

# MEMORANDUM

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

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

**DATE:** June 6, 2022

**FILE NO:** H:\Projects\Egerton\_Hwy\00587\_Edg\_Hwy\_24-29\_Resurf\6Design\2DSR

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

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

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

**SUBJECT:** Edgerton Hwy MP 24-29 Resurfacing  
NFHWY00587/0850030  
Abbreviated Design Study Report

## Introduction/History

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA) is proposing to resurface the Edgerton Highway between MP 24 and MP 29. The purpose of this Preventive Maintenance project is to improve safety and extend the highway service life.

This project is located on the Edgerton Highway between MP 24.4 and MP 28.8. The Edgerton Highway begins at MP 83 of the Richardson Highway and continues to MP 35 at Chitina, Alaska where the road becomes locally known as the McCarthy Road, then ending at MP 92 in McCarthy. The Edgerton Highway is classified as a major collector and is a sole access route connecting McCarthy and Chitina to the rest of Alaska. The Edgerton Highway was surfaced with an asphalt surface treatment (AST) in 1986, the AST remains between MP 24 and MP 29 and has reached the end of its useful life.

## Project Description

The existing pavement within the MP 24-29 has areas of localized settlement that requires a high frequency of patching by DOT&PF's maintenance forces. This project will mill, regrade, and repave the roadway to alleviate DOT&PF's maintenance. In addition to resurfacing, this project includes replacement of existing signs, drainage improvements, new pavement markings and guardrail replacement.

## Design Standards

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

- American Association of State Highway & Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets, 2011
  - Roadside Design Guide, 2011
- Alaska DOT&PF Highway Preconstruction Manual (HPCM)
- FHWA Manual on Uniform Traffic Control Devices (MUTCD), 2009
- Alaska DOT&PF Alaska Traffic Manual, 2016

### **Design Exceptions and Design Waivers**

Per Section 1100.3.3 of the HPCM, the only design waivers required for preventative maintenance project are for vertical clearance. This project will not decrease the vertical clearance of the existing overhead utility crossings because there are no overhead utilities.

### **Design Alternatives**

Not required for preventative Maintenance projects.

### **Preferred Design Alternative**

Not required for preventative Maintenance projects.

### **3R Analysis**

Not required for preventative Maintenance projects.

### **Traffic Analysis**

Not required for preventative Maintenance projects.

### **Horizontal/Vertical Alignment**

Horizontal and vertical alignment will not be changed as part of this project.

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

The typical section of the MP 24-29 corridor will match as-built conditions. The road surface consists of two 12-foot lanes with 2-foot-wide shoulders. See appendix A for typical sections and road details.

### **Pavement Design**

The DOT&PF proposes to surface the Edgerton Highway with 2 inches of hot mix asphalt (HMA) within the project limits. M&O specifically requested 2 inches of HMA as an improvement over the existing surfacing. The existing road surface is an AST called “high float” and is approximately 1 inch thick or less. The existing asphalt surface has reached the end of its design life. An increased number of potholes are occurring along with the edge of the roadway unraveling all along the road corridor.

The Edgerton Highway is classified as a Major Collector and does not require a pavement design pre-section 2.1 General Policy (GP) Statements, GP-1. The average daily traffic (ADT) was 515 in 2020 and is projected to be 630 ADT in 2040. The Materials section was consulted for geotechnical recommendations for the proposed resurfacing.

### **Preliminary Bridge Layout**

There are no bridges within the project limits. There are two bridges near the beginning of project, Liberty Falls Creek Bridge No. 279 and Liberty Falls Bridge No. 285, that will be included a future project. M&O has identified the section of highway between MP 20 and MP 24 as a future resurfacing project.

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

All project work will remain within the existing right of way limits. No acquisitions, temporary construction permits or temporary construction easements are anticipated.

### **Maintenance Considerations**

This preventive maintenance project will reduce current maintenance efforts by improving the functional condition of the highway. The road surface will be regraded and paved alleviating the need for frequent patching of the localized settled areas.

Box beam guardrail was specifically requested by M&O to replace the existing W-Beam guardrail currently in use. The proposed box beam guardrail will reduce maintenance cost and allow for easier snow removal operations. Box beam guardrail allows for easier winging operations used to push snow over the guardrail, decreasing time to remove snow and accidental damage caused by the machinery.

This project will neither increase nor decrease the number of lane miles.

### **Material Sources**

Four potential material sources have been identified for use on this project. The following material sites listed have been environmentally cleared and have sales agreements.

North Liberty Falls Pit – Owner AHTHA - M.S. #850-033-5 (Mile Post 23)

South Liberty Falls Pit – Owner AHTHA - M.S. #850-032-5 (Mile Post 24)

MP 26 – Owner AHTHA – M.S. #850-031-5 (Mile Post 26)

Kenny Lake School Pit – Owner State of Alaska – M.S. #850-036-5 (Mile Post 5)

The Material site 850-074-05 at MP 28.5 known as the Chitina Airport Pit, owned by AHTNA, is currently being environmentally cleared. It is unknown if the material site will be environmentally cleared by the time the project starts due to public comments.

### **Utility Relocation & Coordination**

There is a communication utility owned by Copper Valley Telephone that travels along the Edgerton Highway. Utility relocation is anticipated due to culvert replacement near MP 27.

### **Access Control Features**

Not required for Preventive Maintenance projects.

### **Pedestrian/Bicycle (ADA) Provisions**

There are currently no dedicated pedestrian or bicycle facilities on this project. Pedestrians and Bicyclists will continue to use the shoulders.

### **Safety Improvements**

Safety will be improved by providing a smooth roadway surface consistent with traveler's expectations. Newly installed signs will meet current retro reflectivity requirements. Replaced guardrail will improve safety by meeting current standards.

### **Intelligent Transportation System Features**

This project does not include any intelligent transportation system features.

### **Drainage**

The existing drainage patterns will not be changed.

Culvert failure has occurred at MP 27. The culvert for the basin will be replaced.

### **Soil Conditions**

Minor geotechnical investigation will be conducted during the 2022 summer season to ensure the accuracy of historic drilling reports and that the selected material sites will produce the quantity and type of aggregates that the project requires.

### Erosion and Sediment Control

A Storm Water Pollution Prevention Plan (SWPPP) will be required by the contractor prior to construction activities. The SWPPP will outline which Best Management Practices (BMPs) will be implemented to best minimize storm water pollution to the surrounding area.

### Environmental Commitments

The environmental document is provided in Appendix B.

The contractor will avoid the Loading Structure (VAL-00650) in the North Liberty Falls Pit (MS 850-031-5) and the adjacent visible segment of the Old Road to Chitina (VAL-00505) during project activities along the Edgerton Highway and usage of MS 850-031-5.

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

Temporary delays to traffic during construction are expected due to anticipated lane closures. During construction and before disturbing traffic the contractor will be required to develop an approved temporary traffic control plan. The plan will be developed to provide safety to motorists, bicyclists, pedestrians, workers, and emergency vehicles as they pass through the work zone. The plan will identify and provide adequate warning, delineation, and channelization to assist in guiding road users through the work zone.

### Value Engineering

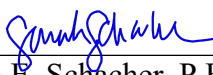
Not required for preventative Maintenance projects.

### Cost Estimate

The estimated costs for this project are as follows:

Design	\$440,000.00
Utilities	\$40,000.00
Right of Way	\$0.00
Construction (Includes 18% Engineering)	\$3,298,738.75
Total Cost of Project	\$3,778,738.75

Approved: \_\_\_\_\_

  
Sarah E. Schacher, P.E., Preconstruction Engineer

6/6/2022

\_\_\_\_\_  
Date

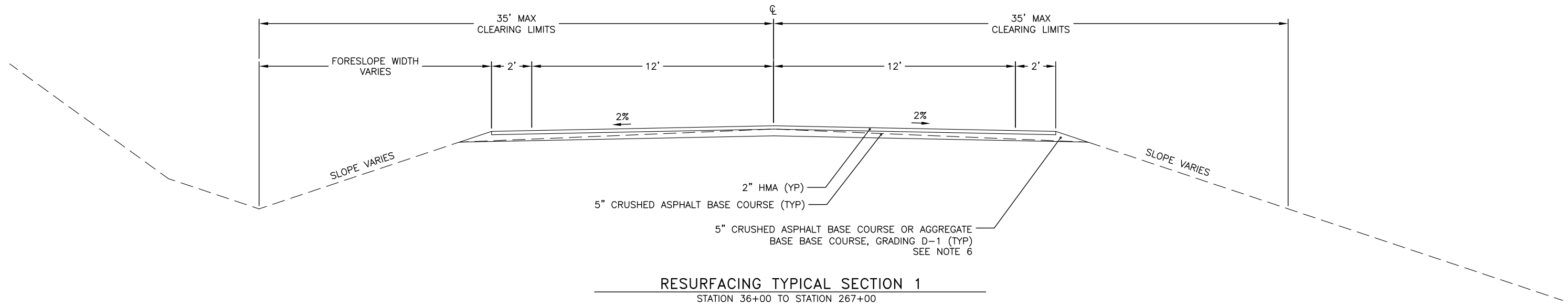
NB SL  
ncb/sml

Attachments: Appendix A – Typical Sections  
Appendix B – Environmental Documents

Copy to: Preconstruction/Project file  
Chad M. Heller, M&O District Superintendent  
Original to: Barbie Tanner, P.E., Chief of Contracts  
cc: NR Design Directive 20-01 Distribution

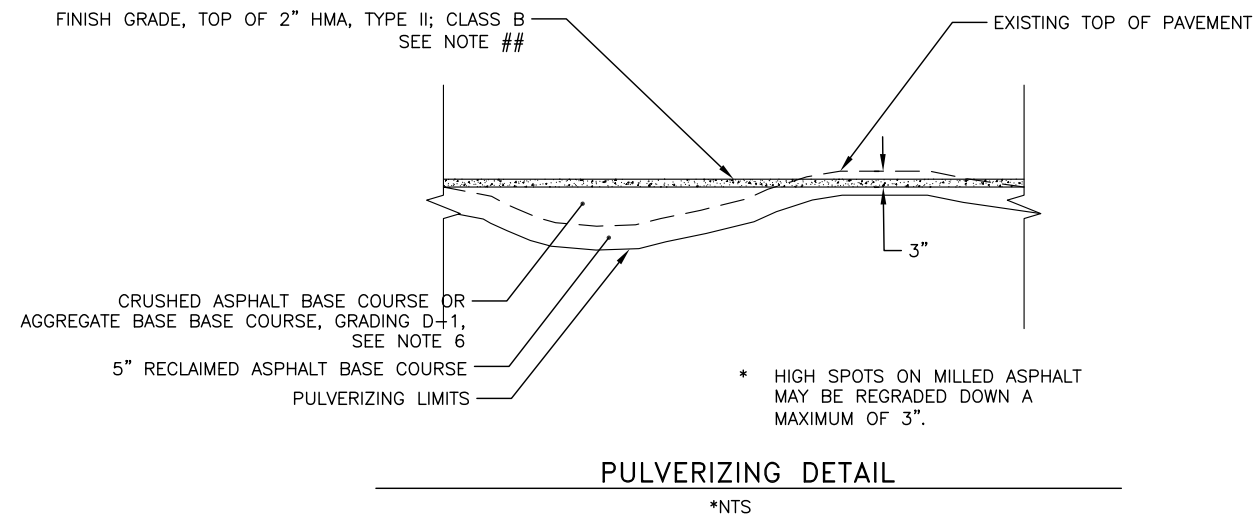
APPENDIX A  
TYPICAL SECTIONS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0850030/NFHwy00587	2023	B1	B1



**RESURFACING TYPICAL SECTION 1**

STATION 36+00 TO STATION 267+00



**NOTES:**

1. THE EXISTING ROADWAY WAS CONSTRUCTED WITH A 3% CROSS SLOPE. SEE TYPICAL SECTION FOR NEW CROSS SLOPE REQUIREMENTS. RESHAPE THE EXISTING ROADWAY PRIOR TO PLACING D-1.
2. CLEARING LIMITS SHALL EXTEND 35' OR TO THE TOE OF SLOPE, WHICH EVER IS CLOSER. CLEARING IS NOT REQUIRED ON OR ABOVE ADJACENT CLIFF FACES WITHIN THE ROAD CORRIDOR.
3. PAVEMENT MARKING APPLICATIONS SHALL BE AS SHOWN ON STANDARD PLAN T-000.00 FOR TWO WAY ROADS WITH PAVED SHOULDERS AND A 10/30 STRIP/SKIP RATIO.
4. SEED ALL ERODIBLE DISTURBED AREAS IN ACCORDANCE WITH SECTION 618, EXCEPT WHERE RIPRAP IS INSTALLED OR AS DIRECTED BY THE ENGINEER.
5. UNSUITABLE EXCAVATION MAY BE UNIFORMLY PLACED ON FLATTENED FORESLOPES AS APPROVED BY THE ENGINEER.
6. THIS PROJECT HAS NO DESIGN PROFILE. SHAPE, GRADE, AND TEST THE CRUSHED ASPHALT BASE COURSE ACCORDING TO SPECIFICATION 308.
7. DO NOT PLACE AGGREGATE BASE COURSE, GRADING D-1 UNTIL AFTER THE USABLE CRUSHED ASPHALT BASE COURSE HAS BEEN PLACE IN THE FILL. PLACE D-1 AS DIRECTED BY ENGINEER.
8. ALL WORK MUST STAY WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.
9. SLOPE VARIES. MATCH TO EXISTING EMBANKMENT SLOPE.
10. TRANSITION TO MATCH EXISTING PAVEMENT OVER 100 FEET OR AT THE DIRECTION OF THE ENGINEER. THE EXISTING CROWN IS APPROXIMATELY 3%.
11. SUPER ELEVATION RATES AND TRANSITIONS SHALL MATCH EXISTING.
12. A BURIED TELEPHONE LINE IS LOCATED ALONG THE SIDE OF THE ROAD THROUGHOUT THE PROJECT. PRIOR TO ANY SUB EXCAVATION OR POST DRIVING, THE CONTRACTOR SHALL COORDINATE WITH COPPER VALLEY TELEPHONE TO DETERMINE THE EXACT LOCATION OF THE LINE. THE CONTRACTOR SHALL PROTECT THE LINE DURING CONSTRUCTION AND SHALL COORDINATE WITH COPPER VALLEY TELEPHONE IF THE LINE REQUIRES RELOCATION.

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200  
C:\Home Projects\00587\_Edg\_Hwy\_24-29\_Resurf\6 Design\4 C3D\2 Drawings\00587\_B1-B1\_Fri\_Jun/03/22 03:17pm



APPENDIX B

Environmental Document



**A. Environmental Documentation Approval**

**Yes**      **No**

1. Do any unusual circumstances exist, as described in 23 CFR 771.117(b)?

2. Does the project meet the criteria of one of the following DOT&PF Programmatic Approvals authorized in the Nov. 13, 2017 "Chief Engineer Directive - Programmatic Categorical Exclusions"?

- Programmatic Approval 2

**Summary**

This project qualifies as a PCE.

**Environmental Documentation Approval Signatures**

Prepared by:



Date: 4/20/2022

Zoe Petersen

Environmental Impact Analyst I

Reviewed by:



Date: 4/20/2022

John J Netardus

Engineer/Architect III

Approved by:



Date: 4/20/2022

Brett Nelson

Environmental Impact Analysis Manager I