

MEMORANDUM

State of Alaska

Department of Transportation and Public Facilities

to: Distribution

DATE: December 8, 2025

FROM: Matthew Hansen, P.E.

TELEPHONE: 269-0602

SUBJECT: **Anchorage Area Drainage Preservation
Program No. 0001822 / CFHWY01389
PIH/PS&E Combined Review**

Attached for final review and comment 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 (L:) drive at <\\dot.soa.alaska.gov\shared\AVI\Admin\FORMS\FORMS> -> Pre PS&E Review comments.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.

Timesheet coding is as follows:

IRIS Project No. CFHWY00851

(Note: The project being reviewed is a "child" to the "parent" project CFHWY00851. Please use this "parent" project number for your timesheet.)

IRIS Activity: __ __ P (input your own activity code in the blank spaces)

IRIS Phase: T02015

IRIS Template: TTPJ001

PS&E Review

PS&E REVIEW COMMENTS are due on Wednesday January 7, 2025. The review meeting will be held at **1:00 PM** on Tuesday January 13, 2025 in the **Main Conference Room**. Please **E-mail comments, using the comment form, to Ryan Harris (ryan.harris@alaska.gov) and Matthew Hansen (matthew.hansen@alaska.gov)**.

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

dot.alaska.gov/creg/design/highways/PS&E_Review/CFHWY01389/

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

Microsoft Teams:	(907) 202-7104
Conference ID:	968 689 0#

DISTRIBUTION (1 copy, MS 2525 unless otherwise noted):

* Luke Bowland, Pre-Construction Engineer

Highway Design

Sean Baski, Highway Design Group Chief
Ryan Harris, Project Manager, **(4+CD)**
Fred Park, Spec/Estimating Engineer, Highway Design
* Chris Post, Standards Manager

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* Mike San Angelo, Statewide Materials Eng. (MS 2538)
* Mitch Miller, Central Region Materials, (MS 2526)

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* Electronic Only

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Orion LeCroy, Regional Hydrologist
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Right-of-Way

* Melanie Arnolds, Right-of-Way Group Chief
* Bob Keiner, ROW Engineering Supervisor
* James Sowerwine, ROW, 2525
* Lorraine Kastner, Appr. & Acq Supervisor

Planning

* Ben White, Planning Group Chief
* (vacant), Planning Manager, Planning
* Justin Zarr, Hwy Data Supervisor, Planning

Surveys

* Travis Test, Survey Manager

Project Control

* Jennifer Coisman, Project Control Group Chief

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION



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

**Anchorage Area Drainage Preservation
Program No. 0001822 / CFHWY01389**

**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. Invitation (yellow)
 - INVITATION TO BID 25D-7 (CR 7/18)
2. Bid Notices (yellow)
 - REQUIRED DOCUMENTS 25D-4H (11/23)
 - FEDERAL EEO BID CONDITIONS 25A-301 (03/23)
3. Forms (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-COMPLIANT MINIMAL USE & DE MINIMIS REGISTER 25D-60B (10/25)
 - EEO-1 CERTIFICATION 25A-304 (10/19)
 - DOT&PF TRAINING PROGRAM REQUEST 25A-310 (5/13)
 - TRAINING UTILIZATION REPORT 25A-311 (1/16)
 - 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. Contract Provisions and Specifications (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. Federal Wage Rates

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

**Anchorage Area Drainage Preservation
Program No. 0001822 / CFHWY01389**

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 XXth day of XXXX 2026**. 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: Anchorage, Alaska
Contracting Officer: Sean L. Holland, P.E., Regional Director
Issuing Office: Central Region
State Funded Federal Aid

Description of Work:
This federally funded will address the significant amount of deteriorating and damaged storm drain systems within the Group A limits through rehabilitation using trenchless construction methods.

Project DBE Utilization Goal: Race-Neutral

The Engineer's Estimate is between **\$2,500,000** and **\$5,000,000**

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:

<p>Bidding Documents for Project: Anchorage Area Drainage Preservation Program No. 0001739 / CFHWY00851</p>	<p>ATTN: State of Alaska Department of Transportation & Public Facilities PO Box 196900 4111 Aviation Avenue Anchorage, AK 99519-6900</p>
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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 **\$100.00** 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 **Ryan Harris, P.E.**

Email: ryan.harris@alaska.gov

Phone: (907) 269-0568

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/dcsspecs/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/dcspecs/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-1gg9j9gk.html>
 - b. Alaska Test Methods Manual (Lab & Field), May 19, 2025 Edition (\$25.00). Available online at: www.dot.state.ak.us/stwddes/desmaterials/mat_waqtc/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:
 - Chugach Electric Association, Inc. (CEA) Electrical Facility Clearance Requirements <https://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. Erosion, Sediment Control Plan (ESCP). Anchorage Area Drainage Preservation, 0001822/ CFHWY01389, November, 2025.
 - g. Transportation Management Plan (TMP). Anchorage Area Drainage Preservation, 0001822/ CFHWY01389, November, 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 U.S. Department of Transportation issued an Interim Final Rule (IFR) on October 3, 2025 with an immediate effective date. The rule removes race- and sex-based presumptions in Disadvantaged Business Enterprise (DBE)/Airport Concessions DBE (ACDBE) qualifications and requires the Alaska Unified Certification Program (AUCP) to recertify all applicants based on evidence of social or economic disadvantage.

Until this recertification process is complete for all firms, the Department cannot count DBE participation toward overall DBE goals. In anticipation of recertification, the Department is still requiring submission of DBE paperwork for all projects, to include Good Faith Effort (GFE) and DBE Utilization Forms with the following guidance:

As a result:

- There are no mandatory DBE contacts required for Good Faith Effort (GFE) documentation.
- DBE Commitment Forms may be marked as "Not Applicable".
- Any submitted DBE Utilization Forms should reflect \$0.00 DBE participation.

The Interim Final Rule is available here:

<https://www.federalregister.gov/documents/2025/10/03/2025-19460/disadvantaged-business-enterprise-program-and-disadvantaged-business-enterprise-in-airport>

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. **Alaska DOT&PF Bidders List Form.** All bidders on federally funded projects must submit the Alaska DOT&PF Bidders List Form with their Bid submittal at the time of bid opening. This is a federal requirement of all bidders, but is not a condition of responsiveness.

Fill out the Alaska DOT&PF Bidders List Form for all subcontractors contacted for quotes regardless of whether they are the successful subcontractor. Ensure the NAICS codes submitted in the Alaska DOT&PF Bidders List Form align the subcontractor scope for the work requested with the appropriate federal code. This may result in multiple NAICS codes for each subcontractor.

Vendor IDs are available at <https://dot.alaska.gov/procurement/awp/vendorcheck.html>

If a subcontractor does not have a Vendor ID in AASHTOWare, leave that field blank but fill in the Vendor Name and applicable NAICS codes.

For electronically submitted bids, attach a copy of the completed Excel file as an attachment in BidX. If submitting a manual bid, email the Excel file to the regional contracts office conducting the procurement prior to the bid opening.

Central – crdotpfcontracts@alaska.gov

Northern – dot.nrcontracts@alaska.gov

Southcoast – srdotpfcontracts@alaska.gov

The collection of this information is a requirement of 49 CFR 26.11(c) and is required of all bidders at the time of bid to ensure DOT&PF's compliance with Federal Regulation.

9. **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/>

10. **Section 408 and 703 Hard Aggregate.** Hot Mix Asphalt, Type VH requires hard aggregate. Refer to the table in 703-2.04 Coarse Aggregate for the specified Nordic Abrasion value. Material suppliers are also included in 703-2.04.
11. **Limitation of Operation.** Limit disturbed unstabilized ground. Refer to Subsection 652-1.04 Limitation of Operation for further information.
12. **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.

CSNtB-25.1001_SSHC20

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PART 4

**STANDARD MODIFICATIONS
AND
SPECIAL PROVISIONS**

To the **STATE OF ALASKA**



**STANDARD
SPECIFICATIONS
FOR
HIGHWAY CONSTRUCTION**

**2020
EDITION**

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TABLE OF CONTENTS

Section	Page
Special Notice to Bidders	
Standard Modifications and Special Provisions	
Table of Contents	

DIVISION 100 — GENERAL PROVISIONS

102	Bidding Requirements and Conditions	3
104	Scope of Work	4
105	Control of Work	5
106	Control of Material	6
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

202	Removal of Structures and Obstructions	19
-----	--	----

DIVISION 300 — BASES

DIVISION 400 — ASPHALT PAVEMENTS AND SURFACE TREATMENTS

408	Hot Mix Asphalt Pavement – Type VH	25
-----	--	----

DIVISION 500 — STRUCTURES

550	Commercial Concrete	45
-----	---------------------------	----

DIVISION 600 — MISCELLANEOUS CONSTRUCTION

603	Culverts and Storm Drains	49
604	Manholes and Inlets	53
641	Erosion, Sediment, and Pollution Control	55
642	Construction Surveying and Monuments	77
643	Traffic Maintenance	78
644	Services to be Furnished by the Contractor	100
645	Training Program	102
646	CPM Scheduling	105
651	Control of Work – Supplemental Requirements	106
652	Prosecution and Progress – Supplemental Requirements	107
656	Cured in Place Pipe	108

DIVISION 700 — MATERIALS

703	Aggregates	119
-----	------------------	-----

APPENDIXES

Appendix A	Construction Survey Requirements
Appendix B	Environmental Permits
Appendix C	Material Certification List
Appendix D	Temporary Construction Easements

TABLE OF CONTENTS

Section

Page

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DIVISION 100 — GENERAL PROVISIONS

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**SECTION 102
BIDDING REQUIREMENTS AND CONDITIONS**

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.

HSM20.42-22.0430

SECTION 104 SCOPE OF WORK

Standard Modification

104-1.01 INTENT OF CONTRACT.

Replace the second paragraph with the following:

The Contractor is responsible for the means, methods, techniques, sequence, and procedures of construction, safety, and quality control. This includes ensuring safety and overseeing the safety of all personnel and Subcontractors. In the event of a multi-employer site, the Contractor is the controlling employer responsible for coordinating site-wide safety efforts, ensuring compliance with applicable safety regulations, and mitigating potential hazards across all employees, Subcontractors or suppliers on the site, consistent with any applicable federal, state, and local laws, rules, regulations, and ordinances.

HSM20.53-25.0610

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.

HSM20.2-20.1130-1

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

C105.5-16.0128-2

Standard Modification

105-1.05 COOPERATION BY CONTRACTOR.

Replace the second paragraph with the following:

Either the Contractor's Superintendent or an acting Superintendent with authority to represent and act for the Contractor shall be available on-site, or within a reasonable distance to ensure timely response and oversight of the project whenever work is occurring. The Contractor shall employ, as its agent, a competent superintendent thoroughly experienced in the work being performed and capable of reading and thoroughly understanding the Plans and Specifications.

The Contractor shall be responsible for maintaining a safe work environment, ensuring compliance with all applicable safety regulations, and overseeing the safety of all work being performed. The Superintendent shall have the Contractor's authority to stop work and implement immediate corrective action if safety concerns arise, or if the work is not being performed in accordance with the Contract documents.

The Contractor shall provide 24-hour contact information for the Superintendent. The Contractor shall ensure that the superintendent is available at all times to receive and execute Directives and other instructions from the Engineer, to supervise personnel and to coordinate the work of subcontractors. The Contractor shall give the superintendent full authority to supply the resources required. The Contractor shall furnish superintendence regardless of the amount of work sublet.

HSM20.52-25.0610

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.

C105.6-23.0601

**SECTION 106
CONTROL OF MATERIAL**

Special Provision

106-1.01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS.

Replace the fourth paragraph of 106-1.01 with the following:

The Contractor shall submit a certificate of compliance according to Subsection 106-105 for each item listed on the Material Certification List. The Engineer may authorize the use of articles, materials, or supplies based on a certificate of compliance Form 25D-62 Certificate of Domestic Materials Compliance. Materials incorporated into the project on the basis of a certificate of compliance may be tested or verified 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.

Replace the BUY AMERICA PROVISION with the following:

DOMESTIC MATERIALS PREFERENCE PROVISION. On projects using federal-aid funds the Contractor shall ensure all Iron and Steel Products, Manufactured Products, and Construction Materials, incorporated into the project are produced in the United States as required by 23 CFR 635.410-Buy America requirements (Iron, Steel, and Manufactured Products), and 2 CFR 184-Buy America Preferences for Infrastructure Projects (Construction Materials).

Domestic material requirements apply when articles, materials, or supplies are permanently incorporated into the work. Domestic material requirements do not apply to articles, materials, or supplies: (i) brought temporarily to the construction site and removed at or before the completion of the project, e.g., tools, construction equipment, Jersey barriers; or (ii) used by the Contractor to facilitate construction that are left in place upon completion of the work and are not required to be permanently installed as part of the contract requirements.

An article, material, or supply shall only be classified as an iron or steel product, a manufactured product, a construction material, or other material. An article, material, or supply shall not be considered to fall into multiple categories.† The classification of an article, material, or supply as falling into one of the categories listed must be made based on its status at the time it is brought to the work site for incorporation into the project. The work site is the location of the project at which the articles, material, or supply will be incorporated.

†As addressed in paragraph 3) below, 23 CFR 635.410(c)(2) creates an exception to the single category requirement regarding precast concrete products (Precast Concrete) and intelligent transportation systems (ITS) and other electronic hardware systems cabinets and other enclosure.

DOMESTIC MATERIAL CATEGORIES:

1) IRON AND STEEL PRODUCTS (23 CFR 635.410). Defined as articles, materials, or supplies that consist wholly or predominantly of iron and steel or a combination of both. To be classified as domestic, all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

If the cost of iron and steel content of an article, material, or supply exceeds 50 percent of the total cost of all components, the iron and steel must meet the domestic materials requirements of the Iron and Steel Products of this provision. The remaining components are then exempt from any domestic procurement requirement.

The cost of iron or steel is the cost of the iron and 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. Buy America requirements do not apply to iron ore, pig iron, and processed, pelletized and reduced iron ore.

Iron and Steel Minimal Use:

All wholly or predominantly iron and steel, or a combination of both, products incorporated into the work, shall be manufactured in the United States. Minimal amounts of iron and steel products of foreign or unknown 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 (established at award), 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.

- 2) CONSTRUCTION MATERIALS (2 CFR 184).** Defined as the articles, materials, or supplies that consist of only one of the items listed. Each material has a specific standard to be considered in compliance with domestic materials requirements. The items are:
- a. Non-ferrous metals. All manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.
 - b. Plastic and Polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiberoptic cables). 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.
 - c. Glass (including optic glass). All manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States.
 - d. Fiber Optic Cable (including drop 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-bases products, or any others.
 - e. Optical Fiber. All manufacturing process, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.
 - f. Lumber. All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States.
 - g. 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.
 - h. 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 a Construction Material contains, as minor additions, 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.

- 3) MANUFACTURED PRODUCTS (23 CFR 635.410).** Defined as 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. Manufactured products are acceptable under this provision if the product was manufactured in the United States. For the purposes of this provision, "manufactured in the United States" means that the final assembly of the product occurred in the United States.

For Precast Concrete and ITS and other electronic hardware systems cabinets and other enclosures that are classified as manufactured products, the components that are predominantly steel or iron or a combination of both must comply with the domestic materials requirements of the Iron and Steel Products in paragraph 1) above.

Declare all manufactured products on Form 25D-62 regardless of their exemption.

4) OTHER MATERIALS. Defined as articles, materials, or supplies that do not meet the definition of Iron and Steel Products, Manufactured Products, or Construction Materials. These materials do not have any requirements for domestic sourcing. This includes the following items that are specifically categorized as other (excluded) materials per BABA Section 70917(c) of the Infrastructure Investment and Jobs Act of 2021.

1. Cement and cementitious materials;
2. Aggregates such as stone, sand, or gravel; or
3. Aggregate binding agents or additives

The Contractor shall submit a completed Non-Compliant Minimal Use & 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 prior to incorporating the non-compliant item on the subject federal-aid Project, (as defined by the NEPA decision).

The Contractor shall submit a completed Certificate of Domestic Materials Compliance Form 25D-62 for all materials incorporated into the project. The Department will not allow installation of, nor pay for, products that must comply with Domestic Materials requirements until the Contractor has submitted acceptable Forms 25D-60 and 25D-62.

Non-compliant Iron and Steel Products, Manufactured Products, and Construction Materials in Excess of the minimal use and/or the de minimis amounts are prohibited and shall be immediately replaced at no expense to the State. Failure to comply may also subject the Contractor to default, suspension, or debarment.

The entity 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, 2 CFR 200.322, and 2 CFR 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 Domestic Materials requirements.

De Minimis Waiver:

Notwithstanding the domestic materials requirements outlined in this section regarding Manufactured Products and Construction Materials, US DOT has adopted a limited, non-domestic content waiver regarding articles, materials, and supplies used in the project. As applicable here, US DOT has determined that it is in the public interest to waive domestic materials requirement for Manufactured Products and Construction Materials for which:

The total value of the non-compliant products is no more than the lesser of \$1,000,000 or 5% of total applicable costs for the project. In applying the waiver:

1. "Total value of non-compliant products" does not include the value of those products subject to a separate Buy America Waiver.
2. "Total applicable project cost" (as defined by the NEPA finding, determination, or decision and referenced in Form 25D-60) include the cost of materials used in the project that are subject to a domestic preference requirement, including materials that are within the scope of an existing waiver.

("Total value of non - compliant products" (Construction Materials + Manufactured Products))

(" Total applicable project costs" (Iron + Steel + Manufactured Products + Construction Materials)) x100

HSP20.7B-25.1030

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

106-1.05 CERTIFICATES OF COMPLIANCE.

Replace the first four paragraphs of 106-1.05 with the following:

A certificate of compliance must meet one of the following:

1. If by manufacturer's certification, the certificate must include the project name and federal project number, the quantity represented, the signature of the manufacturer, and must include information that clearly demonstrates the material or assembly complies with all Contract requirements including for domestic materials preference.
2. If by Contractor's summary sheet, the summary sheet must include the project name and federal project number, the quantity represented, the signature of the contractor, and must include attached documentation that clearly demonstrates the material or assembly fully complies with all Contract requirements including for domestic materials preference.

HSP20.7B-25.1030

**SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

Special Provisions

107-1.02 PERMITS, LICENSES, AND TAXES.

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 __, when there are draft permits.

C107.2-21.0701

Standard Modification

107-1.06 SANITARY, HEALTH, AND SAFETY PROVISIONS.

Replace the fourth paragraph with the following:

The Contractor is responsible for ensuring all workers are adequately protected. The Contractor shall have a safety and health management program that complies with AKOSH requirements, and includes:

1. A Site Specific Safety Plan(s) (SSSP) prior to the commencement of work. This plan must outline the safety measures and procedures to be followed on-site, ensuring compliance with all applicable federal, state, and local safety regulations.
2. The SSSP shall be accessible to all contractor personnel and subcontractors, and provided to the Department upon request.
3. A hazard analysis prior to the commencement of work. It must specifically focus on the job functions and the hazards associated with performing them. The contractor is responsible for ensuring that all necessary personnel are informed of and follow the hazard analysis guidelines.
4. New employee training and periodic worker training regarding safety and health.
5. Regular safety meetings with written documentation of attendance, safety topics discussed, worker safety complaints, and corrective actions taken; and
6. The Contractor shall implement a comprehensive Safety Program to oversee site safety, including the development and maintenance of the SSSP, hazard analysis, employee training, and safety meetings. The program must ensure compliance with safety regulations and promote a proactive safety culture. For specific tasks, refer to Subsection 108-1.03.

HSM20.49-25.0610

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.

C107.3-17.0515

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.

C107.1-18.1001

**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).

HSM20.41-22.0101

Special Provision

Add the following Subsection 108-1.011 Related Sections:

108-1.011 RELATED SECTIONS.

Section 652, Prosecution and Progress – Supplemental Requirements

C108.3-16.0128-1

Standard Modification

108-1.03 PROSECUTION AND PROGRESS.

Replace item 9. with the following: The Contractor shall provide a letter designating a Safety Officer, and designating that person's responsibilities and authority. The Safety Officer is responsible for the Safety Program. The Safety Officer must be familiar with the project plans, specifications, and proposed operations and have the necessary experience and training to assess and address safety elements associated with the project.

Add the following:

10. The Contractor shall implement a comprehensive Safety Program for the Project to ensure all safety measures are met throughout the duration of the project and that the program complies with all applicable federal, state, and local safety regulations.

Requirements. The Safety Program shall include the development, implementation, and ongoing maintenance of the Site-Specific Safety Plan (SSSP), along with the preparation and regular updating of hazard analyses to identify and mitigate risks associated with specific construction activities. It shall ensure that the site complies with project-specific safety requirements, OSHA/AKOSH regulations, and oversees the appropriate use of personal protective equipment (PPE) on-site.

The program will involve routine safety inspections to identify hazards, site-specific safety orientations, and ensure all personnel and Subcontractors receive the necessary training in accordance with AKOSH/OSHA standards. It will also establish procedures for investigating incidents, injuries, and near misses, with corrective actions implemented as needed. Detailed records, such as safety meeting minutes, training logs, incident reports, safety audits, and inspections shall be maintained. Safety reports shall be submitted to the project manager, engineers, or clients as requested.

The Safety Program shall have clear procedures for halting work and implementing immediate corrective actions if safety concerns arise, or if the work is not being conducted in compliance with the Contract documents, safety standards, or applicable federal, state, and local laws.

HSM20.50-25.0610

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-24.0701-1

**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.

C109.4-20.0101

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.

C109.2-18.1101

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.

HSM20.3-20.1130-1

**SECTION 120
DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM**

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

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DIVISION 200 — EARTHWORK

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**SECTION 202
REMOVAL OF STRUCTURES AND OBSTRUCTIONS**

Special Provisions

Replace Subsection 3.05 with the following:

202-3.05 REMOVAL OF PAVEMENT, SIDEWALKS, AND CURBS. In removing pavements, curbs, walks, driveways and similar structures, make all cuts clean, vertical, and true to designated lines where an abutting structure or a part of a structure is to be left in place.

Pavement materials, base course, sidewalks, curbs, gutters, etc., designated for removal may be placed in the embankment in accordance with 203-3.03 with written approval. Maximum allowed dimension of material is 6 inches.

Dispose of materials, not placed in the embankment, outside the right-of-way project limits according to Subsection 202-3.06.

C202.2-20.0401

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.

202-5.01 BASIS OF PAYMENT.

Add the following:

Acquiring waste disposal permits is subsidiary to 202 Pay Items.

C202.1-20.0401

Removal of pavement is subsidiary to the work in Section 656.

CFHWY01389

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DIVISION 300 — BASES

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DIVISION 400 — ASPHALT PAVEMENTS AND SURFACE TREATMENTS

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Special Provision

Add the following Section:

**SECTION 408
HOT MIX ASPHALT PAVEMENT – TYPE VH**

408-1.01 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 VH, except where noted otherwise.

408-1.02 REFERENCES.

1. Section 401 Hot Mix Asphalt Pavement. (HMA 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

408-2.01 ASPHALT BINDER. Conform to Subsection 702-2.01. If binder performance grade is not specified, use PG 64-40E.

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.

408-2.02 LIQUID ANTI-STRIP ADDITIVE. Use anti-strip agents in 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:

**TABLE 408-2.02-1
MINIMUM DOSE OF LIQUID ANTI-STRIP BY WEIGHT OF ASPHALT BINDER**

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

408-2.03 JOINT ADHESIVE. Conform to Subsection 702-2.05.

408-2.04 JOINT SEALANT. Conform to Subsection 702-2.06.

408-2.05 WARM MIX ASPHALT. Conform to Subsection 702-2.07.

408-2.06 ASPHALT RELEASE AGENT. Conform to Subsection 702-2.08.

408-2.07 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.

408-2.08 RECYCLED ASPHALT PAVEMENT. Not allowed in connection with HMA Type VH.

408-2.09 JOB MIX DESIGN (JMD). Provide target values for gradation that satisfy both the broad band gradation limits shown in Table 703-4 and the requirements for Table 408-1 for Type VH HMA.

**TABLE 408-1
HMA DESIGN REQUIREMENTS**

Design Parameters	
Design ESALs, Millions	0.3 to < 3
Rut Index, Max., ATM 419. mm	3
Asphalt Binder Content, Min. %	5.0
Liquid Anti-Strip Additive*, % Min.	0.3

* By weight of asphalt binder.

The approved Job Mix Design (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 include the proposed gradation for the JMD, gradation 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, of at least 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.

The Engineer will evaluate the material and the proposed gradation using ATM 417 or AASHTO R35 and the requirements of Table 408-1 for Type VH HMA, and establish the approved JMD which will become a part of the Contract.

Obtain an approved JMD prior to shipment of aggregates to an asphalt plant site or producing HMA for payment.

1. 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.

2. 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 408-1
 - 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 408-2.10 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 408-2.10.

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 evaluation subsequent to the approved Job Mix Design, per Subsection 408-5.01.

408-2.10 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 408-3.01, 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 408-4.02

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 408-3.04. 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 408-5.01 for payment of test strips.

CONSTRUCTION REQUIREMENTS

408-3.01 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, adjust 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. Reserved
 - 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

408-3.02 CONTRACTOR QUALITY CONTROL. Perform quality control (QC) of HMA materials in accordance with Subsection 106-1.03.

408-3.03 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, or after September 15th without the Engineer's approval in writing.

408-3.04 EQUIPMENT, GENERAL. Use equipment in good working order and free of HMA buildup. Make equipment available for inspection and demonstration of operation a minimum of 24 hours before placement of production and test strip HMA.

408-3.05 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.

408-3.06 HAULING EQUIPMENT. Haul HMA in vehicles with tight, clean, and smooth metal beds. Keep beds free of petroleum oils, solvents, or other materials that will adversely affect the mixture. Apply a thin coat of approved asphalt release agent to beds as necessary to prevent mixture adherence.

Provide hauling vehicles with covers attached and available for use. When directed, cover the HMA in the hauling vehicle(s).

Do not haul HMA on barges.

When directed by the Engineer cover the HMA in the hauling vehicle(s).

408-3.07 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.

408-3.08 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.

408-3.09 RESERVED.

408-3.10 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 408-3.17. 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.

408-3.11 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.

408-3.12 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.

408-3.13 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.

408-3.14 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 physical characteristics of asphalt binder, lumpiness, and stiffness of the mixture, are causes for rejection.

Do not store HMA on barges.

408-3.15 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.

During placement, the Engineer, using an infrared camera, may evaluate the HMA surface immediately behind the paver for temperature uniformity. Contractor, immediately adjust laydown procedure to maintain a temperature differential of 25° F or less. Thermal images and thermal profile data will become part of the project record and shared with the Contractor.

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 concrete curbing and gutter until the concrete 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.

Use hand tools to spread, rake, and lute the HMA in areas where irregularities or unavoidable obstacles make mechanical spreading and finishing equipment impracticable.

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.

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.

408-3.16 COMPACTION. Compact the HMA by rolling thoroughly and uniformly. 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 93.0% of the Maximum Specific Gravity (MSG) as determined by ATM 409. A mat area with density lower than 92% MSG is considered segregated and not in conformance with the requirements of the Contract. The work is unacceptable according to Subsection 105-1.11 unless the Engineer determines that reasonably acceptable work has been produced as permitted in Subsection 105-1.03.

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.

408-3.17 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 layer or by using a removable bulkhead, or other approved method. 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 408-4.03.

408-3.18 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 than 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 milled 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.

408-3.19 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.

408-3.20 ROADWAY MAINTENANCE. Inspect daily according to pavement inspection plan. Remove, and dispose of project materials incorrectly deposited on existing and new pavement surface(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.

408-4.01 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.
 - b. By the final HMA surface area.
2. Asphalt Binder. By weight, as follows:

Method 1 is used to determine 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 type.

4. Temporary Pavement. Per Section 401.
5. Leveling Course. Per Section 401.
6. HMA Price Adjustment. Calculated by quality level analysis under Subsection 408-4.03.1.
7. Longitudinal Joint Density Price Adjustment. By the linear foot of top lift longitudinal joint under Subsection 408-4.03.2.
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 408-4.03.3.
10. Asphalt Material Price Adjustment. Determined under Subsection 408-4.04.
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 408-3.10, 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 408-3.10(1), measured according to Section 109.
14. Repair Unstable Pavement. By the surface area of pavement repaired according to 408-3.10(2), measured according to Section 109.
15. Asphalt Binder Price Adjustment. Determined under Subsection 408-4.03.4.

408-4.02 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 408-4.03.1. 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 subplot 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 408-2 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 408-3.02 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.

408-4.03 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 408-2, or as shown below. The TV is the specification value shown in the approved Job Mix Design.

**TABLE 408-2
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, %	93.0	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:

$$CPF = \frac{[f_{3/4 \text{ inch}} (PF_{3/4 \text{ inch}}) + f_{1/2 \text{ inch}} (PF_{1/2 \text{ inch}}) + \dots + f_{ac} (PF_{ac})]}{\Sigma f}$$

Table 408-3 gives the weight factor (f) for each test property considered.

**TABLE 408-3
WEIGHT FACTORS**

Property	Type VH Factor "f"
3/4-inch sieve	4
1/2-inch sieve	5
3/8-inch sieve	5
No. 4 sieve	4
No. 8 sieve	4
No. 16 sieve	4
No. 30 sieve	5
No. 50 sieve	5
No. 100 sieve	4
No. 200 sieve	20
Asphalt Content, %	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:

$$\text{HMA Price Adjustment} = [\text{Lowest Pay Factor}^* - 1.000] \times (\text{tons in lot}) \times (\text{PAB})$$

*Lowest Pay Factor, CPF or DPF

PAB = Price Adjustment Base = \$140.00 per ton.

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
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 408-4.03-1 Asphalt Binder Pay Factors.

**TABLE 408-4.03-1
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	$G^*/\text{Sin}\delta, \text{kPa}^{-1}$	≥ 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	$G^*\text{Sin}\delta, \text{kPa}$	≤ 4711	4712–5000	5001–5289	5290–5578	5579–5867	> 5867
	PG 52-40 E, PG 58-34 E	$G^*\text{Sin}\delta, \text{kPa}$	≤ 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, $G^*/\text{Sin}\delta, \text{kPa}^{-1}$

(2) MSCR: PG, Select the highest pay factor corresponding to, either $J_{NR\ 3.2}$ or % Rec_{3.2} values

PAV

(3) DS, PG, $G^*\text{Sin}\delta, \text{kPa}$

(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.

408-4.04 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.

408-5.01 BASIS OF PAYMENT. The following items, unless included as individual Pay Items, are subsidiary to the Section 408 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
- Repairing defective areas
- Prelevel for ruts, delaminations, and depressions
- Repair unstable pavement
- Job mix design
- Density profiles, Subsection 408-2.10 Process Quality Control
- Repair work and materials when planing equipment breaks through existing pavement – Subsection 408-3.10 Preparation of Existing Surface
- Work and materials associated with Subsection 408-3.06 Hauling Equipment
- Work and materials associated with Subsection 408-3.20 Roadway Maintenance

Test Strips: Subsection 408-2.10 Process Quality Control.

1. 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 408.2008.____, 408.2009.____, 408.2010.____ and 408.2021.____ do not apply.
2. Failed. The materials, construction of, removal and disposal of a failed test strip is at the Contractor's expense.

Pay Item 408.2008.____ HMA Price Adjustment, Type __. The sum of the price adjustments for each material lot, and for deductions and fees assessed. Deductions and fees assessed include:

- A fee of \$6,000 is assessed for each mix design evaluation subsequent to the approved Job Mix Design for each type and class of HMA specified. A failed retest will result in a fee of \$2,500.
- Failure to cut core samples within the specified period will result in a deduction of \$100 per sample per day.
- Failure to backfill voids left by sampling within the specified period will result in a deduction of \$100 per hole per day.
- If an asphalt binder referee test is requested and the ATV confirms the asphalt binder does not meet Contract requirements, a fee of \$500 is assessed each test.

Pay Item 408.2008.____ HMA Price Adjustment, Type __, does not apply to the following:

- Driveway and approach HMA.
- HMA contract quantity is less than 1500 tons.

Pay Item 408.2009.____. Longitudinal Joint Density Price Adjustment. The total price adjustment.

Pay Item 408.2010.____. Pavement Smoothness Price Adjustment. The total price adjustment.

Pay Item 408.2015.____ Asphalt Material Price Adjustment.

For each Section as included in Subsection 408-4.04 Asphalt Material Price Adjustment, item 1.a, the "Asphalt Material Price Adjustment" is paid under the asphalt material Pay Item for the Section with the greatest quantity as determined by the estimate of quantities included in the Plans at the time of the bid opening.

- When more than one "Asphalt Material Price Adjustment" Pay Item is included in the Plans or bid schedule the asphalt material price adjustment, for each Section's asphalt material, is paid under the Pay Item with the greatest quantity.
- When more than one asphalt material is included in the project and only one "Asphalt Material Price Adjustment" Pay Item is included in the Plans or bid schedule, the asphalt material price adjustment, for each Section's asphalt material, is paid under the one Pay Item regardless of the quantity.
- When the Pay Item "Asphalt Material Price Adjustment", is not included, for any section, no payment will be made.

Pay Item 408.2021.____. Asphalt Binder Price Adjustment. The sum of the price adjustments for each material lot.

C408-25.0101

When item 408.2001.____ HMA, Type VH does not appear in the bid schedule, HMA required to patch pavement removal sections at manhole adjustments is subsidiary to work in Section 656.

CFHWY01389

PAY ITEM		
Item Number	Item Description	Unit
408.2001.____	HMA, Type VH	Ton
408.2004.____	Asphalt Binder, Grade PG ##-## X	Ton
408.2007.____	Liquid Anti-Strip Additives	CS
408.2008.____	HMA Price Adjustment, Type __; Class __	CS
408.2009.____	Longitudinal Joint Density Price Adjustment	CS
408.2010.____	Pavement Smoothness Price Adjustment, Method _	CS
408.2014.____	Joint Adhesive	LF
408.2015.____	Asphalt Material Price Adjustment	CS
408.2020.____	HMA, Fiber Reinforced, Type <u>VF</u>	Ton
408.2021.____	Asphalt Binder Price Adjustment	CS

C408-25.0101

DIVISION 500 — STRUCTURES

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**SECTION 550
COMMERCIAL CONCRETE**

Special Provisions

Replace Subsection 550-1.01 with the following:

550-1.01 DESCRIPTION. Furnish, place, finish, and cure Portland cement concrete for minor structures and incidental construction.

Add the following Subsection 550-2.03 Precast Concrete Products:

550-2.03 PRECAST CONCRETE PRODUCTS. Provide precast concrete products from an ATM 520 certified plant. Submit certification for each product.

Minor and Incidental Structure Products

1. Curb and gutter
2. Manhole sections
3. Headwall
4. Modular retaining wall units
5. Noise wall panels and posts
6. Portable barriers
7. Utility structures
 - a. Cabinet base
 - (1) Load center base/foundation
 - (2) Controller base/foundation
 - b. Junction box
 - c. Similar structures
8. Water and waste water structures
 - a. Catch basin
 - b. Inlet box
 - c. Outlet box
 - d. Similar structures

Major Structure Products Section 501 Concrete for Structures

Major structure products include box culvert, mechanically stabilized earth, retaining walls, three-sided flat-topped culvert, three-sided arch culvert, and similar structures.

C550.1-21.0601

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DIVISION 600 — MISCELLANEOUS CONSTRUCTION

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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.

C603-25.0201

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.

CFHWY01389

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.

Steel and Plastic Pipe: match the coupling band material and 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 metal pipe firmly using one of the types of coupling bands shown on the Plans and as described below. Provide coupling bands that are no more than two nominal sheet thickness lighter than pipe being joined and in no case thinner than the minimum sheet thickness of the material. The minimum sheet thickness is 0.048 inches for aluminum and 0.052 inches for steel. Include a gasket each side of the gap.
 - a. Annular, Spiral, Semi-Corrugated, and Rod and Lug Bands. Provide standard bands as described by ASTM A760 and ASTM B745. Join the pipe so the gap between the pipes is in the center of the band and is no wider than one corrugation width.
 - b. Dimple and Bias Bands. Use these bands only where it is not possible to use other bands, such as on field-cut pipe ends or joining new pipe to existing pipe. Join the pipe so the gap between the pipes is in the center of the band and is not wider than 2 inches.

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.

C603-25.0201

603-3.04 CULVERT CLEANING. Remove culvert fugitive materials from inside culverts and around culvert inlets and outlets, including but not limited to organic matter (peat, roots, sticks, sod or other), muck, rocks, gravel, sand, silts, and debris (trash and similar) and as identified by the Engineer. Provide positive drainage through cleaned culverts and into adjacent ditches.

Dispose of removed materials according to Subsection 202-3.06.

CFHWY01389

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.

C603-25.0201

3. Culvert Cleaning. The length of pipe cleaned as directed and accepted by the Engineer, whether cleaned the full length or partial length.

CFHWY01389

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.

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
603.2032.____	Corrugated HDPE Pipe ____	LF
603.2033.____	End Section for Corrugated HDPE Pipe ____	Each

C603-25.0201

PAY ITEM		
Item Number	Item Description	Unit
603.2017.____	Culvert Cleaning	LF

CFHWY01389

SECTION 604 MANHOLES AND INLETS

Special Provisions

604-1.01 DESCRIPTION.

Add the following:

Storm Drain Facilities – Cleaning

This work shall involve the cleaning of storm drain piping, structures, and CCTV inspection as identified in the Plans. Coordinate with the Engineer and participate in a pre-construction inspection of the storm drain facilities. The pre-construction inspections may identify additional storm drain facilities to be cleaned as directed by the Engineer.

CFHWY01389

604-2.01 MATERIALS.

Replace "Precast Concrete Manhole Sections Subsection 712-2.05" with the following:

Precast Concrete Products

Subsection 550-2.03, 712-2.05

C604.2-21.0601

604-3.01 CONSTRUCTION REQUIREMENTS.

Add the following:

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.

Storm Drain Facilities – Cleaning

Clean Drainage System – Pipes: The Contractor shall remove debris from inside the pipes, including but not limited to organic matter (peat, roots, sticks, sod or other), muck, rocks, gravel, sand, and silts. Following completion of the pipe cleaning, the Contractor shall perform a post-cleaning CCTV inspection as detailed in Subsection 656-3.03.02 CCTV Inspection.

Storm drain line cleaning is to be accomplished using high velocity jet cleaning equipment. Selection of the equipment used is to be based on the condition of the storm drain line at the time the work commences.

Clean Drainage System – Structures: The Contractor shall perform cleaning of the structures adjacent to the pipes identified to be lined in the Plans as identified in Subsection 656-3.03.01 Storm Drain Cleaning.

Contractor furnishes the required traffic control, including personnel to assist, while performing inspections and cleaning.

Dispose of removed materials according to Subsection 202-3.06.

604-4.01 METHOD OF MEASUREMENT.

Add the following:

Clean Drainage System – Structures. The number of storm drain structures cleaned as directed and accepted by the Engineer.

Clean Drainage System – Pipes. The length of storm drain pipe cleaned as directed and accepted by the Engineer, whether cleaned the full length or partial length.

604-5.01 BASIS OF PAYMENT.

Add the following:

Pay Item 604.2015.____ includes full compensation for labor and equipment, incidental materials for cleaning, and disposal of removed materials from the structures adjacent to the pipes to be lined as identified in the Plans.

Pay Item 604.2016.____ includes full compensation for labor and equipment, incidental materials for cleaning, disposal of removed materials, and CCTV inspection of the piping identified as requiring cleaning in the Plans.

All traffic control required for inspection and cleaning will be paid under the 643 Pay Items.

Existing manholes being adjusted by raising or lowering the frame or ring casting 12” or less – comply with Subsection 604-3.01, paragraph beginning, “Adjust existing manhole...” and is subsidiary to the work in Section 656.

Add the following:

PAY ITEM		
Item Number	Item Description	Unit
604.2015.____	Clean Drainage System – Structures	Each
604.2016.____	Clean Drainage System – Pipes	LF

CFHWY01389

Special Provision

Replace Section 641 with the following:

**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 SWPPPTrack, utilize SWPPPTrack to sign and initial documents. When documents are not completed in SWPPPTrack (e.g. Form 25D-111 SWPPP Certification for Contractor), upload scanned copies after signing and initialing the documents into SWPPPTrack.

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.
Contractor's 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

C641-24.0401

**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 ration of 1:0.6 and a stroke width to height ratio of 1:6, on an orange background.

C642.1-15.0220-1

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 two, and the immediate area of work. Patch with hot mix asphalt less than 48 hours 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 Flagger 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 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.

Do not place final pavement markings until traffic has traveled over the seal coat or surface treatment for at least 15 days and no more than 21 days, as directed by the Engineer.

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.
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. **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.
19. **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 DOT&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
Temporary ADA Facilities		
ADA Pedestrian Rail	Lineal Foot	\$6.00
ADA Pedestrian Barrier	Lineal Foot	\$8.00
ADA Ramps and Hole Covers in Path	Square Foot	\$10.00
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

C643-25.1001

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 closeable 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 the 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.

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 a 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 services 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

644-5.01 BASIS OF PAYMENT.

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

C644.1-20.0801_FOCOM

Special Provision

Replace Section 645 with the following:

**SECTION 645
TRAINING PROGRAM**

645-1.01 DESCRIPTION. This Statewide Special Provision for on-the-job training (OJT) implements 23 CFR 230, Subpart A, Appendix B.

As part of the Equal Employment Opportunity Affirmative Action Program, the Contractor shall provide on-the-job training aimed at developing full journey status in the type of trade or job classification involved. The number of individuals to be trained and the number of hours of training to be provided under this contract will be as shown on the bid schedule.

645-2.01 OBJECTIVE. Training and upgrading of minorities and women toward journey status is the primary objective of this program. The Contractor shall enroll minorities and/or women, where possible, and document good faith efforts prior to the hire of non-minority males in order to demonstrate compliance with this Training Special Provision. Specific good faith efforts required under this Section for the recruitment and employment of minorities and women are found in the Federal EEO Bid Conditions, Form 25A-301.

645-3.01 GENERAL. The Contractor shall determine the distribution of the required number of apprentices/trainees and the required number of hours of training among the various work classifications based upon the type of work to be performed, the size of the workforce in each trade or job classification, and the shortage of minority and female journey workers within a reasonable area of recruitment.

Training will be provided in the skilled construction crafts unless the Contractor can establish prior to contract award that training in the skilled classifications is not possible on a project; if so, the Department may then approve training either in lower level management positions such as office engineers, estimators, and timekeepers, where the training is oriented toward construction applications, or in the unskilled classifications, provided that significant and meaningful training can be provided. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Credit for offsite training hours indicated above may only be made to the Contractor where the apprentices/trainees are concurrently employed on the project and the Contractor does one or more of the following: contributes to the cost of the training, provides the instruction to the apprentice/trainee, or pays the apprentice's/trainee's wages during the offsite training period.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

Prior to award of the contract, the Contractor shall submit Form 25A-311, Training Utilization Report, indicating the training program to be used, the number of apprentices/trainees to be trained in each selected classification, the number of hours of training to be provided, and the anticipated starting time for training in each of the classifications.

Training must begin within 2 weeks of the anticipated start date(s); unless otherwise authorized by a Directive. Such authorization will be made only after submission of documentation by the Contractor, and approval by the Engineer, of efforts made in good faith which substantiate the necessity for a change.

Contractors may use a training program approved by the U.S. Department of Labor, Office of Apprenticeship (USDOL/OA); or one developed by the Contractor using Form 25A-310 and approved prior to contract award by the OJT Coordinator in the DOT&PF Civil Rights Office.

The minimum length and type of training for each classification will be established in the training program selected by the Contractor. Training program approval by the Department for use under this section is on a project by project basis.

It is expected that each apprentice/trainee will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist or until training has been completed. It is not required that apprentices/trainees be continuously employed for the duration of the contract.

If, in the judgment of the Contractor, an apprentice/trainee becomes proficient enough to qualify as a journey worker before the end of the prescribed training period and the Contractor employs that individual as a journey worker in that classification for as long as work in that area remains, the individual's training program will be considered completed and the balance of training hours required for that apprentice/trainee shall be waived.

The Contractor shall furnish each Alaska DOT&PF training program trainee a copy of the program (Form 25A-310) to be followed during training on the project, and with a written certification showing the type and length of training completed on the project. Existing USDOL/OA apprentices should already have a copy of their program. No employee shall be employed for credit as an apprentice/trainee in a classification in which that employee has previously worked at journey status or has previously completed a training course leading to journey status.

The Contractor shall periodically review the training and promotion potential of minority and women employees and shall encourage eligible employees to apply for such training and promotion.

The Contractor shall provide for the maintenance of records and the furnishing of periodic reports documenting the progress of each apprentice/trainee. The Contractor must submit Form 25A-313 by the 15th of each month and provide each Alaska DOT&PF trainee written evaluation reports for each unit of training provided as established on Form 25A-310.

645-3.02 WAGES. Trainees in Alaska DOT&PF approved training programs will be paid prevailing Davis-Bacon fringe benefits plus at least 60 (but less than 100) percent of the appropriate minimum journey rate specified in the contract for the first half of the training period, at least 75 (but less than 100) percent for the third quarter of the training period, and at least 90 (but less than 100) percent for the last quarter of the training period. Trainee wages shall be identified on Form 25A-310. Apprentices in USDOL/OA training programs shall be paid in accordance with their approved program. Beginning wages of each trainee/apprentice enrolled in a Section 645 Training Program on the project shall be identified on Form 25A-312.

645-3.03 SUBCONTRACTS. In the event the Contractor subcontracts a portion of the work, he shall determine how many, if any, of the apprentices/trainees are to be trained by the subcontractor. Any such subcontracts shall include this Section 645, Form 25A-311 and Form 25A-310, where appropriate. However, the responsibility for meeting these training requirements remains with the Contractor; compliance or non-compliance with these provisions rests with the Contractor and sanctions and/or damages, if any, shall be applied to the Contractor in accordance with subsection 645-5.01, Basis of Payment.

645-4.01 METHOD OF MEASUREMENT. The Contractor will be credited for each approved apprentice/trainee employed on the project and reimbursed on the basis of hours worked, as listed in the certified payrolls. There shall be no credit for training provided under this section prior to the Contractor's submittal and approval by the Engineer of Form 25A-312 for each apprentice/trainee trained under this Section. Upon completion of each individual training program, no further measurement for payment shall be made.

645-5.01 BASIS OF PAYMENT. Payment will be made at the contract unit price for each hour of training credited. Where a trainee or apprentice, at the discretion of the Contractor, graduates early and is employed as a journey worker in accordance with the provisions of Subsection 645-3.01, the Contractor will receive payment only for those hours of training actually provided.

This payment will be made regardless of any other training program funds the Contractor may receive, unless such other funding sources specifically prohibit the Contractor from receiving other reimbursement.

Payment for training in excess of the number of hours specified on the approved Form 25A-311 may be made only when approved by the Engineer through Change Order.

Non-compliance with these specifications shall result in the withholding of progress payments until good faith efforts documentation has been submitted and acceptable remedial action has been taken.

Payment will be at the end of the project following the completion of all training programs approved for the project. No payment or partial payment will be made to the Contractor if he fails to do any of the following and where such failure indicates a lack of good faith in meeting these requirements:

1. provide the required hours of training (as shown in the Bid Schedule and approved Form 25A-311),
2. train the required number of trainees/apprentices in each training program (as shown in the Bid Schedule and approved Form 25A-311), or
3. hire the apprentice/trainee as a journey worker in that classification upon completion of the training program for as long as work in that area remains.

Failure to provide the required training damages the effectiveness and integrity of this affirmative action program and thwarts the Department's federal mandate to bring women and minorities into the construction industry. Although precise damages to the program are impractical to calculate, they are at a minimum, equivalent to the loss to the individuals who were the intended beneficiaries of the program. Therefore, where the Contractor has failed, by the end of the project, to provide the required number of hours of training and has failed to submit acceptable good faith efforts documentation which establishes why he was unable to do so, the Contractor will be assessed an amount equal to the following damages to be deducted from the final progress payment:

Number of hours of training not provided, times the journey worker hourly scale plus benefits. The journey worker scale is that for the classification identified in the approved programs.

PAY ITEM		
Item Number	Item Description	Unit
645.0001.____	Training Program, __ Trainees/Apprentices	LH

HSP20.2-20.1130_FED

**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.

C646.1-23.0501

Special Provision

Replace Section 651 with the following:

**SECTION 651
CONTROL OF WORK – SUPPLEMENTAL REQUIREMENTS**

651-1.01 DESCRIPTION. Supplemental requirements for Section 105, Control of Work.

651-1.02 RELATED SECTIONS. Section 105, Control of Work

651-1.03 UTILITIES. Request locates from the utilities having facilities in the area.

Use the Alaska Digline, Inc. "Locate Call Center" for the following utilities.

ALASKA DIGLINE, INC.

Locate Call Centers:	
Anchorage	278-3121
Statewide	(800) 478-3121

- Call Centers will notify the following:
- Alaska Communications Systems (ACS)
 - Anchorage School District (ASD)
 - Anchorage Water & Wastewater Utility (AWWU)
 - AT & T Alascom (AT&T)
 - Chugach Electric Association (CEA)
 - ENSTAR Natural Gas (ENS)
 - GCI Communication Corp. (GCI)
 - Municipality of Anchorage Signal & Street Maint.
 - State of Alaska DOT&PF Anchorage Street Lights (DOT&PF)
-

State Facility Utilities: before beginning work, contact the Central Region Maintenance & Operations Office at (907) 269-0760 to obtain the District Superintendent's phone number where the project is located, and request locates.

651-1.04 COOPERATION BETWEEN CONTRACTORS. The following state owned projects may be under construction concurrently with this project.

Project Name:	Project No.:

Coordinate traffic control, construction, and material hauling operations with the prime contractor of the above projects to minimize impact on the traveling public, and to minimize conflicts with the work being performed under the other contracts.

CFHWY01389

Special Provision

Replace Section 652 with the following:

**SECTION 652
PROSECUTION AND PROGRESS – SUPPLEMENTAL REQUIREMENTS**

652-1.01 DESCRIPTION. Supplemental requirements for Section 108. Prosecution and Progress.

652-1.02 RELATED SECTIONS. Section 108, Prosecution and Progress.

652-1.03 PROSECUTION AND PROGRESS. In Subsection 108-1.03:

- Replace the last sentence in the 1st paragraph with: "Submit the following at the Preconstruction Conference:"
- Replace No. 1 with: "A Critical Path Method (CPM) Schedule is required, in a format acceptable to the Engineer, showing the order the work will be carried out, and the contemplated dates the Contractor, subcontractors, and utilities will start and finish each of the salient features of the work, including scheduled periods of shutdown. Indicate anticipated hours of operations and periods of multiple shift work. Revise the proposed schedule promptly. Promptly submit a revised CPM Schedule if there are substantial changes to the schedule, or upon request of the Engineer."

652-1.04 LIMITATION OF OPERATIONS. In Subsection 108-1.04:

- Add: "Limit ground disturbed by construction activities and not permanently stabilized between all roadways combined, at any specific time, to a maximum of 11,000 feet parallel to the roadway(s), unless additional length is approved. Stabilize disturbed ground according to Section 641 Erosion, Sediment, and Pollution Control."

CFHWY01389

Special Provision

Add the following Section:

**SECTION 656
CURED IN PLACE PIPE**

656-1.01 DESCRIPTION. Where indicated on the plans perform lining of existing storm drain pipes with a cured-in-place pipe (CIPP), complete in place. The Contractor shall furnish all labor, materials, and equipment for doing the work including planning and coordination, inspection and documentation, storm drain cleaning, flow control, pipe lining installation, and sampling and testing, all in accordance with the pipe lining system's manufacturer's recommendations and industry standards.

The CIPP installation shall include the performance of closed-circuit television inspections including DVD recording of the pre-lining and post-lining pipe conditions, providing all operations pertaining to pipe cleaning, the removal of all intruding pipe ends, intruding pipe materials, and other obstructions and deleterious material, within the pipe cross-section and throughout the full length of the pipe, which may interfere with the installation or service performance of the lining system, and any other preparatory work recommended by the lining system manufacturers and industry standards.

The CIPP shall meet the requirements of ASTM F-1216 or ASTM 1743 or ASTM F-2019. The CIPP shall extend the full length of the host pipe being rehabilitated and shall provide a structurally sound, impermeable, jointless, close-fitting pipe that when cured is mechanically fixed inside the host pipe.

Attain all permits required to complete the work.

656-1.01 SUBMITTALS. Submit the following for review and approval by the Engineer:

1. General Submittals:

- a. A plan listing the required permits and detailing the means and methods for collecting and disposing of all debris, cleaning, construction, and testing materials, including water.
- b. A plan for bypass pumping storm water around pipe sections scheduled for rehabilitation. Include a detailed list of equipment.
- c. Product information for the lining system materials, methods of repair and Material Safety Data Sheets (MSDSs) for all materials used.
- d. Calculations showing that the CIPP thickness and strength has been designed to meet the requirements of this specification.
- e. Satisfactory sample test results from three previous projects where the lining system has been used. This requirement is not necessary if a Senior Installation Supervisor (SIS) meeting requirement "i" is provided.
- f. Letter certifying the lining system for "long term" (minimum of 50-year design life) integrity and effective life span. Submit certification for soil cell testing, chemical resistance, creep, and long-term structural loading.
- g. Information confirming that the pipe conforms to the requirements of the Materials Section of this Specification.
- h. Closed-circuit television (CCTV) operator resume. List three projects using CCTV inspection to locate and identify obstacles inside existing pipe in preparation for pipe lining.
- i. Submit documented evidence of the ability and capacity of the CIPP installer to perform this work, including the name and qualifications of the Senior Installation Supervisor (SIS) who will be on the

project whenever lining materials are being handled, impregnated with resin, or installed. The SIS shall have installed a minimum of 3,000 feet of similar CIPP liner of the same CIPP system.

Personnel replaced by the Contractor shall have similar, verifiable experience as the SIS originally submitted for the project. If the Contractor does not have a Senior Installation Supervisor that meets these requirements, the Contractor shall provide a certified installer or manufacturer's representative who is qualified in the CIPP lining work at the project site for the first seven (7) days of CIPP installation. Contractor shall submit evidence of the certified installers or manufacturer representatives experience and qualifications for approval by the Engineer prior to the site visit.

- j. Host pipe interior diameter measurement data acquired by the Contractor.
 - k. The CCTV DVD records, or other preapproved storage format, and inspection logs before lining the pipe.
 - l. Sampling and testing plan that shall include the Contractor's proposed procedures for quality control, product sampling and testing. The plan shall also include a schedule that states when test results will be available.
 - m. Quality Control Plan (QCP) as described in this specification.
 - n. Plan that describes the procedures that would be used to repair and/or replace defective CIPP lining work.
 - o. The post-installation water quality test results from a third -party certified laboratory.
2. Quality Control Plan. Submit a detailed Quality Control Plan (QCP) that includes the following:
- a. A description of the quality controls to be performed by the Contractor.
 - b. Defined responsibilities of the Contractors personnel who are responsible for quality control.
 - c. Procedures and methods that will be followed for quality control, product sampling and testing including method and frequency of product sampling and testing both in the raw materials form and cured product form.
 - d. Provide performance and product test reviews for approval by the Engineer at regularly scheduled project meetings.
 - e. Inspection forms and guidelines for quality control inspections prepared in accordance with the standards specified in these Contract Documents
3. CIPP Repair or Replacement Procedure. Provide a description of specific procedures that would be followed to repair or replace defective CIPP work that includes the following:
- a. Sharks-fin wrinkles greater than 1-inch tall.
 - b. Loss of resin and thin liner wall.
 - c. Loss of resin and sagging or weak liner wall.
 - d. Separation gaps between the host pipe and the liner or bulging of the liner due to groundwater infiltration.
 - e. Incomplete liner installation due to curing of the liner prior to completion of the inversion or pull-in.
 - f. Damage to the liner due to overheating.
 - g. Fracturing of the liner due to accelerated cooling.

- h. Weak liner wall due to lack of cure heat or cure time.
 - i. CIPP liner that does not meet minimum thickness or strength requirements as determined by CIPP sampling and testing results.
4. Submit the following after completion of work:
- a. The CCTV DVD, or other preapproved storage format, records and inspection logs after lining of pipe.
 - b. Material sample test results including soil cell testing, chemical resistance, SDR, creep and long-term structural loading tests.

MATERIALS

656-2.01 FABRIC TUBE. Felt tubing shall consist of one or more layers of flexible, needled felt or an equivalent woven and/or non-woven material capable of carrying resin, withstanding installation pressures and curing temperatures and compatible with the resin system used. The tube shall meet the requirements of ASTM D 5813.

Fiberglass tubing shall consist of at least two separate tubes made of corrosion resistant (E-CR) glass fibers in accordance with ASTM D 578. The fiberglass tube shall meet the requirements of ASTM F 2019.

The CIPP's interior wall color after installation shall be a relatively light reflective color so a clear detailed examination with CCTV equipment may be made. Hue of the color shall be dark enough to distinguish a contrast between fully resin saturated felt fabric and dry or resin lean areas.

The Contractor shall field verify all pipe diameters and pipe segment lengths prior to ordering materials. Measurements of existing host pipes shall be completed as outlined in this specification.

656-2.02 RESINS AND CATALYST. The Contractor shall furnish an ultraviolet (UV) or thermosetting polyester or vinylester resin compatible with the approved liner and a compatible catalyst system as specified by the resin manufacturer. The resin shall be approved for use in the CIPP process for storm sewer applications. The resin manufacturer shall provide the Contractor with their recommended cure method for each diameter and thickness of CIPP to be installed and shall submit the same to the Engineer for approval. The submittal shall contain a detailed curing procedure outlining the curing medium, the method of application and how the curing temperatures will be monitored.

The CIPP system installed shall meet the chemical resistance requirements of ASTM D 5813.

656-2.03 STRUCTURAL REQUIREMENTS. Design Criteria: The liner thickness shall be calculated per ASTM F 1216, Appendix X.1 The cured-in-place-pipe thickness shall be calculated and designed based upon the following physical condition of each pipe to be rehabilitated. It will be acceptable for the Contractor to submit a design for the most severe section condition and apply that design to the entire length of pipe.

1. All pipes shall be considered fully deteriorated and gravity flow.
2. Design life of the liner shall be 50 years.
3. Pipes shall have a depth of cover as shown in the Plans. If not provided, the Contractor shall use not less than five (5) feet.
4. Pipe shall be subject to a water table of no less than three (3) feet above the invert of the pipe.
5. All pipes shall have a minimum of 5% ovality. Contractor to field verify % ovality and revise as necessary.
6. A factor of safety of not less than 2.0 shall be applied.

7. The enhancement factor K shall not be higher than 7.
8. Live loads shall be AASHTO HL-93.
9. Pipe interior is gritty and abrasive.
10. The CIPP shall have a wall thickness that is no less than 10 percent (10%) larger than the minimum calculated design thickness.

656-2.04 STRUCTURAL PROPERTIES. The CIPP when cured shall have the following minimum values when tested in accordance with ASTM F 1216 by an independent testing laboratory:

Flexural Strength (tested in accordance with ASTM D790) 4,500 psi
 Flexural Modulus (tested in accordance with ASTM D790) 250,000 psi
 Chemical Resistance Meet Minimum Requirements of ASTM F 1216, Table X2.1

CONSTRUCTION REQUIREMENTS

656-3.01 SAFETY. The Contractor shall carry out this operation in accordance with all OSHA and manufacturer's safety requirements.

656-3.02 HOST PIPE MEASUREMENT. Pipe sizes and lengths shown in the plans are approximate. Measure the inside diameter of the host pipe to confirm the proper tube diameter before ordering the liner tube materials. Measure the host pipe diameter at the widest distance between the corrugations and at the narrowest distance between the corrugations. Measurements shall be taken at a minimum of three separate locations for each diameter host pipe on the project. Submit the measurement information to the Engineer. Provide a manufacturer recommended tube diameter to fit in the host pipe.

656-3.03 PRE-INSTALLATION.

656-3.03.01 STORM DRAIN CLEANING. The designated storm drain pipe sections from storm drain structure to storm drain structure shall be cleaned using high velocity jet. Selection of the equipment shall be based on the condition of the storm drain pipes and structures at the time the Work commences. The equipment shall be capable of removing dirt, grease, rocks, sand, pipe coating debris, and other materials and obstructions from the storm drain pipes and structures. If cleaning of an entire section cannot be successfully performed from one structure, the equipment shall be set up on the other structure and cleaning again attempted.

During cleaning operations, satisfactory precautions shall be taken in the use of cleaning equipment. Care shall be exercised to avoid damage to the pipes and structures during cleaning. If the bottom of the pipe is corroded or missing, the cleaning process shall be limited to getting the bottom smooth enough to allow the pre-lining CCTV and to support the lining operation. Extra caution shall be used to ensure that the Contractor does not wash away material that is outside the diameter of the existing pipe section. If the Contractor operation results in a significant wash-out, the Contractor shall import classified material to fix the wash-out. Repair of the wash-out, including placement and the cost of imported materials, is incidental to the Work and no separate payment is made.

The Contractor shall remove all intruding pipe ends, all intruding pipe material, and all other obstructions and deleterious material that remains within the pipe cross-section following cleaning throughout the full length of the pipe as necessary. Perform this work using remote-controlled equipment, including a pipe cutter. Remove the obstructions as set forth by the lining system manufacturer's specifications for preparation of the substrate pipe and applicable industry standards.

The Contractor shall be responsible for and repair, at no cost to the Owner, any damage to a structurally sound (no cracks, breaks, or loss of pipe wall thickness) storm drain pipe caused by use of the cleaning equipment. Further, the Contractor shall be responsible for any damage to properties connected to the storm drain which result from the pipe cleaning operation.

Cleaning shall be performed to a level required so that storm drain pipe rehabilitation can be properly accomplished. The Contractor may use CCTV to monitor work during the cleaning of the storm drain pipe to determine whether the pipe is sufficiently cleaned, at which point the Contractor shall CCTV the pipe in accordance with Subsection 656-3.03.02 CCTV Inspection and provide a copy to the Engineer for final acceptance of the storm drain pipe cleaning. If television inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to re-clean and re-inspect the storm drain line by television inspection until the cleaning is shown to be satisfactory, at no additional cost to the Owner.

656-3.03.02 CCTV INSPECTION. Inspection of pipes shall be performed by experienced personnel trained in locating breaks and obstacles by closed-circuit television. The interior of the pipe shall be carefully inspected to determine the location of any conditions which may prevent proper installation of the pipe lining, and it shall be noted so that these conditions can be corrected. Immediately after the inspection is complete, the Contractor shall provide the Engineer with an inspection recording and suitable log for later reference.

The camera is to be centered in the pipe and move in a downstream direction at a uniform rate stopping and recording all points of coding. At no time is the rate to exceed a rate of thirty feet per minute (30 ft/min), unless using the digital high-resolution camera identified as an alternative in Article 25.3. When the camera is not able to complete the inspection, after several attempts and cleaning of the storm drain pipe, then the inspection of the current segment is to be abandoned and started from a reverse setup going against the storm drain flow.

The camera lens is to be kept clear of condensation, oils, grease, and debris during the CCTV inspection. Lighting intensity is to be adjusted to minimize glare. Picture quality shall be adjusted to provide a clear, in-focus picture of the entire periphery of the pipeline.

656-3.04 PRE-LINING CCTV INSPECTIONS. The Contractor shall perform a pre-lining CCTV inspection of the storm drain piping immediately before the insertion of the impregnated tube to assure that the pipe is clean and existing pipe conditions are acceptable for lining. The Contractor shall complete the pre-lining CCTV inspection in accordance with Subsection 656-3.03.02 CCTV Inspection.

The Contractor shall notify the Engineer two (2) working days in advance of the anticipated date of the pre-lining inspection. The Engineer or their designee is to be provided unobstructed access to CCTV facilities from set up to tear down of the CCTV equipment. During the CCTV inspection the Engineer or their designee may require the Contractor to backup, adjust the camera, and investigate with the CCTV equipment any points they may deem of interest.

The Engineer will review the CCTV video to determine conformance with the specification. The Contractor is to correct deficiencies where the video does not meet the standards stated herein at no additional cost to the Owner.

656-3.05 STORM WATER BYPASS PUMPING. Include a detailed list of equipment (hoses, pumps, and other) and deployment schedule to maintain storm flows during construction including cleaning and lining activities during storm events. Provide for a minimum of 500-gpm normal flow and minimum storm event of 2700-gpm.

Provide primary bypass pump(s) and standby backup pump(s) of equal capacity connected into the bypass piping system available for immediate operation. Maintain the hydraulic gradient, both upstream and downstream, of the bypassed pipe, at an elevation to prevent damage to properties served. Do not discharge storm water onto the ground. During bypass pumping, maintain continuous monitoring and observation of the equipment.

Muffle the equipment to minimize noise. Attain a noise permit where required by the local authorities. A limited operation time required by the local authority is not cause for additional time or compensation.

656-3.06 LINE OBSTRUCTIONS. If the pre-lining CCTV inspection reveals an obstruction in the existing pipe (heavy solids, dropped joint, collapsed pipe, boulders, etc.) the obstruction shall be removed by the Contractor in conformance with these Contract Documents.

656-3.07 RESIN IMPREGNATION. The Contractor shall designate a location where the felt tube will be impregnated with resin, using distribution rollers and vacuum, to thoroughly saturate the felt tube prior to its dispatch for installation. A catalyst system or additive(s) compatible with the resin and tube may be used per the manufacturer's recommendation. They shall, however, not impair or reduce the resin's ability to withstand the minimum chemical resistance or load bearing criteria. The quantity of resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowances for polymerization shrinkage and the loss of resin through cracks and irregularities in the host pipe wall.

656-3.08 INSTALLATION. The wetted out tube shall be protected during transportation and insertion into the manholes. The insertion area, equipment platform, etc., shall be securely protected, and all damaged structures shall be repaired by the Contractor.

The CIPP shall be installed in accordance with ASTM F 1216 or ASTM F 1743. Care shall be taken not to overstress the felt or fiberglass tube at the elevated curing temperatures, which may cause damage or failure prior to cure.

656-3.09 CURING. After completion of the insertion, the Contractor shall follow manufacturer's recommended curing method. The Contractor shall use a hot water recirculation, steam system, or ultraviolet light (depending on the requirements described below), capable of delivering a consistent cure of the resin.

For UV cure provide equipment capable of delivering desired UV light intensity, pressure, and temperature uniformly throughout the liner. The UV light intensity, pressure, and temperature shall be continuously monitored by both computer and video as recommended by the liner manufacturer.

For water or steam cure, the heat source shall be fitted with suitable monitors to gauge the temperature of the outgoing and incoming curing water or steam. Another such gauge shall be placed between the impregnated tube and the invert to the original pipe at all manholes along the length of the liner (including intermediate manholes) to determine the temperatures during the resin curing process. Initial cure may be considered completed when the exposed portions of the felt tube pipe appear to be hard, and the remote sensing device indicates the temperatures to be adequate, as recommended by the resin/catalyst system manufacturer. Curing and cooling temperatures and duration shall comply with previously submitted data and information. The curing temperature shall be as recommended by the resin manufacturer.

Coupon samples shall be obtained for testing as stated below.

656-3.10 COOLING DOWN. For water or steam cure, cool the hardened cured-in-place-pipe to a temperature below 100 degrees Fahrenheit before relieving the internal pressure. Cool down shall be accomplished with water. Careful attention shall be taken not to cool too quickly to eliminate the possibility of thermal shock. Care shall be taken in the release of the internal pressure so that a vacuum will not be developed that could damage the newly installed liner. Cool down process may vary depending on the installation technique of the manufacturer/Contractor

The cure water shall be disposed of once the curing cycle is complete. If Styrene based resins are used cure shall be discharged to a sanitary sewer with adequate flow for dilution or hauled to a wastewater treatment plant for disposal. Permission shall be obtained, in writing, from the sewer or plant owner before discharging.

If uncured resin is above non-detection levels, take immediate steps to prevent release into the environment. Capture the water, uncured resin, and all contaminated materials.

656-3.11 FIT AND FINISH. The finished pipe shall be mechanically fixed and continuous over the entire length of the storm drain section. The finished liner shall tightly conform to the walls of the existing host pipe. No gap or annular space between the finished liner and the host pipe shall be allowed or be visible at the manhole, storm drain service connection, or other exposed points within the finished liner section. The finished liner shall be homogenous throughout and free of any protrusions, holes, cracks, etc., which in the opinion of the Engineer will affect the liner's structural integrity, hydraulic performance, future maintenance access, and overall line performance.

The CIPP shall provide a structurally sound, impermeable, jointless, and close-fitting pipe.

It is not acceptable for the installed liner to cause a backwater or reduce the pipes hydraulic capacity.

At liner termination points in storm drain structures, provide a smooth transition from the liner to the manhole wall or invert. If necessary, grind the exposed liner edge smooth or fill with mortar to eliminate rough or abrupt edges that may collect debris or hamper CCTV equipment operation. If mortar is used, it shall provide a smooth transition on both the upstream and downstream inverts and shall be applied the entire circumference of the liner. For sealing the ends of new liners in corrugated host pipes, a hydrophilic resin may be used to fill the annular space.

656-3.12 REINSTATEMENT OF PIPE CONNECTIONS TO THE CIPP LINED PIPE. Reinstate pipe connections to the CIPP lined pipe using trenchless techniques in accordance with the manufacturer's requirements. The work shall be accomplished from within the storm drain or culvert pipe by either robotic or man-entry means. Excavation to reinstate pipe connections to the CIPP lined pipe will not be allowed. Re-opening of the pipe connection entrances shall be performed in a manner to prevent blockage of flow at the opening. The reinstated pipe connection opening shall be no less than 95 percent and no more than 100 percent of the size of the original connection opening. The reinstated service connection shall be smooth and uniform with no rough edges or protrusions along the trimmed edge of the liner that could cause debris to collect at the pipe connection opening. Each reinstated pipe connection shall be thoroughly inspected with the camera during the post rehabilitation CCTV inspection to confirm that the final fit and finish is acceptable. The CCTV inspection will include stopping at each reinstated pipe connection, pausing for 10 seconds and view the entire circumference of the reinstated pipe connection.

If the Contractor cuts through the liner outside of the pipe connection to be reinstated, the Contractor will repair the damaged liner at no additional cost to the Department.

656-3.13 CLEANUP. After the installation work has been completed and all testing accepted, the Contractor shall clean up the entire project area. The Contractor shall dispose of all excess material and debris not incorporated into the permanent installation.

Dispose of removed/captured materials as required dependent on the type of materials, and as required by these specifications and Federal, State, and local regulations.

656-3.14 SAMPLING AND TESTING. Sampling and testing shall meet the requirements of ASTM F-1216 and shall include the following:

1. Prepare a minimum of two CIPP samples, per 2,000 feet, from each diameter of liner installed.
2. Samples shall be large enough to provide a minimum of five specimens.
3. Test for initial tangent flexural modulus of elasticity and flexural stress in accordance with Test Methods D 790 and meet the requirements of the Mechanical Properties within this specification
4. Verify that the liner thickness of the sample meets the requirements of this specification.
5. Submit test results to the Engineer for review and approval within the time approved by the submittals.
6. Samples shall be cut from a section of cured CIPP at the termination point that has been inverted through a like diameter pipe which has been held in place by a suitable heat sink, such as sand bags or other similar material.

656-3.15 FINAL INSPECTION. After the liner is inserted but before final acceptance, the Contractor shall complete a post-lining CCTV inspection of the cured in place lined pipe and submit the video and log to the Engineer for review. The Contractor shall complete the post-lining CCTV inspection in accordance with Subsection 656-3.03.02 CCTV Inspection. The Contractor shall by-pass or temporarily block the storm drain flow in accordance with Subsection 656-3.05 STORM WATER BYPASS PUMPING if necessary, to achieve this condition.

656-4.01 METHOD OF MEASUREMENT. Section 109, and as follows:

Cured-in-Place Pipe __ Inch. Measured by the linear foot of liner from center of manhole to center of manhole.

Cured-in-Place-Pipe – __ Inch Host Pipe Preparation. Measured by the linear foot of liner from center of manhole to center of manhole.

Cured-in-Place-Pipe – Host Pipe Spot Repair. Per Section 109.

656-5.01 BASIS OF PAYMENT.

Item 656.2001. Cured-in-Place Pipe __ Inch. Payment for furnishing and installing CIPP liner shall constitute full payment for furnishing all materials, including liner, resin, and sampling and testing. Payment for the liner will also include storm drain pipe cleaning and preparation, storm water bypass pumping, disposal of excess material and cleaning debris, the cost of sealing the liner at the termination points, water quality sampling and testing, along with disposal of excess material and debris associated with lining activities. Collection and delivery of pre-lining and post-lining CCTV inspections are subsidiary to this item.

Item 656.2005. Cured-in-Place Pipe – Host Pipe Spot Repair. 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.

Replacement of segments of pipe prior to lining will be paid under Section 603, or according to Section 109 by mutual agreement between the Engineer and Contractor.

Additional permits, labor, equipment, materials, disposal, adjustment of existing manholes, and all other incidentals to perform the work are subsidiary to 656 pay items. No separate payment will be made for excavation and backfill work to install CIPP liners.

Payment will be made under:

PAY ITEM

Item Number	Item Description	Unit
656.2001.____	Cured-In-Place Pipe __ Inch	LF
656.2005.____	Cured-In-Place Pipe – Host Pipe Spot Repair	CS

CFHWY01389

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DIVISION 700 — MATERIALS

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**SECTION 703
AGGREGATES**

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 VH 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 VH
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

C703.1-22.0501

APPENDIXES

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APPENDIX A
CONSTRUCTION SURVEY REQUIREMENTS

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APPENDIX B
ENVIRONMENTAL PERMITS

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APPENDIX C
MATERIAL CERTIFICATION LIST

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HIGHWAY MATERIALS CERTIFICATION LIST

Project Name **ANCHORAGE AREA DRAINAGE PRESERVATION**

Project Number **0001822 / CFHWY01389**

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	Construction		Design			Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g. Binder #
	2020 or Std. Mod./Special Provisions, if noted	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		
408 HOT MIX ASPHALT PAVEMENT - TYPE VH										CRSP = CR Special Provision SP = Special Provision
Mix Design	408-2.09								CRSP	
Asphalt Binder	408-2.01								CRSP	
Joint Adhesive	408-2.03								CRSP	
Joint Sealant	408-2.04								CRSP	
Warm Mix Asphalt	408-2.05								CRSP	
Asphalt Release Agent	408-2.06								CRSP	
550 COMMERCIAL CONCRETE										
Precast Concrete Products	550-2.03								CRSP	
604 MANHOLES & INLETS										
Flexible Watertight Gaskets										
Ring Gaskets for Rigid Pipe & Precast Manhole Sections	705-2.05.1									
Precast Concrete Manhole Sections	550-2.03, 712-2.05								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.	
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).	

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. 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	Construction		Design			Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g. Binder #
	2020 or Std. Mod./Special Provisions, if noted	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		
656 CURED IN PLACE PIPE										
Fabric Tube	656-2.01								SP	
Resins and Catalyst	656-2.02								SP	
Additional Materials										

aded 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.
ection 106-1.05 for submittal requirements.

APPENDIX D
TEMPORARY CONSTRUCTION EASEMENTS

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