State of Alaska, Standard Specifications
for Highway Construction, Dated 2020 are
modified as follows:

STANDARD MODIFICATIONS

SECTION 108
PROSECUTION AND PROGRESS

06/30/20 (HSM20-1)

108-1.07 FAILURE TO COMPLETE ON TIME. *Delete Table 108-1 of this subsection in its entirety and substitute 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	500,000	$1,000
500,000	1,000,000	1,500
1,000,000	5,000,000	1,800
5,000,000	10,000,000	2,500
10,000,000	25,000,000	3,800
25,000,000	----------	4,800

SPECIAL PROVISIONS

SECTION 104
SCOPE OF WORK

11/30/12 (H5)
Add the following subsection:

104-1.07 FROZEN GROUND. Frozen areas, ice lenses, and saturated soils may be encountered on this project and related material sources. Specific locations and specific content of frozen areas, ice lenses, and saturated soils are not defined. Any such area that may be encountered by the Contractor in the performance of the contract work will not be considered unforeseeable within the terms of the contract such as to entitle the Contractor to any adjustment in contract price or contract time. Reference is made to Subsection 203-3.03 of these Specifications.

SECTION 106
CONTROL OF MATERIAL

04/30/17 (N2)
106-1.02 MATERIALS SOURCES.

1. General. *Add the following subparagraph:*

    j. If pre-existing, naturally occurring, hazardous material is encountered in any Material Source under Department ownership, management, or permit; the Department will pay in accordance with Section 109-1.05 for the proper handling and disposal of the hazardous material. Avoid excavation activity in the vicinity of the hazardous material. The Department will not be liable for any delays or impacts to the production of any materials items due to encountering the hazardous material. Contractor shall adhere to Subsection 107-1.11(6). Nothing in this subsection relieves the Contractor of any statutory liability.

SECTION 203
EXCAVATION AND EMBANKMENT

01/20/15 (N8)
203-3.01 GENERAL. *Add the following to the eighth paragraph:* Disposal in wetlands is prohibited, except as described in Subsection 107-1.11.

Add the following after the eighth paragraph: The Contractor shall certify in writing to the Engineer that all permits and clearances relating to all waste disposal sites selected by the Contractor have been obtained prior to any clearing or ground disturbance in the disposal site.

04/30/17 (N10)
203-3.03 EMBANKMENT CONSTRUCTION. *Delete the fifth paragraph and substitute the following:* Existing roadway embankments shall be spread to redistribute the material from the existing roadway for the full width and within the limits of the new roadway prism to form an approximately level surface, prior to placing new embankment. The spread material shall be compacted in accordance with 203-3.04. The minimum depth of excavation in spread existing roadway areas will be to the bottom of the lowest layer shown on the typical section. This work will be paid for as unclassified excavation.

01/20/15 (N11)
203-3.03 EMBANKMENT CONSTRUCTION. *Delete the fourteenth paragraph and substitute the following:* When embankments are to be constructed across wet or swampy ground, which will not support the weight of heavy hauling and spreading equipment, the Contractor shall choose such methods of embankment construction and use such hauling and spreading equipment as will least disturb the soft foundation. When soft foundations are encountered, and when approved by the Engineer, the lower part of

the fill may be constructed by dumping and spreading successive vehicle loads in a uniformly distributed layer of a thickness not greater than that necessary to support the vehicle while placing subsequent layers, after which the remainder of the embankment shall be constructed in layers and compacted as specified.

It is not the policy of the State to allow an increase in the planned depth of embankment material over soft, wet, or swampy ground for the sole purpose of providing support for heavy hauling and spreading equipment, unless the Contractor proves to the satisfaction of the Engineer that the planned depth is inadequate to support light hauling vehicles. If use of smaller hauling vehicles or different methods of embankment construction than originally contemplated are necessary to comply with the foregoing, such shall not be the basis for a claim for extra compensation. The contract unit price for the various pay items involved shall be full compensation for all labor, materials, and equipment necessary to perform the work outlined herein.

01/20/15 (N12)
203-4.01 METHOD OF MEASUREMENT. *Add the following:* Borrow will not be weighed or used while free moisture is observed draining from the haul vehicle at the scale location.

02/01/20 (N13)
203-5.01 BASIS OF PAYMENT. *Add the following:* Ten percent (10%) of the value earned in the progress period shall be withheld on progress payments for all Section 203 items of work. Five percent (5%) will be released by work area, as defined in the SWPPP, when final stabilization is initiated. The last five percent (5%) will be released by work area, as defined in the SWPPP, when final stabilization as defined by the *Construction General Permit* has been obtained and accepted by the Engineer. Withholding will be made under Item 641.0006.____ Withholding.

Delete Section 306 in its entirety and substitute the following:
02/01/20 (N17)

SECTION 306
ASPHALT TREATED BASE

306-1.01 DESCRIPTION. Construct a plant-mixed asphalt treated base (ATB) course on an approved foundation to the lines, grades, and depths shown on the Plans.

306-2.01 MATERIALS. Use materials that conform to the following:

Aggregate	Subsection 703-2.03, Grading D-1, except change the minimum Degradation Value to 30, and change the percent passing the No. 200 sieve to 0-7.
Asphalt Binder	Subsection 702-2.01, for the Grade shown on the bid schedule.
Anti-Strip	As required to meet Subsection 306-3.01.
Recycled Asphalt Pavement	Subsection 703-2.16.

CONSTRUCTION REQUIREMENTS

306-3.01 COMPOSITION OF MIXES. The ATB shall contain 4.5% Asphalt Binder, Grade PG 52-28. Do not place ATB until authorized to do so by the Engineer. ATB with an Asphalt Binder content less than 4.0% will be considered unacceptable according to Subsection 105-1.11.

Use Liquid Anti-Strip Additive in the proportions determined by ATM 414. At least 70% of the aggregate must remain coated when tested according to ATM 414. The minimum required amount of Liquid Anti-Strip Additive is as specified in Subsection 401-2.02.

A maximum of 35 percent RAP, by total weight of ATB, is allowed to be added to the composition at the time of mixing. The combined gradation of all aggregates, virgin and recycled, shall meet the requirements of Table 703-2, except that the percent passing the No. 200 sieve is 0-7. If RAP will be used in the ATB, then submit the following to the Engineer at least fourteen days prior to producing ATB:

1. The target gradation.
2. The gradation of all materials to be used in the ATB.
3. The blend ratio of all materials to be used in the ATB.
4. The combined virgin aggregate gradation.
5. The asphalt binder content of the RAP by the extraction method.
6. Representative samples of all materials to be used in the ATB.

306-3.02 WEATHER LIMITATIONS. Do not place ATB on a wet or frozen surface, or when weather conditions will prevent proper handling, compacting, or finishing of the mixture. Do not place ATB unless the air temperature is above 40°F, as measured in the shade and away from any heat sources.

306-3.03 STOCKPILING. Store virgin aggregates and RAP in separate stockpiles. Prevent segregation and contamination.

306-3.04 EQUIPMENT.
1. Mixing Plant. Conform to Subsection 401-3.05.
2. Hauling Equipment. Conform to Subsection 401-3.06.
3. Spreading Equipment. Conform to Subsection 401-3.07.
4. Rollers. Conform to Subsections 401-3.08 and 306-3.09.

306-3.05 PREPARATION OF ASPHALT. Provide a continuous supply of asphalt binder to the mixer at a uniform temperature, within the allowable mixing temperature range.

306-3.06 PREPARATION OF AGGREGATE. Heat and dry the aggregate to a temperature compatible with the manufacturer's recommended mixing temperature for the asphalt binder used. Adjust dryer flames to avoid damage to aggregate and to avoid soot on the aggregate.

306-3.07 MIXING. Combine aggregate, asphalt binder, anti-strip additive, and RAP (if used) in the mixer in the proportions required by the contract. Mix to obtain 98% coated particles when tested according to AASHTO T 195. For batch plants, put the dry aggregate in motion before addition of the asphalt binder. Mix the ATB mixture within the manufacturer's recommended mixing temperature range for the asphalt binder used.

306-3.08 SPREADING AND FINISHING. Deposit and spread ATB mixture on an approved surface in layers not exceeding 3 inches in compacted depth. Use hand tools to spread, rake, and lute the ATB in areas where irregularities or unavoidable obstacles make mechanical spreading and finishing equipment impracticable. Place a tack coat between successive layers of ATB and on all vertical surfaces the ATB abuts.

306-3.09 COMPACTION. Compact the ATB using vibratory rollers, 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. Do not crush or fracture aggregate. In areas inaccessible to rollers, use mechanical tampers until thoroughly compacted.

306-3.10 SURFACE TEST. After rolling has been completed, the 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 testing edge of a 10-foot straightedge between two contacts with the surface parallel with, and at right angles to, the centerline.

306-3.11 THICKNESS REQUIREMENTS. Meet Plan thickness ± 1/2 inch, compacted.

306-3.12 JOINTS. Offset both transverse and longitudinal joints such that ATB joints in the layer immediately below, and Hot Mix Asphalt Pavement joints in the layer immediately above, are offset by at least 6 inches from the ATB layer being placed.

306-3.13 ACCEPTANCE SAMPLING AND TESTING.

1. Asphalt Binder Content.

   a. If RAP is used and there is a windrow, asphalt binder will be sampled from the windrow by the Engineer according to ATM 403. If there is not a windrow, asphalt binder will be sampled using the plate method by the Contractor in the presence of the Engineer according to ATM 402 or ATM 403. Asphalt binder content will be determined according to ATM 406.

   b. If RAP is not used, asphalt binder content will be measured by supplier's invoice quantity minus waste, diversion and remnant, as confirmed by tank stickings taken at the beginning and end of each shift. Perform tank stickings in the presence of the Engineer. Provide tank volume charts to the Engineer. Tank stickings will be adjusted for temperature. Provide the supplier's asphalt binder temperature-density relationship to the Engineer. At the Engineer's discretion, asphalt binder content may instead be determined according to ATM 405.

2. Aggregate Gradation.

   a. If RAP is used, aggregate gradation will be accepted based on the same samples taken for asphalt binder content, tested according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder.

   b. If RAP is not used, aggregate gradation will be accepted based on samples taken from the combined cold feed conveyor according to ATM 301 and tested according to ATM 304.

3. Density. 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% of the density standard, in accordance with ATM 411. The Engineer will designate the location of test strips.

4. Asphalt Binder Grade. 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. Meet Subsection 702 requirements for asphalt binder quality.

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

1. ATB. By weight. No deduction will be made for the weight of asphalt binder or anti-strip additive in the mixture.

2. Asphalt Binder. By weight. No payment will be made for asphalt binder in excess of 0.5% above the percentage specified in 306-3.01. If ATM 406 or ATM 405 are used to determine asphalt binder content, the quantity used for payment will be the percent asphalt from ATM 406 or ATM 405 multiplied by the weight of ATB represented by that test. If invoices and tank stickings are used to determine asphalt binder content, the quantity for payment will be calculated from supplier's invoice quantity minus waste, diversion, and remnant, as confirmed by tank stickings adjusted for temperature.

306-5.01 BASIS OF PAYMENT. Anti-strip additive is subsidiary to Asphalt Binder.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
306.0001.____	ATB	TON
306.0002.____	Asphalt Binder, Grade PG ___	TON

SECTION 401
HOT MIX ASPHALT PAVEMENT

02/01/20 (N76)

401-2.01 ASPHALT BINDER. *Add the following:* Provide the grade of Asphalt Binder shown in the Bid Schedule, except PG 52-28 may be used for Items 401.0011.____ and 401.0012.____, HMA Driveway.

401-2.08 RECYCLED ASPHALT PAVEMENT. *Add the following:* The maximum amount of RAP in the HMA is limited to 10%.

401-2.09 JOB MIX DESIGN. *Delete the last two rows of Table 401-1 HMA MARSHALL DESIGN REQUIREMENTS.*

Delete Section 406 in its entirety and substitute the following:

SECTION 406
RUMBLE STRIPS

02/01/20 (N69)

406-1.01 DESCRIPTION. Construct a series of indentations into the roadway pavement as shown on the Plans.

406-2.01 MATERIALS. None.

406-3.01 CONSTRUCTION REQUIREMENTS. Stake all locations where milling will start and stop at intersections, approaches, turn lanes, gang mailbox installations, on and off ramps, public turnouts, bridges, narrow shoulders, and railroad tracks. Do not begin milling until all start and stop locations have been approved by the Engineer.

Construct rumble strips with a milling machine designed specifically for milling rumble strips into asphalt pavement. The milling equipment shall provide a smooth cut (approximately 1/16 inch between peaks and valleys), and include a guidance system clearly visible to the operator to provide for consistent alignment of each rumble.

Make the edges of the milled indentation straight, smooth and free of spalling. Do not construct rumble strips on HMA longitudinal joints or on Portland Cement Concrete. Do not construct rumble strips before the lane edge line has been acceptably placed. Meet the following tolerances:

1. Length and Width of indentation: ± 1/2 inch
2. Depth of indentation: ± 1/16 inch
3. Spacing between indentations: ± 1/2 inch
4. Alignment of rumble strip to lane edge line: ± 1 inch

Clean milling debris off the pavement immediately after milling by sweeping the debris onto the embankment foreslope. Do not allow an accumulation of millings to impede roadway drainage or enter any waterways or wetlands.

Rumble strips will be unacceptable if they do not meet the specified tolerances, or the pavement surface is damaged through spalling as a result of rumble strip installation. Unacceptable rumble strips shall be ground out full-width to a depth of 2-inches, repaved with HMA according to Section 401, and reinstalled to the satisfaction of the Engineer.

406-4.01 METHOD OF MEASUREMENT. This Item will not be measured for payment.

406-5.01 BASIS OF PAYMENT. The contract bid price shall be full compensation for staking locations of rumble strips, milling of rumble strips, and cleaning of milling debris.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
406.0001.____	Rumble Strips	LS

Delete Section 520 in its entirety and substitute the following:

SECTION 520
TEMPORARY CROSSINGS

520-1.01 DESCRIPTION. Construct and maintain a temporary crossing that public traffic uses, or where the Contractor uses a temporary crossing that is elevated over a public route. It is the Contractor's responsibility to construct and maintain a traffic diversion embankment that will carry traffic, this Contract provides minimum requirements. Construct the "Temporary Crossing" as described on the Plans. Remove embankment, bridge or culverts, and all materials within ordinary high water after use and cleanup the site.

Design temporary bridge or culverts. Change the preliminary design of approach roads to accommodate temporary bridge or culverts. For temporary bridge, the Contractor must have an independent design check performed.

Comply with all provisions of the Fish Habitat Permit and other project permits.

520-1.02 DEFINITIONS. Designer of Record (DOR). A civil engineer registered as a Professional Engineer in the State of Alaska, and in responsible charge of the work described. The DOR must have adequate and relevant prior bridge design and inspection experience. The DOR may delegate portions of design, quality acceptance, and inspection work, to qualified technicians. The DOR and qualified technicians must not be supervised by, or under the direction of the Contractor's temporary crossing superintendent and work crew.

Independent Engineer (IE). An engineer registered as a Professional Engineer in the State of Alaska, and in responsible charge of the independent design check. The engineer responsible for the check must have adequate and relevant prior bridge or culvert design experience. The engineer responsible for the check shall not be employed by the Contractor or the same firm as the DOR; or employed by a firm managed or owned by the Contractor or the DOR; nor shall the engineer performing the work manage or own the Contractor or the firm employing the DOR.

Independent Design Check (IDC). An independent design check of the temporary bridge package including but not limited to: design, location and dimensions of the foundation, structural members, connections,

erection plan and temporary bracing (when required), safety barrier, and independent calculations of design loads, member stress, material properties, hydraulic capacity and scour protection.

Temporary Bridge. A temporary bridge used by the public or over a public route, including abutments, piers, safety barrier and railing, foundation scour protection, and other incidentals.

Temporary Bridge Package (TBP). Design calculations from the DOR and IE, working drawings, specifications, load ratings and all items identified on Form 25D-8, necessary to construct a temporary bridge.

Temporary Crossings. A diversion route that includes temporary bridge or culverts, approach roads, and other incidentals.

MATERIALS AND DESIGN

520-2.01 MATERIALS. New or used materials must meet the requirements of the design and the Contract. The DOR must verify the quality of temporary bridge or culvert materials before incorporation into the project.

520-2.02 GEOTECHNICAL DATA AND HYDROLOGY REPORT. The Department may provide records of geotechnical investigations. The Contractor is responsible for obtaining all additional geotechnical data necessary for design and construction of the temporary crossing.

The Department may provide a preliminary hydrology and hydraulics report. The Contractor is responsible for obtaining all additional hydrology and hydraulics data necessary for design and construction of the temporary crossing.

520-2.03 TRAFFIC CONTROL PLAN. Submit a traffic control plan for temporary crossing according to the Plans and Section 643.

520-2.04 DESIGN REQUIREMENTS. Retain the services of a DOR to design the temporary bridges, provide a TBP or to design temporary culverts. When temporary bridges are used as a construction platform for the Contractor's equipment or workers, then design and construct temporary bridges that are wide enough for traffic lanes and construction areas, and strong enough to support design traffic and construction loads.

The Department will provide preliminary designs for approach roads. The DOR may change the design of approach roads to accommodate temporary crossing.

1. Design temporary crossings according to the following documents:

    a. DOT&PF Standard Specifications for Highway Construction for recommended construction methods, material properties, and sampling and testing.

    b. AASHTO LRFD Bridge Design Specifications, AASHTO Guide Specifications for LRFD Seismic Bridge Design, and the DOT&PF Bridges and Structures Manual for temporary bridge design criteria, as modified by Subsection 520-2.04; and

    c. DOT&PF Preconstruction Manual for design criteria for changes to approach roads.

2. Provide working drawings for temporary bridges including:

    a. All information and details necessary to construct temporary bridges including all items listed in the Contractor's Questionnaire on Form 25D-8 that can be found at this web address: http://www.dot.state.ak.us/stwddes/dcsconst/pop_constforms.shtml;

b. All dimensions controlling the temporary bridge design and erection, including beam length and spacing, post location and spacing, vertical distance between connections in diagonal bracing, height of bents, and similar design controlling dimensions;

c. All design loads and material properties;

d. The soil bearing values;

e. The openings required to allow the passage of traffic, including horizontal and vertical clearances, and the location of railing or barrier; and

f. Water design flow, opening size and elevations under superstructure, the high water elevation, and the maximum water flow elevation, and vertical clearances.

3. If Contractor chooses to use a temporary culvert other than the temporary culvert shown on the Plans, submit temporary culvert designs to the Engineer for approval. Design temporary culverts to conform to the following requirements:

   a. Culverts must be sized to accommodate no less than Q5 = 660 cfs volumetric flow when the invert is depressed.

   b. Culverts must be depressed 20% of the diameter of the culvert or as required by The Department of Fish & Game for the approved culvert design.

   c. Maintain the water passage to ensure flow is unobstructed for as long as the culvert is in place; remove debris as necessary.

   d. Maintain 3 feet or greater of cover over the top of the culvert.

   e. Embankment slopes of fill in the creek for that portion of the temporary crossing between the tops of creek banks shall not be steeper that 1.5:1 (H:V)

   f. Design to comply with the requirements of all permits and environmental commitments, including time windows during which work may occur. Apply for and obtain additional permits or modifications to existing permits as needed.

   g. Install and maintain temporary erosion control measures for embankment stabilization for as long as the temporary fill is in place and as long as the temporary crossing is required for traffic control.

   h. When the temporary crossing is no longer required for traffic control, restore the creek above and below ordinary high water and install permanent erosion protection and bank stabilization for disturbed areas.

4. Design temporary bridges to conform to the following requirements:

   a. To support 100% of HL-93 live loads or the Contractor's maximum construction load whichever is greater, without overstress. Follow the most recent version, including interim version, of AASHTO LRFD Bridge Design Specifications. Indicate governing live load on working drawings;

   b. Design for half the seismic acceleration value of the permanent bridge shown on the Plans;

   c. Include the capacities and demands of load-supporting members in the design calculations;

   d. Provide a clear roadway and clear pathway widths equal to or greater than the widths indicated on the Plans. Construct the temporary bridge and approach embankments wide enough to provide the

widths indicated on the Plans, and to safely pass contractor's equipment during all phases of constructing the new bridge;

e. Design vertical clearance for the life of the temporary structure. A minimum vertical clearance of 16.5 feet is required above a state highway, local road, or street open to the public. A minimum vertical clearance of 23 feet is required above the Alaska Railroad. For navigable waters a minimum vertical clearance of 17 feet is required between the low elevation of the superstructure and (1) the ordinary high fresh water elevation;

f. Minimum vertical clearance of one foot between the low elevation of the superstructure and the maximum water flow elevation within your proposed construction opening. Calculate the design water discharge for each temporary bridge;

g. To support equipment used to install and remove the temporary bridge, and construct or renovate the existing bridge. List equipment type, size, capacity, lifting locations, and traffic patterns during lift on the working drawings. Indicate maximum construction loads and locations of applied construction loads;

h. Provide a concrete F-shape barrier or guardrail system on the bridge and bridge approaches. Anchor barrier system to prevent deflection when impacted. Locate barrier so outside edge is setback a minimum of 12 horizontal inches from outside edge of bridge deck;

i. Construct roadway surface of concrete or HMA. Construct skid-resistant bridge deck surface of concrete, steel, or HMA. The bridge deck surface shall not be wooden. Provide a bridge deck surface with a friction value of not less than 0.35 as determined by ASTM E1911.

j. Design to comply with the requirements of all permits and environmental commitments, including time windows during which work may occur. Apply for and obtain additional permits or modifications to existing permits as needed;

k. Do not use existing bridge components on the project site for temporary bridge construction;

l. To support loads from utilities identified in the Contract;

5. Provide load ratings of the temporary bridge according to the most recent version, including interim version, of the AASHTO Manual for Bridge Evaluation (MBE). Load rate steel and concrete bridges using the Load Factor Rating (LFR) and Load and Resistance Factor Rating (LRFR) methods. Load rate timber bridges using the Allowable Stress Rating (ASR) method and Load and Resistance Factor Rating (LRFR) methods. Include values for moment, shear and, where applicable, axial stresses. Specify live load type, placement for maximum stress, distribution, and impact. Include the following cases for LFR load ratings:

   a. inventory with multiple lanes and impact included

   b. operating with multiple lanes and impact included

   c. operating with one lane centered on the bridge and impact not included.

6. Design changes to approach roads must conform to permit requirements, and Department design standards applicable to the design criteria listed on the Plans.

520-2.05 DESIGN SUBMITTAL AND REVIEW. Comply with the following:

1. Retain a DOR to design temporary bridges or culverts and design changes to the approach roads, and to provide load ratings for temporary bridges. The design drawings and load ratings in the TBP must be stamped with the seal of, dated by, and signed by the DOR;

2. Retain an IE to perform an IDC; and to stamp with their seal, date, and sign an IDC letter certifying: "The TBP meets the AASHTO LRFD Bridge Design Specifications and the Contract requirements"; and

3. Submit the IDC letter with the TBP (except calculations may be one set), and with three sets of design changes to the approach roads, to the Engineer for review and approval at least 30 days prior to beginning construction of the temporary crossing.

520-2.06 VALUE ENGINEERING CHANGE PROPOSALS. Base your bid on supplying temporary crossing according to the Contract documents. After Award you may submit construction value engineering change proposals to the Engineer. Proposals must include permitting requirements and timelines for construction. The Department will consider value engineering change proposals in accordance with Subsection 104-1.06.

CONSTRUCTION REQUIREMENTS

520-3.01 TRAFFIC MAINTENANCE. Protect and control traffic according to Section 643 and the approved traffic control plan.

520-3.02 CONSTRUCTION AND MAINTENANCE REQUIREMENTS. Construct the temporary crossing entirely within the right-of-way and within permitted areas. Construct the temporary bridge according to the approved TBP. Construct the approach roads according to the Plans and Specifications, as modified by the DOR and approved by the Engineer. Construct according to the Standard Specifications for Highway Construction with exceptions noted by the DOR and this Section 520.

Bolted steel connections must use load indicating washers. Weld according to Subsection 504-3.01.7 Welding.

Maintain structure, safety appurtenances, and wearing surface of the temporary crossing until the acceptance of the mainline HMA and parallel guardrail installation. Maintain temporary crossings in a safe and functional condition. Keep bracing and connections tight, and immediately replace any damaged members or damaged connections. Promptly remove debris caught against, under or inside, temporary bridges.

Limit surface deviations to 3/8 inch, as measured from the testing edge of a 10-foot straightedge, between two contacts on the driving surface of the temporary crossing.

520-3.03 WINTER MAINTENANCE. During seasonal suspension of work the Department may accept maintenance responsibility for snow and ice removal according to Subsections 105-1.13 and 643-3.07. The Contractor is responsible for repairs and maintenance for damage resulting from the Department's action to remove snow and ice, or as required for any other reason, during seasonal suspension of work. Payment will be made for repairs resulting from Department caused damage by unit pay item or in accordance with Subsection 109-1.05, Compensation for Extra Work.

520-3.04 INSPECTION. The Contractor is responsible for Quality Control, and for the construction of temporary crossings, including temporary bridges or culverts and approach roads, to conform to the working drawings, specifications, and the Contract requirements.

The DOR is in responsible charge of Quality Acceptance and inspection, of temporary bridge materials and construction work. The DOR must verify in writing that the quality of bridge materials and construction work meet the design and Contract requirements. The DOR or qualified technician is required to be on-site and to inspect critical work including but not limited to abutments, piers, pile driving, welding, structural elements, fastening of structural elements, reinforcing steel placement, concrete pours, and foundation scour protection.

The Engineer may sample and test materials and may reject materials that do not meet the requirements of the design. The Engineer may inspect the construction of temporary crossing at any phase of construction and reject unacceptable work. The Engineer will inspect the finished construction of the temporary crossing before public use; however inspection by the Engineer will not relieve the Contractor from any responsibility for defective work.

520-3.05 APPROVALS. Obtain the following written approvals from the Engineer:

1. Temporary Culvert Plans prior to beginning temporary culvert installation;

2. TBP prior to beginning temporary bridge construction;

3. Design changes to temporary approach roads prior to construction of approach roads;

4. Temporary bridge construction prior to opening the bridge to traffic; and

5. Approach road construction prior to opening the road to traffic.

   Such approvals will not relieve the Contractor of the responsibility for defective work. The Contractor shall remain responsible for all aspects of the design, location and dimensions of the temporary crossing, including but not limited to materials, foundation, structural members, connections, safety barrier, and for satisfactory and safe construction of all work.

   The Engineer's review and approval of the TBP shall not be construed as a complete review, but will indicate only that the general method of construction and working drawings are acceptable to the Department, that the TBP appears complete, and that a certification of an IDC was provided.

   The request to open the temporary bridge to traffic must be supported by a final inspection report that is stamped with the seal of, dated by, and signed by the DOR; and that certifies: "The temporary crossing has reached Substantial Completion as defined in Subsection 101-1.03, conforms to the requirements of the TBP or Temporary Culvert Plans and the Contract, and can support design traffic loads and construction loads, and is suitable for public use."

520-3.06 CLEANUP. Remove temporary road embankment, temporary bridge or culvert and all temporary fill within ordinary high water; restore the creek above and below ordinary high water and install permanent erosion protection and bank stabilization for disturbed areas before final completion. Return the site substantially to its original condition and construct the "multipurpose trail" and trail crossing". Additional cleanup conditions may be listed in the permits.

In areas where the mainline guardrail installation conflicts with the temporary crossing, the mainline guardrail shall be installed within 48 hours after closure of the temporary crossing. At the end of each work shift, install drums or Type II barricade with flashing warning lights to delineate the incomplete sections of guardrail and terminal sections.

520-4.01 METHOD OF MEASUREMENT. Section 109.

520-5.01 BASIS OF PAYMENT.

Temporary Crossing. The lump sum payment is full compensation for all design, engineering, load rating, inspection, labor, equipment, and materials necessary to furnish, install, repair, maintain, and remove temporary crossings in their entirety. The lump sum payment also includes all traffic control and traffic maintenance within the limits of the temporary crossings.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
520.0001._____	Temporary Crossing	LS

SECTION 603
CULVERTS AND STORMDRAINS

01/20/15 (N21)
603-3.03 JOINING PIPE. *Delete numbered subparagraphs 2.a.2) & 3) and substitute the following:*

(2) Bands shall have a minimum width of 22 inches.

Delete numbered subparagraphs 2.b.2), 3) and 4) and substitute the following:

(2) Bands shall have a minimum width of 22 inches and shall have two circumferential rows of projections for each pipe end being joined.

(3) Furnish and install these bands with a gasket that resists infiltration and leakage.

SECTION 606
GUARDRAIL

11/01/16 (N67)
606-5.01 BASIS OF PAYMENT. *Add the following:* All traffic control devices necessary for removal, installation, reconstruction, or maintenance of 606 Pay Items shall be subsidiary to the respective 606 Pay Items.

SECTION 611
RIPRAP

01/20/15 (N23)
611-2.01 MATERIALS. *Add the following after the first sentence:* WAQTC FOP for AASHTO T 85 will determine apparent specific gravity.

01/20/15 (N24)
611-3.01 CONSTRUCTION REQUIREMENTS. *Add the following after the first sentence of the second paragraph:* The Contractor shall not deposit excavated materials in adjacent stream channels or other bodies of water or in areas subject to flooding during high flows.

SECTION 615
STANDARD SIGNS

01/20/15 (N27)

615-3.01 CONSTRUCTION REQUIREMENTS. *Delete numbered subparagraph 8 in its entirety and substitute the following:*

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.

    b. Finished signs must be clean and have no chatter marks, burrs, sharp edges, loose rivets, delaminated reflective sheeting, oxidation, corrosion, other blemishes, aluminum marks, or unapproved coatings. Do not make repairs to the face sheet.

    c. Replace any finished sign not meeting a. and b. with a replacement sign at no cost to the Department.

11/01/16 (N68)

615-5.01 BASIS OF PAYMENT. *Delete the first sentence and substitute the following:* Sign posts, bases, mounting hardware and all traffic control devices necessary for removal, installation, reconstruction, or maintenance of 615 Pay Items are subsidiary.

Delete Section 618 in its entirety and substitute the following:

02/01/20 (N30)

SECTION 618
SEEDING

618-1.01 DESCRIPTION. It is the intent of this work that a uniform living vegetative cover be established according to the Plans and Specifications. This work consists of soil preparation, seeding, fertilizing, mulching, and establishing, and maintaining vegetated areas.

618-2.01 MATERIALS. Use materials that conform to the following:

Seed	Section 724
Fertilizer	Section 725
Mulch	Subsection 727-2.01
Water	Subsection 712-2.01

CONSTRUCTION REQUIREMENTS

618-3.01 SOIL PREPARATION. Clear all areas to be seeded of stones 4” and larger in diameter and of all weeds, plant growth, sticks, stumps and other debris or irregularities which may interfere with the seeding, establishment, and maintenance of the vegetated areas.

Prior to the application of seed, prepare slopes using one or more of the following methods, or as approved by the Engineer:

1. Manual Raking – Requires manual labor with landscaping rakes to produce a uniform pattern of grooves perpendicular to the fall of the slope.
2. Mechanical Raking - Requires the use of a scarifying slope board to produce grooves with an approximate width and depth of 1”, and no more than 6” apart. The resultant indentations shall leave a uniform pattern of grooves perpendicular to the fall of the slope.
3. Mechanical Track Walking - Requires operating tracked equipment in such a manner as to leave a uniform pattern of grooves perpendicular to the fall of the slope.

618-3.02 SEEDING SEASON. Perform seeding after the ground is free of snow and no sooner than May 31 and no later than August 31. Perform seeding when wind conditions, climatic conditions, and soil conditions will not hinder seeding and establishment.

618-3.03 APPLICATION METHOD. Use the Hydraulic Method. You must obtain the Engineer's permission to use the Mechanical Method.

Hydraulic Method:

1. Seeding by the hydraulic method consists of furnishing and placing a slurry of dye, seed, fertilizer, trace mulch, water, and a second application of mulch.
2. Do not place seed in the slurry prior to 30 minutes before application.
3. Add the proportionate amount of seed to the water slurry in the hydraulic seeder after the proportionate amounts of trace mulch and fertilizer have been added.
4. Apply the slurry mixture in a manner that results in an even distribution of all materials. Apply seed, fertilizer, and trace mulch together in one application.
5. Hydraulic seeding equipment must maintain continuous slurry agitation so that a homogeneous, uniform mixture is applied through a spray nozzle, for the complete tank load. The pump must be capable of producing sufficient pressure to maintain a continuous, nonfluctuating spray capable of reaching the extremities of the seeding area with the pump & nozzle unit located on the roadbed. Provide sufficient hose to reach areas not practical to seed from the pump & nozzle unit situated on the road bed.
6. A second application of mulch shall be applied within 24-hours after seeding. Mulch shall be furnished and evenly applied at the rates required for temporary stabilization per the manufacturer's recommendations and according to Subsection 727-2.01. Mulch sprayed on signs or sign structures shall be removed the same day.

Mechanical Method:

1. Use mechanical spreaders, seed drills or other approved mechanical seeding equipment when seed and fertilizer are to be applied in dry form.
2. Water seeding area both prior to and after the application of fertilizer.
3. Spread fertilizer separately from seed.
4. An application of mulch shall be applied within 24-hours after seeding. Mulch shall be furnished and evenly applied at the rates required for temporary stabilization per the manufacturer's recommendations and according to Subsection 727-2.01. Mulch sprayed on signs or sign structures shall be removed the same day.

618-3.04 APPLICATION RATE. Apply seed, fertilizer, and trace mulch at the rates specified in the table below:

MATERIALS	TYPE	APPLICATION RATE PER 1,000 SQUARE FEET
Seed*	50% 'Nortran' Tufted Hairgrass 20% 'Arctared' Red Fescue 20% Wainwright Slender Wheatgrass 10% Annual Ryegrass	0.75 lb 0.30 lb 0.30 lb 0.15 lb
	Total	1.5 lb
Fertilizer	20-20-10	10 lb
Trace mulch**	See Subsection 727-2.01	20 lb

* Do not remove the required tags from the seed containers.

** Trace mulch application rate may be adjusted according to the manufacturer's recommendations when approved by the Engineer. Trace mulch is not required for mechanical seeding.

618-3.05 MAINTENANCE. Protect seeded areas against erosion and sedimentation. Protect seeded areas against traffic by approved warning signs or barricades. Water seeded areas, in a non-erosive manner, as required to establish a uniform living perennial vegetative cover. Be responsible for identifying, retracking, reseeding, refertilizing and remulching gullied or otherwise damaged areas. The second application of mulch shall be maintained so it properly performs its temporary stabilization function until final stabilization is achieved. Rescarify, reseed, refertilize and remulch unproductive areas as directed by the Engineer.

618-3.06 PERIOD OF ESTABLISHMENT. The establishment period extends until a uniform (e.g. evenly distributed, without large bare areas) perennial living vegetative cover with a density of 70 percent of the native background vegetative cover is established.

618-3.07 ACCEPTANCE. The Engineer will accept seeding when a uniform (e.g. evenly distributed, without large bare areas) perennial living vegetative cover with a density of 70 percent of the native background vegetative cover is established.

618-4.01 METHOD OF MEASUREMENT. Section 109 and as follows:

Watering seeded areas per Subsection 618-3.05 will not be measured directly for payment and is subsidiary, except when Pay Item 618.0003.____ is listed on the Bid Schedule.

Identifying, retracking, reseeding, refertilizing and remulching gullied or otherwise damaged areas will not be measured directly for payment and is subsidiary.

Seeding by the Acre. By the area of ground surface acceptably seeded and maintained. Soil preparation, seed, fertilizer, all mulch, dye, and water required for seed and fertilizer application will not be measured directly for payment and is subsidiary.

Seeding by the Pound. By the dry weight of seed acceptably seeded and maintained. Soil preparation, fertilizer, all mulch, dye, and water required for seed and fertilizer application will not be measured directly for payment and is subsidiary.

Water for Seeding. By the M Gal. (1,000 gallons) acceptably placed. Use a conversion factor of 8.34 pounds per gallon, if measured by weight.

618-5.01 BASIS OF PAYMENT. The accepted quantity will be paid for at the contract price, per unit of measurement, for the pay items listed below that appear on the bid schedule.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
618.0001.____	Seeding	ACRE
618.0002.____	Seeding	LB
618.0003.____	Water for Seeding	MGAL

SECTION 642
CONSTRUCTION SURVEYING AND MONUMENTS

01/20/15 (N34)
642-3.01 GENERAL. *Delete the fifth paragraph and substitute the following:* Follow the Department's Construction Surveying Requirements, or if GPS survey is approved by the Engineer, use the Alaska Survey Manual GPS Surveys 2010 (rev. 8/15/10).

Add the following to the last sentence in the second to the last paragraph: or the Alaska Survey Manual GPS Surveys 2010 (rev. 8/15/10).

Add the following: Install a temporary fence to ensure that an archeological site (FAI-02398) near Little Goldstream Creek is not disturbed during upgrades to the Little Goldstream Creek Bridge No. 678. Stake the temporary Archeological Barrier Fence with a plastic barrier suspended on stakes, located in undisturbed ground at the top of the existing road cut, with the following provisions:

1. That the fence posts be driven in by hand to avoid disturbance to the site.
2. That no excavation be done to install the fence.
3. That no vehicles be driven across the site.
4. That the fence be installed far enough from the existing cut bank to ensure that it does not cause erosion.

01/20/15 (N35)
642-3.01 GENERAL. *Add the following:* Stake all environmental permit boundaries, including but not limited to Corps of Engineers permit boundaries and temporary work zone boundaries, with green colored stakes. Stake according to the permit and frequently enough that you can construct the project without risk of violating the permit conditions, but in no case set stakes further apart than 200 feet or as deemed necessary by the Engineer.

642-3.02 CROSS-SECTION SURVEYS. *Add the following to the first paragraph:* or the Alaska Survey Manual GPS Surveys 2010 (rev. 8/15/10).

Delete numbered paragraph 4 of the second paragraph in its entirety and substitute the following: Department's Construction Surveying Requirements or the Alaska Survey Manual GPS Surveys 2010 (rev. 8/15/10).

642-4.01 METHOD OF MEASUREMENT. *Add the following:* All work and materials required to stake environmental permit boundaries will not be measured for payment, rather is subsidiary to other items of work.

SECTION 643
TRAFFIC MAINTENANCE

643-1.06 CONSTRUCTION PHASING PLAN. *Delete numbered subparagraph 2 and substitute the following:*

2. Submit a construction phasing plan containing the following elements:

   a. Install two (2) Variable Message Boards for two (2) weeks prior to project through Project Completion
   b. Stake permit boundaries and right-of-way
   c. Install BMP's
   d. Clear and grub
   e. Construct temporary crossing (temporary bridge or culvert and diversion)
   f. Stabilize temporary crossing (seeding, etc.)
   g. Install temporary traffic control for diversion
   h. Shift traffic to temporary crossing
   i. Excavate unclassified material behind soldier pile walls to a depth and width required to remove existing "upper" bridge superstructure
   j. Remove existing "upper" bridge superstructure
   k. Remove portions of the soldier pile wall (foundations) and bracing to a depth and width required to construct the new bridge foundation and superstructure
   l. Construct road to and from the bridge
   m. Adjust temporary traffic control as needed
   n. Shift traffic to new bridge
   o. Remove temporary crossing
   p. Finish constructing the road embankment slopes as needed per the typical section
   q. Stabilize remaining areas as needed (seeding, etc.)
   r. Complete remaining work items as needed (signing, approaches, mailbox, etc.)

643-3.04 TRAFFIC CONTROL DEVICES. *Delete subparagraph 8 and substitute with the following:*

8. Portable Changeable Message Board Signs. Furnish Changeable Message Signs two weeks prior to project through project completion. Display only messages approved on the TCP. Follow application guidelines in the ATM.

03/07/19 (N40)
643-5.01 BASIS OF PAYMENT.

11. Traffic Control. *Add the following schedule:*

TRAFFIC CONTROL RATE SCHEDULE

TRAFFIC CONTROL DEVICE	PAY UNIT	UNIT RATE
Construction Signs	Each/Day	$ 6.50
Special Construction Signs	Square Foot	$ 28.00
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	Linear Foot	$ 25.00
Portable Concrete or Steel F Shape Barrier (12.5 foot standard length or$8/foot)	Each	$ 100.00

TRAFFIC CONTROL DEVICE	PAY UNIT	UNIT RATE
Temporary Crash Cushion/ non-redirective Water filled barrier (all required per end)	Each	$ 2,500.00
Temporary Crash Cushion / non-redirective Water filled Barrels (all required per end)	Each	$ 3,285.00
Temporary Crash Cushion / non-redirective Sand filled Barrels (all required per end)	Each	$ 4,325.00
Temporary Crash Cushion / Redirective	Each	$ 9,230.00
Plastic Safety Fence	Foot	$ 1.00
Temporary Sidewalk Surfacing	Square Foot	$ 2.00
Flexible Markers (Flat Whip, Reflective)	Each	$ 60.00
Flagging	Hour	$ 58.00
Archaeological Barrier Fence	Linear Foot	$ 1.50
Electronic Boards, Panels and Signals		
Sequential Arrow Panel	Each/Day	$ 36.00
Portable Changeable Message Board Sign	Each/Day	$ 130.00
Portable Traffic Signals (Two)	Each/Day	$361.00
Cars and Trucks w/driver		
Pilot Car (4x2 ½ ton truck, or any car)	Hour	$ 72.00
Watering Truck – up to 4900 gallon capacity	M-Gallon	$ 28.00
Watering Truck – more than 4900 gallon	M-Gallon	$ 21.00
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
Interim Pavement Markings		
Painted Markings	Linear Foot	$ 0.30
Preformed Pavement Marking Tape (removable or non-removable)	Linear Foot	$ 1.75
Temporary Raised Pavement Markers	Each	$ 1.00
Word or Symbol Markings	Each	$ 40.00
Temporary Cover Markings	Linear Foot	$ 4.00
Removal of Pavement Markings	Linear Foot	$ 1.25

Delete Section 644 in its entirety and substitute the following:
03/13/20 (N41)

SECTION 644
SERVICES TO BE FURNISHED BY THE CONTRACTOR

644-1.01 DESCRIPTION. Furnish and maintain facilities and services specified in the Contract for the Department's project administrative personnel to use during the project. Services include heat, electrical power (NEC compliant), water and any others required to operate the facilities. All furnished facilities remain the property of the Contractor when the work is completed.

The Engineer may delete any 644 Items, by Directive within five working days after the Preconstruction Conference. If any 644 Items are deleted within the specified period, Subsection 109-1.09, Eliminated Items, shall not apply to the deleted 644 Items.

644-2.01 FIELD OFFICE. Furnish and maintain a suitable office for the Engineer to use during construction. Make the Field Office available for occupancy 2 weeks before commencing work on the project through one week after Project Completion. The Field Office shall be within one half of one mile from the project.

1. Submit office proposal to the Engineer prior to procurement or transporting office to the project. The Engineer will approve the office general condition, location, access, features, and physical layout prior to beginning any office setup work. If this office is part of your building, completely partition it from the rest of the structure and provide a separate outside door equipped with a lock.

2. Provide at least the following minimum requirements, or as approved by the Engineer:

    a. Floor space of at least 500 ft^2
    b. Window area of at least 60 ft^2
    c. Lockable outside door(s)
    d. 6 each plastic folding tables, 6 ft. long
    e. Shelf space of at least 24 linear feet
    f. Adequate heating and cooling devices, and fuel or power to run the devices, to maintain an office temperature between 65° and 75°F.
    g. Adequate ventilation
    h. Continuous supply of drinking water from an approved source or commercial supplier
    i. Sanitary facilities including adequate hand soap, hand sanitizer, toilet paper, and paper towels
    j. Janitorial services at least weekly
    k. Provide electrical service as indicated in 644-2.09, #1 Field Office
    l. Internet Service and Phone:

        Furnish and install a high speed internet service and three telephones, with all necessary ancillary equipment.

        The internet system shall have a send and receive capability supporting 1.0 Mbps download speed or higher and 0.5 Mbps upload speed at all times. The internet system shall have a minimum monthly data usage of 10 GB. Include a wireless router and an appropriately sized battery backup for the internet system. The system shall be for the exclusive use of the Engineer.

        The telephone system shall consist of commercially available telephones with the necessary equipment for each line. Provide one telephone that includes a built in digital answering machine.

        Internet and telephone service shall be supplied and operational no more than two weeks after the field office has been set up on site. Service plans shall be provided and remain in effect for the duration of the use of the field office.

    m. One multifunction Color Printer/Scanner/Copier meeting the following requirements:
        New or like-new condition
        Printing/copying at least 32 ppm
        Scan speed of 40 ppm at 400 DPI in color, at a minimum
        Print/Scan/Copy 8.5” x 11” and 11” x 17” in color, at a minimum
        Supports network scanning (FTP and SMB Support)
        Supports network printing (PCL and Postscript)
        Network card included
        Automatic Document Feeder

Furnish ink and toner and perform repairs and maintenance as necessary.

The Printer/Scanner/Copier remains property of the Contractor upon completion of the contract.

n. Make the field office accessible according to the requirements of *Americans with Disabilities Act Accessibility Guidelines* (ADAAG). Provide at least one designated handicap parking space.
o. One AED (Automated External Defibrillator), with carrying case and properly marked wall cabinet. Provide training on how to use the AED.
p. One combination Smoke and Carbon Monoxide Detector minimum. Provide combination Smoke and Carbon Monoxide Detectors in any location requested by the Engineer.
q. One 25 Person Trauma First Aid Kit. List of required contents available at http://dot.alaska.gov/nreg/files/25-Person-Trauma-Kit-Contents.pdf
r. 0 mobile hotspots with month-to-month data plans. Include car charger and 5 gigabytes of data usage per month.

3. Provide electrical power to the Department's portable concrete compressive strength lab if there are any bridge items in the bid schedule as identified in 644-2.09, #9.

4. Provide electrical power to the Department's portable nuclear storage trailer as identified in 644-2.09, #8.

5. Provide the following to the Department's portable asphalt lab if there are any asphaltic materials in the bid schedule and item 644.0002.____ Field Laboratory does not appear in the bid schedule.

   a. electrical service as identified in 644-2.09, #4 Asphalt Laboratory.
   b. internet service as specified for the Field Laboratory.

All long distance calls made by State personnel will be paid by the State. Installation and maintenance fees, local calls, connection fees and internet service provider fees, and all other fees shall be paid by the Contractor. Paper used by the copier/scanner/printer will be paid by the State.

644-2.02 FIELD LABORATORY. Furnish and maintain a field laboratory for the Engineer to use exclusively throughout the contract. Provide a completely functional installation 2 weeks before commencing construction work through one week after Project Completion.

1. Grade and compact a site for the lab acceptable to the Engineer. Locate and level the structure on this site. If subsequent ground movement causes an unlevel or unstable condition, re-level or re-locate the facility as directed.

2. Provide a weatherproof structure suitable to field test construction materials, with the following minimum functional requirements:

   a. Floor space of 300 ft^2
   b. Two 10-ft^2 windows that open and lock
   c. Lockable door(s)
   d. Work bench(es), 2 1/2 x 16 feet total, 3 feet high
   e. Shelf space, 1 x 16 feet
   f. One 18-inch deep sink with attached industrial faucet with hand sprayer attachment and approved drain
   g. A gravity-fed 250-gallon tank or pressurized constant water supply of acceptable quality
   h. electrical service as indicated in 644-2.09, #2 Field Laboratory
   i. Heating equipment suitable to maintain a uniform room temperature of 65° to 75°F

j. Storage cabinet, 3 ft x 3 ft x 3 ft, lockable, securely fixed to an inside wall with a hinged door opening outward
k. Office desk and 2 chairs
l. One combination Smoke and Carbon Monoxide Detector minimum. Provide Combination Smoke and Carbon Monoxide Detectors at any location requested by the Engineer.
m. One 25 person Trauma First Aid Kit.
n. Internet Service and Phone:

Furnish and install a high speed internet service and a telephone, with all necessary ancillary equipment.

The internet system shall have a send and receive capability supporting 1.0 Mbps download speed or higher and 0.5 Mbps upload speed at all times. The internet system shall have a minimum monthly data usage of 10 GB. Include a wireless router and an appropriately sized battery backup for the internet system. The system shall be separate from the internet system of the Contractor for exclusive use of the Department.

The telephone system shall consist of commercially available telephones with the necessary equipment for each line. Provide one telephone that includes a built in digital answering machine.

Internet and telephone service shall be supplied and operational no more than two weeks after the field laboratory has been set up on site. Service plans shall be provided and remain in effect for the duration of the use of the field laboratory.

3. If the lab is a mobile unit mounted on axles and wheels, block the structure under the frame so that the wheels do not touch the ground and the blocking rests firmly on the prepared site.

4. Provide a separate weatherproof shed within 20 feet of the main lab structure (Shaking Shed). Grade and compact a site for the Shaking Shed acceptable to the Engineer. Locate and level the structure on this site. If subsequent ground movement causes an unlevel or unstable condition, re-level or re-locate the facility as directed.

a. The Shaking Shed shall have the following minimum functional requirements:

(1) Floor 8 ft x 12 ft, ceiling height 8 ft
(2) Door 4 ft wide and window 5 ft^2 that opens, both lockable
(3) electrical service as identified in 644-2.09, #3 Field Laboratory Out Building
(4) Work table 3 ft x 1 1/2 ft x 3 ft high, capable of supporting 250 pounds and affixed to an inside wall as directed
(5) Concrete-slab floor, 8 ft x 8 ft x 4 inches thick, cast-in-place or pre-cast. Install anchor bolts in the floor to accommodate the mounting pattern of the Gilson sieving machine at a location as directed.

Found the slab directly on the prepared site such that it is continuously supported.

5. Provide a weatherproof pole shed adjacent to the Shaking Shack. Grade and compact a site for the Splitting shed acceptable to the Engineer. Locate and level the structure on this site. If subsequent ground movement causes an unlevel or unstable condition, re-level or re-locate the facility as directed.

a. The Splitting shed shall meet the following minimum requirements
(1) 12’ x 24’ Pole shed structure with 8’ minimum ceiling height.
(2) Pole spacing 4’ to 6’
(3) Water proof roof
(4) 2x4 construction, or manufactured structure approved by the Engineer.
(5) 6 each 4’ T8 LED lighting fixtures with bulbs spaced evenly across the roof structure

(6) Manufactured, industrial strength, welded-metal shelving with total 52 square feet of shelving
(7) 2 walls
(8) Smooth rigid floor as approved by the Engineer

6. For all types of installations, if the entryway is located higher than a single 7-inch rise, provide the following:

   a. Stairway, 3 feet wide x 11-inch tread x 7-inch rise
   b. Landing, 4 ft x 4 ft centered on the entryway
   c. Handrail(s) firmly affixed to the stairway

7. Provide the following lab equipment and services:

   a. Propane necessary for the lab operation, including two 100-lb tanks, regulators, hoses, fittings, and incidentals for a functional system
   b. Specialized sampling equipment such as belt templates or belt sampling devices as required
   c. Fuel and power necessary to continuously operate the facilities

8. Provide the following to the Department's portable asphalt lab if there are any asphaltic materials in the bid schedule.

   a. electrical service as identified in 644-2.09, #4 Asphalt Laboratory.
   b. internet service as specified for the Field Laboratory.

644-2.03 CURING SHED. Furnish and maintain a suitable weather tight shed for curing concrete test cylinders, with a suitable tank(s) for curing concrete test cylinders.

Provide a tank(s) large enough to contain at least 6 each 4" x 8" test cylinders from each pour that you propose to make during any 28-day period. Use a tank(s) at least 18 inches high, insulated, and constructed of heavy duty plastic or non-corrosive metal. Construct a lid to provide access to the tank(s).

Provide suitable heating to maintain the temperature in the tank between 70° and 77°F at all times when curing the test cylinders. In addition, provide suitable thermometers in the shed and tank(s) to check the temperature.

Provide a supply of calcium hydroxide (high-calcium hydrated lime) sufficient to maintain a fully saturated water bath in the tank(s). Provide a source of potable water.

Provide one combination smoke alarm and carbon monoxide detector.

Provide electrical service as identified in 644-2.09, #5 Curing Shed

644-2.05 VEHICLES. Furnish and maintain vehicles in good condition that are less than three years old and with less than 36,000 miles on the odometer for the exclusive use of the Department throughout the project. Provide full-size four-wheel drive pickups or sport utility vehicles. The Special Provisions will state the required number and type of vehicles. Provide vehicles from two weeks before commencing work to one week after Project Completion. Maintain the vehicles in satisfactory running condition throughout the duration of the contract. Provide insurance, fuel, fluids, lubricants, tire repair/replacement, and windshield repair/replacements as needed. If a vehicle is down for more than 24 hours, provide a replacement Vehicle of the same type at no additional cost.

The State of Alaska is responsible for damage to any vehicle caused by its own negligent operation.

The Engineer will approve the vehicles prior to transporting them to the project site. In addition to use on the project, all of the vehicles will be allowed to make round trips to the Department's regional headquarters. Remove all vehicles from the project at the end of the Contract.

Number of Vehicles	Type
1	Full Sized 8 Passenger SUV
2	1/2 Ton Extended Cab Pickup

Equip each vehicle as follows:

1. Four wheel drive
2. Automatic transmission
3. Power steering
4. Air conditioning
5. Fire extinguisher & basic first aid kit
6. Jack and lug wrench
7. Load range E tires in good condition
8. Two full size load range E spare tires in good condition mounted on rims
9. 360-degree Permanent Beacon
10. 2 sets of keys
11. CB Radio with 48" Antenna for all projects more than 50 miles from Fairbanks.
12. 3 each AKDOT&PF magnetic stickers. Plans available at http://dot.alaska.gov/documents/DOT-SOA-Construction-Magnets-Specs.pdf

Materials Truck

Number of Vehicles
1

Meet the above requirements for a vehicle and the following:

1. Flatbed with 2' tall railing
2. Minimum 1,000 lb Lift attached to the bed of the truck

644-2.06 NUCLEAR TESTING EQUIPMENT STORAGE SHED. Design, furnish and maintain a weatherproof, heated, and ventilated nuclear densometer/testing equipment storage shed for the Engineer to use exclusively throughout the contract. Install the building at least 15-feet from an occupied area at a location approved by the Engineer. Install the shed at least one week before the commencement of construction activities and maintain it until one week after Project Completion. Provide sufficient floor area for the nuclear testing equipment and a portable electric heater to maintain a minimum room temperature of 50°F. Design the building with enough floor area to provide sufficient clearance between the equipment, heater, and combustibles. Provide a commercial grade metal-clad exterior entrance door of 3'-0" min width by 6'-8" height with dead-bolt lockset. Hang the door so that hinge pins are not accessible from the exterior. Provide the Engineer with 2 keys to control access. Provide a 5/16" x 10 foot long welded steel security chain securely attached inside the structure with tamperproof hardware for the Engineer to secure the testing equipment. Provide electrical service as identified in 644-2.09, #7 Nuclear Testing Equipment Storage Shed. Secure the structure to the ground with tamperproof anchors to resist wind loads and prevent unauthorized movement of the building. The Nuclear Testing Equipment Storage Shed remains the property of the Contractor. Remove the shed from the site following project completion. The Nuclear Testing Equipment Storage Shed must be windowless.

644-2.07 STORAGE CONTAINER. Furnish, transport and maintain a weathertight, lockable, steel enclosed 20 foot long x 8 foot wide x 8 foot high wooden floored container for the storage of the Department's materials, supplies and testing equipment (but not nuclear equipment). Provide twenty

equally spaced fastening points on the interior walls that are capable of securing the Department's contents. Door opening dimensions of the storage container shall be greater than 60 square feet. Supply necessary equipment to lift and move container with minimal disturbance to the Department's contents. The container shall not be moved by skidding or hook lift. The Contractor shall be listed as the shipper on all documents listing and acknowledging receipt of the Department's goods for shipment.

Deliver an empty and clean container to the Regional Materials Laboratory, or location acceptable to the Engineer, three weeks prior to transporting to the project site. Allow 7 days for the Department to load the container. Transport the loaded container to the project site. Set up container at a location approved by the Engineer at least one week before the commencement of construction activities and maintain it until one week after Project Completion.

1. Provide electrical service and other facilities as follows:

    a. Provide a stairway with railing, built to meet the International Building Code, if there is more than 12-inch difference in floor entry and existing ground elevation.
    b. Provide electrical service as identified in 644-2.09, #6 Storage Container.

Return the container to the Regional Materials Laboratory, or location acceptable to the Engineer, upon project completion. Allow 7 days for the Department to unload the container. The storage container remains your property after you complete the work.

644-2.08 FIELD COMMUNICATIONS. Provide internet and phone communication systems as directed by the Engineer.

644-2.09 ELECTRICAL POWER. Furnish and maintain a constant source of power to the facilities specified in the contract for the Department's use during the project. Provide a completely functional installation 2 weeks before commencing construction work through 2 weeks after Project Completion.

1. FIELD OFFICE. Provide electrical services as follows:

    a. Heating/Cooling adequate to maintain temperatures between 65° to 75°F
    b. Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
    c. Wiring system to support a 40 amp user load demand with two 20-amp circuits
    d. Eight conveniently spaced outlets on the interior wall, consistent with local codes
    e. Eight 8ft LED minimum 5000 lumen lamps or sixteen 4ft LED minimum 2000 lumen lamps, between 2800K and 5000K color temperature

2. FIELD LABORATORY. Provide electrical services as follows:

    a. Heating/Cooling adequate to maintain temperatures between 65° to 75°F
    b. Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
    c. Wiring system to support a 40 amp user load demand with two 20-amp circuits, GFI Protected
    d. Six conveniently spaced outlets on the interior wall, consistent with local codes
    e. Eight 8ft LED minimum 5000 lumen lamps or sixteen 4ft LED minimum 2000 lumen lamps, between 2800K and 5000K color temperature
    f. Exhaust fan: minimum 300 CFM

3. SHAKING SHED. Provide electrical services as follows:

    a. Heating/Cooling adequate to maintain temperatures between 65° to 75°F
    b. Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
    c. Wiring system to support a 20-amp user load demand, GFI Protected
    d. Three conveniently spaced outlets on the interior wall, consistent with local codes

e. Two 8ft LED minimum 5000 lumen lamps or four 4ft LED minimum 2000 lumen lamps, between 2800K and 5000K color temperature
f. Exhaust fan: minimum 300 CFM

4. ASPHALT LABORATORY. Provide electrical services as follows:

a. Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
b. 100-amp service

5. CURING SHED. Provide electrical services as follows:

a. Heating/Cooling adequate to maintain temperatures between 70° to 77°F
b. Two 100-watt incandescent or four 4ft LED minimum 2000 lumen lamps, between 2800K and 5000K color temperature

6. STORAGE CONTAINER. Provide electrical services as follows:

a. Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
b. Wiring system to support a 20-amp user load demand, GFI Protected
c. Two conveniently spaced outlets on the interior wall, consistent with local codes
d. Four 100-watt incandescent or eight 4ft LED minimum 2000 lumen lamps, between 2800K and 5000K color temperature

7. NUCLEAR TESTING EQUIPMENT STORAGE SHED. Provide electrical services as follows:

a. Heating/Cooling adequate to maintain minimum temperatures of 50°F
b. Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
c. Two 100-watt incandescent or four 4ft LED minimum 2000 lumen lamps, between 2800K and 5000K color temperature
d. Wiring system to support a 20-amp user load demand

8. NUCLEAR TESTING EQUIPMENT STORAGE SHED (STATE PROVIDED). Provide electrical services as follows:

a. Electrical current, 120/240 VAC, 60-cycle on 24-hour basis
b. Wiring system to support a 20-amp user load demand

9. PORTABLE CONCRETE COMPRESSIVE LABORATORY. Provide electrical services as follows:

a. Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
b. Wiring system to support a 20-amp user load demand

If 644.0015____, Nuclear Testing Equipment Storage Shed is deleted the electrical power requirement are still required per 644-2.09, #8.

If the contract contains bridge items that require concrete or grout provide electrical power to the Department's Portable Concrete Compressive Laboratory per 644-2.09, #9.

644-3.01 METHOD OF MEASUREMENT. Section 109 and as follows:

Storage Container. By the number of storage containers specified, to include all components, installed and accepted as completed units and ready for materials and equipment storage.

644-4.01 BASIS OF PAYMENT.

Vehicles. Includes all resources, including fuel, oil, maintenance, and insurance to furnish the specified number of fully operational vehicles for the duration specified in the contract.

Lump Sum Items. Payment for lump sum items will be made as follows:

1. A percentage of the lump sum amount, to be determined by the Engineer, will be paid as full compensation for furnishing the facility at the site.

2. The balance of the lump sum amount will be prorated over the anticipated active construction period with a portion included as part of each interim payment, for maintenance, repairs, providing all utilities, and for removing it from the site. If anticipated construction period changes, the final increment will be held until final payment.

Storage Container. At the contract unit price to include all labor, materials, tools, equipment and supplies required to deliver the storage shed to the regional office for loading, to deliver it to the project office, to install it before commencement of construction, to maintain it for the duration of the project, to remove the shed and electrical service after project completion, to deliver it to the regional office for unloading, and to remove the storage shed. Electrical service and utility costs are subsidiary to this item.

Field Communications. Installation and maintenance of equipment and monthly invoice costs will be paid for by Contingent sum under Item 644.2002.0000, Field Communications. Provide invoices from vendor for installation, maintenance, and monthly subscription costs. When this bid item appears in the Bid Schedule, internet and phone service are not subsidiary to 644.0001.____ Field Office.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
644.0001.____	Field Office	LS
644.0002.____	Field Laboratory	LS
644.0003.____	Curing Shed	LS
644.0006.____	Vehicle	LS
644.0015.____	Nuclear Testing Equipment Storage Shed	EACH
644.0016.____	Storage Container	EACH
644.2002.0000	Field Communications	CS
644.2010.0000	Nuclear Testing Equipment Storage Shed	LS

Add the following:

SECTION 645
TRAINING PROGRAM

01/01/16 (SSP-39)

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.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
645.0001.0000	Training Program, ___ Trainees/Apprentices	Labor Hour

Delete Section 646 in its entirety and substitute the following:
02/01/20 (N42)

SECTION 646
CPM SCHEDULING

646-1.01 DESCRIPTION. Provide and maintain a Critical Path Method (CPM) progress schedule for the project. Use the schedule in coordinating and monitoring of all work under the Contract including activity of subcontractors, manufacturers, suppliers, and utility companies, and submittal review by the Department. Update the CPM as described in this specification.

Provide to the Engineer a legal copy of the software program to be utilized for the CPM Schedule item on the project. The software program shall have the full capacity to analyze and modify the CPM Schedule.

646-2.01 SUBMITTALS.

1. Submit a detailed initial CPM schedule at least 5 working days prior to the preconstruction conference, for the Engineer's approval. The construction schedule, for the entire project, may not exceed the specified contract time.

   Following the Engineer's review, if revisions to the proposed CPM schedule are required, do so promptly. The CPM schedule must be finalized within 15 days of the Notice to Proceed.

No contract work may be pursued at the project site without an approved CPM schedule.

2. Weekly Work Plans. Submit a Weekly Work Plan in conjunction with Weekly Progress Meeting agenda. Detail your proposed operations for the upcoming week. This work plan shall reflect a true and accurate assessment by the Contractor concerning the actual progress on the project. Include:

    a. Tasks / work activities
    b. Work hours
    c. Subcontractors
    d. Location of the work to be performed

The approval by the Department of the initial CPM Schedule, subsequent CPM updated schedules, and the weekly Work Plans shall not relieve the Contractor as the responsible party for development and execution of the means, method, and timing of performance reflected in the schedule, nor completing the project within the specified contract time.

646-3.01 REQUIREMENTS AND USE OF SCHEDULE.

1. Schedule Requirements. Prepare the CPM schedule as a Precedence Diagram Network developed in the activity-on-node format which includes:

    a. Activity description
    b. Activity duration
    c. Critical Sequence of activities and Critical Path.

    Show on the activity-on-node diagram the sequence and interdependence of all activities required for complete performance of all items of work under this Contract, including shop drawing submittals and reviews and fabrication and delivery activities. The maximum review period allowed by the contract shall be shown where review functions by the Department are noted on the schedule

    The contract completion time will be adjusted only for causes specified in this Contract.

2. Weekly Progress Meetings. Hold Weekly job site progress meetings with the Engineer for the purpose of reviewing and updating the CPM schedule. Review progress and verify finish dates of completed activities, remaining duration of uncompleted activities, and any proposed time estimate revisions. At a minimum, the Contractor's Project Manager, Project Superintendent, Traffic Control Supervisor shall attend the weekly job site meetings.

    Provide an updated CPM schedule when the critical path on the CPM schedule has changed by 7 or more days.

646-4.01 METHOD OF MEASUREMENT. Section 109.

646-5.01 BASIS OF PAYMENT. If the requirements of Item 646 CPM Scheduling are not in full compliance, five percent (5%) of the total progress payment value earned during the progress period will be withheld until the requirements of Item 646 CPM Scheduling are in full compliance.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
646.0001.____	CPM Scheduling	LS

SECTION 670
TRAFFIC MARKINGS

01/20/15 (N46)

670-3.01 CONSTRUCTION REQUIREMENTS. *Add the following after the first sentence:* All completed pavement marking symbols and words will be solid as shown on the Plans. When a stencil with bridges is used, fill all breaks not shown on the Plans after removing the stencil.

Add the following section:

SECTION 681
FUEL TANK

01/31/2020 (HSP20-1)

681-1.01 DESCRIPTION. This item consists of furnishing and installing a protected aboveground motor vehicle fuel or heating oil tank complete with fuel and accessories as specified. Prepare for Department use, an Environmental Protection Agency (EPA) approved Spill Prevention, Control and Countermeasure Plan (SPCC plan).

MATERIALS

681-2.01 TANK. Provide skid-mounted, doublewall, aboveground steel tank. The tank shall be of the type and capacity shown in the bid schedule. Equip tank with accessories as shown on the Plans and as follows:

1. Overfill Alarm. Provide a mechanical, audible overfill alarm, Ventalarm Signal as manufactured by Scully Signal Company, 70 Industrial Way, Wilmington, MA 01887 or approved equal.

2. Automatic Shut-Off Device. Provide a positive closing, mechanical, automatic shut-off device. Clay & Bailey model F-30 as manufactured by Clay and Bailey Manufacturing Co., 6401 East 40th Street, Kansas City, MO 64129 or approved equal.

3. Tank-Mounted Mechanical Fuel Gauge. Provide mechanical gauge with 12-hour clock face in feet and inches readout, activated by a stainless steel float connected to a stainless steel cable. Morrison Model 818 as manufactured by Morrison Bros. Co., P.O. Box 238, Dubuque, Iowa 52004 or approved equal.

4. Openings. Provide the following threaded openings and accessories on tank top:

    a. One 2-inch Interstitial Monitoring with plug

    b. One 2-inch Normal Vent with screen

    c. One 2-inch Product fill opening with locking cap

    d. One 2-inch Product pump opening with plug

    e. One 2 to 4-inch Liquid level gauge

    f. One 4 to 8-inch Emergency vent with plug, primary tank

    g. One 4 to 8-inch Emergency vent with plug, secondary tank

    h. No Drain Opening at bottom

5. Exterior Coating. Abrasive blast the exterior surface of the outer tank according to SSPC-SP 6. Coat the exterior surface with 8 mils total thickness of epoxy paint base and urethane paint finish.

6. UL Labeling. Heating oil tanks shall be manufactured and labeled according to UL 142. Motor vehicle fuel tanks shall be manufactured and labeled according to UL 142 and UL 2085.

7. Insulation. For motor vehicle fuel tanks install 3-inch thickness of insulation according to ASTM C332 and ASTM C495.

When a motor vehicle fuel-dispensing tank is specified, it shall meet or exceed the requirements of UL 2085, Underwriters Laboratories Standard for Safety for Protected Aboveground Tanks for Flammable and Combustible Liquids. Equip with a threaded opening for the specified fuel pump.

Tanks larger than 2,500 gallons require additional openings and accessories for UL rating.

681-2.02 MANUAL DISPENSING SYSTEM. Provide a double-action pump, equipped with detachable, self-venting bung adapter, set screws and strainer screen. Provide a dispensing system that is not gravity fed. The pump shall have 16 feet of ¾-inch diameter arctic service fuel hose with shut-off nozzle and deliver a minimum of 20 gallons/100 strokes. The pump supplied shall be a Gasboy, Model 1720, or approved equal.

681-2.03 ELECTRIC DISPENSING SYSTEM. Provide an electric suction or submerged turbine pump with a delivery rate up to 18 gpm, 3-wheel, meter-register with reset and non-resettable 6 digit master totalizer in a cabinet, anti-siphon valve with internal pressure relief, gate valve, canister style fuel filter, flow meter, 20 ft arctic service fuel hose with swivel and breakaway coupling, hose retractor, OPW 11-A automatic nozzle with lockable nozzle holder, explosion proof pump activation switch, emergency pump shutoff switch mounted on the SRE building, warning signs, and BC fire extinguisher per International Fire Code (IFC) chapter 2201 – 2206.

681-2.04 FUEL. No. 1 diesel or No. 1 heating oil, depending on tank use.

CONSTRUCTION REQUIREMENTS

681-3.01 INSTALLATION. Install according to the International Fire Code (IFC) chapters 22 and 34 for the type of tank specified. Mount and secure the tank on the skid base. Install dispensing system to include all fittings and hose. Install wiring of the pump and emergency shut off according to National Fire Protection Association (NFPA) 30 and the current edition of the National Electrical Code (NEC) for hazardous locations. Place tank at the location shown on the Plans, or as directed. Set automatic shut-off device to 90 percent capacity. Fill to 90 percent capacity with specified fuel.

681-3.02 SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN (SPCC). Provide for Department use after tank installation, an EPA approved SPCC plan for the motor vehicle fuel or heating oil tank, that is certified by a licensed professional engineer. (See http://www.epa.gov/oilspill/lawsregs.htm for SPCC plan requirements).

Comply with 40 CFR 112 and address the following issues in the SPCC Plan:

1. Operating procedures that prevent oil spills;

2. Control measures installed to prevent a spill from reaching navigable waters; and

3. Countermeasures to contain, clean up, and mitigate the effects of an oil spill.

The Contractor shall coordinate with the Department to identify oil spill response resources. The SPCC Plan shall take into account the Department's on-site equipment, oil spill containment material, cleanup material, and personnel; and shall make recommendations for future improvements in these areas.

Provide two (2) copies of the SPCC Plan; deliver one to the Engineer to be retained at the site and deliver the other to the Department's Statewide Safety Officer at 5300 E. Tudor Drive, Anchorage, AK, 99507.

681-4.01 METHOD OF MEASUREMENT. See Subsection 109-1.02 and the following:

1. Lump Sum. No measurement of quantities will be made.

2. Unit Prices. The quantity to be paid for will be the number of units installed, complete, in place, accepted, and ready for operation.

681-5.01 BASIS OF PAYMENT. At the contract unit price for the pay items listed below that appear in the bid schedule. Heating fuel distribution and delivery systems are measured and paid for under other Sections or by Special Provision.

Payment will be made under:

PAY ITEM		
Item Number	**Item Description**	**Unit**
681.0001.____	Heating Fuel Tank [Capacity in gallons]	Each
681.0002.____	Fuel	Lump Sum
681.0003.____	Manual Dispensing System	Each
681.0004.____	Electric Dispensing System	Each
681.0005.____	Motor Vehicle Fuel-dispensing Tank [Capacity in gallons]	Each
681.0006.____	Spill Prevention Control and Countermeasure Plan	Lump Sum

SECTION 703
AGGREGATES

703-2.07 SELECTED MATERIAL. *Add the following to item 1:* Aggregate shall have no more than 50 percent wear at 500 revolutions as determine by AASHTO T 96.

12/08/15 (N63)
703-2.09 SUBBASE. *Add the following:*

Subbase, Grading F. 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. Table 703-8 and the first paragraph of Subsection 703-2.09 do not apply to Grading F. Meet the following gradation as tested by ATM 304:

Sieve	Percent Passing by Weight
2 in	100%
No. 4	15-65%
No. 200	0-6%

SECTION 707
METAL PIPE

04/30/17 (N48)

707-2.01 CORRUGATED STEEL PIPE, PIPE ARCHES, AND UNDERDRAINS. *Add the following:* All seams on pipes manufactured with helical corrugations shall have a continuous weld extending from end to end of each length of pipe in conformance with AASHTO M 36. Seams shall be welded in such a manner that they develop 90% of the average ultimate strength of the base metal. A test shall be performed by an independent lab in accordance with AASHTO T 241 Section 4 during the year in which the pipe is fabricated. The Supplier shall maintain quality control test results and provide them upon request. A copy of the test results containing the information specified in Section 4.6 of AASHTO T 241 shall be furnished to the Engineer.

A Supplier of welded helically corrugated pipe which qualifies for inclusion in the current publication of the Department's QUALIFIED PRODUCTS LIST is not required to perform the test.

SECTION 708
PAINTS

08/02/18 (N61)

708-2.03 PAINT FOR TRAFFIC MARKINGS. *Delete this subsection in its entirety and substitute the following:*

1. Pigment Composition: Pigments shall be first quality paint grade pigments. The inert or filler pigments must be of a type and quality generally recognized as first quality paint grade products, and shall not contribute to settling of the paint in storage.

2. Vehicle or Resinous Binder Composition: The vehicle may be any combination of natural or synthetic resinous materials that are not prohibited per this specification. All resins used must be permanently capable of re-dissolving in the solvent combination used in the paint. Paint and binder combinations shall minimize build-up of the paint on the sides of tanks, paint lines, and clogging of spray equipment from un-dissolvable skins.

3. Use material that satisfies the requirements in Table 708-1

TABLE 708-1
PAINT FOR TRAFFIC MARKINGS

CHARACTERISTIC	MINIMUM	MAXIMUM	TEST METHOD
Viscosity @ 77ºF, (25ºC), KU	75	90	ASTM D562
Weight per Gallon at 77ºF, (25ºC)	11.0	---	ASTM D1475
Fineness of Grind, Hegman	2	---	ASTM D1210
Drying Time for no-pick-up, Minutes	---	5	ASTM D711
Contrast Ratio @ 5 mils wet, White and Colors (Black)	0.95 (1.0)	---	ASTM D2805
Colors: Yellow 33538; White: 37925; Blue 35180; Red 31138; Black 37038 or approved equals	Pass		FED-STD-595C
Directional reflectance of white paint applied at 15 mils wet film, percent (Measured with 45°:0° or 0°:45° geometry)	85	---	ASTM E1347
Directional reflectance of yellow paint applied at 15 mils wet film, percent (Measured with 45°:0° or 0°:45° geometry)	45	---	ASTM E1347
Volatile Organic Compounds (VOC), grams/liter (lbs./gallon)	-	150 (1.25)	EPA 40 CFR Part 59, ASTM D3960
Total Solids, % by Weight	70	-	ASTM D2369
Total Solids, % by Volume	43	-	ASTM D2697

4. Prohibited Materials: The Manufacturer must certify that the product does not contain mercury, lead, hexavalent chromium, halogenated solvents (such as Methylene Chloride), or any carcinogen, as defined in 29 CFR 1910.1200.

5. Condition in Container: Store according to the manufacturer's recommendations. For a minimum of one year from the date of manufacture, the paint shall meet each of the following conditions:

   a. Not show excessive settling in a freshly opened full can
   b. Show no curdling, livering, caking, lumps, skins, or color separation
   c. Be easily re-dispersed when mixed with a paddle
   d. Be easily re-dispersed after 5 minutes of mechanical shaking using a standard commercial paint shaker
   e. Water Resistance: Guaranteed water resistant when applied properly.

6. Weathering: Guaranteed against cracking and weathering under extreme conditions when applied properly.

7. Storage Stability:

   a. There must be no viscosity increase of 5 Krebs Units over the originally reported viscosity after aging in the container or decomposition of the product. Field examination of previously unopened containers must not disclose evidence of un-dissolvable gelatinous vehicle separation, heavy skin formation, or corrosion of the container of batches in storage one year or less. Containers stored under adverse conditions such as uncovered areas unprotected from the elements must show no evidence of the above conditions over a period of 6 months from date of shipment from manufacturer.

8. Application Temperature: The manufacturer's recommended minimum application temperature (air, surface and material) must be 40° Fahrenheit or lower.

Delete Section 724 in its entirety and substitute the following:
04/15/16 (N51)

SECTION 724
SEED

724-2.01 DESCRIPTION. This specification provides the requirements for grass seed, used to provide a living vegetative cover.

724-2.02 MATERIALS. Grasses of the type specified shall meet the applicable requirements as outlined by the State of Alaska Department of Natural Resources, Division of Agriculture, "Seed Regulations," latest edition. Seed shall meet or exceed the percentages of purity and germination as specified in Table 724-1. Grass seed shall be furnished in standard containers on which shall be shown the following information:

(1) the common accepted name of the specie (kind) and cultivar (variety) of the seed;
(2) the country or state where the seed was grown;
(3) the total percentage by weight of pure seed;
(4) the total percentage by weight of all weed seed;
(5) the total percentage by weight of inert matter;
(6) the total percentage by weight of other crop seed;
(7) the name and approximate number per pound of each kind of restricted noxious weed seed;
(8) the percentage of germination of the seed, together with the month and year the seed was tested;
(9) the percentage of hard seed, if any is present;
(10) the name and address of the person labeling the seed or selling, offering, or exposing the seed for sale within the state; and
(11) the lot number or other lot identification.

If furnished as a premixed seed, the containers shall state that the seed is a mixture; the name of the species and cultivars of seed; and total percentage by weight of each species of seed present in order of predominance; and the information listed above: (4), (5), (7), (8), (10) and (11).

Seed which contains any prohibited noxious weeds as listed in the Alaska Department of Natural Resources Division of Agriculture's Prohibited and Restricted Noxious Weeds list shall be rejected. The Prohibited and Restricted Noxious Weeds list is located at the following URL:
http://plants.alaska.gov/invasives/noxious-weeds.htm.

Seed containing more than the maximum allowable tolerance of restricted noxious weeds shall be rejected. Restricted noxious weeds, with their maximum allowable tolerances are listed in the Alaska Department of Natural Resources Division of Agriculture's Prohibited and Restricted Noxious Weeds list. The Prohibited and Restricted Noxious Weeds list is located at the following URL:
http://plants.alaska.gov/invasives/noxious-weeds.htm.

The Contractor shall furnish to the Engineer duplicate copies of a statement signed by the vendor certifying that each lot of seed has been tested by a recognized seed testing laboratory. Seed that has not been tested within nine (9) months shall be rejected. The Contractor shall not remove tags from the seed containers. Seed containers that do not have tags shall be rejected. Discrepancies in the lot numbers listed on the statement to the lot numbers indicated on the tags of the seed containers shall be grounds for rejection. Seed which has become wet, moldy, or otherwise damaged in transit or storage will not be accepted. The Contractor shall immediately remove rejected seed from the project premises.

TABLE 724-1
SEEDING REQUIREMENTS

SPECIES (KIND)	CULTIVAR (VARIETY)	PERCENT PURITY	PERCENT GERMINATION	PURE LIVE SEED (PERCENT PURITY X PERCENT GERMINATION)
American Sloughgrass	Egan	90	80	72
Annual Ryegrass	---	85	80	68
Alpine Bluegrass	Gruening	90	90	81
Beach Wildrye	Benson, Reeve	95	40	38
Bering Hairgrass	Norcoast	95	75	71
Bluejoint	Sourdough	95	75	71
Brome	Manchar, Polar	90	80	72
Glaucous Bluegrass	Tundra	95	80	76
Kentucky Bluegrass	Merion, Nugget, Park	95	80	76
Perennial Ryegrass	---	85	80	68
Polargrass	Alyeska, Kenai	95	75	71
Red Fescue	Arctared, Boreal, Pennlawn	98	80	78
Timothy	Climax, Engmo	95	90	85
Tufted Hairgrass	Nortran	95	75	71
Wheatgrass	Wainwright	95	85	81

SECTION 725
FERTILIZER

01/20/15 (N52)

725-2.02 MATERIALS. *Add the following:* Fertilizer which has become wet, moldy or otherwise damaged in transit or storage will not be accepted. The Contractor shall immediately remove rejected fertilizer from the project premises.

SECTION 727
SOIL STABILIZATION MATERIAL

8/02/2018 (N54)

727-2.01 MULCH. *Delete this subsection in its entirety and substitute the following:* All mulch, excluding trace mulch, shall provide 100% ground coverage. Apply mulch at the manufacturer's recommended application rate and increase as needed to achieve 100% ground coverage. All mulch, including trace mulch, shall meet one of the following:

1. Wood Cellulose Fiber or Natural Wood Fiber. Fiber shall be produced from natural or recycled (pulp) fiber, such as wood chips or similar wood materials, or from newsprint, corrugated cardboard, or a combination of these processed materials. Fiber shall not contain any rock, metal, or plastic. Fiber shall be treated with a green dye nontoxic to plant and animal life to facilitate inspection of the placement of the material. Fiber shall be manufactured in such a manner that after addition and

agitation in slurry tanks with water, the fibers in the material will become uniformly suspended to form a homogenous slurry. When hydraulically sprayed on the ground, the material shall allow the absorption and percolation of moisture. The organic matter content shall be at least 90 percent on an oven-dry basis. The moisture content shall be no more than 15 percent as determined by oven dried weight. Each package of the cellulose fiber shall be marked by the manufacturer to show the dried weight. Product must be nontoxic to plant and animal life.

Wood Cellulose Fiber or Natural Wood Fiber may be used to stabilize slopes flatter than 4H:1V. On slopes 4H:1V or steeper Wood Cellulose Fiber or Natural Wood Fiber may be used if an approved tackifier is used, in addition to Wood Cellulose Fiber or Natural Wood Fiber, according to the Manufacturer's recommendations. Wood Cellulose Fiber or Natural Wood Fiber may not be used after August 1.

2. Wood Strand. Wood Strand shall be a blend of loose, long, thin wood pieces derived from native conifer or deciduous trees with high length to width ratio. A minimum of 95-percent of the wood strands shall have lengths between 2 and 10 inches, with a width and thickness between 1/16 and 3/8 inches. Wood Strand shall not contain resin, tannin, or other compounds in quantities that are detrimental to plant life. Sawdust or wood shavings shall not be used as Wood Strand. Wood Strand may be used on slopes flatter than 4H:1V. Wood Strand may not be used after August 1.

3. Straw. All straw material shall be in an air dried condition, free of noxious weeds, seeds, and other materials detrimental to plant life. Hay is not acceptable. Straw shall be suitable for spreading with mulch blower equipment. Straw may be used on slopes flatter than 4H:1V. Straw may not be used after August 1.

4. Bonded Fiber Matrix (BFM). The BFM shall be a hydraulically-applied blanket/mulch/covering composed of long strand, thermally processed wood fibers and crosslinked, hydro-colloid tackifier. The BFM may require a 24-48 hour curing period to achieve maximum performance. Once cured, the BFM shall form an intimate bond with the soil surface to create a continuous, absorbent, flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth. BFM may be used to stabilize slopes between 2H:1V and 4H:1V. BFM may be used after August 1.

5. Fiber Reinforced Matrix (FRM). The FRM shall be a hydraulically-applied, flexible erosion control blanket/mulch/covering composed of long strand, thermally processed wood fibers, crimped, interlocking fibers and performance enhancing additives. The FRM shall require no curing period and upon application shall form an intimate bond with the soil surface to create a continuous, porous, absorbent and erosion resistant blanket that allows for rapid germination and accelerated plant growth. FRM may be used to stabilize slopes 2H:1V and steeper. FRM may be used after August 1.

A list of pre-approved products can be found in Table 1.

Table 1. Pre-Approved Mulch Products List

Product Name	Product Type	Manufacturer
Astro-Mulch	Wood Cellulose Fiber	Thermo-Kool Inc. Wasilla, AK
Fibermulch	Wood Cellulose Fiber	Thermo-Guard Insulation, Spokane, WA
NaturesOwn High Density Paper Hydroseeding Mulch	Wood Cellulose Fiber	Hamilton Manufacturing, Inc., Twin Falls, ID
Hydro-Spray	Wood Cellulose Fiber	National Fiber, Belchertown, MA
EcoFibre	Natural Wood Fiber	Profile Products LLC, Buffalo Grove, IL

Product Name	Product Type	Manufacturer
EcoFibre plus Tack	Natural Wood Fiber	Profile Products LLC, Buffalo Grove, IL
Terra Novo Wood Fiber Plus Tackifier	Natural Wood Fiber	Terra-Novo Inc. Bakersfield, CA
Conwed Fiber 1000	Natural Wood Fiber	Profile Products LLC, Buffalo Grove, IL
Rainier Fiber plus Tack	Natural Wood Fiber	Fiber Marketing International, Spokane, WA
Terra Wood with Tack	Natural Wood Fiber	Profile Products LLC, Buffalo Grove, IL
Excel Fibermulch II	Natural Wood Fiber	American Excelsior Co., Rice Lake, WI
Mat-Fiber Plus	Natural Wood Fiber	Mat, Inc., Floodwood, MN
Mat-Fiber	Natural Wood Fiber	Mat, Inc., Floodwood, MN
EcoAegis	Bonded Fiber Matrix (BFM)	Profile Products LLC, Buffalo Grove, IL
ProMatrix Engineered Fiber Matrix	Bonded Fiber Matrix (BFM)	Profile Products LLC, Buffalo Grove, IL
Verdyol Virgin BFM	Bonded Fiber Matrix (BFM)	Erosion Control Blankets, Manitoba, Canada
Rainier Fiber Bonded Fiber Matrix	Bonded Fiber Matrix (BFM)	Fiber Marketing International, Spokane, WA
Profile Hydro-Blanket BFM	Bonded Fiber Matrix (BFM)	Profile Products LLC, Buffalo Grove, IL
Soil Guard	Bonded Fiber Matrix (BFM)	Mat, Inc., Floodwood, MN
Flexterra FGM	Fiber Reinforced Matrix (FRM)	Profile Products LLC, Buffalo Grove, IL
Flex Guard	Fiber Reinforced Matrix (FRM)	Mat, Inc., Floodwood, MN
Hydra CX	Fiber Reinforced Matrix (FRM)	Tensar North American Green Poseyville, IN