

**Victory Road Pavement Preservation
Project No.: 0001726/CFHWY00672**

PS&E Review

PS&E REVIEW COMMENTS are due on April 10, 2025. The review meeting will be held at **9:00 AM** on April 15, 2025 in the **Construction** conference room. **Please E-mail comments, using the comment form, to Ryan Norkoli (ryan.norkoli@alaska.gov) and Jacob Dilley (jacob.dilley@alaska.gov).**

*****Electronic Copy available on the internet at the following location:**

dot.alaska.gov/creg/design/highways/PS&E_Review/CFHWY00672/

*****Meeting conference call-in number*****

GCI Conference Now Number:	(800) 315-6338
Secondary GCI Conference Now Number:	(913) 904-9376
Access Code:	85827

DISTRIBUTION:

Jacob Dilley PM, Project Manager, 2525 (6+CD)
Sharon L. Smith, Chief, Contracts, 2525
Mike San Angelo, Statewide Materials Engineer, 2538 (email only)
Mike Yerkes, Central Region Materials, 2526 (2)
Mahear Aboueid, Concurrent Review Engineer, 2525
Ken Thomas, Traffic & Safety, 2525
Justin Zarr, HWY Data Supervisor, Planning, 2525 (CD)
Orion LeCroy, Hydrologist, Central Region, 2525 (2)
Travis Test, Survey, 2525 (email only)
Bob Keiner, ROW Engineering Supervisor, 2525
James Sowerwine, ROW, 2525 (CD)
Melanie Arnolds, Chief, ROW, 2525 (Memo and EE)
Cindy Ferguson, Chief, TS&U, 2525
Vacant, Utilities Engineer, 2525
David Freese, Utilities Lead, 2525
Michael Mancill, Utilities Lead, 2525
Joel St Aubin, Regional Construction Engineer, 2525 (Memo and EE)
Brian Schumacher, Construction Group Chief, 2525
Joshua James, Construction Project Manager, 2525 (2)
Athena Marinkovic, Construction ESCP Specialist
Ryan Norkoli, Review Engineer, Contracts, 2525
Fred Park, Spec./Estimating Engineer, Highway Design, 2525
Alex Read, Preliminary Design & Environmental Group Chief, 2525
Brian Elliott, Preliminary Design & Environmental, 2525
Anna Bosin, Traffic Safety, 2525 (2)
Vacant, Traffic Design, 2525 (2)
David Post, Planning Manager, Planning, 2525
Sean Baski, Highway Design Group Chief, 2525
Kirk Warren, Chief, Maintenance and Operations, 2525 (2)
Burrell Nickeson, Maintenance and Operations, 2525 (Memo and EE)
Jeremy Thompson, Maintenance and Operations, 2525
Conner Eshleman, Highway Design, 2525
Luke Bowland, Pre-Construction Engineer, 2525 (Memo and EE)
Dave Lee, Regional Construction Office Engineer, 2525 (Memo and EE)
Jeff Carleton, Electrical, 2525 (email only)

Additional Distribution Email Only (without Engineer's Estimate):

Pre-Design Engineering Division Manager, Matanuska-Susitna Borough, PD&E@mat-sugov.us
Cole Carnahan, FHWA cole.carnahan@dot.gov

MEMORANDUM

State of Alaska

Department of Transportation and Public Facilities

to: See Distribution

DATE: March 18, 2025

TELEPHONE: 269-0423

FROM: Ryan Norkoli, P.E.

SUBJECT: **Victory Road Pavement Preservation
Project No. 0001726/CFHWY00672
PS&E Review**

Attached for final review and comments are the appropriate copies of the subject assembly. The following specific replies are requested in addition to any other comments:

Right-of-Way	Either that R/W is available for the project or an estimated date when it may be available.
Utilities	Either the utility agreements have been completed or an estimated date when they may be available.
Environmental	What permits are required for this project and an estimated date when they will be acquired.

Ordinarily, only the principal reviewers are invited to attend. Comments are limited to those submitted in writing unless there are significant omissions.

Please use the review comment form located on the Library drive in /admin/forms/forms/pre PS&E review comment.doc. If you don't have access to the L drive, and still need a current version of the comment form, let me know and I will E-mail it to you.

IRIS Project No. CFHWY00672

IRIS Activity: 062P (or your sections activity code)

IRIS Template: TTPJ001

IRIS Phase: T02015

Transportation Management Plan

For

Victory Road Pavement Preservation

0001726/00672

Glacier View, Alaska



Alaska Department of Transportation & Public Facilities
Central Region

P.O. Box 196900

Anchorage, Alaska USA 99519-6900

Prepared By: Iain McPherson, PE

Company Name: Kinney Engineering, LLC.

Phase: PS&E Review

Preparation Date: March 2025 March 17, 2025

The following Transportation Management Plan (TMP) has been prepared for/by the Alaska Department of Transportation and Public Facilities (DOT&PF) to assist contractors in successfully planning for project transportation impacts in accordance with 23 CFR 630, Subparts J & K, and DOT&PF Policy and Procedure 05.05.015 "Highway Work Zone Safety and Mobility".

This document lays out a set of strategies for managing the work zone impacts and is required by the [Work Zone Safety Mobility Rule](#). This TMP was developed from the Oregon DOT Transportation Management Plan Template, FHWA Sample Transportation Management Plans and Templates, and DOT&PF Highway Preconstruction Manual.

Table of Contents

1.0	Introduction	3
1.1	TMP Roles and Responsibilities	3
2.0	Project Description	5
2.1	Goals and Objectives	5
2.2	Proposed Improvements	5
2.3	Project Schedule	5
2.4	Nearby Projects	5
2.5	Project Stakeholders	5
3.0	Existing Roadway & Traffic Conditions	7
3.1	Roadway & Traffic Characteristics.....	7
3.2	Pedestrian/Bicycle Facilities	7
3.3	Transit Facilities	7
3.4	Freight	7
3.5	Land Use	7
3.6	Stakeholder Outreach & Input.....	7
3.7	Other	8
4.0	Preliminary Work Zone Impact Assessment	9
4.1	Traffic	10
4.2	Pedestrian & Bicycle.....	10
4.3	Environmental.....	10
4.4	Utilities	11
4.5	Right-of-Way (Public Access)	11
4.6	Public Transportation.....	11
4.7	Commercial Vehicles (including the Alaska Railroad)	11
4.8	Navigable Waters	11
5.0	Operational Analysis.....	12
6.0	Work Zone Impact Management Strategies	13
6.1	Work Zone Traffic Control Narrative	13
6.1.1	Construction Stages and Phases.....	13

6.1.2	Construction Schedule.....	13
6.1.3	Lane Use	13
6.1.4	Work Zone Traffic Analysis/Lane Restriction Hours.....	13
6.1.5	Holidays, Local and Special Events.....	13
6.1.6	Detours.....	13
6.2	Temporary Pedestrian & Bicycle Accessible Routing	13
6.3	Property Access.....	14
6.4	Freight Mobility	14
6.5	Public Information and Outreach.....	14
6.6	Traffic Operations.....	14
6.7	Work Zone Strategies Checklists.....	14
7.0	Construction Monitoring.....	17
7.1	Traffic	17
7.2	Pedestrian & Bicycle.....	17
7.3	Environmental.....	17
7.4	Utilities.....	17
7.5	Right-of-Way (Property Access).....	17
7.6	Public Transportation.....	17
7.7	Commercial Vehicles (including Alaska Railroad).....	17
7.8	Navigable Waters	17
7.9	Other.....	17
8.0	TMP Evaluation.....	18

Appendix A: Temporary Traffic Control Plan

1.0 Introduction

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Highway Administration (FHWA)) is proposing to resurface Victory Road through the Victory Road Pavement Preservation project. The project will include pavement resurfacing, recycled asphalt pavement over existing gravel road, drainage improvements, signing, and striping. Traffic control is anticipated to be primarily short duration and single lane closures.

The purpose of this TMP is to provide the details regarding the development of TTCP and other measures recommended during the construction phase of this project. During construction, disruptions and delays to travelers should be minimized without compromising public or worker safety and the quality of the work being performed. This TMP is considered a living document and will be subject to additions and modifications throughout the project's life.

1.1 TMP Roles and Responsibilities

Design Manager
DOT&PF / Consultant
Name/Title: Jacob Dilley, PE/DOT&PF Project Manager Unit: DOT&PF Highway Design Phone: (907)707-1922 Email: jacob.dilley@alaska.gov
Roles and Responsibilities: Project Manager

Design Engineer
DOT&PF / Consultant
Name/Title: Robert Halcomb, PE, PTOE/ Project Engineer Unit: Kinney Engineering, LLC. Phone: (907)707-1224 Email: robert.halcomb@kinneyeng.com
Roles and Responsibilities: Engineer of Record

The Construction Project Manager is responsible for overseeing TMP components and other safety and mobility aspects of the project. They may delegate to traffic control representatives. Personnel require training in accordance with P&P 05.05.015. (DOT&PF Alaska Construction Manual, Section 3.10, pg. 3-8)

Construction Manager
DOT&PF / Consultant
Name/Title: Unit: Phone: Email:
Roles and Responsibilities:

Construction Project Engineer
DOT&PF / Consultant
Name/Title: Unit: Phone: Email:
Roles and Responsibilities:

TMP Implementation/Monitoring Staff	
DOT&PF / Consultant	Contractor
Name/Title: Unit: Phone: Email:	Name/Title: Unit: Phone: Email:
Roles and Responsibilities:	
Public Information Officer	
DOT&PF / Consultant	Contractor
Name/Title: Unit: Phone: Email:	Name/Title: Unit: Phone: Email:
Roles and Responsibilities:	

Emergency Service Contacts	
Fire and Emergency Medical Services (FEMS)	Police Department (PD)
Name/Title: Unit: Phone: Email:	Name/Title: Unit: Phone: Email:
Roles and Responsibilities:	

2.0 Project Description

2.1 Goals and Objectives

The Victory Preventative Maintenance (PM) project is an effort to maintain public roadways and associated appurtenances in a cost-effective manner. Key goals are maintaining safety and preserving the level of service and function of the existing Victory Road until the next rehabilitation project can be constructed.

2.2 Proposed Improvements

The intention of this project is to improve safety and increase the service life of this roadway through pavement resurfacing, recycled asphalt pavement over existing gravel road, drainage improvements, signing, and striping.

2.3 Project Schedule

Project Milestone	Date
Environmental Document	2020
Plans In Hand & PS&E Review	March 2025
Certification	Spring/Summer 2025
Construction	2025-2026

2.4 Nearby Projects

The Glenn Highway Milepost 66.5 to 92 Pavement Preservation project is expected to go to construction in 2025/2026. No other construction projects in the area are anticipated for 2025/2026. If any projects occur coordination of closures will be needed to ensure access is maintained.

2.5 Project Stakeholders

Table 1. Project Stakeholders

Agency/ Organization	Name	Title	Phone Number
Agency Representatives			
DOT&PF	Jacob Dilley	Design Project Manager	907-707-1922
Palmer M&O	Kirk Warren	Chief, M&O	907-2690760
ENSTAR			907-376-7979

GCI			800-800-4800
MEA			907-761-9500
MTA			907-745-3211
Mat-Su Borough	Mike Brown	Borough Manager	907-861-8689
U.S. Postal Service			907-376-5327
Chickaloon Native Village Tribal Council			907-745-0749
Alaska Department of Natural Resources (DNR)			907-269-8400
Schools			
Ya Ne Dah Ah School			907-745-0793
Glacier View School			907-861-5650
Emergency Services			
Central Mat-Su Fire Department			907-861-8040
Chickaloon Community Volunteer Department			907-352-5440
Victory/Glacier View Ambulance			
Alaska State Troopers			907-745-2131
Hospitals			
Other			
Victory Bible Camp			907-745-4203
DOT&PF M&O Cascade Station			907-745-2159

3.0 Existing Roadway & Traffic Conditions

3.1 Roadway & Traffic Characteristics

The DOT&PF classifies Victory Road as Minor Collector Road. Table 2 lists all roadways directly connected to the project corridor, as well as available traffic data for both segments.

Table 2. Roadways Affected by Project

Roadways Affected by TMP – Summary					
Roadway/Street Name	Classification	AADT	Truck Percentage	Peak Hour Volume	Posted Speed
Victory Road	Minor Collector	110			25
Lee Circle					
Lee Drive					

3.2 Pedestrian/Bicycle Facilities

There are no existing pedestrian and bicycle improvements along this portion of Victory Road.

3.3 Transit Facilities

There are no regularly scheduled transit routes through the project area. Regular bus and shuttle traffic is not expected in the project corridor.

Bus services to and from Victory Bible camp are offered to campers on Sundays and Fridays with exceptions for weeks with holidays. Additional bussing to and from Victory Bible camp occur to near by recreational areas.

3.4 Freight

Adjacent properties are primarily residential, and business access. Victory Road is not a freight route.

3.5 Land Use

Land use in the vicinity of the project is a mixture of residential, commercial and state-owned properties.

3.6 Stakeholder Outreach & Input

The project provided fact sheets and presented the project at the Mat-Su Transportation Fair.

DOT&PF has directly contacted the Chickaloon Native Village Tribal Council, regarding this project. Outreach activities have included phone calls, site visits, meetings, and mailing informational mailers.

3.7 Other

Minimal to no ATV traffic is noted for the area. The contractor will need to ensure that active construction sites are secured to prevent ATV riders from encroaching into the construction zone.

4.0 Preliminary Work Zone Impact Assessment

Table 3. Preliminary Work Zone Impacts

Does the project include long-term closures/extended weekend closures? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, check all applicable types of facilities <input type="checkbox"/> Principal Arterial <input type="checkbox"/> Minor Arterial <input type="checkbox"/> Collector <input type="checkbox"/> Local		Significant Project Rating: <input checked="" type="checkbox"/> Doesn't Meet Significant Project Criteria <input type="checkbox"/> Significant – Category 1 <input type="checkbox"/> Significant – Category 2 <input type="checkbox"/> Significant – Exempt	
Can traffic be detoured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Is the local alternate detour route in good condition?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Will the detour route have a detrimental impact on emergency vehicles, school buses, or other sensitive traffic?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are there load limit restrictions on the detour?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are there bridge/culvert height or width restrictions on the detour?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is the existing shoulder sufficient to support traffic during construction?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is additional width required on culverts or bridges to maintain traffic?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is there a pedestrian/bicycle facility that must be maintained?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would a temporary structure(s) be required?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would a median crossover be needed?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would there be a need to maintain railroad traffic?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Could maintenance of traffic have an impact on existing or proposed utilities?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does it appear that maintenance of traffic will require additional right-of-way?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Can the contractor restrict the roadway during the time periods listed?			
a.m. peak hours, one direction		<input checked="" type="checkbox"/>	p.m. peak hours, one direction <input checked="" type="checkbox"/>

a.m. peak hours, both directions	<input type="checkbox"/>	p.m. peak hours, both directions	<input type="checkbox"/>
Overnight	<input checked="" type="checkbox"/>	Local celebrations	<input type="checkbox"/>
Holidays or weekends	<input type="checkbox"/>	Special events	<input type="checkbox"/>

Will project timing (for example, start or end date) be affected by special events:

School closings or openings	<input type="checkbox"/>	Holidays	<input type="checkbox"/>	Special Events	<input type="checkbox"/>
-----------------------------	--------------------------	----------	--------------------------	----------------	--------------------------

Are there any projects to be considered along the corridor or in the area?

Roadwork in the immediate area that may affect traffic or the contractor's operations? ☐ Yes ☒ No

Roadwork on other roads that may affect the use of alternate routes? ☐ Yes ☒ No

Are there other maintenance of traffic issues? ☐ Yes ☒ No

Does the project need operational analysis to assess impacts?

☐ Yes

☒ No

TMP Components Included	Location	Appendix (if included)
<input type="checkbox"/> Traffic Operation Analysis		
<input checked="" type="checkbox"/> Temporary Traffic Control Plan	TMP	A (TTCP)
<input type="checkbox"/> Public Information & Outreach		
<input type="checkbox"/> Traffic Operations Strategies		
<input type="checkbox"/> Traffic Operation Plan		
<input type="checkbox"/> Other Impact Assessment		
<input type="checkbox"/> Incident Management Plan		

4.1 Traffic

The project scope and existing conditions will necessitate lane closures to construct road improvements as well as full road closures for culvert improvements. This is anticipated to create moderate impacts to existing traffic and can be mitigated by working in off peak hours.

4.2 Pedestrian & Bicycle

There are no pedestrian or bicycle improvements within the project area.

4.3 Environmental

The proposed project does not involve any unusual circumstances or significant environmental impacts. Lane Closures are anticipated to construct road improvements .Full road closures may

be needed for culvert improvements. Construction will not cause major traffic disruptions along Victory Road.

4.4 Utilities

Utility companies with facilities in the project limits may include Matanuska Telephone Association (MTA), and Matanuska Electric Association (MEA). Proposed improvements will not require utility relocation. Utility inspection and minor depth adjustment at crossings may be necessary in roadway construction areas.

4.5 Right-of-Way (Public Access)

All work will be contained within the existing ROW and existing permanent use easements. Temporary Construction Easements may be required to construct some culvert repairs/improvements. At this time there are no Temporary Construction Permits needed for the project.

4.6 Public Transportation

With no regularly scheduled transit routes through the project corridor transit impacts are expected to be minimal. Curb to curb service will be maintained through the allowance of regular vehicular traffic.

4.7 Commercial Vehicles (including the Alaska Railroad)

There are no railroad facilities in the project area.

No freight facilities existing within the project vicinity.

The contractor should coordinate with the Division of Measurement Standards and Commercial Vehicle Enforcement (MSCVE) as needed to determine if there are any specially permitted loads that would require special accommodations during construction.

4.8 Navigable Waters

No navigable waters are anticipated to be impacted by this project.

5.0 Operational Analysis

This project has been determined “not significant” (per PCM 1400.2) and does not require operational analysis.

6.0 Work Zone Impact Management Strategies

6.1 Work Zone Traffic Control Narrative

6.1.1 Construction Stages and Phases

Construction will need to be staged for the clearing and grubbing, earthwork, and culvert installation. Exact phasing will be dependent on permit requirements for bird migration (typically May 15th to July 15th).

6.1.2 Construction Schedule

Construction is anticipated to begin in 2025 and is expected to be completed in 2026.

6.1.3 Lane Use

During construction operations one lane traffic will need to be maintained at all times with the exceptions of single night full road closures for cross culverts at MP 0.16, MP 0.28 and MP 0.29.

6.1.4 Work Zone Traffic Analysis/Lane Restriction Hours

A detailed work zone traffic analysis was not conducted for this project. Peak hour restrictions should be limited in duration and not done without coordination with local schools and Victory Bible Camp.

6.1.5 Holidays, Local and Special Events

No special events were determined within the project corridor. The contractor should avoid lane closures during holidays and school bus operating hours. Closures may be considered during the holiday weeks that camp is not in session and before camp starts and after camp ends.

6.1.6 Detours

There are no alternative routes to detour traffic around the work zone. Small sections of the roadway and side streets may be closed for culvert installation. The closures required for culvert installation should be short duration in order to move traffic from one lane to the next.

6.2 Temporary Pedestrian & Bicycle Accessible Routing

While no pedestrian/bicycle facilities exist in project area, they do use the roadway and will need to be accommodated through active construction areas and provided with space and guidance around inactive construction staging areas. The contractor will need to accommodate non-motorized traffic with individual shuttling through construction zones due to the lack of existing pedestrian facilities.

6.3 Property Access

Access to stakeholder properties will be maintained at all times. Any direct disruption to a specific stakeholder's access should be coordinated directly with the affected parties.

6.4 Freight Mobility

Any freight traffic along the corridor should be accommodated through the allowance of regular traffic. Oversize or overweight loads should be coordinated with the MSCVE.

6.5 Public Information and Outreach

The contractor shall alert the public and project stakeholders to any significant changes to traffic control operations including but not limited to: beginning of construction, roadway closures, active construction zone relocation, or change of working hours.

6.6 Traffic Operations

The contractor shall coordinate plans for construction to safely move roads users through the work area while providing a safe construction work area.

Due to no available detour routes; the contractor will need to work on the road while it is under some traffic load and should focus their construction work on limited lengths. Through traffic and access to homes, businesses, and recreational areas will need to be maintained with limited short duration closures.

6.7 Work Zone Strategies Checklists

Table 4. Temporary Traffic Control Strategies Checklist

Temporary Traffic Control			
Traffic Control Devices			
Temporary signs	<input checked="" type="checkbox"/>	Flaggers	<input checked="" type="checkbox"/>
Sequential arrow boards	<input checked="" type="checkbox"/>	Flaggers station lighting	<input checked="" type="checkbox"/>
Channelizing devices (tubular markers, drums)	<input checked="" type="checkbox"/>	Radar speed trailers	<input checked="" type="checkbox"/>
Pedestrian channelizing devices (PCD)	<input type="checkbox"/>	Temporary barrier glare screen	<input type="checkbox"/>
Bicycle channelization devices (BCD)	<input type="checkbox"/>	Surface mounted tubular markers	<input type="checkbox"/>
Temporary pavement markings	<input checked="" type="checkbox"/>	Uniformed traffic control officers	<input type="checkbox"/>
Temporary traffic signals	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Project Coordination Strategies			
Other area projects	<input checked="" type="checkbox"/>	Right-of-Way	<input type="checkbox"/>

Temporary Traffic Control			
Utilities	<input checked="" type="checkbox"/>	Other transportation infrastructure	<input type="checkbox"/>
Innovative Contracting Strategies			
Alternative Contracting Procurement	<input type="checkbox"/>	Performance specifications	<input checked="" type="checkbox"/>
Incentive / Disincentive clauses	<input type="checkbox"/>		
Innovative or Accelerated Construction Techniques			
Prefabricated / precast elements	<input type="checkbox"/>	Rapid cure materials	<input type="checkbox"/>
Traffic Control Strategies			
Construction phasing / staging	<input checked="" type="checkbox"/>	Day work	<input checked="" type="checkbox"/>
Full roadway closures / detour	<input checked="" type="checkbox"/>	Weekend work	<input checked="" type="checkbox"/>
Lane shifts or closures	<input checked="" type="checkbox"/>	Work hour restrictions for peak travel	<input checked="" type="checkbox"/>
Two-way, one-lane closures	<input checked="" type="checkbox"/>	Pedestrian accommodation	<input checked="" type="checkbox"/>
Ramp closures	<input type="checkbox"/>	Bicycle accommodation	<input checked="" type="checkbox"/>
Night work	<input checked="" type="checkbox"/>	Business access improvements	<input type="checkbox"/>

Reduced speed limits should be used only in the specific portion of the TTC zone where conditions or restrictive features are present. However, frequent changes in the speed limit should be avoided. A TTCP should be designed so that vehicles can travel through the TTC zone with a speed limit reduction of no more than 10 mph.

A reduction of more than 10 mph in the speed limit should be used only when required by restrictive features in the TTC zone. Where restrictive features justify a speed reduction of more than 10 mph, additional driver notification should be provided. The speed limit should be stepped down in advance of the location requiring the lowest speed, and additional TTC warning devices should be used.

Reduced speed zoning (lowering the regulatory speed limit) should be avoided as much as practical because drivers will reduce their speeds only if they clearly perceive a need to do so. (ATMS, Part 6, pg. 143)

Table 5. Public Information and Outreach Strategies Checklist

Public Information and Outreach			
Public Awareness Strategies			
Branding	<input type="checkbox"/>	Project website	<input checked="" type="checkbox"/>
Press kits	<input type="checkbox"/>	Public meetings, hearings, workshops	<input checked="" type="checkbox"/>
Brochures and mailers	<input checked="" type="checkbox"/>	Community task forces	<input type="checkbox"/>
Work zone education and safety campaigns	<input type="checkbox"/>	Coordination with media/schools/business/EMS	<input checked="" type="checkbox"/>
Mass media (earned and/or paid)	<input type="checkbox"/>	Press releases / media alerts	<input checked="" type="checkbox"/>
Paid advertisements	<input type="checkbox"/>	Work zone safety highway signs	<input checked="" type="checkbox"/>
Project Information Center	<input type="checkbox"/>	Rideshare promotions	<input type="checkbox"/>
Telephone hotline	<input type="checkbox"/>	Visual information	<input type="checkbox"/>
Planned lane closure website	<input type="checkbox"/>		
Motorist Information Strategies			
Radio traffic news	<input type="checkbox"/>	Traveler information systems	<input checked="" type="checkbox"/>
Variable message signs (VMS)	<input checked="" type="checkbox"/>	Live traffic camera(s) on a website	<input type="checkbox"/>
Temporary motorist information signs	<input checked="" type="checkbox"/>	Project information hotline	<input type="checkbox"/>
Trip Check	<input type="checkbox"/>	Email alerts	<input checked="" type="checkbox"/>

7.0 Construction Monitoring

Construction staff should monitor the work zone and if necessary, make changes. Any changes to the work zone strategies, including Contractor proposed modifications, should be consistent with the decisions and commitments made during the design of the project. All changes to the Work Zone Strategies should be documented in the TMP.

7.1 Traffic

7.2 Pedestrian & Bicycle

7.3 Environmental

7.4 Utilities

7.5 Right-of-Way (Property Access)

7.6 Public Transportation

7.7 Commercial Vehicles (including Alaska Railroad)

7.8 Navigable Waters

7.9 Other

8.0 TMP Evaluation

The TMP should include an evaluation report upon completion of construction to document the temporary traffic control lessons learned and provide recommendations on how to improve the TMP process and/or modify guidelines.

The evaluation report should include an overall statement reflecting the usefulness, suggested improvements or changes for similar future projects, and incidents related to the TMP.

For a small project, a TMP evaluation could be a discussion with the TMP designer regarding what elements of the TMP went well and which could be further improved.

For larger projects, an actual evaluation report should be developed. The evaluation report not only helps the designer with lesson learned but could also help policy makers improve the overall design process.

Appendix A: Temporary Traffic Control Plan

Standard: The needs and control of all road users (motorists, bicyclists, and pedestrians within the highway, or on private roads open to public travel (see definition in Section 1A.13), including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II, Paragraph 35.130) through a TTC zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents. (2009 MUTCD, Part 6, pg. 547)

MEMORANDUM

State of Alaska

Department of Transportation & Public Facilities
Design and Engineering Services – Central Region
Highway Design

TO: Jacob Dilley, PE

DATE: March 17, 2025

TELEPHONE NO:

FROM: Iain McPherson, PE
Tae Voight, PE

SUBJECT: Temporary Traffic Control Plan

THROUGH: Josh Cross, PE

Victory Rd Pavement
Preservation
0001726/CFHWY00672

This Temporary Traffic Control Plan (TTCP) has been prepared to summarize and provide details for the temporary traffic control methods necessary for construction of the Victory Road Pavement Preservation project.

The Alaska Department of Transportation & Public Facilities (DOT&PF) requires a TTCP that identifies what traffic control devices to use and show their location and operation in a work zone to ensure traffic flow. This plan informs the contractor with Design's assumed phasing and plans to construct the project.

It's recognized that different contractors will have various methods for controlling traffic and safety and additional Temporary Traffic Control (TTC) drawings may be needed. All TTC drawings must adhere to the Alaska Traffic Manual and Chapter 9 of the AASHTO Roadside Design Guide.

This TTCP includes plans and detail drawings, special provisions, and typical applications from the Alaska Traffic Manual (ATM). Alaska Standard Plans C-05.20, and C-06.00 are included in the plans interim pavement markings, roadside safety treatment for work zones. For location of double traffic fine signs and permanent construction sign layout see attachment 1.

Per the Alaska Highway Preconstruction Manual Victory Road is not a Category 1 or 2 project. Victory Road is also not within the boundary of a Metropolitan Plan Organization or the Matsu Valley Planning area and does not meet the anticipated work zone impacts within the project area. Therefore, the project is not considered a significant project.

Refer to the project specifications and Traffic Management Plan (TMP) for further guidance on public information efforts and agency coordination requirements.

Roadway Construction

Project improvements include pavement resurfacing, recycled asphalt pavement over existing gravel road, drainage improvements, signing, and striping on the Victory Road near Sutton, Alaska. This work will be able to be done in half widths with occasional single night road closures.

Culverts

Single night full road closures may be required for large diameter culvert replacements at MP 0.16, MP 0.28, and MP 0.29. These culverts are not fish bearing though stream flow will need to be maintained during construction.

Closures at approaches may also be required for replacement of 24" dia culverts or less but will be shorter in duration and impact due to smaller size and stream flow will not need to be maintained. The following locations are full culvert replacement:

- "V1" 28+88
- "V1" 28+86
- "V1" 31+16
- "V1" 32+76
- "V1" 34+80
- "V1" 36+38
- "V1" 38+15
- "V1" 38+49
- "V1" 39+56
- "V1" 40+33
- "V1" 41+00
- "V1" 42+02
- "V1" 42+36
- "V1" 43+60
- "V1" 44+42
- "V1" 44+92
- "V1" 47+38
- "V1" 51+87
- "V1" 51+82
- "V1" 52+59

Approaches

The contractor will have to maintain access to homes, businesses and recreational areas throughout the course of construction.

The following are approaches with no alternative access:

- "V1" 15+67
- "V1" 21+74
- "V1" 24+87
- "V1" 27+99
- "V1" 28+36
- "V1" 30+96
- "V1" 32+59
- "V1" 33+43
- "V1" 40+87
- "V1" 41+86
- "V1" 42+22
- "V1" 43+45
- "V1" 44+25
- "V1" 45+76
- "V1" 46+18
- "V1" 47+23

- "V1" 34+27
- "V1" 34+69
- "V1" 36+22
- "V1" 36+99
- "V1" 37+99
- "V1" 38+32
- "V1" 39+42
- "V1" 40+18
- "V1" 48+37
- "V1" 51+61
- "V1" 51+61
- "V1" 52+23
- "V1" 58+40
- "V1" 58+76
- "V1" 59+50
- "V1" 62+85

Other

The terrain of Victory Road has flat sections with a couple steep incline segments. There is limited site distance in areas due to vertical and horizontal configuration of the roadway. Traffic control in areas of limited visibility will need special attention to safely guide and protect the traveling public through work zones.

The MSB maintains an Emergency Medical Service (Victory/Glacier View Ambulance) ambulance from a privately owned property located on Victory Road. In addition to the ambulance property, there are currently around thirty residences and VBC, within this community.

Pedestrians/Bikes

Contractor will need to accommodate pedestrians and bicyclists throughout construction. The contractor will need to accommodate non-motorized traffic with individual shuttling through construction zones due to the lack of existing pedestrian facilities.

ATVs

Minimal to no ATV traffic is noted for the area. The contractor will need to ensure that active construction sites are secured to prevent ATV riders from encroaching into the construction zone.

Work Zone Traffic Control Recommendations:

The 2022 annual average daily traffic (AADT) for Victory Road was 110 vehicles. The speed limit is 25 mph and it's classified as a minor collector.

Construction under full traffic is expected. There are no adequate detour routes available for Victory Road or local side streets.

Schedule Constraints

Coordinate any restrictions with local schools (Mid August to Mid May) and Victory Bible Camp (June through August) . Seasonal weight restrictions are typically in effect until June. Closures may be considered during the holiday weeks that camp is not in

session and before camp starts and after camp ends. No detours/closures/restrictions allowed during winter shutdown and all previously paved roads will have a paved surface during winter.

Hours of Operation

Lane closures should be limited to off peak hours or at night to mitigate extended queuing.

Full road closures are limited to single nights and only for work on culverts at MP .16, MP 0.28 and MP 0.29 and coordinated with local businesses and residences.

When work is permitted at night use proper traffic control devices. Noise variances may be necessary.

Keep all business accesses open to traffic.

Lane Use and Lane Restrictions

If two-way traffic cannot be maintained on the existing roadway use the following to route traffic safely and efficiently through work zones:

- One Lane Road closures may be used for short distances in conjunction with flaggers to temporarily reduce the two-way roadway to a single-lane roadway. Pilot cars may be used to guide a queue of vehicles through the TTC zone. All stoppages experienced by a vehicle traveling through a project should not exceed 10 minutes ,or 20 minutes during paving.
- Full Road Closures are only permitted at night and completed outside of peak hour traffic.

For Shoulder work all lanes should be a minimum of 10 feet in width.

If maintaining traffic on an unpaved surface, provide a smooth and even surface that the public traffic can use at all times.

Positive Protection Devices (PPD)

PPD's are encouraged when work operations place workers close to travel lanes open to traffic.

Staging:

Staging will be coordinated during project development.

Erosion and Sediment Control Plan
For
Victory Road Pavement Preservation
0001726/CFHWY00672
Glacier View, Alaska



Alaska Department of Transportation & Public Facilities
Central Region
P.O. Box 196900
Anchorage, Alaska USA 99519-6900

Prepared By: Margaret Devlin and Tae Voight, PE, CESCL
Company Name: Kinney Engineering LLC
ESCP Preparation Date: March 2025

The following Erosion and Sediment Control Plan (ESCP) has been prepared by the Alaska Department of Transportation and Public Facilities (DOT&PF) to assist bidders in successfully planning their construction means and methods to comply with the 2021 Alaska Construction General Permit (CGP), United States Army Corps of Engineers (USACE) 404/10 Permit, Alaska Department of Environmental Conservation (DEC) 401 Water Quality Certification, Alaska Department of Fish and Game (ADF&G) Title 16, and other permits associated with this project. This document is not intended to be all inclusive of the best management practices (BMP's) that will be required to reduce the potential for sediment discharge during construction and comply with permit conditions or construction specifications. This ESCP is intended to guide contractors during the bidding process and assist in the preparation of the contractor's Storm Water Pollution Prevention Plan (SWPPP) that must be approved prior to commencing construction after award. The contractor is responsible for the risk assessment analysis, planning, preparation and implementation of the SWPPP.

TABLE OF CONTENTS

1.0 PERMITTEE (5.3.1)	1
1.1 Operator(s)/Contractor(s)	1
1.2 Subcontractors	2
2.0 STORM WATER CONTACTS (5.3.2).....	3
2.1 Contact Information for SWPPP Preparation	4
3.0 PROJECT INFORMATION (5.3.3).....	5
3.1 Project Information	5
3.2 Project Site-Specific Conditions (5.3.3)	5
3.3 Reference Documents Available	6
4.0 NATURE OF CONSTRUCTION ACTIVITY (5.3.4)	6
4.1 Scope of Work	6
4.2 Project Function (5.3.4.1)	6
4.3 Support Activities (As Applicable)	6
4.4 Sequence and Timing of Soil-disturbing Activities (5.3.4.2)	7
4.5 Size of Property and Total Area expected to be Disturbed (5.3.4.3)	7
4.6 Identification of All Potential Pollutant Sources (5.3.4.5)	8
5.0 SITE MAPS (5.3.5).....	9
6.0 DISCHARGES	11
6.1 Locations of Other Industrial Storm Water Discharges (5.3.8)	11
6.2 Allowable Non-Storm Water Discharges (1.4.3; 4.3.7; 5.3.9)	11
7.0 DOCUMENTATION OF PERMIT ELIGIBILITY RELATED TO TOTAL MAXIMUM DAILY LOADS (3.2, 5.6) 12	
7.1 Identify Receiving Waters (5.3.3.3)	12
7.2 Identify TMDLs (5.6.1)	12
8.0 DOCUMENTATION OF PERMIT ELIGIBILITY RELATED TO ENDANGERED SPECIES (3.3, 5.7)	13
8.1 Information on Endangered or Threatened Species or Critical Habitat (5.7.1)	13
9.0 APPLICABLE FEDERAL, STATE, TRIBAL, OR LOCAL REQUIREMENTS (4.10, 4.15)	13
9.1 Historic Properties	13
9.2 Projects near Public Water System (PWS) (4.10)	14
10.0 CONTROL MEASURES/BEST MANAGEMENT PRACTICES (4.0; 5.3.6)	17
10.1 Minimize Amount of Soil Exposed during Construction Activity (4.2.2)	19
10.1.1 Site Delineation (4.2.1)	19
10.2 Maintain Natural Buffer Areas (4.2.3)	19
10.2.1 Clearing Vegetation (4.2.4)	20
10.3 Control Storm Water Discharges and Flow Rates (4.2.5)	20

10.3.1	Protect Steep Slopes (4.2.6)	22
10.4	Storm Water Inlet Protection Measures (4.3.1)	22
10.5	Water Body Protection Measures (4.3.2)	23
10.6	Down-Slope Sediment Controls (4.3.3)	24
10.7	Stabilized Construction Vehicle Access and Exit Points (4.3.4)	25
10.8	Dust Generation and Track-Out from Vehicles (4.3.5, 4.3.6)	25
10.9	Soil Management and Soil Stockpile (4.3.7)	26
10.10	Authorized Non-Storm Water Discharges (4.3.8)	26
10.11	Sediment Basins (4.3.9)	26
10.12	Dewatering (4.4)	27
10.13	Permanent/Post-Construction BMPs (4.11)	27
10.13.1	Soil Stabilization (4.5, 5.3.6.3)	28
10.14	Treatment Chemicals (4.6; 5.3.6.4)	28
10.15	Treatment Chemicals (4.6.1)	28
10.15.1	Treatment Chemical Selection (4.6.2)	29
10.15.2	Treatment Chemical Use Procedures (4.6.3; 4.6.6)	29
10.15.3	Application of Treatment Chemicals (4.6.4; 4.6.5)	29
10.16	Active Treatment System Information or Cationic Treatment Chemicals (4.6.7)	29
10.17	Good Housekeeping Measures (4.8)	29
10.17.1	Washing of Equipment and Vehicles (4.8.1)	29
10.17.2	Fueling and Maintenance Areas (4.8.2)	30
10.17.3	Staging and Material Storage Areas (4.8.3)	30
10.17.4	Washout of Applicators/Containers Used for Paint, Concrete, and Other Materials (4.8.4)	31
10.17.5	Fertilizer or Pesticide Use (4.8.5)	31
10.18	Spill Notification (4.9)	32
10.19	Construction and Waste Materials (4.8.6, 5.3.7)	32
11.0	INSPECTIONS (5.4; 6.0)	33
11.1	Inspection Schedules (5.4.1.2; 6.1; 6.2; 6.6)	33
11.2	Inspection Form or Checklist (5.4.1.3; 6.7)	34
11.3	Corrective Action Procedures (5.4.1.4; 8.0)	34
11.4	Inspection Recordkeeping (5.4.2)	35
12.0	MONITORING PLAN (IF APPLICABLE) (5.5; 7.0)	35
12.1	Determination of Need for Monitoring Plan	35
12.2	Monitoring Plan Development	35
12.3	Monitoring Considerations	35
13.0	POST-AUTHORIZATION RECORDS (5.8)	36
13.1	Additional Documentation Requirements (5.8.2)	36
13.1.1	Records of Employee Training (4.14; 5.8.2.8)	37
14.0	MAINTAINING AN UPDATED SWPPP (5.9)	37

14.1	SWPPP Amendment Log (5.9.2)	37
14.2	Deadlines for SWPPP Modifications (5.9.3)	38
15.0	ADDITIONAL SWPPP REQUIREMENTS (5.10)	38
15.1	Retention of SWPPP (5.10.1)	38
15.2	Main Entrance Signage (5.10.2).....	38
15.3	Availability of SWPPP (5.10.3)	38
15.4	Signature and Certification (5.10.4)	38

APPENDICES

Appendices that are marked with **(ESCP)** are to be filled out by the Designer. All other appendices are to be filled out by the SWPPP preparer and will not be included in the ESCP.

Appendix A	Site Maps and Drawings (ESCP)
Appendix B	BMP Details (ESCP)
Appendix C	Project Schedule
Appendix D	Supporting Documentation: (ESCP)
	<ul style="list-style-type: none"> • TMDLs • Endangered Species • Historic Properties • DEC Non-Domestic Wastewater Plan Review Non-Objection Letter (if required) • DEC Dewatering Permit (if required) • Environmental Permits and Commitments • Other Permits or Requirements
Appendix E	Project Specific ESCP Discussion & Comments (ESCP – not part of the SWPPP template)

The above Appendix E is for ESCP writers only and should include any additional information that the Designer would like to share with the SWPPP preparer. Below is the list of Appendices to be included in the SWPPP.

Appendix E	Delegation of Authority (25D-107, 25D-108), Subcontractor Certifications (25D-105), Project Staff Tracking (25D-127) and Personnel Qualifications
Appendix F	Permit Conditions:
	<ul style="list-style-type: none"> • Copy of Signed Notice of Intent • Copy of Letters from DEC Authorizing Coverage, with DEC NOI Tracking Number • Copy of 2021 Alaska Construction General Permit
Appendix G	Grading and Stabilization Records (25D-110)
Appendix H	Monitoring Plan (if applicable) and Reports
Appendix I	Training Records (25D-125)
Appendix J	Corrective Action Log and Delayed Action Item Reports (25D-112, 25D-113)
Appendix K	Inspection Records (25D-100)
Appendix L	SWPPP Preconstruction Site Visit (25D-106)
Appendix M	SWPPP Amendment Log (25D-114)
Appendix N	Daily Record of Rainfall (25D-115)
Appendix O	Hazardous Materials Control Plan
Appendix P	Treatment Chemical/Active Treatment Systems (if applicable)
Appendix Q	Other
	<ul style="list-style-type: none"> • Anti-Degradation Analysis (if applicable) • Correspondence with Regulatory Agencies • Notices of Termination

1.0 PERMITTEE (5.3.1)

The Department of Transportation & Public Facilities (DOT&PF) will be a permittee for the project. Upon the approval of the contractor's Storm Water Pollution Prevention Plan (SWPPP) by DOT&PF, the contractor will be required to submit a Notice of Intent (NOI) and obtain permit coverage as an operator. The contractor's contact information as well as contact information for all subcontractors must be included in the contractor's SWPPP. All subcontractors will be required to sign a certification (DOT&PF Form 25D-105) that they have read the Alaska Construction General Permit (CGP) and the contractor's SWPPP and will adhere to their terms and conditions.

1.1 Operator(s)/Contractor(s)

Operator Information					
Organization: Enter Text		Name: Enter Text		Title: Enter Text	
Phone: Enter Text		Fax (optional): Enter Text		Email: Enter Text	
Mailing Address:	Street (PO Box): Enter Text				
	City: Enter Text		State: Enter Text		Zip: Enter Text
Area of Control	Day-to-day operational control of those activities at a site which are necessary to ensure compliance with a SWPPP or other permit conditions.				

The contractor has day-to-day operational control over activities in the field, including subcontractors, installing, maintaining, and inspecting all erosion and sediment controls and implementation of the SWPPP.

Owner/Operator Information					
Organization: State of Alaska Department of Transportation and Public Facilities (DOT&PF)		Name: Enter Text		Title: Enter Text	
Phone: Enter Text		Fax (optional): Enter Text		Email: Enter Text	
Mailing Address:	Street (PO Box): P.O. Box 196900				
	City: Anchorage		State: Alaska		Zip: 99519-6900
Area of Control	Operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications.				

Repeat as necessary.

1.2 Subcontractors

Subcontractor Information			
Organization: Enter Text		Name: Enter Text	Title: Enter Text
Phone: Enter Text		Fax (optional): Enter Text	Email: Enter Text
Mailing Address:	Street (PO Box): Enter Text		
	City: Enter Text	State: Enter Text	Zip: Enter Text
Area of Control	Insert Area of Control (if more than one operator at site)		

Repeat as necessary to include all subcontractors. Include any Utility company and the Utility companies' contractors' doing concurrent relocation as a subcontractor – see subsection 641-1.07.

2.0 STORM WATER CONTACTS (5.3.2)

Identify the qualified persons responsible for the following required positions (note: a small project may have all these responsibilities carried out by one person):

Superintendent; DOT&PF's Project Engineer; Storm Water Lead (5.3.2.1); SWPPP Preparer (5.3.2.2); Person(s) Conducting Inspections- Contractor's SWPPP Manager and DOT&PF's Storm Water Inspector (5.3.2.3); Person(s) Conducting Monitoring (if applicable, 5.3.2.4), and Person(s) Operating Active Treatment System (if applicable, 5.3.2.5).

Document that the named individuals are Qualified Persons as described in CGP Appendix C. Include documentation of qualifications in Appendix E of the SWPPP.

Qualified Personnel	Responsibility
Contractor's Superintendent Company Name Address City, State, Zip Code Telephone # Fax/Email	The Contractor's duly authorized representative in responsible charge of the work. Authority for the overall operation of the Project and for Contractor furnished sites and facilities directly related to the Project.
DOT&PF's Project Engineer Company Name Address City, State, Zip Code Telephone # Fax/Email	The DOT&PF's duly authorized representative in responsible charge of the work. Authority to stop and/or modify construction activities as necessary to comply with the SWPPP and the terms and conditions of the permit. Must approve all amendments.
SWPPP Manager (Storm Water Lead and Inspector) Company Name Address City, State, Zip Code Telephone # Fax/Email	Authority to stop and/or modify construction activities as necessary to comply with the SWPPP and the terms and conditions of the permit. Assess conditions at the construction site that could impact storm water quality. Assess the effectiveness of any erosion and sediment control measures selected to control the quality of storm water discharge, and familiar with Part 6 as a means to ensure compliance with the permit.
SWPPP Preparer Company Name Address City, State, Zip Code Telephone # Fax/Email	Possess the skills to assess conditions at the construction site that could impact storm water quality. Familiar with Part 5 as a means to implement the permit.

DOT&PF's Storm Water Inspector Company Name Address City, State, Zip Code Telephone # Fax/Email	Assess conditions at the construction site that could impact storm water quality. Assess the effectiveness of any erosion and sediment control measures selected to control the quality of storm water discharge, and familiar with Part 6 as a means to ensure compliance with the permit.
Monitoring Person (If Applicable) Company Name Address City, State, Zip Code Telephone # Fax/Email	Knowledgeable in the principles and practices of water quality monitoring who is familiar with Part 7 and the monitoring plan for the site and how to conduct water quality sampling, testing, and reporting.
Active Treatment System Operator (If Applicable) Company Name Address City, State, Zip Code Telephone # Fax/Email	Knowledgeable in the principles and practices of treatment systems that employs chemical coagulation, chemical flocculation or electrocoagulation to aid in the treatment of storm water runoff. Familiar with Part 4.5 as a means to implement and comply with the permit.

A SWPPP Project Staff Tracking log (Form 25D-127) will be included in Appendix E to document any changes in personnel for the positions of Superintendent, Project Engineer, SWPPP Manager, and Inspectors.

Delete the information below prior to submittal of SWPPP. This information is provided for the SWPPP Preparer and is not part of the SWPPP template.

2.1 Contact Information for SWPPP Preparation

The following people may be contacted for questions when writing the SWPPP:

<u>Name</u>	<u>Phone</u>	<u>Email</u>
Athena Marinkovic	(907) 269-0436	athena.marinkovic@alaska.gov
Renee Goentzel	(907) 269-0714	renee.goentzel@alaska.gov

3.0 PROJECT INFORMATION (5.3.3)

3.1 Project Information

Project Name: Victory Road Pavement Preservation				
Location Address:	Street/Location: Victory Road		Borough or similar government subdivision: Matanuska-Susitna Borough	
	City: Glacier View		State: Alaska	Zip: 99674
	Latitude (decimal degree, 5 places): 61.79859°N		Longitude (decimal degree, 5 places): 147.98230°W	
	Determined By: <input checked="" type="checkbox"/> GPS <input type="checkbox"/> Web Map: <input type="checkbox"/> USGS Topo Map, Scale: <input type="checkbox"/> Other:			

3.2 Project Site-Specific Conditions (5.3.3)

Mean annual precipitation based on nearest weather stations (inches): **Sutton 1 W, Alaska (50-8915) has an average annual rainfall of 19.04 inches per year.**

Size of the 2-yr, 24-hr storm event (in inches): **NOAA predicts the Sutton 1-W, Alaska (50-8915) station to have a 1.44 in 2-yr, 24-hr storm event**

Soil Type(s) and Slopes **USDA Web Soil Survey results show the area consists of mostly boreal subalpine scrub/meadow mosaic-silty till slopes, ash influenced and similar soils. AASHTO Group Classification A-8. The following cut/fill and grading information is from the Victory Road DSR (August 2024): Embankment slopes along the roadway of 2:1 are to be constructed for the majority of the project with 1.5:1 used where required to catch natural slopes. Ditches will be established on both sides of the roadway with varying cut/fill slopes depending on roadway conditions. Ditch grading is proposed where existing ditches have become overgrown or filled with debris.**

Landscape Topography: **The terrain is hilly with flatter sections and steep inclines**

Drainage patterns: **Current drainage along the project corridor is poor. The project will not change the existing road drainage patterns. It will replace poor and damaged culverts, end sections, and complete additional drainage maintenance, where necessary. Storm water runoff is intended to flow into the roadside drainage ditches.**

Type of Existing Vegetation: **The major vegetation type of the area is boreal forest. Existing vegetation includes spruce, birch, aspen, balsam, alder, and willow trees. Sedge, sedge-moss meadows, and bogs with willows, sweetgale, or graminoids are common in the area.**

Approximate growing season: **Located in Alaska EcoRegion 116: Alaska Range. Growing Season May 24-Oct 3**

Seeding Dates: **Seeding dates are between May 15 and August 15. See Section 618 of the project specifications**

Recommended time periods to avoid vegetation clearing information can be found here:

<https://www.fws.gov/alaska-bird-nesting-season>

Check the footnotes in the table for any modifications to the periods stated in the table.

Time Period to Avoid Vegetation Clearing: **1 May to 15 July for forest/woodland and shrub/open areas. 1 March to 31 August for eagles.**

Fish Window: **Not Applicable**

Historic site contamination evident from existing site features and known past usage of the site: **There are no DEC identified contaminated sites in the project area.**

Additional information about these sites is available on the DEC Division of Spill Prevention and Response website: <https://www.arcgis.com/home/item.html?id=315240bfabf84aa0b8272ad1cef3cad3>. Include only those sites listed as 'Active' or 'Cleanup Complete – Institutional Controls'

3.3 Reference Documents Available

Listed below are the reference documents available for this project. Please contact the Project Engineer for assistance in obtaining these documents.

- Project Specific Permits – located in Appendix D and in the Special Provisions Package
- Geotechnical Recommendations, Victory Road Pavement Preservation. Project No. CFHWY00672/0001726, March 2023, prepared by DOT&PF.
- Hydrologic and Hydraulic Report, Victory Road Pavement Preservation. Project No. CFHWY000672/0001726, October 2023, prepared by Kinney Engineering, LLC.
- Environmental Commitment Memo – available at Preconstruction Meeting
- Environmental Document – available for review in the DOT&PF Preliminary Design & Environmental section

4.0 NATURE OF CONSTRUCTION ACTIVITY (5.3.4)

4.1 Scope of Work

The Proposed Action would:

- **Resurface Victory Rd for the entire length of the existing paved roadway**
- **Place recycled asphalt pavement over the existing gravel road section**
- **Improve drainage**
- **Replace culverts, signs, and striping**

4.2 Project Function (5.3.4.1)

Victory Road contains several residential homes, and a Bible Camp located at the end of the road. The surrounding land use within the corridor is rural residential and the roadway is classified as a minor collector.

4.3 Support Activities (As Applicable)

Modify support activities table, as necessary. "Dedicated" only applies to activities exclusively for the project, i.e. commercial concrete or asphalt plants would be marked "No" under the "Dedicated" column. Location must be provided for ALL support activities, even those which are commercial or off-site. Provide a physical address for the support activities. For private and/or commercial support activities locations, include the name of the individual and/or company and their physical address. Location may be an address or other descriptive location, i.e. NE corner of staging area.

Support activities for this project are: **To be determined by Contractor**

Support Activity	Location	Dedicated	
		Yes	No
Concrete Batch Plant		<input type="checkbox"/>	<input type="checkbox"/>
Asphalt Batch Plant		<input type="checkbox"/>	<input type="checkbox"/>
Equipment Staging Yards		<input type="checkbox"/>	<input type="checkbox"/>
Material Storage Areas		<input type="checkbox"/>	<input type="checkbox"/>
Excavated Material Disposal Areas		<input type="checkbox"/>	<input type="checkbox"/>
Borrow Areas		<input type="checkbox"/>	<input type="checkbox"/>

4.4 Sequence and Timing of Soil-disturbing Activities (5.3.4.2)

The contractor will be required to finish, either temporary or final stabilized, individual areas prior to moving on to the next area. The contractor will be required to prepare a detailed schedule for review and approval prior to commencement of construction activities and is to be included in the SWPPP. The schedule will detail the sequence of activities and describe the stabilization schedule. The contractor must adapt this section with their specific plans in the project SWPPP.

4.5 Size of Property and Total Area expected to be Disturbed (5.3.4.3)

The following are estimates of the construction site:

Description	Number	Remarks
Total project area:	12.33 acres	ROW to ROW.
Construction-site area to be disturbed:	4.14 acres	Daylight boundaries for repaving, estimated 10' offset around culvert replacement areas.
Percentage impervious area BEFORE construction:	84.5 %	Gravel and asphalt areas
Runoff Coefficient BEFORE construction:	0.5405	
Percentage impervious area AFTER construction:	84.5 %	The project does not change any existing pervious surfaces. It includes paving gravel roadway area of roughly .54 acres

Runoff coefficient AFTER construction:	.563	Additional pavement areas account for change in runoff. Vegetation and water areas do not change.
--	-------------	---

The values shown in the table above were calculated with the information available at the time of the final design. The contractor's values will be different due to staging areas, batch plants, material stockpiles, etc. A weighted **C value from the Rational Method** was used to calculate the Runoff Coefficient. If a discrepancy is found, contact the Project Engineer to request further information.

4.6 Identification of All Potential Pollutant Sources (5.3.4.5)

Identify and list all potential sources of sediment from construction materials and activities which may affect the quality of storm water discharges from the construction site.

Identify and list all potential sources of pollution, other than sediment, from construction materials and activities which may affect the quality of storm water discharges from the construction site.

Potential sources of sediment to storm water runoff:

- Exposed soils from excavation, trenching, digging, and filling activities.
- Concrete activities for culvert headwalls
- Fill materials for culvert replacement activities including Type A and C

Potential pollutants and sources, other than sediment, to storm water runoff:

- Vehicle equipment fluids, including oil, grease, solvent, and coolants
- General site litter and waste
- Materials associated with paving activities

Trade Name Material	Storm Water Pollutants	Location

5.0 SITE MAPS (5.3.5)

Site map(s) and drawings are located in Appendix A.

The SWPPP must include a legible site map (or set of maps for large projects) showing the entire site and identifying the following site-specific information:

1. North Arrow **(ESCP)**
2. Property boundaries **(ESCP)**
3. Locations where earth-disturbing activities will occur, noting any phasing dictated by design **(ESCP)**
4. Location of areas that will not be disturbed and natural features to be preserved **(ESCP)**
5. Locations of all storm water conveyances including ditches, pipes, and swales **(ESCP)**
6. Locations of storm water inlets and outfalls, with a unique identification code for each outfall **(ESCP)**
7. Location where storm water and/or authorized non-storm water discharges to waters of the U.S. (including wetlands) or a Municipal Separate Storm Sewer Systems (MS4), if present **(ESCP)**
8. Direction of storm water flow and approximate slopes anticipated after grading activities **(ESCP)**
9. Locations where control measures will be installed **(ESCP)**
10. Locations where exposed soils will be or have been stabilized
11. Locations where post-construction storm water controls will be installed (i.e. seeding areas, matting, riprap, sedimentation basins, etc.) **(ESCP)**
12. Locations of support activities, if known
13. Locations where authorized non-storm water will be used
14. Locations and sources of run-on to the site from adjacent property that may contain quantities of pollutants (e.g., sediment, fertilizers and/or pesticides, paints, solvents, fuels) which could be exposed to rainfall, or snowmelt, and could be discharged from your construction site, if applicable **(ESCP)**
15. Locations of all waters of the U.S. (including significant wetland areas 10,000 square feet or greater) on the site within 2,500 feet of the site boundary (~1/2 mile on each side of road) that may be affected by storm water discharges from the site (see Section 7.1) **(ESCP)**
 - a. This can be shown on a general location map (USGS quad map, a portion of a city or county map, or other map) with enough detail to identify the location of the construction site and waters of the U.S. within the one mile distance.
16. Location of existing public water system (PWS) drinking water protection areas (DWPA) for PWS sources (e.g. springs, wells, or surface water intakes) that intersect the boundary of the proposed project/permit area. The DWPAs can be found using the interactive web map application, "Alaska DEC Drinking Water Protection Areas", located at <http://dec.alaska.gov/das/GIS/apps.htm>. **(ESCP)**
 - a. A copy of the webpage from the above URL will work with the addition of the project boundary and labels for the DWPAs by their ID numbers (see Section 9).
17. Sampling point(s), if applicable
18. Areas where final stabilization has been accomplished
19. Location of staging and material storage areas (construction materials, hazardous materials, fuels, etc.) **(ESCP, if known)**
20. Dumpsters
21. Porta-potties
22. Concrete, paint, or stucco washout areas
23. Stabilized construction exits **(ESCP, if known)**

6.0 DISCHARGES

Subject to compliance with the terms and conditions of the CGP, the permittee is authorized to discharge pollutants in storm water discharges from the site. If the permittee is eligible for coverage under CGP and does not comply with the requirements of the CGP, the permittee may be in violation of this general permit for otherwise eligible discharges.

Instructions:

Describe and identify the location of any storm water discharge associated with support activities, including discharges from dedicated asphalt and concrete plants covered by the CGP (5.3.8).

6.1 Locations of Other Industrial Storm Water Discharges (5.3.8)

The contractor is required to identify discharges from related support activities. Portable batch plants located on department-supplied property must be included in the contractor's SWPPP and related inspections. If the DOT&PF is not a CGP operator for the site or sites listed in this subsection, then describe the sites and BMPs for them in a separate SWPPP2. In this section, explain which areas are covered within this SWPPP and which are covered within a separate SWPPP2. Also provide information on where the SWPPP2 is available for review.

6.2 Allowable Non-Storm Water Discharges (1.4.3; 4.3.7; 5.3.9)

The contractor must list all allowable non-storm water discharges and describe how the discharges will be minimized and managed to reduce pollution to storm water in the contractor's SWPPP.

Allowable Non-Storm Water Discharges:

- Discharges from fire-fighting activities (1.4.3.1)
- Fire hydrant flushing (1.4.3.2)
- Waters used to wash vehicles where detergent are not used (1.4.3.3)
- Water used to control dust (1.4.3.4)
- Potable water including uncontaminated water line flushings (1.4.3.5)
- Routine external building wash down that does not use detergents (1.4.3.6)
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used (1.4.3.7)
- Uncontaminated air conditioning or compressor condensate (1.4.3.8)
- Uncontaminated, non-turbid discharges of ground water or spring water (1.4.3.9)
- Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated groundwater (1.4.3.10)
- Uncontaminated construction dewatering waters that are treated by an appropriate control measure in compliance with Part 4.4.2 or have been treated with treatment chemicals in compliance with Part 4.6 (1.4.3.11)
- Landscape irrigation (1.4.3.12)

7.0 DOCUMENTATION OF PERMIT ELIGIBILITY RELATED TO TOTAL MAXIMUM DAILY LOADS (3.2, 5.6)

A search of the “Alaska’s Final **2024** Integrated Water Quality Monitoring and Assessment Report” found the **Matanuska River to be Category 4a**. The section of the Matanuska River identified as category 4a is located downstream from the project site. Specifically, a debris site located in Palmer, AK. There is a recovery plan in place for this location.

7.1 Identify Receiving Waters (5.3.3.3)

Description of receiving waters: **The receiving waters located within 2500 ft of the site are Packsaddle Creek, the Matanuska River, and the wetlands surrounding the river. Index Lake is located NW of the project’s end, but runoff is not expected to travel that direction. There is an unnamed lake located to the East of the project where runoff is also not expected. The runoff on Victory Road flows into ditches and driveway culverts along the roadway. There are two cross culverts on Victory Road (MP 0.16 and MP 0.28) where Packsaddle creek flows and an additional cross culvert on Glenn Highway.**

Outstanding Natural Resource Waters (2.1.6):

The DEC must be consulted, at least 30 days prior to construction activities, when determining requirements for water quality analysis on all projects that meet the following:

- Will or may discharge storm water to a Tier 3 water body, also known as Outstanding Natural Resource Waters (ONRW).

No ONRW are designated in Alaska as of the date of this document.

Description of storm sewer and/or drainage systems: **The drainage system for this project involves roadside ditching and culverts. Drainage is conveyed to and from Packsaddle creek and unnamed creek. The project is not proposing to alter any drainage patterns.**

7.2 Identify TMDLs (5.6.1)

Is an EPA-established or approved TMDL published for the receiving water(s) listed in Section 7.1?

☒ Yes ☐ No

TMDL: **Debris**

Summary of consultation with state or federal TMDL authorities (5.6.2): **The location of the impaired section of the Matanuska River is concentrated in an area approximately 1,200 ft north of Eagle Avenue in Palmer, AK. This area is outside of the project area for Victory Road Pavement Preservation.**

Measures taken to ensure compliance with TMDL (5.6.3): **The implementation and monitoring of this site recommends implementing strategies that are localized to the area. There are no strategies associated with locations upriver from the impaired section.**

Are there impaired receiving waters listed in Section 7.1 without an approved TMDL? ☐ Yes ☒ No

8.0 DOCUMENTATION OF PERMIT ELIGIBILITY RELATED TO ENDANGERED SPECIES (3.3, 5.7)

8.1 Information on Endangered or Threatened Species or Critical Habitat (5.7.1)

Are endangered or threatened species and critical habitats on or near the project area?

☐ Yes ☒ No

Describe how this determination was made: **Through the iPac explorer on fws.gov, there are no endangered species or critical habitats in the project area. However, both bald eagles and golden eagles are identified as in the project area. Two additional migratory birds are identified, the American golden-plover and olive-sided Flycatcher.**

Will species or habitat be adversely affected by storm water discharge?

☐ Yes ☒ No

Provide summary of necessary measures (5.7.5): **N/A**

9.0 APPLICABLE FEDERAL, STATE, TRIBAL, OR LOCAL REQUIREMENTS (4.10, 4.15)

The project will comply with all applicable Federal, State, Local, and Tribal requirements for soil erosion control and storm water management.

The contractor will be responsible for obtaining all necessary permits and clearances for material and disposal sites, and/or equipment storage areas in accordance with the CGP for Storm Water Discharges from Construction Activities.

9.1 Historic Properties

SHPO consultation was completed on: **N/A**

Are there any historic sites on or near the construction site?

☐ Yes ☒ No

Describe how this determination was made: **CE - A preliminary review of the Alaska Heritage Resources Survey (AHRs) database on October 15, 2021, indicated that the Glenn Highway is listed as AHRs site ANC-04068. This site is exempt from Section 106 review because the Glenn Highway is part of the Interstate Highway System. No other AHRs sites were identified within or adjacent to the proposed project area. On November 4, 2021, the Regional PQI determined that the proposed project qualifies as a Programmatic Allowance under the Section 106 Programmatic Agreement. See Appendix A for the PA Streamlined Project Review Screening Record.**

If cultural or paleontological resources are discovered after the initial commencement of construction activities, work that would disturb such resources is to be stopped, and the Office of History and Archaeology, a Division of Parks and Outdoor Recreation of the Alaska Department of Natural Resources (<http://dnr.alaska.gov/parks/oha/>), is to be notified immediately at (907) 269-8721.

It is the Contractor's responsibility, thru the Project Engineer, to get clearance for material and disposal sites that have not been assessed during the Design phase of the project.

9.2 Projects near Public Water System (PWS) (4.10)

The project boundary intersects **1** Public Water System (PWS) Drinking Water Protection Area(s) (DWPA) and **0** Provisional Protection Area(s), and will have to follow the requirements of the 2021 CGP Part 4.10. The PWS contact will need to be notified by whatever method is most expedient: email, phone, or post (4.10.1). This should be done by the DOT&PF Project Engineer on behalf of both parties.

The intersecting DWPAs and Provisional Protect Areas ID numbers (PWSID) with contact information are:

Water System Name	PWSID	Contact Name	Phone #	Address	Email
Victory Bible Camp Spring	AK2226567	Alan Morgan	907-841-0504	64741 Victory Rd Sutton, AK 99674	alanm@vbcakalaska.org

The water system name, number, name of contact, and all methods of contact can be found at: <https://dec.alaska.gov/eh/dw/dwp/protection-areas-map/>.

If the project is near a PWS, add language that addresses the following items:

1. Within the identified DWPA, restrict project activities that could significantly change the natural surface water drainage or groundwater gradient (4.10.2).
2. Immediately notify the nearby PWS of any identified potential contamination, such as spills or excess erosion (4.10.3).

Record the time, date, and method of contact and enter into the SWPPP in Appendix Q. Either a copy of the email, or a formal memo stating the date of phone call, or a receipt from certified mail will fulfill this obligation.

General Principles for Erosion and Sediment Controls.

The contractor must design, install, and maintain effective erosion and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

- Control storm water volume and velocity to minimize soil erosion and pollutant discharges;
- Control storm water discharges, including both peak flowrates and total storm water volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points;
- Minimize the amount of soil exposed during construction activity;
- Minimize the disturbance of steep slopes;
- Minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity, duration of precipitation; the nature of resulting storm water runoff; and soil characteristics, including the range of soil particle sizes expected to be present on the site;
- Provide and maintain natural buffers around waters of the U.S., direct storm water to vegetated areas and maximize storm water infiltration to reduce pollutant discharges, unless infeasible;
- Minimize soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates it to be compacted.
- Unless infeasible, preserve topsoil. Preserving topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed.

Additional Erosion and Sediment Controls Selection and Design Considerations:

Preventing storm water from coming into contact with polluting materials is generally more effective, and less costly, than removing pollutants from storm water;

Using a combination of control measures is more effective than using control measures in isolation for minimizing pollutants in the storm water discharge;

Using technologically available, economically practicable, and achievable methods in light of best industry practices;

Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit;

Minimizing impervious areas at the permittees facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches) can reduce runoff and improve groundwater recharge and stream base flows in local streams, although care must be taken to avoid ground water contamination;

Dissipate storm water runoff into open vegetated swales and natural depressions to reduce in stream impacts of erosive flows;

Conserving and/or restoring of riparian buffers will help protect streams from storm water runoff and improve water quality; and

Using treatment interceptors (e.g., sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

Describe the Best Management Practices (BMPs) to be implemented to control pollutants in storm water discharges. For each major activity identified:

- Clearly describe appropriate control measures.
- Describe the general sequence during the construction process in which the measures will be implemented.
- Describe maintenance and inspection procedures to be undertaken for that specific BMP.
- Include protocols, thresholds, and schedules for cleaning, repairing, and/or replacing damaged or failing BMPs.
- Identify staff responsible for maintaining BMPs. (If your SWPPP is shared by multiple operators, indicate the operator responsible for each BMP.)

Categorize each BMP under one of the following areas of BMP activity as described below:

1. *Minimize the Amount of Soil Exposed during Construction Activity (4.2.2) & Site Delineation (4.2.1)*
 2. *Maintain Natural Buffer Areas (4.2.3) & Clearing Vegetation (4.2.4)*
 3. *Control Storm Water Discharges and Flow Rates (4.2.5)*
 4. *Protect Steep Slopes (4.2.6)*
 5. *Storm Water Inlet Protection (4.3.1)*
 6. *Water Body Protection (4.3.2)*
 7. *Down-Slope Sediment Controls (4.3.3)*
 8. *Stabilized Construction Vehicle Access and Exit Points (4.3.4)*
 9. *Track-Out from vehicles (4.3.5)*
 10. *Dust Generation (4.3.6)*
 11. *Stockpile Management (4.3.7)*
 12. *Sediment Basins (4.3.9)*
 13. *Dewatering (4.4)*
 14. *Soil Stabilization (4.5)*
 15. *Treatment Chemicals / Active Treatment Systems (4.6)*
 16. *Good Housekeeping Measures (4.8)*
 17. *Spill Notification (4.9)*
 18. *Construction and Waste Materials (5.3.7)*
 19. *Permanent/Post-Construction BMPs (4.11)*
 20. *Projects near a Public Water System (PWS) (4.10)*
- Note the location of each BMP on your site map(s).
 - Any structural BMPs should have design specifications and details referred to in Section 11 or included in Appendix B.

For more information or ideas on BMPs, see the DEC *Alaska Storm Water Guide*:

<https://dec.alaska.gov/water/wastewater/stormwater/resources/guidance/> & for a list of Alaska specific BMPs look at the DOT&PF *Alaska SWPPP Guide's* Appendix B - BMP Guide for Erosion & Sediment Control at http://dot.alaska.gov/stwddes/desenviron/assets/pdf/bmp/bmp_all.pdf

10.0 CONTROL MEASURES/BEST MANAGEMENT PRACTICES (4.0; 5.3.6)

Much of the guidance in this section is for both the ESCP & SWPPP preparers. Carefully read through the requirements listed below when filling out Section 10. When developing this section, think about how they are going to construct the project. Look at means and measures but do not direct the contractor...merely suggest. Consider 'prior to/upon construction' methods (i.e. upon placing culvert install a fiber roll and outlet protection). The following sections describe BMPs that will or may be used as necessary to prevent erosion and control sediment.

The selection, design, installation, maintenance, and removal of control measures must be in accordance with good engineering practices, manufacturer specifications, and address site-specific conditions such as precipitation, site topography, soil characteristics, and growing season.

The plan preparer will use this section to describe the types and locations of control measures and BMPs to be installed and maintained in accordance with CGP Part 4.0.

Describe each control measure and BMP, including installation schedule and maintenance, inspection, and removal requirements. You may include a brief description of each BMP in this section and refer to detailed installation, maintenance, inspection, removal requirements, and manufacturer's specifications that **MUST** be included in the Appendix B.

If a control measure or BMP will be used to comply with more than one element of this section, you do not need to repeat the detailed installation, maintenance, inspection, removal requirements, and manufacturer's information. For each repeated element, identify the control measure or BMP to be used, and refer to the section or Appendix B where the detailed information is presented.

The person(s) identified in Section 2.0 of this SWPPP will be responsible for ensuring compliance with the installation, maintenance, inspection, and removal of these control measures.

The format to be used is:

BMP Description:

Describe purpose, applicability, limitations and design. If using a BMP manual or publication, this information may be found there.

BMP Manual/Publication:

Provide the citation information as described below. If referencing Appendix B, where the BMP details are provided, ensure the attached sheets clearly identify this information.

Installation Schedule:

Identify the activity or phase prior to which the BMP will be installed or the activity that requires this BMP to be installed before it can begin.

Maintenance and Inspection:

Describe the thresholds and/or indicators for maintenance and protocols for inspecting the BMP. Describe the maintenance procedures. If using a BMP manual or publication, this information may be found there.

Responsible Staff:

Name the position and company who is responsible for installation and maintenance.

How to Cite a BMP Publication:

DOT&PF requires citations for the BMP manual or publication used to select and design the BMP, along with a description of the BMP. If no BMP manual or publication was used to select or design a given BMP then state "No BMP manual or publication was used in the design or selection of this BMP". BMP designs submitted by the contractor and approved by the Project Engineer may be used but still must state that no manual or publication was used.

BMP Manuals/Publications: BMP manuals describe each BMP and outline details such as installation, design parameters, applicability/limitations, maintenance, and targeted pollutants. To cite a manual, include the title, author (individual or agency) and date of publication.

Be careful when citing outside of the state control measures or BMPs. Read through them to make sure they do not put any additional restrictions that go beyond the CGP. If citing outside of state BMPs, make sure to mark out any requirements that do not apply to this project or do not meet CGP requirements and cite as 'modified from (insert BMP manual title).

DOT&PF Specifications and Plan Sheets: The publication cited may be the DOT&PF contract specifications and plan sheets provided that the minimum information regarding the BMP is included (those listed above).

When the plans and specifications are used, the reference must include the sheet or page number and these must be appended to the SWPPP. If the specifications and plan sheets do not provide the minimum information, the plan preparer must provide the missing information in the plan. Any drawing or description developed by the plan preparer must include the statement "No BMP manual or publication was used for this design."

Manufacturer's Specification Sheet: Referencing a manufacturer's specification sheet is suitable only if it includes all the necessary information listed in the above subsection. When using the manufacturer's specification sheet(s), provide the product name, manufacturer, and date of copyright, and attach copies of the specification sheet(s) to the plan. It may also be helpful to provide the manufacturer's website if the information was obtained online. You may deviate from manufacturer's specifications where you provide justification for such deviation and include documentation of your rationale in the ESCP/SWPPP.

Permanent/Post-Construction Control Measures: Identify any permanent/post-construction control measures that will be installed during the construction process and not discussed elsewhere in the SWPPP (permanent Soil Stabilization measures should be covered in section 10.13).

10.1 Minimize Amount of Soil Exposed during Construction Activity (4.2.2)

Describe how the disturbed land areas (e.g., clearing and grading) and undisturbed land areas (e.g., trees, boundaries of sensitive areas, or buffers established by CGP Part 4.2.3) will be delineated.

Describe the areas that will be disturbed for each phase of construction, and the methods you will use (e.g., signs, fences, etc.) to protect the areas that are to be left undisturbed. Construction activities must be phased to minimize the extent and duration of exposed soil.

Identify natural features and describe how each will be protected during construction activity.

Describe how native topsoil will be preserved. Native topsoil should be preserved for later use with on-site stockpiles, unless deemed infeasible by space constraints or site design criteria creates impervious surfaces (CGP Part 4.2.2.1).

10.1.1 Site Delineation (4.2.1)

The site will be cleared next to roadway 5' beyond slope catch points or 5' inside the right-of-way line, whichever is less, for a total area of 2.7 acres. The areas contained by the clearing will act as the site delineation for this project. Existing vegetation beyond this delineation will be preserved.

10.2 Maintain Natural Buffer Areas (4.2.3)

Are stream crossings or waters of the U.S. located within or immediately adjacent to the property?

☒ Yes ☐ No

If YES, describe the control measures to be implemented to comply with the CGP Part 4.2.3 (e.g., buffer areas, perimeter controls, etc.).

You must maintain natural buffer areas at stream crossings and around the edge of any waters of the U.S. that are located within or immediately adjacent to the construction activity in accordance with the following:

- The buffer must be a minimum of 25 feet wide, or the width as required by local ordinance, unless infeasible based on site dimensions;
- Exceptions are allowed for water dependent activities, specific water access activities, or necessary water crossings;
- A permittee should, to the extent practicable, use perimeter controls adjacent to buffers and direct storm water sheet flow to buffer areas to increase sediment removal and maximize storm water infiltration.

A minimum of 25' vegetative buffer will be maintained at all stream crossings, aside from work in and around the Packsaddle Creek culverts located at MP 0.18, 0.28 and 0.29 on Victory Road.

BMP Description: Vegetative Buffer, BMP-38.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide 2021

☒ **Permanent** ☐ **Temporary**

Installation Schedule:	Existing vegetative strip as perimeter control between on-site construction activities and project boundaries. Areas are to be identified prior to ground disturbing activities.
Maintenance and Inspection:	<u>Inspection:</u> Inspect to ensure the site delineation to mark the non-disturbance area is in place. Check for damage by equipment and

	vehicles. Ensure stormwater flowing through the area is not forming ponds, rilles, or gullies. Inspect for sediment deposition. <u>Maintenance:</u> Replace or repair site delineation as necessary. Repair any damage from equipment or vehicles. Provide additional seed, fertilizer, and water to repair seeded areas. If sediment is depositing in the buffer, install improved erosion control measures upslope of the buffer.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.2.1 Clearing Vegetation (4.2.4)

Clearing of vegetation that disturbs the vegetative mat and exposes soil is **prohibited** prior to obtaining authorization under the CGP.

Cutting of trees and brush while the ground is frozen without disturbing the vegetative mat for the purpose of clearing in accordance with the U.S. Fish & Wildlife Service "Recommended Time Periods for Avoiding Vegetation Clearing" is allowed prior to the submittal of a project's NOI. If vegetation clearing that disturbs the vegetative mat and occurs after the onset of spring thaw (as defined in Appendix C) or conditions that consist of above freezing temperatures that cause melting of snow, the permittee must develop a SWPPP and file an NOI. Operators must receive authorization under this permit and otherwise comply with the terms of this permit prior to such clearing.

10.3 Control Storm Water Discharges and Flow Rates (4.2.5)

Describe control measures to comply with the CGP (e.g., divert storm water around the site, slow down or contain storm water, use of velocity dissipation devices, installing permanent storm water management controls prior to construction of site improvements to the extent practicable, etc.). Storm water that may concentrate must be slowed down or contained.

BMP Description: Vegetative Buffer, BMP 38.00	
BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide 2021	
<input checked="" type="checkbox"/> Permanent	<input type="checkbox"/> Temporary
Installation Schedule:	Existing vegetative strip as a living filter to reduce soil erosion and runoff velocities.
Maintenance and Inspection:	<u>Inspection:</u> Inspect to ensure the site delineation to mark the non-disturbance area is in place. Check for damage by equipment and vehicles. Ensure stormwater flowing through the area is not forming ponds, rilles, or gullies. Inspect for sediment deposition. <u>Maintenance:</u> Replace or repair site delineation as necessary. Repair any damage from equipment or vehicles. Provide additional seed, fertilizer, and water to repair seeded areas. If sediment is depositing in the buffer, install improved erosion control measures upslope of the buffer.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

BMP Description: Culvert Inlet Protection, BMP 08.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide 2021

<input type="checkbox"/> Permanent		<input checked="" type="checkbox"/> Temporary
Installation Schedule:		To be installed up-gradient of culvert inlets before ground disturbing activity. Types can include: fiber rolls, geotextile-wrapped foam barriers, sand bags or gravel-filled sand bags, or geotextile-wrapped wire cage barriers.
Maintenance Inspection:	and	<p><u>Inspection:</u> Confirm barriers are in full contact with the soil and that bypass routes are not present. Inspect for sediment accumulation, displacement, and structural damage.</p> <p><u>Maintenance:</u> Remove accumulated sediment before it reaches 1/3 of the design depth. Restore structure to its original dimensions and full contact with soil around inlet as soon as practicable. Repair any structural damage, including replacing damaged sandbags, as soon as practicable.</p>
Responsible Staff:		SWPPP Manager & Superintendent, Contractor

BMP Description: Fiber Rolls for Erosion and Sediment Control, BMP 10.00a and 10.00b

BMP Manual/Publication: DOT&PF Alaska SWPPP Guide 2021

<input type="checkbox"/> Permanent		<input checked="" type="checkbox"/> Temporary
Installation Schedule:		To be installed in ditches perpendicular to flow, where grades exceed 5% to reduce water velocity into culverts.
Maintenance Inspection:	and	<p><u>Inspection:</u> Ensure the rolls are in contact with the soil and fully entrenched. Look for scouring underneath rolls. Look for split, torn, unraveling, or slumping fiber rolls. Ensure equipment has not drive over installed fiber rolls.</p> <p><u>Maintenance:</u> Replace damaged sections and remove accumulated sediment when it reaches ½ the distance between the top of fiber roll and the ground.</p>
Responsible Staff:		SWPPP Manager & Superintendent, Contractor

BMP Description: Pumped Stream Diversion, BMP 15.00

BMP Manual/Publication: DOT&PF Alaska SWPPP Guide 2021

<input type="checkbox"/> Permanent		<input checked="" type="checkbox"/> Temporary
Installation Schedule:		Install before in-stream work occurs
Maintenance Inspection:	and	<p><u>Inspection:</u> When pumping, monitor pumps, intake and discharge points. Ensure that pumps are adequately sized. Inspect upstream and downstream dams for overtopping, bypass, undercutting, or other defects. Inspect for leaks. Inspect discharge point for erosion or failure. Inspect the equipment area for properly stored fuel and hazardous substances.</p> <p><u>Maintenance:</u> Reinforce or restore any portion of the dams, conveyance structure, or energy dissipater.</p>
Responsible Staff:		SWPPP Manager & Superintendent, Contractor

BMP Description: Temporary Diversion Conveyance, BMP 34.00 & 35.00

BMP Manual/Publication: DOT&PF Alaska SWPPP Guide 2021

☐ Permanent

☒ Temporary

Installation Schedule:

Install before in-stream work

Maintenance and Inspection:

Inspection: Inspect the pipe for breaks or blockage. Inspect inlet for sediment build up.

Maintenance: Install headwall if necessary to control erosion at outlet. Repair any breaks in the pipe. Tighten fittings at leaking connection points. Clear any clogs that reduce flow through the pipe.

Responsible Staff:

SWPPP Manager & Superintendent, Contractor

10.3.1 Protect Steep Slopes (4.2.6)

Will steep slopes be present at the site during construction?

☒ Yes

☐ No

If YES, describe control measures to be implemented to comply with CGP Part 4.2.6 (e.g., reduce continuous slope length, divert storm water around slopes, stabilized exposed areas, etc.).

Steep slopes are present at the beginning of the project, on the north side of the roadway. Gravel riprap is already in place for part of this area.

BMP Description: Surface Roughening, BMP 30.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide, March 2021

☐ Permanent

☒ Temporary

Installation Schedule:

Maintenance and Inspection:

Responsible Staff:

SWPPP Manager & Superintendent, Contractor

Sediment Controls:

Sediment control measures (e.g. sediment ponds, traps, filters, etc.) must be constructed as one of the first steps in grading. These control measures must be functional before other land disturbing activities take place.

10.4 Storm Water Inlet Protection Measures (4.3.1)

Describe control measures (e.g., filter berms, perimeter controls, temporary diversion dikes, etc.) to be implemented to protect all inlets receiving storm water from the project during the duration of the project.

BMP Description: Culvert Inlet Protection, BMP 08.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide 2021

☐ Permanent

☒ Temporary

Installation Schedule:

To be installed up-gradient of culvert inlets before ground disturbing activity. Types can include: fiber rolls, geotextile-wrapped foam

		barriers, sand bags or gravel-filled sand bags, or geotextile-wrapped wire cage barriers.
Maintenance Inspection:	and	<p><u>Inspection:</u> Confirm barriers are in full contact with the soil and that bypass routes are not present. Inspect for sediment accumulation, displacement, and structural damage.</p> <p><u>Maintenance:</u> Remove accumulated sediment before it reaches 1/3 of the design depth. Restore structure to its original dimensions and full contact with soil around inlet as soon as practicable. Repair any structural damage, including replacing damaged sandbags, as soon as practicable.</p>
Responsible Staff:		SWPPP Manager & Superintendent, Contractor

10.5 Water Body Protection Measures (4.3.2)

Describe control measures selected to minimize discharge of sediment prior to entry into water bodies located on or immediately downstream of the site.

BMP Description: Temporary Check Dam, BMP 31.00-33.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide, March 2021

☐ Permanent

☒ Temporary

Installation Schedule:		Install as soon as drainage routes are established.
Maintenance Inspection:	and	<p><u>Inspection:</u> Ensure center of check dam is lower than its edges. Check structural integrity.</p> <p><u>Maintenance:</u> Remove large debris, trash and leaves. Remove accumulated sediment.</p>
Responsible Staff:		SWPPP Manager & Superintendent, Contractor

BMP Description: Vegetative Buffer, BMP 38.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide 2021

☒ Permanent

☐ Temporary

Installation Schedule:		Existing vegetative strip as a living filter to reduce soil erosion and runoff velocities.
Maintenance Inspection:	and	<p><u>Inspection:</u> Inspect to ensure the site delineation to mark the non-disturbance area is in place. Check for damage by equipment and vehicles. Ensure stormwater flowing through the area is not forming ponds, rilles, or gullies. Inspect for sediment deposition.</p> <p><u>Maintenance:</u> Replace or repair site delineation as necessary. Repair any damage from equipment or vehicles. Provide additional seed, fertilizer, and water to repair seeded areas. If sediment is depositing in the buffer, install improved erosion control measures upslope of the buffer.</p>
Responsible Staff:		SWPPP Manager & Superintendent, Contractor

BMP Description: Fiber Rolls for Erosion and Sediment Control, BMP 10.00a and 10.00b

BMP Manual/Publication: DOT&PF Alaska SWPPP Guide 2021

☒ **Permanent**

☐ **Temporary**

Installation Schedule:	To be installed perpendicular to flow, upstream of water body.
Maintenance and Inspection:	<u>Inspection:</u> Ensure the rolls are in contact with the soil and fully entrenched. Look for scouring underneath rolls. Look for split, torn, unraveling, or slumping fiber rolls. Ensure equipment has not drive over installed fiber rolls. <u>Maintenance:</u> Replace damaged sections and remove accumulated sediment when it reaches ½ the distance between the top of fiber roll and the ground.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

BMP Description: Culvert Inlet Protection BMP-08.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide, March 2021

☐ **Permanent**

☒ **Temporary**

Installation Schedule:	Immediately when culvert is installed, bedded, and backfilled. All culvert inlet protection will be installed within 24 hours of culvert placement.
Maintenance and Inspection:	<u>Inspection:</u> Look for roll ends remain abutted tightly. Ensure that the rolls are in contact with the soil and are entrenched. Look for scouring underneath the rolls. <u>Maintenance:</u> Remove accumulated sediment before it reaches 1/3 of the design depth. Repair any structural damage and restore structure to original dimensions and is in full contact with soil around the inlet.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.6 Down-Slope Sediment Controls (4.3.3)

Describe sediment controls (e.g., silt fence or temporary diversion dike) for any portion of the down-slope and side-slope perimeter where storm water will be discharged from disturbed areas of the site.

Fibers rolls will be used as a down-slope sediment control. See Section 10.3 Control Storm Water Discharges and Flow Rates for the BMP description, installation, maintenance, and inspection information.

BMP Description: Silt Fence, BMP 20.00

BMP Manual/Publication: DOT&PF Alaska SWPPP Guide 2021

☐ **Permanent**

☒ **Temporary**

Installation Schedule:	Install down slope from construction area to protect Packsaddle Creek
Maintenance and Inspection:	<u>Inspection:</u> Inspect fence line for continuity, collapse, undermined areas, and damage. Inspect fabric for tears, punctures, fraying, weathering and compromised integrity. Confirm fence posts are secure. Ensure fence is keyed in and that there is no undercutting. Look for evidence of sediment

	<p>or erosion flow leading off the downhill edge of the fence. Note depth of sediment built up. Look for signs of inadequate protection. Check for sediment flowing through fence. Check for holes in fence.</p> <p><u>Maintenance:</u> Install alternative or additional BMPS as needed. Replace damaged fabric. Remedy fence sags. Remove accumulated sediment before it accumulates to ½ the capacity or 1/3 available storage. Dispose of silt waste in approved manner. If there is evidence of excessive sedimentation against silt fence, provide increased erosion control upslope.</p>
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.7 Stabilized Construction Vehicle Access and Exit Points (4.3.4)

Vehicle access points must be limited as much as possible and must be stabilized.

Describe location(s) of vehicle entrance(s) and exit(s), procedures to remove accumulated sediment off-site (i.e., vehicle tracking), and stabilization practices (i.e., stone pads and/or wash racks) to minimize off-site vehicle tracking of sediments and discharges to storm water.

Any rubber tire operating on bare soils will require a stabilized entrance / exit prior to driving on paved surfaces. Tracked equipment must be cleaned prior to operating on paved surfaces. The existing gravel surfaces will be used for the stabilized access and exit points.

BMP Description: Stabilized Construction Exit, BMP 23.00 & 24.00

BMP Manual/Publication: DOT&PF SWPPP Guide 2021

☐ **Permanent**

☒ **Temporary**

Installation Schedule:	Installed prior to soil disturbance in the contributing drainage area
Maintenance and Inspection:	<p><u>Inspection:</u> Inspect for sediment accumulation and material displacement. Inspect roadway for sediment track-out. Inspect ditches to ensure no sediment accumulation.</p> <p><u>Maintenance:</u> Maintain in a condition that will prevent tracking of mud or sediment into public Right-of-Way. Repair and/or clean any structures used to trap sediment. Remove all mud and sediment prior to depositing on paved roadways. Add more signs, fencing, or barricades when vehicles exit the project without using the stabilized construction exit. Consider using additional BMPS such as tire wash if track-out persists.</p>
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.8 Dust Generation and Track-Out from Vehicles (4.3.5, 4.3.6)

Describe control measures to minimize the generation of dust and off-site vehicle tracking of sediment. Dust must be minimized prior to the vehicle exits by application of water or other dust suppression techniques.

The contractor will be required to remove any debris including soil and rock from the roadway. Any material tracked will be swept up daily.

BMP Description: Street Sweeping and Vacuuming for Sediment Control, BMP 55.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide, March 2021

☐ **Permanent**

☒ **Temporary**

Installation Schedule:	Sweep where sediment is tracked from the project area onto public or private paved roads, including the roadway.
Maintenance and Inspection:	<u>Inspection:</u> Inspect and sweep accumulate sediment as needed
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.9 Soil Management and Soil Stockpile (4.3.7)

Will soil stockpiles be at the site during construction? ☐ Yes ☐ No

If YES, describe control measures intended to control sediment loss from the stockpiles (e.g., tarps or perimeter straw wattles). Show location(s) of stockpile(s) on site maps, if known. Stockpiles must be stabilized or covered, protected with sediment controls and located away from storm water inlets, conveyance channels, or water bodies, if possible.

BMP Description: Plastic Covering BMP-12.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide, March 2021

☐ **Permanent**

☒ **Temporary**

Installation Schedule:	Plastic covering will be installed when the stockpile is not actively worked on more than 14 days or when there are windy conditions. Plastic covering will be secured either by weighted or trenched method.
Maintenance and Inspection:	<u>Inspection:</u> Inspect sheeting after installation. Check for erosion, undermining, anchorage failure, torn sheets, and deterioration. <u>Maintenance:</u> Repair failures as soon as practicable. If washout or breakages occur, repair damage to the slope and reinstall the material as soon as practicable.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.10 Authorized Non-Storm Water Discharges (4.3.8)

A permittee must minimize any non-storm water authorized by this permit. List any authorized non-storm water discharges.

10.11 Sediment Basins (4.3.9)

Refer to CGP Part 4.3.8 to determine if a sediment basin is required for your site.

Note that sediment basins are required for common drainage locations with 10 or more acres disturbed at one time. Construction must be phased so that either no more than 10 acres (with a common drainage) is disturbed at one time or sediment basins are installed.

Will a sediment basin be required during construction? ☐ Yes ☒ No

If YES, provide a brief description of the sediment basin here. Append detailed design information in appendices (e.g., calculated volume of runoff from a two-year, 24-hour storm, or other assumptions used to calculate appropriate sediment-basin size). Show location of sediment basin(s) on site maps.

10.12 Dewatering (4.4)

Describe dewatering practices to be implemented if water must be removed from an area so construction activity can continue.

Will dewatering be conducted during construction? ☒ Yes ☐ No

Will excavation dewatering be conducted within 1,500 feet of a DEC mapped contaminated site found on the DEC website? ☐ Yes ☒ No

For DEC's contaminated sites:

<http://www.arcgis.com/home/item.html?id=315240bfba84aa0b8272ad1cef3cad3>.

If yes to above question, review and comply with the DEC General Permit for Excavation Dewatering (AKG002000 - <https://dec.alaska.gov/water/wastewater/stormwater/permits-approvals/dewater/>), or most current version, for specific requirements

If a NOI for coverage under the dewatering permit is submitted, attach it and DEC's response in Appendix D.

Describe control measures to be implemented to comply with dewatering discharges authorized either under the CGP or the DEC General Permit for Excavation Dewatering requirements.

Example Format:

BMP Description:

BMP Manual/Publication:

<input type="checkbox"/> Permanent	<input type="checkbox"/> Temporary
Installation Schedule:	
Maintenance and Inspection:	<u>Inspection:</u> <u>Maintenance:</u>
Responsible Staff:	

10.13 Permanent/Post-Construction BMPs (4.11)

Describe any permanent/post-construction control measures that will be installed during the construction process AND have not been discussed elsewhere in this document.

Examples of these measures are:

- Biofilters
- Detention/Retention Devices
- Earth Dikes, Drainage Swales, and Lined Ditches
- Infiltration Basins
- Vegetated Strips and/or Swales

10.13.1 Soil Stabilization (4.5, 5.3.6.3)

The project must stabilize all disturbed areas of the site to minimize on-site erosion and sedimentation and the resulting discharge of pollutants.

Soil stabilization requirements vary depending on the mean annual precipitation for the site. Refer to CGP Part 4.5 for specific requirements.

Refer to the Alaska Plant Materials Center's Alaska Coastal Revegetation & Erosion Control Guide and Interior Alaska Revegetation & Erosion Control Guide at <http://plants.alaska.gov> for help in selecting appropriate seed mixes and information on methods for revegetation.

Describe permanent & temporary stabilization control measures and sequence of installation.

Describe how the site will be stabilized prior to seasonal freeze-up.

BMP Description: Permanent Seeding, BMP 52.00

BMP Manual/Publication: DOT&PF Alaska SWPPP Guide 2021

☒ **Permanent**

☐ **Temporary**

Installation Schedule:

Permanent seeding occurs when construction activities have permanently ceased.

Maintenance and Inspection:

Inspection:
Maintenance:

Responsible Staff:

10.14 Treatment Chemicals (4.6; 5.3.6.4)

Provide documentation for all treatment chemicals and/or an Active Treatment System (ATS) to comply with CGP Part 4.6. Submit cationic treatment chemical use or ATS to DEC at least 14 days for approval before installing.

Will treatment chemicals be used to control erosion and/or sediment during construction?

☐ Yes

☒ No

If YES, comply with CGP Part 4.6 and complete the following sections (10.15 & 10.16).

10.15 Treatment Chemicals (4.6.1)

The use of treatment chemicals to reduce erosion from the land or sediment in a storm water discharge is allowed provided all the requirements of CGP Part 4.6 are met. Use conventional sediment controls before and after the application of treatment chemicals. Chemicals may only be applied where storm water is treated upstream and is directed to a sediment control (e.g., sediment trap, sediment basin) before discharge.

No treatment chemicals will be used on this project.

If YES, comply with ACGP Part 4.6 and complete the following subsections. If NO, delete the following subsections.

10.15.1 Treatment Chemical Selection (4.6.2)

Describe what chemicals will be used, including information required by CGP Part 4.6.2.

No treatment chemicals will be used to control erosion and/or sediment during construction.

10.15.2 Treatment Chemical Use Procedures (4.6.3; 4.6.6)

Describe storage methods that will be used and ensure they comply with Part 4.6.3.

Describe training for employees using treatment chemicals at the site, as specified in Part 4.6.6. Document this training in either appendix for Employee Qualifications or Training Records.

No treatment chemicals will be used to control erosion and/or sediment during construction.

10.15.3 Application of Treatment Chemicals (4.6.4; 4.6.5)

The application of treatment chemicals shall be in combination with appropriate physical control measures to ensure effectiveness of treatment chemical. Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier.

Briefly describe treatment chemical application procedures to be used. Append detailed treatment chemical application procedures Appendix P.

No treatment chemicals will be used to control erosion and/or sediment during construction.

10.16 Active Treatment System Information or Cationic Treatment Chemicals (4.6.7)

A permittee who uses an Active Treatment System (ATS) or cationic treatment chemicals as a control measure must submit information required by the DEC for review at least 14 days prior to start of operation of the ATS at the project. Specific submittal requirements can be found at 4.6.7.

Will an ATS or cationic treatment chemicals be used as a control measure at the site?

☐ Yes ☒ No

If YES, simply include the packet submitted to DEC in Appendix P and refer to this documentation below.

10.17 Good Housekeeping Measures (4.8)

The project must design, install, implement, and maintain effective good housekeeping measures to prevent and/or minimize the discharge of pollutants. The project must include appropriate measures for any of the following activities at the site.

Consult the DEC Storm Water Guide or other resources for more information or ideas on BMPs. See also the EPA's National Menu of BMPs at <https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater> for a list of Alaska specific BMPs look at the *Alaska SWPPP Guide's* Appendix B - BMP Guide for Erosion & Sediment Control at http://www.dot.state.ak.us/stwddes/desenviron/assets/pdf/bmp/bmp_all.pdf

10.17.1 Washing of Equipment and Vehicles (4.8.1)

Will equipment and vehicle washing and/or wheel wash-down be conducted at the site?

☐ Yes ☒ No

If YES, describe the control measures to be implemented to comply with CGP Part 4.8.1.

Example Format:

BMP Description:	
BMP Manual/Publication:	
Installation Schedule:	
Maintenance and Inspection:	<u>Inspection:</u> <u>Maintenance:</u>
Responsible Staff:	

10.17.2 Fueling and Maintenance Areas (4.8.2)

Describe equipment/vehicle fueling and maintenance practices to be implemented to control pollutants to storm water (e.g., secondary containment, drip pans, spill kits, etc.).

Describe spill prevention and control measures to be implemented, including ways to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and control.

Will equipment and vehicle fueling or maintenance be conducted at the site?

☐ Yes ☐ No

The contractor's lay down yards, fueling and maintenance areas must be delineated on the contractor's SWPPP site map. Spill kits appropriate to respond to the hazards on site will be required. Inspections will include the contractor's fueling, maintenance, and laydown areas. Equipment will be maintained to prevent oils and grease from discharging with storm water. Prior to use each day, equipment operators are required to do a visual inspection for leaks, drips, and excess grease. If leaks cannot be repaired and stopped, the equipment will be placed out of service over drip pans and/or pads to collect any fluids or grease and prevent pollution discharge. Topping off fluids will not be allowed in lieu of maintenance. Equipment operators will look for excess grease accumulations, especially when the weather warms up, removing and properly disposing of excess grease to prevent discharge.

HMCP or SPCC: For the specific sections in the Good Housekeeping BMPs that deal with fueling and oiling, equipment care and maintenance, waste materials, etc., it should be mentioned, by referencing the specific page and section, this requirement for BMP reference and citation is met. Also, it will/can create less conflict within the SWPPP due to the HMCP being project specific and the BMP citations more generic.

10.17.3 Staging and Material Storage Areas (4.8.3)

Designate areas to be used for staging and material storage areas. Locate such activities, to the extent practicable, away from storm water conveyance channels, storm water inlets, and waters of the U.S.; and minimize the exposure to precipitation and storm water and vandalism for all chemicals, treatment chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment.

10.17.4 Washout of Applicators/Containers Used for Paint, Concrete, and Other Materials (4.8.4)

Describe location(s) and controls to minimize the potential for storm water pollution from washout areas for concrete mixers, paint, stucco, etc.

Will washout areas for trucks, applicators, or containers of concrete, paint, or other materials be used at the site? ☐ Yes ☐ No

If YES, describe control measures to be implemented to comply with CGP Part 4.8.4. If NO, delete the following paragraph.

The contractor will provide a designated concrete washout area. The washout area may be moved during the construction process but the location must be kept current on the site map. Concrete wash water may not be discharged with storm water. The washout must have sufficient capacity for the scheduled activities.

BMP Description: Concrete Washout, BMP 06.00

BMP Manual/Publication: DOT&PF, Alaska SWPPP Guide, March 2021

☐ Permanent

☒ Temporary

Installation Schedule:	Install before concrete work begins. Install signage within 30 feet of washout.
Maintenance and Inspection:	<p><u>Inspection:</u> Inspect and verify that concrete washout BMPS are in place prior to concrete work. Determine if the concrete washout is filled to 50 percent capacity. Inspect based on self-installed or pre-fabricated guidelines. Check to ensure sign is still secure and visible. If there is evident that washouts are occurring in locations other than designated, improve and install additional signage, increase communication with concrete truck drivers, and provide drivers with maps of washout locations with respect to pour locations.</p> <p><u>Maintenance:</u> Clean existing washouts before the washout is 50 percent full. Solidify with bagged grout, vacuum and dispose of liquids in an approved manner. If necessary, provide alternate washout during existing washout cleaning. Reline self-installed containers after each cleaning. Inspect containment structure before relining or signs of weakening or damage and make necessary repairs. Line with new sheeting and check that it is free of holes, tears, and other damage. Repair damaged washouts before the next concrete pour. Contain any spill or discharge of concrete waste materials. Replace or install new signage as needed.</p>
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.17.5 Fertilizer or Pesticide Use (4.8.5)

Describe fertilizers and/or pesticides expected to be used and/or stored on-site and procedures for storage of materials to minimize exposure of the materials to storm water.

Will fertilizers or pesticides be used at the site? ☐ Yes ☒ No

If YES, describe control measures to be implemented to comply with CGP Part 4.8.5.

Contractors will obtain authorization to spray pesticides through DOT&PF M&O utilizing the DOT&PF Integrated Vegetation Management Plan (IVMP). A permit from DEC is only required (in addition to IVMP authorization obtained via working through the regional M&O environmental analysts and a TCP from ROW) if the contractor is applying pesticide to a water body/aquatic site. Also, if spraying within the MOA, a local permit must be obtained from the MOA as well. For more information and contacts, visit <http://dot.alaska.gov/stwdmno/ivmp/index.shtml>.

10.18 Spill Notification (4.9)

The contractor shall describe spill-notification procedures, including relevant federal, state, tribal, and local agency contact information, to be implemented in the event of a leak, spill, or release of hazardous substances or oil that occur at the construction site. Refer to CGP Part 4.9 for permit requirements.

Contractor shall use DOT&PF Hazardous Material Control Plan template at http://www.dot.state.ak.us/stwddes/dcsconst/assets/docs/constforms/hmcp_template.doc to create project specific plan. Include final plan as approved by DOT&PF in Appendix O.

10.19 Construction and Waste Materials (4.8.6, 5.3.7)

Describe in general terms the type of construction and waste materials expected to be stored at the site, with updates as appropriate, and describe the measures for handling and disposal of all wastes generated at the site, including clearing and demolition debris or other waste soils removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste. Refer also to CGP Parts 4.8.3 Staging and Material Storage Areas, and 4.8.6 Storage, Handling, and Disposal of Construction Waste.

Building materials and other construction site wastes must be properly managed and disposed of to reduce the risk of pollution from materials such as surplus or refuse building materials or hazardous wastes. Practices such as trash disposal, recycling, proper material handling, and spill prevention and cleanup measures can reduce the potential for storm water runoff to mobilize construction site wastes and contaminate surface or groundwater.

The contractor must establish proper building and material storage areas to avoid pollutants coming in contact with rainfall or flowing storm water. Any materials that have the potential to pollute storm water will be covered to prevent rainfall from coming into contact with them. Garbage containers will be covered to prevent debris from blowing away as well. Any contractor supplied staging area must be included in inspections and the SWPPP. No materials will be staged or stored, even temporarily in flowing water.

The contractor should designate a waste collection area on site that does not receive substantial amount of runoff from upland areas and does not drain directly to a water body.

Construction Materials

Insert Text

or Table

Waste Materials

Insert Text or Table

Example Format:

BMP Description: General Construction Site Waste Management

BMP Manual/Publication: DEC Alaska Storm Water Guide, December 2011

Installation Schedule:	Continuously during construction activities
-------------------------------	---

Maintenance Inspection:	and	<u>Inspection:</u> Inspect storage and use areas and identify containers or equipment that could malfunction and cause leaks or spills. Check equipment and containers for leaks, corrosion, support or foundation failure, or other signs of deterioration, and test them for soundness. <u>Maintenance:</u> Immediately repair or replace any that are found to be defective.
Responsible Staff:		SWPPP Manager & Superintendent, Contractor

11.0 INSPECTIONS (5.4; 6.0)

Minimum requirements for the locations and scope of site inspections are described in the CGP Part 6.4. Inspection requirements for linear projects are described in the CGP Part 6.5.

Describe the frequency inspections will occur at your site, including any correlations to storm frequency and intensity.

Note that inspection details for particular BMPs should be included in Section 11 or Appendix B.

11.1 Inspection Schedules (5.4.1.2; 6.1; 6.2; 6.6)

Refer to CGP Part 6.1 for inspection frequency requirements.

Required inspection frequency is based on mean annual precipitation for the site. Refer to Section 3.2 for annual precipitation data and can be found in the project specifications.

A permittee must allow an authorized representative of DEC, EPA or the MS4 operator to conduct a site inspection in accordance with the CGP Part 6.6.

Inspection Frequency:

The inspection frequency in Central Region will now be once every seven calendar days.

Inspection frequency: **Once every seven calendar days**

Justification for reduction in inspection frequency, if applicable: **N/A**

As defined by the CGP, winter shutdown means the cessation of soil disturbing or soil stabilizing construction activity for winter. Typically this period is from October/November to April/May and is approximately from Fall Freeze-up to Spring Thaw.

CGP Definition of Fall Freeze-up: For the purposes of this permit, means for planning purposes in the development of the SWPPP and initial planning of control measure maintenance the date in the fall that air temperatures will be predominately below freezing. It is the date in the fall that has an 80% probability that a minimum temperature below a threshold of 32.5 degrees Fahrenheit will occur on or after the given date.

CGP Definition of Spring Thaw: For the purposes of this permit, means for planning purposes in the development of the SWPPP and initial planning of control measure maintenance the date in the spring that air temperatures will be predominately above freezing. It is the date in the spring that has a 20% probability that a minimum temperature below a threshold of 32.5 degrees Fahrenheit will occur on or after the given date.

These dates can be found by looking up the “Fall ‘Freeze’ Probabilities” & “Spring ‘Thaw’ Probability” for the weather station closest to the site on the website: www.wrcc.dri.edu/summary/Climsmak.html. NOTE: this estimation of “Fall Freeze-up” & “Spring ‘Thaw’” is for planning purposes only. During construction, the permittee will need to maintain control measures based on actual conditions.

Estimated date of winter shutdown: **September 15th**

The inspections will be conducted jointly with department personnel as directed by the Project Engineer. The schedule for site inspections will be established and updated daily as necessary to meet the requirements of the CGP and provide the department with notice and opportunity to participate in the site inspection.

11.2 Inspection Form or Checklist (5.4.1.3; 6.7)

Contractor is required to attach Form 25D-100 in Appendix K. An Inspection Report will be completed after each inspection, identifying BMPs installed at the time of inspection, noting corrective actions required, and documenting complete-by-date for any actions discovered during the inspection. Each report will be certified by the Contractor’s Superintendent and DOT&PF’s Project Engineer.

11.3 Corrective Action Procedures (5.4.1.4; 8.0)

Identify how conditions found that require corrective action will be addressed:

The following guidelines apply for setting corrective action complete-by dates as required by the CGP:

For conditions that are easily remedied (i.e., removal of tracked sediment, maintenance of control measures, or spill clean-up), the permittee must initiate appropriate steps to correct the problem within twenty-four hours from the time of discovery and correct the problem as soon as possible; or

If installation of a new control measure is needed or an existing control measure requires significant redesign and reconstruction or replacement, the permittee must install the new or modified measure and make it operational within seven calendar days from the time of discovery of the need for the corrective action, unless infeasible.

If a discharge occurs during a local 2-year, 24-hour storm event, a corrective action must be initiated the day after the storm event ends as described in CGP Part 8.1.1.

For corrective actions that could affect a subcontractor, notify the subcontractor within three calendar days of taking the corrective action.

Additionally, deadlines for completion of corrective actions shall be selected to protect water quality and prior to the next storm event unless impracticable.

Corrective Action Log

The corrective action log will document the following within 24 hours of discovery of any conditions listed in CGP Part 8.1 (use Form 25D-112 and include in Appendix J):

- Date the problem was identified
- Summary of corrective action taken or to be taken
- Notice of whether SWPPP modifications were required as a result of this discovery or corrective action
- Date corrective action completed and name of person completing the action

In the event there is a reason (outside of the project staff’s control) that a corrective action cannot practicably be completed by the set complete-by date, DOT&PF will complete a Delayed Action Item Report (Form 25D-113). This form will set a new complete-by date and document the reason that the previous date could not be met.

11.4 Inspection Recordkeeping (5.4.2)

Records (including inspection reports, corrective action logs, delayed action item reports, grading and stabilization logs, amendment logs, staff tracking logs, rainfall logs, and training logs) will be maintained for a minimum period of at least three (3) years after the permit is terminated. A hard copy and electronic copy of the final SWPPP, including all appendices, will be transmitted to DOT&PF when the project's NOTs are filed.

12.0 MONITORING PLAN (IF APPLICABLE) (5.5; 7.0)

12.1 Determination of Need for Monitoring Plan

Is there an EPA-established or approved TMDL for **Matanuska River**? ☒ Yes ☐ No

Is the receiving water listed as impaired for turbidity and/or sediment? ☐ Yes ☒ No

What is the acreage of the disturbance in the proposed construction project? **4.14 acres**

Is the disturbed acreage equal to or greater than 20 acres? ☐ Yes ☒ No

If YES, develop a phasing plan to limit the acreage that is disturbed at one time.

A project subject to the monitoring requirements of CGP Part 3.2 is required to collect and analyze storm water discharge samples and document monitoring activities with the procedures described in CGP Part 7.0.

12.2 Monitoring Plan Development

If subject to the monitoring requirements of CGP Part 3.2, the project must develop a written site-specific monitoring plan for analytical monitoring that includes all the requirements of CGP Part 7.0 and follows the applicable DEC Quality Assurance Guide for a Water Quality Monitoring Plan (see <http://dec.alaska.gov/water/water-quality/quality-assurance/>). Most monitoring projects should fall under the Tier 2 Water Quality Monitoring Quality Assurance Project Plan criteria. A *Generic Tier 2 Quality Assurance Project Plan* (follow the link on the above site) has been developed to assist applicants in developing a project specific QA Water Quality Monitoring QA Plan.

Also see the DEC storm water website, <https://dec.alaska.gov/water/wastewater/stormwater/>, for information to use in developing the monitoring plan.

The monitoring plan must be included as a part of the SWPPP in either Appendix H or separate SWPPP section.

At a minimum, the SWPPP must document the person(s) responsible for conducting monitoring, schedules to be followed for monitoring, any checklist or form that will be used to record monitoring results, and correct action procedures.

Monitoring schedules (5.5.1.2; 7.3.2): **TBD**

Monitoring form or checklist (5.5.1.3; 7.3.9): **TBD**

Corrective action procedures (5.5.1.4; 8.0): **TBD**

12.3 Monitoring Considerations

This section does not need to be filled out but is a list of reminders for the applicant.

- Locate upstream/upgradient sampling point(s) to determine background turbidity in the receiving water body. The location should be reasonably close to discharge but not so close as to experience increased turbidity from discharge. Clearly mark in field and on map in SWPPP.
- Sample the discharge where it enters the receiving water body or where it leaves the construction site. Clearly mark in field and on map in SWPPP.
- The discharge entering the water body impaired for turbidity or sediment must not exceed 5 nephelometric turbidity units (NTU) above natural conditions when the natural turbidity is 50 NTU or less, and may not have more than a 10-percent increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 25 NTU.

If Turbidity exceeds allowable levels:

- Correct control measures within seven (7) calendar days, update your SWPPP to reflect improvements, submit a Corrective Action Report consistent with the CGP, AND continue daily sampling until discharge meets allowable turbidity.
- If a specific waste-load allocation has been established for turbidity or sediment that would apply to the discharge of storm water from the construction site, the permittee must implement necessary steps to meet that allocation.
- If there is only a general waste-load allocation applicable to construction storm water discharges, the permittee must consult the DEC to confirm consistency with approved TMDL.

13.0 POST-AUTHORIZATION RECORDS (5.8)

Copy of Permit Requirements (5.8.1)

The contractor's SWPPP must contain the following documents:

- copy of CGP (5.8.1.1)
- copy of the signed and certified NOI form submitted to DEC (5.8.1.2)
- upon receipt, a copy of letter from DEC authorizing permit coverage, providing tracking number (5.8.1.3)

These documents must be included in Appendix F.

13.1 Additional Documentation Requirements (5.8.2)

The Grading and Stabilization Log, Form 25D-110 in Appendix G, will be filled out to satisfy the following CGP requirements:

- Dates when grading activities occur (5.8.2.1.1)
- Description of grading activities and location (5.8.2.1.2)
- Dates when construction activities temporarily or permanently cease on a portion of the site (5.9.2)
- Dates when stabilization measures are initiated (5.8.2.1.4)
- Description of Stabilization Measure (5.8.2.1.5)
- Date of beginning and ending period for winter shutdown (5.8.2.2)

Other documents will be included as shown below:

- Copies of inspection reports (5.4.2; 5.8.2.3; insert in Appendix K).
- Copies of monitoring reports, if applicable (7.3.9.2; 5.8.2.4; 5.8.2.5; 5.5.2; 9.1; insert in Appendix H).
- Documentation in support of chemical-treatment processes (4.6; 5.8.2.7; insert in Appendix P).

- Documentation of maintenance and repairs of control measures (5.8.2.9; 8.1; 8.2; insert in Appendix J).
- Copy of DEC Letter of Non-Objection (insert in Appendix D).

13.1.1 Records of Employee Training (4.14; 5.8.2.8)

Training staff and subcontractors is an effective BMP. Document all training conducted for your staff, those with specific storm water responsibilities (e.g. installing, inspecting, and maintaining BMPs), and subcontractors. Use the Training Log (Form 25D-125) in Appendix I.

Describe Training Conducted: **TBD**

General storm water and BMP awareness training for staff and subcontractors:

During safety meetings and schedule briefings, corrective actions from the previous period will be reviewed. The contractor is encouraged to discuss timing of activities and stabilization requirements. Records of the training topics, attendees, and length must be maintained in the contractor's SWPPP.

Detailed training for staff and subcontractors with specific storm water responsibilities:

TBD

Individual(s) Responsible for Training:

TBD. Contractor will provide names, and contact numbers here.

Documentation of training conducted shall be record on Form 25D-125 and included in Appendix I.

14.0 MAINTAINING AN UPDATED SWPPP (5.9)

This section does not need to be filled out but is a list of reminders for the applicant.

The permittee must modify the SWPPP, including site map(s), in response to any of the following:

- Whenever changes are made to construction plans, control measures, good housekeeping measures, monitoring plan (if applicable), or other activities at the site that are no longer accurately reflected in SWPPP (5.9.1.1);
- If inspections of site investigations by staff or by local, state, tribal, or federal officials determine SWPPP modifications are necessary for permit compliance (5.9.1.2); and
- To reflect any revisions to applicable federal, state, tribal, or local laws that affect control measures implemented at the construction site (5.9.1.3).

14.1 SWPPP Amendment Log (5.9.2)

A permittee must keep a log showing dates, name of person authorizing the change, and a brief summary of changes for all significant SWPPP modifications (e.g., adding new control measures, changes in project design, or significant storm events that cause replacement of control measures). Use DOT&PF construction form 25D-114. **Amendments must be approved by an AK-CESCL or equivalently certified individual and be included in Appendix M. The Superintendent and the SWPPP Manager are the only persons authorized to amend the SWPPP and update the SWPPP Amendment Log. Amendments must be approved by the Project Engineer. This approval must be documented in the "PE's Initials column" by the Project Engineer.**

14.2 Deadlines for SWPPP Modifications (5.9.3)

Revisions to the SWPPP must be completed within seven days of the inspection that identified the need for a SWPPP modification or within seven days of substantial modifications to the construction plans or changes in site conditions.

15.0 ADDITIONAL SWPPP REQUIREMENTS (5.10)

15.1 Retention of SWPPP (5.10.1)

A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from DEC must be retained at the construction site.

15.2 Main Entrance Signage (5.10.2)

A sign or other notice must be posted conspicuously near the main entrance of the site. The sign or notice must include a copy of the completed NOI for both DOT&PF and the contractor.

15.3 Availability of SWPPP (5.10.3)

The permittee must keep a current copy of the SWPPP at the site. The SWPPP must be made available to subcontractors, government and tribal agencies, and MS4 operators, upon request.

15.4 Signature and Certification (5.10.4)

As co-permittees, the SWPPP is signed, dated, and certified by both the contractor and by DOT&PF. DOT&PF requires the use of its forms, instead of those provided as examples in the DEC template. The contractor must complete the SWPPP Contractor Certification (Form 25D-111) once DOT&PF approves the SWPPP and include it in Appendix E. Either the contractor's corporate officer or their duly authorized representative can certify the SWPPP. If a duly authorized representative certifies, the Delegation of Signature Authority form must be included in Appendix E.

Upon approval, DOT&PF will provide the contractor with signed DOT&PF forms for the DOT&PF SWPPP Certification (Form 25D-109) and DOT&PF Delegation of Authority (Form 25D-107) for inclusion in Appendix E of the SWPPP.

APPENDIX A
SITE MAPS AND DRAWINGS



DESIGNED BY
CHECKED BY
DRAFTED BY

SCALE
N/A

DATE
3/17/2025

TIME
11:23 AM

DRAWING LOCATION
Z:\PROJECTS\00572_GLENNHWY66.5-92-VICTORYRD-PM\DWGS-VR\C\SHEETS\00672_A1_TITLE.DWG

STATE OF ALASKA

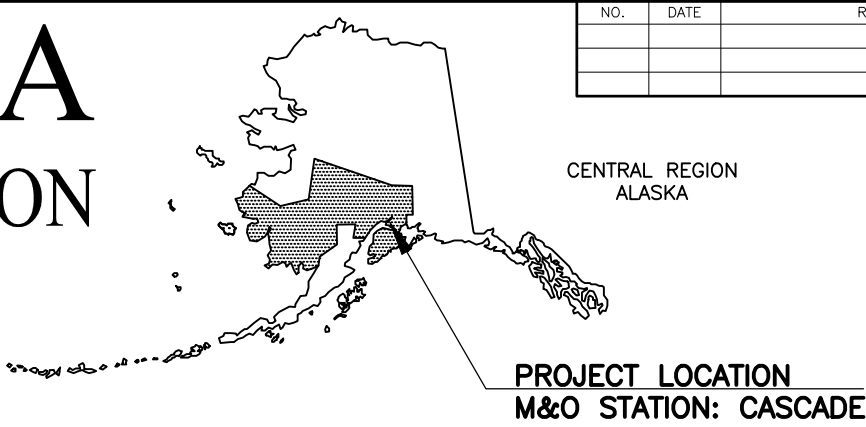
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

PROPOSED HIGHWAY PROJECT

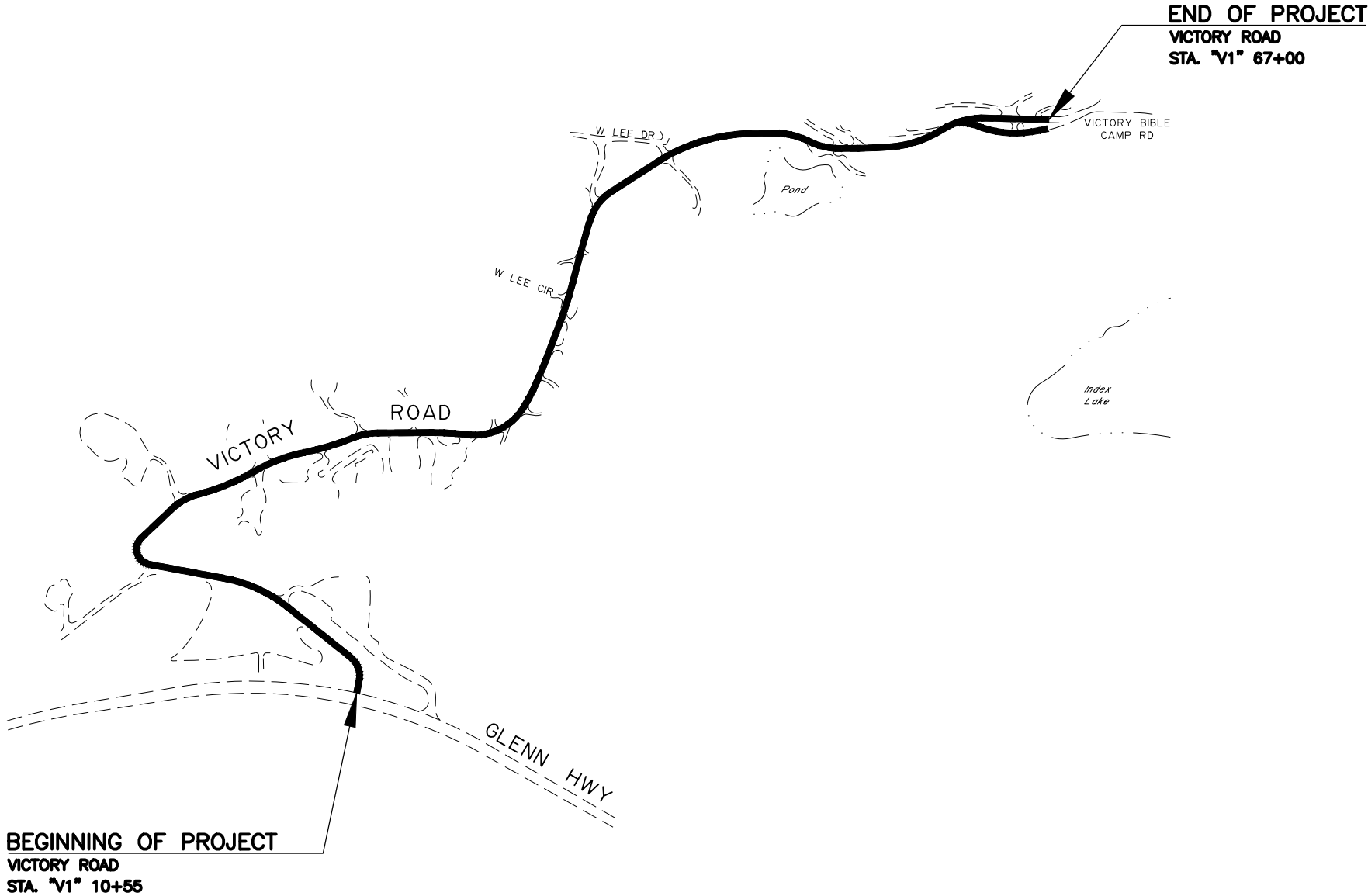
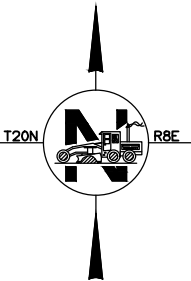
VICTORY ROAD PAVEMENT PRESERVATION

PROJECT NO. 0001726/CFHWY00672

DRAINAGE, PAVING, SIGNING, AND STRIPING



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001726/CFHWY00672	2025	A1	31
ROUTE ID		138153	MILEPOINT		0-1.06		
LATITUDE		61.798	LONGITUDE		-147.982		



PROJECT SUMMARY		
ROADWAY	WIDTH	LENGTH
VICTORY ROAD	19-24 FEET	1.06 MILES

DESIGN DESIGNATIONS			
ROADWAY	FUNCTIONAL CLASS	AADT (2022)	DESIGN SPEED
VICTORY ROAD	MINOR COLLECTOR	110	30 MPH

PLANS DEVELOPED BY: KINNEY ENGINEERING LLC, AECL 1102

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
4111 AVIATION AVENUE, ANCHORAGE, AK 99502
(907)269-0590

APPROVED:

REGIONAL PRECONSTRUCTION ENGINEER DATE

CONCUR:

REGIONAL CONSTRUCTION ENGINEER DATE

DESIGNED BY
CHECKED BY
DRAFTED BY

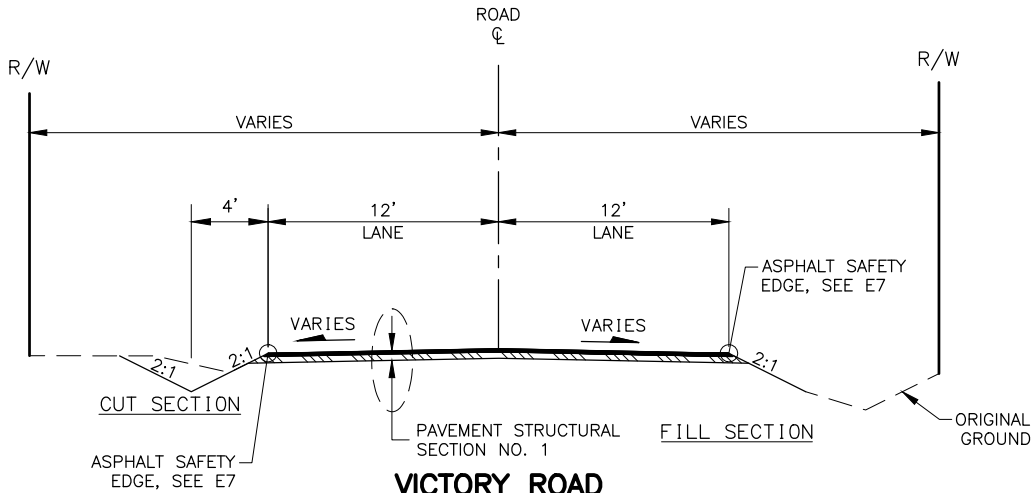
SCALE
1" = 1'

DATE
3/17/2025

TIME
9:58 AM

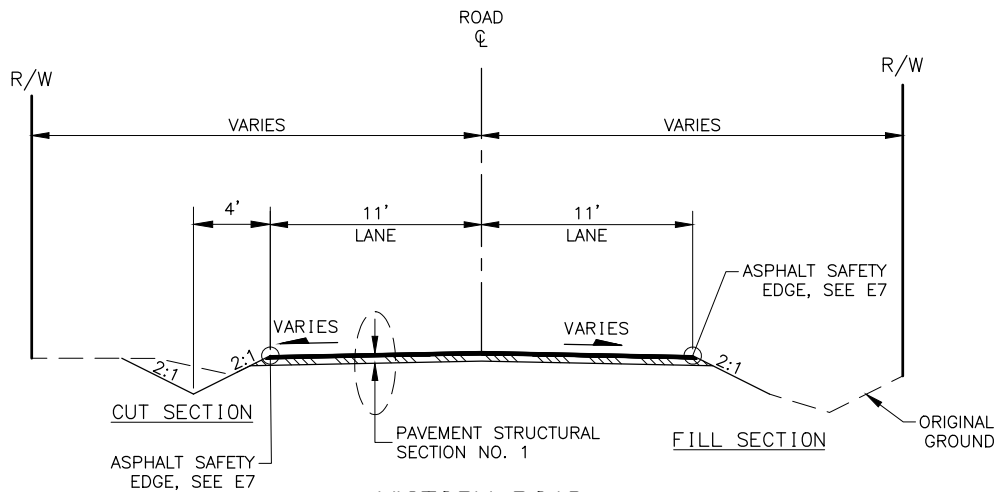
DRAWING LOCATION
Z:\PROJECTS\00572_GLENNHW66.5-92-VICTORYRD-PK DWGS-VR\C\SHEETS\00672_B1_TYP.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0001726/CFHWY00672	2025	B1	B1



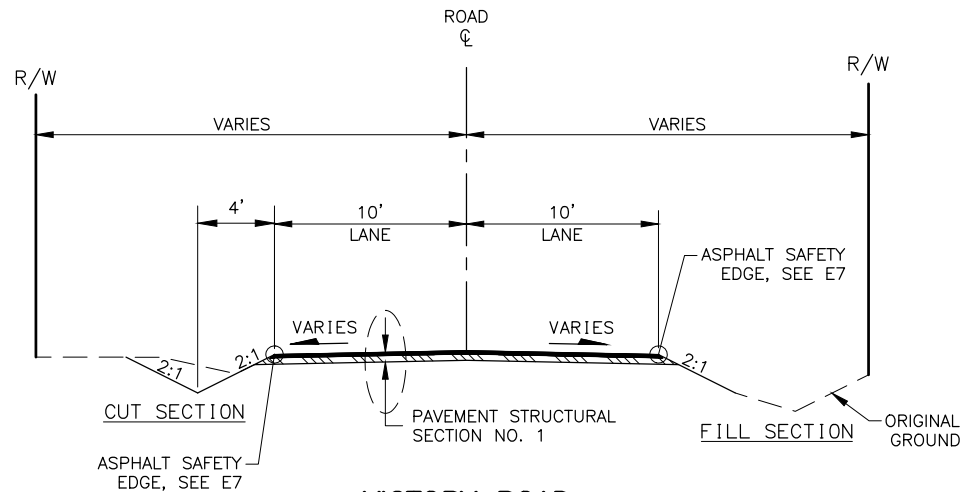
VICTORY ROAD

BOP TO STA. "V1" 20+30



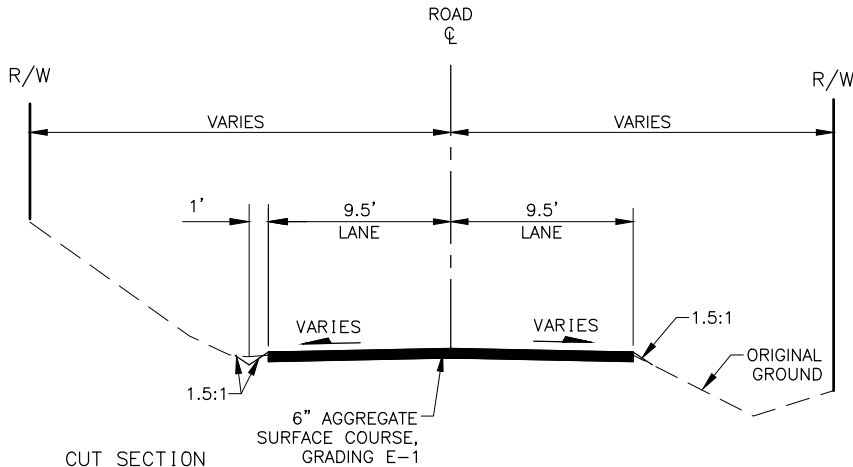
VICTORY ROAD

STA. "V1" 20+30 TO STA. "V1" 23+03



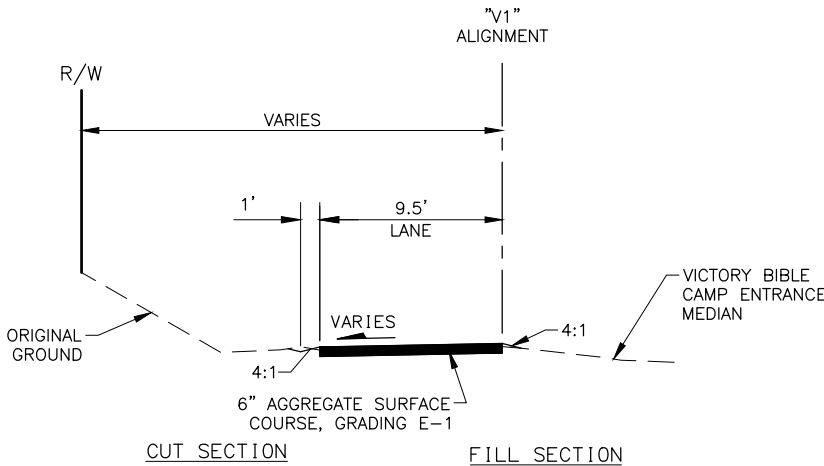
VICTORY ROAD

STA. "V1" 23+03 TO STA. "V1" 53+45



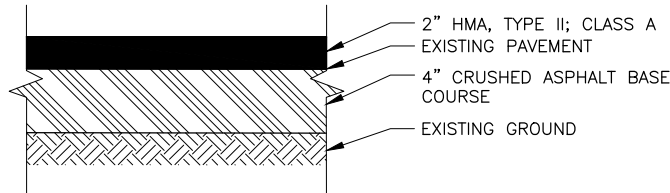
VICTORY ROAD

STA. "V1" 53+45 TO STA. "V1" 63+96



VICTORY ROAD

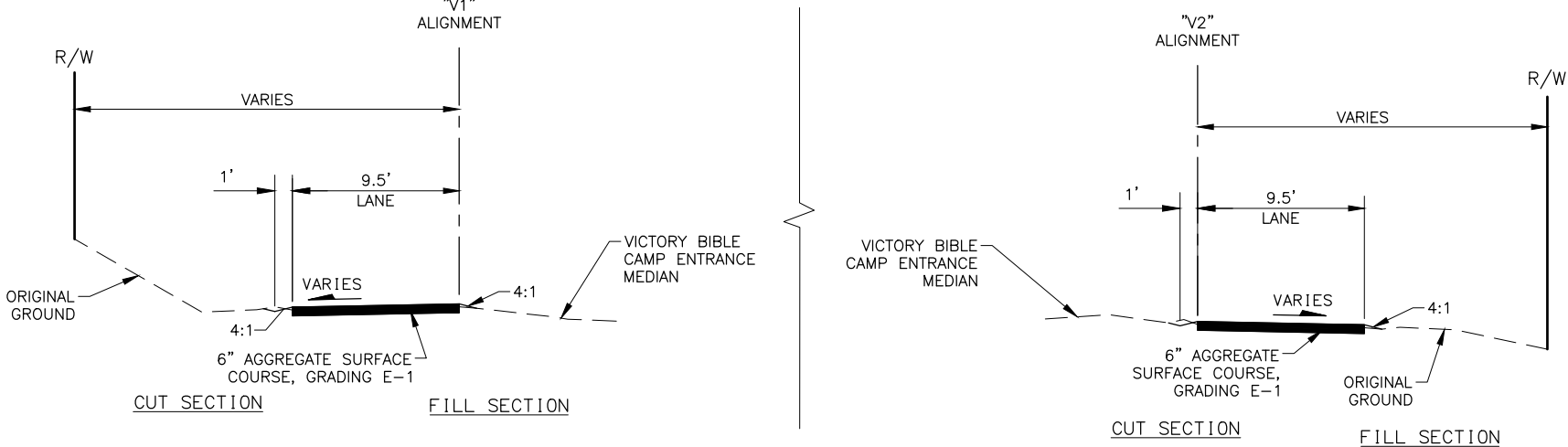
STA. "V1" 63+96 TO EOP (LEFT OF MEDIAN)
STA. "V2" 163+96 TO EOP (RIGHT OF MEDIAN)



PAVEMENT STRUCTURAL SECTION NO. 1

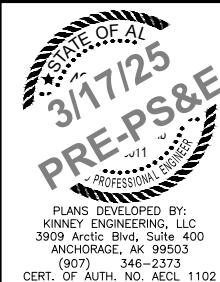
NOTES:

1. CONDUCT PRECONSTRUCTION SURVEY TO IDENTIFY EXISTING ROAD ELEVATION PRIOR TO DISTURBING ROADWAY TO CONSTRUCT TYPICAL SECTIONS AS SHOWN IN PLANS.
2. SHAPE CRUSHED ASPHALT BASE COURSE AT THE EDGE OF PAVEMENT TO ENSURE THERE IS NO DROPOFF AT THE PAVEMENT'S EDGE WITHIN 48 HOURS OF PLACING PAVEMENT.
3. WORK REQUIRED TO SHAPE AND COMPACT CRUSHED ASPHALT BASE COURSE IS SUBSIDIARY TO PAY ITEM 308.0001.0000.
4. ALL EXCESS CRUSHED ASPHALT BASE COURSE SHALL BE DELIVERED TO THE CASCADE M&O STATION.



VICTORY ROAD

STA. "V1" 63+96 TO EOP (LEFT OF MEDIAN)
STA. "V2" 163+96 TO EOP (RIGHT OF MEDIAN)

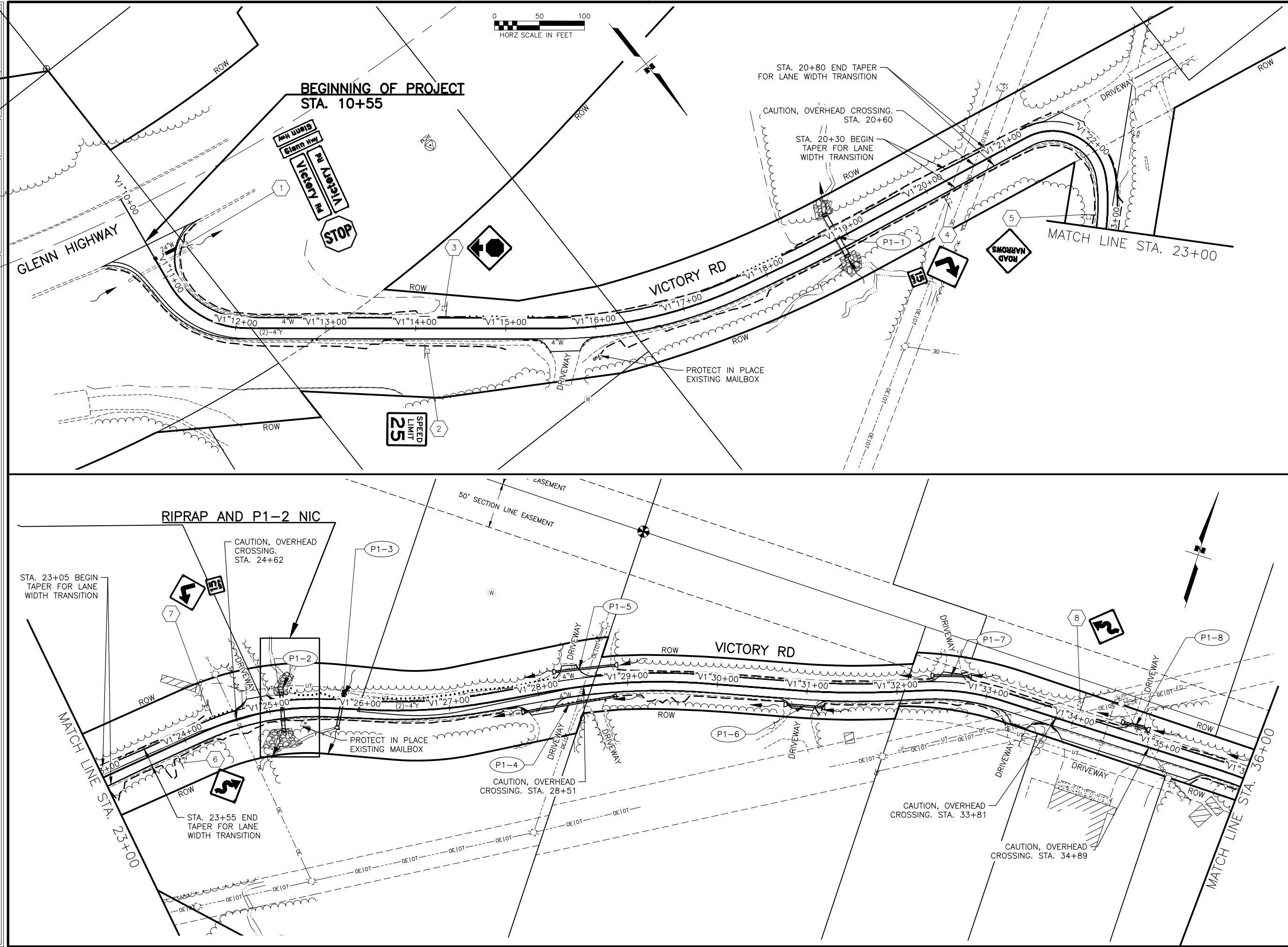


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

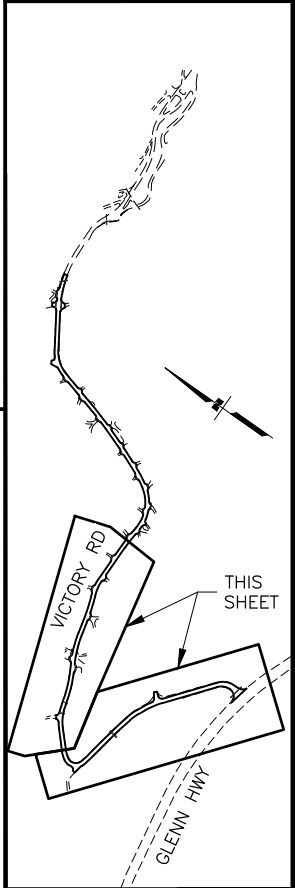
VICTORY ROAD PAVEMENT
PRESERVATION

TYPICAL SECTIONS

DESIGNED BY: [] CHECKED BY: [] DRAFTED BY: []
SCALE: 1" = 50'
DATE: 3/17/2025 TIME: 9:44 AM
DRAWING LOCATION: Z:\PROJECTS\00572_GLENNHWY66.5-92-VICTORYRD-PA\DWGS-VR\C\ SHEETS\00672_F1-F3_PLANS.DWG



SHEET NO.	TOTAL SHEETS
F1	F3
STATE	YEAR
ALASKA	2025
PROJECT DESIGNATION	
0001726 /CFHWY00672	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



STATE OF ALASKA

3/17/25

PRE-PS&E

PROFESSIONAL ENGINEER

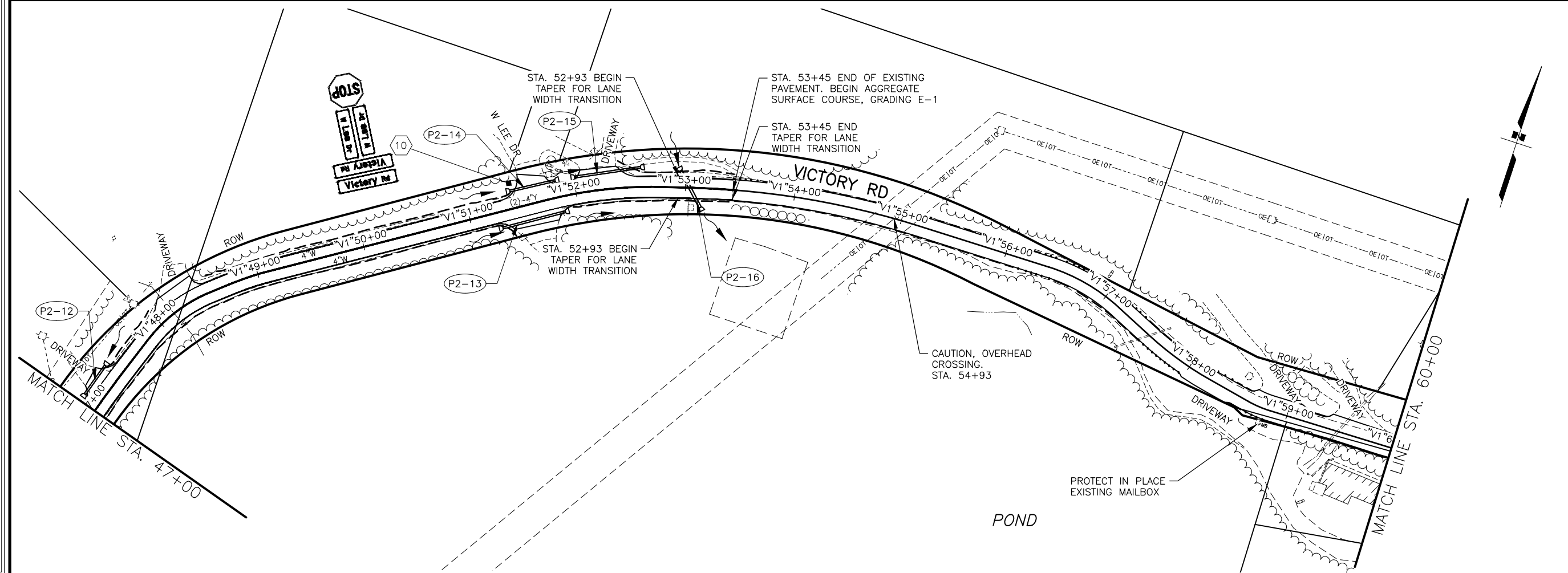
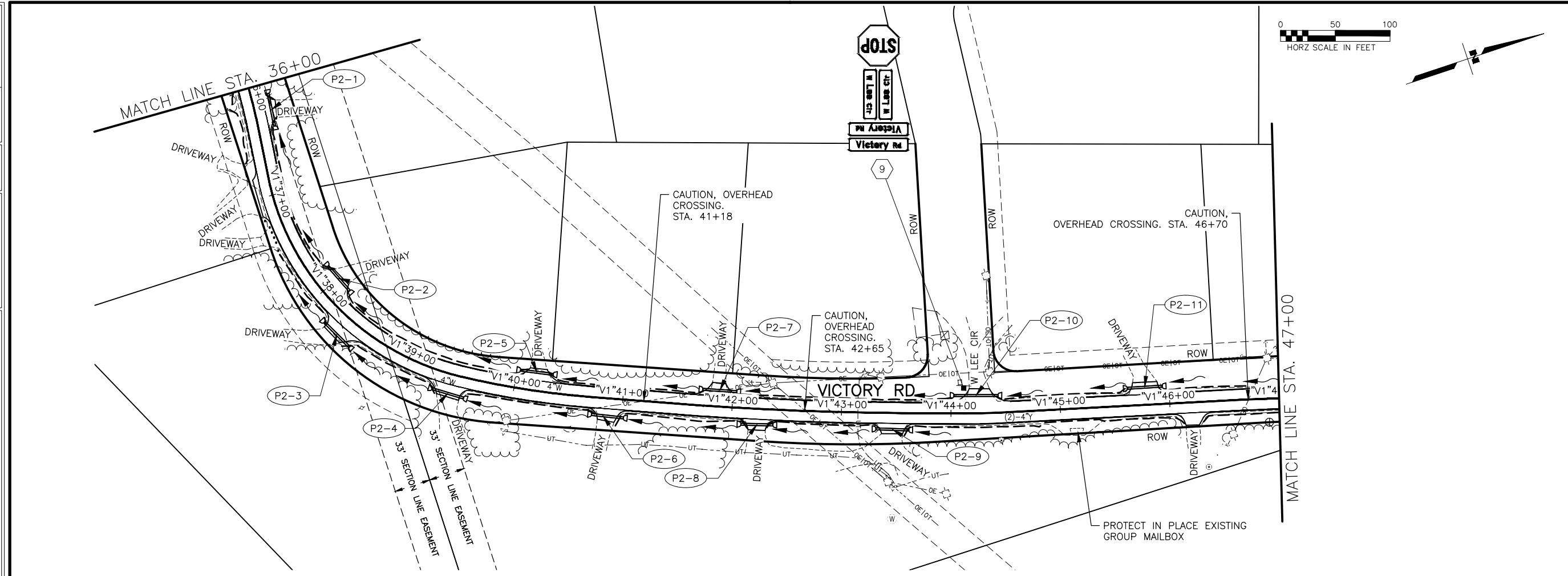
PLANS DEVELOPED BY:
KINNEY ENGINEERING, LLC
3909 Arctic Blvd, Suite 400
ANCHORAGE, AK 99503
(907) 346-2373
CERT. OF AUTH. NO. AECL 1102

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

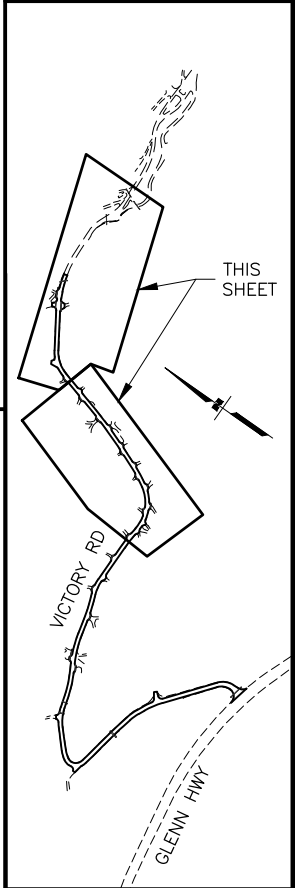
VICTORY ROAD PAVEMENT
PRESERVATION

BOP TO STA 36+00

DRAWING LOCATION	DATE	TIME	SCALE	DESIGNED BY
Z:\PROJECTS\00572_GLENNHW\66.5-92-VICTORYRD-PW\DWGS-VR\C\SHEETS\00672_F1-F3_PLANS.DWG	3/17/2025	9:45 AM	1" = 50'	CHECKED BY
				DRAFTED BY



SHEET NO.		TOTAL SHEETS			
F2		F3			
STATE		YEAR			
ALASKA		2025			
PROJECT DESIGNATION					
0001726 /CFHWY00672					
NO.	REVISION				
DATE					
NO.				REVISION	
DATE					
NO.	REVISION				
DATE					
NO.			REVISION		
DATE					



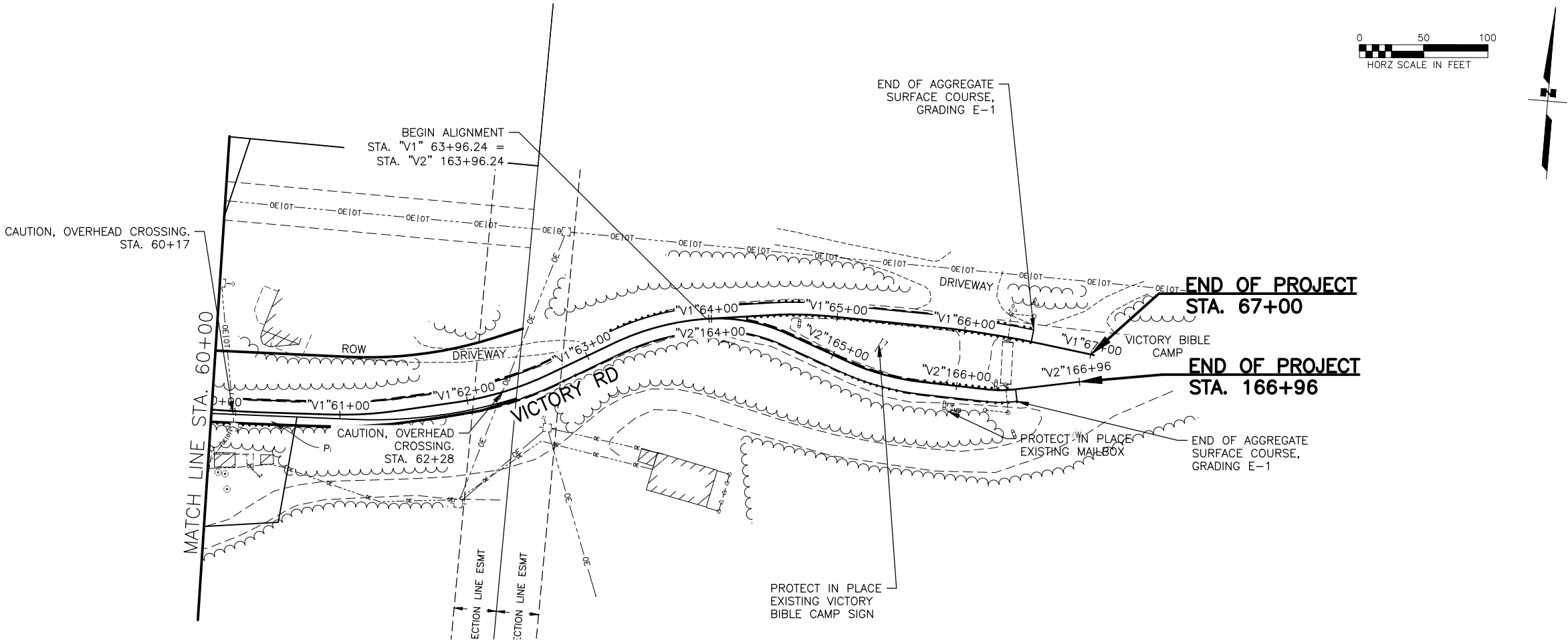
STATE OF AL
3/17/25
PRE-PS&E
PROFESSIONAL ENGINEER

PLANS DEVELOPED BY:
KINNEY ENGINEERING, LLC
3909 Arctic Blvd, Suite 400
ANCHORAGE, AK 99503
(907) 346-2373
CERT. OF AUTH. NO. AECL 1102

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

VICTORY ROAD PAVEMENT
PRESERVATION

STA 36+00 TO STA
60+00



SHEET NO.	TOTAL SHEETS
F3	F3
STATE	YEAR
ALASKA	2025
PROJECT DESIGNATION	
0001726 /CFHWY00672	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

THIS SHEET

STATE OF ALASKA

3/17/25

PRE-PS&E

PROFESSIONAL ENGINEER

PLANS DEVELOPED BY:
KINNEY ENGINEERING, LLC
3909 Arctic Blvd, Suite 400
ANCHORAGE, AK 99503
(907) 346-2373
CERT. OF AUTH. NO. AECL 1102

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

VICTORY ROAD PAVEMENT
PRESERVATION

STA 60+00 TO EOP

APPENDIX B

BMP DETAILS





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OCT 10 2017

OFFICE OF
WATER AND WATERSHEDS

Ms. Michelle Hale, Director
Water Division
Alaska Department of Environmental Conservation
410 Willoughby Avenue
Suite 303
Juneau, Alaska 99801-1800

Re: Approval of the Matanuska River TMDL (Alaska ID 20402-001)

Dear Ms. Hale:

The Alaska Department of Environmental Conservation submitted Total Maximum Daily Load (TMDL) for debris adjacent to Matanuska River in Palmer, Alaska to the U.S. Environmental Protection Agency on September 13, 2017. Following our review, the EPA is pleased to approve this TMDL.

We greatly appreciate the opportunity to work with your staff throughout the development of this TMDL. We are impressed with the cooperation and dedication of both Jeanne Swartz and Cindy Gilder during the development of this TMDL.

By EPA's approval, this TMDL is now incorporated into the State's Water Quality Management Plan under Section 303(e) of the Clean Water Act. We look forward to continuing to work collaboratively on water quality issues in or around the Matanuska River. If you have any questions, please feel free to call me at (206) 553-1755, or have your staff contact Jayne Carlin of my staff at (206) 553-8512.

Sincerely,

A handwritten signature in blue ink, reading "Michael J. Lidgard".

Michael J. Lidgard, Acting Director
Office of Water and Watersheds

cc: Ms. Jeanne Swartz, Non-Point Source Section, ADEC (via email)
Ms. Cindy Gilder, Manager, Non-Point Source Section, ADEC (via email)
Ms. Nancy Sonafrank, Manager, WQS, Assessment & Restoration Program, ADEC (via mail)

Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, Alaska 99501

**Total Maximum Daily Load (TMDL) for
Residue Adjacent to the Waters of the
Matanuska River in Palmer, Alaska**

Final

September 2017

Table of Contents

Executive Summary	7
1 Overview	9
1.1 Location of TMDL Study Area	9
1.2 Population	13
1.3 Topography	13
1.4 Land Use and Land Cover	13
1.5 Soils and Geology	14
1.6 Climate	17
1.7 Hydrology and Waterbody Characteristics	17
1.8 Fish Populations	18
2 Water Quality Standards and TMDL Targets	19
2.1 Applicable Water Quality Standards	19
2.1.1 Designated Uses	19
2.1.2 Water Quality Criteria	19
2.1.3 Antidegradation	19
2.2 Designated Use Impacts	21
2.3 TMDL Target	21
3 Data Review and Analyses	22
3.1 Data Inventory	22
3.2 Debris Analysis	24
3.3 Water Quality, Sediment, and Soil Data Analysis	25
3.3.1 Surface Water	25
3.3.2 Sediment	27
3.3.3 Soil	29
3.3.4 Summary of Data Analysis	31
4 Source Assessment	32
4.1 Point Sources	32
4.1.1 Disposal Area	32
4.1.2 Natural Sources	33
5 TMDL Allocation Analysis	34
5.1 Loading Capacity	34
5.2 Wasteload Allocations	34
5.3 Load Allocations	34
5.4 Margin of Safety	34
5.5 Seasonal Variation and Critical Conditions	35
5.6 Future Growth	35
5.7 Daily Load	35
5.8 Reasonable Assurance	35

6	Implementation and Monitoring Recommendations.....	36
6.1	Prevention of Additional Dumping.....	36
6.1.1	Local Ordinances	36
6.1.2	Leave Debris in Place.....	37
6.2	Options for Debris Removal.....	38
6.3	Enhancing Revegetation.....	39
6.4	Monitoring Recommendations	40
7	Public Participation	41
8	References.....	45

Figures

Figure 1-1. Location of the impaired section of the Matanuska River, Alaska.....	11
Figure 1-2. Location of the debris disposal site along the Matanuska River.....	12
Figure 1-3. Land use and land cover in the Matanuska watershed.....	14
Figure 1-4. Soil classification in the Matanuska River watershed.	16
Figure 1-5. Monthly average flow in the Matanuska River at USGS gage 15284000 (Matanuska River at Palmer, AK) (5/1/1949 to 9/30/2015).	18
Figure 3-1. Location of surface water, sediment, and soil samples collected from the disposal site and the Matanuska River in 2004.	24
Figure 4-1. Photo of the debris site along the Matanuska River.....	33

Tables

Table 1-1. Matanuska River section 303(d) listing information from Alaska’s 2012 Integrated Report	10
Table 1-2. Land use/land cover in the Matanuska River watershed and the debris site surrounding area	13
Table 1-3. Characteristics of hydrologic soil groups.....	15
Table 1-4. Soil distribution in the Matanuska River watershed and within a 1,000-foot area surrounding the debris site	16
Table 2-1. Alaska water quality standards for residues, applicable for TMDLs ^a	20
Table 3-1. Available data summary	22
Table 3-2. Results of water quality sampling in the Matanuska River.....	26
Table 3-3. Results of sediment sampling in the Matanuska River.....	28
Table 3-4. Results of soil sampling near the Matanuska River.....	29
Table 6-1. Pros and cons of debris removal options.....	39

Acronyms

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ARRC	Alaska Railroad Corporation
BMP	best management practice
°C	degrees Celsius
CFR	Code of Federal Regulations
cfs	cubic feet per second
CWA	Clean Water Act
DNR	Department of Natural Resources
DRO	diesel range organics
EPA	United States Environmental Protection Agency
°F	degrees Fahrenheit
ft ²	square feet
GPS	global positioning system
GRO	gasoline range organics
LA	load allocation
LC	loading capacity
□ g/L	micrograms per liter
□ g/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MOS	margin of safety
NAWQA	National Water Quality Assessment
ND	non-detect
NLCD	National Land Cover Database
NRCS	Natural Resources Conservation Service
NTU	nephelometric turbidity unit
OHW	ordinary high water
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
RRO	residual range organics
SQuiRT	Screening Quick Reference Tables
STATSGO	State Soil Geographic
SWCD	soil and water conservation district
TAH	total aromatic hydrocarbon
TAqH	total aqueous hydrocarbon
TEL	threshold effects level

TMDL	Total Maximum Daily Load
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
VOC	volatile organic compound
WLA	wasteload allocation
WQC	water quality criteria
WQS	water quality standards

Total Maximum Daily Load (TMDL) for
Residue Adjacent to the Waters of the
Matanuska River in Palmer, Alaska

TMDL at a Glance:

Water Quality-limited? Yes

Hydrologic Unit Code: 190204020709

Criteria of Concern: Residue (debris)

Designated Uses Affected: Water supply; water recreation; growth and propagation of fish, shellfish, other aquatic life and wildlife

Major Source(s): Debris migration from an unpermitted dump located on and in the Matanuska River just north of Eagle Avenue in Palmer, Alaska.

Loading Capacity: Zero (0); the standard for residues prohibits deposits on or in the streambeds and streambanks

Wasteload Allocation: Zero (0); nonpoint sources only

Load Allocation: Zero (0) residues above natural condition

Margin of Safety: Zero (0)

Future Allocation Zero (0)

Executive Summary

The Matanuska River flows through the Matanuska-Susitna (Mat-Su) Borough of Alaska, in the southcentral region of the state. Alaska included the Matanuska River on its 2002 Clean Water Act (CWA) section 303(d) list as water quality limited by residue (debris), and identified an unpermitted open dump located along and in the Matanuska River just north of Eagle Drive in Palmer as the pollutant source. The Matanuska River remains on the final 2012 CWA section 303(d) list for non-attainment of the applicable standards for residue. A Total Maximum Daily Load (TMDL) is established in this document to meet the requirements of CWA section 303(d)(1)(C) and the U.S. Environmental Protection Agency's (EPA) implementing regulations (Title 40 of the *Code of Federal Regulations* [CFR] Part 130), which require a TMDL to be established to achieve water quality standards in water quality-limited waterbodies. A TMDL is composed of the sum of individual waste load allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background loads. In addition, the TMDL must include a margin of safety (MOS), either implicitly or explicitly, that accounts for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. A TMDL represents the amount of a pollutant the waterbody can assimilate while maintaining compliance with applicable water quality standards.

This document addresses only the debris impairment to the river. It is important to note that the term *debris* used in this document refers only to human-caused residues, and should not be confused with naturally occurring woody debris. The source of debris in the watershed is debris on the slope above the ordinary high water (OHW) mark. The OHW mark is defined by the U.S. Army Corps of Engineers (USACE) as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE 2005a). The railroad cars that are below OHW are not considered a source for the debris impairment because they serve as bank stabilization material (USACE 2005b). Debris deposited in layers above the bank-stabilizing railroad cars are not considered bank stabilization material and have a potential of entering the water column. The debris that can be observed consists of vehicles, household refuse, fuel cans and 55-gallon drums, scrap metal, and other miscellaneous debris. Similar material is expected throughout the debris pile, although the content of any drums is unknown.

The Matanuska River does not fully support its designated uses of water supply, water recreation, and growth and propagation of fish, shellfish, other aquatic life, and wildlife due to elevated debris levels above the OHW mark with the potential to enter the river. The presence of debris detracts from recreation and has the potential to introduce contaminants to the water column. Although the Matanuska River is designated for all uses, the most common uses of the river include white water rafting as well as some fishing in the side channels and some walking and hiking along the river (related to the water recreation designated use).

Because the water quality criteria for debris do not allow for any unpermitted, human-caused inputs to the system, the TMDL for debris adjacent to the Matanuska River OHW mark is set to zero. Similarly, the loading capacity, allocations, and explicit margin of safety are also set to zero in the TMDL. Due to the nature of the debris impairment, the main focus of this TMDL is to develop strategies to stabilize the existing debris and prevent future dumping at the site. Actions including increased enforcement of local ordinances, preventing access to the debris site, and installing signs

and trash cans to discourage littering can significantly reduce the amount of debris dumped adjacent to the river.

1 Overview

Section 303(d)(1)(C) of the Clean Water Act (CWA) and the U.S. Environmental Protection Agency's (EPA) implementing regulations (Title 40 of the *Code of Federal Regulations* [CFR] Part 130) require the establishment of a Total Maximum Daily Load (TMDL) to achieve state water quality standards (WQS) when a waterbody is water quality-limited. A TMDL identifies the amount of a pollutant that a waterbody can assimilate and still comply with applicable WQS. TMDLs identify the level of pollutant control needed to reduce pollutant inputs to a level (or "load") that fully supports the designated uses of a given waterbody. TMDLs also include an appropriate margin of safety to account for uncertainty or lack of knowledge regarding the pollutant loads and the response of the receiving water. The mechanisms used to address water quality problems after the TMDL is developed can include a combination of best management practices (BMPs) for nonpoint sources and/or effluent limits and monitoring required through EPA's National Pollutant Discharge Elimination System permits (or in Alaska, the Alaska Pollutant Discharge Elimination System permits).

Alaska included the Matanuska River on its final 2012 CWA section 303(d) list as water quality-limited due to residue (in the form of debris). The river (Alaska Assessment Unit ID number AK-20402-001) appeared for the first time on the 2002 section 303(d) list, and is currently classified as a Category 5 waterbody. A Category 5 waterbody constitutes the section 303(d) list of waters impaired by a pollutant(s) for which one or more TMDLs are needed. Pollutant sources identified on the section 303(d) list are debris migration from open dump on the bank of the Matanuska River.

This TMDL applies to the debris on the slope of the river bank above the ordinary high water (OHW) mark. The OHW mark is defined by the U.S. Army Corps of Engineers (USACE) as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE 2005a). The railroad cars located in the river below OHW are not considered a source of debris impairment because they serve as bank stabilization material (USACE 2005b). The debris located above the bank-stabilizing railroad cars are not considered bank stabilization material and have the potential to enter the water column. Also, this TMDL applies to any debris that is below the OHW not functioning to stabilize the bank.

Table 1-1 summarizes the information included in the Alaska 2012 section 303(d) list for the Matanuska River (ADEC 2013). This document establishes a TMDL to address the debris impairment adjacent to the Matanuska River above the OHW mark. The following sections provide general background information on the Matanuska River watershed.

1.1 Location of TMDL Study Area

The Matanuska River drains a 2,100-square-mile (1,340,000-acre) watershed between the Chugach and Talkeetna mountains in southcentral Alaska (Curran and McTeague 2011). The river flows through the Matanuska Valley, which contains small communities including Sutton and Chickaloon. Palmer is located near the mouth of the Matanuska River before it flows into the Knik Arm of Cook Inlet. The unpermitted dump described in Table 1-1 is along the Matanuska River just north of Eagle Avenue in Palmer, Alaska (Oasis 2004b; Palmer SWCD 2015) (Figure 1-1). The debris is deposited along a stretch of the Matanuska River approximately one-fourth mile to one-half mile

upstream of Eagle Avenue and is mainly concentrated in an area approximately 1,200 feet north of Eagle Avenue (Oasis 2004b, 2004c; Palmer SWCD 2015) (Figure 1-2). The disposal area is accessed from the old railroad bed off Eagle Avenue that is now part of a hiking trail system.

Table 1-1. Matanuska River section 303(d) listing information from Alaska's 2012 Integrated Report

Alaska ID number	Waterbody	Area of concern	Water quality standard	Pollutant parameters	Pollutant sources
20402-001	Matanuska River	½ mile	Residues	Debris	Landfill
<p>Matanuska River was placed on the section 303(d) list in 2002/2003 for non-attainment of the residues criteria for debris. An active open dump is located on and in the Matanuska River just north of Eagle Drive in Palmer. Numerous derailed railroad cars are visible in the river and riparian area. The main site of concern is the active dump. Visible contents of the dump at the time of the inspection were a minimum of 20 vehicles, household refuse and items, fuel cans, possible 55-gallon drums with unknown contents, grass cuttings, and scrap metal and other debris. Debris continues in the river and riparian area upstream for approximately 1/2 mile. This open dump is within the Drinking Water Protection Area for a minimum of three public water systems. In August 2004, the DEC conducted a site assessment study. Activities included characterizing and quantifying the debris, mapping the site, and collecting surface water, sediment, and soil samples. No hazardous or petroleum contamination was discovered. After characterizing the debris, options were developed for possible debris removal as part of the study. Following subsequent meetings with involved parties, in March 2005, the USACE issued a jurisdictional determination that the railroad cars that are below ordinary high water serve as bank stabilization material and should not be removed. As such, these items are no longer in violation of WQS. However, the remaining debris on the slope above ordinary high water has a potential of entering the water column, and the upper layers are not considered bank stabilization material. The ARRC, as the property owner, needs to work with the DEC Solid Waste staff on developing a plan with goals and a timeline delineating its commitment to cleaning up the site. To date, the ARRC [Alaska Railroad Corporation] has installed concrete jersey barriers to prevent vehicular access to the site.</p>					

Source: ADEC 2013

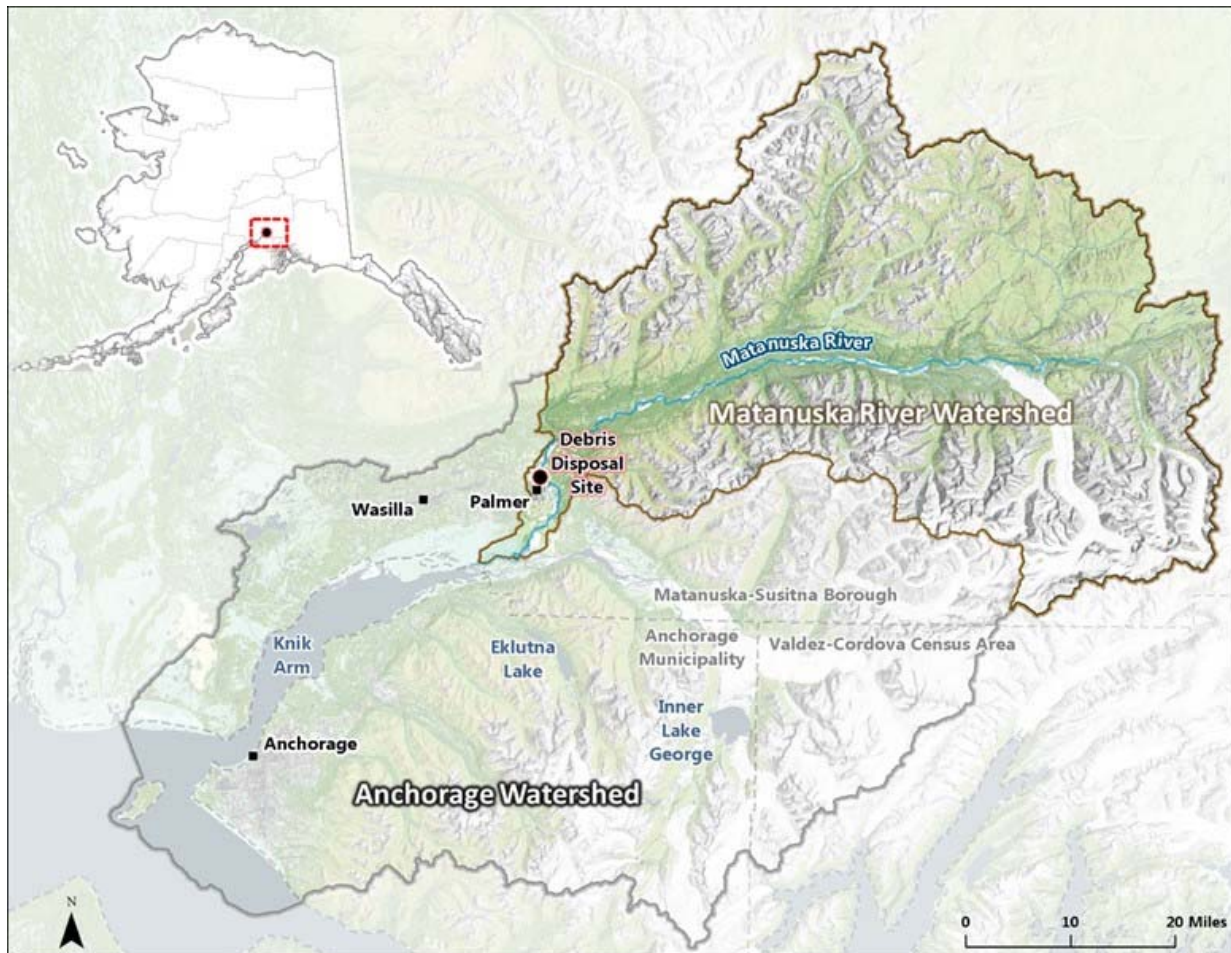


Figure 1-1. Location of the impaired section of the Matanuska River, Alaska.



Figure 1-2. Location of the debris disposal site along the Matanuska River.

Source: Palmer SWCD 2015

1.2 Population

The city of Palmer, Alaska, is in the Matanuska-Susitna (Mat-Su) Borough in the state's southcentral region. The population of Palmer is 6,788 people (U.S. Census 2015).

1.3 Topography

The elevation in the Matanuska River watershed ranges from a maximum elevation of 13,000 feet in the Chugach Mountains to near sea level at the confluence with the Knik River (Curran and McTeague 2011). The slope at the debris pile is approximately 75 percent, resulting in significant erosion potential (Palmer SWCD 2015).

1.4 Land Use and Land Cover

Land cover data were obtained from the 2011 Multi-Resolution Land Characteristics Consortium National Land Cover Database (NLCD). The NLCD data are based on satellite imagery from 2011. Land in the Matanuska River watershed is predominantly barren (42 percent), followed by shrubland (33 percent) and forest (13 percent). Less than one percent of the watershed is developed (Table 1-2 and Figure 1-3). The land use and land cover within 1,000 feet of the debris site are slightly different, with barren land being the dominant land cover (29 percent) followed by forest (25 percent) and shrubland (19 percent). Eight percent of the area immediately surrounding the debris site is developed.

The Alaska Railroad Corporation (ARRC) owns the land of the former Palmer-to-Sutton railroad line, which parallels the Matanuska River and passes by the debris disposal area (Oasis 2004c). There is an existing Public Use Trail Permit near the debris disposal area with Palmer, Alaska, Department of Natural Resources (DNR), and the Mat-Su Borough. Palmer's control ends approximately 425 feet north of the centerline of East Eagle Avenue. At this point the DNR and the Mat-Su Borough areas of control begin. The main debris disposal area is located in the Public Use Trail Permit area controlled by DNR and the Borough. This trail is part of the Matanuska River Railroad Trail and is used year-round for recreation (e.g., runners, bikers, skiers). The vegetation of the site is characterized as quaking aspen (*populus tremuloides*), paper birch (*betula papyrifera*), and big blue joint grass (*calamagrostis Canadensis*), which help stabilize the slope (Palmer SWCD 2015).

Table 1-2. Land use/land cover in the Matanuska River watershed and the debris site surrounding area

Land use/land cover	Entire Matanuska watershed		Within 1,000 feet of the debris site	
	Area (acres)	Percent cover (%)	Area (acres)	Percent cover (%)
Open water	7,879	0.6	6.7	9.2
Perennial ice/snow	124,577	9.3	0.0	0.0
Developed	6,394	0.5	6.0	8.3
Barren land	557,693	41.6	20.9	28.8
Forest	180,144	13.4	17.8	24.5
Dwarf scrub/shrub	440,908	32.9	13.6	18.7
Herbaceous grassland	1,968	0.1	0.0	0.0
Pasture hay	2,093	0.2	0.0	0.0
Cultivated crops	395	0.03	0.0	0.0

Land use/land cover	Entire Matanuska watershed		Within 1,000 feet of the debris site	
	Area (acres)	Percent cover (%)	Area (acres)	Percent cover (%)
Wetlands	18,441	1.4	7.6	10.4
TOTAL	1,340,511	100	72.5	100

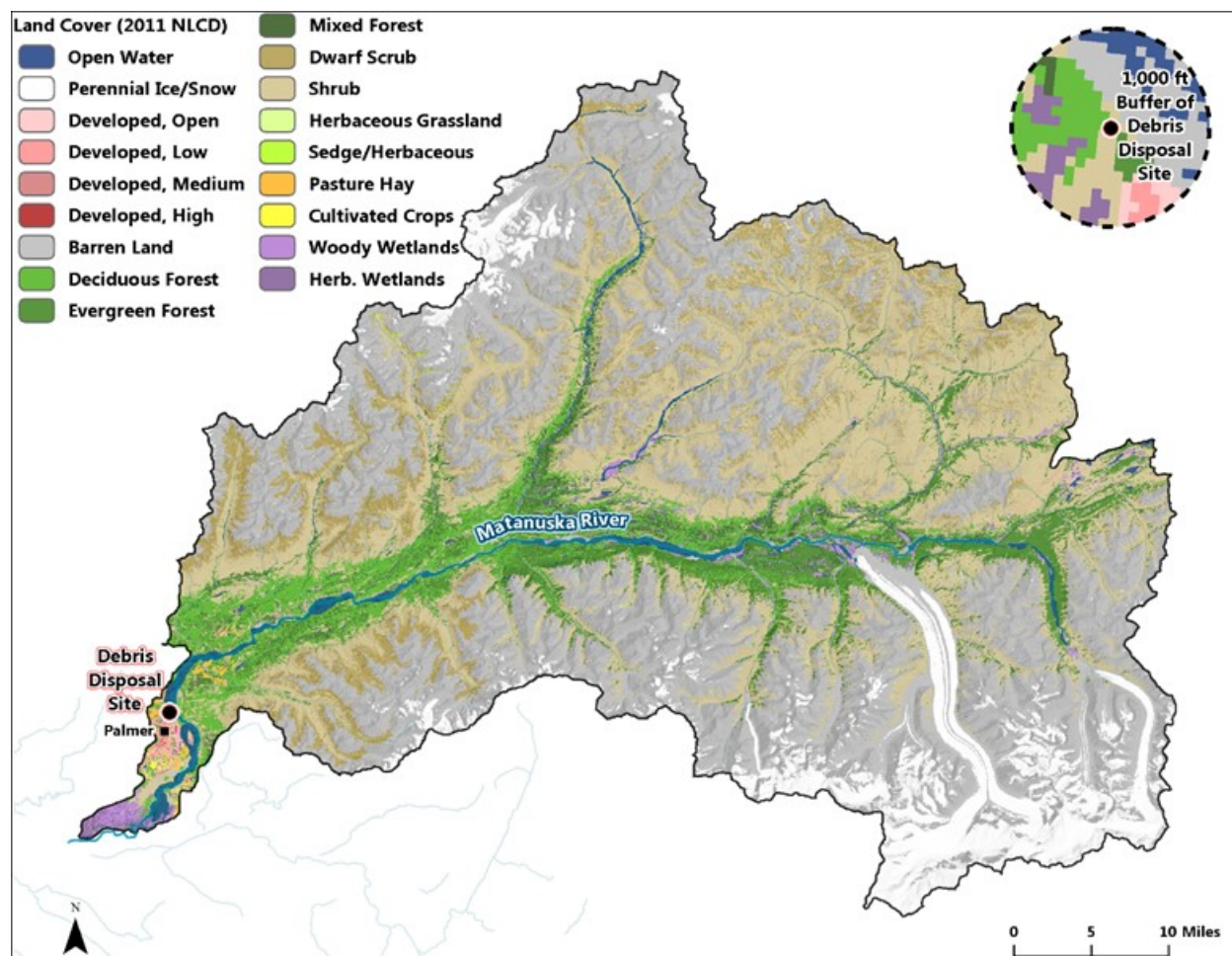


Figure 1-3. Land use and land cover in the Matanuska watershed.

1.5 Soils and Geology

Data from the Natural Resources Conservation Service (NRCS) were used to characterize soils in the Matanuska watershed. General soils data and map unit delineations are available through the State Soil Geographic database (STATSGO).

The hydrologic soil group classification is a means for grouping soils by similar infiltration and runoff characteristics during periods of prolonged wetting. Typically, clay soils that are poorly drained have lower infiltration rates, while sandy soils that are well-drained have the greatest infiltration rates. NRCS has defined four hydrologic groups for soils (Table 1-3). The majority of the soils in the higher elevations of the Matanuska River watershed are considered to be mountainous land and belong to Hydrologic Soil Group D (81 percent of the drainage area). The Matanuska River

valley consists mostly of Hydrologic Soil Group B (18 percent) with smaller areas of A and C soils (less than one percent each). The area directly surrounding the debris disposal site (within 1,000 feet) consists of 48 percent Hydrologic Soil Group B and 52 percent Hydrologic Soil Group D. Group A and B soils are well to moderately well-drained soils. Group C soils are also moderately well drained, while Group D soils have high runoff potential and very low infiltration rates with a clay layer at or near the surface. Figure 1-4 and Table 1-4 summarize the Matanuska River watershed soil information.

Table 1-3. Characteristics of hydrologic soil groups

Soil group	Characteristics	Minimum infiltration capacity (inches/hour)
A	Sandy, deep, well-drained soils; deep loess; aggregated silty soils	0.30 to 0.45
B	Sandy loams, shallow loess, moderately deep and moderately well-drained soils	0.15 to 0.30
C	Clay loam soils, shallow sandy loams with a low permeability horizon impeding drainage (soils with a high clay content), soils low in organic content	0.05 to 0.15
D	Heavy clay soils with swelling potential (heavy plastic clays), water-logged soils, certain saline soils, or shallow soils over an impermeable layer	0.00 to 0.05

Source: NRCS 1972

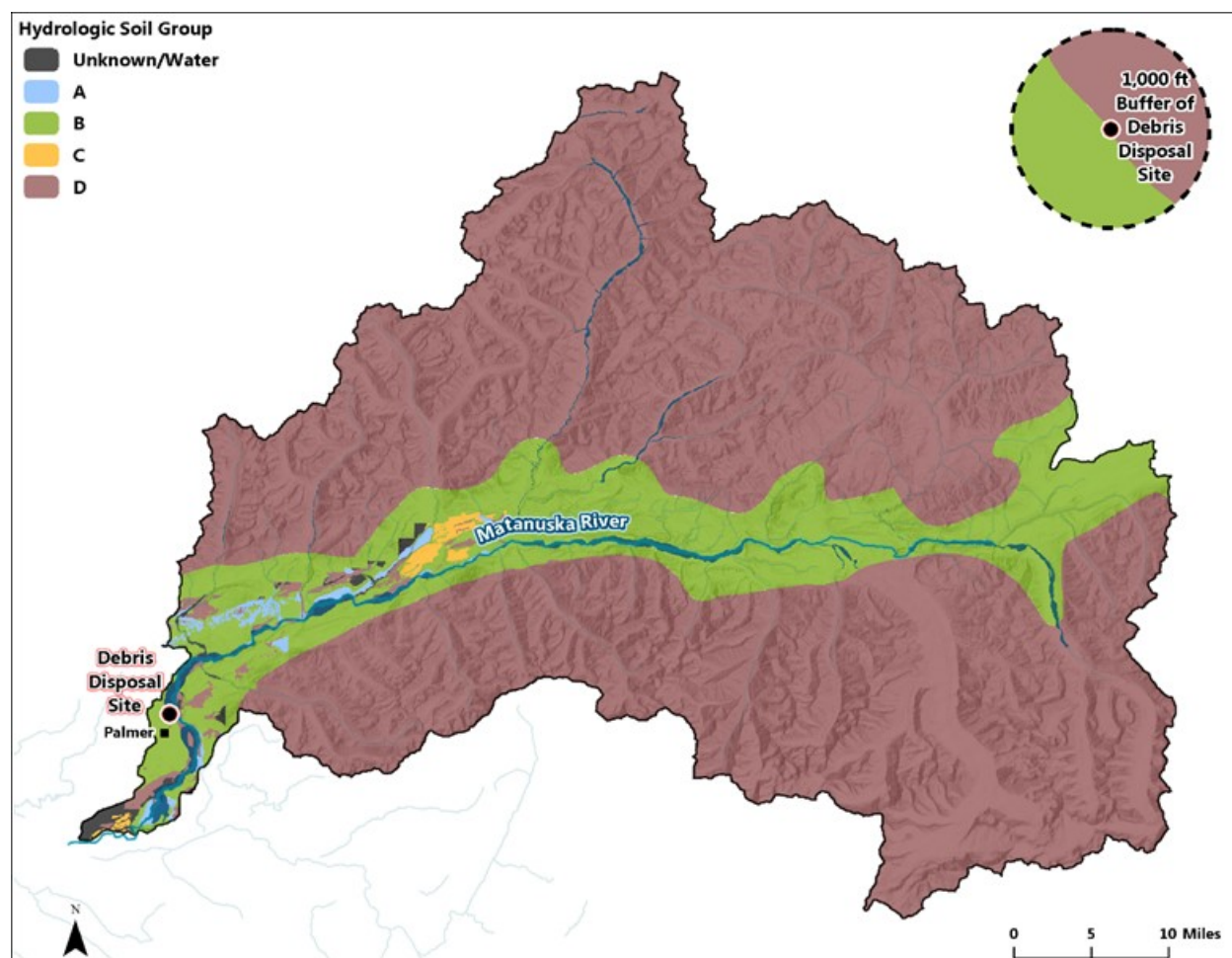


Figure 1-4. Soil classification in the Matanuska River watershed.

Source: NRCS n.d.

Table 1-4. Soil distribution in the Matanuska River watershed and within a 1,000-foot area surrounding the debris site

Hydrologic soil group	Matanuska River watershed		Within 1,000 feet of the debris site	
	Area (acres)	Percent area (%)	Area (acres)	Percent area (%)
A	8,584	0.6	0.0	0
B	239,910	18	34.6	48
C	5,576	0.4	0.0	0
D	1,080,112	81	37.5	52
Unknown/water	6,424	0.5	0.0	0

The Matanuska River flows through the Matanuska Valley, which consists of Mesozoic and Tertiary rocks and was occupied during the Pleistocene period by the Matanuska Glacier (Curran and McTeague 2011). The glacier's current terminus is located 50 miles east of Palmer. Glacial deposits

near Palmer consist of till, morainal, and outwash deposits up to a few hundred feet thick. The Matanuska River braid plain occupies a part of the Matanuska Valley. Upstream of Palmer, the braid plain is flanked by bedrock banks, glacial deposits, narrow fluvial terraces, and tributary fans in a confined valley. Near and downstream of Palmer, the braid plain is flanked by broad glacial terraces in an unconfined valley.

1.6 Climate

The Matanuska Valley has a maritime climate influenced by Gulf of Alaska weather systems that are moderated by the orographic effect of the Chugach Mountains, which creates a rainshadow with reduced precipitation (Curran and McTeague 2011). Mean annual precipitation is low along the valley bottom at Palmer and Sheep Mountain airport near the Matanuska Glacier (15 and 13 inches, respectively), and increases to more than 80 inches at high elevations in the mountainous areas (Curran and McTeague 2011). Temperatures are moderated by the maritime influence and by strong winds through the Matanuska Valley. The coldest month in Palmer is January with an average low of about 5 degrees Fahrenheit (°F) and the warmest month is July with an average high of about 67 °F.

1.7 Hydrology and Waterbody Characteristics

The Matanuska River is a large, braided, glacial outwash stream. The large sediment load and stream flow variations lead to significant channel movement. At times the main channel flows next to the debris disposal area and other times the main river channel is away from the disposal area (Palmer SWCD 2015).

The braid plain contains turbid mainstem channels as well as clearwater side channels that are shallow streams originating at springs within the braid plain or at tributaries to the Matanuska River (Curran and McTeague 2011). These side channel streams are disconnected from the Matanuska River except at their downstream ends; they commonly occupy channels abandoned by the mainstem, forming branching networks across braid plain bars. The mainstem of the river is turbid from spring through fall, when glacial runoff is greatest, and is relatively clear beneath an ice cover in winter (Curran and McTeague 2011). The river transports approximately five million tons of sediment per year (Palmer SWCD 2015).

The mean annual flow of the Matanuska River averages 3,880 cubic feet per second (cfs) at Palmer (Curran and McTeague 2011). Mean monthly flows are lowest during March and highest during July (Palmer SWCD 2015). Streamflow records for the Matanuska River from the U.S. Geological Survey (USGS) stream gage at the Old Glenn Highway bridge at Palmer (USGS Station 15284000) show that streamflow decreases through the fall and winter months and increases with snowmelt in April and May (Curran and McTeague 2011) (Figure 1-5). Another increase in streamflow occurs with glacier melt in June and July. These flow patterns are typical of Alaskan glacial streams and are different than non-glacial streams where flow typically subsides during the often hot and dry conditions of summer months (Oasis 2004b).

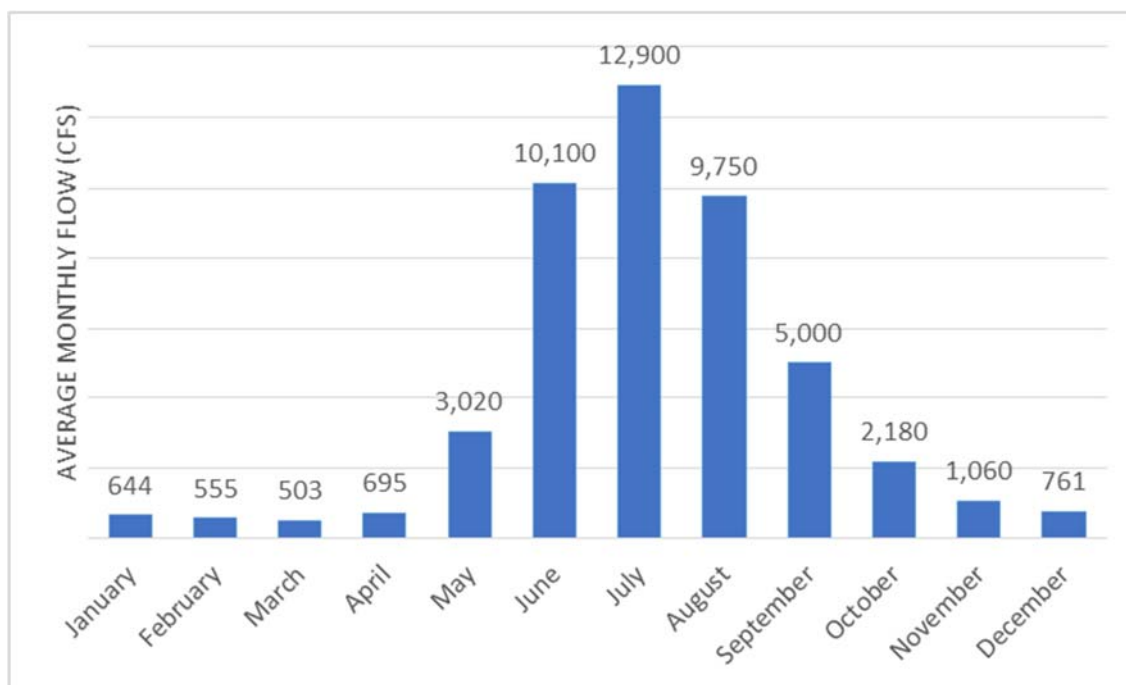


Figure 1-5. Monthly average flow in the Matanuska River at USGS gage 15284000 (Matanuska River at Palmer, AK) (5/1/1949 to 9/30/2015).

1.8 Fish Populations

Five species of Pacific salmon spawn and rear in the Matanuska River and its tributaries (Anderson and Bromaghin 2009). These species include Chinook (*Oncorhynchus tshawytscha*), sockeye (*O. nerka*), coho (*O. kisutch*), chum (*O. keta*) and pink (*O. gorbuscha*) salmon. Clearwater side channels of the braid plain of the Matanuska River form important spawning habitat for sockeye, chum, and Coho salmon (Curran and McTeague 2011). Other fish present in the watershed include Dolly Varden, round whitefish, and longnose sucker (Anderson and Bromaghin 2009). Glacial rivers, such as the Matanuska River, might be too swift, turbid and unstable to provide significant fish habitat; however, side channels can provide important spawning and rearing habitat for salmonids.

2 Water Quality Standards and TMDL Targets

WQS designate the “uses” to be protected (e.g., water supply, recreation, aquatic life) and the “criteria” for their protection (e.g., how much of a pollutant can be present in a waterbody without impairing its designated uses). TMDLs are developed to meet applicable WQS, which may be expressed as numeric water quality criteria (WQC) or narrative criteria for the support of designated uses.

The TMDL target identifies the numeric goals or endpoints for the TMDL that equate to attainment of WQS. The TMDL target may be equivalent to a numeric WQS where one exists, or it may represent a quantitative interpretation of a narrative standard. This section reviews the applicable WQS and identifies an appropriate TMDL target for calculation of the debris TMDL for the Matanuska River.

2.1 Applicable Water Quality Standards

Title 18, Chapter 70 of the Alaska Administrative Code (AAC) (18 AAC 70) establishes WQS for the waters of Alaska (ADEC 2003, 2016), including the designated uses to be protected and the WQC necessary to protect the uses as described below. Alaska’s WQS must be approved by EPA before they can be used in TMDLs and other federal CWA regulatory actions (ADEC 2012). While Alaska’s most recent WQS are dated 2016 (ADEC 2016), the most recent federally-approved WQS for residues are from 2003 (ADEC 2003); therefore, the 2003 WQS (ADEC 2003) are used for this TMDL.

2.1.1 Designated Uses

Designated uses established in Alaska’s WQS (18 AAC 70.020(a)) for fresh waters of the state include (1) water supply, (2) water recreation, and (3) growth and propagation of fish, shellfish, other aquatic life, and wildlife, and are applicable to all fresh waters, unless specifically exempted. All designated uses must be addressed unless specifically exempted in Alaska. Therefore, the TMDL must use the most stringent of the criteria among all of the uses (as outlined in 18 AAC 70.020(b)). In this case, the most stringent criterion is for growth and propagation of fish, shellfish, other aquatic life, and wildlife (see Section 2.1.2).

2.1.2 Water Quality Criteria

The Matanuska River does not fully support its designated uses of water supply, water recreation, and growth and propagation of fish, shellfish, other aquatic life, and wildlife due to the elevated presence of debris on the steep banks adjacent to the river. WQC for all designated uses are applicable to the Matanuska River. Table 2-1 lists the WQC for residues.

2.1.3 Antidegradation

Alaska’s WQS also include an antidegradation policy (18 AAC 70.015), which states that existing water uses and the level of water quality necessary to protect the existing uses must be maintained and protected.

Water quality must be maintained and protected unless the state finds that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the water is located. In allowing such degradation or lower water quality, the state must ensure water quality adequate to fully protect existing uses of the water.

The methods of pollution prevention, control, and treatment found to be the most effective and reasonable will be applied to all discharges. All discharges will be treated and controlled to achieve the highest statutory and regulatory requirements for point sources and all cost-effective and reasonable BMPs for nonpoint sources. State water exhibiting high quality water constitutes an outstanding national resource and must be maintained and protected.

Table 2-1. Alaska water quality standards for residues, applicable for TMDLs^a

Designated use	Description of criteria
(8) Residues for fresh water uses: Floating solids, debris, sludge, deposits, foam, scum, or other residues (criteria are not applicable to groundwater)	
(A) Water supply	
(i) drinking, culinary and food processing	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
(ii) agriculture, including irrigation and stock watering	May not be present in quantities to cause soil plugging or reduced crop yield, or to make the water unfit or unsafe for the use.
(iii) aquaculture	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use.
(iv) industrial	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use.
(B) Water recreation	
(i) contact recreation	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
(ii) secondary recreation	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
(C) Growth and propagation of fish, shellfish, other aquatic life, and wildlife	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use, or cause acute or chronic problem levels as determined by bioassay or other appropriate methods. May not, alone or in combination with other substances, cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.

^aAlaska's most recent WQS (18 AAC 70.020) are dated 2016; however, the most recent federally approved water quality criteria for residues for use in TMDLs are from 2003 and are presented above (ADEC 2003, 2012).

2.2 Designated Use Impacts

Designated uses for Alaska's waters are established by regulation and are specified in Alaska's WQS (18 AAC 70.020(a)). For fresh waters of the state, these designated uses include (1) water supply, (2) water recreation, and (3) growth and propagation of fish, shellfish, other aquatic life, and wildlife. All designated uses must also be protected per Alaska WQS. The Matanuska River does not fully support its designated uses because of elevated levels of debris adjacent to the OHW mark of the river. These elevated debris levels have the potential to enter the waterbody below the OHW mark because of the steep slope of the river bank.

The presence of debris detracts from recreation and can introduce contaminants to the water column. Debris from household garbage can attract undesirable wildlife. Debris deposited in the stream can block culverts and fish passage, which inhibits the designated use of growth and propagation of fish. The dump site that is the source of the debris is within the Drinking Water Protection Area for at least three public water systems (including Mountain View Estates [PWSID 226509.001], Palmer Well No. 4 [PWSID 226020.00], and the Palmer Golf Course [PWSID 227482.001]). There is no evidence that the presence of the debris currently impacts the water supply designated use for this waterbody (see Section 3.3).

2.3 TMDL Target

The TMDL target is the numeric endpoint used to evaluate the loading capacity and necessary load reductions. It represents attainment of applicable WQS. In the case of debris adjacent to the Matanuska River OHW mark, the TMDL target is zero, consistent with applicable WQS allowing no debris in the stream or the adjoining shoreline. This target is also consistent with debris and residue TMDLs previously developed in Alaska (ADEC 2005, 2008; RERS 2000; USEPA 2000).

3 Data Review and Analyses

Unlike most numeric TMDLs where specific loadings are calculated, the data available regarding debris adjacent to the Matanuska River are largely qualitative. According to the guidelines used by ADEC, the best professional judgment of a resource agency professional or other credible source can be used to determine whether a waterbody persistently exceeds WQS (e.g., fish habitat or recreational areas are adversely affected). Direct monitoring data, photographs and videos, and written reports within the last 5 years are additional sources of information that ADEC uses to determine whether a waterbody is impaired or water quality limited due to residues for section 303(d) listing purposes. For the Matanuska River, it was determined that designated uses are not supported because of residues.

The data assessment for the Matanuska River focuses on a qualitative analysis of debris for the impaired area of the river. The goal of this TMDL is to reduce the migration of debris from above the OHW mark on the slope of the Matanuska River into the waterbody and to stabilize the slope of the riverbank so that the existing debris cannot be washed into the waterbody. In addition to a qualitative review of the available residue/debris data and information, all available water quality, sediment, and soil data were reviewed to confirm that there are no additional impairments of the Matanuska River.

3.1 Data Inventory

Previous studies have been completed on the residue impairment of the Matanuska River. In August 2004 Oasis Environmental, Inc. (Oasis), conducted a site assessment for ADEC that included characterizing and quantifying the debris, mapping the site, and collecting surface water, sediment, and soil samples (Oasis 2004b, 2004c). The site assessment focused on the debris located below the OHW mark, including debris in the Matanuska River and along the river bank up to the OHW mark. As part of the assessment, options for possible debris removal were described. In March 2005 the U.S. Army Corps of Engineers (USACE) issued a jurisdictional declaration that the railroad cars that are below OHW serve as bank stabilization material; therefore, these items are not exceeding WQS (USACE 2005b). However, the remaining debris on the river bank above OHW has the potential to enter the water column; therefore, the upper layers are not considered bank stabilization material. In 2015 the Palmer Soil and Water Conservation District (SWCD) re-assessed the site and developed remedial alternatives for debris removal. All of these previous studies are listed in Table 3-1 and were used to characterize the disposal site and impaired area, and help identify recommended TMDL implementation activities. Figure 3-1 shows the locations of the water quality, sediment, and soil samples collected in 2004 (Oasis 2004c).

Table 3-1. Available data summary

Data source	Date	Description
Final Work Plan Matanuska River Debris Site Assessment and Debris Removal and Disposal Plan Palmer, Alaska (Oasis 2004a)	2004	This sampling and assessment plan for the site assessment and debris removal assessment was conducted by Oasis in 2004.

Data source	Date	Description
Final Matanuska River Debris Removal Assessment Palmer, Alaska (Oasis 2004b).	2004	This report presents the results of the Oasis debris removal assessment. The objective of this project was to develop a debris removal and disposal plan that addressed the permits needed, cost estimates, site logistics, and site safety concerns (from the contents of debris pile such as contaminants and from the actual debris removal process).
Final Report Matanuska River Debris Site Assessment Palmer, Alaska (Oasis 2004c)	2004	The objective of this project was to assess, map, and determine the extent of debris as well as any potential pollutants in the debris disposal area along and in the Matanuska River. The focus of the site assessment was to estimate the volume of debris and collect information to determine potential impacts to water quality on the Matanuska River adjacent to the site. It presents sediment, soil, and water quality samples from the impaired area for various parameters. Water quality data were collected for VOCs, TAHs, PAHs, TAqHs, pesticides, PCBs, and metals (As, Ba, Cr, Pb). Sediment and soil data were collected for GROs, DROs, RROs, pesticides, PCBs, VOCs, and metals (As, Ba, Cr, Pb, Hg, Se).
Letter of Jurisdictional Determination (USACE 2005b)	2005	Letter of jurisdictional determination stating that railcars were at the site below the ordinary high water line before 1968 so they are not considered to be part of the impairment.
Matanuska River Debris Disposal Site Remedial Alternatives (Palmer SWCD 2015)	2015	This report, by Palmer SWCD, evaluates a variety of remedial actions to address removing portions of the main debris pile. No raw data are included in this report.

Notes: VOCs = volatile organic compounds; TAHs = total aromatic hydrocarbons; PAHs = polycyclic aromatic hydrocarbons; TAqHs = total aqueous hydrocarbons; PCBs = polychlorinated biphenyls; As = arsenic; Ba = barium; Cr = chromium; Pb = lead; Hg = mercury; Se = selenium; GROs = gasoline range organics; DROs = diesel range organics; RROs = residual range organics



Figure 3-1. Location of surface water, sediment, and soil samples collected from the disposal site and the Matanuska River in 2004.

Source: Oasis 2004c

3.2 Debris Analysis

The disposal area is located along the former Palmer-to-Sutton railroad line where it parallels the Matanuska River (see Figure 1-2). During the 2004 site assessment conducted by Oasis (2004c), debris was scattered along the old railroad line for approximately one-half mile but was mainly concentrated in one area where the old railroad line runs closely parallel to the Matanuska River. Oasis mapped the extent of the debris disposal area based on global positioning system (GPS) coordinates and observations from aerial photographs. The main debris disposal area was estimated to be approximately 20,000 square feet (ft²) or about one-half acre in size. Approximately half of this area is heavily covered with debris. The volume of debris is estimated to be 20,000 to 40,000 cubic feet and the weight of the debris is estimated at 200 to 400 tons, assuming the debris only covers one half of the area (10,000 ft²) and averages roughly two to four feet in thickness. In addition, buried debris was found near the bottom of the bluff, but above the OHW mark, along the Matanuska River resulting from sloughing of the bluff material. The debris adjacent to the Matanuska River results in an exceedance of Alaska's WQC for residues (see Section 2.1).

As mentioned earlier, the main debris disposal area consists mainly of metal debris including old railroad cars, automobile bodies, empty drums, metal lath cuttings, miscellaneous appliances and other metal debris. Wooden rail car pieces, train car axels and wheels, metal rails, and other metal

railroad car pieces were found along the northern edge of the main debris disposal area (Oasis 2004c). Appendix A provide photos of the debris found in the disposal area.

The site assessment conducted by Oasis (2004c) did not find any signs of potential contamination to the site, such as surface staining or discoloration. Car batteries and engines had been removed from the cars observed at the site. In addition to the main debris disposal area, old railroad cars were observed along the former Palmer-to-Sutton railroad line for approximately one-half mile upstream of the main debris disposal area. It is possible that debris might be found along the remainder of the former Palmer-to-Sutton railroad line, but this was not included in the assessed area in 2004.

The 2004 site assessment focused on the debris present below the OHW mark, which includes debris that is in the Matanuska River and debris along the river bank up to the OHW mark (Oasis 2004c). It was observed that the debris pile above the OHW mark was unstable; if any debris is removed from the lower area, there is a high probability that the debris higher up the slope will migrate down toward the river. Although some of the debris above the OHW mark might be unstable, removing the debris could result in the steep slope of the river bank becoming more unstable, resulting in erosion. The quantity of debris below the OHW line is much less than the amount above the OHW line (less than a 5-foot width along the length of the debris disposal area).

3.3 Water Quality, Sediment, and Soil Data Analysis

In addition to the qualitative debris data described in Section 3.2, all water quality, sediment, and soil data collected at the debris disposal site in 2004 (Oasis 2004c) were compared to the applicable water quality criteria, sediment screening benchmarks, and soil cleanup levels, respectively, to confirm that there are no impairments other than residues in the Matanuska River. The results of this data analysis are presented below in Sections 3.3.1 through 3.3.3.

3.3.1 Surface Water

Three surface water samples were collected during the site assessment conducted on May 26 and 27, 2004 (Oasis 2004c). The samples were collected from a braided channel of the Matanuska River that passes the debris disposal area. The sampling sites were located upstream (MD-03), adjacent to (MD-02), and downstream (MD-01) of the debris disposal area (see Figure 3-1). Stations MD-03 and MD-01 were located approximately 100 feet upstream and 100 feet downstream of the main debris disposal area, respectively. Water quality samples were analyzed for pH, temperature, dissolved oxygen, turbidity, volatile organic compounds (VOCs), total aromatic hydrocarbons (TAHs), polycyclic aromatic hydrocarbons (PAHs), total aqueous hydrocarbons (TAqHs), pesticides, polychlorinated biphenyls (PCBs), and metals (arsenic, barium, chromium, and lead).

The results of the samples were compared to Alaska's applicable WQS for fresh water uses (18 AAC 70) (ADEC 2016a). The most stringent WQC for each parameter was applied. The surface water sampling results and the comparison to applicable WQC are presented in Table 3-2. All samples for VOCs, PAHs, TAHs, TAqHs, pesticides and PCBs were below the detection limit; therefore, they are not exceeding the WQC. Arsenic, barium, chromium and lead were detected in the surface water samples, but did not exceed their applicable criteria. Temperature and dissolved oxygen samples also met their applicable WQC. One of the three pH observations (8.6) was slightly outside the allowable range of 6.5 to 8.5 for the growth and propagation of fish, shellfish, other aquatic life, and wildlife. It is recommended that a visual survey for leachate takes place prior to pH monitoring at the debris

site to determine whether pH is causing potential impairment. If there is no visual evidence of leachate at the debris site, pH monitoring is not recommended (see Section 6.4).

Turbidity observations of 544, 590, and 583 nephelometric turbidity units (NTUs) were not compared to the applicable WQC because the criteria are based on natural conditions, which are not available. However, the natural background turbidity conditions are assumed to be relatively high because the Matanuska River is a glacial river, and glacial rivers are typically highly turbid. The Matanuska River carries large amounts of sediment (Anderson and Bromaghin 2009).

Table 3-2. Results of water quality sampling in the Matanuska River

Parameter	Sampling station	Date	Result	Water quality criterion ^a	Exceeds WQS (Y/N)
pH	MD01	5/26/2004	8.4	6.5-8.5	N
	MD02		8.5		N
	MD03		8.6		Y
Temperature (°C)	MD01	5/26/2004	9.3	13 °C	N
	MD02		8.8		N
	MD03		8.3		N
Dissolved oxygen (mg/L)	MD01	5/26/2004	12.0	≥7 mg/L	N
	MD02		12.0		N
	MD03		12.4		N
Turbidity (NTU)	MD01	5/26/2004	544	May not exceed 25 NTU above natural conditions	N
	MD02		590		N
	MD03		583		N
VOC (µg/L)	MD01	5/26/2004	ND	varies ^a	N
	MD02		ND		N
	MD02		ND		N
	MD03		ND		N
TAH (µg/L)	MD01	5/26/2004	<2.0	10 µg/L	N
	MD02		<2.0		N
	MD02		<2.0		N
	MD03		<2.0		N
PAH (µg/L)	MD01	5/26/2004	ND	varies ^a	N
	MD02		ND		N
	MD02		ND		N
	MD03		ND		N
TAqH (µg/L)	MD01	5/26/2004	<4.0	15 µg/L	N
	MD02		<4.0		N
	MD02		<4.0		N
	MD03		<4.0		N
Pesticides and PCBs (µg/L)	MD01	5/26/2004	ND	0.5 µg/L	N
	MD02		ND		N
	MD02		ND		N
	MD03		ND		N
Arsenic (mg/L)	MD01	5/26/2004	0.00684	0.01 mg/L	N
	MD02		0.00651		N
	MD02		0.00644		N
	MD03		0.00540		N
Barium (mg/L)	MD01	5/26/2004	0.1020	2.0 mg/L	N
	MD02		0.0978		N
	MD02		0.0901		N
	MD03		0.0823		N
Chromium (mg/L)	MD01	5/26/2004	0.0144	0.1 mg/L	N
	MD02		0.0136		N
	MD02		0.0126		N
	MD03		0.00997		N
Lead (mg/L)	MD01	5/26/2004	0.00492	0.015	N

Parameter	Sampling station	Date	Result	Water quality criterion ^a	Exceeds WQS (Y/N)
	MD02		0.00490		N
	MD02		0.00449		N
	MD03		0.00461		N

Notes:

ND = non-detect; VOCs = volatile organic compounds; TAHs = total aromatic hydrocarbons; PAHs = polycyclic aromatic hydrocarbons; TAqHs = total aqueous hydrocarbons; PCBs = polychlorinated biphenyls; µg/L = micrograms per liter; mg/L = milligrams per liter; NTU = nephelometric turbidity units; °C = degrees Celsius

^aWater quality data were compared to Alaska's most stringent applicable water quality criteria from 18 AAC 70.020 (ADEC 2016a). Alaska has also adopted EPA's water quality criteria for priority and nonpriority pollutants in *Alaska Water Quality Criteria for Toxic and Other Deleterious Organic and Inorganic Substances* (18 AAC 70.030; ADEC 2008). The pH range of 6.5-8.5 is based on water supply (aquaculture), water contact recreation, and growth and propagation of fish, shellfish, other aquatic life, and wildlife. The water temperature criterion (in degrees Celsius [°C]) is based on water supply (aquaculture)—spawning areas and egg and fry incubation areas. The dissolved oxygen criterion is based on water supply (aquaculture) and growth and propagation of fish, shellfish, other aquatic life, and wildlife. The turbidity criterion is based on growth and propagation of fish, shellfish, other aquatic life, and wildlife. The most stringent water quality criterion for VOCs, PAHs, pesticides and PCBs is for drinking water. For PCBs the criterion is 0.5 micrograms per liter (µg/L), while the criterion for various pesticides, PAHs and VOCs varies. Water quality criteria for specific pesticides, PAHs and VOCs are not presented here since the specific pesticides, VOCs, and PAHs sampled for were not included in the Oasis (2004c) report and none of these parameters were detected in any of the samples (all non-detects).

Therefore, they are not exceeding applicable water quality criteria. TAqH and TAH criteria were based on water supply (aquaculture) and growth and propagation of fish, shellfish, other aquatic life, and wildlife. Arsenic, barium, chromium, and lead criteria were based on drinking water criteria. The lead criterion is based on hardness using the equation $1.46203 - [(\ln \text{hardness})(0.145712)]$; however, no hardness data were available to calculate the criterion. The Oasis (2004c) report uses a criterion of 0.15 milligrams per liter (mg/L). That criterion is applied in Table 3-2 for consistency.

3.3.2 Sediment

Three sediment samples were collected at the same times and locations as the surface water samples discussed above (sampling stations MD-03, MD-02 and MD-01) (see Section 3.2.1 and Figure 3-1). Sediment samples were analyzed for VOCs, gasoline range organics (GROs), diesel range organics (DROs), residual range organics (RROs), pesticides, PCBs and metals (arsenic, barium, chromium, lead, mercury, and selenium). Alaska does not have sediment criteria; therefore, to be consistent with the approach used for ADEC's site assessment (Oasis 2004c), the National Oceanic and Atmospheric Administration Screening Quick Reference Tables (SQuiRTs) for freshwater sediments were used to provide benchmark screening levels for data analysis (Buchman 1999). Specifically, the threshold effects level (TEL) was applied. The TEL is the level below which adverse effects rarely occur.

The sediment sampling results and comparisons to the benchmark screening levels are presented in Table 3-3. All sediment sample results for VOCs, GROs, DROs, RROs, pesticides, and PCBs were below the laboratory reporting limit and did not exceed any screening levels. All of the metals (barium, chromium, lead, mercury, and selenium) were below the sediment screening levels except for arsenic. Arsenic in sediment exceeded the screening level of 5.9 milligrams per kilogram (mg/kg) in all three samples.

Oasis (2004c) indicated that the USGS performed streambed sediment studies to determine the naturally occurring concentrations of arsenic in the nearby Cook Inlet watershed. These streambed sediment samples were collected as part of the National Uranium Resource Evaluation Hydrogeochemical and Streambed Sediment Reconnaissance program, the National Water Quality Assessment (NAWQA) program, and studies with the National Park Service. Arsenic concentrations

in these studies ranged from 1.78 to 184 mg/kg. The arsenic concentrations in the sediment samples collected near the Matanuska River disposal site were all within the range of these studies. It is likely that the arsenic in the river sediment is naturally occurring and does not represent contamination from the debris disposal area.

Table 3-3. Results of sediment sampling in the Matanuska River

Parameter	Sampling station	Date	Result	Sediment benchmark screening level ^a	Exceeds screening level (Y/N)
Gasoline range organics (mg/kg)	MD01	5/27/2004	<1.10	NA ^b	N
	MD02		<0.925		N
	MD03		<1.31		N
Diesel range organics (mg/kg)	MD01	5/27/2004	<25	NA ^b	N
	MD02		<25		N
	MD03		<25		N
Residual range organics (mg/kg)	MD01	5/27/2004	<50	NA ^b	N
	MD02		<50		N
	MD03		<50		N
Pesticides and PCBs (µg/kg) ^d	MD01	5/27/2004	ND	NA ^b	N
	MD02		ND		N
	MD03		ND		N
Arsenic (mg/kg)	MD01	5/27/2004	7.08	5.9	Y
	MD02		11.3		Y
	MD03		11.3		Y
Barium (mg/kg)	MD01	5/27/2004	70.4	NA ^b	N
	MD02		79.4		N
	MD03		117		N
Chromium (mg/kg)	MD01	5/27/2004	16.7	37.3	N
	MD02		23.0		N
	MD03		24.4		N
Lead (mg/kg)	MD01	5/27/2004	5.6	35.0	N
	MD02		7.47		N
	MD03		8.75		N
Mercury (mg/kg)	MD01	5/27/2004	0.0374	0.174	N
	MD02		ND		N
	MD03		0.0657		N
Selenium (mg/kg)	MD01	5/27/2004	ND	NA ^b	N
	MD02		ND		N
	MD03		0.535		N
VOCs (µg/kg)	MD01	5/27/2004	ND	NA ^b	N
	MD02		ND		N
	MD03		ND		N

Notes:

VOCs = volatile organic compounds; PCBs = polychlorinated biphenyls; mg/kg = milligrams per kilogram; µg/kg = micrograms per kilogram; ND = non-detect

^aSource: Buchman 2008

^bNA = no screening level available in Buchman (2008)

3.3.3 Soil

Surface soil samples were collected from five sampling locations at the Matanuska River disposal site (MD04, MD05, MD06, MD07, and MD08) (Oasis 2004c) (Figure 3-1). Samples were analyzed for VOCs, GROs, DRO, RRO, pesticides, PCBs, and metals (arsenic, barium, cadmium, chromium, lead, mercury, and selenium). Oasis (2004c) compared the soil samples to ADEC's applicable soil cleanup levels contained in *Oil and Other Hazardous Substances Pollution Control Regulations* (18 AAC 75) (ADEC 2016b). These results are summarized in Table 3-4. The applicable cleanup levels for soil were developed using Tables B1 and B2 of 18 AAC 75.341 for Method Two cleanup criteria (Oasis 2004c).

All soil samples for VOCs, GROs, DROs, RROs, pesticides, and PCBs were below the laboratory reporting limit except for the soil sample taken at sampling site MD-07. This soil sample contained 40.1 mg/kg of DRO, 257 mg/kg of RRO, and 0.00121 mg/kg of trichlorofluoromethane; none of which exceeded the ADEC soil cleanup criteria (Oasis 2004c). Several metals were detected in the soil samples (arsenic, barium, cadmium, chromium, lead, mercury, and selenium). All of the metals were below their applicable ADEC cleanup levels except for all arsenic observations and two chromium observations (29.1 and 27.4 mg/kg) above the chromium cleanup level of 25 mg/kg.

Arsenic observations ranged from 6.86 to 13.6 mg/kg and were greater than the ADEC cleanup level of 3.9 mg/kg in all six samples.

As with the sediment samples presented in Section 3.3.2, the arsenic concentrations in the soil samples collected from the Matanuska River disposal site were all within the arsenic ranges presented in the USGS studies of Cook Inlet sediment (Oasis 2004c). Therefore, it is likely that the arsenic is naturally occurring in the soil and does not represent contamination from the debris disposal area.

The ADEC Division of Spill Prevention and Response (SPAR) Contaminated Sites (CS) Program addressed instances of chromium exceedances in soil in the November 2016 version of their regulations. The 2016 regulations include information about naturally occurring chromium III, stating that sample results reported for chromium detected at a site will be considered background chromium III unless anthropogenic contribution of chromium III or VI from a source, activity, or mobilization by means of another introduced contaminant is known or suspected. Given site conditions, the slightly elevated chromium levels are likely background chromium III.

Table 3-4. Results of soil sampling near the Matanuska River

Parameter	Sampling station	Date	Result	Soil cleanup level ^a	Exceeds soil cleanup level (Y/N)
Gasoline range organics (mg/kg)	MD04	5/27/2004	<1.36	300	N
	MD05		<1.69		N
	MD05		<1.68		N
	MD06		<1.10		N
	MD07		<1.48		N
	MD08		<1.25		N
Diesel range organics (mg/kg)	MD04	5/27/2004	<25.0	250	N
	MD05		<25.0		N

Parameter	Sampling station	Date	Result	Soil cleanup level ^a	Exceeds soil cleanup level (Y/N)
	MD05		<25.0		N
	MD06		<25.0		N
	MD07		40.1		N
	MD08		<25.0		N
Residual range organics (mg/kg)	MD04	5/27/2004	<50.0	11,000	N
	MD05		<50.0		N
	MD05		<50.0		N
	MD06		912		N
	MD07		257		N
	MD08		<50.0		N
Pesticides and PCBs (µg/kg)	MD04	5/27/2004	ND	varies ^b	N
	MD05		ND		N
	MD05		ND		N
	MD06		ND		N
	MD07		ND		N
	MD08		ND		N
Arsenic (mg/kg)	MD04	5/27/2004	9.26	3.9	Y
	MD05		7.90		Y
	MD05		6.86		Y
	MD06		9.68		Y
	MD07		9.35		Y
	MD08		13.6		Y
Barium (mg/kg)	MD04	5/27/2004	66.8	1,100	N
	MD05		69.8		N
	MD05		58.2		N
	MD06		95.6		N
	MD07		138		N
	MD08		88.7		N
Cadmium (mg/kg)	MD07	5/27/2004	2.92	5.0	N
Chromium (mg/kg)	MD04	5/27/2004	24.7	25.0	N
	MD05		22.2		N
	MD05		22.6		N
	MD06		22.2		N
	MD07		29.1		Y
	MD08		27.4		Y
Lead (mg/kg)	MD04	5/27/2004	22.6	400	N
	MD05		10.4		N
	MD05		6.85		N
	MD06		7.17		N
	MD07		103		N
	MD08		7.75		N
Mercury (mg/kg)	MD04	5/27/2004	ND	1.4	N
	MD05		ND		N
	MD05		ND		N
	MD06		ND		N
	MD07		ND		N
	MD08		ND		N

Parameter	Sampling station	Date	Result	Soil cleanup level ^a	Exceeds soil cleanup level (Y/N)
Selenium (mg/kg)	MD04	5/27/2004	ND	3.4	N
	MD05		ND		N
	MD05		ND		N
	MD06		0.594		N
	MD07		0.532		N
	MD08		ND		N
VOCs (µg/kg)	MD04	5/27/2004	ND	Varies ^b	N
	MD05		ND		N
	MD05		ND		N
	MD06		ND		N
	MD07		ND (except for Trichlorofluoromethane – 121)		N
	MD08		ND		N

Notes:

VOCs = volatile organic compounds; PCBs = polychlorinated biphenyls; mg/kg = milligrams per kilogram; µg/kg = micrograms per kilogram; ND = non-detect

^aSource: ADEC 2016b

^bVaries = The soil cleanup level for specific pesticides, PCBs and VOCs are not presented here since the specific pesticides, PCBs, and PAHs sampled for were not included in the Oasis (2004c) report and none of these parameters were detected in any samples (all non-detects). Therefore, they are not exceeding applicable soil cleanup levels.

3.3.4 Summary of Data Analysis

The debris, water quality, sediment, and soil data analyses presented in Sections 3.2 and 3.3 confirm that residues are the only documented impairment in the Matanuska River. ADEC's 2004 site assessment provides substantial evidence of impairment caused by residues/debris adjacent to the Matanuska River above the OHW mark (Oasis 2004b, 2004c). The data show no signs of contamination to water, sediment, or soil from the debris at the site. The water quality, sediment, and soil data analyses did not indicate continuous exceedances of any of the WQC, sediment screening benchmarks, or soil cleanup levels except for arsenic in the sediment and soil and chromium in the soil. However, all arsenic observations in the sediment and soil samples were within the range of natural background arsenic levels determined by USGS. The chromium observations were also within the range of natural-occurring chromium levels determined by DEC/SPAR (CS) for the nearby Cook Inlet watershed (Oasis 2004c); therefore, they are likely not caused by the debris at the disposal area. It is recommended that a visual survey for leachate takes place prior to pH monitoring at the debris site to determine whether pH is causing potential impairment. If there is no visual evidence of leachate at the debris site, pH monitoring is not recommended.

4 Source Assessment

This section discusses the potential sources of residues (in the form of debris), including point and nonpoint sources, to the Matanuska River. The source is an unpermitted disposal area (Oasis 2004b, 2004c; Palmer SWCD 2015). The types of debris observed at the disposal area along the Matanuska River include old railroad cars, automobile bodies, and other metal debris as described below. These potential sources will be further characterized in the TMDL.

4.1 Point Sources

Point sources, which are permitted dischargers into the waterbody, do not exist for this impairment of the Matanuska River. Discharge of debris into surface waters is prohibited in the Alaska, so no permits have been issued for this activity. Currently, the location of the debris site is not within an area requiring an Alaska Pollutant Discharge Elimination System (APDES) Municipal Stormwater System (MS4) permit. The extent of the pending MS4 permit area has not been finalized, so there is a possibility that the debris site location may be within the ultimate boundary. If the area falls within an MS4 jurisdiction, then the permit may include language to minimize debris discharge to waterbodies covered by the permit including the Matanuska River. *The Matanuska-Susitna Borough Stormwater Management Plan* (November 2013) was developed by the Matanuska-Susitna (Mat-Su) Borough to respond to the potential MS4 permit (Mat-Su 2013). The plan does incorporate actions to reduce debris into waterbodies.

4.1.1 Disposal Area

The source of debris in the watershed is from an unpermitted disposal area on the steep slope (approximately 75 percent) above OHW (note: this does not include railroad cars that are below OHW and serve as bank stabilization material) (see Figure 1-2). It is believed that the debris disposal site has been in use since the 1960s (Palmer SWCD 2015). Debris deposited in layers above the bank-stabilizing railroad cars are not considered bank stabilization material and have the potential to enter the water column because of the steep slope of the riverbank. The ARRC is the responsible party for the debris site as the owner of the former Palmer-to-Sutton railroad line that paralleled the Matanuska River and passed by the debris disposal area (Oasis 2004b, 2004c; Palmer SWCD 2015). The ARRC's land ownership extends 200 feet on each side of the former track's center line and encompasses the majority of the debris disposal area. Figure 4-1 presents a photo of the debris disposal site.

The debris enters the Matanuska River watercourse directly from movement of debris downslope through the forces of wind, gravity and the action of river erosion. Debris can also migrate indirectly from runoff, snowmelt, wind, and wildlife. The river readily erodes any non-cohesive bank material and during extended high flow events and flooding, an even greater part of the bed load is moved and redeposited.

The main disposal area primarily consists of metal debris from old railroad cars, automobile bodies, empty drums, metal lathe cuttings, miscellaneous appliances (washing machines, refrigerators, etc.), and other metal items. The site also contains more recent household debris including trash and yard waste. The main debris disposal area is estimated to be approximately 20,000 ft². The weight of the debris above the ordinary high water level is estimated to be 200 to 400 tons. This estimate does not include the additional scattered railroad car debris that is located upstream of the main debris pile.

4.1.2 Natural Sources

It is important to note that the term *debris* used in this document refers only to human-caused residues, and should not be confused with naturally occurring woody debris that is important to maintain in-stream habitat. Therefore, background or natural sources of debris in the watershed are not addressed in this TMDL.



Figure 4-1. Photo of the debris site along the Matanuska River.

Source: Palmer SWCD 2015

5 TMDL Allocation Analysis

A TMDL represents the total amount of a pollutant that can be assimilated by a receiving waterbody while still achieving WQS. In TMDL development, allowable loadings from all pollutant sources that cumulatively amount to no more than the TMDL's loading capacity must be established and thereby provide the basis for establishing water quality-based controls.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources and natural background loads, and an allocation for future sources (if determined necessary). In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. The TMDL components are illustrated using the following equation:

$$TMDL = \sum WLA_s + \sum LA_s + MOS + Future Allocation$$

The debris impairment to the Matanuska River does not fit the model for the typical loading capacity determination because the nature of debris does not lend well to quantitative analysis. However, because Alaska WQS do not allow for any debris delivered to a stream, no loading calculation is necessary. Therefore, the TMDL will be set to zero, and the TMDL document will focus on recommended implementation of strategies that will help keep debris out of the river and allow it to meet the applicable WQS.

5.1 Loading Capacity

Loading capacity (LC) is the ability of the receiving waters to assimilate a given pollutant. For the Matanuska River, the pollutant is residue in the form of debris. The debris LC for the shoreline of the Matanuska River above the OHW mark is derived directly from the WQS, which require no unpermitted, human-caused debris to be deposited within the stream. As such, the LC for debris is zero.

5.2 Wasteload Allocations

The WLA is the portion of the TMDL that is allocated to point sources. There are no point sources (permitted dischargers into the waterbody) near this impairment of the Matanuska River. Furthermore, discharge of debris into surface waters is prohibited in the state of Alaska, so no permits have been issued for this activity. Therefore, the WLA for debris is zero.

5.3 Load Allocations

The LA is the portion of the TMDL that is allocated to nonpoint sources and background levels. Because the WQS for debris does not allow for any human-caused inputs to the system and no background sources of debris exist, the LA for debris adjacent to the Matanuska River OHW mark is zero.

5.4 Margin of Safety

CWA section 303(d) requires that a TMDL incorporate a MOS to account for any uncertainty or lack of knowledge concerning the relationship between pollutant loading and water quality. The MOS can be implicit (e.g., incorporated into the TMDL analysis through conservative assumptions)

or explicit (e.g., expressed in the TMDL as a portion of the loadings) or a combination of both. Because the loading capacity determined from WQS allows no debris in the stream or above the OHW mark with the potential to enter the river, there is neither a load nor wasteload of debris allocated for the shoreline adjacent to the Matanuska River above the OHW mark; therefore, the explicit MOS is set to zero.

5.5 Seasonal Variation and Critical Conditions

Seasonal variation and critical conditions associated with pollutant loadings, waterbody response, and impairment conditions can affect the development and expression of a TMDL. Therefore, TMDLs must be developed to ensure the waterbody will maintain WQS under all expected conditions.

It is expected that debris input might be lower in the winter because the presence of snow and ice reduces runoff that could carry debris into the river. It is possible that warmer weather might result in increased pedestrian and vehicle traffic near the debris site. Because it is unknown when the debris input typically occurs, the TMDL target is applied year-round.

5.6 Future Growth

The allocation for future growth is zero since no future dumping of debris is allowed.

5.7 Daily Load

A TMDL is required to be expressed as a daily load: or the amount of a pollutant the waterbody can assimilate during a daily time increment and meet WQS. The TMDL for residues is set to zero; therefore, no input of debris is allowed in the Matanuska River at any time. The allowable load of zero debris is applicable at all times and can therefore be applied on a daily basis.

5.8 Reasonable Assurance

EPA requires reasonable assurance that TMDLs can be implemented when the TMDL is a mixed source TMDL (USEPA 1991). A mixed source TMDL is a TMDL developed for waters that are impaired by both point and nonpoint sources. The WLA in a mixed-source TMDL is based on the assumption that nonpoint source load reductions will occur. Determining reasonable assurance shows that a TMDL's established WLA and LA levels can, with a high degree of confidence, achieve the goals outlined in the TMDL. This TMDL is not a mixed-source TMDL; therefore, a reasonable assurance discussion is not included.

6 Implementation and Monitoring Recommendations

The main focus of this TMDL is to develop strategies to prevent debris from entering the Matanuska River from its adjacent steep slopes. Clean-up activities might also be part of the solution to the debris problem adjacent to the Matanuska River; however, preventing additional debris dumping at this site is the focus of the implementation recommendations.

Oasis (for ADEC) and the Palmer SWCD have both identified potential implementation strategies for the disposal site adjacent to the Matanuska River (Oasis 2004b, 2004c; Palmer SWCD 2015).

Note that Palmer SWCD's strategies of chaining or cabling the debris are not included as implementation recommendations because these BMPs would need to be scoped out by a professional engineer before confirming them as potential BMPs for the debris impairment.

Implementation strategies for the Matanuska River debris TMDL include:

1. Enforce local ordinances
2. Leave all debris in place and prevent it from entering the waterbody
3. Remove the smaller debris
4. Remove debris above the OHW mark

Each of these options is discussed in Sections 6.1 and 6.2.

6.1 Prevention of Additional Dumping

Preventing additional dumping in the future includes enforcing local ordinances as well as installing barriers, trash cans and signage to discourage littering near the debris site. Sections 6.1.1 and 6.1.2 below discuss these options.

6.1.1 Local Ordinances

The City of Palmer and the Mat-Su Borough have ordinances in place regarding garbage and litter that can prevent additional debris.

Palmer has two ordinances that relate to the illegal dumping of trash or debris: (1) garbage collection and disposal and (2) nuisances. City staff conduct a monthly code compliance tour of various areas in Palmer. If problems are observed, a letter is written and the owners are called. The garbage collection and disposal ordinance states that no person shall deposit any garbage or rubbish on any streets, alleys, or city-owned property, or on any property owned by somebody else. The city of Palmer's nuisance ordinance states that one cannot dump, abandon, throw, or scatter anything that would result in littering on any street, alley, public place, or private property not his or her own. The fine for unauthorized dumping related to both of these ordinances is \$75 for the first offense, \$150 for the second offense, and \$300 for the third and subsequent offenses (City of Palmer 2016).

The Mat-Su Borough also has two ordinances relevant to trash and debris: (1) solid waste and (2) junk and trash. The borough's solid waste or littering ordinance prohibits a person to throw, drop, discard, or dispose of solid waste or other litter on public rights-of-way or borough lands. Littering can result in a fine of \$500. The junk and trash ordinance prohibits anybody to deposit or place junk, trash, garbage, or junk vehicles or other waste on a street or borough-owned property or a property owned by another. The fine for violating the junk and trash ordinance is \$150 for the first offense, \$300 for the second offense, and \$500 for the third and any subsequent offenses (Mat-Su Borough 2016).

Increased enforcement of the city of Palmer's and Mat-Su Borough's ordinances is important to reducing additional debris in the Matanuska River watershed.

6.1.2 Leave Debris in Place

Any debris removal effort would disturb the vegetative cover that has begun to be established and is essential to erosion control on the steep slope of the Matanuska River bank (Oasis 2004b); therefore, removing the debris could cause more damage and erosion along the steep slopes of the river bank in the short term. The slope in the debris pile was calculated at ~75% slope based on Matanuska-Susitna Borough 2011 Lidar data.

Debris removal efforts would require manpower, equipment and materials capable of lifting heavy loads from the debris site. Heavy equipment transported along the one feasible access route to the debris site, the Palmer-Sutton railroad bed trail, would potentially damage the trail. Several trees would also need to be removed between Eagle Street and the top of the hill where the unpermitted dump site is located. The established trees and brush serve a purpose by screening the debris site and providing bank stabilization. Working with heavy equipment around metal debris on a steep slope inherently includes a number of safety hazards.

In March 2005 ARRC received a letter of jurisdictional determination from the USACE stating that the railroad cars located below the OHW mark do not require a dredge and/or fill permit under section 10 of the Rivers and Harbors Act of 1899 (Palmer SWCD 2015; USACE 2005). The USACE considers those projects to be in place before December 1968; therefore, the projects are considered to have grandfathered status under this act and no permit for the debris located in the river is required.

One concern at a debris disposal site is the damaging effects from leachate draining through the debris downslope. Damaging leachate generally has a low pH. Water quality monitoring near the Matanuska River debris site showed the pH levels are high; indicating that stormwater is not chemically reacting with metals to producing the detrimental type of low-pH leachate.

Although the disposed railroad cars and other debris were not purposely placed in a manner to maximize the erosion reduction potential above the OHW mark, it does appear that the debris is providing effective protection and bank stabilization against active erosion by the Matanuska River (Oasis 2004c; Palmer SWCD 2015).

If the debris is left in place, the implementation efforts should focus on enforcing the city and borough ordinances presented in Section 6.1.1 above and avoiding the dumping of additional debris in the future. Barriers to prevent vehicular access to the dump site by the hiking trail at the Eagle Avenue access point and other points of public access have already been installed. Additional recommendations, which encourage making the site more aesthetically pleasing to discourage further dumping at the site, include (Oasis 2004c):

- Maintaining bollards or other suitable barrier to restrict vehicle access.
- Plant vegetation at the top of the slope near the trail to create a natural barrier. This will reduce access to the site and deter additional dumping at the site because the vegetation will hide the debris site from view.

- Install signage at the head of the trail and along the trail prohibiting illegal littering/dumping and encouraging trail users to “keep Alaska clean.” Signs should include the applicable fines outlined in the city and borough ordinances presented in Section 6.1 above.
- Installation of wildlife proof trash cans at appropriate trail locations, such as trail heads, to encourage proper disposal.
- ARRC employees (when present) conduct trash cleanup at the site.

In addition to the activities listed above, debris clean up and prevention should include involvement from the city of Palmer as well as the Chickaloon Tribe, which is active in the Matanuska watershed. Palmer has an annual cleanup day to help residents dispose of debris at a reduced cost (Garley 2016). A cleanup of the smaller debris in and around the debris site could be organized on this day.

6.2 Options for Debris Removal

Rather than leaving all the debris in place, additional options to the cleanup and prevention options discussed above in Section 6.1 include removing some of the smaller debris (e.g., automobile parts and metal scraps) from the site or removing all the debris above the OHW mark. A portion of the debris could be removed and sent to a permitted landfill site or a metal recycling facility. Before any small debris is removed, it would have to be confirmed that the debris removal would not cause the debris site to become unsafe and less stable, which could increase the chances of the debris falling into the Matanuska River.

Another option is to remove all the debris rather than stabilizing it or removing some of the smaller pieces. Once a debris pile is created it tends to attract the disposal of additional debris (Oasis 2004b). During a 2004 site visit (Oasis 2004b), it was observed that tree cuttings had been recently placed at the top of the debris pile. ADEC staff have also noted “new” debris added to the main pile since 2004. Removal of the entire debris pile and revegetating the bank would eliminate or reduce the desire to dump additional debris at this site. However, because of the steep unstable slope of the river bank and erosive characteristics of the Matanuska River, removing all debris from the site would require activities that could do more harm than good at the site, such as cutting down trees along the public use trail and temporarily widening and leveling the trail to allow heavy equipment access to the site (Oasis 2004c).

Removing all debris would require manpower, equipment, and materials capable of lifting heavy pieces of metal from the bottom of the slope (Oasis 2004b). A crane or similar piece of equipment would need to be used to lift the debris and transport it to the top of the bluff to be placed on a truck for transportation to a recycling or disposal facility. Rail cars and other large pieces of metal debris would likely need to be cut into smaller pieces to reduce the size of equipment necessary to move these large and heavy items. The debris pile would need to be removed starting near the top of the bluff and working down toward the bottom to prevent debris higher up the bluff from slipping down onto a lower work area or into the river. This would cause temporary degradation to the aesthetics of the hiking trail and surrounding area, and would cause additional expense to re-plant trees and other bank stabilizing vegetation and restore the hiking trail to its pre-disturbance conditions (Oasis 2004b).

Removal of all debris would likely disturb the well-established vegetative cover, resulting in erosional impacts to the river bank (Oasis 2004b, 2004c). Debris removal could also disturb the potential

erosional protection offered by the large pieces of metal debris along the banks of the Matanuska River above the OHW mark. In addition, excavation would be necessary for much of the debris near the base of the bluff because it is buried or partially buried. The location of the debris disposal site on a steep slope increases the difficulty and cost of the debris removal effort. For these reasons, debris removal might not be the best option. Table 6-1 presents the pros and cons of the partial and complete debris removal options discussed above.

Debris burial by soil and revegetation after debris burial (capping) would also require manpower, equipment and materials capable of lifting heavy loads. Capping the site is problematic, primarily due to the steepness of the hillside slope at the location of the unpermitted dump site. In order to attempt capping, an engineering plan would need to be completed for the site. An engineering plan would likely propose terraces to be constructed along the slope to hold the soil in place to keep it from eroding into the Matanuska River. In order to create terraces, much of the debris would need to be removed by heavy equipment. Additionally, power lines would need to be removed. Any work at the site may destabilize the debris which is now providing bank stabilization. Debris that becomes destabilized may have serious effects downriver on infrastructure and houses.

Table 6-1. Pros and cons of debris removal options

Debris removal option	Pros	Cons
Remove smaller debris	<ul style="list-style-type: none"> • Lower cost than removing all debris • Improve aesthetics by removing some of the debris 	<ul style="list-style-type: none"> • Removal of some of the smaller debris could cause the debris to become more unstable, resulting in sloughing of large debris into the Matanuska River
Removal of all debris	<ul style="list-style-type: none"> • Improves aesthetics • Removes risk of debris falling into river • Waterbody would meet designated uses; resulting in removal of the Matanuska River from the CWA section 303(d) list of impaired waterbodies 	<ul style="list-style-type: none"> • Expensive • Disturbance of well-established vegetative cover • Decrease in bank stabilization • Need for re-vegetation on a steep slope (difficult to revegetate) • Temporary closure and disturbance of the Palmer Branch Railroad trail • Access needed for large equipment and manpower to remove large pieces of debris

6.3 Enhancing Revegetation

Revegetation of this site would be expensive because of the steep slope and limited site access. It will be difficult to revegetate the site because the soils do not hold water easily. The soils underlying this site are well-drained cryods that do not provide a fertile environment for plants to grow. The extreme slope of the escarpment causes a significant erosion potential at this site. If revegetation is planned, it is recommended that only the top eight feet of the slope be planted with an easily established plant such as willow or alder; anything below eight feet might not yield suitable growing conditions. At this time, the disposal embankment is well-vegetated and appears very stable.

6.4 Monitoring Recommendations

There is currently no requirement to monitor for debris in the Matanuska River and along its river banks. As part of the monitoring strategy in the Matanuska River, it is recommended that ARRC conduct annual site visits to observe and note the presence of new debris in and around the river near the disposal site. Mean monthly flows for the Matanuska River are lowest during March and highest during July. Elevated water levels would be expected after the spring thaw and at the end of the summer, when seasonal rain events combine with high meltwater flows. The Matanuska River is a classic example of a large, braided, glacial outwash stream. The large sediment load and stream flow variations lead to significant channel movement. At times the main channel flows next to the debris disposal area and other times the main river channel is away from the disposal area. Timing of site visits by the ARRC would be appropriate when the main channel is close to the debris disposal area and in the late spring and early fall, when high water levels in the Matanuska River would be expected. The type and amount of debris observed during any site visits should be photographed and recorded to determine if additional debris are being added to the existing debris at the site. In addition to general observation, specific monitoring of sites where strategies (e.g., barriers, signage, and trash cans) have been implemented to reduce debris input into the river and its bank should be monitored to evaluate effectiveness. Monitoring of vegetation growth and site stability should also be included. Regular observation of the disposal site will provide insight into whether or not the implementation programs in place are helping to achieve the TMDL target of zero debris in the Matanuska River and its adjoining shoreline. In addition to regular observation of the disposal site, it is recommended that a visual survey for leachate takes place prior to pH monitoring at the debris site to determine whether pH is causing potential impairment. If there is no visual evidence of leachate at the debris site, pH monitoring is not recommended.

7 Public Participation

The notice for the public review period was posted on July 7, 2017, and the review period closed on August 21, 2017. The notice was posted in the local newspaper, the Anchorage News Dispatch and the Mat-Su Valley Frontiersman, on ADEC's website, and on the state of Alaska's Public Notices website. A fact sheet was also available on ADEC's website. Prior to the public review period, a stakeholder review period was held (March, 2017). The Matanuska River stakeholders included the Alaska Railroad Corporation, the city of Palmer, the Matanuska-Susitna Borough, the Chickaloon Village Tribe, the Eklutna Native Village, the Knik Tribe, the DEC Environmental Health Solid Waste Program, the Army Corps of Engineers, the DNR Division of Mining, Land and Water, and the Palmer Soil & Water Conservation District. ADEC and EPA conducted a stakeholder's meeting with the Chickaloon Village Tribe on May 4, 2017. As an outcome of that meeting, ADEC agreed to contact Palmer citizens whose residences were in closest proximity to any potential TMDL implementation efforts by mailing Matanuska River Residue TMDL Fact Sheets to 124 individuals during the week of July 10, 2014. One comment resulted from the mailings, but there were no requests for a public meeting.

Comments on the TMDLs were received from the Alaska Department of Fish & Game (ADF&G) and the Matanuska-Susitna Borough. Comments and additional information submitted during this public comment period were not used to inform or revise this TMDL document. See below for detailed information on the response to comments.

Matanuska River TMDL Response to Comments

September 12, 2017

Commenter	Comment	TMDL Section	Response/Decision	Change to final TMDL
Alaska Department of Fish & Game (ADF&G)	Was the Division of Habitat a part of this conversation at the time?	Table 1-1. Matanuska River section 303(d) listing information from Alaska's 2012 Integrated Report, p 10	The meetings concerning the waterbody impairment of the Matanuska River due to the unpermitted dump site took place in 2004 – 2006. The Division of Habitat was part of the Alaska Department of Natural Resources (ADNR) during that time. ADNR – Division of Mining, Lands and Water (MLW) was invited to attend the meetings as an identified key stakeholder and the decision to invite representatives from the Habitat Division would have been an internal one for ADNR. No invitation emails from that time have been retained, so it is not possible to say conclusively if representatives from the Habitat Division were invited but did not attend. DNR-MLW did attend the meetings, as was verified from the archived meeting attendance logs.	None.

Commenter	Comment	TMDL Section	Response/Decision	Change to final TMDL
ADF&G	Any activities at or below the ordinary high water line would require a fish habitat permit.	General	Comment noted. The TMDL does not recommend work below ordinary high water.	None.
ADF&G	Does this include more patrols? What are the plans for preventing access to the site? Will the majority of the litter fit in trash cans or is it furniture, appliances, etc?	Executive Summary, p 8	The TMDL implementation section recommends patrols by to prevent future disposal of trash (debris). Currently, Jersey barriers are positioned at the end of the Matanuska Railroad Trail to prevent vehicles from being positioned to dispose of large loads of trash. Also, vegetation partially screens the site from casual view. The litter (debris) currently at the unpermitted site is variable in size and description. Some items are small; and other items are much larger. Examples of the larger items are appliances, automobiles, and fuel drums.	None.
Matanuska-Susitna Borough (MSB)	The site is characterized as both an “active dump: and an “open dump,” though it is described as an issue of historical dumping. Can you clarify this point?	Table 1-1. Matanuska River section 303(d) listing information from Alaska’s 2012 Integrated Report, p 10	Table 1-1. Matanuska River section 303(d) listing information from Alaska’s 2012 Integrated Report is a reproduction of a submission DEC made to EPA in 2013. The wording of this submission cannot be changed in the TMDL, as this is a historical record. However, in current and future references, the unpermitted dump site will not be characterized by the descriptions, “open” or “active”. Instead, the descriptors will be “historical” or “unpermitted.”	None.
MSB	Increased enforcement of ordinances is important to reducing additional debris in the Matanuska River Watershed. As previously noted, the majority, if not all, of the disposal area appears to occur in the City of Palmer and the Borough junk and trash code excludes the City of Palmer	Section 6.1.1, p 36	The ARRC is the landowner of the former Palmer to Sutton Branchline that parallels the Matanuska River in close proximity to the unpermitted dump site. There is an existing Public Use Trail Permit for the Palmer-Sutton railroad bed trail (Palmer-Sutton trail) in the vicinity of the unpermitted dump site with the city of Palmer, the ADNR, and the MSB. The city of Palmer’s control ends approximately 425 feet north the centerline of East Eagle Avenue, at which point ADNR’s and MSB’s areas of control begin. Therefore, in the area of the unpermitted dump site, MSB junk and trash codes would be in effect.	None.

Commenter	Comment	TMDL Section	Response/Decision	Change to final TMDL
MSB	Is the site inside the city limits of Palmer?	Section 1.1, pp 9-10	No, the unpermitted dump site is outside the Palmer city limits.	None.
MSB	How can I access the site?	Section 1.1, p 10	The closest direct access to the unpermitted site is the recreational (non-motorized vehicle) trail off of Eagle Avenue in Palmer; the Palmer-Sutton trail. This trail passes along the bluff adjacent to the unpermitted dump site approximately 0.25 miles past the concrete Jersey barriers on Eagle Ave.	None.
MSB	Is there any clean-up effort underway or planned?	Section 6, pp 35-40	Any implementation of the Matanuska River TMDL will involve key stakeholders to decide the most appropriate strategy for addressing the debris. Section 6 of the draft Matanuska River TMDL outlines identified options for cleanup of the site. One of these options, or a combination of strategies listed in the options, is expected to ultimately be chosen as a cleanup plan.	None.
MSB	Are there specific items identified that represent a higher risk to the water than the rest of the debris?	Section 4, pp 32-33	No. There were not specific items identified that represent a high risk. In addition, there were no findings of contamination in sediment, water, and soil sampling taken at or around the site (draft Matanuska River TMDL, Section 3.3. However, the studies were not able to access the middle to bottom layers of debris so these remain undocumented. In debris disposal sites, leaking contaminants often cause changes to the pH of ambient water. Regular pH monitoring can be an early indication of a contamination problem. Therefore, the DEC recommends regular pH monitoring in order to assess whether later-stage pollution might be occurring.	None.
MSB	The Borough has some authority and funds to clean-up improperly disposed of waste but my guess from the documents you sent is the scope of this site well exceeds our ability to deal with it. However, if there are specific hazards which are high priority, we may be able	Section 4, pp 32-33, Section 6, pp 35-40	DEC appreciates that the MSB is aware of the unpermitted site and also appreciates the willingness of the MSB to assist with cleanup efforts as the Matanuska River Debris TMDL implementation effort goes forward. At this time, no evidence that specific pollutants, such as organophosphates from weed killers or petrochemical products exists. The drums that were	None.

Commenter	Comment	TMDL Section	Response/Decision	Change to final TMDL
	to assist. I am thinking about things like drums of petroleum products, containers of agricultural chemicals like weed killer or pesticides, or other hazardous chemicals. If we are aware of or have identified things like that, I may be able to use Borough assets to remove them from the site properly dispose of them before they go into the river.		investigated were empty of product and batteries and automobile fluids were all removed from the vehicles investigated. In debris disposal sites, leaking contaminants often cause changes to the pH of ambient water. Regular pH monitoring can be an early indication of a contamination problem. Therefore, the DEC recommends ongoing monitoring to recognize late-stage pollution problems from leachate in the debris field and outreach efforts to prevent additional debris disposal from occurring.	
Henry Guinotte	<p>I have lived here over 40 years. There are two areas where trash could be dumped in the river. One is at the north of the railroad track. This is the railroad property. The last time I walked north there were homeless camps. A cement slab keeps the ATUs (sic) from driving up the rail.</p> <p>Another area is by the grade school. There is a trail starting at Gulkana Street that comes out on the old Glenn. I don' (sic) know if people are dumping garbage over the river bank. The city but (sic) large rocks to stop vehicle traffic. Many people drive around the rocks. Put up signs that people will ignore?</p> <p>Clean water is good. Not all people pick up after themselves.</p>	General	Comment noted. Contacted Mr. Guinotte by telephone and clarified that the reason he received the fact sheet mailer was due to a suggestion by the Chickaloon Village Tribe to send information to residents closest to the Matanuska River Trail.	None.

8 References

- ADEC (Alaska Department of Environmental Conservation). 2003. *Title 18 Alaska Administrative Code Chapter 70: Water Quality Standards*. Alaska Department of Environmental Conservation, Juneau, AK.
- ADEC (Alaska Department of Environmental Conservation). 2005. *Total Maximum Daily Load (TMDL) for Residue in the Waters of Jordan Creek in Juneau, Alaska*. Alaska Department of Environmental Conservation, Juneau, AK.
- ADEC (Alaska Department of Environmental Conservation). 2008. *Total Maximum Daily Load (TMDL) for Residue in the Waters of Noyes Slough in Fairbanks, Alaska*. Alaska Department of Environmental Conservation, Fairbanks, AK.
- ADEC (Alaska Department of Environmental Conservation). 2012. *Comparison of State and Federally Approved Water Quality Standards*. Alaska Department of Environmental Conservation, Juneau, AK.
- ADEC (Alaska Department of Environmental Conservation). 2013. *Alaska's 2012 Integrated Water Quality Monitoring and Assessment Report*. December 23, 2013. Alaska Department of Environmental Conservation, Juneau, AK.
- ADEC (Alaska Department of Environmental Conservation). 2016a. *Title 18 Alaska Administrative Code Chapter 70: Water Quality Standards*. Amended as of February 19, 2016. Alaska Department of Environmental Conservation, Juneau, AK.
- ADEC (Alaska Department of Environmental Conservation). 2016b. *Title 18 Alaska Administrative Code Chapter 75: Oil and Other Hazardous Substances Pollution Control Regulations*. Revised as of May 8, 2016. Alaska Department of Environmental Conservation, Juneau, AK.
- Anderson, J.L and J. F. Bromaghin. 2009. *Estimating the Spawning Distribution of Pacific Salmon in the Matanuska River Watershed, Southcentral Alaska, 2008*. Alaska Fisheries Data Series Number 2009-12. U.S. Fish and Wildlife Service, Anchorage, AK.
- Buchman, M.F. 1999. *NOAA Screening Quick Reference Tables*. NOAA HAZMAT Report 99-1. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Coastal Protection and Restoration Division, Seattle, WA.
- Buchman, M.F. 2008. *NOAA Screening Quick Reference Tables*. NOAA OR&R Report 08-1. National Oceanic and Atmospheric Administration, Office of Response and Restoration Division, Seattle, WA.
- City of Palmer. 2016. *Palmer Municipal Code*. Accessed August 29, 2016. <http://www.codepublishing.com/AK/Palmer/>.
- Curran, J.H. and M.L. McTeague. 2011. *Geomorphology and Bank Erosion of the Matanuska River, Southcentral Alaska*. U.S. Geological Survey Scientific Investigations Report 2011-5214. U.S. Geological Survey, Reston, VA.
- Garley, Sandy, City of Palmer Planning Director. September 2016. Personal communication.

Matanuska-Susitna Borough (Mat-Su). 2013. Matanuska-Susitna Borough Stormwater Management Plan. Mat-Su Borough Assembly Ordinance #13-137. Prepared by USKH and Tetra Tech.

Mat-Su Borough (Matanuska-Susitna Borough). 2016. *Matanuska-Susitna Borough Municipal Code*. Accessed August 29, 2016. <http://www.codepublishing.com/AK/MatanuskaSusitnaBorough/>

NRCS (Natural Resources Conservation Service). 1972. *National Engineering Handbook*. Natural Resources Conservation Service. U.S. Department of Agriculture.

NRCS (Natural Resources Conservation Service). no date. *Soil Survey Geographic (SSURGO) Database*. Available online at <http://datagateway.nrcs.usda.gov/>

Oasis (Oasis Environmental, Inc.) 2004a. *Final Work Plan Matanuska River Debris Site Assessment and Debris Removal and Disposal Plan Palmer, Alaska*. Oasis Environmental, Inc., Anchorage, AK.

Oasis (Oasis Environmental, Inc.). 2004b. *Final Matanuska River Debris Removal Assessment Palmer, Alaska*. Oasis Environmental, Inc., Anchorage, AK.

Oasis (Oasis Environmental, Inc.). 2004c. *Final Report Matanuska River Debris Site Assessment Palmer, Alaska*. Oasis Environmental, Inc., Anchorage, AK.

O'Connell, Bill, ADEC-Division of Spill Prevention and Response (SPAR)/Contaminated Sites (CS) Program. 2017. Personal communication.

Palmer SWCD (Palmer Soil and Water Conservation District). 2015. *Matanuska River Debris Disposal Site – Remedial Alternatives*. Palmer Soil and Water Conservation District, Palmer, AK.

RERS (Redburn Environmental & Regulatory Services). 2000. *Swan Lake Watershed Recovery Strategy*. Prepared for the City and Borough of Sitka. Redburn Environmental & Regulatory Services, Douglas, AK.

USACE (U.S. Army Corp of Engineers). 2003. *Background Studies for Expedited Reconnaissance Study of Matanuska River Erosion*. August 2003.

USACE (U.S. Army Corp of Engineers). 2005a. *Regulatory Guidance Letter: Ordinary High Water Mark Identification*. No. 05-05. U.S. Army Corp of Engineers, Washington, DC.

USACE (U.S. Army Corp of Engineers). 2005b. *Letter of Jurisdictional Determination*. U.S. Army Corp of Engineers, Anchorage, AK. U.S. Census. 2015. *Quick Facts. Palmer City, AK*. Accessed July 12, 2016. <http://www.census.gov/quickfacts/table/PST045215/0258660,02>

USEPA (U. S. Environmental Protection Agency). 1991. *Guidance for Water Quality-based Decisions: The TMDL Process*. EPA 440/4-91-001. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

USEPA (U.S. Environmental Protection Agency). 2000. *Total Maximum Daily Load (TMDL) for Debris in the Waters of Duck Creek in Mendenhall Valley, Alaska*. U.S. Environmental Protection Agency Region 10, Seattle, WA.

NOAA Atlas 14, Volume 7, Version 2 SUTTON 1 W

Station ID: 50-8915

Location name: Sutton-Alpine, Alaska, USA*

Latitude: 61.7167°, Longitude: -148.9167°

Elevation:

Elevation (station metadata): 550 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Douglas Kane, Sarah Dietz, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Svetlana Stuefer, Amy Tidwell, Carl Trypaluk, Dale Unruh, Michael Yekta, Erica Betts, Geoffrey Bonnin, Sarah Heim, Lillian Hiner, Elizabeth Lilly, Jayashree Narayanan, Fenglin Yan, Tan Zhao

NOAA, National Weather Service, Silver Spring, Maryland

and

University of Alaska Fairbanks, Water and Environmental Research Center

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.100 (0.084-0.127)	0.124 (0.103-0.160)	0.156 (0.127-0.205)	0.183 (0.147-0.245)	0.220 (0.172-0.301)	0.248 (0.191-0.345)	0.277 (0.210-0.392)	0.310 (0.231-0.446)	0.354 (0.257-0.520)	0.387 (0.277-0.578)
10-min	0.134 (0.113-0.171)	0.166 (0.138-0.214)	0.209 (0.170-0.275)	0.245 (0.196-0.328)	0.295 (0.231-0.404)	0.334 (0.257-0.465)	0.372 (0.281-0.527)	0.417 (0.310-0.600)	0.475 (0.345-0.698)	0.520 (0.372-0.777)
15-min	0.157 (0.132-0.200)	0.194 (0.162-0.250)	0.245 (0.200-0.323)	0.287 (0.230-0.384)	0.345 (0.270-0.472)	0.391 (0.301-0.544)	0.436 (0.330-0.617)	0.488 (0.363-0.702)	0.556 (0.404-0.817)	0.608 (0.435-0.908)
30-min	0.208 (0.176-0.265)	0.258 (0.215-0.333)	0.325 (0.265-0.428)	0.381 (0.305-0.510)	0.458 (0.359-0.627)	0.518 (0.399-0.721)	0.578 (0.437-0.818)	0.648 (0.482-0.932)	0.738 (0.537-1.08)	0.807 (0.577-1.21)
60-min	0.285 (0.241-0.363)	0.353 (0.294-0.455)	0.445 (0.363-0.586)	0.522 (0.418-0.699)	0.628 (0.492-0.860)	0.710 (0.546-0.988)	0.792 (0.599-1.12)	0.887 (0.660-1.28)	1.01 (0.735-1.49)	1.11 (0.791-1.65)
2-hr	0.360 (0.304-0.459)	0.446 (0.371-0.575)	0.563 (0.459-0.741)	0.661 (0.530-0.885)	0.795 (0.623-1.09)	0.898 (0.691-1.25)	1.00 (0.758-1.42)	1.12 (0.834-1.62)	1.28 (0.930-1.88)	1.40 (1.00-2.09)
3-hr	0.435 (0.367-0.554)	0.538 (0.448-0.694)	0.679 (0.554-0.894)	0.797 (0.639-1.07)	0.960 (0.752-1.31)	1.08 (0.834-1.51)	1.21 (0.915-1.71)	1.35 (1.01-1.95)	1.54 (1.12-2.27)	1.69 (1.21-2.52)
6-hr	0.619 (0.522-0.789)	0.766 (0.638-0.988)	0.967 (0.789-1.27)	1.14 (0.910-1.52)	1.37 (1.07-1.87)	1.54 (1.19-2.15)	1.72 (1.30-2.44)	1.93 (1.43-2.77)	2.20 (1.60-3.23)	2.40 (1.72-3.59)
12-hr	0.856 (0.722-1.09)	1.06 (0.883-1.37)	1.34 (1.09-1.77)	1.57 (1.26-2.10)	1.89 (1.48-2.58)	2.14 (1.64-2.98)	2.39 (1.81-3.38)	2.68 (1.99-3.85)	3.06 (2.22-4.49)	3.34 (2.39-4.99)
24-hr	1.16 (1.02-1.35)	1.44 (1.24-1.69)	1.82 (1.54-2.18)	2.13 (1.77-2.59)	2.55 (2.07-3.18)	2.89 (2.31-3.66)	3.24 (2.54-4.17)	3.63 (2.80-4.74)	4.14 (3.13-5.53)	4.52 (3.36-6.14)
2-day	1.52 (1.33-1.76)	1.88 (1.62-2.20)	2.36 (1.99-2.83)	2.74 (2.27-3.33)	3.26 (2.64-4.05)	3.67 (2.93-4.64)	4.09 (3.21-5.26)	4.54 (3.50-5.94)	5.14 (3.88-6.86)	5.59 (4.16-7.59)
3-day	1.77 (1.55-2.05)	2.18 (1.88-2.55)	2.73 (2.30-3.26)	3.15 (2.62-3.83)	3.73 (3.03-4.64)	4.18 (3.34-5.29)	4.64 (3.64-5.97)	5.13 (3.96-6.71)	5.77 (4.36-7.72)	6.26 (4.66-8.50)
4-day	1.95 (1.70-2.26)	2.39 (2.06-2.80)	2.98 (2.52-3.57)	3.44 (2.85-4.18)	4.06 (3.30-5.05)	4.54 (3.63-5.75)	5.03 (3.95-6.48)	5.55 (4.29-7.26)	6.24 (4.71-8.34)	6.76 (5.03-9.18)
7-day	2.31 (2.01-2.67)	2.80 (2.41-3.28)	3.47 (2.93-4.15)	4.00 (3.32-4.86)	4.72 (3.83-5.87)	5.28 (4.22-6.69)	5.86 (4.60-7.55)	6.50 (5.02-8.50)	7.33 (5.54-9.79)	7.96 (5.92-10.8)
10-day	2.57 (2.24-2.98)	3.10 (2.67-3.63)	3.82 (3.23-4.58)	4.40 (3.65-5.35)	5.18 (4.21-6.45)	5.81 (4.64-7.35)	6.45 (5.06-8.30)	7.15 (5.52-9.35)	8.07 (6.10-10.8)	8.77 (6.52-11.9)
20-day	3.48 (3.04-4.03)	4.16 (3.58-4.88)	5.08 (4.29-6.08)	5.80 (4.81-7.05)	6.77 (5.49-8.42)	7.52 (6.00-9.52)	8.29 (6.51-10.7)	9.08 (7.01-11.9)	10.1 (7.66-13.5)	10.9 (8.13-14.8)
30-day	4.35 (3.79-5.04)	5.18 (4.46-6.07)	6.28 (5.30-7.52)	7.13 (5.92-8.67)	8.26 (6.70-10.3)	9.13 (7.28-11.5)	10.0 (7.85-12.9)	10.9 (8.38-14.2)	12.0 (9.06-16.0)	12.9 (9.56-17.5)
45-day	5.53 (4.82-6.40)	6.58 (5.67-7.72)	7.93 (6.69-9.49)	8.92 (7.41-10.9)	10.2 (8.29-12.7)	11.2 (8.92-14.1)	12.1 (9.51-15.6)	13.0 (10.0-17.0)	14.1 (10.7-18.9)	15.0 (11.2-20.4)
60-day	6.50 (5.67-7.53)	7.77 (6.69-9.12)	9.32 (7.86-11.2)	10.4 (8.62-12.6)	11.7 (9.49-14.5)	12.6 (10.1-15.9)	13.4 (10.5-17.3)	14.2 (10.9-18.5)	15.1 (11.4-20.2)	15.8 (11.8-21.5)

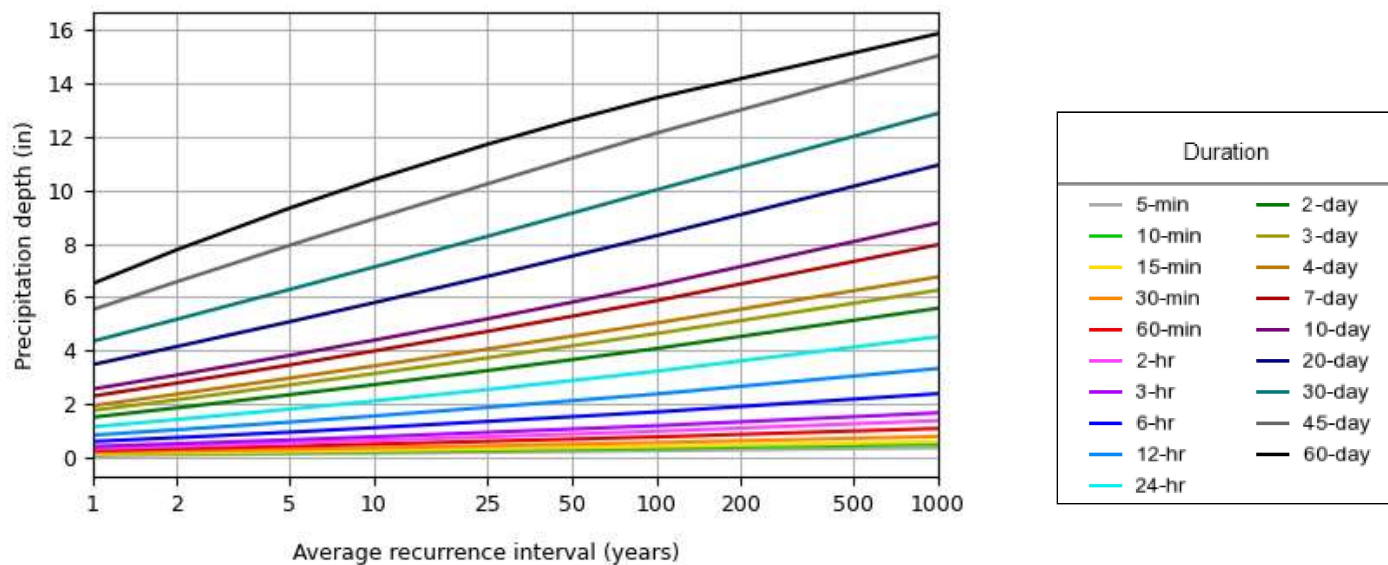
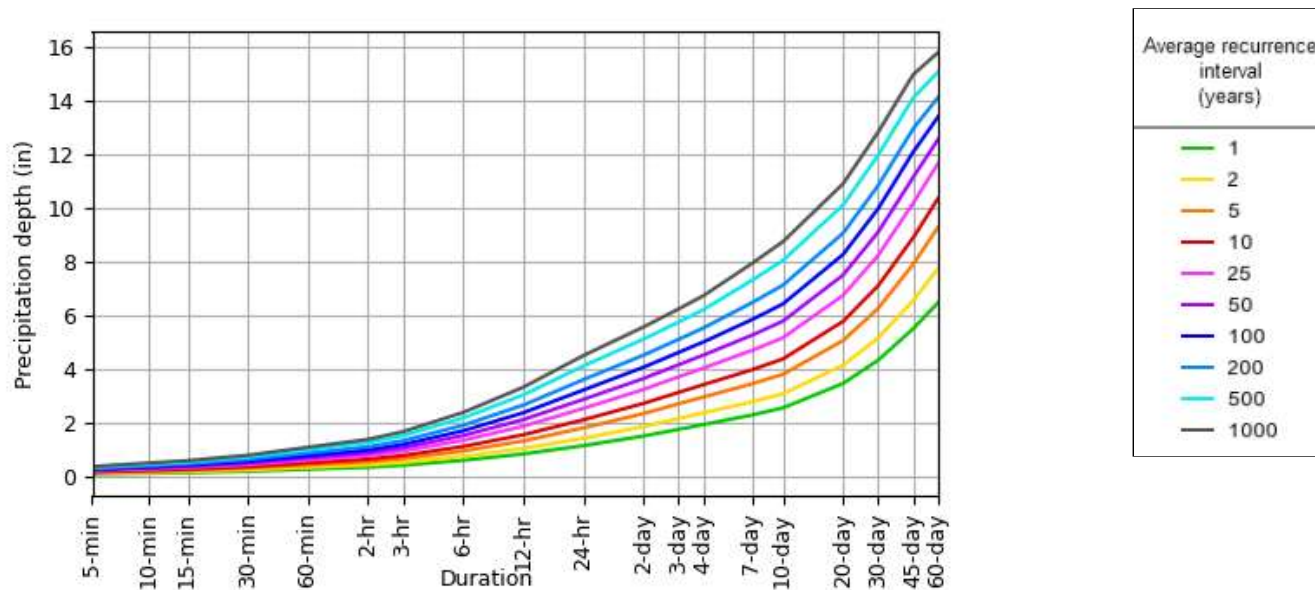
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves

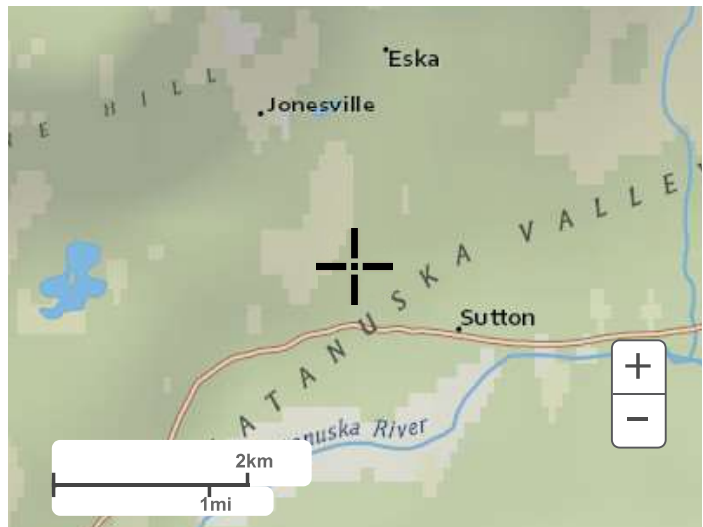
Latitude: 61.7167°, Longitude: -148.9167°



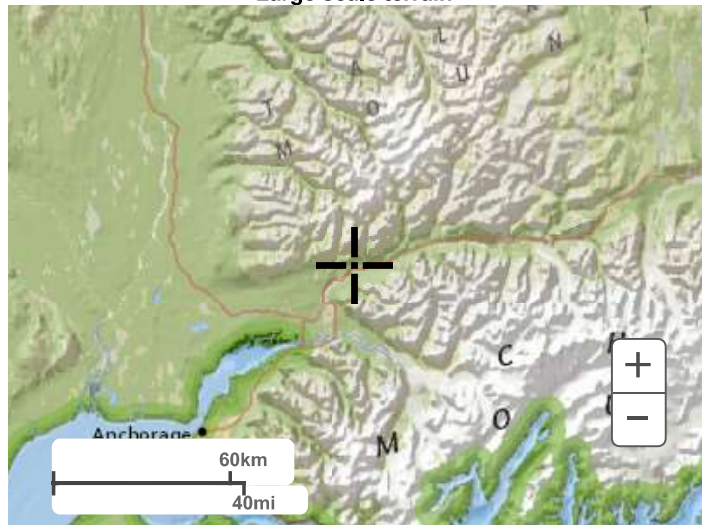
NOAA Atlas 14, Volume 7, Version 2

Created (GMT): Wed Oct 30 23:05:49 2024

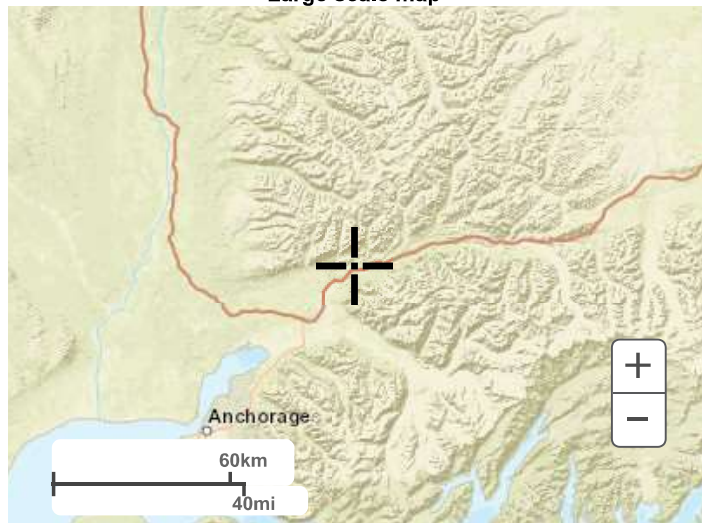
[Back to Top](#)**Maps & aerials****Small scale terrain**



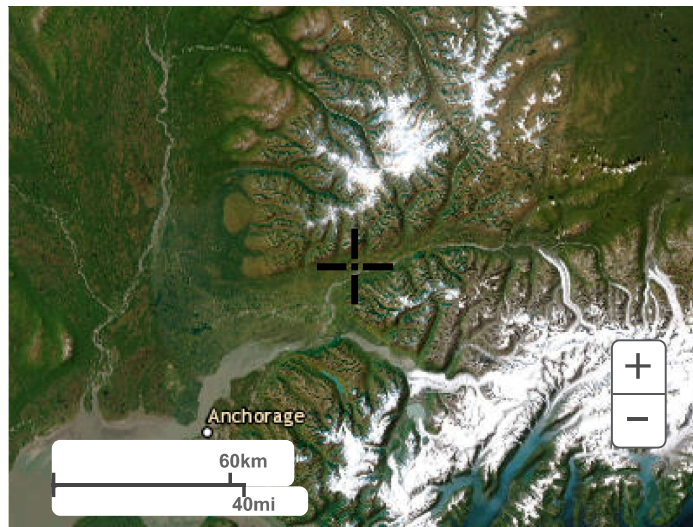
Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

Back to:

**NOTE:**

To print data frame (right side), click on right frame before printing.

1981 - 2010

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(~23 KB\)](#)
- [Monthly Tabular data \(~1 KB\)](#)
- [NCDC 1981-2010 Normals \(~3 KB\)](#)

1971 - 2000

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(~23 KB\)](#)
- [Monthly Tabular data \(~1 KB\)](#)
- [NCDC 1971-2000 Normals \(~3 KB\)](#)

1961 - 1990

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(~23 KB\)](#)
- [Monthly Tabular data \(~1 KB\)](#)
- [NCDC 1961-1990 Normals \(~3 KB\)](#)

Period of Record

- [Station Metadata](#)
- [Station Metadata Graphics](#)

General Climate Summary Tables

- [Temperature](#)
- [Precipitation](#)
- [Heating Degree Days](#)
- [Cooling Degree Days](#)
- [Growing Degree Days](#)

Temperature

- [Daily Extremes and Averages](#)
- [Spring 'Freeze' Probabilities](#)
- [Fall 'Freeze' Probabilities](#)
- ['Freeze Free' Probabilities](#)
- Monthly Temperature Listings
 - [Average](#)
 - [Average Maximum](#)
 - [Average Minimum](#)
 - [Extreme Maximum](#)
 - [Extreme Minimum](#)

Precipitation

- [Monthly Average](#)
- [Daily Extreme and Average](#)
- [Daily Average](#)
- [Precipitation Probability by Duration.](#)
- [Precipitation Probability by Quantity.](#)
- Monthly Precipitation Listings
 - [Monthly Totals](#)

SUTTON 1 W, ALASKA (508915)

Period of Record Monthly Climate Summary**Period of Record : 01/01/1978 to 11/01/2011**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	22.9	28.2	37.2	48.9	60.9	66.9	68.0	65.7	57.2	42.5	28.1	23.6	45.8
Average Min. Temperature (F)	9.1	11.5	17.3	25.0	32.4	40.7	46.3	44.1	35.9	25.9	14.8	10.0	26.1
Average Total Precipitation (in.)	1.08	1.04	0.83	0.54	0.86	1.47	2.48	2.95	3.04	1.66	1.54	1.54	19.04
Average Total SnowFall (in.)	12.3	11.0	8.7	3.5	1.0	0.0	0.0	0.0	0.2	6.4	14.0	17.8	74.8
Average Snow Depth (in.)	16	18	16	5	0	0	0	0	0	1	6	13	6

Percent of possible observations for period of record.

Max. Temp.: 96.1% Min. Temp.: 96.2% Precipitation: 97.1% Snowfall: 97.9% Snow Depth: 96.7%

Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.*Western Regional Climate Center, wrcc@dri.edu*



U.S. Fish & Wildlife Service Region 7

Timing Recommendations for Land Disturbance & Vegetation Clearing

Planning Ahead to Protect Nesting Birds

In Alaska all native birds except grouse and ptarmigan, which are managed by the State of Alaska, are protected by the Migratory Bird Treaty Act (MBTA). Under the MBTA (16 U.S.C. 703) it is illegal for anyone to “take” migratory birds, their eggs, feathers or nests, unless permitted by regulations. “Take” is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect” a migratory bird (50 CFR §10.12). For more information, please see:

<http://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php>.

Destruction of active nests, eggs, or nestlings can result from spring and summer vegetation clearing, grubbing, brush hogging, burning, stockpiling fill, and other land disturbance and construction activities. An “active” nest is indicated by intact eggs, live chicks, or presence of at least one adult on the nest. Human disturbance and repeated loud noises near nest sites can cause nest failure and is considered “take”. Avoiding nesting seasons during project implementation minimizes the risk of encountering an active nest or inadvertently causing a nest to fail.



Lucas DeCicco/USFWS

Rusty Blackbird

Some bird species and their nests have additional protections under other federal laws, including Bald and Golden eagles under the Bald and Golden Eagle Protection Act (Eagle Act), and those listed under the Endangered Species Act (ESA). Please contact the U.S. Fish and Wildlife Service if these species may be present in your project area to ensure Eagle Act and ESA compliance.

Implementing the following timing recommendations considerably reduces the risk of “take” under the MBTA. Final compliance with the law is your responsibility.

Recommendations:

1. Conduct land disturbance and vegetation clearing activities as described above outside of the nesting season (please see nesting season timing for your area on the next page).
2. If you encounter an active nest *at any time*, including before or after the local recommended avoidance times, leave it undisturbed until the eggs hatch and the young depart the nest.
3. If you have any questions regarding the MBTA, the timing recommendations, or if you are unable to comply with the timing recommendations, please contact your local U.S. Fish and Wildlife Service Fish and Wildlife Conservation Office for assistance:

Anchorage (includes Juneau and Kenai areas) - (907) 271-2888

Fairbanks (includes the North Slope, Interior, and Western Alaska) - (907) 456-0203



U.S. Fish & Wildlife Service Region 7

Timing Recommendations for Land Disturbance & Vegetation Clearing

Planning Ahead to Protect Nesting Birds

Nesting Seasons by Habitat Type and Region:

Recommended Times to Avoid Land Disturbance & Vegetation Clearing

HABITAT TYPE → REGION ↓	Forest or Woodland (i.e., trees present)	Shrub or Open (i.e., shrub cover or marsh, pond, tundra, gravel, or other treeless/shrubless ground habitat)	Seabird Colonies (including cliff and burrow colonies)	Eagles ^e
Southeast	April 15-July 15 ^a	May 1-July 15 ^{a, b}	May 1-September 15	March 1-August 31
Kodiak Archipelago			April 15-September 7	
Southcentral (<i>Lake Illiamna to Copper River Delta; north to Talkeetna</i>)	May 1-July 15 ^{a, b}			
Bristol Bay/AK Peninsula (<i>north to Lake Illiamna</i>)	May 1-July 15 ^{a, b, c}		May 10-September 15	
Interior (<i>north of Talkeetna to south slope Brooks Range; west to treeline</i>)	May 1-July 15 ^{a, b}		May 1-July 20 ^d	
Aleutian Islands		April 25-July 15 ^a	May 1-September 15	
Yukon-Kuskokwim Delta	May 1-July 15	May 5-July 25 ^{a, b, c}	May 20-September 15	
Seward Peninsula	May 1-July 15	May 10-July 20 ^{a, c}		
Northern (<i>includes northern foothills of Brooks Range</i>)		June 1-July 31 ^{a, c}		
Pribilof and Bering Sea Islands		May 15-July 15 ^a	May 15-September 15	

^a Raptors may nest two or more months earlier than other birds.

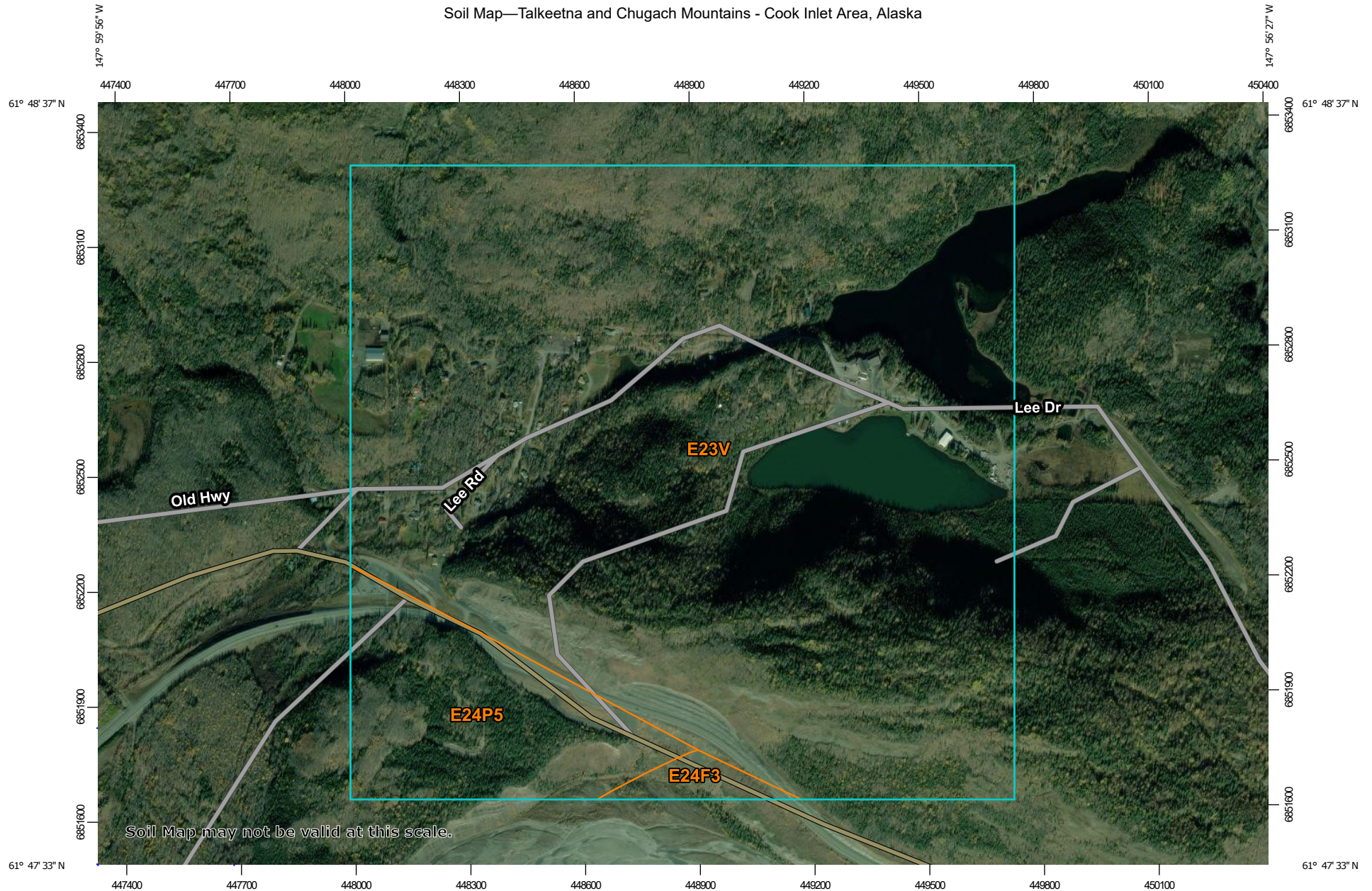
^b Canada geese and swans begin nesting April 20.

^c Black scoter are known to nest through August 10.

^d Seabird colonies in Interior refer to terns and gulls.

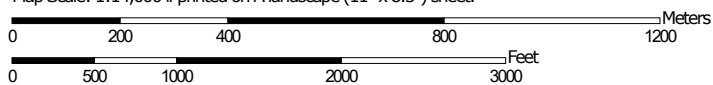
^e Eagles and their nests have additional protections under the Eagle Act and a permit may be required to conduct activities near an eagle nest. Visit the U.S. Fish and Wildlife Service's Alaska Region Eagle Permit Program web page (<https://www.fws.gov/alaska/eaglepermit/guidelines/disturbnestingbaea1.htm>) or call your local Fish and Wildlife Conservation Office for step-by-step guidance to determine if your activity is likely to take or disturb eagles and for conservation measures to that avoid disturbance.

Soil Map—Talkeetna and Chugach Mountains - Cook Inlet Area, Alaska



Soil Map may not be valid at this scale.

Map Scale: 1:14,000 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 6N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

2/3/2025
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:250,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Talkeetna and Chugach Mountains - Cook Inlet Area, Alaska

Survey Area Data: Version 6, Sep 5, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 25, 2015—Oct 19, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
E23V	Cook Inlet Mountains-Boreal Upland and Lowland-Valleys	624.4	87.6%
E24F3	Cook Inlet Lowlands-Boreal Lowland-Flood Plains and Terraces	8.8	1.2%
E24P5	Cook Inlet Lowlands-Boreal Upland-Till Plains	79.5	11.1%
Totals for Area of Interest		712.8	100.0%

APPENDIX D

SUPPORTING DOCUMENTATION

If your project has been determined by the SHPO to have “No Historic Properties Affected”, include the first page of the letter with the “No Historic Properties Affected” stamp. Do NOT include any information that could locate an environmentally sensitive area.



APPENDIX E
PROJECT SPECIFIC ESCP DISCUSSIONS & COMMENTS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION



BID FORM, CONTRACT, BOND, STANDARD MODIFICATIONS
AND SPECIAL PROVISIONS FOR:

**Victory Road Pavement Preservation
Project No. 0001726 / CFHWY00672**

**AS ADVERTISED: TBD
Document Fee: \$100.00**

**To be used in conjunction with State of Alaska Standard Specifications for Highway
Construction dated 2020, and the Plans for the above referenced project.**

www.dot.alaska.gov - "Procurement"

TABLE OF CONTENTS

(Federal-Aid Highways)

1.	<u>Invitation</u> (yellow)		
	INVITATION TO BID	25D-7	(CR 7/18)
2.	<u>Bid Notices</u> (yellow)		
	REQUIRED DOCUMENTS	25D-4H	(11/23)
	FEDERAL EEO BID CONDITIONS	25A-301	(03/23)
3.	<u>Forms</u> (yellow)		
	SUBCONTRACTOR LIST	25D-5	(5/17)
	BIDDER REGISTRATION	25D-6	(6/22)
	CONTRACTOR'S QUESTIONNAIRE	25D-8	(8/01)
	BID FORMS		
	a. Bid Cover Sheet		
	b. Bid Schedule		
	c. Bid Attachments		
	d. Addenda Acknowledgement		
	e. Bidder's Acknowledgement and Certification		
	CONSTRUCTION CONTRACT	25D-10H	(1/15)
	PAYMENT BOND	25D-12	(8/01)
	PERFORMANCE BOND	25D-13	(8/01)
	BID BOND	25D-14	(8/01)
	BID MODIFICATION	25D-16	(7/18)
	NON-DOMESTIC MINIMAL USE & DE MINIMIS REGISTER	25D-60	(11/23)
	EEO-1 CERTIFICATION	25A-304	(10/19)
	CONTACT REPORT	25A-321A	(10/16)
	DBE UTILIZATION REPORT	25A-325C	(3/12)
	PRIME CONTRACTOR'S WRITTEN DBE COMMITMENT	25A-326	(8/01)
	SUMMARY OF GOOD FAITH EFFORT DOCUMENTATION	25A-332A	(8/01)
4.	<u>Contract Provisions and Specifications</u> (white)		
	STANDARD MODIFICATIONS		
	SPECIAL PROVISIONS		
	APPENDIX A: CONSTRUCTION SURVEY REQUIREMENTS		
	APPENDIX B: ENVIRONMENTAL PERMITS		
	APPENDIX C: MATERIAL CERTIFICATION LIST		
	APPENDIX D: SIGN SHOP DRAWINGS		
	APPENDIX E: TEMPORARY CONSTRUCTION EASEMENTS		
	REQUIRED CONTRACT PROVISIONS FOR		
	FEDERAL-AID (FHWA) CONSTRUCTION CONTRACTS	25D-55H	(10/23)
5.	<u>Federal Wage Rates</u>		
	Federal wage rates can be obtained at https://sam.gov/content/home for the State of Alaska. Use the federal wage rates that are in effect 10 days before Bid Opening. The Department will include a paper copy of the federal wage rates in the signed Contract.		

6. State Wage Rates

State wage rates can be obtained at <http://www.labor.state.ak.us/lss/pamp600.htm>. Use the State wage rates that are in effect 10 days before Bid Opening. The Department will include a paper copy of the State wage rates in the signed Contract.



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

INVITATION TO BID

for Construction Contract

Date TBD

**Victory Road Pavement Preservation
Project No. 0001726 / CFHWY00672**

The Department invites bidders to submit bids for furnishing all labor, equipment, and materials and performing all work for the project described below. The Department will only consider bids received **before 2:00 PM local time (per the Department's time source) on the TBD day of XXXX 202X**. On that date, the Department will assemble, open, and then publicly announce the timely-received bids at Anchorage, Alaska at 2:15 PM, or as soon thereafter as practicable.

Location of Project: Wasilla, Alaska

Contracting Officer: Sean L. Holland, P.E., Regional Director

Issuing Office: Central Region

State Funded ☐

Federal Aid ☒

Description of Work:

This federally funded project will resurface Victory Road to pavement end, reshape and top remaining 1300' of gravel road. This project also includes necessary improvements to roadside hardware, drainage, signing, striping and utilities.

Project DBE Utilization Goal: ☒ Race-Neutral

The Engineer's Estimate is between **\$1,000,000** and **\$2,500,000**

All work shall be completed in N/A Calendar Days, or by **TBD**.

The Department will identify interim completion dates, if any, in the Special Provisions.

The apparent successful bidder must furnish a payment bond in the amount of 100% of the contract and a performance bond in the amount of 100% of the contract as security conditioned for the full, complete and faithful performance of the contract. The apparent successful bidder must execute the said contract and bonds within **ten (10)** calendar days, or such further time as may be allowed in writing by the Contracting Officer, after receiving notification of the acceptance of their bid.

Submission of Bidding Documents

Bidders may submit bidding documents electronically via the Department's approved online bidding service, through the mail or hand delivered. For mailed or hand delivered bids and for electronically submitted bids with a paper bid guaranty, documents shall be submitted in a sealed envelope marked as follows:

**Bidding Documents for Project:
Victory Road Pavement Preservation
Project No. 0001726 / CFHWY00672**

**ATTN:
State of Alaska
Department of Transportation & Public Facilities
PO Box 196900
4111 Aviation Avenue
Anchorage, AK 99519-6900**

It is incumbent upon the bidder to ensure its bid, any amendments, and/or withdrawal arrive, in its entirety, at the location and before the deadline stated above. A bidder sending a bid amendment or withdrawal via email must transmit its documentation to the Department at this email address: crdotpfcontracts@alaska.gov.

To be responsive, a bid must include a bid guaranty equal to 5% of the amount bid. *(When calculating the bid amount for purposes of determining the 5% value of the bid guaranty, a bidder shall include its base bid amount, plus the amount bid for alternate and supplemental bid items, if any.)*

The Department hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this Invitation, Disadvantaged Business Enterprises will be afforded full opportunity to submit bids and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

NOTICE TO BIDDERS

Bidders must have a Vendor ID or your bid may not be accepted. More information can be obtained at the following website:
<http://dot.alaska.gov/aashtoware/docs/AWP-Vendor-List-Guidance.pdf>

The following data may assist a bidder in preparing its bid:

See attached Special Notice to Bidders for this project.

A bidder may obtain hard copy project plans and specifications for the price of \$XX.00 from:

State of Alaska, Department of Transportation & Public Facilities

Plans Room

4111 Aviation Avenue

PO Box 196900

Anchorage, AK 99519-6900

Phone: (907) 269-0408

If a bidder has a question relating to design features, constructability, quantities, or other technical aspects of the project, it may direct its inquiry to the questions and answers area of the Bid Express proposal page: <https://www.bidx.com/ak/lettings>

A bidder requesting assistance in viewing the project site must make arrangements at least 48 hours in advance.

The point of contract for inquiries for this project is **Jacob Dilley, P.E.**

Email: jacob.dilley@alaska.gov

Phone: (907) 707-1922

For questions relating to electronic bidding or for assistance with your Bid Express account, contact Bid Express customer support at customer.support@bidx.com or call toll free (888)352-BIDX(2439) Monday through Friday 7:00am to 8:00pm (Eastern).

A bidder may direct questions concerning bidding procedures and requirements to:

Sharon L. Smith, P.E.

Chief of Contracts

PO Box 196900

Anchorage, AK 99519-6900

Email: sharon.smith@alaska.gov

Phone: (907) 269-0414

Other Information:

The Bid Calendar, Plan Holder List, Bid Results and DBE information are available on the Internet at: www.dot.alaska.gov under Procurement.

This project was designed in the US customary (USC) units. Inspection will take place in USC units. Submittals must be provided in USC units.

To report bid rigging activities call: 1-800-424-9071.

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

The **2020 Standard Specifications for Highway Construction** can be obtained at
<http://www.dot.state.ak.us/stwddes/dcspsecs/assets/pdf/hwyspecs/sshc2020.pdf>

SPECIAL NOTICE TO BIDDERS

The Department hereby notifies bidders that information to assist in bid preparation is available from the Department of Transportation and Public Facilities, Anchorage office, located at 4111 Aviation Avenue.

1. **Publications.** The following are available from the Plans Room, download online, or as noted:
 - a. Standard Specifications for Highway Construction, 2020 Edition comb bound (\$25.00), download at:
www.dot.state.ak.us/stwddes/dcspsecs/assets/pdf/hwyspecs/sshc2020.pdf, or order bound book from LuLu at:
<https://www.lulu.com/en/us/shop/state-of-alaska-dept-of-transportation/2020-alaska-standard-specification-for-highway-construction/paperback/product-1gq9j9qk.html>
 - b. Alaska Test Methods Manual (Lab & Field), May 15, 2023 Edition (\$25.00). Available online at:
www.dot.state.ak.us/stwddes/desmaterials/mat_wagtc/testman.shtml
 - c. Alaska Storm Water Pollution Prevention Plan Guide, March 2021.
www.dot.state.ak.us/stwddes/desenviron/resources/stormwater.shtml
 - d. Utility facility clearance requirements. Available online at:
 - Matanuska Electric Association, Inc. (MEA) Electrical Facility Clearance Requirements
<http://www.mea.coop/power-safety/electrical-safety>
 - Chugach Electric Association, Inc. (CEA) Electrical Facility Clearance Requirements
<http://www.chugachelectric.com/system/files/Electrical%20Facility%20Clearance%202020.pdf>
 - ENSTAR Natural Gas Company (ENSTAR)
<https://www.enstarnaturalgas.com/wp-content/uploads/2023/04/2023-Contractor-Excavation-Safety-Letter-with-attachments.pdf>
 - e. Quantity Computations
 - f. Cross Sections
 - g. Geotechnical Report, Victory Road Pavement Preservation, 0001726/CFHWY00672, <INSERT MONTH/DAY/YEAR>, by DOT&PF
 - h. Erosion, Sediment Control Plan (ESCP). Victory Road Pavement Preservation, 0001726/CFHWY00672, 03/14/2025
 - i. Traffic Control Plan (TCP). Victory Road Pavement Preservation, 0001726/CFHWY00672, 03/14/2025
2. **Materials Certification List (MCL).** The MCL provides the Engineer with the appropriate approving authority. Contractor, submit certification for each material to the Engineer. The MCL is included in Appendix C.
3. **Environmental Documents.** The Department has approved an environmental document addressing concerns and environmental commitments. This document is available for review in the Department Section of Preliminary Design and Environmental. (907) 269-0542.
4. **Section 120, Disadvantaged Business Enterprise (DBE) Program.** The Department, in coordination with US DOT, has adopted a Race-Neutral DBE Program effective for Federal-aid projects advertised in Central Region after June 30, 2015. In particular, all bidders shall be aware that Good Faith Effort Documentation is required from the successful bidder for all contracts, regardless of DBE goal or DBE utilization, in accordance with Section 120 Disadvantaged Business Enterprise (DBE) Program.

The overall DBE Utilization Goal is revised to 8.28 percent.

Direct questions about this notice to the Manager of the Civil Rights Office, (907) 269-0848, <http://www.dot.state.ak.us/cvlrts/index.shtml>.

5. **Cargo Preference Act Requirements.** The provisions of the Cargo Preference Act (CPA) must be physically incorporated into all Federal-aid Projects awarded after February 15, 2016, and must be physically incorporated in all agreements with subcontractors and lower tier subcontractors.

Form 25D-55 (2/16) is revised to include the CPA provisions to the Required Contract Provisions for Federal-Aid Construction Contracts. See the last page of Form 25D-55 for the CPA requirements.

For additional details, please visit: <https://www.fhwa.dot.gov/construction/cqit/cargo.cfm>

6. **Buy America Provision.** Effective for Federal award obligations after October 23, 2023, meet the requirements at 2 CFR 184 for construction materials.

Iron products, steel products, and predominantly iron or steel manufactured products remain subject to the requirements of 23 CFR 635.410 and related FHWA Interpretations and waivers.

Manufactured products that are not predominantly iron or steel continue to be waived under FHWA's 1983 waiver of manufactured products.

On August 16, 2023, USDOT issued a waiver at 88 FR 55817 applicable to construction materials on FHWA funded projects.

HSP20-7A revises the specifications in 106-1.01 to incorporate these new requirements.

2 CFR 184:

<https://www.federalregister.gov/documents/2023/08/23/2023-17724/guidance-for-grants-and-agreements>

23 CFR 635.410:

<https://www.govinfo.gov/content/pkg/CFR-2022-title23-vol1/xml/CFR-2022-title23-vol1-sec635-410.xml>

USDOT waiver at 88 FR 55817:

<https://www.federalregister.gov/documents/2023/08/16/2023-17602/waiver-of-buy-america-requirements-for-de-minimis-costs-and-small-grants>

FHWA interpretations, waivers, regulations, policy and guidance on Buy America:

<https://www.fhwa.dot.gov/construction/cqit/buyam.cfm>

7. **Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment.** 2 CFR 200.216, as amended effective August 13, 2020, Federal Register, Vol. 85, No. 157, 49506 – 49582, Prohibition on certain telecommunication and video surveillance services or equipment. Refer to Subsection 106-1.01.

8. **Utilities.**

- a. **Agreements and Dispositions.** Utility Agreements and dispositions are available for review at the office of the Utilities Engineer, (907) 269-0644. Copies may be available, coordinate with the Utility Engineer.
- b. **Utilities, and Erosion, Sediment and Pollution Control.** Utilities will be relocated by others concurrently with construction of this project. The Contractor is responsible for the coordination with Other Contractor's and for control of erosion, sediment and pollution including stabilization of areas disturbed during utility relocation, as described in Section 105-1.06.

The Contractor will identify, in their SWPPP, other work that is or will occur inside or adjacent to the project limits during the contract period.

9. **COVID-19 Management Plan.** The Governor's emergency declaration and mandates relating to COVID-19 expired on February 14, 2021. However, contractors are encouraged to review COVID-19 Response and Recovery Health Advisories that can be accessed at:

<https://covid19.alaska.gov/health-advisories/>

Contractors will still be required to meet any applicable local ordinances or requirements currently in effect, and comply with any future federal, state, or local declarations or mandates that might be adopted while work on the project is ongoing.

Consistent with Section 107-1.01 of the Standard Specifications for Highway Construction, the Contractor will be responsible for paying all costs and expenses incurred to comply with any COVID-19 Health Mandates or Health Advisories in effect during times when the Contractor is performing project-related work activities. The Contractor will additionally be responsible for preparing any

general or site-specific mitigation and response plans required for its forces, along with any attendant schedule delays or impacts.

10. **Certified Payroll.** Certified payroll must be submitted electronically through AASHTOWare for contracts awarded after January 1, 2021.

In order to submit certified payroll, Contractors, Subcontractors, and lower tier Subcontractors must be active in AASHTOWare, which requires they have a valid Vendor ID with a 913 commodity code.

To obtain a Vendor ID, register with the State of Alaska via the Vendor Self-Serve (VSS). Instructions for creating a new account in the VSS system can be found under Reference Guides and Forms at the following link:

<https://iris-vss.alaska.gov/PRDVSS1X1/Advantage4>

For information on certified payroll, contact the Department of Labor and Workforce Development, Wage and Hour Administration: Juneau (907) 465-4842
Anchorage (907) 269-4900
Fairbanks (907) 451-2886

DOT&PF AASHTOWare Project guidance, including schedule, FAQs, training options:

<http://dot.alaska.gov/aashtoware/>

11. **Laborers Mechanics Minimum Rate of Pay.** The current Laborers Mechanics Minimum Rate of Pay contains information on remote sites and per diem. The Department of Labor has issued WHPL #197, which further clarifies this requirement. See pay item 640.0004.—.
12. **Interim Completion Phase.** This project includes at least one interim completion phase. Refer to Subsection 651-1.05 Interim Completion and Subsection 652-1.05 Failure to Complete on Time for further information.
13. **Asphalt Material Price Adjustment.** The unit price adjustment for asphalt material will be combined and paid under one Pay Item. Refer to Sections in Division 300 and 400 that include an "Asphalt Material Price Adjustment" Pay Item.
14. **Solicitation Cancellation.**
15. **Limitation of Operation.** Limit disturbed unstabilized ground. Refer to Subsection 652-1.04 Limitation of Operation for further information.
16. **Contract Price Adjustment(s).** The Department will not provide cost escalation or de-escalation price adjustment for this contract, except for specific items described in the bid package at the time of bid opening.
17. **Post Award Conference.** There will be a mandatory post award conference held in [LOCATION], Alaska prior to the Contractor beginning work. Refer to Subsection 108-1.10 Post Award Conference.
18. **USDOL Davis-Bacon and Related Acts Final Rule.** On September 29, 2023 FHWA updated form FHWA-1273 to incorporate the new Davis-Bacon and Related Acts final rule. Form FHWA-1273 is required to be physically incorporated into construction contracts, subcontracts, and lower-tier subcontracts for awards made after October 23, 2023. DOT&PF satisfies this requirement by incorporating Form 25D-55H into contracts.

A section-by-section change of form FHWA-1273 is available at

<https://www.fhwa.dot.gov/construction/cqit/form1273.cfm>

The USDOL has a website containing the final rule, frequently asked questions, and a comparison chart of changes at <https://www.dol.gov/agencies/whd/government-contracts/construction/rulemaking-davis-bacon>

FED_SOA-CRSNtB-23.1201_SSHC2020

PART 4

**STANDARD MODIFICATIONS
AND
SPECIAL PROVISIONS**

To the **STATE OF ALASKA**



**STANDARD
SPECIFICATIONS
FOR
HIGHWAY CONSTRUCTION**

**2020
EDITION**

Blank Page

TABLE OF CONTENTS

Section	Page
DIVISION 100 — GENERAL PROVISIONS	
102 Bidding Requirements and Conditions	3
103 Award and Execution of Contract.....	4
104 Scope of Work	5
105 Control of Work	6
106 Control of Material	7
107 Legal Relations and Responsibility to Public	10
108 Prosecution and Progress	12
109 Measurement and Payment	14
120 Disadvantaged Business Enterprise (DBE) Program	15
DIVISION 200 — EARTHWORK	
201 Clearing and Grubbing	19
202 Removal of Structures and Obstructions	20
203 Excavation and Embankment	22
204 Structure Excavation for Conduits and Minor Structures	23
DIVISION 300 — BASES	
301 Aggregate Base and Surface Course	29
308 Crushed Asphalt Base Course	31
DIVISION 400 — ASPHALT PAVEMENTS AND SURFACE TREATMENTS	
401 Hot Mix Asphalt Pavement	37
DIVISION 500 — STRUCTURES	
501 Concrete for Structures	57
DIVISION 600 — MISCELLANEOUS CONSTRUCTION	
603 Culverts and Storm Drains	61
611 Riprap	66
615 Standard Signs	67
616 Thaw Pipes and Thaw Wires	72
618 Seeding	73
620 Top Soil	77
639 Driveways	79
641 Erosion, Sediment, and Pollution Control	80
642 Construction Surveying and Monuments	102
643 Traffic Maintenance	103
644 Services to be Furnished by the Contractor	125
646 CPM Scheduling	128
690 Waterway	129
DIVISION 700 — MATERIALS	
701 Hydraulic Cement and Supplementary Cementitious Materials Section Place Holder	137
702 Asphalt Materials	138
703 Aggregates	139
705 Joint Material Section Place Holder	142
706 Concrete and Plastic Pipe	143
708 Paints	144
709 Reinforcing Steel and Wire Rope	145
714 Preservatives for Timber	146
724 Seed	147
726 Topsoil	149
727 Soil Stabilization Material	150
730 Sign Materials	155
Appendix A Construction Survey Requirements	
Appendix B Environmental Permits	

TABLE OF CONTENTS

Section		Page
Appendix C	Material Certification List	
Appendix D	Sign Shop Drawings	
Appendix E	Temporary Construction Easements	
Appendix F	Draft Permits	

DIVISION 100 — GENERAL PROVISIONS

Blank Page

**SECTION 102
BIDDING REQUIREMENTS AND CONDITIONS**

Special Provisions

Standard Modification

102-1.05 PREPARATION OF BID.

In the third paragraph, replace the fourth sentence with the following:

If the bidder is a joint venture, the bid must be signed by an officer or agent with authority to bind the joint venture.

HSM20.42-043022

**SECTION 103
AWARD AND EXECUTION OF CONTRACT**

Special Provisions

103-1.06 INSURANCE REQUIREMENTS.

Replace paragraph No. 17 beginning "The State of Alaska shall" with the following:

The State of Alaska, and the Municipality of Anchorage shall be named as an additional insured on policies required by items 2 thru 4 above. All of the above insurance coverages shall be considered to be primary and non-contributory to any other insurance carried by the State of Alaska, and the Municipality of Anchorage whether through self-insurance or otherwise.

Replace paragraph No. 18 beginning "In any contract or agreement" with the following:

In any contract or agreement with subcontractors performing work, the Contractor shall require that all indemnities and waivers of subrogation it obtains, and any stipulation to be named as an additional insured it obtains, shall also be extended to waive rights of subrogation against the State of Alaska, and the Municipality of Anchorage and to add the State of Alaska, and the Municipality of Anchorage as an additional named indemnitee and as an additional insured.

CR103.1_CR107.7-040123

**SECTION 104
SCOPE OF WORK**

Standard Modification

104-1.06 VALUE ENGINEERING CHANGE PROPOSALS BY CONTRACTOR.

Replace 104-1.06.3.e with the following:

- e. The Contractor may submit VECPs for an approved subcontractor. If the Contractor elects to submit a VECP for an approved subcontractor and it is subsequently accepted by the Department, the Department will reimburse the Contractor per 104-1.06.5.

HSM20.2-113020R

**SECTION 105
CONTROL OF WORK**

Special Provisions

Add the following Subsection 105-1.011 Related Sections:

105-1.011 RELATED SECTIONS.

Section 651, Control of Work – Supplemental Requirements

CR105.5-012816R1

105-1.15 PROJECT COMPLETION.

Replace the 1st sentence in the 3rd paragraph with the following:

When all physical work and cleanup provided for under the Contract is found to be complete, except for work specified for Period of Establishment, the Engineer will issue a letter of project completion.

CR105.6-23.0601

SECTION 106 CONTROL OF MATERIAL

Standard Modification

106-1.01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS.

Add the following:

PROHIBITION ON CERTAIN TELECOMMUNICATION AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT. On projects using federal funds, the Contractor shall comply with the requirements of 2 CFR 200.216, Prohibition on certain telecommunication and video surveillance services or equipment, including any future amends thereto that are applicable to the project.

By submitting a bid or by execution of the contract, the Contractor certifies that it has not entered into a contract nor extended or renewed a contract to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system produced by:

- Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
- Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
- Any entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

The Contractor further certifies that it has complied with the requirements of 2 CFR 200.216 and that it will continue to do so throughout the term of the Contract.

HSM20.20-21.1231

Special Provision

Replace the BUY AMERICA PROVISION with the following:

BUY AMERICA PROVISION. On projects using federal funds the Contractor shall ensure all iron, steel, manufactured products, and construction materials incorporated into the project are produced in the United States as required by 2 CFR Part 184 Buy America Preferences for Infrastructure Projects and 23 CFR §635.410, Buy America requirements.

The Contractor shall submit a completed Non-Domestic Minimal Use and De Minimis Register, Form 25D-60, prior to award of the contract. When the Contractor becomes aware of a change from or error in a previously submitted Form 25D-60, the Contractor shall submit an updated Form 25D-60.

The Contractor shall submit a certificate of compliance according to Subsection 106-1.05 for each item listed on the Material Certification List. The Engineer may authorize the use of materials based on a certificate of compliance and Form 25D-62 Certificate of Buy America Act Compliance. Materials incorporated into the project on the basis of a certificate of compliance may be tested at any time, whether in place or not, and if they do not conform to Contract specifications, they may be rejected and ordered removed under the Subsection 105-1.11.

Manufactured products that are not predominantly steel or iron, or a combination of both, or construction materials are not subject to Buy America provisions. Declare manufactured products on Form 25D-62 regardless of their exemption.

Non-domestic products in excess of the minimal use and/or the de minimis amounts shall be replaced at no expense to the State. Failure to comply may also subject the Contractor to default and debarment.

The supplier certifying Form 25D-62 may be the manufacturer, fabricator, vendor, or supplier; provided they have sufficient control and knowledge of the manufacturing process to accept responsibility and

certify full and complete conformance with 23 CFR §635.410 and 2 CFR Part 184. The Prime Contractor shall also certify Form 25D-62. Provide additional certifications and backup documentation to signed Form 25D-62 when required by the Engineer. False statements may result in criminal penalties prescribed under AS 36.30.687 and Title 18 US Code Section 1001 and 1020.

The United States, Mexico, Canada Agreement (USMCA) does not apply to the Buy America requirement.

Buy America does not apply to construction materials, steel products, and iron products, brought temporarily to the construction site and removed at or before the completion of the project. Further, it does not apply to construction materials, steel products, and iron products which remain in place at the Contractor's convenience. Buy America does not apply to iron ore, pig iron, and processed, pelletized and reduced iron ore.

The following materials are exempt from Build America, Buy America requirements per Section 70917(c) of P. L. 117-58:

1. cement and cementitious materials
2. aggregates such as stone, sand, or gravel
3. aggregate binding agents or additives

De Minimis amount:

Small amounts of non-domestic construction materials, are allowed provided the total value of the non-domestic products is no more than the lesser of \$1,000,000 or 5% of total material costs for the project including freight to the project location.

The total material costs of the project include (Form 25D-60):

1. Predominantly Iron and Steel products
2. Construction Materials
3. Manufactured Products

Do not include the cost of materials exempted per Section 70917(c) of P. L. 117-58, earth materials, processed aggregates, asphalt, concrete, fuel, lubricant, equipment repair parts, etc. in the total material costs of the project.

PREDOMINANTLY STEEL OR IRON PRODUCTS. Products and materials where the cost of the iron and steel, or a combination of both, exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product, or a good faith estimate of the cost of iron or steel components.

To be classified as domestic, all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

Iron and Steel minimal use:

All predominately steel and iron, or a combination of both, products incorporated into the work, shall be manufactured in the United States except that minor amounts of steel and iron products of foreign manufacture may be used, provided the aggregate cost of such does not exceed one tenth of one percent (0.001) of the total contract amount, or \$2,500, whichever is greater. For the purposes of this paragraph, the cost is the value of the products as they are delivered to the project, including shipping.

CONSTRUCTION MATERIALS. The following list contains the categories of construction materials, and the requirements for domestic origin. Construction materials are an article, material, or supply that is:

1. **Non-ferrous metals.** All manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.

2. **Plastic and Polymer-based products.** All manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States.
3. **Glass.** All manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States.
4. **Fiber Optic Cable.** All manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others.
5. **Optical Fiber.** All manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.
6. **Lumber.** All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States.
7. **Drywall.** All manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.
8. **Engineered Wood.** All manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States.

If one construction material contains as inputs other construction materials, it remains classified as a construction material for the purposes of this section. Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material.

MANUFACTURED PRODUCTS. Articles, materials, or supplies that have been processed into a specific form and shape or combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.

If an item is classified as an iron or steel product, a construction material, or an exempted material per Section 70917(c) of P. L. 117-58 then it is not a manufactured product.

An article, material, or supply classified as a manufactured product may include components that are construction materials, iron or steel products, or an exempted material per Section 70917(c) of P. L. 117-58.

Replace Subsection 106-1.05 with the following:

106-1.05 CERTIFICATES OF COMPLIANCE. A certificate of compliance must meet one of the following:

1. If by manufacturer's certification, the certificate must include the project name and number, the signature of the manufacturer, and must include information that clearly demonstrates the material or assembly complies with all Contract requirements except for domestic preference.
2. If by Contractor's summary sheet, the summary sheet must include the project name and number, the signature of the contractor, and must include attached documentation that clearly demonstrates the material or assembly fully complies with all Contract requirements except for domestic preference.

Electronic submittals that are submitted by email from the Contractor's email account are considered signed by the Contractor.

The Contractor shall submit additional certificates of compliance or test data if required by the Contract or by the Engineer. The Engineer may refuse permission to incorporate materials or products into the project based on a certificate of compliance that does not meet the Contract requirements.

HSP20.7A-23.1114

SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Special Provisions

107-1.02 PERMITS, LICENSES, AND TAXES.

The Department will: Add No. 3:

3. The Department has received the following permits on the Contractor's behalf:
 - a.
 - b.

CR107.4-120117R2

The Contractor shall:

Replace No. 1. with the following:

1. Acquire all permits and licenses required to complete the project that are not acquired by the Department.
 - a. Complete all draft permits. Draft permits are included in Appendix F, when there are draft permits.

CR107.2-070121

Add No. 10:

10. Provide a wetland specialist able to conduct wetlands determinations and delineations according to the Corps of Engineers 1987 Wetland Delineation Manual, and the Regional Supplement to the Corps of Engineers Wetland Delineations Manual (Alaska Region, Version 2.0, September 2007). The wetland specialist shall conduct the determination and delineations of sites outside the project limits or not previously permitted, impacted by the Contractor's operations. These delineations will be subject to Corps of Engineers approval.

CR107.5-120117R

107-1.07 ARCHAEOLOGICAL OR HISTORICAL DISCOVERIES.

Replace the 1st sentence including numbers 1, 2, and 3, with:

When operation encounters historic or prehistoric artifacts, burials, remains of dwelling sites, paleontological remains, (shell heaps, land or sea mammal bones or tusks, or other items of historical significance), cease operations immediately and notify the Engineer.

107-1.11 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE.

Add the following:

Non-municipal Water Source. If water is required for a construction purpose from a nonmunicipal water source, obtain a Temporary Water Use Permit from the Water Resource Manager, and provide a copy to the Engineer. The Water Resource Manager is with the Department of Natural Resources in Anchorage and may be contacted at (907) 269-8645.

CR107.3-051517

Add the following:

Eagles. Eagles are protected under 16 U.S.C. 668-668c Protection of Bald and Golden Eagles, that prohibits “takes” of eagles, their eggs, nests, or any part of the bird. The Act defines “taking” as “to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.”

Maintain a Primary Zone of minimum 330-feet as an undisturbed habitat buffer around nesting eagles. If topography or vegetation does not provide an adequate screen or separation, extend the buffer to 1320-feet, or a sufficient distance to screen the nest from human activities. The actual distance will depend on site conditions and the individual eagle’s tolerance for human activity. Within the Secondary Zone, between 330-feet and 660-feet from a nest tree, no obtrusive facilities, or major habitat modifications shall occur. If nesting occurs in sparse stands of trees, treeless areas, or where activities would occur within line-of-site of the nest, extend the buffer up to 2640-feet. No blasting, logging and other noisy, disturbing activities should occur during the nesting period (February 1 – August 31) within the primary or secondary zones.

Do not disturb a nesting eagle. Notify the Engineer when an active eagle nest is within the primary or secondary zones.

CR107.1-100118

107-1.13 RESPONSIBILITY FOR DAMAGE CLAIMS.

Replace the first paragraph with the following:

The Contractor shall indemnify, hold harmless, and defend the State of Alaska, and the Municipality of Anchorage and its agents and employees from any and all claims or actions for injuries or damages whatsoever sustained by any person or property that arise from or relate to, directly or indirectly, the Contractor’s performance of the Contract; however, this provision has no effect if, but only if, the sole proximate cause of the injury or damage is the Department’s negligence.

CR107.7_CR103.1-040123

**SECTION 108
PROSECUTION AND PROGRESS**

Standard Modification

108-1.01 SUBCONTRACTING OF CONTRACT.

In item 1g. replace AS 45.45.101(a) with AS 45.45.010(a).

In item 2f. replace AS 45.45.101(a) with AS 45.45.010(a).

HSM20.41-010122

Special Provision

Replace Subsection 108-1.01 1h. with the following:

1h. Other required items listed in Form 25D-042 are included in the subcontracts;

Replace Subsection 108-1.01 2g. with the following:

2g. Other required items listed in Form 25D-042, are included in the lower tier subcontracts;

CR108.4-010120

Add the following Subsection 108-1.011 Related Sections:

108-1.011 RELATED SECTIONS.

Section 652, Prosecution and Progress – Supplemental Requirements

CR108.3-012816R

108-1.07 FAILURE TO COMPLETE ON TIME.

Replace Table 108-1 with the following:

**Table 108-1
DAILY CHARGE FOR LIQUIDATED DAMAGES
FOR EACH CALENDAR DAY OF DELAY**

Original Contract Amount		Daily Charge
From More Than	To and Including	
\$ 0	1,000,000	\$1,500
1,000,000	5,000,000	2,900
5,000,000	25,000,000	5,500
25,000,000	-----	6,900

HSM20.43A-24.0701

Special Provision

Add the following Subsection 108-1.10 Post Award Conference:

108-1.10 POST AWARD CONFERENCE. The post award conference is a public meeting held in the community of the project location. The Department will schedule the post award conference and notify the Contractor at least 7 days prior to the conference date. The Contractor shall attend the post award conference and present information together with the Department to the community. The conference will be scheduled in cooperation with the local community and other participants.

The post award conference will last approximately one hour. The Contractor shall present the following minimum information at the post award conference:

1. Overview of the project
2. Project timeline
3. Project impacts on the community
4. Project job numbers and types of employees
5. Contractor's employment opportunities and hiring process

The Department and DOLWD will also present information at the post award conference. The Contractor shall attend the entire meeting and participate in answering public questions raised during the post award conference.

All costs incurred by the Contractor to attend the post award conference are at the Contractor's expense. The Department is not liable for delays or rescheduling of the post award conference due to unforeseen circumstances.

HSP20.9-031023

**SECTION 109
MEASUREMENT AND PAYMENT**

Special Provision

109-1.01 GENERAL.

Replace the 2nd paragraph with the following:

When more than one type of material or work is specified for a pay item, the proposal line number, and the description are used to differentiate the material or work.

CR109.4-010120

109-1.05 COMPENSATION FOR EXTRA WORK ON TIME AND MATERIALS BASIS.

Under Item 3. Equipment, Item a. add the following to the second paragraph:

The rental rate area adjustment factors for this project shall be as specified on the adjustment maps for the Alaska – South Region.

Provide a printed copy of the current EquipmentWatch rate sheet for each piece of equipment utilized on time and materials work.

CR109.2-110118

Standard Modification

109-1.08 FINAL PAYMENT. Add the following after the fifth paragraph:

On federally funded projects, if DOLWD Wage and Hour Administration notifies the Department of a pending prevailing wage investigation, and that the investigation is preventing the closing out of the project, the Contractor may place the notified amount in escrow under Wage and Hour for the exclusive purpose of satisfying unpaid prevailing wages. Upon receipt of notice from Wage and Hour that the Contractor has satisfactorily transferred the necessary funds into escrow, the Department will proceed to issue final payment.

HSM20.3-113020R

**SECTION 120
DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM**

Special Provisions

Delete Section 120 Disadvantaged Business Enterprise (DBE) Program:

CR120.1-030117

Standard Modification

120-1.01 DESCRIPTION.

In the first sentence of the second paragraph, delete "8.83 percent" and substitute the following:
"9.39 percent".

120-3.01 DETERMINATION OF COMPLIANCE.

2. Phase II – Award.

- a. Written DBE Commitment. Delete in its entirety and substitute the following: Complete Form 25A-326 for each DBE to be used on the project.

HSM20.21A-24.0415

Blank Page

DIVISION 200 — EARTHWORK

Blank Page

SECTION 201 CLEARING AND GRUBBING

Special Provisions

201-3.01 GENERAL.

Add the following:

Perform the work necessary to preserve and/or restore land monuments and property corners from damage. Restore land monuments and/or property corners that are disturbed according to Section 642. An undisturbed area five feet in diameter may be left around existing monuments and property corners. A list of land monuments and property corners is shown on the Right of Way maps.

CR201.3-042313

Add the following:

Clearing and grubbing is not permitted within the migratory bird window of May 1 to July 15; except as permitted by Federal, State and local laws when approved by the Engineer.

CR201.1-010114

201-5.01 BASIS OF PAYMENT.

Add the following:

The work required to preserve and restore land monuments and property corners is subsidiary to 201 Pay Items.

CR201.3-042313

SECTION 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Special Provisions

replace CR202.2R-100610 with

202-3.05 REMOVAL OF PAVEMENT, SIDEWALKS, AND CURBS.

Add the following

Remove existing asphalt pavement by milling.

Remove milled material from the project immediately after milling according to Subsection 202-3.05 Removal of Pavement, Sidewalks, and Curbs, and dispose of planed material not accepted by the Maintenance Station, not used in the project, and not wanted by the Contractor according to Subsection 3.09 Disposal of Pavement, Sidewalks, and Curbs.

The pavement material milled from the project roadway (X cubic yards) is the property of the Department. Planed material not claimed by the Department is the property of the Contractor.

Stockpile the Department's planed material at the Cascade maintenance station located at Glenn Highway MP 93.5 Cascade Road. Coordinate with DOT&PF M&O, Maintenance Foreman, telephone number NUMBER for acceptance of material and desired location of stockpile.

Milled material may be used in the project with written approval. The material may be used:

- In the embankment construction, Section 203,
- As shoulder buttressing, Section 301,
- As recycled asphalt pavement, Section 306,
- As directed.

CFHWY00672-031725

Add the following Subsection 202-3.06 Salvage and Disposal of Construction and Demolition Materials:

202-3.06 SALVAGE AND DISPOSAL OF CONSTRUCTION AND DEMOLITION MATERIALS. Unless otherwise noted, remove, handle, salvage, transport, store, and dispose waste materials according to the Occupational, Safety, and Health Administration (OSHA), Environmental Protection Agency (EPA), Alaska Department of Environmental Conservation (ADEC), and other Federal, State and local government agency's statutes, rules and regulations.

Use disposal sites outside the project right-of-way limits unless directed otherwise, in writing, by the Engineer. Obtain written consent from the private or public property owner for such disposal and a waiver of all claims against the State for any damage to such land which may result, together with all permits required by law for such disposal. Furnish a copy of such permission, waiver of claims, and permits to the Engineer before commencing work. Grade disposal areas to drain.

CR202.1-040120

Standard Modification

202-5.01 BASIS OF PAYMENT.

In the first paragraph, replace "and 22.0013.____." with the following: "and 202.0013.____."

In the fourth paragraph, replace "Items 020.0014.____" with the following: "Items 202.0014.____"

HSM20.4-113020R

Add the following:

Acquiring waste disposal permits is subsidiary to 202 Pay Items.

CR202.1-040120

**SECTION 203
EXCAVATION AND EMBANKMENT**

Special Provisions

203-1.01 DESCRIPTION.

Add the following:

Ditch linear grading shall consist of the final shaping of designated ditches and slopes for drainage by grading with a small dozer, motor grader, or other suitable means approved by the Engineer.

CR203.2-14.0101R1

203-3.03 EMBANKMENT CONSTRUCTION.

Add the following after the last paragraph:

Furnish the materials, fabricate, install, and maintain the settlement platforms and piezometers as shown in the plans and as directed by the Engineer. Remove the settlement platforms, and piezometers, and grout solid the remaining pipe and conduit as shown in the plans when directed by the Engineer.

CR203.1-010610R

Standard Modification

203-3.04 COMPACTION WITH MOISTURE AND DENSITY CONTROL.

In the second paragraph delete "and ATM 214".

HSM20.5-113020R

203-4.01 METHOD OF MEASUREMENT.

Add the following:

10. Item 203.2038.____. Measurement of ditch linear grading, whether flat bottom or "V" ditch, will be measured for payment by the station along the center of the ditch for each ditch so designated, constructed, and accepted by the Engineer.

SECTION 204 STRUCTURE EXCAVATION FOR CONDUITS AND MINOR STRUCTURES

204-1.01 DESCRIPTIONS. Excavate and backfill for conduits (pipe culverts, structural plate pipe, pipe arches, storm drains, underdrains, and electrical conduits), headwalls, manholes, inlet boxes, and other minor structures.

Dewater ground water from work areas. Construct and maintain temporary water diversion when working in waterways, and for facilities or structures with active drainage.

Perform all pumping, bailing, draining, sheeting, bracing, and incidentals required for proper execution of the work.

204-2.01 MATERIALS. Use materials that conform to the following:

Selected Material	Subsection 703-2.07
Porous Backfill Material	Subsection 703-2.10

1. Structure Backfill and Bedding Material.

a. Selected Material, Type A.

- (1) Material passing the 1-inch sieve.
- (2) Material passing the 1/2-inch sieve for plastic conduits less than 8 inches in diameter.

b. Porous Backfill Material.

Uniform porous backfill material for underdrain conduit.

- (1) Material passing the 1-inch sieve for conduit 3-inch to 10-inch diameters.
- (2) Material passing the 2-inch-sieve for conduit 12-inch to 60-inch diameters.

2. Backfill Material: Selected Material Type C

In the roadbed structure use backfill material meeting the requirements of the roadbed structure, except use the structure backfill material and bedding as specified herein.

Use all suitable material from the project excavation for bedding, structure backfill, and backfill material before using material from another source.

204-3.01 CONSTRUCTION REQUIREMENTS. Clear and grub prior to starting excavation according to the requirements of Section 201.

Keep the work areas dewatered and divert water when working in a waterway or active drainage, Subsection 204-3.02.

Remove and dispose, Subsection 203-3.01, of unsuitable foundation material, including rock or other unyielding material, below the designed elevation as directed, except no less than 6 inches, and replace with approved material.

Place bedding material to a minimum thickness of 4 inches, except 6-inch minimum thickness for conduit over rock or unyielding material, and below electrical conduit, unless shown otherwise in the plans.

Place the bedding material to provide uniform support for conduit with the material in the middle one-third loosely placed and not compacted. Do not shape the bedding to the curvature of the round conduits. Shape the bedding for pipe arches, horizontal ellipse, and underpass shapes with spans exceeding 12 feet. Provide a minimum shaped width one-half the span of the pipe arch and underpass shapes and one-third the span of horizontal ellipse shape. Shape the bedding to the relatively flat bottom arc or fine-grade the foundation to a slight "V" shape.

Place minor precast concrete structures, other than conduits, on the 4-inch bedding/leveling course, of uniform stiffness and thickness with even compaction throughout.

Place the structure backfill over the bedding each side of the structure to 12 inches above the structure or the ground surface if less than 12 inches, except 6 inches above electrical conduit.

Place the structure backfill and backfill material in uniform layers not more than 6 inches deep. Do not create unbalanced loading with the placement of the structure backfill materials. When placing material against concrete, place the material according to the requirements of Section 550.

Compact the materials, each layer, without ponding or jetting to meet Subsection 203-3.04. In the haunch area, each side of the conduit, compact the material by firmly tamping into place.

Outside the roadbed structure, the Engineer may visually inspect and approve the excavation, bedding, structure backfill, backfill material, and compaction.

Support and protect existing conduits or utilities, not scheduled for removal or abandonment, when encountered in the excavation.

Remove all sheeting and bracing used in structure excavation upon completion of the work.

204-3.02 DEWATERING AND WATER DIVERSION. Submit a plan for work area dewatering and each waterway diversion, 14 days before related construction activities. Do not implement the plan without written approval. Include the permit requirements in the plan.

1. Do not exceed State of Alaska water quality standards.
2. Do not divert water from dewatering into a waterway.
3. Provide an approved disposal site for work area excess water.
4. Prevent turbid water from directly entering waterways.
5. Discharge work site water a minimum of 100 ft. from waterway.
6. Diverting water onto the roadway is not permitted.
7. Complete diversion and dewatering activities during the fish window described in the Alaska Department of Fish and Game Title 16 Fish Habitat Permit.
8. Relocate fish contained inside the coffer/diversion dam areas before the site is dewatered. Relocate fish to the closest pool upstream of the construction area.
9. In addition to other equipment required to complete the temporary water diversion and dewatering work, maintain a minimum of two trash pumps with hoses at the site during diversion construction activities. Maintain the intake to prevent fish entrapment, entrainment, or injury with the use of perforated or slotted plate and woven wire with a mesh size not greater than 3/32 inch or a profile bar and wedgewire with openings not greater than 1/16 inch. Do not exceed passive approach velocity of 0.2 fps and active approach velocity of 0.4 fps.

Rewater to minimize sediment movement downstream of the site. Prior to rewatering, slowly wet the reconstructed waterway channel; wash the fines into the bed by using pumps, or by diverting a small portion of the waterway channel flow. Capture and pump the sediment and turbid water, from the downstream end of the channel to the upstream end of the channel, until fines are washed into the streambed and water runs clear. Attain the Engineers written approval before breaching the coffer/diversion dams. Slowly breach the coffer/diversion dams and rewater the waterway channel.

204-4.01 METHOD OF MEASUREMENT. Section 109. Use neat line method as follows:

Structure Excavation:

1. Masonry Structures (except conduit). Between vertical planes, 18 inches outside the base of the masonry sections for the depth required.
2. Conduit. Between parallel vertical planes located 18 inches outside the horizontal projection of the outside diameter of the conduit and to the depth shown on the Plans.

Structure excavation only measured below the limits of other classes of excavation. Structure's in embankment section, the natural ground line as cross-sectioned is the uppermost level of computation.

204-5.01 BASIS OF PAYMENT. The Contract price includes the placing and compacting of all backfill and bedding when the materials used are obtained from excavation, any clearing and grubbing required and not paid for under some other item, formation of any embankments made with surplus material from structure excavation, and disposal of all surplus or unsuitable excavation.

Culvert baffles, headwalls, temporary water diversion, dewatering and rewatering, and the removal of pavement are subsidiary to the conduit and minor structure Pay Items.

Additional excavation to provide for shoring, sheet piles, excavation shields or flattening the excavation slopes, is subsidiary.

When item 204.0001.____, 0002.____, or 0003.____ structure Excavation, does not appear in the bid schedule, structure excavation required to complete other items of work is subsidiary, except that excavation and disposal of unsuitable material required from below a plane 12 inches below the invert elevation of conduits and 12 inches below the bottom of structures is paid as extra work.

Any backfill or bedding material required whose source is other than project excavation is paid at the contract unit price for the materials being used, or as extra work if no unit price has been established.

Traffic control paid under Section 643 and Erosion, Sediment, and Pollution Control paid under Section 641.

PAY ITEM

Item Number	Item Description	Unit
204.0001.____	Structure Excavation	CY
204.0002.____	Structure Excavation	Ton
204.0003.____	Structure Excavation	LS

CR204-24.0501

Special Provision

Replace Section 204 with the following:

DIVISION 300 — BASES

Blank Page

**SECTION 301
AGGREGATE BASE AND SURFACE COURSE**

Special Provision

301-2.01 MATERIALS.

Add the following after the first sentence:

Recycled Asphalt Material (RAM) may be substituted for aggregate base course, inch for inch, if the following conditions are met:

1. RAM shall be crushed or processed to 100 percent by weight passing the 1.5 inch sieve and 95-100 percent by weight passing the 1 inch sieve.
2. The gradation of the extracted aggregate shall meet the following:

Sieve	Percent Passing by Weight
1 inch	100
3/4 inch	70 – 100
3/8 inch	42 – 90
No. 4	28 – 78
No. 16	11 – 54
No. 50	5 – 34
No. 100	3 - 22
No. 200	2 – 12

3. The asphalt content shall be 2.5 – 5.0 percent by weight of the RAM.

CR301.1-012407R

301-3.01 PLACING.

Add the following:

Place base course material, used for the sidewalk and pathway foundations, with equipment capable of providing a specified depth and uniform surface.

CR301.2-062116

Add No. 5 after the 5th paragraph:

5. within 50 feet of detector loops.

CR301.3-022015

Standard Modification

301-3.03 SHAPING AND COMPACTION.

In the second paragraph delete "and ATM 214".

HSM20.5-113020R

Add the following:

If recycled asphalt material is substituted for aggregate base course, the following conditions shall be met:

1. Density acceptance will be determined by control strip method ATM 412. Use a test strip with a vibratory compactor with a minimum dynamic force of 40,000 pounds. The optimum density will be determined by the Engineer using a nuclear densometer gauge to monitor the test strip. Adequate water shall be added to aid compaction.
2. After the appropriate coverage with the vibratory compactor, a minimum of 6 passes with a pneumatic tire roller shall be completed. Tires shall be inflated to 80 psi (\pm 5 psi) and the roller shall have a minimum operating weight per tire of 3,000 pounds.

301-5.01 BASIS OF PAYMENT.

Add the following:

Recycled asphalt material substituted for aggregate base course will be paid for as Item 301.0001.____ Aggregate Base Course, at the unit price shown in the bid schedule for that Item.

CR301.1-012407R

Special Provision

Replace Section 308 with the following:

**SECTION 308
CRUSHED ASPHALT BASE COURSE**

308-1.01 DESCRIPTION. Construct a base course, using pulverized asphalt pavement, to the grades shown on the Plans.

Add emulsified asphalt to the base course mixture, when shown on the Plans.

308-2.01 MATERIALS. Use materials that conform to the following:

Asphalt Concrete	Existing asphalt pavement material
Aggregate Base Course	Subsection 703-2.03
Emulsified Asphalt	Subsection 702 (CSS-1)

CONSTRUCTION REQUIREMENTS

308-3.01 PRODUCTION PLAN. Submit a crushed asphalt base course Production Plan, in writing, at the Preconstruction Conference for approval.

Production Plan. Include the following:

1. Roadway Preparation.
 - a. Procedures to inventory crack sealant materials present in the roadway's surface course.
 - b. Procedures to remove crack sealant materials, according to the established criteria defined in Subsection 308-3.02.
2. Sequence of Operations.
 - a. Crack Sealant removal activities occurring in advance of processing activities, and coordination between the two parties to end each work shift at a common, predetermined location.
 - b. Shaping, grading, and compaction procedures including means and methods to maintain longitudinal grade control.
 - c. Procedures to remove excess crushed asphalt base course.
 - d. Procedures to maintain access to approaches immediately following processing operations.
3. List of field equipment used to execute the Production Plan.
4. Any additional information or procedures to ensure the crushed asphalt base course meets the Contract requirements.

308-3.02 CRACK SEALANT REMOVAL. Remove crack sealant materials from the roadway's surface course prior to processing activities. Remove crack sealant materials meeting the following criteria:

- Crack sealant materials wider than 1.5 inches
- Crack sealant materials longer than 6 feet
- As directed by the Engineer

Crack sealant materials removed are the property of the Contractor, dispose of crack sealant materials according to Subsection 202-3.06.

308-3.03 PULVERIZING AND MIXING. Crush or process the existing asphalt pavement so that 100 percent by weight passes the 2-inch sieve and 95-100 percent by weight passes the 1-1/2-inch sieve.

Use self-propelled pulverizing and mixing equipment capable of processing to full depth in a single pass. If emulsified asphalt is called for in the Plans, the mixing equipment must also be capable of adding the emulsion, through a metered system, during mixing.

Add crushed aggregate base course to the base course mixture as needed to conform to the design grade.

Maintain access to approaches immediately after processing operations.

308-3.04 WEATHER LIMITATIONS. Do not use any frozen material or compact on a frozen base.

308-3.05 SHAPING AND GRADING. Use a finish grader that is equipped with an automatic grade and cross slope control system. Maintain longitudinal grade control, based on either string line or the existing roadway surface, as determined by the Engineer.

Excess material is the property of the Contractor, dispose of excess material according to Subsection 202-3.06. Do not grade excess material past the hinge point.

308-3.06 COMPACTION AND COMPACTION EQUIPMENT. The Engineer will use ATM 412 to determine the density standard. Make each control strip at least 12 feet by 300 feet. Compact the remainder of the project to not less than 98 percent of the density standard in accordance with ATM 411. The Engineer will designate the location of test strips.

Compact the base course using vibratory compactors, applying a minimum dynamic force of 50,000 pounds per vibration at a minimum frequency of 1,000 vibrations per minute. Adjust working speed in order to apply 8 to 12 impacts per foot. In areas inaccessible to rollers, use mechanical tampers until thoroughly compacted.

308-3.07 SURFACE TEST. The finished surface will be tested for smoothness and accuracy of grade, crown, superelevation, and width.

Limit surface deviations to 3/8 inch, as measured from the test edge of a 10-foot straightedge between two contacts with the surface parallel with, and at right angles to, the centerline.

308-4.01 METHOD OF MEASUREMENT. See Section 109 and the following:

1. Crushed Asphalt Base Course, by square yard. By the area of finished top surface.
2. CSS-1 Asphalt for Base Course, by ton. By weighing or invoice.
3. Crushed Asphalt Base Course, by ton. By weighing or invoice.
4. Crushed Asphalt Base Course, by lump sum. Emulsified Asphalt is subsidiary.

308-5.01 BASIS OF PAYMENT. Additional crushed aggregate base course, if required, will be paid for under Section 301.

Water required for compaction of the crushed asphalt base course is subsidiary.

Removal and disposal of excess materials, and crack sealant materials, is subsidiary.

Creation of a model for grade control is subsidiary.

Payment will be made under:

PAY ITEM		
Item Number	Item Description	Unit
308.0001._____	Crushed Asphalt Base Course	SY
308.0002._____	CSS-1 for Asphalt Base Course	TON
308.0003._____	Crushed Asphalt Base Course	TON
308.0004._____	Crushed Asphalt Base Course	LS

CFHWY00672-031725

Blank Page

DIVISION 400 — ASPHALT PAVEMENTS AND SURFACE TREATMENTS

Blank Page

Special Provision

Replace Section 401 with the following:

SECTION 401 HOT MIX ASPHALT PAVEMENT

401-1.01 DESCRIPTION. Construct one or more courses of plant-produced Hot Mix Asphalt (HMA) pavement on an approved surface, to the lines, grades, and depths shown on the Plans.

1. In this Section, HMA refers to Type I, II, III, and IV.
 - a. Temporary Asphalt Pavement: HMA, Type II, Class B, minimum.
 - b. Preleveling/Leveling Course: HMA, Type IV, Class B.

MATERIALS

401-2.01 ASPHALT BINDER. Conform to Subsection 702-2.01. If binder performance grade is not specified, use PG 52-28.

Provide test reports for each batch of asphalt binder showing conformance to the specifications in Section 702 before delivery to the project. Require that the storage tanks used for each batch be noted on the test report, the anti-strip additives required by the mix design be added during load out for delivery to the project, and a printed weight ticket for anti-strip is included with the asphalt binder weight ticket. The location where anti-strip is added may be changed with the written approval of the Engineer.

Furnish the following documents at delivery:

1. Manufacturer's certificate of compliance (Subsection 106-1.05).
2. Conformance test reports for the batch (provide prior to delivery as noted above).
3. Batch number and storage tanks used.
4. Date and time of load out for delivery.
5. Type, grade, temperature, and quantity of asphalt binder loaded.
6. Type and percent of liquid anti-strip added.

Asphalt binder may be conditionally accepted at the source if a manufacturer's certification of compliance is provided, according to Subsection 106-1.05, and the applicable requirements of Section 702 are met.

401-2.02 LIQUID ANTI-STRIP ADDITIVE. Use anti-strip agents in the proportions determined by ATM 414 and included in the approved Job Mix Design (JMD). At least 90% of the aggregate must remain coated when tested according to ATM 414. The following minimum dose (percent) of liquid anti-strip by weight of asphalt binder is required:

Liquid Anti-strip Type	Minimum Dose by Weight of Asphalt Binder, %
Amines based	0.30
Phosphate Ester based	0.30
Organ-Silane based	0.05

401-2.03 JOINT ADHESIVE. Conform to Subsection 702-2.05.

401-2.04 JOINT SEALANT. Conform to Subsection 702-2.06.

401-2.05 WARM MIX ASPHALT. Conform to Subsection 702-2.07.

401-2.06 ASPHALT RELEASE AGENT. Conform to Subsection 702-2.08.

401-2.07 AGGREGATES. Conform to Subsection 703-2.04. Use a minimum of three stockpiles of crushed aggregate (coarse, intermediate, and fine). Place blend material, if any, in a fourth pile.

401-2.08 RECYCLED ASPHALT PAVEMENT. Recycled asphalt pavement (RAP) may be used in the production of HMA. The RAP may be from pavements removed under the Contract, or from an existing stockpile. Conform to Subsection 703-2.16

401-2.09 JOB MIX DESIGN. Provide target values for gradation that satisfy both the broad band gradation limits shown in Table 703-4 and the requirements of Table 401-1, for the Type and Class of HMA specified.

**TABLE 401-1
HMA MARSHALL Design Requirements**

DESIGN PARAMETER	CLASS "A"	CLASS "B"
HMA (Including Asphalt Binder)		
Stability, Pounds	1800 Min.	1200 Min.
Flow, 0.01 Inch	8 – 14	8 - 16
Voids in Total Mix (VTM), %	3.0 – 5.0	3.0 – 5.0
Compaction, Number of Blows Each Side of Test Specimen	75	50
Asphalt Binder		
Voids Filled with Asphalt (VFA), %	65 - 75	65 - 78
Asphalt Content, Min. % @ 4% VTM	5.0	5.0
Dust-Asphalt Ratio*	0.6 - 1.4	0.6 - 1.4
Voids in the Mineral Aggregate (VMA), %, Min.		
Type I	12.0	11.0
Type II	13.0	12.0
Type III, IV	14.0	13.0
Liquid Anti-Strip Additive**, %, Min.	0.30	0.30
RAP, %, Max.	15.0	25.0

*Dust-Asphalt ratio is the percent of material passing the No. 200 sieve divided by the percent of effective asphalt binder (calculated by weight).

** By Weight of Asphalt Binder

The approved JMD will specify the Target Values (TV) for gradation, the TV for asphalt binder content, the Maximum Specific Gravity (MSG) of the HMA, the additives, and the recommended mixing temperature range.

Submit the following to the Engineer at least 15 days before the production of HMA:

1. A letter stating the location, size, and type of mixing plant. The letter shall state whether or not WMA and/or RAP will be used. The letter shall include the proposed gradation for the JMD, gradations for individual stockpiles, and the blend ratio of each aggregate stockpile.
2. Representative samples of each aggregate (coarse, intermediate, fine, blend material and mineral filler, if any) in the proposed mix design. Furnish a total of 500 pounds of material in the proportional amounts in the proposed JMD.
3. Five separate 1-gallon samples of the asphalt binder proposed for use in the HMA. Include name of product, manufacturer, test results of the applicable quality requirements of Subsection 702-2.01, manufacturer's certificate of compliance according to Subsection 106-1.05, a temperature- viscosity curve for the asphalt binder or manufacturer's recommended mixing and compaction temperatures, and current Material Safety Data Sheet.
4. One sample, minimum 1/2 pint, of the anti-strip additive proposed, including name of product, manufacturer, and manufacturer's data sheet, and current Material Safety Data Sheet.
5. Testing results per Subsection 106-1.03.1 for each aggregate type proposed for use.
6. If applicable, a letter stating the WMA technology (Subsection 702-2.07) to be used, location where additive will be introduced and manufacturer's recommended usage rate for each type of HMA. Supply a minimum of 2-pint samples for each proposed additive.
7. If applicable, representative samples of any RAP proposed for use. Furnish a minimum of 200-pound sample of proposed RAP.

The Engineer will evaluate the material and the proposed gradation using ATM 417 and the requirements of Table 401-1 for the appropriate Type and Class of HMA specified, and establish the approved JMD which will become a part of the Contract.

Anti-strip evaluation (ATM 414) of HMA mix designs that include RAP will be completed without the inclusion of the RAP.

Obtain an approved JMD prior to shipment of aggregates to an asphalt plant site or producing HMA for payment.

Contractor Mix Design. If a bid item for JMD appears in the contract, or if the Engineer approves a request from the Contractor to perform the JMD at no cost to the Department, provide a JMD following the requirements specified in this section. Submit the JMD to the Engineer at least 15 working days before HMA production. Submit samples to the Engineer upon request for JMD verification testing.

All Contractor-furnished JMDs must be sealed by a professional Engineer registered in the State of Alaska. The Professional Engineer shall certify that the JMD was performed according to the specified procedures, and meets all project specifications.

Changes. Submit a new JMD with changes noted and new samples in the same manner as the original JMD submittal when:

- a. The results of the JMD evaluation do not achieve the requirements specified in Table 401-1
- b. The asphalt binder source is changed
- c. The source of aggregate, aggregate quality or gradation is changed
- d. The results of a Test Strip do not meet the requirements of the specification – the Engineer may require a new JMD.

Do not produce HMA for production paving and payment before the Engineer provides written approval of the JMD; the original, or a replacement JMD.

The Engineer has the option to require further verification of the JMD under 401-2.10 Process Quality Control. If a Test Strip(s) is required, do not produce HMA for production paving and payment before the Engineer provides written approval of the Test Strip construction, construction process, materials, and the JMD, Subsection 401-2.10.

Payment for HMA will not be made until the new JMD and the Test Strip, when required, is approved.

Approved changes apply only to HMA produced after the submittal of changes.

The Engineer will assess a fee for each mix design subsequent to the approved Job Mix Design, per Subsection 401-5.01.

401-2.10 PROCESS QUALITY CONTROL. Sample and test materials for quality control of the HMA according to Subsection 106-1.03. Submit to the Engineer at the "Pre-Paving Meeting," Subsection 401-3.01, the JMD and a documentation plan that provides a complete, accurate, and clear record of the sampling and testing results.

Failure to perform quality control forfeits the Contractor's right to a retest under Subsection 401-4.02

Provide copies of the documented sampling and testing results no more than 24 hours from the time taken.

Supplemental Process Quality Control:

The Engineer has the option to require supplemental process quality controls including additional sampling and testing. Include the supplemental process quality controls in the documentation plan.

When directed by the Engineer: provide "Density Profiles" and or "Test Strips".

1. Density Profiles. Provide density profile testing, with a nuclear density gauge, of the mat and longitudinal joints. Include the frequency of the test groups, configuration of the test groups for mat density and joint density individually or combined. Indicate the number of tests in a test group intended to confirm the density of the mat and joints.

Locations that may require testing include: all lanes on bridge decks, adjacent to longitudinal joints, areas where segregation is visible, thermal segregation potential exists, where mat density is lower than the minimum (considered segregated), and the paver starts/stops. The Engineer will identify these and other areas that require density testing.

2. Test Strips. Construct test strips (ATM 412) using the approved job mix HMA a minimum of 5 working days prior to planned production paving, except use the proposed JMD when the test strip is being constructed to help evaluate the JMD as part of the mix performance analysis. Submit a proposed test strip location to the Engineer for coordination, and approval; include in the process control documentation plan. The Engineer's approval and written authorization of the location, date, and time, is required before construction of a test strip.

Establish roller patterns and the number of passes required to assure that proper placement and compaction is achieved. The test strip shall include no less than 300 tons and no more than 1000 tons, except as may be authorized, in writing, by the Engineer. The full complement of the paving train shall be on site to receive instructions from the Engineer as needed to complete the mix performance analysis. Make the equipment available for inspection as required by Subsection 401-3.04. Provide an onsite process control representative with authority to modify mix components as instructed by the Engineer.

Failed Test Strip: the Engineer may direct the Contractor to remove and dispose of test strips not meeting specification requirements. Contractor, construct a new test strip or return the surface materials and grade to their original condition as directed by the Engineer.

Only after the Engineer approves the test strip may HMA be produced for production paving and payment.

Refer to Subsection 401-5.01 for payment of test strips.

CONSTRUCTION REQUIREMENTS

401-3.01 PRE-PAVING MEETING. Meet with the Engineer for a pre-paving meeting in the presence of the project superintendent and paving foreman at least (5) working days before beginning paving operations. Submit a paving plan and pavement inspection plan at the meeting. When directed by the Engineer, make adjustments to the plan and resubmit.

1. Paving Plan. Include the following:
 - a. Sequence of operations
 - b. List of equipment that will be used for production, transport, pick-up (if applicable), laydown, and compaction
 - c. Summary of plant modifications (if applicable) for production of WMA
 - d. Procedures to produce consistent HMA
 - e. Procedures to minimize material and thermal segregation
 - f. Procedures to minimize premature cooling
 - g. Procedures to achieve HMA density

- h. Procedures for joint construction including corrective action for joints that do not meet surface tolerance requirements
 - i. Quality control testing methods, frequencies and sample locations for gradation, asphalt binder content, and density, and
 - j. Any other information or procedures necessary to provide completed HMA construction that meets the Contract Requirements
2. Pavement Inspection Plan. Include the following:
- a. Process for daily inspections
 - b. Means and methods to remove and dispose of project materials

401-3.02 CONTRACTOR QUALITY CONTROL. Perform quality control (QC) of HMA materials in accordance with Subsection 106-1.03.

401-3.03 WEATHER LIMITATIONS. Place HMA on a stable/non-yielding roadbed. Do not place HMA when the base material is wet or frozen, or when weather conditions prevent proper handling or finishing of the mix. Do not place HMA when the roadway surface temperature is colder than 40° F.

401-3.04 EQUIPMENT, GENERAL. Use equipment in good working order and free of HMA buildup. Make all equipment available for inspection and demonstration of operation a minimum of 24 hours before placement of HMA and test strip HMA.

401-3.05 ASPHALT MIXING PLANT. Meet AASHTO M 156. Use an HMA plant capable of producing at least 150 tons of HMA per hour noted on posted DEC air quality permit, designed to dry aggregates, maintain consistent and accurate temperature control, and accurately proportion asphalt binder and aggregates. Calibrate the HMA plant and furnish copies of the calibration data to the Engineer at least 24 hours before HMA production.

Provide a scalping screen at the asphalt plant to prevent oversize material or debris from being incorporated into the HMA.

Provide a tap on the asphalt binder supply line just before it enters the plant (after the 3-way valve) for sampling asphalt binder. Provide aggregate and asphalt binder sampling locations meeting OSHA safety requirements.

You may use belt conveyor scales to proportion plant blends and mixtures if the scales meet the general requirements for weighing equipment and are calibrated according to the manufacturer's instructions.

If WMA is approved by the Engineer, modify the mixing plant as required by the manufacturer and WMA additive manufacturer.

401-3.06 HAULING EQUIPMENT. Haul HMA in trucks with tight, clean, smooth metal beds. Keep beds free of petroleum oils, solvents, or other materials that would adversely affect the mixture. Apply a thin coat of approved asphalt release agent to beds as necessary to prevent mixture adherence. Provide trucks with covers attached and available for use.

When directed by the Engineer, cover the HMA in the hauling vehicle(s).

Do not haul HMA on barges.

401-3.07 ASPHALT PAVERS. Use self-propelled asphalt pavers with heated vibratory screed assemblies to spread and finish HMA to the specified section widths and thicknesses without introducing thermal or material segregation.

Equip the paver with a receiving hopper having sufficient capacity for a uniform spreading operation and a distribution system to place the HMA uniformly in front of screed. Use a screed assembly that produces a finished surface of the required smoothness, thickness, and texture without tearing, shoving, or displacing the HMA. Heat and vibrate screed extensions. Place auger extensions within 20 inches of the screed extensions or per written manufacturer's recommendations.

Equip the paver with a means of preventing segregation of the coarse aggregate particles from the remainder of the HMA when carried from the paver hopper back to the augers.

Equip the paver with automatic screed controls capable of operating from a reference line or a ski from either or both sides of the paver.

The use of a "Layton Box" or equivalent towed paver is allowed on bike paths, sidewalks, and driveways.

401-3.08 ROLLERS. Use both steel-wheel (static or vibratory) and pneumatic-tire rollers. Use rollers designed to compact HMA and capable of reversing without shoving or tearing the mixture. Select rollers that will not crush the aggregate or displace the HMA. Equip vibratory rollers with separate vibration and propulsion controls.

Equip the rollers with an infrared thermometer that measures and displays the surface temperature to the operator. Infrared thermometer may be hand-held or fixed to the roller.

Utilize a pneumatic roller in the complement of rollers to compact the leveling course. Use fully skirted pneumatic-tire roller having a minimum operating weight of 3000 pounds per tire.

401-3.09 RESERVED.

401-3.10 PREPARATION OF EXISTING SURFACE. Prepare existing surfaces according to the Contract. Prior to placing HMA, clean existing surfaces of loose material and uniformly coat contact surfaces of curbing, gutters, manholes and other structures with tack coat material meeting Section 402. Treat cold joint surfaces according to 401-3.17. Allow tack coat to break before placement of HMA on these surfaces. Do not apply the tack coat material until the Engineer approves the existing surface including, not limited to; the existing paved surface, the milled surface, and a prior layer of HMA pavement.

Before applying tack coat to an existing paved surface, clean and patch the surface. Remove irregularities to provide a reasonably smooth and uniform surface. Remove and replace unstable areas with HMA. Clean the edges of existing pavements, which are to be adjacent to new pavement, to permit the adhesion of asphalt materials. Clean loose material from cracks. Fill the cleaned cracks, wider than 1 inch, with HMA tamped in place. Wash and/or sweep the paved surface clean and free of loose materials.

Preparation of a milled surface:

1. Prelevel remaining ruts, pavement delaminations, and depressions having a depth greater than 1/2 inch with an approved HMA.
2. Notify the Engineer of pavement areas that appear thin or unstable. Where milling operation creates thin or unstable pavement areas, or where it breaks through existing pavement, remove thin and unstable pavement, and 2 inches of existing base material, compact and replace with an approved HMA.

401-3.11 PREPARATION OF ASPHALT. Provide a continuous supply of asphalt binder to the asphalt mixing plant at a uniform temperature, within the recommended mixing temperature range.

401-3.12 PREPARATION OF AGGREGATES. Dry the aggregate so the moisture content of the HMA, sampled at the point of acceptance for asphalt binder content, does not exceed 0.5% (by total weight of mix), as determined by ATM 407.

Heat the aggregate for the HMA to a temperature compatible with the mix requirements specified.

Adjust the burner on the dryer to avoid damage to the aggregate and to prevent the presence of unburned fuel on the aggregate. HMA containing soot or fuel is unacceptable per Subsection 105-1.11.

401-3.13 MIXING. Combine the aggregate, asphalt binder, and additives in the mixer in the amounts required by the JMD. Mix to obtain at least 98% coated particles when tested according to AASHTO T195.

For batch plants, put the dry aggregate in motion before addition of asphalt binder.

Mix the HMA within the temperature range determined by the JMD.

Upon the Engineer's request, provide daily burner charts showing start/stop times and temperatures.

401-3.14 TEMPORARY STORAGE OF HMA. Silo type storage bins may be used, provided the characteristics of the HMA remain unaltered.

Signs of visible segregation, heat loss, changes from the JMD, change in the characteristics of asphalt binder, lumpiness, and stiffness of the mixture, are causes for rejection.

Do not store HMA on barges.

401-3.15 PLACING AND SPREADING. Use asphalt pavers to distribute HMA, including leveling course and temporary HMA. Place the HMA upon the approved surface, spread, strike off, and adjust surface irregularities. The maximum compacted lift thickness allowed is 3 inches.

When multiple lifts are specified in the Contract, do not place the final lift until all lower lifts throughout that section, are placed and accepted.

Do not place HMA abutting curb and gutter until curb and gutter are installed, except as approved by the Engineer.

Do not pave against new Portland cement concrete curbing until it has cured for at least 72 hours.

When practicable, adjust elevation of metal fixtures before paving the final lift, so they will be between 1/4 and 1/2 inch below the top surface of the final lift. Metal fixtures include, but are not limited to manholes, valve boxes, monument cases, hand holes, and drains.

When the section of roadway being paved is open to traffic, pave adjacent traffic lanes to the same elevation within 24 hours. Place approved material against the outside pavement edge when the drop off exceeds 2 inches.

Use hand tools to spread, rake, and lute the HMA in areas where irregularities or unavoidable obstacles make mechanical spreading and finishing equipment impracticable.

Place HMA over bridge deck membranes according to Section 508 and the membrane manufacturer's recommendations.

Do not mix HMA produced from different plants for testing or paving.

401-3.16 COMPACTION. Thoroughly and uniformly, compact the HMA by rolling. In areas not accessible to large rollers, compact with mechanical tampers or trench rollers.

Prevent indentation in the mat, do not leave rollers or other equipment standing on HMA that has not sufficiently cooled.

The Lower Specification Limit for density is 92.0% of the Maximum Specific Gravity (MSG) as determined by ATM 409. The MSG from the approved JMD is used for the first lot of each type of HMA. The MSG for additional lots is determined from the first subplot of each lot.

401-3.17 JOINTS. Place and compact the HMA to provide a continuous bond, texture, and smoothness between adjacent sections of the HMA.

Minimize the number of joints. Do not construct longitudinal joints in the driving lanes unless approved by the Engineer in writing at the pre-paving meeting. Offset the longitudinal joints in one layer from the joint in the layer immediately below by at least 6 inches. Align the joints of the top layer at the centerline or lane lines. Where preformed marking tape striping is required, offset the longitudinal joint in the top layer not more than 6 inches from the edge of the stripe.

Form transverse joints by saw-cutting back on the previous run to expose the full depth of the course or by using a removable bulkhead. Skew transverse joints 15 to 25 degrees.

For all joints below the top lift, uniformly coat joint surfaces with tack coat material meeting Section 402.

Uniformly coat the joint face of all top lift joints with a joint adhesive. Follow joint adhesive manufacturer's recommendations for temperatures and application method. Remove joint adhesive applied to the top of pavement surface. If infrared joint heaters are used and passing joint densities are achieved in each of the first three joint densities taken, then joint adhesive is not required.

The Lower Specification Limit for top lift longitudinal joint density is 91.0% of the MSG of the panel completing the joint. MSG will be determined according to ATM 409.

For top lift panels that have a longitudinal joint density less than 91.0% of the MSG in a subplot, seal the surface of the longitudinal joints with joint sealant within that subplot, or as directed.. Apply joint sealant according to the manufacturer's recommendations while the HMA is clean, free of moisture and prior to final traffic marking. Place the sealant at a maximum application rate of 0.15 gallons per square yard, and at least 12 inches wide centered on the longitudinal joint. After surface sealing, inlay by grinding pavement striping into the sealed HMA. Use grooving equipment that grinds a dry cut to groove the width, length, and thickness of the striping within the specified striping tolerances.

Correct improperly formed joints that result in surface irregularities according to a corrective action plan.

Complete all hot lapped joints while the mat temperature is over 230°F as measured by the Engineer, within 3 inches of the joint. Tack coat and joint adhesive are not required for hot lapped joints. Hot lapped joints will receive the full Longitudinal Joint Density Price Adjustment incentive without testing for joint density.

Top lift longitudinal joints will be evaluated for acceptance according to Subsection 401-4.03

401-3.18 SURFACE REQUIREMENTS AND TOLERANCE. The finished surface of all HMA paving must match dimensions shown in the Contract for horizontal alignment and width, profile grade and elevation, crown slope, and pavement thickness. Water must drain across the pavement surface without ponding. The surface must have a uniform texture, without ridges, puddles, humps, depressions, and roller marks. The surface must not exhibit raveling, cracking, tearing, asphalt bleeding, or aggregate segregation. Leave no foreign material, uncoated aggregate, or oversize aggregate on the HMA surface.

The Engineer will test the finished surface after final rolling at selected locations using a 10-foot straightedge. The Engineer will identify pavement areas that deviate more than 3/16-inch from the straightedge, including joints, as defective work. Perform corrective work by removing and replacing, grinding, cold milling or infrared heating such areas as required. Do not surface patch. After the Contractor performs corrective work, the Engineer will retest the area.

Perform corrective Actions according to one of the following or by a method approved by the Engineer:

1. Diamond Grinding. If the required pavement thickness is not decreased by more the 1/4-inch grind to the required surface tolerance and cross section. Remove and dispose of all waste materials. Apply joint sealant and sand to exposed aggregates per the manufacturer's recommendations.
2. Overlaying. Mill or sawcut the existing pavement to provide a vertical transverse joint face to match the overlay to the existing pavement. Apply tack coat on the mill surface and joint adhesive to all vertical joints and overlay the full width of the underlying pavement surface. Use the same approved HMA for overlays. Place a minimum overlay thickness of 2.0-inches.
3. Mill and Fill. Mill the existing pavement to provide a vertical transverse joint face. Apply tack coat to the milled surface and joint adhesive to all vertical joints prior to inlaying new HMA to match the existing pavement. Use the same approved HMA. Place a minimum thickness of 2.0-inches.

401-3.19 REPAIRING DEFECTIVE AREAS. Remove HMA that is contaminated with foreign material, is segregated (determined visually or by testing), flushing, or bleeding asphalt. Remove and dispose defective HMA for the full thickness of the course. Cut the pavement so that edges are vertical and the sides are parallel to the direction of traffic. Coat edges with a tack coat according to Section 402. Place and compact fresh HMA so that compaction, grade, and smoothness requirements are met.

401-3.20 ROADWAY MAINTENANCE. Inspect daily according to pavement inspection plan. Remove, and dispose of project materials incorrectly deposited on existing and new pavement surfaces(s) inside and outside the project area including haul routes.

The Contractor is responsible for damage caused by not removing these materials and any damage to the roadway from the removal method(s).

Repair damage to the existing roadway that results from fugitive materials or their removal.

401-4.01 METHOD OF MEASUREMENT. Section 109 and the following:

1. Hot Mix Asphalt.

- a. By weight. No deduction is made for the weight of asphalt binder or anti stripping additive or cutting back joints. If the use of WMA is approved by the Engineer, WMA additives will not be measured and are considered subsidiary to the HMA pay item.

- b. By the final HMA surface area.

2. Asphalt Binder. By weight, as follows:

Method 1 will be used for determining asphalt binder quantity unless otherwise directed in writing. The procedure initially used will be the one used for the duration of the project. No payment is made for any asphalt binder more than 0.4% above the optimum asphalt binder content specified in the JMD.

Method 1: Percent of asphalt binder for each subplot multiplied by the total HMA weight represented by that subplot. The Engineer will use either ATM 405 or ATM 406 to determine the percent of asphalt binder. The same test method used for the acceptance testing of the subplot will be used for computation of the asphalt binder quantity. In the absence of testing, the percent of asphalt binder is the target value for asphalt binder in the JMD.

Method 2: Supplier's invoices minus waste, diversion, and remnant. This procedure is an Engineer's option for projects where deliveries are made in tankers and the asphalt plant is producing HMA for one project only.

The Engineer may direct, at any time that tankers are weighed in the Engineer's presence before and after unloading. If the weight determined at the project varies more than 1% from the invoice amount, payment is based on the weight determined at the project.

Any remnant or diversion will be calculated based on tank stickings or weighing the remaining asphalt binder. The Engineer will determine the method. The weight of asphalt binder in waste HMA is calculated using the target value for asphalt binder as specified in the JMD.

- 3. Job Mix Design. When specified, a Contractor furnished JMD is measured as one according to the HMA class and type.
- 4. Temporary Pavement. By weight, without deduction for the weight of asphalt binder or anti-strip additive.
- 5. Leveling Course. By Lane-Station (12 foot width) or by weighing without deduction for the weight of asphalt binder or anti-strip additive.
- 6. HMA Price Adjustment. Calculated by quality level analysis under Subsection 401-4.03.1.

7. Longitudinal Joint Density Price Adjustment. By the linear foot of top lift longitudinal joint under Subsection 401-4.03.2.
8. Joint Adhesive. By the linear foot of longitudinal and transverse joint.
9. Pavement Smoothness Price Adjustment. Calculated from inertial profiler data using FHWA's ProVAL software under Subsection 401-4.03.3.
10. Asphalt Material Price Adjustment. Determined under Subsection 401-4.04.
11. Liquid Anti-Strip Additive. Based on the number of tons of asphalt binder containing required additive.
12. Crack Repair. From end to end of the crack repaired according to 401-3.10, measured horizontally along the centerline of the crack.
13. Prelevel for Ruts, Delaminations, and Depressions. By the surface area where prelevel is placed according to 401-3.10(1), measured according to Section 109.
14. Repair Unstable Pavement. By the surface area of pavement repaired according to 401-3.10(2), measured according to Section 109.

401-4.02 ACCEPTANCE SAMPLING AND TESTING.

1. Hot Mix Asphalt

The bid quantity of each type of HMA produced and placed is divided into lots and the lots evaluated individually for acceptance.

A lot is normally 5,000 tons. The lot is divided into sublots of 500 tons, each randomly sampled and tested for asphalt binder content, density, and gradation according to this Subsection. The lot is evaluated for price adjustment according to Subsection 401-4.03.1. Seasonal startup or a new JMD requires starting a new lot.

If less than 8 sublots have been placed at the time a lot is terminated, the material in the shortened lot will be included as part of the prior lot. The price adjustment computed for the prior lot will include the samples from the shortened lot. Density test results from material in the shortened lot will be based on the MSG of the first sublot of the shortened lot. If there is no prior lot, and there are at least 3 sublots, the material in the shortened lot will be considered as a lot and the price adjustment will be based on the actual number of test results in the shortened lot. If there are less than 3 sublots, the HMA will be accepted for payment based on the Engineer's approval of the JMD, and placement and compaction of the HMA to the specified depth, finished surface requirements, and tolerances.

If 8 or 9 sublots have been placed at the time a lot is terminated, they will be considered as a lot and the price adjustment will be based on the actual number of test results in the shortened lot.

If the bid quantity is between 1,500 to 5,000 tons, the quantity is considered one lot. The lot is divided into sublots of 500 tons, each randomly sampled and tested for asphalt binder content, density, and gradation according to this Subsection.

For bid quantity less than 1,500 tons, HMA will be accepted for payment based on the Engineer's approval of the JMD, and placement and compaction of the HMA to the specified depth, finished surface requirements, and tolerances.

The Engineer reserves the right to perform any testing required in order to determine acceptance.

- a. Asphalt Binder Content. HMA samples shall be taken randomly by the Contractor in the presence of the Engineer from behind the paver screed before initial compaction, or will be taken randomly by the Engineer from the windrow, according to ATM 402 or ATM 403, at the discretion of the Engineer. The location (behind the paver screed or windrow) will be determined at the pre-paving meeting. The Engineer will determine random sampling locations.

Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. At the discretion of the Engineer, Asphalt binder content will be determined according to ATM 405 or ATM 406.

- b. Aggregate Gradation. Aggregates tested for gradation acceptance will have the full tolerances from Table 401-2 applied.

(1). Drum Mix Plants. Samples will be taken from the combined aggregate cold feed conveyor via a diverter device, from the stopped conveyor belt or from the same location as samples for determination of asphalt binder content, at the discretion of the Engineer. Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. The aggregate gradation for samples from the conveyor system will be determined according to ATM 304. For HMA samples, the gradation will be determined according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder. Locate diverter devices for obtaining aggregate samples from drum mix plants on the conveyor system delivering combined aggregates into the drum. Divert aggregate from the full width of the conveyor system and maintain the diverter device to provide a representative sample of aggregate incorporated into the HMA.

(2) Batch Plants. Samples will be taken from dry batched aggregates according to ATM 301 or from the same location as samples for determination of asphalt binder content, at the discretion of the Engineer. Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. The aggregate gradation for dry batch samples will be determined according to ATM 304. For HMA samples, the gradation will be determined according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder.

- c. Density. The Engineer will determine and mark the location(s) where the Contractor takes each core sample.

(1) Mat Cores: The location(s) for taking core samples is determined using a set of random numbers (independent of asphalt binder and aggregate sampling set of random numbers) and the Engineer's judgment. Take no mat cores within 1 foot of a joint or edge. Core samples are not taken on bridge decks.

(2) Longitudinal Joint Cores: The Engineer will mark the location(s) to take the core sample, centered on the visible surface joint, and adjacent to the mat core sample taken in the panel completing the joint.

Take core samples according to ATM 413 in the presence of the Engineer. Cut full depth core samples, centered on the marks and as noted above, from the finished HMA within 24 hours after final rolling. Neatly core drill one six-inch diameter sample at each marked location. Use a core extractor to remove the core - do not damage the core. The Engineer will immediately take possession of the samples. Backfill and compact voids left by coring with new HMA within 24 hours, and according to ATM 413. The Engineer will determine density of samples according to ATM 410.

- d. Asphalt binder Content, Aggregate Gradation, and Density - Retest. When test results have failed to meet specifications, retest of acceptance test results for asphalt binder content, gradation, and density may be requested provided the quality control requirements of Subsection 401-3.02 Contractor Quality Control are met. Deliver this request in writing to the Engineer within 7 days of receipt of the final test of the lot. The Engineer will mark the sample location for the density retest within a 2-foot radius of the original core. The original test results are discarded and the retest result is used in the price adjustment calculation regardless of whether the retest result gives a higher or lower pay factor. Only one retest per sample is allowed. When gradation and asphalt binder content are determined from the same sample, a request for a retest of either gradation or asphalt binder content results in a retest of both. Both gradation and asphalt binder content retest results are used in the price adjustment calculation. Except for the first lot, retesting for gradation or asphalt binder from the first subplot of a lot will include retesting for the MSG. Retesting will be performed by a Department laboratory.

2. Asphalt Binder

The bid quantity of asphalt binder produced and placed is divided into lots and the lots evaluated individually for binder grade acceptance.

Testing will be by AASHTO accredited independent laboratories. When retesting is requested, the assigned value (ATV) will be determined using ASTM D3244. Each test will be completed by a different laboratory.

- a. Acceptance Test. The lot size for asphalt binder is 200 tons. If a project has more than one lot and the remaining asphalt binder quantity is less than 150 tons, it is added to the previous lot and that total quantity will be evaluated as one lot. If the remaining asphalt binder quantity is 150 tons or greater, it is sampled, tested and evaluated as a separate lot.

If the bid quantity of asphalt binder is between 85 to 200 tons, the quantity is considered as one lot and sampled, tested, and evaluated according to this subsection. Quantities of asphalt binder less than 85 tons will be accepted based on manufacturer's certified test reports and certification of compliance.

Sample asphalt binder at the plant from the supply line in the presence of the Engineer according to ATM 401. The Engineer will take immediate possession of the samples. Take three samples from each lot, one for acceptance testing, one for Contractor requested retesting, and one held in reserve for referee testing if requested. Meet Subsection 702-2.01 requirements for asphalt binder quality.

- b. Retest. Submit a written request, for a retest, no more than 7 days from receiving notice of the failed acceptance test. In the request, identify the retest laboratory. The Engineer will send the second sample (retest sample) to the laboratory. Provide the retest results to the Engineer. Contractor pays for the retest costs.

If the average of the combined test results ($[\text{acceptance} + \text{retest}]/2$) passes the specification requirement, the average value becomes the ATV. If this ATV fails the specification requirement, the Engineer or Contractor may request the third sample (referee sample) be tested.

- c. Referee Test. The Engineer will send the third sample (referee sample) to an agreed upon laboratory. The average of the combined test results ($[\text{acceptance} + \text{retest} + \text{referee}]/3$) equals the ATV. If the ATV fails to meet specifications, the Contractor pays for the referee test.

401-4.03 EVALUATION OF MATERIALS FOR ACCEPTANCE. The Engineer may reject material which appears to be defective based on visual inspection. If a test of rejected material is requested, a minimum of two samples are collected from the rejected material and tested. If all test results are within specification limits, payment for the material is made.

The following methods are applied to each type of HMA with Price Adjustment Pay Items in the Contract. These methods describe how price adjustments are determined based on the quality of the HMA binder longitudinal joint density and pavement smoothness.

1. **HMA Price Adjustment.** Acceptance test results for HMA asphalt binder content, gradation and mat density are used in HMA price adjustment. These test results for a lot are analyzed collectively and statistically by the Quality Level Analysis (QLA) method as specified in Subsection 106-1.03.3 to determine the total estimated percentage of the lot that is within specification limits. The values for percent passing the #200 sieve, asphalt binder content and density test results are reported to the nearest 0.1 percent. All other sieves used in QLA are reported to the nearest whole number.

The HMA price adjustment is based on the lower of two pay factors. The first factor is a composite pay factor (CPF) for HMA that includes gradation and asphalt binder content. The second is the density pay factor (DPF).

A lot containing material with less than a 1.000 pay factor is accepted at an adjusted price, provided that pay factor is at least 0.800 and there are no isolated defects identified by the Engineer. A lot containing material that fails to obtain the minimum pay factor is considered unacceptable and rejected under Subsection 105-1.11.

HMA pay factors are computed as follows:

- a. All statistical Quality Level Analysis (QLA) is computed using the Engineer's Price Adjustment programs.
- b. The USL and LSL are equal to the Target Value (TV) plus and minus the allowable tolerances in Table 401-2, or as shown below. The TV is the specification value shown in the approved Job Mix Design.

TABLE 401-2
HMA LOWER SPECIFICATION LIMIT (LSL) & UPPER SPECIFICATION LIMIT (USL)

Measured Characteristics	LSL	USL
3/4-inch or largest sieve size	99	100
1/2-inch sieve or first sieve retaining aggregate	TV -6	TV +6
3/8-inch sieve	TV -6	TV +6
No. 4 sieve	TV -6	TV +6
No. 8 sieve	TV -6	TV +6
No. 16 sieve	TV -5	TV +5
No. 30 sieve	TV -4	TV +4
No. 50 sieve	TV -4	TV +4
No. 100 sieve	TV -3	TV +3
No. 200 sieve*	TV -2.0	TV +2.0
Asphalt Binder Content, %	TV -0.4	TV +0.4
Mat Density, %	92.0	100.0

*LSL for the No. 200 sieve is restricted by the broadband limits in Table 703-4.

- c. The percent within limits (PWL), Quality Levels and characteristic pay factors (PFs) are determined by the Engineer for each Lot in accordance with Subsection 106-1.03.3. The Composite Pay Factor (CPF) for the lot is determined from gradation and asphalt binder content (ac) acceptance test results using the following example formula:

$$\text{CPF} = \frac{[f_{3/4 \text{ inch}} (\text{PF}_{3/4 \text{ inch}}) + f_{1/2 \text{ inch}} (\text{PF}_{1/2 \text{ inch}}) + \dots + f_{\text{ac}} (\text{PF}_{\text{ac}})]}{\Sigma f}$$

Table 401-3 gives the weight factor (f) for each test property considered.

**TABLE 401-3
WEIGHT FACTORS**

Property	Type I Factor “f”	Type II Factor “f”	Type III Factor “f”
1-inch sieve	4	-	-
3/4-inch sieve	4	4	-
1/2-inch sieve	4	5	4
3/8-inch sieve	4	5	5
No. 4 sieve	4	4	5
No. 8 sieve	4	4	5
No. 16 sieve	4	4	5
No. 30 sieve	4	5	6
No. 50 sieve	4	5	6
No. 100 sieve	4	4	4
No. 200 sieve*	20	20	20
Asphalt Content, %	40	40	40

The Density Pay Factor (DPF) is computed using HMA mat core compaction acceptance test results.

The CPF and DPF are rounded to the nearest 0.001. The price adjustment for each individual lot is calculated as follows:

$$\text{HMA Price Adjustment} = [(\text{CPF or DPF}) - 1.000] \times (\text{tons in lot}) \times (\text{PAB})$$

* CPF or DPF, whichever is lower

PAB = Price Adjustment Base = \$110.00 per ton.

The HMA Price Adjustment is the sum of the price adjustments for each lot and paid for under Item 401.0008._____.

2. Longitudinal Joint Density Price Adjustment. Longitudinal joint density price adjustment will be based on the project average of all top lift cold joint densities and determined as follows:

- a. Disincentive. Project average top lift joint density less than 91.0% MSG:

Deduct \$3.00 per lineal foot.

- b. Incentive. Project average top lift joint density greater than:

92.0% MSG. Add \$0.50 per lineal foot
 93.0% MSG. Add \$1.00 per lineal foot
 94.0% MSG. Add \$1.50 per lineal foot

The longitudinal Joint Density Price Adjustment is the total price adjustment paid for under Item 401.0009._____.

3. Pavement Smoothness Price Adjustment. Not applicable to this project.

4. Asphalt Binder Price Adjustment. A lot quantity of asphalt binder, with a pay factor less than 1.00, is accepted or rejected per Table 401-3.01-1 Asphalt Binder Pay Factors.

**TABLE 401-4.03-1
ASPHALT BINDER PAY FACTORS**

Pay Factor			1.01	1.00	0.95	0.90	0.75	Reject
RTFO (Rolling Thin Film Oven)								
DSR ^(a.1)	All Grades	G*/Sinδ, kPa ⁻¹	≥ 2.69	2.68–2.20	2.19–1.96	1.95–1.43	1.42–1.10	< 1.10
MSCR ^(a.2)	PG 52-40 E	J _{NR 3.2}	≤ 0.39	0.40–0.50	0.51–0.59	0.60–0.69	0.70–1.00	> 1.00
		% Rec _{3.2}	≥ 86.0	85.9–75.0	74.9–68.0	67.9–60.0	59.9–55.0	< 55.0
	PG 58-34 E	J _{NR 3.2}	≤ 0.19	0.20–0.25	0.26–0.29	0.30–0.39	0.40–0.50	> 0.50
		% Rec _{3.2}	≥ 90.0	89.9–85.0	84.9–80.0	79.9–75.0	74.9–70.0	< 70.0
	PG 64-40 E	J _{NR 3.2}	< 0.05	0.05–0.10	0.11–0.15	0.16–0.20	0.21–0.25	> 0.25
		% Rec _{3.2}	≥ 97.0	96.9–95.0	94.9–91.0	90.9–85.0	84.9 – 80.0	< 80.0
PAV (Pressurized Aging Vessel)								
DS ^(a.3)	PG 64-40 E & All Other Grades	G*Sinδ, kPa	≤ 4711	4712–5000	5001–5289	5290–5578	5579–5867	> 5867
	PG 52-40 E, PG 58-34 E	G*Sinδ, kPa	≤ 5700	5701–6000	6001–6300	6301–6600	6601 – 7000	> 7000
CS ^(a.4 & 5)	All Grades ^(a.4)	BBR, S, MPa	≤ 247	248–300	301–338	339–388	389–449	≥ 450
	All Grades ^(a.5)	BBR, m	≥ 0.320	0.319–0.300	0.299–0.294	0.293–0.278	0.277–0.261	< 0.261
Creep Stiffness (CS)			Dynamic Shear (DS)		Multiple Stress Creep Recovery (MSCR)			

a. Asphalt Binder Pay Adjustment = (Lowest Pay Factor – 1.00) x (tons in lot) x PAB x 5

Select the lowest pay factor from:

RTFO (test the binder residue at the performance grade temperature)

(1) DS, All Grades, $G^*/\sin\delta$, kPa⁻¹

(2) MSCR: PG, Select the highest pay factor corresponding to, either J_{NR 3.2} or % Rec_{3.2} values

PAV

(3) DS, PG, $G^*\sin\delta$, kPa

(4) CS, All Grades, BBR, S MPa

(5) CS, All Grades, BBR, m

b. If three consecutive acceptance samples are out of specification, stop HMA production immediately and submit a corrective action plan to the Engineer for approval.

The Asphalt Binder Price Adjustment is the sum of the price adjustments for each lot and paid for under Item 401.2021._____.

401-4.04 ASPHALT MATERIAL PRICE ADJUSTMENT. Asphalt Material Price Adjustment. This subsection provides a price adjustment for asphalt material by: (1) additional compensation to the contractor or (2) a deduction from the contract amount.

1. This provision shall apply:

a. To asphalt material meeting the criteria of Subsection 702-2.01 Asphalt Binder, and is included in items listed in the bid schedule of Sections 306, 307, 308, 318, 401 thru 405, 408, 520, 608 and 609.

b. To cost changes in asphalt material that occur between the date of bid opening and the date on the certified bill of lading from the asphalt material refiner/producer.

- c. When there is more than a seven and one half percent (7.5%) increase or decrease in the Alaska Asphalt Material Price Index, AAMPI, from the date of bid opening to the date on the certified bill of lading from the asphalt refiner/producer.
2. Provide the certified bill of lading from the asphalt material refiner/producer.
3. The AAMPI is calculated bimonthly on the first and third Friday of each month, and will remain in effect from the day of calculation until the next bimonthly calculation. The AAMPI is posted on the Department's Statewide Materials website at and calculated according to the formula posted there. http://www.dot.state.ak.us/stwddes/desmaterials/aprice_index.shtml
4. Price adjustment will be cumulative and calculated with each progress payment. Use the AAMPI in effect on the date of the certified bill of lading from the asphalt material refiner/producer, to calculate the price adjustment for asphalt material. The Department will increase or decrease payment under this contract by the amount determined with the following asphalt material price adjustment formula:

For an increase exceeding 7.5%, additional compensation = $[(IPP - IB) - (0.075 \times IB)] \times Q$

For a decrease exceeding 7.5%, deduction from contract = $[(IB - IPP) - (0.075 \times IB)] \times Q$

Where:

Q = Quantity of Asphalt Material incorporated into project, in tons as measured by the Engineer

IB = Index at Bid: the Bi-monthly AAMPI in effect on date of bid, in dollars per ton

IPP = Index at Pay Period: The bi-monthly AAMPI in effect on the date shown on the certified bill of lading from the asphalt refiner/producer, in dollars per ton

5. Method of measurement for determining Q (quantity) is the weight of asphalt material that meets the criteria of this subsection and is incorporated into the project. The quantity does not include aggregate, mineral filler, blotter material, thinning agents added after material qualification, or water for emulsified asphalt. The quantity for emulsified asphalts will be based on the asphalt residue material only and will be calculated using the percent residue from testing, or if not tested, from the manufacturer's certificate of compliance.

401-5.01 BASIS OF PAYMENT.

The following items, unless included as individual Pay Items, are subsidiary to the Section 401 Hot Mix Asphalt Pavement related Pay Items as included in the bid schedule:

- Asphalt binder
- Liquid anti-strip additives
- Tack coat
- Crack sealing
- Crack repair
- Joint adhesive
- Surface sealing of longitudinal joints
- Surface tolerance corrections
- Patching defective areas
- Prelevel for ruts, delaminations, and depressions
- Repair unstable pavement
- Job mix design
- Density profiles, Subsection 401-2.10 Process Quality Control
- Repair work and materials when planing equipment breaks through existing pavement – Subsection 401-3.10 Preparation of Existing Surface
- Work and materials associated with Subsection 401-3.06 Hauling Equipment
- Work and materials associated with Subsection 401-3.20 Roadway Maintenance

Test Strips: Subsection 401-2.10 Process Quality Control.

- a. Approved. Test strip construction and material, approved by the Engineer in writing, as meeting the specification requirements will be paid for at the Contract unit prices for HMA and asphalt binder as included in the Bid Schedule. Price adjustments 401.0008.____, 401.009.____, 401.0010.____ and 401.2021.____ do not apply.
- b. Failed. The materials, construction of, removal and disposal of a failed test strip will be at the Contractor's expense.

Item 401.0005.____ HMA, Temporary, Type ____; Class ____ Removal and disposal of temporary HMA is subsidiary.

The following price adjustment Pay Items, unless included as individual Pay Items in the bid schedule, are paid under 401.2022.____ Combined Price Adjustment.

Item 401.0016.____ Crack Repair. Cleaning loose material from cracks, asphalt binder, and HMA to fill cracks are subsidiary.

Item 401.0017.____ Prelevel for Ruts, Delaminations, and Depressions. Cleaning loose material, asphalt binder, and HMA are subsidiary.

Item 401.0018.____ Repair Unstable Pavement. Removal of pavement and base course, asphalt binder, and HMA are subsidiary.

PAY ITEM

Item Number	Item Description	Unit
401.0001.____	HMA, Type __; Class __	Ton
401.0002.____	HMA, Leveling Course, Type <u>IV</u> ; Class <u>B</u>	LnSt
401.0003.____	HMA, Leveling Course, Type <u>IV</u> ; Class <u>B</u>	Ton
401.0004.____	Asphalt Binder, Grade PG <u>##-## X</u>	Ton
401.0005.____	HMA, Temporary, Type II, Class B	Ton
401.0006.____	HMA, Type __, Class __	SY
401.0007.____	Liquid Anti-Strip Additives	CS
401.0013.____	Job Mix Design	Each
401.0014.____	Joint Adhesive	LF
401.0015.____	Asphalt Material Price Adjustment	CS
401.0016.____	Crack Repair	LF
401.0017.____	Prelevel for Ruts, Delaminations, and Depressions	SY
401.0018.____	Repair Unstable Pavements	SY
401.2022.____	Combined Price Adjustment	CS

CR401-23.0501

DIVISION 500 — STRUCTURES

Blank Page

**SECTION 501
CONCRETE FOR STRUCTURES**

Special Provision

501-1.01 DESCRIPTION. Add the following: Construct Headwall, Type II as detailed on the plans.

501-2.01 MATERIALS. Add the following:

Reinforcing
Foundation Fill

Section 503
Section 703-2.07, Selected Material, Type A

CFHWY00672-031725

Standard Modification

501-2.02 COMPOSITION OF MIXTURE – JOB MIX DESIGN.

Replace Table 501-4 with the following:

**TABLE 501-4
AIR CONTENT REQUIREMENTS**

Class of Concrete	Air Content
A	6.0% ±0.5%
A-A	6.0% ±0.5%
P	3.50% minimum ¹ and Super Air Meter (SAM) number ≤0.20 ¹
DS	Not required

¹Not required for web and bottom flange of precast, prestressed decked bulb-tee girders.

HSM20.23-123121

501-3.09 FINISHING CONCRETE SURFACES. Add the following: Texture the top of concrete headwalls with a broom finish.

501-3.12 BACKFILLING AND OPENING TO TRAFFIC. Add the following: Place foundation fill material in 6-inch layers, compacted to meet Subsection 203-3.04.

501-5.01 BASIS OF PAYMENT. Add the following:

Headwall, Type I will be paid for each completed installation. Excavation, backfill material, hook bolts, and rebar will be subsidiary to 501 items. Riprap will be paid for separately under 611 items.

Payment will be made under:

<u>Pay Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
501.2007.0002	Headwall, Type II	Each

CFHWY00672-031725

Blank Page

DIVISION 600 — MISCELLANEOUS CONSTRUCTION

Blank Page

Special Provision

Replace Section 603 with the following:

SECTION 603 CULVERTS AND STORM DRAINS

603-1.01 DESCRIPTION. Construct or reconstruct culvert and storm drain pipe. Install culvert marker posts, and strap plastic culvert ends.

CFHWY00672-031725

This work shall also consist of cleaning (removing and disposing of) culvert fugitive materials as shown on the Plans, or as directed by the Engineer.

CFHWY00672-031725

603-1.02 REFERENCES.

ASTM D3953 Standard Specification for Strapping, Flat Steel and Seals
ASTM D4675 Standard Guide for Selection and Use of Flat Strapping Materials

603-2.01 MATERIALS. Use materials that conform to the following:

Bedding and Backfill	Subsection 204-2.01
Joint Mortar	Subsection 705-2.04
Flexible Watertight Gaskets	Subsection 705-2.05
Non-reinforced Concrete Pipe	Subsection 706-2.01
Reinforced Concrete Pipe	Subsection 706-2.02
Corrugated High Density Polyethylene (HDPE) Pipe	Subsection 706-2.07
Corrugated Steel Pipe and Pipe Arches	Subsection 707-2.01
Corrugated Aluminum Pipe	Subsection 707-2.03
Galvanize	Subsection 716-2.07
Culvert Marker Posts (Flexible Delineator Posts)	Subsection 730-2.05

Item 603.0017.____, Pipe, listed in the bid schedule, furnish either Corrugated Steel Pipe (CSP), Corrugated Aluminum Pipe, Reinforced Concrete Pipe, or Corrugated Dual Wall HDPE (plastic) Pipe. Select pipe for each installation that meets or exceeds the requirements shown on the Plans for height of cover.

For steel and plastic pipe, match the end section material to the pipe material.

Separate dissimilar materials with an electrical insulating material. The insulating material must be at least 1/16 inch thick and approved by the Engineer.

Culvert marker post is 6-foot tall by 2.5 inches wide with reinforcing ribs, capable of a 9-inch minimum bending radius, and blue with no marking.

Culvert marker Strap and Seals according to ASTM D3953. .625 inch x .02 inch, dry Type 1 regular-duty (magnetic, ferritic), galvanized Finish B (hot-dipped Grade 2 moderate coating, .18 oz./ft² surface or .0002 inch thick minimum. Push type seals, Style III (overlap), regular duty, galvanized Finish B (hot-dipped coating) by 1.75-inch minimum length and matched to strapping width.

CONSTRUCTION REQUIREMENTS

603-3.01. GENERAL. Excavate, bed, and backfill according to the requirements of Subsections 204-2.01 and 204-3.01, and the Plans.

Dewater ground water from work areas; construct and maintain temporary water diversion when working in waterways, and for facilities or structures with active drainage according to Section 204.

603-3.02. LAYING PIPE. Begin the pipe laying at the downstream end of the pipe. Keep the lower segment of the pipe in contact with the bedding throughout its full length. Place bell or groove ends of rigid pipe and outside circumferential laps of flexible pipe facing upstream.

Lay paved or partially lined pipe so that the longitudinal centerline of the paved segment coincides with the flow line. Install elliptical conduit and circular conduit reinforced with other than a full circular cage or cages so the orientation of a vertical plane through the longitudinal axis of the conduit does not vary more than 5 degrees from the design orientation.

Repair damaged metallic coating on metal pipe according to AASHTO M36.

603-3.03 JOINING PIPE. Joints shall provide circumferential and longitudinal strength to preserve the pipe alignment, prevent separation of pipe sections, and provide a watertight joint between new sections of pipe and joints between new and existing sections of pipe of similar and dissimilar materials. Include a continuous gasket (seal) in all joints. Construct the watertight joint capable of passing a laboratory hydrostatic pressure and vacuum test of at least 4 psi for 10 minutes.

1. Rigid Pipe. Use either bell and spigot or tongue and groove joints. Join pipe sections with the ends fully entered and the inner surfaces reasonably flush and even.

Use one or more of the following joint materials, or any other if approved:

- a. Portland cement mortar
- b. Portland cement grout
- c. Rubber gaskets
- d. Coupling bands
- e. Preformed plastic sealing compound

Make mortar joints using an excess of mortar to form a bead around the outside of the pipe.

For grouted joints, use molds or runners to retain the poured grout. Install rubber ring gaskets to form a flexible, watertight seal.

When using portland cement mixtures, protect the completed joints against rapid drying using suitable covering material.

2. Metal Pipe. Join the metal pipe firmly using connecting bands conforming to ASTM B745 (Corrugated Aluminum Pipe) and ASTM A760 (Corrugated Steel Pipe) and as noted herein. Use bands that are no more than two nominal sheet thicknesses lighter than the pipe joined, and in no case more than 0.052 inches lighter. Include a gasket each side of the gap.
 - a. Primary Band. Furnish and install corrugated bands so that the band corrugations match and conform to the corrugations of the pipe. Conform to the following guidelines:
 - (1) The gap between the pipes joined is in the center of the band and is no wider than one corrugation width.
 - (2) Band for 12-inch through 30-inch diameter pipe are at least 12 inches wide.
 - (3) Bands for pipe with diameters greater than 30 inches are at least 22 inches wide.
 - b. Secondary Band. Use this band only where it is not physically possible to use primary bands, such as on field-cut pipe ends, joining new pipe to existing pipe, etc. Furnish and install deformed metal sheet bands (dimple bands) so that the projections match and are the same depth as the

pipe corrugations. Form these projections in circumferential rows with one projection for each corrugation of the helical pipe.

Conform to the following guidelines:

- (1) The gap between the pipes joined is in the center of the band and is no wider than 2 inches.
 - (2) Bands for 12-inch diameter pipe are at least 12 inches wide and have one circumferential row of projections for each pipe end joined.
 - (3) Bands for pipe with diameters greater than 12 inches are at least 24 inches wide and have two circumferential rows of projections for each pipe end joined.
3. Plastic Pipe. Use push-on or mechanical joints. Ensure that the plastic pipe couplings' corrugation matches the pipe corrugation and that their width is not less than one-half the nominal pipe diameter.

Furnish all bolted connections on coupling bands with cut washers placed between the nut and the angle bracket or use nuts with integral washers.

Take up any pipe that is out of alignment, unduly settled, or damaged and re-lay or replace it.

603-3.04 CULVERT MARKER.

1. Marker Post. Install a culvert marker on the approach side of storm drain outfalls 30 inches and smaller, field inlets not in paved parking lots, all end sections to cross culverts, or as directed. Drive to maintain forty-two inches of post above the ground after driving, and
2. Marker Strap. In addition to marker posts, install marker strap around the plastic pipe ends.

Position the strap in the valley of the first annular ring from the top end of the culvert. From the vertical centerline of the culvert, at the top, overlap the strap and extend the ends to approximately 30 degrees each side of the centerline. Place the strap loosely without twists in the valley, without compressing the pipe, and tight enough to keep the strap from moving out of the valley without deforming the pipe or pipe corrugation. Seal the strap at three locations, one at each of the ends, and one at the top of the culvert. Extend the strap ends beyond the end seals approximately 1/2-inch. Double crimp the seal, two pairs of crimps minimum each seal.

Repair the strap galvanizing where abraded and at cut ends according to ASTM A780. Prepare the surface with power tools per SSPC-SP11, hand tools per SSPC-SP2, and as required by the paint manufacturer. Apply paint, Type – paint containing zinc dust, to the prepared surfaces and allow enough time for curing as required by the manufacturer's printed instructions.

603-3.05 CLEANING CULVERTS.

Cleaning of culverts shall be done concurrently with host pipe preparation for CIPP repairs required per Section 656. Remove culvert fugitive materials from inside culverts and around culvert inlets and outlets. Provide positive drainage through cleaned culverts and into adjacent ditches.

Removed materials are the property of the Contractor. Do not reuse these materials within the project limits without the written approval of the Engineer.

Dispose of removed materials as required dependent on the type of materials and as required by Federal, State, and local environmental regulations.

CFHWY00672-031725

603-4.01 METHOD OF MEASUREMENT. Section 109, and as follows:

1. Culvert Pipe. The length of pipe, measured in place, along the invert.

2. Pipes for Storm Drains. The length of pipe, measured in place, along the invert, from center to center of structures. The length through the inlets, catch basins, and manholes is included in the measured length.

CFHWY00672-031725

3. Culvert Cleaning .The length of pipe, measured in place, along the invert.

CFHWY00672-031725

603-5.01 BASIS OF PAYMENT. Branch connections and elbows are subsidiary to the pipe unless included as a separate Pay Item.

Coupling bands, seals (gaskets), and other items necessary for the proper joining of the sections are subsidiary.

Culvert markers are subsidiary to the pipe.

Excavation, bedding, and backfill paid under Section 204.

Dewatering is subsidiary to culvert pipe work.

Complete culvert cleaning prior to ordering CIPP materials per Section 656. Where a culvert scheduled for cleaning requires CIPP repairs, cleaning the pipe and other work required to prepare for CIPP repairs will be paid for under 656.2004.0000 Cured-In-Place Pipe – Host Pipe Preparation. Only one payment will be made for either culvert cleaning or host pipe preparation.

CFHWY00672-031725

PAY ITEM

Item Number	Item Description	Unit
603.0001.____	CSP ____ Inch	LF
603.0002.____	____ Inch CSP Arch	LF
603.0003.____	End Section for CSP ____ Inch	Each
603.0004.____	End Section for ____ Inch CSP Arch	Each
603.0009.____	Corrugated Aluminum Pipe ____ Inch	LF
603.0010.____	____ Inch Corrugated Aluminum Pipe Arch	LF
603.0011.____	End Section for Corrugated Aluminum Pipe ____ Inch	Each
603.0012.____	End Section for ____ Inch Corrugated Aluminum Pipe Arch	Each
603.0013.____	Reinforced Concrete Pipe, ____ Inch, Class ____	LF
603.0014.____	Reinforced Concrete End Section, ____ Inch	Each
603.0015.____	Elbow, (Type & Size)	Each
603.0016.____	Branch Connection (Type & Size)	Each
603.0017.____	Pipe ____ Inch	LF
603.0019.____	____ Inch Pipe Arch	LF
603.0020.____	End Section for Pipe ____ Inch	Each
603.2017.____	Culvert Cleaning	LF
603.2032.____	Corrugated HDPE Pipe ____	LF
603.2033.____	End Section for Corrugated HDPE Pipe ____	Each

CFHWY00672-031725

SECTION 611
RIPRAP

Special Provision

611-2.01 MATERIALS.

Replace the first paragraph with the following:

Evenly graded stones that are hard, angular, and have no more than 50 percent wear at 500 revolutions as determined by AASHTO T 96. Apparent specific gravity will be determined by ATM 308. Use stones with breadth and thickness at least 1/3 of its length. Do not use round boulders or cobbles on slopes steeper than 3:1.

CR611.1-020119

SECTION 615 STANDARD SIGNS

615-1.01 DESCRIPTION. Furnish and install standard signs and delineators. Remove and relocate or remove and dispose of existing signs and markers, as specified.

615-2.01 MATERIALS. Use materials that conform to the following Subsections:

Sheet Aluminum	730-2.01
High Density Overlaid Plywood	730-2.02
Retroreflective Sheeting, ASTM D4956	730-2.03
Sign Posts	730-2.04
Delineator Posts	730-2.05
Acrylic Prismatic Reflectors	730-2.06
Sign Support Fasteners	730-2.07

1. Shop Drawings. Submit shop drawings, for all signs that must meet the ASDS letter width and spacing charts for variable width legends (such as D-series and I-3 signs), and which require custom shop drawings specific to the project. Submit 4 sets of collated shop drawings prepared according to Subsection 105-1.02. Show the following on each sign drawing:
 - a. Dimensions of all horizontal and vertical characters and spaces
 - b. Overall dimensions
 - c. Sign material and sheeting material type
 - d. Panel thickness
 - e. Legend and letter series
 - f. Whether the sign will be framed
2. Sign Fabrication. Use ASTM D4956 Type IV retroreflective sheeting (for lettering, symbols, borders, and background) on sheet aluminum panels for all signs except the following:
 - a. Orange Background Signs. Use Type IX or XI fluorescent orange reflective sheeting placed on sheet aluminum panels, except:
 - (1) For temporary installations, the reflective sheeting place on aluminum, plastic, or plywood sheet panels.
 - (2) For flexible signs, (Roll-Up Signs) use fluorescent reflective sheeting Type VI or better (based on durability and reflectivity, as determined by the Engineer). Roll-Up Sign – 3M Series RS 24, Reflexite Marathon Orange, or approved equal.
 - b. Railroad Crossbucks and Vertical Crossbuck Supports: Use white ASTM D4956 Type VIII or Type IX or XI retroreflective sheeting for background of sign and all strips.
 - c. Non-Illuminated Overhead Signs with White Legends on Green Backgrounds: Use ASTM D4956 Type IX or XI retroreflective sheeting for legends and background. Create the legend in one of the following ways:
 - (1) Cut border and legend from white ASTM D4956 Type IX or XI retroreflective sheeting and adhere them to a green ASTM D4956 Type IX background, or
 - (2) Cut stencil of border and legend out of green transparent acrylic film and use transparent adhesive to overlay the film on a white ASTM D4956 Type IX or XI retroreflective background.

- d. Fluorescent Yellow-Green School Area Signs: Use ASTM D4956 Type VIII, Type IX or XI retroreflective sheeting for background.

Use a manufacturer-recommended clear coat on all screened signs.

Use sign layouts (including characters, symbols, corner radii, and borders) that conform to the ASDS.

- 3. Sign Posts and Bases. Use sign posts and bases of the types specified. The structural aspects of design and materials for sign supports must comply with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. Do not splice sign posts.

Foundation Concrete:

- a. Non-structural and Non-steel-reinforced Sign Foundations. Use Class W concrete, or commercially available pre-mixed sacked concrete with a minimum compressive strength of 3,000 psi. When sacked concrete is used, acceptance will be based on manufacturer Certificates of Compliance and the compressive strength test results of the specimens prepared according to ATM 506.
- b. Steel-reinforced Roadside Sign Foundations. Use Class B concrete meeting the requirements of Section 550, except:

Overhead Sign Support Foundations. Use Class A concrete meeting the requirements of Section 501.

- 4. Delineators. Use delineator assemblies that conform to the requirements shown on the Plans. Fabricate flexible delineators using ASTM 4956 Type III, IV, V, IX or XI retroreflective sheeting.
- 5. Reflective Sheeting Warranty. Supply manufacturer's warranty for reflective sheeting, including retention of fluorescent yellow-green (measured in accordance with ASTM E2301) for ten years according to the following criteria:
 - a. Minimum Fluorescent Luminance Factor Y_F : 20%
 - b. Minimum Total Luminance Factor Y_T : 35%

The warranty shall stipulate that: If the sheeting fails to meet the minimum fluorescence values within the first 7 years from the date of fabrication of the sign, the manufacturer shall, at the manufacturer's expense, restore the sign surface to its original effectiveness. If the reflective sheeting fails to meet the minimum fluorescence values within the 8th through 10th year from the date of fabrication, the manufacturer shall, at the manufacturer's expense, provide enough new replacement sign sheeting to the Department to restore the sign surface to its original effectiveness.

CONSTRUCTION REQUIREMENTS.

615-3.01 GENERAL.

- 1. Place posts in excavated holes to the depth shown on the Alaska Standard Plans.
- 2. Backfill the space around the posts and foundations placed in holes to finish ground with selected earth or sand, free of rocks or deleterious material. Place backfill in layers approximately 6 to 12 inches thick and thoroughly compact it.
- 3. Dispose of surplus excavated material neatly along the adjacent roadway as directed.
- 4. Install flexible delineator posts according to the manufacturer's recommendations.
- 5. Attach sign panels to posts, electroliers, traffic signal standards, bridge rails, piers, and abutments using the types and sizes of fastening hardware shown on the Plans.

6. If using existing signs and mileposts that are removed and relocated, ensure they conform to the details shown on the Plans or as directed.

7. Sign Salvage:

Notify the Engineer 5 working days prior to beginning sign salvage activities. The Engineer will physically identify those signs to salvage.

- a. Property of the State. When 615-3.01 7a identifies a maintenance station to receive sign salvage, the signs (sign panels, posts, and hardware) are the property of the State.

Protect all items from damage during salvaging and delivery. For each sign so designated, disconnect sign post from panel and group the panels together. Group posts together with their hardware. Deliver sign panels, posts, and hardware to the State Maintenance Station noted in these Special Provisions. Do not deliver salvaged materials until inspected and approved by the Engineer. Replace any items damaged by you at no additional cost to the Department.

Deliver salvaged sign panels, posts, and hardware to the State Maintenance and Operations Station, located at:

Glenn Highway MP 93.5 Cascade Road.

- b. Property of the Contractor. When 615-3.01 7a does not identify a State Maintenance and Operations Station; the signs salvaged (sign panels, posts, and hardware) are the property of the Contractor.

Remove project signs and/or parts designated for salvage, off the project site.

Dispose of foundations from salvaged existing signs in a manner approved of by the Engineer (remove and dispose, abandoned in place, or otherwise). If abandoned in place, remove the tops of the foundations, reinforcing steel, anchor bolts, and conduits to a depth of not less than 12 inches below roadway subgrade or unimproved ground, whichever applies.

Dispose of sign salvage not wanted by the Contractor, not used in the project, and not accepted by the Local Maintenance and Operations Station as required by Federal, State, and Municipal environmental regulations.

All signs, the sign panels, posts, hardware, and foundations at a single installation are considered as one unit.

8. All materials and finished signs are subject to inspection and acceptance in place.
 - a. Surfaces exposed to weathering must be free of defects in the coating that impair serviceability or detract from general appearance or color match.
 - b. Finished signs must be clean and have no chatter marks, burrs, sharp edges, loose rivets, delaminated reflective sheeting, or aluminum marks. Do not make repairs to the face sheet.
9. Install the various breakaway assemblies according to the manufacturer's written instructions. Meet MASH crashworthiness requirement for breakaway hardware, unless approved otherwise by the Engineer.
10. Secure the anchors in templates and install them according to the manufacturer's written instructions.

11. Finish the foundation according to these tolerances:

- a. Do not use more than two shims per coupling.
- b. Do not use more than three shims to plumb each post.

Remove and replace all foundations requiring more than three shims to plumb a post without extra compensation.

12. Construct the top of any foundation located on a slope so that the finished slope passes through the top center of the foundation. Grade the area 24 inches up and down slope of the foundation edge so that no portion of the foundation projects above the surrounding slope and water will drain away from the foundation.

13. Attach a label to the back of all standard signs in the lower right corner. Make the label at least 15 square inches and show the year the sign was purchased from the manufacturer. Show the last two digits of the year in clear and bold numbers. Make the label from ASTM D4956 Type I or brighter retroreflective sheeting. Use background and legend colors meeting Table 615-1.

**TABLE 615-1
DECAL COLORS**

YEAR	BACKGROUND COLOR	LEGEND COLOR
XXX1	Yellow	Black
XXX2	Red	White
XXX3	Blue	White
XXX4	Green	White
XXX5	Brown	White
XXX6	Orange	Black
XXX7	Black	White
XXX8	White	Black
XXX9	Purple	White
XXX0	Strong Yellow-Green	Black

Central values and tolerance limits for each color, as referenced in the MUTCD, are available from the Federal Highway Administration, (HHS-30), 400 7th St. SW, Washington, D.C. 20590

615-3.02 SIGN PLACEMENT AND INSTALLATION. The location and type of installation will be as shown on the Plans. Sign locations are approximate and subject to field adjustment by the Engineer. Do not allow the top of the embedded steel tube to extend more than 2 inches above the surrounding ground and concrete foundation.

On all signs, install 2-inch diameter wind washers, colored to match the sign face, between the fastener head and the sign. Use rust-resistant washers fabricated from a material equal in strength to the sign blank.

Mount signs on mast arms level.

Bring existing signs that are to remain, into conformance with Standard Drawing S-05. Keep existing signs in service until they are no longer needed.

615-4.01 METHOD OF MEASUREMENT.

Standard Signs and Object Markers. By the total area of legend-bearing sign panel erected in place. No deductions in quantity for corner rounding will be made. Nominal dimensions for sign sizes indicated on the Plans will be used to calculate sign pay quantities. Octagons and round signs will be measured as rectangles. Only one side of each double-faced sign will be measured for payment.

Removal and Relocation. By each, complete in place.

Delineators. By each, complete in place. A single delineator consists of one post equipped with three reflectors.

Salvage Sign. By each complete sign delivered in acceptable condition.

615-5.01 BASIS OF PAYMENT. Sign posts, bases, and mounting hardware are subsidiary.

Salvage Sign. Each complete sign includes the sign panels, posts, hardware, and foundations at a single installation.

When Items 615.0002.____, 615.0003.____, or 615.0006.____ do not appear on the bid schedule, this work is subsidiary.

PAY ITEM

Item Number	Item Description	Unit
615.0001.____	Standard Sign	SF
615.0002.____	Remove and Relocate Sign	Each
615.0003.____	Remove and Relocate Milepost	Each
615.0004.____	Delineator, Rigid	Each
615.0005.____	Delineator, Flexible	Each
615.0006.____	Salvage Sign	Each
615.0007.____	Salvage and Dispose Sign	Each

CR615-23.0501

SECTION 616
THAW PIPES AND THAW WIRES

Special Provisions

616-2.02 THAW WIRE. Replace item number 6 with the following:

6. Connectors, Remote Power.

- a. Use wiring devices for remote power connectors that are 2-pole, 3-wire grounding, flanged inlet male plug, 30 Amp, 240 VAC, NEMA L6-30.
- b. Provide cord-sets with plug adapters, quantity and type as indicated on the detail drawings.

616-3.02 THAW WIRE.

Replace subparagraph 1.a with the following:

- a. Use galvanized rigid metal conduit (RMC) for exposed work and for direct burial at depths required by NEC Articles 300, unless noted otherwise. Repair damage to galvanized coatings per AASHTO M 36.

Replace paragraph 3 with the following:

3. Controls and Devices. Install a terminal post with controls and devices mounted in a pad-lockable enclosure for each culvert thaw wire assembly as shown in the plans. Install an engraved phenolic identification tag to indicate the function or rating as applicable for each control and device. Refer to the detail drawings.

Replace paragraph number 8 with the following:

8. External Power. Install separable plug connectors for remote power supply, as required for compatible interface with a gas-powered generator provided by the City of Kenai Maintenance Department. Refer to the detail drawings.

SECTION 618 SEEDING

618-1.01 DESCRIPTION. Establish a healthy living perennial stand of grass or other vegetative living groundcover by seeding. Maintain the living cover for the term of the Contract.

618-2.01 MATERIALS. Use materials that conform to the following:

Water	Subsection 712-2.01
Seed	Section 724 (Grass Seed)
Fertilizer	Section 725
Topsoil	Section 726
Soil Stabilization	Section 619
Soil Stabilization Material	Section 727

**TABLE 618-1
GRASS SEED MIX, SOIL STABILIZER, AND FERTILIZER APPLICATION RATES**

Materials	Ingredients	Application Rate (per MSF ^c)
Grass Seed Mix ^{a, b}	Nortran – Tufted Hairgrass	0.60 lbs.
	Arctared – Red Fescue	0.45 lbs.
	Wainwright - Slender Wheatgrass	0.37 lbs.
	Annual Ryegrass	0.08 lbs.
		Total = 1.50 lbs.
Soil Stabilizer		
Slope ≤ 3:1	Mulch	46 lbs.
Slope >3:1	Mulch with tackifier	45-58 lbs.
Fertilizer	20-20-10	12 lbs.

- a. Do not remove the tags from seed bags.
- b. Submit an alternate seed mix when the specified seed is not commercially available. Provide a letter confirming the specified seed is not available. Include an agronomist certified seed mix design, including application rate, suited to the project site.
- c. MSF = 1000 ft².

CONSTRUCTION REQUIREMENTS

618-3.01 SURFACE PREPARATION. Remove ruts, holes, humps and other irregularities from the surface. Clear stones four inches in diameter and larger, weeds, plant growth, sticks, stumps, and other debris that will interfere with the application of stabilization material, topsoil, the seeding operation, growth of vegetative groundcover, and subsequent maintenance of the cover.

Smooth the slopes for a uniform appearance and round the top and bottom of the slopes to facilitate tracking or raking. Do not disrupt drainage flow lines.

Evenly place stabilization material and or topsoil when specified.

Prepare the surface material by grooving the material in a uniform pattern that is perpendicular to the fall of the slope. Use one or more of the following grooving methods with associated equipment before the application of seed:

1. Manual raking with landscaping rake;
2. Mechanical track walking with track equipment; or

3. Mechanical raking with a scarifying slope board. Form one-inch wide grooves spaced no more than six inches apart.

618-3.02 SEEDING SEASON. Seed disturbed areas after permanent cessation of ground disturbing activities in that area, within the period specified in the Alaska Department of Environmental Conservation (ADEC) Alaska Pollutant Discharge Elimination System (APDES) Construction General Permit (CGP) for Alaska, Section 4.5 Soil Stabilization, and Section 641 Erosion, Sediment, and Pollution Control.

Do not seed during windy conditions, when climatic conditions or ground conditions would hinder placement or proper growth.

Seed between May 15 and August 15.

618-3.03 APPLICATION. Seed, seeding, reseeding includes the application of seed, fertilizer, and stabilization material.

If the seed mix, fertilizer and stabilization material are not included in the Plans or Specifications, including their application rates, use the recommendations of the ADNR and the Revegetation Manual for Alaska.

Do not seed areas of bedrock and plant beds.

Use any of the following methods:

1. Hydraulic Method

Apply seed and stabilization material in one application when using the hydraulic method. Apply fertilizer with the hydraulic method. Include the fertilizer with the seed and stabilization material or apply separately.

- a. Furnish and place a slurry made of seed, fertilizer, water, and other materials.
- b. Use hydraulic seeding equipment that will maintain a continuous agitation and apply a homogeneous mixture through a spray nozzle. The pump must produce enough pressure to maintain a continuous, nonfluctuating spray that will reach the extremities of the seeding area with the pump unit located on the roadbed. Provide enough hose to reach areas not practical to seed from the nozzle unit situated on the roadbed.
- c. If mulch material is required, it may be added to the water slurry in the hydraulic seeder after adding the proportionate amounts of seed and fertilizer. Add seed to the slurry mixture no more than 30 minutes before application.
- d. Mix the slurry and apply it evenly.

2. Dry Methods

- a. Use mechanical spreaders, seed drills, landscape seeders, aircraft, cultipacker seeders, fertilizer spreaders, or other approved mechanical spreading equipment.
- b. Spread fertilizer separately at the specified rate.

618-3.04 MAINTENANCE. Maintenance includes but is not limited to the following:

1. Protecting seeded areas against traffic by approved warning signs or barricades and against erosion.

2. Repairing surfaces gullied or otherwise damaged following seeding. Fill erosion gullies 4 inches deep and greater filling the gully to surrounding grade including the portions less than 4 inches deep. Apply and prepare the stabilization material and or topsoil for seeding. Seed repaired area. Refer to Subsections 618-3.01 & 3.03.
3. Reseeding areas not showing evidence of satisfactory growth within 3 weeks of seeding and after repairs are complete. Reseed bare patches of soil more than 10 square feet in area. Contact ADNR for advice or corrective measures, when seeded areas are not showing evidence of satisfactory growth.
4. Watering seeded areas for healthy growth of vegetative cover. Adjust the amount of water when directed.

618-3.05 ACCEPTANCE. The vegetative ground cover will be inspected considering each station and each side of the road a separate area. Acceptance of the ground cover requires a minimum of 75% cover density in the inspection area, gullies repaired and reseeded, and no bare patches of soil more than 10 square feet in area.

Repair/reseed areas that are not accepted.

618-3.06 PERIOD OF ESTABLISHMENT. Establishment period, for each seeded area, extends one complete growing season (May 1 to August 15) after the planting year, acceptance, and final inspection beginning from the date of Project completion, Subsection 105-1.15.

Employ all possible means to preserve/maintain the new vegetative groundcover in a healthy and vigorous condition to ensure successful establishment. Maintain the vegetative cover, according to Subsection 618-3.04, to not less than the requirements for acceptance, Subsection 618-3.05.

618-4.01 METHOD OF MEASUREMENT. Section 109 and as follows:

Seeding by the Acre. By the area of ground surface acceptably seeded and maintained.

Seeding by the Pound. By the weight of dry seed acceptably seeded and maintained.

Water for Seeding. If weighed, a conversion factor of 8.34 pounds per gallon will be used to convert weights to gallons.

MGAL equals 1000 gallons.

618-5.01 BASIS OF PAYMENT.

1. Pay Items 618.0001.____ and .0002.____ Seeding. Payment is for healthy established vegetative groundcover through the establishment period.
 - a. The initial surface preparation, seed, fertilizer, mulch when applied hydraulically, their application, and the water for hydraulic application are subsidiary.
 - b. Maintenance fill, stabilization material, topsoil, surface preparation, seed, fertilizer, mulch when applied hydraulically, and the water required for hydraulic application are subsidiary.
2. Pay Item 618.0003.____ Water for Seeding. Payment is for water applied for growth of vegetative groundcover through the establishment period.

If Pay Item 618.0003.____ Water for Seeding, is not included in the bid schedule, water applied for growth of vegetative groundcover through the establishment period is subsidiary.

Except for maintenance, stabilization material is paid under Section 619 and topsoil under Section 620.

PAY ITEM		
Item Number	Item Description	Unit
618.0001.____	Seeding	Acre
618.0002.____	Seeding	LB
618.0003.____	Water for Seeding	MGAL

CR618-23.0601

SECTION 620 TOP SOIL

Special Provisions

726-2.01 TOPSOIL. Topsoil furnished by the Contractor shall consist of a natural friable surface soil without admixtures of undesirable subsoil, refuse, or foreign materials. It shall be shredded and free from roots, hard clay, gravel, larger than 1 inch in any dimension, noxious weeds, tall grass, brush, sticks, stubble, or other litter, and shall have indicated by a healthy growth of crops, grass's, trees, or other vegetation that it is free draining and non-toxic. Topsoil to contain not more than 10% gravel by dry weight of total sample. For the purposes of this specification, gravel is defined per ASTM D422 modified to include only material passing 1-inch and retained on the No. 4 sieve.

Topsoil shall conform to the following requirements, as tested using the procedures included in ASTM D422, ASTM D2974 and AASHTO T267. The topsoil will be inspected and tested by the Engineer before approval will be granted for its use.

Topsoil Mix

Organic Material	15-25% by dry weight of total sample (Organic matter is to be determined by loss on ignition of oven dried material in accordance with ASTM D2974)
Silt	25% to 45% by dry weight
Sand	35% to 55% by dry weight

Fertilizer shall be of standard commercial types supplied separately or in mixtures, and furnished in moisture proof containers. Each container shall be marked with the weight and the manufacturer's guaranteed analysis of the contents showing the percentage for each ingredient contained therein.

The proportion of chemical ingredients furnished shall be a mixture such as to provide the total available nitrogen, phosphoric, and potassium as required by the soil analysis.

Tolerances of the chemical ingredient shall be plus or minus 2%.

No cyanamid compounds or hydrated lime will be permitted in mixed fertilizers.

Limestone shall contain not less than 85 percent of calcium and magnesium carbonates. Agricultural ground limestone suitable for application by a fertilizer spreader shall conform to the following gradation:

SIEVE DESIGNATION	MINIMUM PERCENT PASSING, BY WEIGHT
No. 10	100
No. 20	90
No. 100	50

Pelletized limestone may be used subject to approval by the Engineer.

Sufficient fertilizer and limestone shall be applied to the topsoil such that the total natural and applied chemical constituents are within the following ranges:

Nitrogen	21-35 PPM
Phosphoric Acid	11-20 PPM
Potassium	76-150 PPM
Limestone	Sufficient to Attain a Ph of 6.0 to 7.0

The Contractor shall furnish soil analysis test reports which verify this. Fertilizer and limestone shall be applied at the rates indicated by the soil tests and worked into the topsoil to a uniform depth of two inches.

Organic material for incorporation into topsoil, shall be partially decomposed peat moss. Organic material shall be from a source above the water table. Peat moss may require chopping or shredding to insure thorough mixing with the topsoil.

CFHWY00672-031725

Special Provisions

Replace Section 621 with the following:

**SECTION 639
DRIVEWAYS**

639-1.01 DESCRIPTION. Construct driveways and approaches.

639-2.01 MATERIALS. Reserved.

639-3.01 CONSTRUCTION. Reserved.

639-4.01 METHOD OF MEASUREMENT. By the number of driveways and approaches constructed.

639-5.01 BASIS OF PAYMENT. The Contract unit price for driveways and approaches is for furnishing equipment and labor.

Pavement removal and excavation required constructing driveways and approaches is subsidiary to the driveway and approach pay items.

Materials required to construct driveways and approaches will be paid for separately under the respective items listed in the bid schedule.

PAY ITEM

Item Number	Item Description	Unit
639.0001.____	Driveway	Each
639.0002.____	Driveway, Residential	Each
639.0003.____	Driveway, Commercial	Each
639.2000.____	Approach	Each

CR639-16.0920_2

SECTION 641 EROSION, SEDIMENT, AND POLLUTION CONTROL

641-1.01 DESCRIPTION.

Provide project administration and Work relating to control of erosion, sedimentation, and discharge of pollutants, according to this Section and applicable local, state, and federal requirements, including the Alaska Pollution Discharge Elimination System (APDES) Construction General Permit (CGP). The state APDES program is administered by the Department of Environmental Conservation (DEC). Section 301(a) of the Clean Water Act (CWA) and 18 AAC 83.015 provide that the discharge of pollutants to water of the U.S. is unlawful except as allowed by the CGP.

641-1.02 DEFINITIONS.

These definitions apply only to Section 641.

ACTIVE TREATMENT SYSTEM (ATS) OPERATOR. CGP Appendix C.

ALASKA CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (AK-CESCL). A person who has completed training, testing, and other requirements of, and is currently certified as, an AK-CESCL from an AK-CESCL Training Program (a program developed under a Memorandum of Understanding between the Department and others). The Department recognizes AK-CESCLs as "qualified personnel" required by the CGP. An AK-CESCL must be recertified every three years. (See Qualified Person)

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION (DEC). The state agency authorized by EPA to administer the Clean Water Act's National Pollutant Discharge Elimination System.

ALASKA GENERAL PERMIT FOR EXCAVATION, DEWATERING (Excavation Dewatering Permit).

Permit authorizing excavation dewatering discharges from Construction Activities.

ALASKA MULTI-SECTOR GENERAL PERMIT (MSGP). Permit authorizing storm water discharges associated with Industrial Activity.

ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM (APDES). A system administered by DEC that issues and tracks permits for storm water discharges.

BEST MANAGEMENT PRACTICES (BMPS). CGP Appendix C.

CLEAN WATER ACT (CWA). Federal Water Pollution Control Amendments of 1972, as amended (33 U.S.C. 1251 et seq.).

CONSTRUCTION ACTIVITY. Ground disturbing activity by the Contractor, Subcontractor or utility company; that may result in erosion, sedimentation, or a discharge of pollutants into storm water. CGP Appendix C.

CONSTRUCTION GENERAL PERMIT (CGP). The permit authorizing storm water discharges from Construction Activities, issued and enforced by Alaska DEC. It authorizes storm water discharges providing permit conditions and water quality standards are met.

U.S. ARMY CORPS OF ENGINEERS PERMIT (COE Permit). U.S. Army Corps of Engineers Permit for construction in waters of the U.S. may be issued under Section 10 of the Rivers and Harbors Act of 1899, or Section 404 of the Clean Water Act.

ELECTRONIC NOTICE OF INTENT (ENOI). CGP Appendix C.

ELECTRONIC NOTICE OF TERMINATION (ENOT). CGP Appendix C.

ENVIRONMENTAL PROTECTION AGENCY (EPA). The federal agency charged to protect human health and the environment.

ERODIBLE STOCKPILE. Any material storage area or stockpile consisting of mineral aggregate, organic material, or a combination thereof, with greater than 5 percent passing the #200 sieve, and any material storage where wind or water transports sediments or other pollutants from the stockpile. Erodible Stockpile also includes any material storage area or stockpile where the Engineer determines there is potential for wind or water transport of sediments or other pollutants away from the stockpile.

EROSION AND SEDIMENT CONTROL PLAN (ESCP). The Department's project specific document that illustrates measures to control erosion and sediment on the project. The ESCP provides bidders with the basis for cost estimating and guidance for developing an acceptable Storm Water Pollutant Prevention Plan (SWPPP).

FINAL STABILIZATION. CGP Appendix C, "Stabilization".

HAZARDOUS MATERIAL CONTROL PLAN (HMCP). The Contractor's detailed project specific plan for prevention of pollution from storage, use, transfer, containment, cleanup, and disposal of hazardous material (including, but are not limited to, petroleum products related to construction activities and equipment). The HMCP is included as an appendix to the SWPPP.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT. A DEC storm water discharge permit issued to certain local governments and other public bodies, for operation of storm water conveyances and drainage systems. CGP Appendix C.

OPERATOR(S). The party(s) responsible to obtain CGP permit coverage. CGP Appendix C.

1. Contractor – the Contractor is an Operator inside and outside the Project Zone.
2. Department – the Department is an Operator inside the Project Zone.

POLLUTANT. Any substance or item meeting the definition of pollutant contained in 40 CFR § 122.2. A partial listing from this definition includes: dredged spoil, solid waste, sediment, sewage, garbage, sewage sludge, chemical wastes, biological materials, wrecked or discarded equipment, rock, sand, cellar dirt and industrial or municipal waste.

PROJECT ZONE. The physical area provided by the Department for Construction. The Project Zone includes the area of highway or facility under construction, project staging and equipment areas, and material and disposal sites; when those areas, routes and sites, are provided by the Contract.

Material sites, material processing sites, disposal sites, haul routes, staging and equipment storage areas; that are furnished by the Contractor or a commercial operator, are not included in the Project Zone.

QUALIFIED PERSON. CGP Appendix C and Section 641-1.04.

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN (SPCC PLAN). The Contractor's detailed plan for petroleum spill prevention and control measures that meet the requirements of 40 CFR 112.

SPILL RESPONSE FIELD REPRESENTATIVE. The Contractor's representative with authority and responsibility for managing, implementing, and executing the HMCP and SPCC Plan.

STORM EVENT. CGP Appendix C.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP). The Contractor's plan for compliance with the CGP for construction activities inside the Project zone, CGP Appendix C and Section 641.

STORM WATER POLLUTION PREVENTION PLAN TWO (SWPPP2). The Contractor's plan for compliance with the CGP and MSGP for construction activities outside the Project Zone.

SUPERINTENDENT. The Contractor's duly authorized representative with authority and responsibility for the overall operation of the Project and Contractor furnished sites and facilities.

SWPPP AMENDMENT. A modification to the SWPPP. CGP Part 5.0.

SWPPP MANAGER. The Contractor's Qualified Person with authority and responsibility. CGP Appendix C.

SWPPP PREPARER. The Contractor's Qualified Person with authority and responsibility. CGP Appendix C.

SWPPPTRACK. Software Subscription service version SWPPPTrack DOT AK developed and provided by SWPPPTrack AK LTD, for use on construction projects that require coverage under the APDES CGP.

TEMPORARY STABILIZATION. CGP Appendix C, "Stabilization".

641-1.02.01 REFERENCE.

A list of websites and documents referenced herein, including SWPPP preparation documents and construction forms, are available at the DOT&PF Statewide Design and Engineering Services Storm Water web page and Construction Forms webpage.

DEC Permit information is available at the DEC Division of Water webpage.

641-1.03 PLAN AND PERMIT SUBMITTALS.

For plans listed in Subsection 108-1.03.5 (SWPPP, HMCP, and SPCC), use the Contractor submission and Department review deadlines identified in this subsection.

Partial and incomplete submittals will not be accepted for review. Any submittal that is re-submitted or revised after submission, but before the review is completed, will restart the submittal review timeline. No additional Contract time or additional compensation will be allowed due to delays caused by partial or incomplete submittals, or required re-submittals.

1. Storm Water Pollution Prevention Plan. Submit one electronic copy (single PDF file) of the SWPPP to the Engineer for approval. Deliver these documents to the Engineer at least 21 days before beginning Construction Activity. Organize the SWPPP and related documents for submittal according to the requirements of Subsection 641-2.01.2.

The Department will review the SWPPP submittals within 14 days after they are received. Submittals will be returned to the Contractor, and marked as either "rejected" with reasons listed or as "approved" by the Department. When the submittal is rejected, the Contractor must revise and resubmit the SWPPP. The 14-day review period will restart when the Contractor submits an electronic copy of the revised SWPPP to the Engineer for approval.

After the SWPPP is approved and certified by the Department using Form 25D-109, the Contractor must certify the approved SWPPP using Form 25D-111. See Subsection 641-1.03.4 for further SWPPP submittal requirements.

Submit the final SWPPP. Transmit an electronic copy (single pdf file) of the final SWPPP to the Engineer when the Contractor's eNOT is filed, or within 30 days of the Department's eNOT being filed, whichever is sooner. Include all SWPPP documents.

2. Hazardous Material Control Plan. The HMCP Template is available at the DOT&PF Construction Forms webpage. The HMCP submittal, review timeline, and signature requirements are the same as the SWPPP.
3. Spill Prevention, Control, and Countermeasure Plan. When a SPCC Plan is required under Subsection 641-2.03, submit an electronic copy of the SPCC Plan to the Engineer. Deliver these documents to the Engineer at least 21 days before beginning Construction Activity. The Department reserves the right to review the SPCC Plan and require modifications.

4. CGP Coverage. The Contractor is responsible for permitting of Contractor and subcontractor Construction Activities related to the Project. Do not use the SWPPP for Construction Activities outside the Project Zone where the Department is not an operator. For Construction Activities outside the Project Zone, the Contractor must use a SWPPP2. Department approval is not required for a SWPPP2.

After the Department certifies the SWPPP and prior to beginning Construction Activity, submit an eNOI with the required fee to DEC for coverage under the CGP. Submit a copy of the signed eNOI and DEC's written acknowledgement (by letter or other document), to the Engineer as soon as practicable and no later than three days after filing eNOI or receiving a written response.

Do not begin Construction Activity until the conditions listed in Subsection 641-3.01.1 are completed.

The Department will submit an eNOI to DEC for Construction Activities inside the Project Zone. The Engineer will provide the Contractor with a copy of the Department's eNOI and DEC's written acknowledgement (by letter or other document), for inclusion in the SWPPP.

Before Construction Activities occur, transmit to the Engineer an electronic copy of the approved and certified SWPPP, with signed Delegations of Signature Authorities on Forms 25D-107 and 25D-108, SWPPP Certifications on Forms 25D-111 and 25D-109, both permittee's signed eNOIs and DEC's written acknowledgement.

5. DEC SWPPP Review. When CGP Part 2.1.3, or 2.1.4 requires DEC SWPPP review:
 - a. Transmit a copy of the Department-approved SWPPP to DEC using delivery receipt confirmation;
 - b. Transmit a copy of the delivery receipt confirmation to the Engineer within seven days of receiving the confirmation; and
 - c. Retain a copy of delivery receipt confirmation in the SWPPP.
6. Local Government SWPPP Review. When local government or the CGP Part 2.1.4, requires local government review:
 - a. Transmit a copy of the Department-approved SWPPP and other information as required to local government, with the required fee. Use delivery receipt confirmation;
 - b. Transmit a copy of the delivery receipt confirmation to the Engineer within seven days of receiving the confirmation;
 - c. Transmit a copy of any comments by the local government to the Engineer within seven days of receipt;
 - d. Amend the SWPPP as necessary to address local government comments and transmit SWPPP Amendments to the Engineer within seven days of receipt of the comments;
 - e. Include a copy of local government SWPPP review letter in the SWPPP; and
 - f. File a notification with local government that the project is ending.
7. Modifying Contractor's eNOI. When required by the CGP Part 2.7, modify your eNOI to update or correct information within 30 calendar days of the change. Reasons for modification are in the CGP Part 2.7.1. The Contractor must submit an eNOT instead of an eNOI modification when the operator has changed. The new operator must file an eNOI to obtain permit coverage.

641-1.04 PERSONNEL QUALIFICATIONS.

Provide documentation in the SWPPP that the individuals serving in these positions meet the personnel qualifications. The Department accepts the following certificates as equivalent to AK-CESCL: Certified Professional in Erosion and Sediment Control (CPESC), or Certified Inspector in Sediment, and Erosion Control Certified (CISEC). These equivalent certificates are included in the CGP Appendix C and repeated below.

TABLE 641-1.04 PERSONNEL QUALIFICATIONS

Personnel Title	Required Qualifications
SWPPP Preparer	<ol style="list-style-type: none"> 1. Current certification as a Certified Professional in Erosion and Sediment Control (CPESC); or 2. Current certification as AK-CESCL, and at least two years' experience in erosion and sediment control as a SWPPP Manager or SWPPP writer, or equivalent; or 3. Professional Engineer registered in the State of Alaska with current certification as AK-CESCL.
Superintendent	Current AK-CESCL, or substitute training from CGP Appendix C, Qualified Person Table 4
SWPPP Manager	Current AK-CESCL or substitute training from CGP Appendix C, Qualified Person Table 4.
Active Treatment System Operator	Current AK-CESCL or substitute training from CGP Appendix C, Qualified Person Table 4. ATS operator should possess a recognized certification, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated the ability to meet the ATS requirement.

641-1.05 SIGNATURE/CERTIFICATION REQUIREMENTS AND DELEGATIONS.

1. eNOI and eNOT. The eNOI, eNOT, and eNOI Modifications must be signed and certified by a responsible corporate officer according to CGP Appendix A, Part 1.12. Signature and certification authority for the eNOI and eNOT cannot be delegated.
2. Delegation of Signature Authority for Other SWPPP Documents and Reports. Use Form 25D-108 to delegate signature authority and certification authority to the Superintendent position, according to CGP Appendix A, Part 1.12.3, for the SWPPP, Inspection Reports and other reports required by the CGP. The Superintendent position is responsible for signing and certifying the SWPPP, Inspection Reports, and other reports required by the CGP, except the eNOI, eNOI Modifications, and eNOT.

The Engineer will provide the Department's delegation on Form 25D-107, which the Contractor must include in the SWPPP.

3. Subcontractor Certification. Subcontractors must certify on Form 25D-105, that they have read and will abide by the CGP and the conditions of the project SWPPP.
4. Signatures and Initials. Where documents are completed in SWPPPTTrack, utilize SWPPPTTrack to sign and initial documents. When documents are not completed in SWPPPTTrack (e.g. Form 25D-111 SWPPP Certification for Contractor), upload scanned copies after signing and initialing the documents into SWPPPTTrack.

641-1.06 RESPONSIBILITY FOR STORM WATER PERMIT COVERAGE.

107-1.02 includes the requirements to obtain permits, and to provide permit documents to the Engineer.

1. The Department and the Contractor are jointly responsible for permitting and permit compliance within the Project Zone.

2. The Contractor is responsible for permitting and permit compliance for all construction support activity in the Project Zone and outside the Project Zone. The Contractor has sole responsibility for compliance with DEC, COE, and other applicable federal, state, and local requirements, and for securing all necessary clearances, rights, and permits. The Contractor is responsible for protection, care, and upkeep of all work, and all associated off-site zones.
3. The Contractor is responsible for obtaining an Excavation Dewatering Permit (AKG002000) if construction activities are within 1,500 feet of a DEC-identified contaminated site or groundwater plume.
4. An entity that owns or operates, a commercial plant (as defined in Subsection 108-1.01.4) or material source or disposal site outside the Project Zone, is responsible for permitting and permit compliance. The Contractor has sole responsibility to verify that the entity has appropriate permit coverage.
5. The Department is not responsible for permitting or permit compliance, and is not liable for fines resulting from noncompliance with permit conditions:
 - a. For areas outside the Project Zone;
 - b. For Construction Activity and Support Activities outside the Project Zone; and
 - c. For commercial plants, commercial material sources, and commercial disposal sites.

641-1.07 UTILITY.

Relocation Coverage. A Utility company is not an Operator when utility relocation is performed concurrently with the Project, as outlined in Section 105-1.06. The Department maintains operational control over the Utility's plans and specifications for coordination with project construction elements, and the Contractor has day-to-day control over the various utility construction activities that occur in support of the Project. A Utility company is considered a subcontractor for concurrent relocation.

After the Contractor has an active NOI for the Project, a Utility Company performing advance relocation work under a separate SWPPP no longer has Operator status and files the NOT for the Utility Company's SWPPP covering only the completed utility work. Remaining utility relocation work is included in and performed under the Project SWPPP.

641-1.08 USE of SWPPPTRACK. The Contractor is responsible for purchasing and contracting with SWPPPTrack AK LTD for the use of the SWPPPTrack software application and services until final stabilization is achieved and the eNOT has been completed. Contact SWPPPTrack Alaska Support at (888) 401-1993 or AKSupport@SWPPPTrack.com for project fees, setup coordination, device requirements, and training.

Perform and document all inspections required by the CGP and the SWPPP with SWPPPTrack and populate all inspection fields accurately to represent current project conditions. Complete the following forms using SWPPPTrack:

1. SWPPP Construction Site Inspection Report (25D-100)
2. SWPPP Grading & Stabilization Activities Log (25D-110)
3. SWPPP Corrective Action Log (25D-112)
4. SWPPP Amendment Log (25D-114)
5. SWPPP Daily Record of Rainfall (25D-115)
6. SWPPP Training Log (25D-125)
7. SWPPP Project Staff Tracking (25D-127)

641-2.01 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS.**1. SWPPP Preparer and Pre-Construction Site Visit.**

Use a SWPPP Preparer to develop the SWPPP according to the CGP, DEC and Department SWPPP Template. Subsection 641-1.02.01 provides directions to templates.

The SWPPP Preparer must conduct a pre-construction inspection at the Project site before construction activity begins. If the SWPPP Preparer is not a Contractor employee, the SWPPP Preparer must visit the site accompanied by the Contractor. Give the Department at least seven days advance notice of the site visit, so that the Department may participate.

Document the SWPPP Preparer's pre-construction inspection in the SWPPP on Form 25D-106, SWPPP Pre-Construction Site Visit, include the names of attendees and the date.

2. Developing the SWPPP.

- a. Meet all CGP requirements.
- b. Use the Department's ESCP, Environmental commitments, and other Contract documents as a starting point for developing the SWPPP.
- c. Develop the SWPPP with sections and appendices according to the DEC CGP SWPPP Template and DOT&PF SWPPP Template. Include the information required by the Contract and described in the CGP Part 5.0. Use the forms available at the DOT&PF Construction Forms website.
- d. Compile the SWPPP in three ring binders with tabbed and labeled dividers for each appendix. Submit the SWPPP according to Subsection 641-1.03.

3. SWPPP Considerations and Contents.

- a. The SWPPP must provide erosion and sediment control measures for all Construction Activity within the Project Zone.

Construction activity outside the Project Zone must have permit coverage. Document permit compliance according to SWPPP2 requirements.

- b. The SWPPP must consider the activities of the Contractor and all subcontractors and utility companies performing work in the Project Zone. Describe the roles and responsibilities of the Contractor, subcontractors, utility companies, and the Department with regard to implementation of the SWPPP. Include the utility companies and other operators performing Construction Activity.

Identify areas:

- (1) Over which each operator has operational control; and
- (2) Where the Department and Contractor are co-operators.
- c. For work outside the Project Zone the SWPPP must identify the entity that has storm water permit coverage, the operator, and areas that are:
 - (1) Dedicated to the Project and where the Department is not an operator; and
 - (2) Not dedicated to the project, but used for the project.
- d. If the project discharges to a Tier III, Outstanding Natural Resource Water, comply with the CGP Part 2.1.6. Submittal deadlines apply prior to filing an eNOI and beginning construction activities. As of the issuance of the CGP 2021, no Tier III, Outstanding Natural Resource Water is designated in the State of Alaska.
- e. There are special requirements in the CGP Part 3.2, for storm water discharges into an impaired water body. Monitoring of storm water discharges may be required. The Contractor is responsible for monitoring and reporting inside and outside the project zone.

- f. Describe the sequence and timing of activities that disturb soils and BMP implementation and removal. Phase earth-disturbing activities to minimize unstabilized areas, and to achieve temporary or final stabilization. Whenever practicable incorporate final stabilization work into excavation, embankment, and grading activities. Include drawings showing each phase of the project with the BMPs implemented in the Phase.
 - g. Delineate the site according to the CGP Part 4.2.1.
 - h. Minimize the amount of soil exposed and preserve natural topsoil on site, unless infeasible according to the CGP Part 4.2.2.
 - i. Describe methods and time limits, to initiate temporary or final soil stabilization. Comply with stabilization requirements in the CGP Part 4.5.
 - j. If construction will cease during winter months, describe all requirements for winter shutdown according to the CGP Part 4.12.
 - k. Plans for ATS must meet with the requirements in the CGP Part 2.1.5 and 4.6.
 - l. Design all temporary BMPs to accommodate a two year 24-hour storm event. Describe and document all installed control measures in the SWPPP according to the CGP Part 5.3.6. Include a citation from a published BMP Manual, publication, or manufacturers specification used as a source, or include a statement "No BMP Manual was used for this design". If using out of state BMPs, follow the instructions in the DOT&PF SWPPP Guide.
 - m. Provide a legible site map or set of maps in the SWPPP, showing the entire site and identifying boundaries of the property where construction and earth-disturbing activities will occur. Include all elements described in the CGP Part 5.3.5 and the DEC CGP SWPPP Template Section 5.0.
 - n. Identify the inspection frequency in the SWPPP according to the CGP Part 6.1; except, inspect once every seven calendar days regardless of the precipitation amount.
 - o. Linear Project Inspections, described in CGP Part 6.5, are not applicable to this Contract.
 - p. The SWPPP must cite and incorporate applicable requirements of the Project permits, environmental commitments, COE permit, and commitments related to historic preservation. Make additional consultations or obtain permits as necessary for Contractor specific activities that were not included in the Department's permitting and consultation.
 - q. The SWPPP is a dynamic document. Keep the SWPPP current by noting installation, modification, and removal of BMPs, and by using amendments, SWPPP amendment logs, Inspection Reports, corrective action logs, records of land disturbance and stabilization, and any other records necessary to document storm water pollution prevention activities and to satisfy the requirements of the CGP and this specification. See Subsection 641-3.03 for more information.
4. Recording Personnel and Contact Information in the SWPPP.
- Identify the SWPPP Manager as the Storm Water Lead and Storm Water Inspector positions in the SWPPP. Document the SWPPP Manager's responsibilities in Section 2.0 Storm Water Contacts, of the SWPPP Template and:
- a. Identify that the SWPPP Manager does not have authority to sign inspection reports (unless the SWPPP Manager is also the designated project Superintendent).
 - b. Identify that the SWPPP Manager cannot prepare the SWPPP unless the SWPPP Manager meets the Contract requirements for the SWPPP Preparer.

Include in the SWPPP proof of AK-CESCL, or equivalent certifications for the Superintendent and SWPPP Manager, and for any acting Superintendent and acting SWPPP Managers. If the Superintendent or SWPPP Manager is replaced, permanently or temporarily, by an acting Superintendent or acting SWPPP Manager; record in the SWPPP, on Form 25D-127, the names of the replacement personnel, and date of replacement. For temporary personnel, record their beginning and ending dates.

Provide 24-hour contact information for the Superintendent and SWPPP Manager. The Superintendent and SWPPP Manager must have 24-hour contact information for all Subcontractor SWPPP Coordinators and Utility SWPPP Coordinators.

Include in the SWPPP, proof of AK-CESCL or equivalent certifications of ATS operators. Record names of ATS operators and their beginning and ending dates, on Form 25D-127.

The Department will provide proof of AK-CESCL, or equivalent certifications for the Department's Project Engineer, Storm Water Inspectors, and Monitoring Person, and names and dates they are acting in that position. Include Department's staff certifications in SWPPP Appendix E. Include the Department's staff names, dates acting, and assignments in Section 2.0 of the SWPPP and on Form 25D-127.

641-2.02 HAZARDOUS MATERIAL CONTROL PLAN (HMCP) REQUIREMENTS.

Prepare the HMCP using the Department template for the prevention of pollution from storage, use, containment, cleanup, and disposal of all hazardous material, including petroleum products related to construction activities and equipment. Include the HMCP as an appendix to the SWPPP. Compile Material Safety Data Sheets in one location and reference that location in the HMCP.

641-2.03 SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN (SPCC Plan) REQUIREMENTS.

Prepare and implement an SPCC Plan, required by 40 CFR 112; when both of the following conditions are present on the project:

1. Oil or petroleum products from a spill may reach navigable waters (defined in 40 CFR 112), and
2. Total above ground storage capacity for oil and any petroleum products is greater than 1,320 gallons (not including onboard tanks for fuel or hydraulic fluid used primarily to power the movement of a motor vehicle or ancillary onboard oil-filled operational equipment, and not including containers with a storage capacity of less than 55 gallons).

Reference the SPCC Plan in the HMCP and SWPPP.

641-2.04 RESPONSIBILITY AND AUTHORITY OF THE SUPERINTENDENT AND SWPPP MANAGER.

The Superintendent shall certify the SWPPP, Inspection Reports, and other reports required by the CGP, except the eNOI and eNOT. The Superintendent may not delegate the task or responsibility of certifying these documents.

The Superintendent may assign certain duties to the SWPPP Manager.

1. Ensuring Contractor's and subcontractor's compliance with the SWPPP and CGP;
2. Ensuring the control of erosion, sedimentation, or discharge of pollutants;
3. Directing and overseeing installation, maintenance, and removal of BMPs;
4. Performing Inspections; and
5. Updating the SWPPP including adding amendments and forms.

When Bid Item 641.0007.____ is part of the Contract, the SWPPP Manager must be a different person than the Superintendent, be available at all times to administer SWPPP requirements, and be physically present within the Project Zone or the project office, when construction activities are occurring.

The Superintendent and SWPPP Manager shall be knowledgeable in the requirements of Section 641, the SWPPP, CGP, BMPs, HMCP, SPCC Plan, environmental permits, and environmental commitments.

The Superintendent and SWPPP Manager shall have the Contractor's complete authority and be responsible for suspending construction activities that do not conform to the SWPPP or CGP.

641-2.05 MATERIALS.

Use materials suitable to withstand hydraulic, wind, and soil forces, and to control erosion and trap sediments according to the requirements of the CGP and the Specifications.

Use the seed mixture specified in the Contract or as directed by the Engineer.

Use soil stabilization material as specified in Section 727.

Use silt fences as specified in Section 729.

Use straw and straw products certified weed free of prohibited and restricted noxious weed seed and quarantined pests, according to Alaska Administrative Code, Title 11, Chapter 34 (11 AAC 34). When straw or straw products certified according to 11 AAC 34 are not available, use non-certified products manufactured within Alaska before certified products manufactured in another state, country, or territory. Non-certified straw or straw products manufactured in another state, country, or territory shall not be used. Grass, legumes, or any other herbaceous plants produced as hay, shall not be substituted for straw, or straw products.

641-3.01 CONSTRUCTION REQUIREMENTS.

Comply with the SWPPP and the requirements of the CGP Part 5.0.

1. Before Construction.

The following actions must be completed before Construction Activity begins:

- a. The SWPPP Preparer must visit the Project. Document the visit on SWPPP Form 25D-106. The SWPPP must be developed, or amended with the findings from the visit.
- b. The SWPPP must be approved by the Engineer on Form 25D-109.
- c. The Contractor must be authorized to begin work by the Engineer.
- d. The Project must have an eNOI for the Department and for the Contractor.
- e. The Department approved SWPPP must be submitted to DEC and Local Governments per CGP Part 2.1.2, Part 2.1.4, and Part 2.4.1.
- f. The Contractor has transmitted to the Engineer an electronic copy of the approved SWPPP.
- g. The Delegation of Authority, Forms 25D-108 and 25D-107, for both the Contractor and Engineer are signed.
- h. Main entrance signage must meet the requirements of CGP Part 5.10.2.

Post notices on the outside wall of the Contractor's project office, and near the main entrances of the construction project. Protect postings from the weather. Locate postings so the public can safely read them without obstructing construction activities or the traveling public (for example, at an existing pullout). Do not use retroreflective signs for the SWPPP posting. Do not locate SWPPP signs in locations where the signs may be confused with traffic control signs or devices. Update the notices if the listed information changes.

- i. Track precipitation according to CGP Part 7.3.9. Submit the method to track precipitation to the Engineer for approval.
- J. Complete all setup and training required to implement SWPPPTrack.
- k. Complete the upload of the BMP inventory into SWPPPTrack.

2. During Construction.

- a. Delineate The Site. Comply with the CGP Part 4.2.1.
- b. BMPs. Install BMPs according to the SWPPP prior to the initiation of ground disturbance.
- c. Document subcontractors. Provide a copy of the SWPPP and the CGP to all subcontractors and utility companies before they begin soil-disturbing activities. Verify they understand and comply with the SWPPP and CGP.
 - (1) Document all subcontractors and utility companies that may work on the site, according to the CGP Part 5.3.1, and SWPPP Section 1.2.
 - (2) Require subcontractors and utility companies to sign the SWPPP Subcontractor Certification, Form 25D-105. Include Form 25D-105 in the SWPPP Appendix E.
 - (3) Inform subcontractors and utility companies, in a timely manner, of SWPPP amendments that affect them. Coordinate with subcontractors and utility companies to protect BMPs, including temporary and final stabilization from damage.
 - (4) Notify the Engineer immediately if the actions of any utility company or subcontractor do not comply with the SWPPP and the CGP.
- d. Provide Training. Provide ongoing training to all employees, subcontractors, and utility companies according to the CGP Part 4.14.
 - (1) Provide training no less than once a month during construction activity;
 - (2) Document training in the SWPPP Training Log on Form 25D-125. Include the training record in the SWPPP Appendix I.
- e. Protection and Restoration. Comply with Subsection 107-1.11.
- f. Good Housekeeping Measures. Comply with the SWPPP and CGP Part 4.8.
- g. Control Measures. Comply with the SWPPP and CGP Part 5.3.6.
 - (1) Maintain BMPs.
 - (2) Comply with requirements of the HMCP and SPCC Plan, and all local, state, and federal regulations that pertain to the handling, storage, containment, cleanup, and disposal of petroleum products or other hazardous materials.
 - (3) Keep the SWPPP and HMCP current, Subsection 641-2.01.3, SWPPP Considerations and Contents.

3. Winter Construction.

If winter construction activity occurs, the project must have BMPs in place, Part 4.12.2. Inspections can be reduced to once per month if the project meets the CGP Part 6.2.4.

4. Storm Water Discharge Pollutant Reporting Requirements.

If an incident of non-compliance occurs, that may endanger health or the environment, a report must be made, CGP Appendix A, Part 3.4.

A permit non-compliance is any type of pollutant, such as turbidity or petroleum that enters storm water runoff and flows into a receiving water body, MS4, or wetland that is connected to waters of the U.S.

- a. Report the incident to the Engineer immediately;
- b. Report to DEC orally within 24 hours after the permittee becomes aware of the incident; and
- c. Report to DEC in writing within five days after the permittee becomes aware of the circumstances. To report in writing, complete the written noncompliance report on Form 25D-143, and file the written report with DEC. Coordinate the report with the Engineer. Include in the report:
 - (1) A description of the noncompliance and its causes;
 - (2) The exact dates and times of noncompliance;
 - (3) If not yet corrected the anticipated time the project will be brought back into compliance; and
 - (4) The corrective action taken or planned to reduce, eliminate and prevent reoccurrence.
- d. Report an incident of noncompliance with COE Permits to the Engineer immediately. The Engineer will notify the COE.

5. Hazardous Materials Reporting Requirements.

Report any release of a hazardous substance immediately to the Engineer, as soon as the person has knowledge of the discharge.

Report spills of petroleum products or other hazardous materials to the Engineer and other agencies as required by law, and according to the CGP Part 9.3.

- a. To water.

Any amount of hazardous material released must be reported immediately to the Engineer, DEC, and the Coast Guard.

- b. To land.

Any release of a petroleum product, must be reported as soon as the person has knowledge of the discharge, CGP Part 9.3.2.

- (1) Release in excess of 55 gallons,
- (2) Release in excess of 10 gallons but less than 55 gallons, must be reported to the DEC within 48 hours after the person has knowledge of the discharge, and
- (3) Release in excess of 1 gallon to 10 gallons, must be recorded, logged, and provided to the DEC on a monthly basis.

- c. Use the HMCP and SPCC Plan for contact information to report spills to regulatory agencies.
- d. Implement measures to prevent the reoccurrence of and to respond to the release of hazardous materials.
- e. Prior to disposal of contaminated material, submit a Contaminated Media Transport and Treatment Disposal Approval Form to the DEC Division of Spill Prevention and Response. Dispose as approved by the DEC.

6. Maintenance of BMPs and Corrective Action.

Implement maintenance and corrective action as required by the CGP Part 4.13 and Part 8.0, SWPPP, and manufacturer's specifications, whichever is more restrictive.

- a. Implement corrective actions. Comply with the CGP Part 8.0 and the SWPPP.

b. Corrective Action deadlines and documentation.

- (1) Complete Corrective actions according to the CGP Part 8.2.
- (2) Document corrective actions in the Corrective Action Log, Form 25D-112, according to the SWPPP, CGP Part 5.9.2, and Part 8.3.

If a different BMP is installed to correct the condition leading to the corrective action, a SWPPP Amendment must be completed.

- (3) Document the conditions, in the Corrective Action Log, for corrective actions not completed according to the CGP 8.2. Notify the Engineer, and implement the corrective action as soon as possible.

The Engineer may assign a new complete-by date using a Delayed Action Item Report, Form 25D-113 (DAIR Form), if the Contractor is unable to complete the corrective action within the required timeframe. The DAIR Form can only be authorized and completed by the Engineer.

7. Stabilization.

- a. All Soil stabilization requirements must be met in accordance with CGP Part 4.5 and the SWPPP.
- b. When temporary or permanent seeding is required, provide a working hydro seeding equipment located within 100 miles of the project by road; with 1,000 gallon or more tank capacity, paddle agitation of tank, and the capability to reach the seed areas with an uniform mixture of water, seed, mulch and tackifier. If the project is located in an isolated community, the hydro-seeder must be located at the project.
- c. Apply temporary seed and stabilization measures after preparing the surface to reduce erosion potential and to facilitate germination and growth of vegetative cover according to Section 618 and 619.
- d. Apply permanent seed and other stabilization measures after land-disturbing activity has permanently ceased. Comply with the CGP, SWPPP, and the Contract Sections 618, 619, 724, and 727.
- e. Incorporate final or temporary stabilization immediately after installing culverts or other drainage structures to satisfy the CGP Part 4.5, SWPPP and Engineer. Stabilize under any bridge and in areas upstream and downstream of culverts, drainages and areas disturbed by related construction activities after installation, or before deactivating stream bypass or diversion.
- f. Stabilization before Fall Freeze-up, and Spring Thaw.

Stabilize Construction Activities within the Project Zone with BMPs prior to the anticipated date of fall freeze-up, according to the SWPPP and CGP Part 4.12.

Exceptions to stabilization prior to anticipated date of fall freeze-up include:

- (1) Where temporary stabilization activities are precluded by snow cover or frozen ground conditions prior to the anticipated date of fall freeze-up, stabilization measures must be initiated as soon as practicable following the actual spring thaw.
- (2) When winter construction activity is authorized by the Engineer and conducted according to the Contract.

8. Ending CGP Coverage.

- a. The Engineer will determine the date that the following conditions for ending CGP coverage have been met within the Project Zone:
 - (1) Land disturbing activities have ceased;

- (2) Final Stabilization has been achieved on all portions of the Project Zone, including Department furnished material sources, disposal sites, staging areas, equipment areas, etc., according to the CGP Part 4.5.2; and
 - (3) Temporary BMPs have been removed.
 - b. After the Engineer has determined the conditions for submitting an eNOT have been met according to the CGP Part 10.2, the Department will:
 - (1) Send written notice to the Contractor with the date that the conditions were met;
 - (2) Submit an eNOT to DEC within 30 days, and
 - (3) Provide a copy of the eNOT and DEC's acknowledgement letter to the Contractor.
 - c. If the Contractor's CGP eNOI acreage includes Support Activities and any other areas where the Department is not an Operator, the Contractor may not be able to file an eNOT at the same time as the Department.
 - d. The Contractor must submit a copy of each signed eNOT and DEC's acknowledgement letter to the Department within three days of filing the eNOT or receiving a written response. Insert the eNOT and DEC acknowledgement letter in the SWPPP Appendix Q.
 - e. The Contractor is responsible for coordinating local government inspections of work and ending permit coverage with local governments. See Subsection 641-1.03.6 for more information.
9. Ending Inspections, BMP maintenance, and SWPPP Updates in the Project Zone.
- The Contractor is responsible for continuing inspections, BMP maintenance, and SWPPP updates until permit coverage is ended.
10. Transmit final SWPPP.
- Collate all documents into a single electronic file before transmittal. Transmit one electronic copy of the final SWPPP to the Engineer according to Subsection 641-1.03.1.

641-3.02 SWPPP DOCUMENTS, LOCATION ON-SITE, AVAILABILITY, AND RECORD RETENTION.

The SWPPP and related documents maintained by the Contractor are the Record for demonstrating compliance with the CGP. Copies of SWPPP documents transmitted to the Engineer under the requirements of this specification are informational and do not relieve the Contractor's responsibility to maintain complete records as required by the CGP and this specification.

Keep the SWPPP, HMCP, and SPCC Plan at the on-site project office. If there is not an on-site project office, keep the documents at a locally available location that meets CGP requirements and is approved by the Engineer. Records may be moved to another office for record retention after the eNOTs are filed. Records may be moved to another office during winter shutdown. Update on-site postings if records are relocated during winter shutdown. Provide the Department with copies of all Records.

Retain Records including a copy of the SWPPP, for at least three years after the date of eNOT according to the CGP Part 9.4.

The SWPPP and related documents must be made available for review and copy, to the Department and other regulatory agencies that request them. See CGP Parts 5.10, 6.6 and 9.5.

641-3.03 SWPPP INSPECTIONS, AMENDMENTS, REPORTS, AND LOGS.

Perform Inspections, prepare Inspection Reports, and prepare SWPPP Amendments in compliance with the SWPPP and the CGP using Department forms from the DOT&PF Construction Forms website.

1. Inspection during Construction.

Conduct Inspections according to the schedule and requirements of the SWPPP and CGP Part 6.0, except inspect once every seven calendar days regardless of the precipitation amount, Subsection 641-2.01.3.n.

Inspections required by the CGP and SWPPP must be performed by the Contractor's SWPPP Manager and the Department's Storm Water Inspector jointly, unless approved by the Engineer, when:

- a. One of the inspectors is not on site, access is only by air, and weather delayed or canceled flights;
- b. One of the inspectors is sick;
- c. The project is on a reduced frequency inspection schedule with no staff on site, the only access to the site is by air, and it is economical to send only one inspector; or
- d. When the Engineer determines a safety concern that makes joint inspection impracticable.

When this is the case, the Operator who conducts the Inspection must provide a copy of the Inspection Report to the other Operator within three days of the Inspection date and document the date of the report transmittal in Appendix K.

2. Inspection Reports.

Use only the Department SWPPP Construction Site Inspection Report, Form 25D-100, to record Inspections. Changes or revisions to Form 25D-100 are not permitted, except for adding or deleting data fields that list: Location of Discharge Points and Site Specific BMPs. Complete all fields in the Inspection Report; do not leave any field blank.

The Superintendent or SWPPP Manager must review and correct all errors within three days of the date of inspection.

Inspection Reports must be signed by the person described in the CGP Appendix A, Part 1.12 or by a duly authorized representative of that person. Only the Superintendent can certify the Inspection Form.

Insert a Complete-by-Date for each corrective action listed that complies with the CGP Part 8.2.

Provide a copy of the completed, unsigned Inspection Report to the Engineer by the end of the next business day following the inspection.

The Engineer may coordinate with the Superintendent to review and correct any errors or omissions before the Superintendent signs the report. Corrections are limited to adding missing information or correcting entries to match field notes and conditions present at the time the Inspection was performed. The signed and certified Inspection Report must be provided to the Engineer on the same day the Superintendent signed the form.

The Engineer will sign and certify the Inspection Report and will return the original to the Contractor within three working days if compliant with the CGP and SWPPP.

If the Inspection Report is not compliant with the CGP or SWPPP, the Engineer may make corrections after the Superintendent has signed and certified the Inspection Report. The Engineer will initial and date each correction. If the Engineer makes corrections, the Superintendent must recertify the Inspection Report by entering a new signature and date in the white space below the original signature and date lines. Send a copy of the recertified Inspection Report to the Engineer on the day it is recertified.

When an Inspection Report, certified by both the Superintendent and Engineer, requires corrections:

- a. Document the corrections in an addendum memo addressing only the omitted or erroneous portions.
- b. Superintendent and Engineer sign and certify the updated Inspection Report and the addendum memo.
- c. File the corrected Inspection Report and addendum memo in Appendix K and update the amendment log.

The issuance of an addendum memo does not relieve the Contractor of liquidated damages that may have been incurred as a result of the error on the original certified inspection report.

3. Items and Areas to Inspect.

Conduct inspections of all areas required by the CGP Part 6.4 and SWPPP.

4. Reduced Inspection Frequencies.

Conduct Inspections according to the inspection schedule indicated in the approved SWPPP. Any change in inspection frequency must be approved by the Engineer, and beginning and ending dates documented as an amendment to the SWPPP.

The frequency of inspections may be reduced according to the CGP Part 6.2.1 if the site is stabilized and the reduced frequency is approved by the Engineer. At actively staffed sites, inspect within two business days of the end of a storm event that results in a discharge from the site.

5. Winter Shutdown Inspections.

Conduct winter shutdown inspection 14 calendar days after the anticipated fall freeze-up date and conditions under the CGP Parts 4.12. and 6.2.3, and the SWPPP are met. The Engineer may approve suspension of inspections and waive requirements for updating the Grading and Stabilization Activities Log and Daily Record of Rainfall, Form 25D-115, during winter shutdown.

Inspections must resume on a regular frequency or reduced inspection frequency identified in the SWPPP, at least 21 days before anticipated spring thaw, CGP Part 6.2.3. Resume updating the Daily Record of Rainfall Form at the start of the 21-day spring thaw inspection.

6. Inspection before Project Completion.

Conduct Inspection to ensure Final Stabilization is complete throughout the Project, and temporary BMPs that are required to be removed are removed. Temporary BMPs that are biodegradable and are specifically designed and installed with the intent of remaining in place until they degrade, may remain in place after project completion if approved by the Engineer.

7. SWPPP Amendments and SWPPP Amendment Log.

The SWPPP Amendment Log, Form 25D-114, must be filled out by an individual who holds a current AK-CESCL, or equivalent certification. The Superintendent or the SWPPP Manager must sign and date amendments to the SWPPP and updates to the SWPPP Amendment Log.

SWPPP Amendments must be approved by the Engineer.

Amendments must occur:

- a. Whenever there is a change in design, construction operation, or maintenance at the construction site that has or could cause erosion, sedimentation or the discharge of pollutants that has not been previously addressed in the SWPPP;
- b. If an Inspection identifies that any portion of the SWPPP is ineffective in preventing erosion, sedimentation, or the discharge of pollutants;

- c. Whenever an Inspection identifies a problem that requires additional or modified BMPs or a BMP not shown in the original SWPPP is added;
- d. If the Inspection frequency is modified (note beginning and ending dates);
- e. When there is a change in personnel who are named in the SWPPP, according to Subsection 641-2.01;
- f. When an inspection is not conducted jointly;
- g. When an eNOI modification is filed;
- h. When a Noncompliance Report is filed with the DEC.

Place all correspondence with the DEC, EPA or MS4s in Appendix Q.

Amend the SWPPP as soon as practicable after any change or modification, but in no case, later than seven days following identification of the need for an amendment. All SWPPP Amendments must have an amendment number, be dated, and signed.

Keep the SWPPP Amendment Log current. Prior to a scheduled Inspection or submittal of an inspection, submit to the Engineer a copy of the pages of the Amendment Log that contain new entries since the last submittal. Include copies of any documents amending the SWPPP.

Keep the SWPPP Amendment Log in appendix M.

8. Site Maps.

Maintain site maps in accordance with CGP Part 5.3.5 and the SWPPP Template 5.0. It is acceptable to have separate site maps for BMPs, grading and stabilization activities.

9. Corrective Action Log.

The Superintendent and SWPPP Manager are the only persons authorized to make entries on the SWPPP Corrective Action Log, Form 25D-112.

The Corrective Action Log must document corrective actions required by the conditions listed in the CGP Part 8.0. Document the need for corrective action within 24 hours of either:

- a. Identification during an inspection, or
- b. Discovery by the Department's or Contractor's staff, a subcontractor, or a regulatory agency inspector.
- c. If a corrective action is discovered outside of an inspection, update the log with the date of discovery, the proposed corrective action, and the date the corrective action was completed.

Keep the Corrective Action Log current and submit a copy to the Engineer prior to performing each scheduled SWPPP Inspection.

Keep the Corrective Action Log in Appendix J.

10. Grading and Stabilization Activities Log.

The Superintendent and SWPPP Manager are the only persons authorized to date and initial entries on the SWPPP Grading and Stabilization Activities Log, Form 25D-110. Use the SWPPP Grading and Stabilization Activities Log, to record land disturbance and stabilization activities.

Keep the Grading and Stabilization Activities Log current and submit a copy to the Engineer prior to performing each scheduled SWPPP Inspection. Keep the Grading and Stabilization Activities Log organized and completed to demonstrate compliance with the CGP Part 4.5.

Keep the Grading and Stabilization Activities Log in Appendix G.

11. Daily Record of Rainfall.

Use SWPPP Daily Record of Rainfall, Form 25D-115, to comply with CGP Part 7.3.9. Submit a copy to the Engineer with each completed Inspection Report. Keep the Daily Record of Rainfall current in Appendix N.

For projects on a 14-day inspection frequency or reduced inspection frequency, SWPPPTrack will generate a precipitation alert for storm events that produce more than 0.5 inch of rainfall in 24 hours. If a storm event does not produce a discharge from the project zone, submit an explanation in response to the SWPPPTrack precipitation alert.

12. Staff Tracking Log.

Use the SWPPP Project Staff Tracking, Form 25D-127, to identify project staff that are required to be AK-CESCL certified or an equivalent qualification, CGP Appendix C. Complete this form to document the positions of Superintendent, SWPPP Manager, Engineer, DOT&PF Storm Water Inspector, and when these positions have changed personnel, either permanently or temporarily. Update the SWPPP Project Staff Tracking Form within 24 hours of any changes in personnel, qualifications, or other staffing items related to administration of the CGP or Section 641.

641-3.04 FAILURE TO PERFORM WORK.

The Engineer has authority to suspend work and withhold monies for an incident of non-compliance with the CGP, or the SWPPP, that may endanger health or the environment or for failure to perform work related to Section 641.

Non-compliance.

1. **Incidents of Non-compliance.** Failure to:

- a. Obtain appropriate permits before Construction Activities occur;
- b. Perform SWPPP Administration;
- c. Perform timely Inspections;
- d. Update the SWPPP;
- e. Transmit updated SWPPP, Inspection Reports, and other updated SWPPP forms to the Engineer;
- f. Maintain effective BMPs to control erosion, sedimentation, and pollution in accordance with the SWPPP, the CGP, and applicable local, state, and federal requirements;
- g. Perform duties according to the requirements of Section 641;
- h. Meet requirements of the CGP, SWPPP, or other permits, laws, and regulations related to erosion, sediment, or pollution control; or
- i. Any other requirements established or included in the Contract.

2. **Notice of non-compliance**, either oral or written will include:

- a. Reason/defects
- b. Corrective actions required
- c. Time allowed for completing the corrective action

3. **Levels of Non-compliance and Response** correspond with harm to the workers, the public or the environment and whether the harm is:

- a. **Not-imminent**, the Engineer will either orally or in writing, or both, provide notice to the Contractor indicating the incident of non-compliance.

Contractors that take corrective action and complete the action to the satisfaction of the Engineer, within the time specified, may return to the status of compliance, and avoid elevating the response to imminent.

- b. **Imminent**, the Engineer will orally provide notice to the Contractor of non-compliance and promptly provide written notice to suspend work until corrective action is completed.

Additional actions, taken against the Contract whether the level of non-compliance is Not-imminent or Imminent, may include:

- a. Withholding monies until corrective action is completed
- b. Assessing damages or equitable adjustments
- c. Employing others to perform the corrective action and deduct the cost

No additional Contract time or additional compensation is allowed due to delays caused by the Engineer's suspension of work.

641-3.05 ACCESS TO WORK.

The Project, including any related off-site areas or support activities, must be made available for inspection, or sampling and monitoring, by the Department and other regulatory agencies. CGP Part 6.6.

641-4.01 METHOD OF MEASUREMENT.

See Section 109 and as follows:

Item 641.0005.____, measured as specified in the Directive authorizing the work.

Item 641.0006.____, measured as specified in Table 641-2 Version C.

641-5.01 BASIS OF PAYMENT.

1. BMP Values. Table 641-1 BMP Values – Reserved.
2. Erosion, Sediment, and Pollution Control - Liquidated Damages. Liquidated Damages assessed according to Table 641-2 are not an adjustment to the Contract amount. These damages charges are related to Contract performance but are billed by the Department to the Contractor, independent of the Contract amount. An amount equal to the Liquidated Damages may be withheld, for unsatisfactory performance, from payment due under the Contract until the Contractor remits payment for billed Liquidated Damages.

TABLE 641-2- VERSION C

EROSION, SEDIMENT AND POLLUTION CONTROL – LIQUIDATED DAMAGES

Code	Specification Section Number and Description	Deductible Amount in Dollars	Cumulative Deductible Amounts in Dollars
A	641-1.05 Failure to have a qualified (AK-CESCL or equivalent) SWPPP Manager	Calculated in Code B or F	
B	Failure to meet SWPPP requirements of: (1) 641-2.01.1 Name of SWPPP Preparer (2) Not Applicable (3) 641-3.03.8 Sign and Date SWPPP amendments by qualified person. (4) 641-3.02 Records maintained at project and made available for review	\$750 per omission	
C	Not Applicable.		
D	641-3.03.5 Failure to stabilize a Project prior to fall freeze-up.	\$5,000 per Project per year	
E	641-2.01.1. Failure to conduct pre-construction inspections before Construction Activities on all projects greater than 1 acre.	\$2,000 per Project	
F*	641-3.03. Failure to conduct and record CGP Inspections 641-3.03.1 Personnel conducting Inspections and Frequency 641-3.03.2 Inspection Reports, use Form 25D-100, completed with all required information	\$750 per Inspection	Additional \$750 for every additional 7 day period without completing the required inspection.
G	641-3.01.4 Corrective action, failure to timely accomplish BMP maintenance and/or repairs. In effect until BMP maintenance and/or repairs is completed.	\$500 per Project per day	
H	641-3.01.3 Failure to provide to the Engineer and DEC a timely oral noncompliance report of violations or for a deficient oral noncompliance report	\$750 for the first day the report is late or deficient	Additional \$750 for every 14 day period without the required information
I	641-3.01.3 Failure to provide to the Engineer and DEC a timely written noncompliance report, use Form 25D-143, of violations or for a deficient written noncompliance report	\$750 for the first day the report is late or deficient	Additional \$750 for every 14 day period without the required information
J	641-3.04 Failure to comply with the requirements of the CGP, approved SWPPP, and Section 641, except as listed above	\$750 per occurrence for the first day of noncompliance	Additional \$750 for every day the deficiency remains uncorrected

***CODE F.** Liquidated Damages according to Code F will not be billed for typographic errors and minor data entry errors, except the liquidated damages will be assessed for these errors when:

- the Contractor has previously been notified and subsequent inspection reports repeat the same or similar error,
- multiple inspection reports are submitted after the submission due date and the same or similar errors are repeated on multiple overdue reports,
- an error in recording the inspector's AK-CESCL certification date results in an inspector performing the inspection during a period when their certification was lapsed or was otherwise invalid

See Subsection 641-3.04 Failure to Perform Work, for additional work and payment requirements.

Item 641.0001._____ Erosion, Sediment, and Pollution Control Administration. At the Contract lump sum price for administration of all work under this Section. Includes, but is not limited to, SWPPP and HMCP and SPCC Plan preparation, agency fees for SWPPP reviews, SWPPP amendments, pre-construction Inspections, Inspections, monitoring, reporting, and recordkeeping or copying Records related to the SWPPP and required by the CGP, and Record retention.

Item 641.0005._____ Temporary Erosion, Sediment and Pollution Control by Directive. At the contingent sum prices specified in the Directive using time and materials to authorize the work, for all labor, supervision, materials, equipment, and incidentals to install, maintain, remove and dispose of temporary erosion, sedimentation, and pollution control BMPs. Prices for this item will be by time and materials according to Subsection 109-1.05, or by mutual agreement between the Engineer and Contractor. All additional Erosion, Sediment, and Pollution Control Administration necessary due to this item will not be paid for separately but will be subsidiary to other bid items.

Item 641.0006._____ Withholding. The Engineer may withhold an amount equal to Liquidated Damages, assessed according to Section 641, from payment due the Contractor. Liquidated Damages for violations of the Contract, CWA, and CGP are determined by the Engineer according to Table 641-2. The Engineer may withhold payment due the Contractors until the Contractor pays the Liquidated Damages to the Department.

The Department will not release performance bonds until Liquidated Damages assessed according to Section 641 are paid to the Department, and all requirements according to Subsection 103-1.05 are satisfied.

Item 641.0007._____ SWPPP Manager. At the Contract lump sum price for a SWPPP Manager that conforms to this specification. When Item 641.0007._____ appears in the Bid Schedule, the SWPPP Manager must be a different person than the superintendent, and must be physically present during construction activity with duties and authority as described in Subsection 641-2.04. When Item 641.0007._____ does not appear in the Bid Schedule, the SWPPP Manager is subsidiary to Item 641.0001._____.

Item 641.0008._____ SWPPPTrack. Payment for purchasing and contracting with SWPPPTrack AK LTD for the use of the SWPPPTrack software application and services will be based on paid receipts plus a 5 percent markup.

Subsidiary Items. Temporary erosion, sediment, and pollution control measures that are required outside the Project Zone are subsidiary. Work required by the HMCP and SPCC Plan including hazardous material storage, containment, removal, cleanup and disposal, are subsidiary to Item 641.0001._____ Erosion, Sediment and Pollution Control Administration.

Work under other pay items. Work that is paid for directly or indirectly under other pay items will not be measured and paid for under Section 641. This work includes but is not limited to:

1. Dewatering;
2. Shoring;
3. Bailing;
4. Permanent seeding;
5. Installation and removal of temporary work pads;
6. Temporary accesses;
7. Temporary drainage pipes and structures;
8. Diversion channels;
9. Settling impoundment; and
10. Filtration.

Permanent erosion, sediment, and pollution control measures will be measured and paid for under other Contract items, when shown on the bid schedule.

Work at the Contractor's Expense. Temporary erosion, sediment, and pollution control measures that are required due to carelessness, negligence, or failure to install temporary or permanent controls as scheduled or ordered by the Engineer, or for the Contractor's convenience, are at the Contractor's expense.

Payment will be made under:

PAY ITEM		
Item Number	Item Description	Unit
641.0001.____	Erosion, Sediment and Pollution Control Administration	LS
641.0005.____	Temporary Erosion, Sediment and Pollution Control by Directive	CS
641.0006.____	Withholding	CS
641.0007.____	SWPPP Manager	LS
641.0008.____	SWPPPTrack	CS

CR641-24.0401

**SECTION 642
CONSTRUCTION SURVEYING AND MONUMENTS**

Special Provisions

642-2.01 MATERIALS.

Add No. 4:

4. Digital Measuring Instrument: Nu-metrics, Nitestar DMI (www.ae-traffic.com), or approved equal.

642-3.01 GENERAL.

Add No. 11:

11. Before work on the project starts, stake and reference the existing centerline on both sides of the roadway alignment. Stake the existing centerline on tangents at 100 ft, and 50 ft intervals on curves from the beginning and ending of super-elevation changes when the roadway is no longer at normal crown. Stake sign locations at proper offset. Stakes shall be a minimum of 1" x 2" x 2'-0" and be offset 4 to 8 ft from the shoulder on both sides of the roadway. Extend lath stakes a minimum of 2 ft above ground. Show the offset distance to centerline and the station from the beginning of the project. Maintain staking until the final roadway striping is completed. Staking accuracy work requires an electronic distance measuring instrument (DMI) be installed in the Contractor's vehicle. Calibrate the DMI to roadway alignments as stationed in the Plans before beginning work. Record the calibration and staking information in the field book.

Install a reference sign every 500 ft. These reference signs shall meet the following requirements:

- a. mounted with the base a minimum of 5 ft above the shoulder,
- b. located a minimum of 10 ft from the edge of shoulder,
- c. marked with the station from the beginning of the project, in 6 inch high permanent black lettering with a letter proportion height to width ratio of 1:0.6 and a stroke width to height ratio of 1:6, on an orange background.

CR642.1-022015R

Special Provision

Replace Section 643 with the following:

SECTION 643 TRAFFIC MAINTENANCE

643-1.01 DESCRIPTION. Protect and control traffic during the contract. Furnish, erect, maintain, replace, clean, move, and remove the traffic control devices required to ensure the traveling public's safety. Perform all administrative responsibilities necessary to implement this work.

Maintain all roadways and pedestrian and bicycle facilities affected by the work in a smooth and traversable condition. Construct and maintain approaches, crossings, intersections, and other necessary features throughout the project for the life of the contract.

Illuminate construction activities listed in Table 643-4 during hours of night work on roads open to the public within project limits.

643-1.02 DEFINITIONS. These definitions apply only to Section 643.

ATM. When used in this Section, ATM stands for the Alaska Traffic Manual, which is comprised of the Manual on Uniform Traffic Control Devices (MUTCD), the Alaska Traffic Manual Supplement, any adopted revisions or interim addenda to either document issued subsequently, and corrections to known errors to either document.

BALLOON LIGHT. Light surrounding by a balloon-like enclosure kept inflated by pressurized air or helium, and producing uniform light through 360 horizontal degrees.

CONSTRUCTION PHASING PLAN. A plan for each phase of the project showing how to accommodate traffic. Show the sequence of work by segment or phase, if required.

FIXED OBJECTS. Private vehicles, parked flagger vehicles, idle construction equipment, construction material stockpiles, culvert ends, individual trees, power poles, utility poles and appurtenances, and other items deemed by the Engineer to present a hazard to motorists, pedestrians, or bicyclists traveling through the work zone.

NIGHT WORK. Work occurring between sunset and sunrise on all days except the "No Lighting Required" period shown in the Table 643-1 below:

**TABLE 643-1
PROJECT LOCATIONS – NIGHT TIME ILLUMINATION EXCLUSION**

Latitude (degrees)	No Lighting Required		Nearby Cities
	Start	End	
South of 61	Lighting Required All Year		Everything South of Hope
61	June 11	July 1	Anchorage, Valdez, Girdwood
62	June 2	July 13	Wasilla, Palmer, Glennallen, Talkeetna
63	May 27	July 17	Cantwell, Paxson, McGrath
64	May 22	July 21	Tok, Delta, Nome
65	May 18	July 25	Fairbanks
66	May 14	July 29	Circle City
67	May 10	August 2	Coldfoot, Kotzebue
68	May 7	August 6	Galbraith Lake
69	May 3	August 9	Happy Valley
70	April 30	August 12	Deadhorse
71	April 27	August 15	Barrow
72	April 24	August 19	

TRAFFIC. The movement of vehicles, pedestrians, and bicyclists through road construction, maintenance operations, utility work, or similar operations.

TRAFFIC CONTROL PLAN (TCP). A drawing or drawings indicating the method or scheme for safely guiding and protecting motorists, pedestrians, bicyclists, and workers in a traffic control zone. The TCP depicts the traffic control devices and their placement and times of use.

TRAFFIC CONTROL ZONE. A portion of a road construction project, maintenance operation, utility work or similar operation that affects traffic and requires traffic control to safely guide and protect motorists, pedestrians, bicyclists, or workers.

643-1.03 TRAFFIC CONTROL PLAN. Implement an approved TCP before beginning work within the project limits.

The TCP includes, but is not limited to, signs, barricades, traffic cones, plastic safety fence, sequential arrow panels, portable changeable message board signs, special signs, warning lights, portable concrete barriers, crash cushions, flaggers, pilot cars, interim pavement markings, temporary lighting, temporary roadways and all other items required to direct traffic through or around the traffic control zone according to these Specifications and the ATM. Address in the TCPs placement of traffic control devices, including location, spacing, size, mounting height and type. Include code designation, size, and legend per the ATM and the Alaska Sign Design Specification (ASDS). Include longitudinal buffer space for the posted speed limit, according to Table 6C-2 of the ATM unless project conditions or geometric features prohibit including all or a portion of the buffer length.

When a TCP is included in the Plans, use it, modify it, or design an alternative TCP. When a TCP is omitted from the Plans, provide one according to this Section and the ATM.

Submit new or modified TCPs to the Engineer for approval. All TCPs must include the following information:

1. Project name and number.
2. A designated TCP number and name on each page.
3. For TCPs more than one page, each page must be numbered.
4. The posted speed limit for each roadway.
5. Existing striping width, lane width, and road surfacing.
6. Construction lane widths, striping layout, and temporary pavement marker layout.
7. Provisions for Pedestrian, Bicycle, and ADA travel through the work zone.
8. Dates and times the TCP will be in effect and why it is being used.
9. The Worksite Traffic Supervisor's signature certifying that all TCPs conform to the ATM and the Contract.
10. The Project Superintendent's signature confirming the TCP is compatible with the work plan.
11. The name(s) of the Worksite Traffic Supervisor, his/her alternate and their 24-hour telephone number(s).
12. Signs to be used and the ASDS designation number and size.
13. Location and spacing of all devices and signs.
14. A plan to address any possible slopes, drop offs, paving joints, or similar temporary features that may occur during use of the TCP.
15. For TCPs proposed to be used at night, note how the requirements will be met for the required lighting and retroreflective material.

TCPs submitted for approval without all the required information will be rejected. Allow 7 days for review of each TCP submittal. All required modifications to a TCP require a new submission and an additional 7 days for review.

A minor revision to a previously approved TCP during construction requires 48 hours for review and approval by the Engineer.

The TCPs, Plans, and Alaska Standard Plans show the minimum required number of traffic control devices. If unsafe conditions occur, the Engineer may require additional traffic control devices.

A waiver may be requested, in writing, of regulation 17 AAC 25 regarding oversize and overweight vehicle movements inside the project limits. If the waiver is approved, movements of oversize and overweight vehicles in or near traffic inside the project limits will be done according to the provisions of an approved Traffic Control Plan. Maintain a minimum 12-foot lateral separation between the nonstreet legal vehicles and the motoring public. The Traffic Control Plan shall specify the traffic control devices required for these operations.

Road Closures and Major Traffic Sequencing (events). Submit a written request to the Engineer for review and approval of each proposed event and event date. Allow 7 days for the Engineer to review any proposed event or subsequent changes/corrections. The proposed event date will be no less than 14 days from the date of written approval.

643-1.04 WORKSITE TRAFFIC SUPERVISOR. Provide a Worksite Traffic Supervisor responsible for maintaining 24-hour traffic operations.

1. **Qualifications.** Provide a Worksite Traffic Supervisor knowledgeable and experienced regarding the requirements of the ATM and the implementation of those requirements. Provide a Worksite Traffic Supervisor familiar with the Plans, the Specifications, proposed operations, and certified as one of the following:
 - a. Traffic Control Supervisor, American Traffic Safety Services Association (ATSSA)
 - b. Traffic Control Supervisor, Laborers' International Union of North America (LIUNA)
 - c. Work Zone Temporary Traffic Control Technician, International Municipal Signal Association (IMSA). After December 31, 2026 IMSA certification will not be accepted.

Certify according to Form 25D-124 that the Worksite Traffic Supervisor has a minimum 4000 hours of temporary traffic control work experience, is competent and capable, and has the authority to perform the duties and responsibilities in accordance with this section.

- a. Temporary traffic control work experience shall demonstrate an understanding of concepts, techniques, and practices in the installation and maintenance of traffic control devices, and skill in reading, interpreting, implementing, and modifying TCPs.
- b. Temporary traffic control work experience includes a combination of: flagging; installing traffic control devices in accordance with TCPs; monitoring traffic control devices and TCP performance; and recognizing and reporting deficiencies in traffic control devices and TCPs for correction.
- c. Temporary traffic control work experience is gained while serving as a Worksite Traffic Supervisor-in-training, temporary traffic control support personnel, and Flagger.

Worksite Traffic Supervisors shall maintain current certification and be able to show their certification anytime they are on the project.

2. Duties.

- a. Prepare the TCPs and public notices and coordinate traffic control operations between the Project Superintendent and the Engineer.
- b. Physically inspect the condition and position of all traffic control devices used on the project at least twice each day and at approximately 12-hour intervals. Ensure that traffic control devices work properly, are clean and visible, and conform to the approved TCP. Complete and sign a detailed written report of each inspection within 24 hours. Use Traffic Control Daily Review Form 25D-104.
- c. Supervise the repair or replacement of damaged or missing traffic control devices.
- d. Review and anticipate traffic control needs. Make available proper traffic control devices necessary for safe and efficient traffic movement.
- e. Review work areas, equipment storage, and traffic-safety material handling and storage.
- f. Hold traffic safety meetings with superintendents, foremen, subcontractors, and others as appropriate before beginning construction, prior to implementing a new TCP, and as directed. Invite the Engineer to these meetings.
- g. Supervise all traffic control workers, flaggers, and pilot car drivers.
- h. Certify that all flaggers are certified as required by Subsection 643-3.04.4. Submit a copy of all flagger certifications to the Engineer.
- i. Supervise lighting for night work.

3. **Authority.** The Worksite Traffic Supervisor shall have the Contractor's authority to stop work and implement immediate corrective action to unsafe traffic control, in locations where unsafe traffic control is present.

643-1.05 CONSTRUCTION PHASING PLAN. Submit a Construction Phasing Plan for approval no less than 5 working days prior to the preconstruction conference. Include the following:

1. Form 25D-124 designating the Worksite Traffic Supervisor, providing the 24-hour telephone number, and certifying minimum 4,000 hours of work experience as described in 643-1.04 Worksite Traffic Supervisor.
2. A construction-phasing plan for each phase or segment of the project.
3. TCPs for the first phase of the project. Show permanent and temporary traffic control measures, including the times each TCP will be used.

Submit any changes to the Engineer for approval 7 days before proposed implementation.

643-1.06 TRAFFIC MAINTENANCE SETUP. When shown on the bid schedule, Traffic Maintenance Setup items are site specific and are detailed as individual TCPs on the plan sheets. They depict the method or scheme required to route traffic safely and efficiently when any of the following restrictions occur:

1. **Lane Closure.** The closure of one or more lanes on a roadway.
2. **Detour.** The redirection of traffic through or around a traffic control zone.
3. **Road Closure.** The closure of a roadway with or without a specified detour route.
4. **One Lane Road.** A two-way roadway reduced to a single-lane roadway with flaggers, pilot cars, traffic signals, stop signs, or yield signs.

643-2.01 MATERIALS. Provide traffic control devices meeting the following requirements:

1. **Signs.** Use signs, including sign supports, that conform to Section 615, the ATM, and ASDS.
 - a. Construction Signs: Regulatory, guide, or construction warning signs designated in the ASDS.
 - b. Permanent Construction Signs: As designated on the Plans or an approved TCP.
 - c. Special Construction Signs: All other signs are Special Construction Signs. Neatly mark the size of each sign on its back in 3-inch black numerals.
2. **Portable Sign Supports.** Use wind-resistant sign supports with no external ballasting. Use sign supports that can vertically support a 48 X 48 inch traffic control sign at the height above the adjacent roadway surface required by the ATM.
3. **Barricades and Vertical Panels.** Use barricades and vertical panel supports that conform to the ATM. Use Type III Barricades at least 8 feet long. Use retroreflective sheeting that meets ASTM D4956 Type II or III.
4. **Portable Concrete Barriers.** Use portable concrete barriers that conform to the Contract. For each direction of traffic, equip each 12.5-foot section of barrier with at least two side-mounted retroreflective tabs placed approximately 6 to 8 feet apart, or a continuous 4-inch wide horizontal retroreflective stripe mounted 6 inches below the top of the barrier. Use yellow tabs or stripe when barriers are placed at centerline. Use white tabs or stripe when barriers are placed on the roadway shoulder. Use retroreflective sheeting that meets ASTM D4956 Type III, IV or V.
5. **Warning Lights.** Use Type A (low intensity flashing), Type B (high intensity flashing) or Type C (steady burn) warning lights that conform to the ATM.
6. **Drums.** Use plastic drums that conform to the requirements of the ATM. Use retroreflective sheeting that meets ASTM D4956 Type II or III.
7. **Traffic Cones and Tubular Markers.** Use reflectorized traffic cones and tubular markers that conform to the requirements of the ATM. Use traffic cones and tubular markers at least 28 inches high. Use retroreflective sheeting that meets ASTM D4956 Type II or III.
8. **Interim Pavement Markings.** Apply markings according to Section 670 and the manufacturer's recommendations. Use either:
 - a. Paint meeting Subsection 708-2.03 with glass beads meeting Subsection 712-2.08,
 - b. Preformed Marking Tape (removable or non-removable) meeting Subsection 712-2.14, or
 - c. Temporary Raised Pavement Markers meeting Subsection 712-2.15 or 712-2.16, as appropriate.
9. **High-Level Warning Devices.** Use high-level warning devices that conform to the ATM.
10. **Temporary Crash Cushions.** Use retroreflective sheeting that meets ASTM D4956 Type III, IV or V. Application of crash cushion must be appropriate for the intended use and be installed per manufacturer's recommendation. Temporary crash cushions used as rail or barrier end treatments must be redirective. Temporary crash cushions that are barrels or barricade filled with sand or water may only be used when the forecasted temperature during their use is above 32 degrees Fahrenheit.
11. **Sequential Arrow Panels.** Use Type A (24 X 48 inch), Type B (30 X 60 inch) or Type C (48 X 96 inch) panels that conform to the ATM.
12. **Portable Changeable Message Board Signs.** Use new truck or trailer mounted portable changeable message board signs with self-contained power supply for the sign and with:
 - a. Message sign panel large enough to display 3 lines of 18-inch high characters
 - b. Eight character display per message module

- c. Fully programmable message module
 - d. Remote control cellular, wireless radio frequency (RF), landline
 - e. Waterproof, lockable cover for the controller keyboard
 - f. Capacity for electric/hydraulic sign raising or lowering
 - g. Radar over speed detection
 - h. Variable flash and sequence rates
 - i. Light emitting diode (LED) display, using Institute of Transportation Engineers (ITE) amber/yellow
 - j. The capacity for a minimum of 150 pre-programmed messages
 - k. Battery-Pack Operation Duration: minimum of 55 hours under full load
 - l. Power chords shall comply with the National Electrical Code (NEC) Article 600.10 Portable or Mobile Signs, paragraphs 600.10(C)(1) Cords and 600.10(C)(2) Ground-Fault Circuit Interrupter (GFCI). The cord will have integral GFCI protection located in either the attachment plug or 12 inches or less from the plug.
13. **Plastic Safety Fence.** Use 4-foot high construction orange fence manufactured by one of the following companies, or an approved equal:
- a. "Safety Fence" by Jackson Safety, Inc., Manufacturing and Distribution Center, 5801 Safety Drive NE, Belmont, Michigan, 49306. Phone (800) 428-8185.
 - b. "Flexible Safety Fencing" by Carsonite Composites, LLC, 19845 U.S. Highway 76, Newberry, South Carolina, 29108. Phone (800) 648-7916.
 - c. "Reflective Fencing" by Plastic Safety Systems, Inc., 2444 Baldwin Road, Cleveland, Ohio 44104. Phone (800) 662-6338.
14. **Temporary Sidewalk Surfacing.** Provide temporary sidewalk surfacing as required by an approved TCP and the following:
- a. Use plywood at least 1/2-inch thick for areas continuously supported by subgrade. Use plywood at least 1 inch thick for areas that are not continuously supported.
 - b. Do not use unsupported 1-inch plywood longer than 30 inches.
 - c. Use plywood with regular surfaces. Do not overlap plywood joints higher than 1/2-inch. Bevel overlap joints so the maximum slope of the overlapping edge is 2 horizontal to 1 vertical.
 - d. Fasten so wind and traffic will not displace temporary surfacing.
15. **Temporary Guardrail.** Use temporary guardrail that meets Section 606, except that posts may require placement under special conditions, such as in frozen ground.
16. **Flagger Paddles.** Use flagger paddles with 24 inches wide by 24 inches high sign panels, 8 inch Series C lettering (see ASDS for definition of Series C), and otherwise conform to the ATM. Use retroreflective sheeting that meets ASTM D4956 Type VIII, IX or XI. Use background colors of fluorescent orange on one side and red on the other side.
17. **Truck Mounted Attenuator (TMA).** The TMA shall be mounted on a vehicle with a minimum weight of 15,000 pounds and a maximum weight per the manufacturer's recommendations.

18. **Portable Steel Barriers.** Use portable steel barriers that conform to the contract. For each direction of traffic, equip each section of barrier with side-mounted retroreflective tabs placed approximately 6 to 8 feet apart, or a continuous 4-inch wide horizontal retroreflective stripe mounted 6 inches below the top of the barrier. Use yellow tabs or stripe when barriers are placed at centerline. Use white tabs or stripe when barriers are placed on the roadway shoulder. Use retroreflective sheeting that meets ASTM D4956 Type III, IV, or V.

19. **Flexible Markers.** Refer to Subsection 606-2.01 Materials.

643-2.02 Crashworthiness. Temporary Work Zone devices, including portable barriers, manufactured after December 31, 2019, must have been successfully tested to the 2016 edition of Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before this date, and successfully tested to National Cooperative Highway Research Program (NCHRP) Report 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives.

Submit documentation, by the method indicated on table 643-2, that the following devices comply with Test Level 3 requirements of National Cooperative Highway Research Program (NCHRP) Report 350 or the Manual for Assessing Safety Hardware (MASH). Submit documentation of compliance to the Engineer before installing devices on the project.

**TABLE 643-2
WORK ZONE TRAFFIC CONTROL DEVICE AND
BARRIER CRASH TESTING COMPLIANCE**

Category	Devices	Devices Manufactured Before Dec. 31, 2019 ¹	Devices Manufactured after Dec. 31, 2019 ¹	Method of Documentation
1	Low-mass single-piece devices w/o attachments; traffic cones, tubular markers, single piece drums, delineators	NCHRP 350, MASH 2009, or MASH 2016	MASH 2016	Manufacturer's Certification for devices exceeding height and weight limits
2	Category 1 devices with attachments, barricades, portable sign supports, drums w/lights, other devices weighing less than 100 pounds but not included in Category 1	NCHRP 350, MASH 2009, or MASH 2016	MASH 2016	FHWA eligibility letter, at Test Level 32.
3	Fixed sign supports, truck mounted attenuators, temporary crash cushions, bridge railing, bridge and guardrail transitions, and guardrail and barrier end treatments.	NCHRP 350, MASH 2009, or MASH 2016	MASH 2016	FHWA eligibility letter, at Test Level 32.
	Portable Concrete and steel barriers	NCHRP 350, MASH 2009, or MASH 2016	MASH 2016	FHWA eligibility letter, if available, at Test Level 3, or DOT&PF eligibility determination, unless otherwise required in the Contract

1 The Engineer will determine whether a device is in serviceable condition. Serviceable means the device will function equivalent to a new device of the same manufacture.

2 When no test level is specified in a FHWA Eligibility letter; it is implied that the tests were run for Test Level 3.

In Table 643-2, Category 1 devices that exceed the following weights and heights require certification that they meet the evaluation criteria of NCHRP Report 350 or MASH, Test Level 3. This certification may be a one-page affidavit signed by the vendor. Documentation supporting the certification (crash tests and/or engineering analysis) must be kept on file by the certifying organization. No certification is required for devices less than or equal to both the weight and height on the schedule below:

Device	Composition	Weight	Height
Cones	Rubber	20 lb	36 in.
	Plastic	20 lb	48 in.
Candles	Rubber	13 lb	36 in.
	Plastic	13 lb	36 in.
Drums	Hi Density Plastic	77 lb	36 in.
	Low Density Plastic	77 lb	36 in.
Delineators	Plastic or fiberglass	N/A	48 in.

643-3.01 GENERAL CONSTRUCTION REQUIREMENTS. Keep the work, and portions of the project affected by the work, in good condition to accommodate traffic safely. Provide and maintain traffic control devices and services inside and outside the project limits, day and night, to guide traffic safely.

Unless otherwise provided in this Section, keep all roadways, business accesses, and pedestrian facilities within the project limits open to traffic. Obtain the Engineer's approval before temporarily closing residential, commercial, or street approaches. Provide access through the project for emergency vehicles and school and transit buses. Properly sign and/or flag all locations where the traveling public is redirected or stopped. Organize construction operations so the total of all construction related stoppages experienced by a vehicle traveling through the project does not exceed 20 minutes except when indicated otherwise in the Contract.

Stop equipment at all points of intersection with the traveling public unless an approved TCP shows otherwise.

Continue to operate all illumination and signalization according to the requirements of Subsection 660-3.09. When moving approach lanes, realign signal heads as necessary according to the ATM. Coordinate any modifications to existing traffic signals with the agency that maintains and operates them. Operate flood lighting at night according to the ATM. Adjust flood lighting so that it does not shine into oncoming traffic.

Provide and maintain safe routes for pedestrians and bicyclists through or around traffic control zones at all times, except when regulations prohibit pedestrians or bicyclists. Station a flagger, where construction activity encroaches onto the safe route in a traffic control zone, to assist pedestrians, and bicyclists past the construction activity.

Maintain business access(s) during flagging operations.

Immediately notify the Engineer as soon as an employee or a subcontractor becomes aware of any traffic related crash that occurs within the project limits, between construction warnings signs, along a detour route, or involving traffic in a queue back up from project work. Within 3 days fill out the information on Form 25D-123 Work Zone Crash Report and submit a copy to the Engineer.

643-3.02 ROADWAY CHARACTERISTICS DURING CONSTRUCTION. Obtain an approved TCP before reducing existing roadway lane and shoulder widths and before starting construction. Maintain a clear area with at least 2 feet between the edge of traveled way and the work area. Use barricades, traffic cones, or drums to delineate this area. Place traffic control devices on the work side of the clear area. Space them according to the ATM.

Traffic Traversing Unpaved Surface(s).

The total length of unpaved surfaces(s), measured parallel to the roadway, may not exceed the disturbed ground limit in Subsection 652-1.04 and as noted in 643-3.02.

Limit the concurrent unpaved surfaces to [xx], and the immediate area of work. Patch with hot mix asphalt less than 48 hours after removing the existing pavement.

Except:

[Replace with roadway]. Limit the concurrent unpaved surfaces to [xx], and less than [xx] feet total measured parallel to the roadway. Patch with hot mix asphalt less than [xx] days after removing the existing pavement.

If maintaining traffic on an unpaved surface, provide a smooth and even surface that public traffic can use at all times. Properly crown the roadbed surface for drainage. Before beginning other grading operations, place sufficient fill at culverts and bridges to permit traffic to cross smoothly and unimpeded. Use part-width construction techniques when routing traffic through roadway cuts or over embankments under construction. Excavate the material or place it in layers. Alternate the construction activities from one side to the other. Route the traffic over the side opposite the one under construction.

Detour traffic when the Plans or an approved TCP allows. Maintain detour routes so that traffic can proceed safely. When detours are no longer required, obliterate the detour. Topsoil and seed appropriate areas.

If two-way traffic cannot be maintained on the existing roadway or detour, use half-width construction or a road closure if it is shown on an approved TCP. Make sure the TCP indicates closure duration and conditions. Schedule the roadway closures to avoid delaying school buses, and peak-hour traffic. For road closures, post closure-start and road-reopen times at the closure site, within view of waiting traffic.

Pave lanes next to the median first. Pave lanes next to exit and entrance ramps last. Place temporary 12:1 sloped wedge of asphalt concrete against the abrupt pavement edge on lanes next to exit and entrance ramps. Do not open the roadway to traffic until slope wedges are in place.

643-3.03 PUBLIC NOTICE. Give notice at least 3 days before major changes, delays, lane restrictions, or road closures to local officials and transportation organizations, including but not necessarily limited to:

- Alaska Trucking Association
- Alaska State Troopers
- Division of Measurement Standards
- Local Police Department
- Local Fire Department
- Local Government Traffic Engineer
- School and Transit Authorities
- Local Emergency Medical Services
- Local Media (newspapers, radio, television)
- Railroads (where applicable)
- U.S. Postal Service
- Major Tour Operators

Provide local traffic enforcement and maintenance agencies 24-hour notice before shutting down a traffic signal system. Provide notice as required by utility companies before repairing or replacing a utility.

Provide the Alaska State Troopers, local police and fire department with the radio frequencies used on the project and the 24-hour telephone numbers of the Worksite Traffic Supervisor and the Project Superintendent. These telephone numbers are used to alert construction employees when emergency vehicles must pass through the project. When notified of emergencies make every necessary effort to expedite rapid passage.

Additional notices may be given through the Navigator or 511 System for selected projects. Check the special provisions for those requirements.

643-3.04 TRAFFIC CONTROL DEVICES. Before starting construction, erect permanent and temporary traffic control devices required by the approved TCPs. The Engineer will determine advisory speeds when necessary.

For lane closures on multilane roadways, use sequential arrow panels. During hours of darkness when required by the approved TCP, use flashing warning lights to mark obstructions or hazards and steady-burn lights for channelization.

Use only one type of traffic control device in a continuous line of delineating devices, unless otherwise noted on an approved TCP. Use drums or Type II barricades for lane drop tapers.

During non-working hours and after completing a particular construction operation, remove all unnecessary traffic control devices. Store all unused traffic control devices in a designated storage area which does not present a nuisance or visual distraction to traffic. If sign panels are post mounted and cannot be readily removed, cover them entirely with either metal or plywood sheeting. Completely cover signal heads with durable material that fully blocks the view of signal head and will not be damaged or removed by weather.

Keep signs, drums, barricades, and other devices clean at all times.

Use only traffic control devices that meet the requirements of the "Acceptable" category in ATSSA (American Traffic Safety Services Association) "Quality Guidelines for Temporary Traffic Control Devices" and meet crashworthiness requirements per Section 643-2.02.

Immediately replace any devices provided under this Section that are lost, stolen, destroyed, inoperable or deemed unacceptable while used on the project. Stock repair parts for each Temporary Crash Cushion used on the project. Repair damaged crash cushions within 24 hours.

Maintain pre-existing roadside safety hardware at an equivalent or better level than existed prior to project implementation until the progress of construction necessitates removing the hardware. All existing hazards that are currently protected with roadside safety hardware or new hazards which result from project improvements shall be protected or delineated as required in the plans, specifications, and approved TCPs until permanent roadside safety hardware is installed. All temporary roadside safety hardware shall meet crashworthiness requirements of Subsection 643-2.02.

All items paid under this Section remain the property of the Contractor, unless noted otherwise in the contract. Remove them after completing the project.

1. **Embankments.** Close trenches and excavations at the end of each continuous work shift, except as indicated by the Engineer.

Install portable concrete or steel barrier, plastic drums, barricades, tubular markers, plastic safety fence, and cones as specified on the Plans or TCPs to delineate open trenches, ditches, other excavations, and hazardous areas when they exist along the roadway for more than one continuous work shift.

2. **Adjacent Travel Lane Paving.** When paving lifts are 2 inches or greater and you cannot finish paving adjacent travel lanes or paved shoulders to the same elevation before the end of the paving shift, install: W8-11 (Uneven Lanes), W8-9 (Low Shoulder), W8-17 (Shoulder Drop-Off), W14-3 (No Passing Zone), R4-1 (Do Not Pass), R4-2 (Pass with Care), and W8-1 (Bump) signs as appropriate. Place additional signs every 1500 feet if the section is longer than 1/2 mile.
3. **Fixed Objects, Construction Vehicles and Equipment Working On or Next to the Traveled Way.** Do not park equipment in medians. Locate fixed objects at least 30 feet from the edge of traveled way. Fixed objects that exist prior to construction activity are not subject to this requirement unless the proposed temporary traffic routing moves the edge of traveled way closer to the pre-existing fixed object. Vehicles and other objects within parking lots in urban environments are considered preexisting fixed objects regardless of whether they are or are not present continuously throughout the day.

When worksite restrictions, land features, right of way limitations, environmental restrictions, construction phasing, or other construction conditions allow no practicable location meeting the preceding requirements, the Engineer may approve alternate locations for fixed objects. Alternate locations shall be as far as practicable from the edge of traveled way. When the alternate location provides 15 feet or more separation from the edge of traveled way, the Engineer may verbally approve the alternate location. When the alternate location provides less than 15 feet separation, written approval is required.

When the Engineer determines a fixed object or fixed objects present unacceptable hazard, use drums, or Type II barricades with flashing warning lights, or use portable concrete or steel barriers, or temporary crash cushion to delineate or shield the hazard, as approved by the Engineer.

Remove obstructions greater than 4 inches above the nominal foreslope grade at the end of each continuous work shift.

4. **Flagging.** Furnish trained and competent flaggers and all necessary equipment, including lighting of the flagging position during nighttime operations, to control traffic through the traffic control zone. The Engineer will approve each flagging operation before it begins and direct adjustments as conditions change.

Flaggers must be certified as one of the following:

- a. ATSSA Flagger
- b. ATSSA Flagging Instructor
- c. LIUNA Flagger
- d. LIUNA Traffic Control Technician
- e. IMSA Work Zone Temporary Traffic Control Technician

After December 31, 2026, IMSA certification will not be accepted.

Flaggers shall maintain current flagger certification. Flaggers must be able to show their flagger certification anytime they are on the project.

Flaggers must maintain their assigned flagging location at all times, unless another qualified flagger relieves them, or the approved traffic control plan terminates the flagging requirements. Remove, fully cover, or lay down flagger signs when no flagger is present. Keep the flaggers' area free of encumbrances. Keep the flagger's vehicle well off the roadway and away from the flagging location so the flagger can be easily seen.

Provide approved equipment for two-way radio communications between flaggers when flaggers are not in plain, unobstructed view of each other.

Obtain the Engineer's written approval before flagging signalized intersections. When flagging a signalized intersection, either turn off and cover the traffic signal or place it in the All-Red Flash mode. Coordinate changing traffic signal modes and turning off or turning on traffic signals with the agency responsible for signal maintenance and operation and the Engineer. Get their written approval in advance. Only uniformed police officers are permitted to direct traffic in an intersection with an operating traffic signal.

5. **Pilot Cars.** You may use pilot cars when part of an approved TCP, if the Engineer determines one-way traffic is necessary, or if the route through the traffic control zone is particularly hazardous, involved, or frequently altered to preclude adequate signing. Do not use pilot cars to avoid localized traffic control at several locations. Pilot car operators may not control Automated Flagging Assistance Devices while operating a pilot car.

Organize construction operations so the total of all stoppages experienced by a vehicle traveling through a project does not exceed 20 minutes. However, this does not imply that you may allow 20 minutes in all cases. Coordinate multiple pilot-car operations within a project or adjoining projects to minimize inconvenience to the traveling public. Two or more pilot cars may be used to provide two-way traffic through the traffic control zone to reduce the waiting period. The flagger or pilot car operator must record each pilot car's departure time in a bound field book furnished by the Engineer. Whenever practical, the flagger should tell the motorist the reason for and approximate length of the delay. Make every reasonable effort to yield right-of-way to the public and prevent excessive delay.

Use an automobile or pickup as the pilot car, with the company logo prominently displayed. Equip the pilot car with a two-way radio for contact with flaggers and other pilot cars. Mount a G20-4 sign (Pilot Car Follow Me) on the rear at least 5 feet above the driving surface. Use high intensity flashing strobe lights, oscillating beacons, or rotating beacons on all Pilot Cars. Vehicle hazard warning lights may supplement but are not permitted to be used instead of high intensity flashing strobe lights, oscillating beacons, or rotating beacons. Identify the last vehicle in the column.

When pilot car operations are approved, establish all required pilot car traffic control devices before beginning work. Continue pilot car operations until no longer necessary and an approved TCP is in place for operations without pilot car, including all required traffic control devices.

6. **Street Sweeping and Power Brooming.** Keep free of loose material paved portions of the roadway and haul routes open to the public, including sections of roadway off the project where the Contractor's operations have deposited loose material. Use equipment for brooming and sweeping as recommended by the manufacturer and the following:

Dirt, dust and construction materials, mobilized as a result of power brooming and or sweeping, shall not be pushed, ejected, thrown or drift beyond the lesser of, 2 feet from the equipment perimeter or the edge of the paved surface.

All equipment shall operate to typical industry standards. Maintain equipment to operate as designed by the manufacturer. Equipment will employ safety equipment, warning lights, and other as required by the Specifications and these Special Provisions.

Sweeper and Broom Options: Table 643-5, Traffic Control Rate Schedule, Street Sweeping

- a. **Regenerative Sweeper:** Sweeper that blows a stream of air at the paved surface, causing fine particles to rise, and then caught through a vacuum system.
- b. **Vacuum Sweeper:** Sweeper that creates a vacuum at the paved, surface sucking dirt, dust, and debris into a collection system.
- c. **Mechanical Broom Sweeper:** Sweeper designed to pick up and collect larger size road debris, stones and litter, etc. In addition to the requirements noted in these Specifications, use of a mechanical broom sweeper requires the Engineer to approve the sweeper for the intended use.

- d. **Power Broom:** Power brooming that wets, pushes and or ejects loose material directly into an attached collection/pickup container may be used when approved by the Engineer. The added moisture will be contained to the paved roadway surface.

Dry Power Brooming is not permitted. Power brooming without direct/immediate means of collection/pickup is not permitted.

- 7. **Watering.** Furnish, haul, and place water for dust control and pavement flushing, as directed. Use water trucks that can provide a high-pressure water stream to flush the pavement and a light-water spray to control dust. If the flushing operations contaminate or fill adjacent catch basins, clean and restore them to their original condition. This requirement includes sections of roadway off the project where flushing is required. The Engineer will control water application.

Obtain an Alaska Department of Natural Resources permit for water removal before taking water from a lake, stream, or other natural water body. Comply with the Alaska Department of Fish and Game screening requirements for all water removal operations.

- 8. **Portable Changeable Message Board Signs.** Furnish Changeable Message Signs when approved on a TCP. Display only messages approved on the TCP. Follow application guidelines in the ATM.
- 9. **Truck Mounted Attenuator (TMA).** TMAs are mounted on the rear of work vehicles. Impact attenuators shall meet crashworthiness requirements of 643-2.02. TMAs shall be mounted on a vehicle with a minimum weight of 15,000 pounds and a maximum weight in accordance with the manufacturer's recommendations. TMAs shall have an adjustable height so that it can be placed at the correct elevation during usage and to a safe height for transporting. Approach ends of TMAs shall have impact attenuator markings in accordance with the ATM. Do not use a damaged attenuator in the work. Replace any damaged TMA at your expense.
- 10. **Traffic Control Vehicles.** Use high intensity flashing strobe lights, oscillating beacons, or rotating beacons on the Work Zone Supervisor's vehicle and on vehicles being used to transport and set-up traffic control devices. Vehicle hazard warning lights may supplement but are not permitted to be used instead of high intensity flashing strobe lights, oscillating beacons, or rotating beacons.

643-3.05 AUTHORITY OF THE ENGINEER. When existing conditions adversely affect the public's safety or convenience, the Contractor will receive an oral notice, and then a written notice according to Subsection 105-1.01, Authority of the Engineer. The notice will state the defect(s), the corrective action(s) required, and the time required to complete the corrective action(s). In no case shall this time exceed 24 hours. If corrective action(s) are not completed within the specified time, the Engineer may immediately suspend work on the offending operations until the defect(s) are corrected. The Engineer may require outside forces to correct unsafe conditions. The cost of work by outside forces will be deducted from any monies due under the terms of this Contract.

643-3.06 TRAFFIC PRICE ADJUSTMENT. A Traffic Price Adjustment, under Item 643.0023.____, will be assessed for unauthorized lane closures or reductions. Unauthorized lane reductions will be assessed as one full lane closure, for each lane reduced without authorization.

Authorized lane closures and/or lane reductions are those shown in the Contract, an approved TCP, or authorized in writing.

Unauthorized lane reductions include unacceptable roadway, pedestrian walkway or route, and bicycle route or pathway surfaces, such as severe bumps, ruts, washboarding, potholes, excessive dust or mud, and non-conforming or out of place traffic control devices. Failure to install temporary crash cushions or barriers, when required according to the Contract or TCP, is also considered an unauthorized lane reduction. The Engineer will make the sole determination whether unauthorized lane reductions or closures are present.

Failure to maintain an acceptable infrastructure or traffic control plan will result in a price adjustment equal to 100 percent of the applicable rate shown in Table 643-3, Adjustment Rates, for the time the roadway or pedestrian facility is in an unacceptable condition.

The rates are liquidated damages which represent highway user costs, based on Average Daily Traffic (ADT). The Engineer will use the rate shown for the current ADT for this project, as published in the Regional Traffic Volume Report prepared by the Department's Planning Section. Adjustment rates for unauthorized reduction or closure of each lane of pedestrian walkways or route, and bicycle route or pathway, are the same as for one full roadway lane closure.

**TABLE 643-3
ADJUSTMENT RATES**

Published ADT	Dollars/Minute of Unauthorized Lane Reduction or Closure
Less than 1,000	\$6
1,000-4,999	\$25
5,000-9,999	\$75
10,000-29,999	\$105
30,000+	\$150

643-3.07 MAINTENANCE OF TRAFFIC DURING SUSPENSION OF WORK. Approximately one month before work is suspended for the season, schedule a preliminary meeting with the Engineer and Maintenance & Operations to outline the anticipated roadway condition and the work expected to be completed before shutdown. Schedule a field review with the Department for winter maintenance acceptance. At the field review, the Engineer will prepare a punch list for implementation before acceptance.

To be relieved of winter maintenance responsibility, leave all roads with a smooth and even surface for public use at all times. Properly crown the roadbed surface for drainage and install adequate safety facilities. Make sure all illumination and signals, including vehicle detectors, are in good working order.

After the project is accepted for winter maintenance and until ordered to resume construction operations, the Department is responsible for maintaining the facility. The Department will accept maintenance responsibility only for portions of the work that are open to the public, as determined by the Engineer. The Department will not accept maintenance responsibility for incomplete work adjacent to accepted roads. The contractor is responsible for maintaining all other portions of the work. The Engineer will issue a letter of "Acceptance for Winter Maintenance" that lists all portions of the work that the Department will maintain during a seasonal work suspension. The contractor retains all contractually required maintenance responsibilities until receipt of this letter.

If the contractor suspends work due to unfavorable weather (other than seasonal) or due to failure to correct unsafe conditions, carry out Contract provisions, or carry out the Engineer's orders. All costs for traffic maintenance during the suspended period will be borne by the Contractor.

When work is resumed, replace or renew any work or materials lost or damaged during temporary use. If the Department caused damage during winter suspension, payment will be made for repairs by unit pay item or in accord with Subsection 109-1.05, Compensation for Extra Work. When the Engineer directs, remove any work or materials used in the temporary maintenance. Complete the project as though work has been continuous.

643-3.08 CONSTRUCTION SEQUENCING. The construction sequencing detailed in these provisions, the Special Provisions, and the Plans is suggested only. The Contractor may propose alternative construction sequencing.

Throughout the project, maintain the existing roadway, pedestrian walkway, or route, and bicycle route or pathway configuration (such as the number of lanes and their respective widths) except for restrictions to traffic allowed in the Special Provisions or on the Plans, and addressed through approved TCPs. A restriction to traffic is any roadway surface condition, work operation, or traffic control setup that reduces the number of lanes or impedes traffic. Obtain an approved TCP before restricting traffic.

Unless otherwise determined by the Engineer and on an approved Traffic Control Plan (TCP), do not restrict traffic during the times listed below:

1. **Monday through Friday:** 0530 hrs to 0800 hrs and 1630 hrs to 1900 hrs.
2. **Around any Holiday:**
 - a. If a holiday falls on Sunday, Monday, or Tuesday, the above stipulations apply from 1200 hrs on the Friday before the holiday to 0300 hrs. on the day after the holiday.
 - b. If a holiday falls on Wednesday, the above stipulations apply from 1200 hrs on the Tuesday before the holiday to 0300 hrs. on the Thursday after the holiday.
 - c. If a holiday falls on Thursday, Friday, or Saturday, the above stipulations apply from 1200 hrs on the day before the holiday to 0300 hrs. on the Monday after the holiday.

Lane restrictions, if allowed, conducted so that no more than a 10 minute accumulated stopped delay, 40 vehicles, or 1/4 mile (1320 feet) of traffic detained, whichever occurs first, before releasing the detained motorists. During paving operations, a 20 minute stopped delay, 80 vehicles, or 1/2 mile (2640 feet) of traffic detained, allowed for motorists, except school buses. If a queue of traffic develops at a stop, empty the entire queue to include the last car that entered the queue at the time the queue was released.

Lane restrictions, if allowed shall be conducted so that no more than a 5 minute accumulated stopped delay, 20 vehicles, or 1/8 mile (660 feet) of traffic is detained, whichever occurs first, before releasing the detained motorists. During paving operations, a 10 minute stopped delay, 40 vehicles, or 1/4 mile (1320 feet) of traffic detained, allowed for motorists, except school buses. If a queue of traffic develops at a stop, empty the entire queue to include the last car that entered the queue at the time the queue was released.

Do not delay the school busses through the construction zone; obtain the local school bus schedule and coordinate work efforts. Submit the plan, as a TCP, to the Engineer for approval before the implementation of the school bus coordination plan.

643-3.09 INTERIM PAVEMENT MARKINGS. Place permanent or interim pavement markings according to this Subsection, details shown on the Plans, approved TCPs, and Parts III and VI of the ATM before opening existing paved roadways, temporary paved roadways, detours, interim paving lifts, and roadways with seal coats and surface treatments for more than one continuous work shift. This work may include restriping the existing roadway before beginning construction, before seasonal suspension, and/or after seasonal suspension.

Remove conflicting pavement markings according to Subsection 670-3.04, Paint Removal.

Mark existing roadway sections that will be opened to traffic during the winter. Mark over the existing lines and markings, unless shown otherwise on the Plans or an approved TCP.

Maintain all interim pavement markings for their intended life including reapplication when necessary. There will be no compensation to upgrade interim pavement markings required for work operations lasting up to 2 weeks.

Use only temporary raised pavement markers as interim pavement markings on final pavement surfaces. Completely remove and dispose of them when placing the final markings. Completely remove any residual adhesive that might misguide motorists. Place final pavement markings on finished pavement surfaces and interim pavement surfaces before suspending work for the winter.

Stage the construction to avoid routing traffic over conflicting markings, for more than one continuous work shift. If traffic is routed over conflicting markings during a work shift, delineate the roadway with a complement of warning signs, channelizing devices, and flaggers as required by the ATM.

Use only temporary raised pavement markers meeting Subsection 712-2.16 as interim markings on seal coat and surface treatment pavements. Install the markers according to the manufacturer's instructions before applying the asphalt surface material and cover coat. Remove the vinyl protective covers after applying the asphalt pavement.

On multicourse surface treatments, install the temporary raised pavement markers after applying the full width of the first layer of cover coat. Install the markers on each day's completed surface before removing the pilot car operations and allowing unescorted traffic on the surface treatment.

Apply final pavement markings according to Subsection 670-3.01, Construction Requirements, of these Special Provisions.

Apply final pavement markings within 10 days of completing the final sweeping or brooming of the mainline seal coat or surface treatment.

643-3.10 LIGHTING FOR NIGHT WORK. Illuminate the night work areas according to Table 643-4.

Table 643-4 does not provide a comprehensive list of operations that require lighting. Provide lighting for other operations when necessary.

Use balloon lighting as the main light sources. Do not use floodlights without prior approval by the Engineer. When approved, install floodlighting in a manner that minimizes glare for motorists, workers, and residents living along the roadway. Locate, aim, louver, and/or shield light sources to reduce glare.

The Engineer shall be the sole judge of when glare is unacceptable, either for traffic or for adjoining residences. When notified of unacceptable glare, modify the lighting system to reduce glare to an acceptable level.

**TABLE 643-4
NIGHT WORK ILLUMINATION EQUIPMENT AND LOCATION REQUIREMENTS**

Type of Work or Equipment	Lighting Configuration
Paving, Milling, Striping, Pavement Marking Removal, Rumble Strip Installation.	At least one machine-mounted balloon light of at least 2000 watts. Provide additional lights or wattage if necessary to provide complete coverage.
Rolling, Pavement Sweeping.	At least 4 sealed beam halogen lamps in the front and four in the back. Each should be at least 55 watts.
Flagging.	One balloon light of at least 2000 watts, located within 30 feet of the flagger location. Locate so the flagger and the flagging location are illuminated. Provide additional lights or wattage if necessary to provide complete coverage of the flagging location.
Truck Crossings where haul vehicles cross or enter a road with more than 10,000 ADT, or where the haul vehicle crossing or entering location is controlled by portable traffic signals or flaggers.	At least one balloon light of at least 2000 watts, located on the main road on the far right side of the intersection. Locate light within 30 feet of the edge of the side street. If there is a flagger at the crossing, locate the light or lights so the lighting requirements for Flagging are also satisfied.

If the Contractor fails to provide required lighting equipment or provides lighting that creates unacceptable glare, the Contractor shall cease all construction activities that require illumination, including flagging operations, until the condition or conditions are corrected.

Use lighting equipment in good operating condition and that complies with applicable state and local adopted codes and standards, and OSHA, NEC, and NEMA requirements.

Provide suitable brackets and hardware to mount lighting fixtures and generators on machines and equipment. Design mountings so lights can be aimed and positioned as necessary to reduce glare. Locate mounting brackets and fixtures so they don't interfere with the equipment operator or overhead structures. Connect fixtures securely in a manner that minimizes vibration.

Ensure ground, trailer, and equipment-mounted light towers or poles are sturdy and freestanding without the aid of guy wires. Towers shall be capable of being moved as necessary to keep pace with the construction operation. Position the ground and trailer-mounted towers and trailers, to minimize the risk of being impacted by traffic on the roadway, or by construction traffic, or equipment.

Raise trailer or equipment mounted lights to maximum height, except do not exceed the clearance required for overhead objects such as overhead signals, overhead signs, trees, aerial utilities, or bridges. Aim and adjust lights to provide the required light levels. Provide uniform illumination on the hopper, auger, and screed areas of pavers. Illuminate the operator's controls on all machines uniformly.

Furnish each side of non-street legal equipment with a minimum of 75 square inches high intensity retroreflective sheeting in each corner, so at least 150 square inches of sheeting is visible from each direction. Provide red sheeting on the rear of the equipment and yellow sheeting elsewhere.

Existing street and highway lighting and conventional vehicle headlights may supplement but do not relieve the Contract requirement to provide lighting for night work, according to the requirements of Table 643-4.

Provide sufficient fuel, spare lamps, spare generators, and qualified personnel to ensure that all required lights operate continuously during nighttime operations. Ensure generators have fuel tanks of sufficient capacity to permit operation of the lighting system for a minimum of 12 hours. In the event of any failure of the lighting system, discontinue the operation that requires illumination until the required level and quality of illumination is restored.

Maintain a supply of at least twenty emergency flares for use in the event of emergency or unanticipated situations. Comply with local noise ordinances.

Install all post-mounted electroliers located within the clear zone, on NCHRP 350 or MASH compliant breakaway bases.

643-3.11 HIGH VISIBILITY GARMENTS. Ensure all workers within project limits wear outer garments that are highly visible and comply with the following requirements:

1. **Standards.** Use high visibility garments conforming to the requirements of ANSI/ISEA 107-2004, Class 2 for tops or Class E for bottoms, and Level 2 retroreflective material.
2. **Labeling.** Use garments labeled in conformance with Section 11.2 of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010.
3. **Tops.** Wear high visibility vests, jackets, or coverall tops at all times.
4. **Bottoms.** Wear high visibility pants or coverall bottoms during nighttime work (sunset to sunrise). Worksite traffic supervisors, employees assigned to traffic control duties, and flaggers wear high visibility pants or coverall bottom at all times.
5. **Outer Raingear.** Wear raingear tops and bottoms conforming to the requirements of this Subsection 643-3.11.

6. **Exceptions.** When workers are inside an enclosed compartment of a vehicle, they are not required to wear high visibility garments.
7. **Condition.** Furnish and maintain all vests, jackets, coveralls, rain gear, hard hats, and other apparel in a neat, clean, and presentable condition. Maintain retroreflective material to Level 2 standards.

Payment for high visibility garments for workers is subsidiary to other traffic contract items.

643-4.01 METHOD OF MEASUREMENT. Section 109 and as follows: Quantities will not be measured during winter suspension of work.

1. **Traffic Maintenance.** Calendar Day: Every day shown on the calendar, beginning and ending at midnight. Measurement begins on the day following receipt of the Notice to Proceed or on the first day of work at the project site, whichever is later, and ends on the date of project completion.
2. **Traffic Control Device Items.** By the number of units of each bid item shown on the bid schedule (or the Traffic Control Rate Schedule, if item 643.0025.____, Traffic Control, is included) that are installed, accepted, and operational. Incomplete or unsatisfactory devices will not be measured. Special Construction Signs are measured by the total area of legend-bearing sign panel, as determined under Subsection 615-4.01. Compensation for a 24-hour period shall be made under Construction Signs in the Traffic Control Rate Schedule, Table 643-5. Items measured by the day are for each item per 24-hour period.
3. **Traffic Maintenance Setup Items.** By each lane closure or one-lane road in place per hour. By each detour or road closure in place per 24-hour period.
4. **Portable Concrete Barrier.** By each nominal 12.5-foot section placed according to the approved TCPs, for the initial placement and for each subsequent relocation when moved more than 10 feet in any direction. Each transition piece (sloping end) will be measured as a single section.
5. **Temporary Crash Cushion.** By each acceptable installation.
6. **Interim Pavement Marking.** By the single-stripe station. A single stripe is a marking or a temporary raised pavement marker 4 inches wide. Wider striping is measured in multiples of 4 inches. Centerline gaps are not deducted from measurements.
7. **Flagging and Pilot Car.** By the number of approved hours, supported by certified payroll.
8. **Street Sweeping.** By the number of operated hours, supported by certified payroll and approved by the Engineer.
9. **Watering.** By the 1,000 gallons (M-Gallon) of water applied. The Engineer may specify measurement by weight or volume. If by weight, convert to gallons at 8.34 pounds per gallon. If by volume, convert to gallons at 7.48 gallons per cubic foot.
10. **Traffic Price Adjustment.** By each minute that any lane of traffic is not open to full use by the traveling public, measured to the nearest minute. The Engineer will determine whether the roadway is opened to full use.
11. **Traffic Control.** By the units specified in the Special Provisions.
12. **Portable Changeable Message Board Sign.** By the 24-hour period for each sign, as shown on an approved TCP and displaying an approved message.
13. **Plastic Safety Fence.** By the linear foot, as placed, to protect or channelize pedestrian traffic as shown on an approved TCP. Any adjustment in configuration of the fence at the same location that does not result in an increased amount of fence is not measured. Opening and closing the fence to gain access to and from the worksite is not measured.

14. **Temporary Sidewalk Surfacing.** By the square yard as shown on an approved TCP.
15. **Temporary Guardrail.** By the linear foot, including end treatments, as shown on an approved TCP.
16. **Portable Steel Barrier.** By the linear foot placed according to the manufacturer's recommendation and approved TCPs, for the initial placement, and for each subsequent relocation when moved more than 10 feet in any direction.
17. **Hotline Road Report.** No measurement required to provide a 24-hour toll free (1-800 ###-####) "Hotline Road Report" telephone with a prerecorded message, and weekly notices with daily updates. Work will be subsidiary to Pay Item 643.0001.____ or 643.0002.____, Traffic Maintenance.

643-5.01 BASIS OF PAYMENT.

1. **Traffic Maintenance.** The contract price includes all resources required to provide the Worksite Traffic Supervisor, all required TCPs and public notices, the Construction Phasing Plan, and the maintenance of all roadways, approaches, crossings, intersections and pedestrian and bicycle facilities, as required. This item also includes any Traffic Control Devices required but not shown on the bid schedule.

Items required by the Contract that are not listed on the bid schedule or not included in other items are subsidiary to Item 643.0001.____ or 643.0002.____ Traffic Maintenance, except the following:

- a. Traffic Price Adjustment
- b. Traffic Maintenance Setup
2. **Traffic Control Device Items.** The contract price includes all resources required to provide, install, maintain, move, and remove the specified devices. Warning lights, high-level warning devices, vertical panels, and sign supports required for traffic control devices are subsidiary.
3. **Traffic Maintenance Setup Items.** Each setup consists of all traffic control devices, flaggers, pilot cars, and subsidiary items necessary to implement the TCP shown on the Plans. Warning lights, high-level warning devices, vertical panels, and sign supports required for traffic control devices are subsidiary.

Construction and obliteration of temporary roadways, when required on the Plans or approved TCP under a traffic maintenance setup item, is paid for under their respective roadway pay items.

When topsoil or seeding is required for detours, payment will be made under Sections 620 and/or 618.

4. **Portable Concrete Barrier.** The contract price includes all resources required to provide, install, maintain, and remove each barrier section.
5. **Temporary Crash Cushion.** The contract price includes all resources required to provide, install, maintain, repair, and remove each crash cushion.
6. **Interim Pavement Marking.** The contract price includes all resources required to provide, install, maintain, and remove the specified markings. Installation of word and symbol markings are subsidiary. The No-Passing Zone signing, described in Subsection 643-3.04, is subsidiary.
7. **Flagging and Pilot Car.** The contract price includes all required labor, vehicles, radios, flagger paddles and pilot car signs, and transportation to and from the worksite.

The Engineer will pay for Item 643.0032.____ Flagging on a contingent sum basis at the rate of \$82.00/hour. The Engineer does not require a change order/directive for the flagging Pay Item. Flagging associated with Change Order work paid at the prices according to Subsection 109-1.05 Compensation for Extra Work.

8. **Street Sweeping.** The contract price includes all resources required to keep the roadway free of loose material.
9. **Watering.** The contract price includes all resources required to provide watering, as directed.
10. **Traffic Price Adjustment.** If Item 643.0023.____, Traffic Price Adjustment, is shown on the bid schedule, the total value of this contract will be adjusted, for unauthorized lane reductions or closures, at the rates listed in Table 643-3.
11. **Traffic Control.** Payment for Item 643.0025.____, Traffic Control, will be made at the unit rate value contained in the Traffic Control Rate Schedule shown in the Special Provisions for the accepted units of traffic control devices. The Engineer does not require a change order/directive for Pay Item 643.0025.____, Traffic Control.
12. **Portable Changeable Message Board Sign.** The contract price includes all resources required to furnish, move, and operate the sign.

Two Portable Changeable Message Board Signs used for Permanent Construction Signing paid for under Item 643.0003.____ Permanent Construction Signs. Additional portable changeable message board signs will be paid for under 643.0025.____, Traffic Control.
13. **Plastic Safety Fence.** The contract price includes all resources required to install, maintain, and remove the fence.
14. **Temporary Sidewalk Surfacing.** The contract price includes all resources required to construct, maintain, and remove the surfacing.
15. **Temporary Guardrail.** The contract price includes all resources required to construct, maintain, and remove the guardrail.
16. **Portable Steel Barrier.** The contract price includes all resources required to provide, install, maintain, move, and remove each barrier.
17. **Lighting for Night Work.** Payment for illuminating night work areas and any required adjustments to work zone illumination is subsidiary to other items.
18. **Pavement Breaks.** Temporary hot mix asphalt at pavement breaks, as noted in Subsection 643-3.02. Gravel Surface Not Specified is subsidiary to Pay Item 401.0001.____.
19. **Temporary Pavement Markings.** Except where specified as an individual Pay Item (Interim Pavement Markings) temporary pavement markings are subsidiary to Section 670 Pay Items. Refer to Section 670 Traffic Markings, for further information.
20. **Temporary Crash Cushion / Redirective.** The price listed in the Traffic Control Rate Schedule, Table 643-5, will be full compensation for the purchase, installation, maintenance during construction, removal, and salvaging the Temporary Crash Cushion / Redirective unit(s). Deliver the salvaged unit(s) to the nearest ADOT & PF Maintenance & Operations Station or as directed by the Engineer.

Traffic control devices, barriers, and crash cushions required to delineate or shield fixed objects will not be measured or paid for separately, but will be subsidiary

Traffic control devices, barriers, and crash cushions required to delineate or shield guardrail posts or non-crashworthy ends will not be measured or paid for separately, but will be subsidiary, when required for failure to meet completion timelines in subsection 606-3.01.

**TABLE 643-5
TRAFFIC CONTROL RATE SCHEDULE**

Traffic Control Device	Pay Unit	Unit Rate
Construction Signs	Each/Day	\$6.50
Special Construction Signs	Square Foot	\$31.00
Type II Barricade	Each/Day	\$3.30
Type III Barricade	Each/Day	\$11.00
Traffic Cone or Tubular Marker	Each/Day	\$1.10
Drums	Each/Day	\$3.30
Temporary Guardrail	Lineal Foot	\$35.00
Portable Concrete or Steel F Shape Barrier (12.5 foot long or \$8/foot for other lengths)	Each	\$100.00
Temporary Crash Cushion / Non-redirective Water Filled Barrier (all required per end)	Each	\$2500.00
Temporary Crash Cushion / Non-redirective Water Filled Barrels (all required per end)	Each	\$3285.00
Temporary Crash Cushion / Non-redirective Sand Filled Barrels (all required per end)	Each	\$4325.00
Temporary Crash Cushion / Redirective	Each	\$9230.00
Plastic Safety Fence	Lineal Foot	\$1.00
Temporary Sidewalk Surfacing	Square Foot	\$2.00
Flexible Markers (Flat Whip, Reflective)	Each	\$60.00
Cars and Trucks w/driver		
Pilot Car (4x2, 1/2 ton truck)	Hour	\$128.00
Watering Truck – up to 4900 gallon capacity	M-Gallon	\$40.00
Watering Truck – more than 4900 gallon	M-Gallon	\$30.00
Street Sweeping: Regenerative Sweeper, Vacuum Sweeper, Mechanical or Power Broom with Vacuum	Hour	\$214.00
40,000 GVW Truck with Crash Attenuator	Hour	\$162.00
Electronic Boards, Panels, and Signals		
Sequential Arrow Panel	Each/Day	\$60.00
Portable Changeable Message Board Sign	Calendar Day	\$210.00

PAY ITEM

Item Number	Item Description	Unit
643.0001.____	Traffic Maintenance	CDAY
643.0002.____	Traffic Maintenance	LS
643.0003.____	Permanent Construction Signs	LS
643.0004.____	Construction Sign	Day
643.0005.____	Type II Barricade	Day
643.0006.____	Type III Barricade	Day
643.0007.____	Traffic Cone/Tubular Marker	Day
643.0008.____	Plastic Safety Fence	LF
643.0009.____	Drum	Day
643.0010.____	Sequential Arrow Panel, Type C	Day
643.0011.____	Special Construction Signs	SF
643.0012.____	Portable Concrete Barrier	Each
643.0013.____	Temporary Crash Cushion	Each
643.0014.____	Interim Pavement Marking	STA
643.0015.____	Flagging	HR
643.0016.____	Pilot Car	HR
643.0017.____	Street Sweeping	HR
643.0018.____	Watering	MGAL
643.0019.____	Lane Closure	HR
643.0020.____	Detour	Day
643.0021.____	Road Closure	Day
643.0022.____	One Lane Road	HR
643.0023.____	Traffic Price Adjustment	CS
643.0024.____	Portable Changeable Message Board Sign	Day
643.0025.____	Traffic Control	CS
643.0026.____	Temporary Sidewalk Surfacing	SY
643.0027.____	Temporary Guardrail	LF
643.0030.____	Portable Steel Barrier	LF
643.0031.____	Interim Pavement Marking	LS
643.0032.____	Flagging	CS
643.0033.____	Detour	LS

CR643-24.0401

SECTION 644
SERVICES TO BE FURNISHED BY THE CONTRACTOR

Special Provisions

Replace Subsection 644-2.01 with the following:

644-2.01 FIELD OFFICE. Furnish and maintain a suitable office for the Engineer, available for occupancy from 2 weeks before beginning work, through 30 days after issuance of the notice of project completion as defined in Subsection 105-1.15. The following office requirements shall be met:

1. A minimum of 1000 square feet of floor area. The office area shall be divided so that it contains an office room separated by a closable door. The office room shall have a minimum of 160 square feet of floor area.
2. A thermostatically controlled interior heating system with necessary fuel.
3. Adequate electrical lighting and 120 volt, 60 hertz power, with a minimum of 6 electrical outlets.
4. A minimum of 100 square feet of window area and adequate ventilation.
5. Adequate parking for a minimum of 16 vehicles, with one handicap parking space meeting the requirements of Americans with Disabilities Act Accessibility Guidelines (ADAAG).
6. Attached indoor plumbing with sanitary lavatory facilities and potable drinking water provided.
7. Provide engineering communication services to the field office, Subsection 644-2.08.
8. If a part of the Contractor's building, it shall be completely partitioned off from the balance of the structure and provided with a separate outside door equipped with a lock.
9. Located within 3 miles of the project.
10. Weekly janitorial service consisting of emptying trash receptacles, vacuuming office area, and cleaning restrooms and counter areas.
11. Provide one mobilization and one demobilization of the Engineer's office equipment and furniture.
12. Provide a security system controlled by the Department for the office including camera coverage for the vehicle parking.

CR644.FOCOM-080120

644-2.05 VEHICLES.

Replace the second and third paragraphs with the following:

Pickup(LT)/Sport Utility Vehicle (SUV): Furnish full-size, four-wheel drive vehicles, either pickup/light truck(s) with crew cabs or sport utility vehicle(s). Provide vehicles less than three model years old, in good condition, and with less than 36,000 miles on the odometer. Furnish all fuels, maintenance and parts, and insurance during the Department's operation and use.

Equip each vehicle with lightbars wired into the vehicle's electrical system with a dash mounted switch easily accessible to the vehicle operator. Provide Code 3; Reflex C5590AA 15.3-inch mini lightbar, or approved equal. Approved equal equipment shall have the following characteristics:

- (4) 55 watt rotators with amber filters
- 1200 flashes per minute
- (2) diamond mirrors
- 55 inches in length

Equip each vehicle with hands-free communication connectivity.

If you are working after October 1, provide four studded snow tires mounted on each vehicle.

You are responsible for normal wear and tear, and any other incidental damage including broken windshields, occurring during the Department's operation and use. The State of Alaska is responsible for damage to any vehicle caused by its own negligent operation.

CR644.LTSUV-113020

Add the following Subsection 644-2.08 Engineering Communication and Office Equipment:

644-2.08 ENGINEERING COMMUNICATION AND OFFICE EQUIPMENT. Engineering Communications and Office Equipment, minimum service includes:

1. Three phone/facsimile lines and commercial phones (different phone numbers for each line)
 - a. One phone with built-in digital answering machine.
 - b. Ancillary equipment for operational service and as required by the Engineer.
2. High speed internet service with modem (DSL or Cable)
 - a. Send and receive capability supporting 10.0 Mbps download and upload speed or higher at all times.
 - b. Data usage, 10 GB minimum monthly.
 - c. Wireless router.
 - d. Battery backup.
 - e. Ancillary equipment for operational service and as required by the Engineer.
3. Equipment rental services
 - a. All-in-one printer/copier/scanner
 - (1) Black-white and color
 - (2) Pages per minute (ppm): 50
 - (3) Paper trays: 8.5" x 11" and 11" x 17"
 - (4) Capacity: 1100 sheets minimum

CR644.FOCOM-080120

644-4.01 METHOD OF MEASUREMENT.

Replace the third paragraph with following:

Vehicle (LT/SUV). For each vehicle provided. If a replacement vehicle is necessary, no additional measurement will be made.

CR644.LTSUV-113020

644-5.01 BASIS OF PAYMENT.

Add the following:

Pay Item 644.2007.____ Vehicle (LT/SUV):

1. A percentage of the Contract unit price, to be determined by the Engineer, will be paid as full compensation for furnishing the vehicle at the site.
2. The balance of the Contract unit price will be prorated over the anticipated active construction period with a portion included as part of each interim payment, for maintenance, repairs, and fuel and, at the end of the project, for removing it from the site. If anticipated construction period changes, the final increment will be held until final payment.

PAY ITEM

Item Number	Item Description	Unit
644.2007.____	Vehicle (LT/SUV)	Each

CR644.LTSUV-113020

Add the following:

Pay Item 644.2004.____ Engineering Communications:

Usage services including long distance calls made by State personnel and the Internet service provider will be reimbursed by the State. Payment for communication usage services and equipment rental agreements shall be based on paid receipts to the service provider plus 15%.

Connection fees (initial connection) local calls, providing equipment and disconnection are subsidiary to Pay Item 644.0001.____ Field Office and as such are paid by the Contractor.

PAY ITEM

Item Number	Item Description	Unit
644.2004.____	Engineering Communications	CS

CR644.FOCOM-080120

Special Provision

Add the following Section:

**SECTION 646
CPM SCHEDULING**

Special Provisions

Replace Subsection 646-2.01 with the following:

646-2.01 SUBMITTAL OF SCHEDULE.

Submit a detailed initial CPM Schedule at the preconstruction conference for the Engineer's acceptance as set forth below.

The construction schedule for the entire Project shall not exceed the specified contract time. Allow the Engineer 14 days to review the initial CPM Schedule. Revise promptly. The finalized CPM Schedule must be completed and accepted before beginning work on the Project.

646-3.01 REQUIREMENTS AND USE OF SCHEDULE.

Replace the first sentence of No. 2 Schedule Updates. with the following:

Hold job site progress meetings with the Engineer for the purpose of updating the CPM Schedule. Meet with the Engineer monthly or as deemed necessary by the Engineer.

CR646.1-23.0501

Special Provision

Add the following Section:

SECTION 690 WATERWAY

690-1.01 DESCRIPTION. Construct a waterway bed (culvert lining, stream bed, river bed, creek bed, and or similar), and waterway bank (protection and revegetation), at the locations on the Plans and or as staked.

Provide a plan and schedule for the culvert, waterway bed, and waterway bank construction meeting the requirements of the Contract documents (Section 107 Legal Relations and Responsibility to Public - Permits, Section 643 Traffic Maintenance and similar).

1.02 REFERENCES.

1. Stream Bank Revegetation and Protection: A Guide for Alaska; published by Alaska Department of Fish and Game; printed copy available from the Department, and electronic copy available on the internet.

690-2.01 MATERIALS.

Clearing and Grubbing (salvage vegetative mat)	Section 201 & 623
Willow Cuttings/Bundles	Section 621 & 727
Excavation and Embankment (waterway bed and bank)	Section 203 & 703
Structural Plate Pipe	Section 602 & 707
Culverts and Storm Drains	Section 603 & 707
Riprap	Section 611
Coir Logs	Section 619 & 727
Block Sodding (vegetative mat)	Section 623
Erosion, Sediment, and Pollution Control	Section 641
Selected Material	Section 703
Coir Fabric	Section 727

Waterway Bed Fill: A blend of 60% riprap and 40% selected material, Type A. See plans for riprap class. Unclassified waterway excavation may be substituted for the selected material Type A.

Waterway Bank Fill: A blend of 50% riprap and selected material Type A. See plans for riprap class. Unclassified waterway excavation may be substituted for the selected material Type A.

Salvaged Organic Soil: Salvaged topsoil, overburden material, or useable excavation high in organics and fines. Limit height of organic stockpile to prevent anaerobic conditions as directed by the Engineer.

690-3.01 CONSTRUCTION REQUIREMENTS. Provide equipment of a size and type to efficiently complete the work with the least impact on the waterway. Submit to the Engineer a list of equipment to be used during construction for review and approval. Do not damage the culvert structure or surface finish. Do not operate equipment directly on the surface of the culvert; work off of protective pad/dunnage or waterway bed fill material.

Conduct operations in such a manner as to not block any stream or drainage system.

690-3.02 EXCAVATION. Excavate to the dimensions shown on the Plans. Control excavated material to minimize disturbance to the channel and banks.

690-3.03 WATERWAY BED. Place waterway bed fill material in the culvert and existing waterway channel by methods that do not cause segregation or damage. Place or rearrange individual rocks to

obtain a uniformly dense, compact, low permeability mass, matching the drawings and the waterway's natural channel. Place the fill in lifts of maximum depth equal to size of maximum rock or 8-inches whichever is greater. Fill voids by machine or hand tamping after placing each lift. Compact bed materials, each lift, by mechanical means as approved by the Engineer. Make waterway bed surface roughness similar to the natural waterway bed.

Fill all voids left during placement of fill material, of waterway features (rock ribs), and bank reconstruction with selected material Type A. Use water pressure, metal tamping rods, and similar hand operated equipment to force material into all surfaces and subsurface voids between the rocks, and the rocks and structure. After water is restored to the waterway, if voids are present between the rocks, add additional selected material Type A as directed by the Engineer.

690-3.04 WATERWAY BANK. Tie in, to the existing waterway bank, the ends of the constructed banks similar to those found in the field and as shown on the Plans to create a smooth transition from the constructed bank to the existing bank.

Place the bank reconstruction materials as shown on the Plans, and noted in the Specifications. Place the bank fill material combined with coir logs, coir fabric, dormant Willow cuttings and vegetative mat such that the top of the bank, the vegetated mat, is fairly flat and at the same elevation as the existing bank.

1. Install Erosion Control measures before beginning work.
2. Salvage/harvest and stockpile vegetative mat.
3. Salvage/harvest and store Willow cuttings for use in brush layering and live staking. Harvest Willow cuttings before spring thaw and keep refrigerated until use.
4. Excavate the waterway bank, at approximately 6:1 slightly down and toward the existing bank, approximately 6:1.
5. Place waterway bank fill.
6. Place coir log:
 - a. Excavate a trench for the log such that 2/3 of the log diameter is buried.
 - b. Place the log; be sure the log has full contact with the soil, and securely stake in place with #6 rebar. Compact the soil around the log.
7. Backfill with waterway bank fill.
8. Angle the bench, created at the top of the waterway bank fill, slightly down and toward the existing bank, approximately 6:1.
9. Place dormant Willow cuttings: Plant dormant willow cuttings before July 1st.
 - a. Place Willow cuttings on the coir fabric and fill material with the cut ends placed to the back of the bench area and the tips or shoots pointing out into the creek channel. Expose no more than 1/4 of the total branch length beyond the coir fabric and the subsequent layer of fill or vegetative mat.
 - b. Place Willows cuttings in a crisscross pattern. Place 15 Willow cuttings per foot of prepared area.
10. Place salvaged organic soil, mixed with the Willows and on top of the Willows to a depth of 4-inches. Fill all voids between Willow cuttings. Place organic mixture in maximum 12-inch lifts.
11. Repeat steps 10 and 11 as necessary to achieve stream bank height approximately 1 foot below existing surrounding grade.

12. Place vegetative mat on the salvaged organic soil. Plant vegetative mats between May 28 and August 1.
 - a. Wet the bank. Soak vegetative mats to saturation prior to placing mats.
 - b. If the vegetative mat has lost topsoil, such that the in-place thickness of the mat will not be 12-inches thick, place additional topsoil over the Willows, filling voids, and increasing the mat thickness to 12-inches plus the initial 4-inches of topsoil.
 - c. Stake all areas to be planted with vegetative mats as shown on the Plans prior to installation. Notify the Engineer of the delineated areas three working days prior to installation. Install only after receiving the Engineers approval.
 - d. Place vegetative mats tightly together, without gaps, with full contact of the root mass to the soil surface below, tamp into place and anchor with wooden stakes 18-inches long and spaced 1 per square yard.
 - e. Place vegetative mat to extend 6 feet from edge of bank.
13. Place live Willow stakes: Plant live willow stakes before July 1st.
 - a. Prepare several live stakes from one dormant cutting. Cut stakes 10-inches to 24-inches long and roughly 1/2-inch to 2-inches in diameter. Discard flower buds. Each stake requires at least one or two leaf buds near the top of the live stake.
 - b. Create a hole, in the vegetative mat, for the live stake with rebar or similar.
 - c. Plant stakes as vertical as possible, 1-foot to 3-feet apart with 3/4 of the stake below ground and no more than one or two leaf buds exposed above ground.
 - d. Tightly pack the soil around the stake so the stakes stand vertical and no air pockets remain. Fill planting hole with water as soil is packed to prevent air pockets.

690-3.05 WATERWAY BANK PERIOD OF ESTABLISHMENT. The establishment period shall extend for one complete growing season after the required planting is completed. A growing season is from May 1, to September 30.

The Engineer may, but is not required to, determine the Project is complete except for the period of establishment, and issue a letter of final acceptance. After final acceptance, work or materials due under this subsection during any remaining period of establishment are considered warranty obligations that continue to be due following final acceptance according to Subsection 105-1.16.

690-3.06 PLANT REPLACEMENTS. Engineer and Contractor's representative, in the spring of the year following the planting year and before June 30, inventory Willow cuttings, live Willow stakes, and vegetative mat planted on the project to determine the number/area of dead plants/organic materials.

1. Willow Cuttings. At least 4 cuttings per foot, on average over a 4-foot section, for each individual layer, shall be healthy and in a flourishing condition. For areas not meeting this requirement, replant the areas using live staking techniques described in subsection 690-3.04, item 10; space the replacement live stakes at 6-inches along the layer or as directed by the Engineer. Do not remove the dead cuttings.
2. Live Willow Staking. If the number of dead or unhealthy live plants is lower than 25% of the quantities originally planted, then no plant replacements are required.

If the number of dead or unhealthy live plants is higher than 25% of the quantities originally planted, replace a sufficient number of plants to increase the number of healthy plants to 75% of the quantities originally planted.

Provide healthy replacement Willow cuttings of the same size as the original plantings.

Reset Willow stakes to an upright position.

3. Vegetative Mat. If the planted vegetative mat survival (mat being vigorous and healthy) area is greater than 75% of the original planting area, no replacement mat is required.

If the mat survival area is less than 75%, replace the vegetative mat to increase the area to 75% of the originally planted area.

Coordinate the replacement of the vegetative mat with the live Willow staking to minimize damage to healthy organic materials. The Engineer will select which of the dead or unhealthy Willow cuttings, Willow stakes, and vegetative mat area to replace.

Perform replacement planting between July 1 and July 15 according to the original planting procedures and as described in this subsection.

If after the maintenance period, a survival rate, as described in 1, 2, and 3 above, of planted organic material has not been attained, replant the materials to attain the levels of survival as described in 1, 2, and 3 above, for each live organic material planted.

Contractor is responsible for replacing plants vandalized, stolen, or damaged during the maintenance period. Replace plants as soon as weather conditions permit. Provide replacement plant quality equal to, or better than, initially specified.

690-3.07 MAINTENANCE. Install and maintain plastic safety fence meeting the requirements in Section 643, to protect Waterway Bank Revegetation locations shown in the culvert details on the Plans. Install plastic safety fence per the manufacturer's recommendations upon completion of waterway bank protection and revegetation. Remove plastic safety fence at the end of the maintenance period for the Willow cuttings, live Willow stakes, and vegetative mat.

Deep water vegetative mat, Willow cuttings, and live Willow staking immediately after planting. Deep watering shall provide water penetration throughout the entire layer, to the top of the waterway bank fill, with minimum runoff. Rain will not be considered a substitute for deep watering unless permitted by the Engineer.

Deep water the vegetative mat, Willow cuttings and live Willow stakes as follows:

1. Deep water at least twice a week during the first 45 days after planting.
2. 45 days after planting, deep water during the remainder of the first growing season ending September 16 of the same year as the planting, through the maintenance period ending September 16 of the second growing season, as follows:
 - a. Once a week in May, June and July.
 - b. Once between August 10 and August 20.
3. The Engineer may direct the Contractor to deep water past September 30 or provide supplemental waterings any time during the life of the project when weather conditions are excessively warm or dry.

Daily water vegetative mat, Willow cuttings, and live Willow staking, or as directed by the Engineer. Keep the mats moist until final acceptance of the project or as accepted by the Engineer.

Watering equipment shall be equipped with, or followed by a vehicle equipped with a Type B advance warning arrow panel using caution mode according to Part VI of the Alaska Traffic Manual.

The maintenance period extends from the time of planting to September 16 of the next growing season.

690-4.01 METHOD OF MEASUREMENT. Section 109.

690.2001.0000 Waterway Bed Fill: linear foot of the waterway

690.2003.0000 Waterway Bank Revegetation and Protection: linear foot of bank.

690-5.01 BASIS OF PAYMENT.

1. Pay Items 690.2001.0000 include the materials and all work to place and maintain the materials in place, including but not limited to, excavation, placement/backfilling, benching, compacting, creating rock ribs, filling voids, and similar. Riprap is paid for separately under Section 611.
2. Pay Items 690.2003.0000 includes the materials and all work to salvage/harvest/collect, store, transport, place, and maintain organic materials in the state specified (vegetative mats, Willow cuttings, live Willow stakes, coir logs, salvaged organic soil, watering, and similar). The use of a Type B advance warning arrow panel for watering under this section; and plastic safety fence, supply, installation, and maintenance are subsidiary.

Partial payments of up to 80% of full amount may be authorized for Pay Item 690.2003.0000, at time of acceptance. The balance will be paid with one final payment at the completion of the maintenance period if at that time a minimum of plants are living, vigorous, and healthy:

- a. Willow Cuttings. 4 plants per foot
- b. Live Willow Stakes. 75% of live Willow stakes by area
- c. Vegetative mat. 75% of vegetative mat by area

Replanting to reach the survival level specified is subsidiary.

Hauling, stockpiling, and disposal of unsuitable and surplus material are incidental to Section 690 Pay Items.

Water diversion is subsidiary to 602, 603, and 690 Pay Items.

Water for maintenance is subsidiary to 690 Pay Items.

Payment will be made under:

<u>Pay Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
690.2001.0000	Waterway Bed Fill	Linear Foot
690.2003.0000	Waterway Bank Revegetation and Protection	Linear Foot

CFHWY00672-031725

Blank Page

DIVISION 700 — MATERIALS

Blank Page

SECTION 701
HYDRAULIC CEMENT AND SUPPLEMENTARY CEMENTITIOUS MATERIALS

Add the following:

701-2.10 CONCRETE PATCH MATERIAL. Use pre-packaged concrete formulated for repair and patching of concrete structures in aggressive exposures. Concrete may be extended with aggregate according to the manufacturer's written recommendations and instructions.

Provide concrete patch material that meets the requirements of ASTM C928 and Table 701-2. Use water that meets the requirements of Subsection 712-2.01. Provide the manufacturer's recommended batching and installation procedures and minimum cure time.

Protect concrete from moisture during shipment and storage. Use concrete per manufacturer's shelf life, or 2 years maximum, whichever is less, unless the manufacturer retests and certifies the product meets the specified requirements.

Submit a quality control data sheet covering the chemical and physical tests conducted on the concrete patch material for the material in each shipment. Submit a Certified Test Report from an independent laboratory, audited by the Cement and Concrete Reference Laboratory that shows the material meets the property requirements.

TABLE 701-2
CONCRETE PATCH MATERIAL

Property	Requirements	Test Method
Compressive Strength	Min. 3000 psi after 1 day Min. 5000 psi after 28 days	ASTM C109
Bond Strength	Min. 2000 psi after 1 day	ASTM C882
Length Change	Max. 0.05% after 28 days	ASTM C157
Scaling Resistance	No Scaling (0 Rating) at 50 cycles	ASTM C672
Chloride Ion Permeability	Very Low (<1000 Coulombs) at 28 days	ASTM C1202

CFHWY00672-031725

SECTION 702 ASPHALT MATERIALS

Standard Modification

Replace Subsection 701-2.01 with the following:

702-2.01 ASPHALT BINDER. Meet AASHTO M 320 or M 332 for the specified Performance Grade, except as indicated in Table 702-2.01-1 Exceptions to Performance-Graded Binder Specifications.

**TABLE 702-2.01-1
EXCEPTIONS TO PERFORMANCE GRADED ASPHALT BINDER SPECIFICATIONS**

Performance Grade	AASHTO Specification	Viscosity AASHTO T 316	MSCR, AASHTO T 350			PAV, Dynamic Shear AASHTO T 315	Direct Tension AASHTO T 314
			JNR _{3.2} kPa ⁻¹	JNR Diff	% Recovery _{3.2}		
PG 52-28	M 320	None	—	—	—	None	Delete
PG 52-34 E	M 332	None	None	Delete	60 min.	None	Delete
PG 58-28 E	M 332	None	None	Delete	60 min.	None	Delete
PG 58-34 V	M 332	None	None	Delete	60 min.	None	Delete
PG 64-28 E	M332	None	None	Delete	60 min.	None	Delete
PG 52-40 E	M 332	None	None	Delete	75 min.	None	Delete
PG 58-34 E	M 332	None	0.25 max.	Delete	85 min.	None	Delete
PG 64-40 E	M 332	1 Pa•s max.	0.10 max.	Delete	95 min.	5000 max. @ 4°C	Delete

None indicates no exceptions from the listed test. Delete indicates this property is not required from the listed test.

Use asphalt binders without re-refined engine oil bottoms (REOB)/vacuum tower extenders (VTAE) as a modifier. REOB/VTAE are materials as defined in the Asphalt Institute document IS-235. Furnish a certificate of compliance according to Subsection 106-1.05.1 certifying that REOB/VTAE were not used as a modifier of asphalt binder.

HSM20.44-23.0801

702-2.03 EMULSIFIED ASPHALT.

Replace item 1. with the following:

1. Cationic Emulsified Asphalt. Meet AASHTO M 208, except CRS-2P meet AASHTO M316.

HSM20.32-21.1231

702-2.07 WARM MIX ASPHALT (WMA). Add the following to Table 702-3:

WMA Technology	Process Types	WMA Supplier
AD-here ULTRA 1	Chemical Additive	Arkema – Road Science
Cecabase RT	Chemical Additive	Arkema – Road Science

HSM20.44-23.0801

SECTION 703 AGGREGATES

Standard Modification

703-2.03 AGGREGATE FOR BASE AND SURFACE COURSE.

In Table 703-1 replace the line for Degradation Value with the following:

**TABLE 703-1
AGGREGATE QUALITY PROPERTIES FOR BASE AND SURFACE COURSE**

PROPERTY	BASE COURSE	SURFACE COURSE	TEST METHOD
Micro-Deval	15%, max.	15%, max.	AASHTO T 327

HSM20.40-050122

Special Provisions

Replace Subsection 703-2.04 with the following:

703-2.04 AGGREGATE FOR HOT MIX ASPHALT. Process and crush aggregate that is free from clay balls, organic matter, other deleterious material, and not coated with dirt or other finely divided mineral matter. Aggregate used must consist of sound, tough, durable rock of uniform quality.

Remove all natural fines passing a No. 4 sieve before crushing aggregates for Type IV, and **VH** mixes.

Coarse Aggregate. Aggregate retained on the No. 4 Sieve.

Meet Table 703-3 requirements:

**TABLE 703-3
COARSE AGGREGATE QUALITY FOR HMA**

Description	Specification	Type II, Class A	Type I; Type II, Class B; Type III	Type IV	Type VH
LA Wear, % max.	AASHTO T 96	45	45	45	45
Micro-Deval, % max.	AASHTO T 327	18	18	18	18
Sodium Sulfate Loss, % max. (5 cycles)	AASHTO T 104	9	9	9	9
Fracture, % min.	ATM 305	90, 2 face	80, 1 face	90, 2 face	98, 2 face
Flat-Elongated Pieces, % max.	ATM 306				
1:5		8	8	8	8
Absorption, % max.	ATM 308	2.0	2.0	2.0	2.0
Nordic Abrasion, % max.	ATM 312	-	-	-	8^a

a. Hard Aggregate that meets the Nordic Abrasion values specified may be obtained from, but not limited to, the following sources:

- MS 52-068-2, located at MP 217 on the Parks Highway near Cantwell
- Alaska Lime Co, Jim Caswell, located at MP 216.5 on the Parks Highway near Cantwell
- CalPortland plants located in Dupont Washington
- Jack Cewe Ltd located in Coquitlam British Columbia, Canada

Fine Aggregate. Aggregate passing the No. 4 sieve.

Aggregate shall meet the quality requirements of AASHTO M 29, including S1.1, Sulfate Soundness.

Aggregate for Type II, Class A mix shall not contain more than 10% natural fines (blend sand and mineral filler) added to the crushed aggregate, and shall not exhibit rut depth larger than 1/4-inch, as determined by ATM 419.

Fine aggregate for Type IV and V~~H~~ mixes:

- do not blend back natural sand
- shall be non-plastic as determined by ATM 205
- shall have a minimum uncompacted void content (Fine Aggregate Angularity) determined by AASHTO T 304, Method A, of 45%

TABLE 703-4
BROAD BAND GRADATIONS FOR HOT MIX ASPHALT AGGREGATE
Percent Passing by Weight

SIEVE	GRADATION				
	Type I	Type II	Type III	Type IV	Type V H
1 inch	100	-	-	-	-
3/4 inch	80-90	100	-	-	100
1/2 inch	60-84	77-99	100	100	65-90
3/8 inch	48-78	68-88	80-90	80-95	55-80
No. 4	28-63	48-68	44-81	55-70	40-60
No. 8	14-55	33-53	26-70	35-50	≤ 45
No. 16	9-44	20-40	16-59	20-40	≤ 35
No. 30	6-34	14-30	9-49	15-30	≤ 25
No. 50	5-24	9-21	6-36	10-24	≤ 20
No. 100	4-16	6-16	4-22	5-15	≤ 12
No. 200	4-7	3-6	4-7	4-7	4-7

CR703.1-050122

703-2.05 AGGREGATE FOR COVER COAT AND SURFACE TREATMENT.

In Table 703-5 replace the line for Degradation Value with the following:

TABLE 703-5
QUALITY PROPERTIES FOR COVER COAT AND SURFACE TREATMENT

Micro-Deval	AASHTO T 327	15%, max.
-------------	--------------	-----------

HSM20.40-050122

Special Provision

703-2.07 SELECTED MATERIAL.

Replace 1. Type A with the following:

1. Type A. Aggregate containing no muck, frozen material, roots, sod or other deleterious matter and with a plasticity index not greater than 6 as tested by ATM 204 and ATM 205. Meet the following gradation as tested by ATM 304:

<u>Sieve</u>	<u>Percent Passing by Weight</u>
No. 4	20-55%
No. 200	0-6%, determined on the minus 3-inch portion of the sample

CR703.1-050122

703-2.09 SUBBASE.

In Table 703-8 replace the line for Degradation Value with the following:

**TABLE 703-8
QUALITY PROPERTIES FOR SUBBASE**

Micro-Deval	AASHTO T 327	25%, max.
--------------------	---------------------	------------------

HSM20.40-050122

703-2.10 POROUS BACKFILL MATERIAL.

Add the following to the end of the paragraph:

Use Gradation A unless otherwise specified.

HSM20.33-123121

Special Provision

703-2.13 STRUCTURAL FILL. Replace Table 703-12 with the following:

**TABLE 703-12
AGGREGATE GRADATION FOR STRUCTURAL FILL**

SIEVE	PERCENT PASSING BY WEIGHT
3-inch	100
3/4-inch	75-100
No. 4	20-55
No. 200	0-6

Replace Subsection 703-2.16 with the following:

703-2.16 RECYCLED ASPHALT PAVEMENT (RAP). RAP shall be free of contamination and deleterious materials. RAP maximum particle size shall not exceed 1.5-inch.

CR703.1-050122

SECTION 705 JOINT MATERIAL

705-2.01 JOINT FILLERS. Meet AASHTO M 213.

705-2.02 JOINT SEALER.

Silicone Joint Sealer	ASTM D 5893
Hot Pour Joint Sealer (Asphalt)	AASHTO M 324, Type IV
Hot Applied Joint Sealer (Concrete)	AASHTO M 282
Hot Pour Joint Sealant (Concrete, Fuel-Resistant)	ASTM D 3581

705-2.03 BRIDGE SEAL.

1. Preformed Strip Seals and Compression Seals. Use preformed seals. Use preformed material meeting ASTM D 3542.

Submit five copies of a certified test report for preformed seal materials.

2. Silicone Expansion Joint Sealant. Use formed-in-place seals composed of 100 percent silicone meeting the requirements of ASTM D 5893, Type SL (Self-Leveling) for horizontal joints and ASTM D 5893, Type NS (Non-Sag) for curb, rail, and other vertical joints. Do not use acid cure sealants. Ensure the silicone sealant is compatible with the surface to which it is applied. Use a backer rod meeting ASTM C 578 when the joint width is 1/2 inch or greater.

705-2.04 JOINT MORTAR. Use a mixture of one part portland cement and two parts approved sand with water as necessary to obtain the required consistency. Use mortar within 30 minutes after its preparation.

705-2.05 FLEXIBLE WATERTIGHT GASKETS.

1. Ring gaskets for rigid pipe and precast manhole sections meeting AASHTO M 198.
2. Ring gaskets for flexible metal pipe meeting ASTM C 443. Continuous flat gaskets for flexible metal pipe meeting ASTM D 1056, Grade 2B3. Use gaskets with a thickness 1/2 inch greater than the nominal depth of the corrugation for bands with projections or flat bands and 3/8 inch for corrugated bands.

705-2.06 EXPANDED POLYETHYLENE. Use closed-cell expanded polyethylene planks with a density of 2.2 +/- 0.5 lb/ft³ as determined by ASTM D3575 and with a maximum compressive deflection of 50% at 17 psi +/- 5 as determined by ASTM D3575.

CFHWY00672-031725

**SECTION 706
CONCRETE AND PLASTIC PIPE**

Special Provisions

Replace Subsection 706-2.07 with the following:

706-2.07 CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE FOR CULVERTS, STORM DRAINS, AND UNDERDRAINS. Meet the following:

Corrugated Pipe and Fittings (non-pressurized)

AASHTO M 294 and 252

Type S

Perforations

1. Underdrains
2. Underdrains and Storm Drains

Class 2
Class 1

Joints

Subsection 705-2.05.3.

Polyethylene Pipe Manufacturer

1. Participate in the National Transportation Product Evaluation Program (NTPEP) work plan for HDPE thermoplastic pipe and listed on the NTPEP audit website displaying NTPEP compliance.
2. Conduct and maintain a quality control program under the NTPEP.
3. Provide a manufacturer's certificate of compliance identifying production lots for all materials.

Provide corrugated polyethylene pipe and fittings manufactured from high-density polyethylene (HDPE) virgin compounds. May use clean, reworked polyethylene materials from the manufacturer's own production.

Do not install pipe that is more than two years from the date of manufacture.

CR706.1-050119

SECTION 708 PAINTS

Standard Modification

708-2.01 PAINT FOR STEEL STRUCTURES.

3. Top Coat. In the 2nd sentence of the 1st paragraph, replace Federal paint specification "FSS No. 595B" with "AMS-STD-595".

HSM20.31-123121

Special Provisions

Replace Section 709 with the following:

SECTION 709 REINFORCING STEEL AND WIRE ROPE

709-2.01 REINFORCING STEEL.

1. Reinforcing Steel Bars. Furnish deformed steel bars of the type, grade, and size as specified. For steel reinforcing bars used in bridge structures, furnish bars meeting ASTM A 706, Grade 60. For all other structures, furnish bars meeting AASHTO M 31, Grade 60.
2. Headed Reinforcing Steel Bars. Furnish headed steel bars meeting the requirements of ASTM A 970. Use reinforcing steel meeting Section 709-2.01.1 unless otherwise noted.
3. Epoxy-Coated Reinforcing Steel Bars. Furnish epoxy-coated steel bars meeting the requirements of AASHTO M 284. Coat epoxy-coating reinforcing steel in an epoxy coating applicator plant certified in accordance with the Concrete Reinforcing Steel Institute (CRSI) Voluntary Certification Program. Use reinforcing steel meeting Section 709-2.01.1 unless otherwise noted.
4. Steel Wire. Furnish plain steel wire of the size specified that meets the requirements of AASHTO M 32.
5. Steel Bar Mats. Furnish deformed steel bar mats of the type, grade, size, and spacing as specified. Unless otherwise noted, furnish steel bar mats meeting the requirements of AASHTO M 54, Grade 60.
6. Steel Welded Wire Fabric. Furnish plain steel welded wire fabric of the size and spacing specified that meets the requirements of AASHTO M 55.
7. Epoxy-Coating Patch Material. Furnish epoxy-coating patch material meeting the requirements of AASHTO M 317.
8. Certification. Submit five copies of a certified test report covering chemical and physical tests conducted on all reinforcing steel to the Department for the material in each shipment.

709-2.02 WIRE ROPE OR WIRE CABLE. Meeting AASHTO M 30, 3/4 inch Type 1, Class A.

CFHWY00672-031725

**SECTION 714
PRESERVATIVES FOR TIMBER**

Standard Modification

714-2.01 PRESERVATIVES.

Replace the 2nd sentence of item 3. Round Timber Piling, with the following:

Use Category 4C for soil and freshwater contact.

HSM20.36-21.1231R

Special Provisions

Delete Section 715 and replace with the following:

SECTION 724 SEED

724-2.01 DESCRIPTION. Grass seed to provide a living vegetative cover.

724-2.02 MATERIALS. Provide seed mix as specified in the Special Provisions. Provide seed collected or harvested within 2 years of the targeted seeding date. Provide all seed in pure live seed (PLS) unless otherwise directed.

Furnish seed true of genus and species. Meet applicable requirements of the State of Alaska *Seed Regulations*, Alaska Administrative Code, Title 11, Chapter 34, (11 AAC 34), and the Federal Seed Act, 7 CFR Part 201.

The Engineer will review requests for genus, species, or cultivar substitutions(s). The Contractor shall submit a proposed seed mix accompanied by approval from the Alaska Plant Materials Center, and confirmation the vendor can provide the requested mix in quantities adequate for the project.

1. Prohibited and Restricted Noxious Weeds and Quarantined Pests. Furnish seed certified to be free of prohibited noxious weeds or quarantined pests, and certified to contain no more than the maximum allowable tolerances for restricted noxious weeds, according to 11 ACC 34.
 - a. Seed found to contain prohibited noxious weeds or quarantined pests will be rejected, according to 11 AAC 34.020(a) and 11 AAC 34.105 through 34.180, respectively.
 - b. Seed found to contain restricted noxious weed seed in excess of the maximum allowable tolerance per pound will be rejected, according to 11 AAC 34.020(b).

Prohibited and restricted noxious weeds are listed in 11 AAC 34.020, and can be viewed at the following URL: <http://plants.alaska.gov/invasives/noxious-weeds.htm>.

2. Labeling. Ensure each bag or container of individual seed species is labeled to meet requirements of 11 AAC 34.010. Do not remove labels from bags or containers.
3. Certification. Certify seed is free of prohibited noxious weeds and restricted noxious weeds are within allowable tolerances. Furnish to the Engineer a statement signed by the vendor identifying the lot number or lot numbers, certifying each lot of seed has been tested within the preceding nine months, by a recognized seed testing laboratory, a member of the Association of Official Seed Certifying Agency (AOSCA), or the Alaska Plant Materials Center.

Seed will be rejected if:

- a. Contains prohibited noxious weeds;
- b. Contains restricted noxious weeds above maximum allowable tolerances;
- c. Not certified as tested within the preceding nine months;
- d. Wet, moldy, or otherwise damaged in transit or storage; or
- e. Containers do not have labels or the labels have been removed.

Seed may be rejected for:

- a. Discrepancies in the lot numbers listed on the statement to the lot numbers indicated on the labels of the seed containers.

The Contractor shall immediately remove rejected seed from the project premises. If seed is rejected for containing prohibited noxious weeds or for exceeding maximum allowable tolerances of restricted noxious weeds, dispose of rejected seed according to 11 AAC 34.075(g).

CR724-113020

SECTION 726 TOPSOIL

726-2.01 TOPSOIL. Furnish topsoil that is representative of the existing, natural organic blanket of the project area, and free of prohibited and restricted noxious weeds (Prohibited and Restricted Noxious Weeds 11AAC 34.020 <http://plants.alaska.gov/invasives/noxious-weeds.htm>). Perform a quality test, as defined by ATM 203, on the soil to determine the organic content of the soil. Supply the results to the Engineer.

Soil with an organic content of 5 percent or more may be reused and spread on the finished slopes where topsoil is noted on the plans. Remove roots, stumps, unnatural material, and rocks greater than 3 inch in diameter from the organic material before it is graded onto the finished slope.

Soil with an organic content of less than 5 percent cannot be used as topsoil for the project. In this case furnish topsoil consisting of a natural friable surface soil without admixtures of undesirable subsoil, refuse or foreign materials having an organic content of 5 percent or more, as determined by ATM 203. The material shall be reasonably free from roots, clods, hard clay, rocks greater than 3 inches in diameter, noxious weeds, tall grass, brush, sticks, stubble or other litter, and shall be free draining and nontoxic. Notify the Engineer of the topsoil source location at least 30 calendar days before delivery of topsoil to the project from the identified location. The Engineer will inspect the topsoil and its sources before approval will be granted for its use.

**TABLE 726-1
LIMESTONE REQUIREMENTS**

Soil pH	Limestone, tons/acre
Above 6.0	0
5.0-6.0	1.5
Below 5.0	3.0

CR726-20.0101R

Special Provisions

Replace Section 727 with the following:

SECTION 727 SOIL STABILIZATION MATERIAL

727-2.00 GENERAL. Free of restricted and prohibited noxious weeds (11 AAC 34), seeds, chemical printing ink, germination and growth inhibitors, herbicide residue, chlorine bleach, (except where specified: rock, metal, plastics) and other deleterious materials and not harmful to plants, animals and aquatic life. Wood cellulose "paper" fiber, wood chips, sawdust, and hay are not permitted as stand-alone stabilization materials.

727-2.01 MULCH. Flexible blanket/covering, temporary degradable (bio/photo) form of erosion control. Use one of the following:

Dry Erosion Control, Stabilization Products. Hand applied or spread with mulch blower equipment.

1. Straw. Use straw, in an air-dried condition, from oats, wheat, rye, barley, or other approved grain crops that are free from noxious weeds, seeds, mold, or other materials detrimental to plant life. Straw material shall be certified weed-free straw using North American Invasive Species Management Association (NAISMA) Standards. In-lieu of certified weed-free straw provide documentation that the material is steam or heat treated to kill seeds or provide U.S. or state's department of agriculture laboratory test reports, dated within 90 days prior to the date of application showing that there are no viable seeds in the straw.
2. Shredded Bark Mulch. Shredded bark and wood with the following characteristics:
 - a. Not containing resin, tannin, or other compounds in quantities harmful to plant life.
 - b. Maximum length of individual pieces is 2 inches with 75% passing through a 1 inch sieve.
 - c. Will form a uniform ground cover/mat, have moisture absorption, retention, and percolation properties, not be susceptible to spreading by wind or rain providing a good growth medium.
 - d. May contain up to 50% shredded wood material.
 - e. Shredded wood material aged 1 year minimum prior to use.

Hydraulic Erosion Control Products (HECPs) Applied hydraulically.

A fiber mulch matrix: biodegradable and composed of wood, straw, coconut and other fibers natural and man-made. When applied, create a continuous, porous, absorbent high water holding, flexible blanket/mat/mulch/covering making intimate contact with, and adhering to sloped soil surface; permitting water infiltration; resists erosion and promotes rapid germination and accelerated plant growth. The fibers may be thermally processed, and cross-linked with a hydro-colloidal or linear anionic tackifier (curing period 24-48 hours) or mechanically-bonded (no curing period). When agitated in slurry tanks with water the fibers will become uniformly suspended, without clumping to form homogeneous slurry.

The HECPs shall be delivered premixed by the manufacturer. The HECP will contain only the materials provided in the sealed containers from the manufacturer. No added components are permitted after the manufacturer seals the product container, before application, during application or otherwise. Submit documentation dated within 3 years of application, from an independent accredited laboratory as approved by the Engineer, showing that the product's testing performance meets the requirements for the slope(s) to be protected on the project, according to the National Transportation Product Evaluation Program (NTPEP), Erosion Control Technology Council (ECTC) and or the Texas DOT/Texas Transportation Institute (TTI) Laboratory.

If the HECP contains cotton or straw provide documentation that the material is certified weed free using NAISMA Standards. In-lieu of certified weed-free straw, provide documentation that the material is steam or heat treated to kill seeds or provide U.S. or state's department of agriculture laboratory test reports, dated within 90 days prior to the date of application showing that there are no viable seeds in the straw.

The HECP shall contain a dye to facilitate placement and inspection of the material.

1. Wood Strand, Fiber.

A blend of angular, loose, long thin wood pieces with a high length to width ratio and that are frayed. Minimum 95% of strands between 2 inches and 10 inches, at least 50% of the length shall have a width thickness between 1/16 and 1/8 inch. No single strand shall have a width or thickness greater than 1/2 inch. Processed wood fiber with the following characteristics:

- a. Will remain in uniform suspension in water under agitation and will blend with grass seed, fertilizer and other additives to form homogeneous slurry.
- b. Will form a blotter-like uniform ground cover on application, have moisture absorption, retention and percolation properties, the ability to cover, and hold grass seed in contact with soil, and not create a hard crust upon drying providing a good growth medium.

2. Dried Peat Moss. Partially decomposed fibrous or cellular stems and leaves of any of several species of Sphagnum mosses with the following characteristics:

- a. Chopped or shredded to allow distribution through normal hydraulic type seeding equipment and capable of being suspended in water to form part of a homogeneous slurry.
- b. Free from woody substances and mineral matter such as sulfur or iron and with a pH value of between 4.0 and 6.5.
- c. Furnished in an air dry condition and containing less than 35% moisture by weight. Have a water holding capacity of not less than 800% by weight on an oven dry basis.

3. Fiber Matrix (FM) Mulch - Types.

- a. Stabilized Mulch Matrices (SMMs)
- b. Bonded Fiber Matrices (BFMs)
- c. Mechanical Bonded Fiber Matrix (MBFM)
- d. Polymer Stabilized Fiber Matrix (PSFM)
- e. Fiber Reinforced Matrices (FRMs)
 - Flexible Growth Medium (FGM)
 - Extended-Term Flexible Growth Medium (ET-FGM)

727-2.02 MATTING. Fiber mulches, mulch matrices, nets and turf reinforcement mats manufactured from wood fibers, straw, jute, coir, polyolefins, PVC, nylon and others creating dimensionally stable nets, meshes, geotextiles and blankets; creating a continuous, porous, absorbent, flexible blanket/mat/mulch/covering making intimate contact with and adhering to sloped soil surface, resisting erosion and promoting rapid germination and accelerated plant growth.

Rolled Erosion Control Products (RECPs) (Temporary Degradable and Permanent Erosion Control)

Use RECPs that bear the Quality and Date Oversight and Review (QDOR) Seal from the ECTC. Independent test results from the NTPEP, that the mulch, when tested according to ASTM 6459 Standard Test Method for Determination of Rolled Erosion Control Products (RECP), Performance in Protecting Hillslopes from Rainfall-Induced Erosion, meets the performance requirement using the Revised Universal Soil Loss Equation (RUSL).

Functional Longevity.

1. Temporary Degradable.

a. Duration.

1) Short-Term RECPs. (RECPs 3 - 12 months)

C_{Factor} = .15 maximum

Test Soil Type = Sandy Loam

(National Resources Conservation Service (NCRS) Soil Texture Triangle)

2) Moderate (Extended) -Term RECPs. (RECPs 24 months)

C_{Factor} = .05 maximum

Test Soil Type = Sandy Loam (NCRS Soil Texture Triangle)

- 3) Long-Term RECPs. (RECPs 36 months)
 $C_{\text{Factor}} = .01$ maximum
 Test Soil Type = Sandy Loam (NCRS Soil Texture Triangle)

b. Product types.

- 1) Mulch-Control Nets (MCNs). Planar woven natural fiber or extruded geosynthetic mesh used to anchor loose fiber matting/mulches.
- 2) Erosion Control Blankets (ECBs). Processed natural and/or polymer fibers, yarns or twines mechanically, structurally, or chemically bound together to form a continuous matrix with a minimum weight of 8 oz/yd² and a limiting shear stress of 0.45 lb/ft².
- 3) Netless. Fibers mechanically interlocked and/or chemically adhered together.
- 4) Single-net and Double-net. Fibers mechanically bound together by single or double netting.
- 5) Open Weave Textiles (OWTs). Fibers woven into a continuous matrix.

c. Materials.

- 1) Burlap. Standard weave with a weight of 3.5 to 10 oz/yd².
- 2) Jute Mesh Fabric. Cloth of a uniform, open, plain weave of undyed and unbleached single jute yarn. Use yarn that is loosely twisted and not varying in thickness more than one-half its normal diameter. Furnish jute mesh in rolled strips meeting the following requirements:
 - a) Width: 45 to 48 inches, ± 1 inch
 - b) 78 warp-ends per width of cloth (minimum)
 - c) 41 weft-ends per yard (minimum)
 - d) Weight: 20 ounces per linear yard, $\pm 5\%$
- 3) Woven Paper or Sisal Mesh Netting. Woven from twisted yarns available in rolls 45 to 48 inches wide. Mesh may vary from closed to open weave, ranging from 1/8 to 1/4 inch openings. Shrinkage after wetting may not exceed 20% of the surface area.
- 4) Knitted Straw Mat. Commercially manufactured ECB. Use photodegradable netting and biodegradable thread. Use straw, in an air-dried condition, from oats, wheat, rye, barley, or other approved grain crops that are certified weed free of prohibited and restricted noxious weed seed and quarantined pests, according to Alaska Administrative Code, Title 11, Chapter 34 (11 AAC 34), and in conjunction with North American Invasive Species Management Association (NAISMA) standards, and free of mold, or other objectionable materials detrimental to plant life. When straw or straw products certified according to 11 AAC 34 are not available, use non-certified products manufactured within Alaska before certified products manufactured in another state, country, or territory. Non-certified products manufactured in Alaska In-lieu of certified weed-free straw, provide documentation that the material is steam or heat treated to kill seeds or provide U.S. or state's department of agriculture laboratory test reports, dated within 90 days prior to the date of application showing that there are no viable seeds in the straw. Non-certified straw or straw products manufactured in another state, country, or territory shall not be used. ECB may contain coconut or fiber to reinforce the straw.
- 5) Woven/Curled Wood blanket. Machine produced mat of curled wood shavings with a minimum of 80% 6-inch or longer fibers, with consistent thickness and the fibers evenly distributed over the entire area of the blanket. Smolder resistant without the use of chemical additives. Cover the top side of the blanket with biodegradable extruded plastic mesh.
- 6) Coconut (Coir Fiber). Machine produced mat, ECB of consistent thickness and coir fiber evenly distributed over the area of the mat. Use bio/photo degradable netting and thread.

2. Permanent.

a. Product Types and Materials.

- 1) Turf Reinforcement Mats (TRMs). A rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh, and/or other elements, processed into a permanent, three-dimensional matrix of sufficient thickness with a minimum weight of 8 oz/yd² and a minimum limiting shear stress of 1.5 lb/ft². TRMs (may be supplemented with degradable components) shall impart immediate erosion protection, enhance vegetation establishment during and after maturation and permanent vegetation reinforcement providing long-term functionality.

727-2.03 SEDIMENT RETENTION FIBER ROLLS (SRFRs). Fiber rolls also referred to as wattles. Manufacture of photodegradable or biodegradable fabric netting without preservative treatment, evenly woven, free of crusted material, cuts, and tears. Manufacture stakes of photodegradable or biodegradable material (wood stakes, except as approved by the Engineer).

1. Filter Sock (Wattle)

- a. Fabric netting.
- b. Filled with wood fiber, straw, flax, rice, coconut fiber material.
- c. Minimum diameter 5 inches.

2. Compost Sock.

- a. Extra Heavy weight fabric netting with a minimum strand width of 5 mils.
- b. Filled with coarse compost.
- c. Minimum diameter 8 inches.

3. Coir Log.

- a. Woven wrap bristle coir twine netting.
- b. Filled with 100% coconut (coir) fiber uniformly compacted.
- c. Segments maximum length 20 foot, diameter as suited to the application and a density of 7 lbs/pcf or greater.
- d. Coir twine strength equal to 80 lb minimum weaved to a 2 inch x 2 inch opening pattern.
- e. Ties made of hemp rope by 1/4 inch diameter.

727-2.04 COMPOST. Suitable for serving as a soil amendment or an erosion control material. Sanitized, mature compost meeting local, state, and Federal quality requirements tested and certified by the U.S. Composting Council (USCC) under the Seal of Testing Assurance (STA) Program. Biosolids compost must meet the Standards for Class A biosolids outlined in 40 Code of Federal Regulations (CFR) Part 503. Additionally, meet the requirements of the AASHTO specifications:

1. Compost Blankets. Standard Practice for Compost for Erosion/Sediment Control (Compost Blankets) R 52.
2. Compost Filter Berms and Filter Socks. Standard Practice for Compost for Erosion/Sediment Control (Filter Berms and Filter socks) R 51.

727-2.05 TACKIFIER. Tackifier, viscous overspray, generally composed of dry powered vegetable gums derived from guar gum, psyllium and sodium alginase; asphaltic emulsions; petroleum distillates; co-polymer emulsions; and lignosulfonates and used to anchor soil, compost, seed, the mulch fibers to one another, and the ground. Contain no growth or germination inhibiting materials nor significantly reduce infiltration rates. Tackifier shall hydrate in water and readily blend with other slurry material. Tackifier options include:

1. Type A. Organic tackifier with certification of plant sources; or
2. Type B. Synthetic tackifier with certification confirming product is not harmful to plants, animals, or aquatic life.

727-2.06 POLYACRYLAMIDE (PAM). Use as a tie-down for soil, compost, seed and as a flocculent. Polyacrylamide (PAM) products shall meet the requirements of American National Standards Institute (ANSI)/National Sanitation Foundation International (NSF) Standard 60 for drinking water treatment, be anionic (not cationic), linear and not cross-linked with an average molecular weight greater than 5 Mg/mole, minimum 30 percent charge density; contain at least 80% active ingredients and a moisture content not exceeding 10% by weight.

Deliver PAM in a dry granular powder or liquid form.

727-2.07 GEOTEXTILE-ENCASED CHECK DAM AND SEDIMENT BARRIER. Urethane foam core encased in geotextile material (silt fence material Section 633), minimum 8 inches height by minimum base width of 16 inches by minimum 7 foot length. Overhang the geotextile 6 inch minimum each end with apron type ties by 24 inches each side of the foam core.

727-2.08 SANDBAG.

1. Sandbag Sack Fabric. Fabric shall be a nonwoven, needle punched design meeting the Minimum Average Roll Values (MARV) verified in accordance with ASTM D4759.
2. Seam Thread. Similar durability to the sandbag sack fabric.
3. Sandbag Fill Material.
 - a. Selected Material 703-2.07 Type B
4. Cinch Ties. Plastic ties or equivalent tie recommended by the sandbag manufacturer.

727-2.09 MANUFACTURED INLET PROTECTION SYSTEM.

1. Manufacturers:
 - a. Ultra Tech International – Ultra-DrainGuard
 - b. Bowhead Environmental and Safety - StreamGuard Exert II Sediment Insert
 - c. Enpac - Catch Basin Insert, Oil and Sediment or
 - d. Approved equal.

727-2.10 CLEAR PLASTIC COVERING. A clear plastic covering meeting the requirements of the National Institute of Standards and Technology (NIST) voluntary Product Standard PS 17 - 69 for polyethylene sheeting having a minimum thickness of 6 mils.

727-2.11 STAPLES. U-shaped staples for anchoring matting, approximately 6 inches long and 1 inch wide. Machine-made: No. 11 gage or heavier steel wire. Hand-made: 12-inch lengths of No. 9 gage or heavier steel wire.

CR727-12.0508R2

SECTION 730 SIGN MATERIALS

Special Provisions

730-2.04 SIGN POSTS.

Add No. 7:

7. Structural Tubing and W-Shape Beams.

- a. Structural tubing shall conform to ASTM A500, Grade B, or ASTM A501. The tubing shall be square and of the dimensions called for in the Plans with 0.2 inch thick walls. 0.4 inch diameter holes shall be drilled as required to permit mounting of the sign.
- b. W-shape beams shall conform to ASTM A36.
- c. Structural tubing and W-shape beams shall be hot dip galvanized according to 1.b. of this subsection. Damaged and abraded tubes and beams shall be repaired according to 1.c. of this subsection.

CR730.1-062204

Replace Subsection 730-2.05 with the following:

730-2.05 FLEXIBLE DELINEATOR POSTS. Durable fiberglass composite, polymer, or plastic material meeting the dimensions and colors shown on the Plans. Resistant to ultraviolet light, ozone and hydrocarbon damage and remain flexible at a temperature of minus 40 °F. Provide posts with reflectors that are capable of self-erecting and remaining serviceable after 5 head-on impacts at 55 mph and 10 impacts at 35 mph with an automobile at an air temperature of plus 40 °F.

Terminal Markers - Flexible (marker). The marker includes the pole/post/rod (pole), reflective and retroreflective sheeting and mounting hardware.

Provide durable markers: resistant to impact from (snow and vehicle), vandals, ultraviolet light, moisture, ozone, and hydrocarbons.

When the pole is loaded, the marker shall bend/flex, remain flexible and oriented as installed continuing to function as designed without permanent displacement along the length of the member. Provide the flexibility in the primary vertical element, a connecting device between the vertical element and connection to the support member (spring or other) or a combination.

Provide a connection sufficient to transfer the loads from the pole to the supporting member without reducing the strength, flexibility, or durability of either. The connection shall not negatively influence the performance of the guardrail. Provide approval of the connection from the marker manufacturer and support member manufacturer (if proprietary).

- Design Loads:
 - Impact load from snow thrown by snowplows
 - Weight of snow covering the pole (snow thrown from snowplows)
 - Wind loads (100 mph, 3 sec gust)
- Service Temperature Range: -40° F to +140° F.

- Pole:

1. Material:

- Steel, or
- Stainless Steel, or
- Other Poles:
 - (a) Continuous glass fiber and marble reinforced thermosetting composite, or
 - (b) Engineered plastic alloy, or
 - (c) Fiberglass Reinforced Polyester (FRP)
 - (d) High-Impact Polyolefins

2. Dimensions

- Top of Pole: 60 inches to 84 inches above top of guardrail
- Width/Diameter: minimum = 1 1/4 inches, maximum = 2 inches (steel/stainless steel not be greater than 5/8 inch diameter)
- Thickness: as required by design

3. Visibility:

- Daytime: Pole - color orange
 - a. Steel and Stainless Steel Poles: Applied permanent finish.
 - b. Other Poles: Color pigment ultraviolet stabilized and solid through the cross section from end to end.
- Nighttime: Added retroreflective sheeting - color white
 - a. Approximately 12 square inches visible from the traveled way before and after the marker. Applied to a flag attached to the pole or as banding applied directly to the pole. (A flag is required when using steel/stainless steel poles.)
 - b. Place top edge of flag/banding 1 inch from top of pole.
 - (1) Flag: Single retroreflective sheet each face
 - (2) Banding: Two bands completely around marker, 4 inches between bands

- Hardware and Fasteners:

- Steel, and/or
- Stainless Steel, or
- Aluminum alloy (hardware only)

Manufacturers of flexible markers (snowpoles):

Manufacturer	Model	Type	Contact
Nordic Fiberglass, Inc.	FF2	Steel Pole w/ Flag	Ph: (218) 745-5095
PEXCO	Model 3639	High-Impact Polyolefins	Ph: (404) 564-8560
New Century Northwest, LLC	NCN2549	Engineered Plastic Alloy	Ph: (541) 485-5566
Carsonite Composites, LLC	SNFB	Continuous glass fiber and marble reinforced thermosetting composite	Ph: (800) 648-7916

Submit manufacturer's specifications to the Engineer for review and approval before ordering terminal markers.

CR730.2-122217

APPENDIX A
CONSTRUCTION SURVEY REQUIREMENTS

Blank Page

APPENDIX B
ENVIRONMENTAL PERMITS

Blank Page

APPENDIX C
MATERIAL CERTIFICATION LIST

HIGHWAY MATERIALS CERTIFICATION LIST

Project Name Victory Road Pavement Preservation

Project Number 0001726/CFHWY00672

Project Engineer Signature

Unshaded boxes indicate who approves the manufacturer's certificate of compliance or materials submittals. If two boxes aren't shaded, either approving authority may be used.

Materials Item	Specification 2020 or Std. Mod./Special Provisions, if noted	Construction		Design		Regional Traffic Engineer	Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g. Binder #
		Project Engineer	Regional Materials or QA Engineer	Design Engineer of Record	State Mod./Bridge Engineer		*Qualified Products List (QPL)	State Materials or QA Engineer		
202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS										
Timber, Pressure Treated Steel Pipe, Galvanized Steel Fasteners, Galvanized Reflectors Mail Boxes	202-2.01								CRSP	
	202-2.01								CRSP	
	202-2.01								CRSP	
	202-2.01								CRSP	
	202-3.02/AK Std. Plans								CRSP	

308 CRUSHED ASPHALT BASE COURSE

Asphalt Concrete Aggregate Base Course Emulsified Asphalt	existing									
	703-2.03									
	702 (CSS-1)									

401 HOT MIX ASPHALT PAVEMENT

Mix Design Liquid Anti-Strip Additive Asphalt Binder Joint Adhesive Joint Sealant Warm Mix Asphalt Asphalt Release Agent	401-2.09								CRSP	
	Mix-Design									
	401-2.01								CRSP	
	401-2.03/702-2.05								CRSP	
	401-2.04, 702-2.06								CRSP	
	401-2.05/702-2.07								CRSP	
	401-2.06/702-2.08								CRSP	

Unshaded boxes indicate who approves the manufacturer's certificate of compliance or materials submittals. If two boxes aren't shaded, either approving authority may be used.

Materials Item	Specification 2020 or Std. Mod./Special Provisions, if noted	Construction		Design			Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g. Binder #
		Project Engineer	Regional Materials or QA Engineer	Design Engineer of Record	State Bridge Engineer	Regional Traffic Engineer	*Qualified Products List (QPL)	State Materials or QA Engineer		
501 CONCRETE FOR STRUCTURES										
Concrete Mix Design	501-2.02									
	501-2.01.5, 701-2.03									
Epoxy Adhesive for Crack Sealing	501-2.01.5									
Epoxy Adhesive for Crack Injection	501-2.01.5									
Low-Viscosity Resin	501-2.01.5, 712-2.19									
Epoxy Bonding Agents	501-2.01.5									
Concrete Anchor Bolts and Inserts	712-2.20									
Asphalt Felt	501-2.01.4									
Curing Materials	711-2.01									
602 STRUCTURAL PLATE PIPE										
Flexible Watertight Gaskets										
Ring Gaskets for Rigid Pipe & Precast Manhole Sections	705-2.05									
Ring Gaskets for Flexible Metal Pipe	705-2.05									
Elastomeric Seals for Plastic Pipe	705-2.05									
Corrugated Steel Pipe, Pipe Arches, and Underdrains	707-2.01									
Corrugated Aluminum Alloy Culvert Pipe and Underdrains	707-2.03									
Structural Plate Culverts	707-2.04									

*Unshaded boxes under QPL do not indicate that the materials are currently on that list. They indicate materials with potential for being on the QPL once qualified. See Section 106-1.05 for submittal requirements.

Unshaded boxes indicate who approves the manufacturer's certificate of compliance or materials submittals. If two boxes aren't shaded, either approving authority may be used.

Materials Item	Specification 2020 or Std. Mod./Special Provisions, if noted	Construction		Design		Regional Traffic Engineer	Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g. Binder #
		Project Engineer	Regional Materials or QA Engineer	Design Engineer of Record	State Bridge Engineer		*Qualified Products List (QPL)	State Materials or QA Engineer		
603 CULVERTS AND STORM DRAINS										
Flexible Watertight Gaskets										
Ring Gaskets for Rigid Pipe & Precast Manhole Sections	705-2.05.1									
Ring Gaskets for Flexible Metal Pipe	705-2.05.2									
Elastomeric Seals for Plastic Pipe	705-2.05.3									
Corrugated Steel Pipe & Pipe Arches										
Zinc-Coated CSP, __ inch	707-2.01.1									
Zinc-Coated CSP Arch, __ inch	707-2.01.1									
Aluminum-Coated CSP Pipe, __ inch	707-2.01.2									
Aluminum-Coated CSP Pipe Arch, __ inch	707-2.01.2									
Aluminum-Zinc Alloy Coated CSP Pipe, __ inch	707-2.01.3									
Aluminum-Zinc Alloy Coated CSP Pipe Arch, __ inch	707-2.01.3									
Bituminous Coated Corrugated Steel Pipe, Pipe Arches and Underdrains, __ size	707-2.02									
End Sections for __ inch CSP Pipe	707-2.01/Plans									
End Sections for __ inch CSP Arch	707-2.01/Plans									
Corrugate Aluminum Pipe										
Corrugated Aluminum Alloy Pipe, __ inch	707-2.03									
End Section for __ inch Corrugated Aluminum Alloy Pipe, __ inch	707-2.03/Plans									
Galvanizing	716-2.07									
Culvert Marker Posts (Flexible Delineator Posts)	730-2.05								CRSP	
Culvert Marker Strap and Seals	603-2.01								CRSP	

*Unshaded boxes under QPL do not indicate that the materials are currently on that list. They indicate materials with potential for being on the QPL once qualified.
See Section 106-1.05 for submittal requirements.

Unshaded boxes indicate who approves the manufacturer's certificate of compliance or materials submittals. If two boxes aren't shaded, either approving authority may be used.

Materials Item	Specification 2020 or Std. Mod./Special Provisions, if noted	Construction		Design			Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g. Binder #
		Project Engineer	Regional Materials or QA Engineer	Design Engineer of Record	State Bridge Engineer	Regional Traffic Engineer	*Qualified Products List (QPL)	State Materials or QA Engineer		
615 STANDARD SIGNS										
Sheet Aluminum	730-2.01/Plans									
High Density Overlay Plywood	730-2.02									
Sign Framing Members	Plans								CR Detail	
Retroreflective Sheeting	730-2.03									
Orange Background Signs	615-2.01.2								CRSP	
Reflective Sheeting Warranty	615-2.01.5								CRSP	
Sign Posts										
Metal Pipe Posts	730-2.04.1									
Perforated Steel Posts	730-2.04.2									
Wide Flange Posts	730-2.04.4									
Flanged Channel Posts	730-2.04.5									
Square Non-Perforated Steel Tubes	730-2.04.6									
Zinc Coating for Repairs	730-2.04.6.b									
Flexible Delineator Posts	730-2.05								CRSP	
Acrylic Prismatic Reflectors	730-2.06									
Structural Tubing and W-Shape Beams.	730-2.04.7									
Sign Bases										
Slip Base	615-2.01.3/Plans								CRSP	
Breakaway Base	615-2.01.3/Plans								CRSP	
Frangible Couplings	615-2.01.3/ASP								CRSP	
Concrete Mix Design	615-2.01.3/501-2.02/550-2.02								CRSP	

*Unshaded boxes under QPL do not indicate that the materials are currently on that list. They indicate materials with potential for being on the QPL once qualified. See Section 106-1.05 for submittal requirements.

Unshaded boxes indicate who approves the manufacturer's certificate of compliance or materials submittals. If two boxes aren't shaded, either approving authority may be used.

Materials Item	Specification 2020 or Std. Mod./Special Provisions, if noted	Construction		Design		Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g. Binder #
		Project Engineer	Regional Materials or QA Engineer	Design Engineer of Record	State Bridge Engineer	Regional Traffic Engineer	*Qualified Products List (QPL)		
616 THAW PIPE AND THAW WIRES									
Thaw Pipe									
Pipe	616-2.01								
Fittings	616-2.01								
Pipe Hangers	616-2.01								
Braces for Stand Pipe	616-2.01								
Bolts and Nuts	616-2.01								
Galvanizing for Pipe and Braces for Stand Pipe	616-2.01								
Galvanizing Fittings and Bolts and Nuts	616-2.01								
Conduits and Fittings									
Conduit, Couplings, Elbows and Nipples	616-2.02.1.a								
Fittings and Miscellaneous Conduit Hardware	616-2.02.1.b								
Heat Cable	616-2.02.2								
Controls									
Thermostat	616-2.02.3.a								
Contactor	616-2.02.3.b								
Switch	616-2.02.3.c								
Conductors									
Service and Feeder Cables	616-2.02.4.a								
Underground Wire	616-2.02.4.b								
Branch Circuit Wire	616-2.02.4.c								
Control Wire	616-2.02.4.d								
Device, Junction, and Pull Boxes	616-2.02.5								
Receptacles, Remote Power	616-2.02.6								

*Unshaded boxes under QPL do not indicate that the materials are currently on that list. They indicate materials with potential for being on the QPL once qualified. See Section 106-1.05 for submittal requirements.

Unshaded boxes indicate who approves the manufacturer's certificate of compliance or materials submittals. If two boxes aren't shaded, either approving authority may be used.

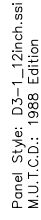
Materials Item	Specification 2020 or Std. Mod./Special Provisions, if noted	Construction		Design			Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g. Binder #
		Project Engineer	Regional Materials or QA Engineer	Design Engineer of Record	State Bridge Engineer	Regional Traffic Engineer	*Qualified Products List (QPL)	State Materials or QA Engineer		
616 THAW PIPE AND THAW WIRES										
Circuit Breakers	616-2.02.7/Plans									
	616-2.02.8									
	616-2.02.9									
	616-2.02.10									
618 SEEDING										
Seed Fertilizer Soil Stabilization Material	724									
	618-2.01/725								CRSP	
	727								CRSP	
641 EROSION, SEDIMENT AND POLLUTION CONTROL										
Materials	641-2.05								CR Special Provision - 641 Control and Stabilization Materials identified and documented in SWPPP and approved on project.	
642 CONSTRUCTION SURVEYING AND MONUMENTS										
Monument Cases Primary Monument Secondary Monument	642-2.01								CRSP	
	642-2.01								CRSP	
	642-2.01								CRSP	
643 TRAFFIC MAINTENANCE										
Traffic Control Devices	643-3.04								CR Special Provision - 643 Materials approved on project with TCP conforming to Alaska Traffic Manual (ATM).	
670 TRAFFIC MARKINGS										
Traffic Paint, Glass Beads Methyl Methacrylate Pavement Markings, Beads, Anti-Skid Combined Cert. Raised and Recessed Pavement Markers	708-2.03, 712-2.08									
	712-2.17, 712-2.18								CRSP	
	712-2.15/Plans									
Additional Materials										

*Unshaded boxes under QPL do not indicate that the materials are currently on that list. They indicate materials with potential for being on the QPL once qualified.
See Section 106-1.05 for submittal requirements.

Blank Page

APPENDIX D
SIGN SHOP DRAWINGS

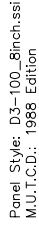
1:20

[illegible]

Letter locations are panel edge to lower left corner

[illegible]

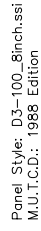
1:20

[illegible]

Letter locations are panel edge to lower left corner

[illegible]

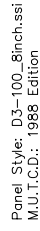
1:20

[illegible]

Letter locations are panel edge to lower left corner

[illegible]

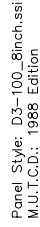
1:20

[illegible]

Letter locations are panel edge to lower left corner

[illegible]

1:20

[illegible]

Letter locations are panel edge to lower left corner

[illegible]

Blank Page

APPENDIX E
TEMPORARY CONSTRUCTION EASEMENTS

Blank Page

APPENDIX F
DRAFT PERMITS

Blank Page