.84	0.000%
30	23.50	-86.65	0.00	-23.50	86.65	0.00	0.000%
31	21.06	-86.65	12.16	-21.06	86.65	-12.16	0.000%
32	12.22	-86.65	21.17	-12.22	86.65	-21.17	0.000%
33	0.00	-86.65	24.63	0.00	86.65	-24.63	0.000%
34	-12.26	-86.65	21.24	12.26	86.65	-21.24	0.000%
35	-21.13	-86.65	12.20	21.13	86.65	-12.20	0.000%
36	-23.50	-86.65	0.00	23.50	86.65	0.00	0.000%
37	-20.44	-86.65	-11.80	20.44	86.65	11.80	0.000%
38	-12.22	-86.65	-21.17	12.22	86.65	21.17	0.000%
39	0.00	-44.90	-19.69	0.00	44.90	19.69	0.001%
40	9.42	-44.90	-16.31	-9.42	44.90	16.31	0.001%
41	15.57	-44.90	-8.99	-15.57	44.90	8.99	0.001%
42	17.81	-44.90	0.00	-17.81	44.90	0.00	0.001%
43	16.17	-44.90	9.34	-16.17	44.90	-9.34	0.001%
44	9.38	-44.90	16.24	-9.38	44.90	-16.24	0.001%
45	0.00	-44.90	18.92	0.00	44.90	-18.92	0.001%
46	-9.42	-44.90	16.31	9.42	44.90	-16.31	0.001%
47	-16.24	-44.90	9.38	16.24	44.90	-9.38	0.001%
48	-17.81	-44.90	0.00	17.81	44.90	0.00	0.001%
49	-15.50	-44.90	-8.95	15.50	44.90	8.95	0.001%
50	-9.38	-44.90	-16.24	9.38	44.90	16.24	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	8	0.00000001	0.00014938
3	Yes	8	0.00000001	0.00011594

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4	Yes	8	0.00000001	0.00013660
5	Yes	8	0.00000001	0.00010339
6	Yes	8	0.00000001	0.00012359
7	Yes	8	0.00000001	0.00009028
8	Yes	8	0.00000001	0.00013680
9	Yes	8	0.00000001	0.00010351
10	Yes	8	0.00000001	0.00014902
11	Yes	8	0.00000001	0.00011550
12	Yes	8	0.00000001	0.00013658
13	Yes	8	0.00000001	0.00010340
14	Yes	8	0.00000001	0.00012308
15	Yes	8	0.00000001	0.00008988
16	Yes	8	0.00000001	0.00013661
17	Yes	8	0.00000001	0.00010340
18	Yes	8	0.00000001	0.00014928
19	Yes	8	0.00000001	0.00011575
20	Yes	8	0.00000001	0.00013681
21	Yes	8	0.00000001	0.00010352
22	Yes	8	0.00000001	0.00012358
23	Yes	8	0.00000001	0.00009028
24	Yes	8	0.00000001	0.00013659
25	Yes	8	0.00000001	0.00010340
26	Yes	6	0.00000001	0.00003802
27	Yes	9	0.00000001	0.00005850
28	Yes	9	0.00000001	0.00005778
29	Yes	9	0.00000001	0.00005708
30	Yes	9	0.00000001	0.00005783
31	Yes	9	0.00000001	0.00005853
32	Yes	9	0.00000001	0.00005774
33	Yes	9	0.00000001	0.00005696
34	Yes	9	0.00000001	0.00005779
35	Yes	9	0.00000001	0.00005859
36	Yes	9	0.00000001	0.00005785
37	Yes	9	0.00000001	0.00005706
38	Yes	9	0.00000001	0.00005775
39	Yes	8	0.00000001	0.00011021
40	Yes	8	0.00000001	0.00010800
41	Yes	8	0.00000001	0.00010583
42	Yes	8	0.00000001	0.00010820
43	Yes	8	0.00000001	0.00011032
44	Yes	8	0.00000001	0.00010794
45	Yes	8	0.00000001	0.00010553
46	Yes	8	0.00000001	0.00010802
47	Yes	8	0.00000001	0.00011043
48	Yes	8	0.00000001	0.00010823
49	Yes	8	0.00000001	0.00010581
50	Yes	8	0.00000001	0.00010796

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 140	4.558	39	0.2442	0.0281
T2	140 - 120	4.012	39	0.2447	0.0284
T3	120 - 100	2.954	39	0.2206	0.0266
T4	100 - 80	2.030	39	0.1817	0.0233
T5	80 - 60	1.298	39	0.1389	0.0190
T6	60 - 40	0.746	39	0.1003	0.0142
T7	40 - 20	0.356	39	0.0632	0.0093

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T8	20 - 0	0.108	39	0.0321	0.0042

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Lightning Rod 1"x10'	39	4.558	0.2442	0.0281	458997
145.00	Sector1(CaAa=13333.33 Sq.in)No Ice	39	4.285	0.2452	0.0283	458997
135.00	Sector1(CaAa=10000 Sq.in)No Ice	39	3.741	0.2416	0.0282	93184
125.00	Sector1(CaAa=13333.33 Sq.in)No Ice	39	3.210	0.2289	0.0273	42475
115.00	Sector1(CaAa=10000 Sq.in)No Ice	39	2.707	0.2115	0.0259	30012

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 140	23.700	2	1.2713	0.1454
T2	140 - 120	20.858	2	1.2729	0.1467
T3	120 - 100	15.353	2	1.1462	0.1378
T4	100 - 80	10.548	2	0.9437	0.1205
T5	80 - 60	6.743	2	0.7214	0.0984
T6	60 - 40	3.875	2	0.5210	0.0739
T7	40 - 20	1.847	2	0.3284	0.0482
T8	20 - 0	0.562	2	0.1668	0.0217

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Lightning Rod 1"x10'	2	23.700	1.2713	0.1454	87764
145.00	Sector1(CaAa=13333.33 Sq.in)No Ice	2	22.277	1.2759	0.1464	87764
135.00	Sector1(CaAa=10000 Sq.in)No Ice	2	19.446	1.2564	0.1459	17849
125.00	Sector1(CaAa=13333.33 Sq.in)No Ice	2	16.684	1.1899	0.1412	8118
115.00	Sector1(CaAa=10000 Sq.in)No Ice	2	14.069	1.0992	0.1340	5754

Bolt Design Data

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	150	Diagonal	A325X	0.6250	1	6.93	9.60	0.722 ✓	1	Member Block Shear
		Top Girt	A325X	0.6250	1	3.23	9.60	0.337 ✓	1	Member Block Shear
T2	140	Leg	A325N	0.7500	6	2.77	29.82	0.093 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	23.02	26.05	0.884 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	5.78	19.20	0.301 ✓	1	Member Block Shear
T3	120	Leg	A325N	0.7500	6	18.65	29.82	0.625 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	24.64	26.05	0.946 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	4.35	19.20	0.226 ✓	1	Member Block Shear
T4	100	Leg	A325N	1.0000	6	41.04	53.01	0.774 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	24.33	26.05	0.934 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	6.13	19.20	0.319 ✓	1	Member Block Shear
T5	80	Leg	A325N	1.2500	6	60.16	82.83	0.726 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	22.05	26.05	0.846 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	7.95	19.20	0.414 ✓	1	Member Block Shear
T6	60	Leg	A325N	1.2500	6	76.78	82.83	0.927 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	21.25	26.05	0.816 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	9.68	19.20	0.504 ✓	1	Member Block Shear
T7	40	Leg	A325N	1.5000	6	91.86	119.28	0.770 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	22.02	26.05	0.845 ✓	1	Member Block Shear
		Horizontal	A325X	0.6250	1	11.30	19.20	0.589 ✓	1	Member Block Shear
T8	20	Leg	A325N	1.5000	6	106.05	119.28	0.889 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	1	23.47	29.25	0.802 ✓	1	Member Bearing
		Horizontal	A325X	0.6250	1	12.85	21.48	0.598 ✓	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _{eff} ft	Kl/r	A in ²	P _u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	150 - 140	1 3/4	10.01	4.50	123.5 K=1.00	2.4053	-10.79	35.60	0.303 ✓

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Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _u	Ratio P _u / φP _u
	ft		ft	ft		in ²	K	K	
T2	140 - 120	2 1/2	20.02	4.75	91.3 K=1.00	4.9087	-86.28	120.11	0.718 ¹ ✓
T3	120 - 100	3 1/4	20.02	4.75	70.2 K=1.00	8.2958	-225.21	260.31	0.865 ¹ ✓
T4	100 - 80	3 3/4	20.02	4.75	60.9 K=1.00	11.0447	-350.31	379.11	0.924 ¹ ✓
T5	80 - 60	4 1/4	20.02	4.75	53.7 K=1.00	14.1863	-458.83	517.03	0.887 ¹ ✓
T6	60 - 40	4 1/2	20.02	4.75	50.7 K=1.00	15.9043	-558.37	593.00	0.942 ¹ ✓
T7	40 - 20	5	20.02	4.75	45.6 K=1.00	19.6350	-652.22	758.73	0.860 ¹ ✓
T8	20 - 0	5	20.02	4.75	45.6 K=1.00	19.6350	-741.35	758.73	0.977 ¹ ✓

¹ P_u / φP_u controls

Diagonal Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _u	Ratio P _u / φP _u
	ft		ft	ft		in ²	K	K	
T1	150 - 140	L1 3/4x1 3/4x3/16	6.22	3.13	109.3 K=1.00	0.6211	-6.18	11.68	0.529 ¹ ✓
T2	140 - 120	2L2 1/2x2 1/2x3/16x3/8	5.61	5.41	85.6 K=1.00	1.8000	-22.03	47.35	0.465 ¹ ✓
T3	120 - 100	2L 'a' > 30.9968 in - 29 2L2 1/2x2 1/2x3/16x3/8	6.04	5.82	92.1 K=1.00	1.8000	-24.11	43.54	0.554 ¹ ✓
T4	100 - 80	2L 'a' > 33.3379 in - 66 2L2 1/2x2 1/2x3/16x3/8	6.06	5.84	92.3 K=1.00	1.8000	-25.09	43.40	0.578 ¹ ✓
T5	80 - 60	2L 'a' > 33.4223 in - 132 2L2 1/2x2 1/2x3/16x3/8	7.07	6.83	108.0 K=1.00	1.8000	-21.43	34.50	0.621 ¹ ✓
T6	60 - 40	2L 'a' > 39.0963 in - 144 2L2 1/2x2 1/2x3/16x3/8	7.64	7.40	117.1 K=1.00	1.8000	-21.29	29.67	0.718 ¹ ✓
T7	40 - 20	2L 'a' > 42.3694 in - 183 2L2 1/2x2 1/2x3/16x3/8	8.24	7.98	126.3 K=1.00	1.8000	-22.56	25.48	0.885 ¹ ✓
T8	20 - 0	2L 'a' > 45.7189 in - 222 2L3x3x3/16x3/8	8.86	8.62	114.6 K=1.00	2.1800	-23.47	36.77	0.638 ¹ ✓
		2L 'a' > 49.2164 in - 261							

¹ P_u / φP_u controls

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Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
T2	140 - 120	2L1 3/4x1 3/4x3/16x3/8	5.61	2.70	60.3 K=1.00	1.2422	-5.73	42.84	0.134 ¹ ✓
T3	120 - 100	2L 'a' > 15.5372 in - 22 2L1 3/4x1 3/4x3/16x3/8	7.11	3.42	76.4 K=1.00	1.2422	-4.35	36.49	0.119 ¹ ✓
T4	100 - 80	2L 'a' > 19.6748 in - 64 2L1 3/4x1 3/4x3/16x3/8	8.61	4.15	92.7 K=1.00	1.2422	-6.13	29.83	0.205 ¹ ✓
T5	80 - 60	2L 'a' > 23.8725 in - 103 2L1 3/4x1 3/4x3/16x3/8	10.11	4.88	109.0 K=1.00	1.2422	-7.95	23.46	0.339 ¹ ✓
T6	60 - 40	2L 'a' > 28.0701 in - 142 2L1 3/4x1 3/4x3/16x3/8	11.61	5.62	125.5 K=1.00	1.2422	-9.68	17.82	0.543 ¹ ✓
T7	40 - 20	2L 'a' > 32.3277 in - 181 2L1 3/4x1 3/4x3/16x3/8	13.11	6.34	141.8 K=1.00	1.2422	-11.30	13.96	0.810 ¹ ✓
T8	20 - 0	2L 'a' > 36.5253 in - 220 2L2x2x3/16x3/8	14.61	7.09	138.8 K=1.00	1.4300	-12.85	16.77	0.766 ¹ ✓
		2L 'a' > 40.7749 in - 259							

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
T1	150 - 140	L1 3/4x1 3/4x3/16	3.79	3.64	127.2 K=1.00	0.6211	-3.19	8.67	0.368 ¹ ✓

¹ P_u / φP_n controls

Inner Bracing Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
T2	140 - 120	L1 3/4x1 3/4x3/16	2.80	2.80	97.9 K=1.00	0.6211	-0.06	13.86	0.005 ¹ ✓
T3	120 - 100	L1 3/4x1 3/4x3/16	3.20	3.20	111.7 K=1.00	0.6211	-0.03	11.23	0.003 ¹ ✓
T4	100 - 80	L1 3/4x1 3/4x3/16	3.95	3.95	137.9 K=1.00	0.6211	-0.01	7.38	0.002 ¹ ✓

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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	K	K	
T5	80 - 60	L1 3/4x1 3/4x3/16	4.70	4.70	164.1 K=1.00	0.6211	-0.01	5.21	0.002 ¹ ✓
T6	60 - 40	L1 3/4x1 3/4x3/16	5.45	5.45	190.3 K=1.00	0.6211	-0.01	3.87	0.003 ¹ ✓
T7	40 - 20	L1 3/4x1 3/4x3/16	6.55	6.55	229.0 K=1.00	0.6211	-0.01	2.68	0.004 ¹ ✓
T8	20 - 0	L1 3/4x1 3/4x3/16	6.95	6.95	242.7 K=1.00	0.6211	-0.01	2.38	0.006 ¹ ✓

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	K	K	
T1	150 - 140	1 3/4	10.01	0.50	13.7	2.4053	16.66	108.24	0.154 ¹ ✓
T2	140 - 120	2 1/2	20.02	0.50	9.6	4.9087	111.91	220.89	0.507 ¹ ✓
T3	120 - 100	3 1/4	20.02	0.50	7.4	8.2958	246.24	373.31	0.660 ¹ ✓
T4	100 - 80	3 3/4	20.02	0.50	6.4	11.0447	360.95	497.01	0.726 ¹ ✓
T5	80 - 60	4 1/4	20.02	0.50	5.7	14.1863	460.70	638.38	0.722 ¹ ✓
T6	60 - 40	4 1/2	20.02	0.50	5.3	15.9043	551.15	715.69	0.770 ¹ ✓
T7	40 - 20	5	20.02	0.50	4.8	19.6350	636.31	883.57	0.720 ¹ ✓
T8	20 - 0	5	20.02	0.50	4.8	19.6350	715.68	883.57	0.810 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	K	K	
T1	150 - 140	L1 3/4x1 3/4x3/16	6.22	3.13	69.9	0.3604	6.93	17.57	0.395 ¹ ✓
T2	140 - 120	2L2 1/2x2 1/2x3/16x3/8	5.61	5.41	83.5	1.1391	23.02	55.53	0.414 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T3	120 - 100	2L 'a' > 30.9968 in - 30 2L2 1/2x2 1/2x3/16x3/8	6.04	5.82	89.8	1.1391	24.64	55.53	0.444 ¹ ✓
T4	100 - 80	2L 'a' > 33.3379 in - 65 2L2 1/2x2 1/2x3/16x3/8	6.06	5.84	90.0	1.1391	24.33	55.53	0.438 ¹ ✓
T5	80 - 60	2L 'a' > 33.4223 in - 133 2L2 1/2x2 1/2x3/16x3/8	6.56	6.32	97.4	1.1391	22.05	55.53	0.397 ¹ ✓
T6	60 - 40	2L 'a' > 36.1764 in - 172 2L2 1/2x2 1/2x3/16x3/8	7.64	7.40	114.1	1.1391	21.25	55.53	0.383 ¹ ✓
T7	40 - 20	2L 'a' > 42.3694 in - 182 2L2 1/2x2 1/2x3/16x3/8	8.24	7.98	123.1	1.1391	22.02	55.53	0.397 ¹ ✓
T8	20 - 0	2L 'a' > 45.7189 in - 221 2L3x3x3/16x3/8	8.86	8.62	110.1	1.4241	22.13	69.42	0.319 ¹ ✓
		2L 'a' > 49.2164 in - 261							✓

¹ P_u / φP_u controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _u K	Ratio $\frac{P_u}{\phi P_u}$
T2	140 - 120	2L1 3/4x1 3/4x3/16x3/8	5.61	2.70	60.3	0.7207	5.78	35.13	0.165 ¹ ✓
T3	120 - 100	2L 'a' > 15.5372 in - 22 2L1 3/4x1 3/4x3/16x3/8	7.11	3.42	76.4	0.7207	4.35	35.13	0.124 ¹ ✓
T4	100 - 80	2L 'a' > 19.6748 in - 64 2L1 3/4x1 3/4x3/16x3/8	8.61	4.15	92.7	0.7207	6.13	35.13	0.174 ¹ ✓
T5	80 - 60	2L 'a' > 23.8725 in - 106 2L1 3/4x1 3/4x3/16x3/8	10.11	4.88	109.0	0.7207	7.95	35.13	0.226 ¹ ✓
T6	60 - 40	2L 'a' > 28.0701 in - 145 2L1 3/4x1 3/4x3/16x3/8	11.61	5.62	125.5	0.7207	9.68	35.13	0.275 ¹ ✓
T7	40 - 20	2L 'a' > 32.3277 in - 184 2L1 3/4x1 3/4x3/16x3/8	13.11	6.34	141.8	0.7207	11.30	35.13	0.322 ¹ ✓
T8	20 - 0	2L 'a' > 36.5253 in - 223 2L2x2x3/16x3/8	14.61	7.09	138.0	0.8616	12.85	42.00	0.306 ¹ ✓
		2L 'a' > 40.7749 in - 262							✓

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 $^1 P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _n K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	150 - 140	L1 3/4x1 3/4x3/16	3.79	3.64	81.4	0.3604	3.23	17.57	0.184 ¹ ✓

 $^1 P_u / \phi P_n$ controls

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _n K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	140 - 120	L1 3/4x1 3/4x3/16	2.45	2.45	54.7	0.6211	0.03	27.95	0.001 ¹ ✓
T3	120 - 100	L1 3/4x1 3/4x3/16	3.55	3.55	79.4	0.6211	0.00	27.95	0.000 ¹ ✓
T4	100 - 80	L1 3/4x1 3/4x3/16	4.30	4.30	96.2	0.6211	0.00	27.95	0.000 ¹ ✓
T5	80 - 60	L1 3/4x1 3/4x3/16	5.05	5.05	112.9	0.6211	0.00	27.95	0.000 ¹ ✓
T6	60 - 40	L1 3/4x1 3/4x3/16	5.80	5.80	129.7	0.6211	0.00	27.95	0.000 ¹ ✓
T7	40 - 20	L1 3/4x1 3/4x3/16	6.55	6.55	146.5	0.6211	0.00	27.95	0.000 ¹ ✓
T8	20 - 0	L1 3/4x1 3/4x3/16	7.30	7.30	163.2	0.6211	0.01	27.95	0.000 ¹ ✓

 $^1 P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	150 - 140	Leg	1 3/4	3	-10.79	35.60	30.3	Pass
T2	140 - 120	Leg	2 1/2	21	-86.28	120.11	71.8	Pass
T3	120 - 100	Leg	3 1/4	60	-225.21	260.31	86.5	Pass
T4	100 - 80	Leg	3 3/4	99	-350.31	379.11	92.4	Pass
T5	80 - 60	Leg	4 1/4	138	-458.83	517.03	88.7	Pass
T6	60 - 40	Leg	4 1/2	177	-558.37	593.00	94.2	Pass
T7	40 - 20	Leg	5	216	-652.22	758.73	86.0	Pass
T8	20 - 0	Leg	5	255	-741.35	758.73	97.7	Pass
T1	150 - 140	Diagonal	L1 3/4x1 3/4x3/16	11	-6.18	11.68	52.9	Pass
T2	140 - 120	Diagonal	2L2 1/2x2 1/2x3/16x3/8	29	-22.03	47.35	72.2 (b) 46.5	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T3	120 - 100	Diagonal	2L2 1/2x2 1/2x3/16x3/8	66	-24.11	43.54	88.4 (b) 55.4	Pass
T4	100 - 80	Diagonal	2L2 1/2x2 1/2x3/16x3/8	132	-25.09	43.40	94.6 (b) 57.8	Pass
T5	80 - 60	Diagonal	2L2 1/2x2 1/2x3/16x3/8	144	-21.43	34.50	93.4 (b) 62.1	Pass
T6	60 - 40	Diagonal	2L2 1/2x2 1/2x3/16x3/8	183	-21.29	29.67	84.6 (b) 71.8	Pass
T7	40 - 20	Diagonal	2L2 1/2x2 1/2x3/16x3/8	222	-22.56	25.48	81.6 (b) 88.5	Pass
T8	20 - 0	Diagonal	2L3x3x3/16x3/8	261	-23.47	36.77	63.8 80.2 (b)	Pass
T2	140 - 120	Horizontal	2L1 3/4x1 3/4x3/16x3/8	22	5.78	35.13	16.5 30.1 (b)	Pass
T3	120 - 100	Horizontal	2L1 3/4x1 3/4x3/16x3/8	64	4.35	35.13	12.4 22.6 (b)	Pass
T4	100 - 80	Horizontal	2L1 3/4x1 3/4x3/16x3/8	103	-6.13	29.83	20.5 31.9 (b)	Pass
T5	80 - 60	Horizontal	2L1 3/4x1 3/4x3/16x3/8	142	-7.95	23.46	33.9 41.4 (b)	Pass
T6	60 - 40	Horizontal	2L1 3/4x1 3/4x3/16x3/8	181	-9.68	17.82	54.3	Pass
T7	40 - 20	Horizontal	2L1 3/4x1 3/4x3/16x3/8	220	-11.30	13.96	81.0	Pass
T8	20 - 0	Horizontal	2L2x2x3/16x3/8	259	-12.85	16.77	76.6	Pass
T1	150 - 140	Top Girt	L1 3/4x1 3/4x3/16	4	-3.19	8.67	36.8	Pass
T2	140 - 120	Inner Bracing	L1 3/4x1 3/4x3/16	32	-0.06	13.86	0.5	Pass
T3	120 - 100	Inner Bracing	L1 3/4x1 3/4x3/16	90	-0.03	11.23	0.3	Pass
T4	100 - 80	Inner Bracing	L1 3/4x1 3/4x3/16	128	-0.01	7.38	0.2	Pass
T5	80 - 60	Inner Bracing	L1 3/4x1 3/4x3/16	166	-0.01	5.21	0.2	Pass
T6	60 - 40	Inner Bracing	L1 3/4x1 3/4x3/16	205	-0.01	3.87	0.3	Pass
T7	40 - 20	Inner Bracing	L1 3/4x1 3/4x3/16	226	-0.01	2.68	0.4	Pass
T8	20 - 0	Inner Bracing	L1 3/4x1 3/4x3/16	284	-0.01	2.38	0.6	Pass
							Summary	
							Leg (T8)	97.7 Pass
							Diagonal (T3)	94.6 Pass
							Horizontal (T7)	81.0 Pass
							Top Girt (T1)	36.8 Pass
							Inner	0.6 Pass
							Bracing (T8)	
							Bolt Checks	94.6 Pass
							RATING =	97.7 Pass

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1) PROJECT DESCRIPTION

Based on the preliminary drawings, it is understood a self supporting communications tower will be constructed at the referenced site. The structure loads will be provided by the tower manufacturer.

2) SITE EXPLORATION

The field exploration included the performance of one soil test boring (B-1) to the auger refusal depth of 15 feet (bgs) at the staked centerline of the proposed self supporting tower. The boring was performed by a truck mounted drill rig using continuous flight hollow stem augers to advance the hole. Split-spoon samples and Standard Penetration Resistance Values (N-values) were obtained in accordance with ASTM D 1586 at a frequency of four samples in the top 10 feet and two samples every 10 feet thereafter to refusal.

The Split-spoon samples were transported to the TEP laboratory where they were classified by a Geotechnical Engineer in general accordance with the Unified Soil Classification System (USCS), using visual-manual identification procedures (ASTM D 2488).

Diamond-bit core drilling procedures were used to help determine the character and continuity of the rock in boring B-1. The core drilling procedures were in accordance with ASTM Specification D-2113. Rock core samples of the materials penetrated were protected and retained in a swivel-mounted inner tube of the core barrel. Upon completion of the drill run, the core barrel was brought to the surface and samples removed and placed in standard boxes. The samples were classified by a Geotechnical Engineer and the "Recovery" and "Rock Quality Designation" were determined.

The "Recovery" is the ratio of the sample length obtained to the length drilled, expressed as a percent. The "Rock Quality Designation" (RQD) is the percent of the recovered rock samples in lengths of four or more inches, compared to the total length of the core run. This designation is generally applied to samples of NWX size (2-1/8 inch diameter) or larger and to samples described as moderately hard or harder. The percent recovery and RQD are related to rock soundness and continuity. Generalized rock descriptions, percent recovery, and the RQD value are shown on the boring log.

A Boring Location Plan showing the approximate boring location, a Boring Log presenting the subsurface information obtained and a brief guide to interpreting the boring log are included in the Appendix.

3) SITE CONDITIONS

The site is located at 16150 Merganser Rd. in Juneau, Juneau Borough, Alaska. The proposed tower and compound are to be located in a wooded area, adjacent to a water tank. The ground topography is moderately sloped.

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4) SUBSURFACE CONDITIONS

The following description of subsurface conditions is brief and general. For more detailed information, the individual Boring Log contained in Appendix B - Boring Log may be consulted.

4.1) Soil

The USCS classification of the materials encountered in the boring include CL, ML, SM, and Graywacke. The Standard Penetration Resistance ("N" Values) recorded in the materials ranged from 2 blows per foot to 50 blows per inch of penetration.

4.2) Rock

Graywacke was encountered at a depth of 15 feet (bgs) in the boring. Refusal of auger advancement was encountered at a depth of 15 feet (bgs) in the boring.

4.3) Subsurface Water

Subsurface water was not encountered in the boring at the time of drilling. It should be noted the subsurface water level will fluctuate during the year, due to seasonal variations and construction activity in the area.

4.4) Frost

The frost depth for Borough of Juneau, Alaska is 32 inches based on City and Borough of Juneau Building Division.

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5) TOWER FOUNDATION DESIGN

Based on the boring data, it is the opinion of TEP that a pier for each leg extending to a single large mat foundation, an individual pier and spread footing for each leg or a single drilled shaft for each leg can be used to support the new tower. If the drilled shaft foundation option is utilized, design of the foundation should be adjusted to terminate in a known material. The following presents TEP's conclusions and recommendations regarding the foundation types.

5.1) Shallow Foundation

The foundation should bear a minimum of 32 inches below the ground surface to penetrate the frost depth and with sufficient depth to withstand the overturning of the tower. To resist the overturning moment, the weight of the concrete and any soil directly above the foundation can be used. TEP recommends that the foundation designer specify a minimum unit weight for compacted backfill over the new foundation based on what is required to resist overturning of shallow foundations. The values are based on the current ground surface elevation and soils bearing in undisturbed native soils.

Based on preliminary site information the site is located on moderately sloping ground, with approximately 40 feet of elevation change across the planned 100 foot lease area. It is recommended that foundation designs account for site grades being raised with excavation spoils or that foundation drawings specify minimum embedment depths based on existing site elevations and factor in ground slopes.

Table 1 - Shallow Foundation Analysis Parameters – Boring B-1

Depth		Soil	Gross Ultimate Bearing ^{1,2,3} (psf)	Cohesion ¹ (psf)	Friction Angle ¹ (degrees)	Effective Unit Weight (pcf)	Friction Factor
Top	Bottom						
0	4	CL	2950	2550	-	112	0.30
4	6	ML	2775	800	-	105	0.30
6	9	ML	2775	400	-	105	0.30
9	14	SM	10375	-	29	105	0.35

Notes:

- 1) These values should be considered ultimate soil parameters.
- 2) A minimum factor of safety of 2 is recommended for allowable bearing.
- 3) The soil values are based on a maximum foundation size of 40 foot squared. If the foundation design size exceeds this dimension TEP should be contacted to re-evaluate soil parameters based on the actual foundation size.

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5.2) Drilled Shaft Foundation

The following values may be used for design of drilled shaft foundations. TEP recommends the side frictional and lateral resistance values developed in the top section of the caisson for a depth equal to the half the diameter of the caisson or the frost depth, whichever is greater, be neglected in the calculations. The values are based on the current ground surface elevation.

Table 2 – Drilled Shaft Foundation Analysis Parameters

Depth		Soil	Gross Ultimate Bearing ^{1,2} (psf)	Ultimate Side Frictional Resistance ^{1,3} (psf)	Cohesion ¹ (psf)	Friction Angle ¹ (degrees)	Effective Unit Weight (pcf)
Top	Bottom						
0	4	CL	7200	1270	2550	-	112
4	6	ML	3775	680	800	-	105
6	9	ML	3150	400	400	-	105
9	14	SM	12500	490	-	29	105
14	15	CL	38800	2250	4500	-	120
15	20	Graywacke ⁴	229300	9170	800	45	150
20	25	Graywacke ⁴	348425	10810	1400	45	165

Notes:

- 1) These values should be considered ultimate soil parameters.
- 2) A minimum factor of safety of 2 is recommended for allowable bearing. If the bearing depth of the foundation is less than 5 diameters below the ground surface the bearing values listed in Table 1 – Shallow Foundation Analysis Parameters should be utilized.
- 3) A minimum factor of safety of 2 is recommended for allowable side frictional resistance.
- 4) The side frictional resistance provided is assuming that a drilled shaft is fully socketed in the rock at this depth. This should be verified during construction

5.3) Modulus of Subgrade Reaction

A vertical modulus of subgrade reaction and a horizontal modulus of subgrade reaction may be derived using the following equations and soil parameters for analysis of foundations.

$$k_{s-v} = 12 (SF) Q_a$$

$$k_{s-h} = k_{s-v} B$$

Q_a = Allowable Bearing Capacity (ksf)

SF = Factor of Safety

B = Base width (ft), use 1 if $B < 1$ ft.

k_{s-v} = Vertical Modulus of Subgrade Reaction (kcf)

k_{s-h} = Horizontal Modulus of Subgrade Reaction (ksf)

6) SOIL RESISTIVITY

Soil resistivity was performed at the TEP laboratory in accordance with ASTM G187-05 (Standard Test Method for Measurement of Soil Resistivity Using the Two Electrode Soil Box Method). Test results indicated a result of 2,400 ohms-cm.

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7) CONSTRUCTION CONSIDERATIONS - SHALLOW FOUNDATION

7.1) Excavation

The boring data indicates excavation to the expected subgrade level for the shallow foundation will extend through clay, silt, and sand. A large tracked excavator should be able to remove the materials with minimal to moderate difficulty.

Excavations should be sloped or shored in accordance with local, state and federal regulations, including OSHA (29 CFR Part 1926) excavation trench safety standards. It is the responsibility of the contractor for site safety. This information is provided as a service and under no circumstance should TEP be assumed responsible for construction site safety.

7.2) Foundation Evaluation/Subgrade Preparation

After excavation to the design elevation for the footing, the materials should be evaluated by a Geotechnical Engineer or a representative of the Geotechnical Engineer prior to reinforcement and concrete placement. This evaluation should include probing, shallow hand auger borings and dynamic cone penetrometer testing (ASTM STP-399) to help verify that suitable residual material lies directly under the foundation and to determine the need for any undercut and replacement of unsuitable materials. Loose surficial material should be compacted in the excavation prior to reinforcement and concrete placement to stabilize surface soil that may have become loose during the excavation process. TEP recommends a 6-inch layer of compacted crushed stone be placed just after excavation to aid in surface stability.

7.3) Fill Placement and Compaction

Backfill materials placed above the shallow foundation to the design subgrade elevation should not contain more than 5 percent by weight of organic matter, waste, debris or any otherwise deleterious materials. To be considered for use, backfill materials should have a maximum dry density of at least 100 pounds per cubic foot as determined by standard Proctor (ASTM D 698), a Liquid Limit no greater than 40, a Plasticity Index no greater than 20, a maximum particle size of 4 inches, and 20 percent or less of the material having a particle size between 2 and 4 inches. Because small handheld or walk-behind compaction equipment will most likely be used, backfill should be placed in thin horizontal lifts not exceeding 6 inches (loose).

Fill placement should be monitored by a qualified Materials Technician working under the direction of a Geotechnical Engineer. In addition to the visual evaluation, a sufficient amount of in-place field density tests should be conducted to confirm the required compaction is being attained.

7.4) Reuse of Excavated Soil

The silt, sand, and clay that meets the above referenced criteria can be utilized as backfill based on dry soil and site conditions at the time of construction.

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8) CONSTRUCTION CONSIDERATIONS - DRILLED SHAFTS

Based on TEP's experience a conventional drilled shaft rig (Hughes Tool LDH or equivalent) can be used to excavate to the auger refusal depth of TEP's boring. An earth auger can typically penetrate the materials encountered to the auger refusal depth of the boring with moderate to severe difficulty. Materials below the depth of 14 feet (bgs) may require a coring bit or roller-bit to remove the material. Boulders and bedrock outcroppings are sometimes encountered in this geographic region and may be encountered outside of the boring location. Special excavation equipment may be necessary for a shaft greater than 60-inches in diameter. If hole collapse is encountered during construction, the design and geotechnical engineers should be contacted immediately to make any necessary adjustments.

The following are general procedure recommendations in drilled shaft construction using the "dry" method:

- 1) Drilling equipment should have cutting teeth to result in a hole with little or no soil smeared or caked on the sides; a spiral like corrugated side should be produced. The shaft diameter should be at least equal to the design diameter for the full depth.
- 2) The drilled shaft should be drilled to satisfy a plumbness tolerance of 1.5 to 2 percent of the length and an eccentricity tolerance of 2 to 3 inches from plan location.
- 3) Refer to Section 4.3 for subsurface water information. Water will fluctuate during the year and during rain events. Any subsurface water should be removed by pumping, leaving no more than 3 inches in the bottom of the shaft excavation.
- 4) A removable steel casing may be installed in the shaft to prevent caving of the excavation sides due to soil relaxation. Loose soils in the bottom of the shaft should be removed.
- 5) The drilled shaft should be evaluated by the Geotechnical Engineer or their representative to confirm suitable end bearing conditions and to verify the proper diameter and bottom cleanliness. The shaft should be evaluated immediately prior to and during concrete operations.
- 6) The drilled shaft should be concreted as soon as practical after excavation to reduce the deterioration of the supporting soils due to caving and subsurface water intrusion.
- 7) The slump of the concrete is critical for the development of side shear resistance. TEP recommends a concrete mix having a slump of 6 to 8 inches be used with the minimum compressive strength specified by the structural engineer. A mix design incorporating super plasticizer will likely be required to obtain this slump.
- 8) The concrete may be allowed to fall freely through the open area in the reinforcing steel cage provided it is not allowed to strike the reinforcing steel or the casing prior to reaching the bottom of the shaft excavation.
- 9) The protective steel casing should be extracted as concrete is placed. A head of concrete should be maintained above the bottom of the casing to prevent soil and water intrusion into the concrete below the casing.

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Due to the sandy soil/gravel, the contractor may elect to utilize the "slurry" method for shaft construction. The following are general procedure recommendations in drilled shaft construction using the "slurry" method:

- 1) Slurry drilled shafts are constructed by conventional caisson drill rigs excavating beneath a drilling mud slurry. Typically, the slurry is introduced into the excavation after the groundwater table has been penetrated and/or the soils on the sides of the excavation are observed to be caving-in. When the design shaft depth is reached, fluid concrete is placed through a tremie pipe at the bottom of the excavation.
- 2) The slurry level should be maintained at a minimum of 5 feet or one shaft diameter, whichever is greater, above the subsurface water level.
- 3) Inspection during excavation should include verification of plumbness, maintenance of sufficient slurry head, monitoring the specific gravity, pH and sand content of the drilling slurry, and monitoring any changes in the depth of the excavation between initial approval and prior to concreting.
- 4) A removable steel casing may be installed in the shaft to prevent caving of the excavation sides due to soil relaxation. Loose soils in the bottom of the shaft should be removed.
- 5) The specific gravity or relative density of the drilling mud slurry should be monitored from the initial mixing to the completion of the excavation. An increase in the specific gravity or density of the drilling slurry by as much as 10 percent is indicative of soil particles settling out of the slurry onto the bottom of the excavation. This settling will result in a reduction of the allowable bearing capacity of the bottom of the drilled shaft.
- 6) After approval, the drilled shaft should be concreted as soon as practical using a tremie pipe.
- 7) For slurry drilled shafts, the concrete should have a 6 to 8 inch slump prior to discharge into the tremie. The bottom of the tremie should be set at about one tremie pipe diameter above the excavation. A closure flap at the bottom of the tremie should be used, or a sliding plug introduced into the tremie before the concrete, to reduce the potential for the concrete being contaminated by the slurry. The bottom of the tremie must be maintained in concrete during placement, which should be continuous.
- 8) The protective steel casing should be extracted as concrete is placed. A head of concrete should be maintained above the bottom of the casing to prevent soil and water intrusion into the concrete below the casing.
- 9) Additional concrete should be placed via the tremie causing the slurry to overflow from the excavation in order to reduce the likelihood of slurry pockets remaining in the drilled shaft.

If variability in the subsurface materials is encountered, a representative of the Geotechnical Engineer should verify that the design parameters are valid during construction. Modification to the design values presented above may be required in the field.

150 Ft Self Supporting Subsurface Exploration Report
Project Number 152046.210102

March 26, 2019
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Page 10

9) SITE PHOTOGRAPHS

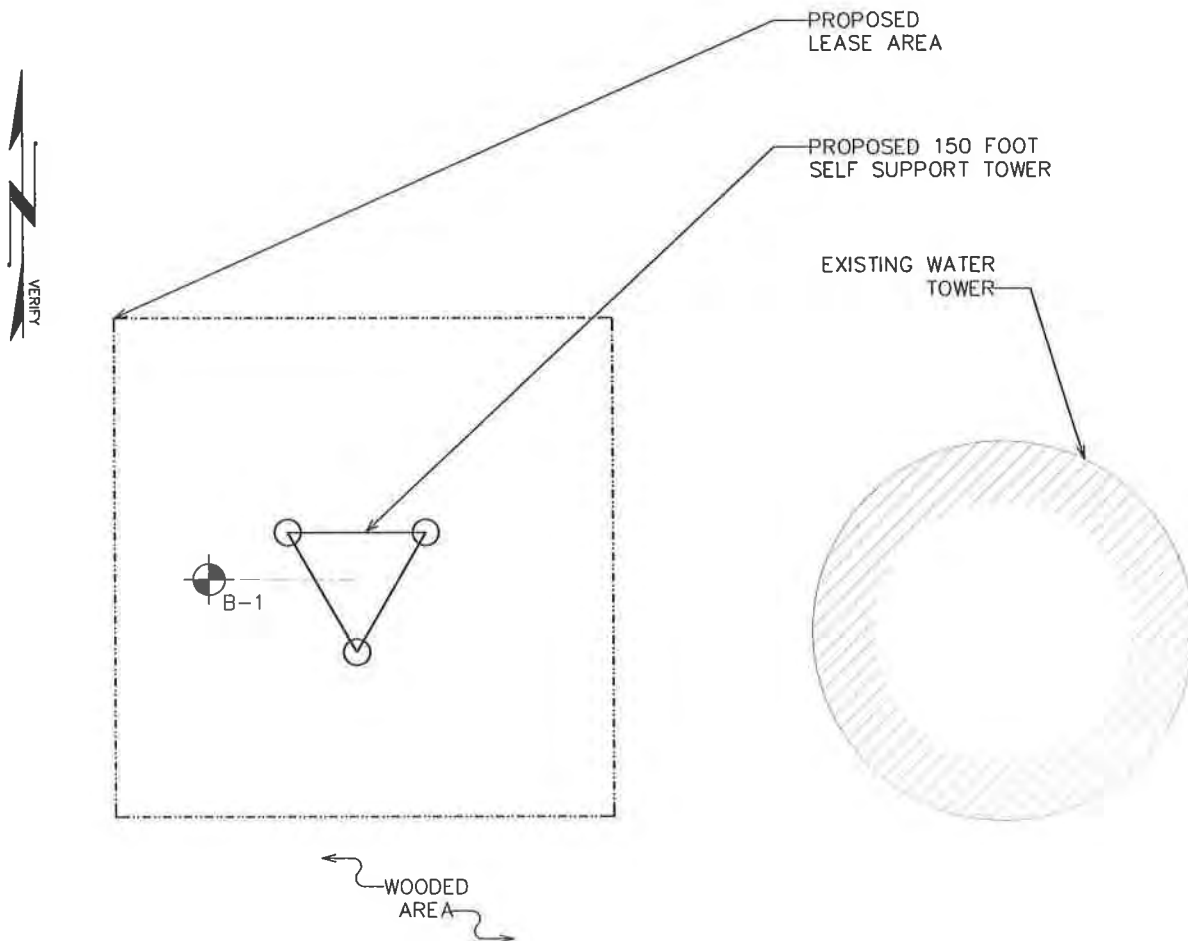


Staked Boring Location

*150 Ft Self Supporting Subsurface Exploration Report
Project Number 152046.210102*

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**APPENDIX A
BORING LAYOUT**



BORING LAYOUT

SCALE: N.T.S.

PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 (919) 661-6351
 www.tepgroup.net

PREPARED FOR:

CENTERLINE
 16035 TABLE MOUNTAIN PARKWAY
 GOLDEN, CO 80403
 OFFICE: (303) 993-3293

PROJECT INFORMATION:

LENA
SITE# US-AK-5241

16150 MERGANSER RD.
 JUNEAU, AK 99801
 (JUNEAU BOROUGH)

REVISION: 0

TEP JOB #: 152046.240102

SHEET NUMBER:

C-1

*150 Ft Self Supporting Subsurface Exploration Report
Project Number 152046.210102*

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APPENDIX B
BORING LOG

 Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Telephone: 919-661-6351 Email: geotech@tepgroup.com				LOG OF BORING B-1 1 OF 1							
PROJECT: Lena Point				SITE ID: US-AK-5241		TEP NO.: 152046					
DATE STARTED: 3/21/2019		DRILLING METHOD: Hollow Stem Auger		HOLE SIZE: 10in O.D.		CITY, STATE: Juneau, Alaska					
DATE COMPLETE: 3/21/2019		HAMMER WEIGHT/FALL: 340lbs / 30in		HAMMER TYPE: Auto Hammer		TOTAL DEPTH: 25.0 FT		DRILL RIG TYPE: B-61			
GROUND EL.:		LOGGED BY: JEL		CHECKED BY: JDL		BACKFILL: Cuttings		DEPTH/EL. GROUNDWATER: Not Encountered			
BORING LOCATION: At the staked centerline of the proposed tower											
SAMPLE NUMBER	SAMPLE LENGTH (INCHES)	BLOW COUNTS (N) REC% / RQD%	ELEVATION (FEET)	DEPTH (FEET)	SAMPLE GRAPHIC	USCS GRAPHIC	DESCRIPTION AND CLASSIFICATION	REMARKS	POCKET PEN TSF	UNCONFINED STRENGTH, PSF	UNIT WEIGHT PCF
S1	24	9-9-6-5 (15)					0.0-4.0: Stiff, brown, lean CLAY (CL), with sand, trace gravel, moist	Split spoon 3in O.D. and 2.375in I.D. Driller Note: Organics encountered from 6 feet to 8 feet	2		
S2	24	2-2-2-1 (4)		5			4.0-9.0: Soft, brown, SILT (ML), with sand, trace gravel, moist		1.5		
S3	24	1-1-1-1 (2)							1		
S4	24	2-1-2-1 (3)		10			9.0-14.0: Loose, brown, fine to coarse, silty SAND (SM), trace gravel, moist				
S5	12.1	7-19-50/0"		15			14.0-15.0: Hard, gray, lean CLAY (CL), trace sand, trace gravel, moist	Glacial Till	6		
R1	60	87 / 23					15.0-20.0: Auger Refusal at 15 feet Gray, fine to medium grained, GRAYWACKE, severely fractured, highly weathered, moist 16.0: Unconfined Compressive Strength: 7,975 psi				182
R2	60	97 / 68		20			20.0-25.0: highly fractured 21.0: Unconfined Compressive Strength: 5,975 psi				176
				25			25.0: Rock Core Terminated				



Tower Engineering Professionals, Inc.
326 Tryon Road
Raleigh, NC 27603
Telephone: 919-661-6351
Email: Geotech@tepgroup.net

Key to Soil Symbols and Terms

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE-GRAINED SOILS (major portions retained on No. 200 sieve): includes (1) clean gravel and sands and (2) silty or clayey gravels and sands. Condition is rated according to relative density as determined by laboratory tests or standard penetration resistance tests.

Descriptive Terms

Very Loose

Loose

Medium Dense

Dense

Very Dense

SPT Blow Count

< 4

4 to 10

11 to 30

31 to 50

> 50

FINE-GRAINED SOILS (major portions passing on No. 200 sieve): includes (1) inorganic and organic silts and clays (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings, SPT blow count, or unconfined compression tests.

Descriptive Terms

Very Soft

Soft

Medium Stiff

Stiff

Very Stiff

Hard

SPT Blow Count

< 2

2 to 4

5 to 8

9 to 15

16 to 30

> 30

GENERAL NOTES

1. Classifications are based on the Unified Soil Classification System and include consistency, moisture, and color. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate.

2. Surface elevations are based on topographic maps and estimated locations and should be considered approximate.

3. Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were made. They are not guaranteed to be representative of subsurface condition at other locations or times.

	Group Symbols	Typical Names	Sampler Symbols
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	Split Spoon
	GP	Poorly-graded gravels, little or no fines/sands	Standard Penetration Test (SPT)
	GM	Silty gravels, gravel-sand-silt mixtures	Pushed Shelby Tube
	GC	Clayey gravels, gravel-sand-silt mixtures	Auger Cuttings
	SW	Well-graded sands, gravelly sands, little or no fines	Grab Sample
	SP	Poorly-graded sands, little or no fines/sands/gravels	Dynamic Cone Penetrometer
	SM	Silty sands, sand-silt mixtures	Hand Auger
	SC	Clayey sands, sand-clay mixtures	Rock Core
	ML	Inorganic silts and very fine sands, rock floor, silty or clayey fine sands or clayey silts with slight plasticity	Log Abbreviations ATD - At Time of Drilling AD - After Drilling EOD - End of Drilling RMR - Rock Mass Rating WOH - Weight of Hammer WOR - Weight of Rod REC - Rock Core Recovery RQD - Rock Quality Designation
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
	OL	Organic silts and organic silty clays of low plasticity	
	MH	Inorganic silts, micaceous or distomaceous fine sandy or silty soils, elastic silts	
	CH	Inorganic clays of high plasticity, fat clays	
	OH	Organic clays of medium to high plasticity, organic silts	
	PT	Peat and other highly organic soils	

Information Regarding This Subsurface Exploration Report

The information contained in this report has been specifically tailored to the needs of the client at the time the report was provided, for the specific purpose of the project named in this report. The attached report may not address the needs of contractors, civil engineers, or structural engineers. Anyone other than the named client should consult with the geotechnical engineer prior to utilizing the information contained in the report.

It is always recommended that the full report be read. While certain aspects of the report may seem unnecessary or irrelevant; just as each project and site are unique, so are the subsurface investigation reports and the information contained in them. Several factors can influence the contents of these reports, and the geotechnical engineer has taken into consideration the specific project, the project location, the client's objectives, potential future improvements, etc. If there is any question about whether the attached report pertains to your specific project or if you would like to verify that certain factors were considered in the preparation of this report, it is recommended that you contact the geotechnical engineer.

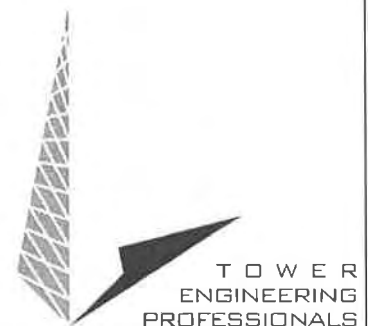
Geotechnical subsurface investigations often are prepared during the preliminary stages of a project and aspects of the project may change later on. Some changes may require a report revision or additional exploration. Some changes that often need to be brought to the attention of the geotechnical engineer include changes in location, size and/or type of structure, modifications to existing structures, grading around the project site, etc. Some naturally occurring changes can also develop that impact the information contained in this geotechnical report such as earthquakes, landslides, floods, subsurface water levels changing, etc. It is always recommended that the geotechnical be informed of known changes at the project site.

Subsurface exploration reports are generated based on the analysis and professional opinions of a geotechnical engineer based on the results of field and laboratory data. Often subsurface conditions can vary – sometimes significantly – across a site and over short distances. It often is helpful to retain the geotechnical engineer's services during the construction process. Otherwise, the geotechnical cannot assume responsibility or liability for report recommendations which may have needed to change based on changing site conditions or misinterpretation of recommendations.

Geotechnical engineers assemble testing and/or boring logs based on their interpretation of field and laboratory data. Testing and/or boring logs should always be coupled with the subsurface exploration report. The geotechnical engineer and Tower Engineering Professionals cannot be held reliable for interpretations, analyses, or recommendations based solely on the testing and/or boring log if it is independent of the prepared report.

The scope of the subsurface exploration report does not include an assessment or analysis of environmental conditions, determination of the presence or absence of wetlands or hazardous or toxic materials on or below the ground surface. Any notes regarding odors, fill, debris, or anything of that nature are offered as general information for the client, often to help identify or delineate natural soil boundaries.

For additional information, please contact the geotechnical engineer named in the attached report.





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

Aeronautical Study No.
2018-AAL-331-OE

Issued Date: 01/23/2019

FCC Contact
BRT Group, LLC
PO. Box 812530
Boca Raton, FL 33481

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

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

Structure:	Antenna Tower US-AK-5241 Lena Point
Location:	Juneau, AK
Latitude:	58-23-20.07N NAD 83
Longitude:	134-45-31.03W
Heights:	230 feet site elevation (SE) 155 feet above ground level (AGL) 385 feet above mean sea level (AMSL)

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

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 L Change 2.

This determination expires on 07/23/2020 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, effective 21 Nov 2007, 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 (907) 271-5863, or robert.van.haastert@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-AAL-331-OE.

Signature Control No: 392047729-394312736

(DNE)

Robert van Haastert
Specialist

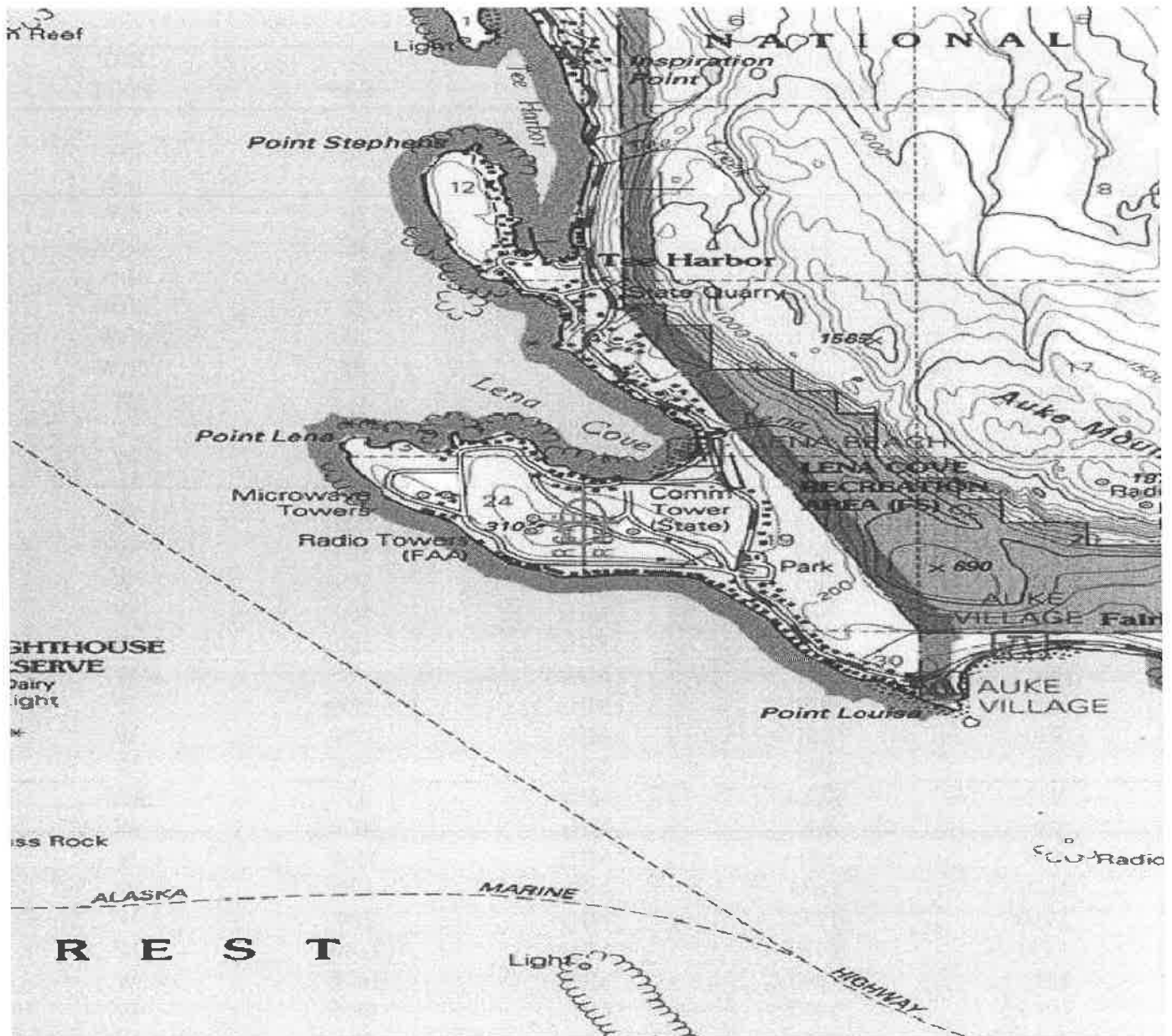
Attachment(s)
Frequency Data
Map(s)

cc: FCC

Frequency Data for ASN 2018-AAL-331-OE

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

TOPO Map for ASN 2018-AAL-331-OE



[illegible]



AK LENA POINT

Visualization Report

CONTACT

Centerline Solutions
Jay Rasmusson
Construction Manager
360-250-4265

Address:
3322 South Bay Road NE
Olympia, WA 98506

Email:
jrasmusson@centerlinesolutions.com

Balloon Test – Proposed 150' Self Support Telecommunications Tower

AK Lena Point
16150 Merganser Rd
Juneau, AK 99801

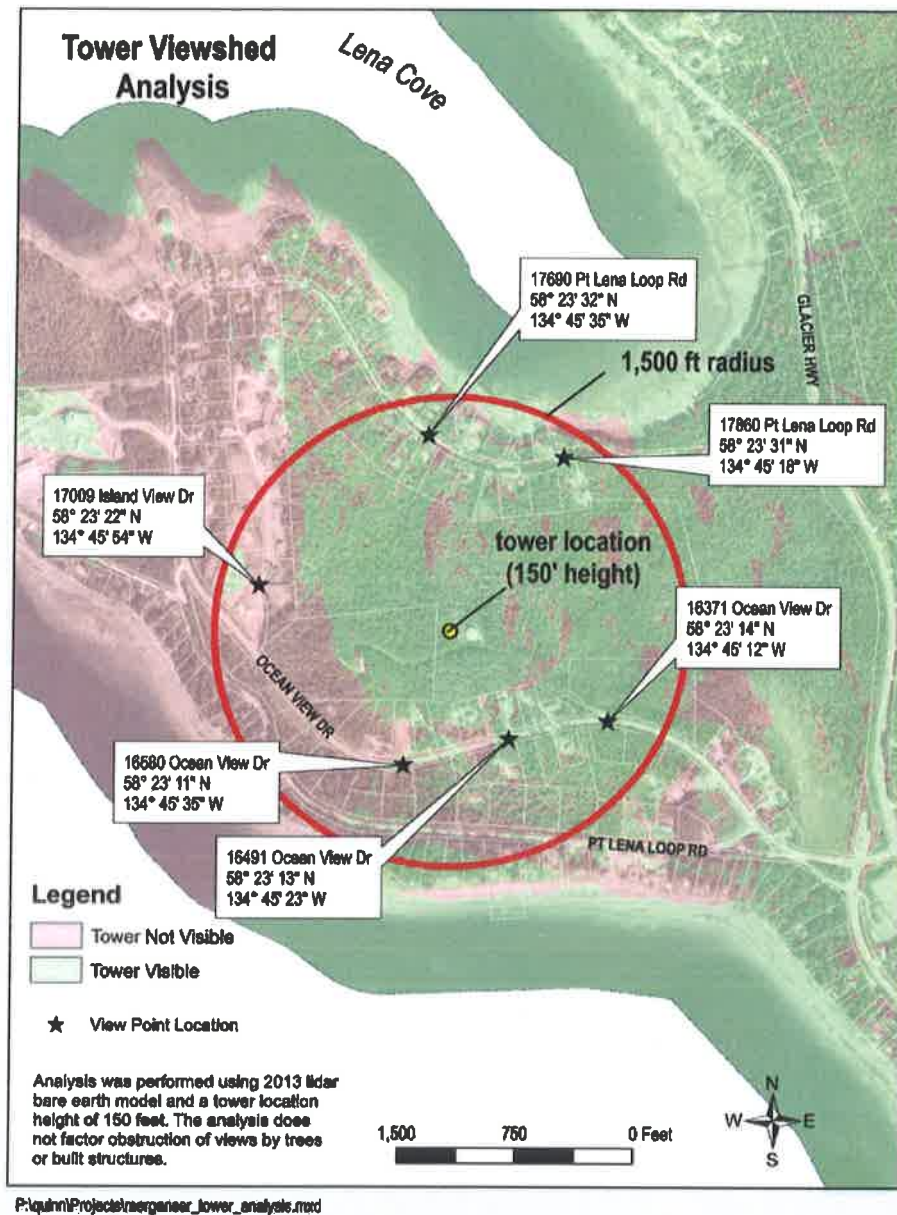
The CBJ was notified of the scheduled balloon test on Wednesday, January 30th, 2019. The test was scheduled Thursday February 7th, and continue through the following Sunday, February 10th to meet the 72 hr. requirement of one (1) full day of the 72 hours being on a Saturday or Sunday. The test was completed during this time.

Balloon Test Overview:

- Balloon #1 & #2 were made of latex. They were both 36" diameter and filled with helium and were bright orange in color.
- Both balloons were anchored to the ground with nylon twine approximately 50' from the actual tower location. Dense tree cover prevented the balloon from being sent aloft any closer to the actual tower location.
- The line used, was measured out to 160' (although the tower is a proposed 150') – due to potential line sag an extra 10' was added to the overall required length.
- Balloon #1 was sent aloft at 9:30am Thursday, February 7th with cloudy skies and no wind.
- Balloon #1 stayed aloft until Saturday, February 9th at 9:30am when it was lodged in an adjacent tree due to wind, and it popped. Balloon #2 was sent aloft approximately 45 minutes later.
- Balloon #2 stayed aloft the duration of the test with light winds through Sunday, February 10th at 10:10 am, when the balloon was pulled down when the 72 hr duration had finished.
- The CJB provided documentation to provide photos from six (6) locations within 1,500' of the test site. These photos were obtained, and documented the morning of Wednesday, February 7th with cloudy skies and no winds were present.

VIEWPOINTS

Location Map provided by the CBJ and photographs were obtained from each of the locations provided.



BALLOON AND ANCHOR LOCATION

A 36" diameter, helium filled, latex balloon was utilized for the testing.



BALLOON ALOFT AT ANCHOR POINT

View of the balloon from ground level.



VIEWPOINT #1 – 16371 OCEAN VIEW DR.

Lat & Long provided by the CBJ, accuracy being +/- 40' to the exact location provided.

In this photo, you can see the balloon just above the tree line above the middle of the roadway up to the site.



VIEWPOINT #2 – 16491 OCEAN VIEW DR.

Lat & Long provided by the CBJ, accuracy being +/- 40' to the exact location provided.

In this photo, you can see the balloon just above the tree line past the house located to the right of the balloon location.



VIEWPOINT #3 – 16580 OCEAN VIEW DR

Lat & Long provided by the CBJ, accuracy being +/- 40' to the exact location provided.

You cannot see the balloon from this location due to the dense tree cover.



VIEWPOINT #4 – 17009 ISLAND VIEW DR

Lat & Long provided by the CBJ, accuracy being +/- 40' to the exact location provided.

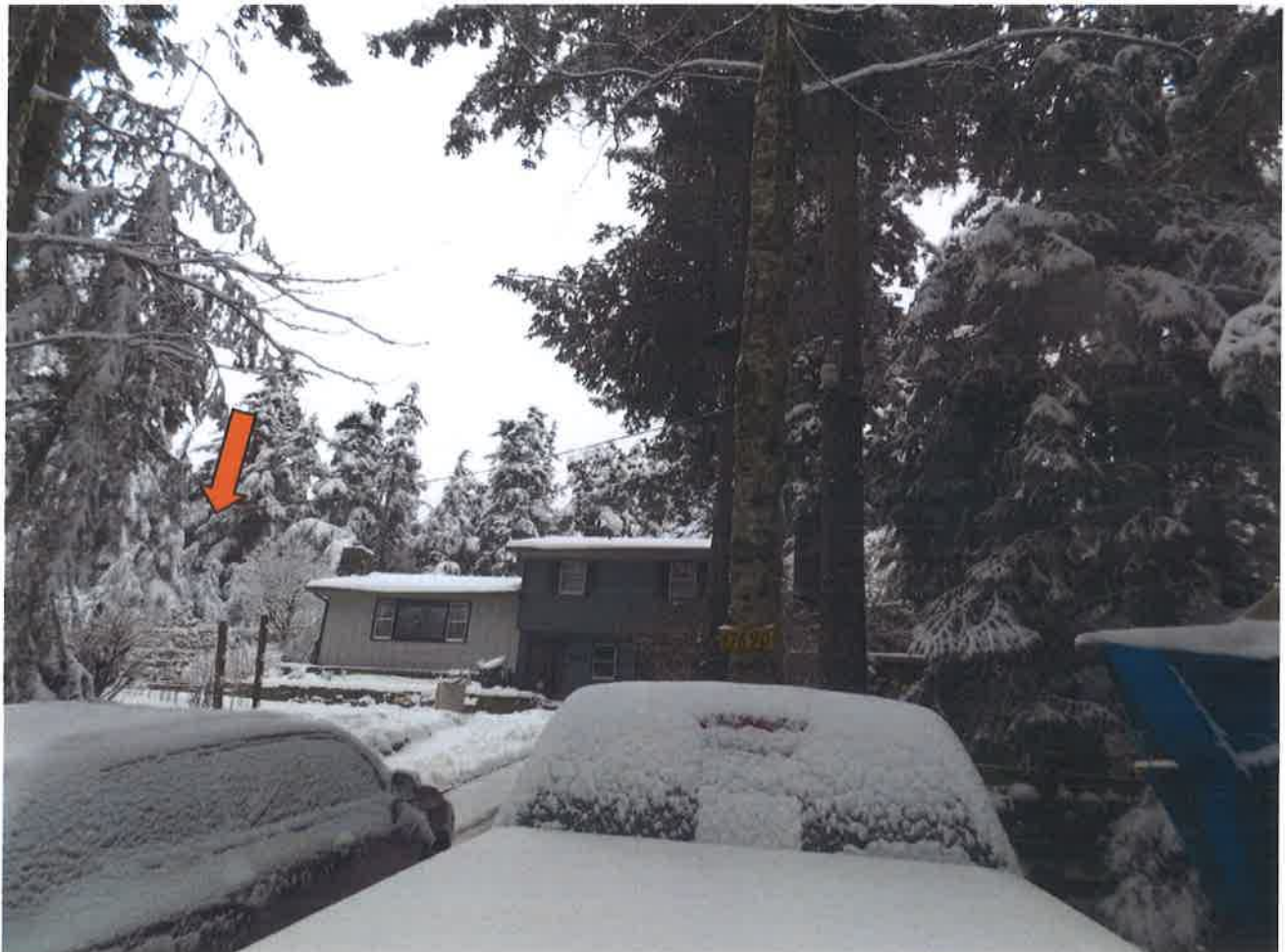
You cannot see the balloon from this location due to the dense tree cover.



VIEWPOINT #5 – 17690 PT LENA LOOP RD

Lat & Long provided by the CBJ, accuracy being +/- 40' to the exact location provided.

You cannot see the balloon from this location due to the dense tree cover.



VIEWPOINT #6 – 17860 PT LENA LOOP RD

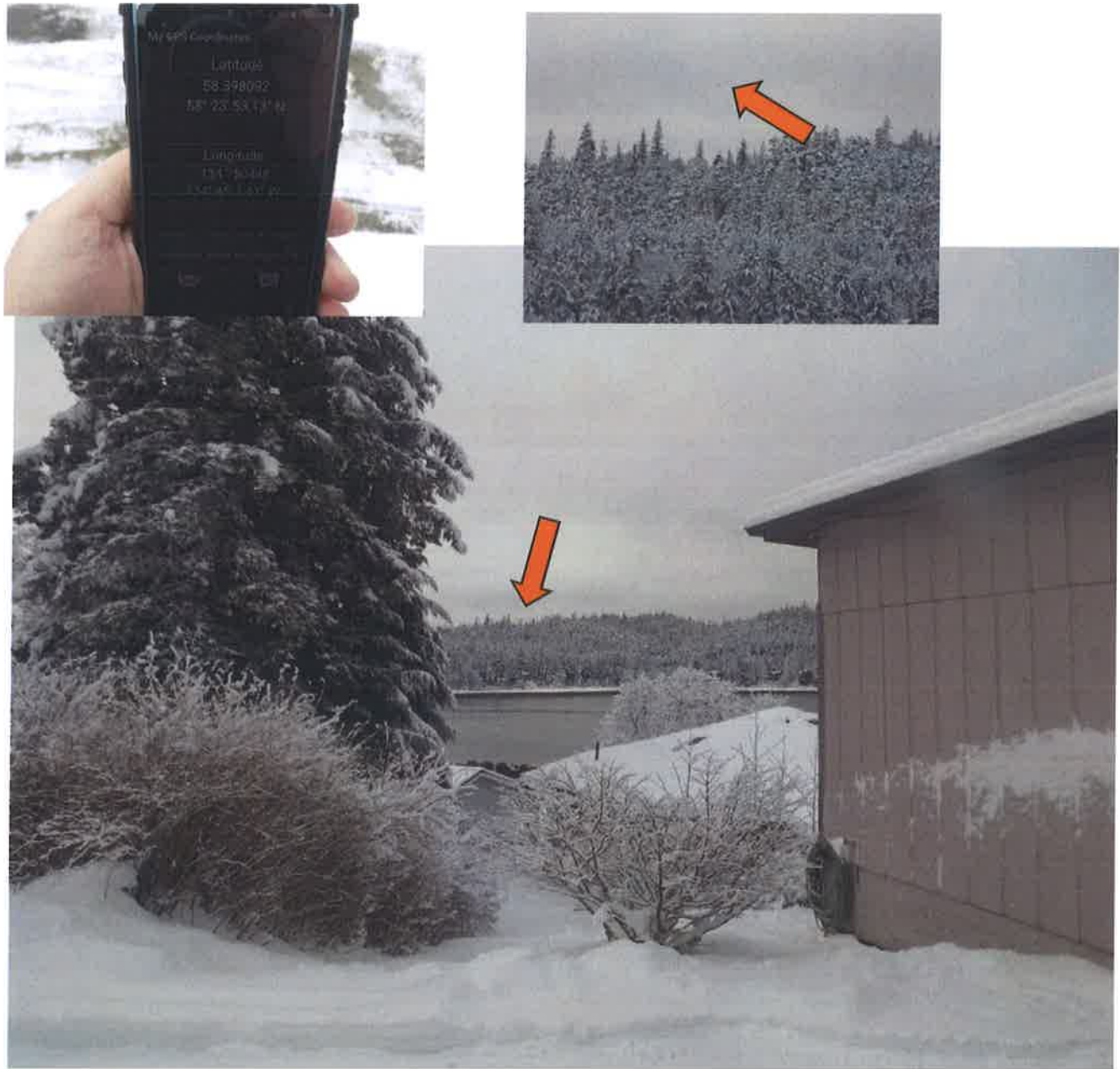
Lat & Long provided by the CBJ, accuracy being +/- 40' to the exact location provided.

You cannot see the balloon from this location due to the dense tree cover.



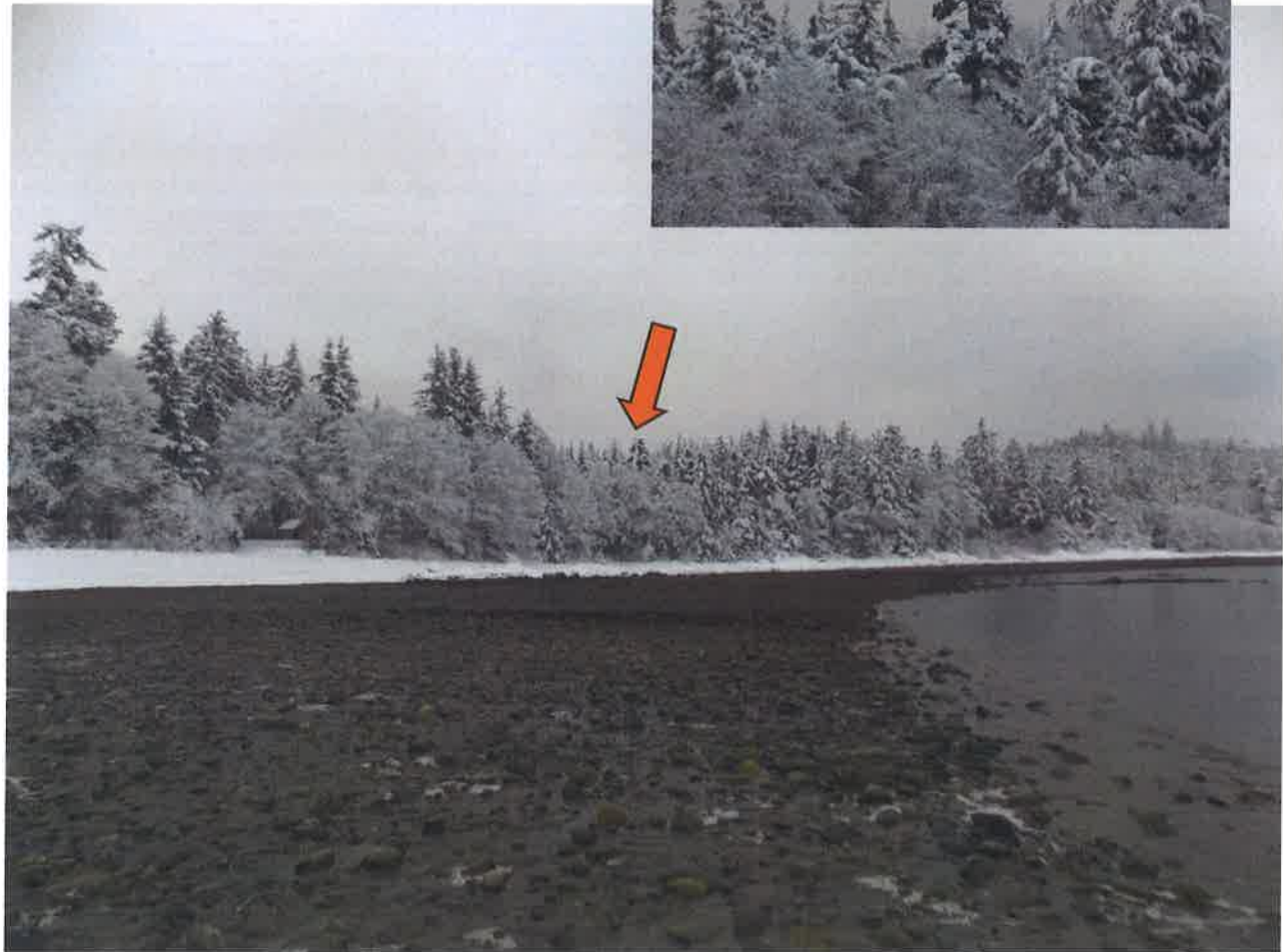
EXTRA VIEWPOINT (SUGGESTED BY THE CBJ) – 17065 GLACIER HWY

Although outside the required 1500' radius the CBJ suggested a couple of photos of any locations found that the balloon was visible. This location is located along Glacier Hwy across the water from the proposed site. From this location you can see the balloon from the roadway.



EXTRA VIEWPOINT (SUGGESTED BY THE CBJ) – LENA BEACH RECREATION AREA

Although outside the required 1500' radius the CBJ suggested a couple of photos of any locations found that the balloon was visible. This location is on the beach in the Lena Beach Picnic Area. You can only see the balloon at low tide.





US-AK-5241 LENA POINT

16150 MERGANSER RD.
JUNEAU, AK 99801

ZONING DRAWINGS

vertical



PROJECT SUMMARY

THIS PROJECT INCLUDES THE FOLLOWING SCOPE OF WORK:

CONSTRUCTION OF A NEW TELECOMMUNICATION AND PUBLIC UTILITY FACILITY CONSISTING OF A NEW 150'-0" SELF SUPPORTING TOWER, CARRIER EQUIPMENT AND A UTILITY BACKBOARD WITHIN A NEW 75'x75' FENCED COMPOUND. (NO WATER OR SEWER IS REQUIRED.)

GOVERNING CODES

GOVERNING CODES

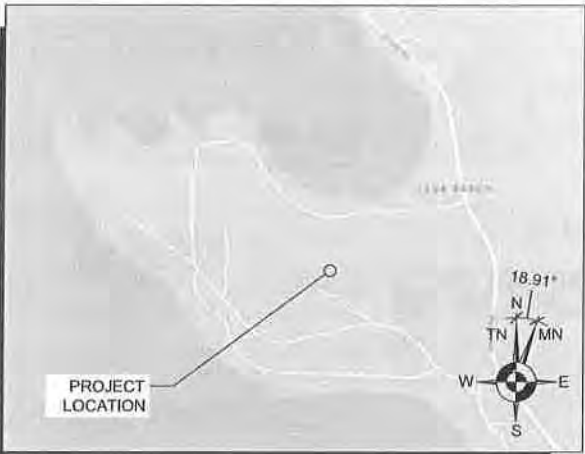
IBC-2015, INTERNATIONAL BUILDING CODE W/ LOCAL AMENDMENTS

NEC-2014, NATIONAL ELECTRICAL CODE

A.D.A. COMPLIANCE

INSTALLATION IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED PER A.D.A.

PROJECT VICINITY MAP



DRIVING DIRECTIONS

FROM JUNEAU INTERNATIONAL AIRPORT:

1. TAKE SHELL SIMMONS DR TO GLACIER HWY (0.6 MI)
2. FOLLOW GLACIER HWY TO POINT LENA LOOP RD (7.1 MI)
3. TAKE OCEAN VIEW DR TO YOUR DESTINATION (0.6 MI)

ESTIMATED DISTANCE: 8.3 MILES
ESTIMATED TIME: 17 MIN

SITE INFORMATION

SITE NAME: LENA POINT
SITE ADDRESS: 16150 MERGANSER RD.
JUNEAU, AK 99801

LATITUDE: 58° 23' 19.962" N
LONGITUDE: 134° 45' 32.386" W
SOURCE: 1A CERTIFICATION

PARCEL NUMBER: 8B3301070090
ZONING CLASSIFICATION: D3 (SINGLE FAMILY/DUPLEX)
FLOOD ZONE: X
JURISDICTION: CITY AND BOROUGH OF JUNEAU
TOP OF (N) STRUCTURE: 150'
OVERALL HEIGHT: 154'

OCCUPANCY GROUP: U
CONSTRUCTION TYPE: II-B

PROJECT LOCATION MAP



UTILITY COMPANIES

POWER: TBD
TELCO/FIBER: TBD

PROJECT CONTACTS

APPLICANT
VERTICAL BRIDGE
750 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487
ROBERT EVANS
PH: 425.652.5727
REVANS@VERTICALBRIDGE.COM

PROPERTY OWNER
CITY & BOROUGH OF JUNEAU
LANDS AND RESOURCES
155 S SEWARD ST.
JUNEAU, AK 99801

SURVEYOR
ACUTEK GEOMATICS LLC.
5099 E. BLUE LUPINE DR #104
WASILLA, AK 99654
PH: 907.376.8800

CONSTRUCTION MANAGEMENT
CENTERLINE SOLUTIONS
3322 SOUTH BAY RD
OLYMPIA, WA 98506
JAY RASMUSSEN
PH: 360.438.8002

ZONING AND PERMITTING CONSULTANT
ALASKA AERIAL SURVEY, LLC
6510 BEECHCRAFT ROAD
WASILLA, AK 99658
GARY R. BREKKE
PH: 907.331.8311

SITE ACQUISITION CONSULTANT
ALASKA AERIAL SURVEY, LLC
6510 BEECHCRAFT ROAD
WASILLA, AK 99658
GARY R. BREKKE
907.331.8311

ENGINEER OF RECORD
CENTERLINE SOLUTIONS
16360 TABLE MOUNTAIN PARKWAY
GOLDEN, CO 80403
KHRISTOPHER SCOTT, P.E.
PH: 303.993.3293

DRAWING INDEX

SHEET	DESCRIPTION
T1.0	TITLE SHEET
SV-1	SURVEY
SV-2	SURVEY
A1.0	OVERALL SITE PLAN
A2.0	ENLARGED SITE PLAN
A3.0	ELEVATIONS

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

SIGN OFF OF FINAL CONSTRUCTION DRAWINGS

REVIEWERS SHALL CLEARLY PLACE INITIALS ADJACENT TO EACH REDLINE NOTE AS DRAWINGS ARE BEING REVIEWED

CONSULTANT	SIGNATURE	DATE
SITE ACQUISITION		
PERMITTING CONSULTANT		
RF ENGINEER:		
CONST. MNGR.		
OPS MNGR.		
PROJECT MNGR.		
REGULATORY REV.		
DEV. MNGR.		



12/19/2018

NOT FOR CONSTRUCTION

CP PROJECT NO.: VRB-18-0001-5

PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	10-03-18	YK/AT	90% CD REVIEW
1	11-29-18	JK/AT	90% CD REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	12-18-18	JK/AT	LU SUBMITTAL

SITE NAME:

LENA POINT
US-AK-5241

SITE ADDRESS:

16150 MERGANSER RD.
JUNEAU, AK 99801

SHEET TITLE

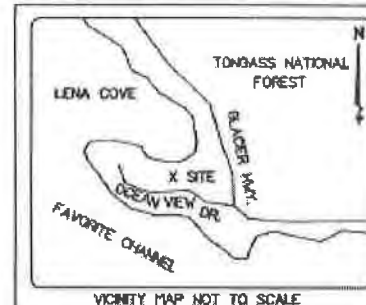
TITLE
SHEET

SHEET NO.

T1.0

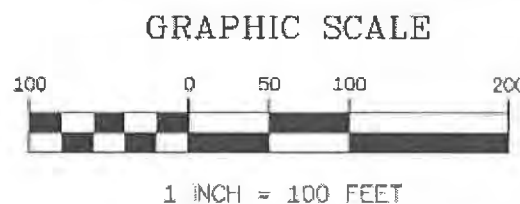


Know what's below.
Call before you dig.



SITE DETAIL:
(1"=100')

AREA TABLE	SQUARE FEET	ACREAGE
(A) PARENT PARCEL	2,802,650 +/-	64.34 +/-
(B) LEASED AREA	10,000 +/-	0.23 +/-
(C) NON-EXCLUSIVE ACCESS & UTILITY ESMT.	18,896 +/-	0.48 +/-



LEGEND:

MEASURED DATA
RECORD DATA
PROPERTY BOUNDARY LINES
ADJACENT PROPERTY LINES
CENTERLINE
FENCE AS NOTED
RECOVERED 5/8" REBAR
SET 5/8" REBAR (LS 9106)
RECOVERED MONUMENT
UTILITY PEDESTAL
POWER POLE
SEPTIC PIPES
RIGHT-OF-WAY

N 90°00'00" W
(N 90°00'00" W)

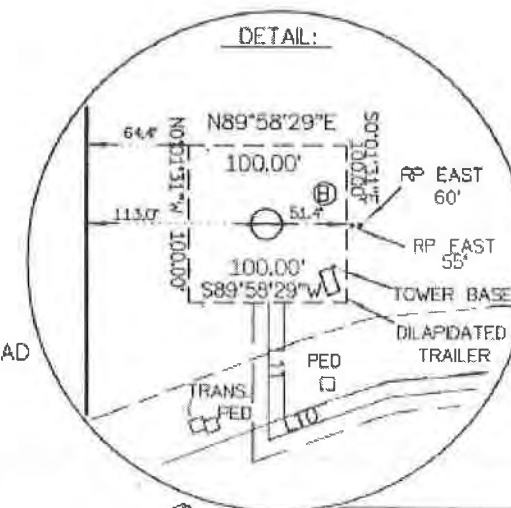
—x—x—x—x—
○
●
⊙
PED □
P/P ∅
SP ○
—ROW—

SITE PLAN SURVEY
BLOCK E, SOUTH LENA SUBDIVISION, PLAT NO. 2006-57.RD.

SURVEYOR'S NOTES

1. BASIS OF BEARING IS PER RECORD PLAT OF SOUTH LENA SUBDIVISION, PLAT NO. 2006-57, JUNEAU RECORDING DISTRICT.
2. NO SUBSURFACE INVESTIGATION WAS PERFORMED TO LOCATE UNDERGROUND UTILITIES. UTILITIES SHOWN HEREON ARE LIMITED TO AND ARE PER OBSERVED EVIDENCE ONLY.
3. SURVEY COMPLETED IN MAY 2018.
4. THIS SURVEY DOES NOT REPRESENT A SURVEY OF THE PARENT PARCEL. REAL PROPERTY SHOWN HEREON ARE APPLICABLE TO THE TELECOMMUNICATIONS SITE, THERE MAY BE OTHER IMPROVEMENTS NOT SHOWN.
5. LEASED AREA ENCOMPASSED WITH A LARGE AMOUNT OF DEAD FALL TREES, EXTREME WALKING HAZARD.
6. 100' WIDE RIGHT-OF-WAY OF MERGANSER ROAD IS GRAPHICALLY PLOTTED FROM RECORD PLAT, NO DIMENSIONS ARE PROVIDED ON PLAT OR ON DOCUMENT SITED AS AKA 061617. (FAA 44LD513) FURTHER TITLE RESEARCH REQUIRED TO PROVIDE DEFINED POSITION OF SAID RIGHT-OF-WAY.
7. EXCESSIVE ERRORS IN MONUMENTS AND REBARS FOUND ON THIS PROPERTY, EXTENSIVE RETRACEMENT OF PARENT PARCEL IS ADVISED. PLEASE SEE BASIS OF BEARINGS FOR CONTROL USED ON THIS SURVEY.

DETAIL:



S87°17'50"W 880.40'

NUM	BEARING	DISTANCE
L1	N0°00'00"E	45.70'
L2	N62°54'48"W	129.80'
L3	N51°42'35"W	84.73'
L4	N37°10'40"W	111.70'
L5	N48°26'24"W	64.82'
L6	N66°02'15"W	78.79'
L7	N76°47'56"W	124.80'
L8	N83°37'50"W	108.17'
L9	S84°15'05"W	72.44'
L10	S70°29'23"W	82.49'
L11	N00°01'31"W	87.08'

SEE DETAIL
POINT OF BEGINNING
⑤ LEASED AREA

MERGANSER ROAD
(100' ACCESS EASEMENT
DEPICTED ON PLAT ⑥
#2006-57, NO DIMENSIONS)

PHYSICAL MERGANSER ROAD

WATER TOWER

④ OWNER: CITY & BOROUGH OF
JUNEAU
PROPERTY: BLOCK E, SOUTH LENA
SUBD. (#2006-57 JRD)
DEED: #2006-006347-0
PARCEL ID: 883301070090

LOT 5
USS 3808
(FAA PROPERTY)

POINT OF BEGINNING
NON-EXCLUSIVE ACCESS
& UTILITY EASEMENT

MERGANSER ROAD
(PUBLIC ROW DEDICATED
ON PLAT #2006-57)

S0°00'00"E 207.80'

S0°00'00"E 93.46'

S58°52'16"E 265.47'
N58°52'16"W 265.47'

POINT OF COMMENCEMENT
LEASED AREA AND
NON-EXCLUSIVE ACCESS
& UTILITY EASEMENT

LOT 4

LOT 5

LOT 6

LOT 7

LOT 8

LOT 9

LOT 10

LOT 11

FOR: BRT GROUP, LLC
SITE NAME: LENA POINT
SITE NUMBER: US-AK-5241
ADDRESS: 16150 MERGANSER RD.
JUNEAU, ALASKA 99801
CITY AND BOROUGH OF JUNEAU
SURVEY WORK PERFORMED BY:
ACUTEK
GEOMATICS LLC
5099 E. BLUE LUPINE DR #104, WASILLA AK 99654
(907) 376-8800 FAX (907) 376-9629 ACUTEKSURVEY.COM
DRAWN BY: TENDRA CHECKED BY: TERRY JOB #: 18-08.06
NATIONAL SURVEY SERVICES COORDINATION BY:
CENTERLINE SOLUTIONS
3322 SOUTH BAY ROAD NE
OLYMPIA WA 98506
360-438-8002
SHEET 1 OF 2

verticalbridge

CENTERLINE
Advancing Wireless Networks

NOT FOR CONSTRUCTION

CP PROJECT NO.: VRB-18-0001-5

ZD PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	10-03-18	YK/AT	90% CD REVIEW
1	11-29-18	JK/AT	90% CD REVIEW

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	12-18-18	JK/AT	LU SUBMITTAL

SITE NAME:

LENA POINT

US-AK-5241

SITE ADDRESS:

16150 MERGANSER RD.
JUNEAU, AK 99801

SHEET TITLE

**SURVEY
DETAILS**

SHEET NO.

SV1.0

COMMITMENT FOR TITLE INSURANCE

TITLE COMMITMENT PREPARED BY FIDELITY NATIONAL TITLE GROUP, FILE NUMBER 27017427,
WITH AN EFFECTIVE DATE OF APRIL 2, 2018. SCHEDULE B - SECTION II, SPECIAL
EXCEPTIONS ARE LISTED BELOW:

1. RESERVATION OR EXCEPTIONS IN PATENTS OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF. (NOT PLOTTABLE)
2. RESERVATIONS AND EXCEPTIONS AS CONTAINED IN THE STATE OF ALASKA PATENT. (NOT PLOTTABLE)
3. TAXES AND/OR ASSESSMENTS DUE THE CITY AND BOROUGH OF JUNEAU, IF ANY. (NOT PLOTTABLE)
4. THE RIGHTS OF THE PUBLIC IN AND TO ANY PORTION OF THE PREMISES HEREIN DESCRIBED LYING WITHIN THE LIMITS OF STREETS, ROADS AND HIGHWAYS. (NOT PLOTTABLE)
5. THE EFFECT OF THE NOTES WHICH APPEAR ON THE PLAT OF SAID SUBDIVISION. (NOT PLOTTABLE)
6. EASEMENTS AS DEDICATED AND SHOWN ON THE PLAT OF SAID SUBDIVISION. (PLOTTED, DOES NOT NEGATIVELY AFFECT LEASED AREA OR NON-EXCLUSIVE ACCESS & UTILITY EASEMENT)
7. COVENANTS, CONDITIONS AND RESTRICTIONS, RECORDED AUGUST 31, 2006 AS RECEPTION NO. 2006-006347-0. (NOT PLOTTABLE)

LEGAL DESCRIPTION: (PARENT PARCEL) AS PROVIDED

BLOCK E, SOUTH LENA SUBDIVISION, ACCORDING TO PLAT 2006-49, AND AMENDED BY PLAT 2006-57, RECORDS OF THE JUNEAU RECORDING DISTRICT, FIRST JUDICIAL DISTRICT, STATE OF ALASKA.

ZONING: PER CITY AND BOROUGH OF JUNEAU PLANNING, PROPERTY IS ZONED AS "D 3" SINGLE FAMILY/DUPLEX.

FLOOD NOTE: THIS PARCEL LIES WITHIN FLOOD ZONE X, PER FEMA MAP NUMBER 02000511350, WITH AN EFFECTIVE DATE OF SEPTEMBER 25, 2009.

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY TO:
VERTICAL BRIDGE REIT, LLC, A DELAWARE
LIMITED LIABILITY COMPANY, ITS SUBSIDIARIES,
AND THEIR RESPECTIVE SUCCESSORS AND/OR
ASSIGNS; DEUTSCHE BANK TRUST COMPANY
AMERICAS, AS INDENTURE TRUSTEE, ITS
SUCCESSORS AND ASSIGNS AS THEIR
INTERESTS MAY APPEAR; AND FIDELITY
NATIONAL TITLE INSURANCE COMPANY.

ACUTEK GEOMATICS, LLC

TERRY L. NICODEMUS, PLS
LAND SURVEYOR, ALASKA #9106-S

Date: _____



FAA 1-A TOWER LOCATION INFORMATION:
PROPOSED 155± SELF SUPPORT TOWER

NAD 83
LATITUDE = 58°23'20.072" N ± 20"
LONGITUDE = 134°45'31.033" W ± 20"

GROUND ELEVATION AT BASE OF TOWER = 230' ± 3' NAVD88
HEIGHT OF TOP OF TOWER ABOVE GROUND = 385±3'

SITE PLAN SURVEY

LEGAL DESCRIPTION: (LEASED AREA) AS SURVEYED BLOCK E, SOUTH LENA SUBDIVISION, PLAT NO. 2006-57JRD.

A TEN THOUSAND (10,000) SQUARE FOOT LEASED AREA ENTIRELY WITHIN BLOCK E, SOUTH LENA SUBDIVISION, ACCORDING TO PLAT 2006-49, AND AMENDED BY PLAT 2006-57, RECORDS OF THE JUNEAU RECORDING DISTRICT, FIRST JUDICIAL DISTRICT, STATE OF ALASKA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A RECOVERED REBAR ON THE SOUTHEAST CORNER OF BLOCK E, AMENDED PLAT OF SOUTH LENA SUBDIVISION, PLAT NUMBER 2006-57, THENCE N 58°52'16" W A DISTANCE OF 265.47 FEET TO A POINT, A RECOVERED MONUMENT ON THE SOUTH BOUNDARY OF BLOCK E, COMMON TO THE NORTHWEST CORNER OF LOT 11, BLOCK C, AMENDED PLAT OF SOUTH LENA SUBDIVISION, THENCE N 59°35'22" W A DISTANCE OF 546.94 FEET TO A POINT, THE TRUE POINT OF BEGINNING;

THENCE S 89°58'29" W A DISTANCE OF 100.00 FEET TO A POINT,
THENCE N 00°01'31" W A DISTANCE OF 100.00 FEET TO A POINT,
THENCE N 89°58'29" E A DISTANCE OF 100.00 FEET TO A POINT,
THENCE S 00°01'31" E A DISTANCE OF 100.00 FEET TO A POINT, THE TRUE POINT OF BEGINNING.

CONTAINING 10,000 SQ. FT. MORE OR LESS. (0.23 ACRES)

LEGAL DESCRIPTION: (NON-EXCLUSIVE ACCESS & UTILITY EASEMENT) AS SURVEYED

A EIGHTEEN THOUSAND EIGHT HUNDRED NINETY-SIX (18,896) SQUARE FOOT NON-EXCLUSIVE ACCESS AND UTILITY EASEMENT, TWENTY (20) FEET WIDE, TEN (10) FEET EACH SIDE OF THE CENTERLINE, LOCATED ENTIRELY WITHIN BLOCK E, SOUTH LENA SUBDIVISION, ACCORDING TO PLAT 2006-49, AND AMENDED BY PLAT 2006-57, RECORDS OF THE JUNEAU RECORDING DISTRICT, FIRST JUDICIAL DISTRICT, STATE OF ALASKA, THE CENTERLINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A RECOVERED REBAR ON THE SOUTHEAST CORNER OF BLOCK E, AMENDED PLAT OF SOUTH LENA SUBDIVISION, PLAT NUMBER 2006-57, THENCE N 00°00'00" E ALONG THE EAST BOUNDARY OF SAID TRACT E, A DISTANCE OF 45.70 FEET TO A POINT WITHIN THE RIGHT-OF-WAY OF MERGANSER ROAD, AS SHOWN ON AMENDED PLAT OF SOUTH LENA SUBDIVISION, PLAT NUMBER 2006-57, THE TRUE POINT OF BEGINNING;

THENCE N 62°54'48" W A DISTANCE OF 129.80 FEET TO A POINT,
THENCE N 51°42'35" W A DISTANCE OF 84.73 FEET TO A POINT,
THENCE N 37°10'40" W A DISTANCE OF 111.70 FEET TO A POINT,
THENCE N 48°26'24" W A DISTANCE OF 64.82 FEET TO A POINT,
THENCE N 66°02'15" W A DISTANCE OF 78.79 FEET TO A POINT,
THENCE N 76°47'56" W A DISTANCE OF 124.80 FEET TO A POINT,
THENCE N 83°37'50" W A DISTANCE OF 108.17 FEET TO A POINT,
THENCE S 84°15'05" W A DISTANCE OF 72.44 FEET TO A POINT,
THENCE S 70°29'23" W A DISTANCE OF 82.49 FEET TO A POINT,
THENCE N 00°01'31" W A DISTANCE OF 87.08 FEET TO A POINT ON THE SOUTH BOUNDARY OF THE LEASED AREA, THE POINT OF TERMINUS. SAID EASEMENT BOUNDARY IS TO EXTEND OR SHORTEN AT THE LEASED AREA BOUNDARY AND THE RIGHT-OF-WAY OF MERGANSER ROAD.

CONTAINING 18,896 SQ. FT. MORE OR LESS. (0.44 ACRES)

FOR: BRT GROUP, LLC

SITE NAME: LENA POINT
SITE NUMBER: US-AK-5241
ADDRESS: 16150 MERGANSER RD.
JUNEAU, ALASKA 99801
CITY AND BOROUGH OF JUNEAU

SURVEY WORK PERFORMED BY:

ACUTEK
GEOMATICS LLC
5099 E. BLUE LUPINE DR #104, WASILLA AK 99654
(907) 376-8800 FAX (907) 376-9629 ACUTEKSURVEY.COM

DRAWN BY: TENDRA CHECKED BY: TERRY JOB #: 18-0808

NATIONAL SURVEY SERVICES COORDINATION BY:

CENTERLINE SOLUTIONS

3322 SOUTH BAY ROAD NE,
OLYMPIA, WA 98506
360-438-8002

SHEET 2 OF 2

REVISION:

3	11/26/2018	SITE MOVED LOCATION PER FIELD SURVEY
2	11/8/2018	SITE MOVED LOCATION PER CENTERLINE
1	9/25/2018	SITE MOVED LOCATION PER CENTERLINE

vertical

CENTERLINE
Advancing Wireless Networks

NOT FOR CONSTRUCTION

GP PROJECT NO.: VRB-18-0001-5

ZD PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	10-03-18	YK/AT	90% CD REVIEW
1	11-29-18	JK/AT	90% CD REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	12-18-18	JK/AT	LU SUBMITTAL

SITE NAME:

LENA POINT
US-AK-5241

SITE ADDRESS:

16150 MERGANSER RD.
JUNEAU, AK 99801

SHEET TITLE

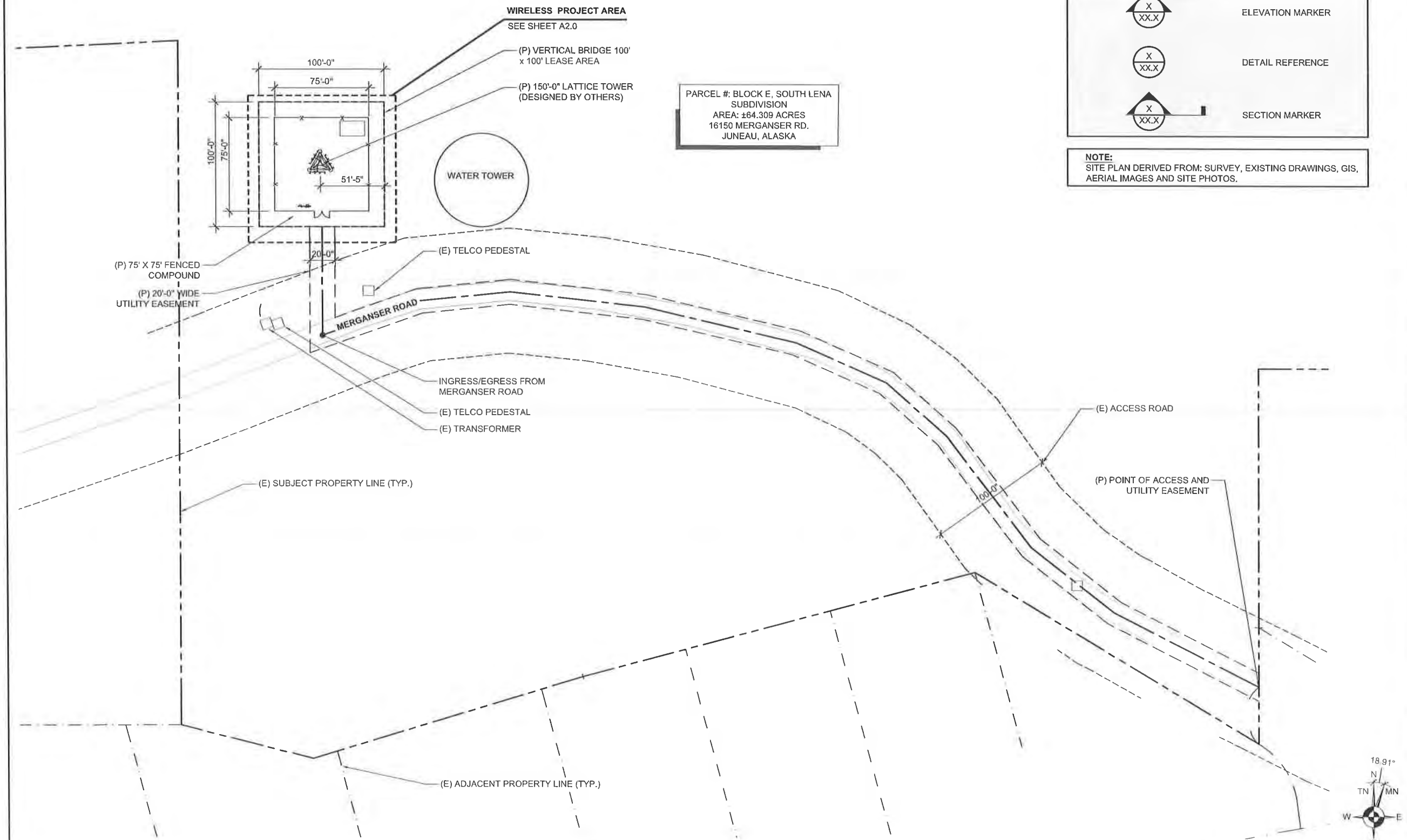
SURVEY DETAILS

SHEET NO.

SV2.0

SCALE: NTS

SCALE: NTS



DRAWING LEGEND

	SUBJECT PROPERTY LINE
	ADJACENT PROPERTY LINE
	COAX ROUTE
	HYBRID CABLE ROUTE
	EXISTING FENCE
	ELEVATION MARKER
	DETAIL REFERENCE
	SECTION MARKER

NOTE:
SITE PLAN DERIVED FROM: SURVEY, EXISTING DRAWINGS, GIS, AERIAL IMAGES AND SITE PHOTOS.

12/19/2018

NOT FOR CONSTRUCTION

CP PROJECT NO.: VRB-18-0001-5

ZD PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	10-03-18	YK/AT	90% CD REVIEW
1	11-29-18	JK/AT	90% CD REVIEW

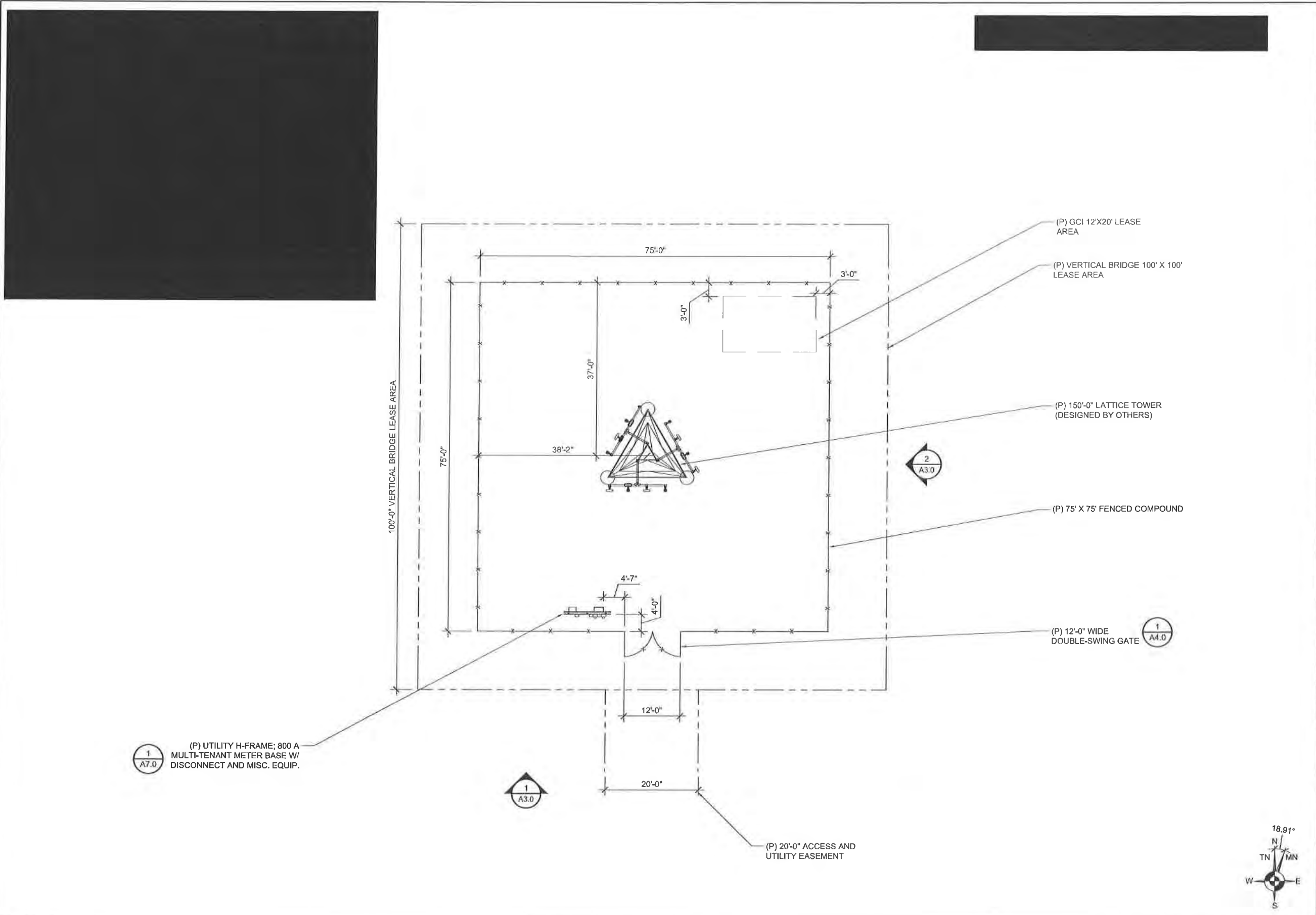
SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	12-18-18	JK/AT	LU SUBMITTAL

SITE NAME:
LENA POINT
US-AK-5241

SITE ADDRESS:
16150 MERGANSER RD.
JUNEAU, AK 99801

SHEET TITLE
OVERALL
SITE PLAN

SHEET NO.
A1.0



CP PROJECT NO.: VRB-18-0001-5

ZD PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	10-03-18	YK/AT	90% CD REVIEW
1	11-29-18	JK/AT	90% CD REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	12-18-18	JK/AT	LU SUBMITTAL

SITE NAME:

LENA POINT
US-AK-5241

SITE ADDRESS:
16150 MERGANSER RD.
JUNEAU, AK 99801

SHEET TITLE

ENLARGED SITE PLAN

SHEET NO.

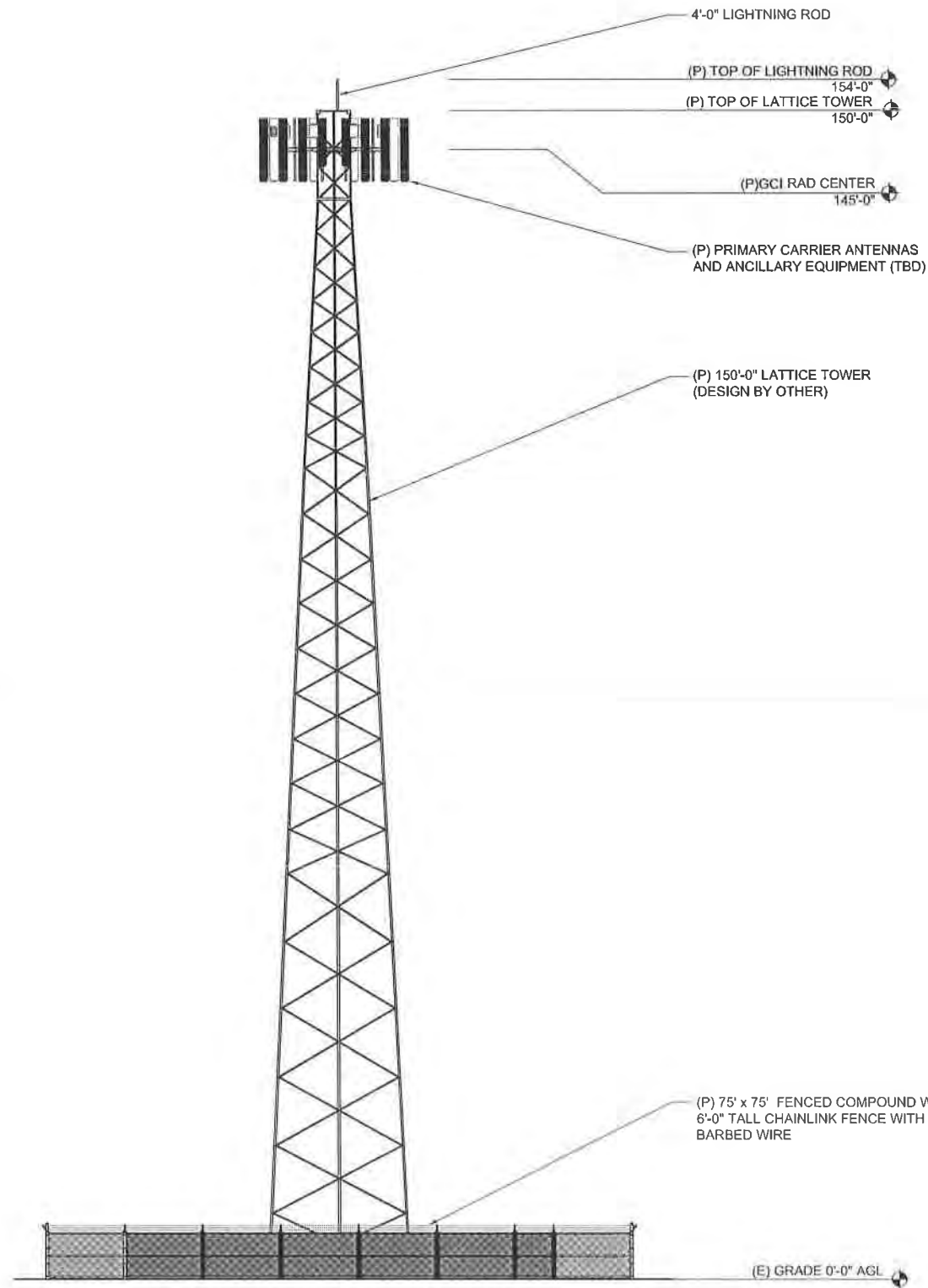
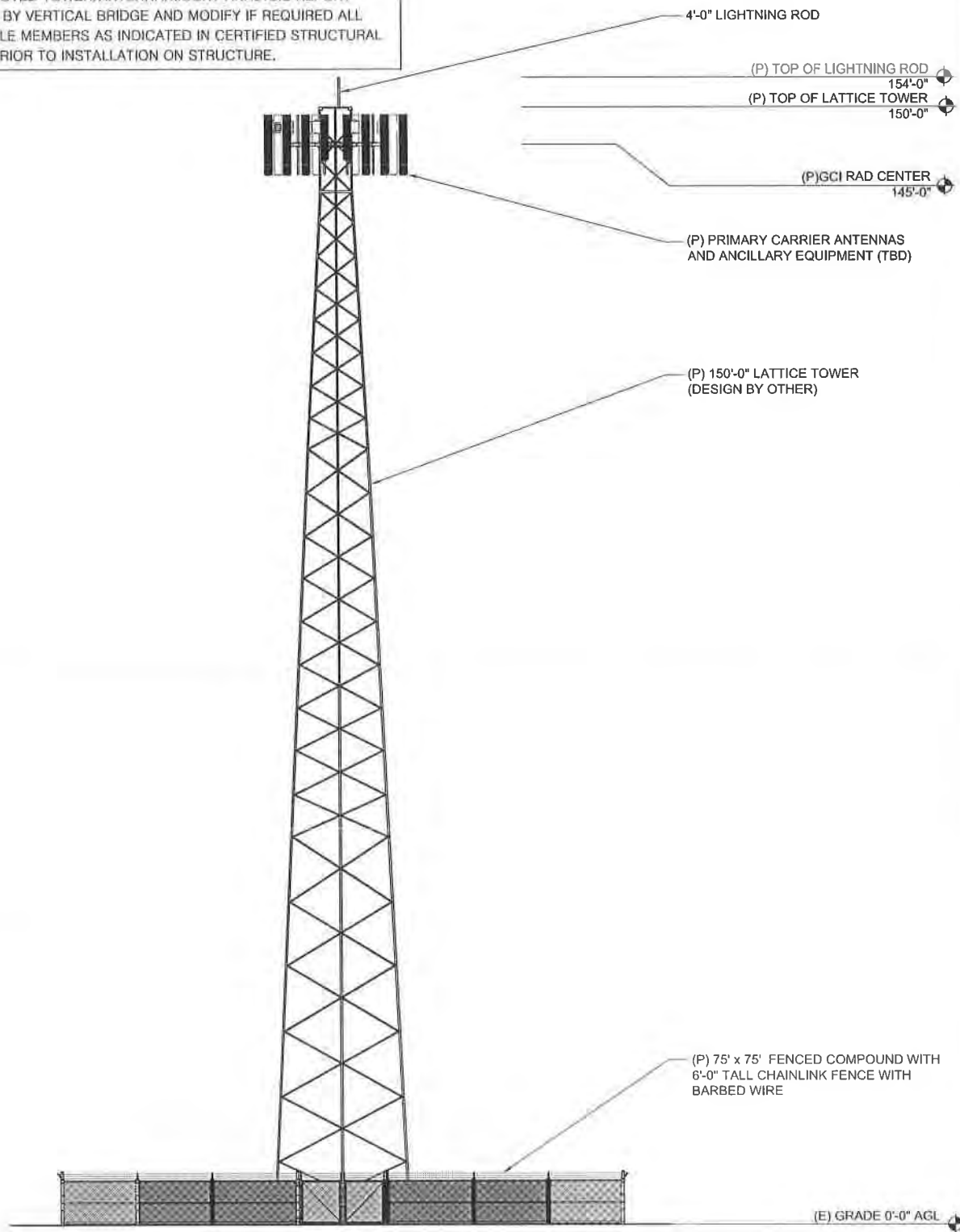
A2.0

1 ENLARGED SITE PLAN

SCALE: 1" = 20'-0" (11X17)

SCALE: 1" = 10'-0" (22X34)

STRUCTURAL SERVICES COMPLIANCE NOTE:
NO WORK SHALL COMMENCE WITHOUT THE APPROVED
STRUCTURAL TOWER/ANTENNA/MOUNT ANALYSIS REPORT (SIGNED
AND SEALED) TO BE PROVIDED UNDER SEPARATE COVER BY
OTHERS. CONTRACTOR PRIOR TO CONSTRUCTION SHALL REVIEW
THE APPROVED TOWER/ANTENNA/MOUNT ANALYSIS REPORT
SUPPLIED BY VERTICAL BRIDGE AND MODIFY IF REQUIRED ALL
APPLICABLE MEMBERS AS INDICATED IN CERTIFIED STRUCTURAL
REPORT PRIOR TO INSTALLATION ON STRUCTURE.



1

PROPOSED SOUTH ELEVATION

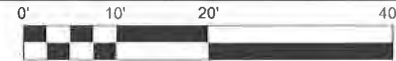
SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)



2

PROPOSED EAST ELEVATION

SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)



verticalbridge

CENTERLINE
SOLUTIONS
Advancing Wireless Networks



12/19/2018

NOT FOR CONSTRUCTION

CP PROJECT NO.: VRB-18-0001-5

ZD PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	10-03-18	YK/AT	90% CD REVIEW
1	11-29-18	JK/AT	90% CD REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	12-18-18	JK/AT	LU SUBMITTAL

SITE NAME:

LENA POINT
US-AK-5241

SITE ADDRESS:

16150 MERGANSER RD.
JUNEAU, AK 99801

SHEET TITLE

ELEVATIONS

SHEET NO.

A3.0

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 1"x10"	150	Sector3(CaAa=13333.33 Sq.in)No Ice (Carrier 3)	125
Sector1(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	145	Sector1(CaAa=5000 Sq.in)No Ice (Carrier 4)	115
Sector2(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	145	Sector1(CaAa=5000 Sq.in)No Ice (Carrier 4)	115
Sector3(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	145	Sector1(CaAa=5000 Sq.in)No Ice (Carrier 4)	115
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 2)	135	Sector1(CaAa=5000 Sq.in)No Ice (Carrier 5)	105
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2)	135	Sector1(CaAa=5000 Sq.in)No Ice (Carrier 5)	105
Sector3(CaAa=10000 Sq.in)No Ice (Carrier 2)	135	Sector1(CaAa=5000 Sq.in)No Ice (Carrier 5)	105
Sector1(CaAa=13333.33 Sq.in)No Ice (Carrier 3)	125	Sector1(CaAa=5000 Sq.in)No Ice (Carrier 5)	105
Sector2(CaAa=13333.33 Sq.in)No Ice (Carrier 3)	125		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x3/16		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Juneau County, Alaska.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 108 mph basic wind in accordance with the TIA-222-G Standard.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 3 with Crest Height of 195.000 ft
7. Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity.
8. Design is preliminary and subject to change.

ALL REACTIONS
ARE FACTORED

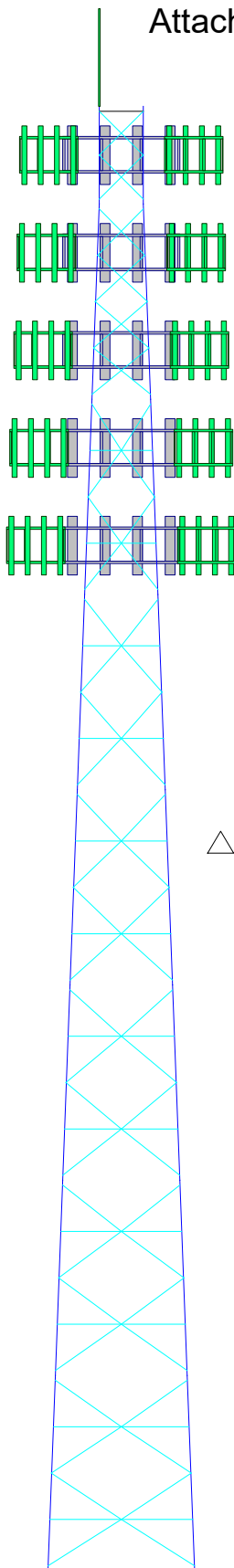
MAX. CORNER REACTIONS AT BASE:

DOWN: 710 K
SHEAR: 57 K

UPLIFT: -658 K
SHEAR: 55 K

AXIAL
55 K
SHEAR
97 K
MOMENT
8984 kip-ft
TORQUE 34 kip-ft
REACTIONS - 108 mph WIND

150.0 ft
140.0 ft
120.0 ft
100.0 ft
80.0 ft
60.0 ft
40.0 ft
20.0 ft
0.0 ft



Section	T1	T2	T3	T4	T5	T6	T7	T8	
Legs	SR 1 3/4	SR 2 1/2	SR 3	SR 3 1/2	SR 4	SR 4 1/4	SR 4 3/4	SR 5	
Leg Grade	A	L3x3x1/4		A529-50				2L3x3x3/16x3/8	
Diagonals				2L2 1/2x2 1/2x3/16x3/8					
Diagonal Grade				A36M-50					
Top Girts	A			N.A.					
Horizontals				2L1 3/4x1 3/4x3/16x3/8				2L2x2x3/16x3/8	
Inner Bracing				L1 3/4x1 3/4x3/16					
Face Width (ft)	4.5	6	7.5	9	10.5	12	13.5	6.0	27.4
# Panels @ (ft)	2 @ 4.5	1.8	2.5	3.2	3.9	4.3	5.2		
Weight (K)	0.4								

Job: Proposal Design - Lena Point (Site# US-AK-5241)			
Project: 150' SST - Juneau County, AK			
Client: Vertical Bridge	Drawn by: Akshay Kumar	App'd:	
Code: TIA-222-G	Date: 11/21/19	Scale: NTS	
Path:		Dwg No. E-1	
Phone:			
FAX:			

Attachment A - Application

Quoted by	Quote #	Date	Customer	Contact Name	Site Name	Site #	Tower Sales Price
Kevin Gajan	1118-65	11/19/19	Vertical Bridge	Bill Shearer	Lena Point	US-AK-5241	11,190.00

FOR REVIEW

GENERAL INFO

Final FDN Design Req'd	Bid Fdn. Design Req'd	FDN Option 1	FDN Option 2	Soils for bid	Soils for final design
Yes	No	SST/Caisson	Combined Footing	Per Geo	Per Geo

NEED TO INTERPOLATE WIND SPEED

TOWER INFO

Tower Type	Tower Model	Tower Height (ft)	Site State	Site County	Lattitude (DD)	Longitude (DD)
Self-Support	SST	150	AK	Juneau	58.38919	-134.758966

Guyed Towers Only

Guy Radius (ft)	Assume Flat Terrain	Torque Arm Req'd?

TIA 222 Rev.	Structure Class	Exposure Category	Topo Category	Min Basic Wind Speed (mph)	Max Basic Wind Speed (mph)	Min Basic Wind Speed w/ice (mph)	Max Basic Wind Speed w/ice (mph)	Min. Design Ice Thickness (in)	Max. Design Ice Thickness (in)	Design Frost Depth (in)	Min Ss	Min Ss	Notes	Interpolate Windspeed	Special Rev G Wind	F wind Speed (mph) no ice	F wind Speed (mph) w/ice
G	II	C	3	90	110	60	60	0.25	0.25	-	0.25	1.2	2, 3	YES	NA	NA	NA

NOTES FOR DESIGN ENGINEER

ANTENNA LOADING						ANTENNA MOUNT LOADING						FEEDLINE LOADING					
ELEVATION		DESCRIPTION				ELEVATION		DESCRIPTION				ELEVATION		DESCRIPTION			
145		40,000 Sq in						Included in EPA loading				145		(12) 1 5/8" Lines			
135		30,000 Sq In										135		(12) 1 5/8" Lines			
125		40,000 Sq in										125		(12) 1 5/8" Lines			
115		15,000 Sq. In.										115		(12) 1 5/8" Lines			
105		15,000 Sq. In.										105		(12) 1 5/8" Lines			

February 12, 2020

Mr. Mathew Grugan
Vertical Bridge Holdings, LLC
750 Park of Commerce Dr; ste 200
Boca Raton FL 33487

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject:**Breakpoint Letter****Eastpointe Designation:****Eastpointe Project Number:**

1118-65

Eastpointe Site Name:

Lena Point

Engineering Firm Designation:**B+T Group Project Number:**

130962.004.01a

Site Data:

US AK 5241 Lena Point
16150 Merganser Rd., Juneau, AK 99801 (Juneau Borough)
Latitude N58° 23' 20.072", Longitude W134° 45' 31.033"
150' Foot – Self Supporting Tower

To Whom It May Concern:

As Requested by Eastpointe Industries, LLC on behalf of Vertical Bridge Holdings LLC, B+T Group is pleased to submit this "Breakpoint Letter" for the 150' self-supporting tower to be constructed at the Lena Point site.

This tower was designed in accordance with the TIA 222-G standard for the Borough of Juneau AK. The tower was designed to support antennas and transmission lines for three wireless carriers. The design criteria are more particularly described as follows:

Design Wind Speed: 108mph 3-sec gust (no ice), 60mph 3-sec gust (.25" ice)

Structure Class: II

Exposure Category: C

Topographic Category: 3

145'—Wireless Carrier 1 (CaAa= 40,000in²) w/ (12) 1 5/8" lines

135'—Wireless Carrier 2 (CaAa= 30,000in²) w/ (12) 1 5/8" lines

125'—Wireless Carrier 3 (CaAa= 40,000in²) w/ (12) 1 5/8" lines

115'—Wireless Carrier 2 (CaAa= 30,000in²) w/ (12) 1 5/8" lines

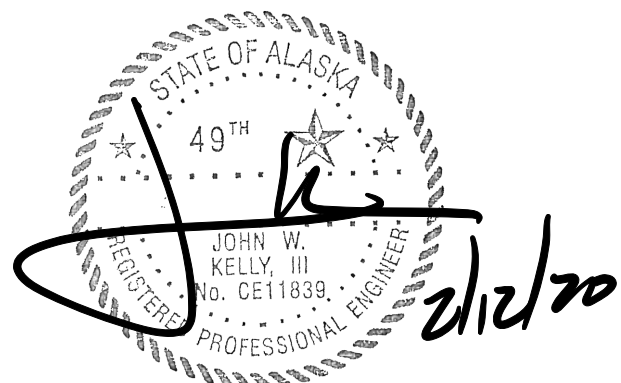
This letter is to provide information on the breakpoint being designed for this tower. The breakpoint failure will occur at a specific elevation point on the tower. The criteria that needs to be met is a breakpoint at a minimum height of 65'. It should be understood, communications structures are designed in accordance with strict structural standards and it is extremely rare that well maintained towers fail under normal operational conditions. However, in the highly unlikely event that this tower should experience operational failure, the failure mode will be bolt rupture. The breakpoint for this tower is at the 80' elevation. It should be understood, that this break point design does not consider unpredictable extreme catastrophic events for which the structure is not designed. However, any damage to surrounding property caused by the tower failing during such an event would be relatively insignificant when compared to the damage caused to the surrounding property by the event itself.

I hope this letter satisfies your concerns. Please let me know if I may be of further assistance.

Structural analysis prepared by: Carlon Bethell

Respectfully submitted by: B+T Engineering, Inc.

John W. Kelly, P.E., S.E.



Attachment A - Application

150ft. Balloon Test



verticalbridge

US-AK-5241 LENA POINT
16150 Merganser Rd, Juneau, AK 99801

**150ft. LATTICE TOWER
SIMULATION**

View from Ocean View Drive
approximately 1,100ft. southeast of site

Attachment A - Application

150ft. Balloon Test



verticalbridge

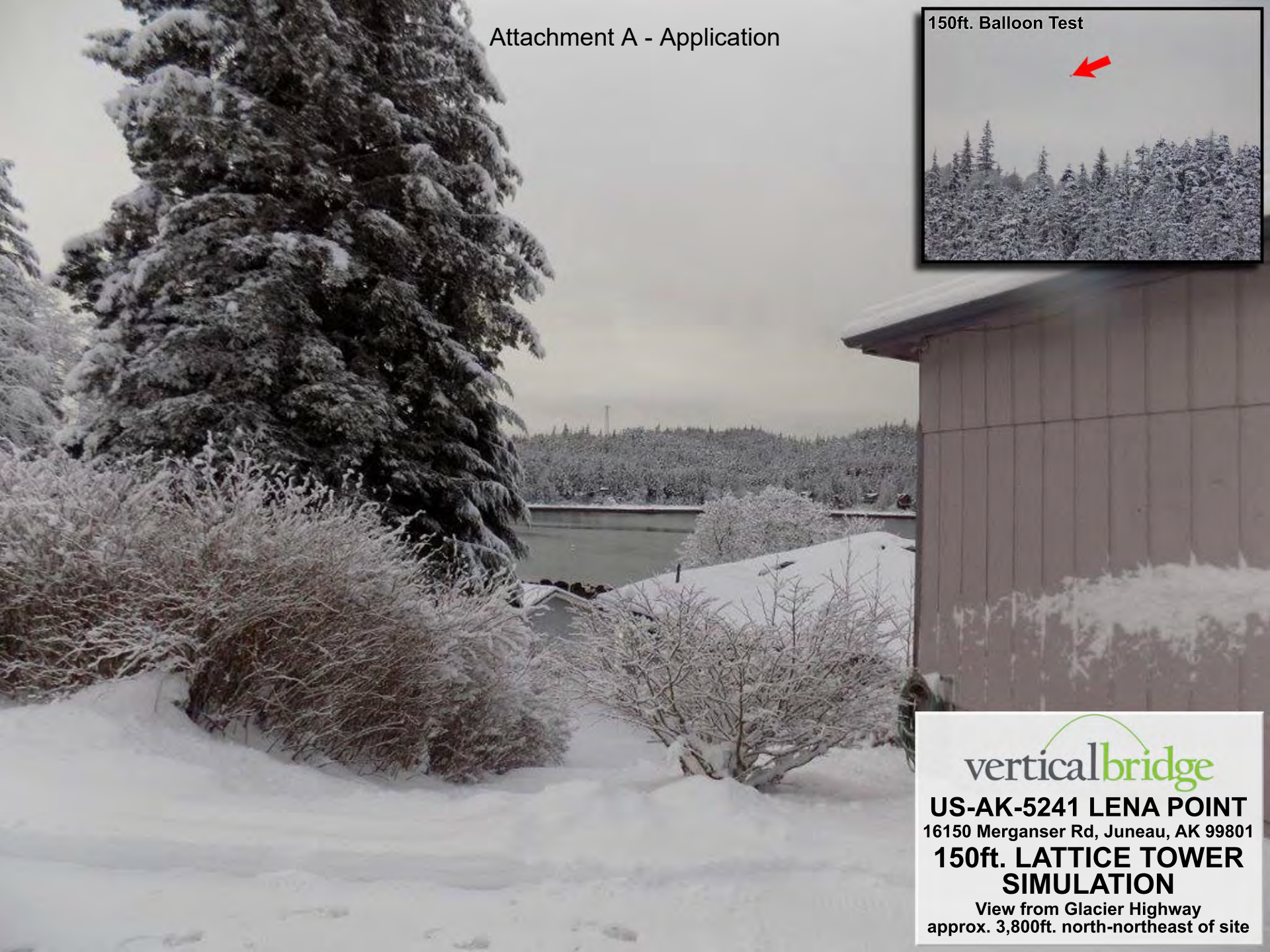
US-AK-5241 LENA POINT
16150 Merganser Rd, Juneau, AK 99801

**150ft. LATTICE TOWER
SIMULATION**

View from Ocean View Drive
approx. 740ft. south-southeast of site

Attachment A - Application

150ft. Balloon Test



verticalbridge

US-AK-5241 LENA POINT
16150 Merganser Rd, Juneau, AK 99801

**150ft. LATTICE TOWER
SIMULATION**

View from Glacier Highway
approx. 3,800ft. north-northeast of site

Attachment A - Application

150ft. Balloon Test



verticalbridge

US-AK-5241 LENA POINT
16150 Merganser Rd, Juneau, AK 99801
**150ft. LATTICE TOWER
SIMULATION**

View from Lena Beach Recreation Area
approximately 3,200ft. northeast of site



Lena Point- Area

Existing Site Area Map

Packet Page 443 of 643





Lena Point- Existing Location/ Proposed Location

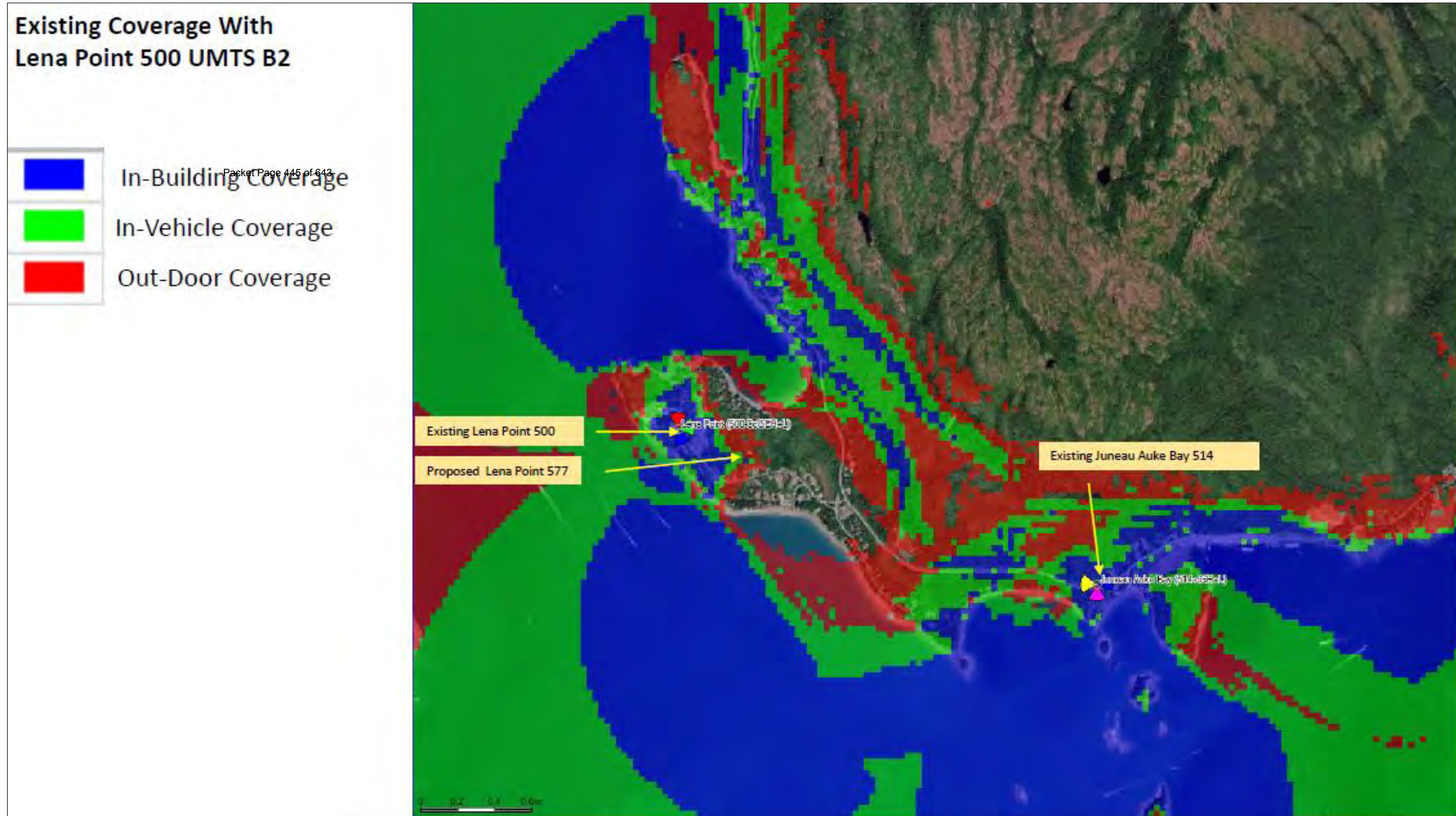
Existing Site Area with
Proposed Lean Point 577

Packet Page 444 of 643



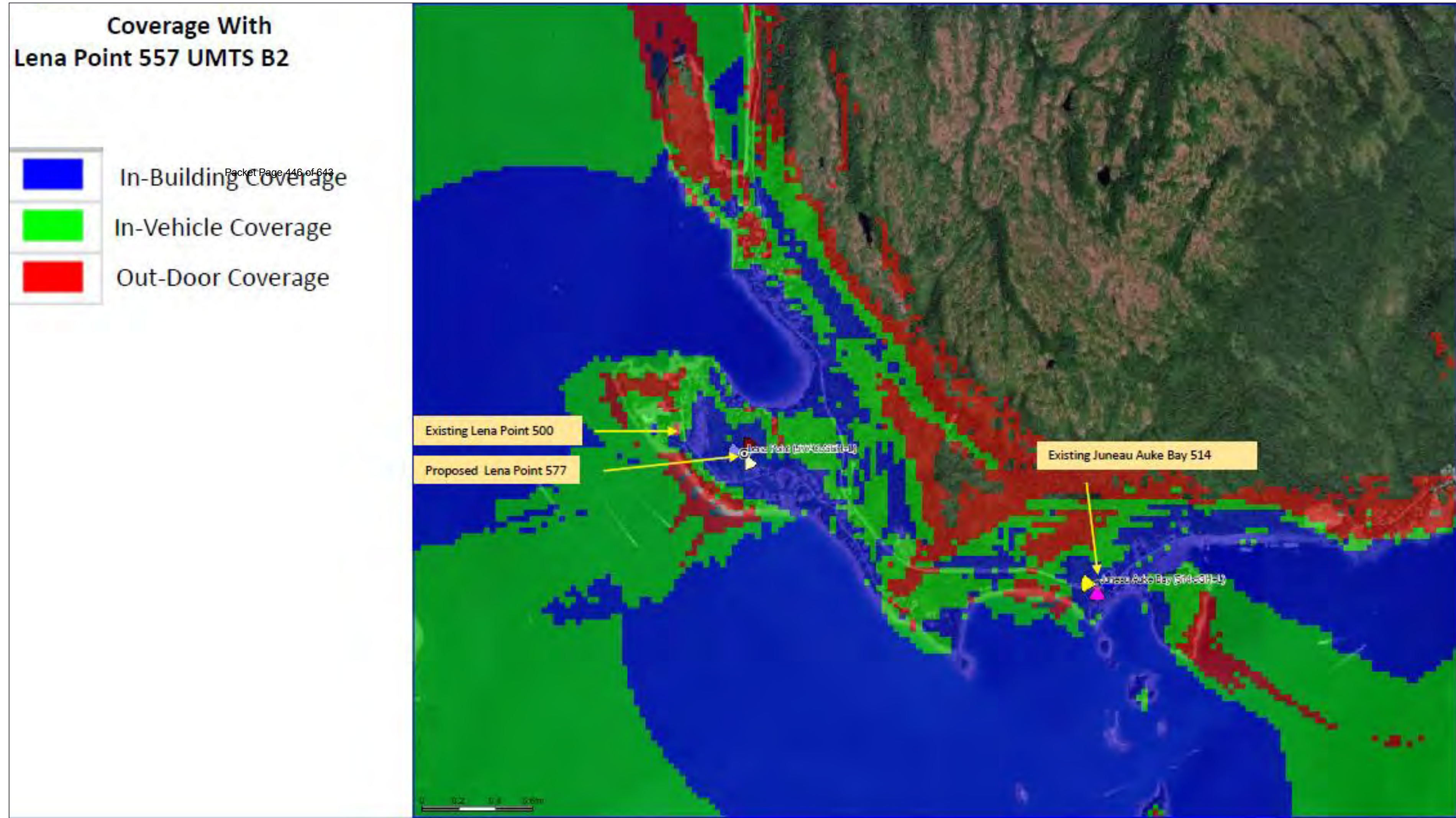


Lena Point- Existing Location UMTS Coverage



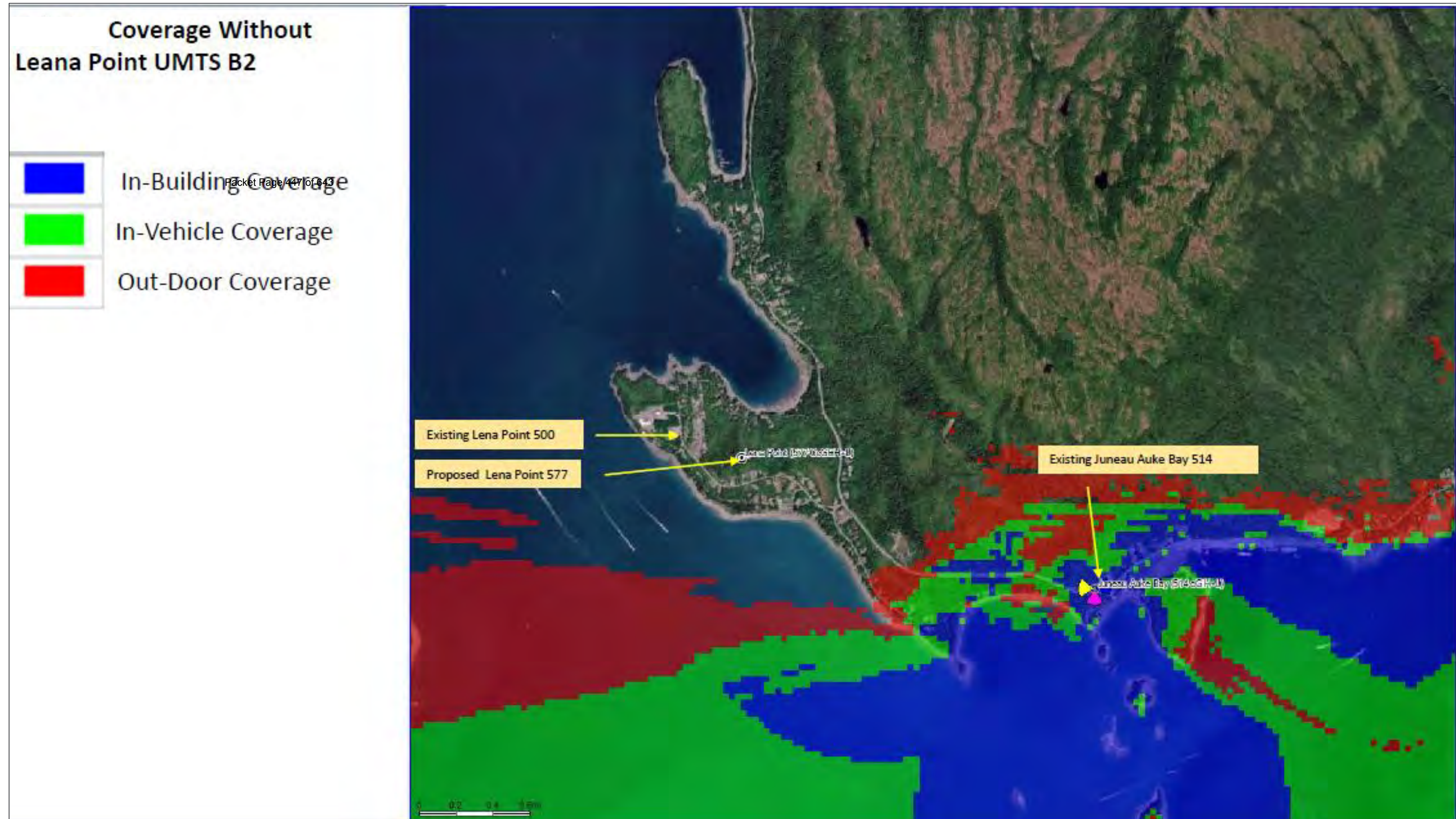


Lena Point- Proposed Location UMTS Coverage



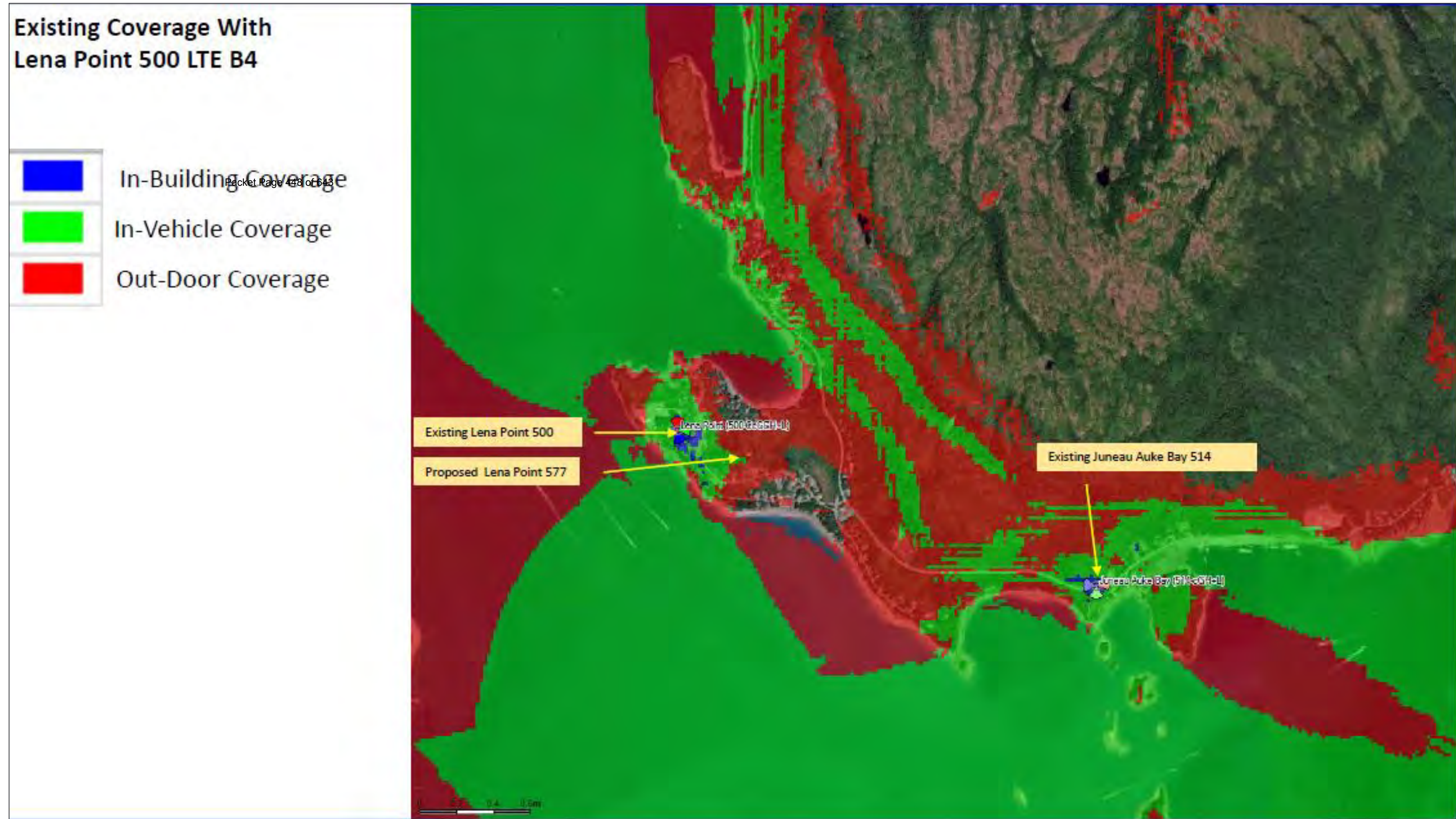


Lena Point- UMTS Coverage without Lena point site



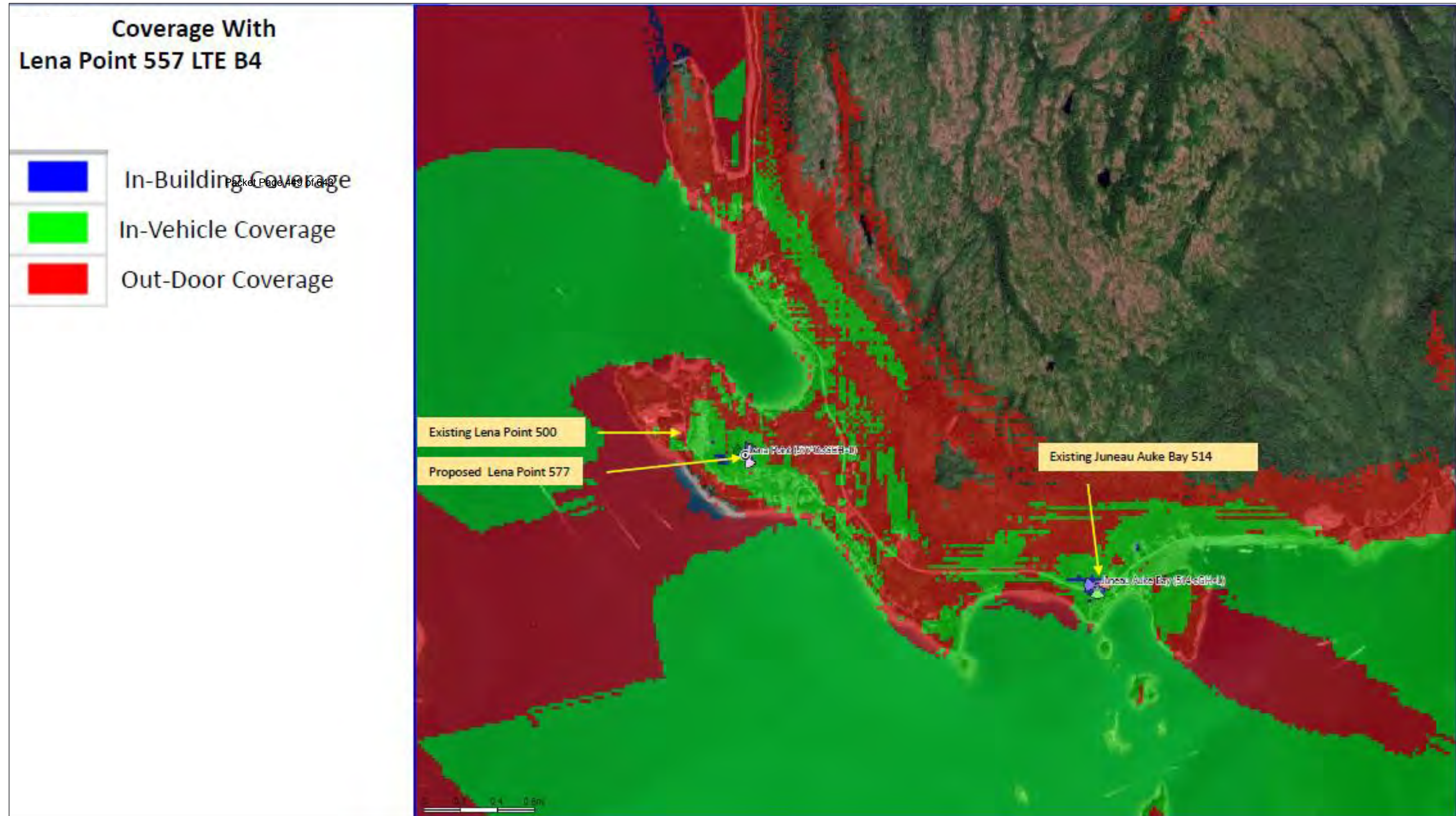


Lena Point- LTE coverage from Existing Location



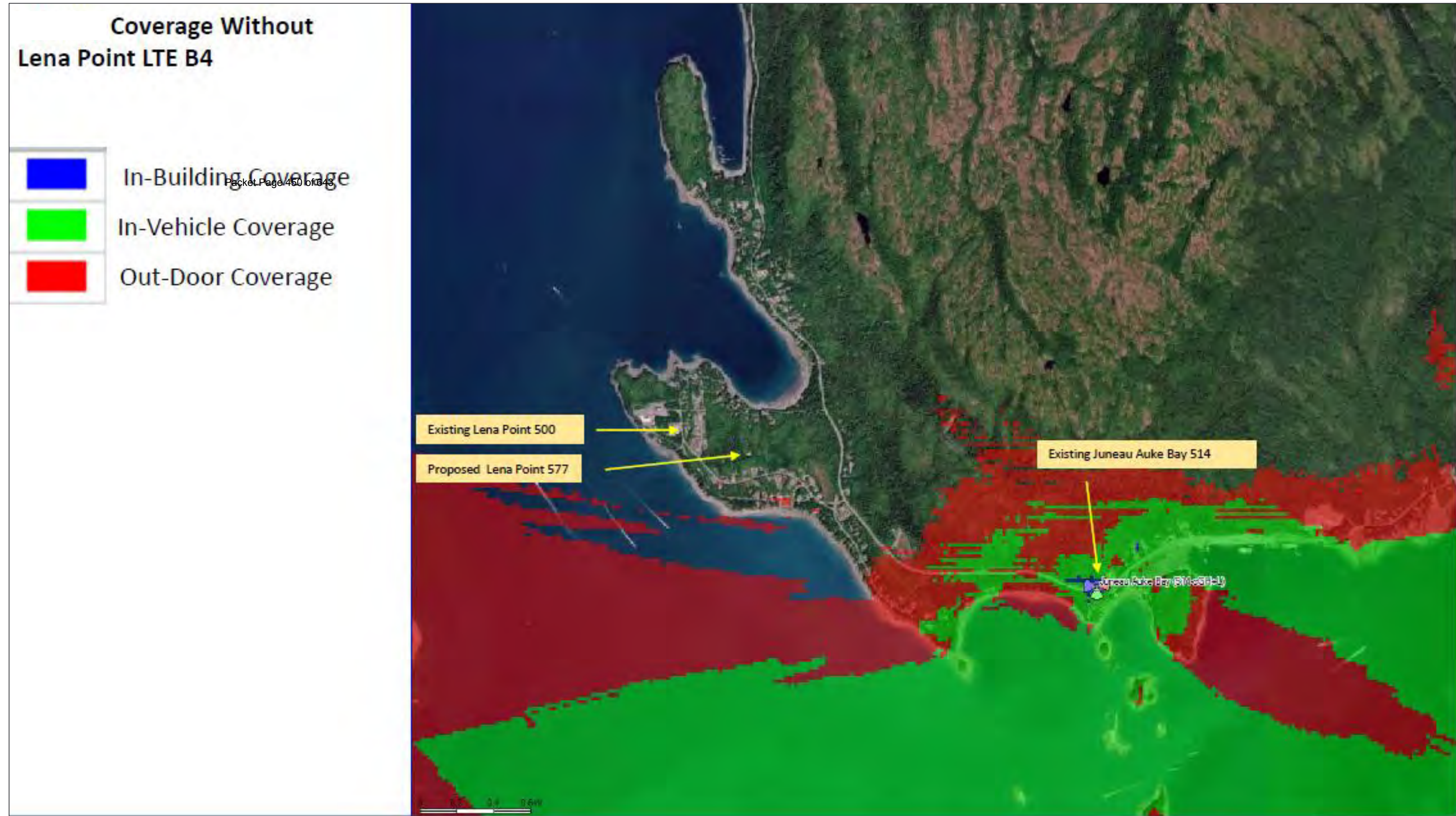


Lena Point- LTE coverage from Proposed Location





Lena Point- LTE coverage without Lena Point Site



Proposed Vertical Bridge Towers Justification

WCF20190009 Lena Point and WCF20190010 11 Mile

September 30th, 2019

In the spring of 2018, Vertical Bridge began a search for a couple of new tower site locations in the Industrial zoned area south of the Glacier Hwy and west of the Mendenhall River and in the area of the Glacier Hwy out by Lena Point in the D3 zoned area. The purpose of these searches was to find suitable locations for their primary client to locate new cellular equipment and expand the cellular coverage beyond what was capable on existing infrastructure.

Vertical Bridge's primary client for both of these locations is currently located on existing AT&T Alaska (Alascom) towers in these areas.

There are several reasons why the client's existing colocations on these AT&T Alaska facilities do not perform as the client's RF Engineering Network parameters require them to:

1. Lack of necessary height for the antennas to generate the desired coverage
2. Lack of the existing structures to be modified to achieve the desired height for the coverage parameters and additional tower cellular equipment
3. Lack of existing ground space to accommodate the addition of desired additional, new equipment to be placed in order to provide new 5G technology
4. Lack of any other colocatable structures within these search areas that can accommodate any cellular equipment

5. Unreasonable increase of lease fees for ground and tower space by current landlord

An extensive search was conducted for the new, proposed tower locations in the above mentioned areas. In the case of the WCF20190009 Lena Pt. location, there was really only one practical location that would provide the coverage required by the client's RF Engineering group. That is the proposed location adjacent to the CBJ Water Tank and across the access road from the FAA tower off of Merganser Rd on CBJ owned property. This location has good road access as well as existing power and telephone copper/fiber available nearby for use at the proposed site. Critical elements for economically feasible telecommunications site operations. The proposed site is also heavily wooded and provides a natural visual barrier to minimize viewshed intrusion.

Both proposed locations have had visual impact studies performed and there has been determined to be no significant visual impact to the surrounding area. Neither tower is required by the FAA or FCC to be lit or painted. Because of these determinations, both towers have been designed to be manufactured in galvanized steel and non-concealed. Both towers have been load designed to accommodate a total of 4 carriers.

In the Industrial zoned area of the proposed WCF20190010 11 Mile site, six prospective landlords were approached about leasing space on their property to Vertical Bridge for the purposes of developing a telecommunications site with tower. Several of these potential landlords rejected the proposal outright and several others considered it, but either requested unreasonable lease amounts way out of line with market norms or decided that they didn't want the requested size of the proposed site to occupy that much of their property.

After exhausting all prospective private property site locations, it was suggested by the CBJ to examine the CBJ property where the Food Bank and an FAA tower is currently located off of Crazy Horse Drive. This location was not ideal from a Wetlands standpoint, but it was workable and still within the Industrial zoned area. Vertical Bridge's primary client's RF Engineering group reviewed the location, determined the necessary tower height required to meet the network performance criteria and OK'd the site. Vertical Bridge is currently pursuing a Wetlands construction permit with the Army Corps of Engineers for this location.

In both the Lena Point and 11 Mile locations there are FAA towers. The FAA, and for that matter any Federal Government telecommunications facility, have never allowed any private carriers (cellular or otherwise) to collocate on their tower facilities. To my knowledge, neither has the State of Alaska. This is to prevent any hint of favoritism or endorsement by a government entity toward any particular carrier or commercial entity.

In conclusion, both proposed site locations meet Vertical Bridge's primary client's RF engineering network performance criteria. There are already existing FAA towers in close proximity and one of the locations is in the highly preferred Industrial area for telecommunications development. In the case of the Lena Point location, the proposed site is also in close proximity to the rather large CBJ owned water tank. Both locations seem ideal to locate commercial, multiple carrier telecommunications facilities as the immediate areas surrounding each location already accommodate a more industrial oriented development.

Gary R. Brekke

From: [Charlie Ford](#)
To: [Amy Liu](#)
Subject: RE: Review WCF20190009/ -10 Merganser and Crazy Horse
Date: Friday, October 4, 2019 10:55:34 AM
Attachments: [image001.jpg](#)

Hi Amy,
Buildings has no issues with these projects.
Thank you,

Charlie Ford | Building Official

[Community Development Department](#) | City & Borough of Juneau, AK

Location: 230 S. Franklin Street, 4th Floor Marine View Building

Office: 907.586.0767

CBJ_EmailLargeColorLogo



From: Amy Liu

Sent: Friday, October 4, 2019 9:58 AM

To: Charlie Ford

Subject: Review WCF20190009/ -10 Merganser and Crazy Horse

Good morning,

Please see the attached applications for your review and comment.

Thanks,

Amy Liu | Planner

[Community Development Department](#) | City & Borough of Juneau, AK

Location: 230 S. Franklin Street, 4th Floor Marine View Building

Office: 907.586.0764

CBJ_EmailLargeColorLogo





(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

COMMUNITY DEVELOPMENT DEPARTMENT - REQUEST FOR AGENCY COMMENT

DEPARTMENT: Juneau International Airport
STAFF PERSON/TITLE: Patty Wahto
DATE: 10/11
APPLICANT: Gary Brekke
TYPE OF APPLICATION: Wireless Communication Facility

PROJECT DESCRIPTION:

New free standing, unlit, 150' communications tower

LEGAL DESCRIPTION: SOUTH LENA BL E
PARCEL NUMBER(S): 8B3301070090
PHYSICAL ADDRESS: 16150 Merganser Rd

SPECIFIC QUESTIONS FROM PLANNER:

Are there concerns related to your agency about the proposed tower?

AGENCY COMMENTS:

Has the applicant filed the FAA form 7460 for obstruction to air space? That is a requirement for areas around an airport and reviewed by Obstruction Evaluation Group (OEG) and others. It will determine the ability to construct as well as requirements for lighting and marking.



(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

COMMUNITY DEVELOPMENT DEPARTMENT - REQUEST FOR AGENCY COMMENT

DEPARTMENT: Engineering and Public Works
STAFF PERSON/TITLE: Autumn Sapp
DATE: 10/4
APPLICANT: Gary Brekke
TYPE OF APPLICATION: Wireless Communication Facility

PROJECT DESCRIPTION:
New free standing, unlit, 150' communications tower

LEGAL DESCRIPTION: SOUTH LENA BL E
PARCEL NUMBER(S): 8B3301070090
PHYSICAL ADDRESS: 16150 Merganser Rd

SPECIFIC QUESTIONS FROM PLANNER:

Are there concerns related to your department about the proposed tower?

AGENCY COMMENTS:

Engineering has no concerns with the proposed work. Any work within the ROW will need to be permitted through General Engineering.

From: Sara Stekoll <sarastekoll@yahoo.com>
Sent: Saturday, November 09, 2019 4:16 PM
To: PC_Comments
Subject: Case WCF2019 0009

Packet Page 457 of 643

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

To whom it may concern,

I am writing to express concern over the proposed wireless communication facility permit for a tower located at 16150 Merganser Road.

The proposed tower raises several questions and concerns:

1. The proposed tower would be in very close proximity to our property and home. We purchased this property and built a house here in part due to the lack of towers, lines, and other such infrastructure in the immediate close location. Why is it necessary to place this tower a few hundred yards from existing residential properties? Is this really the best location for it?
2. What is the purpose of said tower? There is currently very little information available to us about the plans for this proposed tower. Who will own it? Who will operate it? Why is it necessary? What is allowed or not allowed to be installed on it? The proposal is for a permit and a tower, but, to my knowledge, does not state or limit what kind of equipment might be installed on said tower at any time in the future.
3. Although there is no clear scientific evidence that wireless communication towers and the amount of radio frequency waves they emit are a danger to people, and in particular children, there also is no clear scientific evidence to the contrary. The number of children populating Lena peninsula grows annually. There are already communication, airport, and federal satellite towers and equipment present on Lena peninsula, and these towers and the RF waves they emit seem like more than enough exposure for these local children, including mine.
4. The tower is to be unlit. Based on the amount of small aircraft traffic I see and hear passing more or less directly over this location, an unlit tower may pose a hazard in inclement weather and/or dim lighting conditions. However, a lit tower would add to light pollution in the neighborhood and annoy those of us who would see the light and/or tower from our home windows.

In all, I feel that placing such a tower in this particular neighborhood location is a poor decision on the part of the city.

Thank you for your time and consideration.

Sincerely,

Sara Stekoll
16530 Ocean View Drive
Juneau AK 99801
(907) 209

From: Sara Stekoll <sarastekoll@yahoo.com>
Sent: Tuesday, November 12, 2019 10:08 PM
To: PC_Comments
Subject: More comments for Case WCF2019 0009

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Dear Sir or Madam,

I previously sent an email of comments and concerns regarding this matter. Amy Liu was kind enough to send me more information and attempted to address some of the questions and concerns I had stated, which I appreciated.

After reading through the 128 page permit application materials and the 4 page justification that she provided (she said there was a link to these materials on the public notice postcard we received— there was not; there were links to CBJ parcel viewer to the assembly minutes/staff report, which I attempted to peruse with minimal luck), I have a few more comments that are more specific.

First, to be clear, even after reading the provided information, my husband and I are both fully opposed to the proposed tower placement on Lena Peninsula.

Relating to permit pages 15-17 and 23-25: the proposed tower will operate under Table 1 of FCC guidelines for RF waves in the 30-300MHz range, which are the report states are those most efficiently absorbed by the human body. Per the table, uncontrolled exposure at any wavelength should be limited to 30 minutes. The RF study performed was a “desktop study only” performed with calculations from the base of the proposed tower, which measured 0% MPE. But RF waves travel distances and have trajectories. Did anyone ever measure the projected exposure several hundred feet away? At nearby residences, for example?

We live very close. We have two small children who live very close. There are already FAA, communication, and microwave towers present on Lena Peninsula. Our exposure will not ever be limited to 30 minutes. Who knows what the aggregate dose is currently, what it will be with the proposed GCI antennae, and what it could be in the future with potential aggregate carriers. As stated in my previous letter, the empirical data neither confirms nor denies a major health hazard, but plenty of anecdotal cases exist that would suggest RF exposure is not good for young children especially; furthermore, multiple cases brought forth across the country for similar installations would prove that we are not alone in our opposition to increased levels of RF exposure for our children and our neighbors’ children.

Page 9 states the tower is “designed to accommodate multiple carriers.” GCI has had to perform basic studies and confirm compliance of Federal guidelines for MPEs at the tower’s base (but not beyond!). Will future companies utilizing said tower have to provide studies and confirm compliance with federal MPE guidelines? Will the local homeowners be notified of an increase in RF output a few hundred yards away if/when it happens?

The zoning for the area is D3 single family and duplex housing. Is the city still planning to develop and sell the adjacent lots to the proposed tower? The balloon test showed the tower visible from our property, as well as the properties within 1/4 mile to the SE of us. When we purchased this property, there was a phase two plan to open the lots on Merganser Road for residential development, which could be a lucrative venture for the city. Is a cellular communication tower the best addition? It will diminish property value (and therefore property taxes), and decrease overall desirability of the lots in the area, including ours.

Based on the reasons listed in the justification notice, this tower is proposed in this area because existing towers are not ideal or too expensive to lease or modify, and owners of private property were unwilling to accommodate said tower. None of which, in my opinion, are good justifications for placing it in this location.

Page 13 states that there are no setback requirements or height restrictions on the proposed tower. So although the proposed tower is only 150 feet, there is very little to stop those installing it from deciding in the near or distant future to increase the tower's height.

Since the property is city-owned, what is or was the process for sale or lease of the property on which the proposed tower would be located? Has it taken place already?

Again, thank you for your time and attention.

Sincerely,

Sara and Skye Stekoll
16530 Ocean View Drive
Juneau AK 99801
(907) 209-7349

Sara

From: Aimée Richards <aimnorth11@gmail.com>
Sent: Friday, November 15, 2019 1:44 PM
To: PC_Comments
Subject: public comment: communication tower on Merganser Way

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

To Whom It May Concern,

As a resident of the Lena Point neighborhood (Ocean View Drive) I am writing to oppose the proposed location of a new communication tower on Merganser Way.

Our family is very concerned about the potential negative health effects of 5G systems. We have two young children, considered as a "vulnerable" population by scientists currently studying the potential ill effects of 5G signals on human health. The proposed tower would be in our backyard. We therefore oppose the proposed tower on Merganser.

Sincerely,
Aimee Richards
16450 Ocean View Drive

From: Amy Liu
Sent: Wednesday, November 27, 2019 10:31 AM
To: PC_Comments
Subject: FW: Parcel # 8B3301070090
Attachments: Amy.docx

Hi, sharing this so that it can be included in the public comments.

From: tyson lee <tyson.lee78@gmail.com>
Sent: Monday, November 18, 2019 8:59 AM
To: Amy Liu <Amy.Liu@juneau.org>
Cc: Roxie Duckworth <Roxie.Duckworth@juneau.org>; Dan Bleidorn <Dan.Bleidorn@juneau.org>; Greg Chaney <Greg.Chaney@juneau.org>
Subject: Re: Parcel # 8B3301070090

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Amy, please see my attached letter in reference to the 5G cell tower they are attempting to place in the Lena neighborhood. This tower would be directly behind my property on OceanView Drive.
Please let me know if there is anything else I can do in reference to stop this Tower from being placed behind my future house.

Thank you,

Tyson Lee
907-723-9484

On Wed, Nov 13, 2019 at 12:02 PM Dan Bleidorn <Dan.Bleidorn@juneau.org> wrote:

Hello Tyson,
Great to hear from you and congratulations on all the life changes!
I am CC'ing Amy Liu on this email, as she is the Planner working on the tower and is collecting public comments.

To answer your questions:

1. The City property is zoned D3; same as your property.
2. The current proposal is for a leased area of about 100 feet by 100 feet and is west of the municipal reservoir. (it looks like the proposed lease is about 400 feet from your back property line on the opposite side of the dirt road).
3. The proposal is for 150 foot tower.

Please let us know if you have additional questions.
Thanks,
Dan Bleidorn

-----Original Message-----

From: Tyson Lee <tyson.lee78@gmail.com>
 Sent: Wednesday, November 13, 2019 11:35 AM
 To: Dan Bleidorn <Dan.Bleidorn@juneau.org>
 Subject: Parcel # 8B3301070090

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Dan,

How is it going my friend? I hope life is treating you well.

I had to put my house build on the back burner. I got married and we had a child and had to buy a house in the valley for the time being. I still plan on building out there in my OceanView lot though.

The reason I am writing you is because I had some questions in regards to the proposed cell tower they want to put behind my lot. I was also interested in details on the parcel they are proposing to put the tower on. I listed the parcel number in the subject line but I'm Sure you are already aware of which one I am referencing.

1. I was wondering what parts of the area (south Lena) was designated industrial and when this particular site was designated as industrial.
2. Is this out of town operation purchasing the entire 46 acres, leasing a small piece or purchasing a small piece?
3. Do you know the height of the water tower they are wanting to place the tower next to?

Sorry for the barrage of questions, I'll keep it at those three for right now.

I just received the information about the project last night and questions started popping up left and right. I figured I would start with you in regards to their site selection in a Developing residential neighborhood.

Obviously I don't know anyone who would be excited to find out they are attempting to put a cell tower right behind their property.

I am still interested in the city property behind my lot and plan to submit an application with the city in the future. The location of that tower is right in the other side of that lot I am interested in purchasing from the city.

The idea of that tower being there will have a huge negative impact on the residential lot values in the area. It will also make the rest of the undeveloped land less attractive for future land sales.

I really appreciate all your help And information you have shared over the years.

Thank you,

Tyson Lee
 907-723-0484
 9342 Stephen Richards Memorial Drive
 Owner of parcel # 10 lot 8 block C
Tyson.lee78@gmail.com

Sent from my iPhone

From: Heather <hssikes@gci.net>
Sent: Sunday, November 17, 2019 4:34 PM
To: PC_Comments
Subject: Case #WCF2019 0009

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Hello,

My family and I live on Ocean View Drive in Juneau, AK.

I am curious to learn more about the wireless communication facility permit to install a new 150' tower at 16150 Merganser Road.

Do you know if this tower will be 5G?

The location of the proposed tower seems very close to many homes. Is there a minimum distance from homes a tower can be located?

Thank you,
Heather Sikes

Amy,

I am writing you in reference to the proposed 5G Cell tower on Meganser Rd behind the property I own at 16490 OceanView Drive in the Lena area. I would like to start with making it clear that I object to this tower, which will reside 400 feet from the back of my property line. I have reviewed the letter from Vertical Bridge and their application and I will use those as reference as I build my case for rejecting this project.

In Gary Brekke letter, he states that their client already has coverage on the current cell towers in the area. That means there is no reason base on safety or the ability to dial 9-1-1 for a new tower. Currently there is cell coverage in the area so this is not establishing new cellular service to an area that previously did not have any. The reasons they use to support this request are solely for the benefit of the for profit corporation. There is no added benefit to the residents of the Lena with the addition of this intrusive tower. 5G towers need to be within 500 of each other to be able to provide the coverage they promise. That means we would have a Landscape dominated by these 150' cell towers in the future. This proposed tower is inconsistent with our community image.

Mr. Brekke also states they were looking for industrial areas to erect these massive towers. The area in Lena is a neighborhood, not a commercial area nor an industrial area. The land that proposed to host the tower is also part of the CBJ's long-term plan to subdivide into residential lots. The Lena area is one of the few current custom home developments in Juneau. Residents bought into Lena because of the nature based environment and lack of industrial structures. A 150' cell tower would lessen the value of the current homes and would have negative impact on the future development of the 46 acres of parcel 8B3301070090. This tower location is not in CBJ's or the homeowner's best interest.

Brekke mentions that the cell tower will have no significant visual impact to the surrounding area. This is his and his client's opinion and the balloon pictures show otherwise. This tower will dominate the landscape and the wooded area they claim will provide a visual barrier are the trees they need to cut down for their tower. In Brekke June 27th letter he states that this space will require substantial clearing. It is easy to see how someone in Wasilla or their client in Florida would not have any issues with the visual impact.

The Crazy Horse Drive location is highly preferred because it is in an industrial area. Brekke tries to lead you to believe Lena is industrial oriented development because of a City owned water tank. This area is a neighborhood of houses occupied by residents of Juneau. Mr. Brekke is from Wasilla and is clients are based out of Florida neither have a vested residential stake in this area. I implore CBJ to hold the interest of the residents of Juneau above that of for profit corporations that do not call Juneau home.

Moving on to the Development Permit Application:

The first thing that I noticed with the application was in the Radio Frequency Exposure Report. When it came to the Site Characteristics section, it clearly states that (no site visit was done). The radio frequency exposure report was a simulation with no actual testing. The GCI antenna inventory they use for their simulation is not the same type of towers or technology as this tower. The GCI LTE towers are low frequency below 1 GHz. This proposed tower is a 5G tower that uses high frequency waves between 30GHz and 300 GHz and are also known as millimeter waves. The military uses Millimeter waves in active-denial technology as a weapon. These higher frequency waves can cause physical pain, cancer

and can alter a person's DNA. Women, children and unborn fetuses are most acceptable to these millimeter waves. As new father and the closest property to this site, I find the lack of actual testing and use of improper data alarming. This creates a risk to my family without providing real and proper testing. It is not ok to compromise our health and wellbeing like this. Currently there are several municipalities throughout the United States fighting the implementation of 5G towers in neighborhoods. These lawsuits will likely lead to an update to the Telecommunications Act of 1996.

The visual impact of this tower will be significant! The balloon test pictures show that the tower will be highly visible throughout the Lena area, from and across the water and from Glacier Hwy. The map of the view shed is overwhelmingly green which indicated by the legend that tower is visible.

From Viewpoint #1 you can see the balloon significantly higher than any of the surrounding trees. From Viewpoint # 2 you notice that there is only one tree that comes close to the height of the balloon. The empty lot in that picture is the property I own. As you can see, the tower will be right behind my property and would hover over my future house. Viewpoint 3 and 4 were behind trees where if you moved a few steps in either direction you would have a clear view of the tower. The pictures outside the 1500 radius show how even more of a visual impact this tower will have on our community. The visual impact report was missing the "after illustrations" that show views from locations that are visible by many. The balloon test in no way represents the footprint the tower would have in this area. The tower is 15 feet at the base and 3.75 feet at the top 150 feet high. The string used in the balloon test no way represents the actual width of the tower. This tower will have a site elevation of 230 feet, the base and antenna will be 155 feet above ground and the top of the tower will 385 feet above sea level. This massive tower will be seen above all else in the Lena area.

In conclusion, I would like to encourage CBJ to deny Vertical Bridge's application for the 5G Cell Tower off Merganser rd. This location is not in the best interest of the residents of Lena or the City of Juneau. I would like to suggest a location that still meets the needs of Vertical Bridge's client and that is Aant'iyek Park. There are no houses or future developments planed for that area. It has road and coper wire access and sits at a higher elevation.

Submitted from Tyson Lee
November 18, 2019

From: Sarah A <promisesinjohn14@gmail.com>
Sent: Monday, November 18, 2019 2:23 PM
To: PC_Comments
Cc: sarastekoll@yahoo.com
Subject: Fwd: More comments for Case WCF2019 0009

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

To Whom It Concerns:

I have reviewed at length the letter previously sent to you by Sara Stekoll (as she provided me, which is included below). I believe her arguments to be very well formed and informed and worth more consideration. As a resident of the same neighborhood, I would like to formally request that the plans for the proposed tower placement (as referenced in the letter below) be aborted.

Thank you for hearing my comments and concerns.

Respectfully,

Sarah Anderson
 16290 Ocean View Dr.
 Juneau, AK 99801

----- Forwarded message -----

From: Sara Stekoll <sarastekoll@yahoo.com>
Date: Thu, Nov 14, 2019 at 7:47 PM
Subject: Fwd: More comments for Case WCF2019 0009
To: Sarah Anderson <promisesinjohn14@gmail.com>

My second letter

Sara

Begin forwarded message:

From: Sara Stekoll <sarastekoll@yahoo.com>
Date: November 12, 2019 at 10:07:38 PM AKST
To: pc_comments@juneau.org
Subject: More comments for Case WCF2019 0009

Dear Sir or Madam,

I previously sent an email of comments and concerns regarding this matter. Amy Liu was kind enough to send me more information and attempted to address some of the questions and concerns I had stated, which I appreciated.

After reading through the 128 page permit application materials and the 4 page justification that

she provided (she said there was a link to these materials on the public notice postcard we received— there was not; there were links to CBJ parcel viewer to the assembly minutes/staff report, which I attempted to peruse with minimal luck), I have a few more comments that are more specific.

First, to be clear, even after reading the provided information, my husband and I are both fully opposed to the proposed tower placement on Lena Peninsula.

Relating to permit pages 15-17 and 23-25: the proposed tower will operate under Table 1 of FCC guidelines for RF waves in the 30-300MHz range, which are the report states are those most efficiently absorbed by the human body. Per the table, uncontrolled exposure at any wavelength should be limited to 30 minutes. The RF study performed was a “desktop study only” performed with calculations from the base of the proposed tower, which measured 0% MPE. But RF waves travel distances and have trajectories. Did anyone ever measure the projected exposure several hundred feet away? At nearby residences, for example?

We live very close. We have two small children who live very close. There are already FAA, communication, and microwave towers present on Lena Peninsula. Our exposure will not ever be limited to 30 minutes. Who knows what the aggregate dose is currently, what it will be with the proposed GCI antennae, and what it could be in the future with potential aggregate carriers. As stated in my previous letter, the empirical data neither confirms nor denies a major health hazard, but plenty of anecdotal cases exist that would suggest RF exposure is not good for young children especially; furthermore, multiple cases brought forth across the country for similar installations would prove that we are not alone in our opposition to increased levels of RF exposure for our children and our neighbors’ children.

Page 9 states the tower is “designed to accommodate multiple carriers.” GCI has had to perform basic studies and confirm compliance of Federal guidelines for MPEs at the tower’s base (but not beyond!). Will future companies utilizing said tower have to provide studies and confirm compliance with federal MPE guidelines? Will the local homeowners be notified of an increase in RF output a few hundred yards away if/when it happens?

The zoning for the area is D3 single family and duplex housing. Is the city still planning to develop and sell the adjacent lots to the proposed tower? The balloon test showed the tower visible from our property, as well as the properties within 1/4 mile to the SE of us. When we purchased this property, there was a phase two plan to open the lots on Merganser Road for residential development, which could be a lucrative venture for the city. Is a cellular communication tower the best addition? It will diminish property value (and therefore property taxes), and decrease overall desirability of the lots in the area, including ours.

Based on the reasons listed in the justification notice, this tower is proposed in this area because existing towers are not ideal or too expensive to lease or modify, and owners of private property were unwilling to accommodate said tower. None of which, in my opinion, are good justifications for placing it in this location.

Page 13 states that there are no setback requirements or height restrictions on the proposed tower. So although the proposed tower is only 150 feet, there is very little to stop those installing it from deciding in the near or distant future to increase the tower’s height.

Since the property is city-owned, what is or was the process for sale or lease of the property on which the proposed tower would be located? Has it taken place already?

Again, thank you for your time and attention.

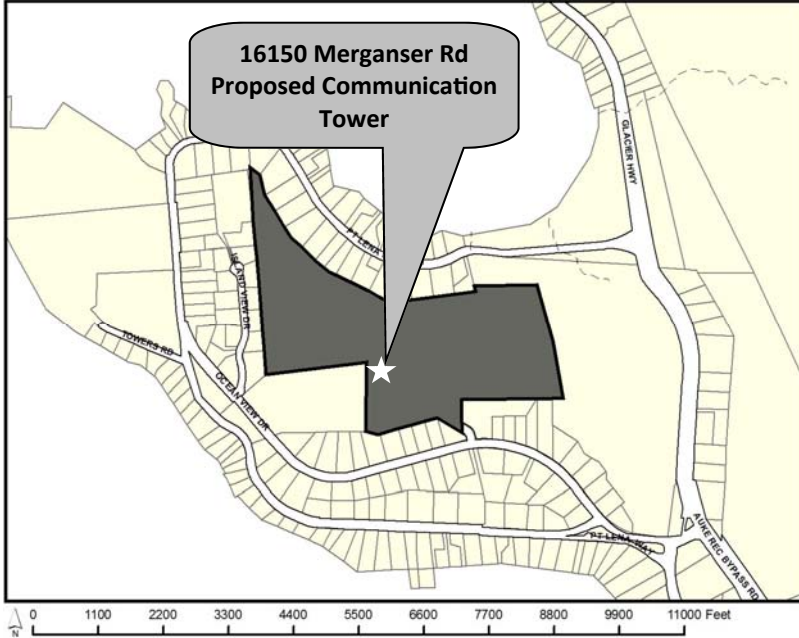
Sincerely,

Sara and Skye Stekoll
16530 Ocean View Drive
Juneau AK 99801
(907) 209-7349

Sara

Invitation to Comment

On a proposal to be heard by the CBJ Planning Commission
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

An application has been submitted for consideration and public hearing by the Planning Commission for a **Wireless Communication Facility Permit** to install a new, unlit, 150-foot communication tower located at **16150 Merganser Road** in a **D3 Zone**.

TIMELINE

Staff Report expected to be posted **Monday, November 4, 2019** at <https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through October 21, 2019

Comments received during this period will be sent to the Planner, **Amy Liu**, to be included in the staff report.

October 22 through 12 noon, November 8

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME

7:00 pm, November 12, 2019

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

November 13

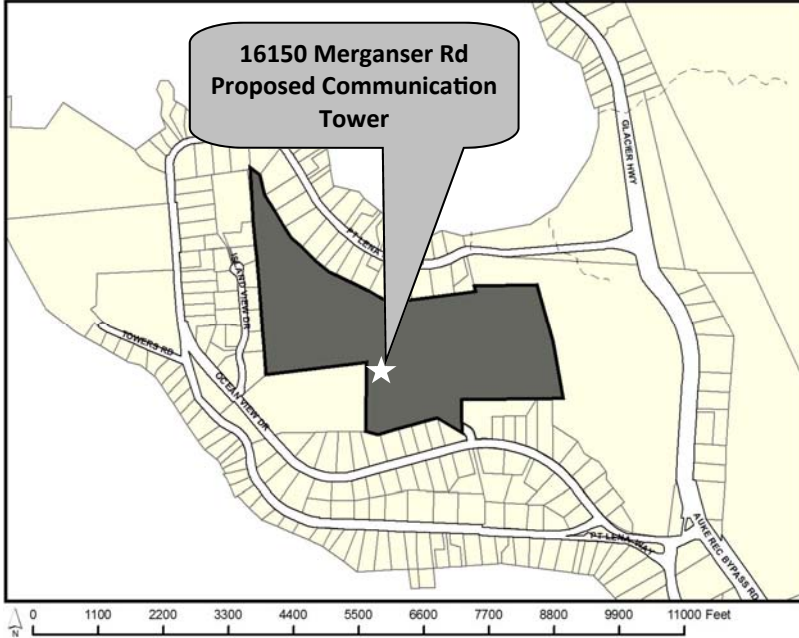
The results of the hearing will be posted online.

Phone: **(907)586-0715** ♦ Email: **pc_comments@juneau.org**
Mail: **Community Development, 155 S. Seward St, Juneau AK 99801**

Case No.: WCF2019 0009
Parcel No.: 8B3301070090
CBJ Parcel Viewer: <http://epv.juneau.org>

Revised Notice

Re: Proposed Communication Tower
Hearing Rescheduled



155 S. Seward Street Juneau, Alaska 99801

TO:

POSTPONED

You are receiving this notice regarding an application being heard by the Planning Commission for a Wireless Communication Facility Permit to install a new, unlit, 150-foot communication tower located at 16150 Merganser Road. Originally, the hearing was set for November 12, 2019.

The hearing has been reschedule for December 10, 2019.

TIMELINE

Staff Report expected to be posted **Monday, December 2, 2019** at <https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through November 18, 2019

Comments received during this period will be sent to the Planner, **Amy Liu**, to be included in the staff report.

Nov. 19 through 12 noon, December 6

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME

7:00 pm, December 10, 2019

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

December 11

The results of the hearing will be posted online.

Phone: **(907)586-0715** ♦ Email: pc_comments@juneau.org
Mail: **Community Development, 155 S. Seward St, Juneau AK 99801**

Case No.: WCF2019 0009
Parcel No.: 8B3301070090
CBJ Parcel Viewer: <http://epv.juneau.org>

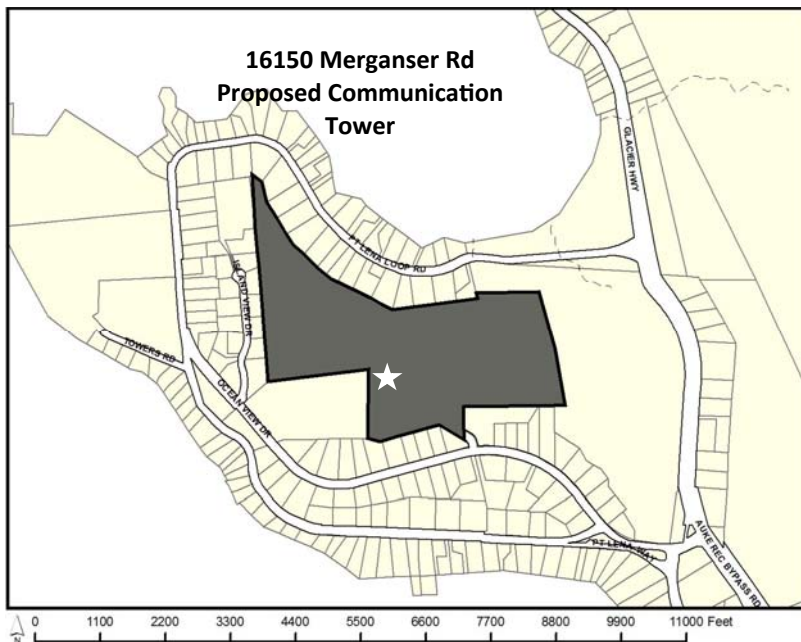
**Notice: The December 10
Planning Commission
hearing for the Proposed
Wireless Communication
Facility Tower has been
CANCELED**



155 S. Seward Street Juneau, Alaska 99801

TO:

Case No.: WCF2019 0009
Parcel No.: 8B3301070090
CBJ Parcel Viewer: <http://epv.juneau.org>



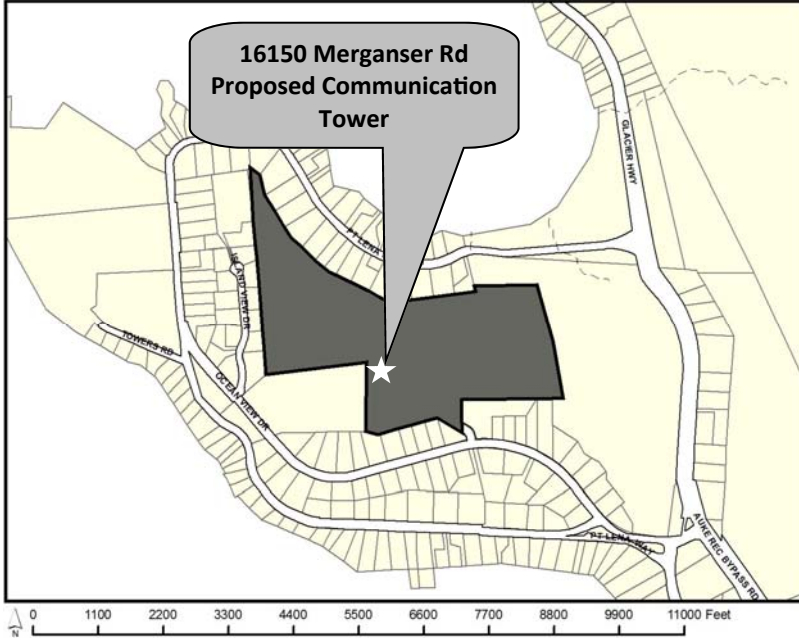
CANCELED

This notice is to inform you that the public hearing by the Planning Commission for a **Wireless Communication Facility Permit to install a new, unlit, 150-foot communication tower** located at 16150 Merganser Road in a D3 Zone **has been canceled**. If and when this case is rescheduled, you will receive notification and have the opportunity to comment.

For questions, please contact Amy Liu, CDD Planner
Phone: (907)586-0764 ♦ Email: amy.liu@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

SECOND Revised Notice

Re: Proposed Communication Tower
Hearing Rescheduled



155 S. Seward Street Juneau, Alaska 99801

TO:

THIS ITEM HAS BEEN RESCHEDULED

You are receiving this notice regarding an application being heard by the Planning Commission for a Wireless Communication Facility Permit to install a new, unlit, 150-foot communication tower located at 16150 Merganser Road. Originally, the hearing was set for December 10, 2019.

The hearing has been reschedule for March 24, 2020.

TIMELINE

Staff Report expected to be posted **Monday, March 16, 2020** at <https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through March 2

Comments received during this period will be sent to the Planner, **Amy Liu**, to be included in the staff report.

March 3 through 12 noon, March 20

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME 7:00 pm, March 24, 2020

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

March 25

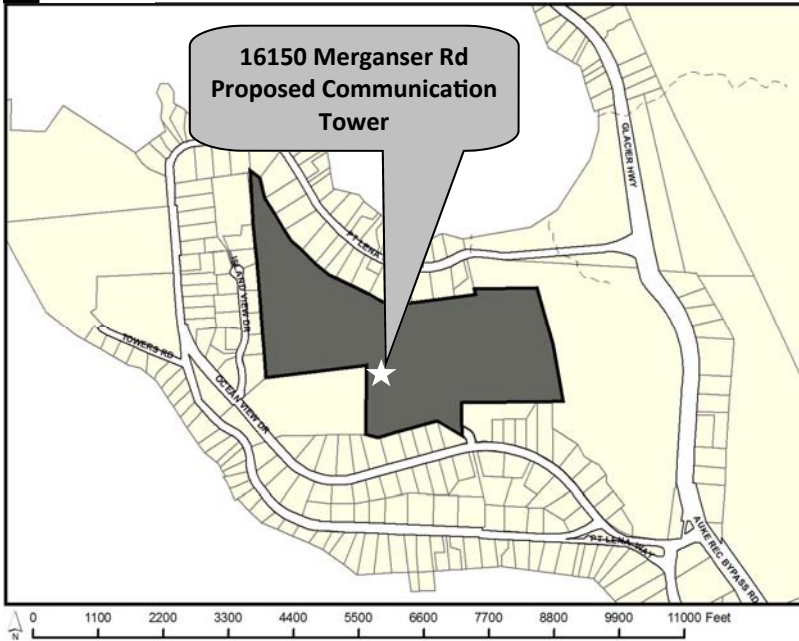
The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: WCF2019 0009
Parcel No.: 8B3301070090
CBJ Parcel Viewer: <http://epv.juneau.org>

Hearing Rescheduled

Re: Proposed Communication Tower
Third Revised Notice



COMMUNITY DEVELOPMENT
155 S. Seward Street Juneau, Alaska 99801

TO:

THIS ITEM HAS BEEN RESCHEDULED

You are receiving this notice regarding an application being heard by the Planning Commission for a Wireless Communication Facility Permit to install a new, unlit, 150-foot communication tower located at 16150 Merganser Road. Originally, the hearing was reset for March 24, 2020.

The hearing will now be held April 14, 2020.

TIMELINE

Staff Report are posted at:

<https://beta.juneau.org/assembly/assembly-minutes-and-agendas>

Find hearing results, meeting minutes and more here as well.

Now through 12 noon, April 10

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, April 14, 2020

Members of the public wishing to call in to testify can dial 907-713-2140 and entering Participant ID number 813893. **The caller should provide their name and state that they are calling in for the Planning Commission meeting.** Public lines will be muted by default but will be unmuted by CBJ staff when it is that individual's turn to testify.

April 15

The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: WCF2019 0009
Parcel No.: 8B3301070090
CBJ Parcel Viewer: <http://epv.juneau.org>

WCF2019 0009

A Wireless Communication Facility Permit to install new,
unlit 150-foot communication tower

PC Presentation April 14, 2020

Staff recommends the Planning Commission adopt the Directors analysis and findings and **APPROVE WITH CONDTIONS** the requested Special Use Permit. (Packet Page No. 162)

Project Description

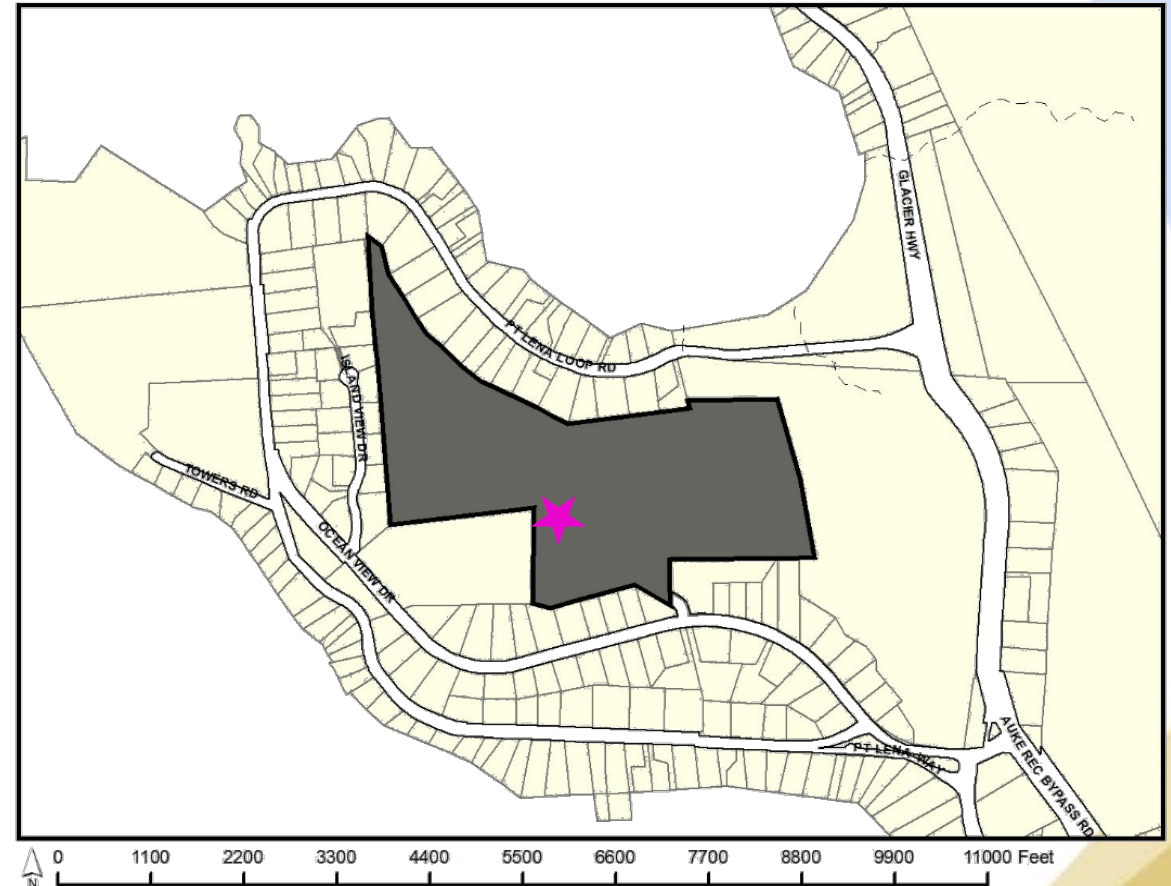
155-foot tall, freestanding lattice tower with lightening rod. The tower is 150 feet tall, and the rod adds 5 feet.

- There will be no antenna adding to the height of the tower.
- The tower is proposed to be unlit

Staff recommends that the tower be constructed as a monopole, rather than lattice-style, and painted matte dark green to minimize visual impacts, and be reduced to a lesser height

- The following analysis evaluates the impacts resulting from the applicant's proposal.

See Packet Page No. 153



Agency Review and Public Comment

Staff requested review from the CBJ Assessor's Office, Building Division, Capital City Fire and Rescue, Engineering and Public Works Department, Lands and Resources Division, and the Juneau International Airport (JIA). (Packet Page No. 309-311)

- Building Division, and Engineering and Public Works expressed that they had no concerns.
- JIA noted that the applicant will need to file FAA 7460. This form must be filed at least 45 days prior to the start date of proposed construction.
- Staff did not receive other comments.

Several public comments expressed concerns about 5G service being detrimental to health. (Packet Page No. 312-323)

- Staff's review takes into account whether the applicant meets regulatory standards set by the Federal Communication Commission (FCC).
- The applicant has submitted a FCC Compliance Assessment which states that as the tower is designed, it meets FCC regulations (Packet Page No. 182-195)

Project Site

The project site is a 64.34 acre parcel located in a D3 zoning district.

- The site currently accommodates a 44-foot tall water reservoir. The water reservoir is 90 feet from the location of the proposed tower.

There are two towers on Point Lena, within 680 – 2000 feet from the proposed tower.

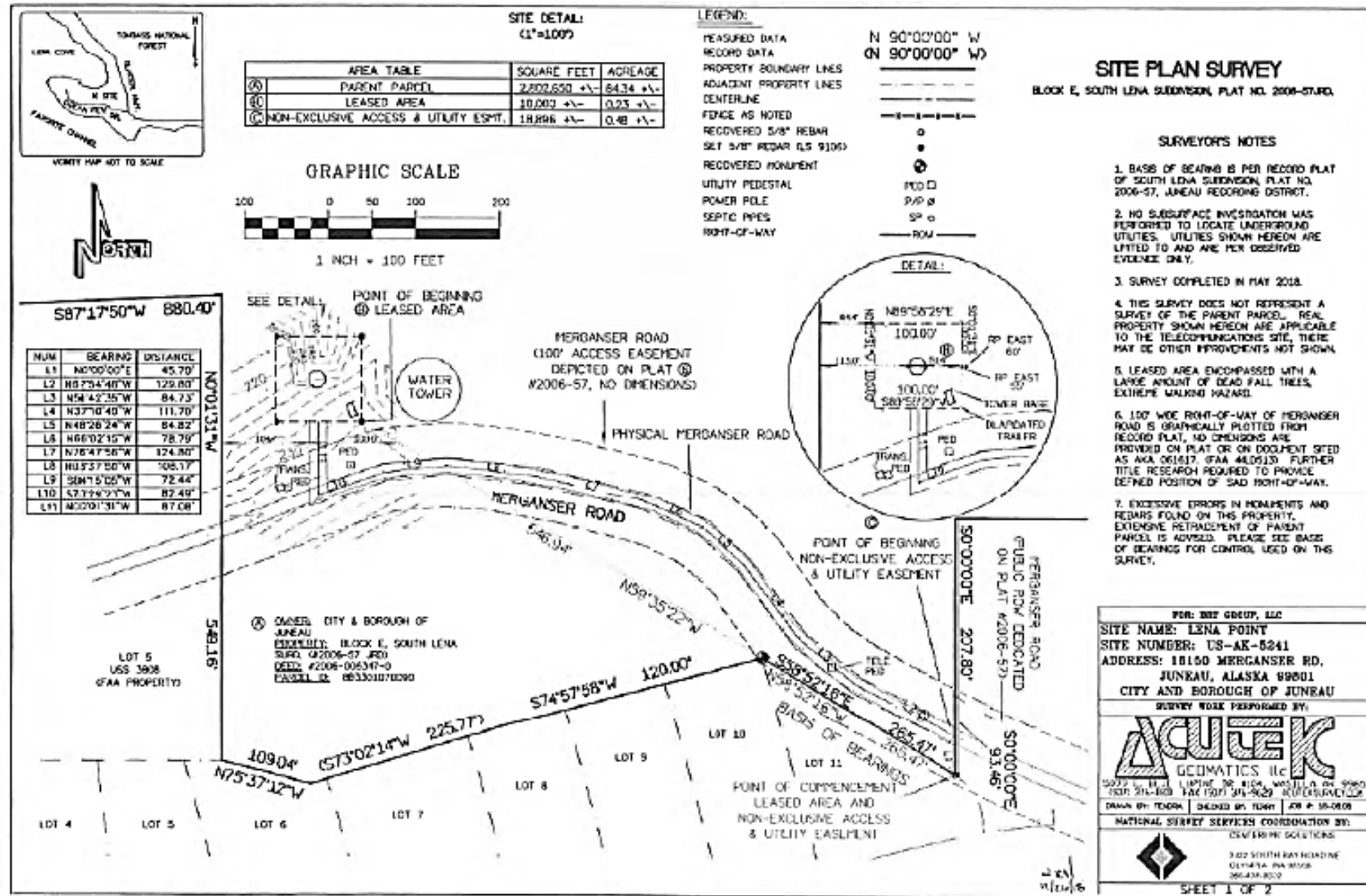
- According to the Wireless Telecommunications Master Plan, Site 2 at 17099 Point Lena Loop Road hosts a 220-foot lattice tower owned by AT&T and Alascom.
- Site 3 at 16800 Point Lena Loop Road has an 80-foot lattice tower owned by the Federal Aviation Administration (FAA).

The applicant reasons that collocation onto private towers will not be cost effective or support desired performance.

- The applicant has not provided documentation to demonstrate the cost effectiveness, nor if cost effectiveness should be considered in allowing a new tower, rather than requiring collocation.
- The FAA prohibits private carriers from collocating onto its facilities.

See Packet Page No. 155

Project Site



Packet Page
No. 286

Technical drawing of a lattice tower structure. The drawing includes the following labels and dimensions:

- 4" WEIGHTING ROD
- 1" TO CEILING TIE ROD
- 1" TO TOP OF LATTICE TOWER
- 100'-0"
- WIND RAD CENTER
- 145'-0"
- PRIMARY CARRIER ANTENNAS AND ACCESSORY FOR BUREAU USE
- 15'-0" LATTICE TOWER (DESIGN BY OTHER)
- 15'-0" TO TOP OF COMPOUND WITH FULL CARRIER FORCE WITH BUREAU USE

- There will be a 6-foot tall, barbed chain link fence with barbed wire and a locking gate.
- Signage cautioning entry on premises and posting contact information will be affixed onto the fence.

- The FAA does not require lighting for the tower.

- CBJ 49.65.930(e)(1) requires WCFs between 121 feet and 150 to accommodate no fewer than five antenna arrays. The proposed tower will accommodate five antenna arrays.
- Staff recommends that, if a height of 150 feet is approved, more than five antenna arrays must be accommodated.



CITY AND BOROUGH OF
JUNEAU
ALASKA'S CAPITAL CITY

Project Design

Setbacks

- The tower meets setbacks. The tower has a breakpoint that is 70 feet from the top of the tower. Per CBJ 49.65.930(f)(2), the minimum setback distance shall be equal to 110 percent of the distance from the top of the structure to the breakpoint level of the structure
- Given the location of the breakpoint, the minimum setback is 77 feet. The site plan shows the tower 113 feet from the nearest property line and more than 350 feet from the next nearest property line.
- The water reservoir is 90 feet from the location of the proposed tower.

Structural Assessment

- A professional engineer certifies all construction drawings for the proposed tower.
- Another professional engineer has confirmed that subsurface conditions are suitable for the tower foundation.

Propagation Study and RF Emissions Compliance

- The submitted statement confirming that radio frequency emissions will comply with FCC standards is consistent with the requirements of CBJ 49.65.960(d).
- The propagation study shows increased service coverage.

See Packet Page No. 156-157

Project Design

Visual Impact Study

- The proposed site for the tower does not obstruct view sheds identified in the 2013 Comprehensive Plan.
- Dense vegetation surrounds the tower location. The surrounding trees are approximately 60 feet to 90 feet tall. The proposed tower consists of a galvanized steel lattice that is distinguishable from the surrounding vegetation. Staff recommends a decrease in height, and a monopole-style tower in a matte dark green to blend better with the surrounding vegetation.
- The applicant has included photo-simulations of the tower viewed from multiple vantage points used in the zone of visibility study.
- Existing coniferous trees and other vegetation provides screening.
- The balloon test meets the requirements of CBJ 49.65.930(2)(D). The study shows six vantage points around Ocean View Drive and Point Lena Loop Road

See Packet Page No. 156-157 and 273-284

Traffic, Parking, Circulation

Traffic

- Staff does not anticipate the proposed use to add traffic to the existing site, excluding the limited traffic during construction and periodic maintenance.

Parking and Circulation

- The site has more than 60 square-feet of area for parking and is accessed from Merganser Road. Merganser Road is not accessible by the public. The FAA determines permission for using the road.
- Access to the project site will be addressed during the land lease process.

See Packet Page No. 157

Other External Impacts

Noise

- Staff does not anticipate that the tower will generate noise. The site is separated from residential homes by a dense vegetation.

Public Health or Safety

- No evidence indicates that there are any public health or safety impacts from the proposed project. The applicant provided a Radio Frequency Emissions Compliance Report signed by a qualified professional, whose credentials are included.

Habitat

- The proposal does not affect habitat protected by Title 49.

Property Value or Neighborhood Harmony

- The proposed tower will not generate noise, traffic, or visual impact that is inconsistent with neighboring residential uses. The nearest dwelling is approximately 500-550 feet from the proposed tower.

- **See Packet Page No. 157**

Conformity With Adopted Plans

The proposal complies with the 2013 Comprehensive Plan and the Wireless Telecommunications Master Plan

- The subject property has a Comprehensive Land Use designation of Urban Low Density Residential. WCFs are deemed appropriate to the zoning due to their low noise and traffic impact. While the tower is not similarly scaled to single-family residential development, the tower's isolation is anticipated to mitigate conflicts with neighborhood harmony.

See Packet Page No. 158

Findings and Recommendation

**Staff findings can be found on WCF20190009 Staff Report Pages 8-11
(Packet Page No. 159-162)**

Staff recommends the Planning Commission adopt the Director's analysis and findings and approve the requested Special Use Permit for a WCF tower with the following conditions:

1. The WCF must be constructed as a monopole;
2. The WCF must be matte dark green in color;
3. The WCF cannot have lighting, and if in the future the FAA requires lighting, a modification to the Special Use permit must be approved by the Planning Commission;
4. The site security and required signage must be installed and maintained according to the plan;
5. The WCF must accommodate more than five (5) antenna arrays.



Planning Commission

(907) 586-0715
PC_Comments@juneau.org
www.juneau.org/plancomm
155 S. Seward Street • Juneau, AK 99801

PLANNING COMMISSION NOTICE OF DECISION

Date: April 17, 2020
File No.: WCF2019 0009

Vertical Bridge, LLC
ATTN: Gary Brekke
6510 Beechcraft Road
Wasilla, AK 99654

Application For: A Wireless Communication Facility Permit to install new, unlit 150-foot communication tower

Legal Description: South Lena Block E

Property Address: 16150 Merganser Road

Parcel Code No.: 8B3301070090

Hearing Date: April 14, 2020

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated March 16, 2020, and APPROVED the Special Use Permit to install a new, unlit, 150-foot communication tower, to be conducted as described in the project description and project drawings submitted with the application and with the following conditions:

1. The site security and required signage must be installed and maintained according to the plan.

Attachments: March 16, 2020 memorandum from Amy Liu, Community Development, to the CBJ Planning Commission regarding WCF2019 0009.

This Notice of Decision does not authorize construction activity. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ 01.50.030. Appeals must be filed by 4:30

Case No.: WCF2019 0009

April 17, 2020

Page 2 of 2

P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ 01.50.030(c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ 49.20.120).

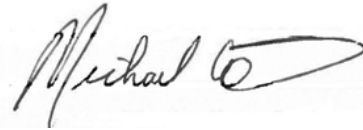
Effective Date: The permit is effective upon approval by the Commission, April 14, 2020.

Expiration Date: The permit will expire 18 months after the effective date, or October 14, 2021, if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the development permit was authorized. Application for permit extension must be submitted thirty days prior to the expiration date.

Project Planner:



Laurel Christian, Planner
Community Development Department



Michael LeVine, Chair
Planning Commission



Filed With City Clerk

4/20/2020

Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ-adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.



(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

DATE: March 17, 2020

TO: Planning Commission

FROM: Amy Liu, Planner *Amy Liu*
Community Development Department

FILE NO.: WCF2019 0010

PROPOSAL: A Wireless Communication Facility Permit to install a new, unlit 150-foot communication tower

GENERAL INFORMATION

Applicant: Vertical Bridge, LLC

Property Owner: CBJ Lands & Resources

Property Address: 10020 Crazy Horse Drive

Legal Description: USS 1041

Parcel Code Number: 4B1701100120

Site Size: 31.97 acres

Comprehensive Plan Future Land Use Designation: Institutional Public Use

Zoning: Industrial

Utilities: Public water, no public sewer or onsite septic

Access: Crazy Horse Drive

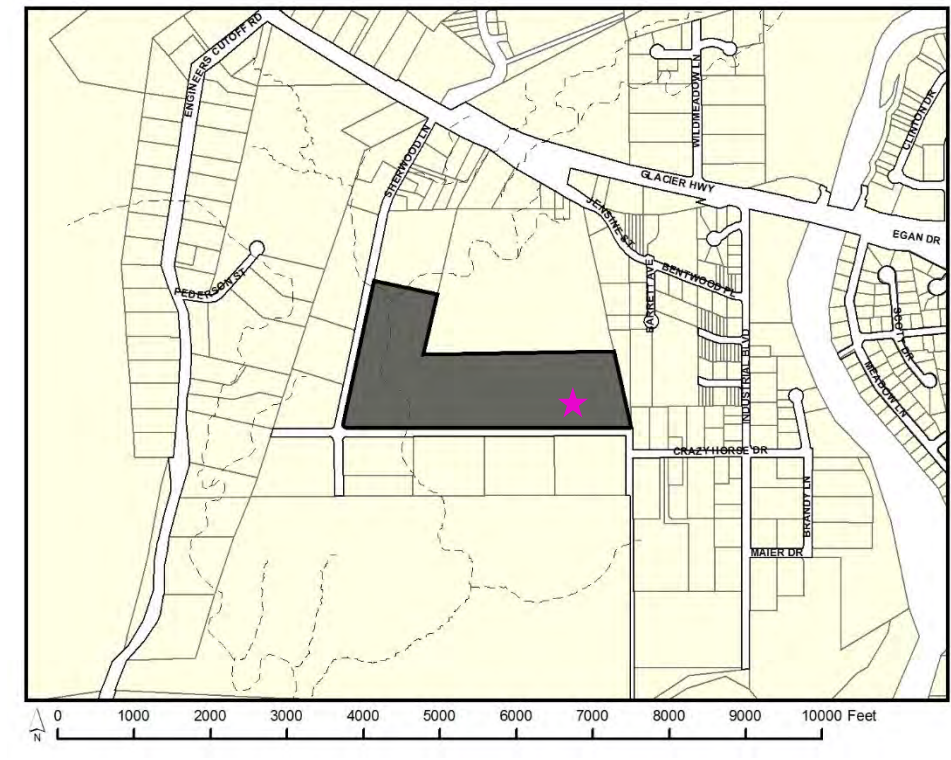
Existing Land Use: Southeast Alaska Food Bank

Surrounding Land Use: North – Communications tower

Planning Commission
File No.: WCF 2019 0010
March 17, 2020
Page 2 of 11

South – Commercial shop with storage
East – Equestrian center
West – Auto salvage yard

VICINITY MAP



ATTACHMENTS

Attachment A Application
Attachment B Agency Comments
Attachment C Public Comments

PROJECT DESCRIPTION

The applicant requests a Special Use Permit (SUP) for the development of a Wireless Communication Facility (WCF) to construct a 155-foot tall, freestanding monopole tower with lightning rod. The tower is 150 feet tall, and the rod adds 5 feet. There will be no antenna adding to the height of the tower. The tower will be unlit, and will occupy 5,625 square feet of land leased from CBJ to the applicant. The purpose of the tower is support multiple wireless carriers. CBJ 49.65.930(e)(1) requires WCFs between 121 feet and 150 to accommodate no fewer than five antenna arrays.

Planning Commission
File No.: WCF 2019 0010
March 17, 2020
Page 3 of 11

An SUP is required for WCF that do not fall under the categories of *CBJ 49.65.950, Table 1*. This application requires an SUP for a new non-concealed tower greater than 60 feet in height in the Industrial zoning district

AGENCY REVIEW

Staff requested review from the CBJ Assessor's Office, Building Division, Capital City Fire and Rescue, Engineering and Public Works Department, Lands and Resources Division, and the Juneau International Airport (JIA).

Building Division, and Engineering and Public Works expressed that they had no concerns. JIA noted that the applicant will need to file FAA 7460. This form must be filed at least 45 days prior to the start date of proposed construction. Staff did not receive any other comments. (Attachment B)

PUBLIC COMMENT

Several public comments expressed concerns about 5G service being detrimental to health. Staff's review takes into account whether the applicant meets regulatory standards set by the Federal Communication Commission (FCC). (Attachment C)

ANALYSIS

The purpose of Specified Use Provisions Article IX. Wireless Communication Facilities (*CBJ 49.65.900*), is to establish reasonable regulations for the placement, construction and modification of wireless communication facilities (WCF) consistent with the Telecommunications Act of 1996 and applicable law and to:

- (a) Promote the health, safety, and general welfare of the public and the City and Borough;
- (b) Minimize the impacts of WCFs by establishing standards for siting, design and screening and by requiring consistency with the City and Borough's wireless telecommunications master plan;
- (c) Encourage the collocation of antennas on existing structures thereby minimizing new visual impacts and reducing the need for new towers;
- (d) Maintain the natural surroundings and character of the City and Borough;
- (e) Preserve neighborhood harmony and scenic viewsheds and corridors as indicated in the Comprehensive Plan of the City and Borough of Juneau;
- (f) Accommodate the growing need and demand for wireless communications services;
- (g) Respond to the policies embodied in the Telecommunications Act of 1996 in such a manner as not to unreasonably discriminate between providers of functionally

Planning Commission
 File No.: WCF 2019 0010
 March 17, 2020
 Page 4 of 11

equivalent personal wireless services or to prohibit or have the effect of prohibiting personal wireless services; and

(h) Respond to the policies embodied in Section 6409(a) of the Spectrum Act (P.L. 112-96).

Project Site – The applicant proposes the tower to be on a 31.97-acre parcel located in an Industrial zoning district. The parcel currently accommodates the Southeast Alaska Food Bank. The tower location is approximately 28 feet north and 190 feet west of the food bank. The applicant anticipates additional grading and fill to prepare the building site and access to the site.

The Juneau Wetlands Management Plan identifies Class B wetlands at the project location. Per *CBJ 49.70.1060(1)*, a CBJ wetlands permit is not required for this category of wetlands. However, the Army Corps of Engineers requires a wetlands permit for construction. The applicant is currently in the process of acquiring that permit.

There are three towers within a 1,000-foot vicinity of the proposed tower's location. Site 16 and Site 17 are located along Bentwood Plaza, and owned by Alascom and AT&T respectively. The former is a 158-foot lattice tower, and the latter is a 60-foot monopole. Site 18 hosts a 120-foot Federal Aviation Administration (FAA) tower west of the applicant's proposed site along Crazy Horse Drive. The applicant reasons that collocation onto private towers will not be cost effective or support desired performance. The applicant has not provided documentation to demonstrate the cost effectiveness, nor if cost effectiveness should be considered in allowing a new tower, rather than requiring collocation. The FAA prohibits private carriers from collocating onto its facilities. (Attachment A, pg. 117-119)

Project Design –

- Security and signage: There will be a chain link fence with barbed wire and a locking gate. The chain link is six feet in height, and the barbed wire above the fence adds one foot in height. The fence will form a 60-foot by 60-foot square around the tower. (Attachment A, pg. 56) Signage cautioning entry on premises and posting contact information will be affixed onto the fence. (Attachment A, pg. 54)
- Lighting: The FAA does not require lighting for the tower. (Attachment A, pg. 33-37)
- Design criteria: The tower without the lightning rod is 150 feet tall. *CBJ 49.65.930(e)(1)* requires WCFs between 121 feet and 150 to accommodate no fewer than five antenna arrays. The proposed tower will accommodate five antenna arrays (Attachment A, pg. 78-93). Staff recommends that the tower accommodate more than five antenna arrays.
- Setbacks: The tower will not have a breakpoint. *CBJ 49.65.930(f)(1)* requires a tower without breakpoints to have a minimum setback distance from the nearest property line at least equal

Planning Commission
 File No.: WCF 2019 0010
 March 17, 2020
 Page 5 of 11

to the height of the tower. The tower height is 150 feet. The tower location is more than 300 feet from the north, the east, and the west lot lines. The distance from the south property line is 165 feet. (Attachment A, pg. 79)

- Structural assessment: The structural assessment meets *CBJ 49.65.930(j)*. An Alaska-licensed engineer conducted the structural assessment of the tower and foundation. (Attachment A, pg. 20-28, 18-19)
- Visual Impact Assessment:
 - Zone of Visibility Map: The application includes a zone of visibility map that meets the requirements of *CBJ 49.65.970(c)(2)(B)(i)*. The proposed site for the tower does not obstruct view sheds identified in the 2013 Comprehensive Plan. (Attachment A, pg. 58)
 - Siting for Least Adverse Impact: The development meets the requirements of *CBJ 49.65.930(2)(B)(i)* and minimizes adverse effects on the surrounding landscape, as it is located more than a quarter mile from residences. The tower consists of a galvanized steel, which appears mottled grey that is consistent with the local industrial streetscape. (Attachment A, pg. 13, 57-66) Staff recommends as a condition of approval that the monopole is matte grey in color.
 - Simulated Renderings of WCF: The applicant has included photo-simulations of the tower viewed from multiple vantage points used in the zone of visibility study. (Attachment A, pg. 95-98)
 - Screening of Base: Existing trees and other vegetation provide screening at the base of the tower. While grading and backfill will be performed at the tower location, the surrounding dense vegetation will remain largely intact. (Attachment A, pg. 60)
 - Balloon Test: The balloon test meets the requirements of *CBJ 49.65.930(2)(D)*. The study shows six vantage points: Brandy Lane and Crazy Horse Drive, Industrial Boulevard and Bentwood Plaza, Glacier Highway and Jensine Street, 2331 Engineers Cutoff Road, and the Mendenhall Golf Course Parking Lot. Photos of the balloon from these positions show that the tower will have minimal visual impact. (Attachment A, pg. 59-66)
- Propagation Study/Radio Frequency Emissions Compliance Report: The submitted statement confirming that radio frequency emissions will comply with FCC standards is consistent with the requirements of *CBJ 49.65.960(d)*. (Attachment A, pg. 38-54) The propagation study shows increased service coverage. (Attachment A, pg. 100-115)

Planning Commission
File No.: WCF 2019 0010
March 17, 2020
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Traffic – Staff does not anticipate the proposed use to add traffic to the existing site, excluding the limited traffic during construction and periodic maintenance.

Parking and Circulation – The site has area for parking and is accessed from Crazy Horse Drive.

Noise – Staff does not anticipate that the tower will generate noise. The site is separated from residential homes by more than quarter mile of industrial uses and vegetation.

Public Health or Safety – No evidence indicates that there are any public health or safety impacts from the proposed project. The applicant provided a Radio Frequency Emissions Compliance Report signed by a qualified professional, whose credentials are included.

Habitat – The proposal does not affect habitat protected by Title 49.

Property Value or Neighborhood Harmony – The proposed tower will not generate noise, traffic, or visual impact that is inconsistent with existing towers or neighboring residential uses.

CONFORMITY WITH ADOPTED PLANS

2013 Comprehensive Plan:

POLICY 12.11. TO PLAN FOR AND TO ESTABLISH LAND USE CONTROLS ON WIRELESS COMMUNICATIONS FACILITIES IN A MANNER THAT IS APPROPRIATE FOR THE COMMUNITY AND WITHIN THE PARAMETERS ESTABLISHED BY FEDERAL LAW.

The subject property is zoned Industrial, and has a Comprehensive Land Use designation of Institutional and Public Use (IPU). WCFs are deemed appropriate to the zoning because their use will not have external impacts that exceed those of industrial uses. IPU lands can vary widely, so the Plan recommends that these lands are regulated in accordance with the zoning district.

Lands that are in public ownership and dedicated for a variety of public uses, such as the University of Alaska Southeast; local, state and federal government uses; and for such public facilities as community gardens, schools, libraries, fire stations, treatment plants, and public sanitary landfills. Included are potential sites for future boat harbors, schools, parks, farmers markets, publicly-supported arts events, permitted arts or food-service kiosks or sales activities, parking facilities and road and public transit system easements. Also included are public aircraft facilities.

The public use of these lands will vary widely, so IPU-designated lands can be under any zoning district, with the uses thereon appropriate for that zone as regulated in the Table of Permissible Uses (CBJ 49.25.300); the zone of any particular public use should be the same district as the surrounding or abutting lands.

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Wireless Telecommunications Master Plan (WMP):

The WMP is a document that guides future development of wireless telecommunication facilities. The project generally complies with the Wireless Telecommunications Master Plan.

POLICY 1. TO ENSURE THE PROTECTION OF THE HEALTH AND SAFETY OF THE PUBLIC WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

POLICY 2. TO PROTECT AVIATION SAFETY BY COORDINATING WITH FEDERAL AVIATION ADMINISTRATION (FAA) WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

POLICY 3. TO PROTECT THE NATURAL ENVIRONMENT WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

POLICY 5. PROMOTE LAND USE EFFICIENCY WITH THE COLLOCATION OF WIRELESS COMMUNICATION FACILITIES TO EXISTING STRUCTURES.

POLICY 6. TO PRESERVE THE SCENIC VIEWSHEDS AND CORRIDORS LISTED IN THE 2013 COMPREHENSIVE PLAN WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

FINDINGS

CBJ 49.65.970(d) and (e), Director's Review, states that the director shall review the application for completeness.

1. The director shall review the application for completeness.
2. Incomplete applications shall be rejected and the applicant notified in writing within 30 days of receipt of the initial submission. If rejected, the director's decision shall identify the deficiencies in the application, which, if cured, would make the application complete.
3. Once an application is deemed complete, the director shall schedule it for a hearing before the planning commission, and shall give notice to the applicant and the public in accordance with subsection (e).

CBJ 49.65.970(f), Planning Commission Determination, states that the Planning Commission is authorized to review, analyze, evaluate and make decisions with respect to reviewing special use permits for WCFs.

1. The Planning Commission may impose any conditions on a special use permit:
 - a. Required to ensure compliance with the design criteria specified in section 49.65.930; and

Planning Commission
File No.: WCF 2019 0010
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- b. That are consistent with the purposes of this article, which may include conditions related to the aesthetic effect of the WCF and compatibility with the surrounding area. Factors relevant to aesthetic effects are: the protection of the view in sensitive or particularly scenic areas, scenic corridors/viewsheds identified in the Comprehensive Plan of the City and Borough of Juneau and in the historic district; the concentration of WCFs in the proposed area; and whether the height, design, placement or other characteristics of the proposed facility could be modified to have a less intrusive visual impact.
2. The Planning Commission may deny an application for any of the following reasons:
 - a. Conflict with safety and safety-related codes and requirements;
 - b. Conflict with the purpose of a specific zoning, overlay, or land use designation;
 - c. Presence of another approved WCF or WCF application within the geographic search area that is available to the applicant;
 - d. The proposed site is on, or eligible to be on, the National Register of Historic Places;
 - e. The proposed site is in an area commonly valued by the community as a whole for its natural or scenic properties.
 - f. For a proposed freestanding tower, the applicant fails to demonstrate that no existing structure or tower can accommodate the applicant's proposed use without increasing the height of the existing tower or structure or otherwise creating a greater visual impact; or that use of such existing facilities is technically infeasible or commercially impracticable; and
 - g. Conflicts with the provisions of this article.
3. The Planning Commission shall deny any application for WCF in the following locations:
 - a. State or local wildlife refuges;
 - b. In any area designated as a public park, unless screened so as to minimize visual and noise impacts, and as long as public use will not be disrupted; and
 - c. In any area designated as a scenic corridor/viewshed identified in the Comprehensive Plan of the City and Borough of Juneau.
 - d. In any area that fully or partially obstructs the view of the Mendenhall Glacier from the waterfront roadway from the North Douglas boat launch facility to False Outer Point.
4. The Planning Commission shall condition a permit on a requirement to construct the WCF within a reasonable period of time, which may not exceed 18 months.

Planning Commission
 File No.: WCF 2019 0010
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Per CBJ 49.65.970(d) and (f), Review of Director's and Commission's Determinations, the Director makes the following findings on the proposed development:

1. *Is the application for the requested special use permit complete?*

Yes. The application contains the information necessary to conduct a full review of the proposed wireless communications facility. The proposal consists of a narrative, visual impact assessment, confirmation that the facility will serve a necessary function for the provider's network, and confirmation that emitted electromagnetic radiation will meet FCC requirements. The proposal was preceded by a pre-application meeting, summarized in PAC2019 0035. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.65.900.

2. *Is the proposed project consistent with safety and safety-related codes and requirements?*

Yes. The permit does not conflict with safety and safety-related codes and requirements.

3. *Is the proposed use appropriate according to the Table of Permissible Uses and other specific zoning, overlay, or land use designation?*

Yes. The requested permit is appropriate according to the Table of Permissible Uses and ARTICLE IX - Wireless Communication Facilities.

4. *Is the presence of another approved WCF or WCF application within the geographic search area that is available to the applicant?*

Yes. There are three towers within a 1,000-foot vicinity of the proposed tower's location. Site 16 and Site 17 are located along Bentwood Plaza, and owned by Alascom and AT&T respectively. The former is a 158-foot lattice tower, and the latter is a 60-foot monopole. Site 18 hosts a 120-foot Federal Aviation Administration (FAA) tower west of the applicant's proposed site along Crazy Horse Drive.

5. *Was Public Notice of the Planning Commission consideration in compliance with CBJ 49.65.970(e)?*

Yes. Public notice of this project was provided in the March 13, 2020 and March 22, 2020 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 1500 feet of the subject parcel as well as all neighborhood associations. Three public notice signs were posted on March 10, 2020, one at Crazy Horse Drive, one at the intersection of Sherwood Lane and Glacier Highway, and one at Industrial Boulevard and Glacier Highway. The signs were posted to be visible from the public right-of-way.

6. *Is the proposed site on, or eligible to be on, the National Register of Historic Places?*

No. The development site does not meet the National Register of Historic Places criteria for

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evaluation.

7. *Is the proposed site in an area commonly valued by the community as a whole for its natural or scenic properties?*

No. The development site is located in a developed industrial area on a vacant industrial zoned lot.

8. *For a proposed freestanding tower, did the applicant demonstrate that no existing structure or tower can accommodate the applicant's proposed use without increasing the height of the existing tower or structure or otherwise creating a greater visual impact; or that use of such existing facilities is technically infeasible or commercially impracticable?*

Yes. The applicant has demonstrated that the existing structure cannot accommodate the proposed use, and that the tower's appearance will mitigate visual impact while meeting the FAA's minimum requirements.

9. *Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?*

Yes. The development is in general conformity with Title 49, the 2013 Comprehensive Plan, and the Wireless Telecommunications Master Plan.

10. *Is the proposed development located on State or local wildlife refuges?*

No. The proposed development is located in an industrial zoning district.

11. *Is the proposed development in any area designated as a public park, unless screened so as to minimize visual and noise impacts, and as long as public use will not be disrupted?*

No. The proposed development is located in an industrial zoning district.

12. *Is the development in any area designated as a scenic corridor/viewshed identified in the Comprehensive Plan of the City and Borough of Juneau?*

No. The proposed development is not located any area designated as a scenic corridor or viewshed.

13. *Is the development in any area that fully or partially obstructs the view of the Mendenhall Glacier from the waterfront roadway from the North Douglas boat launch facility to False Outer Point?*

No. The proposed development would not visually impact views of the Mendenhall Glacier.

The Planning Commission may deny a Special Use Permit according to the process pursuant to 49.65.970(f)(2). The Planning Commission shall deny a Special Use Permit for a project listed in

Planning Commission
File No.: WCF 2019 0010
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areas of the borough that are indicated in 49.65.970(f)(3). The Commission cannot deny the permit outside of those listed items.

RECOMMENDATION

Staff recommends the Planning Commission adopt the Director's analysis and findings and approve the requested Special Use Permit for a 150-foot tall communication tower with a 5-foot lightning rod with the following conditions:

1. The WCF must be constructed as a monopole;
2. The WCF must be matte grey in color;
3. The WCF cannot have lighting, and if in the future the FAA requires lighting, a modification to the Special Use permit must be approved by the Planning Commission;
4. The site security and required signage must be installed and maintained according to the plan;
5. The WCF must accommodate more than five (5) antenna arrays.

DEVELOPMENT PERMIT APPLICATION

Project Number	CITY and BOROUGH of JUNEAU	Date Received:
Project Name (City Staff to Assign Name)		

PROJECT / APPLICANT INFORMATION	Project Description New WCF Tower		
	PROPERTY LOCATION		
	Street Address 10020 Crazy Horse Drive	City/Zip	
	Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot) USS 1041		
	Assessor's Parcel Number(s) 4B1701100120		
	LANDOWNER/ LESSEE		
	Property Owner's Name CBS Land	Contact Person:	Work Phone:
	Mailing Address 155 S. Seward St	Home Phone:	Fax Number:
	E-mail Address Don.Hudson@jun.org	Other Contact Phone Number(s):	
	LANDOWNER/ LESSEE CONSENT ****Required for Planning Permits, not needed on Building/ Engineering Permits****		
I am (we are) the owner(s) or lessee(s) of the property subject to this application and I (we) consent as follows: A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission. B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.			
X <u>Don Hudson - CBS Land</u>		7/23/19	
Landowner/Lessee Signature		Date	
X _____		_____	
Landowner/Lessee Signature		Date	
NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.			
APPLICANT If the same as OWNER, write "SAME" and sign and date at X below			
Applicant's Name Vertical Bridge, LLC	Contact Person: Gary Bekke	Work Phone:	
Mailing Address 6510 Beechcraft Rd. Wasilla, AK 99654	Home Phone: 561-406-4094	Fax Number:	
E-mail Address aasllc15@gmail.com	Other Contact Phone Number(s):		
X _____		_____	
Applicant's Signature		Date of Application	

OFFICE USE ONLY BELOW THIS LINE					
STAFF APPROVALS	☒	Permit Type	SIGN	Date Received	Application Number(s)
		Building/Grading Permit			
		City/State Project Review and City Land Action			
		Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)			
		Mining Case (Small, Large, Rural, Extraction, Exploration)			
		Sign Approval (If more than one, fill in all applicable permit #'s)			
		Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)			
		Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)			
		Variance Case (De Minimis and all other Variance case types)			
		Wetlands Permits			
		Zone Change Application			
		Other (Describe)			
	***Public Notice Sign Form filled out and in the file.				
	Comments:				Permit Intake Initials AL



WIRELESS COMMUNICATION FACILITY APPLICATION

See reverse side for more information regarding the permitting process and the materials required for a complete application.

NOTE: Must be accompanied by a DEVELOPMENT PERMIT APPLICATION form.

To be completed by Applicant	PROJECT SUMMARY: Vertical Bridge, LLC proposes to construct a new WCF at 10020 Crazy Horse Dr adjacent to the Juneau Food Bank on property owned by the CBJ. There is an existing FAA tower at this location, but is not available for commercial access. The tower is proposed to be a 155' overall height monopole and reside in a 75' X 75' security fenced lease space. The location is in a designated Wetlands and the ACOE Wetlands permit process has begun. There will be clearing, excavation and backfill required to make the location suitable for tower construction. The tower and location have been designed to accommodate multiple wireless carriers. There is no tower lighting required. Appropriate and required site id, ownership and emergency contact information signage will be installed on a secured, locked security access gate.
	ZONING DISTRICT: I, 4B1701100120
	PROPOSED WCF TYPE ☐ Colocation ☒ New Tower ☐ Attached WCF ☐ Eligible Facility Request
	LIGHTING Proposed ☐ YES (this application requires all items under 49.65.950 and 49.65.970, it will go through the Special Use Permit process) ☒ NO Existing ☐ YES ☒ NO
	STRUCTURE HEIGHT (in feet) 155' overall
	Does the requested facility meet the criteria listed in Table 1 (CBJ 49.65.950(a))? ☐ Yes Does the facility qualify as a substantial Change per 49.65.950(b)(1-6)? ☐ Yes – Submit items under 49.65.960 with your application ☐ No – this application meets Table 1 (49.65.950(a)) with no substantial changes ☒ No – Submit items under 49.65.950 and 49.65.970. Proceed with the Special Use Permit process.
ALL REQUIRED MATERIALS ATTACHED ☒ Complete submittal checklist	

DEPARTMENT USE ONLY BELOW THIS LINE

REQUIRED PERMIT				
	Building Permit	Project falls under Table 1 (49.65.950)		
	Special Use Permit	Project does not fall under Table 1		
REVIEW APPROVALS				
	Initials	Date		
	Building _____			
	Engineering _____			
	Planning _____			
Fees	Fees	Check No.	Receipt No.	Date
Application Fee	\$ _____			
Public Notice Sign Fee	\$ _____			
Public Notice Sign Deposit	\$ _____			
Total	\$ _____			

This form and all documents associated with it are public record once submitted.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

For assistance filling out this form, contact the Permit Center at 586-0770.

Case Number	Date Received

AL



WIRELESS COMMUNICATION FACILITY CHECKLIST

Juneau Permit Center • 230 S. Franklin Street • (907) 586-0770

This checklist is required to complete an application for a Wireless Communication Facility (WCF) permit. There are two types of WCF permits. See below.

- A. WCF qualifies as Eligible Facility Request (**Streamlined Review**)
 - a. Submit items 1-12
- B. WCF requires Special Use permit
 - a. Submit items 2-21

Required Items (please label each item with the corresponding number on plans)

- ☒ 1) Completed Building Permit Application
- ☒ 2) Completed WCF Application
- ☒ 3) Completed Development Permit Application
- ☐ 4) Fees (contact the Permit Center at (907) 586-0770 to determine amount)
- ☒ 5) A statement certifying that radio frequency emissions from the antenna array(s), both individually and cumulatively, will comply with FCC standards (considering any other WCF located on or immediately adjacent to the proposed WCF). This statement must be signed by a qualified person and accompanied with a statement of that person's professional qualifications
- ☒ 6) Site address and CBJ Parcel Identification Number (tax ID number)
- ☒ 7) Site size and dimensions
- ☒ 8) Site plan showing all existing and proposed structures, buildings, fences (their height) and landscaping
- ☒ 9) Proposed WCF type and design, lighting, height above grade, material, number of, color, any accessory structures, and number of collocations it can accommodate, if applicable
- ☒ 10) Certification that proposal complies with applicable laws pertaining to service offered
- ☒ 11) The following documents from a licensed Alaska Professional Engineer:
 - ☒ Signed and stamped letter indicating the proposed WCF will be constructed, repaired, modified or restored in compliance with all current applicable technical, safety, and safety-related laws of the CBJ, State of Alaska, and Federal government
 - ☒ Signed and stamped letter indicating the proposed WCF is in compliance with industry practices of the National Association of Tower Erectors
- ☒ 11) Letter indicating compliance with FAA regulations in 14 CFR Part 77 (if applicable)
- ☒ 12) Location of any dwelling(s) within distance of tower equal to the height of tower (if applicable), disclosure of any agreements which limit and/or preclude the proposed WCF from being shared with new WCFs

WIRELESS COMMUNICATION FACILITY CHECKLIST



- ☒ 13) Signed and stamped letter from a licensed Alaska Professional Engineer indicating the foundation and attachments meet EIA/TIA 222 G and local building code structure requirements for loads, including wind, snow, and ice (this shall also address the total number of required accommodated collocations, when applicable)
- ☒ 14) A narrative describing compliance with subsections under 49.65.930:
 - ☒ Concealed & Non-concealed antenna
 - ☒ Security
 - ☒ Signage
 - ☒ Lighting
 - ☒ Design Criteria
 - ☒ Setbacks
 - ☒ Affects to mapped
 - ☒ Viewsheds
 - ☒ WCF Master Plan
 - ☒ Structural Assessment
- ☒ 15) Visual Impact Study consisting of:
 - Zone of Visibility Map
 - Analysis demonstrating how the proposed WCF will be sited to be of least adverse impact on environment and its character while meeting applicant's network objectives
 - Illustration showing before and after views of proposed WCF from roadways, parks, public lands, historic districts and any other location where the site is visible to many people
 - Description of visual impact
 - Narrative or drawing describing how the base of the tower and accessory structures will be screened from view
- ☐ 16) For lighted towers:
 - Description of type of light and how it complies with 49.65.930(d) (if required by FAA, the minimum intensity allowed by FAA)
 - How it will not project directly onto adjacent surrounding property (use of buffers, louvers, etc.)
- ☒ 17) Narrative indicating that the design height is the minimum necessary for effective functioning of provider's network
- ☒ 18) Visual impact assessment according to 49.65.970(c)(2)(B)
- ☒ 19) Balloon Test according to 49.65.970(c)(2)(D)
- ☒ 20) Propagation study



CITY/STATE PROJECT AND LAND ACTION REVIEW APPLICATION

See reverse side for more information regarding the permitting process and the materials required for a complete application.

NOTE: Must be accompanied by a DEVELOPMENT PERMIT APPLICATION form.

To be completed by Applicant	PROJECT SUMMARY <i>CONSTRUCT NEW CELLULAR SITE WITH MONOPOLE TOWER ON OBTAINED PROPERTY WHERE JUNEAU FOOD BANK IS LOCATED. THIS CONSTRUCTION ENTAILS CLEARING AN ACCESS DRIVEWAY AND LEASED SPACE, EXCAVATION AND BACKFILL.</i>
	TYPE OF PROJECT REVIEW: ☒ City Project Review ☐ City Land Acquisition /Disposal ☐ State Project Review
	PROJECT NUMBERS ASSOCIATED WITH PROPOSAL: Is this project associated with any other Land Use Permits? ☒ YES Case No.: <i>RL 2019-01</i> ☐ NO Capital Improvement Program # (CIP) _____ Local Improvement District # (LID) _____ State Project # _____
	ESTIMATED PROJECT COST: <i>\$ 235,000.00</i>
	ALL REQUIRED MATERIALS ATTACHED ☒ Complete application ☐ Pre-Application notes (if applicable) ☒ Narrative including: ☐ Current use of land or building(s) ☐ Proposed use of land or building(s) ☐ How the proposed project complies with the Comprehensive Plan ☐ How the proposed project complies with the Land Use Code (Title 49) ☒ Site Plan (details on page 2)

NOTE: This application is required even if the proposed project is associated with other Land Use permits.

-----DEPARTMENT USE ONLY BELOW THIS LINE-----

CITY/STATE PROJECT FEES	Fees	Check No.	Receipt	Date
Application Fees	\$ _____			

This form and all documents associated with it are public record once submitted.

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

For assistance filling out this form, contact the Permit Center at 586-0770.

Case Number	Date Received

**BUILDING PERMIT APPLICATION**NOTE: THIS IS NOT A BUILDING PERMIT

* NOTE: "Building Permit" is a generic term which includes Building Safety Inspections, Grading Permits, and permits for Electrical, Plumbing and Mechanical work.

Case No: **BLD20190447**

Case Description: New WCF tower.

Site Address: **10020 CRAZY HORSE DR**

Parcel No: 4B1701100120

Legal Description: USS 1041

Check No. of Existing Dwelling Units:

No. of New Dwelling Units: No. of Removed Dwelling Units: **Applicant :** VERTICAL BRIDGE
6510 BEECHCRAFT RD
WASILLA AK 99654

PH1

331-8311

Owner: CITY AND BOROUGH OF JUNEAU
LANDS AND RESOURCES
155 S SEWARD ST
JUNEAU AK 99801**Contractor:** VERTICAL BRIDGE
6510 BEECHCRAFT RD
WASILLA AK 99654

PH: _____ FAX: _____

Valuation for Permit Fee Calculations:S.F. TypeRateAmount

237,000.00

Total Valuation:

\$237,000.00

Associated Cases:

None.

Parcel Tags:

GPC August 10 2001 - This lot is in a mapped wetland area per JWMP Atlas. Wetland unit MW4 which is a category "B" wetland.

GPC August 10 2001 - This lot is in a mapped "V" wetland. The base flood elevation has not been classified but was determined to be 23 feet MLLW per Deb Purves. FIRM map 0880C.

No build easement was recorded in connection with BLD2001-00459 as an alternate method to meet building and fire code requirements on 8-30-2001 Book 572 Pages 822-826. Note by Deb Purves 9/18/2001.

Notes and Conditions:

Awaiting wcf20190010 approval and bld fee payment.

Applicant's Signature

(Owner, Contractor or Authorized Agent)

Date**Staff Acceptance**

I hereby certify that I have read and examined this application and know the same to be true and correct. I further certify that all provisions of laws and ordinances governing this type of work will be complied with whether specified herein or not. I understand that the granting of a permit does not presume to give authority to violate or cancel the provisions of any other federal, state or local law regulating construction or the performance of construction.

Staff Review Sheet

Planner

Permit Intake Initials: _____

FIRE ZONE ENG WAT SEW ARCH STRUC PLUM MECH ELEC ACCESS SPEC/INSP

7/24/2019

Case No: **BLD20190447**

Site Address: 10020 CRAZY HORSE DR

Parcel No: 4B1701100120

Desc: New WCF tower.

Commercial _____ NEV _____ New Dwelling Units: _____ 0
 FCC Code: _____ 329 _____ Existing Dwelling Units: _____ 0
 Type of Construction: _____ VB _____ Occupancy Class: _____
 Sprinkler Substitute for Type A Construction: YES NO
 Sprinkler System: FULL PARTIAL NONE Required: YES NO
 Alarm System: FULL PARTIAL NONE Required: YES NO
 Code Edition: _____ Code Review by: _____ Date: _____

Valuation for Permit Fee Calculations:

S.F. Type

Rate

Amount

237,000.00

Total Valuation:

\$237,000.00

LAND USE

ZONE/UNITS _____ I /
 WETLAND _____
 FLOOD ELEV _____ 23.00
 FIRM ZONE _____ V
 FIRM MAP _____
 LOT SIZE _____ 1,392,613 SF
 _____ 32.0 ACRES
 SETBACKS
 Front _____ 10
 Rear _____ 10
 Side _____ 0
 Other _____
 PARKING _____
 ANADROMOUS _____
 EAGLES NEST _____
 Coverage _____ Permissible/Conditional
 HEIGHT _____ Permissible/Accessory
 VEGETATION _____
 HAZARD _____

ENGINEERING/PUB WORKS

Dwelling Units: _____
 CITY WATER:
 Permit #: _____
 Use: _____
 Assessment: _____
 Service Size: _____
 Line Size: _____
 Meter Size: _____
 CITY SEWER:
 Permit #: _____
 Use: _____
 Assessment: _____
 Fixture Units: _____

LAND USE PERMITS

ADR Case #: _____

PLAN REVIEW APPROVALS

	Initials	Date
Fire	_____	_____
Zoning	_____	_____
Engineering	_____	_____
Water	_____	_____
Sewer	_____	_____
Architectural	_____	_____
Structural	_____	_____
Plumbing	_____	_____
Mechanical	_____	_____
Electrical	_____	_____
Access	_____	_____
Spcl Insp Form	_____	_____

APPROVED FOR ISSUANCE

Signature _____

Date _____

PERMIT ISSUANCE FEES

Grading Plan Review Fee	\$ _____
Adjusted Plan Review Fee	\$ _____
Fast Track Fee	\$ _____
Early Start Fee	\$ _____
Building Permit Fee	\$ _____
Water Assessment Fee	\$ _____
Sewer Assessment Fee	\$ _____
Sewer Inspection Fee	\$ _____
Grading Permit Fee	\$ _____
Driveway Permit Fee	\$ _____
Bond for	\$ _____
Other	\$ _____
Total Issuance Fees	\$ _____

PERMIT ISSUANCE PAYMENTS

Date	Receipt	Check	Amount
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____

Parcel Tags:

GPC August 10 2001 - This lot is in a mapped wetland area per JWMP Atlas. Wetland unit MW4 which is a categc wetland.

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No build easement was recorded in connection with BLD2001-00459 as an alternate method to meet building and f requirements on 8-30-2001 Book 572 Pages 822-826. Note by Deb Purves 9/18/2001.

CONDITIONS AND HOLDS ON PERMIT: (Continued on back of sheet)

BUILDING PERMIT APPLICATION (Continued)

Page 2 of 2

TYPES OF INSPECTIONS

The Work Codes below contain standard inspections for the permit type. Circle additional inspections if required.

Work Codes -

B-Building Safety Inspection
 B-Commercial Addition
 B-Demolition
 B-Grading
 B-Manufactured Home Placement
 B-Oil/Gas Piping
 B-Porches/Decks/Carports
 B-Reroof
 B-Residential Electrical Service
 B-Single Family Dwelling
 E-ROW- Water & Sewer Service
 E-ROW- Water Main
 E-ROW-Driveway
 E-ROW-Fire Line
 E-ROW-Sewer Main
 E-ROW-Sewer Main & Service
 E-ROW-Sewer Service
 E-ROW-Water Main & Service
 E-ROW-Water Main & Sewer Main
 E-ROW-Water Service
 E-UTL- Sewer Main
 E-UTL-Fire Line
 E-UTL-Fire Line & Water Line
 E-UTL-Fire Line & Water Main
 E-UTL-OWTDS
 E-UTL-Sewer Line
 E-UTL-Pressure Sewer Line
 E-UTL-Sewer Line w/ Decomm
 E-UTL-Pressure Sewer Line w/Decomm
 E-UTL-Water Line
 E-UTL-Water Main

Building-

B-Appliance/Chimney
 B-Bonding
 B-Building Final
 B-Building Service
 B-Combustion Air
 B-Commercial Hoods
 B-Conduit & Raceway Systems
 B-Cross Connection Control
 B-Demo Electric Safed Off
 B-Demo Excavation Filled
 B-Demo Sewer/Water Capped
 B-Demolition Final
 B-Devices and Equipment
 B-Electrical Final
 B-Fire Dampers/Sprinklers
 B-Fire Separation/Rated Assemb
 B-Foundation, Forms & Reinf Steel
 B-Framing
 B-Grounding
 B-Heat Piping
 B-Insulation/Vapor Barrier
 B-Masonry
 B-Mechanical Final
 B-Meter Yoke
 B-Meter Yoke with Meter
 B-MH Foundation
 B-MH Utilities
 B-Mobile Home Final
 B-Plumbing Final
 B-Oil & Gas Piping/Tanks
 B-Rough Electrical
 B-Rough Plumbing
 B-Service/Panel
 B-Setback Verification
 B-Smoke/Carbon Monoxide Detec
 B-Special Inspection
 B-Specialty Piping
 B-Temporary Power
 B-Under Slab Utilities
 B-Ventilation/Plenums & Ducts
 B-Vents (Bath, Dryer, Kitchen, etc.)
 B-Yellow Tag Electrical
 B-Zoning Final

Enforcement -

ENF - Enforcement Status Check

Miscellaneous -

M-Site Visit

Fire -

F-Address and Required Signage
 F-Alarm Panel/Transmitter
 F-Alarm Zones
 F-Blasting on Individual Lot
 F-Childcare/Daycare Inspection
 F-Commercial Dev Land Clearing
 F-Courtesy Inspection
 F-Emergency Lighting Test
 F-Events in Mall Hallways
 F-Explosives Shipment-Unest Loc
 F-FDC Location
 F-Fire Extinguishers
 F-Fire Final
 F-Fire Hydrant Placement
 F-Fire Related Inspection
 F-Fixed Welding Inspection
 F-Flammable/Combustible Material
 F-Hazardous Material Storage
 F-Kitchen Hood Suppression Test
 F-Liquor License Renewal
 F-Open Burning Inspection
 F-Paint Booth Inspection
 F-Proper Sprinkler System Bracing
 F-Roof/Tar Kettle Inspection
 F-Special Event Structure
 F-Sprinkler Head Placement
 F-Sprinkler Hydrostatic Test
 F-Subdivision Land Clearing
 F-Subdivision/Road Blasting
 F-System Acceptance Test
 F-Temporary Welding Inspection
 F-Underground Fire Line Flush

Engineering -

E-Access to Curb Stop Valve
 E-ADEC on-site Sewer Final
 E-ADEC on-site Water Main Final
 E-Asbuilt Survey Required
 E-Bacteriological Test
 E-Bedding / Backfill
 E-Billing Authorization
 E-Blasting Verification
 E-Bore Flush
 E-CBJ Waste Water Department
 E-CBJ Water Department
 E-Chlorination Test
 E-Cleanouts
 E-Continuity
 E-Cross Connection Control
 E-Culvert
 E-Curb Box
 E-Curb Cut Final
 E-Curb Cut Reinforcement
 E-Curb Stop
 E-Depth
 E-Electrical Utility
 E-Final
 E-Fire Hydrants
 E-Fire Line Final
 E-General Engineering Final
 E-Grade
 E-Grading/Drainage
 E-Headwalls
 E-Installation of Access & Ports
 E-Installation of Insulation
 E-Location
 E-Manhole Tap
 E-Manholes - Sewer Main
 E-Material
 E-OWTDS Inspection
 E-Pressure Test
 E-Pump Ticket
 E-Residual / Free Chlorine
 E-Retaining Walls
 E-ROW - Final
 E-ROW Restoration
 E-Septic Decommission
 E-Sewer Connection
 E-Sewer Disconnect
 E-Sewer Final
 E-Sewer Main Final
 E-Sewer Service Tap
 E-Sewer System
 E-Sidewalk Final
 E-Sidewalk Reinforcement
 E-Size
 E-Soil
 E-State D.O.T. Approval
 E-Storm Drains
 E-Street Patch
 E-Streets
 E-Telephone Utility
 E-Thaw Waiver
 E-Thaw Wire
 E-Thrust Blocks
 E-Turn Water OFF
 E-Turn Water ON
 E-TV Cable
 E-Utility Ribbon
 E-Utility Trench
 E-Water Final
 E-Water Meter Required
 E-Water Meter/Yoke
 E-Water Service Tap
 E-Water System
 E-Water Tap
 E-Width

ADDITIONAL CONDITIONS AND HOLDS (STAFF)

7/9/2019

Gary R. Brekke
Alaska Aerial Survey, LLC
6510 Beechcraft Rd
Wasilla, AK 99654

Vertical Bridge, LLC Proposed 11 Mile Cell Tower

Vertical Bridge, LLC proposes to construct a new communication facility site at 10020 Crazy Horse Dr. The site location is adjacent to the Food Bank and an existing FAA tower in a delineated wetlands area.

The proposed site is to be a 75' X 75' leased area with a 60' X 60' security fenced enclosure. There will be an access drive constructed from the parking area for the Food Bank along a preconstructed and overgrown dike. The space will require substantial clearing, excavation and appropriate fill material in order to make the location suitable for tower, shelter and equipment construction. This site will not be a storage area for any ancillary or other equipment.

There will be a chain-link security fence installed on the perimeter of the leased space with a locked security gate installed as well. This gate will also have installed on it the appropriate and required signage that details ownership, site id and contact information in case of emergency.

The site location was selected based on Network RF Engineering requirements as determined by the primary client of Vertical Bridge. The tower height of 150' and load design capability has been engineered to be sufficient to accommodate not only the primary client, but to also accommodate additional clients loads and future growth.

An FAA Determination has specified that no tower lighting of any kind is required.

The design of the tower, tower foundation and general facility meets all standard engineering requirements and is typical of communications facilities currently being constructed in Alaska and nationwide.

The tower was not designed with stealth technology because the location in an Industrial zoned district and the natural vegetation adequately provides sufficient concealment as demonstrated in the Visual Impact and Balloon Test documentation. The tower height was selected for minimal visual impact while providing a structure for multiple other communications carriers to utilize.

All setbacks were determined during the surveying of the property and the site laid out to meet or exceed the setback requirements.

A Wetlands Construction permit application will be submitted by the end of July this year with the ACOE in order to comply with construction standards and Federal regulation regarding wetlands development. A copy of this application and the ACOE construction permit will be provided to the CBJ.

\$237K



(907) 586-0715
 CDD_Admin@juneau.org
 www.juneau.org/CDD
 155 S. Seward Street • Juneau, AK 99801

Insert Project Name

52.

Case Number: PAC2019 XXXX

Applicant: Vertical Tower

Property Owner:

Property Address:

Parcel Code Number: Use Capital Letter, not Lowercase

Site Size: xx,xxx Square Feet

Zoning:

Existing Land Use:

Conference Date: (Insert Conference Date)

Report Issued: (Insert Today's Date)

List of attendees

Note: Copies of the Pre-Application Conference Report will be emailed, instead of mailed, to participants who have provided their email address below.

Name	Title	Email address
GARY B	Applicant	
	Planning	xxx.xxx@juneau.org
	Building	xxx.xxx@juneau.org
	General Engineering	xxx.xxx@juneau.org

Pre-Application Conference Final Report

Based upon the information submitted for pre-application review, the following list of applications must be submitted in order for the project to receive a thorough and speedy review.

1. (Add application forms required)
2. (Add notes as necessary)

Additional submittal requirements:

Submittal of additional information, given the specifics of the development proposal and site, are listed below. These items will be required in order for the application to be determined Counter Complete.

1. A copy of this pre-application conference report.
2. (Add any necessary supporting documents required in the application forms OR that may be useful supporting information)

Exceptions to submittal requirements:

Submittal requirements staff has determined **not** to be applicable or **not** required, given the specifics of the development proposal, are listed below. These items will **not** be required in order for the application to be reviewed.

1. (Add any items required with the forms that are not applicable to the Conditional Use application)
- 2.

Fee estimates

The preliminary plan review fees listed below can be found in the CBJ code section 49.85.

Based upon the project plan submitted for pre-application review, staff has attempted to provide an accurate estimate for the permits and permit fees which will be triggered by your proposal.

1. (List individual permit fees and sign fees)
2. \$1000.00 650.00 +

For informational handouts with submittal requirements for development applications, please visit our website at www.juneau.org/cdd.

Submit your completed application

You must submit your application(s) in person with payment to:

City/Borough of Juneau
Permit Center
230 S. Franklin Street,
Fourth Floor Marine View Center
Juneau, AK 99801

Phone: (907) 586-0715
Fax: (907) 586-4529
Web: www.juneau.org/cdd

Pre-Application Conference Final Report

* Sam DAK AS WCF-09

Conference Summary

Questions/issues/agreements identified at the conference that weren't identified in the attached reports.

The following is a list of issues, comments and proposed actions, and requested technical submittal items that were discussed at the pre-application conference.

Planning Division:

No lighting Required by FAA.

1. **Zoning** – (check special districts – ADOD / Historic)
2. **Setbacks** –
3. **Height** –
4. **Access** –
5. **Parking & Circulation**– (check if in Juneau / Douglas Geographic area)
6. **Lot Coverage** –
7. **Vegetative Coverage** –
8. **Lighting** –
9. **Noise** –
10. **Flood** – (check floodplain)
11. **Hazard/Mass Wasting/Avalanche/Hillside Endorsement** –
12. **Wetlands** –
13. **Habitat** – (Eagle – remind applicant to check with Feds; Riparian, etc.) –
14. **Plat or Covenant Restrictions** –
15. **Traffic** -

Building Division:

16. **Building** –
17. **Outstanding Permits** -

General Engineering/Public Works:

18. **Engineering** –
19. **Drainage** –
20. **Utilities** – (water, power, sewer, etc.)

Fire Marshal:

21. **Fire Items/Access** –

Other Applicable Agency Review:

22. DOT&PF / Alcohol Beverage Control Board / Army Corps / DEC (wastewater) / DNR / USF&W / F&G / FAA / Corrections...
- 23.

List of required applications

Amy Liu

From: Gary Brekke <aasllc15@gmail.com>
Sent: Thursday, September 12, 2019 9:28 AM
To: Amy Liu
Subject: Re: FW: WCF20190009 Follow-Up
Attachments: 25910.letter.pdf; 452079.fdndwgseal.pdf; 25910.calcs.pdf; 452078.twrdwgseal.pdf

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Hi Amy! Thanks for the call Tuesday morning! I look forward to working with you on the permitting for this 11 Mile site and the one at Lena Pt.

I've attached 4 additional documents pertaining to the 11 Mile site and the questions you had about the tower.

It will be galvanized steel in color. No antennas will exceed the height of the tower structure. There is a ground rod that does attach at the top of the tower and projects above the tower structure. I've attached a letter from the tower manufacturer attesting to it's structural integrity and statistical likeliness of failure within the 75' leased space.

Please let me know if this answers your questions satisfactorily or if you need additional information.

Thanks Amy!!

Gary R. Brekke
Alaska Aerial Survey, LLC
907 331-8311
www.alaskaaerialsurvey.com

On Wed, Sep 11, 2019 at 11:36 AM Amy Liu <Amy.Liu@juneau.org> wrote:

From: Amy Liu
Sent: Thursday, September 05, 2019 9:35 AM
To: 'aasllc1@gmail.com' <aasllc1@gmail.com>
Cc: Teri Camery <Teri.Camery@juneau.org>; Alexandra Pierce <Alexandra.Pierce@juneau.org>
Subject: RE: WCF20190009 Follow-Up

Gary,

Thanks for reaching out to CDD. I heard through the grapevine that you chatted with Teri. However, I'm following up because I am assigned your two WCF applications.

The application for 11 mile is not officially in our system yet. I would still like your input on the questions I listed below before we begin review and scheduling. Also, the meeting dates I initially shared may not be available anymore, so I'll let you know soon the next hearing dates.

Thanks,

Amy

From: Amy Liu

Sent: Friday, August 09, 2019 2:24 PM

To: 'aasllc1@gmail.com' <aasllc1@gmail.com>

Subject: RE: WCF20190009 Follow-Up

Gary,

I just noticed that what I thought was an antenna was just a lighting rod. Makes sense. However, could you address the other questions?

Thanks,

Amy

From: Amy Liu

Sent: Tuesday, August 06, 2019 11:38 AM

To: 'aasllc1@gmail.com' <aasllc1@gmail.com>

Subject: WCF20190009 Follow-Up

Gary,

Thanks for chatting with me the other day. I confirmed that the 11 mile application has not been paid yet, so that application has also not been assigned for review yet. As we previously discussed, WCF20190009 (Lena Pt) could be scheduled for October 8 or 22 at the earliest. Let me know if you have a preference, want to wait for the 11 mile tower application to be assigned, or are interested in later dates.

Also, I have a few of questions that I'm not sure are answered by the materials you provided for the Lena Pt tower.

- What will the color of the tower be?
- Will there be a breakpoint?
- Will there be antenna(s) that add height to the tower? I see in the design drawing that there may be a whip antenna

Amy

From: Gary Brekke <aasllc15@gmail.com>

Sent: Tuesday, July 09, 2019 9:53 AM

To: Kyle Paw <Kyle.Paw@juneau.org>; Edward Quinto <Edward.Quinto@juneau.org>; Amy Liu <Amy.Liu@juneau.org>

Subject: Fwd: Vertical bridge Lena Pt.

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Kyle, I've uploaded the WPA and BPA. I've also uploaded a narrative addendum addressing the total number of antennas and carriers the tower loading is applicable for. VB is getting the checks in process for the fees and will send directly to the CBJ.

Please note the middle paragraph in the Narrative doc that explains the tower design height criteria. If you want me to try and elaborate further I can. Thanks all!

Gary R. Brekke

Alaska Aerial Survey, LLC

907 331-8311

www.alaskaaerialsurvey.com

----- Forwarded message -----

From: **Gary Brekke** <aasllc15@gmail.com>

Date: Tue, Jul 9, 2019 at 7:48 AM

Subject: Re: Vertical bridge Lena Pt.

To: Kyle Paw <Kyle.Paw@juneau.org>

Cc: Edward Quinto <Edward.Quinto@juneau.org>, Amy Liu <Amy.Liu@juneau.org>

Hi Kyle! Thanks for the quick response on this - it is greatly appreciated!! I am working on the additional docs and will upload when completed this morning.

I have forwarded this to my VB contacts for clarification from the tower manufacturer about the "Breakpoint Technology" designed into the tower. I will upload as soon as I receive that. I've also asked VB to cut the checks for the fees and submit directly to the CBJ. Is that who the checks should be made out to and is there a reference number associated with this project that they should not on the checks? Or perhaps just VB Lena Pt project?

Gary R. Brekke

Alaska Aerial Survey, LLC

907 331-8311

www.alaskaaerialsurvey.com

On Mon, Jul 8, 2019 at 2:56 PM Kyle Paw <Kyle.Paw@juneau.org> wrote:

Good afternoon,

Thank you for your email. We were able to extract the forms and have reviewed them for intake. This project is going to require both a Wireless Facility Application as well as a Building Permit for new tower. The initial look over of your application materials it appears that we require a few things in order to move forward:

- DPA (see attached)
- Narrative indicating that the design height is the minimum necessary for effective functioning of the provider's network

- Clarification on max number of antenna arrays possible, whether there is a breakpoint, and color
- The total estimated cost of the project construction (used in the associated building permit that will be required. (build permit form attached)

The fee for the WCF application is \$1000.00. the breakdown of which is as follows:

\$850.00 for the application

\$150.00 for sign notice (\$100.00 is refundable with an on time return of sign)

The fee for the building permit can be determined when you supply the estimate cost of the project.

If you have any additional concerns or questions, please don't hesitate to contact us.

Regards,

Kyle Paw | Permit Technician III

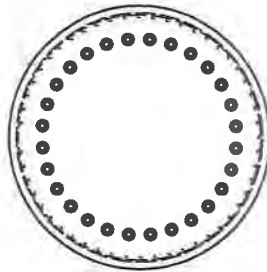
Community Development Department | City & Borough of Juneau, AK

Location: 230 S. Franklin Street, 4th Floor Marine View Building

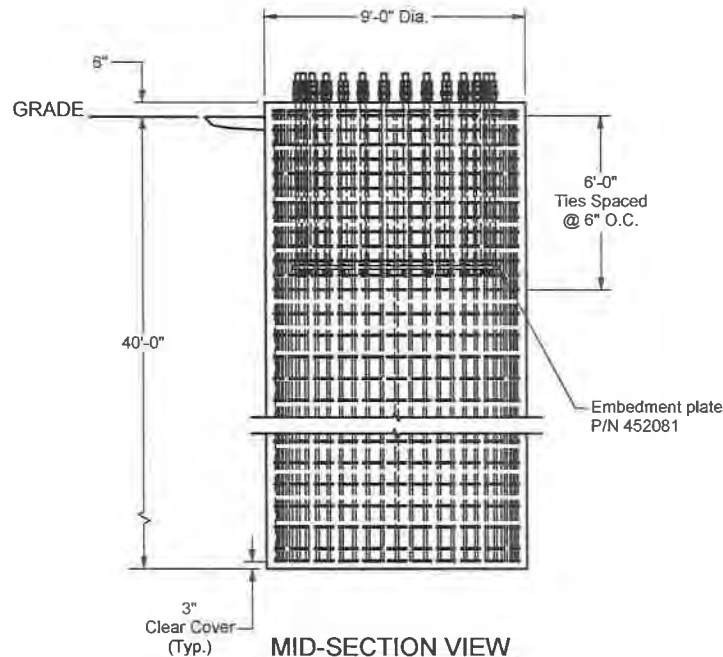
Office: 907.586.0773



Attachment A - Application

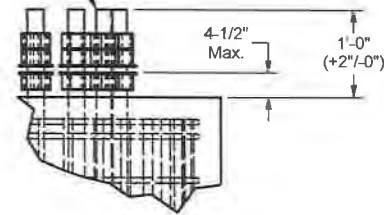


PLAN VIEW

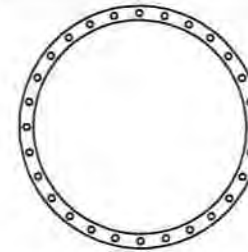


MID-SECTION VIEW
DRILLED PIER FOUNDATION
(CONCRETE VOLUME: 95.4 CU. YD. TOTAL)

2.25" dia. x 84" ASTM A615
grade 75 anchor bolts,
P/N 108787
28 total.



ANCHOR BOLT DETAIL

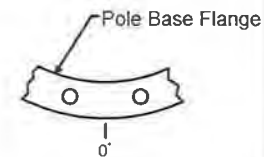


85.5 in EMBEDMENT PLATE O.D.
(28) 2-5/16" HOLES
ON A 80.5 in DIAMETER BOLT CIRCLE
75.5 in EMBEDMENT PLATE I.D.

EMBEDMENT PLATE DETAIL

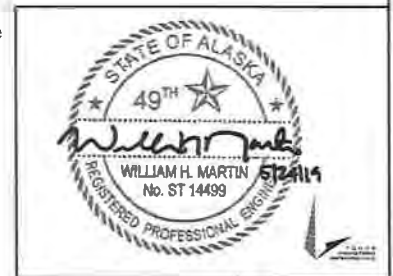
#10 Reinforcing bars,
480" long.
Equally spaced around inside of ties.
52 Total

#6 Reinforcing ties,
343 0" long before being bent into circle with
102 00" outer diameter and 6.00" overlap
and 3" seismic hooks.
Top 2 ties spaced at 2" O.C.
Next 12 ties spaced at 6" O.C.
Bottom 2 ties spaced at 5" O.C.
Remainder of ties equally spaced at 8.81" O.C.
60 Total.



Anchor Bolt Holes
Are on Either Side of
the 0 Degree Azimuth
Anchor Bolt Azimuth

Concrete Compressive Strength, $f_c = 4000$ psi



TITLE:
Vertical Bridge
NTP 73" X 150"
US-AK5244 11 Mile
Juneau Co., AK



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

REV	BY	DATE	DESCRIPTION

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ORIG. DATE: 5/20/2019	DWG NO: 452079
DWG. PROG: v1 05	SHEET: 1 OF 2

Attachment A - Application

Foundation Notes

1. This foundation has been designed for the following reactions.

<u>ASCE7-05</u>		<u>ASCE7-10</u>	
Shear:	86.6 kips	Shear:	83.3 kips
Moment:	10261.2 ft-kips	Moment:	9874.7 ft-kips
Weight:	73.7 kips	Weight:	73.7 kips

2. Foundation design is based on the Geotechnical Report dated 03/26/2019, by Tower Engineering Professionals, Inc.; Project No. 152226.242955.

3. A field inspection shall be performed in order to verify that the actual site soil parameters meet or exceed the assumed soil parameters and that the depth of standard foundations are adequate based on the frost penetration and groundwater depth. Local frost depth must be no deeper than the bottom of the base foundation.

4. Reinforcement shall be deformed and conform to the requirements of ASTM A615 Grade 60 unless otherwise noted. Splices in reinforcement shall not be allowed unless otherwise noted.

5. Welding is prohibited on reinforcing steel and anchorage.

6. Backfill must be compacted in 8" loose lifts to a 95% of maximum dry density at optimum moisture content in accordance with ASTM D698. Backfill must be clean and free of organic and frozen soils and foreign materials. Fill should be compacted at water content within 2 percent of optimum.

7. Foundation designs assume level ground at tower site.

8. Loose material shall be removed from bottom of excavation prior to concrete placement.

9. Concrete cover from exposed surface of concrete to surface of reinforcement shall not be less than 3".

10. Concrete and reinforcement installation must conform to ACI 318, "Building Code Requirements for Structural Concrete."

11. Concrete shall develop a minimum compressive strength of 4000 psi in 28 days.

12. Concrete shall be placed as soon as practical after excavating to avoid disturbance of bearing and side wall surfaces.

13. Concrete contractor shall be responsible for properly aligning anchor bolts and materials before and after placing concrete, regardless of whether an anchor bolt template is provided.

14. Positive drainage shall be maintained during construction and throughout the life of the facility to minimize the potential for surface water infiltration.

15. It shall be the contractor's responsibility to locate and prevent damage to any existing underground utilities, foundations or other buried objects that might be damaged or interfered with during construction of the foundation.

16. Groundwater may be encountered at 3.5 feet bgs at this site based on the geotechnical investigation. Dewatering techniques should be anticipated below this depth.

17. Temporary steel casing or drilling slurry may be required for installation of the drilled pier. A clean-out bucket should be used to remove any cuttings and loose soils in the bottom of the shaft excavation.

18. Concrete shall be placed by tremie methods if there is more than 1 inch of water or drilling fluid at the bottom of the shaft excavation or if water infiltration exceeds a rise of 1/4" per minute.



TITLE:
Vertical Bridge
NTP 73" X 150'
US-AK5244 11 Mile
Jeneau Co., AK


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

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ORIG. DATE: 5/20/2019

DWG NO: 452079

DWG PROG: v1.05

SHEET: 2 OF 2

REV	BY	DATE	DESCRIPTION



Design Supporting Calculations

Sales Order: SO25910
Drawing Number(s)
Tower: 452078
Foundation: 452079
Order Description: NTP 73" x 150'
Site Name: US-AK5244 11 Mile
Location: JuneauBorough, AK

Prepared For:
Customer: Vertical Bridge
Contact: Bill Shearer
Date: 5/21/2019



Section	4	3	2	1
Length (ft)	52.75	53.00	20.00	42.25
Number of Slides	18	18	18	18
Thickness (in)	0.5000	0.5000	0.4375	0.3125
Socket Length (ft)		7.75	5.50	4.75
Top Dia (in)	53.0385	36.5720	31.8500	18.0000
Bot Dia (in)	73.4000	57.0300	39.5700	34.3085
Grade		A572-65		
Weight (lb)	19653.0	14577.1	3666.7	4053.5

150.0 ft

107.8 ft

92.5 ft

45.0 ft

0.0 ft

DESIGNED APPURTENANCE LOADING

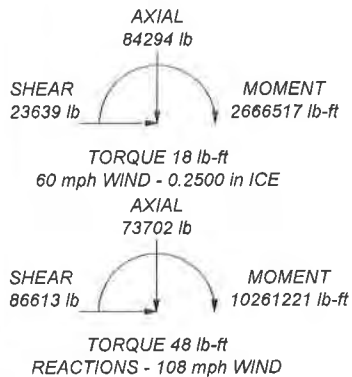
TYPE	ELEVATION	TYPE	ELEVATION
5' Lightning Rod	150	30,000 sq in CaAa	130
30,000 sq in CaAa	150	30,000 sq in CaAa	120
30,000 sq in CaAa	140		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure D to the TIA-222-G Standard.
2. Tower designed for a 108 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 60 mph basic wind with 0.25 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 99.9%

ALL REACTIONS
ARE FACTORED

Nello		Job: SO25910; Tower 452078; Foundation 452079	
1201 S. Sheridan		Project: NP 150' - US-AK5244 11 Mile - Juneau Co., AK	
South Bend, IN	Client: Vertical Bridge	Drawn by: ageyer	App'd:
Phone: 800-804-3556	Code: TIA-222-G	Date: 05/14/19	Scale: NTS
FAX: 574-288-5860	Path: N:\seri4520\452078.en	Dwg No. E-1	

tnxTower Nello 1201 S. Sheridan South Bend, IN Phone: 800-804-3556 FAX: 574-288-5860	Job	SO25910; Tower 452078; Foundation 452079	Page	1 of 37
	Project	NP 150' - US-AK5244 11 Mile - Juneau Co., AK	Date	10:40:35 05/14/19
	Client	Vertical Bridge	Designed by	ageyer

Tower Input Data

There is a pole section.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Basic wind speed of 108 mph.

Structure Class II.

Exposure Category D.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.2500 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 pole 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	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	✓ Assume Rigid Index Plate	✓ Calculate Redundant Bracing Forces
Use Moment Magnification	✓ Use Clear Spans For Wind Area	✓ Ignore Redundant Members in FEA
✓ Use Code Stress Ratios	✓ Use Clear Spans For KL/r	✓ SR Leg Bolts Resist Compression
✓ Use Code Safety Factors - Guys	✓ Retension Guys To Initial Tension	✓ All Leg Panels Have Same Allowable
Escalate Ice	✓ Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	✓ Use Azimuth Dish Coefficients	Consider Feedline Torque
Use Special Wind Profile	✓ Project Wind Area of Appurt	Include Angle Block Shear Check
Include Bolts In Member Capacity	✓ Autocalc Torque Arm Areas	Poles
✓ Leg Bolts Are At Top Of Section	✓ SR Members Have Cut Ends	✓ Include Shear-Torsion Interaction
✓ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	✓ Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-107.75	42.25	4.75	18	18.0000	34.3085	0.3125	1.2500	A572-65 (65 ksi)
L2	107.75-92.50	20.00	5.50	18	31.8500	39.5700	0.4375	1.7500	A572-65 (65 ksi)
L3	92.50-45.00	53.00	7.75	18	36.5720	57.0300	0.5000	2.0000	A572-65 (65 ksi)

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	Client	Vertical Bridge	Designed by	ageyer

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L4	45.00-0.00	52.75		18	53.0385	73.4000	0.5000	2.0000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia.	Area	I	r	C	I/C	J	It/Q	w	w/t
	in	in ²	in ⁴	in	in	in ³	in ⁴	in ²	in	
L1	18.2777	17.5438	693.4158	6.2791	9.1440	75.8329	1387.7441	8.7736	2.6180	8.378
	34.8378	33.7198	4923.5444	12.0686	17.4287	282.4961	9853.5673	16.8631	5.4883	17.563
L2	34.2031	43.6202	5437.8839	11.1514	16.1798	336.0909	10882.9232	21.8142	4.8356	11.053
	40.1804	54.3404	10513.2069	13.8920	20.1016	523.0045	21040.2474	27.1753	6.1943	14.158
L3	39.2919	57.2463	9410.7675	12.8056	18.5786	506.5387	18833.9179	28.6286	5.5567	11.113
	57.9098	89.7131	36220.2408	20.0681	28.9712	1250.2137	72488.1411	44.8651	9.1573	18.315
L4	56.8944	83.3786	29076.8519	18.6512	26.9436	1079.1764	58191.9639	41.6972	8.4548	16.91
	74.5323	115.6923	77677.8080	25.8795	37.2872	2083.2298	155457.826	57.8571	12.0384	24.077

Tower Elevation	Gusset Area	Gusset Thickness	Gusset Grade	Adjust. Factor	Adjust. Factor	Weight Mult.	Double Angle	Double Angle
	(per face)			A _f	A _t		Stitch Bolt	Stitch Bolt
ft	ft ²	in					Spacing	Spacing
							Diagonals	Horizontals
							in	in
L1				1	1	1.1		
150.00-107.75				1	1	1.1		
L2				1	1	1.1		
107.75-92.50				1	1	1.1		
L3 92.50-45.00				1	1	1.1		
L4 45.00-0.00				1	1	1.1		

Monopole Base Plate Data

Base Plate Data

Base plate is square	
Base plate is grouted	
Anchor bolt grade	A615-75
Anchor bolt size	2.2500 in
Number of bolts	28
Embedment length	72.0000 in
f _c	4 ksi
Grout space	3.3750 in
Base plate grade	A572-50
Base plate thickness	3.0000 in
Bolt circle diameter	80.5000 in
Outer diameter	86.5000 in
Inner diameter	69.5000 in
Base plate type	Plain Plate

Feed Line/Linear Appurtenances - Entered As Area

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	Client	Vertical Bridge	Designed by	ageyer

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		$C_A A_A$ ft ² /ft	Weight plf
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	150.00 - 0.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	140.00 - 0.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	130.00 - 0.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	120.00 - 0.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight lb
L1	150.00-107.75	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	1072.56
L2	107.75-92.50	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	600.24
L3	92.50-45.00	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	1869.60
L4	45.00-0.00	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	1771.20

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	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight lb
L1	150.00-107.75	A	0.572	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	1072.56
L2	107.75-92.50	A	0.559	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	600.24
L3	92.50-45.00	A	0.537	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	1869.60
L4	45.00-0.00	A	0.481	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	1771.20

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		$C_A A_A$ Front ft ²	$C_A A_A$ Side ft ²	Weight lb
5' Lightning Rod	C	From Leg	0.00 0.00 5.00	0.0000	150.00	No Ice 1/2" Ice	0.83 1.49	0.83 1.49	10.23 16.01
30,000 sq in CaAa	C	None		0.0000	150.00	No Ice 1/2" Ice	208.00 250.00	208.00 250.00	3536.00 4738.00
30,000 sq in CaAa	B	None		0.0000	140.00	No Ice 1/2" Ice	208.00 250.00	208.00 250.00	3536.00 4738.00
30,000 sq in CaAa	A	None		0.0000	130.00	No Ice 1/2" Ice	208.00 250.00	208.00 250.00	3536.00 4738.00
30,000 sq in CaAa	C	None		0.0000	120.00	No Ice 1/2" Ice	208.00 250.00	208.00 250.00	3536.00 4738.00

Tower Pressures - No Ice

$$G_H = 1.100$$

Section Elevation ft	z ft	K_z	q_z psf	A_G ft ²	F_a c e ft ²	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L1 150.00-107.75	126.83	1.493	42	93.505	A B C	0.000 0.000 0.000	93.505 93.505 93.505	93.505	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L2 107.75-92.50	99.92	1.433	41	47.265	A B C	0.000 0.000 0.000	47.265 47.265 47.265	47.265	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L3 92.50-45.00	67.59	1.339	38	192.378	A B C	0.000 0.000 0.000	192.378 192.378 192.378	192.378	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L4 45.00-0.00	22.28	1.104	31	246.425	A B C	0.000 0.000 0.000	246.425 246.425 246.425	246.425	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000

Tower Pressure - With Ice

$$G_H = 1.100$$

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft ²	F_a c e ft ²	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L1 150.00-107.75	126.83	1.493	13	0.5721	97.534	A B	0.000 0.000	97.534 97.534	97.534	100.00 100.00	0.000 0.000	0.000 0.000

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	Client	Vertical Bridge	Designed by	ageyer

Section Elevation ft	z ft	K _z	q _z psf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L2 107.75-92.50	99.92	1.433	13	0.5586	48.719	C	0.000	97.534		100.00	0.000	0.000
						A	0.000	48.719	48.719	100.00	0.000	0.000
						B	0.000	48.719		100.00	0.000	0.000
						C	0.000	48.719		100.00	0.000	0.000
L3 92.50-45.00	67.59	1.339	12	0.5372	196.800	A	0.000	196.800	196.800	100.00	0.000	0.000
						B	0.000	196.800		100.00	0.000	0.000
						C	0.000	196.800		100.00	0.000	0.000
L4 45.00-0.00	22.28	1.104	10	0.4807	250.454	A	0.000	250.454	250.454	100.00	0.000	0.000
						B	0.000	250.454		100.00	0.000	0.000
						C	0.000	250.454		100.00	0.000	0.000

Tower Pressure - Service

$$G_H = 1.100$$

Section Elevation ft	z ft	K _z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 150.00-107.75	126.83	1.493	12	93.505	A	0.000	93.505	93.505	100.00	0.000	0.000
					B	0.000	93.505		100.00	0.000	0.000
					C	0.000	93.505		100.00	0.000	0.000
L2 107.75-92.50	99.92	1.433	11	47.265	A	0.000	47.265	47.265	100.00	0.000	0.000
					B	0.000	47.265		100.00	0.000	0.000
					C	0.000	47.265		100.00	0.000	0.000
L3 92.50-45.00	67.59	1.339	10	192.378	A	0.000	192.378	192.378	100.00	0.000	0.000
					B	0.000	192.378		100.00	0.000	0.000
					C	0.000	192.378		100.00	0.000	0.000
L4 45.00-0.00	22.28	1.104	9	246.425	A	0.000	246.425	246.425	100.00	0.000	0.000
					B	0.000	246.425		100.00	0.000	0.000
					C	0.000	246.425		100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 150.00-107.75	1072.56	4053.53	A	1	0.65	42	1	1	93.505	2830.30	66.99	C
			B	1	0.65		1	1	93.505			
			C	1	0.65		1	1	93.505			
L2 107.75-92.50	600.24	3666.73	A	1	0.65	41	1	1	47.265	1373.46	90.06	C
			B	1	0.65		1	1	47.265			
			C	1	0.65		1	1	47.265			
L3 92.50-45.00	1869.60	14577.10	A	1	0.65	38	1	1	192.378	5206.65	109.61	C
			B	1	0.65		1	1	192.378			
			C	1	0.65		1	1	192.378			
L4 45.00-0.00	1771.20	19652.98	A	1	0.65	31	1	1	246.425	5508.47	122.41	C
			B	1	0.65		1	1	246.425			
			C	1	0.65		1	1	246.425			
Sum Weight:	5313.60	41950.35						OTM	970832.36 lb-ft	14918.88		

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	NP 150' - US-AK5244 11 Mile - Juneau Co., AK	10:40:35 05/14/19
	Client	Designed by
	Vertical Bridge	ageyer

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
L1 150.00-107.75	1072.56	4053.53	A	1	0.65	42	1	1	93.505	2830.30	66.99	C
			B	1	0.65		1	1	93.505			
			C	1	0.65		1	1	93.505			
L2 107.75-92.50	600.24	3666.73	A	1	0.65	41	1	1	47.265	1373.46	90.06	C
			B	1	0.65		1	1	47.265			
			C	1	0.65		1	1	47.265			
L3 92.50-45.00	1869.60	14577.10	A	1	0.65	38	1	1	192.378	5206.65	109.61	C
			B	1	0.65		1	1	192.378			
			C	1	0.65		1	1	192.378			
L4 45.00-0.00	1771.20	19652.98	A	1	0.65	31	1	1	246.425	5508.47	122.41	C
			B	1	0.65		1	1	246.425			
			C	1	0.65		1	1	246.425			
Sum Weight:	5313.60	41950.35						OTM	970832.36 lb-ft	14918.88		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
L1 150.00-107.75	1072.56	4053.53	A	1	0.65	42	1	1	93.505	2830.30	66.99	C
			B	1	0.65		1	1	93.505			
			C	1	0.65		1	1	93.505			
L2 107.75-92.50	600.24	3666.73	A	1	0.65	41	1	1	47.265	1373.46	90.06	C
			B	1	0.65		1	1	47.265			
			C	1	0.65		1	1	47.265			
L3 92.50-45.00	1869.60	14577.10	A	1	0.65	38	1	1	192.378	5206.65	109.61	C
			B	1	0.65		1	1	192.378			
			C	1	0.65		1	1	192.378			
L4 45.00-0.00	1771.20	19652.98	A	1	0.65	31	1	1	246.425	5508.47	122.41	C
			B	1	0.65		1	1	246.425			
			C	1	0.65		1	1	246.425			
Sum Weight:	5313.60	41950.35						OTM	970832.36 lb-ft	14918.88		

Tower Forces - With Ice - Wind Normal To Face

tnxTower Nello 1201 S. Sheridan South Bend, IN Phone: 800-804-3556 FAX: 574-288-5860	Job	SO25910; Tower 452078; Foundation 452079	Page	7 of 37
	Project	NP 150' - US-AK5244 11 Mile - Juneau Co., AK	Date	10:40:35 05/14/19
	Client	Vertical Bridge	Designed by	ageyer

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 150.00-107.75	1072.56	4850.86	A B C	1 1 1	1.2 1.2 1.2	13	1 1 1	1 1 1	97.534 97.534 97.534	1682.18	39.81	C
L2 107.75-92.50	600.24	4057.72	A B C	1 1 1	1.2 1.2 1.2	13	1 1 1	1 1 1	48.719 48.719 48.719	806.67	52.90	C
L3 92.50-45.00	1869.60	16101.42	A B C	1 1 1	1.2 1.2 1.2	12	1 1 1	1 1 1	196.800 196.800 196.800	3034.95	63.89	C
L4 45.00-0.00	1771.20	21393.86	A B C	1 1 1	1.2 1.2 1.2	10	1 1 1	1 1 1	250.454 250.454 250.454	3190.04	70.89	C
Sum Weight:	5313.60	46403.86						OTM	570150.24 lb-ft	8713.84		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 150.00-107.75	1072.56	4850.86	A B C	1 1 1	1.2 1.2 1.2	13	1 1 1	1 1 1	97.534 97.534 97.534	1682.18	39.81	C
L2 107.75-92.50	600.24	4057.72	A B C	1 1 1	1.2 1.2 1.2	13	1 1 1	1 1 1	48.719 48.719 48.719	806.67	52.90	C
L3 92.50-45.00	1869.60	16101.42	A B C	1 1 1	1.2 1.2 1.2	12	1 1 1	1 1 1	196.800 196.800 196.800	3034.95	63.89	C
L4 45.00-0.00	1771.20	21393.86	A B C	1 1 1	1.2 1.2 1.2	10	1 1 1	1 1 1	250.454 250.454 250.454	3190.04	70.89	C
Sum Weight:	5313.60	46403.86						OTM	570150.24 lb-ft	8713.84		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 150.00-107.75	1072.56	4850.86	A B C	1 1 1	1.2 1.2 1.2	13	1 1 1	1 1 1	97.534 97.534 97.534	1682.18	39.81	C
L2 107.75-92.50	600.24	4057.72	A B C	1 1 1	1.2 1.2 1.2	13	1 1 1	1 1 1	48.719 48.719 48.719	806.67	52.90	C
L3	1869.60	16101.42	A	1	1.2	12	1	1	196.800	3034.95	63.89	C

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*****
*                               Federal Airways & Airspace
*
*                               Summary Report: New Construction
*
*                               Antenna Structure
*
*****

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Airspace User: Dawn Keniley

File: USAK5244

Location:  Juneau, AK

Latitude:  58°-22'-01.13"           Longitude:
134°-36'-38.97"

SITE ELEVATION AMSL.....24 ft.
STRUCTURE HEIGHT.....150 ft.
OVERALL HEIGHT AMSL.....174 ft.
SURVEY HEIGHT AMSL.....174 ft.

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NOTICE CRITERIA

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FAR 77.9(a): NNR (DNE 200 ft AGL)
FAR 77.9(b): NR  (Exceeds Notice Slope, Maximum: 62 ft.)
FAR 77.9(c): NNR (Not a Traverse Way)
FAR 77.9:   NR  Exceeds JNU Proposed Rwy 08P, TERPS
analysis required.
FAR 77.9(d): NNR (Off Airport Construction)

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NR  = Notice Required
NNR = Notice Not Required
PNR = Possible Notice Required (depends upon actual IFR
procedure)

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For new construction review Air Navigation
Facilities at bottom
of this report.

Notice to the FAA is required because height exceeds
Notice Slope criteria.

Notice is required. Height exceeds FAA IFR straight-in
screening criteria.

The maximum height to avoid notice is: 20 ft AMSL.

OBSTRUCTION STANDARDS

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FAR 77.17(a)(1): DNE 499 ft AGL
FAR 77.17(a)(2): DNE - Airport Surface
FAR 77.19(a):    DNE - Horizontal Surface
FAR 77.19(b):    DNE - Conical Surface

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FAR 77.19(c): DNE - Primary Surface
 FAR 77.19(d): DNE - Approach Surface
 FAR 77.19(e): DNE - Approach Transitional Surface
 FAR 77.19(e): DNE - Abeam Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: JNU: JUNEAU INTL

Type: A RD: 4174.986 RE: 20.6

FAR 77.17(a)(1): DNE

FAR 77.17(a)(2): DNE - Height No Greater Than 200 feet AGL.

VFR Horizontal Surface: DNE

VFR Conical Surface: DNE

VFR Primary Surface: DNE

VFR Approach Surface: DNE

VFR Transitional Surface: DNE

The structure is within VFR - Traffic Pattern Airspace Climb/Descent Area.

Structures exceeding the greater of 350' AAE, 77.17(a)(2), or VFR horizontal and conical surfaces will receive a hazard determination from the FAA.

Maximum AMSL of Climb/Descent Area is 375 feet.

VFR TRAFFIC PATTERN AIRSPACE FOR: 5Z1: JUNEAU HARBOR

Type: S RD: 45916.54 RE: 0

FAR 77.17(a)(1): DNE

FAR 77.17(a)(2): DNE - Greater Than 5.99 NM.

VFR Horizontal Surface: DNE

VFR Conical Surface: DNE

VFR Primary Surface: DNE

VFR Approach Surface: DNE

VFR Transitional Surface: DNE

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)

FAR 77.17(a)(3) Departure Surface Criteria (40:1)

The Maximum Height Permitted is 124 ft AMSL

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)

FAR 77.17(a)(4): DNE - No Airway Found

PRIVATE LANDING FACILITIES

FACIL	BEARING	RANGE
DELTA ARP FAA	To FACIL	IN NM
IDENT TYP NAME		
ELEVATION IFR		
-----	-----	-----
18AK HEL NORTH DOUGLAS	120.19	4.16

+149

No Impact to Private Landing Facility

Structure is beyond notice limit by 20277 feet.

5.13 AA44 HEL BARLETT REGIONAL HOSPITAL 116.78
 -122
 No Impact to Private Landing Facility
 Structure 122 ft below heliport.

+24 AK94 HEL ALASCOM/COASTAL LENA POINT 285.38 5.43
 No Impact to Private Landing Facility
 Structure is beyond notice limit by 27993 feet.

AIR NAVIGATION ELECTRONIC FACILITIES

GRND	FAC	ST	DIST	DELTA	ST	LOCATION				
ANGLE	APCH	IDNT	TYPE	AT	FREQ	VECTOR	(ft)	ELEVA	ST	LOCATION
BEAR										
	JDL	LOCALIZER	I	109.9	238.73	5699	+9	AK	RWY	08
JUNEAU	INT	.09	71							
	CGL	NDB	R	21	260.6	17248	+116	AK	COGLAN	
ISLAND		.39								
	SSR	VORTAC	R	114.0	240.71	142671	+134	AK	SISTERS	
ISLAND		.05								

CFR Title 47, §1.30000-\$1.30004
 AM STUDY NOT REQUIRED: Structure is not near a FCC
 licensed AM station.
 Movement Method Proof as specified in §73.151(c) is not
 required.
 Please review 'AM Station Report' for details.

Nearest AM Station: KJNO @ 9087 meters.

Airspace® Summary Version 19.3.529

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04-10-2019
 17:28:19

FAA 1-A Accuracy Certification

Date of Survey: February 2019

Market: Alaska

Site Address:

10020 Crazy Horse Dr.
Juneau, Alaska 99801

Site Name: AK 11 Mile

Project #: 19-08.02

Proposed Structure Type: Self Support Tower

Surveyed Latitude (NAD 83)

N 58°22'01.135"

Surveyed Longitude (NAD 83)

W 134°36'38.975"

Ground Elevation: (NAVD 1988)

24'

Proposed Tower Height:

150'

Overall Tower Height (NAVD 1988)

174.0

Certification: I certify that the latitude and longitude are accurate to within +/- 20 feet horizontally, and that the ground elevation is accurate to within +/- 3 feet vertically. The horizontal datum (coordinates) are expressed in degrees, minutes, and seconds to the nearest hundredth of a second. The vertical datum (height) is expressed in terms of feet.

Company: Acutek Geomatics
5099 E. Blue Lupine Dr., Ste. 104
Wasilla, Alaska 99654
907-376-8800

3/4/2019





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

Aeronautical Study No.
2019-AAL-104-OE

Issued Date: 04/25/2019

FCC Contact
BRT Group, LLC
PO. Box 812530
Boca Raton, FL 33481

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

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

Structure:	Antenna Tower US-AK-5244 11 Mile
Location:	Juneau, AK
Latitude:	58-22-01.14N NAD 83
Longitude:	134-36-38.98W
Heights:	24 feet site elevation (SE) 150 feet above ground level (AGL) 174 feet above mean sea level (AMSL)

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

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

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

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 10/25/2020 unless:

- the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- extended, revised, or terminated by the issuing office.
- 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, effective 21 Nov 2007, 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 (907) 271-5863, or robert.van.haastert@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AAL-104-OE.

Signature Control No: 402328681-403823495

(DNE)

Robert van Haastert
Specialist

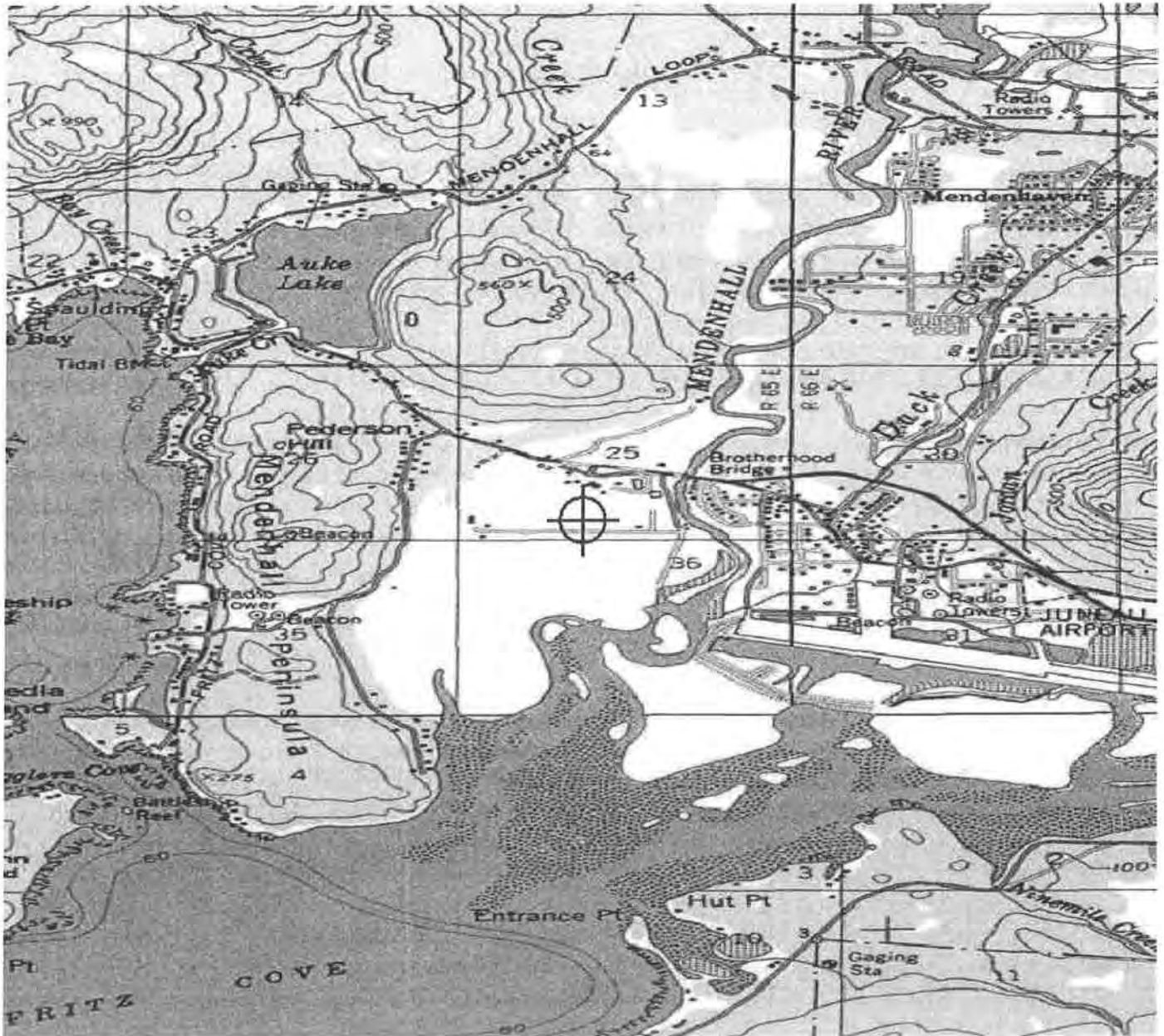
Attachment(s)
Frequency Data
Map(s)

cc: FCC

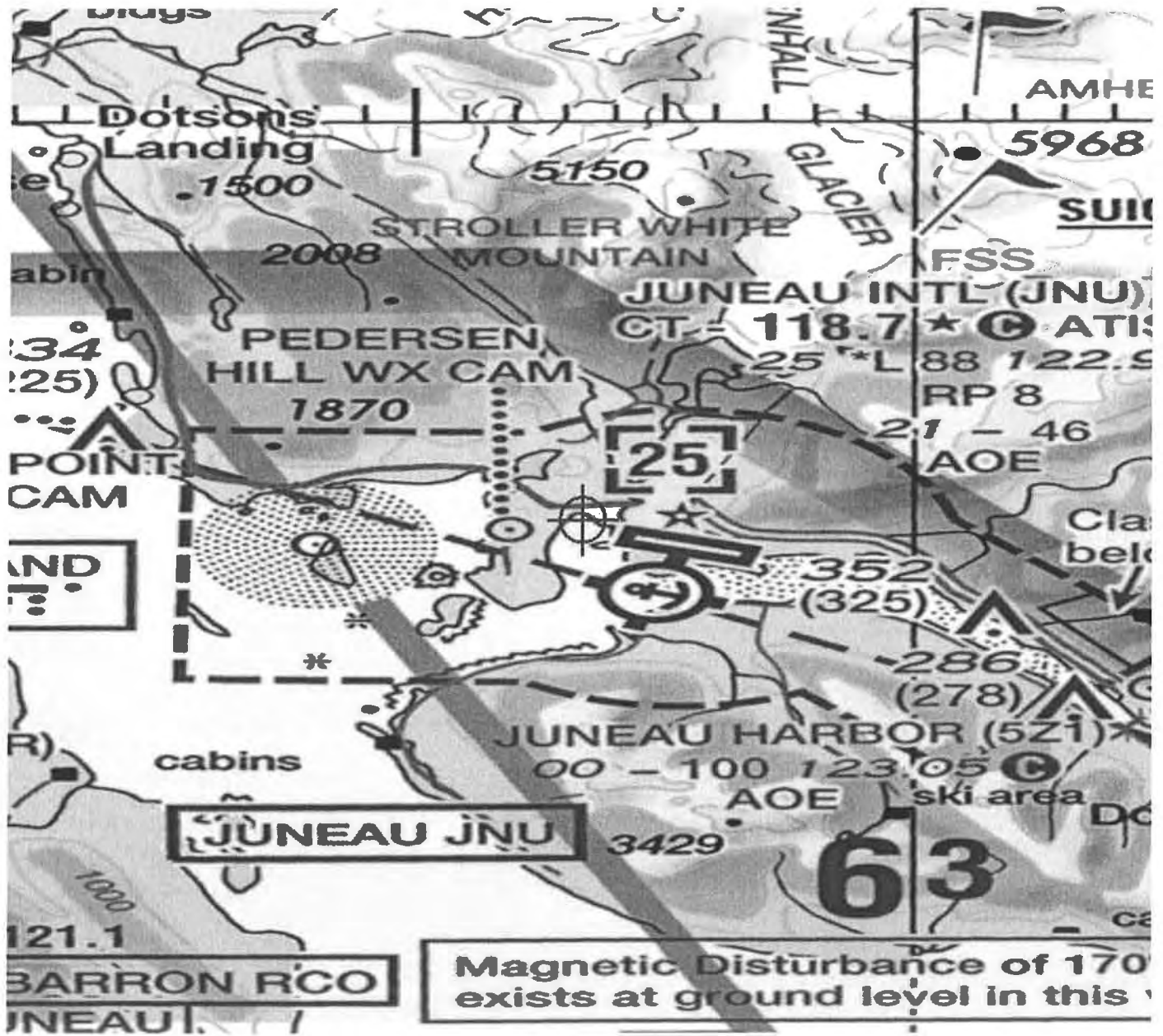
Frequency Data for ASN 2019-AAL-104-OE

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

TOPO Map for ASN 2019-AAL-104-OE



Sectional Map for ASN 2019-AAL-104-OE





2550 Denali Street, Suite 1000, Anchorage Alaska 99503

Proposed 11 Mile FCC RF Exposure Limits & Issues

According to the Federal Communications Commission OET Bulletin 65, Edition 97-01:

"...out of an abundance of caution, the FCC requires that tower-mounted installations be evaluated if antennas are mounted lower than 10 meters above ground and the total power of all channels being used is over 1000 Watts effective radiated power..."

"For antennas mounted higher than 10 meters, measurement data for cellular facilities have indicated that ground-level power densities are typically hundreds to thousands of times below the new MPE (Maximum Permissible Exposure) limits."

<http://www.naic.edu/~phil/hardware/rfmonitor/fccGuidelines.pdf>

The following paragraphs are excerpts from the most recent FCC guidelines publication that explain the FCC's rationale in determining the MPE limits for general public exposure and for occupational/controlled exposure:

"In reaching its decision on adopting new guidelines, the Commission carefully considered the large number of comments submitted in its rule-making proceeding, and particularly those submitted by the U.S. Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), and other federal health and safety agencies. The new guidelines are based substantially on the recommendations of those agencies, and it is the Commission's belief that they represent a consensus view of the federal agencies responsible for matters relating to public safety and health."

"The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based are derived from criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 Watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The new MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk."

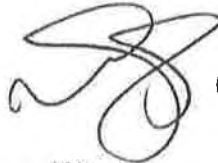
6/5/19

"The new FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. As indicated by Table 1 {shown on page 3}, the most restrictive limits occur in the frequency range of 30-300 MHz where whole body absorption of RF energy by human beings is most efficient. At other frequencies whole-body absorption is less efficient, and, consequently, the MPE limits are less restrictive.

Note that if both of the criteria in the first paragraph are not met (i.e. antenna height less than 10 meters **and** the total power of all channels used is over 1000 Watts), a detailed engineering evaluation of the RF field strengths at or near the site is not required unless specifically requested. A detailed MPE study has been conducted of this proposed structure and equipment at the request of interested parties. A copy of the MPE report which includes a summary as well as calculation methodology for the cumulative emissions of all equipment to be installed and operated by GCI is included with this statement.

All wireless facilities to be installed by GCI will be in compliance with the above criteria as well as the MPE limits for the general public in areas for which the general population has access (i.e. behind site fences or gates). In addition, GCI will comply with all FCC requirements for signage which serves to both identify the site (FCC licensing) and the presence of RF radiation at the site.

Mark Schott

 6/5/19

Staff Engineer, GCI Wireless RF Engineering
GCI Wireless

Attachment A - Application

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

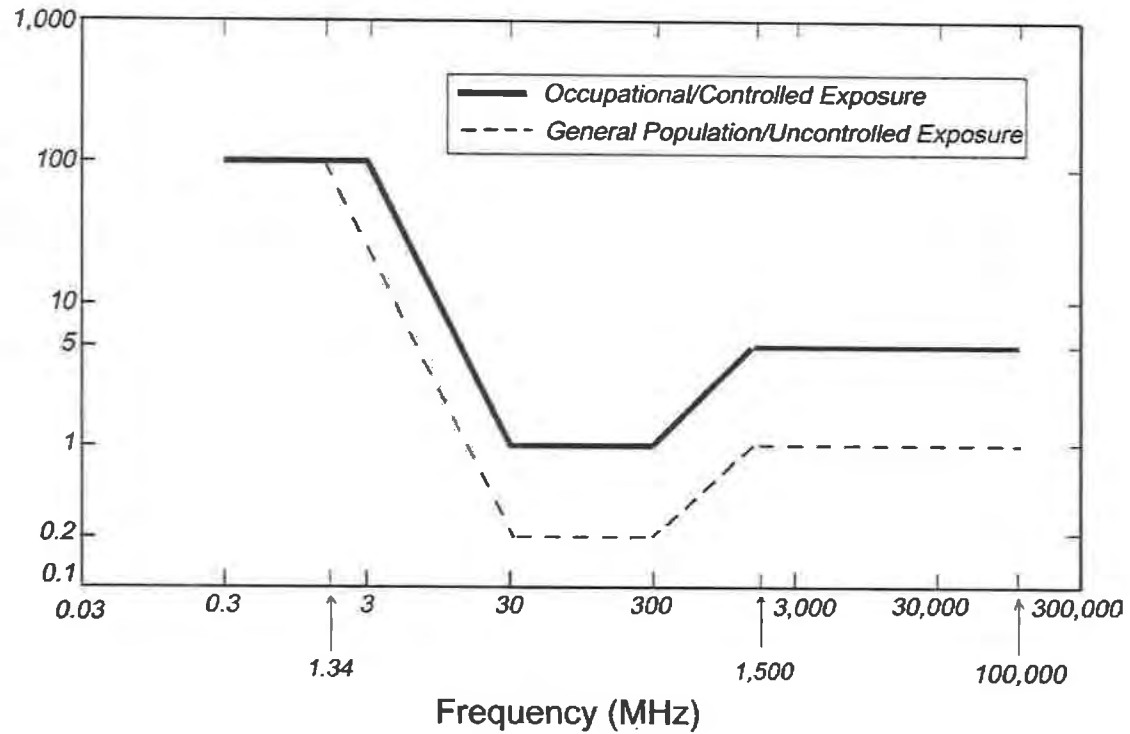
NOTE 1: **Occupational/controlled** limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2: **General population/uncontrolled** exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

 6/5/19

Attachment A - Application

Figure 1. *FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density*



MS 6/5/19



11 Mile New Tower (578) Radio Frequency (RF) Site Compliance Report



Mendenhall Valley, Juneau, AK, USA

MD 6/5/19



Radio Frequency Exposure Report

FCC Compliance Assessment

Site Specific Information			
Site Name	11 Mile New Tower (578)	Categorically Excluded?	No
Street Address	Mendenhall Valley		
City, State, Zip	Juneau, AK, USA	5% Contributor to Areas Requiring Mitigation?	No
Multi-Licensee Facility	N/A	GCI's Max % MPE (Predictive - Occupational)	0.00%
Structure Type	Tower	GCI's Max % MPE (Measured - Occupational)	N/A
Broadcast Equipment	No	Assessment Date	05/23/2019
# of Access Points		N/A	

Compliance Status	COMPLIANT AS DESIGNED
-------------------	-----------------------

☒	Worst-case RF power density levels are BELOW the MPE for General Population/Uncontrolled Environments in accessible areas.
☐	Worst-case RF power density levels are ABOVE the MPE for General Population/Uncontrolled Environments but BELOW the MPE for Occupational/Controlled environments.
☐	Worst-case RF power density levels are ABOVE the MPE for Occupational/Controlled Environments but BELOW 10x the MPE for Occupational/Controlled environments.
☐	Worst-case RF power density levels are ABOVE 10x the MPE for Occupational/Controlled environments.

Compliance Requirements					
	Guidelines	Notice	Caution	Warning	NOC Information
Access Point	☒ [1]	☐ [#]	☐ [#]	☐ [#]	☐ [#]
Alpha	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]
Beta	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]
Gamma	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]

Additional Compliance Requirements(s):

Consultant Legal Name	GCB Services	Phone/Fax	(703) 564-2297
Address	8201 Greensboro Drive, Suite 300, McLean, VA 22102		

Handwritten signature and date 6/5/19

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1. Summary

GCI has contracted with GCB Services, an independent consulting firm, to conduct a Radio Frequency Exposure Compliance Assessment of the **11 Mile New Tower (578)** cell site. This report contains a detailed summary of the Radio Frequency environment as it relates to Federal Communications Commission (FCC) and Occupational Safety & Health Administration (OSHA) Rules and Regulations for all individuals.

This compliance assessment and report has been **prepared** by:

Preparer	
Name	Bipin Kumar
Title	RF Associate
Date	05/23/2019

This report utilizes the following **for predictive modeling of the ambient RF environment**:

MPE Modeling Program: ROOFMASTER 10.0.3.20.15

Required Modeling Assumptions: 100% Duty Cycle and Maximum Total Power Output.

Additional Modeling Assumptions:

For this report, in the simulation we have shown the maximum RF energy density considering worst-case analysis by assuming that all antennas are operating at full power all times.

In OET-65, the Cylindrical Model is presented as an approach to determine the spatially averaged power density in the near field directly in front of an antenna. In order to implement this model in all directions, RoofMaster™ utilizes the antenna manufacturer horizontal pattern data. Additionally, RoofMaster™ incorporates factors that reduce the power density by the inverse square of horizontal and vertical distance beyond the near field region.

For areas on the rooftop where MPE levels are more than 20% occupational, reports shows location of signage and barriers around restricted areas. These restricted areas should not be entered without taking proper steps towards reducing carrier power or tuning the site down. Personal accessing these restricted areas should carry a personal RF monitor.

For unknown antennas on the rooftop, GCB will use generic antennas listed as "Unknown". We will use max output power to model the site. Operating frequency information for unknown antenna will be selected such as to get per max antenna gain.



2. Site Characteristics**a. Access information**

- No site visit was done. This report is for desktop study only.

All access points locked at time of assessment?

N/A

b. Structure

Description	GCI antennas are installed at the height of 140' from ground level. This site has three sectors (ALPHA, BETA and GAMMA) are mounted on Azimuth 50°, 160 °and 315° respectively.
Site Latitude (NAD 83)	58.369692°
Site Longitude (NAD 83)	-134.610558°
Overall Structure Height	N/A



C. Antenna Inventory

Ant#	Carrier Name	Freq.(MHz)	ERP(Watts)	Manufacturer	Model	(ft) X	(ft) Y	(ft) Z	Gain(dbd)	Azimuth	HBW	Down tilt	Length(m)
1	GCI	CDMA 1967.5	784	Kathrein	80010891	14.3	14.2	140	15.35	50	63	0	1.99
1	GCI	UMTS 1952.5	567	Kathrein	80010891	14.3	14.2	140	15.35	50	63	0	1.99
1	GCI	LTE 2127.5	2100	Kathrein	80010891	14.3	14.2	140	15.35	50	62	0	1.99
1	GCI	LTE 885	1120	Kathrein	80010891	14.3	14.2	140	14.35	50	64	0	1.99
2	GCI	CDMA 1967.5	784	Kathrein	80010891	14.6	1	140	15.35	160	63	0	1.99
2	GCI	UMTS 1952.5	567	Kathrein	80010891	14.6	1	140	15.35	160	63	0	1.99
2	GCI	LTE 2127.5	2100	Kathrein	80010891	14.6	1	140	15.35	160	62	0	1.99
2	GCI	LTE 885	1120	Kathrein	80010891	14.6	1	140	14.35	160	64	0	1.99
3	GCI	CDMA 1967.5	784	Kathrein	80010891	0.1	8.2	140	15.35	315	63	0	1.99
3	GCI	UMTS 1952.5	567	Kathrein	80010891	0.1	8.2	140	15.35	315	63	0	1.99
3	GCI	LTE 2127.5	2100	Kathrein	80010891	0.1	8.2	140	15.35	315	62	0	1.99
3	GCI	LTE 885	1120	Kathrein	80010891	0.1	8.2	140	14.35	315	64	0	1.99

Ground level

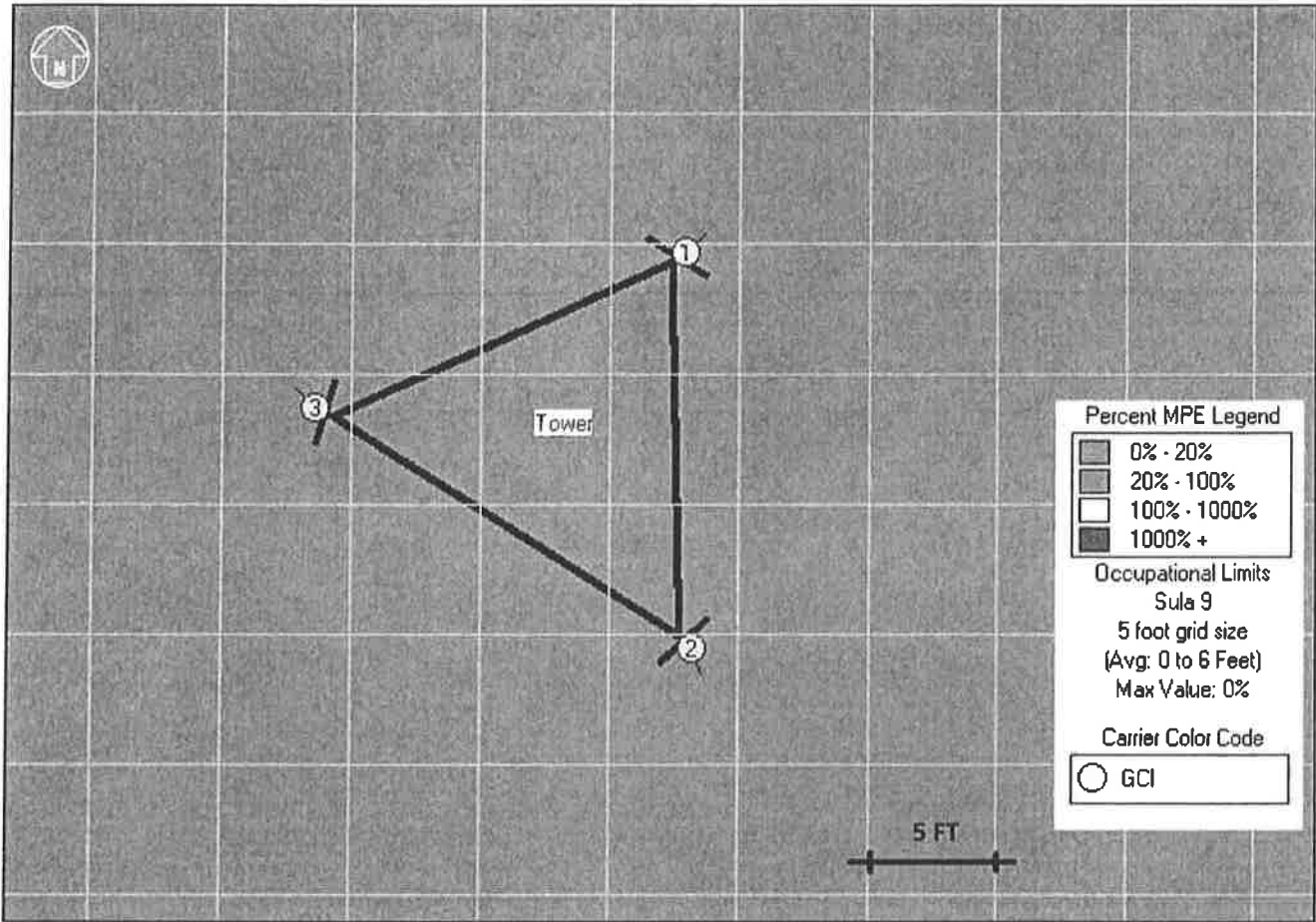
Z height = 140'

- a. The Centerline of the GCI antennas from ground level are 140'.

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6/5/19

3. Theoretical Study

a. Predictive Model: All Transmitters at Ground Level



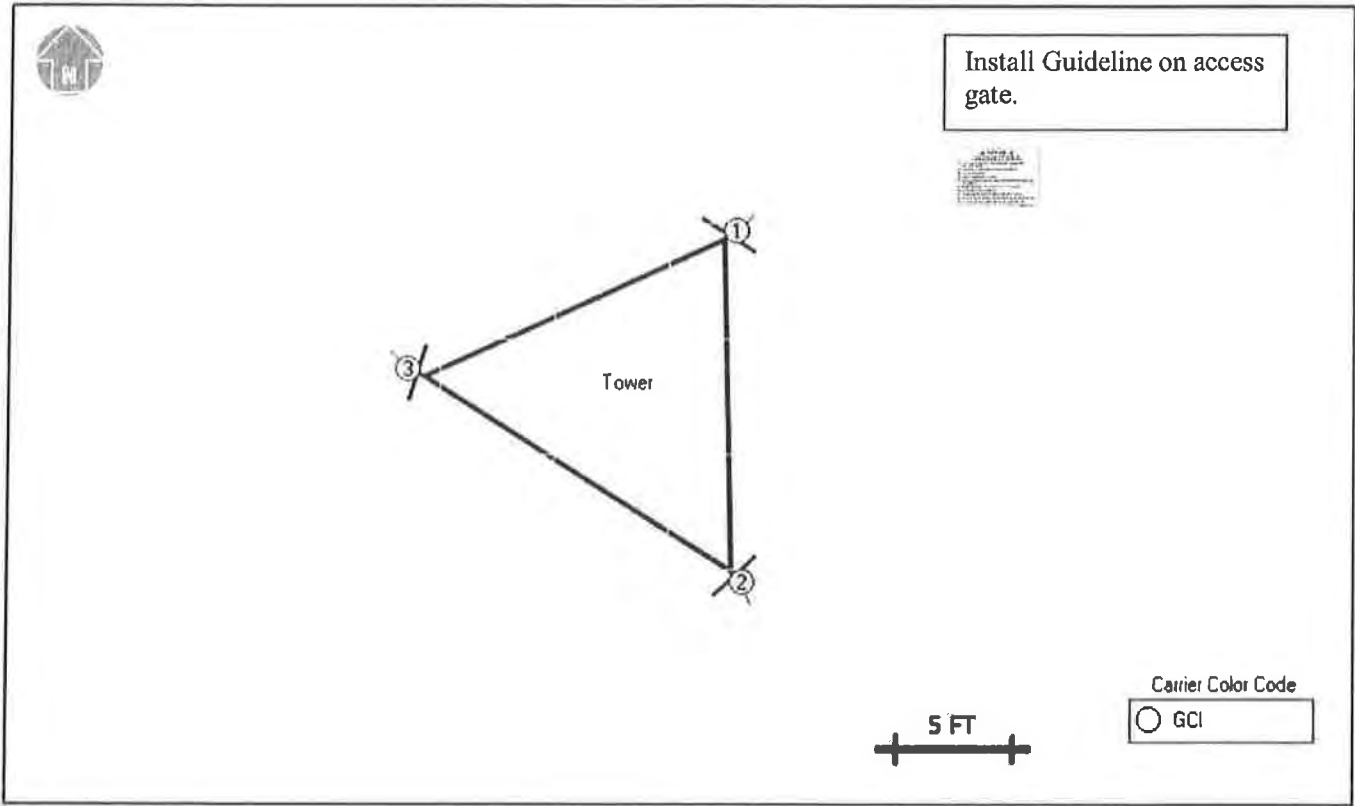
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6/5/19

4. Conclusion from theoretical analysis and field visit**a. Narrative****Description of MPE-Limit Exceeding Areas:****Ground Level**

Simulation result based on the worst-case conditions for all existing antennas at this level show MPE 0.00% of the Occupational limits. No mitigation required.



b. GCI Signage/Barrier Diagram



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6/5/19

<u>GCI Signage Details</u>						
	Guidelines	Notice	Caution	Warning	NOC Information	Barrier/Marker
Access Point	☒ [1]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐
Alpha	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐
Beta	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐
Gamma	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐

c. Signage/Barrier Installation Detail**Access**

Install Guidelines signs on the access gate.

Sector Antennas

No Action required.

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6/5/19

5. Appendix A: RF Consultant Certifications**a. Preparer Certification**

I, Bipin Kumar, the preparer of this report, am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I am also fully aware of and familiar with the GCI Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

Bipin Kumar**b. Reviewer Certification**

I, Gyan Pandey, the reviewer and approved of this report, am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I am also fully aware of and familiar with the GCI Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

Gyan Pandey

6. Appendix B: Reference Information

a. FCC Rules & Regulations

The Federal Communications Commission (FCC) has established safety guidelines relating to RF exposure from cell sites. The FCC developed those standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The FCC explains that its standards "incorporate prudent margins of safety." The following represents explanations of the most applicable information:

Two Classifications for Exposure Limits

Occupational Applies to situations in which persons are "exposed as a consequence of their <i>employment</i> " and are " <i>fully aware</i> of the potential for exposure and can <i>exercise control</i> over their exposure".	General Population Applies to situations in which persons are "exposed as a consequence of their employment <i>may not be made fully aware</i> of the potential for exposure or <i>cannot exercise control</i> over their exposure". Generally speaking, those without significant and documented RF Safety & Awareness training would be in the General Population classification.
--	--

Environment Classification

Controlled – Applies to environments that are restricted or "controlled" in order to prevent access from members of the General Population classification.	Uncontrolled – Applies to environments that are unrestricted or "uncontrolled" that allow access from members of the General Population classification.
---	--

<i>Limits for Occupational/Controlled Exposure</i>		
Frequency	Power Density	Averaging Time
Range	(S)	$ E ^2$, $ H ^2$, or S
(MHz)	(mW/cm ²)	(minutes)
300-1500	$f/300$	6
1500-100,000	5	6
<i>Limits for General Population/Uncontrolled Exposure</i>		
Frequency	Power Density	Averaging Time
Range	(S)	$ E ^2$, $ H ^2$, or S
(MHz)	(mW/cm ²)	(minutes)
300-1500	$f/1500$	30
1500-100,000	1	30
<i>f = frequency in MHz</i>		

Significant Contribution to the RF Environment

Any carrier contributing an aggregate MPE percentage of 5 or more (to the applicable RF Environment Classification) is defined as a significant contributor. This means that if any area is determined to be out of compliance with FCC rules, all significant contributors are jointly responsible for correcting any deficiencies.

b. Occupational Safety and Health Administration (OSHA) Requirements

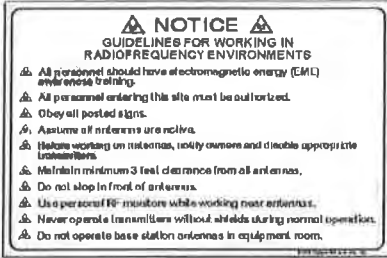
A formal adopter of FCC Standards, OSHA stipulates that those in the Occupational classification must complete training in the following: RF Safety, RF Awareness, and Utilization of Personal Protective Equipment. OSHA also provides options for Hazard Prevention and Control:

Hazard Prevention	Control
- Utilization of good equipment - Enact control of hazard areas - Limit exposures - Employ medical surveillance and accident response	- Employ Lockout/Tag out - Utilize personal alarms & protective clothing - Prevent access to hazardous locations - Develop or operate an administrative control program

[Handwritten signature]
6/5/19

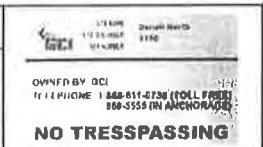
c. RF Signage

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines. These areas must be demarcated by conspicuously posted signage that identifies the potential exposure. Signage MUST be viewable regardless of the viewer's position.

GUIDELINES	NOTICE	CAUTION	WARNING
This sign will inform anyone of the basic precautions to follow when entering an area with transmitting radiofrequency equipment.	This sign indicates that RF emissions may exceed the FCC General Population MPE limit.	This sign indicates that RF emissions may exceed the FCC Occupational MPE limit.	This sign indicates that RF emissions may exceed at least 10x the FCC Occupational MPE limit.
 NOTICE GUIDELINES FOR WORKING IN RADIOFREQUENCY ENVIRONMENTS △ All personnel should have electromagnetic energy (EMF) awareness training. △ All personnel entering this site must be authorized. △ Obey all posted signs. △ Assume all antennas are active. △ Helicopters working on antennas, rotary owners and disable appropriate transmitters. △ Maintain minimum 3 feet distance from all antennas. △ Do not stop in front of antennas. △ Use personal RF monitors while working near antennas. △ Never operate transmitters without shields during normal operations. △ Do not operate base station antennas in equipment room.	 NOTICE Radio frequency fields beyond this point may exceed the FCC general public exposure limit. Obey all posted signs and site guidelines for working in radio frequency environments.	 CAUTION Beyond this point: Radio frequency fields at this site may exceed FCC rules for human exposure. For your safety, obey all posted signs and site guidelines for working in radio frequency environments.	 WARNING Beyond this point: Radio frequency fields at this site exceed the FCC rules for human exposure. Failure to obey all posted signs and site guidelines for working in radio frequency environments could result in serious injury.

INFORMATION SIGN

Information signs are used as a means to provide contact information for any questions or concerns. They will include specific cell site identification information and the GCI Wireless Network Operations Center phone number.



d. Physical Barriers

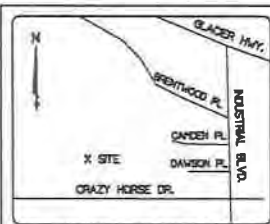
Physical barriers are control measures that require awareness and participation of personnel. Physical barriers are employed as an additional administration control to complement RF signage and physically demarcate an area in which RF exposure levels may exceed the FCC General Population limit.

e. Indicative Markers

Indicative markers are visible control measures that require awareness and participation of personnel, as they cannot physically prevent someone from entering an area of potential concern. Indicative markers are employed as an additional administration control to complement RF signage and visually demarcate an area in which RF exposure levels may exceed the FCC General Population limit. Example:

[Handwritten signature]
6/5/19

Attachment A - Application

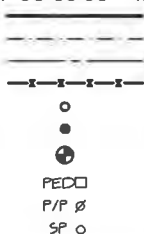


VICINITY MAP NOT TO SCALE

LEGEND:

MEASURED DATA
RECORD DATA
PROPERTY BOUNDARY LINES
ADJACENT PROPERTY LINES
CENTERLINE
FENCE AS NOTED
RECOVERED 5/8" REBAR
SET 5/8" REBAR (LS 9106)
RECOVERED MONUMENT
UTILITY PEDESTAL
POWER POLE
SEPTIC PIPES

N 90°00'00" W
(N 90°00'00" W)



NUM	BEARING	DISTANCE
L1	N73°37'48"W	108.03'
L2	N71°16'40"W	154.99'
L3	N35°28'31"W	28.22'
L4	N89°37'43"W	192.50'
L5	N89°54'01"W	75.00'
L6	N 0°05'59"E	75.00'
L7	S89°54'01"E	75.00'
L8	S 0°05'59"W	75.00'

FAA 1-A TOWER LOCATION INFORMATION: PROPOSED 150'± SELF SUPPORT TOWER

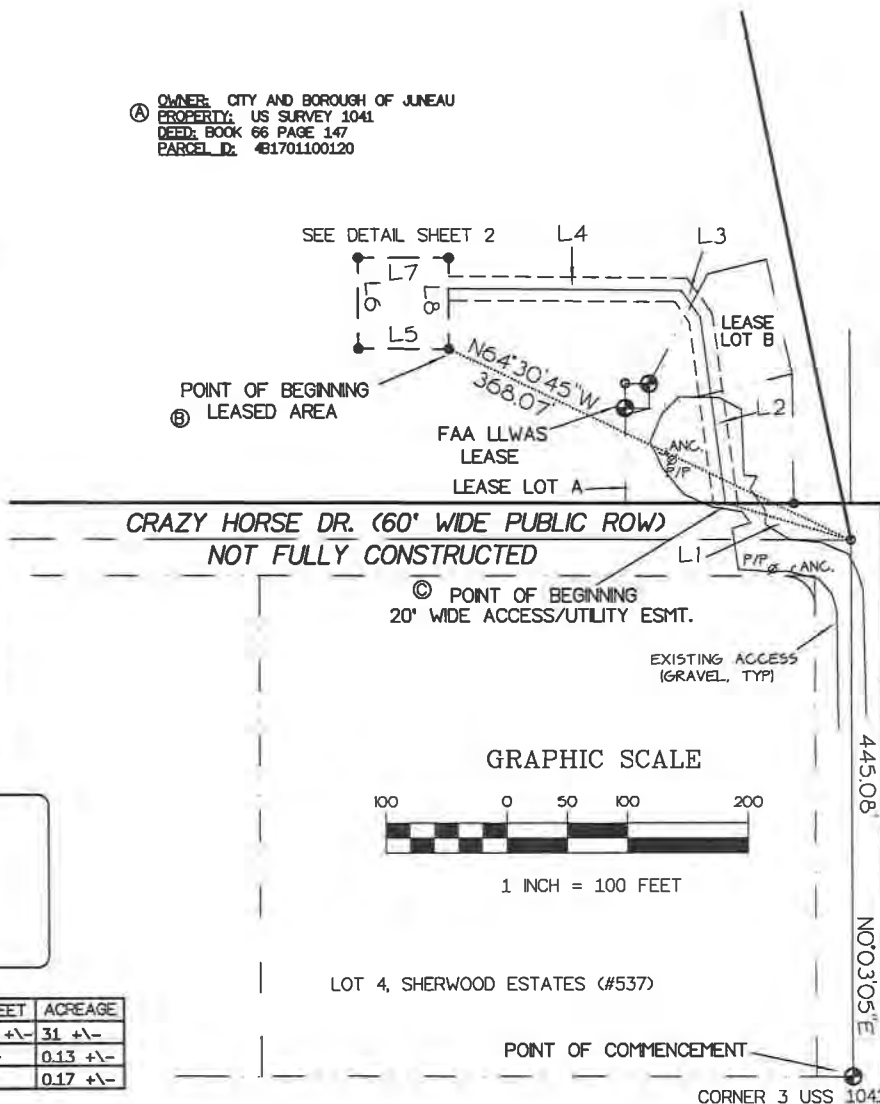
NAD 83
LATITUDE = 58°22'01.135" N ± 20"
LONGITUDE = 134°36'38.975" W ± 20"

GROUND ELEVATION AT BASE OF TOWER = 24' ± 3' NAVD83
HEIGHT OF TOP OF TOWER ABOVE GROUND = 174'±3'

	AREA TABLE	SQUARE FEET	ACREAGE
(A)	PARENT PARCEL	1,350,360 ±	31 ±
(B)	LEASED AREA	5,625 ±	0.13 ±
(C)	NON-EXCLUSIVE ACCESS & UTILITY ESMT.	7,514 ±	0.17 ±

SITE OVERVIEW: (1"=100')

(A) OWNER: CITY AND BOROUGH OF JUNEAU
PROPERTY: US SURVEY 1041
DEED: BOOK 66 PAGE 147
PARCEL ID: 481701100120



SITE PLAN

U.S. SURVEY NO 1041 - JUNEAU ALASKA

SURVEYOR'S NOTES

1. BASIS OF BEARING IS PER RECORD PLAT OF US SURVEY NO. 1041.
2. NO SUBSURFACE INVESTIGATION WAS PERFORMED TO LOCATE UNDERGROUND UTILITIES. UTILITIES SHOWN HEREON ARE LIMITED TO AND ARE PER OBSERVED EVIDENCE ONLY.
3. ALL VISIBLE TOWER EQUIPMENT AND IMPROVEMENTS ARE CONTAINED WITHIN THE DESCRIBED AREA.
4. SURVEY COMPLETED IN FEBRUARY 2019.
5. THIS SURVEY DOES NOT REPRESENT A SURVEY OF THE PARENT PARCEL. REAL PROPERTY SHOWN HEREON ARE APPLICABLE TO THE TELECOMMUNICATIONS SITE, THERE MAY BE OTHER IMPROVEMENTS NOT SHOWN.
6. NO TITLE REPORT PROVIDED FOR THIS PROJECT.

ZONING: PER CITY AND BOROUGH OF JUNEAU ASSESSOR'S DATA, PROPERTY IS ZONED AS INDUSTRIAL.

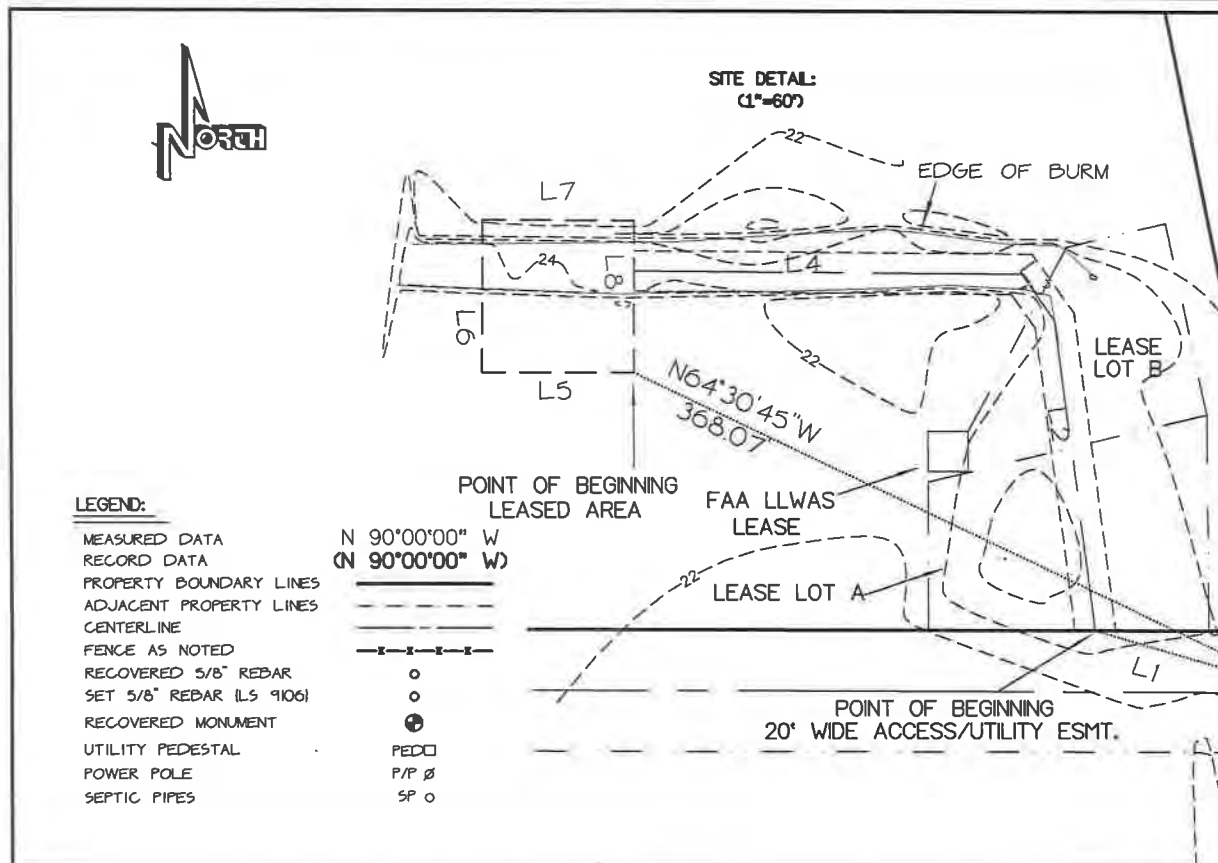
FLOOD NOTE: THIS PARCEL LIES WITHIN FLOOD ZONE X, PER FEMA MAP NUMBER 0210C15260, WITH AN EFFECTIVE DATE OF AUGUST 19, 2013.



ACUTEK GEOMATICS, LLC
TERRY L. NICODEMUS, PLS
LAND SURVEYOR, ALASKA #9106-S
Date: 3/4/2019

CENTERLINE SOLUTIONS	
SITE NAME: AK 11 MILE	
ADDRESS: 10020 CRAZY HORSE DR.	
JUNEAU, ALASKA 99801	
CITY AND BOROUGH OF JUNEAU	
SURVEY WORK PERFORMED BY:	
ACUTEK	
GEOMATICS LLC	
5099 E. BLUE LUPINE DR #104, WASILLA AK 99654	
(907) 376-8800 FAX (907) 376-9629 ACUTEKSURVEY.COM	
DRAWN BY: TENDRA	CHECKED BY: TERRY
JOB #: 19-08.02	
SHEET 1 OF 2	

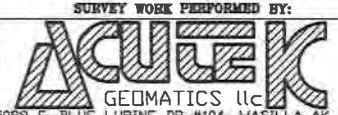
Attachment A - Application



NUM	BEARING	DISTANCE
L1	N73°37'48"W	108.03'
L2	N7°16'40"W	154.99'
L3	N35°28'31"W	28.22'
L4	N89°37'43"W	192.50'
L5	N89°54'01"W	75.00'
L6	N 0°05'59"E	75.00'
L7	S89°54'01"E	75.00'
L8	S 0°05'59"W	75.00'

LEGAL DESCRIPTION: (PARENT PARCEL)

REMAINDER OF US SURVEY NO. 1041 AS DESCRIBED IN QUITCLAIM DEED BOOK 66 AT PAGE 147, JUNEAU RECORDING DISTRICT, STATE OF ALASKA.

CENTERLINE SOLUTIONS		
SITE NAME: AK 11 MILE		
ADDRESS: 10020 CRAZY HORSE DR.		
JUNEAU, ALASKA 99801		
CITY AND BOROUGH OF JUNEAU		
SURVEY WORK PERFORMED BY:		
		
5099 E. BLUE LUPINE DR #104, WASILLA AK 99654 (907) 376-8800 FAX (907) 376-9629 ACUTEKSURVEY.COM		
DRAWN BY: TENDRA	CHECKED BY: TERRY	JOB #: 19-08.02
SHEET 2 OF 2		



AK 11 MILE

Visualization Report

CONTACT

Centerline Solutions
Jay Rasmusson
Construction Manager
360-250-4265

Address:
2305 46th Ave NE,
Olympia, WA 98506

Email:
jrasmusson@centerlinesolutions.com

Balloon Test – Proposed 150' Self Support Telecommunications Tower

AK 11-Mile
10020 Crazy Horse Dr
Juneau, AK 99801

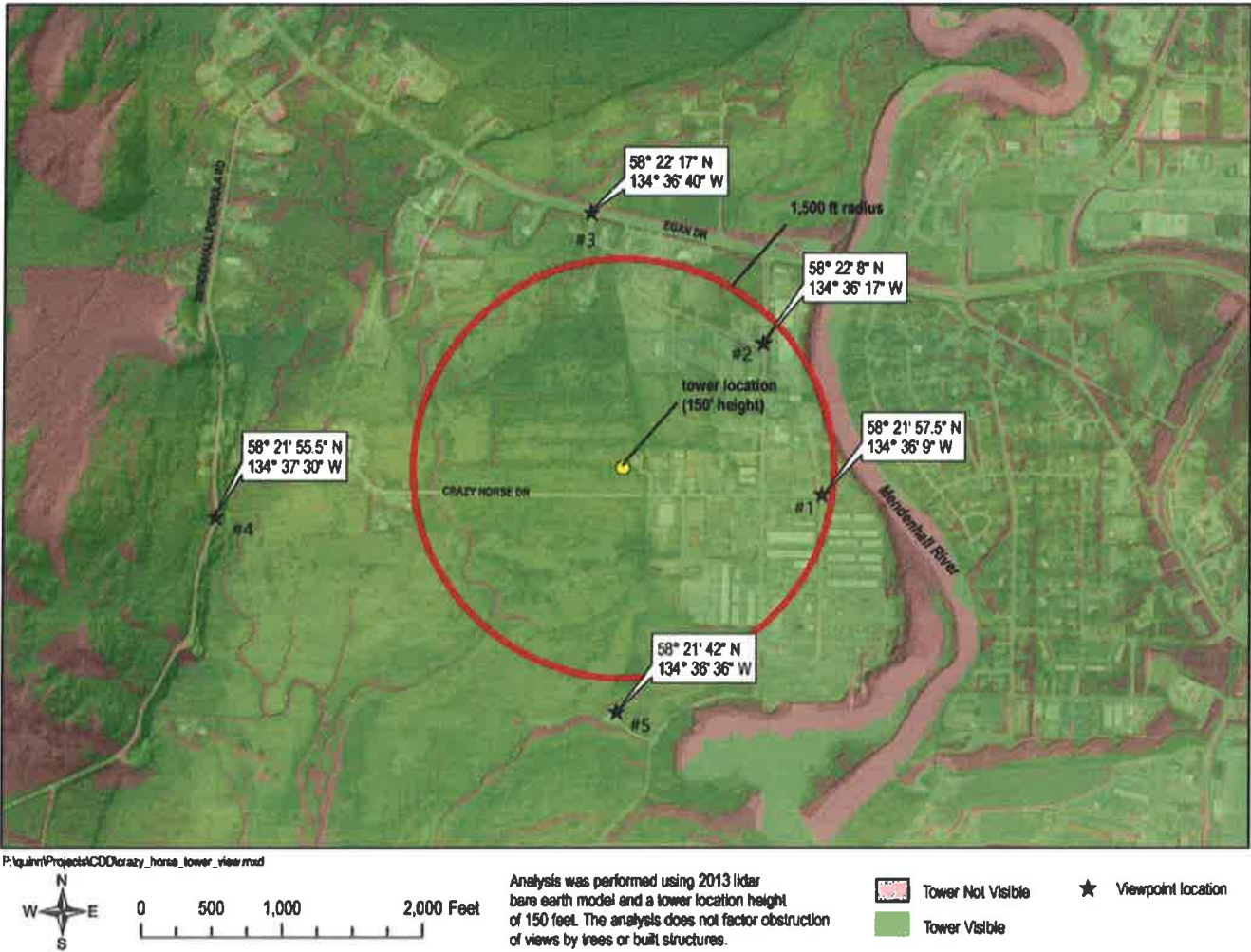
The CBJ was notified of the scheduled balloon test on Friday March 21st, 2019. A reminder email was sent on April 8th. The test was scheduled Saturday April 13th, and continue through the following Tuesday, April 16th to meet the 72 hr. requirement of one (1) full day of the 72 hours being on a Saturday or Sunday. The test was completed during this time.

Balloon Test Overview:

- Balloon #1 & #2 were made of latex. They were both 36" diameter and filled with helium and were bright orange in color.
- Both balloons were anchored to the ground with nylon twine at the survey staked, tower location.
- The line used, was measured out to 160' (although the tower is a proposed 150') – due to potential line sag an extra 10' was added to the overall required length.
- Balloon #1 was sent aloft at 9:30am Saturday, April 13th with cloudy skies and 8 mph winds.
- Balloon #1 stayed aloft until Sunday evening at, 8 pm (almost dark) when heavy rain and hail appeared, and it popped. The local businesses were closed, and a replacement Balloon #2 was sent aloft at 8am Monday Morning as soon as helium was available.
- Balloon #2 stayed aloft the duration of the test with light winds through Tuesday, April 16th at 5pm, when the balloon was pulled down.
- The CJB provided documentation to provide photos from five (5) locations within 1,500' of the test site. These photos were obtained, and documented the morning of Saturday, April 13th with winds gusting 4-8mph. Winds continued through the test period and were never less than this.

VIEWPOINTS

Location Map provided by the CBJ and photographs were obtained from each of the locations provided.



BALLOON AND ANCHOR LOCATION

A 36" diameter, helium filled, latex balloon was utilized for the testing. The survey stake is the proposed tower location at the site.



BALLOON ALOFT AT ANCHOR POINT

View of the balloon from ground level.



VIEWPOINT #1 – INTERSECTION OF BRANDY LN & CRAZY HORSE DR

Lat & Long provided by the CBJ, accuracy being +/- 30' to the exact location provided.

In this photo, you can see the balloon to the right of the adjacent, existing FAA tower.



VIEWPOINT #2 – INTERSECTION OF INDUSTRIAL BLVD & BENTWOOD PL

Lat & Long provided by the CBJ, accuracy being +/- 30' to the exact location provided.

In this photo, you can see the balloon just above roof line of the buildings in the foreground.



VIEWPOINT #3 – INTERSECTION OF GLACIER HWY & JENSINE ST.

Lat & Long provided by the CBJ, accuracy being +/- 30' to the exact location provided.

You cannot see the balloon from this location due to the dense tree cover.



VIEWPOINT #4 – 2331 ENGINEERS CUTOFF RD

Lat & Long provided by the CBJ, accuracy being +/- 30' to the exact location provided.

In this photo, you can see the balloon you can see the balloon just to the left of the existing FAA tower.



VIEWPOINT #5 – MENDENHALL GOLF COURSE PARKING LOT

Lat & Long provided by the CBJ, accuracy being +/- 30' to the exact location provided.

You cannot see the balloon from this location due to the dense tree cover.



VIEWPOINT #6 – DOUGLAS ISLAND LAUNCH

Although outside the required 1500' radius the CBJ suggested a photo of a location found outside the 1,500' radius that the balloon was visible. This location is located approximately 3 miles away on Douglas Island at the boat launch directly across the water from the proposed site. From this location you can see the balloon, and several existing communication towers.



Certificate of AM Regulatory Compliance

Site Name US-AK-5244 11 Mile

Location N58-22-01.13 W134-36-38.97

Client BRT Group, LLC

Certification Date 4/10/2019

According to the Federal Communications Commission (FCC) Rules and Regulations,

"§1 Subpart AA. Disturbance of AM broadcast station antenna patterns
Part §1.30000 Purpose.

This rule protects the operations of AM broadcast stations from nearby tower construction that may distort the AM antenna patterns. All parties holding or applying for Commission authorizations that propose to construct or make a significant modification to an antenna tower or support structure in the immediate vicinity of an AM antenna, or propose to install an antenna on an AM tower, are responsible for completing the analysis and notice process described in this subpart, and for taking any measures necessary to correct disturbances of the AM radiation pattern, if such disturbances occur as a result of the tower construction or modification or as a result of the installation of an antenna on an AM tower. In the event these processes are not completed before an antenna structure is constructed, any holder of or applicant for a Commission authorization is responsible for completing these processes before locating or proposing to locate an antenna on the structure, as described in this subpart.

Part §1.30002 Tower construction or modification near AM stations.

(a) Construction near a nondirectional AM station. Proponents of construction or significant modification of a tower which is within one wavelength of a nondirectional AM station, and is taller than 60 electrical degrees at the AM frequency, must notify the AM station at least 30 days in advance of the commencement of construction. The proponent shall examine the potential impact of the construction or modification as described in paragraph (c). If the construction or modification would distort the radiation pattern by more than 2 dB, the proponent shall be responsible for the installation and maintenance of any detuning apparatus necessary to restore proper operation of the nondirectional antenna.

(b) Construction near a directional AM station. Proponents of construction or significant modification of a tower which is within the lesser of 10 wavelengths or 3 kilometers of a directional AM station, and is taller than 36 electrical degrees at the AM frequency, must notify the AM station at least 30 days in advance of the commencement of construction. The proponent shall examine the potential impact of the construction or modification as described in paragraph (c). If the construction or modification would result in radiation in excess of the AM station's licensed standard pattern or augmented standard pattern values, the proponent shall be responsible for the installation and maintenance of any detuning apparatus necessary to restore proper operation of the directional antenna."

This certificate verifies that the site at the above coordinates has been screened out to 3.2 km for directional antenna AM stations and 1.2 km distance for non-directional antenna AM stations and found to have no AM broadcast stations currently licensed to operate within those distances. Current FCC rules coordination distances are less as calculated in the above FCC rule §1.30002 adopted February 2014. Structure height is also considered in the current FCC rules. No further AM coordination actions are warranted at this time.



8618 Westwood Center Drive, Suite 315
Vienna, VA 22182
703-276-1100
www.sitesafe.com
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```

*****
*                               Federal Airways & Airspace
*
*                               Summary Report: New Construction
*
*                               Antenna Structure
*
*****

Airspace User: Dawn Keniley

File: USAK5244

Location: Juneau, AK

Latitude: 58°-22'-01.13"      Longitude:
134°-36'-38.97"

SITE ELEVATION AMSL.....24 ft.
STRUCTURE HEIGHT.....150 ft.
OVERALL HEIGHT AMSL.....174 ft.
SURVEY HEIGHT AMSL.....174 ft.

```

NOTICE CRITERIA

```

FAR 77.9(a): NNR (DNE 200 ft AGL)
FAR 77.9(b): NR (Exceeds Notice Slope, Maximum: 62 ft.)
FAR 77.9(c): NNR (Not a Traverse Way)
FAR 77.9: NR Exceeds JNU Proposed Rwy 08P, TERPS
analysis required.

```

```

FAR 77.9(d): NNR (Off Airport Construction)

```

```

NR = Notice Required

```

```

NNR = Notice Not Required

```

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PNR = Possible Notice Required (depends upon actual IFR
procedure)

```

```

For new construction review Air Navigation
Facilities at bottom
of this report.

```

```

Notice to the FAA is required because height exceeds
Notice Slope criteria.

```

```

Notice is required. Height exceeds FAA IFR straight-in
screening criteria.

```

```

The maximum height to avoid notice is: 20 ft AMSL.

```

OBSTRUCTION STANDARDS

```

FAR 77.17(a)(1): DNE 499 ft AGL

```

```

FAR 77.17(a)(2): DNE - Airport Surface

```

```

FAR 77.19(a): DNE - Horizontal Surface

```

```

FAR 77.19(b): DNE - Conical Surface

```

FAR 77.19(c): DNE - Primary Surface
 FAR 77.19(d): DNE - Approach Surface
 FAR 77.19(e): DNE - Approach Transitional Surface
 FAR 77.19(e): DNE - Abeam Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: JNU: JUNEAU INTL

Type: A RD: 4174.986 RE: 20.6

FAR 77.17(a)(1): DNE

FAR 77.17(a)(2): DNE - Height No Greater Than 200 feet AGL.

VFR Horizontal Surface: DNE

VFR Conical Surface: DNE

VFR Primary Surface: DNE

VFR Approach Surface: DNE

VFR Transitional Surface: DNE

The structure is within VFR - Traffic Pattern Airspace
 Climb/Descent Area.

Structures exceeding the greater of 350' AAE, 77.17(a)(2),
 or VFR horizontal

and conical surfaces will receive a hazard determination
 from the FAA.

Maximum AMSL of Climb/Descent Area is 375 feet.

VFR TRAFFIC PATTERN AIRSPACE FOR: 5Z1: JUNEAU HARBOR

Type: S RD: 45916.54 RE: 0

FAR 77.17(a)(1): DNE

FAR 77.17(a)(2): DNE - Greater Than 5.99 NM.

VFR Horizontal Surface: DNE

VFR Conical Surface: DNE

VFR Primary Surface: DNE

VFR Approach Surface: DNE

VFR Transitional Surface: DNE

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)

FAR 77.17(a)(3) Departure Surface Criteria (40:1)

The Maximum Height Permitted is 124 ft AMSL

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)

FAR 77.17(a)(4): DNE - No Airway Found

PRIVATE LANDING FACILITIES

FACIL	BEARING	RANGE
DELTA ARP FAA	To FACIL	IN NM
IDENT TYP NAME		
ELEVATION IFR		

18AK HEL NORTH DOUGLAS	120.19	4.16
------------------------	--------	------

+149

No Impact to Private Landing Facility
 Structure is beyond notice limit by 20277 feet.

5.13 AA44 HEL BARLETT REGIONAL HOSPITAL 116.78
 -122
 No Impact to Private Landing Facility
 Structure 122 ft below heliport.

+24 AK94 HEL ALASCOM/COASTAL LENA POINT 285.38 5.43
 No Impact to Private Landing Facility
 Structure is beyond notice limit by 27993 feet.

AIR NAVIGATION ELECTRONIC FACILITIES

GRND	FAC	ST	DIST	DELTA	ANGLE	IDNT	TYPE	AT	FREQ	VECTOR	(ft)	ELEVA	ST	LOCATION
APCH					BEAR									
	JDL	LOCALIZER	I	109.9	238.73	5699	+9	AK	RWY	08				
JUNEAU	INT	.09	71											
	CGL	NDB	R	21	260.6	17248	+116	AK	COGHLAN					
ISLAND		.39												
	SSR	VORTAC	R	114.0	240.71	142671	+134	AK	SISTERS					
ISLAND		.05												

CFR Title 47, §1.30000-§1.30004

AM STUDY NOT REQUIRED: Structure is not near a FCC
 licensed AM station.

Movement Method Proof as specified in §73.151(c) is not
 required.

Please review 'AM Station Report' for details.

Nearest AM Station: KJNO @ 9087 meters.

Airspace® Summary Version 19.3.529

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 Airways & Airspace®

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04-10-2019

17:28:19

FAA 1-A Accuracy Certification

Date of Survey: February 2019

Market: Alaska

Site Address:

10020 Crazy Horse Dr.
Juneau, Alaska 99801

Site Name: AK 11 Mile

Project #: 19-08.02

Proposed Structure Type: Self Support Tower

Surveyed Latitude (NAD 83)

N 58°22'01.135"

Surveyed Longitude (NAD 83)

W 134°36'38.975"

Ground Elevation: (NAVD 1988)

24'

Proposed Tower Height:

150'

Overall Tower Height (NAVD 1988)

174.0

Certification: I certify that the latitude and longitude are accurate to within +/- 20 feet horizontally, and that the ground elevation is accurate to within +/- 3 feet vertically. The horizontal datum (coordinates) are expressed in degrees, minutes, and seconds to the nearest hundredth of a second. The vertical datum (height) is expressed in terms of feet.

Company: Acutek Geomatics
5099 E. Blue Lupine Dr., Ste. 104
Wasilla, Alaska 99654
907-376-8800

3/4/2019



10020 CRAZY HORSE.



US-AK-5244 - 11 MILE

10020 CRAZY HORSE DR
JUNEAU, AK 99801

ZONING DRAWINGS



PROJECT SUMMARY

THIS PROJECT INCLUDES THE FOLLOWING SCOPE OF WORK:

CONSTRUCTION OF A NEW TELECOMMUNICATION AND PUBLIC UTILITY FACILITY CONSISTING OF A NEW 150'-0" MONOPOLE, CARRIER EQUIPMENT AND A UTILITY BACKBOARD INSIDE A NEW 60'x60' FENCED COMPOUND WITHIN A 75'x75' LEASE AREA. (NO WATER OR SEWER IS REQUIRED.)

GOVERNING CODES

GOVERNING CODES

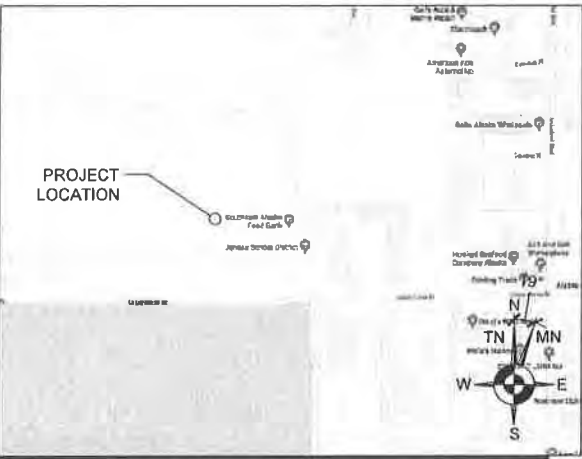
IBC-2015, INTERNATIONAL BUILDING CODE W/ LOCAL AMENDMENTS

NEC-2014, NATIONAL ELECTRICAL CODE

A.D.A. COMPLIANCE

INSTALLATION IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED PER A.D.A.

PROJECT VICINITY MAP



DRIVING DIRECTIONS

FROM JUNEAU INTERNATIONAL AIRPORT:

1. HEAD SOUTH ON SHELL SIMMONS DR TOWARD YANDUKIN DR (0.2 MI)
2. TURN LEFT ONTO YANDUKIN DR (0.2 MI)
3. TURN RIGHT ONTO SHELL SIMMONS DR (0.2 MI)
4. TURN LEFT ONTO GLACIER HWY (0.3 MI)
5. TURN LEFT TO STAY ON GLACIER HWY (0.7 MI)
6. TURN LEFT ONTO INDUSTRIAL BLVD (0.3 MI)
7. TURN RIGHT ONTO CRAZY HORSE DR;
PARTIAL RESTRICTED ACCESS ROAD, DESTINATION ON THE RIGHT (0.2 MI)

ESTIMATED DISTANCE: 2.1 MILES
ESTIMATED TIME: 9 MIN

SITE INFORMATION

SITE NAME: 11 MILE
SITE ADDRESS: 10020 CRAZY HORSE DR
JUNEAU, AK 99801
LATITUDE: 58° 22' 01.135" N
LONGITUDE: 134° 36' 38.975" W
SOURCE: 1A CERTIFICATION
PARCEL NUMBER: 4B1701100120
ZONING CLASSIFICATION: I (INDUSTRIAL)
FLOOD ZONE: ZONE X
JURISDICTION: CITY AND BOROUGH OF JUNEAU
TOP OF (N) MONOPOLE: 150'
OVERALL HEIGHT: 155'
OCCUPANCY GROUP: U
CONSTRUCTION TYPE: II-B

PROJECT LOCATION MAP



UTILITY COMPANIES

POWER: ALASKA ELECTRIC LIGHT & POWER
5601 TONGSGARD CT, JUNEAU, AK 99801
TELCO/FIBER: TBD

PROJECT CONTACTS

APPLICANT
VERTICAL BRIDGE
750 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487
ROBERT EVANS
PH: 425.652.5727
REVANS@VERTICALBRIDGE.COM

PROPERTY OWNER
CITY AND BOROUGH OF JUNEAU
155 S. SEWARD ST
JUNEAU, AK 99801

SURVEYOR
ACUTEK GEOMATICS LLC.
5099 E. BLUE LUPINE DR #104
WASILLA, AK 99654
PH: 907.376.8800

CONSTRUCTION MANAGEMENT
CENTERLINE SOLUTIONS
3322 SOUTH BAY RD
OLYMPIA, WA 98506
JAY RASMUSSEN
PH: 360.438.8002

ZONING AND PERMITTING CONSULTANT
ALASKA AERIAL SURVEY, LLC
6510 BEECHCRAFT ROAD
WASILLA, AK 99658
GARY R. BREKKE
PH: 907.331.8311

SITE ACQUISITION CONSULTANT
ALASKA AERIAL SURVEY, LLC
6510 BEECHCRAFT ROAD
WASILLA, AK 99658
GARY R. BREKKE
907.331.8311

ENGINEER OF RECORD
CENTERLINE SOLUTIONS
16360 TABLE MOUNTAIN PARKWAY
GOLDEN, CO 80403
CHRISTOPHER SCOTT, P.E., LEED AP
PH: 303.993.3293

DRAWING INDEX

SHEET	DESCRIPTION
T1.0	TITLE SHEET
SV-1	SURVEY
SV-2	SURVEY
A1.0	OVERALL SITE PLAN
A2.0	ENLARGED SITE PLAN
A3.0	ELEVATIONS

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



CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	03-11-19	TT/JR	90% ZD REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	04-25-19	TT/JR	LU SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:

10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

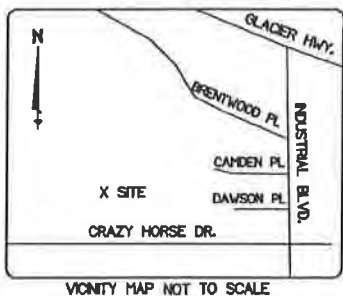
TITLE
SHEET

SHEET NO.

T1.0



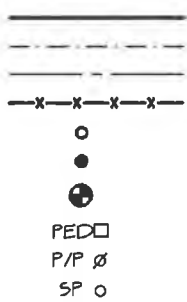
Know what's below.
Call before you dig.



LEGEND:

- MEASURED DATA
- RECORD DATA
- PROPERTY BOUNDARY LINES
- ADJACENT PROPERTY LINES
- CENTERLINE
- FENCE AS NOTED
- RECOVERED 5/8" REBAR
- SET 5/8" REBAR (LS 9106)
- RECOVERED MONUMENT
- UTILITY PEDESTAL
- POWER POLE
- SEPTIC PIPES

N 90°00'00" W
(N 90°00'00" W)



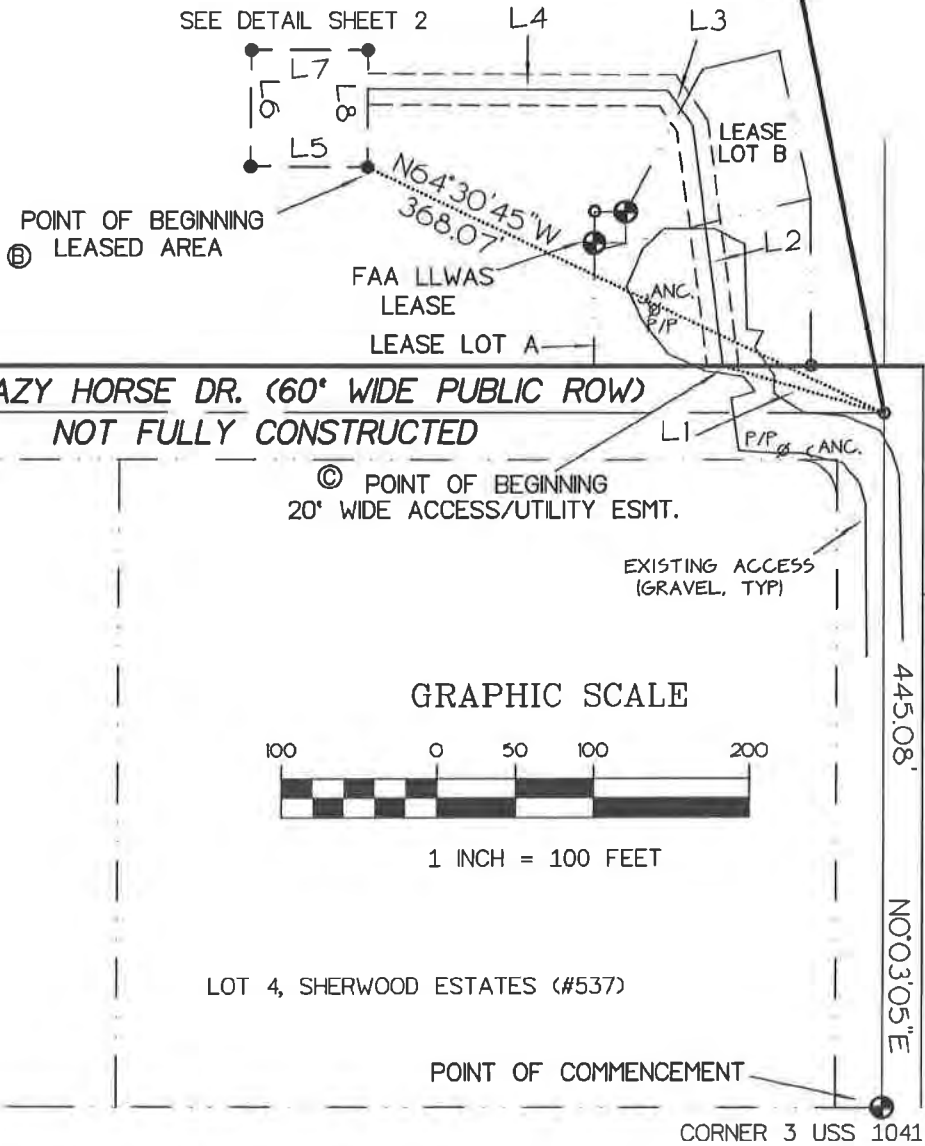
NUM	BEARING	DISTANCE
L1	N73°37'48"W	108.03'
L2	N71°16'40"W	154.99'
L3	N35°28'31"W	28.22'
L4	N89°37'43"W	192.50'
L5	N89°54'01"W	75.00'
L6	N 0°05'59"E	75.00'
L7	S89°54'01"E	75.00'
L8	S 0°05'59"W	75.00'

FAA 1-A TOWER LOCATION INFORMATION:
PROPOSED 150'± SELF SUPPORT TOWER

NAD 83
LATITUDE = 58°22'01.135" N ± 20'
LONGITUDE = 134°36'38.975" W ± 20'
GROUND ELEVATION AT BASE OF TOWER = 24' ± 3' NAVD88
HEIGHT OF TOP OF TOWER ABOVE GROUND = 174'±3'

	AREA TABLE	SQUARE FEET	ACREAGE
Ⓐ	PARENT PARCEL	1,350,360 ±	31 ±
Ⓑ	LEASED AREA	5,625 ±	0.13 ±
Ⓒ	NON-EXCLUSIVE ACCESS & UTILITY ESMT.	7,514 ±	0.17 ±

Ⓐ OWNER: CITY AND BOROUGH OF JUNEAU
PROPERTY: US SURVEY 1041
DEED: BOOK 66 PAGE 147
PARCEL ID: 481701100120



SITE OVERVIEW:
(1"=100')

SITE PLAN

U.S. SURVEY NO 1041 - JUNEAU ALASKA

SURVEYOR'S NOTES

1. BASIS OF BEARING IS PER RECORD PLAT OF US SURVEY NO. 1041.
2. NO SUBSURFACE INVESTIGATION WAS PERFORMED TO LOCATE UNDERGROUND UTILITIES. UTILITIES SHOWN HEREON ARE LIMITED TO AND ARE PER OBSERVED EVIDENCE ONLY.
3. ALL VISIBLE TOWER EQUIPMENT AND IMPROVEMENTS ARE CONTAINED WITHIN THE DESCRIBED AREA.
4. SURVEY COMPLETED IN FEBRUARY 2019.
5. THIS SURVEY DOES NOT REPRESENT A SURVEY OF THE PARENT PARCEL. REAL PROPERTY SHOWN HEREON ARE APPLICABLE TO THE TELECOMMUNICATIONS SITE, THERE MAY BE OTHER IMPROVEMENTS NOT SHOWN.
6. NO TITLE REPORT PROVIDED FOR THIS PROJECT.

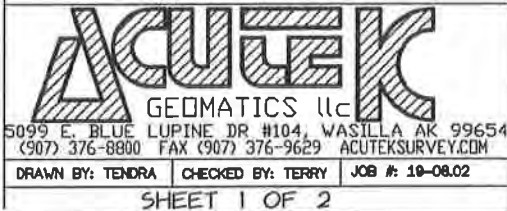
ZONING: PER CITY AND BOROUGH OF JUNEAU ASSESSOR'S DATA, PROPERTY IS ZONED AS INDUSTRIAL.

FLOOD NOTE: THIS PARCEL LIES WITHIN FLOOD ZONE X, PER FEMA MAP NUMBER 02110C1526D, WITH AN EFFECTIVE DATE OF AUGUST 19, 2013.



ACUTEK GEOMATICS, LLC
TERRY L. NICODEMUS, PLS
LAND SURVEYOR, ALASKA #9106-S
Date: 3/4/2019

CENTERLINE SOLUTIONS
SITE NAME: AK 11 MILE
ADDRESS: 10020 CRAZY HORSE DR.
JUNEAU, ALASKA 99801
CITY AND BOROUGH OF JUNEAU
SURVEY WORK PERFORMED BY:



SHEET 1 OF 2



NOT FOR CONSTRUCTION

CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	03-11-19	TT/JR	90% 2D REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	04-25-19	TT/JR	LU SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:
10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

SURVEY
DETAILS

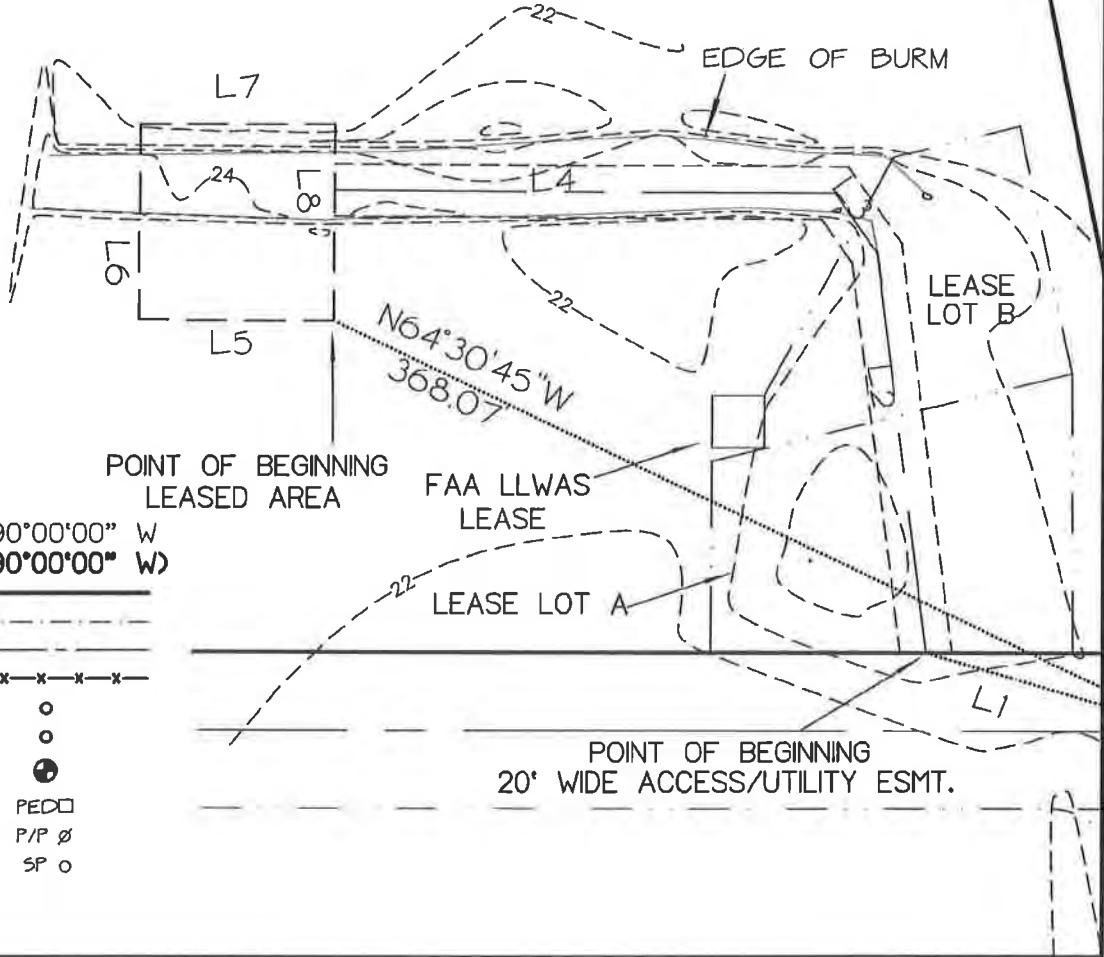
SHEET NO.

SV1.0



SITE DETAIL:
(1"=60')

EDGE OF BURM



LEGEND:

- MEASURED DATA
- RECORD DATA
- PROPERTY BOUNDARY LINES
- ADJACENT PROPERTY LINES
- CENTERLINE
- FENCE AS NOTED
- RECOVERED 5/8" REBAR
- SET 5/8" REBAR (LS 9106)
- RECOVERED MONUMENT
- UTILITY PEDESTAL
- POWER POLE
- SEPTIC PIPES

N 90°00'00" W
(N 90°00'00" W)

POINT OF BEGINNING
LEASED AREA

FAA LLWAS
LEASE

LEASE LOT A

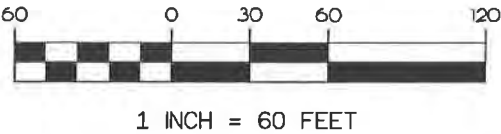
POINT OF BEGINNING
20' WIDE ACCESS/UTILITY ESMT.

PED □

P/P ∅

SP ○

GRAPHIC SCALE



NUM	BEARING	DISTANCE
L1	N73°37'48"W	108.03'
L2	N7°16'40"W	154.99'
L3	N35°28'31"W	28.22'
L4	N89°37'43"W	192.50'
L5	N89°54'01"W	75.00'
L6	N 0°05'59"E	75.00'
L7	S89°54'01"E	75.00'
L8	S 0°05'59"W	75.00'

LEGAL DESCRIPTION: (PARENT PARCEL)

REMAINDER OF US SURVEY NO. 1041 AS DESCRIBED
IN QUITCLAIM DEED BOOK 66 AT PAGE 147, JUNEAU
RECORDING DISTRICT, STATE OF ALASKA.

SITE PLAN

U.S. SURVEY NO 1041 - JUNEAU ALASKA

LEGAL DESCRIPTION: (LEASED AREA)

A FIVE THOUSAND SIX HUNDRED TWENTY-FIVE (5625) SQUARE FOOT LEASED
AREA, ENTIRELY WITHIN THAT PROPERTY DESCRIBED AS THE REMAINDER OF US
SURVEY NO. 1041, FURTHER DESCRIBED IN QUITCLAIM DEED BOOK 66 AT PAGE
147, JUNEAU RECORDING DISTRICT, STATE OF ALASKA, SAID LEASE AREA IS
MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE MONUMENT AT CORNER 3 OF USS 1041, THENCE
N 00°03'05" E A DISTANCE OF 445.08 FEET TO A POINT, THENCE N 64°30'45" W
A DISTANCE OF 368.07 FEET TO A POINT, THE TRUE POINT OF BEGINNING;

THENCE N 89°54'01" W A DISTANCE OF 75.00 FEET TO A POINT,
THENCE N 00°05'59" E A DISTANCE OF 75.00 FEET TO A POINT,
THENCE S 89°54'01" E A DISTANCE OF 75.00 FEET TO A POINT,
THENCE S 00°05'59" W A DISTANCE OF 75.00 FEET TO A POINT, THE TRUE
POINT OF BEGINNING.

CONTAINING 5625 SQUARE FEET, MORE OR LESS. (0.13 ACRES)

LEGAL DESCRIPTION: (NON-EXCLUSIVE ACCESS & UTILITY EASEMENT)

A SEVEN THOUSAND FIVE HUNDRED FOURTEEN (7514) SQUARE FOOT
NON-EXCLUSIVE ACCESS AND UTILITY EASEMENT, TWENTY (20) FEET WIDE, TEN
(10) FEET EACH SIDE OF THE CENTERLINE, ENTIRELY WITHIN THAT PROPERTY
DESCRIBED AS THE REMAINDER OF US SURVEY NO. 1041, FURTHER DESCRIBED IN
QUITCLAIM DEED BOOK 66 AT PAGE 147, JUNEAU RECORDING DISTRICT, STATE OF
ALASKA, SAID CENTERLINE IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE MONUMENT AT CORNER 3 OF USS 1041, THENCE
N 00°03'05" E A DISTANCE OF 445.08 FEET TO A POINT, THENCE N 73°37'48" W
A DISTANCE OF 108.03 FEET TO A POINT ON THE NORTH BOUNDARY OF THE
CRAZY HORSE RIGHT-OF-WAY, THE TRUE POINT OF BEGINNING;

THENCE N 07°16'40" W A DISTANCE OF 154.99 FEET TO A POINT,
THENCE N 35°28'31" W A DISTANCE OF 28.22 FEET TO A POINT,
THENCE N 89°37'43" W A DISTANCE OF 192.50 FEET TO A POINT ON THE EAST
BOUNDARY OF THE LEASED AREA, THE POINT OF TERMINUS.

CONTAINING 7514 SQUARE FEET, MORE OR LESS. (0.17 ACRES)

CENTERLINE SOLUTIONS

SITE NAME: AK 11 MILE

ADDRESS:10020 CRAZY HORSE DR.

JUNEAU, ALASKA 99801

CITY AND BOROUGH OF JUNEAU

SURVEY WORK PERFORMED BY:

ACUTEK

GEOMATICS LLC

5099 E. BLUE LUPINE DR #104, WASILLA AK 99654

(907) 376-8800 FAX (907) 376-9629 ACUTEKSURVEY.COM

DRAWN BY: TENDRA CHECKED BY: TERRY JOB #: 19-08.02

SHEET 2 OF 2



NOT FOR CONSTRUCTION

CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	03-11-19	TT/JR	90% ZD REVIEW

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	04-25-19	TT/JR	LU SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:

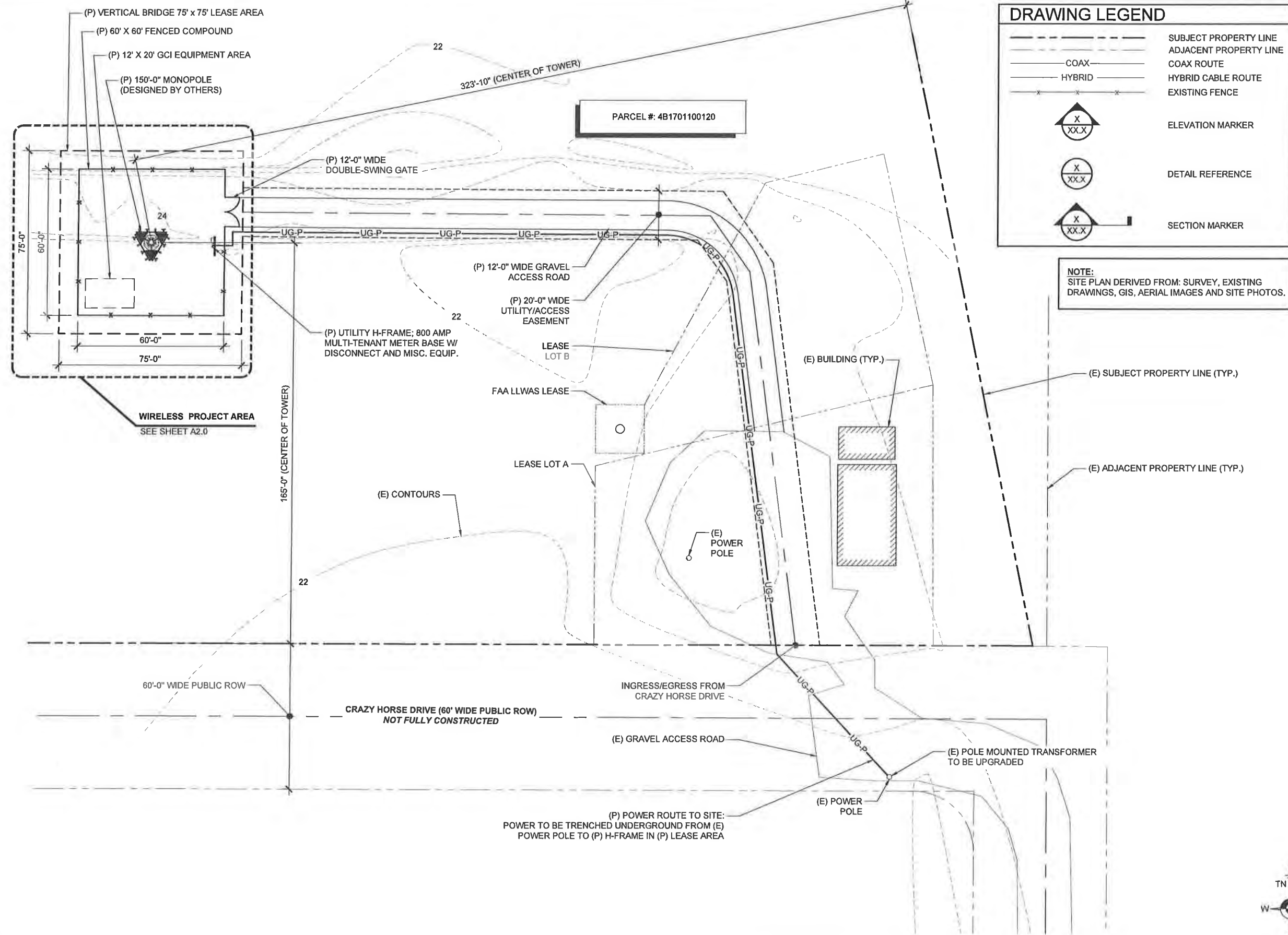
10020 CRAZY HORSE DR
JUNEAU, AK 99801

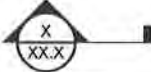
SHEET TITLE

SURVEY DETAILS

SHEET NO.

SV2.0



DRAWING LEGEND	
	SUBJECT PROPERTY LINE
	ADJACENT PROPERTY LINE
	COAX ROUTE
	HYBRID CABLE ROUTE
	EXISTING FENCE
	ELEVATION MARKER
	DETAIL REFERENCE
	SECTION MARKER

NOTE:
SITE PLAN DERIVED FROM: SURVEY, EXISTING
DRAWINGS, GIS, AERIAL IMAGES AND SITE PHOTOS.



NOT FOR CONSTRUCTION

CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	03-11-19	TT/JR	90% ZD REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	04-25-19	TT/JR	LU SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:
10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

OVERALL SITE PLAN

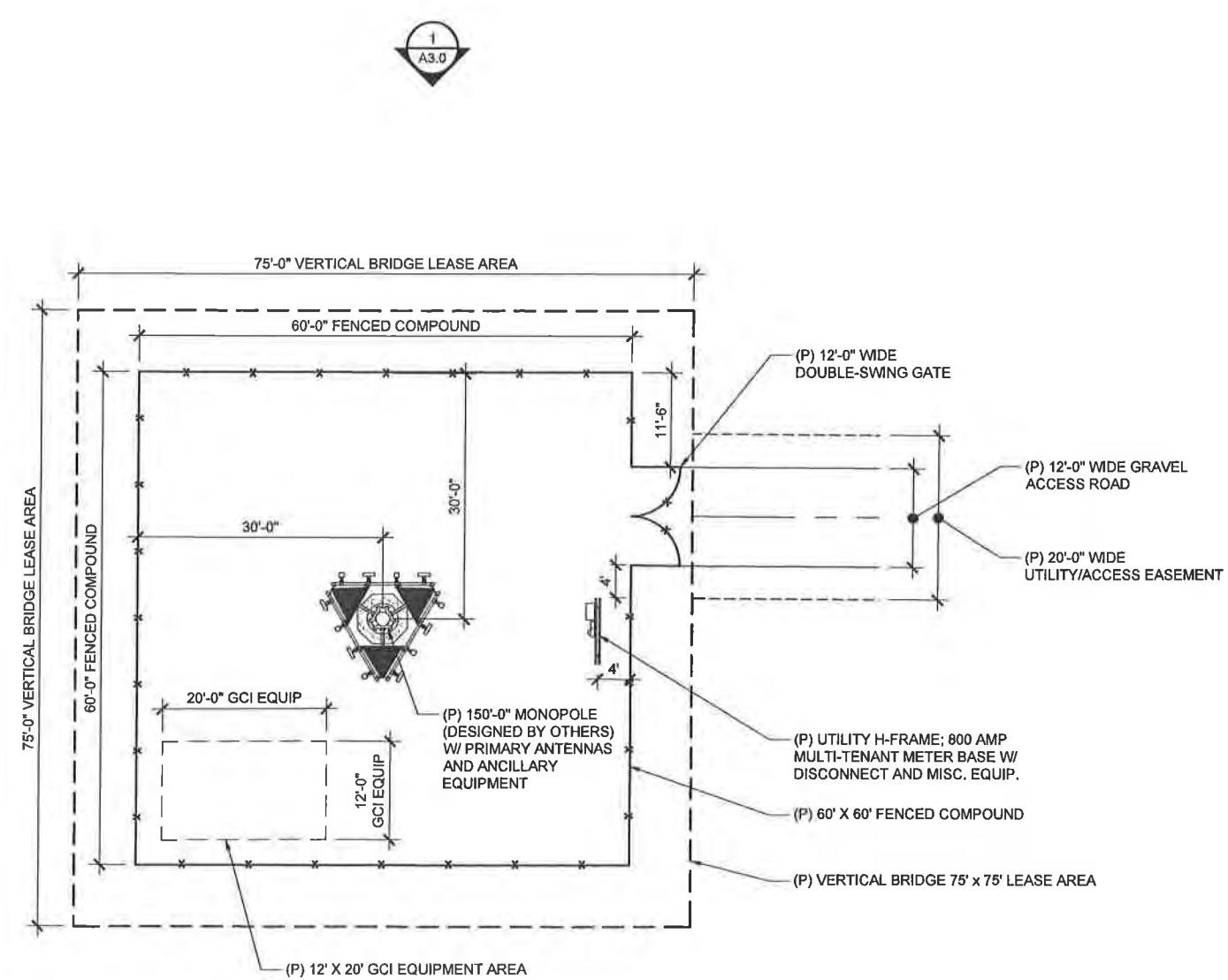
SHEET NO.

A1.0

GENERAL NOTES:

1. THE FACILITY IS AN UNOCCUPIED WIRELESS FACILITY.
2. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
3. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BE RESPONSIBLE FOR ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE IMPLEMENTATION ENGINEER AND ARCHITECT/ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
4. THE CONTRACTOR SHALL RECEIVE, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
5. CONTRACTOR SHALL CONTACT LOCAL DIGGERS HOTLINE 48 HOURS PRIOR TO PROCEEDING WITH ANY EXCAVATION, SITE WORK OR CONSTRUCTION.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
7. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. MECHANICAL AND ELECTRICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

NOTE:
SITE PLAN DERIVED FROM: SURVEY (BY ACUTEK, DATED MARCH 2019)
EXISTING DRAWINGS, GIS, AERIAL IMAGES AND SITE PHOTOS.



CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	03-11-19	TT/JR	90% ZD REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	04-25-19	TT/JR	LU SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

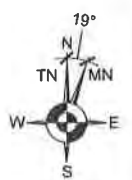
SITE ADDRESS:
10020 CRAZY HORSE DR
JUNEAU, AK 99801

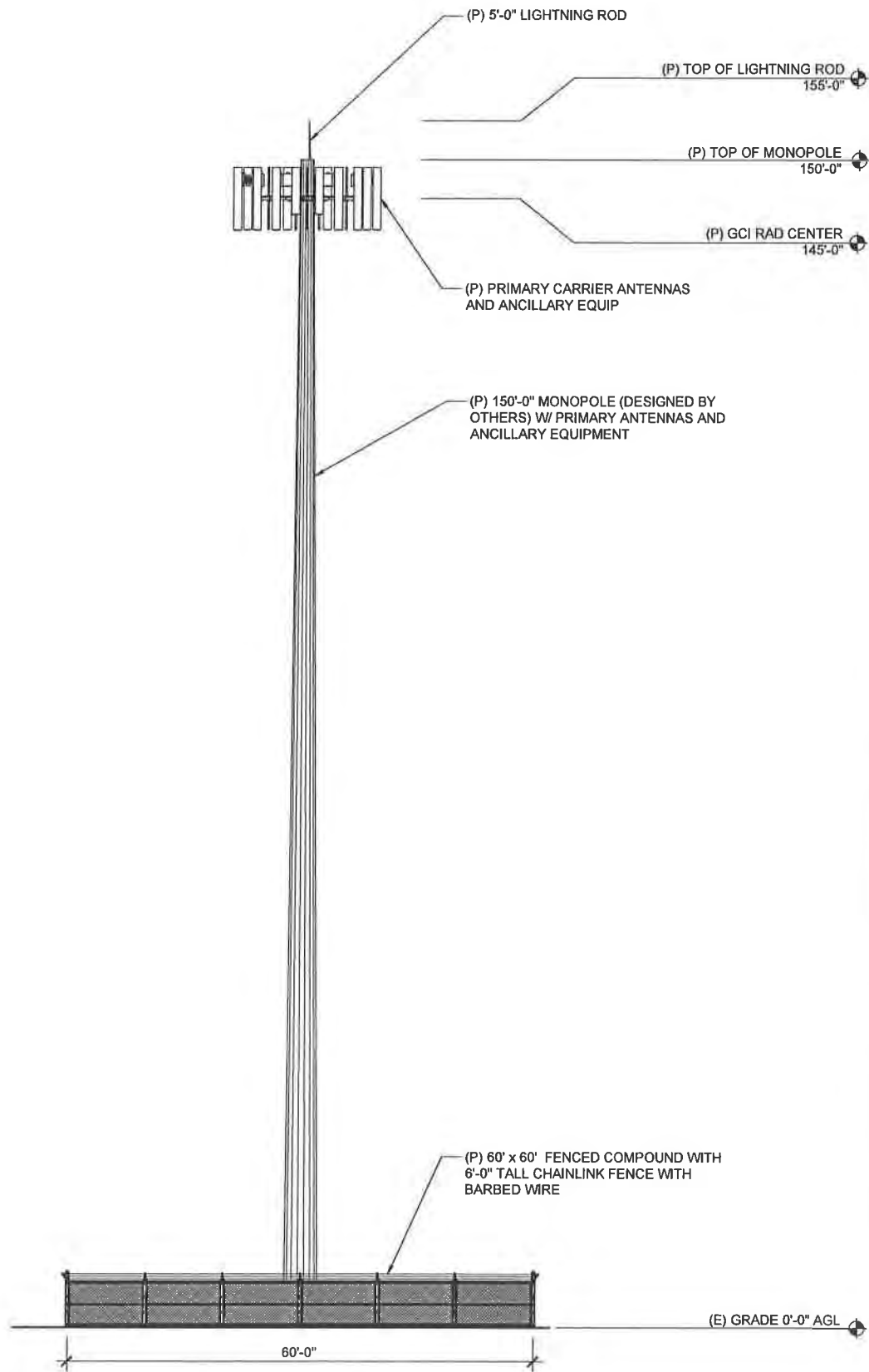
SHEET TITLE

ENLARGED
SITE PLAN

SHEET NO.

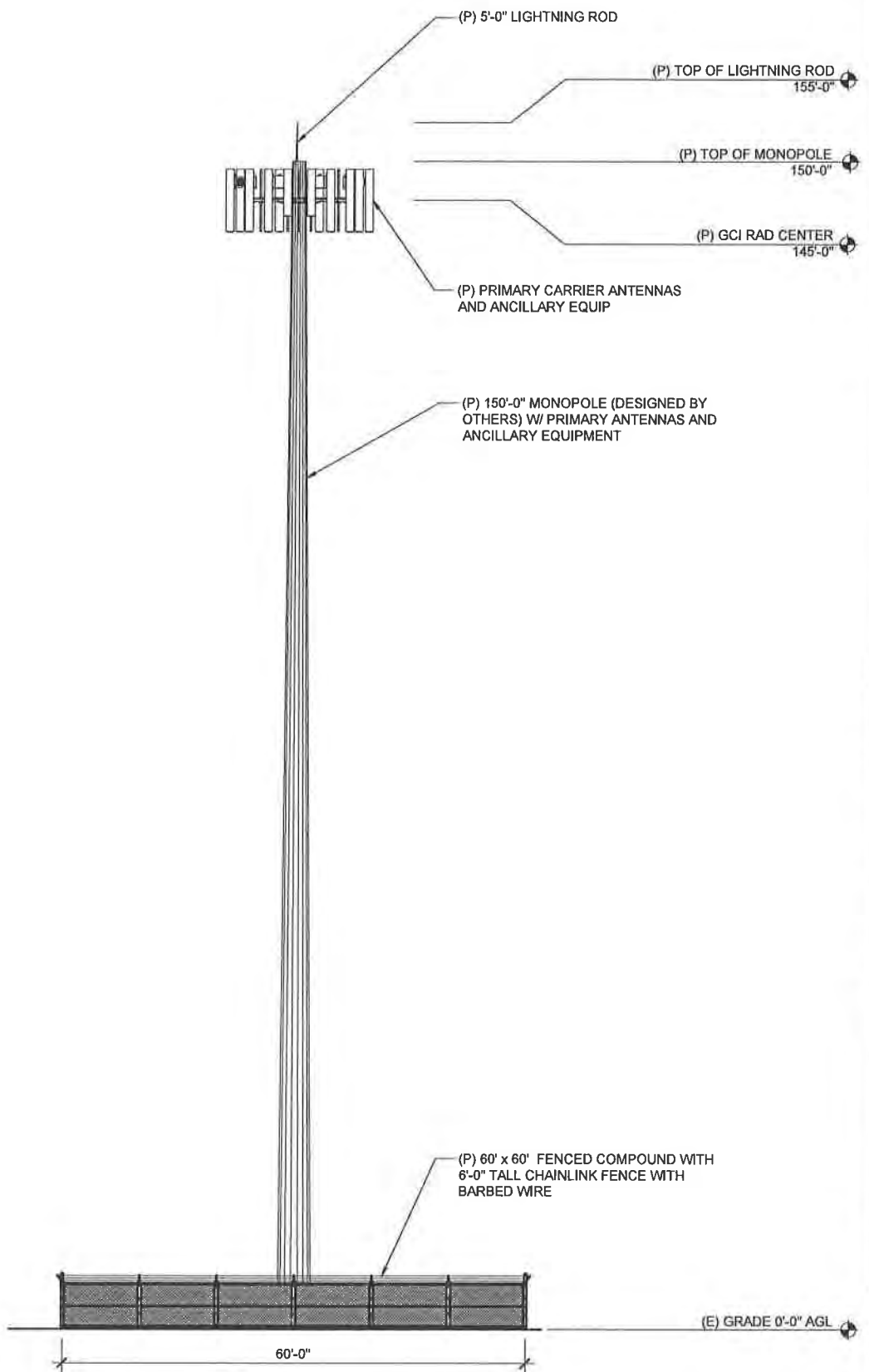
A2.0





1 NORTH ELEVATION

SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)



2 WEST ELEVATION

SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)



verticalbridge

CENTERLINE
SOLUTIONS
Advancing Wireless Networks



NOT FOR CONSTRUCTION

CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	03-11-19	TT/JR	90% ZD REVIEW

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	04-25-19	TT/JR	LU SUBMITTAL

SITE NAME:

11 MILE

US-AK-5244

SITE ADDRESS:

10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

ELEVATIONS

SHEET NO.

A3.0



US-AK-5244 - 11 MILE

10020 CRAZY HORSE DR
JUNEAU, AK 99801

CONSTRUCTION DRAWINGS



PROJECT SUMMARY

THIS PROJECT INCLUDES THE FOLLOWING SCOPE OF WORK:

CONSTRUCTION OF A NEW TELECOMMUNICATION AND PUBLIC UTILITY FACILITY CONSISTING OF A NEW 150'-0" MONOPOLE, CARRIER EQUIPMENT AND A UTILITY BACKBOARD INSIDE A NEW 60'x60' FENCED COMPOUND WITHIN A 75'X75' LEASE AREA. (NO WATER OR SEWER IS REQUIRED.)

GOVERNING CODES

GOVERNING CODES

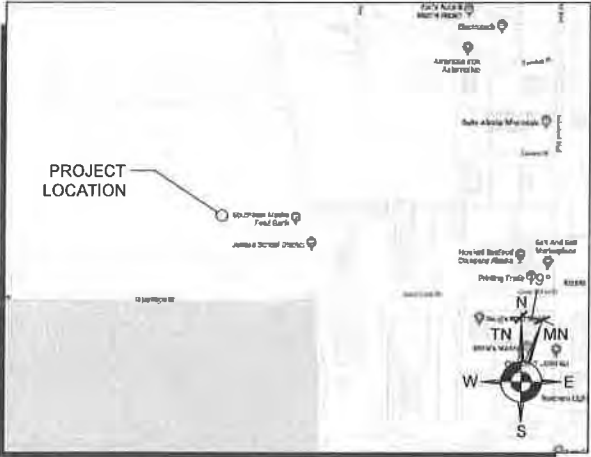
IBC-2015, INTERNATIONAL BUILDING CODE W/ LOCAL AMENDMENTS

NEC-2014, NATIONAL ELECTRICAL CODE

A.D.A. COMPLIANCE

INSTALLATION IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED PER A.D.A.

PROJECT VICINITY MAP



DRIVING DIRECTIONS

FROM JUNEAU INTERNATIONAL AIRPORT:

1. HEAD SOUTH ON SHELL SIMMONS DR TOWARD YANDUKIN DR (0.2 MI)
2. TURN LEFT ONTO YANDUKIN DR (0.2 MI)
3. TURN RIGHT ONTO SHELL SIMMONS DR (0.2 MI)
4. TURN LEFT ONTO GLACIER HWY (0.3 MI)
5. TURN LEFT TO STAY ON GLACIER HWY (0.7 MI)
6. TURN LEFT ONTO INDUSTRIAL BLVD (0.3 MI)
7. TURN RIGHT ONTO CRAZY HORSE DR;
PARTIAL RESTRICTED ACCESS ROAD, DESTINATION ON THE RIGHT (0.2 MI)

ESTIMATED DISTANCE: 2.1 MILES
ESTIMATED TIME: 9 MIN

SITE INFORMATION

SITE NAME: 11 MILE
SITE ADDRESS: 10020 CRAZY HORSE DR
JUNEAU, AK 99801
LATITUDE: 58° 22' 01.135" N
LONGITUDE: 134° 36' 38.975" W
SOURCE: 1A CERTIFICATION
PARCEL NUMBER: 4B1701100120
ZONING CLASSIFICATION: I (INDUSTRIAL)
FLOOD ZONE: ZONE X
JURISDICTION: CITY AND BOROUGH OF JUNEAU
TOP OF (N) MONOPOLE: 150'
OVERALL HEIGHT: 155'
OCCUPANCY GROUP: U
CONSTRUCTION TYPE: II-B

PROJECT LOCATION MAP



UTILITY COMPANIES

POWER: ALASKA ELECTRIC LIGHT & POWER
5601 TONGSARD CT, JUNEAU, AK 99801
TELCO/FIBER: TBD

PROJECT CONTACTS

APPLICANT
VERTICAL BRIDGE
750 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487
ROBERT EVANS
PH: 425.652.5727
REVANS@VERTICALBRIDGE.COM
PROPERTY OWNER
CITY AND BOROUGH OF JUNEAU
155 S. SEWARD ST
JUNEAU, AK 99801
SURVEYOR
ACUTEK GEOMATICS LLC.
5099 E. BLUE LUPINE DR #104
WASILLA, AK 99654
PH: 907.376.8800
CONSTRUCTION MANAGEMENT
CENTERLINE SOLUTIONS
3322 SOUTH BAY RD
OLYMPIA, WA 98506
JAY RASMUSSEN
PH: 360.438.8002
ZONING AND PERMITTING CONSULTANT
ALASKA AERIAL SURVEY. LLC
6510 BEECHCRAFT ROAD
WASILLA, AK 99658
GARY R. BREKKE
PH: 907.331.8311
SITE ACQUISITION CONSULTANT
ALASKA AERIAL SURVEY. LLC
6510 BEECHCRAFT ROAD
WASILLA, AK 99658
GARY R. BREKKE
907.331.8311
ENGINEER OF RECORD
CENTERLINE SOLUTIONS
16360 TABLE MOUNTAIN PARKWAY
GOLDEN, CO 80403
CHRISTOPHER SCOTT, P.E., LEED AP
PH: 303.993.3293

DRAWING INDEX

SHEET	DESCRIPTION
T1.0	TITLE SHEET
SV-1	SURVEY
SV-2	SURVEY
A1.0	OVERALL SITE PLAN
A2.0	ENLARGED SITE PLAN
A3.0	ELEVATIONS
A4.0	FENCE DETAILS
A4.1	FENCE DETAILS
A5.0	CONSTRUCTION DETAILS
A6.0	CABLE BRIDGE DETAILS
A7.0	UTILITY H-FRAME DETAILS
A8.0	ANTENNA DETAIL
G1.0	GROUNDING DETAILS
G2.0	GROUNDING DETAILS
GN1	GENERAL NOTES

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

SIGN OFF OF FINAL CONSTRUCTION DRAWINGS

REVIEWERS SHALL CLEARLY PLACE INITIALS ADJACENT TO EACH REDLINE NOTE AS DRAWINGS ARE BEING REVIEWED

CONSULTANT	SIGNATURE	DATE
SITE ACQUISITION		
PERMITTING CONSULTANT		
RF ENGINEER:		
CONST. MNGR.		
OPS MNGR.		
PROJECT MNGR.		
REGULATORY REV.		
DEV. MNGR.		



CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	05-01-19	TT/JR	90% CD REVIEW

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	06-28-19	TT/JR	BP SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:

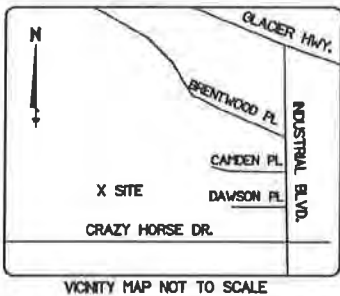
10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

TITLE
SHEET

SHEET NO.

T1.0



LEGEND:

MEASURED DATA	N 90°00'00" W
RECORD DATA	(N 90°00'00" W)
PROPERTY BOUNDARY LINES	---
ADJACENT PROPERTY LINES	---
CENTERLINE	---
FENCE AS NOTED	-x-x-x-x-
RECOVERED 5/8" REBAR	o
SET 5/8" REBAR (LS 9106)	•
RECOVERED MONUMENT	⊕
UTILITY PEDESTAL	PED □
POWER POLE	P/P ∅
SEPTIC PIPES	SP o

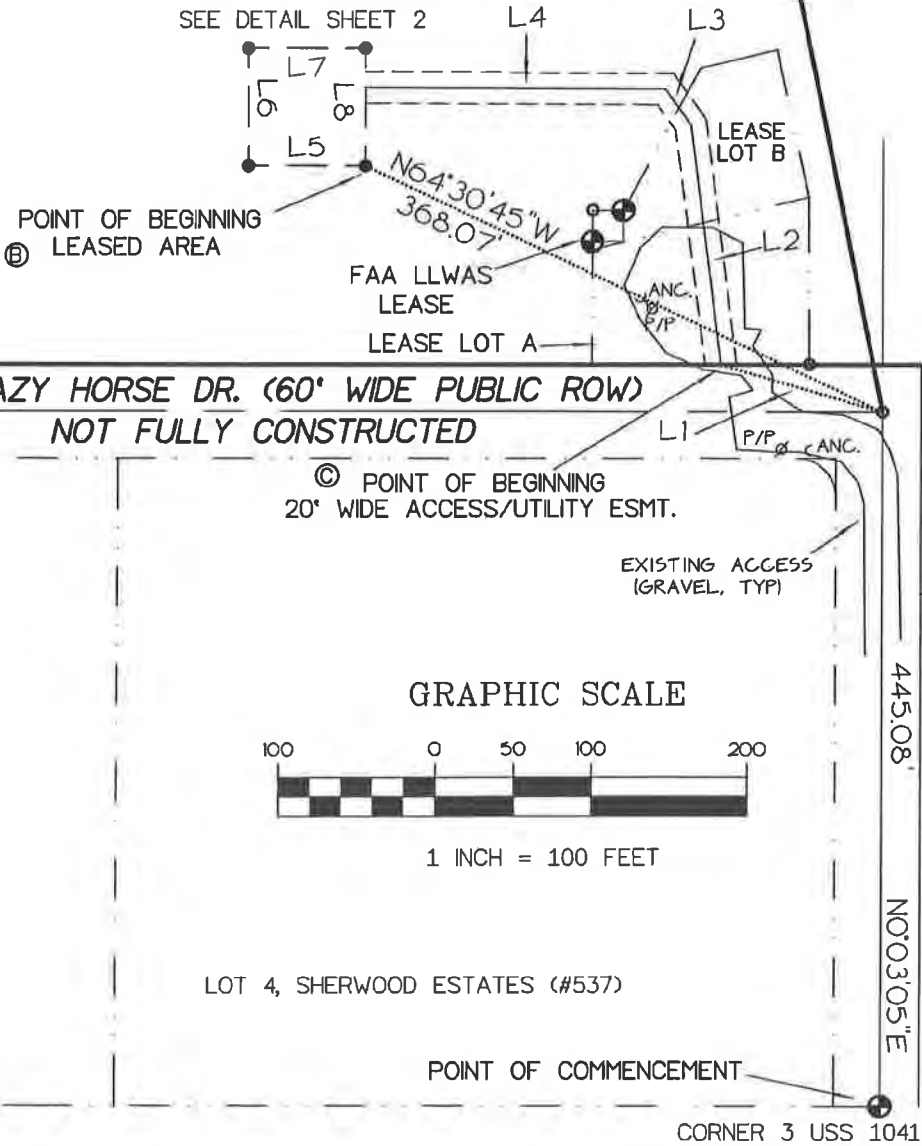
NUM	BEARING	DISTANCE
L1	N73°37'48"W	108.03'
L2	N71°16'40"W	154.99'
L3	N35°28'31"W	28.22'
L4	N89°37'43"W	192.50'
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L6	N 0°05'59"E	75.00'
L7	S89°54'01"E	75.00'
L8	S 0°05'59"W	75.00'

FAA 1-A TOWER LOCATION INFORMATION:
PROPOSED 150'± SELF SUPPORT TOWER

NAD 83
LATITUDE = 58°22'01.135" N ± 20"
LONGITUDE = 134°36'38.975" W ± 20"
GROUND ELEVATION AT BASE OF TOWER = 24' ± 3' NAVD88
HEIGHT OF TOP OF TOWER ABOVE GROUND = 174'±3'

	AREA TABLE	SQUARE FEET	ACREAGE
Ⓐ	PARENT PARCEL	1,350,360 ±	31 ±
Ⓑ	LEASED AREA	5,625 ±	0.13 ±
Ⓒ	NON-EXCLUSIVE ACCESS & UTILITY ESMT.	7,514 ±	0.17 ±

Ⓐ OWNER: CITY AND BOROUGH OF JUNEAU
PROPERTY: US SURVEY 1041
DEED: BOOK 66 PAGE 147
PARCEL ID: 4B1701100120



SITE OVERVIEW:
(1"=100')

SITE PLAN

U.S. SURVEY NO 1041 - JUNEAU ALASKA

SURVEYOR'S NOTES

1. BASIS OF BEARING IS PER RECORD PLAT OF US SURVEY NO. 1041.
2. NO SUBSURFACE INVESTIGATION WAS PERFORMED TO LOCATE UNDERGROUND UTILITIES. UTILITIES SHOWN HEREON ARE LIMITED TO AND ARE PER OBSERVED EVIDENCE ONLY.
3. ALL VISIBLE TOWER EQUIPMENT AND IMPROVEMENTS ARE CONTAINED WITHIN THE DESCRIBED AREA.
4. SURVEY COMPLETED IN FEBRUARY 2019.
5. THIS SURVEY DOES NOT REPRESENT A SURVEY OF THE PARENT PARCEL. REAL PROPERTY SHOWN HEREON ARE APPLICABLE TO THE TELECOMMUNICATIONS SITE, THERE MAY BE OTHER IMPROVEMENTS NOT SHOWN.
6. NO TITLE REPORT PROVIDED FOR THIS PROJECT.

ZONING: PER CITY AND BOROUGH OF JUNEAU ASSESSOR'S DATA, PROPERTY IS ZONED AS INDUSTRIAL.

FLOOD NOTE: THIS PARCEL LIES WITHIN FLOOD ZONE X, PER FEMA MAP NUMBER 02110C1526D, WITH AN EFFECTIVE DATE OF AUGUST 19, 2013.



ACUTEK GEOMATICS, LLC
TERRY L. NICODEMUS, PLS
LAND SURVEYOR, ALASKA #9106-S
Date: 3/4/2019

CENTERLINE SOLUTIONS
SITE NAME: AK 11 MILE
ADDRESS: 10020 CRAZY HORSE DR.
JUNEAU, ALASKA 99801
CITY AND BOROUGH OF JUNEAU
SURVEY WORK PERFORMED BY:
ACUTEK GEOMATICS LLC
5099 E. BLUE LUPINE DR #104, WASILLA AK 99654
(907) 376-8800 FAX (907) 376-9629 ACUTEKSURVEY.COM
DRAWN BY: TENDRA CHECKED BY: TERRY JOB #: 19-08-02
SHEET 1 OF 2



CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
0	05-01-19	TT/JR	90% CD REVIEW

SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	06-28-19	TT/JR	BP SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:

10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

SURVEY
DETAILS

SHEET NO.

SV1.0



CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY			
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NO.	DATE	D/C	DESCRIPTION
0	06-28-19	TT/JR	BP SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:
10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE
SURVEY DETAILS

SHEET NO.

SV2.0

SITE PLAN

U.S. SURVEY NO 1041 - JUNEAU ALASKA

LEGAL DESCRIPTION: (LEASED AREA)

A FIVE THOUSAND SIX HUNDRED TWENTY-FIVE (5625) SQUARE FOOT LEASED AREA, ENTIRELY WITHIN THAT PROPERTY DESCRIBED AS THE REMAINDER OF US SURVEY NO. 1041, FURTHER DESCRIBED IN QUITCLAIM DEED BOOK 66 AT PAGE 147, JUNEAU RECORDING DISTRICT, STATE OF ALASKA, SAID LEASE AREA IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE MONUMENT AT CORNER 3 OF USS 1041, THENCE N 00°03'05" E A DISTANCE OF 445.08 FEET TO A POINT, THENCE N 64°30'45" W A DISTANCE OF 368.07 FEET TO A POINT, THE TRUE POINT OF BEGINNING;

THENCE N 89°54'01" W A DISTANCE OF 75.00 FEET TO A POINT, THENCE N 00°05'59" E A DISTANCE OF 75.00 FEET TO A POINT, THENCE S 89°54'01" E A DISTANCE OF 75.00 FEET TO A POINT, THENCE S 00°05'59" W A DISTANCE OF 75.00 FEET TO A POINT, THE TRUE POINT OF BEGINNING.

CONTAINING 5625 SQUARE FEET, MORE OR LESS. (0.13 ACRES)

LEGAL DESCRIPTION: (NON-EXCLUSIVE ACCESS & UTILITY EASEMENT)

A SEVEN THOUSAND FIVE HUNDRED FOURTEEN (7514) SQUARE FOOT NON-EXCLUSIVE ACCESS AND UTILITY EASEMENT, TWENTY (20) FEET WIDE, TEN (10) FEET EACH SIDE OF THE CENTERLINE, ENTIRELY WITHIN THAT PROPERTY DESCRIBED AS THE REMAINDER OF US SURVEY NO. 1041, FURTHER DESCRIBED IN QUITCLAIM DEED BOOK 66 AT PAGE 147, JUNEAU RECORDING DISTRICT, STATE OF ALASKA, SAID CENTERLINE IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE MONUMENT AT CORNER 3 OF USS 1041, THENCE N 00°03'05" E A DISTANCE OF 445.08 FEET TO A POINT, THENCE N 73°37'48" W A DISTANCE OF 108.03 FEET TO A POINT ON THE NORTH BOUNDARY OF THE CRAZY HORSE RIGHT-OF-WAY, THE TRUE POINT OF BEGINNING;

THENCE N 07°16'40" W A DISTANCE OF 154.99 FEET TO A POINT, THENCE N 35°28'31" W A DISTANCE OF 28.22 FEET TO A POINT, THENCE N 89°37'43" W A DISTANCE OF 192.50 FEET TO A POINT ON THE EAST BOUNDARY OF THE LEASED AREA, THE POINT OF TERMINUS.

CONTAINING 7514 SQUARE FEET, MORE OR LESS. (0.17 ACRES)

LEGAL DESCRIPTION: (PARENT PARCEL)

REMAINDER OF US SURVEY NO. 1041 AS DESCRIBED IN QUITCLAIM DEED BOOK 66 AT PAGE 147, JUNEAU RECORDING DISTRICT, STATE OF ALASKA.

CENTERLINE SOLUTIONS

SITE NAME: AK 11 MILE
ADDRESS: 10020 CRAZY HORSE DR.
JUNEAU, ALASKA 99801
CITY AND BOROUGH OF JUNEAU

SURVEY WORK PERFORMED BY:



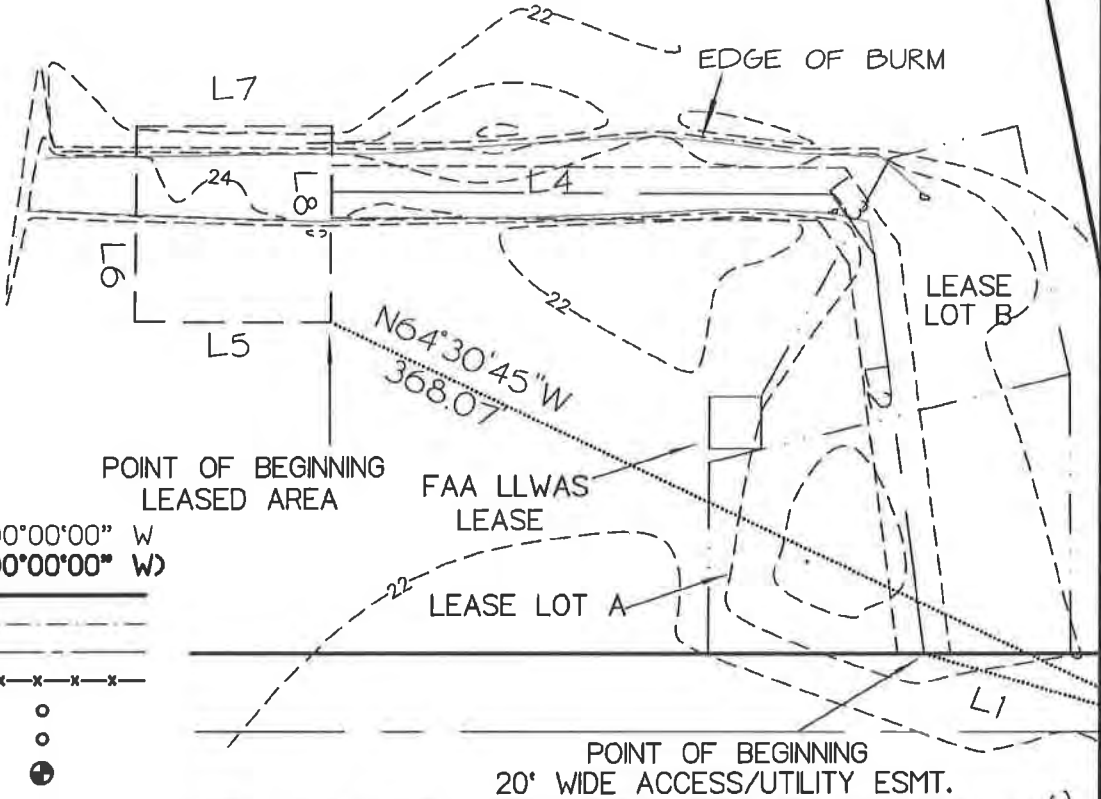
5099 E. BLUE LUPINE DR #104, WASILLA AK 99654
(907) 376-8800 FAX (907) 376-9629 ACUTEKSURVEY.COM

DRAWN BY: TENDRA CHECKED BY: TERRY JOB #: 19-08.02

SHEET 2 OF 2



SITE DETAIL:
(1"=60')



LEGEND:

MEASURED DATA
RECORD DATA
PROPERTY BOUNDARY LINES
ADJACENT PROPERTY LINES
CENTERLINE
FENCE AS NOTED
RECOVERED 5/8" REBAR
SET 5/8" REBAR (LS 9106)
RECOVERED MONUMENT
UTILITY PEDESTAL
POWER POLE
SEPTIC PIPES

N 90°00'00" W
(N 90°00'00" W)

—x—x—x—x—

○

○

●

PED □

P/P ∅

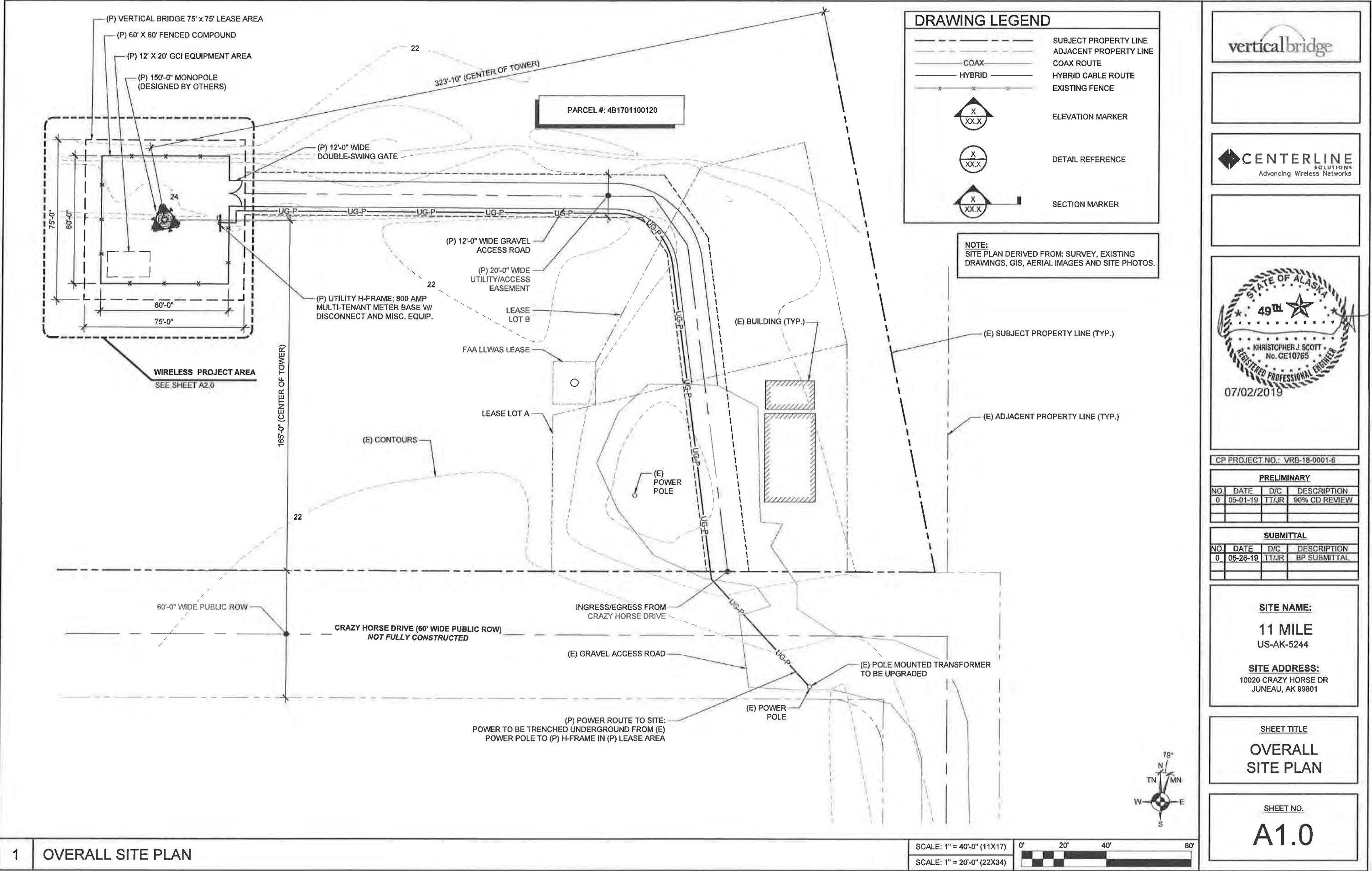
SP ○

GRAPHIC SCALE



1 INCH = 60 FEET

NUM	BEARING	DISTANCE
L1	N73°37'48"W	108.03'
L2	N7°16'40"W	154.99'
L3	N35°28'31"W	28.22'
L4	N89°37'43"W	192.50'
L5	N89°54'01"W	75.00'
L6	N 0°05'59"E	75.00'
L7	S89°54'01"E	75.00'
L8	S 0°05'59"W	75.00'



GENERAL NOTES:

1. THE FACILITY IS AN UNOCCUPIED WIRELESS FACILITY.

2. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

3. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BE RESPONSIBLE FOR ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE IMPLEMENTATION ENGINEER AND ARCHITECT/ENGINEER PRIOR TO PROCEEDING WITH THE WORK.

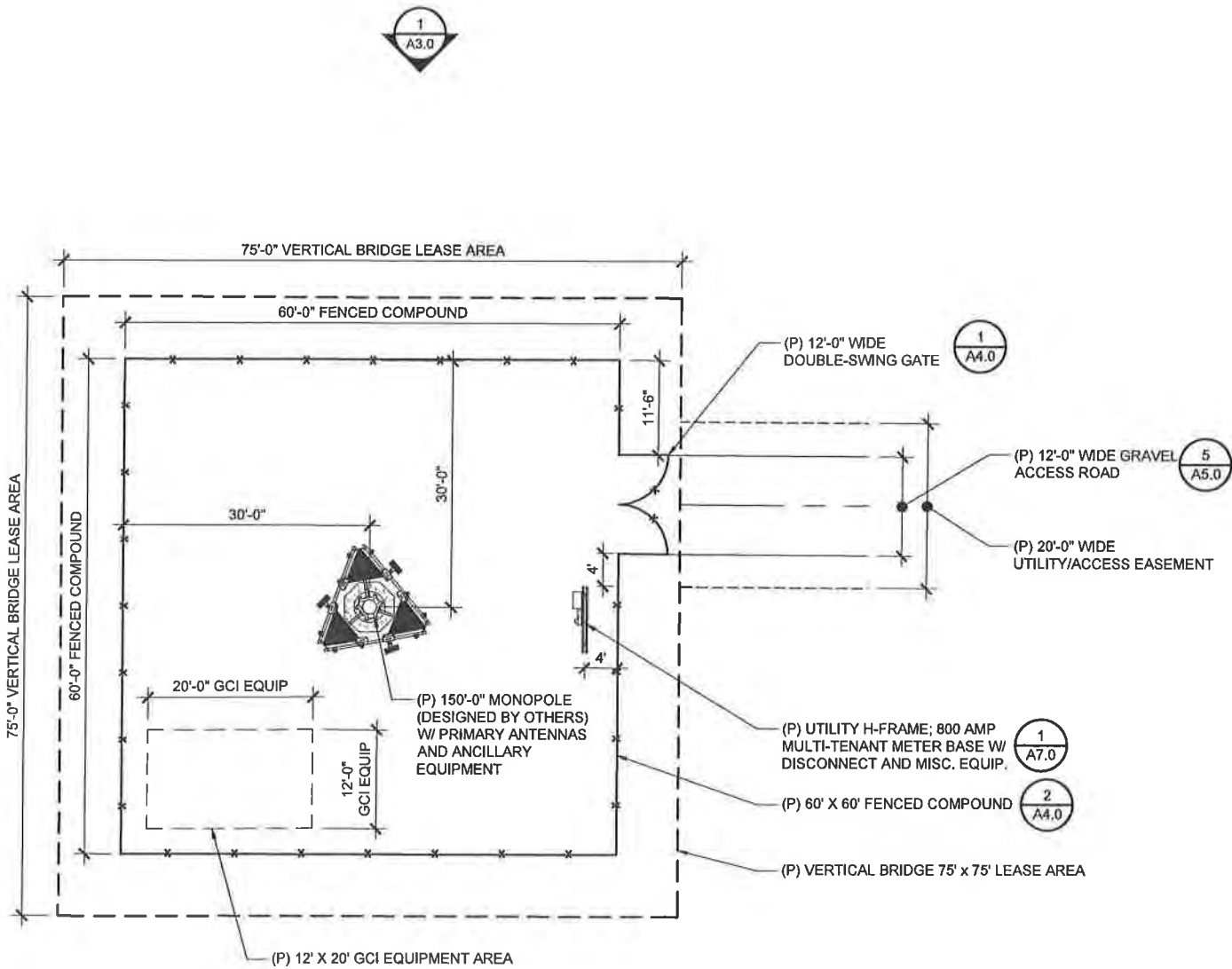
4. THE CONTRACTOR SHALL RECEIVE, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.

5. CONTRACTOR SHALL CONTACT LOCAL DIGGERS HOTLINE 48 HOURS PRIOR TO PROCEEDING WITH ANY EXCAVATION, SITE WORK OR CONSTRUCTION.

6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

7. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. MECHANICAL AND ELECTRICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

NOTE:
SITE PLAN DERIVED FROM: SURVEY (BY ACUTEK, DATED MARCH 2019)
EXISTING DRAWINGS, GIS, AERIAL IMAGES AND SITE PHOTOS.



CP PROJECT NO.: VRB-18-0001-6

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NO.	DATE	D/C	DESCRIPTION
0	06-28-19	TT/JR	BP SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

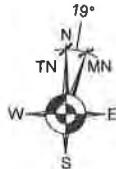
SITE ADDRESS:
10020 CRAZY HORSE DR
JUNEAU, AK 99801

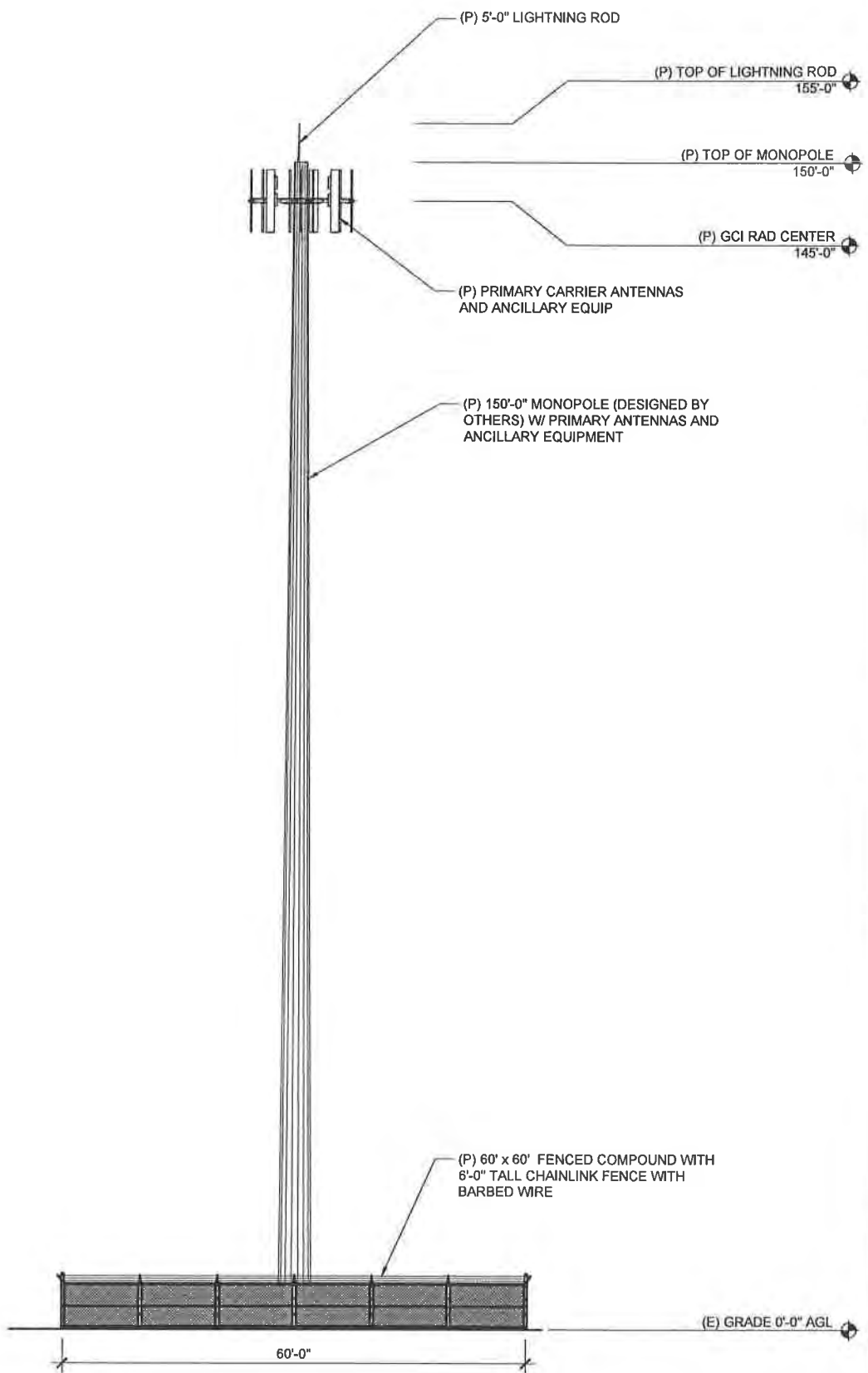
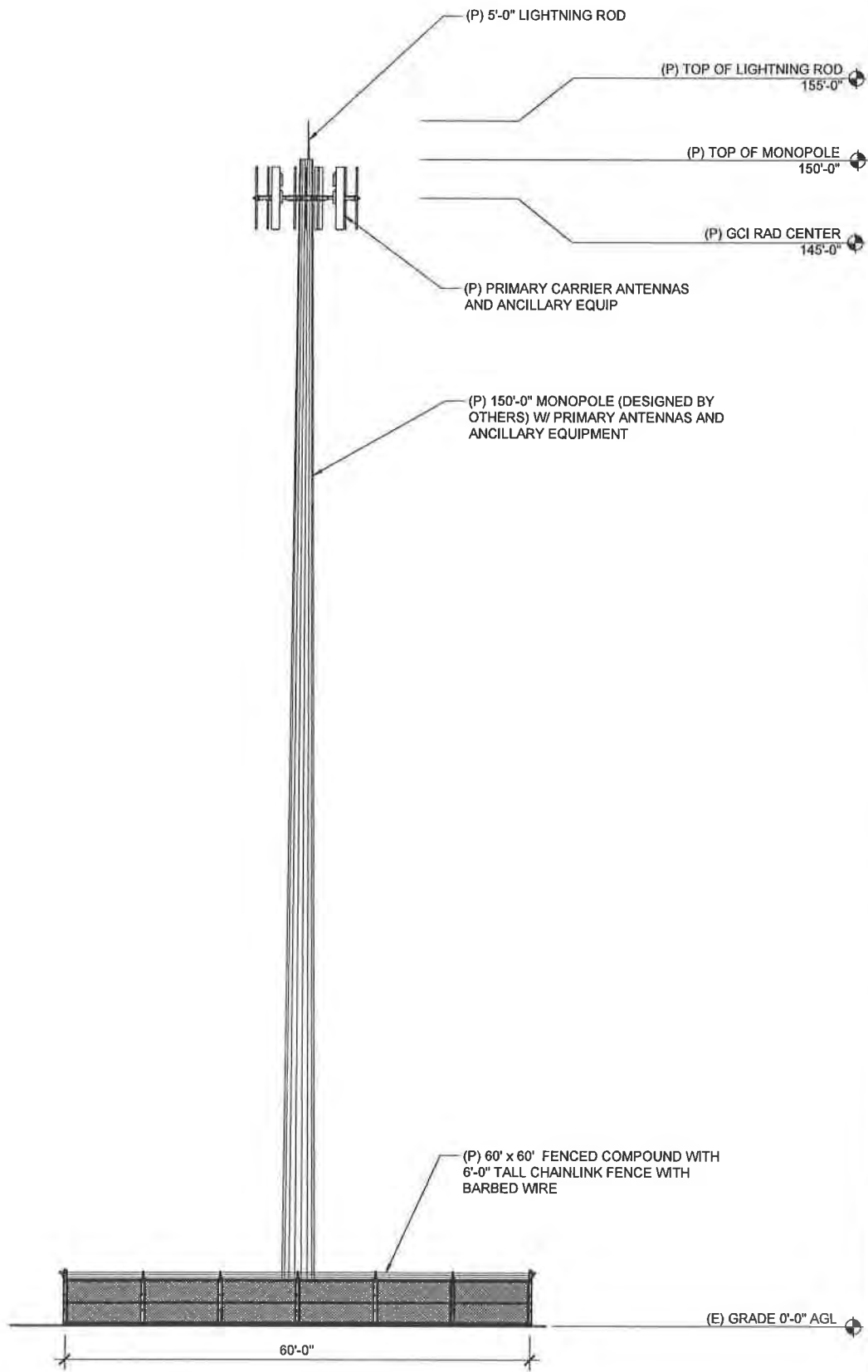
SHEET TITLE

ENLARGED
SITE PLAN

SHEET NO.

A2.0





CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY			
NO.	DATE	D/C	DESCRIPTION
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NO.	DATE	D/C	DESCRIPTION
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SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:

10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

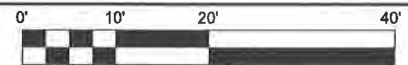
ELEVATIONS

SHEET NO.

A3.0

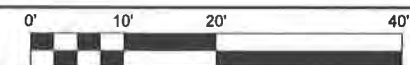
1 NORTH ELEVATION

SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)

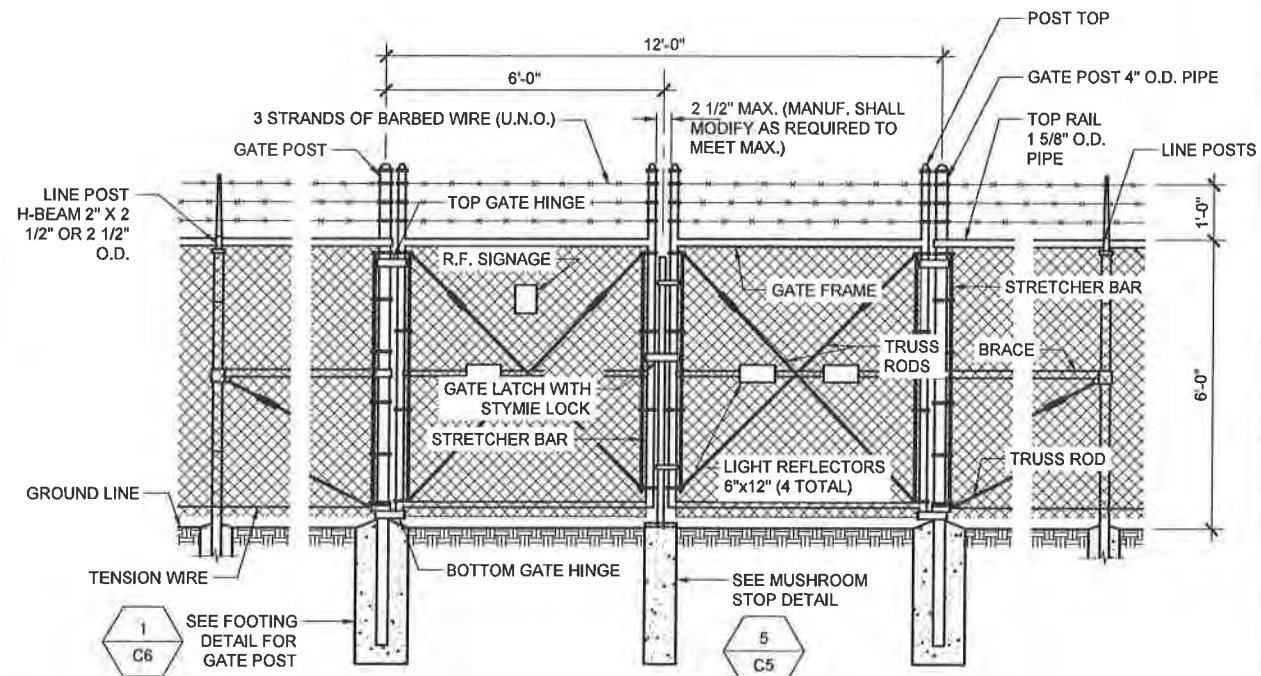


2 WEST ELEVATION

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SCALE: 1" = 10'-0" (22X34)

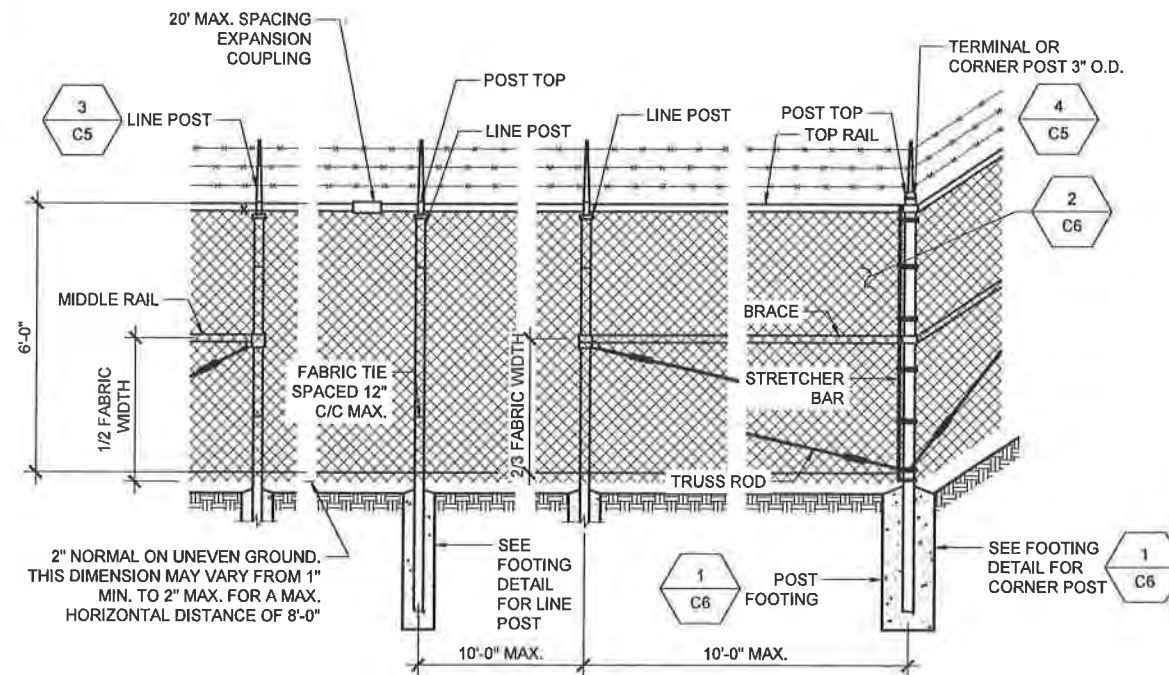


1. THIS SECURITY FENCE TO HAVE ALL NUTS
INSTALLED TOWARD INSIDE FACE OF
COMPOUND.



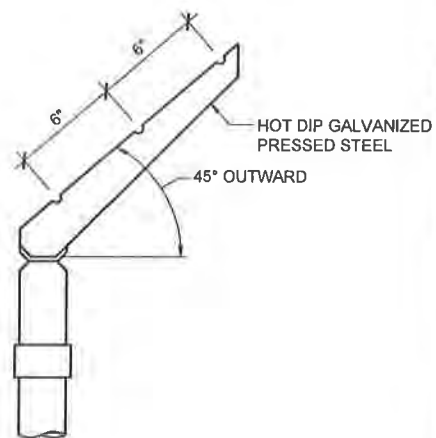
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SCALE: NTS

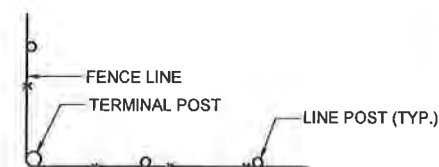


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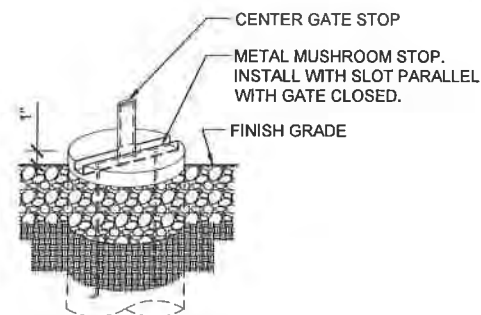
SCALES: NTS



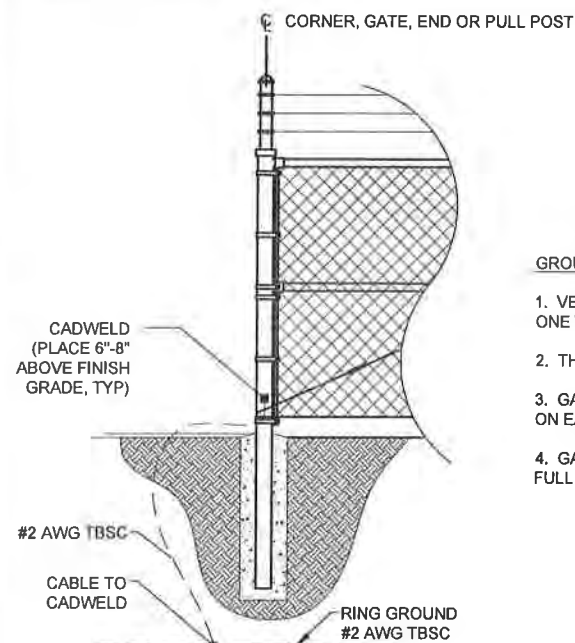
3



4



5



1. VERTICAL POSTS SHALL BE BONDED TO THE RING AT EACH CORNER AND AT EACH GATE POST. AT MINIMUM, ONE VERTICAL POST SHALL BE BONDED TO THE GROUND RING IN EVERY 100-FOOT STRAIGHT RUN OF FENCE.
2. THE #2 AWG, TBSC, FROM THE RING GROUND SHALL BE CADWELDED TO THE POST, ABOVE GROUND.
3. GATE JUMPER SHALL BE #4/0 AWG WELDING CABLE OR FLEXIBLE COPPER BRAIDED FLAT STRAP WITH SLEEVES ON EACH END DESIGNED FOR EXOTHERMIC WELDING.
4. GATE JUMPER SHALL BE INSTALLED SO THAT IT WILL NOT BE SUBJECTED TO DAMAGING STRAIN WHEN GATE IS FULL OPEN IN EITHER DIRECTIONS

6

SCALE: NTS



07/02/2019

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SUBMITTAL			
NO.	DATE	D/C	DESCRIPTION
0	06-28-19	TT/JR	BP SUBMITTAL

11 MILE

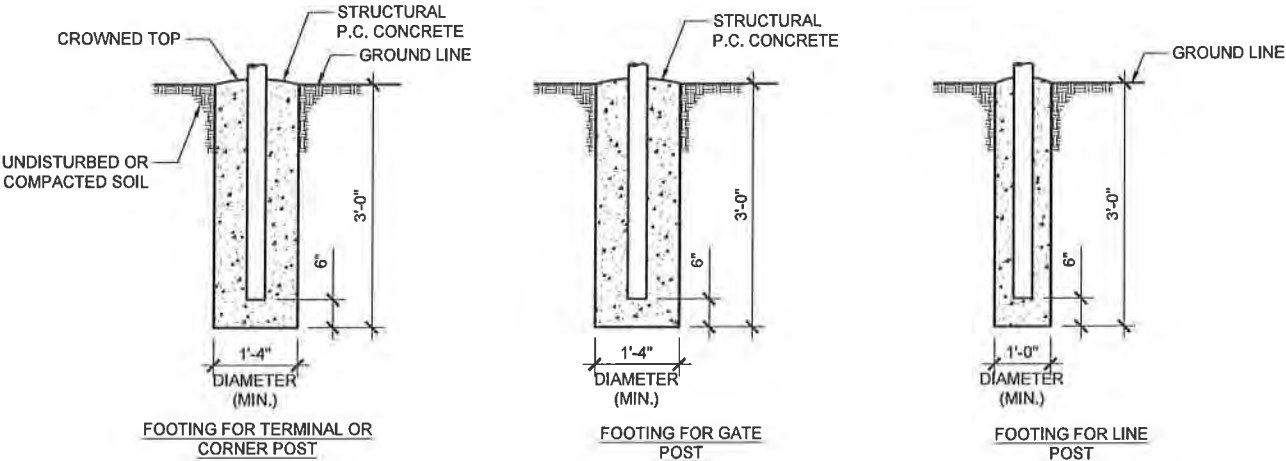
US-AK-5244

10020 CRAZY HORSE DR
JUNEAU, AK 99801

FENCE

DETAILS

A4.0



FENCE NOTES

ZINC COATING - THE WEIGHT OF THE COATING SHALL NOT BE LESS THAN 1.2 OUNCES PER SQUARE FOOT OF ACTUAL SURFACE COVERED. ALL FERROUS METALS USED AS PART OF THE FENCE INSTALLATION SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL. ALL SCREWS, BOLTS, LOCK WASHERS, NUTS, ETC. SHALL BE HOT DIP GALVANIZED OR MADE OF STAINLESS STEEL.

FABRIC - STANDARD INDUSTRIAL GRADE #9 GAUGE WITH 2 INCH MESH ZINC COATED CHAIN LINK WITH A BREAKING STRENGTH OF NOT LESS THAN 1290 POUNDS SHALL BE USED. THE FABRIC SHALL BE ZINC COATED BY THE HOT DIP PROCESS AFTER FABRICATION.

METAL POSTS - METAL POSTS (LINE, CORNER, TERMINAL, GATE POSTS, MIDDLE RAILS, BRACES AND TOP RAIL) SHALL BE HOT DIP GALVANIZED SCHEDULE 40 TUBULAR STEEL WITH AN OUTSIDE DIAMETER AS INDICATED ON THIS DRAWING. A POST TOP FITTING OF GALVANIZED STEEL WILL BE INSTALLED TO EXCLUDE MOISTURE.

POST CAPS - ALL POST CAPS TO USE THE BARBED WIRE OUTRIGGER BRACKET AND SHALL BE ATTACHED TO THE POST WITH TAMPER RESISTANT SCREWS, BRADS, OR BOLTS.

TOP RAIL - A MINIMUM OF ONE COUPLING IN EACH STRAIGHT RUN OF TOP RAIL, SHALL HAVE A HEAVY SPRING INSERTED WITHIN THE COUPLING TO TAKE UP EXPANSION AND CONTRACTION OF THE TOP RAIL. THE TOP RAIL SHALL BE FASTENED TO TERMINAL POSTS WITH PRESSED STEEL CONNECTIONS.

MIDDLE RAIL - THE MIDDLE RAIL SHALL BE OF THE SAME MATERIAL AS THE TOP RAIL AND INSTALLED WITH HOT DIP GALVANIZED FITTINGS ATTACHED TO THE POSTS.

BRACE RAIL - BRACE RAIL MATERIAL SHALL BE OF THE MATERIAL AS THE TOP RAIL AND LOCATED 2/3 OF THE DISTANCE UP FROM THE BOTTOM OF THE FABRIC. BRACE RAILS SHALL BE SECURELY FASTENED TO POSTS BY SUITABLE PRESSED STEEL CONNECTIONS.

TRUSS RODS - SHALL BE 3/8" ROUND GALVANIZED STEEL RODS WITH GALVANIZED TURNBUCKLES. THE ZINC COATING SHALL BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.

TENSION WIRE - THE TENSION WIRE SHALL BE OF #7 GAUGE HOT DIP GALVANIZED SPRING TENSION WIRE WITH A BREAKING STRENGTH OF NOT LESS THAN 1900 POUNDS. THIS WIRE SHALL BE KEPT TAUT WITH GALVANIZED TURNBUCKLES AND ATTACHED TO POSTS WITH GALVANIZED HARDWARE OR CABLE CLAMPS.

FABRIC TIES - THE FABRIC TIES SHALL BE ALUMINUM WIRE. NOT LESS THAN #9 GAGE.

STRETCHER BARS - THE STRETCHER BARS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THAN 5/16" X 3/4" AND NOT LESS THAN 2" SHORTER THAN THE FABRIC. STRETCHER BAR BANDS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THAN 5/16" X 1 1/2" WITH 5/16" DIAMETER GALVANIZED CARRIAGE BOLT.

BARBED WIRE - BARBED WIRE OF GALVANIZED STEEL (OR ALUMINUM) CONSISTING OF 12 1/2 GAUGE WIRE WITH 4-POINT BARBS OF 14 GAUGE WIRE SPACED 5 INCHES APART.

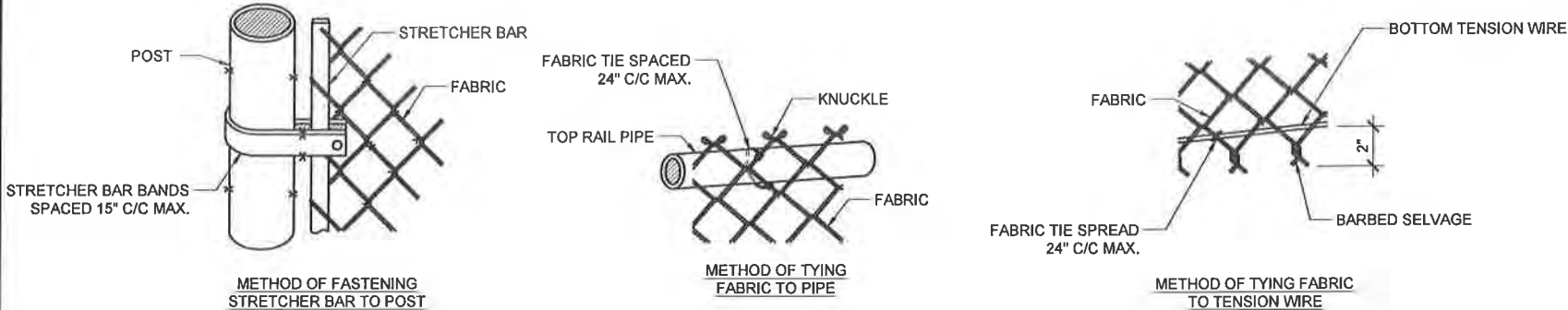
GATE FRAMES SHALL BE CONSTRUCTED OF 2 1/2 INCH OUTSIDE DIAMETER HEAVY DUTY GALVANIZED STEEL PIPE. THE GATES SHALL BE ASSEMBLED USING CORNER FITTINGS OF HEAVY PRESSED STEEL OR MALLEABLE CASTINGS OR MAY BE WELDED IF THE ENTIRE GATE FRAME IS HOT DIP GALVANIZED AFTER THE WELDING. ALL GATES SHALL BE EQUIPPED WITH HEAVY DUTY GALVANIZED STEEL TYPE HINGES WITH LARGE BEARING SURFACES OF ADEQUATE STRENGTH TO SUPPORT THE GATE. THE HINGES SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. GATES WILL PROVIDE A FULL RANGE OF MOTION AND BE EASILY OPENED AND CLOSED BY ONE PERSON. GATE LATCH SHALL BE CARGO PROTECTORS, INC. MODEL FL-100. LATCH SHALL BE EQUIPPED TO RECEIVE A PADLOCK.

PROVIDE R.F. WARNING SIGNAGE ON ALL GATES.

1 POST FOOTINGS

SCALE: NTS

SCALE: NTS



2 FABRIC / BAR CONNECTIONS

SCALE: NTS

SCALE: NTS

3 NOTES

SCALE: NTS

SCALE: NTS



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11 MILE
US-AK-5244

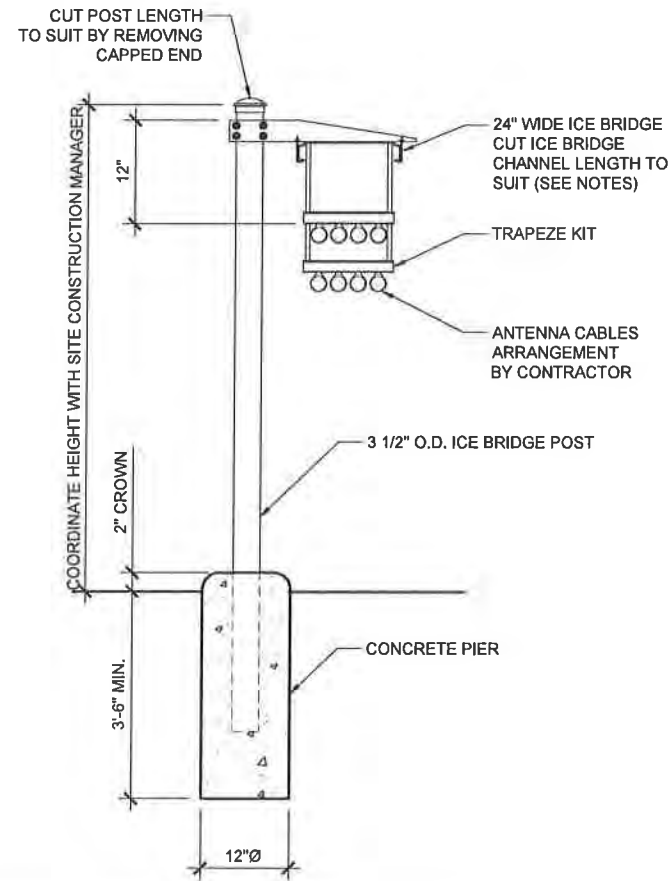
SITE ADDRESS:
10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

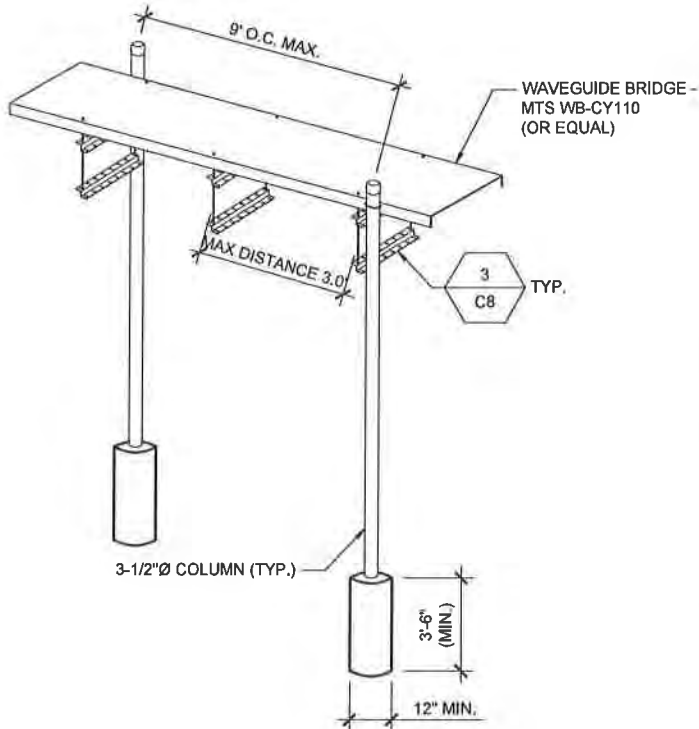
FENCE DETAILS

SHEET NO.

A4.1

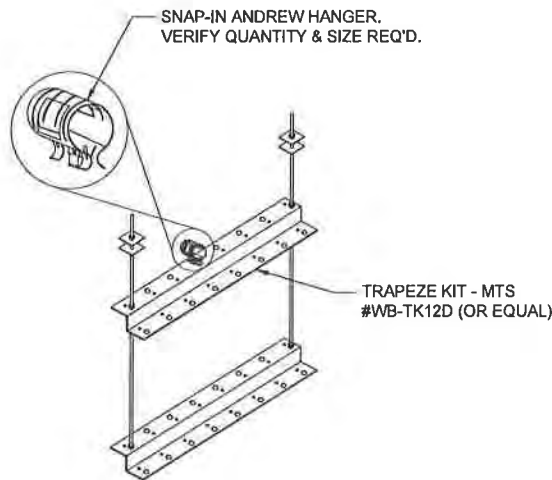


- NOTES:
1. WHEN USING COMPONENTS AS SHOWN IN STANDARD DETAILS, MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 9 FEET FOR 10 FEET BRIDGE CHANNEL.
 2. WHEN USING COMPONENTS FOR SPlicing BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
 3. WHEN USING COMPONENTS, SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF ICE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE ICE BRIDGE.
 4. CUT BRIDGE CHANNEL SECTIONS SHALL HAVE RAW EDGES TREATED WITH A MATERIAL TO RESTORE THESE EDGES TO THE ORIGINAL CHANNEL, OR EQUIVALENT, FINISH.
 5. ICE BRIDGES MAY BE CONSTRUCTED WITH COMPONENTS FROM OTHER MANUFACTURERS, PROVIDED THE MANUFACTURER'S INSTALLATION GUIDELINES ARE FOLLOWED.
 6. DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
 7. DEVIATIONS FROM ICE BRIDGE FOUNDATIONS REQUIRE ENGINEERING APPROVAL.
 8. THE DESIGN IS BASED ON ASCE 7-98, 3 SECOND GUST WIND SPEED OF 110 MPH, EXPOSURE C, ELEVATION AT GRADE.



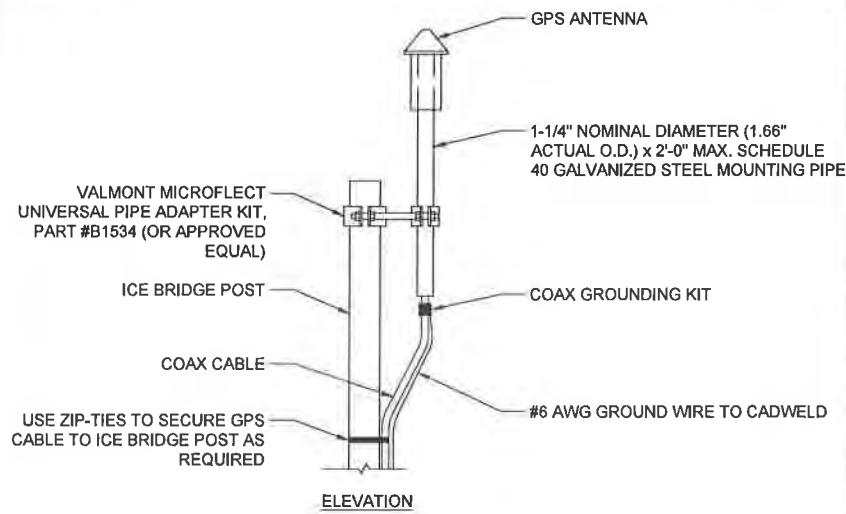
- NOTES:
1. CONCRETE SHALL BE 3000PSI.
 2. INSTALL FOUNDATION AROUND PIPE COLUMNS SUCH THAT TOP OF FOUNDATION EXTENDS 6" ABOVE GRADE.

PARTS LIST (PER 10' SECTION)		
ITEM	PART NO.	DESCRIPTION
1	MT-357-12	TRAPEZE KIT (NOTE 3)
2	MF-130	3-1/2" OD X 160" GALV. PLAIN
3	PC-034	3-1/2" GALV PIPE CAP
4	HHD12-K	CANTILEVER W/HARDWARE
5	WB-CY110	SAFETY GRATED WAVEGUIDE BRIDGE 12" x 10'



3 TRAPEZE KIT DETAIL

SCALE: NTS
SCALE: NTS



- NOTES:
1. LOCATION OF ANTENNA MUST HAVE CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE ANY BLOCKAGES EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.
 2. ALL GPS ANTENNA LOCATIONS MUST BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF FOUR (4) SATELLITES. VERIFY WITH HANDHELD GPS BEFORE FINAL LOCATION OF GPS ANTENNA.

4 GPS MOUNTING DETAIL

SCALE: NTS
SCALE: NTS

verticalbridge

CENTERLINE
SOLUTIONS
Advancing Wireless Networks



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SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:

10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE
CABLE BRIDGE
DETAILS

SHEET NO.

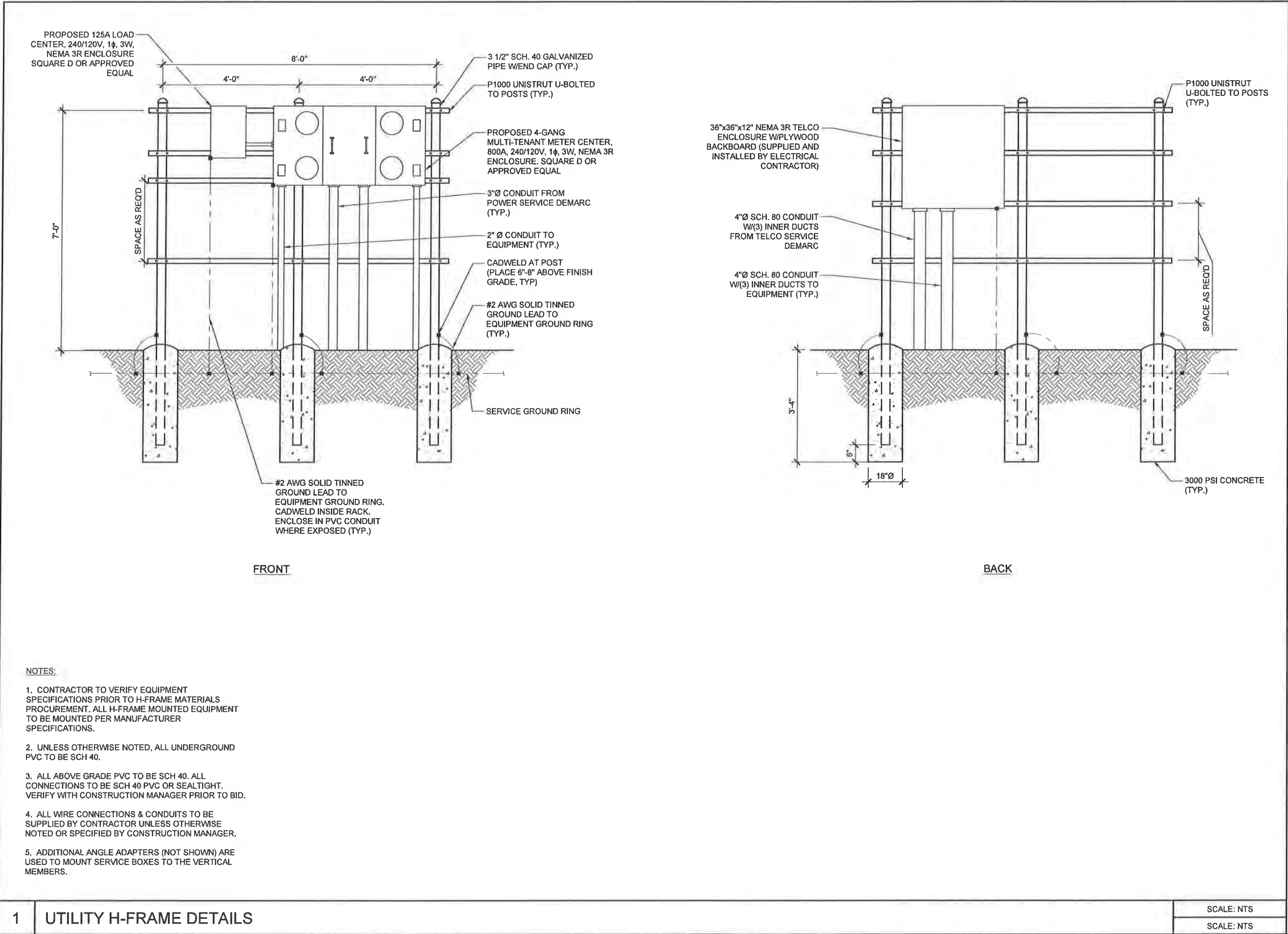
A6.0

1 ICE BRIDGE SUPPORT POST FNDN.

SCALE: NTS
SCALE: NTS

2 ICE BRIDGE DETAIL

SCALE: NTS
SCALE: NTS



CP PROJECT NO.: VRB-18-0001-6

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NO.	DATE	D/C	DESCRIPTION
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SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:
10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE

**UTILITY H-FRAME
DETAILS**

SHEET NO.

A7.0

1

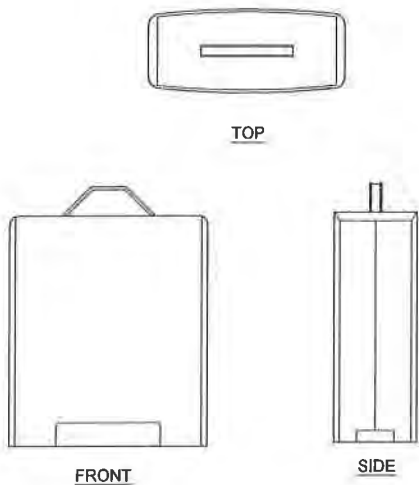
UTILITY H-FRAME DETAILS

SCALE: NTS

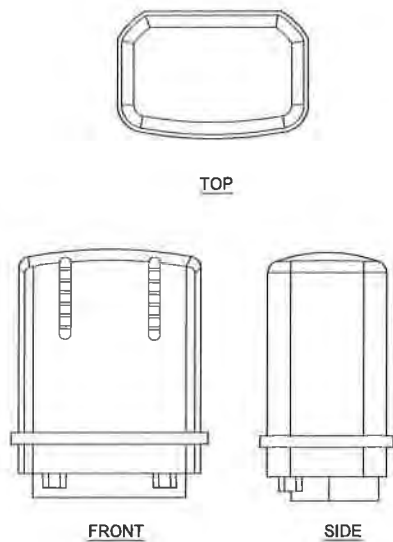
SCALE: NTS



MANUFACTURER: KATHRINE
PART NUMBER: 80010891
LENGTH: 78.5"
WIDTH: 14.8"
DEPTH: 6.7"
WEIGHT W/O BRACKETS: 79.7 LBS



RRU 2217 B2 (REMOTE RADIO UNIT)
MANUFACTURE: ERICSSON
HEIGHT: 13.8"
WIDTH: 11.7"
DEPTH: 6.7"
WEIGHT: 27.6 LBS



SURGE: RKED3969PF48
MANUFACTURE: RAYCAP
HEIGHT: 20"
WIDTH: 9"
DEPTH: 16"
WEIGHT: 8 LBS

1 PANEL ANTENNA DETAILS

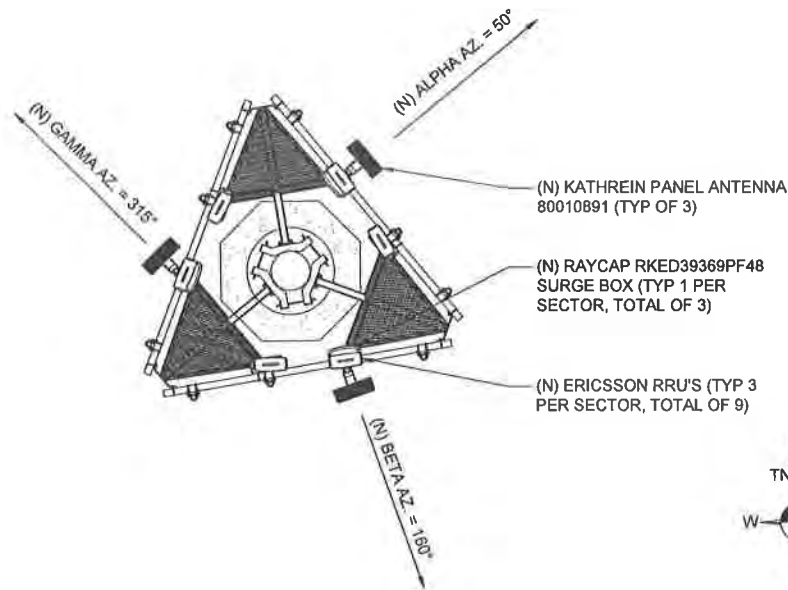
SCALE: NTS
SCALE: NTS

2 RRU DETAILS

SCALE: NTS
SCALE: NTS

3 SURGE PROTECTOR DETAILS

SCALE: NTS
SCALE: NTS



4 ANTENNA PLAN

SCALE: 1/8" = 1'-0" (11X17)
SCALE: 1/4" = 1'-0" (22X34)



5 NOT USED

SCALE: NTS
SCALE: NTS

verticalbridge

CENTERLINE
SOLUTIONS
Advancing Wireless Networks



CP PROJECT NO.: VRB-18-0001-6

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	05-01-19	TT/JR	90% CD REVIEW

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	06-28-19	TT/JR	BP SUBMITTAL

SITE NAME:

11 MILE
US-AK-5244

SITE ADDRESS:
10020 CRAZY HORSE DR
JUNEAU, AK 99801

SHEET TITLE
ANTENNA
DETAILS

SHEET NO.

A8.0

DESCRIPTION

SYSTEM GROUND RESISTANCE SHALL NOT EXCEED 10 OHMS. A THREE POINT SYSTEM RESISTANCE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH VERTICAL BRIDGE SPECIFICATIONS.

A. PERFORM THREE TESTS AT EACH SITE.

B. CONTRACTOR SHALL PROVIDE A WRITTEN REPORT CONSISTING OF THE FOLLOWING: SITE NAME, ADDRESS AND IDENTIFICATION NUMBER, DESCRIPTION OF SITE SOIL AND MOISTURE CONDITION, DESCRIPTION OF WEATHER, MODEL NUMBER OF TESTING EQUIPMENT, DATE OF LAST CALIBRATION, SITE SKETCH SHOWING LOCATION OF TEST PROBES AND ALL FIELD DATA COLLECTED (READINGS, RANGE, TEST, MILLIAMPS, ETC.)

C. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES PERFORMING SYSTEM RESISTANCE TESTS OR IF MEASUREMENTS ARE ABOVE 10 OHMS. THE CONSTRUCTION MANAGER SHALL PROVIDE INSTRUCTION TO THE CONTRACTOR TO INSTALL ADDITIONAL GROUNDING MEASURES TO MEET THE 10 OHMS REQUIREMENT.

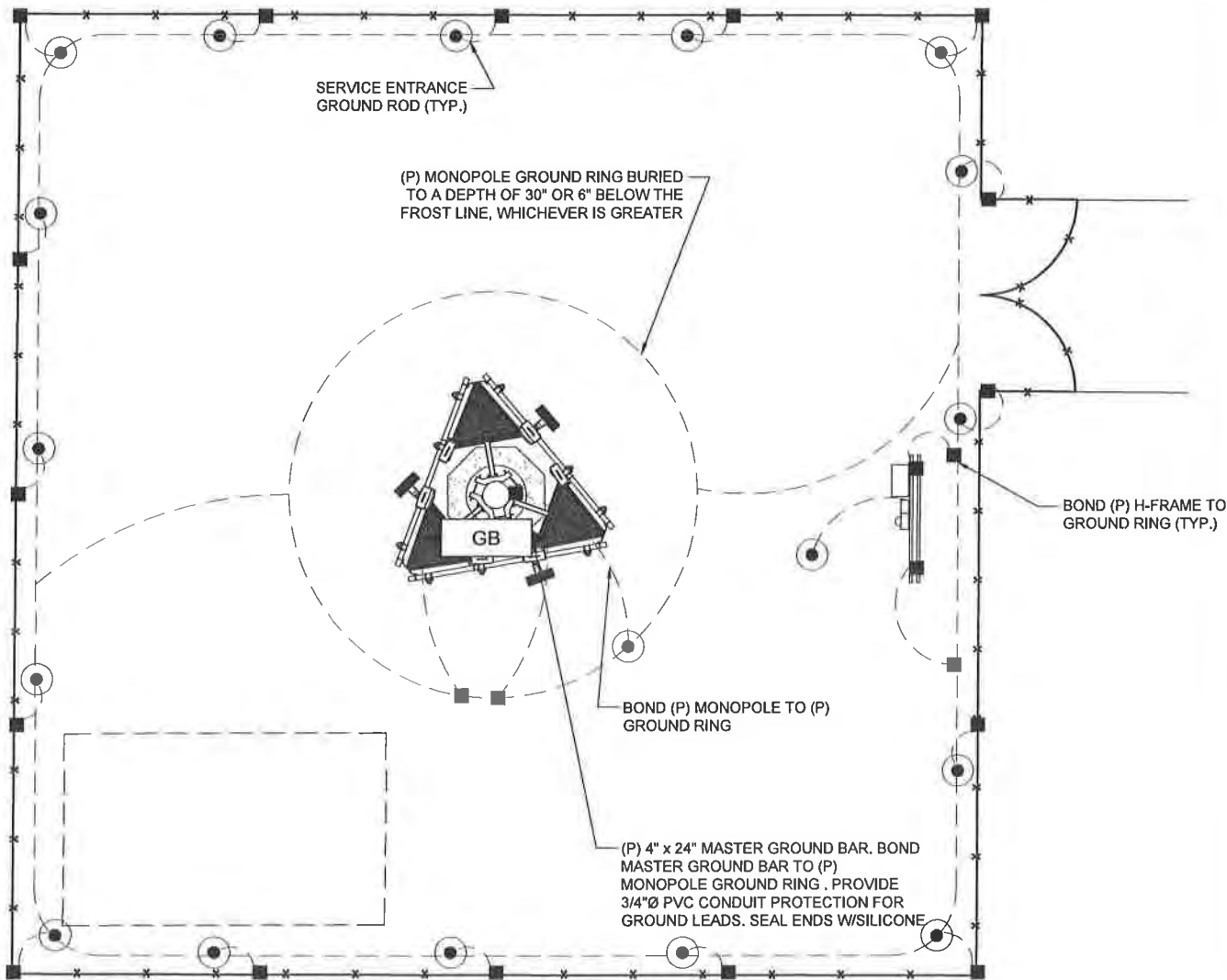
GROUNDING LEGEND

- ⊗ GROUND TEST WELL
- ⊙ GROUND ROD
- ▲ MECHANICAL CONNECTION (DOUBLE HOLE LUG)
- CAD WELD CONNECTION
- CONNECT PER MANUFACTURER SPECIFICATIONS
- GB GROUND BAR
- ⊥ EARTH GROUND

NOTES:

1. ALL ABOVE GRADE GROUND LEADS TO BE SHEATHED IN CARFLEX-X-FLEX™ FLEXIBLE CONDUIT OR EQUIV.

2. DEPICTION OF GROUNDING ROUTING IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO DETERMINE PER EXISTING SITE CONDITIONS.



1. GROUNDING SHALL CONFORM TO VERTICAL BRIDGE STANDARDS AND BE PER FEDERAL, STATE AND LOCAL CODES. IN THE EVENT OF A CONFLICT, MEET THE MOST STRINGENT REQUIREMENT.
2. GROUND RODS PAST METER SHALL BE COPPER-CLAD STEEL, 5/8" DIAMETER x 10 FEET IN LENGTH (MIN)
3. ALL GROUND CONDUCTORS PAST METER SHALL BE # 2 AWG SOLID BARE TINNED COPPER. MINIMUM BEND RADIUS FOR CONDUCTOR SHALL BE 8 INCHES.
4. GROUND RODS SHALL BE SPACED NOT MORE THAN 20'-0" AND NOT LESS THAN 10'-0" APART EXCEPT FOR THE MONOPOLE GROUND RING WHICH SHALL COMPLY WITH TIA/EIA 222 (REV G)
5. CONTRACTOR SHALL ADD ADDITIONAL RODS AND CONDUCTORS OR APPROVED GROUND ENHANCING MATERIAL TO ACHIEVE LESS THAN 10 OHMS RESISTANT TO GROUND.
6. MAINTAIN 2'-0" (TOWER) AND 3'-0" (SHELTER/EQUIPMENT) BETWEEN GROUND RINGS AND FOUNDATIONS.
7. ALL GROUNDING INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY VERTICAL BRIDGE AND ANY JURISDICTION HAVING INSPECTION AND APPROVAL AUTHORITY (IF REQUIRED) BEFORE PLACING ANY BACKFILL.
8. ALL GROUNDING SPLICES AND CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS (CADWELD OR EQUIVALENT). COAT ALL WELDS WITH ZINC RICH PAINT.

2 EXTERIOR GROUNDING NOTES

1. ALL GROUND CABLE IN CONCRETE OR THROUGH WALL SHALL BE IN 3/4" PVC CONDUIT. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTOR SLEEVES.
2. GROUND ALL EXPOSED METALLIC OBJECTS USING A TWO-HOLE NEMA DRILLED CONNECTOR SUCH AS THOMAS & BETTS #32207 OR APPROVED EQUAL.
3. ALL EXTERIOR GROUND CONDUCTORS INCLUDING GROUND RING SHALL BE #2 AWG SOLID BARE TINNED COPPER. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. THE RADIUS OF ANY BEND SHALL NOT BE LESS THAN 8" AND THE INCLUSIVE ANGLE OF ANY BEND SHALL NOT EXCEED 90°. GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARDS TOWARD THE BURIED GROUND RING.
4. ALL BELOW GROUND EXTERNAL CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. ALL EXOTHERMIC WELDS TO BURIED GROUND RING SHALL BE THE PARALLEL, EXCEPT FOR THE GROUND RODS WHICH ARE TEE-TYPE EXOTHERMIC WELDS. REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY EXOTHERMIC WELDING. USE SPRAY GALVANIZED SUCH AS HOLUB LECTROSOL #15-501.
5. WHERE MECHANICAL CONNECTORS (TWO-HOLE OR CLAMP) ARE USED, APPLY A LIBERAL PROTECTIVE COATING OF A CONDUCTIVE ANTI-OXIDE COMPOUND ON ALL CONNECTORS. PROVIDE LOCK WASHERS ON ALL MECHANICAL CONNECTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT. THOROUGHLY REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTORS, REPAINT TO MATCH EXISTING AFTER CONNECTION IS MADE TO MAINTAIN CORROSION RESISTANCE. ALL GROUND CONNECTIONS SHALL BE APPROVED FOR THE TYPES OF METALS BEING ATTACHED TO.
6. THE CONTRACTOR SHALL COORDINATE AS REQUIRED TO HAVE UTILITY COMPANY REPRESENTATIVE AT THE SITE TO DISCONNECT THE UTILITY NEUTRAL FROM GROUNDING SYSTEM DURING FINAL INSPECTION SO THAT REQUIRED TESTING ON THE GROUND SYSTEM CAN BE PERFORMED. THE CONTRACTOR SHALL PROVIDE NOTICE TO THE VERTICAL BRIDGE REPRESENTATIVE 2 (TWO) DAYS PRIOR TO FINAL TESTING. IF THE CONTRACTOR FAILS TO MAKE UTILITY COMPANY REPRESENTATIVE AVAILABLE DURING THE FINAL TESTING, THE CONTRACTOR SHALL PAY THE COST FOR AN INDEPENDENT GROUNDING CONSULTANT TO PERFORM THE GROUND RESISTANCE TEST. GROUNDING CONSULTANT SHALL BE SELECTED BY THE VERTICAL BRIDGE REPRESENTATIVE. IF THE UTILITY COMPANY REPRESENTATIVE FAILS TO APPEAR DUE TO NO FAULT THE CONTRACTOR, NO PENALTY SHALL APPLY.
7. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
8. THE GROUND CONDUCTORS SHALL BE RUN STRAIGHT FOR MINIMUM INDUCTANCE AND VOLTAGE DROP. SINCE CABLE BENDS INCREASE INDUCTANCE, THE MINIMUM REQUIRED BENDING RADIUS IS 8 INCHES WHEN BEND ARE UNAVOIDABLE. ALL METAL WORK WITHIN 10 FEET OF THE GROUND RING SHALL BE DIRECTLY BONDED TO THE GROUND SYSTEM, WITHOUT USING SERIES OR DAISY CHAIN CONNECTION ARRANGEMENTS.
9. PAINT, ENAMEL, LACQUER AND OTHER ELECTRICALLY NON-CONDUCTIVE COATINGS SHALL BE REMOVED FROM THREADS AND SURFACE AREAS WHERE CONNECTIONS ARE MADE TO ENSURE GOOD ELECTRICAL CONTINUITY.
10. CONNECTIONS BETWEEN DISSIMILAR METALS SHALL NOT BE MADE UNLESS THE CONDUCTORS ARE SEPARATED BY A SUITABLE MATERIAL THAT IS A PART OF THE ATTACHMENT DEVICE LISTED AND APPROVED FOR USE WITH THE SPECIFIC DISSIMILAR METALS MAY BE USED FOR THE PURPOSE.
11. ALL BELOW GRADE GROUND SYSTEM CONDUCTORS SHALL BE A MINIMUM DEPTH OF 30" (OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER).
12. CONTRACTOR TO COORDINATE WITH TOWER CONTRACTOR TO PROVIDE, RUN AND TERMINATE POWER & CONTROL WIRES WITHIN CONDUITS FROM LIGHTING CONTROLLER TO ELECTRICAL AND CONTROL PANELS.
13. INTERMEDIATE COAX GROUNDING TO BE INSTALLED ON VERTICAL RUNS THAT EXCEED 200 FEET IN LENGTH. CONTRACTOR SHALL COORDINATE WITH VERTICAL BRIDGE CONSTRUCTION MANAGER ON LOCATION OF INTERMEDIATE GROUNDING LOCATION.



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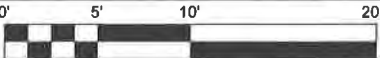
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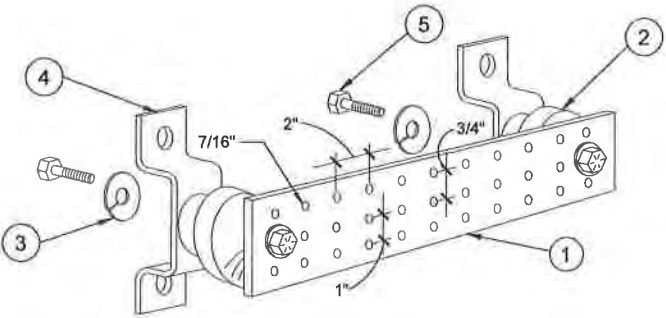
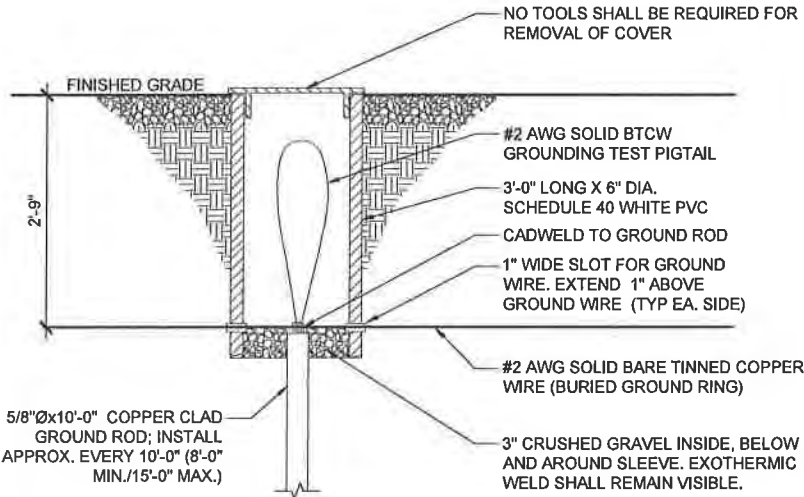
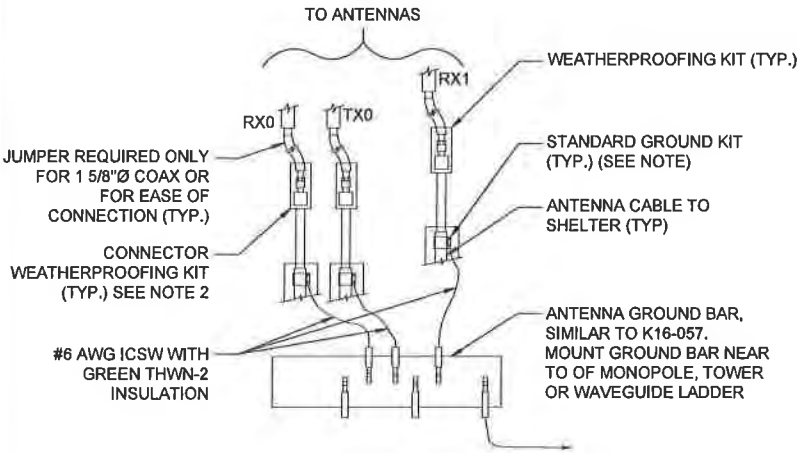
SHEET TITLE
GROUNDING
PLAN

SHEET NO.

G1.0



- NOTES:
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
 - WEATHER PROOFING SHALL BE ANDREWS. (TYPE & PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.)



- KEY / NOTES:
- TINNED COPPER GROUND BUSBAR, 1/4" X 4" X 12" OR APPROVED EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
 - SPACERS AS REQUIRED.
 - 5/8" LOCKWASHERS.
 - WALL MOUNTING BRACKET.
 - 5/8-11 X 1" HHCS BOLTS.
- GROUND BAR TO BE PURCHASED FROM ROHN.

1 SECTOR GROUNDING

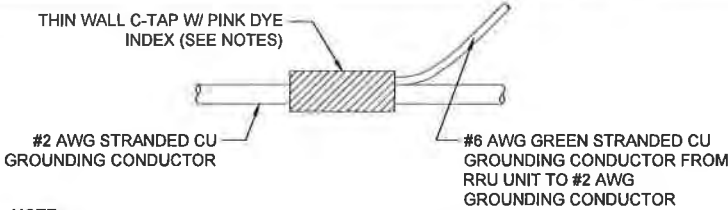
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2 GROUND TEST WELL DETAIL

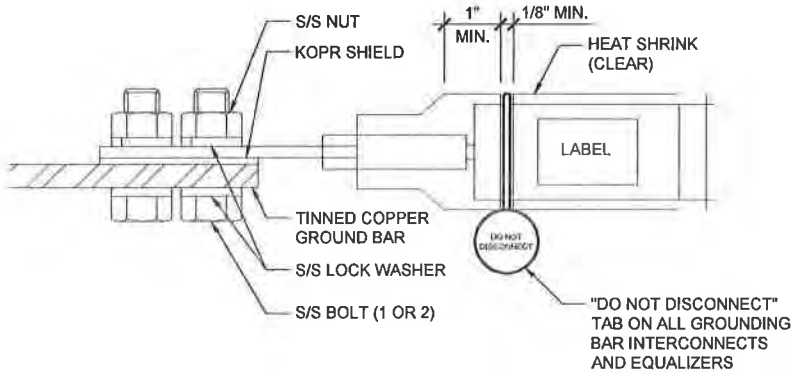
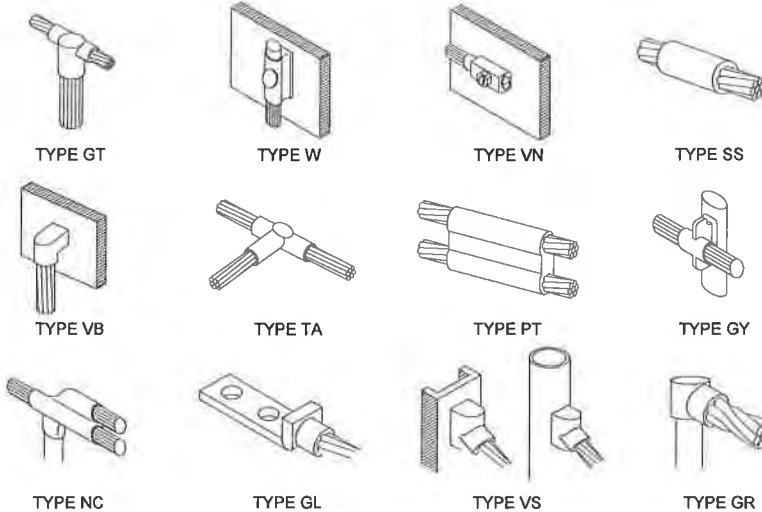
SCALE: NTS
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3 GROUND BAR DETAIL

SCALE: NTS
SCALE: NTS



NOTE:
CONTRACTOR TO SURROUND COMPLETED CONNECTION W/ WEATHER PROOFING TAPE TO ENSURE WEATHER PROOF CONNECTION.



- NOTES:
- ALL HARDWARE 18/8 STAINLESS STEEL INCLUDING LOCK WASHER. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATCHING.
 - FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHIELD.
 - PROVIDE 'DO NOT DISCONNECT' TAG.

3 C-TAP AND EXOTHERMIC WELDS

SCALE: NTS
SCALE: NTS

NOT TO SCALE

4 TWO-HOLE LUG CONNECTION

SCALE: NTS
SCALE: NTS

NOT TO SCALE

verticalbridge

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GROUNDING
DETAILS

SHEET NO.

G2.0

GENERAL CONSTRUCTION NOTES

- ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
- DO NOT CHANGE SIZE NOR SPACING OF STRUCTURAL ELEMENTS.
- DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
- BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
- DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE APPROVAL.
- EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS AND COORDINATE HIS WORK WITH THE WORK OF ALL OTHER CONTRACTORS TO ENSURE THAT WORK PROGRESSION IS NOT INTERRUPTED.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A NEAT AND ORDERLY SITE, YARD AND GROUNDS. REMOVE AND DISPOSE OFF SITE ALL RUBBISH, WASTE MATERIALS, LITTER, AND ALL FOREIGN SUBSTANCES. REMOVE PETRO-CHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. RAKE GROUNDS TO A SMOOTH EVEN-TEXTURED SURFACE.
- THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, ABOVE-GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE SHOWN OR MAY NOT BE SHOWN; AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL OR BLAST, CALL 1-800-962-7962.
- THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE OWNER OR OWNER'S REPRESENTATIVE.
- THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
- THE CONTRACTOR SHALL RESTORE ALL PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO AT LEAST AS GOOD OF CONDITION AS BEFORE DISTURBED AS DETERMINED BY THE OWNER OR OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND INCURRING THE COST OF ALL REQUIRED PERMITS, INCLUDING, BUT NOT LIMITED TO, THE BUILDING PERMIT, INSPECTIONS, CERTIFICATES, ETC.
- THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A LICENSED LAND SURVEYOR.
- ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE OSHA REGULATIONS FOR CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
- ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE AND THE UTILITY OWNER. NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE AND THE UTILITY OWNER BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
- MAINTAIN FLOW FOR ALL EXISTING UTILITIES.
- ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS AS DEFINED BY THE OWNER OR OWNER'S REPRESENTATIVE ON THE DRAWINGS.
- CONTRACTOR SHALL GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE EQUIPMENT PAD AND THE TOWER.
- ALL IMPROVEMENTS TO CONFORM WITH LOCAL JURISDICTION CONSTRUCTION STANDARDS AND SPECIFICATIONS, LATEST EDITION.

STRUCTURAL STEEL NOTES

- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- ALL INTERIOR STRUCTURAL STEEL USED SHALL BE, WHEN DELIVERED, FINISHED WITH ONE COAT FABRICATOR'S NON-LEAD, RED OXIDE PRIMER. PRIMING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE PRIMED AREAS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.
- ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATION ASTM A36 UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.
- DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
- CONNECTIONS:
 - ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
 - BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4" DIA) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
 - NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM 307 BOLTS UNLESS NOTED OTHERWISE.
 - CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.

DESIGN DATA

- WIND LOADS: PER EIA/TIA F-222
ICE LOADS: 1/2" RADIAL ON ALL COMPONENTS & CABLE
SNOW LOAD: PER NY STATE BLDG. CODE.
SEISMIC LOADS: PER NY STATE BLDG. CODE.

CONCRETE NOTES

- DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING APPLICABLE CODES: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"; ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE";
- MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE.
- CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED (±1.5%) WITH A MAXIMUM 4" SLUMP, AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE NOTED.
- MAXIMUM AGGREGATE SIZE SHALL BE 1".
- THE FOLLOWING MATERIALS SHALL BE USED: ASTM C 150, TYPE I
PORTLAND CEMENT: ASTM C 150, TYPE I
REINFORCEMENT: ASTM A 185
NORMAL WEIGHT AGGREGATE: ASTM C 33
WATER: DRINKABLE
ADMIXTURES: NON-CHLORIDE CONTAINING
- REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 315.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH: 3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER: #6 AND LARGER: 2 IN.
#5 AND SMALLER & WWF: 1 1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL: 3/4 IN.
BEAMS AND COLUMNS: 1 1/2 IN.
- A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURES WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE.
- ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI-301.
- DO NOT WELD OR TACKWELD REINFORCING STEEL.
- ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.

- LOCATE ADDITIONAL CONSTRUCTION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT.
- REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
- PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD JOINTS AND OTHER PLANES OF WEAKNESS. VIBRATE THE CONCRETE TO FULLY EMBED REINFORCING. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE THROUGH CHUTES OR FORMWORK.
- DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
- DO NOT ALLOW CONCRETE SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.
- FOR COLD-WEATHER AND HOT-WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS MINIMUM.



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GENERAL
NOTES

SHEET NO.

GN1

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
5' Lightning Rod	150	30,000 sq in CaAa	130
30,000 sq in CaAa	150	15,000 sq in CaAa	120
30,000 sq in CaAa	140	15,000 sq in CaAa	105

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure D to the TIA-222-G Standard.
2. Tower designed for a 108 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 60 mph basic wind with 0.25 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 96%

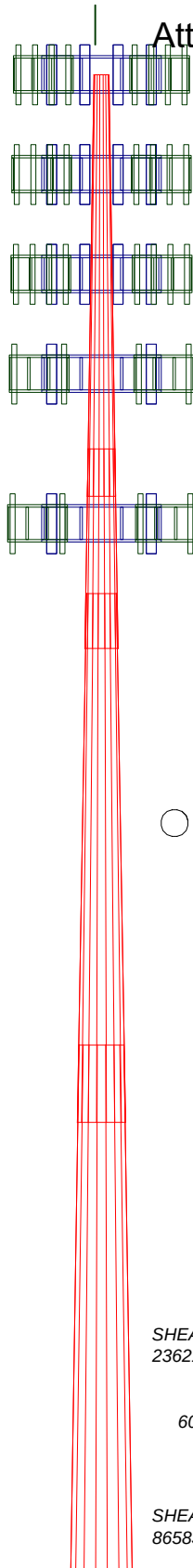
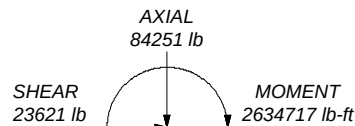
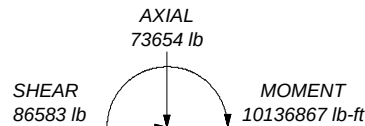
150.0 ft

107.8 ft

92.5 ft

45.0 ft

0.0 ft

ALL REACTIONS
ARE FACTOREDTORQUE 18 lb-ft
60 mph WIND - 0.2500 in ICETORQUE 48 lb-ft
REACTIONS - 108 mph WIND

Section	1	2	3	4
Length (ft)	42.25	20.00	53.00	52.75
Number of Sides	18	18	18	18
Thickness (in)	0.3125	0.4375	0.5000	0.5000
Socket Length (ft)	4.75	5.50	7.75	
Top Dia (in)	18.0000	31.8500	36.5720	53.0385
Bot Dia (in)	34.3085	39.5700	57.0300	73.4000
Grade			A572-65	
Weight (lb)	4053.5	3666.7	14577.1	19653.0
				41950.3

Nello Corporation

1201 S. Sheridan Street

South Bend, IN. 46619

Phone: 800-806-3556

FAX:

Job: **SO25910; Tower 452078; Foundation 452079**Project: **NP 150' - US-AK5244 11 Mile - Juneau Co., AK**

Client: Vertical Bridge

Drawn by: A G

App'd:

Code: TIA-222-G

Date: 01/08/20

Scale: NTS

Path: N:\eri\4520\452078.display.eri

Dwg No. E-1



May 22, 2019

Vertical Bridge
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487

Re: Nello Tower Fall Radius – Nello 150' NTP Pole Tower
Project Name: US-AK5244 11 Mile
Nello Job #: SO25910
Tower Drawing #: 452078

To Whom It May Concern:

This letter is regarding your inquiry about the expected performance of your proposed tower designed by Nello Corporation based on site-specific criteria.

Our towers are designed to meet or exceed industry standards defined by TIA-222-G, "Structural Standards for Antenna Supporting Structures and Antennas" (TIA Standard). It is our opinion that the possibility of a tower collapse is very unlikely. The tower is designed using extreme wind and ice conditions. In fact, wind speeds specified by the TIA Standard are 50-year wind speeds. That is, they have only a 2% statistical chance of occurring in any given year.

This tower has been designed using the following wind conditions as a minimum: a 134 mph ultimate wind speed with no ice and a 60 mph 3-second gust wind with .25" ice. The TIA Standard specifies 127 mph as the wind speed required for Juneau Borough, AK. The "3-second gust wind speed" refers to a wind measured at 33 feet above the ground. Equations in the TIA Standard take into account that wind speed escalates with increasing height of the tower.

Although we cannot guarantee exactly how a tower would fall if it were to fail, the most likely mode of failure would be a buckling failure of one of the pole sections due to excessive wind loading. The pole section with the highest stress ratio is located at the 107.75' – 150' level. The stress ratio in that section is calculated to be 96.2% of the code-permitted design loading. Given that the pole section with the highest stress ratio will most likely fail first, the proposed tower would fail at the 107.75' level with the top 42.25' of the tower collapsing. Depending on the conditions at the time of failure and the stress levels in structural material below, the top 42.5' of the tower would likely fall within a 75' fall radius.

The fall radius statement above assumes proper foundation construction and tower installation. The foundation design should be reviewed to ensure that no foundation limit state governs the entire structural system and negates the fall radius design. The fall radius expectancy requires that the foundation be designed with a capacity greater than that of the tower capacity. If the foundation design used in association with this tower is performed by a third party then Nello must be provided the opportunity to review the design in order to confirm that the fall radius remains satisfactory. If for some reason Nello does not provide the tower design or is not given the opportunity to design or review the foundation for this specific project then the content of this letter becomes void.

If you have any other questions or concerns regarding the design of your site-specific tower, please contact our engineering or sales department.

Sincerely,

William H. Martin, P.E., S.E.



Attachment A - Application

150ft. Balloon Test



verticalbridge

US-AK-5244 11 MILE

10020 Crazy Horse Dr, Juneau, AK 99801

**150ft. MONOPOLE
SIMULATION**

View from Brandy Lane
approximately 1,350ft east of site

Attachment A - Application

150ft. Balloon Test



verticalbridge

US-AK-5244 11 MILE

10020 Crazy Horse Dr, Juneau, AK 99801

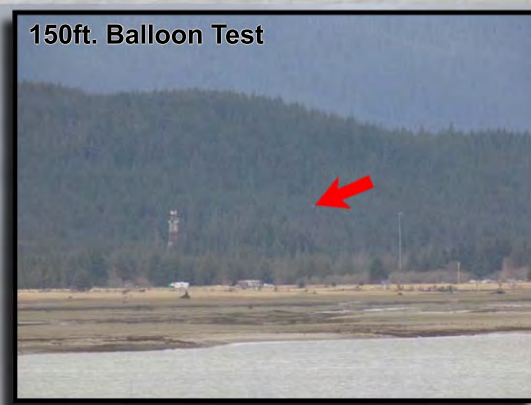
**150ft. MONOPOLE
SIMULATION**

View from Industrial Boulevard
approximately 1,280ft northeast of site

Attachment A - Application



150ft. Balloon Test



verticalbridge

US-AK-5244 11 MILE

10020 Crazy Horse Dr, Juneau, AK 99801

**150ft. MONOPOLE
SIMULATION**

View from Douglas Island Launch
approximately 3 miles south of site

Attachment A - Application

150ft. Balloon Test



verticalbridge

US-AK-5244 11 MILE

10020 Crazy Horse Dr, Juneau, AK 99801

**150ft. MONOPOLE
SIMULATION**

View from Engineers Cutoff Road
approximately 2,970ft west of site



11 Mile

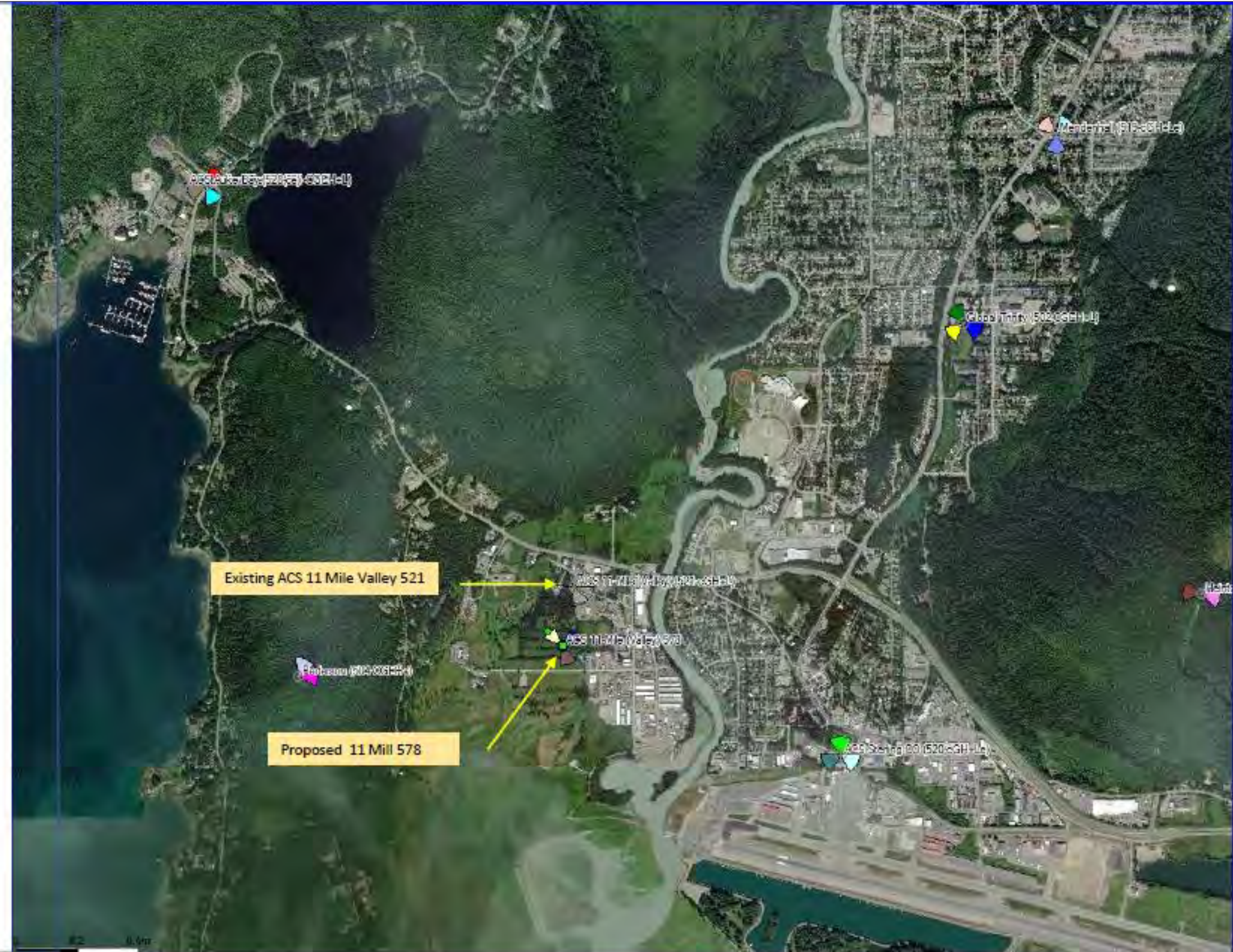
Existing Site Area Map

[illegible]

Existing Location/ Proposed Location

Existing Site Area with
Proposed 11 mile 578

Packet Page 599 of 643



Existing Coverage With 11 Mile 521 UMTS B2

Legend:

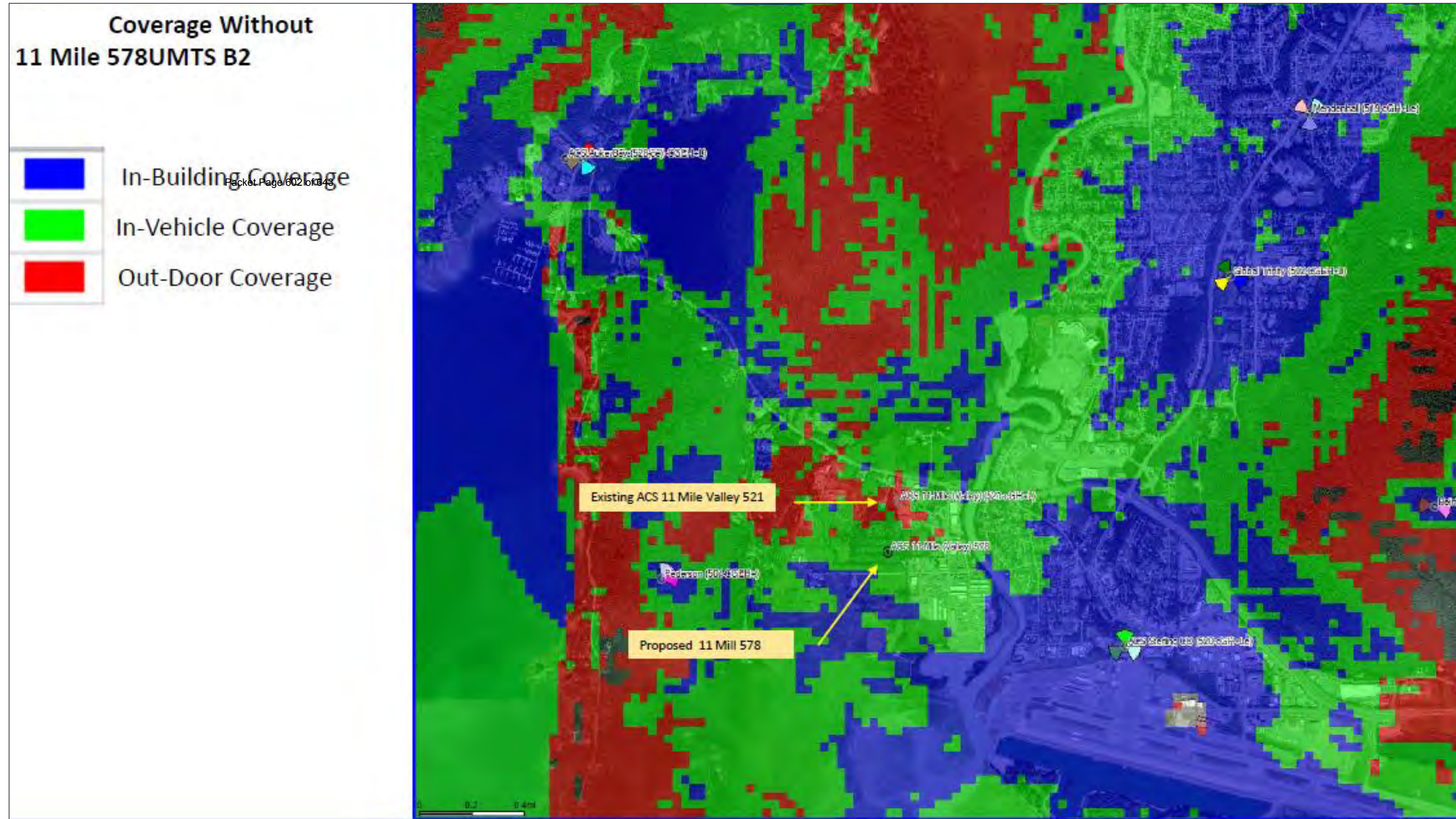
- In-Building Coverage (Blue)
- In-Vehicle Coverage (Green)
- Out-Door Coverage (Red)

Map Labels:

- Existing ACS 11 Mile Valley 521
- Proposed 11 Mill 578
- Merced (512-664-114)
- Shady Grove (520-082-41)
- Pleasanton (925-435-114)
- ACS 11-Mile (521-521) (521-521-11)
- ACS 11-Mile (521-521) (521-521-11)
- ACS 11-Mile (521-521) (521-521-11)
- ACS 11-Mile (521-521) (521-521-11)

[illegible]

UMTS Coverage without site



Existing Coverage With 11 Mile 521 LTE B4

- In-Building Coverage (Blue)
- In-Vehicle Coverage (Green)
- Out-Door Coverage (Red)

Packet Page 603 of 643

ACS Luke (B4-52055) (GSH-L)

ACS 11 Mile Valley (521-GH-L)

ACS 11 Mile Valley 578

ACS Sterling CO (520-GH-L)

ACS 11 Mile Valley (520-GH-L)

Existing ACS 11 Mile Valley 521

Proposed 11 Mill 578

Scale: 0.2 Miles

Coverage With 11 Mile Vertical Bridge 578 LTE B4

- In-Building Coverage
- In-Vehicle Coverage
- Out-Door Coverage

Existing ACS 11 Mile Valley 521

Proposed 11 Mill 578

ACS 11 Mile Valley (521-e54-e1)

ACS 11 Mile Vertical Bridge (578)

ACS 11 Mile Valley (520-e54-e1)

ACS 11 Mile Valley (520-e54-e1)

Scale: 0.2 to 0.4 miles



Existing Site Area Map

**Existing Site Area with
Proposed 11 mile 578**

[illegible]

**Existing Coverage With
11 Mile 521 UMTS B2**

The map displays three types of coverage areas:

- In-Building Coverage (Blue)
- In-Vehicle Coverage (Green)
- Out-Door Coverage (Red)

Key locations labeled include:
 - Existing ACS 11 Mile Valley 521
 - Proposed 11 Mill 578
 - Merced Mall (F&G GH-H)
 - Shadel Villa (E&D GH-H)
 - Polkson (H&I GH-H)
 - ACS 11-Mile Valley 521 (F&G GH-H)
 - ACS 11-Mile Valley 578
 - ACS Rising Sun (F&G GH-H)

A scale bar at the bottom left indicates distances from 0 to 0.4 miles.

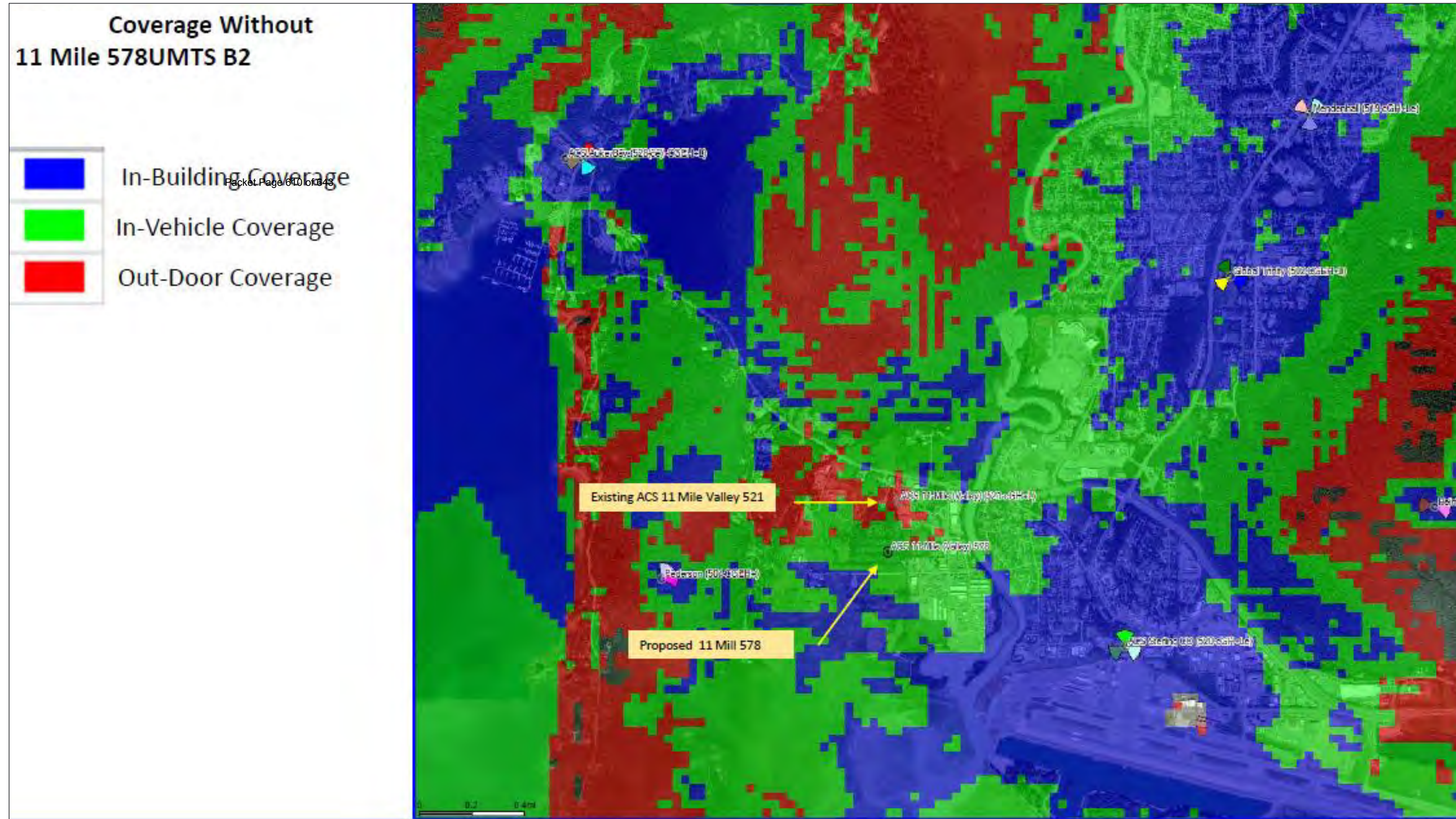
Coverage With
11Mile 578 UMTS B2

In-Building Coverage
In-Vehicle Coverage
Out-Door Coverage

This figure shows two maps side-by-side comparing cellular coverage areas. The left map is titled "Existing ACS 11 Mile Valley 521" and the right map is titled "Proposed 11 Mill 578". Both maps show In-Building Coverage (blue), In-Vehicle Coverage (green), and Out-Door Coverage (red). The proposed system (right) shows significantly expanded coverage, particularly in blue-shaded areas representing buildings.



UMTS Coverage without site



Existing Coverage With 11 Mile 521 LTE B4

Legend:

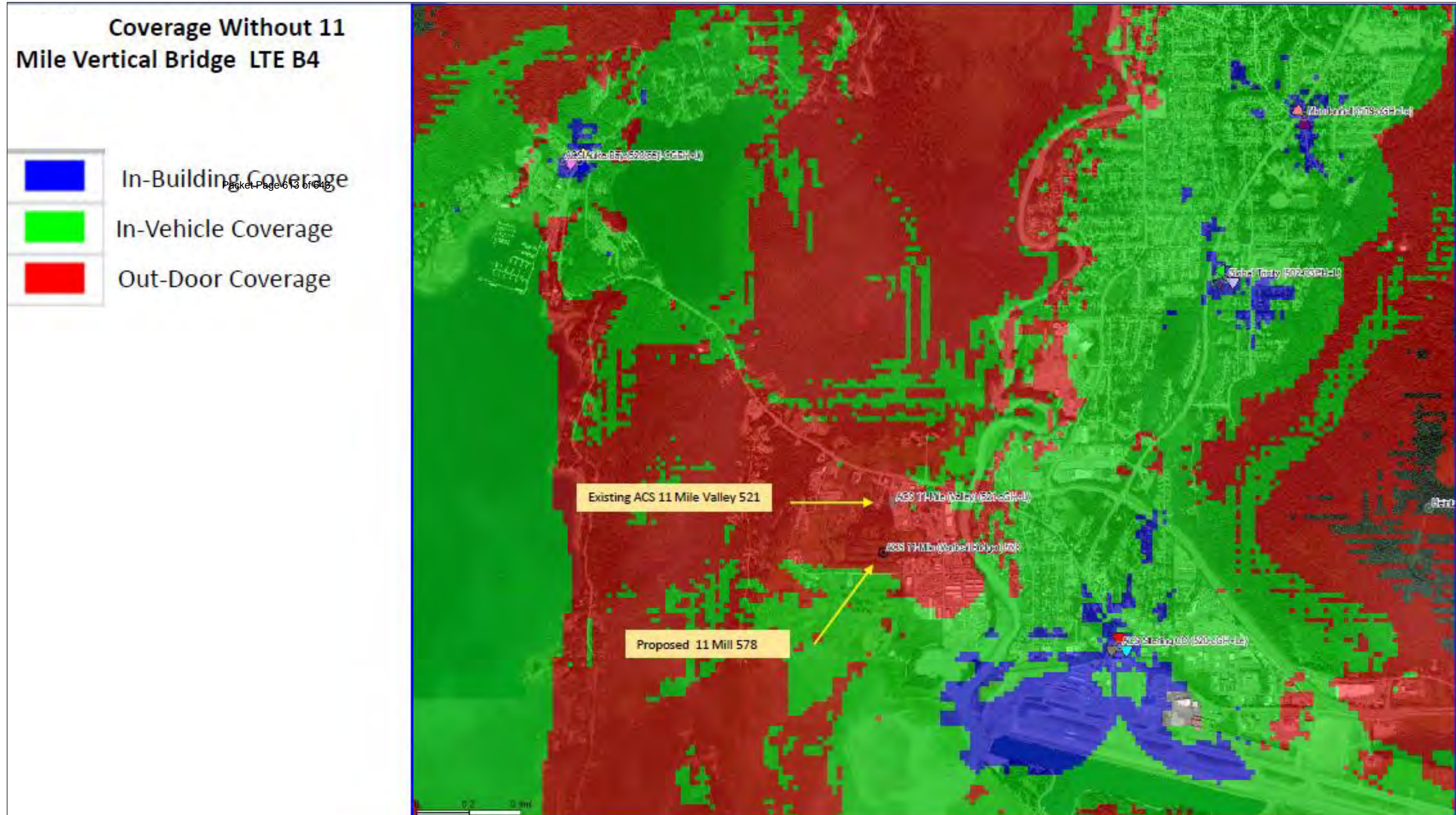
- In-Building Coverage (Blue)
- In-Vehicle Coverage (Green)
- Out-Door Coverage (Red)

Map Labels:

- Existing ACS 11 Mile Valley 521
- Proposed 11 Mill 578
- ACS 11 Mile Valley 578
- ACS 11 Mile Valley 579
- ACS 11 Mile Valley 521 (521-03H-1)
- ACS 11 Mile Valley 578 (578-03H-1)
- ACS 11 Mile Valley 579 (579-03H-1)
- ACS 11 Mile Valley 521 (521-03H-1)
- ACS 11 Mile Valley 578 (578-03H-1)
- ACS 11 Mile Valley 579 (579-03H-1)

[illegible]

LTE coverage without Site





11 Mile New Tower (578) Radio Frequency (RF) Site Compliance Report



Mendenhall Valley, Juneau, AK, USA

Proposed Vertical Bridge Towers Justification

WCF20190009 Lena Point and WCF20190010 11 Mile

September 30th, 2019

In the spring of 2018, Vertical Bridge began a search for a couple of new tower site locations in the Industrial zoned area south of the Glacier Hwy and west of the Mendenhall River and in the area of the Glacier Hwy out by Lena Point in the D3 zoned area. The purpose of these searches was to find suitable locations for their primary client to locate new cellular equipment and expand the cellular coverage beyond what was capable on existing infrastructure.

Vertical Bridge's primary client for both of these locations is currently located on existing AT&T Alaska (Alascom) towers in these areas.

There are several reasons why the client's existing colocations on these AT&T Alaska facilities do not perform as the client's RF Engineering Network parameters require them to:

1. Lack of necessary height for the antennas to generate the desired coverage
2. Lack of the existing structures to be modified to achieve the desired height for the coverage parameters and additional tower cellular equipment
3. Lack of existing ground space to accommodate the addition of desired additional, new equipment to be placed in order to provide new 5G technology
4. Lack of any other colocatable structures within these search areas that can accommodate any cellular equipment

5. Unreasonable increase of lease fees for ground and tower space by current landlord

An extensive search was conducted for the new, proposed tower locations in the above mentioned areas. In the case of the WCF20190009 Lena Pt. location, there was really only one practical location that would provide the coverage required by the client's RF Engineering group. That is the proposed location adjacent to the CBJ Water Tank and across the access road from the FAA tower off of Merganser Rd on CBJ owned property. This location has good road access as well as existing power and telephone copper/fiber available nearby for use at the proposed site. Critical elements for economically feasible telecommunications site operations. The proposed site is also heavily wooded and provides a natural visual barrier to minimize viewshed intrusion.

Both proposed locations have had visual impact studies performed and there has been determined to be no significant visual impact to the surrounding area. Neither tower is required by the FAA or FCC to be lit or painted. Because of these determinations, both towers have been designed to be manufactured in galvanized steel and non-concealed. Both towers have been load designed to accommodate a total of 4 carriers.

In the Industrial zoned area of the proposed WCF20190010 11 Mile site, six prospective landlords were approached about leasing space on their property to Vertical Bridge for the purposes of developing a telecommunications site with tower. Several of these potential landlords rejected the proposal outright and several others considered it, but either requested unreasonable lease amounts way out of line with market norms or decided that they didn't want the requested size of the proposed site to occupy that much of their property.

After exhausting all prospective private property site locations, it was suggested by the CBJ to examine the CBJ property where the Food Bank and an FAA tower is currently located off of Crazy Horse Drive. This location was not ideal from a Wetlands standpoint, but it was workable and still within the Industrial zoned area. Vertical Bridge's primary client's RF Engineering group reviewed the location, determined the necessary tower height required to meet the network performance criteria and OK'd the site. Vertical Bridge is currently pursuing a Wetlands construction permit with the Army Corps of Engineers for this location.

In both the Lena Point and 11 Mile locations there are FAA towers. The FAA, and for that matter any Federal Government telecommunications facility, have never allowed any private carriers (cellular or otherwise) to collocate on their tower facilities. To my knowledge, neither has the State of Alaska. This is to prevent any hint of favoritism or endorsement by a government entity toward any particular carrier or commercial entity.

In conclusion, both proposed site locations meet Vertical Bridge's primary client's RF engineering network performance criteria. There are already existing FAA towers in close proximity and one of the locations is in the highly preferred Industrial area for telecommunications development. In the case of the Lena Point location, the proposed site is also in close proximity to the rather large CBJ owned water tank. Both locations seem ideal to locate commercial, multiple carrier telecommunications facilities as the immediate areas surrounding each location already accommodate a more industrial oriented development.

Gary R. Brekke



(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

COMMUNITY DEVELOPMENT DEPARTMENT - REQUEST FOR AGENCY COMMENT

DEPARTMENT: Engineering and Public Works
STAFF PERSON/TITLE: Autumn Sapp
DATE: 10/4
APPLICANT: Gary Brekke
TYPE OF APPLICATION: Wireless Communication Facility

PROJECT DESCRIPTION:
New free standing, unlit, 155' communications tower

LEGAL DESCRIPTION: USS 1041
PARCEL NUMBER(S): 4B1701100120
PHYSICAL ADDRESS: 10020 Crazy Horse Dr

SPECIFIC QUESTIONS FROM PLANNER:

Are there concerns related to your department about the proposed tower?

AGENCY COMMENTS:

Engineering has no concerns with the proposed work. Any work within the ROW will need to be permitted through General Engineering.

From: [Charlie Ford](#)
To: [Amy Liu](#)
Subject: RE: Review WCF20190009/ -10 Merganser and Crazy Horse
Date: Friday, October 4, 2019 10:55:34 AM
Attachments: [image001.jpg](#)

Hi Amy,
Buildings has no issues with these projects.
Thank you,

Charlie Ford | Building Official

[Community Development Department](#) | City & Borough of Juneau, AK

Location: 230 S. Franklin Street, 4th Floor Marine View Building

Office: 907.586.0767

CBJ_EmailLargeColorLogo



From: Amy Liu
Sent: Friday, October 4, 2019 9:58 AM
To: Charlie Ford
Subject: Review WCF20190009/ -10 Merganser and Crazy Horse
Good morning,
Please see the attached applications for your review and comment.
Thanks,

Amy Liu | Planner

[Community Development Department](#) | City & Borough of Juneau, AK

Location: 230 S. Franklin Street, 4th Floor Marine View Building

Office: 907.586.0764

CBJ_EmailLargeColorLogo





(907) 586-0715
CDD_Admin@juneau.org
www.juneau.org/CDD
155 S. Seward Street • Juneau, AK 99801

COMMUNITY DEVELOPMENT DEPARTMENT - REQUEST FOR AGENCY COMMENT

DEPARTMENT: Juneau International Airport
STAFF PERSON/TITLE: Patty Wahto
DATE: 10/11
APPLICANT: Gary Brekke
TYPE OF APPLICATION: Wireless Communication Facility

PROJECT DESCRIPTION:

New free standing, unlit, 155' communications tower

LEGAL DESCRIPTION: USS 1041
PARCEL NUMBER(S): 4B1701100120
PHYSICAL ADDRESS: 10020 Crazy Horse Dr

SPECIFIC QUESTIONS FROM PLANNER:

Are there concerns related to your agency about the proposed tower?

AGENCY COMMENTS:

Has the applicant filed the FAA form 7460 for obstruction to air space? That is a requirement for areas around an airport and reviewed by Obstruction Evaluation Group (OEG) and others. It will determine the ability to construct as well as requirements for lighting and marking.

From: Tom Dawson <tommyjoe@alaskan.com>
Sent: Wednesday, October 16, 2019 2:44 PM
To: PC_Comments
Subject: Case no: WCF2019 0010 Parcel no: 4B1701100120

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

I strongly **oppose** this proposed wireless communication permit.

First, it does not say what type of “wireless” communication device will be installed, but I assume the tower will be for a 5G wireless phone sys.

Second, knowing all the known and unknown dangers of 5G microwaves, I do not want to see any 5G installations anywhere in Juneau, let alone within 2000 feet of my property in that area.

Third, the known dangers of 5G are bad enough that any sane person would want no part of it, but it is the unknown dangers that haven’t been studied yet that really concern me.

Please do a little research into the dangers of 5G microwave transmissions and how they affect the human body and brain. Do not let these dangers come to Juneau.

Tom Dawson

From: grieser@gci.net
Sent: Monday, October 28, 2019 1:48 PM
To: PC_Comments
Subject: Case WCF2019 0010

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Cell tower installation at 10020 Crazy Horse Drive. Please allow this submission as a request NOT TO INSTALL A 5G tower here or anywhere in Juneau. Thank you!

D. Grieser

From: Karen Dinnan <dinnans@gmail.com>
Sent: Wednesday, October 30, 2019 8:24 PM
To: PC_Comments
Subject: No 5G

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Do we NEED this?

I would say no. Just because it is the latest/greatest, doesn't mean we should especially since there are questionable major health concerns and environmental impacts.

https://themindunleashed.com/2019/10/scientific-american-warning-5g.html?fbclid=IwAR2WlChftz6AcVsU2tF_ZDuKkQeCUjwz3a_Dzlx5lzHGLtJv4TQGtGhaZKg

<http://techcrunch.com/2018/09/10/bay-area-city-blocks-5g-deployments-over-cancer-concerns/>

Karen Dinnan
PO Box 21703
Juneau, AK 99802

dinnans@gmail.com

From: Tom Dawson <tommyjoe@alaskan.com>
Sent: Wednesday, November 20, 2019 7:20 PM
To: PC_Comments
Subject: Case No: WCF2019 0010

EXTERNAL E-MAIL: BE CAUTIOUS WHEN OPENING FILES OR FOLLOWING LINKS

Amy Liu,

I am again writing and expressing my concerns regarding Case No; WCF2019 0010 Parcel No: 4B1701100120

I strongly OPPOSE this permit to install a new 155 foot communication tower on Crazy Horse Drive near my property. I strongly oppose any communication towers in the Juneau area that will include **5G microwave transmissions**. This is dangerous technology that hasn't been fully studied and understood. I hope the Planning Commission does it's due diligence regarding the 5G RF dangers and protects the citizens of Juneau from the horrific health (and privacy) issues that will arise from this radiation, and the millions in lawsuits that will arise as the damage is done and lives are ruined and the city is held accountable for blindly allowing this to happen. **Please see the article below and follow the links.** 5G microwave RF transmissions are **not** harmless. Those RF wavelength transmissions are in the same wavelength as radar transmissions. Even small radar systems on pleasure boats give a "WARNING" in the manuals not to stand anywhere near their beams while they are operating because it causes human cell damage. This damage is similar to the emissions in a microwave oven. Read the caution label on your microwave oven!

Do not grant this permit or allow 5G to come to Juneau.

Tom Dawson
 321-3474

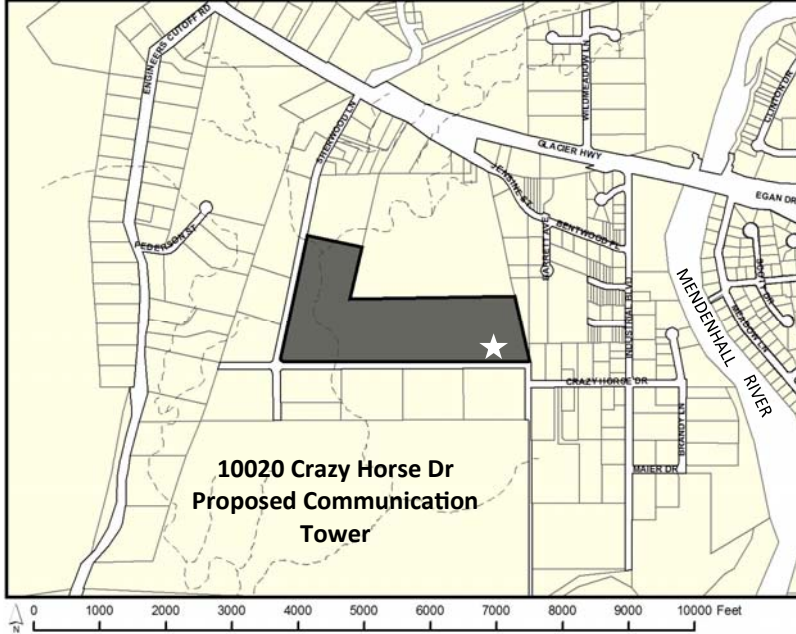
"While the [FCC continues over and over and over again to say that 5G is safe](#), the extended excerpt below which comes to us from this story over at Global Research titled "[5G Danger: 13 Reasons 5G Wireless Technology Will Be a Catastrophe for Humanity](#)" gives us many reasons to believe otherwise".

"The 5G danger can't be overstated. 5G (5th Generation) is now being actively rolled out in many cities around the world. Simultaneously, as awareness over its horrific health and privacy impacts is rising, many places are issuing moratoriums on it or banning it, such as the entire nation of Belgium, the city of Vaud (Switzerland) and San Francisco (USA). Radiofrequency radiation (RF or RFR) and electromagnetic fields (EMF) are being increasingly recognized as new types of pollution – environmental pollution".

Read more at: AllNewsPipeline.com and 5GAlert.com.

Invitation to Comment

On a proposal to be heard by the CBJ Planning Commission
Your Community, Your Voice



155 S. Seward Street Juneau, Alaska 99801

TO:

An application has been submitted for consideration and public hearing by the Planning Commission for a **Wireless Communication Facility Permit** to install a **new, unlit, 155-foot communication tower** located at **10020 Crazy Horse Drive** in an **Industrial Zone**.

TIMELINE

Staff Report expected to be posted **Monday, November 4, 2019** at <https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through October 21, 2019

Comments received during this period will be sent to the Planner, **Amy Liu**, to be included in the staff report.

October 22 through 12 noon, November 8

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME

7:00 pm, November 12, 2019

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

November 13

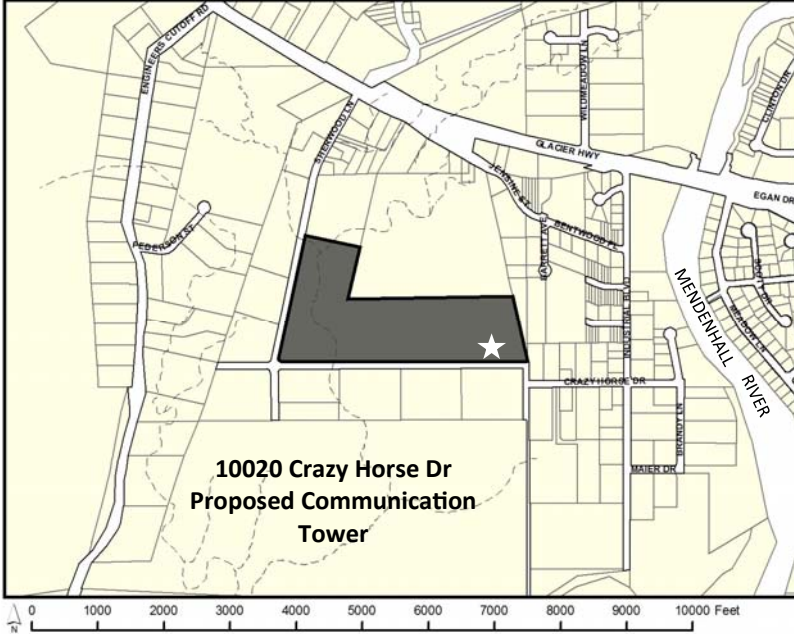
The results of the hearing will be posted online.

Phone: **(907)586-0715** ♦ Email: pc_comments@juneau.org
Mail: **Community Development, 155 S. Seward St, Juneau AK 99801**

Case No.: WCF2019 0010
Parcel No.: 4B1701100120
CBJ Parcel Viewer: <http://epv.juneau.org>

Revised Notice

Re: Proposed Communication Tower
Hearing Rescheduled



155 S. Seward Street Juneau, Alaska 99801

TO:

POSTPONED

You are receiving this notice regarding an application being heard by the Planning Commission for a Wireless Communication Facility Permit to install a new, unlit, 155-foot communication tower located at 10020 Crazy Horse Drive. Originally, the hearing was set for November 12, 2019.

The hearing has been rescheduled for December 10, 2019.

TIMELINE

Staff Report expected to be posted **Monday, December 2, 2019** at <https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through November 18, 2019

Comments received during this period will be sent to the Planner, **Amy Liu**, to be included in the staff report.

Nov. 19 through 12 noon, December 6

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME

7:00 pm, December 10, 2019

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

December 11

The results of the hearing will be posted online.

Phone: **(907)586-0715** ♦ Email: pc_comments@juneau.org
Mail: **Community Development, 155 S. Seward St, Juneau AK 99801**

Case No.: WCF2019 0010
Parcel No.: 4B1701100120
CBJ Parcel Viewer: <http://epv.juneau.org>

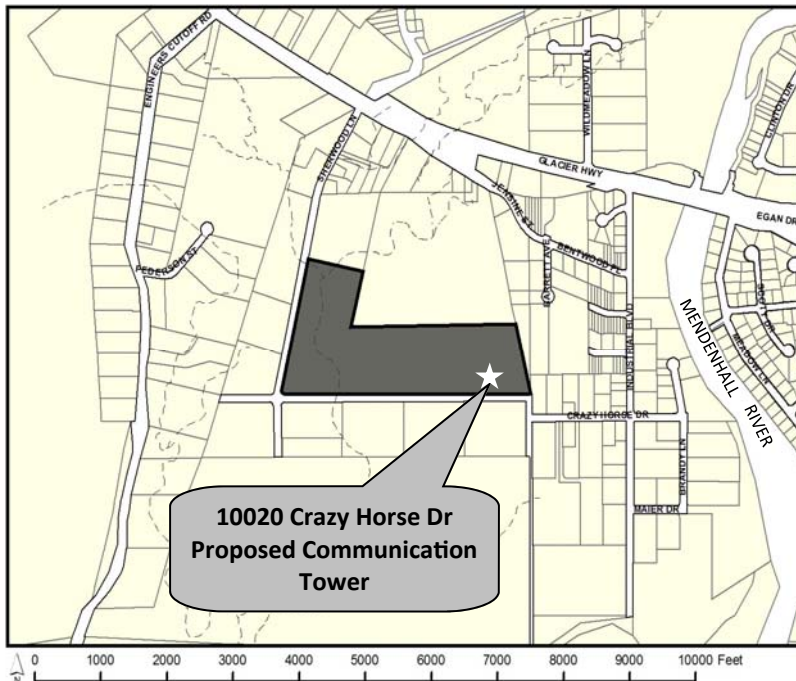
**Notice: The December 10
Planning Commission
hearing for the Proposed
Wireless Communication
Facility Tower has been
CANCELED**



155 S. Seward Street Juneau, Alaska 99801

TO:

Case No.: WCF2019 0010
Parcel No.: 4B1701100120
CBJ Parcel Viewer: <http://epv.juneau.org>



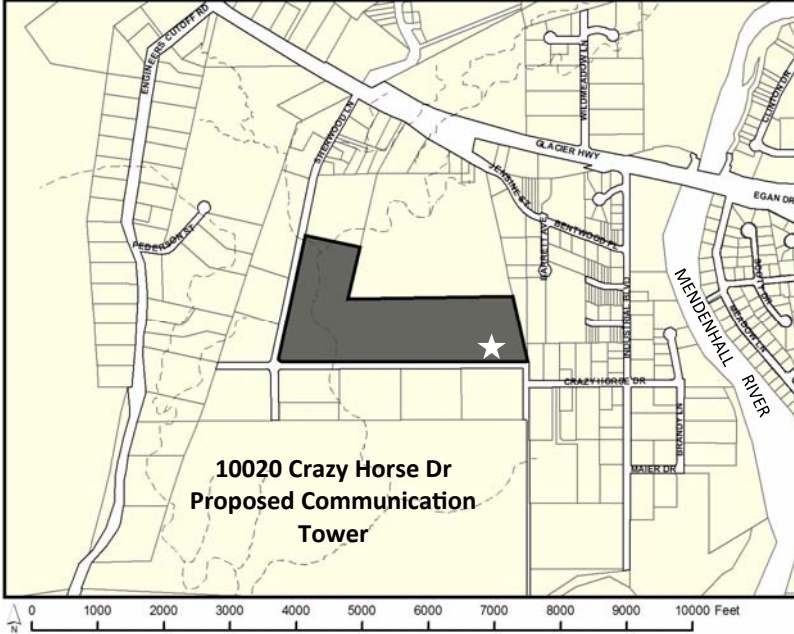
CANCELED

This notice is to inform you that the public hearing by the Planning Commission for a **Wireless Communication Facility Permit to install a new, unlit, 155-foot communication tower** located at 10020 Crazy Horse Drive in an Industrial Zone **has been canceled**. If and when this case is rescheduled, you will receive notification and have the opportunity to comment.

For questions, please contact Amy Liu, CDD Planner
Phone: (907)586-0764 ♦ Email: amy.liu@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

SECOND Revised Notice

Re: Proposed Communication Tower
Hearing Rescheduled



155 S. Seward Street Juneau, Alaska 99801

TO:

THIS ITEM HAS BEEN RESCHEDULED

You are receiving this notice regarding an application being heard by the Planning Commission for a Wireless Communication Facility Permit to install a new, unlit, 155-foot communication tower located at 10020 Crazy Horse Drive. Originally, the hearing was set for December 10, 2019.

The hearing has been rescheduled for March 24, 2020.

TIMELINE

Staff Report expected to be posted **Monday, March 16, 2020** at <https://beta.juneau.org/assembly/assembly-minutes-and-agendas>
Find hearing results, meeting minutes and more here as well.

Now through March 2

Comments received during this period will be sent to the Planner, **Amy Liu**, to be included in the staff report.

March 3 through 12 noon, March 20

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, March 24, 2020

You may testify and bring up to 2 pages of written material (15 copies) in City Hall's Assembly Chambers, 155 S. Seward St., Juneau.

March 25

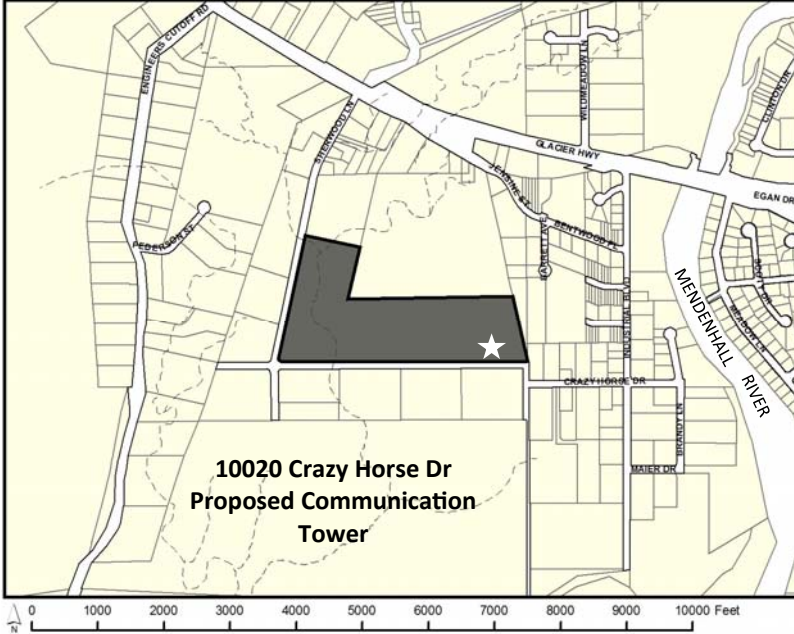
The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: WCF2019 0010
Parcel No.: 4B1701100120
CBJ Parcel Viewer: <http://epv.juneau.org>

Hearing Rescheduled

Re: Proposed Communication Tower
Third Revised Notice



155 S. Seward Street Juneau, Alaska 99801

TO:

THIS ITEM HAS BEEN RESCHEDULED

You are receiving this notice regarding an application being heard by the Planning Commission for a Wireless Communication Facility Permit to install a new, unlit, 150-foot communication tower located at 10020 Crazy Horse Drive. Originally, the hearing was reset for March 24, 2020.

The hearing has been rescheduled for April 14, 2020.

Staff Report are posted at:

<https://beta.juneau.org/assembly/assembly-minutes-and-agendas>

Find hearing results, meeting minutes and more here as well.

TIMELINE

Now through noon, April 10

Comments received during this period will be sent directly to Commissioners to read over the weekend in preparation for the hearing.

HEARING DATE & TIME
7:00 pm, April 14, 2020

Members of the public wishing to call in to testify can dial 907-713-2140 and entering Participant ID number 813893. **The caller should provide their name and state that they are calling in for the Planning Commission meeting.** Public lines will be muted by default but will be unmuted by CBJ staff when it is that individual's turn to testify.

April 15

The results of the hearing will be posted online.

Phone: (907)586-0715 ♦ Email: pc_comments@juneau.org
Mail: Community Development, 155 S. Seward St, Juneau AK 99801

Case No.: WCF2019 0010
Parcel No.: 4B1701100120
CBJ Parcel Viewer: <http://epv.juneau.org>

WCF20190010

A Wireless Communication Facility Permit to install new,
unlit 150-foot communication tower

PC Presentation April 14, 2020

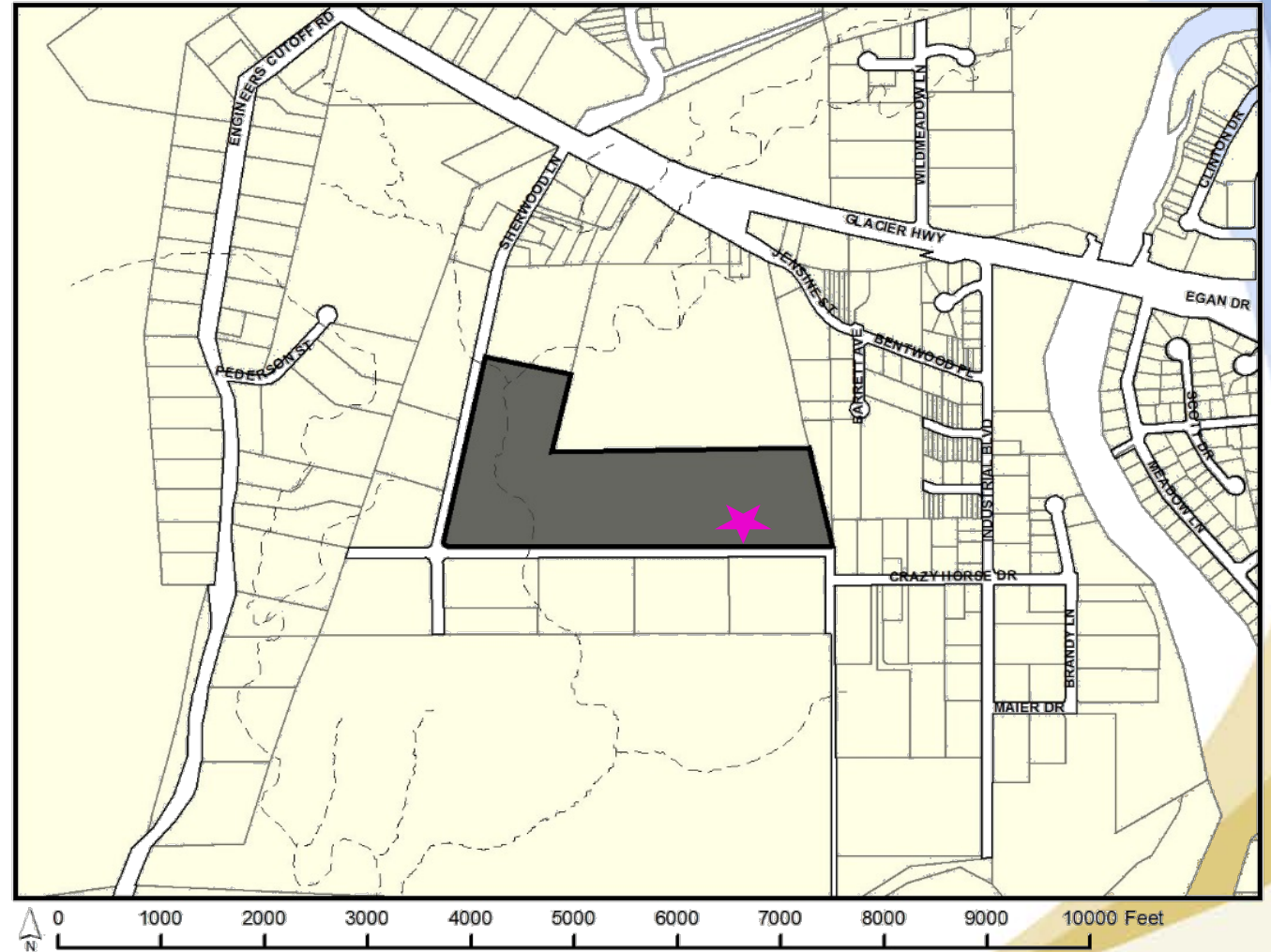
Staff recommends the Planning Commission adopt the
Directors analysis and findings and **APPROVE WITH
CONDITIONS** the requested Special Use Permit.

Project Description

New 150-foot tall, freestanding monopole tower with 5-foot lightning rod.

- There will be no antenna adding to the height of the tower.
- The tower is proposed to be unlit

Packet Page No. 330



Agency Review and Public Comment

Staff requested review from the CBJ Assessor's Office, Building Division, Capital City Fire and Rescue, Engineering and Public Works Department, Lands and Resources Division, and the Juneau International Airport (JIA). (Packet Page No. 459-461)

- Building Division, and Engineering and Public Works expressed that they had no concerns.
- JIA noted that the applicant will need to file FAA 7460. This form must be filed at least 45 days prior to the start date of proposed construction.
- Staff did not receive other comments.

Several public comments expressed concerns about 5G service being detrimental to health. (Packet Page No. 462-465)

- Staff's review takes into account whether the applicant meets regulatory standards set by the Federal Communication Commission (FCC).
- The applicant has FCC Compliance Assessments which states that as designed, the proposed tower will meet FCC regulations (Packet Page No. 382-385)

Project Site

The project site is a 31.97-acre parcel located in an Industrial zoning district.

- The tower location is approximately 28 feet north and 190 feet west of Southeast Alaska Food Bank

There are three towers within a 1,000-foot vicinity of the proposed tower's location.

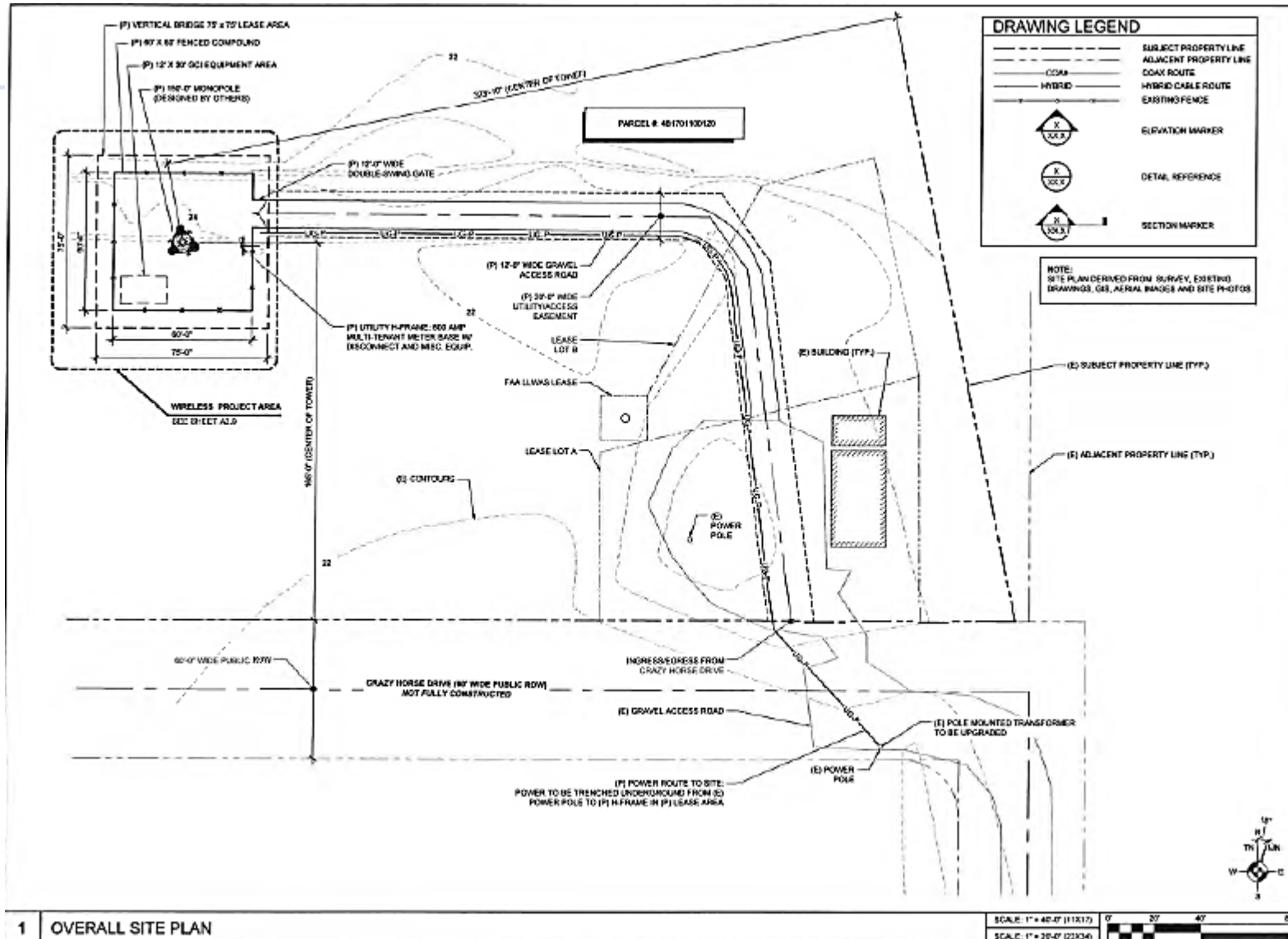
- Site 16 and Site 17 are located along Bentwood Plaza, and owned by Alascom and AT&T respectively. The former is a 158-foot lattice tower, and the latter is a 60-foot monopole.
- Site 18 hosts a 120-foot Federal Aviation Administration (FAA) tower west of the applicant's proposed site along Crazy Horse Drive.

The applicant reasons that collocation onto private towers will not be cost effective or support desired performance.

- The applicant has not provided documentation to demonstrate the cost effectiveness, nor if cost effectiveness should be considered in allowing a new tower, rather than requiring collocation.
- The FAA prohibits private carriers from collocating onto its facilities.

See Packet Page No. 332

Project Site



Project Design

Security and signage

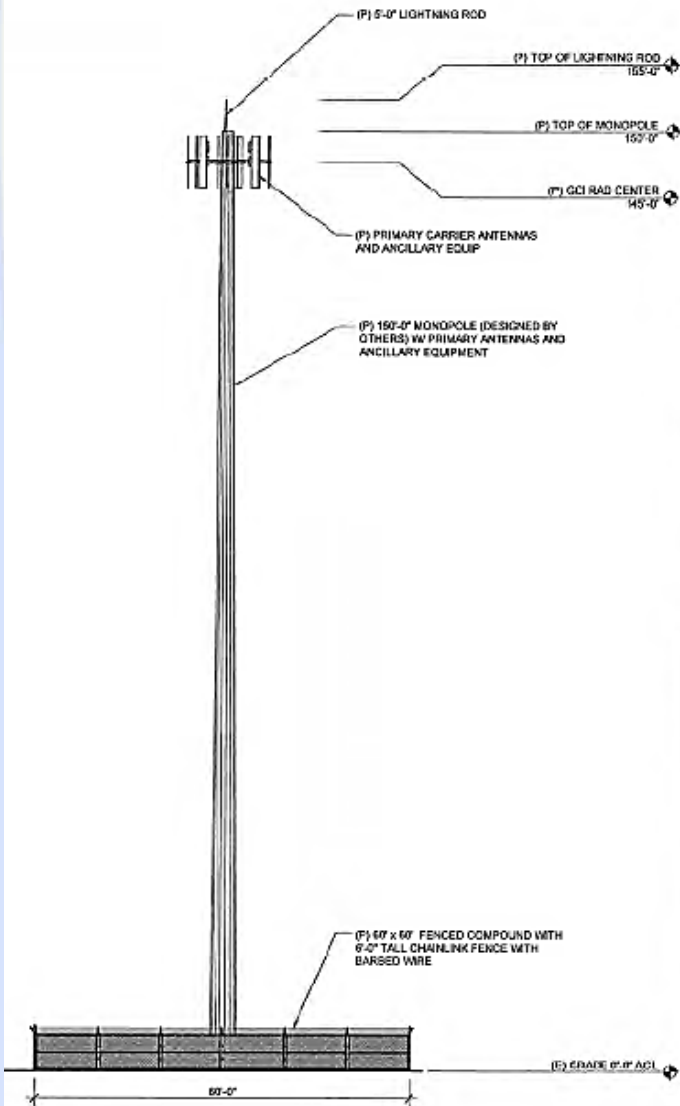
- There will be a 6-foot tall, barbed chain link fence with barbed wire and a locking gate.
- Signage cautioning entry on premises and posting contact information will be affixed onto the fence.

Lighting

- The FAA does not require lighting for the tower.

Arrays

- CBJ 49.65.930(e)(1) requires WCFs between 121 feet and 150 to accommodate no fewer than five antenna arrays. The proposed tower will accommodate five antenna arrays.
- Staff recommends that, if a height of 150 feet is approved, more than five antenna arrays must be accommodated.



Project Design

Setbacks

- The tower meets setbacks. The tower will not have a breakpoint. CBJ 49.65.930(f)(1) requires a tower without breakpoints to have a minimum setback distance from the nearest property line at least equal to the height of the tower.
- The tower height is 150 feet. The tower location is more than 300 feet from the north, the east, and the west lot lines. The distance from the south property line is 165 feet.

Structural Assessment

- A professional engineer certifies all construction drawings for the proposed tower.
- Another professional engineer has confirmed that subsurface conditions are suitable for the tower foundation.

Propagation Study and RF Emissions Compliance

- The submitted statement confirming that radio frequency emissions will comply with FCC standards is consistent with the requirements of CBJ 49.65.960(d).
- The propagation study shows increased service coverage.

See Packet Page No. 332-334

Project Design

Visual Impact Study

- The application includes a zone of visibility map that meets the requirements of CBJ 49.65.970(c)(2)(B)(i). The proposed site for the tower does not obstruct view sheds identified in the 2013 Comprehensive Plan.
- The development meets the requirements of CBJ 49.65.930(2)(B)(i) and minimizes adverse effects on the surrounding landscape, as it is located more than a quarter mile from residences. The tower consists of a galvanized steel, which appears mottled grey that is consistent with the local industrial streetscape. Staff recommends as a condition of approval that the monopole is matte grey in color.
- Simulated Renderings of WCF: The applicant has included photo-simulations of the tower viewed from multiple vantage points used in the zone of visibility study.
- Existing trees and other vegetation provide screening at the base of the tower. While grading and backfill will be performed at the tower location, the surrounding vegetation will remain largely intact.
- The balloon test meets the requirements of CBJ 49.65.930(2)(D). The study shows six vantage points: Brandy Lane and Crazy Horse Drive, Industrial Boulevard and Bentwood Plaza, Glacier Highway and Jensine Street, 2331 Engineers Cutoff Road, and the Mendenhall Golf Course Parking Lot.

See Packet Page No. 333 and

Traffic, Parking, Circulation

Traffic

- Staff does not anticipate the proposed use to add traffic to the existing site, excluding the limited traffic during construction and periodic maintenance.

Parking and Circulation

- The site has area for parking and is accessed from Crazy Horse Drive.

See Packet Page No. 334

Other External Impacts

Noise

- Staff does not anticipate that the tower will generate noise. The site is separated from residential homes by a dense vegetation.

Public Health or Safety

- No evidence indicates that there are any public health or safety impacts from the proposed project. The applicant provided a Radio Frequency Emissions Compliance Report signed by a qualified professional, whose credentials are included.

Habitat

- The proposal does not affect habitat protected by Title 49.

Property Value or Neighborhood Harmony

- The proposed tower will not generate noise, traffic, or visual impact that is inconsistent with existing towers or neighboring residential uses.

See Packet Page No. 334

Conformity With Adopted Plans

The proposal complies with the 2013 Comprehensive Plan and the Wireless Telecommunications Master Plan

- The subject property has a Comprehensive Land Use designation of Urban Low Density Residential. WCFs are deemed appropriate to the zoning due to their low noise and traffic impact. While the tower is not similarly scaled to single-family residential development, the tower's isolation is anticipated to mitigate conflicts with neighborhood harmony.

See Packet Page No. 334-335

Findings and Recommendation

Staff findings can be found on WCF20190010 Staff Report pages 7-11 (Packet Pages 335-339)

Staff recommends the Planning Commission adopt the Director's analysis and findings and approve the requested Special Use Permit for a 150-foot tall communication tower with a 5-foot lightning rod with the following conditions:

1. The WCF must be constructed as a monopole;
2. The WCF must be matte grey in color;
3. The WCF cannot have lighting, and if in the future the FAA requires lighting, a modification to the Special Use permit must be approved by the Planning Commission;
4. The site security and required signage must be installed and maintained according to the plan;
5. The WCF must accommodate more than five (5) antenna arrays.



Planning Commission

(907) 586-0715
PC_Comments@juneau.org
www.juneau.org/plancomm
155 S. Seward Street • Juneau, AK 99801

PLANNING COMMISSION

NOTICE OF DECISION

Date: April 17, 2020

File No.: WCF2019 0010

Vertical Bridge, LLC
ATTN: Gary Brekke
6510 Beechcraft Road
Wasilla, AK 99654

Application For: A Wireless Communication Facility Permit to install a new, unlit 150-foot communication tower

Legal Description: USS 1041

Property Address: 10020 Crazy Horse Drive

Parcel Code No.: 4B1701100120

Hearing Date: April 14, 2020

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated March 17, 2020, and APPROVED the Special Use Permit to install a new, unlit, 150-foot communication tower with a 5-foot lightning rod to be conducted as described in the project description and project drawings submitted with the application and with the following conditions:

1. The site security and required signage must be installed and maintained according to the plan.

Attachments: March 17, 2020 memorandum from Amy Liu, Community Development, to the CBJ Planning Commission regarding WCF2019 0010.

This Notice of Decision does not authorize construction activity. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ 01.50.030. Appeals must be filed by 4:30 P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to

Vertical Bridge, LLC
Case No.: WCF2019 0010
April 17, 2020
Page 2 of 2

CBJ 01.50.030(c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ 49.20.120).

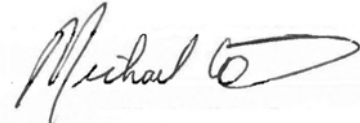
Effective Date: The permit is effective upon approval by the Commission, April 14, 2020.

Expiration Date: The permit will expire 18 months after the effective date, or October 14, 2021, if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the development permit was authorized. Application for permit extension must be submitted thirty days prior to the expiration date.

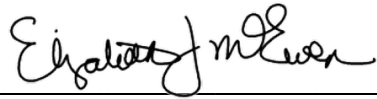
Project Planner:



Laurel Christian, Planner
Community Development Department



Michael LeVine, Chair
Planning Commission



Filed With City Clerk

4/20/2020

Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ-adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.