# CITY OF FRANKLIN, TENNESSEE PROFESSIONAL SERVICES AGREEMENT COF Contract No. 2019-0223

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as "City," and <u>THE CORRADINO GROUP, INC.</u>, hereinafter referenced as "Consultant," who mutually agree as follows:

**DECLARATIONS**. City desires to retain Consultant to provide engineering, related technical, and other services in connection with City's SR-96 West Multi-Use Trail project hereinafter referenced as "Project." The Project is described as follows:

## CONSTRUCTION ENGINEERING & INSPECTION (CEI) SERVICES FOR THE SR-96 WEST MULTI-USE TRAIL (PIN 123098.00)

- 1. SCOPE OF SERVICES. Consultant shall provide Construction Engineering & Inspection (CEI) and related technical services for the Project in accordance with the Scope of Services ("Services") as found in Attachment A, which shall be considered as an integral part hereof.
- 2. Consultant shall submit as a part of Attachment A an individual Fee Schedule and a Completion Schedule for the Project based on the detailed Scope of Services.
- 3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.
- 4. Consultant shall be paid on a monthly basis for work performed based on the Fee Schedule as contained in Attachment A in the Amount of Five Hundred Forty-Five Thousand Three Hundred Ninety-Nine and No/100 Dollars (\$545,399.00).

The Board of Mayor and Aldermen Approved this Agreement on the	Day of
201	

#### TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

#### ARTICLE 1. SERVICES. Consultant will:

- 1.1 Act for City in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with standards of competent consultants using the standards in the industry:
- 1.2 Consider all reports to be confidential and distribute copies of the same only to those persons specifically designated by the City.
- 1.3 Perform all services under the general direction of a senior professional employee, licensed and/or registered in the State of Tennessee, when appropriate.
- 1.4 Designate, in writing, the sole Project representative to coordinate with City the Services to be provided, including all contact information.
- 1.5 Unless provided for in the Project Scope of Services (Attachment A), Consultant shall perform all Services with his own forces (employees). Should sub-consultants be proposed to be used in the Project, a listing of said sub-consultants with Services to be performed shall be provided. After approval of this Agreement, no substitute for sub-consultants shall be allowed unless approved by City.
- 1.6 Retain pertinent records relating to the services performed for a period of seven (7) years following the completion of the work; during this period the records shall be available for review by City at all reasonable times.

#### **ARTICLE 2. CITY'S RESPONSIBILITIES.** City, or its authorized representative, will:

- 2.1 Provide Consultant with all information regarding the Project, which is available to, or reasonably obtainable by, the City.
- 2.2 Furnish right-of-entry onto the Project site for Consultant's necessary field studies and surveys. Consultant will endeavor to restore the site to its original condition and shall remain solely liable for all damages, costs and expenses, including reasonable attorneys' fees, for failure to make such restoration.
- 2.3 Designate, in writing, the sole Project representative to coordinate with and direct the Consultant, including all contact information.
- Guarantee to Consultant that it has the legal capacity to enter into this contract and that sufficient monies are available to fund Consultant's compensation.

#### ARTICLE 3. GENERAL CONDITIONS.

- 3.1 Consultant, by the performance of services covered hereunder, does not in any way assume, abridge or abrogate any of those duties, responsibilities or authorities customarily vested in other professionals or agencies participating in the Project.
- 3.2 Consultant shall be responsible for the acts or omissions of any party involved in concurrent or subsequent phases of the Project acting upon written instruction issued by the Consultant.
- 3.3 Neither City nor Consultant may assign or transfer its duties or interest in this Agreement without written consent of the other party.
- 3.4 ALLOCATION OF RISK AND LIABILITY; GENERAL. Considering the potential liabilities that may exist during the performance of the services of this Agreement, the relative benefits and risks of the Project, and the Consultant's fee for the services rendered, and in consideration of the promises contained in this Agreement, the City and the Consultant agree to allocate and limit such liabilities in accordance with this Article.

- 3.5 INDEMNIFICATION. Consultant agrees to indemnify and hold City harmless from and against legal liability for all judgments, losses, damages, and expenses to the extent such judgments, losses, damages, or expenses are caused by Consultant's negligent act, error or omission in the performance of the services of this Agreement. In the event judgments, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.
  - 3.5.1 SURVIVAL. The terms and conditions of this paragraph shall survive completion of this services agreement.
- 3.6 LIMITATIONS OF RESPONSIBILITY. Consultant shall not be responsible for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project unless specifically undertaken in Attachment A, Scope of Services; (b) the failure of any contractor, subcontractor, Consultant, or other Project participant, not under contract to Consultant, to fulfill contractual responsibilities to City or to comply with federal, state, or local laws, regulations, and codes; or (c) procuring permits, certificates, and licenses required for any construction unless such procurement responsibilities are specifically assigned to Consultant in Attachment A, Scope of Services.

## **ARTICLE 4. TERMINATION BY THE CITY.** The City may terminate this Agreement in accordance with the following terms and conditions:

- 4.1 Termination for Convenience. The City may, when in the interests of the City, terminate performance under this Agreement with the Consultant, in whole or in part, for the convenience of the City. The City shall give written notice of such termination to the Consultant specifying when termination becomes effective. The Consultant shall incur no further obligations in connection with the work so terminated, other than warranties and guarantees for completed work and installed equipment, and the Consultant shall stop work when such termination becomes effective. The Consultant shall also terminate outstanding orders and subcontracts for the affected work. The Consultant shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Consultant to assign the Consultant's right, title and interest under termination orders or subcontracts to the City or its designee. The Consultant shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Consultant has in its possession or control. When terminated for convenience, the Consultant shall be compensated as follows:
  - (1) The Consultant shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Consultant fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Consultant the amount the City deems the Consultant is due.
  - (2) The City and the Consultant may agree to the compensation, if any, due to the Consultant hereunder.
  - (3) Absent agreement to the amount due to the Consultant, the City shall pay the Consultant the following amounts:
    - (a) Contract costs for labor, materials, equipment and other services accepted under this Agreement;

(b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Consultant's performance, plus a fair and reasonable allowance for direct job site overhead and earned profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it reasonably appears that the Consultant would have not profited or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

The total sum to be paid the Consultant under this Section shall not exceed the total Agreement Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

4.2 Termination for Cause. If the Consultant does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Agreement, then the City, in addition to any other rights it may have against the Consultant or others, may terminate the performance of the Consultant, in whole or in part at the City's sole option, and assume possession of the Project Plans and materials and may complete the work.

In such case, the Consultant shall not be paid further until the work is complete. After Completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Consultant. Otherwise, the Consultant shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Agreement.

In the event the employment of the Consultant is terminated by the City for cause pursuant to this Section and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under this Section and the provisions of Section 4.1 shall apply.

- 4.3 Termination for Non-Appropriation. The City may also terminate this Agreement, in whole or in part, for non-appropriation of sufficient funds to complete or partially complete the Project, regardless of the source of such funds, and such termination shall be on the terms of Section 4.1.
- 4.4 The City's rights under this Section shall be in addition to those contained elsewhere herein or provided by law.

**ARTICLE 5. SCOPE OF SERVICES.** Consultant shall provide the Services as described in Attachment A, Scope of Services.

- 5.1 By mutual agreement, this Agreement and scope can be amended by the parties. The scope and fee for any additional tasks or services under such amendment shall be mutually negotiated and agreed to in writing prior to beginning such additional tasks or services.
- 5.2 ENVIRONMENTAL RESPONSIBILITY.

Where drilling/sampling services are involved, the samples obtained from the Project site are the property of the City. Should any of these samples be recognized by the Consultant to be contaminated, the City shall remove them from the Consultant's custody and transport them to a disposal site, all in accordance with applicable government statutes, ordinances, and regulations. For all other samples, the Consultant shall retain them for a sixty (60)-day period following the submission of the drilling/sampling report unless the City directs otherwise; thereafter, the Consultant shall discard the samples in accordance with all federal, state and local laws.

#### ARTICLE 6. SCHEDULE.

- 6.1 TIME OF THE ESSENCE. The parties agree that time is of the essence with respect to the parties' performance of all provisions of the Agreement.
- Before executing this Agreement, the Consultant shall have prepared and submitted for approval to the City a Completion Schedule for the Project with milestones for the various stages (tasks) of the Services as outlined in the Scope of Services. The Consultant shall submit and obtain the City's approval for any proposed changes to the logic, durations, sequences, or timing of tasks as approved in the Completion Schedule.
- 6.3 FORCE MAJEURE. Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.
- 6.4 Should City request changes in the scope, extent, or character of the Project, the fee and the time of performance of Consultant's Services as indicated in Attachment A shall be adjusted equitably.

#### ARTICLE 7. USE OF DOCUMENTS, DATA.

7.1 All Documents, including, but not limited to, reports, drawings, specifications, and computer software prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. Consultant shall retain an ownership and property

interest therein (including the right of reuse at the discretion of the Consultant) whether or not the Project is completed.

- 7.1.1 USE OF DATA SYSTEMS: Ownership, property interests and proprietary rights in data systems used by Consultant do not extend to the data created by or supplied to Consultant by the City; all rights to that data (including derivative or hidden data such as metadata) shall vest solely in City at the moment of creation.
- 7.1.2 DISCLOSURE OF DOCUMENTS/DATA. City may be required to disclose documents or data under state or federal law. City shall notify Consultant if a request for data or documents has been made and shall give Consultant a reasonable opportunity under the circumstances to respond to the request by redacting proprietary or other confidential information. Consultant waives any right to confidentiality of any document, e-mail or file it fails to clearly mark on each page as confidential or proprietary. In exchange, Consultant agrees to indemnify, defend, and hold harmless City for any claims by third parties relating thereto or arising out of (i) the City's failure to disclose such documents or information required to be disclosed by law, or (ii) the City's release of documents as a result of City's reliance upon Consultant representation that materials supplied by Consultant (in full or redacted form) do not contain trade secrets or proprietary information, provided that the City impleads Consultant and Consultant assumes control over that claim.
- 7.2 By execution of this Agreement, Consultant and his sub-consultant(s) grant the City a royalty-free, perpetual, irrevocable, and assignable license to use any and all intellectual property interest Consultant or his sub-consultant(s) possess to any drawings, details, specifications, documents, and other information created before each of their first involvement with the Project and subsequently incorporated into the Project's documents. City-furnished data that may be relied upon by Consultant is limited to the printed copies that are delivered to the Consultant pursuant to Article 2 of this Agreement. Any copyrighted electronic files furnished by City shall be used by Consultant only for the Project as described herein. City's posting or publication of such documents created by Consultant for City shall constitute fair use and shall not constitute an infringement of Consultant's copyright, if any.
- 7.3 Documents that may be relied upon by City are limited to the printed copies (also known as hard copies) that are signed or sealed by the Consultant. Files in electronic media format of text, data, graphics, or of other types that are furnished by Consultant to City are only for convenience of City, unless the delivery of the Project in electronic media format has been dictated in Attachment A, Scope of Services. Any conclusion or information obtained or derived from electronic files provided for convenience will be at the user's sole risk.
- 7.4 Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. Unless stated otherwise herein, Consultant shall not be responsible to maintain documents stored in electronic media format after acceptance by City.
- 7.5 When transferring documents in electronic media format, Consultant makes no representations as to long term compatibility, usability, or readability, of documents

- resulting from the use of software application packages, operating systems, or computer hardware differing from that as required of, and used by, Consultant at the beginning of this Project.
- 7.6 City may make and retain copies of Documents for information and reference in connection with use on the Project by the City, or his authorized representative. Such Documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse or modifications without written verification or adaptation by Consultant, as appropriate for the specific purpose intended, will be at City's sole risk and without liability or legal exposure to the Consultant or to Consultant's sub-consultants.
- 7.7 If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- 7.8 Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

#### **ARTICLE 8. INSURANCE.**

- 8.1 During the performance of the Services under this Agreement, Consultant shall maintain the following minimum insurance:
  - a) General Liability Insurance with a combined single limit of \$1,000,000 per occurrence and \$2,000,000 annual aggregate.
  - b) Automobile Liability Insurance with a combined single limit of \$1,000,000 for each person and \$1,000,000 for each accident.
  - c) Workers' Compensation Insurance Coverage A in accordance with statutory requirements and Coverage B, Employer's Liability Insurance, with a limit of \$500,000 for each occurrence.
  - d) Professional Liability Insurance with a limit of \$1,000,000 annual aggregate.
- 8.2 Consultant shall add the City an additional insured on all policies unless otherwise prohibited.
- 8.3 Consultant shall, upon execution of this Agreement, furnish City certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days' written notice to City.
- 8.4 No insurance, of whatever kind or type is to be considered as in any way limiting other parties' responsibility for damages resulting from their activities in the execution of the Project. City agrees to include, or cause to be included, in the Project's construction contract, such requirements for insurance coverage and performance bonds by the Project's construction contractor as City deems adequate to indemnify City, Consultant, and other concerned parties against claims for damages and to insure compliance of work performance and materials with Project requirements.

#### **ARTICLE 9. PAYMENT.**

9.1 City will pay Consultant for services and expenses in accordance with the Fee Schedule proposal submitted for the Project as part of the Scope of Services. Consultant's invoices will be presented at the completion of the work or monthly and will be payable upon receipt. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. City shall give prompt written notice of any disputed amount and shall pay the remaining amount.

- 9.2 Consultant shall be paid in full for all services under this Agreement, including City authorized overruns of the Project budget or unforeseen need for Consultant's services exceeding the original Scope of Services.
- 9.3 TRAVEL; EXPENSES

City shall reimburse reasonable expenses, including travel and meals, when specified in the Scope of Services, but only in accordance with the City's Travel and Expense Policy and Procedures Manual. The maximum amount will be applied as of the date of travel and as listed in the per diem reimbursement rates on the "CONUS" website developed by the United States General Services Administration, located at <a href="www.gsa.gov">www.gsa.gov</a> [click on 'per diem rates' under the 'etools' category].

#### **ARTICLE 10. MISCELLANEOUS PROVISIONS**

- EQUAL EMPLOYMENT OPPORTUNITY. In connection with this Agreement and the Project, City and Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that the contractor used for the Project does not discriminate against any employee and employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship.
  - 10.1.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.2 TITLE VI CIVIL RIGHTS ACT OF 1964. City and Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations.
  - 10.2.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- NO THIRD PARTY RIGHTS CREATED. City and Consultant each binds itself and its successors, executors, administrators, permitted assigns, legal representatives and, in the case of a partnership, its partners, to the other party to this Agreement and to their successors, executors, administrators, permitted assigns, legal representatives and partners of such other party in respect to all provisions of this Agreement. The Services provided for in this Agreement are for the sole use and benefit of City and Consultant. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than City and Consultant.
- 10.4 WARRANTIES/LIMITATION OF LIABILITY/WAIVER. City reserves all rights afforded to local governments under law for all general and implied warranties. City does not waive any rights it may have to all remedies provided by law and therefore any attempt by Consultant to limit its liability shall be void and unenforceable.

#### **ARTICLE 11. EXTENT OF AGREEMENT:**

11.1 APPLICABLE LAW/CHOICE OF FORUM AND VENUE. This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice of forum and venue shall be exclusively in the courts of Williamson County, Tennessee. Any provision of this

- Agreement held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force.
- 11.2 ENTIRE AGREEMENT. This Agreement, including these terms and conditions, represent the entire Agreement between City and Consultant for this Project and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be amended only by written instrument signed by City and Consultant.

#### ARTICLE 12. DISPUTE RESOLUTION, BREACH.

- 12.1 If a dispute should arise relating to the performance of or payment for the Services under this Agreement, the aggrieved party shall notify the other party of the dispute within a reasonable time after such dispute arises. During the pendency of any dispute, the parties shall continue diligently to fulfill their respective obligations hereunder. No arbitration or mediation shall be required as a condition precedent to filing any legal claim arising out of or relating to this Agreement. No arbitration or mediation shall be binding.
- 12.2 BREACH. Upon deliberate breach of the Agreement by either party, the non-breaching party shall be entitled to terminate the Agreement with notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

#### ARTICLE 13. SURVIVAL.

The provisions contained in this Professional Services Agreement shall survive the completion of or any termination of the Agreement, contract or other document to which it may accompany or incorporate by reference or which subsequently may be modified, unless expressly excepted from this Article upon consent of both parties.

CONSULTANT:	CIT	Y OF FRANKLIN, TENNESSEE:
(Signature)		(Signature)
Name: Gerald Bolden	Name:	Dr. Ken Moore
Title: Vice President	Title:	Mayor
Date: July 5, 2019	Date:	
Approved as to Form:		
Shauna R. Billingsley, City Attorney	<del>-</del>	

ENGINEERS · PLANNERS · PROGRAM MANAGERS · ENVIRONMENTAL SCIENTISTS

July 1, 2019

Mr. Paul Holzen, PE City Engineer City of Franklin 109 3<sup>rd</sup> Avenue South, Suite 133 Franklin, TN 37064

RE: Proposal for Professional Services to Provide Construction Engineering Inspection (CEI) SR-96 West Multi-Use Trail Project (TDOT PIN 12398.00)
City of Franklin, Tennessee

Dear Paul,

The Corradino Group is pleased to submit this Letter Proposal to the City of Franklin for construction and engineering inspection (CEI) services for the SR-96 West Multi-Use Trail project, beginning at Vera Valley Drive and extending approximately 1.288 miles to 5<sup>th</sup> Avenue. Services to be provide will consist of construction management and oversight, inspection, materials testing, utility coordination and conflict resolution, and as-built preparation. We intend to subconsultant the necessary material testing for this project.

We have coordinated with City staff and have based our estimate on the most recent plans prepared for the City.

#### **PROFESSIONAL SERVICES**

#### Exhibit A

The scope of work will consist of the following services. Please see Attachment A for a fully detailed Scope of Work.

- Full-time Inspection we understand inspection staff is not expected to be on-site during periods
  of inactivity by the Contractor
- Project Management and Coordination
- Local Programs Coordination
- Materials Testing
- Utility Coordination
- Plans Revisions to Resolve Conflicts
  - Impacts to existing utilities
  - Reduce construction time and/or delays
- Project Closeout per TDOT requirements
- As-Built Preparation

#### **TIME of SERVICE**

The Corradino Group will begin working with the City upon receipt of an executed contract and will complete professional services with 16 months, beginning with the preconstruction meeting and having a construction duration 15 months. One month will be for project closeout.

Mr. Paul Holzen, City Engineer July 1, 2019 Page 2



#### FEE

Services for this project will be billed monthly at a direct labor rate, plus our current TDOT audited overhead rate with net fee applied. A detailed Fee Schedule can be found in Attachment B. A summary of our not to exceed fee is as follows.

Exhibit B

Total Labor for CEI Services	\$451,375.00
Direct Expenses	\$12,705.00
Materials Testing (TTL, Inc.)	\$81,319.00

Estimated Total for CEI Services ......\$545,399.00

Corradino will subconsultant materials testing to be billed as a unit cost direct expense for each test. We estimate testing will be necessary to verify concrete, verification of asphalt at the batch plant and during laydown, and density certification. The cost provided is an estimate based on the project schedule and recommended testing frequency outlined by TDOT and LPDO.

#### **ADDITIONAL SERVICES**

Any services not specifically outlined in this Proposal, or considered as additional services, can be provided upon written approval. These services will be billed at direct hourly rates.

We appreciate the opportunity to present this Proposal to the City of Franklin and look to work with you and staff. Should you have any questions or require additional information you may reach me by telephone at 615-372-6972 or by email at <a href="mailto:mbiggs@corradino.com">mbiggs@corradino.com</a>, or you may contact Gerald Bolden at 615-372-6972 or <a href="mailto:gbolden@corradino.com">gbolden@corradino.com</a>.

Sincerely,

THE CORRADINO GROUP, INC.

Michael A. Biggs, PE, CPESC Transportation Engineer Manager

## THE CORRADINO GROUP, INC.

ENGINEERS · PLANNERS · PROGRAM MANAGERS · ENVIRONMENTAL SCIENTISTS

#### Exhibit A

### **Attachment A** - Scope of Work

SR-96 West Multi-Use Trail, from Vera Valley Drive to 5<sup>th</sup> Avenue (PIN 123098.00)

City of Franklin

July 1, 2019

#### **Project Understanding**

The Corradino Group (Corradino) understands this project will consist of serving as the City's representative and provide CEI services throughout the life of the project to effectively monitor and oversee construction of the project as defined by the plans and specifications for SR-96 West Multi-Use Trail, from Vera Valley Drive to 5<sup>th</sup> Avenue, PIN 123098.00. All inspection and documentation shall be as outlined in the TDOT Proposed Scope of Work for CEI and per Local Programs Development Office guidelines. Corradino estimates the following CEI tasks based on a 15-month construction schedule. Contract terms are understood to be Cost-Plus Net Fee.

#### Task 1 – Project Management and Administration

Project management and administration is a continuous task that will be performed for the duration of this contract. This task includes monitoring, coordinating, facilitating, scheduling, and documenting all project task.

Each month during the contract, Corradino will prepare and submit a monthly invoice and status report covering work progress and contract fulfillment.

After receipt of the notice-to-proceed, Corradino will conduct a project kick-off meeting with City staff. This meeting will include the following topics:

- Key project staff
- Communications protocol
- Project schedule
- Invoicing
- Monthly progress meetings and reports
- Data and information needs

Once the project is underway, Corradino will provide monthly status reports to the City's Project Manager (PM) and conduct monthly progress meetings with City staff, as necessary. These meetings will include a status update, anticipated next phases of work to be completed, and discussion on any critical items/issues and/or potential issues identified during project development.

Corradino will prepare the agenda for all meetings and provide all necessary materials and handouts for discussion. At the conclusion of each meeting, Corradino will prepare meeting minutes and a cumulative list of "action items" developed for assignment to the appropriate party. These items will be distributed to the attendees and other appropriate stakeholders within five (5) working days following the meeting. All deliverables included within this task will be provided in .pdf format.

Scope of Work SR-96 West Multi-Use Trail CEI July 1, 2019 THE CORRADINO GROUP

#### Task 2 – TDOT Local Programs Reporting & Coordination

Throughout the project, Corradino will provide continuous coordination with TDOT Local Programs Development Office (LPDO) and will provide all documentation and reporting as outlined in the TDOT LPDO Local Government Guidelines. This includes completion of all required forms to move the project from construction to project close-out.

As needed, Corradino will meet with TDOT LPDO staff to review the project status, address any issues or provide documentation to move the project forward. Also, as necessary, Corradino will provide coordination with FHWA Division staff. This may include meetings or teleconferences.

#### Task 3 – Construction Engineering and Inspection (CEI)

Corradino will provide CEI services as outlined in the following sections. Based on discussions with the City, Corradino will provide an inspection team consisting of a Project Manager, full-time inspector, and Project Engineer for the project. Corradino will coordinate throughout the construction phase with the City's PM accordingly. The inspector will not be required to be on-site during periods when the contractor is inactive.

#### A. Constructability Review

Corradino will review the plan documents to evaluate any potential constructability issues and work with the City and/or design engineer to address prior to construction. The review will identify any areas of concern or potential issues and identify any potential modifications that may be a time or cost savings to the project.

#### **B.** Pre-Construction Conference

Corradino will prepare for and conduct the Pre-Construction Conference; address and resolve all issues that arise at the meeting with appropriate offices, agencies and divisions; and prepare and distribute detailed minutes of the meeting. Corradino recommends *Erosion Control* and *Utility Coordination* conferences prior to commencing activities to discuss scheduling and operations for these specific items.

#### C. Proiect Administration

Corradino will provide project administration and coordinate with the assigned TDOT Project Supervisor; prepare for and attend, when requested, any periodic or in-depth FHWA inspections that may be conducted on the project related to project work, progress or records; prepare for, cooperate with, and assist auditors that may be assigned to review project records, payments, reports, etc.; monitor Contractors hours worked on the project and justify need for overtime; obtain from the contractor a list of contractor's personnel that will be responsible for any occurrence that may arise on the project for the life of the project.

#### D. Provide Construction Inspection Technical Support

Corradino will provide qualified personnel for inspection of the project during the construction phase to oversee the Contractor's activities.

#### E. Supplemental Agreements – Construction Change Orders

Through coordination with the City's inspection team, if the Contractor request a change order, Corradino will review any Supplemental Agreements/Construction Changes; Negotiate prices for additional pay items with the contractor while adhering to the "Average Unit Price" listing when possible; Coordinate acceptance of prices with the City and TDOT;

Scope of Work SR-96 West Multi-Use Trail CEI July 1, 2019



Prepare the Supplemental Agreement/Construction Change and submit to the City for final review and submittal for processing; Submit and coordinate with TDOT.

#### F. Quality Assurance, Testing for Acceptance and Training

Corradino will assist and oversee a subconsultant to monitor and provide materials testing in the field as defined by TDOT LPDO and specifications. Any certifications of material submitted by the contractor will be reviewed by Corradino for conformity to the Plans and Specifications. A Final Materials and Tests Certification will be included in the Final Records submitted to the Department.

#### **G.** Progress Payments

Corradino will document and assemble accurate quantities for Monthly Progress Payments to the Contractor from actual project field records. The quantities for payment will be referenced to field records prior to submission for payment. All pay quantities will be submitted to the City for review and payment. Payments for stockpiled material may be made as defined in the Standard Specifications and approved by the Project Supervisor. The Estimate "cut-off" will be the 15<sup>th</sup> of each month.

Copies of approved subcontracts as well as copies of actual DBE subcontractor's contracts should be on file prior to the first Progress Payment.

#### H. Distribution of Correspondence

Corradino will maintain a copy of all correspondence between the Consultant, contractor, subcontractors, or others concerning matters related to the project. The correspondence will be submitted with the project Final Records.

#### I. Inspection of Work

Corradino's inspection team ensure completion of the following tasks:

- Provide inspection services for conformance to Plans and Specifications for all items
  that are being incorporated into the project. Corradino will measure and record all
  quantities for payment and provide daily reports to the City. These daily reports will
  be provided at a minimum of weekly. The daily records will be recorded on a standard
  form (field book) and/or on field inspection forms.
- 2. Check traffic control daily, and additionally as required.
- Notify the contractor of deficiencies or problems immediately. Document weekly (or as often as necessary) project traffic control on standard forms and provide to the City.
- 4. Inspect daily erosion control items for conformance to the plans as well as effectiveness in the field.
- 5. Prepare an accurate daily diary, signed by the inspector, consisting of:
  - A record of the contractors on the project
  - Their personnel (number and classification)
  - Equipment (number and type or size)
  - Location and work performed by each contractor or subcontractor
  - Orders given the contractor
  - Events of note on the project
  - Accidents on the project and any details surrounding the accident such as police report number, fatalities, causes, time, etc. Obtain a copy of the police report for the project records whenever possible.
  - Weather, amount of precipitation, temperature at morning, noon, and evening, cloudy, clear, etc.

Scope of Work SR-96 West Multi-Use Trail CEI July 1, 2019



- Days charged, with explanation if not charged.
- Equipment arriving or leaving the project, idle equipment.
- Any other details that may be important later in the project life.
- 6. Review shop drawings and/or submittals and evaluate for compliance.
- 7. Collect all material certifications (T2 Forms).

Corradino understands that the City does not expect Corradino to be on-site for the entire work day if no work is being performed.

#### J. Contractor's Payrolls, Employee Interviews and Contract Compliance:

Corradino will receive and check the contractor's payrolls for conformance to state wage rates as defined in the contract; Notify the prime contractor of late payrolls and request immediate submission; Notify the City prior to withholding payments; Conduct employee interviews and compare to the submitted payrolls for accuracy; Notify the contractor of inaccuracies and resolve discrepancies.

#### K. Reports

There are numerous reports, documents, etc., that must be generated in the process of contract administration. Corradino will maintain either electronic or paper copies of all reports in compliance with TDOT's Standard Operating Procedures and LPDO Guidelines.

#### L. Final Records

Corradino will submit a compilation of project records as well as all project documentation to the City. Corradino will make any corrections when/if notified and resubmit the records and a final estimate for the project at the appropriate time and submit all final forms (CC3, etc.) with the final records.

#### Task 4 – Utility Coordination & Conflict Resolution

Corradino will coordinate the proposed construction with affected utilities in the area. In the event that conflicts arise, Corradino will work with the City of Franklin and/or other parties (Contractor, respective utility, etc.) to make adequate field adjustments and/or suitable revision(s) to the plans that will resolve, improve, or redesign the situation and help reduce delays. These situations will be handled on a case-by-case basis.

#### Task 5 – As-Built Development

Corradino will develop as-built plans showing the location of constructed improvements. Corradino assumes the selected Contractor will collect field information of constructed improvements. This information will be provided to Corradino who will review and verify all improvements have been located. Corradino assumes information will be reported on a monthly basis to verify all work completed. Final as-built plans (in .pdf format) and survey files (in Microstation .dgn format) will be delivered to the City upon completion of the project.

#### **Exhibit B**

### **Attachment B** - Fee Schedule

### **SR-96 West Multi-Use Trail CEI**

July 1, 2019

PIN 123098.00



TASK DESCRIPTION	esource	roject Manager	enior Engineer	roject Engineer	spector	
TASK DESCRIPTION	æ	Α.	Se	7	드	

TASK HOURS

#### CONSTRUCTION ADMINISTRATION

TOTAL ESTIMATED HOURS

1. PROJECT MANAGEMENT & ADMINISTRATION		192		320		512
2. LOCAL PROGRAMS REPORTING & COORDINATION		60				60
3. CONSTRUCTION ENGINEERING & INSPECTION			960	240	2400	3600
4. UTILITY COORDINATION & CONFLICT RESOLUTION		60	60	480		600
5. AS-BUILT DEVELOPMENT				128		128
						_
	Total Manhours	312	1020	1168	2400	4900
	% of Total Hours	6%	21%	24%	49%	7500

The Corradino Group - TDOT audited overhead rate

Home Office Rate = 134.09%

Field Rate = 113.11%

Net Fee = 12%

Total Estimated Labor for CEI

\$ 451,375.00

**Estimated Direct Expeneses** 

Daily Truck Charge (\$30.25/day) \$ 12,705.00

ESTIMATED TOTAL COST \$ 464,080.00

## THE CORRADINO GROUP, INC.

ENGINEERS · PLANNERS · PROGRAM MANAGERS · ENVIRONMENTAL SCIENTISTS

#### 2019 CLASSIFICATION HOURLY RATE SCHEDULE

Principal	.\$240.00
Project Manager	.\$220.00
Senior ITS Engineer	.\$210.00
Senior Design Engineer	.\$192.00
Staff Engineer	.\$145.00
Engineer Intern	.\$90.00
Senior Planner	.\$145.00
Staff Planner	.\$115.00
Construction Manager	.\$180.00
Inspector	.\$100.00
Travel Demand Modeler	.\$145.00
Technician	.\$100.00
Administrative	.\$70.00



June 28, 2019

Mr. Michael Biggs, PE, CPESC Transportation Engineer Manager The Corradino Group 7000 Executive Center Drive, Suite 2-250 Brentwood, Tennessee 37027

RE: Proposal for Construction Engineering and Inspection

State Route 96 Multi-use Trail

Franklin, Tennessee

TTL Proposal No. P00190801757.00

Dear Mr. Biggs:

Thank you for the opportunity to provide construction engineering and inspection services during construction activities for the State Route 96 Multi-use Trail project in Franklin, Tennessee. This proposal contains our understanding of the project, the proposed scope of services, and estimated fee and scheduling information.

#### PROJECT INFORMATION

As described in the April 1, 2019 Request for Letters of Interest, "The City (of Franklin) received federal grant funding to construct a multi-use trail along State Route 96 West (SR-96W), between Vera Valley Drive and 5th Avenue North (SR-106/US-431. The project generally includes: grading, concrete flatwork, drainage, asphalt paving, pavement marking & signage, minor traffic signal modifications, and utility relocations. Final construction plans have been submitted to TDOT for review. The purpose of this request is to procure CEI services to document and inspect the work performed by the contractor as a part of this project." Additionally, we understand the project is currently scheduled for 15 months.

Project information was obtained from email correspondence and a link to a set of drawings in PDF format made available electronically. The link included a set of civil drawings which were prepared by Benesch dated April 24, 2019. We were not provided with a detailed construction schedule or project specifications.

#### PROPOSED SCOPE OF SERVICES

Based on our review of information provided and our experience on similar projects, we propose to provide the following services during construction:

- Observe and test roadway embankment fill placement and compaction activities and measure compaction efforts with a proofroll and/or a nuclear density gauge, if applicable.
- Perform laboratory standard Proctor compaction testing for soil materials used as fill and crushed limestone mineral aggregate base materials.

- Monitor and test roadway basestone and asphalt placements in general accordance with TDOT requirements.
- Perform Quality Assurance observations at the asphalt batch plant during batching of asphalt mixtures.
- Make test specimens and perform field tests on plastic concrete. Tests will include slump, air content, unit weight, and temperature. We will cast five test cylinders (4 in. x 8 in.) for every 100 cubic yards of concrete placed for Class A concrete or every 25 cubic yards or less weekly for Non-Critical Structures and placements.
- Cure the concrete samples in our laboratory and test the specimens for compressive strength.
- Perform laboratory gradations for the mineral aggregate base materials, granular backfill materials, and asphalt mixtures.
- Perform laboratory density testing on field-cored asphalt specimens.
- Observe concrete pipe culvert and drainage structure installation and backfill activities and measure compaction efforts with a nuclear density gauge, if applicable.

We will issue field and testing reports for each site visit. Our project manager will review the field reports and test results before these documents are issued as final documents and will also be available for consultation at your request. The actual scope of services may vary from the proposed scope of services based on the project schedule, budget constraints, and other issues that we do not control. Please keep in mind that our testing is a sampling of the construction materials and does not guarantee the quality of the entire work product. Our representatives will notify you and the contractor of any portions of the work we observe which do not meet the project specifications. We do not have the authority to stop the contractor's work.

We will need to be provided copies of the full construction documents (plans, specifications, and submittals related to inspections), at the beginning of the project. As project conditions change or are modified by Requests for Information (RFIs), we will need to be copied on the RFIs and responses.

Additionally, we are not responsible for the safety of persons other than TTL personnel. Job-site safety is the sole responsibility of the general contractor.

#### SCHEDULING

A TTL representative will be on-site on a full-time (continuous) and part-time (periodic) basis, depending on the activity. Our on-site representative(s) or Project Manager will be available to communicate with the General Contractor's Project Manager or designated representative to discuss construction schedules. Scheduling of our activities will be the sole responsibility of the contractor. We require at least 24 hours' notice to assist with scheduling our services for periodic observations.

#### COMPENSATION

Based on our understanding of the site-specific needs and the scope of work described within this proposal, we estimate the budget for our services as outlined above and on the appended sheets to be about \$81,319. Our estimate is based on the assumed work schedule which is shown on the detailed cost estimate included

June 28, 2019 Page 3

with this proposal. Our estimate is also based on providing a materials testing technician to perform various testing and observations as a supplement to Corradino's full-time CE&I professional. We also propose to provide a CE&I professional on as as-needed basis at an hourly rate of \$125.00 per hour. Our cost estimate does not include providing this service.

We have not been provided with a detailed construction schedule. Our fees will depend on the quality of the work and rate of progress achieved by the contractor, weather conditions, and other factors beyond our control. We will monitor and keep you apprised of the budget status and items requiring re-inspection. Our estimate does not include project delays and/or re-inspections, if required. If it appears that we will exceed the budget estimate, we will notify you and discuss whether you wish to expand the budget or reduce the remaining scope of services, if possible, to maintain the budget.

#### **AUTHORIZATION**

To authorize our services, please sign the attached Client Project Services Agreement and return it and the proposal to our office. This proposal will remain valid for a period of 60 days from the date of this letter.

#### **CLOSING**

We appreciate this opportunity to be of service to you on this project. If you have questions or require additional information, please contact our office at (615) 331-7770.

Sincerely, TTL, Inc.

Daven Gl Rogers

Construction Services Project Manager

Matt Bullard, P.E.

Transportation Regional Leader

Attachments:

**Construction Testing Estimates** 

Schedule of Fees

Client Project Services Agreement

Project: The Corradino Group - S.R. 96 Multi-Use Trail

Location: Franklin, TN TTL Proposal No.: P00190801757.00



SERVICE	PROJ	ECTED SCHE	DULE	UNIT COST	SUBTOTAL	SECTION SUBTOTAL
EARTHWORK	No. Days	hrs/day	Total	Rate	Subtotal	
Subgrade Review / Proofrolling	4	4	32	\$65.00	\$2,080.00	1
Monitoring Cut/Fill Activities & Density Testing - Embankment	30	8	240	\$65.00	\$15,600.00	1
Technician Overtime	0	2	0	\$84.50	\$0.00	1
Project Manager / Engineer Review	34	0.5	17	\$150.00	\$2,550.00	1
PM Support Services	34	0.25	8.5	\$55.00	\$467.50	
						\$20,698
RIGID / FLEXIBLE PAVEMENTS	No. Days	hrs/day	Total	Rate	Subtotal	
Subgrade Review / Proofrolling	4	4	16	\$65.00	\$1,040.00	1
Monitoring Storm Drain Installation and Backfill Testing	36	8	288	\$65.00	\$18,720.00	
Monitoring Basestone Placement	6	8	48	\$65.00	\$3,120.00	1
Monitoring & Testing Pavement Placement (Field)	12	8	96	\$65.00	\$6,240.00	1
Monitoring & Testing Pavement Placement (Field) Overtime	0	2	0	\$84.50	\$0.00	1
Monitoring & Testing Pavement Placement (Plant)	12	8	96	\$90.00	\$8,640.00	1
Monitoring & Testing Pavement Placement (Plant) Overtime	0	2	0	\$117.00	\$0.00	1
Project Manager / Engineer Review	58	0.5	29	\$150.00	\$4,350.00	1
PM Support Services	58	0.25	14.5	\$55.00	\$797.50	
	-1					\$42,908
CONCRETE	No. Days	hrs/day	Total	Rate	Subtotal	
Concrete Placements (Sidewalks / Curbs / Driveways)	14	4	56	\$65.00	\$3,640.00	1
Technician Overtime			0	\$84.50	\$0.00	
Cylinder Pick-Up	14	1	14	\$65.00	\$910.00	1
Project Manager / Engineer Review	14	0.5	7	\$150.00	\$1,050.00	1
PM Support Services	14	0.25	3.5	\$55.00	\$192.50	
111 231 231 231 231		0,20	0.0	430.00	4102,00	\$5,793
MATERIALS / LAB TESTING / ADDITIONAL SERVICES	Number	Units	Total	Rate	Subtotal	441144
Proctor Density Testing			0	\$125.00	\$0.00	
Proctor Density Testing w/ Atterberg Limits	4	1	4	\$210.00	\$840.00	
Concrete Cylinders (Curb / Gutter / Sidewalks / etc)	15	5	75	\$13.00	\$975.00	
Gradations (Roadway Basestone & Backfill Materials)	50	1	50	\$70.00	\$3,500.00	1
Gradations (Asphalt)	5	1	5	\$225.00	\$1,125.00	
Asphalt Core Density	0	1	0	\$50.00	\$0.00	
Asphalt Coring (2-Man Crew)	0	8	0	\$120.00	\$0.00	
Nucelar Density Gauge (Daily Equipment Charge)		1	0	\$40.00	\$0.00	
Engineer Review of Concrete / Soils / Asphalt	70	0.25	17.5	\$150.00	\$2,625.00	
						\$9,065
DIRECT COSTS	Trips	Miles	Total	Rate	Subtotal	
Trip Charge	102	40	4080	\$0.70	\$2,856.00	
			7000			-
						\$2,856

Note: This is a good faith estimate based on our understanding of the project. The actual schedule may vary and billing will be based on the unit rates shown on the attached fee schedule for actual hours worked.



## Schedule of Fees (Labor)

Senior Project Technician I	\$65.00 / hr
Senior Project Technician IV	\$90.00 / hr
Senior Project Professional I	\$150.00 / hr
Principal	
Project Administrator II	\$55.00 / hr
Technician rates to be multiplied by 1.3 for time in excess of 8 hours per day, and Sundays, and Holidays.	all hours on Saturdays,
Travel (Portal to Portal)	\$0.70 / mile
Direct Expenses	Cost + 15%



## Schedule of Fees (Laboratory)

#### Soils:

- 47		
01.	Field Density Testing by Nuclear Methods (Daily Equipment Charge)	\$40.00 / daily
	Natural Moisture Content (ASTM D2216)	
	Atterberg Limits (ASTM D4318)	
	Shrinkage Limit & Shrinkage Ratio (ASTM D427)	
05.	Material in Soils Finer than the No. 200 Sieve by Washing (ASTM D1140)	\$65.00 / test
06.	Grain Size, Sieve Analysis, with hydrometer (ASTM D422)	\$185.00 / test
07.	Grain Size, Sieve Analysis, without hydrometer (ASTM D422)	\$85.00 / test
	Rymac Soil Strength Test (SPT Sample)	
09.	Resistivity of Soils (ASTM G57)	\$100.00 / test
10.	pH of Soils (ASTM D4972)	\$35.00 / test
11.	Specific Gravity of Soils (ASTM D854)	\$55.00 / test
	Organic Content (ASTM D2974)	
13	Moisture-Density Curve (Requires Atterberg Limits Not Included in Test Fee)	
	a. Standard Proctor (ASTM D698)	\$125.00 / test
	b. Modified Proctor (ASTM D1557)	
	c. One Point	
14	Laboratory CBR (ASTM D1883)	
	a. In-situ	\$215.00 / test
	b. Remolded (Not Including Proctor)	\$300.00 / test
15	Unconfined Compression Test:	4000,007 1001
1,50	a. Soil Specimen (2-1/2-inch or 3-inch) (ASTM D2166)	\$130.00 / test
	b. Rock Core Specimen (BX or NX), Cupped (Non-ASTM)	\$75.00 / test
16	Unit Dry and Wet Weight (ASTM D2216)	
	One-Dimensional Consolidation Test (1/4 to 16-ton loading) (ASTM D2435)	
	(Add \$40.00 for each unload-reload cycle)	
	a. Undisturbed Sample	\$395 00 / test
	b. Remolded Sample (Proctor Not Included)	\$375.00 / test
18	One-Dimensional Swell/Settlement Potential of Cohesive Soils (ASTM D4546)	\$375.00 / test
	Triaxial Compression Test:	\$070.007 test
10.	a. Unconsolidated Undrained (ASTM D2850)	\$300 00 / 3 nte
	b. Consolidated Undrained with Pore Pressure Measurements (ASTM D47)	
	pts	01)\$000.00 1 0
20	Consolidated-Drained, Undisturbed Sample	\$650 00 / test
	Direct Shear Testing of Soils under Consolidated-Drained Conditions	\$000.007 test
21.	2 ½" Specimen (ASTM D3080)	\$305.00 / toet
22	Hydraulic Conductivity (Permeability), Flexible Wall/Backpressure (ASTM D5084	
	Moisture-Density of Soil-Cement Mixture (ASTM D558)	
	Moisture-Density of Soil-Cement Mixture (Modified)	
	Remolded Soil Specimen for Any Soil Test Above	
~ U.	Translate con execution for fully con rest Above	ψυυ. υυ / Cauli

#### Concrete:



	01.	Curing and Breaking Cylinders	\$13,00 / each
	02.	Curing and Breaking Cylinders (Made by Others)	\$21.00 / each
	03.	Thin-Wall Concrete Coring, 2-Person Crew and Equipment	\$120.00 / hour
	04.	Sawing, Curing, Capping and Breaking Thin-Wall Concrete Cores (ASTM C42)	\$45.00 / each
	05.	Floor Flatness / Floor Levelness Testing (ASTM E1155)	\$0.05 / sq. ft.
	06.	Petrographic Examination (ASTM C856 & ASTM C457)	.\$1,500.00 / core
		Test Cylinder Sample Preparation Saw Cutting	
	08.	Hardened Concrete Shrinkage Testing, (ASTM C157) (Set of 3)	\$180.00 / each
	09.	Compressive Strength of Grout Prism (Made by Others)	\$17.00 / each
	10.	Flexural Strength of Concrete Beams (ASTM C78)	\$37.50 / each
	11.	Mechanical Tension Splice Testing Rebar	\$300.00 / each
	12.	Windsor Probe Testing (ASTM C803)	\$90.00 / test
	13.	Alkali-Silica Reactivity - Mortar Bar Method (ASTM C1260)	\$500.00 / test
	14.	Relative Humidity in Concrete Floor Slab (Calcium Chloride Method)	\$25.00 / each
	15.	Relative Humidity in Concrete Floor Slab (In-Situ Method)	\$50.00 / each
			0.000
ġ,			
Ag	greg	gates:	
	01.	Base Stone Moisture Content and Density Tests by Nuclear Methods	No Charge
	02.	Specific Gravity and Absorption, coarse aggregate (ASTM C127)	\$70.00 / test
	03.	Specific Gravity and Absorption, fine aggregate (ASTM C128)	\$90.00 / test
	04	Sieve Analysis of Fine and Coarse Aggregates (ASTM C136)	\$70.00 / test
	05	Soundness of Aggregates, Sodium or Magnesium Sulfate	\$70.007 1001
	791	a. Five Cycles (ASTM C88)	\$350.00 / test
		b. Bulk Sample Preparation	\$50.00 / each
	06	LA Abrasion (ASTM C535)	\$350.00 / each
	07.	Clay Lumps & Friable Particles (ASTM C142)	\$75.00 / test
	08.	Organic Impurities in Sands & Concrete (ASTM C40)	\$50.00 / test
	09.	Chemical Analysis	\$350.00 / test
	10.	Bulk Sample Preparation	\$25.00 / each
	10.50	~	\$20.00 7 Caon
Ası	hal	t:	
	01.	Marshall Mix Design (KM 64-411-90)	\$550.00 / each
	02.	Gradation & Asphalt Content (Extraction) (KM 64-405-92 & KM 64-433-89)	\$300.00 / each
	03.	Unit Weight & Thickness (AASHTO T166)	\$25.00 / each
	04	Maximum Theoretical Density	\$50.00 / each
		The state of the s	400.00 / Cacil



#### Masonry & Mortar:

01. Absorption and As-Received Moisture, Masonry Block Units	\$45.00 / each
02. Absorption Test, Brick, 5-hour with Coefficient	\$40.00 / each
03. Compression Test, Brick	\$25.00 / each
04. Compression Test, Grout Cylinder	\$13.00 / each
05. Compression Test, Grout Cylinder (Made by Others)	\$21.00 / each
06. Compression Test, Masonry Block Units	\$45.00 / each
07. Compressive Strength Test of Mortar Cubes (ASTM C109)	\$13.00 / each
08. Equivalent Thickness Masonry Block Unit	\$10.00 / each
09. Modulus of Rupture, Brick	\$30.00 / each

#### Fireproofing:

01. Senior Project Technician III ......\$80.00 / hr

### **Specialty Testing:**

Based on our experience and network of contacts we can provide or develop most specialty tests on an individual basis as requested.