Matanuska-Susitna Borough
Planning Commission Meeting Agenda

Meeting Date: June 15, 2026
Meeting Time: 6:00 PM

Meeting Location

Assembly Chambers – Dorothy Swanda Jones Building
350 E. Dahlia Avenue
Palmer, Alaska 99645

Planning Commission Members

Chairperson: Richard Allen

Vice-Chair: Doug Glenn

Commissioners:

- Brendan Carpenter
- Michael Collins
- Linn McCabe
- Ivan Fonov
- Curt Scoggin

Ways to Participate in the Meeting

1. Participate In Person

Members of the public may attend the meeting in person. You will have **three (3) minutes** to provide oral comments unless otherwise directed by the Chair.

2. Submit Written Comments

Send written comments to the Planning Commission Clerk:
Email: msb.planning.commission@matsugov.us
Deadline: Written comments must be received **by 12:00 PM (noon) on the Friday before the meeting.**

3. Provide Testimony by Telephone

1. Dial **1-855-290-3803**.
2. You will hear “joining conference” when connected.

3. You will be automatically muted and able to listen to the meeting.
4. When the Chair opens public testimony, if you would like to speak, press ***3** to raise your hand.
5. You will hear "Your hand has been raised."
6. When it is your turn to speak, you will hear "Your line has been unmuted."
7. State your name for the record, spell your last name, and provide your testimony.

4. Observe the Meeting Online

You may watch the meeting live using one of the following platforms:

- Matanuska-Susitna Borough Facebook page
- Matanuska-Susitna Borough YouTube channel

Meeting Agenda

1. Call to Order, Roll Call, and Determination of Quorum
2. Approval of Agenda
3. Pledge of Allegiance
4. Consent Agenda
   A. Meeting Minutes – June 1, 2026
   B. Introduction for Public Hearing: Quasi-Judicial Matters

      Resolution 26-10 A Conditional Use Permit In Accordance With MSB 17.70 - Regulation Of Alcoholic Beverage Uses To Expand Operations For A Pre-Existing Alcoholic Beverage Dispensary (Bar), Located At 10204 S. Knik Goose Bay Road (Tax ID# 7186000L001), Within Township 16 North, Range 03 West, Section 24, Seward Meridian.

      Staff: Wade Long, Development Services Manager

      Public Hearing Date: July 20, 2026

   C. Introduction for Public Hearing: Legislative Matters
5. Committee Reports
6. Agency/Staff Reports
7. Land Use Classifications
8. Audience Participation

9. Public Hearing: Quasi-Judicial Matters

10. Public Hearing: Legislative Matters

Resolution 26-09 A Resolution Of The Matanuska Susitna Borough Planning Commission Recommending Approval Of An Ordinance Amending MSB 17.73 Multifamily Development Design Standards To Align Permitting And Design Standards With The Scale And Complexity Of Development Projects.

Staff: Alex Strawn, Planning Director

11. Correspondence and Information

12. Unfinished Business

13. New Business

14. Commission Business

    A. Upcoming Planning Commission Agenda Items

15. Director and Commissioner Comments

16. Adjournment

Accessibility and Accommodation Information

Individuals with disabilities who need reasonable accommodation to participate in this meeting should contact the Borough ADA Coordinator:

Phone: 907-861-8432
Request Deadline: At least **one week before the meeting.**

MINUTES

June 1, 2026

Matanuska-Susitna Borough
Planning Commission Meeting Minutes

Meeting Date: June 1, 2026
Meeting Time: 6:00 PM

Meeting Location

Assembly Chambers – Dorothy Swanda Jones Building
350 E. Dahlia Avenue
Palmer, Alaska 99645

Planning Commission Members

Chairperson: Richard Allen

Vice-Chair: Doug Glenn

Commissioners:
- Brendan Carpenter
- Michael Collins
- Linn McCabe
- Ivan Fonov
- Curt Scoggin

Meeting Agenda

1. Call to Order, Roll Call, and Determination of Quorum

   The Matanuska-Susitna Borough Planning Commission's regular meeting was held on June 1, 2026, at the Matanuska-Susitna Borough Assembly Chambers, 350 E. Dahlia Avenue, Palmer, Alaska. Chair Allen called the meeting to order at 6:00 p.m.

   Attendance:
   (*) Next to a name indicates telephonic participation.

   Present: Commissioner McCabe*
   Commissioner Allen
   Commissioner Fonov
   Commissioner Carpenter
   Commissioner Glenn

Absent: Commissioner Collins
Commissioner Scoggin

Staff Present: Mr. Wade Long, Development Services Manager
Ms. Lacie Olivieri, Planning Department Admin
Mr. Alex Lowe, Assistant Borough Attorney
Ms. Erin Ashmore, Assistant Borough Attorney

2. Approval of Agenda

Chair Allen inquired if there were any changes to the agenda.

GENERAL CONSENT: The Agenda was approved without objection.

3. Pledge of Allegiance

The Pledge of Allegiance was led by Commissioner Glenn.

4. Consent Agenda

A. Meeting Minutes – May 18, 2026

B. Introduction for Public Hearing: Quasi-Judicial Matters

C. Introduction for Public Hearing: Legislative Matters

Resolution 26-09 A Resolution Of The Matanuska Susitna Borough Planning Commission Recommending Approval Of An Ordinance Amending MSB 17.73 Multifamily Development Design Standards To Align Permitting And Design Standards With The Scale And Complexity Of Development Projects.
Staff: Alex Strawn, Planning Director
Public Hearing date: June 15, 2026

Chair Allen read the Consent Agenda into the record.

GENERAL CONSENT: The Consent Agenda was approved without objection.

5. Committee Reports *(There were no Committee reports)*

6. Agency/Staff Reports *(There were no Agency/Staff reports)*

7. Land Use Classifications *(There were no Land Use Classifications)*

8. Audience Participation

There being no persons to be heard, audience participation was closed without objection.

9. Public Hearing: Quasi-Judicial Matters *(There were no Quasi-Judicial public hearings)*

10. Public Hearing: Legislative Matters *(There were no Legislative public hearings)*

11. Correspondence and Information *(There was no Correspondence and information)*

12. Unfinished Business *(There was no unfinished business)*

13. New Business *(There was no new business)*

14. Commission Business

    A. Upcoming Planning Commission Agenda Items

Chair Allen asked whether Commissioners had any questions about the list of upcoming agenda items in their folders.

15. Director and Commissioner Comments

Commissioner Fonov: No Comment.

Commissioner Carpenter: No Comment.

Commissioner Glenn: No comment

Commissioner McCabe: Hello, and enjoy the nice weather this week.

Wade Long: Wade Long, Development Services Manager. And not to take up too much of anybody's time, but I did want to recognize that last week, May 27th through the 30th, the Planning Department Development Services Division, in partnership with the Church of Jesus Christ of Latter-day Saints, did a cleanup in Sutton Townsite. And we hit about 70 properties in about four days with 252 volunteers. We're still tallying up the tonnage that was removed from there. But I just wanted to express my gratitude to borough staff and the public and especially the Church of Jesus Christ Latter-day Saints for their continued support and keeping the borough beautiful. Thank you.

Commissioner Allen: This is supposed to be a spectacular week this week, weather-wise. So I hope everyone can get out and enjoy it a little bit.

16. Adjournment

The regular meeting adjourned at 6:05 p.m.

RICHARD ALLEN

Planning Commission Chair

ATTEST:

LACIE OLIVIERI

Planning Commission Clerk

Minutes approved: _____

INTRO FOR PUBLIC HEARING

QUASI-JUDICIAL

Resolution No. 26-10

A Conditional Use Permit In Accordance With MSB 17.70 - Regulation Of Alcoholic Beverage Uses To Expand Operations For A Pre-Existing Alcoholic Beverage Dispensary (Bar), Located At 10204 S. Knik Goose Bay Road (Tax ID# 7186000L001), Within Township 16 North, Range 03 West, Section 24, Seward Meridian.

Public Hearing Date: July 20, 2026

Staff: Wade Long, Development Services Manager

Staff Report

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

DEVELOPMENT SERVICES DIVISION STAFF REPORT

Date:	June 8, 2026
File Number:	ALC-2026-010282
Applicant:	Douglas Massie on behalf of Knik Landing
Property Owner:	BROKEN BOAT LLC
Request:	Planning Commission Resolution 26-10 Application to expand operations for Knik Bar & Liquor as it pertains to a pre-existing Alcoholic Beverage Dispensary (bar) alcohol license in accordance with MSB 17.70 – Regulation of Alcoholic Beverage Uses
Location:	10204 S Knik Goose Bay Rd, TAX ID 7186000L001; within Township 16 North, Range 3 West, Section 24, Seward Meridian.
Size of Property:	2.76 acres
Reviewed By:	Alex Strawn, Planning and Land Use Director
Staff:	Wade Long, Development Services Manager
Staff Recommendation:	Approval with conditions

EXECUTIVE SUMMARY

A conditional use permit application has been submitted for the expansion of an existing legal non-conforming status issued in 1985 (#177019850008). The applicant proposes to add a 5000 square feet event building and a 2000 square foot outdoor deck on the southern portion of the property on the corner of mile 13.4 of Knik Goose Bay Road and Northshore Drive. The proposed event building and outdoor deck are intended to function as an event space in association with the existing Knik Bar & Liquor operation, and the applicant seeks to include these areas within the scope of the authorized use and associated licensed premises for the Beverage Dispensary (bar) alcohol license. A conditional use permit is required for the proposed expansion in accordance with MSB 17.70, Regulation of Alcoholic Beverage Uses.

History

Knik Bar & Liquor has operated under a Borough issued legal non-conforming status since 1985, when the borough approved LCUP/GFR 1985-0008 for the beverage dispensary license and related operations.

Between 2011 and 2016, borough aerial imagery indicated an expansion of an enclosed area associated with the operation. Premises information submitted for alcohol licensing review later began depicting an additional area that was not clearly documented in the original 1985 approval materials.

In 2016, premises information submitted for alcohol licensing review included an expanded service area identified as a beer garden. On May 13, 2016, the borough protested the beverage dispensary license and notified the owner that a conditional use permit under MSB 17.70 was required to expand the beverage dispensary service area.

In 2023, the borough received a request associated with a restaurant designation that included a premises diagram reflecting an expanded outdoor service area. Borough staff responded that the borough could not support the request because the expanded service area had not been approved through the conditional use permit process; however, no formal protest was issued at that time.

In 2025, an alcohol licensing submission again depicted the expanded outdoor service area. The borough protested the beverage dispensary license citing that the expansion had not obtained the required borough approval under MSB 17.70 and noted an unpaid license review fee.

In 2026, the applicant submitted a conditional use permit application requesting a modification to the existing legal non-conforming status as it pertains to the beverage dispensary license transfer, removing the beer garden, and adding the event building and outdoor deck. The Borough Assembly adopted Resolution 26-018 to waive the conditional use permit application fee for this request due to prior planning department oversight related to enforcement of the expanded outdoor service area.

LAND USE

Existing Land Use:
The applicant currently holds an alcohol license issued by the State of Alaska for a Beverage Dispensary (bar) and operates Knik Bar & Liquor at the subject property. In addition to operating as a bar, the existing facility operates a grill serving patrons on-site. The business is located at 10204 S Knik Goose Bay Rd on Tax ID 7186000L001. Parking for patrons and employees is provided on-site and has historically supported the operation.

Surrounding Land Uses:
Knik Bar & Liquor is located at the corner of Knik Goose Bay Road and Northshore Drive in the Knik Lake area. The surrounding land uses consists primarily of rural residential and recreation related uses, including seasonal cabins and undeveloped parcels. Knik Goose Bay Road provides the primary regional access to the area, and Northshore Drive provides local access to the lakefront properties. Nearby land use patterns are generally characterized by dispersed development, lake oriented recreation activity, and residential.

Special Land Use District:
The subject property is located within the Knik Sled Dog and Recreation Special Land Use District. The district does not prohibit a beverage dispensary use, and borough-wide conditional uses remain eligible for consideration within the district when processed under the applicable Title 17 standards.

Lake Management Plan:
The Knik Lake Management Plan was reviewed because the subject property is adjacent to Knik Lake. The plan addresses the regulation of motorized uses on the lake. The proposed development does not include motorized use of the lake. Therefore, the plan does not directly apply to the proposed use.

COMPREHENSIVE PLANS

This property is located within the Knik-Fairview Comprehensive Plan (1997) planning area. The plan does not contain site specific policies for beverage dispensary license operations at Knik Lake; however, it provides broad land use goals and recommendations intended to guide growth, maintain rural character, and reduce land use conflicts. Some of the goals and recommendations of the plan state:

Land Use and Community Development Goals:

- Maintain the existing low density rural residential settlement pattern for most of the planning area.
- Maintain the community values of privacy, recreational opportunities, and a clean environment.
- Encourage future commercial development to occur along developed transportation corridors, while avoiding commercial strip development.
- Encourage commercial uses to cluster in existing commercialized and high traffic areas, and allow limited commercial development outside those areas when compatible with surrounding uses.
- Provide buffering between non-compatible uses and activities in order to minimize land use conflicts.

The Matanuska-Susitna Borough Comprehensive Development Plan (2005 update) also pertains to this property. The plan does not provide site specific standards for beverage dispensary license operations at Knik Lake; however, it includes general goals and policies that support compatible development and protection of public health, safety, and welfare. Some of the goals and policies of the plan state:

- Institute appropriate land use guidelines and regulations that reduce land use conflicts and protect residents and businesses.
- Protect and enhance the public safety, health, and welfare of Borough residents.
- Provide for consistent, compatible, effective, and efficient development within the Borough.
- Protect residential neighborhoods and associated property values.

- Develop and implement regulations that protect residential development by separating incompatible uses, while encouraging uses that support such residential uses including office, commercial, and other mixed-use developments that are shown to have positive cumulative impacts in the neighborhood.

REVIEW OF APPLICABLE CRITERIA AND FINDINGS

MSB 17.03 - Public Notification

Notices were mailed to all property owners within 600 feet of the subject property and to the Knik-Fairview Community Council. A total of 18 notices were mailed. 2 written comments regarding the conditional use permit request have been received to date. The public hearing notice was published in the May 15, 2026, edition of the Frontiersman. The application material was also posted on the Borough's website on May 15, 2026. The public notice, application material, and a request for comments was mailed to the Knik-Fairview Community Council on May 15, 2026. Two written comment letters were received prior to the comment deadline of May 29, 2026, and are included in the Planning Commission packet. The comments received expressed concerns regarding potential noise impacts, traffic increases, parking adequacy, light/glare, and effects on Knik Lake and surrounding residential properties. No response has been received from the Knik-Fairview Community Council.

Section 17.20.070(A) Development Standards and Requirements

Buffering for Commercial and Industrial Uses: Adequate buffering and separation shall be required between new large-scale commercial and heavy industrial development and all other land uses.

Adequate buffering shall be provided through retention of native vegetation, privacy fencing, vegetative buffers, or earthen berms. Privacy fencing shall not exceed eight feet in height. Chain link fencing with privacy slats is permitted.

A 20-foot-wide vegetative buffer shall be provided along the perimeter of the large-scale commercial and heavy industrial property along the lot lines of the property. The vegetative buffer area shall consist of primarily native vegetation, existing or proposed, and shall visually screen the area from public view. Fifty percent of the trees shall be evergreen. One tree shall be placed on center every ten feet. At planting, trees should be at least three feet in height.

Berms shall not exceed six feet in height along local streets and eight feet along collector and arterial streets or railroad rights-of-way. Berms shall not impede the natural drainage pattern or cause snow drifting in roadways. The maximum slope shall be 3:1. The crest area shall be a minimum of four feet in width. The slopes shall be protected to prevent erosion by trees, shrubs and groundcover. The toe of a berm over three feet in height shall be set back at least five feet from any property line, unless when abutting public right-of-way.

No part of the buffering shall encroach into a public right-of-way or easement.

Findings of Fact:

1. Table 1 establishes buffering requirements for new large-scale commercial and heavy industrial development.

2. "Large-scale commercial" is defined in MSB 17.125 as a commercial building with a total gross building area equal to or exceeding 25,000 square feet.

3. The proposed development consists of a 3,600 square foot restaurant, 5,000 square foot event building, and a 2,000 square foot outdoor deck.

4. The total square footage is approximately 10,600 square feet, which does not meet the definition of large-scale commercial development.

Conclusions of Law: Therefore, the buffering requirements of MSB 17.20.070(A), Table 1, are not applicable to the proposed development.

Lighting: Glare and illumination associated with exterior lighting shall be contained on the subject property and not impact adjacent properties, lands and the night sky. Exterior lighting shall be located and shielded to direct light towards the ground. Glare shall be shielded from vehicular traffic and not impair traffic safety. Street illumination and other fixtures mounted higher than 20 feet shall have downward directional shielding.

The director may allow directed exterior sources of illumination when a determination is made that personal security is an issue, special security needs exist, emergency services needs exist, or where public safety is compromised. The director may consider specific site characteristics, level of vehicle and pedestrian conflict, and special security needs in making a determination.

Findings of Fact:

1. Table 1 requires that glare and illumination associated with exterior lighting are required to be contained on the subject property and not impact adjacent properties, surrounding lands, or the night sky.

2. According to the application materials, exterior lighting associated with the proposed development will be downward-directed and shielded, which is intended to direct light toward the ground and minimize light spillover onto adjacent properties.

3. This design is consistent with the requirement to contain illumination on-site and reduce impacts to surrounding uses.

4. Glare from exterior lighting is required to be shielded from vehicular traffic and shall not impair traffic safety.

5. No information has been provided indicating that any lighting fixtures will exceed 20 feet in height.

Conclusions of Law: Based on the application materials and with conditions, the proposed exterior lighting is consistent with the requirements of MSB 17.20.070(A), Table 1.

Lot Size: Meets MSB Title 43. Minimum lot size of 40,000 square feet. Can decrease lot size below 40,000 square feet with community water or sewer.

Findings of Fact:

1. Table 1 requires a minimum lot size of 40,000 square feet, consistent with MSB Title 43, unless reduced through the provision of community water or sewer.
2. The subject property is approximately 2.76 acres in size, which exceeds the minimum 40,000 square foot requirement.

Conclusions of Law: The proposed development complies with the minimum lot size requirements of MSB 17.20.070(A), Table 1.

Setbacks: A setback of 30 feet shall be established and maintained between new large-scale commercial and heavy industrial structures and the property line of the nearest existing land uses.

Findings of Fact:

1. Table 1 requires a minimum setback of 30 feet between new large-scale commercial or heavy industrial structures and the property line of the nearest existing land uses.

2. "Large-scale commercial" development is defined in MSB 17.125 as a commercial building with a total gross building area equal to or exceeding 25,000 square feet.

3. The proposed development consists of a 3,600 square foot restaurant, 5,000 square foot event building, and a 2,000 square foot outdoor deck.

4. The total square footage is approximately 10,600 square feet, which does not meet the definition of large-scale commercial development.

Conclusions of Law: Therefore, the setback requirements of MSB 17.20.070(A), Table 1, are not applicable to the proposed development.

Section 17. 70.100 Standards

(A) A conditional use may be approved only if it meets the general requirements of this section in addition to any other standards required by this chapter:

(1) Findings. In granting a conditional use permit the planning commission must make the following findings:

(a) the conditional use is compatible with and will preserve or not materially detract from the value, character and integrity of the surrounding area.

Findings of Fact:

1. The beverage dispensary use at Knik Bar & Liquor operates under an existing legal non-conforming status issued in 1985 (LCUP/GFR #177019850008).

2. The subject property is located at the southwest corner of Northshore Drive and Knik Goose Bay Road intersection in the Knik Lake area.

3. Northshore Drive is a borough road and separates the subject property from a vacant parcel located directly to the north.

4. A property with a residential use is located northwest of the subject parcel north of Northshore Drive.

5. A vacant parcel is located directly west of the bar property, with residential properties located further west beyond that vacant parcel.

6. Knik Lake is located directly south of the subject property, and residential properties are located across the lake to the south.

7. Knik Goose Bay Road is a state road located directly east of the subject property.

8. Across Knik Goose Bay Road to the east is a tidal zone and a mix of privately owned vacant parcels, including parcels owned by individuals and a company, adjacent to the Knik Arm of Cook Inlet.

9. The closest residence is located just over 300 feet to the northwest of the subject property.

10. According to the application materials, the proposed development includes a 5,000 square foot event building and a 2,000 square foot outdoor deck located on the southern portion of the property.

11. According to the application materials, the proposed event building is proposed to operate seven days per week from 8:00 a.m. to 12:00 a.m.

12. According to the application materials, the existing bar is proposed to operate seven days per week from 12:00 p.m. to 12:00 a.m.

13. According to the application materials, the outdoor deck use aligns with the event building hours.

14. According to the application materials, amplified sound is proposed indoors only.

15. According to the site plan, 72 total parking spaces are provided on-site.

16. Based on industry-standard guidance from the Institute of Transportation Engineers (ITE) Parking Generation Manual, 6th Edition, restaurant uses typically generate demand of approximately 8–12 spaces per 1,000 square feet, while assembly/venue uses generate approximately 5–10 spaces per 1,000 square feet. Applying these ranges, the combined parking demand is estimated to fall within a range that is generally consistent with the 72 spaces provided. The proposed parking supply is therefore considered adequate based on ITE industry standards.

17. The site plan indicates four ADA-accessible parking spaces, including van-accessible spaces. For a parking lot of 51–75 spaces, three accessible spaces are required; therefore, the proposal exceeds ADA requirements.

18. According to the site plan, a metal chain link fence with wood slats is proposed to extend from the northwest corner of the existing building to the lake to provide visual screening, security, and privacy.

19. The owner and/or operator must comply with the maximum permissible sound level limits per the requirements of MSB 8.52, Noise, Amplified Sound, and Vibration.

20. According to the site plan, the proposed fencing is intended to connect between the existing building and the proposed event building and then extend from the proposed event building to the lake.

21. According to the application materials, exterior lighting will be downward facing around the buildings to reduce glare.

22. A high volume driveway permit is required for access onto the borough road Northshore Drive.

Conclusions of Law: Based on the above findings, this conditional use permit with conditions is compatible with and will preserve or not materially detract from the value, character and integrity of the surrounding area (MSB 17.70.l00(A)(l)(a)).

(b) That granting the conditional use permit will not be harmful to the public health, safety, convenience and welfare.

Findings of Fact:

1. According to the application material, the applicant proposes to add a 5,000 square foot event building and a 2,000 square foot outdoor deck in association with the existing beverage dispensary operation.

2. According to the application material, the event building is proposed to operate seven days a week from 8:00 a.m. to 12:00 a.m.

3. According to the application material, the existing bar is proposed to operate seven days a week from 12:00 p.m. to 12:00 a.m.

4. According to the application material, the outdoor deck use aligns with the event building hours.

5. According to the application material, the event space is proposed to accommodate up to 200 guests for seated events and up to 300 persons for standing events.

6. The State Fire Marshal–accepted public safety plan establishes occupant load limits, emergency access, and life safety measures for indoor and outdoor event operations, ensuring compliance with applicable fire and life safety codes.

7. Implementation of the approved safety plan reduces potential risks associated with large gatherings, including emergency response, crowd management, and egress, thereby protecting public health and safety.

8. Adherence to the Fire Marshal–approved plan is required for operation of the event venue and outdoor deck, providing ongoing oversight of life safety conditions during events.

9. According to the application material, amplified sound is proposed indoors only.

10. The proposed use is accessed from Northshore Drive, a borough road, and Knik Goose Bay Road, a state road.

11. A high volume driveway permit is required for access onto the borough road Northshore Drive.

12. According to the site plan, 72 total parking spaces are provided on-site.

13. Based on industry-standard guidance from the Institute of Transportation Engineers (ITE) Parking Generation Manual, 6th Edition, restaurant uses typically generate demand of approximately 8–12 spaces per 1,000 square feet, while assembly/venue uses generate approximately 5–10 spaces per 1,000 square feet. Applying these ranges, the combined parking demand is estimated to fall within a range that is generally consistent with the 72 spaces provided. The proposed parking supply is therefore considered adequate based on ITE industry standards.

14. The site plan indicates four ADA-accessible parking spaces, including van-accessible spaces. For a parking lot of 51–75 spaces, three accessible spaces are required; therefore, the proposal exceeds ADA requirements.

15. The nearest school is Joe Redington Sr./Jr. High School, which is approximately 3.6 miles from the site. Dena'ina Elementary School is approximately 3.1 miles from the site. State regulations preclude beverage dispensary licenses within 200 feet of a school.

16. Persons under the age of 21 are prohibited from being served alcoholic beverages.

17. The operator of the proposed use is required to operate in accordance with Alaska laws and statutes, which include mandatory alcohol server education.

18. Alaska Statute 04.16.030 specifically prohibits the sale of alcoholic beverages to drunken persons.

19. The owner and/or operator must comply with the maximum permissible sound level limits per the requirements of MSB 8.52, Noise, Amplified Sound, and Vibration.

20. According to the application material, exterior lighting will be downward facing around the buildings to reduce glare.

21. According to the site plan, a metal chain link fence with wood slats is proposed between the existing building and the proposed event building and extending toward the lake to reduce visual effects and provide security and privacy.

Conclusions of Law: Based on the above findings, this conditional use permit with conditions will not be harmful to the public health, safety, convenience, and welfare (MSB 17.70.100(A)(l)(b)).

(c) That sufficient setbacks, lot area, buffers or other safeguards are being provided to meet the conditions listed in subsections (A) and (B) of this section.

Findings of Fact:

1. The subject property is approximately 2.76 acres in size.

2. According to the application materials, the applicant proposes to add a 5,000 square foot event building and a 2,000 square foot outdoor deck on the southern portion of the property near Knik Lake.

3. MSB 17.55.020 requires that no structure or footing be located closer than 75 feet from the ordinary high water mark of a body of water, unless otherwise authorized through an approved land use permit.

4. The subject property is subject to an approved Mandatory Land Use Permit (MLUP-2025-010065), which authorizes a non-habitable event venue structure approximately 40 feet from the ordinary high water mark and a covered gazebo approximately 5 feet from the ordinary high water mark of Knik Lake.

5. For purposes of minimum setback distances, fences are not considered structures under MSB 17.55.004.

6. According to the site plan, a metal chain link fence with wood slats is proposed between the existing building and the proposed event building and extending toward the lake to reduce visual effects and provide security and privacy.

7. The closest residence is located just over 300 feet to the northwest.

8. According to the site plan, 72 total parking spaces are provided on-site.

9. Based on industry-standard guidance from the Institute of Transportation Engineers (ITE) Parking Generation Manual, 6th Edition, restaurant uses typically generate demand of approximately 8–12 spaces per 1,000 square feet, while assembly/venue uses generate approximately 5–10 spaces per 1,000 square feet. Applying these ranges, the combined parking demand is estimated to fall within a range that is generally consistent with the 72 spaces provided. The proposed parking supply is therefore considered adequate based on ITE industry standards.

10. The site plan indicates four ADA-accessible parking spaces, including van-accessible spaces. For a parking lot of 51–75 spaces, three accessible spaces are required; therefore, the proposal exceeds ADA requirements.

11. The operation is required to comply with the maximum permissible sound level limits of MSB 8.52 – Noise, Amplified Sound, and Vibration.

12. A high volume driveway permit is required for access onto the borough road Northshore Drive.

Conclusions of Law: Based on the above findings, sufficient setbacks, lot area, buffers or other safeguards are being provided (MSB 17.70.l00(A)(l)(c)).

(2) General Standards. In considering whether the general standards are satisfied, the planning commission may weight factors contributing or detracting from the development of a safe, convenient and attractive community, including, but not limited to:

(a) Any potential negative effect upon other properties in the area due to such factors as dust, noise, obtrusive advertising and glare.

Findings of Fact:

1. The subject property is approximately 2.76 acres in size.

2. According to the application materials, the proposed development includes a 5,000 square foot event building and a 2,000 square foot outdoor deck associated with the existing beverage dispensary operation.

3. According to the application materials, the event building is proposed to operate seven days per week from 8:00 a.m. to 12:00 a.m.

4. According to the application materials, the existing bar is proposed to operate seven days per week from 12:00 p.m. to 12:00 a.m.

5. According to the application materials, the outdoor deck use aligns with the event building hours.

6. According to the application materials, amplified sound is proposed indoors only.

7. The closest residence is located just over 300 feet to the northwest of the subject property.

8. The surrounding area consists of a mix of residential and vacant parcels in proximity to the subject property.

9. According to the application materials, exterior lighting will be downward facing around the buildings to reduce glare onto adjacent properties.

10. According to the site plan, a metal chain link fence with wood slats is proposed between the existing building and the proposed event building and extending toward the lake to provide visual screening, security, and privacy.

11. Knik Lake is located directly south of the subject property. Open water areas may transmit sound and are not considered a physical noise buffer.

12. The operation is required to comply with the maximum permissible sound level limits of MSB 8.52 – Noise, Amplified Sound, and Vibration.

13. According to the application materials, signage will consist of a wood timber frame sign reading "Knik Landing," with lighting that is dim and directed downward to minimize visual impact.

Conclusions of Law: Based on the above findings and with conditions, there will not be any negative effects on the properties in the area due to such factors as dust, noise, obtrusive advertising, and glare (MSB 17.70.100(A)(2)(a))

(b) Any potential negative effect on the safe, efficient flow of traffic on any highway arterial, collector or street from which access to and from the establishment is obtained.

Findings of Fact:

1. The subject property will be accessed primarily from Knik Goose Bay Road, a roadway under the jurisdiction of the State of Alaska.

2. A driveway permit for access onto Knik Goose Bay Road has been issued by the State of Alaska.

3. A high volume driveway permit is required for access onto the borough road Northshore Drive.

4. Any future use of the Northshore Drive access will require compliance with MSB 11.12, including permitting and potential upgrades to meet applicable driveway standards based on traffic generation.

5. According to the application materials, peak traffic is anticipated between 4:00 p.m. and 8:00 p.m., with approximately 92 vehicle trips (entering and exiting) during the peak hour.

6. The projected traffic generation exceeds the threshold for a low volume driveway under MSB 11.12 and would require higher design standards if access to a borough right-of-way is pursued.

7. Based on industry-standard guidance from the Institute of Transportation Engineers (ITE) Parking Generation Manual, 6th Edition, restaurant uses typically generate demand of approximately 8–12 spaces per 1,000 square feet, while assembly/venue uses generate approximately 5–10 spaces per 1,000 square feet. Applying these ranges, the combined parking demand is estimated to fall within a range that is generally consistent with the 72 spaces provided. The proposed parking supply is therefore considered adequate based on ITE industry standards.

8. The site plan indicates four ADA-accessible parking spaces, including van-accessible spaces. For a parking lot of 51–75 spaces, three accessible spaces are required; therefore, the proposal exceeds ADA requirements.

9. Internal site circulation and parking layout are designed to manage vehicle movement on site and minimize the potential for vehicles queuing onto adjacent roadways.

10. Knik Goose Bay Road functions as a primary transportation corridor and is designed to accommodate higher traffic volumes than local or collector roads.

Conclusions of Law: Based on the above findings and with conditions, the proposed use will not negatively affect the safe, efficient flow of traffic on any highway, arterial, collector, or street from which access to and from the establishment is obtained (MSB 17.70.100(A)(2)(b)).

(c) The effectiveness of any measures to reduce any negative effect upon adjacent and nearby properties by property line buffers and arterial buffers, planted berms, landscaping, reduction or elimination of obtrusive or garish signing or other features, lowered building elevation, clustering with other commercial establishments and use of frontage roads to reduce the number of entries and exists onto highways, arterials and collectors, and where the surrounding area is predominantly residential in character, site and building design features that contribute to the residential character of the development.

Findings of Fact:

1. The subject property is approximately 2.76 acres in size.

2. The subject property is developed with an existing commercial building and proposes an additional building located to the south of the existing structure.

3. Parking and circulation areas are located on the subject property surrounding the existing and proposed buildings, including areas to the south and east of the proposed building.

4. The northern boundary of the subject property is adjacent to Northshore Drive, a borough road.

5. The eastern boundary of the subject property is adjacent to Knik Goose Bay Road, a state highway.

6. Portions of the subject property include limited natural vegetation, with vegetative screening present primarily along the western portion of the site.

7. Other portions of the site, including areas adjacent to Northshore Drive and Knik Goose Bay Road, are more open in character with developed parking and circulation areas.

8. The surrounding area consists of a mix of residential and rural properties.

9. According to the application materials, the exterior of the buildings will utilize neutral earth tone colors intended to blend with the surrounding environment.

10. According to the application materials, signage will consist of a wood timber frame sign reading "Knik Landing," with lighting that is dim and directed downward to minimize visual impacts.

11. According to the application materials, exterior lighting on the site will be downward-directed and shielded to reduce glare onto adjacent properties.

12. According to the application materials, a chain link fence with wood slats is proposed along portions of the property to provide screening, privacy, and security for areas where alcohol is served.

13. The site plan consolidates buildings, parking, and circulation into a unified development pattern, limiting the spread of activity areas across the site.

14. Access to the site is primarily provided from Knik Goose Bay Road, and access from Northshore Drive will be closed as a condition of approval, resulting in a single primary access point.

Conclusions of Law: Based on the above findings, measures will be in place to reduce any negative effect upon adjacent and nearby properties (MSB 17.70.100(A)(2)(c)).

(d) Whether there are adequate parking facilities to accommodate a reasonably expected increased demand for parking created by issuing the permit.

Findings of Fact:

1. According to the application materials, there are 72 total parking spaces are provided on the subject parcel.

2. Based on industry-standard guidance from the Institute of Transportation Engineers (ITE) Parking Generation Manual, 6th Edition, restaurant uses typically generate demand of approximately 8–12 spaces per 1,000 square feet, while assembly/venue uses generate approximately 5–10 spaces per 1,000 square feet. Applying these ranges, the combined parking demand is estimated to fall within a range that is generally consistent with the 72 spaces provided. The proposed parking supply is therefore considered adequate based on ITE industry standards.

3. The site plan indicates four ADA-accessible parking spaces, including van-accessible spaces. For a parking lot of 51–75 spaces, three accessible spaces are required; therefore, the proposal exceeds ADA requirements.

4. According to the site plan, parking areas are located on the subject parcel and are designed to serve both the existing and proposed uses.

5. Internal circulation and parking layout are designed to accommodate vehicle movement on-site and minimize the potential for congestion.

6. According to the application materials and site plan, all parking for employees and patrons will be located on the subject parcel.

Conclusions of Law: Based on the above findings, adequate parking is provided to accommodate a reasonably expected increased demand for parking created by issuing the permit (MSB 17.70.100(A)(2)(d)).

(e) Whether access to the premises will create an unreasonable traffic hazard.

Findings of Fact:

1. The subject property is accessed primarily from Knik Goose Bay Road, a roadway under the jurisdiction of the State of Alaska.

2. A driveway permit has been issued by the State of Alaska for access to Knik Goose Bay Road.

3. Northshore Drive is a borough road located along the northern boundary of the subject property.

4. Any future use of the Northshore Drive access will require compliance with MSB 11.12, including permitting and upgrades to meet applicable driveway standards.

5. According to the application materials, peak traffic is anticipated between 4:00 p.m. and 8:00 p.m., with approximately 92 vehicle trips (entering and exiting) during the peak hour.

6. According to the application materials and site plan, internal circulation is provided on-site to accommodate vehicle movement and reduce the potential for vehicles queuing onto adjacent roadways.

7. The surrounding area includes a mix of residential and rural uses.

Discussion: A driveway permit for access to Knik Goose Bay Road has been issued by the State of Alaska. Staff recommends as a condition of approval that access from Northshore Drive remain closed unless and until a driveway permit is obtained and upgraded to meet applicable borough standards.

Conclusions of Law: Based on the above findings and with conditions, access to the premises will not create an unreasonable traffic hazard (MSB 17.70.100(A)(2)(e)).

(f) Whether a reasonably expected increase in traffic will overtax existing road systems.

Findings of Fact:

1. Knik Goose Bay Road is a paved public roadway under the jurisdiction of the State of Alaska.

2. Access to the subject property is provided from Knik Goose Bay Road pursuant to an approved driveway permit issued by the State of Alaska.

3. The surrounding area includes a mix of residential and rural properties with relatively low-density development patterns.

4. According to the application materials, peak traffic is anticipated between 4:00 p.m. and 8:00 p.m., with approximately 92 vehicle trips (entering and exiting) during the peak hour.

5. Knik Goose Bay Road functions as a primary transportation corridor in the area and is designed to accommodate higher volumes of traffic than local or collector roads.

6. Internal circulation and on-site parking are provided to accommodate traffic demand and reduce the potential for traffic impacts extending onto adjacent roadways.

7. Access to the subject property from Knik Goose Bay Road has historically served the existing beverage dispensary use.

8. A high volume driveway permit is required for access onto the borough road Northshore Drive.

9. Any future use of the Northshore Drive access will require compliance with MSB 11.12, including permitting and potential upgrades to meet applicable driveway standards based on traffic generation.

Conclusions of Law: Based on the above findings, traffic generated by the proposed use will not overtax existing road systems (MSB 17.70.100(A)(2)(f)).

(g) Whether the use is incompatible with the character of the surrounding neighborhood.

Findings of Fact:

1. The subject property is approximately 2.76 acres in size.

2. The subject property is developed with an existing beverage dispensary (bar) use that has operated at the site under legal nonconforming status since 1985.

3. The proposed development includes an additional event building located to the south of the existing structure and associated outdoor use areas.

4. The surrounding area is characterized by a mix of residential properties, vacant parcels, and recreational uses associated with Knik Lake.

5. The closest residential structure is located approximately 300 feet to the northwest of the subject property.

6. Knik Goose Bay Road and Northshore Drive provide separation between portions of the subject property and nearby residential uses.
7. There are no complaints from the public on record regarding the subject property.

8. According to the application materials, exterior building materials and colors will consist of neutral earth tones intended to blend with the surrounding environment.

9. According to the application materials, signage will be limited to a wood timber frame sign with dim, downward-directed lighting to minimize visual impacts.

10. According to the application materials, exterior lighting will be downward-directed and shielded to reduce glare onto adjacent properties.

11. According to the application materials, a chain link fence with wood slats is proposed to provide screening, privacy, and security for portions of the site.

12. Access to the subject property from Knik Goose Bay Road has historically served the existing beverage dispensary use.

13. The site plan consolidates buildings, parking, and circulation areas on the subject property.

Conclusions of Law: Based on the above findings, the proposed use is compatible with the character of the surrounding area (MSB 17.70.100(A)(2)(g)).

(3) The commission shall deny the application if it does not meet the application standards.

17.70.110 Special Standards for Liquor Uses.

(A) In addition to the general standards, a commercial use shall only be approved if it meets the requirements of this section.

(B) An application shall be denied if the planning commission finds, based on the evidence presented, that one or more of the following are applicable.

(1) There is, or the use would tend to result in, a high crime rate or a high incidence of alcohol-related accidents in the area.

Findings of Fact:

1. The subject property currently operates as a beverage dispensary (bar) under an existing legal nonconforming status established in 1985.

2. According to the application materials, the proposed use includes expansion of the existing beverage dispensary operation through construction of an event building and associated outdoor use areas.

3. According to the application materials, the proposed use will operate in conjunction with the existing bar and is not a new standalone establishment.

4. According to the application materials, the site includes controlled access and defined areas for alcohol service.

5. The operator of the proposed use is required to operate in accordance with Alaska laws and statutes, including mandatory alcohol server education requirements.

6. Persons under the age of 21 are prohibited from being served alcoholic beverages.

7. Alaska Statute 04.16.030 prohibits the sale of alcoholic beverages to drunken persons.

8. The State Fire Marshal–accepted public safety plan establishes occupant load limits, emergency access, and life safety measures for indoor and outdoor event operations, ensuring compliance with applicable fire and life safety codes.

9. Implementation of the approved safety plan reduces potential risks associated with large gatherings, including emergency response, crowd management, and egress, thereby protecting public health and safety.

10. Adherence to the Fire Marshal–approved plan is required for operation of the event venue and outdoor deck, providing ongoing oversight of life safety conditions during events.

11. Access to the site has historically served the existing beverage dispensary use.

12. There are no complaints from the public on record regarding the subject property.

13. According to the application materials, a chain link fence with wood slats is proposed to enclose areas where alcohol is served and to provide screening, privacy, and site security.

Conclusions of Law: Based on the above findings, the proposed use will not increase the crime rate in the area or increase alcohol-related accidents (MSB 17.70.110(B)(1)).

(2) The applicant or a person with an interest in the application has had an interest in a liquor license which was suspended or revoked in the 12-month preceding the application.

Findings of Fact:

1. The Alcoholic & Marijuana Control Office (AMCO) has no record of violations by the applicant or persons with an interest in the application within the 12 months preceding the application.

Conclusions of Law: Based on the above finding, the applicant has not had a liquor license suspended or revoked in the 12 months preceding the application (MSB 17.70.110(B)(2)).

(3) The applicant or person with an interest in the application demonstrated that the person is untrustworthy or unfit to conduct the operation of a licensed business or is a potential source of harm to the public.

Finding of Fact:

1. No information has been submitted indicating that any person/party associated with this application is untrustworthy, unfit to conduct business in the borough, or is a potential source of harm to the public.

2. The Alcohol & Marijuana Control Office (AMCO) has no record of violations by the applicant or persons with interest within the prior 12 months.

Conclusions of Law: Based on the above finding, the applicant is trustworthy or fit to conduct business in the borough and the applicant is not a potential source of harm to the public (MSB 17.70.110(B)(3)).

STAFF RECOMMENDATIONS

Staff recommends approval of the conditional use permit to expand an existing beverage dispensary (bar) operation at 10204 S Knik Goose Bay Road, Tax ID 7186000L001. The proposed use meets all the standards of MSB 17.70.100 and 17.70.110. Staff also recommends the following conditions:

1. The operation shall comply with all other applicable federal, state, and local regulations.

2. All aspects of the operation shall comply with the description detailed in the application material and with the conditions of this permit. An amendment to the Conditional Use Permit shall be required prior to any expansion or substantial alteration of the conditional use.

3. Outdoor use areas, including the deck and event-related outdoor activities, shall be limited to the hours of 10:00 a.m. to 10:00 p.m. daily.

4. The operation shall comply with the maximum permissible sound level limits allowed per the requirements of MSB 8.52, Noise, Amplified Sound, and Vibration.

5. Prior to operation of the expanded service areas, provide a copy of the approved State of Alaska Beverage Dispensary license.

6. Use of access from Northshore Drive requires a driveway permit and compliance with MSB 11.12 driveway standards.

7. The driveway access onto Knik Goose Bay Road shall be maintained in accordance with the approved State of Alaska driveway permit.

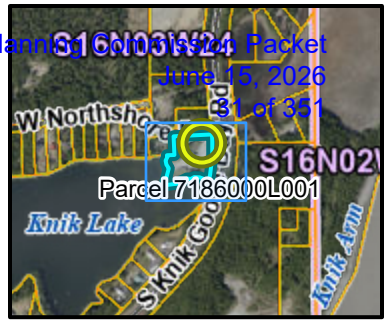
If the Planning Commission chooses to deny this permit, findings for denial must be prepared by the Commission.

Maps

Matanuska-Susitna Borough, AK

Parcel Map





Legend

- Major Road
- Minor Road
- Mat-Su Borough Boundary
- Address Numbers
- Parcels
- Lot and Block Numbers
- ROW and Easements

Layer

- ROW Easement
- Lakes and Rivers
- Section Lines

RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3
- Highlighted Points
- Highlighted Points

THIS MAP IS NOT TO BE USED FOR NAVIGATION

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NAD 1983 State Plane Alaska 4 FIPS 5004 Feet

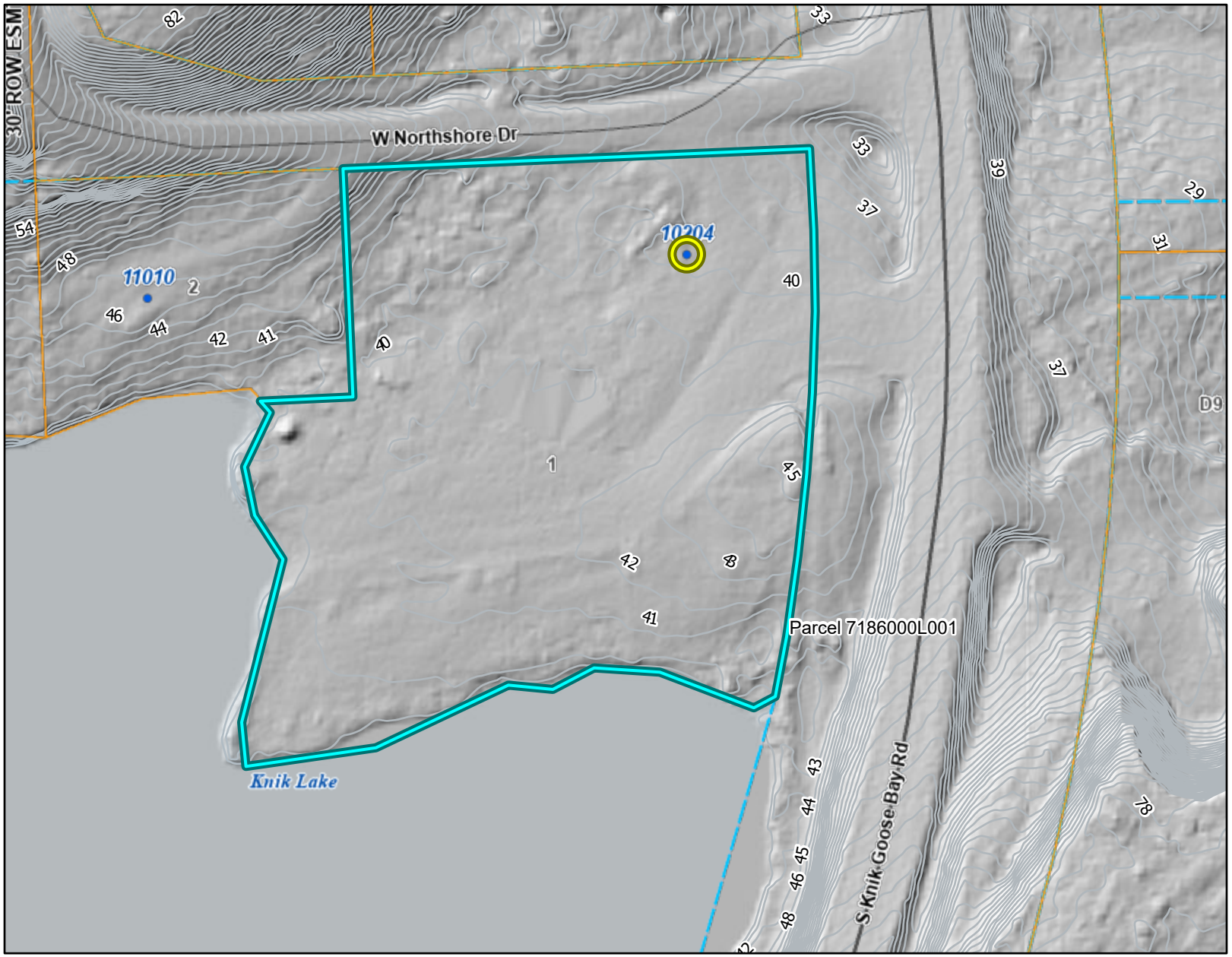
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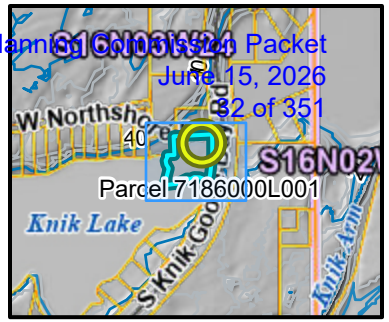
Notes

Generated on 08.06.2026 (dd/mm/yyyy)

Matanuska-Susitna Borough, AK

Parcel Map





Legend

- Major Road
- Minor Road
- Mat-Su Borough Boundary
- Address Numbers
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- ROW Easement
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- Section Lines

Value

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- 0
- Highlighted Points
- Highlighted Points

THIS MAP IS NOT TO BE USED FOR NAVIGATION

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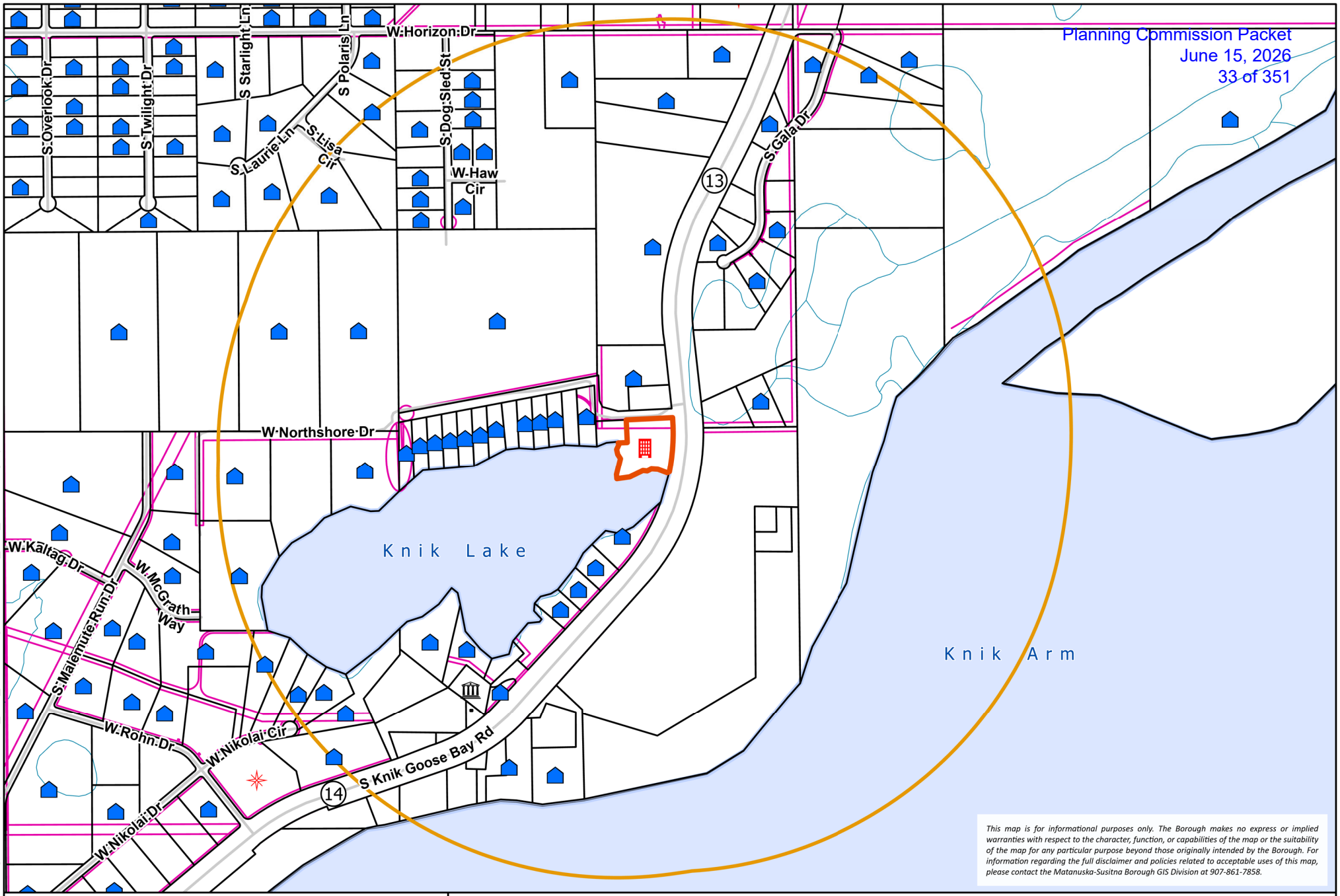
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Notes

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Land Use Map

Knik Landing

MSB Tax ID#7186000L001

Building Use
- Government or School Grounds
- Religous
- Residential
- Commercial

- Mileposts
- ROW and Easements
- Parcels
- Subject Parcel (ID: 7186000L001)

- Subject Parcel Half Mile Buffer
- Lake
- River
- Wetland

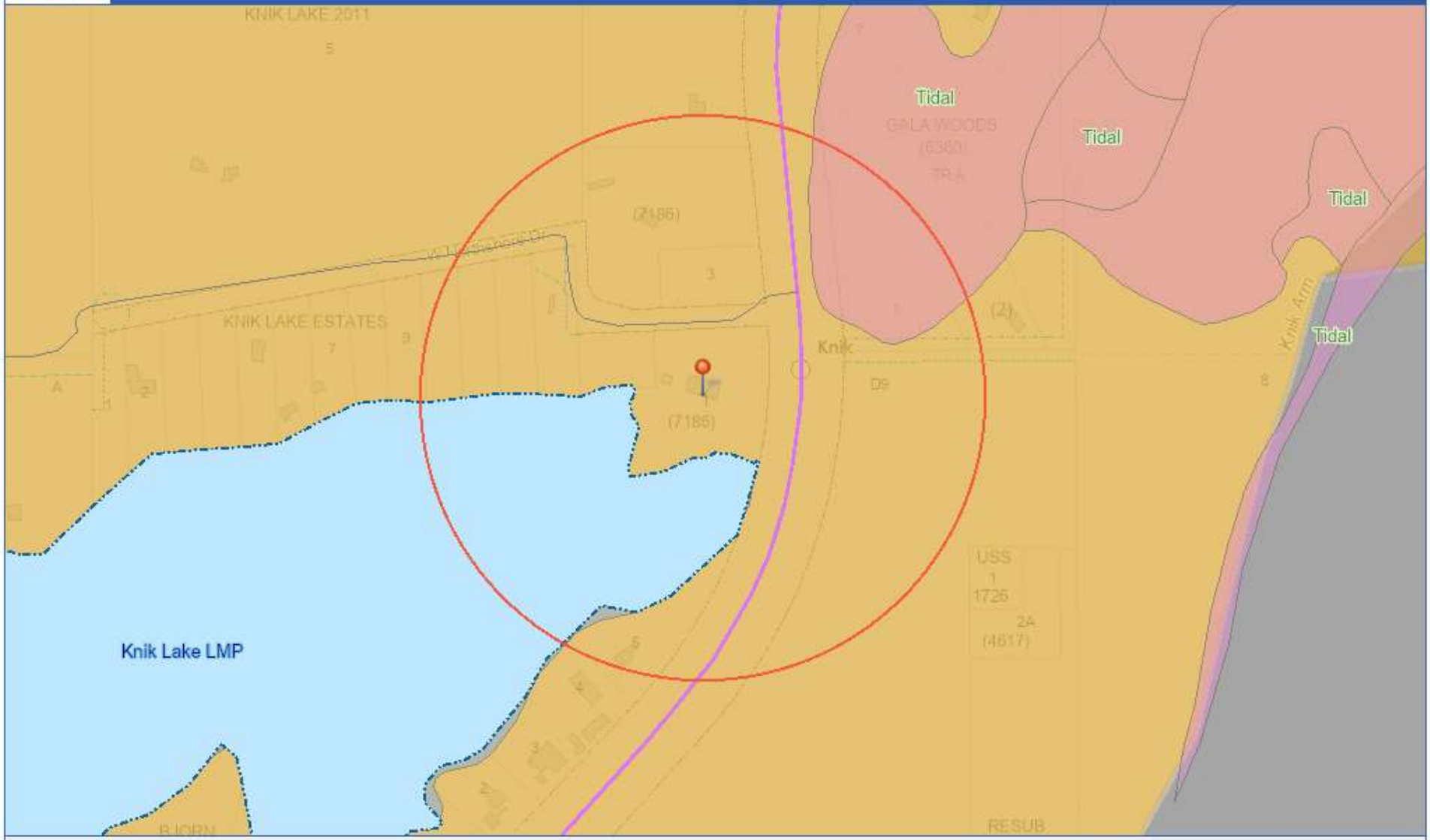
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Feet

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Map Produced by MSB IT/GIS Division: 6/8/2026

Planning & Land Use Map



Special Use Districts
- Other
- MSB General Use Regulations

Official Streets and Highways Plan
- Major Arterial
- Local Road

Lake Management Plans

Wetlands
- LAKE
- Tidal

Assembly Districts

Community Councils

ROW and Easements
- ROW Road
- ROW Easement
- Section line easement

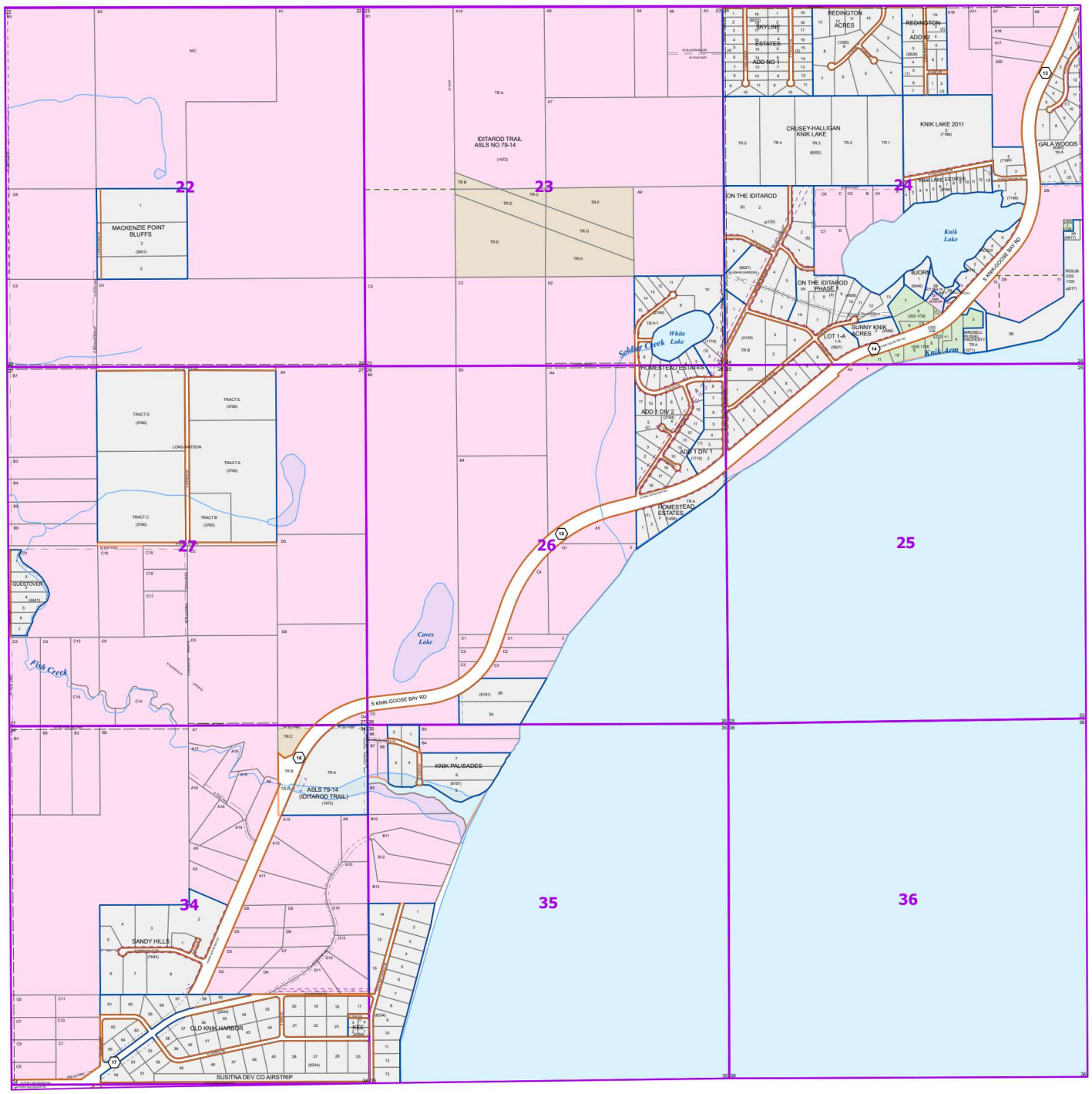
Printed on Jun 8, 2026

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0 0.04 0.08 0.16 mi


W Northshore Dr
10204
2
1

Matanuska - Susitna Borough



Legend

Section Grid	
City Boundary	
Subdivision Boundary	
ParcelType	
Subdivision Lot	
Tax Parcel	
Mineral Survey	
Multi Unit	
Surveyed	
Utility	
Agency	
Building Only	
Other	
US Survey	
Government Lot Line	
MP	Mileposts
7	Subdivision or Government Lot Number
(1	Subdivision Block Number
SUBD	Subdivision Name
(####)	Subdivision Number
A15	Tax Parcel Number
7	Section Number
N/C	Non-Conforming Parcel

Easements

Easement	
MSB Right-of-Way	
MSB Travelled Way	
Railroad	
Right-of-Way ESMT	
Section Line ESMT	
Waterbody	
Stream	

N W E S

500 0 500 1000 1500

(FEET)

Source: This map was compiled using a variety of sources including, but not limited to, Recorded Subdivision Plats, U.S. Surveys, Alaska State Land Surveys, Bureau of Land Management Survey Plats, Alaska DOT Right of Way Plats, Public Use Easements, Deeds, and other recorded documents. This map is solely an index of property records and is not intended to be used in lieu of the recorded documents or a survey prepared by a Registered Land Surveyor. All information on this map is subject to field verification.

Projection: Data is modeled in State Plane Coordinate Feet, Alaska Zone 4, using North American Datum of 1983.

Matanuska-Susitna Borough
Information Technology Dept.
Geographic Information System
350 E. Dahlia Avenue
Palmer, Alaska 99645
Phone: (907) 861-7858

E-Mail: Service.Desk@matsugov.us

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PORTION OF

GOOSE BAY

T. 16 N., R. 03 W., .M.

SEC. 22,23,24,25,26,27,34,35,36

Date : August 23, 2024

GB08

Google Earth 2023 Aerial Imagery

MSB Tax ID #7186000L001



If the Planning Commission chooses to deny this permit, findings for denial must be prepared by the Commission.

MATANUSKA-SUSITNA BOROUGH
PLAN DETAILED REPORT (ALC-2026-010282)

Plan Type:	Alcohol	**Project:**		**App Date:**	02/02/2026
Work Class:	Beverage Dispensary	**District:**	Matanuska-Susitna Borough	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Rick Benedict	**Approval Expire Date:**	

Description: Existing dispensary building expansion.

Parcel:	7186000L001	Main	**Address:**	10204 S Knik Goose Bay Rd	Main

Contact Type	Contact Name	Address	Cell Phone	Home Phone	Business Phone
Applicant	Douglas A Massie	10204 S. Knik Goose Bay Road Wasilla, AK 99623	(907) 232-7072		(907) 232-7072

Note		Created By	Date and Time Created
1	Follow up to 2/26/26 in personmeeting to clarify previous RFAI items from 2/23/26	Rick Benedict	03/16/2026
2	Application submitted 2/3/2026	Rick Benedict	02/23/2026

Douglas Massie
February, 02 2026

X 

MATANUSKA-SUSITNA BOROUGH INFORMATION MEMORANDUM **IM No. 26-049**

SUBJECT: A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY WAIVING THE FEE FOR A CONDITIONAL USE PERMIT FOR AN ALCOHOLIC BEVERAGE DISPENSARY (BAR).

AGENDA OF: March 3, 2026

Assembly Action: Approved under the consent agenda 03/03/26 - BJH

AGENDA ACTION REQUESTED: Present to the Assembly for consideration.

Route To	Signatures
Originator	X Alex Strawn 2/18/2026 Signed by: Alex
Department Director	X Alex Strawn 2/18/2026 Signed by: Alex
Finance Director	Recoverable Signature X Cheyenne Heindel Signed by: Cheyenne Heindel
Borough Attorney	X Nicholas Spiropoulos 2/19/2026 Signed by: Nicholas Spiropoulos
Borough Manager	X Michael Brown 2/19/2026 Signed by: Mike Brown
Borough Clerk	X Lonnie McKechnie 2/23/2026 Signed by: Lonnie McKechnie

ATTACHMENT(S): Resolution Serial No. 26-018 (2 pp)

SUMMARY STATEMENT: This resolution is sponsored by Assemblymember Gamble.

MSB 17.70, Regulation of Alcoholic Beverage Uses, was adopted in 1984 and requires a conditional use permit for establishments requiring a beverage dispensary license under AS 04.11.090.

Knik Bar and Grill operates as a pre-existing legal nonconforming use, as the establishment existed prior to the adoption of MSB 17.70. MSB 17.70.200 further requires a conditional use permit for any expansion of a nonconforming use.

The current owner purchased the business in 2021. Unbeknownst to the current owner, the establishment had previously expanded its operations without obtaining the required conditional use permit.

During the 2013 state license transfer process involving prior owners, the borough failed to recognize the unpermitted expansion.

In September 2023, the current owner submitted a request to the borough for comments regarding the state license. The borough notified the owner that the expansion required a conditional use permit but failed to protest the state license with AMCO. During the 2025 state license review, staff protested the license due to the operation's noncompliance with its legal nonconforming status, as required under MSB 8.40.

The current owner is now applying for the necessary conditional use permit, which typically requires a $1,500 application fee. Due to the oversight by Borough staff at the time of the license transfers, a waiver of the application fee is requested.

RECOMMENDATION OF ADMINISTRATION: Respectfully request approval.

Adopted: 03/03/26

MATANUSKA-SUSITNA BOROUGH
RESOLUTION SERIAL NO. 26-018

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY WAIVING THE FEE FOR A CONDITIONAL USE PERMIT FOR AN ALCOHOLIC BEVERAGE DISPENSARY (BAR).

WHEREAS, MSB 17.70 Regulation of Alcoholic Beverage Uses was adopted in 1984; and

WHEREAS, MSB 17.70 requires a conditional use permit for uses requiring a beverage dispensary license under A.S. 04.11.090; and

WHEREAS, Knik Bar and Grill obtained pre-existing legal nonconforming status, as it was in operation prior to 1984; and

WHEREAS, MSB 17.70.200 requires a conditional use permit for the expansion of a nonconforming use; and

WHEREAS, the current owner of Knik Bar and Grill purchased the business in 2021; and

WHEREAS, the Knik Bar and Grill expanded its operation without obtaining a conditional use permit at some point prior to the current owner's purchase; and

WHEREAS, an oversight error by Borough staff should have required a permit for the expansion in 2013 and 2023 when the state license was being transferred to the new owner; and

WHEREAS, as required by MSB 8.40, Borough staff are currently protesting the State license for Knik Bar and Grill, as the

operation is not in compliance with its pre-existing legal nonconforming status; and

WHEREAS, the current owner of Knik Bar and Grill has applied for a conditional use permit; and

WHEREAS, the application fee for a conditional use permit is $1,500.

NOW, THEREFORE, BE IT RESOLVED, the application fee for a conditional use permit for the expansion of the Knik Bar and Grill is hereby waived.

ADOPTED by the Matanuska-Susitna Borough Assembly this 3 day of March, 2026.

EDNA DeVRIES, Borough Mayor

ATTEST:

LONNIE R. MCKECHNIE, CMC, Borough Clerk

(SEAL)

PASSED UNANIMOUSLY: Bowles, Nowers, McKee, Sumner, Gamble, Fonov, and Bernier

MATANUSKA-SUSITNA BOROUGH

Real Property Detail for Account: 57186000L001

Site Information

Account Number	57186000L001	Subdivision	KNIK LK 2011
Parcel ID	518705	City	None
TRS	S16N03W24	Map GB08	Tax Map
Abbreviated Description (Not for Conveyance)	KNIK LK 2011 LOT 1		
Site Address	10204 S Knik Goose Bay Rd		

Ownership

Owners	BROKEN BOAT LLC	Buyers	
Primary Owner's Address	PO BOX 874893 WASILLA AK 99687	Primary Buyer's Address	

Appraisal Information

Year	Land Appraised	Bldg. Appraised	Total Appraised
2026	$193,700.00	$348,100.00	$541,800.00
2025	$168,400.00	$114,300.00	$282,700.00
2024	$168,400.00	$114,300.00	$282,700.00

Assessment

Year	Land Assessed	Bldg. Assessed	Total Assessed[1]
2026	$193,700.00	$348,100.00	$541,800.00
2025	$168,400.00	$114,300.00	$282,700.00
2024	$168,400.00	$114,300.00	$282,700.00

Building Information

Structure 0 of 2

Residential Units	0	Use	Under Construct - Non Res
Condition	Standard	Design	Commercial
Basement	None	Construction Type	Frame
Year Built	2025	Grade	None
Foundation	Poured Concrete	Well	
Septic	Septic - 1 - Septic Tank		

Structure 1 of 2

Residential Units	0	Use	Bars and Lounges
Condition	Standard	Design	Commercial
Basement	None	Construction Type	Frame
Year Built	1960	Grade	None
Foundation	Poured Concrete	Well	Well 1 - Drilled Well
Septic	Septic - 1 - Septic Tank		

Building Item Details

Building Number	Description	Area	Percent Complete

Tax/Billing Information

Year	Certified	Zone	Mill	Tax Billed
2026	No	0030	::	::
2025	Yes	0030	12.797	$3617.71
2024	Yes	0030	13.174	$3724.29

Recorded Documents

Date	Type	Recording Info (offsite link to DNR)
4/14/2021	CORRECTIVE DEED	Palmer 2021-010167-0
4/13/2021	WARRANTY DEED (ALL TYPES)	Palmer 2021-010030-0
3/11/2016	TRUSTEES DEED	Palmer 2016-004698-0

Tax Account Status [2]

Status	Tax Balance	Farm	Disabled Veteran	Senior	Total [3]	LID Exists
Current	$1,808.84	$0.00	$0.00		$0.00	$0.00 No

Land and Miscellaneous

Gross Acreage	Taxable Acreage	Assembly District	Precinct	Fire Service Area	Road Service Area
2.76	2.76	Assembly District 005	30-585	130 Central Mat-Su	017 Knik RSA

[1] Total Assessed is net of exemptions and deferments.rest, penalties, and other charges posted after Last Update Date are not reflected in balances.
[2] If account is in foreclosure, payment must be in certified funds.
[3] If you reside within the city limits of Palmer or Houston, your exemption amount may be different.

Last Updated: 2/17/2026 9:00:02 AM

Knik Landing Event Venue

Summary:

Knik Landing is a proposed 5,000-square-foot event venue located on the scenic shores of Knik Lake in Knik, Alaska, adjacent to the established Broken Boat Knik Bar and Grill. This venue will capitalize on the area's natural beauty, recreational appeal, and the existing customer base of the bar and grill to offer a premier destination for weddings, corporate events, community gatherings, and private parties. With a focus on rustic Alaskan charm, modern amenities, and year-round accessibility, Knik Landing aims to become a sought-after event space in the Matanuska-Susitna Borough. The venue will generate revenue through rentals, catering partnerships, and bar services, with an initial investment covering construction, permits, and marketing.

Company Description Name: Knik Landing/ Knik Bar and Liquor

Location: Knik Lake, Knik, Alaska, adjacent to Broken Boat Knik Bar and Grill (10204 S. Knik Goose Bay Rd, Wasilla, AK 99623).

Legal Structure: LLC (to be formed as an extension of the existing Broken Boat business or as a separate entity).

Mission: To provide a versatile, scenic event venue that celebrates Alaskan heritage and fosters memorable experiences for locals and visitors.

Vision: To be the premier event venue in the Matanuska-Susitna Borough, known for exceptional service, stunning lakefront views, and seamless integration with the Broken Boat Knik Bar and Grill.

Location: Matanuska-Susitna Borough, Anchorage, and out-of-state visitors.

Services and Offerings Venue Features Size: 5,000 sq. ft. indoor space, with an additional 2,000 sq. ft. outdoor deck overlooking Knik Lake. Capacity: Up to 200 guests (seated) or 300 (standing).

Amenities: Open floor plan with divisible rooms for smaller events. Floor-to-ceiling windows for lake views. Rustic-modern design (wood accents, Alaskan decor). Full AV system (projector, speakers, microphones). WiFi, power outlets, and climate control. Outdoor deck with seating, lighting, and heaters for year-round use. Ample parking (shared with Broken Boat Knik Bar and Grill).

Accessibility: ADA-compliant entrances and restrooms.

Operations Plan Location and Facilities Site: 5,000 sq. ft. building on Knik Lake, adjacent to Broken Boat Knik Bar and Grill.

Construction: Stick-built structure with shingle roofing for snow load.

Conclusion: Knik Landing will fill a gap in the Matanuska-Susitna Borough's event venue market by offering a 5,000+-square-foot lakefront space with modern amenities and seamless integration with the Broken Boat Knik Bar and Grill. By leveraging Knik's natural beauty, recreational appeal, and the bar and grill's established customer base, Knik Landing is poised to become a leading event destination in Alaska.

Security Plan
Knik Bar
10204 South Knik Goose Bay Road
Wasilla, Alaska 99623
907-376-3818

1. Type of services to be offered.

The Knik Bar is an establishment that provides alcoholic beverages and food to customers. Knik Bar and its staff promote a safe and secure environment to all patrons through following state and local guidelines and laws, and through consistent and reoccurring training to our employees.

Occasionally the Knik Bar host's events such as live bands/musicians, these such events and individuals are not employed by Knik Bar, however, they shall be held to the same standard as employees while performing at the Knik Bar.

2. Number/Utilization of security personnel for events.

For live events, one in-house security person for each 50 patrons shall be on duty. All security personnel shall be attired in a manner to readily identify them as such. From the time a live entertainment event ends and for 30 minutes thereafter, one-half of all security personnel shall be stationed outside the premises to assist and encourage patrons to leave safely.

No event shall ever exceed the authorized capacity of the Knik Bar.

Assigned security staff shall regularly patrol both the women's and men's bathroom facilities and outdoor seating area.

3. Control & clearance of parking lot and outdoor seating area.

Video cameras will be mounted to cover the entrance, exits and entire premises, including the outdoor seating area. Recordings will be made available upon request by the local police agency (Alaska State Troopers). Staff shall regularly patrol the immediate exterior of the building at least once every half-hour, doing so on a random basis during an event. Knik Bar shall conspicuously post in its parking lot area the following signage: "No Trespassing/Loitering. Any person who is not a patron or not there on official business with the owner or the owner's agent, will be asked to leave the parking area

immediately." Outdoor seating area perimeter secured by a 5' fence, there is one entry/exit that goes through the dining room area. The only exit in the fenced area is to be used for emergency's only, there shall be no entry through that exit. Underaged persons will not be permitted in the outdoor seating area without a legal parent or guardian over the age of 21. Bar staff will check the outdoor seating area frequently to ensure patrons are following Knik Bar rules and guidelines and all Alaska State Laws. Bar staff will check outdoor seating area at the beginning of shift f to ensure the fenced barrier is not compromised and does not allow unauthorized entry. Fence will be posted with signs every 20' stating "No Alcohol beyond this point", any patrons that violate will be asked to leave Knik Bar immediately and not allowed to return.

4. Unruly patrons.

The Knik Bar will familiarize all staff with provisions of the local laws for unruly patrons, or patrons committing acts of disorderly conduct. When a patron acts in a manner that is violent, abusive, indecent, profane, boisterous, or otherwise disorderly, staff will immediately ask that person to leave, if that person refuses to leave, the local police department (Alaska State Troopers) will be contacted to remove the person. At no time will any Knik Bar employee engage in physical contact with a patron or exercise any use of force, the only exception is self-defense.

5. Persons who are intoxicated.

Knik Bar staff may not sell, dispense, or provide alcohol to any person who is impaired or considered under the influence as defined by Alaska law, nor shall such a person be permitted on the premises. When a customer has been "cut off", the server will notify the other employees. Management will support the server's decision to terminate service to any customer. If a customer is impaired, licensee will advise the customer not to drive, and arrange a safe ride. If the customer refuses, management will notify the location Police Department (Alaska State Troopers) with a description of the person and the license plate number of the vehicle, if possible.

6. Patrons presenting false ID's.

All identification cards used to prove age must be valid (i.e., may not be expired), and must be government-issued. If the identification card is expired or appears at all questionable to the employee, the employee shall request a second form of identification. The employee shall make sure that the individual purchasing the liquor resembles the identification card. All employees are encouraged to ask purchasers questions relating to their identification in order to verify the information. If the employee checking an ID has a strong suspicion that an ID is false, altered, or belongs to someone other than the person presenting the ID, he/she shall confiscate the ID and turn it over to management, to be presented to the police and the person will be asked to leave immediately.

7. Control/Supervision of patrons Under 21.

Knik Bar staff **will** request proof of identification and age from any customer who orders or drinks alcoholic beverages. Knik Bar employees **will** refuse service to any customer who cannot produce adequate ID. When selling pitchers, ID's **will** be requested for each person receiving a glass. Separate types of glassware will be used to distinguish alcohol drinks from non-alcohol drinks. Patrons under the age of 21 are not permitted in the bar area. Patrons under the age of 21 shall be seated in the dining room only. The staff member serving any person under 21 shall notify all other staff members of the

under-age person as to ensure no alcoholic beverages are served to them. Underaged persons will not be permitted in the outdoor seating area without a legal parent or guardian over the age of 21.

8. Circumstances under which the police will be called.

The local police (Alaska State Troopers) **will** be called, in a timely manner, anytime management or staff has information to believe a crime has been or is about to be committed and/or whenever a threat of or act of violence occurs on the premises or off premises in areas that would be considered in view or earshot of the establishment.

9. Handling of physical disturbances, including fights.

Staff or management will ask anyone who is fighting to leave. If necessary, staff or management will call the local law enforcement agency for assistance. The Knik Bar will permanently refuse admittance to any chronic problem encounter. At no time will any Knik Bar employee engage in physical contact with a patron or exercise any use of force, the only exception is self-defense.

10. Incident Log.

The Knik Bar and its staff will keep and maintain an incident log for any of the aforementioned incidents or encounters. Any incident such as fights, unruly patrons, suspicious activity, patrons being cut off, attempts by underage persons to be served, intoxicated persons, fake ID presentation, or any other abnormal or suspect activity that should be documented.

The Knik Bar's incident log will include the date time of incident, type of incident, location of incident (Bar, bathroom, dining room, parking lot, outside seating, etc.), persons involved, action taken, and will be brought to the attention of any staff during a shift change.

All Knik Bar staff are required to review and initial the incident log prior to the beginning of their shift to ensure compliance with any action taken as the result of an incident, and for situational awareness and safety.

The Knik Bar's incident log will be posted on the wall near the employee schedule.

All Knik Bar employees will sign a document agreeing that they have read and understand the procedures designated in the security plan.

Knik Landing Conditional Use Permit Application
Response to Request for Additional Information (RFAI)

Date: 4/8/2026

In response to the request for additional information for the conditional use permit application related to alcoholic beverage uses under MSB 17.70, the applicant provides the following narrative. The AMCO application for expansion of the licensed beverage dispensary areas is currently in process and includes approximately 13,000 square feet of licensed area. The site provides a total of 72 parking spaces, including four ADA-compliant spaces, with all parking areas constructed of compacted gravel. The hours of operation are proposed as 8:00 AM to 12:00 AM daily for the wedding venue and 12:00 PM to 12:00 AM daily for the bar.

Peak traffic is anticipated between 4:00 PM and 8:00 PM, with an estimated 92 vehicles entering and exiting the site during those hours. The exterior of the operation will utilize neutral earth tones, specifically tan and brown, to blend with the surrounding environment. Signage will consist of a wood timber frame sign reading “Knik Landing,” located south of the driveway off Knik Goose Bay Road, with lighting that is dim and directed downward to minimize visual impact.

Exterior lighting across the site will consist of downward-directed and shielded disk lighting installed in soffits at approximately 15 feet in height, along with flood lights mounted at approximately 20 feet on each gabled end. No additional parking lot lighting is proposed. Access to the site is primarily from Knik Goose Bay Road; coordination with the State of Alaska is ongoing regarding driveway permitting, as no existing permit is currently on file. Access from the borough road will be blocked, though the physical size of the driveway will be maintained for potential future use.

The subject parcel has no known flooding issues. A sewer excavation to a depth of approximately 17 feet did not encounter groundwater, and prior grading work by the former owner directs drainage to the northeast into a state culvert system. A drainage plan, including contours and flow direction, will be provided as part of the updated site plans.

To mitigate potential impacts to surrounding properties consistent with MSB 17.70.100, the operation will continue in a manner consistent with its longstanding history of over 65 years while implementing additional improvements. A chain link fence with wood slats will be installed along the western boundary extending toward the lake to enclose areas where alcohol is served and to reduce visibility from the public. The operation will observe normal quiet hours, maintain modest and consistent signage without obtrusive features, and remove dilapidated outbuildings. Landscaping enhancements will be implemented to improve site appearance, including removal of weeds and overall site cleanup.

Date: 4/8/2026

The fencing proposed on the site will serve multiple purposes, including privacy, security, and reduction of visual impacts to adjacent properties. Updated site plans will be submitted to include a drainage plan, circulation patterns for vehicles and pedestrians, fencing details, signage and lighting locations, and designated ADA parking spaces, ensuring compliance with application requirements and borough code.

STATE OF ALASKA - ALCOHOLIC BEVERAGE CONTROL BOARD
ALCOHOLIC BEVERAGE LICENSE

2025-2026

License Number: **597**
Issued Date: **9/26/2025**
Type of License: **BEVERAGE DISPENSARY LICENSE(BDL)**

D/B/A: **KNIK BAR & LIQUOR STORE**

Premises Address:

10204 S KNIK GOOSE BAY ROAD, WASILLA, AK, 99654, USA

Name/Mailing Address:

BROKEN BOAT LLC

P.O. BOX 874893, WASILLA, AK, 99687, USA

Enforcement Conditions:

N/A

LICENSE RENEWAL APPLICATION DUE
DECEMBER 31, 2026
THIS LICENSE EXPIRES MIDNIGHT
FEBRUARY 28, 2027, UNLESS DATED BELOW

CITY/BOROUGH:

Matanuska-Susitna Borough

This license cannot be transferred without permission of the Alcoholic Beverage Control Board

ISSUED BY ORDER OF THE
ALCOHOLIC BEVERAGE CONTROL BOARD

DIRECTOR

THIS LICENSE MUST BE POSTED IN A VISIBLE PLACE ON THE PREMISES
AND AVAILABLE FOR INSPECTION 3 AAC 305.630(c)

Alcohol and Marijuana Control Office
550 W. 7th Avenue, Suite 1600
Anchorage, AK 99501
alcohol.licensing@alaska.gov
https://www.commerce.alaska.gov/web/amco
Phone: 907.269.0350

Planning Commission Packet
June 15, 2026
34 of 351

Alaska Alcoholic Beverage Control Board

Form AB-01: Transfer License Application

This transfer license application form is required for all individuals or entities seeking to apply for the transfer of ownership and/or location of an existing liquor license. Applicants should review **Title 04** of **Alaska Statutes** and **Chapter 305** of the **Alaska Administrative Code**. All fields of this form must be completed, per AS 04.11.260, AS 04.11.280, AS 04.11.290, 3 AAC 305.045 and 3 AAC 305.060.

This form must be completed and submitted to AMCO's Anchorage office, along with all other required forms and documents before any license application will be considered complete.

Section 1 – Transferor Information

Enter information for the ***current*** licensee and licensed establishment.

Licensee:	Broken Boat LLC			**License #:**	597
License Type:	Beverage Dispensary			**Statutory Reference:**	
Doing Business As:	Knik Bar and Liquor Store				
Premises Address:	10204 S Knik Goose Bay Rd				
City:	Wasilla	**State:**	AK	**ZIP:**	99623
Local Governing Body/Bodies:	Mat-Su Borough				

Transfer Type:

- [ ] Regular transfer
- [ ] Transfer with security interest
- [ ] Involuntary retransfer
- [X] Controlling interest transfer
- [ ] Location transfer

OFFICE USE ONLY			
Complete Date:		***Transaction #:***	
Board Meeting Date:		***License Years:***	
Issue Date:		***Examiner:***	

Alcohol and Marijuana Control Office
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Planning Commission Packet
June 15, 2026
Page 51 of 351

Alaska Alcoholic Beverage Control Board

Form AB-01: Transfer License Application

Section 2 – Transferee Information

Enter information for the ***new*** applicant and/or location seeking to be licensed.

Licensee:	Broken Boat LLC				
Doing Business As:	Knik Bar and Liquor Store				
Premises Address:	10204 S Knik Goose Bay Rd				
City:	Wasilla	**State:**	AK	**ZIP:**	99623
Community Council, (If applicable):	Knik-Fairview Community Council				

Mailing Address:	PO Box 874893				
City:	Wasilla	**State:**	AK	**ZIP:**	99687
Email:	mmassiebbllc@gmail.com	**Phone:**	907-232-1063		

Designated Licensee:	Misty Massie		
Contact Phone:	907-232-1063	**Business Phone:**	907-376-3818
Contact Email:	mmassiebbllc@gmail.com		

Seasonal License? Yes ☐ No ☒ **If "Yes", write your six-month operating period:** _____

Section 3 – Premises Information

Premises to be licensed is:

☒ an existing facility ☐ a new building ☐ a proposed building

The next two questions must be completed by beverage dispensary (including tourism) and package store applicants only:

What is the distance of the shortest pedestrian route from the public entrance of the building of your proposed premises to the outer boundaries of the nearest school grounds? Include the unit of measurement in your answer (Must be in feet).

3 Miles from Dena'ina Elementary School.

What is the distance of the shortest pedestrian route from the public entrance of the building of your proposed premises to the public entrance of the nearest church building? Include the unit of measurement in your answer (Must be in feet.)

0.6 Miles from the Knik LDS Church

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Planning Commission Packet
June 15, 2026
Page 56 of 351

Alaska Alcoholic Beverage Control Board

Form AB-01: Transfer License Application

Section 4 – Sole Proprietor Ownership Information

This section must be completed by any sole proprietor who is applying for a license. Entities should skip to Section 5.
If more space is needed, please attach a separate sheet with the required information.
The following information must be completed for each licensee and each affiliate (spouse).

This individual is an: ☐ applicant ☐ affiliate

Name:					
Address:					
City:		**State:**		**ZIP:**	
Email:		**Phone:**			

This individual is an: ☐ applicant ☐ affiliate

Name:					
Address:					
City:		**State:**		**ZIP:**	
Email:		**Phone:**			

Section 5 – Entity Ownership Information

This section must be completed by any entity, including a corporation, limited liability company (LLC), partnership, or limited partnership, that is applying for a license. Sole proprietors should skip to Section 6.
If more space is needed, please attach a separate sheet with the required information.

- If the applicant is a **corporation**, the application shall be executed by an authorized officer of the Corporation. Information must be completed below for each ***stockholder who owns 10% or more*** of the stock in the corporation, and for each ***president, vice-president, secretary***, and ***managing officer***.
- If the applicant is a **limited liability organization**, whether manager managed or member managed, the following information must be completed for each ***member with an ownership interest of 10% or more*** and for each ***manager regardless of ownership share***.
- If the applicant is a **partnership**, including a **limited partnership**, the following information must be completed for each ***partner with an interest of 10% or more***, and for each ***general partner***.
- For **any entity**, identify all affiliates for your organization as defined at 3 AAC 305.950.

Entity Official:	Misty Massie				
Title(s):	Managing Member	**Phone:**	907-232-1063	**% Owned:**	50
Address:	PO Box 874893				
City:	Wasilla	**State:**	AK	**ZIP:**	99687
Email:	mmassiebbllc@gmail.com	**Phone:**	907-232-1063		

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Alaska Alcoholic Beverage Control Board

Form AB-01: Transfer License Application

Entity Official:	Douglas Massie				
Title(s):	Member	**Phone:**	907-232-7072	**% Owned:**	50
Address:	PO Box 874893				
City:	Wasilla	**State:**	AK	**ZIP:**	99687
Email:	massman76@hotmail.com	**Phone:**	907-232-7072		

Entity Official:					
Title(s):		**Phone:**		**% Owned:**	
Address:					
City:		**State:**		**ZIP:**	
Email:		**Phone:**			

Entity Official:					
Title(s):		**Phone:**		**% Owned:**	
Address:					
City:		**State:**		**ZIP:**	
Email:		**Phone:**			

This subsection must be completed by any applicant that is a corporation or LLC. Corporations and LLCs are required to be in good standing with the Alaska Division of Corporations (DOC). The registered agent is either an individual resident of the state or domestic corporation authorized to transact business in the state and whose business office is the same as the registered office.

CBPL Entity #:	10137962	**AK Formed Date:**	07/18/2020	**Home State:**	Alaska
Registered Agent:	Misty Massie		**Agent's Phone:**	907-232-1063	
Agent's Mailing Address:	PO Box 874893				
City:	Wasilla	**State:**	AK	**ZIP:**	99687
Email:	mmassiebbllc@gmail.com		**Phone:**	907-232-1063	

Residency of Agent:	Yes	No
Does your registered agent satisfy the requirement of AS 04.11.430?	X	☐

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Planning Commission Packet
June 15, 2026
58 of 351

Alaska Alcoholic Beverage Control Board

Form AB-01: Transfer License Application

Section 6 – Other Licenses

Ownership and financial interest in other alcoholic beverage businesses:	Yes	No
Does any representative or owner named as a transferee in this application have any direct or indirect financial interest in any other alcoholic beverage business that does business in or is licensed in Alaska?	[X]	[ ]

If "Yes", disclose which individual(s) has the financial interest, what the type of business is, and if licensed in Alaska, which license number(s) and license type(s):

License # 596 - Broken Boat LLC, same entity, Package Store License.

Section 7 – Authorization

Communication with AMCO staff:	Yes	No
Does any person other than a licensee named in this application have authority to discuss this license with AMCO staff?	[ ]	[X]

If "Yes", disclose the name of the individual and the reason for this authorization:

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Alaska Alcoholic Beverage Control Board

Form AB-01: Transfer License Application

Section 8 – Transferor Certifications

Additional copies of this page may be attached, as needed, for the controlling interest of the current licensee to be represented.

I declare under penalty of perjury that the undersigned represents a **controlling interest** of the current licensee. I additionally certify that I, as the current licensee (either the sole proprietor or the controlling interest of the currently licensed entity) have examined this application, approve of the transfer of this license, and find the information on this application to be true, correct, and complete.

Misty Massie
Signature of transferor

Misty Massie
Printed name of transferor

Subscribed and sworn to before me this 9th day of January, 2026.

Danielle Howard
Signature of Notary Public

DANIELLE HOWARD My Commission Expires NOTARY PUBLIC Mar 18, 2027 STATE OF ALASKA

Notary Public in and for the State of Alaska.

My commission expires: 3-18-27

Alice Massie
Signature of transferor

Alice Massie
Printed name of transferor

Subscribed and sworn to before me this 9th day of January, 2026.

Danielle Howard
Signature of Notary Public

DANIELLE HOWARD My Commission Expires NOTARY PUBLIC Mar 18, 2027 STATE OF ALASKA

Notary Public in and for the State of Alaska.

My commission expires: 3-18-27

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Planning Commission Packet
June 15, 2026
60 of 351

Alaska Alcoholic Beverage Control Board

Form AB-01: Transfer License Application

Section 9 – Transferee Certifications

Read each line below, and then sign your initials in the box to the right of each statement: Initials

I certify that all proposed licensees (as defined in AS 04.11.260) and affiliates have been listed on this application. MM

I certify that all proposed licensees have been listed with the Division of Corporations. MM

I certify that I understand that providing a false statement on this form or any other form provided by AMCO is grounds for rejection or denial of this application or revocation of any license issued. MM

I certify that all licensees, agents, and employees who sell or serve alcoholic beverages or check the identification of a patron will complete an approved alcohol server education course, if required by AS 04.21.025, and, while selling or serving alcoholic beverages, will carry or have available to show a current course card or a photocopy of the card certifying completion of approved alcohol server education course, if required by 3 AAC 305.700. MM

I agree to provide all information required by the Alcoholic Beverage Control Board in support of this application. MM

I hereby certify that I am the person herein named and subscribing to this application and that I have read the complete application, and I know the full content thereof. I declare that all the information contained herein, and evidence or other documents submitted are true and correct. I understand that any falsification or misrepresentation of any item or response in this application, or any attachment, or documents to support this application, is sufficient grounds for denying or revoking a license/permit. I further understand that it is a Class A misdemeanor under Alaska Statute 11.56.210 to falsify an application and commit the crime of unsworn falsification. MM

I certify that I and any individual identified in the business entity ownership section of this application, has, or will read AS 04 and its implementing regulations. MM

Misty D Massie
Signature of transferee

Misty Massie
Printed name

DANIELLE HOWARD
My Commission Expires
NOTARY PUBLIC
Mar 18, 2027
STATE OF ALASKA

Danielle Howard
Signature of Notary Public

Notary Public in and for the State of Alaska.

My commission expires: 3-18-27

Subscribed and sworn to before me this 9th day of January, 2026.

Outlook

Your affidavit for Controlling Interest Transfer Application

From Column Support <support@column.us>
Date Mon 2/2/2026 7:00 AM
To mmassiebbllc@gmail.com <mmassiebbllc@gmail.com>

1 attachment (555 KB)
column_affidavit_goh7GBytTZilnG94VrqN.pdf;

Hi Misty,

The affidavit for Controlling Interest Transfer Application is now available. **Please find a copy of the affidavit attached to this email.**

Notice Name: Controlling Interest Transfer Application
Notice ID: goh7GBytTZilnG94VrqN
Publisher: Mat-Su Valley Frontiersman
Publication Dates: 01/16/26, 01/23/26, 01/30/26

To review the uploaded affidavit in Column, click **View Notice.**

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FRONTIERSMAN

AFFIDAVIT OF PUBLICATION

State of Florida, County of Broward, ss

Anjana Bhadoriya, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Mat-Su Valley Frontiersman, a newspaper printed and published at Wasilla and circulated through out Matanuska Susitna Borough, in said division three and state of Alaska and that the advertisement, of which the annexed is a true copy, and that the rate charged therein is not in excess of the rate charged private individuals, was published on the following days

PUBLICATION DATES:
Jan. 16, 2026, Jan. 23, 2026, Jan. 30, 2026

NOTICE ID: goh7GBytTZilnG94VrqN
PUBLISHER ID: MSV000719
NOTICE NAME: Controlling Interest Transfer Application
Publication Fee: 321.75

I certify under penalty of perjury that the foregoing is true.

Anjana Bhadoriya

(Signature)

SHERI SMITH
Notary Public - State of Florida
Commission # HH259383
Expires on May 31, 2026

VERIFICATION

State of Florida
County of Broward

Subscribed in my presence and sworn to before me on this 02/02/2026

S Smith

Notary Public
Notarized remotely online using communication technology via Proof.

Controlling Interest Transfer License Application

Broken Boat LLC, dba Knik Bar & Liquor Store located at 10204 S Knik Goose Bay Road in Wasilla is applying for a transfer of a Beverage Dispensary License AS 04.09.200 and Package Store License AS.09.230 to Broken Boat LLC. The change in ownership involves the ownership interest transfer from Misty Massie 66.67% and Alice Massie 33.33% to Misty Massie 50% and Douglas Massie 50%. Interested persons should submit written comment to their governing body, the applicant, and to the Alcohol Beverage Control Board at 550 West 7 th Ave. Suite 1600 Anchorage AK 99501 or alcohol.licensing@alaska.gov. Date: January 16, 23, 30, 2026
MSV000719

Alcohol and Marijuana Control Office
550 W 7th Avenue, Suite 1600
Anchorage, AK 99501
alcohol.licensing@alaska.gov
https://www.commerce.alaska.gov/web/amco
Phone: 907.269.0350

Planning Commission Packet
June 15, 2026
63 of 351

Alaska Alcoholic Beverage Control Board

Form AB-02: Premises Diagram

Why is this form needed?

A detailed diagram of the proposed licensed premises is required for all alcohol license applications, per AS 04.11.260, 3 AAC 305.630 and 3 AAC 305.660. Your diagram must include dimensions and must show all entrances and boundaries of the premises, walls, bars, fixtures, and areas of storage, service, consumption, and manufacturing.

This form must be completed and submitted to AMCO's Anchorage office before any license application will be considered complete. You may attach blueprints or other detailed drawings that meet the requirements of this form.

The diagram MUST include:

- You must use a **solid, contiguous red line** to outline the outer perimeter of your premises with no breaks or separations.
  - The red outline is required to follow a physical barrier (wall, fence and even across doorways).
  - There should be no red lines within the perimeter
- Each area should be clearly labeled in any color other than red where alcohol is:
  - Stored
  - Served/Sold
  - Manufactured
  - Consumed
- All diagrams must include:
  - Dimensions (AMCO does not accept diagrams drawn to scale)
  - Cross streets
  - Points of reference, such as a compass rose indicating True North
  - All entrances, exits, walls, bars, and fixtures
- If your premises include multiple floors, please include a separate diagram of each floor.
  - You must identify the stairs between each floor, and each hallway/corridor that leads to each set of stairs.
- If your premises includes multiple floors, please include a separate diagram of each floor. You must identify the stairs between each floor, and each hallway/corridor that leads to each set of stairs.
- If your proposed premises is located within a building or building complex that contains multiple businesses and/or tenants, please provide an additional page that clearly shows the location of your proposed premises within the building or building complex, along with the addresses and/or suite numbers of the other businesses and/or tenants within the building or building complex.
- **Any license applications that include outdoor space** are required to submit a security plan that includes information about the barriers, practices, and personnel that are to be used to ensure that alcohol is not introduced or removed from the permitted premises and to prevent the access of alcohol by a minor during the permitted event. A security plan may be requested for other proposed locations on a case-by-case basis.

Section 1 – Establishment Information

Enter information for the business seeking to be licensed, as identified on the license application.

Licensee:	Broken Boat LLC	**License Number:**	597		
License Type:	Beverage Dispensary				
Doing Business As:	Knik Bar & Liquor Store				
Premises Address:	10204 S Knik Goose Bay Road				
City:	Wasilla	**State:**	AK	**ZIP:**	99623

Alcohol and Marijuana Control Office
550 W 7th Avenue, Suite 1600
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Phone: 907.269.0350

Planning Commission Packet
June 15, 2026
64 of 351

Alaska Alcoholic Beverage Control Board

Form AB-02: Premises Diagram

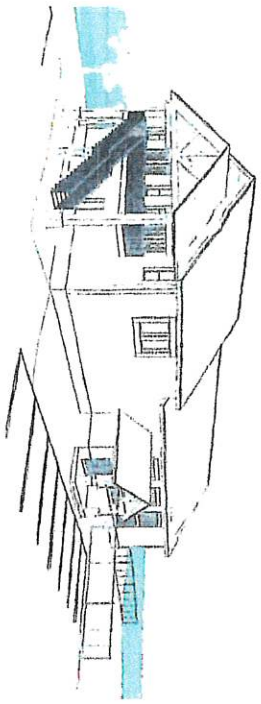
Section 2 – Detailed Premises Diagram

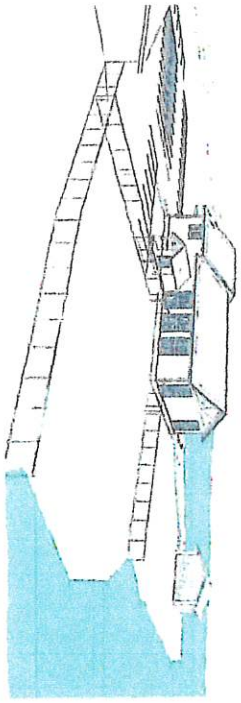
Clearly indicate the boundaries of the premises and the proposed licensed area within that property. See above for detailed instructions.

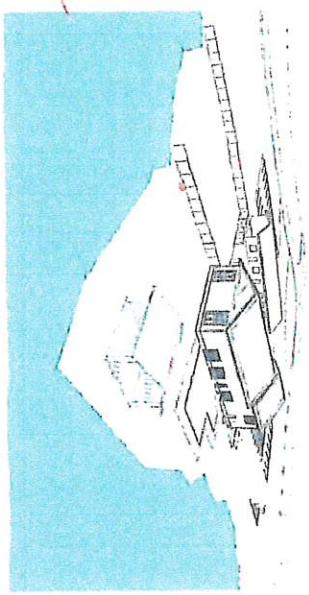
Please see attached premises diagram and map.

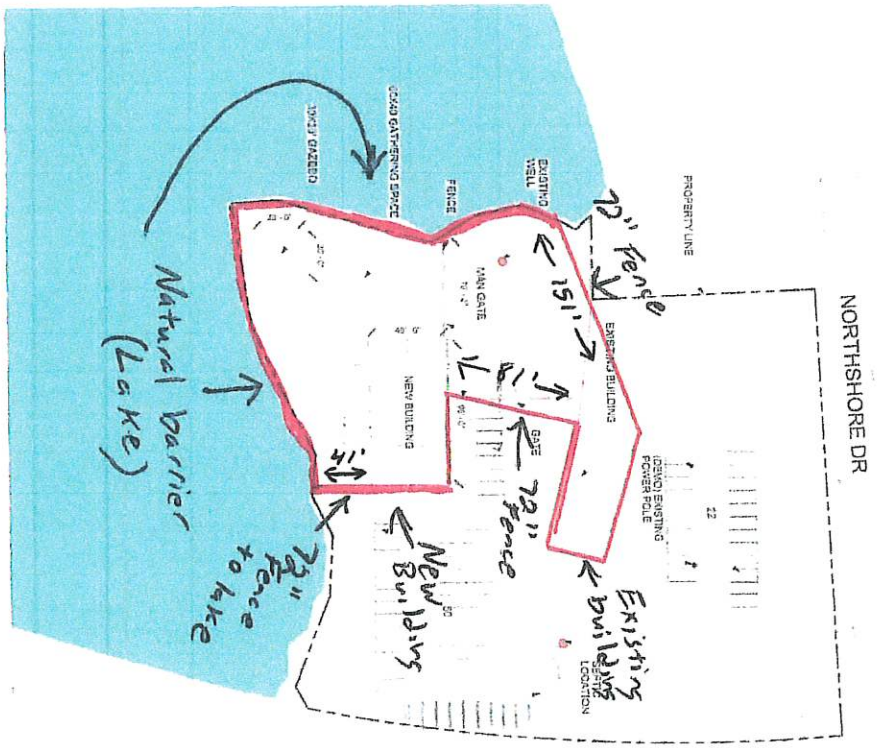
NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

Knik Landing









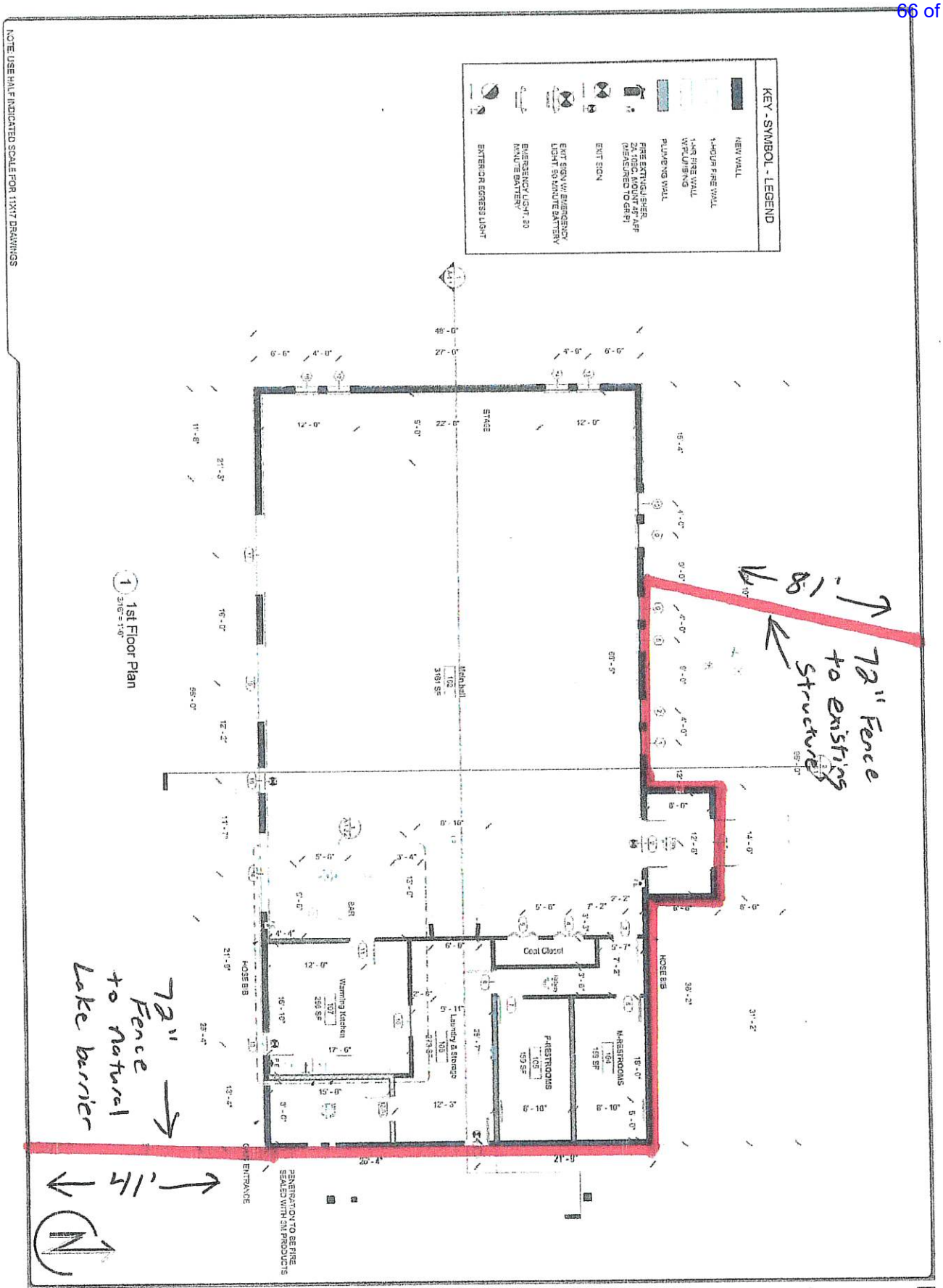
1 Site
1" = 40'-0"

N

A-1.0

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Site Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

Determine DESIGN LLC AECL1613
506 E FIREWEED LN, STE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@determinedesign.com



Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: 1st Floor Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.2

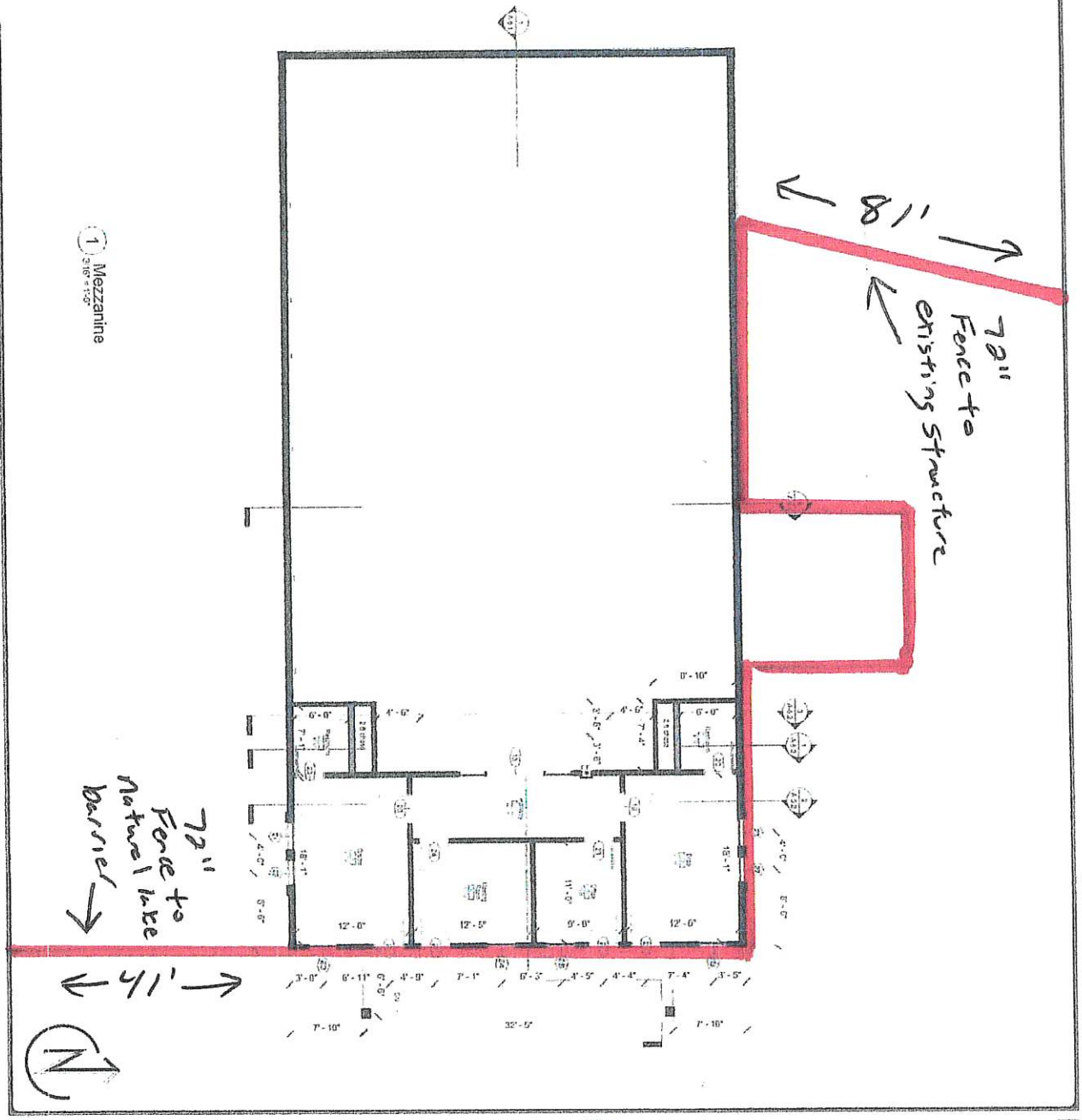
Determine DESIGN LLC AECL1613
506 E FIREWEED LN, STE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@determinedesign.com

Determine

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

KEY - SYMBOL - LEGEND

- NEW WALL
- 1-HOUR FIRE WALL
- 1-HR FIRE WALL W/PLUMBING
- PLUMBING WALL
- FIRE EXTINGUISHER 24-10BC, MOUNT 40" AFF (MEASURED TO GRIP)
- EXIT SIGN
- EXIT SIGN W/ EMERGENCY LIGHT, 90 MINUTE BATTERY
- EMERGENCY LIGHT, 90 MINUTE BATTERY
- EXTERIOR EGRESS LIGHT



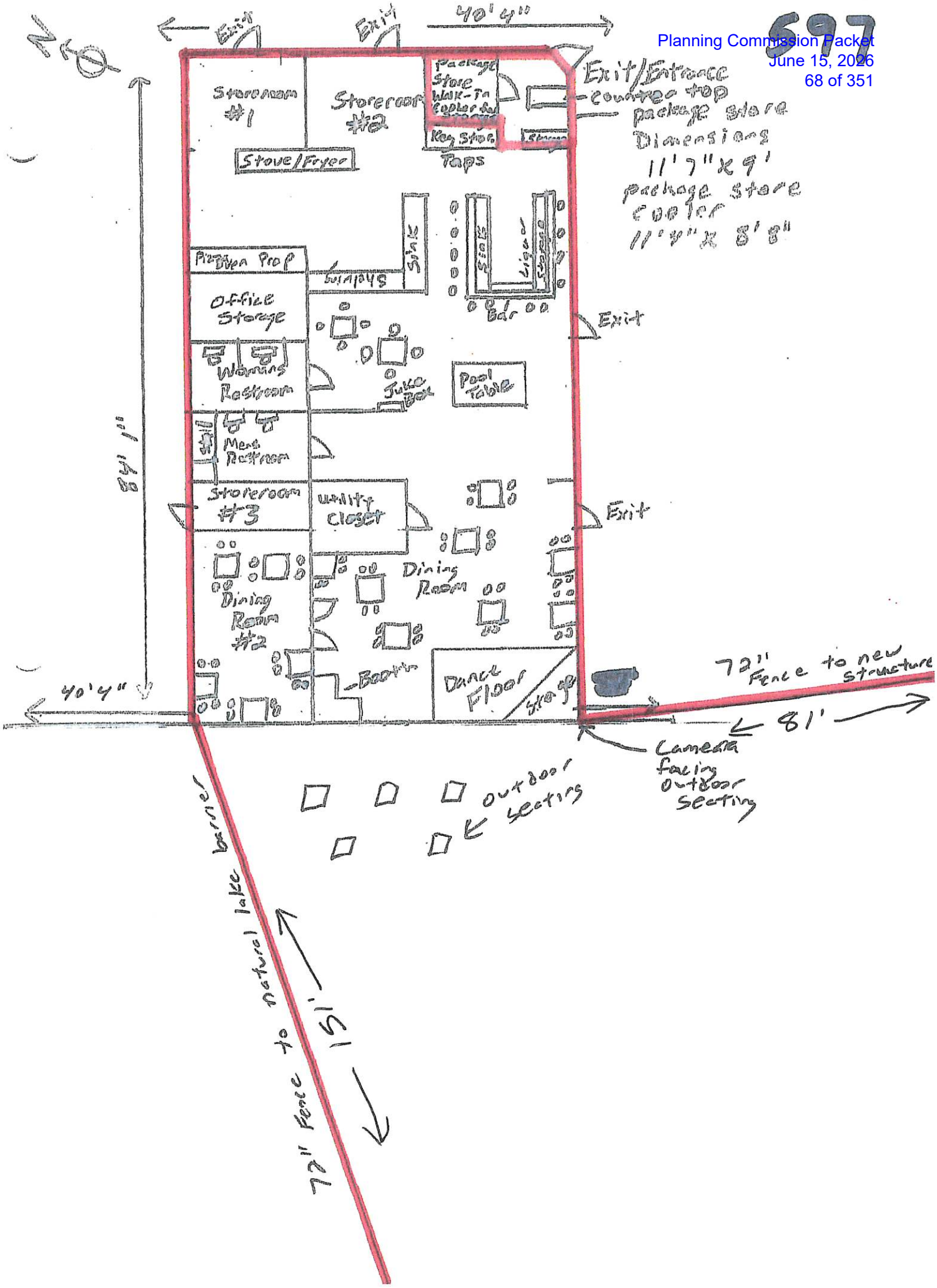
A-1.3

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Mezzanine Floor Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

Sheet Issue Date: 9/2/2025 8:23:23 PM
Drawn by: MD
Checked by: DHZ

Determine DESIGN LLC AECL1613
506 E FIREWEED LN, STE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@determinedesign.com

697


240
Exit
Exit
40'4"
Storeroom #1
Storeroom #2
Package Store Walk-In Refrigerator
Exit/Entrance
counter top
package store
Dimensions
11'7" x 9'
package store
counter
11'9" x 8'8"
Key Stoc
Taps
Stove/Fryer
Pizza Prep
Sinks
Sink
Liquor
Storage
Bar
Office Storage
Exit
Womens Restroom
Juke Box
Pool Table
Mens Restroom
Storeroom #3
Utility Closet
Exit
Dining Room
Dining Room #2
Booth
Dance Floor
Step
72" Fence to new structure
81'
40'4"
84'1"
Camera facing outdoor seating
outdoor seating
72" Fence to natural lake barrier
151'

Alcohol and Marijuana Control Office
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Alaska Alcoholic Beverage Control Board

Form AB-07: Public Notice Posting Affidavit

Why is this form needed?

A public notice posting affidavit is required for all liquor license applications. An applicant must give notice of a liquor license application to the public by posting a true copy of the **Form AB-00** (new licenses) or **Form AB-01** (license transfers) for ten (10) days at the location of the proposed licensed premises and one other conspicuous location in the area of the proposed premises, per AS 04.11.310 and 3 AAC 305.075. The public notice must be given within the 90 days immediately preceding filing of the application.

This form must be completed and submitted to AMCO's Anchorage office before any license application will be considered complete.

Section 1 – Establishment Information

Enter information for the business seeking to be licensed, as identified on the license application.

Licensee:	Broken Boat LLC				
License Type:	Beverage Dispensary				
Doing Business As:	Knik Bar & Liquor Store				
Premises Address:	10204 S Knik Goose Bay Rd				
City:	Wasilla	**State:**	AK	**ZIP:**	99623

Section 2 – Certification

I certify that I have met the public notice requirement set forth under AS 04.11.310 by posting a copy of my application for the following 10-day period at the location of the proposed licensed premises and at the following conspicuous location in the area of the proposed premises:

Start Date: 01/20/2026 End Date: 01/30/2026

Other conspicuous location: Three Bears - Knik Goose Bay Rd

Read the statement below, and then sign your initials in the box to the right of the statement: **Initials**

I hereby certify that I am the person herein named and subscribing to this application and that I have read the complete application, and I know the full content thereof. I declare that all of the information contained herein, and evidence or other documents submitted are true and correct. I understand that any falsification or misrepresentation of any item or response in this application, or any attachment, or documents to support this application, is sufficient grounds for denying or revoking a license/permit. I further understand that it is a Class A misdemeanor under Alaska Statute 11.56.210 to falsify an application and commit the crime of unsworn falsification.

Misty Massie
Printed name of licensee

Misty Massie
Signature of licensee

Alcohol and Marijuana Control Office
550 W 7th Avenue, Suite 1600
Anchorage, AK 99501
alcohol.licensing@alaska.gov
https://www.commerce.alaska.gov/web/amco
Phone: 907.269.0350

Alaska Alcoholic Beverage Control Board

Form AB-09: Statement of Financial Interest

Why is this form needed?

A statement of financial interest is required for all alcoholic beverage license applications, per 3 AAC 305.045(c). A person other than a licensee may not have a direct or indirect financial interest (as defined in AS 04.11.450(f)) in the business for which a liquor license is issued, per AS 04.11.450.

This form must be completed and submitted to AMCO's Anchorage office before any license application will be considered complete.

Section 1 – Establishment Information

Enter information for the business seeking to be licensed, as identified on the license application.

Licensee:	Broken Boat LLC				
License Type:	Beverage Dispensary	**EIN:**	85-2093809		
Doing Business As:	Knik Bar & Liquor Store				
Premises Address:	10204 S Knik Goose Bay Road				
City:	Wasilla	**State:**	AK	**ZIP:**	99623
Email:	mmassiebbllc@gmail.com	**Phone:**	907-376-3818		

Section 2 – Certifications

Read each statement below, and then sign your initials in the box to the right of the statements:

Initials

The sole proprietor or entity listed above certifies that no person other than a proposed licensee listed on the alcoholic license application has a direct or indirect financial interest, as defined in AS 04.11.450(f), in the business for which a liquor license is being applied for.

The sole proprietor or entity listed above additionally certifies that any ownership change shall be reported to the board as required under AS 04.11.040, AS 04.11.045, AS 04.11.050, and AS 04.11.055.

I hereby certify that I am the person herein named and subscribing to this application and that I have read the complete application, and I know the full content thereof. I declare that all of the information contained herein, and evidence or other documents submitted are true and correct. I understand that any falsification or misrepresentation of any item or response in this application, or any attachment, or documents to support this application, is sufficient grounds for denying or revoking a license/permit. I further understand that it is a Class A misdemeanor under Alaska Statute 11.56.210 to falsify an application and commit the crime of unsworn falsification.

Misty Massie

Printed name of licensee

Signature of licensee

Alcohol and Marijuana Control Office
550 W 7th Avenue, Suite 1600
Anchorage, AK 99501
alcohol.licensing@alaska.gov
https://www.commerce.alaska.gov/web/amco
Phone: 907.269.0350

Planning Commission Packet
June 15, 2026
71 of 351

Alaska Alcoholic Beverage Control Board

Form AB-11: Creditors Affidavit

Why is this form needed?

This form must be completed by the transferor of a liquor license in order to report all debts of and taxes owed by the business, as required by AS 04.11.280(b). The Alcoholic Beverage Control Board will deny an application for transfer of a license to another person if the Board finds that the transferor has not paid all debts or taxes arising from the conduct of the licensed business, unless the transferor gives security for the payment of the debts or taxes satisfactory to the creditor or taxing authority, per AS 04.11.360(4)(A).

This form must be completed and submitted to AMCO's Anchorage office before any application to transfer the ownership, including the controlling interest, of a license will be considered complete.

Section 1 – Transferor Information

Enter information for the ***current*** licensee and licensed establishment.

Licensee:	Broken Boat LLC	**License Number:**	597		
License Type:	Beverage Dispensary				
Doing Business As:	Kink Bar & Liquor Store				
Premises Address:	10204 S Knik Goose Bay Road				
City:	Wasilla	**State:**	Alaska	**ZIP:**	99623
Federal Tax ID # / EIN:	85-2093809				

Section 2 – Debts and Taxes Owed

Enter information for each creditor or taxing authority to which debts or taxes are owed. If there are no debts or taxes owed by the business, write "None" in the first field. You will be required to correct this form if a response of "N/A" is written in any field. Attach additional pages or documentation as necessary.

Creditor / Taxing Authority	Current Valid Email or Mailing Address of Creditor	Amount Owed
Northrim Bank	PO Box 241489, Anchorage, AK 99524, timothy.breeden@nrim.com	1,100,000

Alcohol and Marijuana Control Office
550 W 7th Avenue, Suite 1600
Anchorage, AK 99501
alcohol.licensing@alaska.gov
https://www.commerce.alaska.gov/web/amco
Phone: 907.269.0350

Planning Commission Packet
June 15, 2026
72 of 351

Alaska Alcoholic Beverage Control Board

Form AB-11: Creditors Affidavit

Section 3 – Transferor Certifications

Read the statements below, and then sign your initials in the box to the right of the statements: Initials

I certify that all debts of the business and all taxes the business owes are listed on Page 1 of this form, and that the contact information provided for each creditor is current. MM

I hereby certify that I am the person herein named and subscribing to this application and that I have read the complete application, and I know the full content thereof. I declare that all of the information contained herein, and evidence or other documents submitted are true and correct. I understand that any falsification or misrepresentation of any item or response in this application, or any attachment, or documents to support this application, is sufficient grounds for denying or revoking a license/permit. I further understand that it is a Class A misdemeanor under Alaska Statute 11.56.210 to falsify an application and commit the crime of unsworn falsification. MM

Misty Massie
Printed name of transferor

Misty Massie
Signature of transferor

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 6898
JBER, AK 99506-0898

October 2, 2025

Regulatory Division
POA-2025-00404

Office of History and Archaeology
Attention: Ms. Sarah Meitl, Deputy SHPO
550 W. 7th Avenue, Suite 1380
Anchorage, Alaska 99501-3561

Dear Ms. Meitl:

This letter is in regard to Douglas Massie's application for a Department of the Army (DA) permit to fill 500 feet of shoreline with armoring rock below the ordinary high-water mark for bank stabilization within Knik Lake. This work is to prevent further erosion to the shoreline. It has been assigned file number POA-2025-00404, Knik Lake which should be referred to in all future correspondence with this office. The project site is located within Section 36, T. 17 N., R. 3 W., Seward Meridian; Latitude 61.4619° N., Longitude 149.7241° W.; Matanuska-Susitna Borough, in Knik, Alaska. All work would be performed in accordance with the enclosed plan (sheets 1-6), dated September.

This letter constitutes consultation pursuant to Section 106 of the National Historic Preservation Act and 33 CFR 325 Appendix C. The U.S. Army Corps of Engineers (USACE) has defined the undertaking as all portions of the project described above, which require DA authorization. USACE has defined the permit area as the shoreline where the bank stabilization is occurring in Knik Lake and the immediate area around the proposed work, as shown on the enclosed map.

Based on the information provided by the Alaska Historic Resources Survey (AHRS) and Google Earth, ANC 00003 (Knik Site), which is listed on the NHR, is about 350 feet from the permit area. ANC-02855 is an historic town originally used by the Tanaina where in 1915 held about 500 residents with 200 homesteads. With the establishment of Wasilla in 1917 the town dissipated leaving only two structures by 1973. The site is impacted with road construction and development of gravel. The proposed project would not disrupt this site further due to the distance from the historic town and since the site is already impacted.

Therefore, we have determined that the proposed undertaking would result in a No Adverse Effect determination. We are hereby seeking your concurrence with our determination of No Adverse Effect for the proposed undertaking. Please provide your response within 30 days from the date of this letter.

Please contact me via email at leah.barrett@usace.army.mil, by mail at the address above, or by phone at (907) 753-2760.

Sincerely,

Leah Barrett

Leah Barrett
Regulatory Specialist

Enclosures

Print Form Save As

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved -
***OMB** No. 0710-0003*
Expires: 02-28-2022

The public reporting burden for this collection of information, 0MB Control Number 0710-0003, is estimated to average 11 hours per response including the lime for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if ii does not display a currently valid 0MB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers, Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by Federal law. Submission of requested informat on is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN): The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: htli.../di..cld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.asi. x

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Douglas Middle - A. Last- Massie	First - Middle - Last-
Company- Broken Boat LLC	Company- Same
E-mail Address - Massman76@hotmail.com	E-mail Address -
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- PO Box 874893	Address-
City- Wasilla State - AK Zip - 99687 Country- USA	City- State - Zip - Country-
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 907-232-7072 c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

SIGNATURE OF APPLICANT DATE 8/22/25

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Knik Landing

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Knik Lake	Address 10204 S. Knik Goose Bay Rd.
15. LOCATION OF PROJECT	City- Wasilla State- AK Zip- 99623
Latitude: N Longitude: W	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID 518705 Municipality Matanuska Susitna Borough

Section - 5 T16N R03W 24 Township - Range -

Print Form Save As

17. DIRECTIONS TO THE SITE

Mile 13.5 Knik Goose Bay Rd.

18. Nature of Activity (Description of project, include all features)

Add armoring rock to 500' of shoreline on west end of property. (See attachment)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

To prevent further erosion to my land and provide bank stabilization.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Fill rock to be placed below ordinary high water for bank stabilization.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Less than 1 cubic yard/foot		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres
or
Linear Feet 500' Linear feet.

23. Description of Avoidance, Minimization, and Compensation (see instructions)

By using armoring rock, we will minimize ~~turbidity~~ turbidity in the Lake.

Print Form

24. Is Any Portion of the Work Already Complete? Yes (No) IF YES, DESCRIBE THE COMPLETED WORK

No.

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list)

a. Address- 11010 Northshore Drive

City- Wasilla, AK 99654 State - AK Zip - 99654

b. Address- 10328 S. Knik Goose Bay Rd.

City- Wasilla, AK State - AK Zip - 99623

c. Address-

City- State - Zip -

d. Address-

City- State - Zip -

e. Address-

City- State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
None					

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

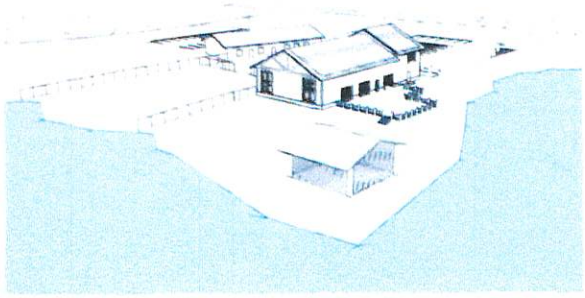
SIGNATURE OF APPLICANT 8/22/25 DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

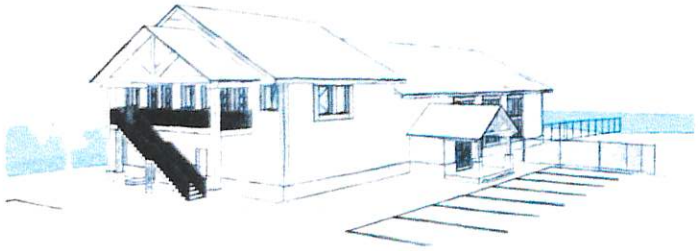
18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

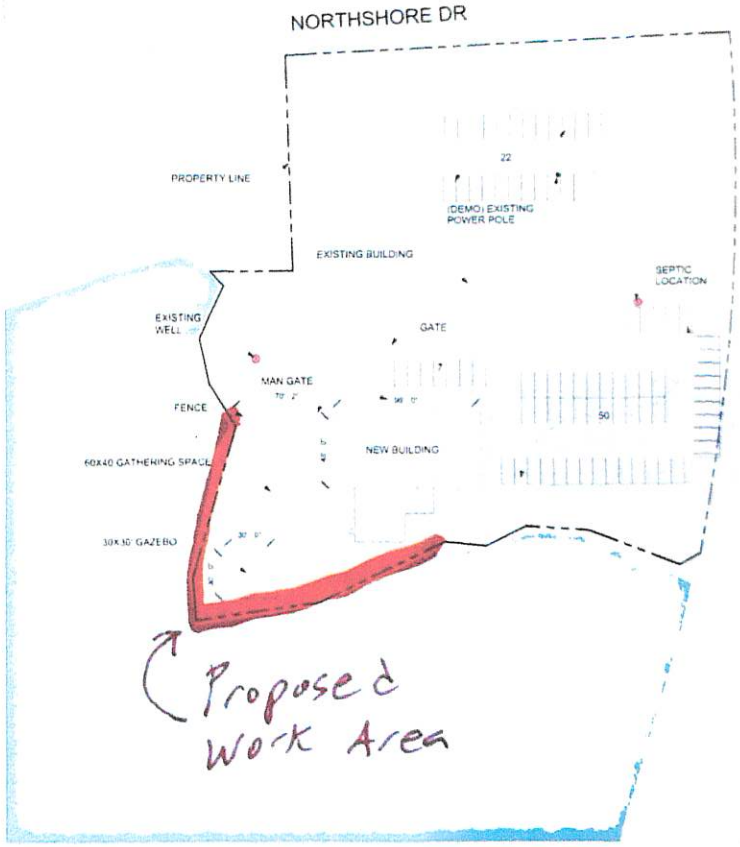
File No.: PDA-2025-004

Knik Landing









1 Site

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

Determine

Determine DESIGN LLC AECL1613
506 E FIREWEED LN, STE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@determinesdesign.com

Sheet Issue Date: 9/12/2025 12:59:04 PM
Drawn by: MO
Checked by: DHC

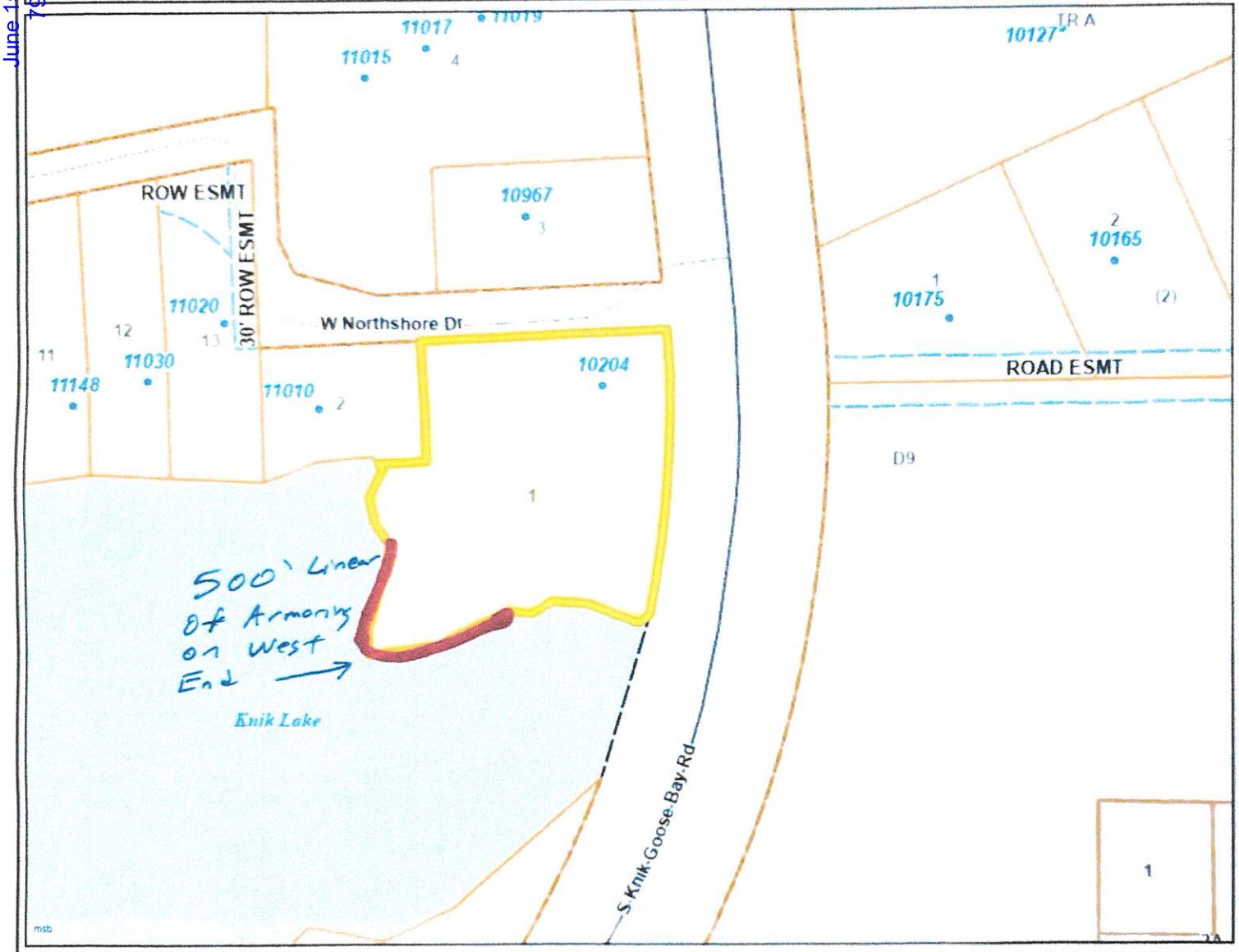
SCHEMATIC DEVELOPMENT PHASE

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Site Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.0

Page 1

Matanuska-Susitna Borough



Legend

ParcelViewer

Roads
- Major Road
- Minor Road

Mat-Su Borough Boundary

Address Numbers

Parcels

ROW and Easements
- ROW Road
- ROW Easement

Section Lines

1 : 4514

THIS MAP IS NOT TO BE USED FOR NAVIGATION

0 350 700 ft

WGS_1984_Web_Mercator_Auxiliary_Sphere

Date: 08/22/25

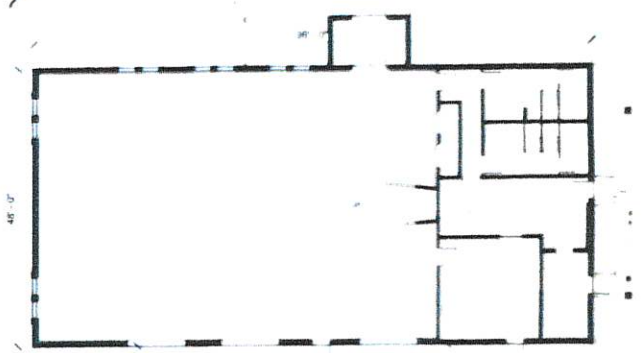
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Notes

Knik Landing Plan View

North

Douglas Massic
File No.: POA-2025-00404
Knik Lake
Proposed Activity: Bank restoration w/armoring rock.



Proposed Mitigation 500' lineal feet Rock @ 1 yard/ foot

250'

250

Mean high water

Knik Lake

Wasilla, Alaska
Matanuska Susitna
10204 S. Knik Goose Bay Rd. Wasilla AK, 99623
Mile 13.5 KGB

1 Enlarged Site Plan

Not to Scale

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

Determine

Determine DESIGN LLC AECL1613
506 E FIREWEED LN, STE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@gdeterminesdesign.com

Sheet Issue Date: 5/12/2025 12:59:07 PM
Drawn by: MO
Checked by: DHC

SCHEMATIC DEVELOPMENT PHASE

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Enlarged Site Plan
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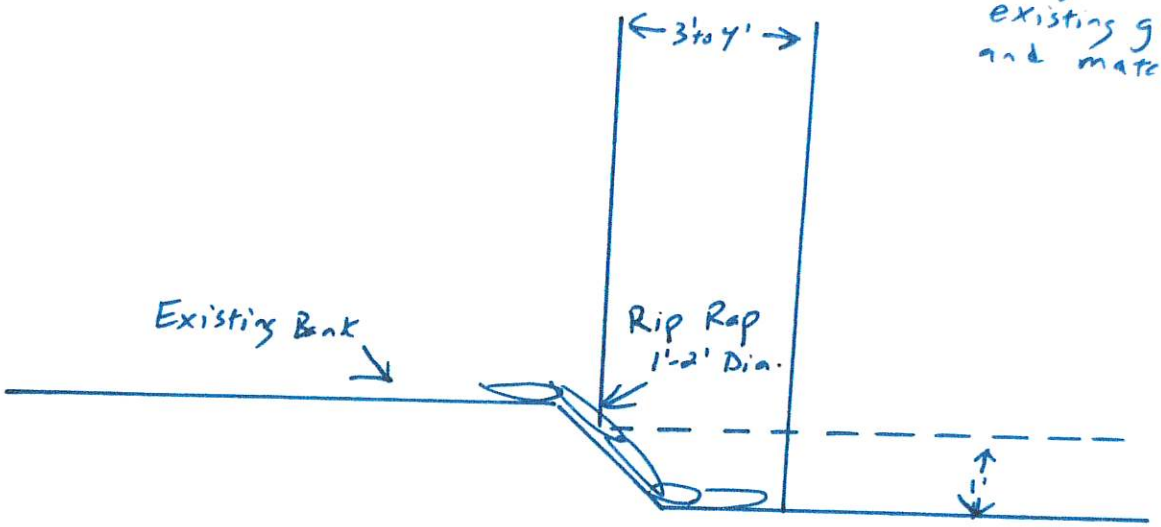
A-1.1

Bank Stabilization (Riprap) Cross-Section

* Estimate 1/2 yard of stone per running foot of shoreline needed.

*500' of shoreline to be armored, 250 yards of material total.

*Rip Rap to go above existing grade and match.



*Not to scale

Wasilla, AK Matanuska Susitna Borough
Mile 13.5 Knik Goose Bay Rd.
Knik Lake

Douglas A. Massie
File No.: POA-2025-00404
Knik Lake
Proposed Activity: Bank restoration w/armoring rock

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved
OMB No. 0710-0003
Expires: 02-28-2022

The public reporting burden for this collection of information, 0MB Control Number 0710-0003, is estimated to average 11 hours per response, including the lime for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if ii does not display a currently valid 0MB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: htli;,://di;,cld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.asi;,x

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Douglas Middle - A. Last- Massie	First - Middle - Last-
Company- Broken Boat LLC	Company- Same
E-mail Address - Massman76@hotmail.com	E-mail Address -
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- PO Box 874893	Address-
City- Wasilla State - AK Zip - 99687 Country- USA	City- State - Zip - Country-
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 907-232-7072 c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

SIGNATURE OF APPLICANT DATE 8/22/25

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Knik Landing

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Knik Lake	Address 10204 S. Knik Goose Bay Rd.
15. LOCATION OF PROJECT	City- Wasilla State- AK Zip- 99623
Latitude: N Longitude: W	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID 518705 Municipality Matanuska Susitna Borough

Section - S16N03W24 Township - Range -

17. DIRECTIONS TO THE SITE

Mile 13.5 Knik Goose Bay Rd.

18. Nature of Activity (Description of project, include all features)

Add armoring rock to 500' of shoreline on west end of property. (See attachment)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

To prevent further erosion to my land and provide bank stabilization.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Fill rock to be placed below ordinary high water for bank stabilization.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Less than 1 cubic yard/foot		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres
or
Linear Feet 500' Linear feet.

23. Description of Avoidance, Minimization, and Compensation (see instructions)

By using armoring rock, we will minimize ~~turbidity~~ turbidity in the Lake.

24. Is Any Portion of the Work .AJready Complete? Yes (No) IF YES, DESCRIBE THE COMPLETED WORK

No.

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list)

a. Address- 11010 Northshore Drive

City- Wasilla, AK 99654 State - AK Zip - 99654

b. Address- 10328 S. Knik Goose Bay Rd.

City- Wasilla, AK State - AK Zip - 99623

c. Address-

City- State - Zip -

d. Address-

City- State - Zip -

e. Address-

City- State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
None					

• Would include but is not restricted to zoning, building, and flood plain permits

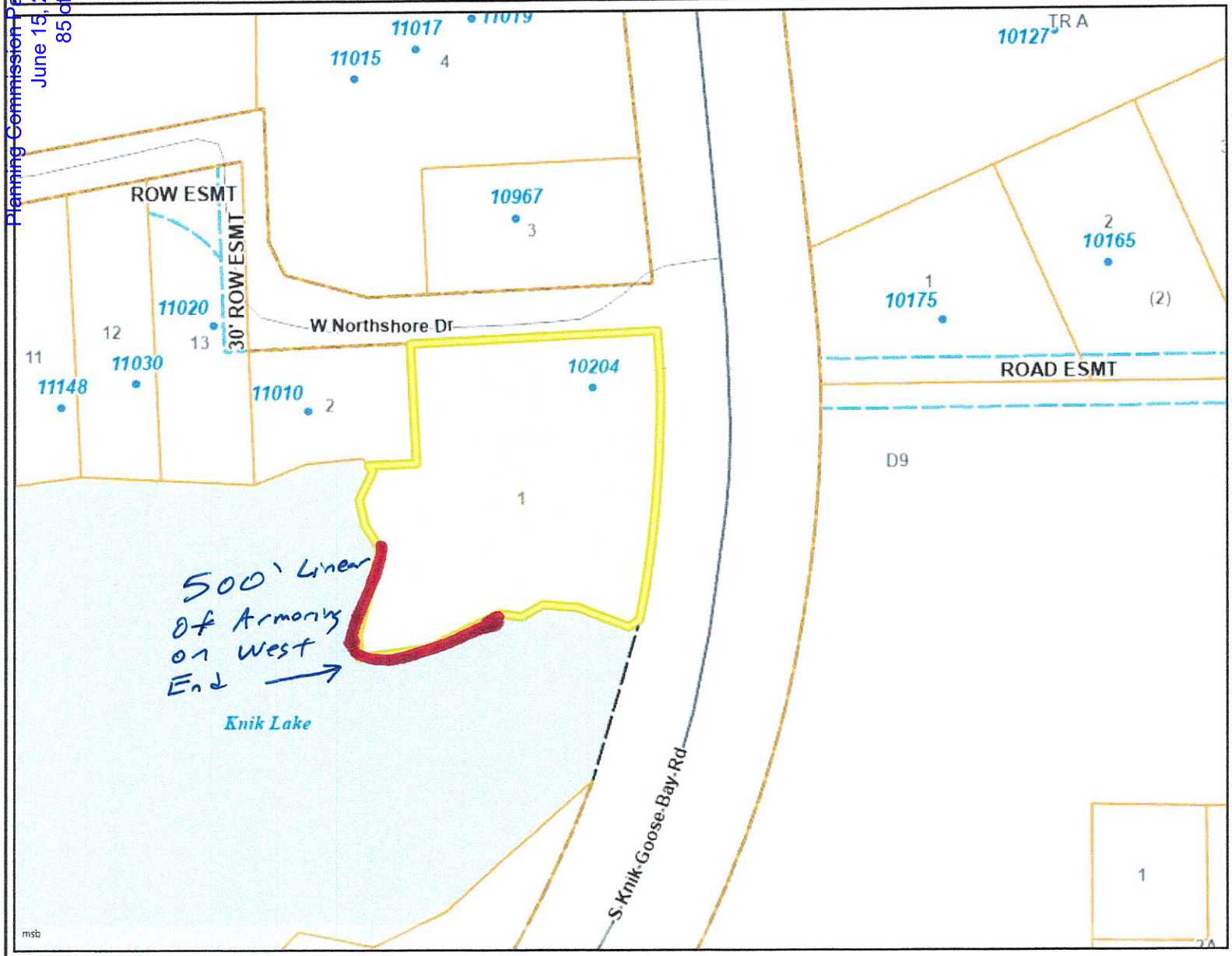
27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT 8/22/25 DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Matanuska-Susitna Borough



Legend

ParcelViewer

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Mat-Su Borough Boundary

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1 : 4514

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0 350 700 ft

WGS_1984_Web_Mercator_Auxiliary_Sphere

Date: 08/22/25

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Notes

Doug Massie
Knik Bar Event Center

Design Wastewater Flow

Source	Qty	Flow	Total
Gathering Space			
Atttendees (per person)	200	3	600
Warming Kitchen			
Customer (per person)	200	2	400
Employee (per person)	6	15	90
Clothes Washer (Per cycle)	4	20	80
		TOTAL	**1170 GPD**

SEPTIC TANK SIZING

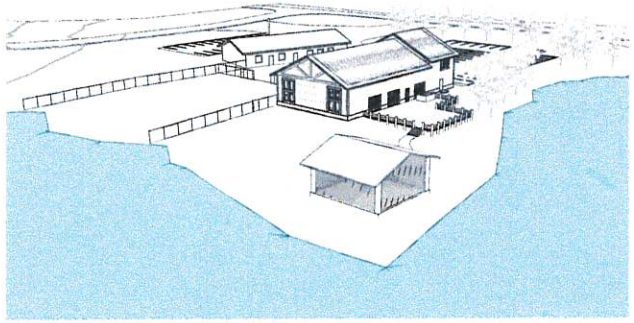
Per ADEC Onsite Wastewater System Installation Manual - OWSIM (April 2024)
Minimum Septic Tank Size (Design Flow 1,001 - 1,250 gpd) = 2,000 Gallons (with Manhole Risers)

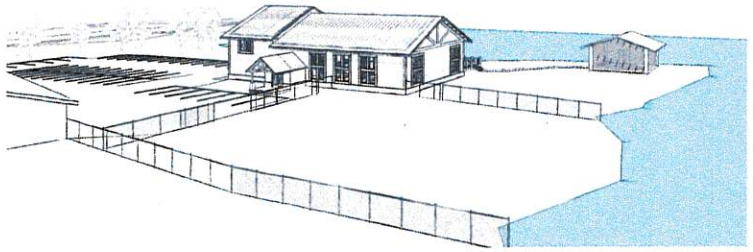
SAS DESIGN

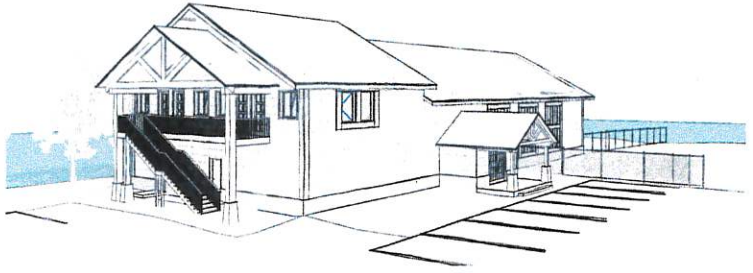
Subsurface soils in test hole were visually graded as poorly graded sands (SP)

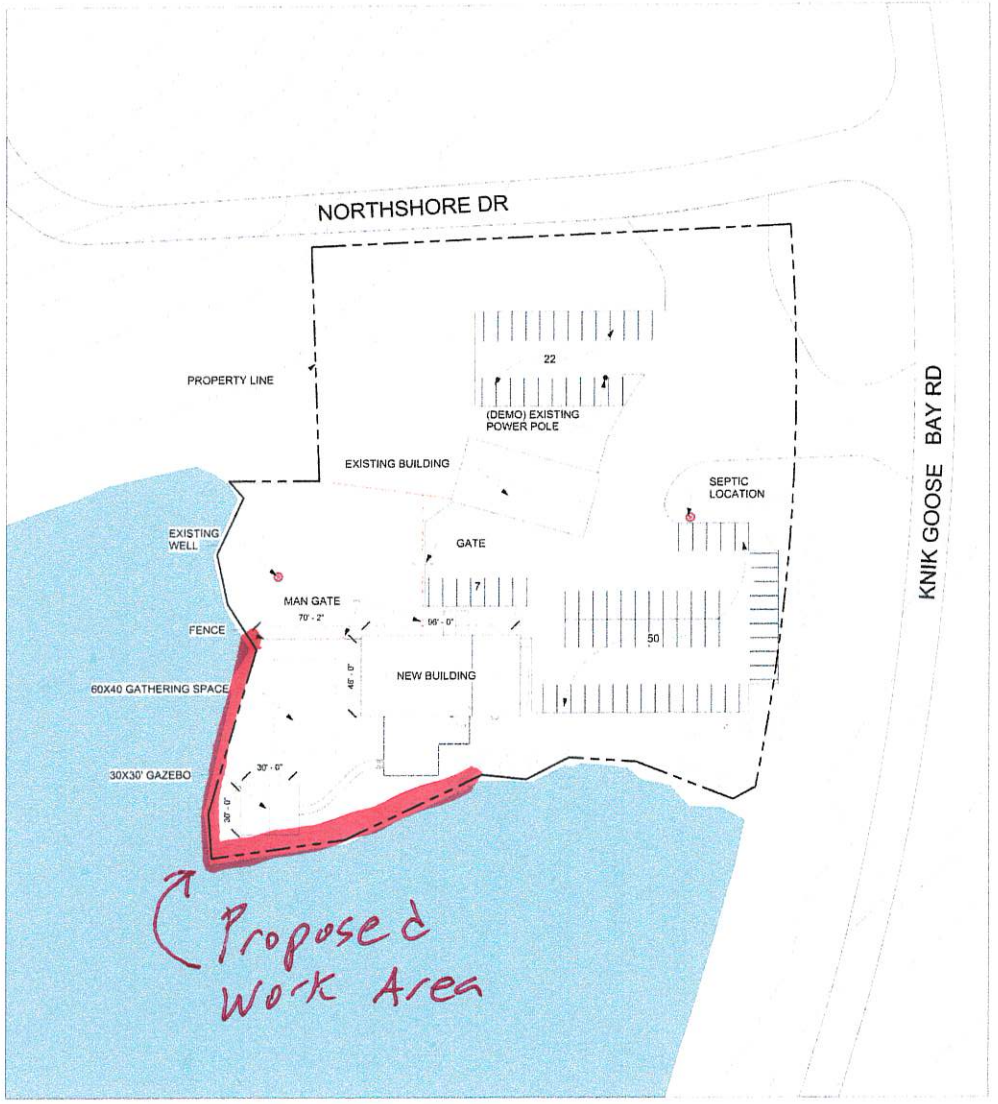
Soil Rating = 1.0 gpd/sq ft (Per OWSIM)
Min. SAS Area = 1,170 gpd/(1.0 gpd/sq ft) = 1,170 sq ft
Tentative Design -- Deep Trench, 8' Eff. Depth x 73' Long

Knik Landing









1 Site
1" = 40'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

Determine DESIGN
Determine DESIGN LLC AECL1613
506 E FIREWEED LN, STE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@determinedesign.com

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Drawn by: MO
Checked by: DHC

SCHEMATIC DEVELOPMENT PHASE

NOT FOR CONSTRUCTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Site Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

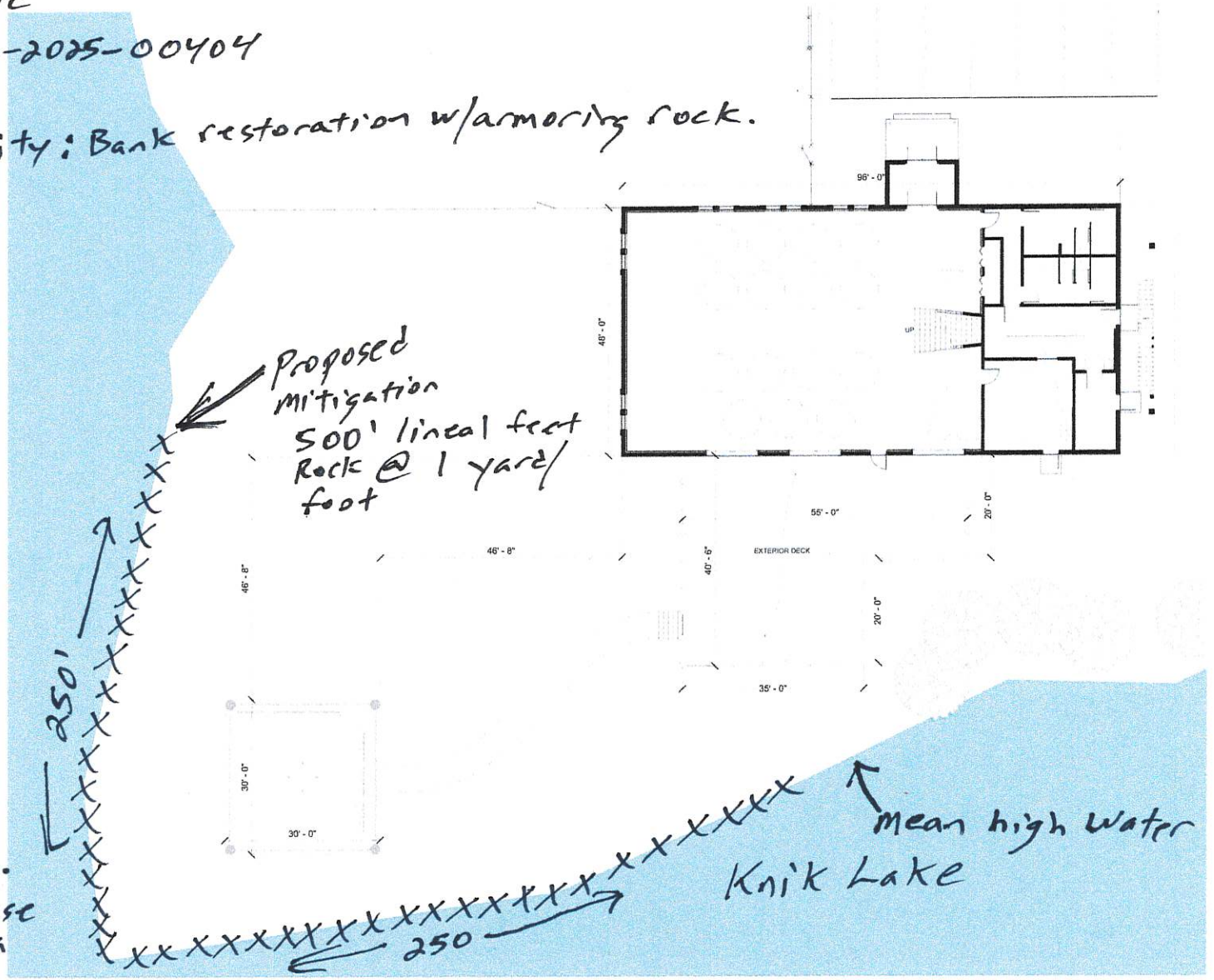
A-1.0

Planning Commission Packet
June 15, 2026
89 of 351

Knik Landing Plan View

North

Douglas Massic
File No.: POA-2025-00404
Knik Lake
Proposed Activity: Bank restoration w/armoring rock.



Wasilla, Alaska
Matanuska Susitna
10204 S. Knik Goose
Bay Rd. Wasilla
AK, 99623
Mile 13.5 KGB

1 Enlarged Site Plan
1" = 10'-0"

Not to Scale

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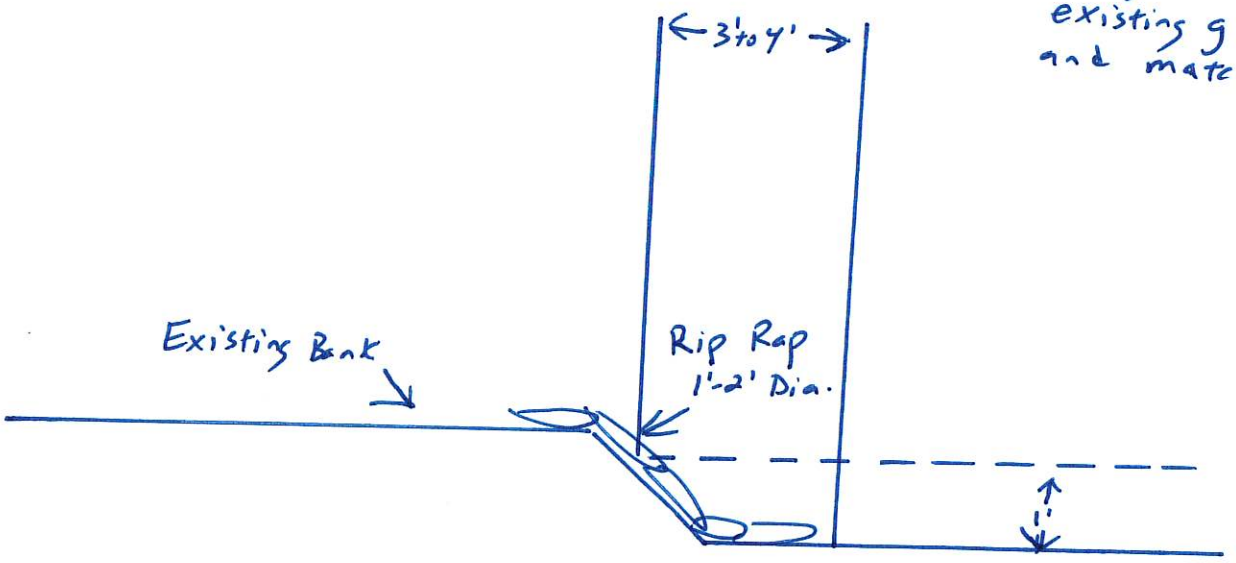
A-1.1

Bank Stabilization (Riprap) cross-Section.

* Estimate 1/2 yard of stone per running ~~foot~~ of shoreline needed.

*500' of Shoreline to be armored, 250 yards of material total.

*Rip Rap to go above existing grade and match.

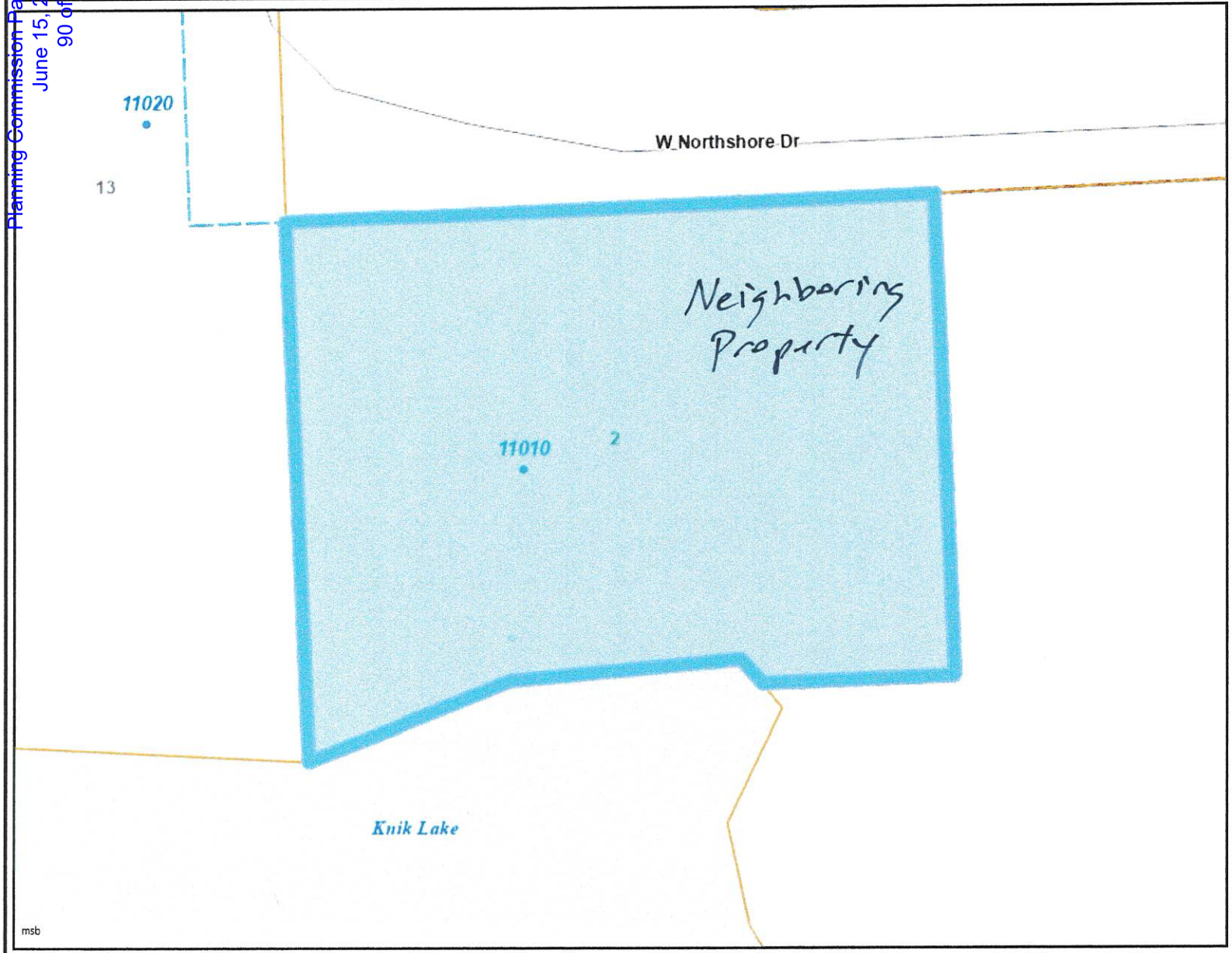


*Not to scale

Wasilla, AK Matanuska Susitna Borough
mile 13.5 Knik Goose Bay Rd.
Knik Lake

Douglas A. Massie
File No.: POA-2025-00404
Knik Lake
Proposed Activity: Bank restoration w/armoring rock

Matanuska-Susitna Borough



Legend

ParcelViewer

Roads

Minor Road

Mat-Su Borough Boundary

Address Numbers

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ROW and Easements

ROW Road

ROW Easement

Section Lines

1 : 1128

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0 50 100 ft

WGS_1984_Web_Mercator_Auxiliary_Sphere

Date: 09/06/25

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Notes

Planning Commission Packet
June 15, 2026
91 of 351

MATANUSKA-SUSITNA BOROUGH

* Subject Property Information

Real Property Detail for Account: 57186000L001

Site Information

Account Number	57186000L001	Subdivision	KNIK LK 2011
Parcel ID	518705	City	None
TRS	S16N03W24	Map GB08	Tax Map
Abbreviated Description (Not for Conveyance)	KNIK LK 2011 LOT 1		
Site Address	10204 S Knik Goose Bay Rd		

Ownership

Owners	BROKEN BOAT LLC	Buyers	
Primary Owner's Address	PO BOX 874893 WASILLA AK 99687	Primary Buyer's Address	

Appraisal Information

Year	Land Appraised	Bldg. Appraised	Total Appraised
2025	$168,400.00	$114,300.00	$282,700.00
2024	$168,400.00	$114,300.00	$282,700.00
2023	$168,400.00	$109,900.00	$278,300.00

Assessment

Year	Land Assessed	Bldg. Assessed	Total Assessed[1]
2025	$168,400.00	$114,300.00	$282,700.00
2024	$168,400.00	$114,300.00	$282,700.00
2023	$168,400.00	$109,900.00	$278,300.00

Building Information

Structure 1 of 3

Residential Units	0	Use	Bars and Lounges
Condition	Standard	Design	Commercial
Basement	None	Construction Type	Frame
Year Built	1960	Grade	None
Foundation	Poured Concrete	Well	Well 1 - Drilled Well
Septic	Septic - 1 - Septic Tank		

Structure 2 of 3

Residential Units	1	Use	Residential Building
Condition	Standard	Design	Cabin
Basement	None	Construction Type	Frame
Year Built	1999	Grade	1215 - Cabin
Foundation	Concrete Piers	Well	
Septic			

Structure 3 of 3

Residential Units	1	Use	Residential Building
Condition	Standard	Design	Cabin
Basement	None	Construction Type	Frame
Year Built	1999	Grade	1215 - Cabin
Foundation	Concrete Piers	Well	

Page 5 of 6

Planning Commission Packet
June 15, 2026
92 of 351

MATANUSKA-SUSITNA BOROUGH

X Neighboring Property Owner

Real Property Detail for Account: 57186000L002

Site Information

Account Number	57186000L002	Subdivision	KNIK LK 2011
Parcel ID	518706	City	None
TRS	S16N03W24	Map GB08	
Abbreviated Description (Not for Conveyance)	KNIK LK 2011 LOT 2	Tax Map	
Site Address	11010 W Northshore Dr		

Ownership

Owners	MARQUEZ DAWN L	Buyers	
Primary Owner's Address	STE B PMB 975 2521 E MOUNTAIN VILLAGE D WASILLA AK 99654	Primary Buyer's Address	

Appraisal Information

Year	Land Appraised	Bldg. Appraised	Total Appraised
2025	$65,800.00	$1,000.00	$66,800.00
2024	$65,800.00	$1,000.00	$66,800.00
2023	$65,800.00	$1,000.00	$66,800.00

Assessment

Year	Land Assessed	Bldg. Assessed	Total Assessed[1]
2025	$65,800.00	$1,000.00	$66,800.00
2024	$65,800.00	$1,000.00	$66,800.00
2023	$65,800.00	$1,000.00	$66,800.00

Building Information

Building Item Details

Building Number	Description	Area	Percent Complete

Tax/Billing Information

Year	Certified	Zone	Mill	Tax Billed
2025	Yes	0030	12.797	$854.83
2024	Yes	0030	13.174	$880.02
2023	Yes	0030	12.883	$860.58

Recorded Documents

Date	Type	Recording Info (offsite link to DNR)
1/31/2024	QUITCLAIM DEED (ALL TYPE)	Palmer 2024-001483-0
7/25/2014	PERSONAL REPRESENTATIVE	Palmer 2014-014013-0
3/7/2013	QUITCLAIM DEED (ALL TYPE)	Palmer 2013-004710-0

Tax Account Status [2]

Status	Tax Balance	Farm	Disabled Veteran	Senior	Total [3]	LID Exists
Current	$427.41	$0.00	$0.00		$0.00	$0.00 No

Land and Miscellaneous

Gross Acreage	Taxable Acreage	Assembly District	Precinct	Fire Service Area	Road Service Area
0.70	0.70	Assembly District 005	30-585	130 Central Mat-Su	017 Knik RSA

[1] Total Assessed is net of exemptions and deferments.rest, penalties, and other charges posted after Last Update Date are not reflected in balances.
[2] If account is in foreclosure, payment must be in certified funds.
[3] If you reside within the city limits of Palmer or Houston, your exemption amount may be different.

Last Updated: 9/6/2025 12:00:00 PM

Page 6 of 6

MSB • Department of Emergency Services • Central Mat-Su Fire Department

Fire & Life Safety Division

Physical: Station 51 – 1911 S Terrace Court, Palmer
Mailing: 101 W Swanson Avenue • Wasilla, AK 99654
Office (907) 861-8383 • Fax (907) 861-8157 • E-mail: FireCode@matsugov.us

October 23, 2025

Douglas Massie
Broken Boat LLC
massman76@hotmail.com
10204 S. Knik Goose Bay Road
Wasilla, AK 99623

SUBJECT:	Knik Landing - Commercial Event Venue
FIRE SERVICE AREA:	Central Mat-Su FSA
PLAN REVIEW:	F&LS 2025-000116
TYPE OF CONSTRUCTION:	VB
OCCUPANCY TYPE:	A-3

2021 INTERNATIONAL BUILDING AND FIRE CODE

Dear Douglas Massie:

Plans for the subject facility have been reviewed by this office for conformity with the State Fire Safety Regulations and are hereby approved as submitted. Enclosed is a certificate of approval that must be posted on the premises until completion of the above facility. Any changes to the approved plans must be submitted to this office for review and approval. **You are prohibited to occupy this building until construction is completed for which plans have been examined and approved.** After completion of the construction, you must schedule a certificate of occupancy inspection prior to opening.

It must be understood that the inclusion of and compliance with State Fire Safety Regulations does not preclude the necessity of compliance with the requirements of local codes and ordinances. Also understand that approval of submitted plans is not approval of omissions or oversights by this office or noncompliance with any applicable regulations. The plans have not been reviewed for compliance with the Federal Americans with Disabilities Act or structural requirements.

If we can be of further assistance in this matter, please contact us at the address above.

Sincerely,

Tyler E. Buff
Deputy Fire Marshal

Fire and Life Safety Division

Central Mat-Su Fire Service Area No. 130 - District 1
Department of Emergency Services, Matanuska-Susitna Borough

Plan Review #F&LS 2025-000116

Knik Landing - Commercial Event Venue

New Construction/Addition Approval

This is to certify that the plans for this building were reviewed by CMSFD's Fire & Life Safety Division on 10/23/2025, for conformance with AS 18.70.010–100; 13 AAC 50.027. This certificate becomes invalid 180 days after the work on the site is commenced within 180 days after issuance, or if the work authorized is suspended or abandoned for a period of 180 days after the time work is commenced. An extension may be requested at the above mentioned address.

This certificate shall be posted in a conspicuous place on the premises listed above and shall remain posted until construction is completed. **Notice:** *Any changes or modifications to the approved plans must be resubmitted for review by the Central Mat-Su Fire Department.*

Authority: AS 18.70.080, 13 AAC 50.075 & MSB RS 06-054

Tyler E. Buff

by Tyler E. Buff, Deputy Fire Marshal

State of Alaska

Department of Transportation and Public Facilities

Driveway Permit 35051

This permit allows the owner to construct and maintain a driveway within a State owned highway Right of Way.

Owner:	Doug Massie/ Kink Bar
Mailing Address:	P.O. Box 874893, Wasilla, AK 99687

Driveway location (highway, address, subdivision, legal description milepost, etc.)

Existing DOT constructed driveway located at approx. MP 13.5 Knik Goose bay Road.

In Process

Design Criteria

A.	Driveway width	34	Feet
B.	Left edge clearance	50	Feet
C.	Right edge clearance	50	Feet
D.	Left return radius	40	Feet
E.	Right return radius	40	Feet
F.	Shoulder width	4	Feet
G.	Approach angle	90	Degrees
H.	Curb type	None	
I.	Curb to sidewalk distance	0	
J.	Left driveway foreslope	4:1	Or match existing
K.	Right driveway foreslope	4:1	Or match existing
L.	Culvert length	68	Feet (field fit)
M.	Landing grade	-2	Percent
N.	Landing length	48	Feet
O.	Culvert size	18	Inches
P.	Culvert type	CMP	
Q.	Ditch depth	3	Feet
R.	Shoulder type	Gravel	
S.	Road surface type	Paved	
T.	Driveway surface type	Asphalt	

This permit applies only to the State right of way.

This permit grants permission for a driveway allowing access to and from your property onto a State maintained highway. It does not permit the following within the right of way or within that portion of a driveway that is within the right of way: (1) Parking of vehicles "for sale"; (2) Obstructions of any kind (i.e. logs, cables, fencing, etc.); (3) Advertising signs or banners/flags; (4) Parking vehicles with signs/advertising on the side.

A driveway constructed under permit within a highway right-of-way is the property of the State, but all cost and liability arising from the construction, operation, or maintenance of a driveway is at the sole expense of those lands served.

The Department is not obligated to change its maintenance practices to accommodate a driveway constructed under a permit, or to incur any additional expense removing snow berms or other obstructions from a driveway within a right of way resulting from the Department's activities, or activities under a permit issued under 17 AAC 15.

Owner is responsible for adjusting, relocating or removing the driveway without cost or liability to the Department if the use or safety of the highway requires.

In Process

This permit is not a property right but a temporary authorization, revocable by the State upon violation of any permit terms or conditions, or for other reasons. All reasonable attorney's fees and costs associated with legal or enforcement actions related to the terms and conditions of this permit will be borne by the Owner.

Any survey monument or monument accessory that is disturbed or destroyed during construction or maintenance of the driveway will be restored or replaced by a Land Surveyor licensed in the State of Alaska.

The Owner will be responsible for all necessary Federal, State, and Municipal permits and licenses required by law, pay all taxes and special assessments lawfully imposed upon the permitted area, and pay other fees and charges assessed under applicable law.

Placement of fill material in waters of the U.S., including wetlands and streams, requires prior authorization from the U.S. Army Corps of Engineers. It is the responsibility of the owner to contact the Corps before filling activities take place.

The Owner shall construct and maintain a driveway in such a manner that the highway, and all of the highway's appurtenances or facilities, including drainage facilities, pipes, culverts, ditches, traffic control devices, street lights, pathways, and sidewalks are not impaired or endangered in any way by the construction or maintenance. If you damage any improvements within the State owned right of way, you will be responsible for returning them to their previous condition. The Department will inspect and approve the restored improvements.

Owner will indemnify, defend, and hold harmless the State, and its officers, employees, and contractors, from any and all claims or actions resulting from injury, death, loss, or damage sustained by any person or personal property resulting directly or indirectly from Owner's use of or activities in the permitted area.

Landings from all paved roads must be paved and maintained from edge of the road to the length of the landing as stipulated in this permit.

If a culvert is required by this driveway permit, culvert ends must be installed at the time of installation and maintained continuously by the owner.

No person shall place, leave, or deposit upon any street, avenue, alley, sidewalk, or other public right of way any snow or ice which has been removed from a private driveway, private parking area, or the adjacent property. Owner is responsible for contractor's actions concerning placement of snow from Owner's property.

If driveway construction or maintenance interferes with the public's safety and/or use of facilities within State owned right of way, you will be directed to stop work until adjustments are made.

While doing construction or maintenance activities do not park equipment or stockpile material on the shoulder during non-working hours.

Owner is responsible for sight distance clearing of brush and obstructions adjacent to their property

In Process

Contact the Department for information about acceptable driveway markers (i.e., size, materials, distance, etc.) for placement within the right of way.

Attachments included as part of this permit are:

- Construction table (D10) and project sheet (F50) for built driveway

I, Douglas Massie, acknowledge and accept that (I or Corp. – Company LLC, etc.) will comply with all the provisions and conditions that the Department of Transportation and Public Facilities has included as a condition of issuing this permit.

Signed by:
Douglas Massie
380E675EAD814A4...
Owner Signature

5/14/2026
Date

DOT&PF Signature

Date

DW 35051
Planning Commission Packet
June 15, 2026
98 of 351

REVISIONS			STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
No.	DATE	DESCRIPTION	ALASKA	CA-0525(11)/53922	2003	D10	D10

639(1), 639(2)

DRIVEWAYS

STATION	COM.	RES.	OFFSET	LT. RAD.	RT. RAD.	WIDTH	REMARKS
530+00		**X**	**LT.**	**20**	**20**		**NEW**
547+10	X		RT.	40	40	23.91	S. KNIKKNACKMUDSHACK ROAD
558+60		X	LT.	20	20	13.91	
~~558+70~~		~~X~~	~~RT.~~	~~20~~	~~20~~	~~16.46~~	
564+10		X	LT.	20	20	13.99	
582+25		**X**	**LT.**	**20**	**20**		**NEW**
588+70	X		RT.	40	40	23.25	S. ROYAL LANE
588+70	X		LT.	40	40	23.01	S. ROYAL LANE
597+60		X	LT.	20	20	18.32	S. BROPHY CIRCLE
600+30	X		RT.	40	40	23.02	S. ALIX DRIVE
619+00		X	LT.	20	20	15.13	
601+00	**X**		**LT.**	**40**	**40**		**NEW SUBDIVISION**
620+80		X	RT.	20	20	19.90	S. A STREET
625+65		X	LT.	20	20	13.01	
627+40	X		RT.	40	40	24.30	S. FOXWORTH DRIVE
642+60		X	LT.	20	20	13.10	
643+10		X	RT.	20	20	15.79	
659+70		X	RT.	20	20	19.97	
660+00		X	LT.	20	20	14.82	
671+40		X	RT.	20	20	14.24	
677+20		X	RT.	20	20	16.75	
678+00		X	LT.	20	20	13.00	
681+50		X	RT.	20	20	18.76	GRAVEL PIT ACCESS
688+20	X		LT.	40	40	23.03	S. GALA DRIVE
688+40	X		RT.	40	40	23.02	W. HORIZON DRIVE
696+80		X	RT.	20	20	19.83	
699+95		X	RT.	20	20	20	
701+50		**X**	**LT.**	**20**	**20**		**NEW**
714+50	X		RT.	40	40	23.17	W. NORTHSHORE DRIVE
716+60	X		RT.	40	40	31.96	KNIK LAKE BAR
						14.60	
						17.35	**RALPH'S**
						18.00	BUS PULLOUT / RESIDENCE
735+58	X	~~X~~	RT.	NONE	~~20~~ 40	13.00	BUS PULLOUT / RESIDENCE
735+75	X		LT.	40	40	34	GRAVEL PIT ACCESS
737+95		X	RT.	20	20	20.00	**IDITAROD MUSEUM**
738+00		X	LT.	20	20	13.36	
754+00		X	RT.	20	20	16.93	**SUNNY KNIK CHAPEL, DOG LOT**
778+55	**X**		**LT.**	**20**	**20**		**NEW**
758+00		X	RT.	20	20	19.97	W. ROHN DRIVE
779+00	X		RT.	40	40	18.00	S. MALAMUTE RUN ROAD
783+90		X	LT.	20	20	13.12	
791+00		X	LT.	20	20	14.34	
793+50		X	LT.	20	20	13.28	
795+42		**X**	**LT.**	**20**	**20**		**NEW**
793+90	X		RT.	40	40	24.00	S. HOMESTEAD DRIVE
802+90		X	LT.	20	20	14.67	
824+80		X	LT.	20	20	18.68	
831+10		X	LT.	20	20	13.09	
857+80		X	LT.	20	20	13.10	
834+85		**X**	**LT.**	**20**	**20**		**NEW**
780+85	**X**		**LT.**	**40**	**40**		**NEW SCENIC OVERLOOK**

639(1), 639(2)

DRIVEWAYS

STATION	COM.	RES.	OFFSET	LT. RAD.	RT. RAD.	WIDTH	REMARKS
903+50		**X**	**RT.**	**20**	**20**		**NEW**
858+00		X	RT.	20	20	14.70	
861+60		X	RT.	20	20	19.96	
868+10		X	RT.	20	20	17.11	
868+50		X	LT.	20	20	13.19	**FISH CREEK CAMPGROUND, PRIVATE**
875+20		X	RT.	20	20	18.15	
878+10		**X**	**RT.**	**20**	**20**		
889+80		X	LT.	20	20	13.11	
889+90		X	RT.	20	20	14.27	
894+10		X	LT.	20	20	15.41	
900+00		X	RT.	20	20	13.41	W. MARTEN ROAD
901+60		X	LT.	20	20	17.98	W. PORCUPINE ROAD
904+60		**X**	**LT.**	**20**	**20**		**NEW**
907+90		X	LT.	20	20	13.56	
907+90		X	RT.	20	20	13.14	
916+90		X	RT.	20	20	13.99	
921+10	X		RT.	40	40	27.08	W. POINT MACKENZIE ROAD
922+80		X	LT.	20	20	19.93	S. ROSEBERRY LOOP
920+15		**X**	**LT.**	**20**	**20**		**REINSTALLED, PAVED**
929+70		X	RT.	20	20	19.61	SUBSTATION ACCESS ROAD
932+60		X	LT.	20	20	19.92	S. ROSEBERRY LOOP
941+00		X	RT.	20	20	13.99	
960+40		X	RT.	20	20	13.13	
982+10		X	RT.	20	20	14.11	
958+55		**X**	**RT.**	**20**	**20**		**CULVERT, NOT PAVED**
989+80	X		LT.	40	40	33.00	BAR AND DINER
992+40		X	LT.	20	20	13.13	
998+40		X	RT.	20	20	13.06	
999+40		X	LT.	20	20	13.54	**1ST CIRCLE APPROACH**
1000+20		X	LT.	20	20	13.54	**1ST CIRCLE APPROACH**
967+50		**X**	**LT.**	**20**	**20**		**NOT OBLITERATED**
1004+40		X	LT.	20	20	13.14	**2ND CIRCLE APPROACH**
1008+90		X	LT.	20	20	13.07	
1013+50		X	LT.	20	20	13.09	
1018+20		X	LT.	20	20	13.13	
959+60		**X**	**LT.**	**20**	**20**		**NOT OBLITERATED, PAVED, HAS CULVERT**
1023+00		X	LT.	20	20	15.73	
1043+60	X		RT.	40	40	23.84	ROAD TO THE BOAT LAUNCH
1052+10	X		LT.	40	40	23.07	MAINTENANCE ACCESS
1057+20	X		℄	42	52	52	42'x52' RECTANGLE PAD
550+00		**X**	**RT.**	**20**	**20**		**NEW**
550+90		**X**	**RT.**	**20**	**20**		**NEW**
582+35		**X**	**RT.**	**20**	**20**		**NEW**
759+70		**X**					**OBLITERATED, REINSTALLED UNDER IWA# 16**

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

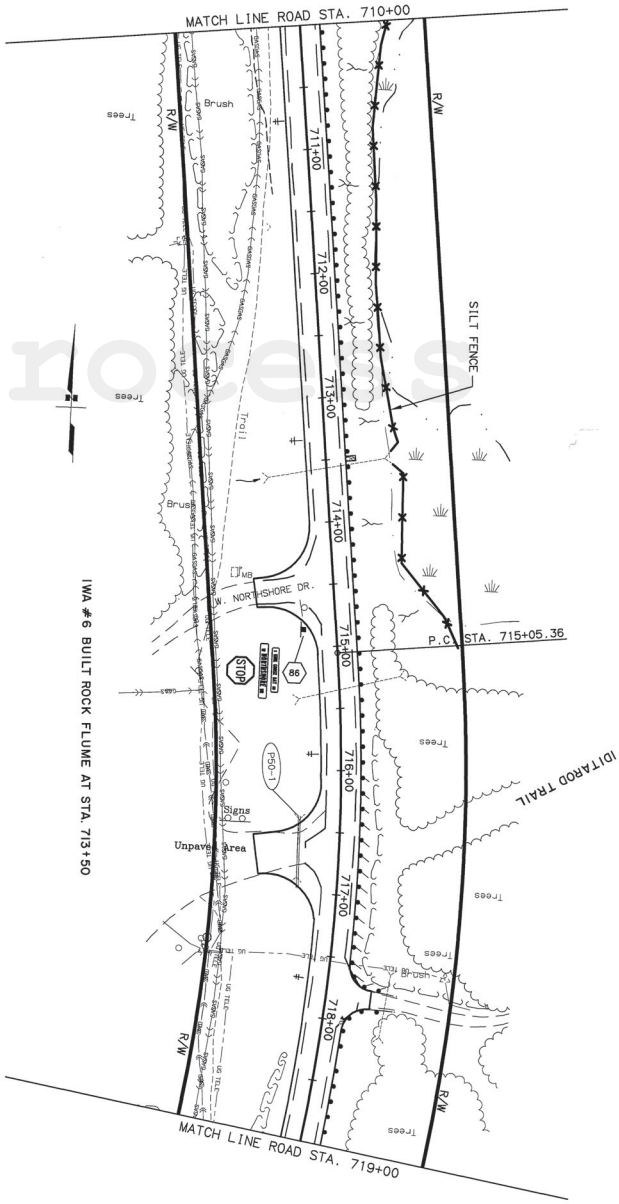
THOMAS P. MOLL
CE 3499
9/25/03
REGISTERED PROFESSIONAL ENGINEER

KNIK-GOOSE BAY ROAD
REHABILITATION AND PATHWAY

SUMMARY SHEET

SPECIFICATIONS
DESIGN
DESIGNATION
AUTOCAD FILE: I:\ANCSSA\53922\CON\...
DESIGNED BY
DRAWN BY
CHECKED BY
DATE PLOTTED
04/17/2003
VIEW = D10

SPECIFICATIONS		DESIGNED BY	
SCALE 1=50	XREFS: BASE_KGB.DWG, PROF_KGB.DWG, MAP_SIDE.DWG	CHECKED BY	
COMPUTER DESIGNATION	AUTOCAD-PATTI/VANESSA-53922R3\PANDP_KGB.DWG VIEW= F50	DRAFTED BY	PL/VS 04/11/2003



In Process

GOOSE BAY AIRPORT — W. POINT MACKENZIE RD. — W. HORIZON DR. — S. SETTLER'S BAY DR. — S. VINE RD. — W. FAIRVIEW LOOP — W. EDLUND RD. — GLENWOOD DR. — PARKS HIGHWAY

NO.	DATE	REVISIONS DESCRIPTION

ATTACHMENT NO.

ADDENDUM NO.

PROJECT DESIGNATION
CA-0525(11)/53922

STATE	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	2003	F50	F65

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KNIK-GOOSE BAY ROAD
REHABILITATION
AND PATHWAY

PATHWAY
PLAN AND PROFILE

STATE OF ALASKA — REGISTERED PROFESSIONAL ENGINEER — THOMAS P. MOLL — 9469 — 4-9-04

Certificate Of Completion

Envelope Id: E146EA44-851B-8E97-83AB-47A19B8CD9E6
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Subject: Complete with Docusign: 35051 Permit.pdf
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Signatures: 1
Certificate Pages: 4
Initials: 0
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Time Zone: (UTC-09:00) Alaska

Envelope Originator:
Nick Hann
PO Box 110206
Juneau, AK 99811
nick.hann@alaska.gov
IP Address: 158.145.14.55

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nick.hann@alaska.gov
Pool: StateLocal

Location: DocuSign

Signer Events	Signature	Timestamp
Kutcher, Gabe gabe.kutcher@alaska.gov State of Alaska Security Level: Email, Account Authentication (None)	**Completed** Using IP Address: 136.226.57.3	Sent: 5/14/2026 12:35:31 PM Viewed: 5/14/2026 12:48:13 PM Signed: 5/14/2026 12:49:12 PM
Electronic Record and Signature Disclosure: Accepted: 5/14/2026 12:48:13 PM ID: 6e405726-205f-4cfb-9af3-80baf881ffdc Company Name: State of Alaska		
Douglas Massie massman76@hotmail.com Security Level: Email, Account Authentication (None)	Signed by: Douglas Massie 380E675EAD814A4... Signature Adoption: Pre-selected Style Using IP Address: 2600:387:15:80e::38 Signed using mobile	Sent: 5/14/2026 12:49:15 PM Viewed: 5/14/2026 1:20:40 PM Signed: 5/14/2026 1:22:11 PM
Electronic Record and Signature Disclosure: Accepted: 5/14/2026 1:20:40 PM ID: 56d3b222-1d44-4f8a-81bd-ed398cf31a33 Company Name: State of Alaska		
Arnolds, Melanie melanie.arnolds@alaska.gov CR ROW Chief State of Alaska, DOT&PF Security Level: Email, Account Authentication (None)		Sent: 5/14/2026 1:22:12 PM
Electronic Record and Signature Disclosure: Accepted: 2/10/2022 10:44:54 AM ID: f4482ac8-b847-4a05-a0c9-4b1aa8964367 Company Name: State of Alaska		

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

In Process

Carbon Copy Events	Status	Timestamp
Douglas Massie massman76@hotmail.com Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via Docusign		

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	5/14/2026 12:35:31 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

In Process

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

Please read this Electronic Records and Signature Disclosure (ERSD). It concerns your rights regarding electronically undertaking, and the conditions under which you and the State of Alaska agree to electronically undertake, the transaction to which it relates (the "TRANSACTION").

Consent to Electronically Undertake the TRANSACTION

You can electronically undertake the TRANSACTION only if you confirm that you meet the following requirements by selecting the box next to "I agree to use electronic records and signature" (the "AGREE BOX"):

1. you can fully access and have read this ERSD;
2. you can fully access all of the information in the other TRANSACTION records;
3. you can retain all of the TRANSACTION records in a form that you will be able to fully access for later reference;
4. you consent to undertake the TRANSACTION electronically; and
5. you are authorized to undertake the TRANSACTION. (Please note that falsely undertaking the TRANSACTION may subject you to civil liabilities and penalties and/or to criminal penalties.)

If you cannot or are not willing to confirm each of these five things, do not select the AGREE BOX.

Withdrawing Consent

If you select the AGREE BOX, you can withdraw your consent to electronically undertake the TRANSACTION at any time before you complete the TRANSACTION: simply do not finalize it. The only consequence of withdrawing your consent is that you will not finalize the TRANSACTION.

If you select the AGREE BOX, your consent will apply only to this TRANSACTION. You must separately consent to electronically undertake any other transaction with the State of Alaska.

Paper Option for Undertaking the TRANSACTION

You may undertake the TRANSACTION with the State of Alaska using paper records. (State of Alaska employees who want to undertake the TRANSACTION in paper should contact the agency responsible for the TRANSACTION.) Print the paper records on the website of the State of Alaska agency responsible for the TRANSACTION, or request them from the agency. The State of Alaska homepage is at http://alaska.gov/.

Copies of TRANSACTION Records

After completing the TRANSACTION but before closing your web browser, you should download the TRANSACTION records. Or you can download the records within 30 days after

completing the TRANSACTION using the link in the DocuSign email sent to the email address you used to complete the TRANSACTION. The State of Alaska will not provide a paper copy of the TRANSACTION records as part of the TRANSACTION. Under the Alaska Public Records Act (APRA), AS 40.25.100–.295, you can request a copy from the agency responsible for the TRANSACTION, but if too much time has passed, the agency may no longer have the records when you make your request. If required under the APRA, the agency will charge a fee.

Required Hardware and Software

For the minimum system requirements to electronically undertake the TRANSACTION, including accessing and thereby retaining the TRANSACTION records, visit https://support.docusign.com/guides/signer-guide-signing-system-requirements. These requirements may change. In addition, you need access to an email account.

How to Contact the State of Alaska

To ask a question on this ERSD or the DocuSign document generated after you complete the TRANSACTION or on using DocuSign to electronically undertake the TRANSACTION, contact the Alaska Department of Administration at either of the following addresses:

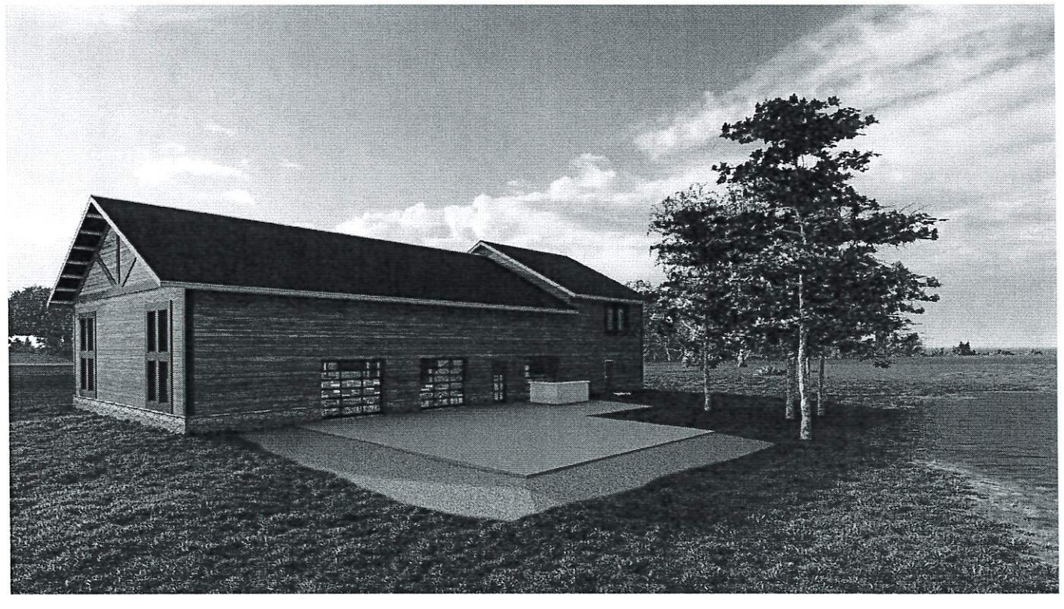
State of Alaska
Department of Administration
550 West 7th Avenue
Suite 1970
Anchorage, AK 99501
Reference: DocuSign

doa.commissioner@alaska.gov
Subject: DocuSign

To ask any other question on the TRANSACTION records or to update the information for contacting you electronically, contact the State of Alaska agency responsible for the TRANSACTION using the contact information in the TRANSACTION records or, if those records contain no contact information, using the contact information on the agency's website. Again, the State of Alaska homepage is at http://alaska.gov/.



KNIK LANDING EVENT CENTER



NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

Determine DESIGN

Determine **DESIGN LLC** AECL1613
506 E FIREWEED LN, STE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@determinedesign.com

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Sheet Issue Date:
9/9/2025 2:49:58 PM
Drawn by: MO
Checked by: DHC

STATE OF ALASKA
DANIEL H. CLIFT
14104
REGISTERED PROFESSIONAL ARCHITECT

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Title Sheet
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

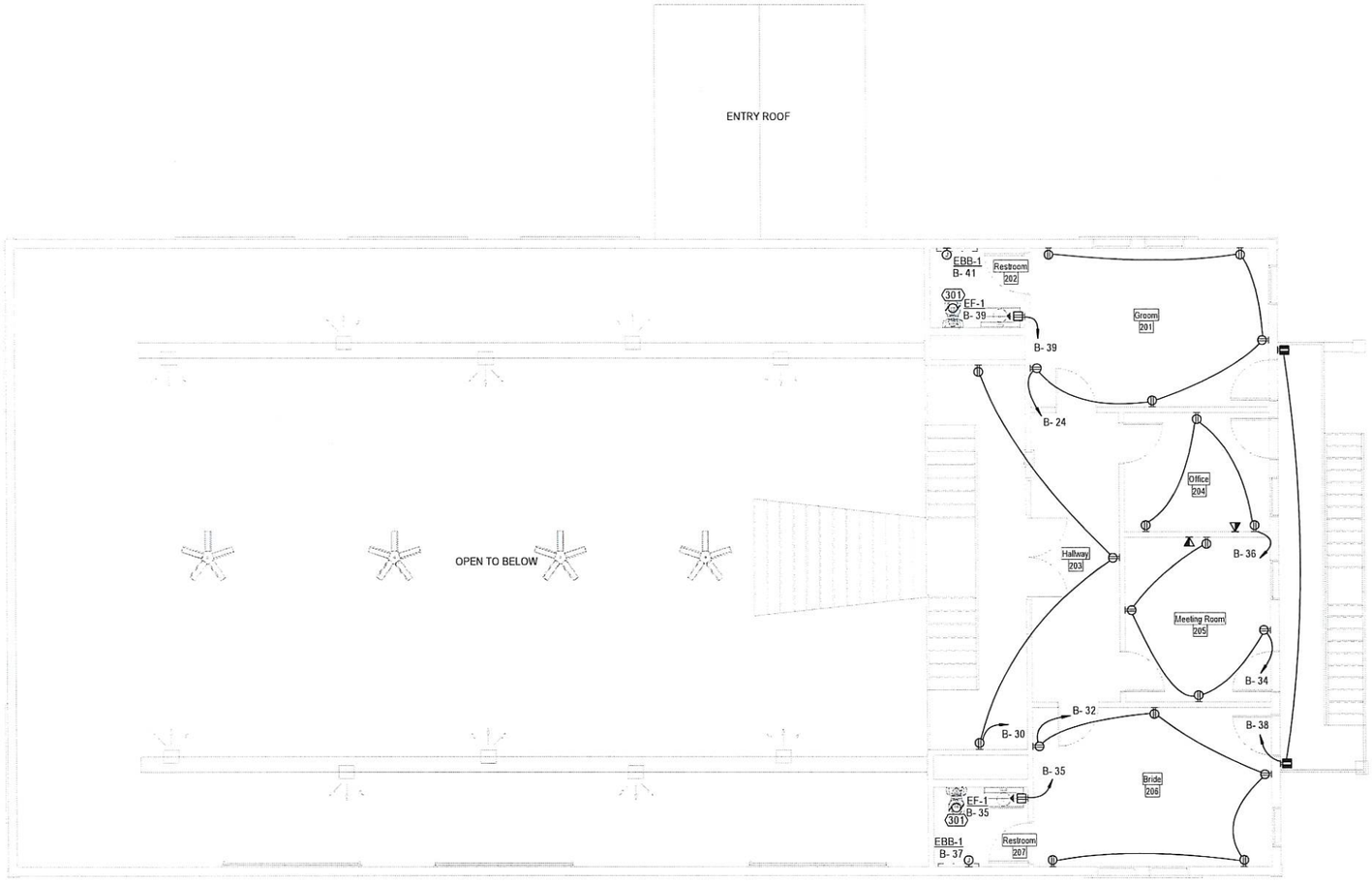
CVR

GENERAL NOTES

1. BASED ON THE A3 GREATER THAN 100 OCCUPANCY ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE.

(#) REFERENCED SHEET NOTES

REF	NOTE
301	EXHAUST FAN CONTROLLED BY SWITCH SHOWN ON LIGHTING PLAN.



1 E3.2 LEVEL 2 POWER AND SIGNAL PLAN
SCALE: 3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

Determine DESIGN
Determine **DESIGN LLC** AECL1613
506 E. FIREWEED LN, SUITE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@determinedesign.com

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Project Number

Sheet Issue Date: 09/09/2025
Drawn by: RBC
Checked by: EDC

STATE OF ALASKA 49TH ERIC D. COWLING EE - 9773 REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: 2ND FLOOR POWER AND SIGNAL PLAN
Address: 10204 S Knik Goose Bay Rd. Wasilla. AK 99623

E3.2

EIC ENGINEERS, INC
ELECTRICAL ENGINEERS
EIC JOB NO: E25-4831
CORP. #AECC1105
6927 OLD SEWARD HWY
SUITE 200
ANCHORAGE, AK 99518
T 907.349.9712
F 907.349.9713
www.eiceng.com

TRUE NORTH

9/9/2025 10:20:15 AM C:\Users\EricCowling\EIC Engineers\Design - Files\Projects\E25\E25-4831 Knik Landing\DES\E25-4831_ESht25_KnikLanding.rvt
9/09/2025 09:04:21 - rc-2 - abudbil - pcbd: 0.5.5.8.rc.3/5151

DISTRIBUTION SCCR SCHEDULE
EQUIPMENT SHALL HAVE AN SCCR EXCEEDING THE SHORT CIRCUIT AMPS "SCA" OR MINIMUM SCCR, WHICH EVER IS GREATER. EQUIPMENT SHALL BE FULLY RATED. BRANCH CIRCUIT PANELS RATED 225 AMPS OR LESS MAY USE MANUFACTURER TESTED COMBINATIONS PER NEC 240.86(B) WHERE THE MOTOR LOAD DO NOT EXCEED 1% OF THE LOWEST AIC RATED DEVICE IN THE PANEL PER NEC 240.86(C).
CONTRACTOR TO VERIFY EQUIPMENT TO BE PROVIDED WITH SERVING UTILITY PRIOR TO PROCUREMENT. ANY DECREASE OF TRANSFORMER %Z, CONDUCTOR LENGTHS, OR INCREASE IN TRANSFORMER KVA OR CABLE SIZES TO BE REPORTED TO CONTRACT OFFICER FOR RECALCULATION OF SCA PRIOR TO PROCUREMENT.
THE "MIN FT" COLUMN DENOTES DISTANCE USED FOR 'SCA' CALCULATION. ACTUAL DISTANCE IS EXPECTED TO BE LONGER. IF CONDUCTOR LENGTH IS LESS THAN "MIN FT", CONTRACTOR SHALL SUBMIT A VARIATION REQUEST FOR RECALCULATION. THIS MAY REQUIRE ASSOCIATATED EQUIPMENT MODIFICATIONS.

ASSUMED UTILITY SYSTEM CONFIGURATION (BASIS FOR CALCULATION)

SERVICE TRANSFORMER

KVA	%Z	SCA SECONDARY LINE-LINE	SCA SECONDARY LINE-NEUTRAL
50	1.40	14,877	23,803

AMPS	- FOR CALCULATION ONLY - SERVICE LATERAL	MIN FT
200	(3)3/0 AWG	22

EQUIP ID	OPD	SCA	MIN SCCR	XR	MIN FT
A	200 A	6,741	10,000	1.55	5
BD	200 A	7,022	10,000	1.64	188
MCD	200 A	16,690	19,000	4.15	22
TS	200 A	6,856	10,000	1.58	7
B	100 A	6,670	10,000	1.51	2

LOAD CLASSIFICATIONS SCHEDULE		
NOTES		
(A)	NOT ALL LOAD CLASSIFICATIONS ARE NECESSARILY USED. ONLY CLASSIFICATIONS FROM LOADS THAT ARE CONNECTED TO EACH PANEL ARE SHOWN IN THE SUMMARY SECTION OF THE PANEL SCHEDULES.	
(B)	PANELBOARD BUS RATINGS TO EQUAL OR EXCEED OPD RATINGS SHOWN IN PANEL SCHEDULES UNLESS OTHERWISE NOTED.	
(C)	THE NEC DEMAND PERCENTAGE VALUES SHOWN IN THE PANEL SCHEDULE ARE A WEIGHTED AVERAGE. EXAMPLE 100VA @ 125% PLUS 100VA @100% IS A WEIGHTED AVERAGE OF 112.5% RESULTING IN 225VA NEC COMPUTED DEMAND AND 200VA CONNECTED.	
SCHEDULE		
CLASS.	NEC 2020	DESCRIPTION
CONT	210.20(A)	125% OF THE CONTINUOUS LOAD.
KTCH	220.56	TABLE 220.56 - DEMAND FACTORS FOR KITCHEN EQUIPMENT.
LTG	210.20(A)	LIGHTING LOADS CONSIDERED TO BE CONTINUOUS. 125% OF THE CONTINOUS LOAD.
LTGE	210.20(A)	CALCULATED SAME AS 'LTG' BUT EXCLUDED FROM ENERGY LIGHTING POWER DENSITY CALCULATIONS.
MTR	430.24	125% OF THE FULL-LOAD CURRENT RATING OF THE HIGHTEST RATED MOTOR PLUS THE SUM OF THE FULL-LOAD CURRENT RATINGS OF ALL OTHER MOTORS.
NCDN	220.60	NONCOINCIDENT LOADS: WHERE TWO OR MORE LOAD ARE UNLIKELY TO BE IN USE SIMULTANEOUSLY, THE LARGEST LOAD WILL BE USED. LOADS CLASSIFIED AS NCDN WILL HAVE ZERO LOAD.
NCNT	210.20(A)	100% OF THE NON-CONTINUOUS LOAD.
REC	220.44	NON-DWELLING GENERAL USE RECEPTACLES = FIRST 10KVA OR LESS AT 100% PLUS REMAINDER AT 50%.
MCA	(SEE MTR)	THE LOAD IS BASED ON THE GIVEN MCA (MINIMUM CIRCUIT AMPACITY) WHICH INCLUDES 125% OF THE LARGEST MOTOR OF THE UNIT. 100% OF THE MCA LOAD.

PANEL SCHEDULE NOTES (COLUMN 'N' OF PANEL SCHEDULE)	
'KEY'	DEFINITION OF REQUIREMENT - NOT ALL KEY NOTES ARE NECESSARILY REFERENCED
A	PROVIDE COMBINATION-TYPE AFCI CIRCUIT BREAKER.
B	PROVIDE CIRCUIT BREAKER RATED FOR "BACKFEED" USE.
C	CONTROL CIRCUIT VIA CONTACTOR.
D	PROVIDE DUAL FUNCTION AFCI AND GFCI CIRCUIT BREAKER.
E	PROVIDE GFPE CIRCUIT BREAKER.
G	PROVIDE GFCI CIRCUIT BREAKER.
L	PROVIDE CIRCUIT BREAKER WITH OEM LOCK-OFF DEVICE FOR USE AS DISCONNECT PER NEC.
N	PROVIDE NEW CIRCUIT BREAKER MATCHING EXISTING BREAKER AIC RATINGS.
O	PROVIDE CIRCUIT BREAKER WITH OEM LOCK ON DEVICE IDENTIFIED WITH RED MARKINGS.
S	PROVIDE SHUNT TRIP CIRCUIT BREAKER CONTROLLED BY ASSOCIATED SYSTEM.

SERVICE EQUIPMENT SCHEDULE				
NOTES				
(KEY)	'(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE.			
(A)	'MB' DENOTES ELECTRICAL SERVICE METERBASE PER UTILITY STANDARDS.			
1	METER/MAIN TO BE COMMERCIAL TYPE WITH SAFETY TEST BY-PASS PROVISIONS.			
SCHEDULE				
ID	FUNCTION	OPD	VOLTAGE CONFIG	ENCLOSURE
MCD	METER COMBINATION DISCONNECT	200 A	240/120V, 1PH, 3W	NEMA 3R
BD	BUILDING DISCONNECT	200 A	240/120V, 1PH, 3W	NEMA 3R

TRANSFER SWITCH SCHEDULE					
NOTES					
(A)	PROVIDE LABEL DENOTING "SYSTEM CONFIGURED FOR NON-SEPARETLY DERIVED PORTABLE GENERATOR (NO N-G BOND IN GENERATOR)".				
ID	SYSTEM RATING	POLES	AMP	WITHSTAND	ENCLOSURE
TS	240/120V, 1PH, 3W	2 POLE	200 A	6,856	NEMA 3R

UTILITY SERVICE DEMAND KW ESTIMATE			
TOTAL CONNECTED	POWER FACTOR	DIVERSITY FACTOR	ESTIMATED DEMAND KW
37.57 kVA	0.9	0.7	23.67

FEEDER SCHEDULE		
ID	OPD	FEEDER (MINIMUM) CU UON
A	200	2"C, (3)3/0 AWG, (1)6 AWG EGC
BD	200	2.5"C, (3)300 KCMIL, (1)3 AWG EGC
TS	200	2"C, (3)3/0 AWG, (1)6 AWG EGC
B	100	1.25"C, (3)2 AWG, (1)6 AWG EGC

PANEL 'A' SCHEDULE

VOLTAGE: 240/120V, 1PH, 3W
OPD RATING: 200 A
LOAD CENTER
LOCATION: Mech. 108
ENCLOSURE: NEMA 1
MOUNTING: SURFACE

#	N	LOAD DESCRIPTION	AMP	P	A		B		P	AMP	LOAD DESCRIPTION	N	#
1		B	100	2	11.96	0.20			1	20	LTG: RM 102 CL		2
3	--	-	–	–			9.13	0.09	1	20	LTG/LTGE: RM 102		4
5		LTG/LTGE: RM 108	20	1	0.08	0.05			1	20	LTG:		6
7		LTG/LTGE: RM 203-205	20	1			0.22	0.10	1	20	LTG/LTGE: RM 201		8
9	S	MTR/NCNT: RM 108 CP-1,WH-1	20	1	0.56	0.18			1	20	REC:		10
11		LTG/LTGE: RM 103,105	20	1			0.31	0.26	1	20	LTG/LTGE: RM 107		12
13		LTG/LTGE: RM 205	20	1	0.10	0.38			1	20	KTCH: RM 107 RF-2	G	14
15		REC: RM 102	20	1			0.18	0.36	1	20	REC: RM 107		16
17	G	KTCH: RM 107 FR-1	20	1	1.00	1.06			1	20	MTR: RM 108 AHU-1		18
19		MTR: RM 108 AHU-2	20	1			1.38	1.20	1	20	NCNT: RM 107 DW	G	20
21	G	NCNT: RM 107 MW	20	1	1.55	0.36			1	20	REC: RM 108		22
23		REC: RM 105 WASHER	20	1			0.18	0.54	1	20	REC: RM 106		24
25		REC: RM 106 DRYER	20	1	0.18	0.18			1	20	REC: RM 102 KEG-1		26
27		REC: RM 107	20	1			0.36	1.44	2	15	NCNT: RM 102 GW-1	G	28
29		REC: RM 102	20	1	0.36	1.44			–	–	-	–	30
31		REC: RM 106	20	1			0.72	0.00	1	20	SPARE	–	32
33	G	REC: RM 107 ICE	20	1	1.27	0.00			1	20	SPARE	–	34
35		MCA: RM 107 HOOD	20	1			0.20	0.00	1	20	SPARE	–	36
37	--	SPARE	20	1	0.00	0.00			1	20	SPARE	–	38
39	--	SPARE	20	1			0.00	0.00	1	20	SPARE	–	40
41	--	SPARE	20	1	0.00	0.00			1	20	SPARE	–	42
43	--	SPARE	20	1			0.00	0.00	1	20	SPARE	–	44
45	--	SPARE	20	1	0.00	0.00			1	20	SPARE	–	46
47	--	SPARE	20	1			0.00	0.00	1	20	SPARE	–	48
49	--	SPARE	20	1	0.00	0.00			1	20	SPARE	–	50
51	--	SPARE	20	1			0.00	0.00	1	20	SPARE	–	52
53	--	SPARE	20	1	0.00	0.00			1	20	SPARE	–	54
		TOTAL KVA/PHASE:			20.9		16.7						
		TOTAL AMPS/PHASE:			174.3		138.8						

SUMMARY BY LOAD TYPE

LOAD CLASSIFICATION	CONNECTED	NEC FACTORS	TOTAL NEC
CONT	3.750 kVA	125.00%	4.688 kVA
KTCH	1.380 kVA	100.00%	1.380 kVA
LTG	3.099 kVA	125.00%	3.874 kVA
LTGE	0.106 kVA	125.00%	0.133 kVA
MCA	0.200 kVA	100.00%	0.200 kVA
MTR	5.432 kVA	106.35%	5.777 kVA
NCNT	7.930 kVA	100.00%	7.930 kVA
REC	15.672 kVA	81.90%	12.836 kVA

PANEL TOTALS
CONNECTED KVA: 37.569 kVA
NEC CALCULATED KVA: 36.817 kVA
CONNECTED AMPS: 157 A
NEC CALCULATED AMPS: 153 A

PANEL 'B' SCHEDULE

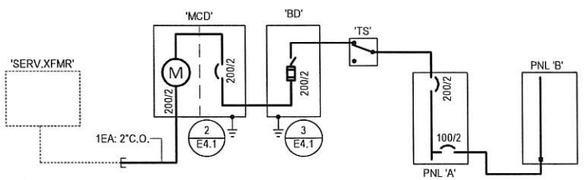
VOLTAGE: 240/120V, 1PH, 3W
OPD RATING: 100 A
LOAD CENTER
LOCATION: Mech. 108
ENCLOSURE: NEMA 1
MOUNTING: SURFACE

#	N	LOAD DESCRIPTION	AMP	P	A		B		P	AMP	LOAD DESCRIPTION	N	#
1		LTG/LTGE:	20	1	0.07	0.36			1	20	REC:		2
3		LTG: RM 102	20	1			0.13	0.24	1	20	LTG:		4
5	L	CONT: RM 105 EBB-2	20	1	1.00	0.18			1	20	LTG: RM 102		6
7		LTG MAIN HALL 102	20	1			0.26	0.30	1	20	LTG/LTGE: RM 102		8
9		MTR/LTG: RM 102 ,CF-1	20	1	0.20	0.54			1	20	REC: RM 102		10
11		LTG/LTGE: RM 102	20	1			0.30	0.20	1	20	MTR/LTG: RM 102 ,CF-1		12
13	L	NCNT: ECUH-1	30	1	2.00	0.36			1	20	REC: RM 102	S	14
15	S	MTR: RM 108 B-1,CP-2	20	1			0.30	0.36	1	20	REC: RM 102	S	16
17		MTR/LTG: RM 102 ,CF-1	20	1	0.20	0.36			1	20	REC: RM 102		18
19	L	CONT: RM 104 EBB-3	20	1			1.25	0.20	1	20	MTR/LTG: RM 102 ,CF-1		20
21	S	REC: RM 102	20	1	0.36	0.70			1	15	MTR: RM 108 EF-3		22
23	S	REC: RM 102	20	1			0.36	0.90	1	20	REC: RM 201		24
25		REC: RM 102	20	1	0.54	0.54			1	20	REC: RM 102		26
27		REC:	20	1			0.36	0.36	1	20	REC: RM 108		28
29		REC:	20	1	0.72	0.54			1	20	REC: RM 203		30
31		MTR/RECILTG/LTGE: RM 103- EF-2	20	1			1.49	0.90	1	20	REC: RM 206		32
33		REC: RM 102	20	1	0.72	0.72			1	20	REC: RM 205		34
35		MTR/RECILTG: RM 207 EF-1	20	1			0.34	0.54	1	20	REC: RM 204		36
37	L	CONT: RM 207 EBB-1	20	1	0.75	0.36			1	20	REC: EXT UPPER DECK		38
39		MTR/RECILTG: RM 202 EF-1	20	1			0.34	0.00	1	20	SPARE	–	40
41	L	CONT: RM 202 EBB-1	20	1	0.75	0.00			1	20	SPARE	–	42
		TOTAL KVA/PHASE:			12.0		9.1						
		TOTAL AMPS/PHASE:			99.7		76.1						

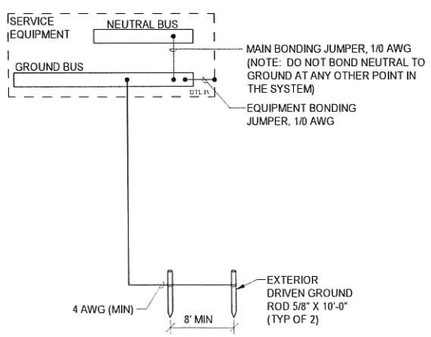
SUMMARY BY LOAD TYPE

LOAD CLASSIFICATION	CONNECTED	NEC FACTORS	TOTAL NEC
CONT	3.750 kVA	125.00%	4.688 kVA
LTG	1.771 kVA	125.00%	2.214 kVA
LTGE	0.036 kVA	125.00%	0.045 kVA
MTR	2.732 kVA	106.37%	2.906 kVA
NCNT	2.000 kVA	100.00%	2.000 kVA
REC	10.800 kVA	96.30%	10.400 kVA

PANEL TOTALS
CONNECTED KVA: 21.089 kVA
NEC CALCULATED KVA: 22.252 kVA
CONNECTED AMPS: 88 A
NEC CALCULATED AMPS: 93 A

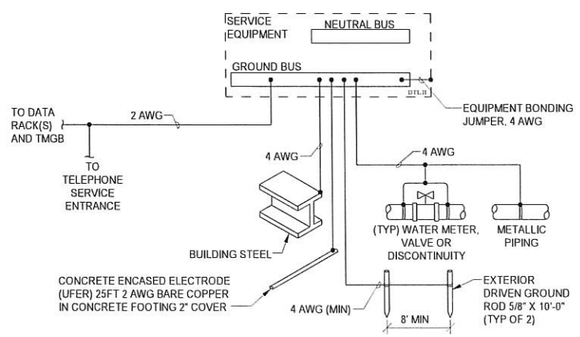


1 E4.1 POWER ONE-LINE
SCALE: NONE



2 E4.1 SERVICE GROUNDING SYSTEM ONE-LINE DIAGRAM
SCALE: NONE

NOTES:
1. BOND ALL BUILDING STEEL AND METALLIC PIPING TO PROVIDE ELECTRICALLY CONTINUOUS SYSTEMS.
2. PROVIDE RACEWAY FOR ALL ELECTRODE AND BOND CONDUCTORS. RACEWAY TO BE METALLIC IN PLENUM AIR SPACES. BOND METALLIC RACEWAY TO EACH END OF CONDUCTOR.
3. COMBINE GROUNDING ELECTRODE CONDUCTORS PER NEC.



3 E4.1 BUILDING GROUNDING SYSTEM ONE-LINE DIAGRAM
SCALE: NONE

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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ERIC D. COWLING
EE - 9773
6/4/25
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NUM	DESCRIPTION

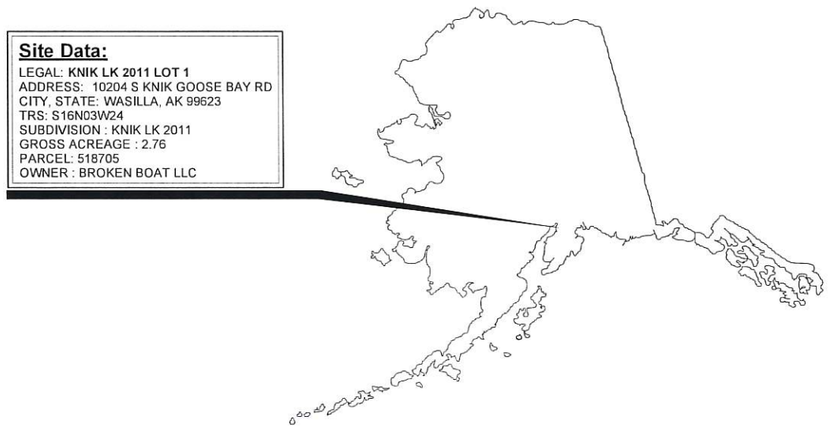
Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: DIAGRAMS, DETAILS, AND SCHEDULES
Address: 10204 S Knik Goose Bay Rd. Wasilla, AK 99623

E4.1

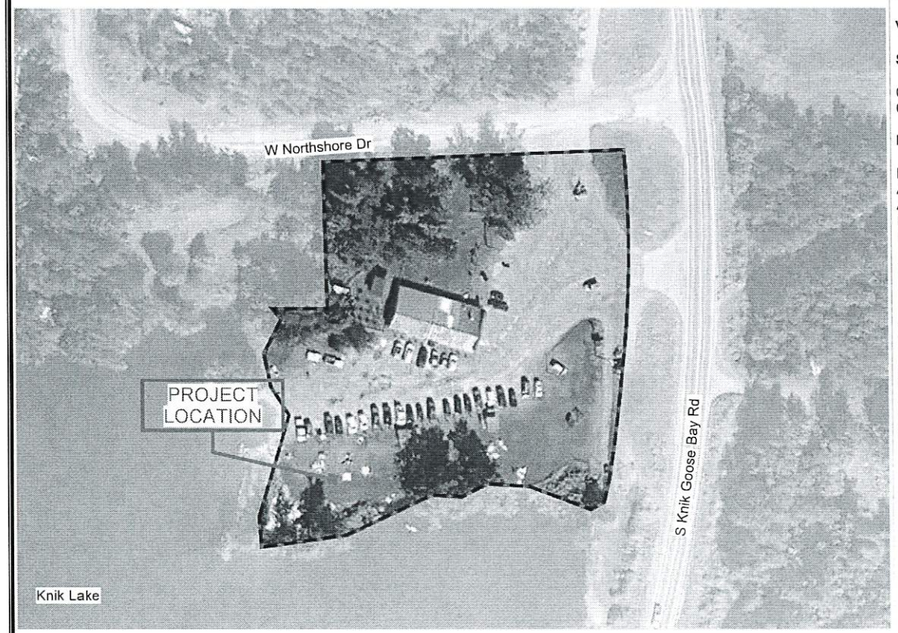
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qc:09/09/2025 09:04:21 : rc-2 : abudbil : pschd : 0.5;5.8;6.3/5151

VICINITY MAP - ANCHORAGE, ALASKA

Site Data:
LEGAL: **KNIK LK 2011 LOT 1**
ADDRESS: 10204 S KNIK GOOSE BAY RD
CITY, STATE: WASILLA, AK 99623
TRS: S16N03W24
SUBDIVISION : KNIK LK 2011
GROSS ACREAGE : 2.76
PARCEL: 518705
OWNER : BROKEN BOAT LLC



SITE VICINITY



CODE REVIEW

I. CODE: 2021 INTERNATIONAL BUILDING CODE, 2021 INTERNATIONAL FIRE CODE, 2021 EXISTING BUILDING CODE, & 2021 INTERNATIONAL ENERGY CONSERVATION CODE AS ADOPTED BY THE STATE OF ALASKA TITLE 13.

II. SCOPE: NEW CONSTRUCTION
CONSTRUCT A NEW 4,608 SF EVENT CENTER PRIMARILY DESIGNED FOR WEDDINGS, WITH FLEXIBILITY TO ACCOMMODATE A VARIETY OF OTHER EVENTS.

III. OCCUPANT CLASSIFICATION:

LEVEL	AREA	FUNCTION	OCC
GROUND	4,608 SF	EVENT CENTER	A-3
MEZZANINE	1,280 SF	EVENT CENTER	A-3

IV. SPECIAL DETAILED OCCUPANCY REQUIREMENTS
N/A

V. GENERAL HEIGHTS AND AREAS

ADDRESS IDENTIFICATION: 20" TALL x 10" WIDE NUMBERS SIGNS SHALL BE PERMITTED SEPARATELY

BASIC ALLOWABLE (MOST RESTRICTIVE IBC T503): V-B (40 FT HEIGHT / 1 STORY / 6,000 SF)

MEZZANINE IN COMPLIANCE WITH SECTION 505 IBC
THE AGGREGATE AREA OF A MEZZANINE WITHIN A ROOM SHALL NOT EXCEED ONE-THIRD (1/3) OF THE FLOOR AREA

505.2.3 EXCEPTION
THE MEZZANINE IS PERMITTED TO BE ENCLOSED, AS ALL ROOMS HAVE TWO MEANS OF EGRESS

ACTUAL HEIGHT/STORY/AREA: (33) FT / 1 STORY / 4,608 SF

VI. TYPES OF CONSTRUCTION

TYPE OF CONSTRUCTION REQUIRED: VB
OCCUPANT GROUP CLASSIFICATION (RESTRICTIVE):A-3

EXTERIOR WALL REQUIRED RATING (IBC T602)

DISTANCE		RATING(MOST RESTRICTIVE)
X<5'	-	1-HOUR
5'<X<10'	-	1-HOUR
10'<X<30'	-	NO RATING

VII. FIRE RESISTANCE REQ'D
N/A

VIII. INTERIOR FINISHES TABLE 803.9 & 804.4

SPRINKLER (NO)

CLASS C WALL/CEILING FINISHES REQUIRED
CLASS II FLOORS COMPLYING WITH DOC FF-1 'PILL TEST'

IX: FIRE PROTECTION SYSTEMS

IFC 506.1: PROVIDE KNOX BOX:"KEY BOX SHALL BE OF AN APPROVED TYPE LISTED IN ACCORDANCE WITH UL 1037, AND SHALL CONTAIN KEYS TO GAIN ACCESS AS REQUIRED BY THE CODE OFFICIAL."
MOUNT KNOX BOX AT 66" AFG

IFC 503: FIRE APPARATUS ROAD WITHIN 150' OF ALL EXTERIOR WALLS MEASURED BY WALKING DISTANCE.

IFC 903 NFPA 13 SPRINKLER: NOT REQUIRED.
SINGLE LEVEL BELOW 300 OCCUPANTS

IFC 906.1: PORTABLE FIRE EXTINGUISHERS REQUIRED: EVERY 75'

IFC 907: MANUAL PULL FIRE ALARM: NOT REQUIRED
OCCUPANT LOAD BELOW 300

X. MEANS OF EGRESS

OCCUPANT LOAD:
230 PERSON

AREA:
CORRIDOR WIDTH SHALL NOT BE LESS THAN: 36" (IBC T1020.3)
DOORS SHALL NOT PROJECT MORE THAN 7" INTO WIDTH.

EXIT SIGNS REQUIRED WHERE MULTIPLE EXIT REQUIRED
EXIT SHALL BE ILLUMINATED, 90 MIN BATTERY BACKUP

MAX DEAD END: 20 FT (IBC 1020.5)
DISTANCE TO EXIT WHERE MULTIPLE: 200 FT(IBC T1017.2)

EGRESS PATH SHALL BE ILLUMINATED BY WITH 1 FOOT-CANDLE AT ALL TIMES WITH 90 MINUTE BATTERY BACKUP

1008.1.10 - PANIC AND FIRE EXIT HARDWARE
EXCEPTION: A MAIN EXIT OF A GROUP A OCCUPANCY IN COMPLIANCE WITH SECTION 1008.1.9.3, ITEM2. & 1010.2.4, ITEM 3

THE KIND OF LATCHES AND LOCKS ALLOWED A STATEMENT THAT EACH DOOR NEEDS TO SERVE A MINIMUM OF 50% OF THE OCCUPANT LOAD AND 36" DOOR IS SUFFICIENT

STAIRS:
4-7" RISE & 11" TREAD MINIMUM. MINIMUM WIDTH 44", UNLESS SERVING 50 OR FEWER PERSONS, IN WHICH CASE THE REQUIRED WIDTH IS 36". ONE LANDING REQ'D FOR EVERY 12' OF OVERALL RISE AND BE MINIMUM DEPTH EQUAL TO WIDTH, CLEAR OF DOOR SWING.

RAMPS: N/A

XI: ACCESSIBILITY
NEW CONSTRUCTION & ALTERATIONS REQUIRE COMPLIANCE WITH ACCESSIBILITY WITH REGARD TO TOILET FACILITIES, DRINKING FOUNTAINS, AND PRIMARY FUNCTION.-PER ICC/ANSI A117.1-2009

XII: INTERIOR ENVIRONMENT

LIGHTING & TEMPERATURE MEP OR NATURAL VENTILATION
IF VENTILATION TO BE NATURAL, OPENABLE PORTION NOT LESS THAN 4%

MINIMUM ROOM HEIGHT NOT LESS THAN 7'-6"
EXCEPTION: STORAGE, RESTROOM, KITCHEN & MEZZANINE AREAS PERMITTED MINIMUM HEIGHT OF 7'-0"
MINIMUM WIDTH IN ALL OCCUPIED AREAS NOT LESS THAN 3' EXCEPT TO ACCESS MEP, 2'

UNOCCUPIED SPACES CRAWLSPACE OR ATTIC (YES):

ATTIC ACCESS: AN OPENING NOT LESS THAN 20"X30" SHALL BE PROVIDED TO ANY ATTIC AREA HAVING A CLEAR HEIGHT OF OVER 30". CLEAR HEADROOM OF NOT LESS THAN 30" SHALL BE PROVIDED IN THE ATTIC SPACE AT OR ABOVE THE ACCESS OPENING. **(22"x30" IN IRC)**

XXIX: PLUMBING FACILITIES
(IBC T2902.1)

URINALS MAY BE SUBSTITUTED FOR 50% OF W.C. IN MALE

REQUIRED FIXTURES
2 TOILET FOR MALE
3 TOILETS FOR FEMALE
2 LAVATORY
1 SERVICE SINK

INDEX

G-1	Vicinity, Index & Code Review
Architectural	Unnamed
A-1.0	Site Plan
A-1.1	Enlarged Site Plan
A-1.2	1st Floor Plan
A-1.2.2	Enlarged Bar & Kitchen
A-1.3	Mezzanine Floor Plan
A-2.1	Reflected Ceiling Plans
E-2.4	Unnamed
A-4.1	Roof Plan
A-5.1	Sections
A-5.2	Sections
A-5.3	Details
A-5.4	Details
A-6.1	Elevations
A-6.2	Elevations
A-7.1	Schedules
Structural	
S-0.0	Notes & Details
S-0.1	Details
S-1.0	Foundation
S-2.0	Lower Floor Framing
A-5.6	Upper Floor Framing
S-3.0	Roof Plan
Mechanical	
M-1.1	Legends, Abbreviations & Schedules
M-1.2	Mechanical Schedules
M-1.3	Mechanical Schedules
M-2.0	Underground Plumbing Plan
M-2.1	1st Floor Plumbing Plan
M-2.2	2nd Floor Plumbing Plan
M-3.1	1st Floor HVAC Plan
M-3.2	2nd Floor HVAC Plan
M-6.1	Mechanical Partial Plans & Details
M-8.1	Mechanical Details
Electrical	
E-0.1	Legend and Specifications
E-0.2	Schedules
E-1.1	Electrical Site Plan
E-2.1	1st Floor Lighting Plan
E-2.2	2nd Floor Lighting Plan
E-3.1	1st Floor Power and Signal Plan
E-3.2	2nd Floor Power and Signal Plan
E-4.1	Diagrams, Details, and Schedules

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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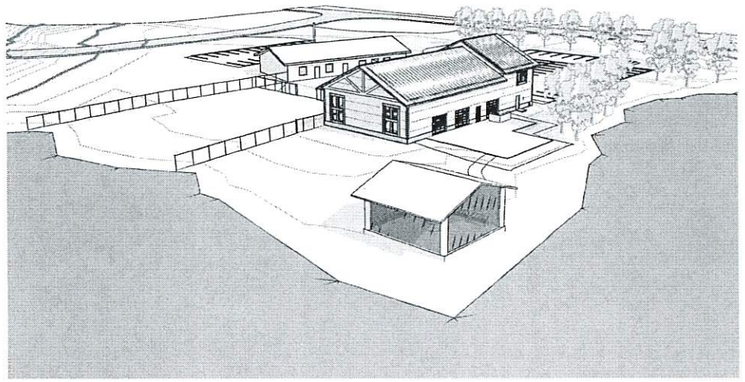
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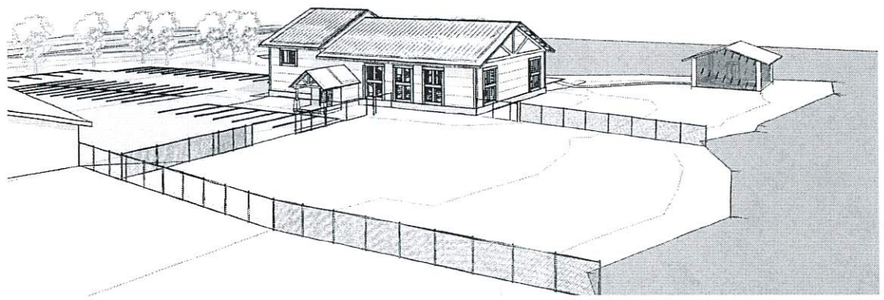
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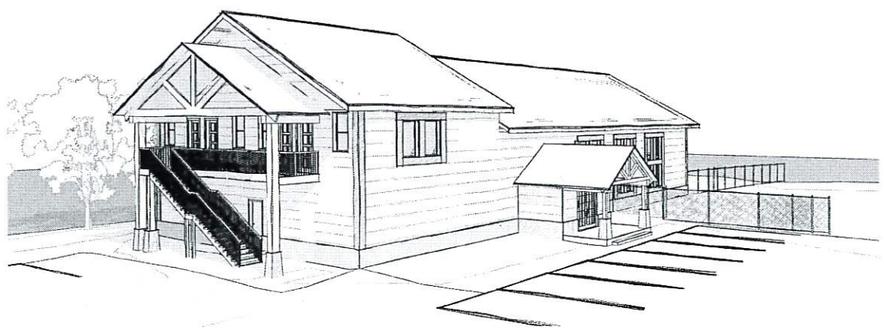
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Prepared for: Doug Massie
Sheet Title: Vicinity, Index & Code Review
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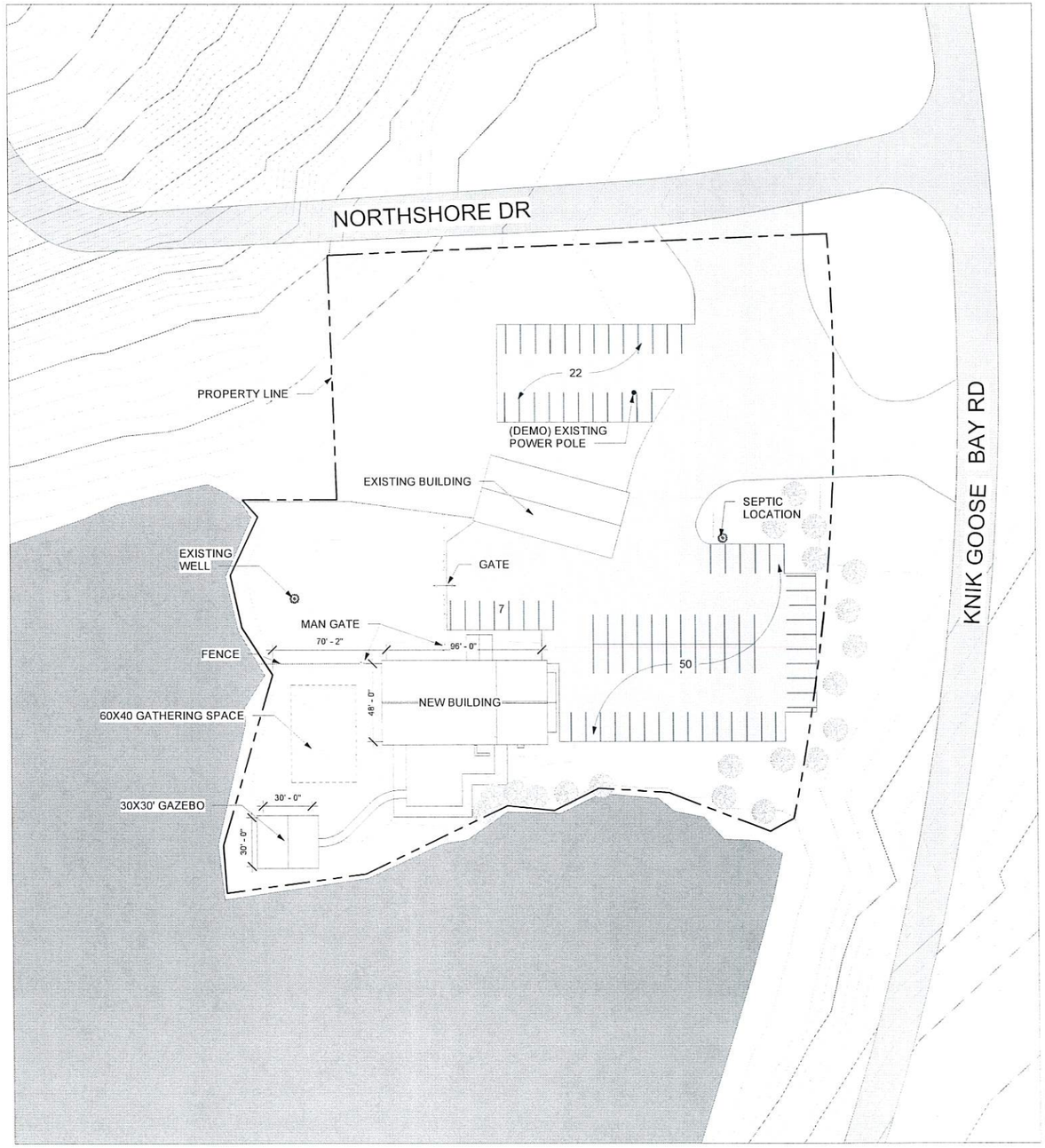
G-1

Knik Landing









1 Site
1" = 40'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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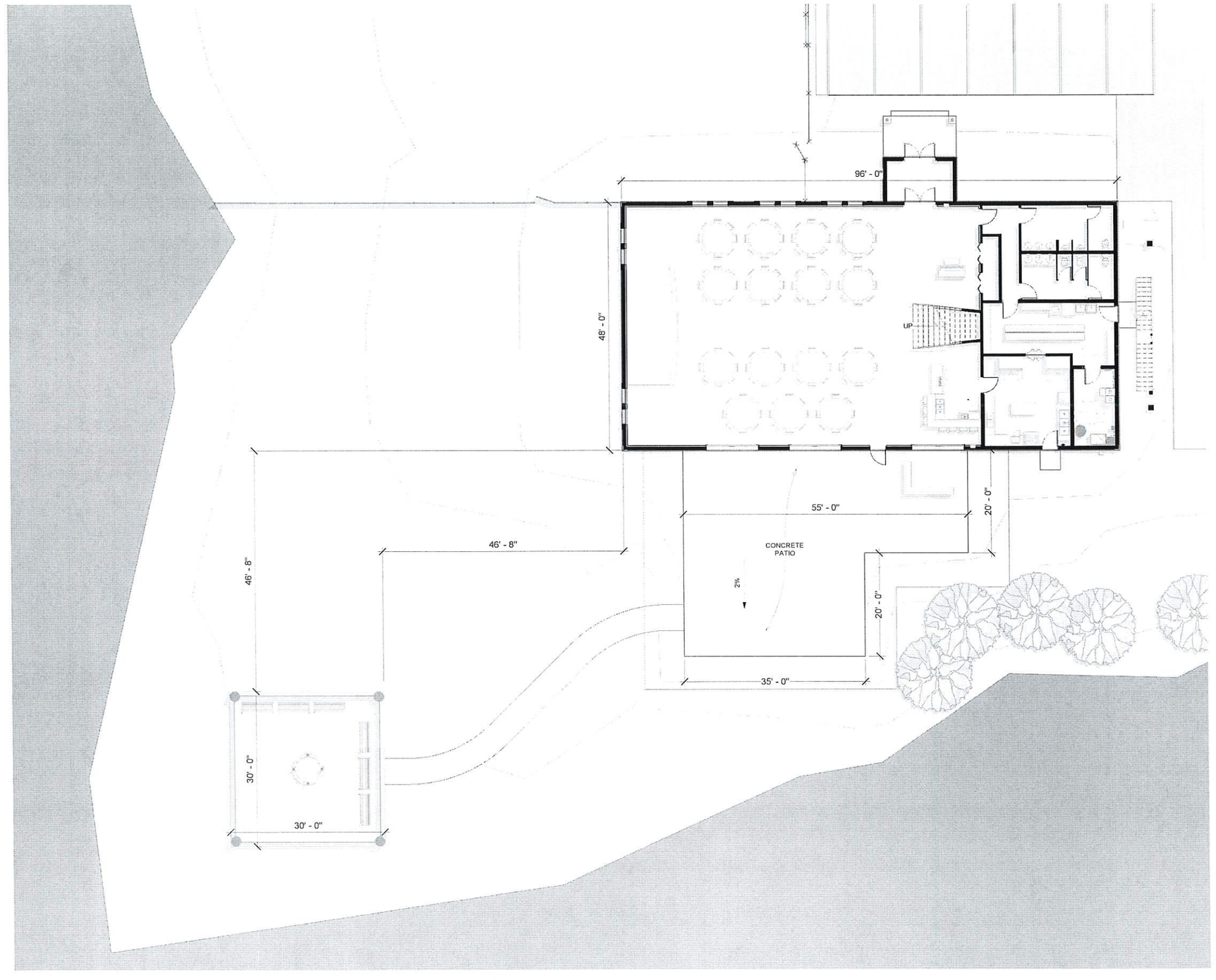
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14104
REGISTERED PROFESSIONAL ARCHITECT

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Site Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.0



1 Enlarged Site Plan
1" = 10'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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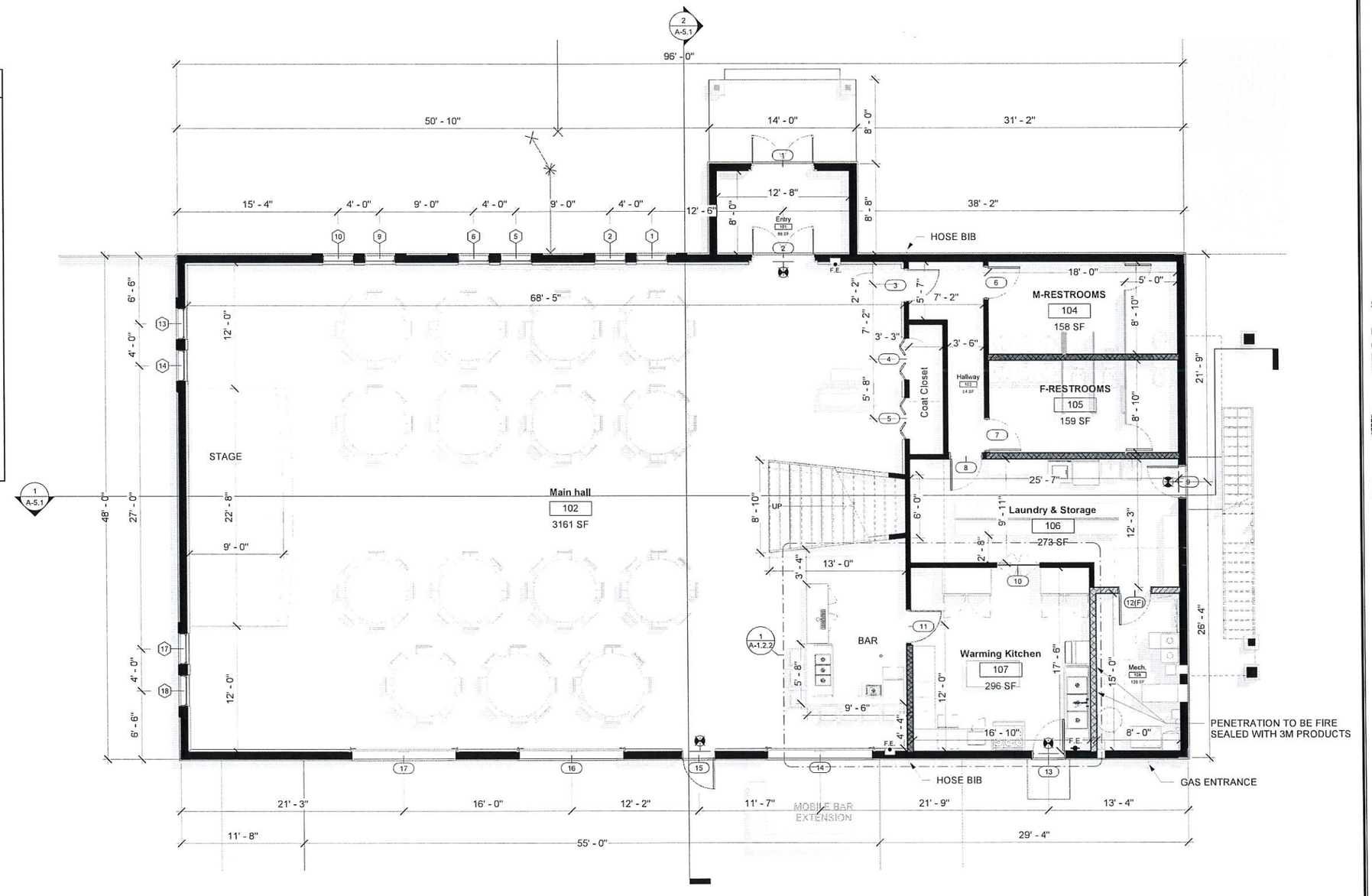
STATE OF ALASKA
DANIEL H. CLIFT
14104
REGISTERED PROFESSIONAL ARCHITECT

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Enlarged Site Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.1

KEY - SYMBOL - LEGEND

- NEW WALL
- 1-HOUR FIRE WALL
- 1-HR FIRE WALL W/PLUMBING
- PLUMBING WALL
- F.E. — FIRE EXTINGUISHER, 2A:10BC, MOUNT 48" AFF (MEASURED TO GRIP)
- EXIT SIGN
- EXIT SIGN W/ EMERGENCY LIGHT, 90 MINUTE BATTERY
- EMERGENCY LIGHT, 90 MINUTE BATTERY
- EXTERIOR EGRESS LIGHT



1 1st Floor Plan
3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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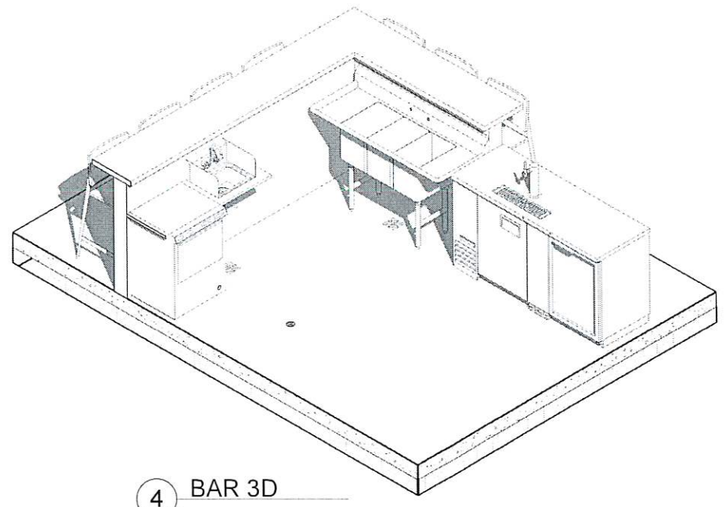
Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: 1st Floor Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.2

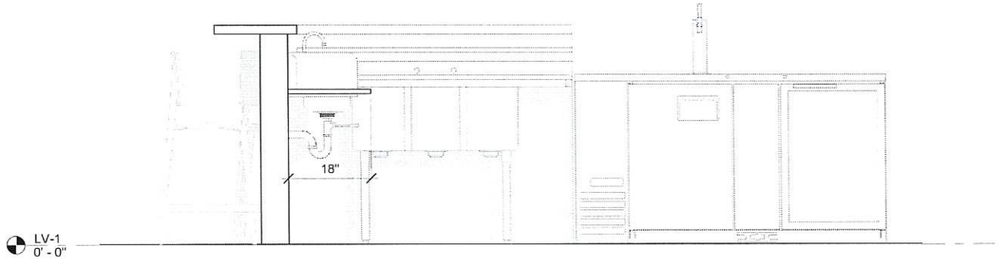


1 Enlarged Bar & Kitchen
1/2" = 1'-0"

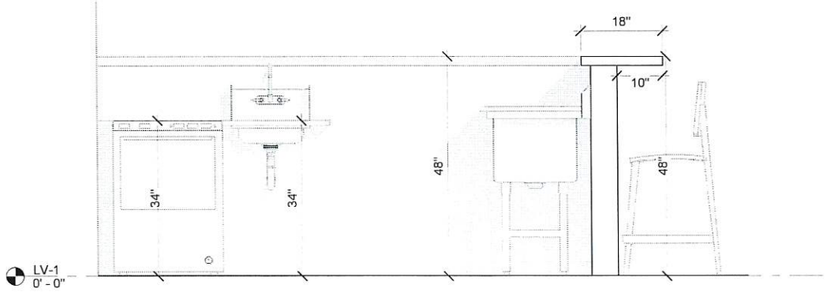
Equipment Schedule			
EQ.ID	Count	Description	Size
1	1	Beer dispenser	
2	1	3-bay sink & speed well	
3	1	Hand sink	
4	1	Glass washer	
5	1	Dishwasher	
6	1	Microwave	
7	1	Range	
8	1	Prep table	
9	1	3-Compartment sink	
10	1	Ice machine	
11	1	Freezer	
12	1	Refrigerator	



4 BAR 3D



2 Elevation A
3/4" = 1'-0"



3 Elevation B
3/4" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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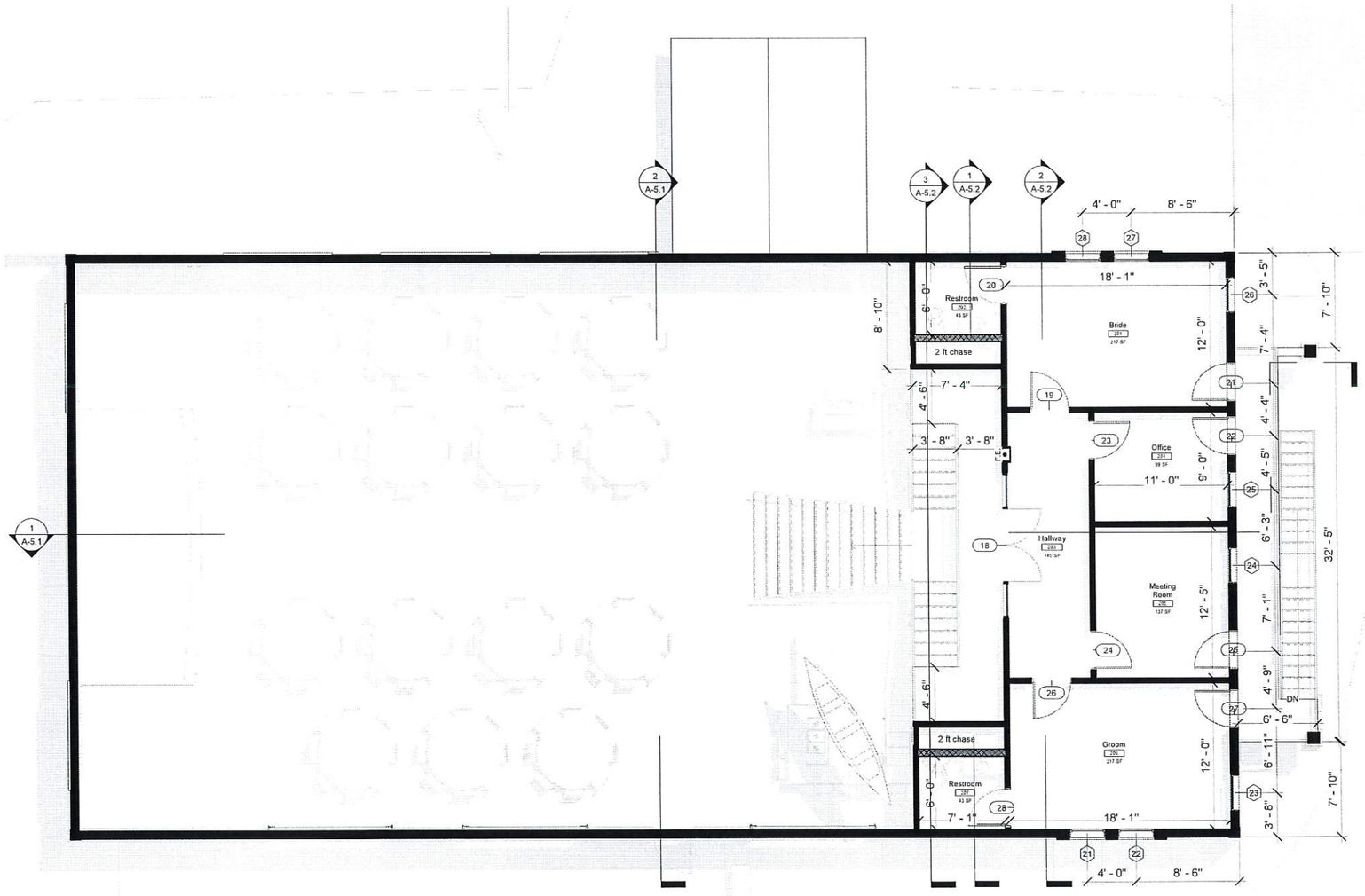
STATE OF ALASKA
DANIEL H. CLIFT
14104
REGISTERED PROFESSIONAL ARCHITECT

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Enlarged Bar & Kitchen
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.2.2

KEY - SYMBOL - LEGEND

- NEW WALL
- 1-HOUR FIRE WALL
- 1-HR FIRE WALL W/PLUMBING
- PLUMBING WALL
- FIRE EXTINGUISHER, 2A:10BC, MOUNT 48" AFF (MEASURED TO GRIP)
- EXIT SIGN
- EXIT SIGN W/ EMERGENCY LIGHT, 90 MINUTE BATTERY
- EMERGENCY LIGHT, 90 MINUTE BATTERY
- EXTERIOR EGRESS LIGHT



1 Mezzanine
3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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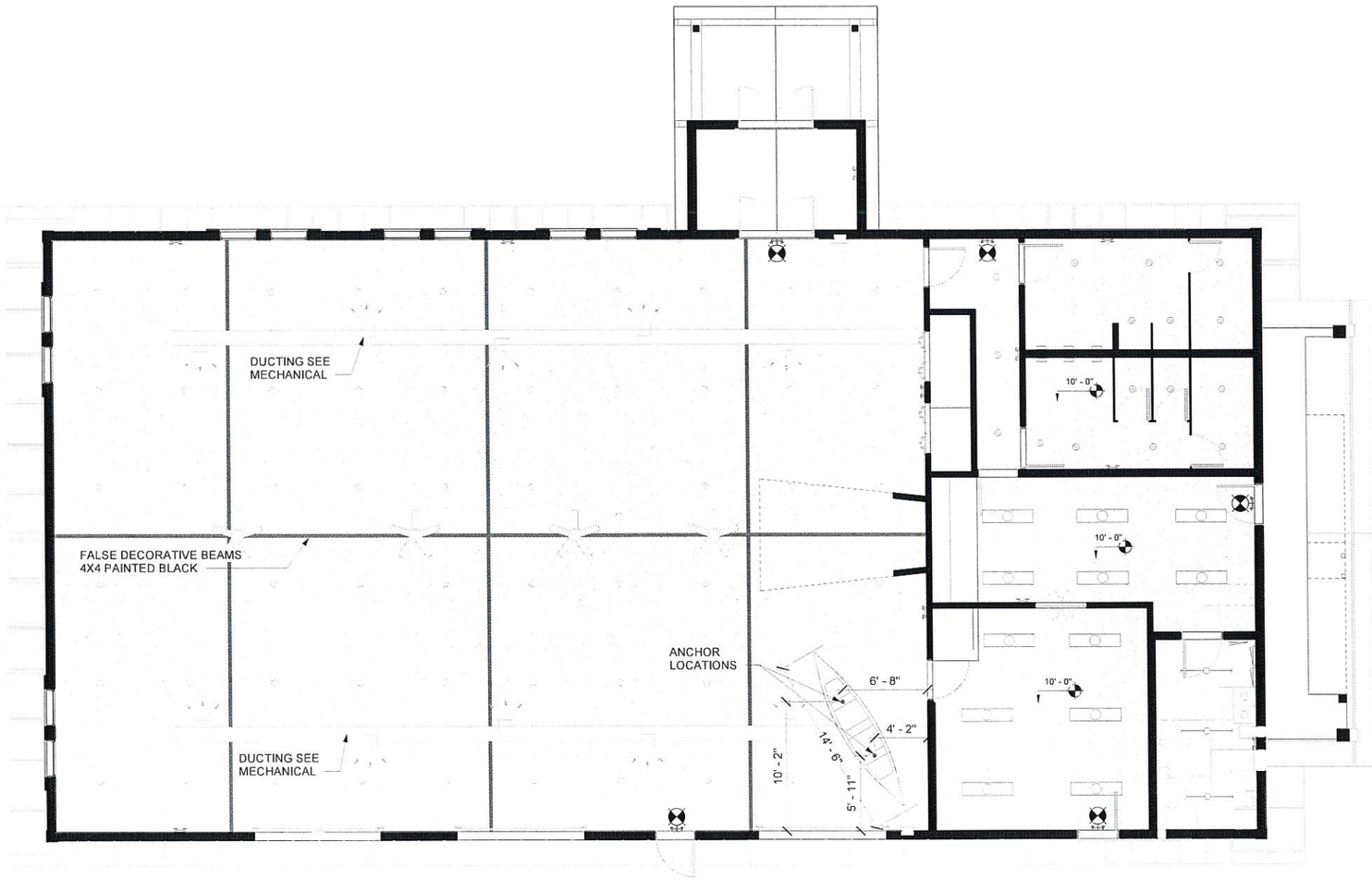
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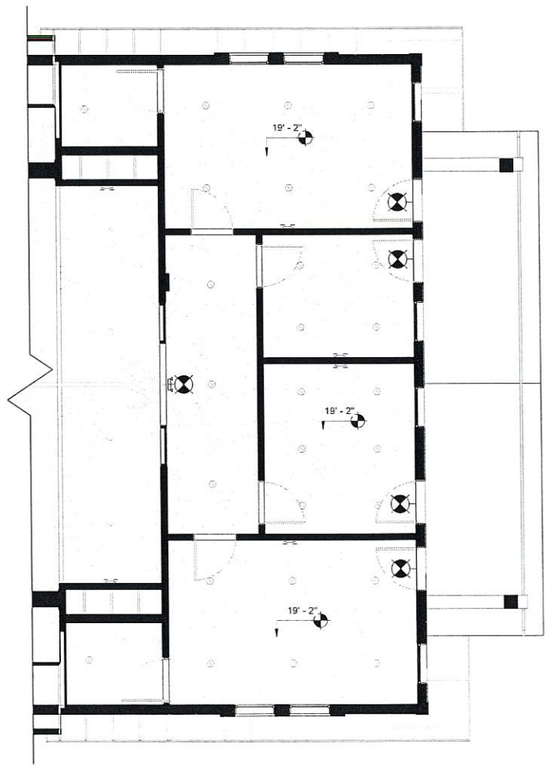
Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Mezzanine Floor Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.3

KEY - SYMBOL - LEGEND		KEY - SYMBOL - LEGEND	
	GYPSUM HARD LID		1' X 4' LED FLAT PANEL ADJUSTABLE OUTPUT
	EXIT SIGN		4FT LED STRIP WITH DROPPED LENS WHITE FINISH
	EXTERIOR EGRESS LIGHT		4" OPEN LED DOWNLIGHT
	90-MINUTE EMERGENCY LIGHT		13" SURFACE LED DOWNLIGHT



1 LV-1 Reflected Ceiling Plan
3/16" = 1'-0"



2 Mezzanine Reflected Ceiling Plan
3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Reflected Ceiling Plans
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-2.1

ROOFING NOTES:

SLOPE = 6" IN 12" MINIMUM

MATERIAL: ASPHALT ROOFING SHINGLES

FURNISH COMPLETE SYSTEM

ICE SHIELD WITHIN 3' OF EXTERIOR WALL

INSTALL PER MANUFACTURER'S RECOMMENDATIONS FOR 10 YEAR WARRANTY

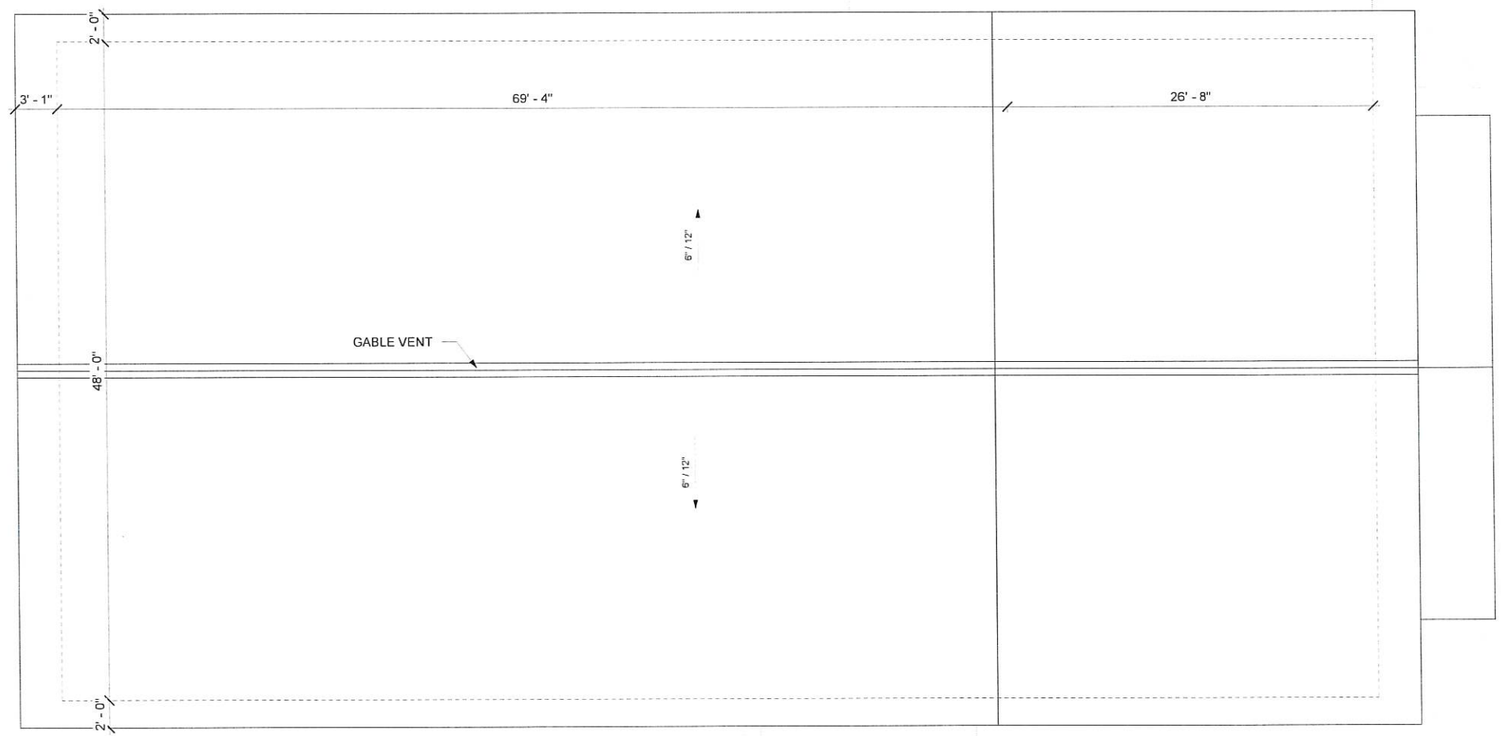
FLASH ALL PENETRATIONS AND WALL INTERSECTIONS

DRAFT-STOPS IN ATTIC SPACES EXCEEDING 3,000 SF

REQUIRED VENTING = 1/300 DUE TO VAPOR RETARDER UNDER INSULATION
ROOF = 4,608 SF
REQUIRED VENTING = 15.36 SF OR 2,212 SI
96' LENGTH (EACH SIDE)
REQUIRED EAVE VENTING = 1,106 SI OR 5.5 SI PER LF, EACH SIDE
REQUIRED RIDGE VENTING = 1,106 SI OR 5.5 SI PER LF, EACH SIDE

PROVIDE (5) HOLES 2"Ø PER 2' TRUSS BLOCK FOR 15.7 SI, (7.8 SI PER LF)
PROVIDE 3/4" RIDGE VENT FOR 9 SI PER LF

SUBMITTAL PACKAGE REQUIRED



1 Roof Plan
3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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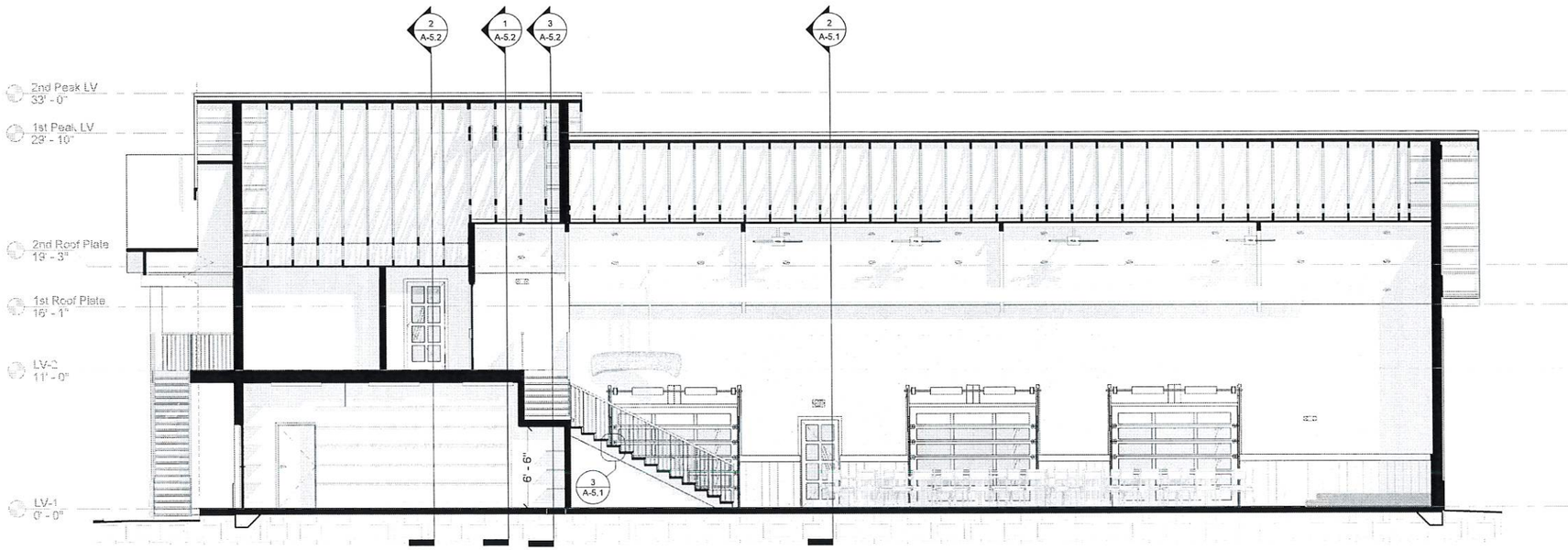
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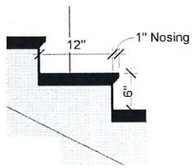
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Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Roof Plan
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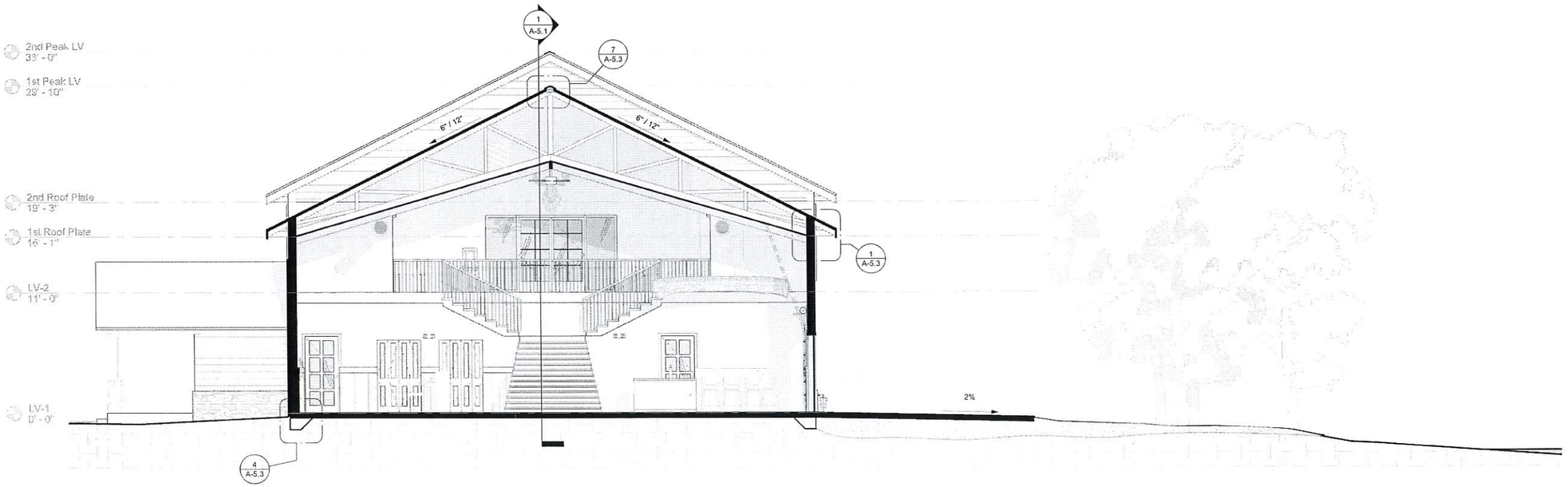
A-4.1



1 Section A
3/16" = 1'-0"



3 Riser & Tread
1" = 1'-0"



2 Section B
3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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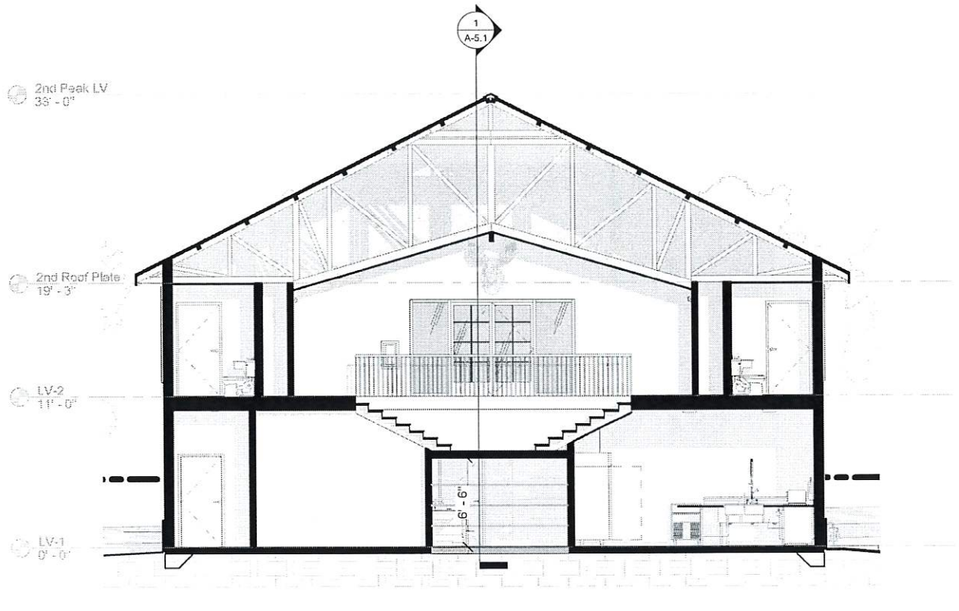
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Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Sections
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

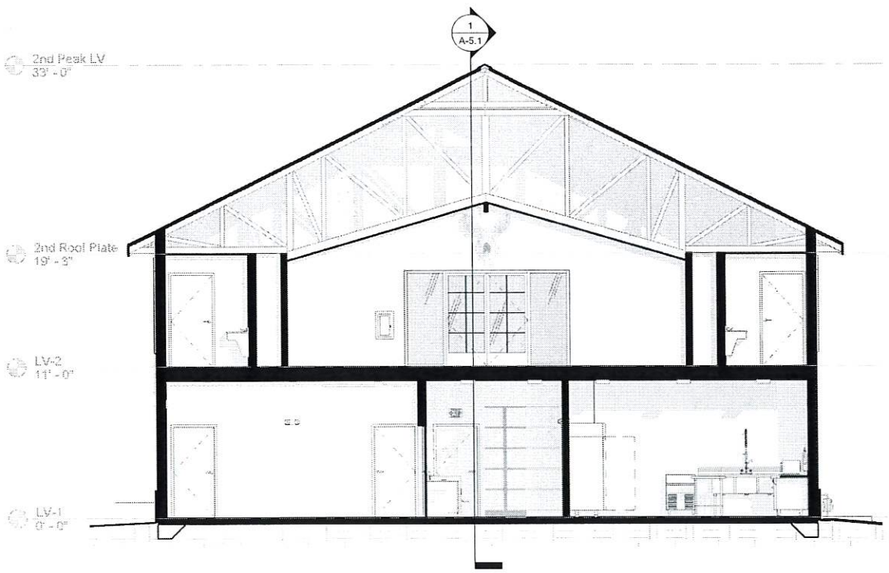
A-5.1



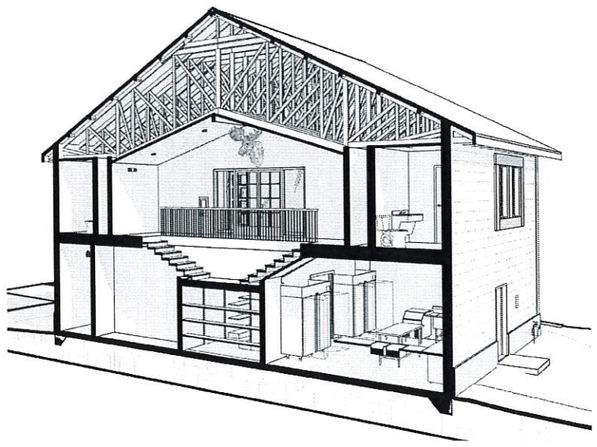
2 Section C
3/16" = 1'-0"



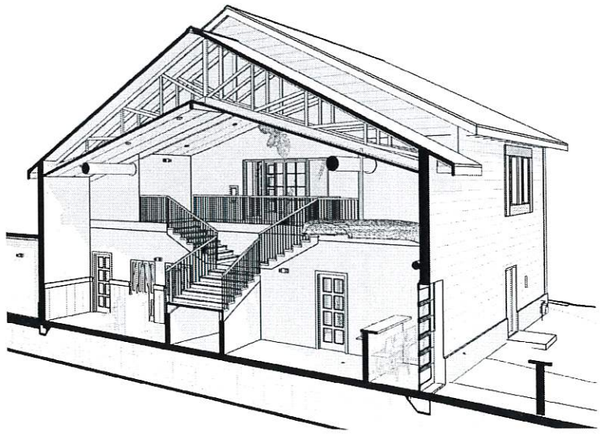
3 Section E
3/16" = 1'-0"



1 Section D
3/16" = 1'-0"



4 3D View Interior section



5 3D View Interior section 2

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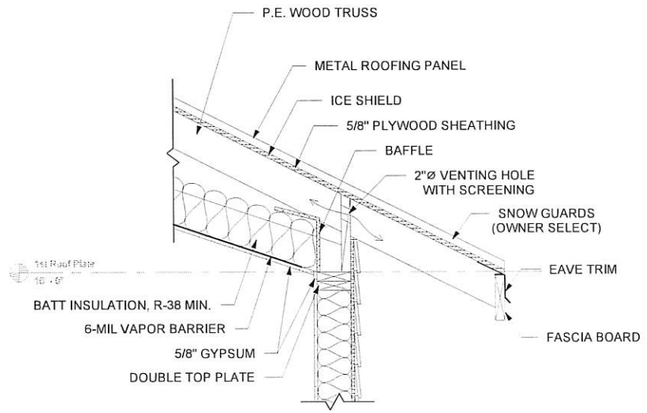
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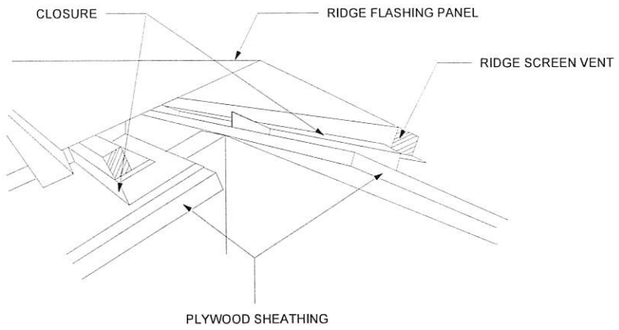
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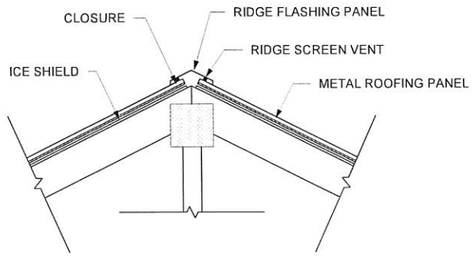
Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Sections
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-5.2

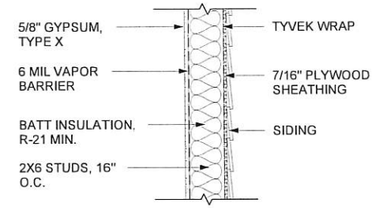


1 Eave
1" = 1'-0"

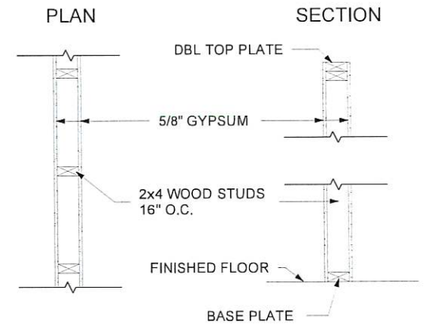




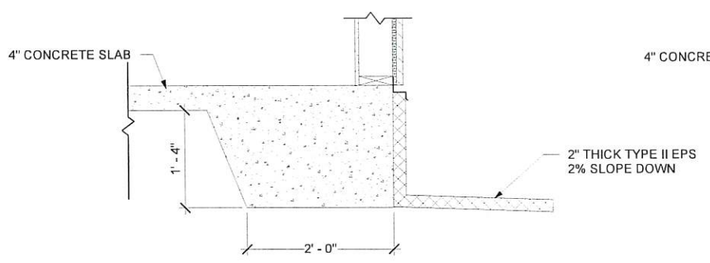
7 Ridge
1" = 1'-0"



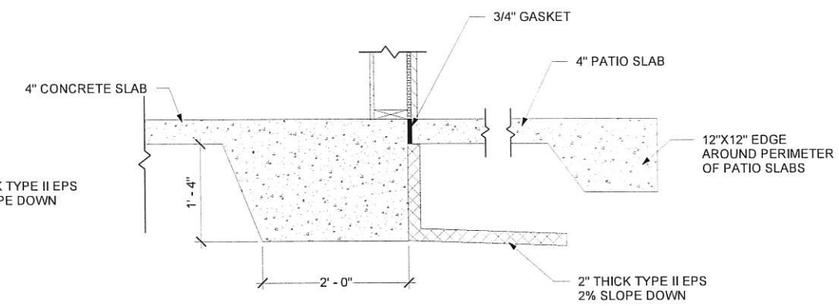
2 Typical Exterior Wall
1" = 1'-0"



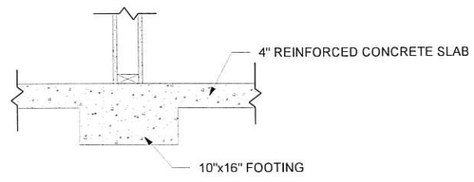
3 Typical Interior Wall
1" = 1'-0"



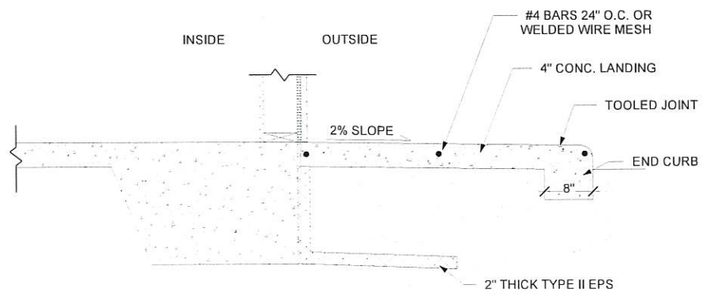
4 Perimeter Footing
1" = 1'-0"



5 Perimeter Footing @ Patio
1" = 1'-0"



6 Interior Footing
1" = 1'-0"



9 Landing Detail
1" = 1'-0"

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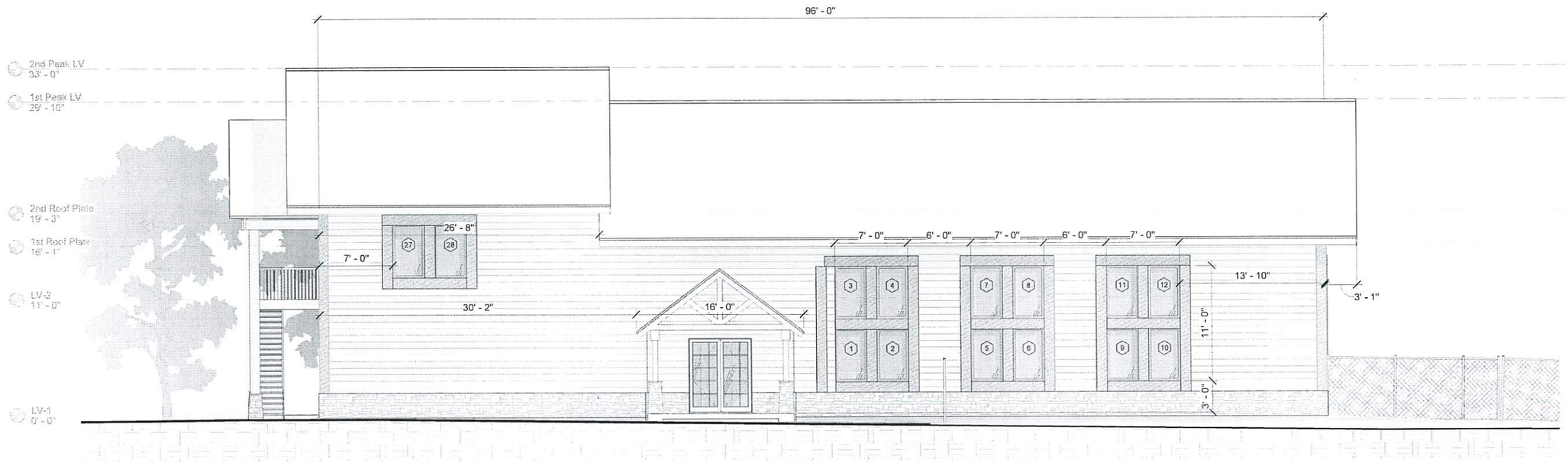
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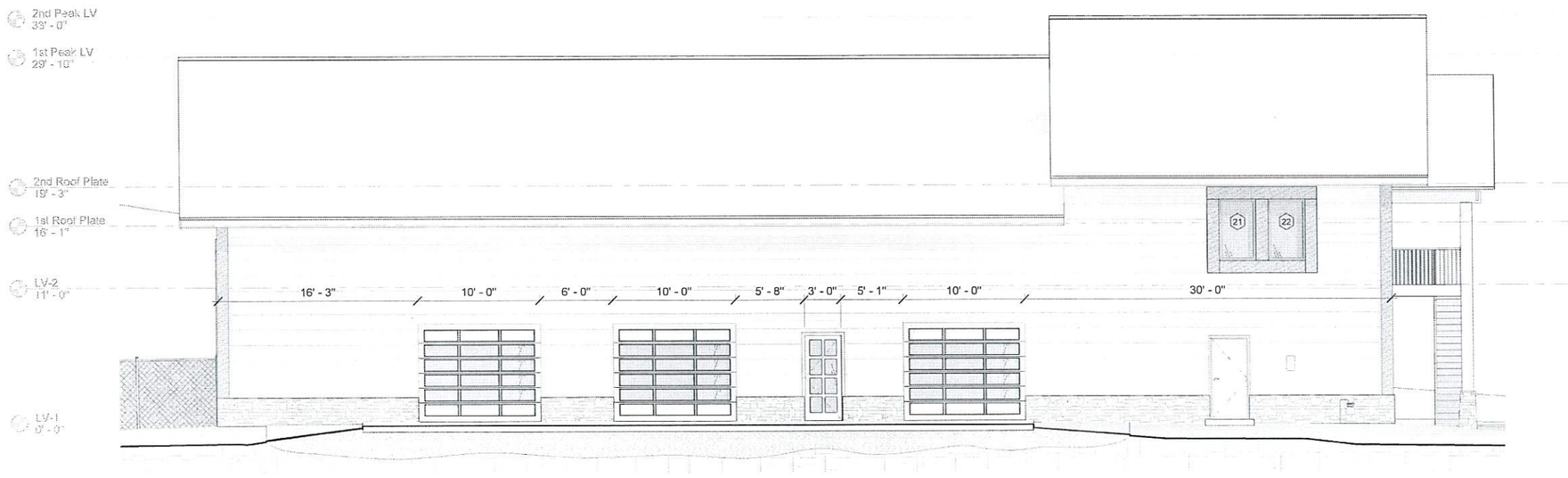
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DANIEL H. CLIFT
14104
REGISTERED PROFESSIONAL ARCHITECT

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Details
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-5.3



1 North
3/16" = 1'-0"



2 South
3/16" = 1'-0"

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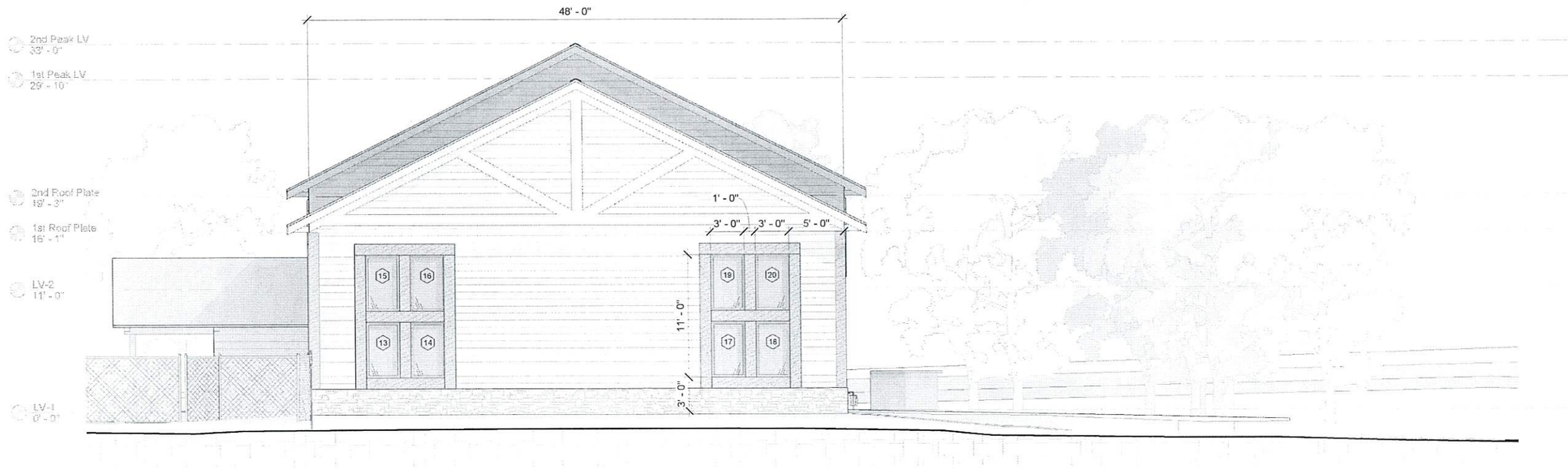
STATE OF ALASKA
DANIEL H. CLIFT
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REGISTERED PROFESSIONAL ARCHITECT

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Elevations
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-6.1



1 East
3/16" = 1'-0"



2 West
3/16" = 1'-0"

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Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Elevations
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-6.2

Room Schedule

#	Name	Area	Wall Finish	Ceiling Finish	Base Finish	Floor Finish	Comments
101	Entry	99 SF	GYP/P1	GYP	RB	C	
102	Main hall	3161 SF	GYP/P1/ W	GYP	RB	C	
103	Hallway	84 SF	GYP/P1	GYP	RB	C	
104	M-RESTROOMS	158 SF	GYP/P2	GYP	RB	C	
105	F-RESTROOMS	159 SF	GYP/P2	GYP	RB	C	
106	Laundry & Storage	273 SF	GYP/P1	GYP	RB	C	
107	Warming Kitchen	296 SF	GYP/P2	GYP	RB	C	
108	Mech.	120 SF	GYP/P1	GYP	RB	C	
201	Bride	217 SF	GYP/P1	GYP	RB	LVT	
202	Restroom	43 SF	GYP/P2	GYP	RB	LVT	
203	Hallway	145 SF	GYP/P1	GYP	RB	LVT	
204	Office	99 SF	GYP/P1	GYP	RB	LVT	
205	Meeting Room	137 SF	GYP/P1	GYP	RB	LVT	
206	Groom	217 SF	GYP/P1	GYP	RB	LVT	
207	Restroom	43 SF	GYP/P2	GYP	RB	LVT	

DOOR HARDWARE SCHEDULE LEGEND

PT-1 : PAINT
PT-2 : MOISTURE RESISTANT PAINT
GYP : GYPSUM BOARD
W: WAINSCOT AND CHAIR RAIL
RB : 4" BLACK RUBBER BASE
CPT : CARPET
LVT : LUXURY VINYL TILE FLOORING
CN : CONCRETE

Door Schedule

Door #	Width x Height	Type	Door Material	Frame Material	Hardware Group	Comments
1	72"x86"	A	WD/GL	WD	L	
2	72"x86"	A	WD/GL	WD	E	EGRESS
3	36"x84"	B	WD/GL	WD	E	
4	48"x80"	D	WD	WD	E	
5	48"x80"	D	WD	WD	E	
6	36"x80"	C	WD	WD	E	
7	36"x80"	C	WD	WD	E	
8	36"x80"	C	WD	WD	L	
9	36"x80"	C	WD	WD	L	EGRESS
10	48"x84"	E	WD	WD	E	
11	36"x84"	B	WD/GL	WD	L	
12(F)	36"x80"	C	WD	WD	L	1,4
13	36"x80"	C	WD	WD	L	EGRESS
14	120"x96"	G	IHM/GL	IHM	-	
15	36"x84"	B	WD/GL	WD	L	EGRESS
16	120"x96"	G	IHM/GL	IHM	-	
17	120"x96"	G	IHM/GL	IHM	-	
18	72"x82"	F	WD/GL	WD	E	
19	36"x84"	B	WD/GL	WD	L	
20	36"x80"	C	WD	WD	PR	
21	36"x84"	C	WD	WD	L	
22	36"x84"	C	WD	WD	L	
23	36"x84"	B	WD/GL	WD	L	
24	36"x84"	B	WD/GL	WD	L	
25	36"x84"	C	WD	WD	L	
26	36"x84"	B	WD/GL	WD	L	
27	36"x84"	C	WD	WD	L	
28	36"x80"	C	WD	WD	PR	

DOOR SCHEDULE LEGEND

IHM: INSULATED HOLLOW METAL
HM: HOLLOW METAL
WD: SOLID CORE WOOD
GL: GLASS

1. DOOR CLOSER
2. WEATHERSTRIPPING
3. KICKPLATE
4. 20 MIN FIRE RATED

DOOR HARDWARE SCHEDULE LEGEND

L: PASSAGE LATCH, WITH COMMERCIAL LOCK
E: ENTRY LATCH, NO LOCK OPTION
PR: PRIVACY LATCH
C: KEYED LATCH, KEY ONLY OPERATION
P: PUSH / PULL
*I: PROVIDE PANIC HARDWARE

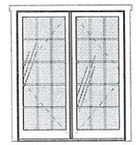
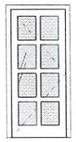
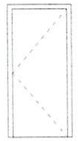
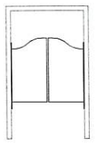
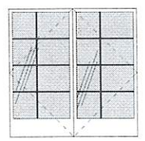
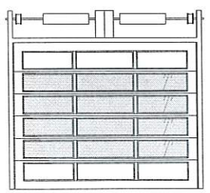
Window Schedule

Window #	Width x Height	Sill Height	Type	Comments
1	36"x60"	36"	A	
2	36"x60"	36"	A	
3	36"x60"	108"	A	
4	36"x60"	108"	A	
5	36"x60"	36"	A	
6	36"x60"	36"	A	
7	36"x60"	108"	A	
8	36"x60"	108"	A	
9	36"x60"	36"	A	
10	36"x60"	36"	A	
11	36"x60"	108"	A	
12	36"x60"	108"	A	
13	36"x60"	36"	A	
14	36"x60"	36"	A	
15	36"x60"	108"	A	
16	36"x60"	108"	A	
17	36"x60"	36"	A	
18	36"x60"	36"	A	
19	36"x60"	108"	A	
20	36"x60"	108"	A	
21	36"x60"	24"	A	
22	36"x60"	24"	A	
23	36"x60"	36"	B	
24	36"x60"	36"	B	
25	36"x60"	36"	B	
26	36"x60"	36"	B	
27	36"x60"	24"	A	
28	36"x60"	24"	A	

WINDOW TYPES

ELEVATION	PLAN	DESCRIPTION
		TYPE A FIXED
		TYPE B SLIDING

DOOR TYPES

ELEVATION	PLAN	DESCRIPTION
		TYPE A EXTERIOR FRENCH DOOR DOUBLE LEAF, HINGED
		TYPE B FRENCH DOOR SINGLE LEAF, HINGED
		TYPE C FLUSH SINGLE LEAF, HINGED
		TYPE D BI-FOLD, 4-PANEL
		TYPE E SALOON DOOR
		TYPE F INTERIOR FRENCH DOOR DOUBLE LEAF, HINGED
		TYPE G OVERHEAD GARAGE DOOR

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

Determine DESIGN
DESIGN

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14104
REGISTERED PROFESSIONAL ARCHITECT

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Schedules
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-7.1

JOB: # 250801

GENERAL FRAMING NOTES AND SCHEDULES

1.0 GENERAL LOADING CONDITIONS

1.1 BUILDING CODES: INTERNATIONAL BUILDING CODE (IBC) 2021

1.2 DESIGN LOADS:

	LL	SL	DL
ROOF	20 PSF	40 PSF	15 PSF
FLOOR	60 PSF	N/A	15 PSF

1.3 DESIGN WIND SPEED (3-SECOND GUST): 120 MPH EXPOSURE C

1.4 DESIGN GROUND SNOW LOAD: 60 PSF
DESIGN ROOF SNOW LOAD: 42 PSF

1.5 SEISMIC ZONE: D
Ss = 1.5, S1 = .686
Sds = 1.0, Sd1 = 1.29
V = Cs X W = 12.9 KIPS
(EQUIVALENT LATERAL FORCE PROCEDURE)

2.0 GENERAL CONDITIONS

2.1 THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO THE FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.

2.2 THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORTS THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.

2.3 THE PROJECT SPECIFICATIONS SHALL BE CONSIDERED AN INTEGRAL PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REVIEW THE SPECIFICATIONS PRIOR TO CONSTRUCTION AND NOTIFY THE ARCHITECT OR ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

2.4 THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REQUIREMENTS AND PUBLIC AGENCIES SAFETY ORDINANCES.

2.5 AN APPROVED AGENCY OR INDIVIDUAL SHALL INSPECT THE FRAMING INCLUDING WALL FRAMING, SHEAR WALLS, TRUSSES, DECKING, MATERIALS AND CONNECTIONS PER THE OWNER'S DIRECTION AND LOCAL ADMINISTRATION.

3.0 MATERIALS

3.1 WOOD

1. DIMENSIONAL LUMBER SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATIONS (NDS), LATEST EDITION, AS RECOMMENDED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION. INSTALLATION SHALL ALSO CONFORM TO THE WOOD FRAME CONSTRUCTION MANUAL (WFCM), PUBLISHED BY THE AMERICAN FOREST & PAPER ASSOCIATION (AF&PA).
2. ALL LUMBER TO BE #2 GRADE DOUGLAS FIR - LARCH (DF-L) OR SPRUCE PINE FIR (SPF), UNLESS NOTED OTHERWISE. STUDS CAN BE HEM-FIR, U.N.O. ON SHEAR PLANS.
3. ALL WOOD FRAMING MEMBERS TO HAVE 19% OR LESS MOISTURE CONTENT.
4. ALL SILLS ON SLABS SHALL BE TREATED WOOD.
5. POSTS AND COLUMNS LOCATED ON CONCRETE, MASONRY OR EXPOSED TO WEATHER SHALL BE TREATED WOOD.
6. WALL STUD MATERIAL SHALL BE STUD GRADE OR BETTER. 3X STUDS ARE REQUIRED AT HOLDDOWNS AND SHEAR PANEL SPLICE LOCATIONS.
7. FINGER-JOINTED STUDS SHALL NOT BE USED AT HOLD DOWN LOCATIONS AT ENDS OF SHEAR WALLS. FINGER-JOINTED STUDS SHALL NOT BE USED IN BALLOON FRAMING CONSTRUCTION.
8. ALL GLULAM BEAMS TO BE BOISE CASCADE 24F, 1.8E OR BETTER GRADE
9. ALL LVL SHALL BE MICROLLAM 1.9E OR BETTER. CONNECT PER MANUFACTURER.

3.2 STEEL
STRUCTURAL STEEL COMPONENTS SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS AND STANDARDS:
GENERAL: AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTON, 13TH EDITION
STRUCTURAL STEEL ROLLED SHAPES: ASTM A992
STRUCTURAL STEEL TUBES: ASTM A500 GRADE B
ANCHOR BOLTS: ASTM F1554
ALL WELDS TO BE COMPLETED PER AWS D1.1 BY A QUALIFIED WELDER

3.3 CONCRETE

1. STRUCTURAL CONCRETE SHALL COMPLY WITH AMERICAN CONCRETE INSTITUTE (ACI) CODES 318 AND 530, LATEST EDITION
2. WALL CONCRETE SHALL HAVE 3500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
3. DECK CONCRETE SHALL HAVE 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
4. SLAB CONCRETE SHALL HAVE 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
5. REBAR: ASTM A615 GRADE 60
6. SLAB REBAR TO BE #4 BAR @ 18" O.C. EACH WAY.
7. CONCRETE TO HAVE 3" COVER WHEN EXPOSED TO EARTH, AND 2" COVER ELSEWHERE.
8. GROUT: ASTM C476 (COMPRESSIVE STRENGTH OF GROUT, F' G, SHALL NOT BE LESS THAN 5000 PSI.)
9. CONTROL JOINTS SHALL BE INSTALLED AS REQUIRED TO LIMIT COSMETIC CRACKING. MAX SPACING BETWEEN JOINTS SHOULD NOT EXCEED 12 FT.

3.4 CONNECTORS

3. ALL NAILS SPECIFIED ON THESE PLANS SHALL BE COMMON NAILS, UNLESS NOTED OTHERWISE. (8D - 2.5X.131, 10D - 3X.148, 16D - 3.5X.162) PNEUMATIC CONNECTORS ARE PERMITTED, PROVIDED THEY HAVE EQUIVALENT CAPACITY.
4. SPECIFIED HOLD-DOWNS, HANGERS, STRAPS, ETC., ARE BY SIMPSON STRONG-TIE. PRODUCTS BY OTHER MANUFACTURERS MAY BE USED, PROVIDED THEY HAVE EQUAL OR GREATER STRUCTURAL CAPACITY. ALL HOLD-DOWNS, HANGERS, STRAPS, ETC., SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. ALL CONNECTORS EXPOSED TO WEATHER OR USED IN CONJUNCTION WITH FIRE-RETARDANT LUMBER SHALL BE GALVANIZED OR OTHERWISE PROTECTED FROM CORROSION.

Sill Plate Anchorage Schedule

SILL PLATE ANCHORAGE		
ATTACHMENT ANCHOR TYPE	EMBED.	LOAD BEARING WALLS
5/8" Ø ANCHOR BOLTS	7"	32" O.C.

NOTES:
1. THIS SCHEDULE APPLIES TO BASIC ANCHORAGE OF THE BOTTOM SILL PLATE TO THE FOUNDATION. ADDITIONAL CONNECTIONS MAY BE REQUIRED FOR LATERAL OR UPLIFT FORCES ON THE BUILDING. SEE THE PLANS OR THE SHEATHING SCHEDULE FOR ADDITIONAL REQUIREMENTS.
2. SHEAR WALLS MAY REQUIRE ADDITIONAL INSTALLATION INSTRUCTIONS.

4.0 Conventional Wood Framing

4.1 THE MAIN WIND FORCE RESISTING SYSTEM (MWFRS) AND COMPONENTS AND CLADDING (C&C) HAVE BEEN DESIGNED IN ACCORDANCE WITH THE IRC, IBC, AND/OR WFCM.

4.2 FOR THE MWFRS, SEE THE PLAN FOR REQUIRED SHEATHING AND HOLD DOWNS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE SHEATHING SCHEDULE AND ACCOMPANYING DETAILS.

4.3 FOR C&C, SEE THE SHEATHING AND CLADDING ATTACHMENT SCHEDULE.

SHEATHING AND CLADDING ATTACHMENT SCHEDULE						
	Framing Spacing	Sheathing Thickness	Interior Zone		Perimeter Edge Zone	
			Panel Edge	Panel Field	Panel Edge	Panel Field
ROOF SHEATHING	24" O.C.	5/8"	6"	12"	6"	6"
ENDWALL RAKE					6"	6"
WALL SHEATHING	16" O.C.	7/16"	6"	12"	6"	6"
TOP PLATE	16" O.C.	7/16"	3" (2) rows staggered	N/A	3" (2) rows staggered	N/A

4.4 TOP PLATE SPLICES SHALL BE 48" WITH 2-16D NAILS EVERY 6 INCHES.

4.5 ROOF SHEATHING SHALL BE A MIN. OF 5/8" ORIENTED STRAND BOARD (OSB). THICK APA RATED SHEATHING (CDX) OR PLYWOOD, EXTERIOR GRADE. USE BLOCKING OR APPROVED "H" CLIPS TO SECURE UNSUPPORTED EDGES. NAIL WITH 8D COMMON NAILS @ 6" O.C. AT EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS.

4.6 STUDS SHALL BE 2X6 @ 16" O.C. WALLS BELOW 12 FEET, 2X6 @ 12" OR 2X8 @ 16" O.C. FOR TALL WALLS.

4.7 FLOOR JOISTS TO BE PER PLAN W/ ¾" T&G SHEATHING W/ 10D 6" EDGE, 12" FIELD.

4.8 HOLES AND NOTCHES SHALL BE IN COMPLIANCE WITH APPLICABLE DETAILS OR MANUFACTURER'S SPECIFICATIONS.

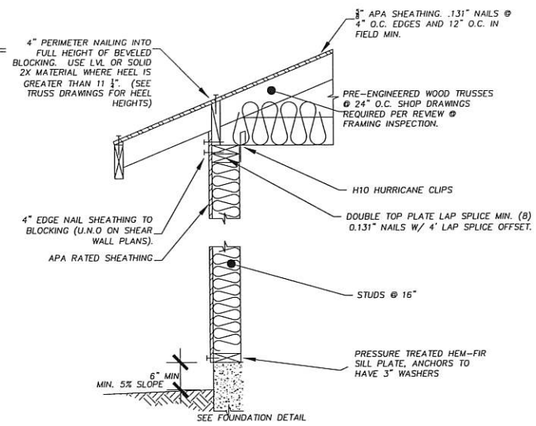
5.0 Nailing Schedule

CONNECTION	QUANTITY / SIZE / METHOD	SPACING
Roof Framing		
Blocking to Truss		Each End
Rimboard to Truss	(3) - 10d (Facenail)	6" O.C.
Wall Framing	(2) - 10d (Toenail)	
Stud to Sole Plate	(4) - 10d (Toenail) or (2) - 16d (Endnail)	Each End
Double Studs	16d (Facenail)	24" O.C.
Double Top Plates	16d (Facenail)	24" O.C.
Top Plate Laps and Intersections	(2) - 16d (Facenail)	Every 6" for 36" Splice
Continuous Header, Two Pieces	16d	16" O.C. Along Each Edge
Ceiling Framing		
1/2" Gypsum Wallboard	5d cooler	6" Edge / 10" Field
Floor Framing		
Joist to Sill or Girder	(4) - 10d	Per Joist
Blocking to Joist	(2) - 10d	Per End
Blocking to Plate	(4) - 16d	Each Block
Build-Up Sections		
Build-Up Wood Columns	(2 Rows) - 16d	8" O.C.
Build-Up Girder and Beams	20d (Facenail) @ Top & Bottom and Staggered (2) - 20d (Facenail) @ Ends & at Each Splice	32" O.C. (Facenail) @ Top & Bottom and Staggered @ 32" O.C. @ Ends & at Each Splice

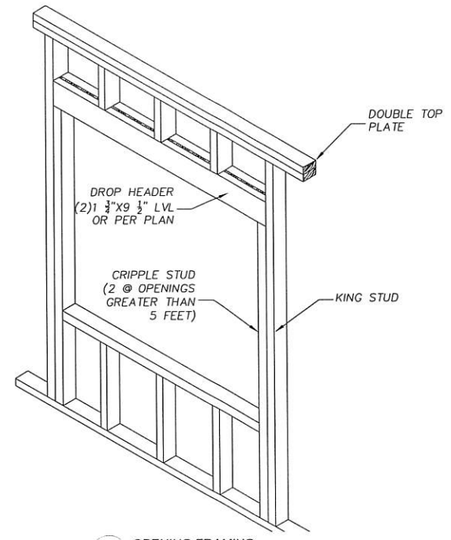
NOTES:
1. SUPPLY RATED CLIPS OR STRAPS FOR UPLIFT FORCES AT RAFTERS TO PLATE CONNECTIONS AS NOTED ON PLAN SHEETS.
2. ON SHEAR WALLS AND DIAPHRAGMS NAILS SHALL BE PLACED NOT LESS THAN 3/8 INCH FROM THE PANEL EDGE.
3. REFERENCE IBC TABLE 2304.9.1 and WFCM.

6.0 Site Preparation

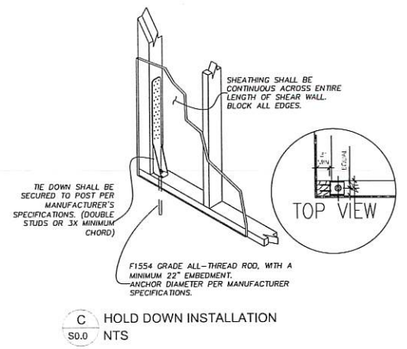
NOTES:
1. SITE WILL BE CLEARED OF ALL DEBRIS AND ORGANIC MATERIAL PRIOR TO PLACING ANY FOUNDATION COMPONENTS.
2. WHERE FILL IS REQUIRED, 95% COMPACTION IS REQUIRED WITH A MAXIMUM LIFT OF 8".
3. DRAINAGE DURING CONSTRUCTION AND AT PROJECT COMPLETION SHOULD DRAIN AWAY FROM THE SITE.
4. NO SOIL REPORT WAS AVAILABLE FOR THIS SITE. THE CONTRACTOR SHALL VERIFY SOIL CONDITIONS PRIOR TO CONSTRUCTION.



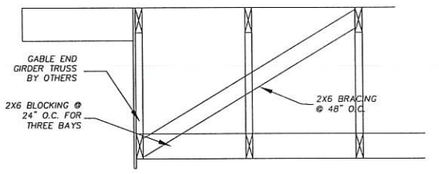
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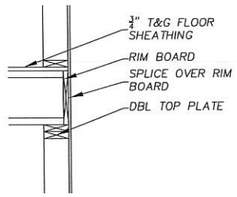
B S0.0 OPENING FRAMING NTS



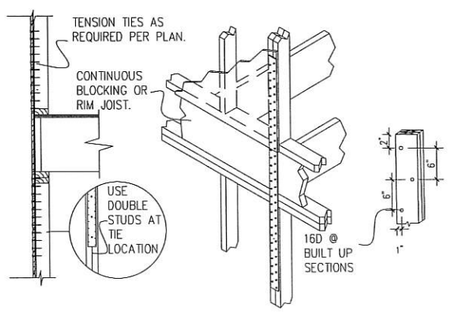
C S0.0 HOLD DOWN INSTALLATION NTS



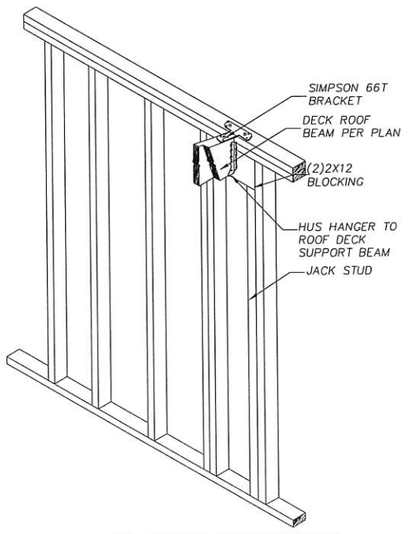
D S0.0 GABLE END BRACING NTS



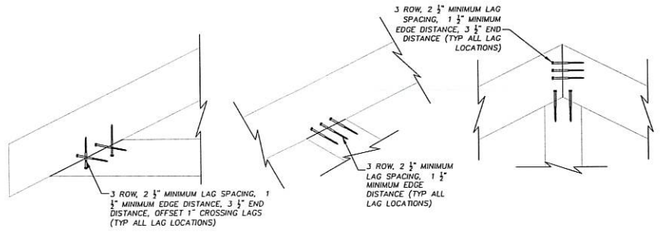
E S0.0 SHEAR TRANSFER BETWEEN FLOORS NTS

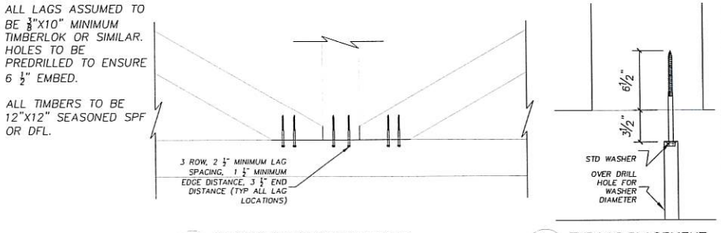


F S0.0 UPPER FLOOR STRAP NTS



G S0.0 EXTERIOR BEAM CONNECTION NTS





H S0.0 TIMBER TRUSS CONNECTIONS NTS

I S0.0 TYP LAG PLACEMENT NTS

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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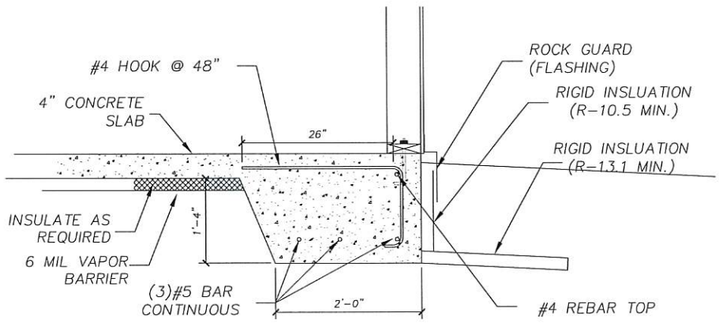
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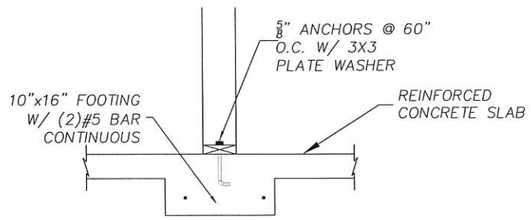
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REGISTERED PROFESSIONAL ENGINEER
9/8/2025
FOR CONSTRUCTION

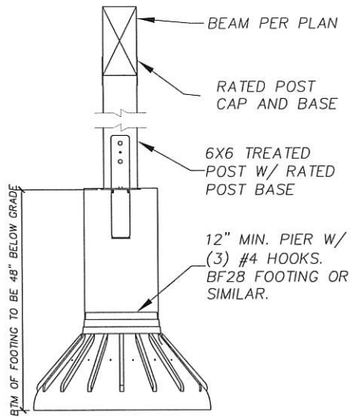
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Prepared for: DOUG MASSIE
Sheet Title: NOTES & DETAILS
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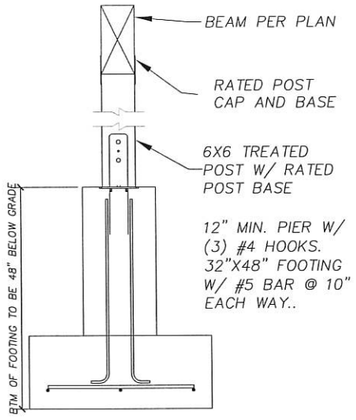
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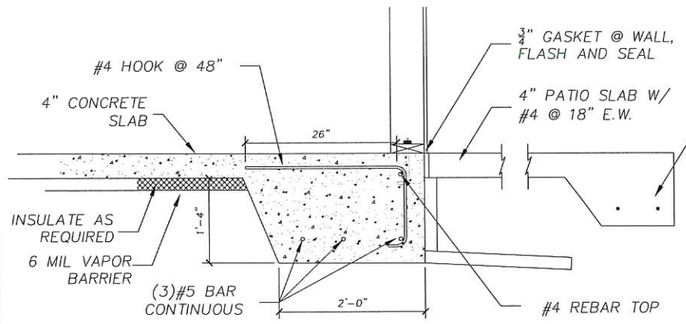




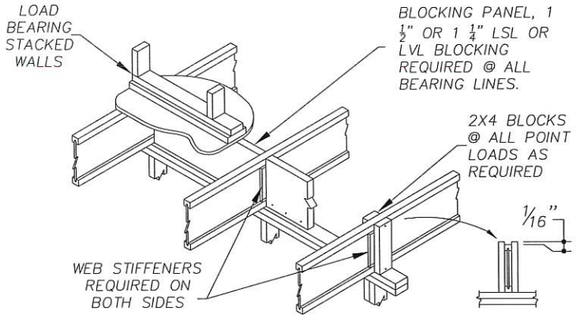




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NTS

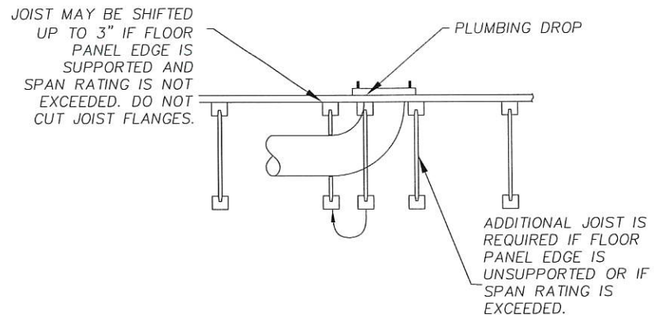


B S0.1 INTERIOR FOOTING
NTS



C S0.1 POST FOOTING
NTS

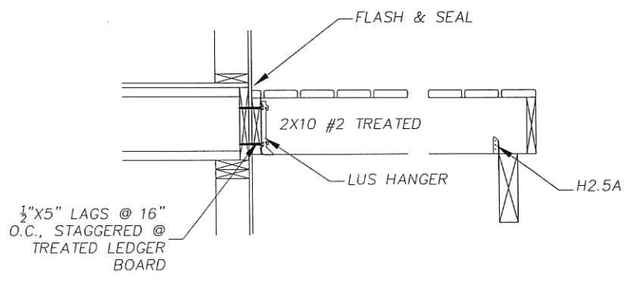
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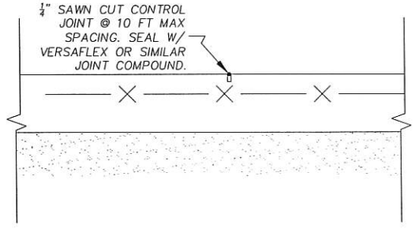


E S0.1 PERIMETER FOOTING @ PATIO
NTS

F S0.1 BLOCKING @ BEARING
NTS

G S0.1 PLUMBING DROP
NTS





H S0.1 DECK ATTCHMENTS
NTS

I S0.1 CONTROL JOINT
NTS

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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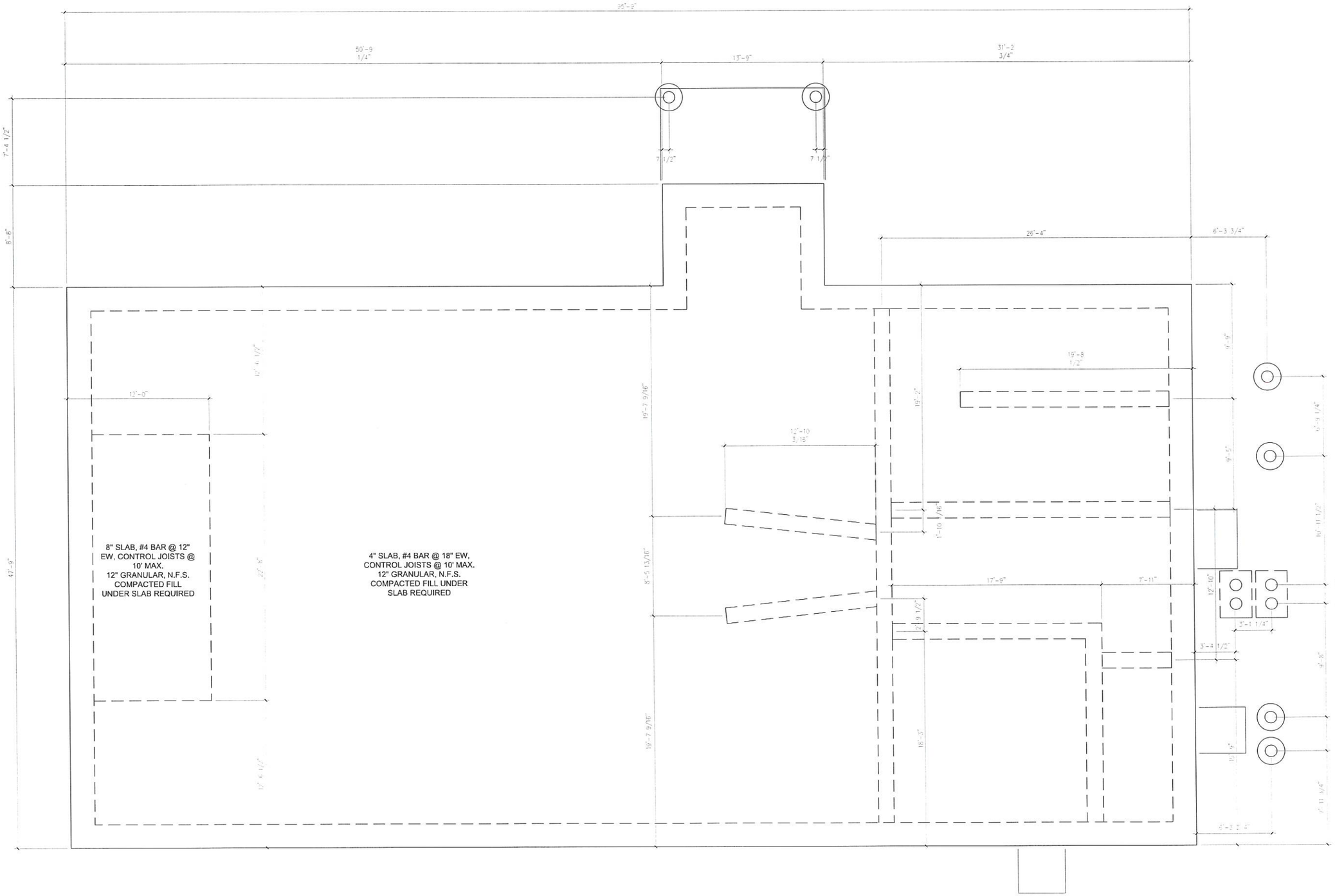
Sheet Issue Date: 9/8/2025
Drawn by: AA
Checked by: DC

STATE OF ALASKA 49TH
Andrew P. Adams
No. SE13603
REGISTERED PROFESSIONAL ENGINEER
9/8/2025
FOR CONSTRUCTION

Project Title: KNIK LANDING
Prepared for: DOUG MASSIE
Sheet Title: DETAILS
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

S0.1

Job: # 250801



1 S1.0 FOUNDATION PLAN
1/4" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

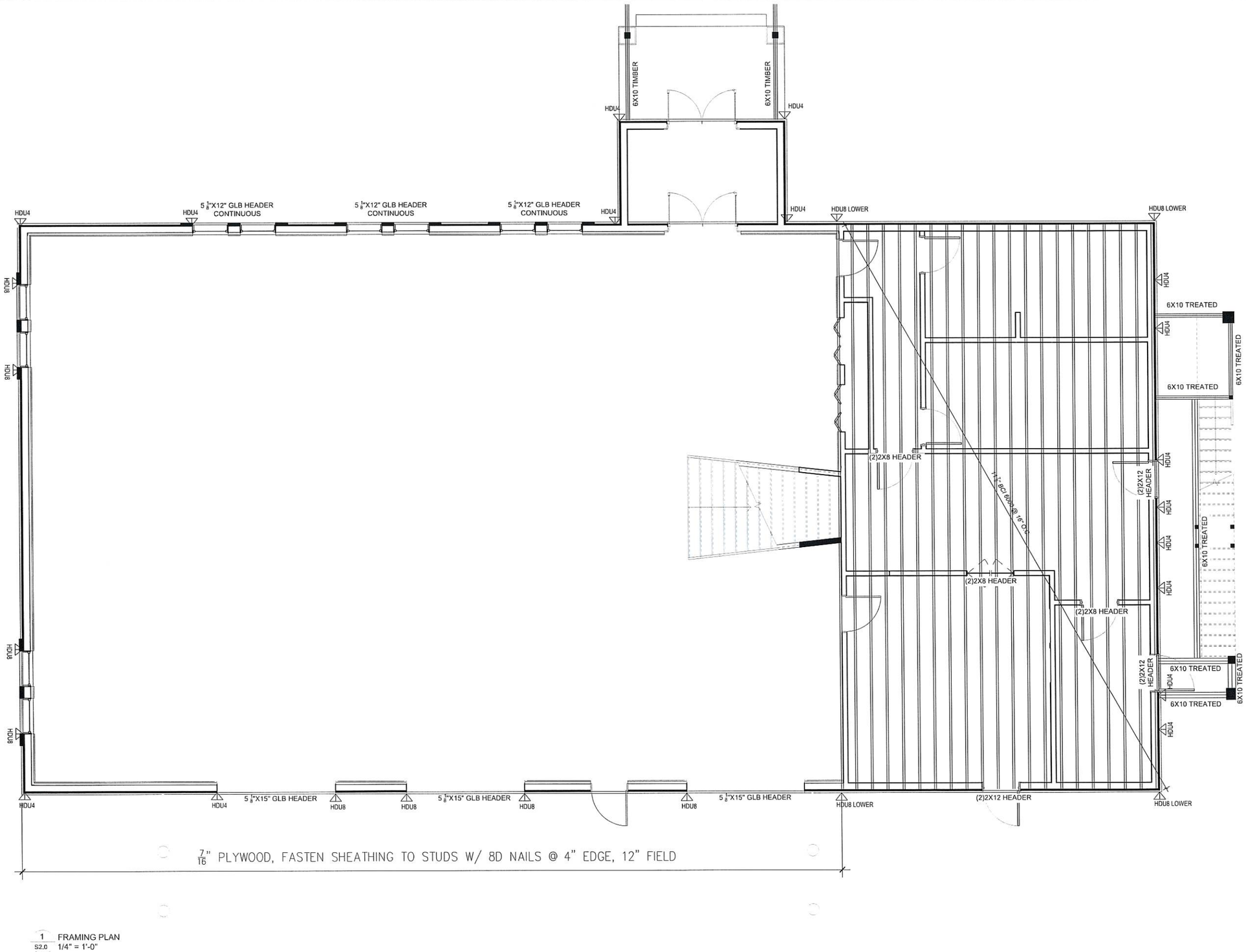
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Sheet Issue Date: 9/8/2025
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STATE OF ALASKA
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Andrew P. Adams
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9/8/2025
FOR CONSTRUCTION

Project Title: KNIK LANDING
Prepared for: DOUG MASSIE
Sheet Title: FOUNDATION
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

S1.0



1 / S2.0 FRAMING PLAN
1/4" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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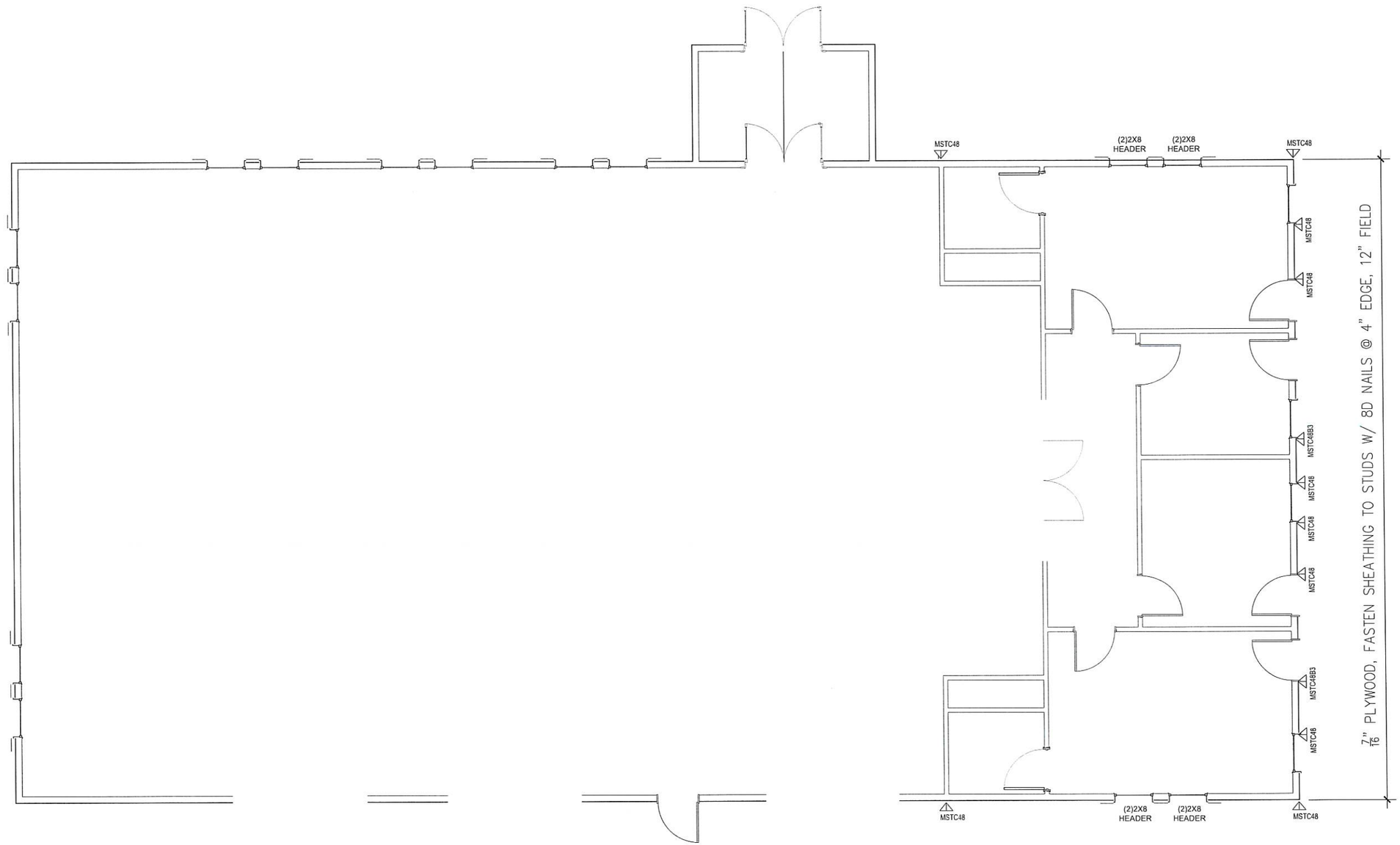
JOB: # 250801

Sheet Issue Date: 9/8/2025
Drawn by: AA
Checked by: DC

STATE OF ALASKA
49 TH
Andrew P. Adams
No. SE13603
REGISTERED PROFESSIONAL ENGINEER
9/8/2025
FOR CONSTRUCTION

Project Title: KNIK LANDING
Prepared for: DOUG MASSIE
Sheet Title: LOWER FLOOR FRAMING
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

S2.0



1 S2.0 FRAMING PLAN
1/4" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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STATE OF ALASKA 49TH
Andrew P. Adams
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9/8/2025
FOR CONSTRUCTION

Project Title: KNIK LANDING
Prepared for: DOUG MASSIE
Sheet Title: UPPER FLOOR FRAMING
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

S2.1

JOB: # 250801



1 S3.0 ROOF PLAN
1/4" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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Project Title: KNIK LANDING
Prepared for: DOUG MASSIE
Sheet Title: ROOF PLAN
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

S3.0

MECHANICAL SYMBOL LEGEND

PIPING SYMBOLS

SYMBOL	ABBR.	DESCRIPTION
———	W	WASTE
- - - - - -	V	VENT
—— — ——	CW	COLD WATER
—— — — ——	HW	HOT WATER
—— — — ——	HWC	HOT WATER RECIRCULATION
— — GHR — —	GHR	GLYCOL HEATING RETURN
—— GHS ——	GHS	GLYCOL HEATING SUPPLY
— — SMR — —	SMR	SNOW MELT RETURN
—— SMS ——	SMS	SNOW MELT SUPPLY
——G——	G	LOW PRESSURE GAS
——○		DEEP SEAL TRAP
——⊃		PIPE ELBOW DOWN
——○		PIPE ELBOW UP
—⊪—		UNION
—⋈—	GV/SOV	GATE VALVE/SHUT-OFF VALVE
—⋈—		PLUG VALVE
—⋈—		GAS COCK
—⋈—		GLOBE VALVE
—⋈—	MOV	MOTOR OPERATED VALVE 2-WAY
—⋈—	MOV	MOTOR OPERATED VALVE 3-WAY
—⋈—	PRV	PRESSURE REDUCING VALVE
—⋈—	RV	RELIEF VALVE
—⋈—	CV	CHECK VALVE
—⋈—		BALL VALVE (FULL PORT)
—⋈—		STRAINER
—⋈—		THERMOMETER
—⋈—		PRESSURE GAUGE W/ISO. VALVE
—⋈—		SOLENOID VALVE
—⋈—	BV	BALANCING VALVE
—⋈—		BUTTERFLY VALVE
—⋈—		FLEX CONNECTION
—□ Y	WHA	WATER HAMER ARRESTER (Y=SIZE)
—⋈—		AUTOMATIC FLOW CONTROL
—⊣	CO	CLEAN-OUT
—⊣	WCO	WALL CLEAN-OUT
—⊗	FCO	FLOOR CLEAN-OUT
—◎	FD	FLOOR DRAIN
—⋉—		PIPE ANCHOR
—⋉—		PIPE GUIDE

HVAC SYMBOLS

SYMBOL	ABBR.	DESCRIPTION
		NEW DUCTWORK
	S.L.	ACOUSTICALLY LINED DUCT
		THERMALLY INSULATED DUCT
UP		DUCTWORK UP
DN		DUCTWORK DOWN
		TURNING VANES
		AIR EXTRACTOR
	S/A	SUPPLY REG., GRILLE OR DIFFUSER
	R/A	RETURN/EXHAUST REG. OR GRILLE
		SUPPLY
		RETURN OR EXHAUST
		SUPPLY AIR SLOT WITH FLEX DUCT
		RETURN AIR SLOT
		FLEXIBLE DUCT
		FLEXIBLE CONNECTION
VD	VD,BD	VOLUME DAMPER
FD	FD	FIRE DAMPER
FSD	FSD	FIRE/SMOKE DAMPER
M AV	MOD	MOTOR OPERATED DAMPER
20"X12"		DUCT SIZE
	HC	HEATING COIL
	S/A	SUPPLY AIR
	R/A	RETURN/RELIEF AIR
	E/A	EXHAUST AIR
	O/A	OUTSIDE AIR
DD	DD	DUCT DETECTOR
		ACCESS PANEL
T T	T'STAT	THERMOSTAT,& W/INS. BASE
SP		STATIC PRESSURE SENSOR
S		SWITCH

ABBREVIATIONS

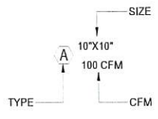
ABBR.	DESCRIPTION
EAT	ENTERING AIR TEMPERATURE
LAT	LEAVING AIR TEMPERATURE
EWT	ENTERING WATER (GLYCOL) TEMP.
LWT	LEAVING WATER (GLYCOL) TEMP.
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BDD	BACK DRAFT DAMPER
BG	BELOW GRADE
SS	STAINLESS STEEL
TP	TRAP PRIMER
VTR	VENT THRU ROOF
OADB	OUTSIDE AIR DRY BULB
AAV	AUTOMATIC AIR VENT

SYMBOLS DO NOT NECESSARILY APPEAR ON PLANS IN SAME SIZE AND PROPORTION AS SHOWN HERE.

PLANS DO NOT NECESSARILY USE ALL OF THE SYMBOLS SHOWN HERE.

DIFFUSER KEY

DIFFUSERS, GRILLES, AND REGISTERS SYMBOL:



MECHANICAL SPECIFICATIONS

GENERAL

1. THESE DRAWINGS ARE DIAGRAMATICAL IN NATURE AND DO NOT SHOW ALL FITTINGS AND/OR ACCESSORIES NECESSARY FOR A COMPLETE, FUNCTIONAL AND COORDINATED INSTALLATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THEIR WORK WITH OTHER TRADES AND WITH FIELD CONDITIONS.
2. ALL PLUMBING PIPING SHALL BE PER THE UNIFORM PLUMBING CODE, LATEST ADOPTED EDITION AND ALL LOCAL AMENDMENTS.
3. ALL MECHANICAL WORK SHALL BE PER THE INTERNATIONAL MECHANICAL CODE, LATEST ADOPTED EDITION AND ALL LOCAL AMENDMENTS.
4. ALL PENETRATIONS THROUGH FIRE RATED CONSTRUCTION (FIRE BARRIERS, SHAFTS AND HORIZONTAL ASSEMBLIES) MUST COMPLY WITH INTERNATIONAL BUILDING CODE, LATEST ADOPTED EDITION.
5. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND FEES.
6. THE CONTRACTOR SHALL PROVIDE SUBMITTAL DATA ON ALL PLUMBING AND MECHANICAL SYSTEMS. THIS INFORMATION SHALL BE BOUND IN A THREE RING BINDER, PROPERLY MARKED AND TAGGED. DATA SUBMITTED SHALL BE COMPLETE AND SUBMITTED AT ONE TIME AS PARTIAL SUBMITTALS WILL BE RETURNED WITHOUT REVIEW. SUBMITTALS SHALL BE CLEARLY MARKED TO INDICATE EXACT ITEM TO BE SUPPLIED.
7. NO SUBSTITUTION OF MATERIALS WILL BE ALLOWED WITHOUT OWNERS APPROVAL.
8. AT THE END OF THE PROJECT PROVIDE THE OWNER WITH THREE COPIES OF AN OPERATION AND MAINTENANCE MANUAL ASSEMBLED SPECIFICALLY FOR THIS PROJECT FOR ALL MECHANICAL EQUIPMENT FURNISHED UNDER THIS CONTRACT. INFORMATION SHALL BE COMPLETE AND SHALL PROVIDE SPECIFICATION, OPERATION AND MAINTENANCE INFORMATION, WARRANTY INFORMATION, AS WELL AS SOURCES OF REPLACEMENT PARTS.
9. PROVIDE A COMPLETE SET OF AS-BUILT DRAWING AT THE END OF THE PROJECT, DRAWINGS SHALL SHOW ALL CHANGES MADE TO THE PROJECT DURING CONSTRUCTION. AS-BUILT OF CONTROL DRAWINGS SHALL ALSO BE INCLUDED.
10. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS FOR A PERIOD ON ONE YEAR AFTER ACCEPTANCE OF THE PROJECT BY THE OWNER. THIS SHALL INCLUDE MATERIALS, EQUIPMENT AND WORKMANSHIP. ALL DEFECTS SHALL BE REPLACED OR REPAIRED TO THE OWNERS SATISFACTION.
11. PROVIDE MANUFACTURERS RECOMMENDED CLEARANCE AND ACCESS TO ALL EQUIPMENT.
12. ALL PIPING, DUCT WORK, AND EQUIPMENT SHALL BE SEISMICALLY RESTRAINED IN ACCORDANCE WITH THE SMACNA SEISMIC RESTRAINT MANUAL FOR MECHANICAL SYSTEMS.

PIPING

1. DOMESTIC HOT AND COLD WATER PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING (ASTM-B-88), WROUGHT SOLDER TYPE FITTINGS, 95/5 TIN-ANTIMONY OR LEAD FREE SILVER BEARING SOLDER. PRO-PRESS FIITINGS MAY BE USED WITH COPPER PIPE. PROVIDE WATER HAMMER ARRESTORS FOR ALL BATTERIES OF FIXTURES. PEX TUBING MAY BE USED WHERE ALLOWED BY CODE. NSF-61 CERTIFIED.
2. WASTE, AND VENT PIPE SHALL BE CAST IRON HUBLESS PIPE WITH S.S. BANDS OR "ABS" PIPING (ASTM D-3965). FITTINGS SHALL BE DRAIN, WASTE AND VENT AND SHALL BE INSTALLED AND TESTED PER THE REQUIREMENTS OF THE LATEST ADOPTED EDITION OF THE UNIFORM PLUMBING CODE.
3. PROVIDE BACKFLOW PREVENTERS WHERE REQUIRED BY THE UPC AND OR THE LOCAL AUTHORITIES.
4. VALVES FOR PLUMBING SYSTEMS SHALL BE BALL VALVES. PROVIDE ISOLATION VALVES FOR EACH FIXTURE BATTERY AND WHERE INDICATED ON DRAWINGS.
5. NATURAL GAS PIPING SHALL BE SCHEDULE 40 STEEL PIPE WITH THREADED FITTINGS. GAS VALVES SHALL BE AGA APPROVED.

VALVES

1. BALL VALVES UP TO 2" SHALL BE TWO PIECE, FULL PORT BRONZE, CLASS 150 VALVES WITH TEFLON SEATS.
2. BALL VALVES 2" AND LARGER SHALL BE FULL PORT STEEL, CLASS 150 WITH TEFLON SEATS.
3. CHECK VALVES SHALL BE CLASS 125, BRONZE WITH SWEAT OR THREADED FITTINGS.
4. BALANCE VALVES ARE BASED ON TACO ACCU-FLOW OR B&G CIRCUIT SETTERS. BALBNCE VALVE SIZES ARE BASED ON THE BELOW CHART.

VALVE SIZE	RANGE (GPM)
1/2"	< - 1.5
3/4"	1.5 - 3.0
1"	3.0 - 6.0
1-1/4"	6.0 - 11.0
1-1/2"	11.0 - 17.0
2"	17.0 - 37.0
2-1/2"	37.0 - 66.0

PLUMBING

1. PLUMBING FIXTURES SHALL BE COMMERCIAL GRADE COMPLETE WITH ALL TRIM. FOR FIXTURE MANUFACTURER, MODEL ETC, SEE THE PLUMBING FIXTURE SCHEDULE.
2. PLUMBING EQUIPMENT SHALL BE COMMERCIAL GRADE COMPLETE WITH ALL SAFETIES AND TRIM. FOR INFORMATION ON MODEL ETC., SEE EQUIPMENT SCHEDULES.

HEATING

1. HEATING EQUIPMENT SHALL BE COMMERCIAL GRADE COMPLETE WITH ALL SAFETIES AND TRIM. FOR INFORMATION ON MODEL ETC., SEE EQUIPMENT SCHEDULES.

SHEET METAL

1. DUCTWORK SHALL BE FABRICATED SHEET METAL AND INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
2. DIMENSIONS SHOWN FOR DUCTWORK ARE THE INSIDE CLEAR DIMENSIONS. CONTRACTOR SHALL ADD TO THE DUCT ALLOWANCES FOR SOUND LINING.
3. PAINT INTERIOR OF ALL DUCTWORK VISIBLE THROUGH GRILLES, REGISTERS AND DIFFUSERS FLAT BLACK. FLEX DUCT SHALL ONLY BE USED AT DIFFUSER CONNECTIONS AND SHALL BE THE SAME DIAMETER AS THE DIFFUSER NECK.
4. FLEX DUCT LENGTH SHALL NOT EXCEED 5 FEET, AND SHALL NOT BE INSTALLED WITH MORE THAN ONE (1) 90° FULL RADIUS BEND.

INSULATION

1. INSULATE ALL COLD PIPES WITH 1" FIBERGLASS INSULATION, WITH VAPOR BARRIER JACKET. (FIBERGLASS 25ASJ/SSL-II).
2. INSULATE ALL HOT PIPES, UP TO 2", WITH 1" FIBERGLASS INSULATION, PIPES 2-1/2" OR LARGER, INSULATE WITH 1-1/2" FIBERGLASS INSULATION. (FIBERGLASS 25ASJ/SSL-II).
3. INSULATE EXHAUST DUCT WORK FROM FAN TO THE EXTERIOR.
4. 2" INSULATION ON ALL OSA, AND RELIEF AIR DUCTWORK.
5. INSULATE ALL ABS & PVC PIPING IN CEILING PLENUM WITH 1" FIBERGLASS INSULATION (FIBERGLASS 25ASJ/SSL-II), WHEN APPROVED BY AUTHORITY HAVING JURISIDICTION.

CONTROLS

1. THE CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERATIONAL CONTROL SYSTEM AS REQUIRED TO PROVIDE EQUIPMENT CONTROL.

BALANCING

1. BALANCE HVAC & PLUMBING SYSTEMS USING NATIONAL ENVIROMENTAL BALANCING BUREAU (NEBB) RECOMMENDED PROCEDURES.

SAI CONSULTING ENGINEERS
SPURLOCK & ASSOCIATES, INC.
3705 ARCTIC BLVD. #1657
ANCHORAGE, AK. 995503
1150 S. COLONY WAY ST.3, PMB 370
PALMER, AK 99645
TEL: (907) 344-8222
TEL: (907) 745-8325
AECC 734

STATE OF ALASKA — 49TH — PROFESSIONAL ENGINEER — 09/09/25

KNIK LANDING
10204 S. Knik Goose Bay Road, Wasilla, AK

DATE:	09/09/25
DRAWN:	BKS
CHECKED:	TWS
JOB NO:	25982

REV.	DATE	DESCRIPTION

SHEET TITLE:
LEGENDS, ABBREVIATIONS & SCHEDULES

SHEET NUMBER:
M1.1

Permit Drawings

FILENAME: Users\jm\OneDrive - SAI Alaska\Projects\25-Projects\25982\Architect\5982Mechanical.rvt
DATE 9/9/2025 9:07:08 AM

FIXTURE CONECTION SCHEDULE

TAG	FIXTURE	WASTE SIZE	VENT SIZE	HW SIZE	CW SIZE	REMARKS (1)
P1-1	WATER CLOSET	3"	2"	—	1/2"	FLOOR MOUNTED TANK TYPE WATER CLOSET WITH TRIM.
P1-2	WATER CLOSET "ADA"	3"	2"	—	1/2"	FLOOR MOUNTED TANK TYPE WATER CLOSET WITH TRIM. "ADA" APPROVED.
P2-1	URINAL	2"	2"	—	3/4"	WALL MOUNTED URINAL WITH FLUSHVALVE, CARRIER AND ALL REQUIRED TRIM.
P3-1	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	COUNTER SET LAVATORY WITH FAUCET AND TRIM. (2)
P3-2	LAVATORY "ADA"	1-1/2"	1-1/2"	1/2"	1/2"	COUNTER SET LAVATORY WITH FAUCET AND TRIM. "ADA" APPROVED. (2)
P4-1	KITCHEN SINK	2"	1-1/2"	1/2"	1/2"	COUNTER SET TWO COMPARTMENT SINK WITH FAUCET AND TRIM.
P4-2	3-COMPARTMENT SINK	2"	1-1/2"	1/2"	1/2"	FREE STANDING THREE COMPARTMENT SINK WITH FAUCET AND TRIM.
P4-3	MOP SINK	2"	1-1/2"	1/2"	1/2"	FLOOR SET MOP SINK WITH FAUCET AND TRIM.
P4-4	UTILITY SINK	2"	1-1/2"	1/2"	1/2"	FREE STANDING SINGLE COMPARTMENT UTILITY SINK WITH FAUCET AND TRIM.
P5-1	WASHER BOX	2"	2"	1/2"	1/2"	GUY GRAY WASHER BOX WITH ALL REQUIRED TRIM
FD-1	FLOOR DRAIN	2"	1-1/2"	—	—	J.R. SMITH FLOOR DRAIN WITH TRAP PRIMER.
FS-1	FLOOR SINK	2"	1-1/2"	—	—	J.R. SMITH FLOOR SINK WITH TRIM.
HB-1	HOSE BIBB	—	—	—	1/2"	J.R. SMITH FROST FREE HOSE BIBB.

(1) PLUMBING FIXTURES TO BE SELECTED BY ARCHITECT AND OWNER.

(2) PROVIDE WITH ASSE 1070 POINT OF USE VALVE.

PUMP SCHEDULE

TAG	LOCATION	SERVICE	FLUID	FLUID TEMP.	GPM	HEAD FT.	MOTOR HP /VOLTS/ PH	REMARKS
CP-1	MECH. ROOM	HOT WATER RE-CIRC.	WATER	120	3.0	15'	1/12/120/1	GRUNDFOS UP 15-42B7
CP-2	MECH. ROOM	HEATING CIRCULATION	50/50% P.G.	180	12.0	15'	107.7W/120/1	GRUNDFOS MAGNA3 32-100

ELECTRIC HEATING SCHEDULE

TAG	DISCRIPTION	SCFM	KW	NOM. SIZE	MOTOR HP /VOLTS/ PH	REMARKS
EBB-1	ELECTRIC BASEBOARD	—	0.75	36"	--/120/1	REZNOR ELECTRIC BASEBOARD HEATER MODEL "EBHB-08-AK1E". FURNISH COMPLETE WITH ALL REQUIRED TRIM.
EBB-2	ELECTRIC BASEBOARD	---	1.0	48"	--/120/1	REZNOR ELECTRIC BASEBOARD HEATER MODEL "EBHB-10-AK1E". FURNISH COMPLETE WITH ALL REQUIRED TRIM.
EBB-3	ELECTRIC BASEBOARD	---	1.2	60"	--/120/1	REZNOR ELECTRIC BASEBOARD HEATER MODEL "EBHB-60-AK1E". FURNISH COMPLETE WITH ALL REQUIRED TRIM.
ECUH-1	ELECTRIC CABINET UNIT HEATER	—	2.0	—	--/120/1	REZNOR ELECTRIC CABINET UNIT HEATER MODEL "EMC-02-AK3E-HG5". FURNISH COMPLETE WITH ALL REQUIRED TRIM.

(1) FURNISH COMPLETE WITH ALL REQUIRED TRIM.

EQUIPMENT SCHEDULE

WH-1

WATER HEATER: BRADFORD WHITE GAS FIRED WATER HEATER MODEL "EF-60T-150-3N". 150,000 BTU/HR. 169 GALLONS PER HOUR RECOVERY WITH 100 DEGREE RISE. 60 GALLONS STORAGE. 120 VOLT, 1.8 AMPS. PROVIDE WITH EXPANSION TANK.

B-1

BOILER: LOCHINVAR KNIGHT GAS FIRED BOILER, MODEL "WHN111". 110 MBH INPUT, 102 MBH OUTPUT. FURNISH COMPLETE WITH ALL REQUIRED TRIM TO INCLUDE BUT NOT LIMITED TO CONDENSATE NEUTRALIZATION KIT, REQUIRED CONTROLS AND SAFETIES. 120 VOLT. PROVIDE MANUFACTURERS VENT TERMINATION KIT.

GMT-1

GLYCOL TANK: AXIOM MF200 PRESSURE PAL MINI SYSEM FEEDER, 6.0 GALLONS, WALL MOUNTED, 120 VOLT, 50 WATTS.

HYDRONIC HEATING SCHEDULE

TAG	DISCRIPTION	SCFM	EWT	LWT	GPM	FLUID	MOTOR HP /VOLTS/ PH	REMARKS
HC-1	HEATING COIL	1,150	180	160	11.07	50/50% P.G.	--/---/--	TRANE HEATING COIL, 24"x24" WITH THREE-WAY MODULATING CONTROL VALVE. PROVIDE COMPLETE WITH ALL REQUIRED TRIM (1)

(1) FURNISH COMPLETE WITH ALL REQUIRED TRIM.

Permit Drawings

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KNIK LANDING

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REV.	DATE	DESCRIPTION

SHEET TITLE: MECHANICAL SCHEDULES

SHEET NUMBER: M1.2

FILENAME: C:\Users\tom\OneDrive - SAI Alaska\Projects\25-Projects\25982-Architect\982Mechanical.rvt
DATE 9/9/2025 9:07:08 AM

AIR HANDLER UNIT SCHEDULE

TAG	LOCATION	SCFM	RPM	E.S.P.	COOLING TONS	GAS INPUT MBH	HEATING OUTPUT MBH	USE	DISC.	MOTOR HP /VOLTS/ PH	REMARKS
AHU-1	MECH. ROOM	1,200	—	1.5"	—	60.0	58.0	S/A	HORIZ.	3/4/120/1	(2) SEE SPEC. BELOW (FLA 8.8) (3)
AHU-2	MECH. ROOM	2,000	—	1.5"	—	120.0	117.0	S/A	HORIZ.	1/120/1	(2) SEE SPEC. BELOW (FLA 11.5) (3)

(1) 120 VOLT/1/60

(2) PACKAGED GAS/ELECTRICAL AIR HANDLING UNIT.

(3) SET MINIMUM OUTSIDE AIR AT 15%.

(4) CONTRACTOR SHALL ENLIST THE SERVICES OF A STRUCTURAL ENGINEER FOR FINALLOCATION OF RTU'S AND SHALL PROVIDE ANY MODIFICATIONS TO SSTRUCTURE REQUIRED FOR THE NEW UNITS.

(5) STRUCTURAL AND SEISMIC CALCULATIONS FOR UNITS SHALL BE PROVIDED BY OTHERS.

AHU-1

FURNISH A INTERNATIONAL COMFORT PRODUCTS (ICP) MODEL"IG 96BTN060 1716B" UNIT OR EQUIVALENT IN ACCORDANCE WITH THE PERFORMANCE DESCRIBED ABOVE. PACKAGED UNIT SHALL BE DESIGNED FOR OUTDOOR INSTALLATION AND SHALL BE MOUNTED INDOOR.

THE HEATING SECTION SHALL BE INDIRECT NATURAL GAS WITH CLAM SHELL HEAT EXCHANGER. INTERMITTENT SPARK IGNITION WITH PROVEN PILOT. TWO-STAGE FIRING, POWER VENTED AND WITH ELECTRIC IGNITION CONTROL WITH FLAME SENSOR TO LOCK-OUT GAS VALVE ON IGNITION FAILURE.

THE FAN SECTION SHALL CONSIST OF A BELT DRIVEN BLOWER AND A FILTER SECTION WITH 1" THROW AWAY FILTERS.

OPTIONS SHALL INCLUDE AN ECONOMIZER PACKAGE WITH ENTHALPY HIGH LIMIT AND CO2 OVERRIDE, A BAROMETRIC RELIEF DAMPER PACKAGE, AND AN ELECTRONIC PROGRAMMABLE THERMOSTAT, WITH AUTOMATIC HEAT/COOL CHANGE OVER.

ELECTRICAL REQUIREMENTS: UNIT SHALL BE FURNISHED WITH HIGH EFFICIENCY MOTORS AND MAGNETIC STARTERS. THERMOSTAT HONEY WELL TB-8220.

AHU-2

FURNISH A INTERNATIONAL COMFORT PRODUCTS (ICP) MODEL"IG 96BTN120 2422B" UNIT OR EQUIVALENT IN ACCORDANCE WITH THE PERFORMANCE DESCRIBED ABOVE. PACKAGED UNIT SHALL BE DESIGNED FOR OUTDOOR INSTALLATION AND SHALL BE MOUNTED INDOOR.

THE HEATING SECTION SHALL BE INDIRECT NATURAL GAS WITH CLAM SHELL HEAT EXCHANGER. INTERMITTENT SPARK IGNITION WITH PROVEN PILOT. TWO-STAGE FIRING, POWER VENTED AND WITH ELECTRIC IGNITION CONTROL WITH FLAME SENSOR TO LOCK-OUT GAS VALVE ON IGNITION FAILURE.

THE FAN SECTION SHALL CONSIST OF A BELT DRIVEN BLOWER AND A FILTER SECTION WITH 1" THROW AWAY FILTERS.

OPTIONS SHALL INCLUDE AN ECONOMIZER PACKAGE WITH ENTHALPY HIGH LIMIT AND CO2 OVERRIDE, A BAROMETRIC RELIEF DAMPER PACKAGE, AND AN ELECTRONIC PROGRAMMABLE THERMOSTAT, WITH AUTOMATIC HEAT/COOL CHANGE OVER.

ELECTRICAL REQUIREMENTS: UNIT SHALL BE FURNISHED WITH HIGH EFFICIENCY MOTORS AND MAGNETIC STARTERS. THERMOSTAT HONEY WELL TB-8220.

AIR OUTLET SCHEDULE

TAG	UNIT SIZE	SCFM	FINISH	USE	REMARKS (1)
A	12"x4"	AS NOTED	----	S/A	TITUS "DL" DUCT MOUNTED DRUM DIFFUSER WITH O.B.D.
B	4"x 10"	AS NOTED	----	S/A	SHOEMAKER "TMS" CEILING DIFFUSER WITH O.B.D.
C	12"x12"	AS NOTED	----	S/A	TITUS "TMS" CEILING DIFFUSER WITH O.B.D.
J	8"x8"	AS NOTED	----	R/A	TITUS "50-F" DUCT MOUNTED RETURN GRILLE WITH O.B.D.
Q	12" x 12"	AS NOTED	----	R/A	TITUS "50-F" CEILING RETURN GRILLE
R	12" x 12"	AS NOTED	----	R/A	TITUS "350-RL" WALL RETURN GRILLE
U	36" x 12"	AS NOTED	----	R/A	TITUS "50-F" WALL RETURN GRILLE

(1) DIFFUSER NECK SIZE TO MATCH DUCT SIZE ON DRAWINGS..

(2) CONFIRM BORDER TYPE BEFORE ORDERING DIFFUSERS.

FAN SCHEDULE

TAG	LOCATION	SCFM	RPM	E.S.P.	TYPE	NOM. SIZE	USE	DISC.	MOTOR HP /VOLTS/ PH	REMARKS
EF-1	TOILET ROOM	150	—	0.25"	CENTR.	—	E/A	HORIZ.	FR/120/1	PANASONIC "FV 20VQ3" WITH TRIM (1)
EF-2	TOILET ROOM	450	—	0.375"	CENTR.	—	E/A	HORIZ.	1/4/120/1	GREENHECK "SQ 90" WITH DISCHARGE DAMPER, AND ALL REQUIRED TRIM
EF-3	MECH. ROOM	200	—	0.25"	CENTR.	—	E/A	HORIZ.	1/4/120/1	GREENHECK "SQ 75" WITH DISCHARGE DAMPER, AND ALL REQUIRED TRIM
CF-1	MAIN HALL	—	—	—	PADDLE	—	—	HORIZ.	FR/120/1	BIGASS "HAIKU" 52" INDOOR, UNIVERSAL WHITE FINISH, CEILING FAN 120 VOLT, 20.1 WATTS. FURNISH COMPLETE WITH ALL REQUIRED TRIM

(1) FURNISH WITH SPEED CONTROLLER, BACKFRAFT DAMPER, TIME DELAY WALL SWITCH AND WALL OR ROOF CAP.

(2) FURNISH WITH SPEED CONTROLLER, BACKFRAFT DAMPER, WALL MOUNTED REVERSE ACTING THERMOSTAT, AND INLET GUARD.

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PALMER, AK 99645
TEL: (907) 745-8325
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KNIK LANDING

10204 S. Knik Goose Bay Road, Wasilla, AK

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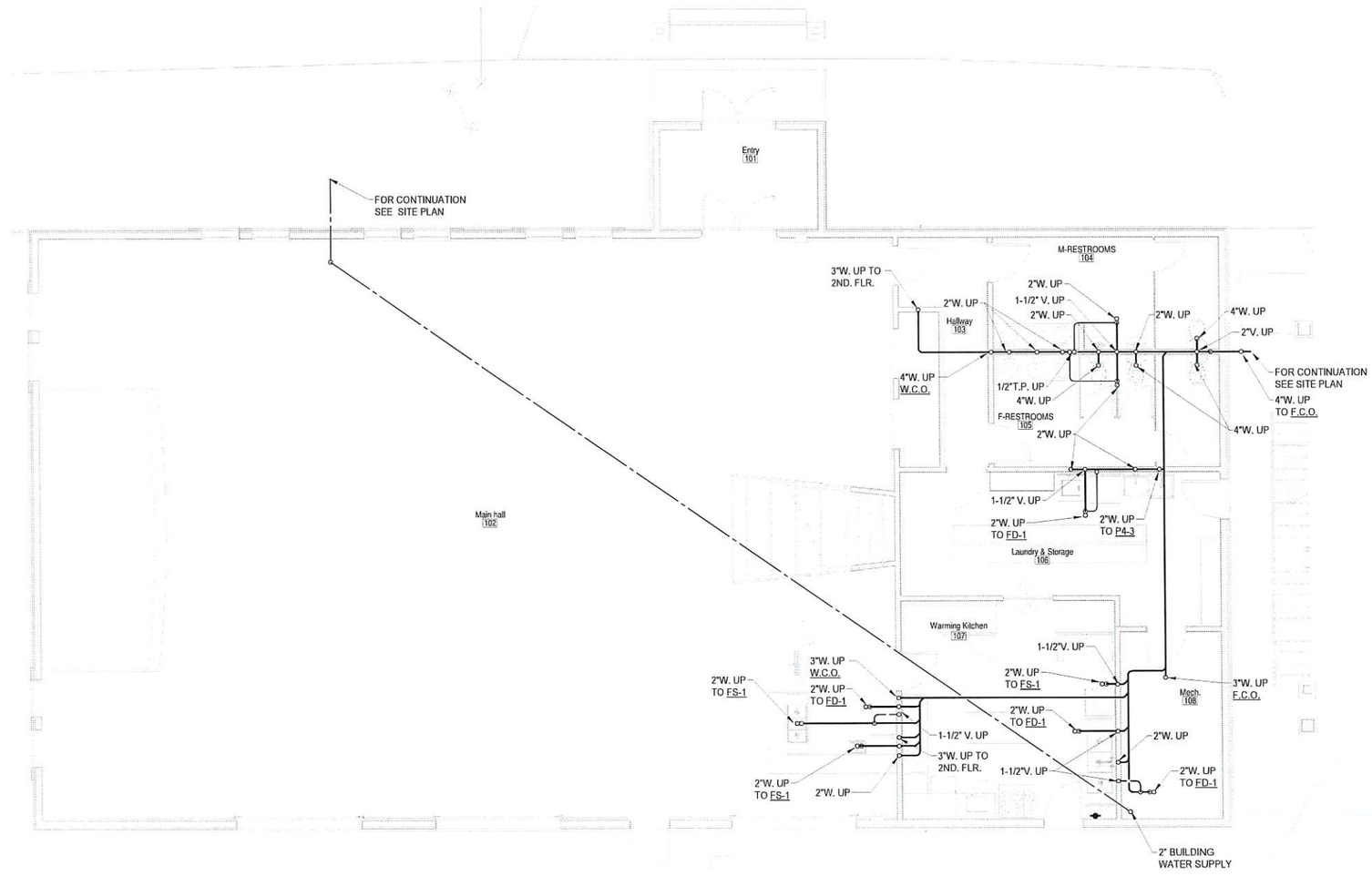
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SHEET TITLE: MECHANICAL SCHEDULES

SHEET NUMBER: **M1.3**

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1 Underground Plumbing - Plan
3/16" = 1'-0"

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STATE OF ALASKA
49 TH
09/09/25

KNIK LANDING

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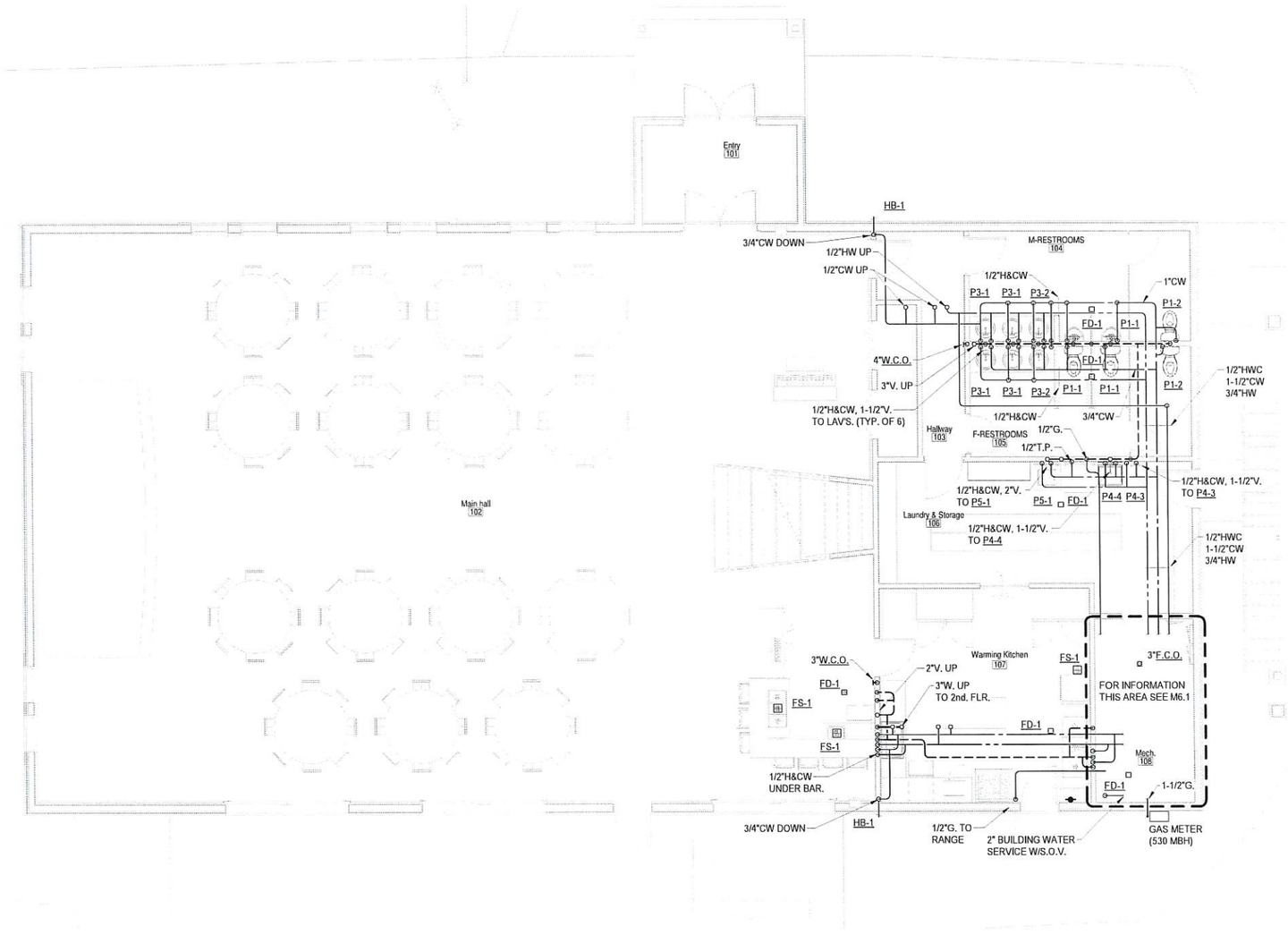
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SHEET TITLE:
Underground Plumbing - Plan

SHEET NUMBER:
M2.0

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1 1st. FLR. Plumbing - Plan
3/16" = 1'-0"

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KNIK LANDING

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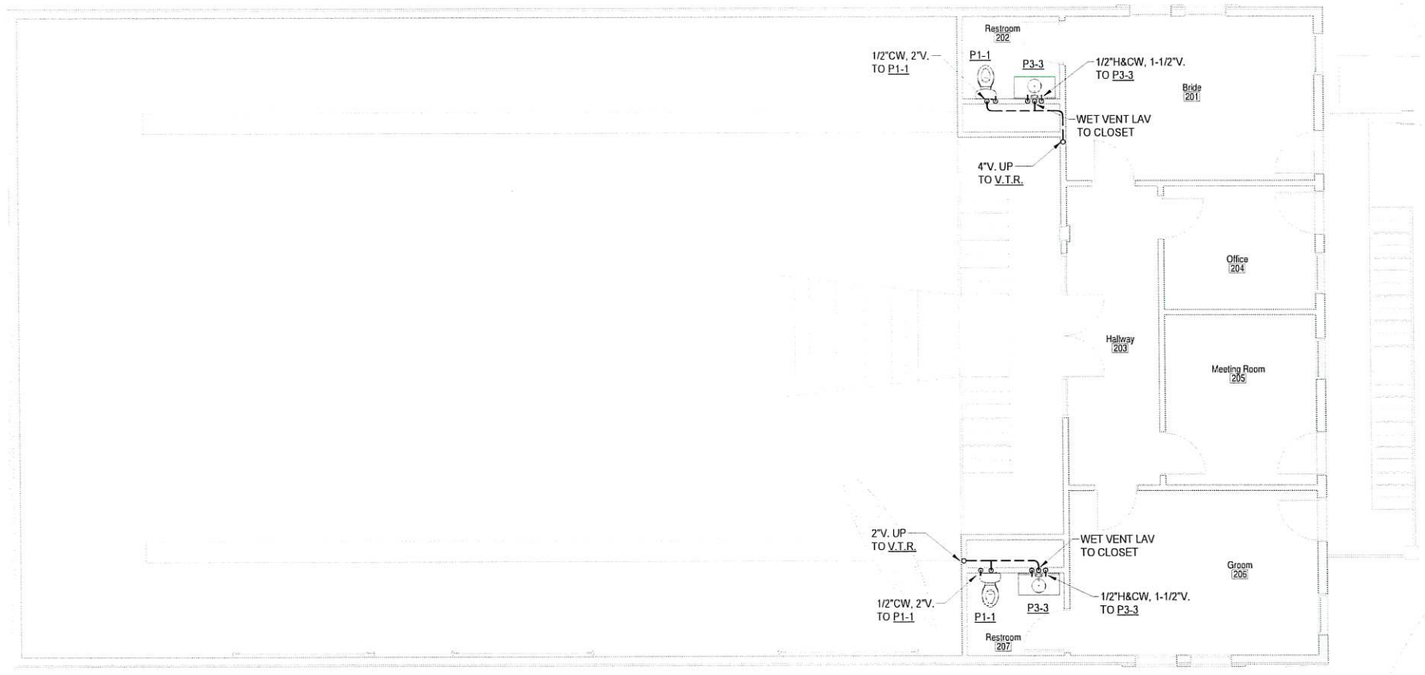
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SHEET NUMBER:
M2.1

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1 2nd. Floor Plumbing - Plan
3/16" = 1'-0"

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KNIK LANDING

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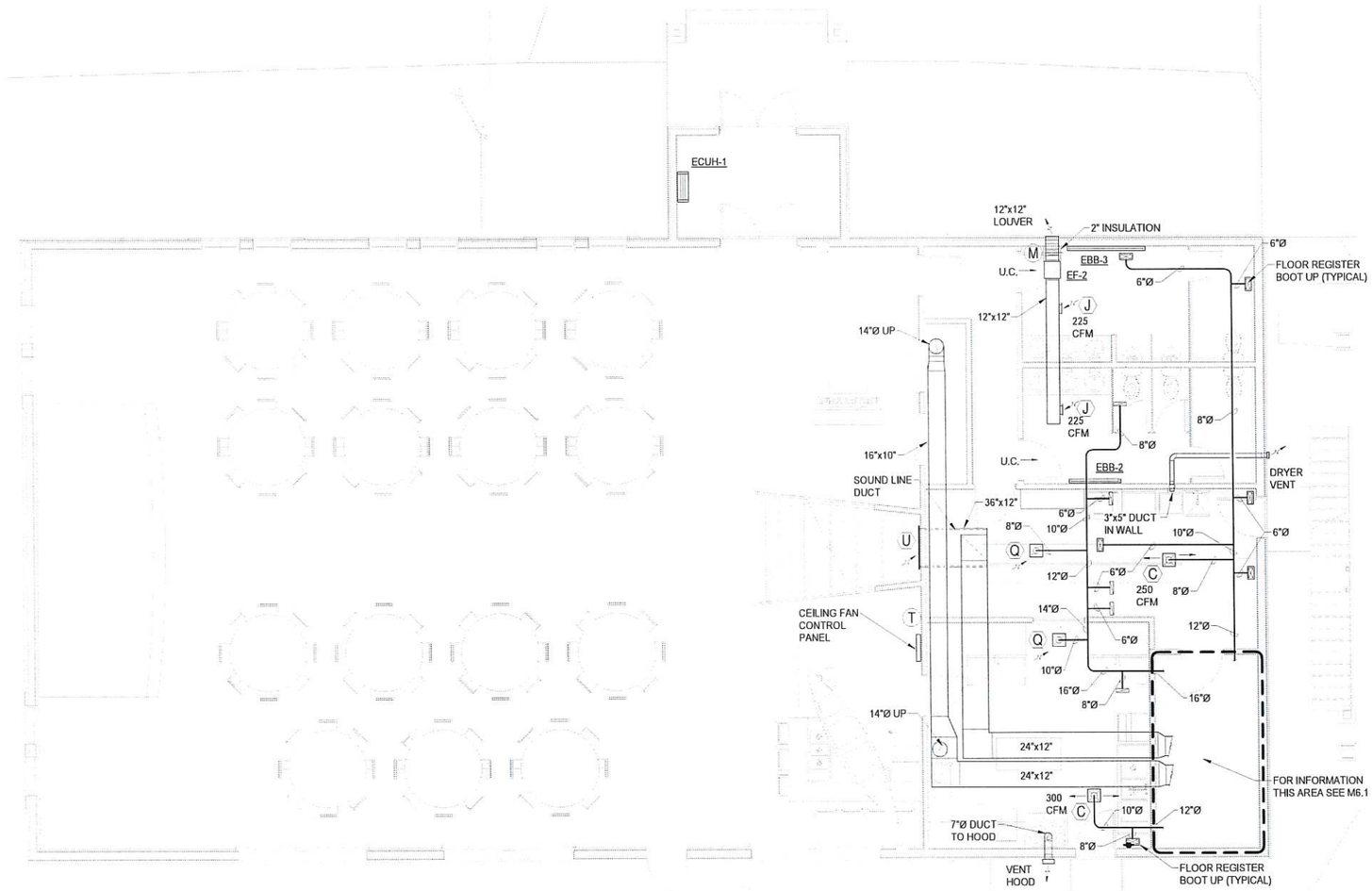
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SHEET TITLE:
2nd. Flr. Plumbing - Plan

SHEET NUMBER:
M2.2

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1 1st. Flr. HVAC - Plan
3/16" = 1'-0"

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09/09/25

KNIK LANDING
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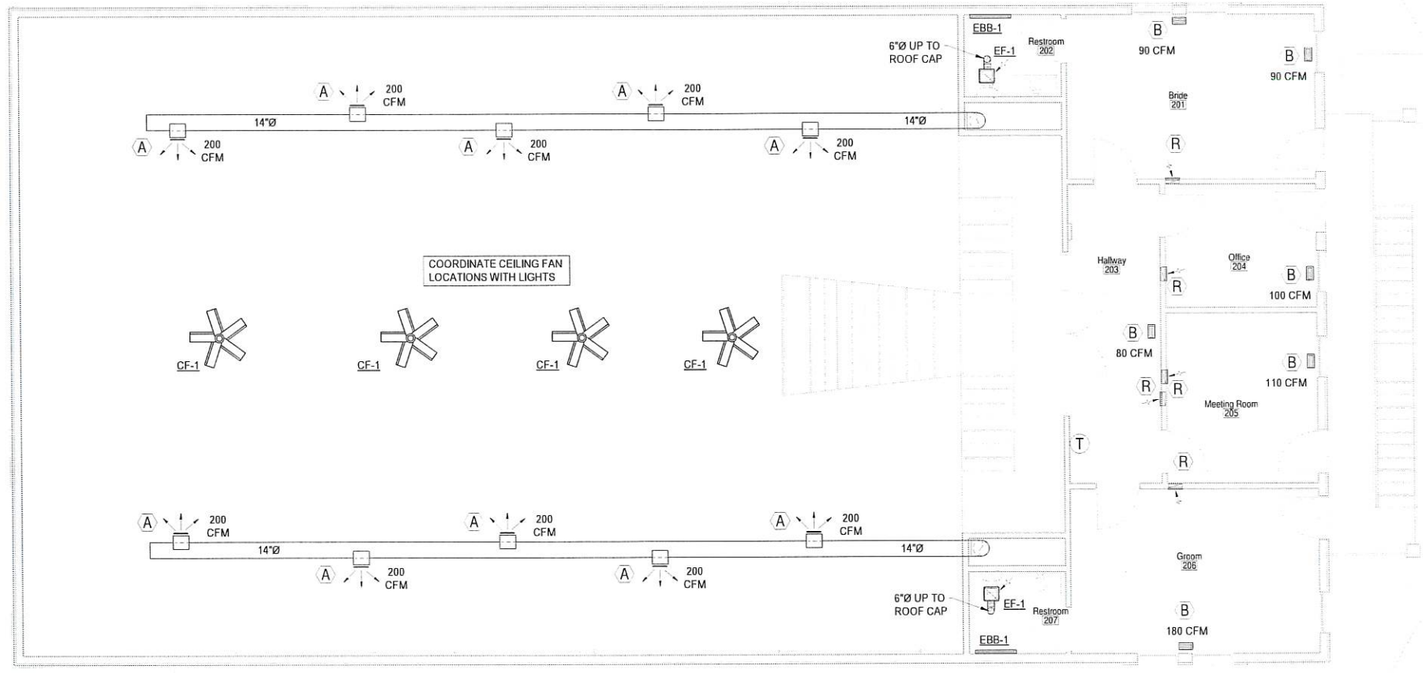
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SHEET TITLE:
1st, Flr. HVAC - Plan

SHEET NUMBER:
M3.1

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1 2nd. Flr. HVAC - Plan
3/16" = 1'-0"

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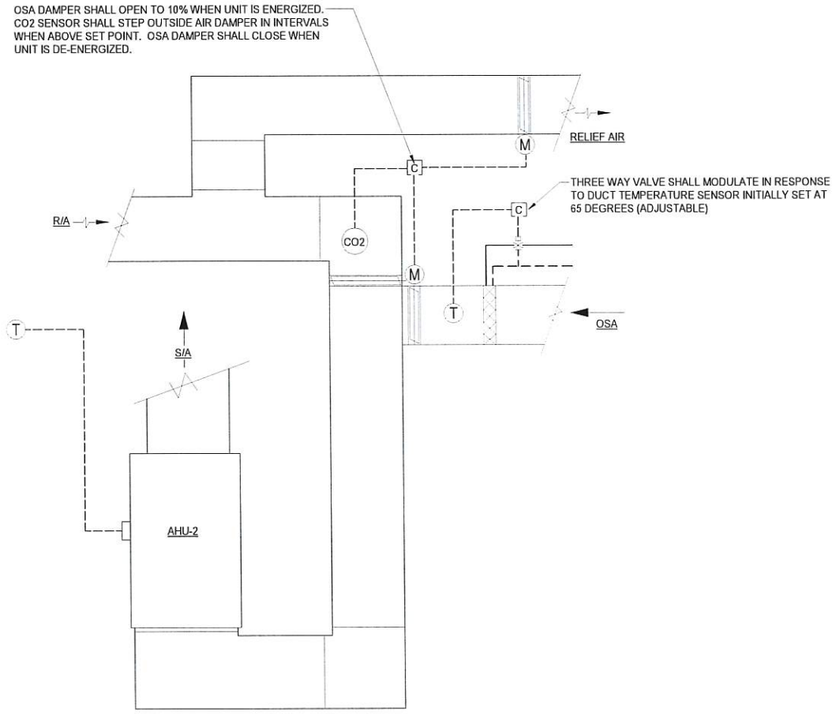
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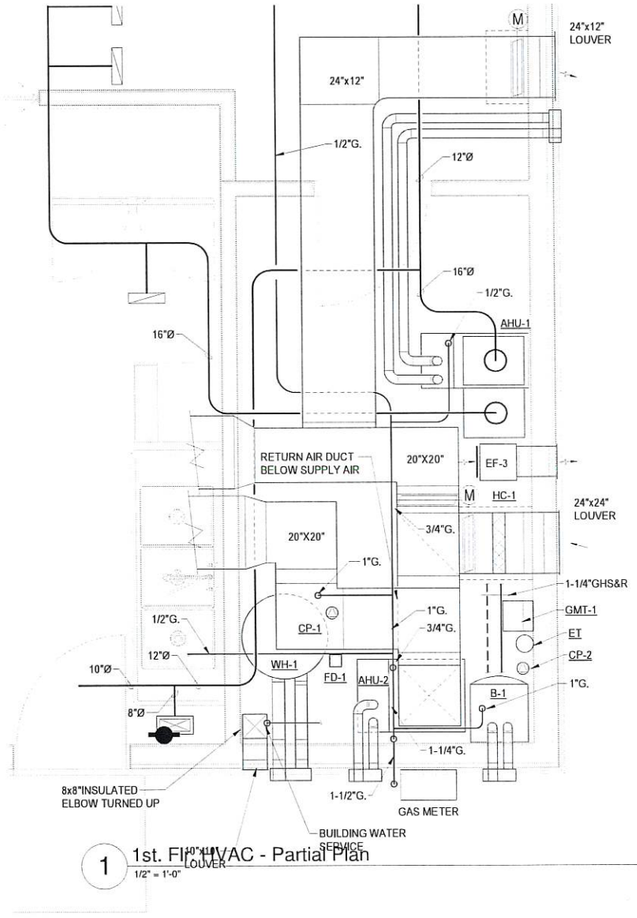
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SHEET NUMBER: M3.2

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2 AHU-2 CONTROL SCHEMATIC
12" = 1'-0"



1 1st. Flr. HVAC - Partial Plan
1/2" = 1'-0"

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KNIK LANDING

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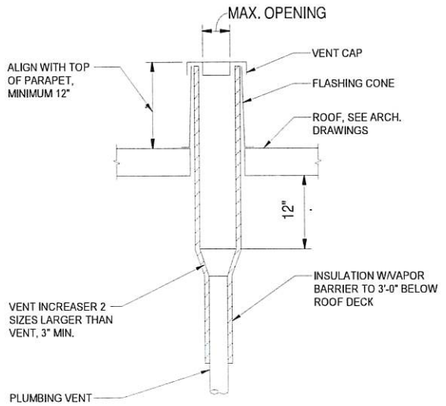
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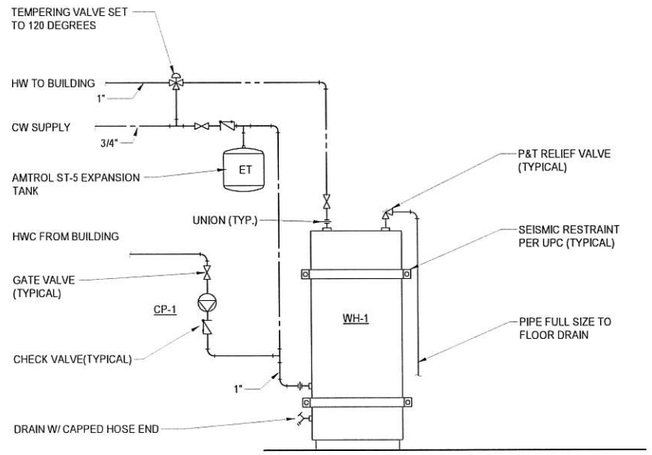
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Permit Drawings

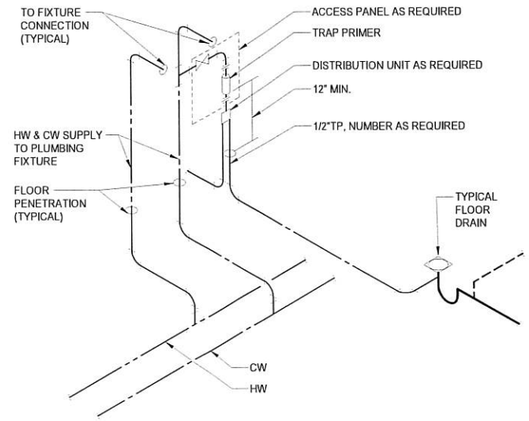
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1 VENT THRU ROOF DETAIL
12" = 1'-0"



2 WATER HEATER DETAIL
12" = 1'-0"



3 AUTOMATIC TRAP PRIMER DETAIL
12" = 1'-0"

Permit Drawings

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SHEET TITLE:
MECHANICAL DETAILS

SHEET NUMBER:
M8.1

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ELECTRICAL SPECIFICATIONS

"X" = PROVIDE SUBMITTAL

26 00 00 - GENERAL REQUIREMENTS: ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC), STATE, MUNICIPAL, FEDERAL LAWS, AND AMENDMENTS GOVERNING THE PROJECT. ALL WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A CERTIFIED ADMINISTRATOR JOURNEYMAN ELECTRICIAN.

ALL ELECTRICAL EQUIPMENT SHALL BE NEW COMMERCIAL GRADE AND INCLUDE THE SEAL OF A NATIONALLY RECOGNIZED TESTING LABORATORY FOR THE PURPOSE IT IS INSTALLED AS A COMPLETE ASSEMBLY. THE CONTRACTOR SHALL SUBMIT A REQUEST FOR ANY SUBSTITUTION OR DEVIATION FROM THE DESIGN IN WRITING TO THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED CONSTRUCTION PERMITS, SCHEDULE INSPECTIONS, AND PAY ALL ASSOCIATED FEES UNLESS DIRECTED OTHERWISE.

WORKING CLEARANCES: THE CONTRACTOR IS REQUIRED TO COORDINATE THE MINIMUM WORKING CLEARANCES AND DEDICATED EQUIPMENT REQUIRED BY THE NEC. THE CONTRACTOR IS REQUIRED TO COORDINATE WITH ALL SUBCONTRACTORS SO THAT ENCROACHMENTS INTO THE RESTRICTED SPACE ARE PREVENTED.

PROVIDE ALL CUTTING, CORING, AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION. REGISTERED STRUCTURAL ENGINEER APPROVAL IS REQUIRED WHEN CORING OR CUTTING OF STRUCTURAL MEMBERS IS REQUIRED.

COORDINATE WITH ARCHITECTURAL PLANS, SHOP DRAWINGS, AND OTHER TRADES PRIOR ROUGH-IN FOR FOR DEVICE AND EQUIPMENT LOCATIONS AND REQUIREMENTS.

26 01 10 - SUBMITTALS: PROVIDE MATERIAL AND EQUIPMENT SUBMITTAL FOR EACH SPECIFICATION SECTION DENOTED AS REQUIRED AT MINIMUM. SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY IN PDF FORMAT (UNLESS HARD COPY IS REQUIRED BY OTHER CONTRACT APPLYING TO THE ENTIRE PROJECT). SUBMIT ALL REQUIRED SECTIONS IN A SINGLE SUBMITTAL OR BROKEN INTO NO MORE THAN THE FOLLOWING SEPARATE SECTIONS: "LIGHTING", "EQUIPMENT", "WIRING/DEVICES", AND "SPECIAL SYSTEMS". ORGANIZE SUBMITTAL AND/OR EACH SECTION BY SPECIFICATION NUMBER FOLLOWED BY ANY MAJOR EQUIPMENT REFERENCE ON THE DRAWINGS WITH ALL OPTIONS AND SELECTIONS HIGHLIGHTED TO DENOTE THE SPECIFIC EQUIPMENT PROPOSED. SUBMITTAL REVIEW IS FOR GENERAL DESIGN AND CONFIGURATION AND DOES NOT RELIEVE THE CONTRACTOR FROM PROVIDING A COMPLETE OPERATIONAL SYSTEM COMPLIANT WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

26 01 21 - RECORD DRAWINGS: MARK UP A SET OF DRAWINGS (REDLINES) SHOWING ALL ELECTRICAL WORK. SHOW DIAGRAMMATIC ROUTING MODIFICATIONS, SIZING, AND CIRCUIT REVISIONS TO THE CONTRACT PLANS. RECORD DRAWINGS SHALL BE KEPT ON SITE AVAILABLE FOR REVIEW DURING THE ENTIRE CONSTRUCTION PERIOD. SUBMIT FINAL REDLINE SET FOR APPROVAL PRIOR TO FINAL INSPECTION.

26 05 15 - POWER AND LIGHTING CONDUCTORS: STRANDED COPPER ROUTED IN CONDUIT UNLESS NOTED OTHERWISE. INSULATION TO BE THHN-2 90 DEGREE C FOR INDOOR APPLICATIONS AND XHHW-2 90 DEGREE C FOR OUTDOOR LOCATIONS, IN UNHEATED SPACES, OR INSTALLED WHILE THE AMBIENT TEMPERATURE IS LESS THAN -7C (20F). ALL CONDUCTORS SHALL BE INSTALLED IN ACCORDANCE WITH NEC REQUIREMENTS FOR AMBIENT TEMPERATURE DERATING, CONDUIT FILL DERATING, AND BOX FILL. PROVIDE UNSHARED DEDICATED NEUTRAL FOR EACH CIRCUIT. BRANCH CIRCUIT WIRING MAY BE INSTALLED IN SOLID CONDUCTOR CABLE TYPES DENOTED WHERE ROUTED CONCEALED AND SUPPORTED BY NEC REQUIREMENTS. TYPE W OR EQUAL CORDS WHERE INSTALLED IN ACCORDANCE WITH THE NEC REQUIREMENTS SIZED AS DENOTED IN THE NEC TABLES 400.5(A)(2) AND 400.5(A)(3).

240V/120V CONDUCTORS: COLOR CODE CONDUCTORS BLACK, RED, WHITE, AND GREEN. MINIMUM SIZE CONDUCTORS FOR 15 AND 20 AMP BRANCH CIRCUITS MEASURED FROM THE PANELBOARD TO THE FURTHEST DEVICE ON THE CIRCUIT UNLESS OTHERWISE NOTED ON THE DRAWINGS: 12 AWG UP TO 75 FT, 10 AWG 75 FT TO 140 FT, GREATER THAN 140 FT SIZE CONDUCTORS TO LIMIT VOLTAGE DROP TO 5% OR LESS.

26 05 19 - MC CABLES: METALCLAD (MC) CABLE WITH STEEL OUTER SHEATH. ALLOWED USES DRY WHERE ROUTED CONCEALED AND PROTECTED. SOLID CONDUCTORS FOR 10 AWG AND SMALLER

26 05 22 - SIGNAL AND CONTROL: CONDUCTORS TO BE CABLE OR CONDUCTORS IN CONDUIT OF THE TYPE AND CONFIGURATION AS MANUFACTURER RECOMMENDATIONS FOR EACH SYSTEM. CONDUCTORS/CABLES TO BE INSTALLED IN RACEWAY, CABLE TRAYS, OR CAT 6 RATED J-HOOKS SPACED NO MORE THAN 4 FT APART. WHEN ROUTED IN NON-ACCESSIBLE LOCATIONS, RETURN AIR CEILING OR FLOOR PLENUM, CABLES MUST BE CMP PLENUM RATED OR IN CONDUIT. DO NOT INSTALL WHEN AMBIENT TEMPERATURES ARE LESS THAN -7C (20F). CLASS 1: WHERE SYSTEM POWER SUPPLY IS NOT MARKED AS CLASS 2, PROVIDE ALL CONDUCTORS IN RACEWAY OR OTHER CLASS 1 RATED CABLE. CLASS 2: CABLES CAN BE IN CONDUIT OR CLASS 2 RATED CABLE.

26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: PROVIDE EQUI-POTENTIAL GROUNDING SYSTEM, IN ACCORDANCE WITH NEC ARTICLE 250. PROVIDE GROUNDING CONDUCTOR IN ALL RACEWAYS BONDED TO EQUIPMENT AND TO RACEWAY SYSTEM.

26 05 26.1 - GROUNDING AND BONDING FOR COMMUNICATION SYSTEMS: PROVIDE COMMUNICATION GROUND SYSTEM USING INSULATED GROUND BUS AT EACH TELECOM ROOM OR TTB BONDED TO THE MAIN SERVICE GROUND AND PROVIDE BOND FROM INSULATED GROUND BUS TO EACH RACK.

26 05 29 - HANGARS AND SUPPORTS FOR ELECTRICAL SYSTEMS: SUPPORT ALL ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, LIGHT FIXTURES, PANELBOARDS, BOXES, CONDUIT, ETC. PER NEC AND IBC SEISMIC REQUIREMENTS. PROVIDE SEISMIC SUPPORT AND DESIGN SEALED BY A LICENSED STRUCTURAL ENGINEER AS A DEFERRED SUBMITTAL TO THE AHJ FOR ALL EQUIPMENT OVER 400 LBS AND, EQUIPMENT OVER 20 LBS MOUNTED GREATER THAN 4FT AFF, CONDUIT 2.5"C OR GREATER AND ALL TRAPEZE OR WALL SUPPORTED RACEWAY 10 LBS/LF OR GREATER. SUPPORT STRUT AND MOUNTING HARDWARE TO BE GALVANIZED

26 05 30 - RACEWAY: ALL POWER, LIGHTING, CLASS 1, CLASS 2/3 CIRCUITS INSTALLED IN CONDUIT SHALL BE CONCEALED RACEWAY EXCEPT WHERE SPECIFICALLY INDICATED ELSEWHERE IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS. ELECTRICAL EQUIPMENT AND WIRING CAN BE EXPOSED IN MECHANICAL/ELECTRICAL ROOMS, COOLER/FREEZERS, TELECOMMUNICATION ROOMS, OPEN CEILING SPACES, OR WHERE SPECIFICALLY NOTED. DO NOT ROUTE RACEWAYS ON THE EXTERIOR SURFACE OF THE BUILDING OR THE ROOF UNLESS SPECIFICALLY NOTED OTHERWISE. RACEWAYS CROSSING BUILDING SEISMIC JOINTS OR CONNECTING TO EQUIPMENT WHICH MOVES OR VIBRATES REQUIRE TRANSITION TO FLEXIBLE RACEWAY ACROSS JOINT WITH ENOUGH SLACK TO ALLOW BUILDING MOVEMENT IN ALL DIRECTIONS WITHOUT DAMAGE.

26 05 31 - POLYVINYL CHLORIDE CONDUIT (PVC): UL 651, SCHEDULE 40 AND SCHEDULE 80. FITTINGS: UL 514C AND UL 514D. USES: SCHEDULE 40 - BELOW GRADE OR SLAB ON GRADE. SCHEDULE 80 – BELOW GRADE, SLAB ON GRADE, CORROSIVE ENVIRONMENT, OR EXPOSED. DO NOT INSTALL WHEN AMBIENT TEMPERATURES ARE LESS THAN -7C (20F).

ELECTRICAL SPECIFICATIONS

"X" = PROVIDE SUBMITTAL

26 05 33 – RIGID METAL CONDUIT (RMC): ANSI C80.1, UL 6. WITH BUSHINGS AT ALL TERMINATIONS. FITTINGS: GALVANIZED MALLEABLE IRON WITH THREADED HUBS FOR ALL CONDUIT ENTRIES AND COUPLINGS. SET SCREW OR RUNNING THREAD FITTINGS ARE NOT PERMITTED. USES: WET OR DRY WHERE INSTALLED BELOW GRADE, IN CONCRETE, STUB UPS, CONCEALED, WHERE EXPOSED TO PHYSICAL DAMAGE, ROUTED ON BUILDING ROOF, SERVICE RISERS, OR WITHIN 10FT OF RACEWAY ROUTED INTO FIXED FOUNDATIONS SUCH AS LIGHT POLE BASE OR STRUCTURE. MUST USE THREADED FITTINGS. MYERS HUBS WITH GROUNDING LOCKNUTS ARE REQUIRED FOR SERVICE RACEWAYS TO CT'S, METERS AND MAIN DISCONNECTS.

26 05 34 - ELECTRICAL METALLIC TUBING (EMT): ANSI C80.3, UL 797; GALVANIZED STEEL TUBING. FITTINGS: NEMA FB 1; GALVANIZED STEEL OR MALLEABLE IRON SET SCREW OR COMPRESSION. DIE CAST OR PRESSURE CAST FITTINGS OR LOCKNUTS ARE NOT PERMITTED. USES: WET OR DRY CONCEALED OR EXPOSED WHERE NOT SUBJECT TO PHYSICAL DAMAGE. WET OR DAMP LOCATIONS REQUIRE RAINTIGHT WET RATED GLAND COMPRESSION COUPLINGS AND CONNECTORS. NOT PERMITTED FOR SERVICE ENTRANCE RACEWAY, IN CONTACT WITH EARTH, OR IN CONTACT WITH CONCRETE.

26 05 35 - FLEXIBLE METAL CONDUIT (FMC): GALVANIZED OR ZINC COATED FLEXIBLE STEEL CONSTRUCTION. FMC FITTINGS: GALVANIZED MALLEABLE IRON OR STEEL WITH INSULATED THROATS. USES: DRY SPACES LENGTHS LESS THAN 6FT FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND OTHER MOVABLE OR VIBRATING EQUIPMENT.

LIQUIDTIGHT FLEXIBLE CONDUIT (LTMC): GALVANIZED OR ZINC COATED FLEXIBLE STEEL CONSTRUCTION WITH PVC OUTER JACKET. USES: DRY, DAMP, OR WET LOCATIONS LENGTHS LESS THAN 6FT FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND OTHER MOVABLE OR VIBRATING EQUIPMENT.

26 05 36 - WET OR DAMP LOCATIONS: USE DEVICES, FIXTURES, RACEWAYS, CONNECTORS, COUPLINGS, CABLES, ENCLOSURES, SUPPORTS, DEVICES, COVER PLATES, AND CONDUCTORS RATED FOR LOCATION INSTALLED.

26 05 40 - BOXES: PROVIDE PULL AND JUNCTION BOXES AS REQUIRED SIZED PER NEC REQUIREMENTS. BOX TO BE NEMA RATED FOR THE THE ENVIRONMENT INSTALLED. BRANCH CIRCUIT JUNCTION BOXES TO BE ELECTRO-GALVANIZED, 4" SQUARE BY 1 1/2" DEEP MINIMUM FOR USE IN DRY INTERIOR AREAS. PROVIDE 4 11/16" SQUARE BY 2 1/8" DEEP OUTLET BOXES FOR ALL VOICE AND DATA OUTLETS. DO NOT INSTALL BOXES BACK-TO-BACK IN WALLS. PROVIDE SEPARATION TO MINIMIZE SOUND TRANSFER. PROVIDE FIRE RATED PADS TO COVER EACH BOX IN FIRE RATED WALLS WHERE NECESSARY TO MAINTAIN FIRE WALL RATING.

26 05 40.1 - WET OR DAMP LOCATION BOXES AND FITTINGS: BOXES: WET RATED. FITTINGS: THREADED HUBS OR RAINTIGHT CONNECTORS FOR EMT. OUTLET BOXES SHALL BE CAST FERROUS WITH THREADED HUBS, NEMA 3R FOR EXTERIOR LOCATIONS, NEMA 4 FOR EXTERIOR OR INTERIOR WET LOCATIONS SUBJECT TO WATER SPRAY. NEMA 4X FOR OUTDOOR WITHIN 1 MILE OF THE COASTLINE, CONTROL EQUIPMENT, AND INTERIOR/EXTERIOR WET LOCATIONS EXPOSED TO CORROSIVE ENVIRONMENT.

26 05 53 - IDENTIFICATION FOR ELECTRICAL EQUIPMENT: PROVIDE PLACARDS FOR ALL NEW AND EXISTING AFFECTED ELECTRICAL SWITCHBOARDS, PANELBOARDS, TRANSFER SWITCHES, CONTACTORS, EQUIPMENT AND DISCONNECTS PER NEC REQUIREMENTS.

X 26 09 24 - PHOTOCELL: ENCLOSED IN A WEATHER TIGHT ENCLOSURE WITH THREADED NIPPLE. THE ENCLOSURE SHALL BE SUITABLE FOR MOUNTING IN ANY POSITION WITH AN ADJUSTMENT SHIELD TO PERMIT ADJUSTMENT TO TURN-ON LIGHT LEVEL REQUIREMENTS.

X 26 24 17 - LOAD CENTERS: PROVIDE AND INSTALL RESIDENTIAL GRADE LOAD CENTERS OF THE RATING AND CONFIGURATION AS SHOWN ON THE SINGLE LINE DIAGRAM, PANEL SCHEDULES, AND SCCR TABLE. PROVIDE CIRCUIT DIRECTORY SHOWING CIRCUITING ARRANGEMENT. PROVIDE UL LISTED SURGE PROTECTION DEVICE AND COMBINATION-TYPE ARC-FAULT CIRCUIT-INTERRUPTER (AFCI) BREAKER PROTECTION FOR ALL BRANCH CIRCUITS IN DWELLING UNITS, DORMITORIES, HOTEL GUEST SUITES, OR BARRACKS SLEEPING ROOM.

X 26 27 13 - ELECTRICAL SERVICES: THE ELECTRICAL CONTRACTOR SHALL CONTACT EACH SERVING UTILITY CO. AND VERIFY EXACT SERVICE REQUIREMENTS/LOCATION FOR POWER, TELEPHONE AND CABLE TV. SUBMIT EQUIPMENT SUBMITTALS/SHOP DRAWINGS TO SERVING POWER UTILITY FOR COORDINATION OF FAULT CURRENT RATINGS AND CONFIGURATION APPROVAL PRIOR TO EQUIPMENT PROCUREMENT. THE CONTRACTOR SHALL COORDINATE AND PROVIDE ALL REQUIREMENTS OF EACH SERVING UTILITY AND ALL EQUIPMENT SHALL CONFORM TO THE SERVING UTILITY STANDARDS AND REQUIREMENTS.

26 27 26 - WIRING DEVICE PLATES: COORDINATE COLOR WITH OWNER. FINISHED AREAS - FLUSH SMOOTH PLASTIC WITH MATCHING SCREWS. UNFINISHED AREAS - RAISED GALVANIZED STEEL. WET OR DAMP LOCATIONS PROVIDE WET RATED GASKETED PLATES. EXTERIOR AREAS - WEATHERPROOF WHILE-IN-USE, DIE CAST METAL, POWDER COAT FINISH, GASKETED, EXTRA DUTY RATED.

26 27 27 - RECEPTACLES: TAMPER-RESISTANT DUPLEX (AS DENOTED ON THE PLANS) COMMERCIAL GRADE, 2 POLE, 3 WIRE, 120V, 20 AMP STRAIGHT BLADE, UON, UL LISTED, SMOOTH NYLON FACE. BACK AND SIDE WIRED. INSTALL RECEPTACLES VERTICALLY WITH GROUNDING POLE ON BOTTOM UNLESS NOTED OTHERWISE.

26 27 28 - GFCI RECEPTACLES: DUPLEX WITH CLASS 3 INTEGRAL GROUND FAULT CURRENT INTERRUPTER (GFCI), THE GFCI SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION OR PROVIDE GFCI BREAKER IN PANEL. EXTERIOR, WET, OR DAMP LOCATIONS SHALL BE WEATHER RESISTANT MARKED "WR" ON THE FACE.

26 27 29 - SPECIAL RECEPTACLES: AMPERAGE/VOLTAGE/POLES AS DENOTED ON PLANS. COORDINATE RECEPTACLE CONFIGURATION WITH EQUIPMENT PROVIDED. RECEPTACLES DENOTED AS GFCI PROTECTED MAY BE PROTECTED BY GFCI CIRCUIT BREAKER OR REMOTE GFCI PROTECTION MODULE WITH TEST/RESET IN ACCESSIBLE LOCATION.

26 27 35 - SWITCHES: 20 AMP, 120/277V AC, BACK AND SIDE WIRED CONFIGURED AS INDICATED ON THE DRAWINGS. PROVIDE NEUTRAL (GROUNDED CONDUCTOR) IN ALL SWITCH BOXES FOR EACH SWITCHED CIRCUIT TO ALLOW FUTURE TECHNOLOGIES TO BE INSTALLED WHICH REQUIRE NEUTRAL CONDUCTOR.

26 27 36 - DIMMING SWITCHES: COMPATIBLE WITH FIXTURE SPECIFIED. ON/OFF CONTROL WITH RAISE AND LOWER PUSHBUTTONS.

26 27 37 - OCCUPANCY WALL SENSORS: DUAL TECHNOLOGY, PASSIVE INFRARED (PIR). SELF ADJUSTING, AUTOMATIC DUAL MODE WITH AUTO ON - AUTO OFF CONFIGURATION.

ABBREVIATIONS	
INDUSTRY STANDARD ABBREVIATIONS SHALL ALSO BE...	
Key Name	FullWord
(#)	DENOTES TYPICAL IN LIGHT FIXTURE TYPES
(D)	DEMOLISH
(E)	EXISTING
(R)	RELOCATED
AER	ARC ENERGY REDUCTION
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
BJ	BONDING JUMPER
CB	CIRCUIT BREAKER
CO, C.O.	CONDUIT ONLY
CT	CURRENT TRANSFORMER
CU	COPPER
EECP	ELEVATOR EMERGENCY COMMUNICATION PANEL
EECS	ELEVATOR EMERGENCY COMMUNICATION STATION
EGC	EQUIPMENT GROUNDING CONDUCTOR
FAA	FIRE ALARM ANNUCIATOR
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLE ILLUMINATION
FHP	FRACTIONAL HORSEPOWER
FLA	FULL LOAD AMPS
FSD	FIRE SMOKE DAMPER
G, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GEC	GROUNDING ELECTRODE CONDUCTOR
GES	GROUNDING ELECTRODE SYSTEM
GFPE	GROUND FAULT PROTECTION OF EQUIPMENT
MCA	MINIMUM CIRCUIT AMPACITY
MFS	MAXIMUM FUSE SIZE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT (NOT IN SCOPE)
NO	NORMALLY OPEN
P	POLES
PC	PHOTO CELL
PH, Ø	PHASE
PNL	PANEL
RIB	RELAY IN A BOX (MOTOR RATED)
SCA	SHORT CIRCUIT AMPS
SCCR	SHORT CIRCUIT CURRENT RATING
SE	SERVICE ENTRANCE RATED
SPD	SURGE PROTECTION DEVICE
SSBJ	SUPPLY SIDE BONDING JUMPER
SSEBJ	SUPPLY SIDE EQUIPMENT BONDING JUMPER
TGB	TELECOMMUNICATION GROUNDING BUSBAR
TMGB	TELECOMMUNICATION MAIN GROUNDING BUSBAR
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS OR WIRE
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

MOUNTING HEIGHT SCHEDULE	
EQUIPMENT (TO CENTER UON)	HEIGHT (UON)
CONTACTORS, MOTOR STARTERS, DISCONNECT (TOP)	66"
ELECTRIC RANGE RECEPTACLES (TOP)	7" MAX
INDICATING DEVICES (BOTTOM)	80"
PANELBOARDS - POWER; SPECIAL SYSTEMS (TOP)	72"
POWER METER BASE (CENTER LINE OF SOCKET)	PER UTILITY
PULL STATIONS, PUSH BUTTONS	46"
REC FULL HEIGHT REFRIGERATOR OR REACH-IN UNITS	46"
REC IN FINISHED AREAS	18"
REC IN NON-FINISHED, WAREHOUSE, MECH AND SHOPS	46"
REC LOCATED IN HAZARDOUS OR S-2 OCCUPANCIES	24" MINIMUM
TELECOMMUNICATION OUTLETS	18"
WALL MOUNTED SWITCHES	46"
WASHING MACHINES AND DRYER RECEPTACLE	43"

ELECTRICAL LEGEND

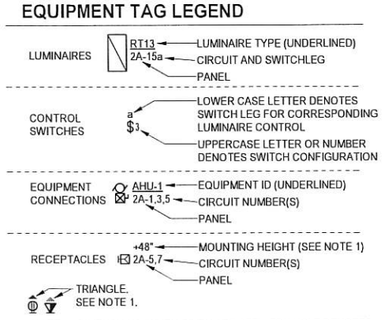
- PHOTOCELL CONTROL
- LUMINAIRE - TYPE AS NOTED ON PLAN - LINEWORK MAY VARY
- LUMINAIRE - WALL MOUNTED: TYPE AS NOTED ON PLAN
- LUMINAIRE - FILL INDICATES EMERGENCY (MAY VARY) - TYPE ENDS WITH 'E'
- EMERGENCY LIGHTING UNIT (WALL; CEILING; REMOTE HEAD)
- EXIT SIGN SHADE DENOTES FACE; ARROWS AS INDICATED
- COMBINATION EMERGENCY LIGHTING UNIT/EXIT SIGN, SHADE DENOTES FACE
- $ SWITCH - SINGLE POLE, SINGLE THROW, UON
- $x SWITCH - SEE SWITCH LEGEND FOR TYPE
- EMERGENCY SHUTDOWN
- WALL SENSOR - SEE SWITCH LEGEND: WALL SENSOR FOR TYPE
- METERING DEVICE
- POWER PANELBOARD
- MOTOR CONNECTION
- FUSED SAFETY SWITCH / DISCONNECT
- ELECTRIC BASEBOARD HEATER
- JUNCTION BOX OR EQUIPMENT CONNECTION (CEILING; WALL; FLOOR)
- JUNCTION BOX OR EQUIPMENT CONNECTION - WALL MOUNTED
- DUPLEX RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE - GFCI PROTECTED
- DUPLEX RECEPTACLE - GFCI PROTECTED, WEATHERPROOF, +24" UON
- DOUBLE DUPLEX RECEPTACLE - GFCI PROTECTED
- DUPLEX RECEPTACLE - PROTECTED BY GFCI CIRCUIT BREAKER IN PANEL
- SPECIAL RECEPTACLE - GFCI PROTECTED (VERIFY NEMA CONFIGURATION)
- TELECOMMUNICATION OUTLET

SWITCH LEGEND

STANDARD: 3 (THREE WAY); 4 (FOUR WAY); B (THREE WAY DIMMER); C (TIMER); D (DIMMER); K (KEYED); L (LOW VOLTAGE); P (PILOT LIGHT); S (VARIABLE SPEED CONTROL); T (INTEGRAL MOTOR OVERLOAD)
WALL SENSOR: 2 (DUAL CIRCUIT OCCUPANCY); D (DIMMING VACANCY SENSOR); O (OCCUPANCY SENSOR); V (VACANCY SENSOR)

- LINETYPE/LINEWEIGHT DENOTING FUTURE WORK
- LINETYPE/LINEWEIGHT DENOTING DEMO WORK
- LINETYPE/LINEWEIGHT DENOTING EXISTING WORK TO REMAIN
- LINETYPE/LINEWEIGHT DENOTING NEW WORK
- LINETYPE/LINEWEIGHT DENOTING NEW ONE-LINE CONNECTIONS
- LINETYPE/LINEWEIGHT DENOTING BELOW GRADE CONDUIT
- LINETYPE/LINEWEIGHT DENOTING CONTROL WIRING

EQUIPMENT TAG LEGEND



NOTE 1: DIMENSIONS (WHEN GIVEN ARE AFF). TRIANGLE DENOTES 46" AFF IN OPEN AREAS OR AT CASEWORK LOCATIONS TO BE 4" ABOVE COUNTERTOP (BACKSPLASH WHEN PRESENT). COORDINATE WITH ARCHITECTURE. THIS APPLIES TO ALL ELECTRICAL DEVICES.

ELECTRICAL SHEET LIST		
NUM	REV#	SHEET TITLE
E0.1		LEGEND AND SPECIFICATIONS
E0.2		SCHEDULES
E1.1		ELECTRICAL SITE PLAN
E2.1		1ST FLOOR LIGHTING PLAN
E2.2		2ND FLOOR LIGHTING PLAN
E3.1		1ST FLOOR POWER AND SIGNAL PLAN
E3.2		2ND FLOOR POWER AND SIGNAL PLAN
E4.1		DIAGRAMS, DETAILS, AND SCHEDULES
TOTAL SHEETS: 8		

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Project Number

Sheet Issue Date: 09/09/2025
Drawn by: RBC
Checked by: EDC

STATE OF ALASKA 49TH ERIC D. COWLING EE - 9775 6/9/25 REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: LEGEND AND SPECIFICATIONS
Address: 10204 S Knik Goose Bay Rd. Wasilla, AK 99623

E0.1

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

9/9/2025 10:20:13 AM C:\Users\EricCowling\EIC Engineers\Design - Files\Projects\E25\E25-4831 Knik Landing\DES\E25-4831_ESh25_KnikLanding.rvt
qc:09/09/2025 09:34:21 | rc:1 | ab:0 | rvt:0 | 0.55 86.9/5151

LUMINAIRE SCHEDULE	
NOTES	
(KEY)	'(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE. NUMBERED NOTES ARE REFERENCED IN THE SCHEDULE.
(A)	COLUMN HEADER DENOTED "IU" IS FOR INTERNAL USE ONLY BY EIC ENGINEERS FOR QC. THE VALUE HAS NO CONTRACTURAL IMPLICATIONS.
(B)	CATALOG NUMBERS ARE FOR GENERAL REFERENCE AND ARE NOT INCLUSIVE OF ALL OPTIONS/REQUIREMENTS DENOTED ON PLANS AND SPECIFICATIONS. ASTERISK (*) DENOTES COORDINATION ITEMS.
(C)	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND PROVIDE MOUNTING HARDWARE/FLANGES ETC FOR ALL LUMINAIRES FOR CEILING TYPES SHOWN.
(D)	PROVIDE UNIVERSAL OR MULTI-VOLTAGE VOLTAGE DRIVERS WHEN AVAILABLE. COORDINATE EXACT VOLTAGE/PHASE WITH CONNECTED CIRCUITS IN ALL OTHER SITUATIONS.
(E)	LIGHT SOURCE COLOR TEMPERATURE, UNLESS OTHERWISE NOTED: 3500K (SELECT NEAREST AVAILABLE COLOR TEMP FOR EACH LUMINAIRE TYPE). LIGHT SOURCE CRI TO BE 80 MIN, UON.
(F)	COLOR FINISH FOR ALL EXTERIOR LUMINAIRES TO BE DARK BRONZE UON.
1	NOT USED.

SCHEDULE

IU	TYPE	DESCRIPTION	WATTS	LUMENS	MOUNTING	MANUFACTURER	MODEL	NOTE
57	D41	4" OPEN LED DOWNLIGHT, ADJUSTABLE (SET TO 750LM)	13 W	750 LM LED	CEILING RECESSED	LITHONIA	LDN4 AL01 SWW1* L04AR LD MVOLT UGZ	
7	D41E	4" OPEN LED DOWNLIGHT, ADJUSTABLE (SET TO 750LM) FED FROM EM INVERTER	13 W	750 LM LED	CEILING RECESSED	LITHONIA	LDN4 AL01 SWW1* L04AR LD MVOLT UGZ	
47	DJ41	4" OPEN LED DOWNLIGHT	12 W	954 LM LED	CEILING RECESSED	JUNO	IC1LED G4 09LM *K *CRI * 17 HZWH	
14	E2	EMERGENCY LIGHTING UNIT W/ TWO ADJUSTABLE HEADS	1 W	(2) 1.2W LED	WALL +7'-0" OR CEILING	LITHONIA	ELM2L M12	
1	EM	EMERGENCY LIGHTING UPS SINE WAVE INVERTER, 125VA, UL924	125 W	N/A	SURFACE	EVENLITE	PW 12 LC V1	
3	LC4	4FT LED STRIP WITH DROPPED LENS WHITE FINISH	26 W	3906 LM LED	SURFACE	LITHONIA	CLX L48 4000LM SEF RDL MVOLT GZ10 *K *CRI WH	
12	LF14	1' X 4' LED FLAT PANEL ADJUSTABLE OUTPUT (SET TO HIGH LM)	40 W	4356 LM LED	CEILING SURFACE	LITHONIA	CPANL 1X4 AL01 SWW7 M4 DCMK 14	
6	RM1	1FT LED CYLINDER VANITY	10 W	829 LM LED	WALL OVER MIRROR	LITHONIA	FMVCCLS 12IN MVOLT * 90CRI BN	
2	RM2	2FT LED CYLINDER VANITY	18 W	1737 LM LED	WALL OVER MIRROR	LITHONIA	FMVCCLS 24IN MVOLT * 90CRI BN	
4	XA	LED EXIT SIGN W/ EXTERIOR REMOTE EM LIGHT	2 W	GREEN LED	WALL OR CEILING	LITHONIA	LHQM LED G HO RO; AFB OELR DDBTXD WT	
4	XE	LED COMBO EXIT SIGN & EM LIGHTING UNIT W/ BATTERY BACKUP	4 W	GREEN LED	WALL OR CEILING	LITHONIA	LHQM LED G	
4	XEA	LED COMBO EXIT SIGN & EM LIGHTING UNIT W/ EXT REMOTE EM LIGHT	4 W	GREEN LED	WALL OR CEILING	LITHONIA	LHQM LED G HO; AFB OELR DDBTXD WT	
5	ZMCU1	OUTDOOR LED ROUND CYLINDER UP/DOWNLIGHT LIGHT, CAST-AL	14 W	947 LM LED	WALL	LITHONIA	OLLWU LED P1 40K MVOLT *	
1	ZMR	OUTDOOR LED WALL SCONCE, DIE-CAST ALUMINUM	24 W	LED	WALL	KENALL	MR13FL PP * 20L*K *	
6	ZWG6	OUTDOOR LED WALL LUMINAIRE, DIE-CAST ALUMINUM	48 W	6127 LM LED	WALL	LITHONIA	WDGE2 LED P5 * 80CRI VF MVOLT * *	

UTILIZATION EQUIPMENT CONNECTION SCHEDULE	
NOTES	
(KEY)	'(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE. NUMBERED NOTES ARE REFERENCED IN THE SCHEDULE.
(A)	COLUMN HEADER DENOTED "IU" IS FOR INTERNAL USE ONLY BY EIC ENGINEERS FOR QC. THE VALUE HAS NO CONTRACTURAL IMPLICATIONS.
(B)	REFER TO FLOOR PLAN DRAWINGS FOR EQUIPMENT TYPE REQUIREMENTS, LOCATIONS AND QUANTITIES.
(C)	COORDINATE ALL CONNECTION REQUIREMENTS WITH ACTUAL EQUIPMENT SUPPLIED PRIOR TO ROUGH-IN.
(D)	COORDINATE AND PROVIDE SPECIFIC SIZING OF OVERLOADS AND FUSES WITH EQUIPMENT RATINGS.
(E)	FRACTIONAL HP TYPE MOTOR SWITCH WHERE AUTO CONTROL IS REQUIRED PROVIDE 'RELAY IN BOX'.
(F)	DISCONNECT HP RATING TO BE SIZED PER VOLTAGE AND FUSE TYPE UTILIZED.
(G)	DISCONNECTS DENOTED PLANS CAN BE ELIMINATED WHEN PROVIDED INTEGRAL WITH EQUIPMENT.
(H)	PROVIDE EQUIPMENT NAMEPLATE FOR EACH EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCCR SCHEDULE FOR ADDITIONAL REQUIREMENTS.
(I)	THE 'SCA' COLUMN DENOTES CALCULATED SHORT CIRCUIT AMPS ON LINE SIDE OF EQUIPMENT. THE 'MIN FT' COLUMN DENOTES CONDUCTOR LENGTH USED FOR THE SCA CALCULATION. THE ACTUAL LENGTH IS EXPECTED TO BE LONGER. IF THE ACTUAL LENGTH IS LESS THAN "MIN FT", THE SCA MUST BE RECALCULATED.
(J)	THE "SCCR" COLUMN DENOTES THE ANTICIPATED FACTORY EQUIPMENT SHORT CIRCUIT CURRENT RATING. CONTRACTOR SHALL VERIFY THE ACTUAL EQUIPMENT SCCR MEETS OR EXCEEDS THE SCCR VALUE DENOTED IN THIS TABLE. WHERE THE EQUIPMENT SCCR IS LESS THAN THE SCA VALUE, THE CONTRACTOR SHALL PROVIDE CURRENT LIMITING FUSES TO RESTRICT THE PEAK LET-THRU AMPS TO LESS THAN THE EQUIPMENT SCCR. IN THESE CASES, REFER TO "FUSE PART #" COLUMN FOR THE ENGINEER RECOMMENDED FUSE TO BE PROVIDED. PROVIDE WARNING SIGNAGE DENOTING FUSE PEAK LET-THRU AMPERAGE, TEXT DENOTING "IDENTIFIED REPLACEMENT COMPONENTS REQUIRED", FOLLOWED BY AMPERAGE AND MANUFACTURER MODEL/TYPE OF FUSE REQUIRED. THE CONTRACTOR SHALL ALSO PROVIDE THE PEAK LET-THRU TABLE FOR THE FUSE INSTALLED AND POST AT THE ASSOCIATED EQUIPMENT DISCONNECT FOR INSPECTOR REVIEW. PROVIDE CLASS RK-5, J, OR SIMILAR TIME-DELAY FUSES OR EQUAL PER THE SYSTEM REQUIREMENTS WHERE SPECIFIC FUSE PART NUMBER IS NOT DENOTED.
(K)	EQUIPMENT WITH NO VALUES IN "MIN FT", "SCA", AND "SCCR" CELLS INDICATE NO ANALYSIS IS REQUIRED. EQUIPMENT WITH NO VALUES IN "FUSE PART #" AND "LET-THRU AMPS" CELLS INDICATE NO SPECIFIC FUSE IS REQUIRED.
1	NOT USED.

SCHEDULE

													ENGINEERED SHORT CIRCUIT CURRENT MITIGATION					
IU	EQUIP ID	LOCATION OR FUNCTION	KVA	HP	FLA	MCA	MFS	TYPE	INGRESS RATING	V	PH	OPD	CIRCUIT (MINIMUM) CU UON	MIN FT	SCA	SCCR	FUSE PART #	LET-THRU AMPS	NOTE
1	AHU-1	AIR HANDLER UNIT	1.056		8.8			FUSED DISC	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	5	4140	5,000	NA	SCA	
1	AHU-2	AIR HANDLER UNIT	1.380		11.5			FUSED DISC	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	13	2155	5,000	NA	SCA	
1	B-1	BOILER	0.150	FHP				MOTOR SWITCH	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	14	2063	5,000	NA	SCA	
1	CF-1	CEILING PADDLE FAN	0.200	FHP				J-BOX	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	79	452	5,000	NA	SCA	
1	CF-1	CEILING PADDLE FAN	0.200	FHP				J-BOX	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	44	785	5,000	NA	SCA	
1	CF-1	CEILING PADDLE FAN	0.200	FHP				J-BOX	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	66	531	5,000	NA	SCA	
1	CF-1	CEILING PADDLE FAN	0.200	FHP				J-BOX	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	54	647	5,000	NA	SCA	
1	CP-1	CIRCULATION PUMP	0.264	1/12				MOTOR SWITCH	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	12	2342	5,000	NA	SCA	
1	CP-2	CIRCULATION PUMP	0.150	FHP				MOTOR SWITCH	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	12	2282	5,000	NA	SCA	
1	DW	DISHWASHER	1.200					DUPLEX 5-20R GFCI CB	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	27	1226	5,000	NA	SCA	
1	EBB-1	ELECTRIC BASEBOARD - 3 LINEAR FEET	0.750					J-BOX		120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	27	1213	5,000	NA	SCA	
1	EBB-1	ELECTRIC BASEBOARD - 3 LINEAR FEET	0.750					J-BOX		120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	40	862	5,000	NA	SCA	
1	EBB-2	ELECTRIC BASEBOARD - 4 LINEAR FEET	1.000					J-BOX		120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	17	1776	5,000	NA	SCA	
1	EBB-3	ELECTRIC BASEBOARD - 5 LINEAR FEET	1.250					J-BOX		120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	34	979	5,000	NA	SCA	
1	ECUH-1	CABINET UNIT HEATER	2.000					MOTOR SWITCH	NEMA 1	120	1	30 A	0.75"C, (2)8 AWG, (1)8 AWG EGC	58	1398	5,000	NA	SCA	
1	EF-1	EXHAUST FAN	0.120	FHP				DIRECT WIRED	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	28	1173	5,000	NA	SCA	
1	EF-1	EXHAUST FAN	0.120	FHP				DIRECT WIRED	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	38	903	5,000	NA	SCA	
1	EF-2	EXHAUST FAN	0.696	1/4				MOTOR	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	34	1001	5,000	NA	SCA	
1	EF-3	EXHAUST FAN	0.696	1/4				MOTOR SWITCH	NEMA 1	120	1	15 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	10	2739	5,000	NA	SCA	
1	GW-1	GLASS WASHER	2.880		12			NEMA 6-15R	NEMA 1	240	1	15 A	0.5"C, (3)12 AWG, (1)12 AWG EGC	30	1963	5,000	NA	SCA	
1	HOOD	KITCHEN HOOD	0.200	0.25						120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	22	1453	5,000	NA	SCA	
1	KEG-1	KEGERATOR	0.180					DUPLEX 5-20R GFCI	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	36	951	5,000	NA	SCA	
1	MW	MICROWAVE	1.550					DUPLEX 5-20R GFCI	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	25	1324	5,000	NA	SCA	
1	WH-1	WATER HEATER	0.300					MOTOR SWITCH	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	13	2157	5,000	NA	SCA	

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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STATE OF ALASKA 49TH ERIC D. COWLING EE - 977 4/4/25 REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

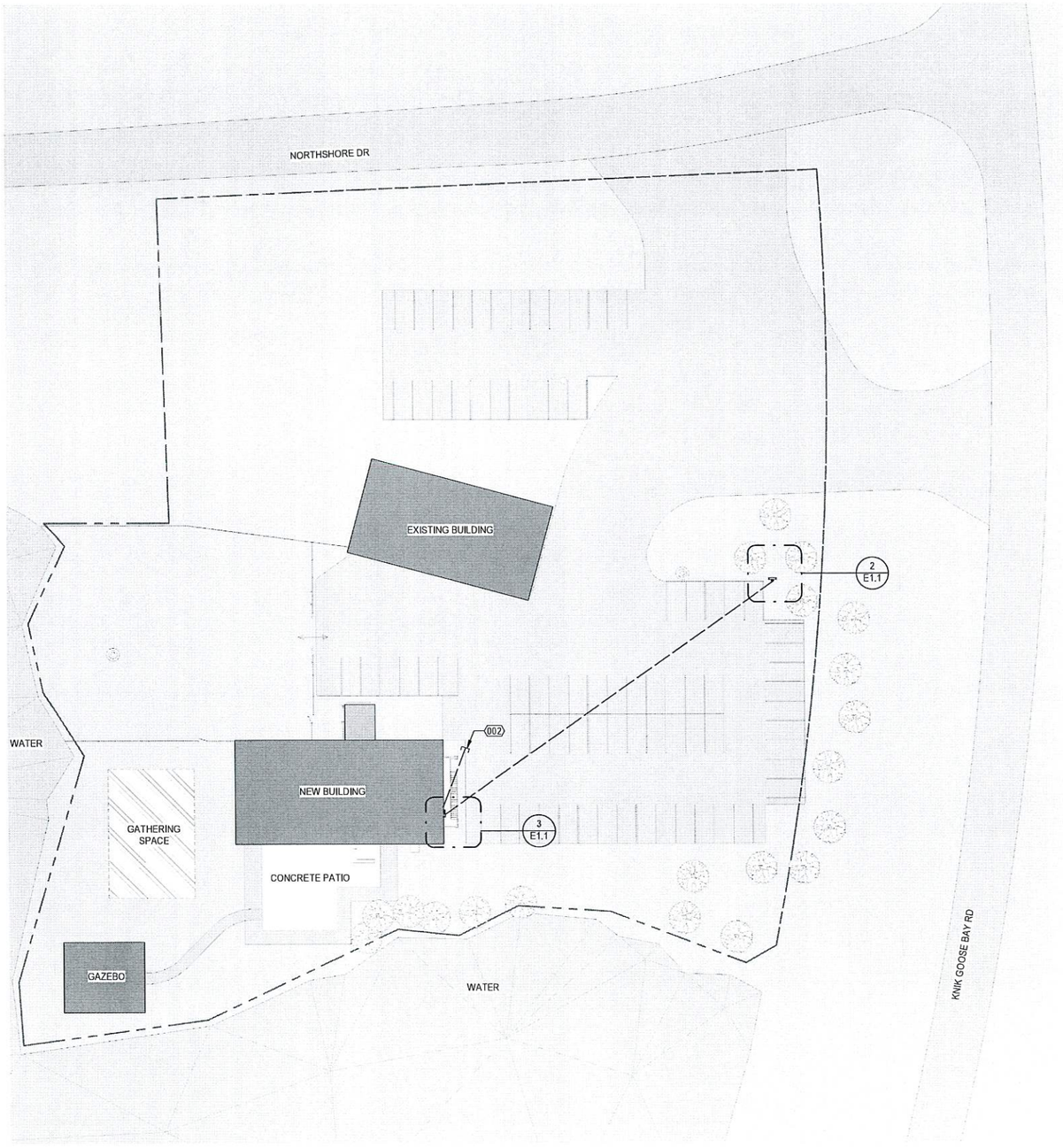
Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: SCHEDULES
Address: 10204 S Knik Goose Bay Rd. Wasilla, AK 99623

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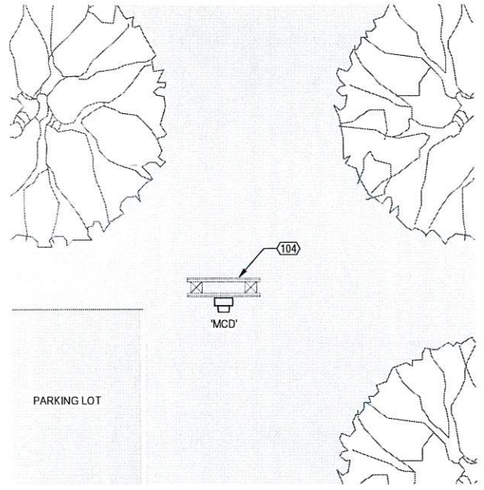
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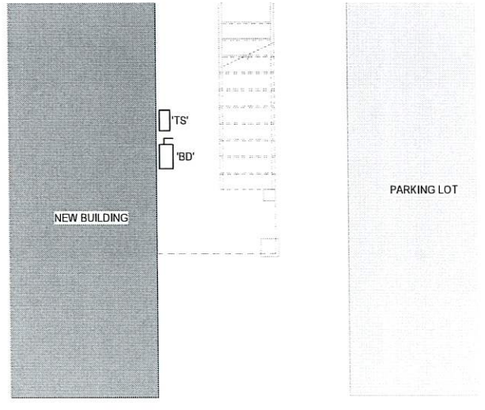
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002	PROVIDE (2) 1" C. STUBOUTS FROM PANEL A FOR FUTURE SIGN AND POLE MOUNTED SITE LIGHTING.
104	PROPOSED LOCATION OF BUILDING ELECTRICAL SERVICE. COORDINATE WITH SERVING UTILITY BEFORE INSTALLATION TO VERIFY EXACT LOCATION AND REQUIREMENTS. PROVIDE WOOD POST BACKBOARD FOR REMOTE SERVICE PEDESTAL.



1 E1.1 ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"



2 E1.1 ELECTRICAL SITE PLAN - UTILITY SERVICE AND MCD
SCALE: 1/4" = 1'-0"



3 E1.1 ELECTRICAL SITE PLAN - SERVICE DISCONNECT
SCALE: 1/4" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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EE - 9775
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NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: ELECTRICAL SITE PLAN
Address: 10204 S Knik Goose Bay Rd. Wasilla. AK 99623

E1.1

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NOTE:

- ARROWS DENOTE APPARENT DRAINAGE PATTERNS.

1 Ground Drainage Plan
1" = 30'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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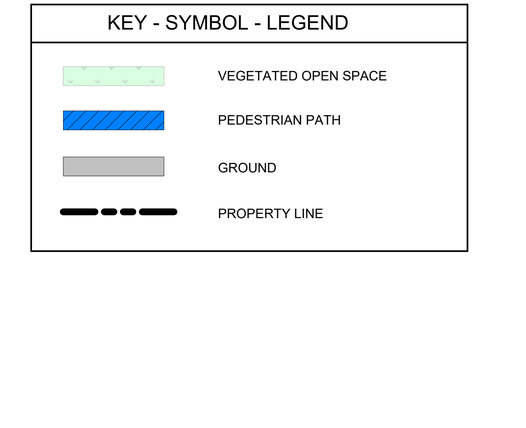
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Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Ground Drainage Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

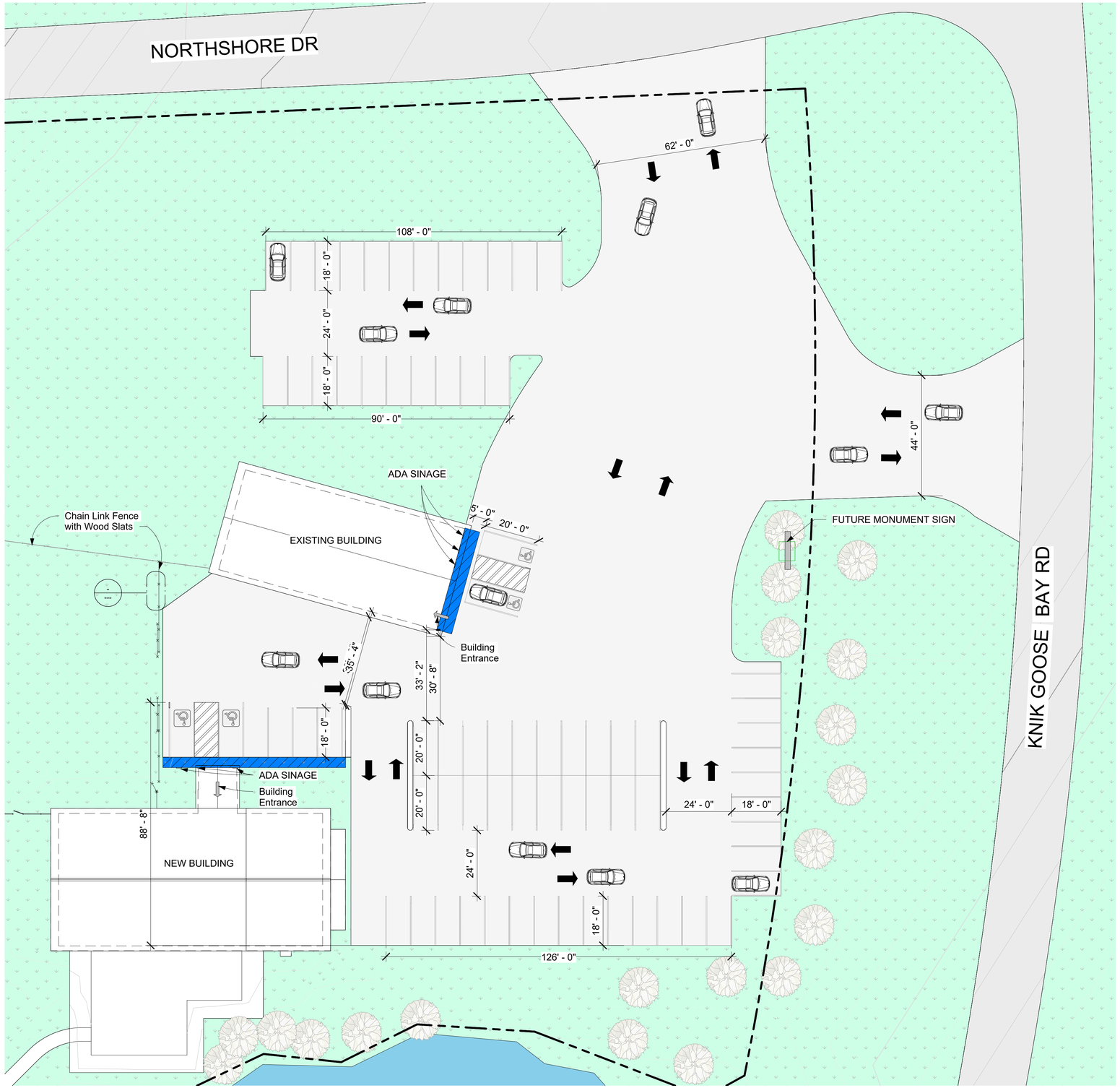
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KEY - SYMBOL - LEGEND

- VEGETATED OPEN SPACE
- PEDESTRIAN PATH
- GROUND
- PROPERTY LINE



2 Detail - Chain Link Fence with Wood Slats
3/4" = 1'-0"



1 Vehicular and Pedestrian Plan
1" = 20'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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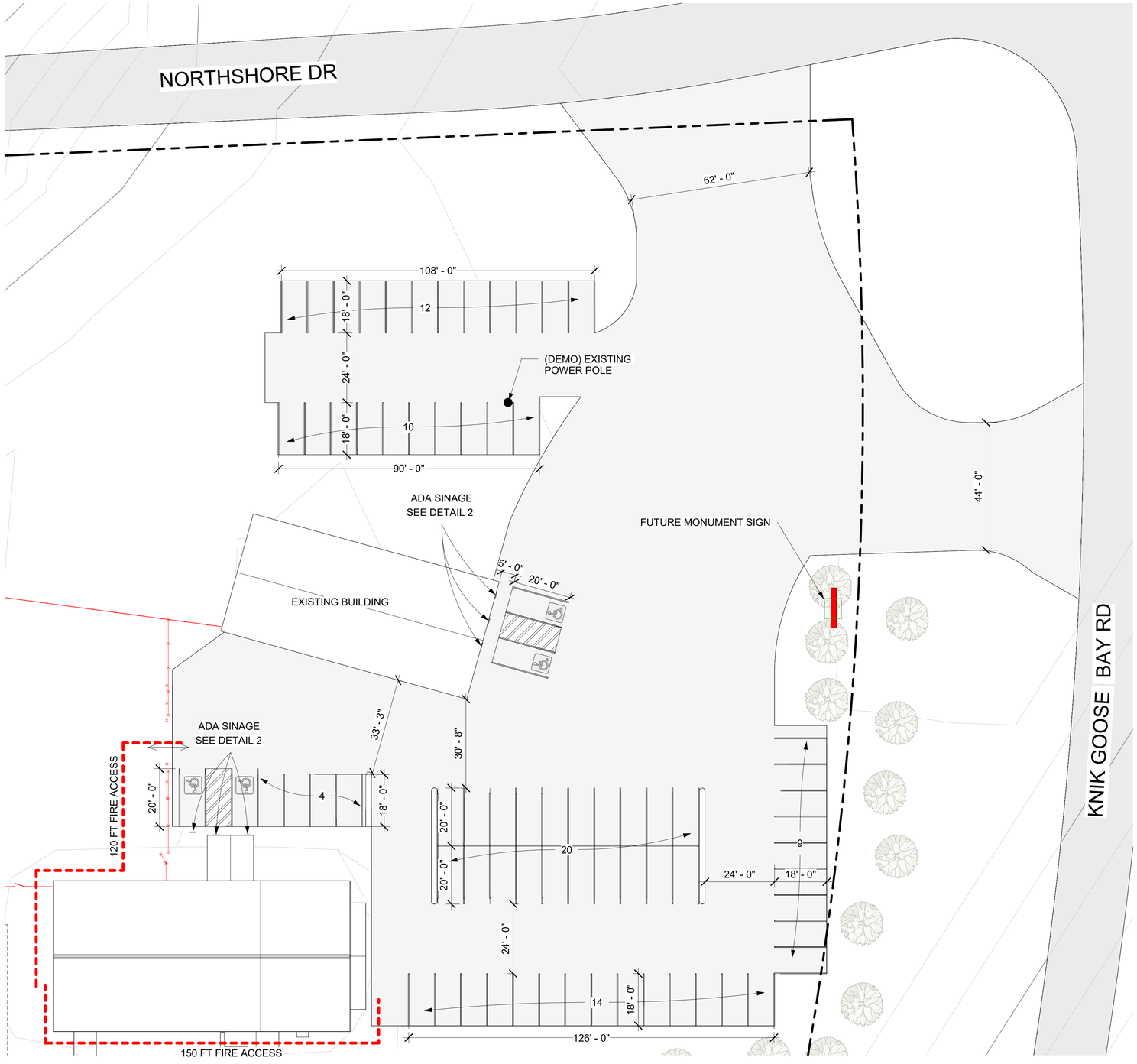
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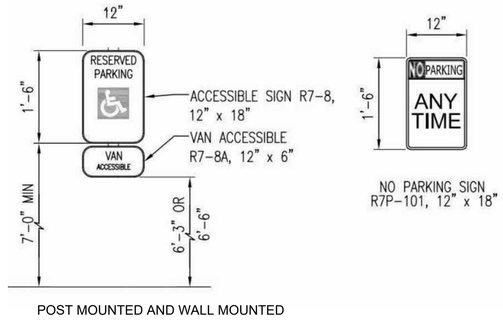
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Drawn by: AA
Checked by: DHC

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Vehicular and Pedestrian Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.0.2



1 Parking Plan & Fire Department Access
1" = 20'-0"



2 ADA Parking Sign Dimensions
3/4" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: Parking Plan
Address: 10204 S Knik Goose Bay Rd, Wasilla, AK 99623

A-1.0.1

ELECTRICAL SPECIFICATIONS

"X" = PROVIDE SUBMITTAL

26 00 00 - GENERAL REQUIREMENTS: ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC), STATE, MUNICIPAL, FEDERAL LAWS, AND AMENDMENTS GOVERNING THE PROJECT. ALL WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A CERTIFIED ADMINISTRATOR JOURNEYMAN ELECTRICIAN.

ALL ELECTRICAL EQUIPMENT SHALL BE NEW COMMERCIAL GRADE AND INCLUDE THE SEAL OF A NATIONALLY RECOGNIZED TESTING LABORATORY FOR THE PURPOSE IT IS INSTALLED AS A COMPLETE ASSEMBLY. THE CONTRACTOR SHALL SUBMIT A REQUEST FOR ANY SUBSTITUTION OR DEVIATION FROM THE DESIGN IN WRITING TO THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED CONSTRUCTION PERMITS, SCHEDULE INSPECTIONS, AND PAY ALL ASSOCIATED FEES UNLESS DIRECTED OTHERWISE.

WORKING CLEARANCES: THE CONTRACTOR IS REQUIRED TO COORDINATE THE MINIMUM WORKING CLEARANCES AND DEDICATED EQUIPMENT REQUIRED BY THE NEC. THE CONTRACTOR IS REQUIRED TO COORDINATE WITH ALL SUBCONTRACTORS SO THAT ENCROACHMENTS INTO THE RESTRICTED SPACE ARE PREVENTED.

PROVIDE ALL CUTTING, CORING, AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION. REGISTERED STRUCTURAL ENGINEER APPROVAL IS REQUIRED WHEN CORING OR CUTTING OF STRUCTURAL MEMBERS IS REQUIRED.

COORDINATE WITH ARCHITECTURAL PLANS, SHOP DRAWINGS, AND OTHER TRADES PRIOR ROUGH-IN FOR FOR DEVICE AND EQUIPMENT LOCATIONS AND REQUIREMENTS.

26 01 10 - SUBMITTALS: PROVIDE MATERIAL AND EQUIPMENT SUBMITTAL FOR EACH SPECIFICATION SECTION DENOTED AS REQUIRED AT MINIMUM. SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY IN PDF FORMAT (UNLESS HARD COPY IS REQUIRED BY OTHER CONTRACT APPLYING TO THE ENTIRE PROJECT). SUBMIT ALL REQUIRED SECTIONS IN A SINGLE SUBMITTAL OR BROKEN INTO NO MORE THAN THE FOLLOWING SEPARATE SECTIONS: "LIGHTING", "EQUIPMENT", "WIRING/DEVICES", AND "SPECIAL SYSTEMS". ORGANIZE SUBMITTAL AND/OR EACH SECTION BY SPECIFICATION NUMBER FOLLOWED BY ANY MAJOR EQUIPMENT REFERENCE ON THE DRAWINGS WITH ALL OPTIONS AND SELECTIONS HIGHLIGHTED TO DENOTE THE SPECIFIC EQUIPMENT PROPOSED. SUBMITTAL REVIEW IS FOR GENERAL DESIGN AND CONFIGURATION AND DOES NOT RELIEVE THE CONTRACTOR FROM PROVIDING A COMPLETE OPERATIONAL SYSTEM COMPLIANT WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

26 01 21 - RECORD DRAWINGS: MARK UP A SET OF DRAWINGS (REDLINES) SHOWING ALL ELECTRICAL WORK. SHOW DIAGRAMMATIC ROUTING MODIFICATIONS, SIZING, AND CIRCUIT REVISIONS TO THE CONTRACT PLANS. RECORD DRAWINGS SHALL BE KEPT ON SITE AVAILABLE FOR REVIEW DURING THE ENTIRE CONSTRUCTION PERIOD. SUBMIT FINAL REDLINE SET FOR APPROVAL PRIOR TO FINAL INSPECTION.

26 05 15 - POWER AND LIGHTING CONDUCTORS: STRANDED COPPER ROUTED IN CONDUIT UNLESS NOTED OTHERWISE. INSULATION TO BE THHN-2 90 DEGREE C FOR INDOOR APPLICATIONS AND XHHW-2 90 DEGREE C FOR OUTDOOR LOCATIONS, IN UNHEATED SPACES, OR INSTALLED WHILE THE AMBIENT TEMPERATURE IS LESS THAN -7C (20F). ALL CONDUCTORS SHALL BE INSTALLED IN ACCORDANCE WITH NEC REQUIREMENTS FOR AMBIENT TEMPERATURE DERATING, CONDUIT FILL DERATING, AND BOX FILL. PROVIDE UNSHARED DEDICATED NEUTRAL FOR EACH CIRCUIT. BRANCH CIRCUIT WIRING MAY BE INSTALLED IN SOLID CONDUCTOR CABLE TYPES DENOTED WHERE ROUTED CONCEALED AND SUPPORTED BY NEC REQUIREMENTS. TYPE W OR EQUAL CORDS WHERE INSTALLED IN ACCORDANCE WITH THE NEC REQUIREMENTS SIZED AS DENOTED IN THE NEC TABLES 400.5(A)(2) AND 400.5(A)(3).

240V/120V CONDUCTORS: COLOR CODE CONDUCTORS BLACK, RED, WHITE, AND GREEN. MINIMUM SIZE CONDUCTORS FOR 15 AND 20 AMP BRANCH CIRCUITS MEASURED FROM THE PANELBOARD TO THE FURTHEST DEVICE ON THE CIRCUIT UNLESS OTHERWISE NOTED ON THE DRAWINGS: 12 AWG UP TO 75 FT, 10 AWG 75 FT TO 140 FT, GREATER THAN 140 FT SIZE CONDUCTORS TO LIMIT VOLTAGE DROP TO 5% OR LESS.

26 05 19 - MC CABLES: METALCLAD (MC) CABLE WITH STEEL OUTER SHEATH. ALLOWED USES DRY WHERE ROUTED CONCEALED AND PROTECTED. SOLID CONDUCTORS FOR 10 AWG AND SMALLER

26 05 22 - SIGNAL AND CONTROL: CONDUCTORS TO BE CABLE OR CONDUCTORS IN CONDUIT OF THE TYPE AND CONFIGURATION AS MANUFACTURER RECOMMENDATIONS FOR EACH SYSTEM. CONDUCTORS/CABLES TO BE INSTALLED IN RACEWAY, CABLE TRAYS, OR CAT 6 RATED J-HOOKS SPACED NO MORE THAN 4 FT APART. WHEN ROUTED IN NON-ACCESSIBLE LOCATIONS, RETURN AIR CEILING OR FLOOR PLENUM, CABLES MUST BE CMP PLENUM RATED OR IN CONDUIT. DO NOT INSTALL WHEN AMBIENT TEMPERATURES ARE LESS THAN -7C (20F). CLASS 1: WHERE SYSTEM POWER SUPPLY IS NOT MARKED AS CLASS 2, PROVIDE ALL CONDUCTORS IN RACEWAY OR OTHER CLASS 1 RATED CABLE. CLASS 2: CABLES CAN BE IN CONDUIT OR CLASS 2 RATED CABLE.

26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: PROVIDE EQUI-POTENTIAL GROUNDING SYSTEM, IN ACCORDANCE WITH NEC ARTICLE 250. PROVIDE GROUNDING CONDUCTOR IN ALL RACEWAYS BONDED TO EQUIPMENT AND TO RACEWAY SYSTEM.

26 05 26.1 - GROUNDING AND BONDING FOR COMMUNICATION SYSTEMS: PROVIDE COMMUNICATION GROUND SYSTEM USING INSULATED GROUND BUS AT EACH TELECOM ROOM OR TTB BONDED TO THE MAIN SERVICE GROUND AND PROVIDE BOND FROM INSULATED GROUND BUS TO EACH RACK.

26 05 29 - HANGARS AND SUPPORTS FOR ELECTRICAL SYSTEMS: SUPPORT ALL ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, LIGHT FIXTURES, PANELBOARDS, BOXES, CONDUIT, ETC. PER NEC AND IBC SEISMIC REQUIREMENTS. PROVIDE SEISMIC SUPPORT AND DESIGN SEALED BY A LICENSED STRUCTURAL ENGINEER AS A DEFERRED SUBMITTAL TO THE AHJ FOR ALL EQUIPMENT OVER 400 LBS AND, EQUIPMENT OVER 20 LBS MOUNTED GREATER THAN 4FT AFF, CONDUIT 2.5"C OR GREATER AND ALL TRAPEZE OR WALL SUPPORTED RACEWAY 10 LBS/LF OR GREATER. SUPPORT STRUT AND MOUNTING HARDWARE TO BE GALVANIZED

26 05 30 - RACEWAY: ALL POWER, LIGHTING, CLASS 1, CLASS 2/3 CIRCUITS INSTALLED IN CONDUIT SHALL BE CONCEALED RACEWAY EXCEPT WHERE SPECIFICALLY INDICATED ELSEWHERE IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS. ELECTRICAL EQUIPMENT AND WIRING CAN BE EXPOSED IN MECHANICAL/ELECTRICAL ROOMS, COOLER/FREEZERS, TELECOMMUNICATION ROOMS, OPEN CEILING SPACES, OR WHERE SPECIFICALLY NOTED. DO NOT ROUTE RACEWAYS ON THE EXTERIOR SURFACE OF THE BUILDING OR THE ROOF UNLESS SPECIFICALLY NOTED OTHERWISE. RACEWAYS CROSSING BUILDING SEISMIC JOINTS OR CONNECTING TO EQUIPMENT WHICH MOVES OR VIBRATES REQUIRE TRANSITION TO FLEXIBLE RACEWAY ACROSS JOINT WITH ENOUGH SLACK TO ALLOW BUILDING MOVEMENT IN ALL DIRECTIONS WITHOUT DAMAGE.

26 05 31 - POLYVINYL CHLORIDE CONDUIT (PVC): UL 651, SCHEDULE 40 AND SCHEDULE 80. FITTINGS: UL 514C AND UL 514D. USES: SCHEDULE 40 - BELOW GRADE OR SLAB ON GRADE. SCHEDULE 80 – BELOW GRADE, SLAB ON GRADE, CORROSIVE ENVIRONMENT, OR EXPOSED. DO NOT INSTALL WHEN AMBIENT TEMPERATURES ARE LESS THAN -7C (20F).

ELECTRICAL SPECIFICATIONS

"X" = PROVIDE SUBMITTAL

26 05 33 – RIGID METAL CONDUIT (RMC): ANSI C80.1, UL 6. WITH BUSHINGS AT ALL TERMINATIONS. FITTINGS: GALVANIZED MALLEABLE IRON WITH THREADED HUBS FOR ALL CONDUIT ENTRIES AND COUPLINGS. SET SCREW OR RUNNING THREAD FITTINGS ARE NOT PERMITTED. USES: WET OR DRY WHERE INSTALLED BELOW GRADE, IN CONCRETE, STUB UPS, CONCEALED, WHERE EXPOSED TO PHYSICAL DAMAGE, ROUTED ON BUILDING ROOF, SERVICE RISERS, OR WITHIN 10FT OF RACEWAY ROUTED INTO FIXED FOUNDATIONS SUCH AS LIGHT POLE BASE OR STRUCTURE. MUST USE THREADED FITTINGS. MYERS HUBS WITH GROUNDING LOCKNUTS ARE REQUIRED FOR SERVICE RACEWAYS TO CT'S, METERS AND MAIN DISCONNECTS.

26 05 34 - ELECTRICAL METALLIC TUBING (EMT): ANSI C80.3, UL 797; GALVANIZED STEEL TUBING. FITTINGS: NEMA FB 1; GALVANIZED STEEL OR MALLEABLE IRON SET SCREW OR COMPRESSION. DIE CAST OR PRESSURE CAST FITTINGS OR LOCKNUTS ARE NOT PERMITTED. USES: WET OR DRY CONCEALED OR EXPOSED WHERE NOT SUBJECT TO PHYSICAL DAMAGE. WET OR DAMP LOCATIONS REQUIRE RAINTIGHT WET RATED GLAND COMPRESSION COUPLINGS AND CONNECTORS. NOT PERMITTED FOR SERVICE ENTRANCE RACEWAY, IN CONTACT WITH EARTH, OR IN CONTACT WITH CONCRETE.

26 05 35 - FLEXIBLE METAL CONDUIT (FMC): GALVANIZED OR ZINC COATED FLEXIBLE STEEL CONSTRUCTION. FMC FITTINGS: GALVANIZED MALLEABLE IRON OR STEEL WITH INSULATED THROATS. USES: DRY SPACES LENGTHS LESS THAN 6FT FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND OTHER MOVABLE OR VIBRATING EQUIPMENT.

LIQUIDTIGHT FLEXIBLE CONDUIT (LTMC): GALVANIZED OR ZINC COATED FLEXIBLE STEEL CONSTRUCTION WITH PVC OUTER JACKET. USES: DRY, DAMP, OR WET LOCATIONS LENGTHS LESS THAN 6FT FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND OTHER MOVABLE OR VIBRATING EQUIPMENT.

26 05 36 - WET OR DAMP LOCATIONS: USE DEVICES, FIXTURES, RACEWAYS, CONNECTORS, COUPLINGS, CABLES, ENCLOSURES, SUPPORTS, DEVICES, COVER PLATES, AND CONDUCTORS RATED FOR LOCATION INSTALLED.

26 05 40 - BOXES: PROVIDE PULL AND JUNCTION BOXES AS REQUIRED SIZED PER NEC REQUIREMENTS. BOX TO BE NEMA RATED FOR THE THE ENVIRONMENT INSTALLED. BRANCH CIRCUIT JUNCTION BOXES TO BE ELECTRO-GALVANIZED, 4" SQUARE BY 1 1/2" DEEP MINIMUM FOR USE IN DRY INTERIOR AREAS. PROVIDE 4 11/16" SQUARE BY 2 1/8" DEEP OUTLET BOXES FOR ALL VOICE AND DATA OUTLETS. DO NOT INSTALL BOXES BACK-TO-BACK IN WALLS. PROVIDE SEPARATION TO MINIMIZE SOUND TRANSFER. PROVIDE FIRE RATED PADS TO COVER EACH BOX IN FIRE RATED WALLS WHERE NECESSARY TO MAINTAIN FIRE WALL RATING.

26 05 40.1 - WET OR DAMP LOCATION BOXES AND FITTINGS: BOXES: WET RATED. FITTINGS: THREADED HUBS OR RAINTIGHT CONNECTORS FOR EMT. OUTLET BOXES SHALL BE CAST FERROUS WITH THREADED HUBS, NEMA 3R FOR EXTERIOR LOCATIONS, NEMA 4 FOR EXTERIOR OR INTERIOR WET LOCATIONS SUBJECT TO WATER SPRAY. NEMA 4X FOR OUTDOOR WITHIN 1 MILE OF THE COASTLINE, CONTROL EQUIPMENT, AND INTERIOR/EXTERIOR WET LOCATIONS EXPOSED TO CORROSIVE ENVIRONMENT.

26 05 53 - IDENTIFICATION FOR ELECTRICAL EQUIPMENT: PROVIDE PLACARDS FOR ALL NEW AND EXISTING AFFECTED ELECTRICAL SWITCHBOARDS, PANELBOARDS, TRANSFER SWITCHES, CONTACTORS, EQUIPMENT AND DISCONNECTS PER NEC REQUIREMENTS.

X 26 09 24 - PHOTOCELL: ENCLOSED IN A WEATHER TIGHT ENCLOSURE WITH THREADED NIPPLE. THE ENCLOSURE SHALL BE SUITABLE FOR MOUNTING IN ANY POSITION WITH AN ADJUSTMENT SHIELD TO PERMIT ADJUSTMENT TO TURN-ON LIGHT LEVEL REQUIREMENTS.

X 26 24 17 - LOAD CENTERS: PROVIDE AND INSTALL RESIDENTIAL GRADE LOAD CENTERS OF THE RATING AND CONFIGURATION AS SHOWN ON THE SINGLE LINE DIAGRAM, PANEL SCHEDULES, AND SCCR TABLE. PROVIDE CIRCUIT DIRECTORY SHOWING CIRCUITING ARRANGEMENT. PROVIDE UL LISTED SURGE PROTECTION DEVICE AND COMBINATION-TYPE ARC-FAULT CIRCUIT-INTERRUPTER (AFCI) BREAKER PROTECTION FOR ALL BRANCH CIRCUITS IN DWELLING UNITS, DORMITORIES, HOTEL GUEST SUITES, OR BARRACKS SLEEPING ROOM.

X 26 27 13 - ELECTRICAL SERVICES: THE ELECTRICAL CONTRACTOR SHALL CONTACT EACH SERVING UTILITY CO. AND VERIFY EXACT SERVICE REQUIREMENTS/LOCATION FOR POWER, TELEPHONE AND CABLE TV. SUBMIT EQUIPMENT SUBMITTALS/SHOP DRAWINGS TO SERVING POWER UTILITY FOR COORDINATION OF FAULT CURRENT RATINGS AND CONFIGURATION APPROVAL PRIOR TO EQUIPMENT PROCUREMENT. THE CONTRACTOR SHALL COORDINATE AND PROVIDE ALL REQUIREMENTS OF EACH SERVING UTILITY AND ALL EQUIPMENT SHALL CONFORM TO THE SERVING UTILITY STANDARDS AND REQUIREMENTS.

26 27 26 - WIRING DEVICE PLATES: COORDINATE COLOR WITH OWNER. FINISHED AREAS - FLUSH SMOOTH PLASTIC WITH MATCHING SCREWS. UNFINISHED AREAS - RAISED GALVANIZED STEEL. WET OR DAMP LOCATIONS PROVIDE WET RATED GASKETED PLATES. EXTERIOR AREAS - WEATHERPROOF WHILE-IN-USE, DIE CAST METAL, POWDER COAT FINISH, GASKETED, EXTRA DUTY RATED.

26 27 27 - RECEPTACLES: TAMPER-RESISTANT DUPLEX (AS DENOTED ON THE PLANS) COMMERCIAL GRADE, 2 POLE, 3 WIRE, 120V, 20 AMP STRAIGHT BLADE, UON, UL LISTED, SMOOTH NYLON FACE, BACK AND SIDE WIRED. INSTALL RECEPTACLES VERTICALLY WITH GROUNDING POLE ON BOTTOM UNLESS NOTED OTHERWISE.

26 27 28 - GFCI RECEPTACLES: DUPLEX WITH CLASS 3 INTEGRAL GROUND FAULT CURRENT INTERRUPTER (GFCI). THE GFCI SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION OR PROVIDE GFCI BREAKER IN PANEL. EXTERIOR, WET, OR DAMP LOCATIONS SHALL BE WEATHER RESISTANT MARKED "WR" ON THE FACE.

26 27 29 - SPECIAL RECEPTACLES: AMPERAGE/VOLTAGE/POLES AS DENOTED ON PLANS. COORDINATE RECEPTACLE CONFIGURATION WITH EQUIPMENT PROVIDED. RECEPTACLES DENOTED AS GFCI PROTECTED MAY BE PROTECTED BY GFCI CIRCUIT BREAKER OR REMOTE GFCI PROTECTION MODULE WITH TEST/RESET IN ACCESSIBLE LOCATION.

26 27 35 - SWITCHES: 20 AMP, 120/277V AC, BACK AND SIDE WIRED CONFIGURED AS INDICATED ON THE DRAWINGS. PROVIDE NEUTRAL (GROUNDED CONDUCTOR) IN ALL SWITCH BOXES FOR EACH SWITCHED CIRCUIT TO ALLOW FUTURE TECHNOLOGIES TO BE INSTALLED WHICH REQUIRE NEUTRAL CONDUCTOR.

26 27 36 - DIMMING SWITCHES: COMPATIBLE WITH FIXTURE SPECIFIED. ON/OFF CONTROL WITH RAISE AND LOWER PUSHBUTTONS.

26 27 37 - OCCUPANCY WALL SENSORS: DUAL TECHNOLOGY, PASSIVE INFRARED (PIR), SELF ADJUSTING, AUTOMATIC DUAL MODE WITH AUTO ON - AUTO OFF CONFIGURATION.

ABBREVIATIONS	
INDUSTRY STANDARD ABBREVIATIONS SHALL ALSO BE...	
Key Name	**FullWord**
(#)	DENOTES TYPICAL IN LIGHT FIXTURE TYPES
(D)	DEMOLISH
(E)	EXISTING
(R)	RELOCATED
AER	ARC ENERGY REDUCTION
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
BJ	BONDING JUMPER
CB	CIRCUIT BREAKER
CO, C.O.	CONDUIT ONLY
CT	CURRENT TRANSFORMER
CU	COPPER
EECP	ELEVATOR EMERGENCY COMMUNICATION PANEL
EECS	ELEVATOR EMERGENCY COMMUNICATION STATION
EGC	EQUIPMENT GROUNDING CONDUCTOR
FAA	FIRE ALARM ANNUCIATOR
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLE ILLUMINATION
FHP	FRACTIONAL HORSEPOWER
FLA	FULL LOAD AMPS
FSD	FIRE SMOKE DAMPER
G, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GEC	GROUNDING ELECTRODE CONDUCTOR
GES	GROUNDING ELECTRODE SYSTEM
GFPE	GROUND FAULT PROTECTION OF EQUIPMENT
MCA	MINIMUM CIRCUIT AMPACITY
MFS	MAXIMUM FUSE SIZE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT (NOT IN SCOPE)
NO	NORMALLY OPEN
P	POLES
PC	PHOTO CELL
PH, Ø	PHASE
PNL	PANEL
RIB	RELAY IN A BOX (MOTOR RATED)
SCA	SHORT CIRCUIT AMPS
SCCR	SHORT CIRCUIT CURRENT RATING
SE	SERVICE ENTRANCE RATED
SPD	SURGE PROTECTION DEVICE
SSBJ	SUPPLY SIDE BONDING JUMPER
SSEBJ	SUPPLY SIDE EQUIPMENT BONDING JUMPER
TGB	TELECOMMUNICATION GROUNDING BUSBAR
TMGB	TELECOMMUNICATION MAIN GROUNDING BUSBAR
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS OR WIRE
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

MOUNTING HEIGHT SCHEDULE	
EQUIPMENT (TO CENTER UON)	**HEIGHT (UON)**
CONTACTORS, MOTOR STARTERS, DISCONNECT (TOP)	66"
ELECTRIC RANGE RECEPTACLES (TOP)	7" MAX
INDICATING DEVICES (BOTTOM)	80"
PANELBOARDS - POWER; SPECIAL SYSTEMS (TOP)	72"
POWER METER BASE (CENTER LINE OF SOCKET)	PER UTILITY
PULL STATIONS, PUSH BUTTONS	46"
REC FULL HEIGHT REFRIGERATOR OR REACH-IN UNITS	46"
REC IN FINISHED AREAS	18"
REC IN NON-FINISHED, WAREHOUSE, MECH AND SHOPS	46"
REC LOCATED IN HAZARDOUS OR S-2 OCCUPANCIES	24" MINIMUM
TELECOMMUNICATION OUTLETS	18"
WALL MOUNTED SWITCHES	46"
WASHING MACHINES AND DRYER RECEPTACLE	43"

ELECTRICAL LEGEND

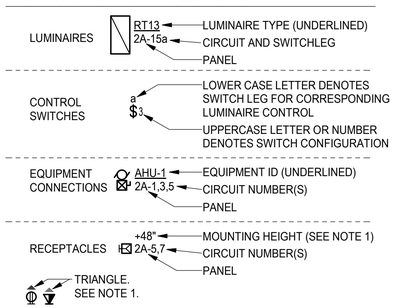
- PHOTOCELL CONTROL
- LUMINAIRE - TYPE AS NOTED ON PLAN - LINEWORK MAY VARY
- LUMINAIRE - WALL MOUNTED: TYPE AS NOTED ON PLAN
- LUMINAIRE - FILL INDICATES EMERGENCY (MAY VARY) - TYPE ENDS WITH 'E'
- EMERGENCY LIGHTING UNIT (WALL; CEILING; REMOTE HEAD)
- EXIT SIGN SHADE DENOTES FACE; ARROWS AS INDICATED
- COMBINATION EMERGENCY LIGHTING UNIT/EXIT SIGN, SHADE DENOTES FACE
- $ SWITCH - SINGLE POLE, SINGLE THROW, UON
- $x SWITCH - SEE SWITCH LEGEND FOR TYPE
- EMERGENCY SHUTDOWN
- WALL SENSOR - SEE SWITCH LEGEND: WALL SENSOR FOR TYPE
- METERING DEVICE
- POWER PANELBOARD
- MOTOR CONNECTION
- FUSED SAFETY SWITCH / DISCONNECT
- ELECTRIC BASEBOARD HEATER
- JUNCTION BOX OR EQUIPMENT CONNECTION (CEILING; WALL; FLOOR)
- JUNCTION BOX OR EQUIPMENT CONNECTION - WALL MOUNTED
- DUPLEX RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE - GFCI PROTECTED
- DUPLEX RECEPTACLE - GFCI PROTECTED, WEATHERPROOF, +24" UON
- DOUBLE DUPLEX RECEPTACLE - GFCI PROTECTED
- DUPLEX RECEPTACLE - PROTECTED BY GFCI CIRCUIT BREAKER IN PANEL
- SPECIAL RECEPTACLE - GFCI PROTECTED (VERIFY NEMA CONFIGURATION)
- TELECOMMUNICATION OUTLET

SWITCH LEGEND

STANDARD: 3 (THREE WAY); 4 (FOUR WAY); B (THREE WAY DIMMER); C (TIMER); D (DIMMER); K (KEYED); L (LOW VOLTAGE); P (PILOT LIGHT); S (VARIABLE SPEED CONTROL); T (INTEGRAL MOTOR OVERLOAD)
WALL SENSOR: 2 (DUAL CIRCUIT OCCUPANCY); D (DIMMING VACANCY SENSOR); O (OCCUPANCY SENSOR); V (VACANCY SENSOR)

- LINETYPE/LINEWEIGHT DENOTING FUTURE WORK
- LINETYPE/LINEWEIGHT DENOTING DEMO WORK
- LINETYPE/LINEWEIGHT DENOTING EXISTING WORK TO REMAIN
- LINETYPE/LINEWEIGHT DENOTING NEW WORK
- LINETYPE/LINEWEIGHT DENOTING NEW ONE-LINE CONNECTIONS
- LINETYPE/LINEWEIGHT DENOTING BELOW GRADE CONDUIT
- LINETYPE/LINEWEIGHT DENOTING CONTROL WIRING

EQUIPMENT TAG LEGEND



NOTE 1: DIMENSIONS (WHEN GIVEN ARE AFF). TRIANGLE DENOTES 46" AFF IN OPEN AREAS OR AT CASEWORK LOCATIONS TO BE 4" ABOVE COUNTERTOP (BACKSPLASH WHEN PRESENT). COORDINATE WITH ARCHITECTURE. THIS APPLIES TO ALL ELECTRICAL DEVICES.

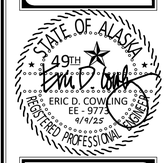
ELECTRICAL SHEET LIST		
NUM	**REV#**	**SHEET TITLE**
E0.1		LEGEND AND SPECIFICATIONS
E0.2		SCHEDULES
E1.1		ELECTRICAL SITE PLAN
E2.1		1ST FLOOR LIGHTING PLAN
E2.2		2ND FLOOR LIGHTING PLAN
E3.1		1ST FLOOR POWER AND SIGNAL PLAN
E3.2		2ND FLOOR POWER AND SIGNAL PLAN
E4.1		DIAGRAMS, DETAILS, AND SCHEDULES
TOTAL SHEETS: 8		

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Drawn by: RBC
Checked by: EDC



NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: LEGEND AND SPECIFICATIONS
Address: 10204 S Knik Goose Bay Rd. Wasilla, AK 99623

E0.1

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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qc:09/09/2025 09:04:21 : fc-2 : abuDbl : pschd : 0.5;5.8:6.3/5151

LUMINAIRE SCHEDULE	
NOTES	
(KEY)	'(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE. NUMBERED NOTES ARE REFERENCED IN THE SCHEDULE.
(A)	COLUMN HEADER DENOTED "IU" IS FOR INTERNAL USE ONLY BY EIC ENGINEERS FOR QC. THE VALUE HAS NO CONTRACTURAL IMPLICATIONS.
(B)	CATALOG NUMBERS ARE FOR GENERAL REFERENCE AND ARE NOT INCLUSIVE OF ALL OPTIONS/REQUIREMENTS DENOTED ON PLANS AND SPECIFICATIONS. ASTERISK (*) DENOTES COORDINATION ITEMS.
(C)	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND PROVIDE MOUNTING HARDWARE/FLANGES ETC FOR ALL LUMINAIRES FOR CEILING TYPES SHOWN.
(D)	PROVIDE UNIVERSAL OR MULTI-VOLTAGE VOLTAGE DRIVERS WHEN AVAILABLE. COORDINATE EXACT VOLTAGE/PHASE WITH CONNECTED CIRCUITS IN ALL OTHER SITUATIONS.
(E)	LIGHT SOURCE COLOR TEMPERATURE, UNLESS OTHERWISE NOTED: 3500K (SELECT NEAREST AVAILABLE COLOR TEMP FOR EACH LUMINAIRE TYPE). LIGHT SOURCE CRI TO BE 80 MIN, UON.
(F)	COLOR FINISH FOR ALL EXTERIOR LUMINAIRES TO BE DARK BRONZE UON.
1	NOT USED.

SCHEDULE

IU	TYPE	DESCRIPTION	WATTS	LUMENS	MOUNTING	MANUFACTURER	MODEL	NOTE
57	D41	4" OPEN LED DOWNLIGHT, ADJUSTABLE (SET TO 750LM)	13 W	750 LM LED	CEILING RECESSED	LITHONIA	LDN4 AL01 SWW1* L04AR LD MVOLT UGZ	
7	D41E	4" OPEN LED DOWNLIGHT, ADJUSTABLE (SET TO 750LM) FED FROM EM INVERTER	13 W	750 LM LED	CEILING RECESSED	LITHONIA	LDN4 AL01 SWW1* L04AR LD MVOLT UGZ	
47	DJ41	4" OPEN LED DOWNLIGHT	12 W	954 LM LED	CEILING RECESSED	JUNO	IC1LED G4 09LM *K *CRI * 17 HZWH	
14	E2	EMERGENCY LIGHTING UNIT W/ TWO ADJUSTABLE HEADS	1 W	(2) 1.2W LED	WALL +7'-0" OR CEILING	LITHONIA	ELM2L M12	
1	EM	EMERGENCY LIGHTING UPS SINE WAVE INVERTER, 125VA, UL924	125 W	N/A	SURFACE	EVENLITE	PW 12 LC V1	
3	LC4	4FT LED STRIP WITH DROPPED LENS WHITE FINISH	26 W	3906 LM LED	SURFACE	LITHONIA	CLX L48 4000LM SEF RDL MVOLT GZ10 *K *CRI WH	
12	LF14	1' X 4' LED FLAT PANEL ADJUSTABLE OUTPUT (SET TO HIGH LM)	40 W	4356 LM LED	CEILING SURFACE	LITHONIA	CPANL 1X4 AL01 SWW7 M4 DCMK 14	
6	RM1	1FT LED CYLINDER VANITY	10 W	829 LM LED	WALL OVER MIRROR	LITHONIA	FMVCCLS 12IN MVOLT * 90CRI BN	
2	RM2	2FT LED CYLINDER VANITY	18 W	1737 LM LED	WALL OVER MIRROR	LITHONIA	FMVCCLS 24IN MVOLT * 90CRI BN	
4	XA	LED EXIT SIGN W/ EXTERIOR REMOTE EM LIGHT	2 W	GREEN LED	WALL OR CEILING	LITHONIA	LHQM LED G HO RO; AFB OELR DDBTXD WT	
4	XE	LED COMBO EXIT SIGN & EM LIGHTING UNIT W/ BATTERY BACKUP	4 W	GREEN LED	WALL OR CEILING	LITHONIA	LHQM LED G	
4	XEA	LED COMBO EXIT SIGN & EM LIGHTING UNIT W/ EXT REMOTE EM LIGHT	4 W	GREEN LED	WALL OR CEILING	LITHONIA	LHQM LED G HO; AFB OELR DDBTXD WT	
5	ZMCU1	OUTDOOR LED ROUND CYLINDER UP/DOWNLIGHT LIGHT, CAST-AL	14 W	947 LM LED	WALL	LITHONIA	OLLWU LED P1 40K MVOLT *	
1	ZMR	OUTDOOR LED WALL SCONCE, DIE-CAST ALUMINUM	24 W	LED	WALL	KENALL	MR13FL PP * 20L*K *	
6	ZWG6	OUTDOOR LED WALL LUMINAIRE, DIE-CAST ALUMINUM	48 W	6127 LM LED	WALL	LITHONIA	WDGE2 LED P5 * 80CRI VF MVOLT * *	

UTILIZATION EQUIPMENT CONNECTION SCHEDULE	
NOTES	
(KEY)	'(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE. NUMBERED NOTES ARE REFERENCED IN THE SCHEDULE.
(A)	COLUMN HEADER DENOTED "IU" IS FOR INTERNAL USE ONLY BY EIC ENGINEERS FOR QC. THE VALUE HAS NO CONTRACTURAL IMPLICATIONS.
(B)	REFER TO FLOOR PLAN DRAWINGS FOR EQUIPMENT TYPE REQUIREMENTS, LOCATIONS AND QUANTITIES.
(C)	COORDINATE ALL CONNECTION REQUIREMENTS WITH ACTUAL EQUIPMENT SUPPLIED PRIOR TO ROUGH-IN.
(D)	COORDINATE AND PROVIDE SPECIFIC SIZING OF OVERLOADS AND FUSES WITH EQUIPMENT RATINGS.
(E)	FRACTIONAL HP TYPE MOTOR SWITCH WHERE AUTO CONTROL IS REQUIRED PROVIDE 'RELAY IN BOX'.
(F)	DISCONNECT HP RATING TO BE SIZED PER VOLTAGE AND FUSE TYPE UTILIZED.
(G)	DISCONNECTS DENOTED PLANS CAN BE ELIMINATED WHEN PROVIDED INTEGRAL WITH EQUIPMENT.
(H)	PROVIDE EQUIPMENT NAMEPLATE FOR EACH EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCCR SCHEDULE FOR ADDITIONAL REQUIREMENTS.
(I)	THE 'SCA' COLUMN DENOTES CALCULATED SHORT CIRCUIT AMPS ON LINE SIDE OF EQUIPMENT. THE 'MIN FT' COLUMN DENOTES CONDUCTOR LENGTH USED FOR THE SCA CALCULATION. THE ACTUAL LENGTH IS EXPECTED TO BE LONGER. IF THE ACTUAL LENGTH IS LESS THAN "MIN FT", THE SCA MUST BE RECALCULATED.
(J)	THE "SCCR" COLUMN DENOTES THE ANTICIPATED FACTORY EQUIPMENT SHORT CIRCUIT CURRENT RATING. CONTRACTOR SHALL VERIFY THE ACTUAL EQUIPMENT SCCR MEETS OR EXCEEDS THE SCCR VALUE DENOTED IN THIS TABLE. WHERE THE EQUIPMENT SCCR IS LESS THAN THE SCA VALUE, THE CONTRACTOR SHALL PROVIDE CURRENT LIMITING FUSES TO RESTRICT THE PEAK LET-THRU AMPS TO LESS THAN THE EQUIPMENT SCCR. IN THESE CASES, REFER TO "FUSE PART #" COLUMN FOR THE ENGINEER RECOMMENDED FUSE TO BE PROVIDED. PROVIDE WARNING SIGNAGE DENOTING FUSE PEAK LET-THRU AMPERAGE, TEXT DENOTING "IDENTIFIED REPLACEMENT COMPONENTS REQUIRED", FOLLOWED BY AMPERAGE AND MANUFACTURER MODEL/TYPE OF FUSE REQUIRED. THE CONTRACTOR SHALL ALSO PROVIDE THE PEAK LET-THRU TABLE FOR THE FUSE INSTALLED AND POST AT THE ASSOCIATED EQUIPMENT DISCONNECT FOR INSPECTOR REVIEW. PROVIDE CLASS RK-5, J, OR SIMILAR TIME-DELAY FUSES OR EQUAL PER THE SYSTEM REQUIREMENTS WHERE SPECIFIC FUSE PART NUMBER IS NOT DENOTED.
(K)	EQUIPMENT WITH NO VALUES IN "MIN FT", "SCA", AND "SCCR" CELLS INDICATE NO ANALYSIS IS REQUIRED. EQUIPMENT WITH NO VALUES IN "FUSE PART #" AND "LET-THRU AMPS" CELLS INDICATE NO SPECIFIC FUSE IS REQUIRED.
1	NOT USED.

SCHEDULE | **ENGINEERED SHORT CIRCUIT CURRENT MITIGATION**

IU	EQUIP ID	LOCATION OR FUNCTION	KVA	HP	FLA	MCA	MFS	TYPE	INGRESS RATING	V	PH	OPD	CIRCUIT (MINIMUM) CU UON	MIN FT	SCA	SCCR	FUSE PART #	LET-THRU AMPS	NOTE
1	AHU-1	AIR HANDLER UNIT	1.056		8.8			FUSED DISC	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	5	4140	5,000	NA	SCA	
1	AHU-2	AIR HANDLER UNIT	1.380		11.5			FUSED DISC	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	13	2155	5,000	NA	SCA	
1	B-1	BOILER	0.150	FHP				MOTOR SWITCH	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	14	2063	5,000	NA	SCA	
1	CF-1	CEILING PADDLE FAN	0.200	FHP				J-BOX	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	79	452	5,000	NA	SCA	
1	CF-1	CEILING PADDLE FAN	0.200	FHP				J-BOX	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	44	785	5,000	NA	SCA	
1	CF-1	CEILING PADDLE FAN	0.200	FHP				J-BOX	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	66	531	5,000	NA	SCA	
1	CF-1	CEILING PADDLE FAN	0.200	FHP				J-BOX	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	54	647	5,000	NA	SCA	
1	CP-1	CIRCULATION PUMP	0.264	1/12				MOTOR SWITCH	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	12	2342	5,000	NA	SCA	
1	CP-2	CIRCULATION PUMP	0.150	FHP				MOTOR SWITCH	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	12	2282	5,000	NA	SCA	
1	DW	DISHWASHER	1.200					DUPLEX 5-20R GFCI CB	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	27	1226	5,000	NA	SCA	
1	EBB-1	ELECTRIC BASEBOARD - 3 LINEAR FEET	0.750					J-BOX		120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	27	1213	5,000	NA	SCA	
1	EBB-1	ELECTRIC BASEBOARD - 3 LINEAR FEET	0.750					J-BOX		120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	40	862	5,000	NA	SCA	
1	EBB-2	ELECTRIC BASEBOARD - 4 LINEAR FEET	1.000					J-BOX		120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	17	1776	5,000	NA	SCA	
1	EBB-3	ELECTRIC BASEBOARD - 5 LINEAR FEET	1.250					J-BOX		120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	34	979	5,000	NA	SCA	
1	ECUH-1	CABINET UNIT HEATER	2.000					MOTOR SWITCH	NEMA 1	120	1	30 A	0.75"C, (2)8 AWG, (1)8 AWG EGC	58	1398	5,000	NA	SCA	
1	EF-1	EXHAUST FAN	0.120	FHP				DIRECT WIRED	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	28	1173	5,000	NA	SCA	
1	EF-1	EXHAUST FAN	0.120	FHP				DIRECT WIRED	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	38	903	5,000	NA	SCA	
1	EF-2	EXHAUST FAN	0.696	1/4				MOTOR	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	34	1001	5,000	NA	SCA	
1	EF-3	EXHAUST FAN	0.696	1/4				MOTOR SWITCH	NEMA 1	120	1	15 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	10	2739	5,000	NA	SCA	
1	GW-1	GLASS WASHER	2.880		12			NEMA 6-15R	NEMA 1	240	1	15 A	0.5"C, (3)12 AWG, (1)12 AWG EGC	30	1963	5,000	NA	SCA	
1	HOOD	KITCHEN HOOD	0.200	0.25						120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	22	1453	5,000	NA	SCA	
1	KEG-1	KEGERATOR	0.180					DUPLEX 5-20R GFCI	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	36	951	5,000	NA	SCA	
1	MW	MICROWAVE	1.550					DUPLEX 5-20R GFCI	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	25	1324	5,000	NA	SCA	
1	WH-1	WATER HEATER	0.300					MOTOR SWITCH	NEMA 1	120	1	20 A	0.5"C, (2)12 AWG, (1)12 AWG EGC	13	2157	5,000	NA	SCA	

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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STATE OF ALASKA
49TH
ERIC D. COWLING
EE - 9773
9/9/25
REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: SCHEDULES
Address: 10204 S Knik Goose Bay Rd. Wasilla. AK 99623

E0.2

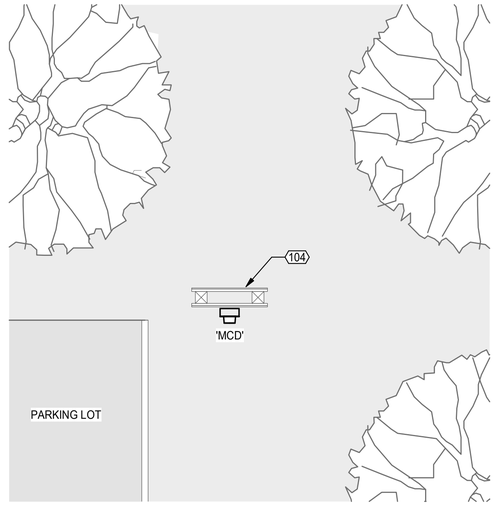
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REFERENCED SHEET NOTES

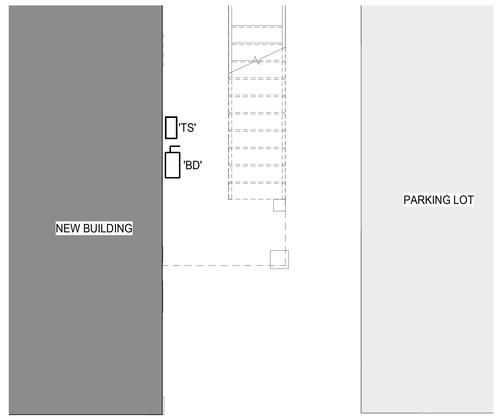
REF	NOTE
002	PROVIDE (2) 1" C. STUBOUTS FROM PANEL A FOR FUTURE SIGN AND POLE MOUNTED SITE LIGHTING.
104	PROPOSED LOCATION OF BUILDING ELECTRICAL SERVICE. COORDINATE WITH SERVING UTILITY BEFORE INSTALLATION TO VERIFY EXACT LOCATION AND REQUIREMENTS. PROVIDE WOOD POST BACKBOARD FOR REMOTE SERVICE PEDESTAL.



1 E1.1 ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"



2 E1.1 ELECTRICAL SITE PLAN - UTILITY SERVICE AND MCD
SCALE: 1/4" = 1'-0"



3 E1.1 ELECTRICAL SITE PLAN - SERVICE DISCONNECT
SCALE: 1/4" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

TRUE NORTH

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Project Number

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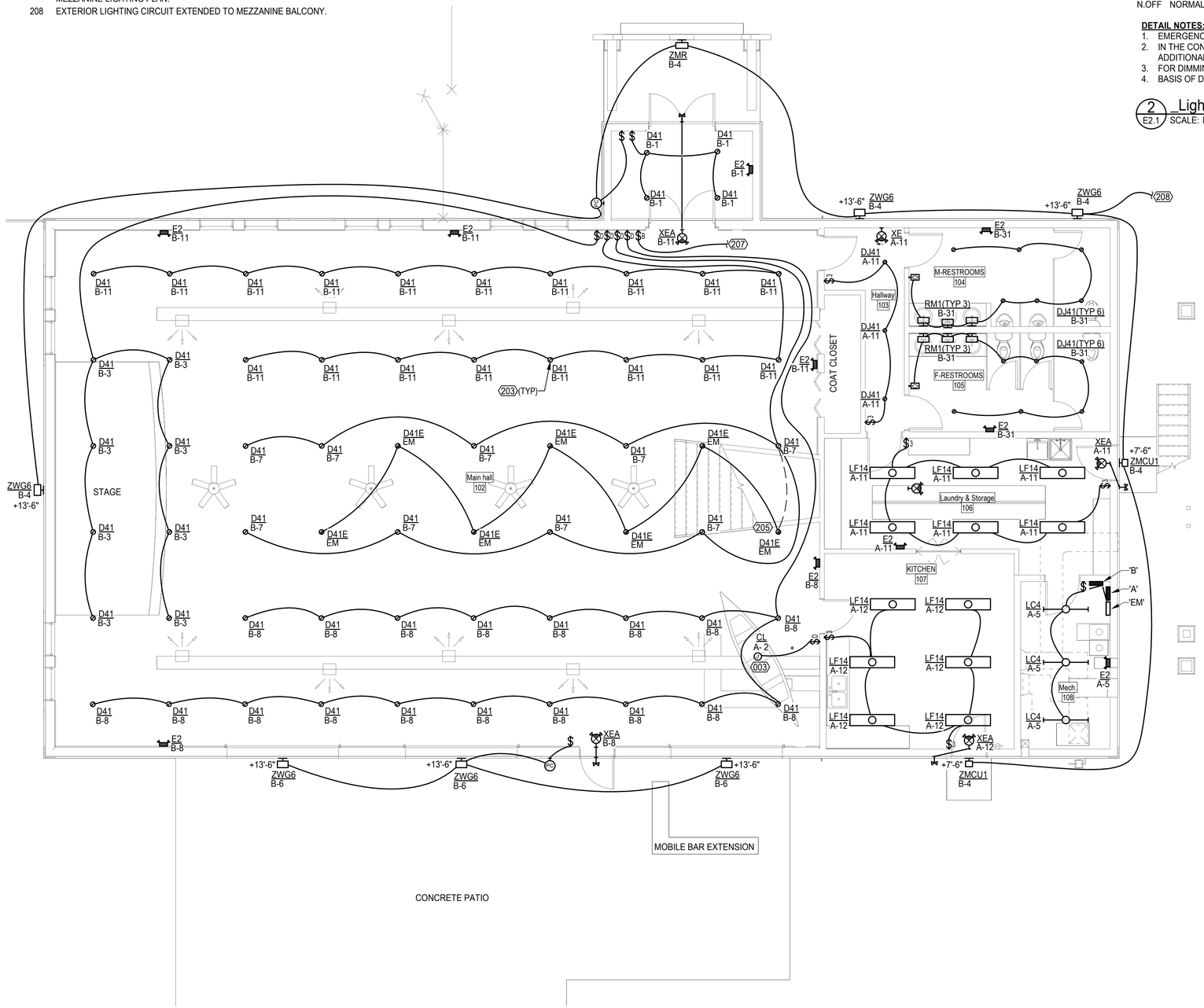
Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: ELECTRICAL SITE PLAN
Address: 10204 S Knik Goose Bay Rd. Wasilla. AK 99623

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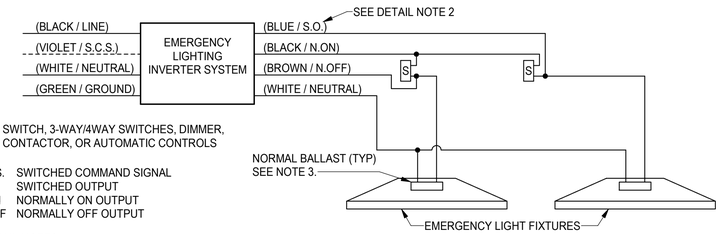
REFERENCED SHEET NOTES

REF	NOTE
003	PROVIDE CEILING MOUNTED JUNCTION BOX ABOVE BAR FOR FUTURE CONNECTION OF INTEGRAL LIGHTING IN OVERHEAD CANOPY.
203	PROVIDE FIRE RATED TOP HAT OVER EACH LIGHT FIXTURE INSTALLED IN CEILING WITH INSULATION.
205	LIGHTING CONTROLS, SWITCHES, AND/OR DIMMERS TO CONTROL BOTH NORMAL AND EMERGENCY FIXTURES. EMERGENCY FIXTURES ARE TO BE CONNECTED TO THE EMERGENCY CIRCUIT INDICATED VIA UL 924 LISTED EMERGENCY POWER CONTROL DEVICE. UL 924 DEVICE TO MONITOR NORMAL CIRCUIT IN SAME AREA AND TO POWER ALL EMERGENCY LIGHTING TO FULL ON IF NORMAL CIRCUIT FAILS REGARDLESS OF CONTROLS, SWITCHES, AND/OR DIMMERS STATE.
207	3-WAY DIMMER SWITCH TO CONTROL LIGHTING ABOVE STAIR LANDING. SEE MEZZANINE LIGHTING PLAN.
208	EXTERIOR LIGHTING CIRCUIT EXTENDED TO MEZZANINE BALCONY.



1 E2.1 LEVEL 1 LIGHTING PLAN
SCALE: 3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

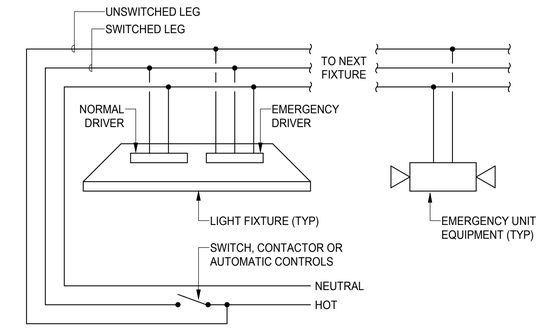


S SWITCH, 3-WAY/4WAY SWITCHES, DIMMER, CONTACTOR, OR AUTOMATIC CONTROLS

S.C.S. SWITCHED COMMAND SIGNAL
S.O. SWITCHED OUTPUT
N.ON NORMALLY ON OUTPUT
N.OFF NORMALLY OFF OUTPUT

DETAIL NOTES:
1. EMERGENCY FIXTURES TO ILLUMINATE WHEN LINE VOLTAGE AT INVERTER FAILS NO MATTER WHAT STATE SWITCHES/CONTROLS ARE IN.
2. IN THE CONFIGURATION SHOWN, THE SWITCHED COMMAND SIGNAL INPUT IS NOT USED AND THE SWITCHED OUTPUT FUNCTIONS AS AN ADDITIONAL NORMALLY OFF OUTPUT.
3. FOR DIMMING PROVIDE LINE VOLTAGE DIMMING BALLAST ONLY. DOES NOT WORK WITH 0-10V OR LOW VOLTAGE.
4. BASIS OF DESIGN: EVENLITE PW SERIES.

2 E2.1 _Lights__EMERGENCY LIGHTING INVERTER CONNECTION DIAGRAM
SCALE: NONE



DETAIL NOTES:
1. EMERGENCY FIXTURES TO BE CONNECTED TO LOCAL LIGHTING CIRCUIT TO ILLUMINATE WHEN UNSWITCHED LEG CIRCUIT FAILS NO MATTER WHAT STATE LIGHTING IS OPERATING.

3 E2.1 _Lights__EMERGENCY LIGHTING CONNECTION DIAGRAM
SCALE: NONE

TRUE NORTH

EIC ENGINEERS, INC
ELECTRICAL ENGINEERS
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STATE OF ALASKA 49TH
ERIC D. COWLING
EE - 9773
9/9/25
REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

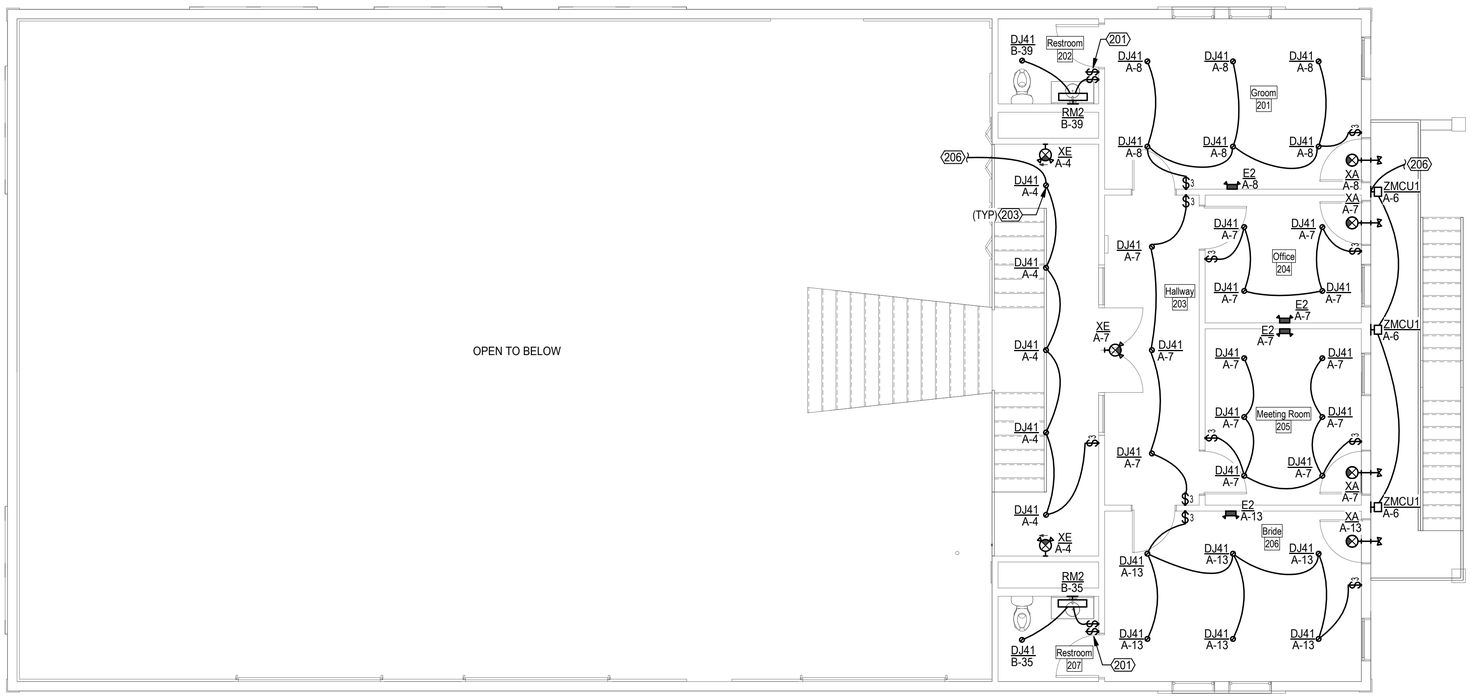
Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: 1ST FLOOR LIGHTING PLAN
Address: 10204 S Knik Goose Bay Rd. Wasilla, AK 99623

E2.1

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qc:09/09/2025 09:04:21 : fc-2 : abu0bl : pschd : 0.5;5.8.6.3/5151

REFERENCED SHEET NOTES

REF	NOTE
201	EXHAUST FAN CONTROL SWITCH. SEE THE POWER PLAN FOR FAN.
203	PROVIDE FIRE RATED TOP HAT OVER EACH LIGHT FIXTURE INSTALLED IN CEILING WITH INSULATION.
206	SEE FIRST FLOOR PLAN FOR LIGHTING CONTROL.



1 LEVEL 2 LIGHTING PLAN
E2.2 SCALE: 3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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STATE OF ALASKA 49TH ERIC D. COWLING EE - 9773 9/9/25 REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: 2ND FLOOR LIGHTING PLAN
Address: 10204 S Knik Goose Bay Rd. Wasilla, AK 99623

E2.2

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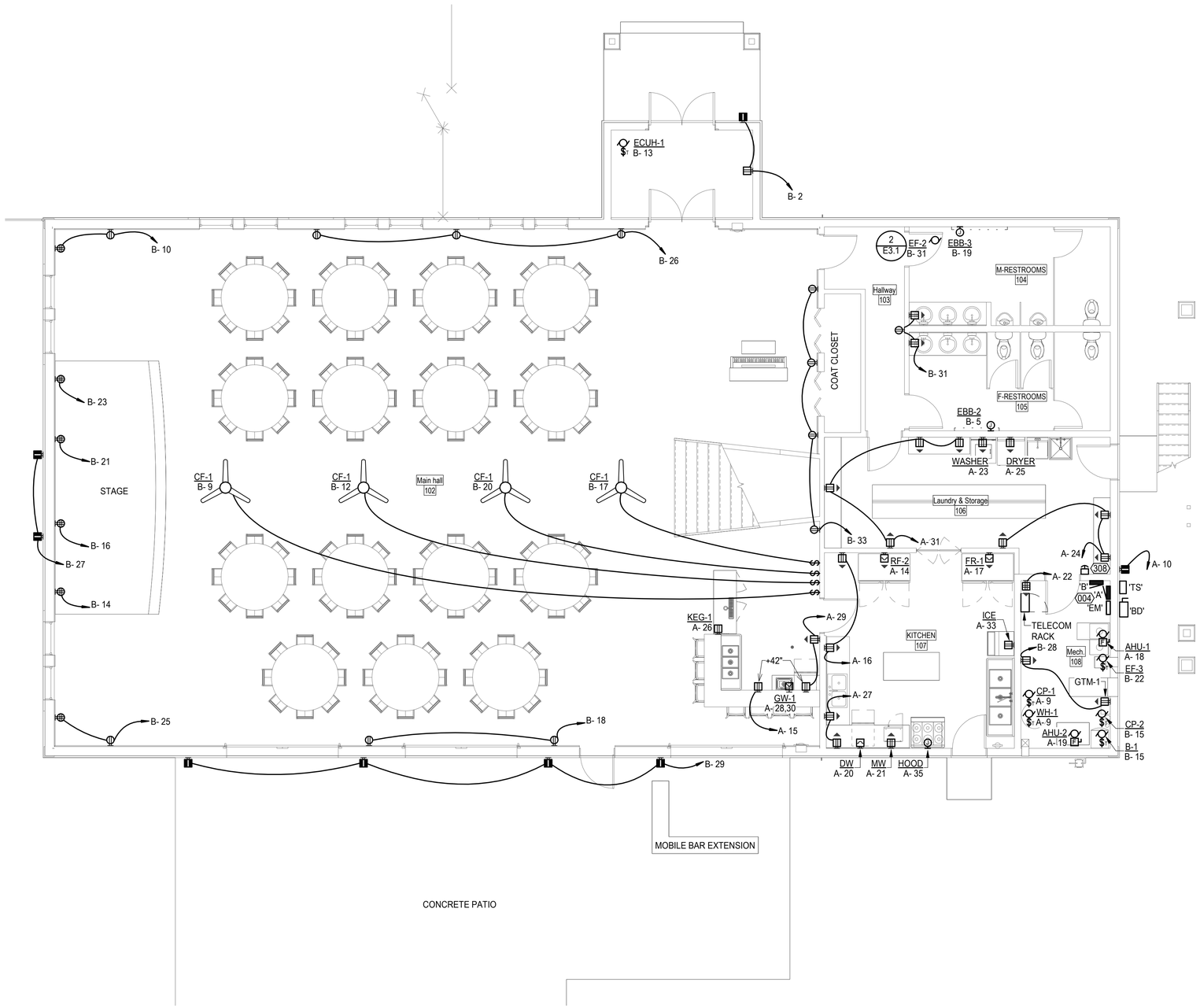
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GENERAL NOTES

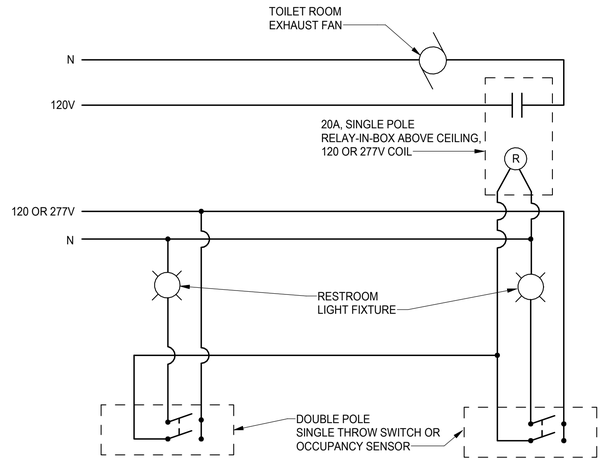
1. BASED ON THE A3 GREATER THAN 100 OCCUPANCY ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE.

(#) REFERENCED SHEET NOTES

REF	NOTE
004	COORDINATE WITH MECHANICAL TO NOT ROUTE ANY PIPING OR DUCTS ABOVE PANELS OR ENCROACH ON THE REQUIRED WORKING CLEARANCES.
308	PROVIDE A REMOTE EMERGENCY SHUTDOWN SWITCH TO DE-ENERGIZE THE POWER SOURCE OF STEAM HEATING, HOT WATER HEATING, AND HOT WATER SUPPLY BOILERS. PROVIDE "SWITCH PROTECTION COVER" TO ELIMINATE INADVERTENT OPERATION AND LABEL SWITCH "EMERGENCY BOILER/HOT WATER SHUTDOWN".



1 E3.1 LEVEL 1 POWER AND SIGNAL PLAN
SCALE: 3/16" = 1'-0"



2 E3.1 PUBLIC RESTROOM EXHAUST FAN SWITCH DETAIL
SCALE: NONE

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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STATE OF ALASKA
49TH
ERIC D. COWLING
EE - 9775
9/9/25
REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: 1ST FLOOR POWER AND SIGNAL PLAN
Address: 10204 S Knik Goose Bay Rd. Wasilla. AK 99623

E3.1

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Planning Commission Packet
Nov 18, 2026
Mtg 2.3b1

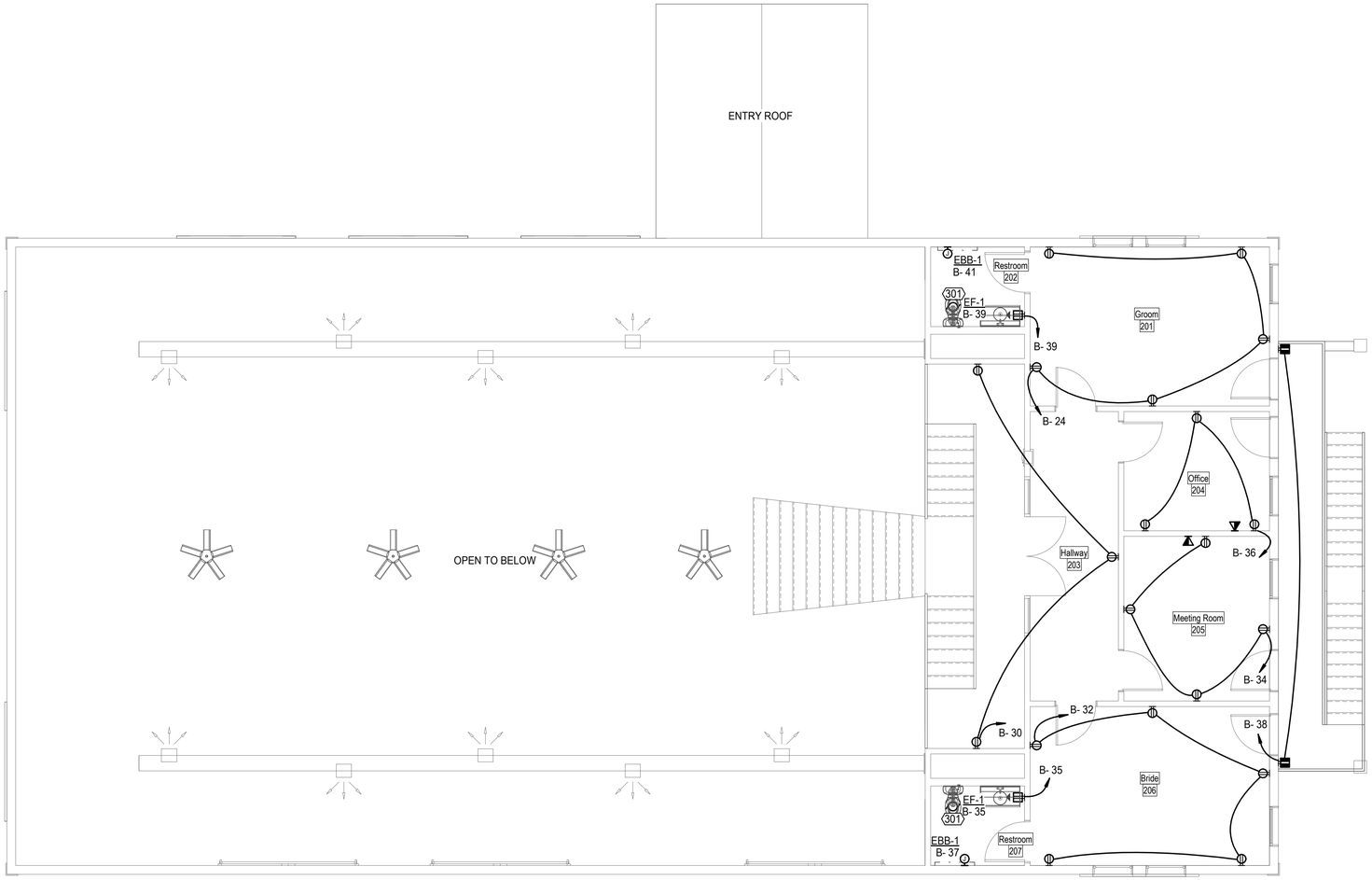
Project Number

GENERAL NOTES

1. BASED ON THE A3 GREATER THAN 100 OCCUPANCY ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE.

(#) REFERENCED SHEET NOTES

REF	NOTE
301	EXHAUST FAN CONTROLLED BY SWITCH SHOWN ON LIGHTING PLAN.



1 LEVEL 2 POWER AND SIGNAL PLAN
E3.2 SCALE: 3/16" = 1'-0"

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS

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ERIC D. COWLING
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9/9/25
REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: 2ND FLOOR POWER AND SIGNAL PLAN
Address: 10204 S Knik Goose Bay Rd. Wasilla, AK 99623

E3.2

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qc:09/09/2025 09:04:21 : fc-2 : abuDbl : pschd : 0.5;5.8:6.3/5151

Planning Commission Packet
Nov 13, 2025
Project Number
AK-24-354

DISTRIBUTION SCCR SCHEDULE
EQUIPMENT SHALL HAVE AN SCCR EXCEEDING THE SHORT CIRCUIT AMPS "SCA" OR MINIMUM SCCR, WHICH EVER IS GREATER. EQUIPMENT SHALL BE FULLY RATED. BRANCH CIRCUIT PANELS RATED 225 AMPS OR LESS MAY USE MANUFACTURER TESTED COMBINATIONS PER NEC 240.86(B) WHERE THE MOTOR LOAD DO NOT EXCEED 1% OF THE LOWEST AIC RATED DEVICE IN THE PANEL PER NEC 240.86(C).
CONTRACTOR TO VERIFY EQUIPMENT TO BE PROVIDED WITH SERVING UTILITY PRIOR TO PROCUREMENT. ANY DECREASE OF TRANSFORMER %Z, CONDUCTOR LENGTHS, OR INCREASE IN TRANSFORMER KVA OR CABLE SIZES TO BE REPORTED TO CONTRACT OFFICER FOR RECALCULATION OF SCA PRIOR TO PROCUREMENT.
THE "MIN FT" COLUMN DENOTES DISTANCE USED FOR 'SCA' CALCULATION. ACTUAL DISTANCE IS EXPECTED TO BE LONGER. IF CONDUCTOR LENGTH IS LESS THAN "MIN FT", CONTRACTOR SHALL SUBMIT A VARIATION REQUEST FOR RECALCULATION. THIS MAY REQUIRE ASSOCIATATED EQUIPMENT MODIFICATIONS.

ASSUMED UTILITY SYSTEM CONFIGURATION (BASIS FOR CALCULATION)

SERVICE TRANSFORMER

KVA	%Z	SCA SECONDARY LINE-LINE	SCA SECONDARY LINE-NEUTRAL
50	1.40	14,877	23,803

AMPS	- FOR CALCULATION ONLY - SERVICE LATERAL	MIN FT
200	(3)3/0 AWG	22

EQUIP ID	OPD	SCA	MIN SCCR	XR	MIN FT
A	200 A	6,741	10,000	1.55	5
BD	200 A	7,022	10,000	1.64	188
MCD	200 A	16,690	19,000	4.15	22
TS	200 A	6,856	10,000	1.58	7
B	100 A	6,670	10,000	1.51	2

LOAD CLASSIFICATIONS SCHEDULE

NOTES

(A)	NOT ALL LOAD CLASSIFICATIONS ARE NECESSARILY USED. ONLY CLASSIFICATIONS FROM LOADS THAT ARE CONNECTED TO EACH PANEL ARE SHOWN IN THE SUMMARY SECTION OF THE PANEL SCHEDULES.
(B)	PANELBOARD BUS RATINGS TO EQUAL OR EXCEED OPD RATINGS SHOWN IN PANEL SCHEDULES UNLESS OTHERWISE NOTED.
(C)	THE NEC DEMAND PERCENTAGE VALUES SHOWN IN THE PANEL SCHEDULE ARE A WEIGHTED AVERAGE. EXAMPLE 100VA @ 125% PLUS 100VA @100% IS A WEIGHTED AVERAGE OF 112.5% RESULTING IN 225VA NEC COMPUTED DEMAND AND 200VA CONNECTED.

SCHEDULE

CLASS.	NEC 2020	DESCRIPTION
CONT	210.20(A)	125% OF THE CONTINUOUS LOAD.
KTCH	220.56	TABLE 220.56 - DEMAND FACTORS FOR KITCHEN EQUIPMENT.
LTG	210.20(A)	LIGHTING LOADS CONSIDERED TO BE CONTINUOUS. 125% OF THE CONTINOUS LOAD.
LTGE	210.20(A)	CALCULATED SAME AS 'LTG' BUT EXCLUDED FROM ENERGY LIGHTING POWER DENSITY CALCULATIONS.
MTR	430.24	125% OF THE FULL-LOAD CURRENT RATING OF THE HIGHTEST RATED MOTOR PLUS THE SUM OF THE FULL-LOAD CURRENT RATINGS OF ALL OTHER MOTORS.
NCDN	220.60	NONCOINCIDENT LOADS: WHERE TWO OR MORE LOAD ARE UNLIKELY TO BE IN USE SIMULTANEOUSLY, THE LARGEST LOAD WILL BE USED. LOADS CLASSIFIED AS NCDN WILL HAVE ZERO LOAD.
NCNT	210.20(A)	100% OF THE NON-CONTINUOUS LOAD.
REC	220.44	NON-DWELLING GENERAL USE RECEPTACLES = FIRST 10KVA OR LESS AT 100% PLUS REMAINDER AT 50%.
MCA	(SEE MTR)	THE LOAD IS BASED ON THE GIVEN MCA (MINIMUM CIRCUIT AMPACITY) WHICH INCLUDES 125% OF THE LARGEST MOTOR OF THE UNIT. 100% OF THE MCA LOAD.

PANEL SCHEDULE NOTES (COLUMN 'N' OF PANEL SCHEDULE)

'KEY'	DEFINITION OF REQUIREMENT - NOT ALL KEY NOTES ARE NECESSARILY REFERENCED
A	PROVIDE COMBINATION-TYPE AFCI CIRCUIT BREAKER.
B	PROVIDE CIRCUIT BREAKER RATED FOR "BACKFEED" USE.
C	CONTROL CIRCUIT VIA CONTACTOR.
D	PROVIDE DUAL FUNCTION AFCI AND GFCI CIRCUIT BREAKER.
E	PROVIDE GFPE CIRCUIT BREAKER.
G	PROVIDE GFCI CIRCUIT BREAKER.
L	PROVIDE CIRCUIT BREAKER WITH OEM LOCK-OFF DEVICE FOR USE AS DISCONNECT PER NEC.
N	PROVIDE NEW CIRCUIT BREAKER MATCHING EXISTING BREAKER AIC RATINGS.
O	PROVIDE CIRCUIT BREAKER WITH OEM LOCK ON DEVICE IDENTIFIED WITH RED MARKINGS.
S	PROVIDE SHUNT TRIP CIRCUIT BREAKER CONTROLLED BY ASSOCIATED SYSTEM.

SERVICE EQUIPMENT SCHEDULE

NOTES

(KEY)	'(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE.
(A)	'MB' DENOTES ELECTRICAL SERVICE METERBASE PER UTILITY STANDARDS.
1	METER/MAIN TO BE COMMERCIAL TYPE WITH SAFETY TEST BY-PASS PROVISIONS.

SCHEDULE

ID	FUNCTION	OPD	VOLTAGE CONFIG	ENCLOSURE
MCD	METER COMBINATION DISCONNECT	200 A	240/120V, 1PH, 3W	NEMA 3R
BD	BUILDING DISCONNECT	200 A	240/120V, 1PH, 3W	NEMA 3R

UTILITY SERVICE DEMAND KW ESTIMATE

TOTAL CONNECTED	POWER FACTOR	DIVERSITY FACTOR	ESTIMATED DEMAND KW
37.57 kVA	0.9	0.7	23.67

FEEDER SCHEDULE

ID	OPD	FEEDER (MINIMUM) CU UON
A	200	2"C, (3)3/0 AWG, (1)6 AWG EGC
BD	200	2.5"C, (3)300 KCMIL, (1)3 AWG EGC
TS	200	2"C, (3)3/0 AWG, (1)6 AWG EGC
B	100	1.25"C, (3)2 AWG, (1)6 AWG EGC

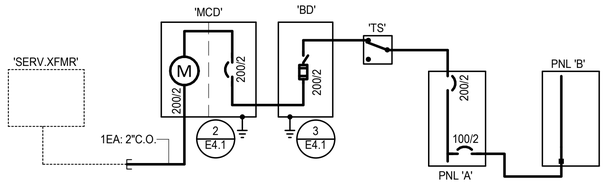
TRANSFER SWITCH SCHEDULE

NOTES

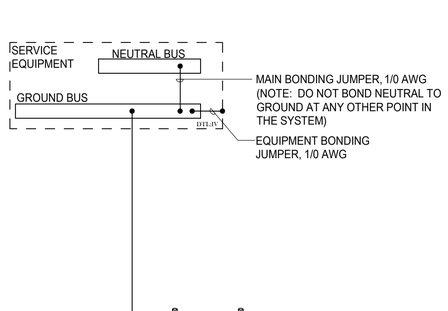
(A)	PROVIDE LABEL DENOTING "SYSTEM CONFIGURED FOR NON-SEPARETLY DERIVED PORTABLE GENERATOR (NO N-G BOND IN GENERATOR)".

SCHEDULE

ID	SYSTEM RATING	POLES	AMP	WITHSTAND	ENCLOSURE
TS	240/120V, 1PH, 3W	2 POLE	200 A	6,856	NEMA 3R

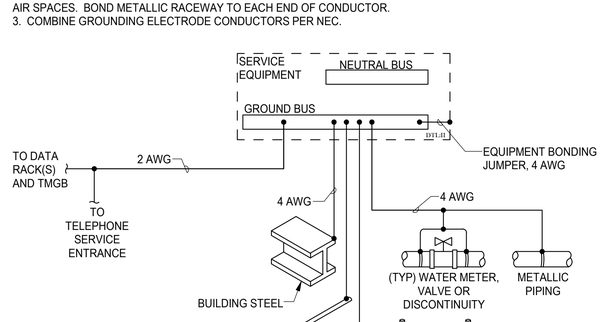


1 E4.1 POWER ONE-LINE
SCALE: NONE



2 E4.1 SERVICE GROUNDING SYSTEM ONE-LINE DIAGRAM
SCALE: NONE

NOTES:
1. BOND ALL BUILDING STEEL AND METALLIC PIPING TO PROVIDE ELECTRICALLY CONTINUOUS SYSTEMS.
2. PROVIDE RACEWAY FOR ALL ELECTRODE AND BOND CONDUCTORS. RACEWAY TO BE METALLIC IN PLENUM AIR SPACES. BOND METALLIC RACEWAY TO EACH END OF CONDUCTOR.
3. COMBINE GROUNDING ELECTRODE CONDUCTORS PER NEC.



3 E4.1 BUILDING GROUNDING SYSTEM ONE-LINE DIAGRAM
SCALE: NONE

PANEL 'A' SCHEDULE

VOLTAGE: 240/120V, 1PH, 3W
OPD RATING: 200 A
LOAD CENTER
LOCATION: Mech. 108
ENCLOSURE: NEMA 1
MOUNTING: SURFACE

#	N	LOAD DESCRIPTION	AMP	P	A		B		P	AMP	LOAD DESCRIPTION	N	#
1		B	100	2	11.96	0.20			1	20	LTG: RM 102 CL		2
3	--	--	--	--			9.13	0.09	1	20	LTG/LTGE: RM 102		4
5		LTG/LTGE: RM 108	20	1	0.08	0.05			1	20	LTG:		6
7		LTG/LTGE: RM 203-205	20	1			0.22	0.10	1	20	LTG/LTGE: RM 201		8
9	S	MTR/NCNT: RM 108 CP-1,WH-1	20	1	0.56	0.18			1	20	REC:		10
11		LTG/LTGE: RM 103,106	20	1			0.31	0.26	1	20	LTG/LTGE: RM 107		12
13		LTG/LTGE: RM 206	20	1	0.10	0.38			1	20	KTCH: RM 107 RF-2	G	14
15		REC: RM 102	20	1			0.18	0.36	1	20	REC: RM 107		16
17	G	KTCH: RM 107 FR-1	20	1	1.00	1.06			1	20	MTR: RM 108 AHU-1		18
19		MTR: RM 108 AHU-2	20	1			1.38	1.20	1	20	NCNT: RM 107 DW	G	20
21	G	NCNT: RM 107 MW	20	1	1.55	0.36			1	20	REC: RM 108		22
23		REC: RM 106 WASHER	20	1			0.18	0.54	1	20	REC: RM 106		24
25		REC: RM 106 DRYER	20	1	0.18	0.18			1	20	REC: RM 102 KEG-1		26
27		REC: RM 107	20	1			0.36	1.44	2	15	NCNT: RM 102 GW-1	G	28
29		REC: RM 102	20	1	0.36	1.44			--	--	--	--	30
31		REC: RM 106	20	1			0.72	0.00	1	20	SPARE	--	32
33	G	REC: RM 107 ICE	20	1	1.27	0.00			1	20	SPARE	--	34
35		MCA: RM 107 HOOD	20	1			0.20	0.00	1	20	SPARE	--	36
37	--	SPARE	20	1	0.00	0.00			1	20	SPARE	--	38
39	--	SPARE	20	1			0.00	0.00	1	20	SPARE	--	40
41	--	SPARE	20	1	0.00	0.00			1	20	SPARE	--	42
43	--	SPARE	20	1			0.00	0.00	1	20	SPARE	--	44
45	--	SPARE	20	1	0.00	0.00			1	20	SPARE	--	46
47	--	SPARE	20	1			0.00	0.00	1	20	SPARE	--	48
49	--	SPARE	20	1	0.00	0.00			1	20	SPARE	--	50
51	--	SPARE	20	1			0.00	0.00	1	20	SPARE	--	52
53	--	SPARE	20	1	0.00	0.00			1	20	SPARE	--	54
		TOTAL KVA/PHASE:			20.9		16.7						
		TOTAL AMPS/PHASE:			174.3		138.8						

SUMMARY BY LOAD TYPE

LOAD CLASSIFICATION	CONNECTED	NEC FACTORS	TOTAL NEC
CONT	3.750 kVA	125.00%	4.688 kVA
KTCH	1.380 kVA	100.00%	1.380 kVA
LTG	3.099 kVA	125.00%	3.874 kVA
LTGE	0.106 kVA	125.00%	0.133 kVA
MCA	0.200 kVA	100.00%	0.200 kVA
MTR	5.432 kVA	106.35%	5.777 kVA
NCNT	7.930 kVA	100.00%	7.930 kVA
REC	15.672 kVA	81.90%	12.836 kVA

PANEL TOTALS
CONNECTED KVA: 37.569 kVA
NEC CALCULATED KVA: 36.817 kVA
CONNECTED AMPS: 157 A
NEC CALCULATED AMPS: 153 A

PANEL 'B' SCHEDULE

VOLTAGE: 240/120V, 1PH, 3W
OPD RATING: 100 A
LOAD CENTER
LOCATION: Mech. 108
ENCLOSURE: NEMA 1
MOUNTING: SURFACE

#	N	LOAD DESCRIPTION	AMP	P	A		B		P	AMP	LOAD DESCRIPTION	N	#
1		LTG/LTGE:	20	1	0.07	0.36			1	20	REC:		2
3		LTG: RM 102	20	1			0.13	0.24	1	20	LTG:		4
5	L	CONT: RM 105 EBB-2	20	1	1.00	0.18			1	20	LTG: RM 102		6
7		LTG MAIN HALL 102	20	1			0.26	0.30	1	20	LTG/LTGE: RM 102		8
9		MTR/LTG: RM 102 ,CF-1	20	1	0.20	0.54			1	20	REC: RM 102		10
11		LTG/LTGE: RM 102	20	1			0.30	0.20	1	20	MTR/LTG: RM 102 ,CF-1		12
13	L	NCNT: ECUH-1	30	1	2.00	0.36			1	20	REC: RM 102	S	14
15	S	MTR: RM 108 B-1,CP-2	20	1			0.30	0.36	1	20	REC: RM 102	S	16
17		MTR/LTG: RM 102 ,CF-1	20	1	0.20	0.36			1	20	REC: RM 102		18
19	L	CONT: RM 104 EBB-3	20	1			1.25	0.20	1	20	MTR/LTG: RM 102 ,CF-1		20
21	S	REC: RM 102	20	1	0.36	0.70			1	15	MTR: RM 108 EF-3		22
23	S	REC: RM 102	20	1			0.36	0.90	1	20	REC: RM 201		24
25		REC: RM 102	20	1	0.54	0.54			1	20	REC: RM 102		26
27		REC:	20	1			0.36	0.36	1	20	REC: RM 108		28
29		REC:	20	1	0.72	0.54			1	20	REC: RM 203		30
31		MTR/REC/LTG/LTGE: RM 103- EF-2	20	1			1.49	0.90	1	20	REC: RM 206		32
33		REC: RM 102	20	1	0.72	0.72			1	20	REC: RM 205		34
35		MTR/REC/LTG: RM 207 EF-1	20	1			0.34	0.54	1	20	REC: RM 204		36
37	L	CONT: RM 207 EBB-1	20	1	0.75	0.36			1	20	REC: EXT UPPER DECK		38
39		MTR/REC/LTG: RM 202 EF-1	20	1			0.34	0.00	1	20	SPARE	--	40
41	L	CONT: RM 202 EBB-1	20	1	0.75	0.00			1	20	SPARE	--	42
		TOTAL KVA/PHASE:			12.0		9.1						
		TOTAL AMPS/PHASE:			99.7		76.1						

SUMMARY BY LOAD TYPE

LOAD CLASSIFICATION	CONNECTED	NEC FACTORS	TOTAL NEC
CONT	3.750 kVA	125.00%	4.688 kVA
LTG	1.771 kVA	125.00%	2.214 kVA
LTGE	0.036 kVA	125.00%	0.045 kVA
MTR	2.732 kVA	106.37%	2.906 kVA
NCNT	2.000 kVA	100.00%	2.000 kVA
REC	10.800 kVA	96.30%	10.400 kVA

PANEL TOTALS
CONNECTED KVA: 21.089 kVA
NEC CALCULATED KVA: 22.252 kVA
CONNECTED AMPS: 88 A
NEC CALCULATED AMPS: 93 A

EIC ENGINEERS, INC
ELECTRICAL ENGINEERS
EIC JOB NO: E25-4831
CORP. #AECC1105
6927 OLD SEWARD HWY
SUITE 200
ANCHORAGE, AK 99518
T 907.349.9712
F 907.349.9713
www.elceng.com

Determine DESIGN
Determine DESIGN LLC AECL1613
506 E. FIREWEED LN, SUITE A
ANCHORAGE, AK 99503
Office: (907)339-9100
dan@determinedesign.com

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Sheet Issue Date:
09/09/2025
Drawn by: RBC
Checked by: EDC

STATE OF ALASKA
49TH
ERIC D. COWLING
EE - 9773
9/9/25
REGISTERED PROFESSIONAL ENGINEER

NUM	DESCRIPTION

Project Title: Knik Landing
Prepared for: Doug Massie
Sheet Title: DIAGRAMS, DETAILS, AND SCHEDULES
Address: 10204 S Knik Goose Bay Rd. Wasilla, AK 99623

E4.1

9/9/2025 10:20:15 AM C:\Users\EricCowling\EIC Engineers\Design - Files\Projects\E25\E25-4831 Knik Landing\DES\E25-4831_ESht25_KnikLanding.rvt
qc:09/09/2025 09:04:21 : fc:2 : abuDb! : pschd : 0.5;5.8.6.3/5151

NOTE: USE HALF INDICATED SCALE FOR 11X17 DRAWINGS


OPEN DURING
ROW INSPECTOR


BUILDERS CHOICE
homeGUARD
CAUTION
CUIDADO
SLOW
DOWN
SPEED LIMIT
5 MPH




Knik
BAR & GRILL
OPEN

Communication and
Deficient Application Material

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

February 23, 2026

Broken Boat, LLC (dba Knik Landing/Knik Bar and Grill)
Attn: Douglas Massie
10204 S. Knik Goose Bay Road
Wasilla, AK 99623

SUBJECT: CUP Application for Alcoholic Beverage Uses – Request for Required Information

LOCATION: 10204 S. Knik Goose Bay Road; Tax Account #7186000L001

Dear Mr. Massie,

Borough staff have reviewed the application material, and it has been determined that the following information needs to be provided to process this request:

1. Please provide a copy of the delegation letter from the State of Alaska Alcohol & Marijuana Control Office (AMCO) depicting that the proposed expansion area (licensed alcohol-beverage serving area) for Beverage Dispensary License #597 has been approved by the Alcoholic Beverage Control (ABC) Board in a delegated status. The delegation letter must include AMCO Form AB-02 and the board-approved Premises Diagram map. The Premises Diagram must clearly depict the areas of the subject parcel defining the approved consumption areas (licensed footprint).
2. The application narrative is insufficient:
    a. Update the narrative to include the AMCO application status for the proposed expansion of the licensed alcoholic beverage serving areas.
    b. Describe the total number and size of all parking spaces available for the operation, including ADA-compliant spaces and construction type (asphalt, concrete, compacted gravel, etc.). Include parking details regarding the existing and proposed structures. A parking diagram must be included in the site plans.
    c. Describe the days and hours of operation.
    d. Describe the anticipated AM and PM peak hours of vehicular traffic, to include an estimation of the total number of vehicles that are expected to enter/exit the site during operating hours.
    e. Describe the external colors of the proposed operation, to include both existing and new construction.

f. Describe any advertisement signs that exist or are proposed for the operation, to include their locations and construction type, and whether they are lit, and the type of lighting, if applicable. Ensure that advertisement signage and lighting locations are depicted on the site plans.
g. Describe any existing or proposed exterior lighting, to include the height, direction of light, and type. Is it downward-directed and shielded to mitigate light from impacting nearby properties?
h. Describe the type/s and locations of all access points for the operation. If access is offered via a state right-of-way, provide a copy of the state-issued driveway permit. Consider that, in most cases, if expansion is proposed, both the state and the borough must be contacted to confirm whether a permit is required and/or whether it needs to be applied for and/or updated. For driveway permits within the borough accessing borough-owned/maintained roadways, please contact the MSB Permitting Center at (907) 861-7822.
i. Describe the current topography of the subject parcel and whether drainage issues exist or flooding occurs. For new construction, describe any significant changes to grading that may affect water run-off/drainage. Site plans must include contour lines with elevation and arrows depicting drainage throughout the entire parcel.
j. Describe measures to mitigate any potential negative effect upon other properties in the area due to such factors as dust, noise, obtrusive advertising, and glare, such as the use of buffers, planted berms, landscaping, reduction or elimination of obtrusive or garish signage or other features, lowered building elevations, and site and building design features.
k. Describe measures the operation will incorporate into its plan to prevent, reduce, or eliminate crime or alcohol-related accidents in the area.

3. The site plan is insufficient. Please review page 3 for the items necessary for a complete site plan.
    a. The submitted site plans are not to scale. It appears the scale of the diagrams would be accurate; however, they have been submitted on a smaller paper size than the drawings are intended for. Please provide updated site plans to scale (these can be submitted electronically or in a larger format in person).
    b. The dimensions and wording on the provided site plans are faded or blurred, and difficult and/or impossible to read. Some of the lettering is too small to read. The information required for a complete site plan can be submitted on multiple pages if necessary.
    c. Indicate the setback distances to the lot lines and rights-of-way on the site plan.
    d. Provide the dimensions of the structures: size (square footage), height, width, and length.
    e. Show the direction of proposed drainage on the property. Contours and arrows can be used in conjunction on a separate plan sheet as necessary.
    f. Fencing is depicted on the site plans; however, the construction type is not described in the narrative, and whether the proposed fencing is for privacy and/or to reduce visual effects to the surrounding parcels.
    g. Ensure that advertisement signage and lighting locations are depicted on the site plans.
    h. A parking diagram must be included in the site plans to depict all parking spaces available for the operation, including the locations of ADA-compliant spaces.

4. According to the submitted site plans, several of the proposed parking areas are extremely close to the waterbody. Mat-Su Borough Ordinance 05-023 established voluntary measures that property owners can use to protect the quality of our lakes, streams, and wetlands. See attached Voluntary Best Management Practices for Development around Waterbodies.

5. Provide a copy of the Fire Marshal's determination for:
    a. maximum occupancy capacity
    b. Plan Approval for the construction of the proposed new facility.

Should you have any questions or require additional information, please feel free to contact me by phone at (907) 861-8527 or email at rick.benedict@matsugov.us.

Respectfully,

Rick Benedict, Current Planner
Development Services Division
Matanuska-Susitna Borough

Attachments:
Voluntary Best Management Practices for Development around Waterbodies

From: Rick Benedict
To: "Doug Massie"
Subject: RE: Knik Bar & Grill - CUP Application #ALC-2026-010282
Date: Monday, February 23, 2026 2:39:00 PM
Attachments: Alcoholic-Beverage-Uses-Application.pdf

Mr. Massie,

Page 2 of the attached application will list the items to be described in the narrative. The application seeks specific information as outlined in MSB 17.70.030, 17.70.100, & 17.70.110. Chapter 17.70 REGULATION OF ALCOHOLIC BEVERAGE USES

Respectfully,

Rick Benedict – Current Planner
Development Services Division
Matanuska-Susitna Borough
(907)861-8527 direct

From: Doug Massie <massman76@hotmail.com>
Sent: Monday, February 23, 2026 2:32 PM
To: Rick Benedict <Rick.Benedict@matsugov.us>
Subject: Re: Knik Bar & Grill - CUP Application #ALC-2026-010282

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
Can you send me the document or point me in the right direction of where I can find directions and all required documentation for the narrative that you reference? When I applied for the permit, there was nothing that I could find outlining what was required to be in the narrative.

Thanks,

Doug Massie

Get Outlook for Android

From: Rick Benedict <Rick.Benedict@matsugov.us>
Sent: Monday, February 23, 2026 11:46:07 AM
To: massman76@hotmail.com <massman76@hotmail.com>
Subject: Knik Bar & Grill - CUP Application #ALC-2026-010282

Mr. Massey,

An initial review of the Conditional Use Permit application concerning Knik Bar & Grill/Knik Landing has been conducted by the Planning Department. Please find attached a request for additional information.

I'm available by email or phone to answer any questions or provide clarity to the attached letter.

Respectfully,

Rick Benedict – Current Planner
Development Services Division
Matanuska-Susitna Borough
(907)861-8527 direct

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

March 16, 2026

Broken Boat, LLC (dba Knik Landing/Knik Bar and Grill)
Attn: Douglas Massie
10204 S. Knik Goose Bay Road
Wasilla, AK 99623

SUBJECT: CUP Application for Alcoholic Beverage Uses – Request for Required Information

LOCATION: 10204 S. Knik Goose Bay Road; Tax Account #7186000L001

Dear Mr. Massie,

I'm following up on our February 26th meeting, during which we discussed the remaining items needed to complete your application. Below is a list of information needed to complete the application:

1. Please update the application narrative to include the following information:
    a. The status of the AMCO application for the proposed expansion of licensed alcoholic beverage serving areas, including the application submission date to AMCO and the total square footage of all Beverage Dispensary licensed areas.
    b. The total number and size of all parking spaces available for the operation, including ADA-compliant spaces and construction type (asphalt, concrete, compacted gravel, etc.).
    c. Days and hours of operation.
    d. Anticipated AM and PM peak hours of vehicular traffic, to include an estimation of the total number of vehicles that are expected to enter/exit the site during operating hours.
    e. External colors of the proposed operation, to include both existing and new construction.
    f. Describe any advertisement signs that exist or are proposed for the operation, to include their locations and construction type, and whether they are lit, and the type of lighting, if applicable. Ensure that advertisement signage and lighting locations are depicted on the site plans.
    g. Describe any existing or proposed exterior lighting, to include the height, direction of light, and type (downward-directed and shielded to mitigate light from impacting nearby properties).

h. Locations of all access points for the operation. If access is offered via a state right-of-way, provide a copy of the state-issued driveway permit. Consider that, in most cases, if expansion is proposed, both the state and the borough must be contacted to confirm whether a permit is required and/or needs to be updated. For driveway permits within the borough accessing borough-owned/maintained roadways, please get in touch with the MSB Permitting Center at (907) 861-7822.
i. Describe the current topography of the subject parcel and whether drainage issues exist or flooding occurs. For new construction, describe any significant changes to grading that may affect water run-off/drainage. Site plans must include contour lines with elevation and arrows depicting drainage throughout the entire parcel.
j. Describe measures to mitigate any potential negative effect upon other properties in the area due to such factors as dust, noise, obtrusive advertising, and glare, such as the use of buffers, planted berms, landscaping, reduction or elimination of obtrusive or garish signage or other features, lowered building elevations, and site and building design features.

2. Please update the site plan/s to depict the following information. Page 3 of the application contains the items necessary for a complete site plan:
   a. A drainage plan is required. Show the direction of proposed drainage on the subject property. Contours and arrows can be used in conjunction on a separate plan sheet as necessary.
   b. Vehicular and pedestrian circulation patterns as related to the proposed access points from Knik Goose Bay Road and Northshore Drive.
   c. Fencing is depicted on the site plans. However, the construction type is not described in the narrative, and it is unclear whether the proposed fencing is for privacy, security, or to reduce visual effects to the surrounding parcels.
   d. Ensure that advertisement signage and lighting locations are depicted on the site plans.
   e. ADA-compliant spaces must be included in the site plans depicting their locations.

If you have any additional questions, please feel free to contact me by phone at (907) 861-8527 or email at rick.benedict@matsugov.us. Upon receipt of the requested information and a complete application determination, our office will conduct the required public notice process and schedule a public hearing before the Planning Commission.

Sincerely,

Rick Benedict, Current Planner
Development Services Division
Matanuska-Susitna Borough

Attachments:
Application for a Conditional Use Permit – Regulation of Alcoholic Beverage Uses MSB 17.70

From: Doug Massie
To: Rick Benedict; Maxwell Sumner; Mike Brown; Misty Massie; StephanieNowersDistrict2@gmail.com; Michael Bowles
Cc: Wade Long; AMCO Local Government Only (CED sponsored); CED ABC Alcohol Licensing (CED sponsored)
Subject: Re: Knik Bar & Grill - CUP Application #ALC-2026-010282
Date: Tuesday, March 17, 2026 2:25:47 PM

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
Mr. Benedict and Mr. Strawn,

This is completely unnecessary, as you and Strawn are fully aware of our current application status and intent to expand the licensed premise for the new event venue, which you know makes the existing beer garden a moot point. The 597-restaurant designation application is not new; it is a renewal, that has been approved and renewed several times.

You are fully aware of our pending expansion application with AMCO and the Borough. I provided you a copy of the AMCO app., and I am currently working through the borough Alcohol use permit process. The AMCO board approved our application and you (MSB) are holding it up.

Fact- the borough has never protested the restaurant designation (Now called an endorsement) in that past, nothing has changed. We have owned the business for 5 years, and as far as I can tell the beer garden in question has been there for over 10 years (Reviewed and approved by AMCO) without any borough protest. In a conversation Alex Strawn, he admitted that a borough employee did not do their job, but it was never protested.

So why, when you know I am applying for expansion beyond what already exists, are you holding up our restaurant endorsement. The only thing this does is hurt our business financially for something that has gone permitted for years, and will change drastically in the next few months when expansion permits are approved.

I have to be honest with you and your staff Mr. Strawn. I have found the Mat-Su planning department to be the most difficult and unfriendly department towards businesses in the Mat-Su that I have ever experienced. Many business people in the community feel the same as I, unfortunately. Your office seems to be hyper-critical of my business recently, after a half decade of zero interaction, zero inspections, and zero protests of several license renewals and modifications. I find this very curious and concerning to say the least.

This is a simple fix. Remove your protest and allow my pending applications to work out your perceived problem. Very simple, this is an opportunity for your department to do the right thing and remove the unwarranted protest on a beer garden that has been in existence and permitted by AMCO for over a decade.

Doug and Misty Massie
Broken Boat LLC

Get Outlook for Android

From: Rick Benedict <Rick.Benedict@matsugov.us>
Sent: Tuesday, March 17, 2026 11:16:14 AM
To: Doug Massie <massman76@hotmail.com>
Cc: Wade Long <Wade.Long@matsugov.us>; Alex Strawn <Alex.Strawn@matsugov.us>; AMCO Local Government Only (CED sponsored) <amco.localgovernmentonly@alaska.gov>; CED ABC Alcohol Licensing (CED sponsored) <alcohol.licensing@alaska.gov>
Subject: RE: Knik Bar & Grill - CUP Application #ALC-2026-010282

Mr. Massie,

The borough protested the new restaurant endorsement for Beverage Dispensary License (BDL) #597 because staff determined a modification to expand the use was being proposed. AMCO submitted the application to the borough for review on December 19, 2025, which included the "Form AB-02 Premises Diagram," showing an expansion of the existing consumption area already permitted by the MSB (#LCUP/GFR 1985-0008). The proposed expansion triggers a requirement for grandfathered sites to obtain a modified (new) Conditional Use Permit (CUP) under MSB 17.70.200(A) to include these areas of expansion and other new factors of the operation.

Once a complete application is established regarding the CUP application you submitted on February 2, 2026, public notice will then be given in accordance with MSB 17.03, and a public hearing will be scheduled with the Planning Commission (PC). When the PC adopts a resolution approving the new/modified permit, the borough code allows the Planning Director to then issue the permit once all conditions of the resolution are met.

At that time, the borough's "protest" of license #597 will also be rescinded, with AMCO, as required by MSB 8.40.030(D). AMCO provided an update yesterday via email, which you were included in, indicating that the Alcohol Board approved the Restaurant Endorsement under BDL #597 in a delegated status. Approval with delegation often includes a 180-day period to resolve any outstanding items required by state or local entities, such as obtaining a CUP through the borough. You will want to verify with AMCO when this delegation period expires.

Respectfully,

Rick Benedict – Current Planner
Development Services Division
Matanuska-Susitna Borough
(907)861-8527 direct

From: Doug Massie <massman76@hotmail.com>
Sent: Monday, March 16, 2026 11:45 AM
To: Rick Benedict <Rick.Benedict@matsugov.us>
Subject: Re: Knik Bar & Grill - CUP Application #ALC-2026-010282

[**EXTERNAL EMAIL** - CAUTION: Do not open unexpected attachments or links.]
I'm in Hawaii on vacation and I will be back on Wednesday. I have many of the required documents and pieces of the application needed. I just need to put them together in an email and complete the narrative.

On another note, can you explain why there is a protest on my application for a restaurant endorsement? I have been in the queue for over a year and this puts my approval at risk, which will adversely affect my business.

Doug Massie

Get Outlook for Android

From: Rick Benedict <Rick.Benedict@matsugov.us>
Sent: Monday, March 16, 2026 9:32:32 AM
To: Doug Massie <massman76@hotmail.com>
Subject: Knik Bar & Grill - CUP Application #ALC-2026-010282

Good Morning Mr. Massey,

I'm following up regarding our meeting on February 26th. I wanted to check in to see if you have any further questions after our discussion, and to ensure we have a plan to stay on track to a complete application and the scheduling of a public hearing with the Planning Commission.

I've attached an updated information request and removed the items you provided during our meeting. I'm available by email or phone to answer any further questions or provide clarity to the attached letter.

Respectfully,

Rick Benedict – Current Planner
Development Services Division
Matanuska-Susitna Borough
(907)861-8527 direct

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

March 16, 2026

Broken Boat, LLC (dba Knik Landing/Knik Bar and Grill)
Attn: Douglas Massie
10204 S. Knik Goose Bay Road
Wasilla, AK 99623

SUBJECT: CUP Application for Alcoholic Beverage Uses – Request for Required Information

LOCATION: 10204 S. Knik Goose Bay Road; Tax Account #7186000L001

Dear Mr. Massie,

I'm following up on our February 26th meeting, during which we discussed the remaining items needed to complete your application. Below is a list of information needed to complete the application:

1. Please update the application narrative to include the following information:
    a. The status of the AMCO application for the proposed expansion of licensed alcoholic beverage serving areas, including the application submission date to AMCO and the total square footage of all Beverage Dispensary licensed areas.

Status: in process
Date submitted: NEED
Square footage: 13000 sq ft

    b. The total number and size of all parking spaces available for the operation, including ADA-compliant spaces and construction type (asphalt, concrete, compacted gravel, etc.).

Total parking spaces: 72
ADA: 4
Construction type: compacted gravel

    c. Days and hours of operation.

Wedding venue: 8:00AM – 12:00AM, seven days a week
Bar: 12:00PM – 12:00 AM, seven days a week

d. Anticipated AM and PM peak hours of vehicular traffic, to include an estimation of the total number of vehicles that are expected to enter/exit the site during operating hours.

Peak hours: 4PM – 8PM, estimated 92 vehicles

e. External colors of the proposed operation, to include both existing and new construction.

Neutral earth tones, tan and brown

f. Describe any advertisement signs that exist or are proposed for the operation, to include their locations and construction type, and whether they are lit, and the type of lighting, if applicable. Ensure that advertisement signage and lighting locations are depicted on the site plans.

Wood timber frame, dimly lit, flood lights pointing down on it, will say Knik Landing.
Location: south of driveway off KGB

g. Describe any existing or proposed exterior lighting, to include the height, direction of light, and type (downward-directed and shielded to mitigate light from impacting nearby properties).

Disk lighting in soffits shining downward. 15' high. Flood lights on each gabled end, 20' high.
No other parking lot lighting

h. Locations of all access points for the operation. If access is offered via a state right-of-way, provide a copy of the state-issued driveway permit. Consider that, in most cases, if expansion is proposed, both the state and the borough must be contacted to confirm whether a permit is required and/or needs to be updated. For driveway permits within the borough accessing borough-owned/maintained roadways, please get in touch with the MSB Permitting Center at (907) 861-7822.

State is not showing a diveway permit on file, but you're working with State
Will block off driveway off borough road, but will maintain size for future access

i. Describe the current topography of the subject parcel and whether drainage issues exist or flooding occurs. For new construction, describe any significant changes to grading that may affect water run-off/drainage. Site plans must include contour lines with elevation and arrows depicting drainage throughout the entire parcel.

No current flooding, dug down 17 ft for sewer and never hit water, previous owner contoured the property so that drainage goes northeast into state culvert system.

Built it and didn't change topography. Installed a pad for patio. Slab on grade and maintains previous drainage. No site plan exists with topography.

j. Describe measures to mitigate any potential negative effect upon other properties in the area due to such factors as dust, noise, obtrusive advertising, and glare, such as the use of buffers, planted berms, landscaping, reduction or elimination of obtrusive or garish signage or other features, lowered building elevations, and site and building design features.

Continue to operate the way they have for 65 years, will put up a fence on the west side down to the lake. Any area where alcohol is served will be fenced and not observable by public.

Material, chain link with wood slats

Will observe normal quite hours

Owned for 5 years, has had zero complaints

No flashy signs, will maintain steady signage

Will get rid of ugly outbuildings

Will do enhanced landscaping to get rid of weeds

2. Please update the site plan/s to depict the following information. Page 3 of the application contains the items necessary for a complete site plan:
   a. A drainage plan is required. Show the direction of proposed drainage on the subject property. Contours and arrows can be used in conjunction on a separate plan sheet as necessary.

Draw to scale with direction arrows the direction water will flow to the northeast retention pond

b. Vehicular and pedestrian circulation patterns as related to the proposed access points from Knik Goose Bay Road and Northshore Drive.

I provided a map example showing vehicular circulation. Apply this concept to your plan, be sure to show that the Borough road driveway is blocked off.

c. Fencing is depicted on the site plans. However, the construction type is not described in the narrative, and it is unclear whether the proposed fencing is for privacy, security, or to reduce visual effects to the surrounding parcels.

All 3

d. Ensure that advertisement signage and lighting locations are depicted on the site plans.

draw and submit

e. ADA-compliant spaces must be included in the site plans depicting their locations.

Have this based on the plan you emailed me today

If you have any additional questions, please feel free to contact me by phone at (907) 861-8527 or email at rick.benedict@matsugov.us. Upon receipt of the requested information and a complete application determination, our office will conduct the required public notice process and schedule a public hearing before the Planning Commission.

Sincerely,

Rick Benedict, Current Planner
Development Services Division
Matanuska-Susitna Borough

Attachments:
Application for a Conditional Use Permit – Regulation of Alcoholic Beverage Uses MSB 17.70

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For each additional 1,000 pieces, or fraction thereof	
Duplicate Copy ☐	

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18	1st	☐ Verified	45

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postage stamps he



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

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

Total Number of Pounds	Total Postage Paid for Mailpieces	Fee Paid
4. 2oz		$13.50

Mailed For	Mailed By
Permit Center	Betty Jean Black



Postmaster's Certification

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

_____
(Postmaster or Designee)

1474000L004 1
TUCKER WILLIAM JAY
TUCKER JOANN M
10360 S KNIK GOOSE BAY RD
WASILLA, AK 99623-8806

7186000L004 2
REDINGTON LISA
KELSAR JAMES
11019 W NORTHSHORE DR
WASILLA, AK 99623

6166000L013 3
KIMPTON ROBERT
11020 W NORTHSHORE DR
WASILLA, AK 99623

6166000L007 4
BUCHANAN JONATHAN & BETH
11242 W NORTHSHORE DR
WASILLA, AK 99623

6166000L012 5
ARCTIC ACRES LLC
1530 OXFORD DR
ANCHORAGE, AK 99503

16N03W24D009 6
KNIK INDUSTRIES LLC
1730 JAIME MARIE CIR
WASILLA, AK 99654

6360B01L007 7
ROSE RAYMOND P & DANYA M
26232 MONDON HILL RD
BROOKSVILLE, FL 34601-5409

1474000L005 8
DICKERSON SCOTT D
2855 SCENIC DR
CHIPLEY, FL 32428-3485

7186000L002 9
MARQUEZ DAWN L EST
389 GRIER AVE
% DEBRA L HEUPEL PER REP
LEAD, SD 57754

6166000L008 10
NOVELLI BRAD & PERSI LVG TR
7583 E ASPEN RIDGE RD
WASILLA, AK 99654

16N03W24A020 11
MORMILE DON & CATHERINE
PO BOX 3566
PALMER, AK 99645-3566

7186000L003 12
PITCHER JAMES & FLORENCE
PO BOX 60009
FAIRBANKS, AK 99706

6166000L010 13
LUND CHRISTOPHER P
PO BOX 6121
JBER, AK 99506

7186000L001 14
BROKEN BOAT LLC
PO BOX 874893
WASILLA, AK 99687

6360B02L002 15
O'NEIL WILLIAM & KATHRYN
PO BOX 877149
WASILLA, AK 99687-7149

6166000L011 16
WHISENAND SHAWN & BRIDGETTE C
PO BOX 877303
WASILLA, AK 99687-7303

7186000L005 17
POHL ANDREW
PO BOX 879005
WASILLA, AK 99687

CC 18
KNIK FAIRVIEW COMMUNITY COUNCIL
PO BOX 879434
WASILLA, AK 99687

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

TOTAL 18

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

Location/Legal Description of your property:_____

Comments:_____

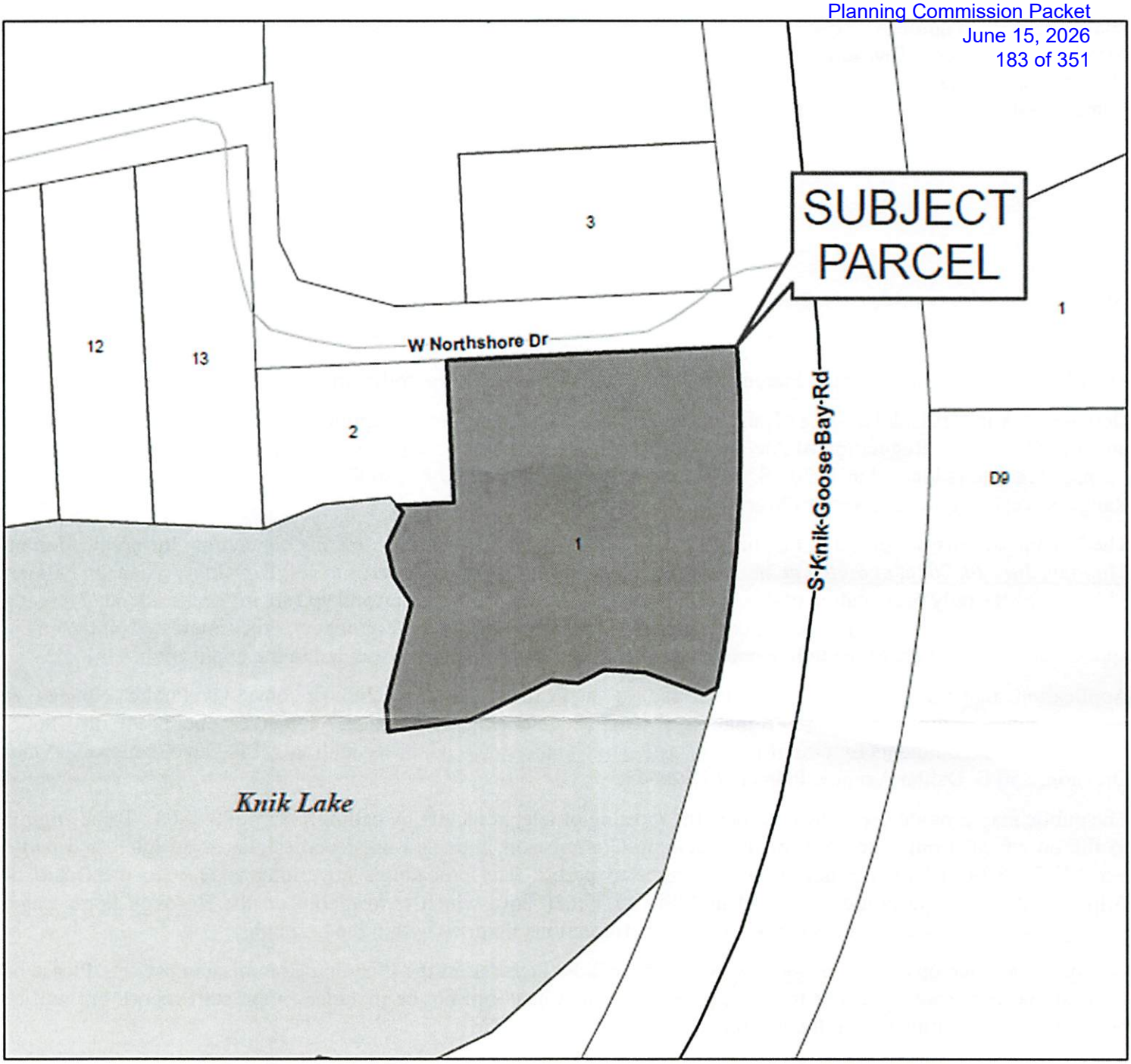
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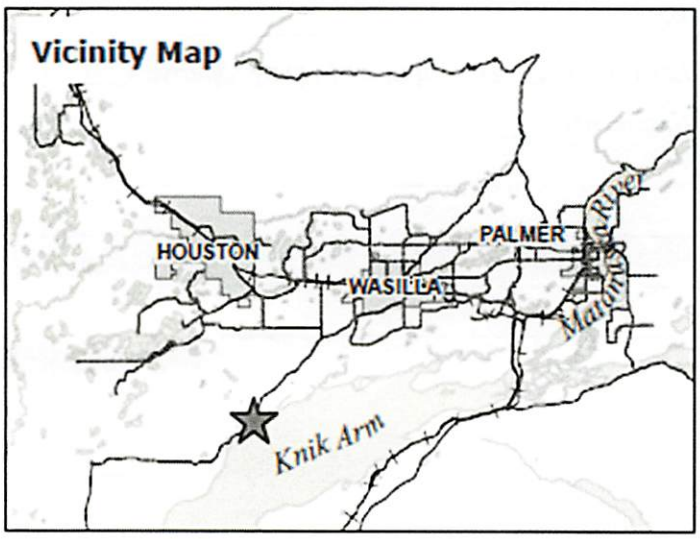
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Note: Vicinity Map Located on Reverse Side



7186000L001

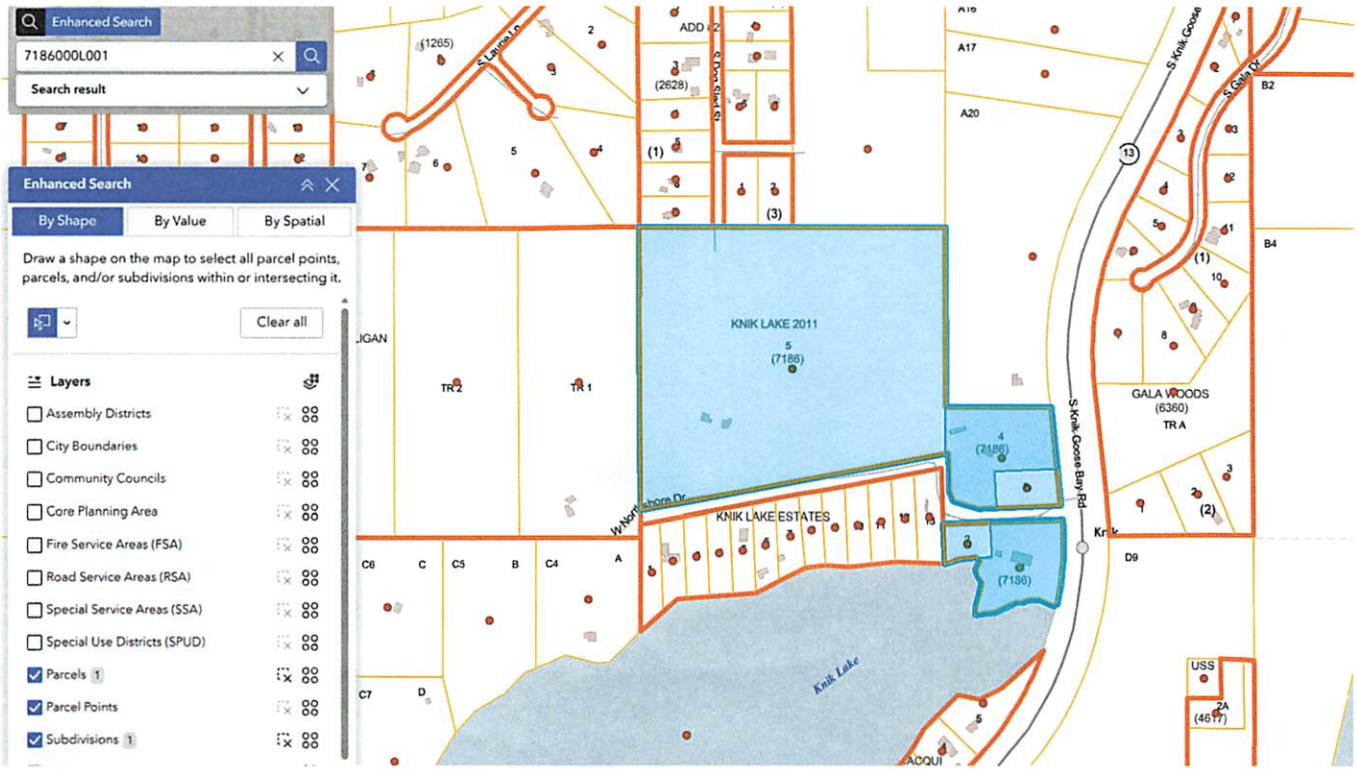


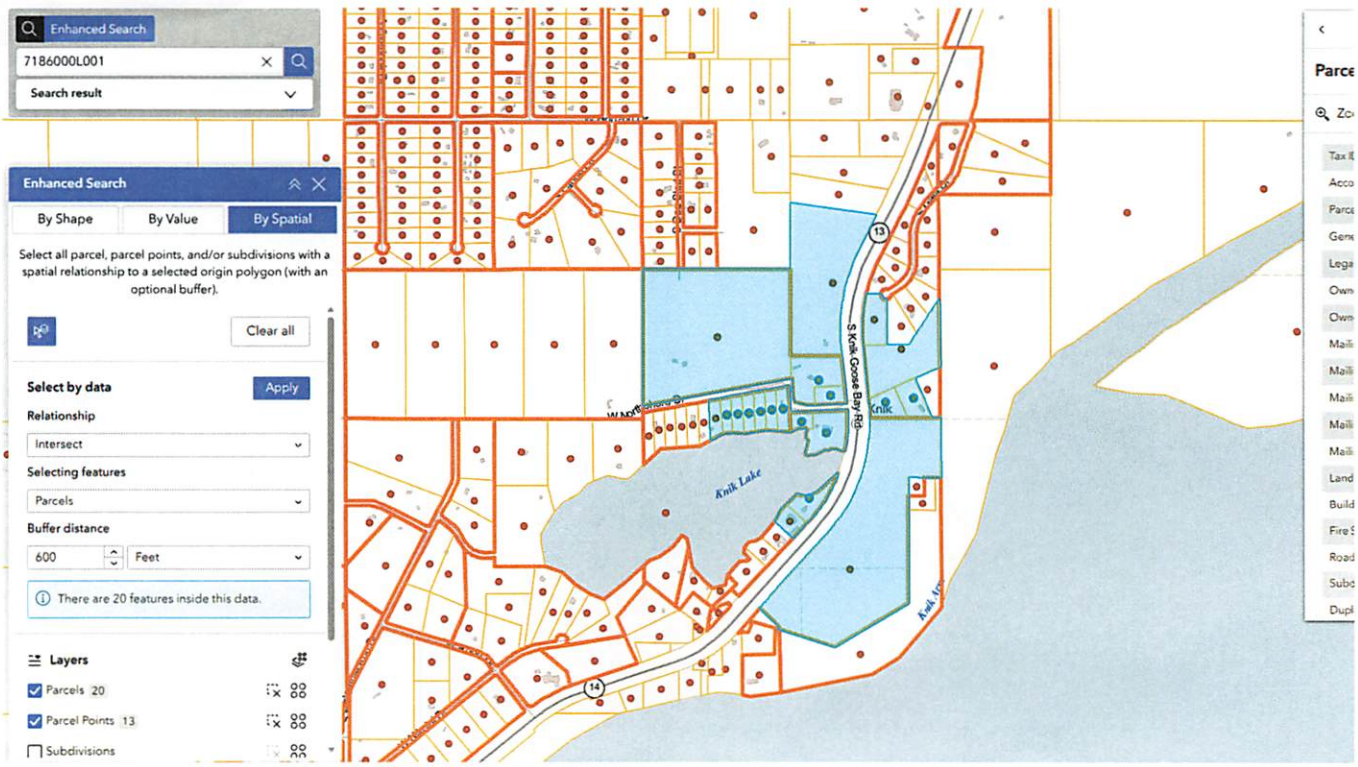
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MSB Information Technology/GIS
March 05, 2026

0 1,000 Feet


Enhanced Search
7186000L001
Search result
Enhanced Search
By Shape
By Value
By Spatial
Draw a shape on the map to select all parcel points, parcels, and/or subdivisions within or intersecting it.
Clear all
Layers
Assembly Districts
City Boundaries
Community Councils
Core Planning Area
Fire Service Areas (FSA)
Road Service Areas (RSA)
Special Service Areas (SSA)
Special Use Districts (SPUD)
Parcels 1
Parcel Points
Subdivisions 1
KNIK LAKE 2011
KNIK LAKE ESTATES
GALA WOODS
(6360)
TR A
S Knik Goose Bay Rd
Knik Lake


Enhanced Search
7186000L001
Search result
Enhanced Search
By Shape
By Value
By Spatial
Select all parcel, parcel points, and/or subdivisions with a spatial relationship to a selected origin polygon (with an optional buffer).
Clear all
Select by data
Apply
Relationship
Intersect
Selecting features
Parcels
Buffer distance
600
Feet
There are 20 features inside this data.
Layers
Parcels 20
Parcel Points 13
Subdivisions
S Knik Goose Bay Rd
Knik Lake

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Name: Don Roseveare **Mailing Address:** P.O. Box 877817 Wasilla 99687

Location/Legal Description of your property: 16N 3W 24C7 11852 W. Northshore

Comments: Lack of Parking, Construction did not follow Borough Lake set back guidance

RECEIVED
MAY 29 2026
PERMIT CENTER

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

1474000L004 1
TUCKER WILLIAM JAY
TUCKER JOANN M
10360 S KNIK GOOSE BAY RD
WASILLA, AK 99623-8806

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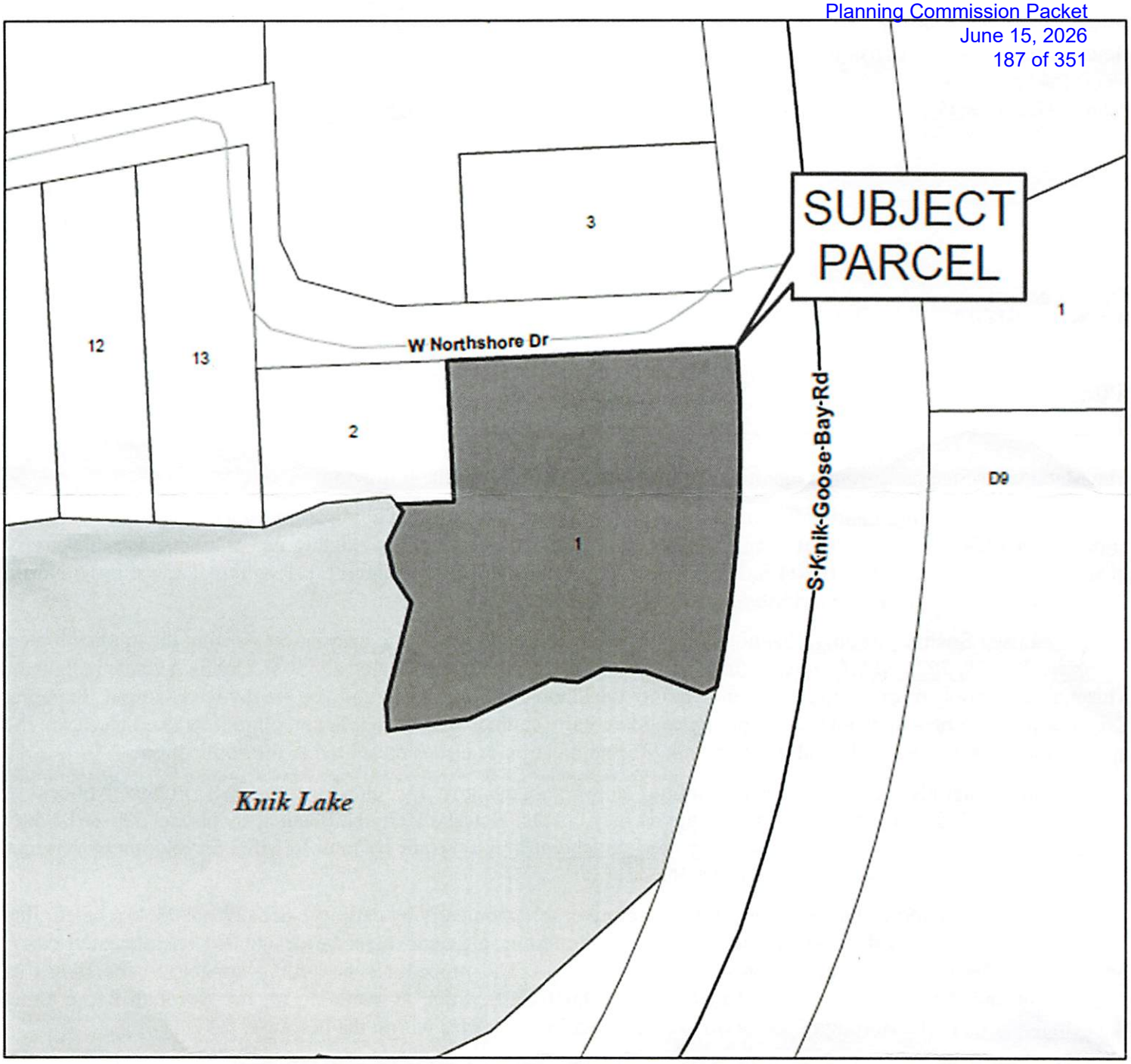
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Name: William & Joanna Tucker ***Mailing Address:*** 10360 S Knik Goose Bay

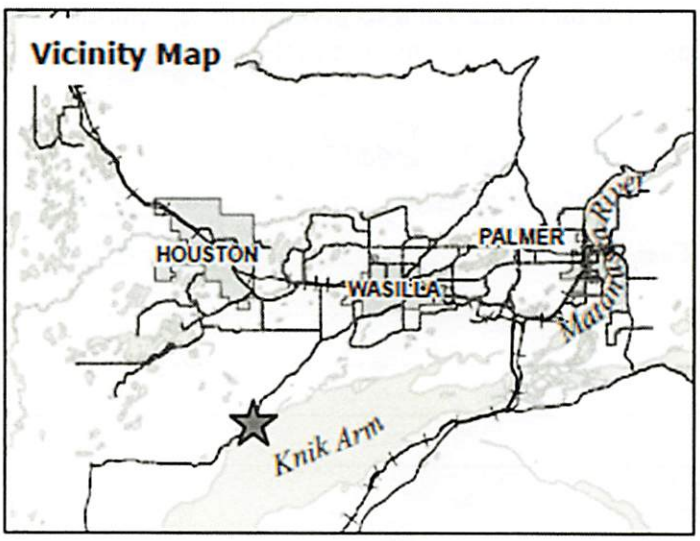
Location/Legal Description of your property: Lot 4 Jacqui Subdivision

Comments: See Attached and

Note: Vicinity Map Located on Reverse Side



7186000L001



N

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MSB Information Technology/GIS
March 05, 2026

0 1,000 Feet

Knik bar Permitting

Lot # 4 Jacque sub division
10360 S. Knik goose bay rd.
Wasilla,Ak 99623

Knik is a 55 acre residential lake .The Knik Lake,Lake management plan covers several of the reasons why we decided to purchase our primary residency on Knik Lake.
The concerns we have for this new permitting of the Knik bar are
-Noise , music , voices the reverberation and echoing across the lake
-traffic will increase
300 capacity,Non adequate parking. Drinking and driving on One of most dangerous roads in Alaska. Knik Goose Bay.
-Glare blinding light that shine across lake

The impact on lake itself, the impact of the wildlife and the decrease in property values of surrounding area.

Thank you for your attention in this matter

William Tucker

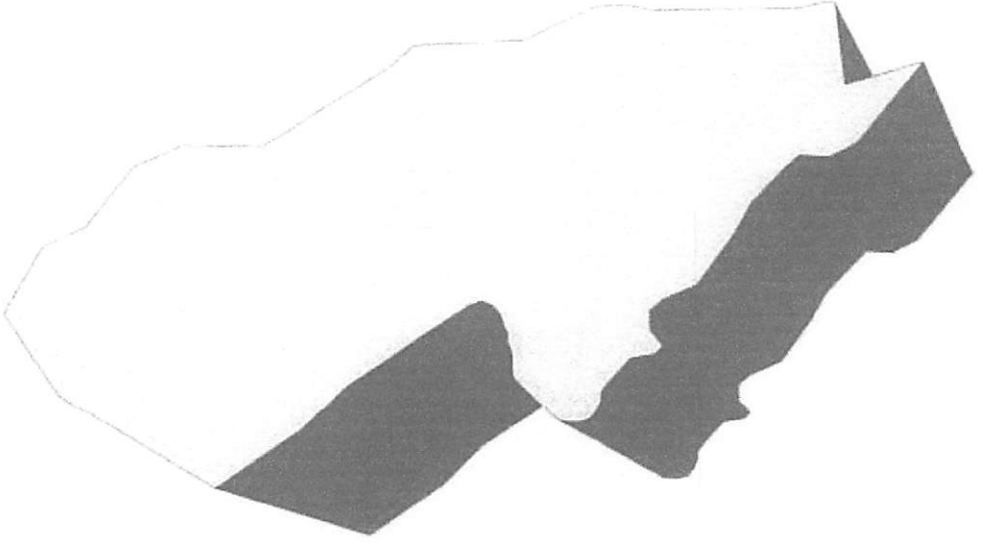
Joann Tucker

1995

KNIK LAKE, LAKE MANAGEMENT PLAN

MATANUSKA-SUSITNA BOROUGH
PLANNING DEPARTMENT

ADOPTED
AUGUST 15, 1995



The Knik Lake, Lake Management Plan is dedicated to Trader Ed (Edward R. Shepard), a lifelong resident of the Knik community and the individual who initiated the efforts to develop this plan so that the wildlife and recreational values of Knik Lake would be protected for future generations.

1 Introduction

1.1 Purpose

Lake management plans are developed for a variety of purposes. Most often lake front property owners request management plans because increased development or the provision of new public access brings about increased lake usage and a corresponding increase in user conflicts. As more people use a lake conflicts among users may occur, bird nesting sites (especially loons and grebes) may be disturbed, environmental degradation may occur and the overall quality of the experience may decline. The most often cited complaints are noise generated from watercraft during the evening and night hours and inappropriate use of public access points. A lake management plan seeks to present policies and strategies which attempt to balance the various demands placed upon a lake, solve lake related problems, and protect the public health, safety and welfare.

The Knik Lake Management Plan provides management guidelines for:

- The protection of the residential quality of life at Knik Lake; and
- The continued recreational enjoyment of Knik Lake; and
- The protection of Knik Lake's water quality; and
- The provision of controlled and maintained access; and
- The protection and enhancement fish and wildlife; and
- The protection of the public health, safety and welfare.

1.2 Process

Lake management plans are typically initiated by individuals having concerns about a particular lake or who have experienced conflicts between user groups. These individuals request that the Planning Department of the Matanuska-Susitna Borough complete a lake management plan. With the advice of the Planning Commission which is vested with planning authority in the Borough, the Department collects background information on the lake and contacts adjacent property owners and users to participate in the planning process.

Meetings are held with adjacent property owners and users to: 1) identify any problems that may exist, 2) develop recommended alternatives, and 3) consider methods of implementing the recommendations. A draft plan is then developed and a public comment period is held to solicit comments on the draft plan. After

2.2 Land Ownership

There are 36 lots within the Knik Lake planning area (see Table 1). The majority of the land adjacent to Knik Lake is privately owned. The Borough owns only one lot with lake frontage (see Figure 2).

Table 1
Land Ownership and Parcel Size

	Mat-Su Borough	Kniknatu	Private
Number of Parcels	3	2	31
Total Acreage			
Average Parcel Size	N/A	N/A	
Smallest Parcel Size			
Largest Parcel Size			

N/A = Not Appropriate due to small sample size.
Note: Sample consists of shoreline properties only.

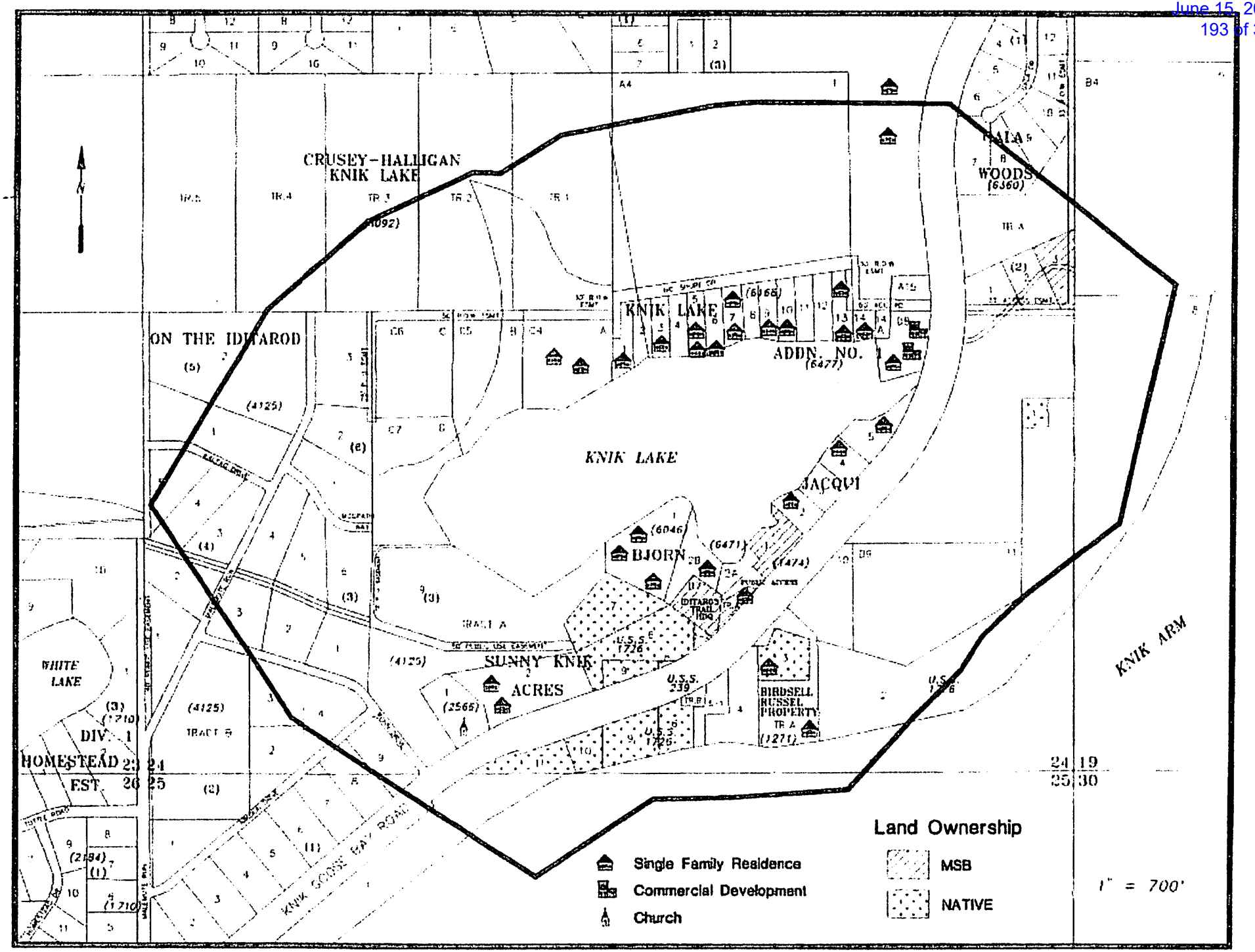
2.3 Existing Plans

State

The State plan affecting the Knik Lake area is the Willow Sub-Basin Plan. The Willow Sub-Basin Area plan, adopted in October 1982, contains management intent for State and Borough lands within the Willow Sub-Basin, an area of approximately 1,500 square miles. Knik Lake is located within the Knik management unit. Generally speaking, the plan's intent for public lands within the management unit is to encourage their use for settlement, protection of the Iditarod Trail and provision of stream buffers for Goose and Fish Creeks. Since there is only one publicly owned lot near Knik Lake, the plan's direct impact on this management plan is negligible.

Borough

Borough plans that address Knik Lake in some manner include the Borough-wide comprehensive plan, adopted in 1971; the Matanuska-Susitna Borough Coastal Zone Management Plan, as amended; the Knik/Fairview comprehensive plan which is presently being developed and the Borough wide Long Range Transportation and Public Facilities plans.


CRUSEY-HALLIGAN
KNIK LAKE
KNIK LAKE
ADDN. NO. 1
KNIK LAKE
BJORN
JACQUI
WOODS
(6360)
SUNNY KNIK
ACRES
BIRDSELL
RUSSEL
PROPERTY
WHITE
LAKE
DIV. 1
HOMESTEAD
EST.
KNIK ARM
KNIK GOOSE BAY ROAD
Land Ownership
Single Family Residence
Commercial Development
Church
MSB
NATIVE
1" = 700'

include: public safety (fire protection, emergency medical services, and emergency preparedness); library; historical preservation; governmental administration; education; parks, recreation and open space; trails; and utilities.

2.4 Existing Regulations - Public

This section describes the principle regulations affecting use and development in the Knik Lake area. This section is **NOT** meant to provide an all encompassing description of all activities and uses that require permits or approvals from local, state or federal agencies. Prior to undertaking any development activity, individuals should contact the appropriate local, state and federal agencies and obtain the required permits and approvals.

Federal

Any work which results in the dredging or placing of structures or fills in tidal (ocean) waters, streams, lakes or wetlands requires a 404 permit from the U.S. Army Corps of Engineers.

Migratory birds, which include loons and grebes, are protected by the Migratory Bird Treaty Act. The Act, among other things, prohibits the "take" of migratory birds where "take" is defined to mean pursuing, killing, etc., migratory birds. Destruction of nest sites, eggs or the birds themselves is a violation of the Act.

State

The Alaska Department of Environmental Conservation (DEC) provides regulations for waste water disposal. DEC waste water/septage regulations [18 AAC 72,015(f)] state that no holding tank, septic tank, soil absorption system, seepage pit, privy or other waste water collection, treatment, or disposal system may be within 100 feet, measured horizontally, of the mean annual high water level of a lake, river, stream, spring, slough, or the mean higher high water level of coastal waters.

In addition to the U.S. Army Corps of Engineers 404 permit requirements, any activity within streams and certain work within lakes requires a Title 16 permit from the Department of Fish and Game. Activities which result in the construction of a dam which impounds water or places a weir, culvert or temporarily blocks a stream requires a Title 16 permit. In February, 1994 the Habitat and Restoration Division of Fish and Game issued a one year, general permit allowing the vehicle movement on frozen water surfaces in southcentral Alaska. The permit allows certain motorized vehicles less than 2,000 pounds gross vehicle weight and wheeled vehicles less than 10,000 pounds gross vehicle weight to travel upon frozen water surfaces in southcentral Alaska without a

is 10 feet deep or less is substantial and, as expected, is near the shoreline. Due to these physical characteristics of Knik Lake, boats with large motors must perform numerous turning movements unless the engines are idled or kept at a reduced speed. A large number of turning movements will (and has) create(d) numerous wakes on the lake. Moreover, several boats with large engines performing such maneuvers or one boat performing many of these turns could create severe erosion problems.

Grebes which typically utilize floating vegetation for nests and loons which nest near the shoreline are very susceptible to disturbance and damage caused by wakes. Wakes also may harm grebe and loon chicks by either drowning them or by separating them from parents and making them easier targets for predators such as gulls and ravens. Finally, large motors generate higher sound levels than smaller ones.

Recommendation It is recommended that a limit on the size or power of boat motors be imposed due to harm to wildlife and habitat, an existing noise nuisance, shoreline erosion, and harm to the residential character of the area. The recommended limit for motors on Knik Lake is 5 horsepower. The size limit of 5 horsepower has been selected based on the physical characteristics of the lake, residential character of the area, request for quiet hours and as recommended by the area's property owners and residents.

4.3 Water Level

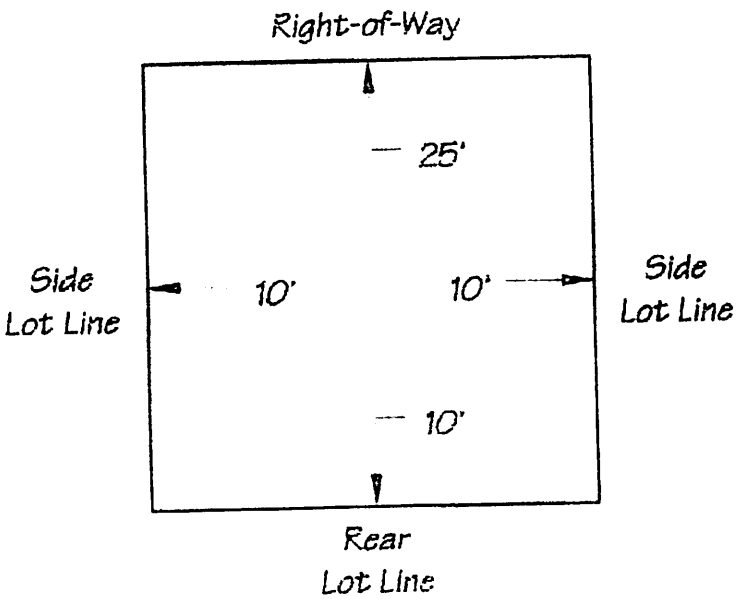
Management Issue Some property owners have reported that the lake's present water level is higher than its historical level. The higher level being caused by disturbance within an outlet located at the east portion of the lake when a natural gas pipeline was installed. As a result of the higher water level, it has been indicated that docks have become inconvenient for launching or landing boats and certain upland areas of the lake have become inundated with water. Other property owners, however, have reported that the lake is at its historic level and that no corrective action(s) are necessary.

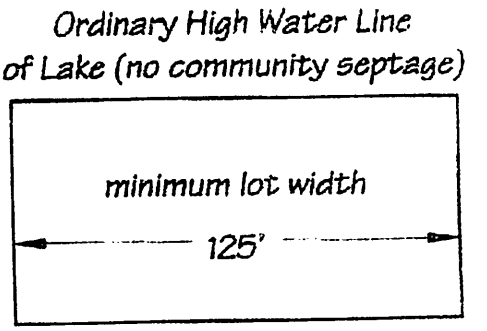
The State of Alaska, Departments of Fish and Game and Natural Resources were contacted for information on the historic water level of the lake. The agencies' personnel did not have any information about the historic water level of the lake.

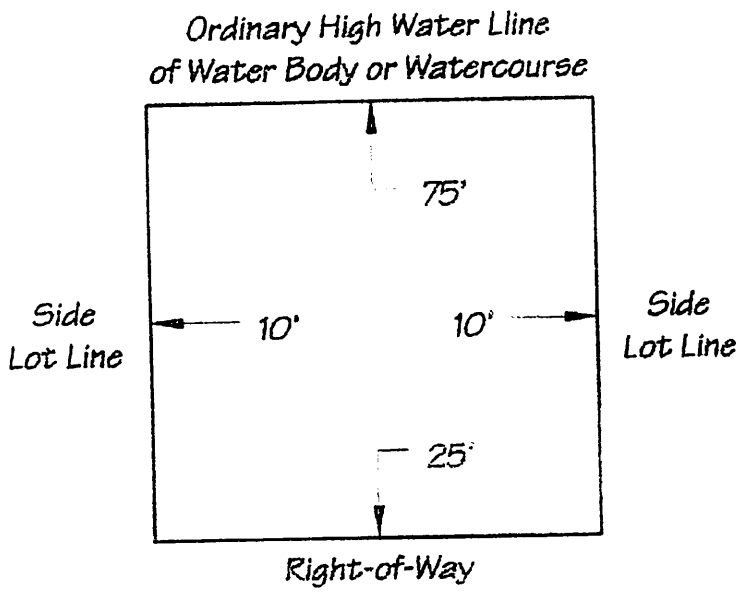
Alternatives One alternative is to let the lake remain at its current level. This alternative is very easy to implement as nothing new needs to be done. Another alternative is to modify the outlet stream in such a manner as to increase the outward flow of water until the lake reaches its historical level. This second alternative would require the placement of an outlet control structure within the outlet stream or modification of the outlet stream itself.

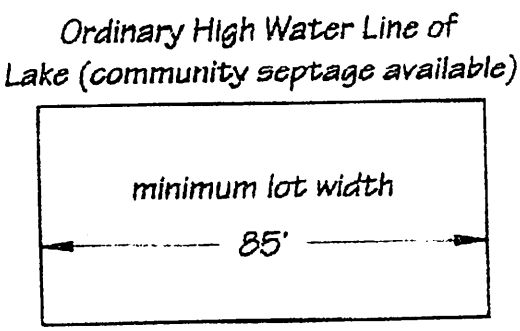
Figure 3

General Setback Requirements and Lot Size* Requirements









*All lots must be a minimum of 40,000 sq. ft.

The Borough received approximately 350,000 acres of land through the Municipal Entitlement Program. The Planning Department of the Borough manages and disposes of these lands through the policies and procedures described within Title 23. As of December, 1994, the Borough owned about 1.2 acres within the Knik Lake area (see Table 1).

Existing Regulations - Private

Private regulations which exist in the Knik Lake area consist of subdivision covenants. Only two subdivisions within the area have covenants, these being Knik Lake Estates and Jacqui Subdivision. The Knik Lake Estates covenants regulate dwelling type, provide for lot setbacks, and prohibit livestock and unsanitary conditions.

The Jacqui Subdivision covenants prohibits nuisances, temporary structures and livestock, and places restrictions on other site development such as fences and signs. For an up-to-date and complete version of these covenants, the reader is referred to the State of Alaska Recorders Office.

2.5 Present Lake Usage

Knik Lake contains 50 surface acres without coves or peninsulas and has just over 1.5 miles of shoreline (see Table 2). Figure 4 illustrates the lake's bathymetry. Trout are found in the lake and the lake contains active grebe nests.

Table 2
Knik Lake Characteristics

Surface Area	50 acres
Maximum Depth	37 feet
Mean Depth	19 feet
Shoreline Length	1.5 miles
Volume	963 acre feet

Source: State of Alaska, Department of Fish and Game

The present use of Knik Lake may be characterized as being residential. Most residents live at the lake throughout the entire year. Lake front property owners are also the predominant users of Knik Lake. They boat, swim and fish at the lake. The use of personal watercraft (jetskis) does not presently occur on Knik Lake.

Residents have indicated that the lake is used by visitors for boating and fishing. Some visitors access the lake from the Borough owned public access point located at milepost 14 at the Knik/Goose Bay Road. Some visitors have been reported to camp at the site which lacks sanitary and camping facilities and trash receptacles resulting in unsanitary conditions. In addition boats with large engines, over 15 horsepower, have used the lake for engine testing in early spring and occasionally during the summer. Boats with large engines have created erosion from wakes since the lake is small and shallow which requires a large boat to make frequent turns.

As Knik Lake is one of the early ice-free lakes in the area, it is commonly used by southcentral boaters to check their boats and motors for the upcoming season. This use of the lake has created noise and erosion problems due to effects of large boats and motors being tested on a relatively small and shallow lake. The public access point has also been utilized for overnight camping. Overnight camping has restricted the use of the public access by members of the public as the parcel is small. Litter, noise, and unsanitary conditions are also problems occurring with the unmanaged use at the public access. Finally, access to the public access parcel is by using a natural gas utility easement. Other present uses of Knik Lake include swimming by area children, trout fishing, and wildlife (grebe) viewing.

3 Goals

Goals describe the future expectations of residents, property owners, and users for a lake. The following goals reflect the aspirations of Knik Lake residents, property owners, and users and address their principal concerns: water quality, access, wildlife, recreation, and the residential character of the area. The goals are not shown in priority order as they are interdependent.

3.1 Water Quality

Knik Lake is a significant natural resource and it is the desire of property owners, residents and users of Knik Lake to maintain or improve the lake's water quality.

The water level of Knik Lake should be maintained at its natural level.

3.2 Recreation and Residential Character

The variety of recreational opportunities offered by Knik Lake should be maintained and enhanced but suited to the lake's particular characteristics and should not detract from the residential quality of the lake.

Prior to placing the structure in the stream several steps are required. The first step is obtaining a consensus from the lake's adjacent property owners that the lake's level should be lowered. Other steps that need to be accomplished include obtaining the necessary permits and reviewing the impacts of a lower water level on property setbacks. For example, a permit from the Alaska Department of Fish and Game is required to work within the stream as well as place the structure in it. Also, a water right may be required from the Alaska Department of Natural Resources. Additionally, the impact of the new water level must be reviewed in terms of positive impacts on Department of Environmental Conservation and Matanuska-Susitna Borough setback requirements for waste water systems and structures, respectively.

A final alternative is to perform limited redesign of the outlet channel. The redesign would increase outlet flow yet provide for fish passage. This alternative, which is preferred by the State of Alaska, Department of Fish and Game, is the least costly and less environmentally disruptive alternative.

Recommendation It is recommended that a review of the need for, and impacts of, lower water levels on property and structures, e.g., docks, be performed. After completing this review, and should the review indicate no negative impact, permit applications should be filed with the necessary agencies to redesign the outlet channel in order to bring the lake lower it to its historical level.

4.4 Access

Management Issue Presently the legal and physical overland access to Knik Lake is provided by a business having a launch and over Borough land. Access to Knik Lake is necessary for recreation purposes. Access must also be provided to the lake to fulfill the state's legal requirement of providing public access to a public water body. The public's access over Borough land has created problems, such as, overnight camping, litter and unsanitary conditions. To use the Borough parcel one must utilize the natural gas line easement which was not developed for vehicular traffic.

Alternatives Legal and physical overland access is necessary for Knik Lake in order to comply with Borough and State regulations. The privately owned public access point does not present any concerns or problems because the commercial establishment manages the access point.

In regards to the Borough owned parcel, three alternatives present themselves: 1) do nothing, 2) sell the parcel, or 3) actively manage the parcel. The first alternative must be discarded because the lack of management at this access point is the primary reason residents and property owners requested a lake management plan for Knik Lake. Moreover, doing nothing would allow environmental

caused by motorized craft may destroy the nest or wash away the eggs. In addition to damaging a nest, activities occurring too close to a nest will cause loons to leave an active nest thereby allowing predators such as gulls and ravens to eat the unprotected eggs or chicks. Discarded mono-filament line presents another threat to loons and other birds as it may entangle birds and chicks and ultimately kill them through starvation predation, or by drowning.

Alternatives If nothing is done to inform lake users of the sensitivity of loons and grebes to water borne activities and development, active nests will not be found on Knik Lake in the future. In order to maintain the presence of loons at the present nest site it is necessary that some proactive steps be implemented.

Recommendations Most individuals will not disturb a nest site if they are informed of its location and the proper behavior when near it. It is recommended that a number of techniques be employed to provide the public with information about loons and grebes. First, existing nests where regular loon or grebe nests have occurred should be encircled by a number of buoys marked with "Loon (or Grebe) Nesting Site - Do Not Approach" placed at least 150 feet (200 feet preferred) from the nest's boundary. Appendix #2 provides an illustration of a low cost, effective buoy. Loon and grebe alert notices and general information about loons should be posted at a weather protected signboard at the lake's access point to inform the public about proper "loon or grebe etiquette" (see Appendix #2).

5.0 Implementation

Plans may be implemented in a number of ways but are typically implemented through capital improvement programs and subdivision and zoning ordinances. Within the Borough, residents may also petition for motorized use restrictions on lakes and this ordinance may be used to implement a lake management plan. This ordinance was discussed by Knik Lake property owners and found not to be needed at this time. Plans may also provide for private implementation through public information campaigns and a list of best management practices that may be used by the public. The problems facing Knik Lake at this time do not warrant a special zoning or subdivision ordinance nor do they warrant implementation of the Borough's motorized use of lakes ordinance. Therefore, this plan will utilize a combination of capital improvements, public information and best management practices to implement the plan. In addition should a Lake Management ordinance[1] be adopted containing a general provisions section that

[1] Note: Due to the diversity of lakes in the Borough and the many requests for lake management plans and guidelines that have been received, a Borough-wide ordinance consisting of a general provisions section containing rules for all lakes, e.g., don't litter and a more specific provisions section containing several lake categories with different guidelines ranging from none to several is being considered.

throughout the Borough. Firework displays create two problems, noise from explosions and trash from the fireworks. Firework displays may also start forest fires. The Borough does not have the resources to actively police the illegal use of fireworks and such use is a low priority for the Alaska State Troopers. However the Borough should advise property owners of the law and inform them, by correspondence, to be considerate of their neighbors, avoid polluting the lake with debris and avoid forest fires and disturbance of waterfowl.

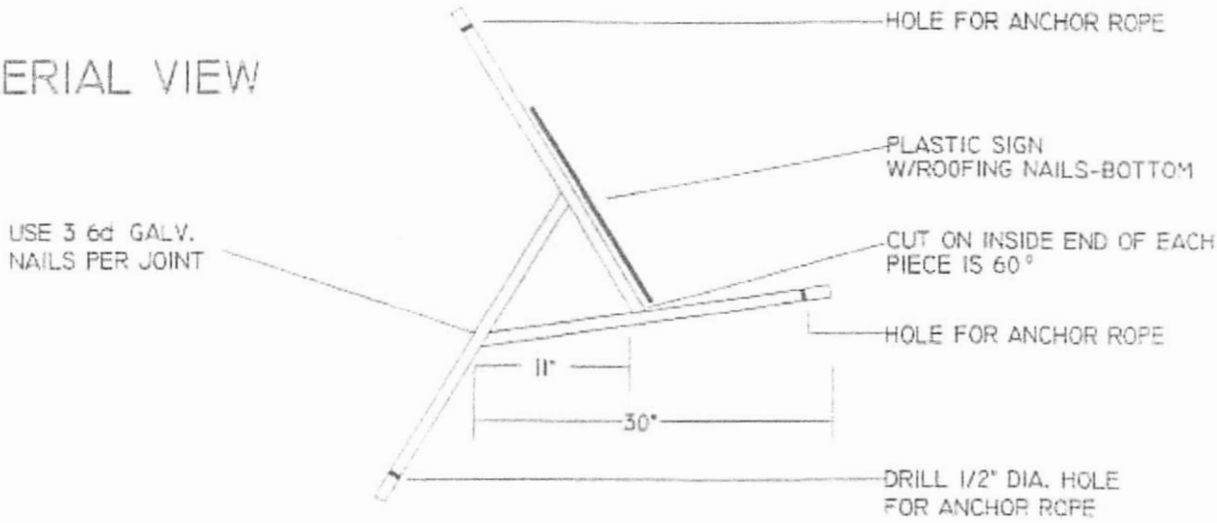
Loons and Grebes To protect loons and grebes it is recommended that buoys should be placed a minimum of 150 feet (200 feet preferred) around the island to inform lake users of the nest site. Appendix #1 provides information on buoy construction and placement. Finally, a weather protected informational signboard should be constructed at the preferred access point and information about lake usage and proper behavior near active loon nests e.g. "Loon (or Grebe) Alert!" The Knik area residents and property owners and Borough should cooperate in implementing the loon and grebe protection program.

Enforcement Violation(s) of the management guidelines described within the Implementation Section of this plan should be subject to citations and the remaining remedies that exist for violation of the Borough motorized use of waterbodies ordinance (17.58).

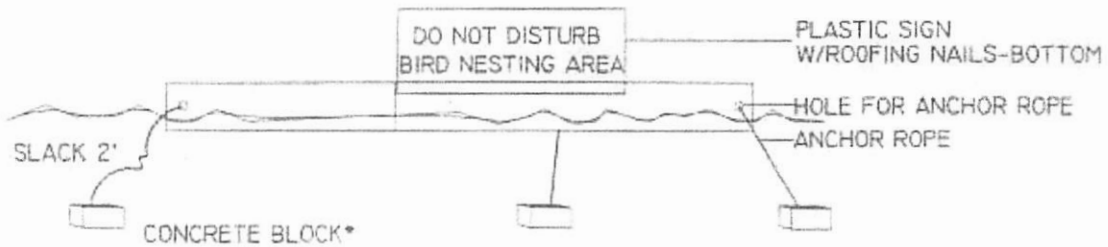
SIGN FLOAT FOR LOON NESTS

(NOT LIKELY TO TURN OVER
IN THE STRONGEST WIND)

AERIAL VIEW

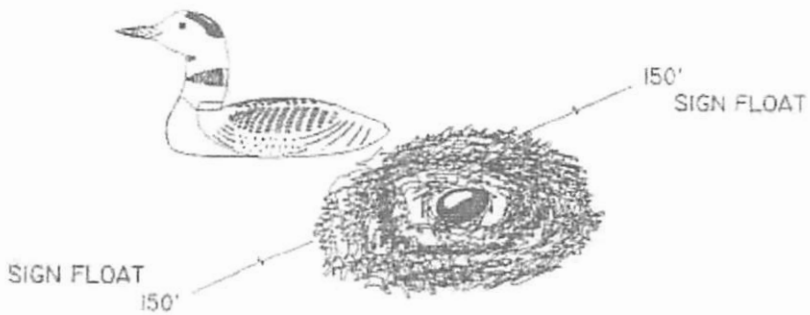


VIEW FROM WATER



*GALLON MILK JUGS FILLED WITH SAND
COULD REPLACE CONCRETE BLOCKS

NEST



MATERIALS LIST

3 - 1"x 4"x 30"
WHITE PINE OR
NO. WHITE CEDAR

9 - 6d .GALV BOX NAILS

5 - 1" ROOFING GALV. NAILS

1 - LOON SIGN

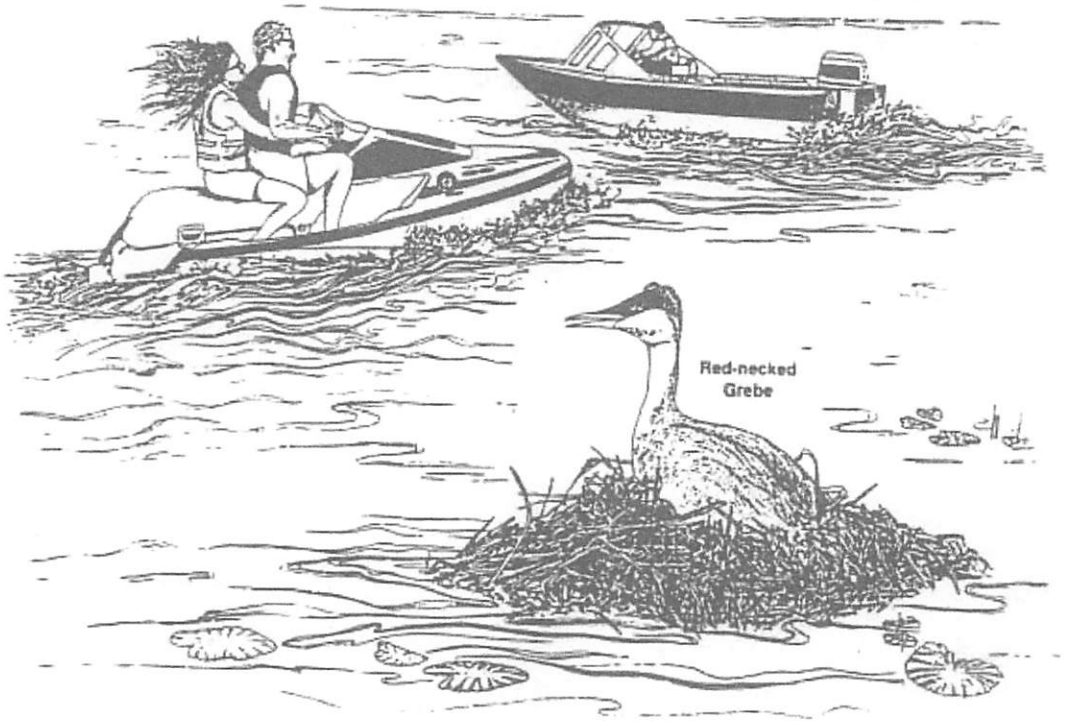
2 - 3 CONCRETE BLOCK *
FOR ANCHORS

ENOUGH 1/4" NYLON ROPE
TO REACH BOTTOM OF LAKE
FOR ANCHOR

The platforms should be attached with two anchors a minimum of 150 feet from the nest (more, if needed to avoid disturbing the loons) and be clearly visible, yet not be a boating hazard. Signs should be removed after nesting is completed (usually by mid-July) each year to preserve there use. Signs should be stored over the winter in a dry area.

DESIGNED BY:
HERB CILEY/PO BOX 348 TUPELO POINT BOWLAKE, NORTHWOOD, N.H. 03261
ENHANCED BY:
MATANUSKA-SUSITNA BOROUGH SUPPORT SERVICE (MS)

STEER CLEAR!



BOATERS – Stay at least 100 feet away from nesting Red-necked Grebes.

Grebes are duck-sized birds that nest on floating vegetation and debris in shallow water.

Wakes from watercraft will destroy their nests and kill their eggs and chicks.

Go slowly along shorelines and avoid nesting areas.

– HELP PROTECT ALASKA'S WILDLIFE –

Wildlife harassment is illegal. Report violations to Fish and Wildlife Protection (State Troopers) or call (800) 478-3377.

This sign was produced by a grant to the Alaska Watchable Wildlife Trust Fund, c/o Alaska Conservation Foundation, 430 W. 7th Avenue #215, Anchorage AK 99501 (907) 276-1917.

POSTED BY ALASKA DEPT. FISH AND GAME

Resolution

By: Wade Long
Introduced: June 15, 2026
Public Hearing: July 20, 2026
Action:

MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION RESOLUTION NO. 26-10

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION APPROVING A CONDITIONAL USE PERMIT TO EXPAND OPERATIONS FOR A PRE-EXISTING ALCOHOLIC BEVERAGE DISPENSARY (BAR), LOCATED AT 10204 SOUTH KNIK GOOSE BAY ROAD, TAX ID# 7186000L001; LOCATED WITHIN TOWNSHIP 16 NORTH, RANGE 03 WEST, SECTION 24, SEWARD MERIDIAN.

WHEREAS, an application has been received from Douglas Massie on behalf of Knik Landing, for a conditional use permit to expand an existing beverage dispensary (bar) at 10204 S Knik Goose Bay Road (Tax ID #7186000L001); within Township 16 North, Range 3 West, Section 24, Seward Meridian; and

WHEREAS, the applicant proposes to construct a 5,000 square foot event building and a 2,000 square foot outdoor deck associated with the existing Knik Bar & Liquor operation; and

WHEREAS, the beverage dispensary use at Knik Bar & Liquor operates under an existing legal nonconforming status issued in 1985 (LCUP/GFR #177019850008); and

WHEREAS, the existing Knik Bar & Liquor operation is proposed to operate under the name “Knik Landing Event Center” as part of the expanded use; and

DRAFT

WHEREAS, the proposed use represents an expansion of the existing beverage dispensary operation from legal nonconforming status; and

WHEREAS, the subject property is located within the Knik Sled Dog and Recreation Special Land Use District; and

WHEREAS, development within the district is required to comply with the applicable development standards and requirements of MSB 17.20.070(A) Table 1; and

WHEREAS, table 1 establishes buffering requirements for new large-scale commercial and heavy industrial development; and

WHEREAS, "large-scale commercial" is defined in MSB 17.125 as a commercial building with a total gross building area equal to or exceeding 25,000 square feet; and

WHEREAS, the proposed development consists of a 3,600 square foot restaurant, 5,000 square foot event building, and a 2,000 square foot outdoor deck; and

WHEREAS, the total square footage is approximately 10,600 square feet, which does not meet the definition of large-scale commercial development; and

WHEREAS, table 1 requires that glare and illumination associated with exterior lighting are required to be contained on

DRAFT

the subject property and not impact adjacent properties, surrounding lands, or the night sky; and

WHEREAS, according to the application materials, exterior lighting associated with the proposed development will be downward-directed and shielded, which is intended to direct light toward the ground and minimize light spillover onto adjacent properties; and

WHEREAS, this design is consistent with the requirement to contain illumination on-site and reduce impacts to surrounding uses; and

WHEREAS, glare from exterior lighting is required to be shielded from vehicular traffic and shall not impair traffic safety; and

WHEREAS, the application materials provided show that no lighting fixtures will exceed 20 feet in height; and

WHEREAS, Table 1 requires a minimum lot size of 40,000 square feet, consistent with MSB Title 43, unless reduced through the provision of community water or sewer; and

WHEREAS, the subject property is approximately 2.76 acres in size, which exceeds the minimum 40,000 square foot requirement; and

DRAFT

WHEREAS, table 1 requires a minimum setback of 30 feet between new large-scale commercial or heavy industrial structures and the property line of the nearest existing land uses; and

WHEREAS, MSB 17.70.020 requires a conditional use permit for the operation of an alcoholic beverage dispensary (bar); and

WHEREAS, an application for a restaurant endorsement associated with the existing Beverage Dispensary license is currently under review by the State of Alaska and is pending approval by the Matanuska-Susitna Borough Planning Commission for a conditional use permit; and

WHEREAS, the subject property is located at the southwest corner of Northshore Drive and Knik Goose Bay Road intersection in the Knik Lake area; and

WHEREAS, Northshore Drive is a borough road and separates the subject property from a vacant parcel located directly to the north; and

WHEREAS, a property with a residential use is located northwest of the subject parcel north of Northshore Drive; and

WHEREAS, a vacant parcel is located directly west of the bar property, with residential properties located further west beyond that vacant parcel; and

DRAFT

WHEREAS, Knik Lake is located directly south of the subject property, and residential properties are located across the lake to the south; and

WHEREAS, Knik Goose Bay Road is a state road located directly east of the subject property; and

WHEREAS, across Knik Goose Bay Road to the east is a tidal zone and a mix of privately owned vacant parcels, including parcels owned by individuals and a company, adjacent to the Knik Arm of Cook Inlet; and

WHEREAS, the closest residence is located just over 300 feet to the northwest of the subject property; and

WHEREAS, according to the application materials, the proposed event building is proposed to operate seven days per week from 8:00 a.m. to 12:00 a.m.; and

WHEREAS, according to the application materials, the existing bar is proposed to operate seven days per week from 12:00 p.m. to 12:00 a.m.; and

WHEREAS, according to the application materials, the outdoor deck use aligns with the event building hours; and

WHEREAS, according to the application materials, amplified sound is proposed indoors only; and

DRAFT

WHEREAS, according to the site plan, 72 total parking spaces are provided on-site; and

WHEREAS, based on industry-standard guidance from the Institute of Transportation Engineers (ITE) Parking Generation Manual, 6th Edition, restaurant uses typically generate demand of approximately 8–12 spaces per 1,000 square feet, while assembly/venue uses generate approximately 5–10 spaces per 1,000 square feet, and applying these ranges, the combined parking demand is estimated to fall within a range that is generally consistent with the 72 spaces provided, and the proposed parking supply is therefore considered adequate based on ITE industry standards; and

WHEREAS, the site plan indicates four ADA-accessible parking spaces, including van-accessible spaces, and for a parking lot of 51–75 spaces, three accessible spaces are required, and the proposal therefore exceeds ADA requirements; and

WHEREAS, according to the site plan, a metal chain link fence with wood slats is proposed to extend from the northwest corner of the existing building to the lake to provide visual screening, security, and privacy; and

WHEREAS, the owner and/or operator must comply with the maximum permissible sound level limits per the requirements of MSB 8.52, Noise, Amplified Sound, and Vibration; and

DRAFT

WHEREAS, according to the site plan, the proposed fencing is intended to connect between the existing building and the proposed event building and then extend from the proposed event building to the lake; and

WHEREAS, a high volume driveway permit is required for access onto the borough road Northshore Drive; and

WHEREAS, according to the application material, the event space is proposed to accommodate up to 200 guests for seated events and up to 300 persons for standing events; and

WHEREAS, the State Fire Marshal-accepted public safety plan establishes occupant load limits, emergency access, and life safety measures for indoor and outdoor event operations, ensuring compliance with applicable fire and life safety codes; and

WHEREAS, implementation of the approved safety plan reduces potential risks associated with large gatherings, including emergency response, crowd management, and egress, thereby protecting public health and safety; and

WHEREAS, adherence to the Fire Marshal-approved plan is required for operation of the event venue and outdoor deck, providing ongoing oversight of life safety conditions during events; and

DRAFT

WHEREAS, the proposed use is accessed from Northshore Drive, a borough road, and Knik Goose Bay Road, a state road, and

WHEREAS, the nearest school is Joe Redington Sr./Jr. High School, which is approximately 3.6 miles from the site; and

WHEREAS, Dena'ina Elementary School is approximately 3.1 miles from the site; and

WHEREAS, state regulations preclude beverage dispensary licenses within 200 feet of a school; and

WHEREAS, persons under the age of 21 are prohibited from being served alcoholic beverages; and

WHEREAS, the operator of the proposed use is required to operate in accordance with Alaska laws and statutes, which include mandatory alcohol server education; and

WHEREAS, Alaska Statute 04.16.030 specifically prohibits the sale of alcoholic beverages to drunken persons; and

WHEREAS, the subject property is approximately 2.76 acres in size; and

WHEREAS, MSB 17.55.020 requires that no structure or footing be located closer than 75 feet from the ordinary high water mark of a body of water, unless otherwise authorized through an approved land use permit; and

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WHEREAS, the subject property is subject to an approved Mandatory Land Use Permit (MLUP-2025-010065), which authorizes a non-habitable event venue structure approximately 40 feet from the ordinary high water mark and a covered gazebo approximately 5 feet from the ordinary high water mark of Knik Lake; and

WHEREAS, for purposes of minimum setback distances, fences are not considered structures under MSB 17.55.004; and

WHEREAS, the operation is required to comply with the maximum permissible sound level limits of MSB 8.52 – Noise, Amplified Sound, and Vibration; and

WHEREAS, the surrounding area consists of a mix of residential and vacant parcels in proximity to the subject property, and

WHEREAS, Knik Lake is located directly south of the subject property, and open water areas may transmit sound and are not considered a physical noise buffer; and

WHEREAS, according to the application materials, signage will consist of a wood timber frame sign reading "Knik Landing," with lighting that is dim and directed downward to minimize visual impact; and

WHEREAS, the subject property will be accessed primarily from Knik Goose Bay Road, a roadway under the jurisdiction of the State of Alaska; and

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WHEREAS, a driveway permit for access onto Knik Goose Bay Road has been issued by the State of Alaska; and

WHEREAS, any future use of the Northshore Drive access will require compliance with MSB 11.12, including permitting and potential upgrades to meet applicable driveway standards based on traffic generation; and

WHEREAS, according to the application materials, peak traffic is anticipated between 4:00 p.m. and 8:00 p.m., with approximately 92 vehicle trips (entering and exiting) during the peak hour; and

WHEREAS, the projected traffic generation exceeds the threshold for a low volume driveway under MSB 11.12 and would require higher design standards if access to a borough right-of-way is pursued; and

WHEREAS, internal site circulation and parking layout are designed to manage vehicle movement on site and minimize the potential for vehicles queuing onto adjacent roadways; and

WHEREAS, Knik Goose Bay Road functions as a primary transportation corridor and is designed to accommodate higher traffic volumes than local or collector roads; and

WHEREAS, according to the site plan, parking areas are located on the subject parcel and are designed to serve both the existing and proposed uses; and

DRAFT

WHEREAS, internal circulation and parking layout are designed to accommodate vehicle movement on-site and minimize the potential for congestion; and

WHEREAS, according to the application materials and site plan, all parking for employees and patrons will be located on the subject parcel; and

WHEREAS, according to the application materials and site plan, internal circulation is provided on-site to accommodate vehicle movement and reduce the potential for vehicles queuing onto adjacent roadways; and

WHEREAS, internal circulation and on-site parking are provided to accommodate traffic demand and reduce the potential for traffic impacts extending onto adjacent roadways; and

WHEREAS, access to the subject property from Knik Goose Bay Road has historically served the existing beverage dispensary use; and

WHEREAS, the proposed development includes an additional event building located to the south of the existing structure and associated outdoor use areas; and

WHEREAS, Knik Goose Bay Road and Northshore Drive provide separation between portions of the subject property and nearby residential uses; and

DRAFT

WHEREAS, according to the application materials, exterior building materials and colors will consist of neutral earth tones intended to blend with the surrounding environment; and

WHEREAS, the site plan consolidates buildings, parking, and circulation areas on the subject property; and

WHEREAS, according to the application materials, the proposed use will operate in conjunction with the existing bar and is not a new standalone establishment; and

WHEREAS, according to the application materials, the site includes controlled access and defined areas for alcohol service; and

WHEREAS, according to the application materials, a chain link fence with wood slats is proposed to enclose areas where alcohol is served and to provide screening, privacy, and site security; and

WHEREAS, the Alcoholic & Marijuana Control Office (AMCO) has no record of violations by the applicant or persons with an interest in the application within the 12 months preceding the application; and

WHEREAS, no information has been submitted indicating that any person or party associated with this application is

DRAFT

untrustworthy, unfit to conduct business in the borough, or is a potential source of harm to the public; and

WHEREAS, two written comments were received expressing concerns regarding noise, traffic, parking, lighting, and potential impacts to Knik Lake and surrounding residential properties; and

WHEREAS, no comments were received from the Knik-Fairview Community Council; and

WHEREAS, there are no complaints from the public on record regarding the subject property; and

WHEREAS, the Planning Commission has reviewed this application with respect to applicable standards set forth in MSB 17.70, and

WHEREAS, the Planning Commission conducted a public hearing on July 20, 2026, on this matter.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Planning Commission hereby adopts the aforementioned findings of fact and makes the following conclusions of law supporting approval of Planning Commission Resolution 26-10:

1. The buffering requirements of MSB 17.20.070(A), Table 1, are not applicable to the proposed development.

DRAFT

2. The proposed exterior lighting is consistent with the requirements of MSB 17.20.070(A), Table 1.
3. The proposed development complies with the minimum lot size requirements of MSB 17.20.070(A), Table 1.
4. The setback requirements of MSB 17.20.070(A), Table 1, are not applicable to the proposed development.
5. The proposed use is compatible with and will preserve or not materially detract from the value, character, and integrity of the surrounding area (MSB 17.70.100(A)(1)(a)).
6. The proposed use will not be harmful to public health, safety, convenience, and welfare (MSB 17.70.100(A)(1)(b)).
7. Sufficient setbacks, lot area, buffers or other safeguards are being provided (MSB 17.70.100(A)(1)(c)).
8. There will not be any negative effects upon the properties in the area due to such factors as dust, noise, obtrusive advertising, and glare (MSB 17.70.100(A)(2)(a)).
9. The proposed use will not negatively affect the safe, efficient flow of traffic on any highway, arterial, collector or street from which access to and from the establishment is obtained (MSB 17.70.100(A)(2)(b)).

DRAFT

10. Measures will be in place to reduce any negative effect upon adjacent and nearby properties (MSB 17.70.100(A)(2)(c)).
11. Adequate parking is provided to accommodate a reasonably expected increased demand for parking created by issuing the permit (MSB 17.70.100(A)(2)(d)).
12. Access to the premises will not create an unreasonable traffic hazard (MSB 17.70.100(A)(2)(e)).
13. Traffic will not overtax existing road systems (MSB 17.70.100(A)(2)(f)).
14. The proposed use is compatible with the character of the surrounding area (MSB 17.70.100(A)(2)(g)).
15. The proposed use is not expected to increase the crime rate in the area or increase alcohol-related accidents (MSB 17.70.110(B)(1)).
16. The applicant has not had a liquor license suspended or revoked in the 12 months preceding the application (MSB 17.70.110(B)(2)).
17. The applicant is trustworthy or fit to conduct business in the borough and the applicant is not a potential source of harm to the public (MSB 17.70.110(B)(3)).

BE IT FURTHER RESOLVED, the Planning Commission finds this application does meet the standards of MSB 17.70 and does hereby approve the conditional use permit with the following conditions:

DRAFT

1. The operation shall comply with all applicable federal, state, and local regulations.
2. All aspects of the operation shall comply with the description detailed in the application materials and with the conditions of this permit. An amendment to the Conditional Use Permit shall be required prior to any expansion or substantial alteration of the conditional use.
3. Outdoor use areas, including the deck and event-related outdoor activities, shall be limited to the hours of 8:00 a.m. to 10:00 p.m. daily.
4. The operation shall comply with the maximum permissible sound level limits allowed per the requirements of MSB 8.52, Noise, Amplified Sound, and Vibration.
5. Prior to operation of the expanded service areas, provide a copy of the approved State of Alaska Beverage Dispensary license to the Mat-Su Borough Planning Department.
6. Use of access from Northshore Drive requires a driveway permit and compliance with MSB 11.12 driveway standards.
7. The driveway access onto Knik Goose Bay Road shall be maintained in accordance with the approved State of Alaska driveway permit.

DRAFT

ADOPTED by the Matanuska-Susitna Borough Planning Commission this ___ day of _____, 2026.

Richard Allen - Chair

ATTEST

Lacie Olivieri, Planning Clerk

(SEAL)

YES:

NO:

DRAFT

PUBLIC HEARING LEGISLATIVE

Resolution No. 26-09

A Resolution Of The Matanuska Susitna Borough Planning Commission Recommending Approval Of An Ordinance Amending MSB 17.73 Multifamily Development Design Standards To Align Permitting And Design Standards With The Scale And Complexity Of Development Projects.

Staff: Alex Strawn, Planning Director

MATANUSKA-SUSITNA BOROUGH INFORMATION MEMORANDUM **IM No. 26-045**

SUBJECT: AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY AMENDING MSB 17.73 MULTIFAMILY DEVELOPMENT DESIGN STANDARDS TO ALIGN PERMITTING AND DESIGN STANDARDS WITH THE SCALE AND COMPLEXITY OF DEVELOPMENT PROJECTS.

AGENDA OF: April 21, 2026

ASSEMBLY ACTION:

AGENDA ACTION REQUESTED: Refer to Planning Commission for 90 days.

Route To	Signatures
Originator	X Alex Strawn 4/10/2026 Signed by: Alex Strawn
Department Director	X Alex Strawn 4/10/2026 Signed by: Alex Strawn
Finance Director	Recoverable Signature X Cheyenne Heindel Signed by: Cheyenne Heindel
Borough Attorney	X Shannon Bodolay for NS 4/14/2026 Signed by: Shannon Bodolay
Borough Manager	X MichaelBrown 4/14/2026 Signed by: Mike Brown
Borough Clerk	X Lonnie McKe... 4/24/2026 Signed by: Lonnie McKechnie

ATTACHMENT(S): Ordinance Serial No. 26-031 (10pp)
MSB 17.73 (15pp)
MSB 17.125 (17pp)
MSB 2022 Subdivision Construction Manual (54pp)
MSB Design Criteria Manual Chapter Two (25pp)
Planning Commission Resolution No. 26-___ (pp)

SUMMARY STATEMENT: This ordinance is at the request of Assemblymember Sumner.

The amendments to Title 17 address multiple aspects of multifamily development, with the purpose of clarifying permit requirements, improving safety and circulation standards, and providing exemptions for smaller-scale developments. These changes support the borough's goals of promoting orderly growth while protecting

public health, safety, and welfare.

The ordinance also addresses definitions relevant to multifamily development. "Primary vehicle access" is modified to remove a development standard from within the definition itself. "Vehicular circulation" is defined to establish minimum design requirements for internal drive systems, promoting safe and efficient movement of vehicles on-site.

Applicability standards for multifamily regulations are clarified under section 17.73.030. Developments with two or fewer dwelling units per lot are now exempt from this chapter, ensuring that small scale residential projects are not subject to standards intended for larger-scale multifamily housing.

To improve fire access and traffic movement, the ordinance outlines vehicular circulation requirements based on project size. All bridges and water crossings leading to more than one dwelling unit must be designed and constructed in accordance with the Borough Design Criteria Manual.

The adoption of drainage requirements ensure developments are designed to handle stormwater appropriately. Drainage plans must be certified by an engineer and meet specific runoff and detention standards.

In summary, this ordinance is consistent with the MSB comprehensive plan by addressing safety, accessibility, and environmental stewardship while balancing the regulatory burden for small-scale developments.

Matanuska-Susitna Borough Comprehensive Plan

Goal E-3: Create an attractive environment for business investment.

> Policy E3-2: Institute appropriate land use guidelines and regulations that reduce land use conflicts and protect residents and businesses.

Goal LU-1: Protect and enhance the public safety, health, and welfare of Borough residents.

> Policy LU1-1: Provide for consistent, compatible, effective, and efficient development within the Borough.

RECOMMENDATION OF ADMINISTRATION: Refer to Planning Commission and then introduce and set for public hearing.

CHAPTER 17.73: MULTIFAMILY DEVELOPMENT DESIGN STANDARDS

Section

Article I. Adoption

17.73.010 Title

17.73.020 Intent and purpose

17.73.030 Application of provisions

17.73.040 Density

Article II. Application Requirements

17.73.050 Approval required

17.73.055 Mobile home parks prohibited

17.73.060 Administrative review

17.73.070 Planning commission review

17.73.080 Appeals process

17.73.090 Conflicting provisions

17.73.095 Domestic wastewater system plan

17.73.100 Nonstructural fire and life safety plan review

17.73.110 Violation and enforcement

Article III. Incentives

17.73.120 Earning incentive points [Repealed]

Article IV. Standards

17.73.130 General design standards

17.73.140 Height [Repealed]

17.73.150 Access roads; Design/parking

17.73.160 Bicycle storage/parking [Repealed]

17.73.170 Lighting

17.73.180 Pedestrian circulation

17.73.190 Landscaping

17.73.200 Service area screening

17.73.210 Fencing and walls [Repealed]

17.73.220 Useable open space [Repealed]

17.73.230 Mixed use opportunities [Repealed]

17.73.240 Affordable housing [Repealed]

Article V. Definitions

17.73.250 Definitions

ARTICLE I. ADOPTION

17.73.010 TITLE.

(A) This chapter shall be known and cited as the “multifamily development design standards ordinance of the Matanuska-Susitna Borough.”

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.020 INTENT AND PURPOSE.

(A) The overall goals of this chapter are to provide safe, affordable multifamily developments that promote a healthy lifestyle in the Matanuska-Susitna Borough (also referred to as “borough”). Also, this chapter encourages compatible multifamily development with surrounding land uses, and provides development incentives to encourage innovative multifamily development and affordable housing. Issues related to multifamily development, such as water quality, traffic impacts, design standards, and other associated concerns, are addressed by this chapter. This chapter establishes appropriate density levels for multifamily development throughout the borough.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), § 2, 2008: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.030 APPLICATION OF PROVISIONS.

(A) This chapter applies to all multifamily developments, including substandard dwellings, which meet or exceed the density threshold of this chapter, regardless of the form of ownership. This chapter applies to:

(1) all new multifamily developments started after the effective date of the ordinance codified in this chapter.

(2) all structural additions totaling 300 square feet and greater to an existing multifamily development.

(B) The provisions of this chapter are not applicable and may not be used for multifamily developments or buildings within the cities of Houston, Palmer, or Wasilla.

(C) The provisions of this chapter are the responsibility of the developer.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), §§ 3, 4, 2008; Ord. 07-058, § 1, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.040 DENSITY.

(A) Density thresholds are used by this chapter to determine if the chapter applies. The density thresholds are determined using the following subsections:

(1) Residential development constructed at a density greater than two dwelling units per 40,000 square feet of lot area; or

(2) Any development exceeding six dwelling units, regardless of lot size.

(3) This chapter shall apply to substandard dwellings offered for compensation in the form of money, services, or barter that are constructed at a density:

(a) equal to or greater than one dwelling per 40,000 square feet of lot area, calculated at 0.000025 multiplied by the lot area; and

(b) exceeding two dwellings regardless of lot size.

(4) This density threshold does not apply to short-term transient accommodations, as defined by this chapter and subject to regulations by MSB 3.32.010, 3.32.020, and 3.32.030 and subsequent amendments. Short-term transient accommodations shall be exempt from the standards of this chapter.

(B) Density ceiling is the maximum number of dwelling units that can be built per 40,000 square feet. A density ceiling applies when allowed through the application of this chapter and unless otherwise established within a SPUD or another codified standard.

(1) Two density ceilings are provided.

(a) Core Area (As Delineated in the MSB Core Area Comprehensive Plan).

(i) The maximum number of dwelling units allowed within the core area is 18 units per 40,000 square feet.

(b) Non-Core Area.

(i) The maximum number of dwelling units allowed outside of the core area is 12 units per 40,000 square feet.

(2) Regardless of location, substandard dwellings that are being offered for compensation in the form of money, services, or barter are subject to the following density ceilings:

(a) one substandard dwelling per 40,000 square feet; or

(b) two substandard dwellings, regardless of lot size.

(Ord. 18-013, § 2, 2018; Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), §§ 5, 6, 2008; Ord. 07-058, § 2, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

ARTICLE II. APPLICATION REQUIREMENTS

17.73.050 APPROVAL REQUIRED.

(A) Multifamily development permit application approval is required prior to commencement of a multifamily development that meets or exceeds the density threshold of this chapter.

(B) A complete application includes the following:

(1) nonrefundable multifamily development permit fee;

(2) three copies of the following documents:

(a) permit application;

(b) certified site plan (see definition);

(i) The landscape and drainage plans may be included as part of the certified site plan;

(c) *[Repealed by Ord. 12-169, § 2, 2013]*

(d) drainage plan;

(3) *[Repealed by Ord. 12-169, § 2, 2013]*

(4) additional information as determined by the director.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), § 7, 2008; Ord. 07-058, § 3, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.055 MOBILE HOME PARKS PROHIBITED.

(A) In accordance with the substandard dwelling density limits of MSB 17.73.040(B)(2), mobile home parks are prohibited.

(B) Mobile home parks in existence as of the date of the adoption of this section are allowed to continue if they:

(1) Were permitted under former MSB 17.48 before August 6, 2024; or

(2) Receive legal nonconforming status under MSB 17.80 by on or before June 30, 2025.

(Ord. 24-096, § 2, 2024)

17.73.060 ADMINISTRATIVE REVIEW.

(A) Each application for multifamily development will be approved administratively, unless a variance or other modification to the standards of this chapter is requested.

(B) The planning and land use director or designated staff shall determine whether an application for a multifamily permit is complete. An incomplete application shall be returned to the applicant with a written explanation of application deficiencies within seven working days of the date the application is received in the planning and land use department.

(C) Decisions will be rendered within ten working days from the date the application is determined complete.

(D) The director may revoke any approved application if the development does not conform to the approved application.

(E) If the proposed multifamily development contains or will contain any substandard dwellings offered for commercial compensation in the form of money, services, or barter, and if the minimum criteria for a multifamily development permit are met, the director will notify surrounding property owners in accordance with MSB 17.03, Public Notification. Within 30 days of acceptance of the completed application, the director shall issue a decision on the application with conditions to address concerns raised by surrounding property owners within the notification area, if deemed appropriate by the director.

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.070 PLANNING COMMISSION REVIEW.

(A) In the event the applicant wishes to vary from any of the standards of this chapter, the planning commission may grant variances from the standards contained in this chapter. The planning commission will base its decision on the variance review criteria described in MSB 17.65.

(B) The planning commission may consider comments from the department of emergency services when granting a variance.

(C) The planning commission may require conditions of approval when granting a variance to support the overall objectives of the multifamily standards.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), §§ 8, 9, 2008; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.080 APPEALS PROCESS.

(A) The appeal of a decision shall be conducted in accordance with the process outlined in MSB 15.39.

(Ord. 12-169, § 2 (part), 2013: Ord. 07-058, § 4, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.090 CONFLICTING PROVISIONS.

(A) If any provisions of this chapter are inconsistent with one another or if they conflict with provisions found in other adopted borough, state, federal, or local codes, ordinances, or regulations, the more restrictive provision will apply.

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.095 DOMESTIC WASTEWATER SYSTEM PLAN.

(A) *[Repealed by Ord. 21-013, § 2, 2021]*

(B) Certification by a professional engineer, who is authorized to engage in that profession by the state of Alaska, must be submitted to the planning and land use department within 90 days of installation of the domestic wastewater system, certifying that the domestic wastewater system was installed in full compliance with all applicable Alaska State Department of Environmental Conservation regulations.

(Ord. 21-013, § 2, 2021; Ord. 18-013, § 3, 2018)

17.73.100 NONSTRUCTURAL FIRE AND LIFE SAFETY PLAN REVIEW.

(A) All multifamily dwellings:

(1) shall comply with current Alaska State Fire Code;

(2) may be subject to a nonstructural fire and life safety plan review before construction may begin;

(3) *[Repealed by Ord. 07-058, § 5, 2007]*

(B) *[Repealed by Ord. 07-058, § 5, 2007]*

(C) *[Repealed by Ord. 07-058, § 5, 2007]*

(D) *[Repealed by Ord. 07-058, § 5, 2007]*

(E) *[Repealed by Ord. 07-058, § 5, 2007]*

(F) The following design standards shall be required:

(1) Separation distances between habitable buildings shall be no less than 20 feet, unless approved by the State Fire Marshal or the local fire marshal where a state deferment exists;

(2) *[Repealed by Ord. 12-169, § 2, 2013]*

(3) Hard-wired smoke and carbon monoxide detectors shall be installed in all multifamily dwellings.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), § 10, 2008; Ord. 07-058, § 5, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.110 VIOLATION AND ENFORCEMENT.

(A) Except as otherwise specified in this chapter, violations of this chapter are infractions.

(B) Remedies, enforcement actions, and penalties shall be consistent with the terms and provisions of MSB 1.45.

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

ARTICLE III. INCENTIVES

17.73.120 EARNING INCENTIVE POINTS. [Repealed by Ord. 12-169, § 2, 2013]

ARTICLE IV. STANDARDS

17.73.130 GENERAL DESIGN STANDARDS.

(A) *[Repealed by Ord. 12-169, § 2, 2013]*

(1) No more than 60 percent of the lot area shall be occupied by impervious surface areas;

(2) *[Repealed by Ord. 12-169, § 2, 2013]*

(3) *[Repealed by Ord. 07-058, § 7, 2007]*

(4) *[Repealed by Ord. 12-169, § 2, 2013]*

(5) Comply with Americans with Disabilities Act of 1990 (ADA) Requirements. In addition to ADA, all buildings exceeding four units must comply with all of the Fair Housing Act of 1968 requirements;

(6) *[Repealed by Ord. 12-169, § 2, 2013]*

(7) *[Repealed by Ord. 12-169, § 2, 2013]*

(8) Perimeter setbacks are the minimum required yards measured from the perimeter property lines or public access easement(s), whichever is the more restrictive. The following perimeter setbacks apply:

(a) front: 25 feet;

(b) rear: 20 feet; and

(c) side: ten feet;

(9) *[Repealed by Ord. 12-169, § 2, 2013]*

(10) Minimum interior setbacks are measured between habitable buildings, detached garages, and other detached accessory buildings.

(a) *[Repealed by Ord. 12-169, § 2, 2013]*

(b) detached garages: ten feet; and

(c) other detached nonhabitable accessory buildings: ten feet;

(11) *[Repealed by Ord. 12-169, § 2, 2013]*

(12) Roof overhangs may project from the outside wall no more than two feet into the setback, and are not considered as part of the setback.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), §§ 12, 13, 2008; IM 07-289, page 2 (part), presented 11-13-07; Ord. 07-058, § 7, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.140 HEIGHT. [Repealed by Ord. 12-169, § 2, 2013]

17.73.150 ACCESS ROADS; DESIGN/PARKING.

(A) All primary vehicle access to a multifamily development, at a minimum, shall be from a residential road as described by the borough's Subdivision Construction Manual;

(B) The following standards shall apply:

(1) Vehicle Access and Circulation.

(a) Any multifamily developments exceeding the thresholds of MSB 17.61.050 will submit a traffic impact analysis (TIA) as directed;

(b) The director has the authority to restrict or require additional access to the development when the need to do so is dictated by one or more of the following conditions:

(i) the development causes or increases hazardous traffic conditions; or

(ii) there is inadequate access provided for emergency vehicles; or

(iii) the development causes hazardous conditions to exist which would constitute a clear and present danger to the public health, safety, and general welfare;

(c) To provide for increased traffic movement on congested streets and to eliminate road capacity conflicts, the director may consult with the planning transportation division or the public works department for findings that may restrict the location of driveways or approach roads on streets and require the location of driveways and approach roads to be placed on adjacent streets, or in a new location;

(2) *[Repealed by Ord. 08-018(SUB), § 16, 2008]*

(3) Multifamily residential developments shall not have primary access to an arterial street(s), unless approved by the appropriate governing entity; and

(4) The internal drive system will connect to the perimeter public street system to provide for inter-connectivity with public amenities, adjoining neighborhoods, and adjacent developments; and

(5) For emergency service purposes, all internal drive systems shall conform to MSB 11.20 and be named.

(C) Street Design.

(1) Street design shall minimize automobile and pedestrian conflicts and strive to create low-profile, safe, modest parking areas. All public street design standards shall comply with the borough's Subdivision Construction Manual. The following standards shall apply:

(a) The development's street design shall create a hierarchy of streets and drives for the development. To the extent possible, the design of all through-access drives shall be consistent with, and aligned with, residential drives or through-access drives in adjacent existing or planned development sites.

(D) Private Access Drives.

(1) Minimum private access drive width must be no less than 20 feet in width.

(a) For road design and access standards, see the borough's Subdivision Construction Manual.

(b) Parking along private access drives is prohibited unless designed to accommodate the standards of this chapter.

(E) Parking Standards. Minimum parking spaces required per dwelling unit:

(1) efficiency unit: 1.0 per dwelling unit;

(2) one- to two-bedroom units: 1.5 per dwelling unit; and

(3) three- or more bedroom units: 2.0 per dwelling unit.

(F) Vehicle Parking Space Design Requirements.

(1) Standard:

(a) length: 20 feet;

(b) width: ten feet; and

(c) vertical clearance: seven feet;

(2) Barrier-free (ADA):

(a) one barrier-free parking stall shall be provided for every 25 required parking stalls.

(i) width: eight feet plus a five-foot adjacent access aisle;

(ii) length: 20 feet; and

(iii) vertical clearance: eight feet.

(Ord. 12-169, § 2 (part), 2013: Ord. 08-018(SUB), § 16, 2008; Ord. 07-058, § 8, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.160 BICYCLE STORAGE/PARKING. [Repealed by Ord. 12-169, § 2, 2013]

17.73.170 LIGHTING.

(A) Lighting standards provide visual safety in high traffic areas within the development while preventing excessive lighting and glare on adjacent properties.

(B) Exterior lighting shall comply with the following standards:

(1) Pedestrian pathways must have adequate lighting with increased illumination around building entrances and transit stops.

(2) All parking areas exceeding 18 on-site parking stalls must have adequate lighting.

(3) Lights in parking lots must be non-glare and must be mounted no more than 20 feet above the ground.

(4) *[Repealed by Ord. 12-169, § 2, 2013]*

(5) Glare and illumination associated with exterior lighting shall be contained on the subject property and not impact adjacent properties.

(Ord. 12-169, § 2 (part), 2013: Ord. 06-188(SUB), § 2 (part), 2007)

17.73.180 PEDESTRIAN CIRCULATION.

(A) *[Repealed by Ord. 12-169, § 2, 2013]*

(B) On-site pedestrian paths shall comply with the following standards:

(1) *[Repealed by Ord. 12-169, § 2, 2013]*

(2) *[Repealed by Ord. 12-169, § 2, 2013]*

(3) within all multifamily developments, each residential building will be connected by a path to the vehicular parking area;

(4) crossings shall be designed and located for pedestrian safety wherever required pedestrian paths intersect with vehicle access driveways or parking lots;

(5) required paths shall be paved with hard surface materials as defined in the most recent version of the ADA Standards for Accessible Design; and

(6) path widths shall be no less than five feet.

(Ord. 12-169, § 2 (part), 2013: Ord. 07-058, § 9, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.190 LANDSCAPING.

(A) *[Repealed by Ord. 12-169, § 2, 2013]*

(B) Landscaping. The existing natural landscape, especially healthy plants, shrubs, and trees indigenous to the area, should be preserved to an extent that is reasonable and feasible. Further, if it is not prudent to retain existing vegetation or no existing vegetation exists, the site shall be designed to accommodate landscaping. The following landscaping standards apply:

(1) Landscape Plan.

(a) The applicant's proposed landscape plan will indicate the project's compliance with these standards.

(2) Plant Materials.

(a) Retain, at a minimum, 10 percent of the existing ground cover, natural plant species, and healthy tree canopy of the lot, including the understory and foliage; or

(b) Install landscaping for 10 percent of the area within a 100-foot radius of each structure on the property. Installed landscaping shall be:

(i) a species known to reach a minimum height of at least three feet and tolerant of the climate zone; and

(ii) established within two years of the project's application.

(3) Perimeter Landscaping.

(a) The perimeter(s) of the subject development adjacent to developed or developable properties, other than a street edge, require a perimeter landscape buffer.

(i) Vegetation used for the perimeter buffers shall be, at a minimum, three feet in height at the time of installation.

(ii) Vegetation used for the perimeter buffers shall be species known to reach a minimum height of six feet and tolerant of the local climate zone.

(b) Perimeter buffers shall be landscaped with a combination of evergreen trees or shrubs at a ratio

of one per 40 linear feet of edge, measured on center. Fractional requirements will be rounded up.

(c) All perimeter landscaping located on corner lots shall be located and maintained so as not to obstruct vehicular/driver visibility in accordance with the American Association of State Highway and Transportation Officials (AASHTO) standards.

(d) Exception. If the application has multiple lots that will be part of one large multifamily development, perimeter landscaping is only required around the perimeter of the overall development area.

(4) Perimeter Fences and Walls.

(a) A perimeter fence or wall is not required but may be installed. If a perimeter fence or wall is installed, in addition to the perimeter landscaping, then the following standards apply:

(i) walls and fences shall be constructed of high-quality materials, such as treated wood, decorative blocks, brick, stone, wrought iron, chain link, and other natural and appropriate building materials.

(Ord. 12-169, § 2 (part), 2013: Ord. 07-058, § 10, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.200 SERVICE AREA SCREENING.

(A) Service areas often create noise and visual impacts on adjacent uses and neighborhoods. The following standards visually screen on-site service areas, including trash collection areas, from public rights-of-way and adjacent properties;

(B) Trash containers and collection areas must be oriented away from public streets or adjacent property lines;

(C) Trash collection areas will be located a minimum of 20 feet from any adjacent property line;

(D) Trash containers must be secured from the effects of wind; and

(E) Trash containers and collection areas will be screened using any of the following methods:

(1) fence or wall at least five feet in height;

(2) one three-foot-wide row of vegetation screening, using vegetation at least five feet in height; or

(3) any combination of the above.

(Ord. 12-169, § 2 (part), 2013: Ord. 07-058, § 11, 2007; Ord. 06-188(SUB), § 2 (part), 2007)

17.73.210 FENCING AND WALLS. [Repealed by Ord. 12-169, § 2, 2013]
17.73.220 USEABLE OPEN SPACE. [Repealed by Ord. 12-169, § 2, 2013]
17.73.230 MIXED USE OPPORTUNITIES. [Repealed by Ord. 12-169, § 2, 2013]
17.73.240 AFFORDABLE HOUSING. [Repealed by Ord. 18-013, § 4, 2018]

ARTICLE V. DEFINITIONS

17.73.250 DEFINITIONS.

(A) For purposes of this chapter, the following definitions shall apply. All other definitions are listed in MSB 17.125, Definitions.

- "Developer" means the legal or beneficial owner or owners of a lot or of any land included in a proposed multifamily development.

- "Dwelling unit" means a single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation or a portion of the land area of a planned development, residential development or site condominium project designed and intended for residential construction.

- "Grade plane" means a reference plane representing the average of finished ground level adjoining the building at exterior walls. Where the finished ground level slopes away from the exterior walls, the reference plane shall be established by the lowest points within the area between the building and the lot line or, where the lot line is more than six feet (1,829 mm) from the building, between the building and a point six feet (1,829 mm) from the building.

- "Height, building" means the vertical distance from grade plane to the average height of the highest roof surface.

- "Mobile home" means a detached single-family dwelling designed for long-term human habitation and having complete living facilities; capable of being transported to a location of use on its own chassis and wheels; identified by a model number and serial number by its manufacturer, and designed primarily for placement on a nonpermanent foundation.

- "Mobile home parks" means any parcel, tract or lot or portion thereof where more than two mobile homes or travel trailers are leased, rented, or held for rent for occupancy, but not including automobile or trailer sales lots on which unoccupied mobile homes are parked for inspection and sale or camper parks in which travel trailers are permitted for temporary occupancy of less than 30 days.

- "Substandard dwelling" means:

    (1) a structure used for human habitation, including a structure mounted on skids or wheels, which

lacks one or more of the following:

(a) permanent foundations; or

(b) water plumbed to run within the dwelling; or

(c) meets the standards of the Alaska State Department of Environmental Conservation wastewater and septic systems.

• "Travel trailers" means a motor vehicle or portable vehicular structure capable of being towed on the highways by a motor vehicle designed or intended for casual or short-term human occupancy for travel, recreational or vacation uses, identified by a model number, serial number or vehicle registration number, equipped with limited water storage and other self-contained living facilities.

(Ord. 24-096, §§ 3, 4, 2024; Ord. 18-013, § 5, 2018; Ord. 12-169, § 3, 2013; Ord. 08-018(SUB), § 17, 2008)

CHAPTER 17.125: DEFINITIONS

Section

17.125.005 General provisions

17.125.010 Definitions

17.125.005 GENERAL PROVISIONS.

(A) The definitions listed in this section shall apply to the words and phrases used in MSB Title 17 unless otherwise described within the individual chapters.

(1) Words used in the present tense shall include the future.

(2) Words in the singular number shall include the plural number and the plural number shall include the singular.

(3) The word “shall” is mandatory.

(4) The words “include,” “including,” and “includes” shall be interpreted as being followed by the phrase “but not limited to.”

(5) The word “lot” includes the words “plot” and “parcel.”

(B) In instances where a word is not included in this section nor in the applicable section, reference will be made first to the most recent publication of “The Illustrated Book of Development Definitions” then to “The Zoning Dictionary” by Lehman and Associates, then to “Webster’s New Universal, Unabridged Dictionary.”

(Ord. 05-125(SUB)(AM), § 2 (part), 2005)

17.125.010 DEFINITIONS.

- “Access” means a legal way or means of approach to provide physical ingress or egress to a property.

- “Accessory building” means a building detached from a principal building located on the same lot and customarily incidental and subordinate to the principal building or use.

- “Accessory use” means a use or structure incidental and subordinate to the principal use or structure on a parcel of land, is on the same parcel as the principal use or structure, and is a use or structure commonly associated with the principal use or structure and integrally related to it. Some examples are: private garages or storage sheds on residential property or barns on agricultural property.

- “Administrative permit” means a written document issued administratively which may specify controls,

restrictions and safeguards on the administratively permitted activity to ensure compatibility with permitted uses.

- "Adult bookstore" means a commercial establishment where at least 51 percent of its interior floor area or retail merchandise is devoted to the sale, rent, lease, inspection, or viewing of books, films, video cassettes, magazines, or other media or periodicals whose dominant theme is actual or simulated specified sexual activities, display or exhibition of specified anatomical areas, removal of articles of clothing, or total nudity.

- "Adult business" means any bookstore, adult cabaret, adult escort service, adult massage service, adult mini-theater, or adult motion picture theatre.

- "Adult cabaret" means a restaurant, coffee house, or cabaret which features topless dancers, strippers, male or female impersonators, or similar entertainers who provide live adult entertainment for commercial purposes at any time or any number of times.

- "Adult entertainment" means any motion picture, live performance, display, or dance of any type whose dominant theme is actual or simulated specified sexual activities, display or exhibition of specified anatomical areas, removal of articles of clothing, or total nudity, whether live or by shadow effects, offered for commercial purposes.

- "Adult escort" means a person who, for monetary consideration such as a fee or tip, or for other non-monetary consideration, agrees or offers to act as a companion, guide, or date that may provide services such as modeling lingerie, adult entertainment, adult massage service, or similar activities.

- "Adult escort service" means a person or business that, for monetary consideration such as a fee or tip, or for other non-monetary consideration, furnishes or offers adult escorts.

- "Adult massage service" means a person or business that, for monetary consideration such as a fee or tip, or for other non-monetary consideration, furnishes or offers massages or related services, for which the service providers do not have a license for the practice of that profession or vocation as regulated under Alaska Statute Title 8, or which also provides adult entertainment.

- "Adult mini-theater" means an enclosed building with a capacity of less than 50 persons used for the purpose of displaying adult entertainment through films, video, or other motion pictures for commercial purposes.

- "Adult motion picture theater" means an enclosed building with a capacity of 50 or more persons used for the purpose of displaying adult entertainment through films, video, or other motion pictures for commercial purposes.

- "Adverse impact" means a condition that creates, imposes, aggravates, or leads to inadequate, impractical, unsafe, or unhealthy conditions on a site proposed for development or on other properties and facilities.

- "Affordable housing" means housing renting for monthly rent of not more than 30 percent of the total monthly

household income of low income households (defined to be household earnings less than 80 percent of the median annual income adjusted for household size, as determined by the United States Housing and Urban Development Department); or housing that may be purchased with monthly payments including: principal, interest, taxes, insurance, homeowner association fees, and assessments that do not add up to more than 30 percent of the total monthly household income of low income households.

- "Agricultural" means the production and harvest or care of plants, animals, birds, fish, bees, and other organisms by humans for use in providing food, fuel, fiber, shelter, travel, clothing, energy, and aesthetics.

- "Allowed use" means a use of land or a structure, which is permissible by right or condition within a certain zoning district according to the regulations of this code.

- "Amateur radio tower" means any tower used for amateur radio transmissions consistent with the "Complete Federal Communications Commission U.S. Amateur Part 97 Rules and Regulations" for amateur radio facilities.

- "Americans with Disabilities Act (ADA)" means a 1990 federal law designed to bring disabled Americans into the economic mainstream by providing them equal access to jobs, transportation, public facilities, and services.

- "Ancillary structure" means any form of development associated with a telecommunication facility, including but not limited to: foundations, concrete slabs on grade, guy wires, guy anchors, generators, and transmission cable supports; however, specifically excluding equipment cabinets.

- "Angle of repose" means the steepest angle material can be piled without slumping.

- "Antenna" means any apparatus designed for the transmitting or receiving of electromagnetic waves. Types of antenna include, but are not limited to: omni-directional antennas, directional antennas, multi or single bay, yagi, or parabolic antennas.

- "Applicant" means a person or authorized representative submitting an application for development.

- "Aquifer" means a formation, a group of formations, or part of a formation that contains sufficient saturated permeable material to yield economical quantities of water to wells and springs.

- "Batch plant" means a plant or equipment used for production of asphalt or concrete.

- "Bedroom" means a private room planned and intended for sleeping, separated from other rooms by a door, and accessible to a bathroom without crossing another bedroom.

- "Berm" means an earthen mound designed to provide visual interest, screen undesirable views, decrease noise, or control or manage surface drainage.

- "Bioswales" means open channels that usually possess a dense cover of grasses and other herbaceous plants through which runoff is directed during storm events. Bioswales allow runoff to infiltrate.

- "Breakpoint technology" means the engineering design of a tower wherein a specified point is designed to have stresses concentrated so that the stress point is at least 5 percent more susceptible to failure than any other point along the structure. In the event of a structural failure, the failure will occur at the breakpoint rather than at the base plate, anchor bolts, or any other point on the tower.

- "Broadcast facilities" means a tower, antennas, or antenna arrays for FM/TV/HDTV broadcasting transmission facilities, and tower(s) utilized as antennas for an AM broadcast station that are licensed by the Federal Communications Commission.

- "Buffer" means a method of protection against negative impacts, which provides a physical separation or barrier.

- "Building" means any structure, including mobile homes, intended for the shelter, housing, or enclosure of any person, animal, process, equipment, goods, use, materials, or services of any kind or nature.

- "Cabin" means any residential building no greater than 800 square feet in gross floor area.

- "Capture area" means the area on the surface of the ground where infiltrating water will travel to a drinking water well.

- "Caretaker" means a person(s) who takes care of land, dwellings, animals, or belongings when an owner is absent.

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

- "Character" means those attributes, qualities, and features that make up and distinguish a development project and give such project a sense of purpose, function, definition, and uniqueness.

- "Circulation" means systems, buildings, and physical improvements for the movement of people, goods, water, air, sewage, or power by such means as streets, highways, railways, waterways, and airways.

- "Collocation" means the installation of antennas and associated equipment from more than one provider on a single structure.

- "Commencement of construction or placement" means the first placement of permanent construction of a

building on a site, such as the pouring of a slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a building upon a foundation.

- "Commercial use" means a land use, business enterprise, or vehicle maintained for the purpose of buying or selling goods or services.

- "Commission" means the Matanuska-Susitna Borough Planning Commission.

- "Compatible design" means the visual relationship between adjacent and nearby buildings and the immediate streetscape, in terms of a consistency of materials, colors, building height, building elements, building mass, and other constructed elements of the urban environment, such that abrupt or severe differences are avoided.

- "Conditional use" means a use of a structure or land, which may be allowed by the planning commission after a public hearing and review and subject to certain prescribed or imposed conditions.

- "Conditional use permit (CUP)" means a written document which may specify controls, restrictions and safeguards on the conditional permitted activity to ensure compatibility with permitted uses.

- "Conditions of approval" means requirements established by the borough before preliminary or final approval of an application becomes effective.

- "Confined aquifer" means an aquifer which is bounded above and below by formations of impermeable or relatively impermeable material. An aquifer in which ground water is under significantly greater pressure than atmospheric pressure and its upper limit is the bottom of a bed of distinctly lower hydraulic conductivity than that of the aquifer itself. Confined aquifer is synonymous with artesian aquifer.

- "Confining layer" means a geologic bed or layer that retards but does not necessarily prevent the flow of water. A confining layer does not readily yield water to wells or springs. Confining layer is synonymous with aquitard.

- "Contiguous acres" includes acreage that may be separated by a highway or railroad.

- "Deciduous" means plants that drop their foliage annually before becoming dormant.

- "Density" means the number of dwelling units allowed per area of a development site or parcel.

- "Design standards" means a set of regulations defining parameters to be followed in site and building design and development.

- "Designee" means the director or his/her duly authorized representative.

- "Developer" means the legal or beneficial owner or owners of a lot or of any land included in a proposed

development, including the holder of an option or contract to purchase or other persons having enforceable proprietary interests in such lands.

- "Development" means the construction, reconstruction, conversion, structural alteration, relocation, placement, or enlargement of any building.

- "Director" means the director of planning and land use.

- "Dog mushing" means a transport method powered by one or more dogs for sport or paid service.

- "Drainage plan" means a plan that is prepared and stamped by a civil engineer authorized to operate in the state of Alaska, which contains the following:

    (a) background information:

        (i) project description;

        (ii) existing (predevelopment) conditions; and

        (iii) proposed future (development) conditions.

- "Duplex" means a structure containing two dwelling units, each of which has direct access to the outside.

- "Dwelling unit" means one or more rooms, providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.

- "Earth materials" includes those natural resources such as sand, rock, gravel, soil, peat moss, sphagnum, stone, pumice, cinders and clay; also called "materials."

- "Earth materials processing" means any crushing, loading, screening, sorting, storing, washing, or production of asphalt.

- "Efficiency" means a one-room unit that serves as the occupant's total living, sleeping, and eating space, usually containing a separate bathroom.

- "Egress" means an exit.

- "Equipment compound" means the area occupied by a tower including areas inside or under the following: an antenna-support structure's framework, equipment cabinets, and ancillary structures.

- "Evergreen" means vegetation that has foliage that persists and remains green throughout the year.

- "Extraction" means to take and remove earth materials from the subject site to an off-site location.

- "Fair Housing Act of 1968" means that Title VIII of the Civil Rights Act of 1968 (Fair Housing Act), as amended, which prohibits discrimination in the sale, rental, and financing of dwellings, and in other housing-related transactions, based on race, color, national origin, religion, sex, familial status, and handicap (disability).

- "Feed lines" means cables used as the interconnecting media between the transmission or receiving equipment and the antenna.

- "Fence" means a manmade barrier of any material or combination of materials erected to enclose, screen, or separate areas.

- "Fence, solid" means a fence, including any gates, constructed of solid material, wood, or masonry, through which no visual images may be seen.

- "Fire service area" means a geographic region or area established by the borough to provide fire stations and related facilities or services that are needed to protect the health, safety, or welfare of persons and property within that area.

- "Flag lot" means a lot with a long, narrow strip protruding from one side (pole) which fronts on a borough standard width legal right-of-way and provides access to the lot.

- "Garage" means an accessory building or portion of a main building primarily used for storage of motor vehicles. A "garage" is distinguished from a "carport" in that a garage is enclosed on more than three sides, so that the stored or parked car is contained entirely inside the building.

- "Ground cover" means grasses or other low-growing plants and landscaping.

- "Groundwater" means that part of the subsurface where water occurs in the saturated zone.

- "Habitable" means a residence that is safe and can be occupied in reasonable comfort; the premises should be closed in against the weather, provide running water, access to decent toilets and bathing facilities, heating, and electricity. Particularly in multifamily developments, freedom from noxious smells, noise, and garbage are expected.

- "Heavy industrial" means the use of land, buildings, or structures for the manufacturing, processing, fabricating, or assembly of raw materials, warehousing or bulk storage of goods, and related accessory uses.

- "Height, building" means the height of a building, the vertical distance as measured from the base of the building at finished grade to the highest point of the building including appurtenances. The average between the highest and lowest grades within 20 feet of the building shall be considered finished grade and be used in

calculating the height.

• "Height, tall structure" means the vertical distance measured from finished grade to the highest point of the tall structure, not including appurtenances, antennas, or equipment affixed thereto. In the case of wind energy conversion systems, the blade is considered part of the overall height of the structure.

• "Historical uses" means lands with sites, structures, landmarks, or objects with local, regional, statewide, or national historical significance that have been used by past populations for historic or traditional uses (such as subsistence activities, trail use, etc.) and that are often currently enjoyed by users.

• "Impermeable" means a surface or material that provides a functional barrier to significant liquid flow or infiltration.

• "Impervious area/surface" means the area of the subject site covered by impenetrable materials. This surface has been compacted or covered with a layer of material so that it is highly resistant to infiltration by water.

• "Incentive points" means numerical points that are provided to applicants that exceed the required minimum design standards.

• "Industrial use" means any activity which includes manufacturing, processing, warehousing, storage, distribution, shipping, or other related uses.

• "Ingress" means access or entry.

• "Isochron" means a line drawn on a map through all points having the same numerical value of time.

• "Junkyard/refuse area" means a location which is commercially used for the purpose of the outdoor storage, handling, dismantling, wrecking, keeping or sale of used, discarded, wrecked or abandoned airplanes, appliances, vehicles, boats, building and building materials, machinery, equipment, or parts thereof, including, but not limited to, scrap metals, wood, lumber, plastic, fiber, or other tangible materials.

• "Landfill" means an area in which solid waste is disposed of on or into the land, or that portion of a facility where landfilling is taking or has taken place. "Landfill" does not include a landspreading facility or a containment structure used for the disposal of drilling wastes.

• "Landscape plan" means a plan, drawn to scale, showing proposed location and type of existing vegetation to be retained, and proposed new vegetation. The landscape plan may be a component of the certified site plan. Landscape plans shall also include:

(a) proposed grade changes;

(b) proposed buffers; and

(c) proposed screening devices.

• "Landscaping" means any of the following or combination of material such as, but not limited to, grass, natural ground cover, shrubs, flowers, vines, hedges, trees, indigenous plant materials, planters, brick, stone or natural forms, water forms, but not including the use of smooth concrete or asphalt.

• "Large-scale commercial" means a commercial building whose total gross building area, including outdoor display and sales area, is equal to or exceeds 25,000 square feet. Large-scale commercial does not include agricultural uses or activities.

• "Legal trail" means a trail that has been legally dedicated for public use either in fee simple or as a public use easement as a trail. The trail has an existing right-of-way or formal, written and recorded landowner permission allowing public access along its entire length.

• "Livable space" means the square footage of habitable or living areas in a building intended for occupancy by one or more persons for living or sleeping quarters.

• "Livestock" means outdoor animals (i.e., cows, goats, horses, pigs, sled dogs, barnyard fowl, etc.) kept for the purpose of providing food, clothing, work or recreation.

• "Living area" means an area or room(s) in a building designed for occupancy by one or more persons for living or sleeping quarters.

• "Lot" means the least fractional part of subdivided lands having limited fixed boundaries and having an assigned number, or other name through which it may be identified.

• "Lot area" means the total horizontal area within the lot lines of a lot, but does not include the pole area of a flag lot and excludes any street rights-of-way.

• "Maintenance" means the servicing, repairing, or altering of any premises, appliance, apparatus, or equipment to perpetuate the use or purpose for which such premises, appliance, apparatus, or equipment was originally intended.

• "Mixed use development" means the development of a neighborhood, tract of land, building with a variety of complementary and integrated uses, such as, but not limited to, residential, office, neighborhood commercial, retail, public, recreation, in a compact urban form.

• "Monitoring well" means any cased excavation or opening into the ground made by digging, boring, drilling, driving, jetting or other methods for the purpose of determining the physical, chemical, biological, or radiological

properties of groundwater.

- "Multifamily" means any development that exceeds the density thresholds within MSB 17.73.040(A).

- "Natural features" means, but is not limited to, floodplains and surface drainage channels, stream corridors, wetlands and riparian habitat, wildlife and scenic corridors, and other bodies of water, steep slopes, prominent ridges, bluffs, or valleys, and existing trees and vegetation.

- "Natural grade" means the elevation of the ground level in its natural state, before construction, filling, or excavation.

- "Neighborhood" means an area of a community with characteristics that distinguish it from other areas and that may include distinct social or economic characteristics, housing types, schools, or boundaries defined by physical barriers such as major highways, and railroads, or natural features such as water bodies or topography.

- "Neighborhood commercial use(s)" means mixed use establishments primarily engaged in the provision of frequently or recurrently needed goods for household consumption, such as prepackaged food and beverages and limited household supplies and hardware. Typical commercial uses include neighborhood convenience stores, laundromats, dry cleaners, small neighborhood offices, postal services, and gas stations.

- "Occupied" means the presence of an individual or individuals in a structure or on a parcel of land or contiguous parcels.

- "Operator or manager" means any natural person responsible for the actual operation and management of an adult business.

- "Ownership interest" in any unincorporated business, means any interest in real or personal property used in connection with the business, coupled with any degree of exercise of management, supervision, direction, or control of the business. In any incorporated business, the term "ownership interest" means ownership of any stock of the corporation.

- "Parcel" means a lot or contiguous group of lots in single ownership or under single control, usually considered a unit for purposes of development.

- "Parking area/lot" means any public or private area, under or outside a building, designed and used for parking motor vehicles, including parking lots, garages, private driveways, and legally designated areas of public streets.

- "Path/pathway" means a cleared way for pedestrians or bicycles that may or may not be improved.

- "Pedestrian walkway" means a walkway or tunnel located at, above, or below grade level that is used as a

means of travel by persons.

- "Permit" means written governmental permission issued by an authorized official, empowering the holder thereof to do some act not forbidden by law but not allowed without such authorization.

- "Pervious hard surface" means any material that permits full or partial absorption of storm water into a previously unimproved land.

- "Phase" means a portion of an operation undertaken in a logical time and geographical sequence.

- "Pollution" means the contamination or other degradation of the physical, chemical or biological properties of water or air, including change in temperature, taste, color, turbidity or odor, or such discharge of any liquid, gaseous, solid, radioactive or other substance into water or air as will or is likely to create a nuisance or render such water or air harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

- "Primary vehicle access" means, in the context of multifamily development, a vehicle access to the development that is, at a minimum, characterized by the following elements: (1) full-turn vehicle access (i.e., turns allowed in all directions); (2) entryway signage with name of development and address; and (3) principal entry for prospective owners or renters. All public and private roads must meet design standards as outlined in the borough's subdivision construction manual and addressing/street naming requirements as designated by the borough's geographic information systems department.

- "Principal use" means the primary or predominant use of any lot, building, or structure.

- "Property" means a lot, parcel, or tract of land together with the building located thereon.

- "Public land" means land owned, maintained, or managed by a public agency.

- "Qualified professional" means a professional hydrologist, geologist, or registered engineer that has specific education and experience with groundwater hydrology.

- "Recreational uses" means the pursuit of leisure-time activities such as, but not limited to, boating, dog mushing, fishing, hunting, trapping, swimming, motorized and nonmotorized activities, sports, games of skill, hiking, skiing, etc., and may include the enjoyment of natural beauty, historic landmarks, or wildlife.

- "Reserved trail" means a trail that has been legally dedicated for public use either in fee simple or as a public use easement as a trail. The trail has an existing right-of-way or formal, written and recorded landowner permission allowing public access along its entire length.

- "Responsible party" means the landowner or the land owner's designated agent.

- "Residential use" means the use of land, buildings or structures for human habitation.

- "Right-of-way" means a strip of land reserved or dedicated, used or to be used for a street, alley, walkway, trail, airport, or circulation related purpose.

- "Road" means a public or private way that provides access to property for vehicles or pedestrians.

- "Runoff" means the portion of rainfall, melted snow, irrigation water, and any other liquids that flows across the ground surface.

- "Scenic views" means scenic, natural views that may be of significant natural beauty, farmlands, mountains, or other scenes. The goal of development should be to preserve unique vistas and scenic corridors to the greatest extent possible.

- "Screening" means a method of visually shielding or buffering one abutting or nearby building or use from another by fencing, walls, berms, or densely planted vegetation.

- "Seasonal high water table" means the highest level to which the groundwater rises in most years. Estimates are based on observations of the water table at selected sites and on the evidence of a saturated zone, the upper limit often consisting of a mixture of grayish and reddish mottles in the soil.

- "Setback" means the distance between a structure or activity and any lot line, right-of-way, or easement and also the minimum distance required to be maintained between two structures or between a structure and property line, right-of-way, water well, or water body. The distance shall be calculated in a straight line, without regard to intervening structures or objects to the closest exterior point of the structure, property line, or shore line, or center of the well.

- "Short-term transient accommodation" means accommodations for compensation in a building or portions of a building consisting of a residency of any period less than 60 days. If residency exceeds 59 consecutive days, it cannot be considered a short-term transient accommodation for the purposes of this title.

- "Sidewalk" means a paved, surfaced, or leveled area, paralleling and usually separated from the traveled way, used as a pedestrian walk.

- "Single-family dwelling" means a building containing one dwelling unit.

- "Site" means any plot or parcel of land or combination of contiguous lots or parcels of land.

- "Slope" means the rate of vertical change of ground surface expressed as a percentage figure and

determined by dividing the vertical distance by the horizontal distance.

- "Solid waste" means drilling wastes, garbage, refuse, sludge, building material, or other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, or agricultural operations, or from community activities. For purposes of this chapter, "solid waste" does not include:

  (a) spoil and overburden from road construction, land clearing, or mining operations;

  (b) mining waste regulated by federal and state regulations;

  (c) domestic sewage and other wastes that are discharged into and pass through a sewer system to a publicly owned treatment works;

  (d) industrial or mining wastes that are being collected, stored, or treated in:

    (i) a wastewater treatment plant before discharge or removal; or

    (ii) an industrial processing facility for continual re-use;

  (e) industrial discharges that are point sources subject to federal or state permits;

  (f) nuclear or nuclear byproduct material.

- "Specified anatomical areas" means:

  (a) less than completely and opaquely covered human genitals, pubic region, buttocks, and female breast below a point immediately above the top of the areola; and

  (b) human male genitals in a discernibly turgid state, even if opaquely covered.

- "Specified sexual activities" means simulated or actual:

  (a) display of human genitals in a state of sexual stimulation or arousal;

  (b) acts of masturbation, sexual inter-course, sodomy, bestiality, necrophilia, sado-masochistic abuse, fellatio, or cunnilingus; and

  (c) fondling or erotic touching of human genitals, pubic region, buttocks, or female breasts.

- "Standards" means mandatory regulations, which are indicated by use of the terms "will," "shall" and "must."

- "Steep slopes" means any portion of a development site where the natural grade of the land has a slope of 40

percent or greater.

- "Stream" means a body of flowing water, where the water flows in a natural channel as opposed to a canal.

- "Stream corridor" means the corridor defined by the top of the stream's channel bank, plus the adjacent land areas that contain vegetation, habitats, and ecosystems associated with bodies of water or dependent on the flow of water in the stream. Biologists often refer to the adjacent land area, which will vary in width depending on the particular stream, as a "riparian ecosystem." In braided channels, the stream corridor shall include the entire stream feature.

- "Street" means any vehicular way that is (1) an existing state, municipal, or borough roadway; (2) shown upon a plat approved pursuant to law; (3) approved by other official action; (4) shown on a plat duly filed and recorded in the office of the recording clerk; (5) shown on the official map or adopted master plan. It includes the land between the street lines, whether improved or unimproved.

- "Structure" means anything that is constructed or created and located on or under the ground, or attached to something fixed to the ground. For purposes of minimum setbacks and building separation requirements, the following are not considered structures unless specifically addressed by code: fences; retaining walls; parking areas; roads, driveways, or walkways; window awnings; a temporary building when used for 30 days or less; utility poles and lines; guy wires; clotheslines; flagpoles; planters; incidental yard furnishings; water wells; monitoring wells; and/or tubes, patios, decks, or steps less than 18 inches above average grade.

- "Structure, rail dependent" means a structure with a primary function requiring close proximity to railroad tracks.

- "Subdivider" means any person having an ownership interest in the land that is the subject of an application for development.

- "Subdivision" means the division of a tract or parcel of land into two or more lots, sites, or other divisions, or the combining of two or more lots, tracts, or parcels into one lot, tract, or parcel for the purpose, whether immediate or future, of sale or lease for more than ten years, including any resubdivision.

- "Subject site" means the property subject to the interim materials district; conditional use permit; or administrative permit for earth materials extraction activities.

- "Swale" means a low-lying or depressed land area commonly wet or moist, which can function as an intermittent drainageway.

- "Tall structure" means a structure that is over 85 feet above grade. The term includes, but is not limited to, tethered balloons, flag poles, sculpture, buildings, elevators, storage or processing facilities, water tanks,

derricks, cranes, signs, chimneys, area illumination poles, towers, broadcast facilities, and supports for communication.

- "Telecommunication facility" means any unmanned facility established for the purpose of providing wireless transmission of voice, data, images, or other information including, but not limited to, cellular telephone service, personal communications service, paging service, and television or radio communications. Telecommunication facilities may include one or more towers, antennas, equipment cabinets, feed lines, ancillary structures, and fencing.

- "Telecommunication tower" means a tower built for the sole or primary purpose of supporting any FCC licensed or authorized antennas and their associated facilities, including structures that are constructed for wireless communications services including, but not limited to, private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul.

- "Topographic features" means the physical land surface relief including terrain elevation and slope.

- "Tower" means a vertical projection composed of metal or other material designed for the purpose of accommodating antennas, wind turbine equipment, or other equipment at a desired height or utilization as a broadcast facility. Examples of tower types include guyed, lattice, monopole, concealed, and other similar type facilities. Towers do not include any device used to attach antennas to an existing building, unless the device extends above the highest point of the building by more than 20 feet.

- "Traditional uses" means an inherited, established, or customary pattern of land uses that may involve a cultural, historical practice, or a social custom.

- "Trail" means a traveled way which may have recreational, aesthetic, alternative transportation, or educational opportunities.

- "Transmission equipment" means equipment that facilitates transmission for any FCC licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, and regular backup power supply.

- "Unbuildable" means an area or land that cannot be used practically or is not feasible for a habitable building because of natural conditions, such as a slope exceeding 40 percent, wetlands, floodplains, streams, ponds, or other impeding conditions.

- "Unconfined aquifer" means an aquifer whose upper surface is a water table free to fluctuate.

- "Undeveloped land" means land in its natural state before commencement of construction or placement of any building.

- "Use" means the purpose for which land, a building, or structure is arranged, designated, or intended, is occupied or maintained.

- "Useable open space" means land within or related to a development that is designed and intended for the common use or enjoyment of the residents of the development and may include complementary buildings and improvements as are necessary and appropriate.

- "Variance" means specific grant of relief from one or more of the requirements of this title as provided in MSB 17.65.

- "Water bodies" means permanent or temporary areas of standing or flowing water. Water depth is such that water, and not air, is the principal medium in which organisms live. Water bodies include, but are not limited to: lakes, ponds, streams, rivers, sloughs, and all salt water bodies.

- "Water table" means the upper surface of a zone of saturated soil, including natural seasonal fluctuations, but excluding fluctuations caused by heavy rains or rapid snowmelt; the water table is indicated by the level at which water stands in a well that is open along its length and penetrates the surficial deposits just deeply enough to encounter standing water in the bottom.

- "Wetlands" means those areas that are inundated and saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas.

- "Width of a structure" means the horizontal distance measured from the outermost points of the structure including attachments and structural supports but excluding guy wires and transmission lines strung between towers as in the case of electrical power lines.

- "Wind energy conversion system (WECS)" means any device such as a wind charger, windmill, turbine, energy ball, wind tower, or another similar device, which is typically mounted to a tower or pole, and its associated mechanical and electrical equipment, which is designed to convert wind energy to a form of usable energy.

- "Yard" means an open space that lies between the principal building or buildings and the nearest lot line.

- "Yard, front" means a space extending across the full width of the lot between the principal building and the front lot line and measured perpendicular to the building to the closest point of the front lot line.

- "Yard, rear" means a space extending across the full width of the lot between the principal building and the rear lot line and measured perpendicular to the building to the closest point of the rear lot line.

- "Yard, required" means the minimum open space between a lot line and the yard line within which no building

is permitted to be located except as provided by the design standards.

• "Yard, side" means a space extending from the front yard to the rear yard between the principal building and the side lot line and measured perpendicular from the side lot line to the closest point of the principal building.

(Ord. 18-030, § 8, 2018; Ord. 18-013, § 6, 2018; Ord. 17-096, § 5, 2017; Ord. 15-016, § 3, 2015; Ord. 12-169, § 4, 2013; Ord. 12-064, § 3, 2012; Ord. 11-159, § 3, 2011; Ord. 11-153, § 18, 2011; Ord. 11-146, § 8, 2011; Ord. 11-074, § 5, 2011; Ord. 11-019, § 3, 2011; Ord. 09-014, § 3, 2009; Ord. 08-161(AM), § 3, 2008; Ord. 08-136, § 3, 2008; Ord. 08-018(SUB), § 18, 2008; Ord. 08-017(AM), § 3, 2008; Ord. 07-058, § 12, 2007; Ord. 06-192(AM), § 3, 2007; Ord. 06-188(SUB), § 3, 2007; Ord. 05-182(AM), § 9, 2005; Ord. 05-125(SUB)(AM), § 2 (part), 2005)



2022 SUBDIVISION CONSTRUCTION MANUAL

Matanuska-Susitna Borough
Public Works Department

(Roads, Drainage, and Utilities)
Adopted Date: July 19, 2022
Effective Date: July 19, 2022

IM 26-045
OR 26-031

CODE ORDINANCE

Sponsored by: Borough Manager
Introduced: 06/21/22
Public Hearing: 07/19/22
Adopted: 07/19/22

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 22-057

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY AMENDING MSB 43.05.015 PURPOSE AND SCOPE, TO REFERENCE THE 2022 SUBDIVISION CONSTRUCTION MANUAL UPDATE.

BE IT ENACTED:

Section 1. Classification. This ordinance is of a general and permanent nature and shall become a part of the Borough Code.

Section 2. Amendment of section. MSB 43.05.015(B)(3) is hereby amended to read as follows:

(3) [2020] **2022** Subdivision Construction Manual.

Section 3. Effective date. This ordinance shall take effect upon adoption.

ADOPTED by the Matanuska-Susitna Borough Assembly this 19 day of July, 2022.

EDNA DeVRIES, Borough Mayor

ATTEST:

LONNIE R. McKECHNIE, CMC, Borough Clerk

(SEAL)

PASSED UNANIMOUSLY: Hale, Nowers, McKee, Yundt, Tew, Sumner, and Bernier

Table of Contents

Acronyms iv
Definitions v
Introduction 1
Section A. Street Design 2
A01 General 2
A02 Applicability 2
A03 Street Classifications 2
A04 Access Criteria 4
A05 Design Criteria 6
A06 Typical Section 9
A07 Turnarounds 9
A08 Stub Streets 11
A09 Intersections 11
A10 Driveways 14
A11 Trailhead 14
A12 Bicycle and Pedestrian Paths 14
A13 Signage 14
A14 Railroad Crossings 17
A15 Average Daily Traffic 17
A16 Design Deviations 17
Section B. Major Road Corridors 18
B01 General 18
B02 Right-of-way and Surface Widths 18
B03 Frontage, Backage, and Connector Street Standards 18
B04 Access Standards 19
B05 Future Corridors 20
B06 References 20
Section C. Construction Requirements 21
C01 General 21
C02 Road Construction 21
C03 Roads Outside of a Road Service Area 23
C04 Pioneer Road Construction Requirements 23
C05 Winter Construction 23
C06 Alternate Methods and Materials 23
C07 Materials 23
Section D. Drainage 26
D01 General 26
D02 Requirements 26

D03 Drainage Design Criteria 27
D04 Drainage Ditches 29
D05 Culverts 30
D06 Fish Passage Culverts 31
D07 Soil Infiltration Facilities 34
D08 Rainfall Data 34
Section E. Easements 35
E01 General 35
Section F. Development Implementation 37
F01 General 37
Section G. Commercial and Industrial Subdivisions 41
G01 General 41
Section H. Utilities 42
H01 General 42
H02 Utility Location Guidelines 42
References 44
Appendix A 45

Figures

Figure A-1: Loop Residential Streets 4
Figure A-2: Loop Residential Subcollector Streets 5
Figure A-3: Typical Section 9
Figure A-4: Cul-de-sac Options 10
Figure A-5: Alternate Turnarounds 10
Figure A-6: Intersection Sight Distance 12
Figure A-7: Intersection Offset 13
Figure A-8: Intersection Angle 13
Figure A-9: Controlled Street Landing Profile 14
Figure A-10: Sign Placement 15
Figure A-11: Stop Sign Location 16
Figure A-12: Concrete Foundation for Sign Post 16
Figure B-1: Frontage Street Configurations 19
Figure C-1: Structural Sections for Gravel Roads 24
Figure C-2: Structural Sections for Paved Roads 25

Tables

Table A-1: Design Criteria 7
Table A-2: Recommended and Minimum Intersection Sight Distance 12
Table B-1: ROW and Surface Widths 18
Table B-2: Average Access Point Spacing 20
Table C-1: Aggregate Quality Properties for Base Course 24
Table C-2: Aggregate Gradations 24
Table D-1: Drainage Sizing and Analysis Criteria 28
Table D-2: Ditch Stabilization 29
Table D-3: Ditch Lining Materials 30

Section A. Acronyms & Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
ADFG	Alaska Department of Fish and Game
ADT	Average Daily Traffic
ADOT&PF	Alaska Department of Transportation and Public Facilities
ATM	Alaska Test Method
cfs	cubic feet per second
DPW	Department of Public Works of the Matanuska-Susitna Borough
FHWA	Federal Highway Administration
ft	feet
h:v	Horizontal to vertical
IDF	Intensity-Duration-Frequency
IFC	International Fire Code
in	inches
ITE	Institute of Transportation Engineers
LEW	Low Erosivity Waiver
LRTP	Long Range Transportation Plan
mph	miles per hour
MSB	Matanuska-Susitna Borough
N/A	Not applicable
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NTP	Notice to proceed
OHWM	Ordinary high water mark
OSHP	Official Streets and Highways Plan
PUE	Public use easement
ROW	Right-of-way
SCS	Soil Conservation Service
VPD	Vehicles per day

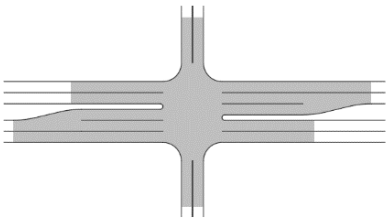
Section B. Definitions

Access Point	The location along a road at which a driveway or road intersects.
Arterial	A road that provides a high level of mobility within the transportation network. Arterials have managed access with a minimal number of intersections or interchanges.
Average Daily Traffic	The total number of vehicle trips during a given time period (in whole days greater than one day and less than one year) divided by the number of days in that time period.
Backslope	On a roadway section in a cut, the portion of the roadside that slopes up from the roadside ditch and away from the roadway to the top of the cut, see Figure A-3.
Catchment Area	The total area contributing stormwater runoff to a particular point, site, or structure.
Collector	A road that links local roads with arterials and performs some duties of each. Collectors have managed access with a moderate number of intersections and driveways.
Curve Return	The curve located at the corner of an intersection, connecting the roadway edge of one road to the roadway edge of an intersecting road or driveway.
Detention	The temporary storage of runoff, for later controlled release.
Drainage Pattern	The configuration of a drainage system including manmade and natural features within a catchment area.
Driveway	A vehicular access way between a road and a parking area within a lot or property.
Embankment	Earthen material that is placed and compacted for the purpose of raising the grade of a roadway.
Engineer	An individual who is registered as a Professional Civil Engineer in the State of Alaska.

Feasible Reasonable and capable of being done or carried out.

Foreslope On a roadway section, the portion of the roadside that slopes down and away from the roadway, see Figure A-3.

Functional Area The physical area of an intersection and the area extending both upstream and downstream which includes perception reaction distance, maneuver distance, and storage length.



Intersection The general area where two or more roads join or cross.

Local Road A road that provides access to abutting property, rather than to serve through traffic. Local roads are not access controlled and can have frequent intersections and driveways.

Lot Frontage A property line that abuts the right-of-way that provides access to the lot.

Ordinary High Water Mark The elevation marking the highest water level which has been maintained for a sufficient time to leave evidence upon the landscape. Generally, it is the point where the natural vegetation changes from predominately aquatic to upland species.

Positive Drainage Clear, unobstructed flow of water away from structures and roadways without localized ponding.

Public Use Easement Provides the rights for ingress, egress, roadways, right-of-way, public utilities, and slopes for cuts and fills. The rights are to the public in general, and public utilities governed by permits required under federal, state, and local laws and regulations. May also be known as a public access easement or right-of-way.

Regulated Stream Any watercourse along which the flood hazard areas have been mapped and approved by the Federal Emergency Management Agency; any stream which harbors fish, as determined by the Alaska Department of Fish and Game; or any stream designated as regulated by MSB.

Retention The prevention of runoff. Stormwater, which is retained, remains indefinitely, with the exception of the volume lost to evaporation, plant uptake, or infiltration.

Right-of-way A strip of land reserved, used, or to be used for a street, alley, walkway, airport, railroad, or other public or private purpose.

Road A general term denoting a public thoroughfare used, or intended to be used, for passage or travel.

Road Prism The foundation that supports the roadway; see Figure A-3.

Roadway The portion of a road that includes driving lanes and shoulders, see Figure A-3.

Segment A portion of road between two significant intersections or an intersection and its terminus.

Shoulder The portion of a roadway contiguous to any traveled way for lateral support of surface courses, see Figure A-3.

Street A general term usually denoting an urban or suburban road.

Stub A right-of-way or road segment that is planned to be extended, typically short in length, which terminates at the boundary of a subdivision or masterplan phase.

T-intersection A three leg intersection in the form of a “T”.

Through Street A road given preferential right of way; roads which intersect a through street are controlled, such as with a stop sign or yield sign.

Water Body A permanent or temporary area of standing or flowing water. Water depth is such that water, and not air, is the principal medium in which organisms live. Water bodies include, but are not limited to: lakes, ponds, streams, rivers, sloughs, and all salt water bodies.

Introduction

This manual is intended to accomplish the following goals:

(1) To establish standards for the design and construction of transportation networks throughout the Matanuska-Susitna Borough.
(2) To provide information and guidelines for the design, construction, and upgrade of roads, drainage facilities, and utilities within rights-of-way.
(3) To develop and maintain a safer and more efficient transportation system.
(4) To minimize operation & maintenance efforts.

Section A. Street Design

A01 General

These provisions establish appropriate standards for the design of roads. The purpose of these provisions is to:

(1) promote the safety and convenience of motorized and non-motorized traffic;
(2) promote the safety of neighborhood residents;
(3) minimize the long term costs for maintenance and repair;
(4) protect the residential qualities of neighborhoods by limiting traffic volume, speed, noise, and air pollution;
(5) encourage the efficient use of land; and
(6) minimize the cost of road construction and thereby restrain the rise in housing costs.

A02 Applicability

These standards apply to the design and construction of all subdivision improvements within the Matanuska-Susitna Borough (MSB), with the exception of those streets within cities that exercise road powers by ordinance.

A03 Street Classifications

Roads within the MSB fall within one of the following functional classifications, in accordance with the Long Range Transportation Plan (LRTP): Interstate, Principal Arterial, Minor Arterial, Major Collector, Minor Collector, and Local Road. Functional classification of a road is based on its function, design, and current potential use. The applicant may request review of the functional classification of existing roads abutting or affecting the design of a subdivision or land development during the preapplication process.

This section provides design guidance for roads falling under local road and minor collector functional classifications.

A03.1 Residential Street

Residential streets are local roads intended to carry the least amount of traffic at the lowest speed. The Residential street will provide the safest and most desirable environment for a residential neighborhood. Developments should be designed so that all, or the maximum number possible, of the homes will front on this class of street.

A03.2 Residential Subcollector Street

Residential Subcollector streets are local roads that carry more traffic than Residential streets.

A03.3 Residential Collector Street

Residential Collector streets are the highest order of residential streets and are a type of minor collector. In large residential developments, this class of street may be necessary to carry traffic from one neighborhood to another or from the neighborhood to other areas in the community. Residential Collector streets should provide the fewest direct accesses as possible.

A03.4 Mountain Access Road

Mountain Access Roads may be used in areas where the average cross slope exceeds 15 percent or to traverse terrain features in excess of 25 percent. Maintenance of Mountain Access Roads will be at the discretion of Department of Public Works (DPW). School bus access should be considered as school bus routes require all grades less than 10 percent. Mountain Access Road standards allow for steeper grades and switchbacks, but should otherwise be designed to Residential, Residential Subcollector, or Residential Collector standard as required by this section.

A03.5 Pioneer Road

Pioneer Roads may only be used where allowed by MSB or other applicable code. This classification establishes minimum requirements for roads providing physical access, but should otherwise be designed to Residential, Residential Subcollector, or Residential Collector standard as required by this section. No MSB maintenance will be provided for Pioneer Roads. Pioneer roads may be constructed offset from the centerline of the ROW to facilitate future expansion of the road.

A03.6 Alleys

Alleys are permitted provided legal and physical access conforms to MSB or other applicable code. No MSB maintenance will be provided for Alleys.

A03.6 Other Street Types

The above classifications may be further typed as one of the following streets. These other street types should be designed to Residential, Residential Subcollector, or Residential Collector standard as required by this section.

(a) Frontage Street – streets parallel and adjacent to a major road corridor which provides access to abutting properties and separation from through traffic. See Section B for additional design standards.
(b) Backage Street – streets that provide access to lots located between the Backage Street and a major road corridor. See Section B for additional design standards.
(c) Connector Street – the portion of a street that connects a frontage or backage street to a major road corridor. See Section B for additional design standards.
(d) Divided Street – streets may be divided for the purpose of accommodating environmental features or avoiding excessive grading. In such a case, the design standards shall be applied to the appropriate street classification and a single lane width with a shoulder on each side.

A04 Access Criteria

A04.1 Residential Street

(a) A Residential street provides access to abutting properties.

(b) The anticipated average daily traffic (ADT) volume on Residential streets shall not exceed 400. A loop street shall be designed such that the anticipated ADT at each terminus of the loop street does not exceed 400, see Figure A-1.

(c) Residential streets may intersect or take access from an equal or higher classification street. Both ends of a loop Residential street are encouraged to intersect the same collecting street and be designed to discourage through traffic.

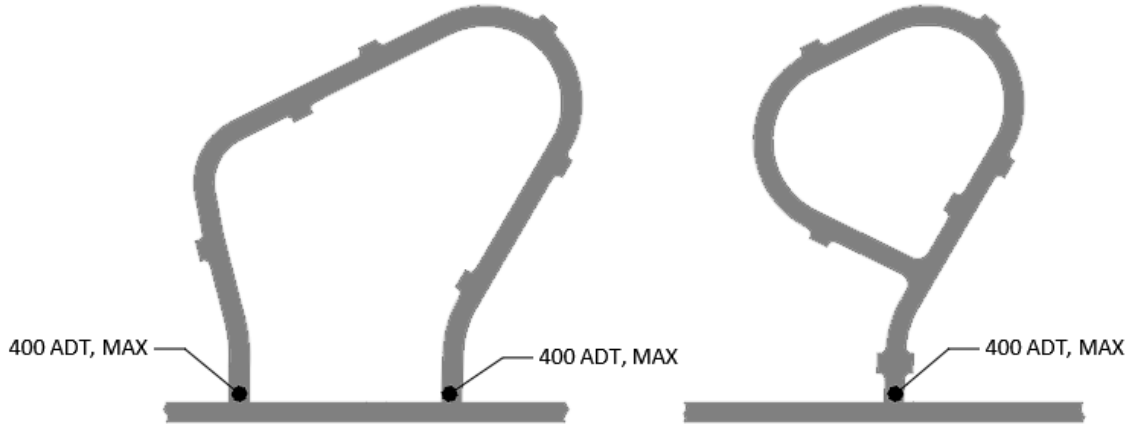


Figure A-1: Loop Residential Streets

A04.2 Residential Subcollector Street

(a) A Residential Subcollector street provides access to abutting properties and may also move traffic from Residential streets that intersect it. Residential Subcollector streets are required when the ADT anticipated on the street will exceed the limits for Residential.

(b) The anticipated ADT on Residential Subcollector streets shall not exceed 1000. A loop street shall be designed such that the anticipated ADT at each terminus of the loop street does not exceed 1000, see Figure A-2.

(c) Residential Subcollector streets shall be designed to exclude all external through traffic that has neither origin nor destination on the Residential Subcollector or its tributary Residential streets. Adjacent parcels may acquire access if proven landlocked by legal or terrain features or if such Residential Subcollector access can be demonstrated to be beneficial to the public.

(d) Residential Subcollector streets shall take access from a street of equal or higher classification.

(e) Traffic calming elements should be considered for the design of Residential Subcollectors, such as avoiding long, straight segments and reducing the length of roadway from farthest lot to a collector.

(f) Residential Subcollector streets shall be provided with two continuous moving lanes within which no parking is permitted.

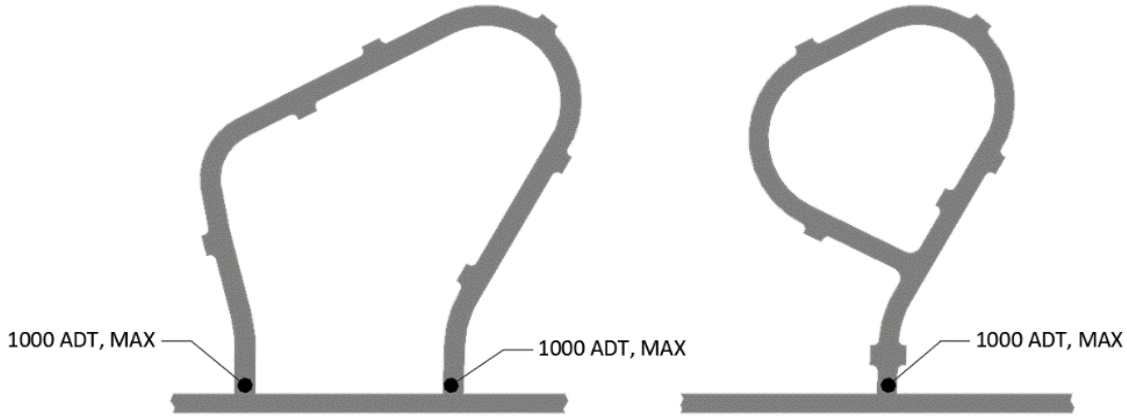


Figure A-2: Loop Residential Subcollector Streets

Residential Collector Street

(a) A Residential Collector street carries residential neighborhood traffic, but restricts or limits direct residential access. Residential Collector streets are required when the ADT anticipated on the street will exceed the limits for Residential Subcollectors.

(b) Residential Collector streets should be designed to have as few residential lots directly fronting them as possible. When efficient subdivision design or physical constraints make this not possible, the average access point spacing shall be a minimum of 250 feet. Average access point spacing is calculated per segment and is equal to the segment length divided by the number of potential access points on both sides of the street. Undeveloped lots with only access to Residential Collector streets are counted as having at least one access point. When the average access point spacing on a segment of an existing Residential Collector street is less than 250 feet, the average access point spacing shall not decrease due to the subdivision.

(c) Space shall be provided on these lots for turnaround so that vehicles will not have to back out onto Residential Collector streets.

(d) Proposed access points on Residential Collector streets shall be shown on the preliminary plat.

(e) Residential Collector streets shall be laid out to encourage connectivity within the transportation network.

(f) If the anticipated ADT will exceed 3000, the street shall be classified at a higher level than Residential Collector by DPW.

(g) Every Residential Collector shall be provided with no fewer than two access intersections to streets of equal or higher classification. If it is shown by the applicant that two accesses are not feasible, Residential Collector streets shall be provided with access to one street of equal or higher classification and be designed to accommodate a future second connection to a street of equal or higher classification, or otherwise be approved by DPW.

(h) All Residential Collector streets shall be provided with two continuous moving lanes within which no parking shall be permitted.

A04.4 Access through Existing Streets

The anticipated ADT on existing Residential streets used to access a proposed subdivision may exceed 400, but shall not exceed 800, if:

(a) alternate road corridors are not available or feasible;
(b) horizontal geometry or access density prohibits upgrade to a higher standard road; and
(c) the traffic impacts are mitigated.

A04.5 Traffic Impact Mitigation for Access through Existing Streets

Traffic impact mitigation on existing residential streets can include but is not limited to:

(a) Traffic control devices (signage, striping) on segments where potential ADT exceeds 440;
(b) LED street lighting, speed feedback signs, widened shoulders, inside corner widening for offtracking, or all-way stop intersections on segments where potential ADT exceeds 600.

A04.6 Commercial Uses on Residential and Residential Subcollector Streets

Exceptions to the ADT limits on Residential and Residential Subcollector streets, as set forth in A04.1 and A04.2, respectively, may be allowed for commercial uses that access the first 600 feet of such streets that intersect a Collector standard road or higher classification, as measured from the intersection point. The affected portion of the street and intersection shall be constructed to a higher standard as needed to accommodate the anticipated commercial traffic.

A05 Design Criteria

The design criteria for Residential, Residential Subcollector, and Residential Collector streets and Mountain Access and Pioneer roads are set forth in Table A-1. Any unspecified design criteria shall meet or exceed the design criteria for the roadway design speed in the latest edition of *A Policy on Geometric Design of Highways and Streets* (AASHTO).

Table A-1: Design Criteria

	Unit	Residential	Residential Subcollector	Residential Collector	Mountain Access[1]	Pioneer[1]
Average Daily Traffic	VPD	≤400	401 – 1000	1001 – 3000	–	–
Typical Section						
ROW Width[2]	ft	60	60	60	60	60
Lane Width	ft	10	10	11	10	10
Standard Gravel Shoulder Width	ft	2	2	2	0[3]	0[3]
Shared Paved Shoulder Width[4]	ft	4	4	6	–	–
Roadway Width	ft	24	24	26	20[3]	20
Foreslope[5]	h:v	3:1	3:1	4:1	2:1	3:1
Backslope[6]	h:v	2:1	2:1	2:1	2:1[7]	2:1
Crown, gravel	%	3	3	3	3	3
Crown, pavement	%	2	2	2	2	–
Engineering Criteria						
Design Speed	mph	25	30	35	–	–
Posted Speed	mph	20	25	30	–	–
Stopping Sight Distance	ft	155	200	250	–	–
Horizontal Alignment						
Minimum Centerline Radius	ft	225	350	550	–[8]	–
with DPW Approval	ft	190	275	400	–	–
Minimum Tangent Between Curves	ft	100	100	100	100	100
Maximum superelevation	%	N/A	N/A	4	N/A	N/A

[1] Where a value is not given, Mountain Access and Pioneer Roads shall meet the criteria of the anticipated street classification.
[2] Minimum ROW required for new dedications; width of existing ROW may vary.
[3] Where grades exceed 7 percent, the shoulder width shall be 2 feet for a total roadway width of 24 feet.
[4] An optional paved shoulder may be provided on one or both sides of paved streets for non-motorized shared use.
[5] Slope for the first 7.5 feet from the shoulder; may be steepened to 2:1 thereafter. Install guardrail when required by the latest edition of the *Roadside Design Guide* (AASHTO).
[6] 2:1 Back slopes may be steepened to 1.5:1 if cuts exceed 5 feet and appropriate slope stabilization, as determined by the design engineer, is used. Retaining walls may be used to replace or augment backslopes.
[7] Or backslope recommended by the design engineer based on actual conditions.
[8] Switch backs are allowed provided cul-de-sac criteria is met or turning radius is 40 feet with a 2% grade.

	Unit	Residential	Residential Subcollector	Residential Collector	Mountain Access[1]	Pioneer[1]
Vertical Alignment						
Maximum Centerline Grade	%	10	10	10	15[9]	10
Minimum Rate of Vertical Curvature[10]; Crest		12	19	29	–	–
Minimum Rate of Vertical Curvature [10]; Sag		26	37	49	–	–
Minimum Flow Line Grades	%	0.5	0.5	0.5	1.0	0.5
Intersections						
Minimum ROW Corner Radius	ft	30	30	30	30	30
Minimum Curve Return Radius[11]	ft	20	25	30	–	–
Maximum Grade on through street within 50 feet of intersection	%	7	7	4	9	7

[9] Up to 15% grade with no more than 200 linear feet of over 10% grade with a minimum of 100 linear feet of less than 10% grade for runout between steeper sections. Maximum grade in a horizontal curve is 10%.
[10] Rate of vertical curvature (K) is the length of curve (L) in feet per percent algebraic difference in intersecting grades (A); K = L / A
[11] 40-foot minimum curve return radius at intersections with higher order streets.

Typical Section

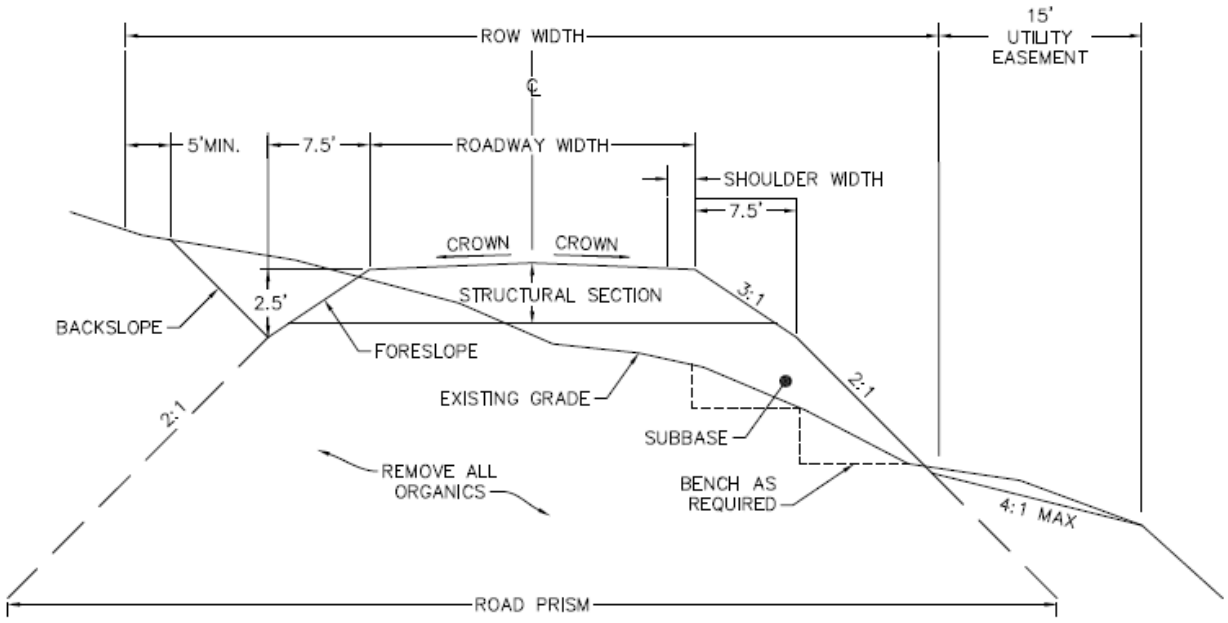


Figure A-3: Typical Section

A07 Turnarounds

Streets with only one inlet shall terminate with a constructed turnaround, unless otherwise provided by A08.2.

A07.1 Cul-de-sac Turnarounds

(a) A cul-de-sac turnaround with a drivable surface diameter (shoulder to shoulder) of 85 feet centered in a ROW diameter of 120 feet shall be provided at the terminus of Residential and Residential Subcollector streets.

(b) Cul-de-sac turnarounds shall meet the configuration and dimensions shown in Figure A-4.

(c) The grade throughout the surface of a cul-de-sac, as depicted in the shaded portion of Figure A-4, shall not exceed 4 percent.

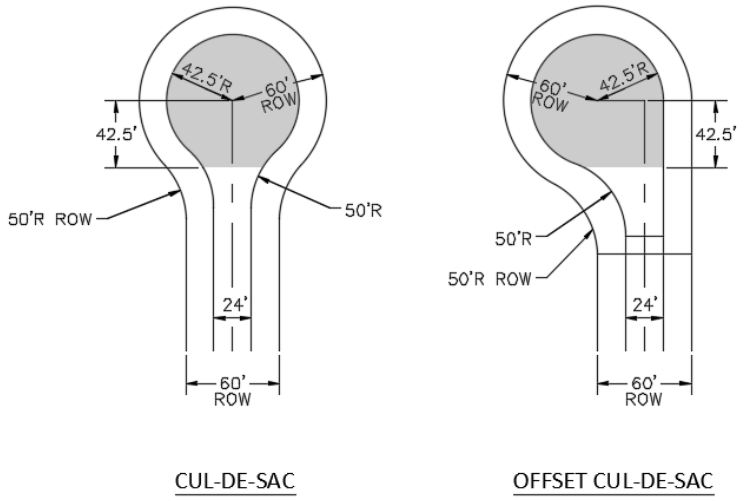


Figure A-4: Cul-de-sac Options

A07.2 Alternate Turnarounds

(a) DPW may permit a street to terminate with an alternative turnaround that meets fire code when such a design is required by extreme environmental or topographical conditions, unusual or irregularly shaped tract boundaries, or when the location of the turnaround is intended to become an intersection.

(b) Alternate turnarounds shall meet the configuration and dimensions shown in Figure A-5.

(c) The grade throughout the turnaround surface, as depicted in the shaded portion of Figure A-5, shall not exceed 4 percent.

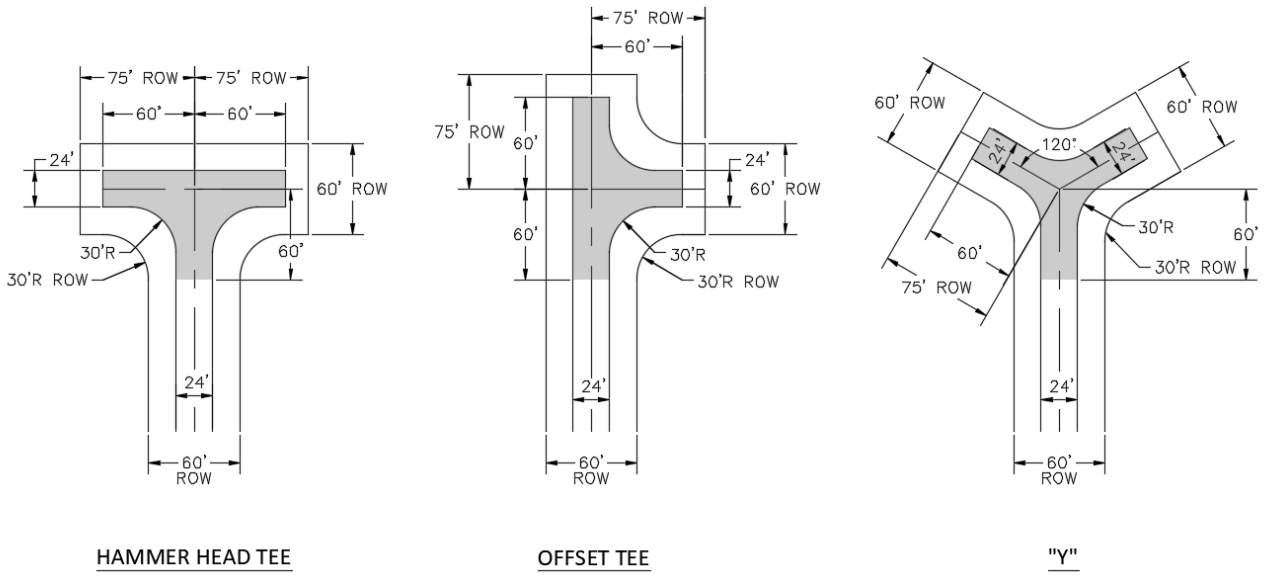


Figure A-5: Alternate Turnarounds

A08 Stub Streets

A08.1 Stub Street Construction

No construction is required if physical access is provided to all lots by adjoining streets as required by MSB or other applicable code.

A08.2 Temporary Turnarounds

Stub streets requiring construction that exceed 200 feet in length (measured from the intersection point to the end of required construction) will meet the requirements of A07.1 or A07.2. A temporary easement will be provided for the turnaround, which will automatically terminate upon extension of the street and physical removal of the turnaround. The centerline grade on stub streets without turnarounds shall not exceed 4%.

A09 Intersections

A09.1 Intersection Sight Distance

(a) Whenever a proposed street intersects an existing or proposed street of higher order, the street of lower order shall be made a stop controlled street, unless alternate intersection control is used as allowed by this subsection.

(b) Stop controlled streets shall be designed to provide intersection sight distance as specified in this subsection, Table A-2, and Figure A-6.

(c) The entire area of the intersection sight triangles shown in Figure A-6 shall be designed to provide a clear view from point A at 3.5 feet above the roadway to all points 3.5 feet above the roadway along the lane centerlines from point B to point C and point D to point E.

(d) Sight distances less than the recommended shall only be used when there are topographical or other physical constraints outside of the applicant's control.

(e) The minimum sight distances listed in Table A-2 are for a passenger car to turn onto a two-lane undivided street and minor road approach grades of 3 percent or less. For other conditions, the minimum sight distance should be calculated by the applicant's engineer according to *A Policy on Geometric Design of Highways and Streets* (AASHTO).

(f) Sight distances less than the minimum, where no other options exist, will require alternate intersection control or warning signs as determined by the applicant's engineer and approved by DPW.

(g) Intersection sight triangles shall be located in their entirety within ROW or a sight distance maintenance easement.

(h) Yield controlled intersections shall conform to sight distance requirements according to *A Policy on Geometric Design of Highways and Streets* (AASHTO).

(i) Intersections with state or other municipal ROW are subject to their respective requirements and review.

Table A-2: Recommended and Minimum Intersection Sight Distance

Design Speed or Posted Speed Limit (whichever is greater)	S_d Recommended	S_d Minimum
MPH	ft	ft
25	370	280
30	450	335
35	580	390
40	750	445
45	950	500
50	1180	555
55	1450	610
60	1750	665
65	2100	720

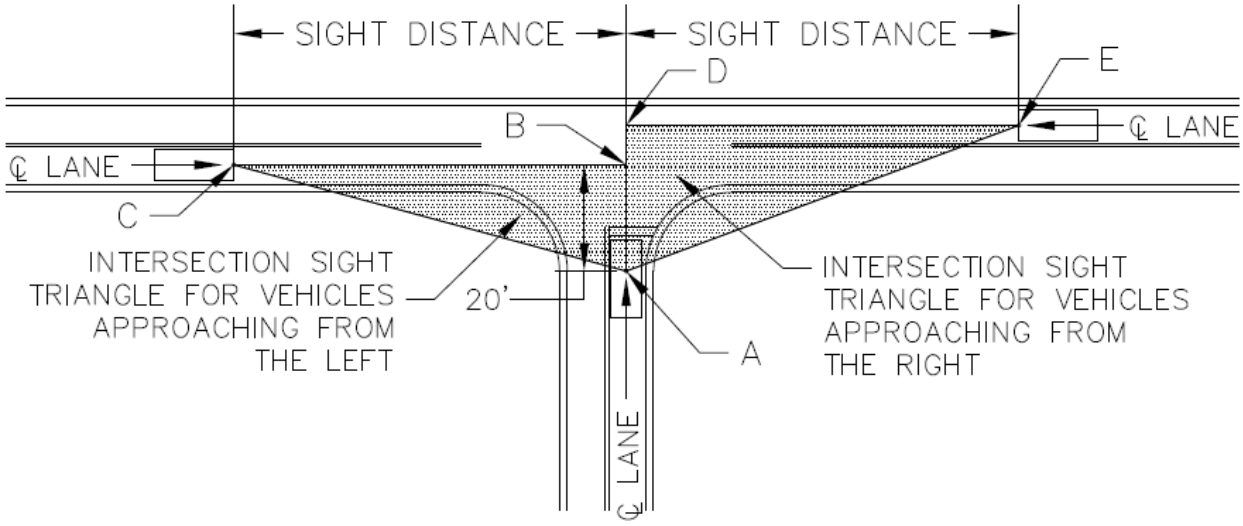


Figure A-6: Intersection Sight Distance

A09.2 Intersection Spacing

(a) Minimum centerline to centerline distance between intersections on the same side or opposing sides of the through street shall be:

(1) 155 feet on Residential streets;

(2) 200 feet on Residential Subcollector streets;

(3) 300 feet on Residential Collectors and Minor Collectors; or

(4) 650 feet on higher order streets where other access standards do not exist.

(b) If the above spacing along the through street cannot be met, intersections shall be aligned directly across from each other. Intersections on opposing sides of the through street may be offset up to 30 feet, with a preference for a left-right offset, as shown in Figure A-7.

(c) Where pre-existing conditions do not allow for the above spacing and no other legal access exists, alternate spacing or offset most closely meeting (a) or (b) above may be allowed.

(d) Additional intersections should be avoided within the functional area of major intersections with turning bays and approach tapers. Exceptions require DPW approval based upon constraints and no other feasible alternatives.

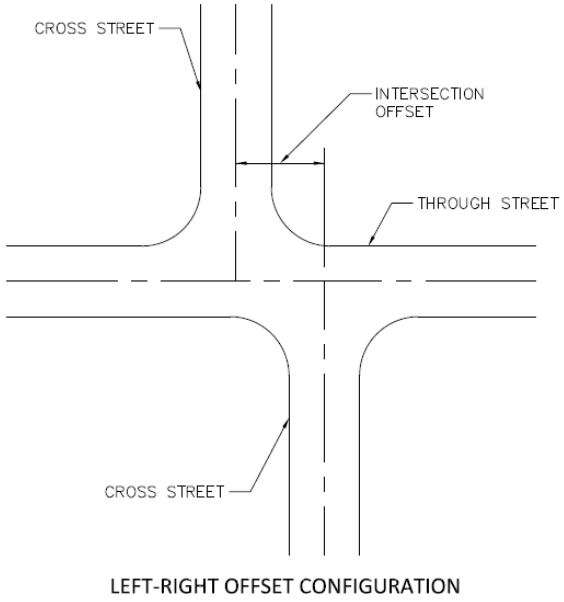


Figure A-7: Intersection Offset

A09.3 Minimum Intersection Angle

Streets should intersect with a straight segment at an angle as close to 90° as possible, but no less than 70°, for a minimum of 75 feet from the intersection point, as shown in Figure A-8.

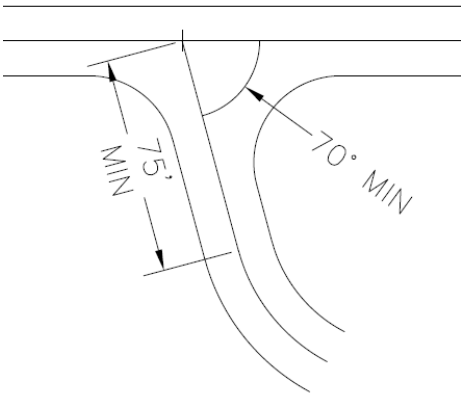


Figure A-8: Intersection Angle

A09.4 Landing

Controlled streets shall be provided with a typical 30-foot landing, conforming to Figure A-9, at its approach to a through street. The landing shall be sloped to match the crown of the through street. Vertical curves shall not be located in the landing to the extent feasible. Where a negative slope away from the through street is not feasible due to topographical constraints, the road shall be constructed in a manner that prevents water from flowing onto the through street.

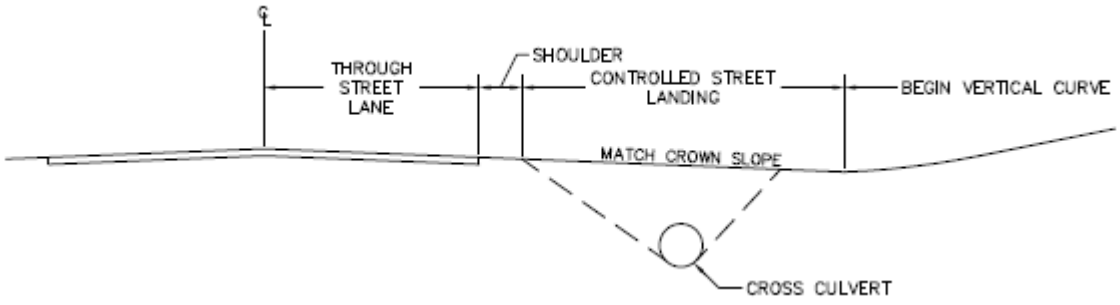


Figure A-9: Controlled Street Landing Profile

A09.5 Paved Apron

A proposed street which intersects an existing paved street shall be provided with a paved apron 40 feet from the edge of the existing pavement.

A10 Driveways

Driveways are not usually required to be constructed within the ROW at time of road construction. However, if an applicant chooses to construct driveways, driveway permits are required. The applicant may permit all driveways with one application. A driveway permit application can be obtained from the MSB Permit Center. Driveways onto state or other municipal ROW are subject to their respective requirements and review.

A11 Trailhead

Trailhead parking lot layout shall conform to applicable local, state, and federal requirements.

A12 Bicycle and Pedestrian Paths

Bicycle and pedestrian paths constructed within public ROW shall conform to the current edition of *Guide for the Development of Bicycle Facilities* (AASHTO), and any other applicable local, state, and federal requirements.

A13 Signage

Signs shall be provided and installed by the applicant in conformance with the latest edition of the *Alaska Traffic Manual* (ADOT&PF) and the *Alaska Sign Design Specifications* (ADOT&PF) prior to plat recordation.

(a) Each street within a subdivision shall be identified and signed at its point of egress and ingress. Cul-de-sac streets will be signed and identified at their point of ingress

(b) Intersection control signs shall be provided at designated intersections within the confines of the subdivision and at the intersection with the access road, if applicable.

(c) Intersection control signs shall be located such that they are visible to approaching traffic and near corresponding stop or yield bars.

(d) Speed limit signs shall be provided at entrances to the subdivision, where the speed limit changes, and at a minimum of one-mile intervals throughout the subdivision.

(e) If a constructed stub street provides access to two or fewer lots and has no turnarounds a sign indicating a dead-end street shall be posted.

(f) If a dedicated stub street is not constructed, no signs are required.

(g) Install signs according to the criteria in Figure A-10, Figure A-11, and Figure A-12.

(h) Signs within state or other municipal ROW are subject to their respective requirements and review.

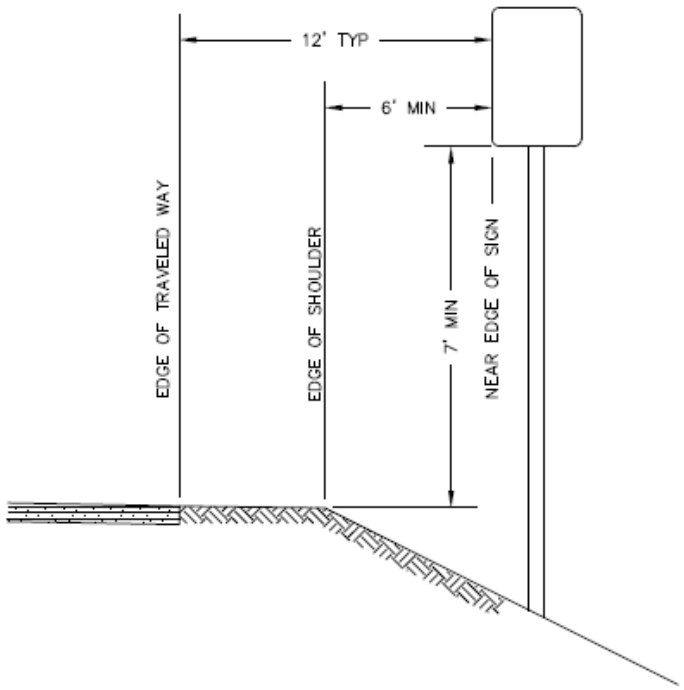


Figure A-10: Sign Placement

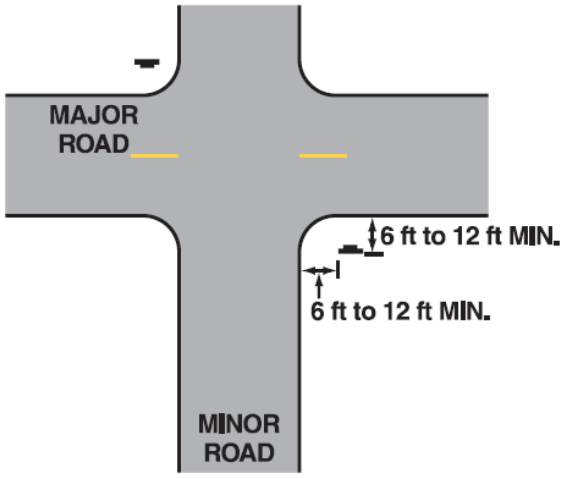
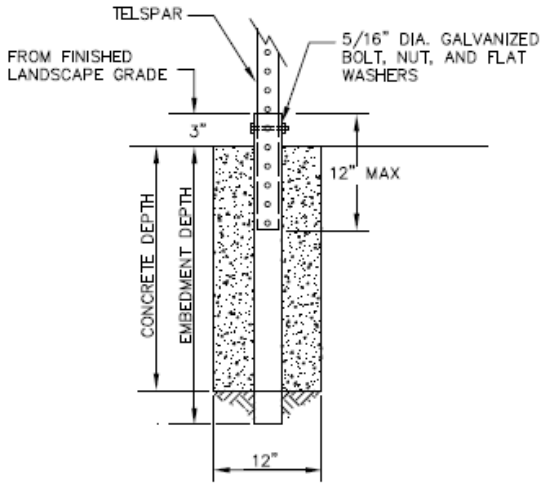


Figure A-11: Stop Sign Location



PERFORATED STEEL TUBES (P.S.T.) (12ga. – .105" Wall Thickness)			
SIGN SURFACE AREA SQ. FT.	POST SIZE	EMBEDMENT DEPTH	CONCRETE DEPTH
7' OR LESS	2" X 2"	27"	24"
GREATER THAN 7'	2 ½" X 2 ½ "	33"	30"

Figure A-12: Concrete Foundation for Sign Post

A14 Railroad Crossings

All access requiring a crossing of the Alaska Railroad shall be subject to the *Alaska Policy on Railroad/Highway Crossings* (Alaska Railroad).

A15 Average Daily Traffic

(a) The following formula shall be used to determine the required classification of streets:
ADT = Number of lots x 10 for single-family residential use.

(b) See Section G for other land uses.

(c) For subdivisions of five or more lots, submit potential ADT calculations for the following locations with the preliminary plat:

(1) at each intersection within the subdivision,

(2) at each intersection en route to an existing Residential Collector street or higher classification, and

(3) at an existing Residential Collector street or higher classification.

A16 Design Deviations

Design deviations will be considered to address extenuating circumstances including but not limited to: existing substandard ROW, environmental conditions, or existing utilities or other structures. Design deviation requests shall be in writing and contain supporting information, justification, and suggested solutions. Design deviations may be allowed by DPW only for matters that do not fall under the jurisdiction of a Board or Commission. In no circumstances will a roadway width less than 20 feet or foreslopes steeper than 2:1 be allowed. Residential Collector streets shall be no less than 24 feet wide.

Section C. Major Road Corridors

B01 General

Major road corridors include major collectors, arterials, and interstates. This section provides references to and guidelines for the design and construction of major road corridors within the MSB.

B02 Right-of-way and Surface Widths

Table B-1: Right-of-way and Surface Widths

Classification	Minimum ROW Width (ft)	Standard Lane Width (ft)	Number of Lanes	Shoulder Width (ft)
Major Collector	80	12	2 – 3	4
Arterial	100	12	3 – 4	4 – 8
Interstate	200	12	4 – 6	12

B03 Frontage, Backage, and Connector Street Standards

Subdivisions adjacent to planned or existing major road corridors shall plan for future frontage or backage streets when any of the following conditions apply, unless it is shown by the applicant to be not necessary or feasible for future development and public safety with no written objection from the road authority.

(a) Subdivisions accessing roads that are classified by ADOT&PF as Interstates.
(b) Subdivisions accessing roads that are or are projected to grow above 20,000 vehicles per day (VPD).
(c) Subdivisions accessing roads that are or are projected to have four or more lanes or median control per the LRTP or OSHP.
(d) Subdivisions that require a second access route.
(e) To gain access to an existing or planned signal.
(f) Where access to a minor arterial or collector as a connector road is feasible.
(g) When there are existing or platted frontage or backage routes adjacent to the property.

B03.1 Separation Distances

Minimum ROW to ROW separation distance between major corridors and frontage or backage streets shall be:

(a) 0 feet for locations with no connector street to the major road corridor;
(b) 100 feet for locations with a connector street to the major road corridor that lie between section lines and planned or existing intersections with other major road corridors;
(c) 300 feet for locations where the connector street to the major road corridor is on a section line or planned or existing major road corridor.

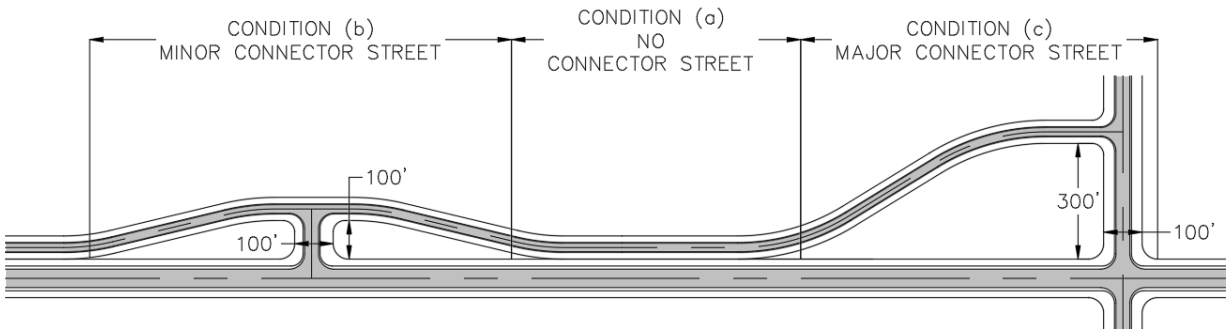


Figure B-1: Frontage Street Configurations

B03.2 Design Standards

(a) Frontage streets
  (1) Minimum centerline radii may be reduced near intersections with through connector streets.

(b) Connector streets
  (1) 100-foot ROW width desirable.
  (2) Minimum 40-foot radius curve returns at the major road corridor.
  (3) Minimum 4-foot wide shoulders for 100 feet from the edge of roadway of the major road corridor.
  (4) Minimal direct access.

B03.3 Dedication and Setbacks

Dedicate ROW or additional building setbacks to allow for the frontage, backage, and connector street standards in this manual. The applicant shall submit design information sufficient to demonstrate that frontage, backage, and connector street dedications or building setbacks are in a practical location where road construction is feasible in accordance with this manual. The applicant shall be required to submit plan, profile, and cross-sections for the sections of road where existing grades along the proposed route exceed 10 percent, existing cross slopes exceed 15 percent, or if existing utilities or other physical features appear to create impediments to a road design meeting standards of this manual. Road plan and profile shall extend at least 300 linear feet on either side of the subject sections or to intersecting or adjacent rights-of-way within 500 linear feet.

B04 Access Standards

(a) The average access point spacing on major road corridors, where other access standards do not exist, shall not exceed the minimums listed in Table B-2, based on the posted speed limit. Average access point spacing is calculated per segment and is equal to the segment length divided by the number of access points on both sides of the street. Undeveloped lots with only access to the major road corridor are counted as having at least one access point.

(b) When the average access point spacing on a segment of an existing major road corridor is less than the minimum listed in Table B-2, the average access point spacing shall not decrease due to the subdivision.

Table B-2: Average Access Point Spacing

Posted Speed Limit (mph)	Minimum Average Access Point Spacing (feet)
30	250
35	300
40	360
45	425
50	495
55	570

B05 Future Corridors

Subdivisions shall be designed in a manner that does not conflict with the LRTP or the OSHP. Subdivisions containing future road corridors identified in the LRTP or OSHP are encouraged to include the future road corridor as part of the road layout of the subdivision.

Building setbacks prohibiting the location of any permanent structure within the future corridor may be voluntarily designated on the final plat. The area within the future road corridor shall be excluded from usable septic area calculations. The area within the future road corridor and building setbacks shall be excluded from usable building calculations.

B06 References

The following publications shall be used for design and construction standards of these classes of streets that are not otherwise established herein:

(a) *A Policy on Geometric Design of Highways and Streets*, AASHTO (current edition).
(b) *Standard Specifications for Highway Construction*, ADOT&PF (current edition);
(c) *Standard Modifications to the ADOT&PF Standard Specifications for Highway Construction*, MSB (latest revision)
(d) *Alaska Highway Preconstruction Manual*, ADOT&PF (latest revision)

Section D. Construction Requirements

C01 General

This section establishes minimum construction requirements. Prior to any ground disturbing activities, call the Alaska Dig Line for utility locates in accordance with AS 42.30.400.

C02 Road Construction

C02.1 Clearing

Cut and dispose of all trees, down timber, stumps, brush, bushes, and debris. Cut trees and brush to a height of not more than 6 inches above the surrounding ground. Clear the ROW, slope easements, and sight distance triangles. Where ROW exceeds 60 feet, clear a minimum of 60 feet. Clear utility easements, if used, for utilities constructed with the development.

C02.2 Grubbing

Remove and dispose of all stumps, roots, moss, grass, turf, debris, or other deleterious material within the fill and cut catch limits of the road plus 5 feet on each side, within the ROW, and cleared utility easements for underground utilities.

C02.3 Disposal

Dispose of clearing and grubbing debris in an area designated by the applicant outside of all ROW, platted utility easements, and platted private road corridors. Organic debris 3 inches in diameter by 8 inches long, or smaller, may be left in place, outside of the road prism.

C02.4 Slit Trenches

Slit trenches are not allowed in the ROW. Utility easements may be used as a borrow source above a 2:1 extension of the road prism, as shown in Figure A-3. Topsoil or other organic non-deleterious material may be disposed within the utility easement. Compact the disposal area with heavy equipment and grade the surface with positive drainage no steeper than 4:1 and no lower than the ditch line. Submit an as-built drawing showing the horizontal locations of borrow extraction along the road corridor with the Final Report.

C02.5 Embankment Construction

(a) Construct the road with the required structural section, see Figure C-1, and dimensions, see Table A-1 and Figure A-3, as determined by its classification.

(b) Prepare the subgrade. Remove all organics from the area below the road prism and dispose in locations where embankment is not proposed. Bench existing slopes that are steeper than 4:1, measured at a right angle to the roadway, where roadway embankment is to be placed.

(c) Place material meeting, or verify in-situ material meets, the requirements for Subbase specified in subsection C07 to a minimum depth of 20 inches with the upper 6 inches having no material with

a diameter larger than 6 inches. Place embankment in horizontal layers, as directed by the engineer, for the full width of the embankment and compact as specified before the next lift is placed.

(d) Place 4 inches of Surface Course meeting the requirements specified in subsection C07. Finish with a 3 percent crown, and compact as specified.

(e) For Residential and Residential Subcollector standard roads, compact all embankment to not less than 90 percent of the maximum dry density at the optimum moisture content and the top 24 inches to not less than 95 percent of the maximum dry density at the optimum moisture content. For Residential Collector standard roads, compact all embankment to not less than 95 percent of the maximum dry density at the optimum moisture content.

(f) Optimum moisture and maximum dry density will be determined by Alaska Test Method (ATM) 207 and ATM 212 or alternative methods approved by DPW.

(g) In-place density shall be determined by ATM 213 or alternative method approved by DPW. Compaction tests on the Subbase layer shall be taken at representative locations along the roadways as follows:

(1) a minimum of three;

(2) at least one per segment;

(3) one additional test per 1000 linear feet, or portion thereof, when the combined length of roadway exceeds 1000 linear feet;

(4) at least one out of every three within three feet of the shoulder, and the remainder in the center of a driving lane.

(h) For paved roadways, substitute Surface Course with a minimum of 2 inches of Base Course and 2 inches of HMA Type II, Class B, for Residential and Residential Subcollector streets, and a minimum of 3 inches of Base Course and 3 inches of HMA Type II, Class B, for Residential Collector Streets. Pavement shall meet MSB Special Provision Section 401 Hot Mix Asphalt Pavement. The width of the pavement shall be equal to two lane widths plus the shared paved shoulder width, if used, and finished with a 2 percent crown. Pavement edges shall be backed with additional Base Course graded and compacted flush with the pavement surface and tapered to the edge of the roadway. The pavement shall be washed or swept immediately following shouldering work.

(i) Remove all loose material exceeding 6 inches in diameter from the ditches and foreslopes. Where slopes are 3:1 or steeper and longer than 10 feet measured along the slope face, trackwalk perpendicular to the slope, or the equivalent, to form 1-inch wide grooves parallel to the road no more than 12 inches apart.

(j) Permanently stabilize backslopes 3:1 or steeper. Stabilization can be part of a subdivision agreement. Stabilization may be allowed to establish during the warranty period.

C02.6 Unsuitable Subgrades

When structurally unsuitable material such as peat, saturated material, or permafrost are present within the ROW, provide an appropriate structural design for approval by DPW, according to Section F, prior to construction. Place embankment to a depth that will produce a stable road surface with a final grade 18 inches above the surrounding ground.

C03 Roads Outside of a Road Service Area

Roads outside of a Road Service Area are not subject to the requirement for Surface Course.

C04 Pioneer Road Construction Requirements

Pioneer roads, whether proposed or existing, shall meet the requirements of Figure C-1, Table A-1, and Figure A-3. Place material meeting, or verify in-situ material meets, the requirements for Subbase specified in subsection C07 to a minimum depth of 12 inches. Additional road embankment may be required to provide a stable road surface. Surface Course is not required. Pioneer roads may be constructed offset from the centerline of the ROW to facilitate future expansion of the road. Cross drainage culverts, minimum 18 inch diameter, will be installed where determined necessary and 24 inch ditches will be provided for drainage.

C05 Winter Construction

Winter construction may be allowed. DPW will not accept any roads until all ground has thawed and any settlement areas corrected.

C06 Alternate Methods and Materials

Use of alternate materials and road construction methods that will more appropriately fit the conditions of the specific road locations, following general engineering practices, may be proposed by the applicant or their engineer in writing. Final acceptance of such plans must be approved by DPW.

C07 Materials

C07.1 Subbase

(a) Is aggregate containing no muck, frozen material, roots, sod, or other deleterious matter;
(b) has a plasticity index not greater than 6 as tested by (ATM) 204 and ATM 205; and
(c) meets the requirements of Table C-2, as determined by ATM 304.

C07.2 Base Course

(a) Crushed stone or crushed gravel, consisting of sound, rough, durable pebbles or rock fragments of uniform quality;
(b) free from clay balls, vegetable matter, or other deleterious matters;
(c) meets the requirements of Table C-1; and
(d) meets the requirements of Table C-2, as determined by ATM 304.

C07.3 Surface Course

(a) Is a screened or crushed gravel, consisting of sound, rough, durable pebbles or rock fragments of uniform quality;
(b) free from clay balls, vegetable matter, or other deleterious matters; and
(c) meets the requirements of Table C-2, as determined by ATM 304.

Table C-1: Aggregate Quality Properties for Base Course

Property	Test Method	Base Course
L.A. Wear, %	AASHTO T 96	50, max
Degradation Value	ATM 313	45, min
Fracture, %	ATM 305	70, min
Plastic Index	ATM 205	6, max
Sodium Sulfate Loss, %	AASHTO T 104	9, max (5 cycles)

Table C-2: Aggregate Gradations

Sieve Designation	Subbase	Base Course	Surface Course
1 1/2 inch			100
1 inch		100	
3/4 inch		70 to 100	70 to 100
3/8 inch		50 to 80	50 to 85
No. 4	20 to 60	35 to 65	35 to 75
No. 8		20 to 50	20 to 60
No. 50		6 to 30	15 to 30
No. 200	0 to 10	0 to 6	7 to 13

(Percent Passing By Weight)

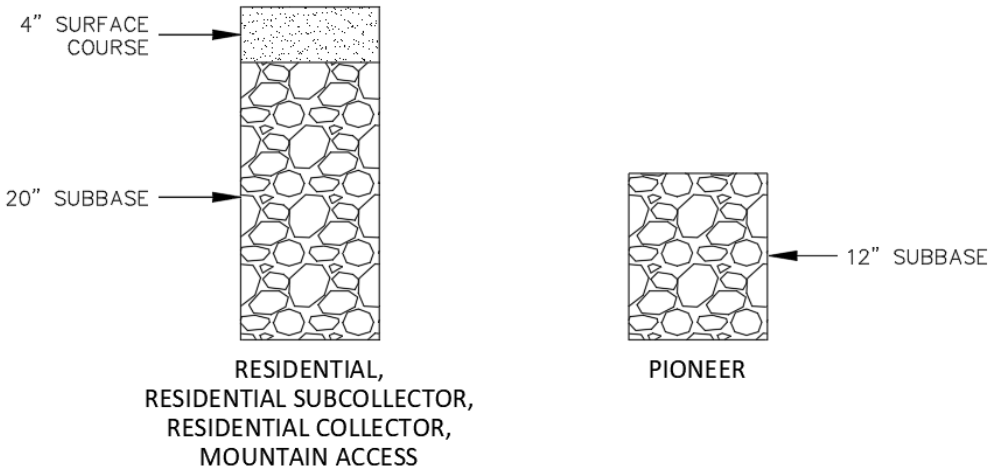


Figure C-1: Structural Sections for Gravel Roads

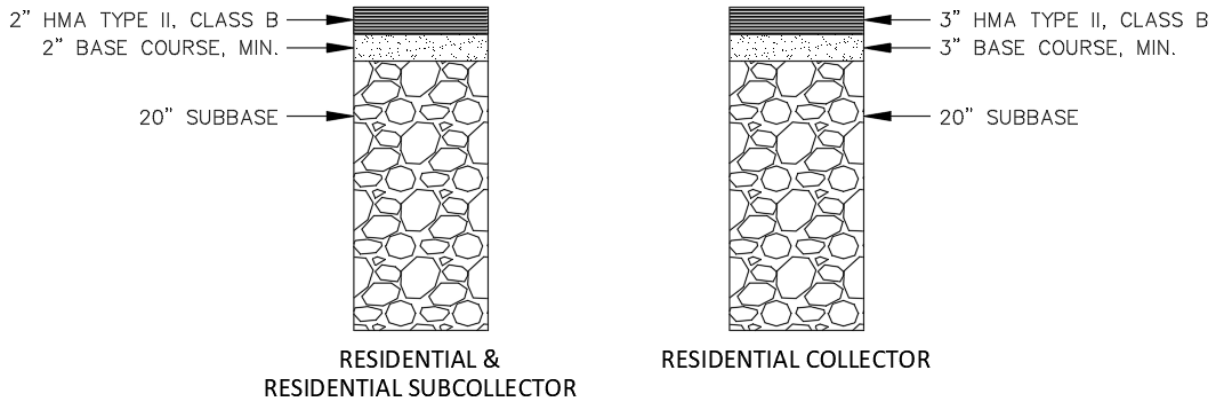


Figure C-2: Structural Sections for Paved Roads

Section D. Drainage

D01 General

The purpose of this section is to ensure that stormwater management is provided with land development activities. Responsible stormwater management is the treatment, retention, detention, infiltration, and conveyance of stormwater and other surface waters without adversely impacting adjoining, nearby, or downstream properties and receiving waters.

D02 Requirements

A preliminary drainage plan is required when road construction or disturbing land to create useable area for a subdivision is proposed. A drainage report is required for projects that include road construction, disturb 10,000 square feet of land or more, fill in wetlands, disturb land within 100 feet of the ordinary high water mark (OHWM) of a water body, disturb land within a mapped flood hazard area, or change the location, direction, quantity, or type of runoff leaving a site. See subsection D06 for specific requirements regarding fish passage culverts. It is the applicant's responsibility to comply with all other applicable federal, state, and local codes and regulations.

D02.1 Preliminary Drainage Plan

Submit a preliminary drainage plan, prepared by an engineer or other qualified professional registered in the State of Alaska, with the preliminary plat or ROW construction permit application. The preliminary drainage plan shall show the project site at a legible scale plottable on 11" by 17" paper or larger and depict the following:

(a) Existing and proposed property lines, plottable easements disclosed in the title report, the OHWM of water bodies with 100-foot upland offset, and existing mapped flood hazard areas.
(b) Existing topography with horizontal and vertical accuracy meeting US National Map Accuracy standards, with 5-foot contour intervals if the ground slope is less than 10 percent and 10-foot contour intervals if the ground slope is greater than 10 percent.
(c) Existing features that convey or retain drainage, including but not limited to: water bodies, wetlands, natural valleys, swales, ditches, check dams, culverts, and pipe systems.
(d) Proposed drainage pattern and features, both constructed and natural, on site. Identify conveyance types, flow directions, and any drainage changes that may affect adjacent property.
(e) Proposed stream crossings and anticipated culvert sizes. Identify fish-bearing streams.

D02.2 Drainage Report

Submit a drainage report, prepared by an engineer or other qualified professional registered in the State of Alaska, as part of the construction plan submittal in subsection F01.2. The drainage report shall include the following:

(a) The drainage plan as specified in D02.1 (may be shown on two plans for clarity), updated to include:

(1) Pre-development and post-development catchment area boundaries determined using 2-foot contour intervals; and
(2) Locations of peak flow, peak velocity, and where runoff leaves the project site.

(b) Description of methods, assumptions, and data sources used or made, including but not limited to:
(1) Rainfall data from the NOAA-14 Precipitation Frequency Data Server.
(2) Assumed post-development land cover conditions.
(3) Method used to determine runoff quantities, time of concentration, peak flows, etc.

(c) Catchment area maps used or created to evaluate down-gradient conditions.

(d) Identify design elements, with supporting runoff calculations, necessary to show compliance with the drainage design criteria set forth in D03.

(e) Fish passage culvert plans, if applicable.

D03 Drainage Design Criteria

(a) Design a drainage system for the project site to meet the criteria listed in Table D-1.

(b) Retain natural drainage patterns to the extent possible.

(c) Changes to drainage patterns must not adversely affect adjacent property or ROW.

(d) Base the size and capacity of the drainage system on runoff volumes and flow rates assuming full development of the subdivision and a 10 percent increase to runoff from the catchment area.

(e) Drainage easements are required where the ROW is not sufficient to accommodate drainage needs. See subsection E01.2.

(f) Where drainage easements overlap utility easements:
(1) Above ground drainage facilities, such as retention and detention basins, may be located in new utility easements only in a manner that will not interfere with utilities. See subsection H02.
(2) Above ground drainage facilities located within existing utility easements require a letter of non-objection from affected utilities.
(3) Culverts crossing utility easements require a letter of non-objection from affected utilities.
(4) Underground drainage facilities such as infiltration trenches and vertical inlets shall not be located in utility easements.

(g) Drainage to state or other municipal ROW are subject to their respective requirements and review.

Table D-1: Drainage Sizing and Analysis Criteria

Design Requirement	Purpose	Criteria
Conveyance	Size conveyances to pass design peak flows.	Drainage ditches: 10-year, 24-hour Non-regulated streams: 10-year, 24-hour Regulated streams: 100-year, 24-hour
Wetlands	Retain function of original wetlands	Preserve the pre-development function of wetlands. For jurisdictional wetland areas, comply with United States Army Corps of Engineers wetlands development retention requirements.
Water Quality	Treat first flush pollutant loading	Treat runoff generated by 0.50 inch of rainfall in a 24-hour period.
Erosion and Sedimentation Control	Ensure channel stability for all project conveyances	Control flows in conveyance channels so that transport of particles sized D50 and greater will not occur for the post-development peak flow.
Extended Detention	Protect streams and channels from damage from smaller, more frequent storm flows	Provide 12 to 24 hours of detention for the post-development project runoff in excess of pre-development runoff volume for the 1-year, 24-hour storm.
Flood Hazard	Control peak flow to minimize downstream impacts	Option 1 Maintain the post-development project runoff peak flows from the 10-year, 24-hour storm to less than or equal to pre-development runoff peak flow at all project discharge points. Option 2 Maintain the post-development project runoff peak flows to less than 1.10 times pre-development runoff peak flow at all project discharge points. Evaluate downstream until the project site area is less than 10% of the total upstream basin area and mitigate adverse impacts.
Flood Bypass	Prevent an increased risk of flood damage from large storm events.	Compute post-development peak flow and delineate an unobstructed, overland flow path for runoff to overtop or bypass project conveyance routes for the post-development 100-year, 24-hour storm.

D04 Drainage Ditches

Stabilize ditches with gravel, turf, or rock riprap. See Table D-2 and Table D-3 for most common conditions and acceptable ditch lining materials. Evaluate channel stability for compliance with the Erosion and Sedimentation Control design requirement in Table D-1 for other conditions.

Normal ditch depth shall be 30 inches and according to the typical section shown in subsection A06. The design peak flow required by Conveyance Design in Table D-1 shall be conveyed within ditches with a minimum freeboard of 12 inches.

The ditch depth may be reduced at local high points of the ditch, provided the flow line offset is maintained and with DPW concurrence. Alternate ditch design along Residential and Residential Subcollector streets may be considered, if evidence is provided that the following conditions exist:

(a) Ditches are a minimum of 18" deep;
(b) The design peak flow required by Table D-1 is demonstrated to be conveyed within ditches with a minimum freeboard of 12 inches;
(c) Adequate drainage routes are provided and constructed within the ROW or designated drainage easements;
(d) Flow lines are established at least 8 feet from the edge of roadway.
(e) Ditches are deepened to provide cross drainage through 24" corrugated metal culverts (18" with DPW approval).
(f) Cross sectional area of ditch is at least 15 square feet.

Table D-2: Ditch Stabilization

Flow	Ditch Slope (ft/ft)										
(cfs)	0.005	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
2.0	A	A	A	A	A	A	A	A	A	A	A
4.0	A	A	A	A	A	A	A	A	B	B	B
6.0	A	A	A	A	A	A	B	B	B	B	B
8.0	A	A	A	A	A	B	B	B	B	B	B
10.0	A	A	A	A	B	B	B	B	B	B	C
20.0	A	A	A	B	B	B	C	C	C	C	C
30.0	A	A	A	B	B	C	C	C	D	D	D
40.0	A	A	B	B	C	C	C	D	D	D	E
50.0	A	A	B	B	C	C	D	D	D	E	E
60.0	A	A	B	C	C	D	D	D	E	E	E
70.0	A	A	B	C	C	D	D	E	E	E	E
80.0	A	B	C	C	C	D	E	E	E	E	E
90.0	A	B	C	C	D	D	E	E	E	E	F
100.0	A	B	C	C	D	D	E	E	E	F	F

Table D-3: Ditch Lining Materials

Type	Material	D50 (in)	Dmax (in)	Dmin (in)	Thickness (in)
A	Native Grass, Turf, or Gravel with < 6% fines				
B	Riprap or Bone Rock	3.0	4.5	1.5	6.0
C	Riprap or Bone Rock	6.0	9.0	3.0	12.0
D	Riprap or Bone Rock	9.0	13.5	4.5	18.0
E	Riprap or Bone Rock	12.0	18.0	6.0	24.0

D05 Culverts

D05.1 General Culvert Design Criteria

The following criteria apply to all cross road culverts for runoff or seasonal drainage:

(a) The minimum culvert slope is 0.5 percent.
(b) Culverts longer than 100 feet require appropriate maintenance access and DPW approval
(c) Cross road culverts shall have a minimum diameter of 18 inches.
(d) Culverts shall be sized to convey the design peak flow required by Table D-1, based on the larger of the two computed sizes using inlet control and outlet control.
(e) Culverts shall be corrugated metal pipe (CMP) and minimum:
    (1) 16 gauge galvanized steel on Residential and Residential Subcollector streets;
    (2) 12 gauge galvanized steel on Residential Collector and minor collector streets; or
    (3) 16 gauge aluminum or aluminized if needed due to soil or water conditions.
(f) Design and install energy dissipation rock aprons at culvert outlets in accordance with Hydraulic Engineering Circular No. 14 (FHWA).
(g) Install culverts in accordance with the manufacturer's recommendations for the anticipated traffic loads.

D05.2 Stream Crossing Culvert Criteria

The following criteria apply to all stream crossing culverts:

(a) Prior to preliminary plat submittal, contact the Alaska Department of Fish and Game (ADFG), Division of Habitat to determine if a stream reach harbors fish. If so, stream crossing culverts shall be designed, constructed, and maintained according to D06.
(b) Stream crossing culverts shall be placed as close to the pre-existing channel alignment as possible. Avoid placing culverts at pools and stream bends.
(c) Road alignment shall be as close to perpendicular to the stream channel as possible.
(d) Culvert slope shall be within 25 percent of the natural stream slope. For example, if the natural stream slope is 1.0 percent, the minimum design slope of the culvert would be 0.75 percent and the maximum design slope would be 1.25 percent.
(e) Culvert outlet and inlet protection shall be used as necessary to reduce the risk of scour and perching.

(f) Stream crossings shall be composed of a single pipe or arch for the main stream channel.
(g) Overflow culverts may be used but should be placed at a higher elevation so that flows up to the OHWM pass through the primary culvert.
(h) Stream crossings shall maintain the connectivity of wetlands adjacent to stream channels and shall accommodate sheet flow within such wetlands.
(i) Stream crossing culverts shall not interfere with the functioning of floodplains and shall be designed to convey the design peak flow required by Table D-1. If the stream crossing culvert is not designed to accommodate the 100-year flow, a route must be established to safely convey flows exceeding the design peak flow without causing damage to property, endangering human life or public health, or causing significant environmental damage.
(j) In cases of crossings within high entrenchment ratio environments, the ratio of the flood prone width to the OHWM width is greater than 2.2, floodplain overflow culverts may be beneficial to floodplain connectivity and can be used to pass the design flow. Minimum width requirements for the primary culvert still apply.
(k) Stream crossing culverts shall have a minimum diameter of three feet.
(l) Stream crossing culvert pipes and arches shall be metal.
(m) Culverts longer than 100 feet require appropriate maintenance access and DPW approval
(n) Install culverts in accordance with the manufacturer's recommendations for the anticipated traffic loads.

D06 Fish Passage Culverts

These criteria provide general design guidance for road crossings of fish-bearing streams to maintain the full hydrologic functioning of the water body they are crossing. Site-specific conditions, such as multi-thread channels, may require alternate design approaches.

D06.1 Pre-design Conference

Schedule a fish passage pre-design conference with DPW prior to permit submittals. The pre-design conference is to:
(a) determine required permits;
(b) coordinate interagency requirements;
(c) determine any site-specific design requirements; and
(d) establish a plan review process.

D06.2 Stream Simulation Method

Stream simulation methodologies shall be used for the design of all fish-bearing stream crossings. The stream simulation method uses reference data from a representative section, or reference reach, of the specific water body crossed. This method attempts to replicate the natural stream channel conditions found upstream and downstream of the crossing. Sediment transport, flood and debris conveyance, and fish passage are designed to function as they do in the natural channel.

Reference Reach

(a) Select a reference reach on the water body being crossed that is outside any anthropogenic influence, such as an existing culvert. In most cases of new crossings, the reference reach can be at the crossing location.

(b) The length of the reference reach should be a minimum of 20 times the reference bankfull width and no less than 200 feet.

(c) If there is not a suitable reference reach on the water body being crossed, a reference reach may be chosen from another water body with similar geomorphic and hydrologic characteristics. The reference reach characteristics should meet the following criteria in comparison to the water body being crossed:
  (1) The reference reach bankfull width should be at least one half and no more than two times that of the water body being crossed;
  (2) The reference reach bankfull discharge should be at least one half and no more than one and one half times the bankfull discharge of the water body being crossed; and
  (3) The stream order of the reference reach should be within one stream order of the water body being crossed.

(d) For a reference reach from another water body, the geomorphic characteristics of the crossing shall be scaled using ratios of the bankfull conditions.

(e) The reference reach bankfull dimensions should be determined in the field by surveying a detailed cross section at the upper 1/3 of a representative riffle.

(f) Reference data shall include, at a minimum:
  (1) channel width at the OHWM,
  (2) bankfull width,
  (3) bankfull cross-sectional area,
  (4) bankfull slope based on the longitudinal profile,
  (5) substrate, and
  (6) potential for floating debris.

Culvert Size, Slope, and Substrate

In addition to D05.2, the following criteria apply to fish passage culverts:

(a) Under normal flow conditions, the channel within or under the fish passage culvert shall not differ from the reference reach condition in regards to the channel width at the OHWM, cross-sectional area, slope, substrate, and ability to pass floating debris.

(b) The width of fish passage culverts shall not be less than the greater of 1.2 times the channel width at the OHWM and 1.0 times the bankfull width.

(c) Fish passage culverts shall have a minimum diameter of five feet.

(d) The use of smooth wall culverts is prohibited.

(e) The use of trash racks or debris interceptors is prohibited

(f) Round culvert pipes shall have a minimum invert burial depth of 40 percent of the culvert diameter into the substrate. Arch or box culverts shall have a minimum invert burial depth of 20

percent of the culvert's rise into the substrate, unless scour analysis shows less fill is acceptable. The minimum invert burial depth is 1 foot.

(g) The gradation of the substrate material within a fish passage culvert shall be designed to be a dense, well-graded mixture with adequate fines to ensure that the majority of the stream flows on the surface and the minimum water depth is maintained.

(h) Substrate material within or under the fish passage culvert shall remain dynamically stable at all flood discharges up to and including a 50-year flood. Dynamic stability means that substrate material mobilized at higher flows will be replaced by bed material from the natural channel upstream of the crossing. For crossings without an adequate upstream sediment supply, the substrate material within the crossing shall be designed to resist the predicted critical shear forces up to the 100-year flood. For culverts with a slope of 6 percent or greater, substrate retention sills may be required to allow the bed load to continuously recruit within the culvert.

(i) Substrate material within or under the fish passage culvert shall incorporate a low flow channel. The low flow channel should mimic the reference reach where possible. If the low flow channel dimensions are not discernable from the reference reach, the low flow channel should have a cross sectional area of 15 to 30 percent of the bankfull cross sectional area and a minimum depth of 4 inches for juvenile fish and 12 inches for adult fish. The low flow channel should be defined by rock features that will resist critical shear forces up to the 100-year flood.

(j) Constructed streambanks are recommended inside fish passage culverts to protect the culvert from abrasion, provide resting areas for fish, and provide for small mammal crossing. If streambanks are constructed through a crossing, the streambanks shall be constructed of rock substrate designed to be stable at the 100-year flood. The streambank width should be a minimum of 1.5 times the maximum sieve size of the streambed material (D100). The crossing width shall be increased to allow for the channel width plus the streambanks.

(k) If substrate retention sills are used, they shall have a maximum weir height of one half of the culvert invert burial depth. Substrate retention sills shall be spaced so that the maximum drop between weirs is 4 inches. The use of sills without substrate is not allowed.

(l) Other state and federal requirements may apply.

D06.3 Hydraulic Method

Hydraulically designed culverts are discouraged for fish-bearing stream crossings, though may be approved by DPW and ADFG in circumstances where stream simulation is not practical. In addition to D05.2, the following criteria apply to hydraulically designed culverts:

(a) The hydraulic method uses the swimming capability and migration timing of target design species and sizes of fish to create favorable hydraulic conditions throughout the culvert crossing. Information and design software for this methodology is available from ADFG, Division of Sport Fisheries (Fishpass) and the US Forest Service (FishXing).

(b) The design fish shall be a 55-milimeter (2.16-inch) juvenile coho salmon for anadromous streams and a 55-milimeter (2.16-inch) Dolly Varden char for non-anadromous streams. These criteria may change based on ongoing research by federal and state agencies.

(c) Fish passage high flow design discharge will not exceed the 5 percent annual exceedance flow or 0.4 times the 2-year peak flow, whichever is lower and has the most supporting hydrologic data.

(d) Fish passage low-flow design discharge shall ensure a minimum 6-inch water depth or natural low flow and depth within the reach the crossing occurs. In cases where local conditions preclude natural low flow characteristics, backwatering or in-culvert structures should be considered.

(e) In cases where flared end sections with aprons are necessary and fish passage is required, water depths and velocities that satisfy fish passage criteria must be demonstrated across the apron in addition to within the culvert.

(f) Fish passage criteria for culverts crossing tidally-influenced streams must be satisfied 90 percent of the time. Tidally-influenced streams may sometimes be impassable due to insufficient depth at low flow and low tide. If the tidal area immediately downstream of a culvert is impassable for fish at low tide, the exceedance criterion shall apply only to the time during which fish can swim to the culvert.

(g) Other state and federal requirements may apply.

D07 Soil Infiltration Facilities

Soil infiltration may be used to reduce stormwater flow and volume with the following criteria:

a) Soil infiltration facilities within Borough ROW or drainage easements should be designed such that they are not considered Class V injection wells. See Appendix A for the EPA's memorandum addressing the subject in June 2008.

   (1) Private drainage facilities that are considered Class V injection wells require conformance with EPA regulations.

D08 Rainfall Data

D08.1 Rainfall Distribution

Intensity-Duration-Frequency (IDF) and 24-hour rainfall data are furnished by NOAA Atlas 14 Point Precipitation Frequency Estimates. Use SCS Type-I Rainfall Distribution and 24-hour rainfall depth to compute runoff.

D08.2 Runoff Transformation

Use the Rational Method for estimating peak flows in drainage basins less than 200 acres and with times of concentration less than 20 minutes for design of conveyances. Use NRCS (SCS) Unit Hydrograph Method for estimating runoff volumes and peak flows for other conditions and applications. Other methods more appropriate for site conditions may be utilized upon DPW approval.

Section E. Easements

E01 General

E01.1 Common Access Easements

When a shared driveway is required for two or more lots, a common access easement shall be granted for the exclusive use of the subject lots, unless otherwise accommodated. The common access easement shall be sized to reasonably accommodate separation of the shared driveway to the individual lots.

E01.2 Drainage Easements

Drainage easements are required where the ROW is not sufficient to accommodate drainage needs. Drainage easements can overlap with other platted easements and shall begin or terminate at the ROW. Drainage easements shall be a minimum width of 20 feet, and a minimum average length of 20 feet outside of any overlapping easements or of sufficient size and area shown to facilitate construction and maintenance.

E01.3 Slope Easements

Slope easements are required to contain all cut and fill slopes steeper than 2.5:1 that extend outside of the ROW, plus at least 5 feet outside the cut or fill catches.

E01.4 Sight Distance Maintenance Easements

Sight distance maintenance easements are required where intersection sight triangles extend outside of the ROW.

E01.5 Snow Storage Easements

Snow storage easements are required where the ROW is not sufficient to accommodate anticipated snow removal needs. Snow storage easements shall be located where the storage of snow would not impede sight distance.

E01.6 Utility Easements

Unless lots are otherwise served by alternate utility easements or agreements, at least one 15-foot utility easement adjacent to the ROW is required to allow for utility installation and maintenance. Additional utility easements may be required as deemed reasonably necessary by utility companies to serve the subdivision or protect existing facilities. The applicant is responsible for satisfying any conflicts that may occur in the request for easements from any utility company during the platting process.

Platted utility easements are to be clear of wells, septic systems, structures, or encroachments, as defined by MSB or other applicable code; unless the applicant has obtained an encroachment permit from the MSB and a "Non-Objection to Easement Encroachment" from each utility.

Utility easements are to be fully useable for utility installation where installation equipment can safely work. Whenever possible, utility easements should not be placed in swamps, steep slopes, or other unusable areas.

Section F. Development Implementation

F01 General

This section describes the procedure that is to be followed before constructing any improvements required for recording a subdivision plat. The applicant's engineer shall be the primary point of contact throughout this process.

It is the applicant's responsibility to determine, acquire, and follow permits required by other agencies. Approval from MSB does not supersede other agencies' permit requirements.

F01.1 Preliminary Plat Submittal

The preliminary plat submittal is to be accompanied by:

(a) ADT calculations per A15;
(b) Preliminary drainage plan per D02.1;
(c) Road plan and profile for sections of road where proposed grades exceed 6 percent where cuts and fills exceed 5 feet in height measured from the centerline, or where slope easements will be required, and cross sections at the maximum cut and fill sections. Road plan and profile shall include the vertical curves or grade breaks on either side of the subject sections;
(d) Road plan, profile, and cross-sections if required by B03.3; and
(e) Intersection sight distance evaluation, if requested, according to A09.1.

F01.2 Construction Plans

Submit construction plans to DPW at least seven calendar days before the preconstruction conference. All plan drawing submittals shall be at a scale of 1 inch = 50 feet or more detailed, plottable on 11" by 17" paper. Construction plans shall include the following:

(a) Drainage Report, according to D02.2;
(b) Plan & Profile of proposed roads (if required by F01.1);
    (1) Existing topography with horizontal and vertical accuracy meeting US National Map Accuracy standards, two-foot contour intervals within the proposed road corridors.
(c) Asbuilt survey of visible improvements and above ground utilities within and adjacent to the subdivision;
(d) Copy of agency accepted permit applications required for the improvements prior to construction, including but not limited to ADOT&PF Approach Road Permit, DNR Section Line Easement authorization, MSB Flood Hazard Development permit, and USACE wetland fill permit; and
(e) Plans for any proposed improvements within the ROW that are outside of the scope of this manual (e.g. retaining walls or guard rail) or do not conform to the standards set forth herein, conforming to ADOT&PF design criteria and standards.

F01.3 Preconstruction Conference

The preconstruction conference is for the purpose of reviewing and approving the Subdivision Construction Plan for the required improvements. The engineer may request scheduling of a preconstruction conference with DPW after the preliminary plat has been approved by the Platting Board, the Platting Board Action Letter has been received, and the construction plans have been submitted. Scheduling of preconstruction conference requests may be delayed during the month of October. The applicant, or designated representative, and the engineer must attend the preconstruction conference. In addition to the construction plans, the following items will be provided at or prior to the preconstruction conference:

(a) Cost estimate of required improvements for the determination of the inspection fee according to the most recently adopted Schedule of Rates and Fees;
(b) Proof of compliance with the Alaska Pollutant Discharge Elimination System Program;
    (1) Acceptable proof includes a Notice of Intent (NOI), a Low Erosivity Waiver (LEW), or a determination by a qualified person that neither is needed.
(c) Rough plan and time line for construction;
(d) Copy of any issued permits required for the improvements prior to construction;
(e) Off-site material source and quantities; and
(f) On-site clearing, grubbing, and topsoil disposal plan, location map.

The Subdivision Construction Plan must be signed by the applicant, or designated representative, and the engineer. Upon acceptance of the Subdivision Construction Plan by DPW and payment of the inspection fee, the Platting Division will issue a Notice to Proceed (NTP).

Some construction plans or permit approvals may take longer to develop or obtain, such as fish passage culvert plans and associated permits. Those finalized plans and issued permits may be submitted later but must be received and reviewed by DPW before construction begins within the respective areas.

F01.4 Interim Inspections

The applicant's engineer shall supervise all phases of construction. Notify DPW of changes to the Subdivision Construction Plan, such as adding or deleting a cross culvert, changes in culvert size, adding or deleting a drainage facility, grade changes of more than 1 percent or that would result in grades of over 6 percent or cuts or fills of over 5 feet in height measured from the centerline, or changes to foreslopes or backslopes. The changes should be approved by DPW prior to completion of construction. Periodic interim inspections may be conducted by DPW. Interim inspections may be requested by the engineer.

F01.5 Subdivision Agreements

If a developer wishes to enter into a Subdivision Agreement and the requirements of MSB 43.55.010(A) are met, the Engineer shall submit a request to DPW no later than October 15th for an Interim Inspection. The Interim Inspection shall be attended by the engineer and DPW, and a list of remaining improvements and work items will be developed. The engineer shall then submit a request for a

Subdivision Agreement containing the scope of work, quantity estimates, and cost estimate in accordance with MSB 43.55 to Platting and for approval by DPW. DPW will only approve the request for a subdivision agreement if all of the minimum required improvements have been inspected by October 31st or before winter conditions prohibit inspection, whichever comes first.

F01.6 Pre-Final Inspection

When the engineer has determined that construction of the improvements will be substantially complete according to the Subdivision Construction Plan, the engineer will request a Pre-Final Inspection. The Pre-Final Inspection request must be received by September 30th and shall include a description of work yet to be completed. The Pre-Final Inspection will be scheduled to occur within 14 calendar days of the request and shall be attended by the engineer and DPW. A punch list will be developed, if any work items remain, at the Pre-Final Inspection.

F01.7 Final Inspection

When construction of the improvements and punch list items are complete according to the Subdivision Construction Plan, the engineer will request a Final Inspection of the improvements. The Final Inspection request must be received by October 15th. Final Inspections will cease October 31st, or when winter conditions prohibit inspection, whichever comes first. The Final Inspection will be scheduled to occur within 14 calendar days of the request and shall be attended by the engineer and DPW.

F01.8 Final Report

Upon DPW approval of the Final Inspection, the engineer shall submit a written Final Report to the Platting Division. The Final Report shall include:

(a) Stamped and signed narrative describing at a minimum:
  (1) road construction process and equipment used,
  (2) material source and disposal areas,
  (3) road embankment and subbase used,
  (4) road topping or pavement used,
  (5) compactive effort,
  (6) road dimensions and shaping (length, roadway width, material thicknesses, pavement width, crown, cul-de-sac or t-turnaround dimensions and slope, foreslope, backslope, maximum centerline grade, etc.) for each road constructed,
  (7) drainage, ditch depth, location of drainage easements, and
  (8) road standard certification (Pioneer Road, Residential Street, etc.) for each road constructed;
(b) Stamped and signed final drainage plan, (minimum 11”x17”);
(c) As-built drawing showing the horizontal locations of borrow extraction along the road corridor;
(d) Documentation verifying Surface Course thickness such as photos and descriptions of test pits, scale tickets, asbuilt surveys, or alternative methods approved by DPW;
(e) Compaction test reports;
(f) Gradation tests, if required; and

(g) Photos of each stage of construction.

DPW will review the report and provide comments, if necessary, within 14 calendar days.

F01.9 Construction Acceptance

Upon approval of the Final Report, DPW will issue a Certificate of Construction Acceptance.

F01.10 Warranty

All improvements are to be guaranteed until October 31st of the calendar year following DPW approval of the Final Inspection. Roads within a Road Service Area may be accepted for maintenance at the end of the warranty. Pioneer Roads are not eligible for maintenance. Maintenance of Mountain Access Roads is at the discretion of DPW.

During the warranty period, the applicant is responsible for any road maintenance including, but not limited to: snow removal, maintaining a smooth road surface and crown, maintaining stabilized foreslopes and backslopes, and maintaining positive drainage. If any deficiencies arise during the warranty, DPW will issue a punch list to the applicant by September 1st to allow time for completion of repairs. The applicant must notify DPW of completion of repairs by October 15th for the roads to be eligible for maintenance on November 1st.

The warranty period for improvements following completion of a subdivision agreement may be lessened to one calendar year. The applicant shall request a punch list from DPW no more than one month before the end of the one-year warranty.

If the subdivision plat has not recorded by April 30th or if warranty repairs are not completed by October 15th, the warranty will be extended an additional year and the warranty process will be repeated.

Maintenance may be denied and the Certificate of Construction Acceptance revoked if deficiencies are not corrected to the satisfaction of DPW. A notice may be recorded indicating to the public that the MSB is not responsible for road upkeep and maintenance until such a time that the deficiencies are corrected.

Section G. Commercial and Industrial Subdivisions

G01 General

Commercial and Industrial subdivisions shall be designed using trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual, and to meet the standards of AASHTO, International Fire Code (IFC), and any other applicable standards or code.

Section H. Utilities

H01 General

These standards apply to the design and construction of utility facilities within the MSB. All utility installation within existing or proposed ROW or utility easements must comply with the provisions of MSB or other applicable code, or as otherwise approved by the permitting authority.

H02 Utility Location Guidelines

H02.1 Underground Utility Facilities:

(a) The location of utility facilities placed within the ROW shall be coordinated with the permitting authority.
(b) Backslopes or foreslopes which extend into a utility easement should not exceed 4:1. These limits are necessary for construction equipment for utility installation.
(c) Utility facilities paralleling the road shall not be located within 10 feet of the roadway, unless otherwise approved by the permitting authority.
(d) Underground road crossings shall be buried a minimum of 48 inches below finished grade. Backfill shall be compacted according to the requirements of Section C, or as otherwise approved by the permitting authority.
(e) Conduit road crossings, if used, shall be installed in accordance with each utility company's standards and applicable code.
(f) Standard burial depth of longitudinal utilities is 36 inches below grade. The applicant should delineate areas, such as where driveways and drainage easements are planned, where deeper burial may be needed.

H02.2 Above Ground Utility Facilities:

(a) Above ground pedestals, poles, and utility facilities shall not be located within 10 feet of the roadway, unless an alternate design meets clear zone requirements.
(b) Above ground pedestals, poles, and utility facilities shall not be located such that they substantially block intersection or driveway sight triangles.
(c) Unless otherwise authorized by the permitting authority, above ground pedestals, poles, and utility facilities shall not be located within the ROW nearer than 40 feet from the point of intersection of the extension of the property lines at any existing or proposed intersection on Residential Collector streets or higher classification.
(d) Above ground pedestals, poles, and utility facilities shall not be located within a common access easement or drainage easement, within 20 feet of a common access point, or within 10 feet of a roadway cross culvert.
(e) Permanent 5-foot high snow marker poles, grey with white retroreflective sheeting or yellow, shall be installed on all pedestals and vaults.
(f) All guy wires installed within the ROW or utility easements adjacent to, or near to a roadway shall have a minimum 8-foot long yellow delineator installed above the anchor.

(g) Pedestals located within the ROW shall be located within the outer 1 foot of the ROW.

H02.3 Separation of Utilities:

(a) Recommend 5-foot horizontal separation between power poles and buried utilities.
(b) Recommend minimum 1-foot physical separation between all underground utilities.
(c) Separation of storm, sewer, and water utilities shall meet the requirements of the Alaska Department of Environmental Conservation.

References

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American Association of State Highway and Transportation Officials. (2011). *Roadside Design Guide* (4th ed.). Washington, DC.

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Appendix A

Environmental Protection Agency Memorandum - Class V Injection Wells

Design Criteria Manual

Chapter 2: Bridges & Crossing Culverts

Public Works Department

TABLE OF CONTENTS

1 Scope 1
2 References 1
3 General 2
3.1 Traffic Volume, Design Speed and Functional Geometry 2
3.2 Survey 3
3.3 Accident Analysis 3
3.4 Geotechnical Field Work and Foundation Report 3
3.5 Hydraulics and Hydrology 4
3.6 Permitting and Environmental 4
3.7 Pathways on Bridges 5
3.8 End Terminals, Approach Guard Railing, and Transition to Bridge Rail 5
3.9 Signage, Marking, and Striping 5
3.10 Durability and Corrosion Control 6
3.11 Study Phase Submittals 6
3.12 Design Phase Submittals 7
4 Hydraulics and Hydrology 7
4.1 General 7
4.2 Hydraulic Site Survey and Site information 8
4.3 Hydraulic History of the Site 8
4.4 Design Flood Event 8
4.5 Scour Analysis 9
4.6 Ice Analysis 9
4.7 Clearance 9
4.8 Abutment and Bank Protection 9
4.9 Fish Passage Analysis 9
4.10 Storm Water Drainage 10
5 Structural 10
5.1 General 10
5.2 Deck 10
5.3 Superstructure 11
5.4 Substructure 11
5.5 Use of preservative-treated wood 12
5.6 Bridge rail 12
5.7 Design live loads 12
5.8 Seismic – special requirements 13
5.9 Skewed bridges 14
5.10 Use of railcars and other non-bridge structures 14
5.11 Welding 15
6 Stream Crossing Culverts 15
6.1 General Requirements 15
6.2 Fish Passage Culverts 16

7 Appendices 19
7.1 Appendix 1 - Bridge Final Design Check List..... 19

1 Scope

This Manual shall be used for design and construction of all new bridges, and stream crossing culverts[1] and replacement bridges and culverts within the Matanuska-Susitna Borough (MSB) right-of-way (ROW), easements, on public property and in subdivisions with private streets, except in the cases listed below. In this document the word "bridges" is intended to refer to both bridges culverts that cross streams, pathway tunnels or other large diameter structural pipes, unless otherwise noted.

This manual does not apply to the design or construction of:

- Bridges within the jurisdiction of the Alaska Department of Transportation and Public Facilities (DOT&PF). This includes bridges on State roads.
- Bridges on private property (except as noted for subdivisions with private streets)
- Existing bridges

2 References

The following design guidelines, manuals, and standards are referenced in this Manual. Use the editions—with all amendments, revisions, provisions, and modifications--published at time of contract execution:

American Association of State Highway and Transportation Officials (AASHTO):
"*A Policy on Geometric Design of Highways and Streets*" (GB)
"*Design Guide for Very Low Volume Roads (GDVLVLR)*"
"*Load and Resistance Factor Design (LRFD) Bridge Design Specifications (BDS)*"
"*Guide Specification for LRFD Seismic Bridge Design*"
"*Manual for Bridge Evaluation*"
"*Guide for the Development of Bicycle Facilities*"
"*Drainage Manual*"

DOT&PF:
"*Alaska Highway Drainage Manual*"
"*Alaska Traffic Manual" (ATM)*
"*Pre-construction Manual* (HPCM)"
"*Standard Specifications for Highway Construction (SSHC)*"

Federal Highway Administration (FHWA):
"*Manual on Uniform Traffic Control Devices (MUTCD)*"

[1] Although culverts less than 20 feet in diameter and other bridge-like structures less than 20 feet long (in the direction of traffic or structure span) are not considered "bridges" by the FHWA and AASHTO, the provisions of this Manual are to be applied to such elements.

U.S. Fish and Wildlife Service (USFWS):
"Culvert Design Guidelines for Ecological Function"
"Stream Simulation Guidelines"

Other:
National Cooperative Highway Research Program (NCHRP) 350 Report: "*Recommend procedures for the safety performance evaluation of highway features*"

Western Wood Preservers Institute, "*Best Management Practices (BMPs) for the Use of Treated Wood in Aquatic and Other Sensitive Environments*"

3 General

A number of general studies, reports, and submittals are required in the planning and design of all new bridges. These include but are not limited to traffic volume, classification, design speed and functional geometry, utility and ROW surveys, accident analysis, geotechnical, hydraulics/hydrology, permitting and environmental, and corrosion control. These items shall be subject to approval by the MSB Department of Public Works (DPW) Director.

3.1 Traffic Volume, Design Speed and Functional Geometry

The MSB will provide the Average Daily Traffic (ADT), Annual Average Daily Traffic (AADT), and design speed for each new crossing.

Grade, alignment, and sight distance shall meet the requirements of *"A Policy on Geometric Design of Highways and Streets."* Design speed shall match the approach roadway design speed.

The clear roadway width[2] on the bridge shall be not less than the value from Table 4.1. NOTE: Table 4.1 is applicable only to "Local Roads and Streets" and "Collector Roads and Streets", as defined in *"A Policy on Geometric Design of Highways and Streets"*. For "Urban and Rural Arterials" and "Freeways" follow the guidance in *"A Policy on Geometric Design of Highways and Streets"*.

Table 4.1 Minimum clear roadway width on bridge

ADT	Total crossing length[3] (feet)	Minimum clear roadway width (feet)
≤ 2000	Any length	Approach roadway width[4], but not less than 28 feet
> 2000	≤ 100 feet	Approach roadway width, but not less than 30 feet
> 2000	> 100 feet	Traveled way + 3 ft (each side) [5], but not less than 30 feet

[2] Clear roadway width is the distance between the inside face of curbs or vehicular railings, whichever is less.
[3] Total crossing length is the distance between "begin bridge" and "end bridge" stations measured along stationing.
[4] Approach roadway width is the distance curb-to-curb or traveled way plus shoulder width.
[5] On long bridges, where the cost per foot is greater than short bridges, narrower widths are usually considered acceptable.

Vertical clearance between the lowest member of the bridge structure and the water surface shall be in accordance with Section 4.7 of this manual. Provide clearance for vessel traffic if the waterway is navigable.

Vertical clearance between the top of the bridge roadway and any overhead cable or structure shall be at least 16 feet 6 inches. This criterion is unique to the MSB.

Design the bridge to support existing and future utilities.

See Section 3.7 for pathway requirements.

3.2 Survey

A survey shall be performed for each new bridge. This shall include the location of all adjacent property and structures, the location of the roadway including centerline (CL), edge of pavement, side slopes and ditches, ordinary high water (OHW), and other features as required. Provide the basis of survey including coordinate system, north arrow, survey monuments and project datum elevation. The survey shall also include the location of all above and below ground utilities in the vicinity (typically 200 feet) of the crossing. The survey shall clearly show the ownership of each parcel and any existing or proposed right-of-way at the proposed crossing.

The survey drawing shall be signed and sealed by a Professional Land Surveyor (PLS) registered in the State of Alaska.

3.3 Accident Analysis

If the new bridge will be replacing an existing bridge the designer will conduct an accident analysis. The designer will examine accident reports from the existing bridge and approaches going back 10 years. The report will summarize the number of accidents and discuss possible contributing factors such as geometry, speed limits, sight distance and other factors.

The accident analysis shall be signed and sealed by a Professional Engineer registered in the State of Alaska.

3.4 Geotechnical Field Work and Foundation Report

A geotechnical field exploration program shall be conducted for each crossing and a foundation report shall be provided.

Exception: a field program and report are not required for culverts less than 48 inches in diameter.

Exploratory holes deeper than the foundation elements shall be advanced. The foundation report shall include the types of material found in the field exploration, historical geotechnical information, the bearing capacity of the soils, abutment design guidelines, pile design guidelines (if a pile foundation is selected) including pile capacity with scour allowance, and other items. The geotechnical work shall meet the requirements outlined in the BDS and the *"Pre-construction Manual."* Coordinate with the engineer responsible for the hydraulics and hydrology analyses.

The foundation report shall be sealed by a Professional Engineer registered in the State of Alaska.

3.5 Hydraulics and Hydrology

A hydraulics and hydrology study shall be conducted for each new crossing. This shall include a hydraulic site survey. The details of this are covered in Section 5 of this document.

3.6 Permitting and Environmental

A permitting and environmental study shall be completed for each new crossing. This report shall outline all permits and environmental issues related to the project along with an action plan to obtain the required permits and to mitigate any impacts. All applicable required permits shall be identified. These include but are not limited to:

- United States Coast Guard (USCG) Section 9 Bridge Permit
- United States Army Corps of Engineers (USACE) Section 10 Navigable Waterways
- USACE Section 401 Water Quality
- USACE Section 404 Excavation and/or fill in waters of the US
- Alaska Department of Fish and Game (ADF&G) Title 16 Fish Habitat
- Alaska Department of Natural Resources (DNR) Land Use
- Environmental Protection Agency (EPA) Storm Water Pollution Prevention Plan (SWPPP)
- MSB Flood Plain Development Permit
- MSB ROW Permit

In addition, construction impacts shall be considered in the planning stage. These include but are not limited to:

- Erosion, sediment, and silt containment
- Dust control
- Noise control/abatement
- Channel diversion
- Temporary stream crossing
- Dewatering criteria
- Staged construction, detour route or structures, traffic control

A written permitting and environmental study outlining the above and additional items as applicable to the specific crossing shall be submitted in the planning stages of the project.

3.7 Pathways on Bridges

The full width of any existing sidewalks, pathways, bike lanes, equestrian lanes, or shared-use pathways on the roadway being served shall be continued over the new bridge. If no such pathways exist, the MSB will identify bridge pathway requirements. The minimum width of a pathway on a bridge shall be ten feet. If the expected volume of traffic on the pathway is very low and the bridge is short, the minimum width may be reduced to six feet[6].

Grating, manhole covers, and other items shall be bicycle and pedestrian "safe" as outlined in the "*Guide for the Development of Bicycle Facilities*."

All pathways on the bridge shall be signed and striped as outlined in the MUTCD.

Railings, fences, or barriers on each side of a pathway shall be a minimum of 4.5 feet high.

3.8 End Terminals, Approach Guard Railing, and Transition to Bridge Rail

Provide end terminals, approach guard railing, and guardrail-to-bridge rail transitions in accordance with the "*Pre-Construction Manual.*"

See Section 5.6 for bridge rail requirements.

3.9 Signage, Marking, and Striping

All bridges shall be marked and signed as outlined in the ATM. In certain cases this may include:

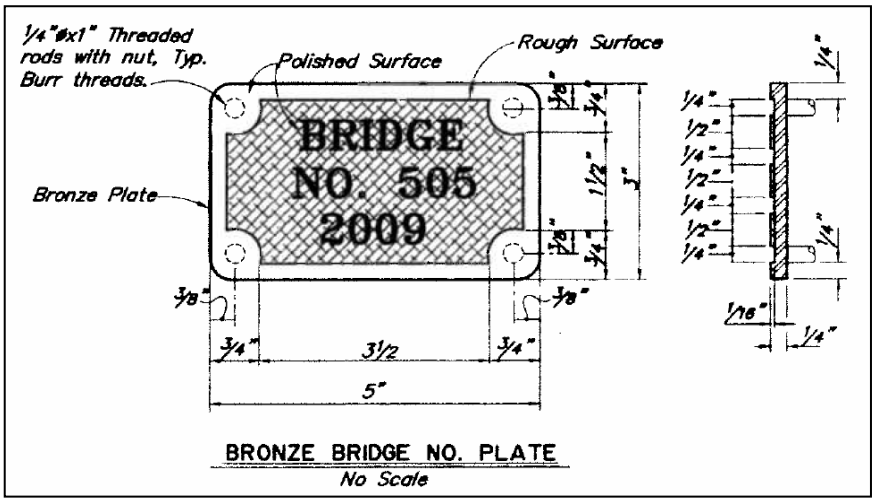
- Narrow bridge
- Speed restrictions
- Load limits

Identify all bridges with a number assigned by the DOT&PF. The bridge number and year of construction shall be displayed on a bronze plate as shown in Figure 4.9, permanently affixed to the structure near each end, on the right-hand side of approaching traffic. The exact location of plates will be determined by the MSB.

[6] In the absence of other published criteria or a specific directive from the MSB, the minimum width may be reduced to six feet if the ADT is less than 400 and the bridge length is less than 40 feet.

Figure 4.9 – Bronze bridge number plate - example

Use bronze conforming to American Society of Testing Materials (ASTM) B98, Alloy "A" or "B". Use "Century" font. Braze ¼" diameter threaded rod to back of plate. Use locking nut or lock washers with nuts. Rod and hardware shall conform to Unified Numbering System (UNS) C65100 or C65500.



3.10 Durability and Corrosion Control

Comply with BDS requirements for durability. All new bridges shall be evaluated for corrosion control requirements. Structural steel members shall be coated, galvanized or constructed from weathering steel. Provide coated or galvanized reinforcing bars in concrete components subjected to deicing salts or salt water. Provide adequate concrete cover and/or membranes to protect reinforcing bars. Provide positive drainage to direct runoff from the deck away from beam seats, bearings, and other structural members. If foundation members are located in tidal-influenced saltwater or brackish water, provide a cathodic protection system such as sacrificial anodes or other means of protection. The geotechnical report shall address the corrosivity of soil and ground water and their effects on foundation elements.

A written corrosion control study outlining the above and additional items as applicable to the specific crossing shall be submitted in the preliminary design stage of the project.

3.11 Study Phase Submittals

Provide study phase submittals to the MSB DPW. Study phase submittals are subject to DPW approval and shall include:

- Survey of existing site along with proposed new structure location
- Accident analysis
- Foundation report
- Hydraulic and hydrology report
- Permitting and environmental study

3.12 Design Phase Submittals

Provide design phase submittals to the MSB DPW. Design phase submittals are subject to DPW approval and shall include:

- Preliminary design with functional geometry and load ratings
- Structural computations
- Corrosion control study
- Erosion and sediment control plan (ESCP)
- Final design drawings and specifications
- Record or as-built drawings
- Engineer's estimate of quantities and cost

A Professional Engineer registered in the State of Alaska and proficient in bridge engineering shall seal all final bridge design documents, including drawings, special provisions, and structural computations.

4 Hydraulics and Hydrology

4.1 General

Stream crossing structures must provide for the passage of flood flows, ice movement, sediment transport, debris transport and fish passage. In addition, the design must protect the bridge foundation, adjacent stream banks, and not present a safety hazard to people. In recent years, due to the failure of bridges from scoured foundations during large flood events, the National Transportation Safety Board (NTSB) has placed increased emphasis on special attention to design and maintenance of scour processes in the vicinity of bridge foundations.

Conform to the requirements of the following publications:

- *Alaska Highway Drainage Manual*[7]
- BDS[8]

The design process shall include hydraulic and hydrologic studies and assessment as a part of the preliminary plan development. At a minimum, this shall include the following elements:

- A site-specific hydraulic survey including cross sections,
- Identifying the hydraulic history of the site including previous flood events and historical high-water elevations,
- Developing the design flood events and low water flow,

[7] The *Alaska Highway Drainage Manual* is available online at the DOT&PF web site. It is based in part on the predecessor to the BDS.
[8] BDS Section 2.6 "Hydrology and Hydraulics" contains a complete outline of appropriate hydrology and hydraulic design criteria. Other sections refer to scour and foundation design.

- A hydraulic analysis including the effects of the new bridge in regard to high-water elevation, energy grade elevation, energy slope, and channel velocity,
- A scour analysis including the effects of channel contraction and pier and abutment scour depths,
- Abutment and bank protection including the size of riprap material, embankment slope and placement of armoring,
- Features as may be required for fish passage, ice movement and debris accumulation Coordinate fish passage analysis with State of ADF&G, Habitat Division,
- Coordination with the geotechnical engineer

A report outlining the above listed items and sealed by an engineer registered in the State of Alaska shall be provided.

4.2 Hydraulic Site Survey and Site information

For each new bridge a hydraulic site survey shall be performed. This shall include:

- Provide a basis of survey including coordinate system, north arrow, survey monuments and project datum elevation.
- Identifying OHW elevation. Include a description of high-water evidence such as a distinct mark on the bank, erosion, shelving, changes in vegetation or other distinctive characteristics.
- A minimum of four cross-sections downstream and three upstream of the structure. Cross-sections are taken normal to the flow direction that defines the floodplain. The cross sections shall include the banks and channel bottom structure. They shall be spaced approximately one channel width apart. Each cross section shall be long enough to encompass the limits of the 500-year floodplain.
- A survey of horizontal and vertical location of other private and public structures that may be affected by the project and/or the hydraulic structure's performance. This may include downstream crossing if the new crossing will increase the channel cross section and remove a restriction to channel flow.

4.3 Hydraulic History of the Site

For each new bridge identify and outline the hydraulic history of the site. This shall include records of past floods, available United States Geological Survey (USGS) records, local observations, high water marks and other historical data.

4.4 Design Flood Event

Develop the flood magnitude estimations for the site, including the 50-, 100-, and 500-year flood events. This shall include the estimated flow rates and elevation for each event. Hydraulic Analysis
Model the 50-, 100-, and 500-year floods, and note design high water elevation, energy grade elevation, energy slope, channel velocity and Froude number. In most cases a one-dimensional

Hydrologic Engineering Centers River Analysis System (HEC–RAS) computer model will suffice for this. Both the existing condition and the condition with the proposed bridge shall be modeled.

Conduct a floodplain study and compare the results to FIRM maps, to determine what the backwater elevation increases will be as a result of the bridge. Provide design methods to alleviate unwanted increases.

4.5 Scour Analysis

Analyze scour potential for the proposed structure for the 100-year and 500-year floods, including estimated degradation, contraction, abutment, and pier scour depths.

Provide counter measures for scour.

4.6 Ice Analysis

Report shall recommend ice thickness and strength for structural design of piers. Provide recommendations for use with BDS ice load provisions.

4.7 Clearance

The minimum vertical clearance between the lowest member on the structure (low chord) and the 100-year flood shall be 3 feet, except where larger clearance is required by the USCG for navigable waterways. The designer shall also consider whether larger clearances are required for debris, ice, and aufeis, based on the environment and the potential for ice or log jams.

The hydraulics and hydrology report shall specify the clearances required for bridge design.

4.8 Abutment and Bank Protection

Provide the size of rip rap required, the method of placement (to include geotextile or filter fabric underlayment), the extents of the protected areas, and the depth of the key and length of toe.

Vegetative streambank stabilization measures should be employed where flow levels are appropriate.

4.9 Fish Passage Analysis

Determine whether the stream contains anadromous fish or not. ADF&G, Division of Habitat, maintains a catalog of waters deemed important to the spawning, rearing or migration of anadromous fish. If the stream in question is listed by ADF&G as anadromous, provide a bridge or a fish passage culvert in accordance with Section 7 of this chapter, and coordinate with the ADF&G, Habitat Division for construction permitting.

4.10 Storm Water Drainage

The bridge structure and approaches must conform to the current Alaska Storm Water Regulations, both for the construction and in service maintenance periods.

5 Structural[9]

5.1 General

Design new bridges, including buried structures such as culverts, in accordance with the BDS, as modified herein.

Bridge design and construction shall be based on the materials and other requirements described in the "*SSHC"* as modified herein.

5.2 Deck

Bridge decks shall be cast-in-place or pre-cast reinforced concrete at least 6 inches thick. All reinforcing steel in the deck shall be epoxy-coated (for precast girders this includes the stirrups). The concrete cover on reinforcing steel in cast-in-place and pre-cast decks shall be at least 2.5 inches. Use a full-width membrane on all concrete bridge decks, overlaid with four inches of asphalt[10]. Include 50 psf for the total dead load of surfacing on concrete decks.

Open-grid steel decks shall not be used.

Stay-in-place forms may be used only with the prior approval of the MSB.[11]

If the ADT is less than 400[12], then a preservative-treated timber deck conforming to the BDS and Section 5.5 may be used. Unless otherwise permitted by the MSB, timber decks shall be provided with a bituminous wearing surface at least two inches thick in accordance with the BDS (either plant mix asphalt or chip seal). An allowance of 26 psf for the dead load of future surfacing on timber decks is required.

[9] Most of these requirements are from the DOT&PF *Pre-construction Manual* (as of 2013) and comments by DOT&PF on this document. The *Manual* requirements have been modified to improve clarity and to change references to the chief bridge engineer, the state foundation engineer, and the state geotechnical engineer.
[10] This allows future milling operations without damaging the membrane.
[11] Stay-in-place forms are discouraged because they hinder future inspection of the under-side of the deck. Stay-in-place forms have been accepted on a case-by-case basis in Alaska – most often in steel box girders, where they also improve lateral and torsional stiffness during construction.
[12] A road with an ADT less than 400 is considered to be a very low volume road. For example, in a suburban setting, a local road with an ADT of 400 might serve 40 residences.

5.3 Superstructure

The bridge superstructure (girders, beams, diaphragms) shall be reinforced concrete, pre-stressed concrete, or steel. See Section 5.10 for use of rail cars and other non-bridge components for bridge superstructure.

Exception: if the ADT is less than 400, and if not prohibited by environmental permit requirements, then the bridge superstructure may be preservative-treated timber. See Section 5.5 regarding the use of preservative-treated wood.

5.4 Substructure

5.4.1 Materials

The bridge substructure (abutments, piers, foundations) shall be constructed from any combination of the following materials:

- cast-in-place or pre-cast reinforced concrete or pre-stressed concrete,
- steel piles,
- reinforced concrete piles or piers.

Also, Mechanically Stabilized Earth (MSE) systems may be used to support abutments of bridges, under the following conditions:

- MSE systems are prohibited at all water crossings,
- if used for multi-span bridges, differential settlement between piers and abutments shall be addressed in the geotechnical report and the structural computations,
- if piles are used with MSE systems, the geotechnical report and structural computations shall consider vertical and lateral interactions between the two components.

Exception: if the ADT is less than 400, and if not prohibited by environmental permit requirements, then preservative-treated wood abutments and piers may be used, including preservative-treated timber piles. See Section 5.5 regarding the use of preservative-treated wood.

5.4.2 Elastomeric bearings

Elastomeric compounds used in the construction of bridge bearing pads shall contain only virgin natural polyisoprene (natural rubber) as the raw polymer. Do not use Neoprene. The prohibited use of Neoprene is unique to the MSB. ASBM allows for the use of Neoprene depending on the availability of natural rubbers. Use design method “B” in accordance with BDS Article 14.7.5.

5.5 Use of preservative-treated wood

As noted in previous sections, preservative-treated wood may be used for bridge components if not prohibited by environmental permit requirements. In addition, notwithstanding the requirements of SSHC Section 714:

- All treated wood products in this project[13] shall be produced in compliance with the BMP.
- All treated wood in this project shall be certified by an independent third-party inspection agency to have been produced in compliance with the BMPs.
- Bridge construction contract documents shall require the contractors and pertinent sub-contractors to be familiar with and apply as appropriate the installation and maintenance guidelines in the BMPs.
- Do not use creosote-treated wood for components subject to frequent public contact (such as pedestrian/equestrian/bicycle railing).

5.6 Bridge rail

Of the multiple rail options provided in the Alaska Bridges and Structures Manual (ABSM), the MSB requires the use of DOT&PF "Alaska Multi-State Bridge Rail" unless an alternative is approved or directed by the MSB.[14] At culverts, alternatively use a traffic barrier that complies with the *"Pre-Construction Manual."*

Bridges on residential and collector roads or bridges with pedestrian pathways shall have a rail with a minimum height of 42" and gaps between post no greater than 4" where the pedestrian traffic will be located.

5.7 Design live loads

5.7.1 Typical live load

The design live load shall be HL-93[15] for bridges on all of the following:

- major hauling routes
- routes to major shipping points
- routes to resource areas
- routes to an industrial site

The MSB will identify bridges on these routes.

[13] As of 2020, the *SSHC s* only require "timbers" to be produced in compliance with the BMPs; they do not require glued-laminated products and piling to be produced in compliance with the BMPs.

[14] Some other crash-tested rail (such as a concrete shape) may be desirable in some circumstances; such bridge rail shall comply with NCHRP 350 Test Level Three. These requirements are from the *"Pre-Construction Manual"* (as of 2013). NOTE: on very low volume, low speed local roads, Test Level One may be appropriate since, according to the BDS ¶13.7.2, p. 13-7, Test Level One is "taken to be generally acceptable for…very low volume, low speed local roads."

[15] This is the current design load required by DOT&PF and the BDS for highway bridges. The HL-93 loading corresponds to a uniform lane load plus a tractor-trailer weighing 36 tons or a single tandem trailer with closely spaced axles weighing 25 tons.

Also, the design live load shall be HL-93 for:

- bridges with total span of 100 feet or more between abutment bearings
- bridges with two or more traffic lanes in each direction
- any bridge funded in whole or part by federal aid
- any other bridge specifically identified by the MSB to be designed for HL-93

5.7.2 Reduced live load for low truck-volume roads[16]

If the Average daily truck traffic (ADTT) is between 100 and 1000, inclusive, then 95 percent of the force effect of HL-93 may be used for design, and if the ADTT is less than 100, then 90 percent of the force effect of HL-93 may be used.

No other reductions in design live load will be allowed, regardless of traffic volume.

The ADTT and percentage of HL-93 used for design shall be shown on the design drawings.

5.8 Seismic – special requirements

The "*Guide Specifications for LRFD Seismic Bridge Design"* may be used in lieu of the seismic requirements in the BDS.

The ends of the superstructure of simply supported multiple span structures shall be tied together and to the substructure with longitudinal restrainers designed for the force specified in the BDS.

Do not use skew angles for bridges greater than 30 degrees unless approved by the MSB.

Do not use steel rocker bearings.

Provide all bearings with transverse restraints.

Anchor bolts shall not be used to resist lateral loads.

Provide all abutments with a full-width, continuous-bearing seat.

[16] These provisions are from BDS, 2008 Interims, 3.6.1.1.1 commentary, p. 3-18. They will result in slightly more economical bridges for routes with low truck volume while still allowing safe passage of fire trucks, concrete trucks, fuel and water trucks, busses, etc. For reference, Indiana Department of Transportation Design Memorandum No. 07-05, dated March 22, 2007, lists the following approximate weights of typical vehicles: school bus carrying up to 84 passengers (15 tons), loaded garbage truck (27 tons), single-unit fire engine (27 tons), loaded ready-mix-concrete truck (30 tons), and tractor-apparatus fire engine (36 tons). These example vehicle weights have not been verified and should not be used for design.

For concrete abutment and retaining walls, use dowels in addition to normal shrinkage and temperature steel on the compression face to connect the stemwall to footing.
Concrete spread footings for abutments and piers shall have reinforcement in the top face to resist seismic forces. Concrete footing reinforcement in abutments and piers shall be a minimum reinforcement of #8 bars at 8 inches each way, top and bottom.

Extend concrete column reinforcement as far as possible into the pier cap beam and footing.

Splices of vertical concrete column reinforcement shall occur only within the centermost (mid-height) section of columns or in accordance with the *"Guide Specifications for LRFD Seismic Bridge Design."*

5.9 Skewed bridges

In a skewed bridge, the loads tend to distribute to the supports in a direction normal to the support. This causes a greater portion of the load to be concentrated at the obtuse corners of the span and less at the acute corners. The structural computations shall demonstrate that this effect has been evaluated. On concrete girders, additional shear reinforcing shall be provided; on steel girders, additional transverse stiffeners may be required, depending on diaphragm type and location.

5.10 Use of railcars and other non-bridge structures

Use of non-bridge components such as flat rail cars, truck trailers, and landing ramps (all of which are hereafter called "non-bridge components") for the superstructure of bridges is discouraged, whether refurbished or not, and is allowed only under the following conditions:

- ADT is less than 100.
- A Professional Engineer, registered in the State of Alaska, shall evaluate the condition of the non-bridge components and shall rate the non-bridge component's deck and structure capacity in accordance with the *"Manual for Bridge Evaluation"* using the Design Load Rating procedure for the HL-93 loading at the Inventory level.
- Calculated Rating Factor (RF) shall not be less than 0.90.
- In addition to all other required computation submittals, the load rating computations shall be sealed and submitted to the MSB for their records.
- Abutments, deck, bearings, connections, and all other bridge elements shall be designed in accordance with the BDS for at least the rated load.
- The ADT and percentage of HL-93 used for design of the abutments shall be shown on the design drawings.
- The deck wearing surface shall comply with the BDS and shall be preservative-treated timber planks securely fastened to the deck, or plant-mix asphalt or chip seal.
- Bridge rail shall comply with Section 5.6

5.11 Welding

All welding shall be in accordance with *SSHC* Section 504. The minimum level of non-destructive examination is specified in American Welding Society (AWS) D1.5 Section 6.7. The contractor shall provide all required QC inspection and non-destructive examination.

6 Stream Crossing Culverts

6.1 General Requirements

The following criteria apply to all culverts that cross waterbodies, such as rivers, lakes, streams and drainage ways with intermittent flow:

- Prior to preliminary plat submittal, contact the ADF&G, Division of Habitat to determine if a stream reach harbors fish. If so, stream crossing culverts shall be designed, constructed, and maintained according to section 6.2 Fish Passage Culverts.
- Stream crossing culverts shall be placed as close to the pre-existing channel alignment as possible. Avoid placing culverts at pools and stream bends.
- Road alignment shall be as close to perpendicular to the stream channel as possible.
- Culvert slope shall be within 25 percent of the natural stream slope. For example, if the natural stream slope is 1.0 percent, the minimum design slope of the culvert would be 0.75 percent and the maximum design slope would be 1.25 percent.
- Culvert outlet and inlet protection shall be used as necessary to reduce the risk of scour and perching.
- Stream crossing culverts shall be composed of a single pipe or arch for at least the bankful width of the stream channel. Additional width is required for streambanks in fish passage culverts per section 7.1.
- Overflow culverts may be used but should be placed at a higher elevation so that flows up to the ordinary high-water mark (OHWM) pass through the primary culvert.
- Stream crossings shall maintain the connectivity of wetlands adjacent to stream channels and shall accommodate sheet flow within such wetlands.
- Stream crossing culverts shall not interfere with the functioning of floodplains and shall be designed to accommodate the 100-year flow.
- In cases of crossings within high entrenchment ratio environments, the ratio of the flood prone width to the OHW width is greater than 2.2, floodplain overflow culverts may be beneficial to floodplain connectivity and can be used to pass the design flow. Minimum width requirements for the primary culvert still apply.
- Stream crossing culverts shall have a minimum diameter of three feet.
- Stream crossing culvert pipes and arches shall be metal.

- Round stream crossing culverts shall have a minimum invert burial depth in the stream substrate of forty percent (40%) of the culvert diameter, as measured from the thalweg.
- Box culverts and pipe arch culverts, should have a minimum invert burial depth of twenty percent (20%) of the culvert's rise into the substrate.
- Bottomless culverts with footers need to have sufficient burial depth and armor material to protect the footings from potential scour over the life of the structure.
- Culverts longer than 100 feet require appropriate maintenance access.

6.2 Fish Passage Culverts

These criteria provide general design guidance for road, pathway or other crossings of fish-bearing streams using culverts to maintain the full hydrologic functioning of the water body they are crossing. Site-specific conditions, such as multi-thread or braided channels, may require alternate design approaches, such as a bridge.

6.2.1 Pre-design Conference

For privately owned roads, schedule a fish passage pre-design conference with DPW prior to permit submittals. The pre-design conference is to:

- determine required permits,
- coordinate interagency requirements,
- determine any site-specific design requirements; and
- establish a plan review process.

6.2.2 Stream Simulation Method

Stream simulation methodologies shall be used for the design of all fish-bearing stream crossings. The stream simulation method uses reference data from a representative section, or reference reach, of the specific water body crossed. This method attempts to replicate the natural stream channel conditions found upstream and downstream of the crossing. Sediment transport, flood and debris conveyance, and fish passage are designed to function as they do in the natural channel.

Reference Reach Investigation

- The design engineer shall select a reference reach on the water body being crossed that is outside any anthropogenic influence, such as an existing culvert. In most cases for new crossings, the reference reach can be at the crossing location.
- The length of the reference reach should be a minimum of 20 times the reference bankfull width and no less than 200 feet and shall include at least 3 stable grade control features.
- If there is not a suitable reference reach on the water body being crossed, a reference reach may be chosen from another water body with similar geomorphic and hydrologic

characteristics. The reference reach characteristics should meet the following criteria in comparison to the water body being crossed:

- The reference reach bankfull width should be at least one-half and no more than two times that of the water body being crossed.
- The reference reach bankfull discharge should be at least one half and no more than one- and one-half times the bankfull discharge of the water body being crossed; and
- The stream order of the reference reach should be within one stream order of the water body being crossed.

- For a reference reach from another water body, the geomorphic characteristics of the crossing shall be scaled using ratios of the bankfull conditions.
- The reference reach bankfull dimensions should be determined in the field by surveying a detailed cross section at the upper 1/3 of a representative riffle.
- Reference data shall include, at a minimum:
- channel width at OHW,
- bankfull width,
- bankfull cross-sectional area,
- bankfull slope based on the longitudinal profile,
- substrate, and
- potential for floating debris.

Culvert Size, Slope, and Substrate

In addition to the criteria identified in Section 6.1, the following criteria apply to all fish passage culverts:

- **Minimum Sizes:** Round culvert pipes shall have a minimum diameter of seven (7) feet and full-invert box arch culverts should have a minimum height of seven (7) feet. Culverts shall have a minimum vertical clear distance of four (4) feet from the constructed stream thalweg to the top of the culvert.
- Under normal flow conditions, the channel within or under the fish passage culvert shall not differ from the reference reach condition in regard to the channel width at OHW, cross-sectional area, slope, substrate, and ability to pass floating debris.
- The width of fish passage culverts shall not be less than the greater of 1.2 times the channel width at OHW and 1.0 times the bankfull width.
- The use of smooth wall culverts is prohibited.
- The use of trash racks or debris interceptors is prohibited.
- Round culvert pipes shall have a minimum invert burial depth of 40 percent of the culvert diameter into the substrate. Arch or box culverts shall have a minimum invert burial depth

of 20 percent of the culvert's rise into the substrate, unless scour analysis shows less fill is acceptable. The minimum invert burial depth is one foot.

- **Substrate Material:** The gradation of the substrate material within a fish passage culvert shall be designed to be a dense, well-graded mixture with adequate fines to ensure that the majority of the stream flows on the surface and the minimum water depth is maintained. The combined gradation should have a minimum of 5% passing the #10 sieve (2mm).
- Substrate material within or under the fish passage culvert shall remain dynamically stable at all flood discharges up to and including a 50-year flood. Dynamic stability means that substrate material mobilized at higher flows will be replaced by bed material from the natural channel upstream of the crossing. For crossings without an adequate upstream sediment supply, the substrate material within the crossing shall be designed to resist the predicted critical shear forces up to the 100-year flood. For culverts in sand bed channels or with a slope of 6 percent or greater, substrate retention sills may be required to allow the bed load to continuously recruit within the culvert.
- If substrate retention sills are used, they shall have a maximum weir height of one half of the culvert invert burial depth. Substrate retention sills shall be spaced so that the maximum drop between weirs is 4 inches. The use of sills without substrate is not allowed.
- **Low Flow Channel**: Substrate material within or under the fish passage culvert shall incorporate a low flow channel. The low flow channel should mimic the reference reach where possible. If the low flow channel dimensions are not discernable from the reference reach, the low flow channel should have a cross-sectional area of 15 to 30 percent of the bankfull cross-sectional area and a minimum depth of 4 inches for juvenile fish and 12 inches for adult fish. The low flow channel should be defined by rock features that will resist critical shear forces up to the 100-year flood.
- **Streambanks**: Except as listed below, constructed streambanks shall be included inside fish passage culverts to protect the culvert from abrasion, provide resting areas for fish, capacity for flood stage flow increases and provide for small mammal crossing. The streambanks shall be constructed of rock substrate designed to be stable at the 100-year flood. The streambank width should be a minimum of 1.5 times the maximum sieve size of the streambed material (D_{100}). The crossing culvert width shall be increased to allow for the channel width plus the streambanks.
- Streambanks are not recommended for the following locations:
    - Sand bed streams
    - Low slope (<1%) wetland complexes
    - Permafrost and aufeis areas
    - Streams with significant ice floes

7 Appendices

7.1 Appendix 1 - Bridge Final Design Check List

Bridge Final Design Checklist

№	DESCRIPTION	PREPARED	DATE
1.	Check Stationing against the roadway plans for each bridge structure: Bridge №: ____, Station _____. Bridge №: ____, Station _____. Bridge №: ____, Station _____.	 _____ _____ _____	 _____ _____ _____
2.	Check profile grade against the roadway plans for each bridge structure: Bridge №: ____, elevations at begin ____, end ____. Bridge №: ____, elevations at begin ____, end ____. Bridge №: ____, elevations at begin ____, end ____.	 _____ _____ _____	 _____ _____ _____
3.	Does the Hydraulic and Hydrologic Summary Table match the Final Hydraulic and Hydrologic Report?		
4.	Does Foundation Summary Table match the Final Foundation Engineering Report?		
5.	Does the bridge naming conform to standards		
6.	Have all of the bridge components been addressed in the Specifications for material requirements, construction tolerances, method of payment, etc?		
7.	Do the bridge plans sheets have the following titles? • General Layout • Site Plan • MSE / Retaining Wall / Foundation Layout • Abutments • Abutment Details • Piers • Pier Details • Typical Section • Framing Plan • Girders • Girder Details • Miscellaneous Details • Approach Slabs • Steel Bridge Railing • Log of Test Holes		
8.	Is the bridge number provided on all bridge plan sheets?		
9.	Does the vertical clearance under the bridge satisfy the DCM requirements?		
10.	Are all of the plans stamped and signed by the Engineer of Record?		
11.	Are all plans readable when reduced in size?		

12.	Have all of the applicable standard plans been identified?		
13.	Has all specifications language been included in the specifications and NOT on the plan sheets?		
14.	Has staged construction and traffic control been shown if required?		
15.	Have all cross references between plan sheets been verified?		
16.	Have bridge railing to roadway guardrail transitions been addressed?		
17.	Have provisions been made for current and future utilities (always inboard of the fascia girder) and blockouts in the diaphragms and backwalls?		
18.	Have bridge mounted utilities been shown and properly identified on the plans?		
19.	Are reinforcing steel schedules / bend diagrams provided on the bridge plans?		
20.	Check for embankment treatment (matching of dirt to wall) at abutments and wingwalls.		
21.	Check for side slope consistency or transition from roadway slopes (____) to bridge side slopes at abutment (____).		
22.	Have the Plans, Specifications, and Estimate been compared against one another and checked?		
23.	Do all of the pay item names and numbers match the specifications?		
24.	Is the terminology used throughout the PS&E used appropriately and consistently?		
25.	Is the PS&E free of brand names, product names, trade names, and other proprietary items?		
26.	Are all estimated quantities appropriately rounded?		
27.	Have nonstandard practice and items of work been reviewed and approved by the MSB?		

CODE ORDINANCE

Sponsored by: Assemblymember Sumner
Introduced:
Public Hearing:
Action:

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 26-031

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY AMENDING MSB 17.73 MULTIFAMILY DEVELOPMENT DESIGN STANDARDS TO ALIGN PERMITTING AND DESIGN STANDARDS WITH THE SCALE AND COMPLEXITY OF DEVELOPMENT PROJECTS.

BE IT ENACTED:

Section 1. Classification. This ordinance is of a general and permanent nature and shall become a part of the Borough Code.

Section 2. Amendment of section. MSB 17.73.030 is hereby amended as follows:

(A) This chapter applies to all multifamily developments, including substandard dwellings, which meet or exceed the density threshold of this chapter, regardless of the form of ownership. This chapter applies to:

(1) all new multifamily developments started after the effective date of the ordinance codified in this chapter.

(2) all structural additions totaling 300 square feet and greater to an existing multifamily development.

(B) The provisions of this chapter are not applicable and may not be used for multifamily

developments or buildings within the cities of Houston, Palmer, or Wasilla.

(C) The provisions of this chapter are the responsibility of the developer.

(D) Multifamily developments constructed with two dwelling units or fewer per lot, regardless of lot size, are exempt from this chapter.

Section 3. Adoption of paragraph. MSB 17.73.040(A)(5) is hereby adopted as follows:

(5) Density thresholds for Common interest ownership sites, commonly referred to as condominium sites, are as follows:

(a) individual units of a condominium site that are less than 40,000 square feet in size are considered dwelling units and shall be governed by paragraphs one through three of this subsection.

(b) individual units of a condominium site that are 40,000 square feet in size or greater, shall be treated as individual lots, and are not considered dwelling units.

Section 4. Amendment of subsection. MSB 17.73.050(B) is hereby amended as follows:

(B) A complete application includes the following:

(1) nonrefundable multifamily development permit

fee;

(2) [THREE COPIES OF THE FOLLOWING DOCUMENTS:

(a) PERMIT APPLICATION;

(b) CERTIFIED SITE PLAN (SEE DEFINITION);

(i) THE LANDSCAPE AND DRAINAGE PLANS MAY BE INCLUDED AS PART OF THE CERTIFIED SITE PLAN;]

(c) [Repealed by Ord. 12-169, § 2, 2013]

(d) [DRAINAGE PLAN;]

(3) [Repealed by Ord. 12-169, § 2, 2013]

(4) additional information as determined by the director.

(5) permit application;

(6) certified site plan;

(a) the landscape and drainage plans may be included as part of the certified site plan;

(7) drainage plan;

(a) the drainage plan shall include certification by a professional engineer, licensed by the state of Alaska, verifying that the provisions of MSB 17.73.155 have been met.

Section 5. Repeal of paragraph. MSB 17.73.130(A)(1) is hereby repealed in its entirety.

Section 6. Adoption of paragraph. MSB 17.73.130(A)(13) is hereby adopted as follows:

(13) All exterior walls of each dwelling unit shall be located within 150 feet of the drivable surface of a vehicular circulation road.

Section 7. Repeal of subsections. MSB 17.73.150(B), (C), and (D) are hereby repealed in their entirety.

Section 8. Amendment of subsection. MSB 17.73.150 (F) is amended as follows:

(F) Vehicle Parking Space Design Requirements.

(1) Standard:

(a) length: 20 feet;

(b) width: ten feet; and

(c) vertical clearance: seven feet;

(2) Barrier-free (ADA **compliant**) **design is required in accordance with the Americans with Disabilities Act.** [:]

(a)[ONE BARRIER-FREE PARKING STALL SHALL BE PROVIDED FOR EVERY 25 REQUIRED PARKING STALLS.

(i) WIDTH: EIGHT FEET PLUS A FIVE-FOOT ADJACENT ACCESS AISLE;

(ii) LENGTH: 20 FEET; AND

(iii) VERTICAL CLEARANCE: EIGHT FEET.]

Section 9. Adoption of subsections. MSB 17.73.150 (G), (H), and (I) are adopted as follows:

(G) All multifamily developments shall comply with MSB 11.12 for access standards.

(H) Vehicular circulation.

(1) Multifamily developments consisting of four detached dwelling units (commonly referred to as a detached fourplex), or any multifamily development with five to ten dwelling units, whether attached or detached, shall provide vehicular circulation. Vehicular circulation roads shall:

(a) be constructed and compacted to support vehicles weighing up to 75,000 pounds;

(b) have a drivable surface of at least 20 feet in width; and

(c) include a turnaround, in accordance with the borough's Subdivision Construction Manual, for dead-end access routes exceeding 150 feet in length.

(i) The turnaround may be an alternate turnaround design as described in the borough's Subdivision Construction Manual.

(2) Multifamily developments consisting of more than 10 dwelling units shall construct vehicular circulation roads in accordance with paragraph one of this subsection and at a minimum to the pioneer road standards of the borough's Subdivision Construction

Manual.

(a) For emergency service purposes, vehicular circulation roads exceeding 150 feet in length, shall conform to MSB 11.20 and be named.

(I) All bridges and water crossings providing vehicular access to more than one dwelling unit shall be designed and constructed in accordance with the borough's Design Criteria Manual standards.

Section 10. Adoption of section. MSB 17.73.155 is hereby adopted as follows:

17.73.155 DRAINAGE PLAN.

(A) Runoff mitigation measures shall meet the following criteria:

(1) Treat the initial 0.5 inch of post-development runoff for each storm event;

(2) Provide a minimum of 12 hours of detention for the post-development runoff in excess of pre-development runoff volumes for a 1-year, 24-hour storm;

(3) Maintain the post-development runoff peak flow to less than 1.10 times pre-development runoff peak flow at all project discharge points;

(4) Storm water conveyance and drainage ditches shall be sized to pass a 10-year, 24-hour storm event. Control flows in conveyance channels so that the

transport of particles will not occur during a 10-year, 24-hour storm.

(B) Multifamily developments consisting of fewer than five dwelling units contained within fewer than three structures are exempt from this section.

Section 11. Amendment of section. MSB 17.73.170 is hereby amended to read as follows:

(A) Lighting standards provide visual safety in high traffic areas within the development while preventing excessive lighting and glare on adjacent properties.

(B) Exterior lighting shall comply with the following standards:

(1) All parking areas exceeding 18 on-site parking stalls must have lighting.

(2) Lights in parking lots must be [NON-GLARE] **shielded to direct the light towards the ground** and must be mounted no more than 20 feet above the ground.

(4) [Repealed by Ord. 12-169, § 2, 2013]

[(5) GLARE AND ILLUMINATION ASSOCIATED WITH EXTERIOR LIGHTING SHALL BE CONTAINED ON THE SUBJECT PROPERTY AND NOT IMPACT ADJACENT PROPERTIES.]

(C) Multifamily developments consisting of fewer than five dwelling units contained within fewer than

three structures are exempt from this section.

Section 12. Repeal of section. MSB 17.73.180 is hereby repealed in its entirety.

Section 13. Amendment of paragraph. MSB 17.73.190(B)(4) is hereby amended as follows:

(4) Perimeter Fences and Walls.

(a) A perimeter fence or wall is not required but may be installed **in lieu of perimeter landscaping**. If a perimeter fence or wall is installed, in [addition to] **lieu of** the perimeter landscaping, then the following standards apply:

(i) walls and fences shall be constructed of high-quality materials, such as treated wood, decorative blocks, brick, stone, wrought iron, chain link, and other natural and appropriate building materials.

(ii) walls and fences shall be a minimum of six feet in height.

(iii) walls and fences shall provide visual screening of the development from abutting properties.

Section 14. Amendment of section. MSB 17.73.250 is hereby amended as follows:

- "Dwelling unit" means a single unit providing

complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation or a portion of the land area **less than 40,000 square feet in size** of a planned development, residential development or site condominium project designed and intended for residential construction.

• **"Vehicular circulation road" means the on-site system of access roads designed to provide safe and efficient movement of vehicles to more than one dwelling unit within a property.**

Section 15. Amendment of section. MSB 17.125.010 is hereby amended as follows:

• "Primary vehicle access" means, in the context of multifamily development, a vehicle access to the development that is, at a minimum, characterized by the following elements: (1) full-turn vehicle access (i.e., turns allowed in all directions); (2) entryway signage with name of development and address; and (3) principal entry for prospective owners or renters. All public and private roads must meet [DESIGN STANDARDS AS OUTLINED IN THE BOROUGH'S SUBDIVISION CONSTRUCTION MANUAL AND] addressing/street naming requirements as designated by the geographic information systems department.

Section 16. Effective date. This ordinance shall take effect upon adoption.

ADOPTED by the Matanuska-Susitna Borough Assembly this - day of -, 2026.

_____
EDNA DeVRIES, Borough Mayor

ATTEST:

_____
LONNIE R. McKECHNIE, CMC, Borough Clerk

(SEAL)

By: A. Strawn
Introduced:
Public Hearing:
Action:

MATANUSKA-SUSITNA BOROUGH
PLANNING COMMISSION RESOLUTION NO. 25-09

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH PLANNING COMMISSION RECOMMENDING APPROVAL OF AN ORDINANCE AMENDING MSB CHAPTER 17.02 MANDATORY LAND USE PERMIT AND MSB CHAPTER 17.73 MULTIFAMILY DEVELOPMENT DESIGN STANDARDS TO ALIGN PERMITTING AND DESIGN STANDARDS WITH THE SCALE AND COMPLEXITY OF DEVELOPMENT PROJECTS.

WHEREAS, Assembly Ordinance 25-031 adopts standards that ensure safety, accessibility, and environmental stewardship while balancing the regulatory burden for small-scale developments; and

WHEREAS, applicability standards for multifamily regulations are clarified under section 17.73.030; and

WHEREAS, to improve fire access and traffic movement, the ordinance outlines vehicular circulation requirements based on project size; and

WHEREAS, developments with four detached units or between five and ten units must meet minimum circulation and fire apparatus access standards, including a 20-foot drive width and turnarounds for dead-end access; and

WHEREAS, developments with more than ten dwelling units must follow the borough's Subdivision Construction Manual; and

DRAFT

WHEREAS, the adoption of drainage requirements ensure developments are designed to handle stormwater appropriately; and

WHEREAS, the proposed standards support the goals and objectives of the Matanuska-Susitna Borough Comprehensive Plan.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Planning Commission hereby recommends approval of Assembly Ordinance 25-031.

ADOPTED by the Matanuska-Susitna Borough Planning Commission on this __ day of _____, 2026.

DRAFT

RICHARD ALLEN, Chair

ATTEST

Lacie Olivieri, Planning Clerk

(SEAL)

YES:

NO:

CORRESPONDENCE & INFORMATION

Outlook

Data Centers

From Nicole Brunnhoelzl <nbrunnhoelzl@icloud.com>
Date Fri 6/5/2026 12:51 PM
To Planning <planning@matsugov.us>

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

Please no Data Centers in the Mat-Su Borough. More regulations surrounding Ai and efforts to reduce digital junk to free up storage is a better use of our time and resources.

Thank you,
Nicole Brunnhoelzl

Mat-Su land, home, and business owner.

Sent from my iPhone

COMMISSION BUSINESS

MATANUSKA-SUSITNA BOROUGH
Planning and Land Use Department
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7822
Matsu.gov

MEMORANDUM

DATE: June 8, 2026

TO: Planning Commission

FROM: Alex Strawn, Planning and Land Use Director

SUBJECT: Tentative Future PC Items

Upcoming PC Actions

Quasi-Judicial

- Houdini's Herbs – Marijuana Retail Facility; 8164B01L001A (Staff: Rick Benedict)
- Butte Land Co. – Earth Materials Extraction; 17N02E35A024 (Staff: Natasha Grover)
- Harman Northeast – Earth Materials Extraction; 18N01W15B015 (Staff: Rick Benedict)
- Three Bears Alaska Inc. – Core Area Conditional Use Permit; 8211000L001 (Staff: Rick Benedict)
- Hart – Variance; 8578B05L015A (Staff: Natasha Grover)
- Riordan – Variance; 6041B08L010 (Staff: Natasha Grover)
- Knik Landing - Alcohol Beverage Uses - 7186000L001 (Staff: Rick Benedict)
- Arctic Fairways – Alcohol Beverage Dispensary; 8242000L004 (Staff: Natasha Grover)
- Punt Brothers Construction – Variance; 6040B03L003 (Staff: Natasha Grover)

Legislative

- Historic Preservation Plan (HPP) (Staff: Paul Clark)
- MSB Borough-Wide Comprehensive Plan (Staff: Jason Ortiz/Alex Strawn)