US Army Corps of Engineers
Alaska District

Public Notice of Application for Permit

FAIRBANKS FIELD OFFICE
Regulatory Division (1145)
CEPOA-RD
1046 Marks Road
Fort Wainwright, Alaska 99703

PUBLIC NOTICE DATE:	**June 5, 2023**
EXPIRATION DATE:	**July 5, 2023**
REFERENCE NUMBER:	**POA-2022-00511**
WATERWAY:	**Bonanza Creek**

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 Amanda Locken at (907) 347-6148, toll free from within Alaska at (800) 478-2712, or by email at Amanda.N.Locken@usace.army.mil if further information is desired concerning this public notice.

APPLICANT: Alaska Department of Transportation and Public Facilities, Division of Design and Engineering Services, Point of Contact William Kulash, 2301 Peger Road, MS-2550-07, Fairbanks, Alaska 99709

LOCATION: The project extends from mileposts (MP) 120 to MP 135 of the Dalton Highway and includes the Bonanza Creek Material Site at MP 124.5 and the Coldfoot Quarry at MP 172.6. The project midpoint is at Latitude 66.698101º N., 150.664202º W. The project endpoints are at Latitude 66.601134º N., 150.718413º W. and Latitude 66.780075º N, Longitude 150.687711º W. The nearest settlement is Coldfoot, Alaska.

Table 1: Project Location

Project Location	Latitude	Longitude	Station	8-digit Hydrologic Unit Code Watershed (USGS 2020)
Beginning of Project (MP 120)	66.601134	-150.718413	684+00	South Fork Koyukuk River (19090102)
Middle of Project (MP 127.5)	66.698101	-150.664202	1076+00	South Fork Koyukuk River (19090102)
Bonanza Creek Material Site (MP 124.5)	66.659152	-150.670106	924+50	South Fork Koyukuk River (19090102)
End of Project (MP 135)	66.780075	-150.687711	1467+99	South Fork Koyukuk River (19090102)
Coldfoot Quarry (MP 172.6)	67.226320	-150.204368	N/A	Upper Koyukuk River (19090101)

Table 2: USGS quadrangles

USGS Quadrangle	Township	Range	Sections	Meridian
Bettles C-2	21N	14W	6, 7, 18, 19, 30	Fairbanks
	22N	14W	7, 18, 19, 30, 31	Fairbanks
	21N	15W	25, 36	Fairbanks
	22N	15W	12, 13	Fairbanks
Bettles D-2	22N	14W	6	Fairbanks
	23N	14W	31	Fairbanks
	22N	15W	1	Fairbanks
	23N	15W	36	Fairbanks
Wiseman A-1	28N	12W	28	Fairbanks

PURPOSE: The applicant's stated purpose is to improve safety of the Dalton Highway between MP 120 and MP 135 using current design standards. The project area requires frequent major maintenance operations due to design and safety issues such as narrow roadway, lack of shoulders, substandard embankment material, thawing permafrost, substandard horizontal and vertical geometric features, lack of pullouts for chain-up areas, and major drainage issues. In some areas, where it is not pragmatic to meet current design standards, design exceptions and waivers have been approved by the Federal Highway Administration (FHWA).

PROPOSED WORK: The proposed repairs and upgrades consist of 55.38 acres of permanent impacts from the discharge of approximately 729,075 cubic yards of fill and 16.72 acres of temporary impacts from the discharge of 136,707 cubic yards of fill into waters of the U.S. (WOTUS), including wetlands, consisting of the components as described in Tables 3 and 4. The Alaska Department of Transportation and Public Facilities (DOT&PF) Northern Region is seeking to improve safety of the Dalton Highway between MP 120–135 using current design standards. This Dalton Highway MP 120–135 Reconstruction Project (project) includes structural embankment replacement, realignments, widening, and resurfacing of the15-mile segment. This is the first phase of a multi-phase project along the Dalton Highway between MP 109-144.

All work would be performed in accordance with the enclosed plan (sheets 1-39), dated May 11, 2023. Additionally, the proposed project would include the following which may impact WOTUS:

Table 3: Discharges into Wetlands and Other WOTUS

Project Feature	Permanent Impact to WOTUS (acres)	Excavation in WOTUS (cubic yards)	Fill in WOTUS (cubic yards)	Temporary Impact to WOTUS (acres)
Roadway	22.64	26,000	136,000	14.95
Stream Crossings	0.12	3,075	707	1.77
Bonanza Creek Material Site	32.62*	700,000	—	—
Expansion of Coldfoot Quarry	—	—	—	—
Project Totals	55.38	729,075	136,707	16.72

*A large portion of the Bonanza Creek Material Site impact area will be converted to a pond with an unconsolidated bottom

Table 4: Project Components

Project Component
Widen the road from 11-foot lanes and variable shoulders to 12-foot lanes and 6-foot shoulders.
Replace the structural section of roadway embankment to mitigate issues resulting from the existing frost-susceptible and moisture-sensitive embankment materials.
Raise the road grade where needed to minimize the effects of aufeis and mitigate snow drifting. Grade raise in some areas is also required to keep the roadway operational while the embankment material is being replaced (minimum fill of 2 feet over the original ground has been determined as necessary to allow the highway traffic to pass through the corridor during construction).

Realign sharp curves to bring features to current standards or improve the current design. There are four realignments due to curve flattening with the average length of the realignments approximately 1/3 mile.
Improve drainage by installing new equalization culverts where needed and by replacing all existing culverts. Temporary diversions and/or half-width construction may be necessary for larger-diameter or deep culverts.
Construct thermal berms to separate thaw-induced settling from the structural component of the embankment.
Install fish passage culverts at Pung's Creek Crossing, South Fork Little Nasty Creek, and Little Nasty Creek.
Realign portions of the channels of South Fork Little Nasty Creek and Little Nasty Creek.
Develop a new material site (Bonanza Creek Material Site) on land managed by the Bureau of Land Management (BLM) at MP 124.5 to provide suitable embankment materials.
Expand an existing material site (Coldfoot Quarry) managed by BLM at MP 172.6 to provide armor rock, riprap, and air convection embankment (ACE) for the realignment that crosses undisturbed permafrost.
Construct pullouts for vehicles to chain up along the project corridor.
Require the relocation of buried utilities. The utility companies would secure necessary permits to perform the relocation work independently from Alaska Department of Transportation and Public Facilities (DOT&PF) and this project.

ADDITIONAL INFORMATION: See Table 5 below.

Table 5: Summary of Permits and Authorizations

Permits and Authorizations	**Agency**
Clean Water Act, Section 404	U.S. Army Corps of Engineers (Corps) with oversight by U.S. EPA
Magnuson-Stevens Act EFH Consultation	National Marine Fisheries Service (NMFS)
National Historic Preservation Act Section 106 Consultation	State Historic Preservation Office
Clean Water Act 401 Certification	State of Alaska Department of Environmental Conservation
Title 16 Fish Habitat Permit	Alaska Department of Fish and Game (ADF&G)
Right-of-Way, Land Use Permits, Highway Easement Deeds, and/or Free Use Permits	BLM
National Environmental Policy Act Review	DOT&PF under the authority of 23 U.S.C. 327 and memorandum of understanding between FHWA and DOT&PF,dated November 3, 2017.

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

a. Avoidance and Minimization: The applicant has stated that complete avoidance of wetlands is not practicable as there is no reasonable, entirely upland alternative (location and/or alignment) along the existing highway route. The impacts to riverine and lacustrine waters of the U.S. have been avoided where possible. See Table 6 for avoidance and minimization measures proposed by the applicant.

Table 6: Avoidance and Minimization measures

Avoidance and Minimization Measures
The majority of the reconstruction will occur within the existing footprint along the current alignment. Of the 15.03 miles of reconstruction, 92 percent (i.e., 13.82 miles) of the reconstructed road uses the current road embankment. All impacted WOTUS are in close proximity to existing disturbance. The majority of impacted WOTUS are due to widening of the roadway embankment to provide a consistent lane and shoulder width.
Realignment of the road onto undisturbed and wetland areas occurs only when necessary for safety. When safety issues can be appropriately mitigated (e.g., signage, addition of chain up areas), design exceptions that minimize impacts to WOTUS have been requested by project engineers and received from DOT&PF's regional Preconstruction Engineer. Examples include: a. Between stations 729+29 and 739+30, a design exception was approved for maintaining a profile grade exceeding design standards. Adhering to design standards would have raised the embankment 80 feet, thereby expanding the required toe of fill outward into WOTUS or would have required realignment that would construct 5 miles of new road over undisturbed ground. b. Between stations 936+42 and 940+75, a design exception was approved for a curve with a design speed of 40 miles per hour on this 50 mile per hour roadway. The existing embankment is surrounded by wetlands on both sides. Realignment of the highway to flatten this sharp curve would impact wetlands and a pond on the west side of the road. At Gobbler's Knob (Station 1154+14-1417+17), multiple design exceptions were approved to maintain or only partially improve the existing profile grades and horizontal curves. This approval prevented raising the embankment by 30 to 65 feet, which would have expanded the required toe of fill outward into WOTUS over 2 miles or would have required new construction of 30 miles of road on undisturbed land.
In areas of the project's proposed road realignments, the abandoned roadway embankment will be reclaimed based on the presence of adjacent WOTUS:
a. Where the abandoned realignment is adjacent to wetlands, the embankment material will be removed to approximately 1 foot below existing (surrounding) ground elevations. The area will then be re-sodded with topsoil and vegetative mat excavated from within the footprint of the new alignment. Approximately 6.8 acres of embankment will be removed, and the area will be revegetated.

b. Where the abandoned roadway realignment is adjacent to upland, the old roadway embankment will be obliterated, meaning that the asphalt will be removed and the surface will be scarified. For approximately 100 feet at the beginning and end of these sections, the abandoned highway embankment will be removed down to existing (surrounding) ground elevations and will be seeded to promote revegetation and inhibit erosion.
Existing drainage patterns will be maintained or enhanced wherever possible, including replacement of damaged or failing culverts with pipes of equal or larger size. To enhance hydraulic connectivity of wetlands, all culverts within the project will be replaced. Existing 24-inch drainage culverts through the Dalton Highway embankment will be replaced with 36-inch-diameter or larger culverts to ensure sufficient hydraulic capacity and improve hydrologic connectivity. Culvert replacement will help improve water quality by reducing scour and erosion, will reduce flooding, and will provide improved habitat connectivity, resulting in some amount of ecological uplift for existing streams and wetlands adjacent to the roadway.
At three fish streams (Pung's Crossing, South Fork Little Nasty Creek, and Little Nasty Creek), fish passage will be enhanced beyond the requirements from the ADF&G and DOT&PF Memorandum of Agreement for Implementing Safe Passage of Anadromous and Resident Fish While Maintaining and Improving State Transportation Infrastructure. The project will construct the following improvements:
a. At Pung's Crossing, the existing two 10-foot-diameter circular steel plate culverts will be replaced with a 19.5-foot-wide circular steel plate culvert designed to exceed ADF&G fish passage standards. The new crossing will improve the stream, which currently splits in order to pass through two culverts separated by 4-feet. The new large culvert will allow passage of the creek underneath the roadway as one stream, simulating the existing stream upstream and downstream of the roadway crossing. The single culvert will properly convey the stream without changing the stream characteristics. The new culvert will provide an opening that exceeds the requirements of the culvert based on the stream width observed almost immediately upstream and downstream of the culverts. Additionally, two 4-foot-diameter culverts will be constructed within the floodplain to alleviate ice damming.
b. At the South Fork Little Nasty Creek, the existing twin 4-foot-diameter circular corrugated steel culverts will be replaced with a 14-foot-wide pipe arch culvert designed to exceed ADF&G fish passage standards.
c. At Little Nasty Creek, the existing 10-foot-diameter circular steel plate culvert will be replaced with a 17-foot-wide pipe arch culvert designed to exceed ADF&G fish passage standards. Portions of the stream channel will be realigned to allow for a perpendicular stream crossing.
d. A small stream realignment will occur at the South Fork of Little Nasty Creek. The stream realignment will remove the stream from the toe of the roadway embankment where fill from the road is actively eroding into the channel. This change will further minimize risk of spills entering and unnaturally altering the stream.

e. Thermal berms have been reduced from the proposed 40-feet-wide to 10-15-feet-wide (i.e., the minimum needed to be effective) in order to reduce impacts to WOTUS.
f. The excavated portion of the Bonanza Creek Material Site will be converted into a pond due to infilling with groundwater. The majority of the WOTUS impact from the new Bonanza Creek Material Site will be conversion from vegetated wetlands to pond with unconsolidated bottom.
Staging areas will be located in uplands or previously disturbed areas.
The contractor will place fill material and riprap below ordinary high water during periods of low flow.
Project contract specifications include utilization of certified weed-free seed mixture. Seed containing prohibited noxious weeds will not be incorporated into the project.
The awarded contractor will be required to have an approved Stormwater Pollution Prevention Plan. The plan will clearly describe Best Management Practices (BMPs) required during construction to prevent erosion and runoff from entering aquatic habitats.
The awarded contractor is required to have an approved Spill Prevention, Control, and Countermeasure Plan (SPCC) prepared for this project. Standard spill-prevention measures will be implemented during construction. Spill clean-up equipment (e.g., oil absorbent pads) will be available on-site during construction.
Wetland water quality will be protected during construction through BMPs and appropriate erosion and sediment control measures (e.g., silt fences, 25-foot vegetative buffers) will be implemented on or at the perimeters of disturbed soil surfaces to minimize transport of sediment to WOTUS, and disturbed areas will be seeded with native perennial grasses.
Construction will minimize impacts to existing natural hydrology of WOTUS, including wetlands. Construction methods will be chosen to prevent the draining of wetlands.
All in-water work within will be isolated from flowing water. Work within standing water or emergent wetlands will be isolated using appropriate BMPs (e.g., silt curtains, cofferdams).
A 25-foot-wide vegetative buffer will be the preferred method of perimeter protection for protecting wetlands. Where a 25-foot vegetative buffer is not available, appropriate BMPs will be used.
All sediment control measures (e.g., silt curtains, certified weed-free straw wattles, and other structures) will be installed properly and maintained in a functioning manner where fill material and exposed soils might cause transport of sediment or turbidity beyond the immediate construction site.
In-water work at Little Nasty Creek and South Fork Little Nasty Creek will be limited to what is needed to shift the channel to accommodate the natural drainage patterns of the creek, remove the existing fish passage culverts, reestablish the stream bed, and place riprap armoring.
Roadway construction temporary wetland impacts will be limited within a 10-foot-wide work area. Work areas will be used for driving by construction equipment. Any incidental fill placed in the 10-foot work areas designated as wetlands will be removed, and those wetlands will be restored to original ground surface elevations.
Wetland and stream banks left with exposed soils as a result of construction will also be seeded with a native, perennial grass seed mixture to provide vegetation stabilization.

Initiation of final stabilization measures on disturbed areas will occur within seven calendar days of completing construction. Ground disturbances in these areas will be addressed by measures such as raking slopes, seeding, fertilizing, and mulching as well as the BMPs mentioned above. This will minimize erosion and sediment transport and help establish vegetative cover, thereby minimizing short-term and long-term impacts to adjacent downstream waters.
Construction of the primary realignment (Station 1040+00) will occur in winter to minimize disturbance and permafrost degradation.
Designing the replacement of three fish passage culverts following United States Fish and Wildlife Service (USFWS) guidelines to substantially increase aquatic resource functions over the existing culverts.
Maximizing the use of design exceptions to avoid significant realignments and impacts to undisturbed aquatic resource functions.
Restoring approximately 6.8 acres of disturbed area previously covered by roadway embankment.
Improving overall hydraulic connectivity between area aquatic resources by increasing the size of small stream and cross drainage culverts.

b. Compensatory Mitigation: The applicant is not proposing compensatory mitigation. The applicant's justification is that "The project falls within the South Fork Koyukuk River eight-digit hydrologic unit code (HUC 19090102) watershed and the Koyukuk River six-digit HUC (190901) watershed. The Koyukuk River watershed encompasses an area greater than 20,100,000 acres. Existing disturbance within the watershed is minimal and represented primarily by the Dalton Highway, infrastructure associated with Trans-Alaska Pipeline System, and few small towns or villages including Coldfoot, Wiseman, Huslia, Bettles, Anaktuvuk Pass, Hughes, and Allakaket. Disturbed or filled areas represent less than 6,000 acres, or approximately 0.03 percent of the watershed USFWS National Wetlands Inventory (NWI) mapping has been completed for approximately 2,200,000 acres, or roughly 11 percent of the watershed. Of the area mapped by NWI, roughly 50 percent has been mapped as wetlands or waterbodies. This demonstrates the enormous abundance of pristine aquatic resources in the watershed, relative to the project footprint; therefore, compensatory mitigation is not appropriate for the relatively insignificant areal extent of the project within the watershed. There are no mitigation banks or in-lieu fee agencies with service areas that cover the project's watershed; therefore, compensatory mitigation through these channels is not available. Permittee-responsible restoration or creation opportunities (if available) would likely face formidable challenges due to widespread continuous permafrost, and access would be difficult due to the remoteness of the region. The minimal private land availability and an overall lack of realistic compensatory mitigation options make compensatory mitigation not practicable to offset the minimal loss of functions on the overall landscape. Based on BLM Surface Management Agency land ownership records of the area (BLM 2022), BLM is the largest landowner within the larger watershed (32 percent), followed by USFWS (25 percent), the National Park Service (18 percent), and the State of Alaska (14 percent). Private land accounts for less than 0.01 percent of the Koyukuk River watershed.

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, ADOT&PF acting for the Federal Highway Administration, is responsible for compliance with the requirements of Section 106 of the National Historic Preservation Act. The Corps will review ADOT&PF'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 ADOT&PF's work or documentation.

ENDANGERED SPECIES: The project area is within mapped habitat know to be used by wood bison (Bison *bison athabascae)*. However, ESA Section 7 informal consultation with U.S. Fish & Wildlife Service was completed on May 30, 2023, with a finding that wood bison are listed as a non-essential experimental population under section 10(j) of the ESA. As the wood bison is managed by different provisions of the ESA, there is no need for consultation for this species under Section 7.

We are currently gathering information regarding this species and have yet to make a determination of effect. Should we find that the described activity may affect the species listed above, which does not have a designated critical habitat, we will follow the appropriate consultation procedures under section 7 of the Endangered Species Act of 1973 (87 Stat. 844). Any comments the U.S. Fish and Wildlife Service or the 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 (Magnuson-Stevens 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).

The project area is not within mapped EFH.

EFH is not present and would have no effect on EFH species.

We have determined the described activity would not adversely affect EFH in 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 Corps, 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 rights or resources. 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 Corps 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 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.

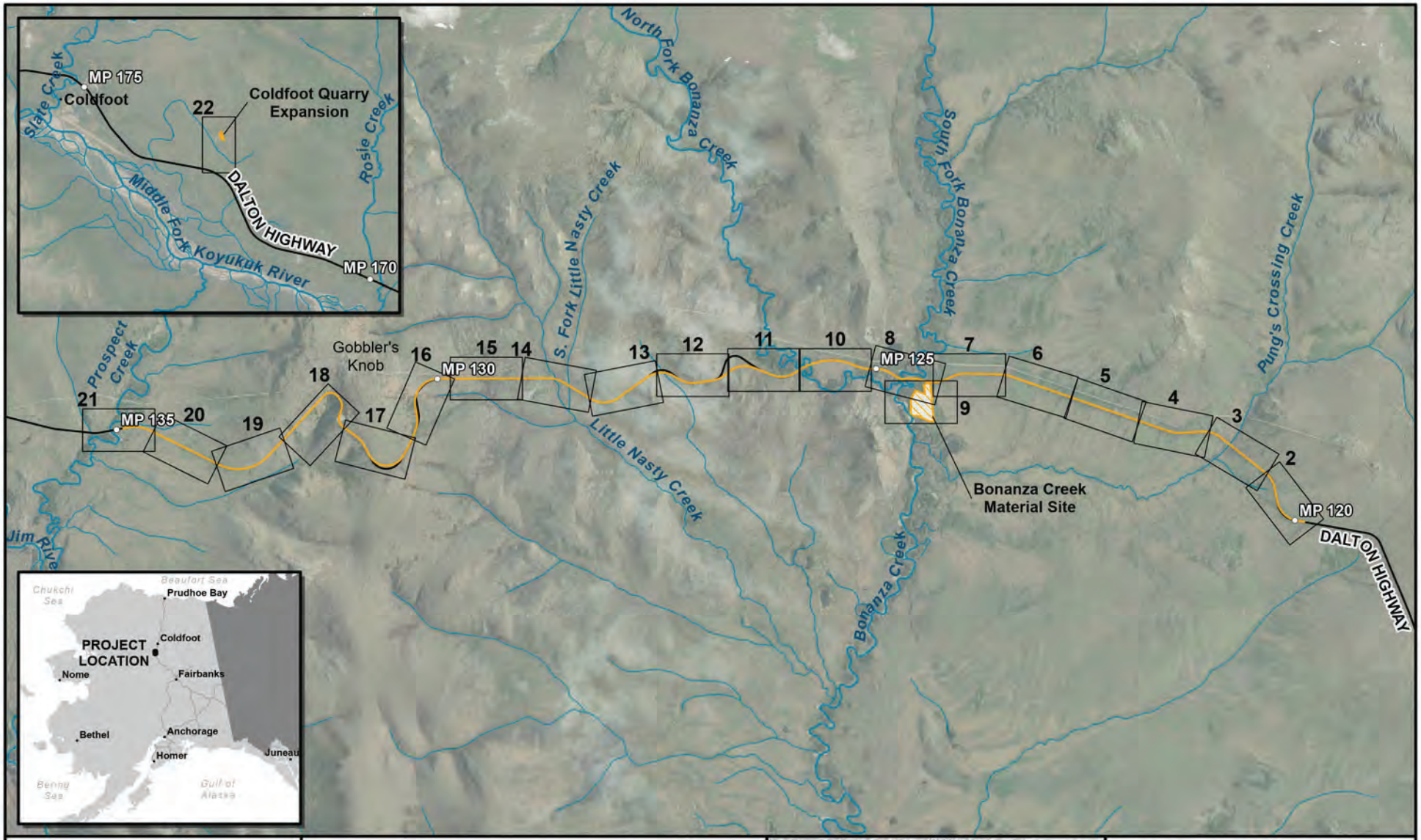
AUTHORITY: This permit will be issued or denied under the following authority:

(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 are enclosed with this public notice.

District Commander
U.S. Army, Corps

Enclosure



Dalton Highway MP120-135 Reconstruction

Vicinity Map

0 0.75 1.5 Miles

HORIZONTAL DATUM: NAD 83 AK State Plane Zone 4

- Milepost
- Project Alignment
- Material Site
- Dalton Highway
- Map Index
- Streams (NHD)

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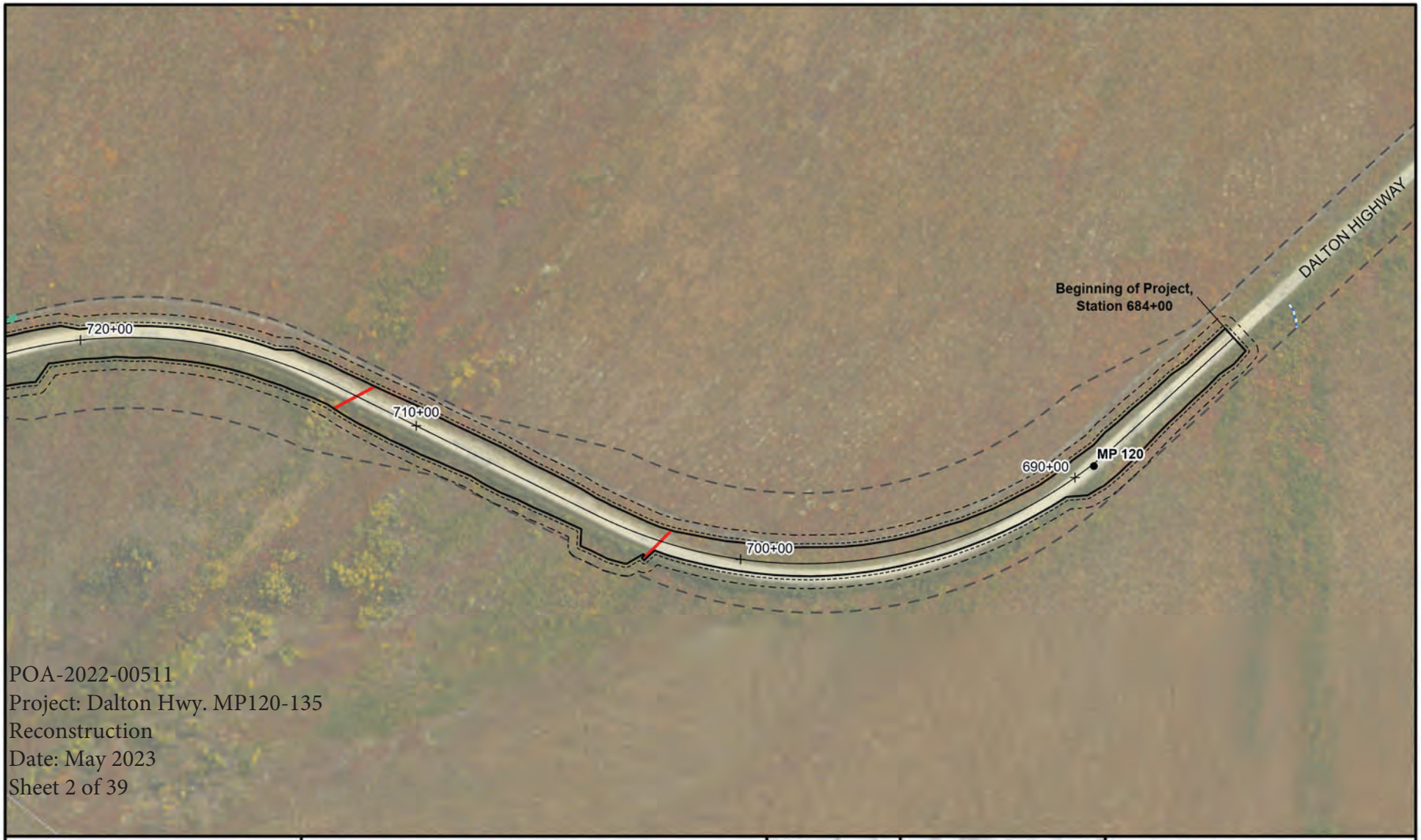
APPLICANT: Alaska Department of Transportation and Public Facilities



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Project: Dalton Hwy. MP120-135 Reconstruction
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Dalton Highway MP120-135 Reconstruction

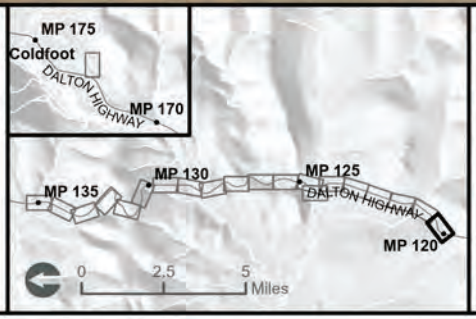
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

HORIZONTAL DATUM: NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Wetland Mapping Limits
- Palustrine Emergent Wetland
- R4SBC
- New Culvert



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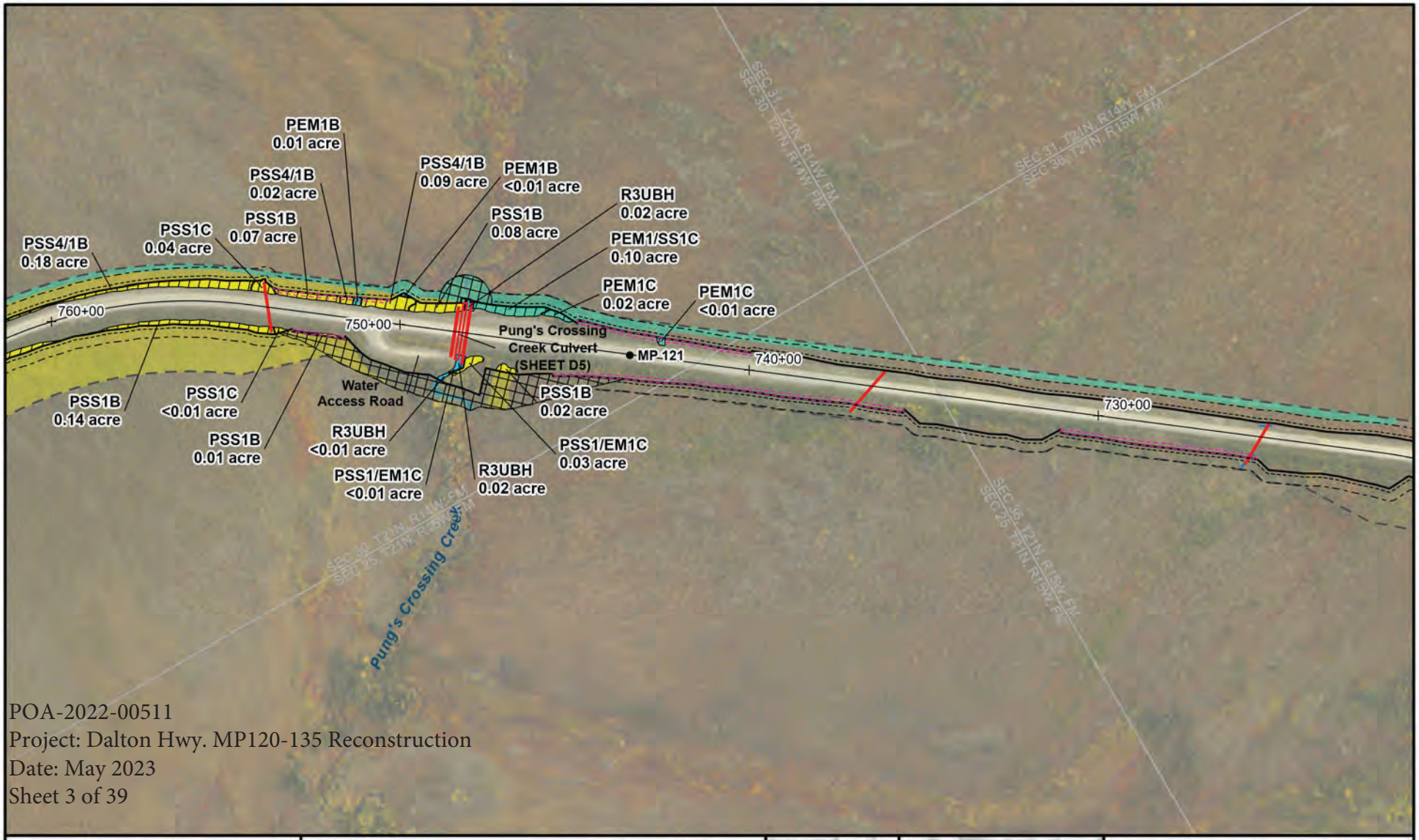

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Dalton Highway MP120-135 Reconstruction

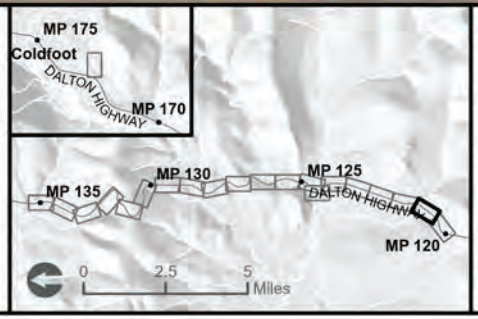
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0.94 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Temporary Construction Area
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- R3UBH
- New Culvert



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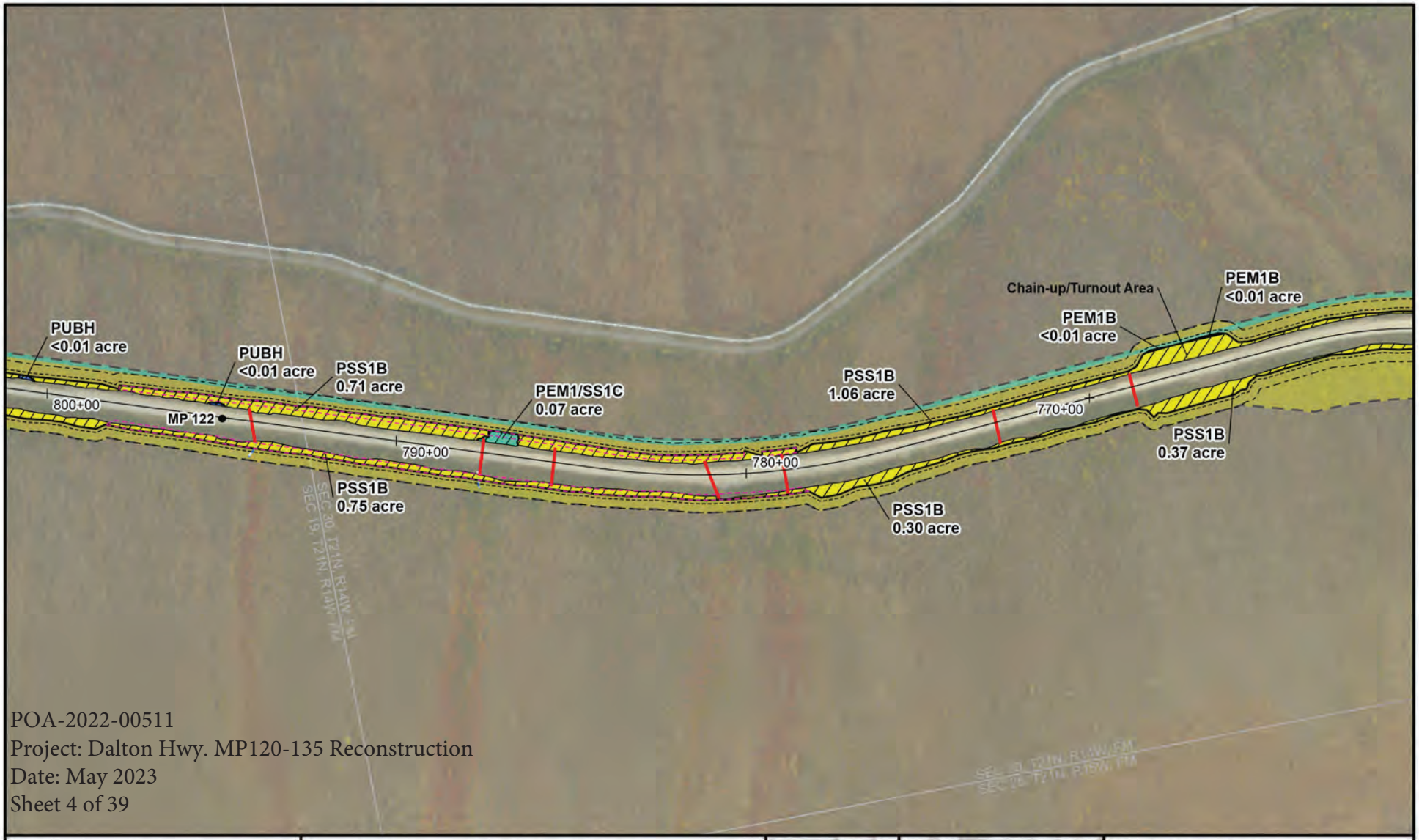

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Project: Dalton Hwy. MP120-135 Reconstruction
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Dalton Highway MP120-135 Reconstruction

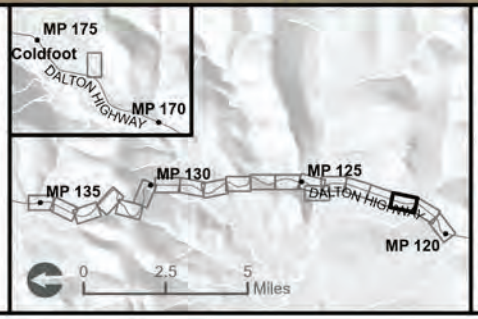
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 3.21 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- R4SBC
- New Culvert



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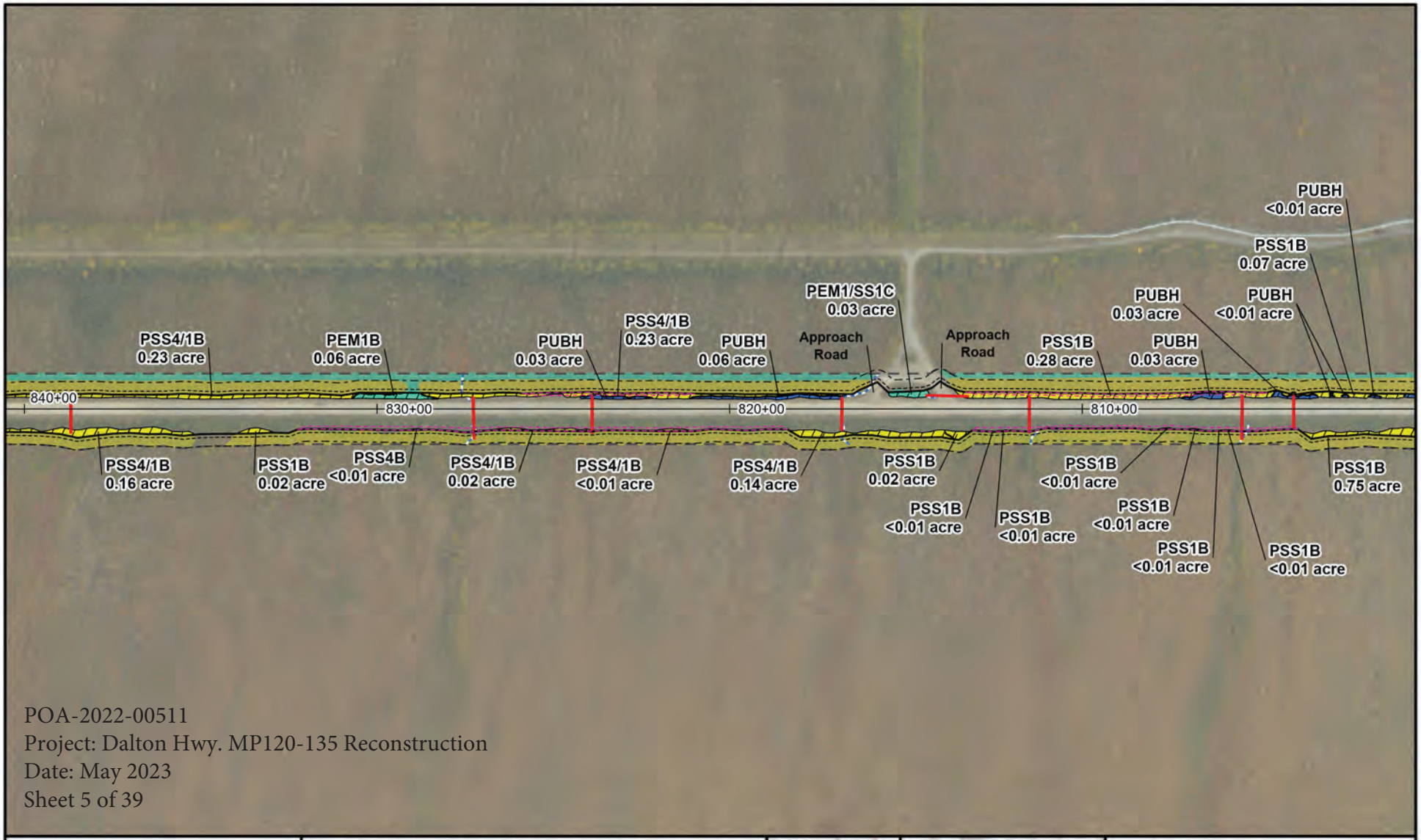

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Dalton Highway MP120-135 Reconstruction

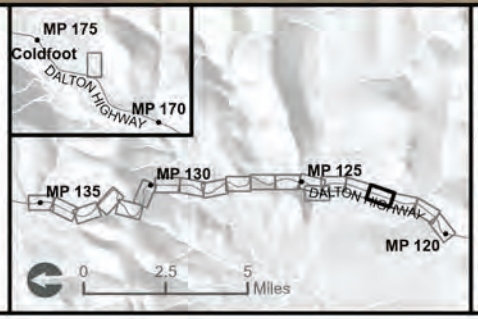
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 1.53 acre
Total Wetland and Waterbody Impact = 55.38 acre

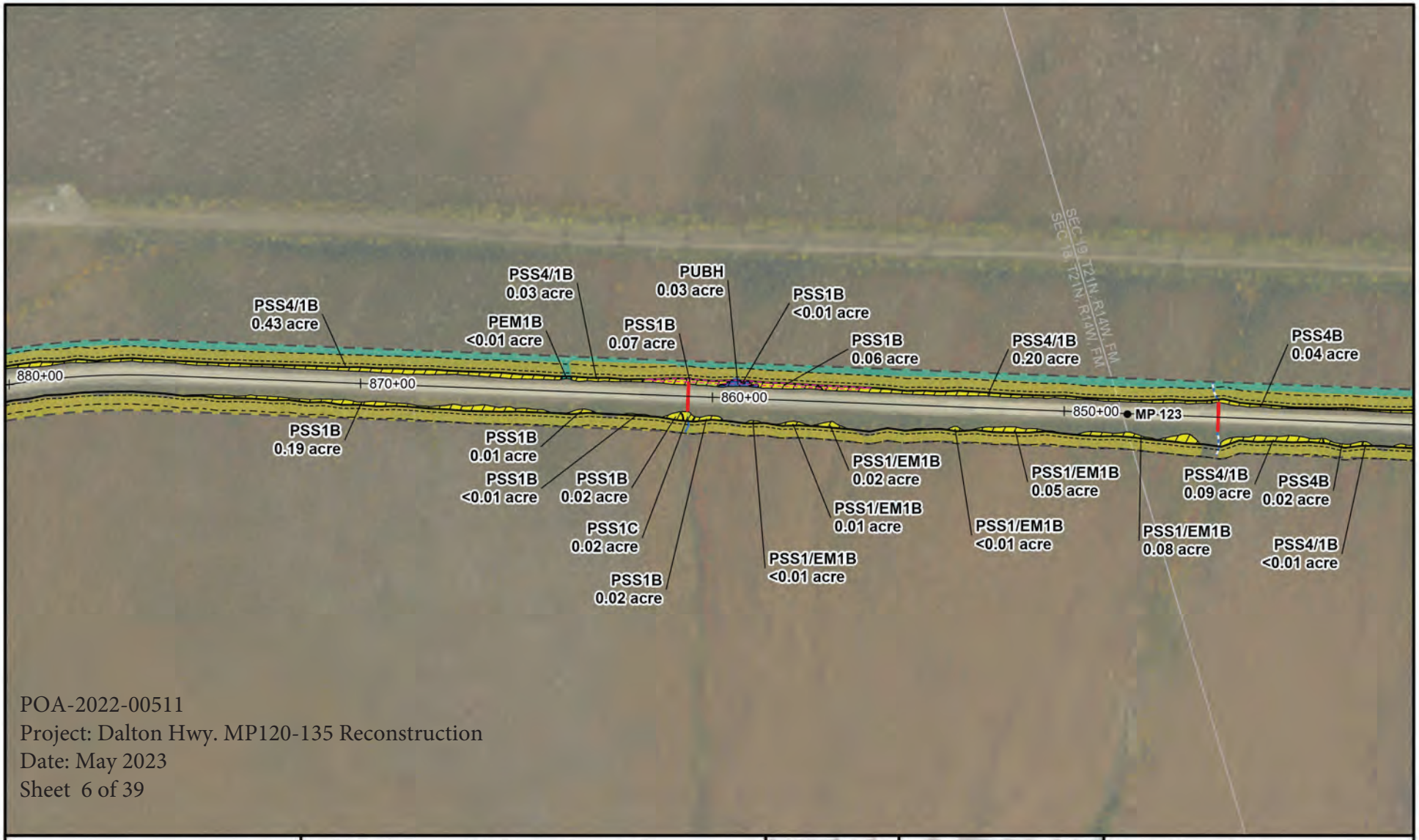
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- R3UBH
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

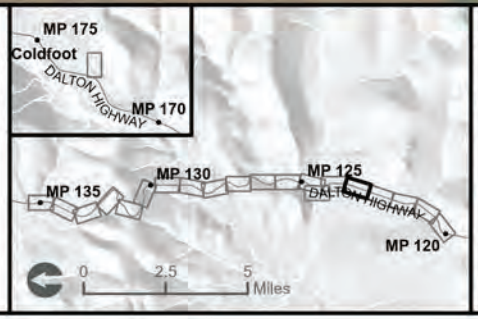
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 1.32 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- R3UBH
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities

POA-2022-00511
Project: Dalton Hwy.
MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

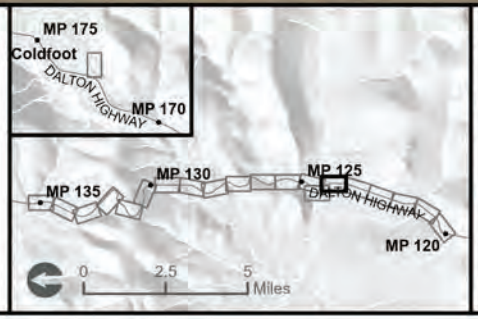
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 1.42 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

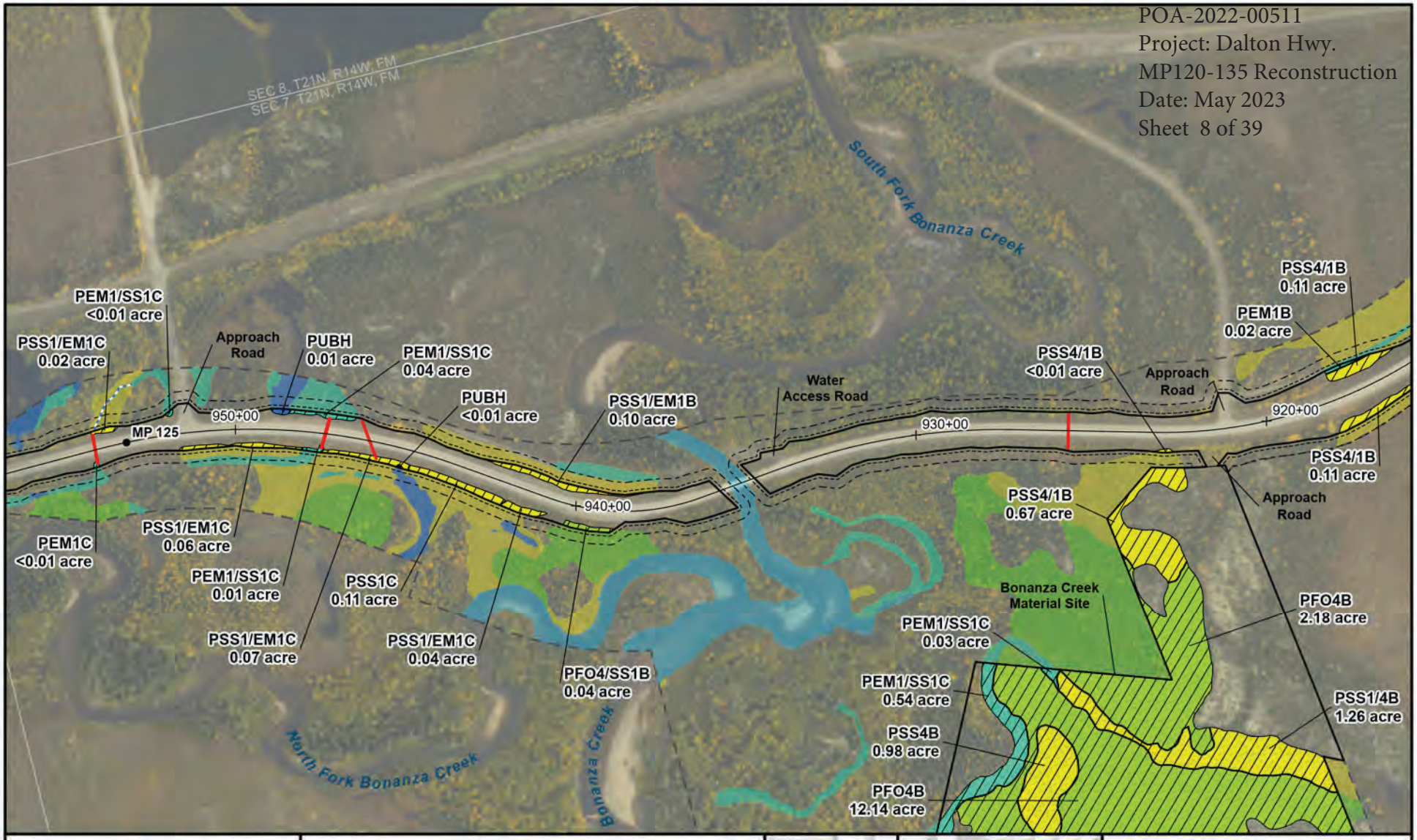
HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland



APPLICANT: Alaska Department of Transportation and Public Facilities

POA-2022-00511
Project: Dalton Hwy.
MP120-135 Reconstruction
Date: May 2023
Sheet 8 of 39



Dalton Highway MP120-135 Reconstruction

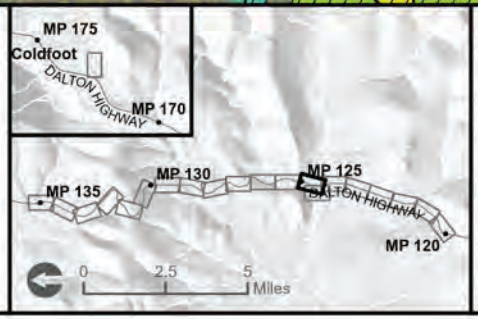
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 11.08 acre
Total Wetland and Waterbody Impact = 55.38 acre

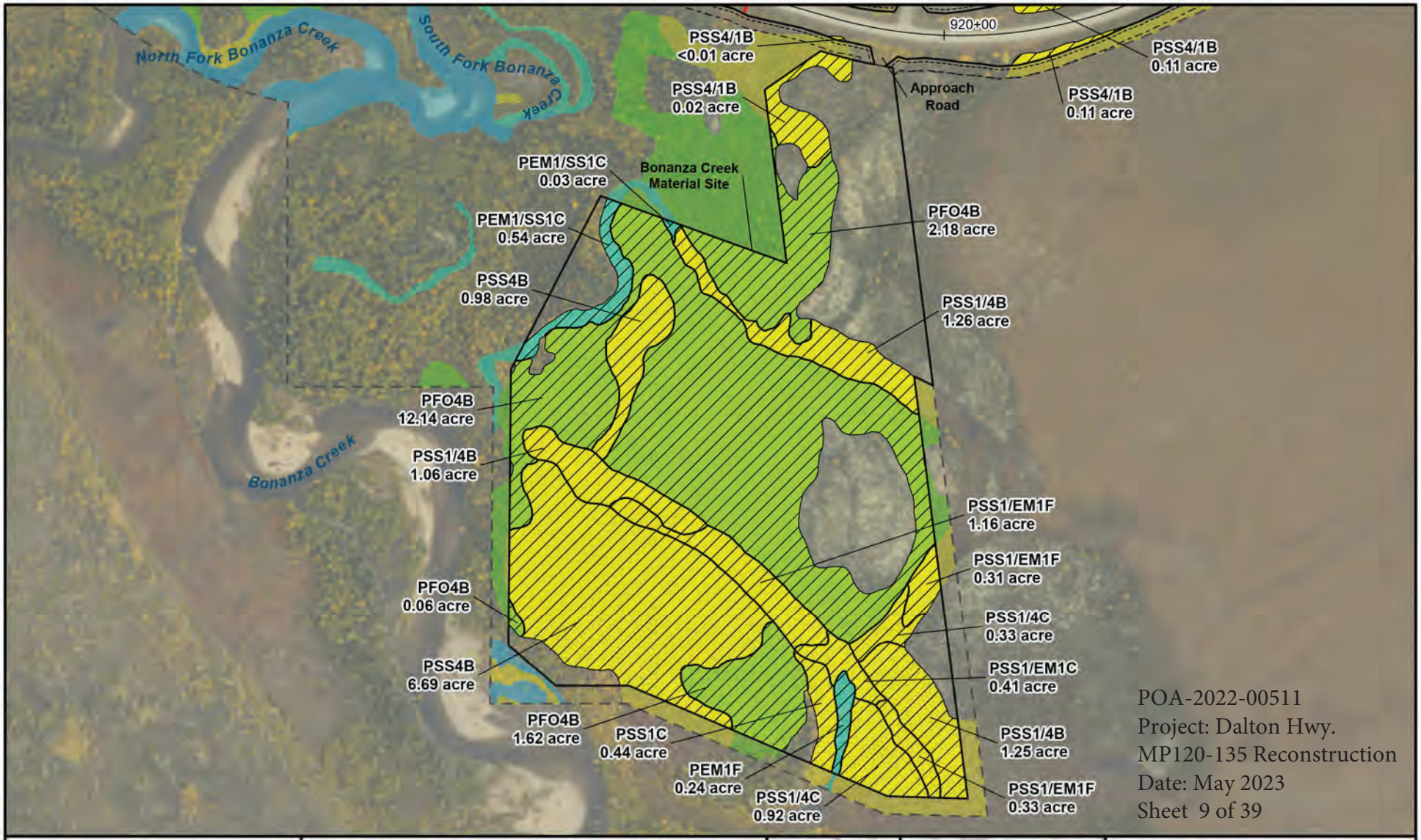
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy.
MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

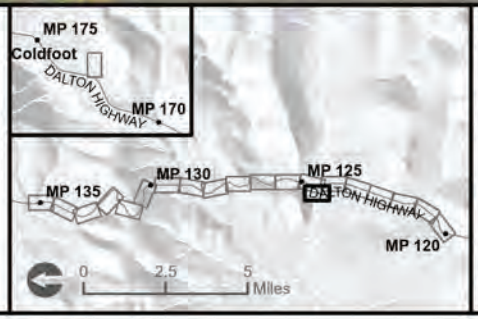
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 32.79 acre
Total Wetland and Waterbody Impact = 55.38 acre

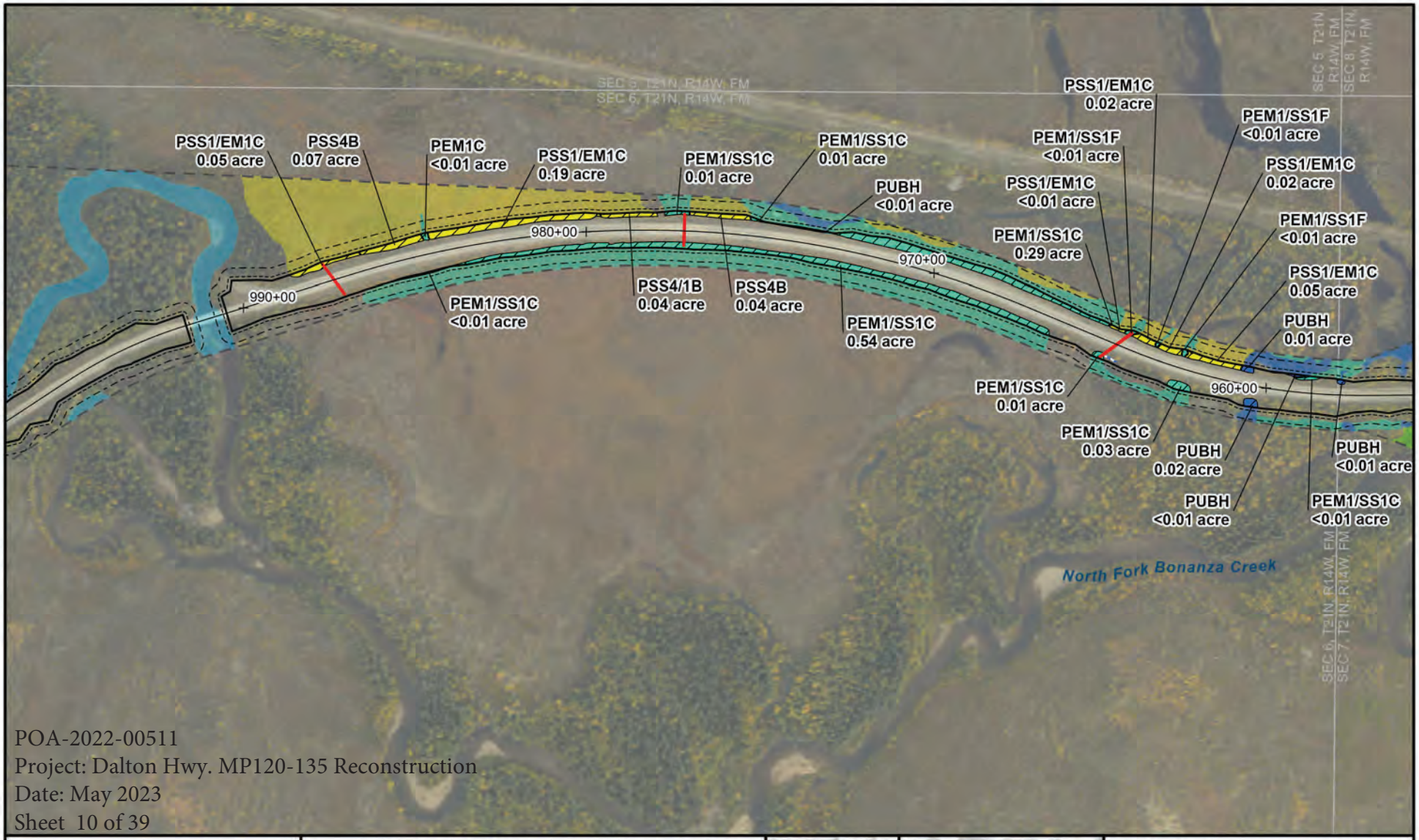
0 210 420 Feet

HORIZONTAL DATUM: NAD 83 AK State Plane Zone 4

- Stationing
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

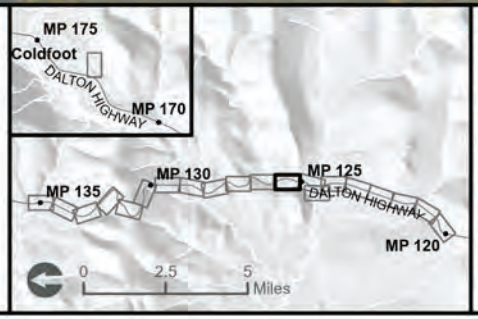
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 1.47 acre
Total Wetland and Waterbody Impact = 55.38 acre

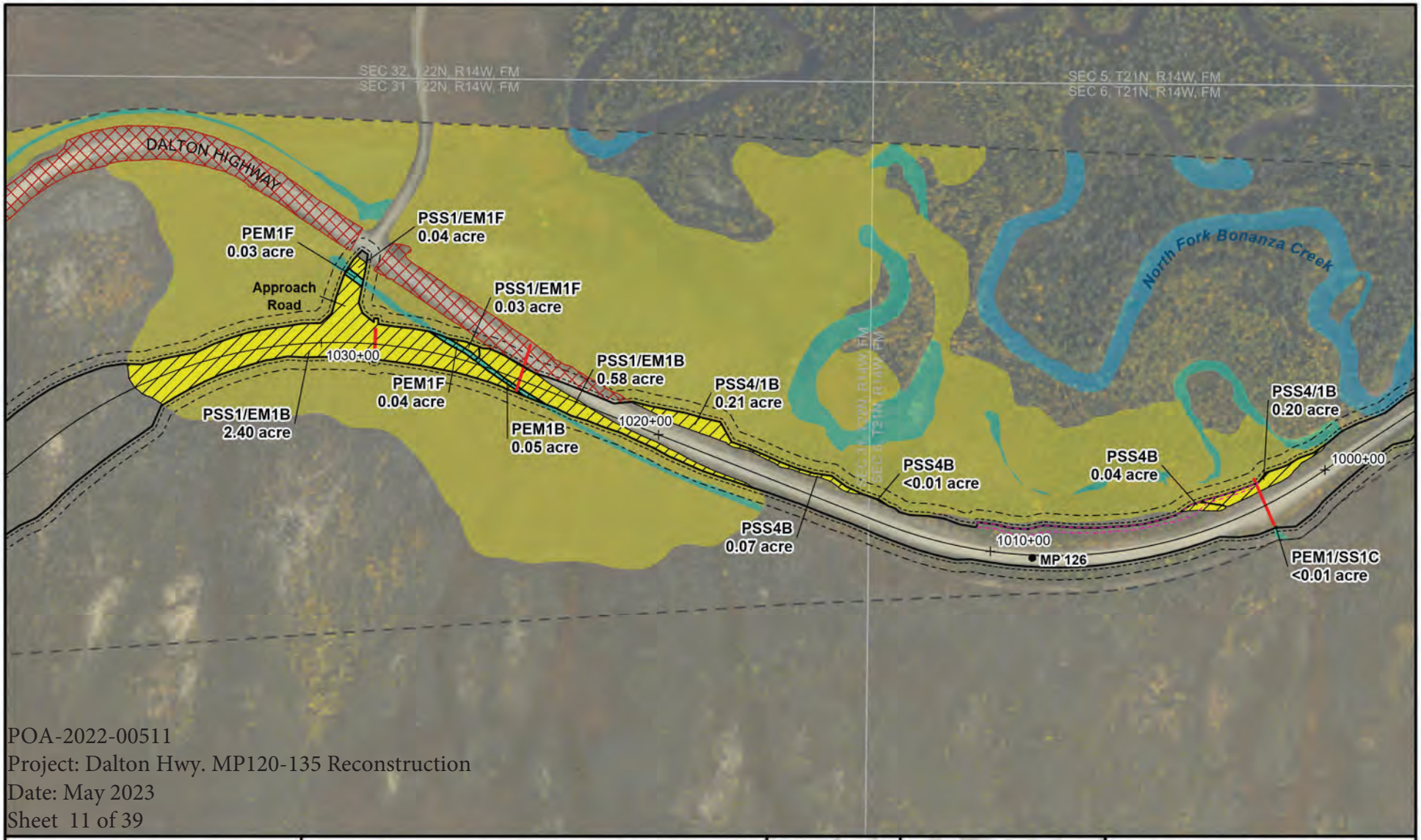
0 210 420 Feet

HORIZONTAL DATUM: NAD 83 AK State Plane Zone 4

- Stationing
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

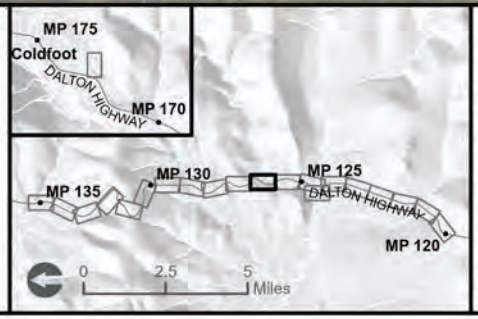
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 3.7 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Material Removal
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- New Culvert



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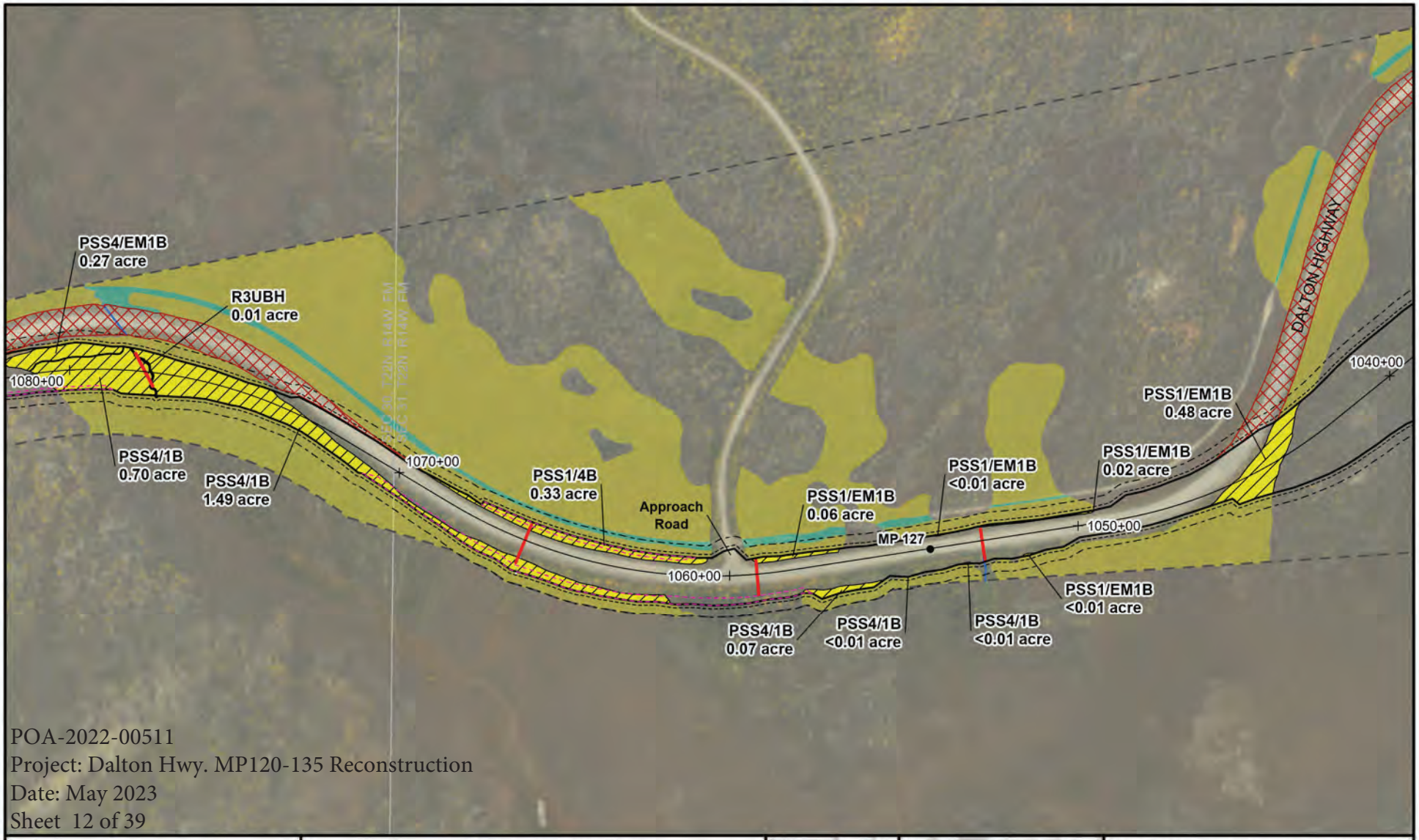

POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

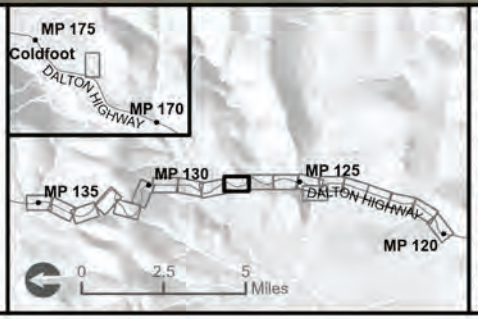
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 3.43 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Material Removal
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- R3UBH
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities

POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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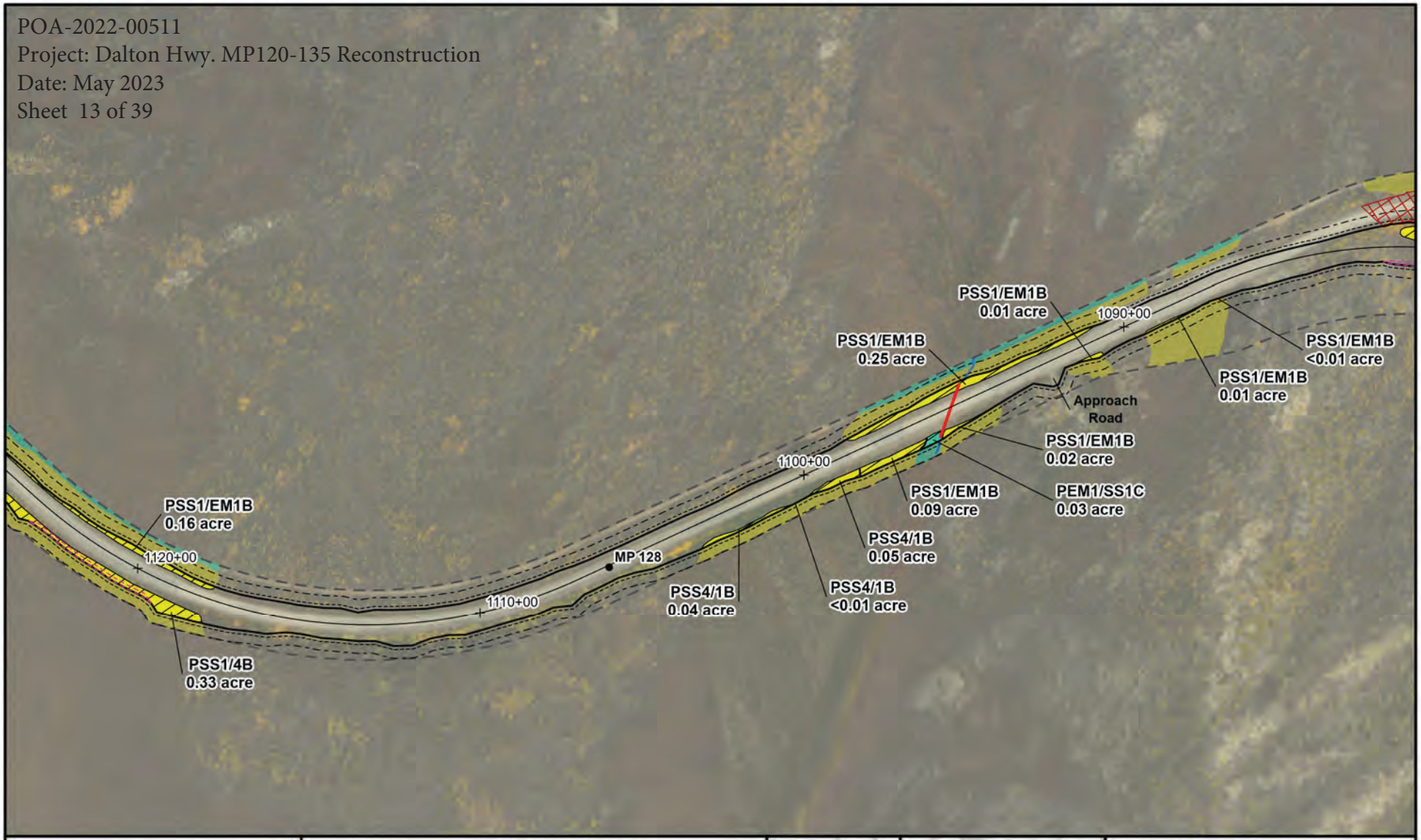


Dalton Highway MP120-135 Reconstruction

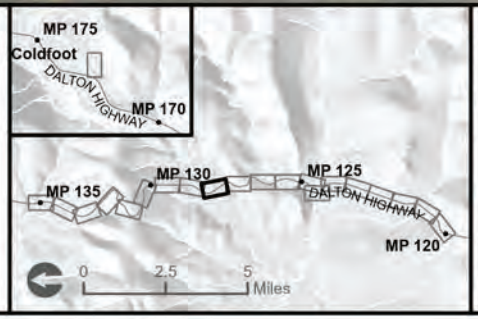
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 1 acre
Total Wetland and Waterbody Impact = 55.38 acre

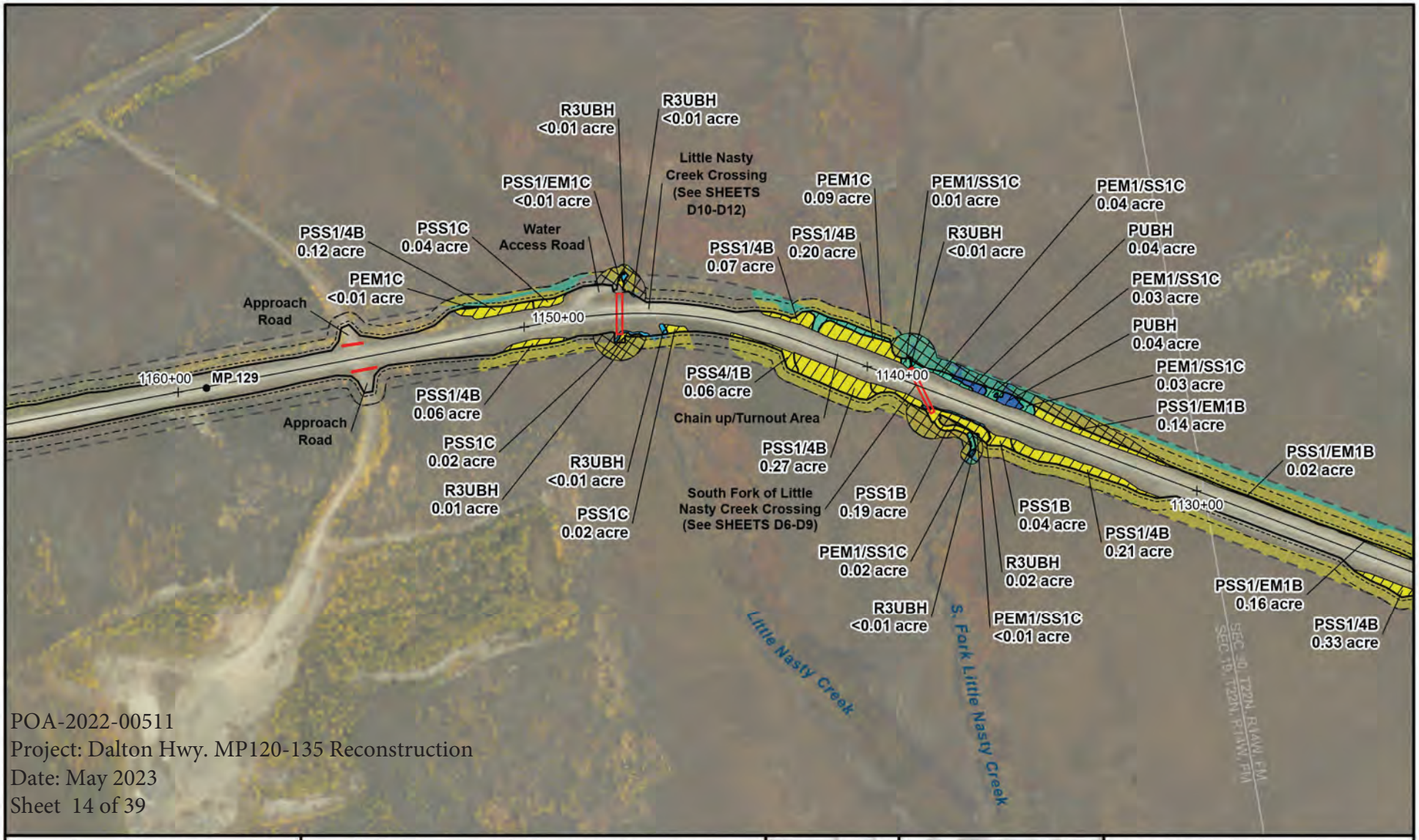
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Material Removal
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- R3UBH
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

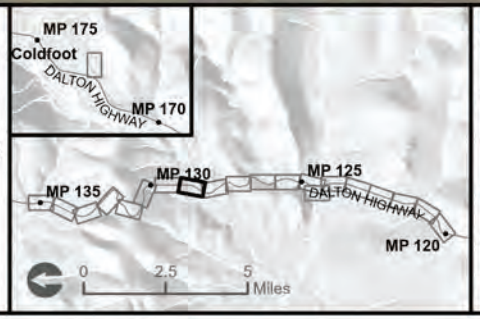
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 1.9 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Temporary Construction Area
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities

POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

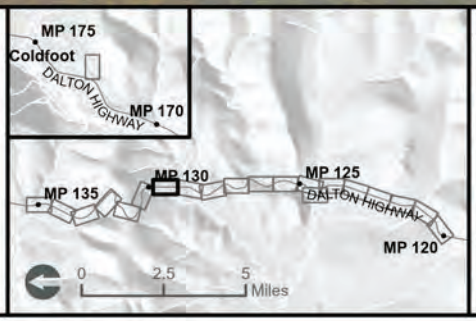
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0 acre
Total Wetland and Waterbody Impact = 55.38 acre

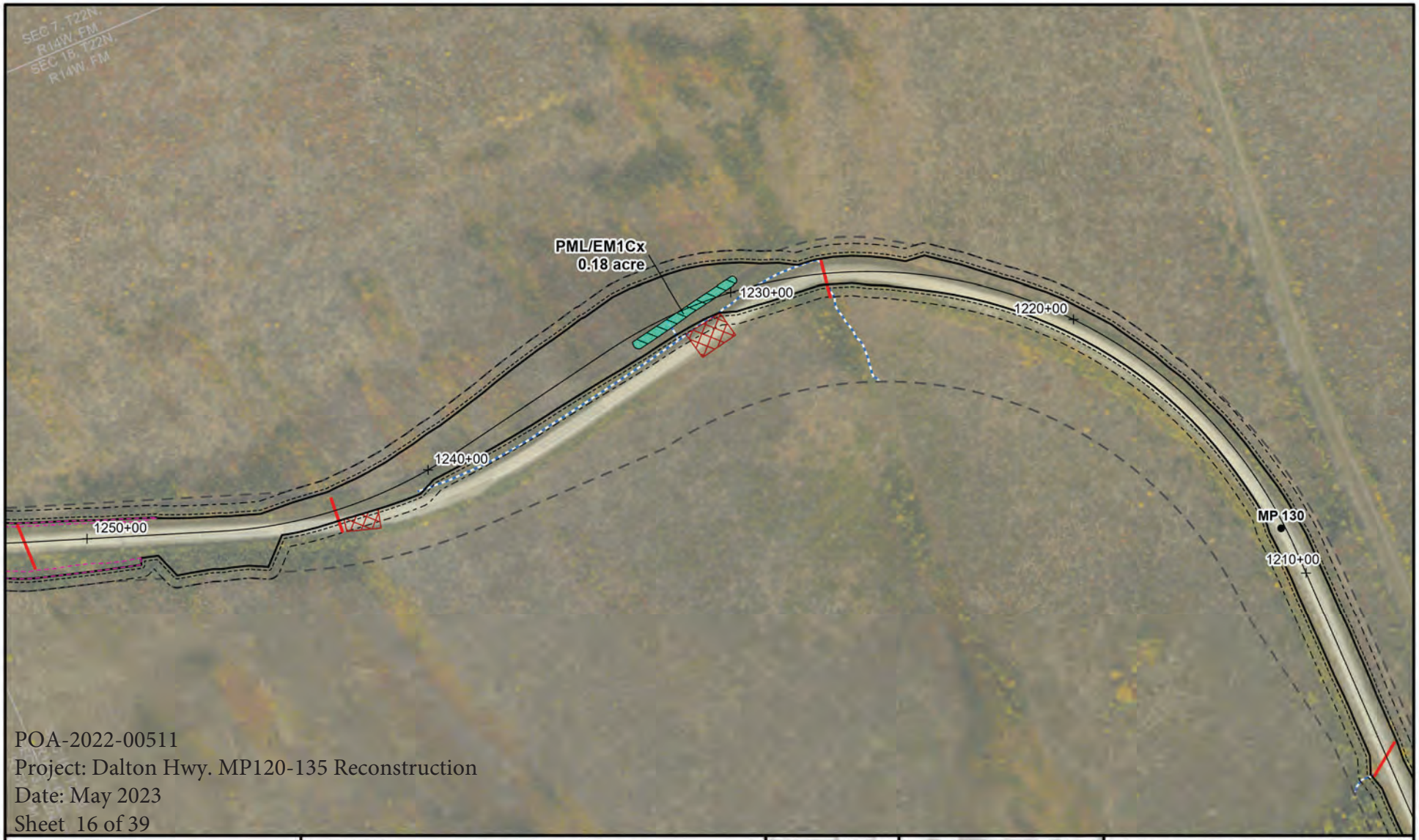
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

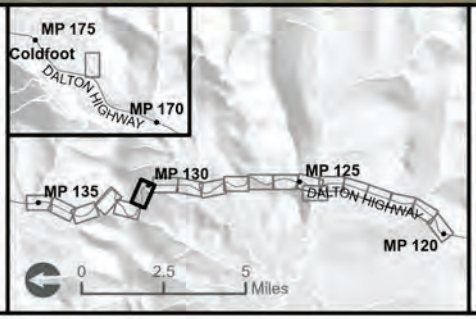
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0.18 acre
Total Wetland and Waterbody Impact = 55.38 acre

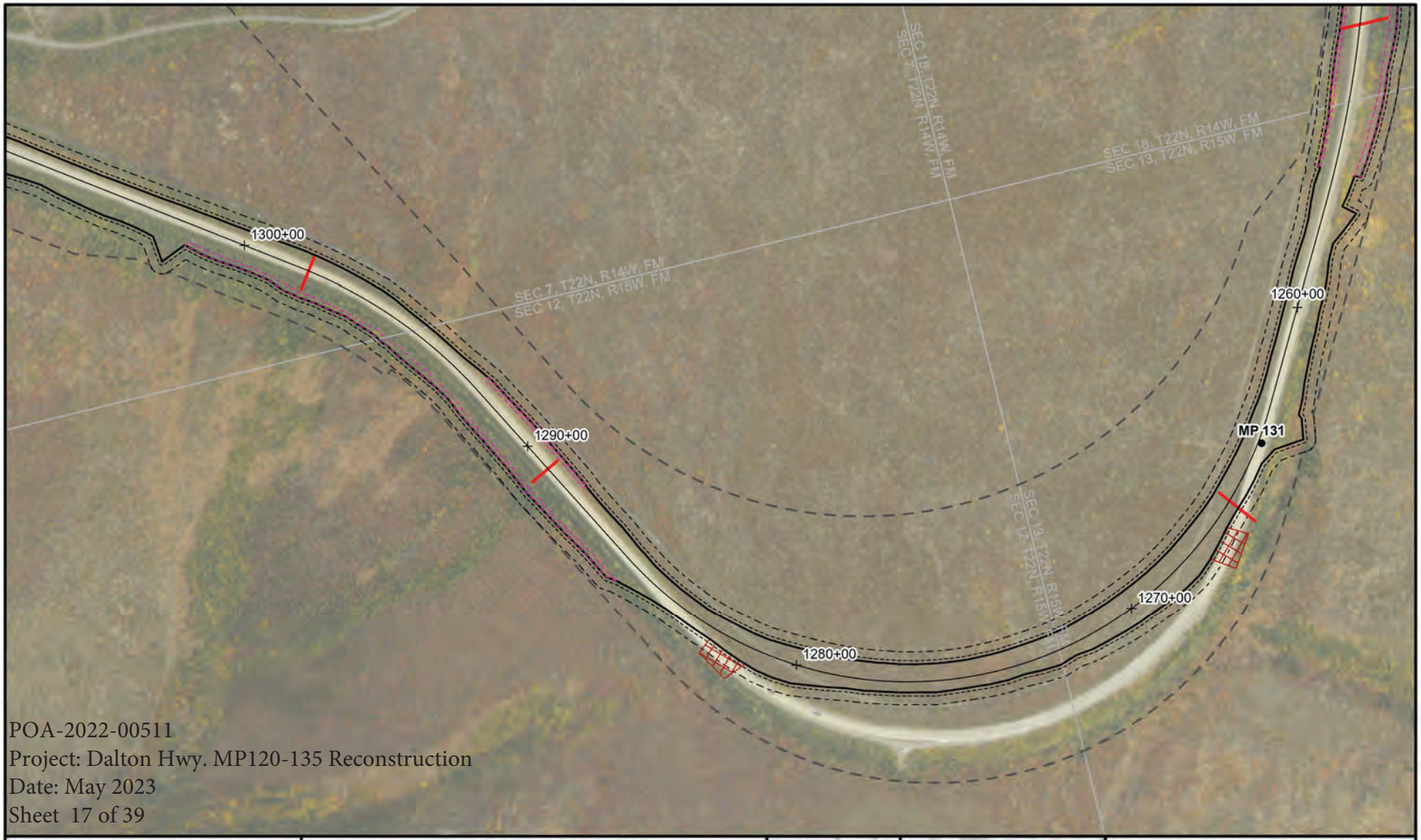
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Material Removal
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

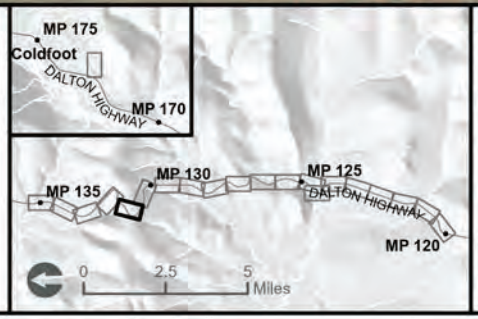
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0 acre
Total Wetland and Waterbody Impact = 55.38 acre

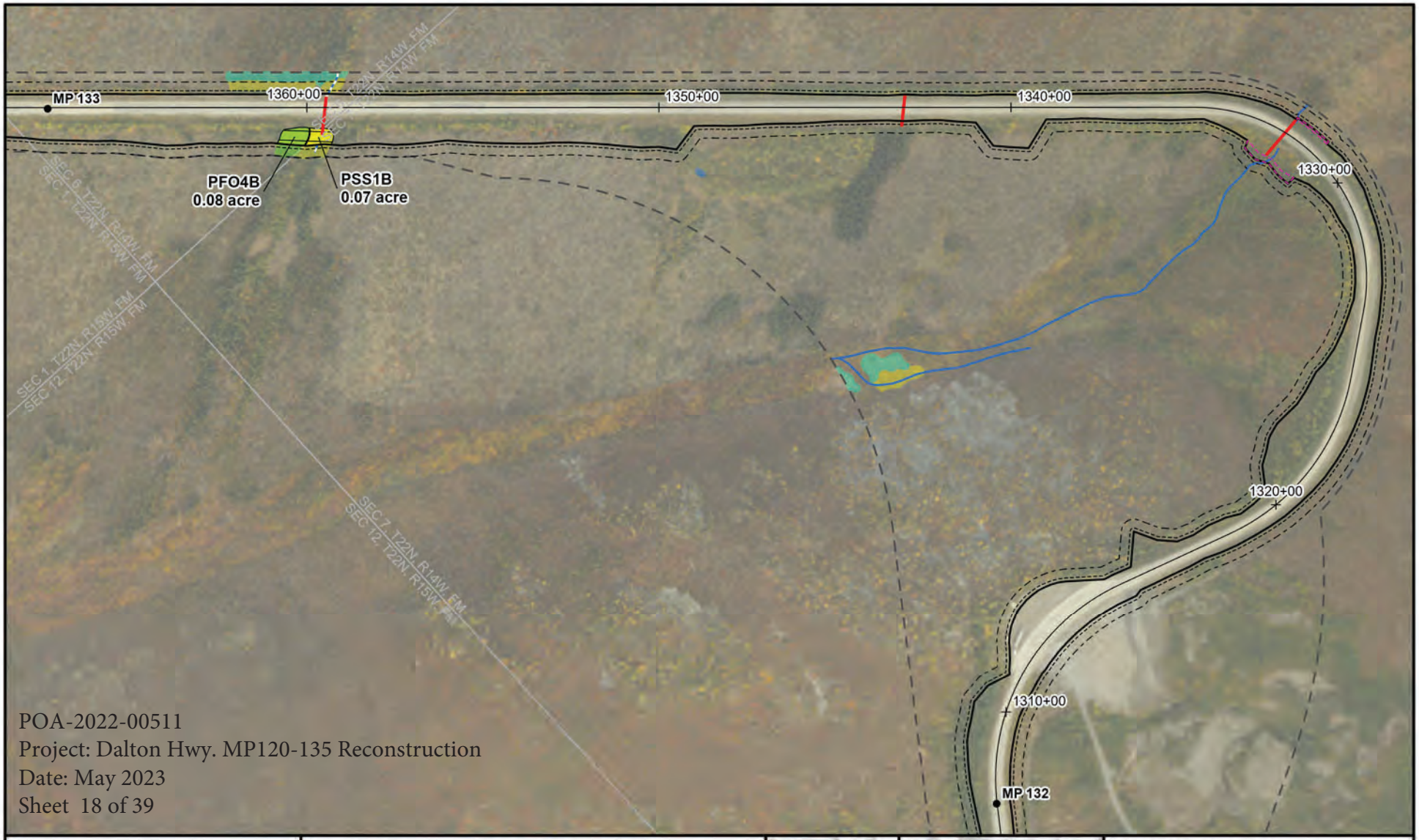
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Material Removal
- Wetland Mapping Limits
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



Dalton Highway MP120-135 Reconstruction

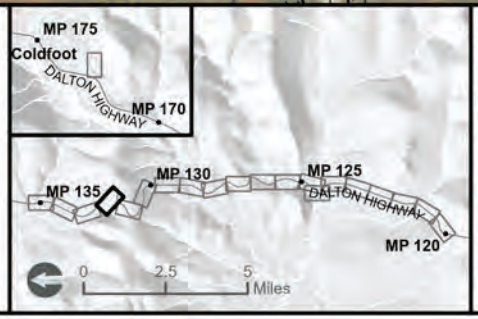
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0.15 acre
Total Wetland and Waterbody Impact = 55.38 acre

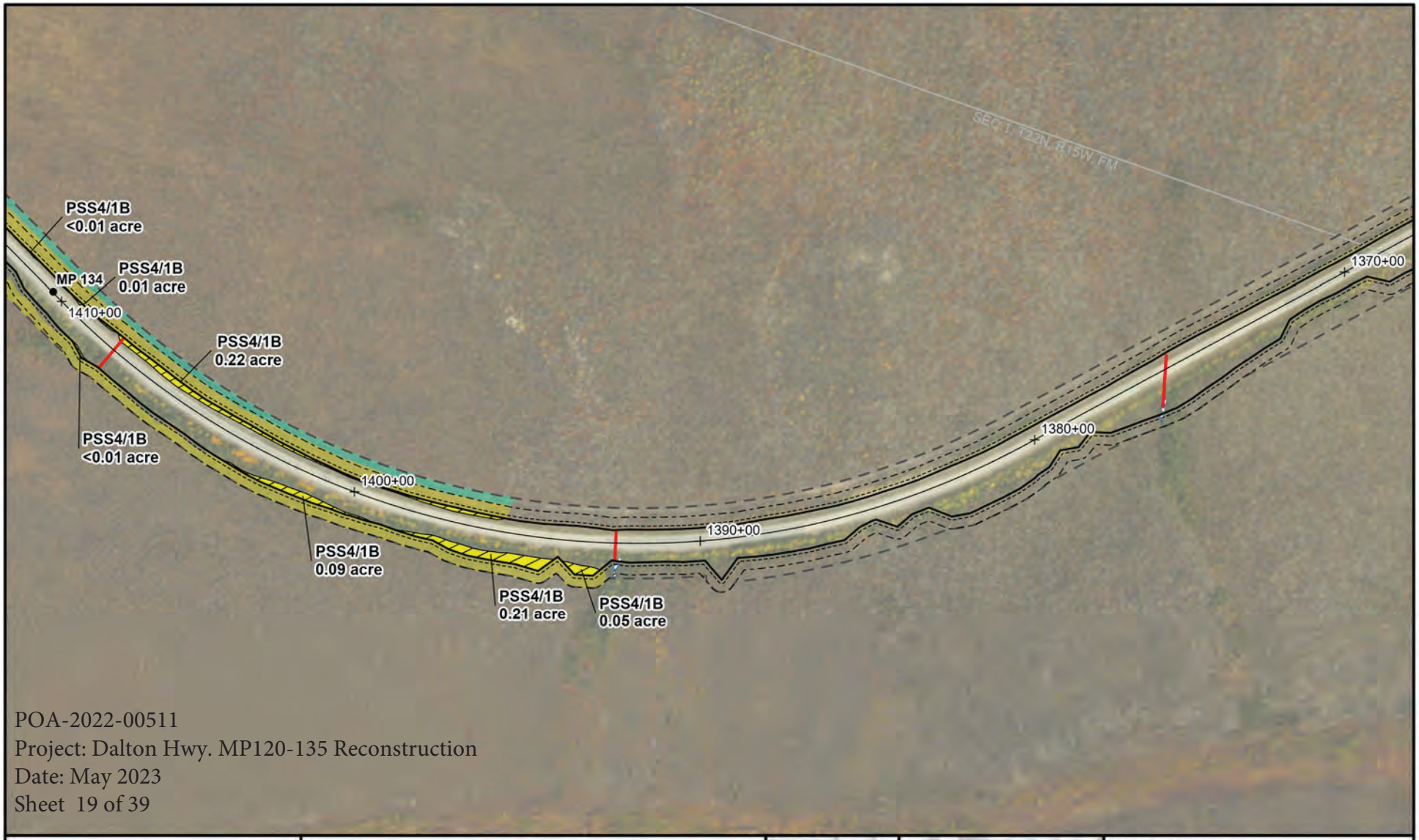
0 210 420 Feet

HORIZONTAL DATUM: NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- R3UBH
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

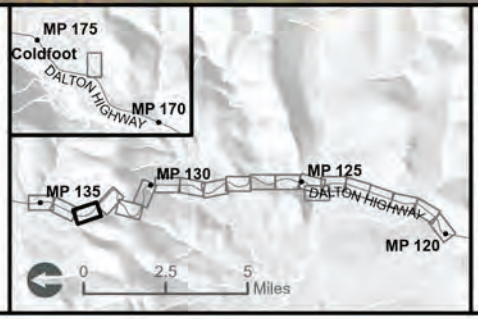
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0.59 acre
Total Wetland and Waterbody Impact = 55.38 acre

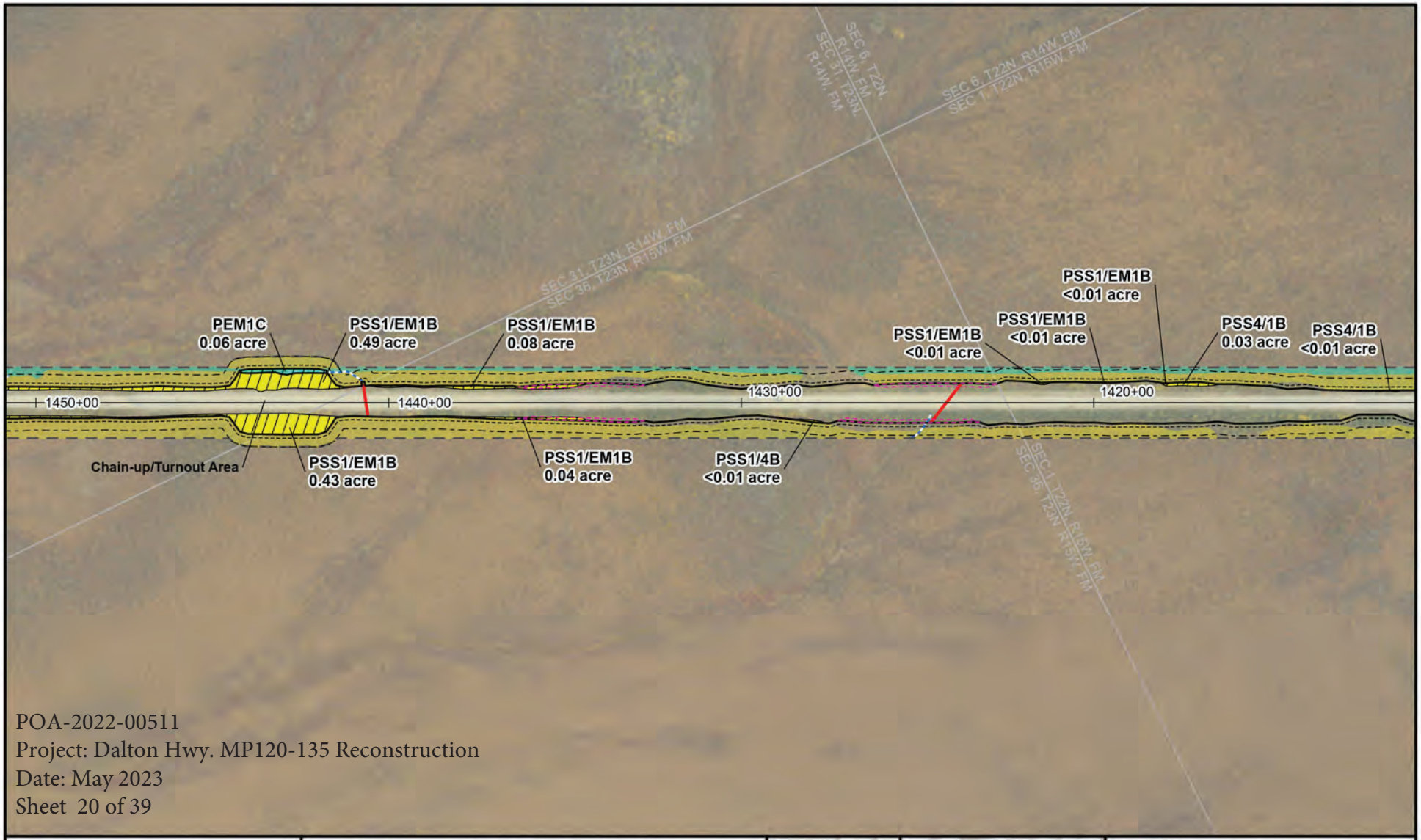
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
Sheet 20 of 39

Dalton Highway MP120-135 Reconstruction

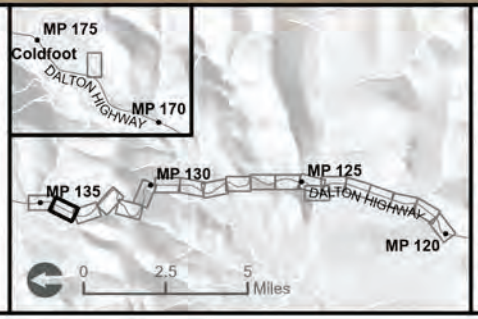
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 1.03 acre
Total Wetland and Waterbody Impact = 55.38 acre

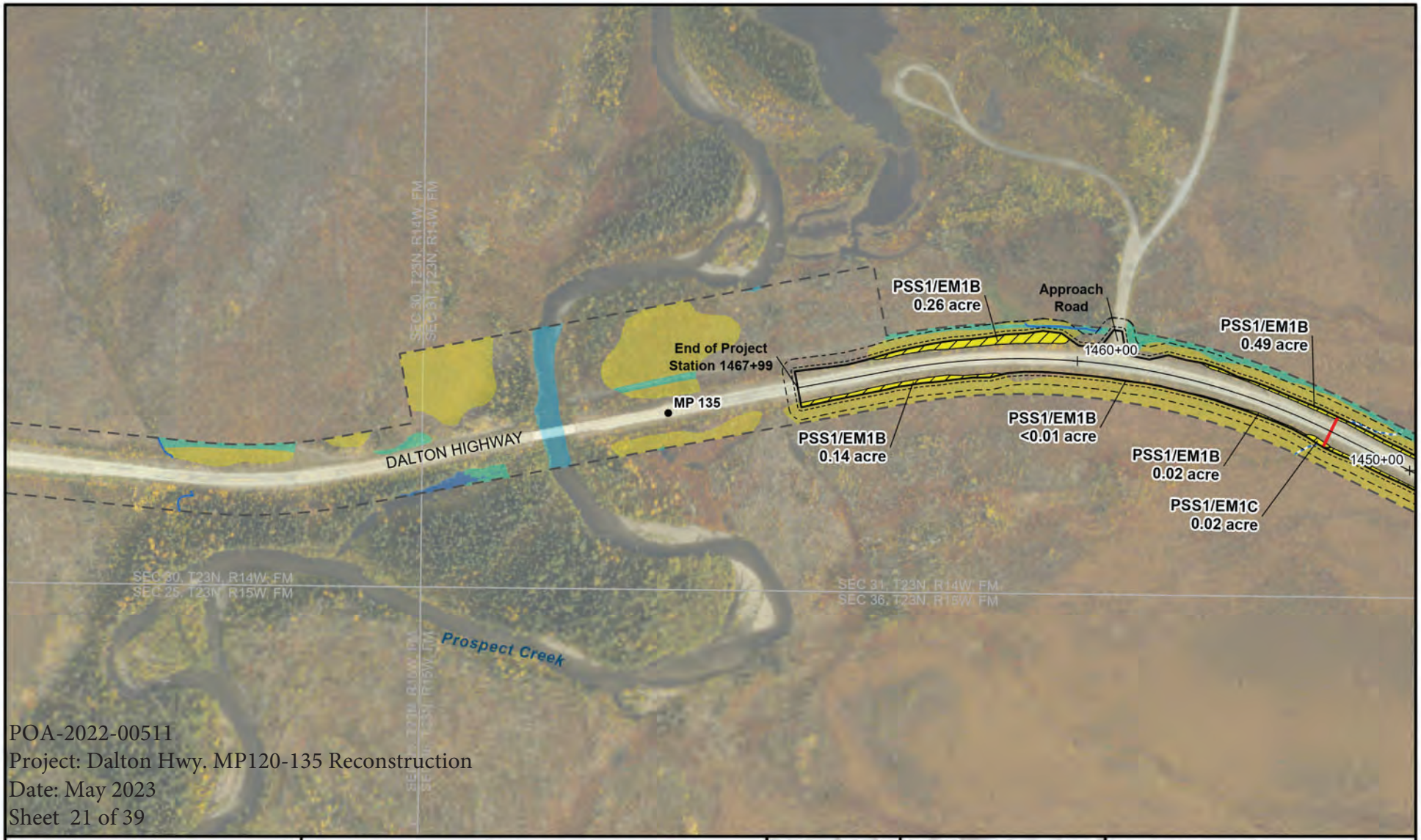
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

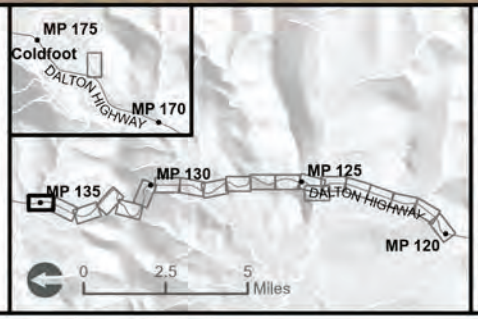
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0.58 acre
Total Wetland and Waterbody Impact = 55.38 acre

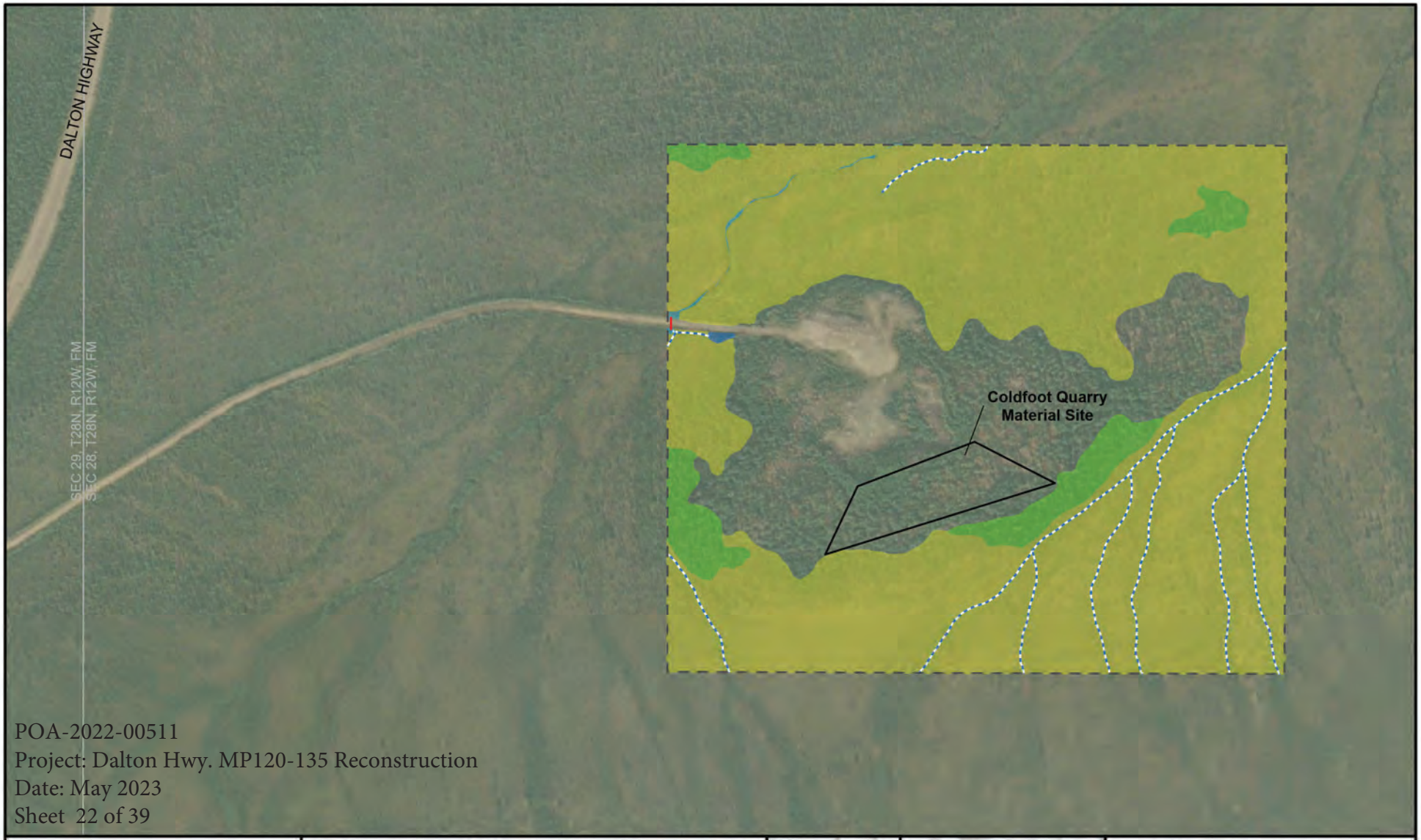
0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Milepost
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- R3UBH
- R4SBC
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities



POA-2022-00511
Project: Dalton Hwy. MP120-135 Reconstruction
Date: May 2023
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Dalton Highway MP120-135 Reconstruction

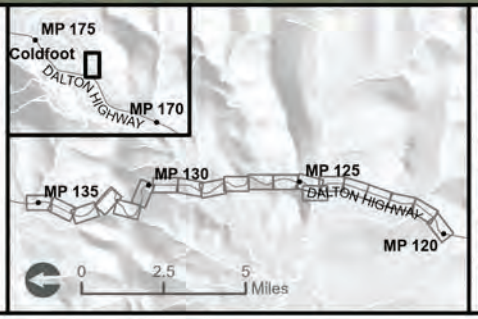
WOUS Impacts Mapbook

Sheet Wetland and Waterbody Impact = 0 acre
Total Wetland and Waterbody Impact = 55.38 acre

0 210 420 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Project Footprint
- Vegetative Buffer
- Work Area
- Wetland Mapping Limits
- Fresh Waterbody
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- Culvert
- R4SBC



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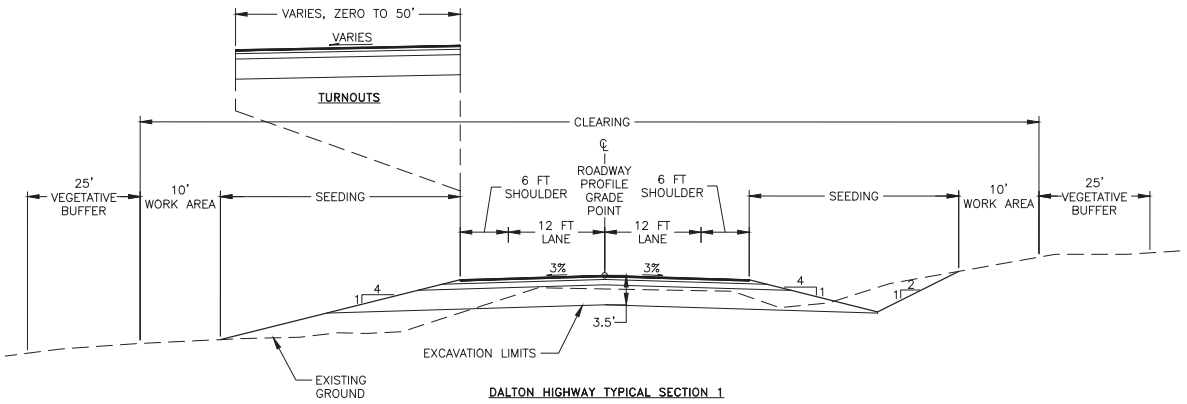
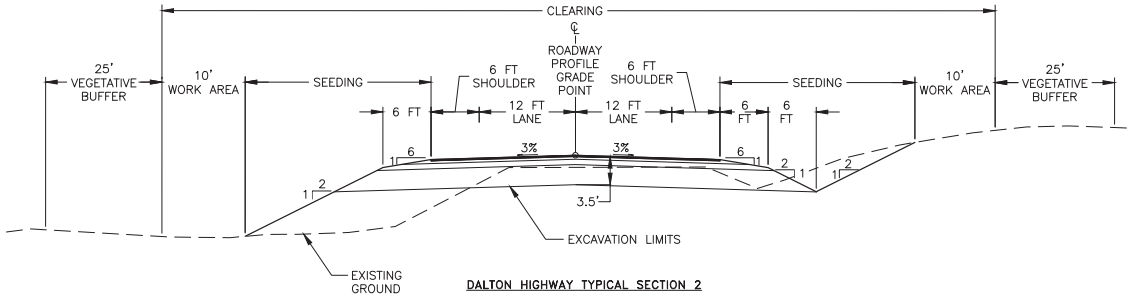


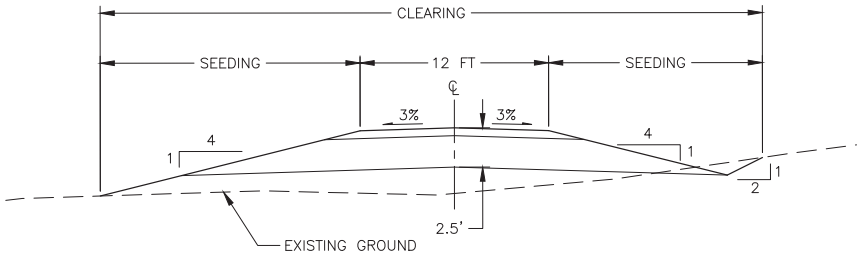
DALTON HIGHWAY TYPICAL SECTION 1



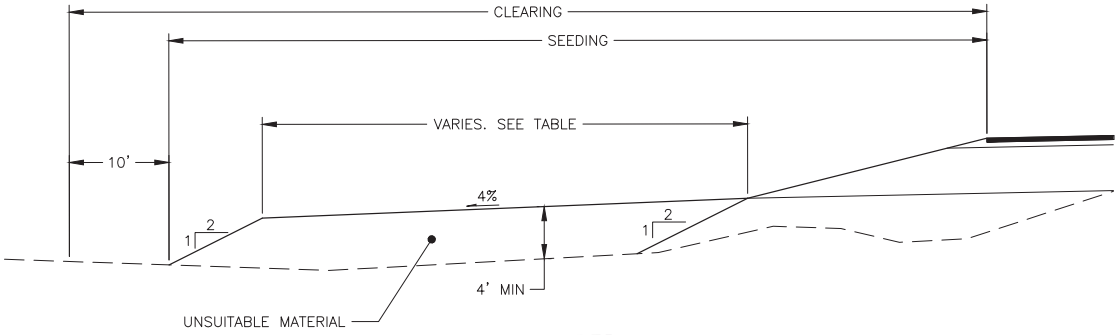
DALTON HIGHWAY TYPICAL SECTION 2

TYPICAL SECTION TABLE (LEFT)					
"O" STATION	TYP 1	TYP 2	"O" STATION	TYP 1	TYP 2
684+00 TO 705+00	X		1059+00 TO 1068+00		X
705+00 TO 722+00		X	1068+00 TO 1247+00	X	
722+00 TO 727+00	X		1247+00 TO 1257+00		X
727+00 TO 729+00		X	1257+00 TO 1285+00	X	
729+00 TO 743+00	X		1285+00 TO 1302+00		X
743+00 TO 750+00		X	1302+00 TO 1315+00	X	
750+00 TO 1001+00	X		1315+00 TO 1340+00		X
1001+00 TO 1003+00		X	1340+00 TO 1385+00	X	
1003+00 TO 1024+00	X		1385+00 TO 1395+00		X
1044+00 TO 1059+00	X		1395+00 TO 1467+00	X	

TYPICAL SECTION TABLE (RIGHT)		
"O" STATION	TYP 1	TYP 2
684+00 TO 744+00	X	
744+00 TO 750+00		X
750+00 TO 1003+00	X	
1003+00 TO 1019+00		X
1019+00 TO 1024+00	X	
1048+00 TO 1467+00	X	

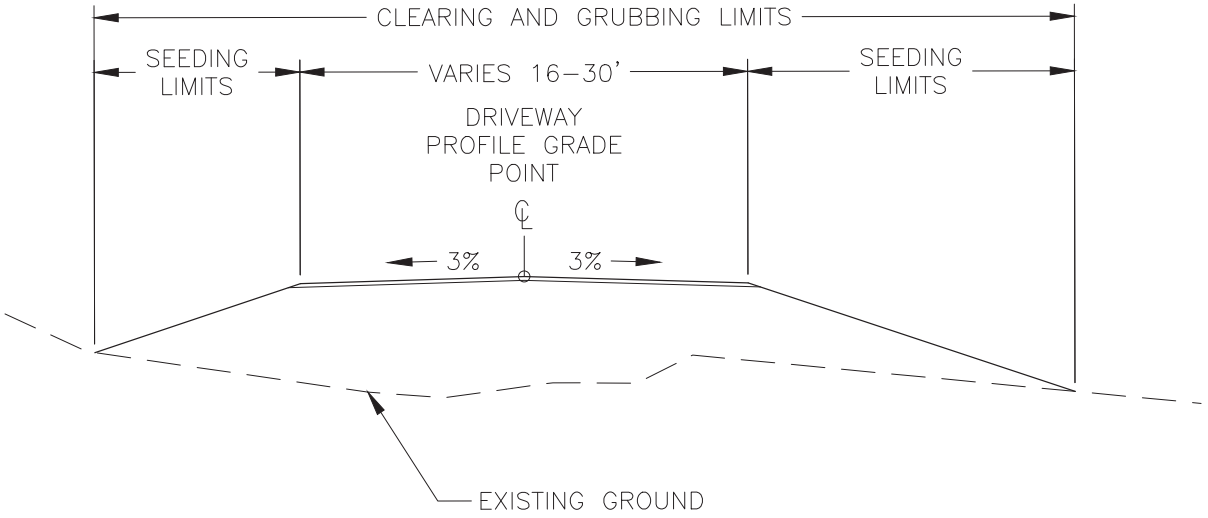


WATER TRUCK ACCESS TYPICAL SECTION



THERMAL BERM

THERMAL BERM WIDTH				
STATION	TO	STATION	OFFSET	WIDTH
725+00		731+00	LT	10'
735+00		746+00	LT	10'
740+00		745+00	RT	10'
750+00		753+50	LT/RT	10'
778+00		798+00	LT/RT	15'
803+50		813+00	LT/RT	10'
818+00		832+00	LT	10'
821+00		825+50	RT	10'
855+50		861+50	RT	10'
1001+50		1010+50	RT	10'
1058+00		1070+50	LT	15'
1061+00		1067+50	RT	15'
1078+50		1082+00	LT	10'
1119+00		1123+00	LT	10'
1183+00		1198+00	LT/RT	15'
1248+00		1256+00	LT/RT	15'
1285+50		1301+50	LT	15'
1288+00		1292+50	RT	15'
1330+50		1333+00	LT/RT	15'
1387+00		1390+50	LT	15'
1422+50		1426+00	RT	10'
1423+00		1427+00	LT	10'
1432+50		1436+00	LT/RT	10'



APPROACH TYPICAL SECTION

Dalton Highway MP120-135 Reconstruction

Approach Road Details

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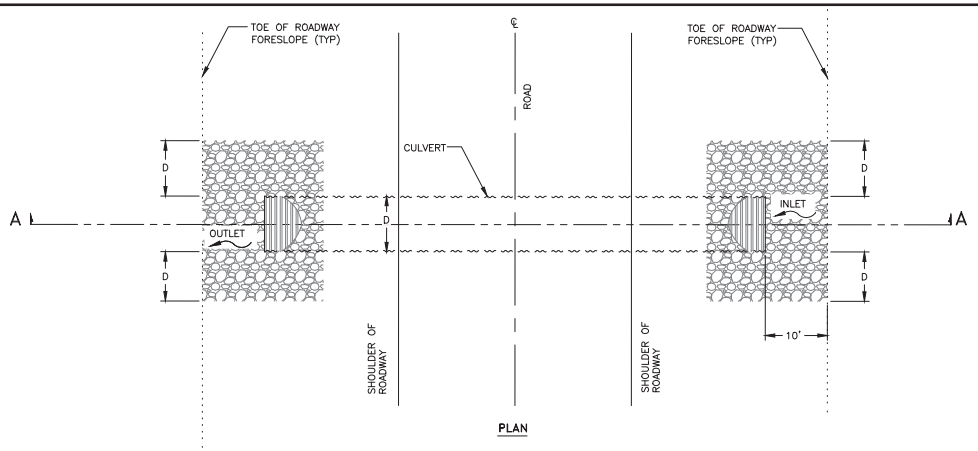
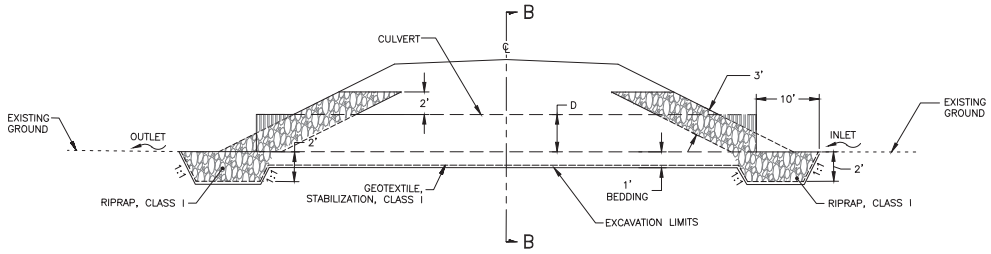
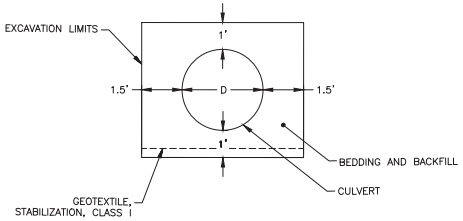


PLAN



SECTION A–A

RIPRAP APRON DETAIL



SECTION B–B

CULVERT BEDDING AND BACKFILL DETAIL

CULVERT SUMMARY TABLE

Station	Latitude	Longitude	Diameter (inches)	Length (feet)	Culvert Type	Comments
702+37	66.605155	-150.712084	36	98	Cross drainage	
711+93	66.605717	-150.705662	36	122	Cross drainage	
725+42	66.607862	-150.698542	36	128	Stream	
736+59	66.610273	-150.693036	36	150	Cross drainage	
748+09	66.612734	-150.688913	48	163	Fish passage	Pung's Crossing
748+26	66.612767	-150.688829	234	173	Fish passage	Pung's Crossing
748+43	66.612811	-150.688778	48	163	Fish passage	Pung's Crossing
753+79	66.61397	-150.686528	36	138	Cross drainage	
768+73	66.617854	-150.684722	36	92	Cross drainage	
772+75	66.618949	-150.684925	36	96	Cross drainage	
778+91	66.620633	-150.685061	36	112	Cross drainage	
780+98	66.621199	-150.684901	36	112	Cross drainage	
785+48	66.622389	-150.684067	36	106	Cross drainage	
787+54	66.622921	-150.683615	36	102	Stream	
794+1	66.624623	-150.68216	36	94	Stream	
804+00	66.627183	-150.679978	36	90	Cross drainage	
805+47	66.627577	-150.679763	36	124	Stream	
811+50	66.629132	-150.678386	36	102	Stream	
813+83	66.629689	-150.677531	24	120	Stream	approach road
816+82	66.630508	-150.67721	36	92	Stream	
823+90	66.632345	-150.675672	36	104	Cross drainage	
827+26	66.633224	-150.674997	36	118	Stream	
838+68	66.636177	-150.672447	36	100	Cross drainage	
845+62	66.637959	-150.6708	48	80	Stream	
860+69	66.641863	-150.667504	48	82	Stream	
925+66	66.659086	-150.656008	36	100	Cross drainage	
946+17	66.664277	-150.662859	36	116	Cross drainage	
947+43	66.664693	-150.662523	60	90	Stream	
954+04	66.666482	-150.661737	48	84	Stream	
964+45	66.66926	-150.660849	48	118	Stream	
977+21	66.672618	-150.658692	36	92	Cross drainage	
987+32	66.675336	-150.659725	36	106	Cross drainage	
1001+96	66.678898	-150.664168	36	144	Cross drainage	
1024+26	66.684651	-150.661702	36	138	Cross drainage	
1028+48	66.685801	-150.661251	48	84	Cross drainage	
1052+76	66.691815	-150.667331	36	90	Stream	
1059+22	66.693562	-150.668023	36	100	Cross drainage	
1065+94	66.695379	-150.667406	36	120	Cross drainage	
1077+88	66.698339	-150.66408	48	108	Stream	
1095+47	66.702555	-150.669182	36	160	Stream	
1138+32	66.712849	-150.669335	144	140	Fish passage	South Fork Little Nasty Creek
1147+26	66.715056	-150.666836	114	114	Fish passage	Little Nasty Creek
1154+69	66.717083	-150.667049	24	72	Cross drainage	approach road
1154+88	66.71714	-150.666824	24	60	Cross drainage	approach road
1204+24	66.730626	-150.667316	36	114	Stream	
1227+26	66.735746	-150.673771	36	108	Stream	
1242+88	66.73553	-150.684411	36	100	Cross drainage	
1251+73	66.736236	-150.690271	36	136	Cross drainage	
1265+87	66.738082	-150.698887	36	132	Cross drainage	
1289+14	66.743233	-150.694997	36	96	Cross drainage	
1298+04	66.744655	-150.690126	36	100	Cross drainage	
1332+10	66.74907	-150.673393	36	140	Stream	
1343+05	66.751197	-150.678556	36	90	Cross drainage	
1359+50	66.754186	-150.687058	36	106	Stream	
1375+96	66.757198	-150.695511	36	150	Cross drainage	
1392+41	66.760792	-150.702145	36	82	Cross drainage	
1407+97	66.764979	-150.701878	36	100	Cross drainage	
1424+20	66.768973	-150.696985	36	134	Stream	
1440+65	66.773012	-150.691969	36	84	Cross drainage	
1452+50	66.775939	-150.688466	36	90	Stream	

Dalton Highway MP120-135 Reconstruction

Cross Drainage Cul ert Details

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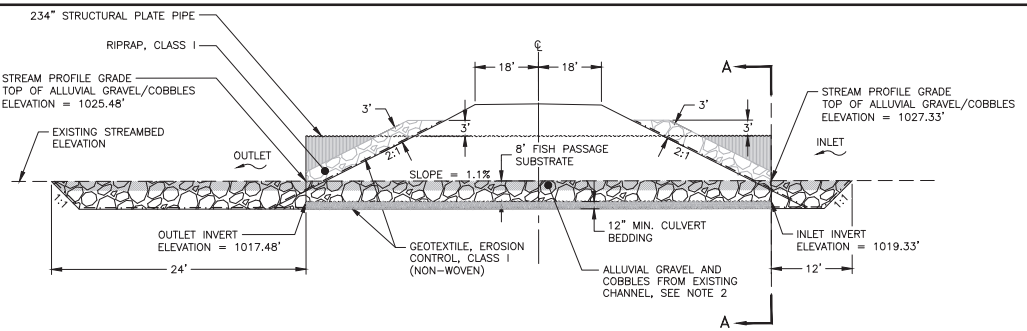


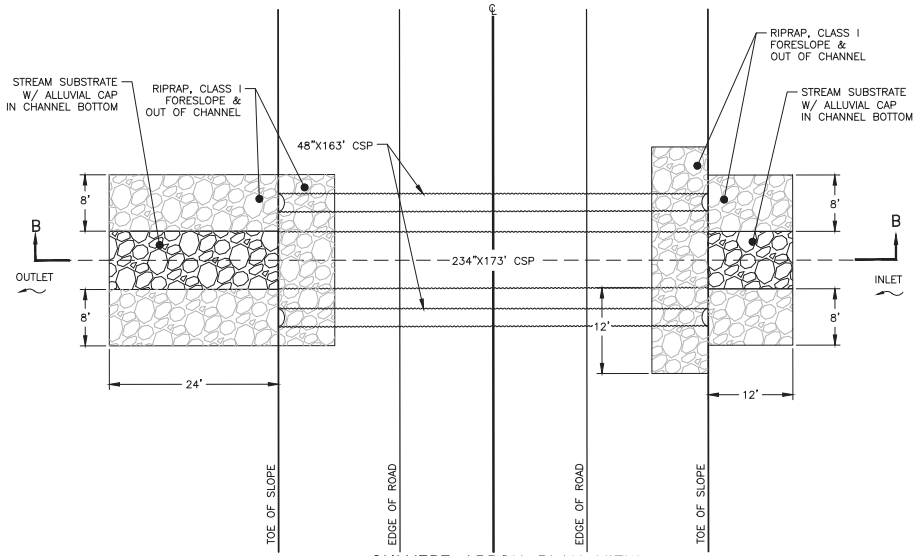
SECTION B–B

NOTES:

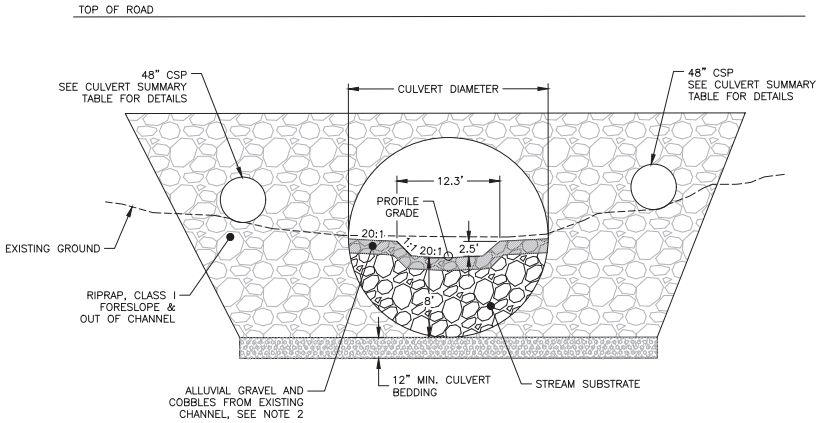
1. THIS CULVERT IS DESIGNED TO PROVIDE FISH PASSAGE.
2. INSTALL ALLUVIAL GRAVEL AND COBBLES FROM EXISTING CHANNEL TO FILL VOIDS WITHIN THE FISH PASS SUBSTRATE.
3. INSTALL A 234" CPP EMBEDDED 8 FEET INTO THE CHANNEL BOTTOM.

HYDROLOGIC & HYDRAULIC SUMMARY				
DALTON HWY MILE 121.1 – STATION 748+26–PUNG'S CROSSING				
BASIN AREA (SQ. MI)	QFISH (CFS)	Q2 (CFS)	Q50 (CFS)	Q100 (CFS)
11.3	76.4	191	667	782
HEADWATER ELEVATION @Q50 IS 1033.7 FT, @Q100 IS 1034.4 FT				
HW/D @ 1= 1670 CFS, ROAD OVERTOPS AT APPROXIMATELY 4310.1 CFS				
CULVERT PURPOSE: CROSS DRAINAGE/ FISH PASSAGE				
ANTICIPATED ADDITIONAL BACKWATER: 0.0 FT				

FISH PASSAGE CULVERT SUMMARY DALTON HWY MILE 121.1							
DESCRIPTION	MATERIAL	LOCATION	DIAMETER (IN)	LENGTH (FT)	SKEW	ELEVATIONS (FT)	
						INLET INVERT	OUTLET INVERT
MAIN PIPE	STRUCTURAL PLATE PIPE	748+26	234"	173	0 DEG.	1019.33	1017.48



CULVERT APRON PLAN VIEW



SECTION A–A

Dalton Highway MP120-135 Reconstruction

Pung s Crossing Creek Details

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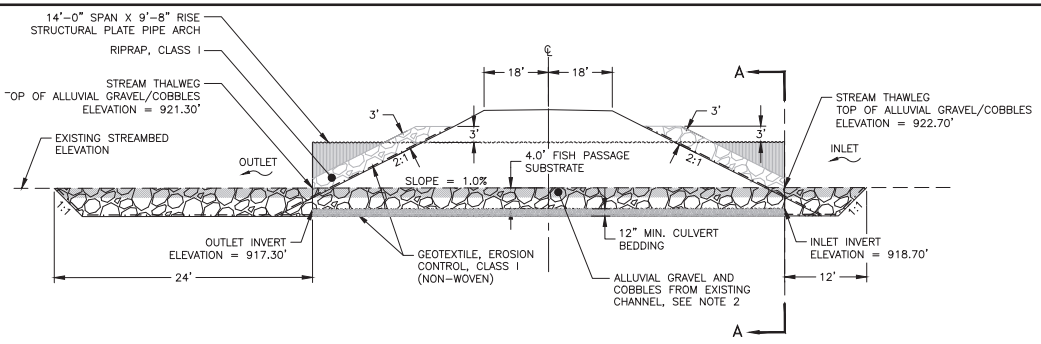
APPLICANT: Alaska Department of Transportation and Public Facilities



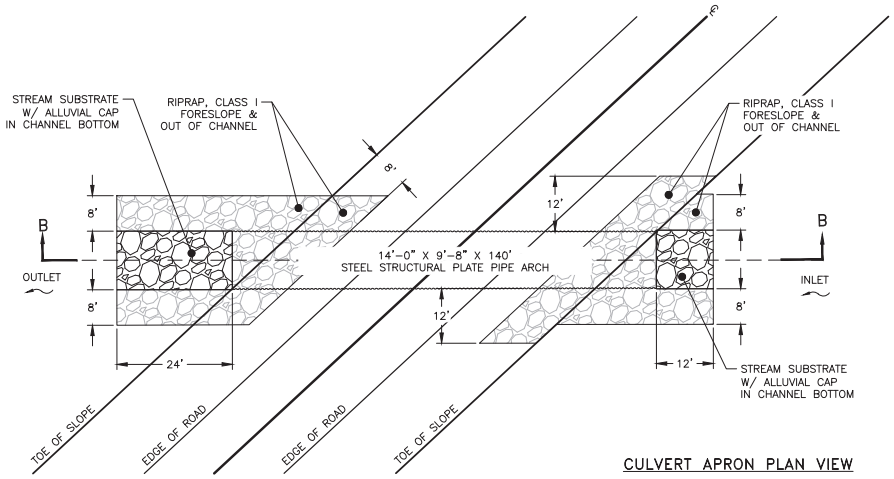
SECTION B–B

NOTES:

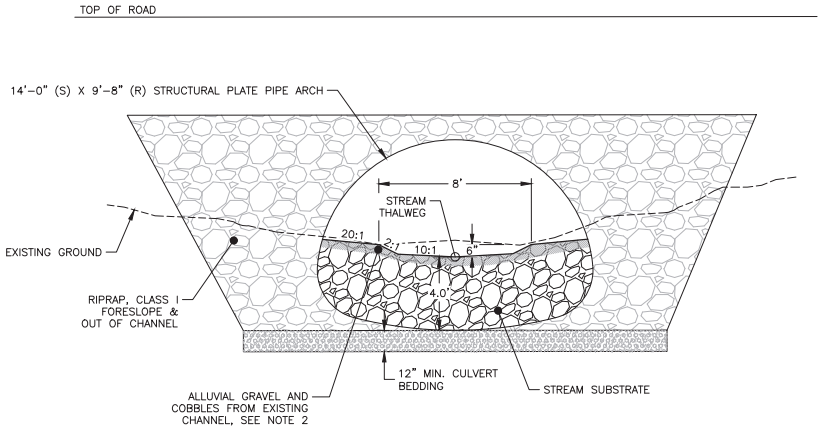
1. THIS CULVERT IS DESIGNED TO PROVIDE FISH PASSAGE.
2. INSTALL ALLUVIAL GRAVEL AND COBBLES FROM EXISTING CHANNEL TO FILL VOIDS WITHIN THE FISH PASS SUBSTRATE.
3. INSTALL A 14'–0" (SPAN) X 9'–8" STEEL STRUCTURAL PLATE PIPE ARCH EMBEDDED 4.0' FEET INTO THE CHANNEL BOTTOM.

HYDROLOGIC & HYDRAULIC SUMMARY				
DALTON HWY MILE 128.6 – STATION 1138+30 – SOUTH FORK LITTLE NASTY CREEK				
BASIN AREA (SQ. MI)	QFISH (CFS)	Q2 (CFS)	Q50 (CFS)	Q100 (CFS)
2.5	18	47	195	233
HEADWATER ELEVATION @Q50 IS 926.4 FT, @Q100 IS 926.9 FT				
HW/D @ 1= 322 CFS, ROAD OVERTOPS AT APPROXIMATELY 644 CFS				
CULVERT PURPOSE: CROSS DRAINAGE/ FISH PASSAGE				
ANTICIPATED ADDITIONAL BACKWATER: 0.0 FT				

FISH PASSAGE CULVERT SUMMARY DALTON HWY MILE 128.6							
DESCRIPTION	MATERIAL	LOCATION	DIMENSIONS (IN)	LENGTH (FT)	SKEW	ELEVATIONS (FT)	
						INLET INVERT	OUTLET INVERT
MAIN PIPE	STRUCTURAL PLATE STEEL	1138+30	14'–0"(S) X 9'–8"(R) SP PIPE ARCH	140'	47 DEG.	918.70'	917.30'



CULVERT APRON PLAN VIEW



SECTION A–A

Dalton Highway MP120-135 Reconstruction

South Fork Little Nasty Creek Details

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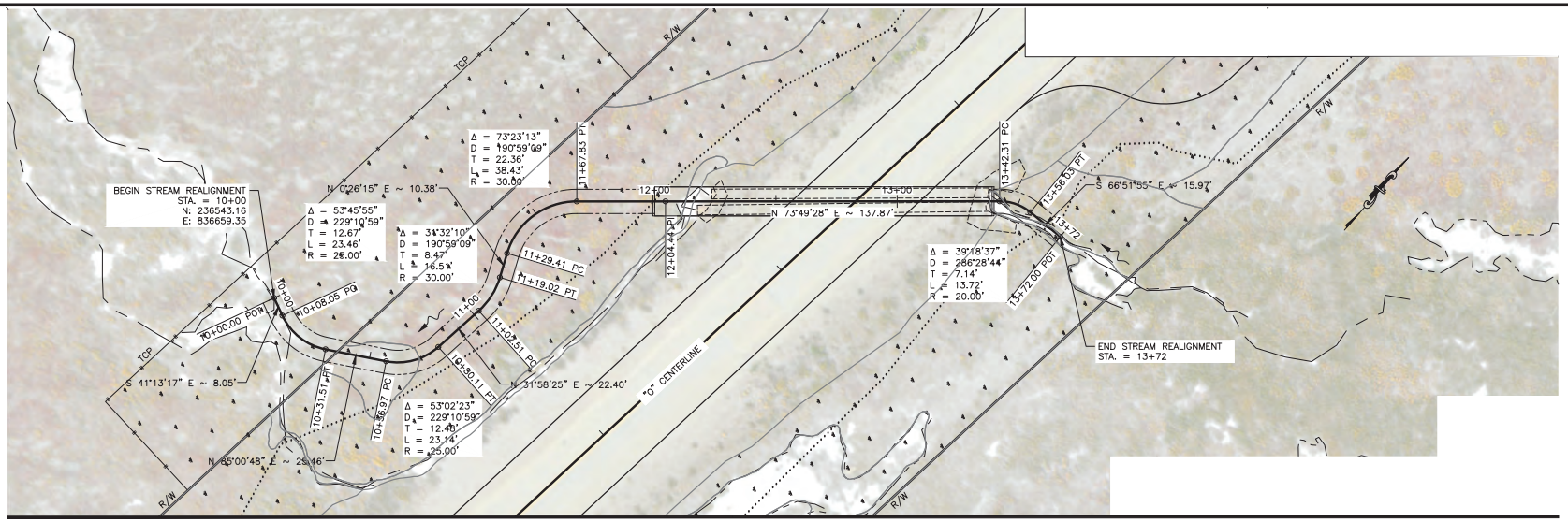

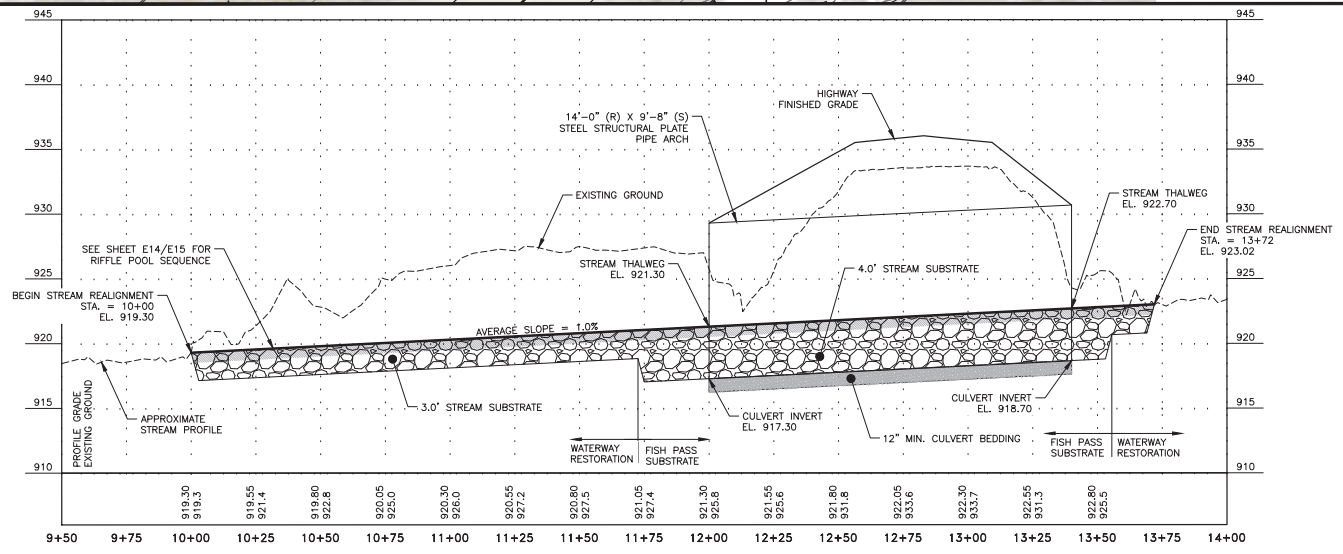

Dalton Highway MP120-135 Reconstruction

South Fork Little Nasty Creek Realignment

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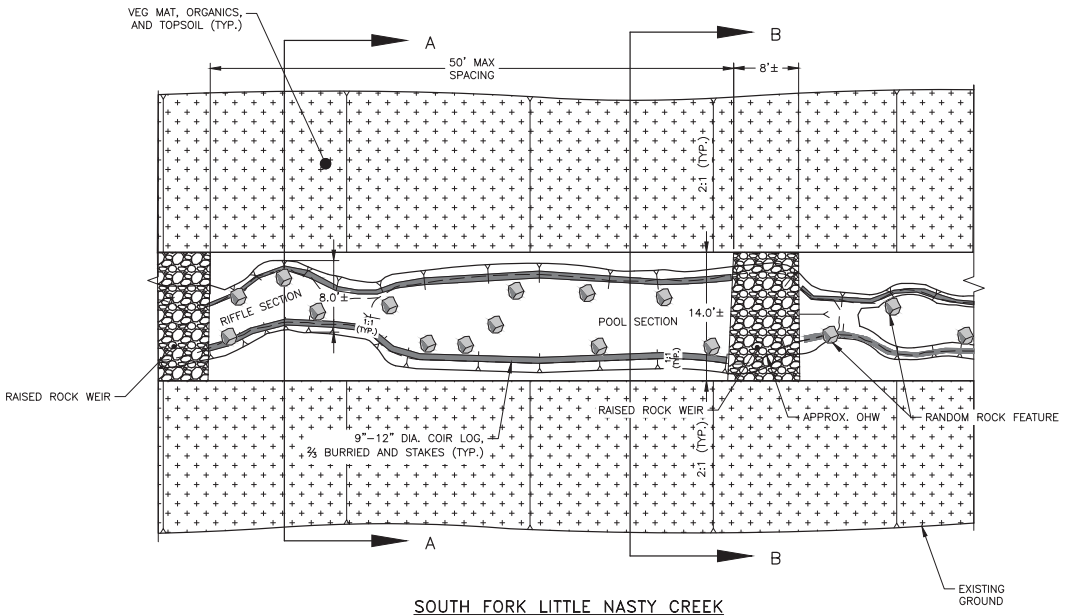
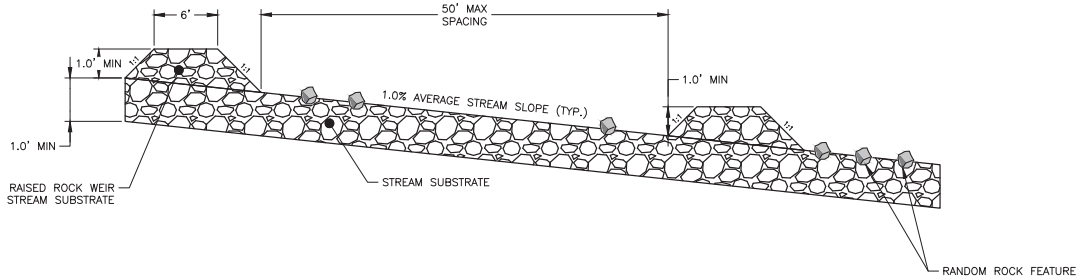
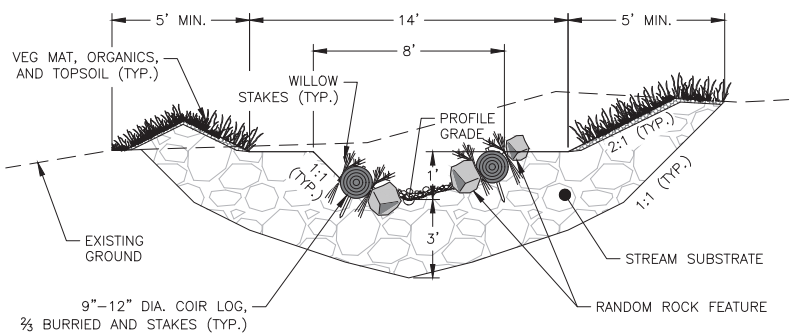


SOUTH FORK LITTLE NASTY CREEK
REALIGNMENT RIFFLE POOL SEQUENCE – PLAN VIEW

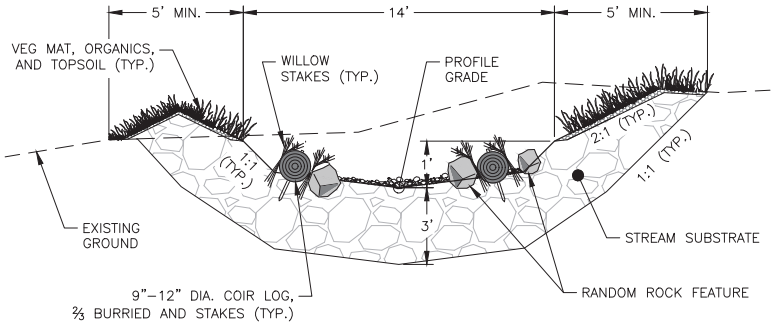


SOUTH FORK LITTLE NASTY CREEK
REALIGNMENT RIFFLE POOL SEQUENCE – PROFILE

Dalton Highway MP120-135 Reconstruction Pool-Weir Plan for South Fork Little Nasty Creek	POA-2022-00511 Project: Dalton Hwy. MP120-135 Reconstruction Date: May 2023 Sheet 30 of 39	APPLICANT: Alaska Department of Transportation and Public Facilities



SOUTH FORK LITTLE NASTY CREEK
REALIGNMENT SECTION STEP AND RIFFLE DETAIL

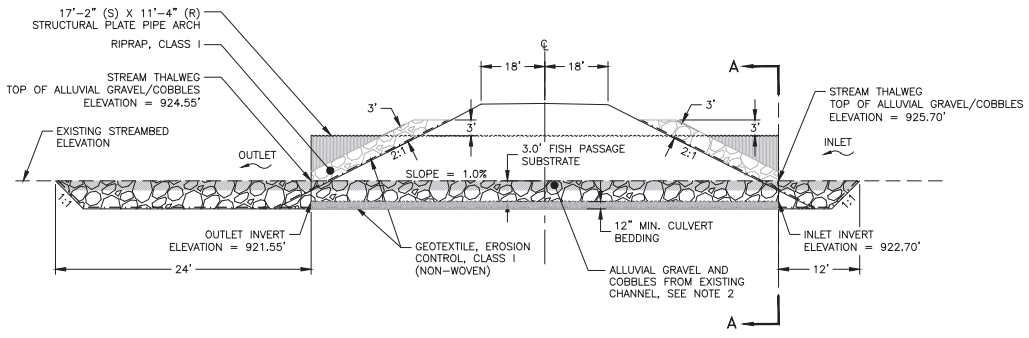


SOUTH FORK LITTLE NASTY CREEK
REALIGNMENT SECTION POOL DETAIL

NOTES:

1. SEE SECTION 690 FOR POOL AND RIFFLE SPACING

Dalton Highway MP120-135 Reconstruction South Fork Little Nasty Creek Realignment Sections	POA-2022-00511 Project: Dalton Hwy. MP120-135 Reconstruction Date: May 2023 Sheet 31 of 39	APPLICANT: Alaska Department of Transportation and Public Facilities



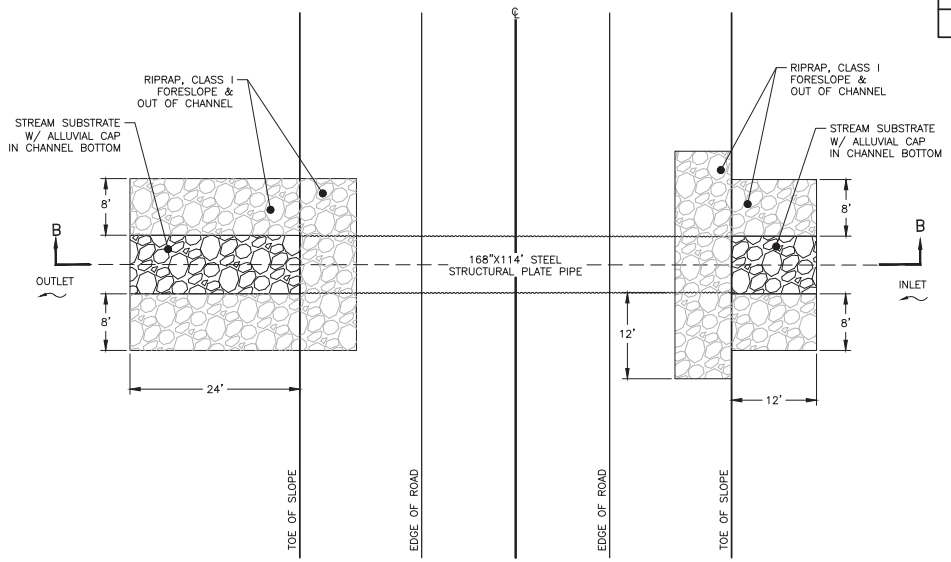
SECTION B-B

NOTES:

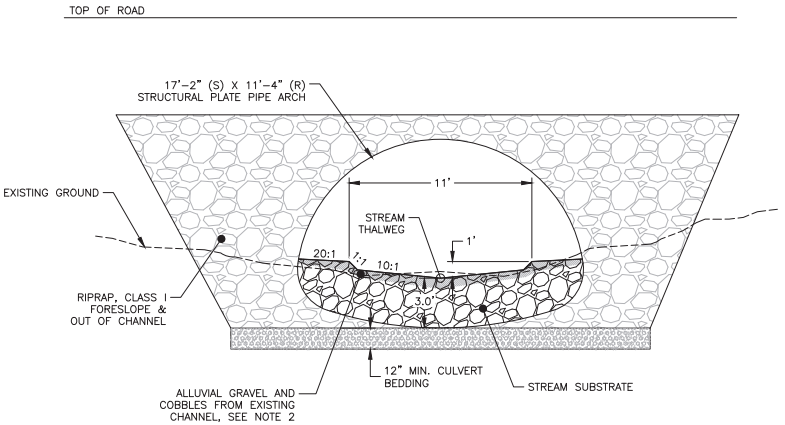
1. THIS CULVERT IS DESIGNED TO PROVIDE FISH PASSAGE.
2. INSTALL ALLUVIAL GRAVEL AND COBBLES FROM EXISTING CHANNEL TO FILL VOIDS WITHIN THE FISH PASS SUBSTRATE.
3. INSTALL A 17'-2" (R) X 11'-4" (S) STRUCTURAL PLATE STEEL PIPE ARCH EMBEDDED 3.0' FEET INTO THE CHANNEL BOTTOM.

HYDROLOGIC & HYDRAULIC SUMMARY				
DALTON HWY MILE 128.8 – STATION 1147+26 – LITTLE NASTY CREEK				
BASIN AREA (SQ. MI)	QFISH (CFS)	Q2 (CFS)	Q50 (CFS)	Q100 (CFS)
8.2	60	149	532	626
HEADWATER ELEVATION @Q50 IS 931.6 FT, @Q100 IS 932.4 FT				
HW/D @ 1= 852 CFS, ROAD OVERTOPS AT APPROXIMATELY 1,587 CFS				
CULVERT PURPOSE: CROSS DRAINAGE/ FISH PASSAGE				
ANTICIPATED ADDITIONAL BACKWATER: 0.0 FT				

FISH PASSAGE CULVERT SUMMARY DALTON HWY MILE 128.8							
DESCRIPTION	MATERIAL	LOCATION	DIMENSIONS (IN)	LENGTH (FT)	SKEW	ELEVATIONS (FT)	
						INLET INVERT	OUTLET INVERT
MAIN PIPE	STRUCTURAL PLATE STEEL	1147+26	17'-2"(S) X 11'4"(R) PIPE ARCH	114'	87 DEG.	922.70'	921.55'



CULVERT APRON PLAN VIEW



SECTION A-A

Dalton Highway MP120-135 Reconstruction

Little Nasty Creek Details

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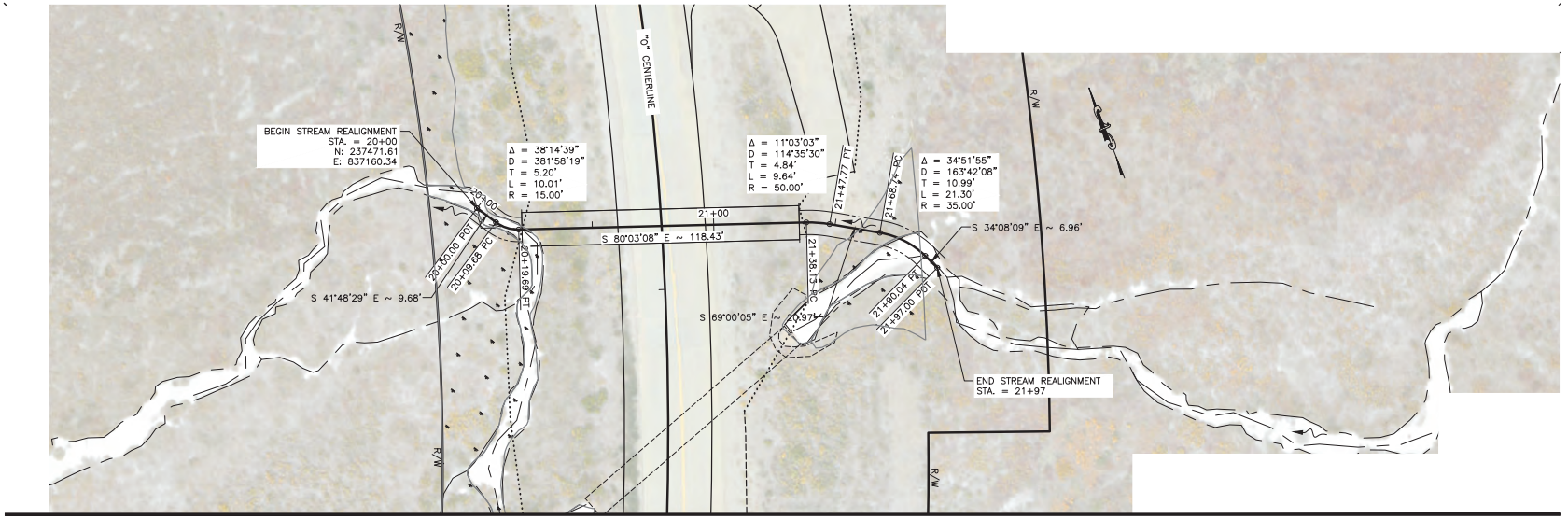

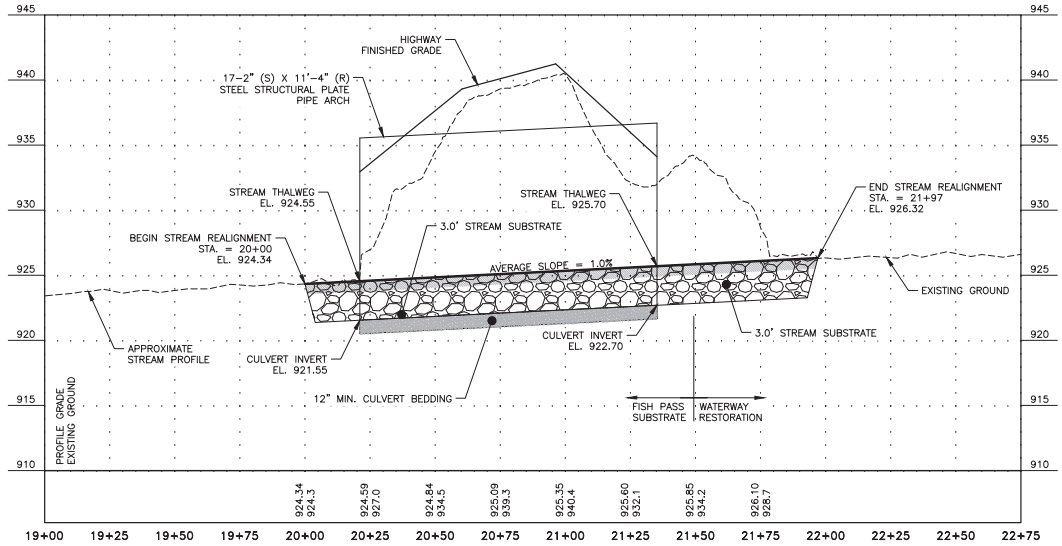

Dalton Highway MP120-135 Reconstruction

Little Nasty Creek Realignment

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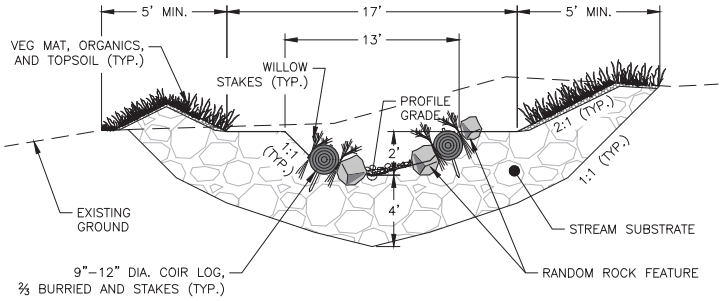
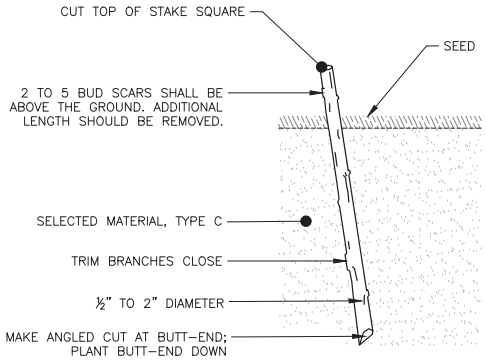


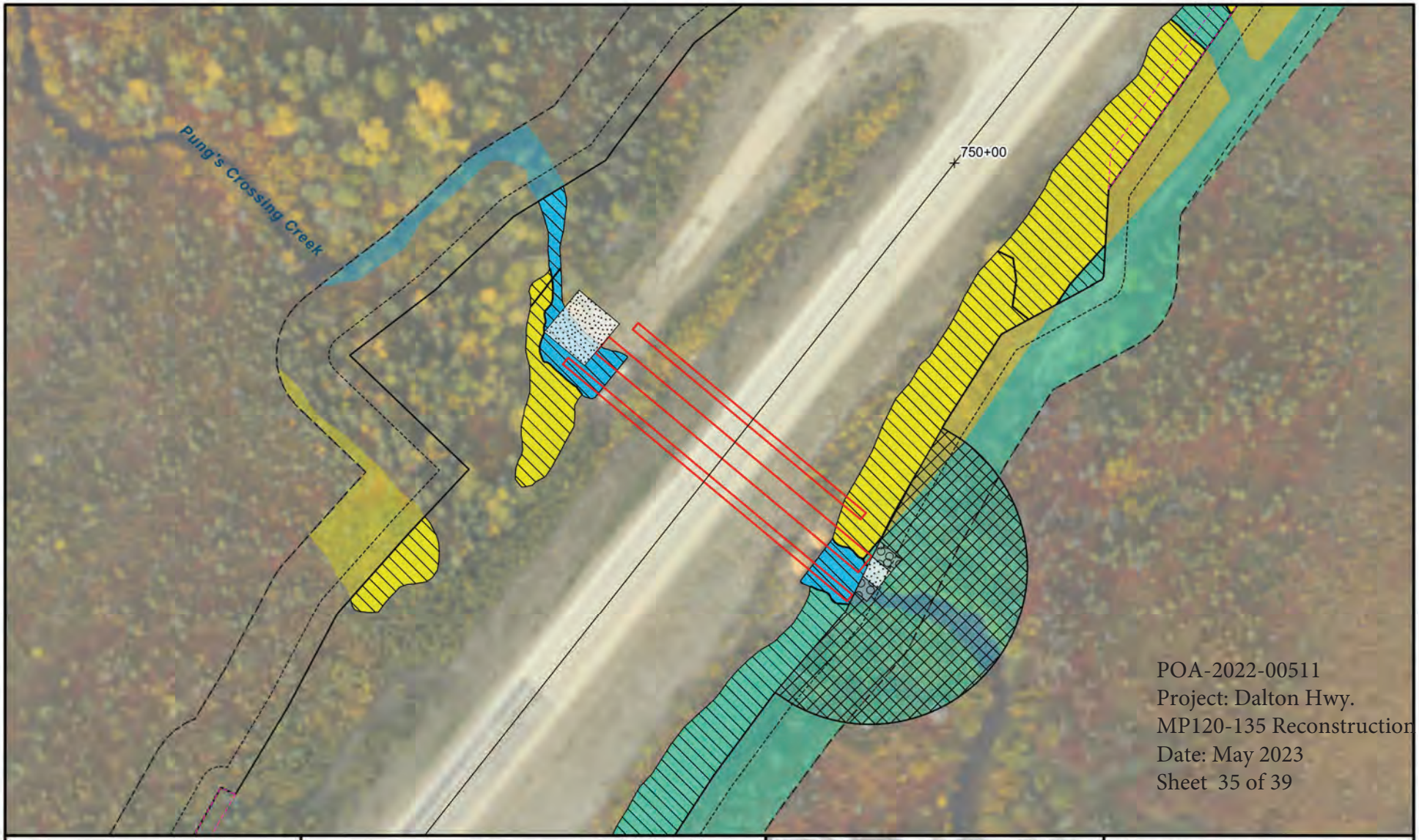
LITTLE NASTY CREEK
REALIGNMENT SECTION DETAIL



WILLOW STAKING DETAIL

WILLOW STAKING NOTES:

1. THE CUTTING SHALL BE TRIMMED INTO LIVE STAKES AT LEAST 20" LONG.
2. DO NOT PLANT IN ROWS.
3. DO NOT DAMAGE BUDS, STRIP BARK OR SPLIT THE STAKE DURING INSTALLATION. DAMAGED STAKES SHALL BE REPLACED IMMEDIATELY.
4. SPRING PLANTING: PLANT STAKES BY FIRST MAKING A PILOT HOLE USING A REBAR OR "STINGER".
   FALL PLANTING: INSERT LIVE STAKES IN CONJUNCTION WITH ROCK PLACEMENT.
5. WATER EACH STAKE WHEN PLANTING TO REMOVE AIR POCKETS.
6. WILLOWS WILL BE PLANTED APPROXIMATELY 15" O.C.



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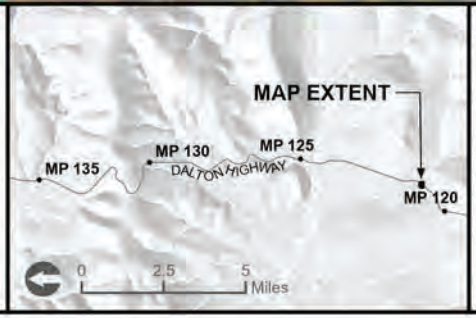
Dalton Highway MP120-135 Reconstruction

Pung's Crossing Creek
Temporary Impacts

0 30 60 Feet
HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Stationing
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Thermal Berm
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Additional Stream Substrate
- Additional Rip Rap
- Temporary Impact Area
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- New Culvert



APPLICANT: Alaska Department of Transportation and Public Facilities

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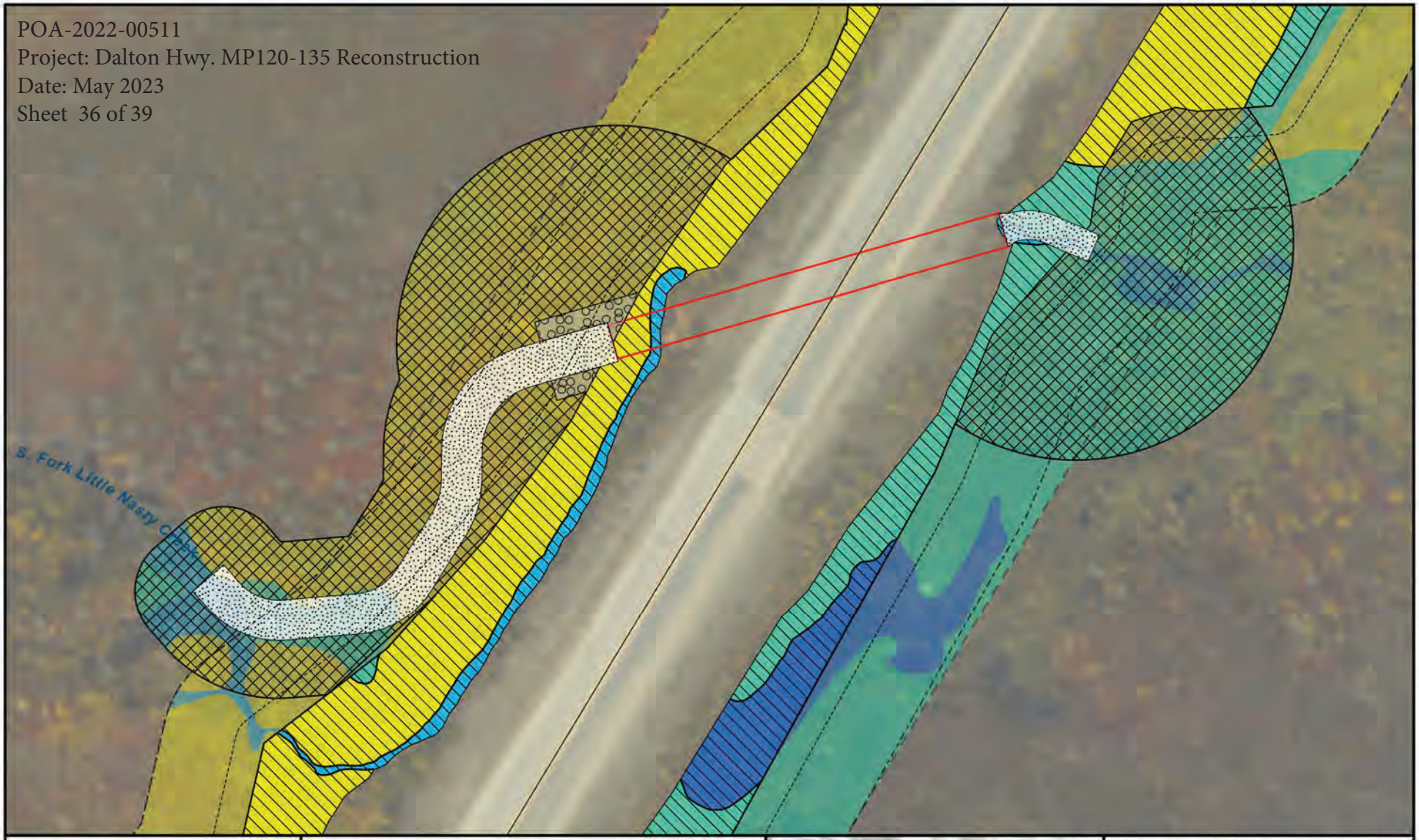

Dalton Highway MP120-135 Reconstruction

South Fork Little Nasty Creek Temporary Impacts

0 25 50 Feet

HORIZONTAL DATUM: NAD 83 AK State Plane Zone 4

- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Additional Stream Substrate
- Additional Rip Rap
- Temporary Impact Area
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Fresh Waterbody
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- New Culvert

APPLICANT: Alaska Department of Transportation and Public Facilities

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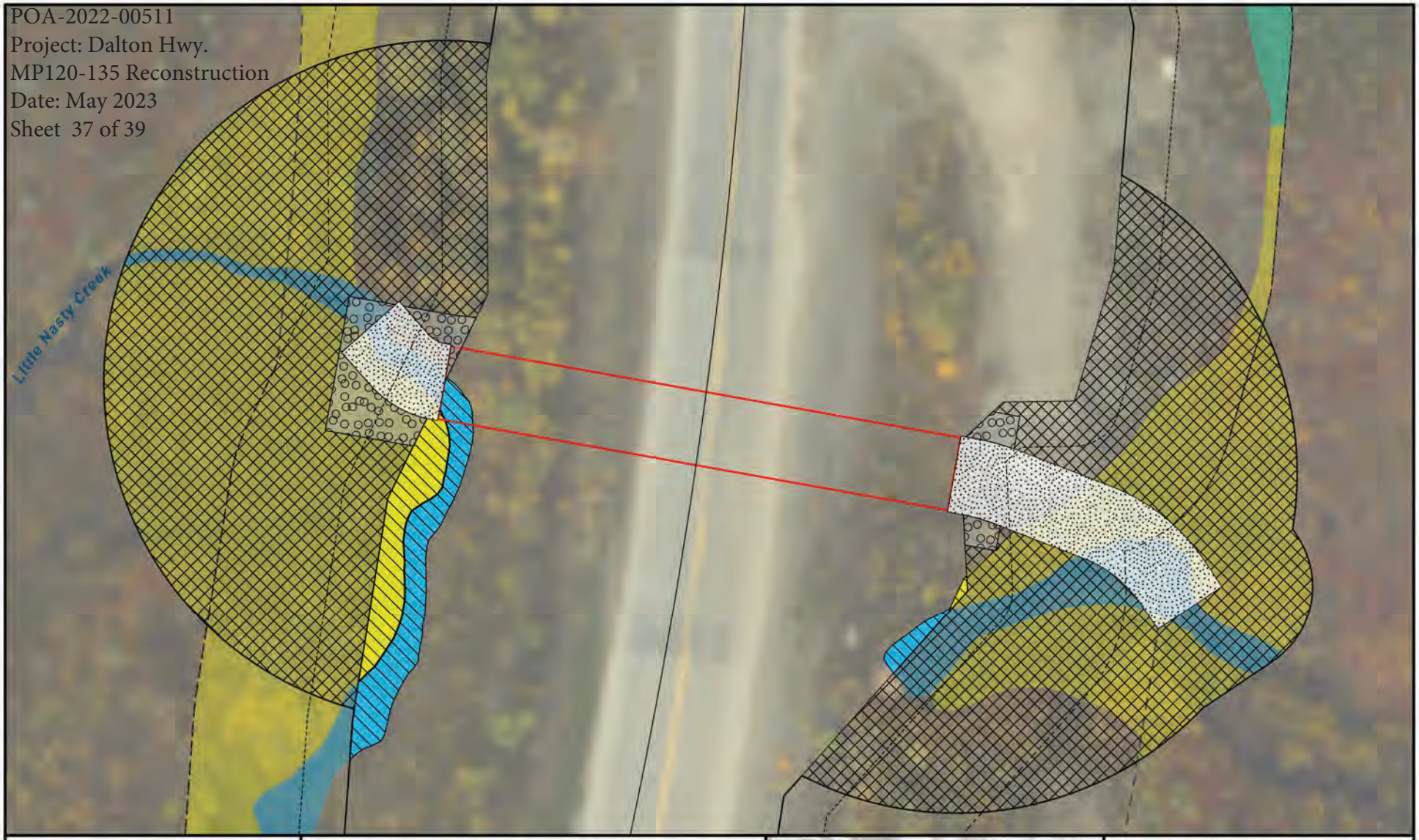


Dalton Highway MP120-135 Reconstruction

Little Nasty Creek
Temporary Impacts

0 10 20 Feet
HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

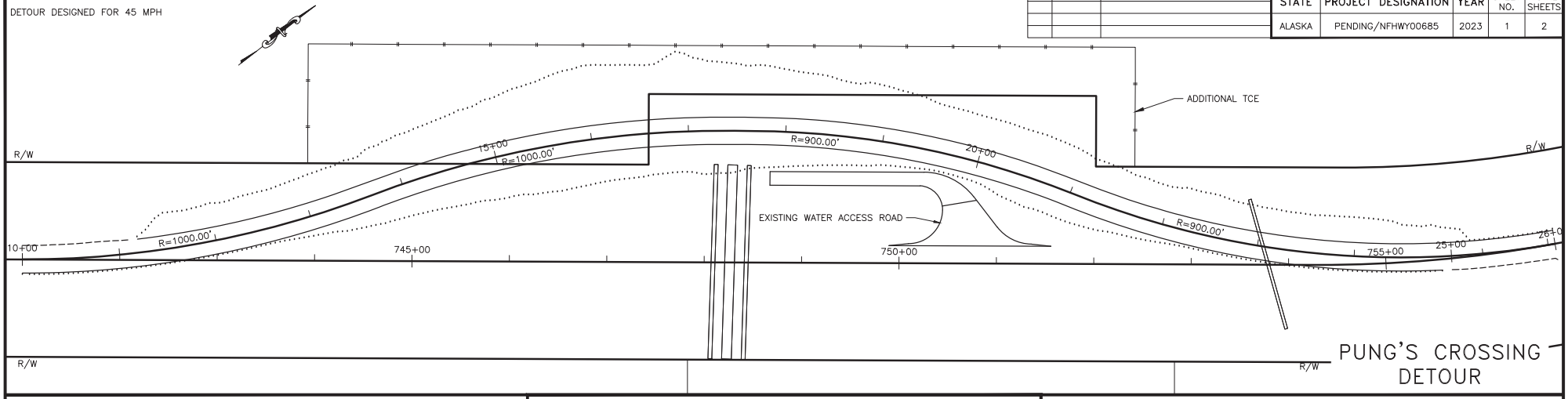
- Project Alignment
- Project Footprint
- Vegetative Buffer
- Work Area
- Additional Stream Substrate
- Additional Rip Rap
- Temporary Impact Area
- Wetland Mapping Limits
- Wetland and Waterbody Impact
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Perennial Rivers and Streams
- New Culvert

APPLICANT: Alaska Department of Transportation and Public Facilities

DETOUR DESIGNED FOR 45 MPH

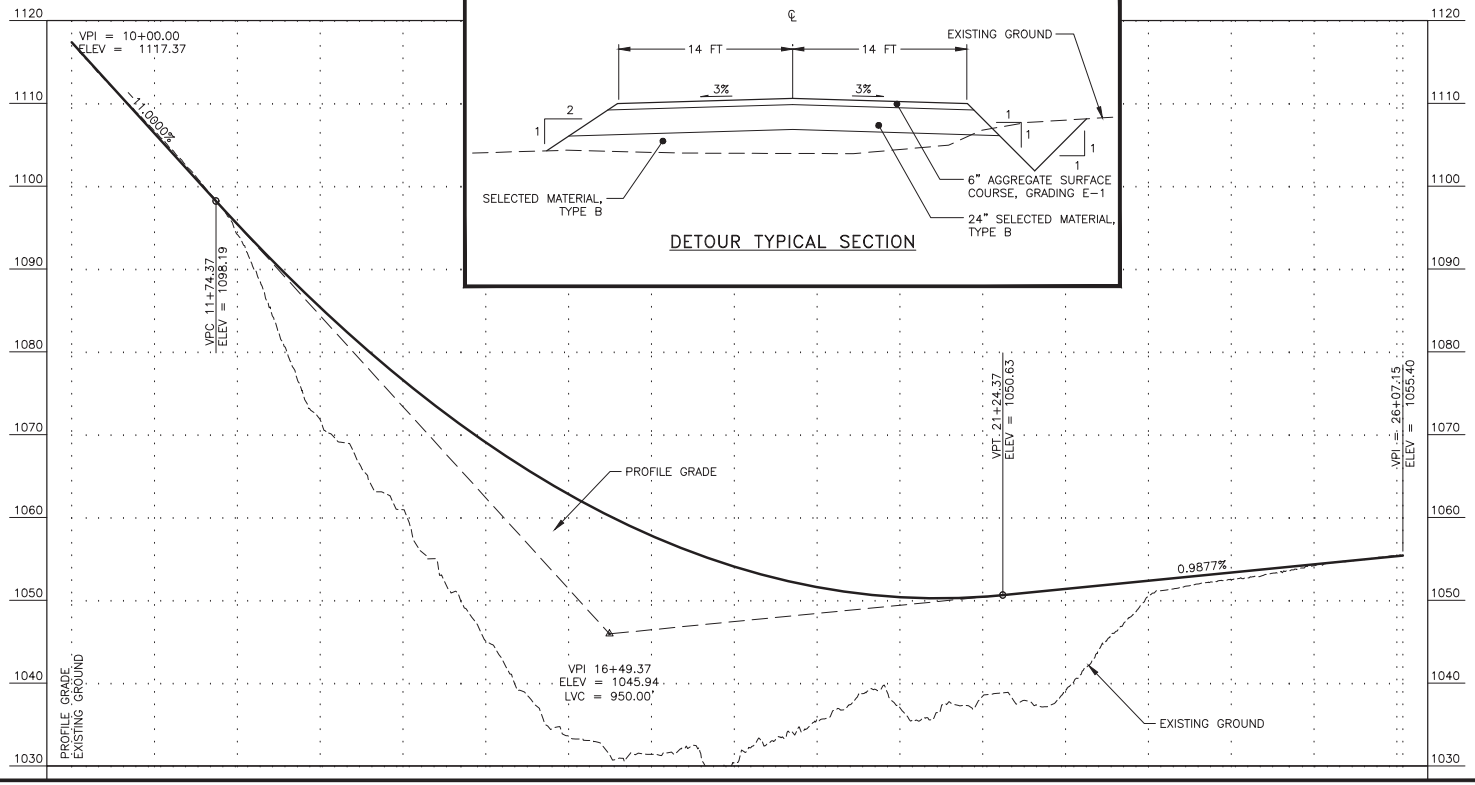
NO.	DATE	REVISION

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	PENDING/NFHWY00685	2023	1	2



PUNG'S CROSSING DETOUR

DETOUR TYPICAL SECTION



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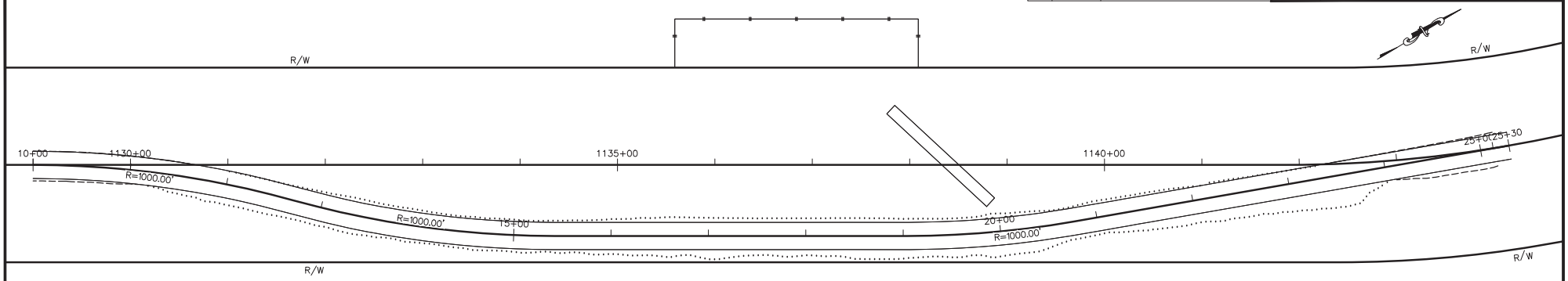
PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200

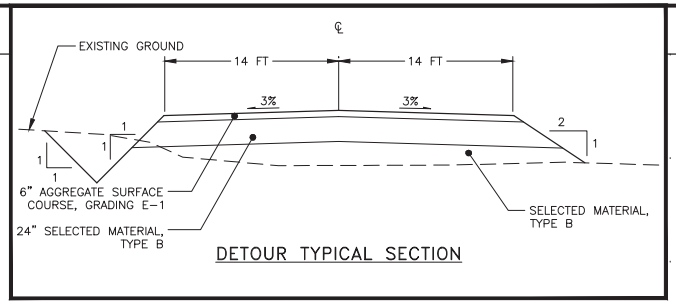
DETOUR DESIGNED FOR 45 MPH

NO.	DATE	REVISION

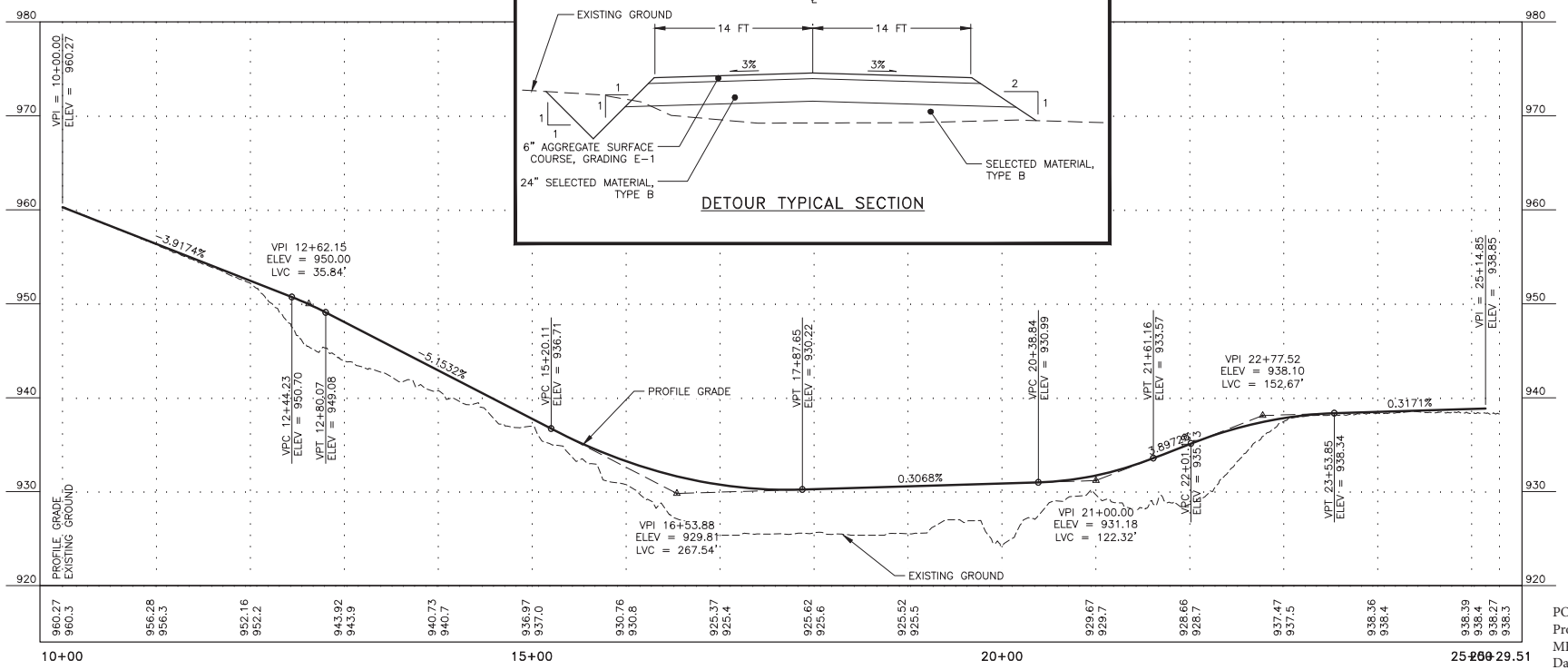
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	PENDING/NFHWY00685	2023	1	2



S. FORK LITTLE NASTY CREEK DETOUR



DETOUR TYPICAL SECTION



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