Illinois Department of Transportation
Office of Intermodal Project Implementation / Division of Aeronautics
1 Langhorne Bond Drive / Springfield, Illinois 62707-8415

April 15, 2026

SUBJECT: Abraham Lincoln Capital Airport
Springfield, Illinois
Sangamon County
Illinois Project Number: SPI-5280
AIP Project Number: 3-17-0096-TBD
Contract No. CA025
Item No. 10A, April 24, 2026 Letting
Addendum A

NOTICE TO PROSPECTIVE BIDDERS

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

Reason for Addendum:
Revisions to the Plans, Specifications, and Schedule of Prices.

To All Plan Holders:
This addendum forms a part of the bidding and contract documents and modifies the original bidding documents, dated March 11, 2026.

Plan Changes:

SHEET 2
REVISE: Summary of Quantities Tables

SHEET 111
ADD: Earthwork Summary Table showing cut and fill quantities for base bid earthwork.

Technical Specifications Changes:

Item P-152
REPLACE Item P-152 with the attached revised Item P-152

Schedule of Prices Changes:

Delete the following Pay Items:
Item AW152442 Offsite Borrow Excavation
Item AX152442 Offsite Borrow Excavation
Item AY152442 Offsite Borrow Excavation

Revise the following Quantities:
Item AW152455 Embankment in Place from 4900 CY to 5619 CY
Item AX152455 Embankment in Place from 1350 CY to 1528 CY
Item AY152455 Embankment in Place from 2350 CY to 2335 CY

Prime contractors must utilize the enclosed material when preparing their bid and must include any changes to the Schedule of Prices in their bid.

Questions on this addendum may be directed to Ashley Stefanik of CMT at 217-787-8050 or by email at astefanik@cmtengr.com.

Attachments:

- Updated Plan Sheet 2, GI002, INDEX TO SHEETS, dated 4/14/2026

- Updated Plan Sheet 111, GC741, SERVICE RD CROSS SECTIONS, dated 4/14/2026

- Revised Technical Specification Item P-152, Excavation, Subgrade, and Embankment, dated 4/14/2026

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1

**BASE BID**

| ITEM NO. | ITEM DESCRIPTION | UNITS | QTY |
|---|---|---|---|
| | | | |
| AW 108158 | 1/C #8 5 KV UG CABLE IN UD | FOOT | 6300.0 |
| AW 108067 | PAPI CABLE | FOOT | 510.0 |
| AW 108258 | 2/C #8 5 KV UG CABLE IN UD | FOOT | 1850.0 |
| AW 108706 | 1/C #6 COUNTERPOISE | FOOT | 5210.0 |
| AW 110102 | DUCT MARKER - IN PAVEMENT | EACH | 14.0 |
| AW 125565 | SPLICE CAN | EACH | 1.0 |
| AW 125615 | PAPI (L-880 SYSTEM) | EACH | 1.0 |
| AW 125902 | REMOVE BASE MOUNTED LIGHT | EACH | 38.0 |
| AW 125903 | REMOVE INPAVEMENT LIGHT | EACH | 1.0 |
| AW 125906 | REMOVE SPLICE CAN | EACH | 1.0 |
| AW 125908 | REMOVE PAPI | EACH | 1.0 |
| AW 125922 | REPLACE BASE MOUNTED LIGHT | EACH | 30.0 |
| AW 125923 | REPLACE INPAVEMENT LIGHT | EACH | 1.0 |
| AW 125942 | ADJUST BASE MOUNTED LIGHT | EACH | 8.0 |
| AW 125946 | ADJUST SPLICE CAN | EACH | 2.0 |
| AW 150510 | ENGINEER'S FIELD OFFICE | L SUM | 1.0 |
| AW 150520 | MOBILIZATION | L SUM | 1.0 |
| AW 150550 | CONSTRUCTION ACCESS | L SUM | 1.0 |
| AW 150552 | RESTORE CONSTRUCTION ACCESS | L SUM | 1.0 |
| AW 152455 | EMBANKMENT IN PLACE | CU YD | 5619.0 |
| AW 154506 | GRANULAR SUBBASE - 6" | SQ YD | 650.0 |
| AW 156510 | SILT FENCE | FOOT | 250.0 |
| AW 156513 | SEPARATION FABRIC | SQ YD | 650.0 |
| AW 156515 | STRAW WATTLE | FOOT | 250.0 |
| AW 201661 | CLEAN & SEAL BITUMINOUS CRACKS | FOOT | 25000.0 |
| AW 401010 | CONTRACTOR QUALITY CONTROL PROGRAM | L SUM | 1.0 |
| AW 401610 | BITUMINOUS SURFACE COURSE | TON | 5465.0 |
| AW 401630 | BITUMINOUS SURFACE TEST SECTION | EACH | 1.0 |
| AW 401640 | BITUMINOUS PAVEMENT GROOVING | SQ YD | 33500.0 |
| AW 403510 | BITUMINOUS BASE COURSE | TON | 10700.0 |
| AW 403630 | BITUMINOUS BASE TEST SECTION | EACH | 1.0 |
| AW 501906 | REMOVE PAVEMENT | SQ YD | 5150.0 |
| AW 603510 | BITUMINOUS TACK COAT | GALLON | 9550.0 |
| AW 620520 | PAVEMENT MARKING - WATERBORNE | SQ FT | 50400.0 |
| AW 620525 | PAVEMENT MARKING - BLACK BORDER | SQ FT | 11500.0 |
| AW 620545 | PAVEMENT MARKING - WATERBORNE SPHPS | SQ FT | 1300.0 |
| AW 620900 | PAVEMENT MARKING REMOVAL | SQ FT | 6350.0 |
| AW 701900 | REMOVE PIPE | FOOT | 40.0 |
| AW 705944 | ADJUST UNDERDRAIN CLEANOUT | EACH | 10.0 |
| AW 800308 | EXPLORATORY EXCAVATION | EACH | 2.0 |
| AW 800317 | PAVEMENT SENSOR | EACH | 1.0 |
| AW 801529 | BITUMINOUS PAVEMENT MILLING - 0.75" TO 4" VAR. DEPTH | SQ YD | 42600.0 |
| AW 801532 | CLEAN AND SEAL WIDE HMA CRACKS | FOOT | 1150.0 |
| AW 801534 | BITUMINOUS PAVEMENT MILLING - 4" TO 8" VAR. DEPTH | SQ YD | 3750.0 |
| AW 901510 | SEEDING | ACRE | 13.5 |
| AW 904510 | SODDING | SQ YD | 3300.0 |
| AW 908515 | HEAVY-DUTY HYDRAULIC MULCH | ACRE | 13.5 |
| AW 910975 | RELOCATE ROADWAY SIGN | EACH | 2.0 |

**ALTERNATE 1**

| ITEM NO. | ITEM DESCRIPTION | UNITS | QTY |
|---|---|---|---|
| | | | |
| AX 108158 | 1/C #8 5 KV UG CABLE IN UD | FOOT | 2150.0 |
| AX 108258 | 2/C #8 5 KV UG CABLE IN UD | FOOT | 350.0 |
| AX 108706 | 1/C #6 COUNTERPOISE | FOOT | 2150.0 |
| AX 110102 | DUCT MARKER - IN PAVEMENT | EACH | 2.0 |
| AX 125902 | REMOVE BASE MOUNTED LIGHT | EACH | 12.0 |
| AX 125922 | REPLACE BASE MOUNTED LIGHT | EACH | 12.0 |
| AX 150520 | MOBILIZATION | L SUM | 1.0 |
| AX 152455 | EMBANKMENT IN PLACE | CU YD | 1528.0 |
| AX 156520 | INLET PROTECTION | EACH | 1.0 |
| AX 201661 | CLEAN & SEAL BITUMINOUS CRACKS | FOOT | 10125.0 |
| AX 401610 | BITUMINOUS SURFACE COURSE | TON | 2120.0 |
| AX 401640 | BITUMINOUS PAVEMENT GROOVING | SQ YD | 16000.0 |
| AX 403510 | BITUMINOUS BASE COURSE | TON | 4250.0 |
| AX 603510 | BITUMINOUS TACK COAT | GALLON | 3800.0 |
| AX 620520 | PAVEMENT MARKING - WATERBORNE | SQ FT | 10200.0 |
| AX 620525 | PAVEMENT MARKING - BLACK BORDER | SQ FT | 2100.0 |
| AX 620900 | PAVEMENT MARKING REMOVAL | SQ FT | 200.0 |
| AX 705944 | ADJUST UNDERDRAIN CLEANOUT | EACH | 6.0 |
| AX 800317 | PAVEMENT SENSOR | EACH | 1.0 |
| AX 801522 | SUBSURFACE TEMPERATURE PROBE | EACH | 1.0 |
| AX 801529 | BITUMINOUS PAVEMENT MILLING - 0.75" TO 4" VAR. DEPTH | SQ YD | 4800.0 |
| AX 801532 | CLEAN AND SEAL WIDE HMA CRACKS | FOOT | 1000.0 |
| AX 801534 | BITUMINOUS PAVEMENT MILLING - 4" TO 8" VAR. DEPTH | SQ YD | 7250.0 |
| AX 801535 | BITUMINOUS PAVEMENT MILLING - 8" TO 14" VAR. DEPTH | SQ YD | 6250.0 |
| AX 901510 | SEEDING | ACRE | 3.5 |
| AX 904510 | SODDING | SQ YD | 1025.0 |
| AX 908515 | HEAVY-DUTY HYDRAULIC MULCH | ACRE | 3.5 |

**ALTERNATE 2**
**(TO BE FUNDED BY ADDITIONAL STATE BOND FUNDS)**

| ITEM NO. | ITEM DESCRIPTION | UNITS | QTY |
|---|---|---|---|
| | | | |
| AY 150520 | MOBILIZATION | L SUM | 1.0 |
| AY 152455 | EMBANKMENT IN PLACE | CU YD | 2335.0 |
| AY 201661 | CLEAN & SEAL BITUMINOUS CRACKS | FOOT | 3700.0 |
| AY 401610 | BITUMINOUS SURFACE COURSE | TON | 790.0 |
| AY 403510 | BITUMINOUS BASE COURSE | TON | 1580.0 |
| AY 603510 | BITUMINOUS TACK COAT | GALLON | 1500.0 |
| AY 620520 | PAVEMENT MARKING - WATERBORNE | SQ FT | 3750.0 |
| AY 620525 | PAVEMENT MARKING - BLACK BORDER | SQ FT | 1250.0 |
| AY 705944 | ADJUST UNDERDRAIN CLEANOUT | EACH | 2.0 |
| AY 801529 | BITUMINOUS PAVEMENT MILLING - 0.75" TO 4" VAR. DEPTH | SQ YD | 6800.0 |
| AX 801532 | CLEAN AND SEAL WIDE HMA CRACKS | FOOT | 1000.0 |

CMT

License No. 184-000613

CONSULTANTS

FINAL SUBMITTAL (100%)
MARCH 11, 2026

REHABILITATE RUNWAY 13/31, RECONSTRUCT LIGHTING AND SIGNAGE - CONSTRUCTION PHASE 1 AND RECONSTRUCT RUNWAY 13 PAPI

OWNER

SPRINGFIELD AIRPORT AUTHORITY
ABRAHAM LINCOLN CAPITAL AIRPORT
SPRINGFIELD, IL

| MARK | DATE | DESCRIPTION |
|---|---|---|
| 1 | 04/14/26 | ADDENDUM #1 |

AIP PROJ. NO: 3-17-0096-TBD
IL. PROJ. NO: SPI-5280
CMT PROJECT NO: 220049-04
CAD DWG FILE: PH1-2200490400-GI002.DWG
DESIGNED BY: APS
DRAWN BY: DPA
CHECKED BY: CHK
APPROVED BY: HWI
COPYRIGHT:

SHEET TITLE

INDEX TO SHEETS

GI002

SHEET 2 OF 111

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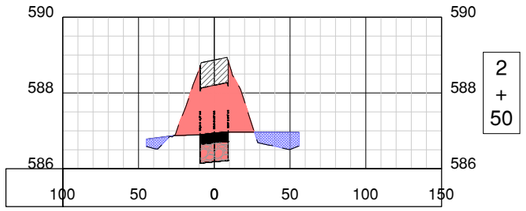


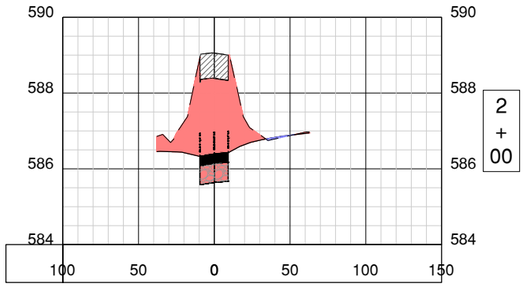


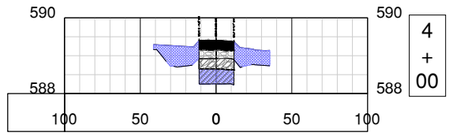


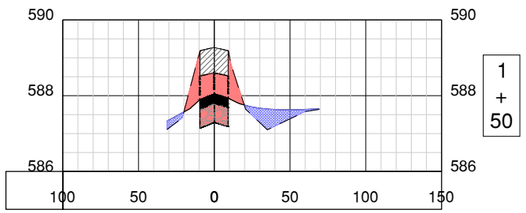


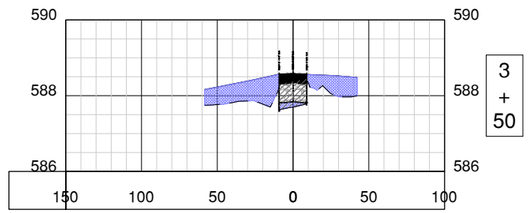


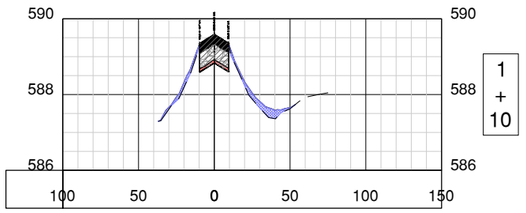


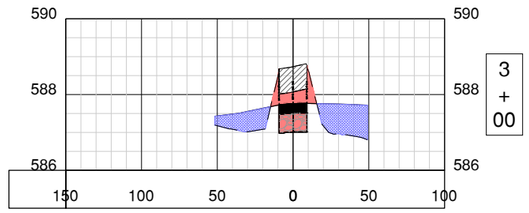


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EARTHWORK SUMMARY

| STATION | EXCAVATE END AREA (S.F.) | CUT VOLUME (C.Y.) | CUMULATIVE CUT VOLUME (C.Y.) | EMBANK END AREA (S.F.) | FILL VOLUME (C.Y.) | CUMULATIVE FILL VOLUME (C.Y.) |
|---|---|---|---|---|---|---|
| **1331 PH1 BB** | | | | | | |
| 206+00 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206+50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 207+00 | 7 | 6 | 6 | 54 | 50 | 50 |
| 207+50 | 0 | 6 | 12 | 35 | 82 | 132 |
| 208+00 | 0 | 0 | 13 | 51 | 80 | 212 |
| 208+50 | 0 | 0 | 13 | 97 | 137 | 349 |
| 209+00 | 1 | 1 | 14 | 110 | 191 | 540 |
| 209+50 | 2 | 3 | 17 | 114 | 207 | 747 |
| 210+00 | 2 | 4 | 21 | 107 | 205 | 952 |
| 210+50 | 0 | 1 | 22 | 92 | 185 | 1137 |
| 211+00 | 2 | 2 | 24 | 48 | 130 | 1267 |
| 211+50 | 1 | 3 | 27 | 77 | 116 | 1383 |
| 212+00 | 1 | 2 | 29 | 60 | 128 | 1511 |
| 212+50 | 4 | 4 | 34 | 43 | 95 | 1606 |
| 213+00 | 0 | 3 | 37 | 56 | 91 | 1697 |
| 213+50 | 0 | 0 | 37 | 34 | 83 | 1780 |
| 214+00 | 0 | 0 | 37 | 46 | 74 | 1854 |
| 214+50 | 0 | 0 | 37 | 43 | 82 | 1936 |
| 215+00 | 0 | 0 | 37 | 67 | 101 | 2038 |
| 215+50 | 0 | 0 | 37 | 57 | 115 | 2153 |
| 216+00 | 0 | 0 | 37 | 44 | 93 | 2246 |
| 216+50 | 0 | 0 | 37 | 27 | 65 | 2311 |
| 217+00 | 0 | 0 | 37 | 18 | 41 | 2353 |
| 217+50 | 0 | 0 | 37 | 25 | 40 | 2393 |
| 218+00 | 0 | 0 | 37 | 25 | 47 | 2439 |
| 218+50 | 0 | 0 | 37 | 17 | 39 | 2478 |
| 219+00 | 1 | 1 | 38 | 28 | 41 | 2519 |
| 219+50 | 5 | 5 | 43 | 37 | 60 | 2579 |
| 220+00 | 15 | 19 | 62 | 44 | 75 | 2654 |
| 220+50 | 50 | 61 | 123 | 56 | 93 | 2747 |
| 221+00 | 120 | 157 | 280 | 39 | 88 | 2834 |
| 221+50 | 17 | 127 | 407 | 134 | 160 | 2994 |
| 222+00 | 25 | 39 | 447 | 71 | 190 | 3184 |
| 222+50 | 2 | 25 | 472 | 67 | 127 | 3311 |
| 223+00 | 0 | 2 | 473 | 104 | 158 | 3469 |
| 223+50 | 0 | 0 | 473 | 10 | 105 | 3575 |
| 224+00 | 0 | 0 | 474 | 10 | 18 | 3593 |
| 224+50 | 0 | 0 | 474 | 4 | 13 | 3606 |
| 225+00 | 1 | 1 | 475 | 22 | 24 | 3631 |
| 225+50 | 0 | 1 | 476 | 44 | 61 | 3691 |
| 226+00 | 0 | 0 | 476 | 58 | 95 | 3786 |
| 226+50 | 0 | 0 | 476 | 61 | 111 | 3896 |
| 227+00 | 0 | 0 | 476 | 61 | 113 | 4009 |
| 227+50 | 0 | 0 | 476 | 46 | 99 | 4109 |
| 228+00 | 0 | 0 | 476 | 41 | 81 | 4190 |
| 228+50 | 0 | 0 | 476 | 20 | 57 | 4247 |
| 229+00 | 0 | 0 | 476 | 28 | 44 | 4291 |
| 229+50 | 0 | 0 | 476 | 21 | 45 | 4336 |
| 230+00 | 0 | 0 | 476 | 8 | 28 | 4364 |
| 230+50 | 0 | 0 | 476 | 10 | 17 | 4381 |
| 231+00 | 0 | 0 | 477 | 17 | 25 | 4406 |
| 231+50 | 0 | 0 | 477 | 17 | 32 | 4438 |
| 232+00 | 17 | 15 | 492 | 40 | 54 | 4491 |
| 232+50 | 20 | 34 | 526 | 71 | 103 | 4594 |
| 233+00 | 17 | 34 | 560 | 83 | 143 | 4737 |
| 233+50 | 13 | 28 | 588 | 81 | 152 | 4889 |
| 234+00 | 0 | 12 | 600 | 0 | 75 | 4964 |
| 234+50 | 6 | 6 | 606 | 108 | 100 | 5064 |
| 235+00 | 1 | 7 | 612 | 106 | 199 | 5263 |
| 236+00 | 0 | 0 | 614 | 17 | 92 | 5355 |

| **13 SERVICE ROAD (BB)** | | | | | | |
|---|---|---|---|---|---|---|
| 1+10 | 2 | 0 | 0 | 8 | 0 | 0 |
| 1+50 | 38 | 29 | 29 | 14 | 16 | 16 |
| 2+00 | 98 | 126 | 155 | 1 | 14 | 30 |
| 2+50 | 69 | 155 | 310 | 14 | 14 | 43 |
| 3+00 | 25 | 88 | 397 | 46 | 56 | 99 |
| 3+50 | 0 | 23 | 421 | 49 | 88 | 188 |
| 4+00 | 0 | 0 | 421 | 32 | 76 | 264 |

CMT
License No. 184-000613
CONSULTANTS

FINAL SUBMITTAL (100%)
MARCH 11, 2026

REHABILITATE RUNWAY 13/31, RECONSTRUCT LIGHTING AND SIGNAGE - CONSTRUCTION PHASE 1 AND RECONSTRUCT RUNWAY 13 PAPI

OWNER

SPRINGFIELD AIRPORT AUTHORITY
ABRAHAM LINCOLN CAPITAL AIRPORT
SPRINGFIELD, IL

| MARK | DATE | DESCRIPTION |
|---|---|---|
| 1 | 04/14/26 | ADDENDUM #1 |

| | |
|---|---|
| AIP PROJ. NO: | 3-17-0096-TBD |
| IL. PROJ. NO: | SPI-5280 |
| CMT PROJECT NO: | 220049-04 |
| CAD DWG FILE: | PH1-2200490400-CG755.DWG |
| DESIGNED BY: | AJB |
| DRAWN BY: | DPA |
| CHECKED BY: | CHK |
| APPROVED BY: | HWI |
| COPYRIGHT: | |

SHEET TITLE

# SERVICE RD CROSS SECTIONS

CG741

SHEET 111 OF 111

# 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.

Please note that the earthwork for this project does not balance as the total embankment quantities exceed the total excavation quantities. The on-site excavated material may be used for embankment, however remaining borrow material shall be obtained from borrow areas from a source identified by the contractor off airport property.

**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.

**b. Borrow excavation**. Borrow excavation shall consist of approved material required for the construction of embankments or for other portions of the work in excess of the quantity of usable material available from required excavations. Borrow material shall be obtained from borrow areas from a source identified by the contractor off airport property.

**c. Exploratory excavation.** Exploratory excavation shall consist of the excavation necessary for the purpose of locating and confirming the position, features, and elevations of existing utilities and drainage components in order to identify potential conflicts or inaccurate record information. This item shall also include the coordination and location of existing utilities in the area of the Exploratory Excavation as required by Section 70, and the associated topographic surveying of the utility points of interest.

**152-1.3 Unsuitable excavation.** Unsuitable material shall be disposed in designated waste areas as 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. Material suitable for topsoil may be used on the embankment slope when approved by the RPR.

## CONSTRUCTION METHODS

**152-2.1 General.** 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 RPR. All unsuitable material shall be disposed of in waste areas as shown on the plans. All waste areas 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 RPR.

When the Contractor’s excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, 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 inches (100 mm), to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches (100 mm) in their greatest dimension will not be permitted in the top 6 inches (150 mm) of the subgrade.

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 RPR, 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 RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and RPR 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.

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 RPR. 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 as shown on the plans.

The grade shall be maintained so that the surface is well drained at all times.

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 RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas from a source identified by the contractor off airport property.

**a. Selective grading.** When selective grading is indicated on the plans, the more suitable material designated by the RPR 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 until it can be placed. 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.** Not Used

**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 RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR 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 RPR 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. All existing foundations shall be excavated at least 2 feet (60 cm) below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the RPR. 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.**

There are no borrow sources within the boundaries of the airport property. The Contractor shall locate and obtain borrow sources, subject to the approval of the RPR. The Contractor shall notify the RPR at least 15 days prior to beginning the excavation so visual inspections can be made by the RPR. 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.

**152-2.4 Drainage excavation.** Drainage excavation shall consist of excavating drainage ditches including intercepting, inlet, or outlet ditches; or other types as shown on the plans. The work shall be performed in sequence with the other construction. 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 RPR. 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 100% of maximum density for non-cohesive soils, and 95% 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.** 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 inches (150 mm) and shall then be compacted per paragraph 152-2.10.

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 inches (300 mm) 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 RPR, 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 12 inches (300 mm) upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR 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 RPR. 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 RPR.

**152-2.8 Formation of embankments.** The material shall be constructed in lifts as established in the control strip, but not less than 6 inches (150 mm) nor more than 12 inches (300 mm) 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 RPR. 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 ±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 contractor 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 ASTM D698 and ASTM D1557. A new Proctor shall be developed for each soil type based on visual classification.

Density tests will be taken by the contractor in the presence of the RPR for every 3,000 square yards of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) 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 95% 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 95 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 (100 mm) 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 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 RPR’s presence and provide the test results upon completion to the RPR for acceptance. If the specified density is not attained, the area represented by the test or as designated by the RPR 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.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches (100 mm) in their greatest dimensions will not be allowed in the top 12 inches (300 mm) of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

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 in lifts not exceeding 2 feet (60 cm) in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet (1.2 m) below the finished subgrade.

Payment for compacted embankment will be made under embankment in-place and no payment will be made for excavation, borrow, topsoil stripping, topsoil placement, stockpiling, 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 80/100/150 psi in the presence of the RPR. Apply a minimum of 1 coverage, or as specified by the RPR, 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 (25 mm) or show permanent deformation greater than 1 inch (25 mm) shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications. Removal and replacement of soft areas is incidental to this item.

**152-2.10 Compaction requirements.** The subgrade under areas to be paved shall be compacted to a depth of and to a density of not less than 100 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 95 percent of the maximum density as determined by ASTM D698.

The material to be compacted shall be within ±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 ¾ inch (19.0 mm) sieve, follow the methods in ASTM D1557. Tests for moisture content and compaction will be taken at a minimum of 3,000 S.Y. of subgrade. All quality assurance testing shall be done by the Contractor's laboratory in the presence of the RPR, and density test results shall be furnished upon completion to the RPR for acceptance determination.

The in-place field density shall be determined in accordance with 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.

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 cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the RPR 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. All low areas, holes or depressions in the subgrade shall be brought to grade. 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 RPR.

**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 (75 mm), reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

a. **Smoothness.** The finished surface shall not vary more than +/- ½ inch (12 mm) when tested with a 12-foot (3.7-m) 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 (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid.

b. **Grade.** The grade and crown shall be measured on a 50-foot (15-m) grid and shall be within +/- 0.05 feet (15 mm) of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to placed, grade shall not vary more than 0.10 feet (30 mm) from specified 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 RPR, 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.

**152-2.15 Exploratory excavation.** The purpose of this item is to identify potential conflicts between existing utilities and the proposed improvements and to confirm record information on existing utility structures to allow proposed revisions where necessary.

The Exploratory Excavation shall be performed at the locations shown on the Plans or as directed by the RPR.

The Exploratory Excavation shall be performed prior to the manufacture or acquisition of the proposed utility or drainage structures and materials.

The Exploratory Excavation shall not be less than 60 in. in depth measured from the existing ground elevation. The size of the excavation shall be sufficient to allow proper investigation of the area being excavated including topographic surveying.

After the excavation has been inspected by the RPR, the excavated material shall be used to backfill the trench in accordance with item P-152.

## METHOD OF MEASUREMENT

**152-3.1** Measurement for payment specified by the cubic yard shall be computed by the average end areas of design cross sections for computation of neat line design quantities. The end area is that bound by the original ground line established by field cross-sections and the final theoretical pay line established by cross-sections shown on the plans, subject to verification by the RPR.

**152-3.2** The quantity of embankment in place shall be the number of cubic yards measured in its final position.

**152-3.3** The quantity of exploratory excavation to be paid for shall be the number of completed exploration locations performed and accepted by the RPR. Measurement shall not include the quantity of topsoil stripping or unclassified excavation required to perform the exploratory excavation; those items are considered incidental to the exploratory excavation.

**152-3.4** The quantity of Adjust underdrain cleanout to be paid for shall be the number of cleanouts adjusted in accordance with the plans.

**152-3.5** The quantity of relocate roadway sign to be paid for shall be the number of signs relocated in accordance with the plans.

## BASIS OF PAYMENT

**152-4.1** For embankment in place, 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** Payment for exploratory excavation will be made at the contract unit price per each.

**152-4.3** Payment for adjust underdrain cleanout will be made at the contract unit price per each.

**152-4.4** Payment for relocate roadway sign will be made at the contract unit price per each.

Payment will be made under:

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| Item AW152455 | Embankment In Place – per cubic yard |
| Item AW800308 | Exploratory Excavation – per each |
| Item AW705944 | Adjust Underdrain Cleanout – per each |
| Item AW910975 | Relocate Roadway Sign – per each |
| Item AX152455 | Embankment In Place – per cubic yard |
| Item AX705944 | Adjust Underdrain Cleanout – per each |
| Item AY152455 | Embankment In Place – per cubic yard |
| Item AY705944 | Adjust Underdrain Cleanout – per each |

## 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)

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| AASHTO T-180 | Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop |

ASTM International (ASTM)

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| ASTM D698 | Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft$^3$ (600 kN-m/m$^3$)) |
| 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/ft$^3$ (2700 kN-m/m$^3$)) |
| 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)

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

Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

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

**END OF ITEM P-152**