Airport Name: Joplin Regional Airport
Project No.: 3-29-0037-0XX
County: Jasper

AVIATION PROJECT CONSULTANT AGREEMENT
(FEDERAL ASSISTANCE)
(Revision 04/01/2016)

THIS AGREEMENT is entered into by Crawford, Murphy & Tilly, Inc. (hereinafter the "Consultant"), and the City of Joplin, Missouri, (hereinafter the "Sponsor").

WITNESSETH:

WHEREAS, the Sponsor has selected the Consultant to perform professional services to accomplish a project at the Joplin Regional Airport; and

WHEREAS, while the Federal Aviation Administration (FAA) is not a party to this Agreement, FAA land acquisition, environmental, planning, design and construction criteria and other requirements will be utilized unless specifically approved otherwise by FAA; and

WHEREAS, the Sponsor intends to accomplish a project at the Joplin Regional Airport as listed in Exhibit I of this Agreement, entitled "Pavement Management System Update", which is attached hereto and made a part of this Agreement.

NOW, THEREFORE, in consideration of the payments to be made and the covenants set forth in this Agreement to be performed by the Sponsor, the Consultant hereby agrees that it shall faithfully perform the professional services called for by this Agreement in the manner and under the conditions described in this Agreement.

(1) DEFINITIONS: The following definitions apply to these terms, as used in this Agreement:

(A) "SPONSOR" means the owner of the airport referenced above.

(B) “SPONSOR’S REPRESENTATIVE” means the person or persons designated in Section (23)(A) of this agreement by the Sponsor to represent the Sponsor in negotiations, communications, and various other contract administration dealings with the Consultant.

(C)

(D) "CONSULTANT" means the firm providing professional services to the Sponsor as a party to this Agreement.

(E) "CONSULTANT'S REPRESENTATIVE" means the person or persons designated in Section (23)(B) of this agreement by the Consultant to represent that firm in negotiations, communications, and various other contract administration dealings with the Sponsor.

(F) "DELIVERABLES" means all drawings and documents prepared in performance of this Agreement, to be delivered to and become the property of the Sponsor pursuant to the terms and conditions set out in Section (12) of this Agreement.

(G) "DISADVANTAGED BUSINESS ENTERPRISE (DBE)" means an entity owned and controlled by a socially and economically disadvantaged individual as defined in 49 Code of Federal Regulations (CFR) Part 26, which is certified as a DBE firm in Missouri by MoDOT. Appropriate businesses owned and controlled by women are included in this definition.

(H) "FAA" means the Federal Aviation Administration within the United States Department of Transportation (USDOT), headquartered at Washington, D.C., which acts through its authorized representatives.

(I) "INTELLECTUAL PROPERTY" consists of copyrights, patents, and any other form of intellectual property rights covering any data bases, software, inventions, training manuals, systems design or other proprietary information in any form or medium.

(J) "SUBCONSULTANT" means any individual, partnership, corporation, or joint venture to which the Consultant, with the written consent of the Sponsor, subcontracts any part of the professional services under this Agreement but shall not include those entities which supply only materials or supplies to the Consultant.

(K) "SUSPEND" the services means that the services as contemplated herein shall be stopped on a temporary basis. This stoppage will continue until the Sponsor either decides to terminate the project or reactivate the services under the conditions then existing.

(L) "TERMINATE", in the context of this Agreement, means the cessation or quitting of this Agreement based upon the action or inaction of the Consultant, or the unilateral cancellation of this Agreement by the Sponsor.

(M) "USDOT" means the United States Department of Transportation, headquartered at Washington, D.C., which acts through its authorized representatives.

(N) "SERVICES" includes all professional engineering and related services and the furnishing of all equipment, supplies, and materials in conjunction with such services as are required to achieve the broad purposes and general objectives of this Agreement.

(2) SCOPE OF SERVICES:

(A) The services covered by this Agreement shall include furnishing the professional, technical, and other personnel and the equipment, material and all other things necessary to accomplish the proposed project detailed in Exhibit I of this Agreement.

(B) The specific services to be provided by the Consultant are set forth in Exhibit II of this Agreement, entitled "Scope of Services," which is attached hereto and made a part of this Agreement.

(3) ADDITIONAL SERVICES: The Sponsor reserves the right to direct additional services not described in Exhibit II as changed or unforeseen conditions may require. Such direction by the Sponsor shall not be a breach of this Agreement. In this event, a Supplemental Agreement will be negotiated and executed prior to the Consultant performing the additional or changed services, or incurring any additional cost for those additional services. Any changes in the maximum compensation and fee, or time and schedule of completion, will be covered in the Supplemental Agreement. Supplemental Agreements must be approved by FAA to ensure additional funding is available.

(4) INFORMATION AND SERVICES PROVIDED BY THE SPONSOR:

(A) At no cost to the Consultant and in a timely manner, the Sponsor will provide available information of record which is pertinent to this project to the Consultant upon request. In addition, the Sponsor will provide the Consultant with the specific items or services set forth in Exhibit III of this Agreement, entitled "Services Provided by the Sponsor", which is attached hereto and made a part of this Agreement. The Consultant shall be entitled to rely upon the accuracy and completeness of such information, and the Consultant may use such information in performing services under this Agreement.

(B) The Consultant shall review the information provided by the Sponsor and will as expeditiously as possible advise the Sponsor of any of that information which the Consultant believes is inaccurate or inadequate or would otherwise have an effect on its design or any of its other activities under this Agreement. In such case, the Consultant shall provide new or verified data or information as necessary to meet the standards required under this Agreement. Any additional work required of the Consultant as the result of inaccurate or inadequate information provided by the Sponsor will be addressed per the provisions of Section (3) of this Agreement. The Consultant shall not be liable for any errors, omissions, or deficiencies resulting from inaccurate or inadequate information furnished by the Sponsor which inaccuracies or inadequacies are not detected by the Consultant, unless the errors should have been detected by the Consultant through reasonable diligence.

(5) RESPONSIBILITY OF THE CONSULTANT:

(A) The Consultant shall comply with applicable local, state and federal laws and regulations governing these services, as published and in effect on the date of this Agreement. The Consultant shall provide the services in accordance with the criteria and requirements established and adopted by the Sponsor; and if none are expressly established in this Agreement, published manuals and policies of FAA which shall be furnished by the Sponsor upon request; and, absent the foregoing, manuals and policies of the FAA, as publisihed and in effect on the date of this Agreement.

(B) Without limiting the foregoing, land acquisition, environmental, planning, design and construction criteria will be in accordance with the information set out in Exhibit II of this Agreement.

(C) The Consultant shall be responsible for the professional quality, technical accuracy, and the coordination of designs, drawings, specifications, and other services furnished under this Agreement. At any time during construction of the Sponsor project associated with this Agreement or during any phase of work performed by others on said project that is based upon data, plans, designs, or specifications provided by the Consultant, the Consultant shall prepare any data, plans, designs, or specifications needed to correct any negligent acts, errors, or omissions of the Consultant or anyone for whom it is legally responsible in failing to comply with the foregoing standard. The services necessary to correct such negligent acts, errors, or omissions shall be performed without additional compensation, even though final payment may have been received by the Consultant. The Consultant shall provide such services as expeditiously as is consistent with professional performance. Acceptance of the services will not relieve the Consultant of the responsibility to correct such negligent acts, errors, or omissions.

(D) Completed design reports, plans and specifications, plans and specifications submitted for review by permit authorities, and plans and specifications issued for construction shall be signed, sealed, and dated by a Professional Engineer registered in the State of Missouri. Incomplete or preliminary plans or other documents, when submitted for review by others, shall not be sealed, but the name of the responsible engineer, along with the engineer's Missouri registration number, shall be indicated on the design report, plans and specifications or included in the transmittal document. In addition, the phrase "Preliminary - Not for Construction," or similar language, shall be placed on the incomplete or preliminary plan(s) in an obvious location where it can readily be found, easily read, and not obscured by other markings, as a disclosure to others that the design report, plans and specifications are incomplete or preliminary. When the design report, plans and specifications are completed, the phrase "Preliminary - Not for Construction" or similar language shall be removed and the design report, plans and specifications shall thereupon be sealed.

(E) The Consultant shall cooperate fully with the Sponsor’s activities on adjacent projects as may be directed by the Sponsor. This shall include attendance at meetings, discussions, and hearings as requested by the Sponsor. The minimum number and location of meetings shall be defined in Exhibit II.

(F) In the event any lawsuit or court proceeding of any kind is brought against the Sponsor, arising out of or relating to the Consultant's activities or services performed under this Agreement or any project of construction undertaken employing the deliverables provided by the Consultant in performing this Agreement, the Consultant shall have the affirmative duty to assist the Sponsor in preparing the Sponsor's defense, including, but not limited to, production of documents, trials, depositions, or court testimony. Any assistance given to the Sponsor by the Consultant will be compensated at an amount or rate negotiated between the Sponsor and the Consultant as will be identified in a separate agreement between the Sponsor and the Consultant. To the extent the assistance given to the Sponsor by the Consultant was necessary for the Sponsor to defend claims and liability due to the Consultant's negligent acts, errors, or omissions, the compensation paid by the Sponsor to the Consultant will be reimbursed to the Sponsor.

(6) NO SOLICITATION WARRANTY: The Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working for the Consultant, to solicit or secure this Agreement, and that it has not paid or agreed to pay any company or person, other than a bona fide employee, any fee, commission, percentage, brokerage fee, gifts, or any other consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the Sponsor will have the right to terminate this Agreement without liability, or at its discretion, to deduct from the Agreement price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gifts, or contingent fee, plus costs of collection including reasonable attorney's fees.

(7) DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS:

(A) DBE Goal: The following DBE goal has been established for this Agreement. The dollar value of services and related equipment, supplies, and materials used in furtherance thereof which is credited toward this goal will be based on the amount actually paid to DBE firms. The goal for the percentage of services to be awarded to DBE firms is 0% of the total Agreement dollar value.

(B) Eligibility of DBE's: Only those firms currently certified as DBE's by MoDOT, City of St. Louis/Lambert Airport Authority, Metro, City of Kansas City, and Kansas City Area Transportation Authority are eligible to participate as DBEs on this contract. A list of these firms is available on MoDOT's Office of External Civil Rights webpage at the following address under the MRCC DBE Directory:

http://www.modot.org/business/contractor_resources/External_Civil_Rights/DBE_program.htm

(C) Consultant's Certification Regarding DBE Participation: The Consultant's signature on this Agreement constitutes the execution of all DBE certifications which are a part of this Agreement. The Consultant shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The Consultant shall carry out applicable requirements of 49 CFR Part 26 in the award

and administration of DOT assisted contracts. Failure by the Consultant to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as the recipient deems appropriate.

1. Policy: It is the policy of the USDOT and the Sponsor that businesses owned by socially and economically disadvantaged individuals (DBEs) as defined in 49 CFR Part 26 have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds. Thus, the requirements of 49 CFR Part 26 apply to this Agreement.

2. Obligation of the Consultant to DBEs: The Consultant agrees to assure that DBEs have the maximum opportunity to participate in the performance of this Agreement and any subconsultant agreement financed in whole or in part with federal funds. In this regard the Consultant shall take all necessary and reasonable steps to assure that DBEs have the maximum opportunity to compete for and perform services. The Consultant shall not discriminate on the basis of race, color, religion, creed, disability, sex, age, or national origin in the performance of this Agreement or in the award of any subsequent subconsultant agreement. The Consultant shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT assisted agreements and contracts. Failure by the Consultant to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy, as the recipient deems appropriate.

3. Geographic Area for Solicitation of DBEs: The Consultant shall seek DBEs in the same geographic area in which the solicitation for other Subconsultants is made. If the Consultant cannot meet the DBE goal using DBEs from that geographic area, the Consultant shall, as a part of the effort to meet the goal, expand the search to a reasonably wider geographic area.

4. Determination of Participation Toward Meeting the DBE Goal: DBE participation shall be counted toward meeting the goal as follows:

A. Once a firm is determined to be a certified DBE, the total dollar value of the subconsultant agreement awarded to that DBE is counted toward the DBE goal set forth above.

B. The Consultant may count toward the DBE goal a portion of the total dollar value of a subconsultant agreement with a joint venture eligible under the DBE standards equal to the percentage of the ownership and control of the DBE partner in the joint venture.

C. The Consultant may count toward the DBE goal expenditures to DBEs who perform a commercially useful function in the completion of services required in this Agreement. A DBE is considered to perform a commercially useful function when the DBE is responsible for the execution of a distinct element of the services specified in the Agreement and the carrying out of those responsibilities by

actually performing, managing and supervising the services involved and providing the desired product.

D. A Consultant may count toward the DBE goal its expenditures to DBE firms consisting of fees or commissions charged for providing a bona fide service, such as professional, technical, consultant, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for the performance of this Agreement, provided that the fee or commission is determined by the Sponsor to be reasonable and not excessive as compared with fees customarily allowed for similar services.

E. The Consultant is encouraged to use the services of banks owned and controlled by socially and economically disadvantaged individuals.

5. Replacement of DBE Subconsultants: The Consultant shall make good faith efforts to replace a DBE Subconsultant who is unable to perform satisfactorily with another DBE Subconsultant. Replacement firms must be approved by the Sponsor and FAA.

6. Verification of DBE Participation: Prior to the release of the retained percentage by the Sponsor, the Consultant shall file a list with the Sponsor showing the DBEs used and the services performed. The list shall show the actual dollar amount paid to each DBE that is applicable to the percentage participation established in this Agreement. Failure on the part of the Consultant to achieve the DBE participation specified in this Agreement may result in sanctions being imposed on the Sponsor for noncompliance with 49 CFR Part 26. If the total DBE participation is less than the goal amount stated by the Sponsor, the Sponsor may sustain damages, the exact extent of which would be difficult or impossible to ascertain. Therefore, in order to liquidate such damages, the monetary difference between the amount of the DBE goal dollar amount and the amount actually paid to the DBEs for performing a commercially useful function will be deducted from the Consultant's payments as liquidated damages. If this Agreement is awarded with less than the goal amount stated above by the Sponsor, that lesser amount shall become the goal amount and shall be used to determine liquidated damages. No such deduction will be made when, for reasons beyond the control of the Consultant, the DBE goal amount is not met.

7. Documentation of Good Faith Efforts to Meet the DBE Goal: The Agreement goal established by the Sponsor is stated above in Subsection (7)(A). The Consultant must document the good faith efforts it made to achieve that DBE goal, if the agreed percentage specified in Subsection (7)(C)(8) below is less than the percentage stated in Subsection (7)(A). Good faith efforts to meet this DBE goal amount may include such items as, but are not limited to, the following:

A. Attended a meeting scheduled by the Sponsor to inform DBEs of contracting or consulting opportunities.

B. Advertised in general circulation trade association and socially and economically disadvantaged business directed media concerning DBE subcontracting opportunities.

C. Provided written notices to a reasonable number of specific DBEs that their interest in a subconsultant agreement is solicited in sufficient time to allow the DBEs to participate effectively.

D. Followed up on initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested in subconsulting work for this Agreement.

E. Selected portions of the services to be performed by DBEs in order to increase the likelihood of meeting the DBE goal (including, where appropriate, breaking down subconsultant agreements into economically feasible units to facilitate DBE participation).

F. Provided interested DBEs with adequate information about plans, specifications and requirements of this Agreement.

G. Negotiated in good faith with interested DBEs, and did not reject DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities.

H. Made efforts to assist interested DBEs in obtaining any bonding, lines of credit or insurance required by the Sponsor or by the Consultant.

I. Made effective use of the services of available disadvantaged business organizations, minority contractors' groups, disadvantaged business assistance offices, and other organizations that provide assistance in the recruitment and placement of DBE firms.

8. DBE Participation Obtained by Consultant: The Consultant has obtained DBE participation and agrees to use DBE firms to complete at least 0% of the total services to be performed under this Agreement, by dollar value. All DBE firms which the Consultant intends to use, including DBE firm participation above and beyond the goal established in Subsection (7)(A), and the type and dollar value of the services each DBE will perform, is as follows:

(A) DBE NAME AND ADDRESS	(B) TYPE OF DBE SERVICE	(C) DOLLAR VALUE OF DBE SUB-CONTRACT	(D) PERCENT APPLICABLE TO DBE GOAL (100%, 60%)	(E) DOLLAR AMOUNT APPLICABLE TO DBE GOAL (C x D)	(F) PERCENT OF TOTAL CONTRACT (C / TOTAL CONTRACT AMOUNT)

N/A					
TOTAL DBE PARTICIPATION				$0.00	0.0%

9. Good Faith Efforts to Obtain DBE Participation: If the Consultant's agreed DBE goal amount as specified in Subsection (7)(C)(8) is less than the Sponsor's DBE goal given in Subsection (7)(A), then the Consultant certifies good faith efforts were taken by Consultant in an attempt to obtain the level of DBE participation set by the Sponsor in Subsection (7)(A). Documentation of the Consultant's good faith efforts is to be submitted with this Agreement to the Sponsor and a copy submitted to FAA.

(8) SUBCONSULTANTS:

(A) The Consultant agrees that except for those firms and for those services listed below, there shall be no transfer of engineering services performed under this Agreement without the written consent of the Sponsor. Subletting, assignment, or transfer of the services or any part thereof to any other corporation, partnership, or individual is expressly prohibited. Any violation of this clause will be deemed cause for termination of this Agreement.

EXCEPTIONS (Subconsultant information):

List all Subconsultant(s) to be used for any piece of work outlined in this agreement, excluding DBE Firms listed in the DBE Participation Subsection (7)(C)(8), DBE Participation Obtained by Consultant, in this agreement. If none, write "N/A" in the first row of the first column.

FIRM NAME	COMPLETE ADDRESS	NATURE OF SERVICES	SUBCONTRACT AMOUNT
Palmerton & Parrish	12958 State Highway 47 Marthasville, MO 63357	Geotechnical Investigation	$12,000
Engineering & Research International, Inc	1401 Regency Drive East, Savoy, IL 61874	Testing	$25,000

(B) The Consultant agrees and shall require the selected Subconsultants to maintain books, documents, papers, accounting records, and other evidence pertaining to direct costs and expenses incurred under the Agreement and to make such materials available at their offices at reasonable times during the Agreement period and for three (3) years from the date of final payment under the Agreement for

inspection by the Sponsor or any of its authorized representatives (or any authorized representative of FAA or the federal government), and copies thereof shall be furnished.

(C) Unless waived or modified by the Sponsor, the Consultant agrees to require, and shall provide evidence to the Sponsor, that those Subconsultants shall maintain commercial general liability, automobile liability, professional liability and worker's compensation and employer's liability insurance, or alternatively, a comparable umbrella insurance policy submitted to and approved by FAA, for not less than the period of services under such subconsultant agreements, and in an amount equal to the Sponsor's sovereign immunity caps as stated in section 537.600 RSMo and subsequently adjusted by the Missouri Department of Insurance. If the statutory limit of liability for a type of liability specified in this section is repealed or does not exist, the minimum coverage shall not be less than the following amounts:

1. Commercial General Liability: $500,000.00 per person up to $3,000,000.00 per occurrence;

2. Automobile Liability: $500,000.00 per person up to $3,000,000.00 per occurrence;

3. Worker's Compensation in accordance with the statutory limits; and Employer's Liability: $1,000,000.00; and

4. Professional Liability: $1,000,000.00, each claim and in the annual aggregate.

(D) The subletting of the services will in no way relieve the Consultant of its primary responsibility for the quality and performance of the services to be performed hereunder, and the Consultant shall assume full liability for the services performed by its Subconsultants.

(E) The payment for the services of any Subconsultants will be reimbursed at cost by the Sponsor in accordance with the submitted invoices for such services, as set forth in Section (9), entitled "Fees and Payments".

(F) The Consultant agrees to furnish a list of any MoDOT-approved DBE Subconsultants under this Agreement upon the request of the Sponsor or FAA. Further, the Consultant agrees to report to the Sponsor on a monthly basis the actual payments made by the Consultant to such DBE Subconsultants.

(G) The Consultant agrees that any agreement between the Consultant and any Subconsultant shall be an actual cost plus fixed fee agreement if the amount of the agreement between the Consultant and Subconsultant exceeds Twenty-Five Thousand Dollars ($25,000). Subconsultant agreements for amounts of $25,000 or less may be lump sum or actual cost plus fixed fee as directed by the Sponsor.

(9) FEES AND PAYMENTS:

(A) The Consultant shall not proceed with the services described herein until the Consultant receives written authorization in the form of a Notice to Proceed from the Sponsor.

(B) The amount to be paid to the Consultant by the Sponsor as full remuneration for the performance of all services called for in this Agreement will be on the following basis: labor, overhead and profit will be paid for as a lump sum cost of of **$180,426.78** which is shown in Exhibit IV, "Derivation of Consultant Project Costs", and Exhibit V, "Engineering Basic and Special Services-Cost Breakdown" attached hereto and made a part of this Agreement. Payment under the provisions of this Agreement is limited to those costs incurred in accordance with generally accepted accounting principles to the extent they are considered necessary to the execution of the item of service.

(C) The Consultant's fee shall include the hourly salary of each associate and employee, salary-related expenses, general overhead, and direct non-salary costs as allowed by 48 CFR Part 31, the Federal Acquisition Regulations (FAR), and 23 CFR 172, Procurement, Management, and Administration of Engineering and Design Related Services. The hourly salary of each associate and employee is defined as the actual productive salaries expended to perform the services. The other billable costs for the project are defined as follows:

1. Salary-related expenses are additions to payroll cost for holidays, sick leave, vacation, group insurance, worker's compensation insurance, social security taxes (FICA), unemployment insurance, disability taxes, retirement benefits, and other related items.

2. General overhead cost additions are for administrative salaries (including non-productive salaries of associates and employees), equipment rental and maintenance, office rent and utilities, office maintenance, office supplies, insurance, taxes, professional development expenses, legal and audit fees, professional dues and licenses, use of electronic computer for accounting, and other related items.

3. Direct non-salary costs incurred in fulfilling the terms of this Agreement, such as but not limited to travel and subsistence, subcontract services, reproductions, computer charges, materials and supplies, and other related items, will be charged at actual cost without any override or additives.

4. The additions to productive salaries for Items in Subsections (9)(C) 1 and 2 will be established based on the latest audit.

5. The Consultant shall provide a detailed manhour/cost breakdown for each phase of the project indicating each job classification with base wage rates and the number of hours associated with each phase. The breakdown shall include work activities and be in sufficient detail to reflect the level of effort involved. This information shall be attached hereto and made a part of this Agreement as Exhibit V "Engineering Basic and Special Services -Cost Breakdown".

6. The Consultant shall provide a detailed breakdown of all Subconsultant fees, including overhead and profit, when requested by the Sponsor and/or FAA. Once the cumulative amount to be paid to a Subconsultant by the Consultant, as full remuneration for the performance of services, as called for in this Agreement and any supplemental agreements hereafter, equals or exceeds Twenty-Five Thousand Dollars ($25,000), submittal of a separate Exhibit IV, "Derivation of Consultant Project Costs" and Exhibit V, "Engineering Basic and Special Services-Cost Breakdown", prepared to solely reflect the Subconsultant's fees shall be attached hereto and made a part of this Agreement, subject to the process described in Section (3) of this Agreement. These Exhibits prepared to reflect the Subconsultant's fees shall be labeled Exhibit IV-A and Exhibit V-A, respectively.

7. The Consultant shall provide a detailed breakdown of all travel expense, living expense, reproduction expense, and any other expense that may be incurred throughout the project. These expenses must be project specific and not covered in or by an overhead rate.

8. The property and equipment used on this project such as automotive vehicles, survey equipment, office equipment, etc., shall be owned, rented, or leased by the Consultant, and charges will be made to the project for the use of such property at the rate established by company policies and practices. Approval of the Sponsor and FAA will be required prior to acquisition of reimbursable special equipment.

9. The Consultant agrees to pay each Subconsultant under this Agreement for satisfactory performance of its contract no later than 15 days from the Consultant's receipt of each payment the Consultant receives from the Sponsor. The Consultant agrees further to return retainage payments to each Subconsultant within 15 days after the Subconsultant's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Sponsor. This clause applies to both DBE and non-DBE Subconsultants.

(D) The Consultant shall submit an invoice for services rendered to the Sponsor not more than once every month. A progress summary indicating the current status of the services shall be submitted along with each invoice. Upon receipt of the invoice and progress summary, the Sponsor will, as soon as practical, but not later than 30 days from receipt, pay the Consultant for the services rendered, including the proportion of the fixed fee earned as reflected by the estimate of the portion of the services completed as shown by the progress summary, less partial payments previously made. A late payment charge of one and one half percent (1.5%) per month shall be assessed for those invoiced amounts not paid, through no fault of the Consultant, within 30 days after the Sponsor 's receipt of the Consultant's invoice. The Sponsor will not be liable for the late payment charge on any invoice which requests payment for costs which exceed the proportion of the maximum amount payable earned as reflected by the estimate of the portion of the services completed, as shown by the progress summary. The payment, other than the fixed fee, will be subject to final audit

of actual expenses incurredduring the period of the Agreement.

The Sponsor may hold a percentage of the amount earned by the Consultant, not to exceed two percent (2%), until 100% of services as required by Section (2), "Scope of Services," of this Agreement are completed and have been received and approved by the Sponsor and FAA. The payment will be subject to final audit of actual expenses during the period of the Agreement. Upon completion and acceptance of all services required by Section (2), "Scope of Services," the two percent (2%) retainage will be paid to the Consultant. As an alternative to withholding two percent (2%) retainage as set forth above, the Sponsor may accept a letter of credit or the establishment of an escrow account in the amount of said retainage and upon such other terms and conditions as may be acceptable to the Sponsor and the Consultant. If a letter of credit or escrow account is not acceptable to the Sponsor, then the percent retainage will control.

(10) PERIOD OF SERVICE:

(A) The services, and if more than one, then each phase thereof, shall be completed in accordance with the schedule contained in Exhibit VI, "Performance Schedule," attached hereto and made a part of this Agreement. The Consultant and the Sponsor will be required to meet this schedule.

(B) The Consultant and Sponsor will be required to meet the schedules in this Agreement. The Sponsor will grant time extensions for delays due to unforeseeable causes beyond the control of and without fault or negligence of the Consultant and no claim for damage shall be made by either party. Requests for extensions of time shall be made in writing by the Consultant before that phase of work is scheduled to be completed, stating fully the events giving rise to the request and justification for the time extension requested. The anticipated date of completion of the work, including review time, is stated in Exhibit VI of this Agreement. An extension of time shall be the sole allowable compensation for any such delays, except as otherwise provided in Section (3) for additional/changed work and differing/unforeseen conditions. Any extensions or additional costs shall be subject to FAA approval.

(C) As used in this provision, the term "delays due to unforeseeable causes" include but are not limited to the following:

1. War or acts of war, declared or undeclared;

2. Flooding, earthquake, or other major natural disaster preventing the Consultant from performing necessary services at the project site, or in the Consultant's offices, at the time such services must be performed;

3. The discovery on the project of differing site conditions, hazardous substances, or other conditions which, in the sole judgment of the Sponsor,

justifies a suspension of the services or necessitates modifications of the project design or plans by the Consultant;

4. Court proceedings;

5. Changes in services or extra services.

(11) TERMINATION OF AGREEMENT – 2 CFR § 200 Appendix II(B):

(A) Termination for Convenience:

1. The Sponsor may, by written notice to the Consultant, terminate this Agreement for its convenience and without cause or default on the part of the Consultant. Upon receipt of the notice of termination, except as explicitly directed by the Sponsor, the Consultant must immediately discontinue all services affected.

2. Upon termination of the Agreement, the Consultant must deliver to the Sponsor all data, surveys, models, drawings, specifications, reports, maps, photographs, estimates, summaries, and other documents and materials prepared by the Consultant under this Agreement, whether complete or partially complete.

3. The Sponsor agrees to make just and equitable compensation to the Consultant for satisfactory work completed up through the date the Consultant receives the termination notice. Compensation will not include anticipated profit on non-performed services.

4. The Sponsor further agrees to hold the Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

(B) Termination for Default:

1. Either party may terminate this Agreement for cause if the other party fails to fulfill its obligations that are essential to the completion of the work per the terms and conditions of the Agreement. The party initiating the termination action must allow the breaching party an opportunity to dispute or cure the breach.

2. The terminating party must provide the breaching party seven days advance written notice of its intent to terminate the Agreement. The notice must specify the nature and extent of the breach, the conditions necessary to cure the breach, and the effective date of the termination action. The rights and remedies in this clause are in addition to any other rights and remedies provided by law or under this agreement.

3. Termination by the Sponsor:

a. The Sponsor may terminate this Agreement, in whole or in part, for the failure of the Consultant to:

i. Perform the services within the time specified in this Agreement or by Sponsor-approved extension;

ii. Make adequate progress so as to endanger satisfactory performace of the Project;

iii. Fulfill the obligations of the Agreement that are essential to the completion of the Project.

b. Upon receipt of the notice of termination, the Consultant must immediately discontinue all services affected unless the notice directs otherwise. Upon termination of the Agreement, the Consultant must deliver to the Sponsor all data, surveys, models, drawings, specifications, reports, maps, photographs, estimates, summaries, and other documents and materials prepared by the Consultant under this Agreement, whether complete or partially complete.

c. The Sponsor agrees to make just and equitable compensation to the Consultant for satisfactory work completed up through the date the Consultant receives the termination notice. Compensation will not include anticipated profit on non-performed services.

d. The Sponsor further agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

e. If, after finalization of the termination action, the Sponsor determines the Consultant was not in default of the Agreement, the rights and obligations of the parties shall be the same as if the Sponsor issed the termination for the convenience of the Sponsor.

4. Termination by Consultant:

a. The Consultant may terminate this Agreement in whole or in part, if the Sponsor:

i. Defaults on its obligations under this Agreement;

ii. Fails to make payment to the Consultant in accordance with the terms of this Agreement; or

iii. Suspends the Project for more than one hundred eighty (180) days due to reasons beyond the control of the Consultant.

b. Upon receipt of a notice of termination from the Consultant, the Sponsor agrees to cooperate with the Consultant for the purpose of terminating the Agreement or a portion thereof, by mutual consent. If the Sponsor and Consultant cannot reach mutual agreement on the termination settlement, the Consultant may, without prejudice to any rights and remedies it may have, proceed with terminating all or parts of this Agreement based upon the Sponsor's breach of the Agreement.

c. In the event of termination due to Sponsor breach, the Consultant is entitled to invoice the Sponsor and to receive full payment for all services performed or furnished in accordance with this Agreement and all justified reimbursable expenses incurred by the Consultant through the effective date of termination action. The Sponsor agrees to hold the Consultnat harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

(12) OWNERSHIP OF DRAWINGS AND DOCUMENTS:

(A) All drawings and documents prepared in performance of this Agreement shall be delivered to and become the property of the Sponsor upon suspension, abandonment, cancellation, termination, or completion of the Consultant's services hereunder; provided, however,

1. The Consultant shall have the right to their future use with written permission of the Sponsor;

2. The Consultant shall retain its rights in its standard drawing details, designs, specifications, CADD files, databases, computer software, and any other proprietary property; and

3. The Consultant shall retain its rights to intellectual property developed, utilized, or modified in the performance of the services subject to the following:

A. Copyrights. Sponsor, as the contracting agency, reserves a royalty-free, nonexclusive and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for Governmental purposes:

I. The copyright in any works developed under this Agreement, or under a subgrant or contract under this Agreement; and

II. Any rights of copyright to which Sponsor, its Consultant or Subconsultant purchases ownership with payments provided by this Agreement.

B. Patents. Rights to inventions made under this Agreement shall be determined in accordance with 37 CFR Part 401. The standard

patent rights clause at 37 CFR § 401.14, as modified below, is hereby incorporated by reference.

I. The terms "to be performed by a small business firm or domestic nonprofit organization" shall be deleted from paragraph (g)(1) of the clause;

II. Paragraphs(g)(2) and (g)(3) of the clause shall be deleted; and

III. Subsection (l) of the clause, entitled "communication" shall read as follows: "(l) Communication. All notifications required by this clause shall be submitted to the Sponsor ".

IV. The following terms in 37 CFR 401.14 shall for the purpose of this Agreement have the following meaning:

Contractor - Consultant

Government and Federal Agency - Sponsor

Subcontractor - Subconsultant

4. Basic survey notes, design computations, and other data prepared under this Agreement shall be made available for use by the Sponsor without further compensation and without restriction or limitation on their use.

(B) Electronically Produced Documents:

1. Electronically produced documents will be submitted to the Sponsor, FAA, and/or FAA in data files compatible with MicroStation V8i (specify CADD version) and Adobe PDF. The Consultant makes no warranty as to the compatibility of the data files beyond the above specified release or version of the stated software.

2. Because data stored on electronic media can deteriorate undetected or be modified without the Consultant's knowledge, the electronic data files submitted to the Sponsor will have an acceptance period of 60 calendar days after receipt by the Sponsor. If during that period the Sponsor finds any errors or omissions in the files, the Consultant will correct the errors or omissions as a part of this Agreement. However, any changes requested by the Sponsor during the 60 calendar day acceptance period that constitute Additional Services under Section (3) shall be compensated in accordance with the terms of the Agreement. The Consultant will not be responsible for maintaining copies of the submitted electronic data files after the acceptance period.

3. Any changes requested after the acceptance period will be considered additional services for which the Consultant shall be reimbursed at the hourly rates established herein plus the cost of materials.

4. The data on the electronic media shall not be considered the Consultant's instrument of service. Only the submitted hard copy documents with the Consultant Engineer's seal on them will be considered the instrument of service. The Consultant's nameplate shall be removed from all electronic media provided to the Sponsor.

(C) The Sponsor may incorporate any portion of the deliverables into a project other than that for which they were performed, without further compensation to the Consultant; provided however, that (1) such deliverables shall thereupon be deemed to be the work product of the Sponsor, and the Sponsor shall use same at its sole risk and expense; and (2) the Sponsor shall remove the Consultant's name, seal, endorsement, and all other indices of authorship from the deliverables.

(13) DECISIONS UNDER THIS AGREEMENT AND DISPUTES:

(A) The Sponsor will determine the acceptability of the drawings, specifications, and estimates and all other deliverables to be furnished, and will decide the questions that may arise relative to the proper performance of this Agreement. The determination of acceptable deliverables may occur following final payment, and as late as during the construction of the project which decisions shall be conclusive, binding and incontestable, if not arbitrary, capricious or the result of fraud.

(B) The Sponsor will decide all questions which may arise as to the quality, quantity, and acceptability of services performed by Consultant and as to the rate of progress of the services; all questions which may arise as to the interpretation of the plans and specifications; all questions as to the acceptable fulfillment of the Agreement on the part of the Consultant; the proper compensation for performance or breach of the Agreement; and all claims of any character whatsoever in connection with or growing out of the services of the Consultant, whether claims under this Agreement or otherwise. The Sponsor's decisions shall be conclusive, binding and incontestable if not arbitrary, capricious or the result of fraud.

(C) If the Consultant has a claim for payment against the Sponsor which in any way arises out of the provisions of this Agreement or the performance or non-performance hereunder, written notice of such claim must be made within sixty (60) days of the Consultant's receipt of payment for the retained percentage. Notwithstanding Section (23) of this Agreement, the notice of claim shall be personally delivered or sent by certified mail to the Sponsor. The notice of claim shall contain an itemized statement showing completely and fully the items and amounts forming the basis of the claim and the factual and legal basis of the claim.

(D) Any claim for payment or an item of any such claim not included in

the notice of claim and itemized statement, or any such claim not filed within the time provided by this provision shall be forever waived, and shall neither constitute the basis of nor be included in any legal action, counterclaim, set-off, or arbitration against the Sponsor.

(E) The claims procedure in Subsections (13)(C) and (D) does not apply to any claims of the Sponsor against the Consultant. Further, any claims of the Sponsor against the Consultant under this Agreement are not waived or estopped by the claims procedure in Subsections (13)(C) and (D).

(F) Not withstanding Subsections (13)(A) through (E) above, in the event of any material dispute hereunder, both parties agree to pursue, diligently and in good faith, a mutually acceptable resolution.

(14) SUCCESSORS AND ASSIGNS: The Sponsor and the Consultant agree that this Agreement and all agreements entered into under the provisions of this Agreement shall be binding upon the parties hereto and their successors and assigns.

(15) INDEMNIFICATION RESPONSIBILITY:

(A) The Consultant agrees to save harmless the Sponsor, FAA, and the FAA from all liability, losses, damages, and judgments for bodily injury, including death and property damage to the extent due to the Consultant's negligent acts, errors, or omissions in the services performed or to be performed under this Agreement, including those negligent acts, errors, or omissions of the Consultant's employees, agents, and Subconsultants.

(B) The Consultant shall be responsible for the direct damages incurred by the Sponsor as result of the negligent acts, errors, or omissions of the Consultant or anyone for whom the Consultant is legally responsible, and for any losses or costs to repair or remedy construction as a result of such negligent acts, errors or omissions; provided, however, the Consultant shall not be liable to the Sponsor for such losses, costs, repairs and/or remedies which constitute betterment of or an addition of value to the construction or the project.

(C) Neither the Sponsor's review, approval or acceptance of or payment for any services required under this Agreement, nor the termination of this Agreement prior to its completion, will be construed to operate as a waiver of any right under this Agreement or any cause of action arising out of the performance of this Agreement. This indemnification responsibility survives the completion of this Agreement, as well as the construction of the project at some later date, and remains as long as the construction contractor may file or has pending a claim or lawsuit against the Sponsor on this project arising out of the Consultant's services hereunder.

(16) INSURANCE:

(A) The Consultant shall maintain commercial general liability,

automobile liability, and worker's compensation and employer's liability insurance in full force and effect to protect the Consultant from claims under Worker's Compensation Acts, claims for damages for personal injury or death, and for damages to property from the negligent acts, errors, or omissions of the Consultant and its employees, agents, and Subconsultants in the performance of the services covered by this Agreement, including, without limitation, risks insured against in commercial general liability policies.

(B) The Consultant shall also maintain professional liability insurance to protect the Consultant against the negligent acts, errors, or omissions of the Consultant and those for whom it is legally responsible, arising out of the performance of professional services under this Agreement.

(C) The Consultant's insurance coverages shall be for not less than the following limits of liability:

1. Commercial General Liability: $500,000.00 per person up to $3,000,000.00 per occurrence;

2. Automobile Liability: $500,000.00 per person up to $3,000,000.00 per occurrence;

3. Worker's Compensation in accordance with the statutory limits; and Employer's Liability: $1,000,000.00; and

4. Professional ("Errors and Omissions") Liability: $1,000,000.00, each claim and in the annual aggregate.

(D) In lieu of the minimum coverage stated in Subsections (16)(C)(1) and (C)(2) above, the Consultant may obtain insurance at all times in an amount equal to the Sponsor’s sovereign immunity caps as stated in section 537.600 RSMo and subsequently adjusted by the Missouri Department of Insurance. If the statutory limit of liability for a type of liability specified in this section is repealed or does not exist, the Consultant shall obtain insurance with the minimum coverage stated in Subsections (16)(C)(1) and (C)(2) above.

(E) The Consultant shall, upon request at any time, provide the Sponsor with certificates of insurance evidencing the Consultant's commercial general or professional liability ("Errors and Omissions") policies and evidencing that they and all other required insurance is in effect, as to the services under this Agreement.

(F) Any insurance policy required as specified in Section (16) shall be written by a company which is incorporated in the United States of America or is based in the United States of America. Each insurance policy must be issued by a company authorized to issue such insurance in the State of Missouri.

(17) CONSTRUCTION PHASE OF THE PROJECT:

(A) This Agreement does not include construction phase services. Review of shop drawings and other construction phase services can be added by Supplemental Agreement after design has been completed and the construction contract period has been determined.

(B) Because the Consultant has no control over the cost of labor, materials, equipment, or services furnished by others, or over the construction contractor(s)' methods of determining prices, or over competitive bidding or market conditions, any of the Consultant's opinions of probable project costs and/or construction cost, if provided for herein, are to be made on the basis of the Consultant's experience and qualifications and represent the Consultant's best judgment as an experienced and qualified design professional, familiar with the construction industry, but the Consultant cannot and does not guarantee that proposals, bids, or actual total project costs and/or construction costs will not vary from opinions of probable costs prepared by the Consultant.

(C) The Consultant shall not have control over or charge of and shall not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the construction work, since these are solely the construction contractor(s)' responsibility under the construction contract(s). The Consultant shall not be responsible for the construction contractor(s)' schedules or failure to carry out the construction work in accordance with the construction contract(s). The Consultant shall not have control over or charge of acts of omissions of the construction contractor(s), or any of its or their subcontractors, agents, or employees, or of any other persons performing portions of the construction work.

(18) NONDISCRIMINATION ASSURANCE: During the performance of this Agreement, the Consultant, for itself, its assigns, and successors in interest (hereinafter referred to as the "Consultant") agrees as follows:

(A) Compliance With Regulations: The Consultant 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 Agreement. In addition, the Consultant shall comply with all state statutes related to nondiscrimination.

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

(C) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made

by the Consultant for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential Subconsultant or supplier will be notified by the Consultant of the Consultant's obligations under this Agreement and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.

(D) Information and Reports: The Consultant 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 FAA to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of the Consultant is in the exclusive possession of another who fails or refuses to furnish the information, the Consultant will so certify to the Sponsor, or the FAA, as appropriate, and will set forth what efforts it has made to obtain the information.

(E) Sanctions for Noncompliance: In the event of a Consultant's noncompliance with the nondiscrimination provisions of this Agreement, the Sponsor will impose such contract sanctions as it, FAA, or the FAA may determine to be appropriate, including, but not limited to:

1. Withholding payments to the Consultant under this Agreement until the Consultant complies; and/or

2. Cancelling, terminating, or suspending this Agreement, in whole or in part.

(F) Incorporation of Provisions: The Consultant will include these nondiscrimination provisions in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The Consultant will take action with respect to any subcontract or procurement as the Sponsor, or the FAA may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, that if the Consultant becomes involved in, or is threatened with litigation by a Subconsultant or supplier because of such direction, the Consultant may request the Sponsor or the United States to enter into such litigation to protect the interests of the Sponsor or United States.

(H) Title VI List of Pertinent Nondiscrimination Authorities: During the performance of this Agreement, the Consultant, for itself, its assignees, and successors in interest (hereinafter referred to as the "Consultant") agrees to comply with the following nondiscrimination statutes and authorities, including, but not limited to:

1. Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq*., 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);

2. 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);

3. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);

4. Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq*.), as amended (prohibits discrimination on the basis of disability); and 49 CFR Part 27;

5. The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq*.) (prohibits discrimination on the basis of age);

6. 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);

7. 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);

8. Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the bais of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 USC §§ 12131-12189) as implemented by Department of Transportation regulations at 49 CFR Parts 37 and 38;

9. The FAA’s nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

10. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activites with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

11. 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);

and

12. Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC § 1681 *et seq*.).

(19) APPROVAL: This Agreement is made and entered into subject to the approval of FAA.

(20) AVIATION FEDERAL AND STATE CLAUSES:

(A) Civil Rights – 49 USC § 47123: The Consultant agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to assure 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 Consultant from the solicitation period through the completion of the Agreement. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

(B) Trade Restrictions Certification – 49 U.S.C. § 50104, 49 CFR Part 30:

1. By execution of this Agreement, the Consultant certifies that with respect to this Agreement, the Consultant:

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 (USTR);

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 USTR; and

C. has not entered into any subcontract for any product to be used 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 USTR.

2. 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.

3. The Consultant must provide immediate written notice to the Sponsor if the Consultant learns that its certification or that of a subconsultant was erroneous when submitted or has become erroneous by reason of changed circumstances. The Consultant must require subconsultants provide immediate written

notice to the Consultant if at any time it learns that its certification was erroneous by reason of changed circumstances.

4. 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 a Consultant or subconsultant:

A. 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 USTR; or

B. whose subconsultants are owned or controlled by oen or more citizens or nationals of a foreign country on such USTR list; or

C. who incorporates in the public works project any product of a foreign country on such USTR list.

5. 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 Consultant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

6. The Consultant 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 Consultant may rely on the certification of a prospective subconsultant 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 USTR, unless the Consultant has knowledge that the certification is erroneous.

7. This certification is a material representation of fact upon which reliance was placed when entering into this Agreement. If it is later determined that the Consultant or subconsultant knowingly rendered an erroneous certification, the FAA may direct through the Sponsor cancellation of the Agreement for default at no cost to the Sponsor, or the FAA.

(C) Eligible Employees - Executive Order 07-13:

1. The Consultant shall comply with all the provisions of Executive Order 07-13, issued by the Honorable Matt Blunt, Governor of Missouri, on the sixth (6th) day of March, 2007. This Executive Order, which promulgates the State of Missouri's position to not tolerate persons who contract with the state engaging in or supporting illegal activities of employing individuals who are not eligible to work in the United States, is incorporated herein by reference and made a part of this Agreement. By signing this Agreement, the Consultant hereby certifies that any employee of the Consultant assigned to perform services under this Agreement is eligible and authorized to work in the United States in compliance with federal law. In the event the Consultant fails to comply with the provisions of Executive Order 07-13, or in the event the Sponsor

has reasonable cause to believe that the Consultant has knowingly employed individuals who are not eligible to work in the United States in violation of federal law, the Sponsor reserves the right to impose such contract sanctions as it may determine to be appropriate, including but not limited to contract cancellation, termination or suspension in whole or in part or both.

2. The Consultant shall include the above-provision concerning said Executive Order within every subcontract. The Consultant shall take such action with respect to any subcontract as the Sponsor may direct as a means of enforcing such provisions, including sanctions for noncompliance.

(D) Texting While Driving – Executive Order 13513, DOT Order 3902.10:

1. 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), 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.

2. In support of this initiative, the Sponsor encourages the Consultant 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 Consultant must include the substance of this clause in all sub-tier contracts exceeding Three Thousand Five Hundred Dollars ($3,500) and involve driving a motor vehicle in performance of work activities associated with the project.

(E) Veteran's Preference – 49 USC § 47112(c): In the employment of labor (except in executive, administrative, and supervisory positions), the Consultant and all subconsultants must give preference to covered veterans as defined within Title 49 U.S.C. § 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.

(F) Federal Fair Labor Standards Act (Federal Minimum Wage) – 29 USC § 201, et seq.: All contracts and subcontracts that result from this Agreement incorporate by reference the provisions of 29 CFR Part201, 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 Consultant has full responsibility to monitor compliance to the above-referenced statute and regulation. The Consultant must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

(G) Occupational Safety and Health Act of 1970 – 20 CFR Part 1910:

All contracts and subcontracts that result from this Agreement incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. The Consultant must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Consultant retains full responsibility to monitor its compliance and its subconsultants' compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). The Consultant 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.

(H) Energy Conservation Requirements – 2 CFR § 200, Appendix II(H): The Consultant and any subconsultants 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*.).

(I) Debarment and Suspension (Non-Procurement) – 2 CFR Part 180 (Subpart C), 2 CFR Part 1200, DOT Order 4200.5 DOT Suspension & Debarment Procedures & Ineligibility:

1. By executing this Agreement, the Consultant certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this Agreement.

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

A. Checking the System for Award Management at website: https://www.sam.gov.

B. Collecting a certification statement similar to the statement in Subsection (20)(E)1. Above.

C. Inserting a clause or condition in the covered transaction with the lower tier Subcontractor.

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

(21) ACTIONS: No action may be brought by either party hereto concerning any matter, thing, or dispute arising out of or relating to the terms, performance, non-performance, or otherwise of this Agreement except in the Circuit Court of Jasper County, Missouri. The parties agree that this Agreement is entered into at Joplin,

Missouri and substantial elements of its performance will take place or be delivered at Joplin, Missouri, by reason of which the Consultant consents to venue of any action against it in Jasper County, Missouri. The Consultant shall cause this provision to be incorporated into all of its agreements with, and to be binding upon, all Subconsultants of the Consultant in the performance of this Agreement.

(22) AUDIT OF RECORDS: For purpose of an audit, the Consultant shall maintain all those records relating to direct costs and expenses incurred under this Agreement, including but not limited to invoices, payrolls, bills, receipts, etc. These records must be available at all reasonable times to the Sponsor, the FAA, and the Comptroller General of the United States or their designees and representatives, at the Consultant's offices, at no charge, during the Agreement period and any extension thereof, and for the three (3) year period following the date of final payment made under this Agreement. If the Sponsor has notice of a potential claim against the Consultant and/or the Sponsor based on the Consultant's services under this Agreement, the Consultant, upon written request of the Sponsor, shall retain and preserve its records until the Sponsor has advised the Consultant in writing that the disputed claim is resolved.

(23) NOTICE TO THE PARTIES: All notices or communications required by this Agreement shall be made in writing and shall be effective upon receipt by the Sponsor or the Consultant at their respective addresses of record. Letters or other documents which are prepared in 8.5 x 11 inch format may be delivered by telefax, provided that an original is received at the same address as that to which that telefax message was sent, within three (3) business days of the telefax transmission. Either party may change its address of record by written notice to the other party.

(A) Notice to the Sponsor: Notices to the Sponsor shall be addressed and delivered to the following Sponsor's representative, who is hereby designated by the Sponsor as its primary authorized representative for administration, interpretation, review, and enforcement of this Agreement and the services of the Consultant hereunder:

NAME AND TITLE OF SPONSOR'S REPRESENTATIVE	Lynden Lawson, Assistant Director of Public Works		
SPONSOR'S NAME	City of Joplin, Missouri		
SPONSOR'S ADDRESS	602 S. Main St., Joplin, MO 64801		
PHONE	(417) 624-0820	FAX	
E-MAIL ADDRESS	llawson@Joplinmo.org		

The Sponsor reserves the right to substitute another person for the individual named at

any time, and to designate one or more other representatives to have authority to act upon its behalf generally or in limited capacities, as the Sponsor may now or hereafter deem appropriate. Such substitution or designations shall be made by the Sponsor in a written notice to the Consultant.

(B) Notice to the Consultant: Notices to Consultant shall be addressed and delivered to Consultant's representative, as follows:

NAME AND TITLE OF CONSULTANT'S REPRESENTATIVE	Ty Sander, P.E.		
CONSULTANT'S NAME	Crawford, Murphy & Tilly, Inc.		
CONSULTANT'S ADDRESS	One Memorial Drive, Suite 500 St. Louis, MO 63102		
PHONE	(314) 436-5500	FAX	(314) 436-0723
E-MAIL ADDRESS	tsander@cmtengr.com		

The Consultant reserves the right to substitute another person for the individual named at any time, and to designate one or more other representatives to have authority to act upon its behalf generally or in limited capacities, as the Consultant may now or hereafter deem appropriate. Such substitutions or designations shall be made by the Consultant's president or chief executive officer in a written notice to the Sponsor.

(24) LAW OF MISSOURI TO GOVERN: This Agreement shall be construed according to the laws of the State of Missouri. The Consultant shall comply with all local, state, and federal laws and regulations which govern the performance of this Agreement.

(25) CONFIDENTIALITY: The Consultant agrees that the Consultant's services under this Agreement are a confidential matter between the Consultant and the Sponsor. The Consultant shall not disclose any aspect of the Consultant's services under this Agreement to any other person, corporation, governmental entity, or news media, excepting only to Consultant's lawyers, accountants, insurers, and such employees, Subconsultants, and agents as may be necessary to allow them to perform services for the Consultant in the furtherance of this Agreement, without the prior approval of the Sponsor; provided, however, that any confidentiality and non-disclosure requirements set out herein shall not apply to any of the Consultant's services or to any information which (1) is already in the public domain or is already in the Consultant's possession at the time the Consultant performs the services or comes into possession of the information; (2) is received from a third party without any confidentiality obligations; or (3) is required to be disclosed by governmental or judicial order. Any disclosure pursuant to a request to the Sponsor under Chapter 610, RSMo, shall not constitute a breach of this Agreement. The content and extent of any authorized

disclosure shall be coordinated fully with and under the direction of the Sponsor, in advance.

(26) SOLE BENEFICIARY: This Agreement is made for the sole benefit of the parties hereto and nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the Sponsor and the Consultant.

(27) SEVERABILITY AND SURVIVAL:

(A) Any provision or part of this Agreement held to be void or unenforceable under any law or regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the Sponsor and the Consultant.

(B) All express representations, indemnifications, or limitations of liability made or given in this Agreement will survive the completion of all services by the Consultant under this Agreement or the termination of this Agreement for any reason.

(28) PAYMENT BOND: In the event that any subconsultants are used to supply at least fifty thousand dollars ($50,000) worth of materials and/or labor not within the scope of environmental assessment services or licensed professional services as defined by chapter 327, RSMo, the Consultant shall require any such subconsultants to provide laborers and materialmen with adequate bond security. Payment bonds shall be executed by any such subconsultants with the subconsultant as principal and a surety company authorized to do business in the State of Missouri as surety, and any agent executing the same on behalf of a subconsultant or surety company must attach a current Power of Attorney setting forth sufficient execution authority. Said payment bonds must be acceptable to the Sponsor to cover all materials used, all labor performed, and all insurance premiums necessary to comply with Section 107.170, RSMo, and must be provided to the Sponsor prior to the performance of such subconsultant services under this Agreement.

(29) AMENDMENTS: Any change in this Agreement, whether by modification or supplementation, must be accomplished by a formal contract amendment signed and approved by the duly authorized representative of the Sponsor and the Consultant.

(30) ATTACHMENTS: The following Exhibits and other documents are attached to and made a part of this Agreement:

(A) Exhibit I: Project Description.

(B) Exhibit II: Scope of Services.

(C) Exhibit IIA: Current FAA Advisory Circulars, Standards, Guidance

(D) Exhibit III: Services Provided by the Sponsor.

(E) Exhibit IV: Derivation of Consultant Project Costs.

(F) Exhibit V: Engineering Basic and Special Services - Cost

Breakdown.

(G) Exhibit VI: Performance Schedule

IN WITNESS WHEREOF, the parties hereto have entered into this Agreement, executed by their respective proper officials, on the date last written below.

Executed by the **Consultant** the _____ day of _____, 20____.

Executed by the **Sponsor** the _____ day of _____, 20____.

Sponsor: City of Joplin, Missouri	Consultant: Crawford, Murphy & Tilly, Inc
By: _____ Signature	By: _____ Ty Sander
Title: _____	Title: Vice President, CMT, Inc.
ATTEST:	ATTEST:
By: _____ Signature	By: _____ Signature
Title: _____	Title: _____

EXHIBIT I

PROJECT DESCRIPTION

1. This project is an update of the Pavement Management System at the Joplin Regional Airport.

EXHIBIT II

SCOPE OF SERVICES

The Consultant, in consideration of the payment on the part of the Sponsor, agrees to perform the professional engineering services enumerated as follows:

1.0 Project Overview – Pavement Management System Plan

This scope outlines the professional services proposed to update the pavement management system (PMS) plan at the Joplin Regional Airport (JLN) in the calendar year 2022. The PMS is a continuous program to monitor and assess the condition and systematically manage pavements. A PMS update is issued every few years in a report. Updating the PMS periodically enables Airport sponsors to identify and prioritize reconstruction/rehabilitation projects within the CIP.

2.0 Work Tasks

2.1 General

A. Work shall be performed in accordance with the following FAA Advisory Circulars (latest version).

- AC 150/53807B, Airport Pavement Management Program
- AC 150/5335-5, Standardized Method of Reporting Airport Pavement Strength – PCN

B. Pavement Condition Surveys will be performed in accordance with ASTM 5340.

C. Work shall be performed in accordance with the current list of FAA Advisory Circulars at:
https://www.faa.gov/airports/resources/advisory_circulars/model/actAttivioAsyncHandler.cfm?asyncTask=export&display=current&parentTopicID=11&start=0&rows=5000

2.2 Preliminary Work

A. Update Pavement Management Map.

Update the electronic computer-aided design (cad) file to reflect new data and applicable network modifications. Show new pavement and develop survey sections for new pavement sections on the airport map.

The A/E shall obtain JLN security badges and coordinate all fieldwork and access to the site with Airport Manager and Airport Maintenance Staff.

The Airport will make its files and prior investigations and studies available to the A/E for examination and use.

B Information Gathering

1. The A/E shall perform all necessary investigations to re-acclimate to the existing airfield pavements at JLN. The A/E shall review records, including the latest Pavement Management System Update and new airport developments, to familiarize themselves with pavement structures and pavement conditions.

Since the latest pavement management system update, the A/E shall also review and update the MicroPAVER database files and maintenance records to account for any maintenance activities performed on this pavement system.

2.2 Data Collection

A. Airfield Visual Survey/Data Collection. The A/E will perform a 50% visual survey, mapping distress for all airside pavements except as noted below to obtain the pavement condition information. This will include the fueling road between the fuel farm and the air carrier ramp.

B. Runway 13/31 Focus.

1. Added Visual Surveys. In addition, the A/E shall perform a 100% Visual Condition survey for Runway 13 – 31 and the general aviation pavements. These are upcoming near-term CIP priorities. The A/E will increase the visual condition survey coverage to provide more conclusive data to evaluate and prioritize near-term needs.

2. Non-Destructive Pavement Testing (NDT). Perform Non-Destructive Pavement Testing (NDT) on Runway 13/31. The NDT will consist of falling weight deflectometer and back-calculation of pavement characteristics and subgrade modulus. Perform ground penetrating radar testing to discern depths, distinguish pavement layers, and bonding between laters. This work will be done by a sub-consultant specializing in NDT testing.

3. Geotechnical Investigation. Conduct a limited subsurface investigation of Runway 13/31. The study will be used with prior subsurface studies on Runway 13/31. This work will be done by a sub-consultant specializing in Geotechnical Engineering.

E. PCI Calculation. The PCI's will be calculated using MicroPAVER.

1. Update the MicroPAVER database

2. Based on previous PCI work, the preliminary defined pavement sections will be verified, and/or the network will be further divided into the final uniform pavement sections. New pavements will be identified and broken out into areas of prescribed size.

3. An updated PCI will be calculated for each surveyed sample unit within a (preliminary) defined pavement section.

4. Updated PCI Figures and Tables will be updated based on cracking & distress information from the PCI reports generated from MicroPAVER.

F. GIS Interface for Pavement and Distress – Not Performed. The A/E will not perform a GIS interface showing shapefiles, and recording distress type, severity, and location. The A/E can develop a GIS interface but only at the direction of the owner.

2.3 Pavement Maintenance and Repair Program

A. Intent of Maintenance and Repair (M&R) Program.

1. Maintenance staff will be interviewed to discuss the type of distress and maintenance and repair methods.

A draft M&R program will be developed based on gathered information, including priority areas.

A draft M&R program will be reviewed with airport maintenance staff.

B. MicroPAVER. After review and agreement, a Maintenance & Repair (M&R) policy will be established and implemented in MicroPAVER. This includes identifying sections in MicroPAVER to be improved by maintenance & repair programs. Only pavement sections with a PCI between 100 and 70 will be considered for the M&R program.

2.4 Short & Medium Range Rehabilitation Programs

A. Rehabilitation policies. Rehabilitation policies will be updated or developed for cases where resurfacing, reconstructing, or restoring pavement cannot be economically maintained or repaired at a serviceable level.

B. Short & Medium Range Rehabilitation Programs. Short and medium-range rehabilitation programs will be developed, identifying airfield sections to be addressed. Rehabilitation cost estimates will be prepared in the short and medium-range rehabilitation programs for resurfacing, reconstruction, and/or restoration.

C. Presentation. Up to one (1) presentation of the Short & Medium Range Rehabilitation Program may be made to airport maintenance and administration staff. Based on the Airport's review of the program, revisions will be made, and final tables and figures will be prepared.

2.5 Written Report and Documentation

A. Preliminary Pavement Management Report. The project shall result in a preliminary report that includes the following items:

1. Update the Pavement Management System to reflect new data and new network modifications; update the PCI readouts and graphics.

A section will describe PCI survey techniques, summarize PCI results, identify significant distresses found and analyze overall pavement condition per section.

A section will be prepared to describe maintenance and repair (M&R) programs and proposed work,

A section will describe the proposed improvement program consisting of pavement maintenance efforts, rehabilitation, and reconstruction projects. Projects will be divided into short-term and medium-term programs.

Develop a preliminary schedule and conceptual cost estimate for each project.

B Executive Summary. The project shall produce a short 1- 2 page preliminary executive summary.

C. Final Report and Executive Summary to be provided at the end of the work as noted in 5.0 below.

3.0 Deliverables

The A/E shall submit electronic and hard copy deliverables to the Airport in the format and number of copies listed below or as requested.

1. PMS Preliminary and Summary Report and native format	3 hard copies, electronic in PDF
2. PMS Prel. & Executive Summary and native format	3 hard copies, electronic in PDF
3. PMS Final Report and Executive Summary format	3 hard copies, electronic in PDF
4. Distress Maps PDF format	11x17 color prints, electronic in
5. Updated Micro PAVER database	3 CD electronic copies

The summary reports shall address all issues listed in **Section 2.0 Work Tasks** of this statement of work.

The A/E shall submit to the FAA one electronic copy in PDF format of items 1-4, and a CD of item 5.

4.0 Schedule

All work shall be completed within 100 calendar days from Notice to Proceed.

The preliminary report shall have the following submittal schedule:

Preliminary Report	NTP+ 80 calendar days

The summary report shall have the following submittal schedule:

Summary Report	NTP+ 100 calendar days

Distress Locations CAD drawings, updated Micro PAVER database, and PMS Update Report shall have the following submittal schedule:

Final Summary Report	NTP+130 days or within 30 days of comments

The work will require coordination with the Airport Operations Department and FAA Tower personnel. The A/E may be required to attend an additional working meeting during the preparation of the visual surveys.

5.0 Summary Report

A summary report on the pavement condition and proposed rehabilitation program will be prepared for airport staff. The information will include the purpose of each proposed project, work accomplished to date, and remaining pavement life for significant sections of the airfield. A selection will describe PCI survey techniques, PCI summary, major, distresses found, and overall condition. A selection will be prepared describing M&R programs and proposed work, and a section will describe the rehabilitation program and proposed work.

An executive summary will be produced.

6.0 Final Report & Presentation

The findings will be presented to the airport administration and maintenance. Based on the Airport's review of the program, make revisions and prepare the final summary report, tables, and figures; executive summary. This task will also include efforts to prepare for and present the final report to the Airport staff.

7.0 Construction Services

Not Applicable to this agreement.

EXHIBIT IIA
CURRENT FAA ADVISORY CIRCULARS REQUIRED FOR USE IN AIP FUNDED PROJECTS

Updated March 25, 2016

View the most current versions of these ACs and any associated changes at http://www.faa.gov/airports/resources/advisory_circulars/.

NUMBER	TITLE
70/7460-1K	Obstruction Marking and Lighting
150/5020-1	Noise Control and Compatibility Planning for Airports
150/5070-6B Change 2	Airport Master Plans
150/5070-7 Change 1	The Airport System Planning Progress
150/5100-13B	Development of State Standards for Non Primary Airports
150/5200-28E	Notices to Airmen (NOTAMS) for Airport Operations
150/5200-30C Change 1	Airport Winter Safety and Operations

150/5200-31C Changes 1-2	Airport Emergency Plan
150/5210-5D	Painting, Marking and Lighting of Vehicles Used on an Airport
150/5210-7D	Aircraft Rescue and Fire Fighting Communications
150/5210-13C	Airport Water Rescue Plans and Equipment
150/5210-14B	Airport Rescue Fire Fighting Equipment, Tools and Clothing
150/5210-15A	Airport Rescue and Firefighting Station Building Design
150/5210-18A	Systems for Interactive Training of Airport Personnel
150/5210-19A	Driver's Enhanced Vision System (DEVS) Ground Vehicle Operations on Airports
150/5220-10E	Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles
150/5220-16D	Automated Weather Observing Systems (AWOS) for Non-Federal Applications
150/5220-17B	Aircraft Rescue and Fire Fighting (ARFF) Training Facilities
150/5220-18A	Buildings for Storage and Maintenance of Airport Snow and Ice Control Equipment and Materials
150/5220-20A	Airport Show and Ice Control Equipment
150/5220-21C	Aircraft Boarding Equipment
150/5220-22B	Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns
150/5220-23	Frangible Connections
150/5220-24	Foreign Object Debris Detection Equipment
150/5220-25	Airport Avian Radar Systems
150/5220-26 Change 1	Airport Ground Vehicle Automatic Dependent Surveillance – Broadcast (ADS-B) Out Squitter Equipment
150/5300-7B	FAA Policy on Facility Relocations Occasioned by Airport Improvements or Changes
150/5300-13 A Change 1	Airport Design
150/5300-14C	Design of Aircraft Deicing Facilities
150/5300-16A	General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey
150/5300-17C	Standards for Using Remote Sensing Technologies in Airport Surveys

150/5300-18B Change 1	General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards
150/5300-19	Airport Data and Information Program
105/5320-5D	Airport Drainage Design
150/5320-6E	Airport Pavement Design and Evaluation
150/5320-12C Changes 1-8	Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces
150/5320-15A	Management of Airport Industrial Waste
150/5235-4B	Runway Length Requirements for Airport Design
150/5335-5C	Standardized Method of Reporting Airport Pavement Strength-PCN
150/5340-1L	Standards for Airport Markings
150/5340-5D	Segmented Circle Airport Marker System
150/5340-18F	Standards for Airport Sign Systems
150/5340-26C	Maintenance of Airport Visual Aid Facilities
150/5340-30H	Design and Installation Details for Airport Visual Aids
150/5345-3G	Specification for L-821, Panels for the Control of Airport Lighting
150/5345-5B	Circuit Selector Switch
150/5345-7F	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
150/5345-10H	Specification for Constant Current Regulators and Regulator Monitors
150/5345-12F	Specification for Airport and Heliport Beacons
150/5345-13B	Specification for L-841 Auxiliary Relay Cabinet Assembly for Pilot Control of Airport Lighting Circuits
150/5345-26D	FAA Specification for L-823 Plug and Receptacle, Cable Connectors
150/5345-27E	Specification for Wind Cone Assemblies
150/5345-28G	Precision Approach Path Indicator (PAPI) Systems
150/5345-39D	Specification for L-853, Runway and Taxiway Retro reflective Markers
150/5345-42H	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
150/5345-43G	Specification for Obstruction Lighting Equipment

150/5345-44K	Specification for Runway and Taxiway Signs
150/5345-45C	Low-Impact Resistant (LIR) Structures
150/5345-46D	Specification for Runway and Taxiway Light Fixtures
150/5345-47C	Specification for Series to Series Isolation Transformers for Airport Lighting Systems
150/5345-49C	Specification L-854, Radio Control Equipment
150/5345-50B	Specification for Portable Runway and Taxiway Lights
150/5345-51B	Specification for Discharge-Type Flasher Equipment
150/5345-52A	Generic Visual Glideslope Indicators (GVGI)
150/5345-53D	Airport Lighting Equipment Certification Program
150/5345-54B	Specification for L-884 Power and Control Unit for Land and Hold Short Lighting Systems
150/5345-55A	Specification for L-893, Lighted Visual Aid to Indicate Temporary Runway Closure
150/5345-56B	Specification for L-890 Airport Lighting Control and Monitoring System (ALCMS)
150/5360-12F	Airport Signing & Graphics
150/5360-13 Change 1	Planning and Design Guidance for Airport Terminal Facilities
150/5360-14	Access to Airports by Individuals with Disabilities
150/5370-2F	Operational Safety on Airports During Construction
150/5370-10G	Standards for Specifying Construction of Airports
150/5370-11B	Use of Nondestructive Testing in the Evaluation of Airport Pavements
150/5370-12B	Quality Management for Federally Funded Airport Construction Projects
150/5370-13A	Off-Peak Construction of Airport Pavements Using Hot-Mix Asphalt
150/5370-15B	Airside Applications for Artificial Turf
150/5370-16	Rapid Construction of Rigid (Portland Cement Concrete) Airfield Pavements
150/5370-17	Airside Use of Heated Pavement Systems
150/5380-7B	Airport Pavement Management Program
150/5380-9	Guidelines and Procedures for Measuring Airfield Pavement Roughness
150/5390-2C	Heliport Design

150/5395-1A	Seaplane Bases
150/5100-14E	Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects
150/5100-17 Changes 1 – 6	Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects
150/5300-9B	Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects
150/5300-15A	Use of Value Engineering for Engineering Design of Airports Grant Projects
150/5320-17A	Airfield Pavement Surface Evaluation and Rating (PASER) Manuals
150-5370-6D	Construction Progress and Inspection Report – Airport Improvement Program (AIP)
150-5370-12B	Quality Control of Construction for Airport Grant Projects
MoDOT	MoDOT DBE Program- http://www.modot.org/ecr/index.htm

EXHIBIT III

SERVICES PROVIDED BY THE SPONSOR

The Sponsor, as a part of this Agreement, shall provide the following:

1. Assist the Consultant in arranging to enter upon public and private property as required for the Consultant to perform his services.

2. Obtain approvals and permits from all governmental entities having jurisdiction over the project and such approvals and consents from others as may be necessary for completion of the project.

3. Prompt written notice to the Consultant whenever the Sponsor observes or knows of any development that affects the scope or timing of the Consultant's services.

4. One (1) copy of existing plans, standard drawings, bid item numbers, reports or other data the Sponsor may have on file with regard to this project.

5. All staff, procedures and activities related to acquiring the property , including but not limited to appraisals, reviews, negotiations, relocation assistance and eminent domain.

6. Pay all publishing costs for advertisements of notices, public hearings, request for proposals and other similar items. The Sponsor shall pay for all permits and licenses that may be required by local, state or federal authorities, and shall secure the necessary land easements and/or rights-of-way required for the project.

7. Issue Notice to Airmen (NOTAM's) through the applicable FAA Flight Service Station.

8. Disadvantaged business enterprise (DBE) goals for the project based upon proposed bid items, quantities and opinions of construction costs.

9. Guidance for assembling bid package to meet Sponsor’s bid letting requirements.

10. Designate contact person (see Section (23)(A)).

11. Pay costs for title searches.

EXHIBIT IV

DERIVATION OF CONSULTANT PROJECT COSTS

EXHIBIT V

ENGINEERING BASIC AND SPECIAL SERVICES-COST BREAKDOWN

EXHIBIT IV

DERIVATION OF CONSULTANT PROJECT COSTS

JOPLIN REGIONAL AIRPORT
JOPLIN, MISSOURI
PAVMENT MANAGEMENT PLAN
DESIGN PHASE SERVICES
March 15, 2022

1 DIRECT SALARY COSTS:

TITLE	HOURS	RATE/HOUR	COST ($)
Principal	0	$90.72	$0.00
Senior Project Engineer	0	73.55	0.00
Project Manager	340	71.02	24,146.80
Senior Engineer	406	42.58	17,287.48
Engineer	104	32.97	3,428.88
Senior Planner	0	43.26	0.00
Planner	0	32.99	0.00
Registered Land Surveyor	0	44.13	0.00
Senior Technician	0	40.88	0.00
Technician	0	34.84	0.00
Clerk/Secretary	0	28.18	0.00
	850		

Total Direct Salary Costs = $44,863.16

2 LABOR AND GENERAL ADMINISTRATIVE OVERHEAD:

Percentage of Direct Salary Costs @ 166.84 % = $74,849.70

3 SUBTOTAL:

Items 1 and 2 = $119,712.86

4 PROFIT:

15 % of Item 3 Subtotal = $17,956.93

Subtotal $137,669.78

5 OUT-OF-POCKET EXPENSES:

a. Mileage	5400	Miles @	$0.56	/ Mile =	$3,024.00
b. Meals	21	Days @	$36.00	/ Day =	$756.00
c. Motel	21	Nights @	$87.00	/ Night=	$1,827.00
d. Survey Equipment	0	Days @	$100.00	/ Day =	$0.00
e. Printing and Shipping				=	$150.00

Total Out-of-Pocket Expenses = $5,757.00

6 SUBCONTRACT COSTS:

a. Palmerton and Parrish, Inc.; Geotechnical Investigat	=	$12,000.00
b. ERI USA Pavement Testing	=	$25,000.00
c.	=	$0.00
d.	=	$0.00
	=	$37,000.00

7 MAXIMUM TOTAL FEE:

Items 1, 2, 3, 4, 5 and 6 = $180,426.78 Lump Sum

Exhibit V-1

Exhibit V

JOPLIN REGIONAL AIRPORT
JOPLIN, MISSOURI

BASIC AND DESIGN SERVICES
PAVMENT MANAGEMENT PLAN
March 15, 2022

Classification: Gross Hourly Rate:		Principal $278.39	Senior Project Engineer $225.70	Project Manager $217.94	Senior Engineer $130.66	Engineer $101.17	Senior Planner $132.75	Planner $101.24	Registered Land Surveyor $135.42	Senior Technician $125.45	Technician $106.91	Clerk/ Secretary $86.47	Other Costs
A. DESIGN SERVICES													
1. Pavement Management Plan - Full Airfield:													
Preliminary Investigation				12	40								
Visual Surveys				56	74								
Geotechnical Investigation (P&P)													$12,000.00
Non Destructive Testing Analysis (ERI USA)													$25,000.00
Update MicroPAVER and PCI Calculations				12	48	16							
Update Base Map and File Set Up				4	16	8							
Project Tables and Figures				36	88	32							
Pavement Repair Program				48	32	8							
Short & Medium Range Rehabilitation Programs				48	32	8							
Summary Report & Assembly				104	64	24							
Report Presentation				20	12	8							
Design Phase Expenses													$5,757.00
Total hours =	850	0	0	340	406	104	0	0	0	0	0	0	(1,2,3,4,5)
Total =	$180,426.78	$0.00	$0.00	$74,098.32	$53,049.40	$10,522.07	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$42,757.00
B. SPECIAL SERVICES													
Total hours =	0	0	0	0	0	0	0	0	0	0	0	0	(1,2,3,4,5)
Total =	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
PART A SUBTOTAL =		**$180,426.78**											

Proposal For

Pavement Structure and Subsurface Investigation for Runway 13-31

Joplin Regional Airport, Joplin, Missouri

Submitted To:

Crawford, Murphy & Tilly, Inc.

One Memorial Drive, Suite 500, St. Louis, MO 63102



Prepared By:

Engineering & Research International, Inc.

1401 Regency Drive East, Savoy, IL 61874
Ph: (217) 356-5945 Fax: (217) 356-6347
eri@erikuab.com www.erikuab.com

December 17, 2021

1. TECHNICAL PROPOSAL

1. Project Description

Crawford, Murphy & Tilly, Inc. (CMT) has requested Engineering and Research International, Inc. (ERI) to provide technical and cost proposal for the professional services to determine the structural strength variability, existing pavement layer moduli and sub surface soils profile at Runway 13-31 of Joplin Regional Airport, Joplin, Missouri.

Runway 13-31 is approximately 6,500 feet long by 150 feet wide (See **Figure 1**). Based on the previous geotechnical investigation reports (dated 2013 and 2019) provided by CMT, it is our understanding that the existing pavement structure consists of multiple layers of Asphalt Concrete (AC) separated by the aggregate base layers. From the intersection of Runways 13-31 and 18-36 towards Runway End 31, the buried pavement under the existing asphalt concrete surface layer consists of asphalt over Portland Cement Concrete (APC).

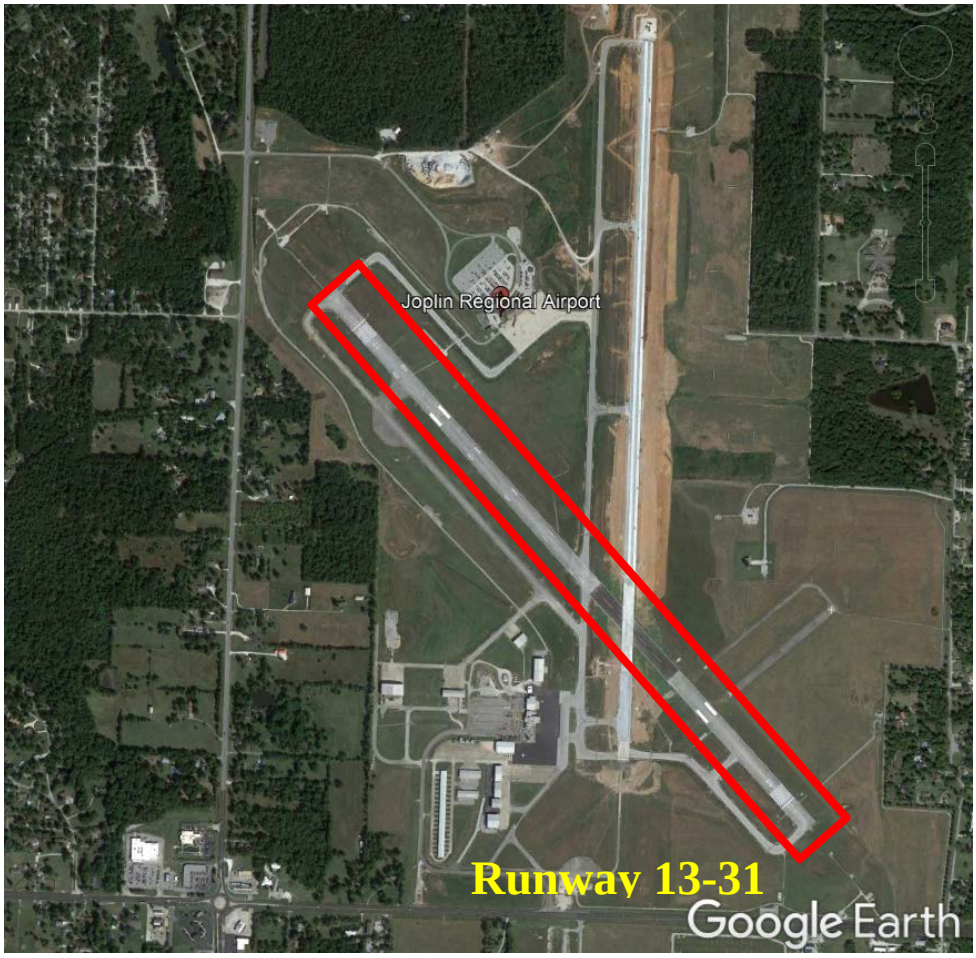


Figure 1: Runway 13-31, Joplin Regional Airport, Joplin, Missouri

The overall project scope of work is summarized below:

- Obtain all the background data related to Runway 13-31 under the scope of this study including previous pavement investigation reports, if available
- Perform Non-destructive testing using Heavy Falling Weight Deflectometer (HWD) on the runway to evaluate the existing structural bearing strength of the pavement
- Perform Non-destructive testing using Ground Penetrating Radar (GPR) on the runway to determine the existing pavement thickness information
- Perform optional limited borings at select locations to determine the pavement thickness and conduct laboratory testing on the samples obtained from the field.
- Identify uniform pavement sections based on the structural bearing strength variability and provide existing pavement layer moduli for the identified uniform pavement sections
- Summarize optional coring profile detailing pavement layers, soil layers, soil classification and thickness

CMT is responsible for the following:

- Provide coordination with the Airport Aviation Department to obtain clearances for the HWD testing, GPR testing and Optional Soil Boring if selected
- Elevations, offsets and stationing of optional boring locations
- Elevation and stationing of both the existing and proposed pavement centerline (at 10 foot spacing) if optional boring task is selected
- Existing and Proposed Typical Pavement Cross Sections if optional boring task is selcted

2. Project Approach

The following paragraphs describe various tasks to achieve the objectives of this study.

Task 1: Project Development

The project scope and the work plan to complete the various project tasks will be discussed with CMT for approval. Project development task also includes the project co-ordination and consultation with the client for clarifications, etc.

Task 2: Background Data Collection and Records Review

The following background data would be collected with the help of CMT:

- Detailed AutoCAD drawings for the runway
- Detailed AutoCAD drawings showing the locations of PCI samples and uniform sections for the runway identified from the most recent Airfield Pavement

Condition Survey, if available
- Pavement construction history data if available

The data gathered will be reviewed by ERI staff. After a thorough review of records, any additional data required will be obtained from CMT.

Task 3: Airfield Pavement Network Identification

For rational evaluation, the runway pavement will be preliminarily divided into uniform sections based on the data obtained under Task **2**. The necessary field maps will be generated for runway for subsequent pavement evaluations.

Task 4: Nondestructive Testing

The objective of the NDT program is to measure the pavement's structural response to heavy loads, similar in magnitude and duration to those produced by moving aircraft. The collected deflection data will be used to identify the uniform pavement sections, determine the pavement layer material properties, load transfer efficiency, and foundation support.

The equipment used for the deflection testing will be a KUAB Heavy Weight Deflectometer (HWD). The HWD is an impulse loading device which exerts a force similar in magnitude and duration to that of a moving wheel load, and measures the resulting deflections of the pavement surface.

The HWD creates an impulse load by dropping a set of falling weights onto a circular loading plate resting on the pavement surface. The magnitude of the impulse load applied to the pavement can be varied from 3,000 lb-force to 55,000 lb-force by varying the mass and the height from which it is dropped. A load cell measures the magnitude of the dynamic load. ERI's KUAB HWD is shown in **Figure 2**.



Figure 2: ERI's KUAB HWD used for NDT Testing

NDT Program:

All HWD testing will be performed at target loads of 25,000 lb, 35,000 lb and 50,000 lbf. The runway will be divided into 12 lanes, each 12.5 feet wide and 6,500 feet long. The **center four lanes** will be treated as the keel section and the remaining lanes will be treated as the outer sections. The HWD testing will be performed in all 12 lanes at 100 feet intervals and the test points will be staggered at 50 ft between two adjacent lanes. The HWD testing will also be performed at Transverse Crack/ Transverse Reflective Crack locations. A total of approximately 1260 tests will be performed on the runway. A typical 12 lane section on the runway is shown below in **Figure 3**.

FIELD DATA COLLECTION SECTIONING

- 150 feet wide runway divided into 12 lanes (lane width 12.5 ft.)
- Segment A – Outer Section: Lanes 1, 2, 3 & 4
- Segment B – Keel Section: Lanes 5, 6, 7 & 8
- Segment C – Outer Section: Lanes 9, 10, 11 & 12

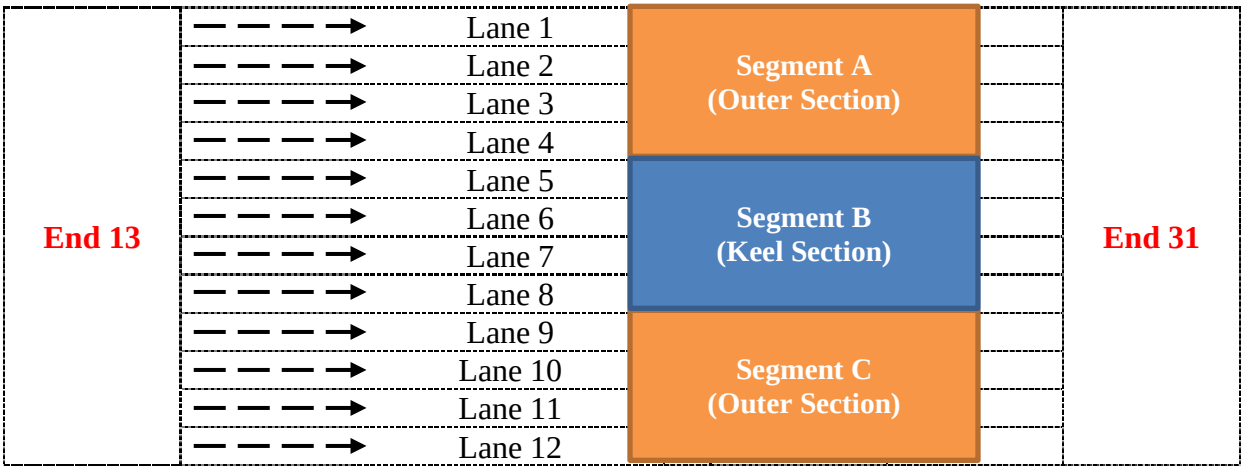


Figure 3: Typical 12 lane Section on Runway 13-31

Ground Penetrating Radar Testing:

Ground Penetrating Radar (GPR) testing will be conducted using GSSI's RoadScan™ system, a powerful, multi-channel GPR data acquisition system. The system is equipped with an inline combination of antennas. One 2.0 GHz Air Launched antenna for layer thickness determination and one 900 MHz and one 400 MHz ground coupled antennas for deeper investigations (**Figure 4**). This system provides an effective tool for quickly determining pavement layer thicknesses and performing base and sub-base evaluations with data densities not obtainable by other labor-intensive methods.



Figure 4: ERI's GSSI GPR

Task 5: HWD and GPR Data Analysis and Report Submittal

The following analysis will be performed on collected data:

HWD Data Analysis:

1. Plot maximum deflection D_0 profiles to identify the uniform pavement sections based on the structural strength response of existing pavement in terms of the variability in the normalized maximum deflection response along the length of the runway as shown in **Figure 5**
2. Determine crack/joint load transfer efficiencies from the deflection data as shown in **Figure 6**
3. Determine existing pavement layer moduli for each uniform pavement section as shown in **Figure 7**
4. Determine the CBR values of the existing subgrade using subgrade resilient moduli as shown in **Figure 8**

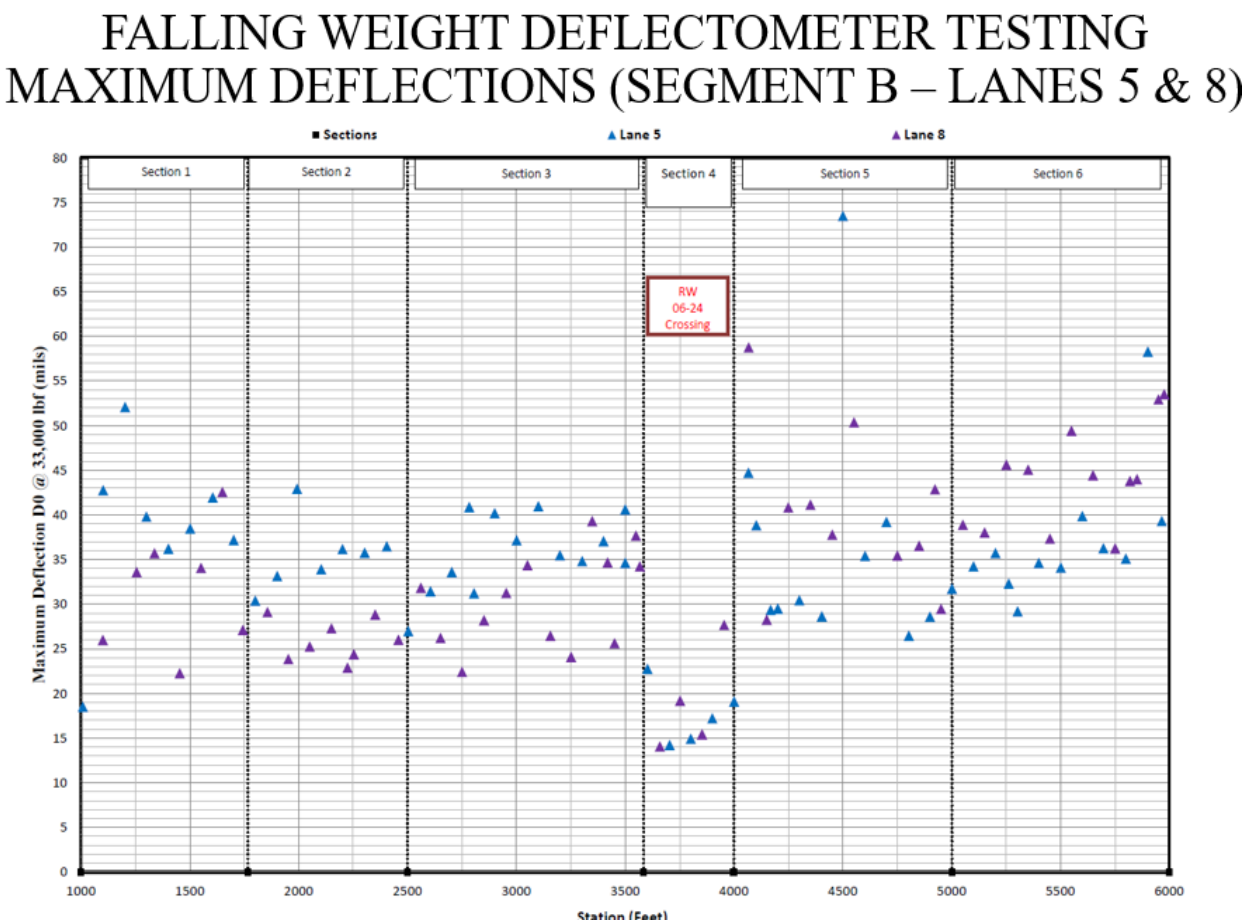


Figure 5: Maximum Deflection D0 profile

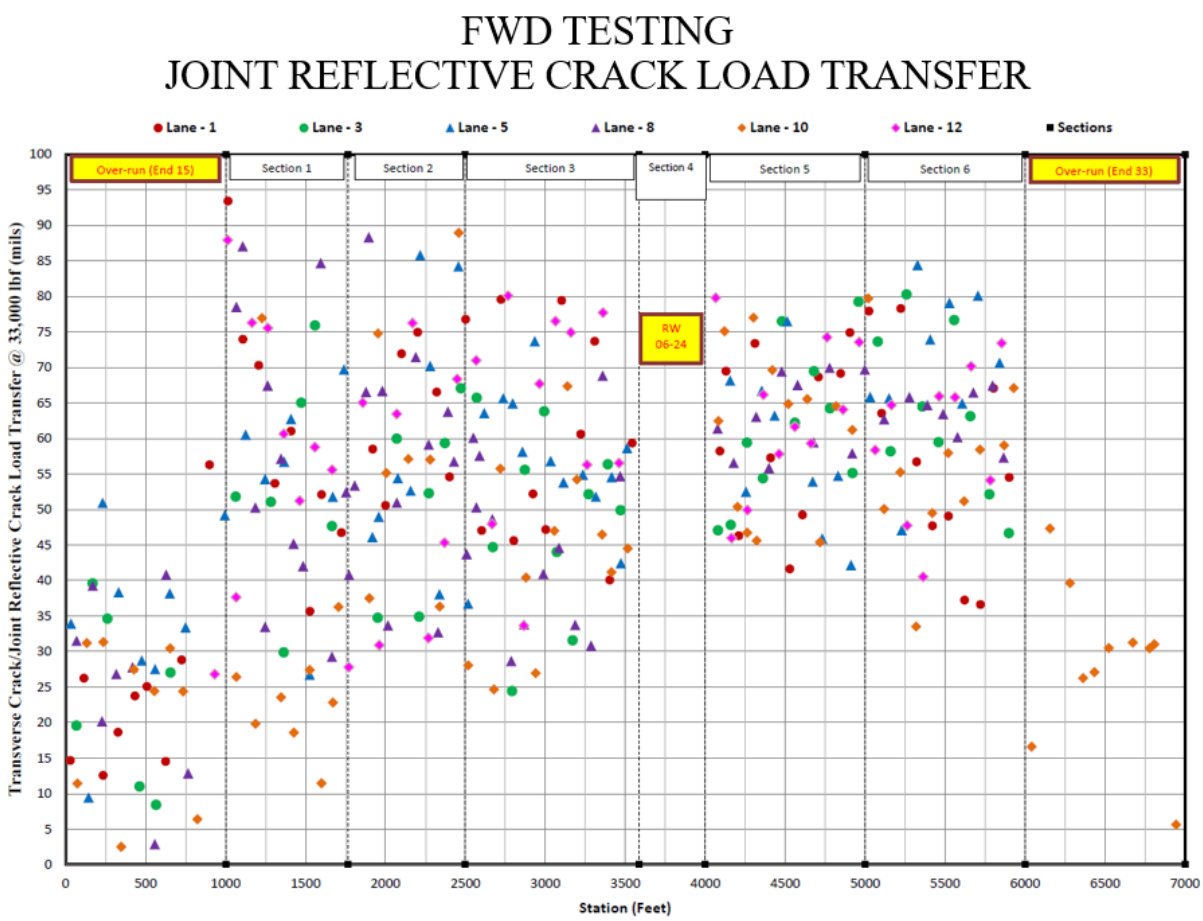


Figure 6: Transverse Joint Load Transfer Efficiency

BACKCACLULATED PAVEMENT LAYER MODULI

Segment	Section	Modulus of Elasticity of PCC (Epcc) psi			Modulus of Sub grade Reaction (K) pci			Subgrade Resilient Moduli (MR) (Flexible Analysis)				Modulus of Elasticity (Epcc) psi			Modulus of Sub grade Reaction (K) pci			Sub grade Resilient Moduli (MR) (Flexible Analysis)		
		Avg	STD	Avg-1STD	Avg	STD	Avg-1STD	Avg	STD	Avg-1STD		Avg	STD	Avg-1STD	Avg	STD	Avg-1STD	Avg	STD	Avg-1STD
Segment 1 (Outer Section Lanes)		Lane 1										Lane 3								
	1	1,982,056	733,072	1,248,984	178	41	138	14.200	2.490	11.710		2,264,650	967,946	1,296,704	294	51	243	19.750	2.375	17.375
	2	1,823,903	595,249	1,228,654	270	51	218	18.571	2.440	16.132		2,185,297	580,461	1,604,836	341	143	197	22.000	4.817	17.183
	3	1,871,180	625,089	1,246,091	205	43	163	15.778	2.386	13.391		2,659,821	798,031	1,861,790	281	38	243	19.500	1.604	17.896
	4																			
	5	1,109,545	649,549	459,996	192	30	162	12.500	2.068	10.432		1,262,341	370,473	891,868	241	27	214	15.500	1.069	14.431
	6	1,397,254	310,422	1,086,832	180	47	133	13.556	2.242	11.313		1,244,959	521,469	723,490	230	37	193	15.833	1.528	14.306
	ALL	1,636,788		1,054,111	205		163	14.921		12.596		1,923,413		1,275,738	277		218	18.517		16.238
Segment 2 (Keel Section Lanes)		Lane 5										Lane 8								
	1	897,189	139,951	757,238	258	25	233	15.286	1.604	13.682		1,512,165	430,072	1,082,092	289	53	236	18.000	1.673	16.327
	2	1,195,546	342,927	852,619	287	65	222	18.429	2.149	16.279		1,405,116	376,986	1,028,130	385	44	342	22.571	1.618	20.953
	3	1,207,456	336,205	871,251	286	49	237	17.455	1.572	15.882		1,334,133	412,918	921,215	326	60	266	20.600	2.319	18.281
	4																			
	5	1,438,494	680,244	758,249	256	35	221	17.200	1.619	15.581		1,264,457	453,394	811,063	243	36	207	16.333	1.732	14.601
	6	1,262,178	332,123	930,056	251	39	213	17.500	1.080	16.420		1,119,748	374,825	744,923	236	41	195	16.000	1.247	14.753
	ALL	1,200,172		833,882	268		225	17.174		15.569		1,327,124		917,485	296		249	18.701		16.983
Segment 3 (Outer Section Lanes)		Lane 10										Lane 12								
	1	1,863,085	1,076,065	787,020	237	47	189	16.429	3.359	13.069		1,427,584	481,702	945,882	142	53	89	10.167	2.137	8.030
	2	1,972,120	1,502,171	469,949	236	68	167	16.571	3.409	13.163		1,879,778	560,649	1,319,128	236	68	168	15.857	2.545	13.312
	3	2,168,791	723,790	1,445,001	212	27	185	16.375	2.066	14.309		1,567,708	517,198	1,050,509	153	24	128	11.143	3.237	7.906
	4																			
	5	1,139,365	572,673	566,692	257	75	182	16.100	2.424	13.676		1,569,583	594,840	974,742	183	35	148	12.667	1.658	11.008
	6	1,493,485	991,403	502,082	222	37	184	15.900	2.079	13.821		2,137,193	919,003	1,218,190	214	46	167	14.444	2.128	12.317
	ALL	1,727,369		754,149	233		181	16.275		13.608		1,716,369		1,101,690	186		140	12.856		10.515

Figure 7: Table for Pavement Layer Moduli

SUBGRADE RESILIENT MODULI

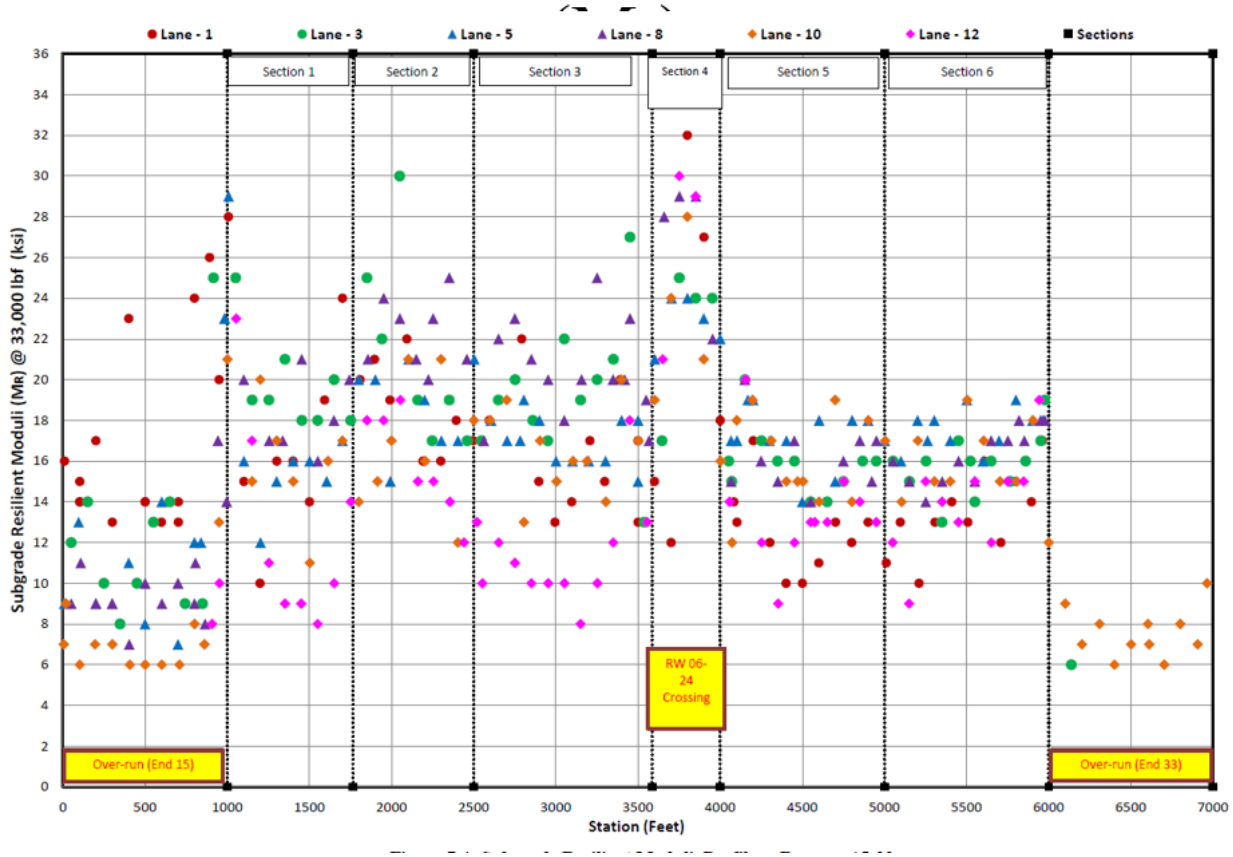


Figure 8: Subgrade Resilient Moduli

GPR Data Analysis:

1. Develop longitudinal existing pavement thickness profiles for all the lanes tested in the field as shown in **Figures 9a &9b**
2. Identify the uniform pavement sections as shown in **Figures 9a &9b**
3. Determine the existing pavement layer thickness data for each uniform pavement section
4. Provide typical existing pavement thickness information at 25 ft intervals for the full length of runway as shown in **Figure 10**

GROUND PENETRATING RADAR TESTING
ALL LANES (AC THICKNESS)

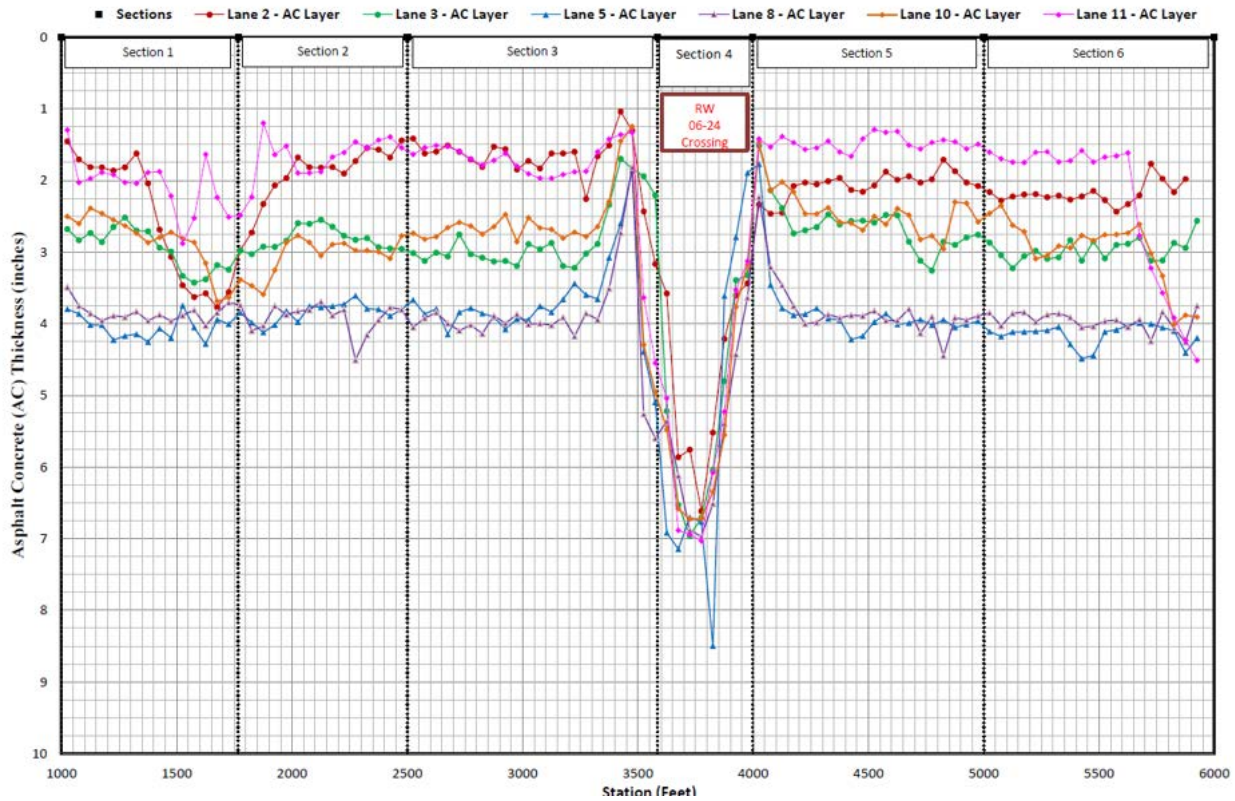


Figure 9a: Pavement Thickness Profiles (AC Surface)

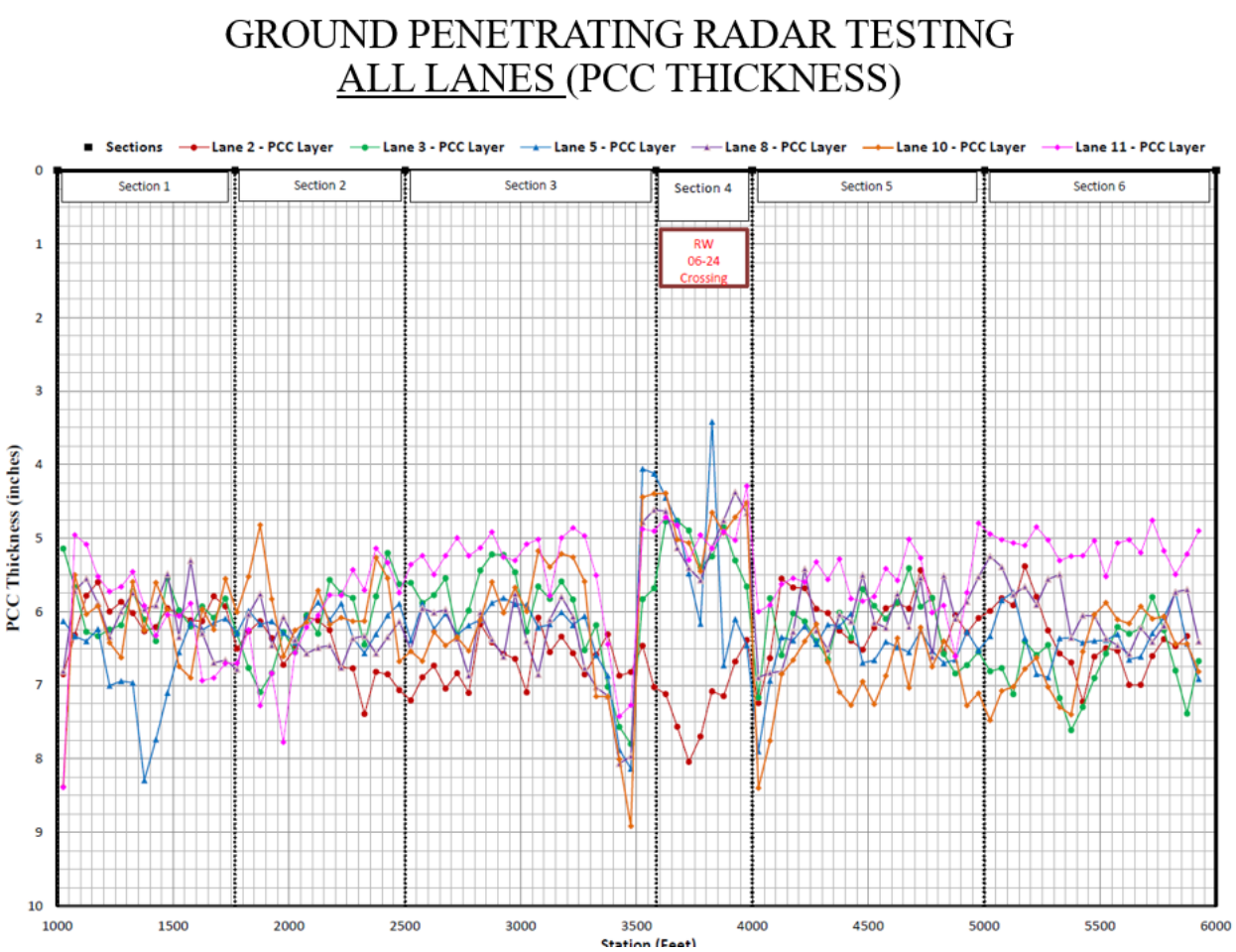


Figure 9b: Pavement Thickness Profiles (PCC Surface)

Table 6.1: 50 Feet Average Layer Thickness Summary from GPR Scans

Stationing		Lane 2				Lane 3				Lane 5				Lane 8				Lane 10				Lane 11			
From	To	AC Depth (in)	AC TH (in)	PCC Depth (in)	PCC TH (in)	AC Depth (in)	AC TH (in)	PCC Depth (in)	PCC TH (in)	AC Depth (in)	AC TH (in)	PCC Depth (in)	PCC TH (in)	AC Depth (in)	AC TH (in)	PCC Depth (in)	PCC TH (in)	AC Depth (in)	AC TH (in)	PCC Depth (in)	PCC TH (in)	AC Depth (in)	AC TH (in)	PCC Depth (in)	PCC TH (in)
1050	1100	1.5	1.5	8.3	6.8	2.7	2.7	7.8	5.1	3.8	3.8	9.9	6.1	3.5	3.5	10.3	6.8	2.5	2.5	10.9	8.4	1.3	1.3	9.7	8.4
1100	1150	1.7	1.7	8.0	6.3	2.8	2.8	8.5	5.7	3.9	3.9	10.2	6.3	3.8	3.8	9.5	5.7	2.6	2.6	8.1	5.5	2.0	2.0	7.0	5.0
1150	1200	1.8	1.8	7.6	5.8	2.7	2.7	9.0	6.3	4.0	4.0	10.4	6.4	3.9	3.9	9.4	5.6	2.4	2.4	8.4	6.0	2.0	2.0	7.1	5.1
1200	1250	1.8	1.8	7.4	5.6	2.9	2.9	9.2	6.3	4.0	4.0	10.3	6.2	4.0	4.0	9.8	5.9	2.5	2.5	8.4	5.9	1.9	1.9	7.4	5.5
1250	1300	1.9	1.9	7.9	6.0	2.6	2.6	8.9	6.2	4.2	4.2	10.2	7.0	3.9	3.9	10.2	6.3	2.6	2.6	9.0	6.4	1.9	1.9	7.6	5.7
1300	1350	1.8	1.8	7.7	5.9	2.5	2.5	8.7	6.2	4.2	4.2	10.0	6.9	3.9	3.9	9.9	6.0	2.6	2.6	9.3	6.6	2.0	2.0	7.7	5.7
1350	1400	1.6	1.6	7.6	6.0	2.7	2.7	8.4	5.7	4.1	4.1	10.3	7.0	3.8	3.8	9.6	5.7	2.7	2.7	8.3	5.6	2.0	2.0	7.5	5.5
1400	1450	2.0	2.0	8.3	6.3	2.7	2.7	8.8	6.1	4.3	4.3	10.8	8.3	4.0	4.0	9.9	6.0	2.9	2.9	9.1	6.3	1.9	1.9	7.8	5.9
1450	1500	2.7	2.7	8.9	6.2	2.9	2.9	9.3	6.4	4.1	4.1	10.3	7.7	3.9	3.9	9.8	5.9	2.8	2.8	8.4	5.6	1.9	1.9	8.2	6.3
1500	1550	3.1	3.1	9.0	6.0	3.0	3.0	8.5	5.5	4.2	4.2	10.2	7.1	4.0	4.0	9.5	5.5	2.7	2.7	8.7	6.0	2.2	2.2	8.3	6.0
1550	1600	3.5	3.5	9.5	6.0	3.3	3.3	9.3	6.0	3.7	3.7	10.2	6.6	3.9	3.9	10.2	6.3	2.8	2.8	9.6	6.7	2.9	2.9	8.9	6.1
1600	1650	3.6	3.6	9.7	6.1	3.4	3.4	9.6	6.2	4.1	4.1	10.2	6.2	3.8	3.8	9.1	5.3	2.9	2.9	9.8	6.9	2.5	2.5	8.4	5.9
1650	1700	3.6	3.6	9.7	6.1	3.4	3.4	9.3	5.9	4.3	4.3	10.5	6.2	4.0	4.0	10.3	6.3	3.2	3.2	9.1	6.0	1.6	1.6	8.6	6.9
1700	1750	3.8	3.8	9.6	5.8	3.2	3.2	9.3	6.1	3.9	3.9	10.1	6.2	3.8	3.8	10.5	6.7	3.7	3.7	9.9	6.2	2.2	2.2	9.1	6.9
1750	1800	3.6	3.6	9.5	5.9	3.2	3.2	9.1	5.8	4.0	4.0	10.1	6.1	3.7	3.7	10.4	6.7	3.6	3.6	9.2	5.6	2.5	2.5	9.2	6.7
1800	1850	3.0	3.0	9.5	6.5	3.0	3.0	9.3	6.3	3.8	3.8	10.1	6.3	3.7	3.7	10.5	6.8	3.4	3.4	9.4	6.0	2.5	2.5	9.2	6.7
1850	1900	2.7	2.7	9.0	6.3	3.0	3.0	9.8	6.8	4.0	4.0	10.0	6.0	4.1	4.1	10.1	6.0	3.5	3.5	9.0	5.5	2.2	2.2	8.5	6.2
1900	1950	2.3	2.3	8.5	6.1	2.9	2.9	10.0	7.1	4.1	4.1	10.3	6.2	4.0	4.0	9.8	5.8	3.6	3.6	8.4	4.8	1.2	1.2	8.5	7.3
1950	2000	2.1	2.1	8.4	6.4	2.9	2.9	9.8	6.8	4.0	4.0	10.1	6.1	3.8	3.8	10.2	6.5	3.3	3.3	9.1	5.8	1.6	1.6	8.5	6.8
2000	2050	2.0	2.0	8.7	6.7	2.8	2.8	9.1	6.3	3.8	3.8	10.1	6.3	3.9	3.9	9.9	6.1	2.9	2.9	9.5	6.6	1.5	1.5	9.3	7.8
2050	2100	1.7	1.7	8.2	6.5	2.6	2.6	9.1	6.6	4.0	4.0	10.4	6.4	3.8	3.8	10.2	6.4	2.8	2.8	9.0	6.3	1.9	1.9	8.5	6.6
2100	2150	1.8	1.8	7.9	6.1	2.6	2.6	8.7	6.0	3.8	3.8	9.8	6.1	3.8	3.8	10.4	6.6	2.9	2.9	9.0	6.1	1.9	1.9	8.1	6.2
2150	2200	1.8	1.8	7.9	6.1	2.5	2.5	8.8	6.3	3.8	3.8	9.6	5.9	3.7	3.7	10.2	6.5	3.1	3.1	8.8	5.7	1.9	1.9	7.9	6.1
2200	2250	1.8	1.8	8.1	6.2	2.6	2.6	8.2	5.6	3.8	3.8	9.9	6.1	3.9	3.9	10.3	6.5	2.9	2.9	9.1	6.2	1.7	1.7	7.4	5.8
2250	2300	1.9	1.9	8.7	6.8	2.8	2.8	8.5	5.8	3.7	3.7	9.6	5.9	3.8	3.8	10.6	6.8	2.9	2.9	9.0	6.1	1.6	1.6	7.4	5.8
2300	2350	1.7	1.7	8.5	6.8	2.8	2.8	8.6	5.8	3.6	3.6	10.0	6.4	4.5	4.5	10.9	6.4	3.0	3.0	9.1	6.1	1.5	1.5	6.9	5.4
2350	2400	1.5	1.5	8.9	7.4	2.8	2.8	9.3	6.4	3.8	3.8	10.4	6.6	4.2	4.2	10.5	6.3	3.0	3.0	9.1	6.1	1.5	1.5	7.3	5.7
2400	2450	1.6	1.6	8.4	6.8	2.9	2.9	8.7	5.8	3.8	3.8	10.1	6.3	3.9	3.9	10.5	6.6	3.0	3.0	8.3	5.3	1.4	1.4	6.6	5.1
2450	2500	1.7	1.7	8.5	6.9	2.9	2.9	8.2	5.2	3.9	3.9	9.9	6.0	3.8	3.8	10.1	6.3	3.1	3.1	8.6	5.5	1.4	1.4	6.7	5.3
2500	2550	1.4	1.4	8.5	7.1	3.0	3.0	8.6	5.6	3.8	3.8	9.7	5.9	3.8	3.8	9.9	6.1	2.8	2.8	9.4	6.7	1.5	1.5	7.3	5.7
2550	2600	1.4	1.4	8.6	7.2	3.0	3.0	8.6	5.6	3.7	3.7	10.1	6.4	4.1	4.1	10.6	6.5	2.7	2.7	9.3	6.5	1.6	1.6	7.0	5.4
2600	2650	1.6	1.6	8.5	6.9	3.1	3.1	9.0	5.9	3.9	3.9	9.8	5.9	3.9	3.9	9.9	6.0	2.8	2.8	9.5	6.7	1.5	1.5	6.8	5.2
2650	2700	1.6	1.6	8.3	6.7	3.0	3.0	8.8	5.8	3.8	3.8	10.0	6.2	3.8	3.8	9.9	6.0	2.8	2.8	9.1	6.3	1.5	1.5	7.0	5.5
2700	2750	1.5	1.5	8.6	7.0	3.1	3.1	8.6	5.5	4.1	4.1	10.2	6.0	4.0	4.0	10.0	6.0	2.7	2.7	9.1	6.5	1.5	1.5	6.8	5.2
2750	2800	1.6	1.6	8.4	6.8	2.8	2.8	9.1	6.3	3.8	3.8	10.2	6.3	4.1	4.1	10.5	6.4	2.6	2.6	8.9	6.3	1.6	1.6	6.6	5.0
2800	2850	1.7	1.7	8.8	7.1	3.0	3.0	9.0	6.0	3.8	3.8	10.0	6.2	4.0	4.0	10.9	6.9	2.6	2.6	9.2	6.5	1.7	1.7	6.9	5.2
2850	2900	1.8	1.8	8.0	6.2	3.1	3.1	8.5	5.4	3.9	3.9	10.0	6.1	4.1	4.1	10.2	6.0	2.7	2.7	8.9	6.1	1.8	1.8	6.9	5.1
2900	2950	1.5	1.5	7.9	6.4	3.1	3.1	8.4	5.2	3.9	3.9	9.8	5.9	3.9	3.9	10.3	6.4	2.6	2.6	8.2	5.6	1.7	1.7	6.6	4.9
2950	3000	1.6	1.6	8.1	6.6	3.1	3.1	8.4	5.2	4.1	4.1	9.9	5.8	4.0	4.0	10.6	6.6	2.5	2.5	8.5	6.0	1.6	1.6	6.9	5.3

Figure 10: Table of Average Layer Thickness 50 feet Intervals

Task 6: Destructive Testing

Typically, we would recommend pavement cores at 500 ft intervals if the construction history is similar. We propose to collect 10 pavement cores and Dynamic Cone Penetration (DCP) testing up to 6 feet depth from the top of the pavement surface. Laboratory testing will be performed on the selected base, subbase and soil samples. All of the information, will be summarized on the profile, boring logs and tables which will be included in the main report. The following paragraphs provide the detailed project scope of work.

Destructive Testing Program:

1. Background Data Collection and Project Development
   a. Plan development / project coordination

2. Field Investigation

2.1 Pavement Borings
   a. 10 pavement borings (up to 6 feet deep)
   b. DCP Testing to a depth of 72" from top of the pavement

2.2 Laboratory Testing for Pavement Borings
   a. Visual classification of soils
   b. Moisture content of in-place soils
   c. Wash Sieve Analysis
   d. Hydrometer Analysis
   e. Atterberg Limits
   f. Organic Content
   g. CBR Testing
   h. Moisture Density Relationship
   i. pH of Soil
   j. Boring Log Preparation

3. Data Analysis
   a. Summary of Data

4. Report including Soils Profile and Subgrade Soil Frost Group

CMT's Responsibility:

CMT will locate and mark the pavement / soil borings and will coordinate with Airport and MO One Call for utility clearance.

2. COST PROPOSAL

The cost proposal to complete the proposed Non-Destructive Testing is shown in **Table 1**. The cost proposal to complete the proposed Destructive Testing is shown in **Table 2**.

Table 1: Cost Proposal for Non-Destructive Testing and Analysis for the Runway 13-31 at Joplin Regional Airport, Joplin, Missouri

	Employee Classification	Project Manager	Principal Engineer	Project Engineer	Senior Technician Draftsman	Total Hours	Total Salary Cost	Description of Reimbursable Expenses		Total Reimbursable Expenses	Total Cost
	Salary Rate	$240.00	$145.00	$110.00	$110.00			Item			
	Project Element	Hours	Hours	Hours	Hours			Unit	Rate		
1	**Task 1: Project Development and Coordination**	1	2	4	4	11	$1,410.00				$1,410.00
2	**Task 2: Background Data Collection and Records Review**	1	2	2	0	5	$750.00				$750.00
3	**Task 3: Airfield Pavement Network Identification**										
	Preperation of Field Testing Plan and Drawings	1	2	2	8	13	$1,630.00				$1,630.00
4	**Task 4: Nondestructive Deflection Testing**										
	Preparation and Mobilization				6	6	$660.00	940	$4.00	$3,760.00	$4,420.00
	HWDTesting /GPR Testing (6 days @ $3,500 per day)							6	$3,500.00	$21,000.00	$21,000.00
5	HWD and GPR Data Analysis and Report Submittal	16	16	40	40	112	$14,960.00				$14,960.00
	HOURS	**19**	**22**	**48**	**58**	**147**					
	SALARY	***$4,560.00***	***$3,190.00***	***$5,280.00***	***$6,380.00***		***$19,410.00***			***$24,760.00***	
	TOTAL COST										**$44,170.00**

Notes:

1. If Airport Security and Safety orientation for HWD/GPR Operator is required then it will be billed separately

Table 2: Cost Proposal for the Sub-Surface Investigation for the Runway 13-31 at Joplin Regional Airport, Joplin, Missouri

Task Number	Task Description	Principle Engineer		Project Engineer		Technician		Equipment/ Reimbursable Expenses		Lab Tests		Total Cost
		Hours	Rate	Hours	Rate	Hours	Rate	Units	Rate	Units	Rate	
1	**Background Data Collection and Project Development**	1	$ 210.00	3	$ 120.00							$ 570.00
2	**Field Investigation**											
2.1	**Pavement Borings**											
	10 Pavement borings to a depth of 6', DCP testing, soil sampling and 5 minute water table measurements (2 Technicians @ 3 hrs per boring)					60	$ 58.00					$ 3,480.00
	Core Bit Charge ($3.00 per inch)							180	$ 3.00			$ 540.00
	DCP Daily Charge ($45.00 per day)							5	$ 45.00			$ 225.00
	Core Rig Charge ($150.00 per day)							5	$ 150.00			$ 750.00
	Mobilization to and from site (per trip)							940	$ 3.50			$ 3,290.00
	Hotel and Per Diem							6	$ 350.00			$ 2,100.00
2.2	**Laboratory Testing for Pavement Borings**											
	Visual Classification of Subgrade Surface soils (per sample)									110	$ 7.00	$ 770.00
	Moisture Content of In-place soils (per sample)									80	$ 12.00	$ 960.00
	Wash Sieve Analysis									10	$ 150.00	$ 1,500.00
	Hydrometer Analysis									3	$ 275.00	$ 825.00
	Atterberg Limits									3	$ 120.00	$ 360.00
	Organic Content									3	$ 60.00	$ 180.00
	CBR Testing Single Point (at 100% Maximum Dry Density and Optimum Water Content)									2	$ 260.00	$ 520.00
	Moisture Density Relationship (Modified Proctor)									3	$ 200.00	$ 600.00
	pH of Soil									2	$ 75.00	$ 150.00
3	**Data Analysis**											
	Summary of Lab Data	6	$ 210.00	12	$ 120.00							$ 2,700.00
4	**Final Report**											
	Geotechnical Report including Boring Logs and Soils Profile	12	$ 210.00	40	$ 120.00							$ 7,320.00
	Total	**19**		**55**		**60**						**$ 26,840.00**

Notes:

1. If Airport Security and Safety orientation for Coring Operator is required then it will be billed separately

PALMERTON & PARRISH, INC.

GEOTECHNICAL & MATERIALS ENGINEERS
MATERIALS TESTING LABORATORIES
ENVIRONMENTAL SERVICES

4168 W. KEARNEY ST.
SPRINGFIELD, MO 65803
Ph: (417) 864-6000
www.ppimo.com

Crawford, Murphy & Tilly, Inc.
Gateway Tower
One Memorial Drive
Suite 500
St. Louis, MO 63102

December 15, 2021

Attention: Mr. Dave Nauman
dnauman@cmtengr.com

Proposal for Geotechnical Investigation
Joplin Regional Airport – Runway 13-31 Reconstruction
Joplin, Missouri

Palmerton & Parrish, Inc. (PPI) appreciates the opportunity to submit this proposal for a geotechnical investigation for the proposed new reconstruction of the existing Runway 13-31 at the Joplin Regional Airport (JLN) in Joplin, Missouri. As requested by Crawford, Murphy & Tilly, Inc. (CMT), PPI's scope of work will include the following:

- Perform twelve (12) pavement cores/soil borings on the existing pavement at locations to be selected by CMT. The purpose of the pavement cores is to evaluate the thickness/type of the pavement and base course, if present. Soil borings will extend to a depth of 10 ft., or refusal, whichever is shallower. Soil samples will be obtained using a split spoon sampler while performing the Standard Penetration Test (SPT) in accordance with ASTM D1586 at approximate 2.5 to 5-ft. intervals. Previous cores within this area indicate a layered pavement system as thick as 18-inches;
- Groundwater depth, if encountered, will be recorded;
- Once the soil borings are drilled, two (2) offset holes will be drilled adjacent to the runway with hollow stem augers to obtain bulk samples for additional laboratory testing;
- Perform laboratory testing on samples collected from drilled borings (SPT samples and bulk samples); Moisture Content Test, Atterberg Limits, Swell Test (if applicable), Grain Size Analysis, Standard Proctor and Laboratory CBR Test; and
- Preparation of a Geotechnical Engineering Report addressing the existing soil conditions and pavement types/thicknesses, summary of laboratory tests and provide recommendations for subgrade preparation and soil stabilization (if recommended).

PPI will provide the scope of services outlined above for a lump sum cost of Twelve Thousand One Hundred Dollars (**$12,100.00**). The projected cost is also based upon the following:

- Right-of-entry, if required, will be obtained by others prior to PPI's mobilizations;
- Boring locations will be staked in the field by PPI using a site plan provided by CMT with existing field features presented on the site plan;
- PPI will notify the Missouri One Call System to locate and mark public utilities;

- Prior to mobilization PPI will coordinate with the Airport, CMT and FFA tech ops to locate private utilities;
- Field activities will commence between Monday through Friday during normal business hours (8 a.m. to 5 p.m.). If night time work is required, additional charges will apply; and
- Samples will be stored and held at PPI's Springfield Laboratory for 30 days past the date of report publication, at which time, the samples will be discarded.

PPI will notify the Client if unanticipated conditions encountered during the field investigation merit a change in scope beyond that discussed in this proposal. In any event, we will not exceed projected costs without your prior approval.

An invoice will be submitted once the report is issued, and due on a paid when paid basis.

To authorize this proposal, please sign one copy, initial the attached General Conditions, and return a fully executed copy to our office. Please call our Springfield office at (417) 864-6000 if you have any questions regarding this proposal or if you need additional information.

PALMERTON & PARRISH, INC.
By:



_____
Brandon Parrish, P.E.
Vice-President

CLIENT AUTHORIZATION:

_____
Firm Name

_____
Authorizing Signature

_____
Please Print Name & Title

_____
Date

Attachments: General Conditions

Submitted: One .pdf Copy via Email

EXHIBIT VI

PERFORMANCE SCHEDULE

The Consultant agrees to proceed with services immediately upon receipt of written Notice to Proceed (NTP) by the Sponsor and to employ such personnel as required to complete the scope of services in accordance with the following time schedule:

BASIC SERVICES

A.	Preliminary Report	80 calendar days from NTP
B.	Summary Report	100 calendar days from NTP
C.	Final Report	30 days after comments

CONSTRUCTION SERVICES

1.	Construction Services	Not Applicable

EXHIBIT VII

REQUIRED FEDERAL CLAUSES

FEDERAL CONTRACT PROVISIONS FOR A/E AGREEMENTS

ALL REFERENCES MADE HEREIN TO "CONTRACTOR", "PRIME CONTRACTOR", "BIDDER", AND "OFFEROR" SHALL PERTAIN TO THE ARCHITECT/ENGINEER (A/E).

ALL REFERENCES MADE HEREIN TO "SUBCONTRACTOR", "SUB-TIER TONTRACTOR" OR "LOWER TIER CONTRACTOR"SHALL PERTAIN TO ANY SUBCONSULTANT UNDER CONTRACT WITH THE A/E.

ALL REFERENCES MADE HEREIN TO "SPONSOR" AND "OWNER" SHALL PERTAIN TO THE STATE, CITY, AIRPORT AUTHORITY OR OTHER PUBLIC ENTITY EXECUTING CONTRACTS WITH THE A/E.

ACCESS TO RECORDS AND REPORTS

Reference: 2 CFR § 200.333, 2 CFR § 200.336, and FAA Order 5100.38

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.

CIVIL RIGHTS – GENERAL

Reference: 49 USC § 47123

The contractor agrees that it will 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.

CIVIL RIGHTS – TITLE VI ASSURANCE

Reference: 49 USC § 47123 and FAA Order 1400.11

A) Title VI Solicitation Notice

The **(Name of Sponsor)**, 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.

B) Title VI Clauses for 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:

1) **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.

2) **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.

3) **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.

4) **Information and Reports:** The contractor will provide all information and reports required by the Nondiscrimination Acts and Authorities, 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.

5) **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.

6) **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 Nondiscrimination Acts and Authorities, 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.

C) Title VI List of Pertinent Nondiscrimination 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).

DISADVANTAGED BUSINESS ENTERPRISE

Reference: 49 CFR part 26

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 DOT 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 recipient deems appropriate.

Prompt Payment (§26.29) - The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than thirty (30) calendar days from the receipt of each payment the prime contractor receives from the Sponsor. The prime contractor agrees further to return retainage payments to each subcontractor within thirty (30) calendar days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Sponsor. This clause applies to both DBE and non-DBE subcontractors.

ENERGY CONSERVATION REQUIREMENTS

Reference: 2 CFR § 200, Appendix II (H)

Contractor and each 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).

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

Reference: 29 USC § 201, et seq.

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

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

Reference: 20 CFR part 1910

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 (20 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.

RIGHT TO INVENTIONS

Reference: 2 CFR § 200 Appendix II (F) and 37 CFR §401

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.

SEISMIC SAFETY

Reference: 49 CFR part 41

In the performance of design services, the Consultant agrees to furnish a building design and associated construction specification that conform to a building code standard which provides a level of seismic safety substantially equivalent to standards as established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their building code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety. At the conclusion of the design services, the Consultant agrees to furnish the Owner a "certification of compliance" that attests conformance of the building design and the construction specifications with the seismic standards of NEHRP or an equivalent building code.

TRADE RESTRICTION CERTIFICATION

Reference: 49 USC § 50104 and 49 CFR part 30

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:

a) 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

b) 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

c) 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 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.

VETERAN'S PREFERENCE

Reference: 49 USC § 47112(c)

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.

DISTRACTED DRIVING

Reference: Executive Order 13513 and DOT Order 3902.10

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.

TERMINATION OF CONTRACT

Reference: 2 CFR § 200 Appendix II (B)

Termination for Convenience

The Owner may, by written notice to the Consultant, terminate this Agreement for its convenience and without cause or default on the part of Consultant. Upon receipt of the notice of termination, except as explicitly directed by the Owner, the Contractor must immediately discontinue all services affected.

Upon termination of the Agreement, the Consultant must deliver to the Owner all data, surveys, models, drawings, specifications, reports, maps, photographs, estimates, summaries, and other documents and materials prepared by the Engineer under this contract, whether complete or partially complete.

Owner agrees to make just and equitable compensation to the Consultant for satisfactory work completed up through the date the Consultant receives the termination notice. Compensation will not include anticipated profit on non-performed services.

Owner further agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

Termination by Default

Either party may terminate this Agreement for cause if the other party fails to fulfill its obligations that are essential to the completion of the work per the terms and conditions of the Agreement. The party initiating the termination action must allow the breaching party an opportunity to dispute or cure the breach.

The terminating party must provide the breaching party [7] days advance written notice of its intent to terminate the Agreement. The notice must specify the nature and extent of the breach, the conditions necessary to cure the breach, and the effective date of the termination action. The rights and remedies in this clause are in addition to any other rights and remedies provided by law or under this agreement.

a) Termination by Owner: The Owner may terminate this Agreement in whole or in part, for the failure of the Consultant to:

    1) Perform the services within the time specified in this contract or by Owner approved extension;

    2) Make adequate progress so as to endanger satisfactory performance of the Project;

    3) Fulfill the obligations of the Agreement that are essential to the completion of the Project.

Upon receipt of the notice of termination, the Consultant must immediately discontinue all services affected unless the notice directs otherwise. Upon termination of the Agreement, the Consultant must deliver to the Owner all data, surveys, models, drawings, specifications, reports, maps, photographs, estimates, summaries, and other documents and materials prepared by the Engineer under this contract, whether complete or partially complete.

Owner agrees to make just and equitable compensation to the Consultant for satisfactory work completed up through the date the Consultant receives the termination notice. Compensation will not include anticipated profit on non-performed services.

Owner further agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

If, after finalization of the termination action, the Owner determines the Consultant was not in default of the Agreement, the rights and obligations of the parties shall be the same as if the Owner issued the termination for the convenience of the Owner.

b) Termination by Consultant: The Consultant may terminate this Agreement in whole or in part, if the Owner:

    1) Defaults on its obligations under this Agreement;

    2) Fails to make payment to the Consultant in accordance with the terms of this Agreement;

    3) Suspends the Project for more than [180] days due to reasons beyond the control of the Consultant.

Upon receipt of a notice of termination from the Consultant, Owner agrees to cooperate with Consultant for the purpose of terminating the agreement or portion thereof, by mutual consent. If Owner and Consultant cannot reach mutual agreement on the termination

settlement, the Consultant may, without prejudice to any rights and remedies it may have, proceed with terminating all or parts of this Agreement based upon the Owner's breach of the contract.

In the event of termination due to Owner breach, the Engineer is entitled to invoice Owner and to receive full payment for all services performed or furnished in accordance with this Agreement and all justified reimbursable expenses incurred by the Consultant through the effective date of termination action. Owner agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

DEBARMENT AND SUSPENSION

Reference: 2 CFR part 180 (Subpart C), 2 CFR part 1200, and DOT Order 4200.5

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

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: https://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 tell a higher tier that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedy, including suspension and debarment.

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

Reference: 2 CFR § 200 Appendix II (E)

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) above, 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 above, 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 above.

3) Withholding for Unpaid Wages and Liquidated Damages.

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 any monies 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 above.

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 section.

LOBBYING AND INFLUENCING FEDERAL EMPLOYEES

Reference: 31 U.S.C. § 1352 – Byrd Anti-Lobbying Amendment; 2 CFR part 200, Appendix II (J); and 49 CFR part 20, Appendix A

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.

BREACH OF CONTRACT TERMS

Reference: 2 CFR § 200 Appendix II (A)

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.

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.

CLEAN AIR AND WATER POLLUTION CONTROL

Reference: 2 CFR § 200 Appendix II (G)

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.

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

1) The applicant represents that it is ( ) is not (X) 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 ( ) is not (X) is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If an applicant responds in the affirmative to 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.

Term Definitions

> **Felony conviction:** Felony conviction means a conviction within the preceding twentyfour (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.