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Letting January 15, 2021

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. LI039
Litchfield Municipal Airport
Litchfield, Illinois
Montgomery County
Illinois Project No. 3LF-4819
SBG Project No. 3-17-SBGP-144/156/162**



1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. on January 15, 2021, at which time the bids will be publicly opened from the iCX SecureVault.
2. **DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. LI039
Litchfield Municipal Airport
Litchfield, Illinois
Montgomery County
Illinois Project No. 3LF-4819
SBG Project No. 3-17-SBGP-144/156/162**

Extend Partial Parallel Taxiway B and Related Lighting/Electrical from Existing End to Runway 9 Turnaround

For engineering information, please contact Kyle Schweizer, P.E. of Hanson Professional Services, Inc. at 217.747.9219.

3. INSTRUCTIONS TO BIDDERS.

- (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 10-18 of the Illinois Standard Specifications for Construction of Airports, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.
- (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded within 90 calendar days to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

5. **PRE-BID CONFERENCE.** N/A

6. **DISADVANTAGED BUSINESS POLICY.** The DBE goal for this contract is 10.0%.

7. **SPECIFICATIONS AND DRAWINGS.** The work shall be done in accordance with the Illinois Standard Specifications for Construction of Airports, the Special Provisions dated November 20, 2020, and the Construction Plans dated November 20, 2020 as approved by the Illinois Department of Transportation, Division of Aeronautics.

- 8. BIDDING REQUIREMENTS AND BASIS OF AWARD.** When alternates are included in the proposal, the following shall apply:
- a. Additive Alternates
 - (1) Bidders must submit a bid for the Base Bid and for all Additive Alternates.
 - (2) Award of this contract will be made to the lowest responsible qualified bidder computed as follows:

The lowest aggregate amount of (i) the Base Bid plus (ii) any Additive Alternate(s) which the Department elects to award.

The Department may elect not to award any Additive Alternates. In that case, award will be to the lowest responsible qualified bidder of the Base Bid.
 - b. Optional Alternates
 - (1) Bidders must submit a bid for the Base Bid and for either Alternate A or Alternate B or for both Alternate A and Alternate B.
 - (2) Award of this contract will be made to the lowest responsible qualified bidder computed as follows:

The lower of the aggregate of either (i) the Base Bid plus Alternate A or (ii) the Base Bid plus Alternate B.
- 9. CONTRACT TIME.** The Contractor shall complete all work within the specified contract time. Any calendar day extension beyond the specified contract time must be fully justified, requested by the Contractor in writing, and approved by the Engineer, or be subject to liquidated damages.
- The contract time for this contract is 100 calendar days.
- 10. INDEPENDENT WEIGHT CHECKS.** The Department reserves the right to conduct random unannounced independent weight checks on any delivery for bituminous, aggregate or other pay item for which the method of measurement for payment is based on weight. The weight checks will be accomplished by selecting, at random, a loaded truck and obtaining a loaded and empty weight on an independent scale. In addition, the department may perform random weight checks by obtaining loaded and empty truck weights on portable scales operated by department personnel.
- 11. MATERIAL COST ADJUSTMENTS.** Federal Aviation Administration rules prohibit the use of escalation clauses for materials. Therefore, the Illinois Department of Transportation, Division of Aeronautics cannot offer any material cost adjustment provisions for projects that utilize Federal Funds.
- 12. GOOD FAITH COMPLIANCE.** The Illinois Department of Transportation has made a good faith effort to include all statements, requirements, and other language required by federal and state law and by various offices within federal and state governments whether that language is required by law or not. If anything of this nature has been left out or if additional language etc. is later required, the bidder/contractor shall cooperate fully with the Department to modify the contract or bid documents to correct the deficiency. If the change results in increased operational costs, the Department shall reimburse the contractor for such costs as it may find to be reasonable.

By Order of the
Illinois Department of Transportation

Omer Osman,
Acting Secretary

ILLINOIS DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS

REQUIRED CONTRACT PROVISIONS FOR STATE FUNDED AIRPORT CONSTRUCTION PROJECTS

The following provisions are State of Illinois requirements and are in addition to the REQUIRED CONTRACT PROVISIONS FOR AIRPORT IMPROVEMENT PROGRAM AND FOR OBLIGATED SPONSORS

DISADVANTAGED BUSINESS POLICY

NOTICE: This proposal contains the special provision entitled "Disadvantaged Business Participation." Inclusion of this Special Provision in this contract satisfies the obligations of the Department of Transportation under federal law as implemented by 49 CFR 23 and under the Illinois "Minority and Female Business Enterprise Act."

POLICY: It is public policy that the businesses defined in 49 CFR Part 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with State or Federal funds. Consequently, the requirements of 49 CFR Part 23 apply to this contract.

OBLIGATION: The Contractor agrees to ensure that the businesses defined in 49 CFR Part 23 have the maximum opportunity to participate in the performance of this contract. In this regard, the Contractor shall take all necessary and reasonable steps, in accordance with 49 CFR Part 23, to ensure that the said businesses have the maximum opportunity to compete for and perform portions of this contract. The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

The Contractor shall include the above Policy and Obligation statements of this Special Provision in every subcontract, including procurement of materials and leases of equipment.

DBE/WBE CONTRACTOR FINANCE PROGRAM: On contracts where a loan has been obtained through the DBE/WBE Contractor Finance Program, the Contractor shall cooperate with the Department by making all payments due to the DBE/WBE Contractor by means of a two-payee check payable to the Lender (Bank) and the Borrower (DBE/WBE Contractor).

BREACH OF CONTRACT: Failure to carry out the requirements set forth above and in the Special Provision shall constitute a breach of contract and may result in termination of the contract or liquidated damages as provided in the special provision.

SPECIAL PROVISION FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform 10.0% of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:
<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.

- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

(c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement.

(e) DBE as a material supplier:

(1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100 percent goal credit for the cost of materials or supplies obtained from a DBE manufacturer.

(3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

(a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.

(b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or

(2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or

(3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

(f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily

completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) **ENFORCEMENT.** The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

(h) **RECONSIDERATION.** Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

SPECIAL PROVISION FOR WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: April 2, 2015

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Resident Engineer on Division of Aeronautics Form "AER 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

SPECIAL PROVISION FOR SUBCONTRACTOR MOBILIZATION PAYMENTS

Effective: November 2, 2017

Revised: April 1, 2019

To account for the preparatory work and the operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting according to Section 80-01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form AER 260A submitted for the approval of the subcontractor's work.

Value of Subcontract Reported on Form AER 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%

The mobilization payment to the subcontractor is an advance payment of the reported amount of the subcontract and is not a payment in addition to the amount of the subcontract; therefore, the amount of the advance payment will be deducted from future progress payments.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

SPECIAL PROVISION FOR PAYMENTS TO SUBCONTRACTORS

Effective: November 2, 2017

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 90-07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause. If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section 7(b) of the State Prompt Payment Act. State law creates other and additional remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

SPECIAL PROVISION FOR SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Subcontractor and Disadvantaged Business Enterprise Payment Reporting

The Contractor shall report all payments made to the following parties:

- (a) first tier subcontractors;
- (b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;
- (c) material suppliers or trucking firms that are part of the Contractor's submitted DBE utilization plan.

The report shall be made through the Department's on-line subcontractor payment reporting system within 21 days of making the payment.

SPECIAL PROVISION FOR ADDITIONAL STATE REQUIREMENTS FOR FEDERAL-AID CONSTRUCTION CONTRACTS

Effective: February 1, 1969

Revised: January 1, 2017

EQUAL EMPLOYMENT OPPORTUNITY

In the event of the Contractor's noncompliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act, or the Illinois Department of Human Rights Rules and Regulations, the Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political sub-divisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation.

During the performance of this Contract, the Contractor agrees as follows:

- (1) That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability

unrelated to ability, military status, or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

(2) That, if it hires additional employees in order to perform this contract or any portion hereof, it will determine the availability (in accordance with the Illinois Department of Human Rights Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.

(3) That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status, or an unfavorable discharge from military service.

(4) That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Contractor's obligations under the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations. If any labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with such Act and Rules and Regulations, the Contractor will promptly so notify the Illinois Department of Human Rights and IDOT and will recruit employees from other sources when necessary to fulfill its obligations thereunder.

(5) That it will submit reports as required by the Illinois Department of Human Rights Rules and Regulations, furnish all relevant information as may from time to time be requested by the Illinois Department of Human Rights or IDOT, and in all respects comply with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.

(6) That it will permit access to all relevant books, records, accounts, and work sites by personnel of IDOT and the Illinois Department of Human Rights for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.

(7) That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the Contractor will be liable for compliance with applicable provisions of this clause by subcontractors; and further it will promptly notify IDOT and the Illinois Department of Human Rights in the event any subcontractor fails or refuses to comply with these provisions. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

SPECIAL PROVISION FOR NPDES CERTIFICATION

In accordance with the provisions of the Illinois Environmental Protection Act, the Illinois Pollution Control Board Rules and Regulations (35 Ill. Adm. Code, Subtitle C, Chapter I), and the Clean Water Act, and the regulations thereunder, this certification is required for all construction contracts that will result in the disturbance of one or more acres total land area.

The bidder certifies under penalty of law that he/she understands the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR100000) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

The Airport Owner or its Agent will:

- 1) prepare, sign and submit the Notice of Intent (NOI)
- 2) conduct site inspections and complete and file the inspection reports
- 3) submit Incidence of Non-Compliance (ION) forms
- 4) submit Notice of Termination (NOT) form

Prior to the issuance of the Notice-to-Proceed, for each erosion control measure identified in the Storm Water Pollution Prevention Plan, the contractor or subcontractor responsible for the control measure(s) must sign the above certification (forms to be provided by the Department).

SPECIAL PROVISION FOR COMPLETION TIME VIA CALENDAR DAYS

It being understood and agreed that the completion within the time limit is an essential part of the contract, the bidder agrees to complete the work within 100 calendar days, unless additional time is granted by the Engineer in accordance with the provisions of the specifications. In case of failure to complete the work on or before the time named herein, or within such extra time as may have been

allowed by extensions, the bidder agrees that the Department of Transportation shall withhold from such sum as may be due him/her under the terms of this contract, the costs, as set forth in Section 80-09 Failure to Complete on Time of the Standard Specifications, which costs shall be considered and treated not as a penalty but as damages due to the State from the bidder by reason of the failure of the bidder to complete the work within the time specified in the contract.

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
SECTION 80 PROSECUTION AND PROGRESS

This Special Provision amends the provisions of the Standard Specifications for Construction of Airports, adopted April 1, 2012 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

80-09 FAILURE TO COMPLETE ON TIME.

DELETE: "See contract documents for current schedule of deductions."

ADD:

Schedule of Deductions for Each Day of Overrun in Contract Time			
Original Contract Amount		Daily Charges	
From More Than	To and Including	Calendar Day	Work Day
\$ 0	\$ 100,000	\$ 475	\$ 675
100,000	500,000	750	1,050
500,000	1,000,000	1,025	1,425
1,000,000	3,000,000	1,275	1,725
3,000,000	6,000,000	1,425	2,000
6,000,000	12,000,000	2,300	3,450
12,000,000	And over	6,775	9,525

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
SECTION 90 MEASUREMENT AND PAYMENT

This Special Provision amends the provisions of the Standard Specifications for Construction of Airports, adopted April 1, 2012 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

90-07 PARTIAL PAYMENTS.

DELETE: The entire section.

ADD: Partial payments will be made to the Contractor at least once each month as the work progresses. The payments will be based upon estimates, prepared by the Resident Engineer, of the value of the work performed and materials complete and in place in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with the Section 90-08 PAYMENT FOR MATERIALS ON HAND. From the amount of partial payment so determined on Federal-Aid projects, there shall be deducted an amount up to ten percent of the cost of the completed work which shall be retained until all conditions necessary for financial closeout of the project are satisfied. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1,000.00 will be approved for payment other than the final payment. A final voucher for under \$5.00 shall not be paid except through electronic funds transfer. (15 ILCS 405/9(b-1))

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders, except when such excess quantities have been determined by the Engineer to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Department to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in Section 90-09 ACCEPTANCE AND FINAL PAYMENT.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610) progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

In accordance with 49 USC § 47111, the Department will not make payments totaling more than 90 percent of the contract until all conditions necessary for financial closeout of the project are satisfied.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved.

90-10 TRUST AGREEMENT OPTION.

DELETE: The entire section.

APPENDIX A – FEDERAL AVIATION ADMINISTRATION (FAA) REQUIRED CONTRACT PROVISIONS

A1 ACCESS TO RECORDS AND REPORTS

A1.1 CONTRACT CLAUSE

ACCESS TO RECORDS AND REPORTS

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the sponsor, the Federal Aviation Administration, and the Comptroller General of the United States or any of their duly authorized representatives, access to any books, documents, papers, and records of the contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

A2 AFFIRMATIVE ACTION REQUIREMENTS

A2.1 SOLICITATION CLAUSE

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

The following goal for female utilization in each construction craft and trade shall apply to all Contractors holding Federal and federally-assisted construction contracts and subcontracts in excess of \$10,000. The goal is applicable to the Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, federally assisted or nonfederally related construction contract or subcontract.

AREA COVERED (STATEWIDE)

Goals for Women apply nationwide.

GOAL

Goal (percent)

Female Utilization..... 6.9

Until further notice, the following goals for minority utilization in each construction craft and trade shall apply to all Contractors holding Federal and federally-assisted construction contracts and subcontracts in excess of \$10,000 to be performed in the respective geographical areas. The goals are applicable to the Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, federally-assisted or nonfederally related construction contract or subcontract.

<u>Economic Area (percent)</u>	Goal
056 Paducah, KY: Non-SMSA Counties - IL - Hardin, Massac, Pope KY - Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall	5.2
080 Evansville, IN: Non-SMSA Counties - IL - Edwards, Gallatin, Hamilton, Lawrence, Saline, Wabash, White IN - Dubois, Knox, Perry, Pike, Spencer KY - Hancock, Hopkins, McLean, Mublenberg, Ohio, Union, Webster	3.5
081 Terre Haute, IN: Non-SMSA Counties - IL - Clark, Crawford IN - Parke	2.5
083 Chicago, IL: SMSA Counties: 1600 Chicago, IL - IL - Cook, DuPage, Kane, Lake, McHenry, Will	19.6

3740 Kankakee, IL - IL - Kankakee	9.1
Non-SMSA Counties IL - Bureau, DeKalb, Grundy, Iroquois, Kendall, LaSalle, Livingston, Putnam IN - Jasper, Laporte, Newton, Pulaski, Starke	18.4
084 Champaign - Urbana, IL: SMSA Counties: 1400 Champaign - Urbana - Rantoul, IL - IL - Champaign	7.8
Non-SMSA Counties - IL - Coles, Cumberland, Douglas, Edgar, Ford, Piatt, Vermilion	4.8
085 Springfield - Decatur, IL: SMSA Counties: 2040 Decatur, IL - IL - Macon	7.6
7880 Springfield, IL - IL - Menard, Sangamon	4.5
Non-SMSA Counties IL - Cass, Christian, Dewitt, Logan, Morgan, Moultrie, Scott, Shelby	4.0
086 Quincy, IL: Non-SMSA Counties	3.1
IL - Adams, Brown, Pike MO - Lewis, Marion, Pike, Ralls	
087 Peoria, IL: SMSA Counties: 1040 Bloomington - Normal, IL - IL - McLean	2.5
6120 Peoria, IL - IL - Peoria, Tazewell, Woodford	4.4
Non-SMSA Counties - IL - Fulton, Knox, McDonough, Marshall, Mason, Schuyler, Stark, Warren	3.3
088 Rockford, IL: SMSA Counties: 6880 Rockford, IL - IL - Boone, Winnebago	6.3
Non-SMSA Counties - IL - Lee, Ogle, Stephenson	4.6
098 Dubuque, IA: Non-SMSA Counties - IL - JoDaviess IA - Atlamakee, Clayton, Delaware, Jackson, Winnesheik WI - Crawford, Grant, Lafayette	0.5
099 Davenport, Rock Island, Moline, IA - IL: SMSA Counties: 1960 Davenport, Rock Island, Moline, IA - IL - IL - Henry, Rock Island IA - Scott	4.6
Non-SMSA Counties - IL - Carroll, Hancock, Henderson, Mercer, Whiteside IA - Clinton, DesMoines, Henry, Lee, Louisa, Muscatine MO - Clark	3.4
107 St. Louis, MO: SMSA Counties: 7040 St. Louis, MO - IL - IL - Clinton, Madison, Monroe, St. Clair MO - Franklin, Jefferson, St. Charles, St. Louis, St. Louis City	14.7
Non-SMSA Counties - IL - Alexander, Bond, Calhoun, Clay, Effingham, Fayette, Franklin, Greene,	11.4

Jackson, Jasper, Jefferson, Jersey, Johnson, Macoupin, Marion,
Montgomery, Perry, Pulaski, Randolph, Richland, Union, Washington,
Wayne, Williamson
MO - Bollinger, Butler, Cape Girardeau, Carter, Crawford, Dent, Gasconade,
Iron, Lincoln, Madison, Maries, Mississippi, Montgomery, Perry, Phelps,
Reynolds, Ripley, St. Francois, St. Genevieve, Scott, Stoddard, Warren,
Washington, Wayne

These goals are applicable to all of the contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is Litchfield, Illinois; Montgomery County.

A3 BREACH OF CONTRACT TERMS

A3.1 CONTRACT CLAUSE

This provision is required for all contracts that exceed the simplified acquisition threshold as stated in 2 CFR Part 200, Appendix II (A). This threshold is occasionally adjusted for inflation and is now equal to \$150,000.

BREACH OF CONTRACT TERMS

Any violation or breach of terms of this contract on the part of the contractor or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement.

Owner will provide the Contractor written notice that describes the nature of the breach and corrective actions the Contractor must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner's notice will identify a specific date by which the Contractor must correct the breach. Owner may proceed with termination of the contract if the Contractor fails to correct the breach by deadline indicated in the Owner's notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

A4 BUY AMERICAN PREFERENCE

A4.1 CONTRACT CLAUSE

- (a) The Aviation Safety and Capacity Expansion Act of 1990 provides that preference be given to steel and manufactured products produced in the United States when funds are expended pursuant to a grant issued under the Airport Improvement Program (AIP).
- (b) Any and all steel products used in the performance of this contract by the Contractor, subcontractors, producers, and suppliers are required to adhere to the Illinois Steel Products Procurement Act, which requires that all steel items be of 100 percent domestic origin and manufacture. Any products listed under the Federal Aviation Administration's (FAA) nationwide approved list of "Equipment Meeting Buy American Requirements" shall be deemed as meeting the requirements of the Illinois Steel Products Procurement Act.
- (c) The successful bidder will be required to assure that only domestic steel and domestically manufactured products will be used by the Contractor, subcontractors, producers, and suppliers in the performance of this contract. The North American Free Trade Agreement (NAFTA) specifically excluded federal grant programs such as the AIP. Therefore, NAFTA does not change the requirement to comply with the Buy American requirement in the Act. Exceptions to this are for products, other than steel, that:
 - (1) the FAA has determined, under the Aviation Safety and Capacity Expansion Act of 1990, are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality;
 - (2) the FAA has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest;

- (3) the FAA has determined that inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent; or
- (4) the FAA has determined, under the Aviation Safety and Capacity Expansion Act of 1990,
 - (i) the cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components of the facility or equipment, and
 - (ii) final assembly of the facility or equipment has occurred in the United States.

The FAA must grant waivers for any items that are included in these above exceptions. Bidders can review items already approved under the FAA nationwide approved list of "Equipment Meeting Buy American Requirements" on the FAA website, which do not require a specific FAA waiver.

All waivers are the responsibility of the Contractor, must be obtained prior to the Notice to Proceed, and must be submitted to the Illinois Division of Aeronautics for review and approval before being forwarded to the FAA. Any products used on the project that cannot meet the domestic requirement, and for which a waiver prior to the Notice to Proceed was not obtained, will be rejected for use and subject to removal and replacement with no additional compensation, and the contractor deemed non-responsive.

A5 CIVIL RIGHTS - GENERAL

A5.1 CONTRACT CLAUSE

GENERAL CIVIL RIGHTS PROVISIONS

The contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision binds the contractor and sub-tier contractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

A6 CIVIL RIGHTS – TITLE VI ASSURANCE

A6.1 CONTRACT CLAUSE

A6.1.1 Title VI Solicitation Notice

Title VI Solicitation Notice:

The Litchfield Airport Authority, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

A6.1.2 Title VI Clauses for Compliance with Nondiscrimination Requirements

Compliance with Nondiscrimination Requirements

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

Compliance with Regulations: The contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts And Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

Non-discrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.

Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.

Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:

- a. Withholding payments to the contractor under the contract until the contractor complies; and/or
- b. Cancelling, terminating, or suspending a contract, in whole or in part.

Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

A6.1.3 Title VI List of Pertinent Nondiscrimination Acts and Authorities

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

A7 CLEAN AIR AND WATER POLLUTION CONTROL

A7.1 CONTRACT CLAUSE

This provision is required for all contracts and lower tier contracts that exceed \$150,000.

CLEAN AIR AND WATER POLLUTION CONTROL

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 U.S.C. § 740-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

Contractor must include this requirement in all subcontracts that exceeds \$150,000.

A8 CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

A8.1 CONTRACT CLAUSE

This provision applies to all contracts and lower tier contracts that exceed \$100,000, and employ laborers, mechanics, watchmen, and guards.

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

1. Overtime Requirements.

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; Liability for Unpaid Wages; Liquidated Damages.

In the event of any violation of the clause set forth in paragraph (1) of this clause, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this clause.

3. Withholding for Unpaid Wages and Liquidated Damages.

The Federal Aviation Administration (FAA) or the Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this clause.

4. Subcontractors.

The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this clause.

A9 COPELAND "ANTI-KICKBACK" ACT

A9.1 CONTRACT CLAUSE

COPELAND "ANTI-KICKBACK" ACT

Contractor must comply with the requirements of the Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled. The Contractor and each Subcontractor must submit to the Owner, a weekly statement on the wages paid to each employee performing on covered work during the prior week. Owner must report any violations of the Act to the Federal Aviation Administration.

A10 DAVIS-BACON REQUIREMENTS

A10.1 CONTRACT CLAUSE

DAVIS-BACON REQUIREMENTS

1. Minimum Wages

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this

section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii) (B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2 Withholding.

The Federal Aviation Administration or the sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Federal Aviation

Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i) and that such information is correct and complete;

(2) That each laborer and mechanic (including each helper, apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying or transcription by authorized representatives of the sponsor, the Federal Aviation Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act Requirements.

The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts.

The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract Termination: Debarment.

A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance With Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes Concerning Labor Standards.

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of Eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

A11 DEBARMENT AND SUSPENSION

A11.1 CONTRACT CLAUSE

A11.1.1 Bidder or Offeror Certification

CERTIFICATION OF OFFERER/BIDDER REGARDING DEBARMENT

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

A11.1.2 Lower Tier Contract Certification

CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT

The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>
2. Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension (Bidder or Offeror), above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract

If the FAA later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

A12 DISADVANTAGED BUSINESS ENTERPRISE

A12.1 REQUIRED PROVISIONS

A12.1.1 Solicitation Language (Solicitations that include a Project Goal)

The Owner's award of this contract is conditioned upon Bidder or Offeror satisfying the good faith effort requirements of 49 CFR §26.53.

As a condition of bid responsiveness, the Bidder or Offeror must submit the following information with their proposal on the forms provided herein:

- (1) The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract;
- (2) A description of the work that each DBE firm will perform;
- (3) The dollar amount of the participation of each DBE firm listed under (1)
- (4) Written statement from Bidder or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the Owner's project goal;
- (5) If Bidder or Offeror cannot meet the advertised project DBE goal; evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR Part 26.

A12.1.2 Solicitation Language (Race/Gender Neutral Means)

The requirements of 49 CFR part 26 apply to this contract. It is the policy of the Litchfield Airport Authority to practice nondiscrimination based on race, color, sex or national origin in the award or performance of this contract. The Owner encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

A12.1.3 Prime Contracts (Projects covered by DBE Program)

DISADVANTAGED BUSINESS ENTERPRISES

Contract Assurance (§ 26.13) - The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of Department of Transportation-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Owner deems appropriate, which may include, but is not limited to:

- 1) Withholding monthly progress payments;
- 2) Assessing sanctions;
- 3) Liquidated damages; and/or
- 4) Disqualifying the Contractor from future bidding as non-responsible.

A13 DISTRACTED DRIVING

A13.1 CONTRACT CLAUSE

TEXTING WHEN DRIVING

In accordance with Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving" (10/1/2009) and DOT Order 3902.10 "Text Messaging While Driving" (12/30/2009), the FAA encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or sub-grant.

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding \$3,500 and involve driving a motor vehicle in performance of work activities associated with the project.

A14 ENERGY CONSERVATION REQUIREMENTS

A14.1 CONTRACT CLAUSE

ENERGY CONSERVATION REQUIREMENTS

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201 *et seq.*).

A15 EQUAL EMPLOYMENT OPPORTUNITY (E.E.O.)

A15.1 MANDATORY CONTRACT CLAUSE

A15.1.1 E.E.O. Contract Clause

EQUAL OPPORTUNITY CLAUSE

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identify or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided, however,* That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

A 15.1.2 EEO Specification

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS

1. As used in these specifications:

- a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
- b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
- c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
- d. "Minority" includes:
 - (1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);
 - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance

Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or female sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

- n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

A16 FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

A16.1 CONTRACT CLAUSE

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The contractor has full responsibility to monitor compliance to the referenced statute or regulation. The contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

A17 LOBBYING AND INFLUENCING FEDERAL EMPLOYEES

A17.1 CONTRACT CLAUSE

This provision is required for all contracts that exceed \$100,000.

CERTIFICATION REGARDING LOBBYING

The bidder or offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

A18 PROHIBITION of SEGREGATED FACILITIES

A18.1 CONTRACT CLAUSE

PROHIBITION of SEGREGATED FACILITIES

(a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

A19 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

A19.1 CONTRACT CLAUSE

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (29 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

A20 PROCUREMENT OF RECOVERED MATERIALS

A20.1 CONTRACT CLAUSE

Procurement of Recovered Materials

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use of products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- a) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or,

The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at www.epa.gov/epawaste/conserve/tools/cpg/products/.

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

A21 RIGHT TO INVENTIONS

A21.1 CONTRACT CLAUSE

RIGHTS TO INVENTIONS

Contracts or agreements that include the performance of experimental, developmental, or research work must provide for the rights of the Federal Government and the Owner in any resulting invention as established by 37 CFR part 401, Rights to Inventions Made by Non-profit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements. This contract incorporates by reference the patent and inventions rights as specified within in the 37 CFR §401.14. Contractor must include this requirement in all sub-tier contracts involving experimental, developmental or research work.

A22 SEISMIC SAFETY

A22.1 CONTRACT CLAUSE

A22.1.1 Construction Contracts

Seismic Safety

The contractor agrees to ensure that all work performed under this contract, including work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

A23 TAX DELINQUENCY AND FELONY CONVICTIONS

A23.1 CONTRACT CLAUSE

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

Certifications

- 1) The applicant represents that it is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- 2) The applicant represents that it is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If an applicant cannot comply with either of the above representations, the applicant is ineligible to receive an award unless the sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Term Definitions

Felony conviction: Felony conviction means a conviction within the preceding twenty-four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. § 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

A24 TERMINATION OF CONTRACT

A24.1 CONTRACT CLAUSE

A24.1.1 Termination for Convenience

Termination for Convenience (Construction & Equipment Contracts)

The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to the owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the owner to protect and preserve property and work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

- a) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;

documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;

reasonable and substantiated claims, costs and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and reasonable and substantiated expenses to the contractor directly attributable to Owner's termination action

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

A24.1.2 Termination for Default

Termination for Default (Construction)

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes conditions, rights and remedies associated with Owner termination of this contract due default of the Contractor.

A25 TRADE RESTRICTION CERTIFICATION

A25.1 CONTRACT CLAUSE

TRADE RESTRICTION CERTIFICATION

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror -

- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (U.S.T.R.);
- b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the U.S.T.R; and
- c. has not entered into any subcontract for any product to be used on the Federal on the project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to an Offeror or subcontractor:

- (1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R. or
- (2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such U.S.T.R. list or

(3) who incorporates in the public works project any product of a foreign country on such U.S.T.R. list;

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by U.S.T.R., unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Owner cancellation of the contract or subcontract for default at no cost to the Owner or the FAA.

A26 VETERAN'S PREFERENCE

A26.1 CONTRACT CLAUSE

VETERAN'S PREFERENCE

In the employment of labor (excluding executive, administrative, and supervisory positions), the contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 U.S.C. 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

SECTION III SPECIAL PROVISIONS

Litchfield Municipal Airport
Litchfield, Montgomery County, Illinois

EXTEND PARTIAL PARALLEL TAXIWAY B AND RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RUNWAY 9 TURNAROUND

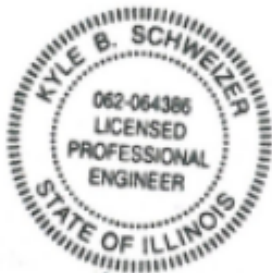
Illinois Project No. 3LF-4819
AIP Project. No. 3-17-SBGP-144/156/162

Prepared by:



Engineering | Planning | Allied Services

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November 16, 2020
License Expires 11/30/2021



NOV. 13, 2020
EXPIRES: NOV. 30, 2021
COVERING ELECTRICAL
DESIGN

Issued: November 20, 2020

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FOREWORD

These Special Provisions, together with applicable Standard Specifications for Construction of Airports, Rules and Regulations, Contract Requirements for Airport Improvement Projects, Payroll Requirements, and Minimum Wage Rates, which are hereto attached or which by reference are herein incorporated, cover the requirements of the State of Illinois, Department of Transportation (IDOT), Division of Aeronautics (Department) for the following improvement project at Litchfield Municipal Airport, Litchfield, Montgomery County, Illinois including:

SCOPE OF WORK

The project proposes to construct a 1,500-ft extension to Taxiway B (35-ft wide) westerly toward runway end 9, and associated connector Taxiway B3. The project will include unclassified excavation, lime treated subgrade, crushed aggregate drainage and base courses, underdrains, bituminous base and surface courses, drainage improvements, pavement marking, seeding, mulching, erosion control procedures, and the installation of taxiway edge lights and guidance signs with associated ducts and cabling. Two failing corrugated metallic pipes (CMP) under Runway 9-27 are also proposed to be repaired by lining the interior with smaller HDPE pipes and grouting the voids in-between.

GOVERNING SPECIFICATIONS AND RULES AND REGULATIONS

The State of Illinois Department of Transportation, Division of Aeronautics, Standard Specifications for Construction of Airports, adopted April 1, 2012, shall govern the project, except as otherwise revised or noted in these Special Provisions. All references to IDOT Specifications refer to Standard Specifications for Road and Bridge Construction, Illinois Department of Transportation, adopted April 1, 2016, as revised. In the event of inconsistencies between the Standard Specifications and the Special Provisions, the Special Provisions shall govern. The Contractor shall maintain, at minimum, one printed copy of the relevant sections of the Standard Specifications for Construction of Airports on the project site. The Standard Specifications for Construction of Airports is available online in pdf format at the following address link: [http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Manuals-Guides-&-Handbooks/Aero/New%20Spec%20Book%20\(effective%204-1-2012\).pdf](http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Manuals-Guides-&-Handbooks/Aero/New%20Spec%20Book%20(effective%204-1-2012).pdf)

REFERENCES

The following Federal Aviation Administration Advisory Circulars are referenced on the Plans and/or Special Provision Specifications in regard to safety on airports. These Advisory Circulars are available on the FAA web site at http://www.faa.gov/regulations_policies/advisory_circulars

- A. FAA AC No. 70/7460-1 (most current issue) Obstruction Marking and Lighting
- B. FAA AC No. 150/5210-5 (most current issue) Painting, Marking, and Lighting of Vehicles Used on an Airport.
- C. FAA AC No. 150/5300-13A, Change 1 (most current issue) Airport Design
- D. FAA AC No. 150/5370-2 (most current issue) Operational Safety on Airports during Construction.

END OF FOREWORD

DIVISION I – GENERAL PROVISIONS

SECTION 40. SCOPE OF WORK

Section 40 of the Standard Specifications is modified as outlined below.

Add the following:

40-09 SAFETY PLAN COMPLIANCE DOCUMENT. The Contractor shall consult with the Airport Manager and the Resident Engineer in arranging his construction operations. The Airport Manager will at all times have jurisdiction over the safety of air traffic during construction. Wherever the safety of air traffic during construction is affected, his decisions as to methods, procedures and measures used shall be final and any Contractors performing work must be governed by said decisions.

The Airport Manager shall retain the authority to change the phasing of the work and/or the sequence of construction.

The Contractor shall not have access to any part of the active airfield (runway, taxiway or apron) for all equipment or personnel without the approval of the Resident Engineer. The Contractor will erect signs stating “Construction Access Only” and “Construction Exit Route” at all gates or areas where they are gaining access/egress to/from the airfield. These signs will be provided to help keep the public off the airfield. The Contractor shall be responsible for coordinating all hauling and access on city, township, or county roads with the agency responsible for the roadway.

To maintain airport operations and to facilitate the construction of the proposed work, the project has been divided into separate phases in accordance with FAA Advisory Circular 150/5370-2 (Latest Edition) Operational Safety on Airports During Construction. References to Construction Safety and Phasing Plans (CSPP) in that document shall be interpreted to mean the phase limits, barricade locations, access points, and notes shown on the construction activity plan sheets included in the as-bid contract documents. When safety is used or referred to in the contract documents and in the Advisory Circular(s) (AC) it shall be redefined by this contract as meaning operational safety. The CSPP establishes the airport and project specific requirements, supplementing the requirements in the AC, that are to be included in the Contractor’s bid for maintaining operational safety during construction.

The CSPP contained herein has been approved by the Airport, Department, and FAA. The Contractor shall be required to divide the overall work into separate phases in substantial conformance with the CSPP shown in the plans, except as allowed by the contract documents, and approved by the Department on behalf of the FAA. Durations specified for individual phases shall become requirements of the contract and shall be subject to liquidated damages.

Prior to the preconstruction conference, the Contractor shall submit a Safety Plan Compliance Document (SPCD) to the Airport describing how he will comply with the requirements of the Advisory Circular plus the CSPP and supplying any details that could not be determined before contract award. The SPCD must include a certification statement by the Contractor that indicates he understands the operational safety requirements of the CSPP, that the Contractor has incorporated these requirements into their overall work plan and that the Contractor will maintain the right of control for all means, methods and details of the work performed by the Contractor

and any of his subcontractors within the framework of the operational safety plan. The SPCD must be reviewed, approved, and signed by the Airport Sponsor.

The Contractor shall be fully aware and continuously monitor all requirements and activities for compliance with the contract documents and the FAA Advisory Circular 150/5370-2 (Latest Edition).

Ten (10) days prior to the commencement of each phase, the Contractor shall submit an updated Safety Plan Compliance Document for that phase that meets the requirement of the FAA Advisory Circular 150/5370-2 (Latest Edition). The updated Safety Plan Compliance Document(s) shall detail implementation of the construction haul routes, procedures utilized by the Contractor to eliminate conflicts between construction operations and aircraft traffic shall be included.

Significant changes to the CSPP may require aeronautical review by the Department through the FAA's Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) System. Modification of the CSPP and/or the critical points shown in the contract documents will require airspace approval from the Department and/or the FAA and may require the Contractor to submit FAA Form 7460 for approval.

The Contractor shall not be entitled to any extra compensation due to delays or inconveniences caused by said necessary methods, procedures, and measured to protect air traffic.

END OF SECTION 40

SECTION 50. CONTROL OF WORK

Section 50 of the Standard Specifications is modified as outlined below.

50-06 CONSTRUCTION LAYOUT STAKES. Revise the first paragraph to read:

The Contractor shall be responsible for all construction layout and any extension of the control network provided in the plans necessary to properly complete the work.

Also from RESPONSIBILITY OF THE RESIDENT ENGINEER, delete paragraphs A, B, and C.

Also:

50-16 FINAL INSPECTION. Revise the first sentence of the first paragraph to say the following:

Upon due notice to the Resident Engineer by the Contractor of presumptive completion of the entire project, the charging of Contract Time shall be suspended, and the Engineer will make an inspection.

Add after the first sentence of the second paragraph:

The charging of Contract Time shall resume upon receipt of the Punchlist from the Engineer and continue until the remaining work, including work as required in Section 40-08 Final Clean Up, is completed to the satisfaction of the Engineer.

END OF SECTION 50

SECTION 70. LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

Section 70 of the Standard Specifications is modified as outlined below.

70-10 BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS. Add the following paragraphs to this section:

Runway closures will be required as part of this project. During construction, the Contractor must follow the procedures outlined on the Safety Plan that assures safe operating conditions for aircraft, as well as his personnel and equipment. The Airport Manager will, at all times, have jurisdiction over the safety of air traffic during construction. Whenever working within the proposed construction areas, it will be the Contractor's responsibility to place barricades and traffic control devices as shown on the Plans or as directed by the Resident Engineer/Resident Technician. The barricades on the airfield will be equipped with red-flashing or steady-burn lights and 20-in. square orange flags. The barricades will remain in place until the pavement areas are open for traffic. The barricades will be placed at intervals shown on the Plans.

The Contractor and his employees will be restricted to the work areas. All other areas of the Airport are off limits.

Extreme care will be taken not to impose on the operations of any open runway or taxiway. The proposed Safety Plan, as outlined on the Construction Plans and in the Special Provisions, will address safety and attempt to minimize disruption to Airport daily operations.

When the Contractor's vehicles are on Airport property, they shall be properly marked. The markings shall consist of a 3-ft sq. flag consisting of a checkered pattern of international orange and white squares of not less than 1 ft on each side displayed in full view above the vehicle. Contractor vehicles engaged in continuous hauling operations will not be required to display a flag.

Add the following:

70-27 AIRPORT SECURITY NOTES. Airport security will be maintained at all times.

70-28 SITE INSPECTION. The Contractor shall be responsible for any on-site inspection necessary prior to submitting a bid on this project. Upon receipt of a bid, it shall be assumed that the Contractor is fully familiar with the construction site.

END OF SECTION 70

SECTION 80. PROSECUTION AND PROGRESS

Section 80 of the Standard Specifications is modified as outlined below.

80-03 NOTICE TO PROCEED. Add the following to this section:

The Notice to Proceed (NTP) will not be issued until the Contractor provides the Safety Plan Compliance Documents (SPCD) in conformance with the FAA Advisory Circular (AC) 150/5370-2 (latest revision) and all materials are certified by the Contractor to be available, on hand and meeting the Buy American requirements. The notice to proceed shall state the date on which it is expected the Contractor will begin the construction and from which date contract time will be charged. The Contractor shall begin the work to be performed under the contract within 10 days of the date set by the Engineer in the written notice to proceed, but in any event, the Contractor shall notify the Project Engineer at least 24 hours in advance of the time actual construction operations will begin. The Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the Engineer. The Contract Time will begin on the date the Contractor actually begins construction or 10 days from the date of the Notice to Proceed, whichever is earlier.

80-13 CONTRACTOR'S ACCESS TO AIRFIELD. Add the following to this section:

The Contractor's personnel and equipment shall not traverse outside the designated work areas to other locations on the Airport. The designated haul route will be the only vehicular access to the construction site. It will be the responsibility of the Contractor to maintain the proposed haul route and equipment parking area for the duration of the project.

The Contractor will be responsible for obtaining any permits necessary to use the State/County/Township/City roads. All work required in complying with the above requirement will be considered incidental to the Contract, and no additional compensation will be allowed.

Failure to use the prescribed haul routes and equipment parking area or adhere to the safety requirements will result in the suspension of work.

END OF SECTION 80

DIVISION II – PAVING CONSTRUCTION DETAILS

ITEM 150510 ENGINEER'S FIELD OFFICE

Item 150510 of the Standard Specifications is modified as outlined below.

CONSTRUCTION METHODS

150-2.1 Revise this section as follows:

- B. Delete this item
- C. One four-drawer legal letter size filing cabinet with lock and an Underwriter's Laboratories insulated file device 350 degrees one-hour rating.
- G. One electric water cooler dispenser with water supply as needed, or bottled water.
- H. High-speed internet access shall be provided to the field office by the Contractor via modem if phone or cable connections are available. If internet connection is not available, a functional internet Wi-Fi device such as a mobile hot spot providing hi-speed broadband internet access to the field office shall be supplied as approved by the Resident Engineer/Technician.
- J. One (1) Windows-compatible printer/scanner capable of producing documents sized up to 11 inch by 17 inch
- K. Delete this item.
- L. One mini-refrigerator with a minimum size of 4 cubic feet with a freezer unit.

Add the following to the list of equipment and furniture required in the office:

- N. One lockable cabinet or closet that is large enough in which a nuclear density machine may be stored.

BASIS OF PAYMENT

150-3.1 Revise this section as follows:

The cellular telephone and associated charges will be included in the contract unit price per lump sum for Engineer's Field Office. This price shall include all utility costs and shall reflect the salvage value of the building or buildings, equipment, and furniture, which remain the property of the Contractor after release by the Engineer.

Payment will be made under:

Item AR150510 Engineer's Field Office --- per lump sum.

END OF ITEM 150510

ITEM 150520 MOBILIZATION

Item 150520 of the Standard Specifications is modified as outlined below.

BASIS OF PAYMENT

150-3.1 Add the following to this section:

Payment will be made under:

Item AR150520 Mobilization --- per lump sum.

END OF ITEM 150520

ITEM 150540 HAUL ROUTE

DESCRIPTION

150540-1.1 This item of work shall consist of the construction, maintenance, and removal of the haul routes and vehicle parking and material storage area at the location(s) shown on the Construction Plans. Cost includes any directional, information, or safety signs determined by the Contractor to be necessary to complete the Project.

MATERIALS

150540-2.1 Materials used in completing this item shall meet the individual requirements of the Standard Specifications and Special Provisions and will be incidental to Item 150540 Haul Route.

Materials include:

- a. Excavation and Embankment - Item 152 (as modified in these Special Provisions)
- b. Filter Fabric – Fabric shall meet the minimum requirements for separation fabric described in Item 156513 of the Standard Specifications.
- c. Fractured Stone - Stone shall be recycled bituminous millings, 1.5-inch size broken concrete, IDOT CA-6 or CA-7 crushed aggregate, or other similar aggregate, and must be acceptable to the Resident Engineer.
- d. Corrugated Metal, RCP, or PVC Pipe Culvert – IDOT Specifications.
- e. Construction Vehicle Traffic Control Signs - Applicable IDOT Standards for Traffic Control and Maintenance

CONSTRUCTION METHODS

150540-3.1 The Haul Route will be maintained as not to cause delay to the proposed construction. The Contractor will be required to employ methods to control dust and tracking of mud on the grade of the construction site and paved areas.

- a. Excavation. The existing grade shall be excavated to the widths and depths detailed in the Plans. Topsoil and subsoil shall be stockpiled separately to prevent commingling. Topsoil stockpiles must be approved by the Resident engineer and stabilized with temporary seeding and mulching within seven (7) days. Excavation, stockpiling, temporary erosion control shall not be measured, and separate payment shall not be made.
- b. Filter Fabric. Shall not be measured and separate payment shall not be made.
- c. Fractured Stone. The Contractor will be responsible for compaction, placement, and maintenance as necessary to complete the project. Fractured stone shall not be measured, and separate payment shall not be made.

- d. Corrugated Metal or PVC Pipe Culvert. Required pipe material, placement, maintenance will be the responsibility of the Contractor. Pipe shall not be measured, and separate payment shall not be made.

Temporary structures such as a pipe culvert may be required along ditches, channels, or other low areas to maintain existing flow. Temporary culverts will not be measured or paid for separately but shall be considered incidental.

- e. Construction Traffic Control Signs. Signs shall be furnished and installed in accordance with the requirements of the applicable IDOT Standards for Traffic Control and Maintenance. All traffic control, safety, and permitting requirements associated with the construction and use of the haul route, vehicle parking, and material storage area are the responsibility of the Contractor.

150540-3.2 MAINTENANCE AND REMOVAL AT PROJECT END

The Contractor shall provide for the periodic inspection and maintenance of the route, and any additional paths used within the Construction Limits, throughout the Project duration, and at each rain event. At the discretion of the Airport Manager, the haul route may remain at Project completion, but restored to and left in a condition satisfactory to the Airport Manager and Resident Engineer. If directed to remove the haul route at Project completion, the Contractor shall restore the area to its original condition, including the top soiling, seeding, and mulching of disturbed areas, and whose cost shall be included in the Contract unit price for Haul Route. If recycled bituminous millings are used, they must be removed full depth in all cases at the end of the Project. Further, all additional paths used/constructed within the Construction Limits shall be removed and restored to the satisfaction of the Resident Engineer.

BASIS OF PAYMENT

150540-4.1 Payment will be made at the contract unit price per lump sum for constructing and maintaining the haul routes and vehicle parking and material storage areas, and for restoring the area as described. This price shall be full compensation for furnishing and installation of all materials; restoration and turfing; for all labor, equipment, and incidentals necessary to complete this item of work.

Payment will be made under:

Item AR150540 Haul Route --- per lump sum

END OF 150540

ITEM 152 EXCAVATION AND EMBANKMENT

Revise Item 152 of the Standard Specifications as follows:

CONSTRUCTION METHODS

152-2.2 EXCAVATION. Add the following:

Excess but suitable material shall be used elsewhere on-site to the extent possible; any excess material that cannot be incorporated into the proposed work shall be disposed of off-site or an approved location by the Airport Manager. The loading, hauling and disposal off-site or on-site, shall not be paid for separately, but shall be included in the Contract unit price for "Unclassified Excavation.

Topsoil to be used elsewhere under this project shall be stockpiled within the construction limits, but located so as not to violate any runway or any taxiway safety or object area criteria, or obstruct any FAR Part 77 imaginary surfaces, or be located within 15 feet of the pavement edge, or the roadway clear area, whichever is greater. The location shall be approved by the Resident Engineer. Placement and storage of the topsoil shall not be paid for separately but shall be included in the Contract unit price for Unclassified Excavation.

152-2.9 TOLERANCES. Add the following:

For purposes of verifying these tolerances, the Contractor shall furnish to the Project Engineer for review, survey elevations for the prepared subgrade under pavements, and outside pavements, the final prepared grade prior to topsoil spread, as specified under Section 50-06 (Responsibility of the Contractor Paragraph G).

BASIS OF PAYMENT

152-4.4. Add the following:

Payment will be made under:

Item AR152410 Unclassified Excavation --- per cubic yard

END OF ITEM 152

ITEM 154604 GRANULAR DRAINAGE SUBBASE-4"

GENERAL

154604-1.1 This item shall consist of furnishing, placing, shaping, and compacting crushed stone for use as a granular subbase course and drainage layer. The material is to be placed to the lines and grades as shown on the Plans and as directed by the Resident Engineer.

MATERIALS

154604-2.1 COARSE AGGREGATE. The crushed coarse aggregate shall conform with the requirements of Article 1004.01 of IDOT Standard Specifications for Road and Bridge Construction, adopted April 1, 2016, and the following specific requirements:

- a. Description. The coarse aggregate shall be crushed gravel, novaculite, crushed stone or crushed sandstone. Pit run gravel and gravel shall not be used for the granular subbase material. The granular material, if approved by the Engineer, may be produced by blending aggregates from more than one source, provided the method of blending results in a uniform product. The components of a blend may not be of the same kind of material. The source of material shall not be changed during the progress of the Work without written permission of the Engineer. Where a natural aggregate is deficient in fines, the material added to make up deficiencies shall be a material approved by the Engineer.
- b. Quality. The coarse aggregate shall be Class D Quality or better.
- c. Gradation. The coarse aggregate base gradation shall be CA-7.

CONSTRUCTION METHODS

154604-3.1 GENERAL. All work involved in clearing and stripping of quarries and pits, including the handling of unsuitable material, shall be performed by the Contractor at his own expense. The subbase material shall be obtained from approved sources. The material shall be handled in a manner that shall secure a uniform and satisfactory product.

154604-3.2 EQUIPMENT. All equipment necessary for the proper construction of this Work shall be on the Project, in first class working condition, and approved by the Resident Engineer before construction is permitted to start. Equipment available shall meet the requirements of IDOT Standard Specifications for Road and Bridge Construction, adopted April 1, 2016, Article 311.03, of Section 311, Granular Subbase.

154604-3.3 PREPARING UNDERLYING COURSE. The underlying subgrade shall be checked and accepted by the Resident Engineer before placing and spreading operations are started. The subgrade shall be free of ruts, objects and debris, but shall not be proof rolled unless directed by the Resident Engineer.

The crushed aggregate is to be placed over soil stabilization fabric specified in Item 152540 or over separation fabric as specified in Item 156513. The furnishing and placement of the fabrics will be paid under Item AR156513. The aggregate will be spread over the fabric in a manner that is not injurious to the fabric. To protect the underlying course and to ensure proper

drainage, the spreading of the aggregate shall begin along the centerline of the area for a crowned section or on the high side of the pavement with a one-way slope.

Grade control shall be provided by the Contractor using string lines, checkboards, forms or other suitable methods that will assure that the soil stabilization fabric or separation fabric beneath is not damaged.

154604-3.4 PLACING AND SPREADING. The depositing and spreading of the material shall commence where designated and shall progress without breaks. The drainage layer shall be constructed in a layer of not less than 3-inches nor more than 6-inches of compacted thickness. The material shall be deposited and spread on the underlying subgrade and separation fabric in lanes of a uniform thickness and gradation, without segregation by size or pockets of fine or coarse materials, and to such loose depth that, when compacted, the layer shall have the required thickness. The aggregate shall be spread by spreader boxes or other approved devices or methods that shall spread the aggregate in the required amount to avoid or minimize the need for re-handling the material and to prevent the rutting of the underlying subgrade. Hauling over the un-compacted material shall not be permitted.

No material shall be placed in snow or on a soft, muddy, or frozen underlying course, unless directed by the Resident Engineer.

When more than one layer is required, the construction procedure described herein shall apply similarly to each layer.

During the placing and spreading, sufficient caution shall be exercised to prevent the incorporation of subgrade or shoulder material in the base mixture.

154604-3.5 ROLLING AND COMPACTING. After spreading, the crushed aggregate shall be thoroughly compacted by rolling. The rolling shall progress gradually from the sides to the center of the lane under construction, or from one side toward previously placed material by lapping uniformly each preceding rear wheel track by one-half the width of such track. Rolling shall continue until the stone is thoroughly set, the interstices of the material reduced to a minimum, and creeping of the stone ahead of the roller is no longer visible. The base shall be compacted to the satisfaction of the Resident Engineer.

The course shall not be rolled when the underlying course is soft or yielding or when the rolling causes undulation in the subbase course.

In areas inaccessible to rollers, the crushed aggregate material shall be tamped thoroughly with mechanical tampers.

The sprinkling during rolling, if necessary, shall be in the amount and by equipment approved by the Resident Engineer.

154604-3.6 FINISHING OF SUBBASE. Prior to final shaping, the subbase shall be brought to true shape. After the subbase has been brought to its true shape and correct elevation, the surface shall be wetted and rolled as directed by the Resident Engineer with a three-wheel or tandem roller weighing between 6 and 10 tons and weighing not less than 200 pounds/inch nor more than 325 pounds/inch of width of the roller.

After the subbase has been compacted and shaped, the surface of the subbase shall be tested for crown and elevation. The Contractor shall furnish all equipment necessary for these checks. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified, reshaped, re-compacted, and otherwise manipulated as the Resident Engineer may direct until the required smoothness and accuracy are obtained. The finished surface shall not vary more than ½-inch from a 16-foot straightedge when applied to the surface parallel with, and at right angles to, the centerline, or shall not be more than 0.05 foot from the true grade as established by grade hubs or pins.

The Contractor shall have a minimum of one (1) day's production of subbase ahead of any crushed aggregate base course to be placed.

The subbase shall be moist at the time of placing subsequent base materials. If the subbase subsequently becomes too dry, it shall be sprinkled again, in such a manner as not to form puddles of water. The Contractor shall provide water and all equipment necessary to meet this requirement. The cost of watering shall be incidental to the Contract.

154604-3.7 TOLERANCE IN THICKNESS. The subbase shall be constructed to the thickness shown on the Plans. Thickness determinations shall be made by depth tests or cores taken at intervals in such a manner that each test shall represent no more than 400 square yards. When the base deficiency is more than ½-inch, the Contractor shall correct such areas by scarifying, adding satisfactory base mixture, rolling, sprinkling, reshaping, and finishing in accordance with these Specifications.

The Contractor shall replace, at his expense, the subbase material where borings have been taken for test purposes.

For purposes of determining suitability for placement of Item 209 or 501, the Contractor shall furnish grade elevations for the granular drainage subbase to the Project Engineer for review, as specified under Section 50-06 (Responsibility of the Contractor Paragraph G).

154604-3.8 PROTECTION. Work on the subbase shall not be accomplished during freezing temperatures nor when the subgrade is wet. When the aggregates contain frozen materials or when the underlying course is frozen, the construction shall be stopped.

Hauling equipment may be routed over completed portions of the subbase, provided no damage results and provided that such equipment is routed over the full width of the course to avoid rutting or uneven compaction. However, the Resident Engineer shall have the full and specific authority to stop all hauling over completed or partially completed subbase when, in his opinion, such hauling is causing damage. Any damage resulting from routing equipment over the course shall be repaired by the Contractor at his own expense.

154604-3.9 MAINTENANCE. Following the completion of the subbase, the Contractor shall perform all maintenance work necessary to keep the subbase in good condition. If cleaning is necessary, any work or restitution necessary shall be at the expense of the Contractor.

METHOD OF MEASUREMENT

154604-4.1 The Granular Drainage Subbase to be paid for shall be the measured area in square yards for each thickness of subbase course placed, bonded and accepted by the Resident Engineer.

BASIS OF PAYMENT

154604-5.1 Payment will be made at the Contract unit price per square yard, per each thickness indicated on the Plans, for Granular Drainage Subbase. This price shall be full compensation for furnishing all materials and for the preparation, hauling, and placing of these materials, for furnishing certified scales, and for all labor, equipment, tools and incidentals necessary to complete the item to the satisfaction of the Engineer.

Payment will be made under:

Item AR154604 Granular Drainage Subbase – 4” --- per square yard

END OF ITEM 154604

ITEM 155 LIME TREATED SUBGRADE

Revise Item 155 of the Standard Specifications as follows:

BASIS OF PAYMENT

155-8.1. Add the following:

Payment will be made under:

Item AR155540 By-product Lime --- per ton
Item AR155612 Soil Processing – 12” --- per square yard

END OF ITEM 155

ITEM 156000 EROSION CONTROL

Revise Item 156000 of the Standard Specifications as follows:

MATERIALS

156-2.1 SILT FENCE. Delete the first Paragraph of this Section and replace with the following:

Silt fence shall be of either a pre-fabricated type or shall be constructed in the field, and regardless of the fabrication method, shall be of materials meeting the dimensions and material requirements shown in the Plans.

156-2.4 TEMPORARY SEED. Replace this Paragraph with the following:

Temporary Seed shall be annual ryegrass at a rate of 100 lb/acre.

156-2.7 INLET AND PIPE PROTECTION. Revise this Paragraph to read as follows:

Erosion control protection shall be provided for at drainage inlets at the locations shown in the Plans and as detailed in the Plans. The complete inlet fabric and fabric insert assembly shall be furnished, installed and maintained as shown in the Plans, and shall be IPP Flexstorm by Inlet & Pipe Protection, FLEXSTORM CATCH-IT by Advanced Drainage Systems, FloGard Temporary Inlet Filter by Oldcastle, or approved equivalent. The Contractor shall determine the required assembly size to be used at each location based upon manufacturer recommendations. The manufacturer shall furnish a certification with each assembly stating the number of assemblies furnished and that the material complies with the requirements of this Special Provision and all Contract requirements for materials, including the Buy American Preferences Act (49 U.S.C. §50101). The used inlet protection assembly shall be disposed of off-site at a lawful disposal site when instructed by the Resident Engineer.

156-2.8 EROSION CONTROL BLANKET.

Knitted Straw Mat

Straw mat shall be made of a 100% straw-fiber matrix stitched with photodegradable thread between lightweight, photodegradable polypropylene top and bottom nets. Material shall not contain any weed seed or chemical additives. Straw mat shall be North American Green EroNet S150, or American Excelsior Company Curlex II CL, or approved equal. The manufacturer shall furnish a certification with each shipment of blanket stating the number of rolls furnished and that the material complies with the requirements of this Special Provision and all Contract requirements for materials, including the Buy American Preferences Act (49 U.S.C. § 50101).

Stakes for Erosion Blanket

The mat shall be secured with biodegradable stakes acceptable to the Engineer. Metal staples will not be allowed. Separate measurement of the stakes shall not be made, but shall be incidental to the erosion blanket.

CONSTRUCTION METHODS

156-3.2 TEMPORARY EROSION CONTROL.

Replace Paragraph C. with the following:

Temporary Erosion Control Seeding shall consist of seeding all erodible/bare areas to minimize the amount of exposed surface area. Seed bed preparation will not be required if the surface of the soil is uniformly smooth and in a loose condition. Light disking shall be done if the soil is hard packed or caked. Erosion rills greater than 1 in. in depth shall be filled and area blended with the surrounding soil. Fertilizer nutrients will not be required. The original seed bags shall be opened in the presence of the Resident Engineer/Technician. The seed shall be applied by hand broadcasting to achieve a reasonably uniform coverage at a rate of 100 lb/acre (110 kg/ha). Seed shall be applied to all bare areas every seven days, regardless of weather conditions or progress of the work. The Resident Engineer/Technician may require that critical locations be seeded immediately and the Contractor shall seed these areas within 48 hours of such a directive.

After application, the Contractor shall furnish a watering of the seed bed to encourage germination of the seeds. After planting, the Contractor shall be required to mow the area covered with temporary seeding before the seed heads mature (the seeds could become a strong wildlife attractant if allowed to mature).

BASIS OF PAYMENT

156-5.1 Add the following:

Payment will be made under:

Item AR156510 Silt Fence --- per linear foot
Item AR156520 Inlet Protection --- per each
Item AR156530 Temporary Seeding --- per acre
Item AR156531 Erosion Control Blanket --- per square yard

END OF ITEM 156000

ITEM 156513 SEPARATION FABRIC

Revise Item 156513 of the Standard Specifications as follows:

BASIS OF PAYMENT

156513-5.1 Add the following to this section:

Payment will be made under:

Item AR156513 Separation Fabric --- per square yard

END OF ITEM 156513

ITEM 156540 RIPRAP

Revise Item 156541 of the Standard Specifications as follows:

MATERIALS

156-2.1 RIPRAP. Add the following:

The material shall meet the gradation limits of RR3.

BASIS OF PAYMENT

156-5.1 Add the following:

Payment will be made under:

Item AR156543 Riprap Gradation No. 3 --- per square yard

END OF ITEM 156540

ITEM 209 CRUSHED AGGREGATE BASE COURSE

Revise Item 209 of the Standard Specifications as follows:

DESCRIPTION

209-1.1 Add the following:

The Crushed Aggregate Base Course shall be placed upon a prepared subgrade in lifts of limited thickness as required in the Standard Specifications and to the total uniform compacted thicknesses shown in the Plans. In accordance with Section 209-3.2, the material used in this item shall be pugmilled with water at a central mixing plant or traveling plant and placed at the material's optimum moisture content.

MATERIALS

209-2.1 CRUSHED COARSE AGGREGATE. Add the following:

The Gradation B column in Table 1, Requirements for Gradation of Aggregate, shall be used.

CONSTRUCTION METHODS

209-3.4 FINISHING AND COMPACTING. Add the following:

Add the following after the first Paragraph:

For compaction control testing, this item is to be constructed for aircraft weighing Less than 60,000 pounds (Standard Proctor).

Add the following after the third Paragraph:

The Contractor shall furnish the Resident Engineer with the size and type of straightedge required to check the pavement components as directed in the various sections of the Specifications.

209-3.7 SURFACE GRADE ACCURACY. Add the following to this Section:

For purposes of this grade check, the Contractor shall furnish grade elevations for the crushed aggregate base course to the Project Engineer for review, as specified under Section 50-06 (Responsibility of the Contractor Paragraph G).

METHOD OF MEASUREMENT

209-4.1 Delete. Section 209-4.2 of the Standard Specifications shall be used.

209-4.3 Delete.

Special Provisions
EXTEND TAXIWAY B TO RUNWAY 9 TURNAROUND
Litchfield Municipal Airport

Illinois Project No.: 3LF-4819
AIP Project No.: 3-17-SBGP-144/156/162
LI039

BASIS OF PAYMENT

209-5.1 Add the following to this section:

Payment will be made under:

Item AR209606 Crushed Agg. Base Course – 6” --- per square yard

END OF ITEM 209

ITEM 401 BITUMINOUS SURFACE COURSE-SUPERPAVE

Revise Item 401 of the Standard Specifications as follows:

DESCRIPTION

401-1.1 Add the following to this section:

Method I paving shall be used, and proportioning shall be for aircraft weighing less than 60,000 pounds, runway or taxiway pavement.

BASIS OF PAYMENT

401-6.1 Add the following to this section:

Payment will be made under:

Item AR401613 – Bit. Surf. Cse.-Method I, Superpave --- per ton

END OF ITEM 401

ITEM 401650 BITUMINOUS PAVEMENT MILLING

Revise Item 401650 of the Standard Specifications as follows:

DESCRIPTION

401-1.1 Revise this section to read as follows:

This Item of work shall consist of removing a variable depth of existing bituminous surface course (401), as shown in the Plans and as directed by the Resident Engineer. The Contractor shall be responsible for the removal and proper disposal of the waste material off-site.

CONSTRUCTION METHODS

401-3.1 Add the following:

In the variable depth milling areas, the Contractor shall utilize a string line (guide wire) or equivalent automatic grade control system to achieve the proposed grades as shown in the plans. An equivalent system must be capable of achieving a uniform grade accuracy of 1/4-inch or less, independently of existing surface grade. At the conclusion of the milling, the Contractor shall perform a grade verification survey of the milled surface under the direction of a licensed Professional Land Surveyor and provide the record grades to the Resident Engineer for review. Pavement cross-sections shall be taken at a minimum interval of 50 feet. Any surface variations greater than 1/2-inch above the proposed milled surface grade shall be re-milled. No additional compensation shall be allowed for overruns in asphalt quantity due to surface variations more than 1/2-inch below proposed grade.

The Contractor will be required to make a saw cut where the proposed bituminous pavement abuts existing pavement. Sawing will be considered as an incidental item to the proposed bituminous pavement milling, and no additional compensation will be allowed.

METHOD OF MEASUREMENT

401-4.1 Revise this section to read as follows:

The yardage to be paid for shall be the number of square yards of bituminous pavement milling as measured in the field, completed and accepted. Pavement milling required for milling the proposed overlay areas as well as butt joints will be paid for under this pay item.

BASIS OF PAYMENT

401-5.1 Add the following:

Payment will be made under:

Item AR401650 Bituminous Pavement Milling --- per square yard

END OF ITEM 401650

ITEM 401663 LONGITUDINAL JOINT SEALANT

DESCRIPTION

401663-1.1 This item shall consist of the installation of either a pre-formed rollout banding or hot-poured bituminous material produced on-site for bonding longitudinal construction joints on all of the lifts of both the bituminous base and bituminous surface courses.

MATERIALS

401663-2.1 LONGITUDINAL JOINT SEALANT. Longitudinal Joint Sealant (LJS) will be accepted according to the Illinois Department of Transportation Bureau of Materials and Physical Research Policy Memorandum, "Performance Graded Asphalt Binder Acceptance Procedure" with the following exceptions. Articles 3.1.9 and 3.4.1.4 of the policy memorandum will be excluded.

The bituminous material used for the LJS shall be according to the following table. Elastomers shall be added to a base asphalt and shall be either a styrene-butadiene diblock or triblock copolymer without oil extension, or a styrene-butadiene rubber. Air blown asphalt, acid modification, or other modifiers will not be allowed. LJS in the form of pre-formed rollout banding may also be used.

Specification for Use in Longitudinal Joint Sealant	
Dynamic shear @ 82°C (unaged), $G^*/\sin \delta$, kPa, Test Method AASHTO T 315	1.00 min.
Creep stiffness @ -18°C (unaged), Stiffness (S), MPa m-value, Test Method AASHTO T 313	300 Max. 0.300 min.
Ash %, Test Method AASHTO T 111	1.0-4.0
Elastic Recovery, 100 mm elongation, cut immediately, 25°C, %, Test Method ASTM D 6084 (Procedure A)	70 min.
Separation of Polymer, Difference in °C of the softening point (ring and ball), Test Method ITP Separation of Polymer from Asphalt Binder	3 max.

CONSTRUCTION METHODS

401663-3.1 GENERAL. Any HMA lift shall be complete before construction of the subsequent lift. The longitudinal joints in all lifts shall be as prescribed in section 401 and 403 of the standard specifications.

401663-3.2 EQUIPMENT. If the bituminous material is to be placed using the hot-pour method the following equipment are acceptable for use:

- (1) **Longitudinal Joint Sealant Pressure Distributor:** When a pressure distributor is used to apply the LJS, the distributor shall be equipped with a heating and recirculating system along with a functioning auger agitating system or vertical shaft mixer in the hauling tank to prevent localized overheating. The distributor shall be equipped with a guide or lase system to aid in the proper placement of the LJS application.
- (2) **Longitudinal Joint Sealant Melter Kettle:** When a melter kettle is used to transport and apply the LJS longitudinal joint sealant, the melter kettle shall be an oil jacketed double-boiler with agitating and recirculating systems. Material from the kettle may be dispensed through a pressure feed wand with an applicator shoe or through a pressure feed wand into a hand-operated thermal push cart.”

401663-3.3 PREPARATION OF BITUMINOUS PAVEMENT: When the use of longitudinal joint sealant (LJS) is specified, it shall be applied for all lifts of paving as shown on the plans. The surface to which the LJS is applied shall be dry and cleaned of all dust, debris, and any substances that will prevent the LJS from adhering. Cleaning shall be accomplished by means of a sweeper/vacuum truck, power broom, air compressor or by hand. The LJS may be placed before or after the tack or prime coat. When placed after the tack or prime coat, the tack or prime shall be fully cured prior to placement of the LJS.

401663-3.4 APPLICATION OF LONGITUDINAL JOINT SEALANT: The width and minimum application rate shall be according to the following table:

LJS Application Rate Table		
Overlay Thickness in. (mm)	LJS Width “W” in. (mm)	Application Rate ^{1/} lb/ft (kg/m)
HMA Mixtures		
2 (50)	18 (450)	1.80 (2.68)

1/ The application rate has a surface demand for liquid included within it. The nominal thickness of the LJS may taper from the center of the application to a lesser thickness on the edge of the application. The width and weight/foot (mass/meter) shall be maintained. The Contractor shall furnish to the Engineer a bill of lading for each tanker supplying material to the project. The application rate of LJS will be verified within the first 1000 ft (300 m) of the day’s scheduled application length and every 6000 ft (1800 m) the remainder of the day. The Contractor shall provide a suitable paper or pan to be placed at a random location in the path of the placement for the LJS. The Contractor shall also provide a device to properly weigh the aforementioned paper or pan. This provision shall be included in the contract unit price. After application of the LJS, the paper or pan shall be picked up and weighed. The weight per foot will be calculated. The tolerance from the plan target weight/foot (mass/meter) from the LJS

Application Rate Table shall be \pm 15 percent. The Contractor shall replace the LJS in the area where the sample was taken.

The LJS shall be applied in a single pass with a pressure distributor, melter kettle, or hand applied from a roll for HMA lifts up to 2 in. (50 mm) in thickness. The LJS shall be applied in two passes for HMA lifts between 2 and 4 in. (50 and 100 mm) in thickness. At the time of installation the pavement surface temperature and the ambient temperature shall be a minimum of 40 °F (4 °C) and rising.

The LJS shall be applied at a width of not less than or greater than 1 ½ in. (38 mm) of the width specified. If the LJS flows more than 2 in. (50 mm) from the initial placement width, LJS placement shall stop and remedial action shall be taken.

When starting another run of LJS placement, suitable release paper shall be placed over the previous application of LJS to prevent doubling up of thickness of LJS.

The LJS shall be suitable for construction traffic to drive on without pickup or tracking of the LJS within 30 minutes of placement. If pickup or tracking occurs, LJS placement shall stop and damaged areas shall be repaired.

Prior to start of paving of pavement course, ensure the paver end plate and grade control device is adequately raised above the finished height of the LJS.

The LJS shall not flush to the final surface of the HMA pavement.”

METHOD OF MEASUREMENT

401663-4.1 The longitudinal joint sealant shall be measured by the length in linear feet of joint sealant placed regardless of how many passes of joint sealant are specified. Each lift of bituminous base or surface course with joint sealant shall be measured for payment separately. The length measured for payment in linear feet shall be the length of joint sealant actually constructed in accordance with the details shown in the Plans and accepted by the Resident Engineer.

BASIS OF PAYMENT

401663-5.1 Payment for the Longitudinal Joint Sealant shall be made at the Contract unit price for Longitudinal Joint Sealant. This price shall be full compensation for furnishing all materials, equipment and for all preparation, installation and for all labor, equipment, tools, and incidentals necessary to complete these items as specified.

Payment will be made under:

Item AR401663 Longitudinal Joint Sealant --- per linear foot.

END OF ITEM 401663

ITEM 401900 REMOVE BITUMINOUS PAVEMENT

Revise Item 401900 of the Standard Specifications as follows:

DESCRIPTION

401900-1.1 Revise the second paragraph as follows:

Within the limits shown in the Plans or as directed by the Resident Engineer, the Contractor shall remove all of the existing bituminous concrete pavement. No separate measurements will be made for various HMA thicknesses that may be encountered. Existing Crushed Aggregate Base Course removal that may be required to furnish Plan elevations shall be paid under Unclassified Excavation.

BASIS OF PAYMENT

401900-4.1 Add the following:

Payment will be made under:

Item AR401900 Remove Bituminous Pavement --- per square yard

END OF ITEM 401900

ITEM 401910 REMOVE & REPLACE BITUMINOUS PAVEMENT

DESCRIPTION

401910-1.1 This item consists removing the existing pavement associated with culvert replacement and placing, crushed aggregate, tack coat, and bituminous surface course mix back into the removal area. The pavement repair areas are shown on the construction plans and will be identified in the field by the Resident Engineer/Resident Technician.

MATERIALS

401910-2.1 Bituminous Surface Course. The proposed bituminous surface course shall be an approved Item 401 Bituminous Surface Course Mix.

401910-2.2 Bituminous Tack Coat. The proposed bituminous tack coat shall conform to Item 603.

401910-2.3 Crack Control Fabric. The proposed crack control system shall conform to Item 201670.

401910-2.4 Crushed Aggregate Base Course. The proposed crushed aggregate base course shall conform to Item 209.

401910-2.5 Bituminous Surface Course. The proposed bituminous base course shall conform to Item 401 and be an approved Bituminous Surface Course Mix.

CONSTRUCTION METHODS

401910-3.1 The Contractor shall remove each proposed repair area to the length, width, and depths shown in the Plans. The equipment used must be approved for use on this project by the Resident Engineer. The edge of the trench formed will have a vertical face prior to the placement of the bituminous surface mix.

The subgrade will be checked for stability following the initial excavation and then backfilled as needed with crushed aggregate conforming to Item 209 or IDOT CA-7, followed by the placement of multiple lifts of bituminous material conforming to Item 403 and/or Item 401. Each lift shall be of thickness as shown in the plans and compacted to a minimum density of 93%. The final lift shall be installed flush with the existing adjacent (milled) pavement.

All milled or removed material will be disposed of by the Contractor off the Airport site, unless otherwise directed by the Airport Manager at the time of construction.

METHOD OF MEASUREMENT

401910-4.1 The removal and replacement quantity to be paid for shall be the number square yards completed, accepted, and measured in place by the Resident Engineer. Areas wider than the nominal width or length specified will not be measured for payment.

BASIS OF PAYMENT

401910-5.1 This Item of work will be paid for at the contract unit bid price per square yard for removal and replacement of bituminous pavement. The price shall include full compensation for all sawing (if utilized), milling, excavation, disposal of waste material, application of tack coat material, placement of bituminous material; for furnishing all materials, labor, equipment, and incidentals necessary to complete this Item of work.

Payment will be made under:

Item AR401910 Rem & Replace Bit. Pavement --- per square yard

END OF ITEM 401910

ITEM 403 BITUMINOUS BASE COURSE - SUPERPAVE

Revise Item 401 of the Standard Specifications as follows:

DESCRIPTION

401-1.1 Add the following to this section:

Method I paving shall be used, and proportioning shall be for aircraft weighing less than 60,000 pounds, runway or taxiway pavement.

BASIS OF PAYMENT

401-6.1 Add the following to this section:

Payment will be made under:

Item AR403613 – Bit. Base Cse.-Method I, Superpave --- per ton

END OF ITEM 401

ITEM 602 BITUMINOUS PRIME COAT

Revise Item 602 of the Standard Specifications as follows:

MATERIALS

602-2.1 BITUMINOUS MATERIAL. Revise as follows:

The bituminous material used for prime coat shall be either MC-30 or PEP.

602-2.1 APPLICATION OF BITUMINOUS MATERIAL. Revise as follows:

The prime coat shall be permitted to cure until the penetration has been approved by the Engineer, but at no time shall the curing period be less than 24 hours for MC-30 or 4 hours for PEP. Pools of bituminous material occurring in the depressions shall be squeegeed over the surrounding surface the same day the prime coat is applied. At no time during curing shall traffic be allowed upon the primed surface. The prime coat shall be maintained at all times by the Contractor.

BASIS OF PAYMENT

602-5.1 Add the following to this section:

Payment will be made under:

Item AR602510 Bituminous Prime Coat --- per gallon

END OF ITEM 602

ITEM 603 BITUMINOUS TACK COAT

Revise Item 603 of the Standard Specifications as follows:

BASIS OF PAYMENT

603-5.1 Add the following to this section:

Payment will be made under:

Item AR603510 Bituminous Tack Coat --- per gallon

END OF ITEM 603

ITEM 620 PAVEMENT MARKING

Revise Item 620 of the Standard Specifications as follows:

MATERIALS

620-2.2 PAINT

Add the following as the first paragraph:

White paint color shall match color 37925 of Federal Standard No. 595.
Yellow paint color shall match color 33538 or 33655 of Federal Standard No. 595.
Black paint color shall match color 37038 of Federal Standard No. 595.

620-3-5 APPLICATION

Replace paragraph two with the following:

The paint shall be mixed in accordance with the manufacturer's instructions and, except for black paint, applied to the pavement with a marking machine in two applications as shown in TABLE 1. The first application shall be 50% of the specified application rate and applied as a temporary marking. The final marking application must be at a rate equal to 100% of the full application rate with glass beads. The addition of thinner will not be permitted. Black paint shall be applied in one application at a rate equal to 100% of the full specified rate.

TABLE 1. Application Rates for Paint and Glass Beads

Waterborne	115 ft ² /gal maximum (2.8 m ² /l)	7 lb/gal minimum (0.85 kg/l)
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Replace paragraph three with the following:

A period of 30 days shall elapse between placement of surface course and application of the permanent (final) paint markings. Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the RPR.

620-3.7 PAVEMENT MARKING REMOVAL

Replace the section with the following:

The Contractor shall remove existing and temporary markings as shown in the plans or as directed by the Engineer using a grinding method. Grinding equipment shall be approved by the Engineer.

The existing pavement markings shall be removed from the pavement by a method that does not materially damage the surface or texture of the pavement or surfacing. Very small particles of tightly adhering existing markings may remain in place, if in the opinion of the Engineer, complete removal of the small particles will result in pavement surface damage. Any damage to

the pavement or surfacing caused by pavement marking removal shall be repaired by methods acceptable to the Engineer.

If deemed necessary by the resident engineer, the pavement surfaces shall be cleaned of all debris by compressed air.

620-3.8 TEMPORARY PAVEMENT MARKING

Replace the section with the following:

Temporary pavement marking shall be applied with one coat at 50% the rate shown in TABLE 1, and minimum 24 hours shall elapse between asphalt placement and paint.

BASIS OF PAYMENT

620-5.1 Add the following to this section:

Payment will be made under:

Item AR620520 Pavement Marking–Waterborne --- per square foot
Item AR620525 Pavement Marking–Black Border --- per square foot

END OF ITEM 620

DIVISION IV – DRAINAGE

ITEM 701 PIPE FOR STORM SEWERS AND CULVERTS

Revise Item 701 of the Standard Specifications as follows:

MATERIALS

701-2.1 Add the following to this section:

HDPE Slip Lining pipe shall be in accordance with following:

ASTM D3350 Standard Specification for Polyethylene Plastics Pipe and Fittings
Materials.

ASTM F714 Standard Specification for Polyethylene (PE) Pipe (SDR-PR) Based on
Outside Diameter.

The size, type, and dimensions of pipe liners shall be selected by the Contractor and submitted
for approval.

BASIS OF PAYMENT

701-5.1 Add the following to this section:

Payment will be made under:

Item AR701713 RCEP Span 30 Rise 19 --- per linear feet.

Item AR800567 Fill Pipe with CLSM

Item AR800568 16" HDPE Pipe

Item AR800569 18" HDPE Pipe

END OF ITEM 705

ITEM 705 PIPE UNDERDRAINS FOR AIRPORTS

Revise Item 705 of the Standard Specifications as follows:

DESCRIPTION

705-1.1. Add the following to this section:

This work shall include the removal of the existing underdrain pipe wherever it interferes with the installation of the proposed underdrain pipe. The existing inspection holes designated for removal conflict with the installation of the proposed underdrain pipe or proposed drainage structures. The Contractor will remove the conflicting underdrain pipe and designated inspection holes and dispose of them off the airport site.

METHOD OF MEASUREMENT

705-4.1 Add the following to this section:

The number of existing inspection holes removed to be paid for shall be the number of inspection holes removed and/or adjusted, complete, accepted and measured by the unit.

BASIS OF PAYMENT

705-5.1 Basis of Payment. Add the following to this section:

Payment will be made under:

Item AR705526 6" Perforated Underdrain --- per linear foot
Item AR705546 6" Non-Perforated Underdrain --- per linear foot
Item AR705635 Concrete Headwall for Underdrain --- per each
Item AR705635 Underdrain Collection Structure --- per each
Item AR705640 Underdrain Cleanout --- per each

END OF ITEM 705

ITEM 752 CONCRETE CULVERTS, HEADWALLS, AND MISC. DRAINAGE STRUCTURES

Revise Item 752 of the Standard Specifications as follows:

BASIS OF PAYMENT

752-5.1 Add the following to this section:

Payment will be made under:

Item AR752418 Precast Reinforced Conc. FES 18" --- per each.
Item AR752724 PR Conc. FES EQ. Round Size 24" --- per each..

END OF ITEM 751

DIVISION V – TURFING

ITEM 901 SEEDING

Revise Item 901 of the Standard Specifications as follows:

MATERIALS

901-2.1 SEED Add the following:

The seeding mixture may be revised based on seed availability if the following conditions are met:

1. The species and seeding rates specified are compatible with local climate and soil conditions.
2. The species is an endophyte turf-type fescue or equivalent.
3. The United States Department of Agriculture (USDA) / Animal and Plant Health Inspection Service (APHIS) / Wildlife Service staff has been consulted to ensure seed recommended is not a hazardous wildlife attractant.

A change in seed mixture or rates must be submitted and approved by the Engineer prior to placement.

BASIS OF PAYMENT

901-5.1 Add the following to this section:

Payment will be made under:

Item AR901510 Seeding --- per acre

END OF ITEM 901

ITEM 908 MULCHING

Revise Item 908 of the Standard Specifications as follows:

MATERIALS

908-2.1 Mulch Material. Remove Options A, B, and C. Heavy-duty hydraulic mulch, as specified in Option D, shall be used exclusively.

BASIS OF PAYMENT

908-5.1 Add the following to this section:

Payment will be made under:

Item AR908510 Mulching --- per acre

END OF ITEM 908

DIVISION VI – LIGHTING INSTALLATION

ITEM 108 INSTALLATION OF UNDERGROUND CABLE FOR AIRPORTS

DESCRIPTION

108-1.1. Add the following to this section:

“This Item of work shall consist of the installation (plowing, trenching, directional-boring, or installing in ducts or raceways) of cable for airfield lighting circuits and/or Navaid circuits on the runways, taxiways, aprons, and the associated homeruns at the locations shown on the Plans and in accordance with these Specifications. This Item shall include cable in unit duct where noted on the Plans and specified herein.

In areas where there is a congestion of buried cable or where the proposed cable crosses an existing cable, the Contractor will be required to trench the proposed cable into place. In all other areas, the Contractor has the option to either trench or plow the proposed cable in unit duct into place.

When crossing existing circuits, the Contractor will be required to hand dig the trenches for the proposed cable.”

Add the following:

108-1.2 REFERENCES. Note: where FAA Advisory Circulars are referenced they shall be the current issue or issues in effect.

- A. ASTM Specification B3 – Standard Specification for Soft or Annealed Copper Wire.
- B. ASTM Specification B8 – Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
- C. FAA Advisory Circular 150/5340-30 (current issue in effect) DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS
- D. FAA Advisory Circular 150/5345-7 (current issue in effect) "SPECIFICATIONS FOR L-824 UNDERGROUND ELECTRICAL CABLE FOR AIRPORT LIGHTING CIRCUITS.
- E. FAA Advisory Circular 150/5345-26 (current issue in effect) "FAA SPECIFICATIONS FOR L-823 PLUG AND RECEPTACLE CABLE CONNECTORS".
- F. FAA AC No. 150/5345-53 "AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM" (current issue in effect) and AC 150/5345-53D, AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM Appendix 3 Addendum (current issue in effect).

- G. FAA AC No. 150/5370-2 (current issue in effect) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION.
- H. Federal Specification A-A-59544 Cable and Wire, Electrical (Power, Fixed Installation).
- I. NFPA 70 – National Electrical Code (most current issue in force).
- J. NFPA 70E – Standard for Electrical Safety in the Workplace.
- K. NFPA 2638645-1 National Fire Protection Association.
- L. OSHA 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures.
- M. UL Standard 44 – Thermoset-Insulated Wires and Cables.
- N. UL Standard 83 – Thermoplastic-Insulated Wires and Cables.
- O. UL Standard 854 – Service Entrance Cables.

108-1.3 SHOP DRAWINGS. The Contractor shall furnish shop drawings for approval before ordering equipment and/or materials. Shop drawings are required for each wire, conductor, and/or cable type to be used on the project. **Shop drawings shall be clear and legible. Copies that are illegible will be rejected.** Contractor shall submit sufficient copies of shop drawings to meet the needs of his personnel, sub-contractor personnel, and equipment suppliers plus 4 copies to be retained by the Project Engineer. Shop drawings shall include the following information:

- A. **Certification of compliance with the AIP (Airport Improvement Program) Buy American Preferences for all materials and equipment. Do not submit ARRA (American Recovery and Reinvestment Act) certification as a substitute for certification of compliance with the AIP Buy American Preferences. Do not submit NAFTA (North American Free Trade Agreement) certification as a substitute for certification of compliance with the AIP Buy American Preferences. Shop drawings submitted without certification of compliance with the Airport Improvement Program Buy American Preferences or without certification of manufacture in the United States of America in accordance with the AIP Buy American Requirements will be rejected. See the FAA website at: http://www.faa.gov/airports/aip/buy_american/ for more information on the AIP Buy American Preferences requirements. FAA approved equipment that is on the FAA Buy American Conformance List or the list of Nationwide Buy American Waivers Issued by the FAA complies with the AIP Buy American Preferences and will not require additional waiver paperwork for AIP projects. See the FAA website at: http://www.faa.gov/airports/aip/buy_american/ for a list of Nationwide Buy American Waivers Issued by the FAA.**

- B. In order to expedite the shop drawing review, inspection and/or testing of materials, the Contractor shall furnish complete statements to the Project Engineer as to the origin, composition, and manufacturer of all material to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.
- C. Illinois Department of Transportation Division of Aeronautics requires the following: ***“Under the FAA Buy American Preference, the contractor is required to submit certification that assures only domestic steel, domestic materials and domestic manufactured products are used. The Buy American statement must come from the producer, not the supplier. Producer verification must state that the items are produced in the United States and are made from 100% domestic materials. Statements that solely refer to the “Buy American Act” or “ARRA” or any federal purchasing act other than Title 49 United States Code (USC), Section 50101 will be rejected. Producers may use the Illinois Department of Transportation Domestic Material Compliance Certification Form AER 25 to satisfy this requirement.”***
- D. Indicate the pay item number for each respective cable and/or cable in unit duct.
- E. Shop drawings shall include wire/conductor/cable cut sheets with type, size, specifications, Intertek Testing Services verification/ETL listing or UL listing, manufacturer, and catalog or part number.
- F. Shop drawings for cable in unit duct items shall include cut sheets with type, size, specifications, Intertek Testing Services verification/ETL listing or UL listing, manufacturer, and catalog or part number for the respective unit duct.
- G. Where cable is required to have colored coded insulation, provide information on the color coding for the respective conductors.

EQUIPMENT AND MATERIALS

108-2.1 GENERAL. Add the following:

“All cable shall be FAA approved or UL-listed as suitable for installed application. Cable furnished on this project shall comply with the requirements of the “Airport Improvement Program Buy American Preference requirements. All conductors shall be Copper.”

108-2.2 CABLE. Revise this section to read as follows:

“L-824 Cable – L-824 cable shall be FAA L-824, Type C and shall conform to the requirements of FAA Advisory Circular 150/5345-7 (current edition in effect) "SPECIFICATIONS FOR L-824 UNDERGROUND ELECTRICAL CABLE FOR AIRPORT

LIGHTING CIRCUITS". L-824 cable shall be FAA approved and listed in the current AC 150/5345-53D, AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM Appendix 3 Addendum. Circuits for use with constant current regulator outputs (runway or taxiway lighting circuits) shall use 5000-Volt rated cable. Circuits for use with low voltage applications (600 Volts or below) shall use either 5000-Volt rated cable or 600-Volt rated cable and shall have colored insulation corresponding to the respective voltage system. Cable shall be manufactured in the United States of America to comply with the Airport Improvement Program Buy American Requirement or be on the Federal Aviation Administration list of Nationwide Buy American Waivers.

Cable for use with airfield lighting series circuits (including runway lighting, taxiway lighting and taxi guidance signs) shall be one conductor No. 8, 5,000-Volt, FAA L-824, Type C, stranded.

Item AR108158, 1/C #8 5KV UG Cable in UD shall be one conductor No. 8, 5,000-Volt, FAA L-824, Type C, stranded, in unit duct (3/4-inch) or 3/4-inch Schedule 40 or SDR 13.5 HDPE (High Density Polyethylene) duct. HDPE duct shall be Schedule 40 (minimum wall thickness), conforming to NEMA Standard TC-7 and UL 651B, or HDPE SDR 13.5 (minimum wall thickness) manufactured in accordance with ASTM D-3350 (Specification of Polyethylene Plastics Pipe and Fittings Materials) and ASTM F2160 (Standard Specification for Solid Wall, High-Density Polyethylene Conduit Based on Controlled Outside Diameter). Conduits shall be suitable for direct burial in earth and/or concrete encasement."

108-2.4 CABLE CONNECTIONS. Add the following to this section:

"The Contractor will use a cable stripper/penciller whenever cable connections are made.

All breaks in the unit duct shall be sealed by shrink kits.

All below grade splices shall be installed in splice cans, handholes, or manholes. Splice cans shall be L-867, Class IA, Size B (12 in. diameter), 24 in. deep, with ½ in. thick, galvanized steel cover and stainless steel bolts. Larger size splice cans shall be provided, as applicable, for specific equipment applications or manufacturer's recommendations, and/or where detailed on the Plans. Splice cans located in areas subject to heavy aircraft or vehicle loading shall be L-868 type. The Engineer shall approve all splice locations before work commences. The furnishing and installing of splice cans for new homerun cables shall be incidental to the respective cable pay item, and no additional compensation will be allowed."

108-2.5 RESERVED. Revise 108-2.5 as follows to comply with the requirements of FAA Advisory Circular Number 150/5370-10H Standards for Specifying Construction of Airports, Item L-108 Underground Power Cable for Airports:

"108-2.5 SPLICER QUALIFICATIONS. Every airfield lighting cable splicer shall be qualified in making cable splices and terminations on cables rated at and/or above 5000 Volts AC. The Contractor shall submit to the Project Engineer proof of the qualifications of each proposed cable splicer for the cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable."

108-2.13 UNIT DUCT. Add the following:

“Standard sizes of smooth wall polyethylene duct shall conform to the dimensional requirements specified below:

Nominal Duct Size	Nominal Inside Diameter	Nominal Standard Wall	Nominal Outside Diameter*
¾”	0.910”	0.070”	1.050”
1”	1.145”	0.085”	1.315”
1-1/4”	1.440”	0.110”	1.660”
1-1/2”	1.650”	0.125”	1.900”
2”	2.065”	0.155”	2.375”
2-1/2”	2.449”	0.213”	2.875”
3”	3.048”	0.226”	3.500”
4”	4.000”	0.250”	4.500”

* Dimensions include allowance for duct eccentricity.”

CONSTRUCTION METHODS

108-3.1 GENERAL. Add the following to this section:

“Keep all work, power outages, and/or shut down of existing systems coordinated with the Airport Manager and the Resident Engineer/Resident Technician. Any shutdown of existing systems shall be scheduled with and approved by the Airport Manager prior to shutdown. Once shut down, the circuits shall be labeled as such to prevent accidental energizing of the respective circuits. All personnel shall follow U.S. Department of Labor Occupational Safety & Health Administration (OSHA) 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures including, but not limited to, 29 CFR section 1910.147 The Control of Hazardous Energy (lockout/tagout).

Examine the site to determine the extent of the work. Contractor shall field verify existing site conditions.

Verify respective circuits and power sources prior to removing, disconnecting, relocating, installing, connecting, or working on the respective airfield lighting, taxi sign, NAVAID, or other device. Identify each respective circuit prior to performing work on that circuit.

If the Contractor wishes to lay cable on a line other than that shown on the Plans, he shall obtain approval of the Project Engineer of record before doing so and coordinate with the Resident Engineer/Technician. Any additional cable needed because of such change will be at the Contractor's expense.

New airfield lighting series circuit cables shall be installed a minimum of 18 inches below grade to comply with NEC 300.5 Underground Installations. Deeper depths might be required to avoid obstructions or where detailed herein.

Locate and identify all existing underground utilities located within the area where the proposed cables are being installed, and will take all precautions to protect these utilities from damage. Care shall be taken so as not to damage any existing circuits. Any existing circuits damaged shall be immediately repaired to the satisfaction of the Engineer and/or the respective utility or owner where applicable. Any underground utility damaged will be repaired or replaced at the Contractor's own expense. Any repairs of existing cables will be considered incidental to the contract, and no additional compensation will be allowed.

In areas where there is a congestion of buried cables or where the proposed cable crosses an existing cable, the Contractor will be required to hand dig and/or carefully excavate the trench necessary for the proposed cable. At other locations the proposed cable may be trenched or plowed into place. Hand digging, trenching, and/or plowing will be considered incidental to the proposed cables and no additional compensation will be allowed.

Grounding work and modifications shall not be performed during a thunderstorm or when a thunderstorm is predicted in the area. Grounding for airfield lights and taxi signs shall be as detailed on the Plans and as specified herein.

Homerun cables for a respective circuit that are installed in conduit or duct shall be run together in the same raceway or duct.

The respective personnel performing airfield lighting work, vault work, and/or test shall be familiar with, and qualified to work on 5000 volt airfield lighting series circuits, constant current regulators and associated airport electrical vault equipment.

FAA requires that every airfield lighting cable splicer shall be qualified in making cable splices and terminations on cables rated at and/or above 5000 Volts AC and shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

Only cable in unit duct may be plowed or directional-bored.

Obey and comply with the applicable requirements of NFPA 70E – Standard for Electrical Safety in the Workplace.

The Contractor shall comply with the requirements of FAA AC No. 150/5370-2 (current issue in effect) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".

In the event a conflict is determined with respect to manufacturer installation instructions, National Electrical Code, and/or the Contract Documents, contact the Project Engineer for further direction.

Secure, identify and place any above ground temporary wiring in conduit to prevent electrocution and fire ignition sources in conformance with the requirements of FAA AC 150/5370-2G, Part 2.18.3 "Lighting and Visual NAVAIDs". All temporary installations shall comply with National Electrical Code Article 590 – "Temporary Installations."

Existing ducts and cables associated with removal work shall be abandoned in place unless it conflicts with the installation of the airfield light, sign, duct, cable, handhole,

manhole, site work, pavement or other work, then it shall be disconnected, removed, and disposed of off the site at no additional cost to the Contract. Contractor may remove abandoned cables at no additional cost to the Contract and shall have the salvage rights to abandoned cables.

Other construction projects might be in progress on the Airport at the same time as this project. The Contractor will be required to cooperate with all other contractors and the Airport Manager in the coordination of the work.

Relocation of existing cables and/or cable in unit duct will require careful excavation of the cables to prevent damage to them. The cables and/or cable in unit duct shall be excavated and exposed and then relocated to a different depth and/or route to accommodate the respective site work.

The cable quantities as shown on the Construction plans are based on straight-line measurement. All other cable lengths, such as slack or waste, will not be measured for payment.

All cables installed by the Contractor shall be properly labeled and tagged at all points of access (handholes, manholes, terminal panels, control panels, and the respective wireway in the vault).

All changes to the airfield lighting system shall be documented by the Contractor and provided to the Resident Engineer/Technician.”

108-3.2 INSTALLATION IN DUCT OR CONDUIT. Add the following to this section:

“The unit duct will be run continuous through all ducts and conduits.

Where cable in unit duct enters a handhole or manhole with a continuous duct bank system to the termination point (such as from a handhole to the vault or between handholes and/or manholes) the unit duct will not be required for the respective cable.”

108-3.3 TRENCHING. Add the following to this section:

- F. Cable installed in cultivated fields shall be installed a minimum of 42 in. below grade.
- G. Any and all trenches will be backfilled to a smooth grade to the satisfaction of the Engineer. All trench settlement shall be corrected for a period of one year. Restoration, grading, and seeding of areas disturbed during the installation of the proposed cable will be incidental to the respective 108 Pay Item.”

108-3.5 SPLICING. Add the following:

“In-line connections for existing cables cut during construction shall be repaired with a cast splice kit. The Contractor shall have a minimum of two splice kits on the job site at all times for emergency repairs. Cast splice kits shall be specified in paragraph (a) of Item 108-2.4. **Splice cans shall be provided for existing cables cut and repaired for each splice in cables not to be abandoned. Where a splice can is not readily available at**

the time of the cable damage, splice markers shall be temporarily installed over each splice in cables not to be abandoned, then these splices shall later be replaced with new splices in an L-867 splice can. Costs associated with splice cans for accidental cable cuts caused by the Contractor, repairs and/or shortages of cables will be the responsibility of the Contractor and no additional compensation will be allowed.

There shall be no splices between series lighting circuit isolation transformers. In the event that a series lighting circuit cable is cut between isolation transformers, the entire length of cable between these isolation transformers shall be replaced, at the Contractor's own expense.

The Contractor shall use a cable stripper/penciller whenever cable connections are made.

All splices and connections will be considered incidental to the respective cable.”

108-3.8 TESTING. Add the following.

- “K. Prior to beginning airfield lighting modifications, cable installation, and/or any other work that might possibly affect airfield lighting circuits, all existing series circuit cables shall be Megger tested and recorded at the vault. All existing series circuit cable loops shall have the resistance tested and recorded for each circuit at the vault. Each constant current regulator shall be tested with results recorded. Copies of test results shall be provided to the Resident Engineer/Resident Technician and the respective Project Engineer within 5 business days of conducting the respective set of tests. See the testing forms in Appendix A.
- L. After airfield lighting modifications, additions, and/or upgrades have been completed, series circuit cables shall be Megger tested and recorded at the vault. All series circuit cable loops shall have the resistance tested and recorded for each circuit at the vault. Each constant current regulator shall be tested with results recorded. Copies of test results shall be provided to the Resident Engineer/Resident Technician and the respective Project Engineer within 5 business days of conducting the respective set of tests. See the testing forms in Appendix A.
- M. Insulation resistance testing equipment for use with 5,000 Volt series circuit cables shall use an insulation resistance tester capable of testing the cables at 5,000 Volts. Older series circuit cables and/or cables in poor condition may require the test voltage to be performed at a voltage lower than 5,000 Volts (Example 1,000 Volts, 500 Volts, or less than 500 Volts). The respective test voltage shall be recorded for each cable insulation resistance test result.
- N. Insulation resistance testing equipment for use with 600 Volt rated cables shall use a 500 Volt insulation resistance tester. The respective test voltage shall be recorded for each cable insulation resistance test result.
- O. It is recommended to use the same insulation resistance test equipment throughout the project to ensure reliable comparative readings at the beginning of the project and at the completion of the project.

- P. The Contractor is responsible to employ qualified personnel that are capable of properly conducting the required tests to the satisfaction of the Project Engineer. Tests that provide unsatisfactory results shall be reviewed to determine the possible cause of unsatisfactory results, corrections shall be made, and the tests shall be conducted again.”

Add the following:

108-3.12 LOCATING OF EXISTING UNDERGROUND UTILITIES AND CABLES. The location, size, and type of material of existing underground and/or aboveground utilities indicated on the Plans are not represented as being accurate, sufficient, or complete. Neither the Owner nor the Engineer assumes any responsibility whatsoever in respect to the accuracy, completeness, or sufficiency of the information. There is no guarantee, either expressed or implied, that the locations, size, and type of material of existing underground utilities indicated are representative of those to be encountered in the construction. It shall be the Contractor’s responsibility to determine the actual location of all such facilities, including service connections to underground utilities. Prior to construction, the Contractor shall notify the utility companies of his operational plans, and shall obtain, from the respective utility companies, detailed information and assistance relative to the location of their facilities and the working schedule of the companies for removal or adjustment, where required. In the event an unexpected utility interference is encountered during construction, the Contractor shall immediately notify the utility company of jurisdiction. The Owner’s Representative and/or the Resident Engineer/Technician shall also be immediately notified. Any damage to such mains and services shall be restored to service at once and paid for by the Contractor at no additional cost to the Contract.

All utility cables and lines shall be located by the respective utility. **Contact JULIE (Joint Utility Location Information for Excavators) for utility information, phone: 1-800-892-0123.** Contact the FAA (Federal Aviation Administration) for assistance in locating FAA cables and utilities. Location of FAA power, control, and communication cables shall be coordinated with and/or located by the FAA. Also contact Airport Director/Manager and Airport Personnel for assistance in locating underground Airport cables and/or utilities. Also coordinate work with all aboveground utilities.

Payment for locating and marking underground utilities and cables will not be paid for separately, but shall be considered incidental to the plowing/trenching/boring of cable and cable in unit duct.

108-3.13 SEPARATION OF HIGH-VOLTAGE AND LOW-VOLTAGE WIRING. High-voltage circuit wiring (airfield lighting 5000 Volt series circuits and/or other circuits rated above 600 Volts) and low-voltage circuit wiring (rated 600 Volts and below) shall maintain separation from each other. High-voltage wiring and low-voltage wiring shall not be installed in the same wireway, conduit, duct, raceway, handhole, or junction box. Where necessary provide split flexible duct around low voltage cables located in a handhole with high voltage cables, to isolate the cables from possible contact with each other.

108-3.14 IDENTIFICATION OF CABLES. At electrical handholes and manholes, identify and label each cable originating in the vault with respect to the system or device served. Provide identification tags rated suitable for the respective locations with permanent markings.

METHOD OF MEASUREMENT

108-4.1. Add the following:

“The footage of cable and/or cable in unit duct installed in duct, conduit, or raceway to be paid for shall be the number of linear feet of cable installed in duct, conduit, or raceway measured in place by direct measurement, completed, ready for operation and accepted as satisfactory with no allowance being made for overrun due to slack, turns, splices, etc. Slack cable required to perform cable splices outside of the respective splice cans, handholes, or manholes, shall be incidental to the respective cable pay item and no additional measurement for payment will be made. Coring and interface to handholes or manholes shall be incidental to the respective cable pay item and no additional measurement for payment will be made. The relocation, interface, and/or adjustment of existing cable and/or cable in unit duct will be considered incidental to the work for which it is required and no additional compensation will be allowed. Cable tests and constant current regulator tests will be considered incidental to the respective cable pay item and no additional compensation will be allowed. Cable will be measured for payment from the respective termination or splice point in the field up to the vault or respective termination point.”

BASIS OF PAYMENT

108-5.1. Add the following:

“Payment will be made at the contract unit price per lin. ft. of cable completed and accepted by the Engineer. This price shall be full compensation for furnishing all materials, and for all preparation, assembly, and installation of these materials; for all plowing, trenching, directional-boring, coring of manholes or handholes, installation in ducts, raceways, conduits, splice cans, handholes, or manholes, and for all excavation and backfilling; for all site restoration (topsoiling, grading, seeding, mulching) and pavement restoration; and for all labor, equipment, tools, testing, and incidentals necessary to complete this Item.

Payment will be made under:

Item AR108158, 1/C #8 5KV UG Cable in UD - per linear foot”

END OF ITEM 108

ITEM 109 INSTALLATION OF AIRPORT TRANSFORMER VAULT AND VAULT EQUIPMENT

DESCRIPTION

Add the following:

109-1.2. Item AR800564 “Cable and CCR (Constant Current Regulator) Testing and Calibration” shall consist of testing the airfield lighting systems and the associated cable tests, constant current regulator tests and calibration.

109-1.5 REFERENCES. Note: where FAA Advisory Circulars are referenced they shall be the current issue or issues in effect.

- A. FAA AC No. 150/5340-26C (current issue in effect) “MAINTENANCE OF AIRPORT VISUAL AID FACILITIES”.
- B. FAA AC No. 150/5340-30 (current issue in effect) “DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS”.
- C. FAA AC No. 150/5370-2 (current issue in effect) “OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION”.
- D. NFPA 70 – National Electrical Code (most current issue in force).
- E. NFPA 70E – Standard for Electrical Safety in the Workplace.
- F. OSHA 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures.

CONSTRUCTION METHODS

INSTALLATION OF EQUIPMENT IN VAULT OR PREFABRICATED METAL HOUSING

Add the following:

109-3.19 TESTING AIRFIELD LIGHTING SYSTEMS. Cable and constant current regulator testing and calibration shall include the following:

- a. Follow safety procedures for all tests. Make sure each constant current regulator has a good and secured frame ground connection from the regulator housing to the respective vault ground bus and grounding electrode system, prior to operation and testing of each regulator.

- b. Prior to beginning excavations, airfield lighting modifications, cable installation, and/or any other work that might possibly affect airfield lighting circuits, all existing series circuit cables shall be Megger tested with an insulation resistance tester and recorded at the respective vault. All existing series circuit cable loops shall have the resistance measured with an Ohmmeter and recorded for each circuit at the vault. Each constant current regulator shall be tested with results recorded. Contractor shall provide a True RMS Ammeter for current measurements. Copies of test results shall be provided to the Resident Engineer and the respective Project Engineer within five business days of conducting the respective set of tests. See the testing forms included in the Appendix. These tests are required to protect the Owner and the Contractor and to identify existing conditions and any defective cables, circuits, and/or constant current regulators. Failure to comply with this requirement might result in the Contractor being responsible for defective cable and circuit conditions (where previously not identified) and the associated corrective work at no additional cost to the Contract.
- c. After airfield lighting modifications, additions, and/or upgrades have been completed, series circuit cables shall be Megger tested with an insulation resistance tester and recorded at the respective vault. All series circuit cable loops shall have the resistance measured with an Ohmmeter and recorded for each circuit at the respective vault. Each constant current regulator shall be tested with results recorded. Contractor shall provide a True RMS Ammeter for current measurements. Copies of test results shall be provided to the Resident Engineer and the respective Project Engineer. See the testing forms included in Appendix A.
- d. Insulation resistance testing equipment for use with 5,000 Volt series circuit cables shall use an insulation resistance tester capable of testing the cables at 5,000 Volts. Older series circuit cables and/or cables in poor condition may require the test voltage to be performed at a voltage lower than 5,000 Volts (Example 1,000 Volts, 500 Volts, or less than 500 Volts). The respective test voltage shall be recorded for each cable insulation resistance test result.
- e. Insulation resistance testing equipment for use with 600 Volt rated cables shall use a 500 Volt insulation resistance tester. The respective test voltage shall be recorded for each cable insulation resistance test result.
- f. It is recommended to use the same insulation resistance test equipment throughout the project to ensure reliable comparative readings at the beginning of the project and at the completion of the project.
- g. Based on information in FAA AC No. 150/5340-26C MAINTENANCE OF AIRPORT VISUAL AID FACILITIES, the cable insulation resistance value inevitably declines of the service life of the circuit; a 10-20 percent decline per year may be considered normal. In the event that the cable insulation resistance readings have declined more than 2 percent per month it might indicate cable damage due to lightning or damage as a result of Contractor operations. Where the cable insulation resistance readings have declined more than 2 percent per month over the project construction duration as a result of Contractor

operations, Contractor will need to investigate, address, and repair the respective cable circuits.

- h. When test results for constant current regulators indicate readings that are outside the acceptable tolerances calibrate and adjust the regulator to be within acceptable output current levels. Adjustments and calibrations shall be in accordance with the respective regulator manufacturer recommendations and instructions. Provide a true RMS Ammeter for measuring input and output currents on constant current regulators.
- i. The Contractor is required to employ qualified personnel that are familiar with and capable of properly conducting the required tests and calibrations for the respective cables and equipment.
- j. See Appendix A – “Constant Current Regulator and Cable Testing Forms” for additional information on testing requirements for airfield lighting systems. All testing will be considered incidental to the respective work items and no additional compensation will be allowed.

METHOD OF MEASUREMENT

Add the following:

109-4.4. Testing the airfield lighting systems and the associated cable tests, constant current regulator tests and calibration will be paid for on a per lump sum basis and shall include all testing prior to beginning excavations, airfield lighting modifications, cable installation, and/or any other work that might possibly affect airfield lighting circuits and all testing after airfield lighting modifications, additions, and/or upgrades have been completed. Testing of the airfield lighting systems and the associated cable tests and constant current regulator tests and calibration shall include all labor, transportation, equipment, tools, and measuring devices; all coordination with the Airport Manager, Airport Staff, FAA personnel, Contractor staff, and the Resident Engineer; all recording of the test results and submission of the test results to the Resident Engineer and the Project Engineer; all calibration and adjusting of constant current regulators where test results indicate regulator output currents that are not within accepted tolerances; all retesting where test results indicate unsatisfactory conditions or incorrect testing procedures; and all other incidentals necessary to complete this item. Based on the contract lump sum price for Cable and Constant Current Regulator Testing, partial payments will be allowed as follows:

- A. Upon completion of all testing prior to beginning excavations, airfield lighting modifications, cable installation, and/or any other work that might possibly affect airfield lighting circuits, submission of testing results to the Resident Engineer and the Project Engineer, and acceptance of the testing results by the Project Engineer, 50 percent of the lump sum payment will be allowed.
- B. Upon completion of all testing after airfield lighting modifications, additions, and/or upgrades have been completed, submission of testing results to the Resident Engineer and the Project

Engineer, and acceptance of the testing results by the Project Engineer, the remaining 50 percent of the lump sum payment will be allowed.

BASIS OF PAYMENT

109-5.1. Add the following:

“Payment for Cable and Constant Current Regulator Testing and Calibration will be made at the contract unit price per lump sum and shall include all labor, transportation, equipment, tools, and measuring devices; all coordination with the Airport Manager, Airport Staff, FAA personnel, Contractor staff, and the Resident Engineer; calibration and adjusting constant current regulators; all recording of the test results and submission of the test results to the Resident Engineer and the Project Engineer; all retesting where test results indicate unsatisfactory conditions or incorrect testing procedures; and all other incidentals necessary to complete this item.”

Payment will be made under:

Item AR800564 Cable and CCR Testing and Calibration - per lump sum

END OF ITEM 109

ITEM 110 INSTALLATION OF AIRPORT UNDERGROUND ELECTRICAL

DESCRIPTION

110-1.1 Add the following:

“This item of work shall consist of the installation of all proposed conduits and ducts as shown on the Construction Plans.”

110-1.2 REFERENCES

- A. ANSI C80.1 – Rigid Steel Conduit, Zinc Coated.
- B. ANSI C80.4 – Fittings Rigid Metal Conduit and EMT.
- C. ASTM D3350 – Specification of Polyethylene Plastics Pipe and Fittings Materials.
- D. ASTM F2160 – Standard Specification for Solid Wall, High-Density Polyethylene Conduit Based on Controlled Outside Diameter.
- E. NEMA TC-2 – Electrical Plastic Tubing and Conduit.
- F. NEMA TC-3 – Fittings Rigid PVC Conduit and Tubing.
- G. NEMA Specification TC-7 – Smooth-Wall Coilable Polyethylene Electrical Plastic Conduit.
- H. NFPA 70 – National Electrical Code (NEC), most current issue in force.
- I. NFPA 2638645-1 National Fire Protection Association
- J. UL Standard 6 – Rigid Metal Conduit.
- K. UL Standard 514B – Conduit, Tubing and Cable Fittings.
- L. UL Standard 651 – Schedule 40 and 80 Rigid PVC Conduit.
- M. UL Standard 651B – Standard for Continuous Length High-Density Polyethylene (HDPE) Conduit.

110-1.3 SHOP DRAWINGS. The Contractor shall furnish shop drawings for approval before ordering equipment and/or materials. Shop drawings are required for each type of conduit or duct to be used on the project. **Shop drawings shall be clear and legible. Copies that are illegible will be rejected.** Contractor shall submit sufficient copies of shop drawings to meet the needs of his personnel, sub-contractor personnel, and equipment suppliers plus 4 copies to be retained by the Project Engineer. Contractor may submit electronic copies of shop drawings instead of hard copies. Shop drawings shall include the following information:

- A. **Certification of compliance with the AIP (Airport Improvement Program) Buy American Preferences for all materials and equipment. Do not submit ARRA (American Recovery and Reinvestment Act) certification as a substitute for certification of compliance with the AIP Buy American Preferences. Do not submit NAFTA (North American Free Trade Agreement) certification as a substitute for certification of compliance with the AIP Buy American Preferences. Shop drawings submitted without certification of compliance with the Airport Improvement Program Buy American Preferences or without certification of manufacture in the United States of America from Domestic materials in accordance with the AIP Buy American Requirements will be rejected. See the FAA website at: http://www.faa.gov/airports/aip/buy_american/ for more information on the Airport Improvement Program Buy American Preferences requirements.**
- B. In order to expedite the shop drawing review, inspection and/or testing of materials and equipment, the Contractor shall furnish complete statements to the Project Engineer as to the origin and manufacturer of all materials and equipment to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials and equipment.
- C. Illinois Department of Transportation Division of Aeronautics requires the following: ***“Under the FAA Buy American Preference, the contractor is required to submit certification that assures only domestic steel, domestic materials and domestic manufactured products are used. The Buy American statement must come from the producer, not the supplier. Producer verification must state that the items are produced in the United States and are made from 100% domestic materials. Statements that solely refer to the “Buy American Act” or “ARRA” or any federal purchasing act other than Title 49 United States Code (USC), Section 50101 will be rejected. Producers may use the Illinois Department of Transportation Domestic Material Compliance Certification Form AER 25 to satisfy this requirement.”***
- D. Indicate the pay item number for each respective conduit or duct.
- E. Shop drawings shall include conduit and/or duct cut sheets with type, size, specifications, UL listing, manufacturer, and catalog or part number.
- F. Provide manufacturer’s literature confirming the respective duct to be bored is suitable for directional boring with the respective Shop Drawing submittal.

- G. Provide certification that the respective steel conduits used on this project are manufactured from 100 percent domestic steel.
- H. Provide certification that the respective plastic conduits used on this project are manufactured from domestic materials.

EQUIPMENT AND MATERIALS

110-2.1 GENERAL. Add the following:

“All materials for these items shall be in accordance with the FAA Standard Specification 110 Equipment and Materials, as detailed on the Plans, and as specified herein.

- A. Conduit for concrete encased duct shall be Schedule 40 (minimum) Polyvinyl Chloride (PVC) or Schedule 40 (minimum) High-Density Polyethylene (HDPE), sized as detailed on the Plans, and suitable for concrete encasement.
- B. Duct for Item AR110550 Split Duct shall be 4-inch steel split duct or 4-inch non-metallic split duct and shall be compatible with the respective existing duct to be extended. Based on record drawings some of the existing duct to be extended with split duct is understood to be galvanized rigid steel conduit. Include split conduit couplings and/or adapters to interface the existing duct to the proposed split duct.
- C. The duct to be directional-bored shall be Galvanized Rigid Steel Conduit (GRSC) duct, Schedule 40 PVC Conduit, Schedule 80 PVC Conduit or High-Density Polyethylene (HDPE) duct, (Schedule 40, Schedule 80, SDR 9, SDR 11, or SDR 13.5), and suitable for directional boring installation.”

110-2.2 STEEL CONDUIT. Replace this section with the following:

“Rigid Steel Conduit and fittings shall be hot-dipped, galvanized, UL-listed, and produced in accordance with UL Standard 6 – Rigid Metal Conduit and ANSI C80.1 – Rigid Steel Conduit, Zinc Coated. Couplings, connectors, and fittings for rigid steel conduit shall be threaded, galvanized steel or galvanized, malleable iron, specifically designed and manufactured for the purpose. Fittings shall conform to ANSI C80.4 – Fittings Rigid Metal Conduit and EMT and UL 514B – Conduit, Tubing, and Cable Fittings. Set screw type fittings are not acceptable. Steel used to manufacture conduits shall be 100 percent domestic steel to comply with the Airport Improvement Program Buy American Preference Requirements and the Steel Products Procurement Act. Contractor shall provide certification that the respective steel conduits used on this project are manufactured from 100 percent domestic steel.

Miscellaneous Fittings. Fittings shall be suitable for use with conduits and ducts supplied. All fittings for use with rigid metal conduit shall be threaded. Set screw-type fittings are not acceptable. All conduit bodies, fittings, and boxes installed in classified hazardous locations (Class I, Division 1 or 2, Group D) shall be suitable for use in Class I, Division 1, and Group D locations. Fittings shall be as manufactured by Appleton, Crouse-Hinds, Hubbell-Killark, O-Z/Gedney, or approved equal.

Provide NEMA 4, 4X hubs for all conduit entries into NEMA 4, 4X equipment enclosures to maintain the NEMA 4, 4X rating of the respective enclosure. Hubs for use with NEMA 4X stainless steel enclosures shall be NEMA 4X stainless steel hubs.”

110-2.3 PLASTIC CONDUIT. Add the following to the end of this section:

“Conduits shall be suitable for underground applications encased in concrete or direct burial, and suitable for exposed applications aboveground.

- C. Conduits for concrete encasement shall be Schedule 40 PVC, UL-listed, rated for 90°C cable, conforming to NEMA Standard TC-2 and UL 651, listed suitable for concrete encasement or Schedule 40 (minimum) HDPE conduit, UL-listed, conforming to NEMA Standard TC-7 and UL 651B and listed suitable for concrete encasement. Conduits shall be suitable for underground applications encased in concrete or direct burial, and suitable for exposed applications aboveground.
- D. Conduits for directional boring shall be Schedule 40 PVC or Schedule 80 PVC conduit, UL-listed, rated for 90°C cable-conforming to NEMA Standard TC-2 and UL 651 and suitable for directional boring installation, Schedule 40 HDPE or Schedule 80 HDPE conduit, UL-listed, conforming to NEMA Standard TC-7 and UL 651B and suitable for directional boring installation, or Wall Type SDR 9, SDR 11, or SDR 13.5 HDPE conduit manufactured in accordance with ASTM D-3350 (Specification of Polyethylene Plastics Pipe and Fittings Materials) and ASTM F2160 (Standard Specification for Solid Wall, High-Density Polyethylene Conduit Based on Controlled Outside Diameter), and suitable for directional boring installation. **Per NEC 300.5 (K), raceways installed using directional boring equipment shall be approved for the purpose. Provide manufacturer’s literature confirming the respective duct is suitable for directional boring with the respective Shop Drawing submittal.**
- E. Conduits for direct burial in earth shall be PVC Schedule 40 (minimum wall thickness), UL-listed, rated for 90°C cable-conforming to NEMA Standard TC-2 and UL 651, listed suitable for direct burial in earth, or HDPE Schedule 40 (minimum wall thickness), conforming to NEMA Standard TC-7 and UL 651B, or HDPE SDR 13.5 (minimum wall thickness) manufactured in accordance with ASTM D-3350 (Specification of Polyethylene Plastics Pipe and Fittings Materials) and ASTM F2160 (Standard Specification for Solid Wall, High-Density Polyethylene Conduit Based on Controlled Outside Diameter). Conduits shall be suitable for direct burial in earth and/or concrete encasement.”

110-2.4 SPLIT CONDUIT. Add the following to this section:

“NON-METALLIC SPLIT DUCT. Non-metallic split duct shall be used to extend existing duct that contains cables and/or for protection of existing cables as detailed on the Plans. Non-metallic split duct shall be Schedule 40 PVC designed for use with power and control cable applications. Non-metallic split duct shall be suitable for direct burial in earth and concrete encasement and exhibit superior impact strength. Joints shall be sealed with corrosion-resistant tape and heavy-duty plastic straps as recommended by the split duct manufacturer for the application. Split duct sleeve couplings, duct sweeps, fittings, and accessories shall be by the same manufacturer to assure system integrity. Non-metallic split duct shall be manufactured by Prime Conduit, Inc., Carlon Electrical Products, Cantex Inc., or approved equal. 4-in. Schedule 40 split ducts shall be Carlon Part Number 49015SD, Cantex Part Number A52EAZS, or approved equal. Install split duct as detailed on the Plans and in conformance with manufacturer’s recommendations for the respective application. Provide adapters, couplings, and fittings to accommodate interface to existing duct or conduit. Where split duct is to be concrete-encased, confirm it is suitable for the respective application with the manufacturer.”

Add the following:

110-2.9 DUCT SPACERS. Provide duct spacers to provide proper separation of conduits installed in concrete encased duct. Duct spacers shall be designed to provide 3” separation of conduits. Duct spacers shall be suitable for the respective size and quantity of ducts; Underground Devices Incorporated Wunpeece Series, Carlon Snap-N-Stack Combo Spacers, Cantex Spacers for Duct, or approved equal. Confirm catalog numbers with the manufacturer for the respective application.

CONSTRUCTION METHODS

110-3.1 GENERAL. Add to this section:

“The proposed conduits and ducts shall be constructed at the locations and in accordance with the details shown on the Construction Plans. Ducts shall be installed 18 in. minimum below grade. Ducts located in area subject to farming shall be 42 in minimum below grade. Where detailed on the Plans or where required to avoid obstructions, ducts shall be buried deeper. Where concrete-encased duct interfaces to directional-bored duct at a pavement crossing, the concrete encasement shall be installed up to the respective pavement edge. Where concrete-encased duct interfaces to an electrical handhole or manhole, the concrete encasement shall be installed up to the respective handhole or manhole. Provide bushings or bells at conduit terminations in electrical handholes or manholes.

Underground ducts installed by directional-boring method shall be installed in a manner that will not damage any existing underground utilities, and shall not disturb or damage the respective pavement or roadway surface. Ducts shall be directional-bored at the locations shown on the Construction Plans. The ducts will be bored at a minimum depth of 24 in. below the bottom of the pavement it is being bored under. Ducts installed under paved areas and roadways shall extend a minimum of 10 feet beyond the respective pavement or roadway surface, unless detailed otherwise on the Plans. A pull wire will be

left in the conduit if it is to be left vacant. The ends of the conduit will be sealed with approved plugs.

The Contractor will determine if there is a conflict between the installation of the proposed electrical ducts and any existing/proposed utilities. He will make all necessary adjustments in depth of installation to avoid any and all existing/proposed underground improvements.

Provide conduit bushings or bells at duct terminations in handholes and manholes.”

110-3.7 RESTORATION. Add to this section:

“Any and all trenches and disturbed areas will be backfilled and restored to a smooth grade and seeded to the satisfaction of the Resident Engineer/Resident Technician. All trench settlement shall be corrected for a period of one year. Restoration, grading, and seeding of areas disturbed during the installation of the proposed ducts will be incidental to the respective pay item for which the duct is installed and shall be in accordance with Item 901 Seeding and Item 908 Mulching.

Any and all disturbed pavement areas will be restored to original or better condition. Restoration of pavement areas disturbed during the installation of the proposed ducts will be incidental to the respective pay item for which the duct is installed. The restoration of concrete pavement will be completed in accordance with Item 610 for sidewalks and concrete pavement, but will be incidental to the respective pay item for which the duct is installed.”

Add the following:

110-3.8 LOCATING OF EXISTING UNDERGROUND UTILITIES AND CABLES. The location, size, and type of material of existing underground and/or aboveground utilities indicated on the Plans are not represented as being accurate, sufficient, or complete. Neither the Owner nor the Engineer assumes any responsibility whatever in respect to the accuracy, completeness, or sufficiency of the information. There is no guarantee, either expressed or implied, that the locations, size, and type of material of existing underground utilities indicated are representative of those to be encountered in the construction. It shall be the Contractor’s responsibility to determine the actual location of all such facilities, including service connections to underground utilities. Prior to construction, the Contractor shall notify the utility companies of his operational plans, and shall obtain from the respective utility companies detailed information and assistance relative to the location of their facilities and the working schedule of the companies for removal or adjustment, where required. In the event an unexpected utility interference is encountered during construction, the Contractor shall immediately notify the utility company of jurisdiction. The Owner’s Representative and/or the Resident Engineer/Resident Technician shall also be immediately notified. Any damage to such mains and services shall be restored to service at once and paid for by the Contractor at no additional cost to the Contract.

All utility cables and lines shall be located by the respective utility. **Contact JULIE (Joint Utility Location Information for Excavators) for utility information, phone: 1-800-892-0123.** Contact the FAA (Federal Aviation Administration) for assistance in locating FAA cables and utilities. Location of FAA power, control, and communication cables shall be coordinated with

and/or located by the FAA. Also contact Airport Director/Manager and Airport Personnel for assistance in locating underground Airport cables and/or utilities. Also coordinate work with all aboveground utilities.

Contractor shall locate and mark all existing cables within ten (10) feet of proposed excavating/trenching area. Any cables found interfering with proposed excavation or cable/trenching shall be hand dug and exposed. Any damaged cables shall be immediately repaired to the satisfaction of the Resident Engineer/Resident Technician at the Contractor's expense. The Resident Engineer/Resident Technician and Owner shall be notified immediately if any cables are damaged.

Due to the quantities of existing utilities and lines in the proposed areas of work, the Contractor will need to carefully excavate to expose and protect these utilities and lines prior to installing manholes, handholes, and/or junction structures and the associated trenches for the proposed conduits, ducts, and raceway system.

Payment for locating and marking underground utilities and cables will not be paid for separately, but shall be considered incidental to the respective duct installation.

110-3.9 SEPARATION OF HIGH-VOLTAGE AND LOW-VOLTAGE WIRING. High-voltage circuit wiring (airfield lighting 5000 Volt series circuits and/or other circuits rated above 600 Volts) and low-voltage circuit wiring (rated 600 Volts and below) shall maintain separation from each other. High-voltage wiring and low-voltage wiring shall not be installed in the same wireway, conduit, duct, raceway, handhole, or junction box.

METHOD OF MEASUREMENT

110-4.2 Delete this section.

Add the following:

"110-4.3. The quantity of conduit to be paid for shall be the number of lin. ft of ducts of the particular type installed and measured in-place, complete, and accepted by the Resident Engineer/Resident Technician. Conduits, conduit nipples, conduit couplings, and other conduit fittings included with splice cans, junction structures, Navaid installations, base mounted airfield light fixtures, and/or taxi signs, will be considered incidental to the respective item for which they are installed and no additional measurement will be made."

BASIS OF PAYMENT

110-5.1. Add the following:

"Payment will be made at the contract unit price per each type and size of conduit, completed and accepted. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials; for all sawing and pavement removal; for all duct interface work to handholes/manholes including coring of handholes/manholes; for all excavation and backfilling with aggregate backfill, earth

backfill, and concrete; and for all labor, coordination, equipment, tools, and incidentals necessary to complete this Item. Removal and replacement of bituminous pavement or concrete pavement will be considered incidental to the respective pay item for which the duct is installed.”

Payment will be made under:

Item AR110503; 3-Way Conc. Encased Duct - per linear foot

END OF ITEM 110

ITEM 115 ELECTRICAL MANHOLES AND JUNCTION STRUCTURES

DESCRIPTION

115-1.1. This item of work shall consist of electrical manholes and junction structures (handholes and splice cans) in accordance with this Specification and as detailed on the Construction Plans. This item shall include the installation of each electrical manhole and/or junction structures with all associated excavation, backfilling, sheeting and bracing, concrete, reinforcing steel, ladders, appurtenances, testing, dewatering and restoration of surfaces to the satisfaction of the Resident Engineer/Resident Technician.

115-1.2 SHOP DRAWINGS. The Contractor shall furnish shop drawings for approval before ordering equipment and/or materials. Shop drawings are required for each type of electrical manhole and junction structure to be used on the project. **Shop drawings shall be clear and legible. Copies that are illegible will be rejected.** The preferred shop drawing submittal format shall be electronic (PDF) copies. Shop drawings shall include the following information:

- A. **Certification of compliance with the AIP (Airport Improvement Program) Buy American Preferences for all materials and equipment. Do not submit ARRA (American Recovery and Reinvestment Act) certification as a substitute for certification of compliance with the AIP Buy American Preferences. Do not submit NAFTA (North American Free Trade Agreement) certification as a substitute for certification of compliance with the AIP Buy American Preferences. Shop drawings submitted without certification of compliance with the Airport Improvement Program Buy American Preferences or without certification of manufacture in the United States of America in accordance with the AIP Buy American Requirements will be rejected. See the FAA website at: http://www.faa.gov/airports/aip/buy_american/ for more information on the AIP Buy American Preferences requirements.**
- B. In order to expedite the shop drawing review, inspection and/or testing of materials and equipment, the Contractor shall furnish complete statements to the Project Engineer as to the origin and manufacturer of all materials and equipment to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials and equipment.
- C. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Engineer reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.
- D. Precast concrete handholes and manholes must be on IDOT (Illinois Department of Transportation) List of Certified Precast Concrete Producers. Provide information on respective precast concrete producer for precast manholes and drawings for respective handholes.

- E. Provide cut sheets with part number and specification for each handhole and manhole frame and lid. Include certification that the respective handhole frame and lid is made in the United States of America.
- F. Provide certification that the respective pre-cast handholes and manholes are manufactured in the United States of America.

MATERIALS

115-2.1. GENERAL

- A. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when so requested by the Engineer.
- B. Manufacturer's certifications shall not relieve the Contractor of the Contractor's responsibility to provide materials in accordance with these specifications and acceptable to the Engineer. Materials supplied and/or installed that do not materially comply with these specifications shall be removed, when directed by the Engineer and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.
- C. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

115-2.2 CONCRETE STRUCTURES. Provide precast concrete structures where shown on the Plans. Precast units shall have mortar or bitumastic sealer placed between all joints to make them watertight. Openings or knockouts shall be provided in the structure as detailed on the Plans and as applicable to interface to the respective duct system. Threaded inserts and pulling eyes shall be cast in as shown.

If the Contractor chooses to propose a different structural design, signed and sealed shop drawings, design calculations, and other information requested by the Engineer shall be submitted by the Contractor to allow for a full evaluation by the Engineer.

- A. Electrical Handholes. Each electrical handhole shall be constructed in accordance with the details as shown on the Construction Plans. The handholes shall be provided with extra heavy duty frame and lid suitable for 100,000 pound loading, with spring assist hatch, hinged with hold open safety device, Neenah Foundry Company R-3498-P2S Spring-Assist Hatch, East Jordan Iron Works 8096 Spring-Assist Hatch, or an approved equal. Lids for the handholes containing high voltage airfield lighting cables shall include lettering labeled

“DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS” to comply with NEC Article 300.45 “Warning Signs” and NEC Article 314.30(D) “Covers”. Lids for the handholes containing low voltage cables (600 Volts and below) shall include lettering labeled **“LOW-VOLTAGE”**. Coordinate lettering with manufacturer. Precast electrical handholes shall be manufactured by a concrete electrical handhole producer on the Illinois Department of Transportation approved list of certified precast concrete producers. Electrical handholes will be paid for under Item AR115610 Electrical Handhole per each.

115-2.3 JUNCTION CANS. Junction Cans shall be L-867 Class 1 (non-load bearing) or L-868 Class 1 (load bearing) cans encased in concrete. The cans shall have a galvanized steel blank cover, gasket, and stainless steel hardware. Covers shall be 3/8” thickness for L-867 and 3/4” thickness for L-868. Include internal and external ground straps on each splice can.

115-2.4 CABLE TRAYS. Cable racks shall be as detailed on the Plans.

CONSTRUCTION METHODS

115-3.1. Electrical handholes and manholes shall be constructed in accordance with the details as shown on the Construction Plans. At electrical handholes and manholes, identify and label each cable with respect to its origin and the system or device served. Coordinate conduit and duct interface with the handhole and/or manhole installation. Field cut openings for conduits and ducts according to the respective handhole and/or manhole manufacturer’s recommendations. Core drill and/or cut wall of handhole and/or manhole with a tool designed for the material to be cut and suitable for the respective application. Size holes for termination fittings to be used and seal around penetrations after fittings are installed.

115-3.2 UNCLASSIFIED EXCAVATION. It is the Contractor’s responsibility to locate existing utilities within the work area prior to excavation. Damage to utility lines, through lack of care in excavating, shall be repaired or replaced to the satisfaction of the Resident Engineer/Resident Technician without additional expense to the Owner.

The Contractor shall perform excavation for structures and structure footings. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown.

All excavation shall be unclassified and shall be considered incidental to the respective handhole and/or manhole structure pay item of which it is a component part. Dewatering necessary for manhole structure installation, erosion and turbidity control, in accordance with Federal, State, and Local requirements is incidental to its respective pay item. The cost of all excavation regardless of type of material encountered, shall be included in the unit price bid for the respective manhole structure pay item.

Boulders, logs and all other objectionable material encountered in excavation shall be removed. All rock and other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped or serrated, as directed by the Resident Engineer/Resident Technician. All seams, crevices, disintegrated rock and thin strata shall be removed. When concrete is to rest on a surface other than rock, special care shall be taken not to disturb the

bottom of the excavation. Excavation to final grade shall not be made until just before the concrete or reinforcing is to be placed.

The Contractor shall provide all bracing, sheeting and shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheeting and shoring shall be included in the unit price bid for the structure.

Unless otherwise provided, bracing, sheeting and shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall be effected in a manner that will not disturb or mar finished masonry. The cost of removal shall be included in the unit price bid for the structure.

After each excavation is completed, the Contractor shall notify the Resident Engineer/Resident Technician. Structures shall be placed after the Resident Engineer/Resident Technician has approved the depth of the excavation and the suitability of the foundation material.

Prior to installation the Contractor shall provide a minimum of 6 in of sand or a material approved by the Resident Engineer/Resident Technician as a suitable base to receive the structure. The base material shall be compacted and graded level and at proper elevation to receive the structure in proper relation to the conduit grade or ground cover requirements, as indicated on the Plans.

115-3.2 CONCRETE STRUCTURES. Concrete structures shall be built on prepared foundations conforming to the dimensions and form indicated on the plans. The concrete and construction methods shall conform to the requirements specified in Item 610. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the Engineer before the concrete is placed.

115-3.3 PRECAST UNIT INSTALLATIONS. Precast units shall be installed plumb and true. Joints shall be made watertight by use of sealant at each tongue-and-groove joint and at roof of manhole. Excess sealant shall be removed and severe surface projections on exterior of neck shall be removed.

115-3.4 PLACEMENT AND TREATMENT OF CASTINGS, FRAMES AND FITTINGS. All castings, frames and fittings shall be placed in the positions indicated on the Plans or as directed by the Resident Engineer/Resident Technician and shall be set true to line and to correct elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

Field connections shall be made with bolts, unless indicated otherwise. Welding will not be permitted unless shown otherwise on the approved shop drawings and written permission is granted by the casting manufacturer. Erection equipment shall be suitable and safe for the workman. Errors in shop fabrication or deformation resulting from handling and transportation that prevent the proper assembly and fitting of parts shall be reported immediately to the Resident Engineer/Resident Technician and approval of the method of correction shall be obtained. Approved corrections shall be made at Contractor's expense.

Anchor bolts and anchors shall be properly located and built into connection work. Bolts and anchors shall be preset by the use of templates or such other methods as may be required to locate the anchors and anchor bolts accurately.

Pulling-in irons shall be located opposite all conduit entrances into structures to provide a strong, convenient attachment for pulling-in blocks when installing cables. Pulling-in irons shall be set directly into the concrete walls of the structure.

115-3.5 INSTALLATION OF LADDERS. [Not used]

115-3.6 REMOVAL OF SHEETING AND BRACING. In general, all sheeting and bracing used to support the sides of trenches or other open excavations shall be withdrawn as the trenches or other open excavations are being refilled. That portion of the sheeting extending below the top of a structure shall be withdrawn, unless otherwise directed, before more than 6 inches (150 mm) of material is placed above the top of the structure and before any bracing is removed. Voids left by the sheeting shall be carefully refilled with selected material and rammed tight with tools especially adapted for the purpose or otherwise as may be approved.

The Resident Engineer/Resident Technician may order the Contractor to delay the removal of sheeting and bracing if, in his judgment, the installed work has not attained the necessary strength to permit placing of backfill.

115-3.7 BACKFILLING. After a structure has been completed, the area around it shall be backfilled in horizontal layers not to exceed 6 inches (150 mm) in thickness. Each layer shall be deposited all around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by the Resident Engineer/Resident Technician.

Backfill shall not be placed against any structure until permission is given by the Resident Engineer/Resident Technician. In the case of concrete, such permission shall not be given until tests made by the laboratory under supervision of the Engineer establish that the concrete has attained sufficient strength to provide a factor of safety against damage or strain in withstanding any pressure created by the backfill or the methods used in placing it.

Where required, the Resident Engineer/Resident Technician may direct the Contractor to add, at his own expense, sufficient water during compaction to assure a complete consolidation of the backfill. The Contractor shall be responsible for all damage or injury done to conduits, duct banks, structures, property or persons due to improper placing or compacting of backfill.

115-3.8 CONNECTION OF DUCT BANKS. To relieve stress of joint between concrete-encased duct banks and structure walls, reinforcement rods shall be placed in the structure wall and shall be formed and tied into duct bank reinforcement at the time the duct bank is installed.

115-3.9 RESTORATION. After the backfill is completed, the Contractor shall dispose of all surplus material, dirt and rubbish from the site. The Contractor shall restore all disturbed areas equivalent to or better than their original condition. All sodding, seeding, mulching grading and restoration shall be considered incidental to the respective pay item and shall be in accordance with Item 901 Seeding and Item 908 Mulching. The Contractor shall grade around structures as required to provide positive drainage away from the structure. Areas with special surface treatment, such as roads, sidewalks, or other paved areas shall have backfill compacted to match surrounding areas, and surfaces shall be repaired using materials comparable to original materials. After all work is completed, the Contractor shall remove all tools and other equipment, leaving the entire site free, clear and in good condition.

115-3.10 LOCATING EXISTING UNDERGROUND UTILITIES AND CABLES. The location, size, and type of material of existing underground and/or aboveground utilities indicated on the Plans are not represented as being accurate, sufficient, or complete. Neither the Owner nor the Engineer assumes any responsibility whatever in respect to the accuracy, completeness, or sufficiency of the information. There is no guarantee, either expressed or implied, that the locations, size, and type of material of existing underground utilities indicated are representative of those to be encountered in the construction. It shall be the Contractor's responsibility to determine the actual location of all such facilities, including service connections to underground utilities. Prior to construction, the Contractor shall notify the utility companies of his operational plans, and shall obtain from the respective utility companies detailed information and assistance relative to the location of their facilities and the working schedule of the companies for removal or adjustment, where required. In the event an unexpected utility interference is encountered during construction, the Contractor shall immediately notify the utility company of jurisdiction. The Owner's Representative and/or the Resident Engineer/Resident Technician shall also be immediately notified. Any damage to such mains and services shall be restored to service at once and paid for by the Contractor at no additional cost to the Contract.

All utility cables and lines shall be located by the respective utility. **Contact JULIE (Joint Utility Location Information for Excavators) for utility information, phone: 1-800-892-0123.** Contact the FAA (Federal Aviation Administration) for assistance in locating FAA cables and utilities. Location of FAA power, control, and communication cables shall be coordinated with and/or located by the FAA. Also contact Airport Director/Manager and Airport Personnel for assistance in locating underground Airport cables and/or utilities. Also coordinate work with all aboveground utilities.

Contractor shall locate and mark all existing cables within ten (10) feet of proposed excavating/trenching area. Any cables found interfering with proposed excavation or cable/trenching shall be hand dug and exposed. Any damaged cables shall be immediately repaired to the satisfaction of the Resident Engineer/Resident Technician at the Contractor's expense. The Resident Engineer/Resident Technician and Owner shall be notified immediately if any cables are damaged.

Due to the quantities of existing utilities and lines in the proposed areas of work, the Contractor will need to carefully excavate to expose and protect these utilities and lines prior to installing manholes, handholes, and/or junction structures and the associated trenches for the proposed conduits, ducts, and raceway system.

Contractor is responsible for the repairs of any utilities, lines, and/or cables damaged as a result of his operations.

Payment for locating and marking underground utilities and cables will not be paid for separately, but shall be considered incidental to the respective duct installation.

115-3.11 SEPARATION OF HIGH-VOLTAGE AND LOW-VOLTAGE WIRING. High-voltage circuit wiring (airfield lighting 5000 Volt series circuits and/or other circuits rated above 600 Volts) and low-voltage circuit wiring (rated 600 Volts and below) shall maintain separation from each other. High-voltage wiring and low-voltage wiring shall not be installed in the same wireway, conduit, duct, raceway, handhole, or junction box.

METHOD OF MEASUREMENT

115-4.1. Electrical manholes, handholes and junction structures shall be measured by each unit completed in place and accepted by the Resident Engineer/Resident Technician. The following additional items are specifically included in each unit.

- All required excavation,
- Sheeting and bracing
- All required backfilling with on-site materials
- Restoration of all surfaces and finished grading, sodding
- All required connections
- Slack cable required to perform cable splices outside of the respective junction structures, handholes, or manholes.
- Dewatering if required
- Temporary cables and connections
- Ground rod testing
- All coring and labor associated with conduit, duct, cable in unit duct, and/or cable entries
- Locating existing utilities, lines, and cables in the respective areas of work
- All coordination with the respective Airport staff, site personnel, and/or FAA personnel

BASIS OF PAYMENT

115-5.1. Payment will be made at the contract unit price bid for each electrical manhole, handhole, and/or junction structure completed and in place. This price shall be full compensation for furnishing all materials and for all preparation, excavation, backfilling, and placing of the materials; for locating existing utilities, lines, and cables in the respective areas of work; for all coring and labor associated with conduit, duct, cable in unit duct, and/or cable entries; for all coordination with the respective Airport and/or FAA personnel; for furnishing and installation of appurtenances and connections to duct banks and other structures as may be required to complete the item as shown on the plans and for all labor, equipment, tools and incidentals necessary to complete the structure.

Payment will be made under:

Item AR115610 Electrical Handhole - per each

END OF ITEM 115

ITEM 125 INSTALLATION OF AIRPORT LIGHTING SYSTEMS

DESCRIPTION

125-1.1. Revise this paragraph to read as follows:

“This Item of work shall consist of furnishing and installing base-and stake-mounted airfield lights, taxiway lights, taxi guidance signs, and splice cans at the locations shown on the Construction Plans and in accordance with the details shown on the Plans. This Item of work shall also include the removal of base-and stake-mounted runway lights, taxiway lights and/or taxi guidance signs. Also included in this Item will be the testing of the installation and all incidentals necessary to place the lighting systems into operation, completed, and to the satisfaction of the Engineer.”

125-1.6 REFERENCES. Note: where FAA Advisory Circulars are referenced they shall be the current issue or issues in effect.

- A. ANSI C80.1 – Rigid Steel Conduit, Zinc Coated.
- B. ANSI C80.4 – Fittings Rigid Metal Conduit and EMT.
- C. FAA AC No. 150/5340-26C (current issue in effect) “Maintenance of Airport Visual Aid Facilities”.
- D. FAA AC No. 150/5340-30 (current issue in effect) “DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS
- E. FAA AC No. 150/5345-42 (current issues in effect) “Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories”.
- F. FAA AC No. 150/5345-44 (current issues in effect) “SPECIFICATION FOR RUNWAY AND TAXIWAY SIGNS”.
- G. FAA AC No. 150/5345-46 (current issue in effect) “SPECIFICATION FOR RUNWAY AND TAXIWAY LIGHT FIXTURES”
- H. FAA AC No. 150/5345-47 (current issue in effect) “SPECIFICATION FOR SERIES TO SERIES ISOLATION TRANSFORMERS FOR AIRPORT LIGHTING SYSTEMS”.
- I. FAA AC No. 150/5345-53 “AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM” (current issue in effect) and AC 150/5345-53D, AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM Appendix 3 Addendum (current issue in effect).

- J. FAA AC No. 150/5370-2 (current issue in effect) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION.
- K. NFPA 70 – National Electrical Code (most current issue in force).
- L. NFPA 70E – Standard for Electrical Safety in the Workplace
- M. OSHA 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures
- N. UL Standard 6 – Rigid Metal Conduit.
- O. UL Standard 514B – Conduit, Tubing and Cable Fittings.

125-1.7 SHOP DRAWINGS. The Contractor shall furnish shop drawings for approval before ordering equipment and/or materials. Shop drawings are required for airfield lighting equipment and materials to be used on the project. **Shop drawings shall be clear and legible. Copies that are illegible will be rejected.** Contractor shall submit sufficient copies of shop drawings to meet the needs of his personnel, sub-contractor personnel, and equipment suppliers plus 4 copies to be retained by the Project Engineer. Shop drawings shall include the following information:

- A. **Certification of compliance with the AIP (Airport Improvement Program) Buy American Preferences for all materials and equipment. Do not submit ARRA (American Recovery and Reinvestment Act) certification as a substitute for certification of compliance with the AIP Buy American Preferences. Do not submit NAFTA (North American Free Trade Agreement) certification as a substitute for certification of compliance with the AIP Buy American Preferences. Shop drawings submitted without certification of compliance with the Airport Improvement Program Buy American Preferences or without certification of manufacture in the United States of America in accordance with the AIP Buy American Requirements will be rejected. See the FAA website at: http://www.faa.gov/airports/aip/buy_american/ for more information on the AIP Buy American Preferences requirements. FAA approved equipment that is on the FAA Buy American Conformance List or the list of Nationwide Buy American Waivers Issued by the FAA complies with the AIP Buy American Preferences and will not require additional waiver paperwork for AIP projects. See the FAA website at: http://www.faa.gov/airports/aip/buy_american/ for a list of Nationwide Buy American Waivers Issued by the FAA.**
- B. In order to expedite the shop drawing review, inspection and/or testing of materials and equipment, the Contractor shall furnish complete statements to the Project Engineer as to the

origin and manufacturer of all materials and equipment to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials and equipment.

- C. Illinois Department of Transportation Division of Aeronautics requires the following: ***“Under the FAA Buy American Preference, the contractor is required to submit certification that assures only domestic steel, domestic materials and domestic manufactured products are used. The Buy American statement must come from the producer, not the supplier. Producer verification must state that the items are produced in the United States and are made from 100% domestic materials. Statements that solely refer to the “Buy American Act” or “ARRA” or any federal purchasing act other than Title 49 United States Code (USC), Section 50101 will be rejected. Producers may use the Illinois Department of Transportation Domestic Material Compliance Certification Form AER 25 to satisfy this requirement.”***
- D. Cut sheets with part number and specifications each taxi guidance sign. Include cut sheets with part numbers and dimensions for base cans, transformer cans, cover plates, transformers, and associated components for each taxi guidance sign.
- E. Concrete mix design.
- F. Provide cut sheets with manufacturer’s name, catalog number, dimensions, material and UL listing for each type and size ground rod. Include certification of 100% domestic steel for ground rods. Include cut sheets for exothermic weld connections, ground lugs, and ground wire.
- G. Provide cut sheets for all types of conduit used with the airfield light fixtures and/or taxi guidance signs (for example galvanized rigid steel conduit). Include certification that steel conduits are made with 100 percent domestic steel.

EQUIPMENT AND MATERIALS

125-2.1 GENERAL. Add the following to this section:

- “D. The proposed taxiway lights shall be Type L 861T(L), with LED type illumination and blue lenses. All lights shall have an overall height of 24 in. All of the above lights shall be manufactured in accordance to FAA Specification AC No. 150/5345-46 (current issue in effect) and shall be FAA approved and in compliance with the Airport Improvement Program Buy American Preference Requirements. Medium Intensity Airfield Lights with LED (Light Emitting Diode) illumination shall also conform to the applicable requirements of FAA Engineering Brief No. 67D Light Sources Other Than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures. **See 125-2.18 SPARE PARTS for spare part requirements.**

- E. Item AR125921 Replace Stake Mounted Light and Item AR125922 Replace Base Mounted Light shall be the respective per each unit cost to replace each respective existing incandescent/quartz taxiway edge light noted on the Plans with a new Type L-861T(L) Medium Intensity Taxiway Light with LED (Light Emitting Diode) illumination with mounting hardware, and connectors. The existing series isolation transformers, mounting stakes, baseplates, and light bases shall be reused with the replacement light fixtures. Provide new cable connectors where applicable to accommodate the light fixture replacements. All lights shall have an overall height of 24 inches. All of the above lights shall be manufactured in accordance to FAA Specification AC No. 150/5345-46 (current issue in effect) and shall be FAA approved and in compliance with the Airport Improvement Program Buy American Preference Requirements. Medium Intensity Taxiway Lights with LED (Light Emitting Diode) illumination shall conform to the applicable requirements of FAA Engineering Brief No. 67D Light Sources Other Than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures. This item shall include all equipment, materials, installation, labor, tools, testing, and incidental to replace the designated taxiway edge lights with new LED taxiway edge lights in order to provide a complete and operational taxiway lighting system for the respective taxiway.
- F. Where non-metallic light fixtures or plastic couplings are proposed the Contractor will be responsible to furnish all grounding connectors, bonding jumpers, pipe grounding clamps, and accessories to maintain continuity of the ground path for the required light base ground in accordance with FAA AC 150/5340-30J DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, Chapter 12, Parts 12.6 and 12.7.
- G. The concrete used in the construction of these Items shall be in accordance with Item 610.”

125-2.4 CONDUIT. Add the following to this section:

“Rigid Steel Conduit and fittings shall be hot-dipped, galvanized, UL-listed, produced in accordance with UL Standard 6 – Rigid Metal Conduit and ANSI C80.1 – Rigid Steel Conduit, Zinc Coated. Couplings, connectors, and fittings for rigid steel conduit shall be threaded galvanized steel or galvanized malleable iron specifically designed and manufactured for the purpose. Fittings shall conform to ANSI C80.4 – Fittings Rigid Metal Conduit and EMT. Set screw type fittings are not acceptable. Galvanized rigid steel conduit shall be manufactured in the United States of America produced from 100 percent domestic steel.”

125-2.7 ISOLATION TRANSFORMERS. Add the following to this section:

“Series circuit isolation transformers for the runway or taxiway edge lights and taxi guidance signs shall be manufactured to FAA Specification AC 150/5345-47C (or current edition in effect) and shall be FAA-approved (ETL-Certified). Series circuit transformer shall be properly sized for the respective runway or taxiway edge lights or taxi guidance signs and shall be as recommended by the respective runway or taxiway edge lights manufacturer or respective taxi guidance sign manufacturer. Confirm proper transformer

selection and sizing with the respective runway or taxiway edge lights manufacturer, and the respective taxi guidance sign manufacturer.”

125-2.8 LIGHT CANS. Add the following to this section:

“Each light base can and/or splice can shall include internal and external ground lugs. Cans shall be the size and depth as detailed on the Plans. L-867 splice cans shall have galvanized steel covers, 3/8 in. thick, with stainless steel bolts. Lids for splice cans containing high voltage airfield lighting cables shall include minimum 1/2-inch high lettering labeled “DANGER HIGH VOLTAGE KEEP OUT” to comply with National Electrical Code Article 300.45 “Warning Signs” and National Electrical Code Article 314.71(E) “Suitable Covers”. This will need to be coordinated with the splice can manufacturer. Lids for splice cans containing low voltage cables (rated 600 Volts and below) will be acceptable to use blank covers.”

Add the following:

125-2.11 AIRFIELD SIGNS. Add the following to this section:

“The proposed taxi guidance signs shall conform to Advisory Circular 150/5345-44 (current issue in effect) and be FAA-approved for Type L-858(L) Taxiway and Runway Signs. The signs shall be Size 1, 18-in. sign face with a 12-in. legend; Style 2, powered from a 4.8 to 6.6 amp series lighting circuit; Class 2, for operation from -40°F to 131°F; Mode 2, to withstand wind loads of 200 M.P.H., base-mounted, double-sided, as specified on the Plans.

The signs shall read as described on the Construction Plans. The proposed taxi guidance signs shall have LED (Light Emitting Diode) type illumination. The proposed taxi guidance signs shall be Type L-858-Y(L) direction, destination, and boundary signs (black legend on yellow background); Type L-858-R(L) mandatory instruction sign (black outline on outside edge of white legend on red background); and Type L-858-L(L) location sign (yellow legend and border on black background).

Taxi Guidance Signs with LED (Light Emitting Diode) illumination shall conform to the applicable requirements of FAA Engineering Brief No. 67D Light Sources Other Than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures.

The proposed taxi guidance sign replacement sign panels shall conform to 150/5345 44 (respective issue in force as identified in AC 150/5345-53D, AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM Appendix 3 Addendum) and be FAA-approved. Existing lighted taxi guidance signs in the respective work areas on the Airport are Standard Signs Inc., Lumacurve. To maintain the ETL-Intertek FAA approval rating of these respective signs, the replacement panels shall be furnished by the Original Equipment Manufacturer; Standard Signs Inc., Lumacurve. Sign panels that void the ETL-Intertek FAA approval rating of these respective signs will not be acceptable. Contractor shall field verify existing signs to determine size and legends for replacement panels. Contractor shall confirm the replacement panels are correct in color, description, and not damaged. Any unacceptable sign panel shall be returned to the manufacturer to be replaced.

The concrete used in the construction of these Items shall be in accordance with Item 610.”

125-2.14 IDENTIFICATION TAGS. Identification tags shall be attached to each airfield light fixture. Where shown on the Plans provide new identification tags for existing fixtures. The tag shall be of the type and with the lettering shown on the Plans. The cost of furnishing and installing these tags shall be included in the unit price for the fixtures and no additional compensation will be allowed.

125-2.15 ANTI-SEIZE COMPOUND. Prior to installing the proposed airfield lights, the Contractor will apply an oxide-inhibiting, anti-seizing compound to all screws, nuts, breakable coupling, and all places where metal comes into contact with metal.

125-2.16 STAINLESS STEEL BOLTS. All base plate-mounting bolts and stake-mounting bolts shall be stainless steel.

125-2.17 GROUND RODS. **Ground rods shall be 3/4-inch diameter by 10-foot long UL listed Copper clad with 10 mils (minimum) Copper coating.** Ground rods shall be manufactured in the United States of America from 100 percent domestic steel to comply with the requirements of the Airport Improvement Program Buy American Preferences requirements and the Steel Products Procurement Act.

125-2.18 SPARE PARTS. Spare parts for airport visual aids are allowable in accordance with the requirements of FAA Order 5100.38D “Airport Improvement Program Handbook” and the guidelines in FAA AC No. 150/5340-26C “Maintenance of Airport Visual Aid Facilities”. Provide the following spare parts for the airport visual aid/airfield lighting system:

- 8 spare L861T(L) taxiway edge lights corresponding to the respective fixtures furnished. Include mounting hardware, mounting stakes, and transformers for each spare light fixture.

Spare parts for the airport visual aid/airfield lighting system will be considered incidental to the respective airfield lighting system pay items and no additional compensation will be allowed.

CONSTRUCTION METHODS

125-3.1 GENERAL. Add the following to this section:

“The Contractor shall furnish and install all equipment and electrical materials necessary for complete and operational installation of the airfield lighting systems as shown on the Plans and detailed herein. The complete installation and wiring shall be done in a neat, workmanlike manner. All electrical work shall comply with the requirements of the NFPA 70 - National Electrical Code (NEC) most current issue in force and the applicable Federal Aviation Administration standards, orders, and advisory circulars. Equipment and materials shall be installed in conformance with the respective manufacturer’s directions and recommendations for the respective application. Any installations which void the UL

listing, Intertek Testing Services verification/ETL listing, (or other third party listing), and/or the manufacturer's warranty of a device will not be permitted.

- A. Keep all work, power outages, and/or shut down of existing systems coordinated with the Airport Manager and the Resident Engineer/Resident Technician. Any shutdown of existing systems shall be scheduled with and approved by the Airport Manager prior to shutdown. Once shut down, the circuits shall be labeled as such to prevent accidental energizing of the respective circuits. All personnel shall follow U.S. Department of Labor Occupational Safety & Health Administration (OSHA) 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures including, but not limited to, 29 CFR section 1910.147 The Control of Hazardous Energy (lockout/tagout).
- B. Examine the site to determine the extent of the work. Contractor shall field verify existing site conditions.
- C. Verify respective circuits and power sources prior to removing, disconnecting, relocating, installing, connecting, or working on the respective airfield lighting, taxi sign, NAVAID, or other device. Identify each respective circuit prior to performing work on that circuit.
- D. Install taxi guidance signs and other airfield lighting devices in accordance with the details shown on the Construction Plans.
- E. New 1/C #8 AWG FAA L-824 5,000 Volt cable shall be furnished and installed in duct or unit duct from each respective light on either side of the proposed guidance sign in order to place the new sign into the lighting circuit. The cable will be paid for under Item 108. Provide sufficient slack cable at each splice/transformer can to perform cable splices outside of the can.
- F. Locate existing underground utilities, cables and lines. The location, size, and type of material of existing underground and/or aboveground utilities indicated on the Plans are not represented as being accurate, sufficient, or complete. Neither the Owner nor the Engineer assumes any responsibility whatsoever in respect to the accuracy, completeness, or sufficiency of the information. There is no guarantee, either expressed or implied, that the locations, size, and type of material of existing underground utilities indicated are representative of those to be encountered in the construction. It shall be the Contractor's responsibility to determine the actual location of all such facilities, including service connections to underground utilities. Prior to construction, the Contractor shall notify the utility companies of his operational plans, and shall obtain, from the respective utility companies, detailed information and assistance relative to the location of their facilities and the working schedule of the companies for removal or adjustment, where required. In the event an unexpected utility interference is encountered during construction, the Contractor shall immediately

notify the utility company of jurisdiction. The Owner's Representative and/or the Resident Engineer/Technician shall also be immediately notified. Any damage to such mains and services shall be restored to service at once and paid for by the Contractor at no additional cost to the Contract. All utility cables and lines shall be located by the respective utility. Also coordinate work with all aboveground utilities.

- G. Identify, secure, and place any above ground temporary wiring in conduit to prevent electrocution and fire ignition sources in conformance with the requirements of FAA AC 150/5370-2G, Part 2.18.3 "Lighting and Visual NAVAIDs". All temporary installations shall comply with National Electrical Code Article 590 – "Temporary Installations."
- H. Grounding work and modifications shall not be performed during a thunderstorm or when a thunderstorm is predicted in the area. Grounding for airfield lights and taxi signs shall be as detailed on the Plans and as specified herein.
- I. Homerun cables for a respective circuit that are installed in conduit or duct shall be run together in the same raceway or duct.
- J. The respective personnel performing airfield lighting work, vault work, and/or test shall be familiar with, and qualified to work on 5000 volt airfield lighting series circuits, constant current regulators and associated airport electrical vault equipment.
- K. FAA requires that every airfield lighting cable splicer shall be qualified in making cable splices and terminations on cables rated at and/or above 5000 Volts AC and shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.
- L. Obey and comply with the applicable requirements of NFPA 70E – Standard for Electrical Safety in the Workplace.
- M. Other construction projects might be in progress on the Airport at the same time as this project. The Contractor will be required to cooperate with all other contractors and the Airport Manager in the coordination of the work.
- N. The Contractor shall comply with the requirements of FAA AC No. 150/5370-2 (current issue in effect) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- O. In the event a conflict is determined with respect to manufacturer installation instructions, National Electrical Code, and/or the Contract Documents, contact the Project Engineer for further direction.

- P. Sign replacement panels (for existing taxi guidance signs) shall be installed in accordance with the respective sign manufacturer's instructions and as detailed on the Plans.
- Q. Existing ducts and cables associated with airfield guidance sign removals shall be abandoned in place unless it conflicts with the installation of the airfield light, sign, duct, cable, handhole, manhole, site work, pavement or other work, then it shall be disconnected, removed, and disposed of off the site at no additional cost to the Contract. Contractor may remove abandoned cables at no additional cost to the Contract and shall have the salvage rights to abandoned cables.
- R. Obtaining the required borrow material from an offsite borrow, placing the borrow material, grading, seeding, and mulching the disturbed areas will be considered as an Incidental Item to the proposed/relocated lights, splice cans, and/or removal/relocation work and no additional compensation will be allowed.
- S. Requirements of FAA AC 150/5340-30J, Paragraph 1.6 it notes *"Do not use the high voltage series lighting circuit to power devices that are not certified per AC 150/5345-53, Airport Lighting Equipment Certification Program, listed in Appendix 3, Addendum. Using non-certified devices can result in a poor system power factor resulting in unexpected constant current regulator (CCR) shutdowns and lighting circuit start-up problems."*
- T. When a respective runway is closed the runway lighting and Navaids for that runway shall be shut off. Keep respective Navaids active during times when respective runway is open. Navaids receiving maintenance shall be shut off until operating properly.
- U. Per the requirements of FAA AC 150/5340-26C, Chapter 3, Section 3.6.6 Use of Original Equipment Manufacturer (OEM) Part, it notes the following: *"The use of non-OEM parts or lamps in FAA approved equipment is strongly discouraged. The FAA has strict specifications for approval of all airport lighting equipment and use of non-OEM parts or lamps in such equipment or systems can render the equipment to be functionally non-FAA approved. This could possibly lead to serious liability consequences in case of an aircraft incident at an airport following these practices. In the case of runway and taxiway lighting fixtures, the use of a generic, non-approved lamp can render the photometric output of the fixture out of specification and adversely affect the safety of low visibility operations."*
- V. A slack of three (3') feet, minimum, plus depth of base can (if applicable), shall be provided in the primary cable at each transformer/connector termination. At stake-mounted lights, the slack shall be loosely coiled immediately below the isolation transformer. There shall be no additional payment for cable slack and therefore the

quantity of proposed cable slack has not been included in the respective cable pay items.

- W. Provisions shall be made for the temporary wiring of the affected circuits to insure that the Airport will maintain all runway and taxiway lighting capabilities for active runways and taxiways. All temporary wiring will be considered incidental to the associated work for which it is necessary and no additional compensation will be allowed.”

Add the following:

125-3.4 IDENTIFICATION TAGS. The Contractor will place updated light identification number tags on ALL of the proposed and/or relocated airfield lights as detailed on the Plans. Existing light identification number tags may be reused and/or relocated for relocated and existing airfield light fixtures. The correct light identification numbers are shown on the Construction Plans. The cost to provide and install the identification number tags will be considered as an incidental item to the new and/or relocated airfield lights and no additional compensation will be allowed.

125-3.5 GROUNDING FOR AIRFIELD LIGHTS AND TAXI GUIDANCE SIGNS. Furnish and install a ground rod at each L-867 transformer base/light can and at each stake-mounted light fixture. Grounding for Runway Lights, Taxiway Lights, and Lighted Taxi Guidance Signs shall be as detailed on the Plans and as specified herein. A ground rod must be installed at each light fixture and taxi guidance sign. The purpose of the light base ground is to provide a degree of protection for maintenance personnel from possible contact with an energized light base or mounting stake that may result from a shorted power cable or isolation transformer. A light base ground shall be installed at each transformer base/light can associated with runway lights, taxiway lights, and lighted taxi guidance signs. A light base ground shall also be installed at each stake-mounted light fixture. A light base ground shall be installed and connected to the metal frame of each taxi guidance sign as detailed on the Plans and in accordance with the respective taxi guidance sign manufacturer recommendations. The light base ground shall be a #6 AWG bare copper conductor bonded to the ground lug on the respective L-867 transformer base/light can or mounting stake and a **3/4-inch diameter by 10-foot long (minimum)**, UL-listed, copper-clad ground rod. Connections to ground lugs on the L-867 transformer base/light can or mounting stake shall be with a UL-listed grounding connector. Connections to ground rods shall be made with exothermic-weld type connectors, Cadweld by Pentair Erico Products, Inc., Thermoweld by Continental Industries, Inc., Ultraweld by Harger, or approved equal. Exothermic-weld connections shall be installed in conformance with the respective manufacturer's directions using molds, as required for each respective application. Bolted connections will not be permitted at ground rods. Top of ground rods shall be buried 12 in. minimum below grade, unless noted deeper on the Plans. **For each airfield light fixture and taxi guidance sign the Contractor shall test the made electrode ground system with an instrument specifically designed for testing ground systems. Test results shall be recorded for each airfield light fixture, each taxi guidance sign installation, and each splice can. If ground resistance exceeds 25 Ohms, contact the Project Engineer for further direction.** Also refer to EOR-47643 for additional information on grounding requirements where applicable. Copies of ground system test results shall be furnished to the Resident Engineer/Resident Technician and the Project Engineer.

For base mounted light fixtures the light fixtures must be bonded to the light base internal ground lug via a #6 AWG stranded copper wire rated for 600 Volts with Green XHHW insulation or a braided ground strap of equivalent current rating. The ground wire length must be sufficient to allow the removal of the light fixture from the light base for routine maintenance. See the light fixture manufacturer's instructions for proper methods of attaching a bonding wire.

125-3.7 TESTING AIRFIELD LIGHTING SYSTEMS. Prior to beginning airfield lighting modifications and/or cable installation all existing series circuit cables shall be Megger tested with an insulation resistance tester and recorded at the vault. All existing series circuit cable loops shall have the resistance measured with an Ohmmeter and recorded for each circuit at the vault. Each constant current regulator shall be tested with results recorded. Provide a True RMS Ammeter for current measurements. Copies of test results shall be provided to the Resident Engineer/Technician and the respective Project Engineer within 5 business days of conducting the tests. See the testing forms in Appendix A.

After airfield lighting modifications, additions, and/or upgrades have been completed, series circuit cables shall be Megger tested with an insulation resistance tester and recorded at the vault. All series circuit cable loops shall have the resistance measured with an Ohmmeter and recorded for each circuit at the vault. Each constant current regulator shall be tested with results recorded. Provide a True RMS Ammeter for current measurements. Copies of test results shall be provided to the Resident Engineer/Technician and the respective Project Engineer within 5 business days of conducting the tests. See the testing forms in Appendix A.

Insulation resistance testing equipment for use with 5,000 Volt series circuit cables shall use an insulation resistance tester capable of testing the cables at 5,000 Volts. Older series circuit cables and/or cables in poor condition may require the test voltage to be performed at a voltage lower than 5,000 Volts (Example 1,000 Volts, 500 Volts, or less than 500 Volts). The respective test voltage shall be recorded for each cable insulation resistance test result.

Insulation resistance testing equipment for use with 600 Volt rated cables shall use a 500 Volt insulation resistance tester. The respective test voltage shall be recorded for each cable insulation resistance test result.

It is recommended to use the same insulation resistance test equipment throughout the project to ensure reliable comparative readings at the beginning of the project and at the completion of the project.

The Contractor is responsible to employ qualified personnel that are capable of properly conducting the required tests to the satisfaction of the Project Engineer. Tests that provide unsatisfactory results shall be reviewed to determine the possible cause of unsatisfactory results, corrections shall be made, and the tests shall be conducted again.

See Appendix A – “Constant Current Regulator and Cable Testing Forms” for additional information on testing requirements for airfield lighting systems. All testing will be considered incidental to the respective work items and no additional compensation will be allowed.

METHOD OF MEASUREMENT

125-4.1 Add the following:

“Ground resistance tests for the made electrode ground system at each airfield light fixture will be considered incidental to the respective airfield light fixture and no additional compensation will be allowed.

Testing the airfield lighting systems and the associated constant current regulator tests and cable tests will be considered incidental to the Contract and no additional compensation will be allowed.

Spare parts for the airport visual aid/airfield lighting system will be considered incidental to the respective airfield lighting system pay items and no additional compensation will be allowed.

Conduits, conduit nipples, conduit couplings, and other conduit fittings included with splice cans, junction structures, Navaid installations, base mounted airfield light fixtures, and/or other airfield fixtures, will be considered incidental to the respective item for which they are installed, and no additional compensation will be made.

Ground rods, grounding electrode conductors, connections, and associated grounding work included with airfield lights and/or taxi guidance signs will be considered incidental to the respective item for which they are installed and no additional compensation will be made.

All temporary wiring will be considered incidental to the associated work for which it is necessary and no additional compensation will be allowed.

All cable and duct removals associated with airfield lighting removals, relocations, and /or cable or duct replacements will be considered incidental to the associated work and no additional compensation will be allowed.

The quantity of taxi guidance signs to be paid for under this item shall be the number of each type installed as completed units in place, ready for operation, and accepted by the Engineer. The transformer can associated with the taxi guidance sign and slack cable to perform cable connections outside of the transformer can, will be considered incidental to the respective taxi guidance sign and no additional compensation will be allowed. Ground resistance tests for the made electrode ground system at each taxi guidance sign will be considered incidental to the respective taxi guidance sign and no additional compensation will be allowed.

The quantity of taxi sign panel replacements to be paid for shall be the number of each size panel that is removed and replaced with new sign panel as detailed on the Plans, installed as completed units in place, ready for operation, and accepted by the Engineer.

The quantity of taxiway edge light replacements to be paid for under Item AR125921 Replace Stake Mounted Light shall be the number of existing incandescent taxiway edge lights that are removed and replaced with new L-861(T) LED taxiway light fixtures,

mounting hardware, and secondary connectors installed as completed units in place, ready for operation, and accepted by the Engineer.

The quantity of taxiway edge light replacements to be paid for under Item AR125922 Replace Base Mounted Light shall be the number of existing incandescent taxiway edge lights that are removed and replaced with new L-861(T) LED taxiway light fixtures, mounting hardware, and secondary connectors installed as completed units in place, ready for operation, and accepted by the Engineer.”

BASIS OF PAYMENT

125-5.1 Add the following:

“Payment will be made at the contract price for each completed airfield light fixture, each completed taxi guidance sign, each replacement taxiway edge light, and each replacement sign panel installed in place by the Contractor and accepted by the Resident Engineer/Resident Technician. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials; and for all excavation, backfilling, and restoration; and for all labor, testing, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

- Item AR125410 MITL-Stake Mounted – per each.
- Item AR125415 MITL-Base Mounted – per each.
- Item AR125443 Taxi Guidance Sign, 3 Character – per each.
- Item AR125921 Replace Stake Mounted Light – per each.
- Item AR125922 Replace Base Mounted Light – per each.
- Item AR125932 Replace Sign Panel – per each.

END OF ITEM 125

ITEM 800476 REMOVE AIRFIELD LIGHTING

DESCRIPTION

800476-1.1 This Item of work shall consist of the removal of base-and stake-mounted airfield lighting, removal of splice/transformer cans, and the removal of other airfield lighting units in accordance with the details in the Construction Plans and in accordance with these Special Provisions.

800476-1.2 REFERENCES. Note: where FAA Advisory Circulars are referenced they shall be the current issue or issues in effect.

- A. FAA AC No. 150/5370-2G “Operational Safety on Airports During Construction” (current issue in effect).
- B. NFPA 70E – Standard for Electrical Safety in the Workplace
- C. OSHA 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures.

CONSTRUCTION METHODS

800476-2.1 GENERAL

- A. Contractor shall examine the site to determine the extent of the work.
- B. Contractor shall coordinate work and any power outages with the Airport Manager and the Resident Engineer/Resident Technician. Any shutdown of existing systems shall be scheduled with and approved by the Airport Manager prior to shutdown. Once shut down, the circuits shall be labeled as such to prevent accidental energizing of the respective circuits. All personnel shall follow U.S. Department of Labor Occupational Safety & Health Administration (OSHA) 29 CFR Part 1910 Occupational Safety and Health Standards for electrical safety and lockout/tagout procedures including, but not limited to, 29 CFR section 1910.147 The Control of Hazardous Energy (lockout/tagout).
- C. Contractor shall examine the site to determine the extent of the work. Contractor shall field verify existing site conditions. Contractor shall field verify the respective circuits and power sources prior to removing, disconnecting, relocating, working on, or connecting the respective airfield lighting, taxi sign, NAVAID, circuit, Vault equipment, or other device.
- D. Contractor shall comply with the requirements of FAA AC No. 150/5370-2G “Operational Safety on Airports During Construction” (current issue in effect).

- E. Contractor shall comply with the applicable requirements of NFPA 70E – Standard for Electrical Safety in the Workplace.
- F. Power for each respective airfield lighting system and/or electrical junction structure shall be disconnected at the respective power source prior to removal. Contractor shall field verify to confirm the respective power source for each respective airfield lighting system or other device. The airfield lighting appears to have power from multiple sources.
- G. Where detailed herein and/or to accommodate maintaining operation of the airfield lighting system, the Contractor shall furnish jumper cables and connector kits as required to place the airfield lighting back into operation. All temporary installations shall comply with National Electrical Code Article 590 – “Temporary Installations.” The Contractor shall secure, identify, and place temporary exposed wiring in conduit, duct, or unit duct to prevent electrocution and fire ignition sources in conformance with the requirements of FAA AC 150/5370-2G “Operational Safety on Airports During Construction”, Part 2.18.3 “Lighting and Visual NAVAIDS”.
- H. Existing airfield lighting cables associated with airfield lighting to be removed shall be abandoned in place unless it conflicts with new work and then it shall be removed at no additional cost to the Contact. If the Contractor elects to salvage the cable within the circuit to be removed, shown in the Construction Plans as cable to be abandoned, any cost associated with removal of the cable shall be considered incidental to the Contract and no additional compensation will be allowed.
- I. Every airfield lighting cable splicer shall be qualified in making cable splices and terminations on cables rated at and/or above 5000 Volts AC. The Contractor shall submit to the Project Engineer proof of the qualifications of each proposed cable splicer for the cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

800476-2.2 REMOVAL OF AIRFIELD LIGHTS. The existing airfield lights, and/or splice cans designated for removal shall be removed in their entirety. The Contractor shall remove the existing lights and/or signs including mounting stakes, concrete bases, base/transformer cans, foundations, and transformers. The electrical wire will be disconnected from each light and placed underground at a minimum depth of 18-in. If the Contractor elects to salvage the cable within the circuit of the lights to be removed, shown in the Construction Plans as cable to be abandoned, any cost associated with removal of the cable shall be considered incidental to the Contract and no additional compensation will be allowed. The existing lights and transformers shall be turned over to the Airport Manager. The existing mounting stakes and light bases shall be removed and disposed of off the Airport site in a legal manner. Any materials not salvaged by the Airport, shall be disposed of off the airport site, in a legal manner, at the Contractor's own expense. The stake mounted lights, concrete base mounted lights, and/or splice cans shall be removed, and earth material will be placed in the hole made from the base and/or foundation removal. The disturbed area shall be seeded and mulched to establish a stand of grass. The seeding and mulching will

be considered as an incidental item to the sign removal and/or light removal and no additional compensation will be allowed.

Obtaining the required borrow material from an offsite borrow, placing the borrow material, grading, seeding, and mulching the disturbed areas will be considered as an Incidental Item to the removal work and no additional compensation will be allowed.

800476-2.3 REMOVAL OF ELECTRICAL JUNCTION STRUCTURES. Removal of electrical junction structures shall include L-867 base cans, splice cans, handholes, and manholes. The existing electrical junction structures designated for removal shall be removed in their entirety. Any materials not salvaged by the Airport, shall be disposed of off the airport site, in a legal manner, at the Contractor's own expense. The existing junction structures, bases, foundations, handholes, manholes, and associated materials designated for removal shall be disposed of off the airport site, in a legal manner, at the Contractor's own expense. Earth material will be placed in the hole made from respective removal. The disturbed area shall be restored.

800476-2.4 RESTORATION. All turf areas disturbed by the removal of airfield lighting, taxi signs, Nav aids, junction structures, handholes, manholes, splice cans and associated work shall be restored, graded, and seeded in accordance with Item 901 Seeding and Item 908. All areas disturbed by work shall be restored to its original condition. The hole left from the removal of each base/foundation shall be filled with earth material. The earth material shall be compacted to prevent any future settlement. The earth material shall be obtained from off the Airport site. The restoration shall include any necessary topsoiling, fertilizing, liming, seeding, or mulching, as shown on the plans. All such work shall be performed to establish a stand of grass. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. Restoration shall be considered incidental to the pay item of which it is a component part.

BASIS OF PAYMENT

800476-3.1 This item of work will be paid for at the contract unit price bid price per lump sum for removal of the existing airfield lighting. This price and payment shall constitute full compensation for field verification of existing site conditions and power sources, disconnecting the respective power sources, removing the base-and stake-mounted airfield lights, removal of splice cans, removal of junction structures, handholes, and/or manholes, and removal of associated mounting stakes, bases, foundations, cables, ducts, splice cans, and transformers; for all excavating and backfilling; for furnishing all earth material; and for furnishing all coordination, labor, tools, equipment, and incidentals necessary to complete this item of work. Salvageable materials shall be turned over to the Airport. Any materials not salvaged by the Airport shall be legally disposed of off the Airport site by the Contractor at no additional cost to the Contract.

Payment will be made under:

Item AR800476 Remove Airfield Lighting - per lump sum

END OF ITEM AR800476

Special Provisions
EXTEND TAXIWAY B TO RUNWAY 9 TURNAROUND
Litchfield Municipal Airport

Illinois Project No.: 3LF-4819
AIP Project No.: 3-17-SBGP-144/156/162
LI039

APPENDIX A

CONSTANT CURRENT REGULATOR AND CABLE TESTING FORMS

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

Prior to beginning airfield lighting modifications, cable installation, or any other work that might possibly affect airfield lighting circuits, all existing series circuit cables shall be Megger tested with an insulation resistance tester and recorded at the respective vault. The respective series circuit cable loops shall have the resistance measured with an Ohmmeter and recorded for each circuit at the vault. Each constant current regulator shall be tested with results recorded. Record the date for the respective tests.

___ Record the manufacture and model number of the insulation resistance tester used for the Megger tests. Note: it is recommended to use the same insulation resistance tester again after airfield lighting modifications, additions, and/or upgrades have been completed.

___ Record the manufacture and model number of the Ohmmeter used to measure resistance of each series circuit cable loop. Note: it is recommended to use the same Ohmmeter again after airfield lighting modifications, additions, and/or upgrades have been completed.

___ Record the manufacture and model number of the Ammeter used to measure current. Note: it is recommended to use the same Ammeter again after airfield lighting modifications, additions, and/or upgrades have been completed.

___ Record personnel conducting tests.

___ Record personnel observing tests.

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

___ Conduct cable insulation resistance test (Megger test) and record Runway 9-27 series circuit cable loop at the vault.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Runway 9-27 series circuit cable			

___ Runway 9-27 series circuit cable loop shall have the resistance tested and recorded at the vault. Use an Ohmmeter and measure the resistance of the series circuit loop at the Vault.

Cable Under Test	Series Circuit Loop Resistance in Ohms
Runway 9-27 series circuit cable	

___ Conduct cable insulation resistance test (Megger test) and record Taxiway B series circuit cable loop at the vault.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Taxiway B series circuit cable			

___ Taxiway B series circuit cable loop shall have the resistance tested and recorded at the vault. Use an Ohmmeter and measure the resistance of the series circuit loop at the Vault.

Cable Under Test	Series Circuit Loop Resistance in Ohms
Taxiway B series circuit cable	

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

___ Conduct cable insulation resistance test (Megger test) and record Runway 18-36 and Taxiway series circuit cable loop at the vault.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Runway 18-36 and Taxiway series circuit cable			

___ Runway 18-36 and Taxiway series circuit cable loop shall have the resistance tested and recorded at the vault. Use an Ohmmeter and measure the resistance of the series circuit loop at the Vault.

Cable Under Test	Series Circuit Loop Resistance in Ohms
Runway 18-36 and Taxiway series circuit cable	

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

Tests for constant current regulators shall include the following.

1. Test each brightness step and measure and record the input current on Phase A and Phase B for the 240 VAC branch circuit to each CCR. Note: Provide a True RMS Ammeter for current measurements.
2. Test each brightness step and record the CCR output current to the series circuit lighting circuit. Each CCR should be equipped with an output current meter. In the event the output current meter is not working properly or is out of calibration use a True RMS Ammeter for output current measurements and measure the current in the output series circuit conductor.
3. Test each brightness step and record the CCR output voltage for the series circuit lighting circuit. Each CCR should be equipped with an output voltage meter. Where the CCR does not include an output voltage meter, the output voltage measurements are not required. Do not use a 0 to 600 Volt voltmeter to measure voltage across the CCR output terminals due to safety concerns and high voltages at the CCR output.

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

__ Test Runway 9-27 CCR by Manual Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Runway 9-27 CCR in remote mode by L-854 Radio Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

Note: Provide a True RMS Ammeter for current measurements.

__ Test Taxiway B CCR by Manual Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Taxiway B CCR in remote mode by L-854 Radio Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

Note: Provide a True RMS Ammeter for current measurements.

__ Test Runway 18-36 and Taxiway CCR by Manual Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Runway 18-36 and Taxiway CCR in remote mode by L-854 Radio Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

After airfield lighting modifications, additions, and/or upgrades have been completed, series circuit cables shall be Megger tested with an insulation resistance tester and recorded at the vault. All series circuit cable loops shall have the resistance measured with an Ohmmeter and recorded for each circuit at the vault. Each constant current regulator shall be tested with results recorded. Record the date for the respective tests.

___ Record the manufacture and model number of the insulation resistance tester used for the Megger tests. Note: it is recommended to use the same insulation resistance tester again after airfield lighting modifications, additions, and/or upgrades have been completed.

___ Record the manufacture and model number of the Ohmmeter used to measure resistance of each series circuit cable loop. Note: it is recommended to use the same Ohmmeter again after airfield lighting modifications, additions, and/or upgrades have been completed.

___ Record the manufacture and model number of the Ammeter used to measure current.

___ Record personnel conducting tests.

___ Record personnel observing tests.

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

___ Conduct cable insulation resistance test (Megger test) and record Runway 9-27 series circuit cable loop at the vault.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Runway 9-27 series circuit cable			

___ Runway 9-27 series circuit cable loop shall have the resistance tested and recorded at the vault. Use an Ohmmeter and measure the resistance of the series circuit loop at the Vault.

Cable Under Test	Series Circuit Loop Resistance in Ohms
Runway 9-27 series circuit cable	

___ Conduct cable insulation resistance test (Megger test) and record Taxiway B series circuit cable loop at the vault.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Taxiway B series circuit cable			

___ Taxiway B series circuit cable loop shall have the resistance tested and recorded at the vault. Use an Ohmmeter and measure the resistance of the series circuit loop at the Vault.

Cable Under Test	Series Circuit Loop Resistance in Ohms
Taxiway B series circuit cable	

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

Tests for constant current regulators shall include the following.

1. Test each brightness step and measure and record the input current on Phase A and Phase B for the 240 VAC branch circuit to each CCR. Note: Provide a True RMS Ammeter for current measurements.
2. Test each brightness step and record the CCR output current to the series circuit lighting circuit. Each CCR should be equipped with an output current meter. In the event the output current meter is not working properly or is out of calibration use a True RMS Ammeter for output current measurements and measure the current in the output series circuit conductor.
3. Test each brightness step and record the CCR output voltage for the series circuit lighting circuit. Each CCR should be equipped with an output voltage meter. Where the CCR does not include an output voltage meter, the output voltage measurements are not required. Do not use a 0 to 600 Volt voltmeter to measure voltage across the CCR output terminals due to safety concerns and high voltages at the CCR output.

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

___ Conduct cable insulation resistance test (Megger test) and record Runway 18-36 and Taxiway series circuit cable loop at the vault.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Runway 18-36 and Taxiway series circuit cable			

___ Runway 18-36 and Taxiway series circuit cable loop shall have the resistance tested and recorded at the vault. Use an Ohmmeter and measure the resistance of the series circuit loop at the Vault.

Cable Under Test	Series Circuit Loop Resistance in Ohms
Runway 18-36 and Taxiway series circuit cable	

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

Note: Provide a True RMS Ammeter for current measurements.

___ After airfield lighting modifications, additions, and/or upgrades have been completed, test Runway 9-27 CCR by Manual Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

___ After airfield lighting modifications, additions, and/or upgrades have been completed, test Runway 9-27 CCR in remote mode by L-854 Radio Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

Note: Provide a True RMS Ammeter for current measurements.

__ After airfield lighting modifications, additions, and/or upgrades have been completed, test Taxiway B CCR by Manual Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ After airfield lighting modifications, additions, and/or upgrades have been completed, test Taxiway B CCR in remote mode by L-854 Radio Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

Engineering Firm Hanson Professional Services Inc.
Airport Name 3LF-Litchfield Municipal Airport
Project Extend Taxiway "B" to Runway End 9
Illinois Project 3LF-4819
Hanson Project 20A0040C
Date _____

TESTING FORMS

Note: Provide a True RMS Ammeter for current measurements.

__ After airfield lighting modifications, additions, and/or upgrades have been completed, test Runway 18-36 and Taxiway CCR by Manual Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ After airfield lighting modifications, additions, and/or upgrades have been completed, test Runway 18-36 and Taxiway CCR in remote mode by L-854 Radio Control and record input current and output current at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

APPENDIX B

AIRFIELD SAFETY CHECKLIST

	<u>ITEM</u>	<u>COMPLETED</u>	<u>REMARKS</u>
1.	Are all transition shoulders and tapes constructed and safe for aircraft operations?	_____	
2.	Have all Quality Assurance tests been properly conducted?	_____	
3.	Has all construction equipment, including lighting units, been removed to a remote storage location?	_____	
4.	Have all construction materials, which are to remain on site, been properly secured from dislodgement by wind or jet blast?	_____	
5.	Have all excavations been properly backfilled for safe aircraft operations?	_____	
6.	Has all construction debris been cleaned up and removed from the construction site to a safe disposal location?	_____	
7.	Have all obstruction lights and barricades been removed from areas which are to be opened to aircraft operations?	_____	
8.	Has all lighting and/or temporary lighting been returned to service and tested?	_____	
9.	Have all runway visual aids been returned to service and tested?	_____	
10.	Have proper NOTAM's been issued for the runway operating conditions?	_____	
11.	Have all pavement lips greater than 3 in. in height been removed?	_____	

APPENDIX C

IDOT-AERONAUTICS POLICY MEMORANDUMS

The following IDOT-Aeronautics policy memorandums can be found on the “Contractor Resources” section of the IDOT website, and are included for reference:

- Policy Memorandum (Aeronautics) 2003-1 Requirements for Laboratory, Testing, Quality Control, and Paving of Superpave HMA Concrete Mixtures for Airports (17 pages)
- Policy Memorandum (Aeronautics) 87-2 Density Acceptance of Bituminous Pavements (4 pages)
- Policy Memorandum (Aeronautics) 87-4 Determination of Bulk Specific Gravity (d) of Compacted Bituminous Mixes (3 pages)
- Policy Memorandum (Aeronautics) 96-3 Requirements for Quality Assurance on Projects with Bituminous Concrete Paving (3 pages)
- Policy Memorandum (Aeronautics) Comparison Samples (3 pages)
- Policy Memorandum (Aeronautics) 97-2 Pavement Marking Paint Acceptance (2 pages)

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

April 1, 2010

Springfield, Illinois

Number 2003-1

TO: CONTRACTORS

SUBJECT: REQUIREMENTS FOR LABORATORY, TESTING, QUALITY CONTROL, AND PAVING OF SUPERPAVE HMA CONCRETE MIXTURES FOR AIRPORTS

I. SCOPE

The purpose of this policy memorandum is to define to the Contractor the requirements concerning the laboratory, testing, Quality Control, and paving of HMA mixtures utilizing Superpave technology. References are made to the most recent issue of the Standard Specifications for Construction of Airports and to American Society for Testing and Materials (ASTM) testing methods. The Quality Assurance and acceptance responsibilities of the Resident Engineer are described in Policy Memorandum 96-3.

II. LABORATORY

The Contractor shall provide a laboratory located at the plant and approved by the Illinois Division of Aeronautics (IDA). The laboratory shall be of sufficient size and be furnished with the necessary equipment and supplies for adequately and safely performing the Contractor's Quality Control testing as well as the Resident Engineer's acceptance testing as described in Policy Memorandum 96-3.

The effective working area of the laboratory shall be a minimum of 600 square feet with a ceiling height of not less than 7.5 feet. Lighting shall be adequate to illuminate all working areas. It shall be equipped with heating and air conditioning units to maintain a temperature of 70° F ±5°F.

The laboratory shall have equipment that is in good working order and that meets the requirements set forth in the following ASTM test standards:

ASTM D 70	Test Method for Specific Gravity and Density of Semi-Solid Materials
ASTM C 117	Test Method for Materials Finer than 75 µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 136	Sieve or Screen Analysis of Fine and Coarse Aggregate
ASTM C 566	Total Moisture Content of Aggregate by Drying
ASTM D 75	Sampling Aggregates
ASTM D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
IDOT	Ignition Method for Determining Asphalt Content
ASTM D 2726	Bulk Specific Gravity of Compacted Bituminous Mixtures using Saturated Surface Dry Specimens

ASTM D 3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D 2950	Density of Bituminous Concrete in Place by Nuclear Method
ASTM D 4125	Asphalt Content of Bituminous Mixtures by Nuclear Method
ASTM C 127	Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate
ASTM C 128	Standard Test Method for Specific Gravity and Absorption of Fine Aggregate

The Asphalt Institute's *Superpave Mix Design, Superpave Series No. 2 (SP-2)*

The laboratory and equipment furnished by the Contractor shall be properly calibrated and maintained. The Contractor shall maintain a record of calibration results at the laboratory. The Engineer may inspect measuring and testing devices at any time to confirm both calibration and condition. If the Resident Engineer determines that the equipment is not within the limits of dimensions or calibration described in the appropriate test method, he may stop production until corrective action is taken. If laboratory equipment becomes inoperable or insufficient to keep up with mix production testing, the Contractor shall cease mix production until adequate and/or sufficient equipment is provided.

III. MIX DESIGN SUBMITTAL

Based upon data and test results submitted by the Contractor, the Illinois Division of Aeronautics Engineer of Construction & Materials shall issue the final Job Mix Formula (JMF) approval letter that concurs or rejects the Contractor's proposed JMF. The Contractor will be required to perform the sampling and laboratory testing and develop a complete mix design, according to the following guidelines: [Note: A testing summary chart can be found in Appendix B.]

- A. Material sources meeting the requirements of the contract shall be submitted in writing at or before the preconstruction conference (see BITUMINOUS WORKSHEET in Appendix A) in the following format:
 1. To: Steven J. Long, P.E., Acting Chief Engineer
Attn: Michael F. Wilhelm, P.E., Engineer of Construction & Materials
Division of Aeronautics
One Langhorne Bond Drive
Springfield, Illinois 62707
 2. Producer name and location of each aggregate
 3. Producer # for each aggregate (producers are assigned this number by IDOT Central Bureau of Materials)
 4. Material code for each aggregate
 5. Gradation and Quality designation for each aggregate (i.e. CA-11, etc.)
 6. Producer, producer #, and specific gravities of asphalt cement
 7. Performance Graded Binder 64-22 shall be used unless otherwise approved by the IDA Engineer of Construction & Materials.
- B. The Contractor shall obtain representative samples of each aggregate. The individual obtaining samples shall have successfully completed the IDOT Aggregate Technician Course under the

IDOT Division of Highways, QC/QA program. The sample size shall be approximately 280 lb. for each coarse aggregate, 150 lb. for each fine aggregate, 15 lb. for the mineral filler or collected dust, and 1 gallon of asphalt cement.

- C. The Contractor shall split the aggregate samples down and run gradation tests according to the testing methods referenced in Appendix B of this memorandum. The remaining aggregates shall be set aside for further Mix Design testing. The results of the gradation tests, along with the most recent stockpile gradations, shall be reported by fax to the IDA Engineer of Construction & Materials for engineering evaluation. If the gradation results are deemed non-representative or in any way unacceptable, new representative samples may be required at the direction of the IDA Engineer of Construction & Materials. Only composite gradations are required under this procedure.
- D. Based on the accepted gradation results, the Contractor will determine blend percentages in accordance with the contract specifications (see Section 401/403 – 3.2 JOB MIX FORMULA under Table 2) for each aggregate to be used in determining the Job Mix Formula, as well as mix temperature and asphalt content(s), and number of Gyration (N_{des}) for preparation of the Superpave Mix Design. The Contractor will verify the aggregate percentages, mix temperatures, asphalt content(s), and number of gyrations with the IDA Engineer of Construction & Materials before beginning any testing.
- E. After verification of the information from step D., the Contractor shall make specimens and perform the following tests at various asphalt contents in order to obtain the optimum mix design. [Note: Actual test designation is referenced in Appendix B of this memorandum.]

Tests

Maximum Specific Gravity -- G_{mm}

Bulk Specific Gravity -- G_{mb}

% air voids -- V_a

% VMA

VFA %

The JMF will be designed in accordance with TABLE 2 as modified in Section 401 – 3.2 or 403 – 3.2, depending on the type of mix being produced. Appendix C contains a copy of the TABLE 2 targets and ranges for the JMF.

- F. All technicians who will be performing mix design testing and plant sampling/testing shall have successfully completed the IDOT Division of Highways Bituminous Concrete Level 1 Technician Course “Bituminous Concrete Testing”. The Contractor may also provide a Gradation who has successfully completed the Department’s “Gradation Technician Course” to run gradation tests only under the supervision of a Bituminous Concrete Level 2 Technician.
- G. The mix design testing results and resulting optimal JMF shall be reported to the IDA Engineer of Construction & Materials with the following data included:
 - a) Aggregate & liquid asphalt material codes
 - b) Aggregate & liquid asphalt producer numbers, names, and locations
 - c) Aggregate Blend of each aggregate
 - d) Optimum Blend % for each sieve
 - e) AC Specific Gravity
 - f) Bulk Specific Gravity and Absorption for each aggregate
 - g) Summary of Superpave Design Data: AC % Mix, G_{mb} , G_{mm} , VMA, Voids (Total Mix), Voids Filled, V_{be} , P_{be} , P_{ba} , G_{se}
 - h) Optimum design data listing: AC % Mix, G_{mb} , G_{mm} , VMA, Voids (Total Mix), Voids Filled, G_{se} , G_{sb}
 - i) Percent of asphalt that any RAP will add to the mix

j) Graphs for the following: gradation on 0.45 Power Curve, AC vs. Voids (Total Mix), AC vs. Specific Gravities, AC vs. Voids Filled, AC vs. VMA

- H. The IDA Engineer of Construction & Materials shall generate and issue a concurrence or rejection of the Contractor's proposed Mix Design with the JMF for the manufacture of HMA mixtures based upon the Contractor's submitted testing and completed mix design results. The Contractor shall not be permitted to use the proposed HMA mix in production for the project until an approval letter is issued to the Contractor by the IDA Engineer of Construction & Materials, and the mix passes all test section requirements, when a test section is specified.
- I. The above procedure, III. MIX DESIGN SUBMITTAL, shall be repeated for each change in source or gradation of materials.

IV. MIX PRODUCTION TESTING

The Quality Control of the manufacture and placement of HMA mixtures is the responsibility of the Contractor. The Contractor shall perform or have performed the inspection and tests required to assure conformance to contract requirements. Quality Control includes the recognition of defects and their immediate correction. This may require increased testing, communication of test results to the plant or the job site, modification of operations, suspension of HMA production, rejection of material, or other actions as appropriate. The Resident Engineer shall be immediately notified of any failing tests and subsequent remedial action. Form AER M-14 shall be reported to the Engineer and Resident Engineer no later than the start of the next work day. In addition, AER M-9 and M-11 shall be given to the Resident Engineer daily. The Contractor shall provide a Quality Control (QC) Manager who will have overall responsibility and authority for Quality Control. This individual shall have successfully completed the IDOT Division of Highways HMA Concrete Level II Technician Course "HMA Proportioning and Mixture Evaluation." In addition to the QC Manager, the Contractor shall provide sufficient and qualified personnel to perform the required visual inspections, sampling, testing, and documentation in a timely manner. The following plant tests and documentation shall be required: [Note: A summary chart of testing can be found in Appendix B.]

- A. Minimum of one (1) complete hot bin or combined belt analysis per day of production or every 1,000 tons, whichever is more frequent.
- B. Minimum one (1) stockpile gradation for each aggregate and/or mineral filler per week when a batch plant is utilized. Minimum of one (1) gradation for each aggregate per day of production or every 1,000 tons when a drum plant is used, and one (1) gradation per week for mineral filler when a drum plant is used.
- C. A certification from the quarry for the total quantity of aggregate listing the source, gradation type, and quality designation of aggregate shipped. In lieu of a certification, the contractor may complete and submit an "Aggregate Certification of Compliance" form which may be obtained from IDA or found on the I.D.O.T. website.
- D. Original asphalt shipping tickets listing the source and type of asphalt shipped.

- E. One mix sample per 1,000 tons of mix. The sample shall be split in half. One half shall be reserved for testing by the Engineer. The other half shall be split and tested by the Contractor for Extraction, Gradation, Maximum Specific Gravity, and Air Void tests in accordance with the appropriate ASTM standard referenced herein. [See Appendix B.]
1. In place of the extraction test, the Contractor may provide the asphalt content by a calibrated ignition oven test using the IDOT Division of Highways' latest procedure. The correction (calibration) factor for aggregate type shall be clearly indicated in the reported test results.

From these tests, the Contractor shall interpret the test data and make necessary adjustments to the production process only in order to comply with the approved JMF.

V. QUALITY CONTROL

A. Control Limits

Target values shall be determined from the approved JMF. The target values shall be plotted on the control charts within the following control limits:

<u>Parameter</u>	<u>Control Limits</u>	
	<u>Individual Test</u>	<u>Moving Avg. of 4</u>
% Passing		
1/2 in.	± 7 %	±4 %
No. 4	±7 %	±4 %
No. 8	±5 %	±3 %
No. 30	±4 %	±2.5 %
No. 200 *	±2.0 % *	±1.0 % *
Asphalt Content	±0.45 %	±0.2 %

* No. 200 material percents shall be based on washed samples. Dry sieve gradations (-200) shall be adjusted based on anticipated degradation in the mixing process.

B. Control Charts

Standardized control charts shall be maintained by the Contractor at the field laboratory. The control charts shall be displayed and be accessible at the field laboratory at all times for review by the Engineer. The individual required test results obtained by the Contractor shall be recorded on the control chart immediately upon completion of a test, but no later than 24 hours after sampling. Only the required plant tests and resamples shall be recorded on the control chart. Any additional testing of check samples may be used for controlling the Contractor's processes, but shall be documented in the plant diary.

The results of assurance tests performed by the Resident Engineer will be posted as soon as available.

The following parameters shall be recorded on control charts:

1. Combined Gradation of Hot-Bin (Batch Plant) or Combined Belt Aggregate Samples (Drier Drum Plant). (% Passing 1/2 in., No. 4., No. 8, No. 30, and No. 200 Sieves)
2. Asphalt Content

3. Bulk Specific Gravity (G_{mb})
4. Maximum Specific Gravity of Mixture (G_{mm})

C. Corrective Action for Required Plant Tests

Control Limits for each required parameter, both individual tests and the average of four tests, shall be exhibited on control charts. Test results shall be posted within the time limits previously outlined.

1. Individual Test Result. When an individual test result exceeds its control limit, the Contractor shall immediately resample and retest. If at the end of the day no material remains from which to resample, the first sample taken the following day shall serve as the resample as well as the first sample of the day. This result shall be recorded as a retest. If the retest passes, the Contractor may continue the required plant test frequency. Additional check samples should be taken to verify mix compliance.
2. Asphalt Content. If the retest for asphalt content exceeds control limits, mix production shall cease and immediate corrective action shall be instituted by the Contractor. After corrective action, mix production shall be restarted, the mix production shall be stabilized, and the Contractor shall immediately resample and retest. Mix production may continue when approved by the Engineer. The corrective action shall be documented.

Inability to control mix production is cause for the Engineer to stop the operation until the Contractor completes the investigation identifying the problems causing failing test results.

3. Combined Aggregate/Hot-Bin. For combined aggregate/hot-bin retest failures, immediate corrective action shall be instituted by the Contractor. After corrective action, the Contractor shall immediately resample and retest. The corrective action shall be documented.
 - a. Moving Average. When the moving average values trend toward the moving average control limits, the Contractor shall take corrective action and increase the sampling and testing frequency. The corrective action shall be documented.

The Contractor shall notify the Engineer whenever the moving average values exceed the moving average control limits. If two consecutive moving average values fall outside the moving average control limits, the Contractor shall cease operations. Corrective action shall be immediately instituted by the Contractor. Operations shall not be reinstated without the approval of the Engineer. Failure to cease operations shall subject all subsequently produced material to be considered unacceptable.
 - b. Mix Production Control. If the Contractor is not controlling the production process and is making no effort to take corrective action, the operation shall stop.

VI. TEST SECTION AND DENSITY ACCEPTANCE (Note: Applies only when specified.)

- A. The purpose of the test section is to determine if the mix is acceptable and can be compacted to a consistent passing density.

A quick way to determine the compactibility of the mix is by the use of a nuclear density gauge in the construction of a growth curve. An easy way to construct a growth curve is to use a good vibratory roller. To construct the curve, an area the width of the roller in the middle of the mat is chosen and the roller is allowed to make one compactive pass. With the roller stopped some 30 feet away, a nuclear reading is taken and the outline of the gauge is marked on the pavement. The roller then makes a compactive pass in the opposite direction and another reading is taken. This scenario is continued until at least two (2) passes are made past the maximum peak density obtained.

The maximum laboratory density potential of a given mix is a direct function of the mix design air voids. Whereas, the actual maximum field density is a function of the type of coarse aggregates, natural or manufactured sands, lift thickness, roller type (static or vibratory), roller and paver speed, base condition, mix variation, etc. All of these items are taken into consideration with the growth curve.

1. High Density in the Growth Curve. If the growth curve indicates a maximum achievable field density of between 95 to 98 percent of the Theoretical Maximum Density (D), you can proceed with the Rolling Pattern. On the other hand, if the maximum achievable density is greater than 98 percent, a quick evaluation (by use of an extractor, hot bin gradations, nuclear asphalt determinator, etc.) must be made of the mix. When adjustments are made in the mix, a new growth curve shall be constructed.
2. Low Density in the Growth Curve. If the growth curve indicates the maximum achievable density is below 94 percent, a thorough evaluation of the mix, rollers, and laydown operations should be made. After a thorough evaluation of all factors (mix, rollers, etc.), asphalt or gradation changes may be in order as directed by the Engineer. Again, any changes in the mix will require a new growth curve. Note that the nuclear density test is a quality control tool and not an acceptance test. All acceptance testing is to be conducted by the use of cores, unless otherwise specified.
3. Acceptance of Test Section. The Contractor may proceed with paving the day after the test section provided the following criteria have been met:
 - a. Four random locations (2 cores per location cut longitudinally and cored by the Contractor) will be selected by the Engineer within the test strip. All the cores must show a minimum of 94% density.
 - b. All Superpave and extraction test results from mix produced for the test section must be within the tolerances required by specification.
 - c. The Contractor shall correlate his nuclear gauge to the cores taken in the test section. Additional cores may be taken at the Contractor's expense for this purpose within the test section area, when approved by the Engineer.

4. Density Acceptance under Production Paving. The responsibility for obtaining the specified density lies with the Contractor. Therefore, it is important that the nuclear density gauge operator communicate with the roller operators to maintain the specified density requirements. The Contractor shall provide a qualified HMA Density Tester who has successfully completed the Department's "HMA Nuclear Density Testing Course" to run all required density tests on the job site. Density acceptance testing, unless otherwise specified, is described as follows:
- a. The Contractor shall cut cores at random locations within 500 ton sublots as directed by the Resident Engineer.
 - b. The cores should be extracted so as not to damage them, since they are used to calculate the Contractor's pay.
 - c. The Engineer will run preliminary G_{mb} tests on the cores to give the Contractor an indication of how compaction is running for the next day's paving.
 - d. A running average of four (4) Maximum Theoretical Gravities (G_{mm}) will be used for calculating percent compaction.
 - e. Final core density tests and pay calculations will be performed by the Resident Engineer and delivered to the Contractor.
 - f. Should the contractor wish to resample the pavement as a result of pay calculations resulting in less than 100% payment, the request must be made within 48 hours of receipt of the original payment calculations.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes Policy Memorandum 2003-1 dated January 15, 2007

APPENDIX A

BITUMINOUS WORKSHEET

Airport: _____ Project No.: _____ AIP No.: _____

Mix Design #: _____ Material Code: _____ Producer: _____

Prod. #: _____

AGGREGATE

Mat'l. Code: _____

Producer #: _____

Prod. Name _____

Location: _____

Percent Passing

Sieve Size

1 inch _____

3/4 inch _____

1/2 inch _____

3/8 inch _____

No. 4 _____

No. 8 _____

No. 16 _____

No. 30 _____

No. 50 _____

No. 100 _____

No. 200 _____

Washed (y/n) _____

O.D. Gravity _____

App. Gravity _____

Absorption _____

Asphalt Gravity _____ Asphalt Source _____ Asphalt Producer No. _____

MARSHALL DATA

% Asphalt _____

M. Stability _____

Flow _____

D _____

0 _____

% Air Voids _____

Q.C. Manager Name: _____ Phone number: _____

Laboratory Location: _____ Fax Number: _____

Remarks: _____

APPENDIX B

QUALITY CONTROL TESTING (PLANT)

PARAMETER	FREQUENCY	SAMPLE SIZE	TEST METHOD	REPORT FORM
Aggregate Gradations: Hot bins for batch and continuous plants--- Individual cold-feeds or combined belt-feeds for drier drum plants.	Minimum 1 per day of production and at least 1 per 1000 tons.	CA07/11: 5000 gm CA13: 2000 gm CA16: 1500 gm Fine agg: 500 gm 1 gallon asphalt cement	ASTM C 136	AER M-9
Aggregate gradations: Stockpiles	Minimum 1 per aggregate per week per stockpile.	CA07/11: 5000 gm CA13: 2000 gm CA16: 1500 gm Fine agg: 500 gm *Note: The above test sample sizes are to be obtained from splitting down a larger sample from the stockpiles.	ASTM C 136	AER M-9
Maximum Specific Gravity	Minimum 1 per 1000 tons	1200 gm per test	ASTM D 2041	AER M-11 and AERM-14
Bulk Specific Gravity	Minimum 1 per 1000 tons	1250 gm per briquette	ASTM D 2726	AER M-11 and AERM-14
Marshall Stability and Flow	Minimum 1 per 1000 tons	1250 gm per briquette	ASTM D 1559	AER M-11 and AERM-14
% Air Voids	Minimum 1 per 1000 tons		ASTM D 3203	AER M-11 and AERM-14
Extraction	Minimum 1 per 1000 tons	1000 gm (surface) 1500 gm (base)	ASTM D 2172	AER M-11 and AERM-14
Ignition Oven Test	Minimum 1 per 1000 tons	1500 gm		AER M-14
Nuclear Asphalt Gauge	Minimum 1 per 1000 tons	1000-1100 gm	ASTM D 2145	AER M-14
Gyratory Brix	Minimum 1 per 1000 tons	4700-4800 gm 115 mm +/- 5 mm	AASHTO TP4-99	

MIX DESIGN TESTING

PARAMETER	FREQUENCY	SAMPLE SIZE	TEST METHOD	REPORT FORM
Representative samples of each aggregate and asphalt cement.	1 per aggregate and 1 asphalt cement.	280 lb. (coarse) 150 lb. (fine) 15 lb. (min. filler) 1 gallon asphalt cement	ASTM D 75	N/A
Aggregate Gradation	1 per aggregate	CA07/11: 5000 gm CA13: 2000 gm CA16: 1500 gm Fine agg: 500 gm	ASTM C 136	Bituminous Worksheet (Appendix A)
Maximum Specific Gravity	2 per specified asphalt content	1200 gm per test	ASTM D 2041	Bituminous Worksheet (Appendix A)
Bulk Specific Gravity	3 briquettes per specified asphalt content	1250 gm per briquette	ASTM D 2726	Bituminous Worksheet (Appendix A)
Marshall Stability and Flow	3 briquettes	1250 gm per briquette	ASTM D 1559	Bituminous Worksheet (Appendix A)
% Air Voids	1 per specified asphalt content (Avg. of G_{sb}/G_{mm})		ASTM D 3203	Bituminous Worksheet (Appendix A)
Gyratory Brix	Minimum 1 per 1000 tons	4700-4800 gm 115 mm +/- 5 mm	AASHTO TP4-99	

QUALITY CONTROL TESTING (PAVER)

PARAMETER	FREQUENCY	SAMPLE SIZE	TEST METHOD	REPORT FORM
Nuclear Density Test	As required by the Contractor to maintain consistent passing density	Various locations	ASTM D 2950	

APPENDIX C

AGGREGATE BITUMINOUS BASE COURSE

Percentage by Weight Passing Sieves Job Mix Formula (JMF)		
Sieve Size	Gradation B Range 1" Maximum	Ideal Target
1-1/4 in.	---	---
1 in.	100	100
3/4 in.	93 – 97	95
1/2 in.	75 – 79	77
3/8 in.	64 – 68	66
No. 4	45 – 51	48
No. 8	34 – 40	37
No. 16	27 – 33	30
No. 30	19 – 23	21
No. 100	6 – 10	8
No. 200	4 – 6	5
Bitumen %:		
Stone	4.5 – 7.0	5.5

AGGREGATE BITUMINOUS SURFACE COURSE

Percentage by Weight Passing Sieves Job Mix Formula (JMF)		
Sieve Size	Gradation B Range ^{3/4}" Maximum	Ideal Target
1 in.	100	---
3/4 in.	100	100
1/2 in.	99 - 100	100
3/8 in.	91 - 97	94
No. 4	56 - 62	59
No. 8	36 - 42	39
No. 16	27 - 32	30
No. 30	19 - 25	22
No. 100	7 - 9	8
No. 200	5 - 7	6
Bitumen %:		
Stone	5.0 - 7.0	6.0

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

April 1, 2010

Springfield

Number: 87-2

TO: CONSULTING ENGINEERS

SUBJECT: DENSITY ACCEPTANCE OF BITUMINOUS PAVEMENTS

1. Introduction

This Policy Memorandum deals with the implementation of the bituminous density quality assurance specifications as outlined in the Standard Specifications for Construction of Airports, Sections 401-4.15 and 403-4.15.

II. Sampling

After completion of compaction and when the pavement has reached ambient temperature, the paved area shall be divided into Sublots of 500 tons per type of mix. One core sample (2 cores per sample) shall be taken from each Sublot. The longitudinal and transverse location for each sample shall be determined by use of a random number "Deck" provided by the Division. No core shall be taken closer than two (2) feet from the edge of the mat. A core extraction device shall be used to obtain all cores from the mat. All cores are to be taken by the contractor under the supervision and remain in the possession of the Engineer. It is imperative that the Engineer and the contractor realize that the cores are "money" and that improper coring, extraction, shipping and/or testing can be costly.

One mix sample per 1000 tons of mix laid shall be taken for Extraction, Maximum Specific Gravity (G_{mm}) and Air Void tests. The mix samples shall be sampled by the contractor and split in half.

The Resident Engineer shall randomly designate and send the split samples to an independent laboratory for testing. The laboratory will be verified to be ASTM-certified for all the required testing and be contracted through the Consultant. The frequency of testing split samples shall be 1 per 5000 tons. Higher frequencies may be necessary if the contractor's tests, and/or mix quality control are inconsistent.

III. Testing

All cores shall be tested for Bulk Specific Gravity (G_{sb}) in accordance with ASTM D2726 using Procedure 9.1, "For Specimens That Contain Moisture". The Theoretical Maximum Gravity (G_{mm}) shall be determined according to ASTM D2041, Procedure 7. From these tests the in-place air voids of the compacted pavement are calculated according to ASTM D3203 for "dense bituminous paving mixtures". Selection of the proper G_{mm} shall be based on a running average of four (4) tests per Lot.

- Eg. Lot 1 - Use the average of the two (2) tests for Lot 1.
Lot 2 - Use the average of the four (4) tests from Lots 1 and 2.
Lot 3 - Use the average of the four (4) tests from Lots 2 and 3.

NOTE: When more than four (4) Sublots are used, still use a running average of four (4) tests per Lot.

IV. Acceptance Calculations

The first step in calculating the quantities for pay is to calculate the Mean (\bar{x}) and the Standard Deviation (S) of the Sublot tests. From this data the Lot samples should first be tested for outliers. After consideration for outliers, the Percent Within Tolerance (PWT) and the Percent Within Limits (PWL) are calculated to determine the final pay quantities for the Lot.

EXAMPLE

1. Test Data

Lot Quantity = 2000 tons
Sublot Test 1 = 4.35 % Air Voids
Sublot Test 2 = 3.96 % Air Voids
Sublot Test 3 = 6.75 % Air Voids
Sublot Test 4 = 6.25 % Air Voids

2. Calculating the Mean and Standard Deviation

Sublot	\underline{x}	$(\underline{x} - \bar{x})$	$(\underline{x} - \bar{x})^2$
1	4.35	- 0.978	0.956
2	3.96	- 1.368	1.871
3	6.75	1.422	2.022
4	<u>6.25</u>	0.922	<u>0.850</u>
Sum =	21.31		5.699

$$N = 4$$

$$\text{Mean}(\bar{x}) = 21.34 / 4 = 5.328$$

$$\text{Variance } (S)^2 = \frac{\text{Sum}(x - \bar{x})^2}{3} = \frac{5.699}{3} = 1.900$$

$$\text{Standard Deviation } S = \sqrt{1.900} = 1.378$$

3. Test For Outliers

Check for Critical "T" Values

$$T = \frac{|(x_1 - \bar{x})|}{S} = \frac{|3.96 - 5.328|}{1.378} = 0.99$$

* Difference between the suspect test value (x_1) and the Mean (\bar{x}).

If the T value exceeds the critical "T" Value in the table below and no assignable cause can be determined for the outlier, discard the suspected test measurement and obtain another random sample from the Sublot in question. If the new test exceeds the Mean (\bar{x}) in the same direction from the Mean as the suspected test, recalculate the T value including all tests (original test, suspected test, and new test) for an outlier and for computing final payment.

TABLE OF CRITICAL "T" VALUES

Number of observations (N)	Critical "T" Value 5% Significance Level
3	1.15
4	1.46
5	1.67
6	1.82
7	1.94
8	2.03
9	2.11
10	2.18
11	2.23
12	2.29

Based on the above table, the "T" value of 0.99 does not exceed the Critical "T" Value of 1.46 for N = 4. Therefore, the value (3.96) is not an outlier and shall be used in calculating the Lot payment.

4. Calculation of Lot Payment

To calculate the Lot Payment use the Acceptance Criteria as outlined under Item 401-4.15(c) or Item 403-4.15(c).

$$Q_L = \frac{(\bar{x} - 1)}{S} = \frac{5.328 - 1}{1.378} = 3.141$$

$$Q_u = \frac{(7 - \bar{x})}{S} = \frac{7 - 5.328}{1.378} = 1.213$$

From this data the Percentage Within Tolerance (PWT) for both the lower and upper tolerance limits is determined by Table 6 (see Item 401 Bituminous Surface Course and/or Item 403 Bituminous Base Course in the Standard Specifications) for the number (N) of samples tested.

$$\begin{aligned} \text{Eq. PWT (lower)} &= 99.0\% \\ \text{PWT (upper)} &= 90.4\% \end{aligned}$$

We now calculate the Percent Within Limits (PWL) for the Lot.

$$\begin{aligned} \text{PWL} &= [\text{PWT (lower)}] + [\text{PWT (upper)}] - 100 \\ \text{PWL} &= (99.0 + 90.4) - 100 = 89.4\% \end{aligned}$$

Using Table 5, the % Adjustment in Lot Quantity is:

$$\begin{aligned} \% \text{ Adjustment} &= 0.5 \text{ PWL} + 55.0 \\ \% \text{ Adjustment} &= 0.5 (89.4) + 55.0 \\ \% \text{ Adjustment} &= 99.7 \end{aligned}$$

$$\begin{aligned} \text{Adjusted Quantities} &= \% \text{ Adjustment} \times \text{Lot Quantities} \\ \text{Adjusted Quantities} &= 0.997 \times 2000 \text{ tons} \\ \text{Adjusted Quantities} &= 1994 \text{ tons} \end{aligned}$$

5. Resampling and Retesting

The contractor has the right to request the resampling and retesting of a complete Lot. This privilege is only allowed once for each Lot and must be requested in writing by the contractor within 48 hours of receiving the official report from the Engineer.

6. Reporting

After completion of the tests for each Lot, the Engineer shall complete the necessary calculations for final adjustment in quantities on the Form AER-1 and have both the Engineer and the Contractor sign the report for copying to both the FAA and IDOA.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes Policy Memorandum 87-2, dated January 1, 2004.

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

January 1, 2004

Springfield

Number: **87-4**

TO: CONSULTING ENGINEERS

SUBJECT: DETERMINATION OF BULK SPECIFIC GRAVITY (d)
OF COMPACTED BITUMINOUS MIXES

- A. SCOPE. This method of test covers the determination of the bulk specific gravity and the percent air, of core samples from compacted bituminous mixtures using a saturated surface-dry procedure.
- B. DEFINITIONS.
1. Bulk Specific Gravity (G_{sb}) or density is the weight per unit volume (gms/cc) of a mixture in its existing state of consolidation. The volume measurement for this specific gravity will include the volume of all the aggregate, asphalt, and air spaces (voids) in the aggregate particles and between the aggregate particles.
 2. Theoretical Maximum Specific Gravity (G_{mm}) ASTM 2041 is the weight per unit volume (grams/cc) of a mixture assuming complete consolidation; i.e., all the air spaces (voids) between the aggregate particles are eliminated.
 3. Percent Density is a measure of the degree of compaction in relation to the Theoretical Maximum Specific Gravity.
 4. Percent Air is a measure of the air voids in the compacted pavement.
- C. APPARATUS.
1. Balance - The balance shall be accurate to 0.1 gm throughout the operating range. It may be mechanical or electrical and shall be equipped with a suitable suspension apparatus and holder to permit weighing of the core in water while suspended from the balance. If the balance is a beam type, it shall be set up so that the core is placed in the basket that is suspended from the zero (0) end of the balance arm.
 2. Water bath - The container for immersing the core in water while suspended from the balance shall be equipped with an overflow outlet for maintaining a constant water level. This water bath should be large enough to handle full-depth cores. When testing several cores at the same time, a dish-pan, sink or suitable container may be used for soaking.

D. PROCEDURE.

1. Prior to testing, cores shall be sorted on a flat surface in a cool place. The sample(s) shall be brushed with a wire brush and/or other suitable means, to remove all loose and/or foreign materials, such as seal coat, tack coat, foundation material, soil, paper, and foil, prior to testing.
2. If a core contains binder and surface or multiple lifts, the lifts shall be separated. This may be done in the following manner:
 - a. Mark the separation line between the two lifts.
 - b. Place the core in a freezer for 20-25 minutes.
 - c. Place a 2 or 3-inch wide chisel on the separation line and tap with a hammer. Rotate the core and continue this process until the core separates. Brush loose pieces with a wire brush if needed.
 - d. Allow 2-3 hours for the core to return to ambient temperature before proceeding.
3. Prepare the water baths for soaking and weighing with water at 77^o F. Water baths should be maintained at this temperature throughout testing. Saturate the cores by submerging in the water for a minimum of 20 minutes.
4. With the balance and water bath properly assembled and zeroed, suspend the sample from the balance and submerge it in the water bath. The core must be placed with the original top and bottom in a vertical position. If necessary, add sufficient water to bring the water level up to the overflow outlet. Permit any excess to overflow. Read and record the Saturated Submerged Weight. Designate this weight as (C).
5. Remove the core from the water bath and blot the excess water from the surface of the core with an absorbent cloth or other suitable material. This must be done quickly to prevent the internal water from escaping.
6. Place the core on the balance and read and record the Saturated Surface-dry Weight in air. Designate this weight as (B).
7. Place the core in a tared pan and dry in an oven. When the core is dry, (less than 0.5 gm loss in one hour) record the weight and subtract the pan weight. Designate this weight as (A).

8. The following calculation is used to determine the Bulk Specific Gravity of the core.

$$G_{sb} = \frac{A}{B-C}$$

G_{sb} = Bulk Specific Gravity
A = Oven dry weight
B = Saturated surface-dry weight
C = Saturated submerged weight

- E. PERCENT DENSITY. The following calculation is used to determine the percent density of the core:

$$\% \text{ Density} = 100 \times \frac{G_{sb}}{G_{mm}}$$

G_{sb} = Bulk Specific Gravity
 G_{mm} = Theoretical Maximum Gravity*

Note: The Theoretical Maximum Gravity (G_{mm}) is determined from the mix design until current Vacuum Pycnometer test are available.

- F. PERCENT AIR. To calculate the percent air, use the following formula:

$$\% \text{ Air} = 100 - \% \text{ Density}$$

- G. WEIGHT PER SQUARE YARD OF COMPACTED MIXTURE. The actual weight per square yard of a compacted mixture can be calculated by using the Bulk Specific Gravity (G_{sb}). The volume of a square yard of pavement one (1) inch thick is 0.75 cubic foot. Taking the weight of a cubic foot of water as 62.37 pounds, one square yard of compacted material, one (1) inch thick weighs:

$$\text{Pounds Per Sq. Yd. (1" thick)} = 0.75 \times 62.37 \times G_{sb}$$

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes Policy Memorandum 87-4 effective January 1, 1994.

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

January 1, 2004

Springfield, Illinois

Number 96-3

TO: CONSULTING ENGINEERS

SUBJECT: REQUIREMENTS FOR QUALITY ASSURANCE ON PROJECTS
WITH BITUMINOUS CONCRETE PAVING

I. SCOPE

The purpose of this policy memorandum is to define to the Consulting Engineer the requirements concerning Quality Assurance on bituminous concrete paving projects. Specifically, this memo applies whenever the Contractor is required to comply with the requirements set forth in Policy Memorandum 96-2, "*Requirements for Laboratory, Testing, Quality Control, and Paving of Bituminous Concrete Mixtures*".

II. LABORATORY APPROVAL

The Resident Engineer shall review and approve the Contractor's plant laboratory to assure that it meets the requirements set forth in the contract specifications and Policy Memorandum 96-2. This review and approval shall be completed prior to utilization of the plant for the production of any mix.

III. QUALITY ASSURANCE DURING PRODUCTION PAVING

A. At the option of the Engineer, independent assurance tests may be performed on split samples taken by the Contractor for Quality Control testing. In addition, the Resident Engineer shall witness the sampling and splitting of these samples at the start of production and as needed throughout mix production. The Engineer may select any or all split samples for assurance testing. These tests may be performed at any time after sampling. The test results will be made available to the Contractor as soon as they become available.

B. The Resident Engineer may witness the sampling and testing being performed by the Contractor. If the Resident Engineer determines that the sampling and Quality Control tests are not being performed according to the applicable test procedures, the Engineer may stop production until corrective action is taken. The Resident Engineer will promptly notify the Contractor, both verbally and in writing, of observed deficiencies. The Resident Engineer will document all witnessed samples and tests. The Resident Engineer may elect to obtain samples for testing, separate from the Contractor's Quality Control process, to verify specification compliance.

1. Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits:

<u>Test Parameter</u>	<u>Acceptable Limits of Precision</u>
% Passing	
1/2 in.	5.0 %
No. 4	5.0 %
No. 8	3.0 %
No. 30	2.0 %
No. 200	2.2 %
Asphalt Content	0.3 %
Maximum Specific Gravity of Mixture	0.026
Bulk Specific Gravity of Marshall Sample	0.045

2. In the event a comparison of the required plant test results is outside the above acceptable limits of precision, split or independent samples fail the control limits, an extraction indicates non-specification mix, or a continual trend of difference between Contractor and Engineer test results is identified, the Engineer will immediately investigate. The Engineer may suspend production while the investigation is in progress. The investigation may include testing by the Engineer of any remaining split samples or a comparison of split sample test results on the mix currently being produced. The investigation may also include review and observation of the Contractor's technician performance, testing procedure, and equipment. If a problem is identified with the mix, the Contractor shall take immediate corrective action. After corrective action, both the Contractor and the Engineer shall immediately resample and retest.

- C. The Contractor shall be responsible for documenting all observations, records of inspection, adjustments to the mixture, test results, retest results, and corrective actions in a bound hardback field book or bound diary which will become the property of IDA upon completion and acceptance of the project. The Contractor shall be responsible for the maintenance of all permanent records whether obtained by the Contractor, the Contractor's Consultants, or the producer of bituminous mix material. The Contractor shall provide the Engineer full access to all documentation throughout the progress of the work.

Results of adjustments to mixture production and tests shall be recorded in duplicate and sent to the Engineer.

IV. ACCEPTANCE BY ENGINEER

Density acceptance shall be performed according to Policy Memorandum 87-2, or according to the acceptance procedure outlined in the Special Provisions.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes Policy Memorandum 96-3 dated January 1, 1997



Illinois Department of Transportation

Memorandum

To: Airport Consultants and Contractors
From: Mike Wilhelm
Subject: Comparison Samples
Date: May 31, 2007

In accordance with Policy Memorandum 96-3, the Resident Engineer (R.E.) shall obtain split comparison samples from the contractor for testing by an ASTM-certified, independent testing laboratory. In order to reduce splitting errors, the R.E. shall request that the contractor split the sample down to individual test sample size. The split samples shall be placed in individual paper bags for each test.

The following list shows the number and size of each sample:

3 Marshall Brix.....	3 bags:	1250 grams each
Vacuum Pycnometer Test.....	2 bags:	1100 grams each
Extraction.....	2 bags:	Base course 1500 grams each Surface course 1000 grams each

Each paper bag shall be identified with the following information:

Airport Name:
Illinois Project Number:
Type of Mix (Base or Surface):
Date Sampled:
Lot-Sublot Number:
Type of test (Brix-Pycnometer-Extraction):

For the samples identified as brix the R.E. shall also include the number of blows that are required in the construction contract: 50 or 75 blows.

NUMBER OF SAMPLES TO BE SUBMITTED FOR TESTING

One per test section for each type of mix, then one randomly selected sample for each 5000 tons of mix produced under production paving. Projects with less than 5000 tons of mix shall have one split sample tested per mix type for the project in addition to the test section split sample, if a test section is specified. The split samples not selected shall be stored by the contractor for use at the discretion of the Division of Aeronautics.

The R.E. shall place all seven (7) bags in a box along with all samples and ship them to an ASTM-certified, independent lab for testing. The cost of all testing

is to be borne by the Consultant. The lab shall be chosen by the Consultant, but shall not be the same one used by the Contractor. All testing results shall be obtained in a timely manner. The R.E. shall also fill out the sample identification sheet, which shall be sent to the laboratory. Copies of the sample identification sheet and all testing results shall be faxed to:

Illinois Department of Transportation, Division of Aeronautics
Attn: Mr. Michael F. Wilhelm, P.E.
Engineer of Construction & Materials
Fax: (217) 558-1328

ILLINOIS DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS

SAMPLE IDENTIFICATION

AIRPORT _____ LOCATION _____

ILLINOIS PROJECT NO. _____

MIX PRODUCER _____

P/S NUMBER _____

LOCATION _____

TYPE OF MIX _____

LOT NUMBER _____ SUBLOT NUMBER _____

DATE SAMPLED _____

SAMPLED FROM _____

IS A SURGE BIN BEING USED _____

OF BLOWS FOR MARSHALL BRIX (OR GYRATIONS) _____

COMMENTS _____

FILL IN ALL BLANKS

R.E. or REPRESENTATIVE SIGNATURE

SEND COPY TO:

Division of Aeronautics
Attn: Michael F. Wilhelm, P.E.
1 Langhorne Bond Drive
Springfield, IL 62707-8415
FAX: (217) 558-1328

NOTE: Samples should be submitted on day of sampling but no later than 48 hours.

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

January 1, 2004

Springfield, Illinois

Number 97-2

TO: CONSULTING ENGINEERS

SUBJECT: PAVEMENT MARKING PAINT ACCEPTANCE

I. SCOPE

The purpose of this policy memorandum is to define the procedure for acceptance of pavement marking paint.

II. RESIDENT ENGINEER'S DUTIES

The Resident Engineer shall follow the acceptance procedure outlined as follows:

- A. Require the painting contractor to furnish the name of the paint manufacturer and the batch number proposed for use prior to beginning work. Notify the I.D.A. Materials Certification Engineer when this information is available.
- B. Require the manufacturer's certification before painting begins. Check the certification for compliance to the contract specifications.
 1. The certification shall be issued from the manufacturer and shall include the specification and the batch number.
 2. The paint containers shall have the manufacturer's name, the specification and the batch number matching the certification.
- C. If no batch number is indicated on the certification or containers, sample the paint according to the procedure for the corresponding paint type.
- D. If the I.D.A. Engineer of Materials indicates that batch number has not been previously sampled and tested, sample the paint according to the procedure for the corresponding paint type. The Division of Aeronautics will provide paint cans upon request by the Resident Engineer. Samples will only be taken in new epoxy lined cans so that the paint will not be contaminated. It is important to seal the sample container immediately with a tight cover to prevent the loss of volatile solvents.

Mark the sample cans with the paint color, manufacturer's name, and batch number. The paint samples and manufacturer's certification shall be placed in the mail within 24 hours after sampling. Address the samples to the Materials Certification Engineer at:

Illinois Department of Transportation
Division of Aeronautics
One Langhorne Bond Drive
Springfield, Illinois 62707

Sampling Procedures for Each Paint Type:

1. Waterborne or Solvent Base Paints
 - a. Take the paint sample from the spray nozzle when the contractor begins marking. A sample consists of two one-pint cans taken per batch number.
 - b. Be sure to indicate to the contractor that acceptance of material is based upon a passing test of the paint material.

2. Epoxy Paint
 - a. Take separate one-pint samples of each paint component prior to marking. Before drawing samples, the contents of each component's container must be thoroughly mixed to make certain that any settled portion is fully dispersed. **Do not combine the two components or sample from the spray nozzle.**
 - b. Be sure to indicate to the contractor that acceptance of material is based upon a passing test of the paint material.

III. TESTING

The paint will be tested for acceptance by the IDOT Bureau of Materials and Physical Research for conformance to the contract specifications.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes policy memorandum 97-2 dated February 27, 2002