Kenai Peninsula Borough

144 North Binkley Street
Soldotna, AK 99669

Meeting Agenda

Planning Commission

Monday, May 11, 2026 **7:30 PM** **Betty J. Glick Assembly Chambers**

Zoom Meeting ID 907 714 2200

Remote participation will be available through Zoom, or other audio or video means, wherever technically feasible

ZOOM MEETING DETAILS
Zoom Meeting Link: https://us06web.zoom.us/j/9077142200
Zoom Toll Free Phone Numbers: 888-788-0099 or 877-853-5247
Zoom Meeting ID: 907 714 2200

To join the meeting from a computer, visit the Zoom meeting link above. If you connect by computer and do not have speakers or a microphone, connect online and then select phone for audio. A box will come up with toll free numbers, the meeting ID, and your participant number. To attend the Zoom meeting by telephone, use the Zoom toll free phone numbers listed above.

The hearing procedure for the Planning Commission public hearings are as follows:

1) Staff will present a report on the item.

2) The Chair will ask for petitioner's presentation given by Petitioner(s) / Applicant (s) or their representative – 10 minutes

3) Public testimony on the issue. – 5 minutes per person

4) After testimony is completed, the Planning Commission may follow with questions. A person may only testify once on an issue unless questioned by the Planning Commission.

5) Staff may respond to any testimony given and the Commission may ask staff questions.

6) Rebuttal by the Petitioner(s) / Applicant(s) to rebut evidence or provide clarification but should not present new testimony or evidence.

7) The Chair closes the hearing and no further public comment will be heard.

8) The Chair entertains a motion and the Commission deliberates and makes a decision.

All those wishing to testify must wait for recognition by the Chair. Each person that testifies must write his or her name and mailing address on the sign-in sheet located by the microphone provided for public comment. They must begin by stating their name and address for the record at the microphone. All questions will be directed to the Chair. Testimony must be kept to the subject at hand and shall not deal with personalities. Decorum must be maintained at all times and all testifiers shall be treated with respect.

A. CALL TO ORDER

B. ROLL CALL

C. APPROVAL OF CONSENT AND REGULAR AGENDA

All items marked with an asterisk (*) are consent agenda items. Consent agenda items are considered routine and non-controversial by the Planning Commission and will be approved by one motion. There will be no separate discussion of consent agenda items unless a Planning Commissioner so requests in which case the item will be removed from the consent agenda and considered in its normal sequence on the regular agenda.

If you wish to comment on a consent agenda item or a regular agenda item other than a public hearing, please advise the recording secretary before the meeting begins, and she will inform the Chairman of your wish to comment.

1. Time Extension Request

KPB-7669 McGahan-Schilling Tracts 2022 Additions; KPB File 2022-031

Attachments: C1. TE_McGahan-Schilling Tracts 2022 Addn_Packet

2. Planning Commission Resolutions - None

3. Plats Granted Administrative Approval

KPB-7670 Apache Acres Part Nine; KPB File 2024-123
Kivi Shores Subdivision Addition No. 1 Kurka Replat; KPB File 2025-172
Lake Hills Subdivision Part 3 Samora Replat; KPB File 2025-154

Attachments: C3&4. Admin-Final Approvals_Packet

4. Plats Granted Final Approval (KPB 20.10.040) - None

5. Plat Amendment Request - None

6. Commissioner Excused Absences

Vacant, City of Seward

7. Minutes

KPB-7671 April 27, 2026 Planning Commission Meeting Minutes

Attachments: C7. 042726 PC Minutes

D. OLD BUSINESS - None

E. NEW BUSINESS

1. KPB-7672 Right-of-way Vacation; KPB File 2026-034V
McLane Consulting Group / Douhit
Request: Vacates a 60' X 155' section of an unnamed ROW & associated utility easement along the southeasterly lot line parallel to Wildwood Drive granted by Black Gold Estates Subdivision Amended, Plat KN 1399
City of Kenai
Staff Person Responsible: Platting Manager Vince Piagentini

Attachments: E1. ROWV-Black Gold Estates Amended Packet
PHN_ROWV-Black Gold Estates 2026 Vacation

2. KPB-7673 Ordinance 2026-14: Authorizing a communications site lease agreement with Vertical Bridge S3 Assets, LLC in Kenai
Staff Person Responsible: Land Management Officer Aaron Hughes

Attachments: E2. ORD 2026-14 Packet

3. KPB-7674 Conditional Use Permit; PC Resolution 2026-27
Applicant: Tyonek Native Corporation
Request: Removal of two culverts and replacing them with a 50' X 14' bridge within the HPD of Tyonek Creek
KPB Parcel ID # 21115043
Tyonek Area
Staff Person Responsible: Planner Morgan Aldridge

Attachments: E3. CUP_Tyonek Bridge_Packet
PHN_CUP-Tyonek Culvert

4. KPB-7675 Conditional Use Permit; PC Resolution 2026-24
Applicant: Basil
Request: To install a boat launch & dock in the HPD of Daniels Lake
KPB Parcel ID # 01322068
Nikiski Area
Staff Person Responsible: Planner Morgan Aldridge

Attachments: E4. CUP_Daniels Lake
E4. CUP_Daniels Lake_Desk Packet
PHN_CUP-Daniels Lake Boat Launch

5. KPB-7676 Conditional Use Permit; PC Resolution 2026-28
Applicant: Alaska DNR
Request: Construction of a fence within the 50' HPD of the Kenai River & Soldotna Creek
KPB Parcel ID #06030012
City of Soldotna
Staff Person Responsible: Planner Morgan Aldridge

Attachments: E5. CUP_Soldotna Creek
PHN_CUP KWF Fence

F. PLAT COMMITTEE REPORT - The plat committee will review 7 plats

G. OTHER

H. PUBLIC COMMENT/PRESENTATION

(Items other than those appearing on the agenda or scheduled for public hearing. Limited to five minutes per speaker unless previous arrangements are made)

I. DIRECTOR'S COMMENTS

J. COMMISSIONER COMMENTS

K. ADJOURNMENT

MISCELLANEOUS INFORMATIONAL ITEMS
NO ACTION REQUIRED

KPB-7704 APC Minutes / KP Fish Habitat Partnership

Attachments: Misc Info

NEXT REGULARLY SCHEDULED PLANNING COMMISSION MEETING

The next regularly scheduled Planning Commission meeting will be held Tuesday, May 26, 2026 in the Betty J. Glick Assembly Chambers of the Kenai Peninsula Borough George A. Navarre Administration Building, 144 North Binkley Street, Soldotna, Alaska at 7:30 p.m.

CONTACT INFORMATION
KENAI PENINSULA BOROUGH PLANNING DEPARTMENT

Phone: 907-714-2215
Phone: toll free within the Borough 1-800-478-4441, extension 2215
e-mail address: planning@kpb.us
website:
https://www.kpb.us/local-governance-and-permitting/leadership-governance/planning-commission/planning-commission-overview

A party of record may file an appeal of a decision of the Planning Commission in accordance with the requirements of the Kenai Peninsula Borough Code of Ordinances. An appeal must be filed with the Borough Clerk within 15 days of the notice of decision, using the proper forms, and be accompanied by the filing and records preparation fees. Vacations of right-of-ways, public areas, or public easements outside city limits cannot be made without the consent of the borough assembly.

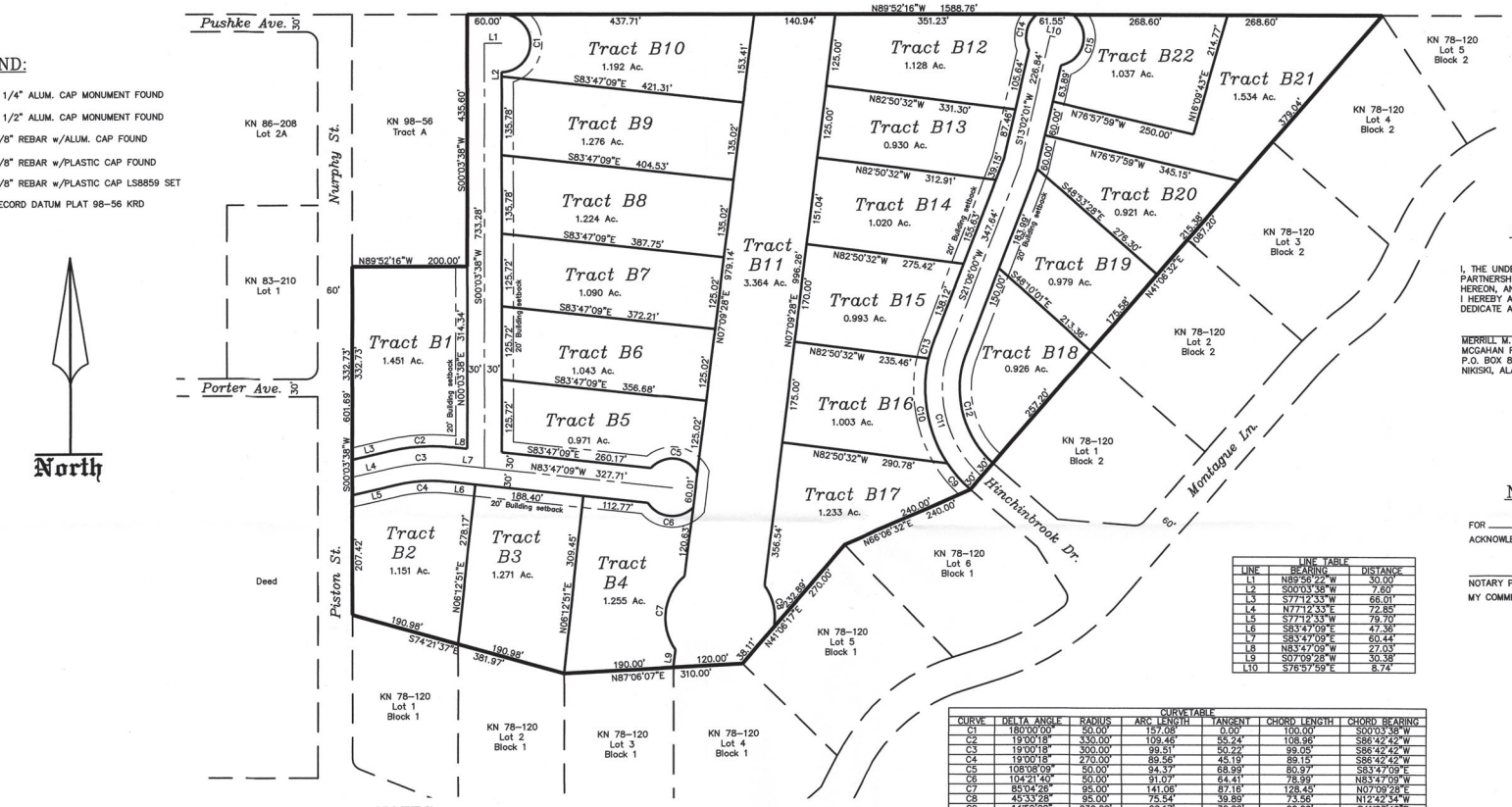
Vacations within city limits cannot be made without the consent of the city council. The assembly or city council shall have 30 calendar days from the date of approval in which to veto the planning commission decision. If no veto is received within the specified period, it shall be considered that consent was given.

A denial of a vacation is a final act for which the Kenai Peninsula Borough shall give no further consideration. Upon denial, no reapplication or petition concerning the same vacation may be filed within one calendar year of the date of the final denial action except in the case where new evidence or circumstances exist that were not available or present when the original petition was filed.

C. CONSENT AGENDA

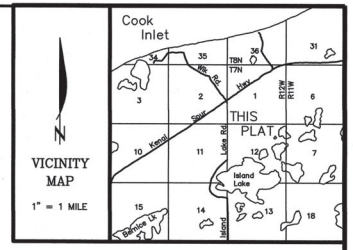
***1. Time Extension Requests**

a. McGahan-Schilling Tracts 2022 Additions; KPB File 2022-031



LEGEND:

- 3 1/4" ALUM. CAP MONUMENT FOUND
- 2 1/2" ALUM. CAP MONUMENT FOUND
- 5/8" REBAR w/ALUM. CAP FOUND
- 5/8" REBAR w/PLASTIC CAP FOUND
- 5/8" REBAR w/PLASTIC CAP LS8859 SET
- ( ) RECORD DATUM PLAT 98-56 KRD



CERTIFICATE of OWNERSHIP and DEDICATION

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THE MCGAHAN FAMILY LIMITED PARTNERSHIP IS THE OWNER OF THE REAL PROPERTY SHOWN AND DESCRIBED HEREON, AND ON BEHALF OF THE MCGAHAN FAMILY LIMITED PARTNERSHIP, I HEREBY ADOPT THIS PLAN OF SUBDIVISION, AND BY MY FREE CONSENT DEDICATE ALL RIGHTS-OF-WAY AND GRANT ALL EASEMENTS TO THE USE SHOWN.

MERRILL M. MCGAHAN
MCGAHAN FAMILY LIMITED PARTNERSHIP
P.O. BOX 8022
NIKISKI, ALASKA 99635

NOTARY'S ACKNOWLEDGEMENT

FOR _____

ACKNOWLEDGED BEFORE ME THIS_____ DAY OF _____ 20___.

_____
NOTARY PUBLIC FOR ALASKA
MY COMMISSION EXPIRES _____

PLAT APPROVAL

THIS PLAT WAS APPROVED BY THE KENAI PENINSULA BOROUGH PLANNING COMMISSION AT THE MEETING OF

KENAI PENINSULA BOROUGH

_____
AUTHORIZED OFFICIAL

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N89°56'22"W	30.00'
L2	S00°03'38"W	7.60'
L3	S77°12'33"W	66.01'
L4	N77°12'33"E	72.85'
L5	S77°12'33"W	79.70'
L6	S83°47'09"E	47.36'
L7	S83°47'09"E	60.44'
L8	N83°47'09"W	27.03'
L9	S07°09'28"W	30.38'
L10	S76°57'59"E	8.74'

CURVE TABLE						
CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
C1	180°00'00"	50.00'	157.08'	0.00'	100.00'	S00°03'38"W
C2	19°00'18"	330.00'	109.46'	55.24'	108.96'	S86°42'42"W
C3	19°00'18"	300.00'	99.51'	50.22'	99.05'	S86°42'42"W
C4	19°00'18"	270.00'	89.56'	45.19'	89.15'	S86°42'42"W
C5	108°08'09"	50.00'	94.37'	68.99'	80.97'	S83°47'09"E
C6	104°21'40"	50.00'	91.07'	64.41'	78.99'	N83°47'09"W
C7	85°04'26"	95.00'	141.06'	87.16'	128.45'	N07°09'28"E
C8	45°33'28"	95.00'	75.54'	39.89'	73.56'	N12°42'34"W
C9	14°59'22"	230.00'	60.17'	30.26'	60.00'	S41°23'42"E
C10	47°01'49"	230.00'	188.79'	100.08'	183.54'	S10°23'07"E
C11	67°39'10"	200.00'	236.15'	134.02'	222.67'	N15°03'48"W
C12	72°31'27"	170.00'	215.18'	124.70'	201.10'	S12°37'39"E
C13	9°07'09"	230.00'	36.61'	18.34'	36.57'	N17°41'29"E
C14	78°25'45"	50.00'	68.44'	40.80'	63.22'	S13°02'01"W
C15	129°25'06"	50.00'	112.94'	105.82'	90.42'	S13°02'01"W

NOTES:

1) Basis of bearing taken from McGahan-Schilling Tracts, Plat 98-56, Kenai Recording District.
2) Building Setback-A setback of 20 feet is required from all street Rights-of-Way unless a lesser standard is approved by resolution by the appropriate Planning Commission.
3) Roads must meet the design and construction standards established by the Borough in order to be considered for certification and inclusion in the Borough road maintenance program.
4) An easement for electric lines or system and/or telephone lines granted to Homer Electric Association is recorded in Book 2 Page 153, Kenai Recording District. No definite location disclosed.
5) Front 10 feet of the 20 foot building setback and the entire setback within 5 feet of the side lot lines is a utility easement. No permanent structure shall be constructed or placed within a utility easement which would interfere with the ability of a utility to use the easement.
6) WASTEWATER DISPOSAL: Soil conditions, water table levels, and soil slopes in this subdivision have been found suitable for conventional onsite wastewater treatment and disposal systems serving single-family or duplex residences and meeting the regulatory requirements of the Kenai Peninsula Borough. Any other type of onsite wastewater treatment and disposal system must be designed by a professional engineer, registered to practice in Alaska, and the design must be approved by the Alaska Department of Environmental Conservation.

_____ _____ _____
Engineer License No. date

SURVEYOR'S CERTIFICATE

I hereby certify that I am properly registered and licensed to practice land surveying in the State of Alaska, this plat represents a survey made by me or under my direct supervision, the monuments shown hereon actually exist as described, and all dimensions and other details are correct.

Date _____

STATE OF ALASKA
49TH
JOHN F. SEGESSER
No. LS 8859
REGISTERED PROFESSIONAL LAND SURVEYOR

CERTIFICATE of ACCEPTANCE

THE UNDERSIGNED OFFICIAL IDENTIFIED BY NAME AND TITLE IS AUTHORIZED TO ACCEPT AND HEREBY ACCEPTS ON BEHALF OF THE KENAI PENINSULA BOROUGH FOR PUBLIC USES AND FOR PUBLIC PURPOSES THE REAL PROPERTY TO BE DEDICATED BY THIS PLAT INCLUDING EASEMENTS, RIGHTS-OF-WAY, ALLEYS, AND OTHER PUBLIC AREAS SHOWN ON THIS PLAT IDENTIFIED AS FOLLOWS: HINCHENBROOK DRIVE, DEDICATIONS.
THE ACCEPTANCE OF LANDS FOR PUBLIC USE OR PUBLIC PURPOSE DOES NOT OBLIGATE THE PUBLIC OR ANY OTHER GOVERNING BODY TO CONSTRUCT, OPERATE, OR MAINTAIN IMPROVEMENTS.

_____
AUTHORIZED OFFICIAL
KENAI PENINSULA BOROUGH

KPB FILE No. KPB 2022-031

McGahan-Shilling Tracts
2022 Addition

A resubdivision of Tract B, McGahan-Shilling Tracts, Tracts, Plat 98-56, Kenai Recording District.

Located within the SE1/4 Section 1, T7N, R12W, S.M., Kenai Peninsula Borough, Alaska.

Containing 30.921 Ac.

Surveyor	Owner
Segesser Surveys 30485 Rosland St. Soldotna, AK 99669 (907) 262-3909	McGahan Family Limited Partnership P.O. Box 8022 Nikiski, Alaska 99635

JOB NO.	20107	DRAWN:	3-4-22
SURVEYED:	July, 2020	SCALE:	1"=100'
FIELD BOOK:	20-1	SHEET:	1 of 1

TIME EXTENSION REQUEST
MCGAHAN-SCHILLING TRACTS 2022 ADDITION

KPB File No.	2022-031
Applicant / Owner:	Carmen M. McGahan and Airport Ventures Trust
Surveyor:	John Segesser/ Segesser Surveys
General Location:	Nikiski

STAFF REPORT PC Meeting: Administrative Approval

2022
The planning department received a completed application March 29, 2022. The preliminary plat was scheduled for the April 25, 2022 meeting and the plat committee granted conditional approval for two years.

2023
On May 19, 2023, a paper final plat was submitted for review to the Planning Department. Staff reviewed the final plat and sent a review letter on July 13, 2023, requesting corrections and missing information on the plat.

2024
On February 26, 2024, staff notified the surveyor of the file expiring within two months. The Surveyor submitted a Time Extension Request February 26, 2024 stating more time is needed to complete the subdivision. The Time Extension Request was approved on March 13, 2024, extending preliminary approval to April 25, 2026. A final mylar was received November 22, 2024. On December 19, 2024, a review letter was sent requesting a soils report, additional authority documents, and other necessary items to be completed prior to final approval of the plat.

2025
A final mylar was received July 1, 2025. On August 27, 2025, a review letter was sent noting the same edits needed and the missing items and requesting some additional corrections to ownership information.

2026
On February 26, 2026, staff notified the surveyor of the upcoming file expiration date of April 25, 2026. The Surveyor submitted a Time Extension Request on March 17, 2026 stating the reason for the request is that the plat was not yet finalized.

This time extension request is the second and final time extension request associated with this subdivision plat. Per KPB 20.25.110 only two 2-year time extension requests may be granted. This time extension request will extend the subdivision approval to April 25, 2028. If the plat is not recorded before April 26, 2028, then the approval will expire and a new plat submittal will be required to complete the subdivision.

There have been no changes in the area that would affect this plat.

STAFF RECOMMENDATIONS: Extend preliminary plat approval for two years to April 25, 2028, subject to the following:

1. Copy of plat with current utility reviews being submitted with the final plat

2. Plat must comply with current Kenai Peninsula Borough Code.

NOTE: Per KPB 20.25.110(A), upon application by the subdivider prior to the two-year deadline for final plat submittal, a time extension for two years beyond the initial two-year period for submittal of the final plat may be granted by the planning director. A second and final two-year extension may be granted by the planning director when requested by the subdivider prior to expiration of the previous approval, allowing for a total approval time of six years. Expiration of time extensions will require the submission of, and action on, a new preliminary plat.

END OF STAFF REPORT

☒ APPROVED

Robert Ruffner the Planning Director

4/20/2026
Date

Kenai Peninsula Borough Planning Department
144 North Binkley Street
Soldotna, Alaska 99669
Phone: (907) 714-2200
Fax: (907) 714-2378

TIME EXTENSION REQUEST FORM

☑ Name of Subdivision: McGahan Shilling Tracts 2022 Addition

☑ Location of Subdivision: Nikiski

☑ KPB Number: KPB 2022-031

☑ Date of Planning Commission Approval(s)

4-25-24

☑ Reason for time extension request.

Plat not finalized

Date: 3-17-26

Signature of Surveyor/Property Owner: [signature]

Source: Resolution 89-27

REVISED 051617

C. CONSENT AGENDA

3/4. Administrative/Final Approvals

a. Apache Acres Part Nine; KPB File 2024-123

b. Kivi Shores Sub. Addn. No. 1 Kurka Replat; KPB File 2025-172

c. Lake Hills Sub. Part 3 Samora Replat; KPB File 2025-154

KENAI PENINSULA Borough
Planning Department

144 North Binkley Street, Soldotna, AK 99669 | (P) 907-714-2200 | (F) 907-714-2378 | www.kpb.us

ADMINISTRATIVE APPROVAL

Subdivision: Apache Acres Part Nine
KPB File 2024-123
Kenai Recording District

The Kenai Peninsula Borough Planning Commission conditionally approved the preliminary subdivision plat on October 27, 2025. Approval for the plat is valid for two years from the date of approval.

The final plat complied with conditions of preliminary approval and KPB Title 20 (Subdivisions); therefore, per KPB 20.60.220, administrative approval has been granted by the undersigned on Wednesday, April 22, 2026.

Vince Piagentini
Platting Manager

State of Alaska
Kenai Peninsula Borough

Signed and sworn (or affirmed) in my presence this 22nd day of April 2026 by Vince Piagentini.

Notary Public for the State of Alaska

My commission expires: with office

Notary Public
Sandra K. Simons
State of Alaska
My Commission Expires With Office

The survey firm has been advised of additional requirements, if any, to be complied with prior to recording. After the original mylar has been signed by the KPB official, it must be filed with the appropriate district recorder within ten business days by the surveyor or the Planning Department.

KENAI PENINSULA Borough

Planning Department

144 North Binkley Street, Soldotna, AK 99669 | (P) 907-714-2200 | (F) 907-714-2378 | www.kpb.us

FINAL APPROVAL OF PLAT SUBMITTED UNDER 20.10.040

Subdivision: Kivi Shores Subdivision Addition No 1 Kurka Replat
KPB File 2025-172
Kenai Recording District

The Kenai Peninsula Borough Planning Department has reviewed the above referenced subdivision plat in accordance with 20.10.040 Borough Code of Ordinances. The final plat meets the conditions of the preliminary approval and complies with KPB Title 20; therefore, final approval has been granted by the undersigned on Wednesday, April 22, 2026.

Vince Piagentini
Platting Manager

State of Alaska
Kenai Peninsula Borough

Signed and sworn (or affirmed) in my presence this 22nd day of April 2026 by Vince Piagentini.

Notary Public for the State of Alaska

My commission expires: with office

Notary Public
Sandra K. Simons
State of Alaska
My Commission Expires With Office

The survey firm has been advised of additional requirements, if any, to be complied with prior to recording. After the original mylar has been signed by the KPB official, it must be filed with the appropriate district recorder within ten business days by the surveyor or the Planning Department.

KENAI PENINSULA Borough

Planning Department

144 North Binkley Street, Soldotna, AK 99669 | (P) 907-714-2200 | (F) 907-714-2378 | www.kpb.us

FINAL APPROVAL OF PLAT SUBMITTED UNDER 20.10.040

Subdivision: Lake Hills Subdivision Part 3 Samora Replat
KPB File 2025-154
Kenai Recording District

The Kenai Peninsula Borough Planning Department has reviewed the above referenced subdivision plat in accordance with 20.10.040 Borough Code of Ordinances. The final plat meets the conditions of the preliminary approval and complies with KPB Title 20; therefore, final approval has been granted by the undersigned on Wednesday, April 29, 2026.

Vince Piagentini
Platting Manager

State of Alaska
Kenai Peninsula Borough

Signed and sworn (or affirmed) in my presence this 29th day of April 2026 by Vince Piagentini.

Notary Public for the State of Alaska

My commission expires: with office

Notary Public
Sandra K. Simons
State of Alaska
My Commission Expires With Office

The survey firm has been advised of additional requirements, if any, to be complied with prior to recording. After the original mylar has been signed by the KPB official, it must be filed with the appropriate district recorder within ten business days by the surveyor or the Planning Department.

C. CONSENT AGENDA

***7. Minutes**

a. April 27, 2026 Planning Commission Meeting Minutes

Kenai Peninsula Borough
Planning Commission

Betty J. Glick Assembly Chambers, Kenai Peninsula Borough George A. Navarre Administration Building

APRIL 27, 2026
7:45 P.M.
UNAPPROVED MINUTES

AGENDA ITEM A. CALL TO ORDER

Commissioner Brantley called the meeting to order at 7:45 p.m.

AGENDA ITEM B. ROLL CALL

Commissioners Present
Jeremy Brantley, Sterling / Funny River
Pamela Gillham, Kalifornsky/Kasilof District
Jeffrey Epperheimer, Nikiski District
Dawson Slaughter, Southern Peninsula District
Virginia Morgan, Cooper Landing/Hope/Eastern Peninsula District
Diane Fikes, City of Kenai
Paul Whitney, City of Soldotna
Franco Venuti, City of Homer

With 8 members present, a quorum was present.

Staff Present
Robert Ruffner, Planning Director
Wayne Cary, Deputy Borough Attorney
Vince Piagentini, Platting Manager
Aaron Hughes, Land Management Officer
Elizabeth Wilder, LMD Administrative Assistant
Ann Shirnberg, Planning Administrative Assistant

AGENDA ITEM C. CONSENT & REGULAR AGENDA

***3/4. Administrative/Final Approvals**
a. Cohoe Lakes Subdivision Frank Addition; KPB File 2025-152
b. Kelly Acres Radtke Addition; KPB File 2025-159
c. Rosewood Subdivision Farmgirl Addition; KPB File 2025-093
d. Valhalla Heights Subdivision Thomsen Replat; KPB File 2025-129

***6. Excused Absences**
a. Vacant, City of Seward

***7. Minutes**
a. April 13, 2026 Planning Commission Meeting Minutes

Chair Brantley asked Ms. Shirnberg to read the consent agenda items into the record. He then asked if anyone wished to speak to any of the items on the consent agenda. Seeing and hearing no one wishing to comment, Chair Brantley brought it back to the commission for a motion.

MOTION: Commissioner Slaughter moved, seconded by Commissioner Fikes to approve the consent and regular agendas.
Hearing no objection or further discussion, the motion was carried by the following vote:

MOTION PASSED BY UNANIMOUS VOTE:

Yes - 8	Brantley, Epperheimer, Fikes, Gillham, Morgan, Slaughter, Whitney, Venuti

AGENDA ITEM E. NEW BUSINESS

ITEM #1 - UTILITY EASEMENT ALTERATION
VACATE A 10-FOOT UTILITY EASEMENT LOCATED ON THE EAST AND SOUTH BOUNDARY OF TRACT 2C, AS SHOWN ON HM 2005-80 AND GRANTED BY PLAT HM 79-44, AND A 10-FOOT UTILITY EASEMENT ON THE EAST BOUNDARY OF TRACT 2B, AS GRANTED BY PLAT HM 2005-80

KPB File No.	2026-030V
Planning Committee Meeting:	April 27, 2026
Applicant / Owner:	Jason Weisser
Surveyor:	Jason Schollenberg / Peninsula Surveying, LLC
General Location:	Hubbard Lane off East End Road, Fritz Creek Area

Staff report given by Platting Manager Vince Piagentini.

Commissioner Brantley opened the item for public comment. Seeing and hearing no one wishing to comment, public comment was closed and discussion was opened among the committee.

Commissioner Venuti asked to be recused from this matter as the petitioner is a friend and business associated of his. Chair Brantley granted his request.

MOTION: Commissioner Epperheimer moved, seconded by Commissioner Gillham granting the vacation as petitioned based on the means of evaluating public necessity established by KPB 20.65, adopting and incorporating by reference the staff report, staff recommendations and subject to the two conditions as set forth in the staff report.

Hearing no objection or further discussion, the motion was carried by the following vote:
MOTION PASSED BY UNANIMOUS VOTE:

Yes - 7	Brantley, Epperheimer, Fikes, Gillham, Morgan, Slaughter, Whitney
Recused - 1	Venuti

ITEM #2 - SECTION LINE EASEMENT VACATION
VACATE AN IRREGULAR PORTION OF THE SOUTHERN 33-FOOT SECTION LINE EASEMENT LOCATED ON THE NORTHERN BOUNDARY OF LOT 1, BLOCK 4, HILL PARK ESTATES SUBDIVISION UNIT 1, PLAT HM 76-50, WITHIN SECTION 2, TOWNSHIP 5 SOUTH, RANGE 14 WEST, SAID IRREGULAR SHAPE BEING 1,762 SQUARE FEET IN AREA AND THE CLOSEST CORNER BEING 3.72 FEET SOUTH AND 6.28 FEET EAST OF THE W1/16TH CORNER, AS SHOWN ON THE SKETCH OF VACATION IN SAID LOT 1, BLOCK 4

KPB File No.	2026-021V
Planning Commission Meeting:	April 13, 2025
Applicant / Owner:	Nelson Community Property Trust
Surveyor:	Jon Guffey / Survey Alaska, LLC
General Location:	At the intersection of North Fork Road & Knob Hill Road Anchor Point Area
Parcel:	171-370-05
Legal Description:	T 5S R 14W SEC 2 SM HM 0760050 HILL PARK ESTATES SUB UNIT 1 LOT 1 BLK 4

Staff report given by Platting Manager Vince Piagentini.

Commissioner Brantley opened the item for public comment. Seeing and hearing no one wishing to comment, public comment was closed and discussion was opened among the committee.

MOTION: Commissioner Whitney moved, seconded by Commissioner Gillham granting the vacation as petitioned based on the means of evaluating public necessity established by KPB 20.65, adopting and incorporating by reference the staff report, staff recommendations and subject to the four conditions as set forth in the staff report.

Hearing no objection or further discussion, the motion was carried by the following vote:
MOTION PASSED BY UNANIMOUS VOTE:

Yes - 8	Brantley, Epperheimer, Fikes, Gillham, Morgan, Slaughter, Whitney, Venuti

ITEM #3 – ORDINANCE 2026-14
AUTHORIZING A COMMUNICATIONS SITE LEASE AGREEMENT WITH GCI COMMUNICATIONS CORPORATION IN BELUGA

Staff report given by Land Management Officer Aaron Hughes

Commissioner Brantley opened the item for public comment. Seeing and hearing no one wishing to comment, public comment was closed and discussion was opened among the committee.

MOTION: Commissioner Gillham moved, seconded by Commissioner Venuti to forward to the Assembly a recommendation to adopt Ordinance 2026-14; Authorizing a communications site lease agreement with GCI Communications Corporation in Beluga.

Hearing no objection or further discussion, the motion was carried by the following vote:
MOTION PASSED BY UNANIMOUS VOTE:

Yes - 8	Brantley, Epperheimer, Fikes, Gillham, Morgan, Slaughter, Whitney, Venuti

ITEM #4 – ORDINANCE 2026-18
AUTHORIZING THE LEASE OF BOROUGH OWNED LAND FOR A MATERIAL SITE IN BELUGA BY COMPETITIVE LEASE OFFERING THROUGH SEALED BID PROCEDURES

Staff report given by Land Management Officer Aaron Hughes

Commissioner Brantley opened the item for public comment. Seeing and hearing no one wishing to comment, public comment was closed and discussion was opened among the committee.

MOTION: Commissioner Gillham moved, seconded by Commissioner Venuti to forward to the Assembly a recommendation to adopt Ordinance 2026-18; Authorizing the lease of borough owned land for a material site in beluga by competitive lease offering through sealed bid procedures.

Hearing no objection or further discussion, the motion was carried by the following vote:
MOTION PASSED BY UNANIMOUS VOTE:

Yes - 8	Brantley, Epperheimer, Fikes, Gillham, Morgan, Slaughter, Whitney, Venuti

ITEM #5 – ORDINANCE 2026-16
AUTHORIZING THE CONVEYANCE OF 5 PARCELS OF KPB OWNED LAND TO THE CITY OF HOMER FOR LESS THAN FAIR MARKET VLAUE IN SUPPORT OF A CITY NEED

Staff report given by Land Management Officer Aaron Hughes

Commissioner Brantley opened the item for public comment. Seeing and hearing no one wishing to comment, public comment was closed and discussion was opened among the committee.

MOTION: Commissioner Venuti moved, seconded by Commissioner Gillham to forward to the Assembly a recommendation to adopt Ordinance 2026-16; Authorizing the conveyance of 5 parcels of KPB owned land to the City of Homer for less than fair market value in support of a city need.

Hearing no objection or further discussion, the motion was carried by the following vote:
MOTION PASSED BY UNANIMOUS VOTE:

Yes - 8	Brantley, Epperheimer, Fikes, Gillham, Morgan, Slaughter, Whitney, Venuti

ITEM #6 – ORDINANCE 2026-17
RE-AUTHORIZING THE CONVEYANCE OF KPB OWNED LAND TO THE STATE OF ALSKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES FOR A PUBLIC HIGHWAY ROW SUPPORT OF THE "STERLING SAFETY CORRIDOR IMPROVEMENTS MP 82.5 TO 94" PROJECT

Staff report given by Land Management Officer Aaron Hughes

Commissioner Brantley opened the item for public comment. Seeing and hearing no one wishing to comment, public comment was closed and discussion was opened among the committee.

MOTION: Commissioner Gillham moved, seconded by Commissioner Whitney to forward to the Assembly a recommendation to adopt Ordinance 2026-17; Re-authorizing the conveyance of KPB owned land to the State of Alaska Department of Transportation & Public Facilities for a public highway right-of-way support of the "Sterling Safety Corridor Improvements, MP 82.5 to 94" project.

Hearing no objection or further discussion, the motion was carried by the following vote:
MOTION PASSED BY UNANIMOUS VOTE:

Yes - 8	Brantley, Epperheimer, Fikes, Gillham, Morgan, Slaughter, Whitney, Venuti

AGENDA ITEM H. PRESENTATIONS / PUBLIC COMMENTS ON ITEMS NOT APPEARING ON THE AGENDA

Chair Brantley asked if there was anyone who wished to comment on anything that was not on the agenda. There was no one who wished to comment.

AGENDA ITEM K. ADJOURNMENT

Commissioner Venuti moved to adjourn the meeting at 8:27 P.M.

_____
Ann E. Shirnberg
Administrative Assistant

E. NEW BUSINESS

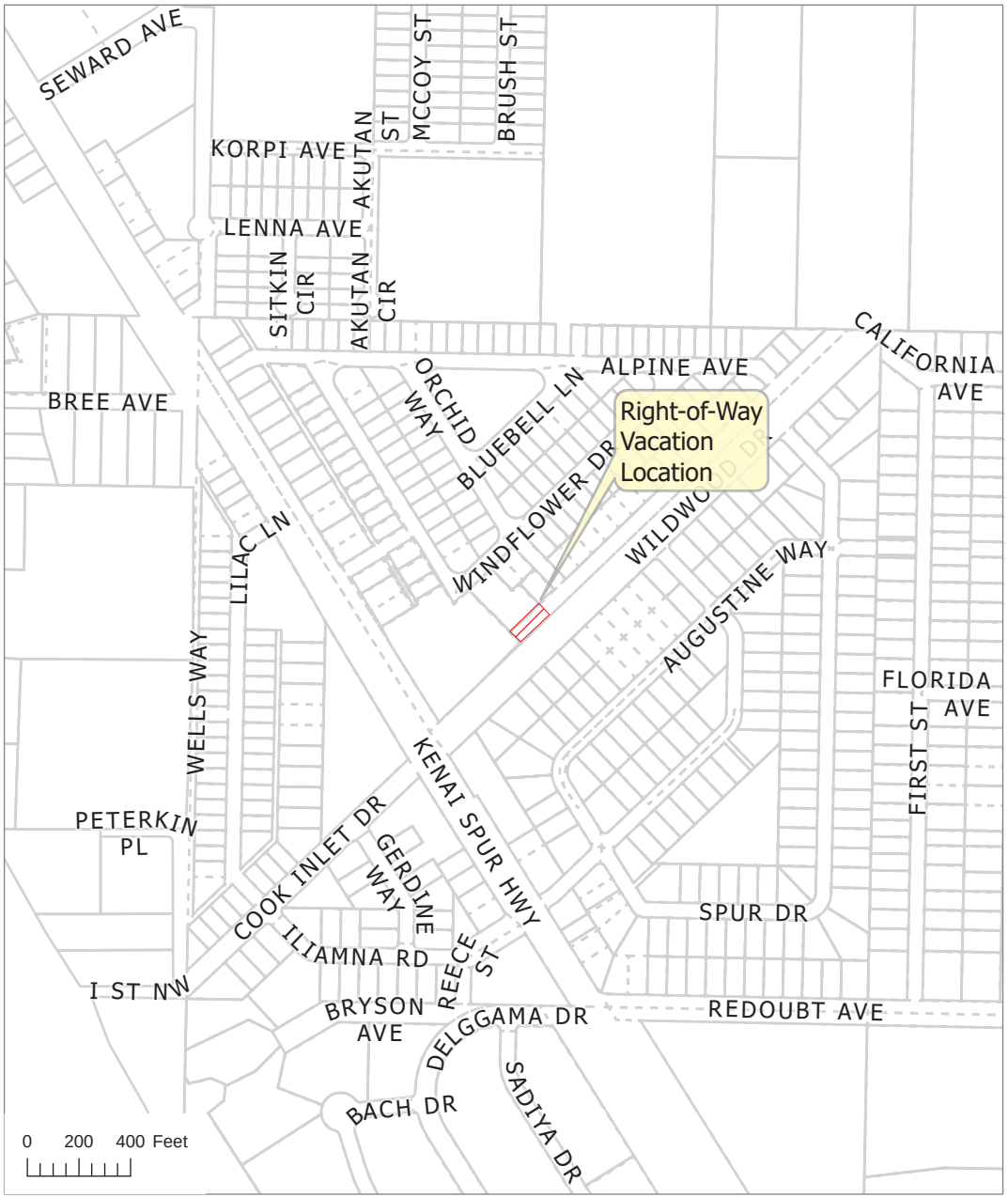
1. **Right-of-way Vacation; KPB File 2026-034V**
   McLane Consulting Group / Douhit
   Request: Vacates a 60' X 155' section of an unnamed ROW & associated utility easement along the southeasterly lot line parallel to Wildwood Drive granted by Black Gold Estates Subdivision Amended, Plat KN 1399
   City of Kenai

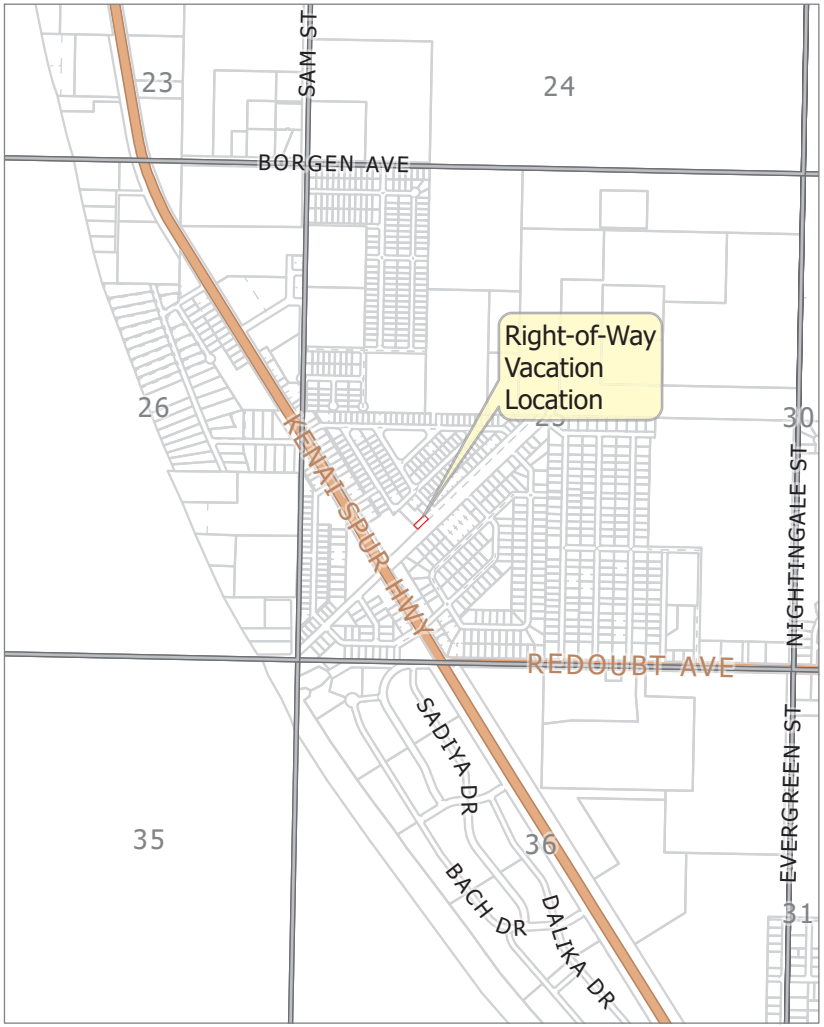
KENAI PENINSULA BOROUGH

Planning

Vicinity Map

4/13/2026





KPB File 2026-034V
T06N R12W SEC25
City of Kenai

KENAI PENINSULA BOROUGH

Planning

Aerial Map

KPB File 2026-034V
4/13/2026

N

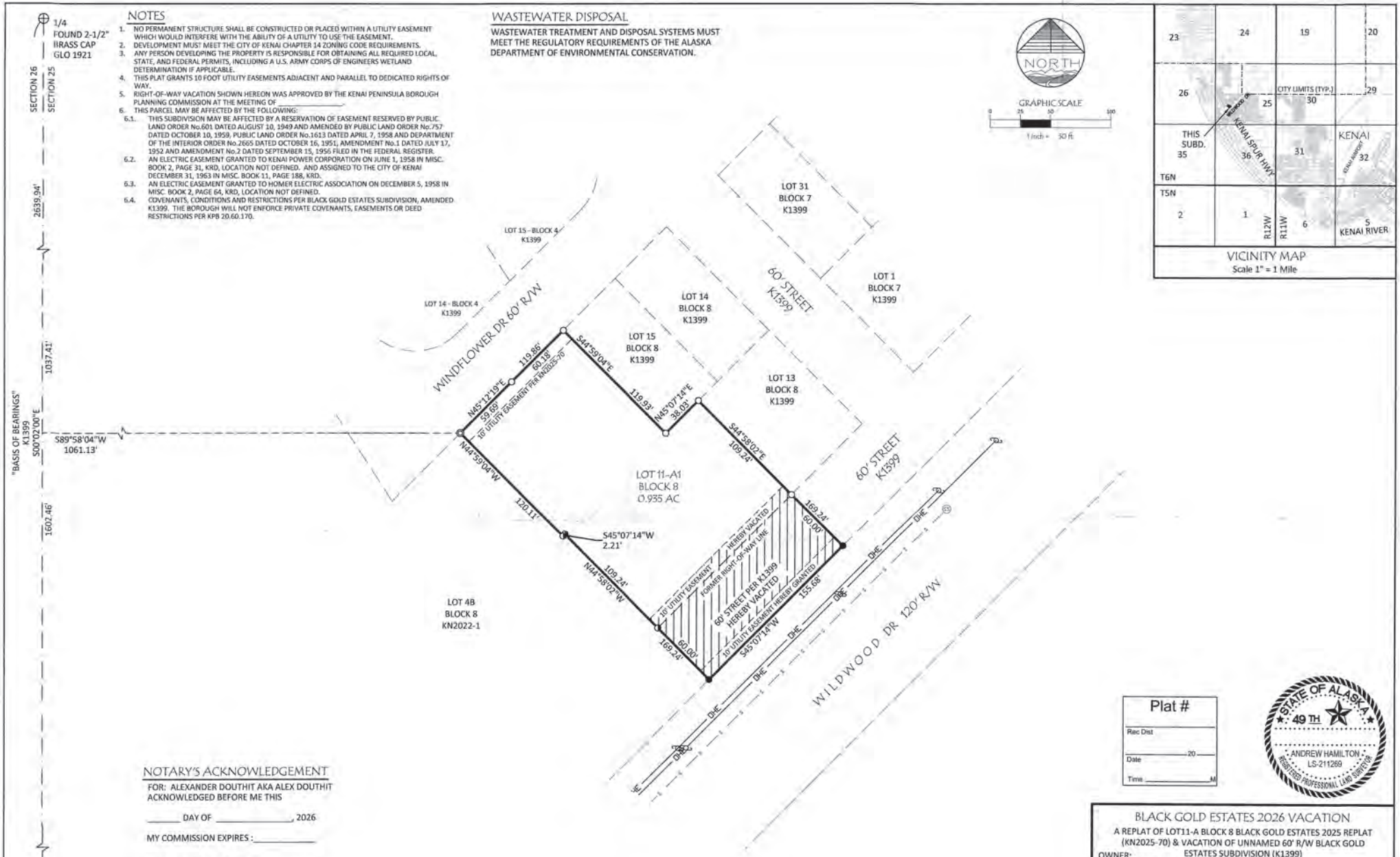
The information depicted hereon is for a graphical representation only of best available sources. The Kenai Peninsula Borough assumes no responsibility for any errors on this map.

NOTES

1. NO PERMANENT STRUCTURE SHALL BE CONSTRUCTED OR PLACED WITHIN A UTILITY EASEMENT WHICH WOULD INTERFERE WITH THE ABILITY OF A UTILITY TO USE THE EASEMENT.
2. DEVELOPMENT MUST MEET THE CITY OF KENAI CHAPTER 14 ZONING CODE REQUIREMENTS.
3. ANY PERSON DEVELOPING THE PROPERTY IS RESPONSIBLE FOR OBTAINING ALL REQUIRED LOCAL, STATE, AND FEDERAL PERMITS, INCLUDING A U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION IF APPLICABLE.
4. THIS PLAT GRANTS 10 FOOT UTILITY EASEMENTS ADJACENT AND PARALLEL TO DEDICATED RIGHTS OF WAY.
5. RIGHT-OF-WAY VACATION SHOWN HEREON WAS APPROVED BY THE KENAI PENINSULA BOROUGH PLANNING COMMISSION AT THE MEETING OF _____.
6. THIS PARCEL MAY BE AFFECTED BY THE FOLLOWING:
   - 6.1. THIS SUBDIVISION MAY BE AFFECTED BY A RESERVATION OF EASEMENT RESERVED BY PUBLIC LAND ORDER No.601 DATED AUGUST 10, 1949 AND AMENDED BY PUBLIC LAND ORDER No.757 DATED OCTOBER 10, 1959, PUBLIC LAND ORDER No.1613 DATED APRIL 7, 1958 AND DEPARTMENT OF THE INTERIOR ORDER No.2665 DATED OCTOBER 16, 1951, AMENDMENT No.1 DATED JULY 17, 1952 AND AMENDMENT No.2 DATED SEPTEMBER 15, 1956 FILED IN THE FEDERAL REGISTER.
   - 6.2. AN ELECTRIC EASEMENT GRANTED TO KENAI POWER CORPORATION ON JUNE 1, 1958 IN MISC. BOOK 2, PAGE 31, KRD, LOCATION NOT DEFINED. AND ASSIGNED TO THE CITY OF KENAI DECEMBER 31, 1963 IN MISC. BOOK 11, PAGE 188, KRD.
   - 6.3. AN ELECTRIC EASEMENT GRANTED TO HOMER ELECTRIC ASSOCIATION ON DECEMBER 5, 1958 IN MISC. BOOK 2, PAGE 64, KRD, LOCATION NOT DEFINED.
   - 6.4. COVENANTS, CONDITIONS AND RESTRICTIONS PER BLACK GOLD ESTATES SUBDIVISION, AMENDED K1399. THE BOROUGH WILL NOT ENFORCE PRIVATE COVENANTS, EASEMENTS OR DEED RESTRICTIONS PER KPB 20.60.170.

WASTEWATER DISPOSAL

WASTEWATER TREATMENT AND DISPOSAL SYSTEMS MUST MEET THE REGULATORY REQUIREMENTS OF THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION.



VICINITY MAP
Scale 1" = 1 Mile

NOTARY'S ACKNOWLEDGEMENT

FOR: ALEXANDER DOUTHIT AKA ALEX DOUTHIT
ACKNOWLEDGED BEFORE ME THIS

_____ DAY OF _____, 2026

MY COMMISSION EXPIRES :_____

_____
NOTARY PUBLIC FOR THE
STATE OF ALASKA

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE REAL PROPERTY SHOWN AND DESCRIBED HEREON AND I HEREBY ADOPT THIS PLAN OF SUBDIVISION AND BY MY FREE CONSENT DEDICATE ALL RIGHTS-OF-WAY AND PUBLIC AREAS TO PUBLIC USE AND GRANT ALL EASEMENTS TO THE USE SHOWN.

_____
ALEXANDER DOUTHIT AKA ALEX DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

LEGEND

- ⊕ FOUND PRIMARY MONUMENT AS DESCRIBED
- ○ FOUND 1/2" REBAR UNLESS NOTED
- ⊙ FOUND 5/8"x30" REBAR w/ 1" STAINLESS STEEL CAP 85032-S
- ● SET 5/8"x30" REBAR w/ 1" BLUE PLASTIC CAP LS-211269
- ◑ FOUND 5/8"x30" REBAR w/ 1" BLUE PLASTIC CAP LS-211269

PLAT APPROVAL

THIS PLAT WAS APPROVED BY THE KENAI PENINSULA IN ACCORDANCE WITH KPB 20.10.080.

_____
AUTHORIZED OFFICIAL

Plat #
Rec Dist
Date _____ 20__
Time _____ M

STATE OF ALASKA 49TH
ANDREW HAMILTON LS-211269
REGISTERED PROFESSIONAL LAND SURVEYOR

BLACK GOLD ESTATES 2026 VACATION

A REPLAT OF LOT11-A BLOCK 8 BLACK GOLD ESTATES 2025 REPLAT (KN2025-70) & VACATION OF UNNAMED 60' R/W BLACK GOLD ESTATES SUBDIVISION (K1399)

OWNER:
ALEXANDER DOUTHIT AKA ALEX DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

0.721 AC. M/L SITUATED IN THE SW1/4 OF SECTION 25, TOWNSHIP 6 NORTH, RANGE 12 WEST, SEWARD MERIDIAN, CITY OF KENAI, KENAI PENINSULA BOROUGH, AND THE KENAI RECORDING DISTRICT, ALASKA.

McLANE Consulting Inc
ENGINEERING - TESTING
SURVEYING - MAPPING
P.O. BOX 468
SOLDOTNA, AK. 99669
VOICE: (907) 283-4218
FAX: (907) 283-3265
WWW.MCLANECG.COM

KPB FILE NO. 2025-048

PROJECT NO. 252006

SCALE 1" = 50' | DATE : JULY 2025 | BOOK NO. : 24-10 | DRAWN BY : AHH

KPB 2026-034V

AGENDA ITEM E. NEW BUSINESS

ITEM #1 - RIGHT OF WAY VACATION
VACATE AN APPROXIMATE 60-FOOT BY 155.68-FOOT PORTION OF THE 60-FOOT UNNAMED RIGHT-OF-WAY LOCATED ALONG THE SOUTHEASTERN BOUNDARY OF 11-A, BLOCK 8, BLACK GOLD ESTATES 2025 REPLAT, PLAT KN 2025-70

KPB File No.	2026-034V
Planning Commission Meeting:	May 11, 2026
Applicant / Owner:	Alexander Douthit AKA Alex Douthit of Kenai, Alaska
Surveyor:	Andrew Hamilton, McLane Consulting, Inc.
General Location:	Off Wildwood Drive, City of Kenai
Legal Description:	Unnamed Street, Black Gold Estates Subdivision, Amended Plat K 1399, Kenai Recording District, Township 6 North, Range 12 West, Section 25, Seward Meridian adjacent to Lots 11 & 12 Block 8

STAFF REPORT

Specific Request / Purpose as stated in the petition:
A portion of the 60-foot right-of-way per Black Gold Estates Subdivision, Amended (K1399). Proposed vacation is approximately 9,360 square feet. The adjacent land has been replat to one lot as Lot 11-A Block 8 Black Gold Estates 2025 Replat (KN2025-70) from Lot
This land was originally plotted in 1962 as a frontage road to access residential lots that will be replotted into one larger lot. The frontage road is no longer needed to access the property. Wildwood drive access is adequate. Additionally, the extra 60 feet to run utilities creates an unnecessary cost burden to develop the land.
An additional portion of the unnamed 60-foot right-of-way was vacated per KN 2022-1.

Notification: The public hearing notice was published in the May 8 issue of the Peninsula Clarion and the May 7 issue of the Homer News as part of the Commission's tentative agenda.

The public notice was posted on the Planning Commission bulletin board at the Kenai Peninsula Borough George A. Navarre Administration building. Additional notices were mailed to the following with the request to be posted for public viewing.

Twenty-nine certified mailings were sent to owners of property within 300 feet of the proposed vacation. Zero receipts had been returned when the staff report was prepared.

Eleven public hearing notices were emailed to agencies and interested parties as shown below;

State of Alaska Dept. of Fish and Game
State of Alaska DNR
State of Alaska DOT
State of Alaska DNR Forestry
City of Kenai
Emergency Services of Kenai
Kenai Peninsula Borough Land Management
Alaska Communication Systems (ACS)
ENSTAR Natural Gas
General Communications Inc, (GCI)
Homer Electric Association (HEA)

Legal Access (existing and proposed):
Legal access to the unnamed street is by Wildwood Drive. Wildwood Drive is a 120-feet-wide city-maintained road which connects to the Kenai Spur Highway to the west, a state-maintained road.

Black Gold Estates Subdivision Amended (KN 1399) dedicated the 60' right-of-way that is proposed for vacation.

The block length is compliant due to the existence of present roads: Wildwood Drive to the south, Kenai Spur Highway to the west, an unnamed 60-foot right-of-way and Windflower Drive to the north, and an unnamed 60-foot right-of-way to the east.

No new dedications are proposed with the plat. No access to surrounding lots will be affected as Windflower Drive and Wildwood Drive provide public access to surrounding lots.

No section line easements affect the area to be vacated.

KPB Roads Dept. comments	Out of Jurisdiction: No Roads Director: Uhlin, Dil Comments: This plat dedicates the 10' utility easement but failed to dedicate the 20' building setback.
SOA DOT comments	

Site Investigation:
According to the KWF Assessment, no wetlands affect the area to be vacated. The frontage road does not provide access to a lake, river, or other area with public interest as it only provides access to private lands.

The topography of the proposed area to be vacated is flat, with no contours affecting the area per the KPB GIS imagery terrain layer.

Per FEMA, this area is located within Zone D and is an undetermined flood risk. The proper plat notes have been added on the plat as plat notes number 2 and 3.

The KPB River Center Reviewer did not identify the proposed vacated area to be within a Habitat Protection District.

According to available public imagery, it does not appear that the right-of-way has been improved or is being used for vehicular access.

KPB River Center review	A. Floodplain Reviewer: Hindman, Julie Floodplain Status: Within City of Kenai Comments: No comments B. Habitat Protection Reviewer: Aldridge, Morgan Habitat Protection District Status: Is NOT within HPD Comments: No comments

Staff Analysis:
The Carl Ahlstrom Homestead was first plotted out in 1955 as shown on the map plat filed at K216. Then in 1963 Black Gold Estates Subdivision K1335 subdivided a portion of the Carl F. Ahlstrom Homestead.

In 1964, the plat was revised by Black Gold Estates Subdivision Amended, Plat KN 1399. As noted on the parent plat under revisions “The addition of the 60 ft. street in front of” certain lots on the plat “were necessary to fill covenant No. 9 as shown on the original plat,” was the reason for the revision and amendment to the plat. This 60-foot right-of-way was intended to be a frontage road along Wildwood Drive.

The adjacent property to the west was subdivided by Black Gold Estates 2021 Replat, plat KN 2022-1. This platting action vacated the western portion of the unnamed 60-foot-wide frontage road.

In 2025, Black Gold Estates 2025 Replat (KN 2025-070) combined Lots 11, 12, 16 and 17, Block 8, and created Lot 11-A1, Block 8 which the petitioned vacation is adjacent to.

This right-of-way vacation was originally reviewed by the City of Kenai Planning and Zoning Commission on February 26, 2025. Subsequently, KPB Planning Commission reviewed and granted approval on April 28, 2025. On May 27, 2025, the City of Kenai City Council, voted to veto the proposed right-of-way vacation.

The petition has been re-submitted after the City of Kenai attempted to clarify ownership of the proposed right-of-way with the Kenai Native Association, Inc by conveyed to the City of Kenai per Deed 2025-010976-0. Upon further review, this area was determined to be Wildwood Dr., and the unnamed frontage road appears to have been dedicated by the owners of Black Gold Estates Subdivision Amended K1399 in their Certificate of Ownership and Dedication note.

The City of Kenai Planning and Zoning Commission reviewed the vacation at their March 25, 2026 meeting and granted conditional approval. Conditions of approval include:

1. Further development of the property will conform to all federal, State of Alaska, and local regulations.
2. The Kenai City Council must declare the 60-foot right-of-way not needed for a public purpose and approve the vacation of the right-of-way as shown on the preliminary plat.
3. A plat note added to the final plat to prohibit access from Windflower Drive to avoid double frontage, in accordance with KMC 14.010.070(e)(2).

The Kenai City Council must approve the vacation after the Kenai Peninsula Borough Planning Commission review in order for the vacation to be finalized by the plat.
Staff recommends, the conditions be met during the final plat submittal.

Black Gold Estates 2025 Replat KN2025-70 granted a 10-foot utility easement adjacent to the unnamed road right-of-way requested for vacation. This right-of-way vacation petition is also requesting to vacate the adjacent and associated 10' utility easement granted by KN2025-70.

20.65.050 – Action on vacation application

D. The planning commission shall consider the merits of each vacation request and in all cases the planning commission shall deem the area being vacated to be of value to the public. It shall be incumbent upon the applicant to show that the area proposed for vacation is no longer practical for the uses or purposes authorized, or that other provisions have been made which are more beneficial to the public. In evaluating the merits of the proposed vacation, the planning commission shall consider whether:

1. The right-of-way or public easement to be vacated is being used;
   Applicant comments: The frontage road is no longer needed to access the property. Wildwood drive access is adequate.
   Staff comments: The unnamed street was intended to be a frontage road. It has not been improved and is not being used for public access

2. A road is impossible or impractical to construct, and alternative access has been provided;
   Applicant comments: Primary access for this land is via Wildwood Drive which is a 120-foot right-of-way that is paved/constructed and used for ingress/egress of traffic.
   Staff comments: Wildwood Drive and Windflower Drive both provide public access.

3. The surrounding area is fully developed and all planned or needed rights-of-way and utilities are constructed;
   Staff comments: The surrounding area has been subdivided with adequate rights-of-way and utilities easements.

4. The vacation of a public right-of-way provides access to a lake, river, or other area with public interest or value, and if so, whether equal or superior access is provided;
   Staff comments: The frontage road does not provide access to a lake, river, or other area with public interest as it only provides access to private lands.

5 The proposed vacation would limit opportunities for interconnectivity with adjacent parcels, whether developed or undeveloped;
   Staff comments: The platted rights-of-way from parent subdivisions provide interconnectivity of public access and utilities.

6. Other public access, other than general road use, exist or are feasible for the right-of-way;
   Staff comments: Lying between Wildwood Dr and the applicant's property, there does not appear to be any other uses available for the frontage road right-of-way.

7. All existing and future utility requirements are met. Rights-of-way which are utilized by a utility, or which logically would be required by a utility, shall not be vacated, unless it can be demonstrated that equal or superior access is or will be available. Where an easement would satisfactorily serve the utility interests, and no other public need for the right-of-way exists, the commission may approve the vacation and require that a utility easement be granted in place of the right-of-way.
   Staff comments: The vacation has been sent to the utility companies for review and comments. Utility providers have existing lines in this area. No new utility easements were requested. The plat that will finalize the vacation will grant a 10-foot utility easement adjacent to Wildwood Drive.

8. Any other factors that are relevant to the vacation application or the area proposed to be vacated.
   Applicant comments: The extra 60 feet to run utilities creates an unnecessary cost burden to develop the land.
   Staff comments:

A KPB Planning Commission decision denying a vacation application is final. A KPB Planning Commission decision to approve the vacation application is subject to consent or veto by the KPB Assembly, or City Council if located within City boundaries. The KPB Assembly, or City Council must hear the vacation within thirty days of the Planning Commission decision.

The City Council will hear the vacation at their scheduled May 20st 2025 meeting.

If approved, Black Gold Estates 2026 Vacation plat will finalize the proposed right of way vacation. The plat will be reviewed internally by staff as it will be submitted as a Right-of-way Vacation Plat Final.

KPB department / agency review:

Addressing	Reviewer: Leavitt, Rhealyn Affected Addresses: 2707 WINDFLOWER DR, 2705 WINDFLOWER DR, 2714 WILDWOOD DR, 2712 WILDWOOD DR Existing Street Names are Correct: Yes List of Correct Street Names: WILDWOOD DR, WINDFLOWER DR Existing Street Name Corrections Needed: All New Street Names are Approved: No

	List of Approved Street Names: List of Street Names Denied: Comments: No other comments
Code Compliance	Reviewer: Ogren, Eric Comments: No comments
Planner	Reviewer: Raidmae, Ryan There are not any Local Option Zoning District issues with this proposed plat. Material Site Comments: There are not any material site issues with this proposed plat. Review Not Required
Assessing	Reviewer: Windsor, Heather Comments: No comment

Utility provider review:

HEA	No comments
ENSTAR	
ACS	
GCI	

STAFF RECOMMENDATIONS
CORRECTIONS / EDITS

RECOMMENDATION:

Based on consideration of the merits as per KPB 20.65.050(D) as outlined by Staff comments, Staff recommends APPROVAL as petitioned, subject to:

1. Consent by Kenai City Council.
2. Compliance with the requirements for preliminary plats per Chapter 20 of the KPB Code including a submittal to and approval by the Plat Committee.
3. Grant any utility easements requested by the Kenai City Council and utility providers.
4. Submittal of a final plat within a timeframe such that the plat can be recorded within one year of vacation consent (KPB 20.65.050(I)).

KPB 20.65.050 – Action on vacation application

H. A planning commission decision to approve a vacation is not effective without the consent of the city council, if the vacated area to be vacated is within a city, or by the assembly in all other cases. The council or assembly shall have 30 days from the date of the planning commission approval to either

consent to or veto the vacation. Notice of veto of the vacation shall be immediately given to the planning commission. Failure to act on the vacation within 30 days shall be considered to be consent to the vacation. This provision does not apply to alterations of utility easements under KPB 20.65.070 which do not require the consent of the assembly or city council unless city code specifically provides otherwise.

I. Upon approval of the vacation request by the planning commission and no veto by the city council or assembly, where applicable, the applicant shall have a surveyor prepare and submit a plat including the entire area approved for vacation in conformance with KPB 20.10.080. Only the area approved for vacation by the assembly or council may be included on the plat. The final plat must be recorded within one year of the vacation consent.

J. A planning commission decision denying a vacation application is final. No reapplication or petition concerning the same vacation may be filed within one calendar year of the date of the final denial action except in the case where new evidence or circumstances exist that were not available or present when the original petition was filed.

K. An appeal of the planning commission, city council or assembly vacation action under this chapter must be filed in the superior court in accordance with the Alaska Rules of Appellate Procedure.

The 2019 Kenai Peninsula Borough Comprehensive Plan adopted November, 2019 by Ordinance No. 2019-25. The relevant objectives are listed.

Goal 3. Preserve and improve quality of life on the Kenai Peninsula Borough through increased access to local and regional facilities, activities, programs and services.

- *Focus Area: Energy and Utilities*
  - *Objective A - Encourage coordination or residential, commercial, and industrial development with extension of utilities and other infrastructure.*
    - *Strategy 1. Near – Term: Maintain existing easements (especially section line easements) in addition to establishing adequate utility rights of way or easements to serve existing and future utility needs.*
    - *Strategy 2. Near – Term: Maintain regular contact with utility operators to coordinate and review utility easement requests that are part of subdivision plat approval.*
    - *Strategy 3. Near – Term: Identify potential utility routes on Borough lands.*
- *Housing*
  - *Objective D. Encourage efficient use of land, infrastructure and services outside incorporated cities by prioritizing future growth in the most suitable areas.*
    - *Strategy 1. Near – Term: Collaborate with the AK Department of Transportation, incorporated cities within the borough, utility providers, other agencies overseeing local services, and existing communities located adjacent to the undeveloped areas that are appropriate for future growth, to align plans for future expansion of services to serve future residential development and manage growth.*

Goal 4. Improve access to, from and connectivity within the Kenai Peninsula Borough

- *Focus Area: Transportation*
  - *Objective B. Ensure new roads are developed in alignment with existing and planned growth and development.*
    - *Strategy 2. Near – Term: Establish subdivision codes that dictate road construction standards to accommodate future interconnectivity and/or public safety.*
    - *Strategy 3. Near – Term: Identify areas of anticipated growth to determine future access needs.*

END OF STAFF REPORT

KENAI PENINSULA BOROUGH

Planning

Aerial Map

KPB File 2026-034V
4/13/2026

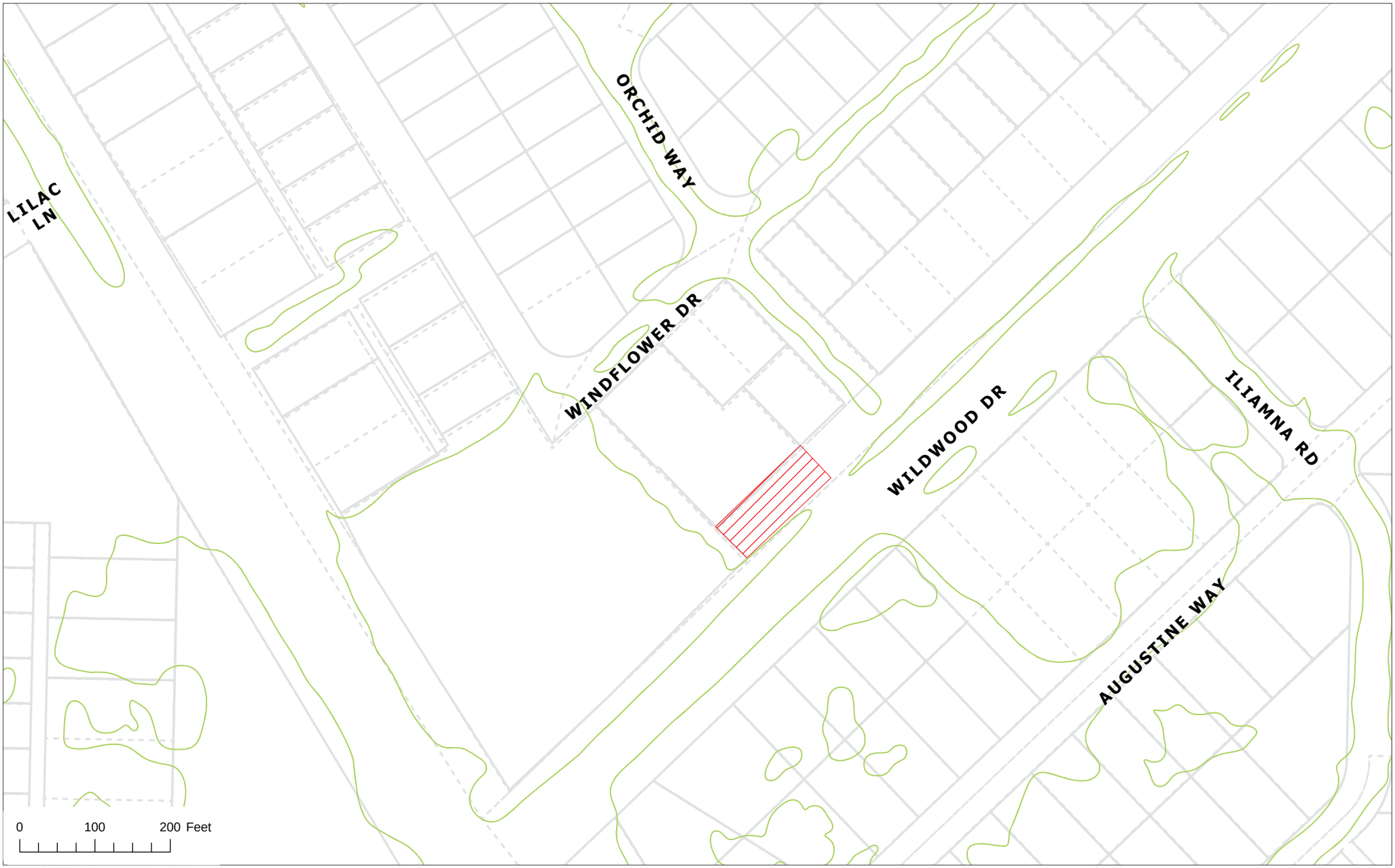
The information depicted hereon is for a graphical representation only of best available sources. The Kenai Peninsula Borough assumes no responsibility for any errors on this map.

KENAI PENINSULA BOROUGH

Planning

Aerial with 5-foot Contours

KPB File 2026-034V
4/13/2026

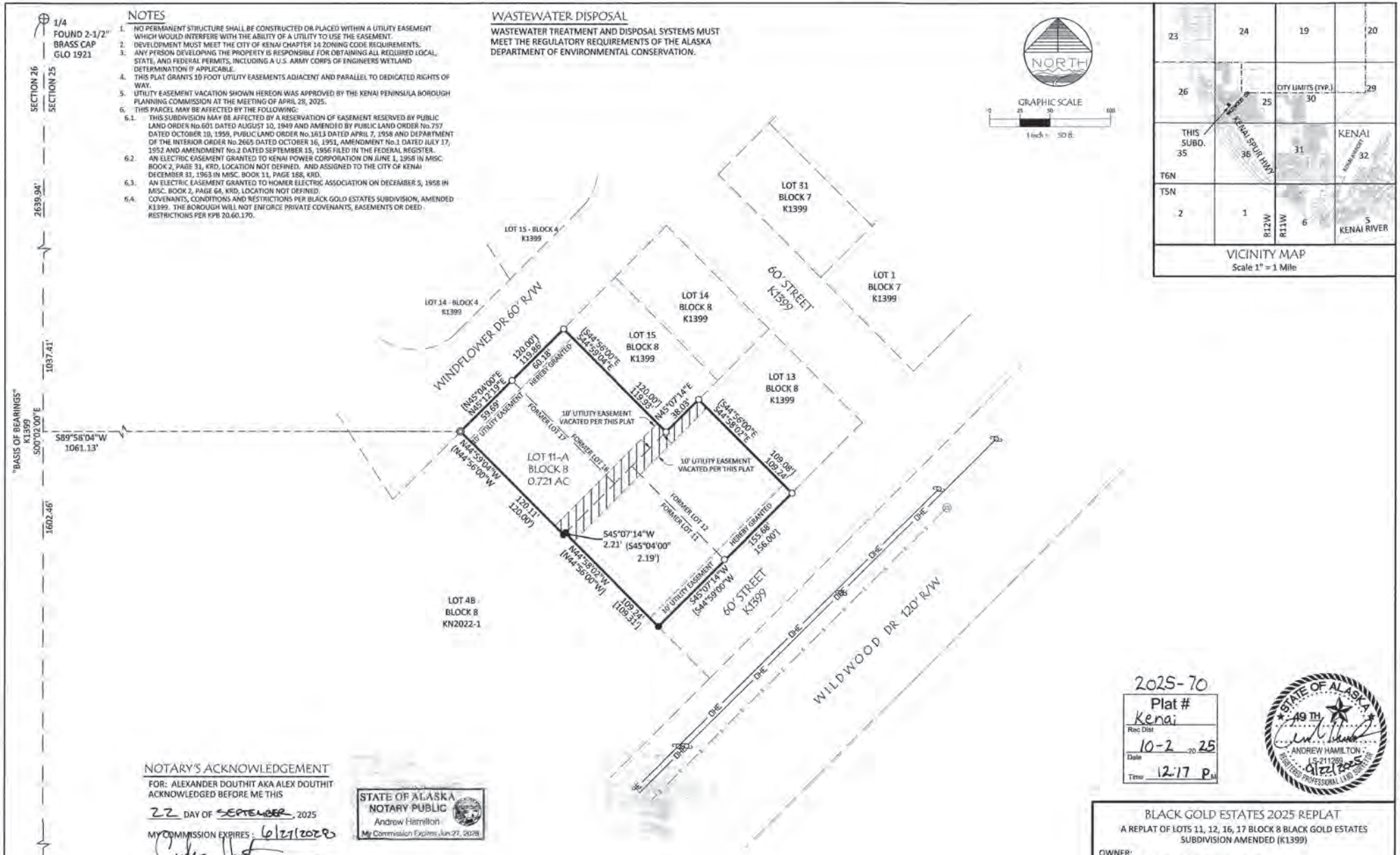


NOTES

1. NO PERMANENT STRUCTURE SHALL BE CONSTRUCTED OR PLACED WITHIN A UTILITY EASEMENT WHICH WOULD INTERFERE WITH THE ABILITY OF A UTILITY TO USE THE EASEMENT.
2. DEVELOPMENT MUST MEET THE CITY OF KENAI CHAPTER 14 ZONING CODE REQUIREMENTS.
3. ANY PERSON DEVELOPING THE PROPERTY IS RESPONSIBLE FOR OBTAINING ALL REQUIRED LOCAL, STATE, AND FEDERAL PERMITS, INCLUDING A U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION IF APPLICABLE.
4. THIS PLAT GRANTS 10 FOOT UTILITY EASEMENTS ADJACENT AND PARALLEL TO DEDICATED RIGHTS OF WAY.
5. UTILITY EASEMENT VACATION SHOWN HEREON WAS APPROVED BY THE KENAI PENINSULA BOROUGH PLANNING COMMISSION AT THE MEETING OF APRIL 28, 2025.
6. THIS PARCEL MAY BE AFFECTED BY THE FOLLOWING:
   - 6.1. THIS SUBDIVISION MAY BE AFFECTED BY A RESERVATION OF EASEMENT RESERVED BY PUBLIC LAND ORDER No.601 DATED AUGUST 10, 1949 AND AMENDED BY PUBLIC LAND ORDER No.757 DATED OCTOBER 10, 1959, PUBLIC LAND ORDER No.1613 DATED APRIL 7, 1958 AND DEPARTMENT OF THE INTERIOR ORDER No.2665 DATED OCTOBER 16, 1961, AMENDMENT No.1 DATED JULY 17, 1952 AND AMENDMENT No.2 DATED SEPTEMBER 15, 1956 FILED IN THE FEDERAL REGISTER.
   - 6.2. AN ELECTRIC EASEMENT GRANTED TO KENAI POWER CORPORATION ON JUNE 1, 1958 IN MISC. BOOK 2, PAGE 31, KRD, LOCATION NOT DEFINED. AND ASSIGNED TO THE CITY OF KENAI DECEMBER 31, 1963 IN MISC. BOOK 11, PAGE 188, KRD.
   - 6.3. AN ELECTRIC EASEMENT GRANTED TO HOMER ELECTRIC ASSOCIATION ON DECEMBER 5, 1958 IN MISC. BOOK 2, PAGE 64, KRD, LOCATION NOT DEFINED.
   - 6.4. COVENANTS, CONDITIONS AND RESTRICTIONS PER BLACK GOLD ESTATES SUBDIVISION, AMENDED K1399. THE BOROUGH WILL NOT ENFORCE PRIVATE COVENANTS, EASEMENTS OR DEED RESTRICTIONS PER KPB 20.60.170.

WASTEWATER DISPOSAL

WASTEWATER TREATMENT AND DISPOSAL SYSTEMS MUST MEET THE REGULATORY REQUIREMENTS OF THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION.



VICINITY MAP
Scale 1" = 1 Mile

NOTARY'S ACKNOWLEDGEMENT

FOR: ALEXANDER DOUTHIT AKA ALEX DOUTHIT
ACKNOWLEDGED BEFORE ME THIS
22 DAY OF SEPTEMBER, 2025
MY COMMISSION EXPIRES: 6/27/2029
NOTARY PUBLIC FOR THE
STATE OF ALASKA

STATE OF ALASKA
NOTARY PUBLIC
Andrew Hamilton
My Commission Expires Jun 27, 2029

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE REAL PROPERTY SHOWN AND DESCRIBED HEREON AND I HEREBY ADOPT THIS PLAN OF SUBDIVISION AND BY MY FREE CONSENT DEDICATE ALL RIGHTS-OF-WAY AND PUBLIC AREAS TO PUBLIC USE AND GRANT ALL EASEMENTS TO THE USE SHOWN.

ALEXANDER DOUTHIT AKA ALEX DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

S26 S25 FOUND 3-1/4" ALMON 1979 610-S
S35 S36

LEGEND

- ⊕ FOUND PRIMARY MONUMENT AS DESCRIBED
- ○ FOUND 1/2" REBAR UNLESS NOTED
- ◎ FOUND 5/8"x30" REBAR w/ 1" STAINLESS STEEL CAP 85032-S
- ● SET 5/8"x30" REBAR w/ 1" BLUE PLASTIC CAP LS-211269
- ( ) RECORD DATA PER BLACK GOLD ESTATES 2021 - KN2022-1
- [ ] RECORD DATA PER BLACK GOLD ESTATES SUBDIVISION AMENDED - K1399

PLAT APPROVAL

THIS PLAT WAS APPROVED BY THE KENAI PENINSULA BOROUGH PLANNING COMMISSION AT THE MEETING OF APRIL 28, 2025.

AUTHORIZED OFFICIAL 10/1/2025

2025-70
Plat # Kenai Rec Dist
10-2 20 25 Date
Time 12:17 PM

STATE OF ALASKA 49TH
ANDREW HAMILTON
LS-211269
REGISTERED PROFESSIONAL LAND SURVEYOR
9/22/2025

BLACK GOLD ESTATES 2025 REPLAT

A REPLAT OF LOTS 11, 12, 16, 17 BLOCK 8 BLACK GOLD ESTATES SUBDIVISION AMENDED (K1399)

OWNER:
ALEXANDER DOUTHIT AKA ALEX DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

0.721 AC. M/L SITUATED IN THE SW1/4 OF SECTION 25, TOWNSHIP 6 NORTH, RANGE 12 WEST, SEWARD MERIDIAN, CITY OF KENAI, KENAI PENINSULA BOROUGH, AND THE KENAI RECORDING DISTRICT, ALASKA.

McLANE Consulting Inc
ENGINEERING - TESTING
SURVEYING - MAPPING
P.O. BOX 468
SOLDOTNA, AK. 99669
VOICE: (907) 283-4218
FAX: (907) 283-3265
WWW.MCLANESG.COM

KPB File No. 2025-048
Project No. 252006
Scale 1" = 50' | Date : JULY 2025 | Book No. : 24-10 | Drawn by : AHH

Sheet 1 of 1

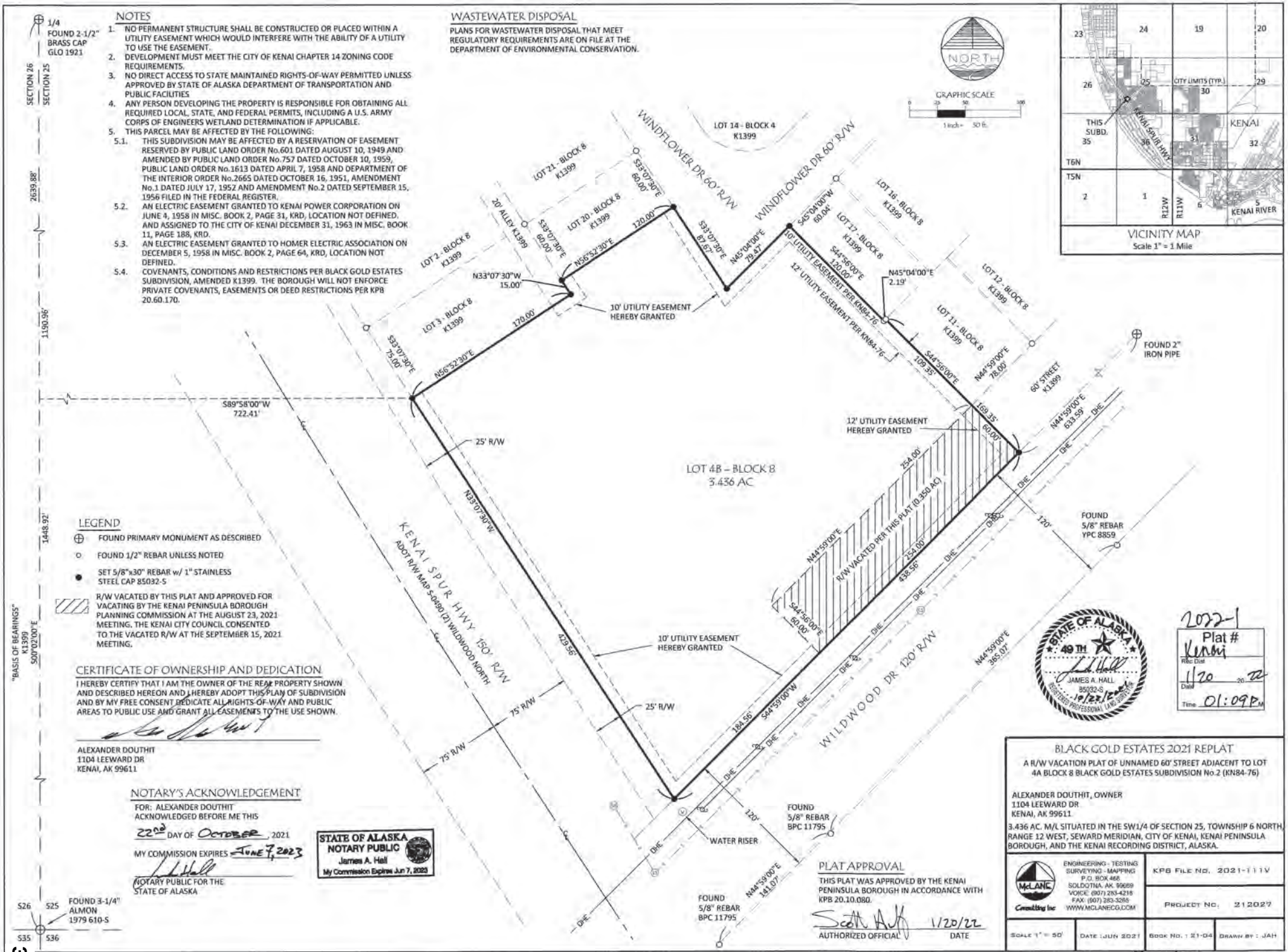
NOTES

1. NO PERMANENT STRUCTURE SHALL BE CONSTRUCTED OR PLACED WITHIN A UTILITY EASEMENT WHICH WOULD INTERFERE WITH THE ABILITY OF A UTILITY TO USE THE EASEMENT.
2. DEVELOPMENT MUST MEET THE CITY OF KENAI CHAPTER 14 ZONING CODE REQUIREMENTS.
3. NO DIRECT ACCESS TO STATE MAINTAINED RIGHTS-OF-WAY PERMITTED UNLESS APPROVED BY STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
4. ANY PERSON DEVELOPING THE PROPERTY IS RESPONSIBLE FOR OBTAINING ALL REQUIRED LOCAL, STATE, AND FEDERAL PERMITS, INCLUDING A U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION IF APPLICABLE.
5. THIS PARCEL MAY BE AFFECTED BY THE FOLLOWING:
   - 5.1. THIS SUBDIVISION MAY BE AFFECTED BY A RESERVATION OF EASEMENT RESERVED BY PUBLIC LAND ORDER No.601 DATED AUGUST 10, 1949 AND AMENDED BY PUBLIC LAND ORDER No.757 DATED OCTOBER 10, 1959, PUBLIC LAND ORDER No.1613 DATED APRIL 7, 1958 AND DEPARTMENT OF THE INTERIOR ORDER No.2665 DATED OCTOBER 16, 1951, AMENDMENT No.1 DATED JULY 17, 1952 AND AMENDMENT No.2 DATED SEPTEMBER 15, 1956 FILED IN THE FEDERAL REGISTER.
   - 5.2. AN ELECTRIC EASEMENT GRANTED TO KENAI POWER CORPORATION ON JUNE 4, 1958 IN MISC. BOOK 2, PAGE 31, KRD, LOCATION NOT DEFINED. AND ASSIGNED TO THE CITY OF KENAI DECEMBER 31, 1963 IN MISC. BOOK 11, PAGE 188, KRD.
   - 5.3. AN ELECTRIC EASEMENT GRANTED TO HOMER ELECTRIC ASSOCIATION ON DECEMBER 5, 1958 IN MISC. BOOK 2, PAGE 64, KRD, LOCATION NOT DEFINED.
   - 5.4. COVENANTS, CONDITIONS AND RESTRICTIONS PER BLACK GOLD ESTATES SUBDIVISION, AMENDED K1399. THE BOROUGH WILL NOT ENFORCE PRIVATE COVENANTS, EASEMENTS OR DEED RESTRICTIONS PER KPB 20.60.170.

WASTEWATER DISPOSAL

PLANS FOR WASTEWATER DISPOSAL THAT MEET REGULATORY REQUIREMENTS ARE ON FILE AT THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.

VICINITY MAP
Scale 1" = 1 Mile



LEGEND

- ⊕ FOUND PRIMARY MONUMENT AS DESCRIBED
- o FOUND 1/2" REBAR UNLESS NOTED
- ● SET 5/8"x30" REBAR w/ 1" STAINLESS STEEL CAP 85032-S
- ▨ R/W VACATED BY THIS PLAT AND APPROVED FOR VACATING BY THE KENAI PENINSULA BOROUGH PLANNING COMMISSION AT THE AUGUST 23, 2021 MEETING. THE KENAI CITY COUNCIL CONSENTED TO THE VACATED R/W AT THE SEPTEMBER 15, 2021 MEETING.

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE REAL PROPERTY SHOWN AND DESCRIBED HEREON AND I HEREBY ADOPT THIS PLAN OF SUBDIVISION AND BY MY FREE CONSENT DEDICATE ALL RIGHTS-OF-WAY AND PUBLIC AREAS TO PUBLIC USE AND GRANT ALL EASEMENTS TO THE USE SHOWN.

ALEXANDER DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

NOTARY'S ACKNOWLEDGEMENT

FOR: ALEXANDER DOUTHIT
ACKNOWLEDGED BEFORE ME THIS
22nd DAY OF OCTOBER, 2021
MY COMMISSION EXPIRES June 7, 2023

NOTARY PUBLIC FOR THE STATE OF ALASKA

STATE OF ALASKA
NOTARY PUBLIC
James A. Hall
My Commission Expires Jun 7, 2023

STATE OF ALASKA 49TH
JAMES A. HALL
85032-S
10/27/21
REGISTERED PROFESSIONAL LAND SURVEYOR

2022-1
Plat # Kenai
Rec Dist
Date 1/20 20 22
Time 01:09 PM

PLAT APPROVAL

THIS PLAT WAS APPROVED BY THE KENAI PENINSULA BOROUGH IN ACCORDANCE WITH KPB 20.10.080.

Scott Huff 1/20/22
AUTHORIZED OFFICIAL DATE

BLACK GOLD ESTATES 2021 REPLAT

A R/W VACATION PLAT OF UNNAMED 60' STREET ADJACENT TO LOT 4A BLOCK 8 BLACK GOLD ESTATES SUBDIVISION No.2 (KN84-76)

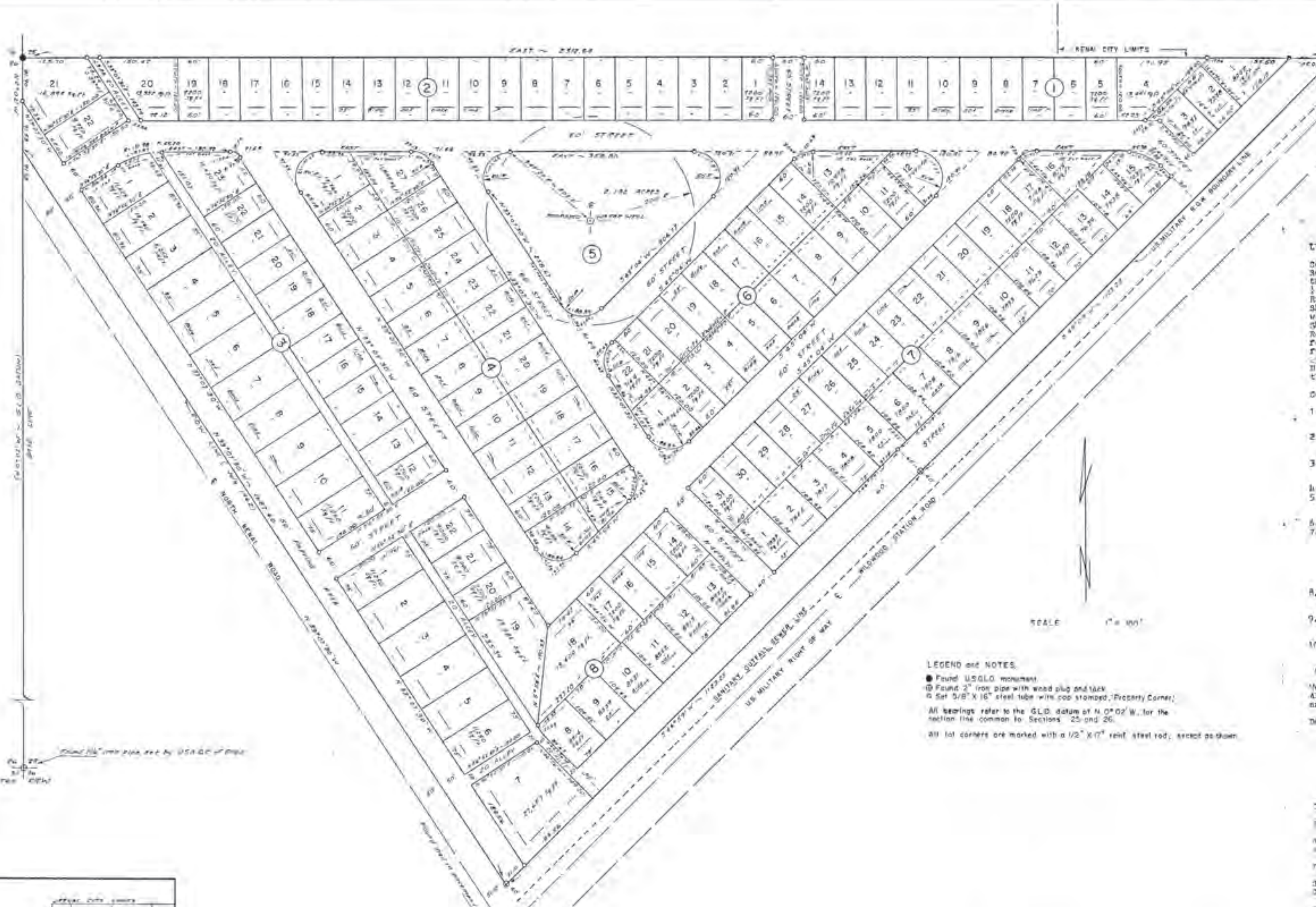
ALEXANDER DOUTHIT, OWNER
1104 LEEWARD DR
KENAI, AK 99611

3.436 AC. M/L SITUATED IN THE SW1/4 OF SECTION 25, TOWNSHIP 6 NORTH, RANGE 12 WEST, SEWARD MERIDIAN, CITY OF KENAI, KENAI PENINSULA BOROUGH, AND THE KENAI RECORDING DISTRICT, ALASKA.

McLANE Consulting Inc
ENGINEERING - TESTING
SURVEYING - MAPPING
P.O. BOX 468
SOLDOTNA, AK 99669
VOICE: (907) 283-4218
FAX: (907) 283-3265
WWW.MCLANECG.COM

KPB FILE NO. 2021-111V
PROJECT NO. 212027
SCALE 1" = 50'
DATE : JUN 2021
BOOK NO. : 21-04
DRAWN BY : JAH

Page 1 of 1



LEGEND and NOTES.

- ● Found U.S.G.L.O. monument
- ⊚ Found 2" iron pipe with wood plug and tack
- ○ Set 5/8" X 16" steel tube with cap stamped, (Property Corner)

All bearings refer to the G.L.O. datum of N. 0°02' W., for the section line common to Sections 25 and 26.

All lot corners are marked with a 1/2" X 17" reinf. steel rod, except as shown.

VICINITY MAP

LEGAL DESCRIPTION OF THE BLACK GOLD ESTATES SUBDIVISION:

Commencing from the U.S.G.L.O. ¼ Section Corner monument common to Sections 25 and 26, T6N, R12W, of the Seward Meridian, Alaska, this is the true point of beginning, thence East, 2517.64 ft. along the center ¼ line of Section 25 to the point of intersection with the U.S. Military Right of Way boundary, found 2" iron pipe with wood plug and tack, thence S45°09'W, 1123.72 ft. along said U.S. Military R.O.W. to a 2" iron pipe with wood plug and tack, thence continue along said Military R.O.W. S44°59'W, 1123.75 ft. to the point of intersection with the North Kenai Road Easterly R.O.W. of Way line, 50 ft. from center line of said road, found 2" iron pipe with wood plug and tack, thence N33°07'30"W, 18[illegible]7.48 ft. to a point of intersection with the section line common to Sections 25 and 26, thence along the Section line N0°02'W, 173.48 ft. to the U.S.G.L.O. ¼ Section Corner monument common to Sections 25 and 26, and the true point of beginning thus embracing 47.553 acres of land.

COVENANTS:

1. Said property shall be subject to all easements, reservations and restrictions of record or contained in the original patent issued to Carl and Mary C. Ahlstrom.
2. No building shall be erected within a distance of twenty five (25) feet from the front lot line, ten (10) feet from either side or rear lot line of any residence lot.
3. Any building erected on the above described premises shall be placed on a permanent foundation (no skids or other devices for moving structures may be included in any building).
4. All buildings shall be finished on the exterior.
5. No industrial enterprise may be conducted on the above described premises, nor shall these premises be used for a trailer park, nor shall any trailer or quonset hut be placed thereon.
6. All debris from clearing shall be removed, burned or buried.
7. Purchaser(s) and seller hereby covenant that the above-described property shall be subject to assessment for any of the improvements required by the ordinances of the City of Kenai when installed at a future time by the City or Developers, unless prior to construction of such improvements by the City or Developers, the owners of property within this subdivision shall have joined together for the purpose of constructing such improvements.
8. Each Purchaser will be assessed, for the purpose of road construction on the basis of ninety (90) cents per front foot, this cost will be included in the contract.
9. Upon request of the City of Kenai, a safety barrier will be constructed along the North Kenai Road R.O.W. line in front of the parking strip by the individual lot owners in Blocks [illegible], 3, and 8.
10. No individual water well will be allowed within this subdivision.

CERTIFICATE OF OWNERSHIP AND DEDICATION.

We hereby certify that we are the owners of BLACK GOLD ESTATES SUBDIVISION AMENDED as shown hereon, and that we adopt this plan with our free consent, and dedicate all streets, alleys, and parking strip, for public use.

Date *Sept 7 '64* *Carl F Ahlstrom* Owner *Mary C. Ahlstrom* Owner

CERTIFICATE OF REGISTERED LAND SURVEYOR

I hereby certify that I am a registered land surveyor, and that this plat represents a survey made by me and the monuments shown thereupon actually exist as located, and that all dimensional and other details are correct.

Date *Sept 29 1964* *Stanley S McLane*
Registered Land Surveyor

STATE OF ALASKA)
CITY OF KENAI) ss

On this 14 day of *Nov 1964* before me personally appeared *Carl F. Ahlstrom* and *Mary C. Ahlstrom*, known to me to be the persons whose names are subscribed on to this instrument, and acknowledged to me that they executed the same for the purposes herein expressed.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my notarial seal this day and year last written above.

November 10, 1968 *[illegible]*
My Commission Expires Notary Public

City Planning Commission
Received *11/14/64*
Approved *11/14/64*

Chairman *[illegible] C. Carr*

COUNCIL

This is to certify that the within plat was duly submitted to and approved by the Council of Kenai City, Alaska, by Resolution Number *[illegible]* duly [illegible] entered as recorded this *[illegible]* day of *December 1964*

[illegible]

[illegible]
City Clerk

BLACK GOLD ESTATES SUBDIVISION, AMENDED

CARL F. AHLSTROM and MARY C. AHLSTROM
OWNERS

RICHARD and JOAN WILLIAMS
DEVELOPERS

A PORTION OF THE CARL F. AHLSTROM, HOMESTEAD LOCATED WITHIN THE SW 1/4 OF SECTION 25, T6N, R12W, OF THE SEWARD MERIDIAN, ALASKA, CONTAINING 47.558 ACRES OF LAND.

SURVEYED BY

STANLEY S. McLANE, R.L.S.

Date	Begin	July 19, 1962
	End	Oct. 24, 1962
REVISIONS	"		Sept. 10, 1964

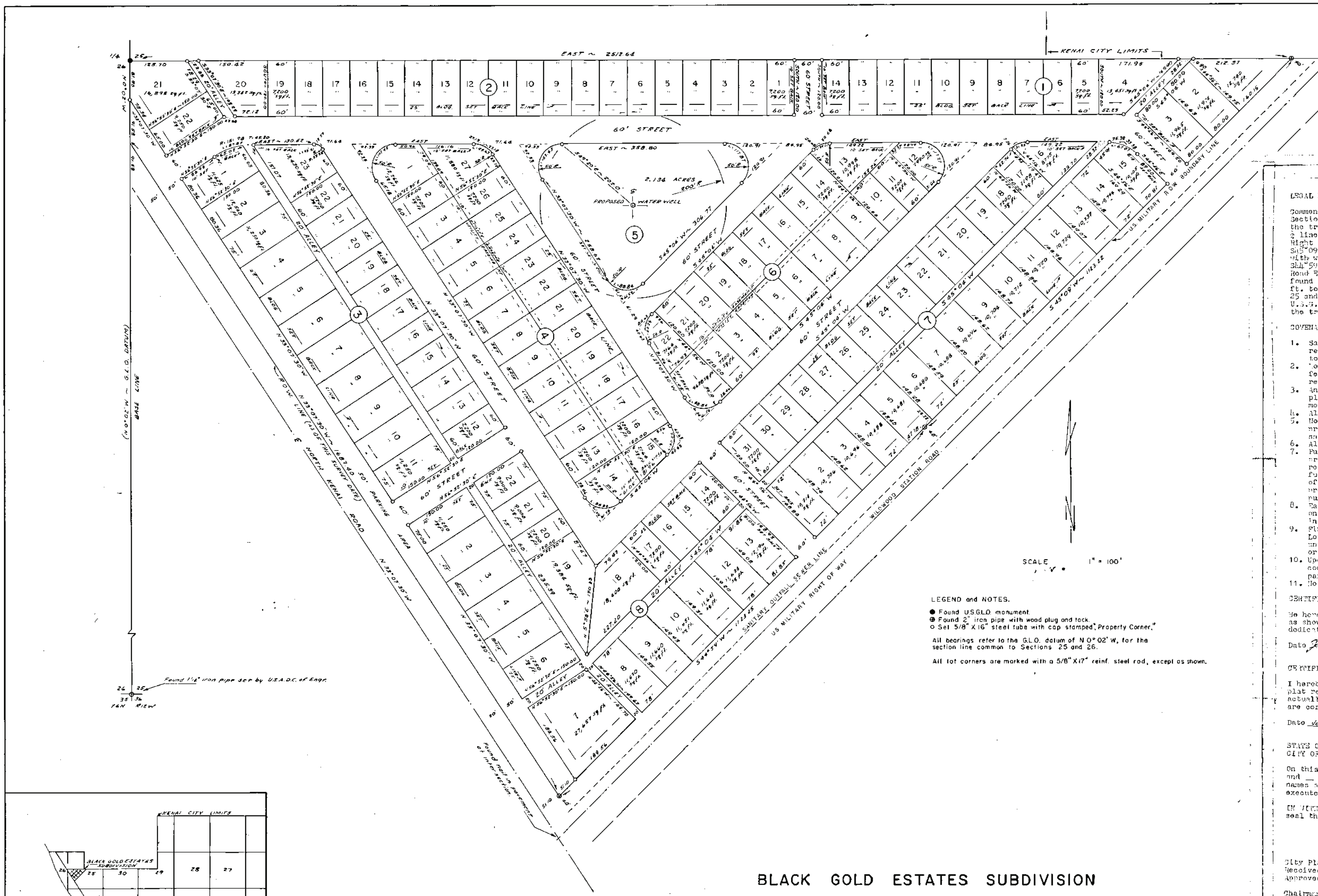
REVISIONS

1. The addition of a 60 ft. street in front of lots 8 thru 13, in block 9, and lots 1 thru 15, in block 7, and eliminating the 20 ft. alley to the back of these lots.
2. The addition of a 60 ft. street in front of lots 1,2,3, in block 1, and eliminating the 20 ft. alley to the back of these lots.
3. The frontage on lots 11,12,13,14, & 15, in block 7, and lots 1,2,& 3, in block 1, has been revised.
4. These revisions were necessary to fill covenant No. 9, as shown on the original plat, and have been completed this date Sept. 29 1964. by Stanley S McLane, R.L.S.

STATE OF ALASKA 49TH *Stanley S. McLane* NO. 6105 REGISTERED LAND SURVEYOR

BLACK GOLD ESTATES, AMENDED

#607

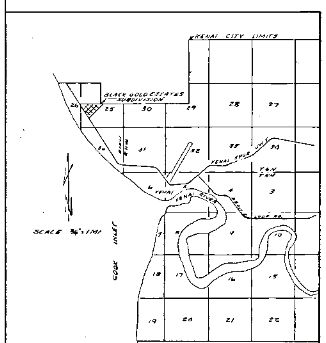


LEGEND and NOTES.

- ● Found U.S.G.L.O. monument.
- ⊕ Found 2" iron pipe with wood plug and tack.
- ○ Set 5/8" X 16" steel tube with cap stamped "Property Corner."

All bearings refer to the G.L.O. datum of N 0° 02' W, for the section line common to Sections 25 and 26.

All lot corners are marked with a 5/8" X 17" reinf. steel rod, except as shown.



VICINITY MAP

BLACK GOLD ESTATES SUBDIVISION

CARL F. AHLSTROM and MARY C. AHLSTROM
OWNERS

RICHARD and JOAN WILLIAMS
DEVELOPERS

A PORTION OF THE CARL F. AHLSTROM, HOMESTEAD, LOCATED WITHIN THE SW 1/4 OF SECTION 25, T6N, R12W, OF THE SEWARD MERIDIAN, ALASKA, CONTAINING 47.558 ACRES OF LAND.

SURVEYED BY

STANLEY S. McLANE, R.L.S.

Date Begin July 19, 1962.
End Oct. 24, 1962.

LEGAL DESCRIPTION OF THE BLACK GOLD ESTATES SUBDIVISION.

Commencing from the U.S.G.L.O. ¼ Section Corner monument common to Sections 25 and 26, T6N, R12W, of the Seward Meridian, Alaska, this is the true point of beginning, thence East, 2512.64 ft. along the center ¼ line of Section 25 to the point of intersection with the U.S. Military Right of Way boundary, found 2" iron pipe with wood plug and tack, thence S45°09'W, 1123.22 ft. along said U.S. Military R.O.W. to a 2" iron pipe with wood plug and tack, thence continue along said military R.O.W. S44°59'W, 1123.25 ft. to the point of intersection with the North Kenai Road Easterly Right of Way line, 50 ft. from center line of said Road, found 2" iron pipe with wood plug and tack, thence N33°07'30"W, 1687.40 ft. to a point of intersection with the section line common to Sections 25 and 26, thence along the Section line N0°02'W, 173.48 ft. to the U.S.G.L.O. ¼ Section Corner monument common to Sections 25 and 26, and the true point of beginning thus embracing 47.558 acres of land.

COVENANTS.

1. Said property shall be subject to all easements, reservations and restrictions of record or contained in the original patent issued to Carl and Mary C. Ahlstrom.
2. No building shall be erected with a distance of twenty five (25) feet from the front lot line, ten (10) feet from either side or rear lot line of any residence lot.
3. Any building erected on the above described premises shall be placed on a permanent foundation (no skids or other devices for moving structures may be included in any building).
4. All buildings shall be finished on the exterior.
5. No industrial enterprise may be conducted on the above described premises, nor shall those premises be used for a trailer park, nor shall any trailer or quonset hut be placed thereon.
6. All debris from clearing shall be removed, burned or buried.
7. Purchaser(s) and seller hereby covenant that the above-described property shall be subject to assessment for any of the improvements required by the ordinances of the City of Kenai when installed at a future time by the City or Developers, unless prior to construction of such improvements by the City or Developers, the owners of property within this subdivision shall have joined together for the purpose of constructing such improvements.
8. Each Purchaser will be assessed, for the purpose of road construction on the basis of ninety (90) cents per front foot, this cost will be included in the contract.
9. Final approval of the City Council on Lots 8-13 of Block 8 and Lots 1-15 of Block 7 and Lots 1-3 of Block 1, will be withheld until the Developer has written approval of access from the Army or has constructed an additional road, etc. to meet City requirements.
10. Upon request of the City of Kenai, a safety barrier will be constructed along the North Kenai Road R.O.W. line in front of the parking strip by the individual lot owners of Blocks 2, 3, and 8.
11. No individual water wells will be allowed within this subdivision.

CERTIFICATE OF OWNERSHIP AND DEDICATION.

We hereby certify that we are the owners of BLACK GOLD ESTATES SUBDIVISION as shown hereon, and that we adopt this plan with our free consent, and dedicate all streets, alleys, and parking strip for public use.

Date *June 14 1963* *Richard M. Williams* ______ owner ______ owner

CERTIFICATE OF REGISTERED LAND SURVEYOR.

I hereby certify that I am a registered land surveyor, and that this plat represents a survey made by me, and the monuments shown thereupon actually exist as located, and that all dimensional and other details are correct.

Date *June 8, 1963* *Stanley S. McLane* Registered Surveyor

STATE OF ALASKA)
CITY OF KENAI) ss

On this *27th* day of ______ 1963, before me personally appeared ______ and ______, known to me to be the persons whose names are subscribed to this instrument, and acknowledged to me that they executed the same for the purposes hereon expressed.

IN WITNESS THEREOF I have hereunto set my hand and affixed my notarial seal this day and year last written above.

______ Notary Public

My commission expires ______

City Planning Commission.
Received *14 June 1963*
Approved *24 June 1963*
Chairman ______

COUNCIL

This is to certify that the within plat was duly submitted to and approved by the Council of Kenai City, Alaska, by resolution number *63-29* duly authenticated as passed this *21* day of *July*, 1963.

______ Mayor

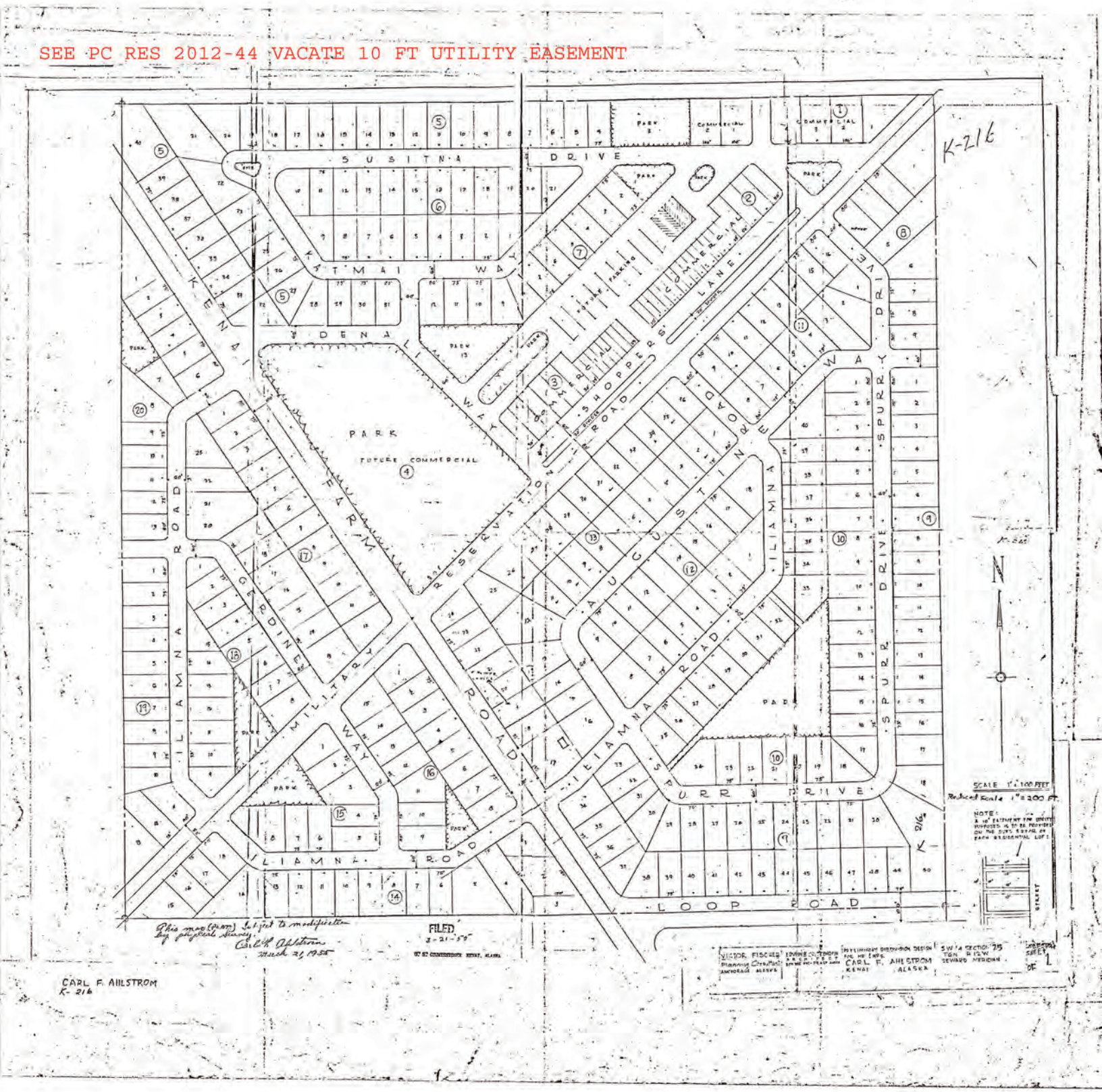
______ City Clerk

BLACK GOLD ESTATES
631

KN-216

216

SEE PC RES 2012-44 VACATE 10 FT UTILITY EASEMENT



Preliminary Plat Submittal Form

City of Kenai
Planning and Zoning Department
210 Fidalgo Avenue
Kenai, AK 99611
(907) 283-8200
planning@kenai.city
www.kenai.city/planning

APPLICANT (SURVEYOR)

Name:	McLane Consulting						
Mailing Address:	PO BOX 468	City:	Soldotna	State:	AK	Zip Code:	99669
Phone Number(s):	907-283-4218						
Email:	ahamilton@mclanecg.com						

PROPERTY OWNER

Name:	Alexander Douthit						
Mailing Address:	1104 Leeward Dr.	City:	Kenai	State:	AK	Zip Code:	99611
Phone Number(s):	907-398-2080						
Email:	alex@alaskacdl.com						

PROPERTY INFORMATION

Kenai Peninsula Borough Parcel #:	03904023		
Current City Zoning:	General Commercial		
Use:	☐ Residential	☐ Recreational	■ Commercial
	☐ Other:		
Water:	☐ On Site	■ City	☐ Community
Sewer:	☐ On Site	■ City	☐ Community

PLAT INFORMATION

Preliminary Plat Name:	Black Gold Estates 2026 Vacation	
Revised Preliminary Plat Name:		
Vacation of Public Right-of-Way:	■ Yes	☐ No
Street Name (if vacating ROW):	Unnamed 60' street per K1399	

Exceptions Required and Requested:

Comments:

This is a plat that intends to vacate the 60' street adjacent to Wildwood Drive. Wildwood Drive is a 120' right of way that is constructed and utilized for ingress/egress of traffic. Please see attached letter.

REQUIRED ATTACHMENTS

■ Certificate to Plat ■ (1) 24" x 36" Plat ■ (2) 11" x 17" Plats

SIGNATURE

Signature:		Date:	2/12/26
Print Name:	Alexander Douthit	Title/Business:	

STAFF REPORT

PLANNING & ZONING DEPARTMENT

KENAI

TO:	Planning and Zoning Commission
THROUGH:	Kevin Buettner, Planning Director
FROM:	Brandon McElrea, Land Management Analyst
DATE:	March 17, 2026
SUBJECT:	Resolution No. PZ2026-07 – Preliminary Plat – Black Gold Estates 2026 Vacation

Request	The applicant is proposing a preliminary plat to vacate a 60-foot right-of-way.
Staff Recommendation	Adopt Resolution No. PZ2026-07 recommending approval of Preliminary Plat – Black Gold Estates 2026 Vacation, to vacate a 60-foot right-of-way.

Applicant:	McLane Consulting, Inc. Attn: Andrew Hamilton P.O. Box 468 Soldotna, AK 99669
Property Owner:	Alexander Douthit
Legal Description:	Lot 11-A, Block 8, Black Gold Estates 2025 Replat
Property Address:	N/A
KPB Parcel No.:	03904023
Zoning District:	General Commercial (CG)
Land Use Plan:	Suburban Residential (SR)
Surrounding Uses:	Improved and Vacant Commercial and Residential

SUMMARY

The City received a preliminary plat from McLane Consulting, Inc. on behalf of the property owner for the vacation of a 60-foot unnamed right-of-way (ROW) located along the southeastern boundary of Lot 11-A, Block 8, Black Gold Estates 2025 Replat. The recent acquisition of the Wildwood Drive ROW by the City of Kenai, from the Kenai Native Association, Inc., renders the unnamed ROW unnecessary for the original intended use of access to the Black Gold Estates Subdivision.

Kenai Municipal Code (KMC) Chapter 14.10 *Subdivision Regulations* states preliminary plats or replats must first be submitted to the City for review and provide recommendation to the Kenai Peninsula Borough Planning Commission.

ANALYSIS

The proposed vacation plat meets the preliminary plat requirements and development requirements for the General Commercial (CG) zoning district. Access to the subject lot is via Wildwood Drive, which is a City maintained paved road. At approximately 40,729 square feet, proposed Lot 11A-1 is of adequate size for commercial development, to include parking. City water and sewer are available along Wildwood Drive. The Public Works Director, Fire Marshal, and Building Official have reviewed the preliminary plat and have no comments.

Staff finds that the preliminary plat meets the following Title 14 of Kenai Municipal Code (KMC) sections and aligns with the intent of the Kenai Zoning Code.

1. Pursuant to KMC 14.10.070 *Subdivision Design Standards*, the preliminary plat for replat, subject to the listed conditions, provides utilities easements, provides a satisfactory and desirable building site, and the accessible water and wastewater systems are subject to the regulatory requirements of the City of Kenai Public Works Department.

2. Pursuant to KMC 14.10.080 *Minimum improvement required*, the preliminary plat is within a subdivision that has dedicated rights-of-way and determined acceptable access, subject to the listed conditions. Therefore, an installation agreement is not required.

3. Pursuant to KMC 14.24.010 *Minimum lot area requirements*, the preliminary plat meets City standards for commercial development, including parking.

4. Pursuant to KMC 14.24.020 *General Requirements*, the preliminary plat meets City standards for minimum lot width/depth and access/utility easements. Compliance with the maximum lot coverage, maximum height, and setbacks will be reviewed during the building permit review.

STAFF RECOMMENDATION

Staff finds that the proposed preliminary plat for Black Gold Estates 2026 Vacation, to vacate a 60-foot ROW on Lot 11A, Block 8, Black Gold Estates 2025 Replat, meets the general standards for Kenai Municipal Code (KMC) Chapter 14.10 *Subdivision Regulations* and Chapter 14.24 *Development Requirements Table* and hereby recommends that the Planning and Zoning Commission recommends approval of Resolution No. PZ2026-07 to the Kenai Peninsula Borough, subject to the following conditions:

1. Further development of the property will conform to all Federal, State of Alaska, and local regulations.

2. The Kenai City Council must declare the 60-foot right-of-way not needed for a public purpose and approve the vacation of the right-of-way as shown on the preliminary plat.

3. A plat note added to the final plat to prohibit access from Windflower Drive to avoid double frontage, in accordance with KMC 14.10.070(e)(2).

ATTACHMENTS

Aerial Map
Application
Preliminary Plat, Black Gold Estates 2026 Vacation
Plat Map K-1399, Black Gold Estates Subdivision Amended
Wildwood Drive Quitclaim Deed

Aerial Map


ORCHIDWAY
WINDFLOWER DR
WILDWOOD DR
KENAI SPUR HWY
14
COOK INLET DR

Preliminary Plat Submittal Form

City of Kenai
Planning and Zoning Department
210 Fidalgo Avenue
Kenai, AK 99611
(907) 283-8200
planning@kenai.city
www.kenai.city/planning

APPLICANT (SURVEYOR)

Name:	McLane Consulting						
Mailing Address:	PO BOX 468	City:	Soldotna	State:	AK	Zip Code:	99669
Phone Number(s):	907-283-4218						
Email:	[redacted]						

PROPERTY OWNER

Name:	Alexander Douthit						
Mailing Address:	[redacted]	City:	Kenai	State:	AK	Zip Code:	99611
Phone Number(s):	[redacted]						
Email:	[redacted]						

PROPERTY INFORMATION

Kenai Peninsula Borough Parcel #:	03904023		
Current City Zoning:	General Commercial		
Use:	☐ Residential	☐ Recreational	■ Commercial
	☐ Other:		
Water:	☐ On Site	■ City	☐ Community
Sewer:	☐ On Site	■ City	☐ Community

PLAT INFORMATION

Preliminary Plat Name:	Black Gold Estates 2026 Vacation	
Revised Preliminary Plat Name:		
Vacation of Public Right-of-Way:	■ Yes	☐ No
Street Name (if vacating ROW):	Unnamed 60' street per K1399	

Exceptions Required and Requested:

Comments:

This is a plat that intends to vacate the 60' street adjacent to Wildwood Drive. Wildwood Drive is a 120' right of way that is constructed and utilized for ingress/egress of traffic. Please see attached letter.

REQUIRED ATTACHMENTS

■ Certificate to Plat ■ (1) 24" x 36" Plat ■ (2) 11" x 17" Plats

SIGNATURE

Signature:	[signature]	Date:	2/12/26
Print Name:	Alexander Douthit	Title/Business:	

Planning Department
144 N. Binkley Street, Soldotna, Alaska 99669 • (907) 714-2200 • (907) 714-2378 Fax

PETITION TO VACATE PLATTED RIGHT OF WAY / PLATTED PUBLIC EASEMENT / PLATTED PUBLIC AREA

PUBLIC HEARING REQUIRED

Upon receipt of complete application with fees and all required attachments, a public hearing before the Planning Commission will be scheduled. The petition with all required information and attachments must be in the Planning Department at least 30 days prior to the preferred hearing date. By State Statute and Borough Code, the public hearing must be scheduled within 60 days of receipt of complete application.

Initially, a sketch may be included with the vacation petition for review by the Planning Commission. After the Planning Commission takes action on the vacation, a Subdivision Plat must be prepared by a licensed land surveyor. The plat will be processed in accordance with KPB 20.10.080. Platting authority is vested in the Planning Director.

SUBMITTAL REQUIREMENTS

A platted right of way vacation (ROWV) application will be scheduled for the next available planning commission meeting after a complete application has been received.

- [x] - $500 non-refundable fee to help defray costs of advertising public hearing. Plat fees will be in addition to the vacation fees.
- [x] - City Advisory Planning Commission. Copy of minutes at which this item was acted on, along with a copy of City Staff Report.
- [ ] Unnamed 60' FT R/W platted public right of way proposed to be vacated was dedicated by the plat of Black Gold Estates Subdivision Subdivision, filed as Plat No. k1399 in the Kenai Recording District.
- [x] - 3 copies of the plat or map showing the platted right of way to be vacated. Must not exceed 11 x 17 inches in size. Area to be vacated must be clearly depicted. Proposed alternative public access to be shown and labeled on the sketch.
- [x] - REASON FOR VACATING The petitioner must attach a statement with reasonable justification for the vacation of the platted right of way / platted easement / platted public area.

Has the platted right of way been fully or partially constructed?		Yes	✔	No
Is the platted right of way used by vehicles / pedestrians / other?		Yes	✔	No
Is alternative right-of-way being provided?		Yes	✔	No
Are there utility easements associated with the right of way to be vacated?	✔	Yes		No
Is the platted right of way and or associated utility easement in use by any utility company?		Yes	✔	No
If so, which utility provider?				

LEGAL DESCRIPTION ADJOINING LAND:

Lot, Block, Subd. or street address Lot 11-A Block 8 Black Gold Estates 2025 Replat (KN2025-70)	
Section, township, range S25, T6N, R12W	
City (if applicable) Kenai	General area Wildwood Drive

The petition must be signed by owners of a majority of the land affected by the platted right of way proposed to be vacated. Each petitioner must include address and legal description of his/her property. Attach additional signature sheets if needed.

Submitted by:
Land Owner

VACATION OF PLATTED RIGHT OF WAY / PLATTED PUBLIC EASEMENT / PLATTED PUBLIC AREA

20.65.010. Authority; Legislative intent; Scope.
This chapter is enacted under the authority of AS 29.40. A vacation decision is a discretionary legislative land use decision. The purpose of this chapter is to establish procedures for the vacation of a platted public right-of-way, public area, or other public easement dedicated on a borough approved plat, and to provide procedures for the alteration, including removal, of platted utility easements. This chapter does not apply to easements or property owned or held by a city or the borough in their proprietary capacity which may only be extinguished through the terms of the controlling document or applicable law. This chapter does not apply to private easements.

20.65.030. Vacation Criteria.
Vacation of a platted public right-of-way, access, area or other easement granted for public use or public benefit must conform to the requirements of this chapter and AS 29.40.120 through AS 29.40.160 as now enacted or as amended.

20.65.040. Vacation Application.
An informal pre-application conference by appointment with borough staff prior to the submittal of the application for vacation of a public right-of-way is encouraged. The application shall include the following items.

A. A petition, provided by the borough planning department, signed by:
   1. The owners of the majority of the land abutting the area being vacated; or
   2. An official representative of the state, the borough, an affected utility, or a city when the area to be vacated is within the city.
B. A sketch that depicts the area to be vacated, a preliminary vacation plat, or a copy of the existing plat showing the proposed alteration or replat. The format and number of copies of the sketch submittal shall be determined by the planning director;
C. Written recommendations, comments, or meeting minutes from the planning and zoning commission of the affected city, if the area to be vacated is within a city. The sketch or submittal provided to an affected city must be the same submittal that is provided to the borough.
D. The appropriate fee; and
E. Applicant statement containing the reasons in support of the vacation.

20.65.050. Action on vacation application.

A. Staff shall review the application and supporting materials for compliance. If the application is incomplete, staff will return it to the applicant with a written list of deficiencies to be satisfied for acceptance.
B. After acceptance of the application, staff will:
   1. Send notice of the proposed vacation and the public hearing in accordance with KPB 20.10.100.
   2. Prepare a staff report that evaluates the merits of the proposed vacation. Revisions to the application submitted subsequent to the preparation of the staff report and after notice is sent will not be considered at the scheduled public hearing. Any such revisions will be treated as a revised application under this chapter.
C. An accepted application shall be placed on the agenda of a regularly scheduled planning commission meeting. The public hearing on the vacation may not be more than 60 days after acceptance of the application, unless the applicant requests postponement.
D. The planning commission shall consider the merits of each vacation request. A platted dedication to public use of land or interest in land may be vacated if the dedication is no longer necessary for present or future public use and in all cases the planning commission shall deem the area being vacated to be of value to the public. In evaluating the merits of the proposed vacation, the planning commission shall consider whether:
   1. The right-of-way or public easement to be vacated is being used;
   2. A road is impossible or impractical to construct, and alternative access has been provided;
   3. The surrounding area is fully developed and all planned or needed rights-of-way and utilities are constructed;
   4. The vacation of a public right-of-way provides access to a lake, river, or other area with public interest or value, and if so, whether equal or superior access is provided;
   5. The proposed vacation would limit opportunities for interconnectivity with adjacent

F. The borough will consider realignment of a right-of-way by vacation and rededication where the planning commission finds that the right-of-way realignment will enhance access and the realigned right-of-way is located to provide reasonable means of ingress and egress.

G. Where the planning commission finds that a right-of-way must be preserved, but determines there is excessive width for all intended uses within the right-of-way, the commission may approve a partial vacation of a right-of-way such that the width is reduced to the maximum necessary for the intended use. Such vacation shall conform to this title for the class of right-of-way involved except where the right-of-way is not intended to be used for vehicular purposes.

H. A planning commission decision to approve a vacation is not effective without the consent of the city council, if the vacated area to be vacated is within a city, or by the assembly in all other cases. The council or assembly shall have 30 days from the date of the planning commission approval to either consent to or veto the vacation. Notice of veto of the vacation shall be immediately given to the planning commission. Failure to act on the vacation within 30 days shall be considered to be consent to the vacation. This provision does not apply to alterations of utility easements under KPB 20.65.070 which do not require the consent of the assembly or city council unless city code specifically provides otherwise.

I. Upon approval of the vacation request by the planning commission and no veto by the city council or assembly, where applicable, the applicant shall have a surveyor prepare and submit a plat including the entire area approved for vacation in conformance with KPB 20.10.080. Only the area approved for vacation by the assembly or council may be included on the plat. The final plat must be recorded within one year of the vacation consent.

J. A planning commission decision denying a vacation application is final. No reapplication or petition concerning the same vacation may be filed within one calendar year of the date of the final denial action except in the case where new evidence or circumstances exist that were not available or present when the original petition was filed.

K. An appeal of the planning commission, city council or assembly vacation action under this chapter must be filed in the superior court in accordance with the Alaska Rules of Appellate Procedure.

20.65.060. Title to vacated area.

A. The title to the street or other public area vacated on a plat attaches to the lot or land bordering the area in equal proportions, except that if the area was originally dedicated by different persons, original boundary lines shall be adhered to so that the street area that lies on one side of the boundary line shall attach to the abutting property on that side, and the street area that lies on the other side of the boundary line shall attach to the property on that side. The portion of a vacated street that lies inside the limits of a platted addition attaches to the lots of the platted addition bordering on the area. If a public square is vacated, the title to it vests in a city if it lies inside the city, and in the borough if it lies inside the borough but outside all cities. If the property vacated is a lot, title vests in the rightful owner.

B. If the municipality acquired the street or other public area vacated for legal consideration or by express dedication to the municipality other than as a subdivision platting requirement, before the final act of vacation the fair market value of the street or public area shall be deposited with the platting authority to be paid to the municipality on final vacation.

C. Other provisions of this subsection notwithstanding, the planning commission may determine that a portion of the area proposed to be vacated should be reserved and if so, title to the area vacated and held for another public easement purpose remains in the borough or city, as applicable.

Planning Department
144 N. Binkley Street, Soldotna, Alaska 99669 • (907) 714-2200 • (907) 714-2378 Fax

PRELIMINARY PLAT SUBMITTAL FORM

■ **PRELIMINARY PLAT** □ **REVISED PRELIMINARY PLAT** (no fee required) □ **PHASED PRELIMINARY PLAT**
□ **PRELIMINARY PLAT FOR PRIVATE STREETS/GATED SUBDIVISION** – ***all requirements of chapter 20, excluding 20.30.210 and 20.50 apply and must be met.***

SUBDIVISION PLAT NAME: must be a unique name, contact staff for assistance if needed.

Black Gold Estates 2026 Vacation

PROPERTY INFORMATION:

Legal description: Replat of Lot 11-A Block 8 Black Gold Estates 2025 Replat (KN2025-70) & Vacation of Unnamed 60' R/W Black Gold Estates Subdivision (K1399)		
Section: 25	Township: 6N	Range: 12W
General area description Wildwood Dr.		
City (if applicable): Kenai	Total Acreage: 0.828	

SURVEYOR

Company: McLane Consulting, Inc.	*Contact Person:* Andrew Hamilton
Mailing Address: PO BOX 468	*City, State, Zip* Soldotna, AK 99669
Phone: 907-283-4218	*e-mail:* ahamilton@mclanecg.com

PROPOSED WASTEWATER AND WATER SUPPLY
WASTEWATER: □ on site ■ City □ community WATER: □ on site ■ City □ community

SUBMITTAL REQUIREMENTS
A preliminary plat application will be scheduled for the next available plat committee meeting after a complete application has been received.

- ■ 1 – full size paper copy
- ■ 3 – reduced sized drawing (11 x 17)
- ■ Preliminary plat NON-REFUNDABLE submittal fee $400
- ■ City Planning Commission minutes when located within city limits or Bridge Creek Watershed District
- ■ Certificate to plat for ALL parcels included in the subdivision
- □ Documentation showing proof of signatory authority (partnerships, corporations, estates, trusts, etc.)
- ■ ALL requirements of KPB 20.25.070 (see page 2 for checklist) and KPB 20.25.080

EXCEPTIONS REQUESTED TO PLATTING CODE: Complete the EXCEPTION REQUEST APPLICATION and attach to the preliminary plat submittal.

APPLICANT: SIGNATURES OF ALL LEGAL PROPERTY OWNERS ARE REQUIRED. Additional signature sheets can be attached. When signing on behalf of another individual, estate, corporation, LLC, partnership, etc., documentation is required to show authority of the individual(s) signing. Contact KPB staff for clarification if needed.

OWNER(s)

Name *(printed)*: Alex Douthit	Signature:
Phone: [redacted]	

Name *(printed)*:	Signature:

Aerial Map

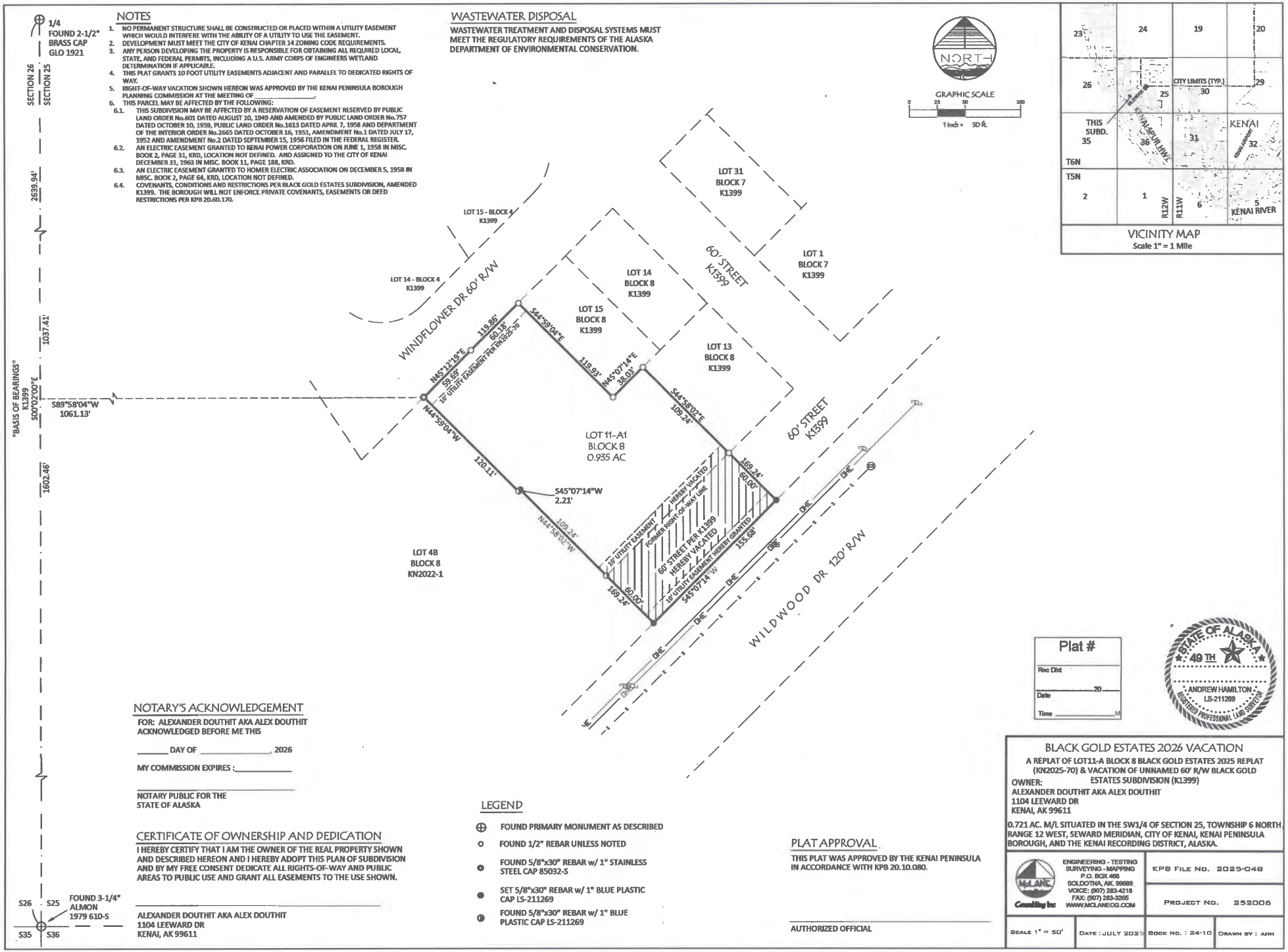

ORCHID WAY
WINDFLOWER DR
WILDWOOD DR
60'x254' area vacated in 2022
KENAI SPUR HWY
14
60'x 155.68' area to be vacated this plat
COOK INLET DR

NOTES

1. NO PERMANENT STRUCTURE SHALL BE CONSTRUCTED OR PLACED WITHIN A UTILITY EASEMENT WHICH WOULD INTERFERE WITH THE ABILITY OF A UTILITY TO USE THE EASEMENT.
2. DEVELOPMENT MUST MEET THE CITY OF KENAI CHAPTER 14 ZONING CODE REQUIREMENTS.
3. ANY PERSON DEVELOPING THE PROPERTY IS RESPONSIBLE FOR OBTAINING ALL REQUIRED LOCAL, STATE, AND FEDERAL PERMITS, INCLUDING A U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION IF APPLICABLE.
4. THIS PLAT GRANTS 10 FOOT UTILITY EASEMENTS ADJACENT AND PARALLEL TO DEDICATED RIGHTS OF WAY.
5. RIGHT-OF-WAY VACATION SHOWN HEREON WAS APPROVED BY THE KENAI PENINSULA BOROUGH PLANNING COMMISSION AT THE MEETING OF _____.
6. THIS PARCEL MAY BE AFFECTED BY THE FOLLOWING:
   - 6.1. THIS SUBDIVISION MAY BE AFFECTED BY A RESERVATION OF EASEMENT RESERVED BY PUBLIC LAND ORDER No.601 DATED AUGUST 10, 1949 AND AMENDED BY PUBLIC LAND ORDER No.757 DATED OCTOBER 10, 1959, PUBLIC LAND ORDER No.1613 DATED APRIL 7, 1958 AND DEPARTMENT OF THE INTERIOR ORDER No.2665 DATED OCTOBER 16, 1951, AMENDMENT No.1 DATED JULY 17, 1952 AND AMENDMENT No.2 DATED SEPTEMBER 15, 1956 FILED IN THE FEDERAL REGISTER.
   - 6.2. AN ELECTRIC EASEMENT GRANTED TO KENAI POWER CORPORATION ON JUNE 1, 1958 IN MISC. BOOK 2, PAGE 31, KRD, LOCATION NOT DEFINED. AND ASSIGNED TO THE CITY OF KENAI DECEMBER 31, 1963 IN MISC. BOOK 11, PAGE 188, KRD.
   - 6.3. AN ELECTRIC EASEMENT GRANTED TO HOMER ELECTRIC ASSOCIATION ON DECEMBER 5, 1958 IN MISC. BOOK 2, PAGE 64, KRD, LOCATION NOT DEFINED.
   - 6.4. COVENANTS, CONDITIONS AND RESTRICTIONS PER BLACK GOLD ESTATES SUBDIVISION, AMENDED K1399. THE BOROUGH WILL NOT ENFORCE PRIVATE COVENANTS, EASEMENTS OR DEED RESTRICTIONS PER KPB 20.60.170.

WASTEWATER DISPOSAL

WASTEWATER TREATMENT AND DISPOSAL SYSTEMS MUST MEET THE REGULATORY REQUIREMENTS OF THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION.



Plat #
Rec Dist
_____ 20____
Date
Time _____ M

STATE OF ALASKA 49TH
ANDREW HAMILTON LS-211269
REGISTERED PROFESSIONAL LAND SURVEYOR

NOTARY'S ACKNOWLEDGEMENT

FOR: ALEXANDER DOUTHIT AKA ALEX DOUTHIT
ACKNOWLEDGED BEFORE ME THIS

_____ DAY OF _____, 2026

MY COMMISSION EXPIRES :_____

_____
NOTARY PUBLIC FOR THE
STATE OF ALASKA

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE REAL PROPERTY SHOWN AND DESCRIBED HEREON AND I HEREBY ADOPT THIS PLAN OF SUBDIVISION AND BY MY FREE CONSENT DEDICATE ALL RIGHTS-OF-WAY AND PUBLIC AREAS TO PUBLIC USE AND GRANT ALL EASEMENTS TO THE USE SHOWN.

_____
ALEXANDER DOUTHIT AKA ALEX DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

S26 S25 FOUND 3-1/4" ALMON 1979 610-S
S35 S36

LEGEND

- ⊕ FOUND PRIMARY MONUMENT AS DESCRIBED
- ○ FOUND 1/2" REBAR UNLESS NOTED
- ◉ FOUND 5/8"x30" REBAR w/ 1" STAINLESS STEEL CAP 85032-S
- ● SET 5/8"x30" REBAR w/ 1" BLUE PLASTIC CAP LS-211269
- ◍ FOUND 5/8"x30" REBAR w/ 1" BLUE PLASTIC CAP LS-211269

PLAT APPROVAL

THIS PLAT WAS APPROVED BY THE KENAI PENINSULA IN ACCORDANCE WITH KPB 20.10.080.

_____
AUTHORIZED OFFICIAL

BLACK GOLD ESTATES 2026 VACATION

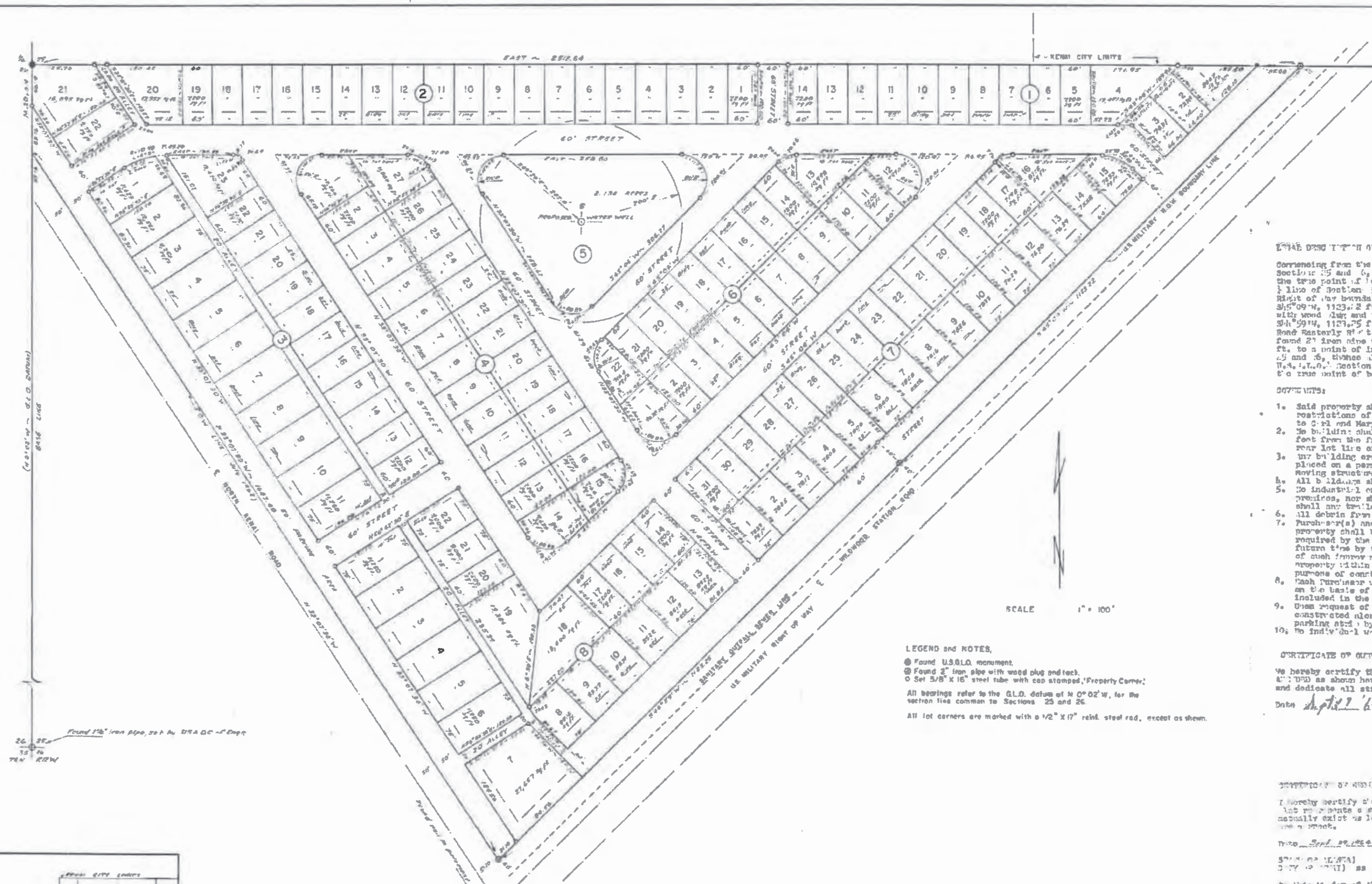
A REPLAT OF LOT11-A BLOCK 8 BLACK GOLD ESTATES 2025 REPLAT (KN2025-70) & VACATION OF UNNAMED 60' R/W BLACK GOLD ESTATES SUBDIVISION (K1399)

OWNER:
ALEXANDER DOUTHIT AKA ALEX DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

0.721 AC. M/L SITUATED IN THE SW1/4 OF SECTION 25, TOWNSHIP 6 NORTH RANGE 12 WEST, SEWARD MERIDIAN, CITY OF KENAI, KENAI PENINSULA BOROUGH, AND THE KENAI RECORDING DISTRICT, ALASKA.

McLANE Consulting Inc
ENGINEERING - TESTING
SURVEYING - MAPPING
P.O. BOX 468
SOLDOTNA, AK. 99669
VOICE: (907) 283-4218
FAX: (907) 283-3265
WWW.MCLANECG.COM

KPB File No. 2025-048
Project No. 252006
Scale 1" = 50' | Date : JULY 2025 | Book No. : 24-10 | Drawn by : ANH



SCALE 1" = 100'

LEGEND and NOTES.

- ● Found U.S.G.L.O. monument.
- ◉ Found 2" iron pipe with wood plug and tack.
- ○ Set 5/8" X 16" steel tube with cap stamped, 'Property Corner.'

All bearings refer to the G.L.O. datum of N 0° 02' W, for the section line common to Sections 25 and 26.

All lot corners are marked with a 1/2" X 17" reinf. steel rod, except as shown.

LEGAL DESCRIPTION OF THE BLACK GOLD ESTATES SUBDIVISION:

Commencing from the U.S.G.L.O. ¼ Section Corner monument common to Sections 25 and 26, T6N, R12W, of the Seward Meridian, Alaska, this is the true point of beginning, thence East, 2317.64 ft. along the center ¼ line of Section 25 to the point of intersection with the U.S. Military Right of Way boundary, found 2" iron pipe with wood plug and tack, thence S45°09'W, 1123.22 ft. along said U.S. Military R.O.W. to a 2" iron pipe with wood plug and tack, thence continue along said military R.O.W. S44°59'W, 1123.75 ft. to the point of intersection with the North Kenai Road Easterly Right of Way line, 50 ft. from center line of said road, found 2" iron pipe with wood plug and tack, thence N33°07'30"W, 1687.40 ft. to a point of intersection with the section line common to Sections 25 and 26, thence along the section line N0°02'W, 173.48 ft. to the U.S.G.L.O. Section Corner monument common to Sections 25 and 26, and the true point of beginning thus embracing 47.558 acres of land.

COVENANTS:

1. Said property shall be subject to all easements, reservations and restrictions of record or contained in the original patent issued to Carl and Mary C. Ahlstrom.
2. No building shall be erected within distance of twenty five (25) feet from the front lot line, ten (10) feet from either side or rear lot line of any residence lot.
3. Any building erected on the above described premises shall be placed on a permanent foundation (no skids or other devices for moving structures may be included in any building).
4. All buildings shall be finished on the exterior.
5. No industrial enterprise may be conducted on the above described premises, nor shall these premises be used for a trailer park, nor shall any trailer or quonset hut be placed thereon.
6. All debris from clearing shall be removed, burned or buried.
7. Purchaser(s) and seller hereby covenant that the above-described property shall be subject to assessment for any of the improvements required by the ordinances of the City of Kenai when installed at a future time by the City or Developers, unless prior to construction of such improvements by the City or Developers, the owners of property within this subdivision shall have joined together for the purpose of constructing such improvements.
8. Each Purchaser will be assessed, for the purpose of road construction on the basis of ninety (90) cents per front foot, this cost will be included in the contract.
9. Upon request of the City of Kenai, a safety barrier will be constructed along the North Kenai Road R.O.W. line in front of the parking strip by the individual lot owners of Blocks [illegible], 3, and 8.
10. No individual water well will be allowed within this subdivision.

CERTIFICATE OF OWNERSHIP AND DEDICATION.

We hereby certify that we are the owners of BLACK GOLD ESTATES SUBDIVISION AMENDED as shown hereon, and that we adopt this plan with our free consent, and dedicate all streets, alleys, and parking strips for public use.

Date *Sept. 2 '64* *Carl F. Ahlstrom* *Mary C. Ahlstrom*
owner owner

CERTIFICATE OF REGISTERED LAND SURVEYOR

I hereby certify that I am a registered land surveyor, and that this plat represents a survey made by me and the monuments shown thereon actually exist as located, and that all dimensional and other details are correct.

Date *Sept. 29, 1964* *Stanley S. McLane*
Registered Land Surveyor

STATE OF ALASKA)
CITY OF KENAI) ss

On this *14* day of *Nov. 1964* before me personally appeared *Carl F. Ahlstrom* and *Mary C. Ahlstrom*, known to me to be the persons whose names are subscribed to this instrument, and acknowledged to me that they executed the same for the purposes herein expressed.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my notarial seal this day and year last written above. *[illegible]*
Notary Public

November 19, 1968
My Commission expires

City Planning Commission
Received *11/6/64*
Approved *11/16/64*

Chairman *[illegible]*

COUNCIL

This is to certify that the within plat was duly submitted to and approved by the Council of Kenai City, Alaska, by Resolution Number *[illegible]* duly [illegible] this [illegible] day of *[illegible] 1964*
[illegible]

[illegible]
City Clerk

BLACK GOLD ESTATES; AMENDED

REVISIONS.

1. The addition of a 60 ft. street in front of lots 8 thru 13, in block 8, and lots 1 thru 15, in block 7, and eliminating the 20 ft. alley to the back of these lots.
2. The addition of a 60 ft. street in front of lots 1,2,3, in block 1, and eliminating the 20 ft. alley to the back of these lots.
3. The frontage on lots 11, 12, 13, 14, & 15, in block 7, and lots 1, 2, & 3, in block 1, has been revised.
4. These revisions were necessary to fill covenant No. 9, as shown on the original plat, and have been completed this date Sept. 29, 1964. by Stanley S. McLane, R.L.S.

VICINITY MAP

BLACK GOLD ESTATES SUBDIVISION, AMENDED

CARL F. AHLSTROM and MARY C. AHLSTROM
OWNERS

RICHARD and JOAN WILLIAMS
DEVELOPERS

A PORTION OF THE CARL F. AHLSTROM, HOMESTEAD LOCATED WITHIN THE SW 1/4 OF SECTION 25, T5N, R12W, OF THE SEWARD MERIDIAN, ALASKA, CONTAINING 47.558 ACRES OF LAND.

SURVEYED BY

STANLEY S. McLANE, R.L.S.	Date	Begin	July 19, 1962
		End	Oct. 24, 1962
REVISIONS	"		Sept 10, 1964

STATE OF ALASKA 49TH REGISTERED LAND SURVEYOR NO. 6165

 # 607

ALASKA

2025-010976-0
Recording Dist: 302 - Kenai
12/23/2025 09:38 AM Pages: 1 of 2

DOCUMENT ELECTRONICALLY RECORDED

QUITCLAIM DEED

The Kenai Native Association, Inc. (hereinafter GRANTOR), an Alaska Native Village Corp. organized under the laws of the State of Alaska, whose address is 215 Fidalgo Street, Suite 204B, Kenai, Alaska 99611, for and in consideration of the sum of TEN DOLLARS ($10.00) and other valuable consideration does hereby convey and quitclaim all right, title and interest to the City of Kenai, (hereinafter GRANTEE), whose address is 210 Fidalgo Ave., Kenai, Alaska 99611, for a road and outfall sewer right-of-way known as Wildwood Station Road, Wildwood Drive, Wildwood Road, Wildwood Extended, U.S. Military Right-of-Way, Military Reservation Road, Sanitary Outfall Sewer Line Right of Way, and Cook Inlet View Dr., including all water and sewer lines and improvements contained thereon extending as shown on Tract 4, Wildwood Corrections Plat KN 92-73, to the Cook Inlet, all within the Kenai Recording District, Alaska, more particularly described as follows:

An 80-foot right-of-way for construction of an outfall sewer, being 40 feet each side of the centerline of manholes and more particularly described as: Starting from the center quarter corner of Sec. 25, T6N, R12W, Seward Meridian, thence North 74 feet along center section line to the centerline of outfall sewer which is the point of beginning , thence South 45 degrees 05 minutes West 1,290 feet to the center of Manhole No. 15; thence South 44 degrees 53 minutes West 1,161 feet to the centerline of the Kenai Spur Road; thence South 45 degrees13 minutes West 1,279 feet to the West line of sec. 25; thence South 45 degrees 11 minutes West 113 feet to the South line of Sec. 26; and,

A 40-foot strip of land for an access road lying southeasterly and adjacent to the 80 foot right-of-way, extending from the military boundary at the quarter section corner of Sec. 25, T6N, R12W, Seward Meridian, to the easterly edge of Kenai Spur Road.

Said right-of-way was conveyed to the Kenai Native Association Inc. by the United States of America in U. S. Patent 50-74-0109 dated March 28, 1974 (Patent). Grantor expressly

Return to: Grantee

reserves any and all rights or claims against any third party related to the original Patent of land to Grantor.

Additionally, any interest conveyed by dedication or vacation of the following platting actions: Carl F. Ahlstrom Subdivision K-216, Black Gold Estates Subdivision Amended K-1399, Black Gold Estates Subdivision No. 2 KN-84-76, and any express easements of record.

Dated this 18 day of December 2025.

Vernon Stanford, President
Kenai Native Association

NOTARY ACKNOWLEDGEMENT

STATE OF ALASKA)
)ss.
THIRD JUDICIAL DISTRICT)

The foregoing instrument was acknowledged before me this 18th day of December, 2025 by Vernon Stanford, President of Kenai Native Association.

JIMMIE MAE PEDGINSKI
My Commission Expires
NOTARY PUBLIC
Aug 23, 2027
STATE OF ALASKA

Notary Public in and for Alaska
My commission expires: 8/23/2027

KENAI PLANNING & ZONING COMMISSION – REGULAR MEETING
MARCH 25, 2026 – 7:00 P.M.
KENAI CITY COUNCIL CHAMBERS
210 FIDALGO AVE., KENAI, AK 99611
CHAIR KEATON, PRESIDING

MINUTES

A. CALL TO ORDER

A Regular Meeting of the Kenai Planning & Zoning Commission was held on March 25, 2026, in City Hall Council Chambers, Kenai, AK. Chair Keaton called the meeting to order at approximately 7:00 p.m.

1. Pledge of Allegiance

Chair Keaton led those assembled in the Pledge of Allegiance.

2. Roll Call

There were present:

Sonja Earsley	Alex Douthit, Vice Chair
Jeanne Keaton, Chair	Diane Fikes
Marty Askin	

Absent:

Gwen Woodard	Stacy Krause

A quorum was present.

Also in attendance were:

Kevin Buettner, Planning Director
Logan Parks, Deputy City Clerk

3. Agenda and Consent Agenda Approval

MOTION:
Commissioner Askin **MOVED** to approve the agenda and consent agenda. Commissioner Fikes **SECONDED** the motion.

The items on the Consent Agenda were read into the record.

Chair Keaton opened the floor for public comment on consent agenda items; there being no one wishing to be heard, the public comment period was closed.

UNANIMOUS CONSENT was requested.
VOTE: There being no objection; **SO ORDERED**.

*All items listed with an asterisk (*) are considered to be routine and non-controversial by the council and will be approved by one motion. There will be no separate discussion of these items unless a Commissioner so requests, in which case the item will be removed from the consent agenda and considered in its normal sequence on the agenda as part of the General Orders.

B. APPROVAL OF MINUTES

1. *Regular Meeting of March 11, 2026.

C. SCHEDULED PUBLIC COMMENTS - None.

D. UNSCHEDULED PUBLIC COMMENTS - None.

E. CONSIDERATION OF PLATS

1. **Resolution PZ2026-07** - Recommending that Preliminary Plat Black Gold Estates 2026 Vacation be Conditionally Approved.

MOTION:
Commissioner Earsley **MOVED** to approve Resolution PZ2026-07. Commissioner Fikes **SECONDED** the motion.

[Clerk's Note: Commissioner Douthit declared a conflict with Resolution PZ2026-07 as he was the applicant. Chair Keaton ruled a conflict did exist and Commissioner Douthit stepped away from the dais and abstained from voting on the Resolution.]

Director Buettner read the staff report as provided in the packet.

Chair Keaton asked if there were any remote attendees wishing to speak. Chair Keaton asked if any Commissioners had any questions for the applicant.

Chair Keaton called for the vote.

[Clerk's Note: Although a vote was taken it was immediately followed by a Point of Order as the public hearing in chambers was never opened. The vote was out of order; therefore, stricken from the record.]

Clarification was provided regarding the changes that were made since the previous application; and instructions were provided that when voting, Commissioners need to include their findings for the record.

Chair Keaton opened the public hearing.

Alex Douthit, applicant addressed the Commission noting that the original denial was based on unresolved right-of-way ownership; a perceived conflict of interest, which was no longer applicable; the City no longer required the right-of-way; staff supported the vacation; and additional costs would be borne by the landowner. He further clarified that the vacation would allow drainage issues to be addressed.

There was discussion regarding the historical purpose and ownership of the land.

There being no one else wishing to be heard, the public comment period was closed.

VOTE:

YEA:	Keaton, Earsley, Fikes
NAY:	Askin
ABSENT:	Krause, Woodard
ABSTENTION:	Douthit

MOTION PASSED.

F. PUBLIC HEARINGS - None.

G. UNFINISHED BUSINESS - None.

H. NEW BUSINESS - None.

I. REPORTS

1. Planning Director

Planning Director Buettner reported on the following:

- FAA Section 106 findings related to fence replacement at the Airport were included under Informational Items for awareness.
- Upcoming schedule changes: no meeting on April 8, and the next meeting is April 29, 2026 due to Council meeting shift.

- Spring workload is increasing, with anticipation of starting seasonal activities soon.

2. Commission Chair - No report.

3. Kenai Peninsula Borough Planning

Commissioner Fikes reported on recent actions of the Kenai Peninsula Borough Planning Commission.

J. ADDITIONAL PUBLIC COMMENTS - None.

K. NEXT MEETING ATTENDANCE NOTIFICATION

1. Next Meeting: April 29, 2026

L. COMMISSION COMMENTS AND QUESTIONS

MOTION:
Commissioner Douthit **MOVED** to excuse Commissioner Woodard's absence. Commissioner Askin **SECONDED** the motion.

UNANIMOUS CONSENT was requested.
VOTE: There being no objection; **SO ORDERED**.

There was appreciation for the Spring weather; Commissioners reminded to state their findings when voting on items brought to the Commission.

M. PENDING ITEMS - None.

N. ADJOURNMENT

O. INFORMATIONAL ITEMS

1. FAA Section 106 Findings

There being no further business before the Planning & Zoning Commission, the meeting was adjourned at 7:27 p.m.

I certify the above represents accurate minutes of the Kenai City Council meeting of March 25, 2026.

_____
Logan Parks, Deputy City Clerk

KENAI

CITY OF KENAI
PLANNING AND ZONING COMMISSION
RESOLUTION NO. PZ2026-07

A RESOLUTION RECOMMENDING THAT PRELIMINARY PLAT BLACK GOLD ESTATES 2026 VACATION ATTACHED HERETO BE **CONDITIONALLY APPROVED**.

PROPERTY ADDRESSES: No Physical Address

LEGAL DESCRIPTION: Lot 11-A, Block 8, Black Gold Estates 2025 Replat

KPB PARCEL NUMBERS: 03904023

WHEREAS, the City of Kenai received a preliminary plat from McLane Consulting, Inc., on behalf of property owner Alexander Douthit, for a vacation of the 60-foot unnamed public right-of-way located along the southeast boundary of Lot 11-A, Block 8, Black Gold Estates 2025 Replat; and,

WHEREAS, the preliminary plat meets the minimum lot width and minimum lot depth requirements as outlined in Kenai Municipal Code (KMC) Section 14.10.070(d)(2); and,

WHEREAS, the existing street names are referenced correctly; and,

WHEREAS, the proposed lot will have access from Wildwood Drive (a City-maintained paved road); and,

WHEREAS, City water and sewer is available to the proposed lot; and,

WHEREAS, a 10-foot easement for utilities is located along the northwest boundary adjacent to Windflower Drive, and along the southeastern boundary of proposed Lot 11-A adjacent to the existing 120-foot Wildwood Drive right-of-way; and,

WHEREAS, an installation agreement is not required; and,

WHEREAS, the City does not have a public interest in retaining the 60-foot unnamed public right-of-way located along the southeastern boundary of Lot 11-A, Block 8, Black Gold Estates 2025 Replat; and,

WHEREAS, the Planning and Zoning Commission finds:

1. Pursuant to KMC 14.10.070 Subdivision Design Standards, the preliminary plat for replat, subject to the listed conditions, provides utilities easements, provides a satisfactory and desirable building site, and the accessible water and wastewater systems are subject to the regulatory requirements of the City of Kenai Public Works Department.

2. Pursuant to KMC 14.10.080 Minimum improvement required, the preliminary plat is within a subdivision that has dedicated rights-of-way and determined acceptable access, subject to the listed conditions. Therefore, an installation agreement is not required.

3. Pursuant to KMC 14.24.010 Minimum lot area requirements, the preliminary plat meets City standards for commercial development, including parking.

4. Pursuant to KMC 14.24.020 General Requirements, the preliminary plat meets City standards for minimum lot width/depth and access/utility easements. Compliance with the maximum lot coverage, maximum height, and setbacks will be reviewed during the building permit review.

NOW, THEREFORE, BE IT RECOMMENDED BY THE PLANNING AND ZONING COMMISSION OF THE CITY OF KENAI, ALASKA:

Section 1. That preliminary plat Black Gold Estates 2026 Vacation be approved subject to the following conditions:

1. Further development of the property will conform to all federal, State of Alaska, and local regulations.
2. The Kenai City Council must declare the 60-foot right-of-way not needed for a public purpose and approve the vacation of the right-of-way as shown on the preliminary plat.
3. A plat note added to the final plat to prohibit access from Windflower Drive to avoid double frontage, in accordance with KMC 14.10.070(e)(2).

PASSED BY THE PLANNING AND ZONING COMMISSION OF THE CITY OF KENAI, ALASKA, THIS 25TH DAY OF MARCH, 2026.

Jeanne Keaton, Chair

ATTEST:

Logan Parks, Deputy City Clerk

City of Kenai | 210 Fidalgo Ave, Kenai, AK 99611-7794 | 907.283.7535 | www.kenai.city

SENT VIA ELECTRONIC EMAIL

March 26, 2026

McClane Consulting
PO Box 468
Soldotna, AK 99669
ahamilton@mclanecg.com

RE: Notice of Decision – Resolution PZ2026-07 - Preliminary Plat – Black Gold Estates 2026 Vacation

Mr. Hamilton,

On Wednesday, March 25, 2026, the City of Kenai Planning and Zoning Commission **conditionally approved** Resolution PZ2026-07 for Preliminary Plat – Black Gold Estates 2026 Vacation. Enclosed is a copy of the signed resolution.

If you have any questions, please contact Planning & Zoning Department at 901-283-8237 or planning@kenai.city.

Sincerely,

Jessica See
Planning Technician

Enclosure
Notice of Decision
Resolution PZ2026-07

CC: Beverly Carpenter, KPB Planning Department (bcarpenter@kpb.us)

KENAI PENINSULA Borough

Planning Department

144 North Binkley Street, Soldotna, AK 99669 | (P) 907-714-2200 | (F) 907-714-2378 | www.kpb.us

KENAI PENINSULA BOROUGH PLANNING COMMISSION
NOTICE OF PUBLIC HEARING

Public notice is hereby given that a petition was received on 4/13/2026 to vacate a public right-of-way in the Kenai area. Area under consideration is described as follows:

Request / Affected Property: Vacates a 60' by approximately 155' right-of-way and associated utility easement along the southeasterly lot line parallel to Wildwood Dr granted per K1399

KPB File No. 2026-034V.

Petitioner(s) / Land Owner(s): Alexander Douthit of Kenai, AK.

Purpose as stated in petition: This land was originally plotted in 1962 as a frontage road to access residential lots that will be replotted into one larger lot. The frontage road is no longer needed to access the property. Wildwood drive access is adequate..

Public hearing will be held by the Kenai Peninsula Borough Planning Commission on **Monday, May 11, 2026**, commencing at **7:30 p.m.**, or as soon thereafter as business permits. The meeting is being held in the Betty J. Glick Assembly Chambers of the Kenai Peninsula Borough George A. Navarre Administration Building, 144 N. Binkley Street, Soldotna, Alaska. This meeting will also be held via Zoom, or other audio or video conferencing means whenever technically feasible.

To attend the meeting using Zoom from a computer visit **https://us06web.zoom.us/j/9077142200**. You may also connect to Zoom by telephone, call toll free **1-888-788-0099** or **1-877-853-5247**. If calling in you will need the Meeting ID of 907 714 2200. Additional information about connecting to the meeting may be found at https://www.kpb.us/local-governance-and-permitting/leadership-governance/planning-commission/planning-public-notices.

Anyone wishing to testify may attend the meeting in person or through Zoom. Written testimony may be submitted by email to planning@kpb.us, or mailed to the attention of Beverly Carpenter, Kenai Peninsula Borough Planning Department, 144 N. Binkley Street, Soldotna, Alaska 99669. [Written comments may also be sent by Fax to 907-714-2378]. All written comments or documents must be submitted by **1:00 PM, Friday, May 8, 2026.** The deadline to submit written comments or documents does not impact the ability to provide verbal testimony at the public hearing.

If the Planning Commission approves the vacation, the Borough Assembly has thirty days from that decision in which they may veto the Planning Commission approval. Denial of a vacation petition is a final act for which no further consideration shall be given by the Kenai Peninsula Borough.

Additional information such as staff reports and comments are available online. This information is available the Monday prior to the meeting and found at https://kpb.legistar.com/Calendar.aspx. Use the search options to find the correct timeframe and committee.

For additional information contact Sandee Simons (ssimons@kpb.us) or Beverly Carpenter (BCarpenter@kpb.us), Planning Department, 714-2200 (1-800-478-4441 toll free within Kenai Peninsula Borough) or email planning@kpb.us.

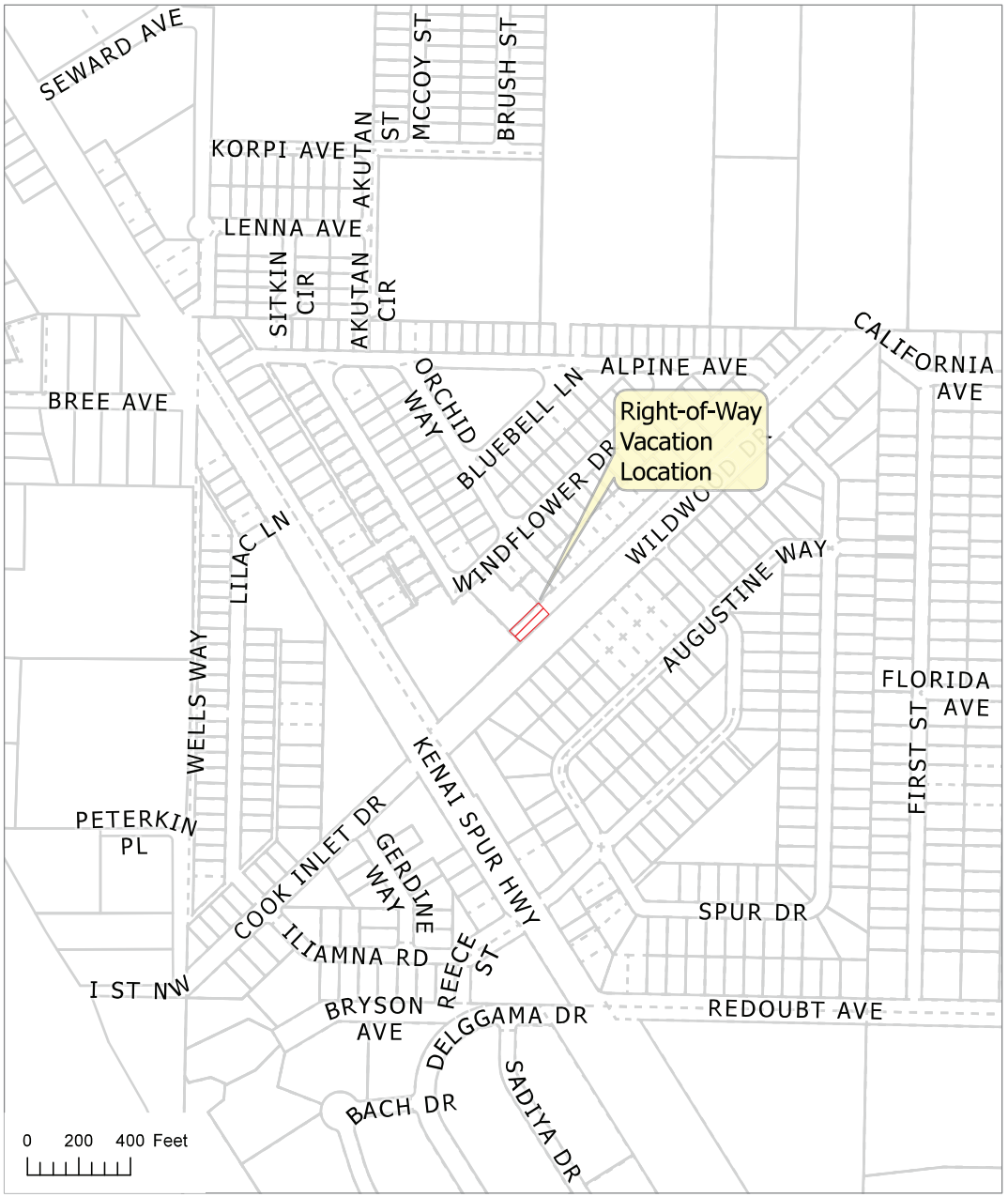
Mailed 4/21/2026

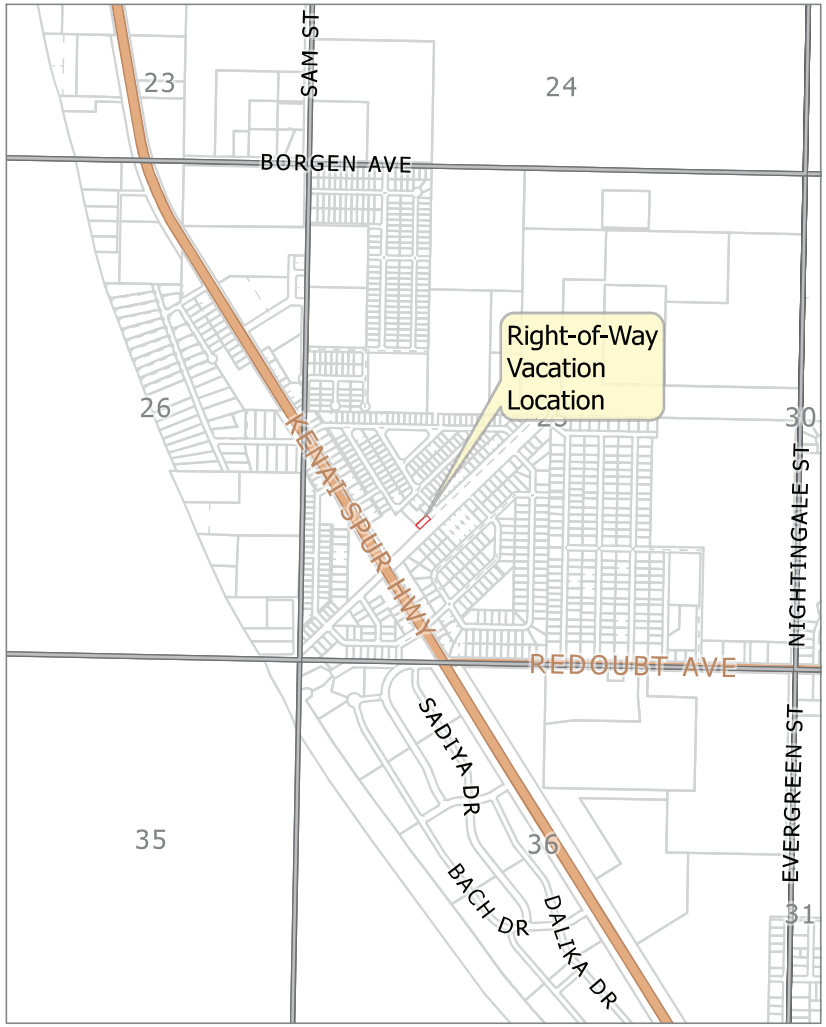
KENAI PENINSULA BOROUGH

Planning

Vicinity Map

4/13/2026





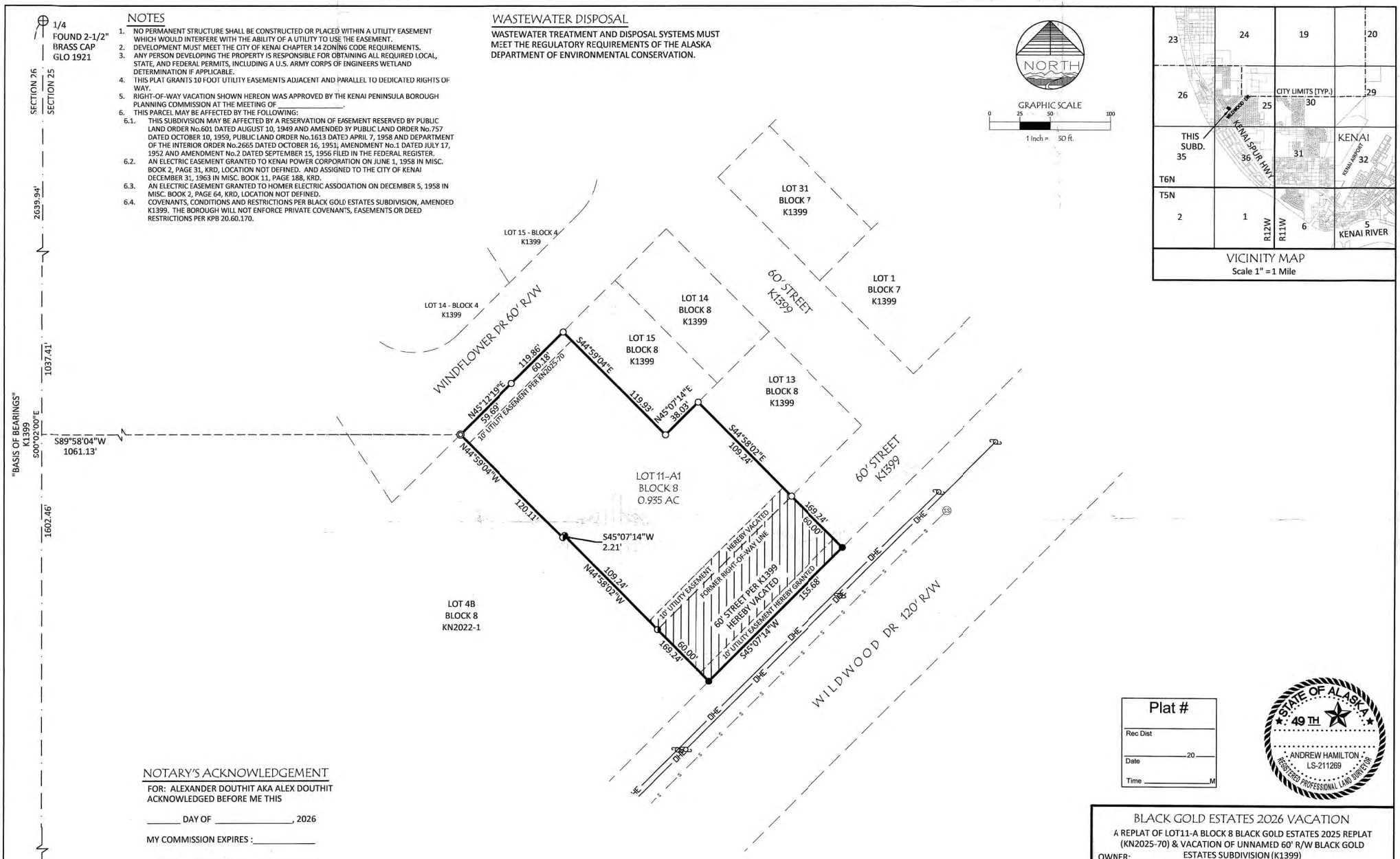
KPB File 2026-034V
T06N R12W SEC25
City of Kenai

NOTES

1. NO PERMANENT STRUCTURE SHALL BE CONSTRUCTED OR PLACED WITHIN A UTILITY EASEMENT WHICH WOULD INTERFERE WITH THE ABILITY OF A UTILITY TO USE THE EASEMENT.
2. DEVELOPMENT MUST MEET THE CITY OF KENAI CHAPTER 14 ZONING CODE REQUIREMENTS.
3. ANY PERSON DEVELOPING THE PROPERTY IS RESPONSIBLE FOR OBTAINING ALL REQUIRED LOCAL, STATE, AND FEDERAL PERMITS, INCLUDING A U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION IF APPLICABLE.
4. THIS PLAT GRANTS 10 FOOT UTILITY EASEMENTS ADJACENT AND PARALLEL TO DEDICATED RIGHTS OF WAY.
5. RIGHT-OF-WAY VACATION SHOWN HEREON WAS APPROVED BY THE KENAI PENINSULA BOROUGH PLANNING COMMISSION AT THE MEETING OF _____.
6. THIS PARCEL MAY BE AFFECTED BY THE FOLLOWING:
   - 6.1. THIS SUBDIVISION MAY BE AFFECTED BY A RESERVATION OF EASEMENT RESERVED BY PUBLIC LAND ORDER No.601 DATED AUGUST 10, 1949 AND AMENDED BY PUBLIC LAND ORDER No.757 DATED OCTOBER 10, 1959, PUBLIC LAND ORDER No.1613 DATED APRIL 7, 1958 AND DEPARTMENT OF THE INTERIOR ORDER No.2665 DATED OCTOBER 16, 1951, AMENDMENT No.1 DATED JULY 17, 1952 AND AMENDMENT No.2 DATED SEPTEMBER 15, 1956 FILED IN THE FEDERAL REGISTER.
   - 6.2. AN ELECTRIC EASEMENT GRANTED TO KENAI POWER CORPORATION ON JUNE 1, 1958 IN MISC. BOOK 2, PAGE 31, KRD, LOCATION NOT DEFINED. AND ASSIGNED TO THE CITY OF KENAI DECEMBER 31, 1963 IN MISC. BOOK 11, PAGE 188, KRD.
   - 6.3. AN ELECTRIC EASEMENT GRANTED TO HOMER ELECTRIC ASSOCIATION ON DECEMBER 5, 1958 IN MISC. BOOK 2, PAGE 64, KRD, LOCATION NOT DEFINED.
   - 6.4. COVENANTS, CONDITIONS AND RESTRICTIONS PER BLACK GOLD ESTATES SUBDIVISION, AMENDED K1399. THE BOROUGH WILL NOT ENFORCE PRIVATE COVENANTS, EASEMENTS OR DEED RESTRICTIONS PER KPB 20.60.170.

WASTEWATER DISPOSAL

WASTEWATER TREATMENT AND DISPOSAL SYSTEMS MUST MEET THE REGULATORY REQUIREMENTS OF THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION.



VICINITY MAP
Scale 1" =1 Mile

NOTARY'S ACKNOWLEDGEMENT

FOR: ALEXANDER DOUTHIT AKA ALEX DOUTHIT
ACKNOWLEDGED BEFORE ME THIS

_____ DAY OF _____, 2026

MY COMMISSION EXPIRES :_____

_____
NOTARY PUBLIC FOR THE
STATE OF ALASKA

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE REAL PROPERTY SHOWN AND DESCRIBED HEREON AND I HEREBY ADOPT THIS PLAN OF SUBDIVISION AND BY MY FREE CONSENT DEDICATE ALL RIGHTS-OF-WAY AND PUBLIC AREAS TO PUBLIC USE AND GRANT ALL EASEMENTS TO THE USE SHOWN.

_____
ALEXANDER DOUTHIT AKA ALEX DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

KPB 2026-034V

LEGEND

- ⊕ FOUND PRIMARY MONUMENT AS DESCRIBED
- ○ FOUND 1/2" REBAR UNLESS NOTED
- ◎ FOUND 5/8"x30" REBAR w/ 1" STAINLESS STEEL CAP 85032-S
- ● SET 5/8"x30" REBAR w/ 1" BLUE PLASTIC CAP LS-211269
- ◑ FOUND 5/8"x30" REBAR w/ 1" BLUE PLASTIC CAP LS-211269

PLAT APPROVAL

THIS PLAT WAS APPROVED BY THE KENAI PENINSULA IN ACCORDANCE WITH KPB 20.10.080.

_____
AUTHORIZED OFFICIAL

Plat #
Rec Dist
Date 20__
Time _____ M

STATE OF ALASKA 49 TH
ANDREW HAMILTON
LS-211269
REGISTERED PROFESSIONAL LAND SURVEYOR

BLACK GOLD ESTATES 2026 VACATION

A REPLAT OF LOT11-A BLOCK 8 BLACK GOLD ESTATES 2025 REPLAT (KN2025-70) & VACATION OF UNNAMED 60' R/W BLACK GOLD ESTATES SUBDIVISION (K1399)

OWNER:
ALEXANDER DOUTHIT AKA ALEX DOUTHIT
1104 LEEWARD DR
KENAI, AK 99611

0.721AC. M/L SITUATED IN THE SW1/4 OF SECTION 25, TOWNSHIP 6 NORTH, RANGE 12 WEST, SEWARD MERIDIAN, CITY OF KENAI, KENAI PENINSULA BOROUGH, AND THE KENAI RECORDING DISTRICT, ALASKA.

McLANE Consulting Inc
ENGINEERING - TESTING
SURVEYING - MAPPING
P.O. BOX 468
SOLDOTNA, AK. 99669
VOICE: (907) 283-4218
FAX: (907) 283-3265
WWW.MCLANECG.COM

KPB File No. 2025-048
Project No. 252006
Scale 1" = 50' | Date : JULY 2025 | Book No. : 24-10 | Drawn by : AHH

E. NEW BUSINESS

2. Ordinance 2026-14: Authorizing a communications site lease agreement with Vertical Bridge S3 Assets, LLC in Kenai

Kenai Peninsula Borough
Planning Department – Land Management Division

MEMORANDUM

TO: Ryan Tunseth, Assembly President
Members, KPB Assembly

THRU: Peter A. Micciche, Mayor
Robert Ruffner, Planning Director

FROM: Aaron Hughes, Land Management Officer

DATE: April 23, 2026

RE: Ordinance 2026-___, Authorizing a Communications Site Lease Agreement with Vertical Bridge S3 Assets, LLC, in Kenai (Mayor)

In 1980, the Kenai Peninsula Borough (KPB) entered into a Lease Agreement with Chevron USA for a communication tower in support of oil and gas production. Since that time, the leasehold interest was assigned to Vertical Bridge S3 Assets, LLC (Vertical Bridge). That original lease agreement was allowed to expire on November 1, 2024. Vertical Bridge has been allowed continued occupancy of the site under a holdover tenancy while negotiating terms of a new lease with the Land Management Division under current fair market value terms.

Vertical Bridge has agreed to a five year lease agreement with four consecutive 5 year renewal options. The initial monthly rent will be $4,000, with an annual escalation of 3%. An additional 33% revenue share will be assessed of all rents collected by the lessee, with the exception of one anchor tenant. As a condition of the lease, KPB has retained a use right on the tower for KPB related needs.

KPB Planning Commission will hold a public hearing regarding the proposed lease at its regularly-scheduled meeting on May 11, 2026, and will forward its recommendation to the Assembly.

Your consideration is appreciated.

Introduced by:	Mayor
Date:	05/05/26
Hearing:	05/19/26
Action:	
Vote:	

KENAI PENINSULA BOROUGH
ORDINANCE 2026-___

AN ORDINANCE AUTHORIZING A COMMUNICATIONS SITE LEASE AGREEMENT WITH VERTICAL BRIDGE S3 ASSETS, LLC, IN KENAI

WHEREAS, in 1980, the Kenai Peninsula Borough (KPB) entered into a Lease Agreement with Chevron USA for the location of a communication tower in support of oil and gas production; and

WHEREAS, in 1999, the lease agreement was assigned to GCI Cable Inc., assigned again in 2016 to Alaska Wireless network, and more recently assigned to Vertical Bridge S3 Assets, LLC (Vertical Bridge); and

WHEREAS, the original lease agreement expired on November 1, 2024; and

WHEREAS, Vertical Bridge has agreed to a five-year lease agreement with renewal options at an initial monthly rent of $4,000 ($48,000/annually); and

WHEREAS, leasing of this property furthers the following objectives of the 2019 KPB Comprehensive Plan, Goal 2, Land Use Objective F: To actively manage Borough-owned lands to meet short and long-term regional goals; and

WHEREAS, KPB Planning Commission, at its regularly scheduled meeting on _____ ____, 2026, recommended _____.

NOW, THEREFORE, BE IT ORDAINED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH:

SECTION 1. That this is a non -code ordinance.

SECTION 2. That pursuant to KPB 17.10.100(I), the Assembly finds that entering into a Communication Tower Site Lease Agreement with Vertical Bridge on that Leased Premises more particularly described as follows is in the best interests of KPB:

Tract B, Alaska State Land Survey 79-57 Amended, situated within the NE¼ of Section 36, Township 6 North, Range 12 West, Seward Meridian, Kenai Recording District, Third Judicial District, State of Alaska.

Parcel Number: 043-010-26

Site Name: Vertical Bridge Wildwood

This finding is based upon the following facts:

1. The property will be used for the continued use of an existing communication tower site for the benefit of Vertical Bridge.

2. KPB will receive revenues and the benefit of reserved tower space for emergency and other KPB related uses.

SECTION 3. That the Mayor is hereby authorized to negotiate and enter into a lease upon a portion of the property identified in Section 2, subject to all lease conditions required by this ordinance and the applicable provisions of KPB 17.10.

SECTION 4. That the monthly rent will be Four Thousand Dollars ($4,000.00) for exclusive use of the Leased Premises for a five-year term with four consecutive 5 year renewal options. On each anniversary of the effective date, rent will adjust annually by three percent (3%) over the prior year's rent amount.

SECTION 5. In addition to and separate from the Rent, and excepting one Anchor Tenant, the Lessee must pay to KPB thirty-three percent (33%) of all rents collected by Lessee from any applicable Sublessees.

SECTION 6. Pursuant to KPB 17.10.230, the Assembly authorizes an exception to the requirements of 17.10.110, "Notice of Disposition", based upon the following facts:

1. Special circumstances or conditions exist.

   a. The proposed lease is solely with Vertical Bridge for the purpose of operating, and maintaining an existing communication tower site.

   b. The notice requirement is intended to make the public aware of an opportunity to purchase KPB property, which is unnecessary since the intent of the disposal is to lease the property solely to Vertical Bridge.

2. That the exception is necessary for the preservation and enjoyment of a substantial property right and is the most practical manner of complying with the intent of this chapter.

   a. The notice requirement is intended to make the public aware of an opportunity to purchase KPB property, which is not applicable to the lease of property solely to Vertical Bridge.

3. That the granting of this exception will not be detrimental to the public welfare or injurious to other property in the area.

a. The existing communication tower site is compatible with the surrounding land uses.

SECTION 7. That Vertical Bridge will have ninety (90) days from the date of enactment of this ordinance to execute the lease agreement.

SECTION 8. That the Mayor is authorized to execute a lease agreement substantially in the form of the one accompanying this ordinance, and any documents necessary to effectuate this ordinance.

SECTION 9. That rent revenue from the lease shall be submitted to the KPB Finance Department and deposited into Land Management Account No. 250.00000.00000.36316.

SECTION 10. If any provision of this ordinance or its application to any person or circumstance is held invalid, the remainder of the ordinance or the application of the provision to other persons or circumstances will not be affected.

SECTION 11. This ordinance shall become effective immediately.

ENACTED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH THIS * DAY OF *, 2026.

Ryan Tunseth, Assembly President

ATTEST:

Michele Turner, CMC, Borough Clerk

Yes:

No:

Absent:

KENAI PENINSULA BOROUGH
Land Management

Vertical Bridge Wildwood Communication Tower Site Lease

0 130 260 390 ft

LMD26-__
Parcel No. 04301026

The information depicted hereon is for a graphical representation only of best available sources. The Kenai Peninsula Borough assumes no responsibility for any errors on this map.

COMMUNICATIONS SITE LEASE AGREEMENT

This Communications Site Lease Agreement (Agreement) is entered into by the Kenai Peninsula Borough, an Alaska municipal corporation, whose mailing address is 144 North Binkley Street, Soldotna, Alaska 99669 (KPB or Lessor), and Vertical Bridge S3 Assets, LLC, a Delaware limited liability company, whose mailing address is 22 W. Atlantic Avenue, Suite 310, Delray Beach, Florida 33444 (Lessee) (together, the Parties). This Agreement becomes effective on the date of signature by KPB (Effective Date).

PART I. BACKGROUND, AUTHORIZED CONTACT, AND CONTRACT DOCUMENTS

1. Background. KPB owns certain real property located in the Kenai Peninsula Borough, in the State of Alaska, that is more particularly described in and depicted on Exhibit 1 attached hereto (the Property). For good and valuable consideration, the Parties agree that KPB will grant Lessee the right to use a portion of the Property in accordance with the terms of this Agreement.

2. Authorized Contact. All communications about this Agreement must be directed as follows, and any reliance on a communication with a person other than who is listed below is at the Party's own risk.

KPB	**LESSEE**
Name: Kenai Peninsula Borough	Name: Vertical Bridge S3 Assets, LLC
Attn: Land Management Division	Attn: Vice President, Asset Management
Re: Lease No.: [ ]	Re: Wildwood Tower US-AK-5117
Mailing Address: 144 N. Binkley St.	Mailing Address: 22 W. Atlantic Ave., Suite 310
Soldotna, AK 99669	Delray Beach, Florida 33444

3. Contract Documents. As authorized by KPB Ordinance [2026-XX], this Agreement is the final and complete understanding of the Parties. The following Exhibits and Appendices are attached and are considered part of this Agreement as well as anything incorporated by reference or attached to those Exhibits or Appendices:

Appendix A: Lease Provisions Required by KPB 17.10
Appendix B: Site Specific Lease Provisions
Exhibit 1: Description of the "Property" and the "Leased Premises"
Exhibit 2: Leased Premises Site Sketch
Exhibit 3: List of Existing Sublessees and Related Equipment
Exhibit 4: Memorandum of Lease

If in conflict, the order of precedence will be: the Agreement, Appendix B, and Appendix A.

PART II. LEASE DESCRIPTION AND TERMS

4. DESCRIPTION OF PROPERTY.

Subject to the terms and conditions of this Agreement, KPB hereby leases to Lessee a certain portion of the Property containing approximately 0.44 acres including the air space above such ground space as described in and depicted on Exhibit 1 and Exhibit 2 attached hereto (collectively, the Leased Premises) for the placement of Communication Facilities as defined in Section 9, "Use".

5. TERM.

(a) The initial term will be five (5) years (the Initial Term), commencing on the Effective Date.

(b) Lessee will have the right and option to extend the term of this Agreement for four (4) successive terms of five (5) years (each, a Renewal Term). Each Renewal Term will commence automatically, unless Lessee delivers written notice of Lessee's intent not to renew to KPB not less than thirty (30) days prior to the end of the then-current Term. For purposes of this Agreement, "Term" includes the Initial Term and any applicable Renewal Term(s).

(c) **HOLDOVER TENANCY.** Should Lessee or any assignee, sublessee or licensee, of Lessee hold over the Leased Premises or any part thereof after the expiration of this Agreement, such holdover shall constitute and be constructed as tenant from month-to-month only, but otherwise upon the same terms and conditions except that Rent to be paid by Lessee to Lessor during any holdover period shall be 150% of the Rent being paid monthly by Lessee to Lessor immediately prior to the expiration of this Agreement. The parties agree to engage in good faith negotiations regarding the extension or renewal of this Agreement prior to its expiration. Each party shall make reasonable efforts to reach agreement on the terms of such extension or renewal in a timely manner so as to avoid the Lease continuing on a holdover basis. The holdover tenancy will be limited to 12 months from the expiration date of the original lease term.

6. TERMINATION. This Agreement may be terminated, without penalty or further liability, as follows:

by Lessee upon written notice to KPB, if Lessee is unable to obtain, or maintain any required insurance, approval(s), or the issuance of a license or permit by any agency, board, court or other governmental authority necessary for the construction or operation of the Communication Facilities as now or hereafter intended by Lessee; or by Lessee if Lessee in its sole discretion determines that the cost of, or delay in, obtaining or retaining the same is commercially unreasonable;by Lessee upon written notice to KPB, if Lessee determines, in its sole discretion, due to the title reports or survey results, that the condition of the Leased Premises is unsatisfactory for its intended uses; or

by Lessee upon sixty (60) days' prior written notice to KPB for any reason or no reason, so long as Lessee pays KPB a termination fee equal to the remaining Rent due under the current Term until such Term expires, and subject to removal requirements contained within Section 12, "Equipment, Fixtures, and Removal". No such termination fee will be payable on account of the termination of this Agreement by Lessee under any termination provision contained in any other Section of this Agreement other than this Section 6(c).

7. RENT. Beginning on the Effective Date, Lessee will pay to KPB a monthly rent payment of Four Thousand Dollars and 00/100 ($4,000.00) (Rent), at the address set forth above on or before the fifth

(5th) day of each calendar month in which Rent is due, in advance. First months rent to be prorated based on the execution date of the agreement. On each anniversary of the Effective Date, Rent will adjust annually by three percent (3%) over the prior year's Rent amount.

8. TAXES. Lessee must pay any real and personal property taxes assessed on, or any portion of such taxes directly attributable to, the Communication Facilities located on the Leased Premises, including private leasehold interests.

9. USE. The Leased Premises are being leased for the purpose of erecting, installing, operating and maintaining a radio or communications tower, transmitting and receiving equipment, antennas, dishes, mounting structures, equipment shelters and other supporting structures, and related equipment (collectively, the Communication Facilities). Lessee may, subject to the foregoing, make any improvement, alteration, or modification to the Leased Premises as are deemed appropriate by Lessee for the permitted use herein provided all necessary permits and related authorizations are obtained. Subject to Section 10(b), "Buffer Landscaping", Lessee will have the right to clear the Leased Premises of any trees, vegetation, or undergrowth which interferes with Lessee's use of the Leased Premises for the intended purposes. Notwithstanding Section 14, "Subleasing and Revenue Share", Lessee will have the exclusive right to install and operate upon the Leased Premises a radio or communications tower, buildings, equipment, antennas, dishes, fencing, and other accessories related thereto, and to alter, supplement, or modify the same as may be necessary.

10. SECURITY AND BUFFER LANDSCAPING.

(a) **Fence and Site Security**. Prior to the Effective Date of this Agreement, Lessee installed a locked fence of approximately six feet (6') in height around the perimeter of the Leased Premises to protect against unauthorized access to the Leased Premises. In addition, to the extent that Lessee elects, in its discretion and at its sole expense, to replace the existing fence around the perimeter of the Leased Premises during the Term of this Agreement, the replacement fence to be installed by Lessee around the perimeter of the Leased Premises must be of a color that blends in with the surrounding landscape (i.e., brown, green or similar color). Lessee may also elect, at its sole expense, to construct such other enclosures as Lessee reasonably determines to be necessary to secure its improvements, including the tower, building(s), guy anchors, and related improvements situated upon the Leased Premises. Lessee may also undertake at its sole expense any other appropriate means to restrict access to its radio or communications tower, buildings, applicable guy anchors, applicable guy wires, and related improvements, including, without limitation, posting signs for security purposes.

(b) **Buffer Landscaping.** To blend with the surrounding use of the Property, the Lessee will only clear the Leased Premises to the extent necessary for its Communication Facilities and access drive.

11. ACCESS, MAINTENANCE, AND UTILITIES.

3.1.(a) **Access**. During the Term, Lessee, and its guests, agents, customers, lessees, licensees, Sublessees, sublicensees, successors and assigns will have the exclusive right to use, and will have free and unfettered access to, the Leased Premises seven (7) days a week, twenty-four (24) hours a day. KPB agrees to cooperate with Lessee's efforts to obtain utilities and services. If there are utilities already existing on the Leased Premises which serve the Leased Premises, Lessee may utilize such utilities and services. Upon Lessee's request, KPB will execute and deliver to Lessee requisite recordable documents evidencing the easements contemplated hereunder within fifteen (15) days of Lessee's request

(b) **Maintenance**. Lessee will keep and maintain the Leased Premises in good condition.

(c) Utilities. Lessee is solely responsible for installing separate meters for utility use and payment, as applicable, and may not connect to any Lessor-owned electrical, communication, or other utility without Lessor's prior written approval.

12. EQUIPMENT, FIXTURES, AND REMOVAL. The Communication Facilities will at all times be the personal property of Lessee and/or its licensees, Sublessees, and sublicensees, as applicable. Lessee or its customers will have the right to erect, install, maintain, and operate on the Leased Premises such equipment, structures, fixtures, signs, and personal property as Lessee may deem necessary or appropriate, and such property, including the equipment, structures, fixtures, signs, and personal property currently on the Leased Premises, will not be deemed to be part of the Leased Premises, but will remain the property of Lessee or its customers. For the purpose of the option to retain, "Tower Structure" means the tower frame, foundation, security fencing, utility lines, and other primary components essential to support KPB's communication equipment and any residual third party equipment intended by the Parties at the time to remain in service. Unless otherwise agreed to in writing by the Parties, or exercise of KPB's option to retain the Tower Structure, within ninety (90) days after the expiration or earlier termination of this Agreement, or upon cessation, abandonment, or non-use of the Tower Structure for communication purposes for a period of six (6) consecutive months following construction of the Tower Structure as such cessation, abandonment, or non-use is acknowledged in writing by Lessee (the Removal Period), Lessee must remove its improvements and restore the Leased Premises to grade in a natural condition free of contamination, reasonable wear and tear excepted, which includes removal of all concrete and other foundation materials to a depth of five feet (5') below grade, and perform all obligations under this Agreement during the Removal Period, including without limitation, the payment of Rent at the rate in effect upon the expiration or termination of this Agreement. Notwithstanding the foregoing, Lessee will not be responsible for the replacement of any trees, shrubs or vegetation. Any property not so removed will be deemed abandoned and may be removed and disposed of by KPB in such manner as KPB will determine, without any obligation on the part of KPB to account to Lessee for any proceeds therefrom. Time is of the essence.

13. ASSIGNMENT.

(a) Lessee may assign this Agreement to any person or entity, at any time with prior written consent of KPB's Mayor and as long as the assignee agrees to the assignment and novation and complies with all terms of this Agreement. Notwithstanding the foregoing, providing all conditions of the agreement have been met including but not limited to payment of all amounts due, upon thirty (30) days' written notice to KPB, Lessee may assign this Agreement or its rights or obligations to (a) any person or entity controlling, controlled by, or under common control with Lessee, (b) Lessee's lender in connection with a collateral assignment, or (c) in connection with the sale or other transfer of substantially all of Lessee's assets in the Federal Communications Commission ("FCC") market area where the Leased Premises is located.

(b) KPB may assign this Agreement to any person or entity, at any time, upon thirty (30) days prior written notice of the assignment and as long as the assignee agrees to the assignment and novation and complies with all the terms of this Agreement.

14. SUBLEASING AND REVENUE SHARE.

(a) **Subleasing and Licensing**. Lessee will have the exclusive right to sublease or grant licenses to use the improvements or any other towers, structures, equipment, or ground space on the Leased Premises. Written consent of the KPB's Mayor is required. The KPB will have 5 business days from receipt

of notice to review request and related documentation to contest the request. Provided the Lessee is compliant with the lease terms and in good standing with the KPB, consent from the KPB may be implied upon the 6th business day, as long as the licensee, Sublessee, or sublicensee agrees and complies with all terms of this Agreement.

(b) **Anchor Tenant.** Alaska Wireless Network (AWN) is the Anchor Tenant using the Leased Premises and improvements thereon as of the Effective Date of this Agreement. There must be no more than one (1) Anchor Tenant at a given time, and Lessee must provide thirty (30) days' notice in writing to KPB of substitution of one Anchor Tenant for another. The Anchor Tenant does not include any lessees, licensees, sublessees, or sublicensees of the Anchor Tenant, and such lessees, licensees, sublessees, or sublicensees of the Anchor Tenant will be deemed Sublessees for the purposes of this Agreement and specifically subject to the Revenue Share provisions of Subsection 14(c). The consideration of any new or substitute Anchor Tenant may not exceed the Rent amount of Lessee on the date of the substitution.

(c) **Revenue Share.** In addition to and separate from the Rent, and excepting the Anchor Tenant, Lessee must pay to KPB thirty-three percent (33%) of rents actually collected by Lessee from any applicable Sublessees (as defined below), exclusive of non-recurring fees (e.g., structural analysis fees, mount analysis fees, and capital expenditures) and reimbursements (such as for taxes and utilities) (Revenue Share). The Revenue Share must be paid to KPB with the Rent in the month immediately following receipt of payment by Lessee from the applicable Sublessee. Upon reasonable written request for audit purposes, Lessee will provide KPB unredacted copies of any applicable Subleases (as defined below) for the purpose of confirming relevant financial terms and information including sublease rate and term information. For the purposes of this Agreement: (i) "Sublease" is defined as any license, sublease, sublicense, collocation, or similar vertical space rental agreement, or any other arrangement in which the Lessee or any Sublessee leases, subleases, licenses, or sublicenses to another party or entity any portion of the Leased Premises described in this Agreement or improvements thereon, including but not limited to a lease, license, sublease, or sublicense for an antenna, microwave dish, or wireless communications equipment; and (ii) "Sublessee" means any lessee, licensee, sublessee, or sublicensee of Lessee which is using any portion of the Leased Premises described in this Agreement or improvements thereon to the extent that such lessee, licensee sublessee, or sublicensee is not paying any rent or fees directly to KPB for the use of ground space related to the use of Lessee's improvements. Notwithstanding anything to the contrary in this Agreement, Lessee and KPB hereby agree and the Revenue Share will not be applicable to the Anchor Tenant using the Leased Premises and the improvements thereon.

(c) **Authorized Contact of Anchor Tenant and Sublessees.** Lessee must provide the KPB the name, telephone number, and email address of the authorized contact for the Anchor Tenant and all Sublessees, which authorized contact is responsible for the Anchor Tenant's and Sublessee's day-to-day operations or activities on the Leased Premises.

15. CO-LOCATE RIGHTS RESERVED BY KPB. KPB reserves the right to install emergency response communication equipment on Lessee's tower, provided that such equipment does not interfere with Lessee's or then-existing sublessee(s)' or licensee(s)' equipment. Ninety (90) days prior to the exercise of this reservation, KPB must provide Lessee with a complete inventory of equipment and proposed vertical location. Lessee must confirm KPB's equipment will not interfere with Lessee's or then-existing sublessee(s)' or licensee(s)' equipment or propose an alternate location. Upon installation of KPB's equipment on the Leased Premises, any future sublessee(s)' or licensee(s)' equipment must not interfere with KPB's emergency response communication equipment, provided such equipment is properly installed and lawfully operated. Notwithstanding the foregoing, KPB's right to install equipment on Lessee's tower will be subject to Lessee's reasonable determination that, at the time in which KPB proposes to install its equipment, Lessee's tower will have sufficient space and structural capacity to accommodate the additional

loading associated with KPB's proposed equipment installation. In connection with the foregoing, each Party will do and perform, or cause to be done and performed, all such further acts and things, and will execute and deliver all such other agreements, instruments, and documents, as the other Party may reasonably request in order to carry out the intent and accomplish the purposes of this Section 15 and the consummation of the transactions contemplated hereby. All costs associated with KPB's collocation on Lessee's tower, including but not limited to the cost of any structural analyses and any installation, maintenance, and operating costs, will be borne by KPB.

16. COVENANTS, WARRANTIES AND REPRESENTATIONS.

(a) KPB represents and warrants that KPB is the owner in fee simple of the Property, free and clear of all liens and encumbrances except those that have been disclosed to Lessee in writing prior to the execution hereof, and that KPB alone has full right to lease the Leased Premises for the Term of this Agreement.

(b) KPB will not do or permit anything during the Term of this Agreement that will unreasonably interfere with or negate Lessee's quiet enjoyment and use of the Leased Premises or cause Lessee's use of the Leased Premises to be in nonconformance with applicable local, state, or federal laws. KPB will cooperate with Lessee in any effort by Lessee to obtain certificates, permits, licenses and other approvals that may be required by any governmental authorities. KPB agrees to promptly execute any necessary applications, consents or other documents as may be reasonably necessary for Lessee to apply for and obtain the proper zoning approvals required to use and maintain the Leased Premises and Communication Facilities.

(c) KPB acknowledges and agrees that, except as disclosed to Lessee in writing prior to the execution hereof, there are no prior existing rights, uses, or authorizations granted to third parties or retained by KPB to locate improvements below grade or in proximity to the Leased Premises. Upon at least sixty (60) days prior written notice to Lessee, KPB reserves the right to grant further or additional rights or authorizations to locate improvements below grade or in proximity to the Leased Premises to the extent such rights or authorizations do not unreasonably interfere with Lessee's equipment or operations.

(d) Each Party hereto warrants and represents that it has the necessary power and authority to enter into and perform its respective obligations under this Agreement. Nothing in this Agreement, including such cooperation, will be construed as creating a partnership between the Parties.

17.REQUIRED INSURANCE COVERAGES. Insurance coverages required under this Agreement must be primary and exclusive of any other insurance carried by KPB. Minimum levels of insurance coverage required under this Agreement will remain in effect for the life of this Agreement. If Lessee's policies contain higher limits, KPB will be entitled to coverage to the extent of such higher limits. Certificates of Insurance must be delivered to KPB at the time of submission of the signed Agreement. KPB may request copies of required policies and endorsements, which must be provided within ten (10) days of KPB's request. Updated certificates must be provided upon insurance coverage renewal, where applicable.

(a) Lessee must provide and maintain commercial general liability insurance (CGL). The CGL policy must be written on an occurrence basis and with a limit of not less than one million dollars ($1,000,000.00) per occurrence and three million dollars ($3,000,000.00) aggregate. If necessary to provide the required limits, the CGL's policy's limits may be layered with an umbrella or excess liability policy. This policy must name KPB as additional insured with a waiver of subrogation.

(b) Lessee must provide and maintain commercial automobile liability insurance. The commercial auto liability policy must include a combined single limit of not less than one million dollars

($1,000,000.00). Coverage must include non-owned and hired car coverage. This policy must name KPB as additional insured with a waiver of subrogation.

(c) Lessee must provide and maintain worker's compensation insurance in accordance with the laws of the State of Alaska for all of its employees engaged in work under this Agreement. This coverage must include statutory coverage for states in which employees are engaging in work and employer's liability protection not less than the minimum amounts required by law. Subrogation will be waived.

(d) Property Insurance. Insuring against all risks of loss to any Lessee improvements at full replacement cost with no insurance penalty provision. Lessee will have the right to self-insure such Property Insurance.

(e) No Representation of Coverage Adequacy. By requiring insurance herein, KPB does not represent that coverage and limits will necessarily be adequate to protect Lessee, Sublessee, and/or contractor or subcontractor(s) of any tier, and such coverage and limits will not be deemed as a limitation on the liability of the Lessee and subcontractor(s) of any tier under the indemnities granted to KPB in this Agreement.

(f) Notwithstanding the foregoing, Lessee's obligations to provide insurance may be met by providing evidence of fiscal responsibility or self-insurance that is acceptable to KPB. Lessee warrants that it has the capacity to self-insure for the risks and coverages specified and will provide evidence of the lines and limits of coverage specified in "Required Insurance Coverages" in this Section 17. Lessee must provide KPB with proof of continuing ability to provide self-insurance within thirty (30) calendar days of any written request by KPB for such proof. If there is any change in the ability to self-insure, Lessee must provide KPB with immediate notice of such change and must immediately purchase insurance as set forth in this Section.

18.LESSEE REPRESENTATIONS. In addition to other obligations under this Agreement, Lessee has the following obligations and represents:

(a) That Lessee assumes all risk of loss, damage, or destruction to Lessee's improvements on the Leased Premises, except to the extent of the negligence or willful misconduct of KPB.

(b) That Lessee will comply with all applicable federal, state, and local laws or regulations, including relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, permitting, construction, operation, and maintenance of any facility, improvement, or equipment on the Leased Premises.

(c) That KPB has no duty, either before or during the Term of this Agreement, to inspect the Leased Premises or warn of hazards and if KPB inspects the Leased Premises, it will incur no additional duty nor any liability for hazards not identified or discovered through such inspections. This Subsection 18(c) will survive the termination or revocation of this Agreement, regardless of cause.

(d) That Lessee has an affirmative duty to protect from damage the Property and the interests of KPB related to this Agreement.

19. INDEMNIFICATION.

(a) Lessee agrees to defend, indemnify, and hold harmless KPB, its employees, public officials, and volunteers, with respect to any action, claim, or lawsuit arising out of (1) a breach of this Agreement, or (2) the use and occupancy of the Leased Premises or the Property by the Lessee. This

agreement to defend, indemnify and hold harmless includes all losses and liabilities without limitation as to any damages resulting from judgment, or verdict and includes the award of any attorneys' fees even if in excess of Alaska Civil Rule 82. The obligations of Lessee arise immediately upon written notice to Lessee by KPB of any action, claim, or lawsuit subject to the indemnification obligation of this Section 19. KPB will notify Lessee in a timely manner of the need for indemnification, but such notice is not a condition precedent for indemnification where Lessee has actual notice. This Agreement applies and is in full force and effect whenever and wherever any action, claim or lawsuit is initiated, filed, or otherwise brought against KPB relating to the Lessee's use and occupancy of the Leased Premises or the Property. Notwithstanding the foregoing, Lessee's duty to indemnify, defend, and hold harmless KPB as set forth above will not apply to the extent a claim arises from the negligence or willful misconduct of KPB, its employees, public officials, volunteers, and agents.

(b) To the extent allowed by law and subject to a specific appropriation by the KPB assembly for this purpose, KPB agrees to defend, indemnify, and hold harmless Lessee, its employees, affiliates, officers, directors, successors and assigns (collectively, the Lessee Indemnified Parties), with respect to any action, claim or lawsuit arising out of (1) a breach of this Agreement, or (2) the use and occupancy of the Property by KPB, its employees, public officials, volunteers, and agents. This agreement to defend, indemnify and hold harmless includes all losses and liabilities without limitation as to any damages resulting from judgment, or verdict and includes the award of any attorneys' fees even if in excess of Alaska Civil Rule 82. The obligations of KPB arise immediately upon written notice to KPB by Lessee of any action, claim, or lawsuit subject to the indemnification obligation of this paragraph. Lessee will notify KPB in a timely manner of the need for indemnification, but such notice is not a condition precedent for indemnification where Lessee has actual notice. This Agreement applies and is in full force and effect whenever and wherever any action, claim or lawsuit is initiated, filed, or otherwise brought against Lessee relating to KPB's use and occupancy of the Property. Notwithstanding the foregoing, KPB's duty to indemnify, defend, and hold harmless the Lessee Indemnified Parties as set forth above shall not apply to the extent a claim arises from the negligence or willful misconduct of Lessee, its employees, affiliates, officers, directors, successors and assigns. Lessee further acknowledges the following: (1) KPB currently has no appropriation available to it to defend and indemnify Lessee under this provision; (2) the enactment of any such appropriation remains in the sole discretion of the KPB Assembly; and (3) the KPB Assembly's failure to make such an appropriation creates no further obligation or duty on behalf of KPB.

20.INSPECTION. KPB reserves the right to enter upon and inspect the Leased Premises at any time to assure compliance with the conditions of this Agreement. Except in case of emergency, KPB will provide Lessee with at least forty-eight (48) hours' prior written notice of KPB's intention to enter upon and inspect the Leased Premises. Lessee reserves the right to have a representative present at all times during KPB's inspection.

21.FORCE MAJEURE. The time for performance by KPB or Lessee of any term, provision, or covenant of this Agreement will be deemed extended by time lost due to delays resulting from acts of God, strikes, civil riots, floods, material or labor restrictions by governmental authority, and any other cause not within the control of KPB or Lessee, as the case may be.

22.DEFAULT. The failure of Lessee or KPB to perform any of the covenants of this Agreement will constitute a default. The non-defaulting Party must give the other written notice of such default, and the defaulting Party must cure such default within thirty (30) days after receipt of such notice. In the event any such default cannot reasonably be cured within such thirty (30) day period, the defaulting Party must provide prompt notice of inability to cure and provide a plan to cure the default within a time frame provided. The time for curing a default will be extended for such period of time as may be necessary and

reasonable; however, in no event will this extension of time to cure be in excess of ninety (90) days, unless agreed upon in writing by the non-defaulting Party.

23.REMEDIES. Should the defaulting Party fail to cure a default under this Agreement, the other Party will have all remedies available either at law or in equity, including the right to terminate this Agreement.

24.MISCELLANEOUS.

(a) **Survival**. If any term of this Agreement is found to be void or invalid, such invalidity will not affect the remaining terms of this Agreement, which will continue in full force and effect.

(b) **Non-waiver**. Failure of any Party to insist on strict performance of any of the conditions or provisions of this Agreement, or failure to exercise any of a Party's rights hereunder, will not waive such rights.

(c) **Governing Law and Jurisdiction**. This Agreement will be governed by and construed in accordance with the laws of the State of Alaska, without regard to conflict of law principles. Any lawsuits filed in connection with this Agreement must be filed and prosecuted in the Third Judicial District, State of Alaska, at Kenai, Alaska.

(d) **Bind and Benefit**. This Agreement is binding upon and will inure to the benefit of the Parties hereto and their respective heirs, legal representatives, successors and assigns.

(e) **Memorandum**. A short-form Memorandum of Lease may be recorded at KPB's or Lessee's option in the form as depicted in Exhibit 4, attached hereto. KPB will promptly execute any Memorandum of Lease or Memorandum of Amendment to Lease upon written request of Lessee.

(f) **Counterparts**. This Agreement may be executed in counterpart, each of which when so executed and delivered will be considered an original and all of which when taken together will constitute one and the same instrument.

(g) **Entire Agreement**. This Agreement and exhibits, appendices or incorporated attachments hereto, constitute the entire agreement and will supersede all prior offers, negotiations and agreements with respect to the subject matter of this Agreement.

(h) **Amendment**. This Agreement may be amended in writing upon mutual agreement of the Parties.

[**SIGNATURES BEGIN ON NEXT PAGE**]

PART III. EXECUTION

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the Effective Date.

LESSOR: Kenai Peninsula Borough

By: _____

Print Name: Peter A. Micciche

Its: Mayor

Date: _____

LESSEE: Vertical Bridge S3 Assets, LLC

By: _____

Print Name: _____

Its: _____

Date: _____

ATTEST:

_____
Michele Turner, CMC
Borough Clerk

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

_____
Wayne Cary
Deputy Borough Attorney

LESSOR ACKNOWLEDGEMENT

STATE OF ALASKA)
) ss.
THIRD JUDICIAL DISTRICT)

The foregoing instrument was acknowledged before me this ____ day of _____, 2026, by Peter A. Micciche, Mayor of the Kenai Peninsula Borough, an Alaska municipal corporation, for and on behalf of such municipal corporation.

Notary Public for State of Alaska
My Commission Expires:

LESSEE ACKNOWLEDGMENT

STATE OF FLORIDA)
) ss:
COUNTY OF PALM BEACH)

On the _____ day of _____, 2026, before me personally appeared _____, and acknowledged under oath that he/she is the _____ of Vertical Bridge S3 Assets, LLC, the Lessee named in the attached instrument, and as such was authorized to execute this instrument on behalf of the Lessee.

Notary Public: _____
My Commission Expires: _____

EXHIBIT 1

DESCRIPTION OF PROPERTY AND LEASED PREMISES
Page 1 of 1

The Property is legally described as follows:

Tract B, Alaska State Land Survey 79-57 Amended , situated within the NE¼ of Section 36, Township 6 North, Range 12 West, Seward Meridian, Kenai Recording District, Third Judicial District, State of Alaska.

Parcel Number: 043-010-26

The Leased Premises is described as follows:

OWNER: KENAI PENNSULA BOROUGH
TRACT B, ALASKA ST A TE LAND SURVEY
No.79-57 AMENDED, RECORD AS PLAT No. 80-33
KENAI RECORDING DISTRICT
DEED: BOOK 175 PAGE 605
PARCEL ID: 040301026

Township 06N, Range 12W, Section 36, Seward Meridian KN 0800033 ALASKA STATE LAND SURVEY 79-57 AMENDED TRACT B

EXHIBIT 2

Leased Premises

The Leased Premises is depicted as follows:

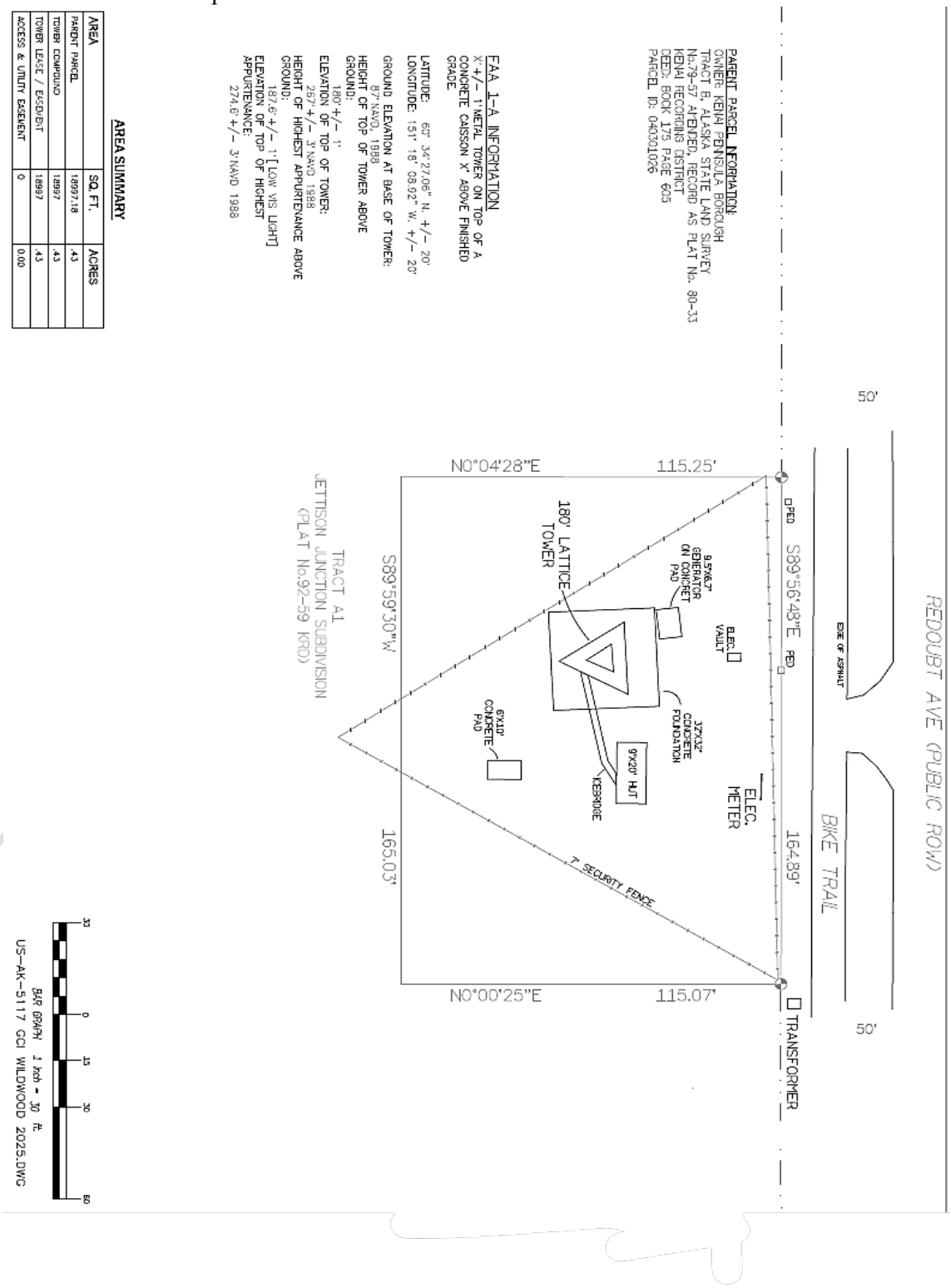


EXHIBIT 3

Existing Anchor Tenant, Sublessees and Related Equipment

Anchor Tenant Alaska Wireless Network's equipment located at RAD centers of 74, 114, 125, 130, 137, 144, 145, 148, 156, 168, 172, and 173 feet above ground level, two (2) equipment shelters, a generator, and associated ground equipment.

SpitWspots' equipment located at a RAD center of 100 feet above ground level and associated ground equipment.

Verizon Wireless' equipment located at a RAD center of 90 feet above ground level and associated ground equipment.

EXHIBIT 4

Memorandum of Lease

(Attached)

(Above 2" Space for Recorder's Use Only)

Prepared by and Return to:
Kenai Peninsula Borough
Attn: Land Management Division
144 N. Binkley St.
Soldotna, AK 99669

Grantor: Kenai Peninsula Borough
Grantee: Vertical Bridge S3 Assets, LLC
Legal Description: Attached as Exhibit 1
Tax Parcel ID #: 043-010-26
Site Name: Wildwood
State: Alaska
Borough: Kenai Peninsula Borough
Recording District: Kenai, Third Judicial

MEMORANDUM OF LEASE

This Memorandum of Lease (Memorandum) is entered into by and between the Kenai Peninsula Borough, an Alaska municipal corporation, having a mailing address of 144 N. Binkley St., Soldotna, AK 99669 (Lessor) and Vertical Bridge S3 Assets, LLC, a Delaware limited liability company, whose mailing address is 22 W. Atlantic Avenue, Suite 310, Delray Beach, Florida 33444 (Lessee) (together, the Parties).

1. Lessor and Lessee entered into a certain Communications Site Lease Agreement (Agreement) on the [insert Effective Date], for the purpose of installing, operating, and maintaining communication facilities and other improvements. All of the foregoing is set forth in the Agreement.
2. The initial lease term will be five (5) years commencing on the Effective Date with four (4) successive automatic five (5) year options to renew.
3. The portion of the land being leased to Lessee (Leased Premises) described in Exhibit 1 annexed hereto.
4. Lessor and Lessee now desire to execute this Memorandum to provide constructive knowledge of Lessee's lease of the Leased Premises.
5. This Memorandum of Lease is governed by the laws of the State of Alaska.

IN WITNESS WHEREOF, the Parties have executed this Memorandum of Lease as of the day and year first above written.

LESSOR: The Kenai Peninsula Borough

By: _____

Print Name: Peter A. Micciche

Its: Mayor

Date: _____

LESSEE: Vertical Bridge S3 Assets, LLC

By: _____

Print Name: _____

Its: _____

Date: _____

LESSOR ACKNOWLEDGEMENT

STATE OF ALASKA)
) ss.
THIRD JUDICIAL DISTRICT)

The foregoing instrument was acknowledged before me this ____ day of _____, 2026, by Peter A. Micciche, Mayor of the Kenai Peninsula Borough, an Alaska municipal corporation, for and on behalf of the municipal corporation.

Notary Public for State of Alaska
My Commission Expires:

LESSEE ACKNOWLEDGMENT

STATE OF FLORIDA)
) ss:
COUNTY OF PALM BEACH)

On the _____ day of _____, 2026, before me personally appeared _____, and acknowledged under oath that he/she is the _____ of Vertical Bridge S3 Assets, LLC, the Lessee named in the attached instrument, and as such was authorized to execute this instrument on behalf of the Lessee.

Notary Public: _____
My Commission Expires: _____

EXHIBIT 1 TO MEMORANDUM OF LEASE

DESCRIPTION OF PROPERTY AND LEASED PREMISES

Pursuant to the Memorandum of Lease dated _____, 2026, by and between The Kenai Peninsula Borough, as Lessor, and Vertical Bridge S3 Assets, LLC, as Lessee.

The Property is legally described as follows:

Tract B, Alaska State Land Survey No. 79-57, situated within the NE¼ of Section 36, Township 6 North, Range 12 West, Seward Meridian, Kenai Recording District, Third Judicial District, State of Alaska.

Parcel Number: 043-010-26

The Leased Premises is described as follows:

OWNER: KENAI PENNSULA BOROUGH
TRACT B, ALASKA ST A TE LAND SURVEY
No.79-57 AMENDED, RECORD AS PLAT No. 80-33
KENAI RECORDING DISTRICT
DEED: BOOK 175 PAGE 605
PARCEL ID: 040301026

Township 06N, Range 12W, Section 36, Seward Meridian KN 0800033 ALASKA STATE LAND SURVEY 79-57 AMENDED TRACT B

APPENDIX A: LEASE PROVISIONS REQUIRED BY KPB 17.10

(1) **Accounts Current**. The Lessee shall not be delinquent in the payment of any tax, debt or obligation owed to the KPB prior to execution of the Agreement.

(2) **Assignment**. Lessee may assign the lands upon which it has an agreement only if approved by the mayor or land management officer when applicable. Applications for assignment shall be made in writing on a form provided by the land management division. The assignment shall be approved if it is found that all interests of the borough are fully protected.

(3) **Breach of Agreement**. In the event of a default in the performance or observance of any of the Agreement terms or conditions, and such default continues thirty days after written notice of the default, KPB may cancel the Agreement or take any legal action for damages or recovery of the Property. No improvements may be removed during the time which the contract is in default.

(4) **Cancellation**. This Agreement may be cancelled at any time upon mutual written agreement of the parties.

(5) **Entry or Re-entry**. In the event the Agreement is terminated, canceled or forfeited, or in the event of abandonment of the Leased Premises by Lessee during the Term, the KPB, its agents, or representatives, may immediately enter or re-enter and resume possession of the Leased Premises. Entry or re-entry by KPB shall not be deemed an acceptance of surrender of the Agreement.

(6) **Fire Protection**. The Lessee shall take all reasonable precautions to prevent, and take all reasonable actions to suppress destructive and uncontrolled grass, brush, and forest fires on the Property under the Agreement, and comply with all laws, regulations and rules promulgated and enforced by the protection agency responsible for forest protection within the area wherein the Property is located.

(7) **Hazardous Waste**. The storage, handling and disposal of hazardous waste shall not be allowed on the Leased Premises.

(8) **Modification**. The Agreement may not be modified orally or in any manner other than by an agreement in writing signed by all parties or their respective successors in interest.

(9) **Notice**. Any notice or demand, which under the terms of the Agreement or under any statute must be given or made by the parties thereto, shall be in writing, and be given or made by registered or certified mail, addressed to the other party at the address shown on the contract. However, either party may designate in writing such other address to which such notice of demand shall thereafter be so given, made or mailed. A notice given hereunder shall be deemed received when deposited in a U.S. general or branch post office by the addressor.

(10) **Notice of Default**. Notice of the default will be in writing as provided in paragraph 9 above.

(11) **Removal or Reversion of Improvements Upon Cancellation of Purchase Agreement or Lease.**

(a) Improvements on Leased Premises owned by Lessee shall, within ninety (90) calendar days after the termination of the Agreement, be removed by Lessee, subject to the terms of Paragraph 12

of the Agreement; provided, such removal will not cause injury or damage to the Property; and further provided, that the mayor or land management officer when applicable may extend the time for removing such improvements in cases where hardship is proven. The Lessee may, with the consent of the mayor or land management officer when applicable, dispose of its improvements to a sublessee or assignee, if applicable.

(b) If any improvements and/or chattels having an appraised value in excess of ten thousand dollars, as determined by a qualified appraiser, are not removed within the time allowed, such improvements and/or chattels shall, upon due notice to the Lessee be sold at public sale under the direction of the mayor and in accordance with the provisions of KPB Chapter 5. The proceeds of the sale shall inure to the former Lessee who placed such improvements and/or chattels on the Property, or his successors in interest, after paying to the borough all moneys due and owing and expenses incurred in making such a sale. In case there are no other bidders at any such sale, the mayor is authorized to bid, in the name of the borough, on such improvements and/or chattels. The bid money shall be taken from the fund to which said lands belong, and the fund shall receive all moneys or other value subsequently derived from the sale of leasing of such improvements and/or chattels. The borough shall acquire all the rights, both legal and equitable, that any other purchaser could acquire by reason of the purchase.

(c) If any improvements and/or chattels having an appraised value of ten thousand dollars or less, as determined by the mayor, are not removed within the time allowed, such improvements and/or chattels shall revert and absolute title shall vest in the borough. Upon request, the Lessee shall convey said improvements and/or chattels by appropriate instrument to the KPB.

(12) **Rental for Improvements or Chattels not Removed**. Any improvements and/or chattels belonging to the Lessee or placed on the Property and remaining upon the Leased Premises after the termination of the contract shall entitle the KPB to charge a reasonable rent therefor.

(13) **Re-rent**. In the event that the Agreement should be terminated, canceled, forfeited or abandoned, the KPB may offer said lands for lease or other appropriate disposal pursuant to the provisions of this chapter or other applicable regulations.

(14) **Responsibility for Location**. It shall be the responsibility of the Lessee to properly locate improvements on the Leased Premises.

(15) **Rights of Mortgage or Lienholder**. In the event of cancellation or forfeiture of the Agreement for cause, the holder of a properly recorded mortgage, conditional assignment, or collateral assignment will have the option to acquire the Agreement for the unexpired term thereof, subject to the same terms and conditions as in the Agreement. Any party acquiring the Agreement must meet the same requirements as the Lessee.

(16) **Sanitation**. The Lessee shall comply with all regulations or ordinances which a proper public authority in its discretion shall promulgate for the promotion of sanitation. The Leased Premises under the Agreement shall be kept in a clean and sanitary condition and every effort shall be made to prevent any pollution of the waters and lands.

(17) **Shore Land Public Access Easement**. As established by AS 38.05, borough lands sold or leased may be subject to a minimum 50-foot public access easement landward from the ordinary high-

water mark or mean high water mark.

(18) **Subleasing**. No lessee may sublease lands or any part thereof without written permission of the mayor or land management officer when applicable. A sublease shall be in writing and subject to the terms and conditions of the original lease. **Violation**. Violation of any provision of KPB 17.10 or of the terms of the Agreement may expose the Lessee to appropriate legal action including forfeiture of purchase interest, termination,s or cancellation of its interest in accordance with state law.

(19) **Written Waiver**. The receipt of payment by the borough, regardless of knowledge of any breach of the Agreement by Lessee, or of any default on the part of Lessee in observance or performance of any of the conditions or covenants of the Agreement, shall not be deemed to be a waiver of any provision of the Agreement. Failure of the borough to enforce any covenant or provision therein contained shall not discharge or invalidate such covenants or provision or affect the right of the borough to enforce the same in the event of any subsequent breach or default. The receipt by the borough of any payment of any other sum of money after notice of termination or after the termination of the Agreement for any reason, shall not reinstate, continue or extend the Agreement, nor shall it destroy or in any manner impair the efficacy of any such notice of termination unless the sole reason for the notice was nonpayment of money due and payment fully satisfies the breach.

APPENDIX B

SITE-SPECIFIC LEASE PROVISIONS

CO-LOCATE RIGHTS RESERVED BY KPB: KPB reserves the right to use vertical space on the tower (Additional Space). To the extent this Appendix conflicts with Section 15 of the Agreement, the terms of the Agreement will control.

KPB may authorize the use of the reserved Additional Space to other government agencies or organizations (KPB Sublessee) for the purpose of facilitating communications for first responders, disaster management, general government operations, or other public safety uses. The KPB Sublessee will provide an inventory of equipment and proposed vertical location to the Lessee for the purposes of ensuring that no interference is likely for the proposed installation. KPB and any KPB Sublessee will be responsible for frequency coordination and adherence to all applicable regulations to prevent interference. All costs associated with any of KPB Sublessee's collocation on Lessee's tower, including but not limited to the cost of any structural analyses and any installation, maintenance, and operating costs, will be borne by KPB or KPB Sublessee.

KPB AND KPB SUBLESSEE USAGE: The KPB and any KPB Sublessee may use the Additional Space only for the purposes of providing public safety communications. KPB or any KPB Sublessee may choose to install equipment to provide general government communications, monitoring equipment, and other similar uses. In general, equipment may include, but is not limited, to VHF Radio Frequency (RF) transceivers, RF repeaters, licensed or unlicensed point to point antennas, microwave backhaul, surveillance cameras and other monitoring devices, and associated items that may support conventional or trunked radio systems. All equipment or facilities placed within the Additional Space will remain the personal property of the KPB or KPB Sublessee.

INTERFERENCE WITH LESSEE EQUIPMENT: In the event that proposed or installed equipment from KPB or KPB Sublessee interferes with equipment of the Lessee, all parties will work to explore technical solutions or changes to mitigate such interference. All other provisions of Section 15 related to interference remain in effect.

RENT: The Additional Space is free of charge. KPB and KPB Sublessees are not responsible for any additional or direct rent payment to Lessee for the use of the tower or associated premises. KPB or KPB Sublessees are responsible for the costs of establishing, maintaining, and removing equipment during the life of this Agreement, as well as for any utilities required to maintain KPB or KPB Sublessee equipment.

E. NEW BUSINESS

3. Conditional Use Permit; PC Resolution 2026-27
Applicant: Tyonek Native Corporation
Request: Removal of two culverts and replacing them with a 50' X 14' bridge within the HPD of Tyonek Creek
KPB Parcel ID # 21115043
Tyonek Area

Multi-Agency Permit Application
Kenai Peninsula Borough
River Center

Fees Received: $_____
☐ Cash
☐ Check #_____
CREDIT CARDS NOT ACCEPTED FOR APPLN FEES

514 Funny River Road
Soldotna, Alaska 99669
KenaiRivCenter@kpb.us

Phone: (907) 714-2460
Fax: (907) 260-5992

PROPERTY OWNER:

Name: Laurie Stuart
Mailing: 101 W Benson Blvd
Anchorage, AK, 99503
Phone: 907-278-1021
Email: lstuart@ttcd.org

AGENT: (if applicable)

Name: Irene Turletes
Mailing:
Phone: 907-644-2099
Email: irene.turletes@hdrinc.com

PROJECT LOCATION:

KPB Parcel ID: 21115043
Physical Address: NA
Subdivision:
Lot: _____ Block: _____ Addition/No.: _____

WATERBODY INFORMATION:

Waterbody: Tyonek Creek
River Mile: ~8
Riverbank: ■ Left ■ Right *(looking downstream)*

PERMIT FEES: ☐ $50 - Staff Permit **OR** ☐ $300 - Conditional Use or Floodway Analysis

PROJECT: ■ New Project **OR** ☐ Extension/Amendment to **RC#** _____

Please select all activities that apply to your project:

- ☐ Bank Stabilization
- ☐ Boat Launch
- ■ Bridge
- ■ Coir Logs
- ■ Culvert
- ☐ ELP Structures
- ■ Equipment Stream Crossing
- ■ Excavation, Dredging, and/or Fill
- ☐ Fence Installation
- ■ Fish & Wildlife Management
- ☐ Floating Dock
- ☐ Fuel Storage Green Infrastructure
- ☐ In-Stream Structures (Weir)
- ☐ Oil & Gas
- ☐ On-Site Utilities
- ■ Prior-Existing Structure
- ■ Revegetation
- ☐ Root Wads
- ■ Road Construction
- ☐ Structure (Accessory)
- ☐ Structure (Residential)
- ☐ Spruce Tree Revetment
- ■ Stream Crossing
- ☐ Utility Line/Easement
- ■ Veg Mat
- ■ Vegetation Removal
- ☐ Water Withdrawal
- ☐ Other: _____

PROJECT DESCRIPTION: *Provide a detailed description of your project, attach additional pages if necessary.*

Please see attached project description document. This project will remove two existing culverts on upper Tyonek Creek and replace them with a bridge structure.

COST-SHARE: Is this project funded by the ADFG-USFWS Cost-Share Program? ☐ Yes ☐ No

KPB TAX CREDIT PROGRAM: KPB provides a tax credit as partial reimbursement for new habitat protection and restoration projects within 150 feet of anadromous streams. If you would like to pre-qualify for this credit, please provide your estimated project cost(s) below. Do not include grants or other funding assistance:

Elevated Light-Penetrating Structures $ _____ Other Activities $ _____
Habitat Restoration & Protection $ _____ Green Infrastructure $ _____

PROJECT QUESTIONS:

1. Start date: May 1, 2026 End date: September 31, 2026 Estimated Days of Construction: 90
2. Is any portion of the work already complete? If yes, please describe: ☐ Yes ☒ No
3. Is your project located on land or waters of an Alaska State Park? ☐ Yes ☒ No

If yes, you must fill out an Alaska State Parks application at: dnr.alaska.gov/parks/permit

Ordinary High Water (OHW) and Mean High Water (MHW):

4. Is the project located within 50 feet of OHW or MHW a waterbody? ☒ Yes ☐ No
5. Does any portion of the project extend below the OHW or MHW of the waterbody? ☒ Yes ☐ No
6. Does any portion of the project cantilever or extend over the MHW of the waterbody? ☒ Yes ☐ No
7. Will anything be placed below OHW or MHW of the waterbody? ☒ Yes ☐ No

Regulatory Floodplains:

8. Is the property where the project is taking place near or within a regulatory floodplain? ☐ Yes ☒ No
   a. Is this project within or adjacent to a regulatory floodway? ☐ Yes ☒ No
   b. Is this project within or adjacent to a coastal high hazard zone? ☐ Yes ☒ No
   c. For new buildings and/or additions, list all project costs (labor, materials, etc.): $

Excavation, Dredging, and Fill:

9. Will material be excavated or dredged from the site? ☒ Yes ☐ No
   a. Type of material(s): See attached project description.
   b. Area to be dredged below OHW or MHW:
      Length: (ft) Width: (ft) Depth: (ft) Total Cubic Yards:
   c. Area to be excavated above OHW or MHW:
      Length: (ft) Width: (ft) Depth: (ft) Total Cubic Yards:
   d. Location materials will be deposited:
10. Will any material (including soils, debris, and/or overburden) be used as fill? ☒ Yes ☐ No
    a. Type of material(s): See attached project description.
    b. Is this fill permanent or temporary? ☒ Permanent ☐ Temporary
    c. Area to be filled above OHW or MHW:
       Length: (ft) Width: (ft) Depth: (ft) Total Cubic Yards:
    d. Area to be filled below OHW or MHW:
       Length: (ft) Width: (ft) Depth: (ft) Total Cubic Yards: 145

Motorized Equipment:

11. Will you be using motorized equipment for this project? If yes, please list all equipment: ☒ Yes ☐ No
    Trackhoe, backhoe, dump trucks
    a. Will you be crossing a stream or waterbody? ☐ Yes ☒ No
    b. How long will equipment be used below OHW or MHW? May 15-July 15

SIGNATURE & CERTIFICATION:

This application is hereby made requesting permit(s) to authorize the work described in this application form. I certify the information in this application is complete and accurate to the best of my knowledge and that my site plans or drawings are attached. If applying for a tax credit, I certify that I have not begun construction of the project and that the project will be constructed to the standards in KPB 5.12 Real Property and Personal Property Taxes, KPB 5.14 Habitat Protection Tax Credit, and other applicable federal, state, and local regulations.

Laurie K. Stuart Digitally signed by Laurie K. Stuart Date: 2026.03.24 10:32:23 -08'00'	03/24/2026		
Owner Signature *(required)*	**Date**	**Agent Signature** *(if applicable)*	**Date**

Project Description

To Support Permit Applications

Upper Tyonek Creek Fish Passage Crossing Replacement

Tyonek Creek (ADF&G #20601534)

Near Tyonek, Alaska

Tyonek Tribal Conservation District
101 W Benson Ave,
Anchorage, AK 99503

March 16, 2026

Contents

Figures

Tables

Appendices

Acronyms and Abbreviations

ADF&G	Alaska Department of Fish and Game
CMP	corrugated metal pipe
FPID	Fish Passage Inventory Database
ft	foot/feet
H&H	hydrology and hydraulics
HDR	HDR Engineering, Inc.
KPB	Kenai Peninsula Borough
NRCS	Natural Resources Conservation Service
OHW	ordinary high water
TBC	The Boutet Company
Tyonek	Native Village of Tyonek
TTCD	Tyonek Tribal Conservation District
USGS	U.S. Geological Survey

1 Introduction

The Tyonek Tribal Conservation District (TTCD) assists several communities along the northwest side of Cook Inlet with community-led conservation efforts, including the Native Village of Tyonek (Tyonek). The Alaska Department of Fish and Game (ADF&G) has designated several roadway stream crossings as fish passage barriers of varying severity around Tyonek. TTCD has been working systematically to improve fish passage and aquatic connectivity throughout the watersheds surrounding Tyonek. TTCD has secured funding through the U.S. Fish and Wildlife Service (USFWS) to replace one of these roadway crossings on Tyonek Creek (Fish Passage Inventory Database [FPID] #20601534). The upper Tyonek Creek fish passage replacement project aims to improve flood capacity, reconnect aquatic habitat, and improve fish passage.

The Boutet Company, Inc. (TBC), with the assistance of HDR Engineering, Inc. (HDR), has been contracted to design the proposed roadway improvements and culvert replacement at the site. HDR completed a Final Hydrology & Hydraulics (H&H) Report for the project in February 2026 (HDR 2026; Appendix A) and TBC completed 95% design specifications in January 2026 (TBC 2026; Appendix B).

This document is intended to support the following permit applications: US Army Corps of Engineers 404 Nationwide Permit, Kenai River Center Multi-Agency Permit, Alaska Department of Fish and Game (ADF&G) Fish Habitat Permit, and Alaska Department of Natural Resources (ADNR) Temporary Water Use Permit.

2 Proposed Project

2.1 Project Purpose

The purpose of this project is to replace an existing culvert battery (FPID# 20601534) to improve fish passage through the stream crossing (Figure 1). The existing crossing consists of two, approximately 9-foot diameter corrugated metal pipes (CMPs) that convey Tyonek Creek under an unnamed road flowing from northwest to southeast. The existing gravel road is approximately 24 feet wide and located just north of an old airstrip (oil and gas exploration). It receives moderate use providing subsistence, recreation, and oil and gas exploration access. This site was surveyed by Alaska Department of Fish and Game (ADF&G) in 2002 and 2016. During the 2016 ADF&G site visit, the north culvert was noted to be blocked by a beaver dam (ADF&G 2025). ADF&G gave this crossing a green rating, indicating it was likely to provide adequate juvenile fish passage, and has not reevaluated the crossing since. The proposed designs for the replacement of the culverts include a bridge crossing design that would meet the USFWS fish passage design guidelines (TBC 2026, USFWS 2025).

2.2 Location

Tyonek resides on the northwest side of Cook Inlet, across from the Kenai Peninsula, and immediately south of the community of Beluga (Figure 1). The site is located on an unnamed road just north of an old airstrip east of Tyonek. The project site resides within the Kenai Peninsula Borough (KPB), and the Tyonek Native Corporation owns the land, crossing and roadway.

The project is located within the KPB in Township 11 North, Range 12 West, Section 1, Seward Meridian and is located within U.S. Geological Survey Tyonek A-4 Quadrangle. Latitude and longitude (North American Datum 1983) of the crossing location is 61.06517°/-151.32443° (Figure 1, Figure 2).

Access is by charter plane from Anchorage to Tyonek (approximately 45 air-miles southwest of Anchorage), then by vehicle on Airport Road (gravel) traveling west for approximately 6 miles. The crossing is located approximately 500 feet southeast of the intersection of Airport Road and Tyonek Timber Road.

Approximately 3 river miles downstream of the site, Tyonek Creek crosses Tyonek-Beluga Road through a 16.5-foot by 9.9-foot structural steel plate pipe arch (FPID #20601542), installed in July 2014. Another 4.5 river miles further downstream, Tyonek Creek crosses Tyonek Timber Road through a 45-foot 10-inch wide by 22-foot 11-inch tall structural steel plate pipe arch (FPID #20601540), installed in September 2024. Tyonek Creek then flows into Cook Inlet just north of Beshta Bay 0.4 river miles further downstream.

2.3 Existing Conditions

The existing crossing consists of two, approximately 9-foot diameter corrugated metal pipes (CMPs) that convey Tyonek Creek under an unnamed road flowing from northwest to southeast. The existing gravel road is approximately 24 feet wide and located just north of an old airstrip (oil and gas exploration). It receives moderate use providing subsistence, recreation, and oil and gas exploration access. This site (FPID #20601534) was surveyed by Alaska Department of Fish and Game (ADF&G) in 2002 and 2016. During the 2016 ADF&G site visit, the north culvert was noted to be blocked by a beaver dam (ADF&G 2024). ADF&G gave this crossing a green rating, indicating it was likely to provide adequate juvenile fish passage, and has not reevaluated the crossing since.

During the 2022 HDR/TBC site visit, the beaver dam was not encountered, and no obstructions were seen in either culvert. The north culvert had an approximate width of 9.3 feet, rise of 7.0 feet, slope of -0.32 percent, and length of 60.0 feet. The south culvert had an approximate width of 9.0 feet, rise of 7.1 feet, slope of -0.08 percent, and length of 60.0 feet. The culverts were not embedded and appeared to be in fair condition with a slight perch at the inlets that may create a juvenile fish barrier at low flows. The existing gravel roadway varied in width from 9 to 12 feet. The upstream and downstream side slopes of the roadway embankment were eroding with geotextile stabilization fabric visible.

2.4 Existing Site Summary

ADF&G's 2016 site visit information is summarized in Table 1. From the 2022 HDR/TBC site visit, existing culvert information is provided in Table 2. Additional information can be found in the Hydrology and Hydraulics report (Attachment A).

Table 1. General Site Information

Site	Road	Stream	ADF&G FPID	ADF&G Fish Passage Classification	Latitude Longitude
Upper Tyonek Creek Crossing	Unnamed Road	Tyonek Creek	20601534	Green: likely to provide adequate juvenile fish passage	61.07681°, -151.31593°

Notes: ADF&G = Alaska Department of Fish and Game; FPID = Fish Passage Inventory Database; ° = degree(s).

Table 2. Existing Culverts

Culvert	Span (ft)	Rise (ft)	Type	Material	Slope (%)	Length (ft)
North Barrel	9.3	7.0	Round, Corrugated	Steel	-0.32	60.0
South Barrel	9.0	7.1	Round, Corrugated	Steel	-0.08	60.0

Notes: ft = foot/feet; % = percent.

2.5 Project Construction Schedule and Details

The replacement of the culvert battery on upper Tyonek Creek with the proposed bridge design is anticipated to occur during the 2026 construction season. Clearing and grubbing will occur prior to May 1. The in-water work will be completed in early summer to place bridge abutments, reconstruct the stream channel, and place the bridge structure on the abutments. All work below the OHW of the stream will be completed between May 1 and July 15 or as stipulated by the ADF&G Fish Habitat Permit. The total area of disturbance for the project is 0.5 acres.

Construction for the project generally includes the following components:

- Clearing and grubbing of the work area (limits of disturbance).
    - USFWS recommends projects avoid clearing vegetation from May 1 to July 15 to protect nesting migratory birds (USFWS 2009). The project will perform clearing and grubbing prior to May 1. Clearing and grubbing will be limited to the limits of disturbance, minimizing impacts to the stream banks and surrounding area.
- Installation of temporary diversion/dewatering methods to route flows around/through the work area in order to conduct work in-the-dry.
    - A diversion channel will be created to divert water during construction. Water will be diverted into the diversion channel using a supersack cofferdam. Pumps may be used to move additional water out of the construction area if necessary. Pump specifications are not currently known. However, the pump will be screened with < 0.25 inch mesh and follow additional guidance outlined in the project's ADF&G Fish Habitat Permit.
- Excavation and removal of the two existing culverts and existing bedding/backfill material.

- Excavation and construction of the new stream channel, realigning the stream into the new stream bed.
- Back fill the diversion channel and construct the new road embankment.
- Prepare the abutments and place bridge structure.
- Streambank reconstruction and stabilization up-and down-stream of the bridge location based on surveyed reference reaches (HDR 2024), and site rehabilitation activities. Bank reconstruction may include the use of coir logs, brush layering, and vegetative mat. 2 saplings 1.5' to 2' tall will be planted for any tree that was cut down for construction activities per KPB permit requirements.

3 Wetlands and other Waters of the U.S.

HDR Professional Wetland Scientists prepared web-based wetland and waterbody mapping for the limits of disturbance for the upper Tyonek Creek culvert replacement project. Mapping was based on publicly available data sources. Scientists reviewed the following datasets in a Geographic Information System (GIS) to delineate wetlands and waterbodies at the location of construction.

- Hillshade and 2-foot contours derived from high-resolution LiDAR data
- Alaska High Resolution Imagery
- KPB Imagery
- Esri World Wayback Imagery digital archive of high-resolution satellite and aerial imagery at 1-meter resolution or better
- USFWS National Wetlands Inventory (NWI) mapping
- ADF&G's Freshwater Fish Inventory (2025) and Anadromous Waters Catalog
- U.S. Geological Survey (USGS) National Hydrography Dataset

Waterbodies were delineated at an approximate scale of 1:400 and vegetation boundaries at an approximate scale of 1:1,200. Wetland mapping included the following methods:

- Vegetation clues: Examination of aerial photographs for saturation-adapted vegetation communities, indicative canopy structure and height, and hydrophytic plant species.
- Evidence of soil saturation: A site's proximity to streams, open water habitat, and marshes can be indicative of shallow subsurface water. Scientists therefore look for visible evidence of wetland hydrology, including surface water and darker areas of photographs that indicate surface saturation.
- Topography: Evidence of high points and sloped surfaces that would allow soils to drain supports the classification of those areas as upland. Topographic depressions, toes of slopes, and flat topography serve as indicators of potentially poor soil drainage.

Mapped polygons identifying homogenous wetland and waterbody areas were attributed with NWI mapping codes based on the USFWS's Classification of Wetlands and Deepwater Habitats of the U.S. (Cowardin et al. 1979). Mapped wetland polygons were also assigned a hydrogeomorphic class based on hydrologic and topographic positions (Brinson 1993).

Wetland scientists identified 0.28 acre of wetlands within the Project limits (Figure 2). Wetland types identified include palustrine aquatic bed, palustrine emergent, palustrine forested, and palustrine scrub shrub. The remaining 0.26 acre (49 percent) of the study area was determined to be upland.

Because this project is working in and around a stream, avoidance of all jurisdictional WOTUS is not possible. Fill will need to be placed to construct abutments and to restore the stream channel and banks. Design indicated that approximately 145 cubic yards of permanent fill in WOTUS will be necessary for construction of the new structure and stream channel. Fill will consist of rip rap, abutment bedding, and streambed material. The anticipated acreage of fill discharge into WOTUS is 0.28 acre. TTCD requests authorization to place fill in up to 0.28 acre of WOTUS for the construction of the upper Tyonek Creek bridge to replace the existing culverts.

4 Fish and Essential Fish Habitat

Tyonek Creek (247-20-10040) is nominated in the Anadromous Waters Catalog for coho salmon (rearing and presence) and pink salmon (spawning) (Geifer and Evers 2025). Additionally, slimy sculpin are a common resident fish in southcentral Alaska and are likely present in Tyonek Creek as well. TTCD is requesting authorization to perform in-water work in upper Tyonek Creek from May 15 to July 15 from ADF&G. By following FHP stipulations and timing windows as identified by ADF&G, significant impacts to fish and essential fish habitat will be avoided. During the diversion installation process and dewatering of the work area, any fish remaining within the work area will be captured using either minnow traps, dip nets, or potentially seine nets, and moved outside of the work area. Fish will be identified and released downstream of the work area.

The USFWS – Alaska's Fish Passage Program Design Guidelines and the KPB Code of Ordinances were used as the design criteria for each crossing (USFWS 2025). Construction of the project will include replacing existing culverts with a bridge, resulting in reduced velocities and increased flood capacity, and will include simulated stream bottom material and reconstructed/rehabilitated stream channels immediately upstream and downstream of the newly installed bridge crossing. The chosen designs and proposed activities will result in an overall benefit to aquatic resources and will improve fish passage capabilities.

5 Endangered Species Act

HDR submitted a query to USFWS's Information for Planning and Consultation web service on January 21, 2026 (USFWS 2026). Results of the query indicated that no endangered or threatened species or their critical habitats listed under the Endangered Species Act are known to occur in the project area.

6 Cultural Resources

USFWS completed National Historic Preservation Act Section 106 consultation in July 2022 (Appendix C). The NHPA Section 106 finding was that the undertaking occurs within the footprint of an area of previous, extensive, disturbance. There are no known archaeological sites within one mile of the project area. Based on this, the undertaking has a finding of no historic properties affected.

7 Mitigation

TTCD has incorporated the following measures into the design and construction of the project to avoid or reduce impacts:

- The contractor shall wash equipment (including all tracked equipment, excavation equipment, and excavation hauling equipment) prior to mobilization to ensure that the spread of invasive species is minimized.
- Fill materials shall be clean and free of contaminants and materials shall be obtained from noxious weed-free material sites.
- All construction activities completed below the OHW of the stream will occur between May 15, 2026 and July 15, 2026 or as stipulated by the ADF&G Fish Habitat Permit.
- Stream diversion will meet the applicable requirements of ADF&G and all other local, state, and federal laws
- The currently proposed stream diversion method includes temporary diversion channels. The contractor will prepare and submit a final stream diversion and dewatering plan and submit to the project engineer for approval.
- Dewatering of the excavations may be required to complete the work. Discharge of dewatering pumps shall be a minimum of 100 feet from streams and shall be protected with best management practices (BMP's) as required to minimize sediment discharge into receiving waters.
- Fish remaining onsite within any coffer/diversion dams, scour pools or old channels will be salvaged and relocated to the closest pool upstream of the construction area prior to completely dewatering the site. TTCD will acquire an Aquatic Resource Permit in accordance with ADF&G requirements prior to salvage activities.
- Stream bottoms will be constructed out of stable material and will tie into existing material as quickly as possible.
- Simulated streambed material will be placed and simulated stream channel shaped by hand.
- High pressure water will be sprayed on all stream substrate to thoroughly wash fines into the streambed prior to diverting stream into the newly constructed channel.
- Two saplings 1.5-feet to 5.5-feet tall will be planted for every tree cut down as required by KPB permits.
- Revegetation and streambank stabilization will be completed according to ADF&G's 2005 Streambank Revegetation and Protection Guide.
- Reshaped stream channels will have bank faces that are uneven, protrude into the channel, and will be rough in appearance.
- Salvaged vegetative mats will have a minimum thickness of six inches and will be sourced from the disturbed area or the local area to rebuild entire streambank four-foot minimum from the stream channel.
- Potted live saplings will be planted along newly constructed channels spaced 2-foot minimum on-center.

- Eighteen-inch diameter coir logs and brush layering will be installed along top of banks of reconstructed stream sections and willow staking will occur at a rate of 15 stems per linear foot.
- Staging areas and disposal of materials generated from excavations will not occur in mapped WOTUS.
- Fueling will not occur within or adjacent to stream beds or wetlands.
- Heavy machinery operating in the stream channels will be limited to the amount necessary to complete the work. The contractor will minimize the amount of in-stream work to the greatest extent possible.
- The contractor will submit a traffic control plan to the project engineer for approval a minimum of three weeks prior to implementing a road closure.
- Applicable BMP's will be followed for the work being performed; the contractor shall minimize erosion and sedimentation of all waterways by implementing control measures as areas are disturbed by construction.
- Sandbags, silt fences, or straw bales will be installed as necessary to protect the stream and other streams from sediment due to construction. Perimeter fences or sandbag dikes will be installed at construction sites to prevent runoff from being directly discharged into nearby streams.

.

8 References

ADF&G Alaska Department of Fish and Game

2025 Fish Passage Inventory Database (FPID) and Fish Resource Interactive Mapping Application. Accessed at https://www.adfg.alaska.gov/index.cfm?adfg=fishpassage.database in December 2024.

Brinson, M. M.

1993 A hydrogeomorphic classification for wetlands. Report No. WES/TR/WRP-DE-4.

Cowardin, Lewis M.

1979 Classification of wetlands and deepwater habitats of the United States. Fish and Wildlife Service, US Department of the Interior.

Geifer and Evers

2025 Catalog of waters important for spawning, rearing, or migration of anadromous fishes - Southcentral Region, June 2025. Alaska Department of Fish and Game, Special Publication No. 25-03, Anchorage.

HDR

2026 Final Hydrology and Hydraulics Report, Upper Tyonek Creek Fish Passage Crossing Replacement, Tyonek Creek (ADF&G #20601534). February 2026.

TBC The Boutet Company

2026 Upper Tyonek Creek Fish Passage Improvements, ADF&G Site # 20601534. 95% Review. January 2026.

USFWS U.S. Fish and Wildlife Service - Alaska Fish Passage Program

2025 Culvert Design Guidelines for Ecological Function, Revision 10. Accessed at https://www.fws.gov/alaska-culvert-design-guidelines in December 2025.

2026 Information for Planning and Consultation. Accessed on January 28, 2026 at https://ipac.ecosphere.fws.gov/ .

Figures

Figure 1: Study area vicinity

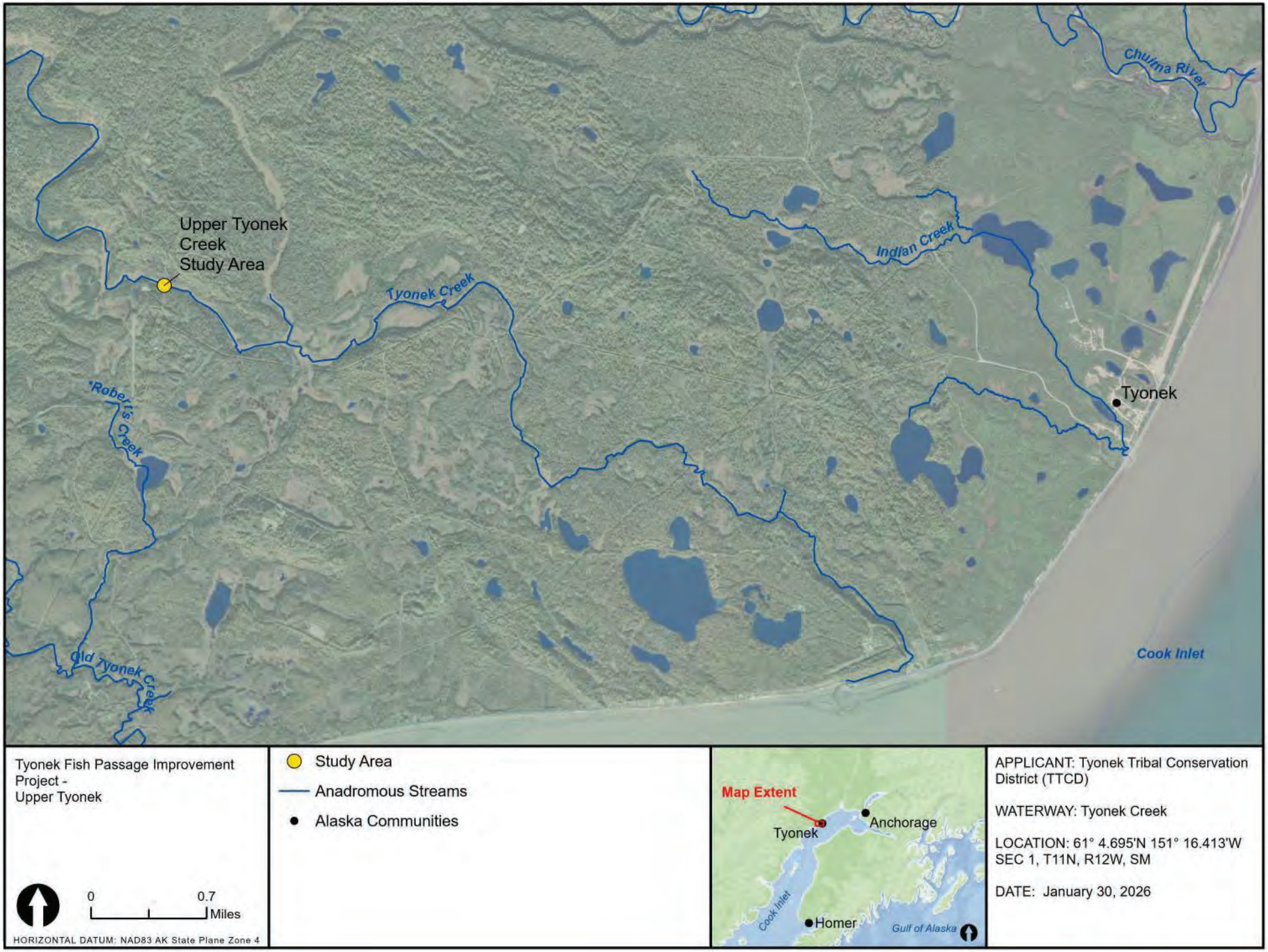
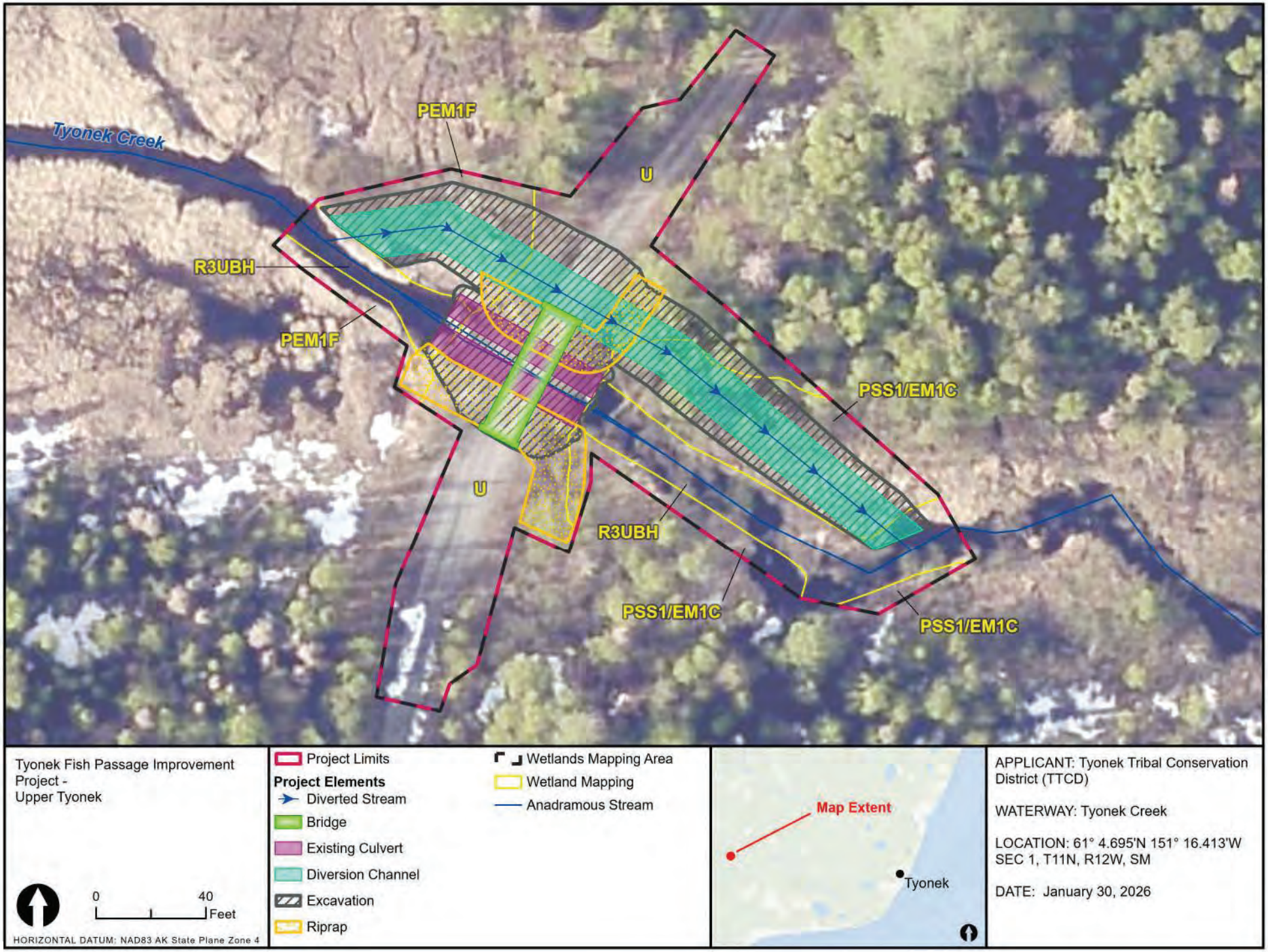

Upper Tyonek Creek Study Area
Tyonek Creek
Roberts Creek
Old Tyonek Creek
Indian Creek
Chuitna River
Tyonek
Cook Inlet
Tyonek Fish Passage Improvement Project - Upper Tyonek
0
0.7
Miles
HORIZONTAL DATUM: NAD83 AK State Plane Zone 4
Study Area
Anadromous Streams
Alaska Communities
Map Extent
Anchorage
Tyonek
Cook Inlet
Homer
Gulf of Alaska
APPLICANT: Tyonek Tribal Conservation District (TTCD)
WATERWAY: Tyonek Creek
LOCATION: 61° 4.695'N 151° 16.413'W SEC 1, T11N, R12W, SM
DATE: January 30, 2026

Figure 2. Site Location and Details


Tyonek Creek
PEM1F
U
R3UBH
PEM1F
PSS1/EM1C
U
R3UBH
PSS1/EM1C
PSS1/EM1C
Tyonek Fish Passage Improvement Project -
Upper Tyonek
0
40
Feet
HORIZONTAL DATUM: NAD83 AK State Plane Zone 4
Project Limits
Project Elements
Diverted Stream
Bridge
Existing Culvert
Diversion Channel
Excavation
Riprap
Wetlands Mapping Area
Wetland Mapping
Anadramous Stream
Map Extent
Tyonek
APPLICANT: Tyonek Tribal Conservation District (TTCD)
WATERWAY: Tyonek Creek
LOCATION: 61° 4.695'N 151° 16.413'W
SEC 1, T11N, R12W, SM
DATE: January 30, 2026

Appendix A – H&H Report

Final Hydrology & Hydraulics Report

Upper Tyonek Creek Fish Passage Crossing Replacement

Tyonek Creek (ADF&G #20601534)

Near Tyonek, Alaska

February 4, 2026

Contents

Figures

Tables

Appendices

Acronyms and Abbreviations

°F	degrees Fahrenheit
ADF&G	Alaska Department of Fish and Game
AEP	annual exceedance probability
BFW	bankfull width
cfs	cubic feet per second
CMP	corrugated metal pipe
DOT&PF	Alaska Department of Transportation and Public Facilities
D100	maximum streambed material size
FHWA	U.S. Federal Highway Administration
FPID	Fish Passage Inventory Database
fps	feet per second
ft	foot/feet
H&H	hydrology and hydraulics
HDR	HDR Engineering, Inc.
HW/D	headwater to diameter ratio
HEC	Hydraulic Engineering Circular
HY-8	HY-8 Culvert Hydraulic Analysis Program
in.	inch(es)
KPB	Kenai Peninsula Borough
NRCS	Natural Resources Conservation Service
OHW	ordinary high water
PRISM	Parameter-elevation Regressions on Individual Slopes Model
Q100	100-year flood event
SNAP	Scenarios Network for Alaska + Arctic Planning
TBC	The Boutet Company
Tyonek	Native Village of Tyonek
TTCD	Tyonek Tribal Conservation District
UAF	University of Alaska Fairbanks
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VAP	vertical adjustment potential
WSE	Water surface elevation
Yr	Year(s)

1 Introduction and Objectives

The Tyonek Tribal Conservation District (TTCD) assists several communities along the northwest side of Cook Inlet with community-led conservation efforts, including the Native Village of Tyonek (Tyonek). The Alaska Department of Fish and Game (ADF&G) has designated several roadway stream crossings as fish passage barriers of varying severity around Tyonek. TTCD has been working systematically to improve fish passage and aquatic connectivity throughout the watersheds surrounding Tyonek. TTCD has secured funding through the U.S. Fish and Wildlife Service (USFWS) to replace one of these roadway crossings on Tyonek Creek (Fish Passage Inventory Database [FPID] #20601534). The upper Tyonek Creek fish passage replacement project aims to improve flood capacity, reconnect aquatic habitat, and improve fish passage.

The Boutet Company, Inc. (TBC), with the assistance of HDR Engineering, Inc. (HDR), has been contracted to design the proposed roadway improvements and culvert replacement at the upper Tyonek Creek site. Through the design process, a bridge was chosen to replace the existing culverts at this site. This hydrology and hydraulics (H&H) report describes the hydrology, existing conditions, and proposed structure at the site to:

- Evaluate watershed size, conveyance requirements, peak flood flows, floodplain issues, and scour analysis to meet hydrologic and fish passage requirements.
- Determine stream slope and profile for long-term channel stability and fish passage.
- Provide recommendations based on design guidance for the new crossing width, depth, length, structure type, and skew angle.
- Design stream substrate and other grade control structures.
- Provide minimum values of roadway grade, fill height, and width that correspond with the proposed structure requirements.

1.1 Location

Tyonek resides on the northwest side of Cook Inlet across from the Kenai Peninsula, and immediately south of the community of Beluga (Figure 1). The upper Tyonek Creek fish passage improvement site is located on an unnamed road just north of an old airstrip east of Tyonek.

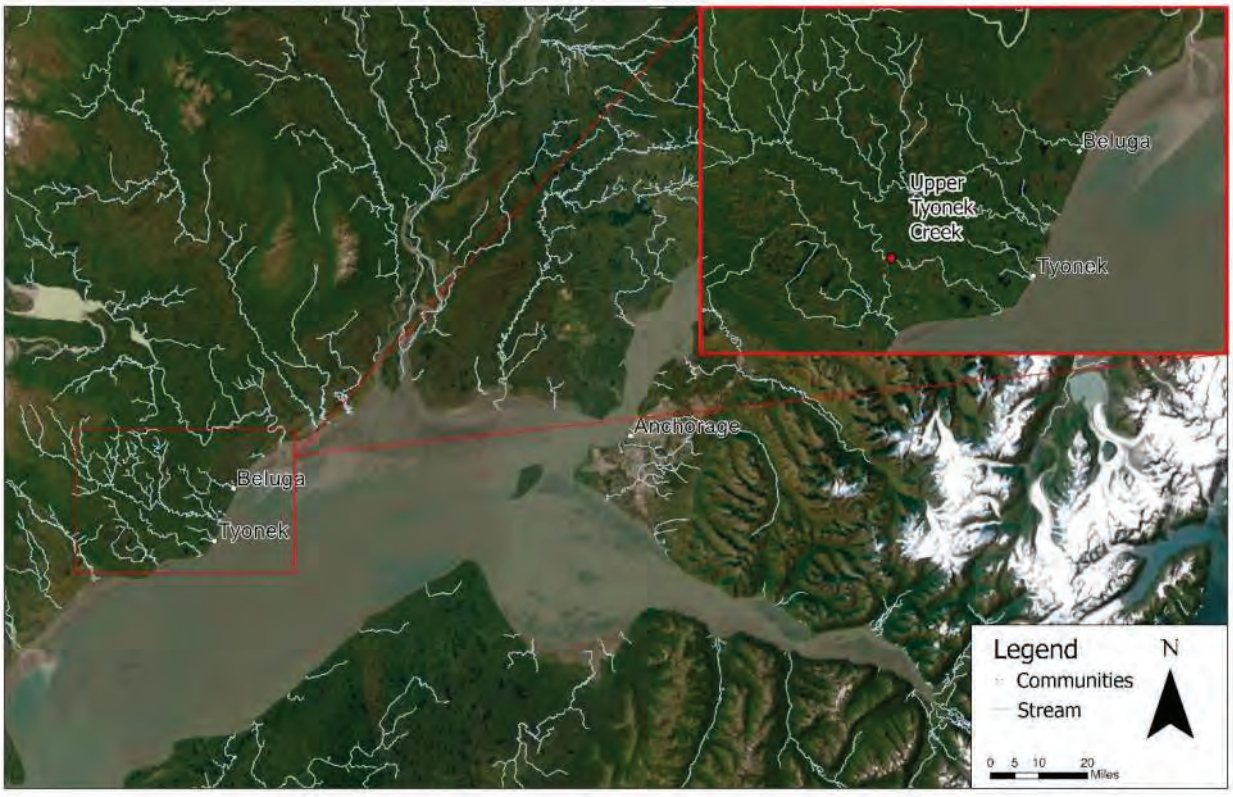


Figure 1. Overview Map

Based on ADF&G's *Fish Resource Interactive Mapping Application* (ADF&G 2026), the current culvert battery at the upper Tyonek Creek crossing is rated as green, which assumes that the crossing would be adequate for juvenile salmonid or weak swimming fish passage. This site is the furthest upstream road crossing on Tyonek Creek. There are two additional road stream crossings further downstream on Tyonek Creek. Three miles downstream of the upper Tyonek Creek site, the creek is crossed by the Tyonek-Beluga Road through a 16.5-foot by 9.9-foot structural steel plate pipe arch (FPID #20601542) installed in July 2014. Another 4.5 miles downstream of this crossing, Tyonek Creek is crossed by Tyonek Timber Road through a 45-foot 10-inch by 22-foot 11-inch structural steel plate pipe arch (FPID #20601540) installed in September 2024. Tyonek Creek flows into Cook Inlet just north of Beshta Bay another 0.4 miles downstream of this crossing.

1.2 Ownership

The project site is located in the Kenai Peninsula Borough (KPB) and the landowner is the Tyonek Native Corporation (KPB 2024a).

1.3 Design Criteria

The following local guidance was used as the design criteria for this project:

- *KPB Code of Ordinances, Chapter 14.06 – Road Standards* (KPB 2024b).
- *KPB Code of Ordinances, Chapter 21.18, Section 21.18.027* states ADF&G has jurisdiction over anadromous fish and tracking of anadromous waters. Section 21.18.040 establishes an anadromous waters habitat protection district. This district includes all lands within 50 horizontal feet of anadromous waters, measured from the ordinary high water (OHW) mark

or mean high water line in tidal areas. In this district, permits are required for activities that may result in significant erosion, sedimentation, damage to the habitat protection district, an increase in ground or surface water pollution, or damage to the riparian wetlands and riparian ecosystems (KPB 2024b).

- The *USFWS Alaska Fish Passage Program's Culvert Design Guidelines for Ecological Function* provides a geomorphic analog method to design a culvert crossing based on a representative section of the specific waterbody being crossed. Though the proposed crossing is a bridge, a number of guidelines were still incorporated, including design criteria for streambed material thickness and stability, designing a channel based on reference reach data, streambed features, and design flows (USFWS 2025).
- *Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance-Third Edition, Volume 2. Hydraulic Engineering Circular No. 23.* (FHWA 2009). This guidance was used in the design of the bridge abutment materials and dimensions.
- *Alaska Department of Transportation and Public Facilities (DOT&PF) Highway Drainage Manual, Chapter 10: Bridges* (DOT&PF 1995).

1.4 Flood Hazards or Floodplain Management Requirements

The project site is not located within a Federal Emergency Management Agency (FEMA) mapped floodplain. KPB participates in the National Flood Insurance Program, developing local floodplain ordinances per FEMA requirements. The KPB Code of Ordinances, Chapter 21.06 – Floodplain Management covers the requirements for development within floodplains. Section 21.06.040(A)(2)(b) requires 1 percent annual exceedance probability (AEP) flood (base flood) elevation data, permitting, and review for development greater than 50 lots or 5 acres, whichever is the lesser (KPB 2024b). The project area is less than 5 acres (43,560 square feet) in size, therefore, no floodplain requirements apply. Additionally, the project's design criteria would be sufficient to maintain flood flows and mitigate floodplain impacts.

1.5 Geotechnical

No geotechnical investigations were performed for this project.

2 Site Visit

On August 11, 2022, HDR water resource engineer Kyle Walker, PE, and engineer-in-training Kacy Grundhauser accompanied TBC project staff to assess the site. The weather was overcast with occasional, light rain, and temperatures ranging from 57 to 65 degrees Fahrenheit (°F).

Survey extents and reference reaches were delineated for survey. The survey extent goes along the stream through the entirety of both upstream and downstream reference reaches and spans the width of the active floodplain. This ground survey was necessary to encompass the floodplain extents, bankfull indicators, and the geometry of the road at the crossing. A reference reach is a section of a stream that is not affected by the crossing and best describes the stream to aid in fish passage design. Reference reaches are chosen by finding the nearest river reach both up and downstream of the existing crossing that are unaffected by the crossing and are stable. HDR

assessed the existing crossing and took stream measurements, field notes, photos, and pebble counts at the identified upstream and downstream reference reaches. A pebble count consists of a particle count of at least 100 particles per reference reach. HDR's site visit notes are provided in Appendix A.

The site visit in 2022 was conducted prior to the implementation of the current USFWS site survey guidelines (USFWS 2025). Therefore, the current reference reach length guidance of 20-times the bankfull width (BFW) of the channel, among others, was not met during the field effort. Once at the reference reach, BFW was identified by examining the streambanks and determining the channel-forming slope break (i.e., the point distinguishing channel flow from overbank flow). Due to the flat floodplain on both sides of the stream channel, bankfull width was identified as the inflection point between relatively steep streambank and flatter floodplain/overbank area. Reference reach longitudinal profiles and representative cross sections with surveyed bankfull indicators can be found in Appendix B.

2.1 Existing Culvert Conditions

The existing crossing is located on an unnamed gravel road that travels northeast from the northern end of an old airstrip that was used for oil and gas exploration. The existing road stream crossing consists of two approximately 9-foot diameter corrugated metal pipes (CMPs) that convey Tyonek Creek which flows from northwest to southeast. The unnamed road and stream crossing receive moderate use, providing access to subsistence, recreation, and oil and gas exploration. This stream crossing site was surveyed by ADF&G in 2002 and 2016. In 2016, ADF&G noted that the north culvert was blocked by a beaver dam (ADF&G 2026). ADF&G rated this crossing as green, indicating it was likely to provide adequate juvenile fish passage. The crossing has not been reevaluated since 2016.

During the 2022 HDR/TBC site visit, the beaver dam was no longer present and no obstructions were seen in either culvert. The north culvert had an approximate width of 9.3 feet, rise of 7.0 feet, slope of -0.32 percent, and length of 60.0 feet. The south culvert had an approximate width of 9.0 feet, rise of 7.1 feet, slope of -0.08 percent, and length of 60.0 feet. The culverts were not embedded and appeared to be in fair condition with a slight perch at the inlets that could create a juvenile fish barrier at low flows. The existing gravel roadway varied in width from 9 to 12 feet. The upstream and downstream side slopes of the roadway embankment were eroding and geotextile stabilization fabric was visible.

2.1.1 Existing Upstream Channel

Directly upstream of the existing crossing, the upstream channel consists of a shallow gradient stream with a primarily silt and mud bottom. This section extends for 300 feet and is likely impacted by backwatering from the existing crossing. The upstream reference reach was identified upstream of this impacted section. The upstream reference reach is 107 feet long containing a well-defined channel with a sand and gravel streambed with frequent boulders and cobbles throughout and steep side slopes (2H:1V or less) that were vegetated with aquatic grasses and occasional willows and alders. The ordinary high water (OHW) was estimated at 12.5 feet wide and 2.0 feet deep. The BFW was estimated at 17.5 feet wide and 4.0 feet deep. The average slope of the reach was -0.42 percent. The floodplain was approximately 200 feet wide and consisted of tall grass with willow and alders throughout.

2.1.2 Existing Downstream

Immediately downstream of the existing crossing, the channel gradient steepens to 2.46 percent for 77 feet. Through this short, steep section numerous cobbles and boulders were observed in the channel, with the largest more than 30 inches in diameter. In several locations, the stream split into braids that consisted of multiple narrow channels around small, vegetated islands. Eroded banks were also observed in several locations. The overbanks were densely vegetated with tall grass, willows, alders, birch trees, and devil's club.

The downstream reference reach was identified 305 feet downstream of the crossing. The reference reach is 90 feet long, with a well-defined channel with frequent boulders and cobbles, gravel bars, and small undercut banks around bends. Side slopes were steep (2H:1V or less) and vegetation on the banks consisted of aquatic grasses with occasional willows and alders. Both the OHW and BFW were estimated at 16.75 feet wide. The OHW depth was estimated at 1.0 feet and the BFW depth was estimated at 3.5 feet. The average slope of the reach was -0.65 percent. The floodplain was estimated to be 50 feet wide, containing the slightly steeper and more sinuous downstream channel. Select site visit photographs are provided in Figure 2.

Upstream of Crossing (facing downstream)

Downstream of Crossing (facing upstream)

North Culvert Inlet (facing downstream)

South Culvert Inlet (facing downstream)

Figure 2. Tyonek Creek Crossing Site Visit Photos

North Culvert Outlet (facing upstream)

South Culvert Outlet (facing upstream)

Upstream Reference Reach (facing downstream)

Downstream Reference Reach (facing downstream)

Figure 2. Tyonek Creek Crossing Site Visit Photos Continued

2.2 Existing Site Summary

ADF&G's 2016 site visit information is summarized in Table 1. HDR/TBC's 2022 site visit information on the existing culverts is provided in Table 2 and reference reach measurements are provided in Table 3.

Table 1. General Site Information

Site	Road	Stream	ADF&G FPID	ADF&G Fish Passage Classification	Latitude Longitude
Upper Tyonek Creek Crossing	Unnamed Road	Tyonek Creek	20601534	Green: likely to provide adequate juvenile fish passage	61.07681°, -151.31593°

Notes: ADF&G = Alaska Department of Fish and Game; FPID = Fish Passage Inventory Database; ° = degree(s).

Table 2. Existing Culverts

Culvert	Span (ft)	Rise (ft)	Type	Material	Slope (%)	Length (ft)
North Barrel	9.3	7.0	Round, Corrugated	Steel	-0.32	60.0
South Barrel	9.0	7.1	Round, Corrugated	Steel	-0.08	60.0

Notes: ft = foot/feet; % = percent.

Table 3. Reference Reach Information

Reach	Length (ft)	Average Slope (%)	Cross Section	Bankfull Width (ft)*	Bankfull Max Depth (ft)*	Bankfull Area (sq. ft.)	Bankfull Mean Depth (ft)^	Floodplain Width (ft)	Location
Upstream Reference Reach	107	-0.42	Upstream XS 1	20.3	2.73	46.2	2.28	200+	300 feet Upstream of Crossing
			Upstream XS 2	12.5	1.93	18.9	1.51		
Downstream Reference Reach	90	-0.65	Downstream XS 1	16.3	2.7	31.9	1.96	50+	300 feet Downstream of Crossing

Notes: ft = foot/feet.; in. = inch(es); % = percent; sq. ft. = square feet.

*Bankfull max depth and width values recorded in field were compared against survey, and after closer inspection the survey values were more representative of the channel. Design bankfull max depth values reported in this table are measured from surveyed top of bank down to surveyed thalweg.

^Bankfull mean depth is equal to the bankfull area divided by the bankfull width.

When designing the proposed cross sections for the channel under the bridge and at transition points, the bankfull parameters shown in Table 3 above should be approximated. Below are the target values for each bankfull parameter to be matched; the design parameter to be matched is either the calculated average value or the calculated median value of the respective parameter, whichever is smaller:

- Bankfull Area:
  - Average Bankfull Area = 32.33 sq. ft.
  - Median Bankfull Area = 31.9 sq. ft.
  - Target bankfull Area = **31.9 sq. ft. (smaller of two)**
- Bankfull Mean Depth:
  - Average Bankfull Mean Depth = 1.92-feet
  - Median Bankfull Mean Depth = 1.96-feet
  - Target Bankfull Mean Depth = **1.92-feet (smaller of two)**
- Bankfull Width:
  - Average Bankfull Width = 16.37-feet
  - Median Bankfull Width = 16.3-feet

- Target Bankfull Width = **16.3-feet (smaller of two)**

3 Hydrologic Analysis

The crossing hydraulics were analyzed to ensure flood capacity of the proposed design. ERSI's ArcGIS Pro (version 3.3.2) was used to visualize publicly available imagery and elevation data and the project survey data. The drainage basin was delineated using ESRI World Imagery and 1-foot contours developed from 2018 US Geological Survey (USGS) 1/3 arc-second (approximately 10 meters) elevation data (USGS 2018). The drainage basin area was determined to be 4,656 acres (202,815,360 square feet), as shown in Figure 3 and provided in Table 4.

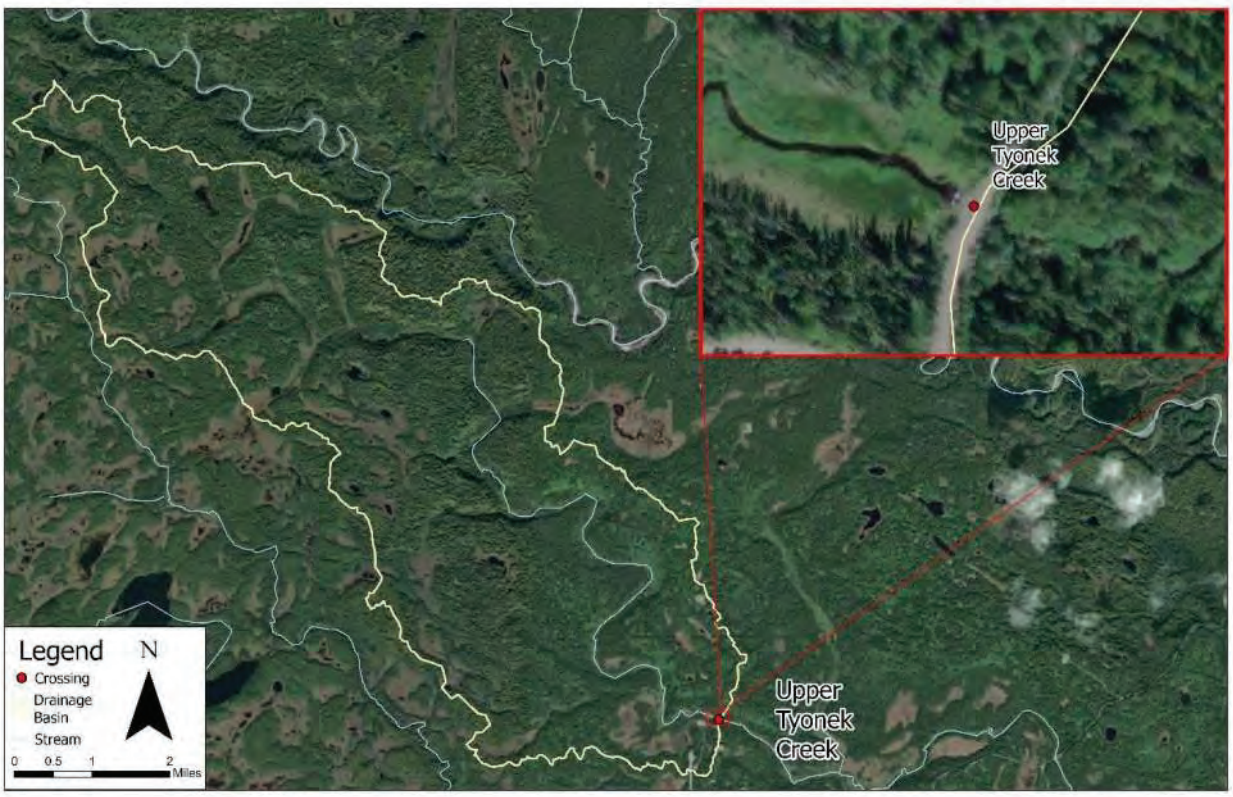


Figure 3. Tyonek Creek Drainage Basin

To determine flood flows, several types of historic precipitation data and future estimates were assessed. The 1971-2000 Parameter-elevation Regressions on Individual Slopes Model (PRISM) climate dataset for Alaska was overlain on the drainage basin area and a weighted precipitation average was calculated. While there are newer PRISM datasets available, the 1971 – 2000 dataset is the one applicable to the hydrologic analyses used. Future precipitation estimates using the Medium Emissions scenario were obtained from the University of Alaska Fairbanks (UAF) Scenarios Network for Alaska + Arctic Planning (SNAP) Community Climate Charts for Tyonek, Alaska (UAF 2024).

Flood flows are defined by a recurrence interval or as an AEP. A recurrence interval (or return period) is the average number of years between floods of a certain size and is based on the probability that the given event will be equaled or exceeded in any given year. An AEP is the percent chance of occurrence in any given year and is always provided as a fraction of 1. For example, a 2-year recurrence interval flood is a 0.5 AEP flood (1/2) or has a 50 percent chance of occurring in any

given year. Therefore, a 100-year recurrence interval flood is a 0.01 AEP flood (1/100) or has a 1 percent chance of occurring in any given year. AEP is the preferred terminology, as it reminds the user that a flood event is not related to a specific time interval but instead as a chance of occurrence.

3.1 2016 USGS Regression Equations

The 2016 USGS regression equations were used to estimate flood magnitude and frequency based on the guidance in *Estimating Flood Magnitude and Frequency at Gaged and Ungaged Sites on Streams in Alaska and Conterminous Basins in Canada, Based on Data Through Water Year 2012* (USGS 2016). The equations are valid for drainage basins between 0.4 and 1,000 square miles (256 to 640,000 acres) - therefore, these equations are valid for this project's drainage basin of 4,656 acres. Other commonly used methods for estimating flood magnitude and frequency are not applicable to basins greater than 250 acres in size (USDA 1986).

The 2016 USGS regression equations use basin area and average mean annual precipitation to estimate flood flows. The estimated drainage basin area of 4,656 acres (202,815,360 square feet) and the 1971–2000 PRISM precipitation data were used to estimate flood flows. To account for climate change, the 2016 USGS regressions equations were also applied using the SNAP Community Climate Charts data as an adjustment factor on average mean annual precipitation. The Tyonek SNAP precipitation data for 2030 through 2099 suggests a 12.9 percent increase in precipitation over the 75-year design life of the structure (UAF 2024).

The 2016 USGS regression equations with SNAP adjusted precipitation results were chosen as the design flood flows, as they take into consideration increased flows over the design life of the structure. The design flood flows used are **bolded** in Table 4; the 2% AEP was used as the design event for sizing streambed material, while the 1% AEP event was used for dimensioning and sizing the abutment protection structures as well as for the scour analysis. Further discussion on the abutment protection sizing can be found in Section 4.2.2 and streambed material sizing in Section 4.2.3 Results of the flood flow regression equation calculations have been rounded to the nearest 5 cubic feet per second (cfs) and are provided in Appendix C.

Table 4. Estimated Flood Flows for Proposed Tyonek Creek Crossing

Tyonek Creek Crossing									
Basin Size (ac.)	4,656	**% AEP / Recurrence-Interval Flood**							
Method	**Annual Mean Precipitation (in.)**	50%	20%	10%	4%	2%	1%	0.5%	0.2%
		2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	200-Yr	500-Yr
2016 USGS Regression	33.8	185	305	395	520	615	720	825	975
2016 USGS SNAP Adjusted	38.2	210	340	440	575	**675**	**790**	905	1,065

Notes: Flows are rounded to the nearest 5 cfs. Design flood flows shown in **bold**. ac. = acres; AEP = Annual Exceedance Probability; in. = inch(es); Yr = Year(s); % = percent.

Two verifications were used to confirm the 2016 USGS regression equation values accurately estimated current flow values. The two concepts used for verification were USGS gage transfer and comparing the bankfull flow to the 50% AEP event (50-year flood).

For the first, an improved estimate of flood flow magnitude and frequency can be calculated for an ungaged site if there is a gage nearby on the same stream and if the drainage basin area ratio between the ungaged and gaged sites is between 0.5-1.5 (USGS 2016). The two nearest gages to Tyonek Creek are not on Tyonek Creek. The drainage area ratio was calculated to determine if this method was applicable despite the gaged sites being on different streams. However, it was determined that the two nearest gaged streams were not comparable to Tyonek Creek due to differences in the size of the contributing area, stream character, and topography.

The closest stream gage to Tyonek Creek is on the Chuitna River (USGS # 15294450), which has a drainage basin area of 132 square miles, compared to Tyonek Creek's drainage basin area at the crossing of 7.2 square miles. The drainage basin area ratio between the Chuitna River basin and the Tyonek Creek basin was 0.05, therefore, the two basins are not comparable. The next closest gaged stream was the Chakachatna River (USGS # 15294500), which has a larger drainage basin than the Chuitna River and thus does not meet the drainage basin area ratio threshold. Additionally, both rivers are larger in size and are not of the same character as Tyonek Creek. Therefore, the USGS gage transfer method could not be used to verify the accuracy of the regression equation estimate of flood flows.

Another verification tool used to verify the USGS regression equations flood flow estimates is to compare the estimated 2-year flows to the reference reach bankfull indicators (USFWS 2025). The estimated 2-year flood flows should be similar to the bankfull indicators noted during the site visit for Tyonek Creek. The section of stream at the existing culverts is in a transition zone between a wider, shallower sloped section of channel to a narrower, steeper section. When the SNAP 2-year flow (210-cfs) was analyzed within Hydraulic Toolbox given the representative reference reach cross section geometries (one at the start of a riffle in the upstream reach, one at the end of a riffle in the upstream reach, and one at the start of a riffle in the downstream reach), the depth of flow was approximately the same as or slightly larger than bankfull depth, indicating the floodplain is active at the 2-year event. The bankfull discharge (175-cfs) was determined by analyzing the reference reach geometries in Hydraulic Toolbox and determining the flow at which the bankfull channel is completely filled but not overtopping. From upstream to down, bankfull flows are described below:

- the bankfull discharge of the upstream cross section at the start of the riffle was smaller than the 2-year flow (bankfull discharge is 175-cfs).
- the bankfull discharge of the second upstream cross-section, which is at the bottom of the riffle, is smaller than the 2-year flow (bankfull discharge is 84-cfs).
- the bankfull discharge of the downstream reference reach cross section approximately equated the 2-year flow (bankfull discharge is 200-cfs).

Representative cross sections with bankfull indicators are located in Appendix B, and the results of 2-year flow estimate analysis within representative reference reach cross sections are in Appendix D.

Overall, the USGS gage transfer method was not appropriate for use due to the drainage basin area the lack of comparable gaged streams in the vicinity of the crossing. The bankfull flow estimates were used to verify the USGS regression equations and determined that the 2-year flow estimates approximated the bankfull discharge indicators from the reference reaches. Therefore, the 2016 USGS regression equations were determined to be the appropriate method for estimating flood magnitude and frequency for the Tyonek Creek crossing.

Lastly, to verify that the reference reach selection was appropriate, the top of bank longitudinal slope was compared to that of the thalweg in each reference reach. The upstream top of bank longitudinal slope did not match that of the bed slope, though the downstream top of bank longitudinal slope did match the thalweg slope in the reference reach. The upstream results indicated that the channel was not incised, allowing more floodplain usage, while the downstream results indicated that the downstream channel was more incised (Appendix B). This, in combination with the 2-year flow analysis showing general equilibrium, confirms that the reference reaches used were appropriate.

4 Crossing Analysis

A new crossing is proposed to replace the existing culverts, which will accommodate the design flood, improve fish passage, and provide floodplain connectivity. Field measurements including bankfull width and sediment gradations were used to size the proposed crossing. Both the existing culverts and the proposed bridge channel geometry were modeled to see how the proposed channel modifications will improve both flood conveyance capacity and fish passage conditions. The U.S. Federal Highway Administration's (FHWA) HY-8 Culvert Hydraulic Analysis Program (HY-8) (version 8.0.0) was used to model and analyze the existing and proposed crossings. The FHWA Hydraulic Toolbox Program (version 5.4.0) was used to model and analyze the proposed bridge typical section. The modeling inputs and results are reported, showing that the proposed bridge channel successfully improves both flood conveyance and fish passage conditions by fully containing the 1% AEP event to prevent road overtopping, providing adequate flow depth for fish during low-flow conditions, and having the design streambed be stable.

4.1 Existing Conditions

The existing culverts were modeled in HY-8 as CMPs based on their surveyed dimensions (approximately 9 feet wide and 7 feet tall). The hydraulic analysis shows the existing crossing passes the 1 percent AEP flood flow of 790 cfs with a headwater to depth ratio (HW/D) of 1.17 (north culvert) to 1.19 (south culvert). USFWS guidelines recommend that the crossing accommodate at least the BFW and pass the 1 percent AEP with a HW/D equal to or less than 0.8. Based on those criteria and the potential barrier for juvenile fish at low flows, the design team recommends replacing this crossing. The existing channel's upper and lower vertical adjustment potential (VAP) lines were plotted on a longitudinal profile, shown in Figure 4 and in Appendix B. These are used as a measure of how much the channel is expected to degrade/aggrade over time. When plotting these lines on the longitudinal profile, it gives an envelope where the design thalweg can be placed to be in accordance with where the stream naturally wants it to be. This is to ensure the culvert invert will be embedded below the lower VAP line so it will not be in danger of being exposed due to degradation in the channel. The existing conditions HY-8 inputs and results are provided in Appendix D.

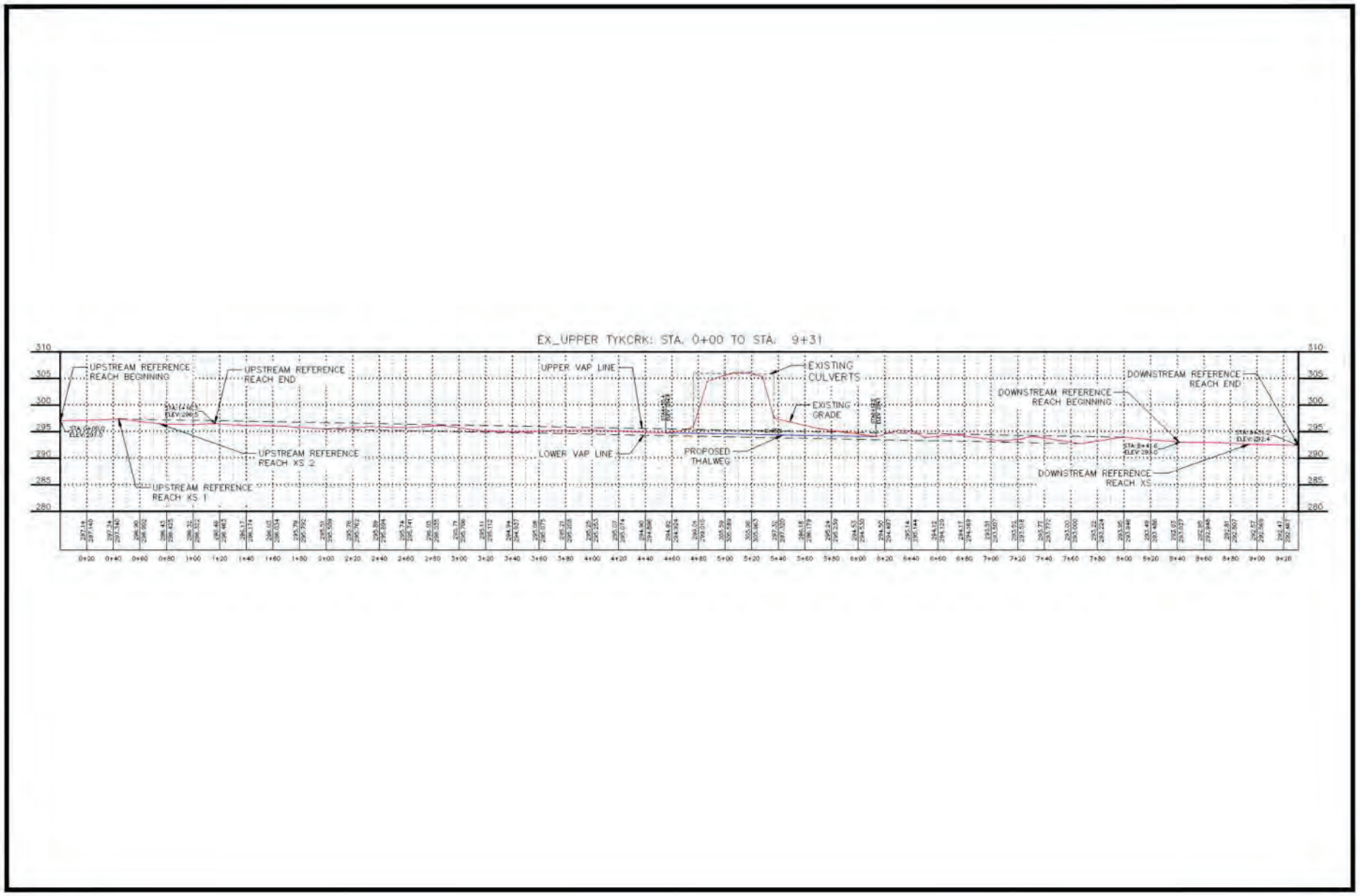
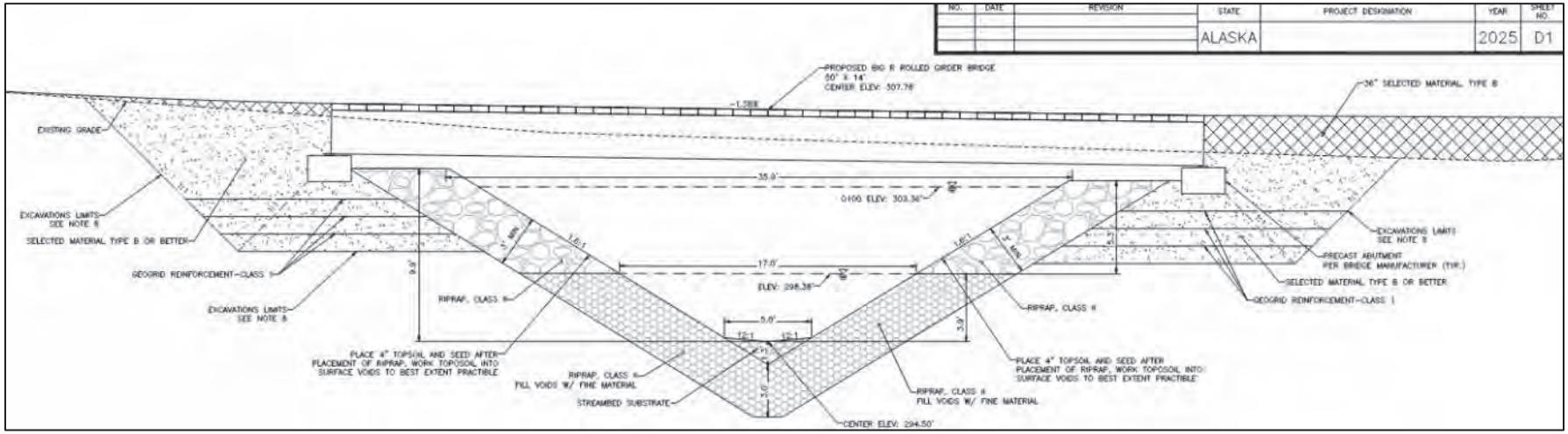


Figure 4. Tyonek Creek Crossing – Existing Longitudinal Profile (5x Vertical Exaggeration)

4.2 Proposed Conditions

Between the 35% and 65% design phases, the proposed crossing changed from a large diameter box culvert to a bridge crossing due to the anticipated level of use. The bridge crossing opening is shown in Figure 5.



Note: At the time of H&H Report submission, the Q100 elevation in the plans was not up to date with the calculations presented in this report. The updated Q100 elevation is 303.03-feet.

Figure 5. Tyonek Creek Crossing – Proposed Bridge Crossing (TBC 2026)

Based on the existing channel's elevations and potential for aggradation and/or degradation, the proposed slope was set at -0.45-percent and proposed elevations for the channel were determined.

This proposed slope falls within the USFWS recommendation of being within 25 percent of the reference reach's slope. The downstream reference reach had a slope of-0.42-percent, the upstream reference reach had a slope of -0.65-percent, for an average slope of -0.54-percent. The proposed crossing will have a minimum stream substrate depth of 4.3-feet (3.0-feet of Class II riprap and 1.3-feet of stream substrate), meeting the USFWS embedment guidelines. The guidelines suggest a substrate depth at least 2-feet thick or 1.5 times the maximum stream material size (D100), whichever is greatest, and substrate placed below the lower VAP line. In this case, the controlling guideline was having the streambed thickness go below the lower VAP line.

4.2.1 HY-8 Modeling Results

The bridge crossing opening geometry was modeled in HY-8 using user defined points. The proposed crossing is estimated to pass 2,007 cubic feet per second (cfs) before overtopping the road. Figure 6 shows the profile of the proposed crossing during the 1 percent AEP flood flow and Table 5 provides results during various discharges. The proposed conditions HY-8 inputs and results are provided in Appendix D.

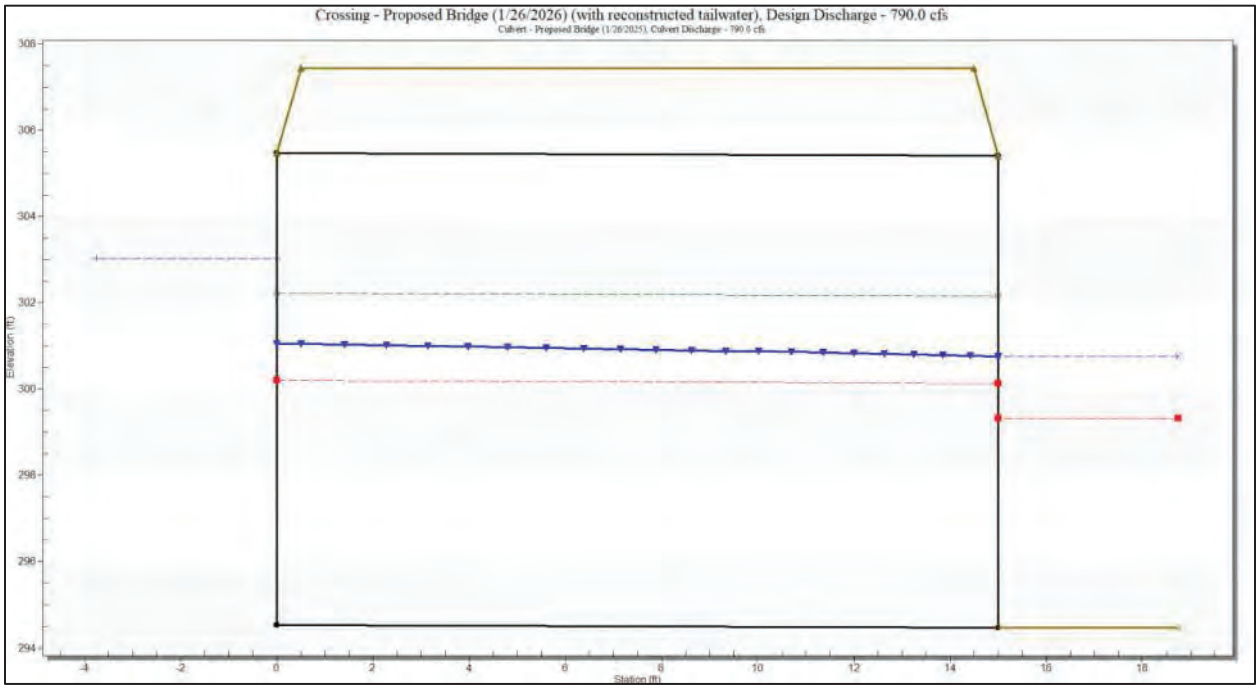


Figure 6. Tyonek Creek Crossing – Proposed Profile at 1 Percent AEP

Table 5. Proposed Bridge Channel HY-8 Hydraulic Results Summary

Discharge Names	Total Discharge (cfs)	Headwater Elevation (ft)	HW/D	Normal Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (fps)	Tailwater Velocity (fps)
40% of 50% AEP	84	297.57	0.28	2.79	2.55	2.54	3.99	3.20
50% AEP	210	299.19	0.43	4.28	3.77	3.77	5.41	3.70
2% AEP	**675**	302.45	0.72	7.19	6.03	6.03	7.99	4.11
1% AEP	**790**	303.03	0.78	7.69	6.29	6.29	8.70	4.28

Note: The overtopping flow for the design crossing is 2,007 cfs.
Note: Design flood flows shown in **bold**. ft = feet; AEP = Annual Exceedance Probability; fps = feet per second; cfs = cubic feet per second; % = percent.

HY-8 was not built to model bridge openings, so the bridge opening geometry was also modeled in Hydraulic Toolbox to compare the estimated water depths and velocities in the constructed channel during the design flood between the two software applications.

For streambed sizing calculations, the direct outputs for outlet velocity and outlet depth at the 2% AEP event from HY-8 were used, as these were deemed the most conservative results between the two and incorporated tailwater conditions. For abutment protection sizing, both software results were used to compare stability calculation results using the modeling results from each software. For scour calculations, the Hydraulic Toolbox values for depth and flow top width in the bridge channel were used for computational consistency, as the scour calculations require an upstream cross section in Hydraulic Toolbox. The upstream cross-section for scour calculations was the same geometry as used for tailwater conditions in HY-8. This is because the reconstructed channel typical will be constructed both upstream and downstream of the bridge channel and tie-in to existing ground. These results are provided in Appendix D, and a comparison table of calculated depths and velocities for the HY-8 model and the Hydraulic Toolbox model is included below in Table 6.

Table 6. Comparison of Modeling Flow Through the Proposed Bridge Opening Geometry Using Both HY-8 and Hydraulic Toolbox

Flood Event (% AEP)	Flow Value (cfs)	Model	Velocity (fps)	Depth (ft)
40% of 50% AEP	85	HY-8	4.0	3.1
		Hydraulic Toolbox	3.5	2.8
50% AEP	210	HY-8	5.4	4.7
		Hydraulic Toolbox	4.4	4.3
2% AEP	675	HY-8	8.0	7.6
		Hydraulic Toolbox	5.9	7.2
1% AEP	790	HY-8	8.7	8.5
		Hydraulic Toolbox	6.1	7.7

*Velocity for HY-8 models was the outlet velocity, and depth for HY-8 models was measured as the difference between the headwater elevation and the bottom elevation of the channel (294.5-feet).

The two models generally had similar results; the HY-8 model velocities and depths were both larger than their equivalents in Hydraulic Toolbox. Velocities were greater by 0.5-feet per second (fps) to 2.6-fps and the depths being greater by 0.3-feet to 0.8-feet.

It should be noted that per DOT&PF bridge design requirements, the distance between the water surface elevation (WSE) of the 1% AEP event and the low chord of the bridge should be at least 3 feet (DOT&PF 1995). Using the more conservative depth produced by the HY-8 model in Table 6, the elevation difference between the low chord of the bridge (305.2-feet) and the WSE of the 1% AEP event (303.03-feet) is 2.2-feet. The design team determined that this is not a concern because this is a very low-volume road and not a major roadway. DOT&PF requirements were used as a guideline for this design, but this structure will be owned and maintained by the Native Village of Tyonek, and as such are not required to meet the 3-feet requirement.

4.2.2 Bridge Abutment Protection

To size both the material to be used in the bridge abutment protection and the abutment protection structures, FHWA's Hydraulic Engineering Circular 23, *Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance* -Third Edition (HEC-23) was used for design guidance (FHWA 2009). The equations used to size the material within the abutment protection structures are included below in Figure 7, while the guidelines used to dimension the abutment protection structures are included below in Figure 8.

For Froude Numbers $(V/(gy)^{1/2}) \leq 0.80$, the recommended design equation for sizing rock riprap for spill-through and vertical wall abutments is in the form of the Isbash relationship:

$$\frac{D_{50}}{y} = \frac{K}{(S_s - 1)}\left[\frac{V^2}{gy}\right] \qquad (14.1)$$

where:

D_{50} = median stone diameter, ft (m)
V = characteristic average velocity in the contracted section (explained below), ft/s (m/s)
S_s = specific gravity of rock riprap
g = gravitational acceleration, 32.2 ft/s^2 (9.81 m/s^2)
y = depth of flow in the contracted bridge opening, ft (m)
K = 0.89 for a spill-through abutment
1.02 for a vertical wall abutment

For Froude Numbers >0.80, Equation 14.2 is recommended:

$$\frac{D_{50}}{y} = \frac{K}{(S_s - 1)}\left[\frac{V^2}{gy}\right]^{0.14} \qquad (14.2)$$

where:

K = 0.61 for spill-through abutments
K = 0.69 for vertical wall abutments

In both equations, the coefficient K, is a velocity multiplier to account for the apparent local acceleration of flow at the point of rock riprap failure. Both of these equations are envelope relationships that were forced to over predict 90% of the laboratory data.

Figure 7. Bridge Abutment Protection Material Sizing Equation based on Froude Number (FHWA 2009)

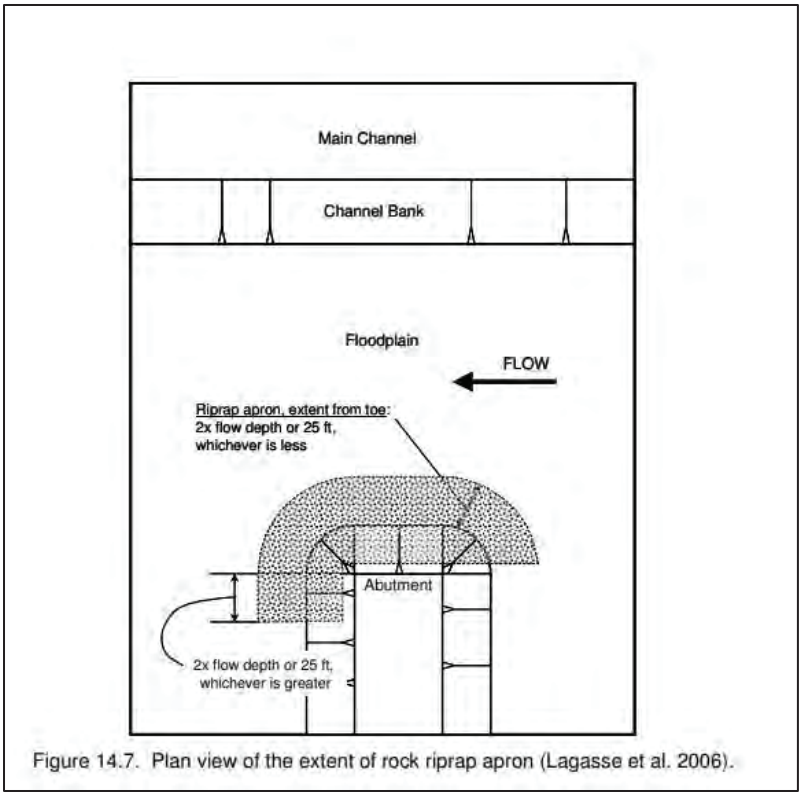


Figure 8. Bridge Abutment Protection Dimensioning Guidelines (FHWA 2009)

The results of using the equations in Figure 7 confirm that using Class II riprap will be sufficient to withstand the 1% AEP event. These calculations can be found in Appendix C. The results of applying the dimension guidance from Figure 8 indicate that the abutment protection riprap needs to extend 25-feet parallel to the road on the downstream side of the crossing, and that the thickness of the abutment protection riprap needs to be at least 1.5xD50 or D100 of the riprap material, whichever is larger (FHWA 2009). For Class II riprap, the D100 is 20-inches while the D50 is 17-inches, which means that 1.5*D50 is the controlling criteria, and the minimum thickness needs to be 25.5-inches. Currently, the designed abutment protection structures are 3 feet thick, which exceeds the minimum abutment protection thickness defined by HEC-23. Additionally, the riprap apron needs to extend from the toe of the abutment into the channel a distance of either twice the flow depth or

25 feet, whichever is less (FHWA 2009). Using the more conservative depth for the 1% AEP event in Table 6 (7.7-feet), the abutment needs to be at least 15.4-feet long. The current abutment length measured along the slope is over 20 feet long, meeting this guideline.

4.2.3 Streambed Sizing

To size the streambed material below the bridge crossing, the first design step was to determined if native streambed material within the reference reach was mobile at small magnitude floods. The USFWS guidance says that if the system has an adequate upstream sediment supply (i.e., if the upstream sediment is mobile), then the streambed material should be designed for the 2% AEP event. The upstream sediment supply will replace finer material within the design streambed mix that may be removed during flood events while maintaining the general streambed profile, as delineated by the VAP lines. If the upstream sediment supply is not adequate in the system, the design streambed material should be sized to be stable for the 1% AEP event (USFWS, 2025).

Using critical velocity for particle movement calculations (Laursen, 1963), the results determined that the native streambed material in the upstream reference reach is not mobile during floods ranging in magnitude from the average flow estimate (40% of the 50% AEP event) to the 50% AEP flood estimate using a SNAP adjustment. These calculations can be found in Appendix C. Though the USFWS guidance says that in this scenario the 1% AEP flood event should be used for streambed sizing, the design stream substrate was sized to the 2% AEP event for two reasons:

1. The USFWS guidance is primarily targeted at culvert design and ensuring the streambed material does not scour out of the culvert. Since this crossing is a bridge with separate abutment protection structures underneath the streambed, stability in the streambed material does not affect the stability of the crossing structure.
2. In discussions with USFWS, ADF&G, and TBC on December 23, 2025, it was agreed that if the upstream material were mobile, then matching the design streambed mix with the native material would take priority over meeting sediment stability benchmarks, such as the D30 calculated by the Maynord Equation (USACE 1991). The Maynord Equation computes the necessary D30 of the streambed material gradation for stability at a given flow velocity and flow depth (USACE 1991). The streambed sizing calculations, using the Maynord and Fuller-Thompson Equations, can be found in Appendix C. Because the upstream material is not mobile, having the design streambed mix meet the D30 from the Maynord equation for the 2% AEP flood provides a balance between matching the native material and following the USFWS guidance to size the material to be stable at the 1% AEP flood.

Recommended Streambed Gradation

Based on the determination of non-mobile upstream sediment and balancing the design criteria to approximate between under- and over-sizing the design streambed material, the proposed streambed material mix is proposed to be 33% coarse material and 67% fine material. The coarse material is to consist of Class I riprap (as defined in the DOT&PF Standard Specifications) and the fine material is to consist of equal parts structural fill and ditch lining (as defined in the DOT&PF Standard Specifications). This mix should consist of 1/3 of each material in total. All streambed sizing calculations can be found in Appendix C. The design streambed gradation is plotted below in Figure 9.

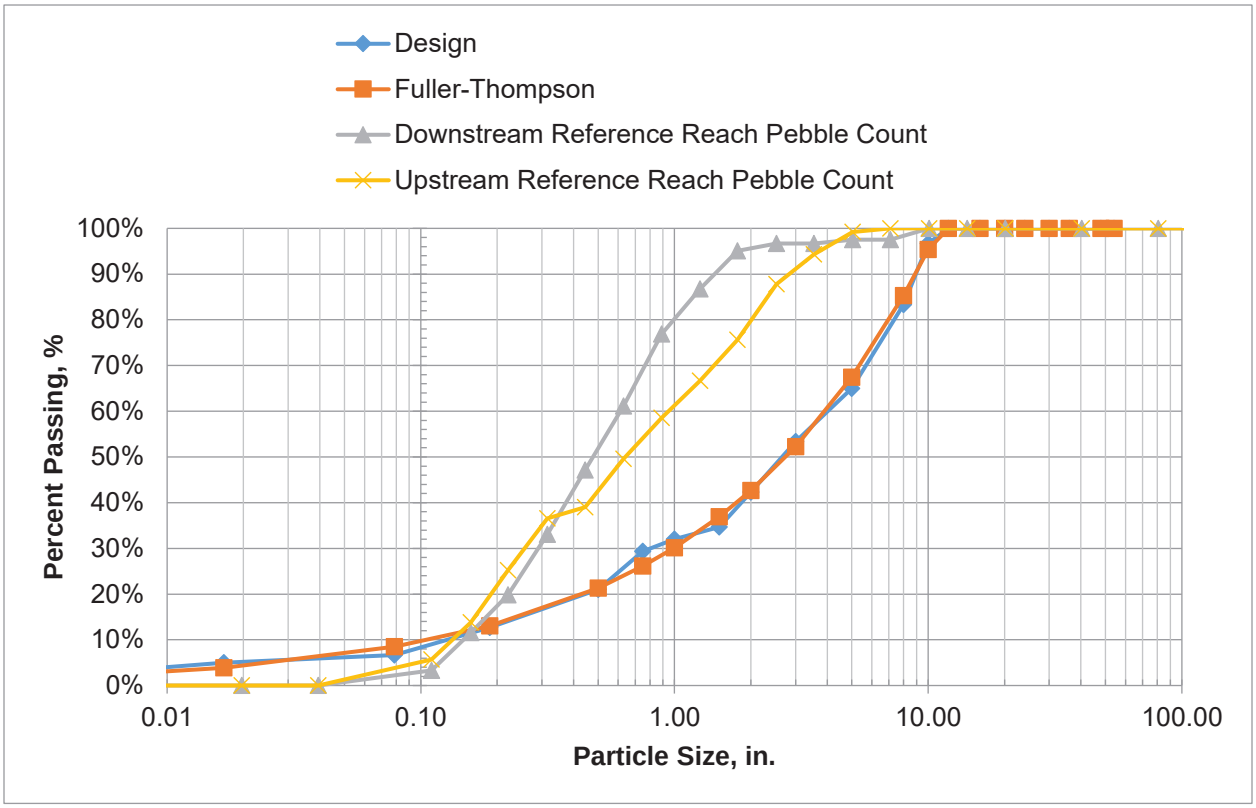


Figure 9. Proposed Stream Material Gradation for Material Stable at the 2% AEP Event

The minimum required D30 calculated by the Maynord Equation is 5 inches, and the D30 of the above gradation is 6 inches. Therefore, the above gradation meets the stability criteria for both the coarse fraction and fine fraction (D30 from the Maynord Equation and Fuller-Thompson, respectively). Though it was noted in the December 23, 2025 discussion with USFWS, ADF&G, and TBC that the use of Class I riprap would not be ideal, the inclusion of Class I riprap will help to keep material on top of the abutment protection structures and resist scour since little material will move from upstream. Agency coordination with regards to streambed material can be found in Appendix E.

4.2.4 Proposed Channel Geometry and Extents

The proposed channel will follow the same alignment as the existing culverts with thalweg elevation and streambed thickness based on VAP lines and existing channel tie-in considerations. Stream regrading will be needed upstream (51-feet) and downstream (50-feet) to tie into the existing channel to provide a smooth transition between the existing and reconstructed channels. A stream diversion will be required during construction; a temporary bypass channel will be constructed north of the proposed crossing that will be backfilled once the proposed stream section is completed and before the bridge is constructed.

Low flows of 40 percent of the 50 percent AEP flow (84 cfs) were analyzed through the proposed channel to ensure an adequate water depth for fish passage would be maintained in all flow conditions. Hydraulic Toolbox results show a water depth of 2.8 feet through the proposed channel at low flows, which is adequate for fish passage. Habitat rocks will be embedded into the proposed streambed. These habitat rocks will consist of Class I riprap (per DOT&PF standard specifications), with each rock less than or equal to the D50 of the standard gradation.

The accompanying 95-percent Plan Set, developed by TBC, provides additional views, details (TBC 2026). Environmental permitting will be conducted in accordance with federal, state, and local regulations.

5 Summary

The proposed Upper Tyonek Creek crossing design meets the USFWS fish passage design guidelines by having the streambed material, slope, and opening dimensions match the reference reaches as much as possible. Additionally, the proposed bridge abutments meet the guidelines in HEC-23 to ensure crossing stability. Though the bridge crossing does not meet the DOT&PF design requirement for 3 feet between the low chord of the bridge and the WSE of the 1% AEP event, this is not a major concern because of the small drainage area and low-volume traffic use of the road. Additionally, the distance between low chord and 1% AEP event WSE was within 0.8-feet of the minimum. The proposed crossing will accommodate fish passage, normal sediment transport, and debris passage. Additional construction details such as detailed inverts, slopes, thalweg elevations, and final stream material gradations will be incorporated into the construction drawings produced by TBC.

With regards to the 2024 USFWS Fish Passage Design Review Checklist, the following guidelines within the checklist were not met as a part of the design because this project's initiation and field efforts in 2022 and 2023 predate the implementation of the 2024 Review Checklist. The longitudinal profile at the crossing includes at least 3 stable grade controls upstream and downstream.

- Channel classification.
- Key pieces count.
- Photos of cross-sections.
- Pebble count for full length of reference reach.
- Major land use delineations including upstream sources of sediment if applicable.

The full 2024 Checklist can be found in Appendix F. The items within the 2024 checklist, as well as ones in the draft 2026 checklist, will be consulted and met in future projects with USFWS design requirements.

6 References

ADF&G Alaska Department of Fish and Game
2026 Fish Passage Inventory Database (FPID) and Fish Resource Interactive Mapping Application. Accessed at https://www.adfg.alaska.gov/index.cfm?adfg=fishpassage.database in December 2025.

DOT&PF Alaska Department of Transportation and Public Facilities
1995 Alaska Highway Drainage Manual, Chapter 10: Bridges. Accessed at https://dot.alaska.gov/stwddes/desbridge/hwy_drainage_manual.shtml in December 2025.

DOT&PF Alaska Department of Transportation and Public Facilities
2020 Standard Specifications for Highway Construction, 2020 Edition. Accessed at https://dot.alaska.gov/stwddes/dcsspecs/ in December 2025.

FHWA Federal Highway Administration
2009 Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance-Third Edition, Volume 2. Hydraulic Engineering Circular No. 23. Accessed at https://www.fhwa.dot.gov/engineering/hydraulics/pubs/09111/09112.pdf in December 2025.

KPB Kenai Peninsula Borough
2024a KPB GeoHub Data: Anadromous Waters, Parcel Lines, and Ownership Type. Accessed at https://geohub.kpb.us/ in December 2025.
2024b Code of Ordinances, Chapters 14.06, 21.06, and 21.18. Accessed at https://library.municode.com/ak/kenai_peninsula_borough/codes/code_of_ordinances?nodeId=TIT21ZO_CH21.18ANWAHAPR in December 2025.

Laursen Emmett M. Laursen
1963 An Analysis of Relief Bridges, ASCE Journal of Hydraulic Engineering, Vol. 92, No. HY 3. December 2025.

TBC The Boutet Company
2026 Upper Tyonek Creek Fish Passage Improvements, ADF&G Site # 20601534. 95% Review. January 2026.

UAF University of Alaska Fairbanks
2024 Scenarios Network for Alaska + Arctic Planning (SNAP) Community Climate Charts – Tyonek (Qaggeyshlat), Alaska. Accessed at https://snap.uaf.edu/tools/community-charts in December 2025.

USACE United States Army Corps of Engineers
1991 Hydraulic Design of Flood Control Channels. EM 1110-2-1601. Accessed at https://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_1110-2-1601.pdf in December 2025

USDA United States Department of Agriculture – Natural Resources Conservation Service
2024 Technical Release 55 (TR-55) - Urban Hydrology for Small Watersheds. Accessed at https://www.hydrocad.net/pdf/TR-55%20Manual.pdf in December 2025.

USFWS U.S. Fish and Wildlife Service - Alaska Fish Passage Program

2025 Culvert Design Guidelines for Ecological Function, Revision 10. Accessed at https://www.fws.gov/alaska-culvert-design-guidelines in December 2025.

USGS U.S. Geological Survey

2016 2016 USGS Regression Equations from, "*Estimating Flood Magnitude and Frequency at Gaged and Ungaged Sites on Streams in Alaska and Conterminous Basins in Canada, Based on Data Through Water Year 2012*" Accessed at https://pubs.usgs.gov/publication/sir20165024 in December 2025.

2018 USGS 1 arc-second n62w152 1 x 1 degree. Accessed at https://www.sciencebase.gov/catalog/item/5df050d9e4b02caea0f5072f in December 2025.

Appendix A – HDR Field Notes

8/11/22 Tyonek – Field Notes by Kacy Grundhauser

9AM @ Spenard Airways w/ Kyle

TBC: Engineers Tim Alley & Shawn

Surveyors: Jason & Cody

920 AM Departure in Cessna 207 skywagon ~30 min flight 1 way.

AT&T has spotty cell coverage.

Took tape, survey rod, gravelometer, field notebook, waders.

10:50 AM Tyonek Cr. -206015 34

x2 ~9ft CMP culverts.

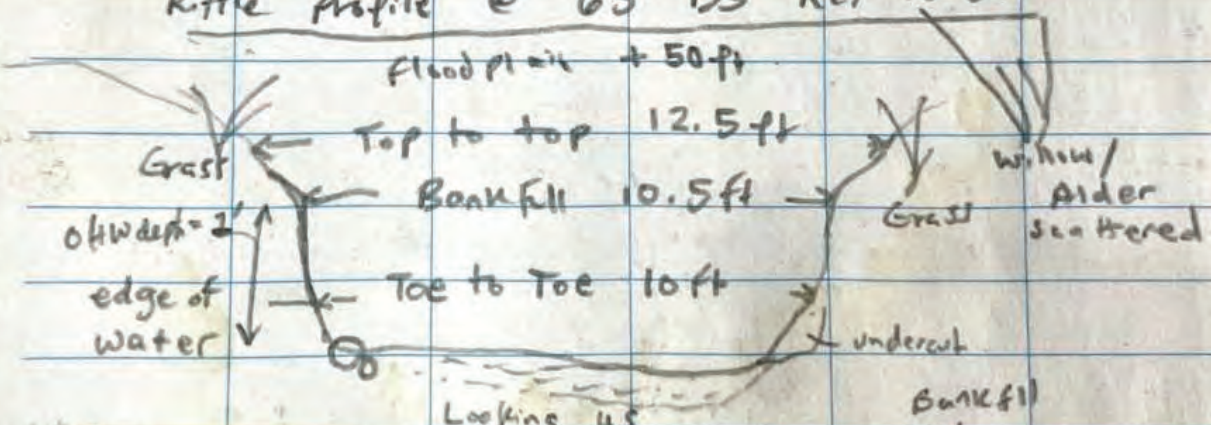
Fill/cover DS: 5 30" cover

- US of DS ref reach has woody grade breaks ripples narrower channel. pools around bends, large rocks appear to on top.

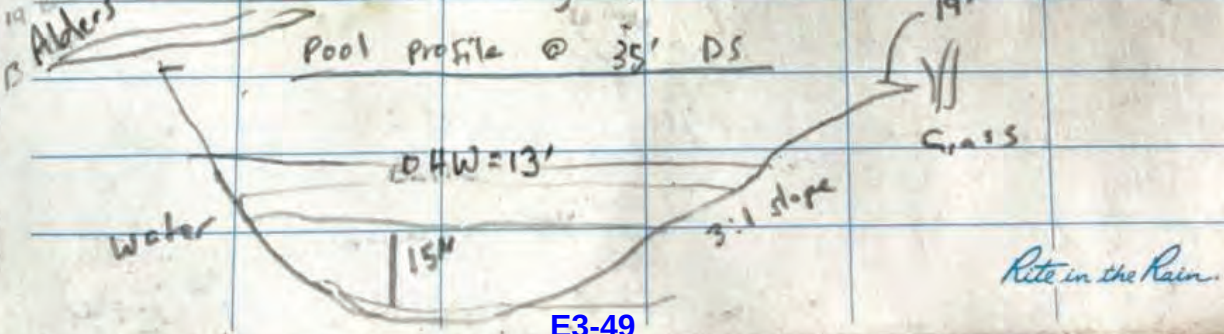
3.5 ft tall banks.

(see more notes on plan view)

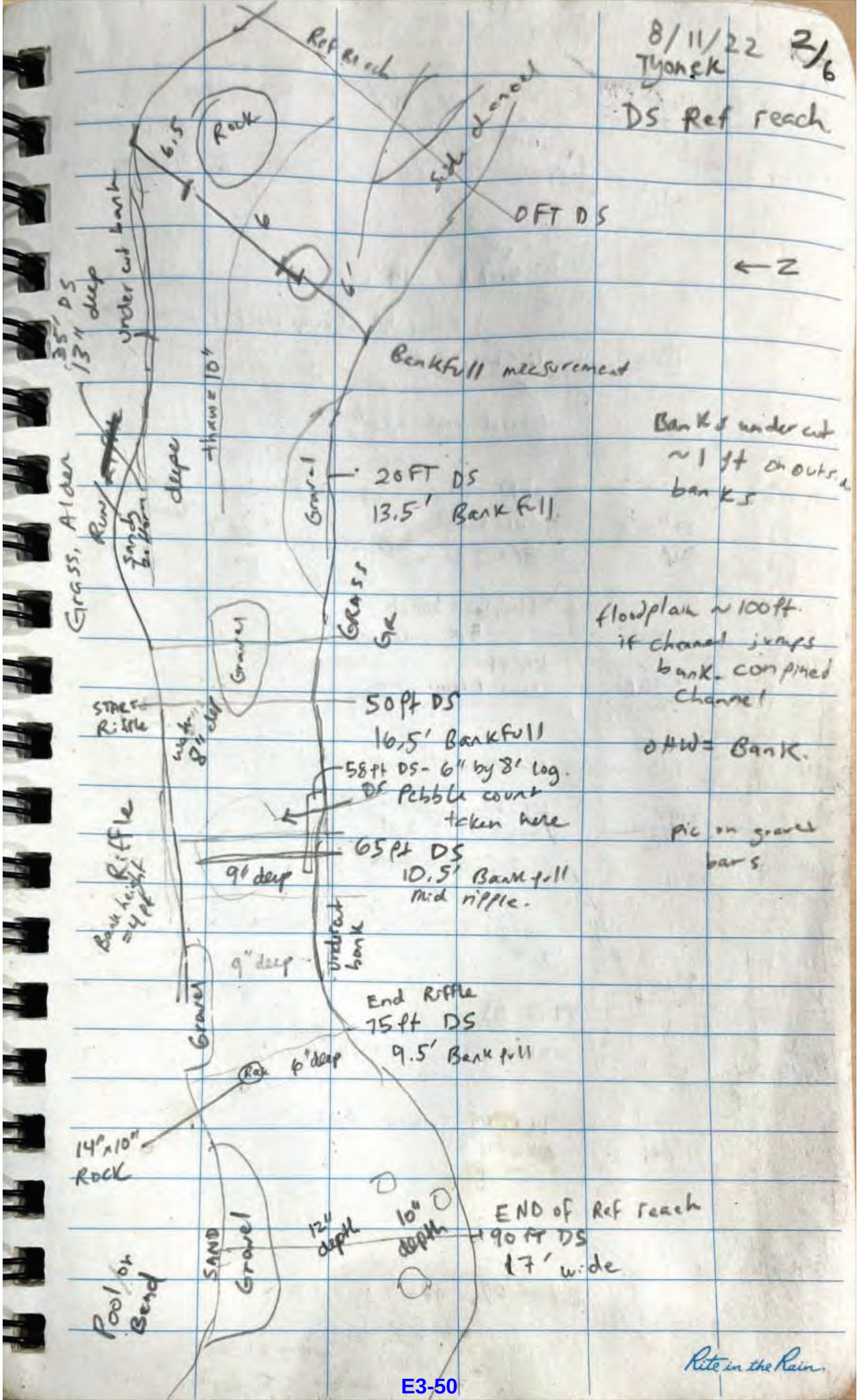
Riffle profile @ 65' DS Ref Reach



Pool profile @ 35' DS

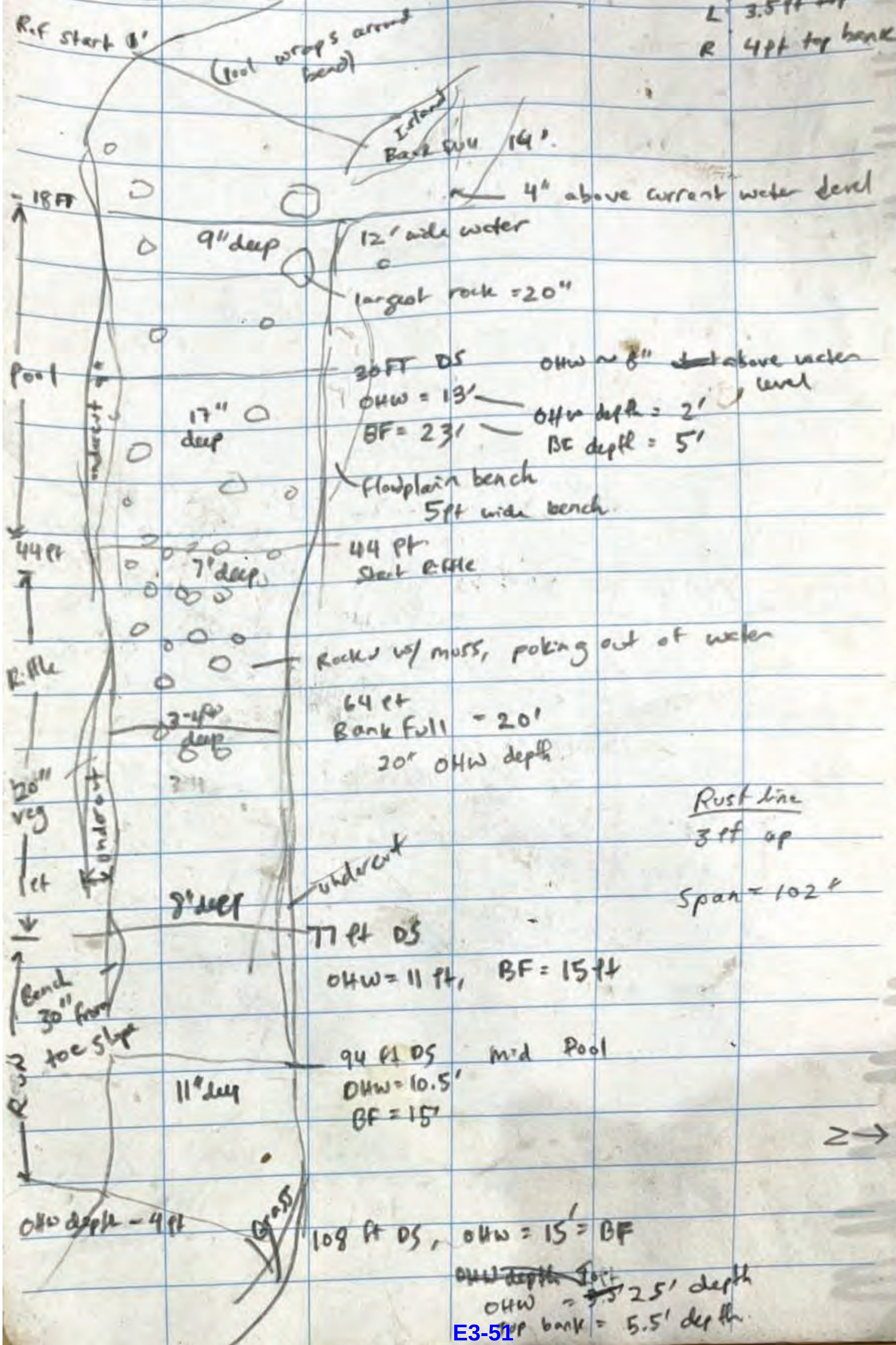


Rite in the Rain

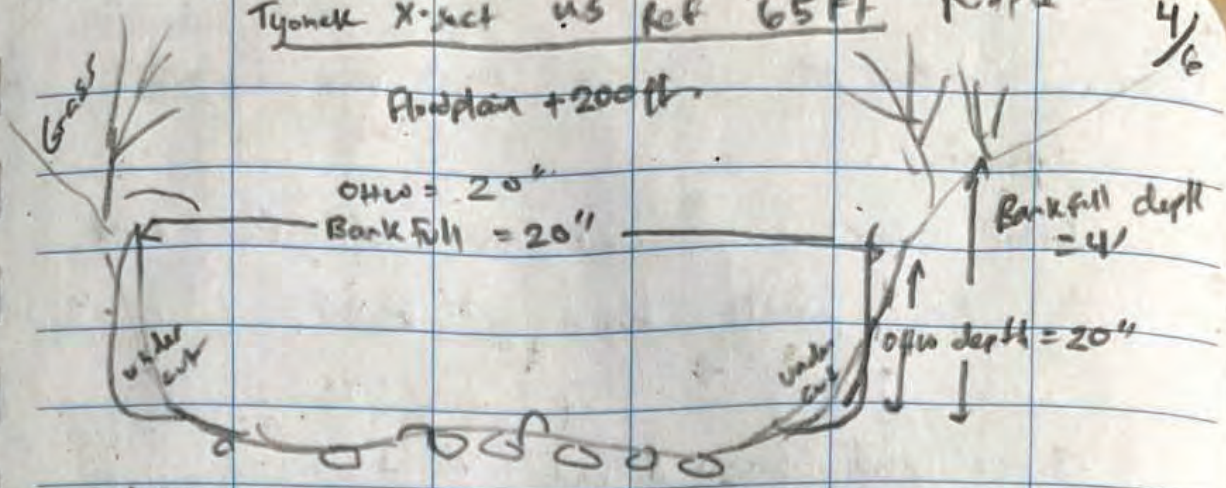

8/11/22 2/6
Tyonek
DS Ref reach
Ref Reach
Rock
6.5
6
6'
OFT DS
←Z
Bankfull measurement
35" DS
13" deep
under cut bank
thalweg = 10'
deep
Grass, Alder
Run
Sandy bottom
Gravel
20FT DS
13.5' Bankfull
Bank undercut
~1 ft on outside
banks
Grass
Gravel
flowplain ~100ft.
if channel jumps
bank. confined
channel
OHW = Bank.
START Riffle
8" deep
50ft DS
16.5' Bankfull
58ft DS - 6" by 8' log.
Pebble count
taken here
pic on gravel
bars
Riffle
Bankheight
=4ft
65ft DS
9" deep
10.5' Bankfull
mid riffle.
9" deep
Undercut
bank
End Riffle
75ft DS
9.5' Bankfull
Gravel
Rock
6" deep
14"x10"
ROCK
SAND
Gravel
12"
depth
10"
depth
END of Ref reach
90 ft DS
17' wide
Pool or
Bend
Rite in the Rain

3/6

Tyonek US Ref reach ~415 ft US of crossing



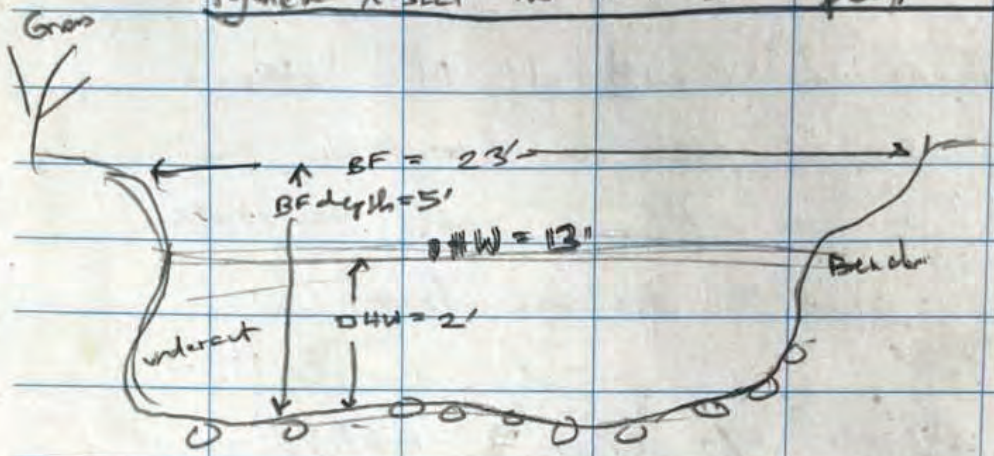
Tyonek X-sect US Ref 65FT Rapids



Floodplain
Grasses, aquatic sage, willows occasionally
↳ in benches

Spruces line edge of floodplain.

Tyonek X-Sect US Ref 30FT pool



No Beaver activity seen @ culvert ends

Rite in the Rain

5/6

2:00pm finished @ Tyonek. moved to Roberts culvert

~~Roberts~~ Culvert is not @ ADF&G point. KG has point hump in road.

- Drains pond from N end to S. water follows along road embankment to culvert & crosses over.
- Pond right @ US end of culvert. Deep & slow. wetlands grasses.

Beaver dam @ end of N lake.

US - no pebble count taken.
no ripples or pools to take cross sections from.

NOTES

Discuss w/ TTCO & ADF&G about this wetlands connection.

move crossing? for constructibility
connection for fish?

current location dissipates energy from lake.

Beaver activity may affect crossing.

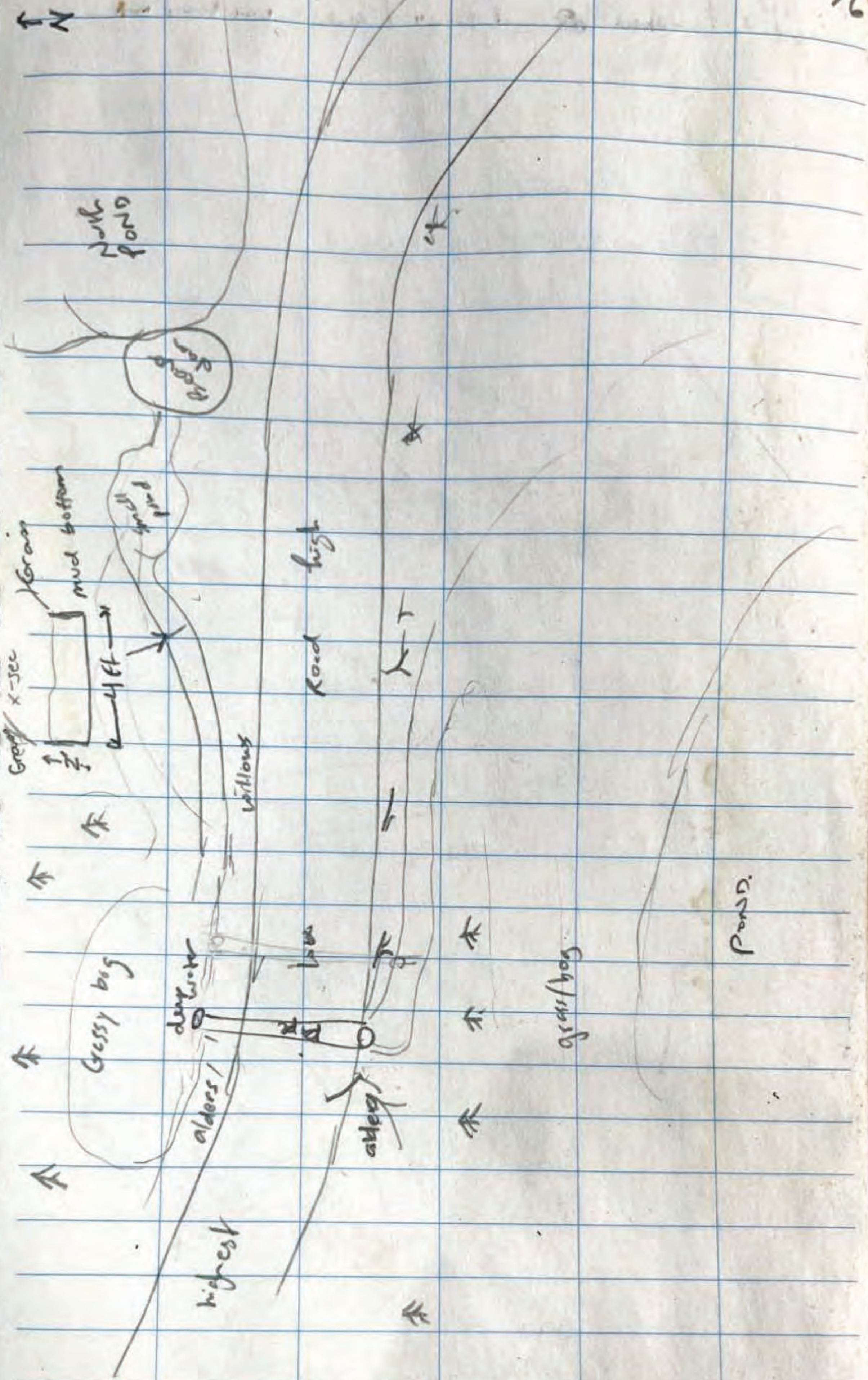
4pm - departed Tyonek.

4:35 - returned to Anc.

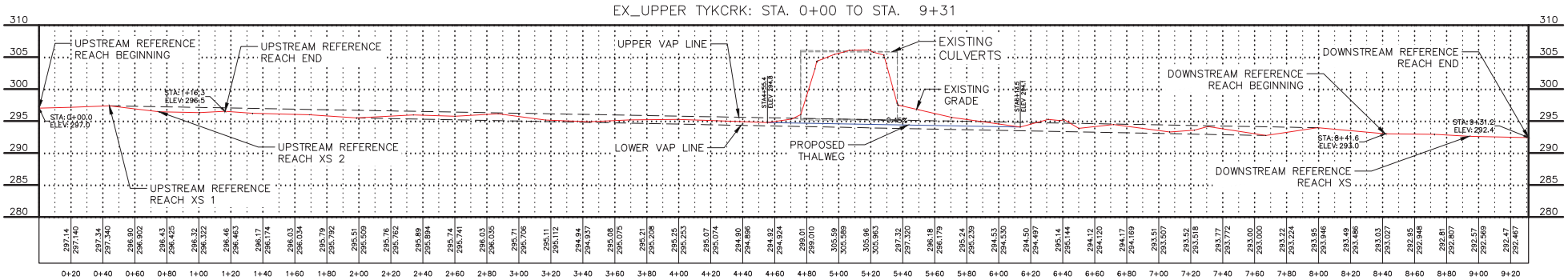
End of fwd day.

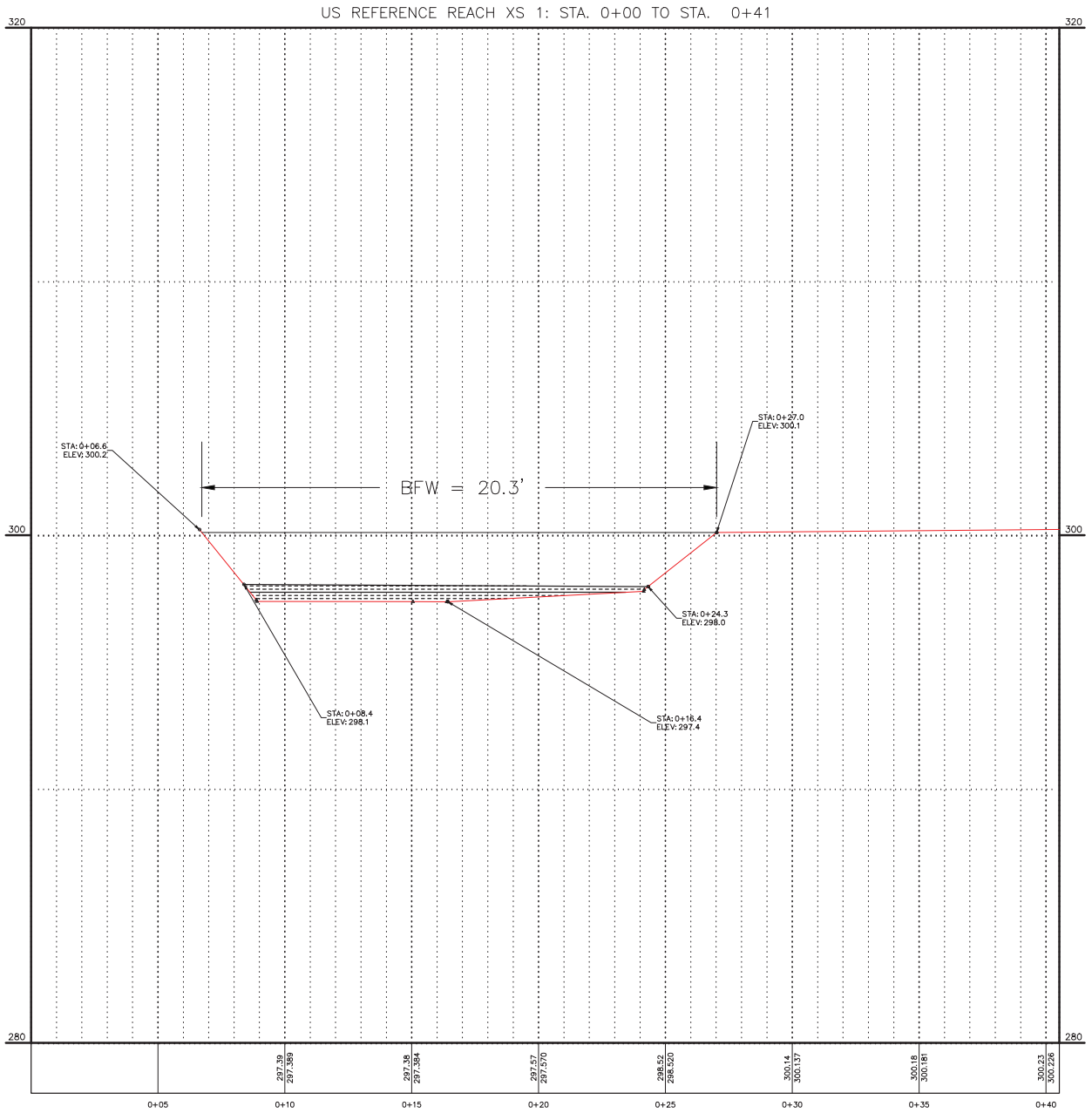
Robert's plan View

5/6

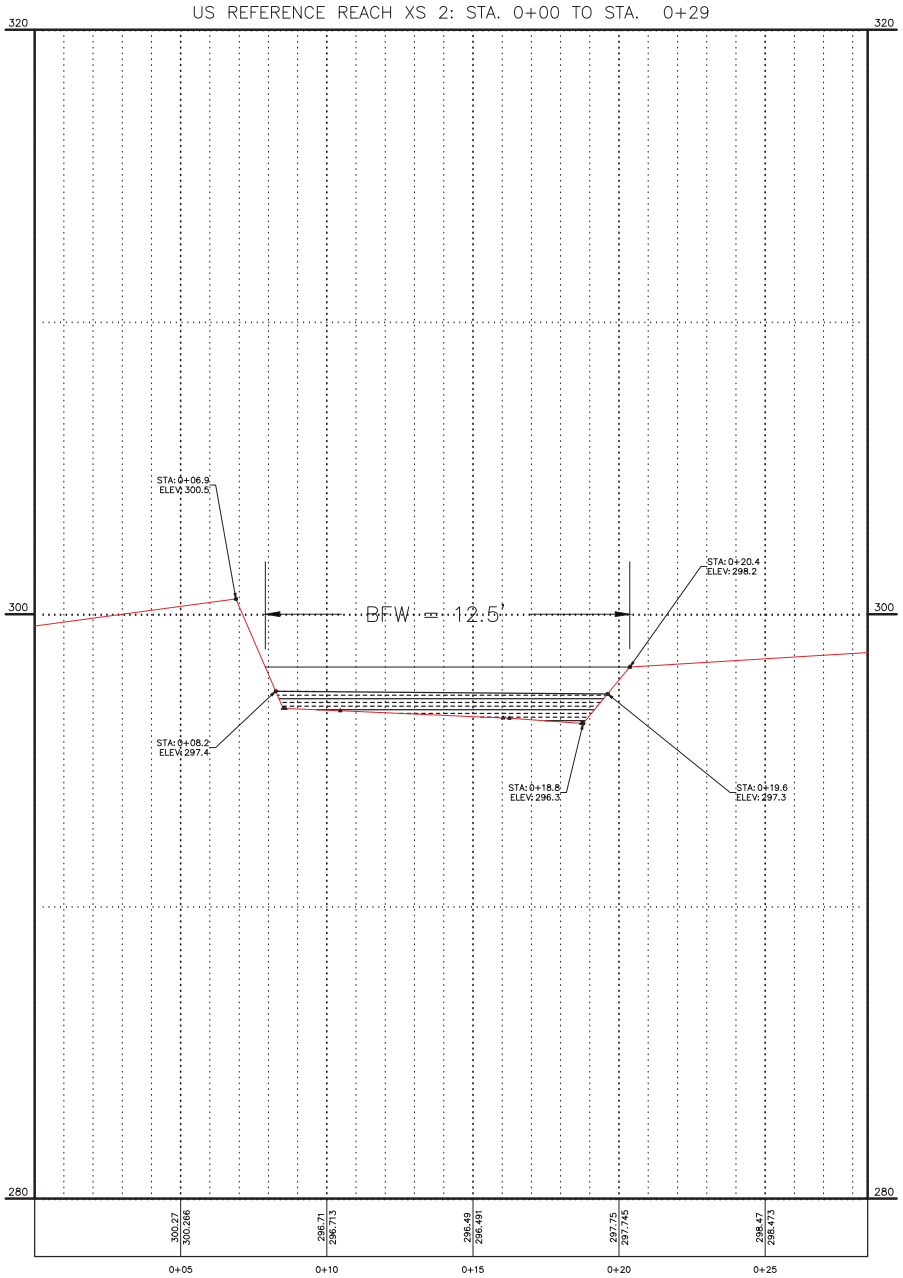


Appendix B – Cross Sections and Longitudinal Profiles of the Existing Stream

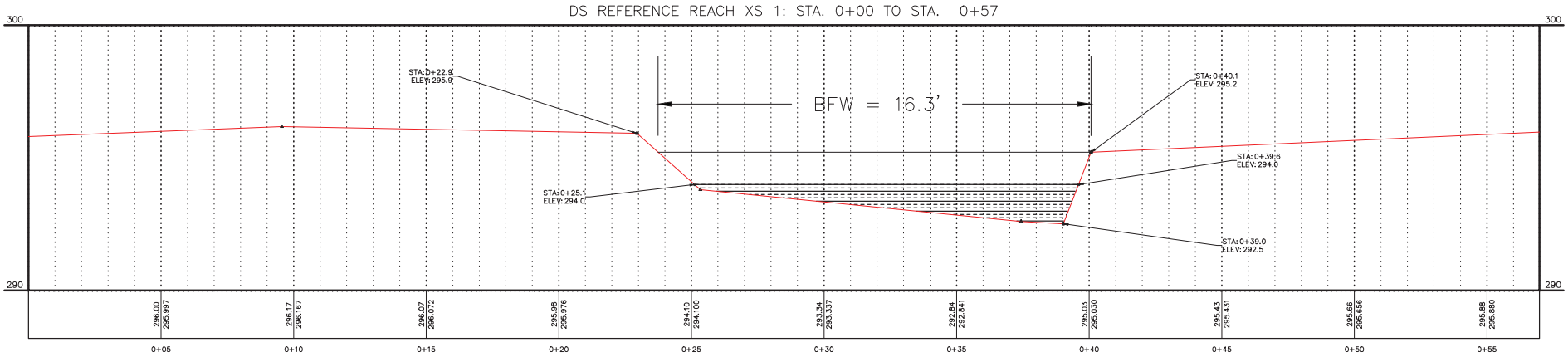

EX_UPPER TYKCRK: STA. 0+00 TO STA. 9+31
UPSTREAM REFERENCE REACH BEGINNING
UPSTREAM REFERENCE REACH END
UPSTREAM REFERENCE REACH XS 2
UPSTREAM REFERENCE REACH XS 1
UPPER VAP LINE
LOWER VAP LINE
EXISTING CULVERTS
EXISTING GRADE
PROPOSED THALWEG
DOWNSTREAM REFERENCE REACH BEGINNING
DOWNSTREAM REFERENCE REACH END
DOWNSTREAM REFERENCE REACH XS
STA: 0+00.0
ELEV: 297.0
STA: 1+16.3
ELEV: 296.5
STA: 8+41.6
ELEV: 293.0
STA: 9+31.2
ELEV: 292.4
310
305
300
295
290
285
280
0+20 0+40 0+60 0+80 1+00 1+20 1+40 1+60 1+80 2+00 2+20 2+40 2+60 2+80 3+00 3+20 3+40 3+60 3+80 4+00 4+20 4+40 4+60 4+80 5+00 5+20 5+40 5+60 5+80 6+00 6+20 6+40 6+60 6+80 7+00 7+20 7+40 7+60 7+80 8+00 8+20 8+40 8+60 8+80 9+00 9+20



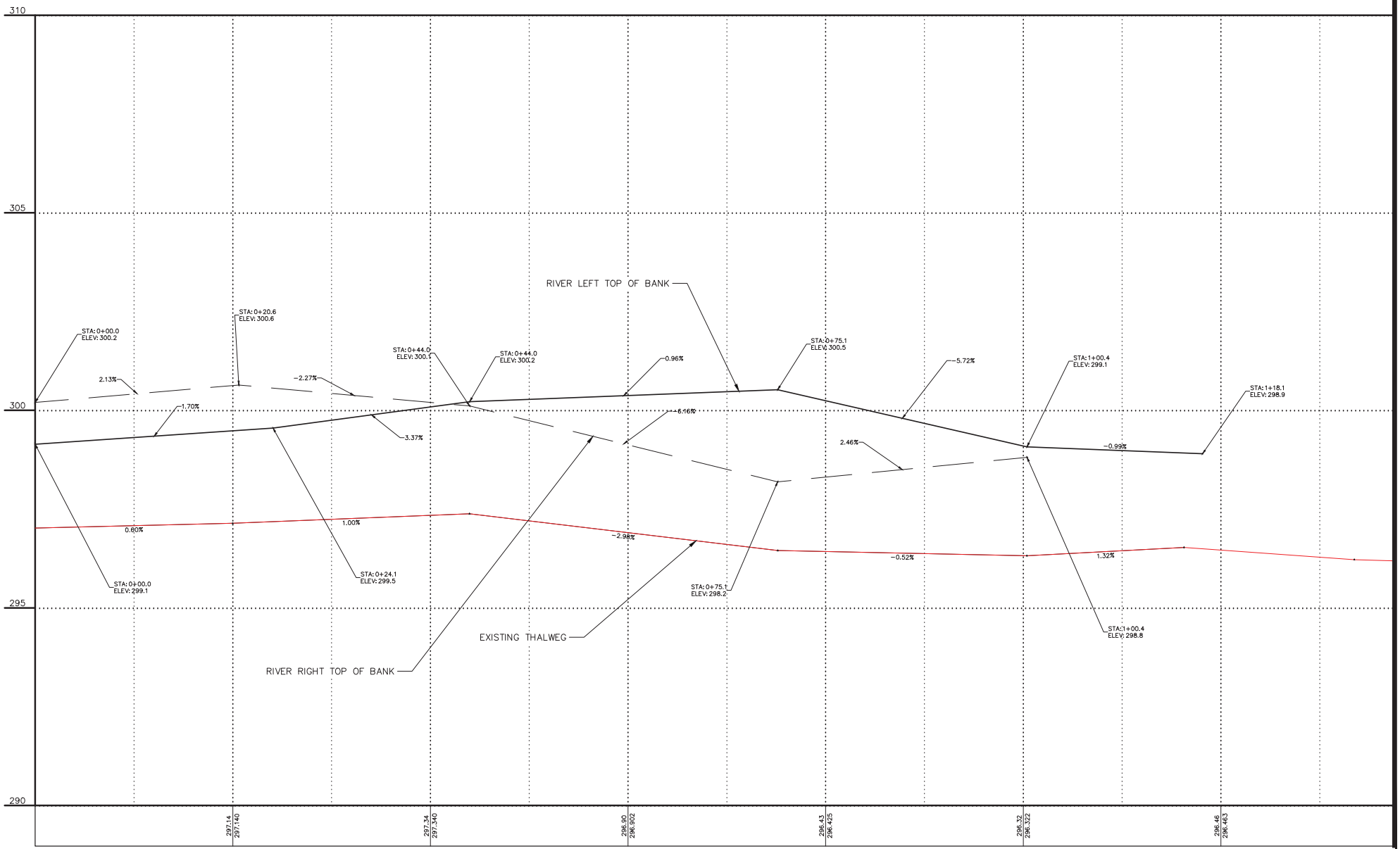
Bankfull Area = 46.2 sq. ft.
ER => 2.2



Bankfull Area = 18.9 sq. ft.
ER => 2.2

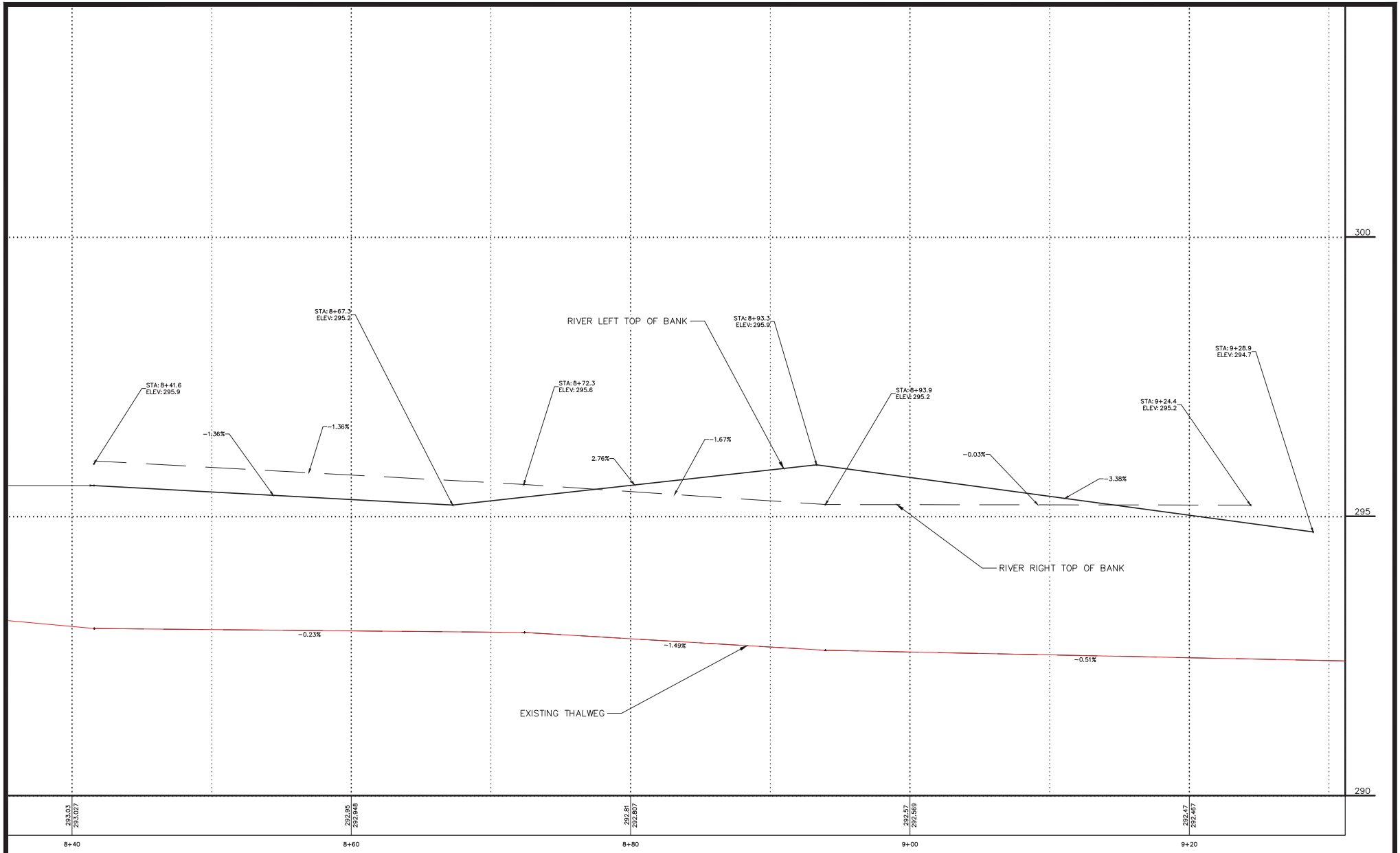


Bankfull Area = 31.1 sq. ft.
ER => 2.2



Upstream Reference Reach Top of Bank Slope Lines vs. Bed Slope Line

5x Vertical Exaggeration



Downstream Reference Reach Top of Bank Slope Lines vs. Bed Slope Line

5x Vertical Exaggeration

Appendix C – Supplemental Calculations

Project Name: 2024 Upper Tyonek Creek Fish Passage Culvert *Updated: 12/09/24 K. Grundhauser*

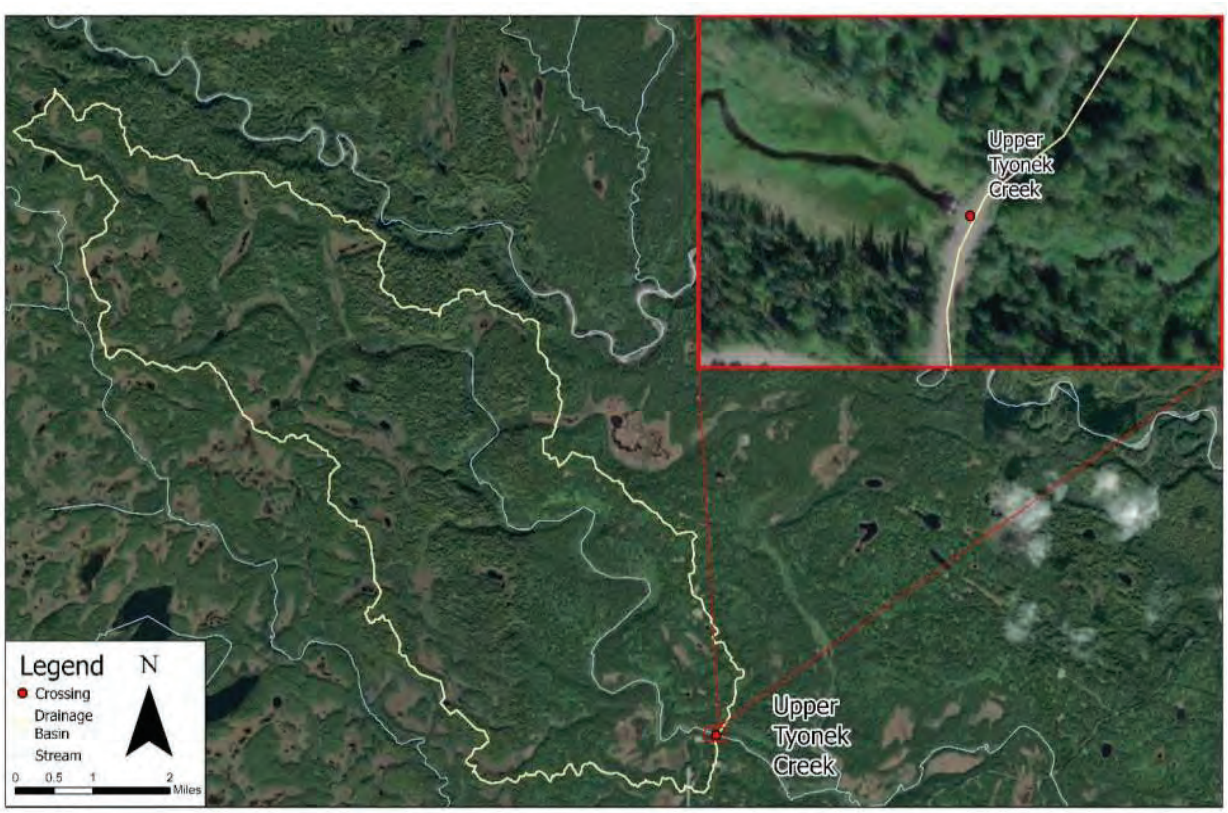
Step 1: Use basin size (ft^2) to determine which peak flow calculation methods apply by basin size.

Basin #	Basin Size	Basin Size	Basin Size	Applicable Method
	ft^2	acres	mi^2	
Upper Tyonek Cr.	**202,786,482**	**4655.3**	**7.274**	**2016 USGS Regression Equations**

Basin falls within 2016 USGS Regression Equation parameters

Basin falls only within NRCS TR-55 Parameters

Basin falls within Rational Method parameters and NRCS TR-55 parameters



Appendix B – Supplemental Calculations *Updated: 12/09/24 K. Grundhauser*

Project Name 2024 Upper Tyonek Creek Fish Passage Culvert

Step 2: Calculate flows using 2016 USGS Regression Equations, flows incorporating SNAP Climate Data, and flows adjusting for local gage factors.

2016 USGS Regression Equations					% AEP / Recurrence-Interval Flood							
					50%	20%	10%	4%	2%	1%	0.5%	0.2%
Basin ID	**Basin Size**	**Basin Size**	**PRISM Precip ***	**PRISM Precip**	**2-year**	**5-year**	**10-year**	**25-year**	**50-year**	**100-year**	**200-year**	**500-year**
	ft^2	mi^2	mm*100	in	2016 Regression Flow (cfs)							
Upper Tyonek Cr.	**202,786,482**	**7.27**	**85,922**	**33.8**	**182**	**301**	**392**	**517**	**614**	**718**	**824**	**973**

*Values calculated in GIS using Zonal Statistics tool with basin polygons and 1 m by 1 m resampled rainfall raster.

Source: Mean Precipitation for Alaska 1971-2000

**See SNAP Data

Basin falls within 2016 Regression Equation parameters

Basin falls outside of 2016 USGS Regression Equations

Basin ID	**Basin Size**	**SNAP** Adjusted PRISM Precip**	% AEP / Recurrence-Interval Flood							
			50%	20%	10%	4%	2%	1%	0.5%	0.2%
			2-year	**5-year**	**10-year**	**25-year**	**50-year**	**100-year**	**200-year**	**500-year**
	mi^2	in	SNAP Adjusted Flow (cfs)							
Upper Tyonek Cr.	**7.27**	**38.2**	**205.9**	**336**	**436**	**571**	**675**	**788**	**902**	**1062**

SUMMARY

Tyonek Creek Crossing									
Basin Size (ac.)	4,655	% AEP / Recurrence-Interval Flow							
Method	**Annual Mean Precipitation (in.)**	50%	20%	10%	4%	2%	1%	0.50%	0.20%
		2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	200-Yr	500-Yr
2016 USGS Regression	33.8	185	305	395	520	615	720	825	975
2016 USGS SNAP Adjusted	38.2	210	340	440	575	675	**790**	905	1,065

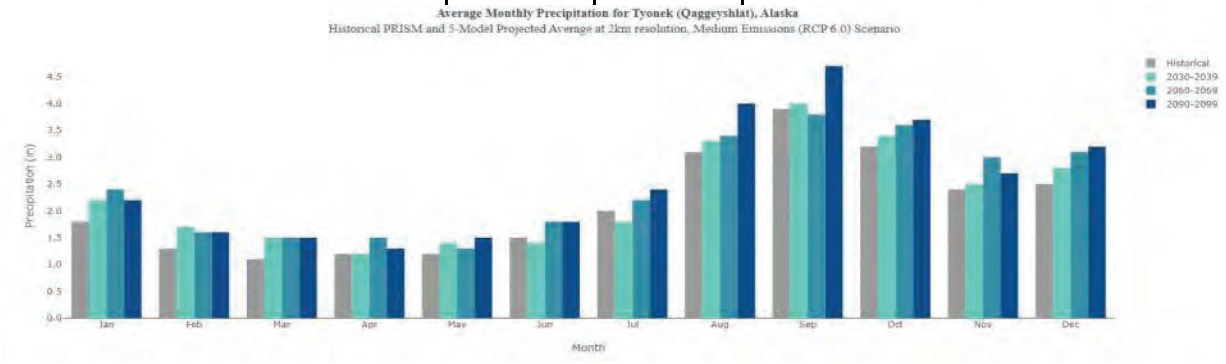
Notes: Flows are rounded to the nearest 5 cfs. Design flood flows shown in **bold**.

Appendix B – Supplemental Calculations

SNAP Data** **Tyonek, AK**

Month	Precipitation (in)				2030-2099
	Historical	2030-2039	2060-2069	2090-2099	% Increase
January	1.77	2.17	2.40	2.24	3.6
February	1.30	1.65	1.61	1.61	-2.4
March	1.14	1.50	1.50	1.54	2.6
April	1.18	1.18	1.54	1.34	13.3
May	1.22	1.42	1.34	1.46	2.8
June	1.50	1.42	1.77	1.81	27.8
July	1.97	1.81	2.20	2.36	30.4
August	3.15	3.35	3.39	4.02	20.0
September	3.94	4.02	3.78	4.72	17.6
October	3.23	3.39	3.58	3.66	8.1
November	2.40	2.52	2.99	2.68	6.3
December	2.52	2.76	3.07	3.23	17.1
Annual	25.31	27.17	29.17	30.67	12.9
			7.4	12.9	

Decimal Increase: 1.129



SNAP data collected from UAF Scenarios Network for Alaska + Arctic Planning website:

Data: https://www.snap.uaf.edu/tools/community-charts

About: https://uaf-snap.org/snap-story/community-charts-help-northerners-see-changes/

Streambed Sizing Calculation

Updated: J. Montoya 1/26/2026

Project: Upper Tyonek Creek Bridge

Legend

- Inputs
- Common Inputs
- Calculated
- Good
- Check

50-year flood was used for sizing to model scenario with sufficient upstream sediment supply

Culvert

Step 1 — Calculate gradation of the coarse fraction

Depth and velocity values obtained from HEC-RAS or HY-8 model.

FHWA-NHI-09-112; Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance-Third Edition, Volume 2, 2009; Design Guideline 3 Riprap Revetment

Using U.S. Army Corps of Engineers (USACE) equation EM-1601, starting on page DG4.3.

$$d_{30} = y(S_f C_S C_V C_T)\left[\frac{(V_{des})}{\sqrt{K_1(S_g - 1)gy}}\right]^{2.5}$$

This method is based on the minimum D30 size.

For revetment riprap sizing (review other riprap calculations for other applications, such as piers, abutments, etc.)

https://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=23&id=143

Local depth of flow, y	6.03	ft for 50-year event	
Safety Factor, S_f	1.3	(must be >1.0, 1.1 recommended for bank revetment*, greater values should be considered for ice or large debris impacts, freeze-thaw degradation, or if there is large uncertainty in the design variables.)	
Stability Coeff, C_S	0.300	Round or Angular Rock?	Angular (0.375 round rock, 0.3 angular rock)
Vertical Velocity Distribution Coeff, C_V	1.0	= 1.0 for straight channels or the inside of bends = 1.283 - 0.2log(R_c/W) for the outside of bends (1.0 for R_c/W > 26) = 1.25 downstream from concrete channels = 1.25 at the end of dikes	
Blanket Thickness Coeff, C_T	1.0	(1.0 is recommended due to limited data)	
Local depth-average velocity, $V_{des} = V_{avg}$	7.99	ft/s from 50-year event avg. velocity in pipe (^assuming straight channel through pipe)	
Channel side slopes	26.6	degrees	(1V:1H = 45°, 1V:2H = 26.6°, 1V:3H = 18.4°, 1V:4H = 14°)
Side slope correction factor, K_1	0.87		
Specific gravity of riprap, S_g	2.65	(2.65 usually taken)	
Gravitational Acceleration, g	32.2	ft/s^2	(English units)

Using NCHRP Report 568's recommended riprap gradations, D30 can be related to recommended D50.
The rest of the gradations were related based on their ratio to the recommended D50.
https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_568.pdf

D15	0.3	ft	4.0	inches
D30	0.4	ft	5.0	inches
D50	0.4	ft	6.0	inches
D85	0.7	ft	9.0	inches
D100	0.9	ft	11.0	inches

Q50

Results from January 2026 Configuration (01/27/26) (Actual reconstructed stream channel with tie-in to EG for tailwater geometry)

	HY-8		Hydraulic Toolbox	
	Outlet	Tailwater	Outlet	Tailwater
Depth	**6.03**	6.03	7.21	6.03
Velocity	**7.99**	4.11	5.88	4.11

Step 2 — Calculate Fuller Thompson idealized gradation of the fine fraction

US Forest Service, Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings, 2008

Adapted from Fuller-Thompson, starting on page 6-40.

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm91_054564.pdf

Fuller-Thompson Power, n	0.5	(0.5 produces a maximum density mix when particles are round.)
D15 (calculated in Step 1)	4.0	inches

d in.	d mm	Particle Size Sieve	% passing
12.0	304.8	12	100.0%
10.0	254	10	100.0%
8.0	203.2	8	100.0%
5.0	127	5	100.0%
3.0	76.2	3	86.6%
2.0	50.8	2	70.7%
1.50	38.1	1.5	61.2%
1.00	25.4	1	50.0%
0.75	19.05	0.75	43.3%
0.50	12.7	0.5	35.4%
0.187	4.75	#4	21.6%
0.079	2.00	#10	14.0%
0.017	0.425	#40	6.5%
0.006	0.15	#100	3.8%
0.003	0.075	#200	2.7%

Step 3a Record field pebble count

Name	Downstream Reference Reach Pebble Count			
Particle Size mm	Particle Size in.	Tot #	Item %	% Accumulative
0.062	0.0024		0%	0%
0.125	0.0049		0%	0%
0.25	0.0098		0%	0%
0.5	0.0197		0%	0%
1	0.039		0%	0%
2.8	0.110	4	3%	3%
4	0.157	10	8%	12%
5.6	0.220	10	8%	20%
8	0.315	16	13%	33%
11.3	0.445	17	14%	47%
16	0.630	17	14%	61%
22.6	0.890	19	16%	77%
32	1.26	12	10%	87%
45	1.77	10	8%	95%
64	2.52	2	2%	97%
90	3.54		0%	97%
128	5.04	1	1%	98%
180	7.09		0%	98%
256	10.08	3	2%	100%
362	14.25		0%	100%
512	20.16		0%	100%
1024	40.31		0%	100%
2048	80.63		0%	100%
3000	118.11		0%	100%
	SUM	121	100%	100%

D50 (linear interpolation): 0.485

Step 3b Record field pebble count

Name	Upstream Reference Reach Pebble Count			
Particle Size mm	Particle Size in.	Tot #	Item %	% Accumulative
0.062	0.0024		0%	0%
0.125	0.0049		0%	0%
0.25	0.0098		0%	0%
0.5	0.0197		0%	0%
1	0.039		0%	0%
2.8	0.110	7	6%	6%
4	0.157	10	8%	14%
5.6	0.220	14	11%	25%
8	0.315	14	11%	37%
11.3	0.445	3	2%	39%
16	0.630	13	11%	50%
22.6	0.890	11	9%	59%
32	1.26	10	8%	67%
45	1.77	11	9%	76%
64	2.52	15	12%	88%
90	3.54	8	7%	94%
128	5.04	6	5%	99%
180	7.09	1	1%	100%
256	10.08		0%	100%
362	14.25		0%	100%
512	20.16		0%	100%
1024	40.31		0%	100%
2048	80.63		0%	100%
3000	118.11		0%	100%
	SUM	123	100%	100%

Notes: Modified channel, not good for design but ok for general comparsion. Recorded retained on.

Step 4 **Develop design streambed material graduation**

Select mix of coarse and fine materials.
For coarse, use standard riprap or special specifications.
For fines, use standard aggregate specifications or use fines calculated in step 2 by Fuller-Thompson equation.
Compare to Pebble Count (if applicable) and Fuller-Thompson Estimating for Maximum Density (step 5).

Min Req'd D30	5.0
Design D30	6.0

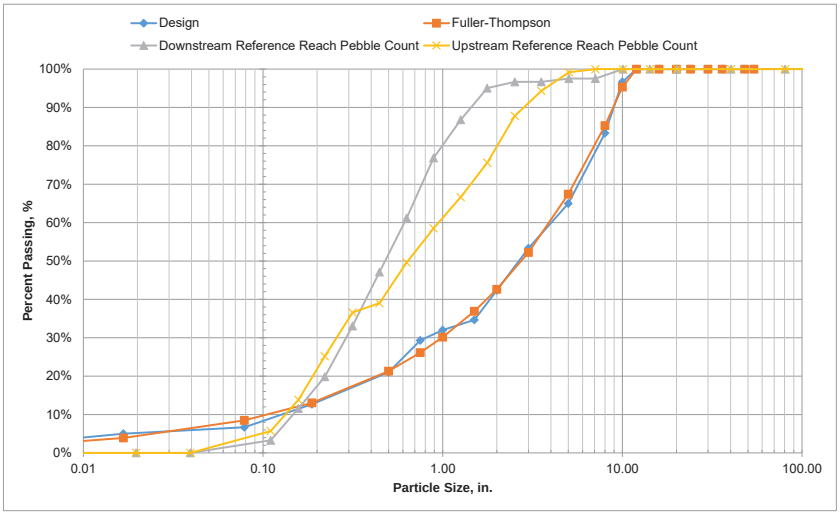
Stability (D30)	Good	
Combined Gradation %	100%	Good

Gradation Tables for Components

		COARSE MATERIAL						FINE MATERIAL				
			Based on Alaska DOT&PF Specifications									
		Ditch Lining	Type IV Riprap	Type III Riprap	Type II Riprap	Type I Riprap	Coarse Fraction	SF	Ditch Lining	Fine Fraction	Design	Fuller-Thomp. Idealized
Selected Mix Proportions %		0%	0%	0%	0%	33%	33%	33%	33%	67%	-	-
Size (inches)	Sieve Size	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing
54	54"	100%	100%	100%	100%	100%	100%	100.0%	100%	100%	100%	100.0%
48	48"	100%	90%	100%	100%	100%	100%	100.0%	100%	100%	100%	100.0%
36	36"	100%	50%	100%	100%	100%	100%	100.0%	100%	100%	100%	100.0%
30	30"	100%	35%	90%	100%	100%	100%	100.0%	100%	100%	100%	100.0%
24	24"	100%	25%	50%	100%	100%	100%	100.0%	100%	100%	100%	100.0%
20	20"	100%	15%	43%	90%	100%	100%	100.0%	100%	100%	100%	100.0%
16	16"	100%	0%	36%	50%	100%	100%	100.0%	100%	100%	100%	100.0%
12	12"	100%	0%	29%	39%	100%	100%	100.0%	100%	100%	100%	100.0%
10	10"	100%	0%	22%	27%	90%	90%	100.0%	100%	100%	97%	95.3%
8	8"	100%	0%	15%	15%	50%	50%	100.0%	100%	100%	83%	85.3%
5	5"	75%	0%	0%	0%	20%	20%	100.0%	75%	88%	65%	67.4%
3	3"	50%	0%	0%	0%	10%	10%	100.0%	50%	75%	53%	52.2%
2	2"	30%	0%	0%	0%	0%	0%	97.0%	30%	64%	42%	42.6%
1.5	1.5"	10%	0%	0%	0%	0%	0%	94.0%	10%	52%	35%	36.9%
1	1"	5%	0%	0%	0%	0%	0%	91.0%	5%	48%	32%	30.2%
0.75	0.75"	0%	0%	0%	0%	0%	0%	88.0%	0%	44%	29%	26.1%
0.5	0.5"	0%	0%	0%	0%	0%	0%	63.0%	0%	32%	21%	21.3%
0.187	#4	0%	0%	0%	0%	0%	0%	38.0%	0%	19%	13%	13.0%
0.0787	#10	0%	0%	0%	0%	0%	0%	20.0%	0%	10%	7%	8.5%
0.0167	#40	0%	0%	0%	0%	0%	0%	15.0%	0%	8%	5%	3.9%
0.0059	#100	0%	0%	0%	0%	0%	0%	9.0%	0%	5%	3%	2.3%
0.0030	#200	0%	0%	0%	0%	0%	0%	3.0%	0%	2%	1%	1.6%

Step 5 Graph Pebble Count, Fuller-Thompson Idealized, and Design gradations

Gradation values should be within +/-5% of this gradation (Rice) AND we need to have at least 5% sand size (#10) or smaller (Forest Service) in the combined gradation



Reference Materials

Spec. Gravity = 2.6

Unit Weight= 162.24 pcf

Riprap by Weight (lbs) (calculation assumes sphere) Weight (lbs)	RADIUS (ft)	DIA (IN)
1	0.11	2.7
25	0.33	8.0
30	0.35	8.5
40	0.39	9.3
45	0.40	9.7
50	0.42	10.1
75	0.48	11.5
100	0.53	12.7
150	0.60	14.5
200	0.67	16.0
300	0.76	18.3
400	0.84	20.1
500	0.90	21.7
700	1.01	24.2
800	1.06	25.3
1000	1.14	27.3
1400	1.27	30.5
1500	1.30	31.2
2000	1.43	34.4
2300	1.50	36.0
4000	1.81	43.3
5400	2.00	47.9
6000	2.07	49.6
7800	2.26	54.1

AK DOT Riprap Specification:

1. Class I 0-50% weighing up to 25 pounds = 8"
0-10% weighing more than 50 pounds = 10"

2. Class II 50-100% weighing 200 pounds or more = 16"
0-15% weighing up to 25 pounds = 8"
0-10% weighing more than 400 pounds = 20"

3. Class III 50-100% weighing 700 pounds or more = 24"
0-15% weighing up to 25 pounds = 8"
0-10% weighing more than 1400 pounds = 30"

4. Class IV 50-100% weighing 2000 pounds or more = 34"
0-15% weighing up to 400 pounds = 20"
0-10% weighing more than 5400 pounds = 48"

Source: https://dot.alaska.gov/stwddes/dcsspecs/assets/pdf/hwyspecs/sshc2020.pdf

Anchorage Sand and Gravel Riprap Sizes:
Riprap Class I is approx. 1" to 12" in diameter.
Each piece weighs approx. 1 to 75 lbs. = 3"-12"
Riprap Class II is approx. 15" to 21" in diameter.
Each piece weighs approx. 200 to 800 lbs. = 16"-25"
Riprap Class III is approx. 21" to 30" in diameter.
Each piece weighs approx. 800 to 2,300 lbs. = 25"-36"
Riprap Class IV is approx. 33" to 45" in diameter.
Each piece weighs approx. 2,300 to 7,800 lbs. = 36"-54"
Note: Sieve sizes reported do not match calculated diameter.

Source: https://www.anchsand.com/product-category/aggregate-sand-gravel/rip-rap/

Critical Velocity Calculation (Determining Upstream Bed Material Mobility)

Legend
- Inputs
- Common Inputs
- Calculated

AEP Event	Flow Value (cfs)	Upstream Reference Reach XS	Average Velocity (fps)	Depth (ft)	D50 (ft)	Vc (fps)	Mobile? (If Vc > Average Velocity - NO; If Vc < Average Velocity - YES)
0.4*Q2	74	XS 1	2.9	1.73	0.052493	4.58243025	NO
		XS 2	2.73	2.39	0.052493	4.83601712	NO
0.4*Q2 SNAP	84	XS 1	3.05	1.87	0.052493	4.64224917	NO
		XS 2	2.87	2.5	0.052493	4.87242147	NO
Q2	185	XS 1	3.96	2.83	0.052493	4.97415429	NO
		XS 2	3.86	3.38	0.052493	5.12358914	NO
Q2 SNAP	210	XS 1	4.16	3.01	0.052493	5.0255384	NO
		XS 2	4.05	3.57	0.052493	5.17050405	NO

HEC-RAS Hydraulic Reference Manual / Estimating Scour at Bridges / Computing Contraction Scour / PDF

Determination of Live-Bed or Clear-Water Contraction Scour

Determination of Live-Bed or Clear-Water Contraction Scour

To determine if the flow upstream is transporting bed material (i.e., live-bed contraction scour), the program calculates the critical velocity for beginning of motion Vc (for the D50 size of bed material) and compares it with the mean velocity V of the flow in the main channel or overbank area upstream of the bridge at the approach section. If the critical velocity of the bed material is greater than the mean velocity at the approach section (Vc > V), then clear-water contraction scour is assumed. If the critical velocity of the bed material is less than the mean velocity at the approach section (Vc < V), then live-bed contraction scour is assumed. The user has the option of forcing the program to calculate contraction scour by the live-bed or clear-water contraction scour equation, regardless of the results from the comparison. To calculate the critical velocity, the following equation by Laursen (1963) is used:

1) $$V_c = K_u y_1^{1/6} D_{50}^{1/3}$$

Symbol	Description	Units
V_c	Critical velocity above which material of size D50 and smaller will be transported	ft/s (m/s)
y_1	Average depth of flow in the main channel or overbank area at the approach section	ft (m)
D_{50}	Bed material particle size in a mixture of which 50% are smaller	ft (m)
K_u	11.17 (English Units), 6.19 (S.I. Units)	

Common Alaska DOT&PF Graduations

Based on Alaska DOT Specifications, Table 703-2, version 2020.

Source: https://dot.alaska.gov/stwddes/dcsspecs/

Size (inches)	Sieve Size	C-1	D-1	E-1	F-1	Structural Fill	Ditch Lining
54	54"	100%	100%	100%	100%	100%	100%
48	48"	100%	100%	100%	100%	100%	100%
36	36"	100%	100%	100%	100%	100%	100%
30	30"	100%	100%	100%	100%	100%	100%
24	24"	100%	100%	100%	100%	100%	100%
20	20"	100%	100%	100%	100%	100%	100%
16	16"	100%	100%	100%	100%	100%	100%
12	12"	100%	100%	100%	100%	100%	100%
10	10"	100%	100%	100%	100%	100%	100%
8	8"	100%	100%	100%	100%	100%	100%
5	5"	100%	100%	100%	100%	100%	70%
3	3"	100%	100%	100%	100%	100%	50%
2	2"	100%	100%	100%	100%	97%	33%
1.5	1.5"	100%	100%	100%	100%	94%	18%
1	1"	85%	100%	100%	100%	91%	5%
0.75	0.75"	75%	85%	85%	93%	88%	0%
0.5	0.5"	60%	70%	68%	80%	63%	0%
0.187	#4	45%	50%	50%	68%	38%	0%
0.0787	#10	37%	35%	35%	55%	20%	0%
0.0167	#40	18%	21%	23%	35%	15%	0%
0.0059	#100	11%	12%	17%	25%	9%	0%
0.0030	#200	3%	3%	12%	14%	3%	0%

TABLE 703-12
AGGREGATE GRADATION FOR STRUCTURAL FILL

SIEVE	PERCENT PASSING BY WEIGHT
3 in.	100
3/4 in.	75-100
No. 4	15-60
No. 16	10-30
No. 200	0-6

Percent Passing by Weight

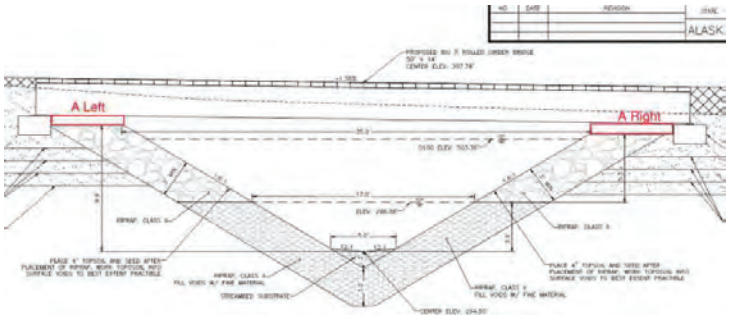
SIEVE	GRADATION			
	BASE COURSE		SURFACE COURSE	
	C-1	D-1	E-1	F-1
1-1/2 in.	100			
1 in.	70-100	100	100	100
3/4 in.	60-90	70-100	70-100	85-100
3/8 in.	45-75	50-80	50-85	60-100
No. 4	30-60	35-65	35-65	50-85
No. 8	22-52	20-50	20-50	40-70
No. 50	6-30	6-30	15-30	25-45
No. 200	0-6	0-6	8-15	8-20

that are sound

Updated: J. Montoya 1/26/2026

Froude Number:	0.515	
Q	790	cfs
V	See below	
Ss	2.65	(FHWA)
g	32.2	ft/s2
y (average depth from HY-8)	8.5	ft
K	0.89	
Avg Velocity:		
SBR for Left Abutment:	5.4	ft
SBR for Right Abutment:	6.3	ft
V_avg in bridge opening	8.7	ft/s
Per FHWA, use lower value of V through bridge or V through overbanks*:	**8.7**	**ft/s**
D50:	1.2679108	ft
D50 for abutments:	1.4	ft
Thickness (larger of 1.5*D50 or D100):	2.1	
1.5*D50:	2.1	ft
D100:	1.67	ft
Proposed Thickness:	3	ft
Proposed Extent from toe (smaller of 2x flow depth or 25')	17	ft
Wrap-Around Length (larger of 2x flow depth or 25'):	25	ft

*Unable to accurately calculate overbank flow with the given methods (flow only through red squares in screenshot). Since the velocity through those sections would be higher than the velocity through the entire bridge opening, and the lower velocity is the design value, the velocity though the entire opening was used for design.



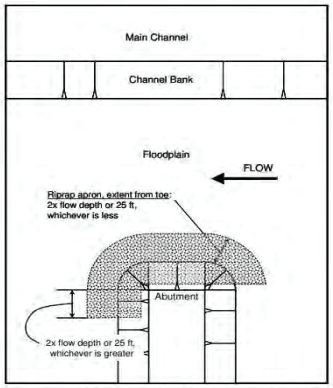


Figure 14.7. Plan view of the extent of rock riprap apron (Lagasse et al. 2006).

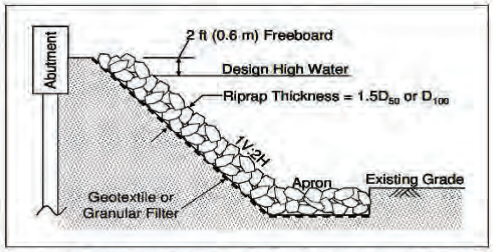


Figure 14.8. Typical cross section for abutment riprap (Lagasse et al. 2006).

For Froude Numbers $(V/(gy)^{1/2}) \leq 0.80$, the recommended design equation for sizing rock riprap for spill-through and vertical wall abutments is in the form of the Isbash relationship:

$$\frac{D_{50}}{y} = \frac{K}{(S_s - 1)}\left[\frac{V^2}{gy}\right] \qquad (14.1)$$

where:

D_{50} = median stone diameter, ft (m)
V = characteristic average velocity in the contracted section (explained below), ft/s (m/s)
S_s = specific gravity of rock riprap
g = gravitational acceleration, 32.2 ft/s^2 (9.81 m/s^2)
y = depth of flow in the contracted bridge opening, ft (m)
K = 0.89 for a spill-through abutment
1.02 for a vertical wall abutment

For Froude Numbers >0.80, Equation 14.2 is recommended:

$$\frac{D_{50}}{y} = \frac{K}{(S_s - 1)}\left[\frac{V^2}{gy}\right]^{0.14} \qquad (14.2)$$

where:

K = 0.61 for spill-through abutments
K = 0.69 for vertical wall abutments

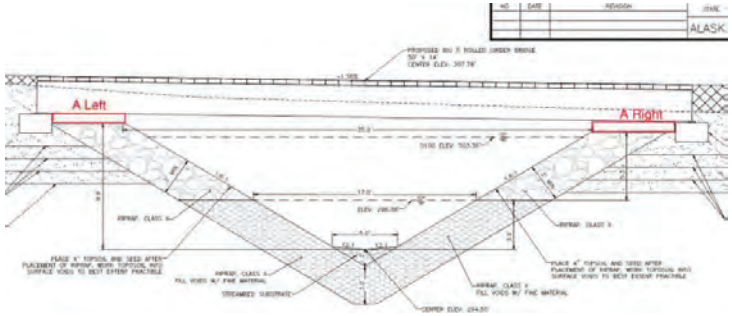
In both equations, the coefficient K, is a velocity multiplier to account for the apparent local acceleration of flow at the point of rock riprap failure. Both of these equations are envelope relationships that were forced to over predict 90% of the laboratory data.

HEC 23 Volume II Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance-Third Edition

Updated: J. Montoya 1/26/2026

Froude Number:	0.515	
Q	790	cfs
V	See below	
Ss	2.65	(FHWA)
g	32.2	ft/s2
y_total	7.7	ft
Thig	0.89	
Avg Velocity:		
SBR for Left Abutment:	5.4	ft
SBR for Right Abutment:	6.3	ft
V_max in bridge opening (critical velocity in HYD for conservatism)	6.1	ft/s
Per FHWA, use lower value of V through bridge or V through overbanks*:	**6.1**	**ft/s**
D50:	0.6233183	ft
Proposed D50 for abutments:	1.4	ft
Thickness (larger of 1.5*D50 or D100):	2.1	
1.5*D50:	2.1	ft
D100:	1	ft
Proposed Thickness:	3	ft
Proposed Extent from toe (smaller of 2x flow depth or 25')	15.4	ft
Wrap-Around Length (larger of 2x flow depth or 25'):	25	ft

*Unable to accurately calculate overbank flow with the given methods (flow only through red squares in screenshot). Since the velocity through those sections would be higher than the velocity through the entire bridge opening, and the lower velocity is the design value, the velocity though the entire opening was used for design.



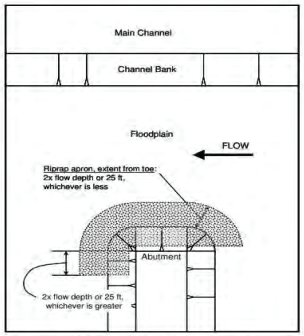


Figure 14.7. Plan view of the extent of rock riprap apron (Lagasse et al. 2006).

For Froude Numbers ($V/(gy)^{1/2}$) ≤ 0.80, the recommended design equation for sizing rock riprap for spill-through and vertical wall abutments is in the form of the Isbash relationship:

$$\frac{D_{50}}{y} = \frac{K}{(S_s - 1)}\left[\frac{V^2}{gy}\right] \qquad (14.1)$$

where:

D_{50} = median stone diameter, ft (m)
V = characteristic average velocity in the contracted section (explained below), ft/s (m/s)
S_s = specific gravity of rock riprap
g = gravitational acceleration, 32.2 ft/s² (9.81 m/s²)
y = depth of flow in the contracted bridge opening, ft (m)
K = 0.89 for a spill-through abutment
1.02 for a vertical wall abutment

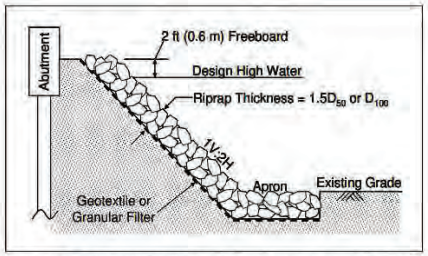


Figure 14.8. Typical cross section for abutment riprap (Lagasse et al. 2006).

For Froude Numbers >0.80, Equation 14.2 is recommended:

$$\frac{D_{50}}{y} = \frac{K}{(S_s - 1)}\left[\frac{V^2}{gy}\right]^{0.14} \qquad (14.2)$$

where:

K = 0.61 for spill-through abutments
K = 0.69 for vertical wall abutments

In both equations, the coefficient K, is a velocity multiplier to account for the apparent local acceleration of flow at the point of rock riprap failure. Both of these equations are envelope relationships that were forced to over predict 90% of the laboratory data.

HEC 23 Volume II Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance-Third Edition

Contraction Scour Calcs

Updated: J. Montoya 1/26/2026

Live-Bed vs. Clear-Water Contraction Scour (Laursen 1963): https://www.hec.usace.army.mil/confluence/rasdocs/ras1dtechref/latest/estimating-scour-at-bridges/computing-contraction-scour/determination-of-live-bed-or-clear-water-contraction-s

Assuming Mixture Stable at 2% AEP and Results from 1% AEP in Upstream Reference Reach in Hydraulic Toolbox

y1 (ft)	6.3
D50 (ft)	0.225
Ku	11.17
Vc (ft/s)	7.62206761
Average Velocity in Approach Section* (ft)	4.3
Live-Bed or Clear-Water?	**CLEAR-WATER**

Legend

- Inputs
- Common Inputs
- Calculated
- Good
- Check

Determination of Live-Bed or Clear-Water Contraction Scour

To determine if the flow upstream is transporting bed material (i.e., live-bed contraction scour), the program calculates the critical velocity for beginning of motion Vc (for the D50 size of bed material) and compares it with the mean velocity V of the flow in the main channel or overbank area upstream of the bridge at the approach section. If the critical velocity of the bed material is greater than the mean velocity at the approach section (Vc > V), then clear-water contraction scour is assumed. If the critical velocity of the bed material is less than the mean velocity at the approach section (Vc < V), then live-bed contraction scour is assumed. The user has the option of forcing the program to calculate contraction scour by the live-bed or clear-water contraction scour equation, regardless of the results from the comparison. To calculate the critical velocity, the following equation by Laursen (1963) is used:

1) $$V_c = K_u y_1^{1/6} D_{50}^{1/3}$$

Symbol	Description	Units
V_c	Critical velocity above which material of size D50 and smaller will be transported	ft/s (m/s)
y_1	Average depth of flow in the main channel or overbank area at the approach section	ft (m)
D_{50}	Bed material particle size in a mixture of which 50% are smaller	ft (m)
K_u	11.17 (English Units), 6.19 (S.I. Units)	

Clear-Water Scour Calculation (Laursen 1963): https://www.hec.usace.army.mil/confluence/rasdocs/ras1dtechref/latest/estimating-scour-at-bridges/computing-contraction-scour/clear-water-contraction-scour

Assuming Mixture Stable at 2% AEP and Results from 1% AEP in Bridge Channel in Hydraulic Toolbox

Dm (1.25xD50) (ft)	0.28125
D50 (ft) - 2.7 in	0.225
C	130
Q (cfs) - 1% AEP	790
W (ft) (top width of flow) (Hydraulic Toolbox)	29.3
Scour Flow Depth (ft)	**3.00463466**
Current Flow Depth (ft)	**7.7**
Check	GOOD

Clear-Water Contraction Scour

The recommended clear-water contraction scour equation by the HEC No. 18 publication is an equation based on research from Laursen (1963):

1) $$y_2 = \left[\frac{Q_2^2}{C D_m^{2/3} W_2^2}\right]^{3/7}$$

2) $$y_s = y_2 - y_0$$

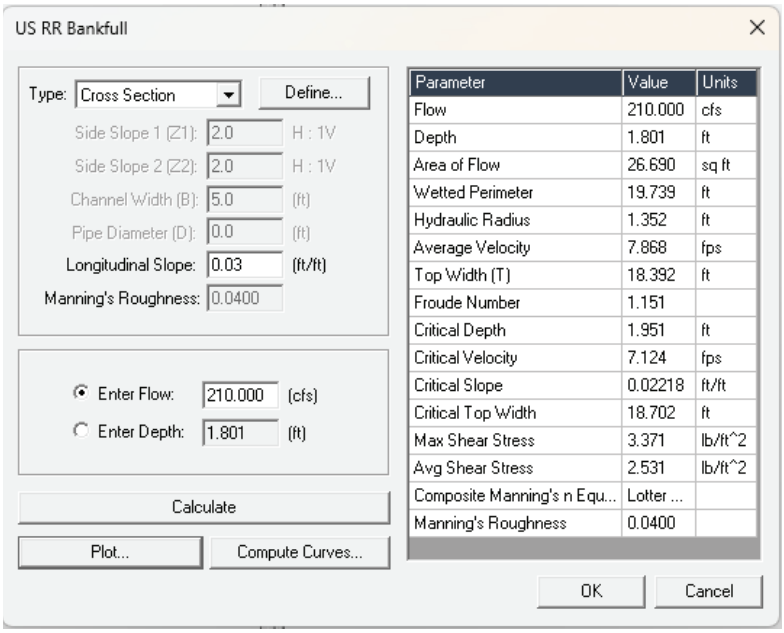
Symbol	Description	Units
D_m	Diameter of the smallest non-transportable particle in the bed material (1.25 D50) in the contracted section	feet (meters)
D_{50}	Median diameter of the bed material	feet (meters)
C	130 for English units (40 for metric)	

Hydraulic Toolbox Channel	Flood Event (% AEP)	Design Discharge (cfs)	Depth (ft)	Velocity (fps)
Bridge Channel	50	210	4.3	4.4
	2	675	7.2	5.9
	1	790	7.7	6.1
Tailwater Channel Outside Bridge	50	210	3.8	3.7
	2	675	6	4.1
	1	790	6.3	4.3
US RR Bankfull	0.4*2 (Regression)	74	1.7	2.9
	0.4*2 (Regression + SNAP)	84	1.9	3
	2 (Regression)	185	2.8	4
	2 (Regression + SNAP)	210	3	4.2
US RR Bankfull 2	0.4*2 (Regression)	74	2.4	2.7
	0.4*2 (Regression + SNAP)	84	2.5	2.9
	2 (Regression)	185	3.4	3.9
	2 (Regression + SNAP)	210	3.6	4
DS RR Bankfull	0.4*2 (Regression)	74	2.1	3.5
	0.4*2 (Regression + SNAP)	84	2.2	3.6
	2 (Regression)	185	3.4	3.8
	2 (Regression + SNAP)	210	3.6	3.9

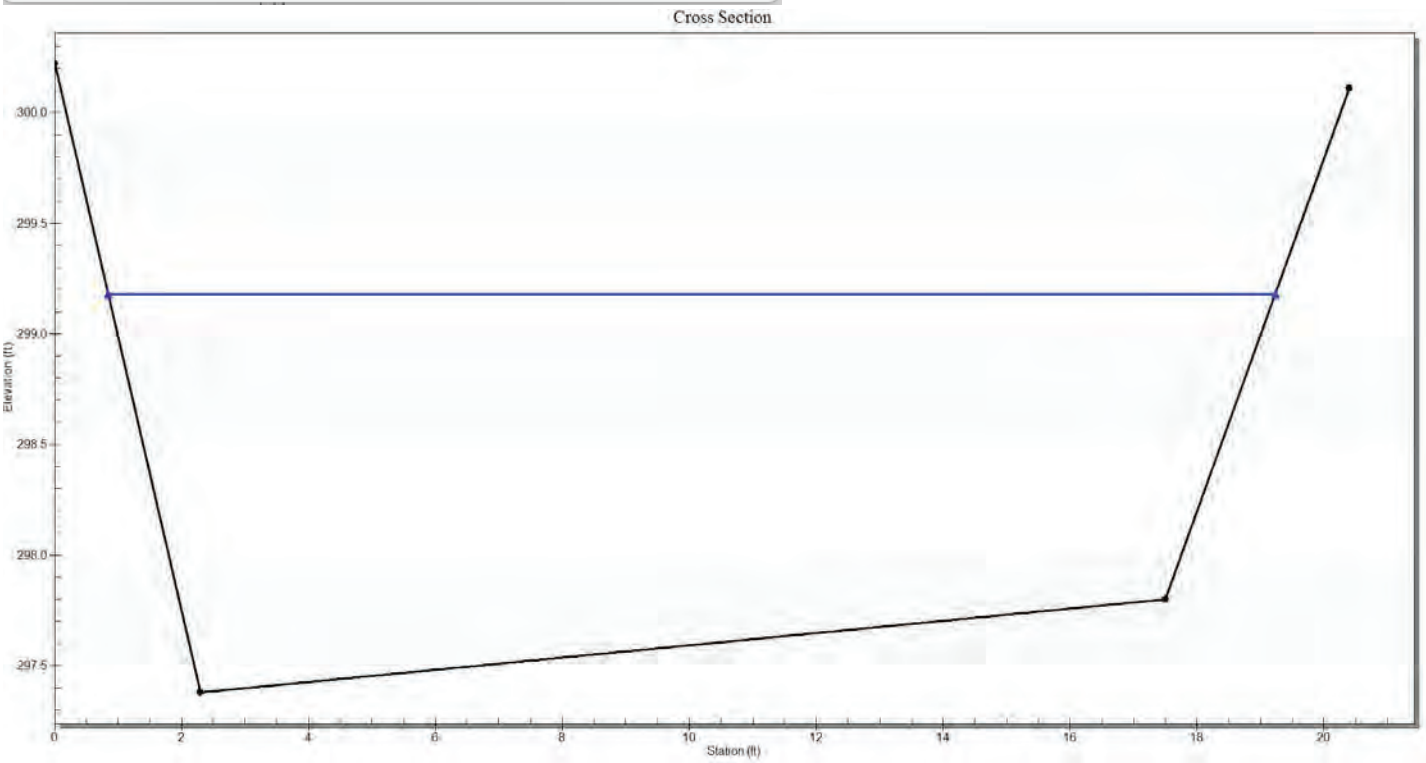
Note: US = upstream; DS = downstream; RR = reference reach; AEP = Annual Exceedance Probability; cfs = cubic feet per second; ft = feet; fps = feet per second.

Appendix D – HY-8 and Hydraulic Toolbox Analyses

Existing Conditions – Upper Tyonek Creek Crossing – Hydraulic Toolbox Analysis of the 2-Year Flow as Compared to Bankfull Discharge (Upstream Reference Reach Head of Riffle at Top, Upstream Reference Reach Bottom of Riffle in Middle, and Downstream Reference Reach Head of Riffle at Bottom)



Parameter	Value	Units
Flow	210.000	cfs
Depth	1.801	ft
Area of Flow	26.690	sq ft
Wetted Perimeter	19.739	ft
Hydraulic Radius	1.352	ft
Average Velocity	7.868	fps
Top Width (T)	18.392	ft
Froude Number	1.151	
Critical Depth	1.951	ft
Critical Velocity	7.124	fps
Critical Slope	0.02218	ft/ft
Critical Top Width	18.702	ft
Max Shear Stress	3.371	lb/ft^2
Avg Shear Stress	2.531	lb/ft^2
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0400	



US RR Bankfull 2

Type: Cross Section — Define...

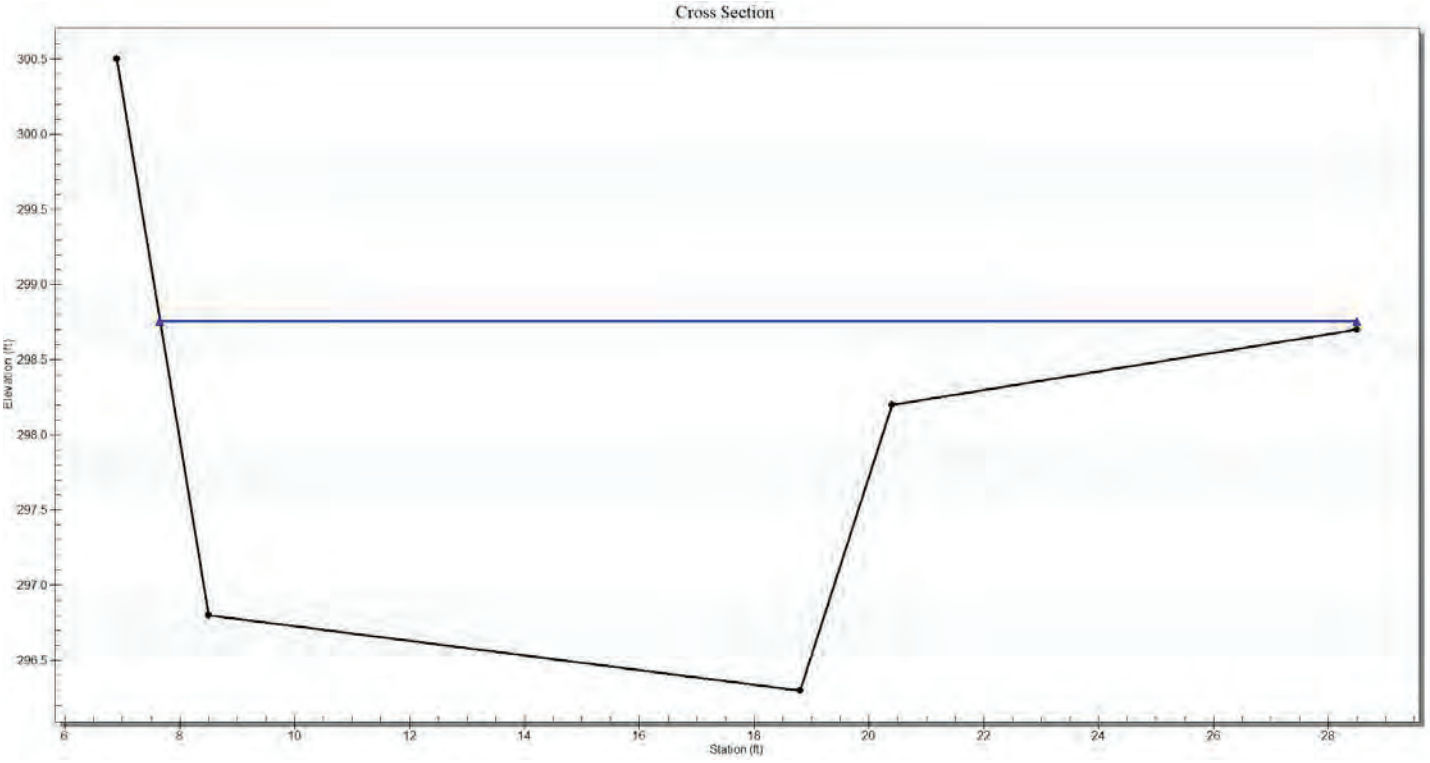
Side Slope 1 (Z1): 2.0 H : 1V
Side Slope 2 (Z2): 2.0 H : 1V
Channel Width (B): 5.0 (ft)
Pipe Diameter (D): 0.0 (ft)
Longitudinal Slope: 0.03 (ft/ft)
Manning's Roughness: 0.0399

Enter Flow: 210.000 (cfs)
Enter Depth: 2.454 (ft)

Calculate
Plot... Compute Curves...

Parameter	Value	Units
Flow	210.000	cfs
Depth	2.454	ft
Area of Flow	28.393	sq ft
Wetted Perimeter	23.094	ft
Hydraulic Radius	1.229	ft
Average Velocity	7.396	fps
Top Width (T)	20.845	ft
Froude Number	1.117	
Critical Depth	2.559	ft
Critical Velocity	6.866	fps
Critical Slope	0.02357	ft/ft
Critical Top Width	20.890	ft
Max Shear Stress	4.594	lb/ft^2
Avg Shear Stress	2.302	lb/ft^2
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0399	

OK Cancel



DS RR Bankfull

Type: Cross Section — Define...

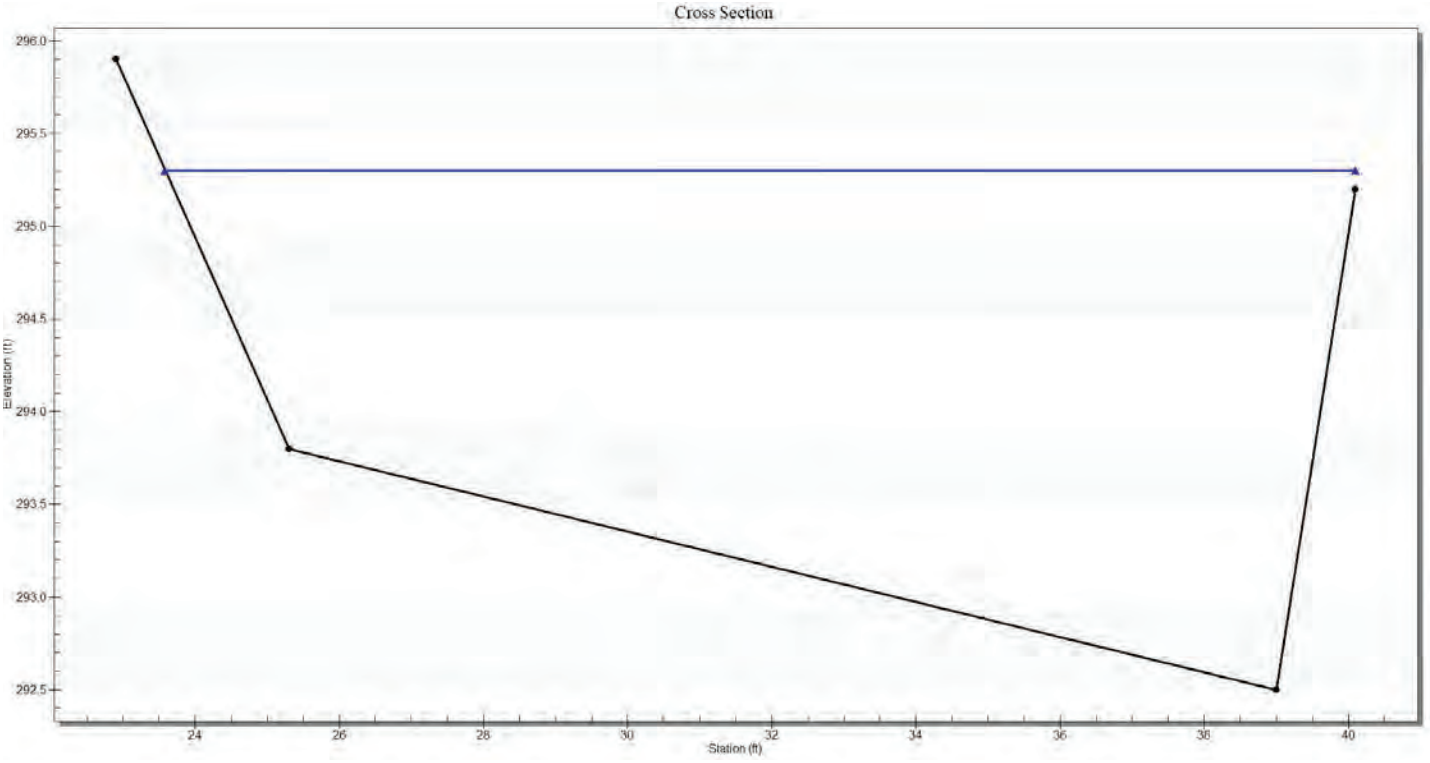
Side Slope 1 (Z1):	2.0	H : 1V
Side Slope 2 (Z2):	2.0	H : 1V
Channel Width (B):	5.0	(ft)
Pipe Diameter (D):	0.0	(ft)
Longitudinal Slope:	0.015	(ft/ft)
Manning's Roughness:	0.0399	

Enter Flow: 210.000 (cfs)
Enter Depth: 2.800 (ft)

Calculate
Plot... Compute Curves...

Parameter	Value	Units
Flow	210.000	cfs
Depth	2.800	ft
Area of Flow	32.331	sq ft
Wetted Perimeter	19.054	ft
Hydraulic Radius	1.697	ft
Average Velocity	6.495	fps
Top Width (T)	16.514	ft
Froude Number	0.818	
Critical Depth	2.539	ft
Critical Velocity	7.481	fps
Critical Slope	0.02306	ft/ft
Critical Top Width	16.151	ft
Max Shear Stress	2.621	lb/ft^2
Avg Shear Stress	1.588	lb/ft^2
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0399	

OK Cancel



Existing Conditions – Upper Tyonek Creek Crossing

Parameter	Value
DISCHARGE DATA	
Discharge Method	User-Defined

XY Series Editor

Number	Names	Flow (cfs)
1	40% of 50% AEP	85.0
2	50% AEP	210.0
3	2% AEP	675.0
4	1% AEP	790.0
5	168% of 1% AEP	1325.0

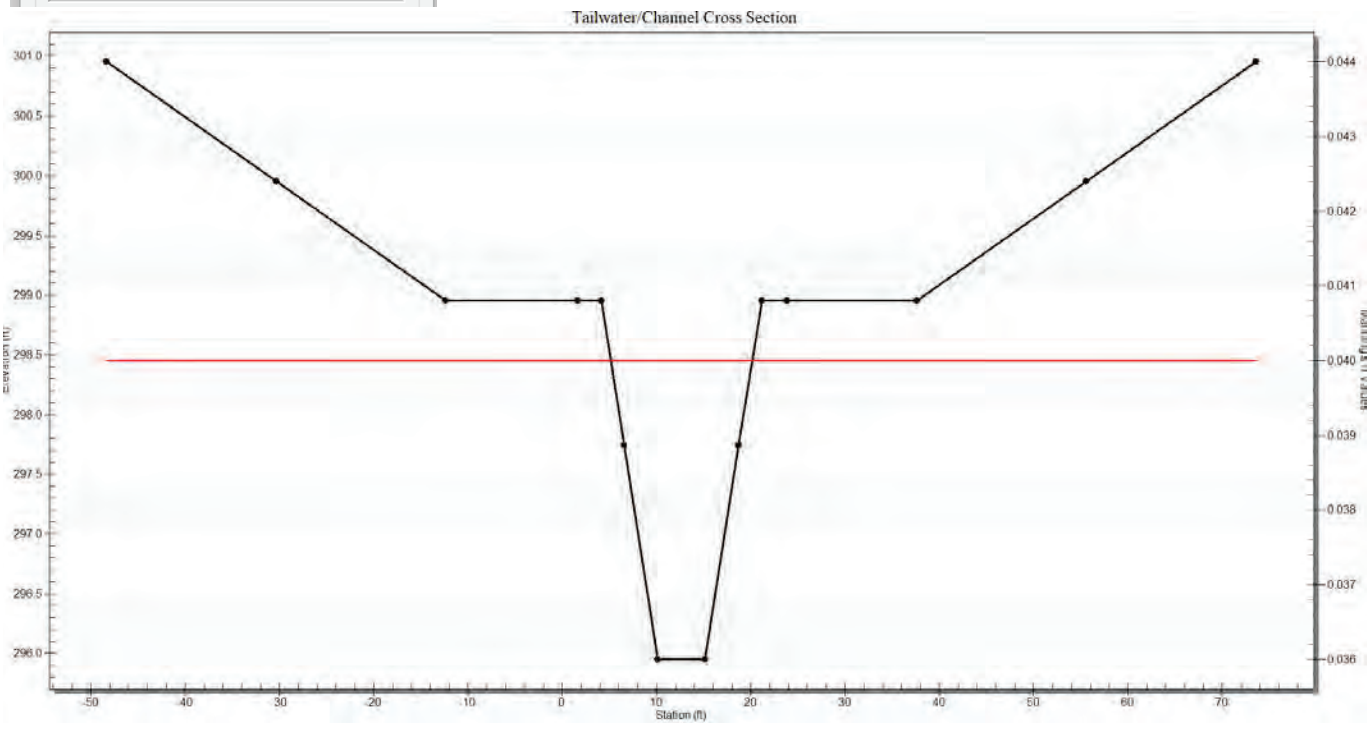
Channel

Slope of Channel: 0.0246 ft/ft

Number of Cross-sec Points: 14

Irregular Channel Cross-Section

No.	Station (ft)	Elevation (ft)	Manning n
1	-48.346	300.953	0.0400
2	-30.346	299.953	0.0400
3	-12.346	298.953	0.0400
4	1.646	298.953	0.0400
5	4.157	298.953	0.0400
6	6.585	297.739	0.0400
7	10.162	295.950	0.0400
8	15.162	295.950	0.0400
9	18.728	297.739	0.0400
10	21.157	298.953	0.0400
11	23.851	298.953	0.0400
12	37.611	298.953	0.0400
13	55.611	299.953	0.0400
14	73.611	300.953	



Existing North Culvert – HY-8 Inputs

Culvert Properties

North Culvert
South Culvert

Add Culvert
Duplicate Culvert
Alternative Des
Delete Culvert

Parameter	Value	Units
CULVERT DATA		
Name	North Culvert	
Shape	User Defined	
Material	Corrugated Metal Riveted or Welded	
Coordinates	Define...	
Span	9.300	ft
Rise	7.040	ft
Embedment De...	0.000	in
Manning's n (Top/Sid...	0.030	
Manning's n (Bottom)	0.030	
Culvert Type	Straight	
Inlet Configurat...	Thin Edge Projecting (Ke=0.9)	
Inlet Depression?	No	
SITE DATA		
Site Data Input Option	Culvert Invert Data	
Inlet Station	0.000	ft
Inlet Elevation	296.210	ft
Outlet Station	59.970	ft
Outlet Elevation	296.020	ft
Number of Barrels	1	
Computed Culvert Slope	0.003168	ft/ft

Culvert Properties

North Culvert
South Culvert

Add Culvert
Duplicate Culvert
Alternativ
Delete Culvert

Parameter	Value
CULVERT DATA	
Name	North Culvert
Shape	User Defined
Material	Corrugated Metal Riveted or Welded

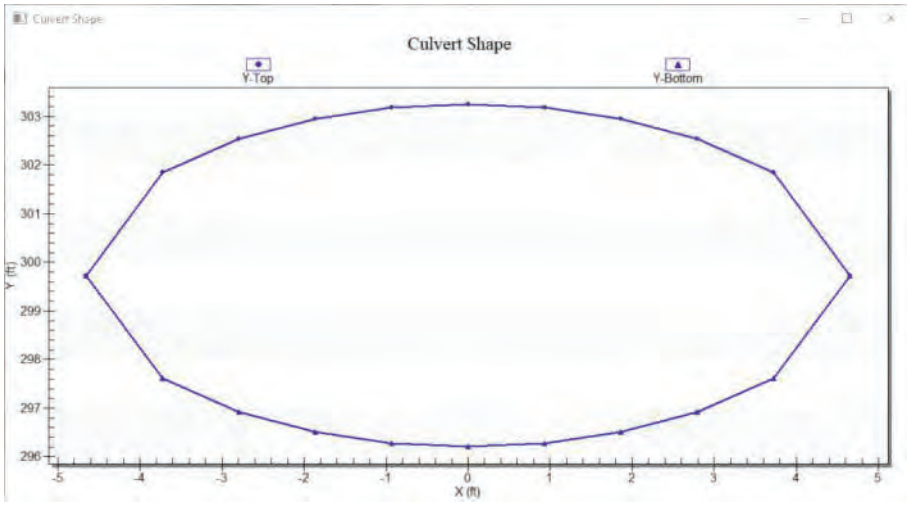
User Defined Culvert Shape

Number of X points: 11

Each X has a Y-top and

Irregular Culvert Cross

Number	X (ft)	Y-Top (ft)	Y-Bottom (ft)
1	-4.6500	299.7300	299.7300
2	-3.7200	301.8420	297.6180
3	-2.7900	302.5460	296.9140
4	-1.8600	302.9561	296.5039
5	-0.9300	303.1789	296.2811
6	0.0000	303.2500	296.2100
7	0.9300	303.1789	296.2811
8	1.8600	302.9561	296.5039
9	2.7900	302.5460	296.9140
10	3.7200	301.8420	297.6180
11	4.6500	299.7300	299.7300



Existing South Culvert – HY-8 Inputs

Culvert Properties

North Culvert
South Culvert

Add Culvert
Duplicate Culvert
Alternative Design
Delete Culvert

Parameter	Value	Units
CULVERT DATA		
Name	South Culvert	
Shape	User Defined	
Material	Corrugated Metal Riveted or Welded	
Coordinates	Define...	
Span	8.970	ft
Rise	7.100	ft
Embedment Depth	0.000	in
Manning's n (Top/Sides)	0.030	
Manning's n (Bottom)	0.030	
Culvert Type	Straight	
Inlet Configuration	Thin Edge Projecting (Ke=0.9)	
Inlet Depression?	No	
SITE DATA		
Site Data Input Option	Culvert Invert Data	
Inlet Station	0.000	ft
Inlet Elevation	296.000	ft
Outlet Station	60.020	ft
Outlet Elevation	295.950	ft
Number of Barrels	1	
Computed Culvert Slope	0.000833	ft/ft

CULVERT DATA
Name: South Culvert

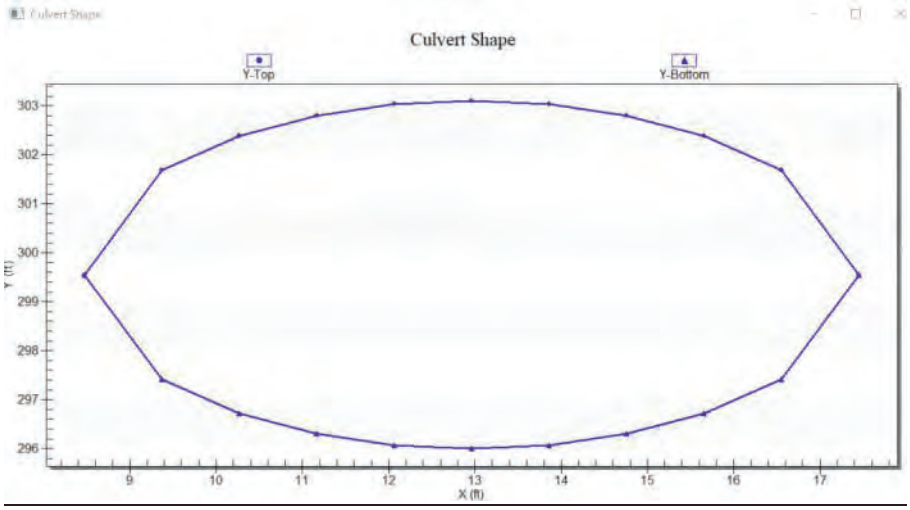
User Defined Culvert Shape

Number of X points: 11

Each X has a Y-top and

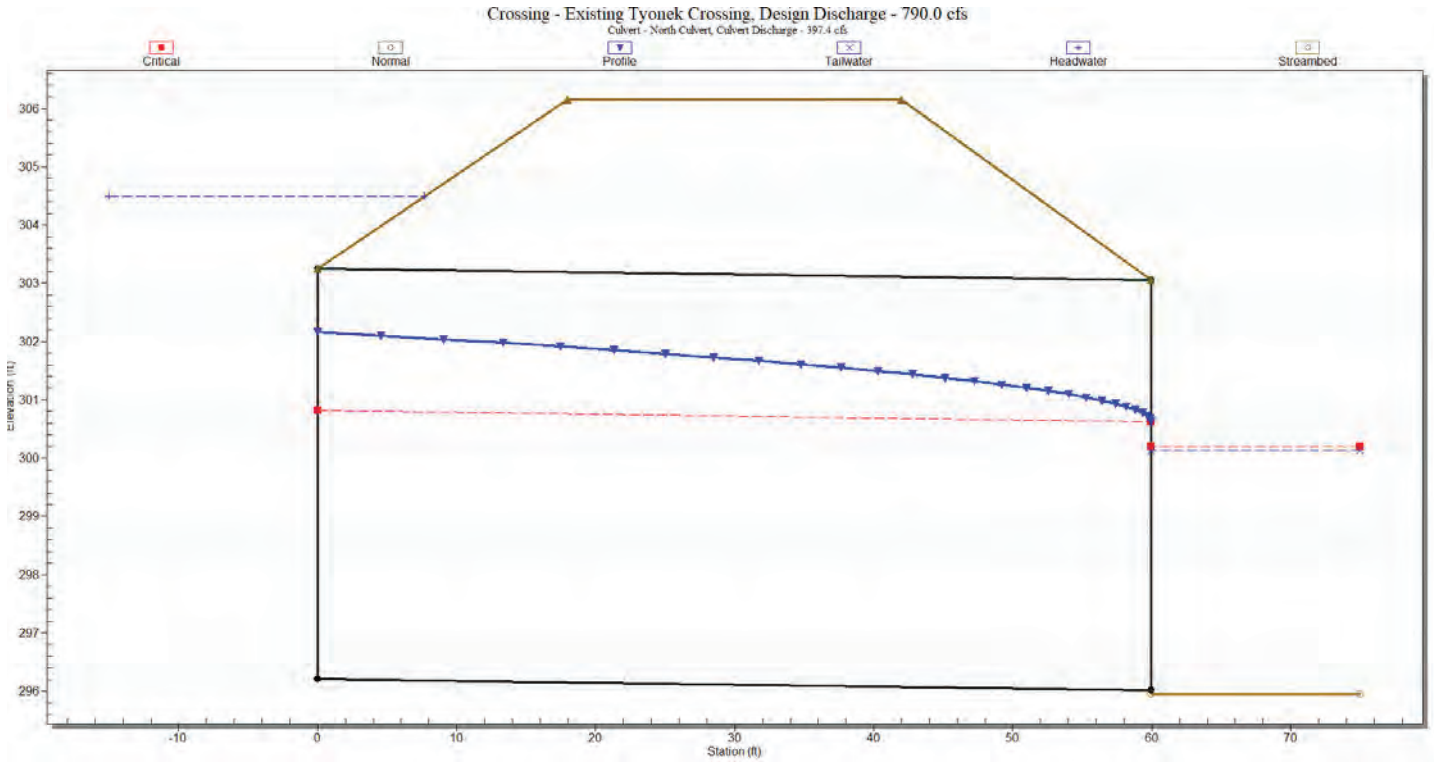
Irregular Culvert Cross

Number	X (ft)	Y-Top (ft)	Y-Bottom (ft)
1	8.4775	299.5500	299.5500
2	9.3745	301.6800	297.4200
3	10.2715	302.3900	296.7100
4	11.1685	302.8036	296.2964
5	12.0655	303.0283	296.0717
6	12.9625	303.1000	296.0000
7	13.8595	303.0283	296.0717
8	14.7565	302.8036	296.2964
9	15.6535	302.3900	296.7100
10	16.5505	301.6800	297.4200
11	17.4475	299.5500	299.5500

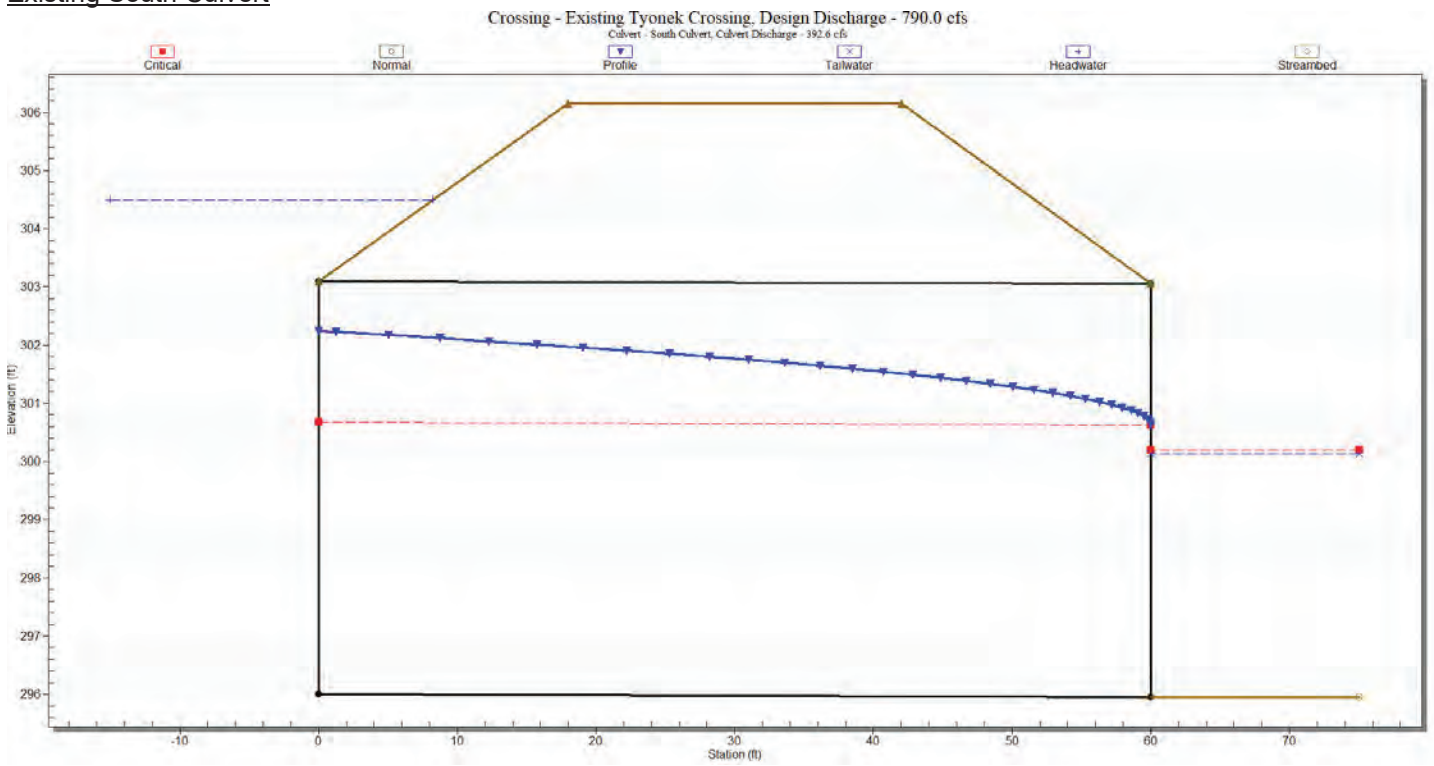


Existing Conditions – Profiles at 1 Percent AEP

Existing North Culvert



Existing South Culvert



Proposed Conditions – Upper Tyonek Creek Crossing – HY-8 Inputs

XY Series Editor

Number	Names	Flow (cfs)
1	40% of 50% AEP	84.0
2	50% AEP	210.0
3	2% AEP	675.0
4	1% AEP	790.0

Crossing Data - Proposed Bridge (1/26/2026) (with reconstructed tailwater)

Crossing Properties

Name: with reconstructed tailwater)

Parameter	Value	Units
DISCHARGE DATA		
Discharge Method	User-Defined	
Discharge List	Define...	
TAILWATER DATA		
Channel Type	Irregular Channel	
Irregular Channel	Define...	
Rating Curve	View...	
ROADWAY DATA		
Roadway Profile Shape	Constant Roadway Elevation	
First Roadway Station	0.000	ft
Crest Length	50.000	ft
Crest Elevation	307.440	ft
Roadway Surface	Gravel	
Top Width	14.000	ft

Culvert Properties

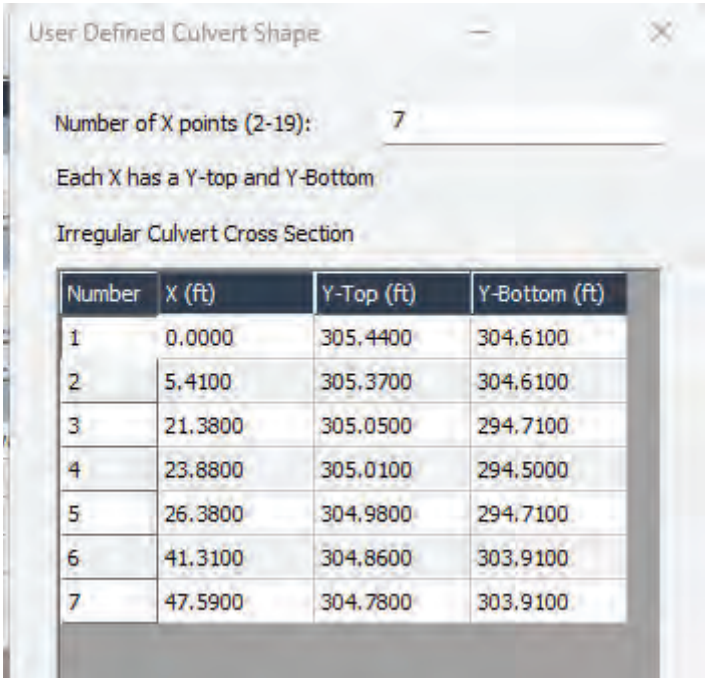
Proposed Bridge (1/26/2025)

Add Culvert | Duplicate Culvert | Alternative Designs | Delete Culvert

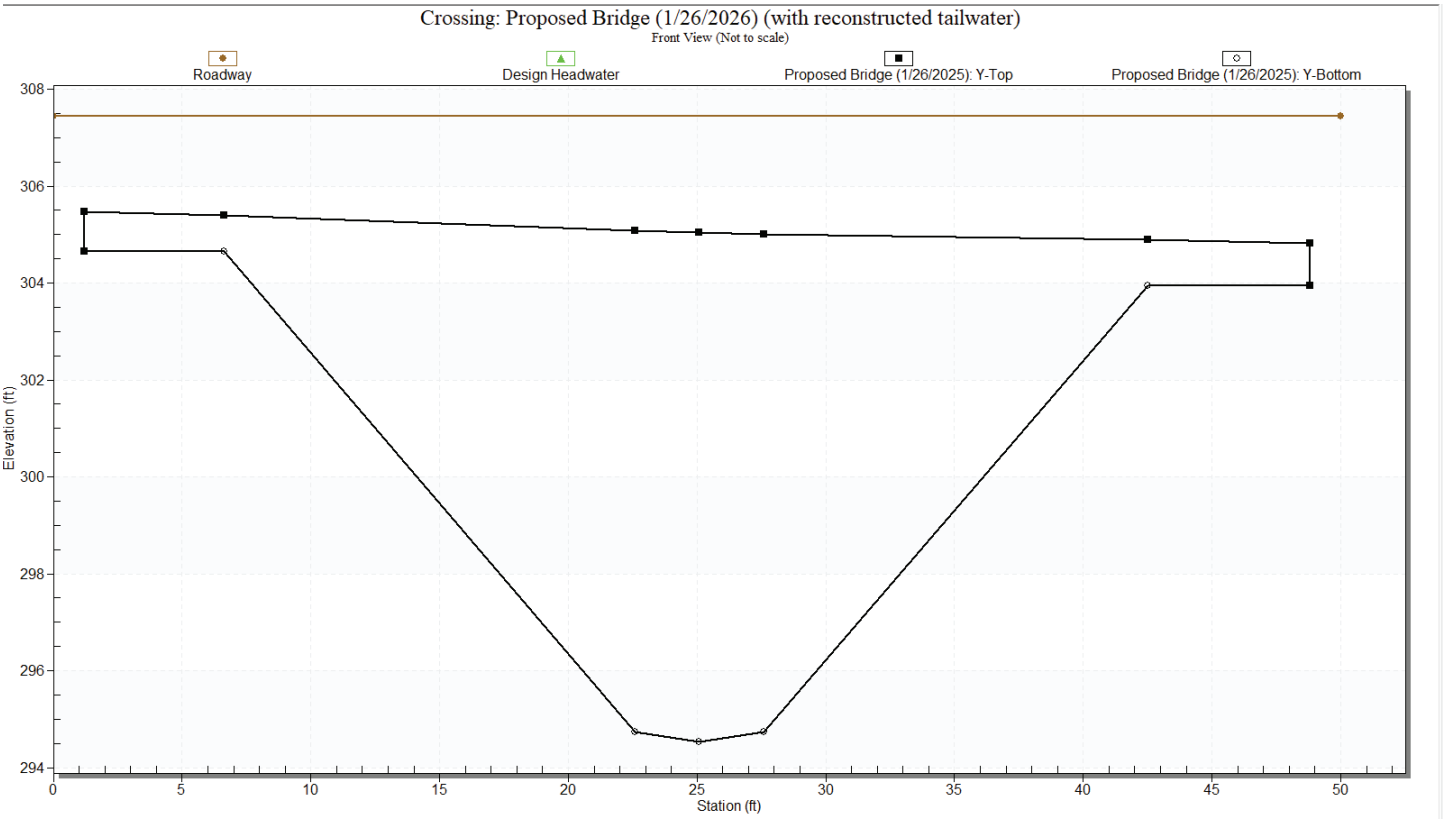
Parameter	Value	Units
CULVERT DATA		
Name	Proposed Bridge (1/26/2025)	
Shape	User Defined	
Material	Corrugated Metal Riveted or Welded	
Coordinates	Define...	
Span	47.590	ft
Rise	10.940	ft
Embedment Depth	0.000	in
Manning's n (Top/Sides)	0.030	
Manning's n (Bottom)	0.040	
Culvert Type	Straight	
Inlet Configuration	Thin Edge Projecting (Ke=0.9)	
Inlet Depression?	No	
SITE DATA		
Site Data Input Option	Culvert Invert Data	
Inlet Station	0.000	ft
Inlet Elevation	294.534	ft
Outlet Station	15.000	ft
Outlet Elevation	294.466	ft
Number of Barrels	1	
Computed Culvert Slope	0.004533	ft/ft

Help | Click on any icon for help on a specific topic | Low Flow | AOP | Energy Dissipation | Analyze Crossing | OK | Cancel

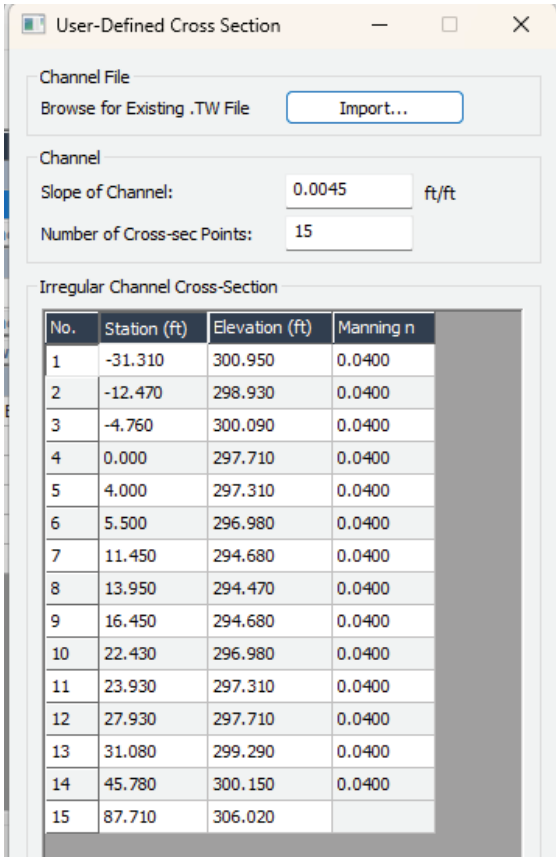
Proposed Conditions – Upper Tyonek Creek Crossing – HY-8 Inputs Continued (Bridge Geometry)



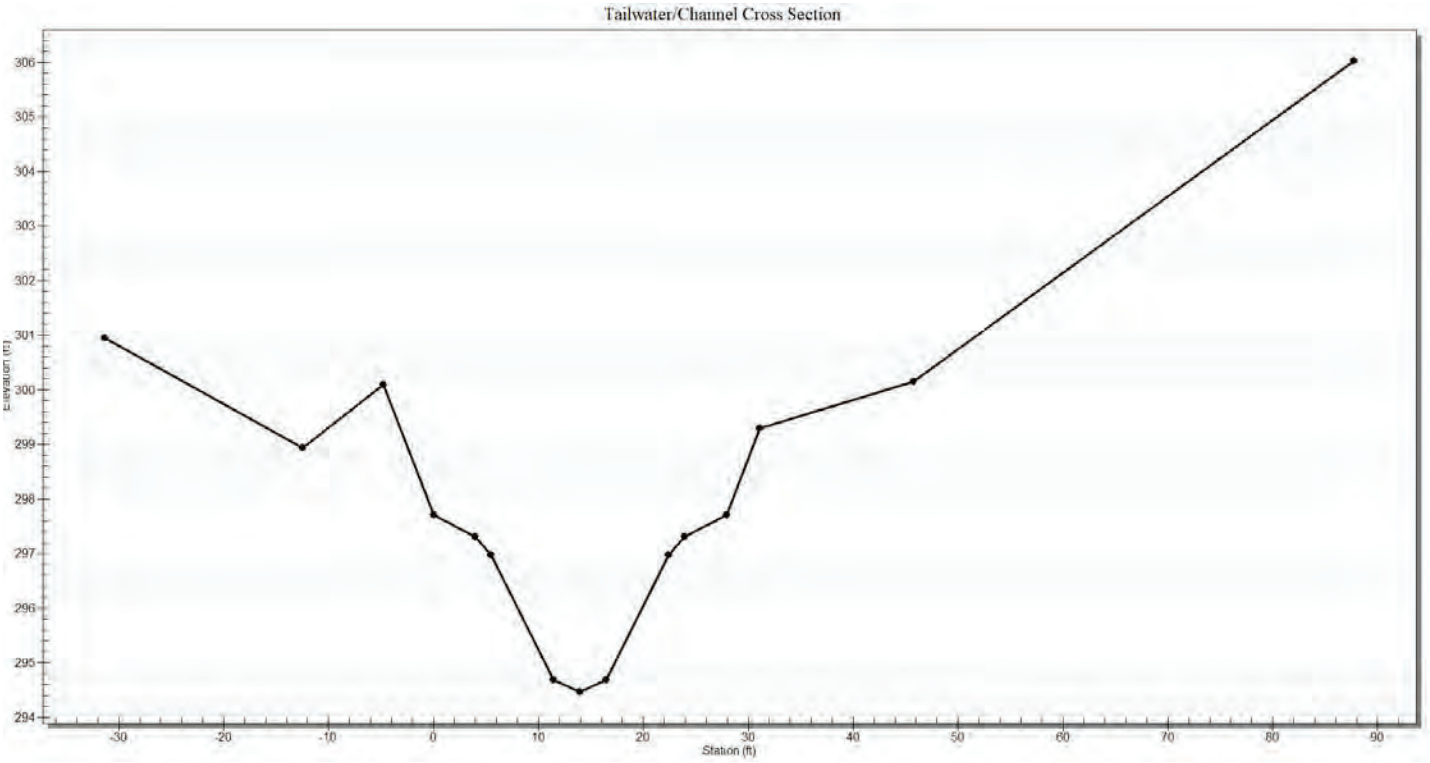
Number	X (ft)	Y-Top (ft)	Y-Bottom (ft)
1	0.0000	305.4400	304.6100
2	5.4100	305.3700	304.6100
3	21.3800	305.0500	294.7100
4	23.8800	305.0100	294.5000
5	26.3800	304.9800	294.7100
6	41.3100	304.8600	303.9100
7	47.5900	304.7800	303.9100



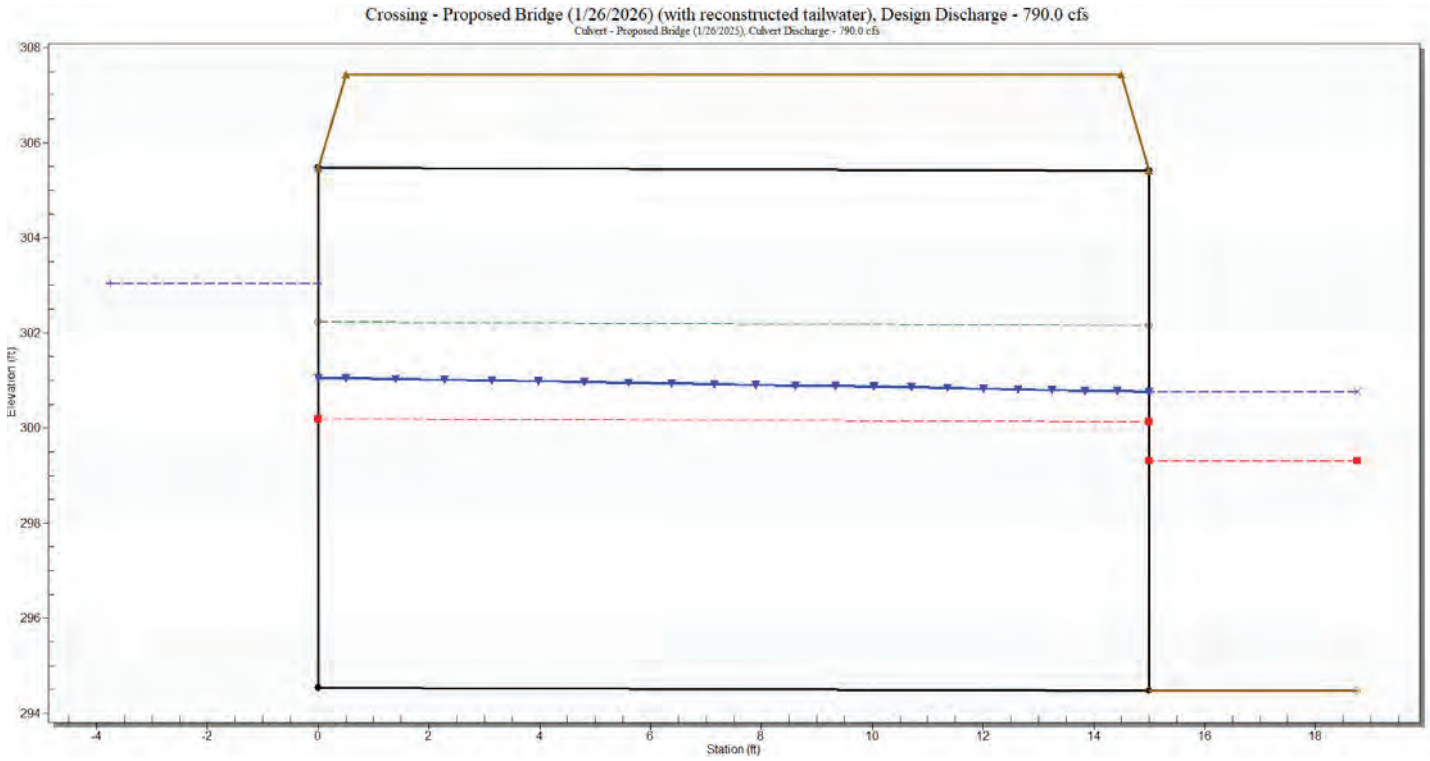
Proposed Conditions – Upper Tyonek Creek Crossing – HY-8 Inputs Continued (Tailwater Geometry = Reconstructed Channel Typical Geometry Tied-In to Existing Ground)



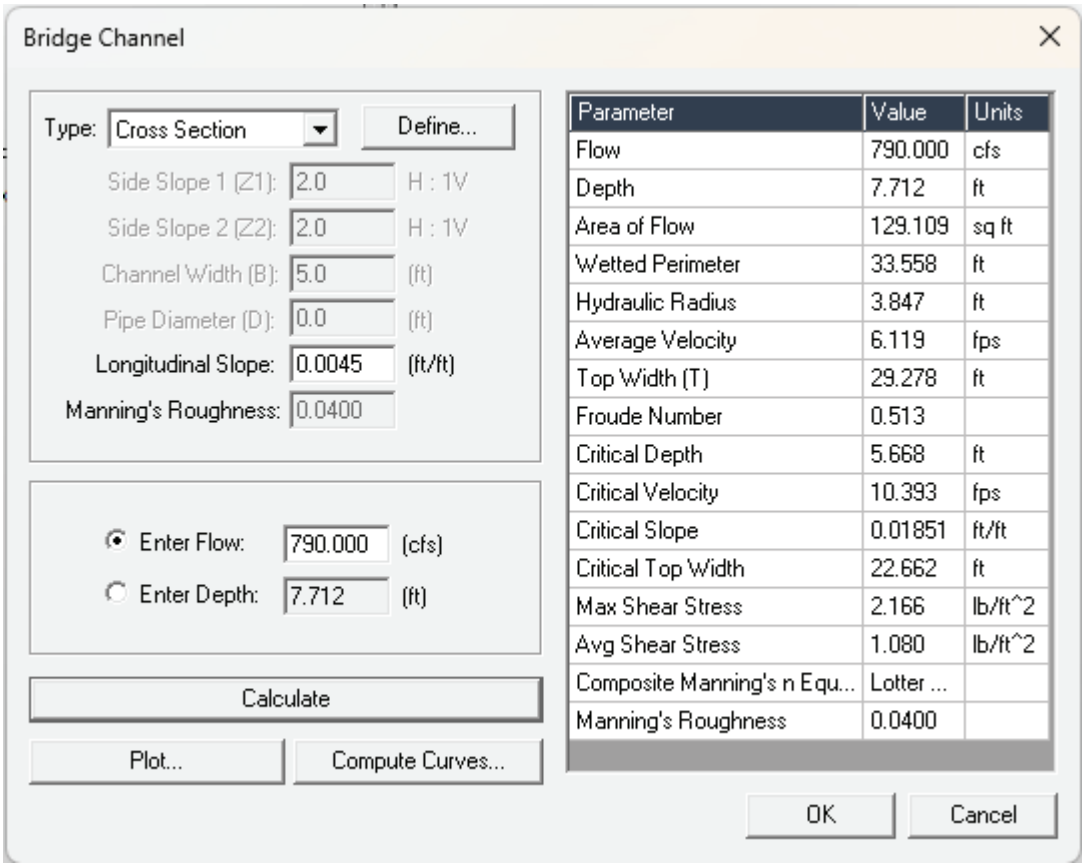
No.	Station (ft)	Elevation (ft)	Manning n
1	-31.310	300.950	0.0400
2	-12.470	298.930	0.0400
3	-4.760	300.090	0.0400
4	0.000	297.710	0.0400
5	4.000	297.310	0.0400
6	5.500	296.980	0.0400
7	11.450	294.680	0.0400
8	13.950	294.470	0.0400
9	16.450	294.680	0.0400
10	22.430	296.980	0.0400
11	23.930	297.310	0.0400
12	27.930	297.710	0.0400
13	31.080	299.290	0.0400
14	45.780	300.150	0.0400
15	87.710	306.020	



Proposed Conditions – Profile at 1 Percent AEP



Proposed Conditions – Upper Tyonek Creek Crossing – Hydraulic Toolbox Analysis



Parameter	Value	Units
Flow	790.000	cfs
Depth	7.712	ft
Area of Flow	129.109	sq ft
Wetted Perimeter	33.558	ft
Hydraulic Radius	3.847	ft
Average Velocity	6.119	fps
Top Width (T)	29.278	ft
Froude Number	0.513	
Critical Depth	5.668	ft
Critical Velocity	10.393	fps
Critical Slope	0.01851	ft/ft
Critical Top Width	22.662	ft
Max Shear Stress	2.166	lb/ft^2
Avg Shear Stress	1.080	lb/ft^2
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0400	

User-Defined Cross Section

Channel File

Browse for Existing .TW File — Import...

Channel

Slope of Channel: 0.0045 ft/ft

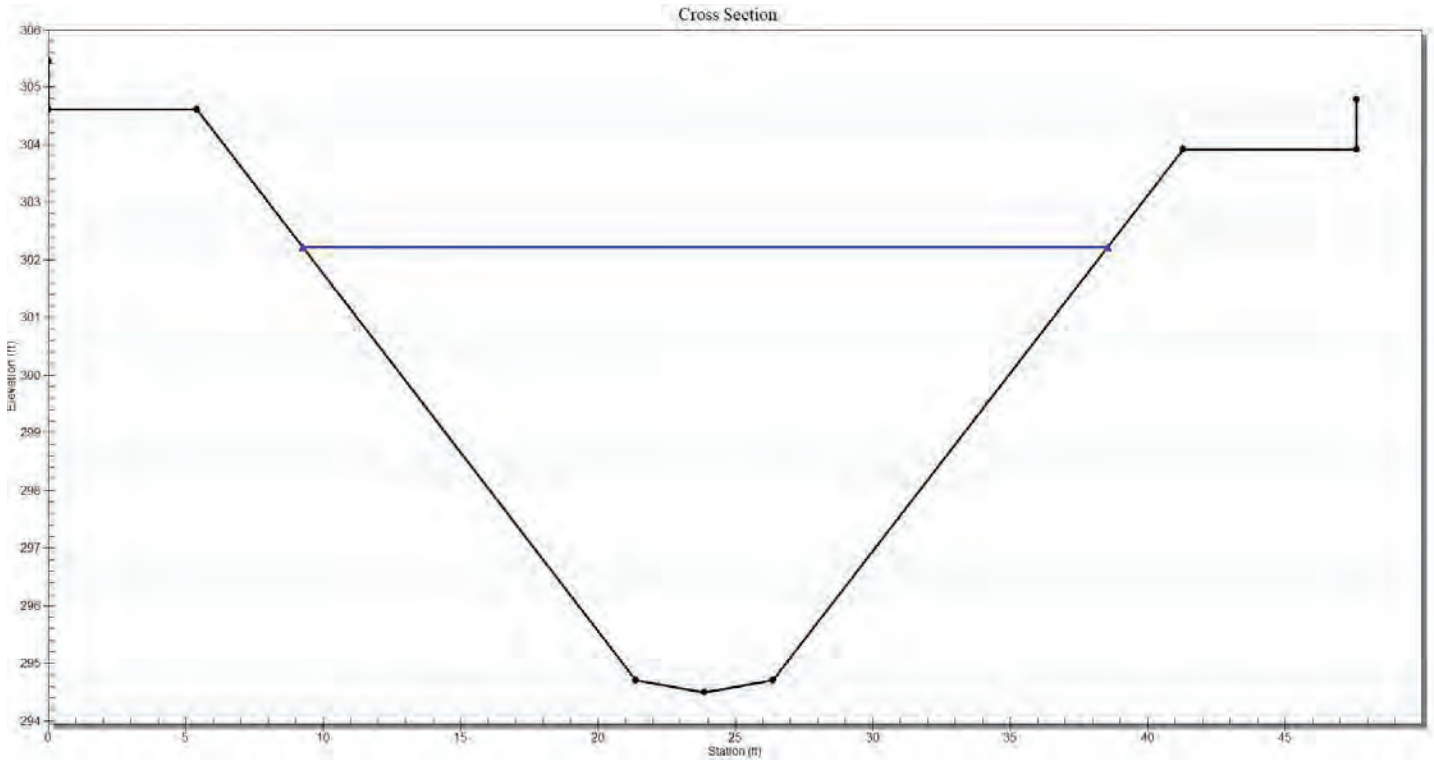
Number of Cross-sec Points: 9

Irregular Channel Cross-Section

No.	Station (ft)	Elevation (ft)	Manning n
1	0.000	305.440	0.0400
2	0.000	304.610	0.0400
3	5.410	304.610	0.0400
4	21.380	294.710	0.0400
5	23.880	294.500	0.0400
6	26.380	294.710	0.0400
7	41.310	303.910	0.0400
8	47.590	303.910	0.0400
9	47.590	304.780	

Plot ☑ Plot Manning's n values

OK Cancel



Bridge Channel Geometry

X	Ytop	Ybot
0	305.44	304.61
5.41	305.37	304.61
21.38	305.05	294.71
23.88	305.01	294.5
26.38	304.98	294.71
41.31	304.86	303.91
47.59	304.78	303.91

Reconstructed Tailwater Channel outside of Bridge Geometry

X	Y
-31.31	300.95
-12.47	298.93
-4.76	300.09
0	297.71
4	297.31
5.5	296.98
11.45	294.68
13.95	294.47
16.45	294.68
22.43	296.98
23.93	297.31
27.93	297.71
31.08	299.29
45.78	300.15
87.71	306.02

Bridge Channel Geometry (HYD)

X	Ybot
0	305.44
0	304.61
5.41	304.61
21.38	294.71
23.88	294.5
26.38	294.71
41.31	303.91
47.59	303.91
47.59	304.78

HY-8 Culvert Analysis Report

Table 1 - Project Headwater Table

Crossing Name	Culvert Name	Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	HW / D (ft)	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Outlet Velocity (ft/s)
Existing Tyonek Crossing	North Culvert	168% of 1% AEP	1325.00	566.62	307.43	10.86	11.217	1.59	7.04	5.58	5.58	13.46
Existing Tyonek Crossing	South Culvert	168% of 1% AEP	1325.00	551.28	307.43	10.91	11.427	1.61	7.10	5.61	5.61	13.49
Proposed Bridge (1/26/2026) (with reconstructed tailwater)	Proposed Bridge (1/26/2025)	1% AEP	790.00	790.00	303.03	5.35	8.499	0.78	7.69	5.67	6.29	8.70

Crossing Discharge Data

Discharge Selection Method: User Defined

Table 2 - Summary of Culvert Flows at crossing: Existing Tyonek Crossing

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	North Culvert Discharge (cfs)	South Culvert Discharge (cfs)	Roadway Discharge (cfs)	Iterations
298.51	40% of 50% AEP	85.00	40.72	44.29	0.00	7
299.97	50% AEP	210.00	103.05	106.95	0.00	5
303.65	2% AEP	675.00	338.36	336.64	0.00	6
304.49	1% AEP	790.00	397.39	392.62	0.00	3
307.43	168% of 1% AEP	1325.00	566.62	551.28	207.09	6
306.15	Overtopping	995.15	503.96	491.19	0.00	Overtopping

Rating Curve Plot for crossing: Existing Tyonek Crossing

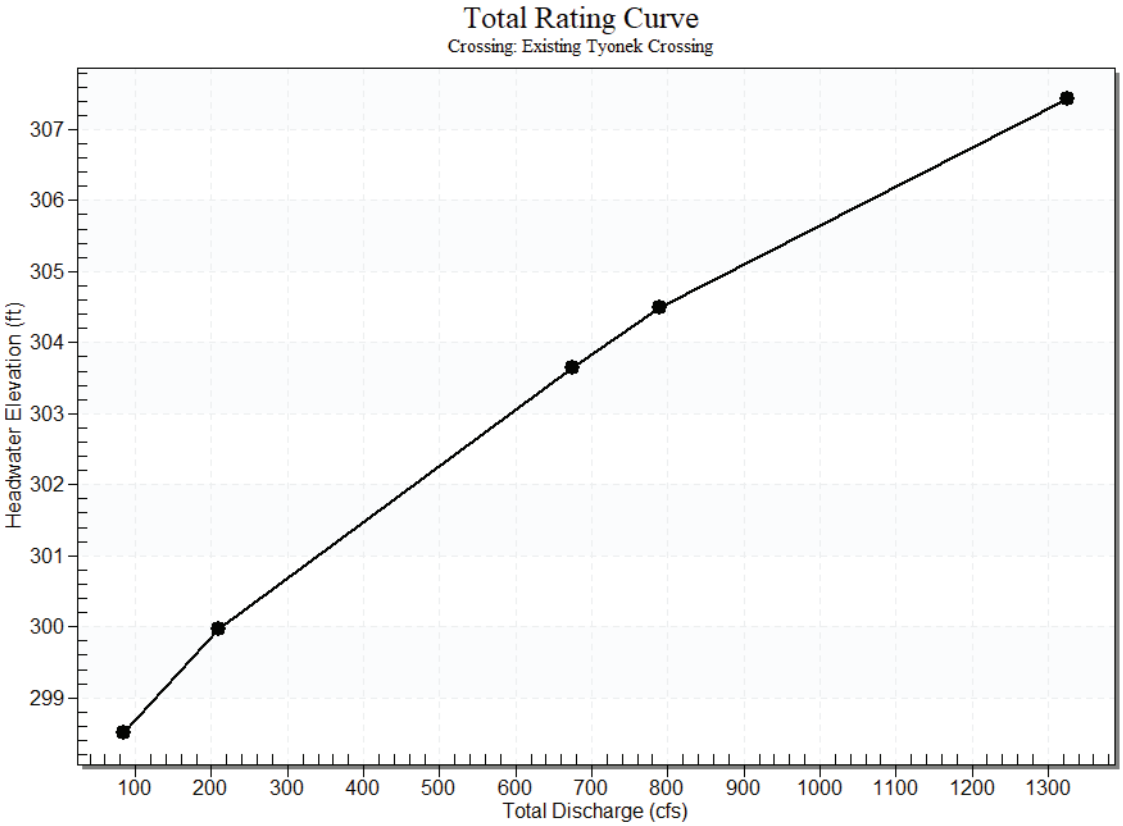


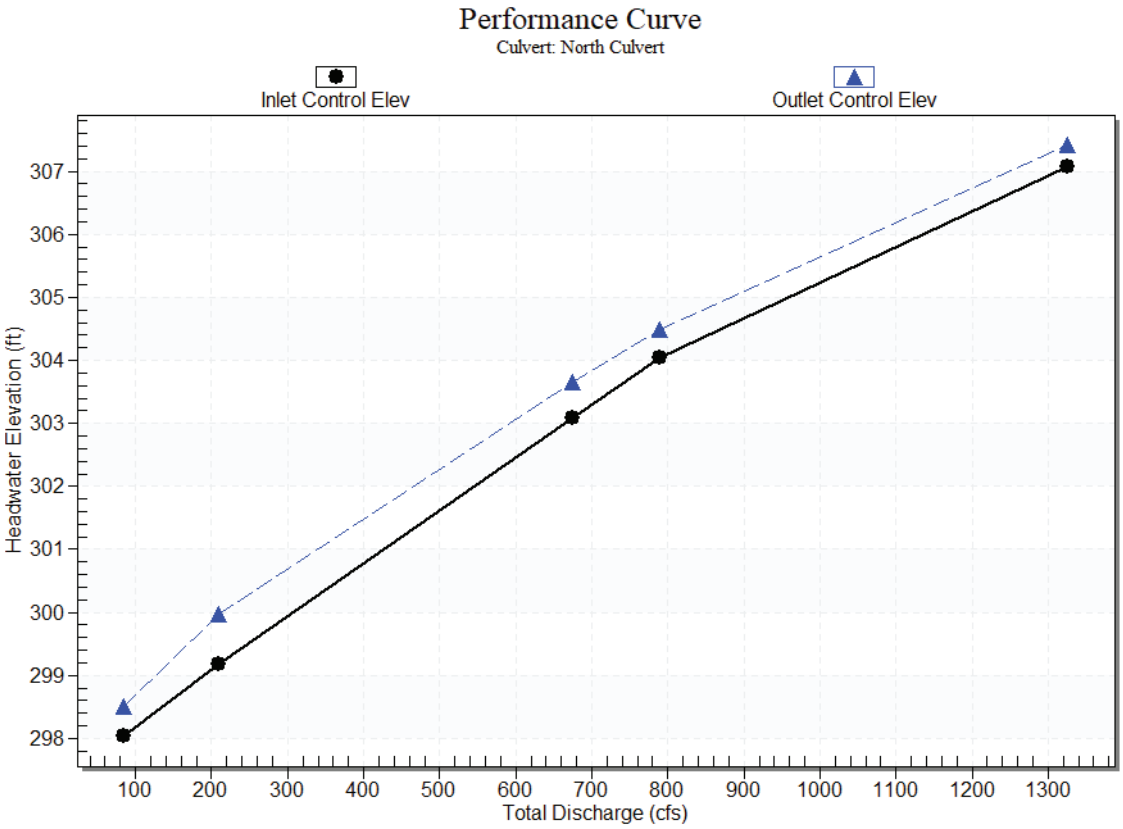
Table 3 - Culvert Summary Table: North Culvert

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	HW / D (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
40% of 50% AEP	85.00	40.72	298.51	1.82	2.303	0.33	3-M2t	2.07	1.42	1.58	1.65	4.82	6.23
50% AEP	210.00	103.05	299.97	2.97	3.760	0.53	3-M2t	3.42	2.27	2.53	2.60	6.42	7.95
2% AEP	675.00	338.36	303.65	6.89	7.440	1.06	7-M2c	7.04	4.24	4.24	4.04	10.79	6.48
1% AEP	790.00	397.39	304.49	7.83	8.279	1.18	7-M2c	7.04	4.61	4.61	4.18	11.53	6.75
168% of 1% AEP	1325.00	566.62	307.43	10.86	11.217	1.59	7-M2c	7.04	5.58	5.58	4.72	13.46	7.70

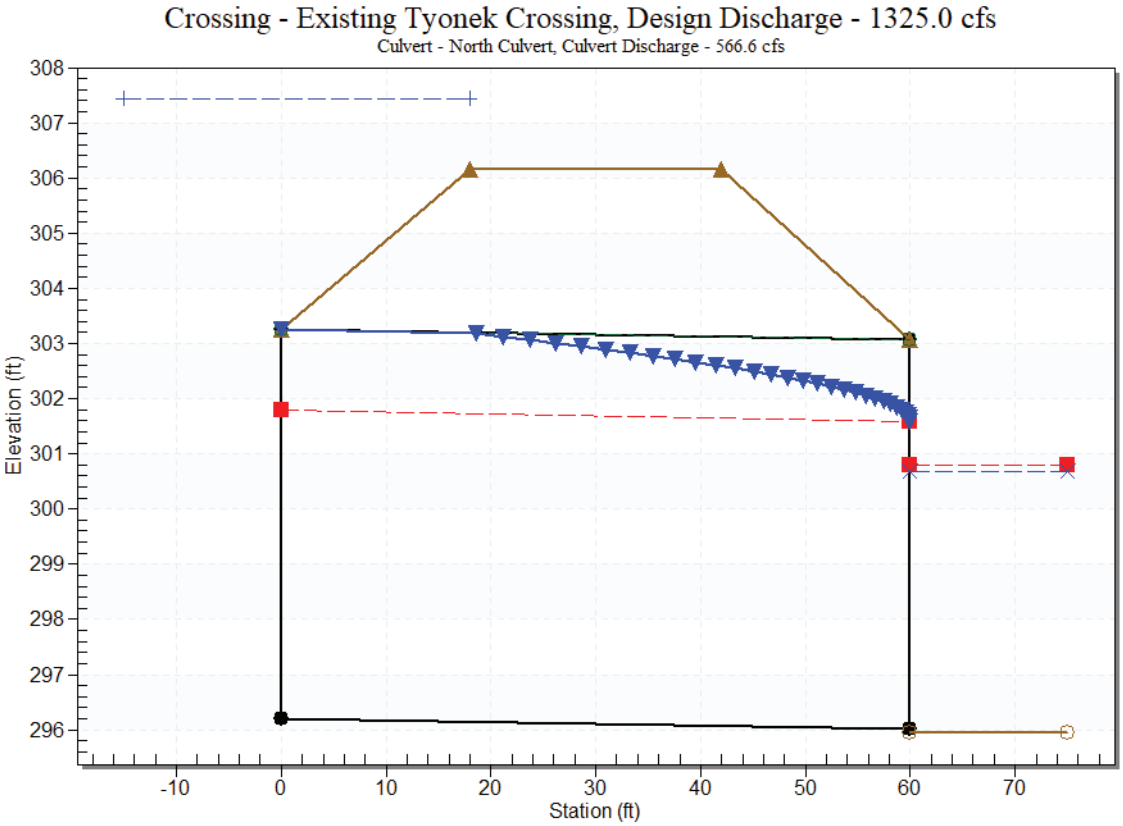
Culvert Barrel Data

Culvert Barrel Type: Straight Culvert
Inlet Elevation(invert): 296.21 ft
Outlet Elevation (invert): 296.02 ft
Culvert Length: 59.97 ft
Culvert Slope: 0.00 ft/ft

Culvert Performance Curve Plot: North Culvert



Water Surface Profile Plot for Culvert: North Culvert



Site Data - North Culvert

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 296.21 ft
Outlet Station: 59.97 ft
Outlet Elevation: 296.02 ft
Number of Barrels: 1

Culvert Data Summary - North Culvert

Barrel Shape: User Defined
Barrel Span: 9.30 ft
Barrel Rise: 7.04 ft
Barrel Material: Corrugated Metal Riveted or Welded
Embedment: 0.00 in
Barrel Manning's n: 0.0300 (top and sides)
Manning's n: 0.0300 (bottom)
Culvert Type: Straight
Inlet Configuration: Thin Edge Projecting
Inlet Depression: None

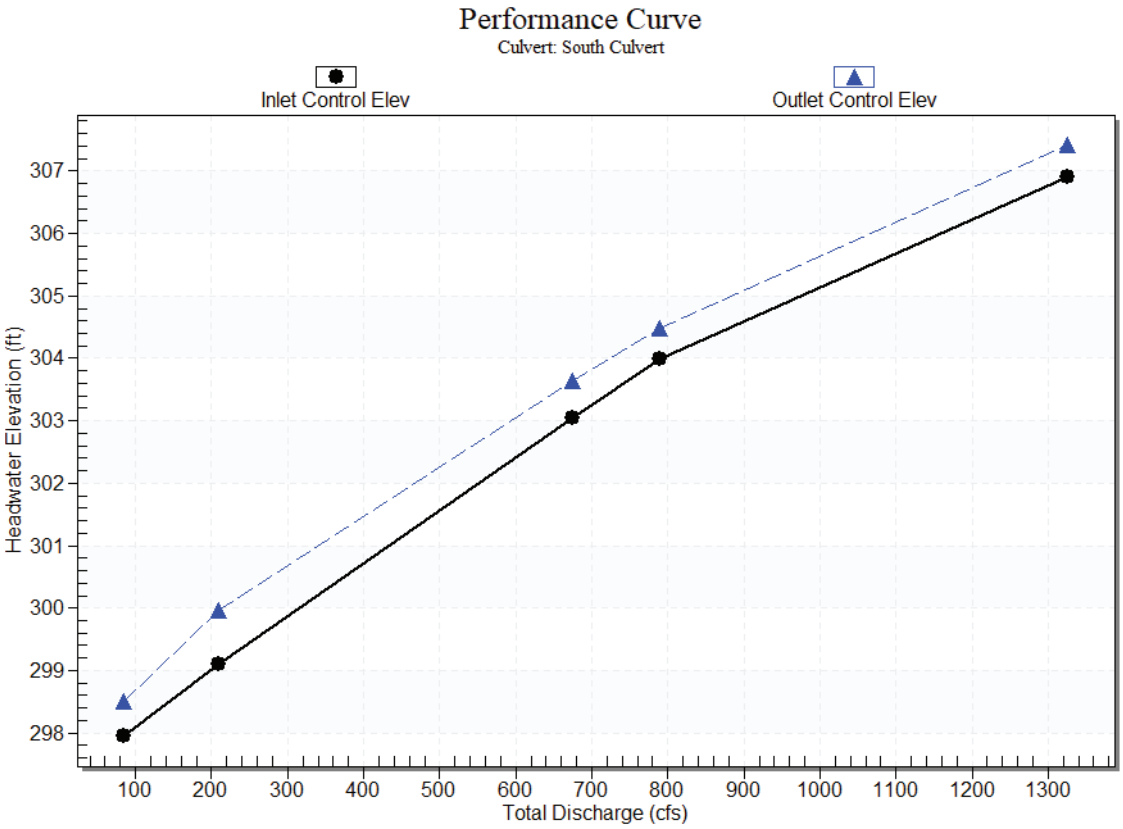
Table 4 - Culvert Summary Table: South Culvert

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	HW / D (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
40% of 50% AEP	85.00	44.29	298.51	1.94	2.513	0.35	3-M2t	3.19	1.51	1.65	1.65	5.13	6.23
50% AEP	210.00	106.95	299.97	3.10	3.970	0.56	3-M2t	5.71	2.37	2.60	2.60	6.68	7.95
2% AEP	675.00	336.64	303.65	7.05	7.650	1.08	7-M2c	7.10	4.32	4.32	4.04	10.92	6.48
1% AEP	790.00	392.62	304.49	7.98	8.489	1.20	7-M2c	7.10	4.68	4.68	4.18	11.64	6.75
168% of 1% AEP	1325.00	551.28	307.43	10.91	11.427	1.61	7-M2c	7.10	5.61	5.61	4.72	13.49	7.70

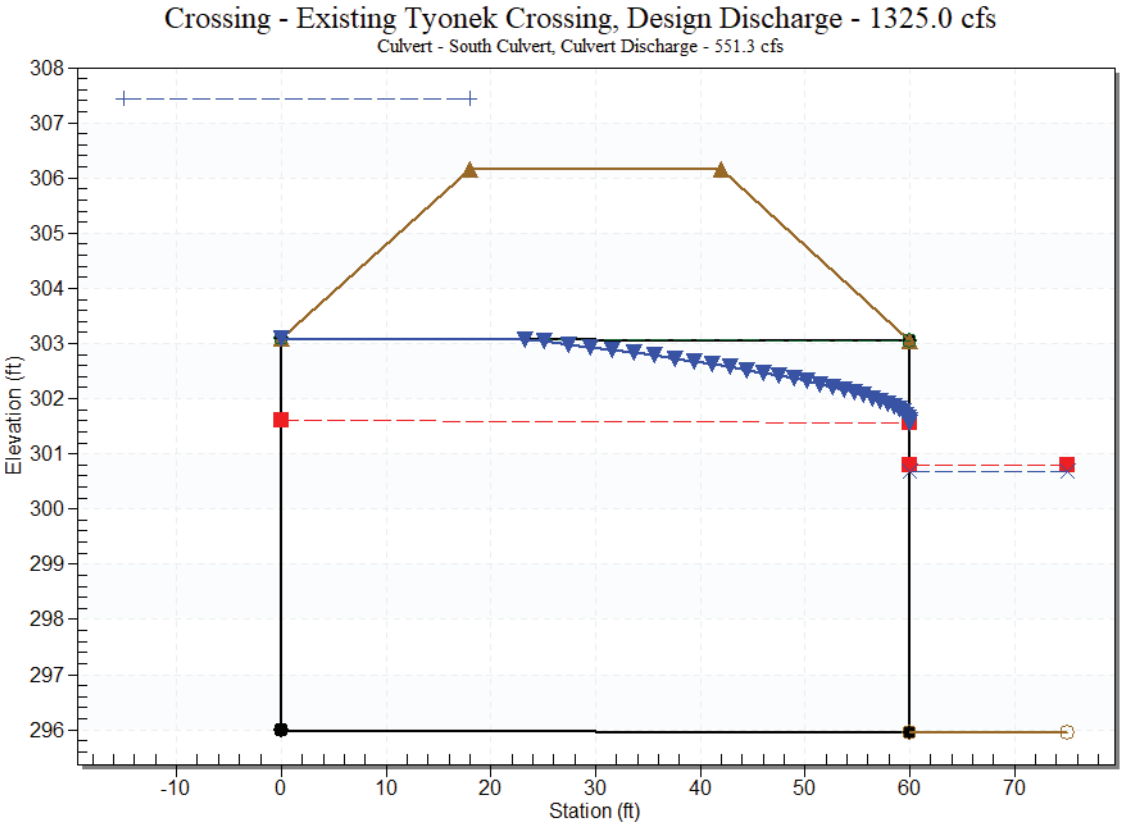
Culvert Barrel Data

Culvert Barrel Type: Straight Culvert
Inlet Elevation(invert): 296.00 ft
Outlet Elevation (invert): 295.95 ft
Culvert Length: 60.02 ft
Culvert Slope: 0.00 ft/ft

Culvert Performance Curve Plot: South Culvert



Water Surface Profile Plot for Culvert: South Culvert



Site Data - South Culvert

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 296.00 ft
Outlet Station: 60.02 ft
Outlet Elevation: 295.95 ft
Number of Barrels: 1

Culvert Data Summary - South Culvert

Barrel Shape: User Defined
Barrel Span: 8.97 ft
Barrel Rise: 7.10 ft
Barrel Material: Corrugated Metal Riveted or Welded
Embedment: 0.00 in
Barrel Manning's n: 0.0300 (top and sides)
Manning's n: 0.0300 (bottom)
Culvert Type: Straight
Inlet Configuration: Thin Edge Projecting
Inlet Depression: None

Tailwater Channel Data for Crossing: Existing Tyonek Crossing

Tailwater Channel Option: Irregular Channel
Channel Slope: 0.02 ft/ft

User Defined Channel Cross-Section

Coord No.	Station (ft)	Elevation (ft)	Manning's n
1	-48.35	300.95	0.0400
2	-30.35	299.95	0.0400
3	-12.35	298.95	0.0400
4	1.65	298.95	0.0400
5	4.16	298.95	0.0400
6	6.58	297.74	0.0400
7	10.16	295.95	0.0400
8	15.16	295.95	0.0400
9	18.73	297.74	0.0400
10	21.16	298.95	0.0400
11	23.85	298.95	0.0400
12	37.61	298.95	0.0400
13	55.61	299.95	0.0400
14	73.61	300.95	0.0400

Table 5 - Downstream Channel Rating Curve (crossing: Existing Tyonek Crossing)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
85.00	297.60	1.65	6.23	2.53	1.01
210.00	298.55	2.60	7.95	3.98	1.07
675.00	299.99	4.04	6.48	6.20	1.05
790.00	300.13	4.18	6.75	6.42	1.06
1325.00	300.67	4.72	7.70	7.25	1.09

Roadway Data for crossing: Existing Tyonek Crossing

Roadway Profile Shape: Constant Roadway Elevation
Crest Length: 50.00 ft
Crest Elevation: 306.15 ft
Roadway Surface: Gravel
Roadway Top Width: 24.00 ft

Crossing Discharge Data

Discharge Selection Method: User Defined

Table 6 - Summary of Culvert Flows at crossing: Proposed Bridge (1/26/2026) (with reconstructed tailwater)

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Proposed Bridge (1/26/2025) Discharge (cfs)	Roadway Discharge (cfs)	Iterations
297.57	40% of 50% AEP	84.00	84.00	0.00	1
299.19	50% AEP	210.00	210.00	0.00	1
302.45	2% AEP	675.00	675.00	0.00	1
303.03	1% AEP	790.00	790.00	0.00	1
307.44	Overtopping	2007.32	2007.32	0.00	Overtopping

Rating Curve Plot for crossing: Proposed Bridge (1/26/2026) (with reconstructed tailwater)

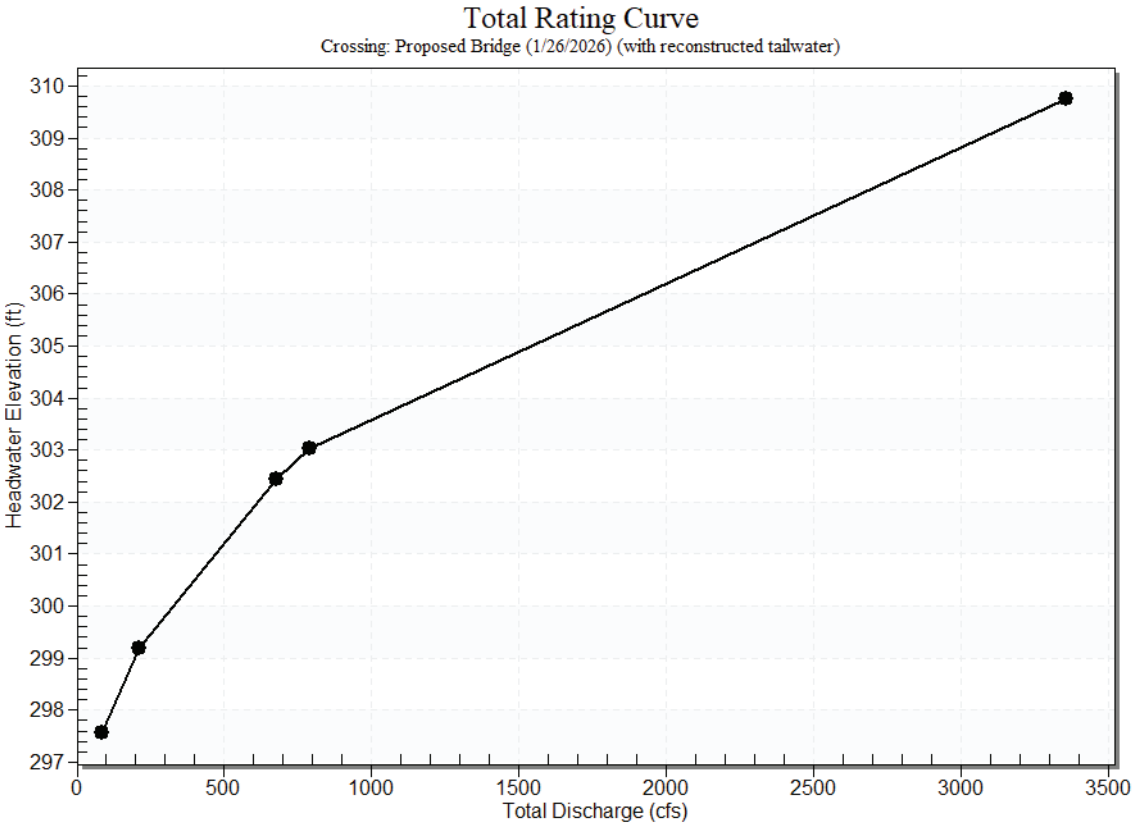


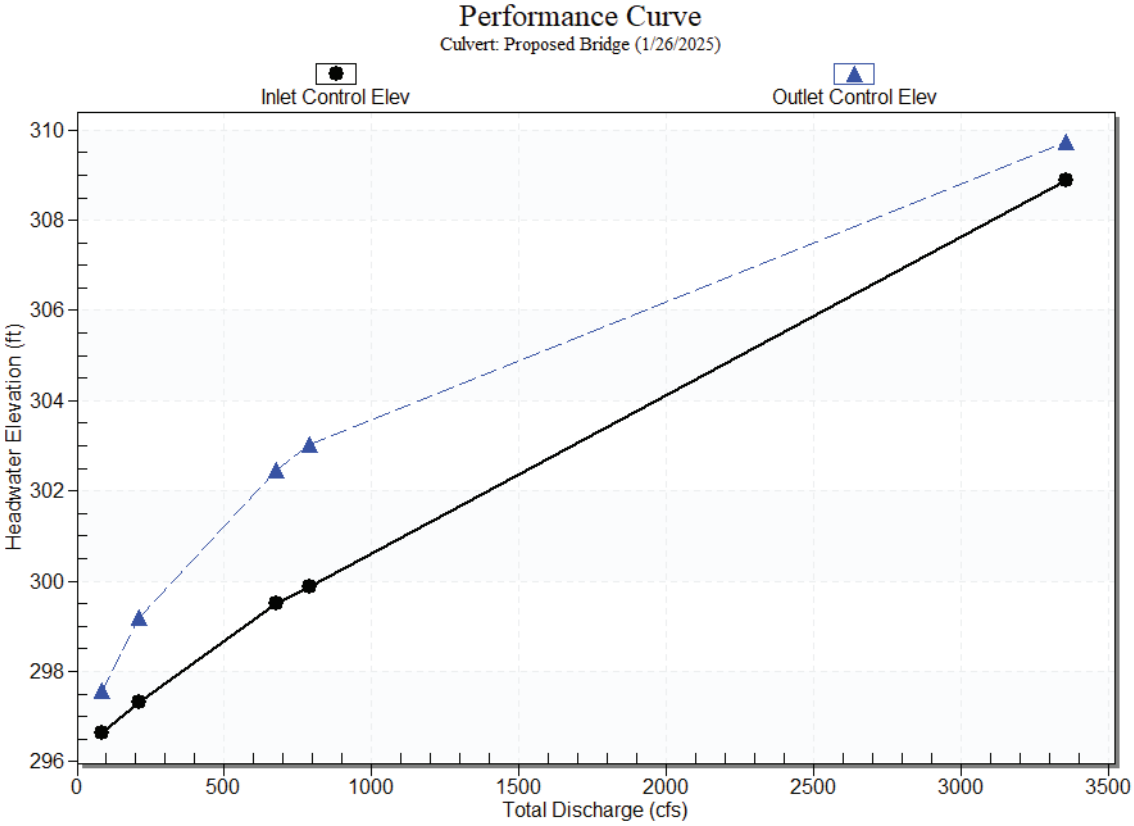
Table 7 - Culvert Summary Table: Proposed Bridge (1/26/2025)

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	HW / D (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
40% of 50% AEP	84.00	84.00	297.57	2.09	3.035	0.28	3-M2t	2.79	1.85	2.55	2.54	3.99	3.20
50% AEP	210.00	210.00	299.19	2.79	4.655	0.43	3-M2t	4.28	2.98	3.77	3.77	5.41	3.70
2% AEP	675.00	675.00	302.45	4.97	7.916	0.72	3-M2t	7.19	5.26	6.03	6.03	7.99	4.11
1% AEP	790.00	790.00	303.03	5.35	8.499	0.78	3-M2t	7.69	5.67	6.29	6.29	8.70	4.28

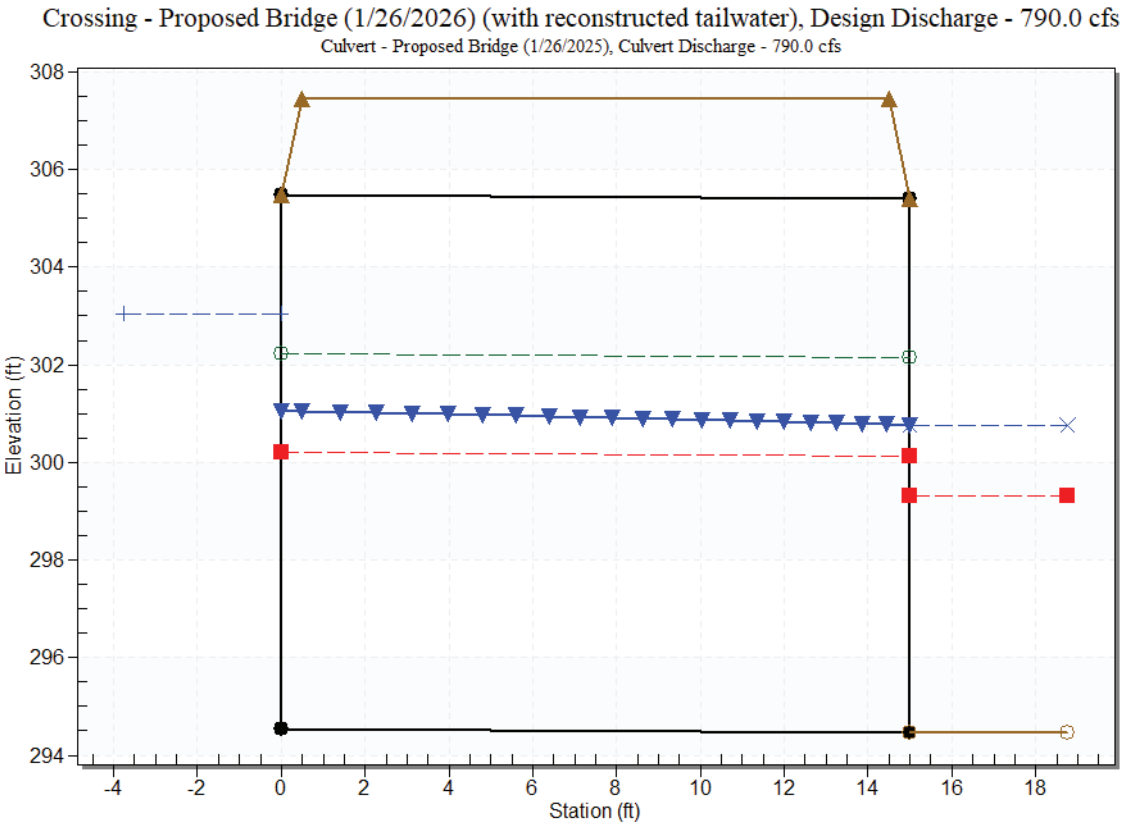
Culvert Barrel Data

Culvert Barrel Type: Straight Culvert
Inlet Elevation(invert): 294.53 ft
Outlet Elevation (invert): 294.47 ft
Culvert Length: 15.00 ft
Culvert Slope: 0.00 ft/ft

Culvert Performance Curve Plot: Proposed Bridge (1/26/2025)



Water Surface Profile Plot for Culvert: Proposed Bridge (1/26/2025)



Site Data - Proposed Bridge (1/26/2025)

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 294.53 ft
Outlet Station: 15.00 ft
Outlet Elevation: 294.47 ft
Number of Barrels: 1

Culvert Data Summary - Proposed Bridge (1/26/2025)

Barrel Shape: User Defined
Barrel Span: 47.59 ft
Barrel Rise: 10.94 ft
Barrel Material: Corrugated Metal Riveted or Welded
Embedment: 0.00 in
Barrel Manning's n: 0.0300 (top and sides)
Manning's n: 0.0400 (bottom)
Culvert Type: Straight
Inlet Configuration: Thin Edge Projecting (Ke=0.9)
Inlet Depression: None

Tailwater Channel Data for Crossing: Proposed Bridge (1/26/2026) (with reconstructed tailwater)

Tailwater Channel Option: Irregular Channel

Channel Slope: 0.00 ft/ft

User Defined Channel Cross-Section

Coord No.	Station (ft)	Elevation (ft)	Manning's n
1	-31.31	300.95	0.0400
2	-12.47	298.93	0.0400
3	-4.76	300.09	0.0400
4	0.00	297.71	0.0400
5	4.00	297.31	0.0400
6	5.50	296.98	0.0400
7	11.45	294.68	0.0400
8	13.95	294.47	0.0400
9	16.45	294.68	0.0400
10	22.43	296.98	0.0400
11	23.93	297.31	0.0400
12	27.93	297.71	0.0400
13	31.08	299.29	0.0400
14	45.78	300.15	0.0400
15	87.71	306.02	0.0000

Table 8 - Downstream Channel Rating Curve (crossing: Proposed Bridge (1/26/2026) (with reconstructed tailwater))

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
84.00	297.01	2.54	3.20	0.71	0.46
210.00	298.24	3.77	3.70	1.06	0.48
675.00	300.50	6.03	4.11	1.69	0.49
790.00	300.76	6.29	4.28	1.77	0.50

Roadway Data for crossing: Proposed Bridge (1/26/2026) (with reconstructed tailwater)

Roadway Profile Shape: Constant Roadway Elevation
Crest Length: 50.00 ft
Crest Elevation: 307.44 ft
Roadway Surface: Gravel
Roadway Top Width: 14.00 ft

Hydraulic Analysis Report

Project Data

Project Title: Upper Tyonek Creek Fish Passage Improvements

Designer: JM

Project Date: January 29, 2026

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Tailwater Channel Outside Bridge

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Station (ft	Elevation (ft)	Manning's n
-31.31	300.95	0.0400
-12.47	298.93	0.0400
-4.76	300.09	0.0400
0.00	297.71	0.0400
4.00	297.31	0.0400
5.50	296.98	0.0400
11.45	294.68	0.0400
13.95	294.47	0.0400
16.45	294.68	0.0400
22.43	296.98	0.0400
23.93	297.31	0.0400
27.93	297.71	0.0400
31.08	299.29	0.0400
45.78	300.15	0.0400
87.71	306.02	-----

Longitudinal Slope: 0.0045 ft/ft

Flow 675.0000 cfs

Result Parameters

Depth 6.0293 ft

Area of Flow 164.2156 ft^2

Wetted Perimeter 77.5225 ft

Hydraulic Radius 2.1183 ft

Average Velocity 4.1105 ft/s

Top Width 75.3811 ft

Froude Number: 0.4908

Critical Depth 4.4255 ft

Critical Velocity 8.7303 ft/s

Critical Slope: 0.0186 ft/ft

Critical Top Width 32.66 ft

Calculated Max Shear Stress 1.6930 lb/ft^2

Calculated Avg Shear Stress 0.5948 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0400

Channel Analysis: Bridge Channel

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Station (ft	Elevation (ft)	Manning's n
0.00	305.44	0.0400
0.00	304.61	0.0400
5.41	304.61	0.0400
21.38	294.71	0.0400
23.88	294.50	0.0400
26.38	294.71	0.0400
41.31	303.91	0.0400
47.59	303.91	0.0400
47.59	304.78	-----

Longitudinal Slope: 0.0045 ft/ft

Flow 84.0000 cfs

Result Parameters

Depth 2.7971 ft

Area of Flow 24.2901 ft^2

Wetted Perimeter 14.8594 ft

Hydraulic Radius 1.6347 ft

Average Velocity 3.4582 ft/s

Top Width 13.3718 ft

Froude Number: 0.4522

Critical Depth 1.8549 ft

Critical Velocity 6.3991 ft/s

Critical Slope: 0.0242 ft/ft

Critical Top Width 10.32 ft

Calculated Max Shear Stress 0.7854 lb/ft^2

Calculated Avg Shear Stress 0.4590 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0400

Channel Analysis: US RR Bankfull

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Station (ft	Elevation (ft)	Manning's n
0.00	300.22	0.0400
2.30	297.38	0.0400
17.50	297.80	0.0400
20.40	300.11	-----

Longitudinal Slope: 0.0043 ft/ft

Flow 210.0000 cfs

Result Parameters

Depth 3.0127 ft

Area of Flow 50.4327 ft^2

Wetted Perimeter 23.0232 ft

Hydraulic Radius 2.1905 ft

Average Velocity 4.1640 ft/s

Top Width 20.4000 ft

Froude Number: 0.4667

Critical Depth 1.9511 ft

Critical Velocity 7.1241 ft/s

Critical Slope: 0.0222 ft/ft

Critical Top Width 18.70 ft

Calculated Max Shear Stress 0.8084 lb/ft^2

Calculated Avg Shear Stress 0.5878 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0395

Channel Analysis: US RR Bankfull 2

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Station (ft	Elevation (ft)	Manning's n
6.90	300.50	0.0400
8.50	296.80	0.0400
18.80	296.30	0.0400
20.40	298.20	0.0400
28.50	298.70	-----

Longitudinal Slope: 0.0043 ft/ft

Flow 210.0000 cfs

Result Parameters

Depth 3.5691 ft

Area of Flow 51.9085 ft^2

Wetted Perimeter 25.4243 ft

Hydraulic Radius 2.0417 ft

Average Velocity 4.0456 ft/s

Top Width 21.3272 ft

Froude Number: 0.4570

Critical Depth 2.5589 ft

Critical Velocity 6.8661 ft/s

Critical Slope: 0.0236 ft/ft

Critical Top Width 20.89 ft

Calculated Max Shear Stress 0.9577 lb/ft^2

Calculated Avg Shear Stress 0.5478 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0388

Channel Analysis: DS RR Bankfull

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Station (ft	Elevation (ft)	Manning's n
22.90	295.90	0.0400
25.30	293.80	0.0400
39.00	292.50	0.0400
40.10	295.20	0.0400
57.00	296.00	-----

Longitudinal Slope: 0.0067 ft/ft

Flow 210.0000 cfs

Result Parameters

Depth 3.5806 ft

Area of Flow 53.6787 ft^2

Wetted Perimeter 37.0462 ft

Hydraulic Radius 1.4490 ft

Average Velocity 3.9122 ft/s

Top Width 34.1000 ft

Froude Number: 0.5495

Critical Depth 2.5391 ft

Critical Velocity 7.4811 ft/s

Critical Slope: 0.0231 ft/ft

Critical Top Width 16.15 ft

Calculated Max Shear Stress 1.4970 lb/ft^2

Calculated Avg Shear Stress 0.6058 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0398

Appendix E – 65% Review Comment Log and Agency Coordination over Streambed Substrate

PROJECT NAME: UPPER TYONEK CK FISH PASSAGE CROSSING REPLACEMENT; ADF&G #20601534

Comments and Reponses

DATE: 12/16/2025 REVIEWER: US Fish and Wildlife Service	Confirmation of action taken on comment by:

Swe Item No.	Page No.	Section	Reviewer	Comment	Response	
1)	B1	Road Typicals	FWS KV	Typical sections call for Borrow, Type B, which doesn't cap material size (unless you provide a special provision to). Since there's no surfacing course, do you want to call for restricting it from having any rocks larger than a certain size within the top 6"?		
2)	B1	Road Typicals	FWS KV	Most vehicles are >6' wide, so two 5' travel lanes seem odd. Might make more sense to just call it a single-lane 10' wide road crowned in the middle at 3% except where superelevated; ie eliminate "TRAVEL LANE" from the dimension.		
3)	B1	Reveg notes	FWS KV	Consider rephrasing note 4 to make clear that topsoil and seed goes where the salvaged grubbing material doesn't go, rather than on top of. Maybe something like, "REUSE SALVAGED VEGETATIVE MAT AND GRUBBING MATERIALS AS MUCH AS PRACTICABLE. PLACE 6 INCHES OF TOPSOIL AND SEED TO RESTORE REMAINING AREAS OF DISTURBANCE." Or eliminate entirely; as this is addressed on the revegetation plan as well.		
4)	D1	Stream substrate gradations	FWS KV	Fine material gradation is very detailed and tight; how closely is contractor expected to meet this? While this level of detail is helpful for coming up with a bed mix and great to see in an H&H report, I recommend simplifying and relaxing for purposes of the construction contract. Recommend simplifying to 5 sizes maximum, perhaps 3", 1.5", 0.75", #4, #10. Likewise eliminate 0% passing 3" for the coarse gradation – no need to reject dusty cobbles due to the presence of fines. Also recommend providing tolerance, either in the specifications or by providing a range of acceptable % passing in the table. I think the H&H report states that a substrate mix sufficiently close to the target gradation can be prepared using 30% Class I riprap, 30% Ditch Lining, and 40% structural fill – this info should be provided somewhere in the contract documents.	1/7 HDR: After discussions with USFWS, ADF&G, and TBC on 12/23/2025, it was agreed that the streambed gradation will consist of materials outlined in the Alaska DOT&PF standard specifications.	

Comments and Reponses

DATE: 12/16/2025 REVIEWER: US Fish and Wildlife Service	Confirmation of action taken on comment by:

5)	D1	1/D1 Stream typical at bridge	FWS KV	Discuss: Channel typical section under the bridge does not match channel typical section shown in abutment stability calculations in H&H report appendices. Typical as shown in plans appears to be more stable given the Class II riprap extending below the channel bed. Open to discussing a simplified typical section under the bridge (ie simple ~2:1 Class II riprap slopes extending below the bed, no banks). With such a small space available for floodplain benches, I don't have confidence that banks built out of stream substrate material will be stable; could just end up with a wide flat section through here. There isn't enough room to build proper benches with stable material. By installing a bridge that provides bankfull span at the floodplain elevation we're still getting much better ecological outcomes than we would with a slightly wider embedded culvert: ☑ Shorter covered/straightened stream lengths ☑ Greater hydraulic capacity ☑ Smaller construction footprint	1/7 HDR: The channel typical sections provided with the abutment stability calculations in the H&H report appendix were not updated along with the rest of the calculations. In next submittal, images and areas of channel typical section will match what is in the plans.	
6)	D1	2/D1 Stream channel plan	FWS KV	H&H report recommends 4'x4' rock clusters, not shown on D2. If rock clusters added, consider using Class I rather than Class II as recommended in H&H report.. In a culvert I would be all-in on Class II for the rock clusters; the idea behind this comment is to make them sacrificially weaker to fail earlier than the abutment protection. Alternatively use Class II pieces more like habitat rocks, have them "float" in the bed rather than tie into the riprap abutment protection. Isolate from the abutment protection with a weaker layer in-between.	1/7 HDR: After discussion with USFWS, ADF&G, and TBC on 12/23/2025, the 4'x4' rock clusters originally called for will be replaced by Class I riprap habitat rocks spread throughout the streambed.	
7)	D1/D2	1/D1 1/D2 Stream typicals	FWS KV	Please provide a non-level bottom to the channel, (ie V-shape) especially if no rock clusters or other forcing features are included. None of the cross sections of the existing stream have level beds, all have a deepest point.	1/7 HDR: After discussion with USFWS, ADF&G, and TBC on 12/23/2025, a slight V-notch will be incorporated to channel bottom.	
8)	D2	1/D2	FWS JL	Sheet D2: No willows are shown planted between top of brush layer and veg mat. Also, Bank Reconstruction Notes reference ADFG's 2005 Streambank Revegetation and Protection Guide pages for reference. This guide has been updated as of 9/2025 (https://www.adfg.alaska.gov/index.cfm?adfg=streambankprotection.main). If the updated guide is used then the page numbers referred to in the Bank Reconstruction notes need to be updated as well.		

Comments and Reponses

DATE: 12/16/2025 REVIEWER: US Fish and Wildlife Service	Confirmation of action taken on comment by:

9)	D2	1/D2 Built channel dimensions	FWS KV	Typical seems to show constructing a 20'+ bankfull width channel whereas plans shown 17' elsewhere. Please provide a vertical dimension from thalweg to top of reconstructed bank. This is very helpful for field verification. Detail showing 3' to the coir log top + brush layer (~15") + veg mat (~12" inches) = pretty deep channel. I wanted to verify the final constructed channel bankfull area isn't too large (doesn't exceed bankfull area measured in reference reach); please see comment regarding H&H summary with bankfull areas and depths.	1/19 HDR: The depth from the thalweg to the top of the coir log is 2.5-ft. Depth from thalweg to top of reconstructed bank is 3.5-ft, as the brush layering was removed and the vegetative mat moved down to replace it. The bankfull area of the cross-section (including the vegetative mat above the coir log) is 42.8 sq. ft. It is slightly larger than the median but within the range of measured values.	
10)	H&H	Table 3	FWS KV	H&H report provides "Bankfull Mean Depth" based on survey data, replacing field measurements. Thank you for providing this. The definition provided in the footnote sounds like what is typically called "Bankfull Max Depth" ie the vertical distance from the bankfull elevation to the thalweg. Typically "Bankfull mean depth" is a calculated value equal to the bankfull area divided by the bankfull width. A quick-and-dirty field approximation is the vertical distance from bankfull to the edge of the channel bed (ie base of bank). HDR: please provide a target bankfull area and bankfull mean depth (per my definition above) to TBC for use in verifying/adjusting design cross sections. I'd say use the median or average (whichever is lower) for bankfull area unless the smallest typical section is the one specifically selected to replicate. TBC: please try to adjust the channel typical section to get roughly the same bankfull area, bankfull mean depth, and bankfull width. It's OK if the typical section bankfull area is a bit smaller than the cross section area of the reference reach. It's OK if the typical section bankfull width ends up a bit wider than in the reference reach. Sometimes it's impossible to get bankfull mean depth to match (esp in E channels with low W/D ratio), but closer is better if aggradation or incision is a concern.	1/7 HDR: Bankfull width, max depth, area, and mean depth have been calculated for each reference reach design cross section. The average and median of each parameter was calculated, and the smaller of the two is the target value for each parameter to be incorporated into the design cross sections.	
11)	D2	1/D2 Veg mat detailing	FWS KV	Uppermost annotation on detail is redundant to dimension provided. Recommend simplifying to: SALVAGED VEGETATIVE MAT, 12" THICK (TYP) or SALVAGED VEGETATIVE MAT, 6" MINIMUM THICKNESS or SALVAGED VEGETATIVE MAT, 6"-15" THICK		

Comments and Reponses

DATE: 12/16/2025 REVIEWER: US Fish and Wildlife Service	Confirmation of action taken on comment by:

12)	D2	Notes	FWS KV	Note 9: Eliminate “supplement with topsoil to achieve 6”. The topsoil supplementation option came from when veg mat was required to be 12” thick, and contractors were allowed to supplement with topsoil to achieve 12” thick if it was slightly thinner. But we often see banks constructed too high, and since too-low banks are better than too-high banks, I’ve been asking for the topsoil to be eliminated. My vision is: -**Engineer designs banks assuming 12” thick veg mat**, but provides tolerance allowing +3” to -6” depending on local veg mat. -Contractor tries to salvage 12” thick veg mat, but has permission to roll with anything from 6” to 15” Suggested revising to something like: SALVAGE VEGETATIVE MAT FROM THE DISTURBED AREA OR LOCAL AREA. ACTUAL ALLOWABLE THICKNESS IS 6” TO 15.” INSTALL SALVAGED VEGETATIVE MAT OVER ENTIRE LENGTH OF DISTURBED OR RECONSTRUCTED STREAMBANKS. (coordinate this language with annotation revision)		
13)	D2	Titles	FWS KV	Consider changing both the sheet title and the detail title to “CHANNEL RECONSTRUCTION.” This sheet isn’t at the bridge, and the detail shows more than the bed or the banks: it includes both!		
14)	F1/D1	Pullout	FWS KV	Is there adequate sight distance? Might only need one pullout rather than two. Recommend adding signs: 2x One lane bridge, 1x “yield to oncoming traffic”, and I think 1x that’s the opposite of “yield” like “proceed with caution.” At a very minimum the 1-lane bridge sign for both directions. These pullouts are also quite generously sized. If both are expected to be necessary for construction anyway, may as well show in the plans so that TNC gets to keep both. But you could potentially shorten one of them (probably the one farther from where the contractor will be coming from)		
15)	F1	Riprap	FWS KV	Should riprap extend on upstream end to armor where the diversion channel gets cut through the embankment, or otherwise be included in the “plug”? Or maybe some other, locally available materials, ie some salvaged woody material.		

Comments and Reponses

DATE: 12/16/2025 REVIEWER: US Fish and Wildlife Service	Confirmation of action taken on comment by:

16)	F2/B1	Alignment and super-elevation	FWS KV	F2 – Provide curve data for proposed road alignment and include superelevation. B2 – Once you provide superelevation design, update typical section/notes. *Road probably isn't as segmented as shown, the segments shown on the basemap are likely just straight lines connecting survey points. Recommend redrawing existing road edges on basemap with a spline. To determine curves, draw short lines connecting the road edge survey points to the nearest survey point on the opposite shoulder in a no-plot layer. Then find best-fit curves through the midpoints. If you can get aerial imagery to match up with your basemap, that can be helpful for looking at the bigger picture of the curves.* *Since the road profile will be brought up, it will bury the existing cross slope, which probably represents grading operations more than any original design. Figure out the "ideal" superelevation design for the existing alignment, then adjust so that the bridge isn't within runout or runoff. Figure out what you want built, then provide the information to build it.*		
17)	F2	Road profile	FWS KV	Design road profile puts lowest point at bridge end, concentrating sheet flows right at the joint/seam with gravel. It would be better to put the lowest point further north as a sag vertical curve, and have the bridge grade match the road grade at the connection.		
18)	Q2	Note 1	FWS KV	To me this reads as though the contractor could or should wait until after substantial completion to install the final stabilization, rather than as each small area of disturbance gets to it's final grading. Note 5 on Q1 already covers this well with "finish-as-you-go." Also "install" doesn't acknowledge that oftentimes much of the final stabilization isn't just installed, it's grown. Recommend revisiting Note 1 on Q2 for clarity.		
19)	Q2	Note 2	FWS KV	This sounds like you're directing the contractor which direction to work (ie starting at embankment and then working upstream and downstream) and providing methods/sequencing. Recommend rephrasing to: INSTALL SALVAGED VEGETATIVE MAT ALONG ALL DISTURBED STREAMBANKS, 4' WIDE MINIMUM OR AS WIDE AS REQUIRED TO UTILIZE ALL STOCKPILED VEGETATIVE MAT. STABILIZE REMAINING AREA OF DISTURBANCE WITH 6" TOPSOIL AND SEED.		
20)	Q2	Note 4	FWS KV	Replace "culvert infill material" with "stream substrate material" since there is no culvert.		
21)	Q2	Note 6	FWS KV	Add, ", MAXIMIZE WOOD-TO-SOIL CONTACT AS FEASIBLE." The purpose, to "aide in reseeding efforts and establishment of riparian habitat" is correct but arguably not necessary; could delete.		

Comments and Reponses

DATE: 12/16/2025 REVIEWER: US Fish and Wildlife Service	Confirmation of action taken on comment by:

22)	Q2	Note 7	FWS KV	Not sure what information or instruction this note provides.		
23)	Q2	Note 8	FWS KV	Q2, Note 8: Appreciate this addition. Option to a pay item in the bid schedule & spec for a few hours of operated excavator time (thumb attachment required) to install habitat features not shown on the plans using salvaged or excess materials at the direction of the engineer or onsite habitat restoration specialist.		
24)	Q2	Sapling notes	FWS KV	Sapling notes seem to contradict D1 bank reconstruction note 6 and possibly another note I saw somewhere directing # of saplings to install per 1,000 SF.		
25)	D1/ bridge	Bridge abutment	FWS	The sloped excavation limits below the concrete abutment sills shown on D1 give me pause. I'm more used to seeing a flat bench dug into in-situ soils, whether right below the sill or several feet lower (and wider) for soil improvements. Consider updating if appropriate, and potentially providing additional details for abutment soil preparation.		
26)	Bridge	Bridge info TBD	FWS KV	Discuss: There's lots of information not yet provided regarding the bridge. What will be provided in the final design plans or specifications versus what will the manufacturer be required to provide? • Concrete abutment/sill design & dimensions, reinforcing details • Material requirements for bridge (ie structural steel, deck materials, anchor bolts, elastomeric pads, concrete, reinforcement) • Design requirements for bridge (ie AASHTO LRFD) • Design loading/requirements (dead load, live load, wind load, seismic design criteria, rail purpose & loading) • Minimum allowable assumed bearing capacity for abutment soils • Any additional foundation soil improvement required? IE compaction of in-situ soils, replacement of in-situ soils with better soils, placing a layer of geotextile & Select A filled geocell stabilization mat over the prepared abutment soils prior to placing concrete footer.		

Comments and Reponses

DATE: 12/16/2025 REVIEWER: US Fish and Wildlife Service	Confirmation of action taken on comment by:

27)	Bridge	Details	FWS KV	Recommend adding one or more bridge-focused detail sheets. Provide hydraulic summary somewhere in the plans and label low chord elevation on D2 or bridge-focused equivalent. Provide bridge layout points (X, Y, Z) for the four corners of the bridge on F1/F2 or bridge details. Provide detail on the abutments, ie: How to prepare soils for the precast concrete abutment sills. Soils memo recommends improving the top 2 feet with geotextile following the deep patch method. Minimum offset from edge of bench to face of sill. As shown in the details, the riprap slope "kisses" one concrete abutment but is offset from the other, unclear why. Typically there's a minimum offset distance from bottom of concrete to that grade break; provide dimensions on that bench if it's required for this application.		
28)	Bridge	Selection	FWS KV	Discuss: The plans and soils memo discuss using a *temporary* bridge for *short-term* installation. Why is that?		
29)	Bridge	Components	FWS	Details don't show any sort of wingwalls at the bridge ends *(essentially [shaped concrete pieces that sit astride the sills and sandwich the bridge, retaining road soils from falling in between the girders).* Are they not required for a "temporary" bridge model?		
30)	65% Drawings	Road Design	J. Hunter (NRCS)	The southern approach is on a steep grade. The inclusion of ditches with armored outlets, and steeper cross slope may help reduce the potential for erosion similar to what occurred on the Lower Tyonek build.		
31)	65% Drawings	D1, Bridge Section	J. Hunter (NRCS)	I would like to see the rip rap come right up to the footer. There's a "gap" on the right side.		
32)	65% Drawings	D2	J. Hunter (NRCS)	Clarifying, the streambed material not under the bridge is all native material?	1/16 HDR: The streambed under the bridge and in the sections marked for reconstruction will consist of the design streambed mix.	
33)	65% Drawings	F1	J. Hunter (NRCS)	consider showing transition from designed streambed material to native streambed material.	1/7 HDR: HDR will work with TBC to add a transitional channel cross section.	
34)	65% Drawings	F1	J. Hunter (NRCS)	Is there a better way to tranition the downstream stream reconstruction? The 3.33% part will probably not transition well to the existing streambed.		
35)	65% Drawings	Q2	J. Hunter (NRCS)	Include points for the toe of the riprap treatment.		

Comments and Reponses

DATE: 12/16/2025 REVIEWER: US Fish and Wildlife Service	Confirmation of action taken on comment by:

36)	H&H	pg. 42, App. B, 1% AEP Sediemnt Sizing	J. Hunter (NRCS)	40% course and 60% fine is too fine and lowers design D50 to 1.5". Drawings call out "Riprap Class II Fill VOIDS w/..." which is OK as long as there's no intention of specify the gradation represented by this calculation. I would assume the riprap treatment to not be well graded and a fuller thompson calculation unneccessary.	1/7 HDR: After discussions with USFWS, ADF&G, and TBC on 12/23/2025, it was agreed that the proposed streambed material gradation will get overall smaller to resemble the Fuller-Thompson and upstream pebble count gradation. This is to make the design streambed material more like the existing streambed material. Because the streambed material at this crossing does not directly impact the stability of the bridge (since the abutment protection will go under the streambed material), getting the proposed gradation closer to the existing streambed's was preferred. Overall, the aim of the proposed streambed mix is to prepare a gradation that better matches the existing streambed while maintaining a level of stability that prevents the placed material from scouring out. 1/28 HDR: After determining that the upstream sediment is not mobile, the streambed gradation was sized to be stable at the 2% AEP event. This strikes a balance between the sizing logic described above and following the USFWS guidance, which states that if there is not a sufficient upstream supply of sediment, the design stream substrate should be sized to the 1% AEP flood.	
37)	65% Drawings	Road Design	J. Hunter (NRCS)	The southern approach is on a steep grade. The inclusion of ditches with armored outlets, and steeper cross slope may help reduce the potential for erosion similar to what occurred on the Lower Tyonek build.		

Montoya, Jacob

From: Valentine, Kirsten R <kirsten_valentine@fws.gov>
Sent: Friday, January 30, 2026 8:07 AM
To: Turletes, Irene; Mazzacavallo, Michael G (DFG)
Cc: Montoya, Jacob; talley; 10436483_TBC Tyonek Fish Passage 2025
Subject: RE: [EXTERNAL] RE: Upper Tyonek Stream Substrate Design

Yes, if the existing bed isn't mobile, I agree that the substrate should be sized to be stable. If this were inside a culvert I would suggest that it be sized to be stable at the Q100. However since we're working under a bridge rather than inside the culvert, I like the idea of the streambed substrate being smaller than the Class II abutment protection riprap (better to "fail" downward which may still fill back in over time or just be a pool, than "fail" outward and lose the abutment protection).

I'm open to other perspectives, but from my first hot take, this is a reasonable approach.

Kirsten Valentine, P.E.
Supervisory Civil Engineer (Fish Passage)

(907) 217-8454
Out of office: 2/19-2/23

Dena'inaq ełnen'aq' gheshtnu ch'q'u yeshdu.
I live and work on Dena'ina land.

From: Turletes, Irene <Irene.Turletes@hdrinc.com>
Sent: Thursday, January 29, 2026 6:20 PM
To: Valentine, Kirsten R <kirsten_valentine@fws.gov>; Mazzacavallo, Michael G (DFG) <michael.mazzacavallo@alaska.gov>
Cc: Montoya, Jacob <Jacob.Montoya@hdrinc.com>; talley <talley@tbcak.com>; 10436483_TBC Tyonek Fish Passage 2025 <10436483_TBCTyonekFishPassage2025@hdrinc.com>
Subject: RE: [EXTERNAL] RE: Upper Tyonek Stream Substrate Design

Hey all,

In our final reporting QC – we found an error in our slope for determining bed mobility. This has been addressed, but now the existing bed is NOT mobile. Because of this, we would like to revise the streambed substrate to be stable in the 2% AEP (50-year). This will change the streambed substrate to a 1/3 each mix of Class I riprap, Ditch lining, and structural fill.

Let us know if this sounds reasonable to you and we'll finalize the report tomorrow. I'll be out of office, but Jacob will be working with others in our office to wrap this up if you have any questions!

Thanks!

Irene Turletes, PE
D 907.644.2099 **M** 907.306.8342

hdrinc.com/follow-us

From: Valentine, Kirsten R <kirsten_valentine@fws.gov>
Sent: Friday, January 16, 2026 6:29 AM
To: Turletes, Irene <Irene.Turletes@hdrinc.com>; Mazzacavallo, Michael G (DFG) <michael.mazzacavallo@alaska.gov>
Cc: Montoya, Jacob <Jacob.Montoya@hdrinc.com>; talley <talley@tbcak.com>
Subject: RE: [EXTERNAL] RE: Upper Tyonek Stream Substrate Design

I support this approach.

Kirsten Valentine, P.E.
Supervisory Civil Engineer (Fish Passage)
Acting Habitat Restoration Branch Lead 12/19/25-1/9/26

(907) 217-8454
Out of office: 12/23/25-12/28/25

Dena'inaq ełnen'aq' gheshtnu ch'q'u yeshdu.
I live and work on Dena'ina land.

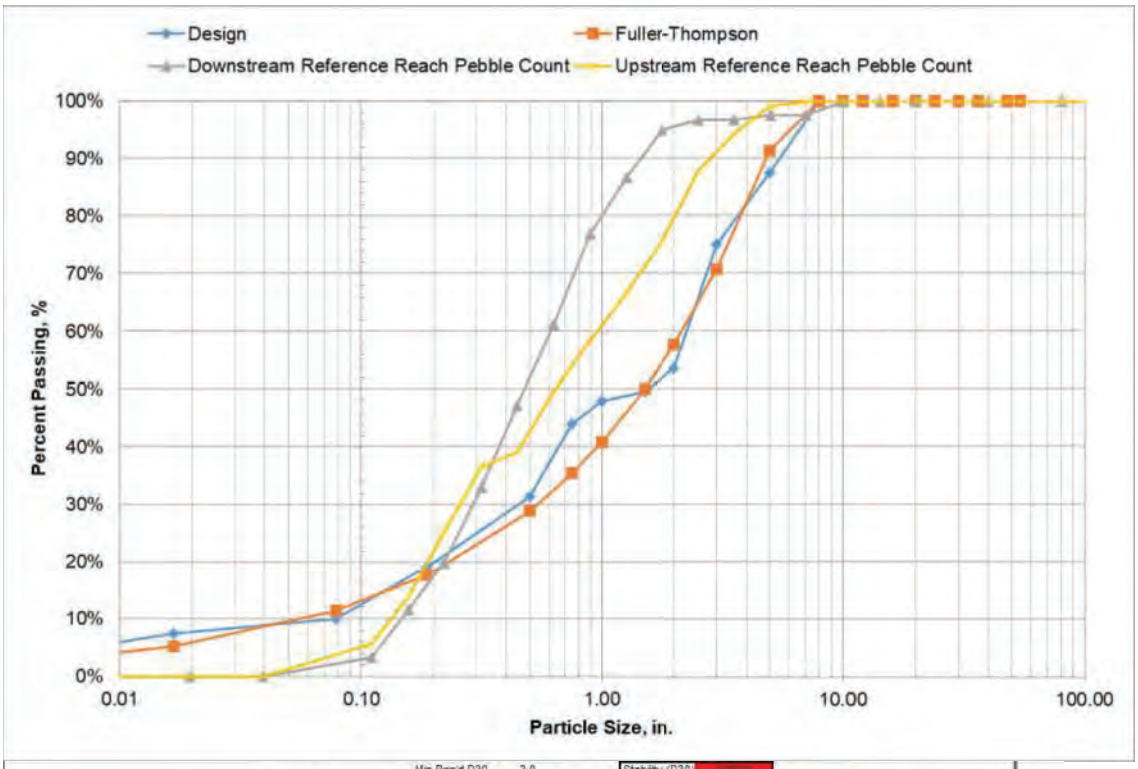
From: Turletes, Irene <Irene.Turletes@hdrinc.com>
Sent: Thursday, January 15, 2026 6:12 PM
To: Valentine, Kirsten R <kirsten_valentine@fws.gov>; Mazzacavallo, Michael G (DFG) <michael.mazzacavallo@alaska.gov>
Cc: Montoya, Jacob <Jacob.Montoya@hdrinc.com>; talley <talley@tbcak.com>
Subject: [EXTERNAL] RE: Upper Tyonek Stream Substrate Design

Happy 2026!

Just wanted to follow up with all on our meeting from December 23rd on Upper Tyonek - how is that already three weeks ago?!?

We discussed the stream substrate design and as a group, determined that we were all comfortable decreasing the stream substrate gradation to better match the upstream pebble counts and decrease the types of material needed to create the substrate. This is also supported by the upstream material being mobile at larger events, which will allow mobilized sediment to be replenished.

Please confirm your agreement with the following sediment gradation:
Mobile at Q50
50% Ditch lining
50% Structural fill



Min Req'd D30	3.0
Design D30	2.0

Stability (D30		
Combined Gradation %	100%	Good

Gradation Tables for Components

		COARSE MATERIAL Based on Alaska DOT&PF Specifications						FINE MATERIAL			
		Ditch Lining	Type IV Riprap	Type III Riprap	Type II Riprap	Type I Riprap	Coarse Fraction	SF	Fuller-Thompson Fines (Step 2)	Design	Fuller-Thomp. Idealized
Selected Mix Proportions %		50%	0%	0%	0%	0%	50%	50%	-	-	-
Size (inches)	Sieve Size	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing
54	54"	100%	100%	100%	100%	100%	100%	100.0%	100.0%	100%	100.0%
48	48"	100%	90%	100%	100%	100%	100%	100.0%	100.0%	100%	100.0%
36	36"	100%	50%	100%	100%	100%	100%	100.0%	100.0%	100%	100.0%
30	30"	100%	35%	90%	100%	100%	100%	100.0%	100.0%	100%	100.0%
24	24"	100%	25%	50%	100%	100%	100%	100.0%	100.0%	100%	100.0%
20	20"	100%	15%	43%	90%	100%	100%	100.0%	100.0%	100%	100.0%
16	16"	100%	0%	36%	50%	100%	100%	100.0%	100.0%	100%	100.0%
12	12"	100%	0%	29%	39%	100%	100%	100.0%	100.0%	100%	100.0%
10	10"	100%	0%	22%	27%	90%	100%	100.0%	100.0%	100%	100.0%
8	8"	100%	0%	15%	15%	50%	100%	100.0%	100.0%	100%	100.0%
5	5"	75%	0%	0%	0%	20%	75%	100.0%	100.0%	88%	91.3%
3	3"	50%	0%	0%	0%	10%	50%	100.0%	100.0%	75%	79.7%
2	2"	30%	0%	0%	0%	0%	30%	97.0%	100.0%	54%	57.7%
1.5	1.5"	10%	0%	0%	0%	0%	10%	94.0%	88.6%	50%	50.0%
1	1"	5%	0%	0%	0%	0%	5%	91.0%	70.7%	48%	40.8%
0.75	0.75"	0%	0%	0%	0%	0%	0%	88.0%	61.2%	44%	35.4%
0.5	0.5"	0%	0%	0%	0%	0%	0%	63.0%	50.0%	32%	28.9%
0.187	#4	0%	0%	0%	0%	0%	0%	38.0%	30.6%	19%	17.7%
0.0787	#10	0%	0%	0%	0%	0%	0%	20.0%	19.8%	10%	11.5%
0.0167	#40	0%	0%	0%	0%	0%	0%	15.0%	9.1%	8%	5.3%
0.0059	#100	0%	0%	0%	0%	0%	0%	9.0%	5.4%	5%	3.1%
0.0030	#200	0%	0%	0%	0%	0%	0%	3.0%	3.8%	2%	2.2%

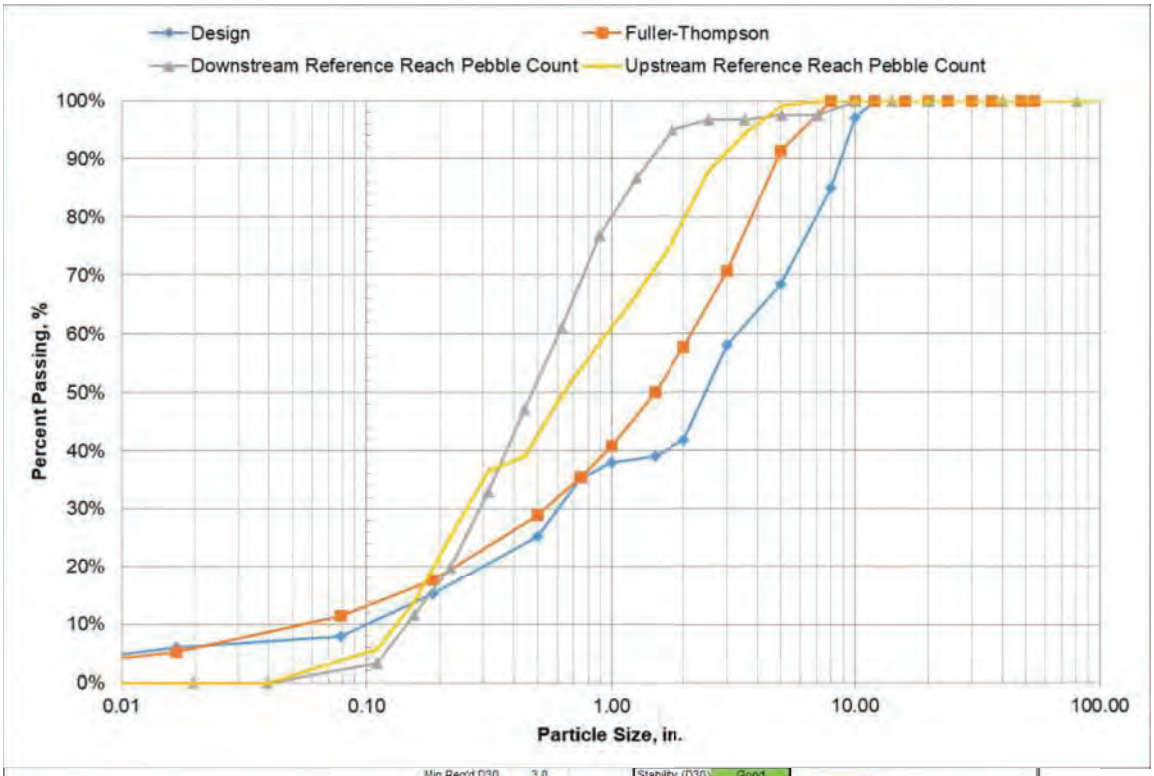
As a reminder, this is what we started with:

Stable at Q50

30% Riprap Class I

30% Ditch lining

40% Structural fill



Min Req'd D30	3.0
Design D30	3.0

Stability (D30)	Good	
Combined Gradation %	100%	Good

Gradation Tables for Components

		COARSE MATERIAL Based on Alaska DOT&PF Specifications						FINE MATERIAL			
		Ditch Lining	Type IV Riprap	Type III Riprap	Type II Riprap	Type I Riprap	Coarse Fraction	SF	Fuller-Thompson Fines (Step 2)	Design	Fuller-Thomp. Idealized
Selected Mix Proportions %		30%	0%	0%	0%	30%	60%	40%	-	-	-
Size (inches)	Sieve Size	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing
54	54"	100%	100%	100%	100%	100%	100%	100.0%	100.0%	100%	100.0%
48	48"	100%	90%	100%	100%	100%	100%	100.0%	100.0%	100%	100.0%
36	36"	100%	50%	100%	100%	100%	100%	100.0%	100.0%	100%	100.0%
30	30"	100%	35%	90%	100%	100%	100%	100.0%	100.0%	100%	100.0%
24	24"	100%	25%	50%	100%	100%	100%	100.0%	100.0%	100%	100.0%
20	20"	100%	15%	43%	90%	100%	100%	100.0%	100.0%	100%	100.0%
16	16"	100%	0%	36%	50%	100%	100%	100.0%	100.0%	100%	100.0%
12	12"	100%	0%	29%	39%	100%	100%	100.0%	100.0%	100%	100.0%
10	10"	100%	0%	22%	27%	90%	95%	100.0%	100.0%	97%	100.0%
8	8"	100%	0%	15%	15%	50%	75%	100.0%	100.0%	85%	100.0%
5	5"	75%	0%	0%	0%	20%	48%	100.0%	100.0%	69%	91.3%
3	3"	50%	0%	0%	0%	10%	30%	100.0%	100.0%	58%	70.7%
2	2"	30%	0%	0%	0%	0%	15%	97.0%	100.0%	42%	57.7%
1.5	1.5"	10%	0%	0%	0%	0%	5%	94.0%	86.6%	39%	50.0%
1	1"	5%	0%	0%	0%	0%	3%	91.0%	70.7%	38%	40.8%
0.75	0.75"	0%	0%	0%	0%	0%	0%	88.0%	61.2%	35%	35.4%
0.5	0.5"	0%	0%	0%	0%	0%	0%	63.0%	50.0%	25%	28.9%
0.187	#4	0%	0%	0%	0%	0%	0%	38.0%	30.6%	15%	17.7%
0.0787	#10	0%	0%	0%	0%	0%	0%	20.0%	19.8%	8%	11.5%
0.0167	#40	0%	0%	0%	0%	0%	0%	15.0%	9.1%	6%	5.3%
0.0059	#100	0%	0%	0%	0%	0%	0%	9.0%	5.4%	4%	3.1%
0.0030	#200	0%	0%	0%	0%	0%	0%	3.0%	3.8%	1%	2.2%

Appendix F – 2024 Alaska USFWS Fish Passage Design Review Checklist

Alaska USFWS Fish Passage Design Review Checklist

Document purpose: Provide minimum guidelines for design review of fish passage projects in the state of Alaska by the USFWS. This document is NOT a template, but a checklist of minimum information recommendations for fish passage design documents.

H&H Report:

Introduction and Objectives Information

- Project Introduction and Description
    - Project type and purpose, river name, roadway name, vicinity map
    - Objectives clearly listed

Site Assessment and Existing Conditions Information

- Site Description
    - Existing site location and description of mainstream flow path
        - Stream conditions in immediate vicinity
        - Nearby crossings and utilities
    - Existing crossing condition including size, type, material, slope, length, depth of fill to roadway above culvert, alignment
    - Reconnaissance level map of the stream cross-section, plan, profile, noting representative width and depths, grade control and other geomorphic features.
- Channel Geomorphology
    - Existing culvert setting, long profile long enough to show that the chosen vertical alignment will tie into the stream outside of the area of impact or area of potential instability, what is going on at crossing zoomed out enough to see slopes, sinuosity etc.
        - Long profile at crossing including at least 3 stable grade controls upstream and downstream.
        - Slope at crossing, slope upstream, and slope downstream
        - This can be included in body of report or appendix
    - Stability analysis narrative
        - Discuss lateral and vertical stability. Is the reach stable?
        - If instability is present, is it localized or system-wide?
        - Can the cause and effect relationship of the instability be identified?
        - Is this site suitable for a crossing?
        - Structure treatments to address stability concerns?
- Reference reach information:

    - Brief reference reach narrative including location (up or downstream of crossing), valley type, general watershed description, constraints (such as development, historical landuse, landownership, geology etc)
        - Reference reach length, slope, bankfull width measurements, bankfull depth measurements and floodplain width measurements should be clearly listed
    - Reference cross section information including dimensions and location
    - Bankfull discharge
    - Channel classification
    - Long Profile (20xwBKF min) with bankfull calls, thalweg and water surface slope
    - Key pieces count
    - Crossing photos and reference reach photos
    - Photos of cross sections
    - Field map or sketch
- Existing Sediment Gradation
    - Pebble count for full length of reference reach
    - Pebble count at reference cross section
    - Pebble count upstream of crossing (if the reference reach is upstream of the crossing, then the reference reach pebble count is fine).

Hydrologic Analysis Information

- Watershed Information
    - Basin size and location
    - Major tributaries
    - Major land use including major upstream sources of sediment if applicable
    - Delineation basin map if applicable
- Flood flow predictions Q2 through Q100, minimum.
- Bankfull verification against gage data, Q2, regional curve
- Hydrology calculations and methods should be clearly described with work shown
    - Method/methods used
    - Did analysis consider future development plans?
    - Did analysis consider climate change over structure life?

Hydraulic Analysis Information

- Hydraulic analysis of existing and proposed crossing.
- Culvert sizing analyses and scour
- HW/D ratio of existing and proposed crossing
- Road overtopping flow

Proposed design components

- Determining ultimate stream alignment, channel geometry, slope and profile for long-term stability and habitat.

- Investigate roadway grade, fill height and width.
- Identify utilities and relocation needs
- Design and locate new crossing and culvert width, length, type, skew.
- Provide recommendations/options for channel complexity elements both through the crossing and outside the crossing (habitat boulders, rock clusters, rock bands, large wood etc..)
- Provide recommendations to project owner and agencies on construction tolerances for culvert invert elevations and channel dimensions to aid in construction.

Substrate design

- Stream substrate gradation for new culvert infill material
- Sizing of material for channel complexity elements such as steps, habitat boulders, rock clusters, rock bands and other grade control structures

Design Sheet Set Review:

15% or 35% Concept Design (often included within the H&H report)

☐ Culvert or bridge horizontal alignment

☐ Constructed channel horizontal alignment

☐ Crossing structure longitudinal profile (include upstream and downstream grade controls and constructed channel tie in locations in the profile).

☐ Longitudinal profile to include existing ground and proposed profile

☐ Culvert length – confirm this is reasonable. Culverts should be as short as possible. Shorter culverts are better for sediment transport, debris movement, channel morphology and fish passage. Long culverts can cut off side channels especially in wetland complexes.

☐ Proposed constructed channel cross section with dimensions

☐ Proposed culvert cross section with road cover requirement

☐ Topo survey with location of utilities

The purpose of this review is to focus on big picture decisions:

- Does the design approach make sense? Is the project heading in the right direction? Are the tradeoffs acceptable?
- What major decisions remain? How will they be made and who should be involved?
- Challenging stream alignment & profile decisions, are BFW and slope correct?

- Does the selected structure make sense?
- Who/what will be impacted by the project? (traffic, utilities, landowners, cultural resources)
- What will it take to build the project? (road closure, diversion, crane, specialty materials or equipment)
- Are we going to need way more money than originally expected?

<u>65% Design (include elements of the concept design plus the following):</u>

☐ Cover sheet with vicinity map
☐ Legend
☐ General notes and estimated quantities
☐ Quantity of fill below the Ordinary High Water Mark (provide revised quantity again within 3 weeks after 65% review meeting and again at 95%)
☐ Civil site plan
☐ Construction limits and area of disturbance are clearly identified. Confirm construction limits are reasonable.
☐ Channel cross sections inside and outside of crossing structure with dimensions and detail
☐ Streambank reconstruction methods – treatments for lateral stability
☐ Stream substrate plan with location of Ordinary High Water Mark
☐ Channel bed features in plan view (eg. rock clusters, rock bands, step-pools)
☐ Large wood layout when applicable (habitat elements)
☐ Grade control structures for vertical stability (as needed)
☐ Revegetation plan
☐ Detour road plan showing a realistic detour road layout (unless road will be closed)
☐ Diversion plan showing projected excavation area for new pipe and realistic diversion channel layout. (not stamped)
☐ Road horizontal alignment and centerline profile
☐ Site plan with utilities, ROWs, private property, etc.
☐ Temporary construction easements
☐ Engineer's cost estimate
☐ Special provisions

Major decisions have already been made; the purpose of this review is to focus on mechanics:

☐ Were the concerns and major decisions from the concept design adequately dressed?
☐ What are the full extents of construction impacts? Is there a plan for all of them?
☐ Have all conflicts been identified, with an idea of how to address them?

☐ Is (or will there be) sufficient detail in place to build and inspect the project? (Placeholder tables & sheets common)
☐ Do the specifications meet project goals and objectives?
☐ What minor decisions remain? Talk about how they will be made and who should be involved.
☐ Are we ready to start permitting? If not, what needs to be addressed in order to begin?
☐ Do we need more money?

*This is a good place to start permits on most projects. Recommend that permits should be in place before going to bid if possible.

95% Design (include elements of concept and 65% design plus the following):

☐Cover sheet
☐Estimate of quantities on drawings (each material gradation should be broken out)
☐Survey Control
☐ Point tables for road, culvert, channel
    ☐ provide stationing of existing and new culvert for field locating tie ins
☐ Road cross section
☐ Road surfacing detail
☐ Streambank details
    ☐ Culvert to streambank transition
    ☐ Cross sections for each streambank treatment
☐ Channel bed feature details and cross sections (eg. rock clusters, rock bands, step-pools, bankfull bench)
    ☐ Clear dimensions needed for construction
☐ Large wood structure details when applicable
☐ Step by step instructions for toewood, rootwads, brush layers, livestakes, etc.
☐ Seed mix
☐ Demolition plan
☐ Erosion and sediment control plan
☐ Erosion and sediment control details (silt fence, straw wattles, etc).
☐ General notes
☐ Sheet notes
☐ Diversion channel cross section
    ☐ Trash pumps >100ft? from stream
☐ Collar armor or headwall details

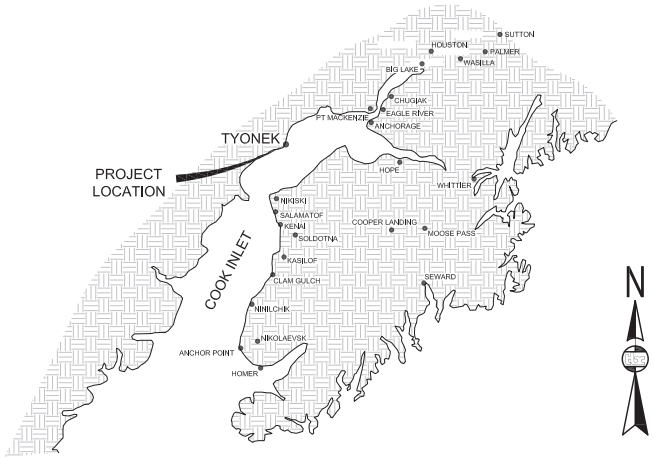
- ☐ Note on filling voids in collar armor
- ☐ Guardrail should be used on culverts with headwalls even if not required per code because of public safety perception.

☐ Thaw pipe details & other details as required (ex: guardrail hardware, concrete footing)
☐ Engineer's cost estimate
☐ Bid Schedule
☐ Special Provisions
☐ General provisions (if applicable)
☐ Standard notes: washing in the fines, filling the voids, etc.
☐ Substrate size tables
☐ Substrate placement in plan view
☐ Substrate depth in cross sections
☐ Quantity of fill below the Ordinary High Water Mark

The purpose of this review is to focus on buttoning up the details:

- ☐ Were the concerns and decisions from 65% design adequately addressed?
- ☐ Have all of the conflicts and impacts been addressed, or are expected to be soon?
  - ☐ (ROW needs, utility agreements, permits)
- ☐ Do all the details and instructions agree with each other?
- ☐ What minor details need to be wrapped up – how will they be addressed?
- ☐ Are roles and decision responsibilities clear?
- ☐ What will the bidding process look like, what needs to be wrapped up before it bids?
- ☐ Do we have enough money?

Appendix B – 95% Design Plans



VICINITY MAP
(NTS)

Tyonek TRIBAL CONSERVATION DISTRICT

Tyonek Native Corporation

U.S. FISH & WILDLIFE SERVICE

ALASKA DEPARTMENT OF FISH AND GAME

NOAA

NRCS Natural Resources Conservation Service

95% REVIEW

UPPER TYONEK CREEK FISH PASSAGE IMPROVEMENTS

ADF&G SITE # 20601534
JANUARY 2026

PREPARED BY

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957

HDR

ENGINEER'S CERTIFICATION:

TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, JUDGEMENT, AND BELIEF THESE PLANS MEET APPLICABLE NRCS STANDARDS.

TIMOTHY J. ALLEY, P.E.
DESIGN ENGINEER
THE BOUTET COMPANY, INC.

DATE: JANUARY 26TH 2026

DRAWING LOCATION
W:\Wasilla\Files\Tyonek Tribal Conservation District\2022\Upper Tyonek Crk\TITLE SHEET UPPER TYONEK.dwg

PLOT DATE 1/26/2026
SCALE N/A

DESIGNED BY TS
DRAWN BY TS
CHECKED BY TS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	A2	A4

SHEET INDEX

LEGEND

- EXISTING GRAVEL ROAD SURFACE
- NEW GRAVEL ROAD SURFACE
- TOPSOIL AND SEED
- EXISTING STREAM
- EXISTING ROADWAY
- PROPOSED ROADWAY
- DIVERSION CHANNEL
- PROPOSED STREAM SUBSTRATE MATERIAL
- RIPRAP ABUTMENT PROTECTION
- VEGETATIVE COLLAR
- PROPOSED BOTTOM OF STREAM BANK
- PROPOSED BANK FULL WIDTH (BFW)
- PROPOSED EDGE OF LOW FLOW CHANNEL
- ROADWAY CENTERLINE
- STREAM CENTERLINE
- EXISTING GRADE PROFILE
- FINISH GRADE PROFILE
- PROJECT LIMITS
- CUT LIMIT
- FILL LIMIT
- EXISTING MINOR CONTOUR
- 195 EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 195 PROPOSED MAJOR CONTOUR
- TOE OF SLOPE
- PERIMETER CONTROL BMP
- COIR LOG
- SLOPE INDICATOR
- PROPOSED SIGN
- EXISTING DRAINAGE ARROW
- PROPOSED DRAINAGE ARROW

ABBREVIATIONS

ADF&G	ALASKA DEPARTMENT OF FISH AND GAME
BM	BENCH MARK
BMP	BEST MANAGEMENT PRACTICE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE SEGMENT
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CONST	CONSTRUCT
CSP	CORRUGATED STEEL PIPE
DET	DETAIL
DI	DUCTILE IRON
EOP	END OF PROJECT
E	EASTING
ELEV	ELEVATION
EA	EASEMENT LINE
EST	ESTIMATED
ESCP	EROSION & SEDIMENT CONTROL PLAN
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE SEGMENT
EW	EACH WAY
EX	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
GB	GRADE BREAK
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HORZ	HORIZONTAL
HTC	HEAT TRACE CHANNEL
IE	INVERT ELEVATION
INT	INTERSECTION
IAW	IN ACCORDANCE WITH
KPB	KENAI PENINSULA BOROUGH
L	LENGTH
LF	LINEAR FEET
LOC	LOCATION
LP	LOW POINT
LT	LEFT
LVC	LENGTH OF VERTICAL CURV
MAX	MAXIMUM
MDD	MAXIMUM DRY DENSITY
ME	MATCH EXISTING
MFG	MANUFACTURED
MIN	MINIMUM
MON	MONUMENT
MSL	MEAN SEA LEVEL
N	NORTHING
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OHW	ORDINARY HIGH WATER
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
PAD	PAD ELEVATION
PCC	PORTLAND CEMENT CONCRETE
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PUE	PUBLIC UTILITY EASEMENT
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RR	REMOVE AND REPLACE
ROW	RIGHT-OF-WAY
RP	RADIUS POINT
RT	RIGHT
REF	REFERENCE
RET	RETURN
S	SLOPE
SQ FT	SQUARE FOOT
STA	STATION
STD	STANDARD
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TAN	TANGENT
TEL	TELEPHONE
TBM	TEMPORARY BENCH MARK
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE
TYP	TYPICAL

CIVIL NOTES:

1. CIVIL CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE ALASKA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION 2020 EDITION, AS CURRENTLY AMENDED BY THE STANDARD MODIFICATIONS AND THESE CONSTRUCTION DRAWINGS.
2. DRAWING SCALES ON SHEETS WITHIN THESE PLANS MAY VARY AND SHOULD BE NOTED PRIOR TO USE. THESE PLANS WERE CREATED FOR 11X17 PLAN SET AND AT A SPECIFIC DRAWING SCALE. ANY REPRODUCTION OR PUBLISHING OF THESE PLANS MAY RESULT IN DISTORTION OF SCALE AND SHALL BE VERIFIED PRIOR TO USE.
3. SURVEY INFORMATION WAS PROVIDED BY THE BOUTET COMPANY INC. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL SITE FEATURES. IF CONDITIONS OTHER THAN THOSE SHOWN ON THE PLANS ARE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
4. CONTRACTOR SHALL MAINTAIN "REDLINE" RECORD DRAWINGS ON A CLEAN SET OF CONSTRUCTION DRAWINGS. THE "REDLINES" SHALL BE KEPT CURRENT ON A DAILY BASIS AND SHALL BE AVAILABLE TO THE ENGINEER FOR INSPECTION ON THE JOBSITE.
5. CONTRACTOR SHALL RECORD SURVEY NOTES FOR SUBMITTAL WITH AS-BUILT PLANS, INCLUDING HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES ENCOUNTERED IN THE FIELD. CONTRACTOR SHALL RECORD ALL DEVIATIONS FROM THE PLANS.
6. OWNER OBTAINED PERMITS OR STATUS THEREOF ARE SUPPLIED IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL ENSURE ALL PERMITS NECESSARY TO COMPLETE THE WORK ARE OBTAINED PRIOR TO EARTHWORK DISTURBING ACTIVITIES. CONTRACTOR SHALL ENSURE COMPLIANCE WITH ALL PERMITS UNTIL THE PROJECT HAS ACHIEVED FINAL ACCEPTANCE. CONTRACTOR SHALL OBTAIN AN ADF&G AQUATIC RESOURCE PERMIT FOR TRANSPORTING STRANDED FISH WITHIN THE PROJECT LIMITS.
7. THESE NOTES CONTAIN INFORMATION NECESSARY FOR THE PROPER EXECUTION OF THE WORK CONTAINED ON THESE IMPROVEMENT PLANS. THESE NOTES APPLY TO ALL PLAN SHEETS. ADDITIONAL CONSTRUCTION NOTES MAY ALSO BE SHOWN ON INDIVIDUAL PLAN SHEETS. THE CONTRACTOR IS RESPONSIBLE TO READ AND COMPLY WITH ALL NOTES SHOWN ON THIS SET OF PLANS. THE TERM "CONTRACTOR", AS USED IN THESE NOTES AND ELSEWHERE IN THIS PLAN SET, MEANS THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS AND INDIVIDUALS AUTHORIZED TO PERFORM WORK SHOWN ON THESE PLANS. ALL CONTRACTORS ARE DIRECTED TO CONTACT THE ENGINEER FOR ANY QUESTIONS REGARDING THE STATED OR IMPLIED MEANING OF ANY NOTE OR OTHER INFORMATION CONTAINED ON THESE IMPROVEMENT PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT HIS/HER CONTRACT FOR SERVICES INCLUDES THE RESPONSIBILITIES DEFINED BY THE APPLICABLE NOTES.
8. ALL QUANTITIES SHOWN HEREIN ARE APPROXIMATE AND DO NOT ACCOUNT FOR SWELL PRIOR TO COMPACTION OR WASTE. CONTRACTOR SHALL VERIFY ALL QUANTITIES.

EXISTING UTILITIES:

9. PLANS MAY NOT SHOW ALL EXISTING UTILITIES WITHIN THE PROJECT AREA.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL UTILITIES AND PERFORMING ANY NECESSARY VERIFICATION PRIOR TO CONSTRUCTION. UTILITY LOCATING SHALL BE COMPLETED A MINIMUM OF 10 DAYS TO NO MORE THAN 20 DAYS PRIOR TO COMMENCEMENT OF WORK.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF CONSTRUCTION, WHETHER OR NOT SAID UTILITIES ARE SHOWN ON THE PLANS. THIS RESPONSIBILITY INCLUDES CONTACTING UTILITY COMPANIES FOR LOCATIONS OR POTHOLING PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES TO REMAIN AND COORDINATE WITH UTILITY OWNERS FOR REQUIREMENTS FOR SHORING OR SUPPORTING UNDERMINED UTILITIES DURING CONSTRUCTION. SHORING/SUPPORTING OF UTILITIES SHALL BE CONSIDERED SUBSIDIARY TO THE CONTRACT AND WILL NOT BE MEASURED FOR PAYMENT.

EXCAVATION AND STRUCTURE INSTALLATION:

13. CONTRACTOR SHALL EXERCISE EXTREME CAUTION AND OBSERVE ALL APPLICABLE OSHA REQUIREMENTS FOR WORKING IN CONFINED AREAS AND OPEN EXCAVATIONS.
14. ORGANIC, OVER SATURATED OR NON-COMPACTABLE MATERIAL SHALL BE REMOVED FROM THE SUBGRADE TO A DEPTH TO BE DETERMINED BY THE ENGINEER. NO ORGANIC MATERIAL OR OTHER DELETERIOUS MATERIAL SHALL BE UTILIZED FOR BACKFILL.
15. CONTRACTOR SHALL VERIFY INVERTS OF EXISTING CHANNEL AND ALL PROPOSED STRUCTURES PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES FROM THE PLANS IMMEDIATELY TO THE ENGINEER.
16. ALL VEGETATION IN THE AREAS NOT AFFECTED BY THE WORK SHALL BE PRESERVED AND PROTECTED BY THE CONTRACTOR. RESEED ALL DISTURBED AREAS IN CONFORMANCE WITH REVEGETATION PLANS ON SHEETS Q1, Q2, Q3, AND THE SWPPP.
17. FINISH GRADE REPRESENTS THE ELEVATION OF THE FINISHED SURFACE. THIS INCLUDES LANDSCAPE AREAS, ROCK RIPRAP SURFACE AND ELEVATION AT EXTERIOR OF STRUCTURE FOUNDATION, UNLESS OTHERWISE DENOTED ON DETAIL OR SPECIAL LABEL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST SUBGRADE OR TOPSOIL TO ALLOW FOR FINISHED SURFACE MATERIAL DIMENSIONS.
18. DEWATERING OF THE EXCAVATION MAY BE REQUIRED TO COMPLETE THE WORK. DISCHARGE OF DEWATERING PUMPS SHALL BE A MINIMUM OF 100' FROM STREAMS AND SHALL BE PROTECTED WITH BMP'S AS REQUIRED TO MINIMIZE SEDIMENT DISCHARGE INTO RECEIVING WATERS.

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957

CONSULTANT

95% PS&E

SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

NOTES, INDEX, LEGEND & ABBREVIATIONS

FILE | W:\WASILLA\FILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME | 1/26/2026 | LAYOUT | DESIGNED | SMJ | CHECKED | TJA | DRAFTED | SMJ

FILE	DATE/TIME	LAYOUT	DESIGNED	CHECKED	DRAFTED
W:\WASILLA\FILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG	1/26/2026		SMJ	SMJ	TJA

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	A3	A4

SURVEY CONTROL IN PROGRESS

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957

CONSULTANT

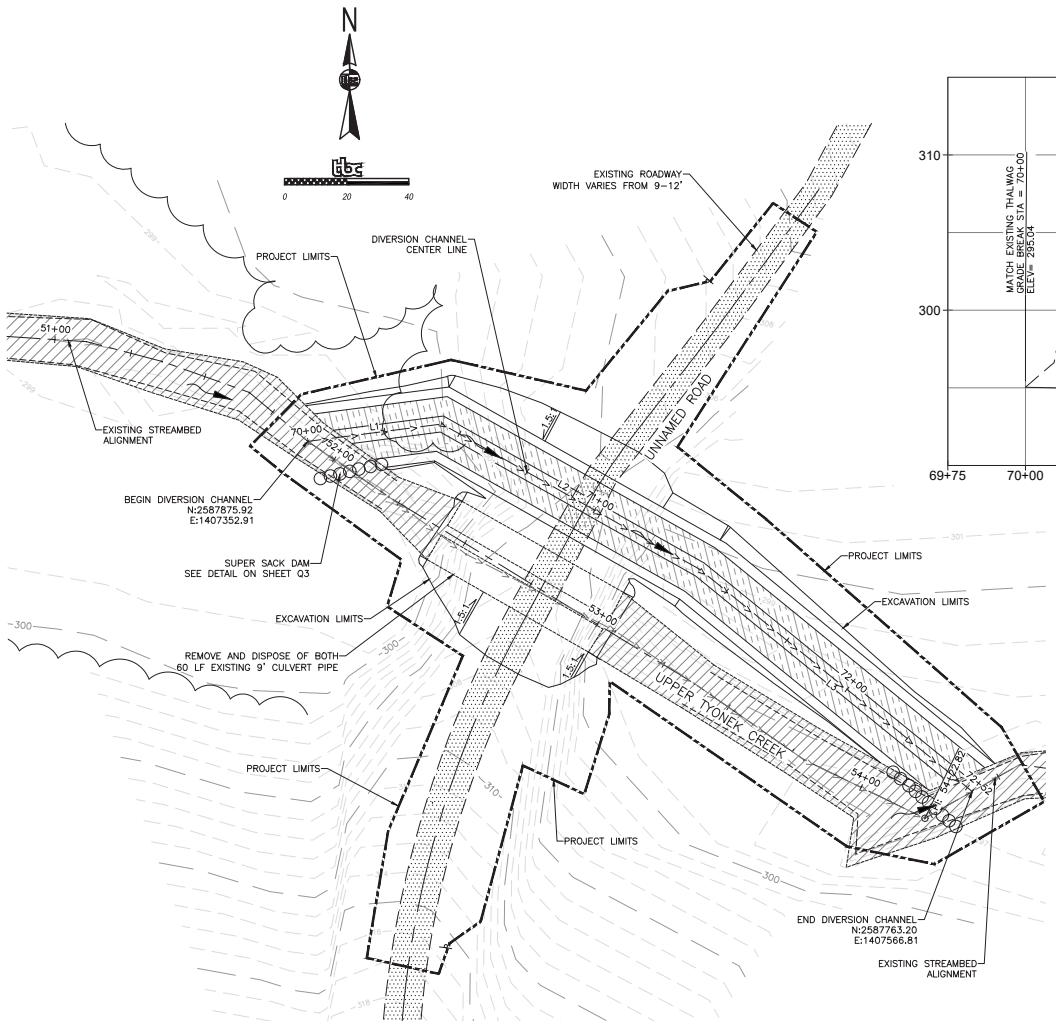
95% PS&E

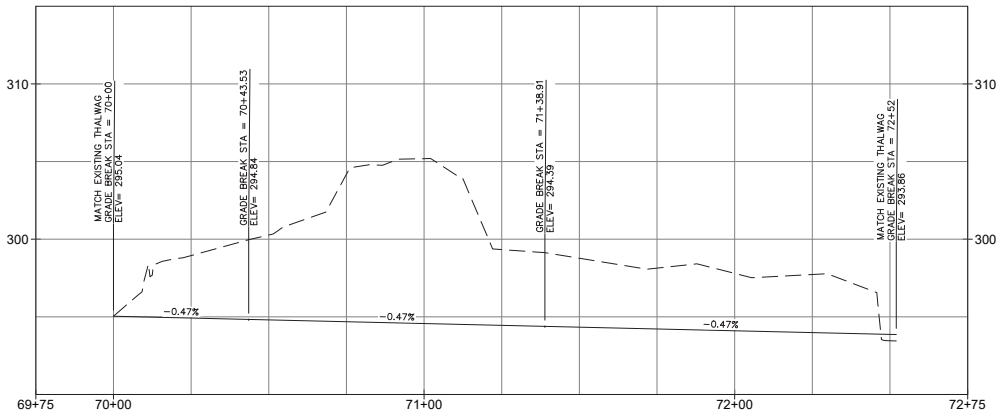
SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

SURVEY CONTROL

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	A4	A4





DIVERSION CHANNEL PROFILE

DIVERSION CENTER LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	43.53	N82° 36' 33.76"E
L2	95.38	S60° 34' 36.60"E
L3	113.09	S50° 48' 38.46"E

DEMOLITION PLAN NOTES:

1. TOTAL AREA OF DISTURBANCE IS 0.5 ACRES.
2. LIMITS OF DISTURBANCE SHOWN ARE APPROXIMATE BASED ON FIELD OBSERVATIONS. ACTUAL LIMITS SHALL BE DELINEATED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO CLEARING AND GRUBBING.
3. THE STREAM CHANNEL AND VEGETATION IN AREAS NOT AFFECTED BY WORK SHALL BE PROTECTED AND PRESERVED BY THE CONTRACTOR. RESTORE ALL DISTURBED AREAS IN CONFORMANCE WITH THE REVEGETATION PLAN.

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957
CONSULTANT

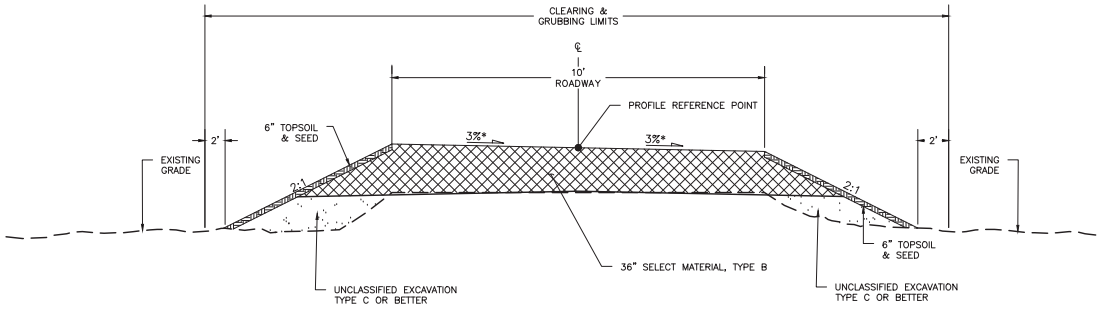
95% PS&E
SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

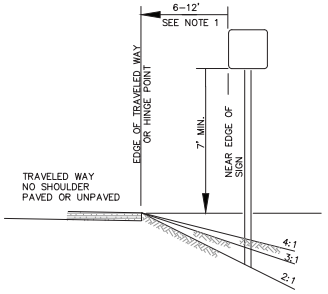
DEMOLITION AND EXCAVATION PLAN

FILE W:\WASILLAFILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME 1/26/2026 | LAYOUT | DESIGNED SMJ | CHECKED TJA | DRAFTED SMJ

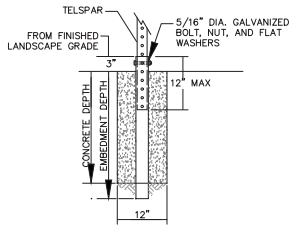
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	B1	B1



ROAD RECONSTRUCTION TYPICAL SECTION (NTS)



NO SHOULDER



CONCRETE FOUNDATION FOR SIGN POST

TYPICAL SECTION NOTES:

1. CONTRACTOR SHALL CLEAR AND GRUB TO FILL/CUT CATCH LIMITS PLUS 2 FEET PER SIDE. SALVAGE GRUBBING MATERIAL FOR REUSE ON THE PROJECT. CLEARING LIMITS SHALL BE APPROVED BY THE ENGINEER PRIOR TO PERFORMING WORK.
2. SEE BRIDGE INSTALLATION DETAIL SHEET D1 FOR MATERIAL TO BE PLACED WITHIN BRIDGE EXCAVATION LIMITS.
3. OUTSIDE OF BRIDGE EXCAVATION LIMITS, PLACE BORROW, TYPE B ON EXISTING ROADBED AS NECESSARY TO CONSTRUCT NEW ROAD PROFILE.
4. BACKFILL SHALL BE COMPACTED TO 95% MDD.
5. TOP 6" OF ROAD EMBANKMENT SELECTED MATERIAL, TYPE B SHALL PASS THE 3" SIEVE.

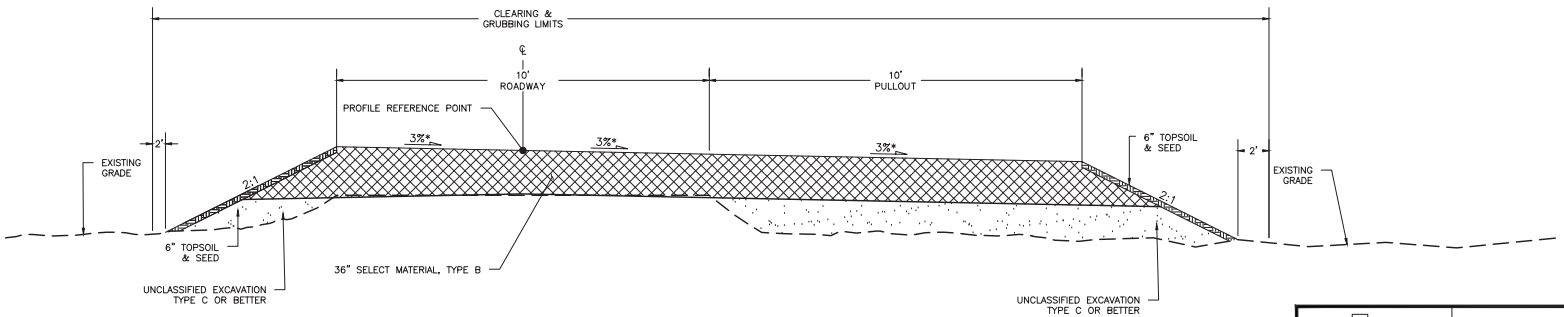
NOTES:

1. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, THE STANDARD SIGN OFFSET IS 12'. THE MINIMUM IS 6'.
2. IF SIGNS EXTEND OVER SIDEWALKS, THE MINIMUM VERTICAL CLEARANCE IS 7'–0".
3. ADD 6" TO MOUNTING HEIGHT ON UNPAVED ROADS.
4. IF SIGNS EXTEND OVER BIKE PATHS, THE MINIMUM VERTICAL CLEARANCE IS 8'–0".
5. PAINT ALL SIGN MOUNTING FASTENERS ON SIGN FACE A COLOR MATCHING THE SIGN FACE.
6. ATTACH ALL SIGNS ZEES AND BRACES MOUNTED TO THE POSTS WITH 5/16" BOLTS WITH SELF–LOCKING NUTS.

POST MOUNTED SIGN (NO SHOULDER) DETAIL
NTS

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"

CONCRETE FOUNDATION FOR SIGN POST DETAIL
NTS



ROAD PULLOUT TYPICAL SECTION (NTS)

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957

CONSULTANT

95% PS&E

SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

ROADWAY TYPICAL SECTION

FILE W:\WASILLAFILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME 1/26/2026 | LAYOUT | DESIGNED SMJ | CHECKED TJA | DRAFTED SMJ

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	C1	C1

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY	NOTE
201.0009.0000	CLEARING AND GRUBBING	ACRE	0.29	
202.0004.0000	REMOVAL OF CULVERT PIPE	LINEAR FOOT	120	Two 60 LF 9 ft Diameter Pipe
203.0003.0001	UNCLASSIFIED EXCAVATION	CUBIC YARD	1,440	
203.0003.0001	BORROW, TYPE B	CUBIC YARD	357	
602.0004.0001	50' Span by 14' Wide Big R "Temporary" Rolled Steel Girder Bridge	LUMP SUM	ALL REQ'D	
641.0001.0000	RIPRAP, CLASS II	CUBIC YARD	123	
641.0003.0000	STREAM SUBSTRAIGHT	CUBIC YARD	230	
615.0001.0000	STANDARD SIGNAGE	SQUARE FEET	6	
618.0002.0000	SEEDING	POUNDS	52	
620.0001.0000	6" TOPSOIL	SQUARE YARD	226	
621.2012.0000	PLANTING TREES AND SHRUBS	EACH	125	
623.0002.0000	VEGETATIVE MAT SALVAGE AND REPLANTING	SQUARE FOOT	1,174	
640.0001.0000	GEOGRID, REINFORCEMENT - CLASS 1	SQUARE YARD	142	
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQ'D	
641.0001.0000	EROSION AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQ'D	
641.0003.0000	TEMPORARY EROSION AND POLLUTION CONTROL	LUMP SUM	ALL REQ'D	
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQ'D	
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQ'D	
671.0001.0000	STREAM BANK RECONSTRUCTION	LINEAR FOOT	314	
671.2001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQ'D	

ESTIMATE OF QUANTITIES NOTES:

1. THE ESTIMATE OF QUANTITIES IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY TO DEMONSTRATE THE RELATIVE SCOPE AND MAGNITUDE OF THE PROJECT. BIDDERS SHALL CALCULATE QUANTITIES IN PREPARATION OF BIDS. DISCREPANCY BETWEEN THIS ESTIMATE AND FINAL QUANTITIES DURING CONSTRUCTION SHALL NOT BE A BASIS FOR A CLAIM.

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957
CONSULTANT

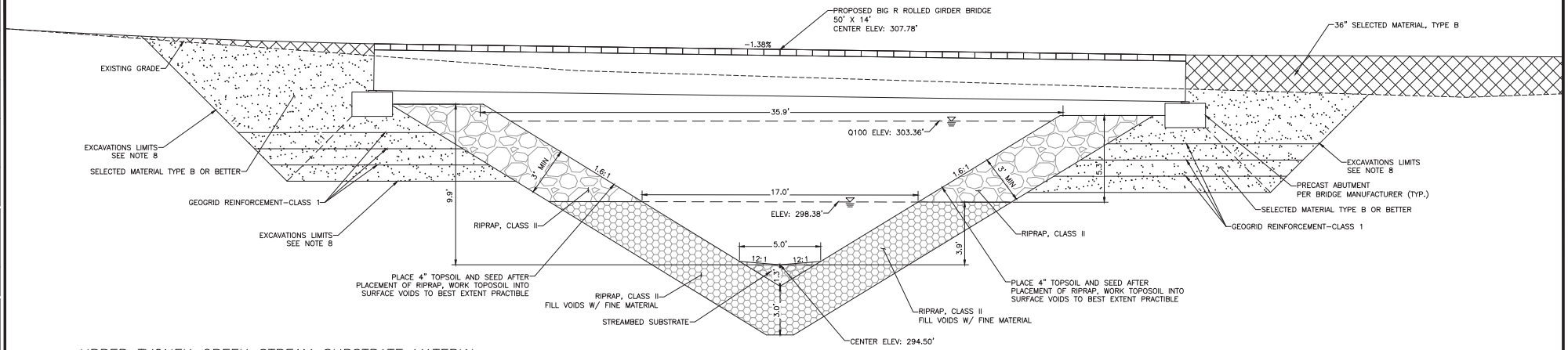
95% PS&E
SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

ESTIMATE OF QUANTITIES

FILE W:\WASILLA\FILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME 1/26/2026 | LAYOUT | DESIGNED SMJ | CHECKED TJA | DRAFTED SMJ

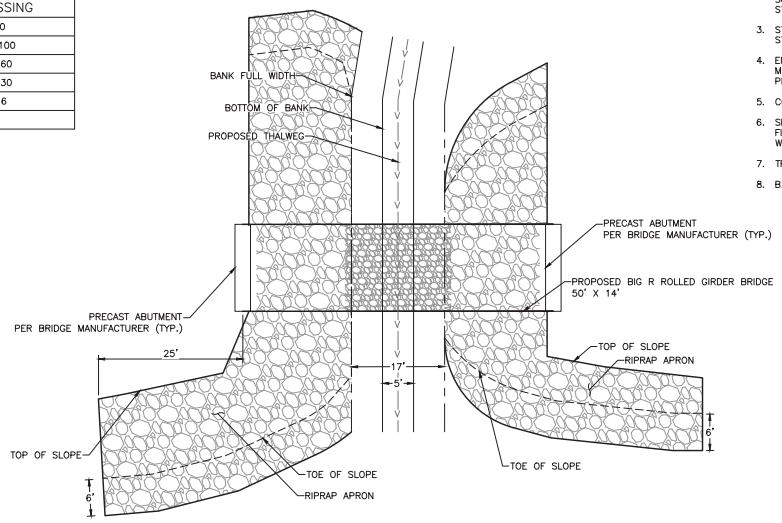
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	D1	D2



1 / D1 BRIDGE SECTION
STREAM STATION 81+62 TO 81+76

UPPER TYONEK CREEK STREAM SUBSTRATE MATERIAL

COARSE MATERIAL 50% BY WEIGHT		FINE MATERIAL 50% BY WEIGHT	
SIZE	% PASSING	SIZE	% PASSING
8"	100	3 IN	100
3"	50 (MAX)	3/4 IN	75–100
1"	5 (MAX)	NO. 4	15–60
–	–	NO. 16	10–30
–	–	NO. 200	0–6



2 / D1 STREAM CHANNEL PLAN VIEW
NTS

BRIDGE INSTALLATION NOTES:

1. STREAM SUBSTRATE MATERIAL SHALL BE 50% COARSE AND 50% FINE MATERIAL BY WEIGHT MEETING THE GRADATIONS SHOWN HEREIN. COARSE MATERIAL IS MADE UP OF DRAINAGE ROCK PER SECTION 610-2.01 AND FINE MATERIAL IS MADE UP OF STRUCTURAL FILL PER 703-2.13.
2. SALVAGE AND REUSE EXISTING STREAMBED MATERIAL WITHIN THE CUT LIMITS FOR USE AS FINE COMPONENT OF STREAM SUBSTRATE AT THE DIRECTION OF THE ENGINEER. IMPORTED MATERIAL SHALL BE USED IF SUFFICIENT QUANTITY OF EXISTING STREAMBED MATERIAL IS NOT AVAILABLE.
3. STREAM SUBSTRATE MATERIAL SHALL BE INSTALLED IN STRUCTURES ACCORDING TO THE PLANS. MANUAL SHAPING OF THE STREAM CHANNEL IS REQUIRED.
4. ENGINEER TO APPROVE MATERIALS AND METHOD FOR STREAM SUBSTRATE MATERIALS BEFORE MIXING AND PLACING MATERIAL OR RECONSTRUCTING THE STREAM CHANNEL. NOTIFY THE ENGINEER AT LEAST 48 HOURS IN ADVANCE OF PLACING BRIDGE INFILL MATERIAL.
5. CONSTRUCT STREAMBED AND BANKS LEAVING A ROUGH, NON-UNIFORM SURFACE.
6. SPRAY HIGH PRESSURE WATER ON ALL BRIDGE INFILL MATERIAL AND FOOTER PROTECTION ROCK TO THOROUGHLY WASH FINES INTO THE STREAMBED PRIOR TO DIVERTING STREAM INTO NEWLY CONSTRUCTED CHANNEL. FINES SHOULD BE WASHED IN UNTIL WATER POOLS ON SURFACE. ADDITIONAL FINES MAY BE REQUIRED DURING THIS PROCESS.
7. TRENCH WALL SLOPES SHALL CONFORM TO OSHA SAFETY STANDARDS.
8. BACKFILL SHALL BE COMPACTED TO 95% MDD.

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957
CONSULTANT

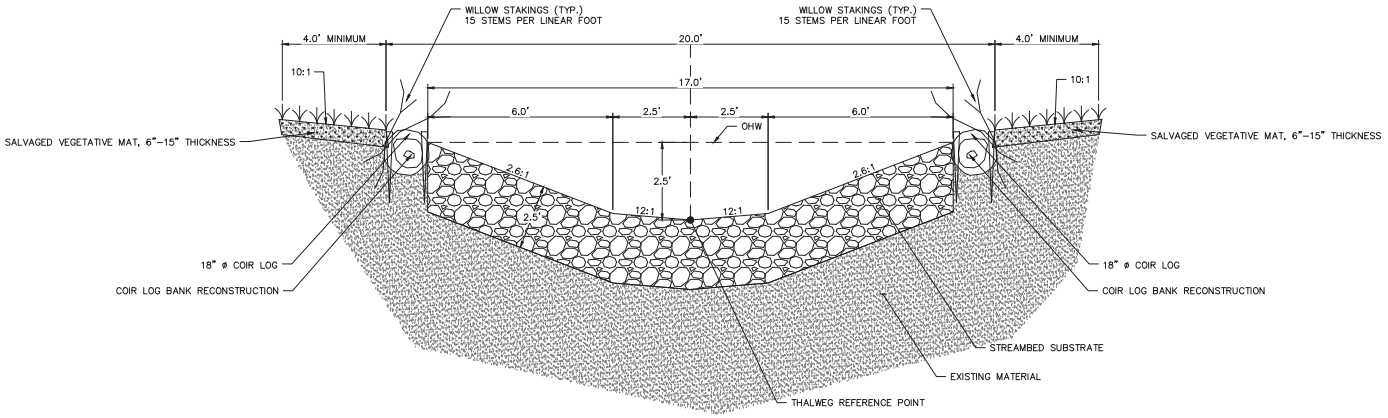
95% PS&E
SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

BRIDGE INSTALLATION CROSS SECTION

FILE W:\WASILLAFILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME 1/26/2026 | LAYOUT | DESIGNED SMJ | CHECKED TJA | DRAFTED SMJ

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	D2	D2



1/D2 TYONEK CREEK CHANNEL RECONSTRUCTION
STA 81+11 TO 81+62 AND STA 81+76 TO 82+27

BANK RECONSTRUCTION NOTE:

1. STREAM BOTTOM OUTSIDE OF CROSSING LOCATION TO CONSIST OF NATIVE, INSITU GRAVELS. EXCAVATE TO LIMITS SHOWN.
2. PLANT 2 SAPLINGS 1.5' TO 5.5' TALL FOR EVERY TREE CUT DOWN AS REQUIRED BY KENAI PENINSULA BOROUGH (KPB) PERMITS. SAPLING SELECTION SHALL FOLLOW ADFG'S 2025 STREAMBANK REVEGETATION AND PROTECTION GUIDE, PAGES 31 AND 33 DETAIL ACCEPTABLE SPECIES AND THEIR PLANTING LOCATION REQUIREMENTS. PLANT TREES A MINIMUM OF FIVE FEET APART.
3. REFER TO PAGES 26, 36-38 OF ADFG'S 2025 STREAMBANK REVEGETATION AND PROTECTION GUIDE FOR VEGETATIVE MAT SALVAGE AND/OR HARVEST AND REPLANTING. IF MAT IS NOT PLACED IN FINAL POSITION WITHIN 24 HOURS OF HARVEST STOCKPILE ON PLASTIC SHEETING, ROOTS DOWN AND SURROUND WITH SOIL TO PREVENT ROOTS AROUND THE EDGES FROM DRYING. REGULARLY WATER THE VEGETATIVE MAT UNTIL SITE IS PREPARED FOR PLANTING.
4. SPRAY HIGH PRESSURE WATER ON ALL STREAMBED INFILL MATERIAL TO THOROUGHLY WASH FINES INTO THE STREAMBED PRIOR TO DIVERTING STREAM INTO NEWLY CONSTRUCTED CHANNEL. FINES SHOULD BE WASHED IN UNTIL WATER POOLS ON SURFACE. ADDITIONAL FINES MAY BE REQUIRED. STREAM SHALL NOT BE RE-DIVERTED INTO RECONSTRUCTED STREAM UNTIL ENGINEER HAS APPROVED BED MATERIALS ARE SUFFICIENTLY SEALED.
5. REFER TO PAGES 26-27 ADFG'S 2025 STREAMBANK REVEGETATION FOR SELECTION OF SAPLING PLANT SPECIES. ENGINEER SHALL APPROVE SAPLING SPECIES PRIOR TO PLANTING.
6. REFER TO PAGES 54-57 OF ADFG'S 2025 STREAMBANK REVEGETATION GUIDE FOR LIVE STAKING, PLANTING AND SPACING OF SAPLINGS.
7. REFER TO PAGES 72-74 ADFG'S 2025 STREAMBANK REVEGETATION FOR COIR LOG INFORMATION.
8. SALVAGE VEGETATIVE MAT FROM THE DISTURBED AREA OR LOCAL AREA. ALLOWABLE THICKNESS OF 6 INCHES MINIMUM AND OF 15 INCHES MAXIMUM. INSTALL SALVAGED VEGETATIVE MAT OVER ENTIRE LENGTH OF DISTURBED OR RECONSTRUCTED STREAMBANKS.

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957
CONSULTANT

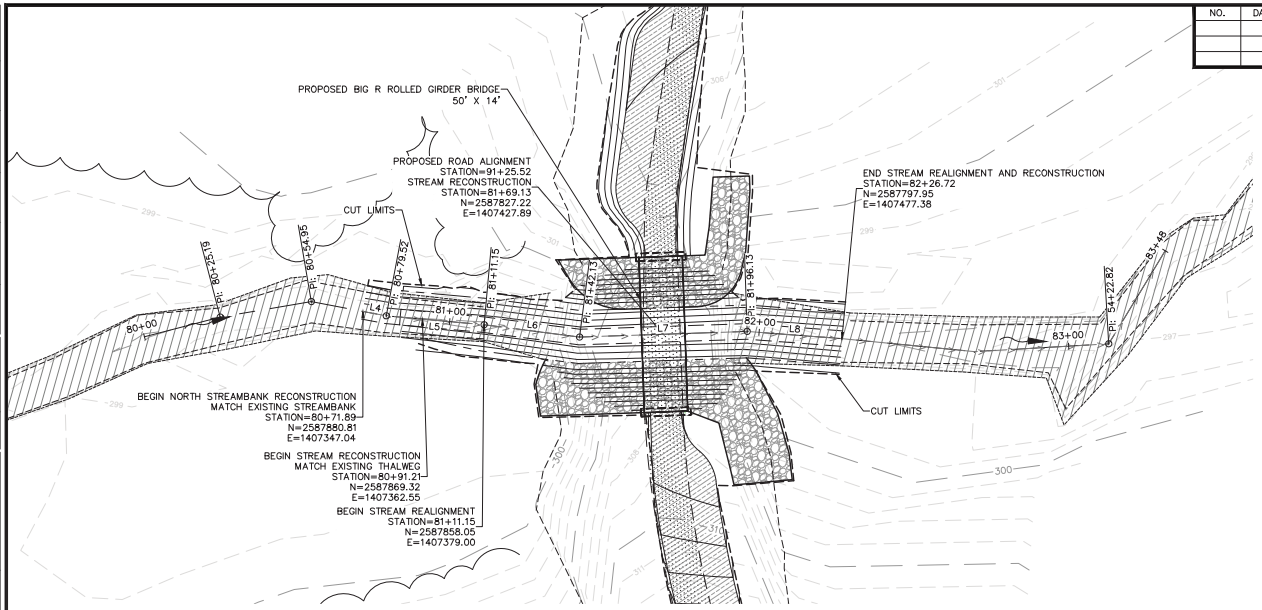
95% PS&E
SEAL

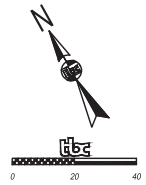
UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

CHANNEL RECONSTRUCTION

FILE | W:\WASILLA\FILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME | 1/26/2026 | LAYOUT | DESIGNED | SMJ | CHECKED | TJA | DRAFTED | SMJ

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	F1	F2



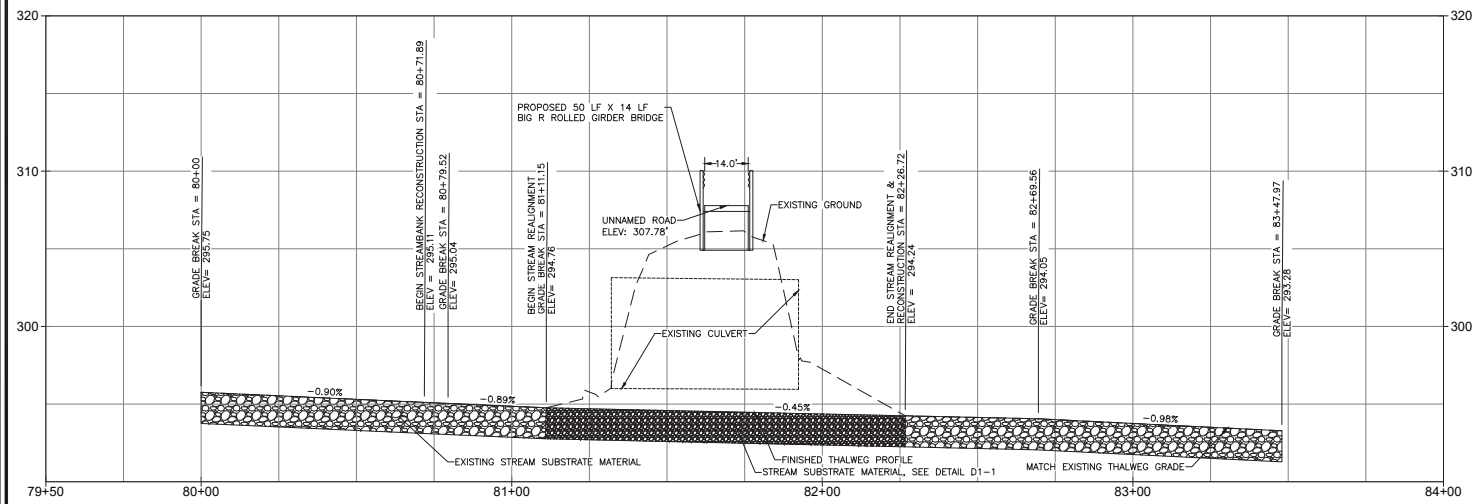


LEGEND

- EXISTING GRAVEL ROAD SURFACE
- NEW GRAVEL ROAD SURFACE
- EXISTING STREAM
- EXISTING ROADWAY
- PROPOSED ROADWAY
- PROPOSED STREAM SUBSTRATE MATERIAL
- RIPRAP ABUTMENT PROTECTION
- PROPOSED BOTTOM OF STREAM BANK
- PROPOSED BANK FULL WIDTH (BFW)
- PROPOSED EDGE OF LOW FLOW CHANNEL
- ROADWAY CENTERLINE
- STREAM CENTERLINE
- EXISTING GRADE PROFILE
- FINISH GRADE PROFILE
- CUT LIMIT
- FILL LIMIT
- EXISTING MINOR CONTOUR
- 195 EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 195 PROPOSED MAJOR CONTOUR
- TOE OF SLOPE

STREAM CENTER LINE TABLE

LINE #	LENGTH	DIRECTION
L4	7.64	S50° 12' 09.47"E
L6	30.99	S53° 27' 21.19"E
L7	54.00	S62° 42' 50.89"E
L8	30.58	S56° 28' 07.89"E



THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957

CONSULTANT

95% PS&E

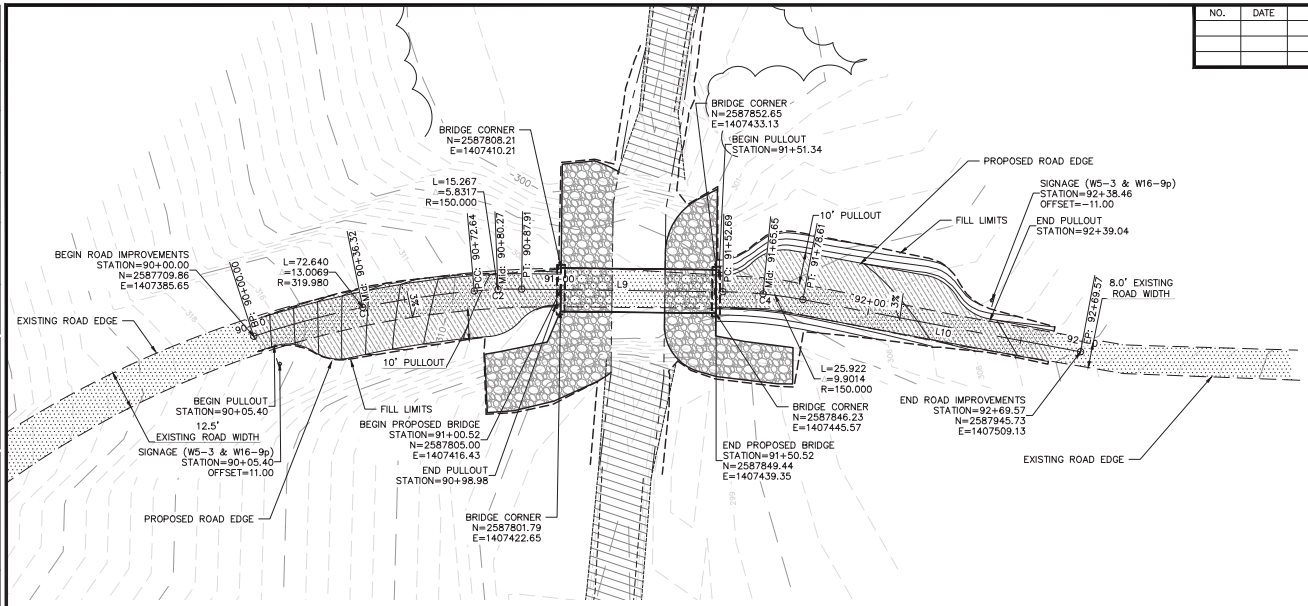
SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

STREAM
PLAN AND PROFILE

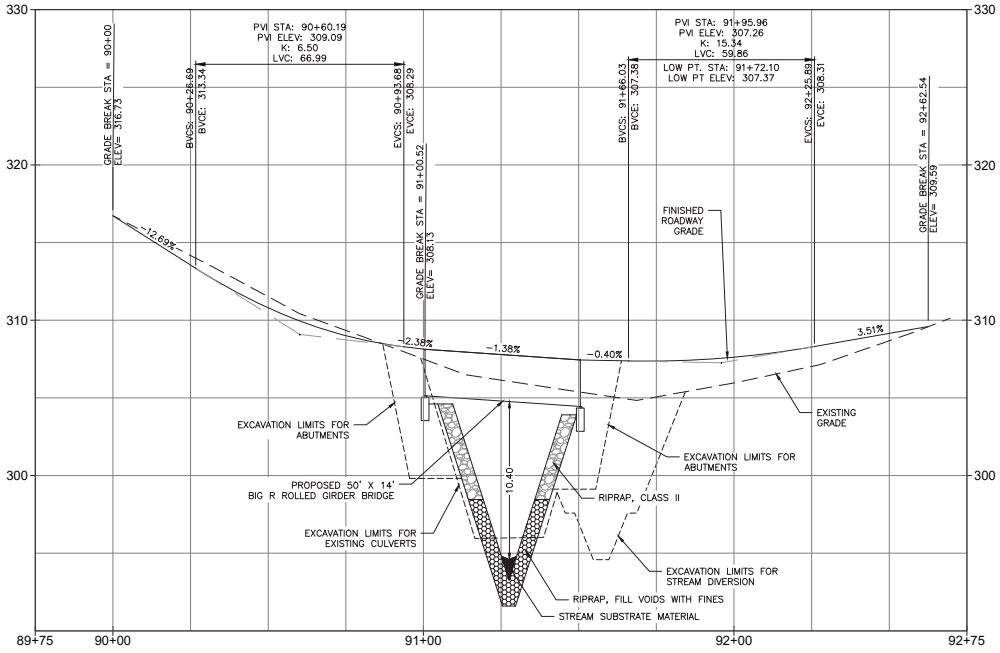
FILE W:\WASILLA\FILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME 1/26/2026 | LAYOUT | DESIGNED SMJ | CHECKED TJA | DRAFTED SMJ

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	F2	F2



ROAD CENTER LINE TABLE		
LINE #	LENGTH	DIRECTION
L9	64.85	N27° 17' 09.11"E
L10	89.04	N37° 11' 14.02"E

ROAD CENTER CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	72.64	319.98	13.01	N14° 57' 03"E	72.48
C2	15.27	150.00	5.83	N24° 22' 12"E	15.26
C4	27.78	150.00	10.61	N32° 35' 26"E	27.74



THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957
CONSULTANT

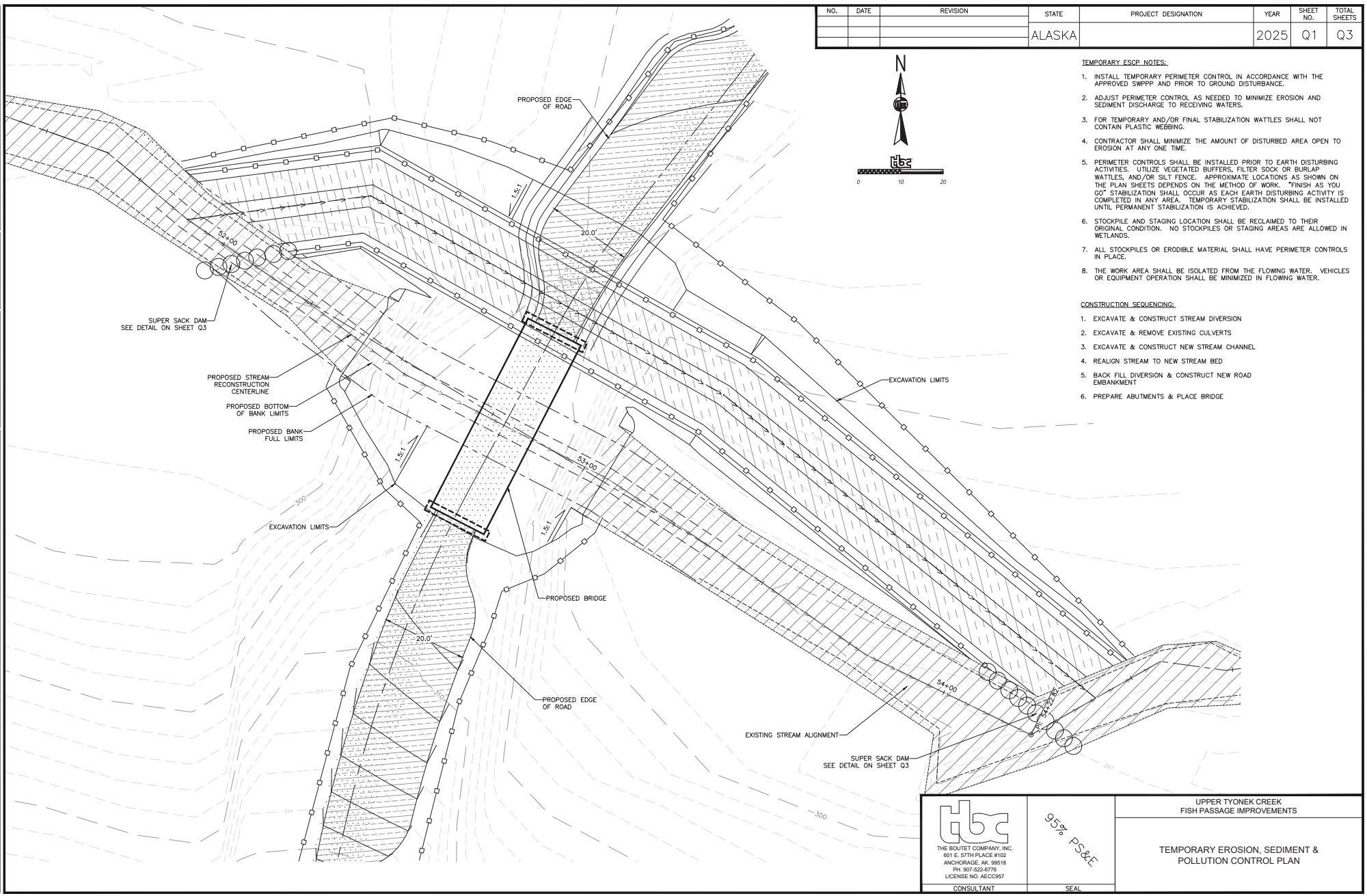
95% PS&E
SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

ROAD PLAN AND PROFILE

FILE | W:\WASILLA\FILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME | 1/26/2026 | LAYOUT | DESIGNED | SMJ | CHECKED | TJA | DRAFTED | SMJ

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	Q1	Q3



TEMPORARY ESCP NOTES:

1. INSTALL TEMPORARY PERIMETER CONTROL IN ACCORDANCE WITH THE APPROVED SWPPP AND PRIOR TO GROUND DISTURBANCE.
2. ADJUST PERIMETER CONTROL AS NEEDED TO MINIMIZE EROSION AND SEDIMENT DISCHARGE TO RECEIVING WATERS.
3. FOR TEMPORARY AND/OR FINAL STABILIZATION WATTLES SHALL NOT CONTAIN PLASTIC WEBBING.
4. CONTRACTOR SHALL MINIMIZE THE AMOUNT OF DISTURBED AREA OPEN TO EROSION AT ANY ONE TIME.
5. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. UTILIZE VEGETATED BUFFERS, FILTER SOCK OR BURLAP WATTLES, AND/OR SILT FENCE. APPROXIMATE LOCATIONS AS SHOWN ON THE PLAN SHEETS DEPENDS ON THE METHOD OF WORK. "FINISH AS YOU GO" STABILIZATION SHALL OCCUR AS EACH EARTH DISTURBING ACTIVITY IS COMPLETED IN ANY AREA. TEMPORARY STABILIZATION SHALL BE INSTALLED UNTIL PERMANENT STABILIZATION IS ACHIEVED.
6. STOCKPILE AND STAGING LOCATION SHALL BE RECLAIMED TO THEIR ORIGINAL CONDITION. NO STOCKPILES OR STAGING AREAS ARE ALLOWED IN WETLANDS.
7. ALL STOCKPILES OR ERODIBLE MATERIAL SHALL HAVE PERIMETER CONTROLS IN PLACE.
8. THE WORK AREA SHALL BE ISOLATED FROM THE FLOWING WATER. VEHICLES OR EQUIPMENT OPERATION SHALL BE MINIMIZED IN FLOWING WATER.

CONSTRUCTION SEQUENCING:

1. EXCAVATE & CONSTRUCT STREAM DIVERSION
2. EXCAVATE & REMOVE EXISTING CULVERTS
3. EXCAVATE & CONSTRUCT NEW STREAM CHANNEL
4. REALIGN STREAM TO NEW STREAM BED
5. BACK FILL DIVERSION & CONSTRUCT NEW ROAD EMBANKMENT
6. PREPARE ABUTMENTS & PLACE BRIDGE

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957

CONSULTANT

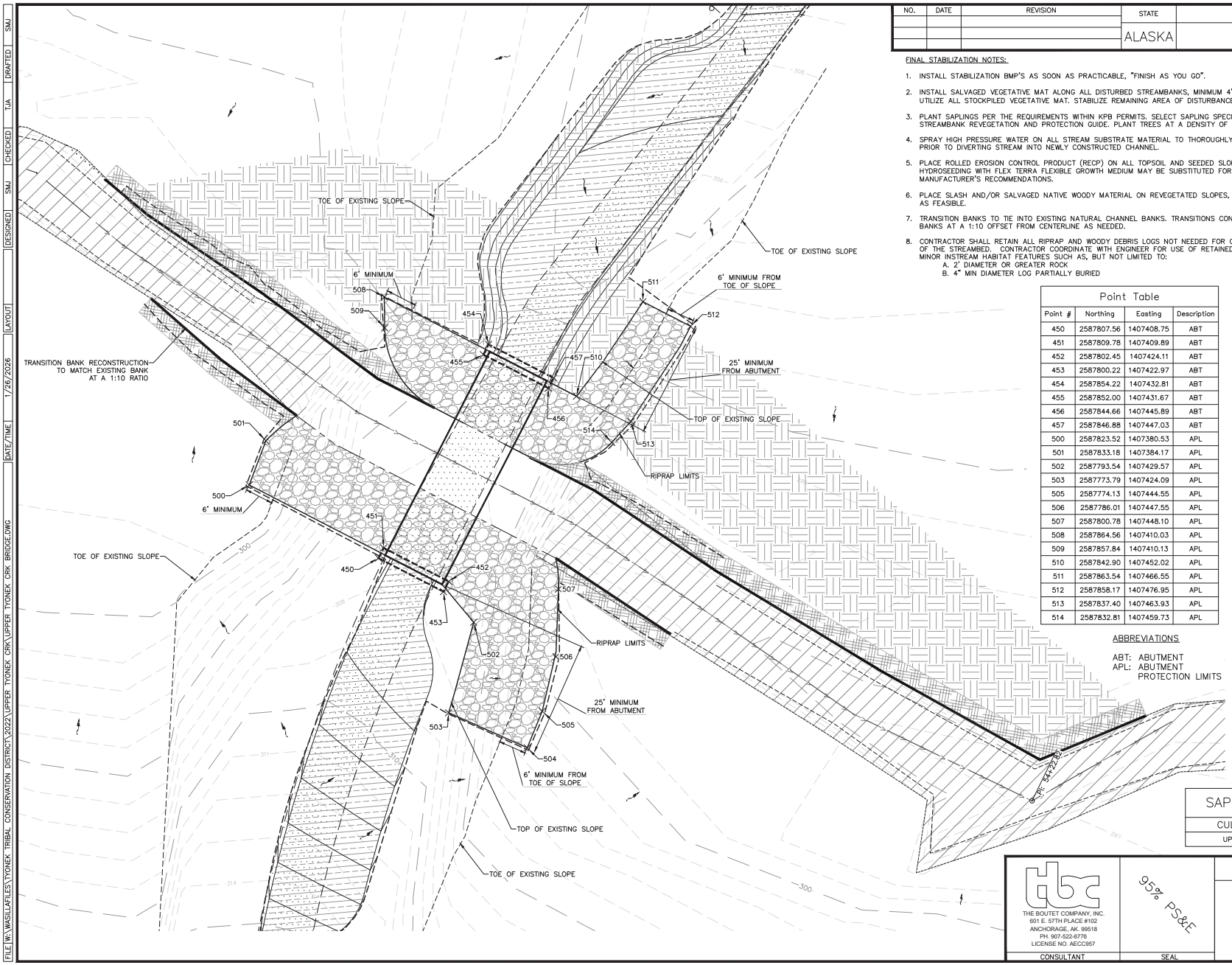
95% PS&E

SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

TEMPORARY EROSION, SEDIMENT & POLLUTION CONTROL PLAN

FILE W:\WASILLA\FILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME 1/26/2026 | LAYOUT | DESIGNED SMJ | CHECKED TJA | DRAFTED SMJ



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	Q2	Q3

FINAL STABILIZATION NOTES:

1. INSTALL STABILIZATION BMP'S AS SOON AS PRACTICABLE, "FINISH AS YOU GO".
2. INSTALL SALVAGED VEGETATIVE MAT ALONG ALL DISTURBED STREAMBANKS, MINIMUM 4' WIDE OR AS WIDE AS REQUIRED TO UTILIZE ALL STOCKPILED VEGETATIVE MAT. STABILIZE REMAINING AREA OF DISTURBANCE WITH 6" TOPSOIL AND SEED..
3. PLANT SAPLINGS PER THE REQUIREMENTS WITHIN KPB PERMITS. SELECT SAPLING SPECIES AND SPACING PER ADF&G'S STREAMBANK REVEGETATION AND PROTECTION GUIDE. PLANT TREES AT A DENSITY OF 17 SAPLINGS PER 1000 SQ FT.
4. SPRAY HIGH PRESSURE WATER ON ALL STREAM SUBSTRATE MATERIAL TO THOROUGHLY WASH FINES INTO THE STREAMBED PRIOR TO DIVERTING STREAM INTO NEWLY CONSTRUCTED CHANNEL.
5. PLACE ROLLED EROSION CONTROL PRODUCT (RECP) ON ALL TOPSOIL AND SEEDED SLOPES 2 TO 1 OR STEEPER. HYDROSEEDING WITH FLEX TERRA FLEXIBLE GROWTH MEDIUM MAY BE SUBSTITUTED FOR RECP. APPLY PER MANUFACTURER'S RECOMMENDATIONS.
6. PLACE SLASH AND/OR SALVAGED NATIVE WOODY MATERIAL ON REVEGETATED SLOPES, MAXIMIZE WOOD-TO-SOIL CONTACT AS FEASIBLE.
7. TRANSITION BANKS TO TIE INTO EXISTING NATURAL CHANNEL BANKS. TRANSITIONS CONSTRUCTED TO MATCH INTO EXISTING BANKS AT A 1:10 OFFSET FROM CENTERLINE AS NEEDED.
8. CONTRACTOR SHALL RETAIN ALL RIPRAP AND WOODY DEBRIS LOGS NOT NEEDED FOR CONSTRUCTION UNTIL ACCEPTANCE OF THE STREAMBED. CONTRACTOR COORDINATE WITH ENGINEER FOR USE OF RETAINED EXTRA MATERIAL FOR USE AS MINOR INSTREAM HABITAT FEATURES SUCH AS, BUT NOT LIMITED TO:
   A. 2' DIAMETER OR GREATER ROCK
   B. 4" MIN DIAMETER LOG PARTIALLY BURIED

Point Table

Point #	Northing	Easting	Description
450	2587807.56	1407408.75	ABT
451	2587809.78	1407409.89	ABT
452	2587802.45	1407424.11	ABT
453	2587800.22	1407422.97	ABT
454	2587854.22	1407432.81	ABT
455	2587852.00	1407431.67	ABT
456	2587844.66	1407445.89	ABT
457	2587846.88	1407447.03	ABT
500	2587823.52	1407380.53	APL
501	2587833.18	1407384.17	APL
502	2587793.54	1407429.57	APL
503	2587773.79	1407424.09	APL
505	2587774.13	1407444.55	APL
506	2587786.01	1407447.55	APL
507	2587800.78	1407448.10	APL
508	2587864.56	1407410.03	APL
509	2587857.84	1407410.13	APL
510	2587842.90	1407452.02	APL
511	2587863.54	1407466.55	APL
512	2587858.17	1407476.95	APL
513	2587837.40	1407463.93	APL
514	2587832.81	1407459.73	APL

ABBREVIATIONS

ABT: ABUTMENT
APL: ABUTMENT PROTECTION LIMITS

LEGEND

- TOPSOIL AND SEED
- EXISTING STREAM
- EXISTING ROADWAY
- PROPOSED ROADWAY
- DIVERSION CHANNEL
- PROPOSED STREAM SUBSTRATE MATERIAL
- RIPRAP ABUTMENT PROTECTION
- VEGETATIVE COLLAR
- PROPOSED BOTTOM OF STREAM BANK
- PROPOSED BANK FULL WIDTH (BFW)
- FINISH GRADE PROFILE
- PROJECT LIMITS
- CUT LIMIT
- FILL LIMIT
- EXISTING MINOR CONTOUR
- 195 EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 195 PROPOSED MAJOR CONTOUR
- TOE OF SLOPE
- PERIMETER CONTROL BMP
- EXISTING DRAINAGE ARROW
- PROPOSED DRAINAGE ARROW

SAPLING QUANTITY ESTIMATE TABLE

CULVERT LOCATION	NUMBER OF SAPLINGS
UPPER TYONEK CREEK	371

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957
CONSULTANT

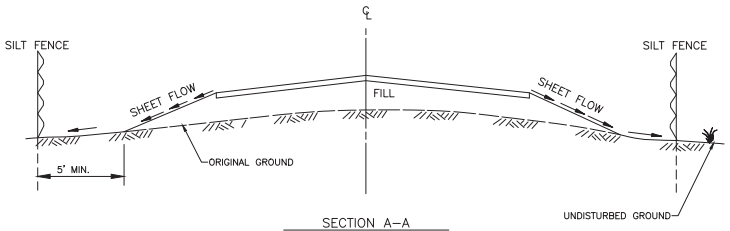
95% PS&E
SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

EROSION, SEDIMENT & POLLUTION CONTROL PLAN
FINAL STABILIZATION PLAN

FILE W:\WASILLA\FILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME 1/26/2026 | LAYOUT | DESIGNED SMJ | CHECKED TJA | DRAFTED SMJ

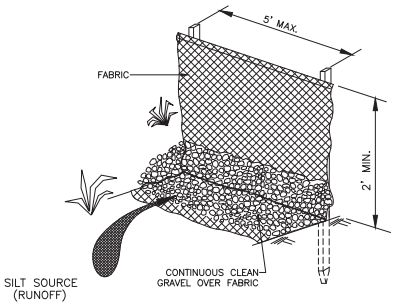
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA		2025	Q3	Q3



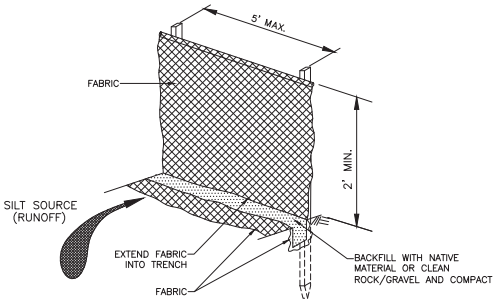
SECTION A–A

SILT FENCE NOTES:

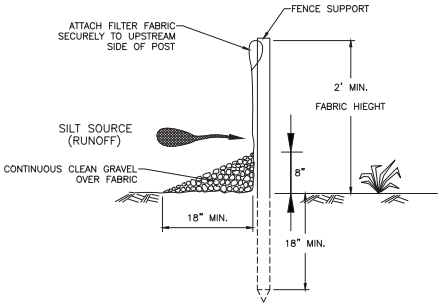
1. INSTALLATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THIS DETAIL AND PER THE MANUFACTURER'S RECOMMENDATION.
2. SILT FENCE FABRIC SHALL BE OVERLAPPED 6" AT FENCE SUPPORTS.
3. SILT FENCE FABRIC SHALL BE TAUT, NOT LOOSE OR FOLDED.
4. THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
5. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.



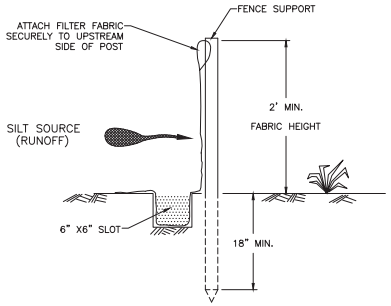
BACKFILL ALTERNATE



TRENCH ALTERNATE

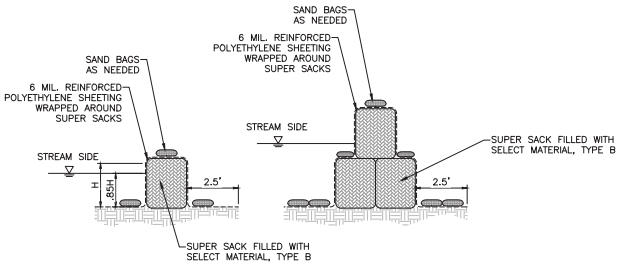


BACKFILL CROSS SECTION

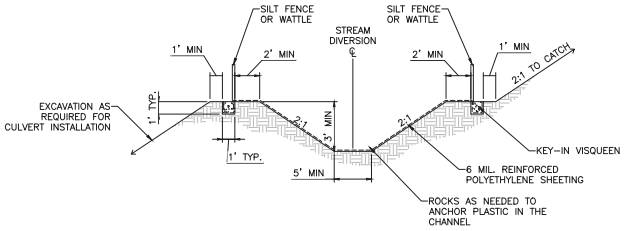


TRENCH CROSS SECTION

1. FENCE SHALL BE PLACED AT LEAST 5' FROM THE TOE OF EMBANKMENT OR EXCAVATION AREAS, OR AS DIRECTED BY THE ENGINEER.
2. ACCUMULATION OF SEDIMENT BEHIND SILT FENCE SHALL BE REMOVED WHEN DEPTH REACHES 12". REMOVED SEDIMENT SHALL BE DEPOSITED IN AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.



1 / Q3 SUPER SACK DAM DETAIL
NTS



2 / Q3 STREAM DIVERSION DETAIL
NTS

SHEET NOTES:

1. SILT FENCE MAY BE SUBSTITUTED FOR WATTLES AS APPROVED BY THE ENGINEER.
2. WATTLES FOR TEMPORARY AND/OR FINAL STABILIZATION SHALL NOT CONTAIN PLASTIC WEBBING.

THE BOUTET COMPANY, INC.
601 E. 57TH PLACE #102
ANCHORAGE, AK. 99518
PH. 907-522-6776
LICENSE NO. AECC957
CONSULTANT

95% PS&E
SEAL

UPPER TYONEK CREEK
FISH PASSAGE IMPROVEMENTS

EROSION, SEDIMENT &
POLLUTION CONTROL DETAILS

FILE W:\WASILLAFILES\TYONEK TRIBAL CONSERVATION DISTRICT\2022\UPPER TYONEK CRK\UPPER TYONEK CRK BRIDGE.DWG | DATE/TIME 1/26/2026 | LAYOUT | DESIGNED SMJ | CHECKED TJA | DRAFTED SMJ

Appendix C – Section 106 Documentation

National Historic Preservation Act Section 106 Review of Project

Cultural Resources (CR) Staff Section 106 Review:

Date Request Received: July 1, 2022

Project Name: Tyonek Fish Passage

CR Project Number: 2022-072

CR Staff Reviewer: Jake Adams, Archaeologist

CR Staff Notes: Describe salient points of project description and any other pertinent information

This project will occur at Fish Passage site 20601534 on Tyonek Creek within an existing, active, roadbed. Instream barriers such as rebar and grates will be removed, and the existing culvert will be replaced with an arch culvert in the same location to create continuous instream habitat. There will be no new ground disturbance associated with this project and everything will occur within the original culvert footprint (PL provided detailed photos of the culvert).

Type of Review: **Literature/Archival**

CR Review Results:

This undertaking occurs within the footprint of an area of previous, extensive, disturbance. There are no known archaeological sites within one mile of the project area. Based on this the undertaking has a finding of no historic properties affected.

Other Instructions:

NHPA Section 106 review is complete.

Section 106 Finding: **No Historic Properties Affected**

Regional Historic Preservation Officer Use Only:

RHPO Comments:

Section 106 Finding Approved:

_____ _____

Jacob S. Adams Date
Archaeologist

From:	Swenson, Nicole Y
To:	Adams, Jacob S
Subject:	Re: Tyonek TCD Agreements - NHPA Compliance
Date:	Tuesday, June 20, 2023 10:09:26 PM
Attachments:	image002.png image003.png

Fantastic, thanks, Jacob!

Nicole

Get Outlook for iOS

From: Adams, Jacob S <jacob_adams@fws.gov>
Sent: Tuesday, June 20, 2023 8:11:53 AM
To: Swenson, Nicole Y <nicole_swenson@fws.gov>
Subject: RE: Tyonek TCD Agreements - NHPA Compliance

Good Morning Nicole-

Looking back at our records and the attachments you provided you are good to go on culverts 20601540 and 20601534. Those culverts were cleared for NHPA Section 106 in 2022. Let me know if you need anything else from me.

Best,
Jake

Jacob S. Adams Ph.D., RPA
Archaeologist
US Fish and Wildlife Service, Alaska Region
1011 E. Tudor Rd.
Anchorage, AK 99503
406-223-5359 or Microsoft Teams
jacob_adams@fws.gov

From: Swenson, Nicole Y <nicole_swenson@fws.gov>
Sent: Friday, June 16, 2023 4:30 PM
To: Adams, Jacob S <jacob_adams@fws.gov>
Subject: Tyonek TCD Agreements - NHPA Compliance

Hi Jacob,

I have two more agreements to process and am requesting your review when you have a moment. (I

am struggling to determine what information or forms are useful to you, so please let me know if you need something more/else!)

I attached previous determination for Lower Tyonek Creek Culvert and Fish Passage Agreement Amendments for your reference.
I am not sure if we need to revisit this, but I thought I would run it by you and make sure the Upper Tyonek Creek site is approved to move forward (construction not starting until 2024 at the earliest)

Both agreements are with the Tyonek Tribal Conservation District doing fish passage/ culvert replacement work.

One agreement is the 3rd year of a 5-year fish passage agreement.
The second agreement is a new BIL FY23 project to support design and construction of two of the larger fish passage culvert replacement projects initiated by the previous agreement.

Both agreements are focused on replacing and installing fish-friendly culverts within the existing roadbed on two projects on Tyonek Creek:

- Lower Tyonek Creek (ADFG 20601540) culvert replacement construction is beginning in 2023 and will be completed in 2024. (Below this email I will paste our conversation from last year about the lower Tyonek Creek Project.)
- Upper Tyonek Creek culvert (circled in the map below, ADFG #20601534) replacement will be constructed in 2025. This will replace a double barrel culvert with a single, larger culvert within the existing roadbed. No permanent stream diversion is anticipated.

All construction is anticipated to be within the existing road prism.

Please let me know what else you might need from me.
Thanks and have a great weekend!

Nicole Swenson

Senior Aquatic Invasive Species Field Biologist
US Fish and Wildlife Service
4700 BLM Rd.
Anchorage, AK 99507
Work Cell: (907) 545-3249

GENERAL NOTES:

1) CONTECH ENGINEERED SOLUTIONS IS RESPONSIBLE FOR THE DESIGN AND SHOP FABRICATION OF THE BRIDGE STRUCTURE ONLY. ALL MEANS, METHODS, AND EQUIPMENT USED FOR FIELD ASSEMBLY AND INSTALLATION OF THE BRIDGE STRUCTURE, INCLUDING PREPARATION OR REVIEW AND APPROVAL OF PROJECT SPECIFIC ERECTION PLANS, ARE OUTSIDE OF CONTECH'S RESPONSIBILITY.

2) DESIGN IS IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

3) MATERIALS (UNLESS NOTED OTHERWISE):
   a) STRUCTURAL STEEL: ASTM A588 WEATHERING STEEL
   b) BRIDGE PLANK: ASTM A653 GRADE 50 CLASS 1 (GALV)
   c) STRUCTURAL BOLTS: ASTM F3125 GRADE A325 (GALV)
   d) SHEET PILING: ASTM A929 (GALV)

4) DESIGN LOADINGS:
   a) BRIDGE DEAD LOAD PLUS 80 PSF TOTAL WEARING SURFACE.
   b) VEHICLE LIVE LOAD: HL-93
      MAX AVERAGE DAILY TRUCK TRAFFIC (ADTT) = 200
      MAX LL DEFLECTION = LENGTH/500
   c) OWNER SPECIFIED LIVE LOAD: U80
   d) WIND LOADING PER AASHTO LRFD BRIDGE DESIGN SPECFICATIONS SECTION 3.8.
   e) SEISMIC LOADING PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 3.10.

5) BRIDGE RAIL DESIGNED FOR TL-1 OR TL-2 LOADING IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS APPENDIX A13.2 OR ONLY USED AS A GUIDE RAIL (RAIL HAS NOT BEEN CRASH TESTED). SEE SECTION VIEW FOR RAIL DESIGN.

6) BRIDGE TO BE BUILT TO THE REQUIREMENTS OF AWS D1.5.

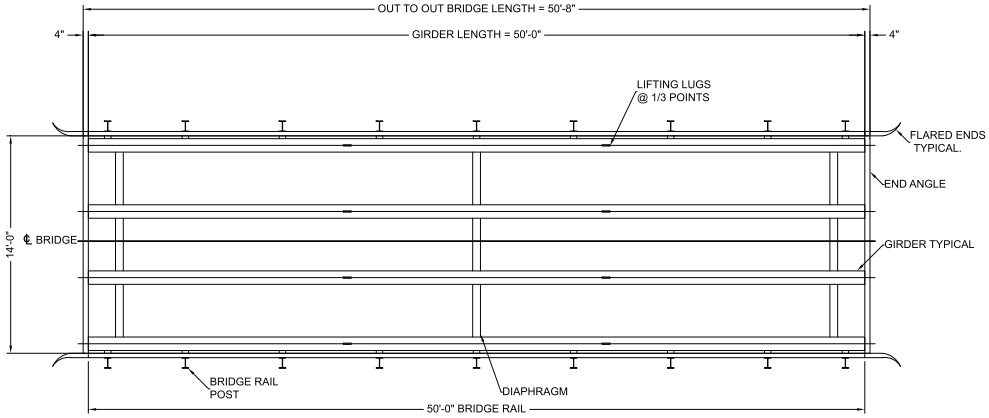
7) ALL EXPOSED SURFACES OF STRUCTURAL STEEL TO BE CLEANED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATIONS NO. 1, SSPC-SP1 SOLVENT CLEANING. EXPOSED SURFACES OF STEEL SHALL BE DEFINED AS THOSE SURFACES SEEN FROM THE DECK OR FROM THE OUTSIDE OF THE STRUCTURE. ALL OTHER SURFACES TO HAVE STANDARD MILL FINISH.

8) MAINTENANCE NOTE: CONTECH RECOMMENDS NOT APPLYING DE-ICING OR DUST PROHIBITIVE CHEMICALS OR SALTS TO ANY PART OF THE BRIDGE STRUCTURE. IF DE-ICING OR DUST PROHIBITIVE CHEMICALS OR SALTS ARE APPLIED TO ANY PART OF THE BRIDGE STRUCTURE, CONTECH WILL NOT BE RESPONSIBLE FOR ANY RESULTANT ACCELERATED CORROSION.

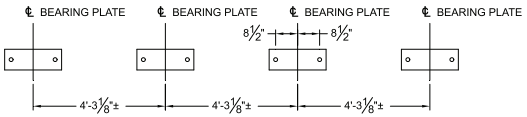
9) ELASTOMERIC PADS ARE USED TO PROVIDE A LEVEL BEARING SURFACE ONLY.

10) 12" x 4-1/4" BRIDGE PLANKS ARE SHOP WELDED TO THE GIRDERS AND ARE THE STRUCTURAL DECKING SYSTEM. THE WEARING SURFACE IS ONLY TO PROVIDE A SMOOTH RUNNING SURFACE AND NOT REQUIRED STRUCTURALLY.

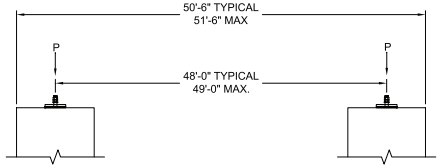
11) DECK MAY BE FINISHED WITH GRAVEL, ASPHALT, CONCRETE, WOOD OR ANY OTHER SUITABLE WEARING SURFACE MATERIAL AT THE OWNERS DISCRETION. TYPICAL WEARING SURFACE LOAD OF 80 PSF WILL ACCOMMODATE UP TO 5 1/4" OF GRAVEL BASE (130 PSF) OR 4 1/4" OF CONCRETE OR ASPHALT (150 PCF) SURFACING ABOVE THE STEEL BRIDGE DECK PLANK CORRUGATIONS. FOR CONCRETE WEARING SURFACES CONTECH RECOMMENDS USING CRACK CONTROL REINFORCING AND IF LATERAL SHIFTING OR UPLIFT OF THE CONCRETE WEARING SURFACE IS A CONCERN, CONTECH RECOMMENDS ATTACHING HEADED ANCHOR STUDS IN THE LOWEST VALLEYS OF THE CORRUGATIONS.



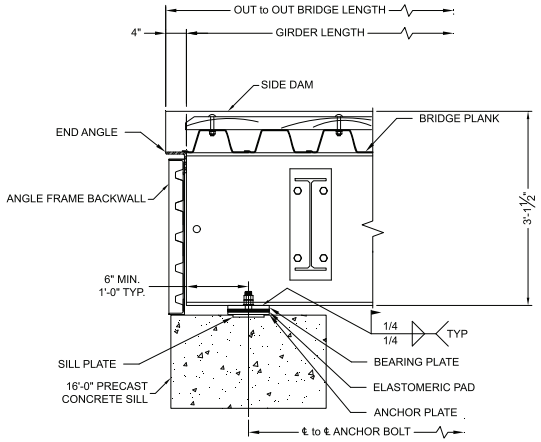
PLAN VIEW



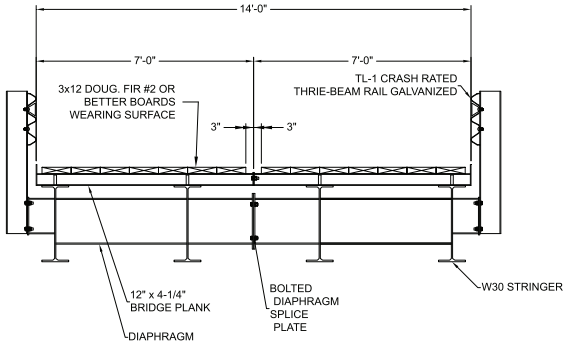
ANCHOR BOLT LAYOUT



ANCHOR BOLT ELEVATION



BEARING ELEVATION



SECTION VIEW

BRIDGE LOADING AND UNFACTORED BEARING REACTIONS IN KIPS		MAX AT INTERIOR GIRDER			MAX AT EXTERIOR GIRDER			TOTAL AT ABUTMENT		
		P	H	L	P	H	L	P	H	L
DEAD LOAD (DC)		3.71			4.31			16.04		
TOTAL WEARING SURFACE (DW) = 80 PSF		8.52			5.48			28.00		
HL-93 DESIGN VEHICLE MAX. ADTT = 1025	LL	42.16			29.99			73.97		
	LL+IM	53.12			37.79			93.20		
U80 OWNER SPECIFIED VEHICLE	LL	58.10			45.43			116.20		
	LL+IM	68.17			53.30			136.34		
WINDLOAD (WS) = 50 PSF		-7.00	1.88		0.00	1.88		-7.00	7.50	
THERMAL LOAD (TU)				2.38			2.38			9.53
BREAKING FORCE (BR)				5.40			5.40			21.60
SEISMIC LOAD (EQ)		CONTACT YOUR CONTECH BRIDGE CONSULTANT FOR SEISMIC INFORMATION								

"P": VERTICAL LOAD
"H": HORIZONTAL LOAD TRANSVERSE TO THE STRUCTURE
"L": HORIZONTAL LOAD LONGITUDINAL TO THE STRUCTURE
* WIND LOAD UPLIFT ASSUMES FULL 20 PSF TO DECK AREA IS APPLIED TO ONE STRINGER LINE

MAX MODULE WEIGHT (LBS)
18500

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

BIG R BRIDGE
CONTECH DYOB DRAWING

BIG R EXPRESS MODULAR
50'-0" x 14'-0" PRELIMINARY DRAWING
50 x 14 Modular
Tyonek, AK

PROJECT No.:	SEQ. No.:	DATE:
888471	010	2/6/2026
DESIGNED: DYOB	DRAWN: DYOB	
CHECKED:	APPROVED:	
SHEET NO.: 1		

GENERAL NOTES:

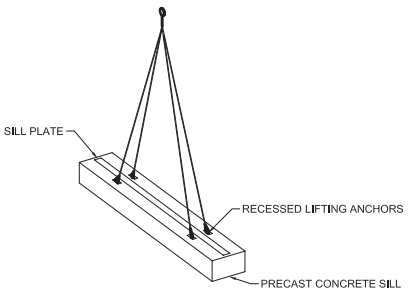
- THE INFORMATION PROVIDED IN THIS GUIDE IS FOR REFERENCE ONLY AND PROVIDES PROVEN PROCEDURES FOR FIELD ASSEMBLY AND INSTALLATION OF BIG R BRIDGES THAT WILL NOT RESULT IN DAMAGE TO THE STRUCTURE. BIG R BRIDGE IS NOT RESPONSIBLE FOR THE MEANS, METHODS AND EQUIPMENT USED FOR FIELD ASSEMBLY AND INSTALLATION OF THE BRIDGE STRUCTURES. BIG R BRIDGE WILL NOT BE HELD LIABLE FOR ANY ISSUES THAT ARISE DUE TO FIELD ASSEMBLY AND INSTALLATION OF THE BRIDGE STRUCTURES.
- THIS GUIDE IS A GENERIC DOCUMENT FOR THE INSTALLATION OF OUR TYPICAL BRIDGES. THE BIG R BRIDGE PROJECT SPECIFIC PLANS SHOULD BE REFERENCED FOR PROJECT SPECIFIC DETAILS AND FOR ADDITIONAL INFORMATION.
- BIG R BRIDGE IS NOT RESPONSIBLE FOR PROJECT SPECIFIC ERECTION PLANS.
- CONTINUED INSPECTIONS AND MAINTENANCE OF THE BRIDGE STRUCTURE SHOULD BE DONE PER BIG R BRIDGE'S MAINTENANCE GUIDELINES AND IS NOT THE RESPONSIBILITY OF BIG R BRIDGE.
- ON PAINTED, GALVANIZED OR METALIZED BRIDGES, CONTRACTOR IS RESPONSIBLE FOR ALL FINAL FINISH TOUCH UP OR REPAIRS. THIS INCLUDES BUT IS NOT LIMITED TO ALL BOLTS, NUTS, WASHERS AND ANY FINISH DAMAGE DUE TO SHIPPING, HANDLING, ASSEMBLY AND INSTALLATION. WHEN INSTALLING BRIDGES CARE MUST BE TAKEN TO MINIMIZE DAMAGE TO THE FINISH DURING INSTALLATION. PADDING SHOULD BE USED TO PROTECT THE FINISH FROM CHAIN, CHOKER OR SLING. FOR PAINTED BRIDGES A NOMINAL AMOUNT OF TOUCH UP PAINT WILL BE SUPPLIED. THIS IS OFTEN AN EPOXY SYSTEM AND ATTENTION WILL NEED TO BE GIVEN TO MIXING THE PAINT. TOUCH UP MUST BE APPLIED TO BLEND WITH FACTORY APPLICATION AS MUCH AS POSSIBLE.
- FOR ADDITIONAL INFORMATION PLEASE CONTACT BIG R BRIDGE AT:
  PHONE: 1-970-356-9600
  EMAIL: pm@bigrbridge.com
  WEBSITE: https://www.bigrbridge.com/
  PLEASE INCLUDE THE BIG R BRIDGE PROJECT NUMBER IN ANY CORRESPONDENCE.

UNLOADING INSTRUCTIONS

- BRIDGE SECTIONS WILL ARRIVE ON OVER THE ROAD TRUCKING AND BE DELIVERED AS CLOSE TO THE BRIDGE LOCATION AS POSSIBLE. THE CONTRACTOR WILL BE RESPONSIBLE FOR UNLOADING THE BRIDGE. OCCASIONALLY, IT MAY BE NECESSARY TO UNLOAD OTHER BIG R MATERIAL TO REACH THE BRIDGE. THE CONTRACTOR WILL NEED TO RELOAD SAID MATERIAL IN THIS EVENT.
- LOOSE ITEMS SUCH AS BEARING PLATES AND BOLTS WILL ARRIVE WITH THE BRIDGE. THE CONTRACTOR SHOULD MAKE SURE ALL LOOSE ITEMS ARE UNLOADED WITH THE BRIDGE. REFER TO THE BILL OF LADING.

SILL PLACEMENT INSTRUCTIONS (WHEN REQUIRED)

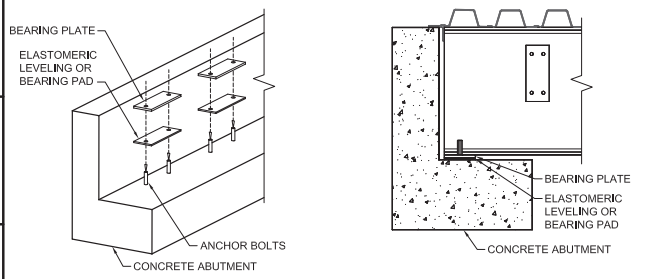
- THE PLACEMENT AREA OF THE SILLS SHALL BE DETERMINED BY THE CONTRACTOR BASED ON THE RELATIVE POSITION OF EACH SILL TO EACH OTHER PER THE ANCHOR BOLT LAYOUT AND ANCHOR BOLT ELEVATION DETAILS SHOWN ON THE BIG R BRIDGE PROJECT SPECIFIC PLANS.
- THE BEARING CAPACITY OF THE SOIL AT THE PLACEMENT AREA OF THE SILLS SHALL MEET OR EXCEED THE REQUIRED LOAD AT SILL PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS. THE ULTIMATE LOAD IS DETERMINED BASED ON FULLY FACTORED LOADS AND THE SERVICE LOAD IS DETERMINED BASED ON UNFACTORED LOADS. IT IS UP TO THE CONTRACTOR TO ASSURE THAT PROPER BEARING CAPACITY IS ACHIEVED AND TO DO ANY SOIL IMPROVEMENT NECESSARY TO ACHIEVE THAT.
- THE PLACEMENT AREA OF THE SILLS SHALL BE GRADED FLAT AND SMOOTH AND AT THE PROPER ELEVATIONS.
- THE SILLS SHALL BE LIFTED FROM THE FOUR RECESSED SPREAD ANCHORS WITH ADEQUATELY SIZED RIGGING HARDWARE AND PLACED ON THE PREPARED SILL PLACEMENT AREAS.
- THE SILLS SHALL BE POSITIONED RELATIVE TO EACH OTHER AS SHOWN ON THE BIG R BRIDGE PROJECT SPECIFIC PLANS.



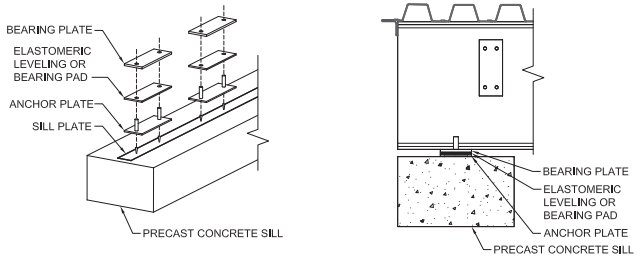
TYPICAL PRECAST SILL LIFTING DETAIL

BEARING PREPARATION INSTRUCTIONS

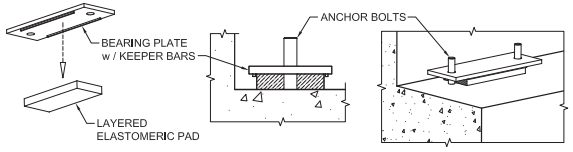
- ALL BEARING PLATES, ELASTOMERIC LEVELING OR BEARING PADS AND ANCHOR PLATES (IF REQUIRED) WILL BE DELIVERED LOOSE ALONG WITH THE BRIDGE. THE BEARING PLATES WILL HAVE HOLES FOR THE FIXED END AND SLOTS FOR THE EXPANSION END OF THE BRIDGE WHICH SHOULD BE CENTERED ON THE ANCHOR BOLTS TO ALLOW FOR PROPER EXPANSION.
- FOR ABUTMENT APPLICATIONS PLACE THE ELASTOMERIC LEVELING OR BEARING PAD ALONG WITH A BEARING PLATE DIRECTLY ON THE ABUTMENT SEAT AT EACH BEARING LOCATION. FOR PRECAST SILL APPLICATIONS, AN ANCHOR PLATE MUST BE POSITIONED ON THE EMBEDDED SILL PLATE PRIOR TO PLACING THE ELASTOMERIC PAD AND BEARING PLATE.
- ASSURE THAT ALL BEARING PLATES ARE AT THE CORRECT ELEVATION, AND THAT THERE IS GOOD BEARING BETWEEN THE ABUTMENT AND THE LEVELING OR BEARING PAD. IF NECESSARY, SHIM THE PLATE OR USE NON-SHRINK GROUT UNDER THE ENTIRE BEARING PAD IN ORDER TO ASSURE 100% BEARING AND PROPER FINAL ELEVATION.
- WHEN LAYERED ELASTOMERIC PADS ARE SPECIFIED, THEY WILL BE SUPPLIED WITHOUT ANCHOR BOLT HOLES AND THE BEARING PLATES WILL INCLUDE WELDED KEEPER BARS TO CAPTURE THE PAD. WHEN POSITIONING THE PADS, BE SURE TO CENTER THEM BETWEEN BOTH THE BEARING PLATE KEEPER BARS AND ANCHOR BOLTS.
- REFER TO THE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ANY SPECIAL INSTRUCTIONS RELATED TO BEARINGS.



TYPICAL ABUTMENT DETAIL



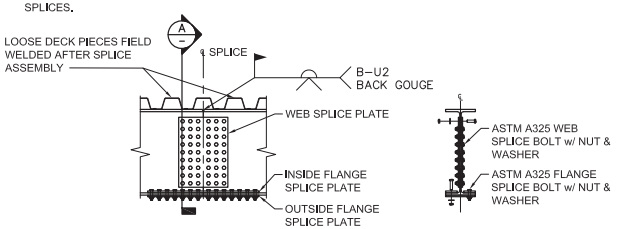
TYPICAL PRECAST SILL DETAIL



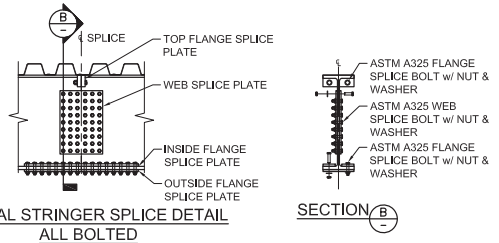
LAYERED ELASTOMERIC PAD DETAIL

BEAM SPLICE ASSEMBLY INSTRUCTIONS (WHEN REQUIRED)

- DURING THE SHOP FABRICATION PROCESS BEAM SPLICES ARE TYPICALLY SHOP FIT TO ASSURE THAT SECTIONS WILL FIT TOGETHER IN THE FIELD. IF DURING THE SPLICE ASSEMBLY PROCESS ANY MISALIGNMENT APPEARS TO OCCUR, STOP, REMOVE OR LOOSEN ALL SPLICE BOLTS, SHIFT SECTIONS AROUND UNTIL PROPER ALIGNMENT OCCURS AND PROCEED WITH ASSEMBLY.
- THE FIRST PART OF THE BRIDGE SECTION SHALL BE SET ON A RELATIVELY FLAT SURFACE WITH THE SPLICED END CRIBBED UP IN THE AIR AS NEEDED TO ALIGN THE SPLICED PART OF THE SECTION.
- THE SECOND PART OF THE BRIDGE SECTION SHALL BE LINED UP WITH THE FIRST PART AND THE SPLICE PLATES INSTALLED WITH ALL BOLTS FINGER TIGHT. ENSURE THAT THE CORRECT BOLT LENGTH AND DIAMETER PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS IS BEING USED. IT MAY BE NECESSARY TO USE DRIFT PINS AND COME-A-LONGS TO GET THE SECTIONS PROPERLY ALIGNED AND ALL BOLTS IN PLACE.
- AFTER ALL BOLTS ARE IN PLACE, THEY SHOULD BE BROUGHT TO SNUG TIGHT CONDITION TO INSURE THAT PLATES AND THE BEAMS ARE BROUGHT INTO GOOD CONTACT WITH EACH OTHER.
- IF THE TOP FLANGES REQUIRE FIELD WELDING, THAT SHOULD BE DONE NEXT PER THE DETAILS IN THE BIG R BRIDGE PROJECT SPECIFIC PLANS.
- BIG R BRIDGE RECOMMENDS NOT TENSIONING BOLTS UNTIL AFTER ALL SECTIONS ARE SET AND FULLY ASSEMBLED BUT IF ACCESS TO THE SPLICES IS NOT POSSIBLE AFTER ERECTION OF THE BRIDGE SECTIONS, THE SPLICE BOLTS MAY BE TENSIONED BEFORE SETTING BUT ADDITIONAL WORK MAY BE REQUIRED TO ALIGN AND ASSEMBLE BRIDGE SECTIONS TOGETHER. ALL BOLT TENSIONING TO BE DONE PER THE BOLT TENSIONING INSTRUCTIONS ON SHEET 2 OF THIS GUIDE.
- REFER TO BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ANY SPECIAL INSTRUCTIONS RELATED TO BEAM SPLICES.



TYPICAL STRINGER SPLICE DETAIL
TOP FLANGE WELDED



TYPICAL STRINGER SPLICE DETAIL
ALL BOLTED

HEAVY HEX BOLT DIAMETERS AND WRENCH SIZE

BOLT DIAMETER (IN)	WRENCH OR SOCKET SIZE (IN)
1/2	7/8
5/8	1 1/16
3/4	1 1/4
7/8	1 7/16
1	1 5/8
1 1/4	2

REV	STATUS	BY	DATE
A	RELEASED	SLJ	11/14/2019

BIG R BRIDGE
19060 County Road 66 · Greeley, Colorado 80631
(970) 356-9600 · Fax:(970) 356-9621 · www.bigrbridge.com

MODULAR BRIDGE WITH BIG R STEEL DECK INSTALLATION GUIDE

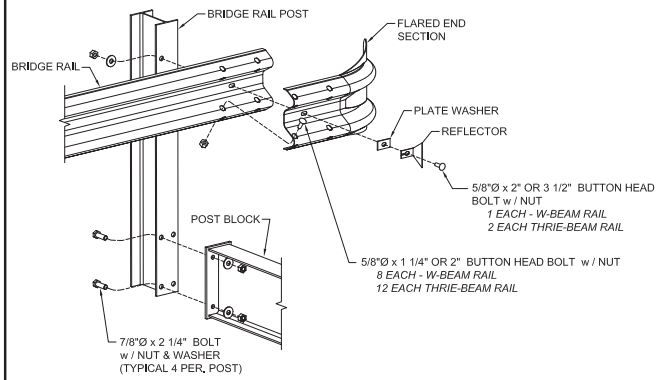
BIG-R BRIDGE

SHEET NO. 1 OF 2

Install Guide – Modular Big R Steel Deck.dwg

RAIL ASSEMBLY INSTRUCTIONS (WHEN REQUIRED)

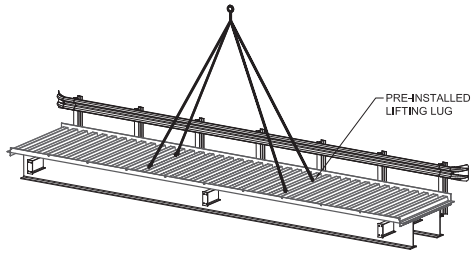
- THESE INSTRUCTIONS ARE FOR TYPICAL W-BEAM AND THRIE-BEAM STRINGER MOUNTED RAILS SYSTEMS. IF OTHER SYSTEMS ARE USED PLEASE REFERENCE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ADDITIONAL INFORMATION.
- THE BRIDGE RAIL AND POSTS WILL BE DELIVERED LOOSE ALONG WITH THE BRIDGE SECTIONS AND MAY BE INSTALLED PRIOR TO, OR AFTER SETTING THE BRIDGE SECTIONS. THE JOB SITE WILL DETERMINE WHICH METHOD IS PREFERABLE.
- EACH BRIDGE RAIL POST SHALL BE FASTENED TO A BRIDGE SECTION POST BLOCK WITH HEX HEAD BOLTS. EACH OF THE FOUR HOLE LOCATIONS ON THE LOWER END OF THE POST WILL RECEIVE ONE BOLT, ONE WASHER, AND ONE NUT. ENSURE THAT THE CORRECT BOLT LENGTH AND DIAMETER PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS IS BEING USED.
- THE BRIDGE RAIL IS ATTACHED TO THE POSTS WITH EITHER ONE BUTTON HEAD BOLT FOR W-BEAM RAIL OR TWO BUTTON HEAD BOLTS FOR THRIE-BEAM RAIL. EACH HOLE LOCATIONS WILL RECEIVE ONE BUTTON HEAD OVAL SHOULDERED BOLT, ONE PLATE WASHER, AND ONE RECESSED NUT. ONE REFLECTOR AT EACH POST SHALL BE INSTALLED AS SHOWN ON THE BIG R BRIDGE PROJECT SPECIFIC PLANS. ENSURE THAT THE CORRECT BOLT LENGTH PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS IS BEING USED.
- THE OVERLAPPING RAIL SPLICE AND FLARED END SECTIONS SHALL BE FASTENED TOGETHER WITH BUTTON HEAD BOLTS. EACH HOLE LOCATION, EIGHT EACH FOR W-BEAM AND TWELVE EACH FOR THRIE-BEAM, SHALL RECEIVE ONE BUTTON HEAD OVAL SHOULDERED BOLT AND ONE RECESSED NUT. ENSURE THAT THE CORRECT BOLT LENGTH PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS IS BEING USED. IT MAY BE NECESSARY TO WORK MATERIAL AND OR USE DRIFT PINS TO GET HOLES IN PROPER ALIGNMENT.
- REFER TO THE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ANY SPECIAL INSTRUCTIONS RELATED TO BRIDGE RAIL.



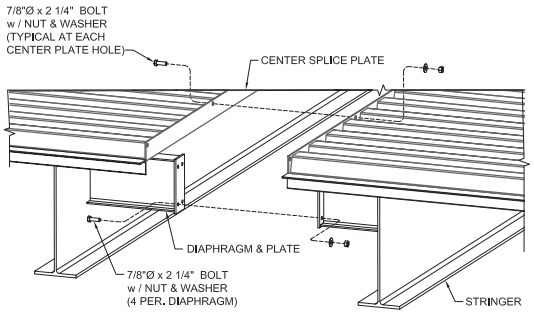
TYPICAL BRIDGE RAIL ASSEMBLY

BRIDGE SECTION LIFTING AND SETTING INSTRUCTIONS

- EACH BRIDGE SECTION TO BE LIFTED FROM THE PRE-INSTALLED LIFTING LUGS WITH ADEQUATELY SIZED RIGGING HARDWARE AND PLACED ON THE PREPARED BEARINGS.
- IF BRIDGE HAS MORE THAN 2 SECTIONS OR SECTIONS THAT ARE NOT IDENTICAL, SECTIONS ARE TO BE SET IN NUMERICAL ORDER AS SHOWN ON THE BIG R BRIDGE PROJECT SPECIFIC PLANS.



- AFTER PLACING THE BRIDGE, ADJUST STRUCTURE ON THE FOUNDATIONS SO THAT SPACING IS EQUAL AT BOTH ENDS OR AS DIRECTED IN THE BIG R PROJECT SPECIFIC PLANS. THE EXPANSION END GAP DESIGNATED IN THE BIG R PROJECT SPECIFIC PLANS MUST MAINTAINED FOR PROPER EXPANSION. IF THE BRIDGE HAS AN ELEVATION DIFFERENCE, BE SURE TO SET THE HIGH END OF THE BRIDGE ON THE HIGHER FOUNDATION. BEARING PLATES MUST BE FULLY COVERED BY THE BEAM FLANGE UNLESS SHOWN OTHERWISE IN BIG R BRIDGE PROJECT SPECIFIC PLANS. REFER TO THE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR CORRECT ALIGNMENT.
- DIAPHRAGM SPLICE PLATES AND CENTER SPLICE PLATES SHALL BE CONNECTED WITH PASS THROUGH BOLTS, EACH OF THE HOLE LOCATION ON THE SPLICE PLATES WILL RECEIVE ONE BOLT, ONE WASHER, AND ONE NUT.
- BRING ALL BOLTS TO A 'SNUG TIGHT' CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE BROUGHT INTO GOOD CONTACT WITH EACH OTHER. SNUG TIGHT IS DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH.
- WHEN INSTALLING BRIDGES CARE MUST BE TAKEN TO MINIMIZE DAMAGE TO THE FINISH DURING INSTALLATION. PADDING SHOULD BE USED TO PROTECT THE FINISH FROM CHAIN, CHOKER OR SLING.



TYPICAL DIAPHRAGM AND DECK SPLICE

BEARING ASSEMBLY INSTRUCTIONS

- FIELD WELD ALL BEARING PLATES TO THE BRIDGE STRINGERS. WHEN PRECAST SILLS ARE INCLUDED FIELD WELD ANCHOR PLATES TO THE EMBEDDED SILL PLATE. WELD SIZE AND LENGTHS SHALL BE AS DIRECTED IN THE BIG R BRIDGE PROJECT SPECIFIC PLANS.
- ON PAINTED, GALVANIZED OR METALIZED BRIDGES, THE FINISHES WILL BE DAMAGED DUE TO THE FIELD WELDING AND WILL REQUIRE REPAIR. IT WILL BE THE RESPONSIBILITY OF THE ONSITE CONTRACTOR TO PERFORM ALL FINISH REPAIR.
- CARE SHOULD BE TAKEN TO AVOID OVERHEATING THE LEVELING OR BEARING PAD DURING WELDING. THIS IS TYPICALLY NOT AN ISSUE WHEN GOOD WELDING PRACTICES ARE USED BUT IF IT IS A CONCERN HEAT CONTROL CRAYONS CAN BE USED TO MONITOR HEAT IN THE STEEL WHERE IT CONTACTS THE PAD. IT IS RECOMMENDED TO KEEP THE HEAT AT THE PAD AT 200° F OR LESS.
- EACH ANCHOR BOLT WILL RECEIVE (1) WASHER AND (2) NUTS. ONE END OF THE BRIDGE IS DESIGNED TO BE *FIXED* AND THE NUTS ARE TO BE INSTALLED TIGHT. THE *EXPANSION END* WILL HAVE THE FIRST NUT TIGHTENED FINGER TIGHT TO THE WASHER PLACED ON THE BEARING PLATE. THE SECOND NUT WILL BE INSTALLED TIGHT TO THE FIRST. REFER TO THE BIG R BRIDGE PROJECT SPECIFIC PLANS TO DETERMINE WHICH END OF THE BRIDGE IS TO BE THE FIXED OR EXPANSION END.

BOLT TENSIONING INSTRUCTIONS

- AFTER BRIDGE IS SET AND ASSEMBLED, ALL BOLTS SHALL BE TENSIONED.
- TIGHTENING OF THE BOLTS SHALL BE IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS" BY RCSC. WE RECOMMEND USING THE TURN-OF-NUT PROCEDURE DESCRIBED BELOW:

  BRING ALL BOLTS TO A 'SNUG TIGHT' CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE BROUGHT INTO GOOD CONTACT WITH EACH OTHER. SNUG TIGHT IS DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. FOLLOWING THIS INITIAL OPERATION, ALL BOLTS SHALL THEN BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION AS SPECIFIED IN THE TABLE BELOW, WITH THE TIGHTENING PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES. DURING THIS OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH.

NUT ROTATION FROM SNUG TIGHT CONDITION

BOLT LENGTH (AS MEASURED FROM UNDERSIDE OF HEAD TO OUTSIDE FACE OF THE NUT PLUS 5/16 INCH)	DISPOSITION OF OUTER FACES OF BOLTED PARTS
	BOTH FACES NORMAL TO BOLT AXIS
NOT MORE THAN 4 DIAMETERS	1/3 TURN
MORE THAN 4 DIAMETERS BUT NOT MORE THAN 8 DIAMETERS	1/2 TURN
MORE THAN 8 DIAMETERS BUT NOT MORE THAN 12 DIAMETERS	2/3 TURN

NUT ROTATION IS RELATIVE TO BOLT, REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR BOLTS INSTALLED BY ½ TURN AND LESS, THE TOLERANCE SHOULD BE PLUS OR MINUS 30°; FOR BOLTS INSTALLED BY 2/3 TURN AND MORE, THE TOLERANCE SHOULD BE PLUS OR MINUS 45°.

- IF ANY BOLTS OR NUTS DO NOT SMOOTHLY ENGAGE UP TO SNUG-TIGHT THERE MAY BE AN OBSTRUCTION WITHIN THE TREADS. THE BOLT OR NUT SHOULD BE REMOVED, THE THREADS ON THE BOLT AND NUT CLEANED AND RETAPPED IF NECESSARY TO ALLOW SMOOTH INSTALLATION.

WEARING SURFACE INSTRUCTIONS

- TYPE AND INSTALLATION OF THE WEARING SURFACE IS NOT BIG R BRIDGE RESPONSIBILITY.
- BIG R BRIDGE'S STEEL BRIDGE DECKING PLANKS ARE THE STRUCTURAL DECKING SYSTEM. THE WEARING SURFACE IS ONLY TO PROVIDE A SMOOTH RUNNING SURFACE AND NOT REQUIRED STRUCTURALLY.
- TYPICAL WEARING SURFACE LOAD OF 80 PSF WILL ACCOMMODATE UP TO 5 1/4" OF GRAVEL BASE (130 PCF) OR 4 1/4" OF CONCRETE OR ASPHALT (150 PCF) SURFACING ABOVE THE STEEL BRIDGE DECK CORRUGATIONS.
- IF GRAVEL WEARING SURFACE IS TO BE USED, THE GRAVEL SHALL BE PLACED ON THE DECK AND GRADED TO THE PROPER THICKNESS.
- REFERENCE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR RECOMMENDATIONS FOR ASPHALT OR CONCRETE WEARING SURFACES.
- TIMBER WEARING SURFACES ARE TYPICALLY INSTALLED BY BIG R BRIDGE DURING FABRICATION, SEE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ADDITIONAL DETAILS.
- OTHER WEARING SURFACE TYPES MAY BE USED AS LONG AS THE TOTAL WEARING SURFACE LOAD IS NOT GREATER THAN THE WEARING SURFACE LOAD PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS.

REV	STATUS	BY	DATE
A	RELEASED	SLJ	11/14/2019

BIG R BRIDGE

19060 County Road 66 · Greeley, Colorado 80631
(970) 356-9600 · Fax:(970) 356-9621 · www.bigrbridge.com

MODULAR BRIDGE WITH BIG R STEEL DECK INSTALLATION GUIDE

BIG-R BRIDGE

SHEET NO. 2 OF 2

Install Guide – Modular Big R Steel Deck.dwg

GENERAL NOTES:

1) CONTECH ENGINEERED SOLUTIONS IS RESPONSIBLE FOR THE DESIGN AND SHOP FABRICATION OF THE BRIDGE STRUCTURE ONLY. ALL MEANS, METHODS, AND EQUIPMENT USED FOR FIELD ASSEMBLY AND INSTALLATION OF THE BRIDGE STRUCTURE, INCLUDING PREPARATION OR REVIEW AND APPROVAL OF PROJECT SPECIFIC ERECTION PLANS, ARE OUTSIDE OF CONTECH'S RESPONSIBILITY.

2) DESIGN IS IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

3) MATERIALS (UNLESS NOTED OTHERWISE):
   a) STRUCTURAL STEEL: ASTM A588 WEATHERING STEEL
   b) BRIDGE PLANK: ASTM A653 GRADE 50 CLASS 1 (GALV)
   c) STRUCTURAL BOLTS: ASTM F3125 GRADE A325 (GALV)
   d) SHEET PILING: ASTM A929 (GALV)

4) DESIGN LOADINGS:
   a) BRIDGE DEAD LOAD PLUS 80 PSF TOTAL WEARING SURFACE.
   b) VEHICLE LIVE LOAD: HL-93
      MAX AVERAGE DAILY TRUCK TRAFFIC (ADTT) = 200
      MAX LL DEFLECTION = LENGTH/500
   c) OWNER SPECIFIED LIVE LOAD: U80
   d) WIND LOADING PER AASHTO LRFD BRIDGE DESIGN SPECFICATIONS SECTION 3.8.
   e) SEISMIC LOADING PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 3.10.

5) BRIDGE RAIL DESIGNED FOR TL-1 OR TL-2 LOADING IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS APPENDIX A13.2 OR ONLY USED AS A GUIDE RAIL (RAIL HAS NOT BEEN CRASH TESTED). SEE SECTION VIEW FOR RAIL DESIGN.

6) BRIDGE TO BE BUILT TO THE REQUIREMENTS OF AWS D1.5.

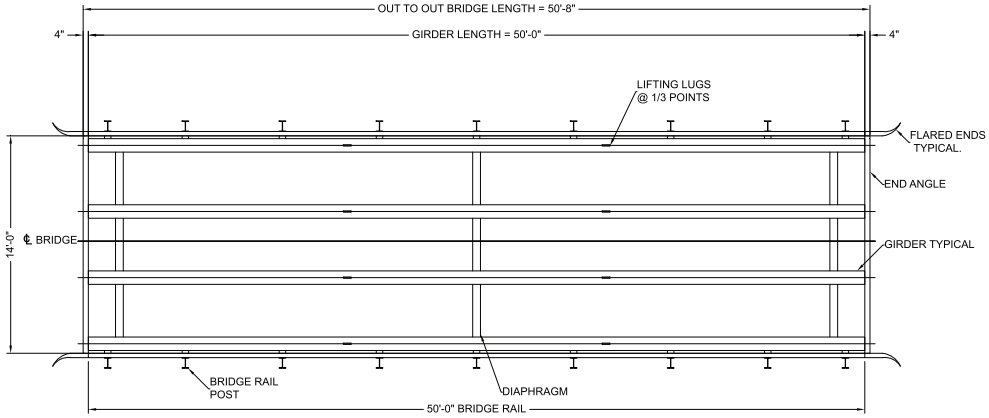
7) ALL EXPOSED SURFACES OF STRUCTURAL STEEL TO BE CLEANED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATIONS NO. 1, SSPC-SP1 SOLVENT CLEANING. EXPOSED SURFACES OF STEEL SHALL BE DEFINED AS THOSE SURFACES SEEN FROM THE DECK OR FROM THE OUTSIDE OF THE STRUCTURE. ALL OTHER SURFACES TO HAVE STANDARD MILL FINISH.

8) MAINTENANCE NOTE: CONTECH RECOMMENDS NOT APPLYING DE-ICING OR DUST PROHIBITIVE CHEMICALS OR SALTS TO ANY PART OF THE BRIDGE STRUCTURE. IF DE-ICING OR DUST PROHIBITIVE CHEMICALS OR SALTS ARE APPLIED TO ANY PART OF THE BRIDGE STRUCTURE, CONTECH WILL NOT BE RESPONSIBLE FOR ANY RESULTANT ACCELERATED CORROSION.

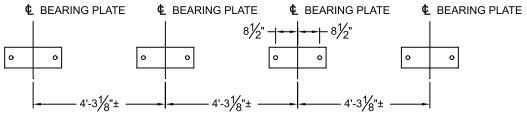
9) ELASTOMERIC PADS ARE USED TO PROVIDE A LEVEL BEARING SURFACE ONLY.

10) 12" x 4-1/4" BRIDGE PLANKS ARE SHOP WELDED TO THE GIRDERS AND ARE THE STRUCTURAL DECKING SYSTEM. THE WEARING SURFACE IS ONLY TO PROVIDE A SMOOTH RUNNING SURFACE AND NOT REQUIRED STRUCTURALLY.

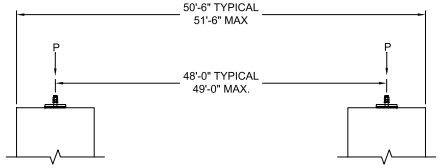
11) DECK MAY BE FINISHED WITH GRAVEL, ASPHALT, CONCRETE, WOOD OR ANY OTHER SUITABLE WEARING SURFACE MATERIAL AT THE OWNERS DISCRETION. TYPICAL WEARING SURFACE LOAD OF 80 PSF WILL ACCOMMODATE UP TO 5 1/4" OF GRAVEL BASE (130 PSF) OR 4 1/4" OF CONCRETE OR ASPHALT (150 PCF) SURFACING ABOVE THE STEEL BRIDGE DECK PLANK CORRUGATIONS. FOR CONCRETE WEARING SURFACES CONTECH RECOMMENDS USING CRACK CONTROL REINFORCING AND IF LATERAL SHIFTING OR UPLIFT OF THE CONCRETE WEARING SURFACE IS A CONCERN, CONTECH RECOMMENDS ATTACHING HEADED ANCHOR STUDS IN THE VALLEYS OF THE CORRUGATIONS.



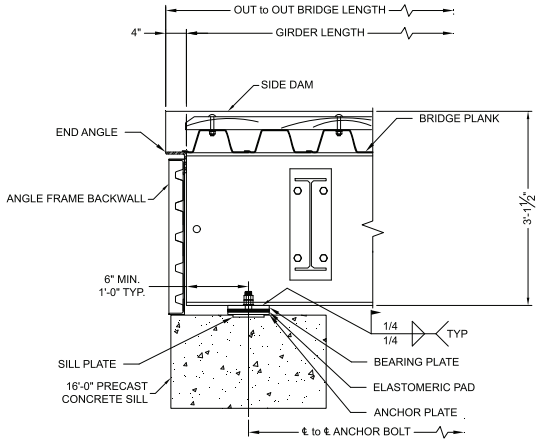
PLAN VIEW



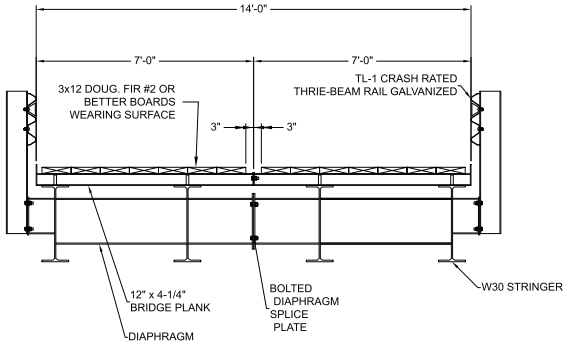
ANCHOR BOLT LAYOUT



ANCHOR BOLT ELEVATION



BEARING ELEVATION



SECTION VIEW

BRIDGE LOADING AND UNFACTORED BEARING REACTIONS IN KIPS		MAX AT INTERIOR GIRDER			MAX AT EXTERIOR GIRDER			TOTAL AT ABUTMENT		
		P	H	L	P	H	L	P	H	L
DEAD LOAD (DC)		3.71			4.31			16.04		
TOTAL WEARING SURFACE (DW) = 80 PSF		8.52			5.48			28.00		
HL-93 DESIGN VEHICLE MAX. ADTT = 1025	LL	42.16			29.99			73.97		
	LL+IM	53.12			37.79			93.20		
U80 OWNER SPECIFIED VEHICLE	LL	58.10			45.43			116.20		
	LL+IM	68.17			53.30			136.34		
WINDLOAD (WS) = 50 PSF		-7.00	1.88		0.00	1.88		-7.00	7.50	
THERMAL LOAD (TU)				2.38			2.38			9.53
BREAKING FORCE (BR)				5.40			5.40			21.60
SEISMIC LOAD (EQ)		CONTACT YOUR CONTECH BRIDGE CONSULTANT FOR SEISMIC INFORMATION								

"P": VERTICAL LOAD
"H": HORIZONTAL LOAD TRANSVERSE TO THE STRUCTURE
"L": HORIZONTAL LOAD LONGITUDINAL TO THE STRUCTURE
* WIND LOAD UPLIFT ASSUMES FULL 20 PSF TO DECK AREA IS APPLIED TO ONE STRINGER LINE

MAX MODULE WEIGHT (LBS)
18500

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

BIG R BRIDGE
CONTECH DYOB DRAWING

BIG R EXPRESS MODULAR
50'-0" x 14'-0" PRELIMINARY DRAWING
50 x 14 Modular
Tyonek, AK

PROJECT No.:	SEQ. No.:	DATE:
888471	010	2/6/2026
DESIGNED: DYOB	DRAWN: DYOB	
CHECKED:	APPROVED:	
SHEET NO.: 1		

GENERAL NOTES:

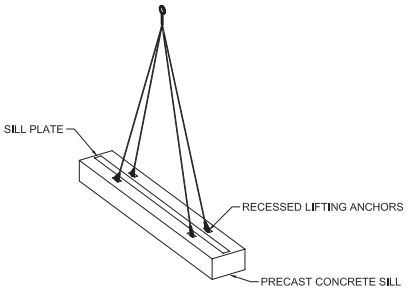
- THE INFORMATION PROVIDED IN THIS GUIDE IS FOR REFERENCE ONLY AND PROVIDES PROVEN PROCEDURES FOR FIELD ASSEMBLY AND INSTALLATION OF BIG R BRIDGES THAT WILL NOT RESULT IN DAMAGE TO THE STRUCTURE. BIG R BRIDGE IS NOT RESPONSIBLE FOR THE MEANS, METHODS AND EQUIPMENT USED FOR FIELD ASSEMBLY AND INSTALLATION OF THE BRIDGE STRUCTURES. BIG R BRIDGE WILL NOT BE HELD LIABLE FOR ANY ISSUES THAT ARISE DUE TO FIELD ASSEMBLY AND INSTALLATION OF THE BRIDGE STRUCTURES.
- THIS GUIDE IS A GENERIC DOCUMENT FOR THE INSTALLATION OF OUR TYPICAL BRIDGES. THE BIG R BRIDGE PROJECT SPECIFIC PLANS SHOULD BE REFERENCED FOR PROJECT SPECIFIC DETAILS AND FOR ADDITIONAL INFORMATION.
- BIG R BRIDGE IS NOT RESPONSIBLE FOR PROJECT SPECIFIC ERECTION PLANS.
- CONTINUED INSPECTIONS AND MAINTENANCE OF THE BRIDGE STRUCTURE SHOULD BE DONE PER BIG R BRIDGE'S MAINTENANCE GUIDELINES AND IS NOT THE RESPONSIBILITY OF BIG R BRIDGE.
- ON PAINTED, GALVANIZED OR METALIZED BRIDGES, CONTRACTOR IS RESPONSIBLE FOR ALL FINAL FINISH TOUCH UP OR REPAIRS. THIS INCLUDES BUT IS NOT LIMITED TO ALL BOLTS, NUTS, WASHERS AND ANY FINISH DAMAGE DUE TO SHIPPING, HANDLING, ASSEMBLY AND INSTALLATION. WHEN INSTALLING BRIDGES CARE MUST BE TAKEN TO MINIMIZE DAMAGE TO THE FINISH DURING INSTALLATION. PADDING SHOULD BE USED TO PROTECT THE FINISH FROM CHAIN, CHOKER OR SLING. FOR PAINTED BRIDGES A NOMINAL AMOUNT OF TOUCH UP PAINT WILL BE SUPPLIED. THIS IS OFTEN AN EPOXY SYSTEM AND ATTENTION WILL NEED TO BE GIVEN TO MIXING THE PAINT. TOUCH UP MUST BE APPLIED TO BLEND WITH FACTORY APPLICATION AS MUCH AS POSSIBLE.
- FOR ADDITIONAL INFORMATION PLEASE CONTACT BIG R BRIDGE AT:
  PHONE: 1-970-356-9600
  EMAIL: pm@bigrbridge.com
  WEBSITE: https://www.bigrbridge.com/
  PLEASE INCLUDE THE BIG R BRIDGE PROJECT NUMBER IN ANY CORRESPONDENCE.

UNLOADING INSTRUCTIONS

- BRIDGE SECTIONS WILL ARRIVE ON OVER THE ROAD TRUCKING AND BE DELIVERED AS CLOSE TO THE BRIDGE LOCATION AS POSSIBLE. THE CONTRACTOR WILL BE RESPONSIBLE FOR UNLOADING THE BRIDGE. OCCASIONALLY, IT MAY BE NECESSARY TO UNLOAD OTHER BIG R MATERIAL TO REACH THE BRIDGE. THE CONTRACTOR WILL NEED TO RELOAD SAID MATERIAL IN THIS EVENT.
- LOOSE ITEMS SUCH AS BEARING PLATES AND BOLTS WILL ARRIVE WITH THE BRIDGE. THE CONTRACTOR SHOULD MAKE SURE ALL LOOSE ITEMS ARE UNLOADED WITH THE BRIDGE. REFER TO THE BILL OF LADING.

SILL PLACEMENT INSTRUCTIONS (WHEN REQUIRED)

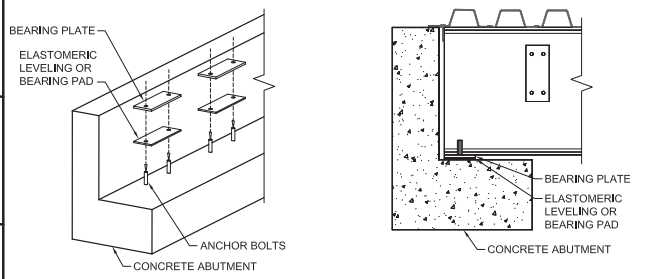
- THE PLACEMENT AREA OF THE SILLS SHALL BE DETERMINED BY THE CONTRACTOR BASED ON THE RELATIVE POSITION OF EACH SILL TO EACH OTHER PER THE ANCHOR BOLT LAYOUT AND ANCHOR BOLT ELEVATION DETAILS SHOWN ON THE BIG R BRIDGE PROJECT SPECIFIC PLANS.
- THE BEARING CAPACITY OF THE SOIL AT THE PLACEMENT AREA OF THE SILLS SHALL MEET OR EXCEED THE REQUIRED LOAD AT SILL PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS. THE ULTIMATE LOAD IS DETERMINED BASED ON FULLY FACTORED LOADS AND THE SERVICE LOAD IS DETERMINED BASED ON UNFACTORED LOADS. IT IS UP TO THE CONTRACTOR TO ASSURE THAT PROPER BEARING CAPACITY IS ACHIEVED AND TO DO ANY SOIL IMPROVEMENT NECESSARY TO ACHIEVE THAT.
- THE PLACEMENT AREA OF THE SILLS SHALL BE GRADED FLAT AND SMOOTH AND AT THE PROPER ELEVATIONS.
- THE SILLS SHALL BE LIFTED FROM THE FOUR RECESSED SPREAD ANCHORS WITH ADEQUATELY SIZED RIGGING HARDWARE AND PLACED ON THE PREPARED SILL PLACEMENT AREAS.
- THE SILLS SHALL BE POSITIONED RELATIVE TO EACH OTHER AS SHOWN ON THE BIG R BRIDGE PROJECT SPECIFIC PLANS.



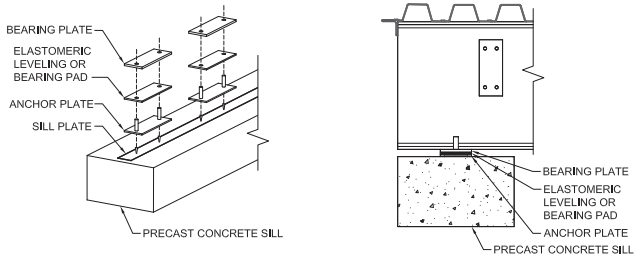
TYPICAL PRECAST SILL LIFTING DETAIL

BEARING PREPARATION INSTRUCTIONS

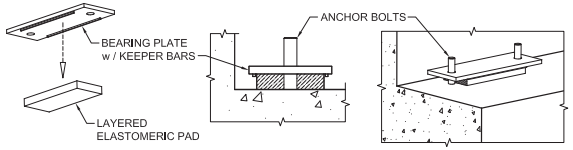
- ALL BEARING PLATES, ELASTOMERIC LEVELING OR BEARING PADS AND ANCHOR PLATES (IF REQUIRED) WILL BE DELIVERED LOOSE ALONG WITH THE BRIDGE. THE BEARING PLATES WILL HAVE HOLES FOR THE FIXED END AND SLOTS FOR THE EXPANSION END OF THE BRIDGE WHICH SHOULD BE CENTERED ON THE ANCHOR BOLTS TO ALLOW FOR PROPER EXPANSION.
- FOR ABUTMENT APPLICATIONS PLACE THE ELASTOMERIC LEVELING OR BEARING PAD ALONG WITH A BEARING PLATE DIRECTLY ON THE ABUTMENT SEAT AT EACH BEARING LOCATION. FOR PRECAST SILL APPLICATIONS, AN ANCHOR PLATE MUST BE POSITIONED ON THE EMBEDDED SILL PLATE PRIOR TO PLACING THE ELASTOMERIC PAD AND BEARING PLATE.
- ASSURE THAT ALL BEARING PLATES ARE AT THE CORRECT ELEVATION, AND THAT THERE IS GOOD BEARING BETWEEN THE ABUTMENT AND THE LEVELING OR BEARING PAD. IF NECESSARY, SHIM THE PLATE OR USE NON-SHRINK GROUT UNDER THE ENTIRE BEARING PAD IN ORDER TO ASSURE 100% BEARING AND PROPER FINAL ELEVATION.
- WHEN LAYERED ELASTOMERIC PADS ARE SPECIFIED, THEY WILL BE SUPPLIED WITHOUT ANCHOR BOLT HOLES AND THE BEARING PLATES WILL INCLUDE WELDED KEEPER BARS TO CAPTURE THE PAD. WHEN POSITIONING THE PADS, BE SURE TO CENTER THEM BETWEEN BOTH THE BEARING PLATE KEEPER BARS AND ANCHOR BOLTS.
- REFER TO THE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ANY SPECIAL INSTRUCTIONS RELATED TO BEARINGS.



TYPICAL ABUTMENT DETAIL



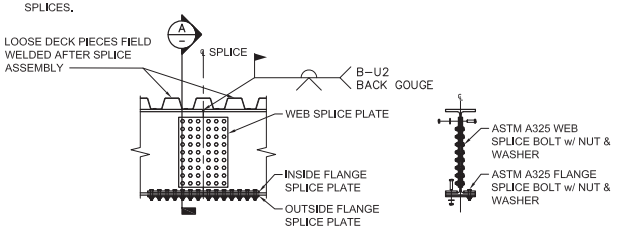
TYPICAL PRECAST SILL DETAIL



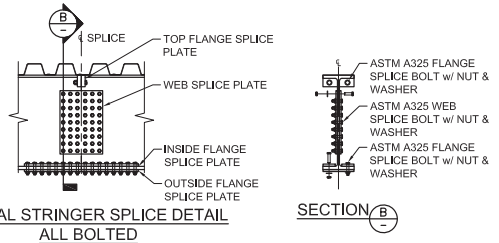
LAYERED ELASTOMERIC PAD DETAIL

BEAM SPLICE ASSEMBLY INSTRUCTIONS (WHEN REQUIRED)

- DURING THE SHOP FABRICATION PROCESS BEAM SPLICES ARE TYPICALLY SHOP FIT TO ASSURE THAT SECTIONS WILL FIT TOGETHER IN THE FIELD. IF DURING THE SPLICE ASSEMBLY PROCESS ANY MISALIGNMENT APPEARS TO OCCUR, STOP, REMOVE OR LOOSEN ALL SPLICE BOLTS, SHIFT SECTIONS AROUND UNTIL PROPER ALIGNMENT OCCURS AND PROCEED WITH ASSEMBLY.
- THE FIRST PART OF THE BRIDGE SECTION SHALL BE SET ON A RELATIVELY FLAT SURFACE WITH THE SPLICED END CRIBBED UP IN THE AIR AS NEEDED TO ALIGN THE SPLICED PART OF THE SECTION.
- THE SECOND PART OF THE BRIDGE SECTION SHALL BE LINED UP WITH THE FIRST PART AND THE SPLICE PLATES INSTALLED WITH ALL BOLTS FINGER TIGHT. ENSURE THAT THE CORRECT BOLT LENGTH AND DIAMETER PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS IS BEING USED. IT MAY BE NECESSARY TO USE DRIFT PINS AND COME-A-LONGS TO GET THE SECTIONS PROPERLY ALIGNED AND ALL BOLTS IN PLACE.
- AFTER ALL BOLTS ARE IN PLACE, THEY SHOULD BE BROUGHT TO SNUG TIGHT CONDITION TO INSURE THAT PLATES AND THE BEAMS ARE BROUGHT INTO GOOD CONTACT WITH EACH OTHER.
- IF THE TOP FLANGES REQUIRE FIELD WELDING, THAT SHOULD BE DONE NEXT PER THE DETAILS IN THE BIG R BRIDGE PROJECT SPECIFIC PLANS.
- BIG R BRIDGE RECOMMENDS NOT TENSIONING BOLTS UNTIL AFTER ALL SECTIONS ARE SET AND FULLY ASSEMBLED BUT IF ACCESS TO THE SPLICES IS NOT POSSIBLE AFTER ERECTION OF THE BRIDGE SECTIONS, THE SPLICE BOLTS MAY BE TENSIONED BEFORE SETTING BUT ADDITIONAL WORK MAY BE REQUIRED TO ALIGN AND ASSEMBLE BRIDGE SECTIONS TOGETHER. ALL BOLT TENSIONING TO BE DONE PER THE BOLT TENSIONING INSTRUCTIONS ON SHEET 2 OF THIS GUIDE.
- REFER TO BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ANY SPECIAL INSTRUCTIONS RELATED TO BEAM SPLICES.



TYPICAL STRINGER SPLICE DETAIL
TOP FLANGE WELDED



TYPICAL STRINGER SPLICE DETAIL
ALL BOLTED

HEAVY HEX BOLT DIAMETERS AND WRENCH SIZE

BOLT DIAMETER (IN)	WRENCH OR SOCKET SIZE (IN)
1/2	7/8
5/8	1 1/16
3/4	1 1/4
7/8	1 7/16
1	1 5/8
1 1/4	2

REV	STATUS	BY	DATE
A	RELEASED	SLJ	11/14/2019

BIG R BRIDGE
19060 County Road 66 · Greeley, Colorado 80631
(970) 356-9600 · Fax:(970) 356-9621 · www.bigrbridge.com

MODULAR BRIDGE WITH BIG R STEEL DECK INSTALLATION GUIDE

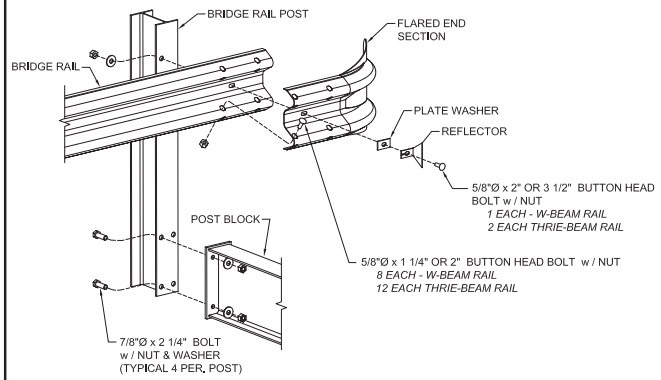
BIG-R BRIDGE

SHEET NO. 1 OF 2

Install Guide – Modular Big R Steel Deck.dwg

RAIL ASSEMBLY INSTRUCTIONS (WHEN REQUIRED)

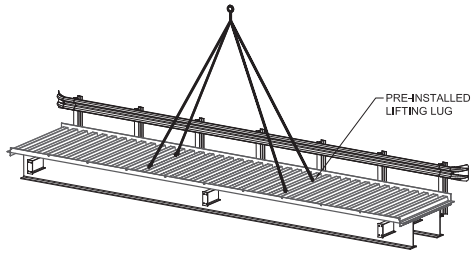
- THESE INSTRUCTIONS ARE FOR TYPICAL W-BEAM AND THRIE-BEAM STRINGER MOUNTED RAILS SYSTEMS. IF OTHER SYSTEMS ARE USED PLEASE REFERENCE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ADDITIONAL INFORMATION.
- THE BRIDGE RAIL AND POSTS WILL BE DELIVERED LOOSE ALONG WITH THE BRIDGE SECTIONS AND MAY BE INSTALLED PRIOR TO, OR AFTER SETTING THE BRIDGE SECTIONS. THE JOB SITE WILL DETERMINE WHICH METHOD IS PREFERABLE.
- EACH BRIDGE RAIL POST SHALL BE FASTENED TO A BRIDGE SECTION POST BLOCK WITH HEX HEAD BOLTS. EACH OF THE FOUR HOLE LOCATIONS ON THE LOWER END OF THE POST WILL RECEIVE ONE BOLT, ONE WASHER, AND ONE NUT. ENSURE THAT THE CORRECT BOLT LENGTH AND DIAMETER PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS IS BEING USED.
- THE BRIDGE RAIL IS ATTACHED TO THE POSTS WITH EITHER ONE BUTTON HEAD BOLT FOR W-BEAM RAIL OR TWO BUTTON HEAD BOLTS FOR THRIE-BEAM RAIL. EACH HOLE LOCATIONS WILL RECEIVE ONE BUTTON HEAD OVAL SHOULDERED BOLT, ONE PLATE WASHER, AND ONE RECESSED NUT. ONE REFLECTOR AT EACH POST SHALL BE INSTALLED AS SHOWN ON THE BIG R BRIDGE PROJECT SPECIFIC PLANS. ENSURE THAT THE CORRECT BOLT LENGTH PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS IS BEING USED.
- THE OVERLAPPING RAIL SPLICE AND FLARED END SECTIONS SHALL BE FASTENED TOGETHER WITH BUTTON HEAD BOLTS. EACH HOLE LOCATION, EIGHT EACH FOR W-BEAM AND TWELVE EACH FOR THRIE-BEAM, SHALL RECEIVE ONE BUTTON HEAD OVAL SHOULDERED BOLT AND ONE RECESSED NUT. ENSURE THAT THE CORRECT BOLT LENGTH PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS IS BEING USED. IT MAY BE NECESSARY TO WORK MATERIAL AND OR USE DRIFT PINS TO GET HOLES IN PROPER ALIGNMENT.
- REFER TO THE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ANY SPECIAL INSTRUCTIONS RELATED TO BRIDGE RAIL.



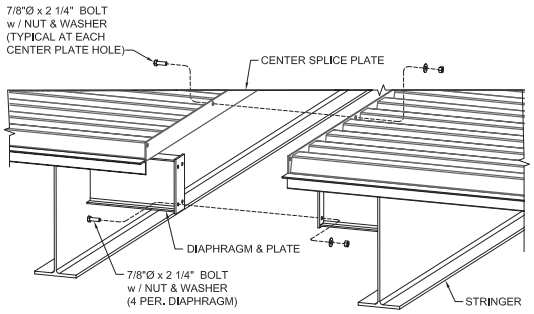
TYPICAL BRIDGE RAIL ASSEMBLY

BRIDGE SECTION LIFTING AND SETTING INSTRUCTIONS

- EACH BRIDGE SECTION TO BE LIFTED FROM THE PRE-INSTALLED LIFTING LUGS WITH ADEQUATELY SIZED RIGGING HARDWARE AND PLACED ON THE PREPARED BEARINGS.
- IF BRIDGE HAS MORE THAN 2 SECTIONS OR SECTIONS THAT ARE NOT IDENTICAL, SECTIONS ARE TO BE SET IN NUMERICAL ORDER AS SHOWN ON THE BIG R BRIDGE PROJECT SPECIFIC PLANS.



- AFTER PLACING THE BRIDGE, ADJUST STRUCTURE ON THE FOUNDATIONS SO THAT SPACING IS EQUAL AT BOTH ENDS OR AS DIRECTED IN THE BIG R PROJECT SPECIFIC PLANS. THE EXPANSION END GAP DESIGNATED IN THE BIG R PROJECT SPECIFIC PLANS MUST MAINTAINED FOR PROPER EXPANSION. IF THE BRIDGE HAS AN ELEVATION DIFFERENCE, BE SURE TO SET THE HIGH END OF THE BRIDGE ON THE HIGHER FOUNDATION. BEARING PLATES MUST BE FULLY COVERED BY THE BEAM FLANGE UNLESS SHOWN OTHERWISE IN BIG R BRIDGE PROJECT SPECIFIC PLANS. REFER TO THE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR CORRECT ALIGNMENT.
- DIAPHRAGM SPLICE PLATES AND CENTER SPLICE PLATES SHALL BE CONNECTED WITH PASS THROUGH BOLTS, EACH OF THE HOLE LOCATION ON THE SPLICE PLATES WILL RECEIVE ONE BOLT, ONE WASHER, AND ONE NUT.
- BRING ALL BOLTS TO A 'SNUG TIGHT' CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE BROUGHT INTO GOOD CONTACT WITH EACH OTHER. SNUG TIGHT IS DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH.
- WHEN INSTALLING BRIDGES CARE MUST BE TAKEN TO MINIMIZE DAMAGE TO THE FINISH DURING INSTALLATION. PADDING SHOULD BE USED TO PROTECT THE FINISH FROM CHAIN, CHOKER OR SLING.



TYPICAL DIAPHRAGM AND DECK SPLICE

BEARING ASSEMBLY INSTRUCTIONS

- FIELD WELD ALL BEARING PLATES TO THE BRIDGE STRINGERS. WHEN PRECAST SILLS ARE INCLUDED FIELD WELD ANCHOR PLATES TO THE EMBEDDED SILL PLATE. WELD SIZE AND LENGTHS SHALL BE AS DIRECTED IN THE BIG R BRIDGE PROJECT SPECIFIC PLANS.
- ON PAINTED, GALVANIZED OR METALIZED BRIDGES, THE FINISHES WILL BE DAMAGED DUE TO THE FIELD WELDING AND WILL REQUIRE REPAIR. IT WILL BE THE RESPONSIBILITY OF THE ONSITE CONTRACTOR TO PERFORM ALL FINISH REPAIR.
- CARE SHOULD BE TAKEN TO AVOID OVERHEATING THE LEVELING OR BEARING PAD DURING WELDING. THIS IS TYPICALLY NOT AN ISSUE WHEN GOOD WELDING PRACTICES ARE USED BUT IF IT IS A CONCERN HEAT CONTROL CRAYONS CAN BE USED TO MONITOR HEAT IN THE STEEL WHERE IT CONTACTS THE PAD. IT IS RECOMMENDED TO KEEP THE HEAT AT THE PAD AT 200° F OR LESS.
- EACH ANCHOR BOLT WILL RECEIVE (1) WASHER AND (2) NUTS. ONE END OF THE BRIDGE IS DESIGNED TO BE *FIXED* AND THE NUTS ARE TO BE INSTALLED TIGHT. THE *EXPANSION END* WILL HAVE THE FIRST NUT TIGHTENED FINGER TIGHT TO THE WASHER PLACED ON THE BEARING PLATE. THE SECOND NUT WILL BE INSTALLED TIGHT TO THE FIRST. REFER TO THE BIG R BRIDGE PROJECT SPECIFIC PLANS TO DETERMINE WHICH END OF THE BRIDGE IS TO BE THE FIXED OR EXPANSION END.

BOLT TENSIONING INSTRUCTIONS

- AFTER BRIDGE IS SET AND ASSEMBLED, ALL BOLTS SHALL BE TENSIONED.
- TIGHTENING OF THE BOLTS SHALL BE IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS" BY RCSC. WE RECOMMEND USING THE TURN-OF-NUT PROCEDURE DESCRIBED BELOW:

  BRING ALL BOLTS TO A 'SNUG TIGHT' CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE BROUGHT INTO GOOD CONTACT WITH EACH OTHER. SNUG TIGHT IS DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. FOLLOWING THIS INITIAL OPERATION, ALL BOLTS SHALL THEN BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION AS SPECIFIED IN THE TABLE BELOW, WITH THE TIGHTENING PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES. DURING THIS OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH.

NUT ROTATION FROM SNUG TIGHT CONDITION

BOLT LENGTH (AS MEASURED FROM UNDERSIDE OF HEAD TO OUTSIDE FACE OF THE NUT PLUS 5/16 INCH)	DISPOSITION OF OUTER FACES OF BOLTED PARTS
	BOTH FACES NORMAL TO BOLT AXIS
NOT MORE THAN 4 DIAMETERS	1/3 TURN
MORE THAN 4 DIAMETERS BUT NOT MORE THAN 8 DIAMETERS	1/2 TURN
MORE THAN 8 DIAMETERS BUT NOT MORE THAN 12 DIAMETERS	2/3 TURN

NUT ROTATION IS RELATIVE TO BOLT, REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR BOLTS INSTALLED BY ½ TURN AND LESS, THE TOLERANCE SHOULD BE PLUS OR MINUS 30°; FOR BOLTS INSTALLED BY 2/3 TURN AND MORE, THE TOLERANCE SHOULD BE PLUS OR MINUS 45°.

- IF ANY BOLTS OR NUTS DO NOT SMOOTHLY ENGAGE UP TO SNUG-TIGHT THERE MAY BE AN OBSTRUCTION WITHIN THE TREADS. THE BOLT OR NUT SHOULD BE REMOVED, THE THREADS ON THE BOLT AND NUT CLEANED AND RETAPPED IF NECESSARY TO ALLOW SMOOTH INSTALLATION.

WEARING SURFACE INSTRUCTIONS

- TYPE AND INSTALLATION OF THE WEARING SURFACE IS NOT BIG R BRIDGE RESPONSIBILITY.
- BIG R BRIDGE'S STEEL BRIDGE DECKING PLANKS ARE THE STRUCTURAL DECKING SYSTEM. THE WEARING SURFACE IS ONLY TO PROVIDE A SMOOTH RUNNING SURFACE AND NOT REQUIRED STRUCTURALLY.
- TYPICAL WEARING SURFACE LOAD OF 80 PSF WILL ACCOMMODATE UP TO 5 1/4" OF GRAVEL BASE (130 PCF) OR 4 1/4" OF CONCRETE OR ASPHALT (150 PCF) SURFACING ABOVE THE STEEL BRIDGE DECK CORRUGATIONS.
- IF GRAVEL WEARING SURFACE IS TO BE USED, THE GRAVEL SHALL BE PLACED ON THE DECK AND GRADED TO THE PROPER THICKNESS.
- REFERENCE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR RECOMMENDATIONS FOR ASPHALT OR CONCRETE WEARING SURFACES.
- TIMBER WEARING SURFACES ARE TYPICALLY INSTALLED BY BIG R BRIDGE DURING FABRICATION, SEE BIG R BRIDGE PROJECT SPECIFIC PLANS FOR ADDITIONAL DETAILS.
- OTHER WEARING SURFACE TYPES MAY BE USED AS LONG AS THE TOTAL WEARING SURFACE LOAD IS NOT GREATER THAN THE WEARING SURFACE LOAD PER THE BIG R BRIDGE PROJECT SPECIFIC PLANS.

REV	STATUS	BY	DATE
A	RELEASED	SLJ	11/14/2019

BIG R BRIDGE

19060 County Road 66 · Greeley, Colorado 80631
(970) 356-9600 · Fax:(970) 356-9621 · www.bigrbridge.com

MODULAR BRIDGE WITH BIG R STEEL DECK INSTALLATION GUIDE

BIG-R BRIDGE

SHEET NO. 2 OF 2

Install Guide – Modular Big R Steel Deck.dwg

KENAI PENINSULA BOROUGH
Planning

Conditional Use Permit
Project Overview and Vicinity Map

0 2000 4000 ft

Tyonek Creek Bridge

Project Area

KPB Parcel(s):

' '

Project Description:

Vicinity: Tyonek

Map created by Aldridge, Morgan
Friday, March 27, 2026

The information depicted hereon is for a graphical representation only of best available sources. The Kenai Peninsula Borough assumes no responsibility for any errors on this map.

Conditional Use Permit
Anadromous Waters Habitat Protection District
Staff Report

PC Res No.	**2026-27**
Planning Commission Meeting:	**Monday, May 11, 2026**
Applicant	**Tyonek Tribal Conservation District**
Mailing Address	**101 W Benson Blvd** **Anchorage, AK 99503**
Legal Description	**T 11N R 12W SEC 1 SM AN US SURVEY 1865 ALL OF SEC 1 LYING WITHIN USS 1865 - MOQUAWKIE INDIAN RESERVATION**
KPB Parcel Number	**21115043**

Project Description

A Conditional Use Permit is sought pursuant to KPB 21.18 for the construction of bridge within the 50-foot Habitat Protection District of Tyonek Creek, as established in KPB 21.18.040.

Background Information

Improve fish passage on Tyonek Creek by removing barriers caused by undersized culverts and replacing them with a bridge.

Project Details within the 50-foot Habitat Protection District

- Placement of a 50 foot by 14 foot rolled girder bridge
- Excavation of 1,140 cubic yards of materials and placement of 710 cubic yards of fill materials, to include rip rap, gravel and topsoil
- Placement of 314 linear feet of coir logs and willow staking, with an additional 1,174 square feet of vegetative mat
- Planting 125 seedlings

Findings of fact pursuant to KPB 21.18.081 Conditional Use Permit

1. Portions of this proposed project are within the 50-foot habitat protection district as defined by KPB 21.18.040.
2. Pursuant to KPB 21.18.081(B)(5), construction of transportation and utility infrastructure may be approved as a conditional structure/use within the habitat protection district.

3. Pursuant to 21.18.081(D) General Standards, staff finds that the proposed project meets the five general standards.
4. Pursuant to KPB 21.18.020(A), this chapter was established to protect and preserve the stability of anadromous fish through controlling shoreline alterations and disturbances along anadromous waters and to preserve nearshore habitat.
5. Pursuant to KPB 21.18.20(B)(5), one purpose of this chapter was established to separate conflicting land uses.
6. The bridge design has been approved by US Fish and Wildlife Service (USFWS) and Alaska Department of Fish and Game (ADFG).
7. 2022 site visit by HDR/ TDC showed that the culverts had a slight perch that may cause juvenile fish barrier at low flows.
8. Construction work will be timed with USFWS and ADFG to limit disturbance to protect nesting migratory birds and fish spawning seasons.
9. Pursuant to KPB 21.06.081(D)(3), the proposed work will occur on the applicant's property and shall not have an adverse effect on adjoining properties.
10. Pursuance to KPB 21.18.140 ORD 2025-12, the proposed project meets the definition of water dependent.
11. The River Center found the application complete and scheduled a public hearing for Monday, May 11, 2026.
12. Agency review was distributed on Wednesday, April 22, 2026. No comments or objections have been received from resource agencies to date.
13. Pursuant to KPB 21.11.030, public notice was mailed to all property owners within a radius of 300 feet of the project on Wednesday, April 22, 2026. A total of 1 mailing was sent.
14. Pursuant to KPB 01.08.180 (B) (1) (3), public notice was posted.
15. The applicant is currently in compliance with Borough permits and ordinances.

Permit Conditions

1. Construction techniques and best management practices shall be utilized to ensure that land disturbing activities do not result in runoff or sedimentation to Tyonek Creek.
2. The bridge must be designed and installed to meet KPB floodplain requirements.
3. The permittee shall minimize damage to all vegetation and shall revegetate all disturbed areas with native vegetation.
4. For each tree removed, two seedlings less than 5.5-feet tall of a species native to the region will be planted within the 50-foot HPD.
5. Storage or use of fuel is prohibited within 50-feet of any open water.
6. The River Center shall be notified at least 3 days prior to the start of the project.
7. If changes to the approved project described above are proposed prior to or during its siting, construction, or operation, the permittee is required to notify the River Center to determine if additional approval is required.

8. The permittee shall be held responsible for the actions of the contractors, agents, or others who perform work to accomplish the approved plan.
9. The construction or installation phase of this Conditional Use Permit must be completed within three calendar years from the date of the permit's issuance, or the Conditional Use Permit shall expire unless the Planning Commission finds that more time is necessary to effectuate the purposes of this chapter, in which case the commission may extend the deadline for a maximum of six years from the date of issuance. Prior to its expiration date and upon written request, the Planning Director may grant a Conditional Use Permit extension for 12 months (KPB 21.18.081 (H)).
10. In addition to the penalties provided by KPB 21.18.110, and pursuant to KPB 21.50, the permit may be revoked if the permittee fails to comply with the provisions of this chapter or the terms and conditions of a permit issued under this chapter. The Borough Clerk shall provide at least 15 day's written notice to the permittee of a revocation hearing before the hearing officer (KPB 21.18.082).
11. The permittee shall comply with the terms, conditions and requirements of the Kenai Peninsula Borough Code of Ordinances Chapter 21.18, and any regulations adopted pursuant to this chapter.
12. The permittee is responsible for abiding by all other federal, state, and local laws, regulations, and permitting requirements applicable to the project (KPB 21.18.081 (G)).

General Standards

Pursuant to 21.18.081(D) General Standards, the following standards shall be met before conditional use approval may be granted:

1. The use or structure will not cause significant erosion, sedimentation, damage within the habitat protection district, an increase in ground or surface water pollution, and damage to riparian wetlands and riparian ecosystems; **Condition 1 and Finding 6-8 appear to support this standard.**
2. Granting of the conditional use shall be consistent with the purposes of this chapter, the borough comprehensive plan, other applicable chapters of the borough Code, and other applicable planning documents adopted by the borough; **Findings 14, 15 appear to support this standard.**
3. The development of the use or structure shall not physically damage the adjoining property; **Finding 9 appears to support this standard.**
4. The proposed use or structure is water-dependent; **Finding 10 appears to support this standard.**
5. Applicant's or owner's compliance with other borough permits and ordinance requirements; **Condition 11, 12 and Finding 15 appear to support this standard.**

Attachments

Multi-Agency Application
Draft Resolution 2026-27

Recommendation

Based on the findings, staff finds that the proposed project meets the five general standards of KPB 21.18.081. The Planning Commission could consider additional permit conditions to mitigate for any habitat loss if it chooses.

Staff recommends the Planning Commission grant a Conditional Use Permit for the proposed project details subject to adopted conditions as set forth in 2026-27.

Note: An appeal of a decision of the Planning Commission may be filed to the Hearing Officer, in accordance with the requirements of the Kenai Peninsula Borough Code of Ordinances, Chapter 21.20.250. An appeal must be filed with the Borough Clerk within 15 days of date of the notice of the decision using the proper forms and be accompanied by the filing and records preparation fee.

END OF STAFF REPORT

KENAI PENINSULA BOROUGH PLANNING COMMISSION

RESOLUTION 2026-27

A RESOLUTION GRANTING A CONDITIONAL USE PERMIT PURSUANT TO KPB 21.18 FOR THE CONSTRUCTION OF A BRIDGE WITHIN THE 50-FOOT HABITAT PROTECTION DISTRICT OF TYONEK CREEK.

WHEREAS, Chapter 21.18 provides for the approval of Conditional Use Permits for certain activities within the habitat protection district; and

WHEREAS, KPB 21.18.081 provides that a conditional use permit is required for construction not meeting the standards of KPB 21.18.071; and

WHEREAS, KPB 21.18.091 provides for mitigation measures by the planning department staff to address impacts to the Habitat Protection District from a proposed, ongoing, or completed project; and

WHEREAS, public notice was sent to all property owners within a 300-foot radius of the proposed activity as provided in Section 21.11.030; and

WHEREAS, public notice was posted as provided in Section 01.08.180 (B) (1) (3); and

WHEREAS, public testimony was received at the Monday, May 11, 2026 meeting of the Kenai Peninsula Borough Planning Commission;

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE KENAI PENINSULA BOROUGH:

That the Planning Commission makes the following findings of fact pursuant to KPB 21.18:

Section 1. Project Details Within the 50-foot Habitat Protection District

• Placement of a 50 foot by 14 foot rolled girder bridge
• Excavation of 1,140 cubic yards of materials and placement of 1,140 cubic yards of fill materials, to include rip rap, gravel and topsoil
• Placement of 314 linear feet of vegetative mat, coir logs and brush layers
• Planting 125 seedlings

Section 2. Findings of fact pursuant to KPB 21.18.081

1. Portions of this proposed project are within the 50-foot habitat protection district as defined by KPB 21.18.040.
2. Pursuant to KPB 21.18.081(B)(5), construction of transportation and utility infrastructure may be approved as a conditional structure/use within the habitat protection district.
3. Pursuant to 21.18.081(D) General Standards, staff finds that the proposed project meets the five general standards.
4. Pursuant to KPB 21.18.020(A), this chapter was established to protect and preserve the stability of anadromous fish through controlling shoreline alterations and disturbances along anadromous waters and to preserve nearshore habitat.
5. Pursuant to KPB 21.18.20(B)(5), one purpose of this chapter was established to separate conflicting land uses.
6. The bridge design has been approved by US Fish and Wildlife Service (USFWS) and Alaska Department of Fish and Game (ADFG).
7. 2022 site visit by HDR/ TDC showed that the culverts had a slight perch that may cause juvenile fish barrier at low flows.
8. Construction work will be timed with USFWS and ADFG to limit disturbance to protect nesting migratory birds and fish spawning seasons.
9. Pursuant to KPB 21.06.081(D)(3), the proposed work will occur on the applicant's property and shall not have an adverse effect on adjoining properties.
10. Pursuant to KPB 21.06.081(D)(3), the proposed work will occur on the applicant's property and shall not have an adverse effect on adjoining properties.
11. The River Center found the application complete and scheduled a public hearing for Monday, May 11, 2026.
12. Agency review was distributed on Wednesday, April 22, 2026. No comments or objections have been received from resource agencies to date.
13. Pursuant to KPB 21.11.030, public notice was mailed to all property owners within a radius of 300 feet of the project on Wednesday, April 22, 2026. A total of 1 mailing was sent.
14. Pursuant to KPB 01.08.180 (B) (1) (3), public notice was posted.
15. The applicant is currently in compliance with Borough permits and ordinances.

Section 3. Permit Conditions

1. Construction techniques and best management practices shall be utilized to ensure that land disturbing activities do not result in runoff or sedimentation to Tyonek Creek.
2. The culvert must be designed and installed to meet KPB floodplain requirements.
3. The permittee shall minimize damage to all vegetation and shall revegetate all disturbed areas with native vegetation.

4. For each tree removed, two seedlings less than 5.5-feet tall of a species native to the region will be planted within the 50-foot HPD.
5. Storage or use of fuel is prohibited within 50-feet of any open water.
6. The River Center shall be notified at least 3 days prior to the start of the project.
7. If changes to the approved project described above are proposed prior to or during its siting, construction, or operation, the permittee is required to notify the River Center to determine if additional approval is required.
8. The permittee shall be held responsible for the actions of the contractors, agents, or others who perform work to accomplish the approved plan.
9. The construction or installation phase of this Conditional Use Permit must be completed within three calendar years from the date of the permit's issuance, or the Conditional Use Permit shall expire unless the Planning Commission finds that more time is necessary to effectuate the purposes of this chapter, in which case the commission may extend the deadline for a maximum of six years from the date of issuance. Prior to its expiration date and upon written request, the Planning Director may grant a Conditional Use Permit extension for 12 months (KPB 21.18.081 (H)).
10. In addition to the penalties provided by KPB 21.18.110, and pursuant to KPB 21.50, the permit may be revoked if the permittee fails to comply with the provisions of this chapter or the terms and conditions of a permit issued under this chapter. The Borough Clerk shall provide at least 15 day's written notice to the permittee of a revocation hearing before the hearing officer (KPB 21.18.082).
11. The permittee shall comply with the terms, conditions and requirements of the Kenai Peninsula Borough Code of Ordinances Chapter 21.18, and any regulations adopted pursuant to this chapter.
12. The permittee is responsible for abiding by all other federal, state, and local laws, regulations, and permitting requirements applicable to the project (KPB 21.18.081 (G)).

Section 4. Pursuant to 21.18.081(D) General Standards, the following standards shall be met before conditional use approval may be granted:

1. The use or structure will not cause significant erosion, sedimentation, damage within the habitat protection district, an increase in ground or surface water pollution, and damage to riparian wetlands and riparian ecosystems; **Conditions 1 and Findings 6-8 appear to support this standard.**
2. Granting of the conditional use shall be consistent with the purposes of this chapter, the borough comprehensive plan, other applicable chapters of the borough Code, and other applicable planning documents adopted by the borough; **Findings 14, 15 appear to support this standard.**

3. The development of the use or structure shall not physically damage the adjoining property; **Finding 9 appear to support this standard.**
4. The proposed use or structure is water-dependent; **Finding 10 appear to support this standard.**
5. Applicant's or owner's compliance with other borough permits and ordinance requirements. **Condition 11, 12 and Finding 14 appears to support this standard.**

THIS CONDITIONAL USE PERMIT EFFECTIVE ON _____ DAY OF_____, 2026.

_____
Jeremy Brantley, Chairperson
Planning Commission

ATTEST:

_____
Ann Shirnberg
Administrative Assistant

Note: An appeal of a decision of the Planning Commission may be filed to the hearing officer, in accordance with the requirements of the KPB Code of Ordinances, Chapter 21.20.250. An appeal must be filed with the Borough Clerk within 15 days of date of the notice of the decision using the proper forms and be accompanied by the filing and records preparation fee.

KENAI PENINSULA Borough

Donald E. Gilman River Center
A Division of the Planning Department

514 Funny River Road, Soldotna, AK 99669 | (P) 907-714-2460 | (F) 907-260-5992 | www.kpb.us

KENAI PENINSULA BOROUGH RIVER CENTER
NOTICE OF PUBLIC HEARING

The Kenai Peninsula Borough received an application for a Conditional Use Permit under KPB 21.18.081 for a project within the 50-foot Habitat Protection District (HPD) of the Tyonek Creek. This project has been scheduled for a public hearing before the Kenai Peninsula Borough Planning Commision.

Why are you receiving this notice?

Per code, property owners within 300 feet of the proposed project must receive notice of the public hearing. This project is located in Tyonek, Alaska, Parcel ID 21115043. Our records indicate that you are a property owner within 300 feet of that parcel.

Project Description:

Removal of two culverts and replacing them with a 50 foot by 14 foot bridge within the 50-foot HPD of the Tyonek Creek.

How can you look at the application?

The meeting packet will be posted the week prior to the meeting. Once it has been posted it can be viewed at https://kpb.legistar.com/Calendar or by scanning this QR code with your phone:

How do you attend the Planning Commission meeting?

When: Monday, May 11, 2026 at 7:30 pm or as soon thereafter as business permits
Where: This meeting will be held in the Betty J. Glick Chambers, George A. Navarre Borough Administration Building located at 144 North Binkley Street, Soldotna.
Zoom: Meeting ID 907 714 2200
https://us06web.zoom.us/j/9077142200
1-888-788-0099 or 1-877-853-5247
Or other audio or video conferencing means whenever technically feasible

How do I comment on the project?

You can provide verbal comment at the meeting (see information above). You may also submit written comments. **Written comments must be received by 1:00 pm Friday, May 8, 2026.**

Mail comments to:
Donald E. Gilman River Center
514 Funny River Road
Soldotna, Alaska 99669

Email comments to:
KenaiRivCenter@kpb.us

For additional information, please contact Morgan Aldridge at MAldridge@kpb.us or 907-714-2465.

E. NEW BUSINESS

4. Conditional Use Permit; PC Resolution 2026-24
Applicant: Basil
Request: Install a boat launch & dock in the HPD of Daniels Lake
KPB Parcel ID # 01322068
Nikiski Area

RUFF START ☺

Multi-Agency Permit Application
Kenai Peninsula Borough
River Center

514 Funny River Road
Soldotna, Alaska 99669
KenaiRivCenter@kpb.us

Phone: (907) 714-2460
Fax: (907) 260-5992

Fees Received: $________
☐ Cash
☐ Check #________
CREDIT CARDS NOT ACCEPTED FOR APPLN FEES

PROPERTY OWNER:
Name: DONALD Boston
Mailing: 36210 Kenai Spur Hwy
Soldotna AK 99669
Phone: 907-252-9503
Email: donboston49@yahoo.com

AGENT: (if applicable)
Name: ________
Mailing: ________
Phone: ________
Email: ________

PROJECT LOCATION:
KPB Parcel ID: 01322067 & 01322068
Physical Address: 000 Candee Circle Nikiski AK 99635
Subdivision: ________
Lot: 1 & 2 Block: ______ Addition/No.: CANDEE COVE SUBDIVISION

WATERBODY INFORMATION:
Waterbody: DANIELS LAKE
River Mile: ______
Riverbank: ☐ Left ☐ Right *(looking downstream)*

PERMIT FEES: ☐ $50 - Staff Permit **OR** ☐ $300 - Conditional Use or Floodway Analysis

PROJECT: ☐ New Project **OR** ☐ Extension/Amendment to **RC#** ______

Please select all activities that apply to your project:

☐ Bank Stabilization
☒ Boat Launch
☐ Bridge
☐ Coir Logs
☐ Culvert
☐ ELP Structures
☐ Equipment Stream Crossing
☐ Excavation, Dredging, and/or Fill
☐ Fence Installation
☐ Fish & Wildlife Management
☐ Floating Dock
☐ Fuel Storage Green Infrastructure
☐ In-Stream Structures (Weir)
☐ Oil & Gas
☐ On-Site Utilities
☐ Prior-Existing Structure
☐ Revegetation
☐ Root Wads
☐ Road Construction
☐ Structure (Accessory)
☐ Structure (Residential)
☐ Spruce Tree Revetment
☐ Stream Crossing
☐ Utility Line/Easement
☐ Veg Mat
☐ Vegetation Removal
☐ Water Withdrawal
☐ Other: Removable Dock

PROJECT DESCRIPTION: *Provide a detailed description of your project, attach additional pages if necessary.*

Put in Gravel on Boat Launch
put in Boat dock 40' X 4' with
ALUMINUM deck 30' into water 10 Ft Land

COST-SHARE: Is this project funded by the ADFG-USFWS Cost-Share Program? ? ☒ Yes ☐ No

KPB TAX CREDIT PROGRAM: KPB provides a tax credit as partial reimbursement for new habitat protection and restoration projects within 150 feet of anadromous streams. If you would like to pre-qualify for this credit, please provide your estimated project cost(s) below. Do not include grants or other funding assistance:

Elevated Light-Penetrating Structures $ ________ Other Activities $ ________
Habitat Restoration & Protection $ ________ Green Infrastructure $ ________

PROJECT QUESTIONS:

1. Start date: May 1st 26 End date: June 15th 26 Estimated Days of Construction: 10
2. Is any portion of the work already complete? If yes, please describe: ☒ Yes ☐ No
   Boat Launch is the area I want to put in More Gravel
3. Is your project located on land or waters of an Alaska State Park? ☐ Yes ☒ No
   If yes, you must fill out an Alaska State Parks application at: dnr.alaska.gov/parks/permit

Ordinary High Water (OHW) and Mean High Water (MHW):

4. Is the project located within 50 feet of OHW or MHW a waterbody? ☒ Yes ☐ No
5. Does any portion of the project extend below the OHW or MHW of the waterbody? ☒ Yes ☐ No
6. Does any portion of the project cantilever or extend over the MHW of the waterbody? ☒ Yes ☐ No
7. Will anything be placed below OHW or MHW of the waterbody? ☒ Yes ☐ No

Regulatory Floodplains:

8. Is the property where the project is taking place near or within a regulatory floodplain? ☐ Yes ☒ No ?
   a. Is this project within or adjacent to a regulatory floodway? ☐ Yes ☒ No
   b. Is this project within or adjacent to a coastal high hazard zone? ☐ Yes ☒ No
   c. For new buildings and/or additions, list all project costs (labor, materials, etc.): $ _____

Excavation, Dredging, and Fill:

9. Will material be excavated or dredged from the site? ☐ Yes ☒ No
   a. Type of material(s): _____
   b. Area to be dredged below OHW or MHW:
      Length: _____ (ft) Width: _____ (ft) Depth: _____ (ft) Total Cubic Yards: _____
   c. Area to be excavated above OHW or MHW:
      Length: _____ (ft) Width: _____ (ft) Depth: _____ (ft) Total Cubic Yards: _____
   d. Location materials will be deposited: _____
10. Will any material (including soils, debris, and/or overburden) be used as fill? ☒ Yes ☐ No
    a. Type of material(s): Pit Run fill, approx 1 foot deep
    b. Is this fill permanent or temporary? ☒ Permanent ☐ Temporary
    c. Area to be filled above OHW or MHW:
       Length: 50 (ft) Width: 12 (ft) Depth: 1 foot (ft) Total Cubic Yards: 40
    d. Area to be filled below OHW or MHW:
       Length: 30 (ft) Width: 12 (ft) Depth: 1 foot (ft) Total Cubic Yards: 20

Motorized Equipment:

11. Will you be using motorized equipment for this project? If yes, please list all equipment: ☐ Yes ☒ No

    _____
    a. Will you be crossing a stream or waterbody? ☐ Yes ☒ No
    b. How long will equipment be used below OHW or MHW? _____

SIGNATURE & CERTIFICATION:

This application is hereby made requesting permit(s) to authorize the work described in this application form. I certify the information in this application is complete and accurate to the best of my knowledge and that my site plans or drawings are attached. If applying for a tax credit, I certify that I have not begun construction of the project and that the project will be constructed to the standards in KPB 5.12 Real Property and Personal Property Taxes, KPB 5.14 Habitat Protection Tax Credit, and other applicable federal, state, and local regulations.

[signature] 3-3-26

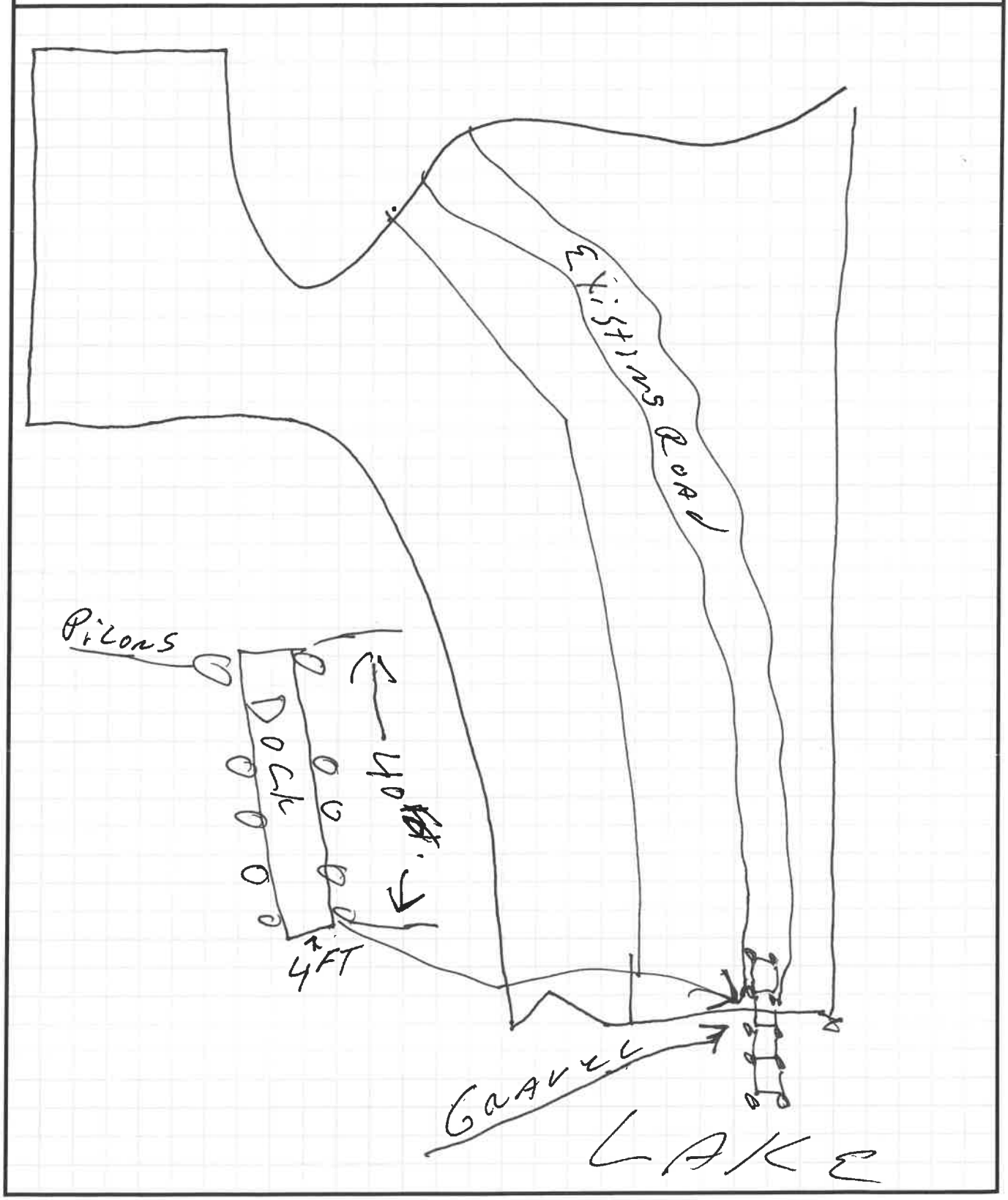
Owner Signature *(required)* **Date** **Agent Signature** *(if applicable)* **Date**

Project Drawings: Top View

Drawings do not have to be to scale, but **must** show the following:

- Property boundaries
- OHW or MHW line
- 50-foot Habitat Protection District
- Floodplain zone(s)
- Dimensions for all structures
  - Length, width, height

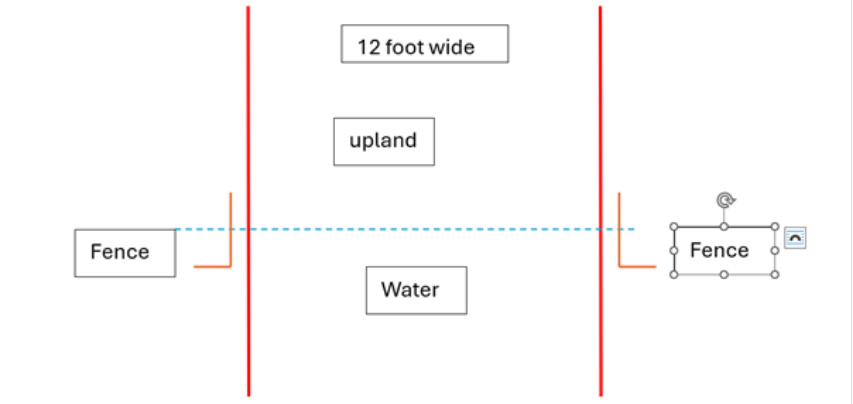
North



Project Details as discussed with applicant and permitting agencies:

1. You plan to put in a 12-foot wide gravel boat launch, extending up to 30-feet into Daniel's Lake, on your parcel 01322068, or the northern most parcel you own on the lake.
2. The boat launch will use up to 60-cubic yards of pit run gravel total, with up to 20-cubic yards of material place below the water line.
3. The dock will be elevated on pipe drilled into the lakebed and will not be supported by floats. Metal grating is the preferred decking material. The dock will start on shore, with 4 piles driven on shore and 6 in the water, to hold Elevated, Light Penetrating platforms (the metal grating) for the deck itself, and it will be 10 foot on the shore and then 30 foot out into the lake.
4. The size of your boat launch will be minimized to the extent practicable based on ability to seasonally launch your boat from your property.
5. At least 50% or your lake frontage will remain vegetated with in-tact, native vegetation.
6. The boat launch will be sloped on the sides with a 2:1 ratio to minimize run off, similar to the photo below

7. As the work is being done you may need to utilize a silt fence or silt curtain. The placement of the fence or curtain should be at the water's edge while the upland portion of the project is being done. Once the in water work begins, the fence or curtain should be moved to the waters edge on the edge of the gravel placement. Once the project is complete and all material has been properly compacted to reduce movement, the fence or curtain may be removed.



8.


01322067
01322068
approx. 50 foot HPD
floating dock with pilings
launch

KENAI PENINSULA BOROUGH

Planning

Boat Launch

Legend

0 1.5 3 mi

Wednesday, April 29, 2026

Map created by Aldridge, Morgan

KENAI PENINSULA BOROUGH

Planning

Boat Launch

Legend

0 500 1000 ft

Wednesday, April 29, 2026

Map created by Aldridge, Morgan

Conditional Use Permit
Anadromous Waters Habitat Protection District
Staff Report

PC Res No.	**2026-24**
Planning Commission Meeting:	**Monday, May 11, 2026**
Applicant	**Donald Boston**
Mailing Address	**36210 Spur Highway** **Soldotna, AK 99669**
Legal Description	**T 8N R 11W SEC 34 SM KN 0870091 CANDEE COVE SUB LOT 1**
Physical Address	**Candee Circle**
KPB Parcel Number	**01322068**

Project Description

A Conditional Use Permit is sought pursuant to KPB 21.18 for the construction of boat launch and a floating dock within the 50-foot Habitat Protection District of Daniels Lake, as established in KPB 21.18.040.

Background Information

Applicant requests to construct a 12 foot wide boat launch out of gravel and construct a 30 foot floating dock on the lake for access.

Project Details within the 50-foot Habitat Protection District

- placement of fill 12 foot wide, in the 50 foot setback to the water's edge, then continuing out 30 feet into the lake
- approximately 60 cubic yards of pit run fill to be used on launch, of which 20 cubic yards will be below water line
- construction of a 40 foot ELP dock, 10 feet which will be on land with 4 piles, 30 feet which will be in the water on 6 piles

Findings of fact pursuant to KPB 21.18.081 Conditional Use Permit

1. Portions of this proposed project are within the 50-foot habitat protection district as defined by KPB 21.18.040.

2. Pursuant to KPB 21.18.081(B)(12), construction of boat launch may be approved as a conditional structure/use within the habitat protection district.
3. Pursuant to 21.18.081(D) General Standards, staff finds that the proposed project meets the five general standards.
4. Pursuant to KPB 21.18.020(A), this chapter was established to protect and preserve the stability of anadromous fish through controlling shoreline alterations and disturbances along anadromous waters and to preserve nearshore habitat.
5. Pursuant to KPB 21.18.20(B)(5), one purpose of this chapter was established to separate conflicting land uses.
6. At least 50% of the lake frontage on this parcel will remain vegetated with in-tact, native vegetation.
7. Per KPB 21.18.081(B) (12) this lake does not have a public boat launch.
8. In accordance with KPB 21.18.081, the land owner plans to utilize sloped construction on the launch and a silt fence for erosion and sediment control measures during installation of boat launch.
9. Pursuant to KPB 21.06.081(D)(3), the proposed work will occur on the applicant's property and shall not have an adverse effect on adjoining properties.
10. Pursuant to KPB 21.18.140, the proposed project meets the definition of water dependent.
11. The River Center found the application complete and scheduled a public hearing for Monday, May 11, 2026.
12. Agency review was distributed on April 16, 2026. No comments or objections have been received from resource agencies to date.
13. Notice of this project was sent to the Nikiski Advisory Planning Commission at their regularly scheduled meeting on May 7, 2026. The APC recommendations can be found in the desk packet.
14. Pursuant to KPB 21.11.030, public notice was mailed to all property owners within a radius of 300 feet of the project on April 16, 2026. A total of 17 mailings were sent.
15. Pursuant to KPB 01.08.180 (B) (1) (3), public notice was posted.
16. The applicant is currently in compliance with Borough permits and ordinances.

Permit Conditions

1. Construction techniques and best management practices shall be utilized to ensure that land disturbing activities do not result in runoff or sedimentation to Daniels Lake.
2. The boat launch must be designed and installed to meet KPB floodplain requirements.
3. The permittee shall minimize damage to all vegetation and shall revegetate all disturbed areas with native vegetation.
4. For each tree removed, two seedlings less than 5.5-feet tall of a species native to the region will be planted within the 50-foot HPD.
5. Storage or use of fuel is prohibited within 50-feet of any open water.
6. The River Center shall be notified at least 3 days prior to the start of the project.

7. If changes to the approved project described above are proposed prior to or during its siting, construction, or operation, the permittee is required to notify the River Center to determine if additional approval is required.
8. The permittee shall be held responsible for the actions of the contractors, agents, or others who perform work to accomplish the approved plan.
9. The construction or installation phase of this Conditional Use Permit must be completed within two calendar years from the date of the permit's issuance, or the Conditional Use Permit shall expire unless the Planning Commission finds that more time is necessary to effectuate the purposes of this chapter, in which case the commission may extend the deadline for a maximum of six years from the date of issuance. Prior to its expiration date and upon written request, the Planning Director may grant a Conditional Use Permit extension for 12 months (KPB 21.18.081 (H)).
10. In addition to the penalties provided by KPB 21.18.110, and pursuant to KPB 21.50, the permit may be revoked if the permittee fails to comply with the provisions of this chapter or the terms and conditions of a permit issued under this chapter. The Borough Clerk shall provide at least 15 day's written notice to the permittee of a revocation hearing before the hearing officer (KPB 21.18.082).
11. The permittee shall comply with the terms, conditions and requirements of the Kenai Peninsula Borough Code of Ordinances Chapter 21.18, and any regulations adopted pursuant to this chapter.
12. The permittee is responsible for abiding by all other federal, state, and local laws, regulations, and permitting requirements applicable to the project (KPB 21.18.081 (G)).

General Standards

Pursuant to 21.18.081(D) General Standards, the following standards shall be met before conditional use approval may be granted:

1. The use or structure will not cause significant erosion, sedimentation, damage within the habitat protection district, an increase in ground or surface water pollution, and damage to riparian wetlands and riparian ecosystems; **Condition 1 and Finding 6, 7 appear to support this standard.**
2. Granting of the conditional use shall be consistent with the purposes of this chapter, the borough comprehensive plan, other applicable chapters of the borough Code, and other applicable planning documents adopted by the borough; **Findings 15, 16 appear to support this standard.**
3. The development of the use or structure shall not physically damage the adjoining property; **Finding 8 appears to support this standard.**
4. The proposed use or structure is water-dependent; **Finding 9 appears to support this standard.**

5. Applicant's or owner's compliance with other borough permits and ordinance requirements; **Condition 11, 12 and Finding 16 appear to support this standard.**

Attachments

Multi-Agency Application
Draft Resolution 2026-24

Recommendation

Based on the findings, staff finds that the proposed project meets the five general standards of KPB 21.18.081. The Planning Commission could consider additional permit conditions to mitigate for any habitat loss if it chooses.

Staff recommends the Planning Commission grant a Conditional Use Permit for the proposed project details subject to adopted conditions as set forth in 2026-24.

Note: An appeal of a decision of the Planning Commission may be filed to the Hearing Officer, in accordance with the requirements of the Kenai Peninsula Borough Code of Ordinances, Chapter 21.20.250. An appeal must be filed with the Borough Clerk within 15 days of date of the notice of the decision using the proper forms and be accompanied by the filing and records preparation fee.

END OF STAFF REPORT

KENAI PENINSULA BOROUGH PLANNING COMMISSION

RESOLUTION 2026-24

A RESOLUTION GRANTING A CONDITIONAL USE PERMIT PURSUANT TO KPB 21.18 FOR THE CONSTRUCTION OF BOAT LAUNCH AND FLOATING DOCK WITHIN THE 50-FOOT HABITAT PROTECTION DISTRICT OF THE DANIELS LAKE.

WHEREAS, Chapter 21.18 provides for the approval of Conditional Use Permits for certain activities within the habitat protection district; and

WHEREAS, KPB 21.18.081 provides that a conditional use permit is required for construction not meeting the standards of KPB 21.18.071; and

WHEREAS, KPB 21.18.091 provides for mitigation measures by the planning department staff to address impacts to the Habitat Protection District from a proposed, ongoing, or completed project; and

WHEREAS, public notice was sent to all property owners within a 300-foot radius of the proposed activity as provided in Section 21.11.030; and

WHEREAS, public notice was posted as provided in Section 01.08.180 (B) (1) (3); and

WHEREAS, public testimony was received at the Monday, May 11, 2026 meeting of the Kenai Peninsula Borough Planning Commission;

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE KENAI PENINSULA BOROUGH:

That the Planning Commission makes the following findings of fact pursuant to KPB 21.18:

Section 1. Project Details Within the 50-foot Habitat Protection District

- placement of fill 12 foot wide, in the 50 foot setback to the water's edge, then continuing out 30 feet into the lake
- approximately 60 cubic yards of pit run fill to be used on launch, of which 20 cubic yards will be below water line
- construction of a 40 foot ELP dock, 10 feet which will be on land with 4 piles, 30 feet which will be in the water on 6 piles

Section 2. Findings of fact pursuant to KPB 21.18.081

1. Portions of this proposed project are within the 50-foot habitat protection district as defined by KPB 21.18.040.
2. Pursuant to KPB 21.18.081(B)(5), construction of a boat launch may be approved as a conditional structure/use within the habitat protection district.
3. Pursuant to 21.18.081(D) General Standards, staff finds that the proposed project meets the five general standards.
4. Pursuant to KPB 21.18.020(A), this chapter was established to protect and preserve the stability of anadromous fish through controlling shoreline alterations and disturbances along anadromous waters and to preserve nearshore habitat.
5. Pursuant to KPB 21.18.20(B)(5), one purpose of this chapter was established to separate conflicting land uses.
6. At least 50% of the lake frontage on the parcel will be remain vegetated with in-tact, native vegetation.
7. Per KPB 21.18.081(B) (12) this lake does not have a public boat launch.
8. In accordance with KPB 21.18.081, the land owner plans to utilize sloped construction on the launch and a silt fence for erosion and sediment control measures during installation of the boat launch.
9. Pursuant to KPB 21.06.081(D)(3), the proposed work will occur on the applicant's property and shall not have an adverse effect on adjoining properties.
10. Pursuant to KPB 21.18.140, the proposed project meets the definition of water dependent.
11. The River Center found the application complete and scheduled a public hearing for Monday, May 11, 2026.
12. Agency review was distributed on April 16, 2026. No comments or objections have been received from resource agencies to date.
13. Notice of this project was sent to the Nikiski Advisory Planning Commission at their regularly scheduled meeting on May 7, 2026. The APC recommendations can be found in the desk packet.
14. Pursuant to KPB 21.11.030, public notice was mailed to all property owners within a radius of 300 feet of the project on April 16, 2026. A total of 17 mailings were sent.
15. Pursuant to KPB 01.08.180 (B) (1) (3), public notice was posted.
16. The applicant is currently in compliance with Borough permits and ordinances.

Section 3. Permit Conditions

1. Construction techniques and best management practices shall be utilized to ensure that land disturbing activities do not result in runoff or sedimentation to Daniels Lake.

2. The boat launch and dock must be designed and installed to meet KPB floodplain requirements.
3. The permittee shall minimize damage to all vegetation and shall revegetate all disturbed areas with native vegetation.
4. For each tree removed, two seedlings less than 5.5-feet tall of a species native to the region will be planted within the 50-foot HPD.
5. Storage or use of fuel is prohibited within 50-feet of any open water.
6. The River Center shall be notified at least 3 days prior to the start of the project.
7. If changes to the approved project described above are proposed prior to or during its siting, construction, or operation, the permittee is required to notify the River Center to determine if additional approval is required.
8. The permittee shall be held responsible for the actions of the contractors, agents, or others who perform work to accomplish the approved plan.
9. The construction or installation phase of this Conditional Use Permit must be completed within two calendar years from the date of the permit's issuance, or the Conditional Use Permit shall expire unless the Planning Commission finds that more time is necessary to effectuate the purposes of this chapter, in which case the commission may extend the deadline for a maximum of six years from the date of issuance. Prior to its expiration date and upon written request, the Planning Director may grant a Conditional Use Permit extension for 12 months (KPB 21.18.081 (H)).
10. In addition to the penalties provided by KPB 21.18.110, and pursuant to KPB 21.50, the permit may be revoked if the permittee fails to comply with the provisions of this chapter or the terms and conditions of a permit issued under this chapter. The Borough Clerk shall provide at least 15 day's written notice to the permittee of a revocation hearing before the hearing officer (KPB 21.18.082).
11. The permittee shall comply with the terms, conditions and requirements of the Kenai Peninsula Borough Code of Ordinances Chapter 21.18, and any regulations adopted pursuant to this chapter.
12. The permittee is responsible for abiding by all other federal, state, and local laws, regulations, and permitting requirements applicable to the project (KPB 21.18.081 (G)).

Section 4. Pursuant to 21.18.081(D) General Standards, the following standards shall be met before conditional use approval may be granted:

1. The use or structure will not cause significant erosion, sedimentation, damage within the habitat protection district, an increase in ground or surface water pollution, and damage to riparian wetlands and riparian ecosystems; **Condition 1 and Finding 6, 7 appear to support this standard.**

2. Granting of the conditional use shall be consistent with the purposes of this chapter, the borough comprehensive plan, other applicable chapters of the borough Code, and other applicable planning documents adopted by the borough; **Findings 15, 16 appear to support this standard.**
3. The development of the use or structure shall not physically damage the adjoining property; **Finding 8 appears to support this standard.**
4. The proposed use or structure is water-dependent; **Finding 9 appears to support this standard.**
5. Applicant's or owner's compliance with other borough permits and ordinance requirements. **Condition 11, 12 and Finding 16 appear to support this standard.**

THIS CONDITIONAL USE PERMIT EFFECTIVE ON _____ DAY OF_____, 2026.

_____
Jeremy Brantley, Chairperson
Planning Commission

ATTEST:

_____
Ann Shirnberg
Administrative Assistant

Note: An appeal of a decision of the Planning Commission may be filed to the hearing officer, in accordance with the requirements of the KPB Code of Ordinances, Chapter 21.20.250. An appeal must be filed with the Borough Clerk within 15 days of date of the notice of the decision using the proper forms and be accompanied by the filing and records preparation fee.

DESK PACKET

(MATERIALS SUBMITTED AFTER 05/01/26)

E. NEW BUSINESS

4. **Conditional Use Permit; PC Resolution 2026-24**
   Applicant: Boston
   Request: To install a boat launch & dock in the HPD of Daniels Lake
   KPB Parcel ID # 01322068
   Nikiski Area

From: Kenai River Center,
To: Aldridge, Morgan
Subject: FW: <EXTERNAL-SENDER>Daniels Lake proposed boat launch site at Parcel 01322068
Date: Friday, May 8, 2026 7:50:16 AM

Good morning!

Public comment for you.

From: Christine DeCourtney <chris.decourtney@gmail.com>
Sent: Thursday, May 7, 2026 7:33 PM
To: Kenai River Center, <kenairivcenter@kpb.us>
Subject: <EXTERNAL-SENDER>Daniels Lake proposed boat launch site at Parcel 01322068

We purchased Property Parcel 01322070 in 2006 and have lived there ever since. Our home was initially built in the 1970's. There is no boat launch on our property.

This parcel is adjacent to Parcel 01322068 for which it is proposed to add a boat launch and floating dock. No one in this part of Daniels Lake has a private boat launch. There is an excellent, dedicated boat ramp less than 1/10th of a mile away from Parcel 01322068.

In addition, this area is a nesting area for water fowl; a birthing place for moose; and several salmon spawning streams including one at the proposed boat launch site.
This environmentally sensitive area is important to the health of Daniels Lake; the attractiveness of North Kenai Lakes to property tax paying home buyers; and lake residents.

For the above stated reasons, as well as an available nearby dedicated boat launch for Daniels Lake property owners, we strongly object to the proposed private boat launch by the owners of Parcel 01322068

The staff report indicates there is no "public boat launch" on the lake.

7. 8. Per KPB 21.18.081(B) (12) this lake does not have a public boat launch.

This is a private lake and there is a private (open to subdivision properties) dedicated boat launch less than 1/10th of a mile away. This is one of the main reasons current property owners in this part of the lake do not have private boat launch sites. There is no current boat launch site on Parcel ID 01322068 as the property has never been developed. The water is very shallow at the proposed site and remains shallow out into

the lake as evidenced by the abundant water plant growth. In addition, there is no stable bottom and gravel would sink further into the ground.

I kayak regularly near the proposed boat launch site. The water is indeed very shallow with a stream leading to and from a pond on the lower part of the property. The pond is used by water fowl and moose.

In summary, we, the owners of the adjacent land parcel, believe that approving a boat launch site will cause irreparable harm to the vegetation, spawning salmon, and wildlife that use this part of the lake, free from boat launches and other disruptions.

KENAI PENINSULA Borough

Donald E. Gilman River Center
A Division of the Planning Department

514 Funny River Road, Soldotna, AK 99669 | (P) 907-714-2460 | (F) 907-260-5992 | www.kpb.us

KENAI PENINSULA BOROUGH RIVER CENTER
NOTICE OF PUBLIC HEARING

The Kenai Peninsula Borough received an application for a Conditional Use Permit under KPB 21.18.081 for a project within the 50-foot Habitat Protection District (HPD) of the Daniels Lake. This project has been scheduled for a public hearing before the Kenai Peninsula Borough Planning Commision.

Why are you receiving this notice?

Per code, property owners within 300 feet of the proposed project must receive notice of the public hearing. This project is located on Candee Circle, in Nikiski, Alaska, Parcel ID 01322068. Our records indicate that you are a property owner within 300 feet of that parcel.

Project Description:

Applicant requests to place boat launch and floating dock within the 50-foot HPD of the Daniels Lake.

How can you look at the application?

The meeting packet will be posted the week prior to the meeting. Once it has been posted it can be viewed at https://kpb.legistar.com/Calendar or by scanning this QR code with your phone:

How do you attend the Planning Commission meeting?

When: Monday, May 11, 2026 at 7:30 pm or as soon thereafter as business permits
Where: This meeting will be held in the Betty J. Glick Chambers, George A. Navarre Borough Administration Building located at 144 North Binkley Street, Soldotna.
Zoom: Meeting ID 907 714 2200
https://us06web.zoom.us/j/9077142200
1-888-788-0099 or 1-877-853-5247
Or other audio or video conferencing means whenever technically feasible

How do I comment on the project?

You can provide verbal comment at the meeting (see information above). You may also submit written comments. **Written comments must be received by 1:00 pm Friday, May 8, 2026.**

Mail comments to:
Donald E. Gilman River Center
514 Funny River Road
Soldotna, Alaska 99669

Email comments to:
KenaiRivCenter@kpb.us

For additional information, please contact Morgan Aldridge at MAldridge@kpb.us or 907-714-2465.

E. NEW BUSINESS

5. Conditional Use Permit; PC Resolution 2026-28
Applicant: Alaska DNR
Request: Construction of a fence within the 50' HPD of the Kenai River & Soldotna Creek
KPB Parcel ID #06030012
City of Soldotna

Multi-Agency Permit Application
Kenai Peninsula Borough
River Center

Fees Received: $_____
☐ Cash
☐ Check #_____
CREDIT CARDS NOT ACCEPTED FOR APPLN FEES

514 Funny River Road
Soldotna, Alaska 99669
KenaiRivCenter@kpb.us

Phone: (907) 714-2460
Fax: (907) 260-5992

PROPERTY OWNER:

Name: Alaska State Parks
Mailing: 550 W 7th Ave #1360
Anchorage, AK 99501
Phone: 907-269-8400
Email: hans.rinke@alaska.gov

AGENT: (if applicable)

Name: Kenai Watershed Forum
Mailing: 44129 Sterling Hwy
Soldotna, AK 99669
Phone: 907-398-4304
Email: christopher@kenaiwatershed.org

PROJECT LOCATION:

KPB Parcel ID: 06030012
Physical Address: None
Subdivision: NA
Lot: NA Block: NA Addition/No.: NA

WATERBODY INFORMATION:

Waterbody: Kenai River/Soldotna Creek
River Mile: 22
Riverbank: ☐ Left ■ Right *(looking downstream)*

PERMIT FEES: ☐ $50 - Staff Permit **OR** ■ $300 - Conditional Use or Floodway Analysis

PROJECT: ☐ New Project **OR** ☐ Extension/Amendment to **RC#** _____

Please select all activities that apply to your project:

- ☐ Bank Stabilization
- ☐ Boat Launch
- ☐ Bridge
- ☐ Coir Logs
- ☐ Culvert
- ☐ ELP Structures
- ☐ Equipment Stream Crossing
- ☐ Excavation, Dredging, and/or Fill
- ■ Fence Installation
- ☐ Fish & Wildlife Management
- ☐ Floating Dock
- ☐ Fuel Storage Green Infrastructure
- ☐ In-Stream Structures (Weir)
- ☐ Oil & Gas
- ☐ On-Site Utilities
- ☐ Prior-Existing Structure
- ☐ Revegetation
- ☐ Root Wads
- ☐ Road Construction
- ☐ Structure (Accessory)
- ☐ Structure (Residential)
- ☐ Spruce Tree Revetment
- ☐ Stream Crossing
- ☐ Utility Line/Easement
- ☐ Veg Mat
- ☐ Vegetation Removal
- ☐ Water Withdrawal
- ☐ Other: _____

PROJECT DESCRIPTION: *Provide a detailed description of your project, attach additional pages if necessary.*

Project seeks to install approximately 80 ft of fence containing 14 posts along the Kenai River and Soldotna Creek confluence in order to reduce trampling of revegetated areas on the Mullen Conservation Easement.

COST-SHARE: Is this project funded by the ADFG-USFWS Cost-Share Program? ☐ Yes ■ No

KPB TAX CREDIT PROGRAM: KPB provides a tax credit as partial reimbursement for new habitat protection and restoration projects within 150 feet of anadromous streams. If you would like to pre-qualify for this credit, please provide your estimated project cost(s) below. Do not include grants or other funding assistance:

Elevated Light-Penetrating Structures $ _____ Other Activities $ _____
Habitat Restoration & Protection $ _____ Green Infrastructure $ _____

PROJECT QUESTIONS:

1. Start date: 6/1/2026 End date: 6/10/2026 Estimated Days of Construction: 2
2. Is any portion of the work already complete? If yes, please describe: _____ ☐ Yes ■ No

_____

3. Is your project located on land or waters of an Alaska State Park? ☐ Yes ■ No

If yes, you must fill out an Alaska State Parks application at: dnr.alaska.gov/parks/permit

Ordinary High Water (OHW) and Mean High Water (MHW):

4. Is the project located within 50 feet of OHW or MHW a waterbody? ■ Yes ☐ No
5. Does any portion of the project extend below the OHW or MHW of the waterbody? ☐ Yes ■ No
6. Does any portion of the project cantilever or extend over the MHW of the waterbody? ☐ Yes ■ No
7. Will anything be placed below OHW or MHW of the waterbody? ☐ Yes ■ No

Regulatory Floodplains:

8. Is the property where the project is taking place near or within a regulatory floodplain? ■ Yes ☐ No
   a. Is this project within or adjacent to a regulatory floodway? ■ Yes ☐ No
   b. Is this project within or adjacent to a coastal high hazard zone? ☐ Yes ■ No
   c. For new buildings and/or additions, list all project costs (labor, materials, etc.): $ _____

Excavation, Dredging, and Fill:

9. Will material be excavated or dredged from the site? ☐ Yes ■ No
   a. Type of material(s): _____
   b. Area to be dredged below OHW or MHW:
      Length: _____ (ft) Width: _____ (ft) Depth: _____ (ft) Total Cubic Yards: _____
   c. Area to be excavated above OHW or MHW:
      Length: _____ (ft) Width: _____ (ft) Depth: _____ (ft) Total Cubic Yards: _____
   d. Location materials will be deposited: _____
10. Will any material (including soils, debris, and/or overburden) be used as fill? ☐ Yes ■ No
    a. Type of material(s): _____
    b. Is this fill permanent or temporary? ☐ Permanent ☐ Temporary
    c. Area to be filled above OHW or MHW:
       Length: _____ (ft) Width: _____ (ft) Depth: _____ (ft) Total Cubic Yards: _____
    d. Area to be filled below OHW or MHW:
       Length: _____ (ft) Width: _____ (ft) Depth: _____ (ft) Total Cubic Yards: _____

Motorized Equipment:

11. Will you be using motorized equipment for this project? If yes, please list all equipment: ☐ Yes ■ No

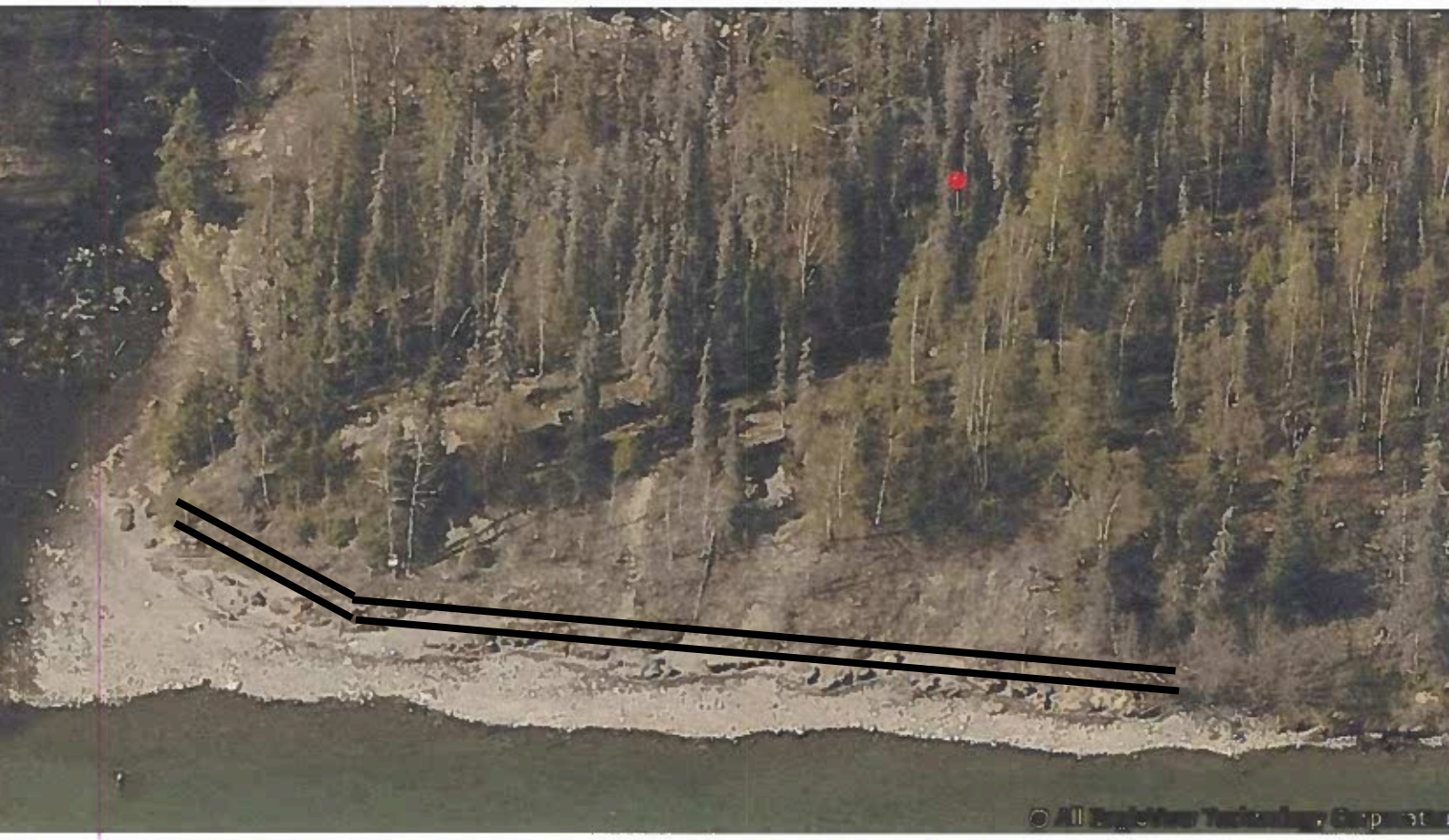
_____

    a. Will you be crossing a stream or waterbody? ☐ Yes ■ No
    b. How long will equipment be used below OHW or MHW? _____

SIGNATURE & CERTIFICATION:

This application is hereby made requesting permit(s) to authorize the work described in this application form. I certify the information in this application is complete and accurate to the best of my knowledge and that my site plans or drawings are attached. If applying for a tax credit, I certify that I have not begun construction of the project and that the project will be constructed to the standards in KPB 5.12 Real Property and Personal Property Taxes, KPB 5.14 Habitat Protection Tax Credit, and other applicable federal, state, and local regulations.

_____	_____	Christopher Haberbush	4/23/2026
Owner Signature *(required)*	**Date**	**Agent Signature** *(if applicable)*	**Date**



Indicates Fence

Indicates Fence


Example of proposed fence

0 300 600 ft

Fence

Project Area

KPB Parcel(s):

' '

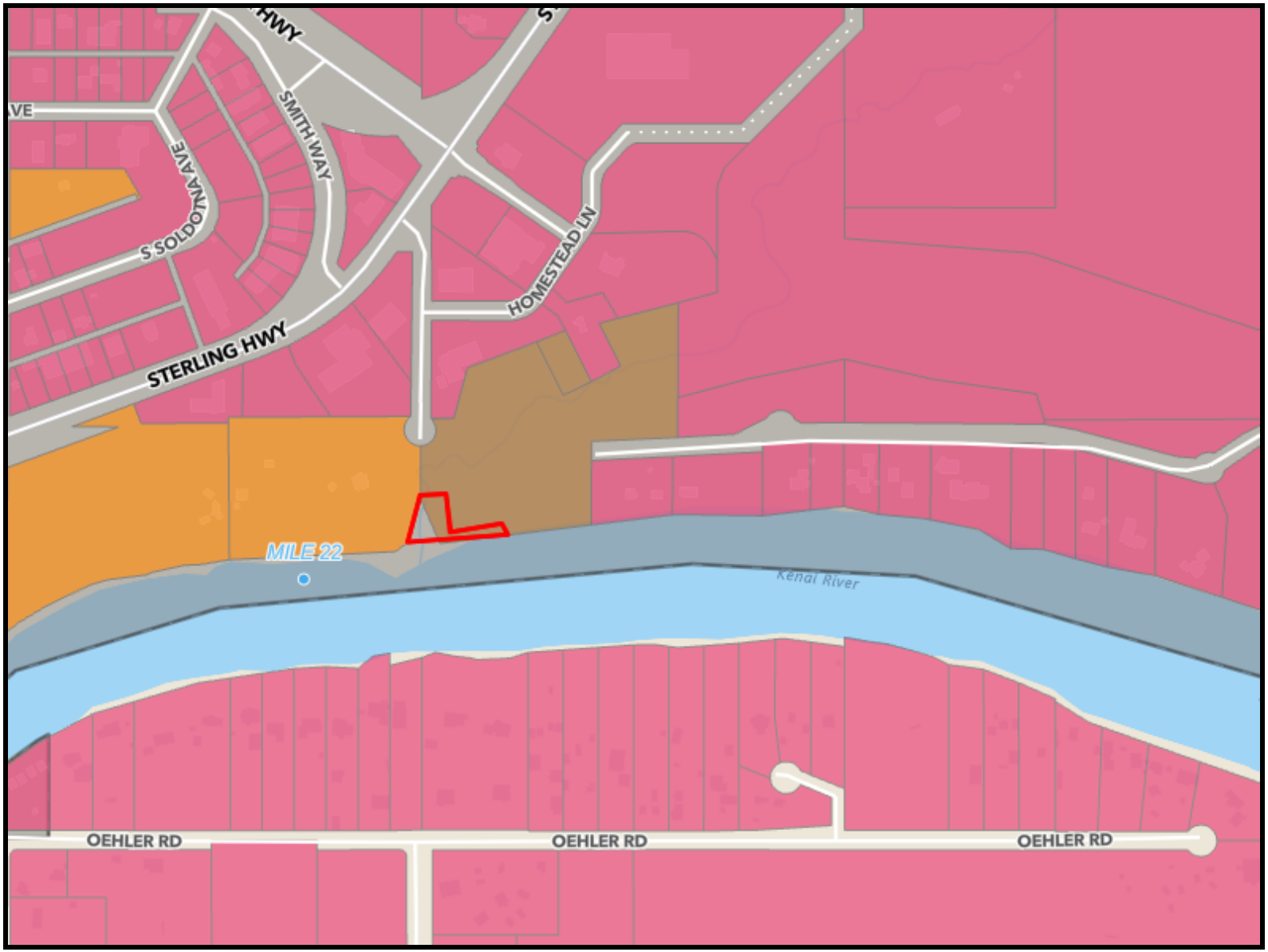
Project Description:

Vicinity: Soldotna

Map created by Aldridge, Morgan
Tuesday, April 28, 2026

The information depicted hereon is for a graphical representation only of best available sources. The Kenai Peninsula Borough assumes no responsibility for any errors on this map.

Ownership Map
Fence



Project Area

KPB Parcel(s):

' '

Parcel and PLSS

Parcel Ownership Type

- Borough
- Federal
- Native
- Native Allotment
- Municipal
- Private
- State

Map created by Aldridge, Morga
Tuesday, April 28, 2026

0 500 1000 ft

Conditional Use Permit
Anadromous Waters Habitat Protection District
Staff Report

PC Res No.	**2026-28**
Planning Commission Meeting:	**Monday, May 11, 2026**
Applicant	**State of Alaska Parks and Recreation & Kenai Watershed Forum**
Mailing Address	**550 W 7th Ave #1360** **Anchorage, AK 99501**
Legal Description	**T 5N R 10W SEC 33 SM KN 0970089 MULLEN HOMESTEAD RIVER ADN PHSE 1 LOT 6-B**
KPB Parcel Number	**06030012**

Project Description

A Conditional Use Permit is sought pursuant to KPB 21.18 for the construction of fence within the 50-foot Habitat Protection District of the Kenai River and Kenai River and Soldotna Creek, as established in KPB 21.18.040.

Background Information

Public use of the area has trampled the bank and removed all vegetation. Foot traffic from Soldotna Creek Park crosses Soldotna Creek to fish and the area has been heavily used. A fence is needed to prevent foot traffic and allow for vegetation to regrow.

Project Details within the 50-foot Habitat Protection District

An 80 foot wooden slat fence will be installed along the upland area. Approximately 14 fence posts will be installed.

Findings of fact pursuant to KPB 21.18.081 Conditional Use Permit

1. Portions of this proposed project are within the 50-foot habitat protection district as defined by KPB 21.18.040.
2. Pursuant to KPB 21.18.081(B)(2), construction of a fence may be approved as a conditional structure/use within the habitat protection district.

3. Pursuant to 21.18.081(D) General Standards, staff finds that the proposed project meets the five general standards.
4. Pursuant to KPB 21.18.020(A), this chapter was established to protect and preserve the stability of anadromous fish through controlling shoreline alterations and disturbances along anadromous waters and to preserve nearshore habitat.
5. Pursuant to KPB 21.18.20(B)(5), one purpose of this chapter was established to separate conflicting land uses.
6. Foot traffic in the area will continue to cause erosion along the water if it is not redirected and controlled in this area.
7. The fence will be made of narrow wooden slats to allow for the flow of water during any high water events.
8. Pursuant to KPB 21.06.081(D)(3), the proposed work will occur on the applicant's property and shall not have an adverse effect on adjoining properties.
9. Pursuant to KPB 21.18.140, the proposed project meets the definition of water dependent
10. Pursuant to KPB 21.06.081(B)(2), the proposed fence meets the standards of being along public property and does not enclose the entire parcel, as to allow for free movement of wildlife.
11. The River Center found the application complete and scheduled a public hearing for Monday, May 11, 2026.
12. Agency review was distributed on 4/24/2026. No comments or objections have been received from resource agencies to date.
13. Pursuant to KPB 21.11.030, public notice was mailed to all property owners within a radius of 300 feet of the project on 4/24/2026. A total of 15 mailings were sent.
14. Pursuant to KPB 01.08.180 (B) (1) (3), public notice was posted.
15. The applicant is currently in compliance with Borough permits and ordinances.

Permit Conditions

1. Construction techniques and best management practices shall be utilized to ensure that land disturbing activities do not result in runoff or sedimentation to the Kenai River and Soldotna Creek.
2. The fence must be designed and installed to meet KPB floodplain requirements.
3. The permittee shall minimize damage to all vegetation and shall revegetate all disturbed areas with native vegetation.
4. For each tree removed, two seedlings less than 5.5-feet tall of a species native to the region will be planted within the 50-foot HPD.
5. Storage or use of fuel is prohibited within 50-feet of any open water.
6. The River Center shall be notified at least 3 days prior to the start of the project.
7. If changes to the approved project described above are proposed prior to or during its siting, construction, or operation, the permittee is required to notify the River Center to determine if additional approval is required.

8. The permittee shall be held responsible for the actions of the contractors, agents, or others who perform work to accomplish the approved plan.
9. The construction or installation phase of this Conditional Use Permit must be completed within one calendar year from the date of the permit's issuance, or the Conditional Use Permit shall expire unless the Planning Commission finds that more time is necessary to effectuate the purposes of this chapter, in which case the commission may extend the deadline for a maximum of six years from the date of issuance. Prior to its expiration date and upon written request, the Planning Director may grant a Conditional Use Permit extension for 12 months (KPB 21.18.081 (H)).
10. In addition to the penalties provided by KPB 21.18.110, and pursuant to KPB 21.50, the permit may be revoked if the permittee fails to comply with the provisions of this chapter or the terms and conditions of a permit issued under this chapter. The Borough Clerk shall provide at least 15 day's written notice to the permittee of a revocation hearing before the hearing officer (KPB 21.18.082).
11. The permittee shall comply with the terms, conditions and requirements of the Kenai Peninsula Borough Code of Ordinances Chapter 21.18, and any regulations adopted pursuant to this chapter.
12. The permittee is responsible for abiding by all other federal, state, and local laws, regulations, and permitting requirements applicable to the project (KPB 21.18.081 (G)).

General Standards

Pursuant to 21.18.081(D) General Standards, the following standards shall be met before conditional use approval may be granted:

1. The use or structure will not cause significant erosion, sedimentation, damage within the habitat protection district, an increase in ground or surface water pollution, and damage to riparian wetlands and riparian ecosystems; **Conditions 1, 3 and Finding 4 support this standard.**
2. Granting of the conditional use shall be consistent with the purposes of this chapter, the borough comprehensive plan, other applicable chapters of the borough Code, and other applicable planning documents adopted by the borough; **Conditions 6, 11 and Findings 1-5 support this standard.**
3. The development of the use or structure shall not physically damage the adjoining property; **Findings 5 and 8 support this standard.**
4. The proposed use or structure is water-dependent; **Finding 9 supports this standard.**
5. Applicant's or owner's compliance with other borough permits and ordinance requirements; **Conditions 11, 12 and Finding 15 support this standard.**

Attachments

Recommendation

Based on the findings, staff finds that the proposed project meets the five general standards of KPB 21.18.081. The Planning Commission could consider additional permit conditions to mitigate for any habitat loss if it chooses.

Staff recommends the Planning Commission grant a Conditional Use Permit for the proposed project details subject to adopted conditions as set forth in 2026-28.

Note: An appeal of a decision of the Planning Commission may be filed to the Hearing Officer, in accordance with the requirements of the Kenai Peninsula Borough Code of Ordinances, Chapter 21.20.250. An appeal must be filed with the Borough Clerk within 15 days of date of the notice of the decision using the proper forms and be accompanied by the filing and records preparation fee.

END OF STAFF REPORT

KENAI PENINSULA BOROUGH PLANNING COMMISSION

RESOLUTION 2026-28

A RESOLUTION GRANTING A CONDITIONAL USE PERMIT PURSUANT TO KPB 21.18 FOR THE CONSTRUCTION OF A FENCE WITHIN THE 50-FOOT HABITAT PROTECTION DISTRICT OF THE KENAI RIVER & SOLDOTNA CREEK.

WHEREAS, Chapter 21.18 provides for the approval of Conditional Use Permits for certain activities within the habitat protection district; and

WHEREAS, KPB 21.18.081 provides that a conditional use permit is required for construction not meeting the standards of KPB 21.18.071; and

WHEREAS, KPB 21.18.091 provides for mitigation measures by the planning department staff to address impacts to the Habitat Protection District from a proposed, ongoing, or completed project; and

WHEREAS, public notice was sent to all property owners within a 300-foot radius of the proposed activity as provided in Section 21.11.030; and

WHEREAS, public notice was posted as provided in Section 01.08.180 (B) (1) (3); and

WHEREAS, public testimony was received at the Monday, May 11, 2026 meeting of the Kenai Peninsula Borough Planning Commission;

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE KENAI PENINSULA BOROUGH:

That the Planning Commission makes the following findings of fact pursuant to KPB 21.18:

Section 1. Project Details Within the 50-foot Habitat Protection District

An 80 foot wooden slat fence will be installed along the upland area. Approximately 14 fence posts will be installed.

Section 2. Findings of fact pursuant to KPB 21.18.081

1. Portions of this proposed project are within the 50-foot habitat protection district as defined by KPB 21.18.040.

2. Pursuant to KPB 21.18.081(B)(2), construction of a fence may be approved as a conditional structure/use within the habitat protection district.
3. Pursuant to 21.18.081(D) General Standards, staff finds that the proposed project meets the five general standards.
4. Pursuant to KPB 21.18.020(A), this chapter was established to protect and preserve the stability of anadromous fish through controlling shoreline alterations and disturbances along anadromous waters and to preserve nearshore habitat.
5. Pursuant to KPB 21.18.20(B)(5), one purpose of this chapter was established to separate conflicting land uses.
6. Foot traffic in the area will continue to cause erosion along the water if it is not redirected and controlled in this area.
7. The fence will be made of narrow wooden slats to allow for the flow of water during any high water events.
8. Pursuant to KPB 21.06.081(D)(3), the proposed work will occur on the applicant's property and shall not have an adverse effect on adjoining properties.
9. Pursuant to KPB 21.18.14, the proposed project meets the definition of water dependent.
10. Pursuant to KPB 21.18.081(B)(2), the proposed fence meets the standards of being along public property and does not enclose the entire parcel, as to allow for the free movement of wildlife.
11. The River Center found the application complete and scheduled a public hearing for Monday, May 11, 2026.
12. Agency review was distributed on 4/24/2026. No comments or objections have been received from resource agencies to date.
13. Pursuant to KPB 21.11.030, public notice was mailed to all property owners within a radius of 300 feet of the project on 4/24/2026. A total of 15 mailings were sent.
14. Pursuant to KPB 01.08.180 (B) (1) (3), public notice was posted.
15. The applicant is currently in compliance with Borough permits and ordinances.

Section 3. Permit Conditions

1. Construction techniques and best management practices shall be utilized to ensure that land disturbing activities do not result in runoff or sedimentation to the Kenai River and Soldotna Creek.
2. The fence must be designed and installed to meet KPB floodplain requirements.
3. The permittee shall minimize damage to all vegetation and shall revegetate all disturbed areas with native vegetation.
4. For each tree removed, two seedlings less than 5.5-feet tall of a species native to the region will be planted within the 50-foot HPD.

5. Storage or use of fuel is prohibited within 50-feet of any open water.
6. The River Center shall be notified at least 3 days prior to the start of the project.
7. If changes to the approved project described above are proposed prior to or during its siting, construction, or operation, the permittee is required to notify the River Center to determine if additional approval is required.
8. The permittee shall be held responsible for the actions of the contractors, agents, or others who perform work to accomplish the approved plan.
9. The construction or installation phase of this Conditional Use Permit must be completed within one calendar year from the date of the permit's issuance, or the Conditional Use Permit shall expire unless the Planning Commission finds that more time is necessary to effectuate the purposes of this chapter, in which case the commission may extend the deadline for a maximum of six years from the date of issuance. Prior to its expiration date and upon written request, the Planning Director may grant a Conditional Use Permit extension for 12 months (KPB 21.18.081 (H)).
10. In addition to the penalties provided by KPB 21.18.110, and pursuant to KPB 21.50, the permit may be revoked if the permittee fails to comply with the provisions of this chapter or the terms and conditions of a permit issued under this chapter. The Borough Clerk shall provide at least 15 day's written notice to the permittee of a revocation hearing before the hearing officer (KPB 21.18.082).
11. The permittee shall comply with the terms, conditions and requirements of the Kenai Peninsula Borough Code of Ordinances Chapter 21.18, and any regulations adopted pursuant to this chapter.
12. The permittee is responsible for abiding by all other federal, state, and local laws, regulations, and permitting requirements applicable to the project (KPB 21.18.081 (G)).

Section 4. Pursuant to 21.18.081(D) General Standards, the following standards shall be met before conditional use approval may be granted:

1. The use or structure will not cause significant erosion, sedimentation, damage within the habitat protection district, an increase in ground or surface water pollution, and damage to riparian wetlands and riparian ecosystems; **Conditions 1, 3 and Finding 4 appear to support this standard.**
2. Granting of the conditional use shall be consistent with the purposes of this chapter, the borough comprehensive plan, other applicable chapters of the borough Code, and other applicable planning documents adopted by the borough; **Conditions 6, 11 and Findings 1-5 appear to support this standard.**
3. The development of the use or structure shall not physically damage the adjoining property; **Findings 5 and 8 appear to support this standard.**

4. The proposed use or structure is water-dependent; **Finding 9 appear to support this standard.**
5. Applicant's or owner's compliance with other borough permits and ordinance requirements. **Conditions 11, 12 and Finding 15 appear to support this standard.**

THIS CONDITIONAL USE PERMIT EFFECTIVE ON _____ DAY OF_____, 2026.

_____
Jeremy Brantley, Chairperson
Planning Commission

ATTEST:

_____
Ann Shirnberg
Administrative Assistant

Note: An appeal of a decision of the Planning Commission may be filed to the hearing officer, in accordance with the requirements of the KPB Code of Ordinances, Chapter 21.20.250. An appeal must be filed with the Borough Clerk within 15 days of date of the notice of the decision using the proper forms and be accompanied by the filing and records preparation fee.

KENAI PENINSULA Borough

Donald E. Gilman River Center
A Division of the Planning Department

514 Funny River Road, Soldotna, AK 99669 | (P) 907-714-2460 | (F) 907-260-5992 | www.kpb.us

KENAI PENINSULA BOROUGH RIVER CENTER
NOTICE OF PUBLIC HEARING

The Kenai Peninsula Borough received an application for a Conditional Use Permit under KPB 21.18.081 for a project within the 50-foot Habitat Protection District (HPD) of the Kenai River and Soldotna Creek. This project has been scheduled for a public hearing before the Kenai Peninsula Borough Planning Commision.

Why are you receiving this notice?

Per code, property owners within 300 feet of the proposed project must receive notice of the public hearing. This project is located adjacent to Soldotna Creek Park, in Soldotna Alaska, Parcel ID 06030012. Our records indicate that you are a property owner within 300 feet of that parcel.

Project Description:

The Kenai Watershed Forum plans to place a fence within the 50-foot HPD of the Kenai River and Soldotna Creek.

How can you look at the application?

The meeting packet will be posted the week prior to the meeting. Once it has been posted it can be viewed at https://kpb.legistar.com/Calendar or by scanning this QR code with your phone:

How do you attend the Planning Commission meeting?

When: Monday, May 11, 2026 at 7:30 pm or as soon thereafter as business permits
Where: This meeting will be held in the Betty J. Glick Chambers, George A. Navarre Borough Administration Building located at 144 North Binkley Street, Soldotna.
Zoom: Meeting ID 907 714 2200
https://us06web.zoom.us/j/9077142200
1-888-788-0099 or 1-877-853-5247
Or other audio or video conferencing means whenever technically feasible

How do I comment on the project?

You can provide verbal comment at the meeting (see information above). You may also submit written comments. **Written comments must be received by 1:00 pm Friday, May 8, 2026.**

Mail comments to:
Donald E. Gilman River Center
514 Funny River Road
Soldotna, Alaska 99669

Email comments to:
KenaiRivCenter@kpb.us

For additional information, please contact Morgan Aldridge at MAldridge@kpb.us or 907-714-2465.

DESK PACKET

(MATERIALS SUBMITTED AFTER 05/01/26)

MISCELLANEOUS INFORMATION

- **Kenai Peninsula Fish Habitat Partnership Field Site Tour May 28, 2026**
- **Nikiski APC 050726 Meeting minutes**

Kenai Peninsula Fish Habitat Partnership
2026 Field Site Tour
SAVE THE DATE!

Participation: Central Kenai Peninsula elected leaders and decision makers

Purpose: During this 3-stop field site visit, members of the Kenai Peninsula Fish Habitat Partnership will share information on the state of salmon research, habitat restoration strategies, and habitat protection efforts in the central Kenai Peninsula. The group will discuss living in salmon landscapes and conservation of these important ecosystems, making valuable connections for moving local and regional fish habitat resilience strategies forward.

Anticipated Site Visit Locations:

May 28th, 2pm-4pm (Soldotna)
Redoubt/Soldotna Creek crossing
Soldotna Creek Tributary Wetland Violation
KHLT Silver Salmon Conservation Area

Contact: Maura Schumacher, maura_schumacher@fws.gov or Ben Meyer, ben@kenaiwatershed.org

NIKISKI ADVISORY PLANNING COMMISSION

Meeting Minutes
May 07, 2026 at 6:30 pm
Location: North Peninsula Rec Center

1. **CALL TO ORDER :** 6:40 pm
2. **ROLL CALL:** Kelly Brewer, Jason Ross, Tim Scher, Stacy Olivia, Kenai Peninsula Borough Planning Department Ryan Raidmae**,** Planning Commission Jeff Epperheimer
3. **APPROVAL OF AGENDA:** Tim approved, Jason 2nd-All Approved
4. **Approval of Minutes**
    a. April 09, 2026: Tim approved, Jason 2nd-All Approved
5. **Borough Business**
    a. Planner Report: Ryan said River Center sent out 5000 notification letters-to parcels in habitat areas-the notifications were the rules on these parcels
    b. Presentation
        i. None
    c. Conditional Use Permit (CUP)
        i. Donald Boston, Daniel's Lake, Boat Launch/Dock: Jeff stepped out of the room during this discussion. Jason motioned to pass, Tim 2nd Some questions regarding the necessity of the Nikiski APC passing this Conditional Use Permit and not River Center-Ryan stated most probable because it's a new structure it runs through Advisory 1st. All necessary paperwork was complete-KPB recommended to approve. All Approved
    d. Platting
        i. None
6. **Old Business:**

Nikiski Comprehensive Plan: Kelly reported on Special meeting regarding the Nikiski Comprehensive Plan. The Commissioners are working on meeting the requests (via Community Survey) of the community to write the plan. One community priority was more beach access. Kelly sent an email dated May 4, 2026 (attached) to Aaron Hughes (KPB land Management Manager) regarding beach access on KPB parcel 01726067. Ryan said that email needed to go him. Kelly will redirect the request for beach access to Ryan. Ryan will report back on that email at the next meeting. Tim has been gathering information on what it would take to have a permanent United States Post Office in Nikiski. Tim reached out via phone to District D Senator Jesse Bjorkman who took the time to return Tim's phone call. Jesse Bjorkman said he is in favor of the having a permanent Post Office. Tim will be gathering more information to bring to the next work session. Funny River is asking for the same request to have a permanent Post Office-Dan Sullivan will be at a Funny River meeting May 8, 2026, and the Funny

River Post Office will be mentioned. Nikiski APC is looking forward to the information Funny River gathers on this topic. Stacy has been working on the logistics of having a Port in Nikiski. She has gathered economic information on it and will continue to work on it as a community goal. All commissioners have taken a topic to gather information on for the next regular APC meeting. We will also have a **Special Meeting April 28**, 2026 6:00 pm to continue working on the Comprehensive Plan. Commissioner assignments: Jason-Contact Nikiski Pioneers to gather information on the History of Nikiski. Stacy-Climate of Nikiski, Tim Demographics of Nikiski-Kelly Local Governing Bodies-Jon Transportation

7. **New Business:** Jeff said he has received some phone calls opposing the Solar Farm going in on Mental Trust Land in Nikiski. He said all questions regarding the Solar Farm should go to Homer Electric Association.

   Stacy will work on getting our Nikiski APC meetings back on Zoom**.**

8. **PUBLIC COMMENT/PRESENTATION:** none
9. **COMMISSIONER COMMENTS:** none
10. **ADJOURNMENT:** 7:45pm

Next Regular Meeting: Thursday, June 04, 2026, at 6:30 PM
