STANDARD MODIFICATIONS

AND

SPECIAL PROVISIONS

To the STATE OF ALASKA

STANDARDS

SPECIFICATIONS

FOR

HIGHWAY CONSTRUCTION

(SSHC)

2017 EDITION

PROJECT NAME

Project No. XXXXX

Date

SECTION 101

DEFINITIONS AND TERMS

Standard Modifications

101-1.02 ACRONYMS. *Add the following:*

MSB Matanuska-Susitna Borough

101-1.03 DEFINITIONS

Add the following definitions:

BOROUGH -The Matanuska-Susitna Borough (MSB)

NON-FROST SUSCEPTIBLE. Material that contains 6 percent or less passing the No. 200 screen as determined by sieve analysis performed with ATM T-7 WAQTC FOP for AASHTO T 27/T 11 on minus 3-inch material.

Amend the following definitions:

CONTRACTING OFFICER. *Delete in its entirety and substitute the following:* The Contracting Officer shall be the Matanuska-Susitna Borough Purchasing Officer or his/her designee authorized to enter into and administer the contract on behalf of the Matanuska-Susitna Borough. He has the authority to make findings, determinations and decisions with respect to the contract and, when necessary, to modify or terminate the contract.

DEPARTMENT. *Delete and substitute*: BOROUGH. The Matanuska-Susitna Borough acting through its authorized representatives.

ENGINEER: *Delete in its entirety and substitute the following:* The Engineer is the authorized representative of the Borough Public Works Director and shall be a professional engineer licensed in the State of Alaska or, if applicable, an individual under the direct supervision of the professional engineer licensed in the State of Alaska, who is in responsible charge of the project.

HOLIDAYS. *Delete Items 2, 8, and 13 and substitute the following*:
2. Friday after Thanksgiving
8. Christmas Eve, December 24

INTERIM WORK AUTHORIZATION. *Delete in its entirety and substitute the following*: A written order by the Engineer initiating changes to the Contract within its general scope, without increasing cost or time of performance, until a subsequent Change Order is executed.

PLANS. *Delete text of PLANS and replace with*: The Borough's Contract drawings, profiles, typical cross sections, standard drawings, and supplemental drawings or reproductions showing the location, character, dimensions and details of the work.

STATE. *DELETE in its entirety and REPLACE with the following:* The Matanuska-Susitna Borough acting through its authorized representatives.

SUBGRADE. *Replace the definition of SUBGRADE with the following:* The soil or embankment upon which the pavement structure or surface course is to be constructed.

SECTION 102

BIDDING REQUIREMENTS AND CONDITIONS

Standard Modifications

DELETE the section in its entirety and refer to the bid advertisement and sample contract documents for bidding information:

MSB 052419

SECTION 103

AWARD AND EXECUTION OF CONTRACT

Standard Modifications

DELETE this section in its entirety and refer to the solicitation documents for bidding and contract information:

MSB 052419

SECTION 104

SCOPE OF WORK

Standard Modifications

104-1.02 CHANGES. *Replace Item 1 with the following:* The Engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the Contract nor release the surety, and the Contractor agrees to perform the work as altered.

If the alterations or changes in quantities significantly change the character of the work under the Contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Engineer may determine to be fair and equitable.

If the alterations or changes in quantities do not significantly change the character of the work to be performed under the Contract, the altered work will be paid for as provided elsewhere in the Contract.

The term "significant change" shall be construed to apply only when the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction.

DELETE: **2. OUTSIDE CONTRACT SCOPE**

SUBSTITUTE THE FOLLOWING:

2. OUTSIDE CONTRACT SCOPE

Changes determined to be outside of the general scope of the contract shall be done through the use of a supplemental agreement in accordance with MSB 3.08

104-1.05 CLEANUP. *Delete in its entirety and substitute the following:*

Upon completion of the work and before final acceptance and payment, the work area and all ground occupied by the Contractor in connection with the work, shall be cleared of all rubbish, excess materials and equipment, and all parts of the work shall be left in a condition acceptable to the Borough Inspector.

All stakes used for stationing layout and all string lines used during paving shall be picked up and removed from the work site by the Contractor.

MSB 032817

SECTION 105

CONTROL OF WORK

Standard Modifications

105-1.01 AUTHORITY OF THE ENGINEER. *ADD the following:*

When, in the opinion of the Engineer, conditions are such that the safety or convenience of the traveling public are adversely affected, the Contractor will be immediately notified in writing. The notice will state the defect(s), the corrective action(s) required, and the time required to complete such action(s). In no case shall this time exceed 24 hours. In the event that the Contractor fails to take the corrective action within the specified time, the Engineer reserves the right to have corrective action taken by outside forces. The cost of work by outside forces shall be deducted from any monies due or that may become due under the terms of this Contract.

105-1.06 UTILITIES.

2. Cooperation with Utility Owners. *DELETE Item 2 and REPLACE with the following:*

The Contractor shall request locates from all the companies and organizations having utilities in the area. The Contractor shall use the Statewide Locate Call Center for utility location services.

The Contractor shall also contact DOT&PF Maintenance & Operations Mat-Su District Superintendent at (907) 745-2159 for work within State owned rights-of-ways.

There may be various utility appurtenances located within the project limits. Cooperate with these utilities and coordinate schedule of work to allow them access to the project for their adjustments or relocation.

The Contractor assumes the obligation of coordinating their activities with utility owners, and shall cooperate with utility owners to facilitate removal, adjustment, or relocation operations, avoid duplication of work, and prevent unnecessary interruption of services.

Utility owners are not required to work in more than one location at a time, and shall be allowed to complete a specific section of work prior to commencing another section. Utility owners will not normally perform adjustment or relocation of underground utilities when the ground is frozen. Utility owners may prohibit the Contractor, through the Engineer, from working near utilities when the ground is frozen.

The Matanuska-Susitna Borough has sole discretion to grant permits for utility work within the Borough rights-of-way. The State of Alaska DOT&PF has sole discretion to grant permits for utility work within State rights-of-way. The Contractor shall allow parties with utility permits to work and make excavations in the project.

If utility owners do not complete their work in a timely manner, the Engineer may direct the Contractor to temporarily relocate the utilities, to construct new utilities, or to make necessary repairs to complete the utility work.

3. Utility Work. *ADD the following:*

t. Work around those utilities not designated for relocation on the plans. Contractor shall bear the expense for any changes or additional relocation requested for Contractor convenience. Work around all utility facilities, either existing or relocated, throughout the project unless advised by the utility that the facility is abandoned in place.

u. Contractor is solely responsible for any changes in contract scheduling and contractor time, which result in the conditions in this specification not being met Schedule and coordinate the utility relocations with project construction as set forth in Section 108-1.03, Prosecution and Progress.

v. When Right of Way or Construction surveying is required prior to utility relocation, payment will be made as follows:

   a. Subsidiary to Item 642(1), Construction Surveying, if the Contractor is required to provide the surveying as part of the Contract; and

   b. Under Item 642(3), Three Person Survey Party, if the construction or Right of Way staking required by the utility is either in advance of the Contractor's two (2) week work plan, or not already required by the Contract.

ADD the following new Item:

5. Utility Relocation Requirements

Provide Traffic Control Plans and all traffic control as required for utility relocations, to promote safety and efficiency of public travel through the project area and safety of utility relocation work, all to the satisfaction of the Engineer.

When scheduling utility relocation work, the Contractor shall assume a six (6) day utility relocation crew work week (Monday through Saturday) excluding holidays.

The Contractor shall schedule and coordinate road construction work and utility relocation work to the satisfaction of the Engineer to maximize efficiency and minimize delay and/or multiple remobilizations for utility relocation crews to the satisfaction of the Engineer. The Contractor shall be responsible for the costs of unnecessary delay or remobilization of utility relocation crews as determined by the Engineer.

105-1.13 MAINTENANCE DURING CONSTRUCTION. *DELETE the first paragraph and REPLACE with the following:* The Contractor shall maintain the work, and those portions of the surrounding area or outside the project area affected by the work, from the date physical construction begins until project completion. This maintenance shall be a continual and effective effort prosecuted day by day, with adequate equipment and forces to the end that the work, and those portions of the project affected by the work, are kept in satisfactory condition at all times. The Contractor may be relieved of specified portions of this maintenance responsibility during a seasonal suspension of work.

The existing road systems, when utilized as haul roads, shall be maintained at the Contractor's expense. Maintenance of haul roads includes, but is not limited to, grading of potholes and application of water for dust control, as directed by the Engineer. Upon completion of hauling over a road, it shall be in as good or better

condition than prior to commencement of hauling operations. This determination shall be made by the Engineer.

105-1.17 CLAIMS. *DELETE the subsection in its entirety and REPLACE with the following:* If the Contractor wishes to make a claim for an increase in the Contract Sum (Change Order), the Contractor shall give the Engineer written notice thereof as soon as possible but at least within ten days of the first observance or awareness or notice of the basis for the claim, whichever is earlier. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property in which case the Contractor shall proceed as needed. No such claim shall be valid unless so made and the claim must comply with and is governed by the terms of this section. Any change in the Contract Sum resulting from such claim shall be authorized only by a written fully executed Change Order.

Except for claims which have been waived by acceptance of final payment, and except as otherwise provided in this Contract, any claims, any disputes, or other questions arising out of, or relating to, this Contract shall be presented in writing by the Contractor to the Engineer. In presenting any claim, the Contractor shall clearly and specifically state in writing:

1. The specific contract provision under which the claim is made.

2. The contract item on which the claim is based.

3. A description of the specific nature and cause of the claim.

4. The specific relief including additional time and compensation to which the Contractor believes they are entitled.

5. The detailed factual basis of any additional costs or time claimed and all verifiable documentation necessary to support those actual costs or additional time.

6. A certification by the Contractor under penalty of perjury the claim is made in good faith, the supporting data are accurate and complete to the best of the Contractor's knowledge and belief, and the amount requested accurately reflects the contract adjustment for which the Contractor believes the Department is liable.

Claims must be submitted as soon as possible, but not later than ten days after the first observance or awareness or notice of the basis for the claim, whichever is earlier; in no case shall a claim be made more than ten days after the date of completion and acceptance of the entire contracted work. If the amount of time or compensation cannot be readily ascertained at the time the claim is submitted, the Contractor shall so advise the Department and such amounts shall be submitted as soon as they are discernible. In any case, the amount of time and compensation claimed together with all necessary supporting data, which could not have reasonably been available to the Contractor or a reasonably sophisticated contractor at the time of notice of claim, shall be submitted no later than 20 days after completion of the contract item of work on which the claim is based.

The Contractor represents to the Department and the Department relies upon the following representations to enter in this Contract with the Contractor:

1. The Department and Contractor recognize claims and litigation concerning claims result in increased contract costs for both parties. Further, both parties recognize both parties are subject to increased risk when stale claims are in dispute or are litigated;

2. The Department and Contractor agree separately from the Contract that compliance with this section is necessary to enhance identification of disputes, processing of claims, negotiations and settlement of disputed issues. Further, both parties agree verbal, written or any other notice not in full compliance with the terms of this section will not meet the terms and spirit of this section; and

3. Failure to comply with this section shall constitute a waiver and abandonment of the right to make any claim not fully compliant with this section.

Claim to the Engineer. As soon as received from the Contractor, a claim shall be acknowledged in writing by the Engineer. If the claim is not disposed of by agreement, the claim shall be reviewed by the Engineer who shall, unless he notifies the Contractor otherwise, within 14 days of receiving the Contractor's final submittal of the claim, advise the Contractor of the Engineer's decision and communicate the decision to the Contractor in writing. The Engineer's decision shall, unless otherwise determined on administrative appeal to the Contracting Officer or then determined by appeal to the Superior Court of Alaska, be final and conclusive. Any appeal from the Contractor of the Engineer's decision to the Contracting Officer shall be commenced within 14 days of the decision. In the event no such appeal to the Contracting Officer is timely made, the decision of the Engineer shall be final and conclusive as to the dispute.

Pending final decision of any dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract, and after the Engineer's decision is made, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the Engineer's decision.

The parties agree at every level, including administrative appeal and litigation, all claims made will be made by the actual cost method, supported by actual invoices, payroll records and the like, and may not be made by the total cost method or any modifications thereof; or by the jury verdict method.

Appeal of Decision by Engineer. An appeal of the Engineer's decision may be filed with the Contracting Officer. The appeal shall be filed within 14 days after the decision is served on the Contractor. An appeal by the Contractor may not raise any new factual issues, theories of recovery or claims for damages in amount or character or for additional time not presented to and decided by the Engineer in the decision appealed from except upon the showing of extraordinary circumstances not due to the fault or neglect of the Contractor or his agents. If allowed to make amended or additional claims, no such claims may be made unless they arise out of the same operative facts on which the original claim was based.

An appeal must contain a copy of the Engineer's decision being appealed and identification of all factual or legal errors in the decision that form the basis for the appeal.

Upon receipt, the Contracting Officer shall advise the parties of the procedures that will be utilized to determine the appeal (i.e. briefing, hearing etc.) and any pertinent deadlines related thereto. The Contracting Officer shall handle the appeal of a claim expeditiously.

The Contracting Officer shall serve all parties personally or by certified mail with the Contracting Officer's decision within 20 days after the hearing has ended or the Contracting Officer's receipt of the final brief, unless the Contractor is notified otherwise. The Contracting Officer's decision shall notify all parties that the Contracting Officer's decision under this section may be appealed to the superior court in Palmer, Alaska in accordance with the Alaska Rules of Appellate Procedure. In the event no such appeal to the court is made within 30 days, the decision of the Engineer or the Contracting Officer shall be final and conclusive as to the dispute.

SECTION 106

CONTROL OF MATERIAL

Standard Modification

106-1.02 MATERIAL SOURCES.

ADD the following new Item:

5. c. Extraction of material below or within four feet of the seasonal high water table requires a permit under MSB Code Chapter 17.30.

MSB 082719

SECTION 107

LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Standard Modifications

107-1.02 PERMITS, LICENSES AND TAXES.

DELETE Item 1. under the paragraph beginning with "In addition…" and REPLACE with the following:

1. Contact all government agencies having possible or apparent permit authority over that area, which may include, but are not limited to:

    a. US Army Corps of Engineers

    b. Alaska Department of Fish and Game

    c. Alaska Department of Environmental Conservation

    d. Alaska Department of Natural Resources

    e. Alaska Department of Transportation

    f. Matanuska-Susitna Borough

    g. All other tribal, federal, state, or local authorities;

107-1.06 SANITARY, HEALTH, SAFETY PROVISIONS. *ADD the following*: The Contractor shall provide and maintain restroom facilities for Contractor's employees and Owner's representatives at all work sites.

107-1.11 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE.

Under Item 2. Material Disposal Sites *add the following*:
Material disposal sites on private property adjacent to the project, shall be blended into the surrounding contours and permanently stabilized. No slope shall exceed 2:1, unless approved by the Engineer.

Under Item 7. Protected areas, *add the following*: All clearing and/or grubbing activities shall take place outside of the Migratory Bird Treaty Act (MBTA) window as determined by the U.S. Fish and Wildlife Service (FWS) under the website publication for the construction year: https://www.fws.gov/alaska-bird-nesting-season

107-1.16 *Delete and replace with the following:*

107-1.16 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES.
Where the Contractor's operations meet any of the following conditions, the Contractor shall advise the owning Utility in writing at least 24 hours in advance of the work.

1. Operations anticipated to be within 10 feet of an overhead electrical line.
2. Operations anticipated to be within 3 feet of an underground electrical line according to locates provided by the owning Utility.

3. Operations requiring use of equipment, which is capable of coming within 10 feet of an overhead electrical line.

The notice shall indicate the location and duration of the work to be performed.

The Contractor shall provide an attendant whose sole responsibility is to perform as a safety observer while equipment is operating such that any part is capable of reaching within 15 feet of an overhead line.

Providing a safety observer for overhead electrical facilities, or a cable watch for buried electrical facilities, will not be paid for separately, but will be subsidiary to the item(s) of work being performed requiring these services.

MSB 051823

SECTION 108

PROSECUTION AND PROGRESS

Standard Modification

108-1.03 PROSECUTION AND PROGRESS. *DELETE the last sentence of the first paragraph and REPLACE with the following:* Submit the following at least two working days prior to the Preconstruction Conference:

ADD the following to Item 10: A completed Gravel Source Verification Form, found in section VI of the Invitation to Bid.

MSB 030619

SECTION 109

MEASUREMENT AND PAYMENT

Standard Modifications

109-1.02 MEASUREMENT OF QUANTITIES. Replace item, "14. Weighing Procedures" with "Weighing Procedures". "Weighing Procedures" is a subtopic under item "13. Ton (2,000 pounds)."

109-1.05 COMPENSATION FOR EXTRA WORK ON A TIME AND MATERIALS BASIS. *Add the following*:
The rental rate area adjustment factors for this project shall be as specified on the adjustment maps for the Alaska - South Region.

109-1.08 FINAL PAYMENT. *Add the following sentence to the first paragraph:*
The Borough will not process the final estimate until the Contractor completes Items 1 through 4 in the first paragraph of subsection 105-1.16.

Add the following subsection:

109-1.10 EQUIPMENT RENTAL CONTRACTS.

1. Hourly Rate Basis.

Scope. Under this subsection, the Contractor shall furnish fully operated equipment, tools, materials, and laborers required in the performance of the work on the project as specifically designated and directed by the Engineer.

The work is to be performed and paid for on an hourly rate basis.

All personnel furnished by the Contractor under this specification shall be, and shall remain during the work hereunder, employees solely of the Contractor.

General Requirements. The work is to be done under the direction of the Engineer, and the Contractor's operations shall at all times be in accordance with the Engineer's instructions. These instructions by the Engineer shall be to the Contractor's supervisory personnel only, not to the operators or laborers. In no case shall these instructions by the Engineer be construed as making the Borough liable for the Contractor's operation of equipment and/or personnel. It is the Contractor's responsibility to prosecute the work in the safest and most expeditious manner.

2. Equipment

General. In the performance of the work to be done under this specification, the Contractor shall furnish, operate, maintain, service and repair equipment of the kinds, sizes, capacities and quantities set forth in the bid schedule or as directed by the Engineer.

The kinds, sizes, capacities and other requirements set forth shall be understood to be minimum requirements. The number of pieces of each equipment to be furnished and used shall be as the Engineer considers necessary for economical and expeditious performance of the work. The equipment shall be used only at such times and places as the Engineers may direct.

All equipment shall be fully operated by skilled operators, which operating shall be understood to include the operators, oilers, tenders, fuel, oil, air hose, lubrication, repairs, maintenance, insurance and all incidental items and expenses.

When the required equipment as a working unit is comprised of tractors and attachments, or of combinations of equipment, the attachments or combinations of equipment shall be of recognized standard sizes and capacities for efficient and economical performance with the tractor or power unit to which they are attached, or with which they are used in combination.

All equipment shall be in first-class working conditions and capable of full output and production. The minimum ratings of various types of equipment shall be as manufactured and based on manufacturer's specifications. Alterations of blowers, rack settings or other modifications will not be considered acceptable in achieving the minimum rating.

Tools. The Contractor shall provide manual equipment, hand tools, and small tools as required for the performance of the work and as considered by the Engineer as necessary for efficient operations.

The Contractor shall designate, without direct compensation, by the Borough, one (1) job superintendent He shall also furnish such other personnel as required to satisfy Union, Borough or State regulations. Further, he shall furnish such other personnel required to provide servicing, maintenance, repair and other care essential for the upkeep of his equipment, tools, supplies and materials provided by him and involved in the performance of the work. The Contractor shall furnish, without direct compensation, all transportation of his personnel required in the performance of the work.

Unless otherwise set forth in the special provisions, the Borough will not furnish, provide or make available for the work anything other than right-of-way, engineering, directions and inspection.

3. Construction.

General. The performance of the work shall be in accordance with the instructions of the Engineer.

The work shall be performed in accordance with recognized standard and efficient methods. Operators of equipment and all personnel shall be conscientious and skilled in their duties.

Equipment and tools shall be maintained in first-class working condition and shall be replaced at any time when, in the opinion of the Engineer, their condition is below that normal for efficient output and production.

Timing and Sequence of Operations. The Contractor shall furnish equipment, tools, labor and materials in the kinds and number and at the times directed by the Engineer, and shall commence, continue, and stop any of the several operations involved in the work only as directed by the Engineer.

Normally, the work is to be done when weather conditions are reasonably favorable, up to six days per week, Mondays through Saturdays, holidays excepted.

Protection of Work and Provisions for Traffic. The Contractor shall furnish signs, lights, barricades and other protective devices at the sites of his operations to protect the work from damage, and to safeguard traffic passing or in proximity of work.

4. Measurement.

General. The number of hours of equipment operation to be paid for shall be the actual number of hours each fully-operated specified unit of equipment or each fully-operated specified combination of units of equipment, is actually engaged in the performance of the specified work on the designated areas in accordance with the instruction of the engineer, provided that the pay time will not include idle periods and standby time and provided further that no payment will be made for time used in oiling, servicing, or repairing of equipment, or in making changeovers of parts to the equipment.

The number of hours of equipment operation to be paid for, as determined above, will be paid for at the pertinent contract price per hour for each of the particular pay items for equipment shown in the bid schedule, which price and payment shall be full compensation for furnishing, operating, maintaining, servicing and repairing the equipment and for ail incidental costs related to the equipment as specified. The furnishing and operating of equipment of heavier type, or of larger capacity, or horsepower than specified will not entitle the Contractor to any extra compensation over his applicable contract unit price. Deviation from estimated quantities is normal and will not be considered as a basis for change in unit prices.

Note: This special provision shall be used on MSB projects, where recovery of timber for sale and/or distribution pursuant to MSB 23.20.170 *by the MSB Land Management Department is included.*

SECTION 201

CLEARING AND GRUBBING

Special Provisions

Delete this section in its entirety and replace with the following:

201-1.01 DESCRIPTION. Clear, remove and dispose of all vegetation and debris within designated areas of the project, except objects that are designated to remain or are to be removed under other sections of these Specifications. Preserve from injury or defacement all vegetation and objects designated to remain. This work shall consist of cutting and disposing of all trees, down timber, stubs, brushes, slash and debris in the construction zone as indicated on the plans.

201-2.01 MATERIALS. None

CONSTRUCTION REQUIREMENTS

201-3.01 GENERAL. The Owner's Representative will designate the limits of work and all trees, shrubs, plants and other things to remain. Preserve all things designated to remain.

Keep erosion potential to a minimum.

Preserve survey stakes, boundary markers, benchmarks, and tie points until such time as their usefulness has ceased and the Engineer gives permission for their destruction.

The Contractor shall use appropriate erosion control methods, as approved by the Owner's Representative, to prevent impact to existing streams, natural drainage ways, and wetlands.

Damage to vegetation outside the construction limits is prohibited. In the unlikely event this occurs, the vegetation damaged by the Contractor shall be fenced around, protected and allowed to recover. Fertilizer shall be applied immediately to encourage regrowth and recovery using methods appropriate to the location of the damaged vegetation.

No wetlands may be disturbed outside of the grading limits during the clearing and grubbing activities. No mechanical land clearing activities resulting in soil disturbance or fills in wetlands or waters are permissible. If soils are disturbed, the contractor shall assume responsibility and restore the site to the satisfaction of the Owner's Representative. The Owner does not assume responsibility for mechanical land clearing resulting in soil disturbance or fills that result from the clearing and/or grubbing activities.

All tree felling and cutting of brush and bushes shall be completed within the time frame specified by regulatory permits to avoid destruction of active bird nests, eggs, or nestlings. Tree cutting/felling and cutting of brush and bushes will not be allowed during the period of May 1st through July 15th, without written authorization from the Owner's Representative.

Any vegetation, trees, down timber, stubs, brush, bushes, stumps, tree roots, debris and other objectionable material left in the construction zone from earlier clearing operations shall become the property of the Contractor and shall be removed from the Project site.

All temporary stockpiles created by the Contractor shall be removed or placed in designated final disposal areas and the sites re-graded and stabilized prior to completion of the work.

Upon completion of Clearing, the Contractor shall provide the Owner with a minimum of 48 hours notice prior to Grubbing to allow the Owner's Representative to conduct a survey for nesting birds.

201-3.02 CLEARING. Cut and dispose of all trees, down timber, stubs, slash, brush, bushes and debris from all areas designated.

Fell trees toward the center of the area to be cleared, in order to minimize damage to the trees that are to be left standing. Remove and dispose of trees unavoidably falling outside the specified limits. Cut trees and brush to a height of not more than 6 inches above the surrounding ground.

Removal and disposal of all trees, down timber, stubs, brush, bushes and debris will not be allowed during the period of May 1st through July 15th, without written authorization from the Owner's Representative.

201-3.03 GRUBBING. Remove and dispose of all stumps, roots, moss, grass, turf, peat, or debris within excavation limits, and within fill limits where the profile grade is less than 8 feet above native ground. Remove slash, brush and trees wherever this material is encountered in the construction zone. In fill limits where the profile grade is more than 8 feet above native ground stumps may be left but must not be more than 6" above the surrounding ground. The removal of slash, brush and trees in the construction zone shall be incidental to clearing and grubbing. Grub all side hill fill areas where benching will be required per Section 203-3.03. Grub any other areas designated on the plans or in the Supplemental Conditions. The grubbing shall progress in such a manner that erosion will be kept to a minimum.

Except in areas to be excavated, backfill stump holes and other holes with suitable materials and compact according to the Specifications.

201-3.04 HAND CLEARING. Cut and dispose of all trees, down timber, stubs, brush, bushes and debris from all areas designated, with minimal disturbance to grass and/or moss cover. Do not use equipment on wheels or tracks in areas designated as hand clearing, except as stated below.

Where shown on the Plans, you may use a mechanical brush cutter, provided such work is performed within the allowed time frame specified in the Special Provisions.

Cut stumps flush with the ground. In areas to be covered by least 8 feet of embankment fill, stumps may extend up to 6 inches above natural ground, except where geotextile is specified.

No hand clearing areas have been designated in the ITB.

201-3.06 DISPOSAL. Dispose of all vegetation and debris less than 6 inches removed by clearing or grubbing by chipping or other approved methods at approved upland locations.

Within the clearing limits, the Contractor may chip or mulch clearing debris and slash less than 6 inches in diameter and trees less than 6 inches in diameter in place. After chipping or mulching material in place, the chips from chipping or mulching must be 3 inches or less in size and may not accumulate to be more than 6 inches in depth. Some spreading of the material may be required to maintain a maximum of 6 inches of depth. In areas adjacent to wetlands or water bodies, the 6 inch depth shall be maximized to avoid potential impacts following thaw.

The Contractor shall make all necessary arrangements with property owners for obtaining suitable disposal locations to dispose of vegetation and debris at upland locations outside the project limits. The Contractor will be responsible for providing the Owner's Representative with a copy of permission documents that contain a waiver of all claims against the MSB for any damage to such land which may result and a copy of all permits required by law for disposal before commencing work. All costs involved for obtaining disposal areas; permission from landowners; waivers of claims; and all applicable permits shall be included in the bid price.

Felled or downed trees 6 inches and larger in diameter encountered in the construction zone shall be removed from the project site by the Contractor. This work shall be incidental to the "Clearing", "Hand Clearing" or "Selective Tree" pay items.

The contractor shall cut, limb and top all trees six (6) inches or greater in diameter within the clearing limits. The contractor shall transport all trees six (6) inches or greater in diameter to the log storage area shown on the plans. All trees taken to the log storage area shall be stacked in piles as shown on the plans. The trees placed in the log storage area shall be of tree length.

201-3.07 TREE HAULING. After clearing operations and in accordance with paragraph 201-3.06, haul and place logs 6 inches or greater in diameter to the log storage area shown on the plan.

201-4.01 METHOD OF MEASUREMENT. Section 109 and the following:

1. Acre. The area acceptably cleared, measured on the ground surface. Only areas shown on the Plans or staked for clearing will be measured.

   Existing roadways, lakes, ponds, stream beds, and other areas not covered by trees or brush will not be included for measurement. Other areas which do not require clearing will be so staked.

2. Cord. The volume of neatly stacked logs that occupies a volume of 128 cubic feet.

3. Damaged Vegetation Outside the Construction Limits. Damage to vegetation outside the construction limits is prohibited. Damaged areas outside the construction limits and repair to these damaged areas will be subsidiary to "Clearing and Grubbing".

The work required cutting, de-limbing, and stacking timber for public removal and to preserve and restore land monuments and property corners will be subsidiary to Pay Item 201(3B).

201-5.01 BASIS OF PAYMENT.

Backfill and compaction of holes left from removal of stumps or other objects are subsidiary.

Damaged Vegetation Outside the Clearing Limits. If repair of damaged vegetation is required, no additional payment will be made for temporary erosion control measures, construction fencing, seed or fertilizer applied to damaged vegetation areas by the contractor. Damaged areas outside the clearing limits and repair to these damaged areas will be incidental to Bid Item 201(1A) Clearing.

Damage to Wetlands. If repair of damaged wetlands is required, no additional payment will be made for temporary erosion control measures, construction fencing, seed or fertilizer applied, additional equipment or labor to repair wetland areas by the contractor to the Owner's Representative's satisfaction. Damaged wetland areas and repair to these damaged areas will be incidental to Bid Item 201(1A) Clearing.

Payment will be made under:

Pay Item No.	Pay Item	Pay Unit
201(3B)	Clearing and Grubbing	Acre

SECTION 203

EXCAVATION AND EMBANKMENT

Special Provision

203-5.01 BASIS OF PAYMENT. Add the following:

Pay Item No.	Pay Item	Pay Unit
203(5)	Borrow, Selected Material ____	Cubic Yard
203(6)	Borrow, Selected Material ____	Ton
203(27)	Ditch Linear Grading	Station

MSB 010824

SECTION 401

HOT MIX ASPHALT PAVEMENT

Standard Modification

Replace Section 401 with the following:

401-1.01 DESCRIPTION. Construct one or more courses of plant-produced Hot Mix Asphalt (HMA) pavement on an approved surface, to the lines, grades, and depths described in the scope of work and shown on the maps at each location.

MATERIALS

401-2.01 ASPHALT BINDER. Conform to Subsection 702-2.01. If binder performance grade is not specified, use PG 52-28. Asphalt binder may be conditionally accepted at the source if a manufacturer's certification of compliance is provided, according to Subsection 106-1.05, and the applicable requirements of Section 702 are met.

401-2.02 LIQUID ANTI-STRIP ADDITIVE. Use anti-strip agents in the proportions determined by ATM 414 and included in the approved Job Mix Design (JMD). At least 70 percent of the aggregate must remain coated when tested according to ATM 414. A minimum of 0.30 percent by weight of asphalt binder is required.

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

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

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

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

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

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

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

TABLE 401-1

HMA MARSHALL DESIGN REQUIREMENTS

DESIGN PARAMETER	CLASS "B"
HMA (including Asphalt Binder)	
Stability, Pounds	1200 Min
Flow, 0.01 Inch	8 – 16
Voids in Total Mix (VTM), %	3.0 – 5.0
Compaction, Number of Blows Each Side of Test Specimen	50
Asphalt Binder	
Voids Filled with Asphalt (VFA), %	65 – 78
Asphalt Content, Min %	5.0
Dust-Asphalt Ratio*	0.6 – 1.4
Voids in Mineral Aggregate (VMA), %, Min	12.0
Liquid Anti-Strip Additive**, %, Min	0.30
RAP, %, Max	25.0

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

The Contractor shall provide a JMD following the requirements specified in this section. Submit the JMD to the Engineer at least two working days prior to the pre-paving meeting. Submit samples to the Engineer upon request for JMD verification testing.

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

Changes in the source of asphalt binder, source of aggregates, aggregate quality, aggregate gradation, or blend ratio shall dictate that the Contractor submit a new JMD for approval.

CONSTRUCTION REQUIREMENTS

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

Include the following elements in the paving plan and address these elements at the meeting:

a. Sequence of operations
b. List of equipment that will be used for production, transport, pick-up (if applicable), laydown, and compaction
c. Procedures to produce consistent HMA
d. Procedures to minimize material and thermal segregation
e. Procedures to minimize premature cooling
f. Procedures to achieve HMA density
g. Procedures for joint construction including corrective action for joints that do not meet surface tolerance requirements

h. Quality control testing methods, frequencies, and sample locations for gradation, asphalt binder content, and density, and
i. Any other information or procedures necessary to provide completed HMA construction that meets the contract requirements.

Include the following elements in the pavement inspection plan and address these elements at the meeting:

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

401-3.02 CONTRACTOR QUALITY CONTROL. Perform quality control (QC) of HMA materials in accordance with Subsection 106-1.03. The Contractor shall employ a qualified person or company to perform process control testing.

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

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

401-3.05 ASPHALT MIXING PLANT. Meet AASHTO M 156. Use an HMA plant capable of producing at least 100 tons of HMA per hour noted on posted DEC air quality permit, designed to dry aggregates, maintain consistent and accurate temperature control, and accurately proportion asphalt binder and aggregates. Calibrate the HMA plant and furnish copies of the calibration data to the Engineer at least 24 hours before HMA production.

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

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

Belt conveyor scales may be used to proportion plant blends and mixtures if the scales meet the general requirements for weighing equipment and are calibrated according to the manufacturer’s instructions.

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

Do not haul HMA on barges.

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

Equip the paver with a receiving hopper having sufficient capacity for a uniform spreading operation and a

distribution system to place the HMA uniformly in front of screed. Use a screed assembly that produces a finished surface of the required smoothness, thickness, and texture without tearing, shoving, or displacing the HMA. Heat and vibrate screed extensions. Place auger extensions within 20 inches of the screed extensions or per written manufacturer's recommendations.

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

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

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

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

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

401-3.09 RESERVED.

401-3.10 PREPARATION OF EXISTING SURFACE. Prepare existing surfaces according to the Contract. Prior to placing HMA, clean existing surfaces of loose material and uniformly coat contact surfaces of curbing, gutters, manholes and other structures with tack coat material meeting Section 402. Treat cold joint surfaces according to 401-3.17. Allow tack coat to break before placement of HMA on these surfaces.

Cut existing pavement, as designated by the Engineer, in a neat line with a power driven saw to provide a clean, straight joint. A thin tack coat of asphalt binder shall be sprayed on all cold joints prior to placing any fresh HMA against the joint. Cutting and removing the asphalt and tack coat is subsidiary to 401(1) item.

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

Preparation of a milled surface:

1. Prelevel remaining ruts, pavement delaminations, and depressions having a depth greater than 1/2 inch with an approved HMA.
2. Notify the Engineer of pavement areas that appear thin or unstable. Where milling operation creates thin or unstable pavement areas, or where it breaks through existing pavement, remove thin and unstable pavement, and 2 inches of existing base material, compact and replace with an approved HMA.

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

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

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

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

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

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

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

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

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

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

Do not store HMA on barges.

401-3.15 PLACING AND SPREADING. Use asphalt pavers to distribute HMA, including leveling course and temporary HMA. Place the HMA upon the approved surface, spread, strike off, and adjust surface irregularities. The maximum compacted lift thickness allowed is 3 inches.

When multiple lifts are specified in the Contract, do not place the final lift until all lower lifts throughout that section, are placed and accepted.

Do not place HMA abutting curb and gutter until curb and gutter are installed, except as approved by the Engineer.

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

When practicable, adjust elevation of metal fixtures before paving the final lift, so they will be between 1/4 and 1/2 inch below the top surface of the final lift. Metal fixtures include, but are not limited to manholes, valve boxes, monument cases, hand holes, and drains.

When the section of roadway being paved is open to traffic, pave adjacent traffic lanes to the same elevation within 24 hours. Place approved material against the outside pavement edge when the drop off exceeds 2 inches.

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

Place HMA over bridge deck membranes according to Section 508 and the membrane manufacturer's recommendations.

Do not mix HMA produced from different plants for testing or paving.

401-3.16 COMPACTION. Thoroughly and uniformly, compact the HMA by rolling. In areas not accessible to large rollers, compact with mechanical tampers or trench rollers. Compact HMA immediately after it is placed and spread, and as soon as it can be compacted without undue displacement, cracking or shoving. Perform initial breakdown compaction while the HMA surface mixture temperature is greater than 235° F and finish compaction before the surface temperature reaches 150° F.

Prevent indentation in the mat, do not leave rollers or other equipment standing on HMA that has not sufficiently cooled.

The Lower Specification Limit for density is 92.0 percent of the Maximum Specific Gravity (MSG) as determined by ATM 409. The MSG from the approved JMD is used for the first lot of each type of HMA. The MSG for additional lots is determined from the first sublot of each lot.

401-3.17 JOINTS. Place and compact the HMA to provide a continuous bond, texture, and smoothness between adjacent sections of the HMA.

Minimize the number of joints. Do not construct longitudinal joints in the driving lanes unless approved by the Engineer in writing at the pre-paving meeting. Offset the longitudinal joints in one layer from the joint in the layer immediately below by at least 6 inches. Align the joints of the top layer at the centerline or lane lines. Where preformed marking tape striping is required, offset the longitudinal joint in the top layer not more than 6 inches from the edge of the stripe.

Form transverse joints by saw-cutting back on the previous run to expose the full depth of the course or by using a removable bulkhead. Skew transverse joints 15 to 25 degrees.

For all joints below the top lift, uniformly coat joint surfaces with tack coat material meeting Section 402.

Uniformly coat the joint face of all top lift joints with a joint adhesive. Follow joint adhesive manufacturer's recommendations for temperatures and application method. Remove joint adhesive applied to the top of pavement surface. If infrared joint heaters are used and passing joint densities are achieved in each of the first three joint densities taken, then joint adhesive is not required.

The Lower Specification Limit for top lift longitudinal joint density is 91.0 percent of the MSG of the panel completing the joint. MSG will be determined according to ATM 409. Top lift longitudinal joints will be evaluated for acceptance according to Subsection 401-4.03.

For top lift panels that have a longitudinal joint density less than 91.0 percent of the MSG, seal the surface of the longitudinal joints with joint sealant. Apply joint sealant according to the manufacturer’s recommendations while the HMA is clean, free of moisture and prior to final traffic marking. Place the sealant at a maximum application rate of 0.15 gallons per square yard, and at least 12 inches wide centered on the longitudinal joint. After surface sealing, inlay by grinding pavement striping into the sealed HMA. Use grooving equipment that grinds a dry cut to groove the width, length, and thickness of the striping within the specified striping tolerances.

Correct improperly formed joints that result in surface irregularities according to a corrective action plan.

Complete all hot lapped joints while the mat temperature is over 230° F as measured by the Engineer, within 3 inches of the joint. Tack coat and joint adhesive are not required for hot lapped joints.

401-3.18 SURFACE REQUIREMENTS AND TOLERANCE. The finished surface of all HMA paving must match dimensions shown in the Contract for horizontal alignment and width, profile grade and elevation,

crown slope, and pavement thickness. Water must drain across the pavement surface without ponding. The surface must have a uniform texture, without ridges, puddles, humps, depressions, and roller marks. The surface must not exhibit raveling, cracking, tearing, asphalt bleeding, or aggregate segregation. Leave no foreign material, uncoated aggregate, or oversize aggregate on the HMA surface.

The Engineer will test the finished surface after final rolling at selected locations using a 10-foot straightedge. The Engineer will identify pavement areas that deviate more than 3/16 inch from the straightedge, including joints, as defective work. Perform corrective work by removing and replacing, grinding, cold milling or infrared heating such areas as required. Do not surface patch. After the Contractor performs corrective work, the Engineer will retest the area. Submit correction methods to the Engineer for approval before correction work commences.

Perform corrective actions according to one of the following or by a method approved by the Engineer:

1. Diamond Grinding. If the required pavement thickness is not decreased by more than 1/4 inch, grind to the required surface tolerance and cross section. Remove and dispose of all waste materials. Apply joint sealant and sand to exposed aggregates per the manufacturer's recommendations.
2. Overlaying. Mill or sawcut the existing pavement to provide a vertical transverse joint face to match the overlay to the existing pavement. Apply tack coat on the milled surface and joint adhesive to all vertical joints and overlay the full width of the underlying pavement surface. Use the same approved HMA for overlays. Place a minimum overlay thickness of 2.0 inches.
3. Mill and Fill. Mill the existing pavement to provide a vertical transverse joint face. Apply tack coat to the milled surface and joint adhesive to all vertical joints prior to inlaying new HMA to match the existing pavement. Use the same approved HMA. Place a minimum thickness of 2.0 inches.

401-3.19 REPAIRING DEFECTIVE AREAS. Remove HMA that is contaminated with foreign material, is segregated (determined visually or by testing), flushing, or bleeding asphalt. Remove and dispose defective HMA for the full thickness of the course. Cut the pavement so that edges are vertical and the sides are parallel to the direction of traffic. Coat edges with a tack coat according to Section 402. Place and compact fresh HMA so that compaction, grade, and smoothness requirements are met.

401-3.20 ROADWAY MAINTENANCE. Inspect daily according to pavement inspection plan. Remove and dispose of project materials incorrectly deposited on existing and new pavement surfaces inside and outside the project area including haul routes.

The Contractor is responsible for damage caused by not removing these materials and any damage to the roadway from the removal method(s).

Repair damage to the existing roadway that results from fugitive materials or their removal.

401-3.21 TEMPERATURE REQUIREMENTS. The Engineer may reject HMA that is mixed, hauled, spread and placed, or compacted at a temperature outside the temperature range determined by either the JMD, by a control test strip, or by the Specifications. Rejected HMA is deemed unacceptable according to Subsection 105-1.11. The Engineer will determine whether the unacceptable HMA shall either be corrected, or removed and replaced.

At the Engineer’s discretion, the Contractor may be allowed to compact HMA that is already placed and spread but is outside the temperature range. If the compacted HMA fails the Engineer’s tests for acceptance, it must be removed and replaced according to Subsection 105-1.11.

401-3.22 SHOULDERS. After the paving is complete, if the Engineer determines that the shoulder is too narrow, additional gravel, D-1 material, or both shall be brought in to widen the shoulder. The pavement shall be washed, swept, or both immediately following shoulder work. The haul, placement, and sweeping

will be subsidiary to 301(1) item.

All pavement edges shall be backed with base course (D-1), surface course (E-1), or processed material graded flush with the pavement surface. This work shall be accomplished as directed by the Engineer after it is determined that the new HMA has cured sufficiently to avoid damaging the edge. Cul-de-sacs and other areas where a grader cannot reach shall be backed by hand raking. The pavement shall be washed, swept, or both immediately following this work. This work will be subsidiary to 401(1) item.

401-4.01 METHOD OF MEASUREMENT. Section 109 and the following:

1. Hot Mix Asphalt. HMA will be measured by the ton in accordance with Section 109, Measurement and Payment. HMA quantities on the bid form include a 10% contingency. Contractor will be required to monitor depth (yield) and waste to not exceed the 10% contingency. Contractor will not be compensated over the HMA amount listed on the bid form unless work is added by a field directive and issued by the Engineer. Asphalt binder, tack coat, and anti-stripping additive will not be measured separately for payment, but are included in the HMA pay item.

2. Leveling Course. By Lane-Station (12-foot width) or by weight. Asphalt binder, tack coat, and anti-stripping additive will not be measured separately for payment, but are included in the Leveling Course pay item.

401-4.02 ACCEPTANCE SAMPLING AND TESTING. HMA will be accepted for payment based on the Engineer's approval of the JMD, and placement and compaction of the HMA to the specified depth, finished surface requirements and tolerances. The Engineer reserves the right to perform any testing required in order to determine acceptance.

Sampling and testing include the following:

1. Asphalt Binder Content. HMA samples shall be taken randomly by the Contractor in the presence of the Engineer from behind the paver screed before initial compaction, or will be taken randomly by the Engineer from the windrow, according to ATM 402 or ATM 403, at the discretion of the Engineer. The location (behind the paver screed or windrow) will be determined at the pre-paving meeting. Random sampling locations will be determined by the Engineer.

   Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. Asphalt binder content will be determined according to ATM 405 or ATM 406, at the discretion of the Engineer.

2. Aggregate Gradation. Aggregates tested for gradation acceptance will have the full tolerances from Table 401-2 applied.

   a. Drum Mix Plants. Samples will be taken from the combined aggregate cold feed conveyor via a diverter device, from the stopped conveyor belt or from the same location as samples for determination of asphalt binder content, at the discretion of the Engineer. Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. The aggregate gradation for samples from the conveyer system will be determined according to ATM 304. For HMA samples, the gradation will be determined according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder. Locate diverter devices for obtaining aggregate samples from drum mix plants on the conveyor system delivering combined aggregates into the drum. Divert aggregate from the full width of the conveyor system and maintain the diverter device to provide a representative sample of aggregate incorporated into the HMA.

b. Batch Plants. Samples will be taken from dry batched aggregates according to ATM 301 or from the same location as samples for determination of asphalt binder content, at the discretion of the Engineer. Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. The aggregate gradation for dry batch samples will be determined according to ATM 304. For HMA samples, the gradation will be determined according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder.

3. Density. The Engineer will determine and mark the location(s) where the Contractor takes each core sample.

   a. Mat Cores. The location(s) for taking core samples is determined using a set of random numbers (independent of asphalt binder and aggregate sampling set of random numbers) and the Engineer's judgment. Take no mat cores within 1 foot of a joint or edge. Core samples are not taken on bridge decks.

   b. Longitudinal Joint Cores. The Engineer will mark the location(s) to take the core sample, centered on the visible surface joint, and adjacent to the mat core sample taken in the panel completing the joint.

      Take core samples according to ATM 413 in the presence of the Engineer. Cut full depth core samples, centered on the marks and as noted above, from the finished HMA within 24 hours after final rolling. Neatly core drill one six-inch diameter sample at each marked location. Use a core extractor to remove the core - do not damage the core. The Engineer will immediately take possession of the samples. Backfill and compact voids left by coring with new HMA within 24 hours. The Engineer will determine density of samples according to ATM 410.

4. Retest. When test results have failed to meet specifications, retest of acceptance test results for asphalt binder content, gradation, and density may be requested provided the quality control requirements of Subsection 401-3.02 are met. Deliver this request in writing to the Engineer within 7 days of receipt of the final test of the lot. The Engineer will mark the sample location for the density retest within a 2-foot radius of the original core. The original test results are discarded and the retest result is used. Only one retest per sample is allowed. When gradation and asphalt binder content are determined from the same sample, a request for a retest of either gradation or asphalt binder content results in a retest of both.

5. Asphalt Binder Grade. The lot size for asphalt binder is 200 tons. If a project has more than one lot and the remaining asphalt binder quantity is less than 150 tons, it is added to the previous lot and that total quantity will be evaluated as one lot. If the remaining asphalt binder quantity is 150 tons or greater, it is sampled, tested and evaluated as a separate lot.

   If the bid quantity of asphalt binder is between 85 – 200 tons, the bid quantity is considered as one lot and sampled, tested, and evaluated according to this subsection. Quantities of asphalt binder less than 85 tons will be accepted based on manufacturer’s certified test reports and certification of compliance.

   Sample asphalt binder at the plant from the supply line in the presence of the Engineer according to ATM 401. The Engineer will take immediate possession of the samples. Take three samples from each lot, one for acceptance testing, one for Contractor requested retesting, and one held in reserve for referee testing if requested. Meet Subsection 702 requirements for asphalt binder quality.

6. Asphalt Binder Grade Retest. Retest of acceptance test results may be requested provided the quality control requirements of Subsection 401-3.02 are met. Deliver the request in writing to the

Engineer within 7 days of receipt of notice of failing test. The original results are discarded and the retest result is used for acceptance. Only one retest per sample is allowed.

If the contractor challenges the result of the retest, the referee sample held by the Engineer will be sent to a mutually agreed upon independent AASHTO accredited laboratory for testing. The original acceptance test result, the retest acceptance test result, and the referee sample test result will be evaluated according to ASTM D3244 to obtain an Assigned Test Value (ATV). The ATV will be used to determine if the asphalt binder conforms to the contract. The Contractor shall pay for the referee sample test if the ATV confirms the asphalt binder does not meet contract requirements.

401-5.01 BASIS OF PAYMENT.

The following items, unless included as individual Pay Items, are subsidiary to the Section 401 Hot Mix Asphalt Pavement related Pay Items as included in the bid schedule:

- Asphalt binder
- Liquid anti-strip additives
- Tack coat
- Crack sealing
- Crack repair
- Joint adhesive
- Surface sealing of longitudinal joints
- Surface tolerance corrections
- Patching defective areas
- Prelevel for ruts, delaminations, and depressions
- Repair unstable pavement
- Job mix design
- Density profiles, Subsection 401-2.10 Process Quality Control
- Repair work and materials when planing equipment breaks through existing pavement – Subsection 401-3.10 Preparation of Existing Surface
- Work and materials associated with Subsection 401-3.06 Hauling Equipment
- Work and materials associated with Subsection 401-3.20 Roadway Maintenance

Item 401(16) Crack Repair. Cleaning loose material from cracks, asphalt binder, and HMA to fill cracks are subsidiary.

Item 401(17) Prelevel for Ruts, Delaminations, and Depressions. Cleaning loose material, asphalt binder, and HMA are subsidiary.

Item 401(18) Repair Unstable Pavement. Removal of pavement and base course, asphalt binder, and HMA are subsidiary.

Item 401(19) Speed Hump. Saw cuts, removal of pavement, and tack coat are subsidiary.

Item 401(20) Raised Crosswalk. Saw cuts, removal of pavement, tack coat, detectable warning plates, and concrete for detectable warning plates are subsidiary

Payment will be made under:

Pay Item	Pay Unit
401(1) HMA, Type II; Class B	Ton
401(2) HMA, Leveling Course, Type IV; Class B	Lane-Station
401(3) HMA, Leveling Course, Type IV; Class B	Ton
401(14) Joint Adhesive	Linear Foot
401(16) Crack Repair	Linear Foot
401(17) Prelevel for Ruts, Delaminations, and Depressions	Square Yard
401(18) Repair Unstable Pavement	Square Yard
401(19) Speed Hump	Each
401(20) Raised Crosswalk	Each

MSB 053123

SECTION 610

DITCH LINING

Standard Modification

610 2.01 MATERIALS. Delete and replace with the following:

Ditch lining material shall be clean aggregate uniformly graded 3"-12" diameter stone with a maximum of 3% passing the 200 sieve.

MSB 010824

Note: This special provision shall be used where detailed resource loading is not desired for construction

SECTION 646

CPM SCHEDULING

Special Provision

646-3.01 REQUIREMENTS AND USE OF SCHEDULE.

Delete Schedule Requirements item c. regarding resources.

MSB 010824

SECTION 669

AUTOMATED TRAFFIC RECORDERS

Special Provisions

669-1.01 DESCRIPTION. This work shall consist of reconstruction, refurbishing, and installation of Automated Traffic Recorder (ATR) station.

ATR consists of inductive loop sensors connected to a traffic counter. In each traffic lane, two inductive loops are separated by a specific travel distance and buried beneath the pavement. Lead wires run in underground conduit from the sensors to a cabinet located at the side of the road. Inside the cabinet, the lead wires connect to the traffic counter. The traffic counter, installed by others, detects the presence and speed of passing vehicles from inductive loop signals. ATR stations are operated and maintained by personnel of the MSB Pre-Design and Engineering Division (PD&E); main office located at 350 E Dahlia Ave, Palmer, phone 907-861-7723.

The locations of traffic detection sensors and cabinets, shown on the Plans are approximate and the Engineer will establish the exact locations in the field after consultation with PD&E.

669-1.02 REGULATIONS AND CODE. Use materials and workmanship that conforms to the standards of the Underwriter's Laboratories, Inc. and the National Electrical Safety Code and local safety code requirements, where applicable.

Use electrical equipment that conforms to the standards of the National Electrical Manufacturer's Association, where applicable.

669-2.01 MATERIALS. Provide all new materials that meet the following requirements:

1. Wiring. Subsection 660-3.05, Wiring. Use single wire conductors and cables that have clear, distinctive and permanent markings on the outer surface throughout the entire length giving the manufacturer's name or trademark, insulation type-letter designation, conductor size, voltage rating and the number of conductors if a cable. Home run label all wires and cables in each junction box and cabinet; for example, W1SLA (for wire) and GaSLA (for cable) as shown on the Plans.

2. Conduit. Subsection 660-3.03, Conduit. Use galvanized rigid metal for conduits, except for PVC conduit forming the inductive loops. Provide grounding bushings with plastic-sleeves to minimize the potential for insulation damage during wire pulls.

3. Junction Boxes. Subsection 660-3.04, Junction Boxes. Label the covers of all junction boxes used for loops or sensor wires 'TRAFFIC'. Label the covers of all junction boxes used to provide electrical service to ATR installations 'ELECTRIC'. Keep junction boxes for 120V/240V electrical service completely separate from junction boxes containing loop or sensor wiring

4. Terminal Blocks. Mount Terminal Blocks as shown in the plans. Use terminal blocks with nickel, silver or cadmium plated brass binder-head screw terminals. Use barrier type terminal blocks rated 600 VAC at 20 Amps, sized for 12-18 AWG wire with removable shorting bars in each position and with integral type marking strips.

5. Presence Loops. Use UL listed IMSA specification #51-5-1984 single conductor PVC nylon with tube jacket, type THHN, #14 AWG conductors for detector presence loops.

   Use twisted pairs of 18 AWG stranded tinned copper wire for multiple pair loop lead-in cable. Each twisted pair shall have its own 20AWG tinned copper drain wire. An aluminum foil shield shall surround each individual bundle of twisted pair and drain wire. Multiple pair loop lead-in cable shall have an overall PVC or PE outer jacket.

6. Electrical Load Centers. Use NEMA Type 3R Electrical Load Centers and provide a 120/240V 100 amp single-phase, three-wire-circuit electrical service.

7. Style CBA1 Cabinets. Cabinets shall meet or exceed a UL 50, NEMA Type 3R rating. CBA1 cabinet shall be a Hoffman #131JF, 24X17X15 or equal. Construct the cabinet and hinged door from 5052-H32 or better unpainted sheet aluminum alloy with a minimum thickness of 1/8 inch and a smooth grain finish on the exterior. Corbin #2 Key Lock. One (1) adjustable shelf. Drip Shield. Interior has four (4) instruct channels for installing adjustable shelves. Grounding points included on body and door. Door latching mechanism is a single point PowerGlide padlocking handle system which secures the door in the middle. A door stay is included at the bottom of the door with three positions: 90, 120, and 180 degrees. Ensure that welds are neatly formed and free of cracks, blowholes and other irregularities. Ensure inside and outside edges of the cabinet are free of burrs. Design the cabinet with a sloped top to prevent the accumulation of water on its top surface.

669-3.01 CONSTRUCTION REQUIREMENTS.

1. Wiring.

   a. Referenced Requirements. Subsection 660-3.05, Wiring.

   b. Termination. Terminate unused pairs at junction boxes within splices. Terminate unused pairs in terminal blocks at cabinets. Terminate and solder conductors, including unused spares to “spade” type terminal lugs at terminal blocks.

   c. Relief. Provide at least 2 feet of slack cable for wiring in each junction box and at least 6 feet of slack cable available in the equipment cabinet before the terminal block.

   d. Labeling. Label wiring in junction boxes and at terminal blocks.

2. Conduit.

   a. Referenced Requirements. Subsection 660-3.03, Conduit, or as indicated on the Plans.

   b. Pull Cords. Leave nylon pull cords in all conduits larger than 1 inch and in spare conduits.

   c. Bushings. Ensure that plastic or plastic-sleeved bushings are in place before wire pulls are performed.

3. Junction Boxes.

   a. Referenced Requirements. Subsection 660-3.04, Junction Boxes, or as indicated on the Plans.

   b. Voltage Limitation. Junction boxes used for ATR installations shall not contain wiring of 24 V.

4. Terminal Blocks.

   a. Terminal Block Placement. Mount terminal blocks within cabinets so that terminals are easily accessible from the front of the cabinet.

   b. Labeling. Clearly label terminal blocks and wire pairs on the block.

   c. Termination. Terminate and solder conductors, including unused spares to "spade" type terminal lugs

5. Presence Loops.

a. Placement Design Adherence. The Plans are not schematics; installation of the presence loops shall closely conform to the location and layout of conduit runs shown in the Plans. The contractor shall notify the Project Engineer 14 days prior to saw cutting the pavement for approval of the site layout.

b. Presence Loop Dimensions. Unless otherwise noted on the plans, form presence loops using four turns of wire, making 6 feet square with a tolerance of ± 1 inch.

c. Presence Loop Dimensions for On-Ramps and Off-Ramps. Form presence loops in On-Ramps and Off-Ramps using four turns of wire, making a rectangular 8 feet wide and 6 inch long with a tolerance of ± 1 inch.

d. Lead-in Conduit. Place lead-in conduits straight and perpendicular to the centerline of the road from the edge of pavement to the presence loops.

e. Presence Loop Alignment. Center presence detector loops in the traffic lane with a tolerance of ± 1 inch.

f. Presence Loops in Asphalt.

I. Loop Placement. Locate presence loops 16 feet from leading edge to leading edge unless otherwise noted on the Plans with a tolerance of ± 1 inch. Align presence loops in adjacent lanes within a tolerance of ± 1 inch.

II. Compaction tests. Compaction test requirements are at the discretion of the Engineer.

6. Cabinets.

a. Cabinet Placement and Orientation. Install cabinets out of the Clear Zone with the doors facing away from the road. Unless the orientation is otherwise noted on the plans.

b. Conduit Entry. Install conduit entries for above-ground enclosure through the bottom of the enclosure. No conduit runs shall be cut through the sides or top of above-ground enclosure.

7. Utilities.

a. Asphalt Pavement Roughness. No transverse seams, joints or roughness within 50 feet of any inductive loops placed in asphalt pavement section is allowed. Test the finished surface of the asphalt with a straightedge 10 feet long. Ensure that the surface does not vary more than ¼ inch from the lower edge of the straightedge within 50 feet of sensors at the ATR installations. At the Engineer's discretion, run an inertial profiler or a profilograph equipped with a chart recorder down each wheelpath of each lane for a distance of 50 feet before and after each ATR installation. HDS will supply the profilograph for the Contractor's personnel to operate. Ensure that the asphalt surface as recorded by the chart recorder does not vary more than ¼ inch in 10 feet.

b. Field Inspection. Notify the Engineer in writing a minimum of 3 working days in advance (excluding Saturday, Sunday and State or Federal Holidays) before installing conduit/wiring, inductive loops, bending plate equipment, piezoelectric cable, axle sensors, and cabinets. The Engineer will be present to approve the installation before backfill placement and paving. At the Contractor's expense, correct and allow the Engineer to re-inspect unacceptable installations for completeness prior to backfill placement and paving. The
Contractor shall be required to excavate, remove, and replace all installations backfilled or paved without prior approval by the Engineer at the Contractor's expense.

669-3.02 DELIVERABLES. Submit deliverables to PD&E before final approval of the work or as otherwise called for herein.

1. Materials Submittal.

    a. Format and Contents. Provide a Materials Submittal of proposed equipment and materials for the ATR installations. The portfolio shall contain information of sufficient detail to determine the suitability of the equipment and materials proposed.

    b. Table of Contents. Each portfolio shall include a table of contents listing each item's intended uses, item description, product name, manufacturer, model or part number and reference to associated information within the portfolio.

    c. Reference Drawings. The Materials Submittal shall include a detailed shop drawing of each equipment cabinet showing the location of mounted components.

    d. Delivery Interval. Deliver Materials Submittal through the Engineer for review and approval of PD&E within thirty days following award of the Contract.

    e. Liability. The MSB will not be liable for any materials purchased, labor performed, equipment used or delay to the work before equipment and materials have been reviewed and approved.

2. As-Built Plans.

    a. Prepare a complete sets of as-built plans, which will be current with the construction. These as-built plans shall detail construction changes made to the ATR design and include the following information on the appropriate sheets:

        I. Location and depth of inductive loops, and conduit runs.

        II. Locations of equipment cabinets and junction boxes.

        III. Station and offset of junction boxes

    b. Present electronic as-built plans to the Engineer in .pdf file format.

    c. Redlines of full size construction plans will be acceptable as-builts.

3. Photographs.

    a. Provide digital photographs documenting sensor installations.

    b. The photographs shall show the inductive loops and conduit in place before covering with gravel and pavement for asphalt pavement sites. The photographs shall include:

        a. Two or more overall views of each ATR installation showing placement of the inductive loops.

        b. One or more views of each loop showing the loop and the conduit to the nearest junction box.

4. Test Results. Written or printed copies of the final results of tests, signed by the Contractor, shall be provided to the Engineer before acceptance of the Automated Traffic Recorder Installation.

5. Manuals. Provide through the Engineer to PD&E installation, repair, and operation manuals for equipment supplied by the Contractor.

669-4.01 METHOD OF MEASUREMENT. Section 109.
Automated Traffic Recorder sites will be measured Lump Sum.

669-5.01 BASIS OF PAYMENT.

The Contract unit price for Automated Traffic Recorder installations shall be full compensation for furnishing all equipment, labor and subsidiary materials required for completion of a site for which there is no specific item in the Plans is subsidiary to the 669 item. This includes but is not limited to:

- backfill materials,
- clearing and grubbing for utilities,
- seeding,
- topsoil,
- removal of structures and obstructions,
- structural excavation for conduits and minor structures,
- work in support of utilities as specified in Subsection 105-1.06,
- as-built plans,
- providing the manufacturer's representative,
- acceptance testing,
- j-boxes,
- CBA cabinets,
- portable heater and cooling fan,
- tilt poles,
- rigid conduit,
- load centers,
- demolition of CBA cabinet foundations and associated utility lines/conduits/appurtenances,
- loops,
- piezoelectric sensors,
- radar sensors,
- TDP's,
- surface temperature probes,
- ambient air sensors,
- AVCs
- ATR equipment or work as shown on the plans or specifications.

Wet cutting with a concrete saw for piezoelectric sensor installations are subsidiary to 669 items.

Payment will be made under:

Pay Item No.	Pay Item	Pay Unit
669 (1)	Automated Traffic Recorder	Lump Sum

SECTION 703

AGGREGATES

Special Provision

703-2.03 AGGREGATE FOR BASE AND SURFACE COURSE.
Add the following:
For E-1, use screened stone or screened gravel, consisting of sound, tough, durable pebbles or rock fragments of uniform quality.
Delete the last column in Table 703-2 and substitute the following:

TABLE 703-2
AGGREGATE GRADATION FOR BASE AND SURFACE COURSE
(Percent Passing By Weight)

Sieve Designation	Grading E-1
1 ½ inch	100
1 inch	
3/4 inch	70-100
3/8 inch	50-85
No. 4	35-75
No. 8	20-60
No. 30	
No. 50	15-30
No. 200	7-15

For projects using type IIA selected material also used in Anchorage, add the following subsection:

703-2.17 BORROW, TYPE IIA. Material shall contain no lumps, frozen material, organic matter, or other deleterious matter, and shall be durable and sound. Meet the following gradation:

TABLE 703-15

GRADATION FOR BORROW, TYPE IIA

Sieve Designation	Cumulative Percent Passing By Weight
3”	100
¾”	50-100
#4	25-60
#10	15-50
#40	4-30
#200	2-6

In addition to the grading limits listed above, the fraction of material passing the #200 sieve shall not be greater than twenty percent (20%) of that fraction passing the #4 sieve.

MSB 010824

SECTION 724

SEED

Special Provisions

724-2.02 MATERIALS. *Add the following:*

Apply seed, mulch, and fertilizer as follows per 1000 square feet (MSF). Apply seed and mulch in one application, if using the hydraulic method. Apply fertilizer with the hydraulic method.

Component	Ingredients	Application Rate (per MSF)
Seed, Type A	Slender Wheatgrass (Wainwright) Red Fescue (Arctared) Annual Ryegrass (Lolium)	**1.00 lbs.** **0.80 lbs.** **0.20 lbs.** **Total = 2.00 lbs**
Soil Stabilizer Slope ≤ 3:1 Slope >3:1	 Mulch Mulch with tackifier	 46 lbs. 45-58 lbs.
Fertilizer	20-20-10	12.0 lbs.

Upon the Engineer's approval, Nortran Tufted Hairgrass may be used as a substitute for Slender Wheatgrass (Wainwright) if Slender Wheatgrass (Wainwright) is commercially unavailable. If this substitution is made, apply at the same application rate.

MSB 010824