



US Army Corps  
of Engineers  
Alaska District

Regulatory Division (1145)  
CEPOA-RD  
44669 Sterling Highway, Suite B  
Soldotna, Alaska 99669-7915

# Public Notice of Application for Permit

<b>PUBLIC NOTICE DATE:</b>	<b>December 16, 2021</b>
<b>EXPIRATION DATE:</b>	<b>January 14, 2022</b>
<b>REFERENCE NUMBER:</b>	<b>POA-2009-00690-M2</b>
<b>WATERWAY:</b>	<b>Scaup Lake</b>

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Interested parties are hereby notified that a Department of the Army permit application has been received for work in waters of the United States as described below and shown on the enclosed project drawings.

All comments regarding this Public Notice should be sent to the address noted above. If you desire to submit your comments by email, you should send it to the Project Manager's email as listed below. All comments should include the Public Notice reference number listed above.

All comments should reach this office no later than the expiration date of this Public Notice to become part of the record and be considered in the decision. Please contact Ms. Jen Martin at (907) 753-2730 or by email at [Jen.L.Martin@usace.army.mil](mailto:Jen.L.Martin@usace.army.mil) if further information is desired concerning this notice.

**APPLICANT:** Hilcorp Alaska, LLC, Attention: Keegan Fleming, 3800 Centerpoint Drive #1400, Anchorage, Alaska 99503

**AGENT:** SLR International Corporation, Attention: Shauna Holben, 3800 Centerpoint Drive #1400, Anchorage, Alaska 99503

**LOCATION:** The project site is located within Section 14, 23, 24 and 25, T. 9 N., R. 9 W., Seward Meridian; USGS Quad Map Kenai D-3 SE; beginning at the intersection of Mountain Violet Drive and the Kenai Spur Highway Extension in the Gray Cliff Subdivision (Latitude 60.8703° N., Longitude 150.8265° W.) and terminating at the existing Birch Hill Unit (BHU) Well No. 22-25 (Latitude 60.8440° N., Longitude 150.7993° W.), within, and north of, the Kenai National Wildlife Refuge, northeast of Nikiski, Alaska.

**SPECIAL AREA DESIGNATION:** The southern 1.6-mile-long road segment is located on land that has been conveyed to Tyonek Native Corporation (TNC) but is within the Kenai National Wildlife Refuge.

**PURPOSE:** The applicant's stated purpose is to safely plug and abandon (P&A) the BHU Well No. 22-25. Discharge of fill material into wetlands is required to provide a stable base for constructing the road that would accommodate the P&A rig and associated equipment. Secondly, the road would be utilized to provide access to their lands for subsistence and recreational activities for shareholders of TNC.

**PROPOSED WORK:** The applicant proposes to discharge 13,000 cubic yards (CY) of gravel fill into 2.56 acres of wetlands for construction of a 2.4-mile-long permanent road, with a 16-20-foot crest width and a 33.5-foot base width, to P&A the BHU Well No. 22-25. The road would be left in place after P&A activities are complete for utilization by Tyonek Native Corporation for access to subsistence hunting.

All work would be performed in accordance with the enclosed plan (sheets 1-14), dated November 15, 2021.

**ADDITIONAL INFORMATION:** A permit was issued to Union Oil Company of California (UNOCAL), on April 21, 2010, to discharge 9,433 cubic yards (cy) of gravel fill material into 2.65 acres of wetlands for construction of an access road, and impacts to 2.61 acres of wetlands for pipeline/utility installation, between the Swanson River Oil and Gas Field, North Swanson River Satellite and the Birch Hill Unit to the north. The original permit was transferred on November 17, 2011, to Hilcorp Alaska, LLC. A permit modification (POA-2009-00690-M1) was authorized July 21, 2015, which granted a five-year time extension. To date, the authorized southern route was cleared, however, the access road was never constructed, and the permit has now expired. The current proposal listed under 'Proposed Work' would access the Birch Hill Unit from the north.

The U.S. Bureau of Land Management (BLM) manages the subsurface operations associated with the BHU. Exploratory BHU Well No. 22-25 was drilled in 1965 on federal oil and gas leases within what is currently the BHU. The well has never been produced, and recent reviews have determined that the estimated recoverable gas from the well does not justify the cost to produce it. As such, BLM has required P&A of the well by May 1, 2022.

**APPLICANT PROPOSED MITIGATION:** The applicant proposes the following mitigation measures to avoid, minimize, and compensate for impacts to waters of the United States from activities involving discharges of dredged or fill material.

- a. **Avoidance:** The project is connected to existing development and sited in a location that optimizes its purpose and need, but complete avoidance of wetlands is not possible. However, Hilcorp has taken additional measures to avoid impacts to waters of the United States (WOUS) to the maximum extent practicable through project design. Proposed mitigation measures specific to avoidance of impacts to WOUS are described below. Hilcorp has designed the project with the minimum road size required to provide the immediate space necessary to access the BHU Well No. 22-25 in order to permanently P&A the well. These measures include:

- (1) The route to access the BHU pad from the north was planned by McLane using available topographic data and overhead plan views of the area to remain in upland areas as much as possible, based on indicators such as ground elevation and vegetation. Minor adjustments were made in the field to avoid or minimize encroachment into wetlands where possible.
- (2) Siting the road so that it is connected to the existing Kenai Spur High extension road system, which maximizes use of current developed ROWs, and upland habitat in the area.
- (3) The road is sited on natural uplands and existing disturbed uplands, and completely avoids permanently inundated wetlands and WOUS.
- (4) The road connects to the existing BHU 22-25 pad, which should have adequate spacing for P&A activities.
- (5) The road avoids placement of gravel in locations designated as Critical Habitat under the Endangered Species Act.
- (6) No concrete or asphalt surfacing will be performed.
- (7) Pullouts will be constructed in upland areas to allow safe passage of construction equipment

b. Minimization: The road was designed based on the largest piece of equipment to mobilize to the site, which is the 401 Drill Rig. Dimensions are: 60' long x 14' tall x 10' wide. Vehicle weight is 98,000 pounds (lbs.). Approximately 37,000 CY of gravel will be needed for road construction. Approximately 13,000 CY of the total gravel amount will be placed within 2.56 acres of wetlands. No concrete or asphalt surfacing will be performed.

- (1) Hilcorp will install fifteen 18-inch (in) diameter by 30 to 35-foot (ft) long culverts in wetlands along the road alignment in order to maintain natural drainage patterns.
- (2) The road surface has been minimized to between 15 and 20 feet wide at the crown, depending on ground conditions, with 2.5V:1H side slopes to minimize fill area and impacts to wetlands. Typical oilfield support road designs have a minimum top surface anywhere from 20 ft (40 ft base) to 35 ft (55 ft base).
- (3) Culverts will be installed as needed as determined by engineering standards for proper road design and environmental conditions to maintain surface water flow and minimize flooding.
- (4) Vegetation clearing and grubbing within the proposed road corridor will not exceed a width of 100 feet for road construction activities.

(5) The construction of the project will conform to standard environmental controls, including best management practices contained within a Stormwater Pollution Prevention Plan, Fuel and Hazardous Substances Control Plan, and Spill Prevention Control and Countermeasures Plan.

(6) Hilcorp will implement a Wildlife Avoidance Plan to minimize human interactions with, and potential impacts to wildlife.

(7) An independent environmental monitor will be on-site during construction activities to ensure permit and plan compliance.

(8) Hilcorp will berm around the existing BHU 22-25 pad during P&A activities to prevent extraneous fluids, such as surface water, from entering and exiting the drill site area.

(9) Fresh water for construction will be provided by the water well installed on the BHU 22-25 pad, purchased from local contractors, or acquired from other permitted water well sites within the area.

(10) Fuel and other hazardous substances will be handled using safe liquid transfer practices, site inspections, and secondary containment of portable containers.

(11) Hilcorp may use existing road system infrastructure (pads, waste facilities, and entrance/egress locations) for equipment and material staging, storage, support, and parking.

c. Compensatory Mitigation: Hilcorp is not proposing compensatory mitigation.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification, as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation.

CULTURAL RESOURCES: The lead Federal agency, Bureau of Land Management (BLM), is responsible for compliance with the requirements of Section 106 of the National Historic Preservation Act. The U.S. Army Corp of Engineers (Corps) will review BLM's documentation and either concur with their documentation or continue to work with them until any issues are resolved. A permit for the described work will not be issued until the Section 106 process has been completed and the Corps concurs with BLM's work or documentation.

ENDANGERED SPECIES: No threatened or endangered species are known to use the project area.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

No EFH species are known to use the project area.

**TRIBAL CONSULTATION:** The Alaska District fully supports tribal self-governance and government-to-government relations between Federally recognized Tribes and the Federal government. Tribes with protected rights or resources that could be significantly affected by a proposed Federal action (e.g., a permit decision) have the right to consult with the Alaska District on a government-to-government basis. Views of each Tribe regarding protected rights and resources will be accorded due consideration in this process. This Public Notice serves as notification to the Tribes within the area potentially affected by the proposed work and invites their participation in the Federal decision-making process regarding the protected Tribal right or resource. Consultation may be initiated by the affected Tribe upon written request to the District Commander during the public comment period.

**PUBLIC HEARING:** Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

**EVALUATION:** The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The outcome of the general balancing process would determine whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur. The decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Commander determines that it would be contrary to the public interest.

The U.S. Army Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

AUTHORITY: This permit will be issued or denied under the following authority:

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

Project drawings a Notice of Application for State Water Quality Certification are enclosed with this Public Notice.

District Commander  
U.S. Army, Corps of Engineers

Enclosures



# PUBLIC NOTICE

Alaska Department of Environmental Conservation (DEC)  
Wastewater Discharge Authorization Program/401 Certification  
555 Cordova Street, Anchorage AK 99501-2617  
Phone: 907-269-6285 | Email: [DEC-401Cert@alaska.gov](mailto:DEC-401Cert@alaska.gov)

## Notice of Application for State Water Quality Certification

Any applicant for a federal license or permit to conduct an activity that might result in a discharge into navigable waters, in accordance with Section 401 of the Clean Water Act (CWA) of 1977 (PL95-217), also must apply for and obtain certification from the Alaska Department of Environmental Conservation that the discharge will comply with the CWA, the Alaska Water Quality Standards, and other applicable State laws.

Notice is hereby given that a request for a CWA §401 Water Quality Certification of a Department of the Army Permit application, Corps of Engineers' Reference Number POA-2009-00690-M2, Scaup Lake, has been received for the discharge of dredged and/or fill materials into waters of the United States (WOUS), including wetlands, as described in the Corps public notice and project figures/drawings (18 AAC 15.180).

Any person desiring to comment on the project with respect to water quality, may submit comments electronically via email to [DEC-401cert@alaska.gov](mailto:DEC-401cert@alaska.gov) by the expiration date of the Corps of Engineer's public notice. All comments need to include the Corps public notice reference number in the subject heading. Physically mailed comments must be postmarked on or before the expiration date of the public notice.

After reviewing the application, the Department may certify there is reasonable assurance the activity, and any discharge that might result, will comply with the CWA, the Alaska Water Quality Standards, and other applicable State laws. The Department also may deny or waive certification.

The permit application and associated documents are available for review. For inquiries or to request copies of the documents, contact [dec-401cert@alaska.gov](mailto:dec-401cert@alaska.gov), or call 907-269-6285.

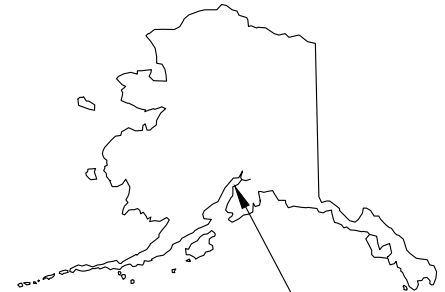
### Disability Reasonable Accommodation Notice

The State of Alaska, Department of Environmental Conservation complies with Title II of the Americans with Disabilities Act (ADA) of 1990. If you are a person with a disability who may need special accommodation in order to participate in this public process, please contact ADA Coordinator Brian Blessington at 907-269-6272 or TDD Relay Service 1-800-770-8973/TTY or dial 711 within 5 days of the expiration date of this public notice to ensure that any necessary accommodations can be provided.

# HILCORP ALASKA, LLC

## BIRCH HILL

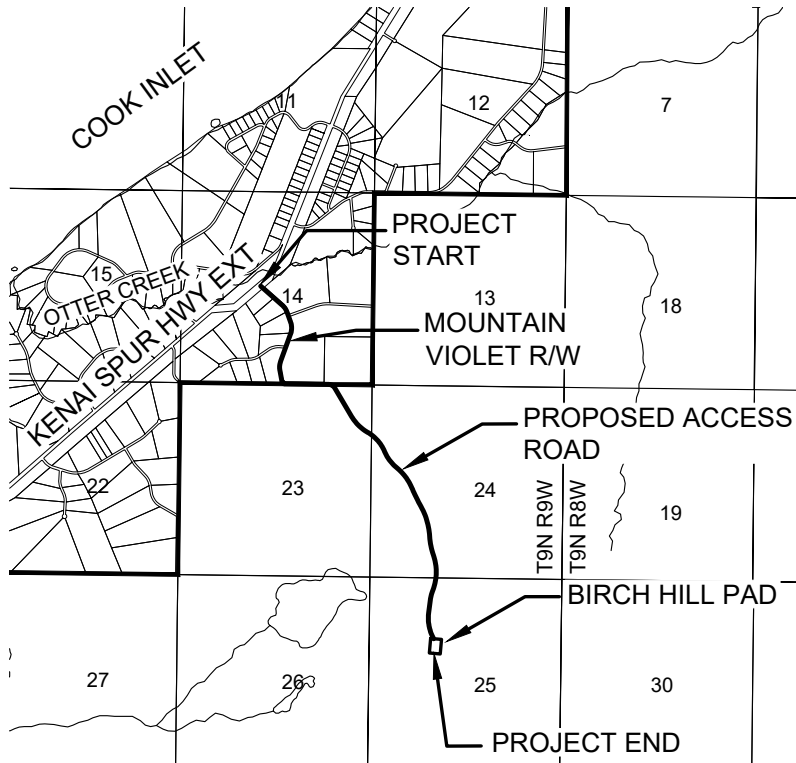
### WELL P&A



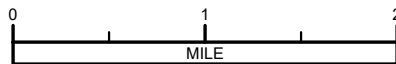
PROJECT LOCATION  
NIKISKI, ALASKA  
LAT: 60° 50' 36.24285" N  
LONG: -150° 47' 56.25127" W

### LEGEND

	TREE LINE
	SECTION LINE
	CONTOUR LINE
	EXISTING PIPELINE
	PROPERTY LINE
	LIMITS OF FILL
	WETLANDS



SCALE



VICINITY MAP

### INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER
2	KEY
3 - 5	TYPICAL SECTIONS
6 - 12	PROJECT PLAN VIEWS
13 - 14	IMPACT TABLES



Consulting Inc

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

#### LOCATION

SECTIONS 14, 23, 24, & 25, T9N, R9W, S.M., AK

#### PROJECT

BIRCH HILL WELL P&A

#### APPLICANTS

HILCORP ALASKA

3800 CENTERPOINT DRIVE, STE. 100, ANCHORAGE, AK 99503



Hilcorp Alaska, LLC

REVISION: 2

DATE: 11/15/2021

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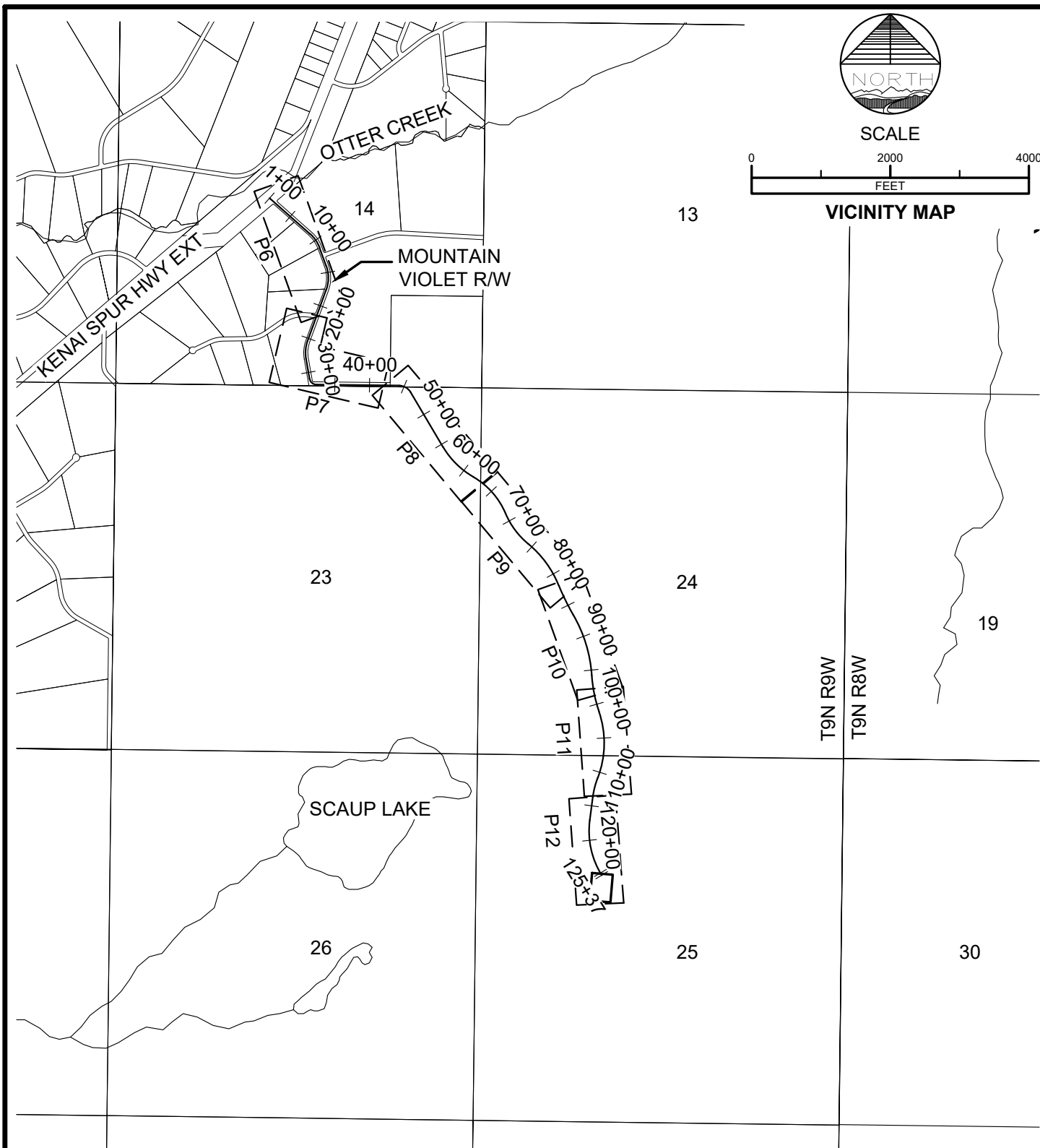
SCALE: 1" = 100'

PROJECT NO. 217010

SHEET

1 OF 14





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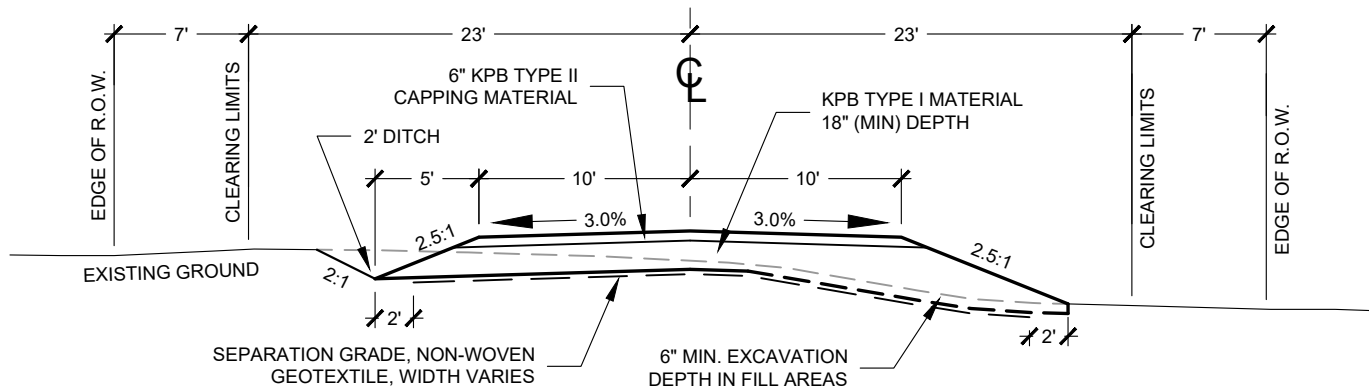
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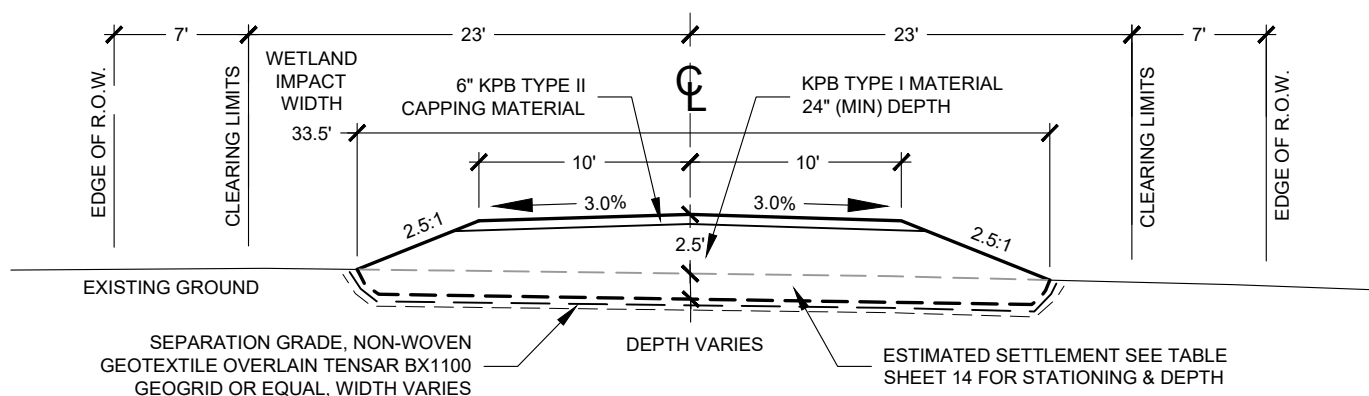
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2 OF 14



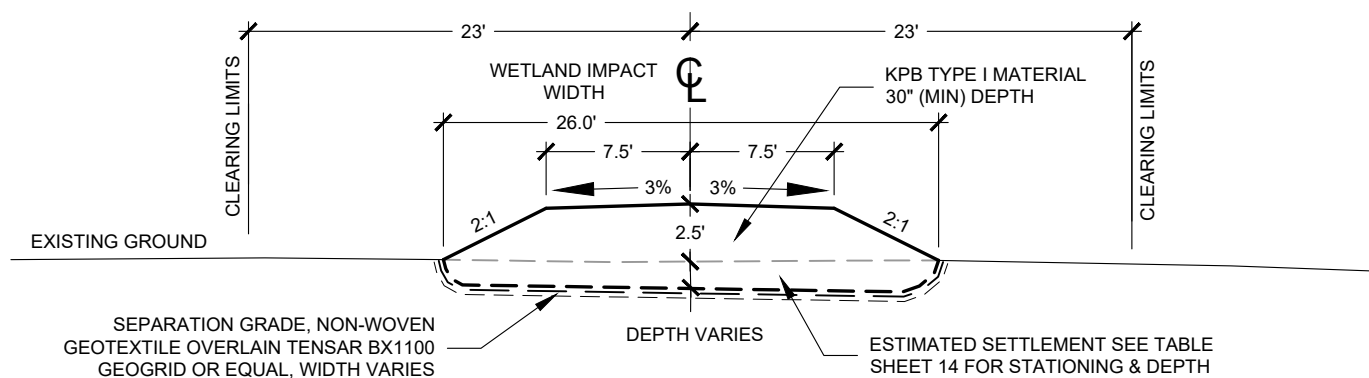
### A EMBANKMENT CONSTRUCTION - CAT I UPLANDS

SCALE: 1" = 10' STA: 3+65 TO 7+10, 9+25 TO 11+46, 16+60 TO 17+92, 18+47 TO 20+25 & 30+03 TO 42+10



### B EMBANKMENT CONSTRUCTION - CAT I WETLANDS

SCALE: 1" = 10' STA: 1+04 TO 3+65, 7+10 TO 9+25, 11+46 TO 16+60, 17+92 TO 18+47 & 20+25 TO 30+03



### C EMBANKMENT CONSTRUCTION - WETLANDS

SCALE: 1" = 10' STA: 71+12 TO 77+10, 106+48 TO 108+30, 109+45 TO 110+35, 110+70 TO 111+14, 112+40 TO 114+22, 115+57 TO 117+50 & 118+72 TO 122+15



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#### LOCATION

SECTIONS 14, 23, 24, & 25, T9N, R9W, S.M., AK

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SCALE: 1" = 10'

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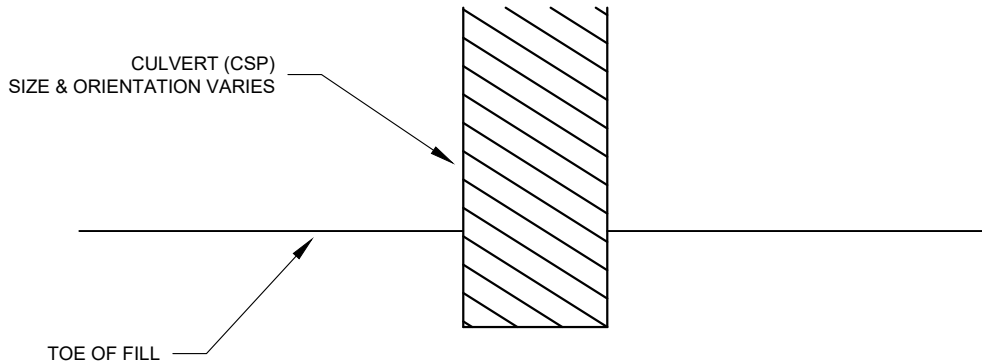
3 OF 14



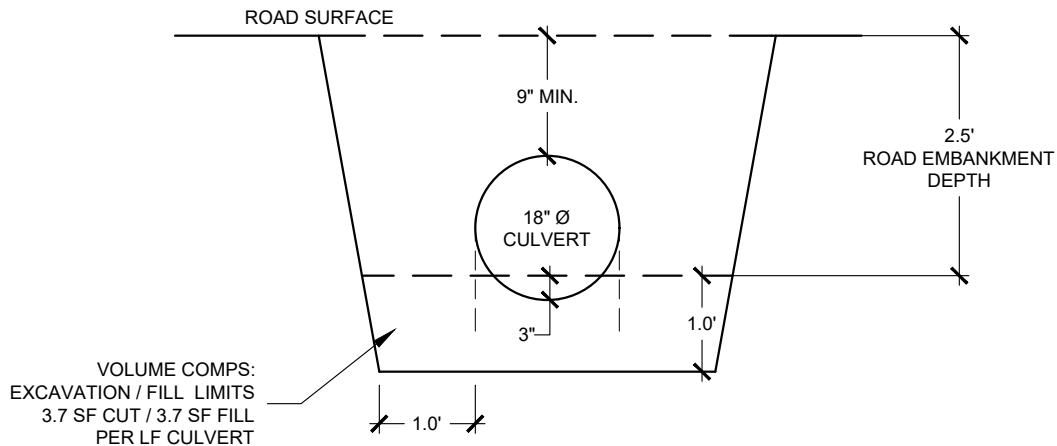
## CULVERT NOTES

1. SET CULVERT INVERTS TO ASSURE UNOBSTRUCTED FLOW.
2. CULVERT LOCATIONS ARE APPROXIMATE AND WILL BE FIELD FIT IN LOW AREAS TO MAXIMIZE DRAINAGE.

## PLAN VIEW



## CROSS SECTION VIEW



A  
5

## CULVERT INSTALLATION DETAILS

SCALE: 1" = 2'



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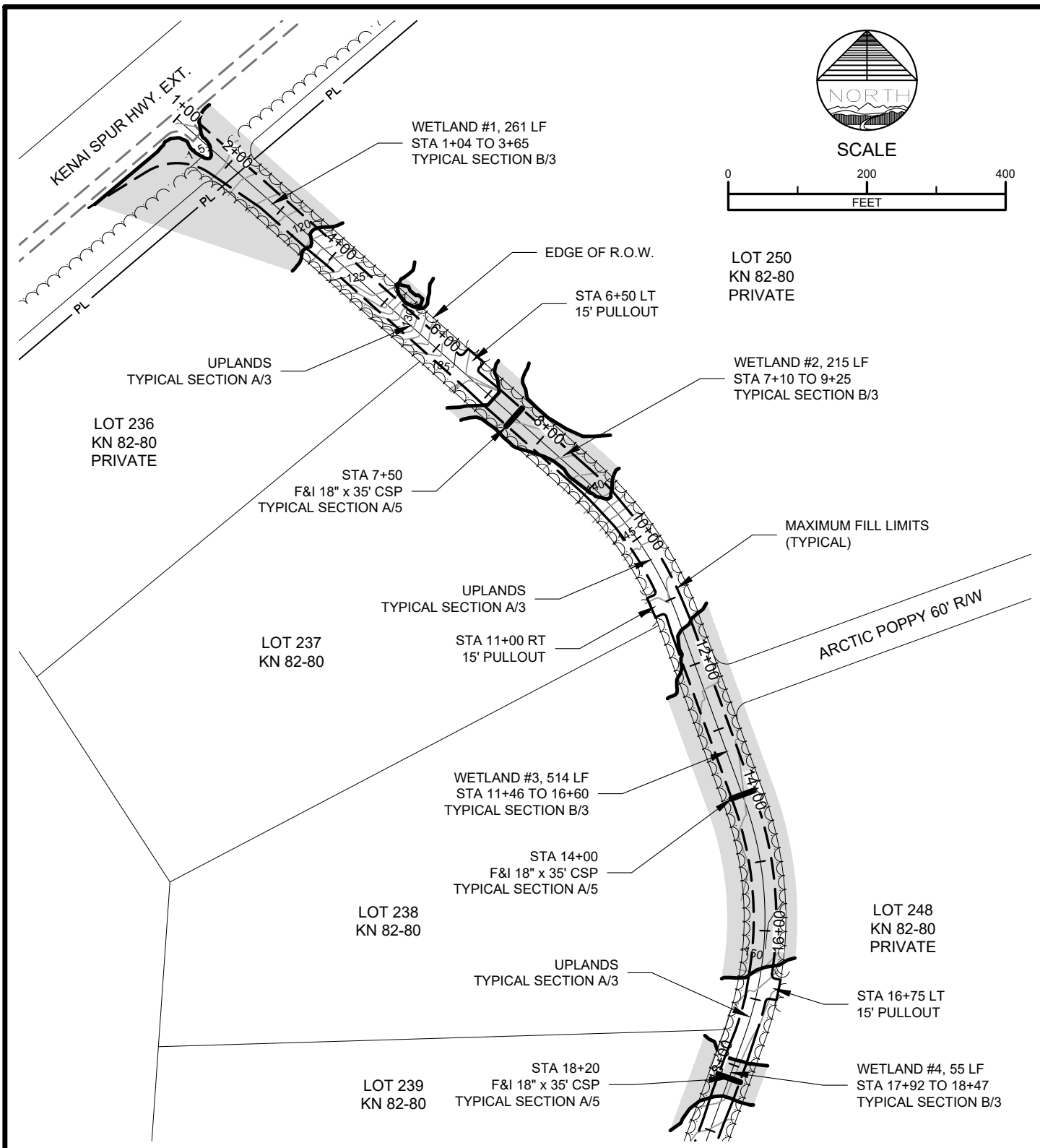
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SCALE: 1" = 10'

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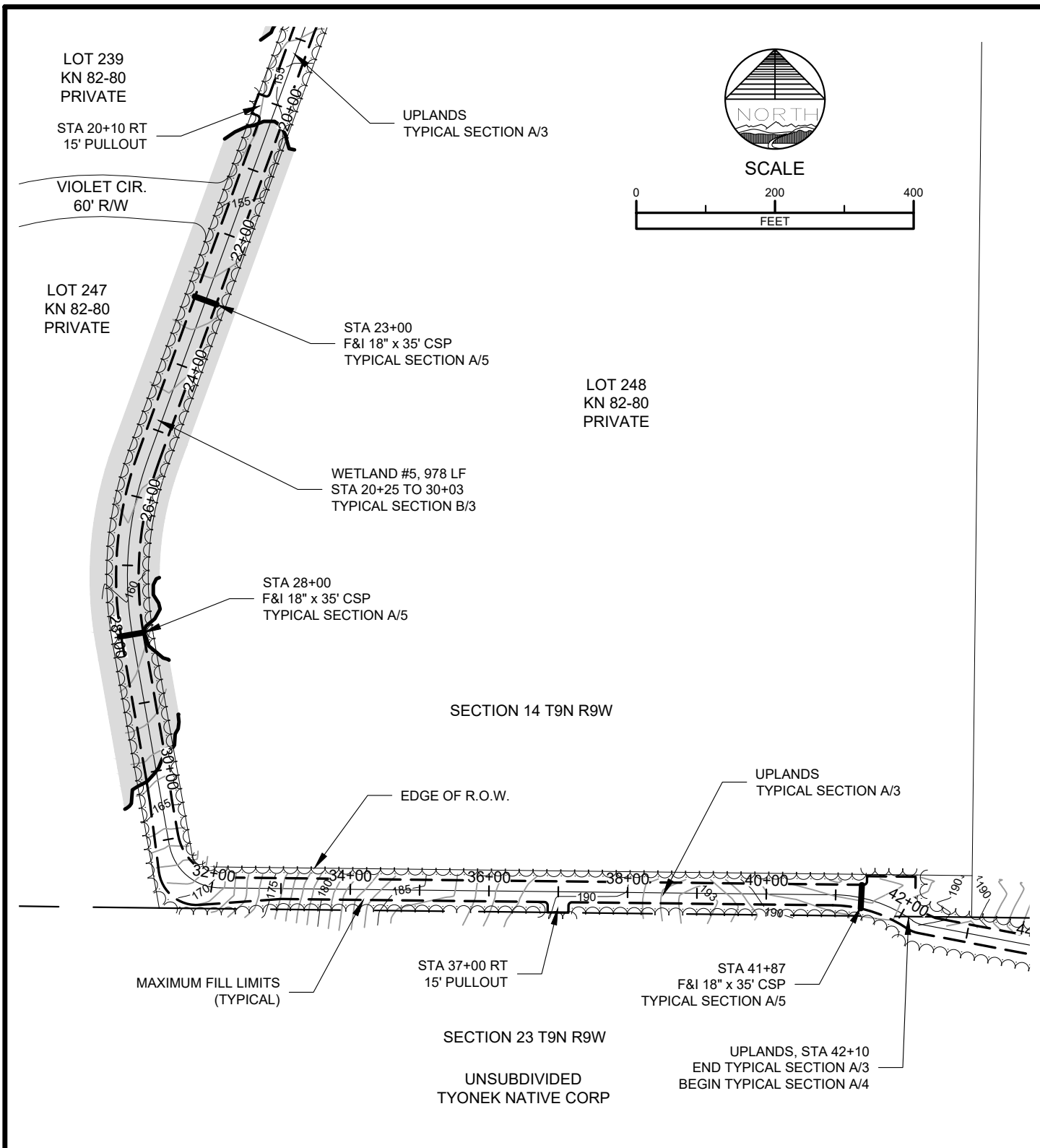
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SCALE: 1" = 200'

PROJECT NO. 217010

SHEET

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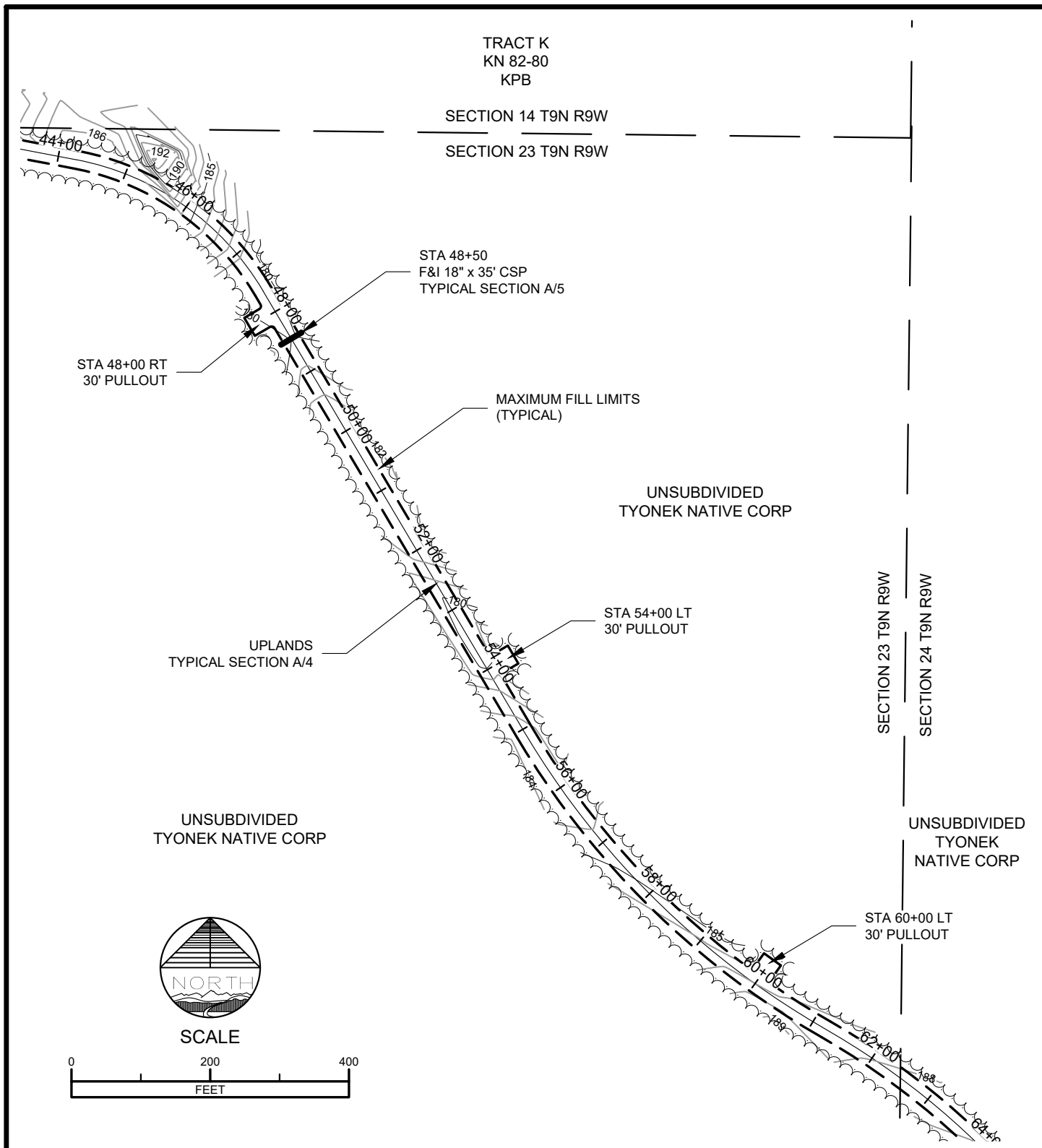
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7 OF 14



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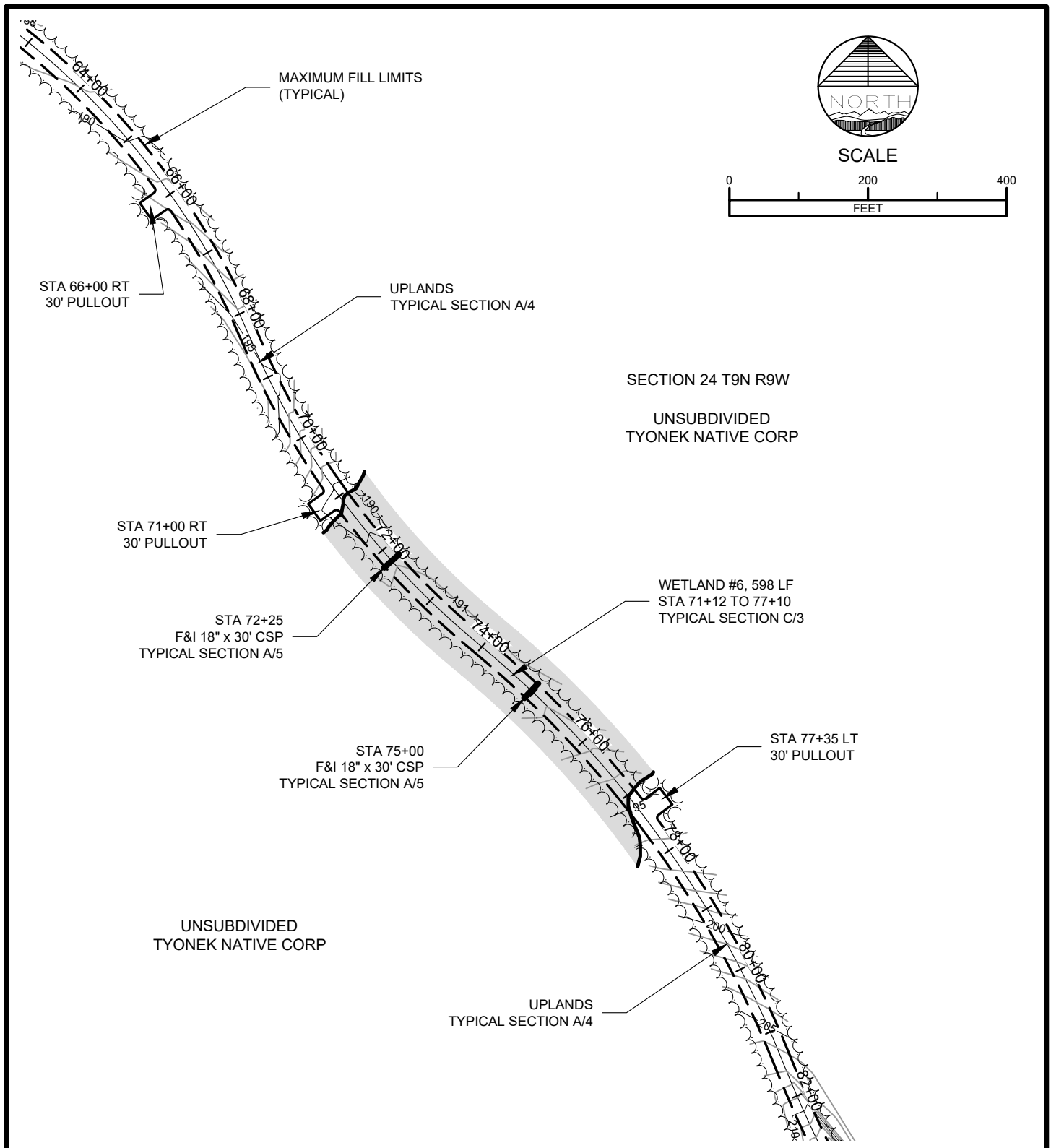
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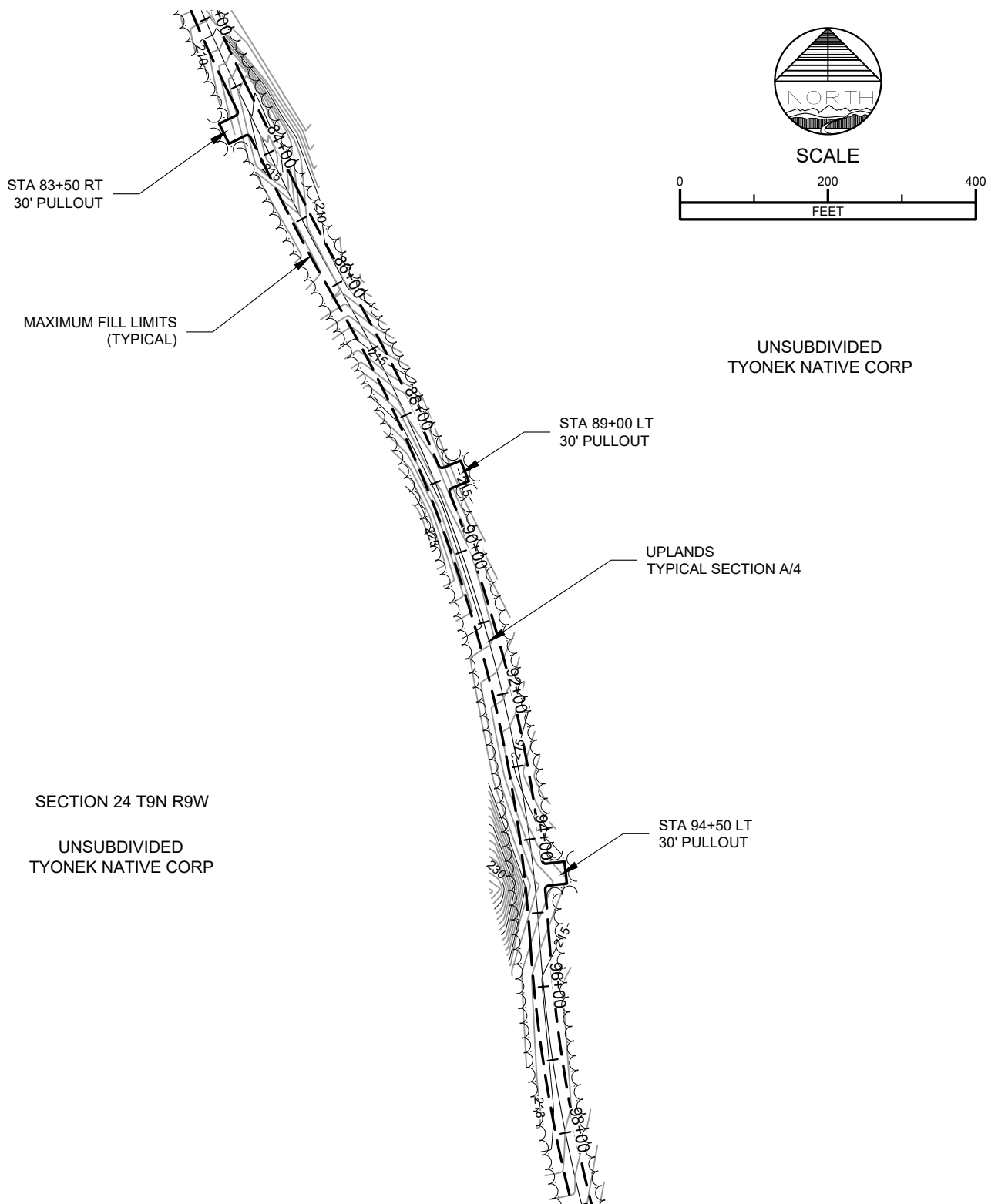
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PROJECT NO. 217010

SHEET  
**9** OF 14





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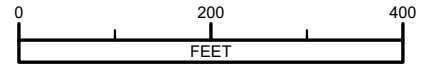
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PROJECT NO. 217010

SHEET  
**10** OF 14



SCALE



MAXIMUM FILL LIMITS  
(TYPICAL)

STA 100+25 LT  
30' PULLOUT

UPLANDS  
TYPICAL SECTION A/4

UNSUBDIVIDED  
TYONEK NATIVE CORP

STA 106+00 RT  
30' PULLOUT

SECTION 24 T9N R9W

SECTION 25 T9N R9W

STA 107+75  
F&I 18" x 30' CSP  
TYPICAL SECTION A/5

UPLANDS  
TYPICAL SECTION A/4

WETLAND #7, 182 LF  
STA 106+48 TO 108+30  
TYPICAL SECTION C/3

WETLAND #8, 90 LF  
STA 109+45 TO 110+35  
TYPICAL SECTION C/3

STA 109+85  
F&I 18" x 30' CSP  
TYPICAL SECTION A/5

UPLANDS  
TYPICAL SECTION A/4

STA 110+90  
F&I 18" x 30' CSP  
TYPICAL SECTION A/5

UNSUBDIVIDED  
TYONEK NATIVE CORP

STA 111+75 RT  
30' PULLOUT

WETLAND #9, 44 LF  
STA 110+70 TO 111+14  
TYPICAL SECTION C/3



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BIRCH HILL WELL P&A

APPLICANTS

HILCORP ALASKA

3800 CENTERPOINT DRIVE, STE. 100, ANCHORAGE, AK 99503



Hilcorp Alaska, LLC

REVISION: 2

DATE: 11/15/2021

DRAWN BY: BGB

SCALE: 1" = 200'

PROJECT NO. 217010

SHEET

11 OF 14

WETLAND #10, 182 LF  
STA 112+40 TO 114+22  
TYPICAL SECTION C/3

STA 113+75  
F&I 18" x 30' CSP  
TYPICAL SECTION A/5

UPLANDS  
TYPICAL SECTION A/4

STA 116+00  
F&I 18" x 30' CSP  
TYPICAL SECTION A/5

UPLANDS  
TYPICAL SECTION A/4

STA 118+25 RT  
30' PULLOUT

STA 120+00  
F&I 18" x 30' CSP  
TYPICAL SECTION A/5

WETLAND #12, 343 LF  
STA 118+72 TO 122+15  
TYPICAL SECTION C/3

WETLAND #11, 193 LF  
STA 115+57 TO 117+50  
TYPICAL SECTION C/3

SECTION 25 T9N R9W

UNSUBDIVIDED  
TYONEK NATIVE CORP

MAXIMUM FILL LIMITS  
(TYPICAL)

STA 125+80  
END ACCESS ROAD CONSTRUCTION

CLEARING LIMITS FROM  
2014 PROJECT  
CLEAR SECOND  
GROWTH ON PAD

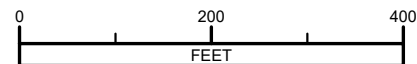
ADDITIONAL PAD CLEARING  
LIMITS FOR DEBRIS AND WASTE  
EXCAVATION DISPOSAL

UNSUBDIVIDED  
TYONEK NATIVE CORP

EXISTING PAD  
REMOVE EXISTING CLEARING  
DEBRIS AND ORGANICS  
GRADE RESULTANT SURFACE  
LEVEL AND COMPACT



SCALE



Consulting Inc

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

LOCATION

SECTIONS 14, 23, 24, & 25, T9N, R9W, S.M., AK

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WETLAND 1 - 1+04 TO 3+65						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
1+04	2+75	IMPACT VARIES - APPROACH EXTENDS INTO WETLAND	171	7257	731	121
2+75	3+65	20' WIDE ROAD - 33.5' WIDE IMPACT	90	3015	297	36
WETLAND 2 - 7+10 TO 9+25						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
7+10	9+25	20' WIDE ROAD - 33.5' WIDE IMPACT	215	7138	707	85
WETLAND 3 - 11+46 TO 16+60						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
11+46	16+60	20' WIDE ROAD - 33.5' WIDE IMPACT	514	17219	1690	203
WETLAND #4 - 17+92 TO 18+47						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
17+92	18+47	20' WIDE ROAD - 33.5' WIDE IMPACT	55	1842	181	22
WETLAND #5 - 20+25 TO 30+03						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
20+25	30+03	20' WIDE ROAD - 33.5' WIDE IMPACT	978	32763	3216	387
WETLAND #6 - 71+12 TO 77+10						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
71+12	77+10	15' WIDE ROAD - 26.0' WIDE IMPACT	598	15548	1819	N/A
WETLAND #7 - 106+48 TO 108+30						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
106+48	108+30	15' WIDE ROAD - 26.0' WIDE IMPACT	182	4732	596	N/A
WETLAND #8 - 109+45 TO 110+35						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
109+45	110+35	15' WIDE ROAD - 26.0' WIDE IMPACT	90	2340	295	N/A
WETLAND #9 - 110+70 TO 111+14						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
110+70	111+14	15' WIDE ROAD - 26.0' WIDE IMPACT	44	1144	144	N/A
WETLAND #10 - 112+40 TO 114+22						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
112+40	114+22	15' WIDE ROAD - 26.0' WIDE IMPACT	182	4732	596	N/A
WETLAND #11 - 115+57 TO 117+50						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
115+57	117+50	15' WIDE ROAD - 26.0' WIDE IMPACT	193	5018	632	N/A
WETLAND #12 - 118+72 TO 122+15						
BEGIN STATION	END STATION	DESCRIPTION	LENGTH (LF)	AREA (SF)	TYPE I VOLUME (CY)	TYPE II VOLUME (CY)
118+72	122+15	15' WIDE ROAD - 26.0' WIDE IMPACT	343	8918	1123	N/A
20' WIDE ROAD = 33.5' WIDE IMPACT TOE TO TOE						
20' WIDE ROAD EMBANKMENT CROSS SECTION AREA - KPB TYPB I = 56.25 SF - KPB TYPE II = 10.68 SF						
15' WIDE ROAD = 26.0' WIDE IMPACT TOE TO TOE						
15' WIDE ROAD EMBANKMENT CROSS SECTION AREA - KPB TYPE I = 50.83 SF						
ESTIMATED WETLAND SETTLEMENT DEPTH VARIES SEE TABLE SHEET 14						



ENGINEERING - TESTING  
SURVEYING - MAPPING  
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CULVERT IMPACT					
CULVERT	STATION	DIAMETER	LENGTH (LF)	CUT (CY)	FILL (CY)
1	7+50	18"	35	5	5
2	14+00	18"	35	5	5
3	18+20	18"	35	5	5
4	23+00	18"	35	5	5
5	28+00	18"	35	5	5
6	41+87	18"	35	5	5
7	48+50	18"	35	5	5
8	72+25	18"	30	4	4
9	75+00	18"	30	4	4
10	107+75	18"	30	4	4
11	109+85	18"	30	4	4
12	110+90	18"	30	4	4
13	113+75	18"	30	4	4
14	116+00	18"	30	4	4
15	120+00	18"	30	4	4
TOTALS			485	67	67
CULVERT BEDDING CROSS SECTION = 3.7 SF					
3.9' CULVERT BEDDING IMPACT WIDTH					

WETLAND SETTLEMENT TABLE				
WETLAND BEGIN	WETLAND END	LENGTH	WIDTH	DEPTH
1+04	3+65	261	38.0'	12"
7+10	9+25	215	32.5'	12"
11+46	16+60	514	32.5'	12"
17+92	18+47	55	32.5'	12"
20+25	30+03	978	32.5'	12"
71+12	77+10	598	25.0'	15"
106+48	108+30	182	25.0'	18"
109+45	110+35	90	25.0'	18"
110+70	111+14	44	25.0'	18"
112+40	114+22	182	25.0'	18"
115+57	117+50	193	25.0'	18"
118+72	122+15	343	25.0'	18"

TOTAL WETLAND IMPACTS				
WETLAND IMPACT LENGTH (LF)	WETLAND IMPACT AREA (SF)	WETLAND IMPACT AREA (AC)	WETLAND FILL VOLUME (CY)	WETLAND CUT VOLUME (CY)
3655	111,666	2.563	12948	67



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