



ISO 9001:2008 CERTIFIED

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

Landmark Center II, Suite 220 • 4601 Six Forks Road • Raleigh, NC 27609 • Phone 919-783-9214 • Fax 919-783-9266

July 30, 2012

Mr. Ron Nalley  
Town Administrator – Town of Montreat  
P.O. Box 423  
96 Rainbow Terrace  
Montreat, NC 28757

Re: Town of Montreat – Replacement of Bridge #528 on Texas Road over Flat Creek  
Revised Submittal

Dear Mr. Nalley:

Please find attached two (2) executed agreements for the planning and design of the referenced bridge replacement project. The agreement has been developed based on our negotiations with NCDOT. Electronic copies of the agreement have been provided to you and NCDOT for review.

If you agree with the terms of the contract, please add the date that Council approves the contract on the first page, execute both copies, and return one to us for our records. NCDOT (Mr. Ray Lotfi) will also require a copy of the executed contract for his records.

We look forward to working with you on this project. Please contact Mr. Charles Flowe if you have questions or comments. His contact information is (919) 278-2504 (direct), (919) 909-2987 (mobile), or [charlie.flowe@kci.com](mailto:charlie.flowe@kci.com).

With regards,  
KCI Associates of North Carolina, PA

A handwritten signature in black ink, appearing to read 'James M. Gellenthin', is written over a large, stylized, light-colored scribble or watermark.

James M. Gellenthin, PLS  
Vice President

Attachments

**PROJECT NAME:** Texas Road over Flat Creek Bridge Replacement  
**STATE PROJECT:** B-5196  
**FEDERAL PROJECT:**  
**COUNTY:** Buncombe  
**TOWN:** Montreat

### **ENGINEERING AGREEMENT**

**THIS AGREEMENT**, made and entered into this \_\_\_ day of \_\_\_\_\_, 2012, by and between the **Town of Montreat, North Carolina** (hereinafter called "Town") and **KCI Associates of North Carolina, P.A.**, a corporation organized and existing under and by virtue of the laws of the State of North Carolina (hereinafter called the "Engineer"), whose office is located at 4601 Six Forks Road, Suite 220, Raleigh, North Carolina 27609.

### **GENERAL RECITALS**

#### **WITNESSETH:**

**WHEREAS**, the Town desires the assistance of a private engineering firm to provide engineering services for the project planning, NEPA document preparation, location surveys, hydraulic design, utility coordination, geotechnical investigations and foundation design, and design and preparation of bridge and roadway plans; and

**WHEREAS**, the Engineer has exhibited evidence of experience, ability, competence, and reputation to perform such engineering services; and

**WHEREAS**, the Town is authorized to enter into an agreement for such services:

**NOW THEREFORE**, the Town and the Engineer, for consideration hereinafter stipulated, mutually agree as follows:

The Engineer agree to perform the required professional engineering services necessary to prepare a NEPA Document (Categorical Exclusion), location surveys, hydraulic analyses and design, geotechnical engineering, roadway and structure design, and to prepare construction plans and special provisions for a new structure to replace the existing structure (Bridge #528) on Texas Road over Lower Creek.

The Engineer shall perform for or furnish to the Town professional engineering and related

services in all phases of the Project to which this Agreement applies as hereinafter provided. The Engineer may employ such Subcontractors as the Engineer deems necessary to assist in the performance or furnishing of professional engineering and related services hereunder. The Engineer shall not be required to employ any of the Town's subcontractors unacceptable to the Engineer and the Engineer shall not employ any subcontractor unacceptable to the Town. All subcontractors shall be prequalified by NCDOT to perform the tasks that are assigned to them.

The standard of care for all professional engineering and related services performed or furnished by the Engineer under this Agreement will be the care and skill ordinarily used by members of the Engineer's profession practicing under similar conditions at the same time and in the same locality.

The Engineer shall be solely responsible for the completeness and accuracy of all documents and supporting data for the Project. Approval by the Town shall not constitute or be deemed a release of the responsibility and liability of the Engineer, its employees, associates, agents, subcontractors, and consultants for the accuracy and competency of their design, working drawings, and reports; nor shall such approval be deemed to be an assumption of such a responsibility by the Town for any defect in the designs, working drawings or other documents prepared by the Engineer, its employees, subcontractors, agents, and consultants. After acceptance of the final documents by the Town, the Engineer agrees, prior to and during construction of this Project, to perform such engineering services as may be required by the Town to correct errors or omissions on the original documents prepared by the Engineer at no cost to the Town.

The Engineer understands that the Town has contracted with it for its expertise in the subject matter of this Agreement and the Engineer warrants that it knows and is familiar with applicable laws and regulations and has the expertise necessary to promptly perform the obligations undertaken by this Agreement at the total compensation plus reimbursable expense amounts described herein.

## **ARTICLE I - SCOPE OF WORK**

Scope of work shall be divided into two phases, (1) Project Planning Report and (2) Design and plan preparation. Should any phase of this work result in a significant change in the expected scope of work for the following phase or phases, both the Town and the Engineer shall have the option of renegotiating the affected phases. Negotiation and payment will be made in accordance with ARTICLE IV – SUPPLEMENTAL SERVICES. The Engineer agrees to follow the Project Plan Outline as set forth in Attachment "B" of this contract. The Engineer also agrees to conform to requirements as set forth as follows:

### **Phase I: Project Planning Report**

The Engineer shall prepare a Project Planning Report/NEPA document in accordance with North

Carolina Department of Transportation's Standard Practices and submit same for approval by North Carolina Department of Transportation. Preliminary designs and public displays shall be prepared in accordance with the current edition of the NCDOT Roadway Design Manual and the 2012 AASHTO "Green Book." A NEPA Categorical Exclusion is the environmental document anticipated for this project. No aquatic surveys, or cultural resource surveys are anticipated as necessary for this project. If any of these surveys are determined to be necessary during the development of the NEPA document, they will be considered supplemental services and will be negotiated and compensated for in accordance with the provisions of ARTICLE IV – SUPPLEMENTAL SERVICES. One public workshop is anticipated for this project. If a public hearing or additional workshops are desired, the Engineer shall prepare public hearing maps and shall assist the Town in conducting the hearing, but these efforts will be considered supplemental services and will be negotiated and compensated for in accordance with the provision of ARTICLE IV – SUPPLEMENTAL SERVICES.

The functional designs for all alignments shall be performed on the survey base data delivered to KCI by the Town, performed by McGill and Associates. KCI shall not be liable for work performed by other parties, for the accuracy of data supplied by other parties upon which KCI may rely, or for testing or inspection work performed by others. Preliminary Review Plans (25% Plans) will be developed for the selected alternate concurrent with the finalization of the NEPA document and will be based on design surveys performed by KCI. The selected alternate will be the only alignment upon which final design surveys are performed.

## **Phase II: Design and Plan Preparation**

Preliminary, Right-of-Way, and Final Plans shall be developed on the basis of the approved planning report and environmental document and shall be in sufficient detail and form for the Town to let construction contracts for the structure and roadway construction. Plans shall include the roadway and structure design, details; and contract documents with special provisions.

- A. The Engineer shall perform location surveys as necessary to prepare project plans for the selected alignment only. These surveys shall include, but not be limited to, the following: location, topography, planimetric features including above-ground utilities and features, gravity sewer location and elevation, bench levels and profiles, cross sections, property owner contacts, and property ties necessary for preparation of plans. This location survey shall not include condemnation surveys or property mapping, or subsurface utility location or mapping with the exception of gravity sewers.
- B. Structure Design shall conform to current AASHTO Specifications for Highway Bridges, the Design Manual of the Structure Design Unit of the North Carolina Department of Transportation, and such modifications as directed by the Town.
- C. Roadway and Hydraulic design shall be in accordance with the current version of the AASHTO A Policy on the Geometric Design of Roads and Streets, the NCDOT

Roadway Design Manual, the AASHTO Highway Drainage Manual, and NCDOT's Drainage Manual.

- D. Plans shall be prepared in conformity with current practices of the North Carolina Department of Transportation with respect to methods of presentation, scales, billing of pay items, special drawings, and summaries thereof. Surveys and plans will be developed in English Units of Measure.
- E. All design calculations, field notes, quantity calculations, and other material, in addition to the drawings prepared under this agreement, will be the property of the Town.
- F. All plans will be prepared on sheets furnished by the Engineer. Reproduction of plans to complete the work will be by the Engineer. The assumed quantity and cost of reproduction is shown in Attachment C. Reproduction costs that exceed those amounts will be treated as supplemental services in accordance with the provisions of Article IV.
- G. Special Provisions - The 2012 Standard Specifications for Roads and Structures and the Standard Special Provisions issued by the Division of Highways shall apply for materials and construction on all work described above. The Engineers shall prepare thorough and complete Project Special Provisions covering items, material, work and other conditions special to the project which are not covered at all or not covered as described in the Standard Special Provisions. The Contract Documents shall be submitted for review. Final Project Special Provisions will be submitted on letter size sheets when construction plans are submitted.

## **ARTICLE II: TIME OF BEGINNING AND COMPLETION**

Work shall begin immediately following written notice of approval of this Agreement and authorization to begin work and shall be completed as follows:

- A. Completion of Project Planning Reports (Categorical Exclusion) within two hundred seventy (270) calendar days after receipt of Notice to Proceed;
- B. Completion of Right-of-Way plans within one hundred eighty (180) calendar days after approval of the Categorical Exclusion document.
- C. Completion of final plans and specifications within ninety (90) calendar days of approval of the Right-of-Way plans.

## **ARTICLE III: COMPENSATION AND PAYMENTS**

Partial payments shall be made to the Engineer on a monthly basis upon submission of Progress Reports and voucher stating the percent of completion of the work. Final payment by the Town to the Engineer shall be made within thirty (30) days after completion and acceptance by North Carolina Department of Transportation and the Town.

As complete compensation for the engineering services described above, the Engineer will be paid as follows:

A lump sum amount of two hundred thirty two thousand three hundred one dollars and forty nine cents (\$232,301.49).

Partial payment will be made to the Engineer on a monthly basis. Invoices submitted by KCI to Client are due and payable in full from the date of said invoice without retainage and payment shall not be contingent upon receipt of funds from third parties. If an invoice remains unpaid for more than thirty (30) days from the date of the invoice, a service charge of one and one half percent (1-1/2%) per month, eighteen percent (18%) per annum, shall be assessed on all unpaid amounts dating from the date of the invoice. The Town agrees to indemnify and hold KCI harmless from any fees and expenses incurred by KCI as a result of Client's non-payment, including, but not limited to cost of personnel time, court costs, litigation expenses and reasonable attorney's fees.

Final payment will be made upon completion of review and approval of the Reports by NCDOT and FHWA.

The Engineer shall maintain cost records in accordance with Section II of this Article. The actual cost may be subject to verification by audit by State or Federal Highway Administration Officials, or any other authorized representative of the State, Town, or Federal Government.

#### **ARTICLE IV: SUPPLEMENTAL SERVICES**

If, during the course of the work defined in this AGREEMENT, unanticipated work beyond the original scope should be required, a supplemental agreement will be developed and executed between the Town and the Engineer. No supplemental services are to be performed by the Engineer without the express written authorization of the Town. If the Engineer receives instructions or directions which are considered beyond the scope of work outlined in this Agreement, all work shall be suspended until the matter is resolved.

#### **ARTICLE V: INFORMATION AND REPORTS**

The Engineer and his sub-contractors (where sub-contractor's charges exceed \$10,000) agree to maintain all books, documents, papers, accounting records, and other evidence pertaining to cost incurred on this project and to make such materials available at their respective offices at all reasonable times during the contract period and for three years from the date of final payment under the contract period and for three years from the date of final payment under the contract for inspection by the Town, Federal Highway Administration, or the North Carolina Department of Transportation or any other authorized representatives of them. Copies thereof shall be furnished to the Town, North Carolina Department of Transportation, or the Federal Highway Administration, if requested. The Engineer shall use cost principles as described in Federal Acquisition Regulation (48 CFR 1-31), Subpart 1-31.2.

**ARTICLE VI: DATA AND SERVICES TO BE FURNISHED BY THE TOWN**

- A. All data in the hands of the Town that can be released that would, in the Town's opinion, assist the Engineer in the accomplishment of the work in this project.
- B. All available information on utilities, structures, and other facilities near the sites.
- C. Right-of-way Agreements, Appraisals, and Acquisition.
- D. Condemnation maps and surveys.

**ARTICLE VII: MISCELLANEOUS PROVISIONS**

**Section I: Conferences, Visits to Site, Inspection of Work**

The Engineer will be represented by a responsible member of the team for meetings, consultations, and field conferences deemed necessary by the Town or the Engineer. All conferences held will be in the vicinity of the project in Montreat, North Carolina; or in the offices of the reviewing State and Federal agencies. Meetings beyond the number of meetings included in Appendix C will be treated as Supplemental Services under Article IV of this agreement.

**Section II: Number of Sets of Plans**

The Engineer shall submit plans in accordance with the NCDOT Municipal Bridge Replacement Program Guidelines. The assumed numbers of prints and copies are included in Appendix C.

**Section III: Insurance**

During the performance of the Services under this Agreement, the Engineer shall maintain the following insurance:

(1) Professional Liability Insurance covering the Engineer's performance or professional services caused by an error, omission, or negligent act. The Engineer shall provide to the Town a certificate of insurance for a minimum of \$1,000, 000 prior to the execution of this contract.

(2) Pursuant to N.C.G.S. 97-19, the Engineer and all subconsultants are required, prior to beginning services, to show proof of coverage issued by a workers' compensation insurance carrier, or a certificate of compliance issued by the Department of Insurance for a self-insured consultant, stating that it has complied with N.C.G.S. 97-93. The Engineer and the subconsultants shall be hereinafter liable under the Workers' Compensation Act for payment of compensation and all

benefits to its employees for any injury or death due to an accident arising out of and in the course of performance of the work insured by the Engineer or his subconsultants.

The Engineer shall indemnify and save harmless the Town for all claims against the Town which may arise due to errors, omissions, or negligence of the Engineer or any subconsultants in performing the work required by this Agreement, including but not limited to any and all costs and damages for defending actions or claims under the National Environmental Policy Act (NEPA) or the North Carolina Environmental Policy Act of 1971.

The Engineer shall indemnify and save harmless the Town, its officers, and employees from any claim, demand, suit, liability, judgment and expense (including reasonable attorney's fees and other cost of litigation) arising out of or relating to injury, disease, or death of persons or damage to or loss of property resulting from or in connection with the negligent performance of this Agreement by the Engineer, its agents, employees and subconsultants or any one for whom the Engineer may be responsible. The obligations, indemnities, and liabilities assumed by the Engineer under this paragraph shall not extend to any liability caused by the Town or its employees.

Upon completion of all services, obligations and duties provided for this Agreement, or in the event of termination of this Agreement for any reason, the terms and conditions of this Article shall survive.

#### **Section IV: Relationships with Others**

The Engineer will fully cooperate with the State, with the Town, local government officials, Federal and State environmental resource and regulatory agencies, and with any others as may be directed by the Town or NCDOT. This shall include attendance at meetings, workshops, and hearings and also includes provisions of project development, human and natural environmental and engineering information to all parties as may be requested by the Town or NCDOT.

#### **Section V: Controlling Law**

This agreement shall be governed by the laws of the State of North Carolina.

#### **Section VI: Standard of Care**

The professional services provided by the Engineer under this agreement will be performed, findings obtained, and recommendations prepared in accordance with generally accepted industry principals and practices.

All work shall be administered and performed in accordance with Federal-Aid Highway Program Manual Volume 1, Chapter, 7, Section 2 and the relevant parts of North Carolina Code and General Statutes.

**Section VII: Successors and Assigns**

The Town and the Engineer each is hereby bound and the partners, successors, executors, administrators and legal representatives of the Town and the Engineer are hereby bound to the other party to this Agreement and to the partners, successors, executors, administrators and legal representatives of such other party, in respect of all covenants, agreements and obligations of this Agreement.

**Section VII: Severability**

If any provision or part of the Agreement is held to be void, invalid, illegal or unenforceable under any law or regulation such void, invalid, illegal or unenforceable provision shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the Town and the Engineer and this Agreement shall be considered as if such void, invalid, illegal or unenforceable provision had never been included herein.

**Section VIII: Agreement Form**

Headings within the Agreement are for convenience only and do not define, limit, or construe the contents of such sections.

**Section X:** Additional miscellaneous provisions are contained in Attachment "A" being attached hereto and made a part hereof.

This Agreement (consisting of Pages 1 to 12 inclusive, and the Attachments A, B and C) constitute the entire agreement between Town and the Engineer and supersede any and all prior written or oral understandings. This Agreement may only be amended, supplemented, or modified by a duly executed written instrument by both parties.

**IN TESTIMONY WHEREOF**, the parties hereto have caused these presents to be executed by their proper officials thereunto duly authorized as of the dates below indicated.

**EXECUTED** by the Town this \_\_\_\_ day of \_\_\_\_\_, 2012.

BY:

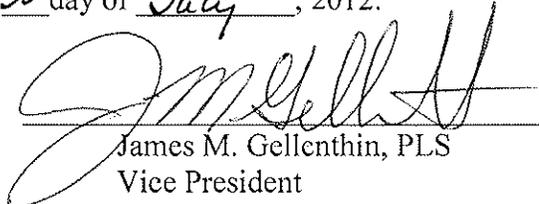
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\_\_\_\_\_  
Title

ATTEST:

\_\_\_\_\_  
\_\_\_\_\_  
Title

**EXECUTED** by the Engineer this 30<sup>th</sup> day of July, 2012.

BY:

  
\_\_\_\_\_  
James M. Gellenthin, PLS  
Vice President

ATTEST:

  
\_\_\_\_\_  
Charles L. Flowe, PE  
Vice President

**STATE PROJECT:** B-5196

**COUNTY:** Buncombe

**CERTIFICATION OF THE TOWN OF MONTREAT**

I hereby certify that I am the \_\_\_\_\_ of the Town of Montreat that the above consulting firm or his representative has not required, directly or indirectly, as an expressed or implied condition in connection with obtaining or carrying out this agreement to:

- A. Employ or retain, or agree to employ or retain, any firm or person, or
- B. pay, or agree to pay, to any firm, person, or organization, any fee, contribution, donation, or consideration of any kind; except as herewith expressly stated(if any):

I acknowledge that this certificate is to be furnished to the North Carolina Department of Transportation, Federal Highway Administration, U.S. Department of Transportation, in connection with this agreement involving participation of Federal Aid Highway Funds, and is subject to applicable State and Federal laws, both criminal and civil.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

STATE PROJECT: B-5196

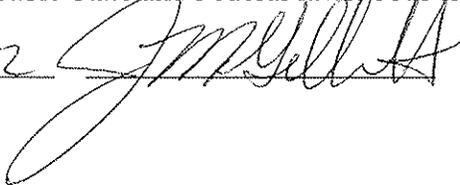
COUNTY: Buncombe

**CERTIFICATION OF PRIVATE ENGINEERING FIRM**

I, James M. Gellenthin, hereby certify that I am the Vice President and duly authorized representative of the firm of KCI Associates of North Carolina, PA, whose address is 4601 Six Forks Road, Suite 220, Raleigh, North Carolina and that neither I nor the above firm I represent has;

- A. Employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above firm) to solicit or secure this agreement:
- B. Agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out this agreement, or
- C. Paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above firm) any fee, contribution, donation, or consideration of any kind for, or in connection with procuring or carrying out the agreement; except as herewith expressly stated (if any):

I acknowledge that this certificate is to be furnished to the Town, State Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation, in connection with this agreement involving participation of Federal-Aid highway funds, and is subject to applicable State and Federal laws, both criminal and civil.

7/30/2012  
Date 

**ATTACHMENT "A"**

**MISCELLANEOUS PROVISIONS (Attachment A)**

**A. COVENANTS AGAINST CONTINGENT FEES**

The Engineer warrants that he has not employed or retained any company or person, other than a bona fide employee working solely for the Engineer, to solicit or secure this contract and that he has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the Engineer, any fee, commission, percentage, brokerage fee, gifts, or any consideration, contingent upon or resulting from the award or making of this contract. For breach or violation of this warranty, the Town shall have the right to annul this contract without liability, or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

**B. DESIGN STANDARDS**

Unless covered elsewhere in this Agreement, design standards are to be furnished by the Town or NCDOT.

**C. OWNERSHIP OF ENGINEERING DOCUMENTS**

All tracings, plans, specifications, photographic negatives, basic survey notes, computations, and maps prepared or obtained under the terms of the contract shall be delivered to and become the property of the Town, and that basic sketches, charts, and other data prepared or obtained under this contract shall be made available, upon request, to the State without restriction or limitation on their use. In the case of an agreement involving preliminary plans only, no commitment is stated or implied that would constitute a limitation on the subsequent use of the plans or ideas incorporated therein for preparation of construction plans.

**D. CHANGES IN WORK**

All changes in the work are to be included in supplemental agreements which are to be executed prior to beginning of such supplemental work. Supplemental work must be approved by the Town prior to performing the work.

**E. DELAYS AND EXTENSIONS**

Reasonable extension of time for unforeseen delays may be made by mutual consent of all parties involved.

**F. TERMINATION OR ABANDONMENT**

Should the Town, for any reason whatsoever, decide to cancel or to terminate the Engineer's Services, it will furnish thirty (30) days written notice thereof to the Engineer who will immediately terminate work, but shall bring to a reasonable stage of completion those items whose value would otherwise be lost without such necessary further work, as may be directed by the Town, and will turn over to the Town copies of all data, charts, survey notes, figures, drawings, and other records or information collected or secured herein, whether partial or complete. Upon such termination, the fee to be paid to the Engineer, will be equitable to cover all services rendered, using a proportional amount of the total fee based on a ratio of the amount of work done to the total amount of work which was to have been performed, less prior partial payments which have been made.

**II. DISPUTES**

In any dispute concerning a question or fact in connection with the work on this Agreement or compensation thereof, the decision of the Secretary of Transportation in the matter shall be final and conclusive for both parties.

**H. GENERAL COMPLIANCE WITH LAWS**

The Engineer shall comply with all laws, ordinances and regulations; Federal, State, and Local, applicable to the work. Specific attention is directed to North Carolina General Statutes 14-100 (Obtaining Property by False Pretenses) and 136-13.2 (Falsifying Highway Inspection Reports).

**1. Selection of Labor**

During the performance of this Agreement, the Engineer shall not discriminate against labor from any other State, possession or territory of the United States.

**2. Employment Practices**

During the performance of this Agreement, the Engineer agrees to comply with all applicable provisions of 49 CFR 21, 23 CFR Part 200 and Part 230 and the Civil Rights Act of 1964 as amended, and agrees as follows:

- a. The Engineer will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin, sex, age, handicap, and/or disability. The Engineers will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color, or national origin,

sex, age, handicap, and/or disability. Such action shall include, but not be limited, to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Engineer agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Town setting forth the provisions of this nondiscrimination clause.

- b. The Engineer will, in all solicitations or advertisements for employees placed by or on behalf of the Engineer, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin, sex, age, handicap, and/or disability.
- c. The Engineer will send to each labor union or representative or workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Town, advising the labor union or worker's representative of the Engineer's commitments under this Section I-2 and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d. The Engineer will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60).
- e. The Engineer will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, as amended by Executive order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60), and will permit access to his books, records, and accounts by the Secretary of Labor for purposes of investigations to ascertain compliance with such rules, regulations and orders.
- f. In the event of the Engineer's noncompliance with the nondiscrimination clauses of the Agreement or with any of such rules, regulations, or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and the Engineer may be declared ineligible for further Government contracts or Federally-assisted construction agreements in accordance with procedures authorized in Executive Order No. 11246, of September, 1965, and as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60); and such other sanctions may be imposed and remedies invoked as provided in the aforementioned Executive Order No. 11246, or as otherwise provided by law.

- g. The Engineer will include the provisions of the Section 1-2 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of the Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.

**3. Selection of Subcontractors, Procurement of Materials, and Leasing of Equipment**

During the performance of this Agreement, the Engineer for itself, its assignees, and successors in interest (herein referred to as the "Engineers") agrees as follows:

- a. **Compliance with Regulations:** The Engineer will comply with the Regulations of the Department of Transportation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (Title 49, Code of Federal Regulations, part 21, through Appendix H and 23 CFR 710.405 (b), hereinafter referred to as the Regulations), which are herein incorporated by reference and made part of this Agreement.
- b. **Nondiscrimination:** The Engineer, with regard to the work performed by it after award and prior to completion of the Agreement work, will not discriminate on the grounds of race, color, or national origin, in the selection and retention of subcontractors, including procurement of material and leases of equipment. The Engineer will not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Agreement covers a program set forth in Appendix B of the Regulations.
- c. **Solicitations:** In all solicitations, either by competitive bidding or negotiation made by the Engineers for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor, supplier, or lessor shall be notified by the Engineer of the Engineer's obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
- d. **Information and Reports:** The Engineer will provide all information and reports required by the Regulations, or orders and instructions issued pursuant thereto, and will permit access to its books, records, account, other sources of information, and its facilities as may be determined by the Town to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of the Engineer

or a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Engineer shall so certify to the Town as appropriate, and shall set forth what efforts it has made to obtain the information.

- c. Sanctions for Noncompliance: In the event of the Engineer's or Contractor's noncompliance with the nondiscrimination provisions of this Section I-3, the Town shall impose such contract sanctions as it may determine to be appropriate, including, but not limited to:
  - 1) withholding of payments to the Engineer under the Agreement until the Engineer complies and/or
  - 2) cancellation, termination, or suspension of the Agreement in whole or in part.
  
- f. Incorporation of Provisions: The Engineer will include the provisions of Section I-3 in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations, orders, or instructions issued pursuant thereto. The Engineer will take such action with respect to any subcontract, procurement, or leases as the Town may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event the Engineer becomes involved in, or is threatened with litigation with a subcontractor, or lessor as a result of such direction, the Engineers may request the Town to enter into such litigation to protect the interests of the Town, and in addition, the Engineer may request the United States to enter into such litigation to protect the interests of the United States.
  
- g. For contracts and subcontracts of amounts in excess of \$100,000 the Engineer shall comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (43 U.S.C. 1857 (h)), Section 508 of the Clean Water Act (33 U.S.C. 1386), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15), which prohibits the use under non-exempt Federal contracts, grants, or loans of the facilities included on the EPA List of Violating Facilities. The Engineer shall report violations to the grantor agency and to the U.S.E.P.E. Assistant Administrator for Enforcement (EN-329).

**I. SUBLETTING, ASSIGNMENT, OR TRANSFER**

There shall be no assignment, subletting or transfer of the interest of the Engineer in any of the work covered by the Agreement without the written consent of the Town, except that the Engineer may, with prior notification of such action to the Town, sublet property searches and related services without further approval of the Town.

**J. ENGINEER'S ENDORSEMENT OF PLANS, ETC.**

The Engineer shall endorse all plans, specifications, estimates, and engineering data furnished by him.

**K. CONTROL OF WORK**

All work by the Engineer is to be done in a manner satisfactory to the Town and in accordance with the established customs, practices, and procedures of the North Carolina Department of Transportation and in conformity with the standards adopted by the American Association of State Highway Transportation Officials, and approved by the Secretary of Transportation as provided in Title 23, U.S. Code, Section 109 (b). The decision of the State is to control in all questions regarding location, type of design, dimension of design, and similar questions.

**L. APPROVAL OF PERSONNEL**

The Town shall have the right to approve or reject the project engineer, and other supervisory personnel, assigned to a project.

The Engineer, or any subcontractor for the Engineer, which is employed to provide engineering services for this project shall not engage the services of any person or persons, now in the employment of the State, County, or Town in the State during the time of this Agreement, without written consent of the employer of such person.

**ATTACHMENT "B"**

**PROJECT PLAN**

## **PROJECT PLAN OUTLINE**

### **I. Planning and NEPA Document Preparation (Categorical Exclusion)**

#### **A. Project Scoping**

##### **1. Field Review**

The consultant will conduct a field visit to the proposed project location. The Consultant shall prepare and send an email with STIP project number, contact information, personnel names, and locations to be visited to the NCDOT Division and District staff five (5) days prior to the field visit. NCDOT PDEA shall be copied on the email. The Consultant will also notify the Town of Montreat staff involved with the project. Consultant will take photos of any notable physical, community and environmental characteristics.

Upon completion of the field visit, consultant will coordinate with complete a summary of findings and submit to NCDOT PDEA.

##### **2. Information Requests and Scoping Letter**

The Consultant will prepare or follow up on requests for necessary data and reports including up to date Purpose and Need Statement (Transportation Planning Branch), traffic and crash data, and natural and cultural resource technical reports.

The Consultant will also create a scoping letter to initiate the coordination process between NCDOT-PDEA and groups outside NCDOT. The letter will solicit input from federal, state (including state clearinghouse), and local government agencies. The Consultant will include a vicinity map of the project with the scoping letter.

##### **3. Project Schedule, Scope and Estimate**

The Consultant will participate in a project kick-off and scoping meeting. Following the scoping meeting, the Consultant will prepare a scope of services defining the project details and outlining the tasks associated with the completion of the CE. A spreadsheet blank task list will be prepared, followed by a detailed fee estimate that calculates the amount of workdays by task and a total budget amount.

#### **B. Project Administration**

The consultant will provide project management and coordination consisting of the following:

- *Monthly Progress Report and Invoicing* – The consultant will prepare a monthly progress report of all projects for NCDOT. This report will list reports by percent complete, estimate the percentage of the budget spent and estimate completion date(s) for the

project or groups of projects. The consultant will manage the budget, staff assignments and progress of the project through monthly internal project reviews. The consultant shall also submit invoices to NCDOT for review and payment on a monthly basis.

- *Project Budgeting/Staff Assignments/Expertise* – The consultant shall track the monies spent on the assigned project and ensure that project is completed for the budgeted amount. Any budget issues shall be discussed with PDEA staff prior to work being conducted. The consultant will ensure that adequate staff and proper expertise are available to the complete the project.
- *Project Meetings* – The consultant shall attend project coordination meetings (in-person and/or conference call) with NCDOT, the consultant team and/or the Town of Montreat as needed (approximately 1 meeting per month assumed).
- *Other Ongoing Project Coordination* – The consultant shall conduct and participate in ongoing project coordination including phone calls, emails and other communication as may be required through the project.

## C. Planning tasks

### 1. Purpose and Need Statement

The issues associated with the necessary repair/replacement of the bridge will be identified and documented. The safety concerns related to the current closure of the bridge will be documented, along with other bridge and roadway information that illustrates the need for the project (alignments, curvature). Vehicular and non-vehicular (such as pedestrian) needs will be identified. Both the technical reasoning behind NCDOT involvement and the community importance level of the bridge will be clearly described, along with the benefits associated with the improvement. Any FHWA Highway Bridge Program standards that are not currently being met will also be identified.

### 2. Alternatives Analysis/Preferred Alternative

A description of the project will be provided, along with the proposed improvements. The project description will include the location of the bridge, the water body over which it traverses, traffic levels of the roadway, and the design specifics. Any additional major community and environmental context characteristics will be identified.

In addition to the project description, the reasonable and feasible alternatives will be identified and described. Initial alternatives for bridge replacement include the following:

- Replace in-place at existing location
- Replace in-place near the existing location
- Replace at a new location downstream of the existing location

The specific alternatives being considered for this project will be clearly detailed and will also include a No-Build Alternative. NCDOT Guidelines for the alternatives being considered, as well as the criteria used to evaluate the

alternatives, will be described. Evaluation criteria typically focuses on the length of the detour route, potentially impacted emergency service/school bus routes, and potential impacts to surrounding land uses.

Based on the specific design criteria, the alternatives will be analyzed and results will be summarized. Input from local government staff will also be integrated into the alternatives evaluation process. Other alternatives that were considered but eliminated from further study will also be described.

The Preferred Alternative will be described in detail upon completion of the alternatives analysis. Support for the selection of the preferred alternative will be provided.

### **3. Community Impact Assessment**

Potential impacts associated with natural and human features surrounding the project will be evaluated for the preferred alternative. In order to determine these impacts, the consultant will complete a data pull of the Census Block Groups encompassing the project area and conduct an examination of the data. The characteristics of the Census Block Groups will be compared to the County and North Carolina. Demographic data will be tabulated. Tables may include: population (2000-2010), population by race/ethnicity (2010), population below poverty level (2010), population below 50% of poverty level (2010) and Limited English Proficiency (2010). A map will be created to depict this demographic area.

The consultant will produce an 8.5x11 community context map which shall include: project area, roads (US, Interstate, NC, SR, and local), jurisdiction lines (municipal and county), parcel lines, water bodies (differentiating between 303(d) impaired and not impaired), cemeteries, schools, churches, parks, hospitals, Section 4(f) and Section 6(f) lands, Wild and Scenic Rivers, FEMA Buyout Properties, airports, National Trails, prime farmland soils, railroads, and State-Owned and Federally-Owned lands. Notable features will be labeled.

Based on field visit observations, demographic data, and discussions with local planners, the consultant will complete a checklist to conduct a regulatory applications inventory and screening for the following:

- American Indian Religious Freedom Act (AIRFA)
- Environmental Justice
- Limited English Proficiency
- National Trails System (NTS)
- Section 6(f) Land and Water Conservation Fund Resources
- Wild and Scenic Rivers
- North Carolina Natural and Scenic Rivers
- Farmland Soils/Agricultural Operations
- VAD and EVAD Districts/Century farms (as applicable)

For all confirmed regulatory applications, the consultant will label the applicable resource on the STIP map, and a photo will be included in the text. The consultant will denote any notable application. Note that Environmental Justice includes both a “Presence” and “Impact” component. While “Presence” should be illustrated on the STIP and Community Context maps, labeled by community name, only an “Impact” needs to be photo-documented.

Based on field visit observations, demographic data, and discussions with local planners, the consultant will complete a checklist of community context and notable features in or in close proximity to the project area, including:

- Moderate to High Growth Rate areas
- Local Area Plans/Goals
- Known Plans for Development
- Pedestrian Activity
- Bicycle Activity
- Transit Activity
- Community Cohesion
- Water Supply Watersheds
- Other Notable Traits of Aquatic Resources
- FEMA Buyout Properties
- Access/Mobility
- Airports
- Area/Community Controversy
- Socio-Economic Resources
- Other (i.e. Historic Features, etc.)

The consultant will conduct an evaluation of potential impacts associated with the proposed project upon the natural and human environment features identified above. Any notable project impacts shall be disclosed and briefly described. The nature, likelihood and severity of potential impacts will be included with as much detail as possible. The consultant will also address the potential indirect and cumulative effects of the proposed project, which are effects that occur over time and/or in combination with other activities.

## **D. Public Involvement**

### **1. Mailing List**

NCDOT will provide a raw spreadsheet or database of names and addresses for people that own property in the study area surrounding the bridge. This initial project mailing list will be expanded based on a stakeholder identification process (up to 200). This list could include resource agencies, residents, elected officials, local community leaders, property owners, business owners, environmental interests, economic development entities, and other stakeholder groups in the area of the project.

The consultant will maintain and update the mailing list for the duration of this contract. All stakeholders expressing interest in the project will be added to the project mailing list, and will be able to provide feedback during the process through email correspondence, phone calls, Stakeholder Meetings and a Citizens Informational Workshop. This mailing list is used to distribute the project newsletter/workshop notification.

**2. Newsletter**

One newsletter will be designed and sent to the general public during the project. The newsletter mailing will be both a project update and serve as notification for the Citizens Informational Workshop.

The consultant will develop the content for the newsletter. Via e-mail, the consultant team will review and revise an early draft and afterwards will provide NCDOT with a first draft of the text (electronic copy). The consultant will address NCDOT comments and incorporate text into newsletter format. The consultant will add graphics to the newsletter and provide NCDOT with a first draft of the formatted newsletter (electronic copy), address one iteration of NCDOT comments, and provide a final print proof for approval by NCDOT. The consultant will coordinate with the printers and produce up to 300 copies. The consultant will also coordinate with the mailing house for distribution of the newsletters (up to 200 copies).

The purpose of the newsletter is to keep project area residents, business and property owners, interested citizens, civic groups, local agency officials, community groups, and other stakeholders informed of the status of the project.

**3. Local Officials Briefings**

The Consultant will make a presentation to local officials to involve and educate them, as well as local government staff, on the progress of the project. This briefing will provide an opportunity to obtain input, to provide updates on project progress, and to facilitate the flow of information between the officials and NCDOT, as well as the public and area stakeholders. Local officials expected to be in attendance at this meeting may include:

- Town of Montreat Mayor
- Town Council (Commission) members
- Town Administrator
- Local Fire Chief
- Local Police Chief

The local officials briefing further ensures that local communities are fully educated on the current study process and have opportunities for input and representation. The briefing will be scheduled just prior to the Citizen's Informational Workshop for the project. Appropriate project summary materials

will be prepared for distribution at these briefings and officials will also receive the project newsletter/public meeting notification.

**4. Citizens Informational Workshop**

The Consultant will be responsible for conducting a Citizens Informational Workshop to inform the public of the progress of the study and to obtain public comments and input on the project. NCDOT will be responsible for locating and arranging facilities for the meeting. NCDOT will also release a press notice through the Communications Office regarding the workshop. The Consultant will notify the public in advance of the workshop through the use of the project newsletter and the mailing list as noted previously.

The consultant will attend and facilitate the workshop (2 staff), which will be informal to encourage one-on-one project discussions with the public. The consultant will note and compile public concerns and comments identified during the meeting. In terms of materials, the consultant will prepare a six (6)-page, black and white, 8½" x 11" handout/brochure that will include a one (1)-page comment form and one (1) 11" x 17" figure for the workshop.

Approximately 300 copies of handouts are anticipated for the project workshop, local officials briefings and stakeholder meetings.

**E. Environmental Document**

**1. Technical Areas**

The consultant will incorporate and summarize information into the environmental document for the following technical areas, reports and coordination items:

*Natural Resources Technical Report*

Relevant information will be summarized from this document for regulated environmental issues and potential associated impacts including jurisdictional streams/wetlands, protected species, and other high-quality natural resources. A discussion of necessary permits will be included.

*Section 7*

No tasks are included in the current task order. If coordination is required, it will be included in a future task order.

*Cultural Resources Technical Report*

Relevant information will be summarized from this document for historic and archaeological sites and potential associated impacts.

*Section 4(f)*

No tasks are included in the current task order. If coordination is required, it will be included in a future task order.

*Section 106*

No tasks are included in the current task order. If coordination is required, it will be included in a future task order.

*Design Description/Estimated Costs*

The Consultant will incorporate the matrix of estimated costs by alternative in the CE. Construction costs line items will include:

- Structure
- Roadway Approaches
- Potential Detour Structure and Approaches
- Structure Removal
- Miscellaneous
- Engineering & Contingencies

In addition to construction costs, costs associated with any right-of-way acquisition and utility relocations will also be included.

*Noise and Air Quality*

The Consultant will incorporate information on noise and air quality analyses for the project. The potential for impacts to emissions will be discussed. As Buncombe County has not been classified as a non-attainment county in North Carolina (it complies with the National Air Quality Standards designated by EPA), the project is not anticipated to create any adverse effects on the air quality of this attainment area.

The potential for noise level increases due to the project will also be described. Impacts associated with noise may be heightened or lessened based on surrounding structures, land uses and topography.

*General Environmental Effects*

The Consultant will summarize the overall impact of the bridge. This will include a determination of any adverse direct or indirect effects on the quality of the natural and human environment both during and after construction. In addition, potential impacts will be evaluated and summarized for specific resources not addressed in other technical reports or studies, such as underground storage tanks, floodplains and floodways, pedestrian pathways, utilities, etc.

*Coordination and Agency Comments*

Any and all federal, state and local agency coordination that is necessary will be documented. Comments received from these agencies will be summarized, and will be utilized in the determination of potential effects, as well as mitigation strategies. Responses to comments will be prepared and included in the environmental document. NCDOT may seek input from the following agencies as a part of the project development, depending on the scope of the project and the nature of the surrounding environment:

- U.S. Army Corps of Engineers
- NC Department of Natural Resources
- U.S. Fish & Wildlife Service
- N.C Wildlife Resource Commission
- N.C. Division of Parks & Recreation
- North Carolina State Historic Preservation Office
- Buncombe County Planning Department
- Town of Montreat

## 2. **Draft Categorical Exclusion**

The consultant will compile the data and analysis information of the previous sections into the latest template provided by NCDOT PDEA. This report will include:

- a) Signature pages
- b) Project Commitments
- c) Purpose and Need Statement
- d) Existing Conditions
- e) Alternatives
- f) Estimated Costs
- g) Natural Resources
- h) Human Environment
- i) General Environmental Effects
- j) Coordination and Agency Comments
- k) Public Involvement
- l) Conclusion
- m) Project Vicinity Map
- n) Photos of bridge and surrounding community and environmental features

The consultant will develop a list of sources used to develop the report. All sources shall have the information, including telephone numbers and web addresses, needed to return to the original source of the information if required.

The consultant will provide ten (10) paper copies of a draft 8 ½" x 11" categorical exclusion, including all supporting figures, photographs, records and sources. The consultant will also provide a digital copy of the final report text in Adobe Portable Document Format.

## 3. **Final Categorical Exclusion**

The consultant will revise the draft report based on NCDOT PDEA comments within seven (7) business days of the receipt of NCDOT comments unless alternative arrangements are made. The consultant will specifically respond to each NCDOT PDEA comment. The consultant will provide fifty (50) paper copies of a final 8 ½" x 11" categorical exclusion, including all supporting figures, photographs, records and sources, for distribution to NCDOT staff and

resource agencies. The consultant will also provide a digital copy of the final report text in Adobe Portable Document Format.

## **II. DESIGN**

The Engineer shall prepare right of way and construction plans in accordance with NCDOT's practices, Article I.B., further defined and as in the Roadway Design Guidelines.

The Engineer shall prepare right of way plans and furnish the Town with bond prints for right of way acquisition. The Engineer shall then prepare roadway construction plans and details.

The Engineer shall prepare preliminary roadway quantities and furnish the Town with copies of these quantities when right of way plans are submitted.

The Engineer shall perform site investigations and hydrological and hydraulics design studies and field surveys as necessary to determine the requirements for all hydraulics related structures as outlined in FAPG-3CFR650A and the Guidelines for Drainage Studies and Hydraulics Design which can be accessed on the NCDOT Hydraulics Unit Web Site. All work will be done in accordance with the aforementioned documents and the direction of the State Hydraulics Engineer.

Where alternate designs appear warranted, the Engineer shall contact the Town's Project Manager prior to modifying the SCOPE OF SERVICES and/or design. If directed by the Town's Project Manager, the Engineer shall prepare designs in sufficient detail to permit a decision on the most desirable alternative. These designs should include profiles, grades, proposed retaining walls, construction quantities and any other pertinent information that will facilitate the selection of the recommended alternative.

For the structures listed in the scope of work, the Engineer shall perform geotechnical subsurface investigations according to the procedures and guidelines outlined in the most recently revised copy of the Geotechnical Unit Guidelines and Procedures Manual. The Engineer shall prepare the structure foundation designs in accordance with the site-applicable designs and procedures as set forth in the Bridge Foundation Guidelines.

When performing design work for areas on or adjacent to public streets or highways, it shall be the responsibility of the Engineer to provide information, deemed necessary by the Town's Project Manager, for the development of Construction Phasing and Traffic Control Plans. All Traffic Control, Pavement Marking and Delineation Plans shall be developed in accordance with the site-applicable designs and procedures as set forth in the NCDOT Traffic Control Section Guidelines.

When performing Signing Design work it shall be the responsibility of the Engineer to provide information, deemed necessary by the Town's Project Manager, for the development of final Signing Plans. All Signing Plans shall be developed in accordance with the site-applicable designs and procedures as set forth in the NCDOT Signing Section Guidelines.

The Engineer shall obtain all field survey data along the corridor recommended in the SCOPE OF SERVICES as mandated by "Description of Work Required" listed above, and shall establish the roadway alignment and profile for approval by the Town and NCDOT. The Engineer shall obtain all other survey data necessary to prepare right of way and construction plans as specified in the Location Survey Guidelines. The Engineer's responsible representative will contact all affected property owners and explain to them the scope of the project prior to beginning surveys.

For the structures listed in the scope of work, the Engineer shall determine the most economical type of construction and span arrangements for the site and shall prepare preliminary plans for the structure for review and approval by the Town and NCDOT. Preliminary plans for the structure shall be developed to the extent necessary to establish arrangement of substructure, geometrics, and type of construction.

When performing Planning Studies, Environmental Investigations and/or Permit Application work it shall be the responsibility of the Engineer to provide information, deemed necessary by the Town's Project Manager, for the development or implementation of final Documents, Plans or Reports. All assignments shall be developed in accordance with the site-applicable designs and procedures as set forth in the SCOPE OF SERVICES.

When performing Erosion Control Design work it shall be the responsibility of the Engineer to provide information, deemed necessary by the Town's Project Manager, for the development of final Erosion Control Plans. All Erosion Control Plans shall be developed in accordance with the site-applicable designs and procedures as set forth in the Roadside Environmental Unit Guidelines and the direction of the State Roadside Environmental Engineer.

Final Engineering Plans shall be developed and shall be in sufficient form and detail for the Town to let a construction contract. Final plans shall include engineering design, details, and material quantities for the project. Final plans shall meet the approval of the Town and NCDOT prior to acceptance. Said approval shall not relieve the Engineer of liability or the responsibility to correct any errors in their plans or computations. Correction of errors discovered after the construction phase of the project begins will not be considered as construction engineering.

All **Original** design calculations, field notes, quantity calculations, any necessary project special provisions, and other material in addition to the drawings prepared under this

Professional Services Agreement  
State Project B-5196  
Texas Road Bridge Replacement

Agreement shall be the property of the Town and shall be turned over to the Town upon completion of the work. The Town shall have the right to use same for any public purpose without compensation to the Engineer.

All plans shall be prepared on sheets furnished by the Engineer. The plans for the work shall be prepared in electronic format with a submitted hardcopy. The Town prefers all electronic files be in Microstation format using Geopak software.

All releases to newspapers, magazines, television and radio shall be approved by and released by the Town unless otherwise directed.

**ATTACHMENT "C"**  
**MANHOUR AND FEE ESTIMATES**

# COMPUTATION OF MANDAY REQUIREMENTS AND FEES

prepared for the North Carolina Department of Transportation

TIP NO.: B-5196

COUNTY: Buncombe

DESCRIPTION: Replacement of Bridge #528 on Texas Road over Flat  
Creek - Town of Montreat, NC

**ENGINEERING AGREEMENT**  
**SUPPLEMENTAL AGREEMENT NUMBER** \_\_\_\_\_  
**PROFESSIONAL SERVICES CONTRACT**  
**LIMITED SERVICES CONTRACT**

**CONTENTS:**

COVER	1
SUMMARY	2
SCOPING CHECKLIST	3
ROADWAY MANDAY ESTIMATE <input checked="" type="checkbox"/>	4-7
ROADWAY CLASSIFICATION <input type="checkbox"/>	8
REPRODUCTION COSTS for ROADWAY <input type="checkbox"/>	9-10
TRAVEL AND MISCELLANEOUS COSTS for ROADWAY <input type="checkbox"/>	11
list others <input type="checkbox"/>	
STRUCTURE DESIGN <input type="checkbox"/>	_____
LOCATION AND SURVEYS	_____
PLANNING AND NEPA DOCUMENT PREPARATION	_____
UTILITY COORDINATION	_____
GEOTECHNICAL INVESTIGATIONS & FOUNDATION DESIGN	_____
HYDRAULIC DESIGN	_____

ENGINEERING FIRM: KCI Associates of NC, PA

PREPARED BY: C. L. Flowe

DATE: July 17, 2012

## SUMMARY

TIP NUMBER : B-5196  
 COUNTY: Buncombe

SCOPE : Planning and CE; Surveys; Roadway, Bridge, and Hydraulic Design; Geotechnical Investigations and Foundation Design; TCP and PMP; Utility Design and Coordination, Bid Document Preparation

PRIVATE ENGINEERING FIRM		INITIAL		FINAL	
ITEM	MD	COST	MD	COST	
** Roadway	41.75	\$ 33,514.88	41.75	\$ 33,549.68	
Direct Costs		\$ 2,698.20		\$ 2,698.20	
** TCP/PMP					
Direct Costs					
** Hydraulics	45.00	\$ 32,358.71	45.00	\$ 31,585.55	
Direct Costs		\$ 560.70		\$ 560.70	
** Structures	72.50	\$ 52,349.85	72.50	\$ 52,404.19	
Direct Costs		\$ 2,394.55		\$ 2,394.90	
** Location Surveys	47.13	\$ 20,091.32	47.13	\$ 20,112.18	
Direct Costs		\$ 4,170.95		\$ 4,170.95	
** Planning	35.13	\$ 25,508.48	35.13	\$ 25,508.48	
Direct Costs		\$ 2,655.80		\$ 2,655.80	
** NRTR	15.50	\$ 9,824.95	15.50	\$ 9,834.46	
Direct Costs		\$ 666.74		\$ 666.74	
** Signing					
Direct Costs					
Geotechnical (Boring and Lab)		\$ 26,569.50		\$ 26,569.50	
Foundations					
** Soils and Foundation					
Direct Costs					
** Trackwork					
Direct Costs					
** Noise Study					
Direct Costs					
** Utilities	24.00	\$ 18,290.28	24.00	\$ 18,309.27	
Direct Costs		\$ 1,280.90		\$ 1,280.90	
** SUE					
Direct Costs					
<b>TOTAL</b>	<b>281.00</b>	<b>\$ 232,935.81</b>	<b>281.00</b>	<b>\$ 232,301.49</b>	

**NOTES:**

\*\* Labor, Overhead & Fee

ENGINEERING FIRM: KCI Associates of NC, PA

PREPARED BY: C. L. Flowe

DATE: July 17, 2012

APPROVED BY: J. M. Gellenthin

DATE: July 17, 2012

# NCDOT-DESIGN SERVICES ROADWAY SCOPING CHECKLIST

TIP NO. :	B-5196	R/W DATE:	March 1, 2013	PREPARED BY:	C. L. Flowe
COUNTY:	Buncombe	LET DATE:	December 1, 2013	DATE:	July 17, 2012
DESCRIPTION:	Replacement of Bridge #528 on Texas Road over Flat Creek - Town of Montreat, NC				
SCOPE:	Planning and CE; Surveys; Roadway, Bridge, and Hydraulic Design; Geotechnical Investigations and Foundation Design; TCP and PMP; Utility Design and Coordination, Bid Document Preparation				
CONSULTANT:	KCI Associates of NC, PA	OVERHEAD:	158.05%	FEE:	9%
SUBCONSULTANT: (1)	Froehling & Robertson	OVERHEAD:	178.62%	COST of CAPITAL:	0.58%
SUBCONSULTANT: (2)	Planning Communities	OVERHEAD:	163.98%	COST of CAPITAL:	1.86%
SUBCONSULTANT: (3)	Sungate Design Group	OVERHEAD:	143.46%	COST of CAPITAL:	0.00%
				COST of CAPITAL:	0.29%

## BASE INFORMATION

<b>SCALE</b>			<b>TYPICAL SECTIONS PER SHOULDER TYPE</b>
PLAN		1" = 20'	BASIC SHOULDER
X-SECTIONS		1" = 10'	BASIC CURB & GUTTER
<b>DESIGN SPEED</b>		30 mph	MEDIAN SHOULDER
<b>LENGTH per Hearing Map or Surveys (Miles)</b>			MEDIAN C & G
-L-		600'	<b>NUMBER OF DRIVEWAY CONNECTIONS REQUIRING GRADES</b>
-Y-		350'	
RPS, LPS, FLYOVERS, C-D's			<b>NUMBER OF BRIDGE SITES</b>
SERVICE ROADS			
DETOURS			<b>STRUCTURE RECOMMENDATIONS (Y/N)</b>
<b>NUMBER OF PLAN SHEETS</b>			
-L-		2	<b>WALLS (LENGTH in feet)</b>
-Y-		0	NOISE
SERVICE ROADS			RETAINING
DETOURS			<b>CONTROL OF ACCESS (Y/N)</b>
INTERCHANGE DETAIL			
<b>NUMBER OF X-SECTIONS</b>			<b>NUMBER OF PARCELS</b>
-L-		15	
-Y-		12	<b>DESIGN EXCEPTIONS (Y/N)</b>
RPS, LPS, FLYOVERS, C-D's			
SERVICE ROADS			<b>ADT (THOUSANDS)</b>
DETOURS			
<b>NUMBER OF X-SECT SHEETS</b>			<b>NUMBER OF FIELD INSPECTIONS</b>
-L-		6	OVERNIGHT STAY (Y/N)
-Y-		4	
RPS, LPS, FLYOVERS, C-D's			<b>PUBLIC HEARING</b>
SERVICE ROADS			PREPARE MAP (Y/N)
DETOURS			ATTEND MEETING (Y/N)
<b>NUMBER OF MEDIAN DETOUR X-OVERS</b>		0	<b>PREPARE CONSTRUCTION PLANS (Y/N)</b>
<b>NUMBER OF AT-GRADE INTERSECTIONS</b>			<b>OVERALL COMPLEXITY (LOW/MED/HIGH)</b>
4 LEG			
T (NOT INCLUDING BULB)		2	<b>SPECIAL CONSIDERATIONS (Y/N)</b>
BULB			LIST BELOW:
<b>NUMBER OF INTERCHANGES</b>			Planning and Final Design
SIMPLE (DIAMOND, TRUMPET)			Two build and one reconstruct existing alternatives to be evaluated during planning
4 LEG			
3 LEG			
INTERMEDIATE (CLOVERLEAFS)			
DIFFICULT (DIRECTIONAL, MULTILEVEL)			

**ROADWAY DESIGN ESTIMATE**

MANHOURS BY CLASSIFICATION							TOTAL		PROJECT PHASE
ASSOC ENGR	SENIOR ENGR	DESIGN ENGR(EI)	SENIOR TECH	TECH	DRAFTER	MANHOURS	MANDAYS		
4.00	4.00	4.00				12.00	1.50	Project Familiarization	
12.00	12.00		12.00			36.00	4.50	Design Public Hearing (Attend if applicable)	
	4.00		2.00			6.00	0.75	Prepare Design Assumptions	
		2.00	6.00			8.00	1.00	Complete Base Plan Sheets (Project No., Preliminary Stickers, Edit, etc.)	
	4.00	2.00	4.00			6.00	0.75	Preliminary Typical Sections	
		6.00				10.00	1.25	Preliminary Studies of Vertical and Horizontal Alignment for -L- (3 Alternatives)	
			2.00			2.00	0.25	Plot Profile and Grades for -L- (Including benchmarks) (3 Alternatives)	
	2.00	2.00				4.00	0.50	Vertical and Horizontal Alignment for -Y-lines, Rps, Ser Rds, etc.	
								Design Interchanges (Itemized as follows):	
						0.00	0.00	Ramp Grade Controls	
						0.00	0.00	Shear Point Layout	
						0.00	0.00	Drainage (Interior)	
						0.00	0.00	Sight Distance Studies and Check	
						0.00	0.00	Graded Contours (For complex interchanges; not for diamonds)	
						0.00	0.00	Gore areas, design and draft	
						0.00	0.00	Finalize Vertical and Horizontal Alignment for -L-	
			4.00			4.00	0.50	Complete Cross-Sections (Existing Ground and Elevation, Preliminary Stickers, Scale, Project No., etc.)	
			4.00			4.00	0.50	Plot Templates on Cross-Sections	
			2.00			2.00	0.25	Plot Slope Stakes for -L-	
			2.00			2.00	0.25	Plot Slope Stakes for -Y-lines, Rps, Ser Rds, etc.	
						0.00	0.00	Capacity Analysis (All aspects of project in accordance with the Highway Capacity Manual, Special Report 209)	
			4.00			4.00	0.50	Prepare Title Sheet	
		2.00				2.00	0.25	Run Earthwork Areas and Prepare Preliminary Summary	
4.00	4.00					8.00	1.00	Attend Preliminary Review (Plans 25% Complete)	
20.00	30.00	18.00	42.00	0.00	0.00	110.00	13.75	SHEET TOTAL	



**ROADWAY DESIGN ESTIMATE**

MANHOURS BY CLASSIFICATION						TOTAL		PROJECT PHASE
ASSOC ENGR	SENIOR ENGR	DESIGN ENGR(EI)	SENIOR TECH	TECH	DRAFTER	MANHOURS	MANDAYS	
	2.00	2.00	4.00			8.00	1.00	Revise Plans in Accordance with Preliminary Field Inspection Recommendations (Includes Cross-Sections, Slope Stakes, Drainage, etc.)
		2.00				2.00	0.25	Compute Right-of-Way Area Takes and Prepare Summary Sheet
						0.00	0.00	Prepare Deed Drafter File for Right-of-Way
						0.00	0.00	Prepare Right-of-Way Strip Maps (Only on C/A projects)
	2.00	4.00	4.00			10.00	1.25	Prepare Preliminary Quantities for NCDOT to Produce Cost Estimate at RW Stage
2.00	4.00	4.00	4.00			14.00	1.75	Finalize Plans to send to RW and Check by Engineer (Plans 75% Complete)
	2.00	2.00	2.00			6.00	0.75	NCDOT Review and Revise
2.00						2.00	0.25	Misc. Studies, Preparation of Correspondence, and Coordination
						2.00	0.25	Coordination with Subconsultants
								OTHERS (LIST):
4.00	8.00	16.00	16.00			44.00	5.50	Traffic Control and Pavement Marking Plan Preparation
10.00	18.00	30.00	30.00	0.00	0.00	88.00	11.00	
<b>TOTAL for FINAL RIGHT-OF-WAY PLANS</b>								
<b>TOTAL for PRELIMINARY RIGHT-OF-WAY PLANS</b>						176.00	22.00	
<b>TOTAL for RIGHT-OF-WAY PLANS</b>						264.00	33.00	

ROADWAY DESIGN ESTIMATE

MANHOURS BY CLASSIFICATION				TOTAL		PROJECT PHASE		
ASSOC ENGR	SENIOR ENGR	DESIGN ENGR(EI)	SENIOR TECH	TECH	DRAFTER		MANHOURS	MANDAYS
						0.00	0.00	Incorporate Final Pavement Design Recommendations
		2.00	2.00			4.00	0.50	Incorporate Final Geotechnical Recommendations (Remove Rock from Cross-Sections, Undercut, etc.)
		2.00	2.00			4.00	0.50	Revise Plans for Right-of-Way Changes
						0.00	0.00	Prepare Field Inspection Questions
						0.00	0.00	Revise after Pre-Final Field Inspection Review
						0.00	0.00	Attend Final Field Inspection
						0.00	0.00	Revise Plans and Cross-Sections in Accordance with Final Field Inspection Recommendations
		2.00				2.00	0.25	Finalize Earthwork, Computations, and Balance Card
			1.00			1.00	0.13	Prepare Index of Sheets, General Notes, Standards, and List of Special Provisions
			1.00			1.00	0.13	Prepare Parcel Index Sheet
			4.00			4.00	0.50	Drafting of Special Details (Undercut, Ditches, Special Drainage Structures, etc.)
			2.00			2.00	0.25	Prepare Earthwork Summary
			1.00			1.00	0.13	Prepare Guardrail Summary
			2.00			2.00	0.25	Prepare Drainage Summary
			2.00			2.00	0.25	Prepare Pavement Removal Summary
			2.00			2.00	0.25	Finalize Typical Sections
	2.00	2.00	4.00			8.00	1.00	Final Quantities and Handwritten Estimate, Develop Contract Documents
1.00	4.00	4.00	4.00			13.00	1.63	Finalize All Designs and Plans and Check by Engineer (Plans 90% Complete)
2.00	2.00	2.00	2.00			8.00	1.00	Final Review by Town and NCDOT, Revise Plans and Submit Original Plans, Quantities, etc. (Plans 100% Complete)
4.00						4.00	0.50	Coordinate with Various Agencies, Misc. Meetings and Conferences
8.00	2.00	2.00				12.00	1.50	Attend and Lead Bid Opening, Tabulate Results
						0.00	0.00	Coordination with Subconsultants
								OTHERS (LIST):
15.00	10.00	16.00	29.00	0.00	0.00	70.00	8.75	
<b>TOTAL for FINAL PLANS</b>						70.00	8.75	
<b>SUMMARY</b>								
PRELIMINARY RIGHT-OF-WAY PLANS						176.00	22.00	SEE ROADWAY DESIGN EMPLOYEE CLASSIFICATION FOR CALCULATED COSTS.
FINAL RIGHT-OF-WAY PLANS						88.00	11.00	
TOTAL RIGHT-OF-WAY PLANS						264.00	33.00	
FINAL PLANS						70.00	8.75	
<b>TOTAL for ROADWAY DESIGN</b>						334.00	41.75	

# ROADWAY DESIGN EMPLOYEE CLASSIFICATION

TIP NO.: B-5196  
 COUNTY: Buncombe

CLASSIFICATION	EMPLOYEE NAME	MANHOURS	MANDAYS	RATE	COST
Associate Engineer	C. L. Flowe	58.00	7.25	\$ 59.43	\$ 3,446.94
Senior Engineer	Barry Smith	78.00	9.75	\$ 33.50	\$ 2,613.00
Design Engineer (EI)	C. Aycock	81.00	10.13	\$ 30.90	\$ 2,502.90
Senior Technician	S. M. Harmon / T. N. Watts	117.00	14.63	\$ 28.55	\$ 3,340.35
Technician		0.00	0.00		\$ -
Draftsperson		0.00	0.00		\$ -
Total		334.00	41.75		
Total Direct Salary					\$ 11,903.19
Escalation (per year) 2%					\$ -
Overhead					\$ 18,812.99
Subtotal					\$ 30,716.18
Fee					\$ 2,764.46
Overhead (Cost of Capital)					\$ 69.04
<b>TOTAL DIRECT AND INDIRECT SALARY COSTS</b>					<b>\$ 33,549.68</b>

**REPRODUCTION COSTS**

<b>(A) BONDS</b>						
<b>SUBMITTAL</b>	<b>SHEETS</b>		<b>SETS</b>		<b>TOTAL</b>	
<b>PRELIMINARY REVIEW (25%)</b>						
Plans	6	x	10	=	60	
Interchange		x	10	=	0	
* X-Sects	10	x	6	=	60	
<b>Geotechnical</b>						
Plans	6	x	2	=	12	
Interchange		x	2	=	0	
* X-Sects	10	x	2	=	20	
<b>Drainage</b>						
Plans	6	x	2	=	12	
Interchange		x	2	=	0	
* X-Sects	10	x	2	=	20	
<b>PRELIM. OR COMB. FIELD INSPECTION</b>						
<b>Pre-PFI/CFI Review</b>						
Plans	8	x	2	=	16	
Interchange		x	2	=	0	
* X-Sects	10	x	2	=	20	
** Prelim. or Comb. Field Inspection						
Plans	8	x	30	=	240	
Interchange		x	30	=	0	
* X-Sects	10	x	9	=	90	
<b>RIGHT-OF-WAY (75%)</b>						
<b>Pre-R/W Review</b>						
Plans	10	x	1	=	10	
Interchange		x	1	=	0	
* X-Sects	10	x	1	=	10	
<b>Geotechnical</b>						
Plans	10	x	1	=	10	
Interchange		x	1	=	0	
X-Sects (22"x34")	10	x	1	=	10	
<b>FINAL FIELD INSPECTION</b>						
<b>Pre-FFI Review</b>						
Plans		x	1	=	0	
Interchange		x	1	=	0	
* X-Sects		x	1	=	0	
** Final Field Inspection						
Plans		x	23	=	0	
Interchange		x	23	=	0	
* X-Sects		x	9	=	0	
<b>FINAL ROADWAY</b>						
<b>Final Review (90%)</b>						
Plans	15	x	3	=	45	
Interchange		x	3	=	0	
* X-Sects	10	x	2	=	20	
<b>Pre-Sealed (100%)</b>						
Plans	15	x	1	=	15	
Interchange		x	1	=	0	
* X-Sects	10	x	1	=	10	
<b>OTHER</b>						
R/W Revisions	15	x	1	=	15	
Const. Revisions	15	x	1	=	15	
Strip Maps (36"x36")		x	1	=	0	
<b>Work Sets</b>						
Plans	15	x	6	=	90	
Interchange		x	6	=	0	
* X-Sects	10	x	3	=	30	
+ TOTAL BOND PLANS & FULL-SIZE X-SECTS (22"x34")	830	x	\$ 0.42	/sheet=	\$	348.60
+ TOTAL BOND INTERCHANGE (34"x68")	0	x	\$ 3.50	/sheet=	\$	-
+ TOTAL BOND X-SECTS (11"x17")	0	x	\$ 0.10	/sheet=	\$	-

**REPRODUCTION COSTS**

<b>(B) RECORD SETS (BOND)</b>					
	<b>SUBMITTAL</b>	<b>SHEETS</b>	<b>SETS</b>		<b>TOTAL</b>
***	<b>PRELIMINARY APPROVED (25%)</b>				
	Plans	6	x 2	=	12
	Interchange		x 2	=	0
*	X-Sects	10	x 2	=	20
***	<b>PRELIM. OR COMB. FIELD INSPECTION</b>				
	Plans	8	x 1	=	8
	Interchange		x 1	=	0
*	X-Sects	10	x 1	=	10
***	<b>RIGHT-OF-WAY (75%)</b>				
	Plans	10	x 2	=	20
	Interchange		x 2	=	0
*	X-Sects	10	x 2	=	20
***	<b>FINAL FIELD INSPECTION</b>				
	Plans		x 1	=	0
	Interchange		x 1	=	0
*	X-Sects		x 1	=	0
***	<b>FINAL ROADWAY (100%)</b>				
	Plans	15	x 2	=	30
	Interchange		x 2	=	0
*	X-Sects	10	x 2	=	20
+	TOTAL BOND PLANS & FULL-SIZE X-SECTS (22"x34")	140	x \$ 0.42	/sheet=	\$ 58.80
+	TOTAL BOND INTERCHANGE (34"x68")	0	x \$ 3.50	/sheet=	\$ -
+	TOTAL BOND X-SECTS (11"x17")	0	x \$ 0.10	/sheet=	\$ -
<b>(C) XEROX COPIES</b>					
+	TOTAL XEROX COPIES (Say)	1000	x \$ 0.04	/sheet=	\$ 40.00
+	COVERS & BINDING (Say)	50	x \$ 1.00	/set=	\$ 50.00
<b>TOTAL REPRODUCTION A + B + C</b>					<b>\$ 497.40</b>

- NOTES:**
- \* Full Size Cross-Sections if 30 sheets or less
  - \*\* Include 2 sets of additional prints if project is in Charlotte
  - \*\*\* Includes Firm's Record Set
  - + See Engineering Guidelines for the most up-to-date max. allowable non-salary direct costs

**TRAVEL AND MISCELLANEOUS COSTS**

**(A) TRAVEL**

PURPOSE of TRIP	TRIPS		MILES		TOTAL		RATE		COSTS
+ Preliminary Field Review	1	x	500.00	=	500.00	x	\$ 0.555	=	\$ 277.50
+ Public Meeting/Hearing/Workshops	2	x	500.00	=	1000.00	x	\$ 0.555	=	\$ 555.00
+ Field Inspections (Preliminary, Combined, Final)	1	x	500.00	=	500.00	x	\$ 0.555	=	\$ 277.50
+ Scheduled Reviews/Miscellaneous Meetings with NCDOT	5	x	12.00	=	60.00	x	\$ 0.555	=	\$ 33.30
+ Miscellaneous Local Meetings	5	x	20.00	=	100.00	x	\$ 0.555	=	\$ 55.50
+ Other		x		=	0.00	x		=	\$ -

PER DIEM	TRIPS		# ATTEND		TOTAL		RATE		COSTS
+ Breakfast	4	x	2	=	8	x	\$ 8.00	=	\$ 64.00
+ Lunch	4	x	2	=	8	x	\$ 10.45	=	\$ 83.60
+ Dinner	4	x	2	=	8	x	\$ 17.90	=	\$ 143.20
+ Lodging	4	x	2	=	8	x	\$ 63.90	=	\$ 511.20

**(B) EQUIPMENT**

LIST COSTS

**(C) COMMUNICATIONS**

LIST COSTS

**(D) POSTAGE**

LIST COSTS

Packages to Montreat and to NCDOT Division Office \$ 200.00

**(E) OTHER**

LIST # ROLLS      RATE      COSTS

+ Film & Developing \_\_\_\_\_ x \$ 20.00 = \$ -

**TOTAL TRAVEL & MISCELLANEOUS COSTS A + B + C + D + E** = \$ 2,200.80

**TOTAL REPRODUCTION** = \$ 497.40

**TOTAL DIRECT NON-SALARY COSTS** = \$ 2,698.20

**NOTES:**

- \* Use Only Items That Are Not Included in Overhead
- + See Engineering Guidelines for the most up-to-date max. allowable non-salary direct costs

## ESTIMATED MANHOURS FOR PREPARING BRIDGE PLANS

County: Buncombe      T.I.P. # B-5196      Firm: KCI

Prepared By: Liz Phipps      Date: 11/21/2011      Chk. By:

**Texas Road - Replace Bridge  
#528 - Town of Montreat**

Replace existing bridge with a single span cored slab or box beam. Study 3 alternative locations and final design for one. Preliminary Engineering include alternatives studies for Planning.

Task	Trans. Eng. Supervisor III	Trans. Eng. Supervisor II	Trans. Engineer III	Trans. Engineer I	Trans. Technician IV	Trans. Technician II	Subtotal	Superstructure Drafting Details	Draft
Preliminary Engineering		40	80		48		168		
Preliminary General Drawing					24				
Check Pre. General Drawing			12				36	Typical Section	
Design Superstructure			40					Details	
Check Superstructure Design		20					60	Span "A"	
Design End Bents #1 & #2			40					Span "B"	
Check End Bent Design		20					60	Span "C"	
Design Interior Bents								Span "D"	
Check Interior Bent Design								Span "E"	
Draw Superstructure					40			Span "F"	
Check Superstructure Plans			16				56	Span "G"	
Draw End Bent #1 & #2					40			Additional Spans	
Check End Bent #1 & #2 Plans			24				64	Framing Plan	
Draw Interior Bents								Girders & Details	
Check Interior Bent Plans								Barrier Rail	
Rip Rap/Slope Protection					4			Deflections	
Chk. Rip Rap/Slope Protection			4				8	Splices	
Approach Slabs					4			Bearings	
Chk. Approach Slabs			4				8	Bill of Material	
General Drawing					24			Str. Steel Details	
Check General Drawing			12				36	Joints	
Construction Elevations			16					Miscellaneous	
Check Construction Elevations		8					24	Total	
Project Coordination		8	16				24		
Post-Design Coordination		4	12				16		
Specifications		4	16				20		
<b>Total Manhours =</b>	580	104	292		184		580		

## ESTIMATED COSTS FOR PREPARING BRIDGE PLANS

Class	Manhours	Rate/Hour	Total
Trans. Engineering Supervisor III			
Trans. Engineering Supervisor II	104	\$46.23	\$4,807.92
Transportation Engineer III	292	\$30.90	\$9,022.80
Transportation Engineer I			
Transportation Technician IV	184	\$25.88	\$4,761.92
Transportation Technician II			
<b>Total Manhours</b>	<b>580</b>		

*% Overhead* = 158.05

Subtotal	=	\$18,592.64
Additives & Overhead	=	\$29,385.67
Subtotal	=	<u>\$47,978.31</u>

*% Fee* = 9

Profit	=	\$4,318.05
Subtotal	=	<u>\$52,296.36</u>

*C. of C.* = 0.5800

Non Salary Costs	=	\$2,394.90
Cost of Capital	=	<u>\$ 107.84</u>

Total Cost	=	<span style="border: 1px solid black; padding: 5px;">\$54,799.09</span>
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<b>NON SALARY COSTS</b>						
<b>TRAVEL AND MISCELLANEOUS COSTS</b>						
<b>STRUCTURE DESIGN</b>						
<b>(A)</b>	<b>Travel</b>					
	Purpose of Trip	Trips	Miles	Total	Rate	Costs
	Field Inspection meetings	2	295	1180	\$0.575	\$678.50
				0	\$0.555	\$0.00
	Per Diem	Days	# people	Total	Rate	Costs
	Breakfast	2	2	4	\$8.00	\$32.00
	Lunch	2	2	4	\$10.45	\$41.80
	Dinner	2	2	4	\$17.90	\$71.60
	Lodging	2	2	4	\$71.50	\$286.00
<b>(B)</b>	<b>Equipment</b>	Fee/Day	Days	Fee w/o Mob	Mobilization	Costs
				\$0.00		\$0.00
				\$0.00	\$ -	\$0.00
				\$0.00	\$ -	\$0.00
						\$0.00
<b>(C)</b>	<b>Communications</b>					
<b>(D)</b>	<b>Postage</b>					
<b>(E)</b>	<b>Reproduction</b>	# pg/set	# Sets	Total	Rate	Costs
	Preliminary 11x17	5	6	30	\$0.10	\$3.00
	Working sets - 11x17	50	12	600	\$0.10	\$60.00
	Submission - 11x17	50	25	1250	\$0.10	\$125.00
	Working Set - 22x34	50	12	600	\$0.42	\$252.00
	Submission - 34x22	50	25	1250	\$0.42	\$525.00
	Final Mylar - 34x22	50	1	50	\$5.90	\$295.00
	Covers	50	25	0	\$0.50	\$12.50
	Binding	50	25	0	\$0.50	\$12.50
<b>(F)</b>	<b>Other</b>			Roll	Rate	Costs
	Film & Developing			0	\$20.00	\$0.00
	<b>Total</b>					<b>\$2,394.90</b>

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
LOCATION AND SURVEYS PEF COST ESTIMATE

DATE: 3/22/2012

FIRM: KCI Associates of NC

SUB: \_\_\_\_\_

PROJECT: \_\_\_\_\_ COUNTY: Buncombe

TIP NO.: B-5196

LENGTH: \_\_\_\_\_ LS NO.: \_\_\_\_\_

L-LINE: 1800 FT

Y-LINE(S): \_\_\_\_\_ FT

RAMPS: \_\_\_\_\_ FT

RAILROADS: \_\_\_\_\_ FT

PROJECT DESCRIPTION: Town of Montreat Municipal Bridge Replacement  
Bridge 528-Texas Road over Flat Creek

MANHOURS BY CLASSIFICATION

TASKS & PARAMETERS	PE	PLS	SCA	ST	PC	IP	RP	TOTAL
1 Courthouse Research No. of Properties 18				8				8
2 Contacting Property Owners No. of Property Owners 18	1	1		8				10
3 NC Grid Tie (Horiz) to NAD 1983 Approx Length								
4 Vertical Control Tie to NAVD 1988 Approx Length								
5 Baseline Traverse Approx Length 1500'		1	3		8	8	8	28
6 Intermediate Staking of Baseline Approx Length								
7 Compute Best-Fit Alignment (Graphically) Approx Length		1		6				7
8 Hub & Stake Design -L- & -Y- Alignments Approx Length L- Approx Length Y-								
9 Establish/Elevate Temp Bench Marks No. of TBMs 4			1		2	2	2	7
10 Pavement DTMs Approx Length				2	10	10	10	32
11 Hydrographic Surveys & T-Lines Approx Length								
12 Suppl Info for DTMs (Obscured Areas) No. of Acres/Hectares				2	10	10	10	32
13 Field Property Ties & Recon No. of Properties 18					10	10	10	30
14 Property Analysis and Computations No. of Properties		4		12				16
15 Property Lane Ties to Design Alignment No. of Properties								
16 Property Strip Maps No. of Maps								
17 Data for Appraisal Report No. of Properties 3				1				1

TASKS & PARAMETERS	PE	PLS	SCA	ST	PC	IP	RP	TOTAL
18. Classif. of Features on Aerial Maps No of Maps Scale								
19. Field Loc. of Topo & Plan Features (Dense, Med. or LT) Med		1		4				5
20. Loc. of Non-Gravity U/G Utilities (Dense, Med. or LT) LT		1		2	20	20		43
21. Loc. of Gravity Utilities & Pipe Inverts (Dense, Med. or LT)		1		2	4	4	4	15
22. Mapping Pre. Prop. from Tax Map Info. No. of Properties								
23. Pole Data Sheets (Dense, Med., LT) Med				1	2	2	2	7
24. Setting Photo Con. Panels No. of Points								
25. Photogrammetric Control No. of Points								
26. Staking and Flagging RAW & Easements No. of RAW Points No. of EASEMENT Points								
27. Production of Base Mapping No. of Sheets 2				16				16
28. GPS Points No. of Points 2			4		8	8	8	28
29. Misc. Staking No. of Points								
33. Travel Hrs. RT 8		8			24	24	16	72
34. Project Mgmt. & Supervision	2	6						8
35. Traffic Control & Safety					4	4	4	12
<b>TOTAL MANHOURS:</b>	<b>3</b>	<b>24</b>	<b>8</b>	<b>64</b>	<b>102</b>	<b>102</b>	<b>74</b>	<b>377</b>

Classification  
PROFESSIONAL ENGINEER  
PROFESSIONAL LAND SURVEYOR  
SURVEY CONTROL ANALYST  
SURVEY TECHNICIAN  
PARTY CHIEF  
INSTRUMENT PERSON  
ROD PERSON

Classification	Hours	Rate	Cost
PROFESSIONAL ENGINEER	3	\$44.00	\$132.00
PROFESSIONAL LAND SURVEYOR	24	\$35.19	\$844.56
SURVEY CONTROL ANALYST	8	\$28.78	\$230.24
SURVEY TECHNICIAN	64	\$22.50	\$1,440.00
PARTY CHIEF	102	\$18.11	\$1,846.71
INSTRUMENT PERSON	102	\$16.20	\$1,652.40
ROD PERSON	74	\$13.38	\$989.75

TOTAL  
MANHOURS  
**377**

TOTAL DIRECT  
SALARY COSTS  
**\$7,135.66**

INDIRECT SALARY COSTS

Total Dir. Salary Costs	\$7,135.66		
Overhead (%)	158.05	\$11,277.91	
Fee (%)	9	\$1,657.22	
Cost of Capt. (%)	0.5800	\$41.39	
<b>Total Indirect Salary Costs:</b>		<b>\$12,976.52</b>	

TOTAL DIR. and  
INDIR. SALARY COSTS  
**\$20,112.18**

DIRECT COSTS

Carry-all \$/Day	\$28.75	Days =	
or \$/Mi	\$0.575	Miles =	\$1,092.50
Sedan \$/Day	\$27.75	Days =	
or \$/Mi	\$0.555	Miles =	\$166.50
Misc. Survey Supplies =			

TOTAL DIRECT COSTS  
**\$1,259.00**

PER DIEM EXPENSES

(Meals: \$36.35 Max., Lodging \$65.90+ taxes - \$71.50 for lump sum jobs)

\$ / Day \$107.85 x 3 Persons x 9 Days =

TOTAL PER DIEM  
**\$2,911.95**

**PROJECT ESTIMATE TOTAL: \$24,283.13**

Cost per Mi: **\$13.49**  
Manhours per Mi: **0.21**

ESTIMATE BY: James M. Gellenthin, PLS

## CATEGORICAL EXCLUSION (CE)

### SCOPE OF SERVICES

STIP B-5196

Prepared July 9, 2012

## I. PROJECT SCOPING

### 1) Field Review

The consultant will conduct a field visit to the proposed project location. The Consultant shall prepare and send an email with STIP project number, contact information, personnel names, and locations to be visited to the NCDOT Division and District staff five (5) days prior to the field visit. NCDOT PDEA shall be copied on the email. The Consultant will also notify the Town of Montreat staff involved with the project. Consultant will take photos of any notable physical, community and environmental characteristics.

Upon completion of the field visit, consultant will coordinate with complete a summary of findings and submit to NCDOT PDEA.

### 2) Information Requests and Scoping Letter

The Consultant will prepare or follow up on requests for necessary data and reports including up to date Purpose and Need Statement (Transportation Planning Branch), traffic and crash data, and natural and cultural resource technical reports.

The Consultant will also create a scoping letter to initiate the coordination process between NCDOT-PDEA and groups outside NCDOT. The letter will solicit input from federal, state (including state clearinghouse), and local government agencies. The Consultant will include a vicinity map of the project with the scoping letter.

### 3) Project Schedule, Scope and Estimate

The Consultant will participate in a project kick-off and scoping meeting. Following the scoping meeting, the Consultant will prepare a scope of services defining the project details and outlining the tasks associated with the completion of the CE. A spreadsheet blank task list will be prepared, followed by a detailed fee estimate that calculates the amount of workdays by task and a total budget amount.

## II. PROJECT ADMINISTRATION

The consultant will provide project management and coordination consisting of the following:

- *Monthly Progress Report and Invoicing* – The consultant will prepare a monthly progress report of all projects for NCDOT. This report will list reports by percent complete, estimate the percentage of the budget spent and estimate completion date(s) for the project or groups of projects. The consultant will manage the budget, staff assignments and progress of the project through monthly internal project reviews. The consultant shall also submit invoices to NCDOT for review and payment on a monthly basis.
- *Project Budgeting/Staff Assignments/Expertise* – The consultant shall track the monies spent on the assigned project and ensure that project is completed for the budgeted amount. Any budget

issues shall be discussed with PDEA staff prior to work being conducted. The consultant will ensure that adequate staff and proper expertise are available to the complete the project.

- *Project Meetings* – The consultant shall attend project coordination meetings (in-person and/or conference call) with NCDOT, the consultant team and/or the Town of Montreat as needed (approximately 1 meeting per month assumed).
- *Other Ongoing Project Coordination* – The consultant shall conduct and participate in ongoing project coordination including phone calls, emails and other communication as may be required through the project.

### **III. PLANNING TASKS**

#### **1) Purpose and Need Statement**

The issues associated with the necessary repair/replacement of the bridge will be identified and documented. The safety concerns related to the current closure of the bridge will be documented, along with other bridge and roadway information that illustrates the need for the project (alignments, curvature). Vehicular and non-vehicular (such as pedestrian) needs will be identified. Both the technical reasoning behind NCDOT involvement and the community importance level of the bridge will be clearly described, along with the benefits associated with the improvement. Any FHWA Highway Bridge Program standards that are not currently being met will also be identified.

#### **2) Alternatives Analysis/Preferred Alternative**

A description of the project will be provided, along with the proposed improvements. The project description will include the location of the bridge, the water body over which it traverses, traffic levels of the roadway, and the design specifics. Any additional major community and environmental context characteristics will be identified.

In addition to the project description, the reasonable and feasible alternatives will be identified and described. Initial alternatives for bridge replacement include the following:

- Replace in-place at existing location
- Replace in-place near the existing location
- Replace at a new location downstream of the existing location

The specific alternatives being considered for this project will be clearly detailed and will also include a No-Build Alternative. NCDOT Guidelines for the alternatives being considered, as well as the criteria used to evaluate the alternatives, will be described. Evaluation criteria typically focuses on the length of the detour route, potentially impacted emergency service/school bus routes, and potential impacts to surrounding land uses.

Based on the specific design criteria, the alternatives will be analyzed and results will be summarized. Input from local government staff will also be integrated into the alternatives evaluation process. Other alternatives that were considered but eliminated from further study will also be described.

The Preferred Alternative will be described in detail upon completion of the alternatives analysis. Support for the selection of the preferred alternative will be provided.

#### **3) Community Impact Assessment**

Potential impacts associated with natural and human features surrounding the project will be evaluated for the preferred alternative. In order to determine these impacts, the consultant will complete a data pull of the Census Block Groups encompassing the project area and conduct an

## **IV. PUBLIC INVOLVEMENT**

### **1) Mailing List**

NCDOT will provide a raw spreadsheet or database of names and addresses for people that own property in the study area surrounding the bridge. This initial project mailing list will be expanded based on a stakeholder identification process (up to 200). This list could include resource agencies, residents, elected officials, local community leaders, property owners, business owners, environmental interests, economic development entities, and other stakeholder groups in the area of the project.

The consultant will maintain and update the mailing list for the duration of this contract. All stakeholders expressing interest in the project will be added to the project mailing list, and will be able to provide feedback during the process through email correspondence, phone calls, Stakeholder Meetings and a Citizens Informational Workshop. This mailing list is used to distribute the project newsletter/workshop notification.

### **2) Newsletter**

One newsletter will be designed and sent to the general public during the project. The newsletter mailing will be both a project update and serve as notification for the Citizens Informational Workshop.

The consultant will develop the content for the newsletter. Via e-mail, the consultant team will review and revise an early draft and afterwards will provide NCDOT with a first draft of the text (electronic copy). The consultant will address NCDOT comments and incorporate text into newsletter format. The consultant will add graphics to the newsletter and provide NCDOT with a first draft of the formatted newsletter (electronic copy), address one iteration of NCDOT comments, and provide a final print proof for approval by NCDOT. The consultant will coordinate with the printers and produce up to 300 copies. The consultant will also coordinate with the mailing house for distribution of the newsletters (up to 200 copies).

The purpose of the newsletter is to keep project area residents, business and property owners, interested citizens, civic groups, local agency officials, community groups, and other stakeholders informed of the status of the project.

### **3) Local Officials Briefings**

The Consultant will make a presentation to local officials to involve and educate them, as well as local government staff, on the progress of the project. This briefing will provide an opportunity to obtain input, to provide updates on project progress, and to facilitate the flow of information between the officials and NCDOT, as well as the public and area stakeholders. Local officials expected to be in attendance at this meeting may include:

- Town of Montreat Mayor
- Town Council (Commission) members
- Town Administrator
- Local Fire Chief
- Local Police Chief

The local officials briefing further ensures that local communities are fully educated on the current study process and have opportunities for input and representation. The briefing will be scheduled just prior to the Citizen's Informational Workshop for the project. Appropriate project summary materials

examination of the data. The characteristics of the Census Block Groups will be compared to the County and North Carolina. Demographic data will be tabulated. Tables may include: population (2000-2010), population by race/ethnicity (2010), population below poverty level (2010), population below 50% of poverty level (2010) and Limited English Proficiency (2010). A map will be created to depict this demographic area.

The consultant will produce an 8.5x11 community context map which shall include: project area, roads (US, Interstate, NC, SR, and local), jurisdiction lines (municipal and county), parcel lines, water bodies (differentiating between 303(d) impaired and not impaired), cemeteries, schools, churches, parks, hospitals, Section 4(f) and Section 6(f) lands, Wild and Scenic Rivers, FEMA Buyout Properties, airports, National Trails, prime farmland soils, railroads, and State-Owned and Federally-Owned lands. Notable features will be labeled.

Based on field visit observations, demographic data, and discussions with local planners, the consultant will complete a checklist to conduct a regulatory applications inventory and screening for the following:

- American Indian Religious Freedom Act (AIRFA)
- Environmental Justice
- Limited English Proficiency
- National Trails System (NTS)
- Section 6(f) Land and Water Conservation Fund Resources
- Wild and Scenic Rivers
- North Carolina Natural and Scenic Rivers
- Farmland Soils/Agricultural Operations
- VAD and EVAD Districts/Century farms (as applicable)

For all confirmed regulatory applications, the consultant will label the applicable resource on the STIP map, and a photo will be included in the text. The consultant will denote any notable application. Note that Environmental Justice includes both a “Presence” and “Impact” component. While “Presence” should be illustrated on the STIP and Community Context maps, labeled by community name, only an “Impact” needs to be photo-documented.

Based on field visit observations, demographic data, and discussions with local planners, the consultant will complete a checklist of community context and notable features in or in close proximity to the project area, including:

- |                                      |   |
|--------------------------------------|---|
| • Moderate to High Growth Rate areas | • Other Notable Traits of Aquatic Resources |
| • Local Area Plans/Goals             | • FEMA Buyout Properties                    |
| • Known Plans for Development        | • Access/Mobility                           |
| • Pedestrian Activity                | • Airports                                  |
| • Bicycle Activity                   | • Area/Community Controversy                |
| • Transit Activity                   | • Socio-Economic Resources                  |
| • Community Cohesion                 | • Other (i.e. Historic Features, etc.)      |
| • Water Supply Watersheds            |   |

The consultant will conduct an evaluation of potential impacts associated with the proposed project upon the natural and human environment features identified above. Any notable project impacts shall be disclosed and briefly described. The nature, likelihood and severity of potential impacts will be included with as much detail as possible. The consultant will also address the potential indirect and cumulative effects of the proposed project, which are effects that occur over time and/or in combination with other activities.

will be prepared for distribution at these briefings and officials will also receive the project newsletter/public meeting notification.

#### 4) Citizens Informational Workshop

The Consultant will be responsible for conducting a Citizens Informational Workshop to inform the public of the progress of the study and to obtain public comments and input on the project. NCDOT will be responsible for locating and arranging facilities for the meeting. NCDOT will also release a press notice through the Communications Office regarding the workshop. The Consultant will notify the public in advance of the workshop through the use of the project newsletter and the mailing list as noted previously.

The consultant will attend and facilitate the workshop (2 staff), which will be informal to encourage one-on-one project discussions with the public. The consultant will note and compile public concerns and comments identified during the meeting. In terms of materials, the consultant will prepare a six (6)-page, black and white, 8½" x 11" handout/brochure that will include a one (1)-page comment form and one (1) 11" x 17" figure for the workshop.

Approximately 300 copies of handouts are anticipated for the project workshop, local officials briefings and stakeholder meetings.

### V. ENVIRONMENTAL DOCUMENT

#### 1) Technical Areas

The consultant will incorporate and summarize information into the environmental document for the following technical areas, reports and coordination items:

##### *Natural Resources Technical Report*

Relevant information will be summarized from this document for regulated environmental issues and potential associated impacts including jurisdictional streams/wetlands, protected species, and other high-quality natural resources. A discussion of necessary permits will be included.

##### *Section 7*

No tasks are included in the current task order. If coordination is required, it will be included in a future task order.

##### *Cultural Resources Technical Report*

Relevant information will be summarized from this document for historic and archaeological sites and potential associated impacts.

##### *Section 4(f)*

No tasks are included in the current task order. If coordination is required, it will be included in a future task order.

##### *Section 106*

No tasks are included in the current task order. If coordination is required, it will be included in a future task order.

##### *Design Description/Estimated Costs*

The Consultant will incorporate the matrix of estimated costs by alternative in the CE. Construction costs line items will include:

- Structure
- Roadway Approaches
- Potential Detour Structure and Approaches
- Structure Removal
- Miscellaneous
- Engineering & Contingencies

In addition to construction costs, costs associated with any right-of-way acquisition and utility relocations will also be included.

#### *Noise and Air Quality*

The Consultant will incorporate information on noise and air quality analyses for the project. The potential for impacts to emissions will be discussed. As Buncombe County has not been classified as a non-attainment county in North Carolina (it complies with the National Air Quality Standards designated by EPA), the project is not anticipated to create any adverse effects on the air quality of this attainment area.

The potential for noise level increases due to the project will also be described. Impacts associated with noise may be heightened or lessened based on surrounding structures, land uses and topography.

#### *General Environmental Effects*

The Consultant will summarize the overall impact of the bridge. This will include a determination of any adverse direct or indirect effects on the quality of the natural and human environment both during and after construction. In addition, potential impacts will be evaluated and summarized for specific resources not addressed in other technical reports or studies, such as underground storage tanks, floodplains and floodways, pedestrian pathways, utilities, etc.

#### *Coordination and Agency Comments*

Any and all federal, state and local agency coordination that is necessary will be documented. Comments received from these agencies will be summarized, and will be utilized in the determination of potential effects, as well as mitigation strategies. Responses to comments will be prepared and included in the environmental document. NCDOT may seek input from the following agencies as a part of the project development, depending on the scope of the project and the nature of the surrounding environment:

- U.S. Army Corps of Engineers
- NC Department of Natural Resources
- U.S. Fish & Wildlife Service
- N.C Wildlife Resource Commission
- N.C. Division of Parks & Recreation
- North Carolina State Historic Preservation Office
- Buncombe County Planning Department
- Town of Montreat

## **2) Draft Categorical Exclusion**

The consultant will compile the data and analysis information of the previous sections into the latest template provided by NCDOT PDEA. This report will include:

- a) Signature pages
- b) Project Commitments
- c) Purpose and Need Statement
- d) Existing Conditions
- e) Alternatives
- f) Estimated Costs
- g) Natural Resources
- h) Human Environment
- i) General Environmental Effects
- j) Coordination and Agency Comments
- k) Public Involvement
- l) Conclusion
- m) Project Vicinity Map
- n) Photos of bridge and surrounding community and environmental features

The consultant will develop a list of sources used to develop the report. All sources shall have the information, including telephone numbers and web addresses, needed to return to the original source of the information if required.

The consultant will provide ten (10) paper copies of a draft 8 ½" x 11" categorical exclusion, including all supporting figures, photographs, records and sources. The consultant will also provide a digital copy of the final report text in Adobe Portable Document Format.

### **3) Final Categorical Exclusion**

The consultant will revise the draft report based on NCDOT PDEA comments within seven (7) business days of the receipt of NCDOT comments unless alternative arrangements are made. The consultant will specifically respond to each NCDOT PDEA comment. The consultant will provide fifty (50) paper copies of a final 8 ½" x 11" categorical exclusion, including all supporting figures, photographs, records and sources, for distribution to NCDOT staff and resource agencies. The consultant will also provide a digital copy of the final report text in Adobe Portable Document Format.

PROJECT DESCRIPTION: Town of Montreat Bridge #528 (Texas Road over Flat Creek) Replacement	STIP NUMBER: B-5196	WBS NUMBER: 45252.1.1	DATE PREPARED: 10/24/2011
PREPARED BY: Planning Communities, LLC			REVISION DATE: 6/20/2012

**ENVIRONMENTAL BREAKDOWN SUMMARY**

TASK NO.	TASK DESCRIPTION	BRANCH MANAGER (TD-1)						ENV. SPEC. (ES-3) (ES-2)	ARCH. & HISTORIC SPVR.	ARCH. & HISTORIC SPECIALIST (ARCH-2) (HPRS-2)	TRANS. ENGINEER SPVR. (TE-3)	TRANS. ENGINEER (TE1)	ENV. TECH 3 (TT-3)	WORD PROCESSOR SUPERVISOR (WP-2)	ROADWAY DESIGN BRANCH BLENDED RATE	HYDRAULIC BRANCH BLENDED RATE	SUB-TOTAL	% OF PROJECT	PEF ESTIMATE	% OF PROJECT
			Townsend	Hall	McAulliffe	Maurer	Thomas													
			UNIT HEAD (TM-1)	PROJECT ENGINEER (TE-3) (TE-2)	PROJECT ENGINEER (TE-3) (TE-2)	COMMUNITY PLANNER (CP-2)	WORD PROCESSOR SUPERVISOR (WP-2)													
1	PROJECT SCOPING		0.13	2.88	0.25	2.00	0.00										5.25	14.95%		
2	PROJECT ADMINISTRATION		1.50	4.00	0.00	0.75	0.00										6.25	17.79%		
3	PLANNING TASKS		0.00	1.13	2.50	4.13	0.00										7.75	22.06%		
4	PUBLIC INVOLVEMENT		0.38	3.13	2.13	5.75	0.13										11.50	32.74%	7.63	
5	ENVIRONMENTAL DOCUMENT		0.38	2.00	0.75	1.00	0.25										4.38	12.46%	4.25	
	<b>TOTAL WORKDAYS/CATEGORY:</b>	0.00	0.00	2.38	13.13	5.63	13.63	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.13			
	<b>RATES PER DAY:</b>	\$0.00	\$0.00	\$430.88	\$282.72	\$248.48	\$196.16	\$162.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
	<b>PAYROLL BURDEN:</b>	\$0.00	\$0.00	\$1,023.34	\$3,710.70	\$1,397.70	\$2,672.68	\$60.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
	<b>TOTAL WORKDAYS:</b>		35.13																	
	<b>TOTAL PAYROLL BURDEN:</b>		\$8,965.17																	
	<b>AVERAGE COST PER HOUR:</b>		\$31.55																	
	<b>GENERAL OVERHEAD @ 163.98%:</b>	\$14,537.11																		
	<b>SUBTOTAL:</b>	\$23,402.28																		
	<b>COMPARATIVE FEE @ 9.00%:</b>	\$2,106.20																		
	<b>TOTAL:</b>	\$25,508.48																		
	<b>DIRECT EXPENSES:</b>	\$2,655.80																		
	<b>SUBCONSULTANT FEES:</b>	\$0.00																		
	<b>FACILITIES COST OF CAPITAL @ 0.00%:</b>	\$0.00																		
	<b>TOTAL:</b>	\$28,164.28																		

**ENVIRONMENTAL BREAKDOWN WORKSHEET**

TASK NO.	TASK DESCRIPTION	BRANCH MANAGER (TD-1)	UNIT HEAD (TM-1)	Townsend	Hall	McAuliffe	Maurer	Thomas	ENV. SPEC. (ES-3) (ES-2)	ARCH. & HISTORIC SPVR.	ARCH. & HISTORIC SPECIALIST (ARCH-2) (HPRS-2)	TRANS. ENGINEER SPVR. (TE-3)	TRANS. ENGINEER (TE1)	ENV. TECH 3 (TT-3)	WORD PROCESSOR SUPERVISOR (WP-2)	ROADWAY DESIGN BRANCH BLENDED RATE	HYDRAULIC BRANCH BLENDED RATE	SUB-TOTAL	% OF PROJECT	PEF ESTIMATE	% OF PROJECT	
				UNIT HEAD (TM-1)	PROJECT ENGINEER (TE-3) (TE-2)	DRAFT & REPO. TECH. (TT-2)	COMMUNITY PLANNER (CP-2)	WORD PROCESSOR SUPERVISOR (WP-2)														
1	<b>PROJECT SCOPING</b>																					
	-Field Review (prepare, attend)				1.250		1.250												2.750	7.83%		
	-Write and Distribute Field Review Summary				0.125		0.500												0.625	1.78%		
	-Write and Distribute Project Scoping Letters/Vicinity Map				1.000	0.250	0.125												1.375	3.91%		
	-Develop Project Schedule			0.125	0.500		0.125												0.500	1.42%		
	-Scope/Estimate/Negotiations																		0.000	0.00%		
2	<b>PROJECT ADMINISTRATION</b>																					
	Project Management & Coordination																					
	-Monthly Progress Reports/Invoicing				1.000														1.000	2.85%		
	-Project Budgeting/Staff Assignments			0.250															0.250	0.71%		
	-Project Meetings (NCDOT, Montreat, team)			0.750	1.500		0.750												3.000	8.54%		
	-Other Project Coordination (emails, calls, ongoing)			0.500	1.500														2.000	5.69%		
3	<b>PLANNING TASKS</b>																					
	-Purpose and Need				0.125														0.125	0.36%		
	-Define/Describe Alternatives (includes figures) and Preferred Selection (confirm)				0.250	0.500													0.750	2.14%		
	-Community Impact Assessment				0.500	2.000	4.000												6.500	18.51%		
	-Assess other project impacts (assume/verify minor)				0.250		0.125												0.375	1.07%		
4	<b>PUBLIC INVOLVEMENT</b>																					
	-Review/Refine Mailing List (elected officials, property owners, etc.)				0.250		0.750	0.125											1.125	3.20%		
	-Develop Newsletter (assume 1)			0.125	0.250	0.125	1.000												1.500	4.27%		
DELETED TASKS	-Prepare for Stakeholder Meetings and Local Officials Briefing #1 (contacts, agendas, handouts)																		0.000	0.00%		
	-Attend Stakeholder Meetings and Local Officials Briefing #1 (schedule same day)																		0.000	0.00%		
	-Prepare and Distribute Summaries (LO #2 and CIW)																		0.000	0.00%		
	-Prepare for Local Officials Briefing #2 and CIW (boards, handouts, comment forms)			0.250	1.000	2.000	2.000												5.250	14.95%		
	-Attend Local Officials #2 and CIW (schedule same day)				1.500		1.500												3.000	8.54%		
	-Prepare and Distribute Summaries (LO #2 and CIW)				0.125		0.500												0.625	1.78%		
5	<b>ENVIRONMENTAL DOCUMENT</b>																					
	-incorporate technical areas																					
	-NRTR (water and biotic resources, permits, protected species, etc.)				0.250		0.125												0.375	1.07%		
	-Section 7 (future task, if applicable)																		0.000	0.00%		
	-Cultural resources technical reports				0.250		0.125												0.375	1.07%		
	-Section 4(f) (future task, if applicable)																		0.000	0.00%		
	-Section 106 (future task, if applicable)																		0.000	0.00%		
	-Design description/estimated costs				0.250														0.250	0.71%		
	-Noise and air quality				0.125	0.250													0.375	1.07%		
	-General environmental effects					0.250													0.250	0.71%		
	-Coordination and agency comments & public involvement				0.125		0.250												0.375	1.07%		
	-Prepare and submit draft report			0.250	0.500	0.250	0.250	0.125											1.375	3.91%		
	-Revise and finalize/copies for distribution			0.125	0.500		0.250	0.125											1.000	2.85%		
<b>TOTAL WORKDAYS/CATEGORY:</b>		0.00	0.00	2.38	13.13	5.63	13.63	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.13	100.00%			

**DIRECT EXPENSES**

PROJECT DESCRIPTION: Town of Montreat Bridge #528 (Texas Road over Flat Creek) Replacement

PREPARED BY: Planning Communities, LLC

STIP NUMBER: B-5196

PROJECT NUMBER:

DATE PREPARED: 10/24/2011 / REVISED: 6/20/2012

REVIEWED BY UNIT HEAD ON:

	Sedan	1 Trip(s) @	500 miles @	\$0 555	\$277 50
	Carry All	Trip(s) @	miles @	\$0 505	\$0 00
	Car Rental		days @	\$45 00	\$0 00
	Gas for Rental		miles @	\$0 11	\$0 00
	Parking	Trip(s) @		\$3 00	\$0 00
	Per Diem	2 Breakfast		\$8 00	\$16 00
		2 Lunch		\$10 45	\$20 90
		2 Dinner		\$17 90	\$35 80
		2 Lodging (not including taxes)		\$63 90	\$127 80
	Reproduction	8 1/2 x 11 Copy(s) @		\$0 04	\$0 00
		11 x 17 Copy(s) @		\$0 10	\$0 00
		Cover(s) @		\$0 50	\$0 00
		Binder(s) @		\$0 50	\$0 00
		Color Copy(s) @		\$0 83	\$0 00
		Blueprint(s) @		\$0 35	\$0 00
	Film and Developing	Roll(s) @		\$20 00	\$0 00
			Subtotal		\$478 00
Maps & Documents	County Tax Maps	Map(s) @		\$7 00	\$0 00
	USGS Maps	Map(s) @		\$7 00	\$0 00
			Subtotal		\$0 00
Technical Reports		60 8 1/2 X 11 Copy(s) @		\$0 04	\$2 40
Reproduction		10 11 x 17 Copy(s) @		\$0 10	\$1 00
-CIA (5 copies)		10 Color Copy(s) @		\$0 83	\$8 30
			Subtotal		\$11 70
Design		8 1/2 x 11 Copy(s) @		\$0 04	\$0 00
Reproduction		11 x 17 Copy(s) @		\$0 10	\$0 00
		Blueprint(s) @		\$0 35	\$0 00
		Mylar Septa(s) @		\$5 90	\$0 00
		Cross-Sections Sheet(s)		\$3 50	\$0 00
		Enlarge Quad Map(s)		\$50 00	\$0 00
			Subtotal		\$0 00
Environmental Document		1200 8 1/2 x 11 Copy(s) @		\$0 04	\$48 00
Reproduction		120 11 x 17 Copy(s) @		\$0 10	\$12 00
-CE (20 pages, 60 copies)		Cover(s) @		\$0 50	\$0 00
		Binder(s) @		\$0 50	\$0 00
		120 Color Copy(s) @		\$0 83	\$99 60
			Subtotal		\$159 60
Meetings and Public Involvement	Travel				
	Sedan	1 Trip(s) @	500 miles @	\$0 485	\$242 50
	Carry All	Trip(s) @	miles @	\$0 505	\$0 00
	Car Rental		days @	\$45 00	\$0 00
	Gas for Rental		miles @	\$0 11	\$0 00
	Parking	Trip(s) @		\$3 00	\$0 00
	Per Diem	4 Breakfast		\$7 00	\$28 00
		4 Lunch		\$9 25	\$37 00
		4 Dinner		\$15 75	\$63 00
		4 Lodging (including taxes)		\$67 00	\$268 00
	Meeting Handouts				
	- Reproduction	300 8 1/2 x 11 Handout(s) @	6 Sheets	\$0 04	\$72 00
		300 11 x 17 Figure(s) @	1 Sheet	\$0 10	\$30 00
	Presentation Materials				
	- Public Officials Meetings	1 Meeting(s) @		\$30 00	\$30 00
	- Public Workshops	1 Workshop(s) @		\$200 00	\$200 00
	- Slide Presentation	1 Presentation @		\$330 00	\$330 00
	Mailing Labels	Box(s) @		\$37 00	\$0 00
	Newsletters				
	- Reproduction	300 Color Copy(s) @	2 Sheets	\$0 83	\$198 00
	- Postage	200 Mailhouse processing and postage @		\$0 84	\$168 00
			Subtotal		\$2,006 50
			<b>TOTAL</b>		\$2,655.80

2011 NCDOT-NEU Engineering Group  
**Appendix A- Man-hour Estimate (by Classification and Task)**

TASK	Principal	Supervising Sci/Eng	Senior Sci/Eng	Project Sci/Eng	Staff Sci/Eng	CADD/Drafter	Project Assistant	Project Surveyor	Party Chief	Instrument Operator	Survey Technician	TOTAL BY TASK
	Phase 1. Initial Data Review	0	0	0	0	8	0	0	0	0	0	0
Phase 2. Field Investigation	0	24	0	0	24	0	0	0	0	0	0	48
Phase 3. Report and Map Production	0	0	4	0	56	0	0	0	0	0	0	60
Phase 4. Coordination	0	0	8	0	0	0	0	0	0	0	0	8
<b>TOTAL</b>	<b>0</b>	<b>24</b>	<b>12</b>	<b>0</b>	<b>88</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>124</b>

## APPENDIX B - ENVIRONMENTAL SERVICES BILLING RATE DERIVATION

Position Classification	Direct Labor Rate \$/hr	Maximum Billing Rate \$/hr (1)
<b>Principal</b>		
Gary Mryncza	\$ 55.00	
		\$ 55.00
<b>Supervising Scientist/Engineer</b>		
Tim Morris	\$ 43.52	
Steve Stokes	\$ 49.34	
		\$ 49.34
<b>Senior Environmental Scientist/Engineer</b>		
Rachele Baker	\$ 38.25	
Adam Spiller	\$ 30.83	
Kathy Hoverman	\$ 37.49	
		\$ 38.25
<b>Project Environmental Scientist/Engineer</b>		
Alexander French	\$ 30.54	
Kristen Knight-Meng	\$ 28.34	
		\$ 30.54
<b>Staff Environmental Scientist/Engineer</b>		
Brian Roberts	\$ 24.35	
April Helms	\$ 25.55	
Zach Mryncza	\$ 21.32	
Kevin O'Briant	\$ 28.00	
Brian Hemel	\$ 27.30	
		\$ 28.00
<b>CADD Drafter</b>		
Mac Harmon	\$ 28.56	
Mark Lawson	\$ 17.86	
		\$ 28.56
<b>Project Assistant</b>		
Laurie Arensdorf	\$ 34.00	
Julie Walcott	\$ 25.50	
		\$ 34.00
<b>Project Surveyor</b>		
Jim Gellenthin	\$ 55.56	
Rob Baumgartner	\$ 35.20	
		\$ 55.56
<b>Party Chief</b>		
Mathew Koss	\$ 16.58	
		\$ 16.58
<b>Instrument Operator</b>		
David Carey	\$ 18.36	
		\$ 18.36
<b>Survey Technician</b>		
Tyler Carey	\$ 12.76	
		\$ 12.76



2011 NCDOT-NEU Engineering Group  
**APPENDIX C - FEE ESTIMATE**

Position Classification	Direct Labor Rate \$/hr		Manhour Estimate	Estimated Salary
<b>Principal</b>				
Gary Mryncza	\$ 55.00		0	\$ -
<b>Supervising Scientist/Engineer</b>				
Tim Morris	\$ 43.52			
Steve Stokes	\$ 49.34		24	\$ 1,184.16
<b>Senior Environmental Scientist/Engineer</b>				
Rachele Baker	\$ 38.25			
Kathy Hoverman	\$ 37.49			
Adam Spiller	\$ 30.83		12	\$ 369.96
<b>Project Environmental Scientist/Engineer</b>				
Alexander French	\$ 30.54			
Kristen Knight-Meng	\$ 28.34		0	\$ -
<b>Staff Environmental Scientist/Engineer</b>				
Brian Roberts	\$ 24.35			
April Helms	\$ 25.55		88	\$ 2,248.40
Zach Mryncza	\$ 21.32			
Kevin O'Briant	\$ 28.00			
Brian Hemel	\$ 27.30			
<b>CADD Drafter</b>				
Mac Harmon	\$ 28.56			
Mark Lawson	\$ 17.86		0	\$ -
<b>Project Assistant</b>				
Laurie Arensdorf	\$ 34.00			
Julie Walcott	\$ 25.50		0	\$ -
<b>Project Surveyor</b>				
Jim Gellenthin	\$ 55.56			
Rob Baumgartner	\$ 35.20		0	\$ -
<b>Party Chief</b>				
Mathew Koss	\$ 16.58		0	\$ -
<b>Instrument Operator</b>				
David Carey	\$ 18.36		0	\$ -
<b>Survey Technician</b>				
Tyler Carey	\$ 12.76		0	\$ -
<b>KCI Estimated Labor</b>			=	\$ 3,802.52
<b>KCI Audited Overhead Rate at 158.05%</b>			=	\$ 6,009.88
<b>Subtotal</b>			=	\$ 9,812.40
<b>Facilities Capital Cost of Money Rate at 0.58%</b>				\$ 22.05
<b>Direct Costs:</b>				\$666.74
			<b>KCI Estimated Total Cost</b>	<b>\$ 10,501.20</b>

# Utility Coord Total Estimate

**Project** TIP B-5196 Purchase Order Contract # WBS RW  
 County Buncombe WBS PE WBS PE  
**PEF**

Name KCI Firm's Contract ID \_\_\_\_\_  
 Project Contact Charlie Flowe PE 919-278-2504 Contract official \_\_\_\_\_

## NCDOT Project Contacts

Coordination Engineering  
 UCS Area Coordinator Ut Eng Squad Leader  
 UCS Coordinator Ut Engineer

Project Estimate	Principal	Project Design Engineer	Senior Engineer	Junior Engineer	Junior Technician	Utility Coordination Manager	Utility Coordination Supervisor	Senior Utility Coordinator	Utility Coordinator	SubTotal
Manhours	0.0	0.0	0.0	0.0	0.0	36.0	0.0	124.0	32.0	192.0
Hourly Rate	\$ 79.00	\$ 50.00	\$ 41.47	\$ 29.53	\$ 18.00	\$ 55.00	\$ 43.68	\$ 31.00	\$ 21.00	\$ 6,496.00
SubTotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,980.00	\$ -	\$ 3,844.00	\$ 672.00	\$ 10,266.93
<b>Invoicing Percentages</b>										
UAPR		Manhours	% Work							
Not Included		88.0	45.8%							
Not Included		0.0	0.0%							
Not Included		84.0	43.8%							
Not Included		20.0	10.4%							
Not Included		0.0	0.0%							
<b>Total</b>		<b>192</b>	<b>100.0%</b>							
<b>Overhead</b>										
Subtotal \$ 16,762.93										
Fee 9% \$ 1,508.66										
Direct Costs \$ 1,280.90										
CoC 0.58% \$ 37.68										
<b>Total Cost \$ 19,590.17</b>										

Product	Draft	FDI	95%	Final
UAPR				
Not Included				

Dates are latest that the overall activity can occur.

## Utility Coord Scoping list

Project B-5196 Buncombe		
Include in estimate	Product	Include in estimate
Phase	Activity	Project Specific Details
1	Yes	UAPR
	Draft Utility Analysis	Identifying project utility conflicts
	Data Collection	From Utility Owners
	Conflict Mitigation	Using Alternate Design Approach
	Identify SUE Needs/Requirements	Provide to NCDOT for execution through L&S
	Preliminary routing	Proposed relocations and constructability
	Identification of ROW/PUE requirements	Verify and provide to NCDOT for execution through ROW by 2/1/11
	Preparation of cost estimate	Budgeting for NCDOT (funding allocation)
	Obtaining utility owner concurrence for proposed utility relocations	schedule, design responsibility, who moves, and obtains general agreement with a plan of action.
	Provide Final UAPR Report to NCDOT & Utility Owner(s)	Hard Copies
	Furnish final electronic files for inclusion in the project file	Microstation/Microsoft Word/Excel (latest version)
2	No	Utility Authorizations
		no
3	No	Utilities by Others
	Assist Utility Owners in Development of Relocation Plans	Using Final UAPR plans
	Provide UBO plans and provisions to NCDOT	Electronic files (Microstation) to be provided
4	No	Environmental Permit Drawings
	Permit drawings for impacts by utility relocations	
	Permit drawings for CAMA permit	requires profiles
No	Other	

**Utility Coord Manhr Est**

Project B-5196 Buncombe	Manhours										Sub-total	
	Principal	Project Design Engineer	Senior Engineer	Junior Engineer	Junior Technician	Utility Coordination Manager	Utility Coordination Supervisor	Senior Utility Coordinator	Utility Coordinator			
Activity												
UAPR						24		56	8			88
Not Included												0
Utilities by Others						8		60	16			84
Environmental Permit Drawings						4		8	8			20
Other												0
Totals	0	0	0	0	0	36	0	124	32			192

Direct Costs	Paper copies			Misc.		Travel				Subtotals	
	8-1/2"x11"	11"x17"	Bond (34"x22")	Postage and Fax	Film and Developing	Breakfast	Lunch	Supper	Overnight per Diem		Mileage
Activity											
UAPR	100	50				2	2	2	2	750	\$ 640.95
Not Included											\$ -
Utilities by Others	50	40				2	2	2	2	750	\$ 637.95
Environmental Permit Drawings	0	20									\$ 2.00
Other											\$ -
Totals	150	110	0		0	4	4	4	4	1500	\$ 1,280.90
Rate	\$ 0.04	\$ 0.10	\$ 0.42		\$ 20.00	\$ 8.00	\$ 10.45	\$ 17.90	\$ 71.50	\$ 0.555	Total
Costs	\$ 6.00	\$ 11.00	\$ -	0	\$ -	\$ 32.00	\$ 41.80	\$ 71.60	\$ 286.00	\$ 832.50	\$ 1,280.90



# FROEHLING & ROBERTSON, INC.

*Engineering Stability Since 1881*

503 Sweeten Creek Industrial Park  
Asheville, North Carolina 28803-1530  
T 828.274.0742 | F 828.274.8917  
NC License #F-0266

February 16, 2012

Mr. Charles L. Flowe, P.E.  
KCI Associates of North Carolina, PA  
4601 Six Forks Road  
Landmark Center II, Suite 220  
Raleigh, North Carolina 27609

Re: Proposal for a Geotechnical Study  
STIP Project B-5196  
Town of Montreat Municipal Bridge Replacement  
Bridge 528 – Texas Road over Flat Creek  
WBS # 45252.1.1; PO #7500013353  
Federal Aid Project #BRZ-1329(6)  
Montreat, North Carolina  
F&R Proposal No. 1270-0121REV

Dear Mr. Flowe:

Froehling and Robertson, Inc. (F&R) is pleased to present this geotechnical study proposal for the proposed new bridge to replace the existing bridge over Flat Creek at Texas Road in Montreat, North Carolina. We have prepared this proposal based on the request for proposal via email, telephone conversations, and NCDOT scoping meeting. This proposal presents a description of the project information along with our proposed scope and cost estimate.

## PROJECT INFORMATION

The project is to be the construction of a new bridge to replace the existing bridge over Flat Creek at Texas Road in Montreat, North Carolina. A bottomless culvert structure is being considered, but for scoping purposes a single-span precast structure (cored slab or box girder) will be assumed. Load ratings will be required for the bridge design. For the purpose of scoping the planning effort, three build alternatives are anticipated. The build alternatives for scoping purposes would be to replace the bridge at the existing location; to replace the bridge on an improved alignment near the existing location, and to replace the bridge at a new location downstream of the existing location.

## SCOPE OF WORK

Provided herein is a list of each geotechnical item with our anticipated scope of work. A breakdown of the estimated costs for each item is shown on the attached sheets. Note that the cost estimate assumes that the project surveyor will provide Station, offset and elevation



information for each boring and that KCI Associates will assist as necessary to make the boring locations readily accessible to our ATV drill equipment, including site access paperwork and dozer clearing, if required. Our work will be performed in accordance with North Carolina Department of Transportation (NCDOT) standards.

F&R will plot our boring locations in plan view, provide final boring logs, and soil test results. F&R will provide preliminary foundation design recommendations for the three bridge location alternatives. F&R will provide foundation design recommendations at the final bridge site using LRFD methodologies. F&R will utilize GRL WEAP to perform a pile driving analysis and provide a preliminary pile driving criteria to insure that the proposed hammer(s) will be adequate to drive the piles to the required resistances. F&R will then review PDA test results from field testing performed by others.

#### PRELIMINARY BORINGS AND FOUNDATION DESIGN RECOMMENDATIONS FOR THREE ALTERNATIVE BRIDGE LOCATIONS:

F&R will advance soil test borings at each bent location. Based on our discussion, we understand that the Bridge Structure will be a single-span bridge. We propose to advance a total of 6 preliminary test borings for the three build alternatives, one at each end bent. Due to the preliminary nature of this initial investigation, rock coring and laboratory testing has not been included in the preliminary test borings scope. We plan to perform this field work with our ATV mounted drill rig. It is anticipated that the end bents will be supported by steel H-pile foundations driven to refusal conditions. However, depending on the depth at which auger refusal is encountered, shallow spread foundations may be anticipated.

#### BORINGS AND FOUNDATION DESIGN RECOMMENDATIONS FOR FINAL BRIDGE STRUCTURE LOCATION:

F&R will advance soil test borings at each bent location. Based on our discussion, we understand that the Bridge Structure will be a single-span bridge. We will perform a total of four soil test borings, two at each end bent. We plan to perform this field work with our ATV mounted drill rig. We anticipate that the end bents will be supported by either steel H-pile foundations driven to auger refusal conditions or shallow spread foundations. Depending on the depth at which auger refusal is encountered at the end bent locations, rock coring may be required to determine the quality of the bearing rock strata.

#### TOTAL COSTS

The total estimated cost to perform the geotechnical work described above is \$26,570.00. Changes to the scope of work or geotechnical engineering services requested beyond our stated scope of work will be considered additional services and will be provided at our stated rates.

FROEHLING and ROBERTSON, INC.

**COST ESTIMATE - Geotechnical Services**

B-5196 Texas Road Over Flat Creek

F&R Proposal No. 1270-0121

Cost

GS-1	Preliminary Subsurface Investigation and Foundation Design Recommendations for Three Bridge Alternatives	\$ 13,431.40
GS-2	Final Subsurface Investigation and Foundation Design Recommendations for Bridge Site	\$ 13,138.10
	Total	\$ 26,569.50



Please contact us if you have any questions.  
Sincerely,

**FROEHLING & ROBERTSON, INC.**

A handwritten signature in black ink, appearing to read 'William J. Davidson'.

Digitally signed by William J. Davidson  
DN: cn=William J. Davidson, o=Froehling  
and Robertson, Inc., ou=70,  
email=WDavidson@FandR.com, c=US  
Date: 2012.02.16 15:35:06 -05'00'

William J. Davidson, P.E.  
Geotechnical Project Manager

Ross Deaver, P.E.  
Regional Vice President

Attachment: Cost Estimate

**COST ESTIMATE - Geotechnical Services**  
**B-5196 Texas Road Over Flat Creek**  
**Preliminary Subsurface Investigation and Foundation Design Recommendations for Three Bridge Alternatives**

F&R Proposal No. 1270-0121

ITEM	UNIT RATE	UNITS	ESTIMATED QUANTITY	COST
<b>1.0 Subsurface Exploration</b>				
1.1 Mobilization of Drill Rig & Crew	\$ 690.00	ea.	3	\$ 2,070.00
1.2 Test Borings using Hollow Stem Auger w/ SPT sampling				
a) SPT N-Values<100bpf	\$ 13.42	ft.	150	\$ 2,013.00
b) SPT N-Values>100bpf	\$ 17.08	ft.	30	\$ 512.40
<b>1.3 Rock Coring</b>				
a) Set-up Charge	\$ 125.00	boring		\$ -
b) NQ coring	\$ 34.00	ft.		\$ -
c) Set Casing (if required)	\$ 5.00	ft.		\$ -
d) Advancing Casing (if required)	\$ 30.00	ft.		\$ -
1.4 Temporary Observation Wells	\$ 1.00	ft.	0	\$ -
1.5 Obtain Undisturbed (Shelby Tube) Samples	\$ 50.00	ea.	0	\$ -
1.6 Crew Time: Difficult moving, Stand-by Site Cleanup, Haul Water, etc.	\$ 150.00	hr.	0	\$ -
<b>1.7 Boring Supervision</b>				
a) Field Professional/Engineering Staff	\$ 75.00	hr.	30	\$ 2,250.00
1.8 Per Diem	\$ 100.25	man-day	4	\$ 401.00
<b>1.9 Mileage</b>				
a) Car/small truck	\$ 0.55	mile	300	\$ 165.00
b) Service Truck	\$ 0.55	mile	600	\$ 330.00
			<b>Subtotal</b>	<b>\$ 7,741.40</b>
<b>2.0 Geotechnical Laboratory Testing</b>				
2.1 NCDOT Classification Tests with Natural Moisture Content	\$ 230.00	ea.	0	\$ -
2.2 Triaxial CU Tests	\$ 850.00	ea.	0	\$ -
2.3 Consolidation Tests	\$ 425.00	ea.	0	\$ -
2.4 Unconfined Compressive Strength	\$ 125.00	ea.	0	\$ -
			<b>Subtotal</b>	<b>\$ -</b>
<b>3.0 Professional Services</b>				
3.1 Senior Professional Engineer (P.E.)	\$ 135.00	hr.	4	\$ 540.00
3.2 Professional Engineer (P.E.)	\$ 130.00	hr.	30	\$ 3,900.00
3.3 Field Professional/Engineering Staff	\$ 75.00	hr.	10	\$ 750.00
3.4 CAD Operator / Draftsman	\$ 80.00	hr.	5	\$ 400.00
3.5 Clerical	\$ 50.00	hr.	2	\$ 100.00
			<b>Subtotal</b>	<b>\$ 5,690.00</b>
			<b>TOTAL</b>	<b>\$ 13,431.40</b>

**COST ESTIMATE - Geotechnical Services**  
**B-5196 Texas Road Over Flat Creek**

**Final Subsurface Investigation and Foundation Design Recommendations for Bridge Site**

ITEM	UNIT RATE	UNITS	F&R Proposal No. 1270-0121	
			ESTIMATED QUANTITY	COST
<b>1.0 Subsurface Exploration</b>				
1.1 Mobilization of Drill Rig & Crew	\$ 690.00	ea.	1	\$ 690.00
1.2 Test Borings using Hollow Stem Auger w/ SPT sampling				
a) SPT N-Values<100bpf	\$ 13.42	ft.	100	\$ 1,342.00
b) SPT N-Values>100bpf	\$ 17.08	ft.	20	\$ 341.60
1.3 Rock Coring				
a) Set-up Charge	\$ 125.00	boring	2	\$ 250.00
b) NQ coring	\$ 34.00	ft.	30	\$ 1,020.00
c) Set Casing (if required)	\$ 5.00	ft.	20	\$ 100.00
d) Advancing Casing (if required)	\$ 30.00	ft.		\$ -
1.4 Temporary Observation Wells	\$ 1.00	ft.	0	\$ -
1.5 Obtain Undisturbed (Shelby Tube) Samples	\$ 50.00	ea.	0	\$ -
1.6 Crew Time: Difficult moving, Stand-by Site Cleanup, Haul Water, etc.	\$ 130.00	hr.	2	\$ 260.00
1.7 Boring Supervision				
a) Field Professional/Engineering Staff	\$ 75.00	hr.	20	\$ 1,500.00
1.8 Per Diem	\$ 100.25	man-day	2	\$ 200.50
1.9 Mileage				
a) Car/small truck	\$ 0.55	mile	100	\$ 55.00
b) Service Truck	\$ 0.55	mile	300	\$ 165.00
			<b>Subtotal</b>	<b>\$ 5,924.10</b>
<b>2.0 Geotechnical Laboratory Testing</b>				
2.1 NCDOT Classification Tests with Natural Moisture Content	\$ 131.00	ea.	4	\$ 524.00
2.2 Triaxial CU Tests	\$ 850.00	ea.	0	\$ -
2.3 Consolidation Tests	\$ 425.00	ea.	0	\$ -
2.4 Unconfined Compressive Strength	\$ 125.00	ea.	2	\$ 250.00
			<b>Subtotal</b>	<b>\$ 774.00</b>
<b>3.0 Professional Services</b>				
3.1 Senior Professional Engineer (P.E.)	\$ 135.00	hr.	4	\$ 540.00
3.2 Professional Engineer (P.E.)	\$ 130.00	hr.	30	\$ 3,900.00
3.3 Field Professional/Engineering Staff	\$ 75.00	hr.	20	\$ 1,500.00
3.4 CAD Operator / Draftsman	\$ 80.00	hr.	5	\$ 400.00
3.5 Clerical	\$ 50.00	hr.	2	\$ 100.00
			<b>Subtotal</b>	<b>\$ 6,440.00</b>
			<b>TOTAL</b>	<b>\$ 13,138.10</b>



April 24, 2012

Mr. Charles L. Flowe, PE  
KCI Associates of NC, P.A..  
4601 Six Forks Road Landmark Center II  
Suite 220  
Raleigh, NC 27609

Re: Hydraulic Design estimate for B-5196, Buncombe County, Texas Road

Dear Charlie,

Enclosed are the Preliminary and Final Hydraulic Design Estimates for the above referenced project. Our scope of work as we understand based on conversation with Marshall Clawson on 4/20/12 it is to provide:

**Preliminary Design**

- Determine feasible structure types for both bottomless culvert and bridge. This will require preliminary field survey but no hydraulic modeling. Based on this preliminary design, the possibility for obtaining a No Impact Certification or compliance with FEMA regulations will not be determined for either the bridge or culvert.

**Final Design**

- Field Survey
- BSR
- Drainage Design
- Permit Drawings
- Combined Field Inspection
- State Stormwater Permit
- Stormwater Management Plan
- Drainage Summary
- CADD of drainage design
- CLOMR

If you have questions or need further information, please contact me.

Sincerely,

W. Henry Wells, Jr., PE

## SUNGATE DESIGN GROUP HYDRAULICS DESIGN ESTIMATE

DATE: 12 - Revised 7/16/12

PRIME: KCI

PROJECT: COUNTY: Buncombe TIP NO.: B-5196

LENGTH:  
     L-LINE:           Km           1.6    Mi  
     Y-LINE(S):       Km           0.5    Mi

PROJECT DESCRIPTION: Final Design - Texas Road over Flat Creek

### MANDAYS BY CLASSIFICATION

TASKS	Project Manager	Project Engineer	Sr. Design Engineer	Design Engineer	Sr. Tech	Eng. Tech	TOTAL
PRE-DESIGN REVIEW & DATA COLLECTION							
FIELD RECONNAISSANCE & SUPPLEMENTARY SURVEYS				2		2	4
HYDROLOGIC & HYDRAULIC DESIGN							
1. BRIDGES	1	2		10	2	2	17
2. BOX CULVERTS & LARGE PIPES							
3. PIPES, STORM DRAINAGE & DITCHES				2		1	
4. EROSION CONTROL ('A' BASINS)							
PREPARE PERMIT DRAWINGS				1		1	2
DRAINAGE SUMMARY							
FLOODWAY MODIFICATION (0)	1	1		7	3	3	15
PLAN FIELD INSPECTION		1					1
WETLAND DELINEATION							
PROJECT MEETINGS							
BRIDGE SPREAD ANALYSIS							
BRIDGE SPREAD DESIGN							
STORMWATER MANAGEMENT PLAN				1			1
CADD						1	1
REVIEW & REWORK				0.5		0.5	1
<b>TOTAL MANDAYS:</b>	<b>2</b>	<b>4</b>		<b>23.5</b>	<b>5</b>	<b>10.5</b>	<b>45</b>
<b>TOTAL MANHOURS:</b>	<b>16</b>	<b>32</b>		<b>188</b>	<b>40</b>	<b>84</b>	<b>360</b>

	<u>Classification</u>	<u>Hours</u>	<u>Rate</u>	<u>Cost</u>
TES III	Project Manager	16	\$38.85	\$621.60
TE III	Project Engineer	32	\$37.07	\$1,186.24
TE II	Sr. Design Engineer		\$37.07	
TE I	Design Engineer	188	\$37.07	\$6,969.16
TT IV	Senior Tech	40	\$25.10	\$1,004.00
TT II	Eng. Tech	84	\$25.10	\$2,108.40

**TOTAL  
MANHOURS**  
360.0

**TOTAL DIRECT  
SALARY**  
\$11,889.40

**INDIRECT SALARY COSTS**

Total Dir. Salary Costs	\$11,889.40	
Overhead (%)	143.46	\$17,056.53
Fee (%)	9	\$2,605.13
Cost of Capt. (%)	0.29	\$34.48
<b>Total Indirect Salary:</b>		<b>\$19,696.15</b>

**TOTAL DIR. and  
INDIR. SALARY COSTS**  
**\$31,585.55**

**TRAVEL COSTS**

Carryall @ 0.575      600      Miles      =

**TRAVEL COSTS**  
**\$345.00**

**PER DIEM EXPENSES**

\$107.85 / Day x      2      Days =

**TOTAL PER DIEM**  
**\$215.70**

**HEC2 DATA**

**HEC2 DATA**

**PROJECT ESTIMATE TOTAL: \$32,146.25**

ESTIMATE BY: 

NOTE: