



Jackson County Board of Commissioners

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Date: March 24, 2021

To: All Qualified Bidders and Plan Holders

From: Jackson County Airport
Myrna Yarbrough, Jackson County Purchasing Manager

RE: Addendum 3 to Jackson County ITB 210002, Apron Pavement and Drainage Rehab, Phase 2, Jackson County Airport

This Addendum is hereby made a part of the contract documents and specifications of the above referenced project. All other requirements of the original specifications and drawings shall remain in effect in their respective order. Acknowledge receipt of this addendum by inserting its number and date in the proposal form. All other terms and conditions in ITB 210002 remain unchanged.

GENERAL

1. The bid opening date has been extended to March 31, 2021 at 2:00 pm.
2. Any inquiries concerning Addendum 3 should be made to Jason Kennedy of WK Dickson at jkennedy@wkdickson.com.
3. Jackson County reserves the right to reject all proposals, to waive any technicalities or irregularities and to award the offer based upon the most responsive, responsible submission.
4. Bidders must acknowledge receipt of addenda, by either signing and attaching this copy, or by writing "Acknowledge Addenda #3" at bottom of the proposal.

BID FORMS

1. The Schedule of Work (Bid Forms I-57.1 to 57.11) has been revised to reflect updated quantities and pay items and is attached to this addendum. Pay items that changed are noted with "Add. No. 3". Bidders shall use the revised Schedule of Work, with header note "Addendum No. 3" for preparation of bid packages.

RESPONSE TO BIDDER QUESTIONS & CLARIFICATIONS

1. Question: Please clarify what asphalt pavement mix is required for the project.

Response: Pavement shall be per GDOT G402 (and all referenced sections and standards

noted in G402 including but not limited to 400 and 828). Mix shall be 12.5 mm using PG 67-22. Recycled Asphalt Material shall not exceed 20%.

2. GDOT Specifications: All References to GDOT specifications are for 2013 edition unless noted otherwise.

SPECIFICATIONS

1. Special Provisions: ADD Item 25 Project Record Drawings, reading as follows:

25. PROJECT RECORD DRAWINGS

A. RECORDING

1. During daily progress of the work, the job superintendent for the Contractor shall record information concurrently with construction progress. Do not conceal any work until required information is recorded.
2. All field data for record information shall be obtained by a surveyor who is a Professional Land Surveyor (PLS) in the State of Georgia. All field notes to determine the "as-built" conditions shall be sealed by the PLS who performed the survey and shall be submitted to the Engineer.
3. Record Information includes but is not limited to the following:
 - a. All constructed work elements
 - b. Final grades of all work areas
 - c. Depths of various elements of foundation in relation to finish reference datum.
 - d. Horizontal and vertical locations of pavements and underground utilities and appurtenances, referenced to permanent surface improvements or finish reference datum.
 - e. Field changes of dimension and detail.
 - f. Details not on original Contract Drawings.
 - g. Changes made by field order or by Change Order.
 - h. Extent and dimensions of pavement removal.
 - i. Any other changes in the plans.
 - j. Storm Drainage System:
 - 1) Pipes: Size, Material and invert elevations
 - 2) Structures (man hole, junction box, headwalls, etc.): Dimensions, invert, top and bottom elevations, and special weir walls.
4. All horizontal control dimensions shall be to the nearest tenth of a foot. Elevations shall be to the nearest one-hundredth of a foot.

B. SUBMITTAL

1. At the close of the job and prior to receipt of final payment, the Contractor shall deliver to the Engineer for the Owner one complete set of Record Documents. Record drawings shall be submitted in AutoCAD and as a PDF signed and sealed by a Professional Land Surveyor in the State of Georgia.
2. General Provisions Section 80, 80-03: REVISE to read as follows (revised text is highlighted)

"80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their progress schedule for the Engineer's approval within ~~10~~ 14 days after the effective date

of the notice ~~to proceed of award.~~ **A notice to proceed will not be issued prior to approval of the construction schedule.** The Contractor's progress schedule, when approved by the Engineer, ~~may will~~ be used to establish major construction operations and to check on the progress of the work. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal, **and as outlined on the approved progress schedule.**

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the Engineer's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the Engineer at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the Owner.”

3. General Provisions Section 80, 80-07: ADD the following paragraphs to this section

“ If the Contractor finds it impossible for reasons beyond his or her control to complete the work within the contract time as specified, or as extended in accordance with the provisions of this subsection, the Contractor may, at any time prior to the expiration of the contract time as extended, make a written request to the Owner for an extension of time setting forth the reasons which the Contractor believes will justify the granting of his or her request. Requests for extension of time on calendar day projects, caused by inclement weather, shall be supported with National Weather Bureau data showing the actual amount of inclement weather exceeded what could normally be expected during the contract period.

The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the supporting documentation justify the work was delayed because of conditions beyond the control and without the fault of the Contractor, the Owner may extend the time for completion by a change order that adjusts the contract time or completion date. The extended time for completion shall then be in full force and effect, the same as though it were the original time for completion.”

4. C-100: ADD specification Item C-100 Contractors Quality Control Program (CQCP). This new item is attached to this addendum.
5. P-101: REVISE pay item P-101-5.3 to read” Remove Existing Flared End Section (FES)”. A revised Item P-101 is attached to this addendum.
6. P-101: REMOVE pay item P-101-5.4 “Joint and Crack Repair and Seal – per linear foot”. This pay item has been moved to specifications Item P-605. A revised Item P-101 is attached to this addendum.
7. P-152: REPLACE this section with the revised P-152 attached to this addendum. Revised text in the attached P-152 is shown highlighted.
8. P-605: REPLACE this section with the revised P-605 attached to this addendum. Revised text in the attached P-605 is shown highlighted.

9. T-908: ADD pay item for Temporary Mulch. Pay Item is added to paragraph 908-5.1 and reads as follows:

“Item T-908-5.2 Temporary Mulch – per acre or fraction thereof”

PLANS

10. Sheet 2 of 25: REVISE detail 1/2 Note 6 to Read: “Barricades will be provided by the Owner.”
11. Sheet 4 of 25: DELETE Note that reads: “Existing Electrical Box and Connection Electrical Cable to be Removed and Relocated”. This work has been completed and is no longer a part of this contract.
12. Sheet 5 of 25: REVISE Note 2 to read as follows: “Bituminous Pavement removal pay item shall include, saw cutting, removal of asphalt pavement, removal of stone base down to subgrade soils, and removal and haul away of materials. Materials shall be deposited of at an offsite location in a safe and legal manner. Saw cutting shall be incidental to pavement removal. Dowel bar removal, if required, shall be incidental to pavement removal.
13. Sheet 5 of 25: REVISE Note 5 to read as follows: “The construction activity area as shown shall be stripped of all vegetation, topsoil, and root systems. The cost of stripping and topsoiling shall be made under T-905 “Topsoil Placement” item of work.
14. Sheet 5 of 25: DELETE Note 9 regarding coordination with Jackson County EMC for relocation of existing electrical utilities. This work is already complete and is excluded from the project scope.
15. Sheet 5 of 25: ADD New Note 9 to read as follows: “Pavement where crack sealing is to be preformed shall be prepared as outlined in P-101”.
16. Sheet 24 of 25: REVISE sheet notes to read as follows:

Note 1: PROOFROLLING SHALL OCCUR IN THE PRESENCE OF THE ENGINEER OR HIS/HER REPRESENTATIVE. PROOFROLL THE SUBGRADE **AS REQUIRED IN P-152**. WITH A 20 TO 30 TON LOADED TANDEM AXLE DUMP TRUCK OR OTHER PNEUMATIC TIRED VEHICLE OF SIMILAR SIZE AND WEIGHT. IF UNSUITABLE SOILS ARE ENCOUNTERED THEN **REMOVAL OF UNSUITABLE SOILS UNDERCUTTING SHALL BE REQUIRED CONDUCTED AS RECOMMENDED BY THE ENGINEER**. UNDERCUT SOILS SHALL BE REPLACED WITH STRUCTURAL FILL, CRUSHED STONE, OR STABILIZED IN-PLACE AS **RECOMMENDED BY THE ENGINEER**. TYPICAL STABILIZATION ~~SHOULD~~ **MAY** INCLUDE PARTIAL UNDERCUTTING OF UNSUITABLE SOILS AND REPLACING WITH STRUCTURAL FILL OR CRUSHED STONE UNDERLAIN WITH A GEOGRID, SUCH AS TENSAR TX 140 OR APPROVED EQUAL.

Note 3: STRUCTURAL FILL SHOULD BE PLACED **PER THE REQUIREMENTS OF P-152 AND/OR AS RECOMMENDED BY THE ENGINEER**. ~~IN THIN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS AND TESTED BY A SOILS TECHNICIAN TO DETERMINE THE COMPACTION PERCENTAGE. AT A MINIMUM, IN AREAS TO BE PAVED, COMPACT THE UPPER 18 INCHES OF~~

~~SUBGRADE IN FILL AREAS AND THE UPPER 12 INCHES IN CUT AREAS TO 98 PERCENT OF THE SOIL'S MAXIMUM MODIFIED PROCTOR DENSITY VALUE (ASTM D1557) AND 95 PERCENT OF THE SOIL'S MAXIMUM MODIFIED PROCTOR DENSITY VALUE BELOW THIS LEVEL. FIELD DENSITY TESTING SHOULD BE PERFORMED A ONE TEST PER LIFT FOR EVERY 10,000 SQUARE FEET.~~

ATTACHMENTS

1. Item C-100 Contractors Quality Control Program (CQCP)
2. Item P-101
3. Item P-152
4. Item P-605
5. Revised Schedule of Work

END OF ADDENDUM NO. 3

ITEM C-100
CONTRACTOR QUALITY CONTROL PROGRAM (CQCP)
DESCRIPTION

100-1 General. Quality is more than test results. Quality is the combination of proper materials, testing, workmanship, equipment, inspection, and documentation of the project. Establishing and maintaining a culture of quality is key to achieving a quality project. The Contractor shall establish, provide, and maintain an effective Contractor Quality Control Program (CQCP) that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The Contractor shall establish a CQCP that will:

- a. Provide qualified personnel to develop and implement the CQCP.
- b. Provide for the production of acceptable quality materials.
- c. Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements can be met.
- d. Document the CQCP process.

The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the CQCP has been reviewed and approved by the Engineer. No partial payment will be made for materials subject to specific quality control (QC) requirements until the CQCP has been reviewed and approved.

The QC requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the quality assurance (QA) testing requirements. QA testing requirements are the responsibility of the Owner as specified in the specifications.

A Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Resident Project Representative (RPR), Contractor, subcontractors, testing laboratories, and Owner's representative must be held prior to start of construction. The QC/QA workshop will be facilitated by the Contractor. The Contractor shall coordinate with the Airport and the Engineer on time and location of the QC/QA workshop. Items to be addressed, at a minimum, will include:

- a. Review of the CQCP including submittals, QC Testing, Action & Suspension Limits for Production, Corrective Action Plans, Distribution of QC reports, and Control Charts.
- b. Discussion of the QA program.
- c. Discussion of the QC and QA Organization and authority including coordination and information exchange between QC and QA.
- d. Establish regular meetings to discuss control of materials, methods and testing.
- e. Establishment of the overall QC culture.

100-2 Description of program.

a. General description. The Contractor shall establish a CQCP to perform QC inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors.

C-100-1

The CQCP shall ensure conformance to applicable specifications and plans with respect to materials, off-site fabrication, workmanship, construction, finish, and functional performance. The CQCP shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of QC.

b. Contractor Quality Control Program (CQCP). The Contractor shall describe the CQCP in a written document that shall be reviewed and approved by the Engineer prior to the start of any production, construction, or off-site fabrication. The written CQCP shall be submitted to the Engineer for review and approval at least **10** calendar days before the CQCP Workshop. The Contractor's CQCP and QC testing laboratory must be approved in writing by the Engineer prior to the Notice to Proceed (NTP).

The CQCP shall be organized to address, as a minimum, the following:

1. QC organization and resumes of key staff
2. Project progress schedule
3. Submittals schedule
4. Inspection requirements
5. QC testing plan
6. Documentation of QC activities and distribution of QC reports
7. Requirements for corrective action when QC and/or QA acceptance criteria are not met
8. Material quality and construction means and methods. Address all elements applicable to the project that affect the quality of the pavement structure including subgrade, subbase, base, and surface course. Some elements that must be addressed include, but is not limited to mix design, aggregate grading, stockpile management, mixing and transporting, placing and finishing, quality control testing and inspection, smoothness, laydown plan, equipment, and temperature management plan.

The Contractor must add any additional elements to the CQCP that is necessary to adequately control all production and/or construction processes required by this contract.

100-3 CQCP organization. The CQCP shall be implemented by the establishment of a QC organization. An organizational chart shall be developed to show all QC personnel, their authority, and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all QC staff by name and function, and shall indicate the total staff required to implement all elements of the CQCP, including inspection and testing for each item of work. If necessary, different technicians can be used for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the CQCP, the personnel assigned shall be subject to the qualification requirements of paragraphs 100-03a and 100-03b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The QC organization shall, as a minimum, consist of the following personnel:

a. Program Administrator. The Contractor Quality Control Program Administrator (CQCPA) must be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The CQCPA must have a minimum of five (5) years of experience in QC pavement construction with prior QC experience on a project of comparable size and scope as the contract.

Included in the five (5) years of paving/QC experience, the CQCPA must meet at least one of the following requirements:

- (1) Professional Engineer with one (1) year of airport paving experience.
- (2) Engineer-in-training with two (2) years of airport paving experience.
- (3) National Institute for Certification in Engineering Technologies (NICET) Civil Engineering Technology Level IV with three (3) years of airport paving experience.
- (4) An individual with four (4) years of airport paving experience, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.

The CQCPA must have full authority to institute any and all actions necessary for the successful implementation of the CQCP to ensure compliance with the contract plans and technical specifications. The CQCPA authority must include the ability to immediately stop production until materials and/or processes are in compliance with contract specifications. The CQCPA must report directly to a principal officer of the construction firm. The CQCPA may supervise the Quality Control Program on more than one project provided that person can be at the job site within two (2) hours after being notified of a problem.

b. QC technicians. A sufficient number of QC technicians necessary to adequately implement the CQCP must be provided. These personnel must be either Engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II in Civil Engineering Technology or higher, and shall have a minimum of two (2) years of experience in their area of expertise.

The QC technicians must report directly to the CQCPA and shall perform the following functions:

- (1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph 100-6.
- (2) Performance of all QC tests as required by the technical specifications and paragraph 100-8.
- (3) Performance of tests for the RPR when required by the technical specifications.

Certification at an equivalent level of qualification and experience by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

c. Staffing levels. The Contractor shall provide sufficient qualified QC personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The CQCP shall state where different technicians will be required for different work elements.

100-4 Project progress schedule. Critical QC activities must be shown on the project schedule as required by Section 80, paragraph 80-03, *Execution and Progress*.

100-5 Submittals schedule. The Contractor shall submit a detailed listing of all submittals (for example, mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include as a minimum:

- a. Specification item number
- b. Item description
- c. Description of submittal
- d. Specification paragraph requiring submittal

e. Scheduled date of submittal

100-6 Inspection requirements. QC inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by paragraph 100-9.

Inspections shall be performed as needed to ensure continuing compliance with contract requirements until completion of the particular feature of work. Inspections shall include the following minimum requirements:

a. During plant operation for material production, QC test results and periodic inspections shall be used to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment used in proportioning and mixing shall be inspected to ensure its proper operating condition. The CQCP shall detail how these and other QC functions will be accomplished and used.

b. During field operations, QC test results and periodic inspections shall be used to ensure the quality of all materials and workmanship. All equipment used in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The CQCP shall document how these and other QC functions will be accomplished and used.

100-7 Contractor QC testing facility.

a. For projects that include Item P-401, Item P-403, and Item P-404, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM D3666, *Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials*:

- 8.1.3 Equipment Calibration and Checks;
- 8.1.9 Equipment Calibration, Standardization, and Check Records;
- 8.1.12 Test Methods and Procedures

b. For projects that include P-501, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM C1077, *Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation*:

- 7 Test Methods and Procedures
- 8 Facilities, Equipment, and Supplemental Procedures

100-8 QC testing plan. As a part of the overall CQCP, the Contractor shall implement a QC testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional QC tests that the Contractor deems necessary to adequately control production and/or construction processes.

The QC testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

- a. Specification item number (e.g., P-401)
- b. Item description (e.g., Hot Mix Asphalt Pavements)
- c. Test type (e.g., gradation, grade, asphalt content)

d. Test standard (e.g., ASTM or American Association of State Highway and Transportation Officials (AASHTO) test number, as applicable)

e. Test frequency (e.g., as required by technical specifications or minimum frequency when requirements are not stated)

f. Responsibility (e.g., plant technician)

g. Control requirements (e.g., target, permissible deviations)

The QC testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D3665. The RPR shall be provided the opportunity to witness QC sampling and testing.

All QC test results shall be documented by the Contractor as required by paragraph 100-9.

100-9 Documentation. The Contractor shall maintain current QC records of all inspections and tests performed. These records shall include factual evidence that the required QC inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the RPR daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the CQCPA.

Contractor QC records required for the contract shall include, but are not necessarily limited to, the following records:

a. Daily inspection reports. Each Contractor QC technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous QC inspections have been performed and shall, as a minimum, include the following:

- (1) Technical specification item number and description
- (2) Compliance with approved submittals
- (3) Proper storage of materials and equipment
- (4) Proper operation of all equipment
- (5) Adherence to plans and technical specifications
- (6) Summary of any necessary corrective actions
- (7) Safety inspection.
- (8) Photographs and/or video

The daily inspection reports shall identify all QC inspections and QC tests conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible QC technician and the CQCPA. The RPR shall be provided at least one copy of each daily inspection report on the work day following the day of record. When QC inspection and test results are recorded and transmitted electronically, the results must be archived.

b. Daily test reports. The Contractor shall be responsible for establishing a system that will record all QC test results. Daily test reports shall document the following information:

- (1) Technical specification item number and description
- (2) Test designation
- (3) Location
- (4) Date of test
- (5) Control requirements
- (6) Test results
- (7) Causes for rejection
- (8) Recommended remedial actions
- (9) Retests

Test results from each day's work period shall be submitted to the RPR prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical QC charts. When QC daily test results are recorded and transmitted electronically, the results must be archived.

100-10 Corrective action requirements. The CQCP shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the CQCP as a whole, and for individual items of work contained in the technical specifications.

The CQCP shall detail how the results of QC inspections and tests will be used for determining the need for corrective action and shall contain clear rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and use statistical QC charts for individual QC tests. The requirements for corrective action shall be linked to the control charts.

100-11 Inspection and/or observations by the RPR. All items of material and equipment are subject to inspection and/or observation by the RPR at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate QC system in conformance with the requirements detailed here and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to inspection and/or observation by the RPR at the site for the same purpose.

Inspection and/or observations by the RPR does not relieve the Contractor of performing QC inspections of either on-site or off-site Contractor's or subcontractor's work.

100-12 Noncompliance.

a. The Engineer will provide written notice to the Contractor of any noncompliance with their CQCP. After receipt of such notice, the Contractor must take corrective action.

b. When QC activities do not comply with either the CQCP or the contract provisions or when the Contractor fails to properly operate and maintain an effective CQCP, and no effective corrective actions have been taken after notification of non-compliance, the Engineer will recommend the Owner take the following actions:

- (1) Order the Contractor to replace ineffective or unqualified QC personnel or subcontractors and/or

(2) Order the Contractor to stop operations until appropriate corrective actions are taken.

METHOD OF MEASUREMENT

100-13 Basis of measurement and payment. Contractor Quality Control Program (CQCP) is for the personnel, tests, facilities and documentation required to implement the CQCP. The CQCP will be paid as a lump sum with the following schedule of partial payments:

- a. With first pay request, 25% with approval of CQCP and completion of the Quality Control (QC)/Quality Assurance (QA) workshop.
- b. When 25% or more of the original contract is earned, an additional 25%.
- c. When 50% or more of the original contract is earned, an additional 20%.
- d. When 75% or more of the original contract is earned, an additional 20%
- e. After final inspection and acceptance of project, the final 10%.

BASIS OF PAYMENT

100-14 Payment will be made under:

Item C-100 Contractor Quality Control Program (CQCP)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

National Institute for Certification in Engineering Technologies (NICET)

ASTM International (ASTM)

ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

END OF ITEM C-100

C-100-7

ITEM P-101

DEMOLITION PAVEMENTS, STRUCTURES, PIPE

DESCRIPTION

101-1 This item shall consist of preparation of existing pavement surfaces for overlay, surface treatments, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable plans.

EQUIPMENT AND MATERIALS

101-2 All equipment and materials shall be specified here and in the following paragraphs or approved by the Engineer. The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 Removal of existing pavement.

The Contractor's removal operation shall be controlled to not damage adjacent pavement structure, and base material, cables, utility ducts, pipelines, or drainage structures which are to remain under the pavement.

a. Concrete pavement removal. This work does not apply to this project.

b. Asphalt pavement removal. Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed. The pavement shall be removed so the joint for each layer of pavement replacement is offset 1 foot from the joint in the preceding layer. This does not apply if the removed pavement is to be replaced with concrete or soil. The removed material shall be disposed of off the airport, unless otherwise specified

c. Repair or removal of Base, Subbase, and/or Subgrade. All failed material including surface, base course, subbase course, and subgrade shall be removed and repaired as shown on the plans or as directed by the Engineer. Materials and methods of construction shall comply with the applicable sections of these specifications. Any damage caused by Contractor's removal process shall be repaired at the Contractor's expense.

101-3.2 Preparation of joints and cracks prior to overlay/surface treatment. This work does not apply to this project.

101-3.3 Removal of Foreign Substances/contaminates prior to remarking. Removal of foreign substances/contaminates from existing pavement that will affect the bond of the new overlay or treatment shall consist of removal of rubber, fuel spills, oil, crack sealer, at least 90% of paint, and other foreign substances from the surface of the pavement. Areas that require removal are designated on the plans and as directed by the Engineer in the field during construction.

High-pressure water and sandblasting may be used. If chemicals are used, they shall comply with the state's environmental protection regulations. Removal methods used shall not cause major damage to the pavement, or to any structure or utility within or adjacent to the work area. Major damage is defined as changing the properties of the pavement, removal of asphalt causing the aggregate to ravel, or removing

pavement over 1/8 inch deep. If it is deemed by the RPR that damage to the existing pavement is caused by operational error, such as permitting the application method to dwell in one location for too long, the Contractor shall repair the damaged area without compensation and as directed by the Engineer.

Removal of foreign substances shall not proceed until approved by the Engineer. Water used for high-pressure water equipment shall be provided by the Contractor at the Contractor's expense. No material shall be deposited on the pavement shoulders. All wastes shall be disposed of in areas indicated in this specification or shown on the plans.

101-3.4 Concrete spall or failed asphaltic concrete pavement repair. This work does not apply to this project.

101-3.5 Cold milling. Milling shall be performed with a power-operated milling machine or grinder, capable of producing a uniform finished surface. The milling machine or grinder shall operate without tearing or gouging the underlying surface. The milling machine or grinder shall be equipped with grade and slope controls, and a positive means of dust control. All millings shall be removed and disposed off Airport property unless specified otherwise on the plans. If the Contractor mills or grinds deeper or wider than the plans specify, the Contractor shall replace the material removed with new material at the Contractor's Expense.

a. Patching. The milling machine shall be capable of cutting a vertical edge without chipping or spalling the edges of the remaining pavement and it shall have a positive method of controlling the depth of cut. The Engineer shall layout the area to be milled with a straightedge in increments of 1-foot widths. The area to be milled shall cover only the failed area. Any excessive area that is milled because the Contractor doesn't have the appropriate milling machine, or areas that are damaged because of his negligence, shall be repaired by the Contractor at the Contractor's Expense.

b. Profiling, grade correction, or surface correction. The milling machine shall have a minimum width of 7'-0" and it shall be equipped with electronic grade control devices that will cut the surface to the grade specified. The tolerances shall be maintained within +0 inch and -1/4 inch of the specified grade. The machine must cut vertical edges and have a positive method of dust control. The machine must have the ability to remove the millings or cuttings from the pavement and load them into a truck.

c. Clean-up. The Contractor shall sweep the milled surface daily and immediately after the milling until all residual materials are removed from the pavement surface. Prior to paving, the Contractor shall wet down the milled pavement and thoroughly sweep and/or blow the surface to remove loose residual material. Waste materials shall be collected and removed from the pavement surface and adjacent areas by sweeping or vacuuming. Waste materials shall be removed and disposed off Airport property unless specified otherwise on the plans.

101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment. This work does not apply to this project.

101-3.7 Maintenance. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

101-3.8 Preparation of Joints in Rigid Pavement prior to resealing. Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other

foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the joint and does not damage the joint.

101-3.8.1 Removal of Existing Joint Sealant. All existing joint sealants will be removed by plowing or use of hand tools. Any remaining sealant and or debris will be removed by use of wire brushes or other tools as necessary. Resaw joints removing no more than 1/16 inch from each joint face. Immediately after sawing, flush out joint with water and other tools as necessary to completely remove the slurry.

101-3.8.2 Cleaning prior to sealing. Immediately before sealing, joints shall be cleaned by removing any remaining laitance and other foreign material. Clean joints by sandblasting, or other method approved by the Engineer, on each joint face with nozzle held at an angle and not more than 3" from face. Following sandblasting, clean joints with air free of oil and water. Allow sufficient time to dry out joints prior to sealing. Joint surfaces will be surface-dry prior to installation of sealant.

101-3.8.3 Joint sealant. Joint material and installation will be in accordance with Item P-605.

101-3.9 Preparation of Cracks in Flexible Pavement prior to sealing. Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the cracks and does not damage the pavement.

101-3.9.1 Preparation of Crack. Widen crack with router or random crack saw ~~by removing a minimum of 1/16 inch (2 mm) from each side of crack to the dimension shown on the plans.~~ Immediately before sealing, cracks will be blown out with a hot air lance combined with oil and water-free compressed air.

101-3.9.2 Removal of Existing Crack Sealant. Existing sealants will be removed by routing or random crack saw. Following routing or sawing any remaining debris will be removed by use of a hot lance combined with oil and water-free compressed air.

101-3.9.3 Crack Sealant. Crack sealant material and installation will be in accordance with Item P-605 .

101-3.9.4 Removal of Pipe and other Buried Structures.

a. Removal of Existing 15" CMP. Remove the types of pipe as indicated on the plans. The pipe material shall be legally disposed of off-site in a timely manner following removal. Trenches shall be backfilled with material equal to or better in quality than adjacent embankment. Trenches under paved areas must be compacted to 98% of ASTM D1557

b. Removal of Existing Flared End Section (FES). Where indicated on the plans or as directed by the Engineer, inlets and/or manholes shall be removed and legally disposed of off-site in a timely fashion after removal. Excavations after removal shall be backfilled with material equal or better in quality than adjacent embankment. When under paved areas must be compacted to 98% of ASTM D1557 , when outside of paved areas must be compacted to 95% of ASTM D698.

METHOD OF MEASUREMENT

101-4.1 Bituminous pavement removal. The unit of measurement for pavement removal shall be the number of square yards removed by the Contractor. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting.

This item shall include, saw cutting, removal of asphalt pavement, removal of stone base down to subgrade soils, and removal and haul away of materials. Materials shall be deposited of at an offsite location in a safe

and legal manner at. Saw cutting shall be incidental to pavement removal. Dowel bar removal, if required, shall be incidental to pavement removal.

101-4.2 Remove Existing 15” CMP. The unit of measurement for removal of pipe and other buried structures will be made at the contract unit price for each linear foot of pipe removed and disposed of off airport property. This price shall be full compensation for all labor, equipment, tools, and incidentals necessary to complete this item in accordance with paragraph 101-3.9.4.

101-4.3 Remove existing Flared End Section (FES) The unit of measurement for the removal of existing drainage structures shall be per each unit removed and disposed of off airport property.

101-4.2 Joint and crack repair and seal. Preparation of pavement cracks for repair and sealing shall be incidental to Joint and Crack Repair and Seal pay item defined in P-605.

BASIS OF PAYMENT

101-5.1 Payment. Payment shall be made at contract unit price for the unit of measurement as specified above. This price shall be full compensation for furnishing all work required to complete the item. Payment shall include all materials preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item.

Item P 101-5.1	Bituminous Pavement Removal - per square yard
Item P 101-5.2	Remove Existing 15” CMP - per linear foot
Item P 101-5.3	Remove Existing Flared End Section (FES) per each
Item P 101-5.4	Joint and Crack Repair and Seal per linear foot

MATERIAL REQUIREMENTS

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6 Guidelines and Procedures for Maintenance of Airport Pavements.

ASTM International (ASTM)

ASTM D6690 Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

END OF ITEM P-101

**ITEM P-152
EXCAVATION, SUBGRADE, AND EMBANKMENT**

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

The construction areas have been surveyed by the Owner to facilitate the determination of the quantities of excavation and embankment for this project. The Contractor shall have the option to accept the Owner's surveyed elevations, measurements, and quantities in the bid form, or provide surveyed elevations and measurements for determination of actual quantities to be accepted and approved by the Owner. Should the Contractor choose not to accept the Owner's surveyed elevations, measurements and quantities, he shall so notify the Engineer in writing prior to commencing earthwork activities. The Owner and Engineer shall agree on the licensed professional land surveyor (PLS) to be used and the survey parameters to include the spacing of cross sectional elevations and measurements. Surveyed cross sectional elevations and measurements of existing ground provided by the Contractor shall be performed prior to beginning of work under this contract, shall be monitored by the Engineer, shall be performed by personnel qualified to perform this type of work, and shall be at the Contractor's expense with no additional cost to the Owner. Likewise, surveyed cross sectional elevations and measurements of finished ground provided by the Contractor shall be performed immediately after satisfactory completion of work under this contract, shall be monitored by the Engineer, shall be performed by personnel qualified to perform this type of work, and shall be at the Contractor's expense with no additional cost to the Owner.

152-1.2 Classification. All material excavated shall be classified as defined below:

- a. **Unclassified excavation.** Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature which is not otherwise classified and paid for ~~under one of the following items another pay item.~~

152-1.3 Unsuitable excavation. Unsuitable material shall be disposed of off airport property or in designated waste areas, if shown on the plans. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction ~~and as suitable subgrade in excavation.~~ Material suitable for topsoil may be used on the embankment slope when approved by the Engineer. ~~Excavated or existing subgrade material may not be deemed unsuitable only based on moisture content. Wet soil that, when dry would be considered suitable, shall not be classified as unsuitable.~~

CONSTRUCTION METHODS

152-2.1 General. ~~When designated on the drawings,~~ before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed in accordance with Item P-151.

The suitability of material to be placed in embankments shall be subject to approval by the Engineer. All unsuitable material shall be disposed of off of airport property. Waste areas, if approved by the Engineer and only if/where shown on the plans, shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the Engineer.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the Engineer notified per Section 70, paragraph 70-20. At the direction of the Engineer, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4", to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade.

There shall be no separate payment for work associated with returning areas impacted by the Contractor's staging or hauling operations. All work associated with restoring the haul route/staging areas to pre-construction conditions, including seed/mulch, shall be considered incidental to the project.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the Engineer, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

a. Blasting.

Blasting shall not be allowed.

152-2.2 Excavation. No excavation shall be started until the work has been staked out by the Contractor and the Engineer has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and Engineer shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

Digital terrain model (DTM) files of the existing surfaces, finished surfaces and other various surfaces were used to develop the design plans.

Volumetric quantities were calculated by comparing DTM files of the applicable design surfaces and generating Triangle Volume Reports. Electronic copies of DTM files and a paper copy of the original topographic map will be issued to the successful bidder.

Existing grades on the design cross sections or DTM's, where they do not match the locations of actual spot elevations shown on the topographic map, were developed by computer interpolation from those spot elevations. Prior to disturbing original grade, Contractor shall verify the accuracy of the existing ground surface by verifying spot elevations at the same locations where original field survey data was obtained as indicated on the topographic map. Contractor shall recognize that, due to the interpolation process, the actual ground surface at any particular location may differ somewhat from the interpolated surface shown on the design cross sections or obtained from the DTM's. Contractor's verification of original ground surface, however, shall be limited to verification of spot elevations as indicated herein, and no adjustments will be made to the original ground surface unless the Contractor demonstrates that spot elevations shown are incorrect. For this purpose, spot elevations which are within 0.1 foot of the stated elevations for ground

surfaces, or within 0.04 foot for hard surfaces (pavements, buildings, foundations, structures, etc.) shall be considered “no change”. Only deviations in excess of these will be considered for adjustment of the original ground surface. If Contractor's verification identifies discrepancies in the topographic map, Contractor shall notify the Engineer in writing at least two weeks before disturbance of existing grade to allow sufficient time to verify the submitted information and make adjustments to the design cross sections or DTM's. Disturbance of existing grade in any area shall constitute acceptance by the Contractor of the accuracy of the original elevations shown on the topographic map for that area.

All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the Engineer. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes as shown on the plans. All unsuitable material shall be disposed of off of Airport property.

The grade shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water that may affect the work.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the Engineer. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

a. Selective grading. When selective grading is indicated on the plans, the more suitable material designated by the Engineer shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas so that it can be measured for payment. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

b. Undercutting. Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches below the subgrade or to the depth specified by the Engineer. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed of off the airport. The cost is incidental to this item. This excavated material shall be paid for at the contract unit price per cubic yard for unsuitable excavation. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a part of the embankment. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans.

c. Over-break. Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the Engineer. All over-break shall be graded or removed by the Contractor and disposed of as directed by the Engineer. The Engineer shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the Engineer determines as avoidable. Unavoidable over-break will be classified as “Unclassified Excavation”.

d. Removal of utilities. The removal of existing structures and utilities required to permit the orderly progress of work will be accomplished by someone other than the Contractor; for example, the utility unless shown otherwise on the plans. All existing foundations shall be excavated at least 2 feet below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the Engineer. All

foundations thus excavated shall be backfilled with suitable material and compacted as specified for embankment or as shown on the plans.

152-2.3 Borrow excavation. Borrow areas within the airport property are indicated on the plans. Borrow excavation shall be made only at these designated locations and within the horizontal and vertical limits as staked or as directed by the Engineer. All unsuitable material shall be disposed of by the Contractor off of airport property. All borrow pits shall be opened to expose the various strata of acceptable material to allow obtaining a uniform product. Borrow areas shall be drained and left in a neat, presentable condition with all slopes dressed uniformly. Borrow areas shall not create a hazardous wildlife attractant.

When borrow sources are outside the boundaries of the airport property, it shall be the Contractor's responsibility to locate and obtain the borrow sources, subject to the approval of the Engineer. The Contractor shall notify the Engineer at least 15 days prior to beginning the excavation so necessary tests for suitability can be made. All unsuitable material shall be disposed of by the Contractor. Borrow areas shall be excavated to regular lines to permit accurate measurements.

152-2.4 Drainage excavation. Drainage excavation shall consist of excavating for drainage ditches such as intercepting, inlet, or outlet ditches; for temporary levee construction; or for any other type as designed or types as shown on the plans. The work shall be performed in sequence with the other construction. Intercepting ditches shall be constructed prior to starting adjacent excavation operations. All satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas or as directed by the Engineer. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

152-2.5 Preparation of cut areas or areas where existing pavement has been removed. In those areas on which a subbase or base course is to be placed, the top 12 inches of subgrade shall be compacted to not less than 98% of maximum density for non-cohesive soils, and 90% of maximum density for cohesive soils as determined by ASTM D1557. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

152-2.6 Preparation of embankment area. In the areas of pavement and building construction where an embankment is to be constructed to a height of 4 feet or less, all sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6" and shall then be compacted per paragraph 152-2.10. When the height of fill is greater than 4 feet, sod not required to be removed shall be thoroughly disked and recompacted to the density of the surrounding ground before construction of embankment.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12" and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.7 Control Strip. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the Engineer, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 8 inches upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified

density. The Engineer must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the Engineer. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the Engineer.

152-2.8 Formation of embankments. Unless specified otherwise on the plans, the material shall be constructed in lifts as established in the control strip, but not less than 6 inches nor more than 8 inches of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications.

The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the Engineer. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each lift shall be within $\pm 2\%$ of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The Engineer will take samples of excavated materials which will be used in embankment for testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with D 1557. A new Proctor shall be developed for each soil type based on visual classification.

Quality assurance density tests will be taken by the Owner's representative for every 1,000 square yards of compacted embankment for each lift which is required to be compacted, with a minimum of one test per lift, or other appropriate frequencies as determined by the Engineer.

If the material has greater than 30% retained on the 3/4-inch sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than 98% of maximum density for non-cohesive soils, and 90% of maximum density for cohesive soils as determined by ASTM D1557. Under all areas to be paved, the embankments shall be compacted to a depth of 12 inches and to a density of not less than 98 percent of the maximum density as determined by ASTM D1557. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

On all areas outside of the pavement areas, no compaction will be required on the top 4 inches which shall be prepared for a seedbed in accordance with Item T-901 .

The in-place field density shall be determined in accordance with ASTM D1556 and / or ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. . The Contractor's laboratory shall perform all density tests in the Engineer's presence and provide the test results upon completion to the Engineer for acceptance . If the specified density is not attained, the area represented by the test or as designated by the Engineer shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

Unless specified otherwise on the plans, when rock and other embankment material are excavated at approximately the same time as the subgrade, the rock shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones or fragmentary rock larger than 4" in their greatest dimensions will not be allowed in the top 6 inches of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the Engineer and the finer material shall be used to fill the voids forming a dense, compact mass. Rock or boulders shall not be disposed of except at places and in the manner designated on the plans or by the Engineer.

For lifts located lower than 4 vertical feet below finish grade and when the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment, as directed by the Engineer, in lifts not exceeding 2 feet in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. A lift of 2 feet in thickness shall not be constructed above an elevation 4'-0" below the finished subgrade. For lifts within the top 4 vertical feet of an embankment, or below a finished subgrade, the Contractor shall be responsible for crushing, pulverizing and further breaking down pieces, such that the material may be placed in the embankment as directed in lifts not exceeding 8 inches in thickness, except for the top 12 inches where particle size is limited to 4" in their greatest dimension.

There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in lifts, compacting, diking, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for excavation, borrow, or other items.

152-2.9 Proof rolling. The purpose of proof rolling the subgrade is to identify any weak areas in the subgrade and not for compaction of the subgrade. Before start of embankment, and after compaction is completed, the subgrade area shall be proof rolled with a 20 ton Tandem axle Dual Wheel Dump Truck loaded to the legal limit with tires inflated to 150 psi in the presence of the Engineer. Apply a minimum of two coverages, or as specified by the Engineer, under pavement areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than 1 inch or show permanent deformation greater than 1 inch shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications.

152-2.10 Compaction requirements. The subgrade under areas to be paved shall be compacted to a depth of 12 inches and to a density of not less than **98** percent of the maximum dry density as determined by ASTM D1557. The subgrade in areas outside the limits of the pavement areas shall be compacted to a depth of 12 inches and to a density of not less than **90** percent of the maximum density as determined by ASTM D698.

The material to be compacted shall be within $\pm 2\%$ of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). When the material has greater than 30 percent retained on the $\frac{3}{4}$ inch sieve, follow the methods in ASTM D698, ASTM D1557, or procedures in AASHTO T180 Annex for correction of maximum dry density and optimum moisture for oversized particles. Tests for moisture content and compaction will be taken at a minimum of 1,000 S.Y. of subgrade. Contractor shall be responsible for their own Quality Control testing. All quality assurance acceptance testing shall be done by the Owner's representative and coordinated through the Engineer.

The in-place field density shall be determined in accordance with ASTM D1556 or ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938 within 12 months prior to its use on this contract. The gage shall be field standardized daily.

The finished grading operations, conforming to the typical cross-section, shall be completed and maintained at least 1,000' ahead of the paving operations, or as directed by the Engineer.

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All loose or protruding rocks on the back slopes of cuts shall be pried loose or otherwise removed to the slope finished grade line. All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the Engineer and the finished subgrade shall be maintained.

152-2.11 Finishing and protection of subgrade. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. After the subgrade is substantially complete, the Contractor shall remove any soft or other unstable material over the full width of the subgrade that will not compact properly. All low areas, holes or depressions in the subgrade shall be brought to grade with suitable select material. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the Engineer.

152-2.12 Haul. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 Surface Tolerances. In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches, reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the Engineer. The Contractor shall perform all final smoothness and grade checks in the presence of the Engineer. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

- a. **Smoothness.** The finished surface In those areas upon which a subbase or base course is to be placed, the top of the subgrade shall be of such smoothness that it shall not vary more than +/- ½ inch when tested with a 12-foot straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot straightedge for the full length of each line on a 50-foot grid. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, reshaping and recompacting.
- b. **Grade.** The grade and crown shall be measured on a 50-foot grid and shall be within +/-0.05 feet of the specified grade.

On safety areas, turfed areas, intermediate and other designated areas, the surface shall be of such smoothness that within the grading limits where no subbase or base is to be placed, the constructed grade shall not vary more than 0.10 feet from specified design grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.14 Topsoil. When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the Engineer, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans and as required in Item T-905.No direct payment will be made for topsoil under Item P-152. The quantity removed and placed directly or stockpiled shall be paid for at the contract unit price per cubic yard for "Unclassified Excavation".

When stockpiling of topsoil and later rehandling of such material is directed by the Engineer, the material so rehandled shall be paid for at the contract unit price per cubic yard for "topsoil placement," as provided in Item T-905.

METHOD OF MEASUREMENT

152-3.1 Measurement for payment specified by the cubic yard shall be computed by the comparison of digital terrain model (DTM) surfaces for computation of neat line design quantities.

After completion of all excavation operations and prior to the placing of base or subbase material, topsoiling, and seeding/mulching, the final excavation shall be measured for payment.

For payment specified by the cubic yard, measurement shall be estimated during construction by percent complete and finalized by comparison of digital terrain models (DTM). The Resident Project Representative (RPR), the contractor, and the engineer will agree upon a percent complete of earthwork quantities for each pay application up until 80% of plan quantities are reached. Payment beyond 80% of the earthwork quantities shall require as-built survey completed and sealed by the contractor's land surveyor who must be a professional licensed surveyor in Georgia. The topographic as-built survey shall contain adequate data to perform DTM comparisons using Autodesk Civil 3D 2018 or newer. The engineer will perform final DTM comparison between as-built survey and the existing base survey. Should the contractor disagree with the final earthwork analysis/DTM comparisons and quantities, the contractor will be required to provide their own analysis at no additional cost to the owner or engineer. The engineer will take the contractor's analysis into consideration; however, the engineer reserves the right to make the final decision on quantities.

152-3.2 The quantity of unclassified excavation to be paid for shall be the number of cubic yards measured in its original position. Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed.

152-3.3 The quantity of unsuitable excavation to be paid for shall be the number of cubic yards measured in its original position. Measurements and quantities for unsuitable excavation must be approved by the Engineer prior to excavation. Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed.

BASIS OF PAYMENT

152-4.1 "Unclassified excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.2 "Unsuitable excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation to completed the item including furnishing all materials, labor, equipment, tools, and incidentals necessary to remove unsuitable soils and replace the material with suitable material approved by the engineer.

Payment will be made under:

Item P-152-4.1 Unclassified Excavation - per cubic yard

Item P-152-4.2 Unsuitable Excavation - per cubic yard

TESTING REQUIREMENTS

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180 Standard Method of Test for Moisture-Density Relations of Soils Using a (10-lb) Rammer and a (18-in.) Drop

ASTM International (ASTM)

ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³)

ASTM D1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³)

ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2 Operational Safety on Airports During Construction Software

Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66 Design and Construction of Airport Pavements on Expansive Soils

END OF ITEM P-152

ITEM P-605

JOINT SEALANTS FOR CONCRETE PAVEMENTS

DESCRIPTION

605-1.1 This item shall consist of providing and installing a resilient and adhesive joint sealing material capable of effectively sealing joints in pavement; joints between different types of pavements; and cracks in existing pavement.

MATERIALS

605-2.1 Joint sealants for Portland Cement Concrete Pavements. Joint sealant materials shall meet the requirements of ASTM D5893 Standard Specifications for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements.

Each lot or batch of sealant shall be delivered to the jobsite in the manufacturer's original sealed container. Each container shall be marked with the manufacturer's name, batch or lot number, the safe heating temperature, and shall be accompanied by the manufacturer's certification stating that the sealant meets the requirements of this specification.

605-2.2 Backer rod. The material furnished shall be a compressible, non-shrinking, non-staining, non-absorbing material that is non-reactive with the joint sealant in accordance with ASTM D5249. The backer-rod material shall be $25\% \pm 5\%$ larger in diameter than the nominal width of the joint.

605-2.3 Bond breaking tapes. Provide a bond breaking tape or separating material that is a flexible, non-shrinkable, non-absorbing, non-staining, and non-reacting adhesive-backed tape. The material shall have a melting point at least 5°F greater than the pouring temperature of the sealant being used when tested in accordance with ASTM D789. The bond breaker tape shall be approximately 1/8 inch wider than the nominal width of the joint and shall not bond to the joint sealant.

605-2.4. Crack Sealers for Existing Asphalt Pavement. Crack sealing materials shall meet the requirements of ASTM D 6690 Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

Each lot or batch of sealing compound shall be delivered to the jobsite in the manufacturer's original sealed container. Each container shall be marked with the manufacturer's name, batch or lot number, and the safe heating temperature and shall be accompanied by the manufacturer's certification stating that the compound meets the requirements of this specification.

The crack sealing product minimum standard shall be set by the CRAFCO Inc. Asphalt Rubber Plus product or approved equivalent product by the engineer. Submit final product to be used to the engineer for review and approval. Submittal shall include certifications of lot used for the jobsite and test data indicating percent of actual rubber content in the sealant.

CONSTRUCTION METHODS

605-3.1 Time of application. Joints shall be sealed as soon after completion of the curing period as feasible (For new pavement) and before the pavement is opened to traffic, including construction equipment. Joints

and cracks repair for existing pavement should be completion as soon as possible after the joint or crack has been cleaned and prepared per item P-101 and as noted on the drawings

The pavement temperature shall be 50°F and rising at the time of application of the poured joint sealing material. Do not apply sealant if moisture is observed in the joint or crack.

605-3.2 Equipment. Machines, tools, and equipment used in the performance of the work required by this section shall be approved before the work is started and maintained in satisfactory condition at all times. Contractor shall submit a list of proposed equipment to be used in performance of construction work including descriptive data with the crack sealant product submittal no less than 15 days prior to use on the project.

a. Concrete saw. Provide a self-propelled power saw, with water-cooled diamond or abrasive saw blades, for cutting joints to the depths and widths specified or for refacing joints or cleaning sawed joints where sandblasting does not provide a clean joint.

b. Sandblasting equipment. Include with the sandblasting equipment an air compressor, hose, and long-wearing venturi-type nozzle of proper size, shape and opening. The maximum nozzle opening should not exceed 1/4". The air compressor shall be portable and capable of furnishing not less than 150 cfm and maintaining a line pressure of not less than 90 psi at the nozzle while in use. Demonstrate compressor capability, under job conditions, before approval. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water. The nozzle shall have an adjustable guide that will hold the nozzle aligned with the joint approximately 1" above the pavement surface. Adjust the height, angle of inclination and the size of the nozzle as necessary to secure satisfactory results.

c. Waterblasting equipment. Include with the waterblasting equipment a trailer-mounted water tank, pumps, high-pressure hose, wand with safety release cutoff control, nozzle, and auxiliary water resupply equipment. Provide water tank and auxiliary resupply equipment of sufficient capacity to permit continuous operations. The nozzle shall have an adjustable guide that will hold the nozzle aligned with the joint approximately 1" above the pavement surface. Adjust the height, angle of inclination and the size of the nozzle as necessary to obtain satisfactory results. A pressure gauge mounted at the pump shall show at all times the pressure in psi at which the equipment is operating.

d. Hand tools. Hand tools may be used, when approved, for removing defective sealant from a crack and repairing or cleaning the crack faces. Hand tools should be carefully evaluated for potential spalling effects prior to approval for use.

e. Two-component, cold-applied, machine mix sealing equipment. Provide equipment used for proportioning, mixing, and installing Federal Specification SS-S-200 Type M joint sealants designed to deliver two semifluid components through hoses to a portable mixer at a preset ratio of one (1) to one (1) by volume using pumps with an accuracy of $\pm 5\%$ for the quantity of each component. The reservoir for each component shall be equipped with mechanical agitation devices that will maintain the components in a uniform condition without entrapping air. Incorporate provisions to permit thermostatically controlled indirect heating of the components, when required. However, immediately prior to proportioning and mixing, the temperature of either component shall not exceed 90°F. Provide screens near the top of each reservoir to remove any foreign particles or partially polymerized material that could clog fluid lines or otherwise cause misproportioning or improper mixing of the two components. Provide equipment capable of thoroughly mixing the two components through a range of application rates of 10 to 60 gallons per hour

and through a range of application pressures from 50 psi to 1500 psi as required by material, climatic, or operating conditions. Design the mixer for the easy removal of the supply lines for cleaning and proportioning of the components. The mixing head shall accommodate nozzles of different types and sizes as may be required by various operations. The dimensions of the nozzle shall be such that the nozzle tip will extend into the joint to allow sealing from the bottom of the joint to the top. Maintain the initially approved equipment in good working condition, serviced in accordance with the supplier's instructions, and unaltered in any way without obtaining prior approval.

f. Two-component, cold-applied, hand-mix sealing equipment. Mixing equipment for Federal Specification SS-S-200 Type H sealants shall consist of a slow-speed electric drill or air-driven mixer with a stirrer in accordance with the manufacturer's recommendations. Submit printed copies of manufacturer's recommendations 15 days prior to use on the project where installation procedures, or any part thereof, are required to be in accordance with those recommendations. Installation of the material will not be allowed until the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.

g. Cold-applied, single-component sealing equipment. The equipment for installing ASTM D5893 single component joint sealants shall consist of an extrusion pump, air compressor, following plate, hoses, and nozzle for transferring the sealant from the storage container into the joint opening. The dimension of the nozzle shall be such that the tip of the nozzle will extend into the joint to allow sealing from the bottom of the joint to the top. Maintain the initially approved equipment in good working condition, serviced in accordance with the supplier's instructions, and unaltered in any way without obtaining prior approval. Small hand-held air-powered equipment (i.e., caulking guns) may be used for small applications.

605-3.3 Preparation of joints. Pavement joints for application of material in this specification must be dry, clean of all scale, dirt, dust, curing compound, and other foreign matter. The Contractor shall demonstrate, in the presence of the Engineer, that the method cleans the joint and does not damage the joint.

a. Sawing. All joints shall be sawed in accordance with specifications and plan details. Immediately after sawing the joint, the resulting slurry shall be completely removed from joint and adjacent area by flushing with a jet of water, and by use of other tools as necessary.

b. Sealing. Immediately before sealing, the joints shall be thoroughly cleaned of all remaining laitance, curing compound, filler, protrusions of hardened concrete, old sealant and other foreign material from the sides and upper edges of the joint space to be sealed. Cleaning shall be accomplished as specified in paragraph 605-3.2. The newly exposed concrete joint faces and the pavement surface extending a minimum of 1/2 inch from the joint edge shall be sandblasted clean. Sandblasting shall be accomplished in a minimum of two passes. One pass per joint face with the nozzle held at an angle directly toward the joint face and not more than 3 inches from it. After final cleaning and immediately prior to sealing, blow out the joints with compressed air and leave them completely free of debris and water. The joint faces shall be surface dry when the seal is applied.

c. Backer Rod. When the joint opening is of a greater depth than indicated for the sealant depth, plug or seal off the lower portion of the joint opening using a backer rod in accordance with paragraph 605-2.2 to prevent the entrance of the sealant below the specified depth. Take care to ensure that the backer rod is placed at the specified depth and is not stretched or twisted during installation.

d. Bond-breaking tape. Where inserts or filler materials contain bitumen, or the depth of the joint opening does not allow for the use of a backup material, insert a bond-breaker separating tape in accordance

with paragraph 605-2.3 to prevent incompatibility with the filler materials and three-sided adhesion of the sealant. Securely bond the tape to the bottom of the joint opening so it will not float up into the new sealant.

605-3.4 Installation of sealants. Joints shall be inspected for proper width, depth, alignment, and preparation, and shall be approved by the Engineer before sealing is allowed. Sealants shall be installed in accordance with the following requirements:

Immediately preceding, but not more than 50 feet ahead of the joint sealing operations, perform a final cleaning with compressed air. Fill the joints from the bottom up to 1/8 inch \pm 1/16 inch below the top of pavement surface; or bottom of groove for grooved pavement. Remove and discard excess or spilled sealant from the pavement by approved methods. Install the sealant in such a manner as to prevent the formation of voids and entrapped air. In no case shall gravity methods or pouring pots be used to install the sealant material. Traffic shall not be permitted over newly sealed pavement until authorized by the Engineer. When a primer is recommended by the manufacturer, apply it evenly to the joint faces in accordance with the manufacturer's instructions. Check the joints frequently to ensure that the newly installed sealant is cured to a tack-free condition within the time specified.

605-3.5 Inspection. The Contractor shall inspect the joint sealant for proper rate of cure and set, bonding to the joint walls, cohesive separation within the sealant, reversion to liquid, entrapped air and voids. Sealants exhibiting any of these deficiencies at any time prior to the final acceptance of the project shall be removed from the joint, wasted, and replaced as specified at no additional cost to the airport.

605-3.6 Clean-up. Upon completion of the project, remove all unused materials from the site and leave the pavement in a clean condition.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

605-4.1 There shall be no separate measurement or basis of payment for joints associated with new Asphalt pavement. Payment these joints shall be incidental to item GDOT 402 Bituminous Surface Course.

605-4.2 Crack sealing for existing asphalt pavements shall be measured by the linear foot of sealant in place. Routing, cleaning, heating, sealing, and cleanup shall be incidental to the crack sealing pay item.

Payment for crack sealing shall be made at the contract unit price per linear foot. The price shall be full compensation for furnishing all materials, for all preparation, delivering, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

P 605-4.2 – Joint and Crack Repair and Seal

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D789	Standard Test Method for Determination of Relative Viscosity of Polyamide (PA)
ASTM D5249	Standard Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland-Cement Concrete and Asphalt Joints
ASTM D5893	Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements

Advisory Circulars (AC)

AC 150/5340-30	Design and Installation Details for Airport Visual Aids
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END ITEM P-605

Item No. & Spec.	Description and Unit Price in Words	Quantity	Unit	Unit Price	Extended Total
Schedule I					
1 FAA C-105	Mobilization @ (write in words) _____ _____	1	LS	_____	_____
2 FAA C-102	Temporary Construction Exit, including installation, maintenance, and removal @ (write in words) _____ _____	1	EA	_____	_____
3 FAA C-102 Add No. 3	Temporary Compost Filter Sock, including installation, maintenance, and removal @ (write in words) _____ _____	630	LF	_____	_____
4 FAA C-102	Temporary Storm Drainage Inlet Protection, including installation, maintenance, and removal @ (write in words) _____ _____	2	EA	_____	_____
5 FAA C-102	Temporary Excavated Inlet Sediment Trap Storm Drainage Inlet Protection, including installation, maintenance, and removal @ (write in words) _____ _____	1	EA	_____	_____
6 FAA C-102	Temporary Slotted Board Dam with Stone Retrofit, including installation, maintenance, and removal @ (write in words) _____ _____	2	EA	_____	_____
7 FAA C-102	Permanent Rip Rap Outlet Protection, including installation and maintenance @ (write in words) _____ _____	9	SY	_____	_____

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**SCHEDULE OF WORK
APRON PAVEMENT DRAINAGE REHABILITATION
PHASE 2**

Addendum #3
3/24/2021

Item No. & Spec.	Description and Unit Price in Words	Quantity	Unit	Unit Price	Extended Total
Schedule I					
8 FAA C-102 Add No. 3	Permanent Slope Stabilization Matting Blanket, including installation and maintenance @ (write in words) _____ _____	300	SY	_____	_____
9 FAA P-101 Add No. 3	Bituminous Pavement Removal @ (write in words) _____ _____	9,000	SY	_____	_____
10 FAA P-101	Remove Existing 15" CMP @ (write in words) _____ _____	100	LF	_____	_____
11 FAA P-101 Add No. 3	Remove Existing Flared End Section (FES) @ (write in words) _____ _____	1	EA	_____	_____
12 FAA P-605 Add No. 3	Joint and Crack Repair and Seal @ (write in words) _____ _____	1,100	LF	_____	_____
13 FAA P-152 Add No. 3	Unclassified Excavation @ (write in words) _____ _____	1,600	CY	_____	_____
14 FAA P-209 Add No. 3	Crushed Aggregate Base Course, 6in Depth @ (write in words) _____ _____	1,800	CY	_____	_____

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**SCHEDULE OF WORK
APRON PAVEMENT DRAINAGE REHABILITATION
PHASE 2**

Addendum #3
3/24/2021

Item No. & Spec.	Description and Unit Price in Words	Quantity	Unit	Unit Price	Extended Total
Schedule I					
15 GDOT 402 Add No. 3	Recycled Asphaltic Concrete 12.5mm, Group I or II, including bituminous materials and hydrated lime @ (write in words) _____ _____	2,000	TN	_____	_____
16 FAA P-602	Bituminous Prime Coat @ (write in words) _____ _____	3,060	GAL	_____	_____
17 FAA P-603	Bituminous Tack Coat @ (write in words) _____ _____	1,521	GAL	_____	_____
18 FAA P-620	Runway & Taxiway Marking, Permanent, Yellow, Reflective with Microbicide @ (write in words) _____ _____	449	SF	_____	_____
19 FAA P-620	Runway & Taxiway Marking, Temporary, Yellow, Non- Reflective with Microbicide @ (write in words) _____ _____	449	SF	_____	_____
20 FAA D-701	18" Diam. CMP, 16 gauge polymer coated @ (write in words) _____ _____	183	LF	_____	_____
21 FAA D-701	18" Diam. Class IV RCP @ (write in words) _____ _____	73	LF	_____	_____

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SCHEDULE OF WORK
APRON PAVEMENT DRAINAGE REHABILITATION
PHASE 2

Addendum #3
3/24/2021

Item No. & Spec.	Description and Unit Price in Words	Quantity	Unit	Unit Price	Extended Total
Schedule I					
22 FAA D-702 Add No.2	Slotted Drain with 18" Diameter Pipe (installation only, material provided by Owner) @ (write in words) _____ _____	312	LF	_____	_____
23 FAA D-702 Add No.2	Slotted Drain with 24" Diameter Pipe, (installation only, material provided by Owner) @ (write in words) _____ _____	311	LF	_____	_____
24 FAA D-702 Add No.2	24" Diam. Elbow for Slotted Drain, (installation only, material provided by Owner) @ (write in words) _____ _____	2	EA	_____	_____
25 FAA D-702	Concrete for Slotted Drain Backfill @ (write in words) _____ _____	108	CY	_____	_____
26 FAA D-751	4'x4' Drop Inlet, 0'-10' Depth @ (write in words) _____ _____	1	EA	_____	_____
27 FAA D-751	4'x4' Drop Inlet with Concrete Apron, 0'-10' Depth @ (write in words) _____ _____	1	EA	_____	_____
28 FAA D-752	18" Concrete Flared End Section @ (write in words) _____ _____	1	EA	_____	_____
29 FAA D-752	Modify Existing Drainage Structure @ (write in words) _____ _____	1	EA	_____	_____

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**SCHEDULE OF WORK
APRON PAVEMENT DRAINAGE REHABILITATION
PHASE 2**

Addendum #3
3/24/2021

Item No. & Spec.	Description and Unit Price in Words	Quantity	Unit	Unit Price	Extended Total
30 FAA T-901 Add No. 3	Permanent Grassing, including seed, lime, fertilizer, and mulch @ (write in words) _____ _____	1	AC	_____	_____
31 FAA T-905	Topsoil Placement @ (write in words) _____ _____	556	CY	_____	_____
32 FAA T-908 Add No. 3	Hydraulic Mulch with Tackifier @ (write in words) _____ _____	1	AC	_____	_____
33 FAA T-908 Add No. 3	Temporary Mulch @ (write in words) _____ _____	3	AC	_____	_____
34 FAA P-152 Add No. 3	Unsuitable Excavation @ (write in words) _____ _____	150	CY	_____	_____
35 Add No. 3	Geogrid (Tensor TX 140 or equivalent), Labor, Materials, equipment, tools and incidentals @ (write in words) _____ _____	200	SY	_____	_____
36 FAA C-100 Add No. 3	Contractors Quality Control Program (CQCP) @ (write in words) _____ _____	1.00	LS	_____	_____
TOTAL BID					_____

The Owner reserves the right to award and/or reject any or all schedules of work.
 CONTRACT TIME: 75 CALENDAR DAYS
 Liquidated Damages \$500.00 per Calendar Day
 DBE Goal is 7.27%

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**SCHEDULE OF WORK
APRON PAVEMENT DRAINAGE REHABILITATION
PHASE 2**

Addendum #3
3/24/2021

Respectfully Submitted,

Contractor

Address

BY

Title

Date

DATE: _____

Current GA Contractor

License No.: _____

ACKNOWLEDGEMENT OF ADDENDA
NO. SIGNATURE

- 1. _____
- 2. _____
- 3. _____
- 4. _____

