Glenn Highway Milepost 66.5 to 92 Pavement Preservation, Stage 1, Milepost 83-92
Project No.: 0A15039/CFHWY01286

PS&E Review

PS&E REVIEW COMMENTS are due on July 3, 2025. The review meeting will be held at **9:00 AM** on July 9, 2025 in the **Construction** conference room. **Please E-mail comments, using the comment form, to Ryan Norkoli (ryan.norkoli@alaska.gov) and Jacob Dilley (jacob.dilley@alaska.gov).**

*****Electronic Copy available on the internet at the following location:**
dot.alaska.gov/creg/design/highways/PS&E_Review/CFHWY01286/

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

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

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Melanie Arnolds, Chief, ROW, 2525 (Memo and EE)
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Jeremy Thompson, Maintenance and Operations, 2525
Connor Eshleman, Highway Design, 2525
Luke Bowland, Pre-Construction Engineer, 2525 (Memo and EE)
Lauren Meyer, Regional Construction Office Engineer, 2525 (Memo and EE)
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MEMORANDUM State of Alaska

Department of Transportation and Public Facilities

TO: See Distribution DATE: June 3, 2025

TELEPHONE: 269-0423

FROM: **Ryan Norkoli, P.E.** SUBJECT: **Glenn Highway Milepost 66.5 to 92 Pavement Preservation, Stage 1, Milepost 83-92 Project No. 0A15039/CFHWY01286 PS&E Review**

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

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

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

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

IRIS Project No. CFHWY00394 (For Timesheets)
IRIS Activity: 062P (or your sections activity code)
IRIS Template: TTPJ001
IRIS Phase: TA2015

Glenn Hwy MP 66.5-92 Pavement Preservation Project CFHWY01286
Stage 1 Local Review - Adjudicated Comments

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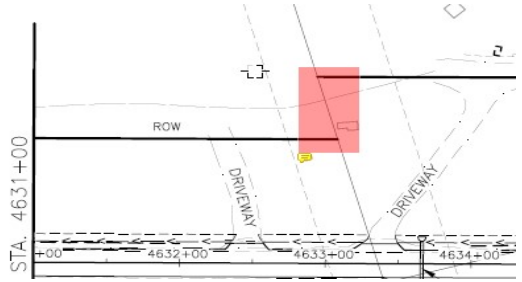
#	Reviewer's Number	Reviewer Department	Reviewer	Sheet No. / Section No.	Comment	Response	Done? (Initial)
1	1	SWD & ES	L. Little	B2	Consider if utilizing an additional 1" of ATB and removing the 2" D-1 would give a superior product at reduced cost. 2" D-1 is typically challenging to construct, and unclear the reason for including it. If it is intended for improving grade/smoothness control for pavement layers, consider reaching out to NR to discuss as D-1 is rarely used in NR under ATB.	Discussed during review meeting. D-1 retained.	RPH
2	2	SWD & ES	L. Little	B2	Given the existing relatively narrow road and the excavation depth required, consider if additional road width (temporary or permanent) may be needed to accommodate traffic safely.	Discussed during review meeting. Outside scope of a pavement preservation project.	RPH
3	3	SWD & ES	L. Little	Specs pg 15	Why is a regional special being used to modify a Division 100 specification (Section 120 DBE Program)?	Removed CR120.1 from specifications.	GMC
4	1	ROW Engineering	B. Laposay/ J. Pettijohn	A1	It appears the Townships and Ranges are incorrect on the north arrow. Please revise.	Revised	RPH
5	2	ROW Engineering	B. Laposay/ J. Pettijohn	A1	Near the label "Beginning of Project", "Sawmill Rd" is labeled. However, on Sheet A4, the same road is labeled "Bonnie Lakes Rd". Please address and be consistent throughout.	Revised A4; it should be Sawmill Rd.	RPH
6	3	ROW Engineering	B. Laposay/ J. Pettijohn	A2	Please change note 2 to: The Right-of-Way lines shown were created for this project by Alaska DOT&PF ROW Engineering and are based on recorded documents and/or platted subdivisions, and surveyed monuments. The Right-of-Way lines were inserted using a common coordinate system.	Updated note.	RPH
7	4	ROW Engineering	B. Laposay/ J. Pettijohn	E5-E9	The scale is incorrect within the title block. Please address.	Revised scale.	RPH
8	5	ROW Engineering	B. Laposay/ J. Pettijohn	F12, F13	Please label the ROW on these sheets and check the ROW line weight as it appears slightly thinner than the previous sheets' ROW linetype.	Revised.	RPH
9	6	ROW Engineering	B. Laposay/ J. Pettijohn	F15	Please darken ROW line near 4633+00 LT. 	Updated ROW	RPH

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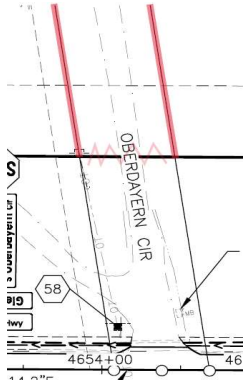
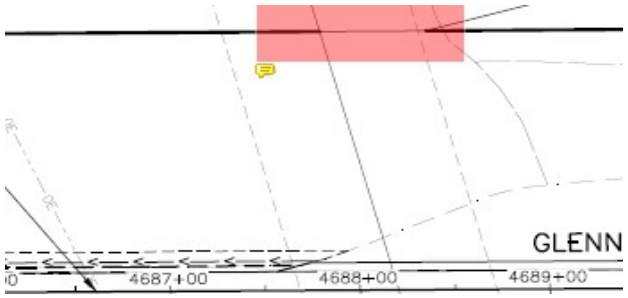
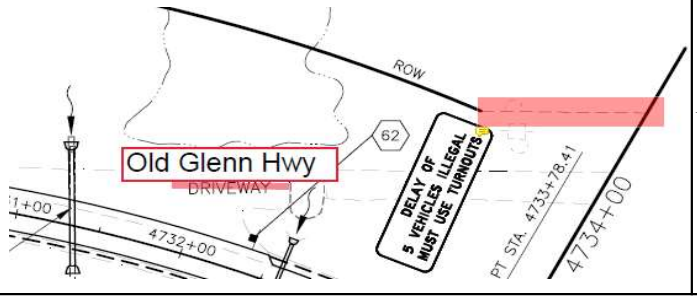
#	Reviewer's Number	Reviewer Department	Reviewer	Sheet No. / Section No.	Comment	Response	Done? (Initial)
10	7	ROW Engineering	B. Laposay/ J. Pettijohn	F15	Oberbayern is public ROW per Plat 90-8 PRD. Please change to ROW linetype and trim the Glenn ROW in between. 	Updated ROW	RPH
11	8	ROW Engineering	B. Laposay/ J. Pettijohn	F17	Please darken ROW line near 4688 LT. 	Updated ROW	RPH
12	9	ROW Engineering	B. Laposay/ J. Pettijohn	F18	Please change “driveway” to “Old Glenn Hwy” and darken ROW line near 4733 LT. 	Updated ROW	RPH

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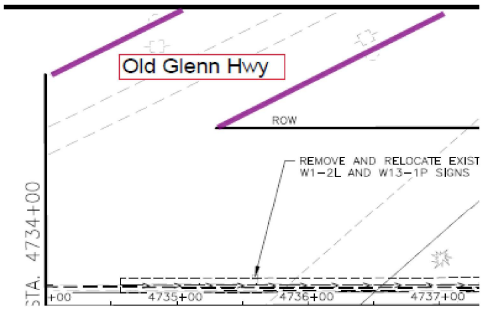
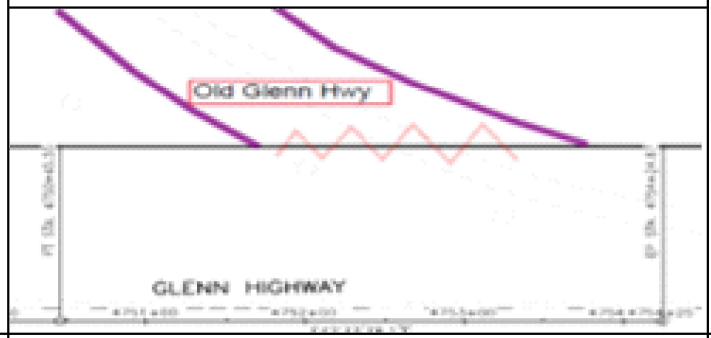
#	Reviewer's Number	Reviewer Department	Reviewer	Sheet No. / Section No.	Comment	Response	Done? (Initial)
13	10	ROW Engineering	B. Laposay/ J. Pettijohn	F19	Please darken ROW line near 4734 LT and 4735+50 LT as shown and label Old Glenn Hwy. 	Updated ROW	RPH
14	11	ROW Engineering	B. Laposay/ J. Pettijohn	F19	Please darken ROW line between ~4751+50 LT and 4754 LT for the Old Glenn Hwy and trim the Glenn ROW between. Label Old Glenn Hwy. 	Updated ROW	RPH
15	12	ROW Engineering	B. Laposay/ J. Pettijohn	F19	Add North arrow to bottom viewport.	North arrow added.	RPH
16	1	Surveys	T. Test	A2	Please remove note #9 as it should not apply to this project.	Removed.	RPH
17	2	Surveys	T. Test	A5	We will look to review the SCS after PS&E review.	Thank you	RPH
18	3	Surveys	T. Test	F5, F15, F16	Please remove monument symbols from sheets.	Removed.	RPH
19	1	Hydrology	O. LeCroy	A3	If retained in F Sheets, add subdrain linetype to legend.	Added linetype.	RPH
20	2	Hydrology	O. LeCroy	C1, E5	How is porous backfill for subdrain paid for?	It is subsidiary to underdrain pay item.	RPH
21	3	Hydrology	O. LeCroy	C1, C2	Table of Estimating Factors: 1) Construction input on unit of measurement for filter blanket? If by ton, add estimating factor.	Remained as it was.	RPH
22					2) Add estimating factor for Riprap, Class III.	Added	RPH

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#	Reviewer's Number	Reviewer Department	Reviewer	Sheet No. / Section No.	Comment	Response	Done? (Initial)
23	4	Hydrology	O. LeCroy	D0, D00	1) How do “Culvert Replacement, 2’ Deep” and “Culvert Excavations” differ?	Referencing same culverts, calulations combined.	RPH
24					2) Are excavation volumes for riprap and plastic downdrains accounted for?	Added to Summary table.	RPH
25	5	Hydrology	O. LeCroy	D3	Ditch Linear Grading Table – 1) Are there driveways being removed by the project? Table terminates ditch linear grading through most driveways, but extends it through the following driveways: STA 4378+75 LT, STA 4623+80 LT and STA 4644+25 LT. Review table and plans for consistency.	No driveways being removed on this project. Missing driveways added.	GMC
26					2) STA 4405+52 cross culvert in remarks columns falls outside station range for this row. Ditching for this row ends on sheet F4, rather than F5.	Revised summary.	GMC
27	6	Hydrology	O. LeCroy	D3	Could not locate Plastic Flume Downdrain details. Reference Z536100000 Seward Highway MP 17-22.5 Rehab for a recent example. For the 17-22.5 project, there was RFI in Construction requesting clarification on embankment grading and bedding for the downdrain and use of duckbill anchors in shallow bedrock locations. Consider whether revisions to the plans and specs are need for installations in this project.	Added details.	GMC
28	7	Hydrology	O. LeCroy	D4	Were HDPE culvert materials evaluated by the project and determined to be unfeasible? Central Region prefers HDPE materials where cover and environmental conditions allow.	HDPE should have been used. Updated.	RPH
29	8	Hydrology	O. LeCroy	D4	603.0001.0036 Table: 1) P85-2 references thaw wire in remarks column, but thaw pipe detail provided on E10. Confirm maintenance station prefers thaw pipe.	Updated	RPH
30					2) P87-3 (Object ID 80), P91-2 (Object ID 61), P91-8 (Object ID 62) were identified for thaw pipe in September 2022 recommendations. Confirm whether thaw pipe should be added to these pipes.	Updated to recommendations.	RPH

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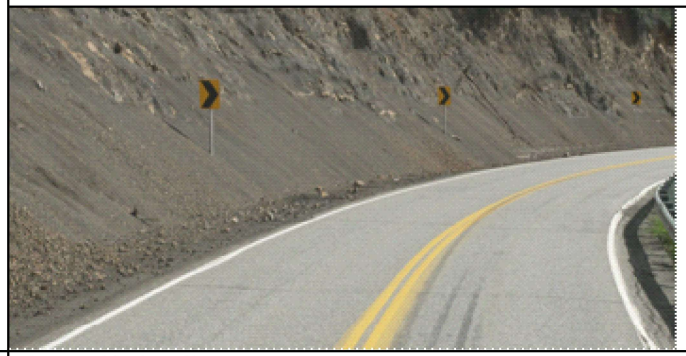
31					610.0002.0000 Table: 1)As shown, Ditch Lining breaks between STA 4403+40 and 4404+70 in plans, but shown continuous in table.	Revised Ditch Lining table.	GMC
32	9	Hydrology	O. LeCroy	D5, F3-F5	2) Are there ditch erosion issues where ditch lining is scheduled on sheets F3-F5? Streetview imagery shows likely continuous recruitment of cutbank material with low angle of repose. Ditch lining as designed may become buried after a year or two. Has M&O provided input on a preferred approach? 	Revised Ditch Lining. Not aware of input from M&O, will reach out to them.	RPH
33	10	Hydrology	O. LeCroy	D5, E4	Riprap Tables/Details: 1) What is the design length for each riprap culvert outlet protection installation? 2) Riprap Thickness shown as constant 2', but tables schedule Class II and III riprap downdrains. Adjust riprap thickness to be a minimum of 2x D50. Typical minimums are 3' for Class II and 4' for Class III.	Length of riprap added to summary tables. Will clarify riprap summary tables and details. Class III Riprap will have its own detail sheets.	GMC
34	11	Hydrology	O. LeCroy	D6	Geotextile Table: Where are details provided for geotextile installation at new culverts?	Geotextle removed from new culvert locations.	RPH
35	12	Hydrology	O. LeCroy	E3	Culvert Note 1 states to match existing inverts. This approach conflicts with elevations provided D Sheet tables.	Revised	RPH
36	13	Hydrology	O. LeCroy	F SHEETS	Consider ways to improve clarity of roadside line types and remove or clean up linework as feasible. Are cut and fill lines necessary for the full project length? Can the dashed line adjacent to the special ditch line be removed? Special ditch lines are not clear where ditch lining is shown.	Revised.	RPH
37	14	Hydrology	O. LeCroy	F SHEETS	There are several instances where culvert inlets are shown beyond special ditch line (Examples P85-2, P88-2, P88-7, and P91-2). Verify inlet locations and/or show ability to warp ditches in these locations.	Revised.	RPH
38	15	Hydrology	O. LeCroy	F1, F9	Ditch linear grading called out in D sheet table from STA 4308+75 to STA 4309+17 and from STA 4511+00 and STA 4517+61. Update plans or table and needed.	Revised.	GMC

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39	16	Hydrology	O. LeCroy	F11	Plan view appears to show embankment armoring near P88-2 along Purinton Creek. How is this work detailed? Project should not constrict conveyance capacity of creek.	Location removed from the project.	JC
40	17	Hydrology	O. LeCroy	F14	Where is the outlet protection for P89-1 detailed?	Details added to E4.	RPH
41	18	Hydrology	O. LeCroy	F15, F16	Missing driveway linework near STA 4638+50 and STA 4659+50.	STA 4659+50 driveway not shown in imagery. Added driveways to plans.	GMC
42	19	Hydrology	O. LeCroy	F18	P91-9 missing from summary table.	Added.	RPH
43	1	Utilities	S. Ahmed	U1	Please confirm the elevation of all utility crossings meet the required heights per Table 1130-1 AK Highway Preconstruction Manual 1140.31.	Confirmed we have vertical clearances required.	RPH
44	1	M&O Environmental	R. Goentzel	1	The SHPO FONA letter committed to including a couple of Section 106 sites in the plan set, marked as 'environmentally sensitive areas,' that must be avoided during construction activities. Those areas are not currently shown on any of the plan sheets, so they need to be added. Erik Hilsinger (DOT&PF PD&E PQI) should be able to provide shapefiles.	Will coordinate with DOT&PF and update letter.	RPH
45	2	M&O Environmental	R. Goentzel	Yi, Section 3	The environmental document for Glenn Hwy MP 66.5-92 PP (CFHWY00394) did not list any child projects, as I didn't have that information. Please send me the list of child project names and numbers (one for each phase of the project) to include in the re-eval for CFHWY00394. Otherwise, this statement in the specs is untrue, as CFHWY01286 is not currently covered by a completed environmental document.	Will coordinate with M&O Environmental.	GMC
46	3	M&O Environmental	R. Goentzel	Y010, Section 107-1.02	The following permits must be obtained, although we do not have them yet (please list them): •ADF&G fish habitat •USACE Section 404 permit Note: The project also disturbs more than one acre, so a SWPPP for coverage under the Construction general Permit (CGP) is also required for this project, but the Contractor writes the SWPPP and this is covered in the Section 641 specs.	Added to specifications.	GMC
47	4	M&O Environmental	R. Goentzel	Y 082 618-3.02	Per the USACE Regional Supplement to the Corps of Engineers Delineation Manual: Alaska Version 2.0, the growing season for the ecoregion where the project is located is May 29th-Sept 28th, not May 15th-August 15th	Revised	GMC
48	1	Highway Design	J. Parada, C. Ellis	A2	Under Alaska standard plans: G-26.00 usage of this standard plan has been rescinded G-33.00 has been updated to G-33.01 as of 04/04/2025 I-81.00 should not be used in central region, it should be replaced by regional detail	Removed all, since G-33.01 is no longer applicable.	RPH

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49	2	Highway Design	J. Parada, C. Ellis	A2	May be out of the scope of project but consider adding delineators (CR-T-04.03) thru project corridor. They help with night/winter driving especially in rural conditions. There are existing delineators from MP 84 thru 89.	Not added at this time.	RPH
50	3	Highway Design	J. Parada, C. Ellis	F3	Missed approach on south side of highway at ~STA 4370+00.	Updated plans.	GMC
51	4	Highway Design	J. Parada, C. Ellis	F5	Well located within paved surface of roadway at ~ STA 4419+20. Is this accurate?	Corrected	RPH
52	5	Highway Design	J. Parada, C. Ellis	B1	Asphalt safety edge, consider matching hatch type/direction to pavement structural section to help avoid any confusion.	Removed from B1 as it is a Standard Drawing	RPH
53	6	Highway Design	J. Parada, C. Ellis	C1	401 pay items: There is a new spec numbered C401-24.1101, 401.2022 – combined price adjustment item is replaced with 401.0008, 401.0009, 401.0010 and 401.2021	Updated.	RPH
54	7	Highway Design	J. Parada, C. Ellis	C2	No 647 pay item in estimate of quantities. One is typically included in most projects.	Added	RPH
55	8	Highway Design	J. Parada, C. Ellis	D Sheets	• P88-2 (~ STA 4572+50 on F11) is shown on both sheet D4 and sheet D5 in tables '603.0001.0036-CSP 36 Inch' and '605.0006.0008-Perforated Corrugated Polyethylene Pipe for Underdrain 8 Inch', respectively. The stationing provided for the 36" pipe is consistent with what is shown in the plans, whereas the stationing for the 8" underdrain is not. • P88-6 (sheet F11) is not in D sheets.	Updated summary tables.	RPH
56	9	Highway Design	J. Parada, C. Ellis	F13	Basemap missing power pole at ~STA 4602+40 RT (guy wire anchor is shown).	Added missing power pole.	RPH
57	10	Highway Design	J. Parada, C. Ellis	F15	Existing roadside mailboxes marked for 'protect in place'; is this feasible for construction?	Yes	RPH
58	11	Highway Design	J. Parada, C. Ellis	F16	Missing approach on south side of highway at ~STA 4670+50.	Added driveway to plans.	GMC
59	12	Highway Design	J. Parada, C. Ellis	F4	Missed approach on north side of highway at ~STA 4379+00.	Added driveway to plans.	GMC
60	13	Highway Design	J. Parada, C. Ellis	H5-H9	Sign summary table font seems small, especially when compared to salvage sign tables.	Updated	GMC
61	14	Highway Design	J. Parada, C. Ellis	X1	201.0003 – Clearing and Grubbing unit price seems low. Should be closer to $20,000 per acre. 401.2022 – Combined price adjustment should be replaced by 401.0008 – HMA price adjustment, 401.0009 – Longitudinal Joint Density price adjustment, 401.0010 – Pavement Smoothness price adjustment, and 401.2021-Asphalt binder price adjustment	Kept clearing and grubbing price. Updated estimate.	RPH
62	15	Highway Design	J. Parada, C. Ellis	X3	Add 647 pay item. Item typically included is most project.	Added	RPH
63	16	Highway Design	J. Parada, C. Ellis	Y000	Project specific special provisions code should be '01286 – mmddyy', not '15039 – mmddyy'.	Updated	GMC

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64	17	Highway Design	J. Parada, C. Ellis	Y045	There is a new 401 specification, # C401-24.1101	Updated	GMC
65	1	Traffic Design	G. Chalder	A2	Recommend changing “Sign Details” in Index to “Traffic Details” as H 02 does not include sign details.	Updated	RPH
66	2	Traffic Design	G. Chalder	A2	Verify if Standard Plan T-23.01 applies to this project. There appears to be no proposed crosswalks at intersections.	Revised.	RPH
67	3	Traffic Design	G. Chalder	C2	Clarify the intent on removing and relocating signs instead of installing/salvaging.	Updated notes on H1	GMC
68	4	Traffic Design	G. Chalder	F1-F19	There are sign symbols throughout the plan views that are not including in the Remove and Relocate, Salvage, or Sign Summaries. These sign symbols include, but are not limited to, the following locations: 4380+50 RT, 4384+25 RT, 4403+10 RT, 4413+30 LT, 4414+50 RT, 4553+25 RT, 4587+75 RT, 4587+90 RT, and 4728+50 RT.	Duplicate sign symbols as a result of using two topo survey xrefs. Froze unnecessary symbols in F sheets	GMC
69	5	Traffic Design	G. Chalder	F3	Verify what curve is associated with the Remove and Relocate signs at sta. 4373+50 RT. This appears to be unnecessary for the immediate curve starting at sta. 4375+12 or too far in advance for the curve staring at sta. 4382+86.	Existing W2-1 sign installed from 2019 HSIP Curve Warning Signs project is associated with curve at 4375+12. According to MUTCD table 2C-5, warning sign is only recommended (not required) based on 5 mph difference between advisory and posted speed. Guidelines for advance placement suggests sign be placed anywhere from PC up to 100ft in advance of curve. Removing and relocating due to recent installation.	GMC
70	6	Traffic Design	G. Chalder	F5	There appears to be a well symbol at sta. 4419+20. Please verify if this is correct.	Corrected	RPH
71	7	Traffic Design	G. Chalder	F5	Recommend installed a W1-8L/R chevron sign at sta. 4424+00.	MUTCD Table 2C-6 recommends 120-ft spacing between chevron signs. Curve is ~350 ft, warranting 3 chevrons. Spaced proposed signs further apart.	GMC
72	8	Traffic Design	G. Chalder	F6	Verify if the Remove and Relocate sign at sta. 4439+77 LT can be installed closer to the road. It does not appear be installed in accordance with ASP S-05.02.	Moved sign closer to road at standard distance 12' from edge of shoulder.	GMC
73	9	Traffic Design	G. Chalder	F7	Recommend moving the Remove and Relocate sign at sta. 4472+90 out of conflict with P86-1.	Moved sign. The four chevron signs at this location will be shifted ~25ft west to more closely align with curve.	GMC
74	10	Traffic Design	G. Chalder	F9	Recommend looking into reconfiguring the sequence of sign posts from sta. 4515+00 to 4517+70 for westbound traffic to the following: no. 39, 41, then 40. This could provide trucks/RVs more time to read signs on post no. 39 before entering the curves/downgrade.	Agreed, moved signs accordingly.	GMC
75	11	Traffic Design	G. Chalder	F10	Clarify why sign post no. 44 is outside of a horizontal curve.	Sign not needed, Removed.	GMC
76	12	Traffic Design	G. Chalder	F11	Recommend looking into seeing if sign post no. 46 & 47 can be spaced further apart to provide more visibility for eastbound traffic.	Limited by existing turnout, removed chevron sign #47 to provide ideal sign spacing.	GMC

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77	13	Traffic Design	G. Chalder	F12, F13	There appears to be disjointed down guy symbols at sta. 4592+50 RT and 4602+50 RT. Verify if linework is needed/accurate.	Corrected	RPH
78	14	Traffic Design	G. Chalder	F14, H10	Verify missing sign symbol for Salvage Sign 4608+52 LT.	Verified	GMC
79	15	Traffic Design	G. Chalder	F15	Recommend moving sign post no. 57 so that it is not in conflict with P89-3.	Moved sign	RPH
80	16	Traffic Design	G. Chalder	F15	Verify if the road at 4654+00 is Oberdayern or S Oberdayern. The sign and the road text differ slightly.	Revised.	RPH
81	17	Traffic Design	G. Chalder	F18	Relocating existing signs in the same location may not be acceptable. There are horizontal curve warning signs that appear to not have been installed in appropriate locations. For example, the curve at sta. 4717+80 to 4720+77. Please review MUTCD Section 2C and update the Remove and Relocate sign summary accordingly	For 35 mph advisory speed, chevron sign spacing should be 120 ft per MUTCD table 2C-6. The three chevron signs meet this criteria, but should be shifted ~25ft east to align with curve. Moved signs	GMC
82	18	Traffic Design	G. Chalder	H1-H12	Ensure sign legends are contained in the summary cells. There are legends throughout these sheets that overlap adjacent cells.	Updated summary table	GMC
83	19	Traffic Design	G. Chalder	H2, H3	Please update traffic details to current versions found on the FTP website: dot.alaska.gov/creg/design/highways/AutoCAD/RegionalDetails/Traffic/	Updated	RPH
84	20	Traffic Design	G. Chalder	H5	Remove (CONT.) from summary header as this is the beginning of the summary.	Updated	GMC
85	21	Traffic Design	G. Chalder	H8, H10, H12	Verify sheet no.s are correct in sign summaries. They appear to be incorrect starting from the following signs: H08 – Sign post no. 49 H10 – Sta. 4592+09 H12- Sta. 4591+02	Revised	GMC
86	1	Materials	A. Brodie, D. Eguires-Lee	B1	Structural Section 1 Change “Existing Ground” to “Existing Embankment”	Corrected	RPH
87	2	Materials	A. Brodie, D. Eguires-Lee	B1	Add note that pavement depth varies, full depth pavement should be reclaimed and field verified by the engineer.	Added	RPH
88	3	Materials	A. Brodie, D. Eguires-Lee	B1	Structural Section Notes 1 and 2 apply to sheet B2, Consider moving them to B2 for additional clarity	Moved	RPH
89	4	Materials	A. Brodie, D. Eguires-Lee	B2	Glenn Highway - Full Excavation Typical Section, change verbiage about geosynthetics to match verbiage in Structural Section 2 so that Geogrid is above Geotextile	Corrected	RPH
90	5	Materials	A. Brodie, D. Eguires-Lee	Specs	Section 308-2.01 Remove sentence about adding emulsified asphalt	Removed	GMC
91	1	Bridge	S. Manning	X	510.2001.0000 Bridge Deck Repair & 513.0002.0000 Field Metallizing of Steel Structures had the incorrect Ext. Amount; and has been updated in AWP by Bridge.	Included updated values.	RPH

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100%

#	Reviewer's Number	Reviewer Department	Reviewer	Sheet No. / Section No.	Comment	Response	Done? (Initial)
92	2	Bridge	S. Manning	H5	Sign Summary Table text is small and hard to read, make larger.	Updated summary table	GMC
93	3	Bridge	S. Manning	H8-H9	"Sheet No." reference is incorrect for signs 53-56 in the Sign Summary table. Do we need object markers?	2023 imagery shows signs in less than ideal conditions. According to ATMS 2C.65: "Type 3 Object markers (OM-3) should be installed at bridges when any of the following conditions exist: A. Total road width (shoulders plus traveled way) on the bridge is narrower than the total road width of the approaching roadway" Shoulders appear to be narrowed along the bridge based on imagery and survey data. Replacing all four object markers and updated sheet references.	GMC
94	4	Bridge	S. Manning	F13	Do we need new Transitions at the Purinton Creek Bridge? We replaced them as part of the Central Region Guardrail Replacement project, construction in 2023-24. If damaged, then yes, they should be replaced, otherwise not needed. Bridge will verify at the end of the month.	No longer replacing.	RPH
95	5	Bridge	S. Manning	H12	What does "Relocate on New Milepost 89" mean for the Purinton Creek name place signs, in the table? Is this not on a standard height sign?	Purinton Creek sign panels are originally on same post as Mile 89 sign, and will not be replaced. They will instead be reinstalled on the same post as the new Milepost 89.	GMC
96	6	Bridge	S. Manning	A2	Delete callout for G-33.000 Standard Plans, if there is no damage to the existing Transition Rails.	Revised	RPH
97	7	Bridge	S. Manning	D5	606 Items – Guardrail Summary table; do we need new transition and approach guardrail as part of this project? We were under the understanding that the previous project covered guardrail and transition rail replacement, as part of the Central Region Guardrail Replacement project. Within the table, it would be items covered on Sheets F13-F14.	No longer replacing.	RPH
98	8	Bridge	S. Manning	F13	Add Begin Bridge and End Bridge stationing to roadway plans.	Added	RPH
99	9	Bridge	S. Manning	N1	Does the Region want us to match roadway stationing on the Bridge plans?	Matched stationing with Bridge plans.	RPH
100	10	Bridge	S. Manning	A4	Purinton Creek on the Sheet Layout sheet is shown incorrectly on F12 and should be on F13 to match stationing and plan and profile. Summary sheet is incorrect.	Corrected	RPH
101	11	Bridge	S. Manning	A2	Index incorrectly lists J after the N sheets, when in fact, it is before the N sheets in the plan package.	J sheets no longer needed, see TMP.	RPH
102	12	Bridge	S. Manning	A1	Call out Purinton Creek on the Vicinity Map.	Label added.	RPH

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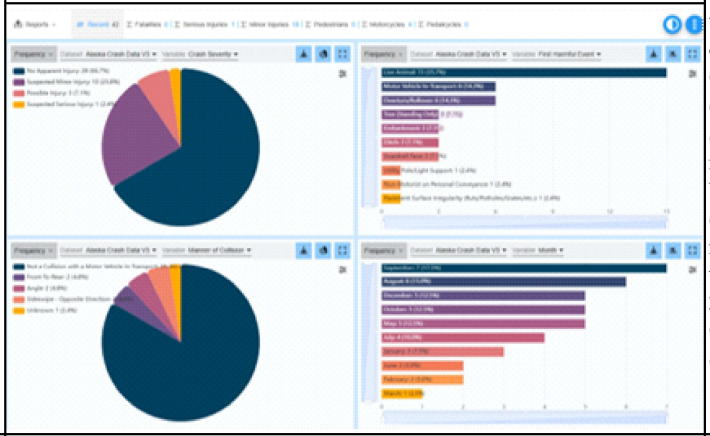
100%

#	Reviewer's Number	Reviewer Department	Reviewer	Sheet No. / Section No.	Comment	Response	Done? (Initial)
103	1	Traffic Safety	A. Bosin	General	 Most recent 5 years of data show animal and winter crashes prevailing for the corridor	See next entry.	RPH
104	2	Traffic Safety	A. Bosin	General	Here is 10 years of data. Still shows animal crashes as higher, with fall crashes outpacing winter. Consider adding moose warning signs within the project limits 	Per ATMS 2C.119: "MOOSE CRASH AREA (W16-115) signs should only be installed on road segments in the top 5% for MVC in the state as ranked by DOT&PF Traffic and Safety staff or in consultation with the Alaska Department of Fish and Game." From MUTCD 2C.50 " signs (see Figure 2C-11) may be used to alert road users in advance of locations where unexpected entries into the roadway might occur or where shared use of the roadway by pedestrians, animals, or equestrians might occur. These conflicts might be relatively confined, or might occur randomly over a segment of roadway." Is this data set for the whole Glenn project corridor? If so, we can add W11-21 signs in advance of BOP and EOP locations. Otherwise, need to know which segments of Glenn Hwy dataset applies. Will coordinate after Review PS&E.	GMC
105	3	Traffic Safety	A. Bosin	B2	consider including superelevation. Many of these curves do not have current standard superelevations. If we are doing substantial subgrade work and sub base construction, now is the time to establish the superelevations where feasible	As a Pavement Preservation project, superelevation is outside the scope of changes for this project.	RPH
106	4	Traffic Safety	A. Bosin	H1	Note 3. Does this assume there is an inventory that all signs needed are accounted for? Some may have been knocked down by the time this project is active so I wouldn't want contractor to assume full signage is present and then just reinstall the sub-optimal signing that was once present back in 2019. Consider pulling the as-built and providing a list for contractor.	Existing signs and signs proposed for replacement were confirmed and determined by 2023 imagery. If signs have been damaged since 2019 curve warning sign project, they will need to be replaced. Updated note.	GMC

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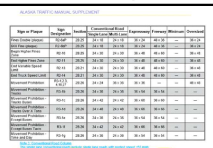
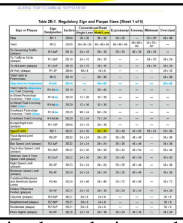
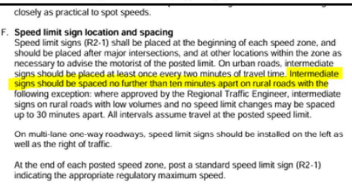
100%

#	Reviewer's Number	Reviewer Department	Reviewer	Sheet No. / Section No.	Comment	Response	Done? (Initial)
107	5	Traffic Safety	A. Bosin	H Sheets	Please increase the size of signage per proposed Alaska Traffic Manual update table 2B-1 Regulatory Signs. Specifically Speed Limit signs should now be 30x36 for roads posted 55MPH and higher (see note highlighted below table pointing to multi-lane column)   Understand this will impact sign base design and sign post design based on wind loads for area.	Increased sign sizes and updated post types.	GMC
108	6	Traffic Safety	A. Bosin	H Sheets	Confirm speed limit sign locations meet recommended placement of every 10 minutes of travel at posted speed limit. This require include looking beyond the limits of this project in each direction of travel to confirm if a speed limit sign is necessary within the scope of this project.  closely as practical to spot speeds. F. **Speed limit sign location and spacing** Speed limit signs (R2-1) shall be placed at the beginning of each speed zone, and should be placed after major intersections, and at other locations within the zone as necessary to advise the motorist of the posted limit. On urban roads, intermediate signs should be placed at least once every two minutes of travel time. Intermediate signs should be spaced no further than ten minutes apart on rural roads with the following exception: where approved by the Regional Traffic Engineer, intermediate signs on rural roads with low volumes and no speed limit changes may be spaced up to 30 minutes apart. All intervals assume travel at the posted speed limit. On multi-lane one-way roadways, speed limit signs should be installed on the left as well as the right of traffic. At the end of each posted speed zone, post a standard speed limit sign (R2-1) indicating the appropriate regulatory maximum speed.	Removed speed limit sign at 4729+91	GMC
109	7	Traffic Safety	A. Bosin	E3	Ditch Linear Grading: is this impacting transversable and recoverable slopes for roadside clear zone evaluations? What about in horizontal curve locations? Check RDG table 3-1 and 3-2. RDG figures 3-6 and 3-7 for drainage features should be checked with combo slopes. (RDG points to trapezoidal bottom ditch that is at least 5' wide. Understand ROW and grades might be limited, need write up when not feasible)	Transversable slopes are an issue on this project. Write up will be provided if not feasible.	RPH

Glenn Hwy MP 66.5-92 Pavement Preservation Project CFHWY01286
Stage 1 Local Review - Adjudicated Comments

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100%

#	Reviewer's Number	Reviewer Department	Reviewer	Sheet No. / Section No.	Comment	Response	Done? (Initial)
110	8	Traffic Safety	A. Bosin	E3-E4	All culvert end sections should have 1:6 or flatter traversable side slopes, with no steeper than 1:3 or be placed outside of clear zone per RDG.	Most likely not able to meet based on limits.	RPH
111					When speaking with Orion, we don't have a standard detail for this currently- a larger ask with statewide on updating the standard drawing.	Understood.	RPH
112	9	Traffic Safety	A. Bosin	E10	Double check note 2 has clearzone evaluated. Double check with M&O if thaw pipe is servicable when guardrail is present.	Still need to ask M&O, been used on other locations.	RPH
113	10	Traffic Safety	A. Bosin	B Sheets	Consider including a rumble STRIPE. Shoulder not wide enough for traditional rumble strips, rumble STRIPE is feasible and may improve striping longevity because of vertical face with paint. Understanding it was used a few years ago on KGB, so there is likely on detail on it. Used widely in NR on Richardson highway	Alaska DOT&PF Policy on Rumble Strip Installation from 2009 provides guidelines for where to install and this project does not meet those minimum lane and shoulder widths.	RPH

Transportation Management Plan

For

Glenn Highway Milepost 66.5 to 92 Pavement Preservation

0A1539/00394

Sutton, Alaska

Alaska Department of Transportation & Public Facilities
Central Region

P.O. Box 196900

Anchorage, Alaska USA 99519-6900

Prepared By: Iain McPherson, PE

Company Name: Kinney Engineering, LLC.

Phase: Plans-In-Hand

Preparation Date: May 27, 2025

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

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

Table of Contents

1.0 Introduction

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Highway Administration (FHWA)) is proposing to resurface Glenn Highway through the Glenn Highway Milepost 66.5 to 92 Pavement Preservation project. The project will include replacing pavement, guardrail, guardrail end treatments, digouts, drainage improvements, signing, and striping. Traffic control is anticipated to be primarily short duration and single lane closures.

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

1.1 TMP Roles and Responsibilities

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

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

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

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

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

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

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

2.0 Project Description

2.1 Goals and Objectives

The Glenn Highway Milepost 66.5 to 92 is a Preventative Maintenance (PM) project. This project is an effort to maintain public roadways and associated appurtenances in a cost-effective manner. Key goals are maintaining safety and preserving the level of service and function of the existing Glenn Highway until the next rehabilitation project can be constructed.

2.2 Proposed Improvements

The purpose of PM project is to resurface the highway, repair damaged structural sections, install guardrail and end treatments, drainage improvements, signing, and striping.

2.3 Project Schedule

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

2.4 Nearby Projects

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

2.5 Project Stakeholders

Table 1. Project Stakeholders

Agency/ Organization	Name	Title	Phone Number
Agency Representatives			
DOT&PF	Jacob Dilley	Design Project Manager	907-707-1922
Palmer M&O	Kirk Warren	Chief, M&O	907-2690760
ENSTAR			907-376-7979
GCI			800-800-4800

MEA			907-761-9500
MTA			907-745-3211
Mat-Su Borough	Mike Brown	Borough Manager	907-861-8689
U.S. Postal Service			907-376-5327
Chickaloon Native Village Tribal Council			907-745-0749
Alaska Department of Natural Resources (DNR)			907-269-8400
Schools			
Ya Ne Dah Ah School			907-745-0793
Glacier View School			907-861-5650
Emergency Services			
Central Mat-Su Fire Department			907-861-8040
Chickaloon Community Volunteer Department			907-352-5440
Alaska State Troopers			907-745-2131
Hospitals			

Other	
Chickaloon Area Transit Services (CATS)	907-745-1855
DOT&PF M&O Cascade Station	907-745-2159

3.0 Existing Roadway & Traffic Conditions

3.1 Roadway & Traffic Characteristics

The DOT&PF classifies Glenn Highway Milepost 66.5 to 92 as an Interstate Rural Road. Table 2 lists all roadways directly connected to the project corridor, as well as available traffic data for both segments.

Table 2. Roadways Affected by Project

Roadways Affected by TMP – Summary					
Roadway/Street Name	**Classification**	**AADT**	**Truck Percentage**	**Peak Hour Volume**	**Posted Speed**
Glenn Highway MP 65.5	Interstate	1,630	15.1	132	55
Glenn Highway MP 78	Interstate	1,290			
Bonnie Lake Road		30			
S Oberbayern Circle					

3.2 Pedestrian/Bicycle Facilities

There are no existing pedestrian and bicycle improvements along this portion of Glenn Highway.

3.3 Transit Facilities

There are no regularly scheduled transit routes through the project area, Chickaloon Area Transit System (CATS) offers on demand curb to curb service between MP 40 to MP 70 of the Glenn Highway. Regular bus and shuttle traffic is not expected in the project corridor.

3.4 Freight

Adjacent properties are primarily recreational with residential, farming, industrial and commercial properties requiring larger truck access. The Glenn Highway is a Primary Highway Freight System (PHFS).

3.5 Land Use

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

3.6 Stakeholder Outreach & Input

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

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

3.7 Other

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

4.0 Preliminary Work Zone Impact Assessment

Table 3. Preliminary Work Zone Impacts

Does the project include long-term closures/extended weekend closures?	**Significant Project Rating:**
☐ Yes	☒ Doesn't Meet Significant Project Criteria
☒ No	☐ Significant – Category 1
If Yes, check all applicable types of facilities	☐ Significant – Category 2
☐ Principal Arterial	☐ Significant – Exempt
☐ Minor Arterial	
☐ Collector	
☐ Local	

Can traffic be detoured?	☐ Yes	☒ No
Is the local alternate detour route in good condition?	☐ Yes	☐ No
Will the detour route have a detrimental impact on emergency vehicles, school buses, or other sensitive traffic?	☐ Yes	☐ No
Are there load limit restrictions on the detour?	☐ Yes	☐ No
Are there bridge/culvert height or width restrictions on the detour?	☐ Yes	☐ No
Is the existing shoulder sufficient to support traffic during construction?	☐ Yes	☒ No
Is additional width required on culverts or bridges to maintain traffic?	☐ Yes	☒ No
Is there a pedestrian/bicycle facility that must be maintained?	☐ Yes	☒ No
Would a temporary structure(s) be required?	☐ Yes	☒ No
Would a median crossover be needed?	☐ Yes	☒ No
Would there be a need to maintain railroad traffic?	☐ Yes	☒ No
Could maintenance of traffic have an impact on existing or proposed utilities?	☐ Yes	☒ No
Does it appear that maintenance of traffic will require additional right-of-way?	☐ Yes	☒ No

Can the contractor restrict the roadway during the time periods listed?

a.m. peak hours, one direction	☒	p.m. peak hours, one direction	☒

a.m. peak hours, both directions	☐	p.m. peak hours, both directions	☐
Overnight	☒	Local celebrations	☐
Holidays or weekends	☐	Special events	☐

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

School closings or openings	☒	Holidays	☐	Special Events	☐

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

Roadwork in the immediate area that may affect traffic or the contractor's operations?	☐ Yes	☒ No
Roadwork on other roads that may affect the use of alternate routes?	☐ Yes	☒ No
Are there other maintenance of traffic issues?	☐ Yes	☒ No

Does the project need operational analysis to assess impacts?

☐ Yes

☒ No

TMP Components Included	Location	Appendix (if included)
☐ Traffic Operation Analysis		
☒ Temporary Traffic Control Plan	TMP	A (TTCP)
☐ Public Information & Outreach		
☐ Traffic Operations Strategies		
☐ Traffic Operation Plan		
☐ Other Impact Assessment		
☐ Incident Management Plan		

4.1 Traffic

The project scope and existing conditions will necessitate lane closures for culvert installation and digouts. This is anticipated to create moderate impacts to existing traffic and can be mitigated by working in off peak hours.

4.2 Pedestrian & Bicycle

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

4.3 Environmental

The proposed project does not involve any unusual circumstances or significant environmental impacts. Lane Closures will be required for construction of culverts and digouts. Construction will not cause major traffic disruptions along the Glenn Highway.

4.4 Utilities

Utility companies with facilities in the project limits may include Alaska Communication Systems (ACS), Matanuska Electric Association (MEA), ENSTAR Natural Gas, and GCI telecommunications. Proposed improvements will not require utility relocation. Utility inspection and minor depth adjustment at crossings may be necessary in roadway construction dig-out areas.

4.5 Right-of-Way (Public Access)

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

4.6 Public Transportation

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

4.7 Commercial Vehicles (including the Alaska Railroad)

There are no railroad facilities in the project area.

No freight facilities existing within the project vicinity. Freight impacts are anticipated to be minimal through the allowance of regular vehicle traffic.

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

4.8 Navigable Waters

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

5.0 Operational Analysis

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

6.0 Work Zone Impact Management Strategies

6.1 Work Zone Traffic Control Narrative

6.1.1 Construction Stages and Phases

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

6.1.2 Construction Schedule

Construction is anticipated to begin in 2025 and is expected be completed in three successive stages.

6.1.3 Lane Use

During construction operations one lane traffic will need to be maintained at all times.

6.1.4 Work Zone Traffic Analysis/Lane Restriction Hours

A detailed work zone traffic analysis was not conducted for this project. Peak hour restrictions should be limited in duration and not put in place within 1 hour of school start and end times or during the school bus operating schedule.

6.1.5 Holidays, Local and Special Events

No special events were determined within the project corridor. The contractor should avoid lane closures during holidays and school bus operating hours.

6.1.6 Detours

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

6.2 Temporary Pedestrian & Bicycle Accessible Routing

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

6.3 Property Access

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

6.4 Freight Mobility

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

6.5 Public Information and Outreach

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

6.6 Traffic Operations

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

Due to the high travel speeds, and no detour routes; the contractor will need to work on the road while it is under some traffic load and should focus their construction work on limited lengths. Through traffic and access to homes, businesses, and recreational areas will need to be maintained with limited short duration closures. Speed limit reductions should be no more than 10mph.

6.7 Work Zone Strategies Checklists

Table 4. Temporary Traffic Control Strategies Checklist

Temporary Traffic Control			
Traffic Control Devices			
Temporary signs	☒	Flaggers	☒
Sequential arrow boards	☒	Flaggers station lighting	☒
Channelizing devices (tubular markers, drums)	☒	Radar speed trailers	☒
Pedestrian channelizing devices (PCD)	☐	Temporary barrier glare screen	☐
Bicycle channelization devices (BCD)	☐	Surface mounted tubular markers	☐
Temporary pavement markings	☒	Uniformed traffic control officers	☐
Temporary traffic signals	☒		☐
Project Coordination Strategies			
Other area projects	☐	Right-of-Way	☐
Utilities	☒	Other transportation infrastructure	☐
Innovative Contracting Strategies			

Temporary Traffic Control			
Alternative Contracting Procurement	☐	Performance specifications	☒
Incentive / Disincentive clauses	☐		
Innovative or Accelerated Construction Techniques			
Prefabricated / precast elements	☐	Rapid cure materials	☐
Traffic Control Strategies			
Construction phasing / staging	☒	Day work	☒
Full roadway closures / detour	☐	Weekend work	☒
Lane shifts or closures	☒	Work hour restrictions for peak travel	☒
Two-way, one-lane closures	☒	Pedestrian accommodation	☒
Ramp closures	☐	Bicycle accommodation	☒
Night work	☒	Business access improvements	☐

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

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

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

Table 5. Public Information and Outreach Strategies Checklist

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

7.0 Construction Monitoring

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

7.1 Traffic

7.2 Pedestrian & Bicycle

7.3 Environmental

7.4 Utilities

7.5 Right-of-Way (Property Access)

7.6 Public Transportation

7.7 Commercial Vehicles (including Alaska Railroad)

7.8 Navigable Waters

7.9 Other

8.0 TMP Evaluation

Appendix A: Temporary Traffic Control Plan

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

Erosion and Sediment Control Plan

For

Glenn Highway Milepost 66.5 to 92 Pavement Preservation Stage 1, Milepost 83.5-92

0A15039/CFHWY01286

Chickaloon, Alaska

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

Prepared By: Margaret Devlin and Tae Voight, PE, CESCL

Company Name: Kinney Engineering LLC

ESCP Preparation Date: May 2025

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

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APPENDICES

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

Appendix A Site Maps and Drawings **(ESCP)**
Appendix B BMP Details **(ESCP)**
Appendix C Project Schedule
Appendix D Supporting Documentation: **(ESCP)**

- TMDLs
- Endangered Species
- Historic Properties
- DEC Non-Domestic Wastewater Plan Review Non-Objection Letter (if required)
- DEC Dewatering Permit (if required)
- Environmental Permits and Commitments
- Other Permits or Requirements

Appendix E Project Specific ESCP Discussion & Comments **(ESCP – not part of the SWPPP template)**

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

Appendix E Delegation of Authority (25D-107, 25D-108), Subcontractor Certifications (25D-105), Project Staff Tracking (25D-127) and Personnel Qualifications
Appendix F Permit Conditions:

- Copy of Signed Notice of Intent
- Copy of Letters from DEC Authorizing Coverage, with DEC NOI Tracking Number
- Copy of 2021 Alaska Construction General Permit

Appendix G Grading and Stabilization Records (25D-110)
Appendix H Monitoring Plan (if applicable) and Reports
Appendix I Training Records (25D-125)
Appendix J Corrective Action Log and Delayed Action Item Reports (25D-112, 25D-113)
Appendix K Inspection Records (25D-100)
Appendix L SWPPP Preconstruction Site Visit (25D-106)
Appendix M SWPPP Amendment Log (25D-114)
Appendix N Daily Record of Rainfall (25D-115)
Appendix O Hazardous Materials Control Plan
Appendix P Treatment Chemical/Active Treatment Systems (if applicable)
Appendix Q Other

- Anti-Degradation Analysis (if applicable)
- Correspondence with Regulatory Agencies
- Notices of Termination

1.0 PERMITTEE (5.3.1)

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

1.1 Operator(s)/Contractor(s)

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

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

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

Repeat as necessary.

1.2 Subcontractors

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

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

2.0 STORM WATER CONTACTS (5.3.2)

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

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

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

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

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

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

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

2.1 Contact Information for SWPPP Preparation

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

Name	Phone	Email
Athena Marinkovic	(907) 269-0436	athena.marinkovic@alaska.gov

3.0 PROJECT INFORMATION (5.3.3)

3.1 Project Information

Project Name: Glenn Highway Milepost 66.5 to 92 Pavement Preservation Stage 1, Milepost 83.5-92			
Location Address:	Street/Location: Glenn Highway	Borough or similar government subdivision: Matanuska-Susitna Borough	
	City: Chickaloon	State: Alaska	Zip: 99674
	Latitude (decimal degree, 5 places): 61.79495	Longitude (decimal degree, 5 places): 148.32596	
	Determined By: ☒ GPS ☐ Web Map:	☐ USGS Topo Map, Scale:	☐ Other:

3.2 Project Site-Specific Conditions (5.3.3)

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

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

Soil Type(s) and Slopes: **USDA Web Soil Survey results show the area consists of mostly boreal subalpine scrub/meadow mosaic-silty till slopes, ash influenced and similar soils. AASHTO Group Classification A-8.**

The following cut/fill and grading information is from the Glenn HWY DSR (November 2024): Existing embankment slopes vary up to 1.5 horizontal to 1 vertical (1.5:1) and most are protected by guardrail. Ditch grading is proposed where existing ditches have become overgrown or filled with debris and appear to be contributing to embankment and pavement degradation. Ditch grading will match existing grades, as work is constrained by obstacles, right-of-way (ROW), and sparse utilities. Existing V-shape ditches are sloped at 2:1 and approximately 3 feet deep with topsoil/seeding and intermittent lining material where the grade is steeper than 5%.

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

Drainage patterns: **Storm water runoff from the roadway is intended to flow into roadside drainage ditches. The runoff flows through culverts generally of 24" and 36" Corrugated Metal Pipes that run along the roadway and discharge into small streams or the Matanuska River. Currently, the majority of drainage ditches are overgrown or filled with debris and runoff flow is impeded. Some culverts ends are crushed or lack end sections. The project will clear and grade ditches, clear shoulders, replace crushed end sections of culverts, clean culverts of sediment and debris, fully replace selected culverts, install new culverts where specified, and install ditch lining and underdrain piping to mitigate storm water spill.**

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

Approximate growing season:**. Glenn Highway South of N. Chickaloon Branch is Located in Cook Inlet EcoRegion 115: Alaska Range. Growing Season May 24-Oct 3**

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

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

Fish Window: **Not Applicable**

Historic site contamination evident from existing site features and known past usage of the site: **There are no DEC identified contaminated sites within MP 82.5 and 92 of the project area.**

Additional information about these sites is available on the DEC Division of Spill Prevention and Response website: https://www.arcgis.com/home/item.html?id=315240bfbaf84aa0b8272ad1cef3cad3. Include only those sites listed as 'Active' or 'Cleanup Complete – Institutional Controls'

3.3 Reference Documents Available

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

- Project Specific Permits – located in Appendix D and in the Special Provisions Package
- Geotechnical Recommendations, Glenn Highway Milepost 66.5 to 92 Pavement Preservation. Project No. CFHWY000394/0A15039, July 2022, prepared by Alaska DOT&PF.
- Hydrologic and Hydraulic Report, Glenn Highway Milepost 66.5 to 92 Pavement Preservation. Project No. CFHWY000394/0A15039, February 2025, prepared by Kinney Engineering, LLC.
- Environmental Commitment Memo – available at Preconstruction Meeting
- Environmental Document – available for review in the DOT&PF Preliminary Design & Environmental section

4.0 NATURE OF CONSTRUCTION ACTIVITY (5.3.4)

4.1 Scope of Work

The Proposed Action would:

- replacement of pavement
- Install and replace guardrail and guardrail end treatments
- Excavations
- Clearing and grubbing
- Improve drainage
- Replace culvert, signs, and striping.
- Bridge repairs
- Install and remove temporary erosion and sediment control measures
- Soil stabilization and seeding

4.2 Project Function (5.3.4.1)

Glenn Highway is classified as an interstate highway with a speed limit of 55 mph. Glenn Highway contains several residential homes.

4.3 Support Activities (As Applicable)

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

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

Support Activity	Location	Dedicated	
		Yes	No
Concrete Batch Plant		☐	☐
Asphalt Batch Plant		☐	☐
Equipment Staging Yards		☐	☐
Material Storage Areas		☐	☐
Excavated Material Disposal Areas		☐	☐
Borrow Areas		☐	☐

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

The contractor will be required to finish, either temporary or final stabilized, individual areas prior to moving on to the next area. Limit ground disturbed a maximum of 11,000 feet parallel to the roadway(s). The contractor will be required to prepare a detailed schedule for review and approval prior to commencement of construction activities and is to be included in the SWPPP. The schedule will detail the sequence of activities and describe the stabilization schedule. The contractor must adapt this section with their specific plans in the project SWPPP.

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

The following are estimates of the construction site:

Description	Number	Remarks
Total project area:	302 acres	ROW to ROW
Construction-site area to be disturbed:	55 acres	Pavement and Clearing/Grubbing

Percentage impervious area BEFORE construction:	19.5 %	Gravel and asphalt areas
Runoff Coefficient BEFORE construction:	.261	Areas of high slopes with barren earth and trees
Percentage impervious area AFTER construction:	19.5%	Gravel and asphalt areas do not change
Runoff coefficient AFTER construction:	.261	

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

4.6 Identification of All Potential Pollutant Sources (5.3.4.5)

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

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

Potential sources of sediment to storm water runoff:

- Exposed soils from excavation, trenching, digging, and filling activities.

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

- Vehicle equipment fluids, including oil, grease, solvent, and coolants
- General site litter and waste
- Materials associated with paving activities
- Pavement marking activities
- Spay apply application of waterproof bridge membrane
    -

Trade Name Material	Storm Water Pollutants	Location

5.0 SITE MAPS (5.3.5)

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

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

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

6.0 DISCHARGES

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

Instructions:

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

6.1 Locations of Other Industrial Storm Water Discharges (5.3.8)

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

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

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

Allowable Non-Storm Water Discharges:

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

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

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

7.1 Identify Receiving Waters (5.3.3.3)

Description of receiving waters: **The receiving waters located within 2500 ft of the site Long Lake, Weiner Lake, Purinton Creek, Cascade Creek, the Matanuska River, and the wetlands surrounding the river. The Matanuska River is identified as AWC code 247-50-10220.**

Outstanding Natural Resource Waters (2.1.6): None

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

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

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

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

Other: **N/A**

7.2 Identify TMDLs (5.6.1)

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

☑ Yes ☐ No

TMDL: **Debris**

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

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

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

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

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

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

☐ Yes ☑ No

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

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

☐ Yes ☑ No

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

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

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

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

9.1 Historic Properties

SHPO consultation was completed on: **Pending**

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

☐ Yes ☐ No

Describe how this determination was made: **Insert Text**

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

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

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

The project boundary intersects **0** Public Water System (PWS) Drinking Water Protection Area(s) (DWPA) and **0** Provisional Protection Area(s).

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

Water System Name	PWSID	Contact Name	Phone #	Address	Email
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

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

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

1. Within the identified DWPA, restrict project activities that could significantly change the natural surface water drainage or groundwater gradient (4.10.2).

2. Immediately notify the nearby PWS of any identified potential contamination, such as spills or excess erosion (4.10.3).

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

General Principles for Erosion and Sediment Controls.

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

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

Additional Erosion and Sediment Controls Selection and Design Considerations:

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

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

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

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

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

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

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

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

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

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

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

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

- Note the location of each BMP on your site map(s).
- Any structural BMPs should have design specifications and details referred to in Section 11 or included in Appendix B.

For more information or ideas on BMPs, see the DEC *Alaska Storm Water Guide*: https://dec.alaska.gov/water/wastewater/stormwater/resources/guidance/ & for a list of Alaska specific BMPs look at the DOT&PF *Alaska SWPPP Guide*'s Appendix B - BMP Guide for Erosion & Sediment Control at http://dot.alaska.gov/stwddes/desenviron/assets/pdf/bmp/bmp_all.pdf

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

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

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

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

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

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

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

The format to be used is:

BMP Description:

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

BMP Manual/Publication:

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

Installation Schedule:

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

Maintenance and Inspection:

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

Responsible Staff:

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

How to Cite a BMP Publication:

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

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

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

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

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

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

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

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

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

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

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

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

10.1.1 Site Delineation (4.2.1)

The site will be cleared next to roadway 5' beyond slope catch points or 5' inside the right-of-way line, whichever is less, for a total area of 39.1 acres. The areas contained by the clearing will act as the site delineation for this project. Existing vegetation beyond this delineation will be preserved.

Construction areas will be delineated with flags, stakes, signs or other types of boundary markers to delineate and protect any objects and areas that must be preserved.

10.2 Maintain Natural Buffer Areas (4.2.3)

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

☑ Yes ☐ No

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

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

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

A minimum of 25' vegetative buffer will be maintained at all stream crossings, aside from work in and around existing and proposed culvert replacements.

BMP Description: *Vegetative Buffer, BMP-38.00*	
BMP Manual/Publication: *DOT&PF, Alaska SWPPP Guide 2021*	
☑ ***Permanent***	☐ ***Temporary***
***Installation Schedule*:**	Existing vegetative strip as perimeter control between on-site construction activities and project boundaries. Areas are to be identified prior to ground disturbing activities.

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

10.2.1 Clearing Vegetation (4.2.4)

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

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

10.3 Control Storm Water Discharges and Flow Rates (4.2.5)

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

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

BMP Description: *Culvert Inlet Protection, BMP 08.00*	
BMP Manual/Publication: *DOT&PF, Alaska SWPPP Guide 2021*	
☐ ***Permanent***	☑ ***Temporary***
***Installation Schedule*:**	To be installed up-gradient of culvert inlets before ground disturbing activity. Types can include: fiber rolls, geotextile-wrapped foam barriers, sand bags or gravel-filled sand bags, or geotextile-wrapped wire cage barriers.
***Maintenance and Inspection*:**	Inspection: Confirm barriers are in full contact with the soil and that bypass routes are not present. Inspect for sediment accumulation, displacement, and structural damage. Maintenance: Remove accumulated sediment before it reaches 1/3 of the design depth. Restore structure to its original dimensions and full contact with soil around inlet as soon as practicable. Repair any structural damage, including replacing damaged sandbags, as soon as practicable.
***Responsible Staff*:**	SWPPP Manager & Superintendent, Contractor

BMP Description: *Fiber Rolls for Erosion and Sediment Control, BMP 10.00a and 10.00b*	
BMP Manual/Publication: *DOT&PF Alaska SWPPP Guide 2021*	
☐ ***Permanent***	☑ ***Temporary***
***Installation Schedule*:**	To be installed in ditches perpendicular to flow, where grades exceed 5% to reduce water velocity into culverts.
***Maintenance and Inspection*:**	Inspection: Ensure the rolls are in contact with the soil and fully entrenched. Look for scouring underneath rolls. Look for split, torn, unraveling, or slumping fiber rolls. Ensure equipment has not drive over installed fiber rolls. Maintenance: Replace damaged sections and remove accumulated sediment when it reaches ½ the distance between the top of fiber roll and the ground.
***Responsible Staff*:**	SWPPP Manager & Superintendent, Contractor

10.3.1 Protect Steep Slopes (4.2.6)

Will steep slopes be present at the site during construction? ☑ Yes ☐ No

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

BMP Description: *Surface Roughening, BMP 30.00*	
BMP Manual/Publication: *DOT&PF, Alaska SWPPP Guide, March 2021*	
☐ ***Permanent***	☑ ***Temporary***
Installation Schedule:	
Maintenance and Inspection:	Inspection: Ensure the area has an adequate depth and coverage of roughening.

	Maintenance: Regrade and reseed as soon as practicable
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

Sediment Controls:

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

10.4 Storm Water Inlet Protection Measures (4.3.1)

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

BMP Description: *Culvert Inlet Protection, BMP 08.00*	
BMP Manual/Publication: *DOT&PF, Alaska SWPPP Guide 2021*	
☐ ***Permanent***	☑ ***Temporary***
***Installation Schedule*:**	To be installed up-gradient of culvert inlets before ground disturbing activity. Types can include: fiber rolls, geotextile-wrapped foam barriers, sand bags or gravel-filled sand bags, or geotextile-wrapped wire cage barriers.
***Maintenance and Inspection*:**	Inspection: Confirm barriers are in full contact with the soil and that bypass routes are not present. Inspect for sediment accumulation, displacement, and structural damage. Maintenance: Remove accumulated sediment before it reaches 1/3 of the design depth. Restore structure to its original dimensions and full contact with soil around inlet as soon as practicable. Repair any structural damage, including replacing damaged sandbags, as soon as practicable.
***Responsible Staff*:**	SWPPP Manager & Superintendent, Contractor

10.5 Water Body Protection Measures (4.3.2)

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

BMP Description: *Temporary Check Dam, BMP 31.00-33.00*	
BMP Manual/Publication: *DOT&PF, Alaska SWPPP Guide, March 2021*	
☐ ***Permanent***	☑ ***Temporary***
Installation Schedule:	Install as soon as drainage routes are established.
Maintenance and Inspection:	Inspection: Ensure center of check dam is lower than its edges. Check structural integrity. Maintenance: Remove large debris, trash and leaves. Remove accumulated sediment.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

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

BMP Description: *Fiber Rolls for Erosion and Sediment Control, BMP 10.00a and 10.00b*	
BMP Manual/Publication: *DOT&PF Alaska SWPPP Guide 2021*	
☑ ***Permanent***	☐ ***Temporary***
***Installation Schedule*:**	To be installed perpendicular to flow, upstream of water body.
***Maintenance and Inspection*:**	Inspection: Ensure the rolls are in contact with the soil and fully entrenched. Look for scouring underneath rolls. Look for split, torn, unraveling, or slumping fiber rolls. Ensure equipment has not drive over installed fiber rolls. Maintenance: Replace damaged sections and remove accumulated sediment when it reaches ½ the distance between the top of fiber roll and the ground.
***Responsible Staff*:**	SWPPP Manager & Superintendent, Contractor

***BMP Description*:** *Culvert Inlet Protection BMP-08.00*
BMP Manual/Publication: *DOT&PF, Alaska SWPPP Guide, March 2021*

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

10.6 Down-Slope Sediment Controls (4.3.3)

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

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

BMP Description: *Silt Fence, BMP 20.00*

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

☐ ***Permanent***	☑ ***Temporary***
Installation Schedule:	Install down slope from construction area to protect Matanuska River
Maintenance and Inspection:	Inspection: Inspect fence line for continuity, collapse, undermined areas, and damage. Inspect fabric for tears, punctures, fraying, weathering and compromised integrity. Confirm fence posts are secure. Ensure fence is keyed in and that there is no undercutting. Look for evidence of sediment or erosion flow leading off the downhill edge of the fence. Note depth of sediment built up. Look for signs of inadequate protection. Check for sediment flowing through fence. Check for holes in fence. Maintenance: Install alternative or additional BMPS as needed. Replace damaged fabric. Remedy fence sags. Remove accumulated sediment before is accumulates to ½ the capacity or 1/3 available storage. Dispose of silt waste in approved manner. If there is evidence of excessive sedimentation against silt fence, provide increased erosion control upslope.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.7 Stabilized Construction Vehicle Access and Exit Points (4.3.4)

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

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

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

BMP Description: *Stabilized Construction Exit, BMP 23.00 & 24.00*	
BMP Manual/Publication: *DOT&PF SWPPP Guide 2021*	
☐ ***Permanent***	☑ ***Temporary***
Installation Schedule:	Installed prior to soil disturbance in the contributing drainage area
Maintenance and Inspection:	Inspection: Inspect for sediment accumulation and material displacement. Inspect roadway for sediment track-out. Inspect ditches to ensure no sediment accumulation. Maintenance: Maintain in a condition that will prevent tracking of mud or sediment into public Right-of-Way. Repair and/or clean any structures used to trap sediment. Remove all mud and sediment prior to depositing on paved roadways. Add more signs, fencing, or barricades when vehicles exit the project without using the stabilized construction exit. Consider using additional BMPS such as tire wash if track-out persists.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

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

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

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

BMP Description*: Street Sweeping and Vacuuming for Sediment Control, BMP 55.00*	
BMP Manual/Publication: *DOT&PF, Alaska SWPPP Guide, March 2021*	
☐ ***Permanent***	☑ ***Temporary***
Installation Schedule:	Sweep where sediment is tracked from the project area onto public or private paved roads, including the roadway.
Maintenance and Inspection:	Inspection: Inspect and sweep accumulate sediment as needed
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.9 Soil Management and Soil Stockpile (4.3.7)

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

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

BMP Description: *Plastic Covering BMP-12.00*	
BMP Manual/Publication: *DOT&PF, Alaska SWPPP Guide, March 2021*	
☐ ***Permanent***	☑ ***Temporary***
Installation Schedule:	Plastic covering will be installed when the stockpile is not actively worked on more than 14 days or when there are windy conditions. Plastic covering will be secured either by weighted or trenched method.
Maintenance and Inspection:	Inspection: Inspect sheeting after installation. Check for erosion, undermining, anchorage failure, torn sheets, and deterioration. Maintenance: Repair failures as soon as practicable. If washout or breakages occur, repair damage to the slope and reinstall the material as soon as practicable.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

10.10 Authorized Non-Storm Water Discharges (4.3.8)

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

10.11 Sediment Basins (4.3.9)

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

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

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

10.12 Dewatering (4.4)

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

Will dewatering be conducted during construction? ☑ Yes ☐ No

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

For DEC's contaminated sites: http://www.arcgis.com/home/item.html?id=315240bfbaf84aa0b8272ad1cef3cad3.

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

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

Example Format:

BMP Description:

BMP Manual/Publication:	
☐ ***Permanent***	☐ ***Temporary***
Installation Schedule:	
Maintenance and Inspection:	Inspection: Maintenance:
Responsible Staff:	

10.13 Permanent/Post-Construction BMPs (4.11)

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

Examples of these measures are:

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

10.13.1 Soil Stabilization (4.5, 5.3.6.3)

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

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

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

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

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

BMP Description: *Permanent Seeding, BMP 52.00*	
BMP Manual/Publication: *DOT&PF Alaska SWPPP Guide 2021*	
☑ ***Permanent***	☐ ***Temporary***
Installation Schedule:	Permanent seeding occurs when construction activities have permanently ceased.
Maintenance and Inspection:	Inspection: Maintenance:
Responsible Staff:	

10.14 Treatment Chemicals (4.6; 5.3.6.4)

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

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

☐ Yes ☑ No

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

10.15 Treatment Chemicals (4.6.1)

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

No treatment chemicals will be used on this project.

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

10.15.1 Treatment Chemical Selection (4.6.2)

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

No treatment chemicals will be used on this project.

10.15.2 Treatment Chemical Use Procedures (4.6.3; 4.6.6)

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

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

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

10.15.3 Application of Treatment Chemicals (4.6.4; 4.6.5)

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

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

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

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

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

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

☐ Yes ☑ No

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

10.17 Good Housekeeping Measures (4.8)

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

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

10.17.1 Washing of Equipment and Vehicles (4.8.1)

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

☐ Yes ☑ No

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

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

10.17.2 Fueling and Maintenance Areas (4.8.2)

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

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

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

☐ Yes ☐ No

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

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

10.17.3 Staging and Material Storage Areas (4.8.3)

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

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

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

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

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

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

10.17.5 Fertilizer or Pesticide Use (4.8.5)

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

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

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

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

10.18 Spill Notification (4.9)

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

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

10.19 Construction and Waste Materials (4.8.6, 5.3.7)

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

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

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

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

Construction Materials

Insert Text or Table

Waste Materials

Insert Text or Table

Example Format:

BMP Description: *General Construction Site Waste Management*	
BMP Manual/Publication: *DEC Alaska Storm Water Guide, December 2011*	
Installation Schedule:	Continuously during construction activities
Maintenance and Inspection:	Inspection: Inspect storage and use areas and identify containers or equipment that could malfunction and cause

	leaks or spills. Check equipment and containers for leaks, corrosion, support or foundation failure, or other signs of deterioration, and test them for soundness. Maintenance: Immediately repair or replace any that are found to be defective.
Responsible Staff:	SWPPP Manager & Superintendent, Contractor

11.0 INSPECTIONS (5.4; 6.0)

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

Inspection requirements for linear projects are described in the CGP Part 6.5.

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

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

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

Refer to CGP Part 6.1 for inspection frequency requirements.

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

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

Inspection Frequency:

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

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

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

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

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

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

These dates can be found by looking up the “Fall ‘Freeze’ Probabilities” & “Spring ‘Thaw’ Probability” for the weather station closest to the site on the website: www.wrcc.dri.edu/summary/Climsmak.html. NOTE:

this estimation of “Fall Freeze-up” & “Spring ‘Thaw’” is for planning purposes only. During construction, the permittee will need to maintain control measures based on actual conditions.

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

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

11.2 Inspection Form or Checklist (5.4.1.3; 6.7)

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

11.3 Corrective Action Procedures (5.4.1.4; 8.0)

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

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

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

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

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

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

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

Corrective Action Log

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

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

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

11.4 Inspection Recordkeeping (5.4.2)

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

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

12.1 Determination of Need for Monitoring Plan

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

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

13.0 POST-AUTHORIZATION RECORDS (5.8)

Copy of Permit Requirements (5.8.1)

The contractor's SWPPP must contain the following documents:

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

These documents must be included in Appendix F.

13.1 Additional Documentation Requirements (5.8.2)

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

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

Other documents will be included as shown below:

- Copies of inspection reports (5.4.2; 5.8.2.3; insert in Appendix K).
- Copies of monitoring reports, if applicable (7.3.9.2; 5.8.2.4; 5.8.2.5; 5.5.2; 9.1; insert in Appendix H).
- Documentation in support of chemical-treatment processes (4.6; 5.8.2.7; insert in Appendix P).
- Documentation of maintenance and repairs of control measures (5.8.2.9; 8.1; 8.2; insert in Appendix J).
- Copy of DEC Letter of Non-Objection (insert in Appendix D).

13.1.1 Records of Employee Training (4.14; 5.8.2.8)

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

Describe Training Conducted: **TBD**

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

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

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

TBD

Individual(s) Responsible for Training:

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

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

14.0 MAINTAINING AN UPDATED SWPPP (5.9)

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

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

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

14.1 SWPPP Amendment Log (5.9.2)

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

14.2 Deadlines for SWPPP Modifications (5.9.3)

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

15.0 ADDITIONAL SWPPP REQUIREMENTS (5.10)

15.1 Retention of SWPPP (5.10.1)

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

15.2 Main Entrance Signage (5.10.2)

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

15.3 Availability of SWPPP (5.10.3)

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

15.4 Signature and Certification (5.10.4)

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

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

APPENDIX A
SITE MAPS AND DRAWINGS

APPENDIX B
BMP DETAILS

APPENDIX D
SUPPORTING DOCUMENTATION

APPENDIX E
PROJECT SPECIFIC ESCP DISCUSSIONS & COMMENTS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

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

Glenn Highway Milepost 66.5 to 92 Pavement Preservation Stage 1, Milepost 83-92 Project No. 0A15039 / CFHWY01286

AS ADVERTISED: MONTH xx, 2025
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"

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(Federal-Aid Highways)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

INVITATION TO BID

for Construction Contract

Date Month xx, 2025

Glenn Highway Milepost 66.5 to 92 Pavement Preservation Stage 1, Milepost 83-92
Project No. 0A15039 / CFHWY01286

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 __th day of ___ 2025.** 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: Glacier View, AK

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

Issuing Office: Central Region

State Funded ☐ Federal Aid ☒

Description of Work:
This federally funded project will resurface the Glenn Highway from milepost 83 to 92. This Project includes necessary improvements to roadside hardware, drainage, signing, striping and utilities.

Project DBE Utilization Goal: ☒ Race-Neutral

The Engineer's Estimate is between $10,000,000 and $20,000,000

All work shall be completed in **N/A** Calendar Days, or by **November 1, 2026.**
The Department will identify interim completion dates, if any, in the Special Provisions.

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

Submission of Bidding Documents

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

Bidding Documents for Project: **Glenn Highway Milepost 66.5 to 92 Pavement Preservation Stage 1, Milepost 83-92** **Project No. 0A15039 / CFHWY01286**	**ATTN:** **State of Alaska** **Department of Transportation & Public Facilities** **PO Box 196900** **4111 Aviation Avenue** **Anchorage, AK 99519-6900**

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

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

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

NOTICE TO BIDDERS

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

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

See attached Special Notice to Bidders for this project.

A bidder may obtain hard copy project plans and specifications for the price of **$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 **Jacob Dilley, P.E.**
Email: jacob.dilley@alaska.gov Phone: (907) 707-1922

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

A bidder may direct questions concerning bidding procedures and requirements to:
Sharon L. Smith, P.E.
Chief of Contracts
PO Box 196900
Anchorage, AK 99519-6900

Email: sharon.smith@alaska.gov Phone: (907) 269-0414

Other Information:

The Bid Calendar, Planholder lists, Bid Results and DBE information are available on the Internet at:
www.dot.state.ak.us under Procurement. Sorry – we no longer fax planholder lists.

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.

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/dcsspecs/assets/pdf/hwyspecs/sshc2020.pdf, or order bound book from LuLu at: https://www.lulu.com/en/us/shop/state-of-alaska-dept-of-transportation/2020-alaska-standard-specification-for-highway-construction/paperback/product-1gq9j9qk.html
   b. Alaska Test Methods Manual (Lab & Field), May 15, 2023 Edition ($25.00). Available online at: www.dot.state.ak.us/stwddes/desmaterials/mat_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:
      - Matanuska Electric Association, Inc. (MEA) Electrical Facility Clearance Requirements https://www.mea.coop/power-safety/electrical-safety
   e. Quantity Computations
   f. Cross Sections
   g. Geotechnical Report, Glenn Highway Milepost 66.5-92 Pavement Preservation, 0A15039/CFHWY01286, July, 2022, By DOT&PF
   h. Erosion, Sediment Control Plan (ESCP). Glenn Highway Milepost 66.5-92 Pavement Preservation, Stage 1 Milepost 83-92, 0A15039/ CFHWY01286, March, 2025
   i. Traffic Control Plan (TCP). Glenn Highway Milepost 66.5-92 Pavement Preservation, Stage 1 Milepost 83-92, 0A15039/ CFHWY01286, March, 2025

2. **Materials Certification List (MCL)**. The MCL provides the Engineer with the appropriate approving authority. Contractor, submit certification for each material to the Engineer. The MCL is included in Appendix __C__.

3. **Environmental Documents**. The Department has approved an environmental document addressing concerns and environmental commitments. This document is available for review in the Department Section of Preliminary Design and Environmental. (907) 269-0542.

4. **Section 120, Disadvantaged Business Enterprise (DBE) Program**. The Department, in coordination with US DOT, has adopted a Race-Neutral DBE Program effective for Federal-aid projects advertised in Central Region after June 30, 2015. In particular, all bidders shall be aware that Good Faith Effort Documentation is required from the successful bidder for all contracts, regardless of DBE goal or DBE utilization, in accordance with Section 120 Disadvantaged Business Enterprise (DBE) Program.

   The overall DBE Utilization Goal is revised to 8.28 percent.

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

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

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

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

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

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

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

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

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

2 CFR 184:

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

23 CFR 635.410:

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

USDOT waiver at 88 FR 55817:

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

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

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

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

8. **Utilities**.

   a. **Agreements and Dispositions**. Utility Agreements and dispositions are available for review at the office of the Utilities Engineer, (907) 269-0644. Copies may be available, coordinate with the Utility Engineer.

   b. **Utilities, and Erosion, Sediment and Pollution Control.** Utilities will be relocated by others concurrently with construction of this project. The Contractor is responsible for the coordination with Other Contractor's and for control of erosion, sediment and pollution including stabilization of areas disturbed during utility relocation, as described in Section 105-1.06.

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

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

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

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

   Consistent with Section 107-1.01 of the Standard Specifications for Highway Construction, the Contractor will be responsible for paying all costs and expenses incurred to comply with any COVID-19 Health Mandates or Health Advisories in effect during times when the Contractor is performing project-related work activities. The Contractor will additionally be responsible for preparing any general or site-specific mitigation and response plans required for its forces, along with any attendant schedule delays or impacts.

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

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

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

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

    For information on certified payroll, contact the Department of Labor and Workforce Development, Wage and Hour Administration:

Juneau	(907) 465-4842
Anchorage	(907) 269-4900
Fairbanks	(907) 451-2886

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

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

11. **Laborers Mechanics Minimum Rate of Pay**. The current Laborers Mechanics Minimum Rate of Pay contains information on remote sites and per diem. The Department of Labor has issued WHPL #197, which further clarifies this requirement. See pay item 640.0004.——.

12. **Asphalt Material Price Adjustment**. The unit price adjustment for asphalt material will be combined and paid under one Pay Item. Refer to Sections in Division 300 and 400 that include an "Asphalt Material Price Adjustment" Pay Item.

13. **Limitation of Operation**. Limit disturbed unstabilized ground. Refer to Subsection 652-1.04 Limitation of Operation for further information.

14. **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.

15. **USDOL Davis-Bacon and Related Acts Final Rule**. On September 29, 2023 FHWA updated form FHWA-1273 to incorporate the new Davis-Bacon and Related Acts final rule. Form FHWA-1273 is required to be physically incorporated into construction contracts, subcontracts, and lower-tier subcontracts for awards made after October 23, 2023. DOT&PF satisfies this requirement by incorporating Form 25D-55H into contracts.

PART 4

STANDARD MODIFICATIONS AND SPECIAL PROVISIONS

To the **STATE OF ALASKA**

STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION

2020
EDITION

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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.

HSM20.42-043022

SECTION 104
SCOPE OF WORK

Standard Modification

104-1.06 VALUE ENGINEERING CHANGE PROPOSALS BY CONTRACTOR.

Replace 104-1.06.3.e with the following:

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

HSM20.2-113020R

SECTION 105
CONTROL OF WORK

Special Provisions

Add the following Subsection 105-1.011 Related Sections:

105-1.011 RELATED SECTIONS.

Section 651, Control of Work – Supplemental Requirements

CR105.5-012816R1

105-1.15 PROJECT COMPLETION.

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

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

CR105.6-23.0601

SECTION 106
CONTROL OF MATERIAL

Standard Modification

106-1.01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS.

Add the following:

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

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

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

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

HSM20.20-21.1231

Special Provision

Replace the BUY AMERICA PROVISION with the following:

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

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

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

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

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

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

certify full and complete conformance with 23 CFR §635.410 and 2 CFR Part 184. The Prime Contractor shall also certify Form 25D-62. Provide additional certifications and backup documentation to signed Form 25D-62 when required by the Engineer. False statements may result in criminal penalties prescribed under AS 36.30.687 and Title 18 US Code Section 1001 and 1020.

The United States, Mexico, Canada Agreement (USMCA) does not apply to the Buy America requirement.

Buy America does not apply to construction materials, steel products, and iron products, brought temporarily to the construction site and removed at or before the completion of the project. Further, it does not apply to construction materials, steel products, and iron products which remain in place at the Contractor's convenience. Buy America does not apply to iron ore, pig iron, and processed, pelletized and reduced iron ore.

The following materials are exempt from Build America, Buy America requirements per Section 70917(c) of P. L. 117-58:

1. cement and cementitious materials
2. aggregates such as stone, sand, or gravel
3. aggregate binding agents or additives

De Minimis amount:

Small amounts of non-domestic construction materials, are allowed provided the total value of the non-domestic products is no more than the lesser of $1,000,000 or 5% of total material costs for the project including freight to the project location.

The total material costs of the project include (Form 25D-60):

1. Predominantly Iron and Steel products
2. Construction Materials
3. Manufactured Products

Do not include the cost of materials exempted per Section 70917(c) of P. L. 117-58, earth materials, processed aggregates, asphalt, concrete, fuel, lubricant, equipment repair parts, etc. in the total material costs of the project.

PREDOMINANTLY STEEL OR IRON PRODUCTS. Products and materials where the cost of the iron and steel, or a combination of both, exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product, or a good faith estimate of the cost of iron or steel components.

To be classified as domestic, all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

Iron and Steel minimal use:

All predominately steel and iron, or a combination of both, products incorporated into the work, shall be manufactured in the United States except that minor amounts of steel and iron products of foreign manufacture may be used, provided the aggregate cost of such does not exceed one tenth of one percent (0.001) of the total contract amount, or $2,500, whichever is greater. For the purposes of this paragraph, the cost is the value of the products as they are delivered to the project, including shipping.

CONSTRUCTION MATERIALS. The following list contains the categories of construction materials, and the requirements for domestic origin. Construction materials are an article, material, or supply that is:

1. **Non-ferrous metals**. All manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.

2. **Plastic and Polymer-based products**. All manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States.
3. **Glass**. All manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States.
4. **Fiber Optic Cable**. All manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others.
5. **Optical Fiber**. All manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.
6. **Lumber**. All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States.
7. **Drywall**. All manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.
8. **Engineered Wood**. All manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States.

If one construction material contains as inputs other construction materials, it remains classified as a construction material for the purposes of this section. Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material.

MANUFACTURED PRODUCTS. Articles, materials, or supplies that have been processed into a specific form and shape or combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.

If an item is classified as an iron or steel product, a construction material, or an exempted material per Section 70917(c) of P. L. 117-58 then it is not a manufactured product.

An article, material, or supply classified as a manufactured product may include components that are construction materials, iron or steel products, or an exempted material per Section 70917(c) of P. L. 117-58.

Replace Subsection 106-1.05 with the following:

106-1.05 CERTIFICATES OF COMPLIANCE. A certificate of compliance must meet one of the following:

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

Electronic submittals that are submitted by email from the Contractor's email account are considered signed by the Contractor.

The Contractor shall submit additional certificates of compliance or test data if required by the Contract or by the Engineer. The Engineer may refuse permission to incorporate materials or products into the project based on a certificate of compliance that does not meet the Contract requirements.

HSP20.7A-23.1114

SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Special Provisions

107-1.02 PERMITS, LICENSES, AND TAXES.

The Department will: Add No. 3:

3. The Department has received the following permits on the Contractor's behalf:

    a. ADF&G Fish Habitat Permit
    b. USACE Section 404 Permit

CR107.4-120117R2

The Contractor shall:

Replace No. 1. with the following:

1. Acquire all permits and licenses required to complete the project that are not acquired by the Department.

    a. Complete all draft permits. Draft permits are included in Appendix F, when there are draft permits.

CR107.2-070121

Add No. 10:

10. Provide a wetland specialist able to conduct wetlands determinations and delineations according to the Corps of Engineers 1987 Wetland Delineation Manual, and the Regional Supplement to the Corps of Engineers Wetland Delineations Manual (Alaska Region, Version 2.0, September 2007). The wetland specialist shall conduct the determination and delineations of sites outside the project limits or not previously permitted, impacted by the Contractor's operations. These delineations will be subject to Corps of Engineers approval.

CR107.5-120117R

107-1.07 ARCHAEOLOGICAL OR HISTORICAL DISCOVERIES.

Replace the 1st sentence including numbers 1, 2, and 3, with:

When operation encounters historic or prehistoric artifacts, burials, remains of dwelling sites, paleontological remains, (shell heaps, land or sea mammal bones or tusks, or other items of historical significance), cease operations immediately and notify the Engineer.

107-1.11 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE.

Add the following:

Non-municipal Water Source. If water is required for a construction purpose from a nonmunicipal water source, obtain a Temporary Water Use Permit from the Water Resource Manager, and provide a copy to the Engineer. The Water Resource Manager is with the Department of Natural Resources in Anchorage and may be contacted at (907) 269-8645.

CR107.3-051517

Add the following:

Eagles. Eagles are protected under 16 U.S.C. 668-668c Protection of Bald and Golden Eagles, that prohibits “takes” of eagles, their eggs, nests, or any part of the bird. The Act defines “taking” as “to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.”

Maintain a Primary Zone of minimum 330-feet as an undisturbed habitat buffer around nesting eagles. If topography or vegetation does not provide an adequate screen or separation, extend the buffer to 1320-feet, or a sufficient distance to screen the nest from human activities. The actual distance will depend on site conditions and the individual eagle’s tolerance for human activity. Within the Secondary Zone, between 330-feet and 660-feet from a nest tree, no obtrusive facilities, or major habitat modifications shall occur. If nesting occurs in sparse stands of trees, treeless areas, or where activities would occur within line-of-site of the nest, extend the buffer up to 2640-feet. No blasting, logging and other noisy, disturbing activities should occur during the nesting period (February 1 – August 31) within the primary or secondary zones.

Do not disturb a nesting eagle. Notify the Engineer when an active eagle nest is within the primary or secondary zones.

CR107.1-100118

SECTION 108
PROSECUTION AND PROGRESS

Standard Modification

108-1.01 SUBCONTRACTING OF CONTRACT.

In item 1g. replace AS 45.45.101(a) with AS 45.45.010(a).

In item 2f. replace AS 45.45.101(a) with AS 45.45.010(a).

HSM20.41-010122

Add the following Subsection 108-1.011 Related Sections:

108-1.011 RELATED SECTIONS.

Section 652, Prosecution and Progress – Supplemental Requirements

CR108.3-012816R

108-1.07 FAILURE TO COMPLETE ON TIME.

Replace Table 108-1 with the following:

Table 108-1
DAILY CHARGE FOR LIQUIDATED DAMAGES
FOR EACH CALENDAR DAY OF DELAY

Original Contract Amount		Daily Charge
From More Than	To and Including	
$ 0	1,000,000	$1,500
1,000,000	5,000,000	2,900
5,000,000	25,000,000	5,500
25,000,000	---------	6,900

HSM20.43A-24.0701

SECTION 109
MEASUREMENT AND PAYMENT

Special Provision

109-1.01 GENERAL.

Replace the 2nd paragraph with the following:

When more than one type of material or work is specified for a pay item, the proposal line number, and the description are used to differentiate the material or work.

CR109.4-010120

109-1.05 COMPENSATION FOR EXTRA WORK ON TIME AND MATERIALS BASIS.

Under Item 3. Equipment, Item a. add the following to the second paragraph:

The rental rate area adjustment factors for this project shall be as specified on the adjustment maps for the Alaska – South Region.

Provide a printed copy of the current EquipmentWatch rate sheet for each piece of equipment utilized on time and materials work.

CR109.2-110118

Standard Modification

109-1.08 FINAL PAYMENT. Add the following after the fifth paragraph:

On federally funded projects, if DOLWD Wage and Hour Administration notifies the Department of a pending prevailing wage investigation, and that the investigation is preventing the closing out of the project, the Contractor may place the notified amount in escrow under Wage and Hour for the exclusive purpose of satisfying unpaid prevailing wages. Upon receipt of notice from Wage and Hour that the Contractor has satisfactorily transferred the necessary funds into escrow, the Department will proceed to issue final payment.

HSM20.3-113020R

SECTION 120
DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM

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 201
CLEARING AND GRUBBING

Special Provisions

201-3.01 GENERAL.

Add the following:

Perform the work necessary to preserve and/or restore land monuments and property corners from damage. Restore land monuments and/or property corners that are disturbed according to Section 642. An undisturbed area five feet in diameter may be left around existing monuments and property corners. A list of land monuments and property corners is shown on the Right of Way maps.

CR201.3-042313

Add the following:

Clearing and grubbing is not permitted within the migratory bird window of May 1 to July 15; except as permitted by Federal, State and local laws when approved by the Engineer.

CR201.1-010114

Add the following:

The work required to preserve and restore land monuments and property corners is subsidiary to 201 Pay Items.

CR201.3-042313

SECTION 202
REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Special Provisions

202-1.01 DESCRIPTION.

Add the following:

Fugitive Materials: remove and dispose of fugitive materials from under guardrails, around luminaire bases, and as specified. Conduct a pre-construction inspection of the project area with the Engineer to determine the limits of the fugitive material removal and disposal work.

CR202.4-040120

202-2.01 MATERIALS.

Add the following:

Fugitive Materials: including but not limited to organic matter (peat, roots, sticks, sod or other), muck, earth (where not part of surface material) rocks, gravel, sand, silts and debris (trash and similar) and as identified by the Engineer.

CR202.4-040120

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.

CR202.2-040120

Add the following Subsection 202-3.06 Salvage and Disposal of Construction and Demolition Materials:

202-3.06 SALVAGE AND DISPOSAL OF CONSTRUCTION AND DEMOLITION MATERIALS. Unless otherwise noted, remove, handle, salvage, transport, store, and dispose waste materials according to the Occupational, Safety, and Health Administration (OSHA), Environmental Protection Agency (EPA), Alaska Department of Environmental Conservation (ADEC), and other Federal, State and local government agency's statutes, rules and regulations.

Use disposal sites outside the project right-of-way limits unless directed otherwise, in writing, by the Engineer. Obtain written consent from the private or public property owner for such disposal and a waiver of all claims against the State for any damage to such land which may result, together with all permits required by law for such disposal. Furnish a copy of such permission, waiver of claims, and permits to the Engineer before commencing work. Grade disposal areas to drain.

CR202.1-040120

Add the following Subsection 202-3.09 Removal of Fugitive Materials:

202-3.09 REMOVAL OF FUGITIVE MATERIALS. Remove fugitive materials from in front of, under, and for a width of 10 ft behind sections of guardrail, measured from the roadside face of guardrail, or as directed by the Engineer. Provide positive drainage away from the roadway. Slope edges of sand removal at 3:1 or flatter.

Clean around the base of a luminaire when the base falls within the 10 ft. The 10 ft width is measured from the roadside face of the guardrail toward the shoulder to the closest point of the luminaire base plate, or as directed by the Engineer. Remove fugitive materials from around the base to a level flush with surrounding ground - or as directed by the Engineer.

Remove disturbed materials in the same work shift the disturbance occurred. Do not reuse these materials within the project limits without the written approval of the Engineer.

Dispose of removed materials according to Subsection 202-3.06

CR202.4-040120

202-4.01 METHOD OF MEASUREMENT.

Add the following:

Item 202.2013.____.Removing and disposing fugitive materials measured along the edge of the traveled way on the side of the road nearest the area of work by the linear foot.

CR202.4-040120

Standard Modification

202-5.01 BASIS OF PAYMENT.

In the first paragraph, replace "and 22.0013.____." with the following: "and 202.0013.____."

In the fourth paragraph, replace "Items 020.0014.____" with the following: "Items 202.0014.____"

HSM20.4-113020R

Add the following:

Acquiring waste disposal permits is subsidiary to 202 Pay Items.

CR202.1-040120
Add the following:

PAY ITEM

Item Number	Item Description	Unit
202.2013.____	Remove Fugitive Materials	LF

CR202.4-040120

SECTION 203
EXCAVATION AND EMBANKMENT

Special Provisions

203-1.01 DESCRIPTION.

Add the following:

Ditch linear grading shall consist of the final shaping of designated ditches and slopes for drainage by grading with a small dozer, motor grader, or other suitable means approved by the Engineer.

CR203.2-14.0101R1

Standard Modification

203-3.04 COMPACTION WITH MOISTURE AND DENSITY CONTROL.

In the second paragraph delete "and ATM 214".

HSM20.5-113020R

203-4.01 METHOD OF MEASUREMENT.

Add the following:

10. Item 203.2038.____. Measurement of ditch linear grading, whether flat bottom or “V” ditch, will be measured for payment by the station along the center of the ditch for each ditch so designated, constructed, and accepted by the Engineer.

203-5.01 BASIS OF PAYMENT.

Add the following:

203.2038.____ payment for ditch linear grading will be full compensation for furnishing equipment, labor, tools, and incidentals to provide the preparation, excavation and shaping necessary to complete the work.

PAY ITEM

Item Number	Item Description	Unit
203.2038.____	Ditch Linear Grading	STA

CR203.2-14.0101R1

Special Provision

Replace Section 204 with the following:

SECTION 204
STRUCTURE EXCAVATION FOR CONDUITS AND MINOR STRUCTURES

204-1.01 DESCRIPTIONS. Excavate and backfill for conduits (pipe culverts, structural plate pipe, pipe arches, storm drains, underdrains, and electrical conduits), headwalls, manholes, inlet boxes, and other minor structures.

Dewater ground water from work areas. Construct and maintain temporary water diversion when working in waterways, and for facilities or structures with active drainage.

Perform all pumping, bailing, draining, sheeting, bracing, and incidentals required for proper execution of the work.

204-2.01 MATERIALS. Use materials that conform to the following:

Selected Material	Subsection 703-2.07
Porous Backfill Material	Subsection 703-2.10

1. Structure Backfill and Bedding Material.

    a. Selected Material, Type A.

        (1) Material passing the 1-inch sieve.
        (2) Material passing the 1/2-inch sieve for plastic conduits less than 8 inches in diameter.

    b. Porous Backfill Material.

        Uniform porous backfill material for underdrain conduit.

        (1) Material passing the 1-inch sieve for conduit 3-inch to 10-inch diameters.
        (2) Material passing the 2-inch-sieve for conduit 12-inch to 60-inch diameters.

2. Backfill Material: Selected Material Type C

In the roadbed structure use backfill material meeting the requirements of the roadbed structure, except use the structure backfill material and bedding as specified herein.

Use all suitable material from the project excavation for bedding, structure backfill, and backfill material before using material from another source.

204-3.01 CONSTRUCTION REQUIREMENTS. Clear and grub prior to starting excavation according to the requirements of Section 201.

Keep the work areas dewatered and divert water when working in a waterway or active drainage, Subsection 204-3.02.

Remove and dispose, Subsection 203-3.01, of unsuitable foundation material, including rock or other unyielding material, below the designed elevation as directed, except no less than 6 inches, and replace with approved material.

Place bedding material to a minimum thickness of 4 inches, except 6-inch minimum thickness for conduit over rock or unyielding material, and below electrical conduit, unless shown otherwise in the plans.

Place the bedding material to provide uniform support for conduit with the material in the middle one-third loosely placed and not compacted. Do not shape the bedding to the curvature of the round conduits. Shape the bedding for pipe arches, horizontal ellipse, and underpass shapes with spans exceeding 12 feet. Provide a minimum shaped width one-half the span of the pipe arch and underpass shapes and one-third the span of horizontal ellipse shape. Shape the bedding to the relatively flat bottom arc or fine-grade the foundation to a slight "V" shape.

Place minor precast concrete structures, other than conduits, on the 4-inch bedding/leveling course, of uniform stiffness and thickness with even compaction throughout.

Place the structure backfill over the bedding each side of the structure to 12 inches above the structure or the ground surface if less than 12 inches, except 6 inches above electrical conduit.

Place the structure backfill and backfill material in uniform layers not more than 6 inches deep. Do not create unbalanced loading with the placement of the structure backfill materials. When placing material against concrete, place the material according to the requirements of Section 550.

Compact the materials, each layer, without ponding or jetting to meet Subsection 203-3.04. In the haunch area, each side of the conduit, compact the material by firmly tamping into place.

Outside the roadbed structure, the Engineer may visually inspect and approve the excavation, bedding, structure backfill, backfill material, and compaction.

Support and protect existing conduits or utilities, not scheduled for removal or abandonment, when encountered in the excavation.

Remove all sheeting and bracing used in structure excavation upon completion of the work.

204-3.02 DEWATERING AND WATER DIVERSION. Submit a plan for work area dewatering and each waterway diversion, 14 days before related construction activities. Do not implement the plan without written approval. Include the permit requirements in the plan.

1. Do not exceed State of Alaska water quality standards.

2. Do not divert water from dewatering into a waterway.

3. Provide an approved disposal site for work area excess water. Maintain disposal site a minimum of 100 ft from waterway.

4. Prevent turbid water from directly entering waterways.

5. Do not divert water onto the roadway.

6. In addition to other equipment required to complete the temporary water diversion and dewatering work, maintain a minimum of two trash pumps with hoses at the site during diversion construction activities. Maintain the intake to prevent fish entrapment, entrainment, or injury with the use of perforated or slotted plate and woven wire with a mesh size not greater than 3/32 inch or a profile bar and wedgewire with openings not greater than 1/16 inch. Do not exceed passive approach velocity of 0.2 fps and active approach velocity of 0.4 fps.

Rewater to minimize sediment movement downstream of the site. Prior to rewatering, slowly wet the reconstructed waterway channel; wash the fines into the bed by using pumps, or by diverting a small portion of the waterway channel flow. Capture and pump the sediment and turbid water, from the downstream end of the channel to the upstream end of the channel, until fines are washed into the streambed and water runs clear. Attain the Engineers written approval before breaching the coffer/diversion dams. Slowly breach the coffer/diversion dams and rewater the waterway channel.

204-4.01 METHOD OF MEASUREMENT. Section 109. Use neat line method as follows:

Structure Excavation:

1. Masonry Structures (except conduit). Between vertical planes, 18 inches outside the base of the masonry sections for the depth required.

2. Conduit. Between parallel vertical planes located 18 inches outside the horizontal projection of the outside diameter of the conduit and to the depth shown on the Plans.

Structure excavation only measured below the limits of other classes of excavation. Structure's in embankment section, the natural ground line as cross-sectioned is the uppermost level of computation.

204-5.01 BASIS OF PAYMENT. The Contract price includes the placing and compacting of all backfill and bedding when the materials used are obtained from excavation, any clearing and grubbing required and not paid for under some other item, formation of any embankments made with surplus material from structure excavation, and disposal of all surplus or unsuitable excavation.

Culvert baffles, headwalls, temporary water diversion, dewatering and rewatering, and the removal of pavement are subsidiary to the conduit and minor structure Pay Items.

Additional excavation to provide for shoring, sheet piles, excavation shields or flattening the excavation slopes, is subsidiary.

When item 204.0001.____, 0002.____, or 0003.____ structure Excavation, does not appear in the bid schedule, structure excavation required to complete other items of work is subsidiary, except that excavation and disposal of unsuitable material required from below a plane 12 inches below the invert elevation of conduits and 12 inches below the bottom of structures is paid as extra work.

Any backfill or bedding material required whose source is other than project excavation is paid at the contract unit price for the materials being used, or as extra work if no unit price has been established.

Traffic control paid under Section 643 and Erosion, Sediment, and Pollution Control paid under Section 641.

PAY ITEM

Item Number	Item Description	Unit
204.0001.____	Structure Excavation	CY
204.0002.____	Structure Excavation	Ton
204.0003.____	Structure Excavation	LS

CR204-24.0501

SECTION 205
EXCAVATION AND FILL FOR MAJOR STRUCTURES

Standard Modification

205-3.05 COMPACTION.

1. Compaction with Moisture and Density Control. 2nd paragraph delete: "and ATM 214".

HSM20.5-113020R

DIVISION 300 — BASES

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SECTION 301
AGGREGATE BASE AND SURFACE COURSE

Special Provision

301-2.01 MATERIALS.

Add the following after the first sentence:

Recycled Asphalt Material (RAM) may be substituted for aggregate base course, inch for inch, if the following conditions are met:

1. RAM shall be crushed or processed to 100 percent by weight passing the 1.5 inch sieve and 95-100 percent by weight passing the 1 inch sieve.

2. The gradation of the extracted aggregate shall meet the following:

Sieve	Percent Passing by Weight
1 inch	100
3/4 inch	70 – 100
3/8 inch	42 – 90
No. 4	28 – 78
No. 16	11 – 54
No. 50	5 – 34
No. 100	3 - 22
No. 200	2 – 12

3. The asphalt content shall be 2.5 – 5.0 percent by weight of the RAM.

CR301.1-012407R

Standard Modification

301-3.03 SHAPING AND COMPACTION.

In the second paragraph delete "and ATM 214".

HSM20.5-113020R

Add the following:

If recycled asphalt material is substituted for aggregate base course, the following conditions shall be met:

1. Density acceptance will be determined by control strip method ATM 412. Use a test strip with a vibratory compactor with a minimum dynamic force of 40,000 pounds. The optimum density will be determined by the Engineer using a nuclear densometer gauge to monitor the test strip. Adequate water shall be added to aid compaction.

2. After the appropriate coverage with the vibratory compactor, a minimum of 6 passes with a pneumatic tire roller shall be completed. Tires shall be inflated to 80 psi (± 5 psi) and the roller shall have a minimum operating weight per tire of 3,000 pounds.

301-5.01 BASIS OF PAYMENT.

Add the following:

Recycled asphalt material substituted for aggregate base course will be paid for as Item 301.0001.____ Aggregate Base Course, at the unit price shown in the bid schedule for that Item.

CR301.1-012407R

Special Provisions

Replace Section 306 with the following:

SECTION 306
ASPHALT TREATED BASE COURSE

306-1.01 DESCRIPTION. Construct a plant-mixed asphalt treated base (ATB) course on an approved foundation to the lines, grades, and depths shown in the Plans. Recycled asphalt pavement (RAP) may be used in the mix as specified herein.

306-1.02 REFERENCE.

1. Section 401, Hot Mix Asphalt and Surface Treatments.

MATERIALS

306-2.01 COMPOSITION OF MIXTURE - JOB MIX DESIGN (JMD). Design the JMD according to the Alaska Test Manual (ATM) 417 using the design requirements of Table 306-1 and as specified herein. Recycled Asphalt Pavement may be used to supplement the aggregate and asphalt binder in the ATB.

TABLE 306-1

ATB DESIGN REQUIREMENTS

DESIGN PARAMETERS	CLASS "B"
ATB (Including Asphalt Binder)	
Stability, Pounds	1200 min.
Flow, 0.01 Inch	8 - 16
Voids in Total Mix, %	3 – 5
Compaction, Number of Blows Each Side of Test Specimen	50
Asphalt Binder	
Percent Voids Filled with Asphalt Binder (VFA)	65 - 78
Asphalt Binder Content, Min. %	5.0
Dust-Asphalt Ratio*	0.6 - 1.4
Voids in the Mineral Aggregate (VMA), %, Min.	
Type II	12.0
Recycled Asphalt Pavement (RAP)	
RAP, Max. %.	25

*Dust-asphalt ratio is the percent of material passing the No. 200 sieve divided by the percent of effective asphalt binder.

The JMD will specify the Target Values (TV) for gradation, the TV for asphalt binder content, the Maximum Specific Gravity (MSG) of the ATB, the additives, and the allowable mixing temperature range.

Target values for gradation in the JMD must be within the broad band limits shown in Table 703-4. For acceptance testing, ATB mixture will have the full tolerances in Table 306-2 applied.

Do not mix ATB produced from different plants for testing or production paving. ATB from different plants will be rejected.

Submit the following to the Engineer at least 15 days before the production of ATB:

1. A letter stating the location, size, and type of mixing plant, the proposed gradation for the JMD including gradations for individual virgin aggregate (aggregate) stockpiles and the RAP stockpile. Provide supporting process quality control information; including the blend ratio of each aggregate stockpile, the RAP stockpile and the RAP asphalt binder content. For mixes with RAP, provide JMD gradation with and without RAP. Provide calibration data if ATM 406 is used for RAP process control.

2 Representative samples of each aggregate (coarse, intermediate, fine, blend material and mineral filler, if any) and RAP required for the proposed JMD. Furnish 100 lbs of each intermediate and/or coarse aggregate, 200 lbs of fine aggregate, 25 lbs of blend sand, and 200 lbs of RAP.

3. Three separate 1-gallon samples, minimum, of the asphalt binder proposed for use in the ATB. 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 (MSDS).

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 MSDS.

The Engineer will evaluate the material and the proposed gradation using ATM 417 and Table 306-1 ATB Design Requirements.

The mix, the materials and proposed gradation meeting the specification requirements will become part of the Contract when approved, in writing, by the Engineer.

FAILURE TO MEET SPECIFICATION REQUIREMENTS

Submit a new JMD with changes noted and new samples in the same manner as the original JMD when:

- The results do not achieve the requirements specified in Table 306-1
- The asphalt binder source is changed
- The source of aggregate, aggregate quality, gradation, or blend ratio is changed
- The source of RAP is changed

Do not produce ATB for production paving and payment before the Engineer provides written approval of the JMD, the original or a new replacement JMD.

Payment for ATB will not be made until the new JMD is approved. Approved changes apply only to ATB produced after the submittal of changes.

The Engineer will assess a fee for each mix design subsequent to the approved Job Mix. The fee will be included under Pay Item 306.2001.____ ATB, Price Adjustment, Type ___; Class__.

306-2.02 AGGREGATES. Conform to Subsection 703-2.04. Type II, Class B (IIB) total combined aggregates.

Use a minimum of three stockpiles for crushed ATB aggregate (coarse, intermediate, and fine). Place RAP, blend material and mineral filler in separate piles.

306-2.03 ASPHALT BINDER. Conform to 702-2.01. If asphalt binder is not specified use PG 52-28.

The total asphalt binder content may be a combination of the asphalt binder specified and the residual asphalt binder in the RAP.

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 anti-strip added.

306-2.04 ANTI-STRIP ADDITIVES. Use anti-strip agents in the proportions determined by ATM 414 and included in the approved JMD. At least 70% of the aggregate must remain coated when tested according to ATM 414. A minimum of 0.25% by weight of asphalt binder is required.

306-2.05 PROCESS QUALITY CONTROL. Sample and test materials for quality control of the ATB according to Subsection 106-1.03. Submit to the Engineer, with the JMD, a documentation plan that will provide a complete, accurate, and clear record of the sampling and testing results. When directed by the Engineer, adjust the plan and resubmit.

Submit a paving and plant control plan at the pre-paving meeting to be held a minimum of 7 days before initiating pre-paving operations. Address the sequence of operations. Outline steps to provide product consistency, to minimize segregation, to prevent premature cooling of the ATB, and to provide the mat density required by these specifications. Include a proposed quality control testing frequency for gradation, asphalt binder content, and compaction.

Failure to perform quality control forfeits the Contractor's right to a retest under Subsection 306-4.02.

Provide copies of the documented sampling and testing results no more than 24 hours from the time taken.

306-2.06 RECYCLED ASPHALT PAVEMENT (RAP). Process existing pavement removed under Subsection 202-3.07 so material passes the 1 1/2" sieve. Stockpile the material separately from the crushed aggregates. Perform one gradation and one asphalt binder content test for every 1000 tons of RAP or a minimum of 10 sets of tests whichever is greater.

CONSTRUCTION REQUIREMENTS

306-3.01 WEATHER LIMITATIONS. Do not place ATB on a wet surface, on an unstable/yielding roadbed, when the base material is frozen, or when weather conditions prevent proper handling or finishing of the mix. Do not place ATB unless the roadway surface temperature is 40°F or warmer.

306-3.02 EQUIPMENT, GENERAL. Use equipment in good working order and free of ATB buildup. Make equipment available for inspection and demonstration of operation a minimum of 24 hours before placement of production ATB.

306-3.03 ASPHALT MIXING PLANTS. Meet AASHTO M 156. Use an asphalt plant designed to dry aggregates, maintain accurate temperature control, and accurately proportion asphalt binder and aggregates. Calibrate the asphalt plant and furnish copies of the calibration data to the Engineer at least 4 hours before ATB production.

When using recycled asphalt pavement material, mix the RAP with the aggregate before the aggregate enters the plant thereby adding the RAP combined with the aggregate to the asphalt treated base mixture at one time.

Provide a scalping screen at the asphalt plant to prevent oversize material or debris from being incorporated into the ATB.

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 equipment meeting OSHA safety requirements.

306-3.04 HAULING EQUIPMENT. Costs associated with meeting the requirements of Subsection 306-3.04 are subsidiary to Section 306 Pay Items.

Vehicles/Equipment. Haul ATB in trucks with tight, clean, smooth metal beds, thinly coated with a minimum amount of paraffin oil, lime water solution, or an approved manufactured asphalt release agent. Do not use petroleum fuel as an asphalt release agent.

During ATB hauling activities, the hauling vehicle will have covers attached and available for use. Be prepared to demonstrate deployment of the cover when hauling material or empty. Illustrate the efficiency of deployment and how the materials are protected from the environment and the environment is protected from the materials. When directed by the Engineer, cover the ATB in the hauling vehicle(s).

Roadway Maintenance. Daily inspect, remove/clean, and dispose of project materials deposited on existing and new pavement surface(s) inside and outside the project area including haul routes.

The inspection plan and method of removal/cleaning and disposal shall be submitted in writing to the Engineer and approved by the Engineer 7 days before initiating paving operations. Include alternatives, options to immediately correct deficiencies in the inspection plan and methods of removal/cleaning and disposal that may be discovered as the work is being performed.

The Engineer may require the Contractor to include a vehicle/equipment cleaning station(s), to be added at the project site and or at the plant, in the basic plan or as one of the corrective alternatives/options. At a minimum, the cleaning station will include the materials and means to:

(1) Spray truck tires with an environmental degradable release agent if mix adheres to tires before dumping in front of the paving equipment.
(2) Clean off loose mix from gates, chains, and tires that might fall on the pavement of the haul route.
(3) Contain, collect and disposal of (1) and (2).

The Contractor is responsible for the inspection plan, the means, and methods used for removal/cleaning and disposal of fugitive materials/debris. The Contractor is responsible for the damage as a result of not removing these materials (to the roadway material, the users, and others) and the damage to the roadway materials from the removal method(s). Approval does not change the Contractor's responsibility, nor add responsibility to the Department for this work.

Repair damage, as specified in Subsection 306-3.16 Patching Defective Areas, to the existing roadway materials (asphalt type) as a result of the fugitive materials or their removal. Use repair materials of similar type to the damaged material. Attain written approval from the Engineer for the proposed material.

306-3.05 PAVING EQUIPMENT. Use self-propelled asphalt pavers with a heated vibratory screed. Control grade and cross slope with automatic grade and slope control devices. Use an erected string line, a 30-foot minimum mobile stringline (ski), or other approved grade follower, to automatically actuate the screed or blade control system. Use grade control on either (a) both the high and low sides or (b) grade control on the high side and slope control on the low side.

Use a paver screed assembly that produces a finished surface of the required smoothness, thickness, and texture without tearing, shoving, or displacing the ATB.

Equip pavers with a receiving hopper having sufficient capacity for a uniform spreading operation and a distribution system to place the ATB uniformly in front of screed.

Prevent segregation of the coarse aggregate particles from the remainder of the ATB during paving operations. Specifically equip pavers to prevent segregation between the hopper and augers. Use means and methods approved by the paver manufacturer. Means and methods may include chain curtains, deflector plates, or other similar devices or combination of devices. When required by the Engineer, provide a Certificate of Compliance verifying use of the means and methods required to prevent segregation.

306-3.06 ROLLERS. Use both steel-wheel (static or vibratory) and pneumatic-tire rollers. Avoid crushing or fracturing of aggregate. Use rollers designed to compact ATB asphalt mixtures and reverse without backlash.

All rollers shall have an attached infrared thermometer that measures and displays the surface temperature to the operator.

Use fully skirted pneumatic-tire rollers having a minimum operating weight of 3000 pounds per tire.

306-3.07 PREPARATION OF EXISTING SURFACE. Prepare base surface conforming to the Plans and Specifications.

Before placing the hot asphalt mix, apply tack coat material (Section 702) as specified here and in Section 402. Uniformly coat contact surfaces of curbing, gutters, sawcut pavement, cold joints, manholes, and other structures with tack coat material. Allow tack coat to break before placement of ATB on these surfaces.

306-3.08 PREPARATION OF ASPHALT. Provide a continuous supply of asphalt binder to the asphalt mixing plant at a uniform temperature, within the allowable mixing temperature range.

306-3.09 PREPARATION OF AGGREGATES. Dry the aggregate so the moisture content of the ATB, 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 ATB, and the RAP when being used in the mix, 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. ATB containing soot or fuel is unacceptable (Subsection 105-1.11).

306-3.10 MIXING. Combine the aggregate, asphalt binder, and additives in the mixer in the amounts required by the JMD. Mix to obtain 98% coated particles when tested according to AASHTO T 195.

306-3.11 TEMPORARY STORAGE. Silo type storage bins may be used, provided the characteristics of the ATB remain unaltered. Changes in the JMD, visible or otherwise, are cause for rejection. Changes may include: visible segregation, heat loss; and the physical characteristics of the asphalt binder, lumpiness, or stiffness of the ATB or similar.

306-3.12 PLACING AND SPREADING. Use asphalt pavers to distribute ATB. Place the ATB 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 ATB surface immediately behind the paver for temperature uniformity. Areas with temperature differences more than 25° F lower than the surrounding ATB may produce areas of low density. Contractor shall 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.

Use hand tools to spread, rake, and lute the ATB in areas where irregularities or unavoidable obstacles make the use of 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.

Do not cover/place over the asphalt treated base material until the ATB material throughout that section, as defined by the Paving Plan, is placed and accepted.

Do not pave against new Portland cement concrete curbing until it has cured for at least 72 hours.

Do not place ATB over bridge deck membranes, except as directed by the Engineer.

306-3.13 COMPACTION. Compact the ATB by rolling thoroughly and uniformly. In areas not accessible to large rollers, compact with mechanical tampers or trench rollers. Prevent indentation of ATB. Do not leave rollers or other equipment standing on ATB that is not sufficiently cooled to prevent indentation.

A mat area with density lower than 92.0 % MSG is considered segregated and not in conformance with the requirements of the Contract. The work shall be deemed unacceptable by the Engineer 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 of the JMD will be used for the first lot of ATB. The MSG for additional lots will be determined from the first sublot of each lot.

Acceptance testing for density will be performed according to ATM 410 using a 6 inch diameter core.

306-3.14 JOINTS. 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. Place and compact the ATB to provide a continuous bond, texture, and smoothness between adjacent sections of the ATB.

Coordinate the joints in the ATB pavement layer with the layer of HMA pavement above. Offset the longitudinal joints in the HMA pavement layer above from the joint in the ATB asphalt pavement layer immediately below by at least 6 inches.

Form transverse joints by cutting back on the previous run to expose the full depth of the layer. Saw cut the joint, use a removable bulkhead or other method approved by the Engineer.

Remove to full depth improperly formed joints resulting in surface irregularities. Before removing pavement, cut a neat straight line along the pavement to be removed and the pavement to remain. Use a power saw or other method approved by the Engineer. Replace the removed asphalt with new ATB and thoroughly compact.

306-3.15 SURFACE TOLERANCE. Costs associated with meeting surface tolerances are subsidiary to the ATB Pay Items.

The Engineer will test the finished surface after final rolling at selected locations using a 10 ft straightedge. Correct variations from the testing edge, between any two contacts, of more than 1/4 inch.

306-3.16 PATCHING DEFECTIVE AREAS. Costs associated with patching defective areas are subsidiary to the ATB Pay Items.

Remove defective ATB for the full thickness of the course, do not skin patch. Cut the pavement so that edges are vertical and the sides are parallel to the direction of traffic. Coat edges with a tack coat meeting Section 402 and allow to cure. Place and compact fresh ATB to grade (Subsection 306-3.13) and surface tolerance requirements (Subsection 306-3.15).

306-4.01 METHOD OF MEASUREMENT. Section 109 and the following:

1. Asphalt Treated Base.

   a) By weighing. No deduction will be made for the weight of asphalt binder or anti stripping additive or cutting back joints.

2. Asphalt Binder. By the ton, as follows.

   Method 1:

   Percent of asphalt binder for each sublot multiplied by the total weight represented by that sublot. The same tests used for the acceptance testing of the sublot will be used for computation of the asphalt binder quantity. If no acceptance testing is required, 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 may be used on projects where deliveries are made in tankers and the asphalt plant is producing ATB for one project only.

   The Engineer may direct, at any time that tankers be 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 will be 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 ATB will be calculated using the target value for asphalt binder as specified in the JMD.

   Method 1 will be used for determining asphalt binder quantity unless otherwise directed in writing. The procedure initially used will be the one used for the duration of the project. No payment will be made for any asphalt binder more than 0.4% above the optimal asphalt binder content specified in the JMD.

3. ATB, Price Adjustment, Type ; Class . By the fees specified in Subsections 306-2.01, 4.02, and 5.01.

306-4.02 ACCEPTANCE SAMPLING AND TESTING.

1. Asphalt Treated Base

The bid quantity of ATB produced and placed is divided into lots and the lots evaluated individually for acceptance.

A lot is normally 10,000 tons. The lot is divided into sublots of 1000 tons, each randomly sampled and tested for asphalt binder content, density, and gradation according to this subsection. The lot is evaluated for acceptance according to Subsection 306-4.03. 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 acceptance computed for the prior lot will include the samples from the shortened lot. Density test results from material in the shortened lot will be based on the MSG of the first sublot of the shortened lot. If there is no prior lot, and there are at least 3 sublots, the material in the shortened lot will be considered as a lot and acceptance will be based on the actual number of test results in the shortened lot. If there are less than 3 sublots, the ATB will be accepted for payment based on the Engineer's approval of the JMD, and placement and compaction of the ATB 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 acceptance will be based on the actual number of test results (excluding outliers) in the shortened lot.

If the bid quantity is between 3,000 to 10,000 tons, the quantity is considered one lot. The lot is divided into sublots of 1000 tons, and each randomly sampled and tested for asphalt binder content, density, and gradation according to this subsection.

ATB quantities of less than 600 tons remaining after dividing the Contract quantity into sublots will be included in the last sublot. ATB quantities of 600 tons or greater will be treated as an individual sublot.

For bid quantity less than 3,000 tons, ATB will be accepted for payment based on the Engineer's approval of a JMD and the placement and compaction of the ATB to the specified depth and finished surface requirements and tolerances.

The Engineer reserves the right to perform any testing required in order to determine acceptance.

a. Asphalt Binder Content. ATB 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, except ATM 405 will not be used when RAP is included in the mixture.

b. Aggregate Gradation. Aggregates tested for gradation acceptance will have the full tolerances from Table 306-2 applied. For ATB 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 mat core sample. 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.

Take core samples according to ATM 413 in the presence of the Engineer. Cut full depth core samples centered on the marks from the finished ATB 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 ATB 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 306-2.05 Process 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 to evaluate the material for acceptance. 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 evaluation. Except for the first lot, retesting for gradation or asphalt binder from the first sublot 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 will normally be 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 bid 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 ([acceptance + 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 ([acceptance + retest + referee]/3) equals the ATV. If the ATV fails to meet specifications, the Contractor pays for the referee test.

306-4.03 EVALUATION OF MATERIALS FOR ACCEPTANCE. A mat area of finished surfacing that is contaminated with foreign material; is segregated (determined visually or by testing), has a lower density than specified, fails to meet surface tolerance requirements, is flushing or bleeding asphalt binder after compaction is complete, or in any other way determined to be defective is unacceptable according to Subsection 105-1.11. ATB, not meeting the specified limits noted in Table 306-2, is considered defective. Correct unacceptable work and materials according to Subsection 306-3.16 and as directed by the Engineer.

TABLE 306-2

LOWER SPECIFICATION LIMIT (LSL) & UPPER SPECIFICATION LIMIT (USL)

Measured Characteristics	LSL	USL
3/4-inch sieve or largest sieve size	99	100
1/2-inch sieve or first sieve retaining aggregate	TV -6	TV +6
3/8-inch sieve	TV -6	TV +6
No. 4 sieve	TV -6	TV +6
No. 8 sieve	TV -6	TV +6
No. 16 sieve	TV -5	TV +5
No. 30 sieve	TV -4	TV +4
No. 50 sieve	TV -4	TV +4
No. 100 sieve	TV -3	TV +3
No. 200 sieve*	TV -2.0	TV +2.0
Asphalt Binder Content, %	TV -0.4	TV +0.4
Mat Density %	92.0	100.0

*LSL for the No. 200 sieve is restricted by the broadband limits in Table 703-4.

Asphalt binder will be randomly sampled and tested in accordance with Subsection 306-4.02. Provide supplier process control test results with the delivery ticket for each load of asphalt binder to the Engineer before unloading asphalt binder at the project. No payment will be made without this documentation.

306-4.04 ASPHALT MATERIAL PRICE ADJUSTMENT. Asphalt Material Price Adjustment. This subsection provides a price adjustment for asphalt material by: (1) additional compensation to the contractor or (2) a deduction from the contract amount.

1. This provision shall apply:

   a. To asphalt material meeting the criteria of Subsection 702-2.01 Asphalt Binder, and is included in items listed in the bid schedule of Sections 306, 307, 308, 318, 401 thru 405, 408, 520, 608 and 609.

   b. To cost changes in asphalt material that occur between the date of bid opening and the date on the certified bill of lading from the asphalt material refiner/producer.

   c. When there is more than a seven and one half percent (7.5%) increase or decrease in the Alaska Asphalt Material Price Index, AAMPI, from the date of bid opening to the date on the certified bill of lading from the asphalt refiner/producer.

2. Provide the certified bill of lading from the asphalt material refiner/producer.

3. The AAMPI is calculated bimonthly on the first and third Friday of each month, and will remain in effect from the day of calculation until the next bimonthly calculation. The AAMPI is posted on the Department's Statewide Materials website at and calculated according to the formula posted there. http://www.dot.state.ak.us/stwddes/desmaterials/aprice_index.shtml

4. Price adjustment will be cumulative and calculated with each progress payment. Use the AAMPI in effect on the date of the certified bill of lading from the asphalt material refiner/producer, to calculate the price adjustment for asphalt material The Department will increase or decrease payment under this contract by the amount determined with the following asphalt material price adjustment formula:

   For an increase exceeding 7.5%, additional compensation = [(IPP – IB) – (0.075 x IB)] x Q

   For a decrease exceeding 7.5%, deduction from contract = [(IB – IPP) – (0.075 x IB)] x 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.

306-5.01 BASIS OF PAYMENT.

Except where specified as individual Pay Items the work and materials associated with:

Asphalt binder, anti-stripping additives, surface tolerance corrections, patching defective areas; removal and disposal of rejected ATB, and the hauling equipment are subsidiary to the Asphalt Treated Base Pay Items.

Item 306.2001·____· ATB, Price Adjustment, Type ___; Class __: is the sum of the price adjustment for the fees assessed the Contractor including:

- Each mix design subsequent to the approved Job Mix Design (Subsection 306-2.01) will result in a fee of $2500.00 each.
- Failure to cut core samples within the specified period will result in a fee of $100.00 per sample per day (Subsection 306-4.02).
- Failure to backfill voids left by sampling within the specified period will result in a fee of $100 per hole per day (Subsection 306-4.02).
- Contractor retesting, referee sample testing and Contractor requested testing for visually inspected and rejected asphalt treated base failing to meet specifications will result in a fee being assessed for all costs associated with the test (Subsection 306-4.02, 4.03).

Item 306.2002·____. Asphalt Material Price Adjustment.

For each Section as included in Subsection 306-4.04 Asphalt Material Price Adjustment, item 1, 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

Item Number	Item Description	Unit
306.0001.____	ATB	Ton
306.0002.____	Asphalt Binder, Grade PG ##-## X	Ton
306.2001.____	ATB, Price Adjustment, Type ___; Class __	CS
306.2002.____	Asphalt Material Price Adjustment	CS

CR306-010122

Special Provision

Replace Section 308 with the following:

SECTION 308
CRUSHED ASPHALT BASE COURSE

308-1.01 DESCRIPTION. Construct a base course, using pulverized asphalt pavement, to the grades shown on the Plans.

308-2.01 MATERIALS. Use materials that conform to the following:

Asphalt Concrete	Existing asphalt pavement material
Aggregate Base Course	Subsection 703-2.03

CONSTRUCTION REQUIREMENTS

308-3.01 PRODUCTION PLAN. Submit a crushed asphalt base course Production Plan, in writing, at the Preconstruction Conference for approval.

Production Plan. Include the following:

1. Roadway Preparation.
    a. Procedures to inventory crack sealant materials present in the roadway's surface course.
    b. Procedures to remove crack sealant materials, according to the established criteria defined in Subsection 308-3.02.
2. Sequence of Operations.
    a. Crack Sealant removal activities occurring in advance of processing activities, and coordination between the two parties to end each work shift at a common, predetermined location.
    b. Shaping, grading, and compaction procedures including means and methods to maintain longitudinal grade control.
    c. Procedures to remove excess crushed asphalt base course.
    d. Procedures to maintain access to approaches immediately following processing operations.
3. List of field equipment used to execute the Production Plan.
4. Any additional information or procedures to ensure the crushed asphalt base course meets the Contract requirements.

308-3.01 PULVERIZING AND MIXING. Add the following:

Crushed asphalt base course is the property of the State. Any excess material shall be delivered to the Cascade maintenance station located at MP 93.5 Glenn Highway, Palmer AK 99559. Coordinate, through the Engineer with the Maintenance and Operations Superintendent, telephone number 907-745-2159 for acceptance of material and desired location of stockpile. Dispose of material not used in the project, not accepted by the maintenance station, and not wanted by the contractor at an approved DEC disposal site.

308-3.02 CRACK SEALANT REMOVAL. Remove crack sealant materials from the roadway's surface course prior to processing activities. Remove crack sealant materials meeting the following criteria:

- Crack sealant materials wider than 1.5 inches
- Crack sealant materials longer than 6 feet
- As directed by the Engineer

Crack sealant materials removed are the property of the Contractor, dispose of crack sealant materials according to Subsection 202-3.06.

308-3.03 PULVERIZING AND MIXING. Crush or process the existing asphalt pavement so that 100 percent by weight passes the 2-inch sieve and 95-100 percent by weight passes the 1-1/2-inch sieve.

Use self-propelled pulverizing and mixing equipment capable of processing to full depth in a single pass. If emulsified asphalt is called for in the Plans, the mixing equipment must also be capable of adding the emulsion, through a metered system, during mixing.

Add crushed aggregate base course to the base course mixture as needed to conform to the design grade.

Maintain access to approaches immediately after processing operations.

308-3.04 WEATHER LIMITATIONS. Do not use any frozen material or compact on a frozen base.

308-3.05 SHAPING AND GRADING. Use a finish grader that is equipped with an automatic grade and cross slope control system. Maintain longitudinal grade control, based on either string line or the existing roadway surface, as determined by the Engineer.

Excess material is the property of the Contractor, dispose of excess material according to Subsection 202-3.06. Do not grade excess material past the hinge point.

308-3.06 COMPACTION AND COMPACTION EQUIPMENT. The Engineer will use ATM 412 to determine the density standard. Make each control strip at least 12 feet by 300 feet. Compact the remainder of the project to not less than 98 percent of the density standard in accordance with ATM 411. The Engineer will designate the location of test strips.

Compact the base course using vibratory compactors, applying a minimum dynamic force of 50,000 pounds per vibration at a minimum frequency of 1,000 vibrations per minute. Adjust working speed in order to apply 8 to 12 impacts per foot. In areas inaccessible to rollers, use mechanical tampers until thoroughly compacted.

308-3.07 SURFACE TEST. The finished surface will be tested for smoothness and accuracy of grade, crown, superelevation, and width.

Limit surface deviations to 3/8 inch, as measured from the test edge of a 10-foot straightedge between two contacts with the surface parallel with, and at right angles to, the centerline.

308-4.01 METHOD OF MEASUREMENT. See Section 109 and the following:

1. Crushed Asphalt Base Course, by square yard. By the area of finished top surface.

2. CSS-1 Asphalt for Base Course, by ton. By weighing or invoice.

3. Crushed Asphalt Base Course, by ton. By weighing or invoice.

4. Crushed Asphalt Base Course, by lump sum. Emulsified Asphalt is subsidiary.

308-5.01 BASIS OF PAYMENT. Add the following:

Removal and delivery of excess material is subsidiary.

Additional crushed aggregate base course, if required, will be paid for under Section 301.

Work required to shape and compact crushed asphalt base course is subsidiary.

Water required for compaction of the crushed asphalt base course is subsidiary.

Removal and disposal of excess materials, and crack sealant materials, is subsidiary.

Creation of a model for grade control is subsidiary.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
308.0001.____	Crushed Asphalt Base Course	SY
308.0002.____	CSS-1 for Asphalt Base Course	TON
308.0003.____	Crushed Asphalt Base Course	TON
308.0004.____	Crushed Asphalt Base Course	LS

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DIVISION 400 — ASPHALT PAVEMENTS AND SURFACE TREATMENTS

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Special Provision

Replace Section 401 with the following:

SECTION 401
HOT MIX ASPHALT PAVEMENT

401-1.01 DESCRIPTION. Construct one or more courses of plant-produced Hot Mix Asphalt (HMA) pavement on an approved surface, to the lines, grades, and depths shown on the Plans.

1. In this Section, HMA refers to Type I, II, III, and IV.

    a. Temporary Asphalt Pavement: HMA, Type II, Class B, minimum.
    b. Preleveling/Leveling Course: HMA, Type IV, Class B.

MATERIALS

401-2.01 ASPHALT BINDER. Conform to Subsection 702-2.01. If binder performance grade is not specified, use PG 52-28.

Provide test reports for each batch of asphalt binder showing conformance to the specifications in Section 702 before delivery to the project. Require that the storage tanks used for each batch be noted on the test report, the anti-strip additives required by the mix design be added during load out for delivery to the project, and a printed weight ticket for anti-strip is included with the asphalt binder weight ticket. The location where anti-strip is added may be changed with the written approval of the Engineer.

Furnish the following documents at delivery:
1. Manufacturer's certificate of compliance (Subsection 106-1.05).
2. Conformance test reports for the batch (provide prior to delivery as noted above).
3. Batch number and storage tanks used.
4. Date and time of load out for delivery.
5. Type, grade, temperature, and quantity of asphalt binder loaded.
6. Type and percent of liquid anti-strip added.

Asphalt binder may be conditionally accepted at the source if a manufacturer's certification of compliance is provided, according to Subsection 106-1.05, and the applicable requirements of Section 702 are met.

401-2.02 LIQUID ANTI-STRIP ADDITIVE. Use anti-strip agents in the proportions determined by ATM 414 and included in the approved Job Mix Design (JMD). At least 90% of the aggregate must remain coated when tested according to ATM 414. The following minimum dose (percent) of liquid anti-strip by weight of asphalt binder is required:

TABLE 401-2.02-1
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

401-2.03 JOINT ADHESIVE. Conform to Subsection 702-2.05.

401-2.04 JOINT SEALANT. Conform to Subsection 702-2.06.

401-2.05 WARM MIX ASPHALT. Conform to Subsection 702-2.07.

401-2.06 ASPHALT RELEASE AGENT. Conform to Subsection 702-2.08.

401-2.07 AGGREGATES. Conform to Subsection 703-2.04. Use a minimum of three stockpiles of crushed aggregate (coarse, intermediate, and fine). Place blend material, if any, in a fourth pile.

401-2.08 RECYCLED ASPHALT PAVEMENT. Recycled asphalt pavement (RAP) may be used in the production of HMA. The RAP may be from pavements removed under the Contract, or from an existing stockpile. Conform to Subsection 703-2.16

401-2.09 JOB MIX DESIGN. Provide target values for gradation that satisfy both the broad band gradation limits shown in Table 703-4 and the requirements of Table 401-1, for the Type and Class of HMA specified.

TABLE 401-1
HMA MARSHALL DESIGN REQUIREMENTS

DESIGN PARAMETER	CLASS "A"	CLASS "B"
HMA (Including Asphalt Binder)		
Stability, Pounds	1800 Min.	1200 Min.
Flow, 0.01 Inch	8 – 14	8 - 16
Voids in Total Mix (VTM), %	3.0 – 5.0	3.0 – 5.0
Compaction, Number of Blows Each Side of Test Specimen	75	50
Asphalt Binder		
Voids Filled with Asphalt (VFA), %	65 - 75	65 - 78
Asphalt Content, Min. % @ 4% VTM	5.0	5.0
Dust-Asphalt Ratio*	0.6 - 1.4	0.6 - 1.4
Voids in the Mineral Aggregate (VMA), %, Min.		
Type I	12.0	11.0
Type II	13.0	12.0
Type III, IV	14.0	13.0
Liquid Anti-Strip Additive**,%, Min.	0.30	0.30
RAP, %, Max.	15.0	25.0

*Dust-Asphalt ratio is the percent of material passing the No. 200 sieve divided by the percent of effective asphalt binder (calculated by weight).
** By Weight of Asphalt Binder

The approved JMD will specify the Target Values (TV) for gradation, the TV for asphalt binder content, the Maximum Specific Gravity (MSG) of the HMA, the additives, and the recommended mixing temperature range.

Submit the following to the Engineer at least 15 days before the production of HMA:

1. A letter stating the location, size, and type of mixing plant. The letter shall state whether or not WMA and/or RAP will be used. The letter shall include the proposed gradation for the JMD, gradations for individual stockpiles, and the blend ratio of each aggregate stockpile.

2. Representative samples of each aggregate (coarse, intermediate, fine, blend material and mineral filler, if any) in the proposed mix design. Furnish a total of 500 pounds of material in the proportional amounts in the proposed JMD.

3. Five separate 1-gallon samples of the asphalt binder proposed for use in the HMA. Include name of product, manufacturer, test results of the applicable quality requirements of Subsection 702-2.01, manufacturer's certificate of compliance according to Subsection 106-1.05, a temperature- viscosity curve for the asphalt binder or manufacturer's recommended mixing and compaction temperatures, and current Material Safety Data Sheet.

4. One sample, minimum 1/2 pint, of the anti-strip additive proposed, including name of product, manufacturer, and manufacturer's data sheet, and current Material Safety Data Sheet.

5. Testing results per Subsection 106-1.03.1 for each aggregate type proposed for use.

6. If applicable, a letter stating the WMA technology (Subsection 702-2.07) to be used, location where additive will be introduced and manufacturer's recommended usage rate for each type of HMA. Supply a minimum of 2-pint samples for each proposed additive.

7. If applicable, representative samples of any RAP proposed for use. Furnish a minimum of 200-pound sample of proposed RAP.

The Engineer will evaluate the material and the proposed gradation using ATM 417 and the requirements of Table 401-1 for the appropriate Type and Class of HMA specified, and establish the approved JMD which will become a part of the Contract.

Anti-strip evaluation (ATM 414) of HMA mix designs that include RAP will be completed without the inclusion of the RAP.

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

Contractor Mix Design. If a bid item for JMD appears in the contract, or if the Engineer approves a request from the Contractor to perform the JMD at no cost to the Department, provide a JMD following the requirements specified in this section. Submit the JMD to the Engineer at least 15 working days before HMA production. Submit samples to the Engineer upon request for JMD verification testing.

All Contractor-furnished JMDs must be sealed by a professional Engineer registered in the State of Alaska. The Professional Engineer shall certify that the JMD was performed according to the specified procedures, and meets all project specifications.

Changes. Submit a new JMD with changes noted and new samples in the same manner as the original JMD submittal when:

a. The results of the JMD evaluation do not achieve the requirements specified in Table 401-1
b. The asphalt binder source is changed
c. The source of aggregate, aggregate quality or gradation is changed
d. The results of a Test Strip do not meet the requirements of the specification – the Engineer may require a new JMD.

Do not produce HMA for production paving and payment before the Engineer provides written approval of the JMD; the original, or a replacement JMD.

The Engineer has the option to require further verification of the JMD under 401-2.10 Process Quality Control. If a Test Strip(s) is required, do not produce HMA for production paving and payment before the Engineer provides written approval of the Test Strip construction, construction process, materials, and the JMD, Subsection 401-2.10.

Payment for HMA will not be made until the new JMD and the Test Strip, when required, is approved.

Approved changes apply only to HMA produced after the submittal of changes.

The Engineer will assess a fee for each mix design subsequent to the approved Job Mix Design, per Subsection 401-5.01.

401-2.10 PROCESS QUALITY CONTROL. Sample and test materials for quality control of the HMA according to Subsection 106-1.03. Submit to the Engineer at the "Pre-Paving Meeting," Subsection 401-3.01, the JMD and a documentation plan that provides a complete, accurate, and clear record of the sampling and testing results.

Failure to perform quality control forfeits the Contractor's right to a retest under Subsection 401-4.02

Provide copies of the documented sampling and testing results no more than 24 hours from the time taken.

Supplemental Process Quality Control:

The Engineer has the option to require supplemental process quality controls including additional sampling and testing. Include the supplemental process quality controls in the documentation plan.

When directed by the Engineer: provide “Density Profiles” and or “Test Strips”.

1. Density Profiles. Provide density profile testing, with a nuclear density gauge, of the mat and longitudinal joints. Include the frequency of the test groups, configuration of the test groups for mat density and joint density individually or combined. Indicate the number of tests in a test group intended to confirm the density of the mat and joints.

   Locations that may require testing include: all lanes on bridge decks, adjacent to longitudinal joints, areas where segregation is visible, thermal segregation potential exists, where mat density is lower than the minimum (considered segregated), and the paver starts/stops. The Engineer will identify these and other areas that require density testing.

2. Test Strips. Construct test strips (ATM 412) using the approved job mix HMA a minimum of 5 working days prior to planned production paving, except use the proposed JMD when the test strip is being constructed to help evaluate the JMD as part of the mix performance analysis. Submit a proposed test strip location to the Engineer for coordination, and approval; include in the process control documentation plan. The Engineer's approval and written authorization of the location, date, and time, is required before construction of a test strip.

   Establish roller patterns and the number of passes required to assure that proper placement and compaction is achieved. The test strip shall include no less than 300 tons and no more than 1000 tons, except as may be authorized, in writing, by the Engineer. The full complement of the paving train shall be on site to receive instructions from the Engineer as needed to complete the mix performance analysis. Make the equipment available for inspection as required by Subsection 401-3.04. Provide an onsite process control representative with authority to modify mix components as instructed by the Engineer.

   Failed Test Strip: the Engineer may direct the Contractor to remove and dispose of test strips not meeting specification requirements. Contractor, construct a new test strip or return the surface materials and grade to their original condition as directed by the Engineer.

   Only after the Engineer approves the test strip may HMA be produced for production paving and payment.

   Refer to Subsection 401-5.01 for payment of test strips.

CONSTRUCTION REQUIREMENTS

401-3.01 PRE-PAVING MEETING. Meet with the Engineer for a pre-paving meeting in the presence of the project superintendent and paving foreman at least (5) working days before beginning paving operations. Submit a paving plan and pavement inspection plan at the meeting. When directed by the Engineer, make adjustments to the plan and resubmit.

1. Paving Plan. Include the following:

   a. Sequence of operations
   b. List of equipment that will be used for production, transport, pick-up (if applicable), laydown, and compaction
   c. Summary of plant modifications (if applicable) for production of WMA
   d. Procedures to produce consistent HMA
   e. Procedures to minimize material and thermal segregation

f. Procedures to minimize premature cooling

g. Procedures to achieve HMA density

h. Procedures for joint construction including corrective action for joints that do not meet surface tolerance requirements

i. Quality control testing methods, frequencies and sample locations for gradation, asphalt binder content, and density, and

J. Any other information or procedures necessary to provide completed HMA construction that meets the Contract Requirements

2. Pavement Inspection Plan. Include the following:

a. Process for daily inspections
b. Means and methods to remove and dispose of project materials

401-3.02 CONTRACTOR QUALITY CONTROL. Perform quality control (QC) of HMA materials in accordance with Subsection 106-1.03.

401-3.03 WEATHER LIMITATIONS. Place HMA on a stable/non-yielding roadbed. Do not place HMA when the base material is wet or frozen, or when weather conditions prevent proper handling or finishing of the mix. Do not place HMA when the roadway surface temperature is colder than 40° F.

401-3.04 EQUIPMENT, GENERAL. Use equipment in good working order and free of HMA buildup. Make all equipment available for inspection and demonstration of operation a minimum of 24 hours before placement of HMA and test strip HMA.

401-3.05 ASPHALT MIXING PLANT. Meet AASHTO M 156. Use an HMA plant capable of producing at least 150 tons of HMA per hour noted on posted DEC air quality permit, designed to dry aggregates, maintain consistent and accurate temperature control, and accurately proportion asphalt binder and aggregates. Calibrate the HMA plant and furnish copies of the calibration data to the Engineer at least 24 hours before HMA production.

Provide a scalping screen at the asphalt plant to prevent oversize material or debris from being incorporated into the HMA.

Provide a tap on the asphalt binder supply line just before it enters the plant (after the 3-way valve) for sampling asphalt binder. Provide aggregate and asphalt binder sampling locations meeting OSHA safety requirements.

You may use belt conveyor scales to proportion plant blends and mixtures if the scales meet the general requirements for weighing equipment and are calibrated according to the manufacturer's instructions.
If WMA is approved by the Engineer, modify the mixing plant as required by the manufacturer and WMA additive manufacturer.

401-3.06 HAULING EQUIPMENT. Haul HMA in trucks with tight, clean, smooth metal beds. Keep beds free of petroleum oils, solvents, or other materials that would adversely affect the mixture. Apply a thin coat of approved asphalt release agent to beds as necessary to prevent mixture adherence. Provide trucks with covers attached and available for use.

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

Do not haul HMA on barges.

401-3.07 ASPHALT PAVERS. Use self-propelled asphalt pavers with heated vibratory screed assemblies to spread and finish HMA to the specified section widths and thicknesses without introducing thermal or material segregation.

Equip the paver with a receiving hopper having sufficient capacity for a uniform spreading operation and a distribution system to place the HMA uniformly in front of screed. Use a screed assembly that produces a finished surface of the required smoothness, thickness, and texture without tearing, shoving, or displacing the HMA. Heat and vibrate screed extensions. Place auger extensions within 20 inches of the screed extensions or per written manufacturer's recommendations.

Equip the paver with a means of preventing segregation of the coarse aggregate particles from the remainder of the HMA when carried from the paver hopper back to the augers.

Equip the paver with automatic screed controls capable of operating from a reference line or a ski from either or both sides of the paver.

The use of a "Layton Box" or equivalent towed paver is allowed on bike paths, sidewalks, and driveways.

401-3.08 ROLLERS. Use both steel-wheel (static or vibratory) and pneumatic-tire rollers. Use rollers designed to compact HMA and capable of reversing without shoving or tearing the mixture. Select rollers that will not crush the aggregate or displace the HMA. Equip vibratory rollers with separate vibration and propulsion controls.

Equip the rollers with an infrared thermometer that measures and displays the surface temperature to the operator. Infrared thermometer may be hand-held or fixed to the roller.

Utilize a pneumatic roller in the complement of rollers to compact the leveling course. Use fully skirted pneumatic-tire roller having a minimum operating weight of 3000 pounds per tire.

401-3.09 RESERVED.

401-3.10 PREPARATION OF EXISTING SURFACE. Prepare existing surfaces according to the Contract. Prior to placing HMA, clean existing surfaces of loose material and uniformly coat contact surfaces of curbing, gutters, manholes and other structures with tack coat material meeting Section 402. Treat cold joint surfaces according to 401-3.17. Allow tack coat to break before placement of HMA on these surfaces. Do not apply the tack coat material until the Engineer approves the existing surface including, not limited to; the existing paved surface, the milled surface, and a prior layer of HMA pavement.

Before applying tack coat to an existing paved surface, clean and patch the surface. Remove irregularities to provide a reasonably smooth and uniform surface. Remove and replace unstable areas with HMA. Clean the edges of existing pavements, which are to be adjacent to new pavement, to permit the adhesion of asphalt materials. Clean loose material from cracks. Fill the cleaned cracks, wider than 1 inch, with HMA tamped in place. Wash and/or sweep the paved surface clean and free of loose materials.

Preparation of a milled surface:

1. Prelevel remaining ruts, pavement delaminations, and depressions having a depth greater than 1/2 inch with an approved HMA.

2. Notify the Engineer of pavement areas that appear thin or unstable. Where milling operation creates thin or unstable pavement areas, or where it breaks through existing pavement, remove thin and unstable pavement, and 2 inches of existing base material, compact and replace with an approved HMA.

401-3.11 PREPARATION OF ASPHALT. Provide a continuous supply of asphalt binder to the asphalt mixing plant at a uniform temperature, within the recommended mixing temperature range.

401-3.12 PREPARATION OF AGGREGATES. Dry the aggregate so the moisture content of the HMA, sampled at the point of acceptance for asphalt binder content, does not exceed 0.5% (by total weight of mix), as determined by ATM 407.

Heat the aggregate for the HMA to a temperature compatible with the mix requirements specified.

Adjust the burner on the dryer to avoid damage to the aggregate and to prevent the presence of unburned fuel on the aggregate. HMA containing soot or fuel is unacceptable per Subsection 105-1.11.

401-3.13 MIXING. Combine the aggregate, asphalt binder, and additives in the mixer in the amounts required by the JMD. Mix to obtain at least 98% coated particles when tested according to AASHTO T195.

For batch plants, put the dry aggregate in motion before addition of asphalt binder.

Mix the HMA within the temperature range determined by the JMD.

Upon the Engineer's request, provide daily burner charts showing start/stop times and temperatures.

401-3.14 TEMPORARY STORAGE OF HMA. Silo type storage bins may be used, provided the characteristics of the HMA remain unaltered.

Signs of visible segregation, heat loss, changes from the JMD, change in the characteristics of asphalt binder, lumpiness, and stiffness of the mixture, are causes for rejection.

Do not store HMA on barges.

401-3.15 PLACING AND SPREADING. Use asphalt pavers to distribute HMA, including leveling course and temporary HMA. Place the HMA upon the approved surface, spread, strike off, and adjust surface irregularities. The maximum compacted lift thickness allowed is 3 inches.

When multiple lifts are specified in the Contract, do not place the final lift until all lower lifts throughout that section, are placed and accepted.

Do not place HMA abutting curb and gutter until curb and gutter are installed, except as approved by the Engineer.

Do not pave against new Portland cement concrete curbing until it has cured for at least 72 hours.

When practicable, adjust elevation of metal fixtures before paving the final lift, so they will be between 1/4 and 1/2 inch below the top surface of the final lift. Metal fixtures include, but are not limited to manholes, valve boxes, monument cases, hand holes, and drains.

When the section of roadway being paved is open to traffic, pave adjacent traffic lanes to the same elevation within 24 hours. Place approved material against the outside pavement edge when the drop off exceeds 2 inches.

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

Place HMA over bridge deck membranes according to Section 508 and the membrane manufacturer's recommendations.

Do not mix HMA produced from different plants for testing or paving.

401-3.16 COMPACTION. Thoroughly and uniformly, compact the HMA by rolling. In areas not accessible to large rollers, compact with mechanical tampers or trench rollers.

Prevent indentation in the mat, do not leave rollers or other equipment standing on HMA that has not sufficiently cooled.

The Lower Specification Limit for density is 92.0% of the Maximum Specific Gravity (MSG) as determined by ATM 409. The MSG from the approved JMD is used for the first lot of each type of HMA. The MSG for additional lots is determined from the first sublot of each lot.

401-3.17 JOINTS. Place and compact the HMA to provide a continuous bond, texture, and smoothness between adjacent sections of the HMA.

Minimize the number of joints. Do not construct longitudinal joints in the driving lanes unless approved by the Engineer in writing at the pre-paving meeting. Offset the longitudinal joints in one layer from the joint in the layer immediately below by at least 6 inches. Align the joints of the top layer at the centerline or lane lines. Where preformed marking tape striping is required, offset the longitudinal joint in the top layer not more than 6 inches from the edge of the stripe.

Form transverse joints by saw-cutting back on the previous run to expose the full depth of the course or by using a removable bulkhead. Skew transverse joints 15 to 25 degrees.

For all joints below the top lift, uniformly coat joint surfaces with tack coat material meeting Section 402.

Uniformly coat the joint face of all top lift joints with a joint adhesive. Follow joint adhesive manufacturer's recommendations for temperatures and application method. Remove joint adhesive applied to the top of pavement surface. If infrared joint heaters are used and passing joint densities are achieved in each of the first three joint densities taken, then joint adhesive is not required.

The Lower Specification Limit for top lift longitudinal joint density is 91.0% of the MSG of the panel completing the joint. MSG will be determined according to ATM 409.

For top lift panels that have a longitudinal joint density less than 91.0% of the MSG in a sublot, seal the surface of the longitudinal joints with joint sealant within that sublot, or as directed. Apply joint sealant according to the manufacturer’s recommendations while the HMA is clean, free of moisture and prior to final traffic marking. Place the sealant at a maximum application rate of 0.15 gallons per square yard, and at least 12 inches wide centered on the longitudinal joint. After surface sealing, inlay by grinding pavement striping into the sealed HMA. Use grooving equipment that grinds a dry cut to groove the width, length, and thickness of the striping within the specified striping tolerances.

Correct improperly formed joints that result in surface irregularities according to a corrective action plan.

Complete all hot lapped joints while the mat temperature is over 230°F as measured by the Engineer, within 3 inches of the joint. Tack coat and joint adhesive are not required for hot lapped joints. Hot lapped joints will receive the full Longitudinal Joint Density Price Adjustment incentive without testing for joint density.

Top lift longitudinal joints will be evaluated for acceptance according to Subsection 401-4.03

401-3.18 SURFACE REQUIREMENTS AND TOLERANCE. The finished surface of all HMA paving must match dimensions shown in the Contract for horizontal alignment and width, profile grade and elevation, crown slope, and pavement thickness. Water must drain across the pavement surface without ponding. The surface must have a uniform texture, without ridges, puddles, humps, depressions, and roller marks. The surface must not exhibit raveling, cracking, tearing, asphalt bleeding, or aggregate segregation. Leave no foreign material, uncoated aggregate, or oversize aggregate on the HMA surface.

The Engineer will test the finished surface after final rolling at selected locations using a 10-foot straightedge. The Engineer will identify pavement areas that deviate more than 3/16-inch from the straightedge, including joints, as defective work. Perform corrective work by removing and replacing, grinding, cold milling or infrared heating such areas as required. Do not surface patch. After the Contractor performs corrective work, the Engineer will retest the area.

Perform corrective Actions according to one of the following or by a method approved by the Engineer:

1. Diamond Grinding. If the required pavement thickness is not decreased by more the 1/4-inch grind to the required surface tolerance and cross section. Remove and dispose of all waste materials. Apply joint sealant and sand to exposed aggregates per the manufacturer's recommendations.

2. Overlaying. Mill or sawcut the existing pavement to provide a vertical transverse joint face to match the overlay to the existing pavement. Apply tack coat on the mill surface and joint adhesive to all vertical joints and overlay the full width of the underlying pavement surface. Use the same approved HMA for overlays. Place a minimum overlay thickness of 2.0-inches.

3. Mill and Fill. Mill the existing pavement to provide a vertical transverse joint face. Apply tack coat to the milled surface and joint adhesive to all vertical joints prior to inlaying new HMA to match the existing pavement. Use the same approved HMA. Place a minimum thickness of 2.0-inches.

401-3.19 REPAIRING DEFECTIVE AREAS. Remove HMA that is contaminated with foreign material, is segregated (determined visually or by testing), flushing, or bleeding asphalt. Remove and dispose defective HMA for the full thickness of the course. Cut the pavement so that edges are vertical and the sides are parallel to the direction of traffic. Coat edges with a tack coat according to Section 402. Place and compact fresh HMA so that compaction, grade, and smoothness requirements are met.

401-3.20 ROADWAY MAINTENANCE. Inspect daily according to pavement inspection plan. Remove, and dispose of project materials incorrectly deposited on existing and new pavement surfaces(s) inside and outside the project area including haul routes.
The Contractor is responsible for damage caused by not removing these materials and any damage to the roadway from the removal method(s).

Repair damage to the existing roadway that results from fugitive materials or their removal.

401-4.01 METHOD OF MEASUREMENT. Section 109 and the following:

1. Hot Mix Asphalt.

   a. By weight. No deduction is made for the weight of asphalt binder or anti stripping additive or cutting back joints. When the Engineer approves the use of WMA, WMA additives will not be measured and are considered subsidiary to the HMA pay item.

   b. By the final HMA surface area.

2. Asphalt Binder. By weight, as follows:

   Method 1 will be used 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 sublot multiplied by the total HMA weight represented by that sublot. 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 sublot will be used for computation of the asphalt binder quantity. In the absence of testing, the percent of asphalt binder is the target value for asphalt binder in the JMD.

   Method 2: Supplier's invoices minus waste, diversion, and remnant. This procedure is an Engineer's option for projects where deliveries are made in tankers and the asphalt plant is producing HMA for one project only.

   The Engineer may direct, at any time that tankers are weighed in the Engineer's presence before and after unloading. If the weight determined at the project varies more than 1% from the invoice amount, payment is based on the weight determined at the project.

   Any remnant or diversion will be calculated based on tank stickings or weighing the remaining asphalt binder. The Engineer will determine the method. The weight of asphalt binder in waste HMA is calculated using the target value for asphalt binder as specified in the JMD.

3. Job Mix Design. When specified, a Contractor furnished JMD is measured as one according to the HMA class and type.

4. Temporary Pavement. By weight, without deduction for the weight of asphalt binder or anti-strip additive.

5. Leveling Course. By Lane-Station (12 foot width) or by weighing without deduction for the weight of asphalt binder or anti-strip additive.

6. HMA Price Adjustment. Calculated by quality level analysis under Subsection 401-4.03.1.

7. Longitudinal Joint Density Price Adjustment. By the linear foot of top lift longitudinal joint under Subsection 401-4.03.2.

8. Joint Adhesive. By the linear foot of longitudinal and transverse joint.

9. Pavement Smoothness Price Adjustment. Calculated from inertial profiler data using FHWA's ProVAL software under Subsection 401-4.03.3.

10. Asphalt Material Price Adjustment. Determined under Subsection 401-4.04.

11. Liquid Anti-Strip Additive. Based on the number of tons of asphalt binder containing required additive.

12. Crack Repair. From end to end of the crack repaired according to 401-3.10, measured horizontally along the centerline of the crack.

13. Prelevel for Ruts, Delaminations, and Depressions. By the surface area where prelevel is placed according to 401-3.10(1), measured according to Section 109.

14. Repair Unstable Pavement. By the surface area of pavement repaired according to 401-3.10(2), measured according to Section 109.

15. Asphalt Binder Price Adjustment. Determined under Subsection 401-4.03.4.

401-4.02 ACCEPTANCE SAMPLING AND TESTING.

1. Hot Mix Asphalt

   The bid quantity of each type of HMA produced and placed is divided into lots and the lots evaluated individually for acceptance.

   A lot is normally 5,000 tons. The lot is divided into sublots of 500 tons, each randomly sampled and tested for asphalt binder content, density, and gradation according to this Subsection. The lot is evaluated for price adjustment according to Subsection 401-4.03.1. Seasonal startup or a new JMD requires starting a new lot.

   If less than 8 sublots have been placed at the time a lot is terminated, the material in the shortened lot will be included as part of the prior lot. The price adjustment computed for the prior lot will include the samples from the shortened lot. Density test results from material in the shortened lot will be based on the MSG of the first sublot of the shortened lot. If there is no prior lot, and there are at least 3 sublots, the material in the shortened lot will be considered as a lot and the price adjustment will be based on the actual number of test results in the shortened lot. If there are less than 3 sublots, the HMA will be accepted for payment based on the Engineer's approval of the JMD, and placement and compaction of the HMA to the specified depth, finished surface requirements, and tolerances.

   If 8 or 9 sublots have been placed at the time a lot is terminated, they will be considered as a lot and the price adjustment will be based on the actual number of test results in the shortened lot.

   If the bid quantity is between 1,500 to 5,000 tons, the quantity is considered one lot. The lot is divided into sublots of 500 tons, each randomly sampled and tested for asphalt binder content, density, and gradation according to this Subsection.

For bid quantity less than 1,500 tons, HMA will be accepted for payment based on the Engineer's approval of the JMD, and placement and compaction of the HMA to the specified depth, finished surface requirements, and tolerances.

The Engineer reserves the right to perform any testing required in order to determine acceptance.

a. Asphalt Binder Content. HMA samples shall be taken randomly by the Contractor in the presence of the Engineer from behind the paver screed before initial compaction, or will be taken randomly by the Engineer from the windrow, according to ATM 402 or ATM 403, at the discretion of the Engineer. The location (behind the paver screed or windrow) will be determined at the pre-paving meeting. The Engineer will determine random sampling locations.

   Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. At the discretion of the Engineer, Asphalt binder content will be determined according to ATM 405 or ATM 406.

b. Aggregate Gradation. Aggregates tested for gradation acceptance will have the full tolerances from Table 401-2 applied.

   (1). Drum Mix Plants. Samples will be taken from the combined aggregate cold feed conveyor via a diverter device, from the stopped conveyor belt or from the same location as samples for determination of asphalt binder content, at the discretion of the Engineer. Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. The aggregate gradation for samples from the conveyer system will be determined according to ATM 304. For HMA samples, the gradation will be determined according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder. Locate diverter devices for obtaining aggregate samples from drum mix plants on the conveyor system delivering combined aggregates into the drum. Divert aggregate from the full width of the conveyor system and maintain the diverter device to provide a representative sample of aggregate incorporated into the HMA.

   (2) Batch Plants. Samples will be taken from dry batched aggregates according to ATM 301 or from the same location as samples for determination of asphalt binder content, at the discretion of the Engineer. Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. The aggregate gradation for dry batch samples will be determined according to ATM 304. For HMA samples, the gradation will be determined according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder.

c. Density. The Engineer will determine and mark the location(s) where the Contractor takes each core sample.

   (1) Mat Cores: The location(s) for taking core samples is determined using a set of random numbers (independent of asphalt binder and aggregate sampling set of random numbers) and the Engineer's judgment. Take no mat cores within 1 foot of a joint or edge. Core samples are not taken on bridge decks.

   (2) Longitudinal Joint Cores: The Engineer will mark the location(s) to take the core sample, centered on the visible surface joint, and adjacent to the mat core sample taken in the panel completing the joint.

   Take core samples according to ATM 413 in the presence of the Engineer. Cut full depth core samples, centered on the marks and as noted above, from the finished HMA within 24 hours after final rolling. Neatly core drill one six-inch diameter sample at each marked location. Use a core extractor to remove the core - do not damage the core. The Engineer will immediately take possession of the samples. Backfill and compact voids left by coring with new HMA within 24 hours, and according to ATM 413. The Engineer will determine density of samples according to ATM 410.

d. Asphalt binder Content, Aggregate Gradation, and Density - Retest. When test results have failed to meet specifications, retest of acceptance test results for asphalt binder content, gradation, and density may be requested provided the quality control requirements of Subsection 401-3.02 Contractor Quality Control are met. Deliver this request in writing to the Engineer within 7 days of receipt of the final test of the lot. The Engineer will mark the sample location for the density retest within a 2-foot radius of the original core. The original test results are discarded and the retest result is used in the price adjustment calculation regardless of whether the retest result gives a higher or lower pay factor. Only one retest per sample is allowed. When gradation and asphalt binder content are determined from the same sample, a request for a retest of either gradation or asphalt binder content results in a retest of both. Both gradation and asphalt binder content retest results are used in the price adjustment calculation. Except for the first lot, retesting for gradation or asphalt binder from the first sublot 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 ([acceptance + 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 ([acceptance + retest + referee]/3) equals the ATV. If the ATV fails to meet specifications, the Contractor pays for the referee test.

401-4.03 EVALUATION OF MATERIALS FOR ACCEPTANCE. The Engineer may reject material which appears to be defective based on visual inspection. If a test of rejected material is requested, a minimum of two samples are collected from the rejected material and tested. If all test results are within specification limits, payment for the material is made.

The following methods are applied to each type of HMA with Price Adjustment Pay Items in the Contract. These methods describe how price adjustments are determined based on the quality of the HMA binder longitudinal joint density and pavement smoothness.

1. HMA Price Adjustment. Acceptance test results for HMA asphalt binder content, gradation and mat density are used in HMA price adjustment. These test results for a lot are analyzed collectively and statistically by the Quality Level Analysis (QLA) method as specified in Subsection 106-1.03.3 to determine the total estimated percentage of the lot that is within specification limits. The values for percent passing the #200 sieve, asphalt binder content and density test results are reported to the nearest 0.1 percent. All other sieves used in QLA are reported to the nearest whole number.

   The HMA price adjustment is based on the lower of two pay factors. The first factor is a composite pay factor (CPF) for HMA that includes gradation and asphalt binder content. The second is the density pay factor (DPF).

   A lot containing material with less than a 1.000 pay factor is accepted at an adjusted price, provided that pay factor is at least 0.800 and there are no isolated defects identified by the Engineer. A lot containing material that fails to obtain the minimum pay factor is considered unacceptable and rejected under Subsection 105-1.11.

   HMA pay factors are computed as follows:

   a. All statistical Quality Level Analysis (QLA) is computed using the Engineer's Price Adjustment programs.

   b. The USL and LSL are equal to the Target Value (TV) plus and minus the allowable tolerances in Table 401-2, or as shown below. The TV is the specification value shown in the approved Job Mix Design.

TABLE 401-2
HMA LOWER SPECIFICATION LIMIT (LSL) & UPPER SPECIFICATION LIMIT (USL)

Measured Characteristics	LSL	USL
3/4-inch or largest sieve size	99	100
1/2-inch sieve or first sieve retaining aggregate	TV -6	TV +6
3/8-inch sieve	TV -6	TV +6
No. 4 sieve	TV -6	TV +6
No. 8 sieve	TV -6	TV +6
No. 16 sieve	TV -5	TV +5
No. 30 sieve	TV -4	TV +4
No. 50 sieve	TV -4	TV +4
No. 100 sieve	TV -3	TV +3
No. 200 sieve*	TV -2.0	TV +2.0
Asphalt Binder Content, %	TV -0.4	TV +0.4
Mat Density, %	92.0	100.0

*LSL for the No. 200 sieve is restricted by the broadband limits in Table 703-4.

c. The percent within limits (PWL), Quality Levels and characteristic pay factors (PFs) are determined by the Engineer for each Lot in accordance with Subsection 106-1.03.3. The Composite Pay Factor (CPF) for the lot is determined from gradation and asphalt binder content (ac) acceptance test results using the following example formula:

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

Table 401-3 gives the weight factor (f) for each test property considered.

TABLE 401-3
WEIGHT FACTORS

Property	Type I Factor "f"	Type II Factor "f"	Type III Factor "f"
1-inch sieve	4	-	-
3/4-inch sieve	4	4	-
1/2-inch sieve	4	5	4
3/8-inch sieve	4	5	5
No. 4 sieve	4	4	5
No. 8 sieve	4	4	5
No. 16 sieve	4	4	5
No. 30 sieve	4	5	6
No. 50 sieve	4	5	6
No. 100 sieve	4	4	4
No. 200 sieve*	20	20	20
Asphalt Content, %	40	40	40

The Density Pay Factor (DPF) is computed using HMA mat core compaction acceptance test results.

The CPF and DPF are rounded to the nearest 0.001. The price adjustment for each individual lot is calculated as follows:

HMA Price Adjustment = [(Lowest Pay Factor)* -1.000] x (tons in lot) x (PAB)

* Lowest Pay Factor, CPF or DPF

PAB = Price Adjustment Base = $110.00 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 401-4.03-1 Asphalt Binder Pay Factors.

TABLE 401-4.03-1
ASPHALT BINDER PAY FACTORS

Pay Factor			1.01	1.00	0.95	0.90	0.75	Reject
RTFO (Rolling Thin Film Oven)								
DSR[a.1]	All Grades	G*/Sinδ, kPa^{-1}	≥ 2.69	2.68–2.20	2.19–1.96	1.95–1.43	1.42–1.10	< 1.10
MSCR[a.2]	PG 52-40 E	$J_{NR\ 3.2}$	≤ 0.39	0.40–0.50	0.51–0.59	0.60–0.69	0.70–1.00	> 1.00
		% $Rec_{3.2}$	≥ 86.0	85.9–75.0	74.9–68.0	67.9–60.0	59.9–55.0	< 55.0
	PG 58-34 E	$J_{NR\ 3.2}$	≤ 0.19	0.20–0.25	0.26–0.29	0.30–0.39	0.40–0.50	> 0.50
		% $Rec_{3.2}$	≥ 90.0	89.9–85.0	84.9–80.0	79.9–75.0	74.9–70.0	< 70.0
	PG 64-40 E	$J_{NR\ 3.2}$	< 0.05	0.05–0.10	0.11–0.15	0.16–0.20	0.21–0.25	> 0.25
		% $Rec_{3.2}$	≥ 97.0	96.9–95.0	94.9–91.0	90.9–85.0	84.9 – 80.0	< 80.0
PAV (Pressurized Aging Vessel)								
DS[a.3]	PG 64-40 E & All Other Grades	G*Sinδ, kPa	≤ 4711	4712–5000	5001–5289	5290–5578	5579–5867	> 5867
	PG 52-40 E, PG 58-34 E	G*Sinδ, kPa	≤ 5700	5701–6000	6001–6300	6301–6600	6601 – 7000	> 7000
CS[a.4 & 5]	All Grades[a.4]	BBR, *S*, MPa	≤ 247	248–300	301–338	339–388	389–449	≥ 450
	All Grades[a.5]	BBR, *m*	≥ 0.320	0.319–0.300	0.299–0.294	0.293–0.278	0.277–0.261	< 0.261

Creep Stiffness (CS) Dynamic Shear (DS) Multiple Stress Creep Recovery (MSCR)

a. Asphalt Binder Pay Adjustment = (Lowest Pay Factor – 1.00)* x (tons in lot) x PAB x 5

*Select the lowest pay factor from:

RTFO (test the binder residue at the performance grade temperature)
(1) DS, All Grades, G*/Sinδ, 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*Sinδ, 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.

401-4.04 ASPHALT MATERIAL PRICE ADJUSTMENT. Asphalt Material Price Adjustment. This subsection provides a price adjustment for asphalt material by: (1) additional compensation to the contractor or (2) a deduction from the contract amount.

1. This provision shall apply:

a. To asphalt material meeting the criteria of Subsection 702-2.01 Asphalt Binder, and is included in items listed in the bid schedule of Sections 306, 307, 308, 318, 401 thru 405, 408, 520, 608 and 609.

b. To cost changes in asphalt material that occur between the date of bid opening and the date on the certified bill of lading from the asphalt material refiner/producer.

c. When there is more than a seven and one half percent (7.5%) increase or decrease in the Alaska Asphalt Material Price Index, AAMPI, from the date of bid opening to the date on the certified bill of lading from the asphalt refiner/producer.

2. Provide the certified bill of lading from the asphalt material refiner/producer.

3. The AAMPI is calculated bimonthly on the first and third Friday of each month, and will remain in effect from the day of calculation until the next bimonthly calculation. The AAMPI is posted on the Department's Statewide Materials website at and calculated according to the formula posted there. http://www.dot.state.ak.us/stwddes/desmaterials/aprice_index.shtml

4. Price adjustment will be cumulative and calculated with each progress payment. Use the AAMPI in effect on the date of the certified bill of lading from the asphalt material refiner/producer, to calculate the price adjustment for asphalt material. The Department will increase or decrease payment under this contract by the amount determined with the following asphalt material price adjustment formula:

   For an increase exceeding 7.5%, additional compensation = [(IPP – IB) – (0.075 x IB)] x Q

   For a decrease exceeding 7.5%, deduction from contract = [(IB – IPP) – (0.075 x IB)] x Q

   Where:

   Q = Quantity of Asphalt Material incorporated into project, in tons as measured by the Engineer

   IB = Index at Bid: the Bi-monthly AAMPI in effect on date of bid, in dollars per ton

   IPP = Index at Pay Period: The bi-monthly AAMPI in effect on the date shown on the certified bill of lading from the asphalt refiner/producer, in dollars per ton

5. Method of measurement for determining Q (quantity) is the weight of asphalt material that meets the criteria of this subsection and is incorporated into the project. The quantity does not include aggregate, mineral filler, blotter material, thinning agents added after material qualification, or water for emulsified asphalt. The quantity for emulsified asphalts will be based on the asphalt residue material only and will be calculated using the percent residue from testing, or if not tested, from the manufacturer's certificate of compliance.

401-5.01 BASIS OF PAYMENT.

The following items, unless included as individual Pay Items, are subsidiary to the Section 401 Hot Mix Asphalt Pavement related Pay Items as included in the bid schedule:

- Asphalt binder
- Liquid anti-strip additives
- Tack coat
- Crack sealing
- Crack repair
- Joint adhesive
- Surface sealing of longitudinal joints
- Surface tolerance corrections
- Patching defective areas
- Prelevel for ruts, delaminations, and depressions
- Repair unstable pavement
- Job mix design
- Density profiles, Subsection 401-2.10 Process Quality Control
- Repair work and materials when planing equipment breaks through existing pavement – Subsection 401-3.10 Preparation of Existing Surface
- Work and materials associated with Subsection 401-3.06 Hauling Equipment
- Work and materials associated with Subsection 401-3.20 Roadway Maintenance

Test Strips: Subsection 401-2.10 Process Quality Control.

a. Approved. Test strip construction and material, approved by the Engineer in writing, as meeting the specification requirements will be paid for at the Contract unit prices for HMA and asphalt binder as included in the Bid Schedule. Price adjustments 401.0008.____, 401.009.____, 401.0010.____ and 401.2021.____ do not apply.

b. Failed. The materials, construction of, removal and disposal of a failed test strip will be at the Contractor's expense.

Pay Item 401.0005.____. HMA, Temporary, Type __; Class __. Removal and disposal of temporary HMA is subsidiary.

Pay Item 401.0008.____. HMA Price Adjustment, Type __; Class__. The sum of the price adjustments for each material lot, and for deductions and fees assessed. Deductions and fees assessed include:

- Each mix design subsequent to the approved JMD for each type and class of HMA specified will result in a fee of $6000.
- 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 will be assessed.

Pay Item 401.0008.____. HMA Price Adjustment, Type __; Class __. Does not apply to the following:

- HMA contract quantity is less than 1500 tons.
- HMA leveling course and rut repair.
- Temporary HMA.
- Driveway and approach HMA.

Pay Item 401.0009.____. Longitudinal Joint Density Price Adjustment. The total price adjustment.

Pay Item 401.0010.____. Pavement Smoothness Price Adjustment. The total price adjustment.

Pay Item 401.0015.____. Asphalt Material Price Adjustment.

For each Section as included in Subsection 401-4.04 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 401.0016.____. Crack Repair. Cleaning loose material from cracks, and asphalt binder and HMA to fill cracks are subsidiary.

Pay Item 401.0017.____. Prelevel for Ruts, Delaminations, and Depressions. Cleaning loose material, and asphalt binder and HMA are subsidiary.

Pay Item 401.0018.____. Repair Unstable Pavement. Removal of pavement and base course, asphalt binder, and HMA are subsidiary.

Pay Item 401.2021.____. Asphalt Binder Price Adjustment. The sum of the price adjustments for each material lot.

PAY ITEM		
Item Number	**Item Description**	**Unit**
401.0001.____	HMA, Type __; Class _	Ton
401.0002.____	HMA, Leveling Course, Type IV; Class B	LnSt
401.0003.____	HMA, Leveling Course, Type IV; Class B	Ton
401.0004.____	Asphalt Binder, Grade PG ##-## X	Ton
401.0005.____	HMA, Temporary, Type II, Class B	Ton
401.0006.____	HMA, Type __, Class __	SY
401.0007.____	Liquid Anti-Strip Additives	CS
401.0008.____	HMA Price Adjustment, Type __; Class __	CS
401.0009.____	Longitudinal Joint Density Price Adjustment	CS
401.0010.____	Pavement Smoothness Price Adjustment, Method _	CS
401.0013.____	Job Mix Design	Each
401.0014.____	Joint Adhesive	LF
401.0015.____	Asphalt Material Price Adjustment	CS
401.0016.____	Crack Repair	LF
401.0017.____	Prelevel for Ruts, Delaminations, and Depressions	SY
401.0018.____	Repair Unstable Pavements	SY
401.2021.____	Asphalt Binder Price Adjustment	CS

C401-24.1101

SECTION 402
TACK COAT

Standard Modification

Replace Subsection 402-3.02 with the following:

402-3.02 EQUIPMENT. Furnish, maintain, and operate asphalt distributor to apply asphalt material uniformly at even heat on variable widths of surface up to 15 feet at readily determined and controlled flow rates. Provide an asphalt distributor capable of application rates from 0.01 to 0.11 gallon per square yard. Equip with a heater, tachometer, flow rate gauge, operable mechanical tank gauge, thermometer for measuring temperatures of tank contents, power unit for the pump and full circulation spray bars adjustable laterally and vertically.

402-3.04 APPLICATION OF ASPHALT MATERIAL.

Add the following at the end of the first paragraph:

Control deviation from any specified application rate to within 0.02 gallon per square yard.

Add the following after the second paragraph:

After application of the tack coat, the surface shall be allowed to cure without being disturbed for the period of time necessary to permit drying and setting of the tack coat. If necessary, the Engineer will determine when the tack has cured.

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DIVISION 500 — STRUCTURES

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SECTION 501
CONCRETE FOR STRUCTURES

Special Provisions

501-1.01 DESCRIPTION. *Add the following:* Repair concrete cracking in abutment caps. Crack inject cracks as located and directed by the Engineer. Repair spalled and deteriorated concrete areas as located and directed by the Engineer.

514-2.01 MATERIALS. *Add the following:*

Concrete Patch Material Subsection 701-2.10

CFHWY01286

Standard Modification

501-2.02 COMPOSITION OF MIXTURE – JOB MIX DESIGN.

Replace Table 501-4 with the following:

TABLE 501-4
AIR CONTENT REQUIREMENTS

Class of Concrete	Air Content
A	6.0% ±0.5%
A-A	6.0% ±0.5%
P	3.50% minimum[1] and Super Air Meter (SAM) number ≤0.20[1]
DS	Not required

[1]Not required for web and bottom flange of precast, prestressed decked bulb-tee girders.

HSM20.23-123121

Replace 501-3.17 with the following:

501-3.17 CRACK EVALUATION. The Engineer will evaluate concrete that is cracked during and prior to execution of the Contract. Measure cracks at their widest point.

For concrete decks and approach slabs, allow the Engineer to inspect any surface cracking immediately after termination of concrete curing operations, before prestressing (if applicable), and before releasing falsework. If any 500 square foot portion of the concrete deck or approach slab has cracks, whose width exceeds 0.020 inches and combined lengths total more than 16 feet, treat the surface by performing low-viscosity resin crack repair.

For other concrete, cracks will be evaluated based on the crack width.

1. For concrete that is cracked during execution of the Contract; and crack widths equal to and greater than 0.060 inches, the concrete will be considered unacceptable. For concrete cracks that are identified prior to execution of the Contract; and crack widths equal to and greater than 0.060 inches, repair the crack by performing low-pressure crack repair according to Subsection 501-3.18 and the Epoxy Adhesive for Crack Injection manufacturer's recommendations.

2. For concrete that is cracked during or prior to execution of the Contract; and crack widths equal to and greater than 0.013 inches but less than 0.060 inches, repair the crack by performing low-pressure crack repair according to Subsection 501-3.18 and the Epoxy Adhesive for Crack Injection manufacturer's recommendations.

3. For concrete that is cracked during execution of the Contract; and cracks widths less than 0.013 inches wide, the crack will be considered acceptable with no additional evaluation or repairs required. For concrete cracks that are identified prior to execution of the Contract; and cracks widths less than 0.013 inches wide, the Engineer will evaluate the cracks to determine if additional evaluation or repairs are required.

Replace first paragraph of 501-3.18 with the following:

501-3.18 CRACK REPAIR. For concrete that is cracked during execution of the Contract, perform crack repairs and replace unacceptable concrete at no cost to the Department. No contract time extension will be given for repairing, removing, and replacing unacceptable material. For concrete cracks identified by the Engineer prior to Contract execution, inject cracks per Section 501-3.17 and Section 501-3.18.

Add the following:

501-3.20 SPALL REPAIR SURFACE PREPARATION. Determine the extent of concrete removal area according to the Engineer. Outline each area with a 1-inch deep cut perpendicular to the surface prior to removal of deteriorated concrete. The Engineer may require additional saw cut outlines and additional concrete removal.

Use any combination of mechanical methods, water-blast cleaning, and abrasive-blast cleaning to remove coarse or broken concrete until a dense, uniform surface of concrete exposing solid coarse aggregate is obtained. When using mechanical methods for removal of concrete, meet the following:

3. Use impact tools weighing less than 15 lbs.
4. Operate impact tools at an angle less than 45 degrees relative to the surface of the concrete being removed.
5. Use hand tools such as hammers and chisels or small air chisels, water blast cleaning, or abrasive blast cleaning to remove final particles of unsound concrete.

During the removal operation do not damage existing reinforcing steel, prestressing steel, or concrete to remain in place. Remove concrete ¾ inch below exposed reinforcing steel.

Before applying the repair material, clean the surface according to ASTM D 4258 and spray metallize exposed reinforcing steel according to 716-2.07.

501-3.21 CONCRETE SPALL REPAIR. Repair existing concrete surfaces that are located and specified by the Engineer with Concrete Patch Material. Use Epoxy Bonding Agent on the existing concrete bonding surface prior to placing Concrete Patch Material.

Finish the repair smooth and level with the surrounding existing concrete. Ensure the existing reinforcing cover as shown on the Plans is maintained in the repair areas.

501-5.01 BASIS OF PAYMENT. *Add the following:*

For concrete that is cracked during execution of the Contract payment for repair is subsidiary. For concrete cracks identified prior to Contract execution by the Engineer payment will be made under pay item 501.2002.0001.

Payment for concrete spall repair will be full compensation for all labor, equipment and materials required to complete the concrete spall repair in accordance with the Contract.

Payment will be made under:

PAY ITEM

Item Number	Item Description	Unit
501.2001.0000	Spall Repair	SF
501.2002.0000	Crack Repair	LF

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SECTION 508
WATERPROOFING MEMBRANE

Special Provisions

508-1.01 DESCRIPTION. *Replace the first paragraph with the following*: Furnish and install waterproofing membrane systems on concrete bridge decks and approach slabs. Remove and dispose of waterproofing membrane systems on existing concrete bridge decks and approach slabs. The spray-applied waterproofing membrane system consists of a primer, a membrane and a tack coat.

508-3.01 CONSTRUCTION. *Replace the first paragraph in 1. General with the following*: Install the waterproofing membrane system in accordance with the manufacturer's installation procedure and the approved submittal. Use the primer and tack coat listed in the approved submittal. Do not apply primers or membranes until the end of the curing period and until concrete and grout has reached at least 80 percent of the specified 28-day compressive strength (f'c). Apply the membrane system vertically at curb faces up to the pavement thickness shown on the Plans. Protect adjacent surfaces not to be covered with the membrane from splatter or coating. Ensure the surface of the membrane is dry when applying tack coat. Use pavement overlay material within the membrane manufacturer's temperature limitations.

Replace the first paragraph in 2. Deck Preparation with the following: Remove existing pavement and membrane systems by methods that do not damage the concrete deck. Do not use a mechanical milling machine such as a reclaimer or planer. Meet the requirements of Subsection 105-1.12. Prepare the concrete surfaces that are to receive the waterproofing membrane system as required by the manufacturer.

508-3.02 QUALITY CONTROL. *Replace the first paragraph in 2. Spray-Applied Waterproofing Membrane with the following*: Perform tensile adhesion bond testing of the waterproofing membrane system, at locations determined by the Engineer, in accordance with ASTM D7234 at least once every 2000 square feet of coated area.

508-3.03 ACCEPTANCE TESTING. *Replace the first paragraph in 1. Flood Testing with the following*: Perform flood testing of spray-applied waterproofing membrane prior to placement of tack coat or asphalt. With the written approval of the manufacturer's on-site representative, perform flood testing of spray-applied waterproofing membrane prior to asphalt overlay, otherwise perform flood testing after asphalt overlay.

508-3.04 MEMBRANE REPAIRS. *Replace the first paragraph in 3. Sheet Waterproofing Membrane with the following*: If flood test acceptance testing is used after placement of asphalt and breaches in the membrane system are found, repairs may be attempted with the written approval of the manufacturer's on-site representative. Patch areas where asphalt overlay is removed to the satisfaction of the Engineer.

508-5.01 BASIS OF PAYMENT. *Replace the first paragraph with the following:* The contract price includes removal and disposal of existing membrane(s) where present, furnishment and installation of waterproofing membrane system(s), quality control, and acceptance testing.

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Remove and replace heading with:

SECTION 510
REMOVAL AND REPAIR OF CONCRETE BRIDGE DECK

Special Provisions

5.10-1.01 DESCRIPTION. *Add the following:* Remove all loose and deteriorated concrete; prepare the surface; and repair spalled and deteriorated concrete areas as indicated on the Plans, specified herein, and directed by the Engineer.

Remove and repair all damaged (e.g., gouged, deteriorated, cracked, or broken) reinforcing steel.

Repair deteriorated grout in the girder joints according to the Plans.

5.10-2.01 MATERIALS. *Add the following:* Use materials that conform to the following:

Concrete Patch Material	Section 701-2.10
Reinforcing Steel	Section 503
Grout	Subsection 701-2.03
Water	Subsection 712-2.01

CONSTRUCTION REQUIREMENTS

510-3.01 GENERAL. *Add the following*:

The existing deck may have areas where reinforcing steel has less than one inch of cover. Identify and map locations where planned removal depth will damage reinforcing steel. Submit a map to the Engineer prior to beginning concrete deck repair.

Do not damage sound concrete, reinforcing steel, and other elements designated to remain in place.

Identify and locate areas of the deck that require repair according to Subsection 510-3.07. Remove and repair areas of unsound concrete according to Subsection 510-3.04. Remove and replace reinforcing steel or portions of reinforcing steel according to Subsection 510-3.05.

CFHWY01286

Standard Modification

510-3.04 HYDRODEMOLITION.

Replace the sixth paragraph of 510-3.04, item 2. Concrete Removal. with the following:

Provide night work lighting according to 643-3.10.

HSM20.24-123121

510-3.06 CLEANUP. *Replace the first sentence with the following*: Following concrete removal, reinforcing steel repairs, and unsound concrete repairs, clean the job site and remove debris.

Add subsections 510-3.07 to 510-3.10:

510-3.07 UNSOUND CONCRETE. In the presence of the Engineer, sound the existing bridge deck according to ASTM D4580, procedure B, and mark the locations of deteriorated concrete. The extent of the repair areas will then be determined and delineated by the Engineer. Locate and map reinforcing steel in the area prior to saw cutting. Repair areas where chain sounding identifies unsound concrete, a

lack of bond between the existing concrete and reinforcing steel, or where existing patches have not been fully removed.

1. Removal. Remove concrete in the delineated repair area using mechanical methods specified in Subsection 501-3.16 or by other acceptable means approved by the Engineer in writing. Remove concrete to a depth necessary to remove loose concrete, unsound concrete, and existing patches.

Replace damaged reinforcing steel that is exposed during concrete removal according to Subsection 510-3.08.

2. Patching Deck. Before applying the deck repair patch, clean the surface according to ASTM D4258 within 24 hours of applying the repair material. Immediately prior to material installation vacuum clean or air-blow clean with oil-free compressed air all receiving surfaces. Leave no loose material on any receiving surface. Remove materials which may act as a bond breaker between the existing concrete, reinforcing steel, and the patch material.

Use water meeting the requirements of Subsection 712-2.01 for removal operations.

Install the patch material between ambient temperatures of 50˚F and 80˚F unless otherwise specified by the manufacturer. After cleaning and before placing concrete patch material, wet the existing concrete to contact the patch material according to the manufacturer's recommendations.
Apply patch material according to the manufacturer's recommendations and meet the minimum and maximum lift thickness recommended by the manufacturer. Level the patch with and match the surface texture of the surrounding concrete. Ensure the existing cover as shown on the Plans is maintained in the repair areas. Cure the patch material according to the manufacturer's recommendations.

After curing and before final acceptance, sound all patched areas. Remove and replace unsound or cracked areas at no further cost to the Department and with no extension of contract time.

510-3.08 REINFORCING STEEL. *Add the following Subsection:* Abrasive blast clean exposed reinforcing steel that is to remain in place. Blast clean exposed reinforcement bars according to SSPC SP 10 Near-White Blast Cleaning. Remove rust and corrosive materials immediately prior to concrete placement. Remove oil, dirt, concrete fragments, laitance, loose scale, and other coating that would destroy or inhibit the bond with the new concrete patch material. If the reinforcing steel becomes contaminated, sandblast the surface again at no additional cost to the Department.

Remove and replace sections of reinforcing steel that are cracked, damaged or deteriorated at any point to less than 80% of their original cross section. Determine remaining section using the Concrete Reinforcing Steel Institute (CRSI) nominal bar diameter and the segment determined either by measuring the chord length or the maximum crack depth with calipers. Splice a new bar the same size as the damaged bar and extend the spliced reinforcing steel beyond each end of the damaged area following Table 503-2.

Remove concrete around unbonded reinforcing steel to provide 3/4 inch minimum clearance around the bar. Remove concrete around damaged reinforcing steel to provide 3/4 inch minimum clearance around the bar and to allow for the new splice bar.

510-3.09 SURFACE PREPARATION FOR GIRDER JOINTS.

Determine and delineate the extent of removal area according to ASTM D4580.

Do not damage existing girder concrete.

When using mechanical methods for removal of joint grout, meet the following:

1. Use impact tools weighing less than 15 lbs.
2. Operate impact tools at an angle less than 45 degrees relative to the surface of the joint being removed.

3. Use hand tools such as hammers and chisels or small air chisels, water blast cleaning, or abrasive blast cleaning to remove final particles of unsound grout.

When using water blast cleaning for removal of joint grout, use water meeting the requirements of Subsection 712-2.01.

Clean joints of surface laitance and other foreign material before placing grout.

510-3.10 PLACING GROUT FOR GIRDER JOINTS. Mix and place grout according to the manufacturer's written instructions.

Tightly pack and rod the grout in the keys and spaces. Keep the grout surface smooth and neat. Ensure the grout surface meets the member edges throughout their lengths and matches the surface elevation of the members with a tolerance of ±1/8 inch.

Do not place loads on the grouted members until the grout compressive strength has reached 5,000 psi.

510-4.01 METHOD OF MEASUREMENT. *Replace this Subsection with the following:*
See Section 109 and as follows:
Item 510.2001.0000, measured on a contingent sum basis as specified by the Directive authorizing the work.
510-5.01 BASIS OF PAYMENT. *Add the following*:

Bridge Deck Repair. Payment for Bridge Deck Repair includes the cost of all labor, equipment, and materials related to deck repairs to complete the work, as determined by the Engineer.

1. Unsound concrete repair will only be eligible for payment if:

a. not damaged by Contractor operations, or
b. damage is located within the delineated repair areas.

2. Reinforcing steel repair will only be eligible for payment if:

a. not damaged by Contractor operations,
b. damage is located within the delineated repair areas, or
c. damage is a result of the existing concrete cover being 1 inch or less.

Payment will be made under:

PAY ITEM

Item Number	Item Description	Unit
510.2001.0000	Bridge Deck Repair	CS

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Replace the heading of this Section with the following:

SECTION 513
FIELD COATING OF STRUCTURAL STEEL

Special Provisions

513-1.01 DESCRIPTION. *Replace the first sentence with the following***:** This work consists of furnishing all necessary labor, materials and equipment to clean, metallize, and seal all structural steel surfaces in the field according to SSPC-CS23.00/AWS C2.23/NACE No. 12 as modified in this Section.

513-2.01 MATERIALS. *Add the following*:

3. Metallizing. Use metallizing wire conforming to ASTM B833 having the 99.99% Zinc – UNS (Z13005) composition. Supply certified test data and copies of mill shipping notices or invoices showing the diameter and quantity of wire being accepted.

4. Sealer. Use sealer that is UV resistant clear aliphatic urethane material.

CONSTRUCTION REQUIREMENTS

513-3.02 PAINT APPLICATOR'S CERTIFICATIONS. *Replace this Subsection with the following*:

513-3.02 APPLICATOR'S CERTIFICATIONS AND EXPERIENCE. Employ only metallizing and coatings crew members who are certified by the Alaska Department of Labor for completing the Alaska Hazardous Painting Certificate Course within the last 3 years. Contact the Alaska Department of Labor for certification information.

Employ at least one fulltime onsite Quality Control (QC) Supervisor who meets the requirements of AASHTO/NSBA Steel Bridge Collaboration S8.2/SSPC-PA 18 "Specifications for Application of Thermal Spray Coating Systems to Steel Bridges" (AASHTO/NSBA) Article 4.1.1. The QC Supervisor has a distinct role and may not be engaged in any other duties in the metalizing work. The QC Supervisor may only delegate duties to QC Inspectors who meet the requirements of AASHTO/NSBA Article 4.2.1.

Employ thermal spray coating (TSC) operators and supervisors who meet the requirements of AASHTO/NSBA Article 4.2. Experience with at least 3 separate field metallizing bridge projects within the previous 5 years is required experience for a majority of the total TSC supervisors and operators for this project. Provide a list of the projects performed by the metallizing personnel and the name and telephone number of a contact person at each agency or company for which the work was completed.

Provide copies of certificates and qualifications of QC Supervisors, QC Inspectors, and TSC operators at the pre-production meeting.

513-3.03 REQUIRED CONTRACTOR EXPERIENCE. *Replace the title of this Subsection with* "LEAD PAINT EXPERIENCE." *Remove the first paragraph. Replace "paint superintendent" in the second paragraph with "TSC supervisor" in this subsection*.

513-3.04 PREPAINTING CONFERENCE. *Change the title of this Subsection and any reference in this Section from "Prepainting Conference" to* "Pre-Production Meeting".

Replace the first paragraph with: Attend a pre-production meeting before mobilizing to the site and beginning any work under this Section.

513-3.05 QUALITY CONTROL AND QUALITY ASSURANCE. *Replace this Subsection with the following:* Quality control consists of designating a QC Supervisor to control the quality of work in each phase established by Quality Control Points (QCPs). Suspend work if the QC Supervisor is not onsite or not able to perform required duties.

1. Quality Control Points. QCPs are points in time when one phase of the work is complete and approved by the QC Supervisor and ready for inspection by the Engineer before commencing the next phase of the work. At a QCP, provide quality control tests signed by the QC Supervisor. Provide the Engineer access to inspect all affected surfaces. If inspection identifies a deficiency, correct the deficiency according to the Contract before starting the next phase of work. Discovery of defective work or material after a QCP is past or failure of the final product before final acceptance, shall not, in any way, prevent the Engineer from rejecting the final product or obligate the Engineer to final acceptance.

TABLE 513-1
QCP DESCRIPTIONS

QCP	Purpose
1. Job Reference Standards	Establish visual and reference standards
2. Solvent Cleaning	Remove visible contamination.
3. Grinding Edges	Remove sharp corners and thermally hardened edges
4. Abrasive Blasting	Blast surfaces to receive metallizing
5. Remove Fins, Tears & Slivers	Remove surface defects, slivers and re-profile
6. Metallizing Coat Application	Check surface cleanliness, surface profile, apply metallized coating and check coating thickness
7. Adhesion Tests	Check adhesion of metallized coating
8. Sealer Application	Check surface cleanliness, dryness, apply coat of sealer, check sealer thickness

Provide documentation of inspection, testing, conditions and material information to the Engineer. Submit sufficient photographs to document the condition of the work at QCPs 1, 4, 7 and 8.

2. Job Reference Standards (QCP #1). Ensure the QC Supervisor witnesses and documents the establishment of Job Reference Standards (JRSs) as specified in this Section. Produce JRSs in the presence of the Engineer. After the Engineer approves the specified JRSs and the JRSs are documented by replica tape, adhesion values and photographs, the Metallizer may start production work. The QC Supervisor and Engineer will use the JRSs and the contract to inspect the work. In all cases of dispute, testing specified in 513-3.10, 513-3.13 and 513-3.14 governs. Perform the abrasive blast, adhesion, cut and bend tests as part of the JRSs at the beginning of each shift of metallizing. If the Metallizer, Engineer believes the initial test section does not establish the proper JRSs for a different structure another test section on the different structure may be performed.

   a. Abrasive Blast Plate Standard. Supply a 18 x 18 x 1/4 inch steel plate and one 2 x 8 x 0.050 inch steel plate per each shift of metallizing of the same specification and grade as the steel being metallized. Have the Metallizer grind the plate edges and abrasively blast both sides of the 18 x 18 x 1/4 inch plate and one side of the 2 x 8 x 0.050 inch steel plate according to Subsection 513.3-13. Record profile depth per ASTM D4417, method B or C.

   b. Metallized Plate Standards.
      (1) Adhesion and Cut Tests: Metallize one side of the 18 x 18 x 1/4 inch plate per Subsection 513-3.13. The other side is to remain in the blast cleaned condition. Supply a uniform surface texture that is free of lumps, dust, debris, inclusions and blisters. Record the coating thickness. Record the application temperature. Perform 3 adhesion tests on the coated side according to ASTM D4541 and record the adhesion value. All 3 adhesion tests shall exceed a minimum value of 500 psi. Perform a cut test on the coated side by placing the plate on a solid surface and hitting the test plate with a sharp 1.5-inch wide mason's chisel impacted with a 3-pound drilling hammer. Cut the metallizing with the mason's chisel oriented at 60 degrees from the horizontal plane of the plate; strike the chisel with sufficient force to cut completely through the metallizing but minimize the damage to the base steel. Cut the metallizing in 3 locations ½ to 1 inch apart. The coating must adhere to the face of the test

plate after cutting. No delamination of the coating is permitted. No cracking of the coating is permitted. After the Engineer and the Metallizer agree the plate was prepared to the requirements of the Contract, the metallized side of the plate becomes the Job Reference Plate Standard. A picture of the unmetallized side of the plate becomes the Job Reference Visual Standard.

(2) Bend Tests: Metallize the 2 x 8 x 0.050 inch steel plate according to Subsection 513-3.13. Record the application temperature. Record the coating thickness. Cold bend the coupon 180 degrees around a mandrel. The metallizing must be on the outside radius of the bent coupon. No delamination of the coating is permitted. Delamination is defined as a coating that can be lifted with a knife blade. Cracking of the coating is permitted, provided the coating adheres to the face of the coupon.

Proper spray equipment set up, calibration, and operating procedures shall be verified by passing a bend test on one 2 x 8 x 0.050 inch steel plate at the beginning of each work shift that metallizing is to be applied. Perform this bend test in accordance with this Section.

513-3.07 TRAINING. *Add the following item:*

15. Confined Spaces.

513-3.08 HEALTH AND SAFETY. *Add the following to the first paragraph*: In the work plan required by Subsection 513-3.04 address protection from potential health and safety hazards not limited to electric shock; fine particulates dusts and fumes; exposure to high-intensity noise, ultraviolet, infrared and intense visible light radiation.

2. Air Alert. *Remove "on painted surfaces" from the first sentence.*

4. Overspray. *Replace the first two sentences with the following*: Take all necessary measure to contain coatings during coating operations. Take appropriate action to prevent overspray metallizing or coating damage to adjacent property.

6. Adjacent Property. *Replace the word "painting" with "coating".*

513-3.09 CONTAINMENT AND DISPOSAL. *Insert the following before the first paragraph*: Prior to removal operations, obtain representative waste samples from the existing bridge paint. Have an accredited laboratory test waste material with the Toxic Characteristic Leachate Procedure (TCLP) using EPA test method SW-6010B, TCLP, or an approved equal.

Add the following: Do not use driven devices to attach rigging to the bridge. Do not modify or alter the structure to attach rigging unless otherwise noted or authorized by the Engineer. If equipment loads on the bridge will exceed legal loads, submit a dimensioned drawing indicating the weight and distribution of loads 30 days before the load will be placed on the bridge.

513-3.10 SURFACE PREPARATION.
Replace the first 4 paragraphs with the following: 1. Solvent Cleaning (QCP #2). Solvent clean by methods described in SSPC-SP1 areas containing oils, greases, asphalt cement, diesel fuel deposits and other petroleum products that interfere with coating adhesion or reduce coating life.

Replace the fifth paragraph with the following: 2. Grinding Edges (QCP #3). Before abrasive blasting, grind smooth all metal defects, fins, slivers, burrs, weld splatter, slag, flux, and sharp edges. Round all corners of thermally cut or sheared edges as necessary to achieve a 1/16 inch radius or equivalent flat surface at a 45-degree angle. Grind the sides of thermally cut material 1.5 inches or thicker to remove the heat affected zone, as necessary, to achieve the specified surface cleaning. Perform this work as necessary to produce a metallized coating on edges and thermally cut surfaces capable of meeting the Job Reference Plate Standard cut test according to 513-3.05.2. Perform the Job Reference Plate Standard cut test on these surfaces if requested by the Engineer.

Replace the sixth paragraph with the following:

3. Abrasive Blasting (QCP #4). Abrasive blast all steel to be metallized according to SSPC-SP 5, as shown on the pictorial surface preparation standards for painting steel surfaces SSPC-VIS 1. Maintain the steel to a SSPC-SP 10 blast cleaned condition until metallized.

   Produce a sharp angular shaped profile with a minimum profile depth of 3 mils to 5 mils as determined according to ASTM D4417, Method B or C. Provide a profile with a sharp angular shape that is visually comparable to the Job Reference Visual Standard.

   Control the abrasive blasting work as necessary to develop a metallized coating meeting the adhesion test requirements of 513-13.8, or meeting the cut test requirements of 513-3.05.2 for the plate edges and areas that are not accessible to adhesion tests.

   Ensure the QC Supervisor takes a profile reading at least every 200 square feet of blasted surface. Provide readings at random locations on flanges, webs, cross bracing stiffeners etc.

   Ensure the QC Supervisor checks abrasives for oil content and water-soluble contamination in accordance with ASTM D7393 and ASTM D4940. Check abrasives used at the job site in accordance with SSPC AB-1, 2, or 3 as applicable. Also check each load of abrasive delivered to the job site for contamination before use.

   Ensure the QC Supervisor checks the compressor for oil contamination in accordance with ASTM D4285. Perform this test at the start of each shift and at 4-hour intervals. If the cloth or blotter retains oil or other contaminants, suspend abrasive blasting until retests verify the problem was corrected.

   Use recyclable steel grit or a recyclable natural mineral, low dusting abrasives that meet SSPC AB-1, 2, or 3. Do not use silica sands, mineral slags, and other types of nonmetallic abrasives that contain more than 0.5 percent free silica, by weight, and contain any organic material. Clean the abrasive of paint, chips, rust, mill scale, and other foreign material after each use and before each reuse. Use equipment specifically designed for cleaning the abrasive.

   Do not abrasive blast areas that contain asphalt cement, oil, grease, or diesel fuel deposits. Before abrasive blasting, completely remove all dirt, sand, bird nests, bird droppings, and other debris from the scuppers, and pier and abutment seats.

   Cover and protect surfaces not intended to be metallized from damage caused by blasting operations. Repair adjacent coatings damaged during the blasting operation. Backwalls and bottoms of decks not sealed nor specified to be sealed do not need to be covered and protected.

   The Metallizer may simultaneously abrasive blast and metallize the same bridge provided the abrasive blasting debris and dust does not contaminate surfaces to be metallized.

   Remove abrasives and residue from all surfaces to be metallized. Keep all surfaces to be metallized dust free. Remove dust and abrasives from work surfaces as needed or at the direction of the Engineer to ensure that surfaces to be metallized will not be contaminated.

   Metallize steel that was blast cleaned within the time specified by 513-3.13. If the steel is not metallized within the specified time, re-blast the steel before metallizing. Remove all dust or abrasives from adjacent work and from the metallized surfaces.

   Provide the Engineer and Inspectors with field wash facilities and adequate supply of running potable water, soap, and towels for washing face and hands during the surface preparation operation. Properly contain, test, and dispose of the wastewater. Locate a wash facility at the bridge site and in an area that will not be contaminated by the blasting debris.

Replace the seventh paragraph with the following:

5. Removing Fins, Tears, or Slivers (QCP #5). Remove all fins, tears, slivers and burred or sharp edges that appear after the blasting operation then re-blast to meet the requirements of QCP #4. Document all weld defects and report them to the Engineer immediately. Perform weld repairs per Section 504

as directed by the Engineer.

Delete the eighth and ninth paragraphs.

513-3.11 WEATHER LIMITATIONS. *Add the following:* Apply metallizing within the environmental limitations of SSPC-CS23.00/AWS C2.23/NACE No. 12 and meet the substrate surface temperature and moisture conditions specified below:

1. Temperature. Metallize when the steel surface temperature is greater than or equal to 40ºF. Monitor temperature using the recording thermometer.

   If using a heated enclosure, uniformly and continuously heat the enclosure to maintain the required minimum steel surface temperature during blasting and metallizing operations. If combustion type heating units are used, vent the units away from the enclosure and do not allow exhaust fumes to enter the enclosure. Do not use open combustion in the enclosure.

2. Moisture. Do not abrasively blast or metallize under any of the following conditions:

   a. the steel surface temperature is less than 5 ºF above the dew point.
   b. the steel surface is wet, damp, frosted, or ice-coated.
   c. the relative humidity is 85% or greater.
   d. during periods of rain, fog, or mist unless the above moisture criteria is met.

Industrial dehumidification equipment within an enclosure may be used to achieve humidity requirements.

513-3.13 METALLIZED COAT APPLICATION AND THICKNESS (QCP #6).

1. General. Metallize all exposed structural steel surfaces as shown on the Plans.

   Coat areas inaccessible to metallizing such as behind snipes and non-connection holes with high zinc content products that meet the repair requirements of Subsection 716-2.07.

2. Surface Cleanliness. Remove all abrasives and residue from all surfaces to be metallized.

   Apply metallizing to surfaces meeting the cleanliness of the Job Reference Visual Standard and the profile of the unmetallized side of the Job Reference Plate Standard.

   If the surface is degraded or contaminated, restore the surface to the specified surface cleanliness and profile before metallizing.

   Apply metallizing to steel surfaces within 6 hours of the beginning of abrasive blasting. If work is done in a heated and dehumidified enclosure that meets the requirements of Subsection 513-3.11, apply metallizing within 24 hours of the beginning of abrasive blasting.

3. Equipment and Techniques. Metallize using electric arc equipment operated in accordance with the manufacturer's latest written instructions and as demonstrated in 513-3.05.2. Flame spray equipment may be used on repair or limited access areas, if operated in accordance with the manufacturer's latest written instructions and demonstrated in 513-3.05.2. Preheating the starting area is required for flame spraying.

   Apply metallizing in a manner that promotes uniform coverage and prevents discontinuity of the applied coating. Supply a uniform surface texture that is free of lumps, dust, debris, inclusions and blisters. Perform spraying in a block pattern, typically 2 to 3 feet square. Overlap 50 percent on each pass to ensure uniform coverage. Obtain the required coating thickness in multiple layers. Do not exceed 4 mils in thickness in a single layer. Apply each layer at right angles to the previous layer. Control the spraying distance to the work to ensure the zinc is plastic upon impact. Immediately correct any defects. Do not perform startup and adjustment of thermal spray equipment on the surface being metallized.

4. Record Environmental Conditions. Ensure that the QC Supervisor verifies and records the ambient temperature, the steel temperature and the dew point no more than 1 hour before application of the metallizing. Monitor environmental conditions every 4 hours during the metallizing operation.

5. Holding Time. A flash coat of metallizing 2 to 4 mil thick may be applied within the required six hours to hold the surface condition for an additional 4 hours. Maximum holding time is 4 hours provided the metallized coating can be maintained free of contamination. Do not exceed the maximum holding time between each successive 2 to 4 mil thick metallized coat.

6. Application Approval. If the Engineer discovers defects, production may be stopped. The Engineer may require additional testing as necessary to produce the thickness, adhesion or impact test results developed by the Job Reference Plate Standard.

7. Record Coating Thickness. Determine the metallizing thickness using Type 2 magnetic gage, calibrated according to SSPC-PA 2, as follows:

   The QC Supervisor is responsible for randomly selecting and measuring metallizing thickness at separate, evenly spaced, spot measurement locations over one 100-square feet of area within each 300 square foot unit of surface area of structural steel that is metallized. Locate 5 spot measurements on each of the following locations: top flanges, bottom flanges, webs, cross bracing, stiffeners, etc. At each spot location, take 3 gage thickness readings on the metallized surface. Move the probe 1 to 3 inches for each new gage reading. Discard an unusually high or low gage reading that is not consistently repeated. The spot thickness measurement is the average of the 3 gage readings.

   The average of 5 spot measurements for each location in the 100-square foot area shall not be less that the specified thickness. No single spot measurement area shall be less than 80 percent of the specified minimum thickness nor greater than 24 mils. Any 1 of 3 readings which are averaged to produce each spot measurement may underrun or overrun by a greater amount.

   The above procedure is the minimum specified level of Metallizer performed quality control. The Metallizer must monitor his application to the extent necessary to assure that any random spot reading meets the thickness requirements specified above.

   Install metallizing with the following thickness:

Location	Min. Spec. Thickness	Min. Spot Thickness	Max Spec. Thickness	Max Spot Thickness
All Steel Surfaces	10.0 mils	8.0 mils	16.0 mils	24.0 mils

   Test areas of metallizing that exceed the maximum spot thickness by adhesion testing. If the values meet the requirements of 513-3.15.8, the coating is acceptable. In an area where the adhesion test cannot be performed, cut test the coating according to 513-3.05.2

8. Metallized Coat-Adhesion Tests (QCP #7). Ensure the QC Supervisor performs and documents the results of adhesion tests in accordance with ASTM D4541 at locations randomly selected by the Engineer in each 500-square feet area metallized or on companion coupons sprayed at the same time for each 500-square foot coated area, at the Engineer's discretion. Perform the test in the presence of the Engineer. The minimum acceptable adhesion value is 500 psi. Make repairs according to Subsection 513-5.15.

   At the selected areas check the plate edges and areas that are not accessible for adhesion testing by performing at least 3 cut tests. If the cut tests for that area do not meet the requirements of 513-3.05.2, additional measurements will be taken to determine the extent of the deficient coatings.

   The above procedure is the minimum specified level of Metallizer performed quality control. The Metallizer must monitor application to the extent necessary to assure that any random spot reading

meets the specified metallizing adhesion value.

513-3.14 SEAL COAT APPLICATION (QCP # 8). If the surface is degraded or contaminated, restore the surface to the specified surface cleanliness before applying the sealer.

If moisture is present in the pores of the metallized surface, heat the surface to 250°F to remove the moisture prior to seal coat application.

Apply the sealer to all previously metallized surfaces as soon as possible after thermal spraying. Do not allow the metallized surface to stand for longer than 8 hours before application of the seal coat. Do not apply seal coat over visible oxidation of the metallizing.

Apply the sealer in a two-coat operation, a mist coat and a full coat. Thin the mist coat up to the manufacturer's written maximum amount using the recommended thinner in order to penetrate the metallizing layer. Apply the full finish sealer coat without thinning.

Apply the sealers to all metallized surfaces at the manufacturers recommended dry film thickness (mils).

If conventional spray is used, verify that the compressed air supply is clean and dry as determined by the ASTM D4285. When spraying, use extreme care to avoid contamination of surrounding areas or property by overspray. Brushes or rollers may be used to control overspray, or for localized application such as touch-up, in areas of limited accessibility for spraying, or for stripe coating.

Do not apply the sealer to faying surfaces prior to assembly. Mask faying surfaces of all bolted connections prior to the application of the seal coat. Apply touch-up sealer to the connections after assembly.

Apply sealer in a manner that coats are well-adherent to each other and to the underlying surface. If the application of any coat causes lifting of an underlying coat, or there is poor adhesion between coats or to the substrate, remove the coating in the affected area to adjacent sound, adherent, coating, and reapply the material. If sealer adhesion appears deficient, conduct adhesion tests in accordance with ASTM D4541, Type 4 or ASTM D3359 as determined by the Engineer and repair all test areas. For coatings testing according to ASTM D4541, meet or exceed 400 psi adhesion between coats. For sealer tested according to ASTM D3359, meet or exceed scale of hardness HB for the coating.

513-3.15 METALLIZING REPAIR. Repair areas of metallizing that do not have acceptable adhesion or cut tests by removal and replacement.

Repair areas of metallizing that have low coating thickness, but have acceptable cut or adhesion tests, by brush blasting according to SSPC-SP 7 to establish the cleanliness of the Job Reference Visual Standard and the profile of the unmetallized side of the Job Reference Plate Standard. Then metallize according to Subsection 513-3.13. Control blasting to create the cleanliness and profile standards with minimal removal of acceptable metallizing.

Repair damage areas, including destructive test locations, of less than 1 square foot by using adequate tools to establish the cleanliness of the Job Reference Visual Standard and the profile of the Job Reference Plate Standard. Then metallize according to Subsection 513-3.13.

Repair damage areas greater than 1 square foot by abrasive blasting according to Subsection 513-5.10 to establish the cleanliness of the Job Reference Visual Standard and the profile of the Job Reference Plate Standard. Then metallize according to Subsection 513-3.13.

Overlap all repairs at least 2 inches into the accepted coating to provide a feathered-area overlay between the accepted metallized areas and the repair area. Metallize the feathered-area and the repair area, so that the repair, overlay and accepted areas are a uniform coating of the thickness specified in Subsection 513-3.13.

513-3.16 FINAL ACCEPTANCE. The Engineer will base Final Acceptance upon the results of the adhesion tests, cut tests and dry film thickness measurements obtained during the work. Supply a report

that documents and contains the raw field data demonstrating compliance to all aspects of the specification. The Engineer will review this report, progressive project documentation and progressive field measurements to determine the final acceptability of the metallized coating.

513-5.01 BASIS OF PAYMENT. *Add the following*: The lump sum payment is full compensation for preparation, inspection, quality control, metallizing and sealing steel. The lump sum payment also includes disposal, access, repair of damaged or out of conformance coatings, and other incidentals to complete the work.

Payment will be made under:

PAY ITEM

Item Number	Item Description	Unit
513.0002.0000	Field Metallizing of Steel Structures	LS

CFHWY01286

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DIVISION 600 — MISCELLANEOUS CONSTRUCTION

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Replace Section 601 with the following:

SECTION 601
PREFORMED PLASTIC FLUME DOWNDRAIN

601-1.01 DESCRIPTION. Furnish and install preformed plastic channel liner and flared end section, metal flume inlet, and earth anchor assemblies, to the lines, grades, and depths as shown on the Plans and as directed by the Engineer.

This work shall also consist of removal and disposal of existing metal flume downdrains at locations where new plastic flume drains are to be constructed and as designated by the Engineer.

601-2.01 MATERIALS. Use materials that conform to the following:

Concrete, Class A or W
(or an approved, pre-mixed, sacked concrete)..... Subsection 501-3.01

Preformed Plastic Channel Liner and End Section. Use high molecular weight high density polyethylene (HDPE) material, uniform throughout that meets ASTM D3350 with a cell classification of 445430. Incorporate UV and flame retardant stabilizers to guarantee a minimum lifespan of 20 years.

Use SmartDitch® fabricated by Penda Corporation, or approved equal. The channel liner and end section shall be high molecular weight high density polyethylene (HDPE) material, uniform throughout that meets ASTM D3350 with a cell classification of 445430. Incorporate UV and flame retardant stabilizers to guarantee a minimum lifespan of 20 years.

Metal Flume Inlet. Use any one of the base metals listed in AASHTO M 36 or AASHTO M 196, minimum sheet thickness of 0.11 inches. Metal flume inlet, steel nuts and bolts, galvanized according to ASHTO M 232.

Earth Anchor Assemblies. Use driven earth anchors with attached cables as recommended by the manufacturer and approved by the Engineer. Use stainless steel or galvanized cabling attached to the anchor.

601-3.01 CONSTRUCTION REQUIREMENTS. Use preformed plastic channel liner conforming to the details and dimensions shown on the Plans. Submit manufacturer's specifications and installation guide to the Engineer for review and approval before ordering preformed plastic channel liner. Submittal shall include anchor assembly pullout rating, minimum driven depth, anchor spacing, and detail anchor assembly attachment to the channel liner.

Excavation, bedding, and backfill must conform to the requirements of Subsections 204-2.01 and 204-3.01, the Preformed Plastic Channel Liner manufacturer's recommendations, and the details on the Plans. Excavate the trench to the line and grade shown on the Plans and matching the cross sectional shape of the preformed channel liner to be installed. Trench shall be uniform and flat to prevent sags and humps in the lining. Trench shall be firm, smooth, and free of debris, rocks, roots, and sharp objects.

Install channel liner per the manufacturer's installation guide beginning at the downstream end of the flume downdrain. Overlap and mechanically fasten the preformed channel liner sections together, install driven earth anchors and attach to the preformed channel liner as recommended by the manufacturer and approved by the Engineer.

Restore the ground adjacent to the completed flume downdrain to the surrounding ground contours as directed by the Engineer. Securely anchor the channel liner prior to, and protect the completed installation during final ground restoration.

601-3.02 REMOVAL OF EXISTING METAL FLUME PIPE. Remove existing metal flume downdrain pipe, inlet, end section, and supporting structure to 12 inches below natural ground lines as approved by

the Engineer. The removed existing metal flume downdrain pipe and materials become the property of the Contractor.

601-4.01 METHOD OF MEASUREMENT. Section 109, measured along the invert from the end of the inlet assembly, not including the inlet flume stub out, to the lower end of the flume end section.

601-5.01 BASIS OF PAYMENT. The contract price includes removing and disposing existing metal flume, furnishing and installing new preformed plastic channel liner and end section, anchor assemblies, metal flume inlet, and associated hardware. Excavation and ground restoration is subsidiary.

Payment will be made under:

PAY ITEM

Item Number	Item Description	Unit
601.2000.____	Plastic Flume Downdrain	LF

CFHWY01286

SECTION 602
STRUCTURAL PLATE PIPE

Special Provisions

Replace Subsection 602-2.01 with the following:

602-2.01 MATERIALS. Use materials that conform to the following:

Bedding and Backfill	Subsection 204-2.01
Flexible Watertight Gaskets	Subsection 705-2.05
Corrugated Steel Pipe, Pipe Arches, and Underdrains	Subsection 707-2.01
Corrugated Aluminum Alloy Culvert Pipe and Underdrains	Subsection 707-2.03
Structural Plate Culverts	Subsection 707-2.04

Replace Subsection 602-3.01 with the following:

602-3.01 CONSTRUCTION REQUIREMENTS. Lay field-assembled plate pipes in conformance to the lines and grades approved by the Engineer. Excavation, grading, shaping, and backfill must conform to Subsection 204-3.01.

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.

Repair damage to the zinc coating according to AASHTO M 36.

Comply with the manufacturer's recommendations and instructions. Provide the Engineer with a copy of the documentation.

CR602.1-010122

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.

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./ft^2 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.

CR603-20.0615R/CFHWY01286

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.

CR603-20.0615R/CFHWY01286

603-3.05 CLEANING CULVERTS.

Cleaning of culverts shall be done concurrently with host pipe preparation for CIPP repairs required per Section 656. Remove culvert fugitive materials from inside culverts and around culvert inlets and outlets. Provide positive drainage through cleaned culverts and into adjacent ditches.

Removed materials are the property of the Contractor. Do not reuse these materials within the project limits without the written approval of the Engineer.

Dispose of removed materials as required dependent on the type of materials and as required by Federal, State, and local environmental regulations.

CFHWY01286

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.

3. Culvert Cleaning .The length of pipe, measured in place, along the invert.

CR603/CFHWY01286

603-5.01 BASIS OF PAYMENT. Branch connections and elbows are subsidiary to the pipe unless included as a separate Pay Item.

Coupling bands, seals (gaskets), and other items necessary for the proper joining of the sections are subsidiary.

Culvert markers are subsidiary to the pipe.

Excavation, bedding, and backfill paid under Section 204.

Dewatering is subsidiary to culvert pipe work.

Complete culvert cleaning prior to ordering CIPP materials per Section 656. Where a culvert scheduled for cleaning requires CIPP repairs, cleaning the pipe and other work required to prepare for CIPP repairs will be paid for under 656.2004.0000 Cured-In-Place Pipe – Host Pipe Preparation. Only one payment will be made for either culvert cleaning or host pipe preparation.

CR603/CFHWY01286

PAY ITEM

Item Number	Item Description	Unit
603.0001.____	CSP ___ Inch	LF
603.0002.____	___ Inch CSP Arch	LF
603.0003.____	End Section for CSP ___ Inch	Each
603.0004.____	End Section for ___ Inch CSP Arch	Each
603.0009.____	Corrugated Aluminum Pipe ___ Inch	LF
603.0010.____	___ Inch Corrugated Aluminum Pipe Arch	LF
603.0011.____	End Section for Corrugated Aluminum Pipe ___ Inch	Each
603.0012.____	End Section for ___ Inch Corrugated Aluminum Pipe Arch	Each
603.0013.____	Reinforced Concrete Pipe, ___ Inch, Class ___	LF
603.0014.____	Reinforced Concrete End Section, ___ Inch	Each
603.0015.____	Elbow, (Type & Size)	Each
603.0016.____	Branch Connection (Type & Size)	Each
603.0017.____	Pipe ___ Inch	LF
603.0019.____	___ Inch Pipe Arch	LF
603.0020.____	End Section for Pipe ___ Inch	Each
603.2017.____	Culvert Cleaning	LF
603.2032.____	Corrugated HDPE Pipe ___	LF
603.2033.____	End Section for Corrugated HDPE Pipe ___	Each

CR603/CFHWY01286

SECTION 605
UNDERDRAINS

Special Provisions

Replace Subsection 605-2.01 with the following:

605-2.01 MATERIALS. Use materials that conform to the following:

Porous Backfill Material	Subsection 703-2.10
Flexible Watertight Gaskets	Subsection 705-2.05
Perforated Concrete Pipe	Subsection 706-2.03
Corrugated High Density Polyethylene (HDPE) Pipe	Subsection 706-2.07
Corrugated Steel Pipe	Subsection 707-2.01
Corrugated Aluminum Pipe	Subsection 707-2.03
Gray Iron Casting	Subsection 719-2.02
Marker Post	Subsection 730-2.05

Replace Subsection 605-3.01 with the following:

605-3.01 PIPE INSTALLATION. Excavate, bed, and backfill according to the requirements of Subsection 204-2.01 and 204-3.01.

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.

Provide perforated pipe with Class 2 perforations.

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.

Use push-on, screw-on, or corrugated couplings matching the pipe corrugation of bell and spigot or split collar type engaging at least two full corrugations on each pipe section. Use fittings supplied or recommended by the pipe manufacturer.

Join pipe end sections and plug or cap up-grade ends of subdrain pipe.

After the pipe installation inspection and approval, place and compact the porous backfill material to a minimum height of 12 inches above the top of pipe. Fill trench above the porous backfill with specified material.

605-5.01 BASIS OF PAYMENT.

Delete pay item 605.0006.____ and .0007.____.

Add the following:

PAY ITEM

Item Number	Item Description	Unit
605.2008.____	Perforated Corrugated HDPE Pipe ___	LF

CR605.1-061520

Special Provisions

Replace Section 606 with the following:

SECTION 606
GUARDRAIL

606-1.01 DESCRIPTION. Construct new guardrail, terminal sections, transition rail, and permanent crash cushions.

The permanent crash cushion, hereafter referred to as, "crash cushion," includes the complete assembly (crash cushion, foundation, backstop or transition) represented in the FHWA eligibility letter(s).

Remove and reconstruct or remove and dispose of existing guardrail, terminal sections, transition rail, and crash cushions.
CR606-123121R

Furnish and store new highway safety appurtenance essential replacement parts (replacement parts) listed in Table 606-1. Repair damage, from highway crashes, with the replacement parts.

CR606.13-072120R

606-1.02 SUBMITTALS.

1. Submit the following at the preconstruction conference and receive approval before installation.

    a. Permanent Crash Cushions.

        (1) FHWA Eligibility Letter(s). Eligibility letters demonstrating each crash cushion assembly is MASH 2016 compliant with the AASHTO 2016 Manual for Assessing Safety Hardware (MASH-16) Test Level 3. Demonstrate the eligibility letter shielding widths cover the hazard widths and travel directions shown in the plans.

        (2) AASHTO Listing Category. AASHTO listing or documented updates for the crash cushion classification as listed in the 2011 AASHTO Roadside Design Guide, Section 8.4.

        (3) Manufacturers' Shop Drawings, Assembly, and Installation Instructions. Submit shop drawings and detailed assembly and installation instructions for the crash cushion as included in the FHWA Eligibility Letters.

        (4) Manufacturer Certification Letter. Certify the crash cushion(s) meet the requirements of the FHWA eligibility letter(s), are suited to the Contract requirements including the environmental conditions at the installation site.

        (5) Manufacturers' Installer Certification Letter. Certify the installation contractor is familiar with and trained to install the crash cushion.

        (6) Manufacturers' Installation Checklist. Submit a crash cushion installation checklist.

    b. Parallel Terminals.

        Manufacturer Installation Checklist. Submit an Assembly Installation Checklist.

2. Submit the following after installation.

   a. Permanent Crash Cushions.

      (1) Manufacturer Certification Letter. Certify the installed crash cushion(s) meet the requirements of the FHWA eligibility letters. Submit the certification letters(s) signed and dated no more than 14 days after installation.

      (2) Manufacturers' Installation Checklist. Submit the completed installation checklist signed by the Installer and Manufacturer no more than 14 days after installation. Complete the checklist after each assembly.

   b. Parallel Terminals.

      Manufacturer Installation Checklist. Submit the completed installation checklist signed by the Installer and Manufacturer no more than 14 days after installation. Complete the checklist after each assembly.

606-2.01 MATERIALS. Use materials that conform to the following:

Concrete, Class B	Section 550
Flexible Delineator Posts	Subsection 730-2.05
Guardrail Connection Plate	Subsection 710-2.12
Thrie-Beam Terminal Connector	Subsection 710-2.12
Guardrail Hardware	Subsection 710-2.07
Guardrail Posts and Blockouts	Subsection 710-2.06
High Strength Bolts	Subsection 716-2.03
Metal Beam Rail	Subsection 710-2.04
Terminals	Subsection 710-2.11
Terminal Markers	Subsection 730-2.05
Wire Cable	Subsection 709-2.02

Guardrail Reflector Assembly Brackets, Side-Mounted. Aluminum alloy.

Retroreflective Sheeting.

1. Post-Mounted Flexible Delineators and Guardrail Reflectors. ASTM D4956 Type IX or XI.

2. Terminal Markers. ASTM D4956 Type VIII, IX or XI.

Permanent Crash Cushion Assembly.

Crash cushions include the complete assembly as included in the Eligibility Letter, the crash cushion, the foundation, and rigid backup anchorage, or transition connection. Install an added Terminal Marker or other flexible delineator to the front of the crash cushions as recommended by the Manufacturer.

Design the crash cushion for the installation location environment. Snow combined with frequent freeze-thaw cycles creates significant ice buildup that may impair the performance of the crash cushion. Design to mitigate the effects from snow and ice. Crash cushions using supports that interlock and travel within fixed tracks at or below the first six inches from ground level, and crash cushions not designed to mitigate snow and Ice buildup are not acceptable for permanent use. Crash cushion covers, when available from the manufacturer, are required as part of the crash cushion installation.

Crash Cushion Classifications. 2011 AASHTO Roadside Design Guide, 4th Edition. The Engineer will determine the final classification of each materials submittal. Provide redirective and non-gating crash cushions of the type specified in the plans and matching the description noted below.

1. Sacrificial: Demonstrated designed for a single impact.

2. Reusable Crash Cushion. Demonstrated to have major components survive most impacts intact and salvageable. Some components require replacement after a crash.

3. Low-maintenance and Self-restoring Crash Cushion. Demonstrated to suffer very little, if any damage, upon impact and easily pulled back into their full operating condition. They may partially rebound after an impact and may only need an inspection to ensure that no parts have been damaged or misaligned.

CR606-123121R

CONSTRUCTION REQUIREMENTS

606-3.01 GENERAL. Install guardrail and terminals at the locations shown on the Plans. Conform to the Alaska Standard Plans and these Specifications.

At locations where public traffic is adjacent to guardrail work, have all materials on site, including crashworthy terminals, that are required to completely install a segment of guardrail before beginning work on that segment.

Start guardrail installation at the "upstream" end (the end adjacent traffic encounters first) by either installing a crashworthy terminal, connecting to an existing barrier or shielding the end with a crash cushion or truck mounted attenuator (TMA) meeting NCHRP 350, Test Level 3. Continue installation in the direction of traffic. Exception: if the guardrail run connects to existing barrier, buried in the backslope terminal, existing or new bridge railing, or other existing structure at the "downstream" end, guardrail installation may start at the point of connection.

Do not leave posts installed for guardrail within the clear zone for more than 48 hours before installing the rail. At the end of each work shift, install drums or Type II barricades with flashing warning lights to delineate incomplete sections of guardrail and terminal sections.

If guardrail runs are not completed within 10 calendar days after beginning installation, install temporary crash cushions meeting NCHRP 350 or MASH test level 3 at all non-crashworthy guardrail ends within the construction clear zone. Apply Traffic Price Adjustment if the Contractor does not comply with the crash cushion requirement.

When possible, proceed with construction of guardrails with the direction of traffic.

Where necessary, adjust the height of existing guardrail to provide a smooth transition to new guardrail. Use 25 linear feet of guardrail or two 12’ 6” pieces of guardrail to transition to match the existing or new guardrail elements and/or end treatments.

After shaping the slopes and staking proposed guardrail terminal section locations, request the Engineer to field verify their locations. Receive approval of the staked locations before installing terminal sections.

Treat field cuts to timber posts and blockouts according to AWPA standard M 4.

Install blockouts according to manufacturer’s recommendations and as shown on the plans.

Install side-mounted guardrail reflectors and post-mounted flexible delineators as follows:

1. at intervals noted on the plans or Alaska Standard Plans, starting with the first guardrail post beyond terminal sections

2. with the retroreflective sheeting facing approaching traffic

3. with retroreflective sheeting on both sides, on two-way roadways

4. not on the terminal sections, except as shown on the plans

5. at or below 500 feet in elevation, except as noted otherwise in the Plans.

Attach terminal markers, in a vertical position, to the P.T. post of Short Radius Guardrail sections and to the post where the flare begins for parallel guardrail terminals. Coordinate terminal marker locations with the Engineer.

At the end of each work shift, install drums or Type II barricades with flashing warning lights to delineate incomplete sections of guardrail and terminal sections.

CR606-123121R

Do not remove existing highway safety appurtenances, guardrail and similar, before mobilization of the replacement parts to the project storage location.

CR606.13-072120R

606-3.02 POSTS. Set posts to accommodate the line, grade, and curvature shown on the Plans.
Use either wood or steel posts when allowed by the type of guardrail specified, subject to the following:

1. Exclusive of end treatments, use one type of post in each run of guardrail.

Set posts as follows:

1. Set posts plumb, in the location and to the depth shown on the Plans or Alaska Standard Plans.

2. Choose an installation method that does not damage the post, adjacent pavement, structures, utility conduits, and final slopes. Repair all damage to the satisfaction of the Engineer, or replace the damaged item, as per subsection 105-1.11.

3. Set wood or steel posts in dug, drilled, or pre-punched holes. Steel posts may also be set by ramming or driving if:

    a. The underlying material is no larger than six inch; and

    b. The posts are not damaged during installation.

4. Backfill and compact around posts with material as specified in the typical section to firmly support the post laterally and vertically. Compact under and around posts to the Engineer's satisfaction.

5. For placement in solid rock or broken rock embankment greater than six inch, set wood or steel posts in pre-dug, pre-drilled, or pre-punched holes.
6. In new roads, install posts before final shoulder or median compaction, surfacing, and paving.

606-3.03 BEAM RAIL. Fabricate metal work in the fabricator's shop. Bend curved guardrail elements with radii less than or equal to 100 feet in the fabricator's shop or with an approved bending apparatus.

Receive approval before field punching, cutting, or welding. Repair damaged spelter coat areas on galvanized rail elements according to AASHTO M 36 (ASTM A760).

Lap rail elements so that the exposed ends face away from approaching traffic in the adjacent lane.

Use bolts long enough to extend at least 1/4 inch beyond the nuts. Except where required for adjustments, do not extend bolts more than 1 inch beyond the nuts.

Locate bolts at expansion joints at the center of the slotted holes.

Tighten bolts at expansion joints to snug-tight. Make all other bolts fully-tight.

606-3.04 CABLE RAIL. Install cable guardrail according to the Plans and Specifications. Install at the locations shown on the Plans.

606-3.05 TERMINAL SECTIONS.

Parallel Terminals.

Install terminal sections according to the manufacturer's recommendations for the entire length of the terminal then, if required, transition rail height over 25' to match guardrail height and splice location.

Install ASTM D4956 Type III, IV, or V retroreflective sheeting on the end section of parallel terminals consisting of yellow and black bars sloping 45 degrees downward toward the traffic side of the terminal according to guidance for Object Markers for Obstructions Adjacent to the Roadway in Chapter 2C of the ATM.

Submit the manufacturers' complete Assembly Installation Checklist signed and dated after completing installation to support acceptance for each installation, see Subsection 606-1.02 for further information.

606-3.06 REMOVAL AND RECONSTRUCTION OF GUARDRAIL. Remove and reconstruct guardrail as specified. Replace lost or damaged materials without extra compensation.

When replacing existing guardrail complete the replacement run installed within 14 calendar days after removal.

For guardrail located within 50 feet of bridge ends, remove and replace the existing guardrail in the same work shift.

606-3.07 REMOVAL AND DISPOSAL OF EXISTING GUARDRAIL. Remove the existing guardrail, including the rail, cable elements, terminal sections, hardware, posts, concrete bases, and steel tubes. Backfill resulting holes with material in 6-inch layers that is similar to the existing embankment and compact to the same approximate density.

Guardrail.

Notify the Engineer a minimum of 5 days before removing guardrail. The Engineer will notify the ADOT & PF, M & O, and have an M & O representative designate portions of guardrail for salvage. Deliver salvaged guardrail and associated hardware to the M & O station located at NA. Remaining items removed become the Contractor's property.

Permanent Crash Cushion.

Notify the Engineer a minimum of 5 days before removing permanent crash cushions. The Engineer will notify the ADOT & PF, M & O, and have an M & O representative designate portions of the crash cushion for salvage. Deliver salvaged crash cushion and associated hardware to the M & O station located at NA. Remaining items removed become the Contractor's property.

606-3.08 ADJUST EXISTING GUARDRAIL. When called for on the Plans, reset existing guardrail to the height shown on the applicable Alaska Standard Plan, measured from the top of the rail to the finished shoulder surface below the rail. Raise and lower the posts several times to prevent settlement and then re-drive them to the height shown on the Plans. Use other methods if approved.

606-3.09 INSTALL NEW GUARDRAIL. Install guardrail as shown on the Plans.

606-3.10 TERMINAL MARKERS. For each parallel rail terminal, attach a terminal marker to the extreme piece of rail.

Attach flexible markers, in a vertical position, to the terminal end directly to the backside of the rail face, the face away from the traveled way, or the first post of each parallel guardrail terminal. Provide an additional marker where the flare begins for guardrail terminal widening. Provide two markers at the end of each run of guardrail; coordinate the locations with the Engineer.

Attach the flexible markers using hardware and attachment methods recommended by the manufacturer. The connection shall not negatively influence the performance of the guardrail as noted in 606-2.01.

606-3.11 LENGTH OF NEED VERIFICATION. After shaping the slopes and staking the proposed guardrail locations, notify the Engineer to field verify the beginning and ends. The Engineer will approve the staked location of the guardrail before installation. When the Engineer determines additional guardrail is required, complete the installation immediately.

606-3.14 HIGHWAY SAFETY APPURTENANCE – ESSENTIAL REPLACEMENT PARTS. Install replacement parts as directed.
Deliver the remaining new replacement parts, at time of substantial completion, to the State Maintenance and Operations Station, located at: _____.

Notify the Engineer no less than 7 days before delivery.

CR606.13-072120R

606-4.01 METHOD OF MEASUREMENT. Section 109 and as follows:

1. Guardrail. Measured along the face of the rail or cable, from the center of the end posts.

   Short Radius Guardrail. Per each, installed in place.

   When the guardrail is connected to a terminal section, the pay limit for the rail ends where the specified terminal section begins.

2. Terminals. Per each, installed in place.

3. Transition Rail. Per each accepted connection.

4. Permanent Crash Cushion. Each installed and accepted.

606-5.01 BASIS OF PAYMENT.

Payment for temporary crash cushions or TMA installed to protect motorists when guardrail installations are not completed within 10 calendar days of beginning installation is subsidiary to other items.

1. Guardrail. Side-mounted guardrail reflectors, post-mounted flexible delineators, terminal markers, guardrail beam, posts, blockouts, and associated hardware are subsidiary. Installation of downstream anchors, transitions for rail height and splice locations, long span guardrail sections, and guardrail stiffening sections are subsidiary to guardrail installation.

2. Short Radius Guardrail Sections. The contract price includes all materials from the terminal anchor to and including the first wood or steel post of standard guardrail or guardrail end terminal, and including the terminal anchor assembly, in-line anchor, terminal posts, short radius guardrail posts, rail elements, terminal markers, and associated hardware required for a complete installation.

3. Terminal Sections.

   a. Parallel Guardrail Terminal. The contract price includes rail elements, posts, blockouts, pipe sleeves, cable assemblies, guardrail extruders, terminal markers, and all associated hardware required for a complete installation.

4. Transition Rail. The contract price includes all brackets, beam sections, transition pieces, and all posts and associated hardware required for a complete connection of the guardrail section to a bridge rail or barrier.

5. Permanent Crash Cushion. The contract price includes all work and materials required to install each permanent crash cushion, foundations, and connections along with the manufacturer's field support, recommendations, and shop drawings. Removal and salvage of existing crash cushions is subsidiary to Pay Item 606.2007.____ Pay Item(s).

All material required for embankment widening for guardrail and terminal sections is paid for under the appropriate pay items shown in the bid schedule.

Guardrail salvage is subsidiary to Pay Item 606.0006.____ Removing and Disposing of Guardrail.

PAY ITEM

Item Number	Item Description	Unit
606.0001.____	W-Beam Guardrail	LF
606.0002.____	Thrie Beam Guardrail	LF
606.2003.____	Box Beam Guardrail	LF
606.0004.____	Cable Guardrail	LF
606.0005.____	Removing and Reconstructing Guardrail	LF
606.0006.____	Removing and Disposing of Guardrail	LF
606.0007.____	Double-faced, W-Beam Guardrail	LF
606.0009.____	Short Radius Guardrail	Each
606.0013.____	Parallel Guardrail Terminal	Each
606.0015.____	Adjust Existing Guardrail	LF
606.0016.____	Transition Rail	Each
606.2007.____	Crash Cushion, Permanent _____	Each

CR606-123121R

TABLE 606-1
HIGHWAY SAFETY APPURTENANCES – ESSENTIAL REPLACEMENT PARTS

Essential Replacement Parts	Material Specification	Unit	Quantity
W-Beam Guardrail	Subsection 710-2.04	LF	
Thrie Beam Guardrail	Subsection 710-2.04	LF	
Cable Guardrail	Subsection 709-2.02	LF	
Box Beam Guardrail	Subsection 710-2.04	LF	
Wood Guardrail Post and Blockout	Subsection 710-2.06	Each	
Steel Guardrail Post and Blockout	Subsection 710-2.06	Each	
Short Radius Guardrail	Alaska Standard Plan G-26.00	Each	
Parallel Guardrail Terminal	Subsection 710-2.11	Each	
Transition Rail	Subsection 710-2.04	Each	
Crash Cushion, Permanent _____	Subsection 606-2.01	Each	
Precast Concrete Barrier	Subsection 501-3.01 & 709-2.01	LF	
Rigid Delineator	Subsection 730-2.05	Each	
Flexible Delineator	Subsection 730-2.05	Each	

Replace damaged replacement parts at no additional cost to the Department.

6. 606.2006.____ Essential Replacement Parts – Installation. Installation of the replacement parts according to the directive authorizing the work.

PAY ITEM

Item Number	Item Description	Unit
606.2005.____	Essential Replacement Parts	LS

PAY ITEM

Item Number	Item Description	Unit
606.2006.___	Essential Replacement Parts – Installation	CS

CR606.13-072120R

Special Provisions

Replace Section 610 with the following:

SECTION 610
DITCH LINING

610-1.01 DESCRIPTION. Construct ditch lining at the locations on the Plans or as staked.

610-2.01. MATERIALS. Use crushed stones that are angular, hard, sound, and durable with at least one face resulting from fracture.

1. Angular—stones, the particles of which possess well-defined edges formed at the intersection of roughly planar faces.

2. Hardness—resistance of a material to indentation or scratching. AASHTO T96, not more than 50% wear at 500 revolutions.

3. Soundness—measure of aggregates durability when exposed to the elements, AASHTO T104.

4. Gradation—ATM 304:

    a. Maximum of 6 inches in greatest dimension
    b. Not more than 50% by weight passing a 3-inch sieve
    c. Not more than 5% passing a 1-inch sieve

5. Breadth and Width—at least 1/3 of the length

610-3.01 CONSTRUCTION REQUIREMENTS. Place and spread ditch lining materials so that the finished face is uniform. Place stones on slopes 1.5:1 and flatter.

610-4.01 METHOD OF MEASUREMENT. Section 109.

610-5.01 BASIS OF PAYMENT. Excavation required below normal ditch grade is subsidiary.

PAY ITEM

Item Number	Item Description	Unit
610.0001.____	Ditch Lining	CY
610.0002.____	Ditch Lining	Ton
610.0003.____	Ditch Lining	STA

CR610-060117R

SECTION 611
RIPRAP

Special Provision

611-2.01 MATERIALS.

Replace the first paragraph with the following:

Evenly graded stones that are hard, angular, and have no more than 50 percent wear at 500 revolutions as determined by AASHTO T 96. Apparent specific gravity will be determined by ATM 308. Use stones with breadth and thickness at least 1/3 of its length. Do not use round boulders or cobbles on slopes steeper than 3:1.

CR611.1-020119

Special Provisions

Replace Section 615 with the following:

SECTION 615
STANDARD SIGNS

615-1.01 DESCRIPTION. Furnish and install standard signs and delineators. Remove and relocate or remove and dispose of existing signs and markers, as specified.

615-2.01 MATERIALS. Use materials that conform to the following Subsections:

Sheet Aluminum	730-2.01
High Density Overlaid Plywood	730-2.02
Retroreflective Sheeting, ASTM D4956	730-2.03
Sign Posts	730-2.04
Delineator Posts	730-2.05
Acrylic Prismatic Reflectors	730-2.06
Sign Support Fasteners	730-2.07

1. Shop Drawings. Submit shop drawings, for all signs that must meet the ASDS letter width and spacing charts for variable width legends (such as D-series and I-3 signs), and which require custom shop drawings specific to the project. Submit 4 sets of collated shop drawings prepared according to Subsection 105-1.02. Show the following on each sign drawing:

    a. Dimensions of all horizontal and vertical characters and spaces
    b. Overall dimensions
    c. Sign material and sheeting material type
    d. Panel thickness
    e. Legend and letter series
    f. Whether the sign will be framed

2. Sign Fabrication. Use ASTM D4956 Type IV retroreflective sheeting (for lettering, symbols, borders, and background) on sheet aluminum panels for all signs except the following:

    a. Orange Background Signs. Use Type IX or XI fluorescent orange reflective sheeting placed on sheet aluminum panels, except:

        (1) For temporary installations, the reflective sheeting place on aluminum, plastic, or plywood sheet panels.

        (2) For flexible signs, (Roll-Up Signs) use fluorescent reflective sheeting Type VI or better (based on durability and reflectivity, as determined by the Engineer). Roll-Up Sign – 3M Series RS 24, Reflexite Marathon Orange, or approved equal.

    b. Railroad Crossbucks and Vertical Crossbuck Supports: Use white ASTM D4956 Type VIII or Type IX or XI retroreflective sheeting for background of sign and all strips.

    c. Non-Illuminated Overhead Signs with White Legends on Green Backgrounds: Use ASTM D4956 Type IX or XI retroreflective sheeting for legends and background. Create the legend in one of the following ways:

        (1) Cut border and legend from white ASTM D4956 Type IX or XI retroreflective sheeting and adhere them to a green ASTM D4956 Type IX background, or

        (2) Cut stencil of border and legend out of green transparent acrylic film and use transparent adhesive to overlay the film on a white ASTM D4956 Type IX or XI retroreflective background.

d. Fluorescent Yellow-Green School Area Signs: Use ASTM D4956 Type VIII, Type IX or XI retroreflective sheeting for background.

Use a manufacturer-recommended clear coat on all screened signs.

Use sign layouts (including characters, symbols, corner radii, and borders) that conform to the ASDS.

3. Sign Posts and Bases. Use sign posts and bases of the types specified. The structural aspects of design and materials for sign supports must comply with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. Do not splice sign posts.

   Foundation Concrete:

   a. Non-structural and Non-steel-reinforced Sign Foundations. Use Class W concrete, or commercially available pre-mixed sacked concrete with a minimum compressive strength of 3,000 psi. When sacked concrete is used, acceptance will be based on manufacturer Certificates of Compliance and the compressive strength test results of the specimens prepared according to ATM 506.

   b. Steel-reinforced Roadside Sign Foundations. Use Class B concrete meeting the requirements of Section 550, except:

      Overhead Sign Support Foundations. Use Class A concrete meeting the requirements of Section 501.

4. Delineators. Use delineator assemblies that conform to the requirements shown on the Plans. Fabricate flexible delineators using ASTM 4956 Type III, IV, V, IX or XI retroreflective sheeting.

5. Reflective Sheeting Warranty. Supply manufacturer's warranty for reflective sheeting, including retention of fluorescent yellow-green (measured in accordance with ASTM E2301) for ten years according to the following criteria:

   a. Minimum Fluorescent Luminance Factor Y_F: 20%
   b. Minimum Total Luminance Factor Y_T: 35%

   The warranty shall stipulate that: If the sheeting fails to meet the minimum fluorescence values within the first 7 years from the date of fabrication of the sign, the manufacturer shall, at the manufacturer's expense, restore the sign surface to its original effectiveness. If the reflective sheeting fails to meet the minimum fluorescence values within the 8th through 10th year from the date of fabrication, the manufacturer shall, at the manufacturer's expense, provide enough new replacement sign sheeting to the Department to restore the sign surface to its original effectiveness.

CONSTRUCTION REQUIREMENTS.

615-3.01 GENERAL.

1. Place posts in excavated holes to the depth shown on the Alaska Standard Plans.

2. Backfill the space around the posts and foundations placed in holes to finish ground with selected earth or sand, free of rocks or deleterious material. Place backfill in layers approximately 6 to 12 inches thick and thoroughly compact it.

3. Dispose of surplus excavated material neatly along the adjacent roadway as directed.4. Install flexible delineator posts according to the manufacturer's recommendations.

5. Attach sign panels to posts, electroliers, traffic signal standards, bridge rails, piers, and abutments using the types and sizes of fastening hardware shown on the Plans.

6. If using existing signs and mileposts that are removed and relocated, ensure they conform to the details shown on the Plans or as directed.

7. Sign Salvage:

   Notify the Engineer 5 working days prior to beginning sign salvage activities. The Engineer will physically identify those signs to salvage.

   a. Property of the State. When 615-3.01 7a identifies a maintenance station to receive sign salvage, the signs (sign panels, posts, and hardware) are the property of the State.

      Protect all items from damage during salvaging and delivery. For each sign so designated, disconnect sign post from panel and group the panels together. Group posts together with their hardware. Deliver sign panels, posts, and hardware to the State Maintenance Station noted in these Special Provisions. Do not deliver salvaged materials until inspected and approved by the Engineer. Replace any items damaged by you at no additional cost to the Department.

      Deliver salvaged sign panels, posts, and hardware to the State Maintenance and Operations Station, located at:

      NA.

   b. Property of the Contractor. When 615-3.01 7a does not identify a State Maintenance and Operations Station; the signs salvaged (sign panels, posts, and hardware) are the property of the Contractor.

      Remove project signs and/or parts designated for salvage, off the project site.

   Dispose of foundations from salvaged existing signs in a manner approved of by the Engineer (remove and dispose, abandoned in place, or otherwise). If abandoned in place, remove the tops of the foundations, reinforcing steel, anchor bolts, and conduits to a depth of not less than 12 inches below roadway subgrade or unimproved ground, whichever applies.

   Dispose of sign salvage not wanted by the Contractor, not used in the project, and not accepted by the Local Maintenance and Operations Station as required by Federal, State, and Municipal environmental regulations.

   All signs, the sign panels, posts, hardware, and foundations at a single installation are considered as one unit.

8. All materials and finished signs are subject to inspection and acceptance in place.

   a. Surfaces exposed to weathering must be free of defects in the coating that impair serviceability or detract from general appearance or color match.

   b. Finished signs must be clean and have no chatter marks, burrs, sharp edges, loose rivets, delaminated reflective sheeting, or aluminum marks. Do not make repairs to the face sheet.

9. Install the various breakaway assemblies according to the manufacturer's written instructions. Meet MASH crashworthiness requirement for breakaway hardware, unless approved otherwise by the Engineer.

10. Secure the anchors in templates and install them according to the manufacturer's written instructions.

11. Finish the foundation according to these tolerances:

    a. Do not use more than two shims per coupling.

    b. Do not use more than three shims to plumb each post.

    Remove and replace all foundations requiring more than three shims to plumb a post without extra compensation.

12. Construct the top of any foundation located on a slope so that the finished slope passes through the top center of the foundation. Grade the area 24 inches up and down slope of the foundation edge so that no portion of the foundation projects above the surrounding slope and water will drain away from the foundation.

13. Attach a label to the back of all standard signs in the lower right corner. Make the label at least 15 square inches and show the year the sign was purchased from the manufacturer. Show the last two digits of the year in clear and bold numbers. Make the label from ASTM D4956 Type I or brighter retroreflective sheeting. Use background and legend colors meeting Table 615-1.

TABLE 615-1
DECAL COLORS

YEAR	BACKGROUND COLOR	LEGEND COLOR
XXX1	Yellow	Black
XXX2	Red	White
XXX3	Blue	White
XXX4	Green	White
XXX5	Brown	White
XXX6	Orange	Black
XXX7	Black	White
XXX8	White	Black
XXX9	Purple	White
XXX0	Strong Yellow-Green	Black

Central values and tolerance limits for each color, as referenced in the MUTCD, are available from the Federal Highway Administration, (HHS-30), 400 7th St. SW, Washington, D.C. 20590

615-3.02 SIGN PLACEMENT AND INSTALLATION. The location and type of installation will be as shown on the Plans. Sign locations are approximate and subject to field adjustment by the Engineer.
Do not allow the top of the embedded steel tube to extend more than 2 inches above the surrounding ground and concrete foundation.

On all signs, install 2-inch diameter wind washers, colored to match the sign face, between the fastener head and the sign. Use rust-resistant washers fabricated from a material equal in strength to the sign blank.

Mount signs on mast arms level.

Bring existing signs that are to remain, into conformance with Standard Drawing S-05. Keep existing signs in service until they are no longer needed.

615-4.01 METHOD OF MEASUREMENT.

Standard Signs and Object Markers. By the total area of legend-bearing sign panel erected in place. No deductions in quantity for corner rounding will be made. Nominal dimensions for sign sizes indicated on the Plans will be used to calculate sign pay quantities. Octagons and round signs will be measured as rectangles. Only one side of each double-faced sign will be measured for payment.

Removal and Relocation. By each, complete in place.

Delineators. By each, complete in place. A single delineator consists of one post equipped with three reflectors.

Salvage Sign. By each complete sign delivered in acceptable condition.

615-5.01 BASIS OF PAYMENT. Sign posts, bases, and mounting hardware are subsidiary.

Salvage Sign. Each complete sign includes the sign panels, posts, hardware, and foundations at a single installation.

When Items 615.0002.____, 615.0003.____, or 615.0006.____ do not appear on the bid schedule, this work is subsidiary.

PAY ITEM

Item Number	Item Description	Unit
615.0001.____	Standard Sign	SF
615.0002.____	Remove and Relocate Sign	Each
615.0003.____	Remove and Relocate Milepost	Each
615.0004.____	Delineator, Rigid	Each
615.0005.____	Delineator, Flexible	Each
615.0006.____	Salvage Sign	Each
615.0007.____	Salvage and Dispose Sign	Each

CR615-23.0501

Replace Section 618 with the following:

SECTION 618
SEEDING

618-1.01 DESCRIPTION. Establish a healthy living perennial stand of grass or other vegetative living groundcover by seeding. Maintain the living cover for the term of the Contract.

618-2.01 MATERIALS. Use materials that conform to the following:

Water	Subsection 712-2.01
Seed	Section 724 (Grass Seed)
Fertilizer	Section 725
Topsoil	Section 726
Soil Stabilization	Section 619
Soil Stabilization Material	Section 727

TABLE 618-1
GRASS SEED MIX, SOIL STABILIZER, AND FERTILIZER APPLICATION RATES

Materials	Ingredients	Application Rate (per MSF[c])
Grass Seed Mix [a, b]	Nortran – Tufted Hairgrass	0.60 lbs.
	Arctared – Red Fescue	0.45 lbs.
	Wainwright - Slender Wheatgrass	0.37 lbs.
	Annual Ryegrass	0.08 lbs.
		Total = 1.50 lbs.
Soil Stabilizer		
Slope ≤ 3:1	Mulch	46 lbs.
Slope >3:1	Mulch with tackifier	45-58 lbs.
Fertilizer	20-20-10	12 lbs.

a. Do not remove the tags from seed bags.
b. Submit an alternate seed mix when the specified seed is not commercially available. Provide a letter confirming the specified seed is not available. Include an agronomist certified seed mix design, including application rate, suited to the project site.
c. MSF = 1000 ft^2.

CONSTRUCTION REQUIREMENTS

618-3.01 SURFACE PREPARATION. Remove ruts, holes, humps and other irregularities from the surface. Clear stones four inches in diameter and larger, weeds, plant growth, sticks, stumps, and other debris that will interfere with the application of stabilization material, topsoil, the seeding operation, growth of vegetative groundcover, and subsequent maintenance of the cover.

Smooth the slopes for a uniform appearance and round the top and bottom of the slopes to facilitate tracking or raking. Do not disrupt drainage flow lines.

Evenly place stabilization material and or topsoil when specified.

Prepare the surface material by grooving the material in a uniform pattern that is perpendicular to the fall of the slope. Use one or more of the following grooving methods with associated equipment before the application of seed:

1. Manual raking with landscaping rake;

2. Mechanical track walking with track equipment; or

3. Mechanical raking with a scarifying slope board. Form one-inch wide grooves spaced no more than six inches apart.

618-3.02 SEEDING SEASON. Seed disturbed areas after permanent cessation of ground disturbing activities in that area, within the period specified in the Alaska Department of Environmental Conservation (ADEC) Alaska Pollutant Discharge Elimination System (APDES) Construction General Permit (CGP) for Alaska, Section 4.5 Soil Stabilization, and Section 641 Erosion, Sediment, and Pollution Control.

Do not seed during windy conditions, when climatic conditions or ground conditions would hinder placement or proper growth.

Seed between May 29 and September 28.

618-3.03 APPLICATION. Seed, seeding, reseeding includes the application of seed, fertilizer, and stabilization material.

If the seed mix, fertilizer and stabilization material are not included in the Plans or Specifications, including their application rates, use the recommendations of the ADNR and the Revegetation Manual for Alaska.

Do not seed areas of bedrock and plant beds.

Use any of the following methods:

1. Hydraulic Method

   Apply seed and stabilization material in one application when using the hydraulic method. Apply fertilizer with the hydraulic method. Include the fertilizer with the seed and stabilization material or apply separately.

   a. Furnish and place a slurry made of seed, fertilizer, water, and other materials.

   b. Use hydraulic seeding equipment that will maintain a continuous agitation and apply a homogeneous mixture through a spray nozzle. The pump must produce enough pressure to maintain a continuous, nonfluctuating spray that will reach the extremities of the seeding area with the pump unit located on the roadbed. Provide enough hose to reach areas not practical to seed from the nozzle unit situated on the roadbed.

   c. If mulch material is required, it may be added to the water slurry in the hydraulic seeder after adding the proportionate amounts of seed and fertilizer. Add seed to the slurry mixture no more than 30 minutes before application.

   d. Mix the slurry and apply it evenly.

2. Dry Methods

   a. Use mechanical spreaders, seed drills, landscape seeders, aircraft, cultipacker seeders, fertilizer spreaders, or other approved mechanical spreading equipment.

   b. Spread fertilizer separately at the specified rate.

618-3.04 MAINTENANCE. Maintenance includes but is not limited to the following:

1. Protecting seeded areas against traffic by approved warning signs or barricades and against erosion.

2. Repairing surfaces gullied or otherwise damaged following seeding. Fill erosion gullies 4 inches deep and greater filling the gully to surrounding grade including the portions less than 4 inches deep. Apply and prepare the stabilization material and or topsoil for seeding. Seed repaired area. Refer to Subsections 618-3.01 & 3.03.

3. Reseeding areas not showing evidence of satisfactory growth within 3 weeks of seeding and after repairs are complete. Reseed bare patches of soil more than 10 square feet in area. Contact ADNR for advice or corrective measures, when seeded areas are not showing evidence of satisfactory growth.

4. Watering seeded areas for healthy growth of vegetative cover. Adjust the amount of water when directed.

618-3.05 ACCEPTANCE. The vegetative ground cover will be inspected considering each station and each side of the road a separate area. Acceptance of the ground cover requires a minimum of 75% cover density in the inspection area, gullies repaired and reseeded, and no bare patches of soil more than 10 square feet in area.

Repair/reseed areas that are not accepted.

618-3.06 PERIOD OF ESTABLISHMENT. Establishment period, for each seeded area, extends one complete growing season (May 1 to August 15) after the planting year, acceptance, and final inspection beginning from the date of Project completion, Subsection 105-1.15.

Employ all possible means to preserve/maintain the new vegetative groundcover in a healthy and vigorous condition to ensure successful establishment. Maintain the vegetative cover, according to Subsection 618-3.04, to not less than the requirements for acceptance, Subsection 618-3.05.

618-4.01 METHOD OF MEASUREMENT. Section 109 and as follows:

Seeding by the Acre. By the area of ground surface acceptably seeded and maintained.

Seeding by the Pound. By the weight of dry seed acceptably seeded and maintained.

Water for Seeding. If weighed, a conversion factor of 8.34 pounds per gallon will be used to convert weights to gallons.

MGAL equals 1000 gallons.

618-5.01 BASIS OF PAYMENT.

1. Pay Items 618.0001.____ and .0002.____ Seeding. Payment is for healthy established vegetative groundcover through the establishment period.

   a. The initial surface preparation, seed, fertilizer, mulch when applied hydraulically, their application, and the water for hydraulic application are subsidiary.

   b. Maintenance fill, stabilization material, topsoil, surface preparation, seed, fertilizer, mulch when applied hydraulically, and the water required for hydraulic application are subsidiary.

2. Pay Item 618.0003.____ Water for Seeding. Payment is for water applied for growth of vegetative groundcover through the establishment period.

   If Pay Item 618.0003.____ Water for Seeding, is not included in the bid schedule, water applied for growth of vegetative groundcover through the establishment period is subsidiary.

Except for maintenance, stabilization material is paid under Section 619 and topsoil under Section 620.

PAY ITEM

Item Number	Item Description	Unit
618.0001.____	Seeding	Acre
618.0002.____	Seeding	LB
618.0003.____	Water for Seeding	MGAL

CR618-23.0601

Special Provision

Replace Section 619 with the following:

SECTION 619
SOIL STABILIZATION

619-1.01 DESCRIPTION. Furnish, install, and maintain materials to stabilize the soil. Control erosion, sediment, and pollution.

619-1.02 RELATED SECTIONS, REFERENCE ORGANIZATIONS, AND STANDARD DOCUMENTS.

1. Alaska Department of Transportation and Public Facilities (ADOT&PF):

   Standard Specifications for Highway Construction
   - Seeding ..... Section 618
   - Topsoil ..... Section 620
   - Planting Trees and Shrubs ..... Section 621
   - Silt Fence ..... Section 633
   - Erosion, Sediment, and Pollution Control ..... Section 641
   - Soil Stabilization Material ..... Section 727

2. American Association of State Highway and Transportation Officials (AASHTO)

   Standard Practice for:
   - Compost for Erosion/Sediment Control (Filter Berms and Filter Socks) ..... R 51
   - Compost for Erosion/Sediment Control (Compost Blankets) ..... R 52

3. United States Composting Council (USCC)
   - Testing Methods for the Examination of Compost and Composting (TMECC)
   - Seal of Testing Assurance Program (STA) documents

4. Erosion Control Technology Council (ECTC)
   - Hydraulic Erosion Control Products (HECPs) Specification Chart
     Table 1, Performance Chart for Standard HECPs
   - Rolled Erosion Control Products (RECPs) Specification Chart
     Table 1, Rolled Erosion Control - Temporary
     Table 2, Rolled Erosion Control - Permanent

5. National Transportation Product Evaluation Program (NTPEP)
   - Testing and Evaluation of Products Materials and/or Devices

6. Texas DOT/Texas Transportation Institute (TTI) Hydraulics and Erosion Control Laboratory

619-1.03 SUBMITTALS. Submit stabilization and erosion, sediment and pollution control performance testing results with certifications for each material, Section 619-2.01 Materials. Submit a sample of each material to the Engineer 7 days before the scheduled installation.

1) Test compost, all applications, no more than 90 days before installation.
2) At a minimum, certificate will include the name of the manufacturer, product name, style number or similar, chemical composition of the material, the fibers, netting, yarn and similar and the weed free status of the material.
3) Organic materials shall be accompanied with all applicable health certificates and permits.
4) Furnish a Material Safety Data Sheet (MSDS) that demonstrates the product is not harmful to plants, animals, and aquatic life.

619-2.01 MATERIALS. Select stabilization materials, individually or a combination of, matched to the project applications/conditions (sheet flow, concentrated flow, slope, length of slope, access, etc.) providing performance and functional longevity meeting the most restrictive requirements of the Construction General Permit (CGP), the approved Storm Water Pollution Prevention Plan (SWPPP) and Section 641 Erosion, Sediment and Pollution Control.

1) Mulch ..... Subsection 727-2.01
   - Dry Erosion Control, Stabilization Products
   - Hydraulic Erosion Control Products (HECPs)
2) Matting ..... Subsection 727-2.02
   - Rolled Erosion Control Products (RECPs)
3) Sediment Retention Fiber Rolls (SRFRs) ..... Subsection 727-2.03
   - Filter Socks
   - Compost Socks
   - Coir Logs
4) Compost ..... Subsection 727-2.04
5) Tackifier ..... Subsection 727-2.05
6) Soil Binders (Polyacrylamide (PAM)) ..... Subsection 727-2.06
7) Geotextile-Encased Check Dams and Sediment Barriers ..... Subsection 727-2.07
8) Sandbag ..... Subsection 727-2.08
9) Manufactured Inlet Protection System ..... Subsection 727-2.09
10) Clear Plastic Covering ..... Subsection 727-2.10
11) Staples ..... Subsection 727-2.11
12) Other stabilization materials submitted to and approved by the Engineer.

Include on the packaging the manufacturer's name, the content, the air dry-weight and the guaranteed chemical analysis of the contents. Ship and deliver to the site in the original, unopened containers.

CONSTRUCTION REQUIREMENTS

619-3.01 GENERAL. Stabilization may include individual or a combination of materials, including but not limited to temporary seeding, mulch, tackifier, staples, matting, stabilizing emulsions, soil binders, dustless sweeping, dust palliatives, and others.

1. Material Storage and Protection. Store materials elevated off the ground and covered protecting them from construction and or damage from the environment including but not limited to:
   - Precipitation
   - Extended ultraviolet radiant including sunlight
   - Chemicals that are strong acids or other
   - Flames and welding sparks
   - Excess temperatures
   - Other environmental conditions that may damage the materials

2. Fabrication.
   a. Sandbags. Sand bags shall measure 15 inches by 30 inches. Place approximately 1.0 cubic foot of select Material, Type B, in each sandbag sack. Close the open end of the sandbag as recommended by the fabric manufacturer.

619-3.02 SURFACE PREPARATION. Clear all areas to be stabilized of stones 4 inches in diameter and larger and of weeds, plant growth, sticks, stumps, and other debris or irregularities that might interfere with the stabilization operation, growth of cover (where vegetative cover is part of the stabilization operation) or subsequent maintenance of the vegetative-covered area(s).

Smooth the surface of the area(s) to be stabilized; make the areas reasonably free of ruts, holes, and humps; trackwalk if required by the manufacturer; apply the stabilization material to each area.

If specified, apply topsoil to the area to be stabilized before application of the stabilizing material. Section 618 and 620.

619-3.03 APPLICATION. Apply stabilization material, including rate of application, according to the specifications. If not specified, apply according to the manufacturer's requirements. Where manufacturer requirements conflict with the specification, except where the Engineer directs otherwise, apply the material according to the requirements of the manufacturer.

If seeding is specified, except where seed is included in the stabilization material, complete the application of stabilization materials within 24 hours after seed is placed.

Do not use vehicles or equipment which cause rutting or displacement of the subgrade or topsoil.

1. Temporary Seeding. Annual Ryegrass per Subsection 724-2.02, Table 724-1. Apply at a rate of 1/2 lb/1000 sq. ft., minimum, on level ground to a maximum of 1 1/2 lb/1000 sq. ft., maximum, on sloping ground and highly erodible soils. Prepare surface and place seed as noted under Subsection 619-3.02 Surface Preparation and Section 618 Seeding. Confirm application of temporary seeding with the Engineer.

2. Tacking Agents - Tackifiers. Apply tacking agents according to the manufacturer's installation instructions matched to the application providing functional longevity, erosion control effectiveness, and vegetative establishment.

3. Soil Binders. Apply soil binders according to the manufacturer's installation instructions.

    a. Using Polyacrylamide (PAM) and PAM with Short-Term Mulch:
    Apply PAM on bare soils.

    Apply PAM and PAM with short-term mulch only where sediment control is in place and complete.

    Do not apply PAM and PAM with short-term mulch on saturated ground during rainfall.

    b. Using Moderate-Term Mulch:
    Apply moderate-term mulch according to manufacturer's installation instructions. If the curing period to achieve maximum performance is greater than the time period before precipitation is predicted, or the soil is saturated, do not apply the moderate-term mulch except as approved by the Engineer.

    c. Using Long-Term Mulch:
    Apply long-term mulch according to the manufactures installation instructions.

4. Erosion Control Blankets (ECBs). Select blankets, as specified by the manufacturer, to match the slope; and installed according to the manufacturer's instructions rolled out on well prepared soils to assure intimate contact and anchored with staples, stakes and or anchor trenches. Temporary erosion control blankets with 60 percent or greater open area may be installed prior to seeding. Place blankets with less than 60 percent open area immediately after the seeding operation.

    Staple matting/ECBs as recommended by the manufacturer for the application.

5. Compost Blankets. Construct compost blankets according to latest AASHTO R 52 and as specified. Use coarse compost and place over bare soil a blanket of 2 inch minimum thickness, except as otherwise specified. Apply material either by hand spreading and or pneumatically. Compost will have no free water visible or produce dust when handled. Place compost before seeding or mix seed with compost.

6. Check Dams. Place check dams as soon as possible and practicable or when and where if directed by the Engineer. Place the check dams perpendicular to channels and construct of a height sufficient to maximize detention while keeping the water in the channel. Place and install check dams according to the Plans and anchor to maintain in effective position.

    a. Sandbag. Place the initial row in tight contact with the ditchline for the length of the dam. Place each following row centered across the joint between the bags of the lift/row below.

7. Stabilized Construction Entrance.
   Temporary stabilized construction entrance shall be constructed according to the Plans, prior to beginning any clearing, grubbing, earthwork, or excavation.

   When the stabilized entrance no longer prevents track out of sediment or debris, the Contractor shall either rehabilitate the existing entrance to original condition, or construct a new entrance.

   When the Plans require a tire wash in conjunction with the stabilized entrance, the Contractor shall include details for the tire wash and the method for containing and treating the sediment-laden runoff as part of the SWPPP. All vehicles leaving the site shall stop and wash sediment from their tires.

8. Sediment Control Barriers. Sediment control barriers shall be installed according to the Plans or manufacturer's recommendations in the areas of clearing, grubbing, earthwork, or drainage prior to starting those activities.

   a. Sandbag. Place the initial row in tight contact with the surface perpendicular to the slope. Place each following row centered across the joint between the bags of the lift/row below.

   b. Sediment Retention Fiber Rolls.

   c. Silt Fence.

   d. Compost Berm. Construct compost berms according to latest AASHTO R 51. Use coarse compost.

9. Turf Reinforcement Mats. According to manufacturer's installation instructions.

619-3.04 MAINTENANCE. Maintain stabilized areas in a satisfactory condition for the term of the Contract. Inspect as required by the CGP, approved SWPPP, and Section 641 Erosion, Sediment and Pollution Control and correct any deficiencies immediately. Remove and dispose of temporary measures, including trapped sediment and contaminants, off project at approved locations. Materials manufactured as degradable may be left in place when approved by the Engineer.

Maintenance includes but is not limited to:

1. Protecting stabilized areas against traffic by approved warning signs or barricades.

2. Repairing surfaces gullied or otherwise damaged following application of stabilization material(s).

Where seeding is included as a part of the soil stabilization:

1. Reseeding, as required by Section 618 Seeding. Reapply the stabilization materials correcting the problems of the initial application.

2. Watering, where vegetative growth is part of the soil stabilization, according to Section 618 Seeding.

The Engineer will perform inspection of the stabilization as required in the CGP, Section 641, and the SWPPP. Make repairs as required by same and as directed.

619-4.01 METHOD OF MEASUREMENT. Section 109, measured on the slope of the ground surface.

619-5.01 BASIS OF PAYMENT. Water, maintenance, repair, removal, and disposal of temporary stabilization materials are subsidiary.

Seeding is paid under Section 618 Pay Items, topsoil under Section 620 Pay Items, silt fence under Section 633 Pay Items and temporary erosion, sediment, and pollution control under 641 Pay Items.

PAY ITEM

Item Number	Item Description	Unit
619.0001.____	Mulching	SY
619.0002.____	Matting	SY
619.2001.____	Compost	SY
619.2002.____	Turf Reinforcement Mat	SY
619.2003.____	Sediment Retention Fiber Rolls	LF
619.2004.____	Check Dam and Sediment Barrier (-Geotextile)	LF
619.2005.____	Check Dam	LF
619.2006.____	Sediment Barrier	LF
619.2007.____	Compost Berm	LF
619.2008.____	Sandbags	Each
619.2009.____	Manufactured Inlet Protection System	Each
619.2010.____	Sandbag Inlet Protection System	Each
619.2016.____	Mulch	SY

CR619-18.0501R1

Replace Section 634 with the following:

SECTION 634
GEOGRID FOR EMBANKMENT AND ROADWAY STABILIZATION AND REINFORCEMENT

634-1.01 DESCRIPTION. Furnish and install geogrid material at locations shown on the Plans.

634-2.01 MATERIALS. Use materials that conform to the following:

Geogrid	Subsection 729-2.04

CONSTRUCTION REQUIREMENTS

634-3.01 WEATHER LIMITATIONS. Do not expose geogrid to sunlight for longer than 14 days after removal of protective covering.

634-3.02 SURFACE PREPARATION.

1. Very Soft Ground (CBR < 1). Care should be taken to avoid disturbing any surface crust overlying softer soil. In these cases the geogrid should be placed directly on the unprepared subgrade.

   If directed by the Engineer, minimize disturbance of the subgrade by leaving root mats in place, cutting stumps and other projecting vegetation as close and even to the ground surface as practical.

   Swampland, peat, muskeg or marshes may be difficult to smooth grade and/or compact. Create a surface that is as uniformly smooth as possible. Grade or crown the surface for positive drainage away from the construction zone.

2. Firm Ground (CBR 1 – 3). Prepare surface by removal of stumps, brush, boulders, and sharp objects. Fill holes and large ruts, as directed by the Engineer, with material shown on the Plans or as approved by the Engineer.

3. Firm Ground (CBR > 3). Compact and finish subgrade or subbase prior to placement of the geogrid.

634-3.03 GEOGRID PLACEMENT. Unroll geogrid directly onto the prepared ground surface in the direction of advancing construction, parallel to the centerline of the roadway or according to the Plans. Do not drag the geogrid across the subgrade. Install the geogrid in the longest continuous practical length, free from folds, creases or wrinkles. Hold the geogrid in place with pins, staples, sandbags or piles of granular material.

1. Very Soft Ground. Overlap geogrid panels a minimum of 36-inches at all joints with the upper geogrid in the direction that fill will be placed. Tie panels together securely with cable ties or hog rings at 5-feet intervals or as recommended by the manufacturer and approved by the Engineer.

   To limit lateral spreading and separation of overlaps, if approved by the Engineer, the Contractor may unroll the geogrid transversely/perpendicular to the roadway embankment alignment. Overlap the adjacent rolls and tie together with cable ties or hog rings at 5-feet intervals.

2. Soft Ground. Overlap geogrid panels a minimum of 24-inches at all joints with the upper geogrid in the direction that fill will be placed. Tie panels together securely with cable ties or hog rings at 20-feet intervals or as recommended by the manufacturer and approved by the Engineer.

3. Firm Ground. Overlap geogrid panels a minimum of 12-inches at all joints in the direction that fill will be placed. Tie panels together securely with cable ties or hog rings at 20-feet intervals. Hand-tension geogrid and stake to the ground at the edges, overlaps, and in the center of each roll, at 30-feet intervals or as specified on the Plans.

634-3.04 PLACING AND SPREADING COVER MATERIAL. Do not operate equipment directly on the unprotected geogrid. Spread fill material in the direction of the fabric overlap. Compact using a smooth drum roller. Do not allow construction equipment to make sudden stops, starts, or turns on the cover material.

1. Very Soft Ground. End-dump material onto previously placed material and spread over the geogrid with a low ground pressure (LGP equates to tire pressure of 4 psf) dozer to the depth permitted. Maintain a minimum depth of 12-inches of cover material at all times between the geogrid and the wheels or tracks of the construction equipment, unless otherwise shown on the Plans or directed by the Engineer. Do not dump material directly on the geogrid. To prevent a mud wave, end-dump fill along the edges of the geogrid to form toe berms or access roads that extend one to two panel widths ahead of the remainder of the embankment fill placement. After constructing the two berms, spread fill in the area between the toe berms by placing material parallel to the alignment and symmetrical from the toe berms inward toward the center to maintain a U-shaped leading edge (i.e., concave outward) to contain the mud wave. Limit height of dumped piles above the geogrid to avoid local bearing failure. Traffic on the first lift should be parallel to the embankment alignment. Do not allow construction equipment to turn on the first lift. Compact the first lift by tracking in place with dozers or end-loaders. Compact with specified compaction equipment once the embankment is at least 2-feet above the geogrid.

2. Soft Ground. End dump material onto previously placed material and spread over the geogrid with a LGP dozer to the depth permitted. Maintain a minimum depth of 6-inches of cover material at all times between the geogrid and the wheels or tracks of the construction equipment unless otherwise shown on the Plans or directed by the Engineer. Place the end-dumped material along the roadway centerline and spread it outward to the roadway edges to prevent the development of wrinkles or movement of the geogrid during construction. Fill in any ruts that form during construction with material shown on the Plans. Do not cut down the fill adjacent to the ruts.

3. Firm Ground. Maintain a minimum depth of 6 inches of cover material at all times between the geogrid and the wheels or tracks of the construction equipment.

634-3.05 GEOGRID REPAIR. If the geogrid is torn, punctured, or the overlaps disturbed – as evidenced by visible geogrid damage – remove the backfill around the damaged area and repair or replace the damaged area. Make repairs to the damaged area with a patch of the same class of geogrid originally placed. Overlay torn area with geogrid with a minimum 3-feet overlap around the edges of the torn area and secure as recommended by the geogrid manufacturer, unless otherwise directed by the Engineer.

634-4.01 METHOD OF MEASUREMENT. Measure geogrid by the square yard of ground surface covered. No allowance will be made for overlap, whether at joints or patches.

634-5.01 BASIS OF PAYMENT. Payment will be made at the Contract unit price. Repair and replacement costs for damaged geogrid are subsidiary to the Section 634 Pay Items.

Material used to fill ruts and holes paid at the unit price for the class of material used.

PAY ITEM

Item Number	Item Description	Unit
634.0001.____	Geogrid, Stabilization, Class ___	SY
634.0002.____	Geogrid, Reinforcement, Class ___	SY

CR634-15.0903R2

Special Provisions

Replace Section 639 with the following:

SECTION 639
DRIVEWAYS

639-1.01 DESCRIPTION. Construct driveways and approaches.

639-2.01 MATERIALS. Reserved.

639-3.01 CONSTRUCTION. Reserved.

639-4.01 METHOD OF MEASUREMENT. By the number of driveways and approaches constructed.

639-5.01 BASIS OF PAYMENT. The Contract unit price for driveways and approaches is for furnishing equipment and labor.

Pavement removal and excavation required constructing driveways and approaches is subsidiary to the driveway and approach pay items.

Materials required to construct driveways and approaches will be paid for separately under the respective items listed in the bid schedule.

PAY ITEM

Item Number	Item Description	Unit
639.0001.____	Driveway	Each
639.0002.____	Driveway, Residential	Each
639.0003.____	Driveway, Commercial	Each
639.2000.____	Approach	Each

CR639-16.0920_2

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 acknowledgment (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	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 l.

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:

a. the Contractor has previously been notified and subsequent inspection reports repeat the same or similar error,
b. multiple inspection reports are submitted after the submission due date and the same or similar errors are repeated on multiple overdue reports,
c. an error in recording the inspector's AK-CESCL certification date results in an inspector performing the inspection during a period when their certification was lapsed or was otherwise invalid

See Subsection 641-3.04 Failure to Perform Work, for additional work and payment requirements.

Item 641.0001.____ Erosion, Sediment, and Pollution Control Administration. At the Contract lump sum price for administration of all work under this Section. Includes, but is not limited to, SWPPP and HMCP and SPCC Plan preparation, agency fees for SWPPP reviews, SWPPP amendments, pre-construction Inspections, Inspections, monitoring, reporting, and recordkeeping or copying Records related to the SWPPP and required by the CGP, and Record retention.

Item 641.0005.____ Temporary Erosion, Sediment and Pollution Control by Directive. At the contingent sum prices specified in the Directive using time and materials to authorize the work, for all labor, supervision, materials, equipment, and incidentals to install, maintain, remove and dispose of temporary erosion, sedimentation, and pollution control BMPs. Prices for this item will be by time and materials according to Subsection 109-1.05, or by mutual agreement between the Engineer and Contractor. All additional Erosion, Sediment, and Pollution Control Administration necessary due to this item will not be paid for separately but will be subsidiary to other bid items.

Item 641.0006.____ Withholding. The Engineer may withhold an amount equal to Liquidated Damages, assessed according to Section 641, from payment due the Contractor. Liquidated Damages for violations of the Contract, CWA, and CGP are determined by the Engineer according to Table 641-2. The Engineer may withhold payment due the Contractors until the Contractor pays the Liquidated Damages to the Department.

The Department will not release performance bonds until Liquidated Damages assessed according to Section 641 are paid to the Department, and all requirements according to Subsection 103-1.05 are satisfied.

Item 641.0007.____ SWPPP Manager. At the Contract lump sum price for a SWPPP Manager that conforms to this specification. When Item 641.0007.____ appears in the Bid Schedule, the SWPPP Manager must be a different person than the superintendent, and must be physically present during construction activity with duties and authority as described in Subsection 641-2.04. When Item 641.0007.____ does not appear in the Bid Schedule, the SWPPP Manager is subsidiary to Item 641.0001.____.

Item 641.0008.____ SWPPPTrack. Payment for purchasing and contracting with SWPPPTrack AK LTD for the use of the SWPPPTrack software application and services will be based on paid receipts plus a 5 percent markup.

Subsidiary Items. Temporary erosion, sediment, and pollution control measures that are required outside the Project Zone are subsidiary. Work required by the HMCP and SPCC Plan including hazardous material storage, containment, removal, cleanup and disposal, are subsidiary to Item 641.0001.____ Erosion, Sediment and Pollution Control Administration.

Work under other pay items. Work that is paid for directly or indirectly under other pay items will not be measured and paid for under Section 641. This work includes but is not limited to:

1. Dewatering;
2. Shoring;
3. Bailing;
4. Permanent seeding;
5. Installation and removal of temporary work pads;
6. Temporary accesses;
7. Temporary drainage pipes and structures;
8. Diversion channels;
9. Settling impoundment; and
10. Filtration.

Permanent erosion, sediment, and pollution control measures will be measured and paid for under other Contract items, when shown on the bid schedule.

Work at the Contractor's Expense. Temporary erosion, sediment, and pollution control measures that are required due to carelessness, negligence, or failure to install temporary or permanent controls as scheduled or ordered by the Engineer, or for the Contractor's convenience, are at the Contractor's expense.

Payment will be made under:

PAY ITEM

Item Number	Item Description	Unit
641.0001.____	Erosion, Sediment and Pollution Control Administration	LS
641.0005.____	Temporary Erosion, Sediment and Pollution Control by Directive	CS
641.0006.____	Withholding	CS
641.0007.____	SWPPP Manager	LS
641.0008.____	SWPPPTrack	CS

CR641-24.0401

SECTION 642
CONSTRUCTION SURVEYING AND MONUMENTS

Special Provisions

642-2.01 MATERIALS.

Add No. 4:

4. Digital Measuring Instrument: Nu-metrics, Nitestar DMI (www.ae-traffic.com), or approved equal.

642-3.01 GENERAL.

Add No. 11:

11. Before work on the project starts, stake and reference the existing centerline on both sides of the roadway alignment. Stake the existing centerline on tangents at 100 ft, and 50 ft intervals on curves from the beginning and ending of super-elevation changes when the roadway is no longer at normal crown. Stake sign locations at proper offset. Stakes shall be a minimum of 1" x 2" x 2'-0" and be offset 4 to 8 ft from the shoulder on both sides of the roadway. Extend lath stakes a minimum of 2 ft above ground. Show the offset distance to centerline and the station from the beginning of the project. Maintain staking until the final roadway striping is completed. Staking accuracy work requires an electronic distance measuring instrument (DMI) be installed in the Contractor's vehicle. Calibrate the DMI to roadway alignments as stationed in the Plans before beginning work. Record the calibration and staking information in the field book.

    Install a reference sign every 500 ft. These reference signs shall meet the following requirements:

    a. mounted with the base a minimum of 5 ft above the shoulder,
    b. located a minimum of 10 ft from the edge of shoulder,
    c. marked with the station from the beginning of the project, in 6 inch high permanent black lettering with a letter proportion height to width ration of 1:0.6 and a stroke width to height ratio of 1:6, on an orange background.

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Add No. 12:

12. Passing Sight Distance. Record the existing centerline striping and final passing sight distance. A copy of the 8 1/2" x 11" Existing Striping, Passing Sight Distance and Final Striping form is included herein. Document the existing passing and sight distance similar to the example included.

    Using the "Existing Striping, Passing Sight Distance and Final Striping" form:

    a. Document the existing striping. Do not disturb the existing striping until the striping record is accepted by the Engineer.

        1) Project Information: Road Name, Stationing, Surveyor & license, Date surveyed.
        2) Col. 1.: Project Stationing in 100-foot intervals from beginning to end of project.
        3) Col. 2.: Posted operating speed per minimum passing sight distance (Table 642-1).
        4) Col. 3a & 4a: Each direction of travel (NB; SB, EB, WB) record the existing striping: passing (dashes) and no passing zones (continuous line) similar to the example. Maintain the orientation of travel to the form, each road, from the beginning of the project to the end of the project.
        5) Col. 6.: Add comments to help clarify the documentation and significant sight obstructions, as needed. Initial your comments.

        Submit the form to the Engineer and make changes when directed by the Engineer.

    b. Document the passing sight distance. Use the form approved in a. for b. Measure and record, after the base course layer is complete, passing sight distance along the roadway in both directions of traveled way at 100-foot maximum intervals and referenced to the project station. Use a 3.5-foot object height or instrument height looking ahead to a 3.5-foot target height which is at the centerline or opposing edge of traveled way.

1) Col. 3 & 4.: Each direction of travel (NB, SB, EB, WB) record the sight distance each station. Record the measurement to the nearest 100-foot up to 1200-foot where the passing sight distance exceeds the minimum passing sight distance. Where the passing sight distance exceeds 1200-foot, record the measurement as "1200+ Feet." Record the measurement to the nearest 10-foot at all stations that fall below the minimum passing sight distance.
2) Col. 6.: Add comments to help clarify the documentation as needed. Initial your comments.

Submit the form to the Engineer and make changes when directed by the Engineer.

c. Final Striping. Using the information approved in a. and b., the existing striping and passing sight distance, the Engineer will evaluate the existing striping and provide the final striping plan 14 days after the Contractor's passing sight distance submittal, 12b above.

1) Col. 3 & 4: Engineer, indicate if the existing striping passes (P) or fails (F).
2) Col. 5a & 5b: Engineer, indicate the final striping.
3) Col. 6.: Engineer, add comments if needed to clarify the final striping. Initial your comments.

Do not begin striping until the Engineer returns the form, signed and dated with the final striping plan.

Engineer, provide the Regional Traffic and Safety Engineer an informational copy of the final striping plan.

TABLE 642-1
PASSING SIGHT DISTANCE REQUIREMENTS [a]

Posted Speed (mph)	Minimum Passing Sight Distance and Minimum Length of Passing Zone (ft)	Minimum No-Passing Zone on Stopped Approaches to Intersections (ft)
30	500	220
35	550	255
40	600	295
45	700	330
50	800	365
55	900	405
60	1000	440
65	1100	480
70	1200	515

a. One- and two-direction no-passing zones for one direction of traffic shall be no shorter than 500 feet

642-4.01 METHOD OF MEASUREMENT.

Add the following:

Pay Item 642.2008.____ Passing Sight Distance Measurement. By the number of stations of the project measured separately along centerline, once for each direction, only after the certified and recorded results (642-3.01 12a & 12b) have been accepted by the Engineer.

642-5.01 BASIS OF PAYMENT.

Add the following Pay Item:

PAY ITEM

Item Number	Item Description	Unit
642.2008.____	Passing Sight Distance Measurement	STA

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Existing Striping, Passing Sight Distance and Final Striping

Project Name and Number: *Example Project Striping, X-(XX)/XXXXX*
Road Name: *Traveled Way*
Stationing: From *101+00* To *129+00*
Surveyor & License Number: *Name, License #* Date of Survey: *mmddyy*

1. Station (ft.)	2. Speed/ Req'd Dist. (mph/ft)	SB Travel 3. Sight Dist. (ft)	Existing Striping 3a. C L 4a.	NB Travel 4. Sight Dist. (ft)	SB Travel 5. Final Striping 5a. C L 5b.	NB Travel 5. Final Striping 5a. C L 5b.	6. Comments
101+00	45/700	>500 F		>500 F			
102+00	45/700	>550 F		>400 F			
103+00	45/700	>600 F		>400 F			
104+00	45/700	>600 F		>400 F			
105+00		>600 F		>400 F			
106+00		>500 F		>500 F			
107+00		>400 F		>500 F			
108+00		>400 F		>600 F			
109+00		>400 F		>550 F			
110+00		>500 F		>500 F			
111+00	45/ 700	>500 F		=700 P			
112+00		=700 P		=700 P			
113+00		=700 P		<800 P			
114+00		<800 P		<800 P			
115+00		<800 P		<800 P			
116+00		<800 P		<900 P			
117+00		<900 P		<900 P			
118+00		<1200 P		<1000 P			
119+00		<1200+ P		<1000 P			
120+00	45/700	"		<1000 P			
121+00	30/500	"		<1000 P			
122+00	30/500	"		<1200 P			
123+00	30/500	"		<1200+ P			
124+00	30/500	"		"			
125+00	30/500	"		"			
126+00	30/500	"		"			
127+00	30/500	"		"			
128+00	60/900	"		"			
129+00	60/900	<1200+ P		<1200+ P			

Existing Striping, Passing Sight Distance and Final Striping

Project Name and Number: ______________________________

Road Name: ______________________________

Stationing: From ____________________ To ____________________

Surveyor & License Number: ____________________ Date of Survey: __________

1. Station (ft.)	2. Speed/ Req'd Dist. (mph/ft)	__ Travel		__ Travel		__ Travel	__ Travel	6. Comments
		3. Sight Dist.	Existing	Striping	4. Sight Dist.	5. Final	Striping	
			3a. C	L 4a.		5a. C	L 5b.	

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Existing Striping 12a. – Date Received: _____

_____ Date Returned: _____
DOT/PF Engineer

Sight Distance 12b. – Date Received: _____

_____ Date Returned: _____
DOT/PF Engineer

Final Striping 12c. – Date Received: _____

_____ Date Returned: _____
DOT/PF Engineer

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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 2, 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 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, conducted so that no more than a 10 minute accumulated stopped delay, 40 vehicles, or 1/4 mile (1320 feet) of traffic detained, whichever occurs first, before releasing the detained motorists. During paving operations, a 20 minute stopped delay, 80 vehicles, or 1/2 mile (2640 feet) of traffic detained, allowed for motorists, except school buses. If a queue of traffic develops at a stop, empty the entire queue to include the last car that entered the queue at the time the queue was released.

Do not delay the school busses through the construction zone; obtain the local school bus schedule and coordinate work efforts. Submit the plan, as a TCP, to the Engineer for approval before the implementation of the school bus coordination plan.

643-3.09 INTERIM PAVEMENT MARKINGS. Place permanent or interim pavement markings according to this Subsection, details shown on the Plans, approved TCPs, and Parts III and VI of the ATM before opening existing paved roadways, temporary paved roadways, detours, interim paving lifts, and roadways with seal coats and surface treatments for more than one continuous work shift. This work may include restriping the existing roadway before beginning construction, before seasonal suspension, and/or after seasonal suspension.

Remove conflicting pavement markings according to Subsection 670-3.04, Paint Removal.

Mark existing roadway sections that will be opened to traffic during the winter. Mark over the existing lines and markings, unless shown otherwise on the Plans or an approved TCP.

Maintain all interim pavement markings for their intended life including reapplication when necessary. There will be no compensation to upgrade interim pavement markings required for work operations lasting up to 2 weeks.

Use only temporary raised pavement markers as interim pavement markings on final pavement surfaces. Completely remove and dispose of them when placing the final markings. Completely remove any residual adhesive that might misguide motorists. Place final pavement markings on finished pavement surfaces and interim pavement surfaces before suspending work for the winter.

Stage the construction to avoid routing traffic over conflicting markings, for more than one continuous work shift. If traffic is routed over conflicting markings during a work shift, delineate the roadway with a complement of warning signs, channelizing devices, and flaggers as required by the ATM.

Use only temporary raised pavement markers meeting Subsection 712-2.16 as interim markings on seal coat and surface treatment pavements. Install the markers according to the manufacturer's instructions before applying the asphalt surface material and cover coat. Remove the vinyl protective covers after applying the asphalt pavement.

On multicourse surface treatments, install the temporary raised pavement markers after applying the full width of the first layer of cover coat. Install the markers on each day's completed surface before removing the pilot car operations and allowing unescorted traffic on the surface treatment.

Apply final pavement markings according to Subsection 670-3.01, Construction Requirements, of these Special Provisions.

Apply final pavement markings within 10 days of completing the final sweeping or brooming of the mainline seal coat or surface treatment.

643-3.10 LIGHTING FOR NIGHT WORK. Illuminate the night work areas according to Table 643-4.

Table 643-4 does not provide a comprehensive list of operations that require lighting. Provide lighting for other operations when necessary.

Use balloon lighting as the main light sources. Do not use floodlights without prior approval by the Engineer. When approved, install floodlighting in a manner that minimizes glare for motorists, workers, and residents living along the roadway. Locate, aim, louver, and/or shield light sources to reduce glare.

The Engineer shall be the sole judge of when glare is unacceptable, either for traffic or for adjoining residences. When notified of unacceptable glare, modify the lighting system to reduce glare to an acceptable level.

TABLE 643-4
NIGHT WORK ILLUMINATION EQUIPMENT AND LOCATION REQUIREMENTS

Type of Work or Equipment	Lighting Configuration
Paving, Milling, Striping, Pavement Marking Removal, Rumble Strip Installation.	At least one machine-mounted balloon light of at least 2000 watts. Provide additional lights or wattage if necessary to provide complete coverage.
Rolling, Pavement Sweeping.	At least 4 sealed beam halogen lamps in the front and four in the back. Each should be at least 55 watts.
Flagging.	One balloon light of at least 2000 watts, located within 30 feet of the flagger location. Locate so the flagger and the flagging location are illuminated. Provide additional lights or wattage if necessary to provide complete coverage of the flagging location.
Truck Crossings where haul vehicles cross or enter a road with more than 10,000 ADT, or where the haul vehicle crossing or entering location is controlled by portable traffic signals or flaggers.	At least one balloon light of at least 2000 watts, located on the main road on the far right side of the intersection. Locate light within 30 feet of the edge of the side street. If there is a flagger at the crossing, locate the light or lights so the lighting requirements for Flagging are also satisfied.

If the Contractor fails to provide required lighting equipment or provides lighting that creates unacceptable glare, the Contractor shall cease all construction activities that require illumination, including flagging operations, until the condition or conditions are corrected.

Use lighting equipment in good operating condition and that complies with applicable state and local adopted codes and standards, and OSHA, NEC, and NEMA requirements.

Provide suitable brackets and hardware to mount lighting fixtures and generators on machines and equipment. Design mountings so lights can be aimed and positioned as necessary to reduce glare. Locate mounting brackets and fixtures so they don't interfere with the equipment operator or overhead structures. Connect fixtures securely in a manner that minimizes vibration.

Ensure ground, trailer, and equipment-mounted light towers or poles are sturdy and freestanding without the aid of guy wires. Towers shall be capable of being moved as necessary to keep pace with the construction operation. Position the ground and trailer-mounted towers and trailers, to minimize the risk of being impacted by traffic on the roadway, or by construction traffic, or equipment.

Raise trailer or equipment mounted lights to maximum height, except do not exceed the clearance required for overhead objects such as overhead signals, overhead signs, trees, aerial utilities, or bridges. Aim and adjust lights to provide the required light levels. Provide uniform illumination on the hopper, auger, and screed areas of pavers. Illuminate the operator's controls on all machines uniformly.

Furnish each side of non-street legal equipment with a minimum of 75 square inches high intensity retroreflective sheeting in each corner, so at least 150 square inches of sheeting is visible from each direction. Provide red sheeting on the rear of the equipment and yellow sheeting elsewhere.

Existing street and highway lighting and conventional vehicle headlights may supplement but do not relieve the Contract requirement to provide lighting for night work, according to the requirements of Table 643-4.

Provide sufficient fuel, spare lamps, spare generators, and qualified personnel to ensure that all required lights operate continuously during nighttime operations. Ensure generators have fuel tanks of sufficient capacity to permit operation of the lighting system for a minimum of 12 hours. In the event of any failure of the lighting system, discontinue the operation that requires illumination until the required level and quality of illumination is restored.

Maintain a supply of at least twenty emergency flares for use in the event of emergency or unanticipated situations. Comply with local noise ordinances.

Install all post-mounted electroliers located within the clear zone, on NCHRP 350 or MASH compliant breakaway bases.

643-3.11 HIGH VISIBILITY GARMENTS. Ensure all workers within project limits wear outer garments that are highly visible and comply with the following requirements:

1. **Standards**. Use high visibility garments conforming to the requirements of ANSI/ISEA 107-2004, Class 2 for tops or Class E for bottoms, and Level 2 retroreflective material.

2. **Labeling**. Use garments labeled in conformance with Section 11.2 of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010.

3. **Tops**. Wear high visibility vests, jackets, or coverall tops at all times.

4. **Bottoms**. Wear high visibility pants or coverall bottoms during nighttime work (sunset to sunrise). Worksite traffic supervisors, employees assigned to traffic control duties, and flaggers wear high visibility pants or coverall bottom at all times.

5. **Outer Raingear**. Wear raingear tops and bottoms conforming to the requirements of this Subsection 643-3.11.

6. **Exceptions**. When workers are inside an enclosed compartment of a vehicle, they are not required to wear high visibility garments.

7. **Condition**. Furnish and maintain all vests, jackets, coveralls, rain gear, hard hats, and other apparel in a neat, clean, and presentable condition. Maintain retroreflective material to Level 2 standards.

Payment for high visibility garments for workers is subsidiary to other traffic contract items.

643-4.01 METHOD OF MEASUREMENT. Section 109 and as follows: Quantities will not be measured during winter suspension of work.

1. **Traffic Maintenance**. Calendar Day: Every day shown on the calendar, beginning and ending at midnight. Measurement begins on the day following receipt of the Notice to Proceed or on the first day of work at the project site, whichever is later, and ends on the date of project completion.

2. **Traffic Control Device Items**. By the number of units of each bid item shown on the bid schedule (or the Traffic Control Rate Schedule, if item 643.0025.____, Traffic Control, is included) that are installed, accepted, and operational. Incomplete or unsatisfactory devices will not be measured. Special Construction Signs are measured by the total area of legend-bearing sign panel, as determined under Subsection 615-4.01. Compensation for a 24-hour period shall be made under Construction Signs in the Traffic Control Rate Schedule, Table 643-5. Items measured by the day are for each item per 24-hour period.

3. **Traffic Maintenance Setup Items**. By each lane closure or one-lane road in place per hour. By each detour or road closure in place per 24-hour period.

4. **Portable Concrete Barrier**. By each nominal 12.5-foot section placed according to the approved TCPs, for the initial placement and for each subsequent relocation when moved more than 10 feet in any direction. Each transition piece (sloping end) will be measured as a single section.

5. **Temporary Crash Cushion**. By each acceptable installation.

6. **Interim Pavement Marking**. By the single-stripe station. A single stripe is a marking or a temporary raised pavement marker 4 inches wide. Wider striping is measured in multiples of 4 inches. Centerline gaps are not deducted from measurements.

7. **Flagging and Pilot Car**. By the number of approved hours, supported by certified payroll.

8. **Street Sweeping**. By the number of operated hours, supported by certified payroll and approved by the Engineer.

9. **Watering**. By the 1,000 gallons (M-Gallon) of water applied. The Engineer may specify measurement by weight or volume. If by weight, convert to gallons at 8.34 pounds per gallon. If by volume, convert to gallons at 7.48 gallons per cubic foot.

10. **Traffic Price Adjustment**. By each minute that any lane of traffic is not open to full use by the traveling public, measured to the nearest minute. The Engineer will determine whether the roadway is opened to full use.

11. **Traffic Control**. By the units specified in the Special Provisions.

12. **Portable Changeable Message Board Sign**. By the 24-hour period for each sign, as shown on an approved TCP and displaying an approved message.

13. **Plastic Safety Fence**. By the linear foot, as placed, to protect or channelize pedestrian traffic as shown on an approved TCP. Any adjustment in configuration of the fence at the same location that does not result in an increased amount of fence is not measured. Opening and closing the fence to gain access to and from the worksite is not measured.

14. **Temporary Sidewalk Surfacing**. By the square yard as shown on an approved TCP.

15. **Temporary Guardrail**. By the linear foot, including end treatments, as shown on an approved TCP.

16. **Portable Steel Barrier**. By the linear foot placed according to the manufacturer's recommendation and approved TCPs, for the initial placement, and for each subsequent relocation when moved more than 10 feet in any direction.

17. **Hotline Road Report**. No measurement required to provide a 24-hour toll free (1-800 ###-####) "Hotline Road Report" telephone with a prerecorded message, and weekly notices with daily updates. Work will be subsidiary to Pay Item 643.0001.____ or 643.0002.____, Traffic Maintenance.

643-5.01 BASIS OF PAYMENT.

1. **Traffic Maintenance**. The contract price includes all resources required to provide the Worksite Traffic Supervisor, all required TCPs and public notices, the Construction Phasing Plan, and the maintenance of all roadways, approaches, crossings, intersections and pedestrian and bicycle facilities, as required. This item also includes any Traffic Control Devices required but not shown on the bid schedule.

   Items required by the Contract that are not listed on the bid schedule or not included in other items are subsidiary to Item 643.0001.____ or 643.0002.____ Traffic Maintenance, except the following:

   a. Traffic Price Adjustment

   b. Traffic Maintenance Setup

2. **Traffic Control Device Items**. The contract price includes all resources required to provide, install, maintain, move, and remove the specified devices. Warning lights, high-level warning devices, vertical panels, and sign supports required for traffic control devices are subsidiary.

3. **Traffic Maintenance Setup Items**. Each setup consists of all traffic control devices, flaggers, pilot cars, and subsidiary items necessary to implement the TCP shown on the Plans. Warning lights, high-level warning devices, vertical panels, and sign supports required for traffic control devices are subsidiary.

   Construction and obliteration of temporary roadways, when required on the Plans or approved TCP under a traffic maintenance setup item, is paid for under their respective roadway pay items.

   When topsoil or seeding is required for detours, payment will be made under Sections 620 and/or 618.

4. **Portable Concrete Barrier**. The contract price includes all resources required to provide, install, maintain, and remove each barrier section.

5. **Temporary Crash Cushion**. The contract price includes all resources required to provide, install, maintain, repair, and remove each crash cushion.

6. **Interim Pavement Marking**. The contract price includes all resources required to provide, install, maintain, and remove the specified markings. Installation of word and symbol markings are subsidiary. The No-Passing Zone signing, described in Subsection 643-3.04, is subsidiary.

7. **Flagging and Pilot Car**. The contract price includes all required labor, vehicles, radios, flagger paddles and pilot car signs, and transportation to and from the worksite.

   The Engineer will pay for Item 643.0032.____ Flagging on a contingent sum basis at the rate of $82.00/hour. The Engineer does not require a change order/directive for the flagging Pay Item. Flagging associated with Change Order work paid at the prices according to Subsection 109-1.05 Compensation for Extra Work.

8. **Street Sweeping**. The contract price includes all resources required to keep the roadway free of loose material.

9. **Watering**. The contract price includes all resources required to provide watering, as directed.

10. **Traffic Price Adjustment**. If Item 643.0023.____, Traffic Price Adjustment, is shown on the bid schedule, the total value of this contract will be adjusted, for unauthorized lane reductions or closures, at the rates listed in Table 643-3.

11. **Traffic Control**. Payment for Item 643.0025.____, Traffic Control, will be made at the unit rate value contained in the Traffic Control Rate Schedule shown in the Special Provisions for the accepted units of traffic control devices. The Engineer does not require a change order/directive for Pay Item 643.0025.____, Traffic Control.

12. **Portable Changeable Message Board Sign**. The contract price includes all resources required to furnish, move, and operate the sign.

    Two Portable Changeable Message Board Signs used for Permanent Construction Signing paid for under Item 643.0003.____ Permanent Construction Signs. Additional portable changeable message board signs will be paid for under 643.0025.____, Traffic Control.

13. **Plastic Safety Fence**. The contract price includes all resources required to install, maintain, and remove the fence.

14. **Temporary Sidewalk Surfacing**. The contract price includes all resources required to construct, maintain, and remove the surfacing.

15. **Temporary Guardrail**. The contract price includes all resources required to construct, maintain, and remove the guardrail.

16. **Portable Steel Barrier**. The contract price includes all resources required to provide, install, maintain, move, and remove each barrier.

7. **Lighting for Night Work**. Payment for illuminating night work areas and any required adjustments to work zone illumination is subsidiary to other items.

18. **Pavement Breaks**. Temporary hot mix asphalt at pavement breaks, as noted in Subsection 643-3.02. Gravel Surface Not Specified is subsidiary to Pay Item 401.0001.____.

19. **Temporary Pavement Markings**. Except where specified as an individual Pay Item (Interim Pavement Markings) temporary pavement markings are subsidiary to Section 670 Pay Items. Refer to Section 670 Traffic Markings, for further information.

20. **Temporary Crash Cushion / Redirective**. The price listed in the Traffic Control Rate Schedule, Table 643-5, will be full compensation for the purchase, installation, maintenance during construction, removal, and salvaging the Temporary Crash Cushion / Redirective unit(s). Deliver the salvaged unit(s) to the nearest ADOT & PF Maintenance & Operations Station or as directed by the Engineer.

Traffic control devices, barriers, and crash cushions required to delineate or shield fixed objects will not be measured or paid for separately, but will be subsidiary

Traffic control devices, barriers, and crash cushions required to delineate or shield guardrail posts or non-crashworthy ends will not be measured or paid for separately, but will be subsidiary, when required for failure to meet completion timelines in subsection 606-3.01.

TABLE 643-5
TRAFFIC CONTROL RATE SCHEDULE

Traffic Control Device	Pay Unit	Unit Rate
Construction Signs	Each/Day	$6.50
Special Construction Signs	Square Foot	$31.00
Type II Barricade	Each/Day	$3.30
Type III Barricade	Each/Day	$11.00
Traffic Cone or Tubular Marker	Each/Day	$1.10
Drums	Each/Day	$3.30
Temporary Guardrail	Lineal Foot	$35.00
Portable Concrete or Steel F Shape Barrier (12.5 foot long or $8/foot for other lengths)	Each	$100.00
Temporary Crash Cushion / Non-redirective Water Filled Barrier (all required per end)	Each	$2500.00
Temporary Crash Cushion / Non-redirective Water Filled Barrels (all required per end)	Each	$3285.00
Temporary Crash Cushion / Non-redirective Sand Filled Barrels (all required per end)	Each	$4325.00
Temporary Crash Cushion / Redirective	Each	$9230.00
Plastic Safety Fence	Lineal Foot	$1.00
Temporary Sidewalk Surfacing	Square Foot	$2.00
Flexible Markers (Flat Whip, Reflective)	Each	$60.00
Cars and Trucks w/driver		
Pilot Car (4x2, 1/2 ton truck)	Hour	$128.00
Watering Truck – up to 4900 gallon capacity	M-Gallon	$40.00
Watering Truck – more than 4900 gallon	M-Gallon	$30.00
Street Sweeping: Regenerative Sweeper, Vacuum Sweeper, Mechanical or Power Broom with Vacuum	Hour	$214.00
40,000 GVW Truck with Crash Attenuator	Hour	$162.00
Electronic Boards, Panels, and Signals		
Sequential Arrow Panel	Each/Day	$60.00
Portable Changeable Message Board Sign	Calendar Day	$210.00

PAY ITEM

Item Number	Item Description	Unit
643.0001.____	Traffic Maintenance	CDAY
643.0002.____	Traffic Maintenance	LS
643.0003.____	Permanent Construction Signs	LS
643.0004.____	Construction Sign	Day
643.0005.____	Type II Barricade	Day
643.0006.____	Type III Barricade	Day
643.0007.____	Traffic Cone/Tubular Marker	Day
643.0008.____	Plastic Safety Fence	LF
643.0009.____	Drum	Day
643.0010.____	Sequential Arrow Panel, Type C	Day
643.0011.____	Special Construction Signs	SF
643.0012.____	Portable Concrete Barrier	Each
643.0013.____	Temporary Crash Cushion	Each
643.0014.____	Interim Pavement Marking	STA
643.0015.____	Flagging	HR
643.0016.____	Pilot Car	HR
643.0017.____	Street Sweeping	HR
643.0018.____	Watering	MGAL
643.0019.____	Lane Closure	HR
643.0020.____	Detour	Day
643.0021.____	Road Closure	Day
643.0022.____	One Lane Road	HR
643.0023.____	Traffic Price Adjustment	CS
643.0024.____	Portable Changeable Message Board Sign	Day
643.0025.____	Traffic Control	CS
643.0026.____	Temporary Sidewalk Surfacing	SY
643.0027.____	Temporary Guardrail	LF
643.0030.____	Portable Steel Barrier	LF
643.0031.____	Interim Pavement Marking	LS
643.0032.____	Flagging	CS
643.0033.____	Detour	LS

CR643-24.0401

SECTION 644
SERVICES TO BE FURNISHED BY THE CONTRACTOR

Special Provisions

Replace Subsection 644-2.01 with the following:

644-2.01 FIELD OFFICE. Furnish and maintain a suitable office for the Engineer, available for occupancy from 2 weeks before beginning work, through 30 days after issuance of the notice of project completion as defined in Subsection 105-1.15. The following office requirements shall be met:

1. A minimum of 1000 square feet of floor area. The office area shall be divided so that it contains an office room separated by a closable door. The office room shall have a minimum of 160 square feet of floor area.
2. A thermostatically controlled interior heating system with necessary fuel.
3. Adequate electrical lighting and 120 volt, 60 hertz power, with a minimum of 6 electrical outlets.
4. A minimum of 100 square feet of window area and adequate ventilation.
5. Adequate parking for a minimum of 16 vehicles, with one handicap parking space meeting the requirements of Americans with Disabilities Act Accessibility Guidelines (ADAAG).
6. Attached indoor plumbing with sanitary lavatory facilities and potable drinking water provided.
7. Provide engineering communication services to the field office, Subsection 644-2.08.
8. If a part of the Contractor's building, it shall be completely partitioned off from the balance of the structure and provided with a separate outside door equipped with a lock.
9. Located within 3 miles of the project.
10. Weekly janitorial service consisting of emptying trash receptacles, vacuuming office area, and cleaning restrooms and counter areas.
11. Provide one mobilization and one demobilization of the Engineer's office equipment and furniture.
12. Provide a security system controlled by the Department for the office including camera coverage for the vehicle parking.

CR644.FOCOM-080120

644-2.05 VEHICLES.

Replace the second and third paragraphs with the following:

Pickup(LT)/Sport Utility Vehicle (SUV): Furnish full-size, four-wheel drive vehicles, either pickup/light truck(s) with crew cabs or sport utility vehicle(s). Provide vehicles less than three model years old, in good condition, and with less than 36,000 miles on the odometer. Furnish all fuels, maintenance and parts, and insurance during the Department's operation and use.

Equip each vehicle with lightbars wired into the vehicle's electrical system with a dash mounted switch easily accessible to the vehicle operator. Provide Code 3; Reflex C5590AA 15.3-inch mini lightbar, or approved equal. Approved equal equipment shall have the following characteristics:

- (4) 55 watt rotators with amber filters
- 1200 flashes per minute
- (2) diamond mirrors
- 55 inches in length

Equip each vehicle with hands-free communication connectivity.

If you are working after October 1, provide four studded snow tires mounted on each vehicle.

You are responsible for normal wear and tear, and any other incidental damage including broken windshields, occurring during the Department's operation and use. The State of Alaska is responsible for damage to any vehicle caused by its own negligent operation.

CR644.LTSUV-113020

Add the following Subsection 644-2.08 Engineering Communication and Office Equipment:

644-2.08 ENGINEERING COMMUNICATION AND OFFICE EQUIPMENT. Engineering Communications and Office Equipment, minimum service includes:

1. Three phone/facsimile lines and commercial phones (different phone numbers for each line)

    a. One phone with built-in digital answering machine.
    b. Ancillary equipment for operational service and as required by the Engineer.

2. High speed internet service with modem (DSL or Cable)

    a. Send and receive capability supporting 10.0 Mbps download and upload speed or higher at all times.
    b. Data usage, 10 GB minimum monthly.
    c. Wireless router.
    d. Battery backup.
    e. Ancillary equipment for operational service and as required by the Engineer.

3. Equipment rental services

    a. All-in-one printer/copier/scanner
        (1) Black-white and color
        (2) Pages per minute (ppm): 50
        (3) Paper trays: 8.5" x 11" and 11" x 17"
        (4) Capacity: 1100 sheets minimum

CR644.FOCOM-080120

644-4.01 METHOD OF MEASUREMENT.

Replace the third paragraph with following:

Vehicle (LT/SUV). For each vehicle provided. If a replacement vehicle is necessary, no additional measurement will be made.

CR644.LTSUV-113020

644-5.01 BASIS OF PAYMENT.

Add the following:

Pay Item 644.2007.____ Vehicle (LT/SUV):

1. A percentage of the Contract unit price, to be determined by the Engineer, will be paid as full compensation for furnishing the vehicle at the site.

2. The balance of the Contract unit price will be prorated over the anticipated active construction period with a portion included as part of each interim payment, for maintenance, repairs, and fuel and, at the end of the project, for removing it from the site. If anticipated construction period changes, the final increment will be held until final payment.

PAY ITEM

Item Number	Item Description	Unit
644.2007.____	Vehicle (LT/SUV)	Each

CR644.LTSUV-113020

Add the following:

Pay Item 644.2004.____ Engineering Communications:

Usage services including long distance calls made by State personnel and the Internet service provider will be reimbursed by the State. Payment for communication usage services and equipment rental agreements shall be based on paid receipts to the service provider plus 15%.

Connection fees (initial connection) local calls, providing equipment and disconnection are subsidiary to Pay Item 644.0001.____ Field Office and as such are paid by the Contractor.

PAY ITEM

Item Number	Item Description	Unit
644.2004.____	Engineering Communications	CS

CR644.FOCOM-080120

Special Provision

Add the following Section:

SECTION 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 ADOT&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 ADOT&PF trainee written evaluation reports for each unit of training provided as established on Form 25A-310.

645-3.02 WAGES. Trainees in ADOT&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

HSP20.2-113020

SECTION 646
CPM SCHEDULING

Special Provisions

Replace Subsection 646-2.01 with the following:

646-2.01 SUBMITTAL OF SCHEDULE.

Submit a detailed initial CPM Schedule at the preconstruction conference for the Engineer's acceptance as set forth below.

The construction schedule for the entire Project shall not exceed the specified contract time. Allow the Engineer 14 days to review the initial CPM Schedule. Revise promptly. The finalized CPM Schedule must be completed and accepted before beginning work on the Project.

646-3.01 REQUIREMENTS AND USE OF SCHEDULE.

Replace the first sentence of No. 2 Schedule Updates. with the following:

Hold job site progress meetings with the Engineer for the purpose of updating the CPM Schedule. Meet with the Engineer monthly or as deemed necessary by the Engineer.

CR646.1-23.0501

Special Provisions

Add the following Section:

SECTION 647
EQUIPMENT RENTAL

647-1.01 DESCRIPTION. This item consists of furnishing construction equipment, operated, fueled, and maintained, on a rental basis for use in construction of extra or unanticipated work at the direction of the Engineer. Construction equipment is defined as that equipment actually used for performing the items of work specified and shall not include support equipment such as, but not limited to, hand tools, power tools, electric power generators, welders, small air compressors and other shop equipment needed for maintenance of the construction equipment.

The work is to be accomplished under the direction of the Engineer, and the Contractor's operations shall at all times be in accordance with the Engineer's instructions. These instructions by the Engineer shall be to the Contractor's supervisory personnel only, not to the operators or laborers. In no case shall these instructions by the Engineer be construed as making the Department liable for the Contractor's responsibility to prosecute the work in the safest and most expeditious manner.

647-2.01 EQUIPMENT FURNISHED. In the performance of this work, the Contractor shall furnish, operate, maintain, service, and repair equipment of the numbers, kinds, sizes, and capacities set forth on the Bid Schedule or as directed by the Engineer. The operation of equipment shall be by skilled, experienced operators familiar with the equipment.

The kinds, sizes, capacities, and other requirements set forth shall be understood to be minimum requirements. The number of pieces of equipment to be furnished and used shall be, as the Engineer considers necessary for economical and expeditious performance of the work. The equipment shall be used only at such times and places as the Engineer may direct.

Equipment shall be in first class working condition and capable of full output and production. The minimum ratings of various types of equipment shall be as manufactured and based on manufacturer's specifications. Alterations will not be considered acceptable in achieving the minimum rating. Equipment shall be replaced at any time when, in the opinion of the Engineer, their condition is below that normal for efficient output and production.

Equipment shall be fully operated, which shall be understood to include the operators, oilers, tenders, fuel, oil, air hose, lubrication, repairs, maintenance, insurance, and incidental items and expenses.

647-2.02 EQUIPMENT OPERATORS AND SUPERVISION PERSONNEL. Equipment operators shall be competent and experienced and shall be capable of operating the equipment to its capacity. Personnel furnished by the Contractor shall be, and shall remain during the work hereunder, employees solely of the Contractor.

The Contractor shall furnish, without direct compensation, a job superintendent or Contractor's representative together with such other personnel as are needed for Union, State, or Federal requirements and in servicing, maintaining, repairing and caring for the equipment, tools, supplies, and materials provided by the Contractor and involved in the performance of the work. Also, the Contractor shall furnish, without direct compensation, such transportation as may be appropriate for the personnel.

647-3.01 CONSTRUCTION REQUIREMENTS. The performance of the work shall be according to the instructions of the Engineer, and with recognized standards and efficient methods.

The Contractor shall furnish equipment, tools, labor, and materials in the kinds, number, and at times directed by the Engineer and shall begin, continue, and stop any of the several operations involved in the work only as directed by the Engineer.

Normally, the work is to be done when weather conditions are reasonably favorable, 6 days per week, Mondays through Saturdays, except holidays.

The Engineer will begin recording time for payment each shift when the equipment begins work on the project. The serial number and brief description of each item of equipment listing in the bid schedule and the number of hours, or fractions thereof to the nearest one quarter hour, during which equipment is actively engaged in construction of the project shall be recorded by the Engineer. Each day's activity will be recorded on a separate sheet or sheets, which shall be verified and signed by the Contractor's representative at the end of each shift, and a copy will be provided to the Contractor's representative.

647-4.01 METHOD OF MEASUREMENT. Section 109.

Hourly Rental Rate: Includes the equipment rate plus the operating costs including: furnishing, travel time, operating, maintaining/servicing and repairing the equipment along with the costs incidental to the equipment and its' operation.

647-5.01 BASIS OF PAYMENT. Payment is for the time that fully operational equipment is engaged in the performance of the work directed by the Engineer. Time not payed for includes: idle periods, maintaining/servicing and repairing the equipment, making change-overs of equipment parts, and time to travel to and from the project. Payment will only be for time supported by certified payroll.

Furnishing and operating equipment that is heavier, has larger capacity, or greater power than specified will not entitle the Contractor to extra compensation.

Pay Item 647.2000.____ Wide Pad Dozer, 65-HP Minimum: payed at the rate of $0/hour.

Pay Item 647.2002.____ Backhoe, 4WD, 1 CY Bucket, 75-HP Minimum, 15 ft Depth: payed at the rate of $0/hour.

PAY ITEM

Item Number	Item Description	Unit
647.2000.____	Wide Pad Dozer, 65-HP Minimum	CS
647.2002.____	Backhoe, 4WD, 1 CY Bucket, 75-HP Minimum, 15 ft Depth	CS

CR647-110316R

Special Provisions

Add the following Section:

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:
Matanuska Electric Association (MEA)
Matanuska Telephone Association (MTA)

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.:**
Victory Road Pavement Preservation	CFHWY00672

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.

CR651-23.0601/CFHWY01286

CR651/CFHWY01286

Special Provisions

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."

CR652-23.0501/CFHWY01286

CR652/CFHWY01286

Special Provision

Add the following Section:

SECTION 654
MONITOR

654-1.01 DESCRIPTION. When authorized by directive, engage a Professional Service Contractor to monitor eagle(s) at their nests.

654-1.02 SUBMITTAL.

1. Eagle Monitoring Plan and documentation as required by the monitoring plan.

2. Professional Service Contractor resume(s).

654-1.03 QUALIFICATIONS. Each position is required to be an employee of the Professional Service Contractor.

Professional Service Contract Manager

1. Bachelor of Science degree in biology, environmental science, or ecology and working in the field of the degree, or

2. Two years of experience monitoring or studying the habitat of birds of prey.

Monitor

1. Professional Service Contract Manager or a person trained and supervised by the Professional Service Contract Manager or other similarly qualified representative.

654-2.01 MATERIALS.

Video Camera	Optical zoom lens, minimum 10 power

654-3.01 CONSTRUCTION REQUIREMENTS.

Before beginning construction activity in the restricted area(s) specified in the directive, submit and receive approval for the following:

1. The qualifications of the Professional Service Contract Manager and Monitor.

2. An Eagle Monitoring Plan prepared by the Professional Service Contract Manager coordinated with the Contractors' Work Plan for work in the restricted area or any timing restricted period.

During Construction, submit and receive approval for the following:

1. Eagle monitoring documentation, reports, forms, video as required by the approved Eagle Monitoring Plan and included in the authorizing directive.

Refer to Section 107-1.11 Eagles for further information.

654-4.01 METHOD OF MEASUREMENT. Eagle monitoring measured as specified in the authorizing directive.

654-5.01 BASIS OF PAYMENT. Eagle monitoring work specified in the authorizing directive.

PAY ITEM

Item Number	Item Description	Unit
654.2002.____	Eagle Monitoring	CS

CR654-100117R

Special Provisions

Add the following Section:

SECTION 682
UTILITY POTHOLING

682-1.01 DESCRIPTION. Expose subsurface utilities using a vacuum-extract truck. Record the location of the utility(s). Backfill the pothole and dispose of waste materials.

682-2.01 MATERIALS.

Backfill Material:	Aggregate Base Course, Grading D-1	Section 703
Asphalt Patch Material:	Hot Mix Asphalt Type II, Class B	Section 401

682-3.01 CONSTRUCTION. Submit the utility potholing schedule to the Engineer and utility companies not less than 7 days before starting potholing.

Deliver the vacuum-extract truck to the job-site with the debris tank empty.

Expose the subsurface utilities. Log the as-built information, subsection 682-3.02. Backfill the pothole immediately after the Engineer accepts the logged data. Backfill the first 6 inch lift using the excavated material, compact the material. Backfill the balance of the pothole using Aggregate Base Course, Grading D-1, compact the material. In paved areas, use Hot Mix Asphalt Type II, Class B to patch over the pothole, match the thickness of the surrounding pavement.

Dispose of excavations off-site. Before beginning potholing, provide to the Engineer a certificate, signed by the owner or owner's representative, identifying the disposal site and acceptance of the project potholing excavations.

Utilities damaged by the potholing operation require the Engineer to be immediately notified. The Contractor is responsible for the repairs and the associated costs. Contact and coordinate repairs with the utility owner.

682-3.02 AS-BUILTS. Create a utility pothole log, as-built, recording for each pothole: the date of potholing operation, utility type and size, station, offset, elevation, groundwater, and other pertinent data. Survey the utility location using the project horizontal and vertical control; comply with the requirements of Section 642. Submit the completed log to the Engineer within two working days following the completion of the pothole excavation.

682-4.01 METHOD OF MEASUREMENT. The pay unit, contingent sum, is measured by the hour of work performed.

682-5.01 BASIS OF PAYMENT. Pay Item No. 682.2000.____ is paid at $450/hour for the work to pothole; expose the utility(s), backfill the hole, patch disturbed pavement and dispose of excavations. The paid time includes the work; labor, and the fully operated vacuum truck or combination of vacuum truck and other Engineer approved equipment engaged in potholing at the area(s) identified in the Plans and/or identified by the Engineer. The paid time includes the time to empty the vacuum truck of excavation material, including the travel time, from this project only, to a certified disposal site.

Travel time to and from the project, idle time, maintenance and repairs (labor, material and time) are incidental and not included in the measured time.

As-built, utility pothole log, per subsection 682-3.02, will be paid under Section 642.

Potholes for the Contractor's information and potholes not accepted by the Engineer will not be paid for by the Department.

Payment will be made under:

PAY ITEM

Item Number	Item Description	Unit
682.2000.____	Vac-Truck Pothole	CS

CR682-010114R

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DIVISION 700 — MATERIALS

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SECTION 701
HYDRAULIC CEMENT AND SUPPLEMENTARY CEMENTITIOUS MATERIALS

Add the following:

701-2.10 CONCRETE PATCH MATERIAL. Use pre-packaged concrete formulated for repair and patching of concrete structures in aggressive exposures. Concrete may be extended with aggregate according to the manufacturer's written recommendations and instructions.

Provide concrete patch material that meets the requirements of ASTM C928 and Table 701-2. Use water that meets the requirements of Subsection 712-2.01. Provide the manufacturer's recommended batching and installation procedures and minimum cure time.

Protect concrete from moisture during shipment and storage. Use concrete per manufacturer's shelf life, or 2 years maximum, whichever is less, unless the manufacturer retests and certifies the product meets the specified requirements.

Submit a quality control data sheet covering the chemical and physical tests conducted on the concrete patch material for the material in each shipment. Submit a Certified Test Report from an independent laboratory, audited by the Cement and Concrete Reference Laboratory that shows the material meets the property requirements.

TABLE 701-2
CONCRETE PATCH MATERIAL

Property	Requirements	Test Method
Compressive Strength	Min. 3000 psi after 1 day Min. 5000 psi after 28 days	ASTM C109
Bond Strength	Min. 2000 psi after 1 day	ASTM C882
Length Change	Max. 0.05% after 28 days	ASTM C157
Scaling Resistance	No Scaling (0 Rating) at 50 cycles	ASTM C672
Chloride Ion Permeability	Very Low (<1000 Coulombs) at 28 days	ASTM C1202

CFHWY01286

SECTION 702
ASPHALT MATERIALS

Standard Modification

Replace Subsection 701-2.01 with the following:

702-2.01 ASPHALT BINDER. Meet AASHTO M 320 or M 332 for the specified Performance Grade, except as indicated in Table 702-2.01-1 Exceptions to Performance-Graded Binder Specifications.

TABLE 702-2.01-1
EXCEPTIONS TO PERFORMANCE GRADED ASPHALT BINDER SPECIFICATIONS

Performance Grade	AASHTO Specification	Viscosity AASHTO T 316	MSCR, AASHTO T 350			PAV, Dynamic Shear AASHTO T 315	Direct Tension AASHTO T 314
			$J_{NR3.2}$ kPa^{-1}	J_{NR} Diff	% $Recovery_{3.2}$		
PG 52-28	M 320	None	—	—	—	None	Delete
PG 52-34 E	M 332	None	None	Delete	60 min.	None	Delete
PG 58-28 E	M 332	None	None	Delete	60 min.	None	Delete
PG 58-34 V	M 332	None	None	Delete	60 min.	None	Delete
PG 64-28 E	M332	None	None	Delete	60 min.	None	Delete
PG 52-40 E	M 332	None	None	Delete	75 min.	None	Delete
PG 58-34 E	M 332	None	0.25 max.	Delete	85 min.	None	Delete
PG 64-40 E	M 332	1 Pa•s max.	0.10 max.	Delete	95 min.	5000 max. @ 4°C	Delete

None indicates no exceptions from the listed test. Delete indicates this property is not required from the listed test.

Use asphalt binders without re-refined engine oil bottoms (REOB)/vacuum tower extenders (VTAE) as a modifier. REOB/VTAE are materials as defined in the Asphalt Institute document IS-235. Furnish a certificate of compliance according to Subsection 106-1.05.1 certifying that REOB/VTAE were not used as a modifier of asphalt binder.

HSM20.44-23.0801

702-2.03 EMULSIFIED ASPHALT.

Replace item 1. with the following:

1. Cationic Emulsified Asphalt. Meet AASHTO M 208, except CRS-2P meet AASHTO M316.

HSM20.32-21.1231

702-2.07 WARM MIX ASPHALT (WMA). Add the following to Table 702-3:

WMA Technology	Process Types	WMA Supplier
AD-here ULTRA 1	Chemical Additive	Arkema – Road Science
Cecabase RT	Chemical Additive	Arkema – Road Science

HSM20.44-23.0801

SECTION 703
AGGREGATES

Standard Modification

703-2.03 AGGREGATE FOR BASE AND SURFACE COURSE.

In Table 703-1 replace the line for Degradation Value with the following:

TABLE 703-1
AGGREGATE QUALITY PROPERTIES FOR BASE AND SURFACE COURSE

PROPERTY	BASE COURSE	SURFACE COURSE	TEST METHOD
Micro-Deval	15%, max.	15%, max.	AASHTO T 327

HSM20.40-050122

Special Provisions

Replace Subsection 703-2.04 with the following:

703-2.04 AGGREGATE FOR HOT MIX ASPHALT. Process and crush aggregate that is free from clay balls, organic matter, other deleterious material, and not coated with dirt or other finely divided mineral matter. Aggregate used must consist of sound, tough, durable rock of uniform quality.

Remove all natural fines passing a No. 4 sieve before crushing aggregates for Type IV, and VH mixes.

Coarse Aggregate. Aggregate retained on the No. 4 Sieve.

Meet Table 703-3 requirements:

TABLE 703-3
COARSE AGGREGATE QUALITY FOR HMA

Description	Specification	Type II, Class A	Type I; Type II, Class B; Type III	Type IV	Type VH
LA Wear, % max.	AASHTO T 96	45	45	45	45
Micro-Deval, % max.	AASHTO T 327	18	18	18	18
Sodium Sulfate Loss, % max. (5 cycles)	AASHTO T 104	9	9	9	9
Fracture, % min.	ATM 305	90, 2 face	80, 1 face	90, 2 face	98, 2 face
Flat-Elongated Pieces, % max.	ATM 306				
1:5		8	8	8	8
Absorption, % max.	ATM 308	2.0	2.0	2.0	2.0
Nordic Abrasion, % max.	ATM 312	-	-	-	8 [a]

a. Hard Aggregate that meets the Nordic Abrasion values specified may be obtained from, but not limited to, the following sources:

- MS 52-068-2, located at MP 217 on the Parks Highway near Cantwell
- Alaska Lime Co, Jim Caswell, located at MP 216.5 on the Parks Highway near Cantwell
- CalPortland plants located in Dupont Washington
- Jack Cewe Ltd located in Coquitlam British Columbia, Canada

Fine Aggregate. Aggregate passing the No. 4 sieve.

Aggregate shall meet the quality requirements of AASHTO M 29, including S1.1, Sulfate Soundness.

Aggregate for Type II, Class A mix shall not contain more than 10% natural fines (blend sand and mineral filler) added to the crushed aggregate, and shall not exhibit rut depth larger than 1/4-inch, as determined by ATM 419.

Fine aggregate for Type IV and 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

CR703.1-050122

703-2.05 AGGREGATE FOR COVER COAT AND SURFACE TREATMENT.

In Table 703-5 replace the line for Degradation Value with the following:

TABLE 703-5
QUALITY PROPERTIES FOR COVER COAT AND SURFACE TREATMENT

Micro-Deval	AASHTO T 327	15%, max.

HSM20.40-050122

Special Provision

703-2.07 SELECTED MATERIAL.

Replace 1. Type A with the following:

1. Type A. Aggregate containing no muck, frozen material, roots, sod or other deleterious matter and with a plasticity index not greater than 6 as tested by ATM 204 and ATM 205. Meet the following gradation as tested by ATM 304:

Sieve	Percent Passing by Weight
No. 4	20-55%
No. 200	0-6%, determined on the minus 3-inch portion of the sample

CR703.1-050122

703-2.09 SUBBASE.

In Table 703-8 replace the line for Degradation Value with the following:

TABLE 703-8
QUALITY PROPERTIES FOR SUBBASE

Micro-Deval	AASHTO T 327	25%, max.

HSM20.40-050122

703-2.10 POROUS BACKFILL MATERIAL.

Add the following to the end of the paragraph:

Use Gradation A unless otherwise specified.

HSM20.33-123121

Special Provision

703-2.13 STRUCTURAL FILL. Replace Table 703-12 with the following:

TABLE 703-12
AGGREGATE GRADATION FOR STRUCTURAL FILL

SIEVE	PERCENT PASSING BY WEIGHT
3-inch	100
3/4-inch	75-100
No. 4	20-55
No. 200	0-6

Replace Subsection 703-2.16 with the following:

703-2.16 RECYCLED ASPHALT PAVEMENT (RAP). RAP shall be free of contamination and deleterious materials. RAP maximum particle size shall not exceed 1.5-inch.

CR703.1-050122

SECTION 705
JOINT MATERIAL

Special Provisions

705-2.05 FLEXIBLE WATERTIGHT GASKETS. In 2. Joining flexible metal pipe (steel and aluminum)" delete Item "a. ASTM C433". Re-letter the remaining items.

HSM20.48-24.0129

SECTION 708
PAINTS

Standard Modification

708-2.01 PAINT FOR STEEL STRUCTURES.

3. Top Coat. In the 2nd sentence of the 1st paragraph, replace Federal paint specification "FSS No. 595B" with "AMS-STD-595".

HSM20.31-123121

SECTION 710
FENCE AND GUARDRAIL

Special Provision

Replace Subsection 710-2.04 with the following:

710-2.04 METAL BEAM RAIL.

1. W-Beam and Thrie Beam Guardrail. Meet AASHTO M 180, Class A, Type II.

2. Box-Beam Guardrail. Meet ASTM A500 Grade B, or ASTM A501.

3. Symmetric and Asymmetric W-Thrie Beam Transition Section. Meet AASHTO M 180, Class B, Type II.

Galvanize the rail per AASHTO M 111 after fabrication.

710-2.06 GUARDRAIL POSTS AND BLOCKOUTS.

Add the following:

4. Transition Posts. Meet the section and length specified on the Plans. Meet ASTM A992 or ASTM A709, Grade 50.

5. Transition Blockouts. Meet the shape and dimensions shown on the Plans. Meet ASTM A500. Grade B or Grade C.

Replace Subsection 710-2.11 with the following:

710-2.11 GUARDRAIL TERMINALS.

W-beam shall meet requirements of AASHTO M 180, Class A, Type II. Box beam shall meet requirements of ASTM A500 Grade B, or ASTM A501. Galvanize after fabrication.

Components made from rolled pressed and forged shapes, castings, plates, bars, and strips shall meet the coating requirements of AASHTO M 111. Galvanize after fabrication.

All hardware or fasteners supplied shall meet the coating requirements of AASHTO M 232.

Guardrail Terminals shall be AASHTO MASH Test Level 3.

1. W-Beam. Provide one of the following terminal types, as shown on the plans, for single-rail W-beam guardrail. Design requirements: 31-inch top of rail height, 8-inch blockouts, W6x8.5 steel posts, 12 ft x 6-inch w-beam panels, and mid-span splice connection to run of rail.

    a. Parallel Terminals. Provide terminals meeting the following:

        (1) Length: 50 ft nominal effective length.

        (2) End Offset: 0 ft to 2 ft (25:1 or flatter straight taper). Offset end as shown on the plans.

    b. Buried in Backslope Terminal. Provide terminals as shown on the Plans.

2. Box Beam. Provide terminals, as shown on the plans for box beam guardrail. Design requirements: 28-inch top of rail height, designed for use with 6-inch by 6-inch by 3/16-inch box beam.

    a. Parallel Terminals. Provide terminals meeting the following:

(1) Length: 33 ft nominal effective length, or a minimum 18 ft of box beam rail and standard 3-inch weak posts beyond the 1/8-inch tube rail, or as recommended by the manufacturer's installation manual.

(2) End Offset: 25:1 or flatter straight taper. Offset end as shown on the plans.

Add the following Subsection 710-2.12 Transition Connection:

710-2.12 TRANSITION CONNECTION.

1. Thrie Beam Terminal Connector. Meet AASHTO M 180, Class B, Type II.

2. Guardrail Connection Plate. Meet ASTM A709, Grade 50.

HSM20.34-123121

SECTION 724
SEED

724-2.01 DESCRIPTION. Grass seed to provide a living vegetative cover.

724-2.02 MATERIALS. Provide seed mix as specified in the Special Provisions. Provide seed collected or harvested within 2 years of the targeted seeding date. Provide all seed in pure live seed (PLS) unless otherwise directed.

Furnish seed true of genus and species. Meet applicable requirements of the State of Alaska *Seed Regulations*, Alaska Administrative Code, Title 11, Chapter 34, (11 AAC 34), and the Federal Seed Act, 7 CFR Part 201.

The Engineer will review requests for genus, species, or cultivar substitutions(s). The Contractor shall submit a proposed seed mix accompanied by approval from the Alaska Plant Materials Center, and confirmation the vendor can provide the requested mix in quantities adequate for the project.

1. Prohibited and Restricted Noxious Weeds and Quarantined Pests. Furnish seed certified to be free of prohibited noxious weeds or quarantined pests, and certified to contain no more than the maximum allowable tolerances for restricted noxious weeds, according to 11 ACC 34.

    a. Seed found to contain prohibited noxious weeds or quarantined pests will be rejected, according to 11 AAC 34.020(a) and 11 AAC 34.105 through 34.180, respectively.

    b. Seed found to contain restricted noxious weed seed in excess of the maximum allowable tolerance per pound will be rejected, according to 11 AAC 34.020(b).

    Prohibited and restricted noxious weeds are listed in 11 AAC 34.020, and can be viewed at the following URL: http://plants.alaska.gov/invasives/noxious-weeds.htm.

2. Labeling. Ensure each bag or container of individual seed species is labeled to meet requirements of 11 AAC 34.010. Do not remove labels from bags or containers.

3. Certification. Certify seed is free of prohibited noxious weeds and restricted noxious weeds are within allowable tolerances. Furnish to the Engineer a statement signed by the vendor identifying the lot number or lot numbers, certifying each lot of seed has been tested within the preceding nine months, by a recognized seed testing laboratory, a member of the Association of Official Seed Certifying Agency (AOSCA), or the Alaska Plant Materials Center.

    Seed will be rejected if:

    a. Contains prohibited noxious weeds;

    b. Contains restricted noxious weeds above maximum allowable tolerances;

    c. Not certified as tested within the preceding nine months;

    d. Wet, moldy, or otherwise damaged in transit or storage; or

    e. Containers do not have labels or the labels have been removed.

    Seed may be rejected for:

    a. Discrepancies in the lot numbers listed on the statement to the lot numbers indicated on the labels of the seed containers.

The Contractor shall immediately remove rejected seed from the project premises. If seed is rejected for containing prohibited noxious weeds or for exceeding maximum allowable tolerances of restricted noxious weeds, dispose of rejected seed according to 11 AAC 34.075(g).

CR724-113020

Special Provision

Replace Section 726 with the following:

SECTION 726
TOPSOIL

726-2.01 TOPSOIL. Furnish topsoil that is representative of the existing, natural organic blanket of the project area, and free of prohibited and restricted noxious weeds (Prohibited and Restricted Noxious Weeds 11AAC 34.020 http://plants.alaska.gov/invasives/noxious-weeds.htm). Perform a quality test, as defined by ATM 203, on the soil to determine the organic content of the soil. Supply the results to the Engineer.

Soil with an organic content of 5 percent or more may be reused and spread on the finished slopes where topsoil is noted on the plans. Remove roots, stumps, unnatural material, and rocks greater than 3 inch in diameter from the organic material before it is graded onto the finished slope.

Soil with an organic content of less than 5 percent cannot be used as topsoil for the project. In this case furnish topsoil consisting of a natural friable surface soil without admixtures of undesirable subsoil, refuse or foreign materials having an organic content of 5 percent or more, as determined by ATM 203. The material shall be reasonably free from roots, clods, hard clay, rocks greater than 3 inches in diameter, noxious weeds, tall grass, brush, sticks, stubble or other litter, and shall be free draining and nontoxic. Notify the Engineer of the topsoil source location at least 30 calendar days before delivery of topsoil to the project from the identified location. The Engineer will inspect the topsoil and its sources before approval will be granted for its use.

TABLE 726-1
LIMESTONE REQUIREMENTS

Soil pH	Limestone, tons/acre
Above 6.0	0
5.0-6.0	1.5
Below 5.0	3.0

CR726-20.0101R

Special Provisions

Replace Section 727 with the following:

SECTION 727
SOIL STABILIZATION MATERIAL

727-2.00 GENERAL. Free of restricted and prohibited noxious weeds (11 AAC 34), seeds, chemical printing ink, germination and growth inhibitors, herbicide residue, chlorine bleach, (except where specified: rock, metal, plastics) and other deleterious materials and not harmful to plants, animals and aquatic life. Wood cellulose "paper" fiber, wood chips, sawdust, and hay are not permitted as stand-alone stabilization materials.

727-2.01 MULCH. Flexible blanket/covering, temporary degradable (bio/photo) form of erosion control. Use one of the following:

Dry Erosion Control, Stabilization Products. Hand applied or spread with mulch blower equipment.

1. Straw. Use straw, in an air-dried condition, from oats, wheat, rye, barley, or other approved grain crops that are free from noxious weeds, seeds, mold, or other materials detrimental to plant life. Straw material shall be certified weed-free straw using North American Invasive Species Management Association (NAISMA) Standards. In-lieu of certified weed-free straw provide documentation that the material is steam or heat treated to kill seeds or provide U.S. or state's department of agriculture laboratory test reports, dated within 90 days prior to the date of application showing that there are no viable seeds in the straw.

2. Shredded Bark Mulch. Shredded bark and wood with the following characteristics:
   a. Not containing resin, tannin, or other compounds in quantities harmful to plant life.
   b. Maximum length of individual pieces is 2 inches with 75% passing through a 1 inch sieve.
   c. Will form a uniform ground cover/mat, have moisture absorption, retention, and percolation properties, not be susceptible to spreading by wind or rain providing a good growth medium.
   d. May contain up to 50% shredded wood material.
   e. Shredded wood material aged 1 year minimum prior to use.

Hydraulic Erosion Control Products (HECPs) Applied hydraulically.

A fiber mulch matrix: biodegradable and composed of wood, straw, coconut and other fibers natural and man-made. When applied, create a continuous, porous, absorbent high water holding, flexible blanket/mat/mulch/covering making intimate contact with, and adhering to sloped soil surface; permitting water infiltration; resists erosion and promotes rapid germination and accelerated plant growth. The fibers may be thermally processed, and cross-linked with a hydro-colloidal or linear anionic tackifier (curing period 24-48 hours) or mechanically-bonded (no curing period). When agitated in slurry tanks with water the fibers will become uniformly suspended, without clumping to form homogeneous slurry.

The HECPs shall be delivered premixed by the manufacturer. The HECP will contain only the materials provided in the sealed containers from the manufacturer. No added components are permitted after the manufacturer seals the product container, before application, during application or otherwise. Submit documentation dated within 3 years of application, from an independent accredited laboratory as approved by the Engineer, showing that the product's testing performance meets the requirements for the slope(s) to be protected on the project, according to the National Transportation Product Evaluation Program (NTPEP), Erosion Control Technology Council (ECTC) and or the Texas DOT/Texas Transportation Institute (TTI) Laboratory.

If the HECP contains cotton or straw provide documentation that the material is certified weed free using NAISMA Standards. In-lieu of certified weed-free straw, provide documentation that the material is steam or heat treated to kill seeds or provide U.S. or state's department of agriculture laboratory test reports, dated within 90 days prior to the date of application showing that there are no viable seeds in the straw.

The HECP shall contain a dye to facilitate placement and inspection of the material.

1. Wood Strand, Fiber.
   A blend of angular, loose, long thin wood pieces with a high length to width ratio and that are frayed. Minimum 95% of strands between 2 inches and 10 inches, at least 50% of the length shall have a width thickness between 1/16 and 1/8 inch. No single strand shall have a width or thickness greater than 1/2 inch. Processed wood fiber with the following characteristics:
   a. Will remain in uniform suspension in water under agitation and will blend with grass seed, fertilizer and other additives to form homogeneous slurry.
   b. Will form a blotter-like uniform ground cover on application, have moisture absorption, retention and percolation properties, the ability to cover, and hold grass seed in contact with soil, and not create a hard crust upon drying providing a good growth medium.

2. Dried Peat Moss. Partially decomposed fibrous or cellular stems and leaves of any of several species of Sphagnum mosses with the following characteristics:
   a. Chopped or shredded to allow distribution through normal hydraulic type seeding equipment and capable of being suspended in water to form part of a homogeneous slurry.
   b. Free from woody substances and mineral matter such as sulfur or iron and with a pH value of between 4.0 and 6.5.
   c. Furnished in an air dry condition and containing less than 35% moisture by weight. Have a water holding capacity of not less than 800% by weight on an oven dry basis.

3. Fiber Matrix (FM) Mulch - Types.
   a. Stabilized Mulch Matrices (SMMs)
   b. Bonded Fiber Matrices (BFMs)
   c. Mechanical Bonded Fiber Matrix (MBFM)
   d. Polymer Stabilized Fiber Matrix (PSFM)
   e. Fiber Reinforced Matrices (FRMs)
      - Flexible Growth Medium (FGM)
      - Extended-Term Flexible Growth Medium (ET-FGM)

727-2.02 MATTING. Fiber mulches, mulch matrices, nets and turf reinforcement mats manufactured from wood fibers, straw, jute, coir, polyolefins, PVC, nylon and others creating dimensionally stable nets, meshes, geotextiles and blankets; creating a continuous, porous, absorbent, flexible blanket/mat/mulch/covering making intimate contact with and adhering to sloped soil surface, resisting erosion and promoting rapid germination and accelerated plant growth.

Rolled Erosion Control Products (RECPs) (Temporary Degradable and Permanent Erosion Control)
Use RECPs that bear the Quality and Date Oversight and Review (QDOR) Seal from the ECTC. Independent test results from the NTPEP, that the mulch, when tested according to ASTM 6459 Standard Test Method for Determination of Rolled Erosion Control Products (RECP), Performance in Protecting Hillslopes from Rainfall-Induced Erosion, meets the performance requirement using the Revised Universal Soil Loss Equation (RUSL).

Functional Longevity.

1. Temporary Degradable.

   a. Duration.

      1) Short-Term RECPs. (RECPs 3 - 12 months)
         C_{Factor} = .15 maximum
         Test Soil Type = Sandy Loam
         (National Resources Conservation Service (NCRS) Soil Texture Triangle)

      2) Moderate (Extended) -Term RECPs. (RECPs 24 months)
         C_{Factor} = .05 maximum
         Test Soil Type = Sandy Loam (NCRS Soil Texture Triangle)

3) Long-Term RECPs. (RECPs 36 months)
C_{Factor} = .01 maximum
Test Soil Type = Sandy Loam (NCRS Soil Texture Triangle)

b. Product types.

1) Mulch-Control Nets (MCNs). Planar woven natural fiber or extruded geosynthetic mesh used to anchor loose fiber matting/mulches.

2) Erosion Control Blankets (ECBs). Processed natural and/or polymer fibers, yarns or twines mechanically, structurally, or chemically bound together to form a continuous matrix with a minimum weight of 8 oz/yd^2 and a limiting shear stress of 0.45 lb/ft^2.

3) Netless. Fibers mechanically interlocked and/or chemically adhered together.

4) Single-net and Double-net. Fibers mechanically bound together by single or double netting.

5) Open Weave Textiles (OWTs). Fibers woven into a continuous matrix.

c. Materials.

1) Burlap. Standard weave with a weight of 3.5 to 10 oz/yd^2.

2) Jute Mesh Fabric. Cloth of a uniform, open, plain weave of undyed and unbleached single jute yarn. Use yarn that is loosely twisted and not varying in thickness more than one-half its normal diameter. Furnish jute mesh in rolled strips meeting the following requirements:
   a) Width: 45 to 48 inches, $\pm$ 1 inch
   b) 78 warp-ends per width of cloth (minimum)
   c) 41 weft-ends per yard (minimum)
   d) Weight: 20 ounces per linear yard, $\pm$ 5%

3) Woven Paper or Sisal Mesh Netting. Woven from twisted yarns available in rolls 45 to 48 inches wide. Mesh may vary from closed to open weave, ranging from 1/8 to 1/4 inch openings. Shrinkage after wetting may not exceed 20% of the surface area.

4) Knitted Straw Mat. Commercially manufactured ECB. Use photodegradable netting and biodegradable thread. Use straw, in an air-dried condition, from oats, wheat, rye, barley, or other approved grain crops that are certified weed free of prohibited and restricted noxious weed seed and quarantined pests, according to Alaska Administrative Code, Title 11, Chapter 34 (11 AAC 34), and in conjunction with North American Invasive Species Management Association (NAISMA) standards, and free of mold, or other objectionable materials detrimental to plant life. When straw or straw products certified according to 11 AAC 34 are not available, use non-certified products manufactured within Alaska before certified products manufactured in another state, country, or territory. Non-certified products manufactured in Alaska In-lieu of certified weed-free straw, provide documentation that the material is steam or heat treated to kill seeds or provide U.S. or state's department of agriculture laboratory test reports, dated within 90 days prior to the date of application showing that there are no viable seeds in the straw. Non-certified straw or straw products manufactured in another state, country, or territory shall not be used. ECB may contain coconut or fiber to reinforce the straw.

5) Woven/Curled Wood blanket. Machine produced mat of curled wood shavings with a minimum of 80% 6-inch or longer fibers, with consistent thickness and the fibers evenly distributed over the entire area of the blanket. Smolder resistant without the use of chemical additives. Cover the top side of the blanket with biodegradable extruded plastic mesh.

6) Coconut (Coir Fiber). Machine produced mat, ECB of consistent thickness and coir fiber evenly distributed over the area of the mat. Use bio/photo degradable netting and thread.

2. Permanent.

   a. Product Types and Materials.

      1) Turf Reinforcement Mats (TRMs). A rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh, and/or other elements, processed into a permanent, three-dimensional matrix of sufficient thickness with a minimum weight of 8 oz/yd^2 and a minimum limiting shear stress of 1.5 lb/ft^2. TRMs (may be supplemented with degradable components) shall impart immediate erosion protection, enhance vegetation establishment during and after maturation and permanent vegetation reinforcement providing long-term functionality.

727-2.03 SEDIMENT RETENTION FIBER ROLLS (SRFRs). Fiber rolls also referred to as wattles. Manufacture of photodegradable or biodegradable fabric netting without preservative treatment, evenly woven, free of crusted material, cuts, and tears. Manufacture stakes of photodegradable or biodegradable material (wood stakes, except as approved by the Engineer).

1. Filter Sock (Wattle)
   a. Fabric netting.
   b. Filled with wood fiber, straw, flax, rice, coconut fiber material.
   c. Minimum diameter 5 inches.

2. Compost Sock.
   a. Extra Heavy weight fabric netting with a minimum strand width of 5 mils.
   b. Filled with coarse compost.
   c. Minimum diameter 8 inches.

3. Coir Log.
   a. Woven wrap bristle coir twine netting.
   b. Filled with 100% coconut (coir) fiber uniformly compacted.
   c. Segments maximum length 20 foot, diameter as suited to the application and a density of 7 lbs/pcf or greater.
   d. Coir twine strength equal to 80 lb minimum weaved to a 2 inch x 2 inch opening pattern.
   e. Ties made of hemp rope by 1/4 inch diameter.

727-2.04 COMPOST. Suitable for serving as a soil amendment or an erosion control material. Sanitized, mature compost meeting local, state, and Federal quality requirements tested and certified by the U.S. Composting Council (USCC) under the Seal of Testing Assurance (STA) Program. Biosolids compost must meet the Standards for Class A biosolids outlined in 40 Code of Federal Regulations (CFR) Part 503. Additionally, meet the requirements of the AASHTO specifications:

1. Compost Blankets. Standard Practice for Compost for Erosion/Sediment Control (Compost Blankets) R 52.

2. Compost Filter Berms and Filter Socks. Standard Practice for Compost for Erosion/Sediment Control (Filter Berms and Filter socks) R 51.

727-2.05 TACKIFIER. Tackifier, viscous overspray, generally composed of dry powered vegetable gums derived from guar gum, psyllium and sodium alginase; asphaltic emulsions; petroleum distillates; co-polymer emulsions; and lignosulfonates and used to anchor soil, compost, seed, the mulch fibers to one another, and the ground. Contain no growth or germination inhibiting materials nor significantly reduce infiltration rates. Tackifier shall hydrate in water and readily blend with other slurry material. Tackifier options include:

1. Type A. Organic tackifier with certification of plant sources; or

2. Type B. Synthetic tackifier with certification confirming product is not harmful to plants, animals, or aquatic life.

727-2.06 POLYACRYLAMIDE (PAM). Use as a tie-down for soil, compost, seed and as a flocculent. Polyacrylamide (PAM) products shall meet the requirements of American National Standards Institute (ANSI)/National Sanitation Foundation International (NSF) Standard 60 for drinking water treatment, be anionic (not cationic), linear and not cross-linked with an average molecular weight greater than 5 Mg/mole, minimum 30 percent charge density; contain at least 80% active ingredients and a moisture content not exceeding 10% by weight.

Deliver PAM in a dry granular powder or liquid form.

727-2.07 GEOTEXTILE-ENCASED CHECK DAM AND SEDIMENT BARRIER. Urethane foam core encased in geotextile material (silt fence material Section 633), minimum 8 inches height by minimum base width of 16 inches by minimum 7 foot length. Overhang the geotextile 6 inch minimum each end with apron type ties by 24 inches each side of the foam core.

727-2.08 SANDBAG.

1. Sandbag Sack Fabric. Fabric shall be a nonwoven, needle punched design meeting the Minimum Average Roll Values (MARV) verified in accordance with ASTM D4759.

2. Seam Thread. Similar durability to the sandbag sack fabric.

3. Sandbag Fill Material.
   a. Selected Material 703-2.07 Type B

4. Cinch Ties. Plastic ties or equivalent tie recommended by the sandbag manufacturer.

727-2.09 MANUFACTURED INLET PROTECTION SYSTEM.

1. Manufacturers:
   a. Ultra Tech International – Ultra-DrainGuard
   b. Bowhead Environmental and Safety - StreamGuard Exert II Sediment Insert
   c. Enpac - Catch Basin Insert, Oil and Sediment or
   d. Approved equal.

727-2.10 CLEAR PLASTIC COVERING. A clear plastic covering meeting the requirements of the National Institute of Standards and Technology (NIST) voluntary Product Standard PS 17 - 69 for polyethylene sheeting having a minimum thickness of 6 mils.

727-2.11 STAPLES. U-shaped staples for anchoring matting, approximately 6 inches long and 1 inch wide. Machine-made: No. 11 gage or heavier steel wire. Hand-made: 12-inch lengths of No. 9 gage or heavier steel wire.

CR727-12.0508R2

SECTION 730
SIGN MATERIALS

Special Provisions

730-2.04 SIGN POSTS.

Add No. 7:

7. Structural Tubing and W-Shape Beams.

   a. Structural tubing shall conform to ASTM A500, Grade B, or ASTM A501. The tubing shall be square and of the dimensions called for in the Plans with 0.2 inch thick walls. 0.4 inch diameter holes shall be drilled as required to permit mounting of the sign.

   b. W-shape beams shall conform to ASTM A36.

   c. Structural tubing and W-shape beams shall be hot dip galvanized according to 1.b. of this subsection. Damaged and abraded tubes and beams shall be repaired according to 1.c. of this subsection.

CR730.1-062204

Replace Subsection 730-2.05 with the following:

730-2.05 FLEXIBLE DELINEATOR POSTS. Durable fiberglass composite, polymer, or plastic material meeting the dimensions and colors shown on the Plans. Resistant to ultraviolet light, ozone and hydrocarbon damage and remain flexible at a temperature of minus 40 °F. Provide posts with reflectors that are capable of self-erecting and remaining serviceable after 5 head-on impacts at 55 mph and 10 impacts at 35 mph with an automobile at an air temperature of plus 40 °F.

Terminal Markers - Flexible (marker). The marker includes the pole/post/rod (pole), reflective and retroreflective sheeting and mounting hardware.

Provide durable markers: resistant to impact from (snow and vehicle), vandals, ultraviolet light, moisture, ozone, and hydrocarbons.

When the pole is loaded, the marker shall bend/flex, remain flexible and oriented as installed continuing to function as designed without permanent displacement along the length of the member. Provide the flexibility in the primary vertical element, a connecting device between the vertical element and connection to the support member (spring or other) or a combination.

Provide a connection sufficient to transfer the loads from the pole to the supporting member without reducing the strength, flexibility, or durability of either. The connection shall not negatively influence the performance of the guardrail. Provide approval of the connection from the marker manufacturer and support member manufacturer (if proprietary).

- Design Loads:
  - Impact load from snow thrown by snowplows
  - Weight of snow covering the pole (snow thrown from snowplows)
  - Wind loads (100 mph, 3 sec gust)
- Service Temperature Range: -40˚ F to +140˚ F.

- Pole:

  1. Material:

     - Steel, or
     - Stainless Steel, or
     - Other Poles:
       (a) Continuous glass fiber and marble reinforced thermosetting composite, or
       (b) Engineered plastic alloy, or
       (c) Fiberglass Reinforced Polyester (FRP)
       (d) High-Impact Polyolefins

  2. Dimensions

     - Top of Pole: 60 inches to 84 inches above top of guardrail
     - Width/Diameter: minimum = 1 1/4 inches, maximum = 2 inches (steel/stainless steel not be greater than 5/8 inch diameter)
     - Thickness: as required by design

  3. Visibility:

     - Daytime: Pole - color orange
       a. Steel and Stainless Steel Poles: Applied permanent finish.
       b. Other Poles: Color pigment ultraviolet stabilized and solid through the cross section from end to end.
     - Nighttime: Added retroreflective sheeting - color white
       a. Approximately 12 square inches visible from the traveled way before and after the marker. Applied to a flag attached to the pole or as banding applied directly to the pole. (A flag is required when using steel/stainless steel poles.)
       b. Place top edge of flag/banding 1 inch from top of pole.
          (1) Flag: Single retroreflective sheet each face
          (2) Banding: Two bands completely around marker, 4 inches between bands

- Hardware and Fasteners:

  - Steel, and/or
  - Stainless Steel, or
  - Aluminum alloy (hardware only)

Manufacturers of flexible markers (snowpoles):

Manufacturer	Model	Type	Contact
Nordic Fiberglass, Inc.	FF2	Steel Pole w/ Flag	Ph: (218) 745-5095
PEXCO	Model 3639	High-Impact Polyolefins	Ph: (404) 564-8560
New Century Northwest, LLC	NCN2549	Engineered Plastic Alloy	Ph: (541) 485-5566
Carsonite Composites, LLC	SNFB	Continuous glass fiber and marble reinforced thermosetting composite	Ph: (800) 648-7916

Submit manufacturer's specifications to the Engineer for review and approval before ordering terminal markers.

CR730.2-122217

SECTION 731
WATERPROOFING MEMBRANE

Special Provision

731-2.01 SPRAY-APPLIED WATERPROOFING MEMBRANE. *Replace Table 731-1 SPRAY-APPLIED WATERPROOFING MEMBRANE with the following*:

Test	Requirements	Test Method
Adhesion to Concrete	100 psi min., with failure in concrete	ASTM D7234
Tensile Strength at Break	1500 psi min.	ASTM D638
Elongation at Break	130% min.	ASTM D638
Crack Bridging	Pass at 10 cycles of 1/8 inch when tested at -15°F	ASTM C1305
Interlayer Shear Strength	30 psi min.	AASHTO TP-114

CFHWY01286

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 Glenn Highway MP 66.5-92 Pavement Preservation, Stage 1 MP 83.5-92

Project Number 0A15039/CFHWY01286

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.
	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		Binder #
202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS									CRSP = CR Special Provision	
Timber, Pressure Treated	202-2.01								CRSP	
Steel Pipe, Galvanized	202-2.01								CRSP	
Steel Fasteners, Galvanized	202-2.01								CRSP	
Reflectors	202-2.01								CRSP	
306 ASPHALT TREATED BASE COURSE										
Mix Design	306-3.01								CRSP	
Asphalt Binder	306-2.01								CRSP	
Anti-Strip Additives	306-2.01								CRSP	
308 CRUSHED ASPHALT BASE COURSE										
Asphalt Concrete	existing									
Aggregate Base Course	703-2.03									
Emusified Asphalt	702 (CSS-1)									
401 HOT MIX ASPHALT PAVEMENT										
Mix Design	401-2.09								CRSP	
Liquid Anti-Strip Additive	Mix-Design									
Asphalt Binder	401-2.01								CRSP	
Joint Adhesive	401-2.03/702-2.05								CRSP	
Joint Sealant	401-2.04, 702-2.06								CRSP	
Warm Mix Asphalt	401-2.05/702-2.07								CRSP	
Asphalt Release Agent	401-2.06/702-2.08								CRSP	

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ection 106-1.05 for submittal requirements.

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Materials Item	Specification	Construction		Design			Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g.
	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		Binder #
501 CONCRETE FOR STRUCTURES										
Concrete Mix Design	501-2.02									
Grout	501-2.01.5, 701-2.03									
Epoxy Adhesive for Crack Sealing	501-2.01.5									
Epoxy Adhesive for Crack Injection	501-2.01.5									
Low-Viscosity Resin	501-2.01.5, 712-2.19									
Epoxy Bonding Agents	501-2.01.5									
Concrete Anchor Bolts and Inserts	712-2.20									
Asphalt Felt	501-2.01.4									
Curing Materials	711-2.01									
Structural Steel	716									
506 TIMBER STRUCTURES										
Timber	713-2.01									
Preservatives for Timber	714-2.01									
Structural Shapes, Rods & Plates	716									
Galvanizing	716-2.07									
Glued-Laminated Timber Members	506-2.01									
Bolts, Screws & Drive Spikes	506-2.01									
Galvanizing	506-2.01/716-2.07									
Mastic Sealer	506-2.01									
Steel Dowels	506-2.01									
Timber Connectors	506-2.01									
508 WATERPROOFING MEMBRANE										
Spray-Applied Waterproofing Membrane	508-2.01 / 731-2.01									
Sheet Waterproofing Membrane	508-2.01 / 731-2.02									

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513 FIELD PAINTING OF STEEL STRUCTURES										
Paint										
Prime Coat	708-2.01.1									
Intermediate Coat	708-2.01.2									
Top Coat	708-2.01.3									
Abrasives										
Non-Steel Abrasives	513-2.01.2.a / 513-2.02									
Steel Abrasives	513-2.01.2.b / 513-2.02									
601 PREFORMED PLASTIC FLUME DOWNDRAINS										
Inlets and Flume Downdrains	601-2.01									
Galvanizing	601-2.01									
603 CULVERTS AND STORM DRAINS										
Flexible Watertight Gaskets										
Ring Gaskets for Rigid Pipe & Precast Manhole Sections	705-2.05.1									
Ring Gaskets for Flexible Metal Pipe	705-2.05.2									
Elastomeric Seals for Plastic Pipe	705-2.05.3									
Corrugated High Density Polyethylene (HDPE) Pipe										
Culverts, __ Inch	706-2.07								CRSP	
Underdrains, __ Inch	706-2.07								CRSP	
Corrugated Steel Pipe & Pipe Arches										
Zinc-Coated CSP, _ inch	707-2.01.1									
Zinc-Coated CSP Arch, _ inch	707-2.01.1									
Aluminum-Coated CSP Pipe, __ inch	707-2.01.2									
Aluminum-Coated CSP Pipe Arch, __ inch	707-2.01.2									
Aluminum-Zinc Alloy Coated CSP Pipe, __ inch	707-2.01.3									

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	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		Binder #
603 CULVERTS AND STORM DRAINS										
Aluminum-Zinc Alloy Coated CSP Pipe Arch, __ inch	707-2.01.3									
Bituminous Coated Corrugated Steel Pipe, Pipe Arches and Underdrains, __ size	707-2.02									
End Sections for __ inch CSP Pipe	707-2.01/Plans									
End Sections for __ inch CSP Arch	707-2.01/Plans									
Galvanizing	716-2.07									
Culvert Marker Posts (Flexible Delineator Posts)	730-2.05								CRSP	
Culvert Marker Strap and Seals	603-2.01								CRSP	
605 UNDERDRAINS										
Flexible Watertight Gaskets										
Ring Gaskets for Rigid Pipe & Precast Manhole Sections	705-2.05.1									
Ring Gaskets for Flexible Metal Pipe	705-2.05.2									
Elastomeric Seals for Plastic Pipe	705-2.05.3									
Perforated Corrugated High Density Polyethylene (HDPE) Pipe __ inch	706-2.07								CRSP	
Flexible Delineator Post	730-2.05								CRSP	
606 GUARDRAIL										
Concrete Mix Design	550-2.02									
Wire Cable	709-2.02									
Metal Beam Rail	710-2.04								CRSP	
Guardrail Posts and Blocks										
Steel Posts and Blockouts	710-2.06.2									
Synthetic Blockouts	710-2.06.3									
Guardrail Hardware	710-2.07									

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	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		
606 GUARDRAIL										
Short Radius Guardrail	AK Std. Plan G-26									
Terminals										
Parallel Terminals	710-2.11.1									
Terminal Markers (Flexible)	730-2.05								CRSP	
Guardrail Reflector Assembly Brackets	606-2.01								CRSP	
Retroreflective Sheeting Type IX or XI	606-2.01								CRSP	
615 STANDARD SIGNS										
Sheet Aluminum	730-2.01/Plans									
High Density Overlaid Plywood	730-2.02									
Sign Framing Members	Plans								CR Detail	
Retroreflective Sheeting	730-2.03									
Orange Background Signs	615-2.01.2								CRSP	
Reflective Sheeting Warranty	615-2.01.5								CRSP	
Sign Posts										
Metal Pipe Posts	730-2.04.1									
Perforated Steel Posts	730-2.04.2									
Wide Flange Posts	730-2.04.4									
Flanged Channel Posts	730-2.04.5									
Square Non-Perforated Steel Tubes	730-2.04.6									
Zinc Coating for Repairs	730-2.04.6.b									
Flexible Delineator Posts	730-2.05								CRSP	
Acrylic Prismatic Reflectors	730-2.06									
Structural Tubing and W-Shape Beams.	730-2.04.7									

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	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		Binder #
615 STANDARD SIGNS										
Sign Bases										
Slip Base	615-2.01.3/Plans								CRSP	
Breakaway Base	615-2.01.3/Plans								CRSP	
Frangible Couplings	615-2.01.3/ASP								CRSP	
Concrete Mix Design	615-2.01.3/ 501-2.02/550-2.02								CRSP	
616 THAW PIPE AND THAW WIRES										
Thaw Pipe										
Pipe	616-2.01									
Fittings	616-2.01									
Pipe Hangers	616-2.01									
Braces for Stand Pipe	616-2.01									
Bolts and Nuts	616-2.01									
Galvanizing for Pipe and Braces for Stand Pipe	616-2.01									
Galvanizing Fittings and Bolts and Nuts	616-2.01									
Conduits and Fittings										
Conduit, Couplings, Elbows and Nipples	616-2.02.1.a									
Fittings and Miscellaneous Conduit Hardware	616-2.02.1.b									
Heat Cable	616-2.02.2									
Controls										
Thermostat	616-2.02.3.a									
Contactor	616-2.02.3.b									
Switch	616-2.02.3.c									

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Materials Item	Specification	Construction		Design			Statewide Materials		Manufacturer/ Remarks	Certificate Location e.g.
	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		Binder #
616 THAW PIPE AND THAW WIRES										
Conductors										
Service and Feeder Cables	616-2.02.4.a									
Underground Wire	616-2.02.4.b									
Branch Circuit Wire	616-2.02.4.c									
Control Wire	616-2.02.4.d									
Device, Junction, and Pull Boxes	616-2.02.5									
Receptacles, Remote Power	616-2.02.6									
Circuit Breakers	616-2.02.7/Plans									
Grounding	616-2.02.8									
Terminal Posts	616-2.02.9									
Branch Circuit Panelboard	616-2.02.10									
618 SEEDING										
Seed	724									
Fertilizer	618-2.01/725								CRSP	
Soil Stabilization Material	727								CRSP	
619 SOIL STABILIZATION										
Mulch	727-2.01								CRSP	
Matting	727-2.02								CRSP	
Sediment Retention Fiber Rolls (SRFRs)	727-2.03								CRSP	
Compost	727-2.04								CRSP	
Tackifier	727-2.05								CRSP	
Polyacrylamide (PAM)	727-2.06								CRSP	
Geotextile-Encased Check Dams and Sediment Barriers	727-2.07								CRSP	
Sandbags	727-2.08								CRSP	

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619 SOIL STABILIZATION										
Manufactured Inlet Protection System	727-2.09								CRSP	
Clear Plastic Covering	727-2.10								CRSP	
Staples	727-2.11								CRSP	
630 GEOTEXTILE FOR EMBANKMENT SEPARATION AND STABILIZATION										
Geotextiles and Sewing Thread										
Separation	729-2.01.2									
634 GEOGRID SOIL REINFORCEMENT										
Geogrid, Reinforcement, Class _	729-2.04.2									
641 EROSION, SEDIMENT AND POLLUTION CONTROL										
Materials	641-2.05								CR Special Provision - 641 Control and Stabilization Materials identified and documented in SWPPP and approved on project.	
642 CONSTRUCTION SURVEYING AND MONUMENTS										
Monument Cases	642-2.01								CRSP	
Primary Monument	642-2.01								CRSP	
Secondary Monument	642-2.01								CRSP	
643 TRAFFIC MAINTENANCE										
Traffic Control Devices	643-3.04								CR Special Provision - 643 Materials approved on project with TCP conforming to Alaska Traffic Manual (ATM).	
670 TRAFFIC MARKINGS										
Traffic Paint, Glass Beads	708-2.03, 712-2.08									
Additional Materials										

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APPENDIX D

SIGN SHOP DRAWINGS

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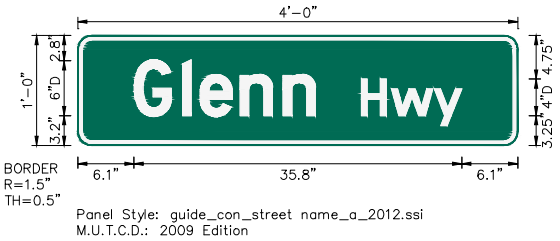
SIGN DETAIL

1:20



Panel Style: guide_con_street name_a_2012.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	Glenn Hwy
WIDTH x HGHT.	4'-0" x 1'-0"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

Panel Style: guide_con_street name_a_2012.ssi
Dimensions are in inches.tenths

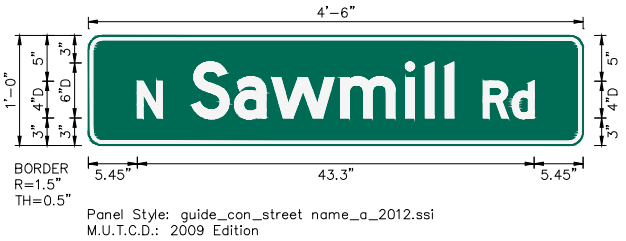
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

G	l	e	n	n	H	w	y													LENGTH	SERIES/SIZE
6.13	11.41	13.33	17.71	22.39	30.93	34.21	38.89													35.76	D 2000 6/4.5,4/3

SIGN DETAIL

1:20



Panel Style: guide_con_street name_a_2012.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	Sawmill Rd
WIDTH x HGHT.	4'–6" x 1'–0"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

Panel Style: guide_con_street name_a_2012.ssi
Dimensions are in inches.tenths

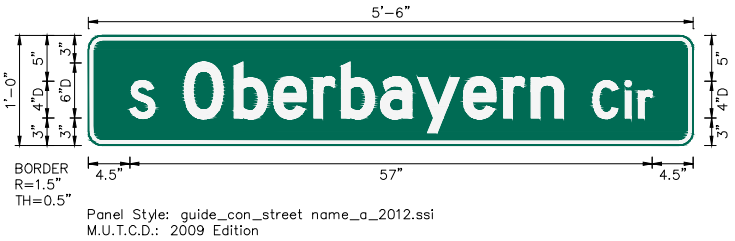
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

N	S	a	w	m	i	l	l	R	d											LENGTH	SERIES/SIZE
5.35	11.27	15.95	20.03	27.53	34.61	36.77	38.93	43.09	46.25											43.3	D 2000 4,6/4.5,4/3

SIGN DETAIL

1:20



Panel Style: guide_con_street name_a_2012.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	Oberbayern Cir
WIDTH x HGHT.	5'-6" x 1'-0"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

Panel Style: guide_con_street name_a_2012.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

S	O	b	e	r	b	a	y	e	r	n	C	i	r							LENGTH	SERIES/SIZE
4.53	10.45	15.91	20.23	24.61	27.61	31.87	35.95	40.93	45.31	48.31	55.05	58.57	60.01							57	D 2000 4,6/4.5,4/3

APPENDIX E

TEMPORARY CONSTRUCTION EASEMENTS

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APPENDIX F

DRAFT PERMITS

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