US Army Corps of Engineers
Alaska District

ANCHORAGE
Regulatory Division (1145)
CEPOA-RD
Post Office Box 6898
JBER, Alaska 99506-0898

Public Notice of Application for Permit

PUBLIC NOTICE DATE:	**October 4, 2022**
EXPIRATION DATE:	**November 3, 2022**
REFERENCE NUMBER:	**POA-2022-00265**
WATERWAYS:	**Nenana River, Little Nenana River, East Middle River, West Middle River, Wetlands**

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 or to regpagemaster@usace.army.mil. 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 Chris Parrish at (505) 231-3586, toll free from within Alaska at (800) 478-2712, or by email at christopher.m.parrish@usace.army.mil if further information is desired concerning this notice.

APPLICANT: Alaska Department of Transportation & Public Facilities (DOT&PF), 2301 Peger Road, Fairbanks, Alaska 99709.

LOCATION: The project site is located at Latitude 64.57553º N., Longitude -149.49913º W.; west of the City of Nenana, Alaska.

PURPOSE: The purpose of this project is to address the need of a reliable route to the valley west of the City of Nenana. Access to the area is currently limited to approximately 12.1 miles of one-lane dirt road that is experiencing degradation due to springtime snow melt. The existing road also includes three bridges that require replacement. Extending west from the current road, access is only feasible by an All-terrain vehicle or snowmachine in the winter via a cleared line that extends to the Kantishna River floodplain. This portion of access is maintained by individuals who frequent the trail.

This project will improve accessibility to the area west of the City of Nenana. Increased accessibility will facilitate development of agriculture plots being auctioned as part of the Alaska Department of Natural Resources (DNR) Nenana-Totchaket Agriculture Project, the Kantishna River, and the western portion of the Tanana Valley State Forest for landowners, hunters, fishers, and recreational users.

PROPOSED WORK: The DOT&PF is proposing to construct the Nenana-Totchaket Road from the Nenana River to the Kantishna River. Project will include improving approximately 12 miles of existing road and constructing 20 miles of new road. The proposed Nenana-Totchaket Road Project is entirely State funded.

Existing Road: The existing approximately 12.1 mile roadway (Totchaket Road) would undergo re-leveling in areas that have experienced settling, flattening of embankment side slopes, installation of new surface course, clearing of vegetation at slope toes, replacement of three bridge crossings (East Middle, West Middle, and Little Nenana Rivers), construction of an armored high water crossing in a seasonal flood area, and some drainage improvements including culvert replacement and ditch work. Existing turnouts would also be improved, and new turnouts may be constructed as needed to support hauling materials during construction. No realignment of the existing roadway is proposed. There are several existing material sites along the existing road which may be further utilized and expanded, exclusively within upland areas.

Road Extension: Approximately 19 miles of new road would be constructed beginning at the end of the existing Totchaket Road, extending westerly towards the Kantishna River. The road would be constructed with an average top width of 18 foot with 3:1 side slopes and an average embankment thickness of 4 foot. Turnouts would be constructed at variable locations along the alignment to support construction at an average frequency of five per mile. Turnouts are anticipated to be limited to no more than 100 foot long and 12 foot wide and would be constructed in upland areas where practicable. The first 15.7 miles of new road extension would be built within the City of Nenana's existing 500-foot wide right-of-way (ROW) easement, traversing relatively flat land primarily composed of sandy soils. Sections requiring road cuts would be constructed with a 4:1 or shallower backslope down to an approximately 10 foot wide ditch. A new ROW would be required for the remaining 3.3 miles of proposed road. This westernmost section of proposed road extension would alter course, taking on a northwesterly bearing, gradually descending approximately 3.3 miles across a ridgeline to the Kantishna River floodplain. The road would then terminate near the Kantishna River at a proposed boat launch area.

Water Crossings: Three bridges along the existing section of Totchaket Road are proposed to be replaced, crossing the Little Nenana River, the East Middle River and the West Middle River, all three of which are 80 foot in length and 4.3 foot wide. All three bridges are proposed to be replaced longer than the existing bridges, spanning the entire channel at ordinary high water, reducing channel constriction and flow velocity. The Little Nenana River bridge is anticipated to be 130 foot in length and 27 foot wide while the East and West Middle River bridges are anticipated to be 100 foot in length and 27 foot wide. Adjacent upland areas may be utilized for equipment staging and temporary access to support erection of the bridges. The existing bridge abutments are rock gabions that have experienced degradation and settlement over the life of the current bridges. All bridge abutments would be re-constructed with riprap placed below the ordinary high water mark (OHWM) and graded upward at a stable slope to mitigate erosion. No dredging within the river channels is anticipated. In addition to the replacement of the existing bridges, this project proposes to reconstruct a portion of road that experiences seasonal flooding. Further detail on this section of road can be found below in the Proposed Mitigation section. Locations of the water crossings can be found in Figures 2, 4, 5, & 7. Detailed profiles for each bridge can be found on Figures 62-64.

Culverts: There are approximately 30 culverts in place along the existing portion of Totchaket Road, all of which have been determined to be operational during a site visit on June 10, 2022, and all but one culvert are not proposed to be replaced (Figure 60). The one culvert proposed to be replaced is part of the section of road that experiences seasonal flooding. Approximately 10 new culverts are proposed along the existing road and approximately 43 culverts are proposed to be placed along the new road alignment (Figure 61). At this time no fish passage culverts are anticipated to be installed. Two 7-foot Enhanced Hydraulic Design (EHD) culverts are being considered for the aforementioned seasonally flooded section of road.

Material Sites: Two material sites are anticipated to be developed for this project, both of which are located adjacent to the proposed road extension area. Alaska DOT&PF applied to establish the sites through Alaska DNR on May 22, 2022. The applications went to public notice on July 26, 2022. In addition to these two sites, there are established commercially available sites along Totchaket Road and in the Nenana River that may be used by the contractor. Locations of material sites and a typical cross section of the sites proposed for development can be found on Figures 1-1 – 1-7.

The proposed project is anticipated to permanently impact approximately 12.88 acres of waters of the U.S. (WOTUS) via the discharge of approximately 83,120 cubic yards of fill within different wetlands and river channels as part of its construction. Permanent fill is proposed for the following project components:

- Addition of material to existing road embankments that have settled; and
- Construction of turnouts to facilitate material hauling; and
- Replacement of three existing bridges over Little Nenana River, East Middle River, and West Middle River; and
- Construction of additional culverts and a high-water crossing on a section of existing road within a seasonally flooded area; and

- Construction of 15.7 miles of new road extension within the established City of Nenana ROW easement. This first 15.7 miles of proposed new road primarily traverses over upland areas with short segments of wetlands within the existing ROW; and
- Construction of 3.3 miles of additional road extension to the Kantishna River (Alternative #2).

A total approximately 10.04 acres of temporary impacts to wetlands are anticipated from the proposed project. Project actions that will result in temporary impacts to wetlands include:

- Temporary work areas associated with replacement of three bridge crossings (0.2 acres); and
- Temporary work areas around new and replacement culverts (0.93 acres); and
- In wetland areas, a temporary work zone will be established with an average of 10 foot on either side of the toe of embankment. This temporary work zone will not exceed a total width of 20 foot within any section of road (8.91 acres).

Temporary work areas associated with the replacement of bridges may include the installation of temporary bridge crossings and approach roads at the discretion of the contractor. The areas adjacent to the three bridges to be replaced are primarily uplands. Installation of temporary bridges/approach roads would result in approximately 0.2 acres of temporary impacts. All fills associated with temporary bridges will be remove prior to completion of construction. Implementation of temporary bridges would be coordinated with the Alaska Department of Fish and Game (ADF&G) and the appropriate permits would be obtained prior to construction. A 25-foot vegetative buffer beyond temporary work zones will be established in wetland areas along the length of the existing and proposed roads in wetland areas. Temporary fills in wetlands will be removed in their entirety upon completion of project construction.

APPLICANT PROPOSED MITIGATION: For each project action with permanent and/or temporary impacts, avoidance and minimization measures are proposed and summarized below. The total estimated acres of wetland impacts avoided by the measures proposed is 17.52 acres.

Avoidance and minimization considerations that lead to the current design features include:

- **Alternatives:** DOT&PF has evaluated the impacts associated with two alternatives for the road extension portion of the proposed project determined to be practicable and constructable. Alternative #1 would have resulted in approximately 12.32 acres of wetland impacts based on NWI data; 6.78 acres greater than the impacts by choosing the preferred Alternative #2. This alternative route can be seen in Figures 36-41. This measure avoids 6.78 acres of wetland impacts.

- **Material Sources:** Material Site MS 37-1-166-2 as originally proposed, would impact 0.74 acres of PSS1B wetlands from material extraction. The Material site boundary was subsequently reduced to completely avoid wetland impacts, including establishing a minimum 100-foot buffer, separating ground disturbing activities from the adjacent wetlands. See Figures 1-5 & 1-6. This measure avoids 0.74 acres of wetland impacts.

  An additional material source was included in scoping for this project and was proposed as a potential source of gravel and sand within the Kantishna River floodplain, near the terminus of the proposed roadway (Figures 48-49). Upon further exploration of the site, it was determined that soil in the area is primarily composed of sand and silt. While this source could still be of use in constructing the roadway, especially given that a source near the end of the proposed road could cut down on the costs of hauling material up to an additional 10 miles from the next nearest source, it was determined that the impact on the surrounding environment heavily outweighed the cost reduction of mining the source. This led to the decision not to permit and develop this material site. Elimination of this site results in approximately 10 acres of wetland avoidance**.**

  All newly proposed material sources will be entirely within upland areas**.**

- **Design:** Proposed to maintain the current variable width of the road (from 12 to 20 foot wide) to reduce the impacts that would result from widening the road to a consistent two-lane width.

  Bridges will be replaced longer than the existing bridges, spanning the entire channel at ordinary high water and allowing for better floodplain connectivity.

  Proposed installation of additional cross-drainage culverts along the existing road would enhance drainage patterns and increase wetland connectivity. Additional culverts in identified areas will reduce scour and erosion caused by seasonal flooding, alleviating some of the unnatural flooding caused by the road feature in wetland areas and leading to ecological uplift, habitat connectivity and improved water quality.

  A section of the existing road crosses a seasonally flooded area and unnamed stream that is centered in a wide swath of wetlands (See Figure 7 for location). According to accounts from local users of the road, the stream is a major collection point for snow melt in the area during breakup season. The seasonal melt causes severe flooding that overwhelms the single 48-inch culvert and overtops the road. Due to this seasonal flooding the road has experienced major erosion, leading to the stream overtopping the road and eroding road surface material into downstream wetlands.

DOT&PF is proposing to reconstruct this section of road, creating an armored high-water crossing with two 7-foot diameter EHD culverts, one adjacent to and one in place of the existing 4-foot diameter culvert, to accommodate for seasonal flooding and improve passage of residential fish in the waterbody. The construction of an armored high-water crossing will prevent erosion of the road into downstream wetlands during flood events while the additional culvert will help convey water across the section of road, reducing the likelihood of a flood event overtopping the road. Consultation on the design of this section of road is ongoing with ADF&G – Division of Habitat, and the final design will conform to ADF&G requirements. Preliminary design for this crossing can be seen on Figures 57-59.

Embankment sideslopes will not exceed 3:1 in wetland areas.

- **Construction:** In wetland areas, a temporary work zone will be established with an average of 10 feet on either side of the toe of embankment. This temporary work zone will not exceed a total width of 20 foot within any section of road.

  Vegetation Clearing will occur within the footprint of the proposed road and within established buffer areas at the toe of each side of the road (Average 10 foot, not to exceed 20 foot for any section of road). Vegetation clearing in wetland areas outside of the proposed footprint will be accomplished while soils are frozen or by hand using only low ground-pressure, wheeled ATVs for access to minimize temporary wetland impacts.

  A 25-foot vegetative buffer beyond temporary work zones will be established in wetland areas along the length of the existing and proposed roads.

  Vegetation clearing will follow, within practicable limits, Migratory Bird Treaty Act-based recommendations by USFWS regarding migratory bird nesting and rearing windows, with the net outcome of conducting the majority of clearing activities during pre-nesting or post-fledge periods for avian protection.

  Construction vehicles will be cleaned of vegetative debris before entering the limits of construction in order to limit the spread of invasive species. Construction activities requiring reseeding of vegetative cover will utilize certified seed materials meeting requirements of the State of Alaska Seed Regulations (11 AAC 34 Articles 1 & 4) regarding purity, germination and weed content.

  Contractors will be required to obtain an Alaska DEC General Construction Permit (GCP). As part of this a SWPPP will be prepared by the contractor and appropriate erosion control BMPs will be installed as described in the SWPPP.

  Seeding of all erodible slopes within the project area will occur in order to minimize the transport of sediment to WOTUS.

  Staging areas will be located solely in upland or previously disturbed areas.

Material stockpiles and unsuitable material will be stored in upland areas wherever possible.

The majority of embankment fill will be sourced from in-situ sand materials and will therefore minimize introduction of invasive weeds from imported materials.

All in-water work will be coordinated with Alaska Department of Fish and Game (ADF&G) - Division of Habitat. Fish habitat permits to authorize in-water work will be obtained after review of project details by the appropriate ADF&G employees.

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: DOT&PF acquired a contractor to conduct a cultural resources survey of the project corridor, which was completed in the Spring of 2022. As a result of consultation with the Office of History and Archaeology (OHA) it was determined that additional survey for cultural resources was necessary. This additional investigation was completed in September of 2022. A technical report documenting the findings from these efforts is currently being prepared and will be submitted to the Corps for review and consultation with State Historic Preservation Office (SHPO), federally recognized tribes, and other consulting parties.

Any comments SHPO, federally recognized tribes, and other consulting parties may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work.

ENDANGERED SPECIES: According to a search of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) database on July 15, 2022, there are no federally listed species or their designated critical habitats within or adjacent to the project area. The database does note that Bald and Golden Eagles may be found in the project area. A survey for eagle and raptor nests was completed during field studies on June 7, 2022, no nests were found in or near the project area as a result of the effort.

Any comments the USFWS or the National Marine Fisheries Service (NMFS) may have concerning endangered or threatened wildlife or plants or their critical habitat will be considered in our final assessment of the described work.

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 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 occur within the project area.

TRIBAL CONSULTATION: The Corps 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)(l) 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 Corps is soliciting comments from the public; federal, state, and local agencies and officials; Alaska Natives; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps 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 authorities:

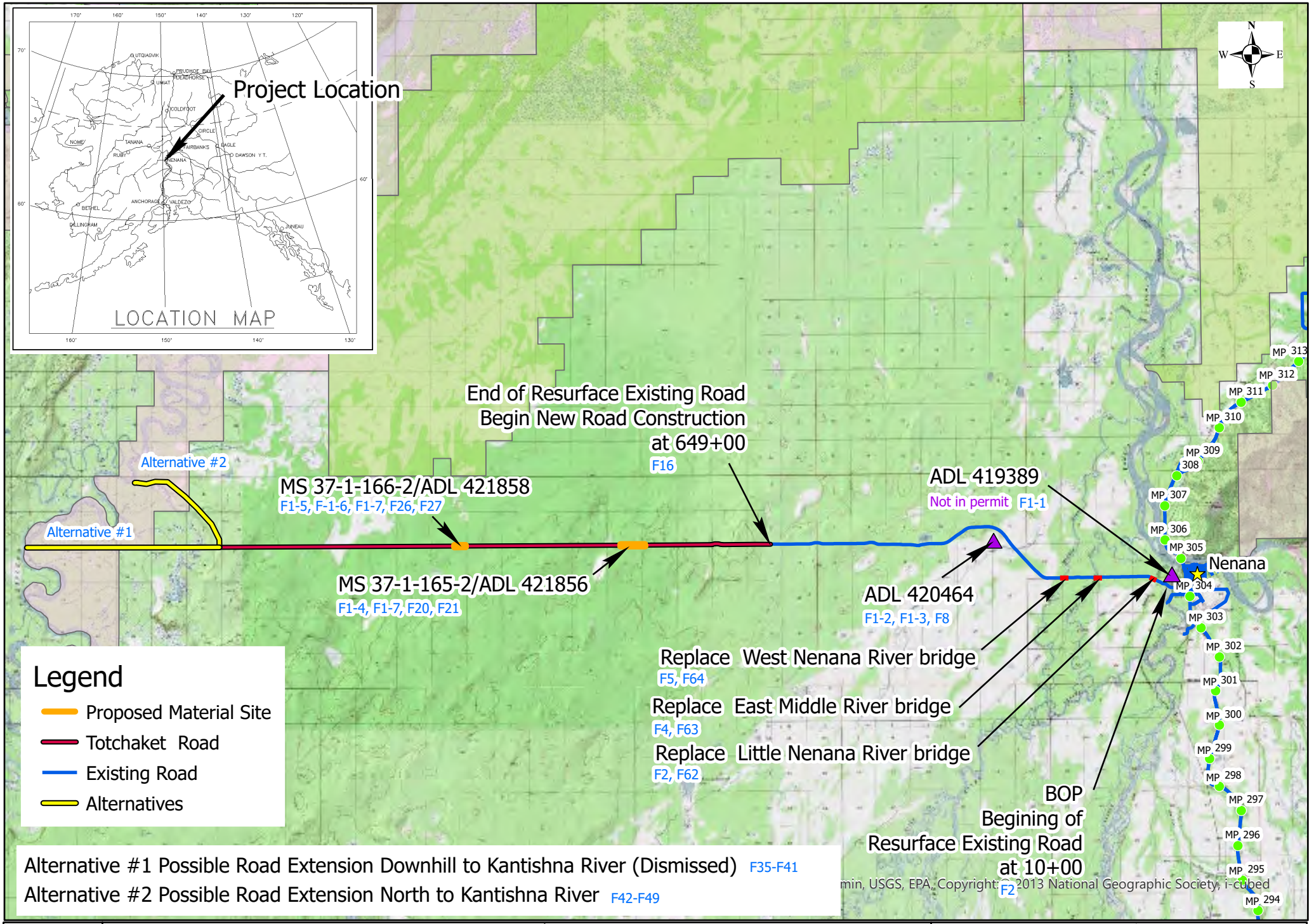
(X) Perform work in or affecting navigable waters of the United States – Section 10 Rivers and Harbors Act 1899 (33 U.S.C. 403).

(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 are enclosed with this Public Notice.

District Commander
U.S. Army, Corps

Enclosures


Project Location
LOCATION MAP
End of Resurface Existing Road
Begin New Road Construction
at 649+00
F16
Alternative #2
Alternative #1
MS 37-1-166-2/ADL 421858
F1-5, F-1-6, F1-7, F26, F27
MS 37-1-165-2/ADL 421856
F1-4, F1-7, F20, F21
ADL 419389
Not in permit F1-1
ADL 420464
F1-2, F1-3, F8
Replace West Nenana River bridge
F5, F64
Replace East Middle River bridge
F4, F63
Replace Little Nenana River bridge
F2, F62
BOP
Begining of
Resurface Existing Road
at 10+00
F2
Nenana
MP 313
MP 312
MP 311
MP 310
MP 309
MP 308
MP 307
MP 306
MP 305
MP 304
MP 303
MP 302
MP 301
MP 300
MP 299
MP 298
MP 297
MP 296
MP 295
MP 294
Legend
Proposed Material Site
Totchaket Road
Existing Road
Alternatives
Alternative #1 Possible Road Extension Downhill to Kantishna River (Dismissed) F35-F41
Alternative #2 Possible Road Extension North to Kantishna River F42-F49
min, USGS, EPA, Copyright: © 2013 National Geographic Society, i-cubed
0 1.75 3.5 7 Miles
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709
Date: 8/8/2022
Figure 1
Project Layout
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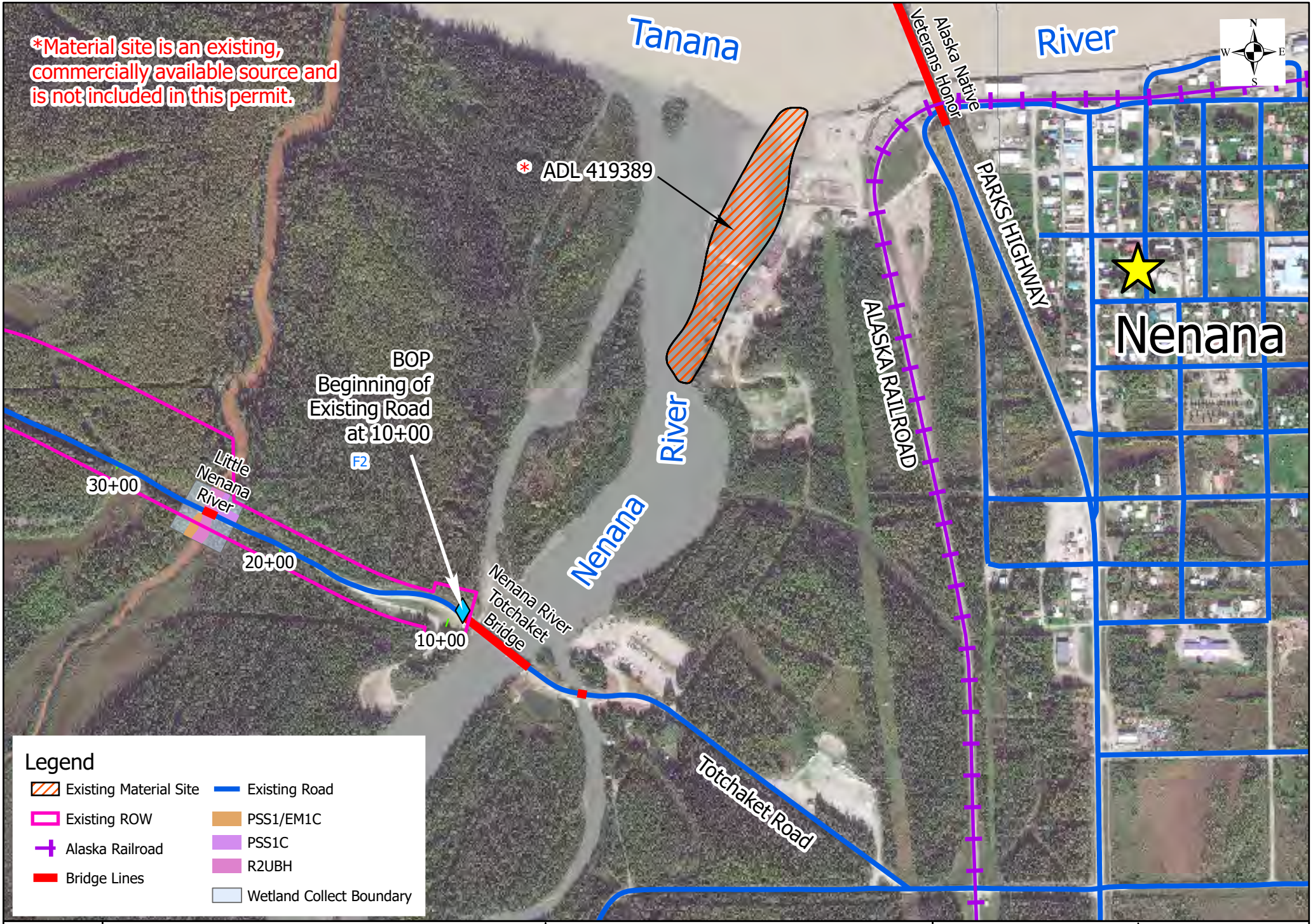

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STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: 8/3/2022

Figure 1-1

Existing Material Site ADL 419389

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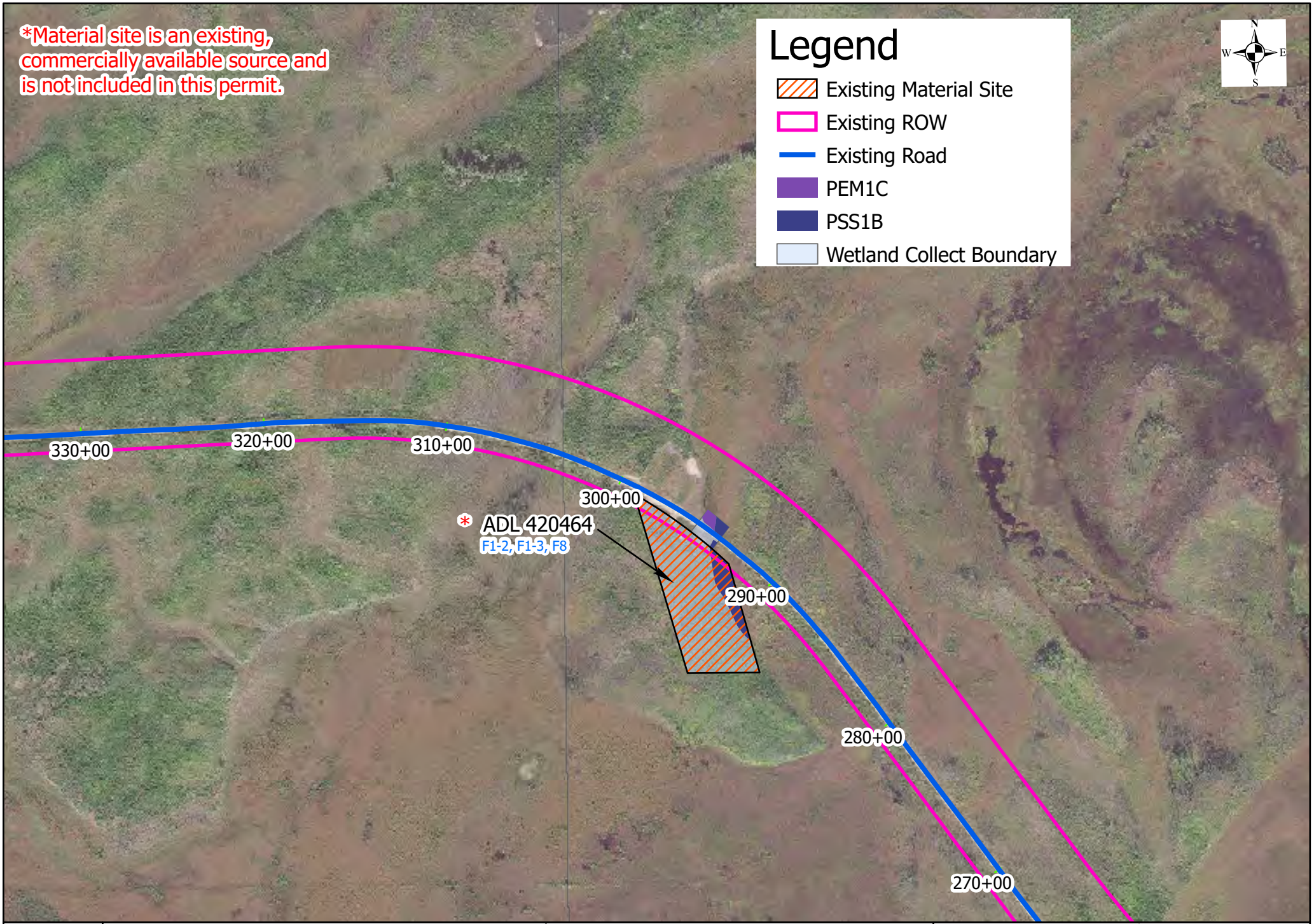

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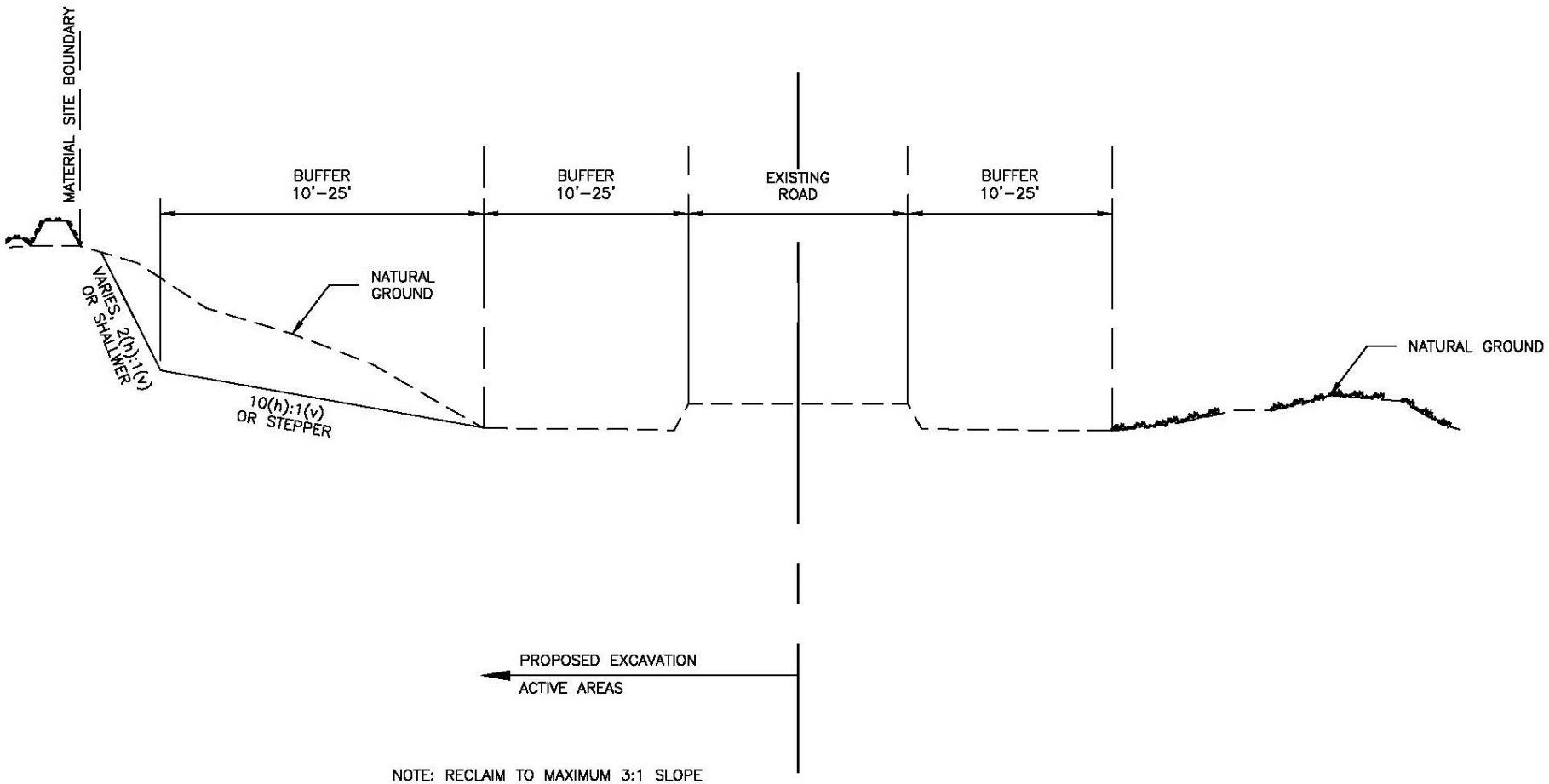
2301 Peger Road Fairbanks, AK 99709

Date: 8/3/2022

Figure 1-2

Existing Material Site ADL 420464



TYPICAL CROSS SECTION MATERIAL SITE – ADL 420464

NOT TO SCALE

	STATE OF ALASKA Department of Transportation and Public Facilities 2301 Peger Road Fairbanks, AK 99709	Date: 8/2/2022	Figure 1-3
		ADL 420464 - Typical section	

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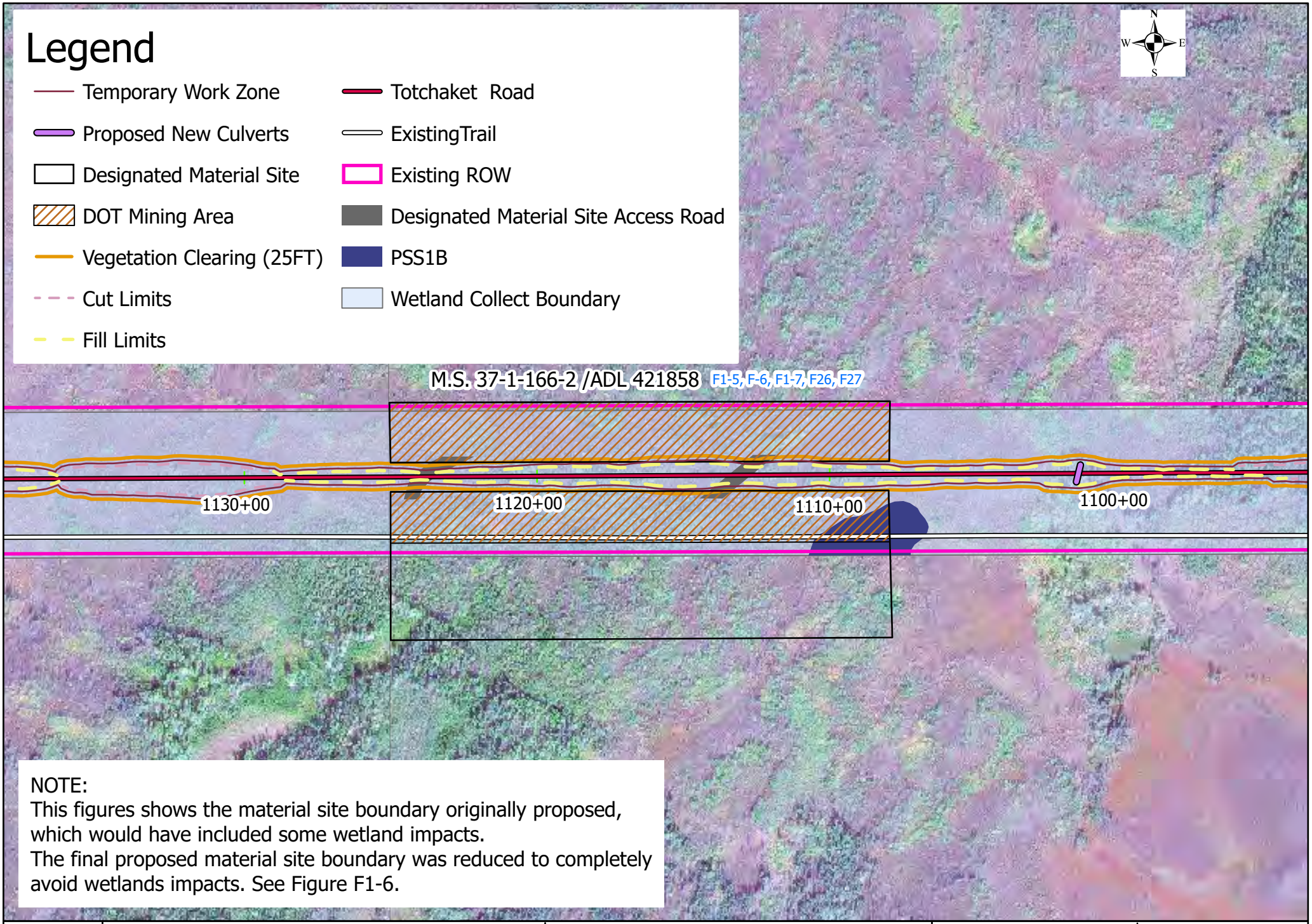
2301 Peger Road Fairbanks, AK 99709

Date: 8/10/2022

Figure 1-4

New Material Site
M.S. 37-1-165-2/ ADL 421856



NOTE:
This figures shows the material site boundary originally proposed, which would have included some wetland impacts.
The final proposed material site boundary was reduced to completely avoid wetlands impacts. See Figure F1-6.

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STATE OF ALASKA
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Date: 8/10/2022

Figure 1-5

New Material Site
M.S. 37-1-166-2 /ADL 421858

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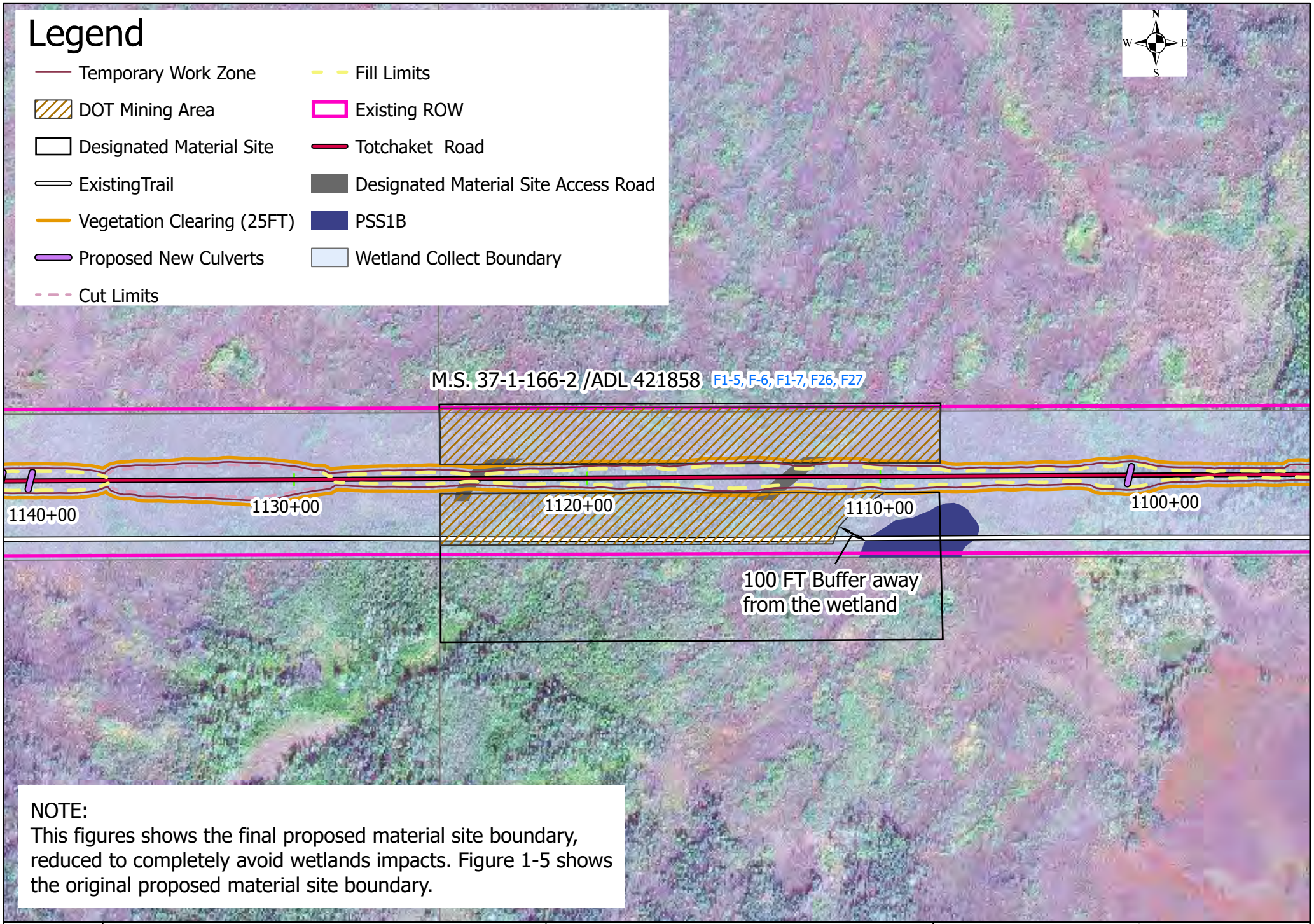

NOTE:
This figures shows the final proposed material site boundary, reduced to completely avoid wetlands impacts. Figure 1-5 shows the original proposed material site boundary.

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STATE OF ALASKA
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Date: 8/10/2022

Figure 1-6

New Material Site boundary
M.S. 37-1-166-2 /ADL 421858

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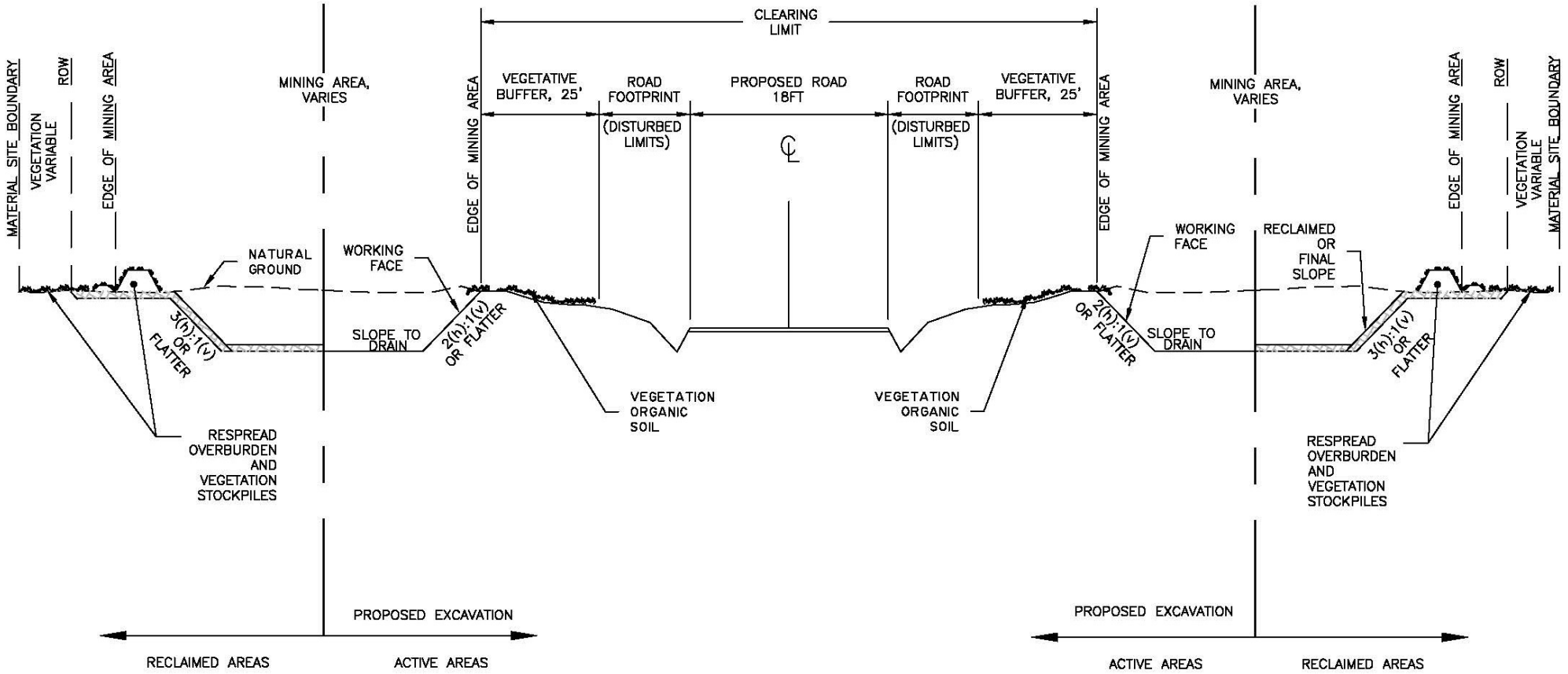

TYPICAL CROSS SECTION IN UNCONSOLIDATED MATERIAL
ADL 421856 & ADL 421858

NOT TO SCALE

NOTE: MATERIAL SITE DIMENSIONS VARY BY SITE.

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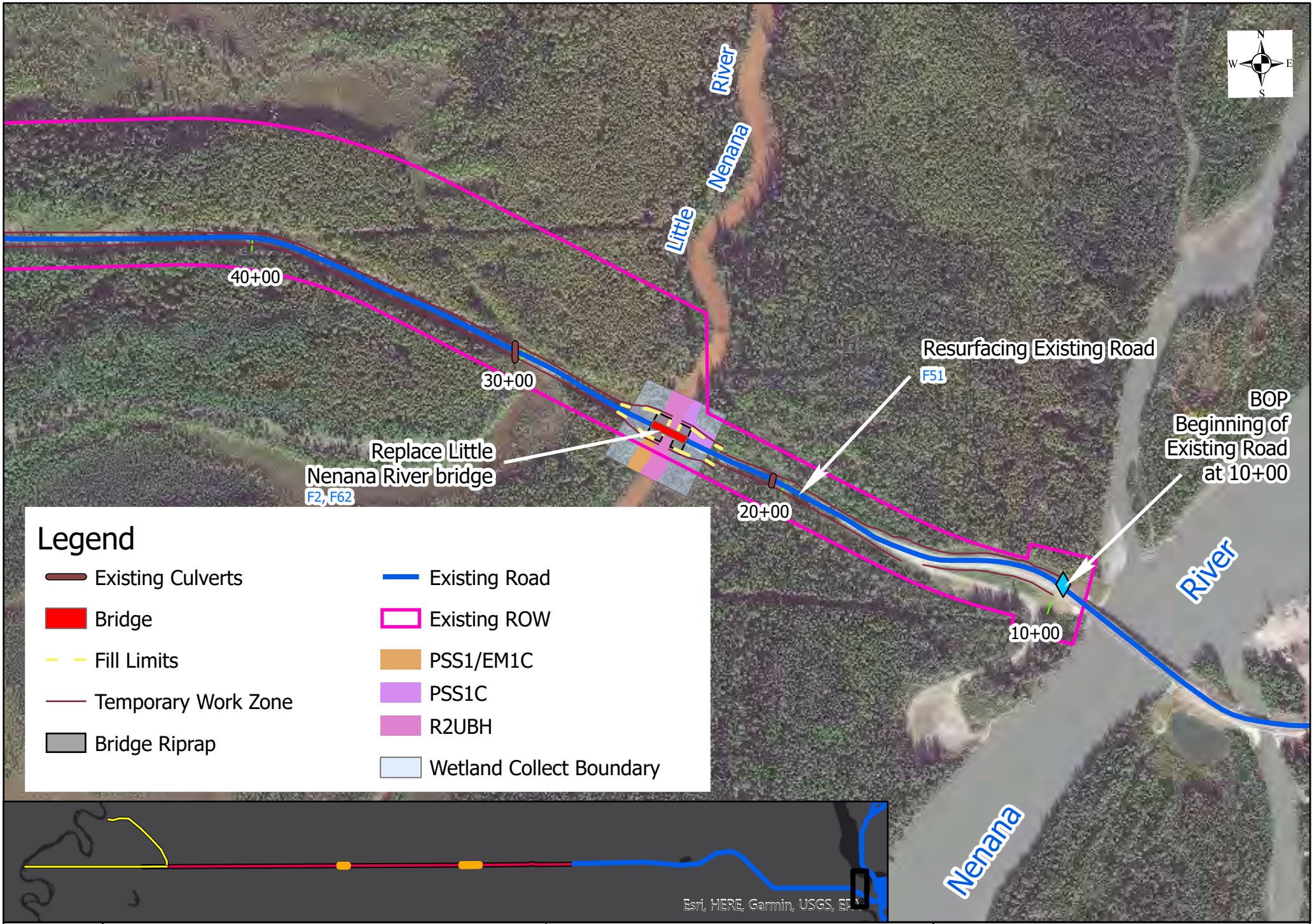
	STATE OF ALASKA Department of Transportation and Public Facilities 2301 Peger Road Fairbanks, AK 99709	Date: 8/2/2022	Figure 1-7
		New Material Site Typical section ADL 421856 & ADL 421858	



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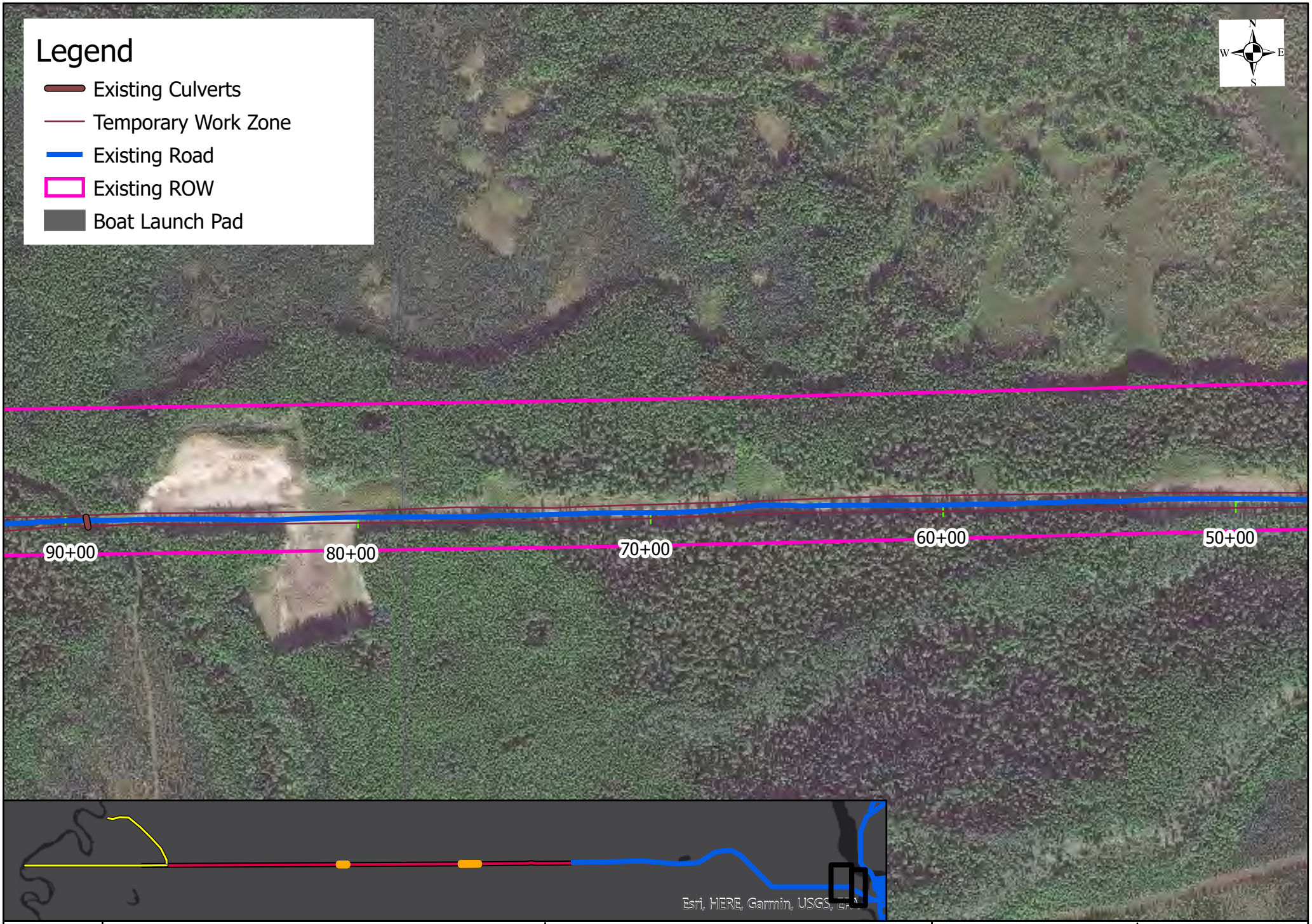
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: 8/11/2022

Figure 2

Plan View Detail



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STATE OF ALASKA
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2301 Peger Road Fairbanks, AK 99709

Date: 8/11/2022

Figure 3

Plan View Detail

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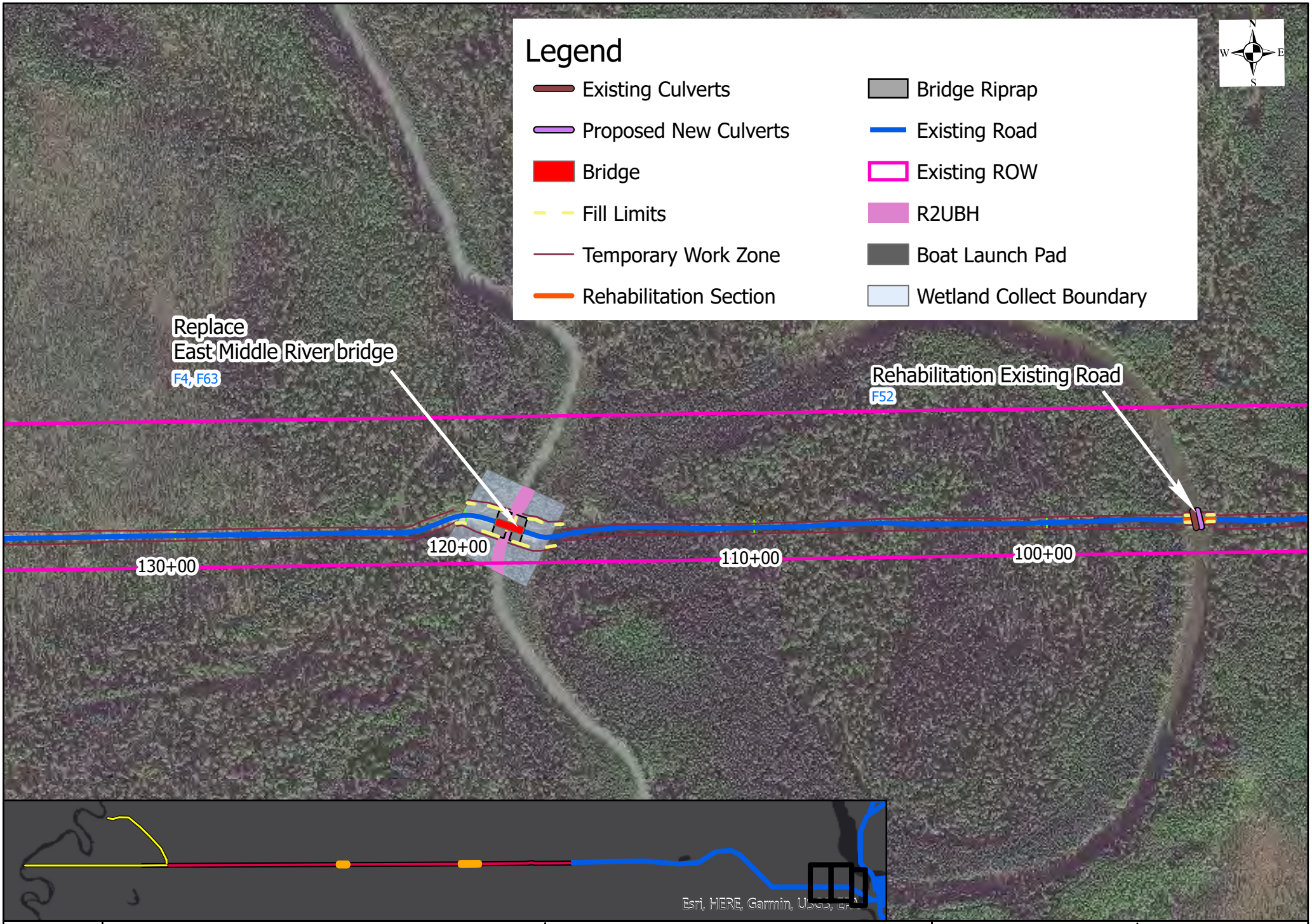

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STATE OF ALASKA
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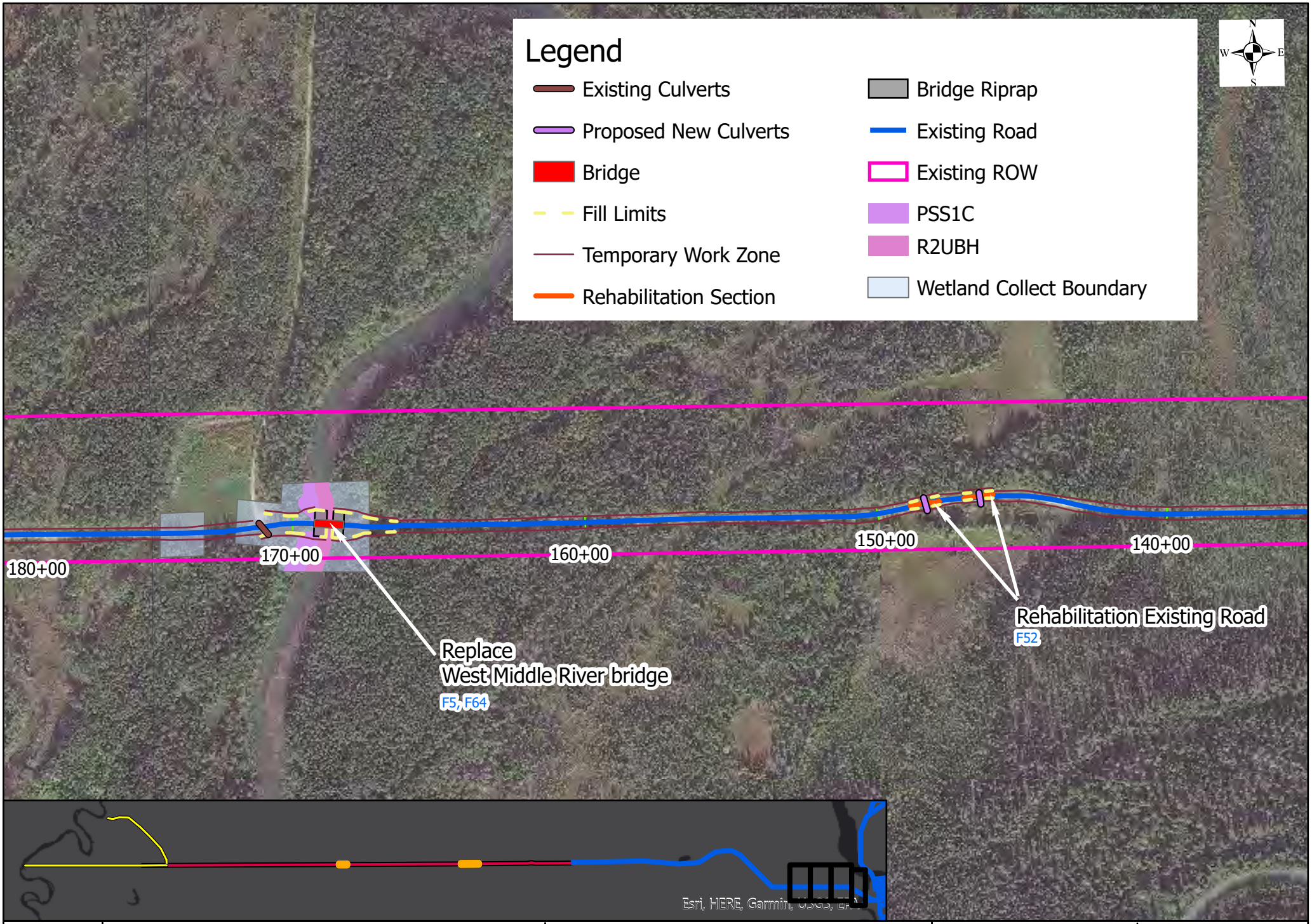
2301 Peger Road Fairbanks, AK 99709

Date: 8/11/2022

Figure 4

Plan View Detail



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STATE OF ALASKA
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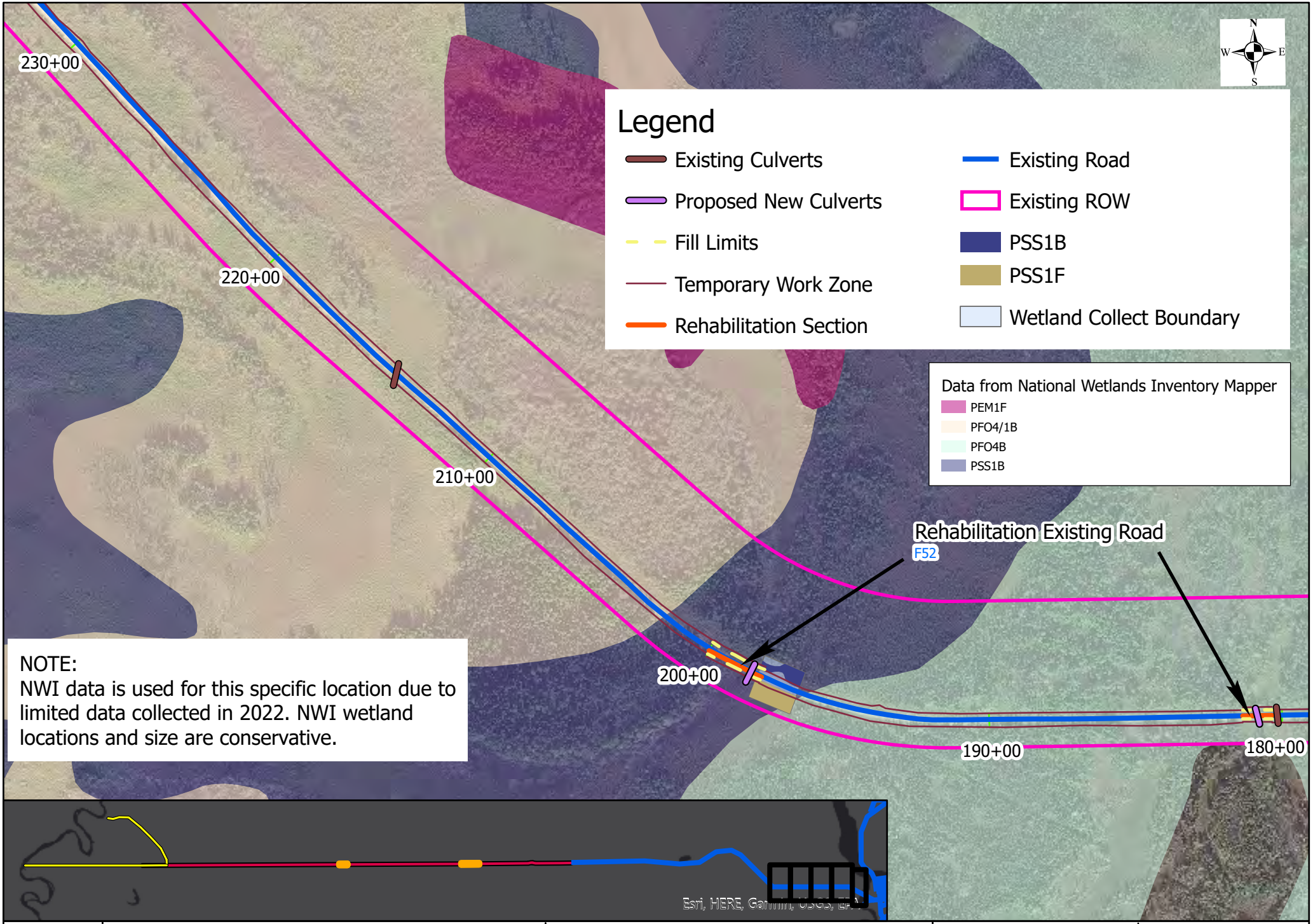
Date: 8/11/2022

Figure 5

Plan View Detail



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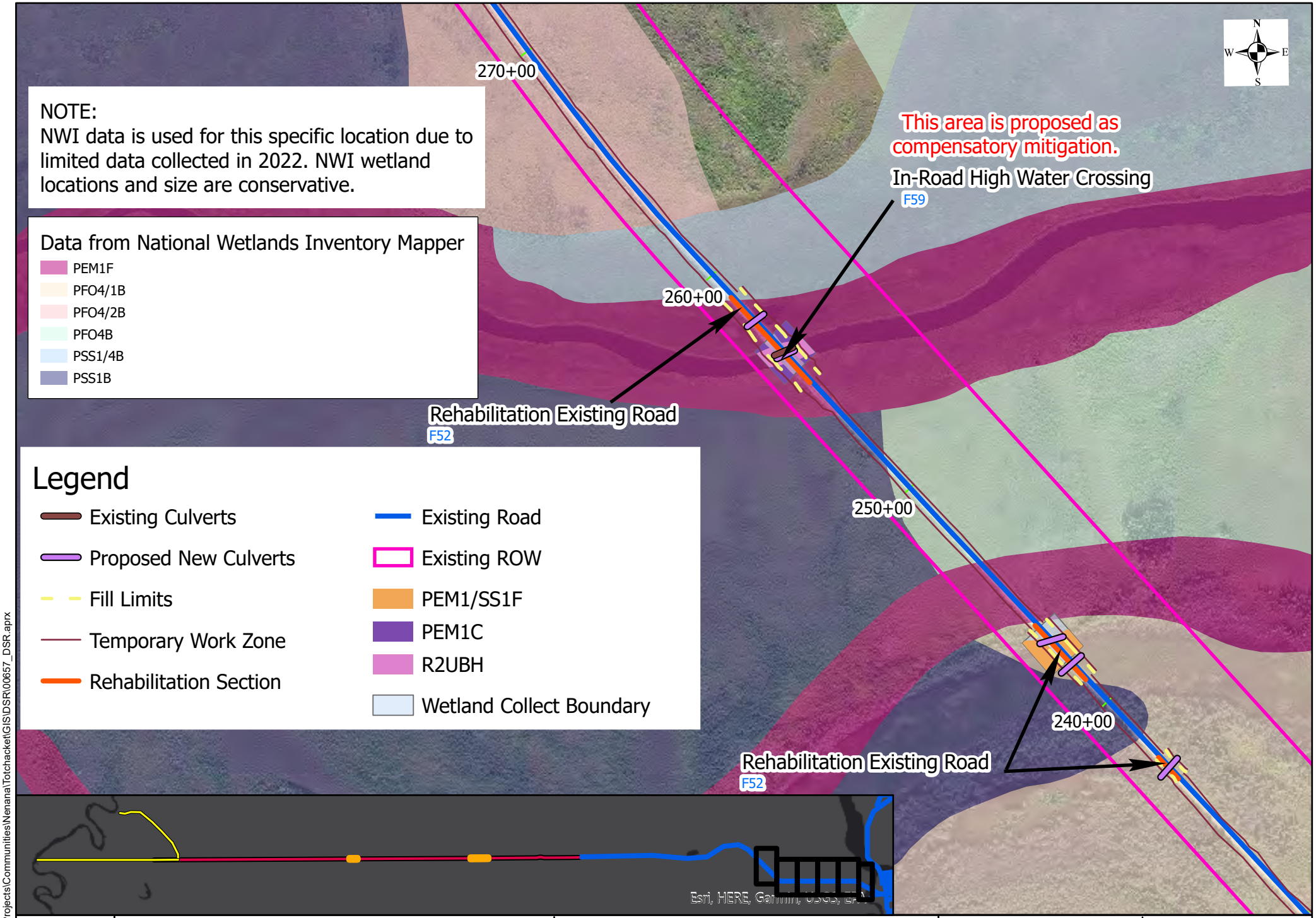
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: 8/11/2022

Figure 6

Plan View Detail



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STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

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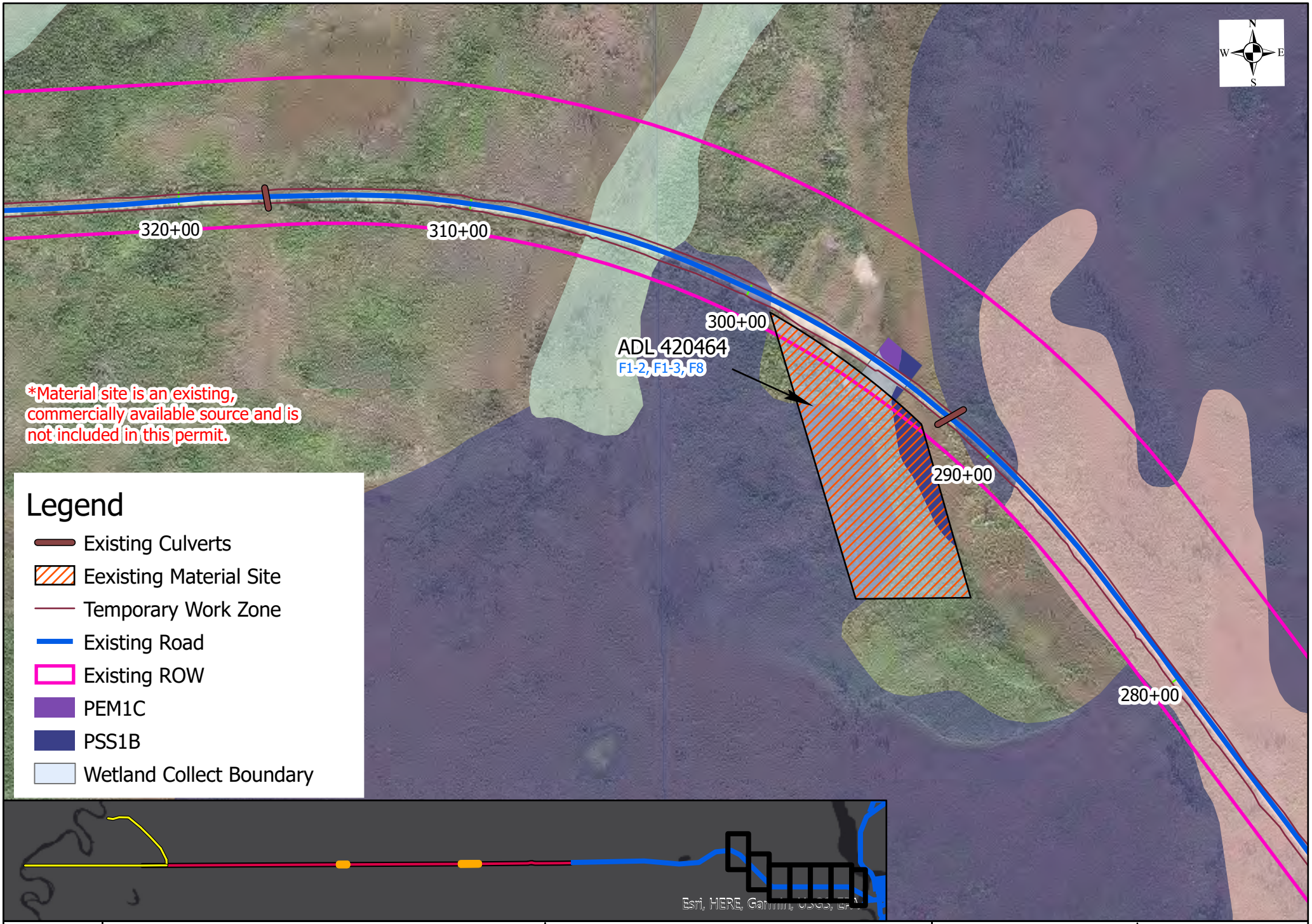
Figure 7

Plan View Detail



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STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

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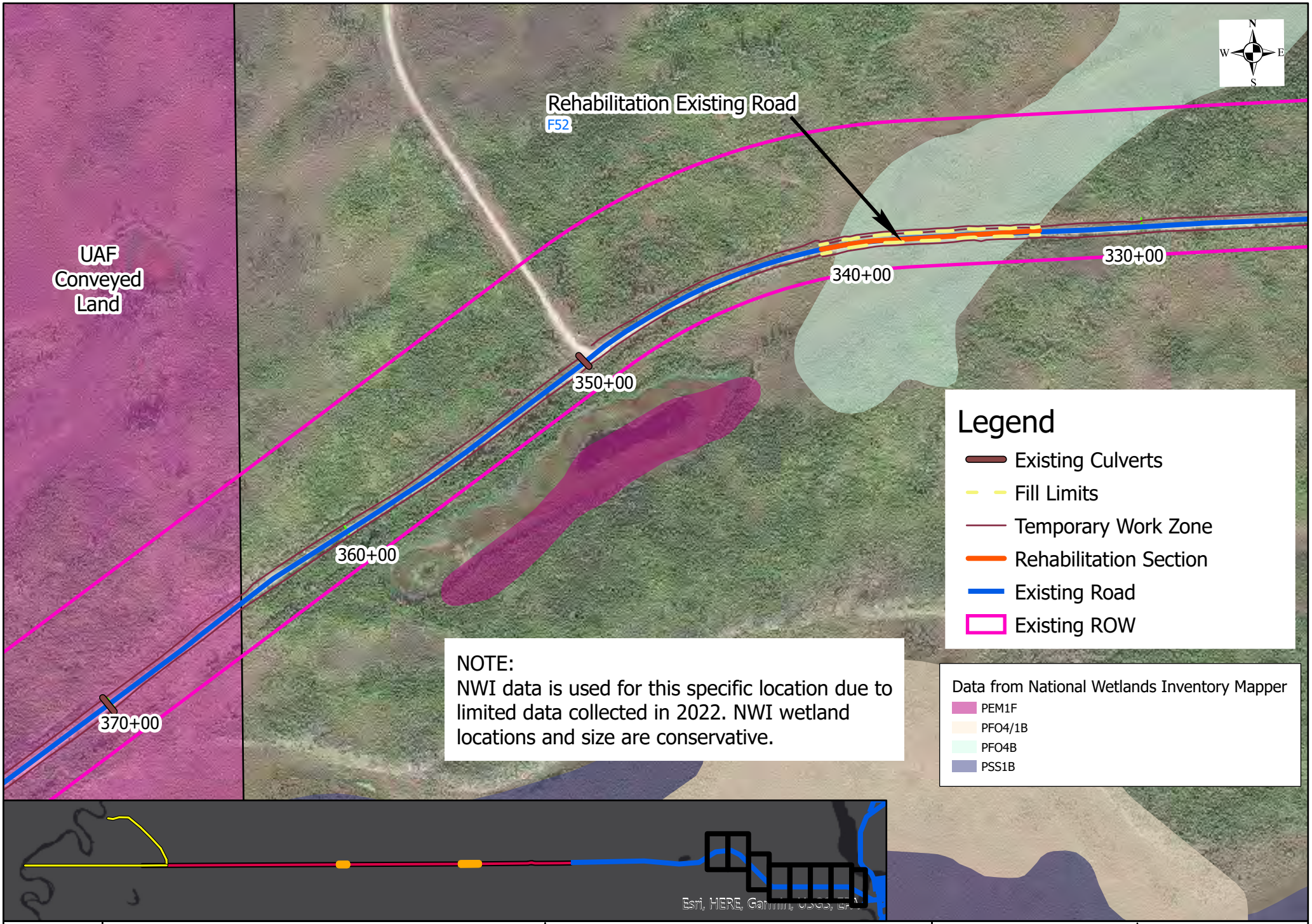
Figure 8

Plan View Detail



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STATE OF ALASKA
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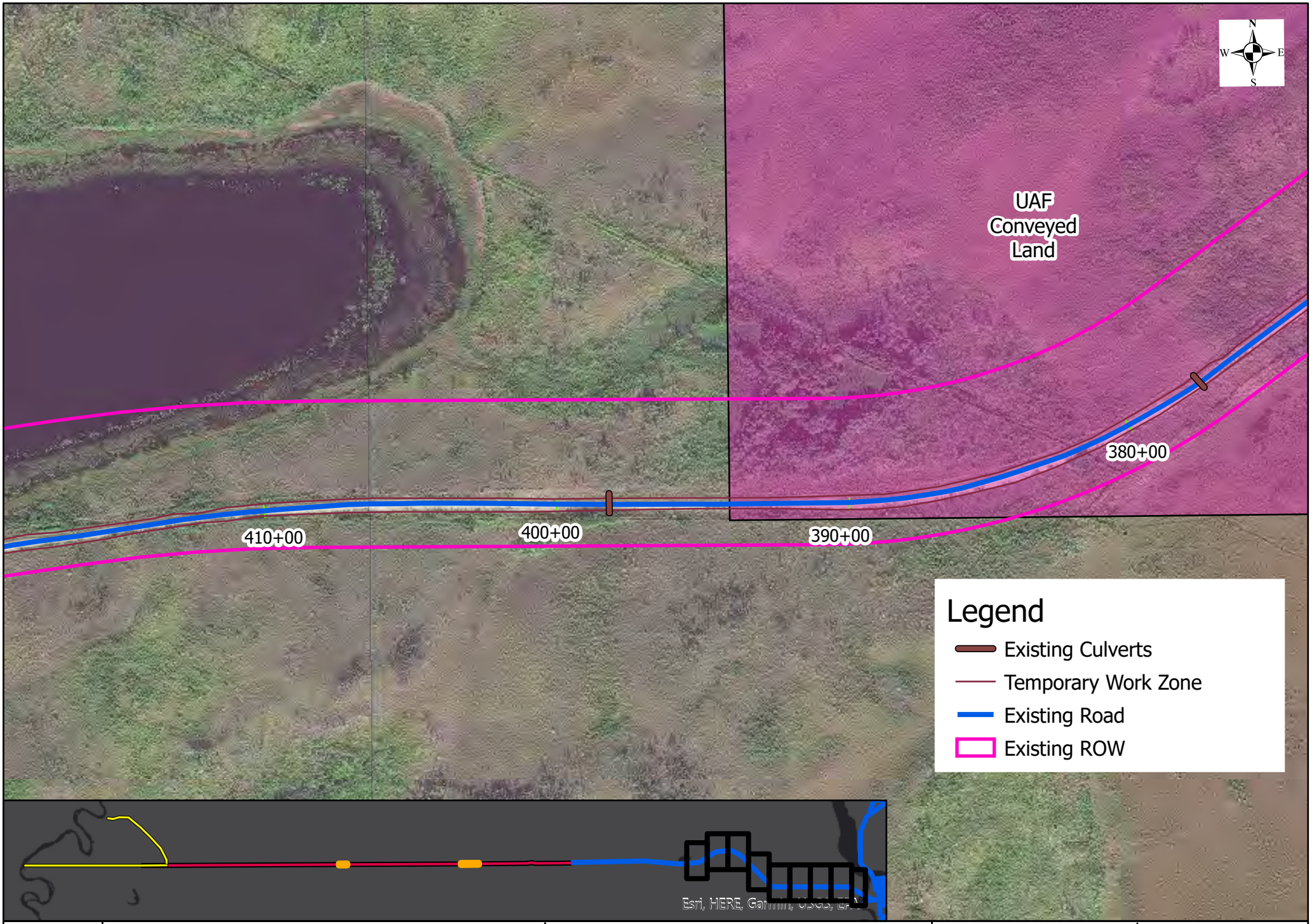
Figure 9

Plan View Detail



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STATE OF ALASKA
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Figure 10

Plan View Detail

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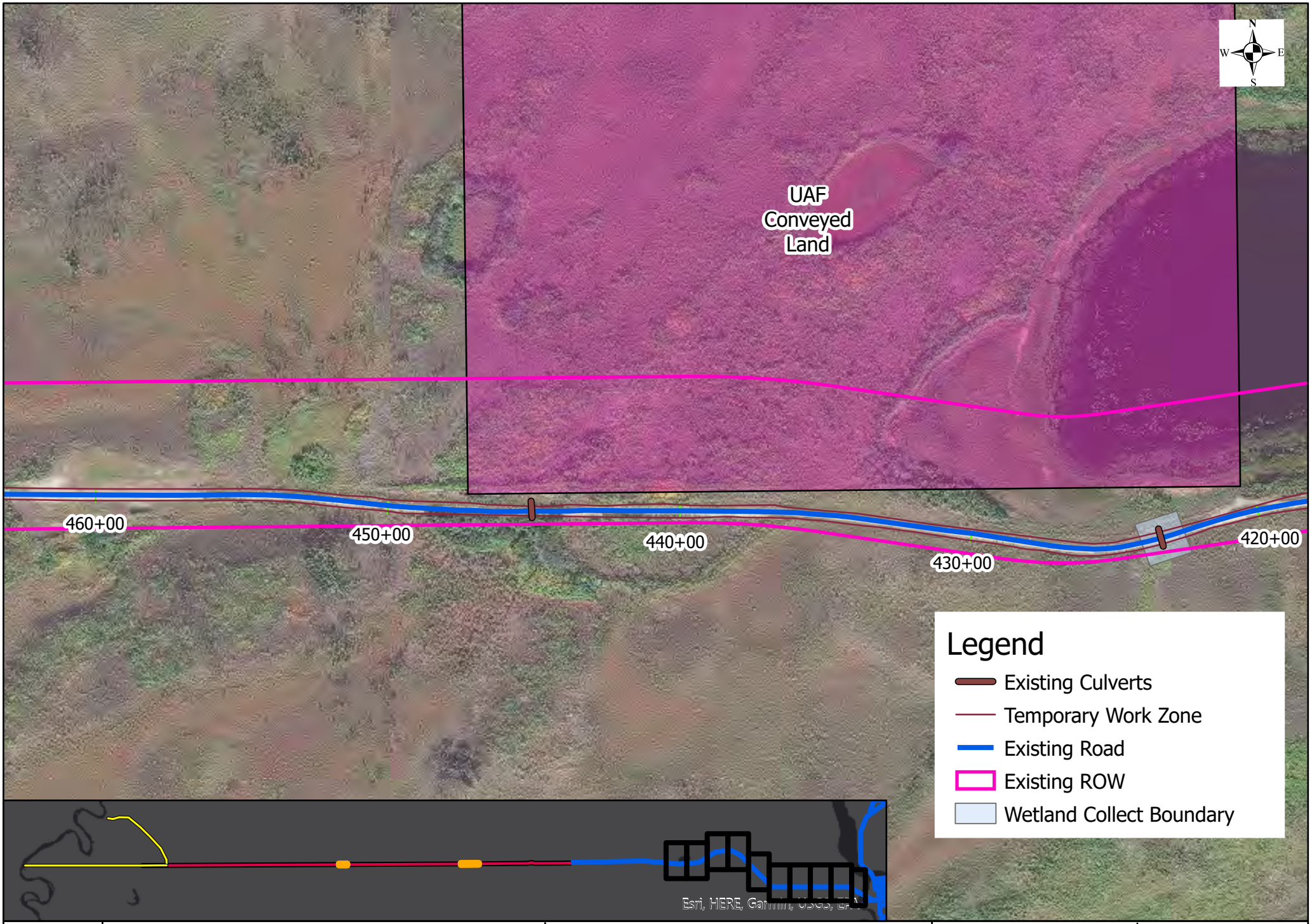

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Figure 11

Plan View Detail

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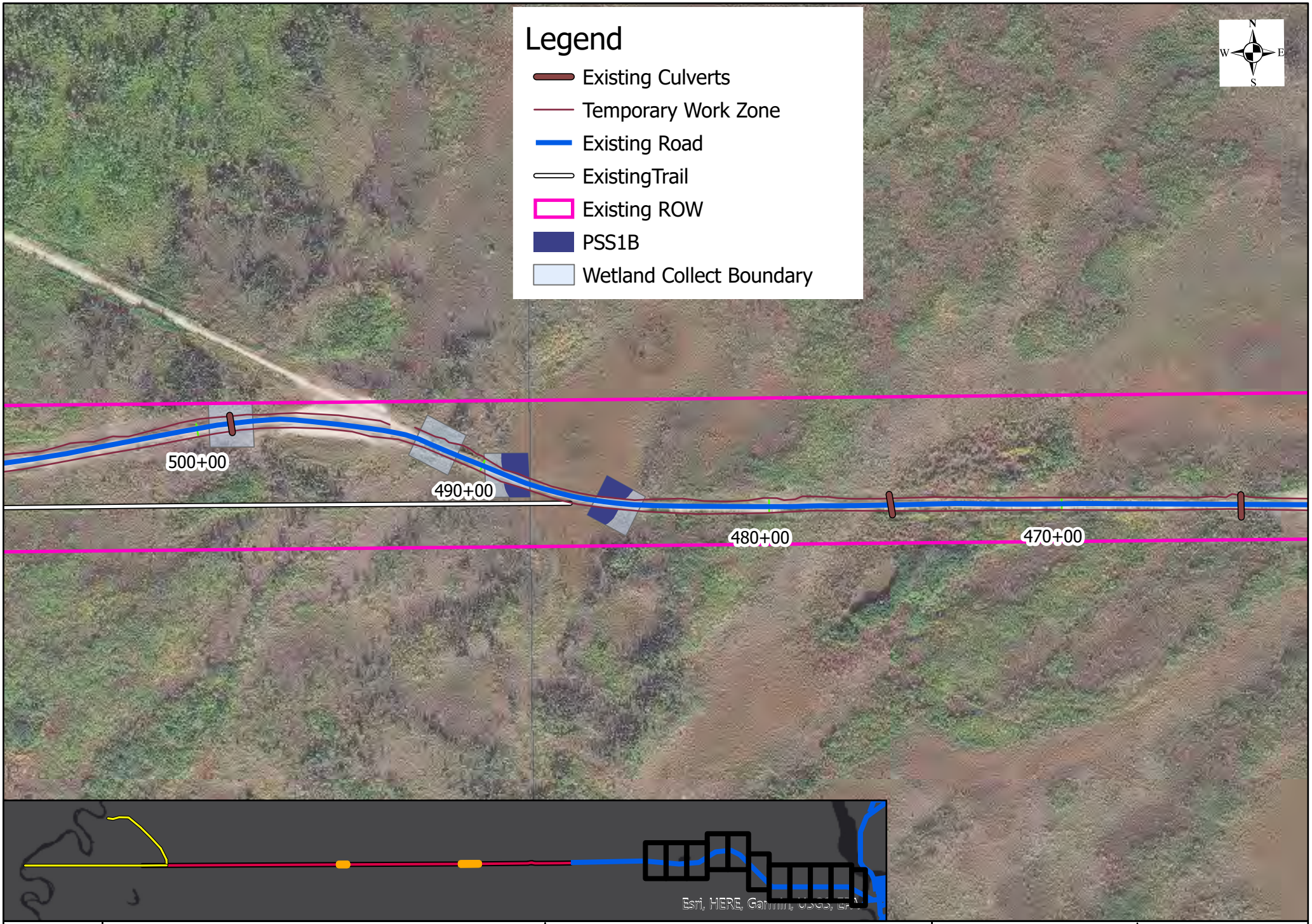

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STATE OF ALASKA
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Figure 12

Plan View Detail

Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx

0 200 400 800 US Feet

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Figure 13

Plan View Detail

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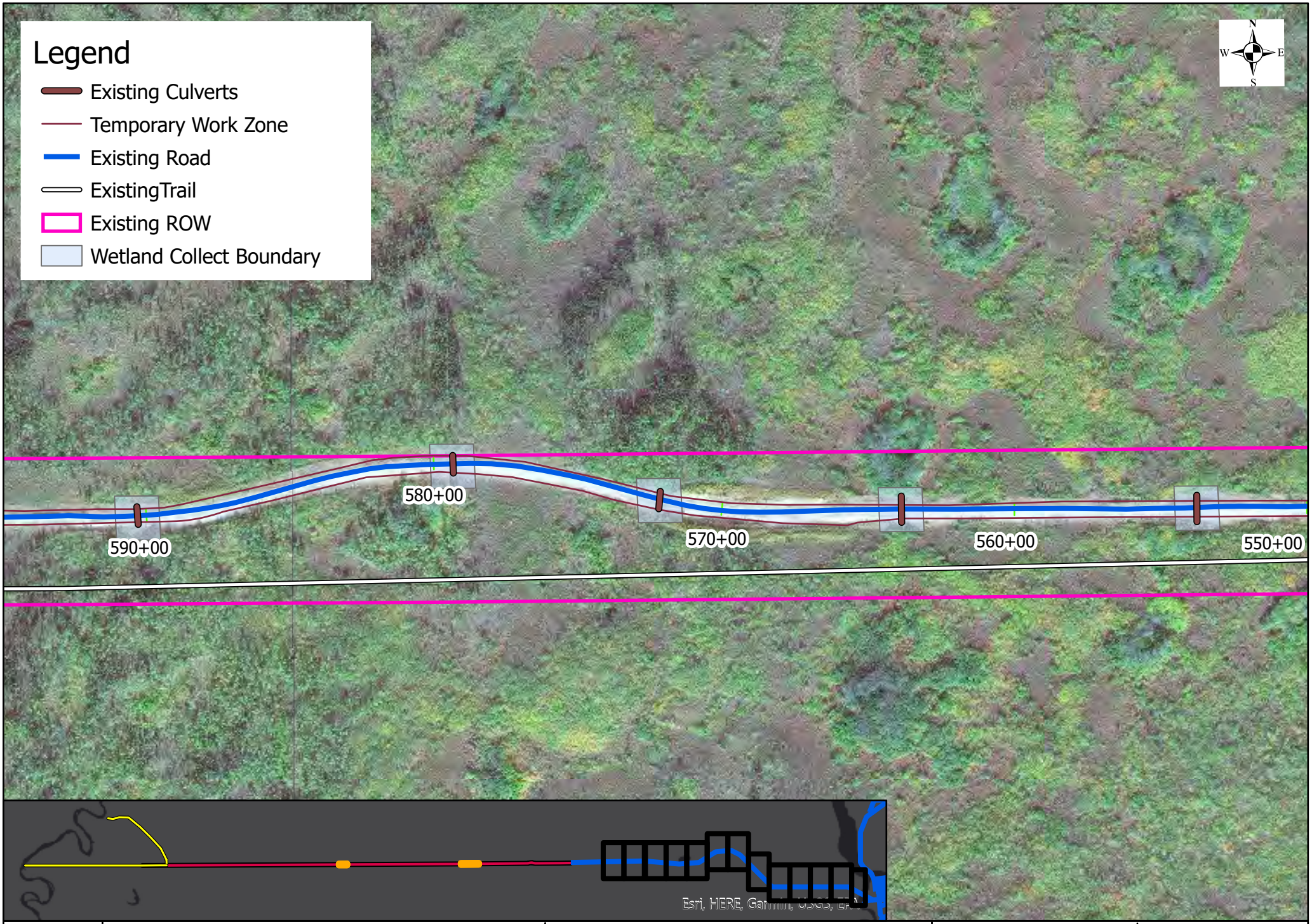

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Figure 14

Plan View Detail

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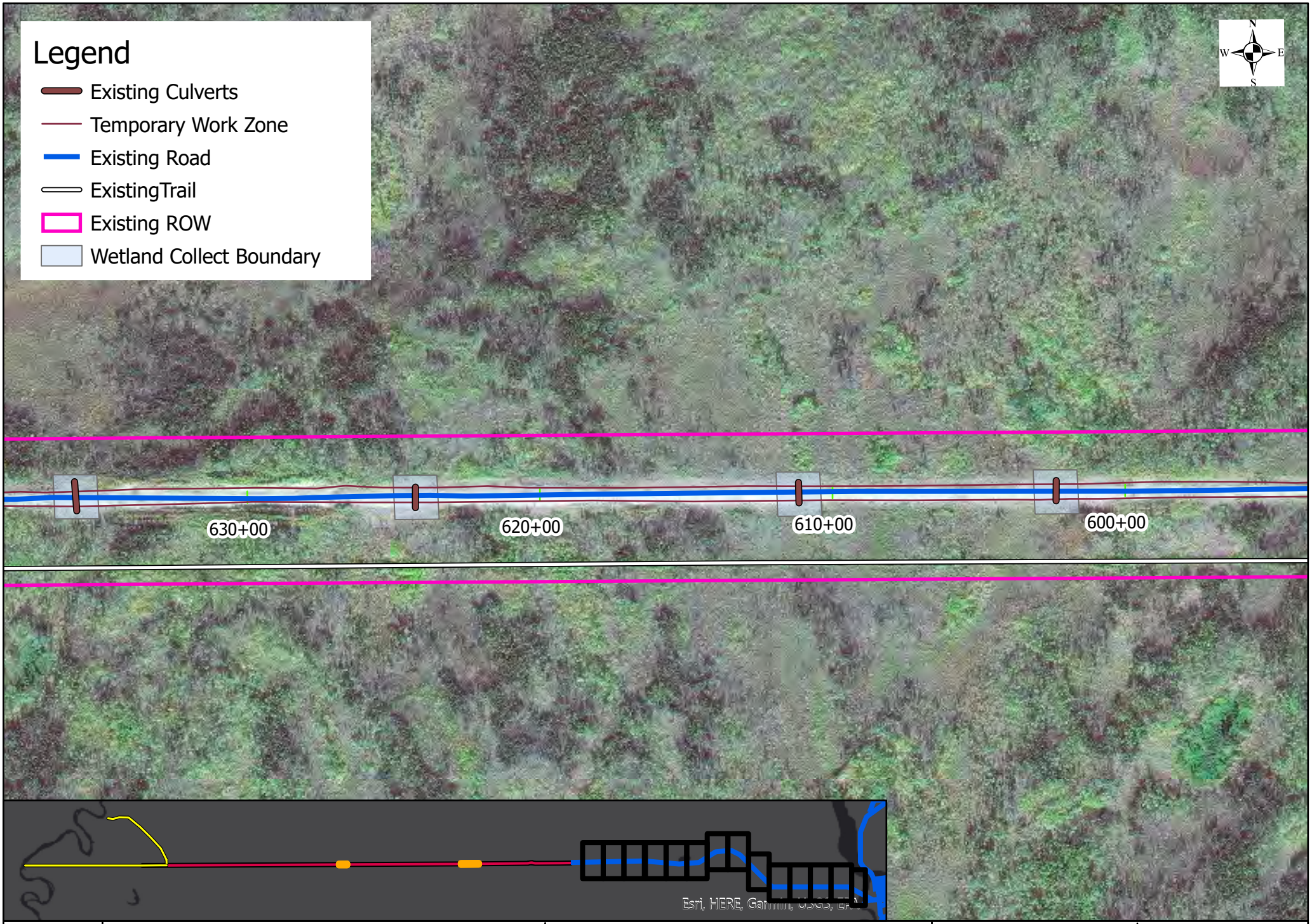

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Figure 15

Plan View Detail

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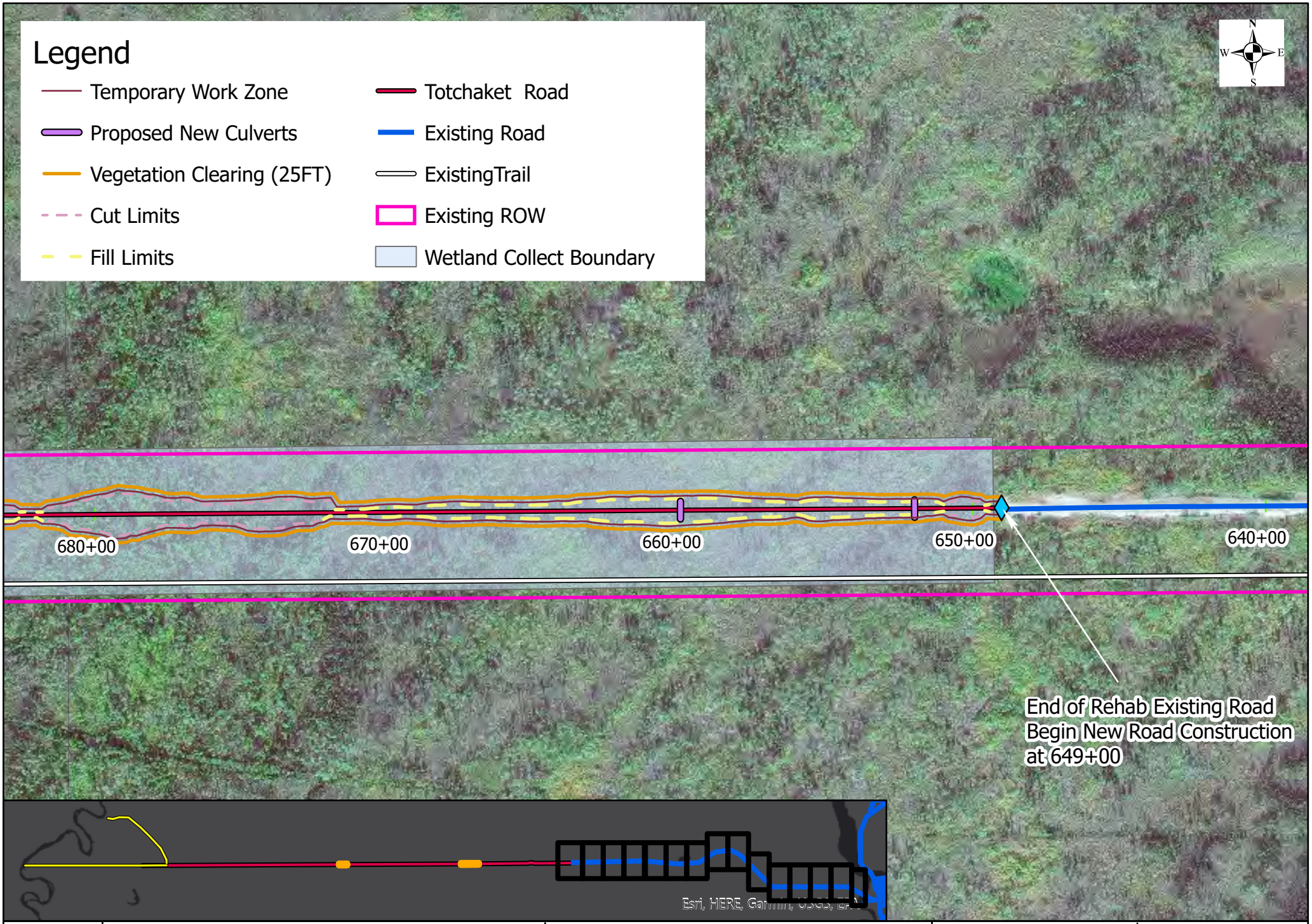

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Figure 16

Plan View Detail

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0 200 400 800 US Feet

STATE OF ALASKA
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Figure 17

Plan View Detail

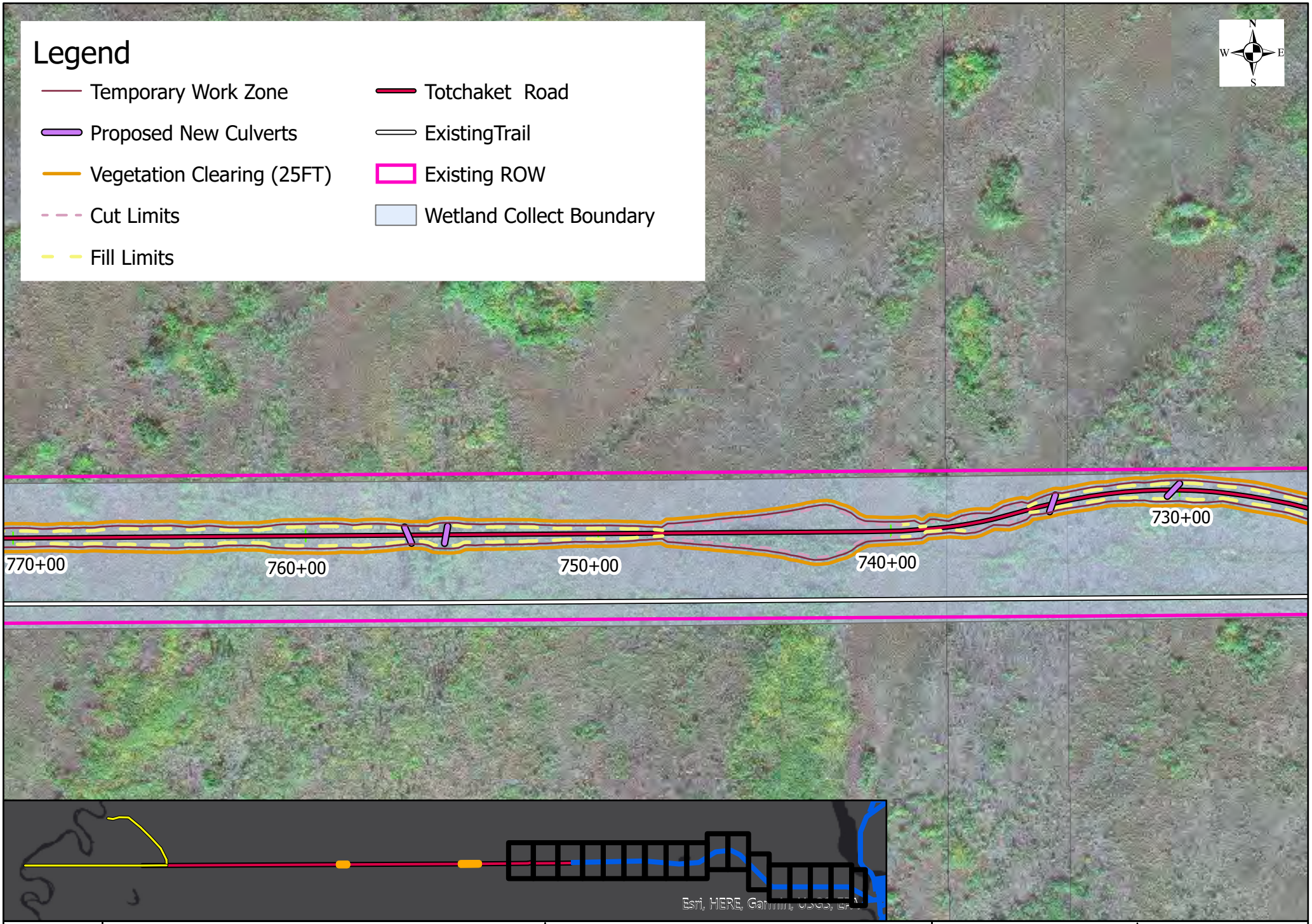

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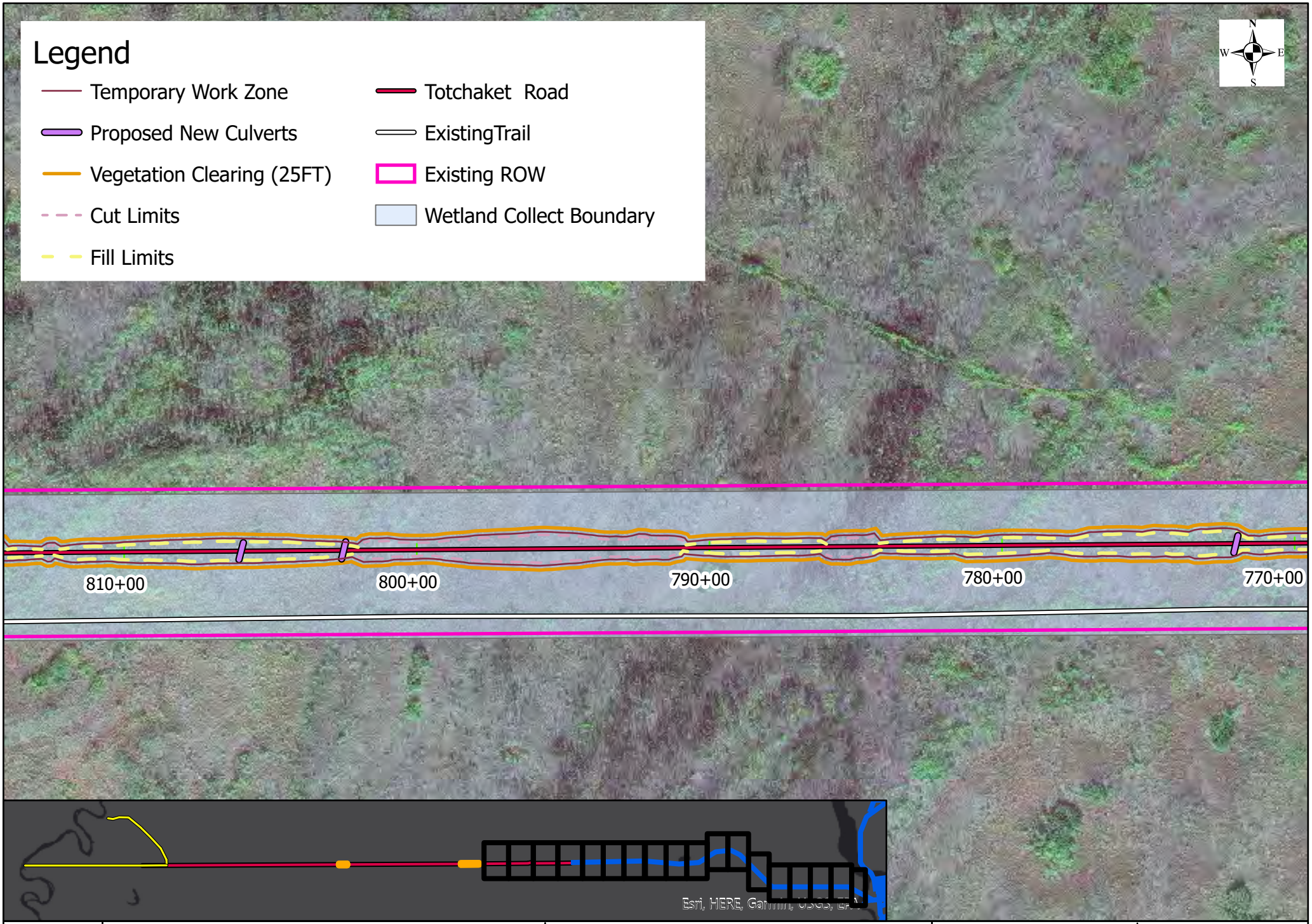
Figure 18

Plan View Detail



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STATE OF ALASKA
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Figure 19

Plan View Detail

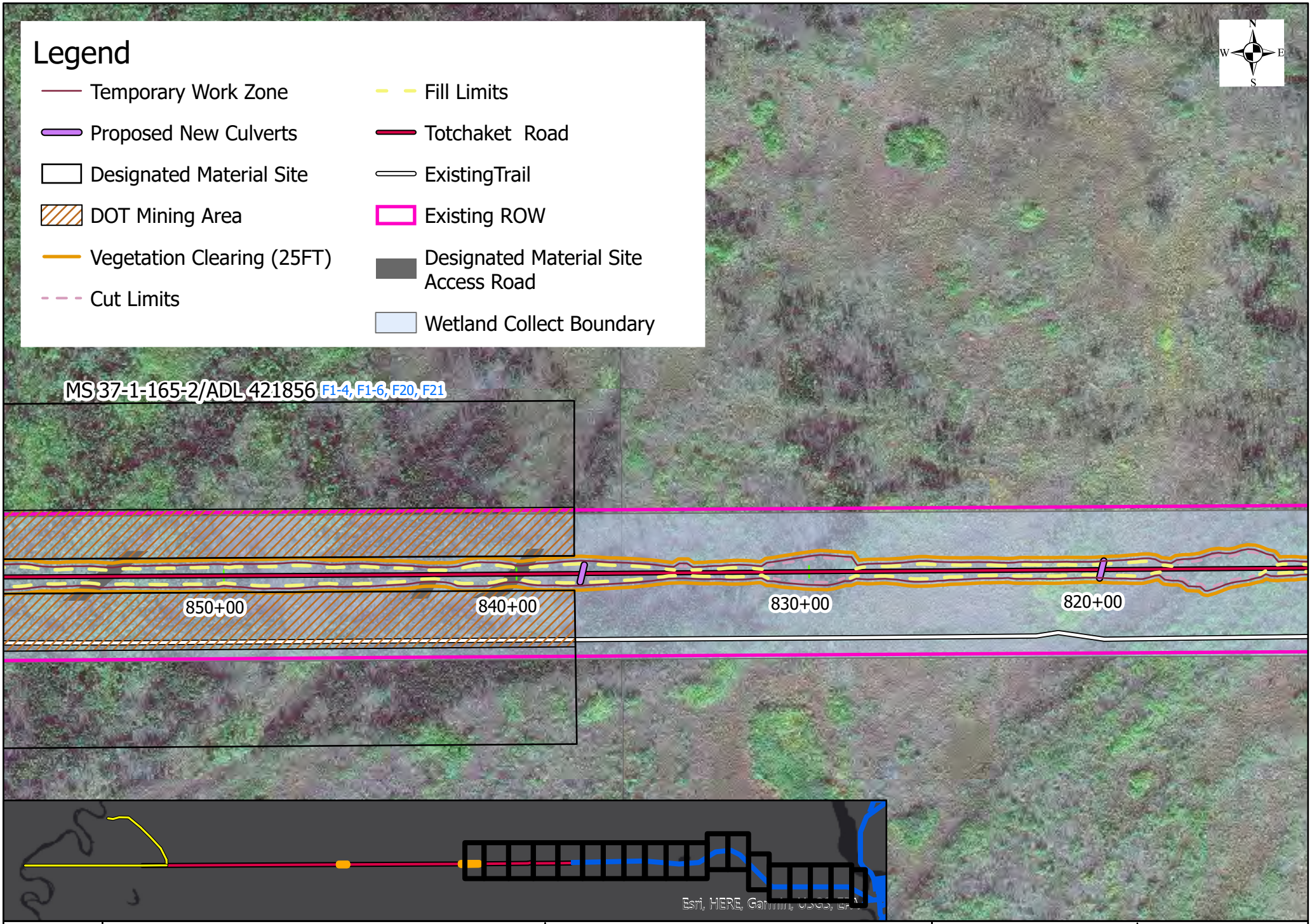

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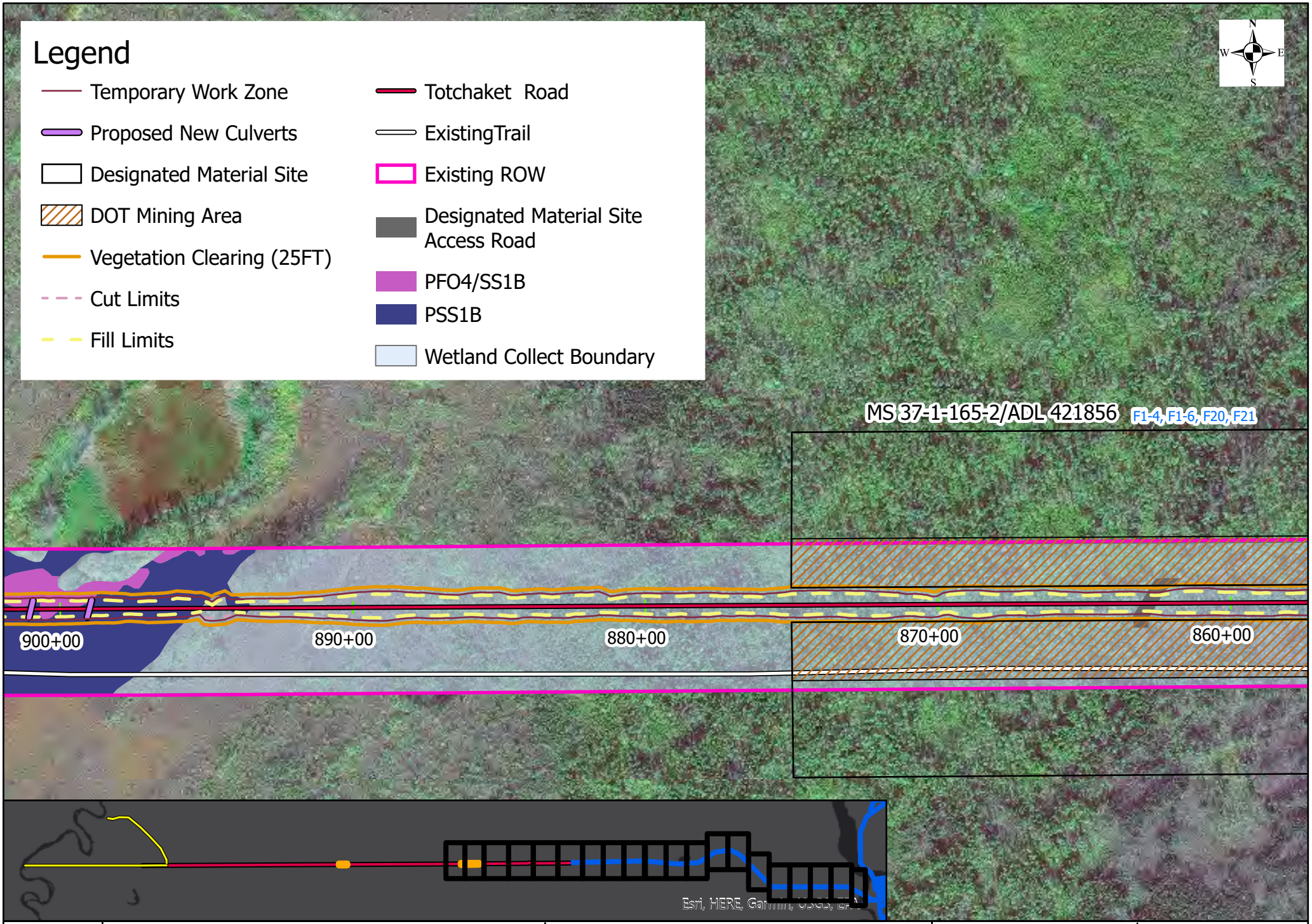
Figure 20

Plan View Detail



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STATE OF ALASKA
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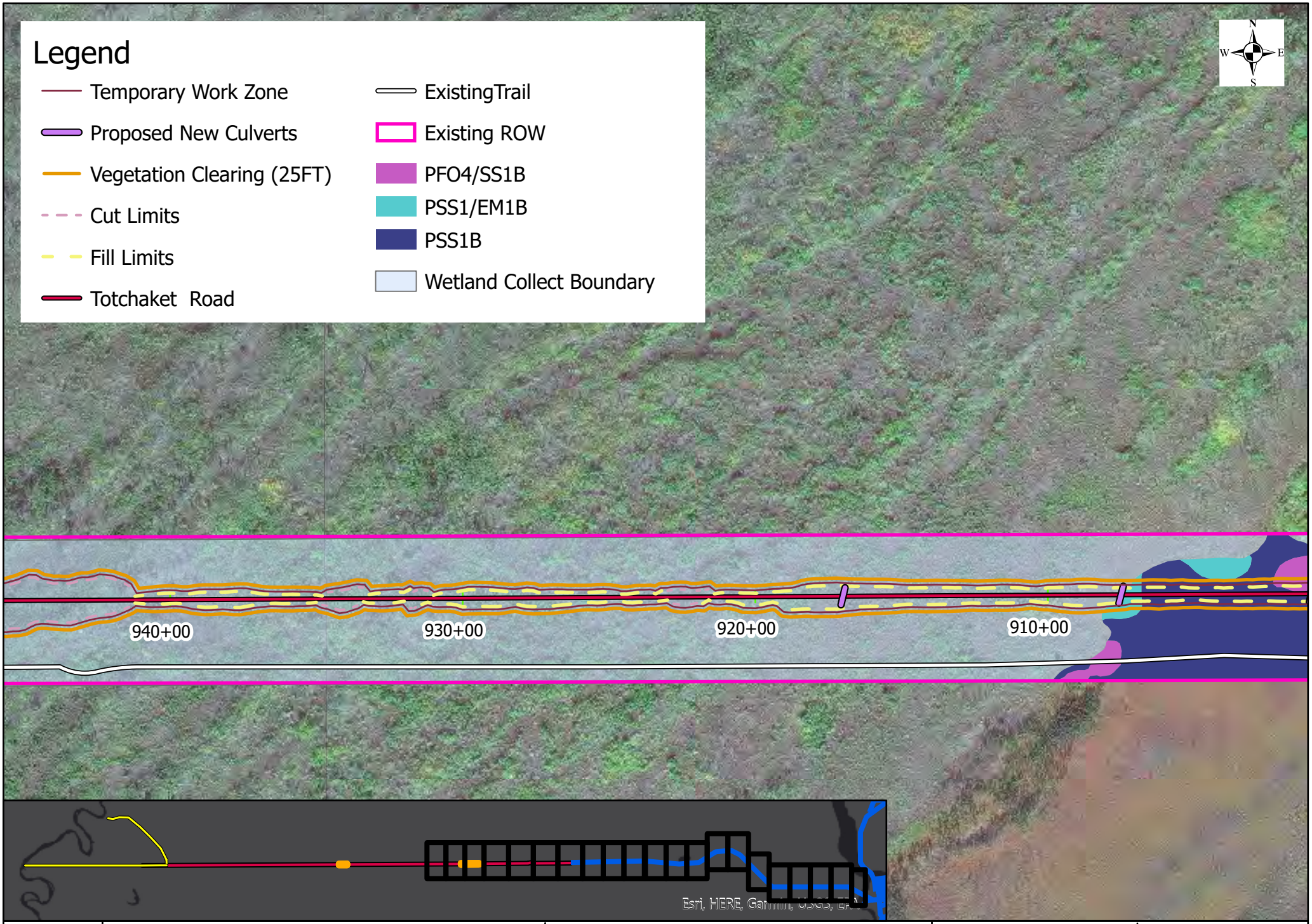
Figure 21

Plan View Detail



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STATE OF ALASKA
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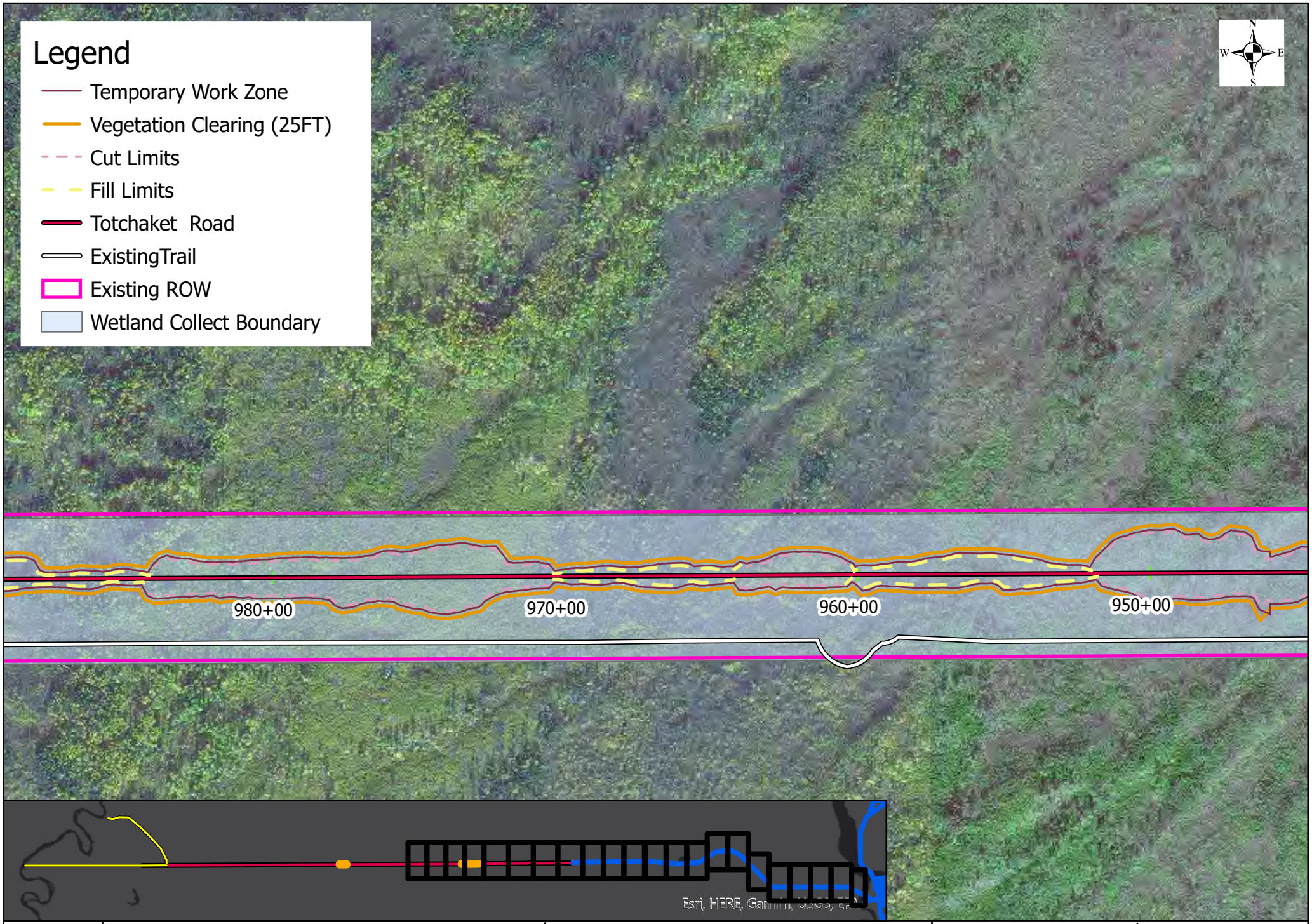
Figure 22

Plan View Detail



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STATE OF ALASKA
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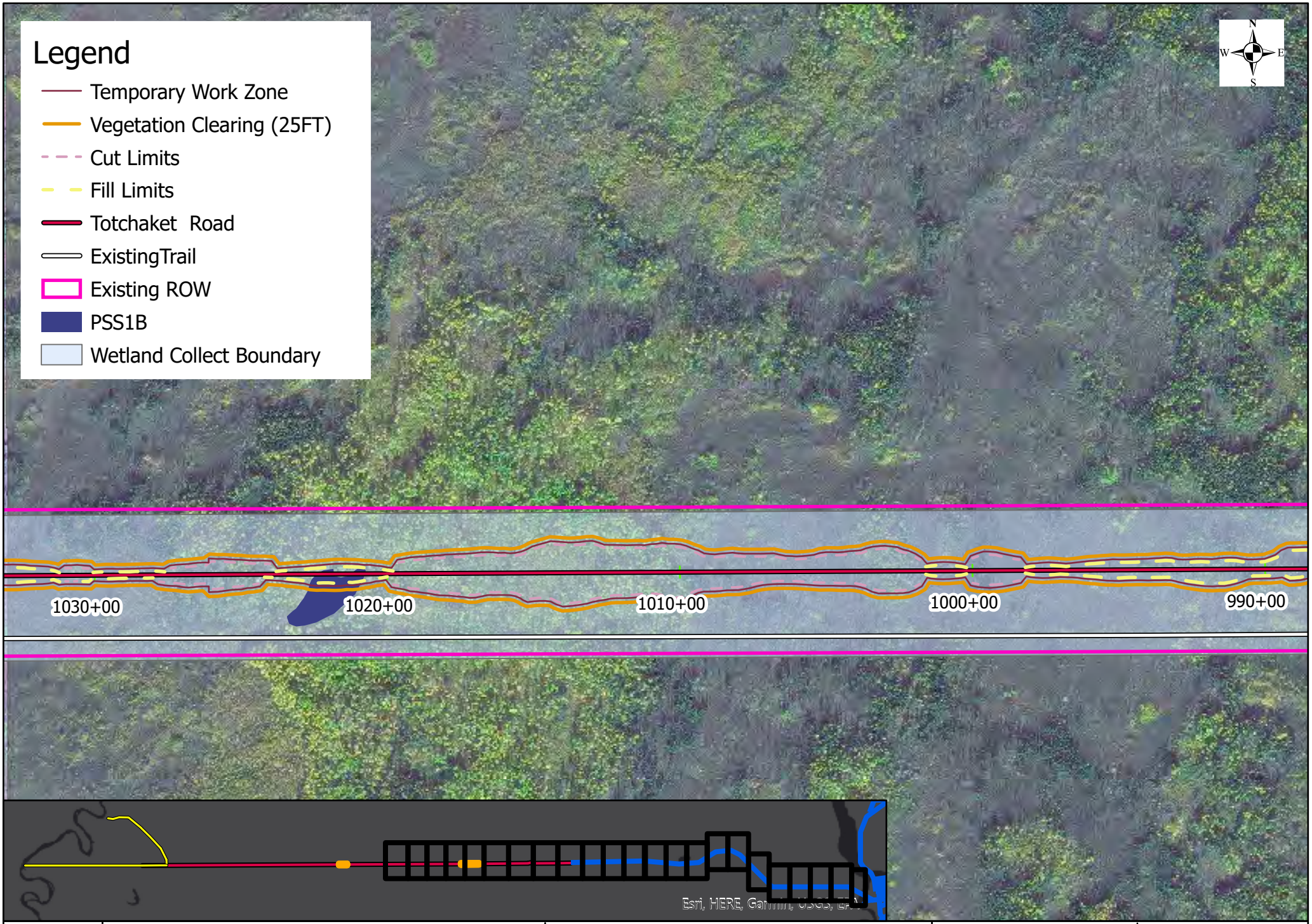
Figure 23

Plan View Detail



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STATE OF ALASKA
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Figure 24

Plan View Detail

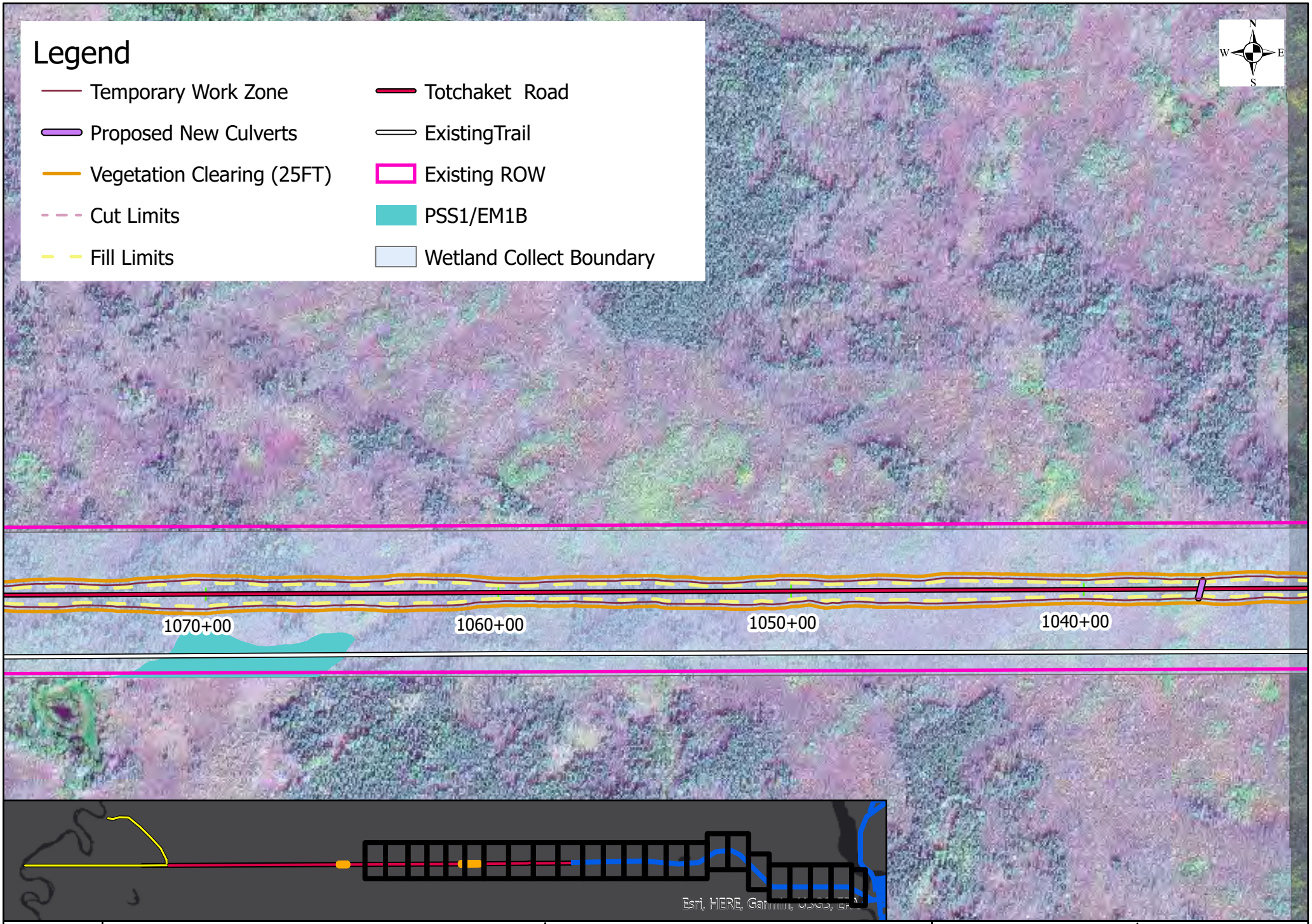

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Figure 25

Plan View Detail

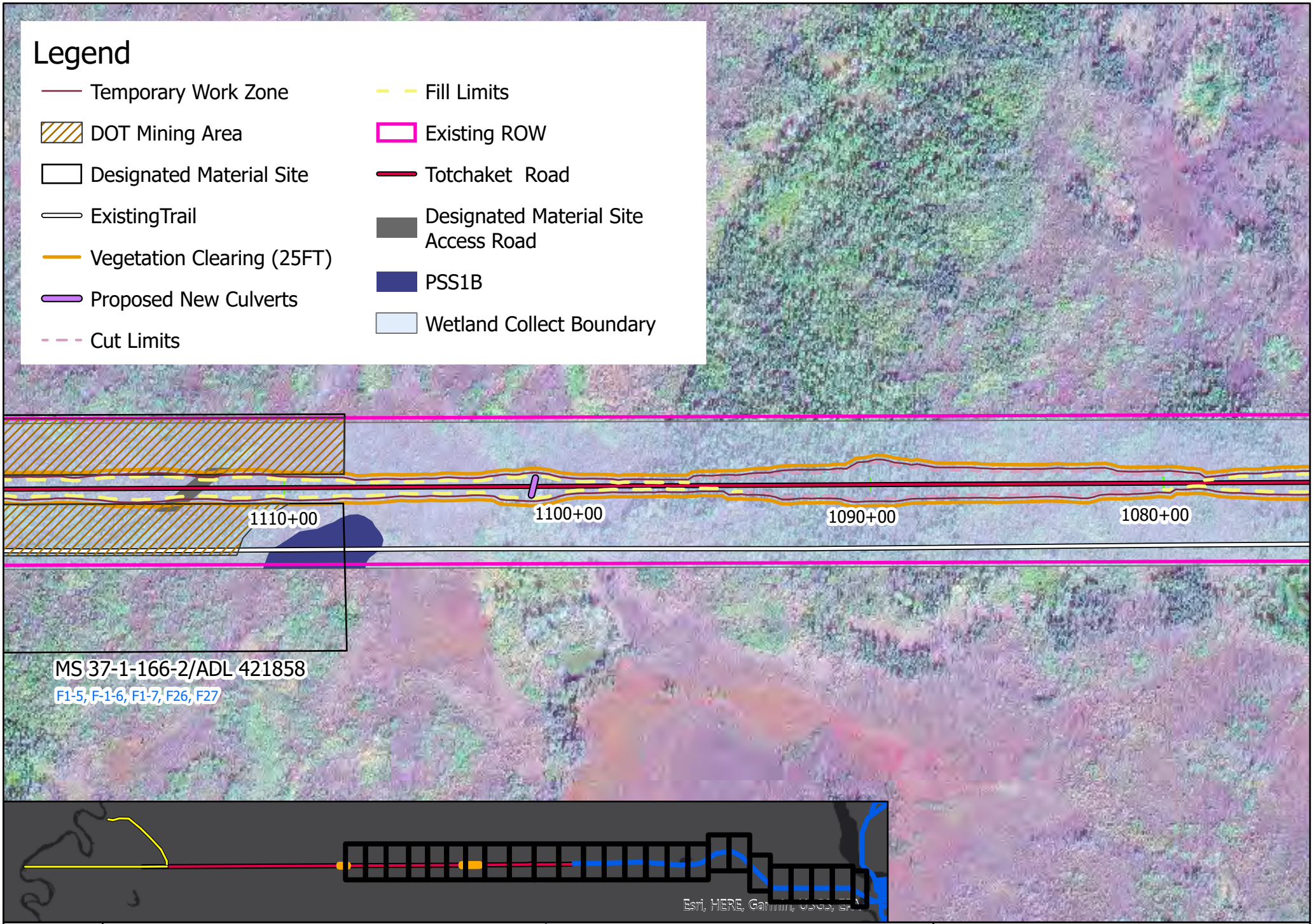

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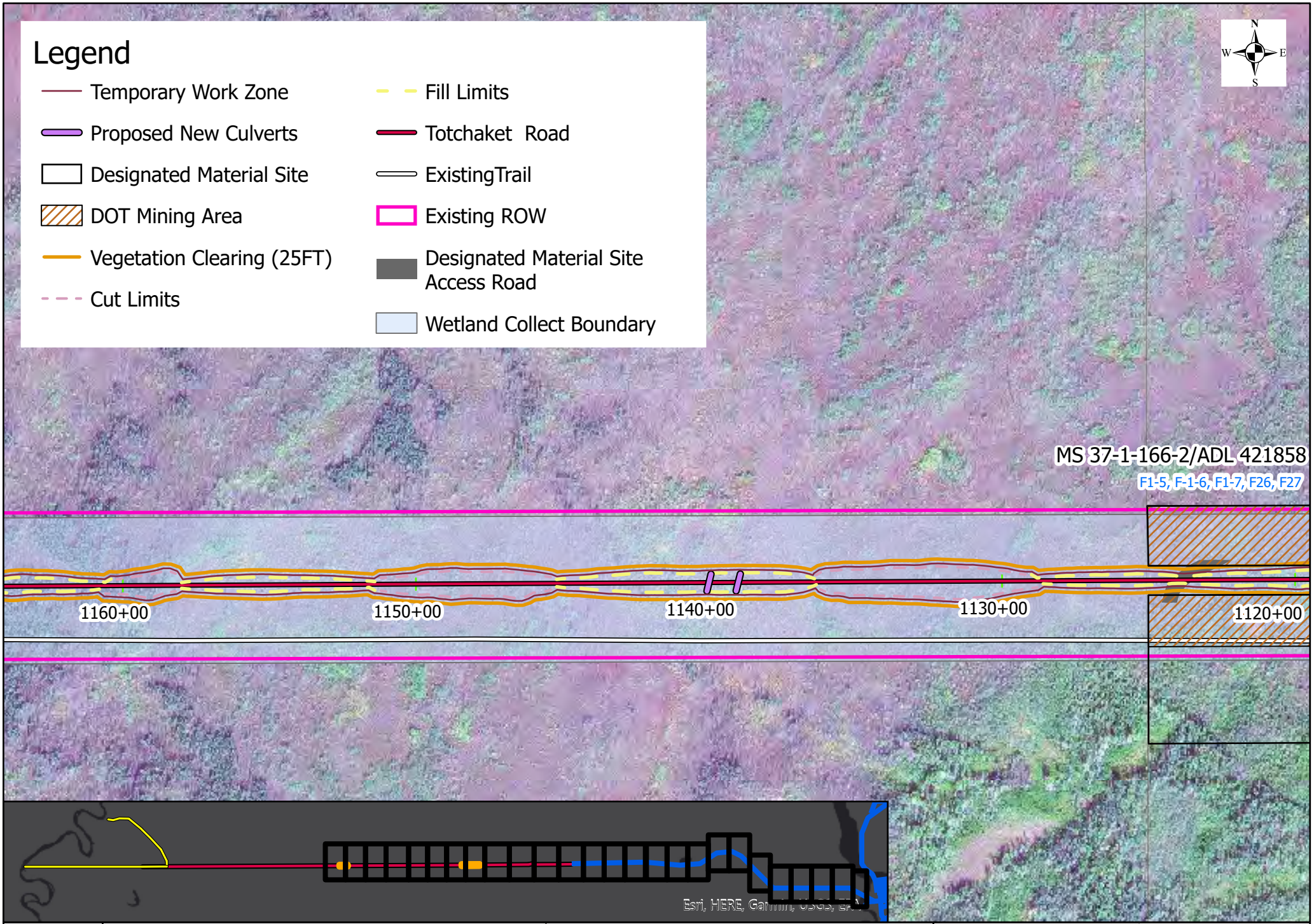
Figure 26

Plan View Detail



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STATE OF ALASKA
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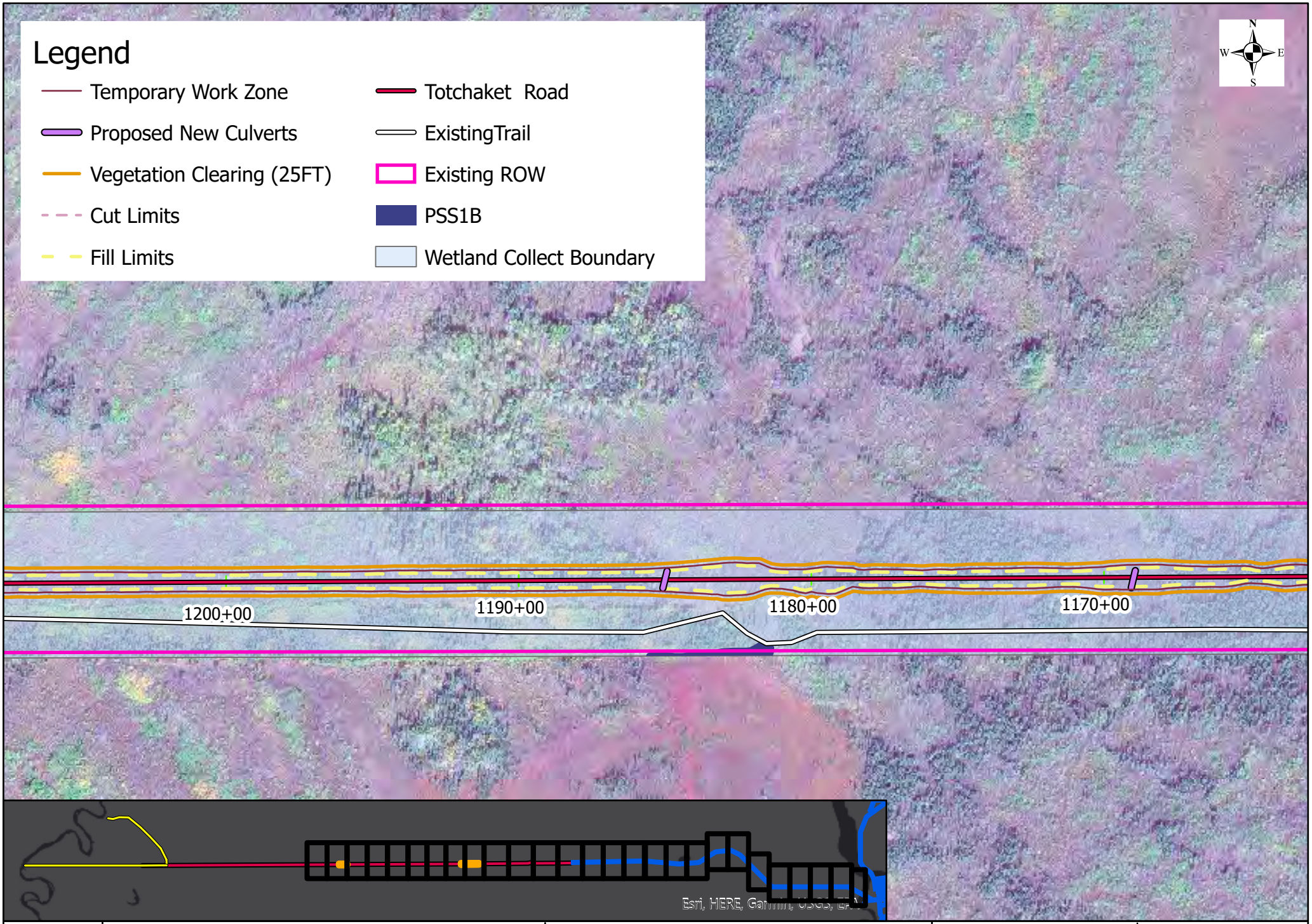
Figure 27

Plan View Detail



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STATE OF ALASKA
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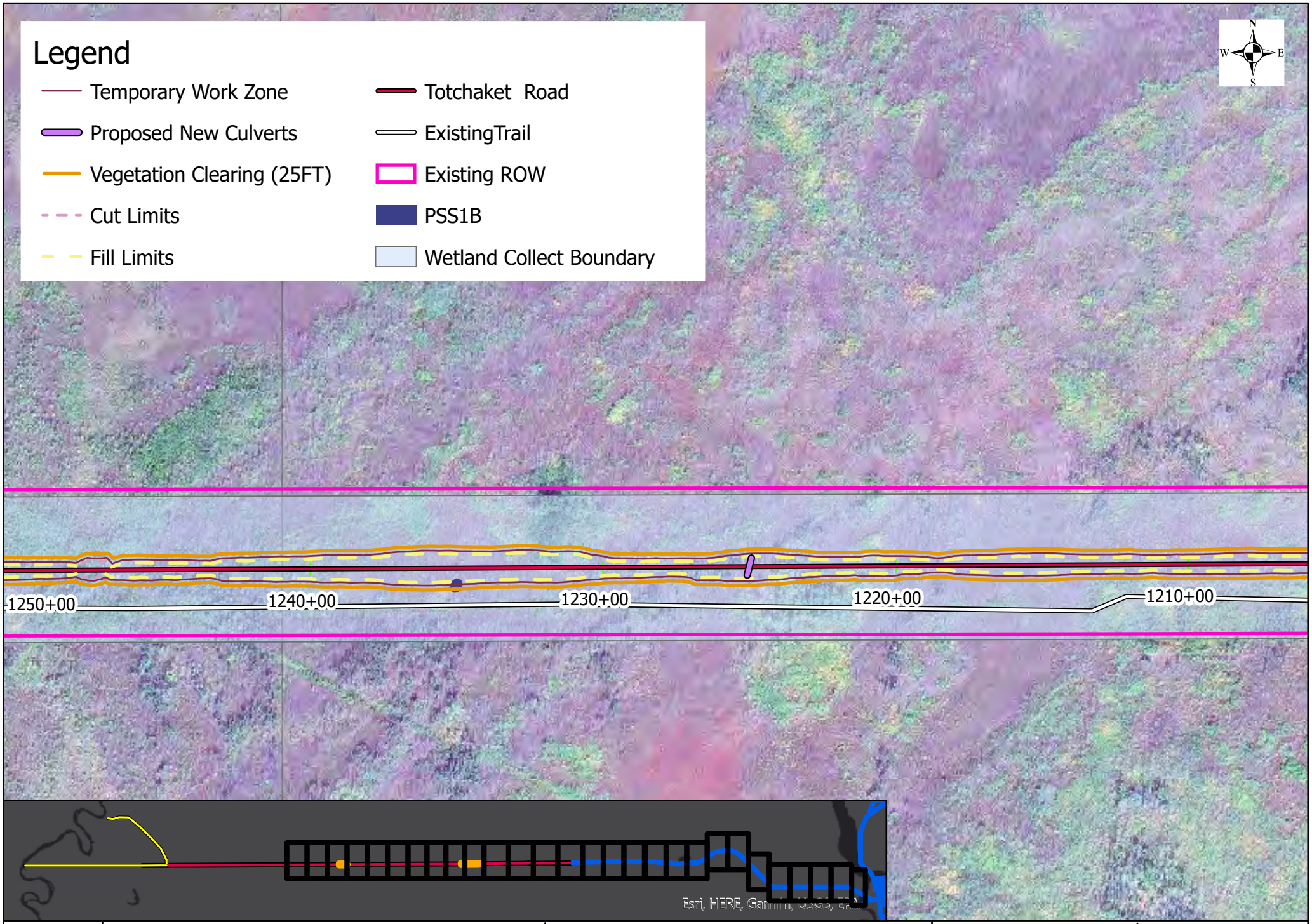
Figure 28

Plan View Detail



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STATE OF ALASKA
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Figure 29

Plan View Detail

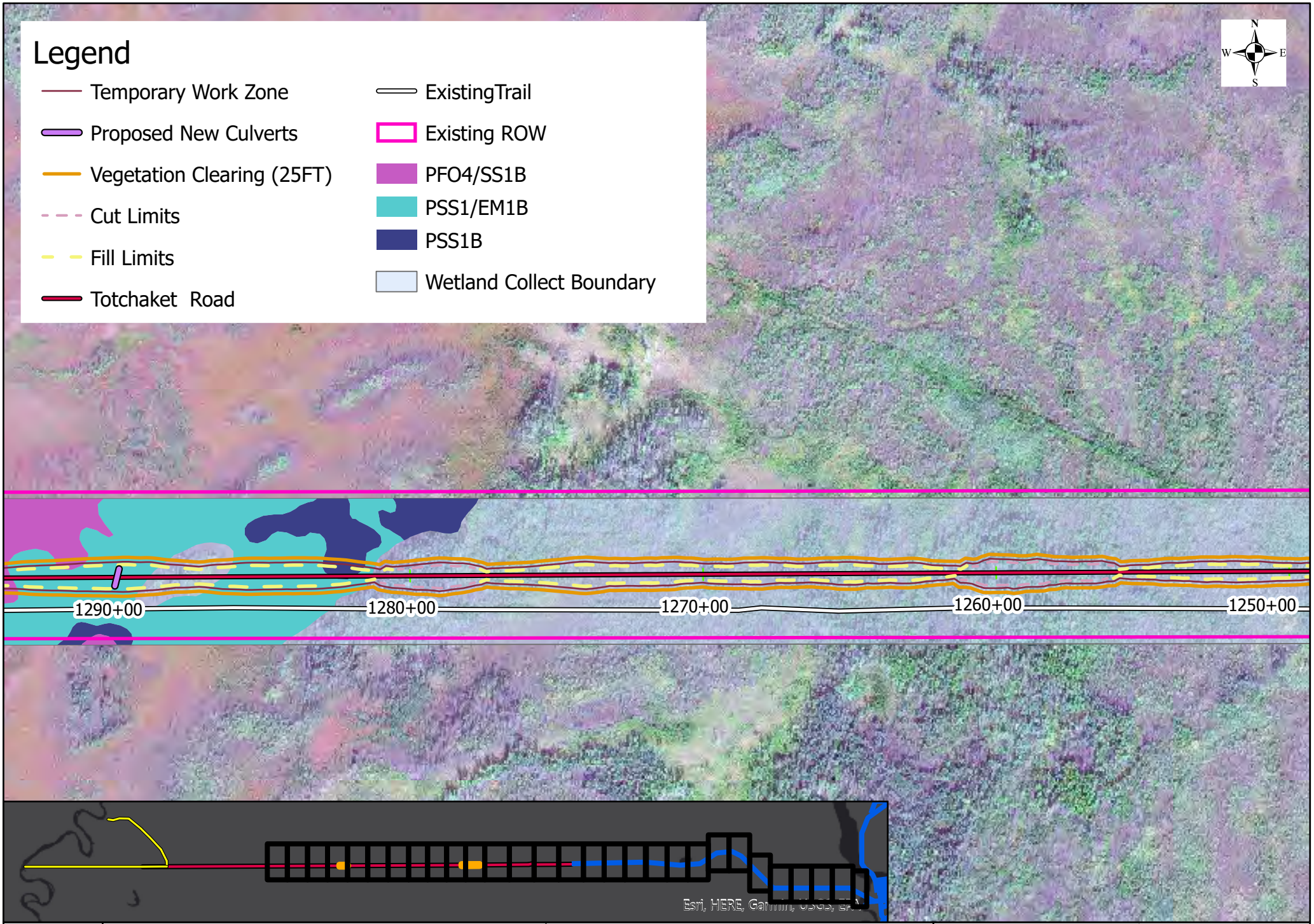

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Figure 30

Plan View Detail

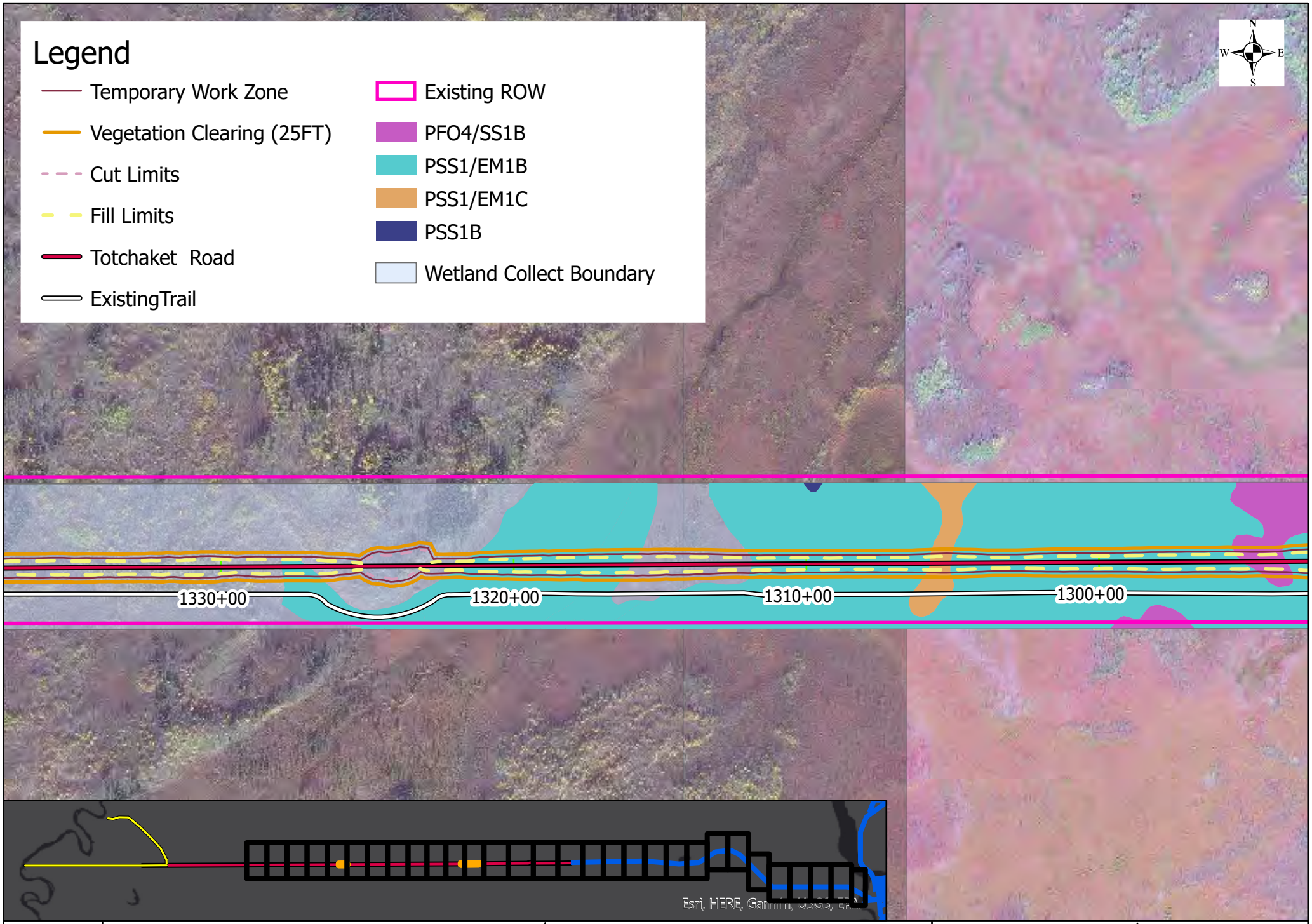

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Figure 31

Plan View Detail

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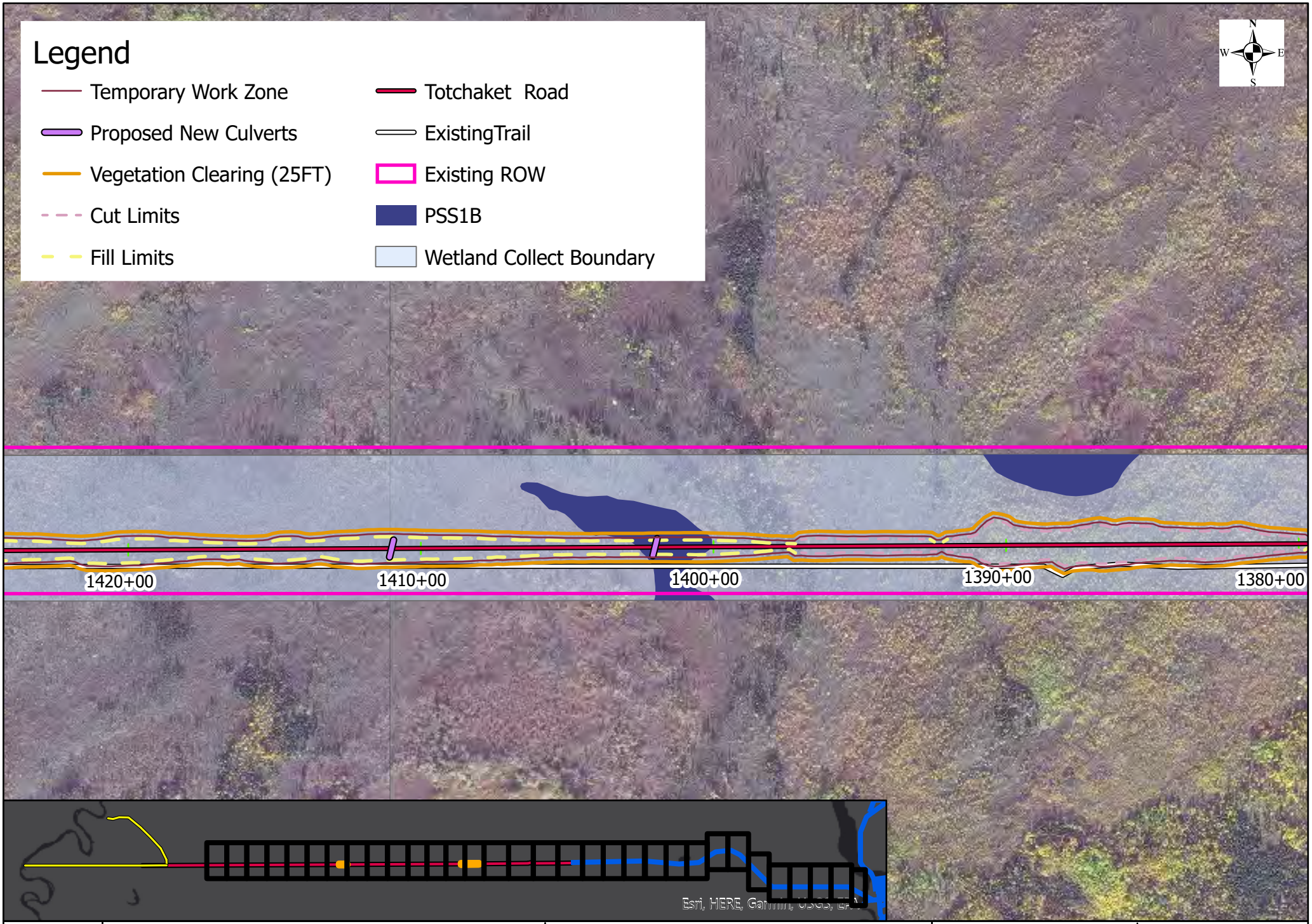
Figure 32

Plan View Detail



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STATE OF ALASKA
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Figure 33

Plan View Detail

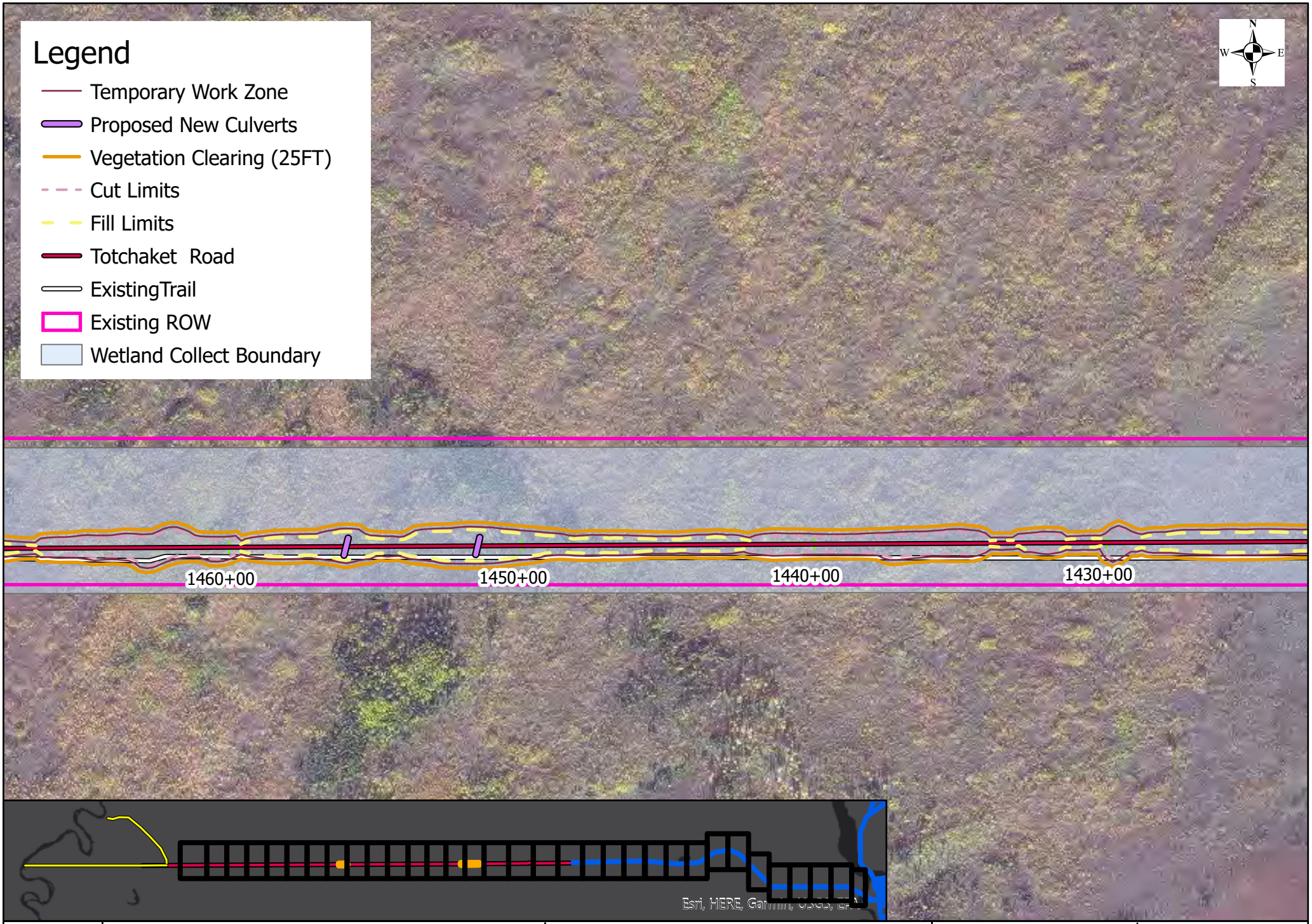

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Figure 34

Plan View Detail

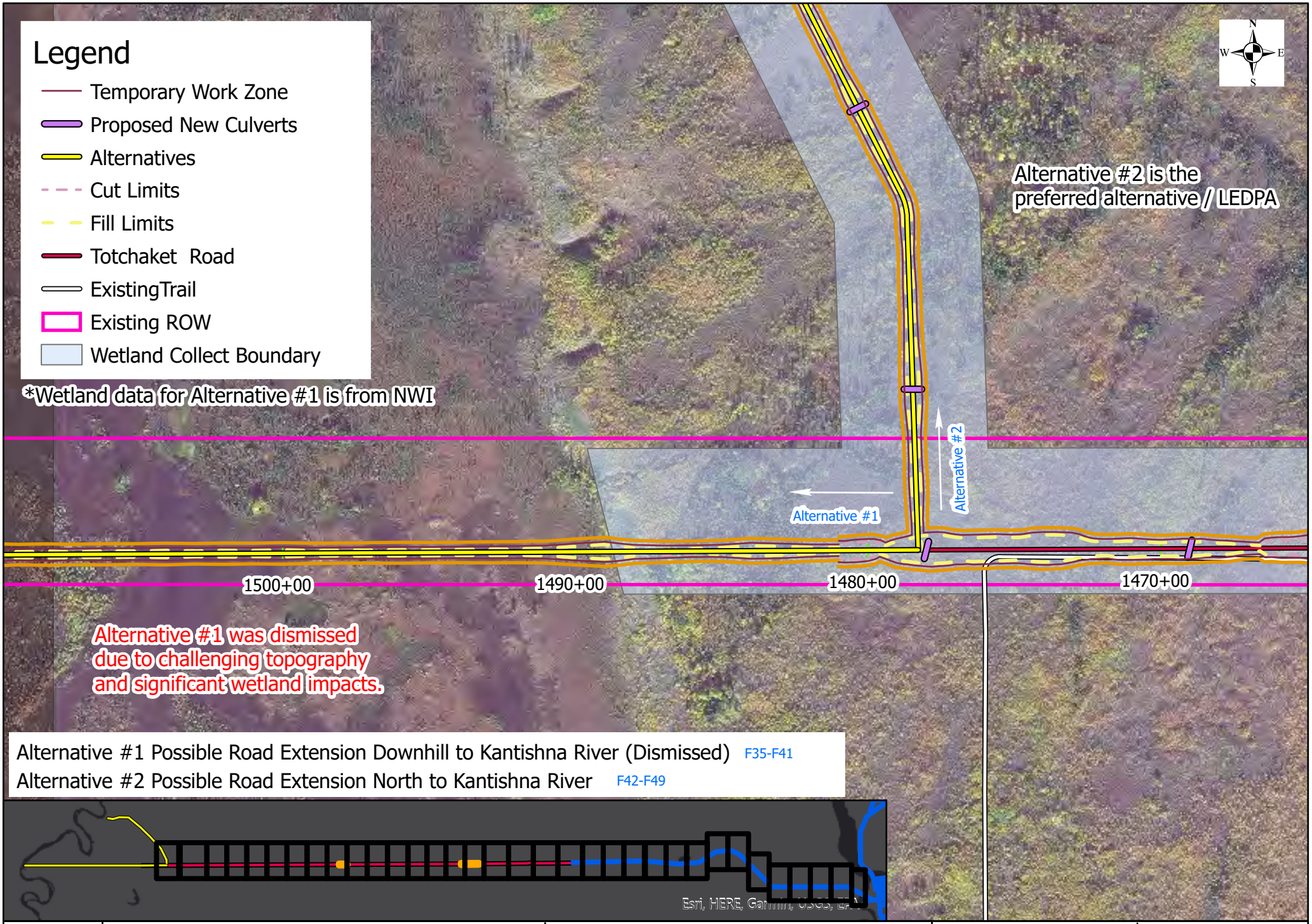

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Figure 35

Plan View Detail

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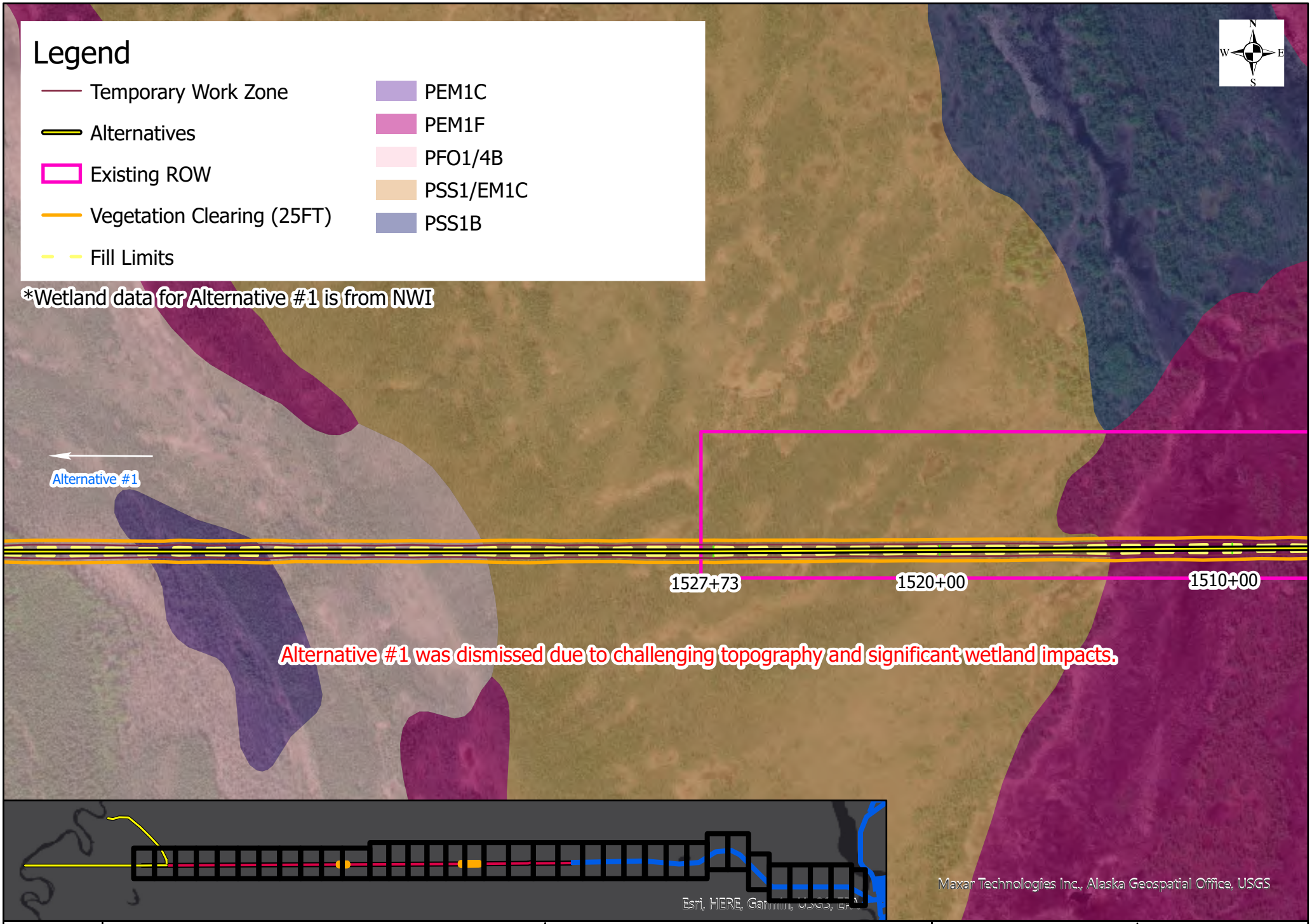

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STATE OF ALASKA
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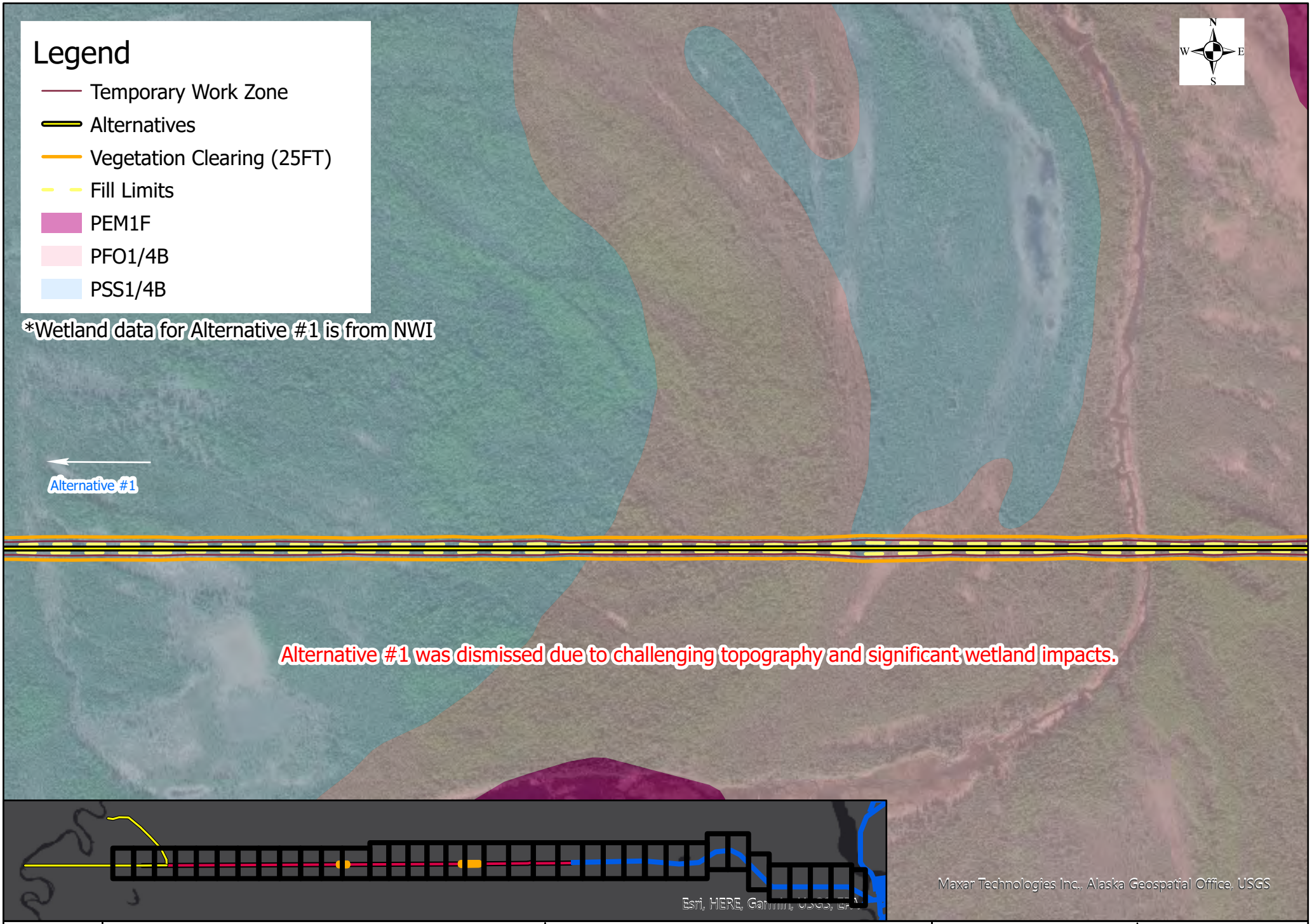
Figure 36

Alternative #1 (Dismissed)



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STATE OF ALASKA
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Figure 37

Alternative #1 (Dismissed)

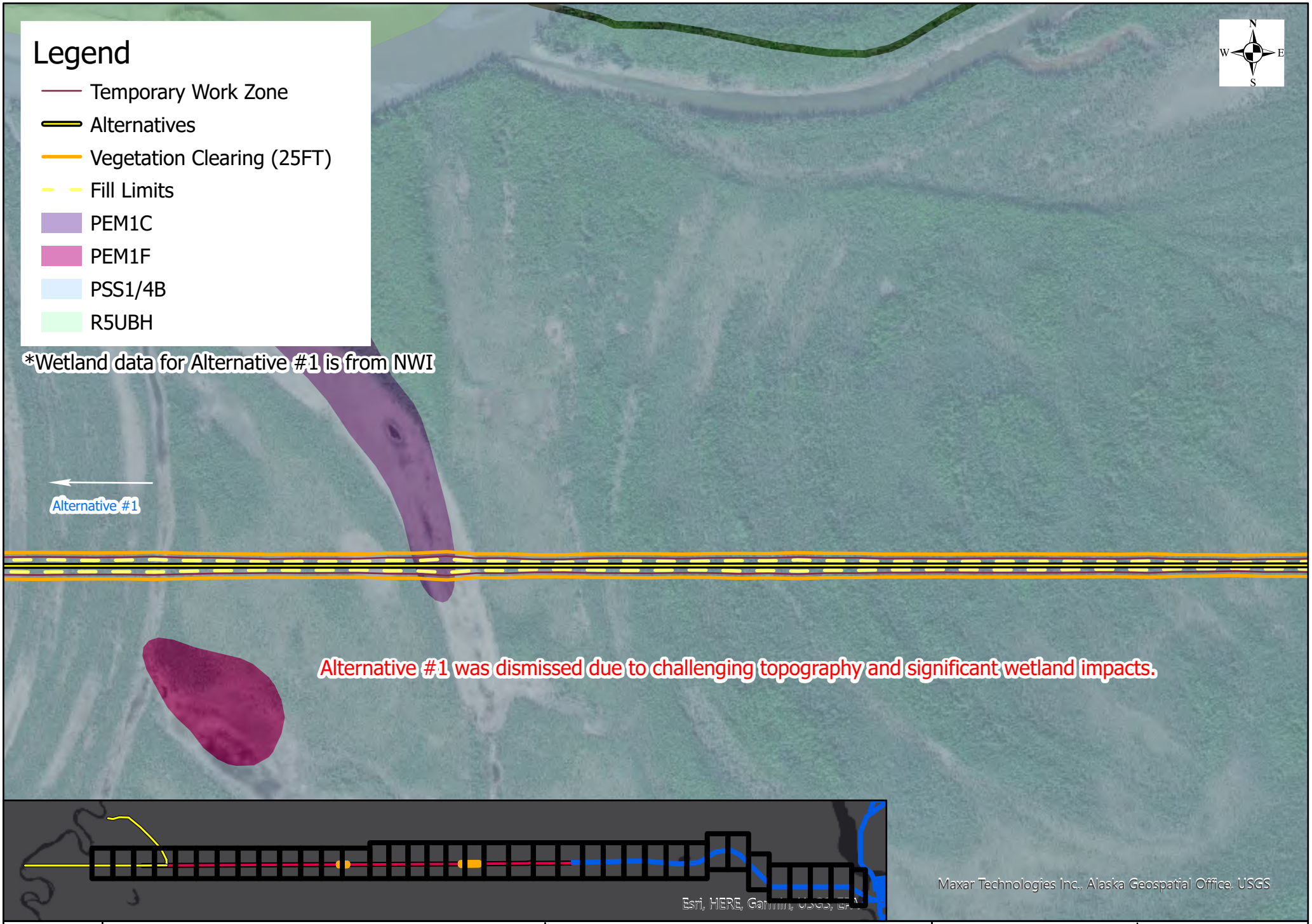

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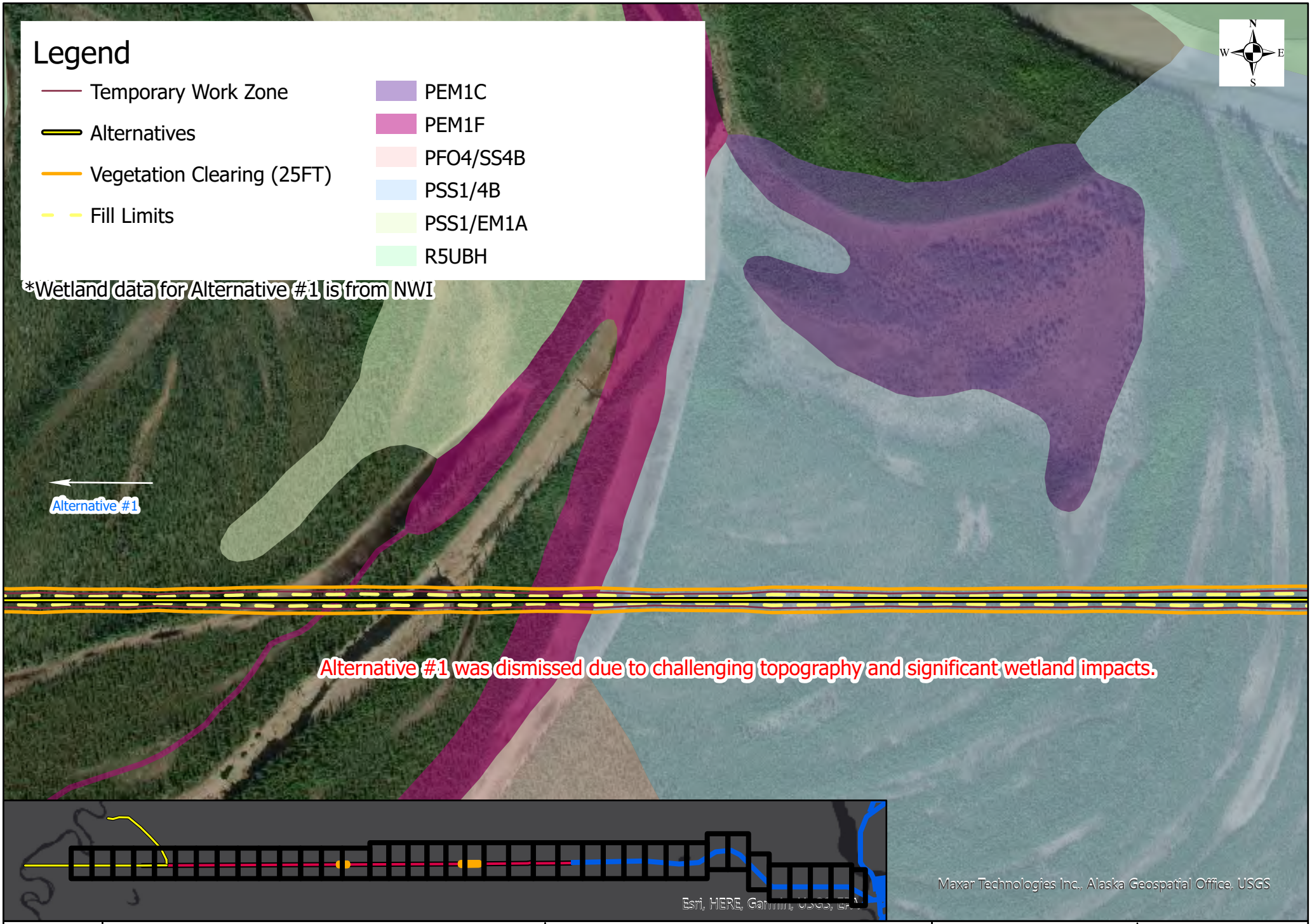
Figure 38

Alternative #1 (Dismissed)



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STATE OF ALASKA
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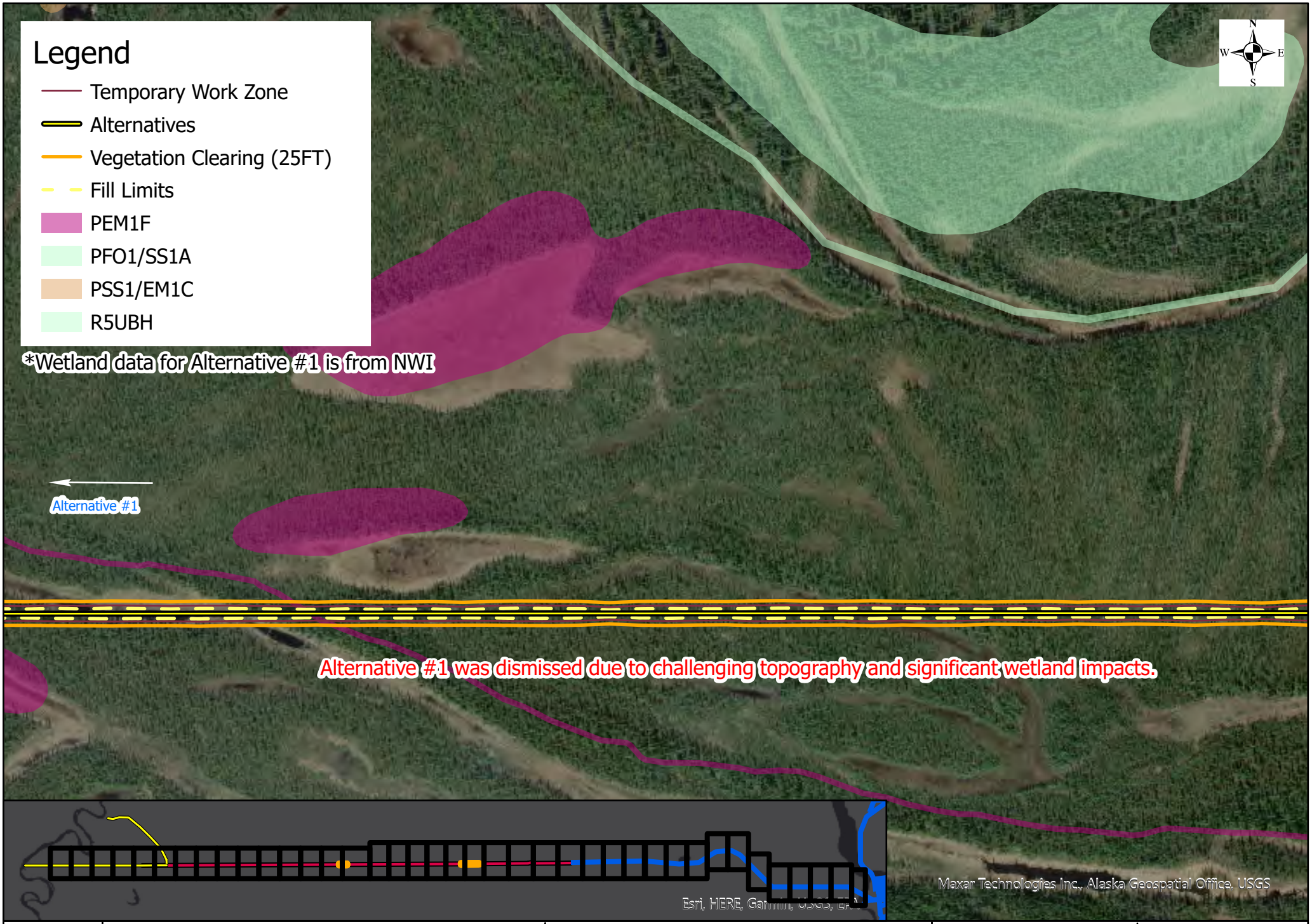
Figure 39

Alternative #1 (Dismissed)



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STATE OF ALASKA
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Figure 40

Alternative #1 (Dismissed)

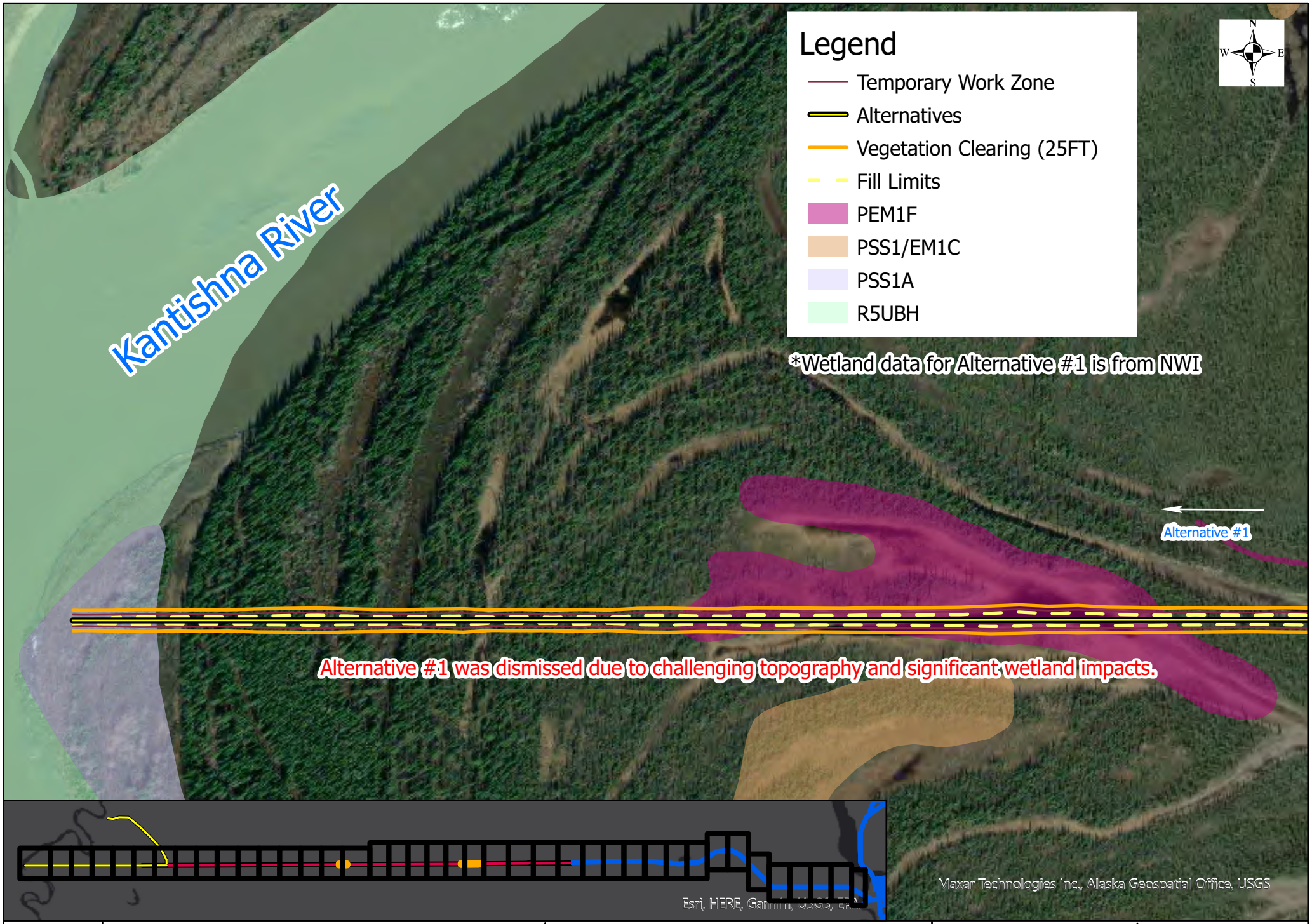

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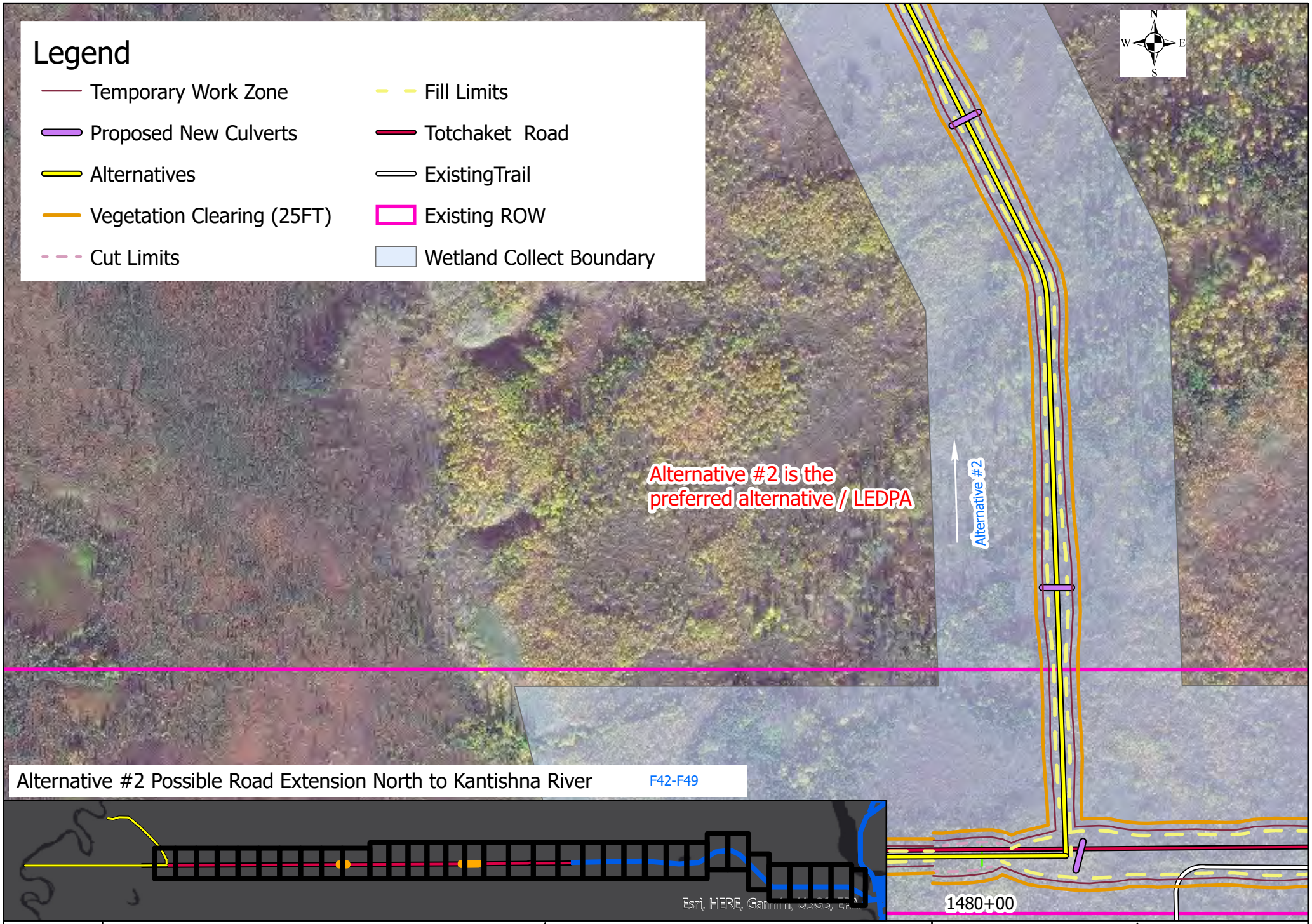
Figure 41

Alternative #1 (Dismissed)



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0 125 250 500 US Feet

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Figure 42

Alternative #2 (Preferred)

0 125 250 500 US Feet

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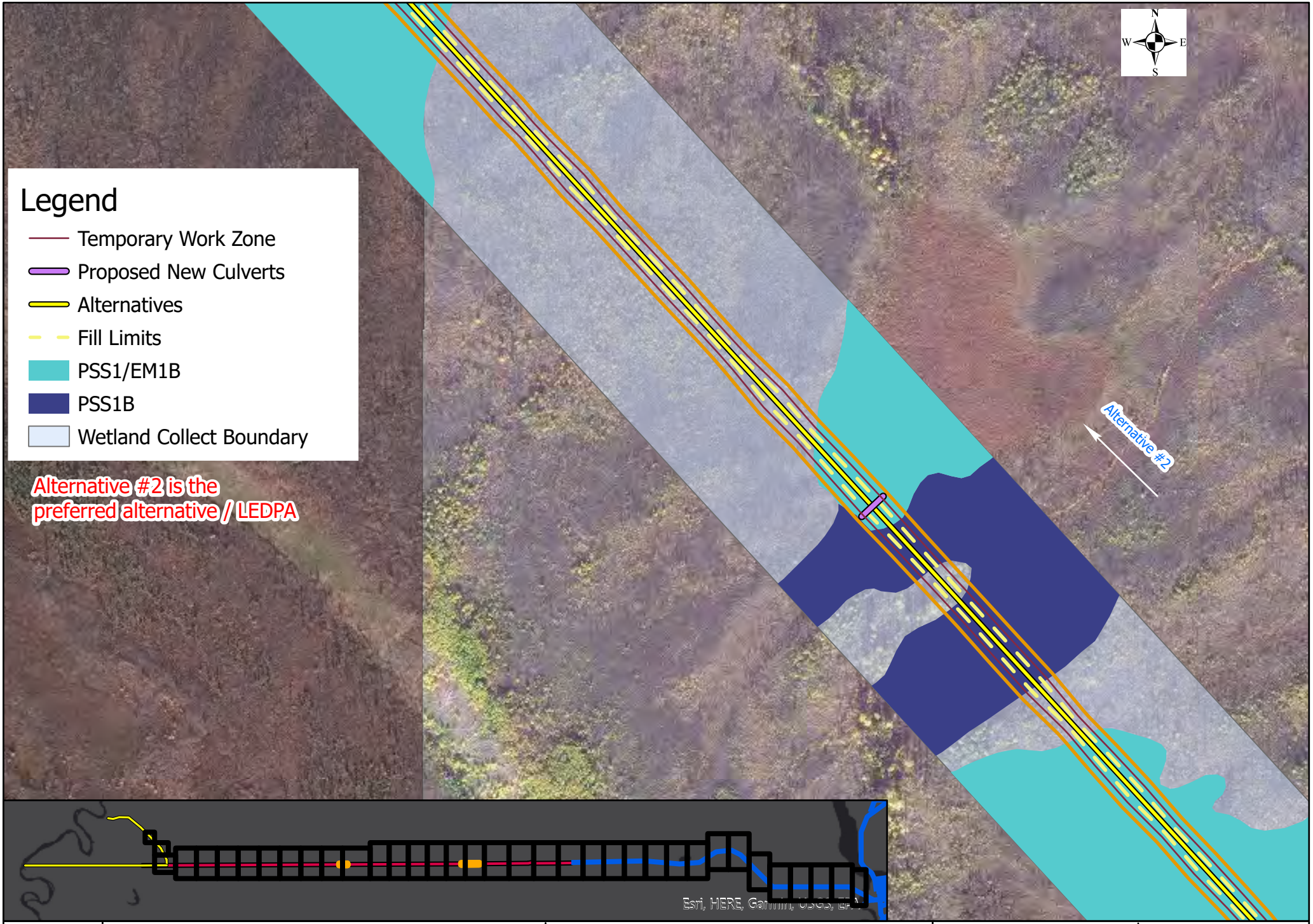
Figure 43

Alternative #2 (Preferred)

Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx



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0 125 250 500 US Feet

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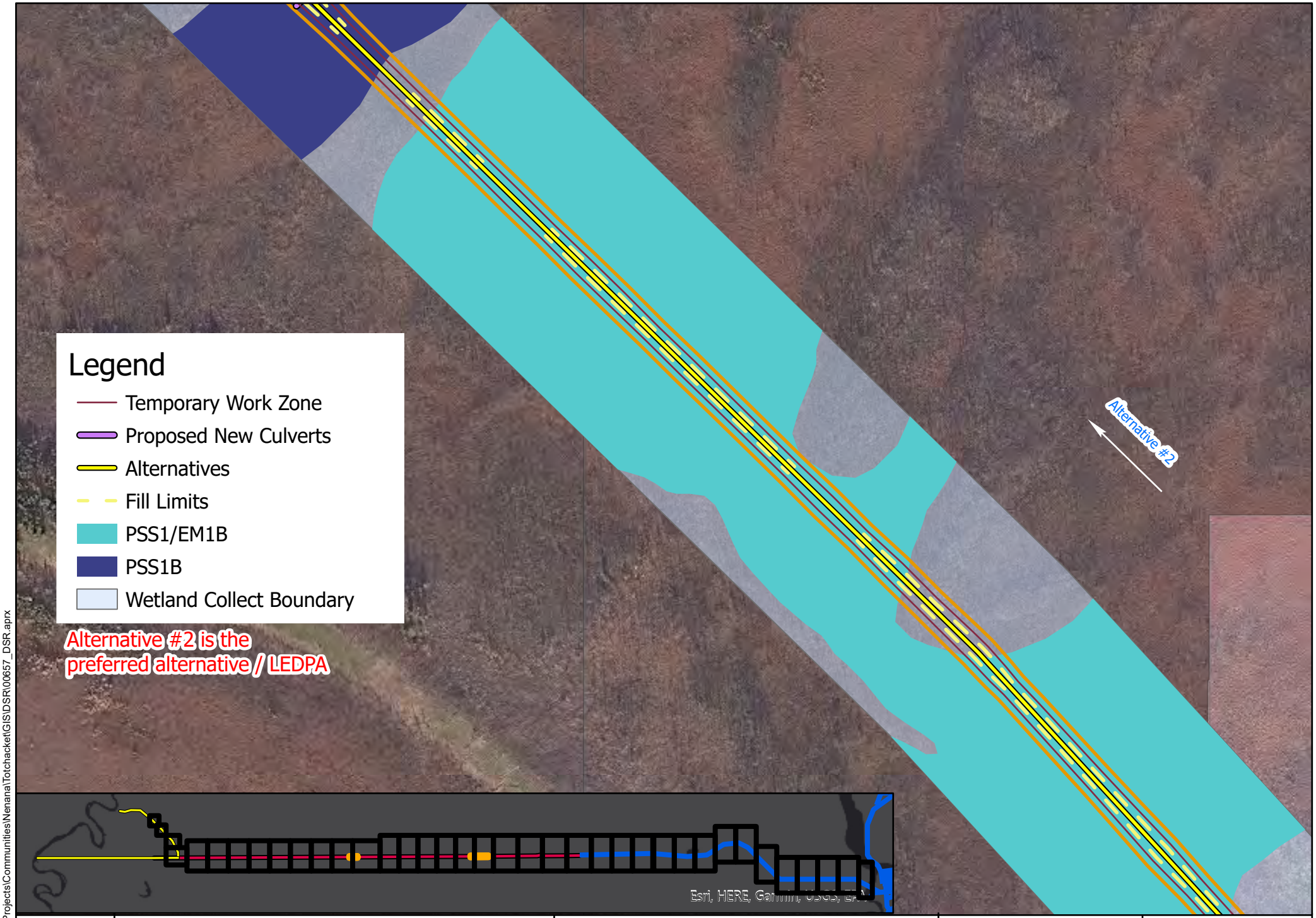
Figure 44

Alternative #2 (Preferred)



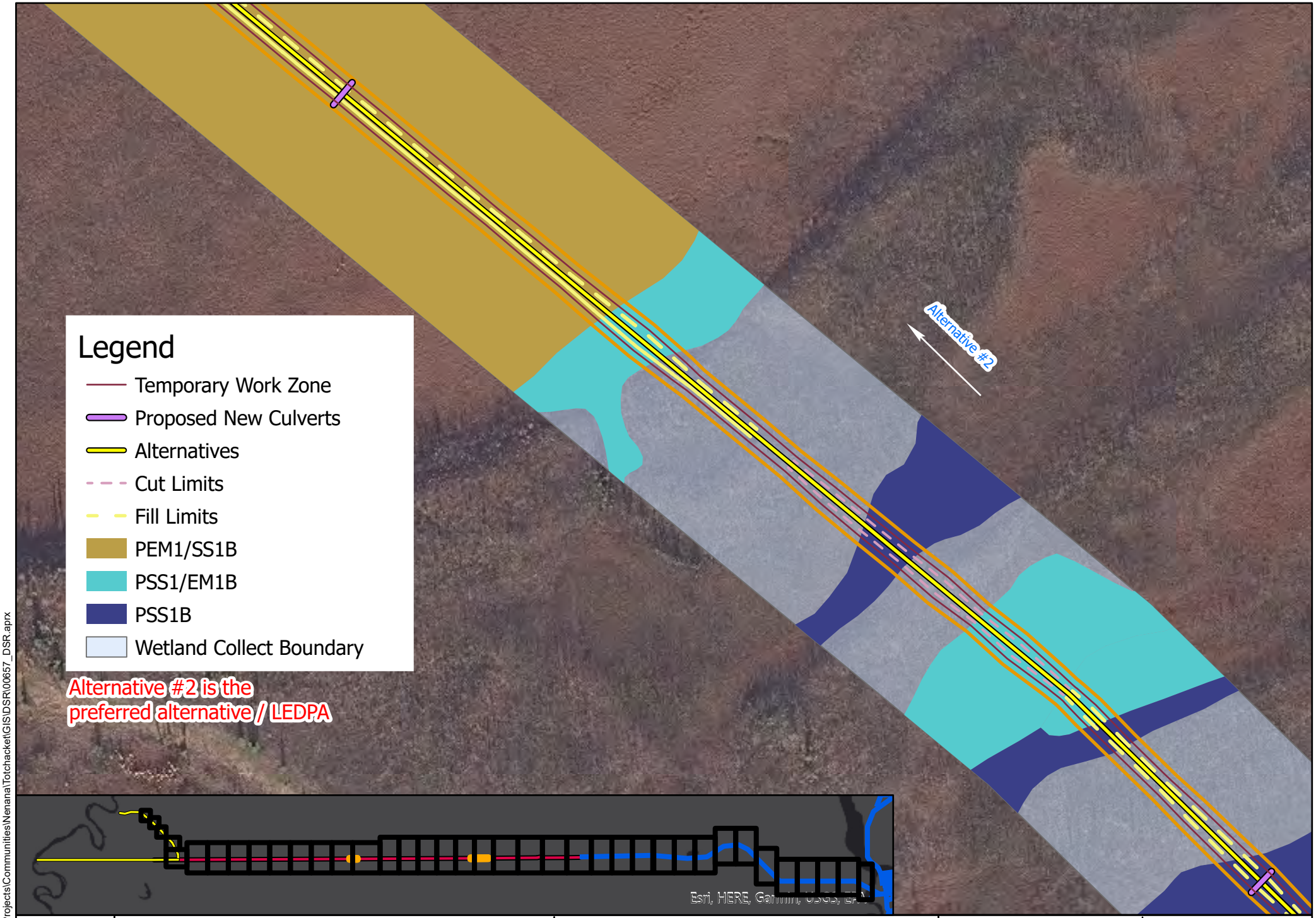
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: 8/10/2022

Figure 45

Alternative #2 (Preferred)

Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx



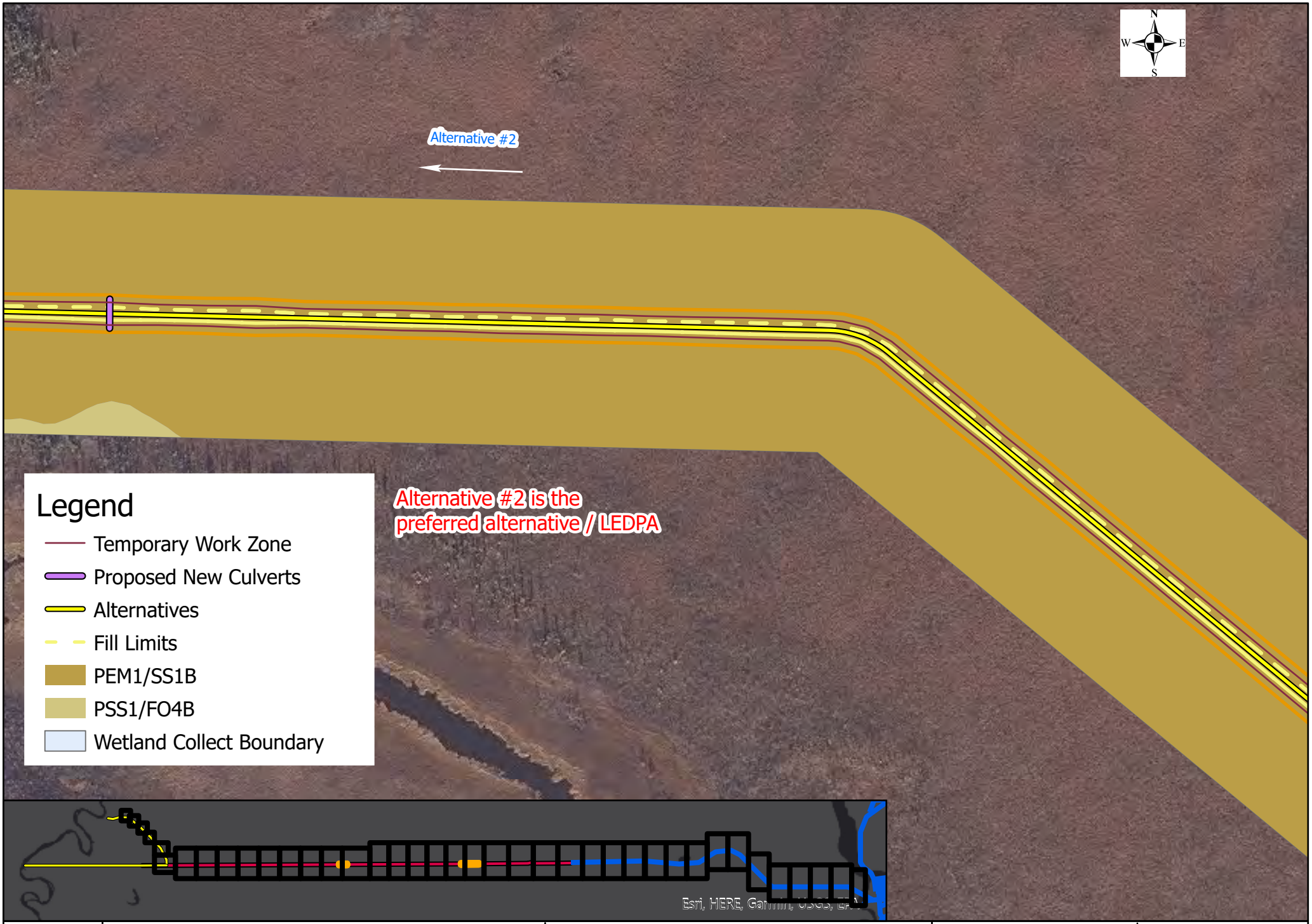
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: 8/10/2022

Figure 46

Alternative #2 (Preferred)

Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx



Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx

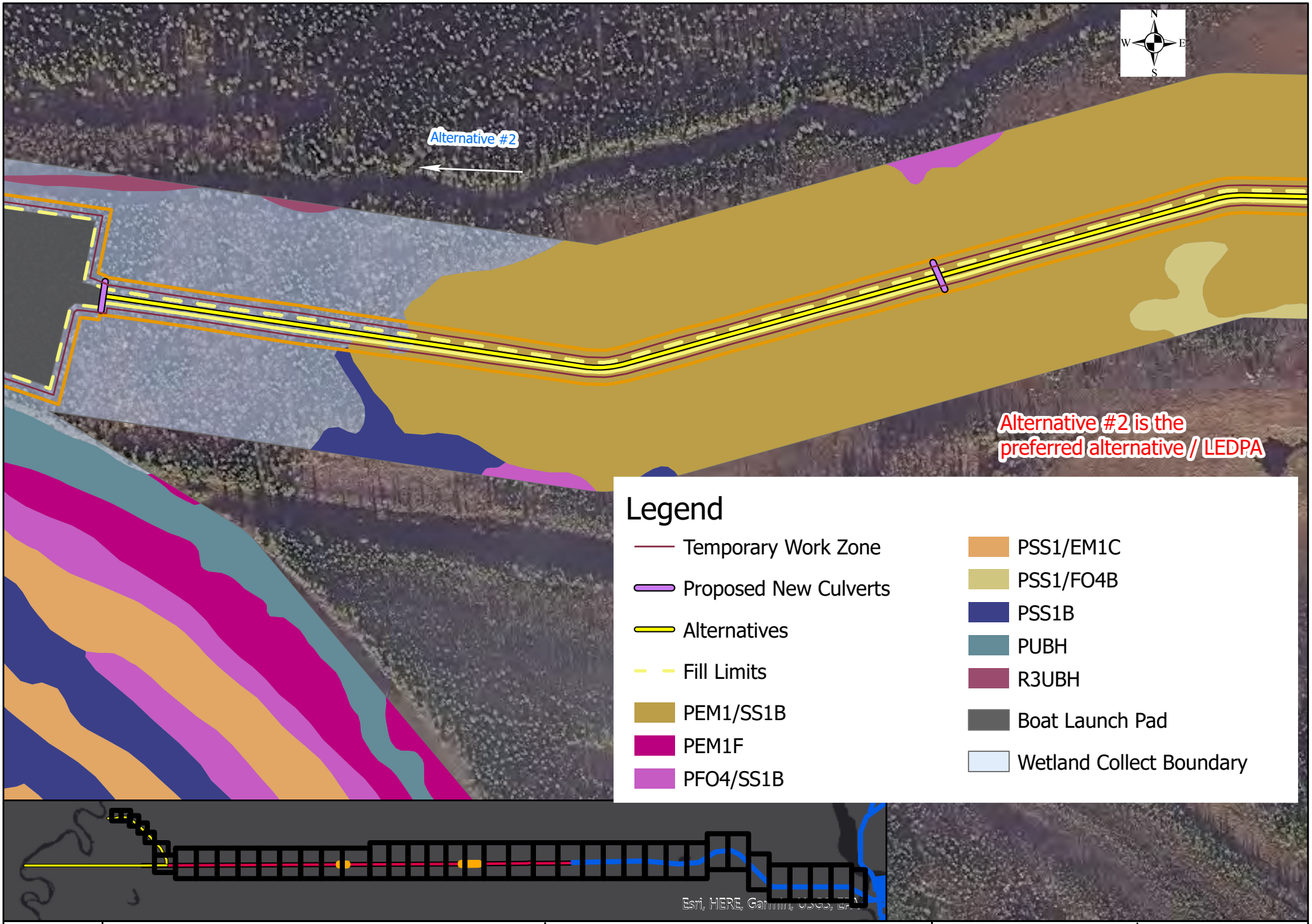
0 125 250 500 US Feet

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: 8/10/2022

Figure 47

Alternative #2 (Preferred)



Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx

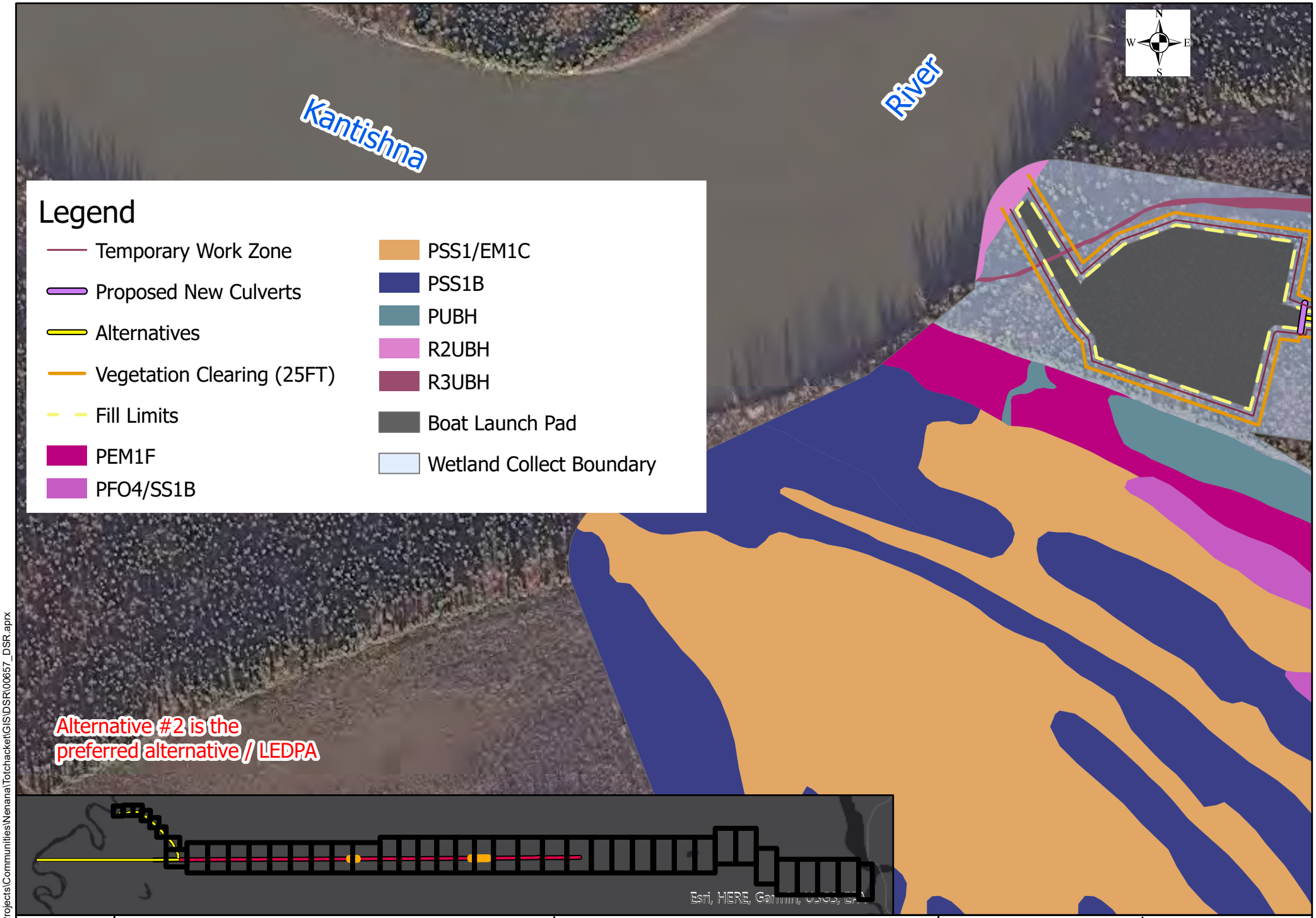
0 125 250 500 US Feet

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: 8/10/2022

Figure 48

Alternative #2 (Preferred)



Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx

0 125 250 500 US Feet

STATE OF ALASKA
Department of Transportation and Public Facilities
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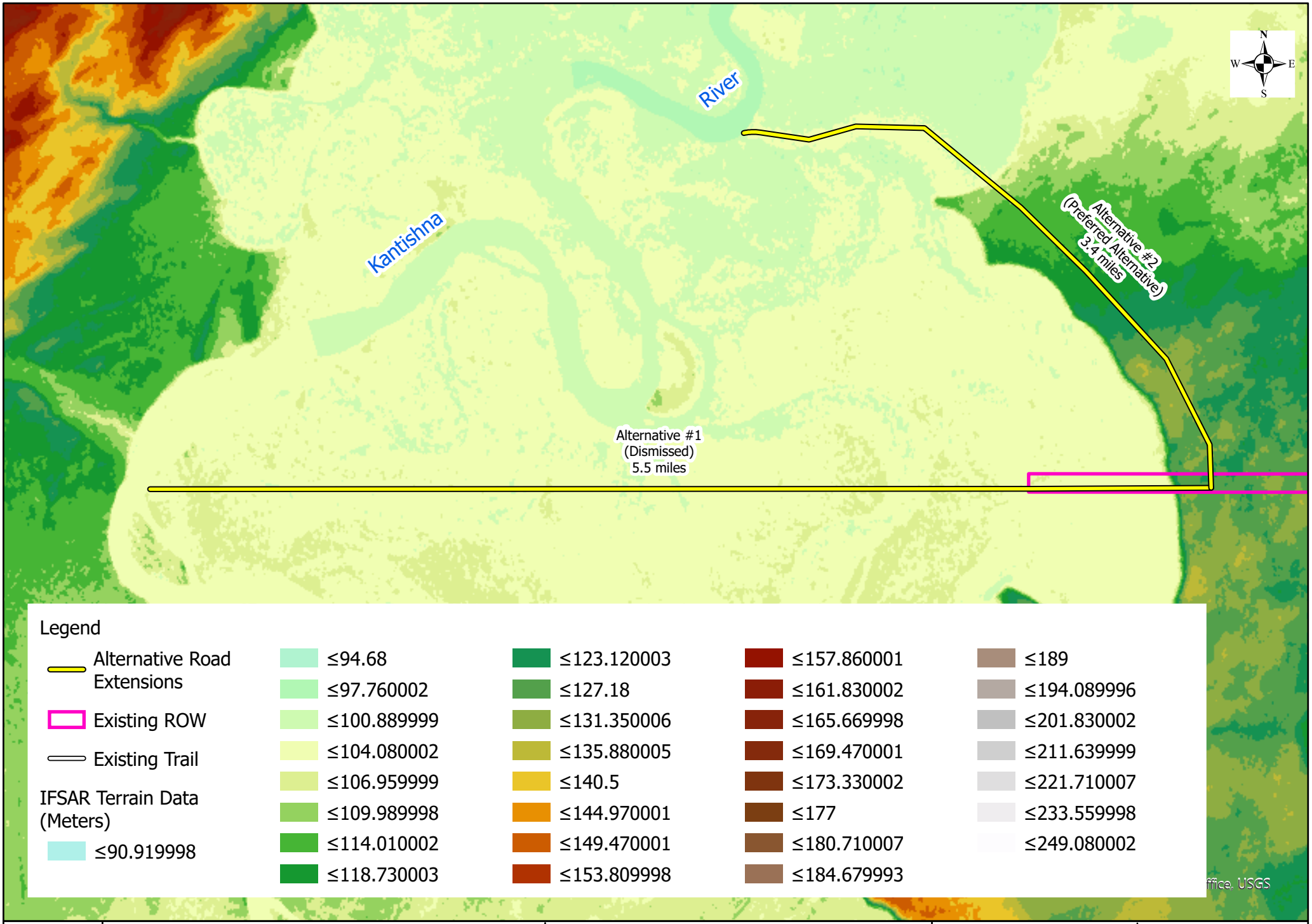
Date: 8/10/2022

Figure 49

Alternative #2 (Preferred)



Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

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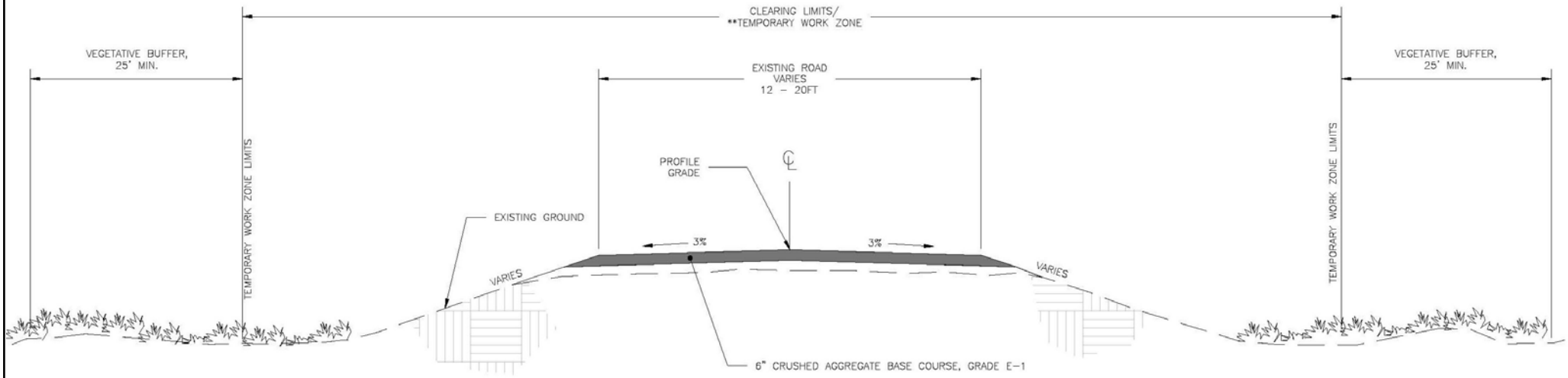
Figure 50

Possible Roads Extension Terrain Map



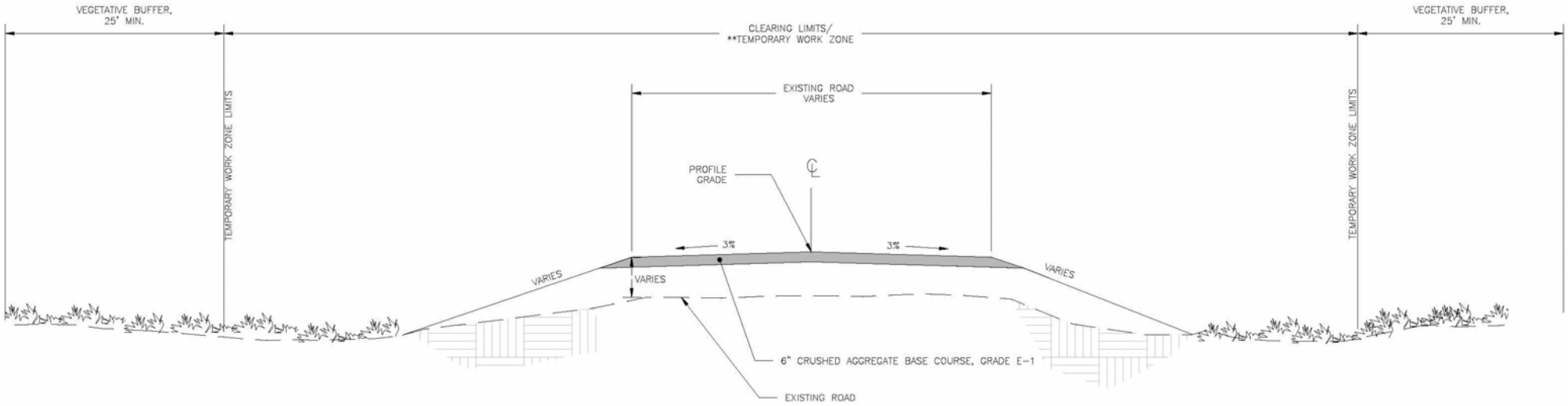
NOTE:

1. WITHIN WETLAND AREAS, TURNOUTS WILL BE CONSTRUCTED WITHIN THE LIMITS OF EXISTING FILL.
2. VEGETATION CLEARING IN WETLAND AREAS OUTSIDE OF THE PROPOSED FOOTPRINT WILL BE ACCOMPLISHED WHILE SOILS ARE FROZEN OR BY HAND USING ONLY LOW GROUND-PRESSURE, WHEELED ATVS FOR ACCESS TO MINIMIZE TEMPORARY WETLAND IMPACTS.

** 3. TEMPORARY WORK ZONE EXTENDS 10' BEYOND TOE OF ROAD. THIS AREA WILL BE FOR TEMPORARY EQUIPMENT ACCESS AND PROJECT ACTIVITIES.

4. VEGETATIVE BUFFER EXTENDS OUTWARD 25' FROM THE TEMPORARY WORK ZONE. THIS AREA WILL BE USED DURING CONSTRUCTION FOR SERVE AS A NATURAL VEGETATIVE SCREEN.

TYPICAL SECTION A
NTS
RESURFACE EXISTING ROAD



NOTE:

1. VEGETATION CLEARING IN WETLAND AREAS OUTSIDE OF THE PROPOSED FOOTPRINT WILL BE ACCOMPLISHED WHILE SOILS ARE FROZEN OR BY HAND USING ONLY LOW GROUND-PRESSURE, WHEELED ATVS FOR ACCESS TO MINIMIZE TEMPORARY WETLAND IMPACTS.

** 2. TEMPORARY WORK ZONE EXTENDS 10' BEYOND TOE OF ROAD. THIS AREA WILL BE FOR TEMPORARY EQUIPMENT ACCESS AND PROJECT ACTIVITIES.

3. VEGETATIVE BUFFER EXTENDS OUTWARD 25' FROM THE TEMPORARY WORK ZONE. THIS AREA WILL BE USED DURING CONSTRUCTION FOR SERVE AS A NATURAL VEGETATIVE SCREEN.

4. FINAL EMBANKMENT THICKNESS ABOVE EXISTING GRADE GENERALLY VARIES BETWEEN 1' TO 5'.

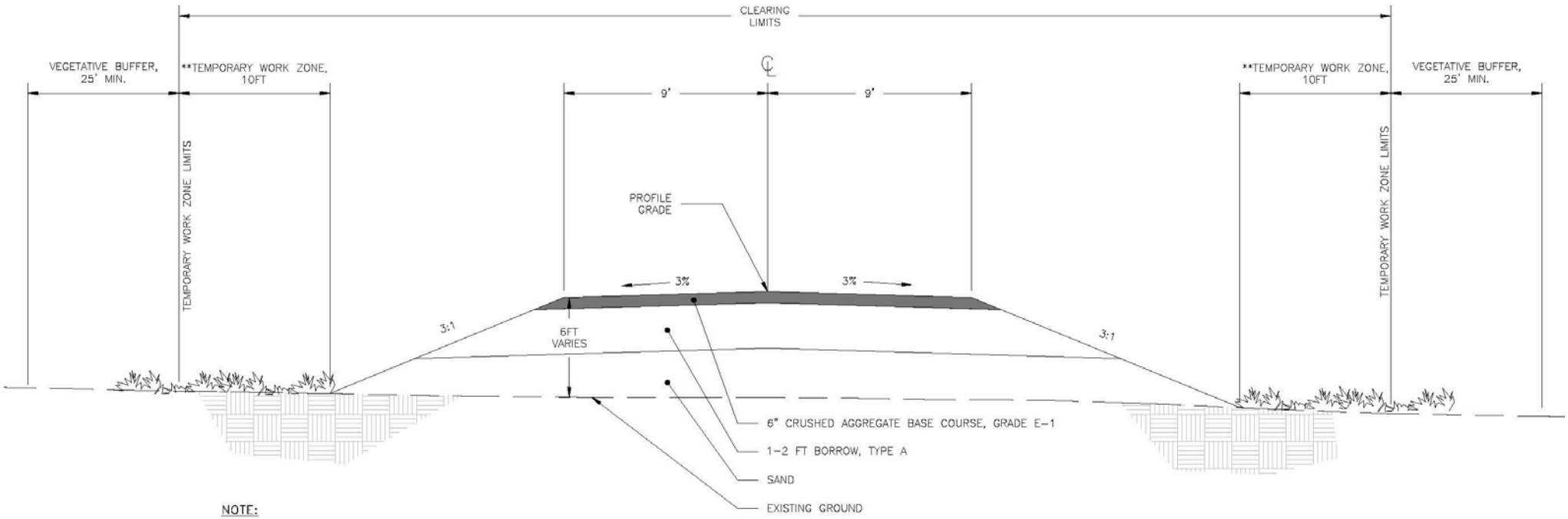
TYPICAL SECTION B
NTS
REHABILITATION EXISTING ROAD

	STATE OF ALASKA Department of Transportation and Public Facilities 2301 Peger Road Fairbanks, AK 99709	Date: 8/10/2022	Figure 52
		Existing Road - Typical section B	

IMPROVEMENT ID	STATION	FILL IN WETLAND (Y/N)	FILL IN WETLAND (ACRES)
**RESURFACE	BOP TO 649+00	N	–
REPLACE 1 (LITTLE NENANA RIVER BRIDGE)	22+50 – 26+00	Y	0.17
REHABILITATION 1	94+27 –95+27	N	–
REPLACE 2 (EAST MIDDLE RIVER BRIDGE)	116+50 – 120+00	Y	0.05
REHABILITATION 2	146+00 – 147+00	N	–
REHABILITATION 3	147+84 – 148+84	N	–
REPLACE 3 (WEST MIDDLE RIVER BRIDGE)	166+50 – 171+00	Y	0.14
REHABILITATION 4	180+34 – 181+34	Y	0.01
REHABILITATION 5	198+00 – 200+00	Y	0.06
REHABILITATION 6	236+38 – 237+38	Y	0.01
REHABILITATION 7	241+00 – 243+00	Y	0.11
REHABILITATION 8 (IN ROAD HIGH WATER CROSSING)	255+00 – 259+00	Y	0.32
REHABILITATION 9	333+50 – 341+00	Y	0.10

NOTE:

1. **THE ENTIRE EXISTING TOTCHAKET ROAD WILL BE RESURFACED AND FILL LIMITS WITHIN WETLAND AREAS WILL REMAIN WITHIN THE EXISTING ROAD PRISM, UNLESS OTHERWISE NOTED.



NOTE:

1. EMBANKMENT HEIGHT WILL AVERAGE BETWEEN 5 TO 8 FEET. MINIMUM EMBANKMENT HEIGHT OF 6 FT MAY BE USED IN AREAS OF POTENTIAL SNOW DRIFTING AND IN AREAS WHERE THERE IS CONCERN OF THAWING UNDERLYING PERMAFROST.

** 2. TEMPORARY WORK ZONE EXTENDS 10' BEYOND TOE OF ROAD. THIS AREA WILL BE FOR TEMPORARY EQUIPMENT ACCESS AND PROJECT ACTIVITIES.

3. VEGETATIVE BUFFER EXTENDS OUTWARD 25' FROM THE TEMPORARY WORK ZONE. THIS AREA WILL BE USED DURING CONSTRUCTION FOR SERVE AS A NATURAL VEGETATIVE SCREEN.

4. EMBANKMENT HEIGHT VARIES, WITH AN AVERAGE THICKNESS OF 6'.

TYPICAL SECTION C
NTS
NEW ROAD FILL

STATE OF ALASKA
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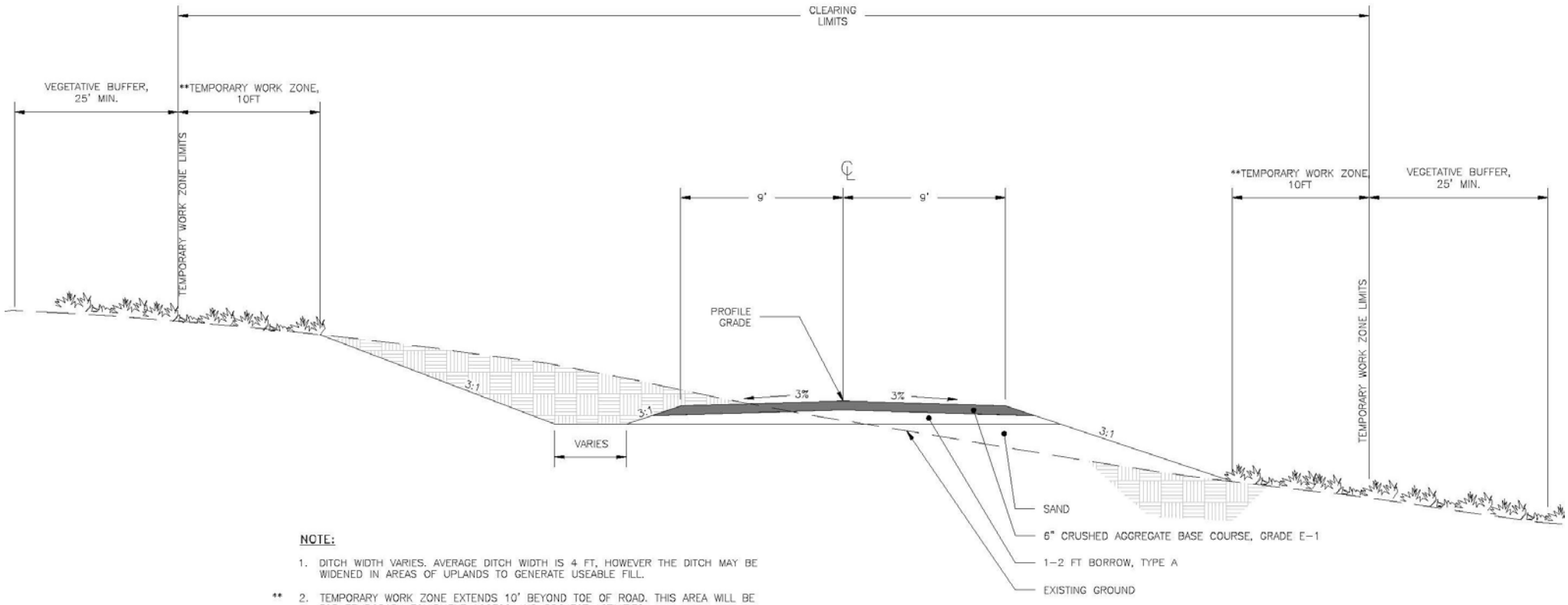
Figure 54

New Road - Typical section C



NOTE:

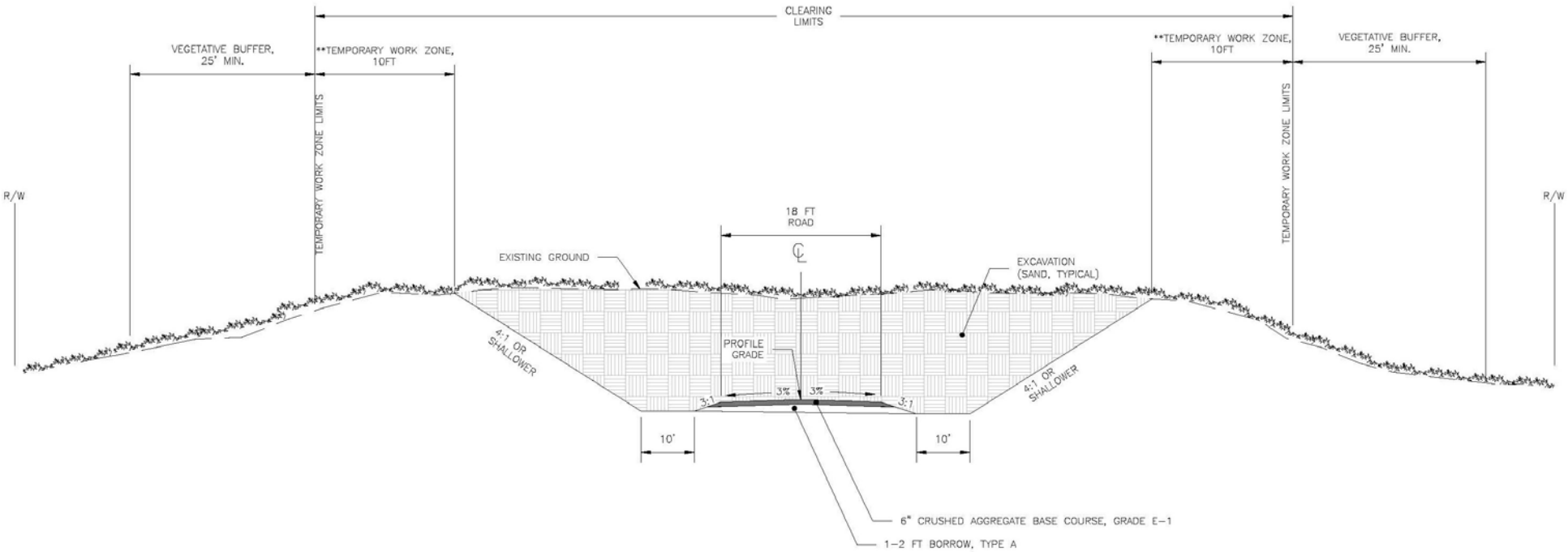
1. DITCH WIDTH VARIES. AVERAGE DITCH WIDTH IS 4 FT, HOWEVER THE DITCH MAY BE WIDENED IN AREAS OF UPLANDS TO GENERATE USEABLE FILL.

** 2. TEMPORARY WORK ZONE EXTENDS 10' BEYOND TOE OF ROAD. THIS AREA WILL BE FOR TEMPORARY EQUIPMENT ACCESS AND PROJECT ACTIVITIES.

3. VEGETATIVE BUFFER EXTENDS OUTWARD 25' FROM THE TEMPORARY WORK ZONE. THIS AREA WILL BE USED DURING CONSTRUCTION FOR SERVE AS A NATURAL VEGETATIVE SCREEN.

TYPICAL SECTION D
NTS
NEW ROAD FILL WITH DITCH

	STATE OF ALASKA Department of Transportation and Public Facilities 2301 Peger Road Fairbanks, AK 99709	Date: 8/10/2022	Figure 55
		New Road - Typical section D	

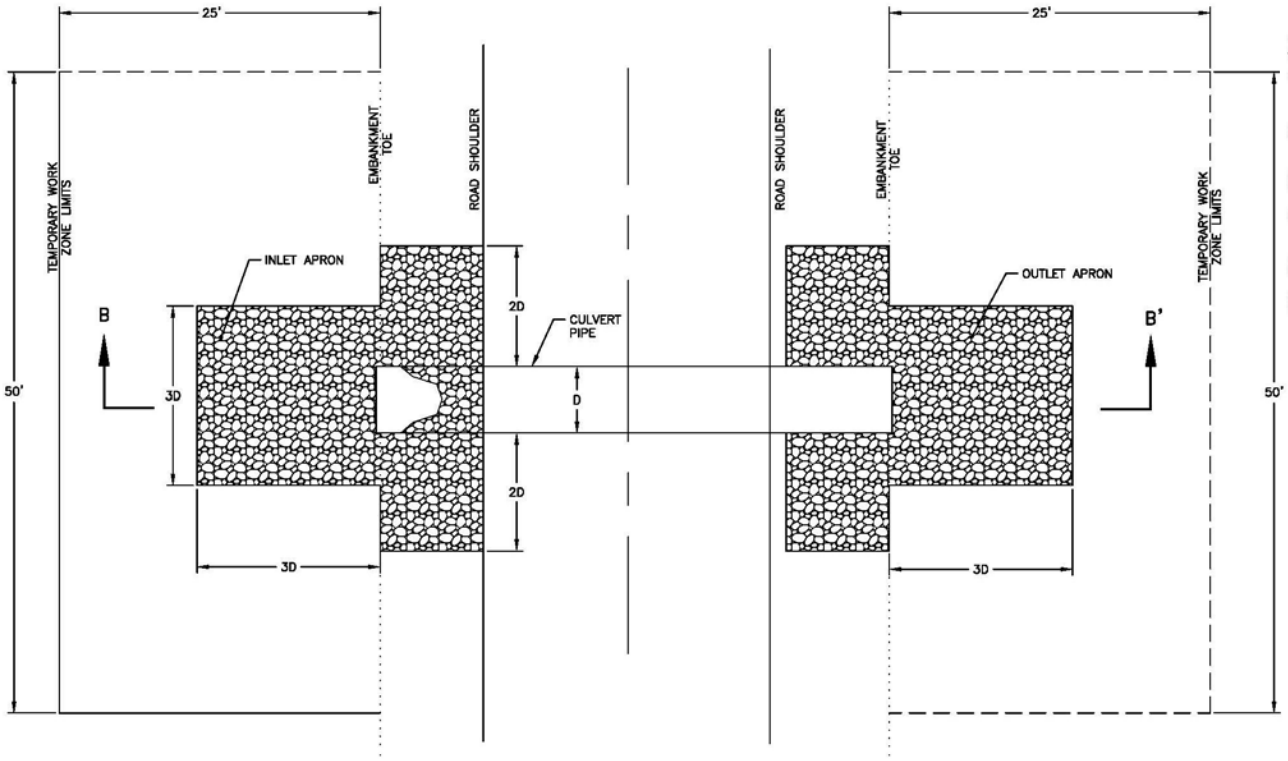


NOTE:

1. DIMENSIONS VARY AND MAY BE MODIFIED TO INCREASE OR DECREASE CUT VOLUME WITHIN UPLAND AREAS.
2. DITCH WIDTH VARIES BETWEEN 0 TO 10'. BACKSLOPES WILL GENERALLY BE 4:1 OR SHALLOWER, EXCEPT IN UPLAND AREAS.
** 3. TEMPORARY WORK ZONE EXTENDS 10' BEYOND TOE OF ROAD. THIS AREA WILL BE FOR TEMPORARY EQUIPMENT ACCESS AND PROJECT ACTIVITIES.
4. VEGETATIVE BUFFER EXTENDS OUTWARD 25' FROM THE TEMPORARY WORK ZONE. THIS AREA WILL BE USED DURING CONSTRUCTION FOR SERVE AS A NATURAL VEGETATIVE SCREEN.

TYPICAL SECTION E
NTS
NEW ROAD CUT

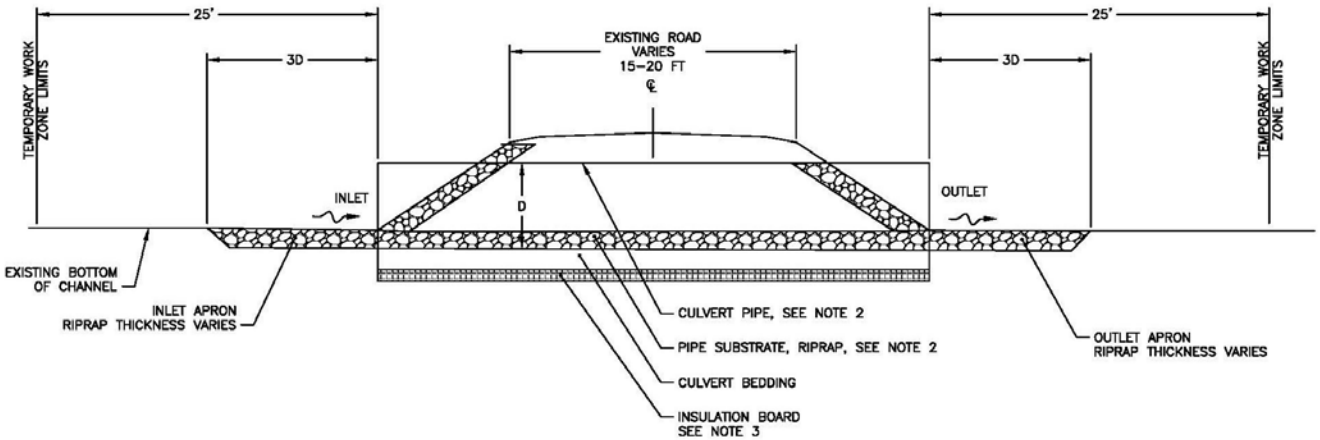
	STATE OF ALASKA Department of Transportation and Public Facilities 2301 Peger Road Fairbanks, AK 99709	Date: 8/10/2022	Figure 56
		New Road - Typical section E	



NOTES:

1. THIS TYPICAL SECTION IS FOR CONVEYANCE STRUCTURES NOT INTENDED FOR FISH PASSAGE. LOCATIONS AND SIZE VARY.
2. CULVERT INVERTS ARE DEPRESSED BELOW THE BOTTOM OF THE EXISTING CHANNEL, AND FILLED WITH RIPRAP SUBSTRATE PASSAGE. THICKNESS VARIES.
3. INSULATION BOARD TO BE USED IN AREAS OF PERMAFROST.
4. INLET, OUTLET, AND FORESLOPE RIPRAP TO BE INSTALLED IN AREAS WHERE EROSION AT CULVERT INVERTS IS A CONCERN. DIMENSIONS ARE APPROXIMATE.
5. SEE STATION F61 FOR CULVERT LOCATION.
6. FINAL LOCATION(S) OF FISH PASSAGE CULVERTS TO BE COORDINATED WITH ADF&G

TYPICAL CULVERT APRON DETAIL
NOT TO SCALE



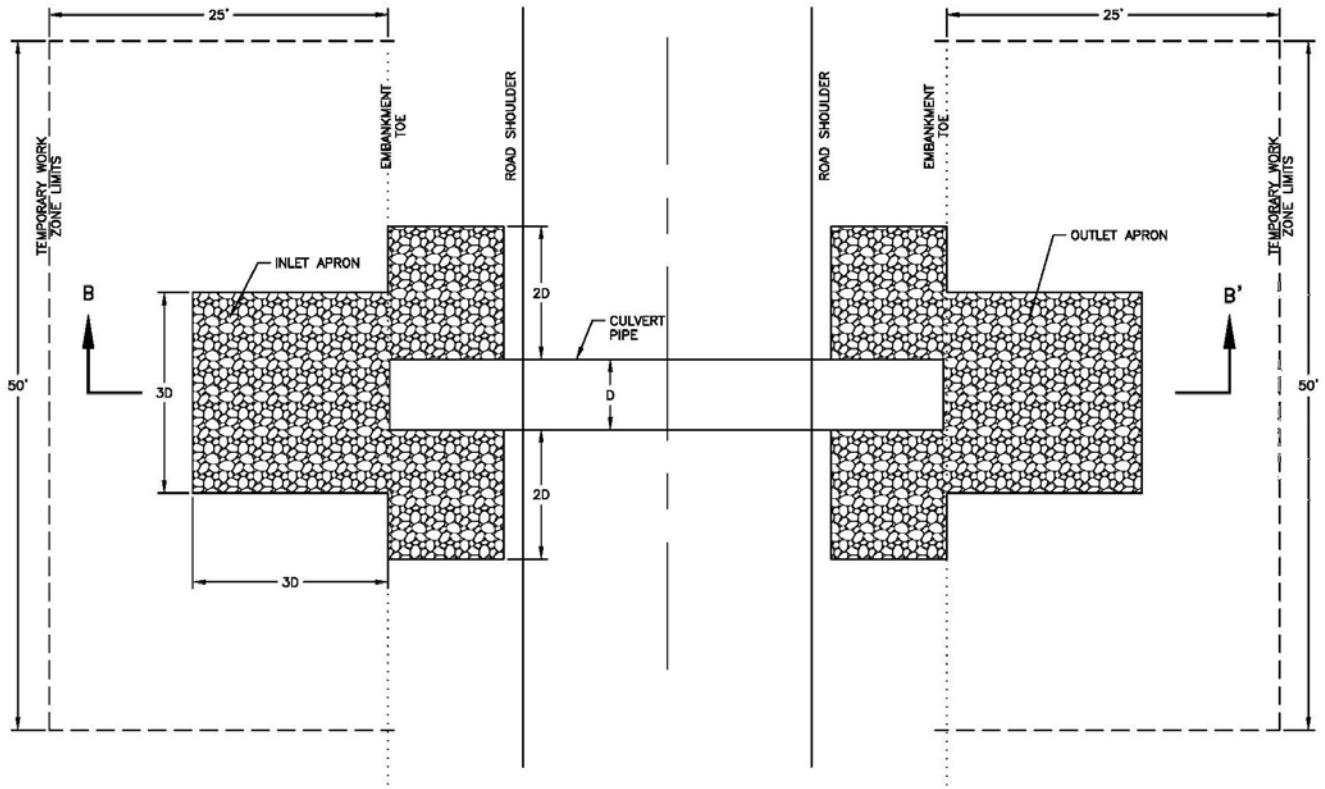
SECTION B–B'
NOT TO SCALE

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

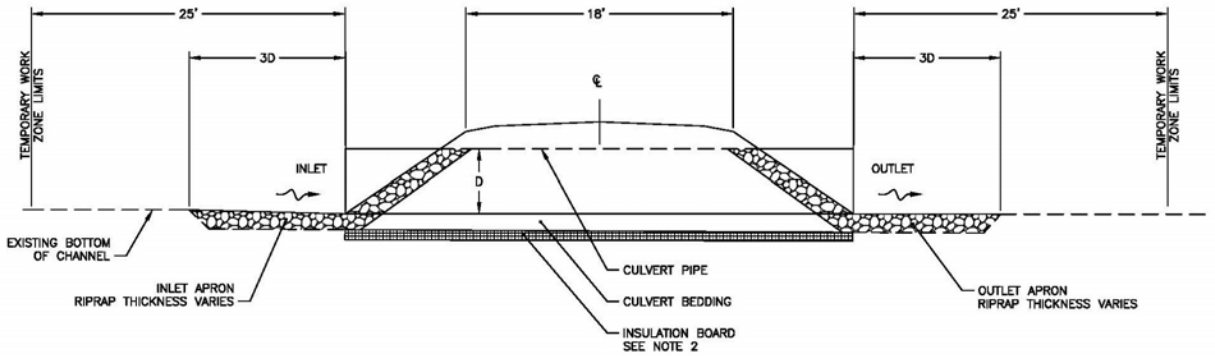
Date: 8/4/2022

Figure 57

Fish passage Culvert Details



TYPICAL CULVERT APRON DETAIL
NOT TO SCALE



SECTION B–B'
NOT TO SCALE

NOTES:

1. THIS TYPICAL SECTION IS FOR CONVEYANCE STRUCTURES NOT INTENDED FOR FISH PASSAGE. LOCATIONS AND SIZE VARY.
2. INSULATION BOARD TO BE USED IN AREAS OF PERMAFROST.
3. INLET, OUTLET, AND FORESLOPE RIPRAP TO BE INSTALLED IN AREAS WHERE EROSION AT CULVERT INVERTS IS A CONCERN. DIMENSIONS ARE APPROXIMATE.
4. FOR ENHANCED HYDRAULIC DESIGN CULVERTS, INVERTS TO BE RECESSED BELOW EXISTING BOTTOM OF CHANNEL TO PROMOTE FISH PASSAGE.
5. SEE SHEET F60–61 FOR CULVERT LOCATION(S).

STATE OF ALASKA
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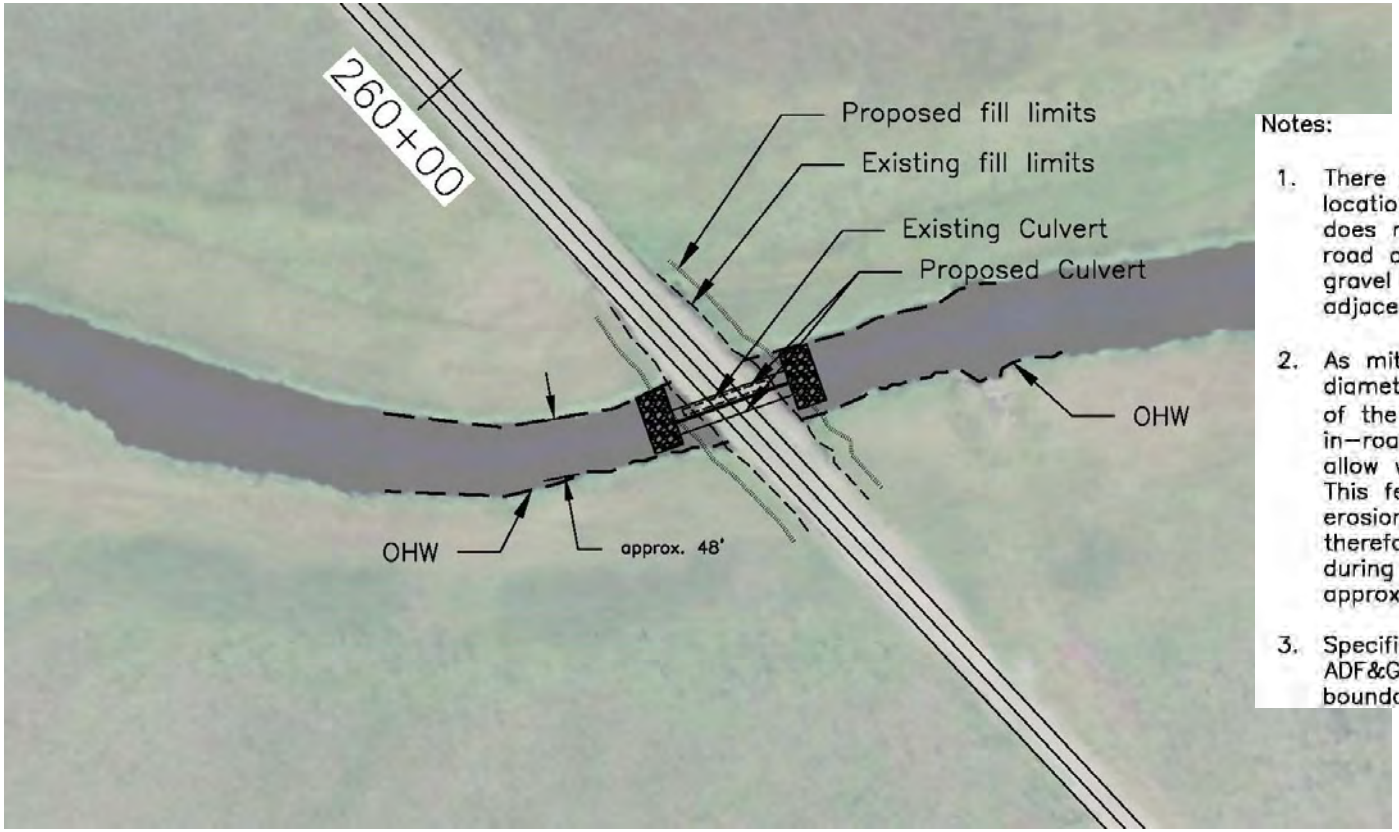
Date: 7/28/2022

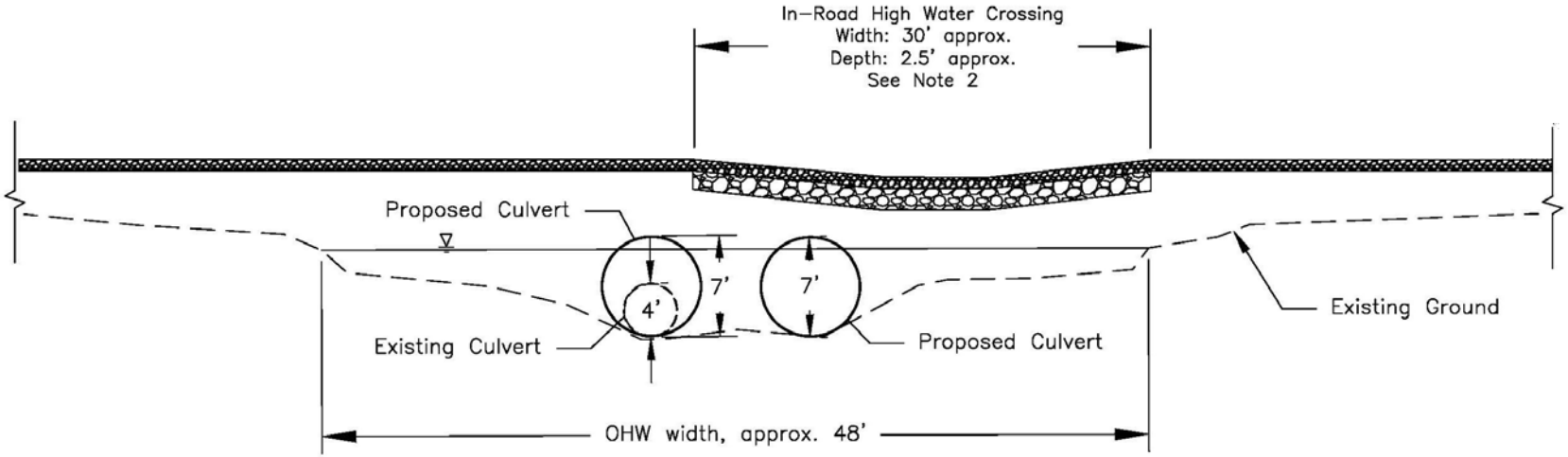
Figure 58

Non-Fish Passage Culvert Details



Notes:

1. There is an existing 4' diameter culvert at the location as shown. During flood stages, this culvert does not adequately convey the water across the road and the water overtops the road, which causes gravel from the road embankment to erode into the adjacent wetlands.
2. As mitigation, this project will construct two 7' diameter culverts, one adjacent to and one in place of the existing 4' culvert. In addition, an armored in-road high water crossing will be constructed to allow water to overtop the road during flood stages. This feature will be armored with rock to prevent erosion of the road during flood stages, and therefore mitigate impacts to wetlands that occurs during flood events. Dimensions noted are approximate.
3. Specific details of the design will be coordinated with ADF&G, but will remain within the wetland impact boundaries shown here.



STATE OF ALASKA
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Date: 8/8/2022

Figure 59

In-Road High Water Culvert detail

EXISTING CULVERT			
LOCATION	LENGTH (FT)	DIAMETER (IN)	REPLACE
20+42.64	UNKNOWN	24	NO
30+26.70	UNKNOWN	24	NO
89+27.29	UNKNOWN	24	NO
94+94.62	UNKNOWN	24	NO
171+09.65	UNKNOWN	24	NO
180+15.98	UNKNOWN	24	NO
214+27.93	UNKNOWN	24	NO
256+42.49	70	36	YES
291+86.03	UNKNOWN	24	NO
316+98.39	UNKNOWN	24	NO
350+04.40	UNKNOWN	24	NO
370+11.21	UNKNOWN	24	NO
377+16.18	UNKNOWN	24	NO
398+20.89	UNKNOWN	24	NO
423+43.51	UNKNOWN	24	NO
455+06.61	UNKNOWN	24	NO
463+87.54	UNKNOWN	24	NO
475+83.87	UNKNOWN	24	NO
498+82.76	60	24	NO
512+36.51	80	24	NO
538+86.41	50	24	NO
553+76.28	90	24	NO
563+85.97	90	24	NO
572+15.52	60	24	NO
579+34.38	60	24	NO
590+30.33	60	24	NO
602+35.87	70	24	NO
611+15.58	70	24	NO
624+25.62	70	24	NO
635+86.01	100	24	NO

NOTE:
DATA COLLECTED BY FIELD MAP ON SITE VISIT. CULVERT LOCATION IS APPROX. STATION ON THE ALIGNMENT. SOME DATA LENGTH IS FROM AS-BUILT.

PROPOSED NEW CULVERT AT EXISTING ROAD
PIPE LOCATION
94+77.56
146+46.23
148+32.93
180+83.89
198+40.14
236+88.37
241+78.04
242+88..93
** 256+29.22
257+84.98

PROPOSED NEW CULVERT AT NEW ROAD CONSTRUCTION
PIPE LOCATION
652+00
660+00
714+39.78
716+50
723+28.19
730+20.93
734+37.81
755+20
756+50
772+00
802+50
806+00
820+00
837+75.29
899+00
901+00
907+50
917+00
1036+00
1101+50
1140+00
1139+00
1168+98.45
1185+00
1225+00
1290+00
1355+00
1402+00
1411+00
1451+50
1456+00
1469+00
1478+00

PROPOSED NEW CULVERT AT ALTERNATIVE #2 (PREFERRED)
PIPE LOCATION
15+50
25+50
43+00
60+00
100+00
116+50
182+00
164+50
155+00
125+00

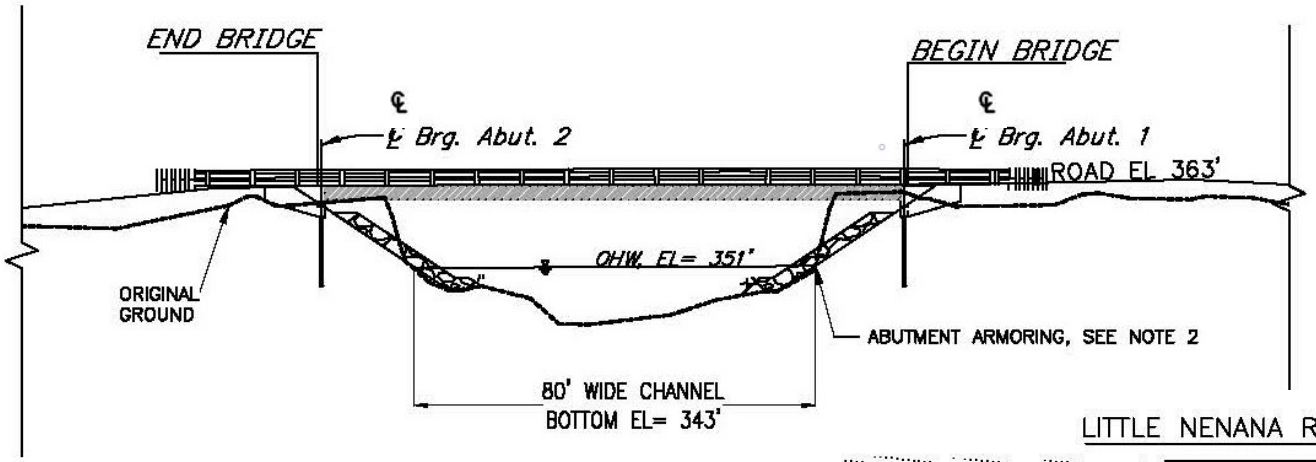
NOTE:

1. DATA COLLECTED BY FIELD MAP ON SITE VISIT. CULVERT LOCATION IS APPROX. STATION ON THE ALIGNMENT. CULVERTS MAY REMOVE FROM LIST IN THE FUTURE DECISION.
2. CULVERT SIZE AND LOCATIONS ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

** 3. FISH PASSAGE PLEASE SEE F57 FOR MORE DETAILS.

LITTLE NENANA RIVER BRIDGE PROFILE VIEW

NTS



BRIDGE PROFILE DETAIL

NOTE:

1. APPROXIMATELY 130' SINGLE SPAN BRIDGE TO BE CONSTRUCTED OVER APPROXIMATELY 80' WIDE LITTLE NENANA RIVER, CENTERED OVER THE RIVER.
2. BRIDGE ABUTMENTS & FOUNDATION TO CONSIST OF SLOPED EARTHEN EMBANKMENT ARMORED WITH ROCK, AND BE DESIGNED TO SPAN ENTIRE RIVER CHANNEL AT ORDINARY HIGH WATER (OHW).
3. LOCATION AND DIMENSIONS OF ROCK ARMORING ALONG ABUTMENTS ARE APPROXIMATE, AND WILL BE DESIGNED TO CLOSELY MAINTAIN NATURAL CHANNEL DIMENSIONS TO THE FURTHEST EXTENT PRACTICABLE.
4. ADJACENT UPLAND AREAS MAY BE UTILIZED FOR TEMPORARY EQUIPMENT ACCESS TO SUPPORT BRIDGE ERECTION.

Little Nenana River Bridge		
Area of fill below OHW	0.095	Acre
Volume of fill below OHW	598.000	CY

LITTLE NENANA RIVER BRIDGE PLAN VIEW

NTS

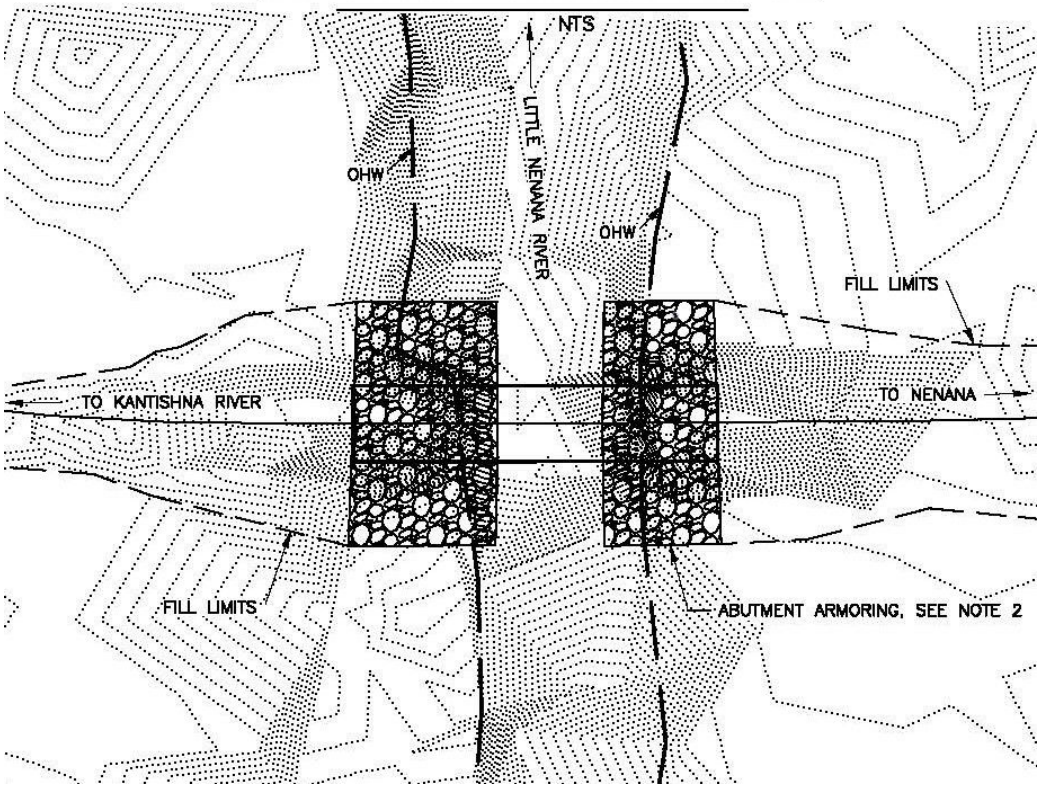


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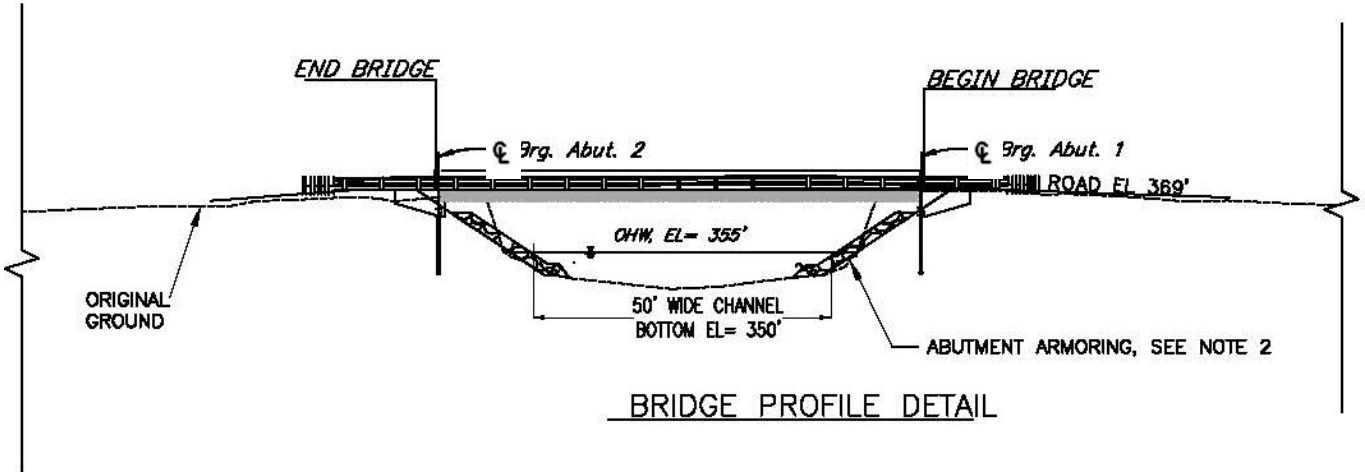
Figure 62

Little Nenana River Bridge Typical Section

EAST MIDDLE RIVER BRIDGE PROFILE VIEW

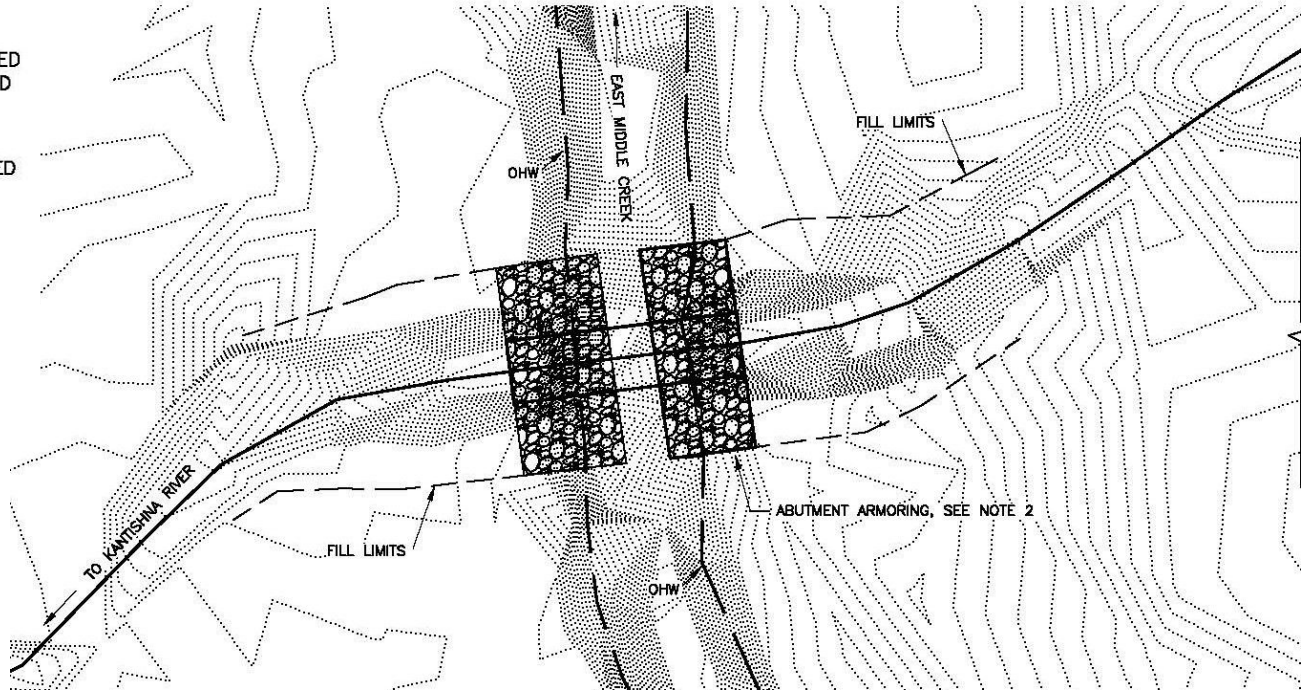
NTS



BRIDGE PROFILE DETAIL

EAST MIDDLE RIVER BRIDGE PLAN VIEW

NTS



NOTE:

1. APPROXIMATELY 100' SINGLE SPAN BRIDGE TO BE CONSTRUCTED OVER APPROXIMATELY 50' WIDE EAST MIDDLE CREEK, CENTERED OVER THE CREEK.
2. BRIDGE ABUTMENTS & FOUNDATION TO CONSIST OF SLOPED EARTHEN EMBANKMENT ARMORED WITH ROCK, AND BE DESIGNED TO SPAN ENTIRE RIVER CHANNEL AT ORDINARY HIGH WATER (OHW).
3. LOCATION AND DIMENSIONS OF ROCK ARMORING ALONG ABUTMENTS ARE APPROXIMATE, AND WILL BE DESIGNED TO CLOSELY MAINTAIN NATURAL CHANNEL DIMENSIONS TO THE FURTHEST EXTENT PRACTICABLE.
4. ADJACENT UPLAND AREAS MAY BE UTILIZED FOR TEMPORARY EQUIPMENT ACCESS TO SUPPORT BRIDGE ERECTION.

East Middle Creek Bridge		
Area of fill below OHW	0.100	Acre
Volume of fill below OHW	628.333	CY

STATE OF ALASKA
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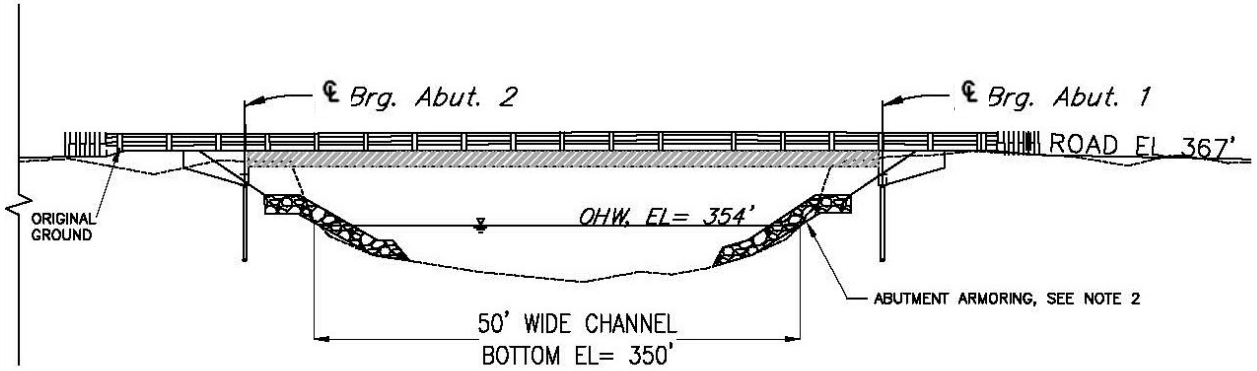
Figure 63

East Middle River bridge Typical Section

WEST MIDDLE RIVER BRIDGE PROFILE VIEW
NTS



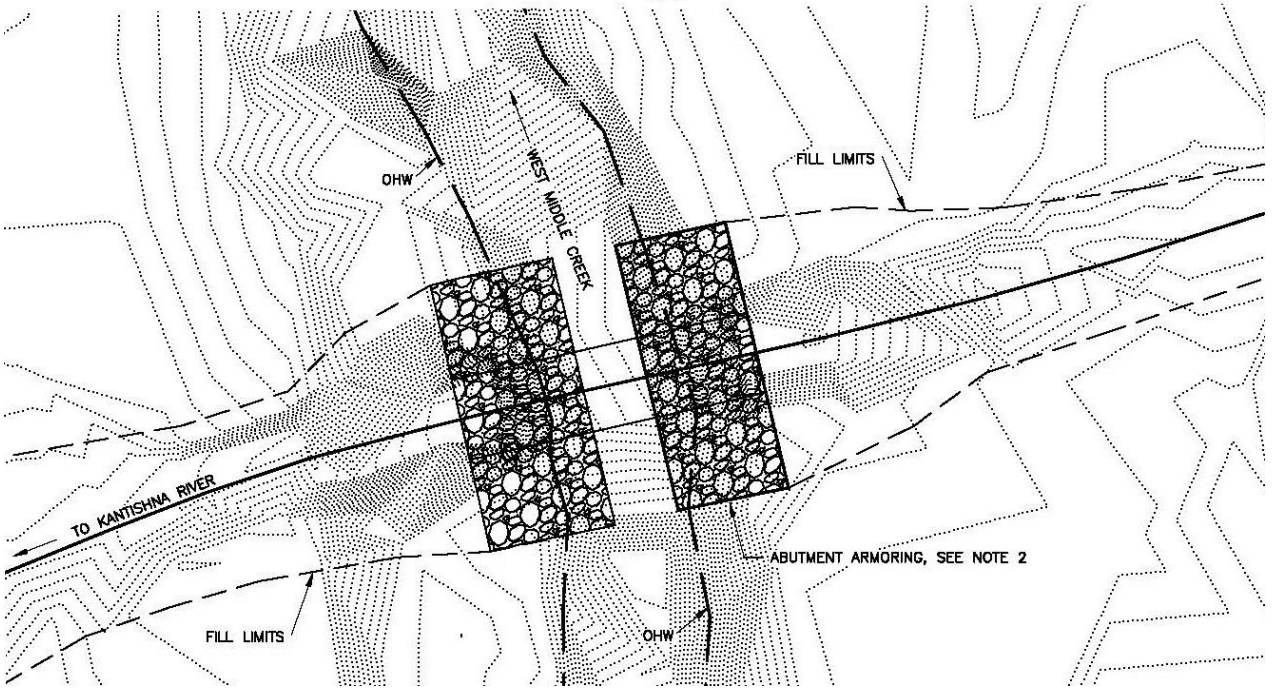
BRIDGE PROFILE DETAIL

NOTE:

1. APPROXIMATELY 100' SINGLE SPAN BRIDGE TO BE CONSTRUCTED OVER APPROXIMATELY 50' WIDE EAST MIDDLE CREEK, CENTERED OVER THE CREEK.
2. BRIDGE ABUTMENTS & FOUNDATION TO CONSIST OF SLOPED EARTHEN EMBANKMENT ARMORED WITH ROCK, AND BE DESIGNED TO SPAN ENTIRE RIVER CHANNEL AT ORDINARY HIGH WATER (OHW).
3. LOCATION AND DIMENSIONS OF ROCK ARMORING ALONG ABUTMENTS ARE APPROXIMATE, AND WILL BE DESIGNED TO CLOSELY MAINTAIN NATURAL CHANNEL DIMENSIONS TO THE FURTHEST EXTENT PRACTICABLE.
4. ADJACENT UPLAND AREAS MAY BE UTILIZED FOR TEMPORARY EQUIPMENT ACCESS TO SUPPORT BRIDGE ERECTION.

West Middle Creek Bridge		
Area of fill below OHW	0.096	Acre
Volume of fill below OHW	606.667	CY

WEST MIDDLE RIVER BRIDGE PLAN VIEW
NTS



Document Path: H:\Projects\Communities\Nenana\Totchaket\GIS\DSR\00657_DSR.aprx

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Figure 64

West Middle River bridge Typical Section