



# MEMORANDUM

**State of Alaska**  
**Department of Transportation & Public Facilities**  
**Northern Region Design & Engineering Services**

**TO:** Sarah E. Schacher, P.E.  
Preconstruction Engineer  
Northern Region

**THRU:** Jake Allen, P.E.   
Project Delivery Team Lead  
Northern Region

**FROM:** John Netardus, P.E.   
Engineering Manager  
Northern Region

**DATE:** December 7, 2022

**FILE NO:** H:\Projects\Fbks\_NP\NFHWY00633 FAST Area  
Surface Upgrades FFY2023\6 Design\2 DSR

**TELEPHONE NO:** 907-451-5448

**SUBJECT:** FAST Area Surface Upgrades FFY2023  
Pending/NFHWY00633  
**Abbreviated Design Study Report**

## Introduction/History

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Fairbanks Area Surface Transport (FAST) and the Federal Highway Administration (FHWA), is proposing to improve surface transportation facilities in three (3) locations in the Fairbanks North Star Borough under the FAST Improvement Program FFY2020-2022 (DESIGN) 0002473/NFHWY00506. These locations will include improvements to twelve roads, one crossing location, and one public recreational facility. The total road surface affected will be approximately 15,436 square yards.

## Project Description

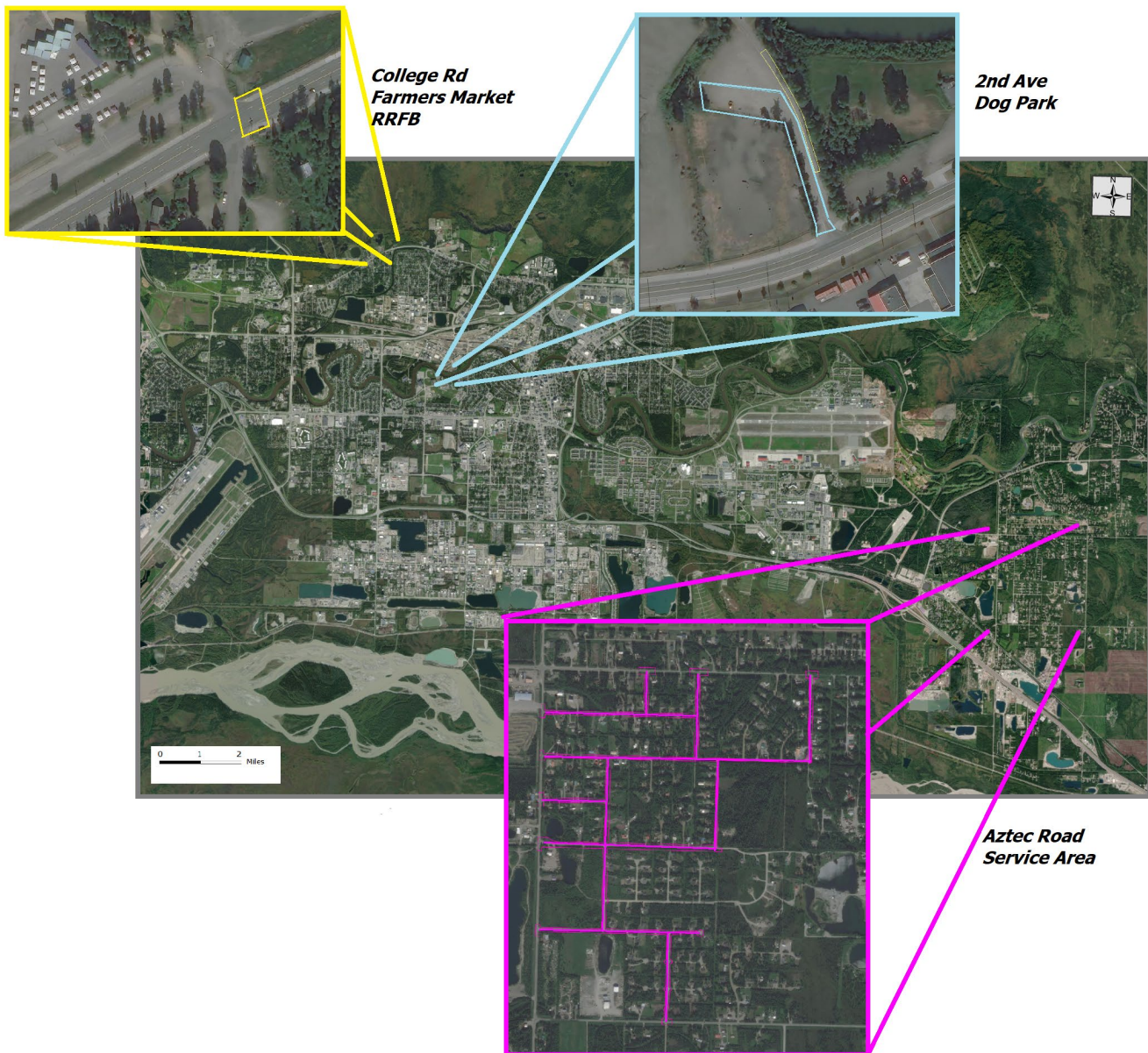
The purpose of this project is to resurface twelve roads in the Aztec Road Service Area in North Pole, install a crosswalk with rectangular rapid flashing beacon (RRFB) on College Road, and construct access and parking improvements to the 2<sup>nd</sup> Avenue Dog Park in Fairbanks.

- Aztec Road Service Area- Aztec Road, Charlotte Road, Copper Street, Choctaw Road, Glenn Street, Ione Street, Pueblo Street north of Copper Street, and Shoshone Drive will be milled and paved. Approaches to driveways will be paved. The crown of the road will be established at 2% away from centerline.
- Aztec Road Service Area- Marsh Laurel Avenue, Pueblo Street south of Copper Street, and Tamarack Woods Drive will be upgraded from gravel to asphalt surfaces. Approaches to driveways will be paved. The crown of the road will be established at 2% away from centerline.
- College Road- A crosswalk will be marked from the corner of College Road and Caribou Way to the opposite side of College Road to designate a crossing location near the Farmers Market. An RRFB will also be installed. Two curb ramps will be replaced on either side of the crosswalk.
- The 2<sup>nd</sup> Avenue Dog Park in Fairbanks will receive significant upgrades, including replacement of damaged pavement on the adjacent pedestrian/bike path, reshaping of the existing aggregate surface to promote positive drainage, paving the entry access and the parking area, and adding an ADA compliant access ramp from the pedestrian/bike path to the parking area.

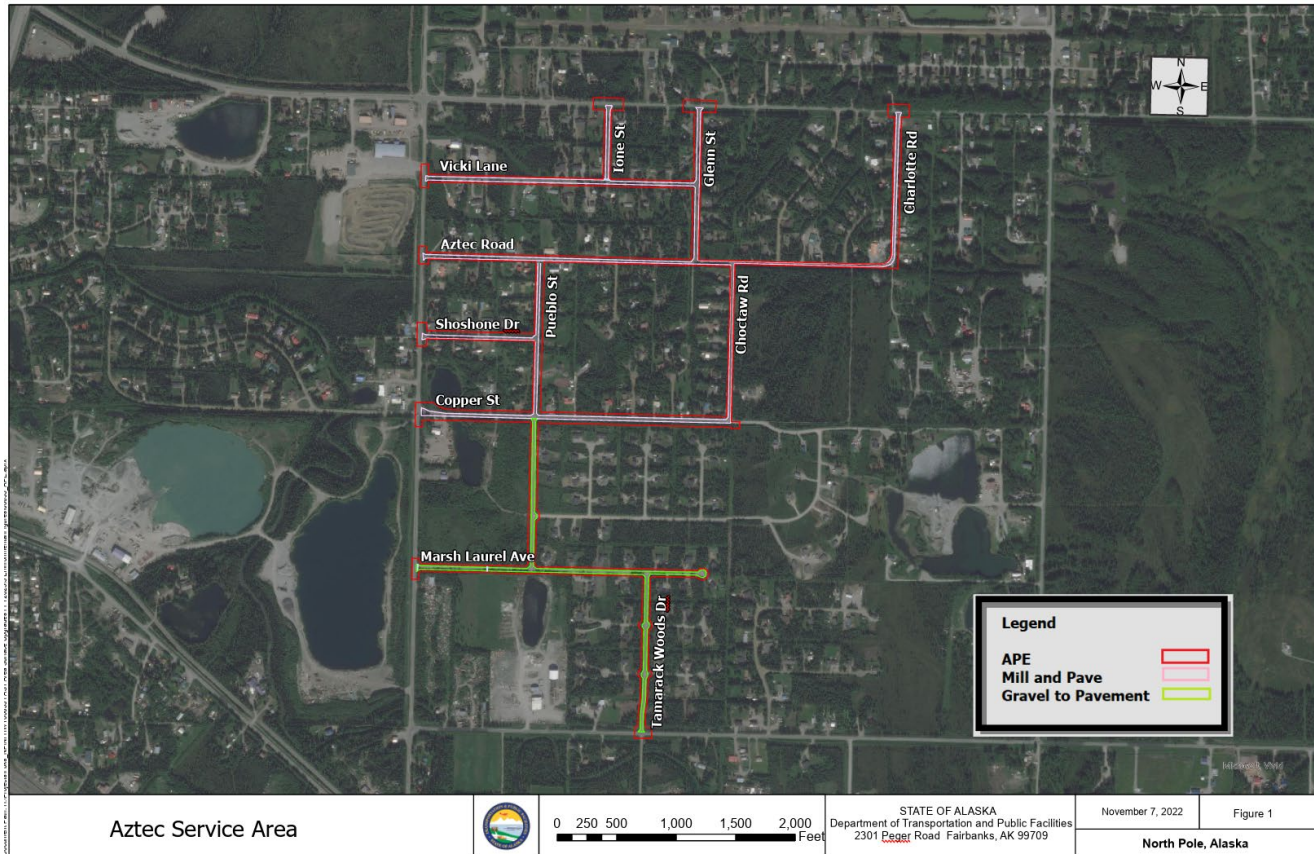
Where applicable, existing asphalt will be reclaimed and used as base material. Manhole and utility lids and storm drains will be adjusted to match the new surfaces; curb ramps will be updated to comply with ADA standards

All work will take place on existing road, driveway, or pedestrian/bike path surfaces.

*Map of project areas*



Map of Aztec Road Service Area



## Design Standards

This project will be designed in accordance with the following standards:

- A policy on Geometric Design of Highways and Streets, 2011.* American Association of State Highway and Transportation Officials (AASHTO)
- Alaska Highway Preconstruction Manual (HPM)*
- Roadside Design Guide, 2011.* AASHTO
- DOJ 2010 Standards for Accessible Design*
- Guide for the Development of Bicycle Facilities, 2012* AASHTO
- Alaska Traffic Manual (ATM)*
- U.S. Department for Transportation ADA Standards for Transportation Facilities, 2006*
- U.S. Department of Justice ADA Standards for Accessible Design, 2010*

A Design Designation and Design Criteria Waiver is in Appendix A.

## Design Exceptions and Design Waivers

There are no design exceptions or design waivers proposed for this project.

## **Design Alternatives**

Aztec Road Service Area- The pavement on Aztec Road, Charlotte Road, Copper Street, Choctaw Road, Glenn Street, Ione Street, Pueblo Street north of Copper Street, and Shoshone Drive: no design alternatives were considered.

Aztec Road Service Area- Marsh Laurel Avenue, Pueblo Street south of Copper Street, and Tamarack Woods Drive: The alternatives were either to pave these roads with asphalt or to supplement the current surface with aggregate surface course, grading E-1 and a dust palliative. Paving the road to match the new pavement on the other roads in the service area was determined to be the best option for longevity. The mobilization of equipment to pave adjacent roads also makes this the most economical time to pave these roads.

2<sup>nd</sup> Avenue Dog Park: Adding aggregate surface course, grading E-1 and a dust palliative to the existing material and creating an aggregate surface was considered as a cost saving approach. The other option was a fully paved approach and a paved parking pad. The pedestrian/bike path will be repaired with an asphalt surface to match the existing path in either case. Longevity of the driving surface was the determining factor in deciding to specify a paved entrance.

College Road Farmers Market RRFB: No design alternatives were considered.

## **Preferred Design Alternative**

The preferred alternatives for each design are as follows:

Aztec Road Service Area- The pavement on Aztec Road, Charlotte Road, Copper Street, Choctaw Road, Glenn Street, Ione Street, Pueblo Street north of Copper Street, and Shoshone Drive: Reclaim existing pavement and use it as a crushed asphalt base course. Reclaiming provides a strong base course material and recycles the older pavement. The costs are lower than the pavement removal alternative, which would require adding an aggregate base course of D-1 or similar for leveling before the surface can be paved. One culvert will be replaced. Pave with 2" of HMA type II, class B.

Aztec Road Service Area- Marsh Laurel Avenue, Pueblo Street south of Copper Street, and Tamarack Woods Drive: Add D-1 to raise the grade to match adjacent paved roads. Two culverts will be replaced. Pave with 2" of HMA type II, class B.

2<sup>nd</sup> Avenue Dog Park- Excavate existing gravel surface material, place aggregate base course, grading D-1 base course and pave access and a portion of the parking area. Repave a portion of the pavement on the adjoining pedestrian/bike path and install an ADA compliant access ramp from the path to the paved parking pad. Grade parking lot to promote positive drainage.

College Road Farmers Market RRFBs- A load cell will be placed near one of two power poles (to be determined by GVEA) and rectangular rapid flashing beacons installed on both sides of College Road. Signal buttons will be installed on upright poles. ADA compliant ramps will be installed at the curbs on both sides of the College Road and a pedestrian crosswalk will be painted. Pedestrian warrants have been confirmed by Traffic and Safety.

### **3R Analysis**

A 3R Analysis is not applicable.

### **Traffic Analysis**

A traffic analysis is not applicable.

### **Horizontal/Vertical Alignment**

No horizontal alignments will be changed. On Aztec Road, Charlotte Road, Copper Street, Choctaw Road, Glenn Street, Ione Street, Pueblo Street north of Copper Street, and Shoshone Drive, there will be a nominal 2" grade raise as an outcome of paving. On Marsh Laurel Avenue, Pueblo Street south of Copper Street, and Tamarack Woods Drive, the grade will be raised to match the paved roads, approximately 6". No change to vertical alignment is anticipated for College Road. There will be vertical changes to the alignment of the 2<sup>nd</sup> Avenue Dog Park to promote positive drainage.

### **Typical Section(s)**

See Appendix B.

### **Pavement Design**

Mill and Pave Asphalt Roadways:

- 2 inches HMA, Type II, Class B
- 4 inches CABC or aggregate base course, grading D-1

Gravel to Asphalt Roadways:

- 2 inches HMA, Type II, Class B
- 6 inches aggregate base course, grading D-1
- Subbase grading F as needed to establish profile and ensure adequate coverage of culverts

Pedestrian/Bike Path:

- 1.5 inches HMA
- 4 inches aggregate base course

### **Right-of-Way Requirements**

All project work will remain within the existing right of way. No acquisitions will be required.

## Maintenance Considerations

Entity	Structure or Roadway	Maintenance Impact
<i>Fairbanks North Star Borough</i>	Aztec Road Service Area	Restore serviceability
<i>Fairbanks North Star Borough</i>	2 <sup>nd</sup> Avenue Dog Park	Restore serviceability
<i>State of Alaska</i>	College Road	New facility for sign/electrical maintenance

Agencies above will maintain the identified facilities.

## Material Sources

All materials will be furnished by the contractor.

## Utility Relocation & Coordination

Numerous existing utilities, consisting of telephone, electric, sewer, water, and natural gas reside within the project areas. Relocations are not anticipated. Utility lids, manholes and risers will be adjusted.

## Access Control Features

Access control is maintained by the driveway permitting process. No access control features will be modified in this project.

## Pedestrian/Bicycle (ADA) Provisions

All existing curb ramps that are part of the project will be evaluated to determine whether they are ADA compliant. Curb ramps determined not to be ADA compliant will be reconstructed to comply with current ADA standards. ADA compliant ramps will be installed as part of the installation of Rectangular Rapid Flashing Beacons on College Road. The new crosswalk and flashing beacons will enhance pedestrian access across College Road.

## Safety Improvements

Upgrades to existing ramps, improvements to the riding surface of bike paths, paint striping, and flashing beacons are all designed to improve safety, as well as utility of the roads and paths.

## Intelligent Transportation System Features

This project does not include Intelligent Transportation System components.

## **Drainage**

The 2<sup>nd</sup> Avenue Dog Park parking area will be paved to promote positive drainage. Aztec Road Service Area will have three failed culverts replaced and when paved a crown on the road will be established to promote positive drainage. The other project areas will have no changes to current drainage patterns.

## **Soil Conditions**

Material analysis will not be performed for this project, as there are no planned alterations to subsurface conditions.

## **Erosion and Sediment Control**

Erosion and sediment control requirements for this project are minor. Best management practices (BMP) will be employed for dust control, inlet protection, and runoff control as appropriate to the circumstances. Post-construction BMPs may include, but are not limited to, establishing vegetation, paved road surface, and addition of sodium chloride or calcium chloride for dust abatement.

## **Environmental Commitments**

The Environmental Document is provided in Appendix C.

No SWPPP is required, as this project will not expose more than one acre of erodible surface.

The following environmental commitments apply to this project:

- During construction, the contractor will maintain access to the Dog Park.
- The contractor will not be allowed to use the Dog Park parking area as a staging location for the project.
- Mechanized vegetation/land clearing activities will be avoided during the migratory bird nesting season (May 1 – July 15) unless a mitigative work plan is submitted by the contractor and approved by DOT&PF.

## **Work Zone Traffic Control**

Contract specifications will require contractors to submit and obtain approval for a Traffic Control Plan (TCP).

## **Value Engineering**

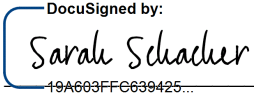
A value engineering study will not be prepared for this project. The roads in the project are not part of the National Highway System and the estimate project cost is significantly below \$40 million. This is compliance with P&P 05.01.030, dated April 12, 2013.

### Cost Estimate

The estimated costs for this project are as follows:

Design*	\$595,000.00
Utilities	\$0.00
Right of Way	\$0.00
Construction (Includes 23% Engineering)	\$2,377,000.00
Total Cost of Project	<u>\$2,972,000.00</u>

\*This is the total design budget that has generated past projects and will generate several other spinoff projects, so is not representative of design costs for this project only.

Approved:  12/7/2022  
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Sarah E. Schacher, Preconstruction Engineer Date

PFW

Attachments:

Copy to: Preconstruction/Project file  
Dan Schacher, M&O District Superintendent  
Original to: Barbara Tanner, Chief of Contracts  
cc: NR Design Directive 20-01 Distribution



## Appendix A

### Design Designation and Design Criteria Waiver

# MEMORANDUM

**State of Alaska**  
**Department of Transportation & Public Facilities**  
**Northern Region Design and Engineering Services**

**TO:** Sarah E. Schacher, P.E.  
Preconstruction Engineer  
Northern Region

**DATE:** December 7, 2022

**FILE NO:** H:\Projects\Fbks\_NP\NFHWY00633 FAST Area Surface Upgrades  
FFY2023\6 Design\1 Design Criteria

**THRU:** James Allen, P.E.  
Project Delivery Lead  
Northern Region

**PHONE NO:** 907-451-5448

**FAX NO:** 907-451-5126

**FROM:** John Netardus, P.E.  
Engineering Manager  
Northern Region

**SUBJECT:** FAST Area Surface Upgrades  
FFY2023  
Pending/NFHWY00633  
**Design Designation and Design  
Criteria Waiver**

A waiver of the Highway Preconstruction Manual requirement for a Design Designation (HPM 1100.4.1) and Design Criteria (HPM 1100.4.2) is requested.

The purpose of this project is to resurface twelve residential roads in North Pole, improve access to the 2<sup>nd</sup> Avenue Dog Park in Fairbanks, and install a crossing with flashing beacon in Fairbanks. All work will take place on existing roads or approaches. No useful information would be obtained through the development of a Project Design Designation because it will not alter any of the geometric conditions listed on the Project Design Criteria sheet.

Please acknowledge your approval of the waiver of Design Designation and Design Criteria by signing below:

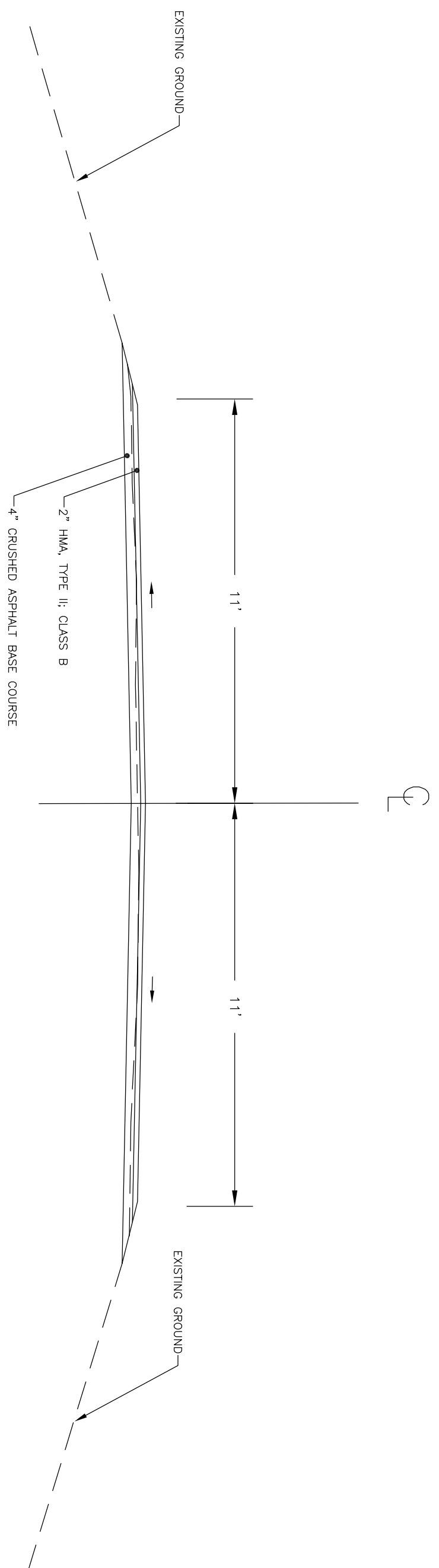
Approved:  12/7/2022  
19A603FEC639425  
\_\_\_\_\_  
Sarah E. Schacher, Preconstruction Engineer Date

pfw

cc: Sara Lucey, Acting Planning Chief

## Appendix B Typical Sections

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	PENDING/NFHWY00633	2023	B1	B3

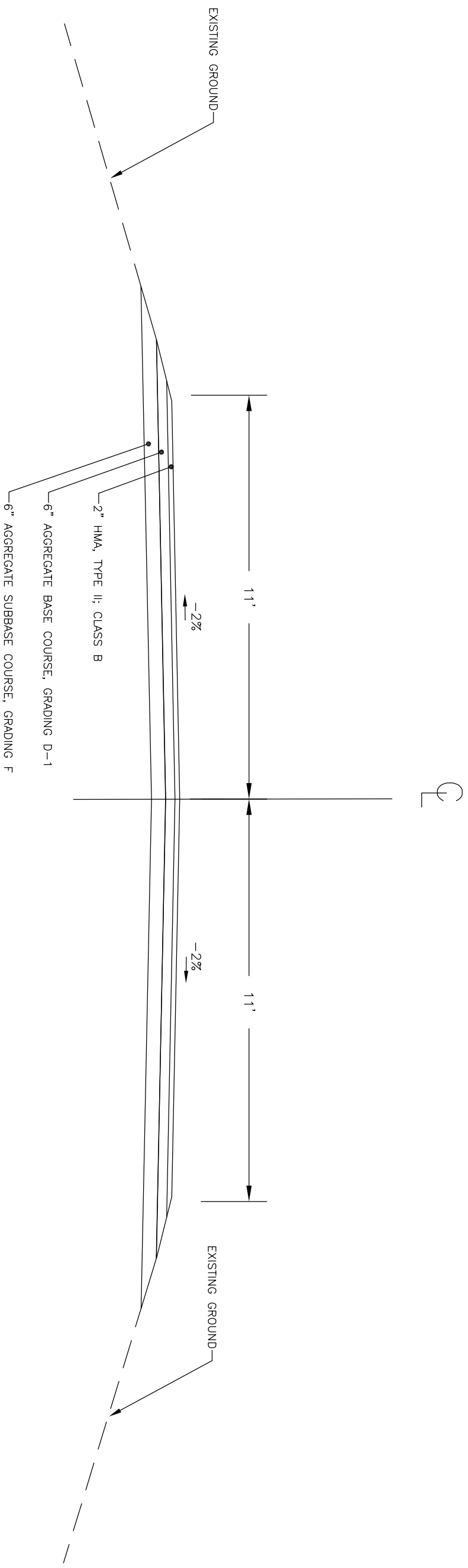


PROPOSED TYPICAL SECTION  
 AZTEC, CHARLOTTE, COPPER, CHOCTAW, GLENN, IONE, PUEBLO NORTH OF COPPER, SHOSHONE, VICKI

TYPICAL SECTION 1



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	PENDING/NFWY00633	2023	B2	B3

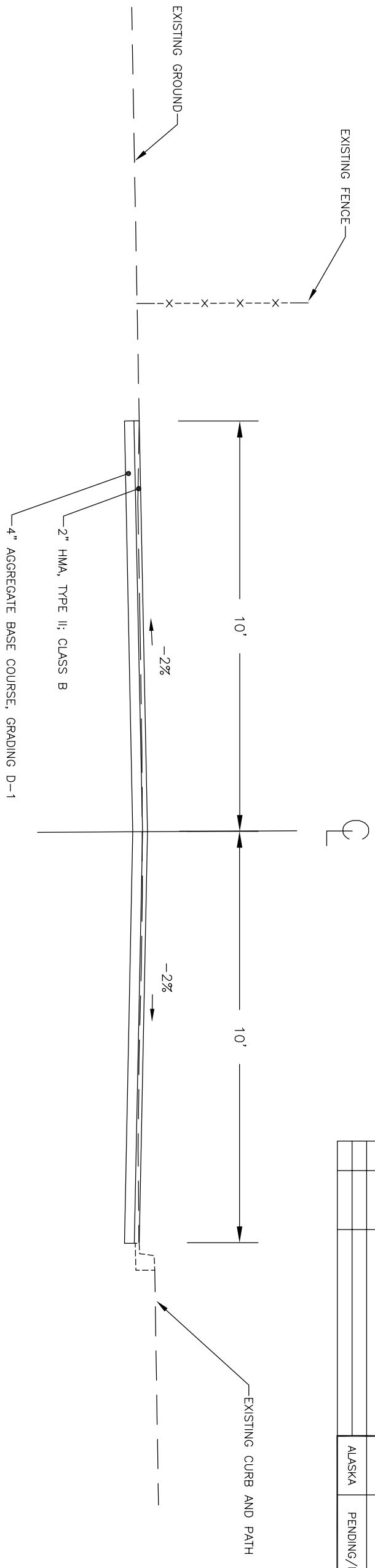


PROPOSED TYPICAL SECTION  
 PUEBLO SOUTH OF COPPER, TAMARACK WOODS, AND MARSH LAUREL

TYPICAL SECTION 2



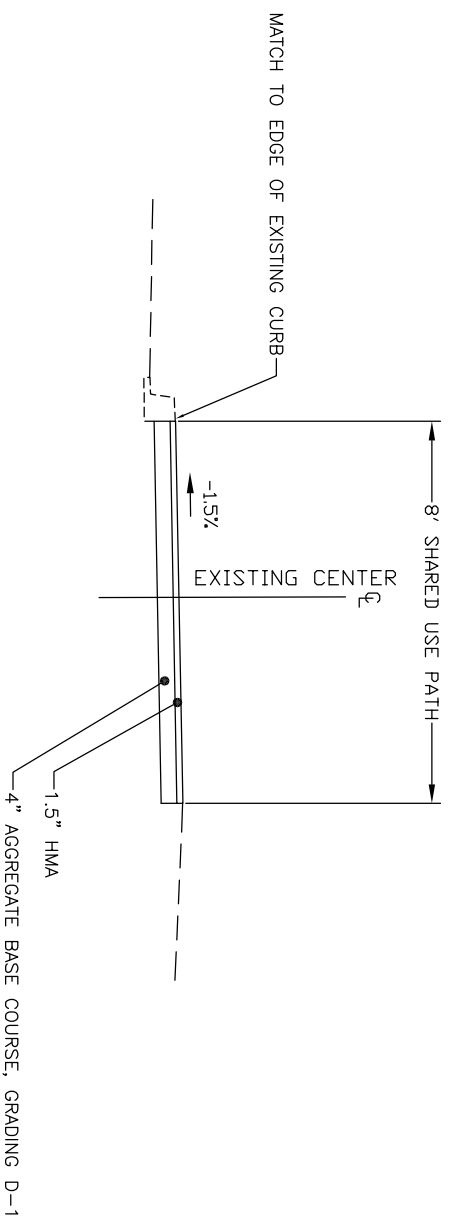
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	PENDING/NFHWY00633	2023	B3	B3



PROPOSED TYPICAL SECTION  
 2ND AVENUE DOG PARK ACCESS

**NOTES:**

1. EXCAVATE EXISTING MATERIAL TO 6" DEPTH. EXCAVATED MATERIAL IS TO BE USED FOR RESHAPING PARKING AREA.



PROPOSED TYPICAL SECTION  
 2ND AVENUE DOG PARK BIKE PATH



PROPOSED PAVING STRUCTURE  
 2ND AVE DOG PARK ASPHALT PARKING SURFACE

**NOTES:**

1. SAW CUT, OR USE OTHER METHOD APPROVED BY THE ENGINEER TO CUT ROOTS 1' DEEP ALONG EDGES OF PATH PRIOR TO RECLAIMING OR REUSING EXISTING ASPHALT. THIS IS SUBSIDIARY TO PAY ITEM 203.0003.0000 UNCLASSIFIED EXCAVATION
2. ASPHALT PARKING AREA TO BE EXCAVATED TO DEPTH TO PLACE AGGREGATE BASE AND HMA. EXCAVATED MATERIAL IS TO BE USED FOR GRADING THE GRAVEL PORTION OF THE PARKING LOT.

TYPICAL SECTION 3



## Appendix C Environmental Document



**State of Alaska  
Department of Transportation & Public Facilities**

**CLASS OF ACTION CONSULTATION FORM**  
*(NEPA Assignment Program Projects)*

*The environmental review, consultation, and other actions required by the applicable Federal environmental laws for this project are being, or have been carried out by the DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated November 3, 2017, and executed by FHWA and DOT&PF.*

**I. Project Information**

**A. Project Name:** FAST Area Surface Upgrades FFY2023

**B. State Project Number:** NFHWY00633

**C. Federal Project Number:** pending

**D. Primary/Ancillary Project Connections:** Primary: NFHWY00506 Fast Improvement Program FFY 2020-2022 (Design)

**E. COA Determination:** 23 CFR 771.117(d)(13)

**F. Project Scope:**

**TIP or STIP:** TIP

**Need ID:** 19096

**Project Scope:**

Perform gravel or asphalt surface maintenance and preservation activities on roads, sidewalks and pathways. Work may also include new or upgraded illumination, signing and striping, storm drains and intersection improvements including nonmotorized crossings, as well as ADA upgrades to sidewalks and curb ramps. State pays design match and local government pays construction match, per agreement.

**G. Project Description:**

The project will improve the following areas:

- 2nd Ave Dog Park - Reestablish drainage, pave existing driveway and parking area, repair or replace damaged bicycle/pedestrian path, replace curb and gutter, and clear vegetation.
- Aztec Subdivision- Mill existing asphalt and repave the following roads: Aztec Rd, Copper St, Ione St, Shoshone Dr, Vicki Ln, and Pueblo St (North). Pave the following gravel roads: Pueblo St (South), Marsh Laurel Dr, and Tamarack Woods Dr.



**II. Project Plans and Funding Information**

**Yes      No**

A. Is the project funded with Federal-aid Highway Program Funds?

B. Is the project funded with federal funds other than Federal-aid Highway Program funds (FTA, FAA, BIA, etc.)?

**IV. Class of Action Determination**

Based on the information available, the DOT&PF has determined that the appropriate Class of Action for the project is selected as follows.

**23 CFR 771.117(d)(13)**

**Discussion of Probable Impacts:**

- Possible floodplain encroachment
- No ROW acquisition anticipated
- Section 106 Streamline Review is anticipated
- No adverse affect to Section 106 properties anticipated
- Section 4(f) use is not anticipated
- No impacts to T&E species or their habitats
- No Wild & Scenic River involvement
- Impacts to contaminated sites is not expected
- No USACE or USCG permits anticipated
- No changes in access control

**Additional Information:**

**Class of Action Consultation Approval Signatures**

Recommended by:

*Brett D Nelson*

Date: 7/22/2022

Brett Nelson  
Regional  
Environmental  
Manager

Concurred by:



Date: 7/22/2022

Jill Taylor  
Statewide NEPA  
Program Manager