# CENTRAL FLORIDA EXPRESSWAY AUTHORITY

MEMORANDUM

TO: CFX Board Members

FROM: Robert Johnson
Manager of Procurement

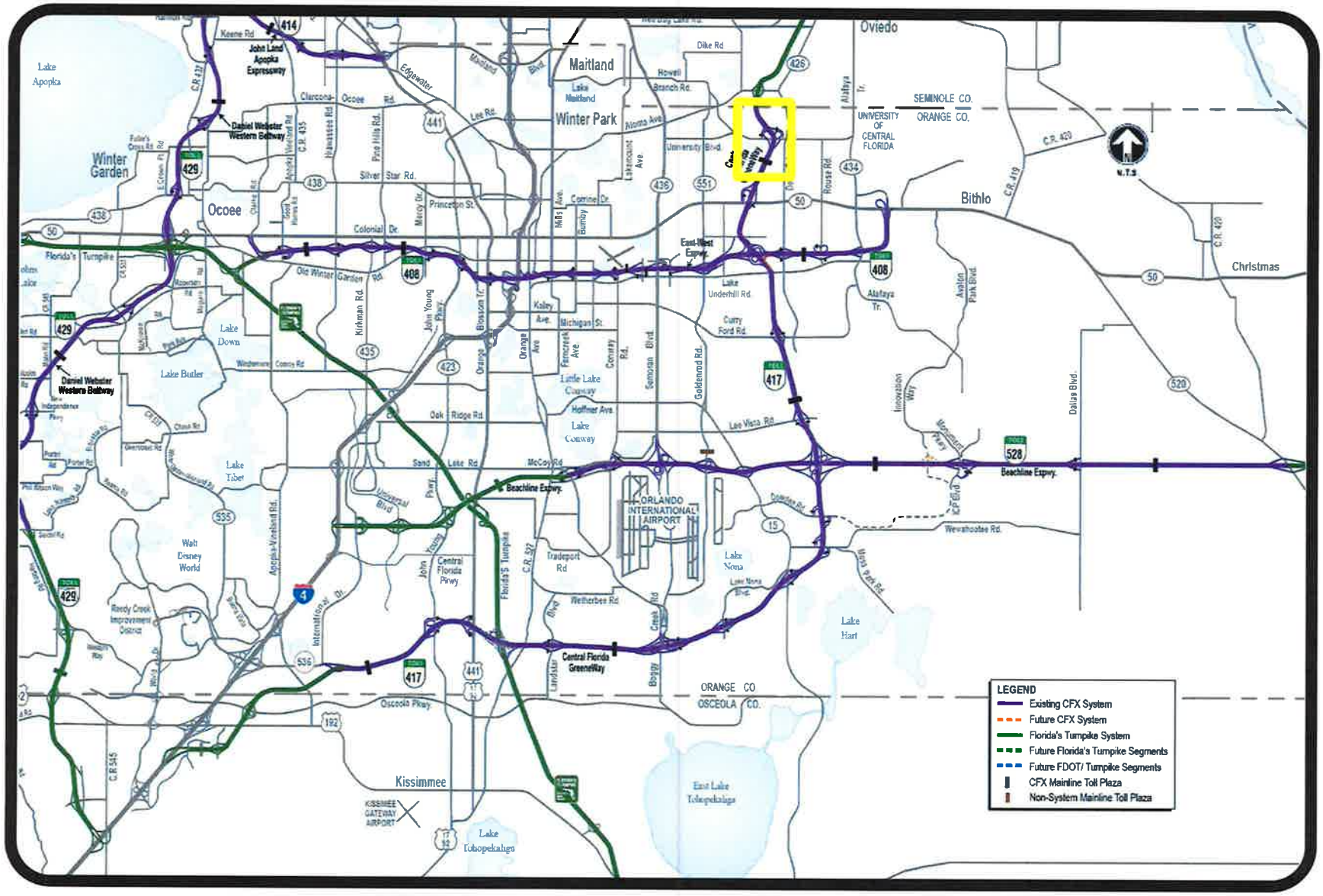
DATE: June 8, 2016

SUBJECT: Authorization to Award of Contract to Dewberry Engineers, Inc.
Professional Engineering Consultant Services for
S.R. 417 Widening from Econlockhatchee Trail to Seminole County Line
Project 417-134, Contract No. 001153

---

The Board approved on March 10, 2016, the final ranking of the firms for the referenced project and authorized staff to enter into negotiations with the highest ranked firm, Dewberry Engineers, Inc. Those negotiations have been completed and Board award of the contract to Dewberry Engineers, Inc. is requested in the not-to-exceed amount of $2,575,000.00.

Reviewed by: _____ for
Glenn Pressimone, PE
Director of Engineering




Project Location Map for
S.R. 417 Widening from Econlockhatchee Trail to Seminole County Line (417-134)

Contract No. 001153

**CENTRAL FLORIDA EXPRESSWAY AUTHORITY**
**AGREEMENT FOR PROFESSIONAL SERVICES**

THIS AGREEMENT, made and entered into this 16th day of June, 2016, by and between the CENTRAL FLORIDA EXPRESSWAY AUTHORITY, a corporate body and agency of the State of Florida, created by Chapter 63-573 Laws of Florida, 1963, (Chapter 348, Part V, Florida Statutes) hereinafter called "CFX" and DEWBERRY ENGINEERS, INC., hereinafter called "CONSULTANT", carrying on professional practice in engineering with offices located at 800 North Magnolia Avenue, Suite 1000, Orlando, FL. 32803.

That CFX did determine that the CONSULTANT is fully qualified to render the services contracted.

WITNESSETH:

1.0 CFX does hereby retain the CONSULTANT to furnish certain services in connection with the design of the S.R. 417 Widening from Econlockhatchee Trail to Seminole County Line identified as Contract No. 001153.

2.0 The CONSULTANT and CFX mutually agree to furnish, each to the other, the respective services, information and items as described in Exhibit "A", Scope of Services, attached hereto and made a part hereof.

Before any additions or deletions to the work described in Exhibit "A", and before undertaking any changes or revisions to such work, the parties shall negotiate any necessary cost changes and shall enter into a Supplemental Agreement covering such modifications and the compensation to be paid therefore.

Reference herein to this Agreement shall be considered to include any Supplemental Agreement thereto.

Reference herein to Director shall mean CFX's Executive Director.

Reference herein to the Project Manager shall mean CFX's Director of Engineering or his authorized designee. The Project Manager shall provide the management and technical direction for this Agreement on behalf of CFX. All technical and administrative provisions of this Agreement shall be managed by the Project Manager and the CONSULTANT shall comply with all of the directives of the Project Manager that are within the purview of this Agreement. Decisions concerning Agreement amendments and adjustments, such as time extensions and supplemental agreements shall be made by the Project Manager.

This Agreement is considered a non-exclusive Agreement between the parties.

3.0 TERM OF AGREEMENT AND RENEWALS

Unless otherwise provided herein or by Supplemental Agreement, the provisions of this Agreement will remain in full force and effect for a five-year term from the date of the Notice to Proceed for the required project services as detailed in Exhibit "A". An extension of the five-year term may be approved by CFX at its sole discretion.

The CONSULTANT agrees to commence the scheduled project services to be rendered within ten (10) calendar days from the date specified in the written Notice to Proceed from the Project Manager, which Notice to Proceed will become part of this Agreement. The CONSULTANT shall complete scheduled project services within the timeframe(s) specified in Exhibit "A", or as may be modified by subsequent Supplemental Agreement.

4.0 PROJECT SCHEDULE

The CONSULTANT agrees to provide Project Schedule progress reports in a format acceptable to CFX and at intervals established by CFX. CFX will be entitled at all times to be advised, at its request, as to the status of work being done by the CONSULTANT and of the details thereof. Coordination shall be maintained by the CONSULTANT with representatives of CFX, or of other agencies interested in the project on behalf of CFX. Either party to the Agreement may request and be granted a conference.

In the event there are delays on the part of CFX as to the approval of any of the materials submitted by the CONSULTANT or if there are delays occasioned by circumstances beyond the control of the CONSULTANT, which delay the scheduled project completion date, CFX may grant to the CONSULTANT by "Letter of Time Extension" an extension of the scheduled project completion date equal to the aforementioned delays. The letter will be for time only and will not include any additional compensation.

It shall be the responsibility of the CONSULTANT to ensure at all times that sufficient time remains within the project schedule within which to complete the services on the project. In the event there have been delays which would affect the scheduled project completion date, the CONSULTANT shall submit a written request to CFX which identifies the reason(s) for the delay, the amount of time related to each reason and specific indication as to whether or not the delays were concurrent with one another. CFX will review the request and make a determination as to granting all or part of the requested extension.

In the event the scheduled project completion date is reached and the CONSULTANT has not requested, or if CFX has denied, an extension of the completion date, partial progress payments will be stopped when the scheduled project completion date is met. No further payment for

the project will be made until a time extension is granted or all work has been completed and accepted by CFX.

5.0 PROFESSIONAL STAFF

The CONSULTANT shall maintain an adequate and competent professional staff to enable the CONSULTANT to timely perform under this Agreement. The CONSULTANT shall continue to be authorized to do business within the State of Florida. In the performance of these professional services, the CONSULTANT shall use that degree of care and skill ordinarily exercised by other similar professionals in the field under similar conditions in similar localities. The CONSULTANT shall use due care in performing in a design capacity and shall have due regard for acceptable standards of design principles. The CONSULTANT may associate with it such specialists, for the purpose of its services hereunder, without additional cost to CFX, other than those costs negotiated within the limits and terms of this Agreement. Should the CONSULTANT desire to utilize specialists, the CONSULTANT shall be fully responsible for satisfactory completion of all subcontracted work. The CONSULTANT, however, shall not sublet, assign or transfer any work under this Agreement to other than the associate consultants listed below without the written consent of CFX. It is understood and agreed that CFX will not, except for such services so designated herein, permit or authorize the CONSULTANT to perform less than the total contract work with other than its own organization.

Comprehensive Engineering Services, Inc. (Class 1)
The Balmoral Group, LLC (Class 1)
Tierra, Inc. (Class 2)
Aerial Cartographics of America, Inc. (Class 2)

CONSULTANT shall not further sublet, sell, transfer, assign, delegate, subcontract, or otherwise dispose of this Contract or any portion thereof, or of the CONSULTANT's right, title, or interest therein without the written consent of CFX, which may be withheld in CFX'S sole and absolute discretion.

Any attempt by CONSULTANT to dispose of this Contract as described above, in part or in whole, without CFX'S written consent shall be null and void and shall, at CFX's option, constitute a default under the Contract.

If, during the term of the Contract, CONSULTANT desires to subcontract any portion(s) of the work to a subconsultant that was not disclosed by the CONSULTANT to CFX at the time that the Contract was originally awarded, and such subcontract would, standing alone or aggregated with prior subcontracts awarded to the proposed subconsultant, equal or exceed twenty five thousand dollars ($25,000.00), the CONSULTANT shall first submit a request to CFX's Director of Procurement for authorization to enter into such subcontract. Except in the case of an emergency, as determined by the Executive Director or his/her designee, no such subcontract shall be executed by the CONSULTANT until it has been approved by CFX Board. In the event of a designated emergency, the CONSULTANT may enter into such a subcontract with the prior written approval of the Executive Director or his/her designee, but such subcontract shall contain a provision that provides that it shall be automatically terminated if not approved by CFX Board at its next regularly scheduled meeting.

6.0 SERVICES TO BE PROVIDED

The work covered by this Agreement includes the preparation of construction plans for one construction project. If the work is divided into more than one construction project by CFX's Project Manager, then the CONSULTANT shall supply construction plans for each project. A Supplemental Agreement will be required for the additional work.

All construction plans, documents, reports, studies and other data prepared by the CONSULTANT shall bear the endorsement of a person in the full employ of the CONSULTANT and duly registered by the State of Florida in the appropriate professional category.

After CFX's acceptance of construction plans and documents for the project, the original set of CONSULTANT's drawings, tracings, plans, maps and CADD files shall be provided to CFX, along with one record set of the final plans. The CONSULTANT shall signify, by affixing an endorsement (seal/signature, as appropriate) on every sheet of the record set, that the work shown on the endorsed sheets was produced by the CONSULTANT. With the tracings and the record set of prints, the CONSULTANT shall submit a final set of design computations. The computations shall be bound in an 8-1/2 x 11" format and shall be endorsed (seal/signature, as appropriate) by the CONSULTANT. Refer to Exhibit "A" for the computation data required for this Agreement.

The CONSULTANT shall submit a final set of reports and studies which shall be endorsed (seal/signature) by the CONSULTANT.

The CONSULTANT shall not be liable for use by CFX of said plans, documents, reports, studies or other data for any purpose other than intended by the terms of this Agreement.

7.0 COMPENSATION

CFX agrees to pay the CONSULTANT compensation as detailed in Exhibit "B", Method of Compensation, attached hereto and made a part hereof, in the amount of $2,575,000.00. Bills for fees or other compensation for services or expenses shall be submitted to CFX in detail sufficient for a proper pre-audit and post audit thereof.

The CONSULTANT may be liable for CFX costs resulting from errors or deficiencies in designs furnished under this Agreement. CFX may enforce such liability and collect the amount due if the recoverable cost will exceed the administrative cost involved or is otherwise in CFX's best interest.

Records of costs incurred by the CONSULTANT under terms of this Agreement shall be maintained and made available upon request to CFX at all times during the period of this

Agreement and for three years after final payment is made. Copies of these documents and records shall be furnished to CFX upon request. The CONSULTANT agrees to incorporate the provisions of this paragraph in any subcontract into which it might enter with reference to the work performed.

Records of costs incurred includes the CONSULTANT's general accounting records and the project records, together with supporting documents and records, of the CONSULTANT and all subconsultants performing work on the project, and all other records of the CONSULTANT and subconsultants considered necessary by CFX for a proper audit of project costs.

The general cost principles and procedures for the negotiation and administration, and the determination or allowance of costs under this Agreement shall be as set forth in the Code of Federal Regulations, Titles 23, 48, 49, and other pertinent Federal and State Regulations, as applicable, with the understanding that there is no conflict between State and Federal regulations in that the more restrictive of the applicable regulations will govern. Whenever travel costs are included in Exhibit "B", the provisions of Section 112.061, Florida Statutes, shall govern as to reimbursable costs.

8.0 DOCUMENT OWNERSHIP AND RECORDS

All plans, documents, reports, studies, and/or other data prepared or obtained under this Agreement shall be considered instruments made for services and shall become the property of CFX without restriction or limitation on their use on this project; and shall be made available, upon request, to CFX at any time. CFX will have the right to visit the site for inspection of the work and the drawings of the CONSULTANT at any time. Unless changed by written agreement of the parties, said site shall be 800 North Magnolia Avenue, Suite 1000, Orlando, FL. 32803.

The CONSULTANT shall allow public access to all documents, papers, letters, or other material as approved and authorized by CFX and subject to the provisions of Chapter 119,

Florida Statutes, and made or received by the CONSULTANT in conjunction with this Agreement. Failure by the CONSULTANT to grant such public access shall be grounds for immediate unilateral cancellation of this Agreement by CFX.

9.0 COMPLIANCE WITH LAWS

The CONSULTANT shall comply with all federal, state and local laws and ordinances applicable to the work or payment for work thereof, and shall not discriminate on the grounds of race, color, religion, sex, or national origin in the performance of work under this contract.

The CONSULTANT shall keep fully informed regarding and shall fully and timely comply with all current laws and future laws that may affect those engaged or employed in the performance of this Agreement.

10.0 WAGE RATES AND TRUTH-IN-NEGOTIATIONS CERTIFICATE

The CONSULTANT hereby certifies, covenants and warrants that wage rates and other factual unit costs as shown in attached Exhibit "C", Details of Costs and Fees, supporting the compensation are accurate, complete and current as of the date of this Agreement. It is further agreed that said price shall be adjusted to exclude any significant sums where CFX shall determine the price was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. All such adjustments shall be made within one year following the date of final billing or acceptance of the work by CFX, whichever is later.

11.0 TERMINATION

CFX may terminate this Agreement in whole or in part at any time the interest of CFX requires such termination.

If CFX determines that the performance of the CONSULTANT is not satisfactory, CFX shall have the option of (a) immediately terminating the Agreement or (b) notifying the

CONSULTANT of the deficiency with a requirement that the deficiency be corrected within a specified time, otherwise the Agreement will be terminated at the end of such time.

If CFX requires termination of the Agreement for reasons other than unsatisfactory performance of the CONSULTANT, CFX shall notify the CONSULTANT in writing of such termination, not less than seven (7) calendar days as to the effective date of termination or specify the stage of work at which the Agreement is to be terminated.

If CFX abandons the work or subtracts from the work, suspends, or terminates the Agreement as presently outlined, the CONSULTANT shall be compensated on the basis of the percentage completion ratio of the fixed fee shown in attached Exhibit "B", plus actual costs as determined in Exhibit "B". In determining the percentage of work completed, CFX shall consider the work performed by the CONSULTANT prior to abandonment or termination to the total amount of work contemplated by this Agreement. The ownership of all engineering documents completed or partially completed at the time of such termination or abandonment, shall be retained by CFX.

CFX reserves the right to cancel and terminate this Agreement in the event the CONSULTANT or any employee, servant, or agent of the CONSULTANT is indicted or has a direct information issued against him for any crime arising out of or in conjunction with any work being performed by the CONSULTANT for or on behalf of CFX, without penalty. It is understood and agreed that in the event of such termination, all tracings, plans, specifications, maps, and data prepared or obtained under this Agreement shall immediately be turned over to CFX. The CONSULTANT shall be compensated for its services rendered up to the time of any such termination in accordance with Paragraph 11.0 hereof. CFX also reserves the right to terminate or cancel this Agreement in the event the CONSULTANT shall be placed in either voluntary or involuntary bankruptcy or an assignment be made for the benefit of creditors. CFX further reserves the right to

suspend the qualifications of the CONSULTANT to do business with CFX upon any such indictment or direct information. In the event that any such person against whom any such indictment or direct information is brought shall have such indictment or direct information dismissed or be found not guilty, such suspension on account thereof may be lifted by CFX's Project Manager.

12.0 ADJUSTMENTS

All services shall be performed by the CONSULTANT to the reasonable satisfaction of the Project Manager who shall decide all questions, difficulties and dispute of any nature whatsoever that may arise under or by reason of this Agreement, the prosecution and fulfillment of the services hereunder and the character, quality, amount and value thereof. Adjustments of compensation and term of the Agreement, because of any major changes in the work that may become necessary or desirable as the work progresses, shall be left to the absolute discretion of the Director and Supplemental Agreement(s) of such a nature as required may be entered into by the parties in accordance herewith. Disputes between the Project Manager and the CONSULTANT that cannot be resolved shall be referred to the Director whose decision shall be final.

In the event that the CONSULTANT and CFX are not able to reach an agreement as to the amount of compensation to be paid to the CONSULTANT for supplemental work desired by CFX, the CONSULTANT shall be obligated to proceed with the supplemental work in a timely manner for the amount determined by CFX to be reasonable. In such event, the CONSULTANT will have the right to file a claim with CFX for such additional amounts as the CONSULTANT deems reasonable; however, in no event will the filing of the claim or the resolution or litigation thereof, through administrative procedures or the courts, relieve the CONSULTANT from the obligation to timely perform the supplemental work.

13.0 CONTRACT LANGUAGE AND INTERPRETATION

All words used herein in the singular form shall extend to and include the plural. All words used in the plural form shall extend to and include the singular. All words used in any gender shall extend to and include all genders.

References to statutes or regulations shall include all statutory or regulatory provisions consolidating, amending, or replacing the statute or regulation referred to. Words not otherwise defined that have well known technical or industry meanings, are used in accordance with such recognized meanings. References to persons include their respective functions and capacities.

If the CONSULTANT discovers any material discrepancy, deficiency, ambiguity, error, or omission in this Agreement, or is otherwise in doubt as to the meaning of any provision of the Agreement, the CONSULTANT shall immediately notify CFX and request clarification of CFX's interpretation of this Agreement.

The Agreement shall not be more strictly construed against either party hereto by reason of the fact that one party may have drafted or prepared any or all of the terms and provisions hereof.

14.0 HOLD HARMLESS AND INDEMNIFICATION

The CONSULTANT shall indemnify and hold harmless CFX and all of its officers and employees from any liabilities, losses, damages, costs, including, but not limited to reasonable attorneys' fee, arising out of any negligent act, error, omission by the CONSULTANT, its agents, employees, or subcontractors during the performance of the Agreement, except that neither the CONSULTANT, its agents, employees nor any of its subconsultants will be liable under this paragraph for any claim, loss, damage, cost, charge or expense arising solely out of any act, error, omission or negligent act by CFX or any of its officers, agents or employees during the performance of the Agreement.

When CFX receives a notice of claim for damages that may have been caused by the CONSULTANT in the performance of services required by the CONSULTANT under this Agreement, CFX will immediately forward the notice of claim to the CONSULTANT. The CONSULTANT and CFX will evaluate the notice of claim and report their findings to each other within fourteen working days.

In the event a lawsuit is filed against CFX alleging negligence or wrongdoing by the CONSULTANT, CFX and the CONSULTANT will jointly discuss options in defending the lawsuit. After reviewing the lawsuit, CFX will determine whether to request the participation of the CONSULTANT in the defense of the lawsuit or to request that the CONSULTANT defend CFX in such lawsuit as described in this section. CFX's failure to notify the CONSULTANT of a notice of claim will not release the CONSULTANT from any of the requirements of this section upon subsequent notification by CFX to the CONSULTANT of the notice of claim or filing of a lawsuit. CFX and the CONSULTANT will pay their own cost for the evaluation, settlement negotiations and trial, if any. However, if only one party participates in the defense of the claim at trial, that party is responsible for all of its costs, but if the verdict determines that there is joint responsibility, the costs of defense and liability for damages will be shared in the same percentage as that judicially established. Nothing herein shall be construed to waive the sovereign immunity damages limitations afforded CFX pursuant to F.S. 768.28.

The parties agree that 1% of the total compensation to the CONSULTANT for performance of this Agreement is the specific consideration from CFX to the CONSULTANT for the CONSULTANT's indemnity agreement.

The CONSULTANT shall pay all royalties and assume all costs arising from the use of any invention, design, process materials, equipment, product or device which is the subject of

patent rights or copyrights. The CONSULTANT shall, at its expense, hold harmless and defend CFX against any claim, suit or proceeding brought against CFX which is based upon a claim, whether rightful or otherwise, that the goods or services, or any part thereof, furnished under this Agreement, constitute an infringement of any patent or copyright of the United States. The CONSULTANT shall pay all damages and costs awarded against CFX.

15.0 THIRD PARTY BENEFICIARY

The CONSULTANT warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT to solicit or secure this Agreement, and that the CONSULTANT has not paid or agreed to pay any person, company, corporation, individual or firm any fee, commission, percentage, gift or any other consideration, contingent upon or resulting from the award or making of this Agreement. It is understood and agreed that the term "fee" shall also include brokerage fee, however denoted. For the breach or violation of this paragraph, CFX shall have the right to terminate this Agreement without liability, and, at its discretion, to deduct from the contract price, or otherwise recover, the full amount of such fee, commission percentage, gift or consideration.

16.0 INSURANCE

The CONSULTANT, at its own expense, shall keep in force and at all times maintain during the term of this Agreement all insurance of the types and to the limits specified herein.

The CONSULTANT shall require and ensure that each of its subconsultants providing services hereunder procures and maintains, until the completion of the services, insurance of the requirements, types and to the limits specified herein. Upon request from CFX, the CONSULTANT shall furnish copies of certificates of insurance evidencing coverage of each subconsultant.

The CONSULTANT shall require all insurance policies in any way related to the work

and secured and maintained by the CONSULTANT to include clauses stating each underwriter shall waive all rights of recovery, under subrogation or otherwise, against CFX. The CONSULTANT shall require of subconsultants, by appropriate written agreements, similar waivers each in favor of all parties enumerated in this section. When required by the insurer, or should a policy condition not permit an endorsement, the CONSULTANT agrees to notify the insurer and request that the policy(ies) be endorsed with a Waiver of Transfer of Rights of Recovery Against Others, or an equivalent endorsement. This Waiver of Subrogation requirement shall not apply to any policy, which includes a condition that specifically prohibits such an endorsement or voids coverage should the CONSULTANT enter into such an agreement on a pre-loss basis. At the CONSULTANT's expense, all limits must be maintained.

16.1 Commercial General Liability coverage shall be on an occurrence form policy for all operations including, but not limited to, Contractual, Products and Completed Operations, and Personal Injury. The limits shall be not less than One Million Dollars ($1,000,000) per occurrence, Combined Single Limits (CSL) or its equivalent. The general aggregate limit shall apply separately to this Agreement (with the ISO CG 25 01 or insurer's equivalent endorsement provided to CFX) or the general aggregate limit shall be twice the required occurrence limit. CFX shall be listed as an additional insured. The CONSULTANT further agrees coverage shall not contain any endorsement(s) excluding or limiting Product/Completed Operations, Independent Consultants, Broad Form Property Damage, X-C-U Coverage, Contractual Liability, or Severability of Interests. The Additional Insured Endorsement included on all such insurance policies shall state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the additional insureds have other insurance which is applicable to the loss, such other insurance shall be excess to any policy of insurance required herein. The amount of the

insurer's liability shall not be reduced by the existence of such other insurance.

16.2 Business Automobile Liability coverage shall be on an occurrence form policy for all owned, non-owned and hired vehicles issued on ISO form CA 00 01 or its equivalent. The limits shall be not less than One Million Dollars ($1,000,000) per occurrence, Combined Single Limits (CSL) or its equivalent. In the event the CONSULTANT does not own automobiles the CONSULTANT shall maintain coverage for hired and non-owned auto liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Each of the above insurance policies shall include the following provisions: (1) The standard severability of interest clause in the policy and when applicable the cross liability insurance coverage provision which specifies that the inclusion of more than one insured shall not operate to impair the rights of one insured against another insured, and the coverages afforded shall apply as though separate policies had been issued to each insured; (2) The stated limits of liability coverage for Commercial/Comprehensive General Liability, and Business Automobile Liability, assumes that the standard "supplementary payments" clause will pay in addition to the applicable limits of liability and that these supplementary payments are not included as part of the insurance policies limits of liability.

16.3 Workers' Compensation and Employer's Liability Insurance shall be provided as required by law or regulation (statutory requirements). Employer's Liability insurance shall be provided in amounts not less than $100,000 per accident for bodily injury by accident, $100,000 per employee for bodily injury by disease, and $500,000 policy limit by disease. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of CFX for all work performed by the CONSULTANT, its employees, agents and subconsultants.

16.4 Professional Liability Coverage shall have limits of not less than One Million Dollars ($1,000,000) Combined Single Limit (CSL) or its equivalent, protecting the selected firm or individual against claims of CFX for negligence, errors, mistakes or omissions in the performance of services to be performed and furnished by the CONSULTANT.

The CONSULTANT shall provide CFX with Certificate(s) of Insurance with required endorsements on all the policies of insurance and renewals thereof in a form(s) acceptable to CFX. CFX shall be notified in writing of any reduction, cancellation or substantial change of policy or policies at least thirty (30) days prior to the effective date of said action.

All insurance policies shall be issued by responsible companies who are acceptable to CFX and licensed to do business under the laws of the State of Florida. Each Insurance company shall minimally have an A.M. Best rating of A-:VII. If requested by CFX, CFX shall have the right to examine copies and relevant provisions of the insurance policies required by this Agreement, subject to the appropriate confidentiality provisions to safeguard the proprietary nature of CONSULTANT manuscript policies.

Any deductible or self-insured retention must be declared to and approved by CFX. At the option of CFX, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as requests CFX, or the CONSULTANT shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

All such insurance required by the CONSULTANT shall be primary to, and not contribute with, any insurance or self-insurance maintained by CFX.

Compliance with these insurance requirements shall not relieve or limit the CONSULTANT's liabilities and obligations under this Agreement. Failure of CFX to demand such certificate or evidence of full compliance with these insurance requirements or failure of CFX to

identify a deficiency from evidence provided will not be construed as a waiver of the CONSULTANT's obligation to maintain such insurance.

The acceptance of delivery by CFX of any certificate of insurance evidencing the required coverage and limits does not constitute approval or agreement by CFX that the insurance requirements have been met or the insurance policies shown in the certificates of insurance are in compliance with the requirements.

17.0 COMMUNICATIONS, PUBLIC RELATIONS, AND USE OF LOGOS

The CONSULTANT agrees that it shall make no statements, press releases or publicity releases concerning this Agreement or its subject matter or otherwise disclose or permit to be disclosed any of the data or other information obtained or furnished in compliance with this Agreement, or any particulars thereof, during the period of the Agreement, without first notifying CFX and securing its consent in writing. The CONSULTANT also agrees that it shall not publish, copyright or patent any of the data furnished in compliance with this Agreement, it being understood that, under Paragraph 8.00 hereof, such data or information is the property of CFX.

Regarding the use of logos, printed documents and presentations produced for CFX shall not contain the name of logo of the CONSULTANT unless approved by CFX's Director of Public Affairs and Communication or his/her designee. If a copy of the CFX logo is to be used in a document or presentation, the logo shall not be altered in any way. The width and height of the logo shall be of equal proportions. The proper presentation of the CFX logo is of utmost importance to CFX. Any questions regarding the use of the CFX logo shall be directed to the Director of Public Affairs and Communication or his/her designee.

18.0 STANDARD OF CONDUCT

The CONSULTANT covenants and agrees that it and its employees shall be bound by the standards of conduct provided in Florida Statutes 112.313 as it relates to work performed under this Agreement, which standards will by reference be made a part of this Agreement as though set forth in full. The CONSULTANT agrees to incorporate the provisions of this paragraph in any subcontract into which it might enter with reference to the work performed.

The CONSULTANT acknowledges that it has read CFX's Code of Ethics and to the extent applicable to the CONSULTANT agrees to abide with such policy.

19.0 DOCUMENTED ALIENS

The CONSULTANT warrants that all persons performing work for CFX under this Agreement, regardless of the nature or duration of such work, shall be United States citizens or properly authorized and documented aliens. The CONSULTANT shall comply with all federal, state and local laws and regulations pertaining to the employment of unauthorized or undocumented aliens at all times during the performance of this Agreement and shall indemnify and hold CFX harmless for any violations of the same. Furthermore, if CFX determines that CONSULTANT has knowingly employed any unauthorized alien in the performance of this Agreement, CFX may immediately and unilaterally terminate this Agreement for cause.

20.0 CONFLICT OF INTEREST

The CONSULTANT shall not knowingly enter into any other contract with CFX during the term of this Agreement which would create or involve a conflict of interest with the services provided herein. Likewise, subconsultants shall not knowingly enter into any other contract with CFX during the term of this Agreement which would create or involve a conflict of interest with the service provided herein and as described below. Questions regarding potential conflicts of interest shall be addressed to the Director for resolution. During the term of this Agreement, the

CONSULTANT is not eligible to pursue any advertised construction engineering and inspection projects of CFX as either a prime or subconsultant where the CONSULTANT participated in the oversight of the projects or for any project which the CONSULTANT prepared plans and/or specifications. Subconsultants are also ineligible to pursue construction engineering and inspection projects where they participated in the oversight of the projects or for any project which the subconsultant was involved in the preparation of plans and/or specifications.

21.0 SEVERABILITY

The invalidity or non-enforceability of any portion or provision of this Agreement shall not affect the validity or enforceability of any other portion or provision. Any invalid or unenforceable portion or provision shall be deemed severed from this Agreement and the balance hereof shall be construed and enforced as if this Agreement did not contain such invalid or unenforceable portion or provision.

22.0 GOVERNING LAW AND VENUE

This Agreement is accepted and entered into in Florida and any question regarding its validity, construction, enforcement, or performance shall be governed by Florida law. The parties consent to the exclusive jurisdiction of the courts located in Orange County, Florida.

23.00 ATTACHMENTS

Exhibit "A", Scope of Services

Exhibit "B", Method of Compensation

Exhibit "C", Details of Cost and Fees

Exhibit "D", Project Organization Chart

Exhibit "E", Project Location Map

Exhibit "F", Schedule

IN WITNESS WHEREOF, the CONSULTANT and CFX have caused this instrument to be signed by their respective duly authorized officials, as of the day and year first above written. This Contract was awarded by CFX's Board of Directors at its meeting on June 16th, 2016.

**DEWBERRY ENGINEERS, INC.**

BY:_____
Authorized Signature

Print Name:_____

Title:_____

ATTEST:_____(Seal)
Secretary or Notary

**CENTRAL FLORIDA EXPRESSWAY AUTHORITY**

BY:_____
Director of Procurement

Print Name:_____

Approved as to form and execution, only.

General Counsel for CFX

_____

# EXHIBIT A

# SCOPE OF SERVICES

**Exhibit A**

# CENTRAL FLORIDA EXPRESSWAY AUTHORITY

## SCOPE OF SERVICES

## FOR

## S.R. 417 WIDENING
## ECONLOCKHATCHEE TRAIL TO THE
## ORANGE / SEMINOLE COUNTY LINE

**PROJECT NO. 417-134**

**IN ORANGE COUNTY, FLORIDA**

**JUNE, 2016**

Exhibit A

SCOPE OF SERVICES

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

TABLE OF CONTENTS (cont.)

## 1.0 GENERAL

### 1.01 Location

A. See EXHIBIT "E", Project Location Map.

### 1.02 Description

The services to be provided for the project shall include final design and preparation of construction drawings/specifications to provide six (6) general use lanes on S.R. 417 between Econlockhatchee Trail and the Orange/Seminole County line. Specifically, the project will include outside widening of S.R. 417 between Econlockhatchee Trail and the University Mainline Plaza, outside/median widening of S.R. 417 from the University Mainline Plaza to the Orange/Seminole County line, conversion of the S.R. 417 northbound and southbound inside cash lanes to express lanes and widening of the southbound S.R. 417 Bridge over University Boulevard. The project will also include the addition of one (1) northbound auxiliary lane and one (1) southbound auxiliary lane between the S.R. 50 / Colonial Drive ramps and the University Mainline Plaza and the addition of one (1) northbound auxiliary lane between the University Boulevard ramp and the S.R. 417 Aloma Avenue ramps.

Additional elements include surveying, drainage evaluation and design, permitting, lighting, signing and pavement markings, maintenance of traffic, traffic operations modeling, utility design and coordination, geotechnical analysis, walls, scheduling and project control, progress reporting and any other incidental items necessary for the proposed design of the project.

### 1.03 Purpose

A. The purpose of this Exhibit is to describe the scope of work and responsibilities required in connection with Final Engineering and Final Construction Drawings and Documents for the proposed S.R. 417 Widening from Econlockhatchee Trail to the Orange/Seminole County line.

B. The Consultant shall perform those engineering services required for final roadway plans, final bridge plans, and the preparation of a complete environmental resource application including 100% storm water management, final lighting plans, final traffic control plans, final utility relocation plans, final toll plaza plans, final fiber optic network plans and final signing and pavement marking plans.

C. The Authority's Project Manager will provide contract administration, management services and technical reviews of all work associated with the preliminary and final designs.

D. It is understood that references throughout this document to items of work and services to be performed are the responsibility of the Consultant unless otherwise expressly stated as the responsibility of others.

1.04 Organization

A. The Authority's Project Manager will administer the Consultant services detailed in this scope. The following sections define the duties and obligations of the Authority and the Consultant.

1.05 Term of Agreement for Design Services

A. The term of the Agreement to perform the required design services shall be 12 months from notice to proceed, including all reviews.

B. The Consultant may continue the design efforts while design submittals are being reviewed. Doing so, however, in no way relieves the Consultant of the responsibility to incorporate review comments into the design, nor does it entitle the Consultant to any additional design fees as a result of making changes due to review comments.

1. Project Milestones:

The Consultant will prepare a tabulation of major project milestones.

2. Project Schedule:

The Consultant shall include a schedule of major design tasks.

## 2.0 STANDARDS

A. The applicable design and construction standards and policies of the Florida Department of Transportation, Federal Highway Administration (FHWA), American Association of State Highway and Transportation Officials (AASHTO), Transportation Research Board (TRB), Standard Building Code, the Authority's Design Practices and Standard Notes and the Authority's Guidelines for Preparation of Signing and Pavement Marking Plans shall be followed throughout the design and construction of the project unless specifically stated otherwise. The editions of the applicable standards and policies in effect at the time of Contract execution shall be used except as follows:

1. Division II, Construction Details, and Division III, Materials, of the FDOT Standard Specifications for Road and Bridge Construction, 2015 edition, and updates, shall be used for this project.

2. The FDOT Design Standards (Index Drawings), latest edition and subsequent interim indexes and updates, shall be used for this project.

3. The FDOT Plans Preparation Manual, latest edition, shall be used for this project.

4. The FDOT Basis of Estimates Handbook, latest edition, shall be used for this project.

5. The AASHTO Policy on Geometric Design of Highway and Streets (Green Book), 2004 edition, shall be used for this project.

6. The FHWA Manual on Uniform Traffic Control Devices (MUTCD), 2009 edition, as amended, shall be used for this project.

7. The CFX ITS Design Standard Details for Design, Construction, Maintenance and Utility Operations on the State Highway System, April 2015, shall be used for this project.

## 3.0 DESIGN CRITERIA

### 3.01 General

Design of this project will be guided by the basic design criteria listed below.

A. The design criteria listed in this section and Project Design Directives, provided by the Authority during the course of the project, may supplement the Project Design Guidelines.

B. Design year – 2038

C. Design vehicle – WB-62FL

### 3.02 Geometry

The following criteria are to be incorporated into the design:

| DESIGN ELEMENT | EXPRESSWAY<br>MAINLINE | <br>RAMPS | CROSSROADS/<br>COLLECTORS |
|---|---|---|---|
| Design Speed, MPH | 70 mph | 30 mph (Loop)<br>50 mph (Diamond)<br>50 mph (Directional) | 30 Local<br>45 Urban<br>50 Rural |
| Horizontal Alignment<br>a. Max. Curve, Degrees | 3°° 30' | 24° 45' Loop<br>8° 15' Diamond<br>8° 15' Directional | 20° |
| b. Max. Superelevation, ft/ft. | 0.10 | 0.10 | 0.05 Urban<br>0.10 Rural |
| c. Lane Drop Tapers | 70:1 | 50:1 | |
| d. Transitions | Use spirals for curves > 1° 30' | Use spirals for curves > 1° 30' | Use spirals for curves > 1° 30' |
| Vertical Alignment<br>a. Max. Grade | 3% | 5% to 7% (30 mph)<br>3% to 5% (50 mph) | 5% Arterial Rural<br>7% Collector Rural |
| b. Vertical Curvature (K) (K=Len./%grade change)<br>Crest | 506 FDOT<br>290 to 540 AASHTO | 31 (30 mph)<br>136 (50 mph)<br>110 to 160 Other (AASHTO) | 31 to 136 |
| Sag | 206 FDOT<br>150 to 200 AASHTO | 31 (30 mph)<br>136 (50 mph)<br>90 to 110 Other (AASHTO) | 37 to 96 |
| c. Decision Sight Dist., ft. | Refer to AASHTO | N/A | N/A |

| DESIGN ELEMENT | EXPRESSWAY MAINLINE | EXPRESSWAY RAMPS | CROSSROADS/ COLLECTORS |
|---|---|---|---|
| Cross Sections | | | |
| a. Lane Widths, ft. | 12 | 12 dual lanes<br>15 min. single lane | 12 inner lanes<br>12-16 outer lanes |
| b. Shoulder width, ft. | 4-Lane | Single Lane | |
| Right | 12 (10 paved) | 6 (4 paved) | 8 (4*paved) |
| Left | 8 (4 paved) | 6 (2 paved) | 8 (2 paved) |
| | | | * min. 5' paved FDOT |
| | 6-Lane | Dual Lane | |
| Right | 12 (10 paved) | 10* (8* paved) | |
| Left | 12 (10 paved) | 8 (4 paved)<br>(* add 2' for interstate) | |
| Bridges, ft. | 4-Lane | Single-Lane | |
| Right | 10 | 6 | |
| Left | 6 | 6 | |
| | 6-Lane | Dual Lane | |
| Right | 10 | 10 | |
| Left | 10 | 6 | |
| c. Cross Slopes | | | |
| 1. Traffic Lanes | 2% (4-lane)<br>3% or tbd (6-lane) | 2% | 2% |
| 2. Bridge Lanes | 2% typ. (no break) | | |
| 3. Left Shoulder | 5% | 5% | 5% |
| 4. Right Shoulder | 6% | 6% | 6% |
| d. Median Width (4-lane), ft. (E.O.P./E.O.P.) | 64' (typical)<br>26' (with barrier) | N/A | 22' or 40' |
| Horizontal Clearance | PPM 1-2.11 | PPM 1-2.11 | PPM 1-2.11 |
| Vertical Clearance, ft. | | | |
| a. Over Roadway* | 16.5 | 16.5 | 16.5 |
| b. Overhead Signs | 17.5 | 17.5 | 17.5 |
| c. Over Railroad | 23.5 | 23.5 | N/A |

Ramp Operations

a. Two thousand (2,000) ft. between entrance and exit terminals – full freeways
b. Six hundred (600) ft. between exit and entrance terminals
c. Single Lane Entrance Ramp Parallel
d. Exit Ramp Taper of 550 ft. (3° – divergence)

Right of Way

a. Ten (10) ft. from back of walls or limit of construction.
b. Two (2) ft. from back of sidewalk on frontage roads.
c. Drainage and construction easements as required
d. Limited access right-of-way limits per Index 450
e. Right of way limits for ramps is based upon limit of construction plus 10 feet.

3.03 Bridge and Other Structures

A. All plans and designs shall be prepared in accordance with the latest standard specifications adopted by AASHTO, FDOT Structures Design Guidelines (Manual), FDOT Structures Detailing Manual, FDOT Plans Preparation Manual, FDOT Standard Drawings, FDOT Indices, etc., except as otherwise directed by the Authority.

## 4.0 WORK PERFORMED BY CONSULTANT

The Consultant shall be responsible for the work outlined in this Section. The work shall conform to the standards, criteria, and requirements of this Scope of Services.

### 4.01 Design Features

A. The work required for this project includes preparation of final construction drawings and specifications as well as the preparation of a complete environmental resource application.

B. Major elements of the work include the following:

The services to be provided for the project shall include final design and preparation of construction drawings/specifications to provide six (6) general use lanes on S.R. 417 between Econlockhatchee Trail and the Orange/Seminole County line. Specifically, the project will include outside widening of S.R. 417 between Econlockhatchee Trail and the University Mainline Plaza, outside/median widening of S.R. 417 from the University Mainline Plaza to the Orange/Seminole County line, conversion of the S.R. 417 northbound and southbound inside cash lanes to express lanes and widening of the southbound S.R. 417 Bridge over University Boulevard. The project will also include the addition of one (1) northbound auxiliary lane and one (1) southbound auxiliary lane between the S.R. 50 / Colonial Drive ramps and the University Mainline Plaza and the addition of one (1) northbound auxiliary lane between the University Boulevard ramp and the S.R. 417 Aloma Avenue ramps.

Additional elements include surveying, drainage evaluation and design, permitting, lighting, signing and pavement markings, maintenance of traffic, traffic operations modeling, utility design and coordination, geotechnical analysis, walls, scheduling and project control, progress reporting and any other incidental items necessary for the proposed design of the project.

### 4.02 Governmental Agencies

A. The Consultant shall coordinate with and assist in securing the approval of all interested agencies involved. These agencies may include, but are not necessarily limited to Orange County, City of Orlando, FDOT, Florida's Turnpike and SJRWMD.

### 4.03 Preliminary Design Report - Review

A. The Consultant shall review the project concept for proposed alternatives with regard to proposed design criteria, maintenance of traffic and construction feasibility.
At the completion of this review, the Consultant shall submit to the

Authority a written list of recommendations and proposed revisions, if any, to the basic layout. A conference will be scheduled by the Authority's Project Manager with the Consultant to resolve any outstanding differences and agree upon a final layout for the project.

4.04 Surveys and Mapping

A. All Surveying and Mapping shall be performed under the direction of a Surveyor and Mapper properly licensed with the Florida Board of Professional Surveyors and Mappers, under Chapter 472, Florida Statutes. The Consultant shall review data provided by the Authority and provide complete field surveys suitable for contract document preparation.

Survey activities shall be coordinated with the Consultant's design team including roadway, drainage, structures, geotechnical, and other disciplines as required.

Field surveys shall be performed with minimal disruption of the normal traffic flow for the project. Field personnel shall use safety devices such as warning signs, traffic cones, warning lights, and safety vests at all times, according to the Florida Department of Transportation requirements. Advanced warning signs required when survey crews are working on the Authority's system shall be made with 3M Scotchlite Diamond Grade Fluorescent orange roll up sign sheeting.

B. Alignment

1. Establish Survey Centerline by establishing the tangent lines of existing Right of Way maps if such maps exist, or in the center of dedicated Right of Way as per subdivision plats, or in the center of the pavement when no Right of Way map or dedication exists. Set alignment points Begin, End, PC's, PT's, PI's and at maximum 1400-foot intervals along alignment.
2. Establish and set alignment in the same manner on cross roads and major adjacent alignments.
3. Station all alignments at 100' intervals.
4. Meet with Authority's Project Manager to discuss methods for determining alignments prior to staking.

C. Reference Points

1. Set at all alignment points, left and right at 90-degrees to alignment where possible, outside the proposed construction limits.
2. Show obstructions where alternate references are set.

D. Bench Levels

1. The Consultant shall establish new benchmarks at 1000' intervals, along all alignments, using stable points.

E. Topography

1. Planimetric mapping and a digital terrain model (DTM), suitable for 1"=50' display scale shall be conducted by the Consultant.
2. The Consultant will obtain existing pavement elevations and cross-slopes along the inside travel lane and outside travel lane every 100'.
3. Additional topographic and DTM surveys, as needed for the project design, are the responsibility of the Consultant. These may include existing water bodies and pavement elevations.

F. Drainage Survey

Perform a drainage survey including pipe type, location, size and flow line elevations as needed for design.

G. Underground Utilities

Locate all underground utilities, horizontally and vertically as flagged by respective utility companies or a qualified utility marking consultant. Provide soft excavation verifications as needed to verify location and at utility conflict areas.

H. Side Street Surveys

Perform topographic and utility surveys of side streets as needed for engineering design.

I. Bridge Survey

Provide bridge survey data as needed for engineering design.

J. Jurisdictional Line Surveys

Perform Jurisdictional Line Surveys as needed for engineering design and permitting.

K. Geotechnical Surveys

Locate and/or stake boring locations as needed for geotechnical investigations.

L. Right-of-Way Ties

Locate right-of-way limits for construction purposes. No new right-of-way is anticipated.

M. Prior to construction, the Consultant shall re-flag and reset alignment control points, references and benchmarks and meet with the construction contractor to review these points

4.05 Geotechnical Investigation

A. The Consultant shall perform a geotechnical investigation of the project in accordance with the requirements of the Authority.

B. Investigations shall be performed with minimal disruption of the normal traffic flow for the project. Field personnel shall use safety devices such as warning signs, traffic cones, warning lights, and safety vests at all times, according to Authority requirements. The Consultant shall adhere to all traffic control requirements when taking samples on existing roadways. A traffic control plan and permit may be required. Any advanced warning signs required when crews are working on the Authority system shall be made with 3M Scotchlite Diamond Grade Fluorescent orange roll up sign sheeting.

C. The work includes, but is not limited to, identifying roadway structural section requirements, LBR testing, design methods for the selected foundation, external stability evaluation at proprietary retaining walls, groundwater and estimated seasonal high groundwater level, estimate of the maximum rate of pumping that will be required at sites that dewatering is anticipated, certification of all under drain and pond draw down times, pH and resistivity conditions requiring design considerations, soil shrinkage/swell characteristics, slope stability and benching in embankment/excavation locations, recommendation for methods of rock excavation, potential imported borrow sites and availability of structural section materials, location and depths of unsuitable material (muck), and design alternatives based on geotechnical findings; design values for active, at rest, and passive soil pressures; allowable design loads or pressures for each foundation type, corrosion testing for structures and design of foundations for sign structures.

D. The results of the geotechnical investigation shall be contained in a Geotechnical Report which shall be submitted to the Authority's Project Manager for approval. The geotechnical investigation shall include all necessary laboratory testing of materials.

E. Upon approval of the Geotechnical Report, the Consultant shall proceed with preparation of the pavement and foundation designs.

F. Boring profiles shall be included on cross-section sheets in the contract plans and include the boring number, station, offset, soil legend, observed water table, design high water elevation and geotechnical consultant's address. A boring number and target symbol shall be shown at the appropriate location on the roadway and bridge plans.

G. Roadway core samples shall be taken to determine the existing pavement section. The Consultant shall submit a plan to the Authority for location approval.

4.06 Contamination Impact Analysis

A. The Consultant shall consider applicability of a contamination impact analysis of the project in accordance with the applicable rules and regulations of the FDOT Project Development and Environment Guidelines, Chapter 22, the Florida Department of Environmental Protection (FDEP), and all other pertinent State or Federal agencies having jurisdiction, and the requirements of the Authority.

B. At a minimum, the Consultant shall conduct a windshield survey along the project corridor to identify any new sources of environmental contamination not reported in the referenced document(s).

C. The testing of any sites including the use of ground penetrating radar, if required to complete the design and/or construction of the project, will be added to the Scope of Services by Supplemental Agreement.

4.07 Pavement Design

A. The Consultant shall prepare the pavement design as appropriate in accordance with the requirements of the FDOT for mainline and ramps.

B. The proposed pavement design recommendation, resulting from the Consultant's analysis of the various alternatives, shall be contained in a Pavement Design Summary.

4.08 Borrow Pits

A. The Consultant's geotechnical investigation may include the investigation of current borrow pits. The location and testing of any new borrow pits if required to complete the construction of the project shall be added to the Scope of Services by Supplemental Agreement. The analysis and test results shall be contained in a separate report submitted not later than the preliminary submittal.

4.09 Governmental Agency and Public Meetings

A. Except as may be provided elsewhere in this Scope of Services, the Consultant shall have appropriate representatives present at such meetings, conferences or hearings as the Authority may direct to secure necessary approvals and/or support of the project by county, municipal, or other governmental agencies. If so directed, the Consultant shall also have appropriate representatives present at meetings or conferences of the Authority, its Chairman or staff.

B. The Consultant shall assist the Authority in presentations to various parties. The Consultant shall prepare exhibits pertaining to basic roadway, aesthetic treatments and noise wall elements. This scope assumes presentations at two public meetings with adjacent property owners.

4.10 Environmental Permits

A. The Authority's Project Manager will review, coordinate and submit the applications for all environmental permits, including EPA's NPDES General Permits for Stormwater Discharges from Construction Sites. The Consultant shall provide all information, permit applications and data relating to Stormwater Management and Floodplain Impacts required for the permits to the Authority. (The Authority will be responsible for preparing all of the Wetlands and Protected Species analysis and documentation required for the permits.) The Consultant shall:

1 Attend the pre-application meetings and site visits with the Authority and regulatory agencies.

2. Provide additional information requested at the pre-application by regulatory agencies for permits.

3. Provide aerial maps at a 1"=400' scale which include SCS soils data, 100-year floodplain limits and proposed project.

4. Provide all plans, calculations, sketches and reports required for permits except as described above.

5. Provide copies of all drainage calculation, including pond routing nodal diagrams, for the project.

6. Assist the Authority in responding to any requests for additional information made by regulatory agencies after the permit application is submitted.

7. Incorporate any changes required by changes in regulatory agency

requirements during the course of the project. If this requires additional work by the Consultant a Supplemental Agreement will be prepared.

8. Prepare a list of adjacent landowners along with address and nine-digit zip code at all wetland encroachment sites.

9. Provide all permit application material in .pdf format and 7 hard copies.

10. The Consultant will provide dredge and fill sketched as required by the permitting agencies if applicable. Mitigation plans, if required, may be added as a supplemental service.

11. Determine extent of floodplain impacts, if any, and provide compensatory flood stages as required.

4.11 Utilities

A. Location

The Consultant shall obtain available utility mapping and information and identify all utilities within the general project limits to determine potential conflicts and relocations. Where a potential conflict exists, the Consultant may need to arrange to probe or expose ("pothole") the utility and survey the horizontal and vertical location of the utility line. The Consultant shall coordinate this effort with involved utility companies. All existing utilities shall be shown on appropriate preliminary construction plans. The Consultant's notes shall include the name and telephone number of contact persons for the construction contractor's use.

B. Utility Coordination

1. The Consultant shall prepare reproducible utility adjustments plans based on information provided by respective utility companies.

2. Private utilities will prepare design plans for the relocation of their facilities. If a utility cannot or will not prepare these design plans, the work shall be added to the scope by Supplemental Agreement and the Consultant shall prepare design plans for utility relocation for approval of the utility and review by the Authority.

3. Where utility conflicts occur which require utility relocation agreements between the affected utility and Authority, the Consultant shall prepare the necessary data/plans required for the agreements. The Consultant shall advise the Authority seven days

in advance of meetings with utility companies/agencies scheduled to discuss utility relocations.

4. The preparation and negotiation of the agreement will be performed by the Authority's Project Manager. After approval of the agreement by the utility and Authority, the Consultant shall prepare reproducible utility adjustment sheets identifying proposed relocations with respect to the construction plans.

5. The Consultant shall prepare a utility conflict matrix to assist in identifying and resolving conflicts between utilities and proposed construction prior to completion of the plans.

6. The Consultant shall obtain utility work schedules from the utility companies.

7. The Consultant shall prepare the Utility Certification Letter certifying that all utility negotiations (full execution of each agreement, approved utility work schedule, technical special provisions written, etc.) have been completed with arrangements made for utility work to be undertaken and completed as required.

4.12 Roadway Design

A. A Typical Section Package will not be prepared for this project. Rather, typical sections will be prepared as part of the 15% submittal and submitted to the Authority for review and approval.

B. The Consultant shall design the geometrics for this project using the design standards included in the scope. The design elements shall include, but not be limited to, the horizontal and vertical alignments, cross section template development, lane width, shoulder widths, cross slopes, borders, sight distance, side slopes, lane transitions, superelevations, features of intersections, ramp terminal details, interchanges, and limited access points.

C. The Consultant shall prepare designs and contract documents for the roadway improvements, including, but not necessarily limited to:

1. Cover sheet (key sheet)

2. Summary of Pay Items

3. General notes

4. Summary Quantities sheets

5. Project Layout

6. Typical roadway sections

7. Plans and profiles (plans at 1"=50' scale)

8. Interchange plans, profiles, alignment and plan index sheets

9. Interchange layout plans

10 Intersection plans and profiles or spot elevations

11. Interchange curve and coordinate data sheets

12. Ramp Terminal Details

13. Crossroad plans and profiles (1"= 50' scale)

14. Cross-sections (with pattern plan) (1" = 20' horiz.) (1" = 5' vert.)

15. Earthwork quantities

16. Traffic Control Sheets

17. Utility Adjustment Sheets

18. Details

19. Special provisions

20. Special specifications

4.13 Structures Design

A. Prior to commencement of final design, the consultant shall prepare a Bridge Concept Memorandum which documents a limited range of structural alternatives and identifies preferred alternatives. Specifically, the alternatives to be examined include beam type, wall type / configuration and foundation pile type.

B. The Consultant shall prepare designs and contract documents for structural design including, but not necessarily limited to the following items.

1. Complete Bridge designs will be provided for all bridges.

2. Retaining walls

3. Box Culverts

4. Slope protection

5. Approach slabs

6. Details

7. Summary quantity tables

8. Special provisions and specifications

9. Stage construction-sequencing details (if applicable).

10. Sign\Signal structures.

11. Sound walls.

12. The Consultant shall perform Load Rating Analysis per FDOT criteria for any box culverts and bridges at the 90% design phase. The Load Rating Analysis packages shall be submitted to FDOT for their review and approval.

4.14 Drainage Design

A. As part of the drainage design requirements, the Consultant shall:

1. Perform all drainage design in accordance with the approved criteria from Section 3.01C.

2. Finalize the pond design at the 30% submittal.

3. Have its chief drainage engineer available at the scheduled (bi-weekly/monthly) team meetings to review progress and discuss problems.

4. Notify the Authority's Project Manager immediately if any deviation from approved design criteria is anticipated.

5. Provide drainage/contour maps used in the development of the drainage design to the Authority for use in scheduled reviews. These maps will be returned to the Consultant along with review comments at the end of the review process.

6. Provide copies of its internal quality control comments and

calculations at the scheduled reviews.

Critical duration analysis is not included in this effort and, if required, shall be added to the scope by Supplemental Agreement. A pond siting report is not required.

B. The Consultant shall prepare designs and contract documents for drainage features including, but not necessarily limited to:

1. Connector pipes

2. Drainage structure details

3. Storm drain and culvert profiles and/or drainage cross-sections

4. Lateral ditches/channels

5. Outfall ditches/channels

6. Retention/detention ponds/exfiltration system

4.15 Roadway Lighting

A. The Consultant shall provide a complete set of final roadway lighting documents in accordance with FDOT and Authority design criteria. The work shall include coordination with the local utility to provide electrical service. Plan sheet scale shall be at 1"=50' scale.

B. The Authority will provide a cut sheet for the type of lighting fixtures to be used for this project.

4.16 Traffic Engineering

A. Traffic Data will be furnished by the Authority.

B. Maintenance of Traffic Plans

1. The Consultant shall prepare maintenance of traffic plans at scale of 1"=100' to safely and effectively move vehicular and pedestrian traffic during all phases of construction. The designs shall include construction phasing of roadways ingress and egress to existing property owners and businesses, routing, signing and pavement markings, and detour quantity tabulations. Special consideration shall be given to the construction of the drainage system when developing the construction phases. Positive drainage must be maintained at all times.

2. The Consultant shall investigate the need for temporary traffic signals, signs, alternative detour roads, arrow boards, flagging operations, and the use of materials such as sheet pilings in the analysis. A certified designer who has completed the FDOT training course shall prepare the maintenance of traffic plan.

3. Traffic shall be maintained during all phases of project construction at all locations determined by the Authority and other governmental agencies. This includes meeting with the governmental agencies which may be impacted by the maintenance of traffic plans.

4.17 Signing Plans

A. The Consultant shall prepare designs and contract documents for final signing plans including layouts showing the locations of ground mounted and overhead signs, special sign details, lighting, and any structural or foundation requirements in accordance with applicable design standards. Any requirements for electric service shall be coordinated with the local electric utility.

B. The Authority will provide conceptual signing plans for the project.

C. The Authority will provide preliminary aesthetic input for the architectural modification of standard FDOT details for sign structures.

D. Plan sheets will be developed at a scale of 1"=50' (11"x17" format).

F. For the purposes of this proposal, six (6) cantilevers and seven (7) overhead truss signs are assumed to be required for the improvements. Of the signs mentioned above, two (2) existing overhead trusses and two (2) existing cantilevers along the project will be affected by the improvements and are assumed to require reconstruction since they do not meet current wind load criteria.

4.18 Pavement Marking Plans

A. The Consultant shall prepare designs and contract documents for final pavement marking plans, including striping, crosswalks, intersection details, reflective pavement markers and traffic delineators.

B. The pavement marking design will be shown on the same plan sheets as the signing design.

4.19 Right-of-Way Surveys

A. No additional right-of-way is anticipated for this project.

4.20 Cost Estimates

A. The Consultant shall prepare and submit to the Authority construction cost estimates at the 60%, 90%, 100%, Pre-Bid and Bid Set submittals outlined herein. The estimate shall be based on the current unit prices as applied to the latest concept of the proposed construction.

4.21 Special Provisions and Specifications

A. The Consultant shall prepare and submit at the 90% level special provisions, special specifications, and technical special provisions for items, details and procedures not adequately covered by the Authority's Technical Specifications.

4.22 Fiber Optic Network (FON)

A. Fiber Optic Infrastructure Plans

1. The site construction plans shall be developed at a scale of 1" equals 50 feet. These plans shall include the relocation of all existing fiber optic ductbanks, cables, manholes, and pull boxes in areas where the existing locations conflict with construction. The Consultant shall identify existing physical features and utilities that will impact the construction and installation of the equipment. The Consultant shall review and modify standard FON details as necessary.

   This scope has assumed that four (4) miles of ITS relocation will be required consisting of two (2) miles of relocations on each side of SR 417.

2. Fiber optic network (FON) plans shall include the following:
   a. Roadway geometry
   b. Rights-of-Way
   c. Existing utilities within the right-of-way including the Authority's FON
   d. Physical features affecting construction/installation (sign structures, light poles, fences, etc.)
   e. Manhole/Pull box locations and stub-out details (standard details provided)
   f. Device layout
   g. Device installation details
   h. Conduit installation details (standard details provided)
   i. Fiber optic cable route marker detail (standard details provided)

j. Fiber count per conduit
k. Communications interconnect
l. Connectivity with the FON backbone conduits
m. Fiber cable design to include link loss budget calculations, per Corning standard recommended procedure
n. Fiber cable routing summaries, fiber cable allocation charts, and splice details and tables
o. Controller cabinet, CCTV pole, and foundation details
p. Power interconnect, calculations to support conductor size, and details. Power conductors to each device location shall be sized to the capacity of the main breaker in the cabinet.
q. Grounding
r. Table of quantities
s. Special notes
t. Maintenance of fiber operations (protection of existing FON through all phases of construction and cutover phasing to ensure continuous operation of existing ITS devices)
u. All existing and proposed FON to be included and shown with roadway cross sections and drainage cross sections
v. No relocation of existing CCTV sites are anticipated under this contract nor or any new CCTV sites anticipated as part of the proposed improvements.
w. Relocation of existing data collection sensor (DCS) sites and any necessary structures, foundations, attachment details, power service, fiber optic connections, and cabinets (standard details provided), in the event existing DCS would not survive project construction.
x. No relocation of existing DMS sites are anticipated under this contract nor or any new DMS sites anticipated as part of the proposed improvements.
y. Conversion of any existing ITS devices within the project limits from point-to-point fiber optic modems to gigabit Ethernet field switches, relocation of video encoders from the mainline toll plazas to the CCTV cabinets, and upgrading other cabinet equipment as needed to meet current Authority ITS equipment standards.

3. The Consultant shall take the following information into consideration when developing the site construction plans:

a. Minimize utility conflicts and adjustments.
b. Minimize traffic impact.
c. Accessibility and ease of equipment maintenance.

d. Safety of equipment maintenance personnel and the traveling public.
e. Maintain the existing FON system through all phases of construction.
f. Environmental conditions.
g. Concurrent/future Authority projects.
h. Compatibility with existing and proposed ITS infrastructure (e.g. Authority enhanced grounding standards for ITS devices, Authority transient voltage surge suppression (TVSS) standards for ITS devices, etc.)
i. Leased conduits in the Authority FON duct bank that are occupied by the fiber optic cable of other agencies or entities.

B. Splice and Cable Routing Details

1. The Consultant shall provide splicing detail diagrams to document fiber optic splices within and between manholes, ITS devices, tollbooths, and other junction points.

2. Splicing tables shall include ITS device connectivity, fiber use, drop cable fiber identification, drop cable identification, backbone cable identification, translateral cable identification, backbone into mainline cable identification, and toll plaza patch panel jack.

3. The Consultant shall provide cable routing diagrams and fiber allocation charts in the Authority's standard format to document the functional connectivity between fiber optic conduit and all splices.

C. Maintenance Of Fiber Operations

1. The Consultant shall provide a plan of action to ensure existing fiber optic network is not disrupted during construction operations.
2. The Consultant shall determine the sequence of fiber optic cable splices to minimize disruption to communications.

D. Inside Plant Plans

1. The Consultant shall be responsible for any data collection necessary to complete its design.

2. All equipment shown on the inside-plant construction plans shall be clearly delineated as existing, proposed, or by-others. The Consultant shall be responsible for identifying and detailing on the inside-plant construction plans with notes and drawings any make-ready work required. The Consultant shall also provide a table of quantities for all

materials and equipment specified in the inside-plant construction plans.

3. The Consultant shall sign and seal final inside-plant construction plans by a licensed professional Electrical Engineer registered in the state of Florida. The inside-plant construction plans shall be subject to the review and approval of the Authority.

Quantities And General Notes

4. Standard notes shall be included to provide direction to the contractor and provide pay item descriptions as necessary.

E. Standard Authority specifications will be provided to the Consultant. The Consultant shall review the specifications and modify them as necessary.

4.23 Toll Plazas

A. This proposal includes modifications pertaining to converting the existing S.R. 417 northbound and southbound inside cash lanes to express lanes at the University Mainline Toll Plaza.

4.24 Post-Design Services

A. Services shall begin after authorization by the Authority. The Consultant compensation for post-design services may be added by Supplemental Agreement and shall be at an hourly rate, inclusive of overhead, profit and expenses, and exclusive of travel. No compensation will be made for correction of errors and omissions.

B. The Consultant shall support the post design process as follows:
   a. Answer questions relative to the plans, typical sections, quantities and special provisions.
   b. Make any necessary corrections to the plans, typical sections, quantities, notes, etc., as may be required.
   c. Attend pre-award meeting with construction contractor, the Authority, and the Authority's CEI.

C. The Consultant shall, prior to the pre-bid conference, be prepared to walk the project with the Authority's CEI to discuss the plans and details. The Consultant shall be prepared to attend the pre-bid conference and respond to questions related to the plans, details, and special provisions.

D. The Consultant shall prepare any addenda required to clarify the work included in the construction contract documents. Addenda may be required based on the project inspection with the CEI, or questions developed in the pre-bid conference, or conditions discovered by bidders during the bid

period.

E. The Consultant shall be available to respond to questions in the field that may arise relative to the plans, details or special provisions during construction. The Consultant shall periodically visit the project site to observe the progress of construction on the project. This visit will not replace the formal construction inspection by the Authority. It is intended to provide the opportunity of the design team to observe whether the work is being performed in general conformance with the project plans. Written memos of all such field trips shall be submitted to the Authority within five working days of the trip.

F. The Consultant shall review and approve shop drawings for structural, lighting, signing, traffic signal elements, and toll plaza shop drawings. This work will include the erection procedure plans, review proposals for substitutions, develop supplemental agreements, and provide other engineering services required to facilitate construction of the project. Reviews will be conducted and returned within two weeks from receipt of information.

G. The Consultant shall appoint a responsible member of the firm to be the contact person for all post-design services. The person should be continually available during the course of construction for review of design plans.

H. The Consultant shall make every reasonable effort to process any material presented for review in a prompt manner recognizing a construction contract is underway.

I. The Consultant shall attend partnering meetings as requested by the Authority's Project Manager. The Consultant shall also attend progress/coordination meetings as requested by the Authority's Project Manager including, but not limited to, the Notice to Proceed meeting.

J. Approved design bridge load ratings were obtained by the Consultant under the final design phase of this contract. The Contractor shall be responsible for revising and resubmitting the load ratings if changes to the bridge design occur during construction. Otherwise, the Consultant shall provide written correspondence to FDOT when construction is complete that the bridges were constructed in accordance with the plans and the design load ratings still apply.

K. The Consultant shall provide geotechnical engineering services as needed by the Authority, relative to pile driving, earthwork, embankment and MSE wall construction.

L. The Consultant shall provide utility consulting services as needed by the

Authority, relative to proposed utility adjustments within the project limits.

M. The Consultant shall prepare Record Drawings in electronic format following completion of the construction phase. The Authority shall provide all As-Built drawings from the Contractor / CEI to the Consultant for their use in preparation of the Record Drawings.

## 5.0 MATERIALS FURNISHED BY THE AUTHORITY OR ITS DESIGNEE

### 5.01 Record Documents

A. The Authority will provide the Consultant, within ten working days of a written request, the following items:

1. Available record drawings of existing conditions
2. Available right-of-way plans of existing conditions
3. Current list available to the Authority of owners of all affected properties within the section.
4. Sample plans to be used as guidelines for format, organization and content.
5. Title searches of all affected properties for use by the Consultant in the preparation of the right-of-way maps.
6. Contract unit prices from latest Authority construction projects.

### 5.02 Traffic Data

A. The Authority will provide the following design traffic data:

1. Current and design year ADT
2. Current and design year peak hour volumes
3. Turning movements at each intersection/interchange
4. K, D and T factors
5. Design speed - See Section 3.02, Geometry.
6. AVI Percentages

### 5.03 Other

1. Utility designates for the FON and roadway lighting within CFX right-of-way.

## 6.0 WORK PERFORMED BY THE AUTHORITY OR ITS DESIGNEE

### 6.01 Right-of-Way Acquisition

A. If necessary, the Authority, or its designee, will review all right-of-way plans, parcel sketches and legal descriptions prepared by the Consultant. The Authority will handle all appraisals, negotiations, relocations, condemnation, and property settlements.

### 6.02 Utility Agreements

A. The Authority will support, as necessary, the Consultant's acquisition of information required for utility agreements.

### 6.03 Public Involvement

A. The Authority will provide a moderator for all required public meetings and provide guidelines for the Public Involvement aspects of the project. The need for public meetings or public hearings will be determined by the Authority. The Authority will be responsible for mailings and advertisements for the public meetings.

### 6.04 Contracts and Specifications Services

A. The Authority will prepare the necessary bid documents for the construction contract using plans, technical special provisions, and special specifications prepared by the Consultant.

### 6.05 Post-Design Services

A. The Authority will be the principal initial contact for post-design questions and answer questions on a limited scope.

### 6.06 Environmental Permits

A. The Authority will review and submit the environmental permit applications and coordinate with the Consultant on requests for additional information from the regulatory agencies.

B. The Authority will stake wetland lines and coordinate agency site visits. The Authority will also prepare the wetland and wildlife analysis and documentation for the permits.

### 6.07 Conceptual Specialty Design

A. The Authority will provide a conceptual major guide signing plan.

B. The Authority will provide conceptual aesthetics design and treatments for structures.

## 7.0 ADMINISTRATION

### 7.01 Central Florida Expressway Authority

A. The Authority's Project Manager will administer the Consultant services detailed in this scope.

B. All contractual payments and changes shall be reviewed and approved by the Authority's Project Manager.

### 7.02 Authority's Project Manager

The Authority's Project Manager will:

A. Conduct ongoing reviews of the Consultant's progress in performing the work and furnish technical comments in a timely manner.

B. Review the Consultant's billings.

C. Review and evaluate the Consultant's requests for extension of time and supplemental agreements and recommend appropriate action.

D. Review all correspondence with public agencies prior to the Consultant's mailing of any correspondence except for requests for information.

E. Coordinate the distribution of public information.

F. Coordinate the data (including documentation of prior rights, cost estimates and plans) necessary for the Authority to prepare and execute all utility and railroad agreements.

G. Conduct an introductory meeting to deliver relevant information and explain the administration process.

H. Review the Consultant's Quality Control program and the Consultant's conformance to the Quality Control Program.

I. Provide a focal point contact for all questions, requests, and submittals.

J. Provide a system to monitor the Consultant's schedule, progress and key milestone submittal dates.

### 7.03 Consultant

A. The Consultant has total responsibility for the accuracy and completeness

of the construction contract documents and related design prepared under this project and shall check all such material accordingly. The plans will be reviewed by Authority for conformity with the Authority procedures and the terms of the Contract, as well as coordination with adjacent design contracts. Review by the Authority does not include detailed review or checking of design of major components and related details or the accuracy with which such designs are depicted on the plans. The responsibility for accuracy and completeness of such items remains solely that of the Consultant. The Consultant shall:

1. Establish, furnish and maintain suitable office facilities to serve as the project office for the duration of the project at a location acceptable to the Authority.

2. Maintain an adequate staff of qualified support personnel to perform the work necessary to complete the project.

3. Establish internal accounting methods and procedures for documenting and monitoring project costs.

4. Establish and maintain contract administration procedures, which will include supplemental agreements, time extensions and subcontracts.

7.04 Project Control

A. The Consultant shall provide data for the Authority's Management Information System to monitor costs and manpower, and report progress. This project control system may include features to:

1. Determine and highlight critical path work from initial plans as work progresses.

2. Identify progress against schedule for each identified work item.

3. Forecast completion dates from current progress.

4. Highlight rescheduled work in any area which is out of required sequence.

5. Highlight rescheduling that has overloaded any physical area that requires more resources than originally allocated.

6. Forecast future conflicts in any area.

7.05 Work Progress

A. The Consultant shall meet with the Authority's Project Manager on a bi-weekly basis (or more often if necessary) and provide written progress reports which describe the work performed on each task. The dates and times of these meetings will be established by the Authority. Two working days prior to each progress meeting, the Consultant shall provide the Authority's Project Manager with a draft copy of the Progress Report and a typewritten agenda for the meeting. The Consultant shall prepare typewritten meeting minutes and submit them to the Authority's Project Manager within five working days after the meeting. The minutes shall indicate issues discussed and the resolution or action required to resolve any issues.

7.06 Schedule

A. Within twenty (20) calendar days after receipt of the Notice to Proceed, the Consultant shall provide a schedule of calendar deadlines in a format prescribed by the Authority.

7.07 Project Related Correspondence

A. The Consultant shall furnish copies of all written correspondence between the Consultant and any party pertaining specifically to this project to the Authority for its records within one (1) week of the receipt or mailing of said correspondence. The Consultant shall record and distribute the minutes of all meetings pertaining to this project.

7.08 Quality Control

A. The Consultant has total responsibility for the accuracy and completeness of the plans and related designs prepared under this project and shall check all such material accordingly. Consultant shall have a quality control plan in effect during the entire time work is being performed under the Contract. The plan shall establish a process whereby calculations are independently checked, plans checked, corrected and back checked. All plans, calculations, and documents submitted for review shall be clearly marked as being fully checked by a qualified individual other than the originator. The FDOT plan review checklist shall be attached and appropriate items checked.

B. The Consultant's quality control plan shall be submitted to the Authority within fifteen (15) working days of receipt of written notice to proceed.

7.09 Consultant Personnel

A. The Consultant's work shall be performed and/or directed by the key personnel identified in Exhibit "D". Any changes in the indicated key personnel or the Consultant's office in charge of the work shall be subject to review and approval by the Authority.

7.10 Site Visit

A. The Consultant shall arrange a site visit within ten (10) calendar days of receipt of written Notice to Proceed. Consultant personnel assigned to perform the work on the project shall attend. Authority representatives will be present. Within seven calendar days of the site visit, the Consultant shall issue to the Authority a brief written report including observations, discussions, and any questions pertaining to the scope or level of effort of the project. The purpose of this visit is to acquaint key personnel with the details and features of the project to facilitate the design process.

7.11 Acceptability of the Work

A. The plans, design, calculations, reports and other documents furnished under this Scope of Services shall conform to the "standards-of-the industry" quality as acceptable to the Authority. The criteria for acceptance shall be a product of neat appearance, well organized, accurate and complete, technically and grammatically correct, checked in accordance with the approved Quality Control program, and have the maker and checker identified. The minimum standard of appearance, organization and content of drawings shall be similar to the type produced by the Florida Department of Transportation and the Authority.

7.12 Design Documentation

A. The Consultant shall submit any design notes, sketches, worksheets, and computations to document the design conclusions reached during the development of the construction contract documents to the Authority for review.

B. The design notes and computations shall be recorded on 8-1/2" x 11" computation sheets, appropriately titled, numbered, dated, indexed and signed by the designer and checker. Computer output forms and other oversized sheets shall be folded or legibly reduced to 8-1/2" x 11" size. The data shall be bound in a hard-back folder for submittal to the Authority.

C. Three copies of the design notes and computations shall be submitted to Authority with each review submittal. When the plans are submitted for 90% review, the design notes and computations corrected for any Authority

comments shall be resubmitted. At the project completion (bid set), a final set of the design notes and computations, sealed by a Professional Engineer, registered in the State of Florida, shall be submitted with the record set of plans and tracings.

D. Design notes and calculations shall include, but are not necessarily limited to, the following data:

1. Field survey notes and computations.

2. Design criteria used for the project.

3. Geometric design calculations for horizontal alignment.

4. Vertical geometry calculations.

5. Right-of-way calculations.

6. Drainage computations.

7. Structural design calculations.

8. Geotechnical report.

9. Hydraulics Report for each bridged stream crossing.

10. Earthwork calculations not included in the quantity computation booklet.

11. Calculations showing cost comparisons of various alternatives considered.

12. Calculations of quantities.

13. Documentation of decisions reached resulting from meetings, telephone conversations or site visits.

14. Lighting and voltage drop calculations.

15. Lighting service letter from the power company stating the following: service voltage, type of service (overhead or underground), location of power company service point, and any other power company requirements.

7.13 Reviews and Submittals

A. Review and coordination of the Consultant's work by the Authority shall continue through the project development process

B. Formal submittals for review shall be made to the Authority when the plans have been developed to the following levels of completion:

1. Preliminary Engineering (Memorandum) (3 sets and 1 .PDF required)

2. 30% Roadway and Toll Plaza plans (6 sets and 1 .PDF CD/DVD required)

3. 30% Bridge and Structural Plans (6 sets and 1 .PDF CD/DVD required)

4. 60% Roadway, Toll Plaza and specifications, Geotechnical Report (6, 6, and 3 sets and 1 .PDF CD/DVD required)

5. 60% Bridge Plans (required only on Category 2 bridges).

6. 90% Bridge and Structural Plans (6 sets and 1 .PDF CD/DVD required)

7. 90% Roadway, Toll Plaza and specifications (6 and 6 sets and 1 .PDF CD/DVD required)

8. 100% Roadway Toll Plaza, Bridge and specifications, Geotechnical Report (6, 6, 6 and 3 sets and 1 .PDF CD/DVD required))

9. Pre-Bid Plans (3 sets and 1 .PDF CD/DVD required)

10. Bid Set (1 set signed and sealed plans, 1 set "clean" plans, 1 set signed and sealed reports and 1 .PDF of all plans and reports)

C. Formal review submittals shall include copies as listed above. 8-1/2" x 11" and 11" x 17" documents do not require reproducible copies.

D. Preparation and distribution of roadway and ROW plans to other than the Authority will not be made until approved by the Authority.

E. The format of review submittal plans shall conform to the FDOT Plans Preparation Manual, except as amended by the Authority.

F. Due to the compact schedule of the design, review and construction process,

any modification to the agreed submittal dates will require a letter from the Consultant to the Authority giving:

1. The reason for the delay.

2. The design components impacted.

3. Proposed methods to maintain submittal dates.

G. The Consultant shall submit all CADD files, including GEOPAK files, use in the preparation of the plans and right of way mapping on compact disk with the final submittal.

7.14 30% Roadway and Toll Plaza Plan Submittal

A. At the completion of this phase, design and plan development should be approximately 30 percent complete except stormwater pond designs. The designs of the stormwater ponds shall be at 90% complete. The following material shall be developed and submitted for review:

1. Key Map Prepared

a) Location map shown complete with destinations, ranges and townships.

b) Beginning and ending stations shown.

c) Any equations on project shown.

d) Project numbers and title shown.

e) Index shown.

2. Drainage Map Prepared

a) Existing culvert sizes and elevations.

b) Horizontal alignment shown.

c) Drainage areas and flow arrows shown.

d) High water information shown.

e) Beginning and end stations shown along with any equations

on project.

f) Interchange supplemental maps prepared.

3. Typical Section Sheets

a) Ramp typical sections developed.

b) Pavement structure shown.

c) Special details developed.

d) General notes shown.

4. Plan and Profile Sheets

a) Centerline plotted.

b) Reference points and bench marks shown.

c) Existing topography.

d) Base line of surveys, curve data, bearings, etc. shown.

e) Beginning and end stations (project and construction).

f) Geometric dimensions.

g) Proposed and existing limited access right-of-way lines.

h) Existing ground line.

i) Proposed profile grade.

j) Type, size and horizontal location of existing utilities.

k) Drainage structures and numbers are shown

l) Drainage ponds are shown.

5. Cross Sections

a) Existing ground line.

b) Preliminary templates at critical locations (not to exceed 500

feet).

c) Existing utilities shown.

6. Interchange Layout and Ramp Profiles

a) Geometric dimensions.

b) Proposed profile grades.

7. Right-of-Way Control Survey

8. Signing and Pavement Markings

a) Striping layout.

b) Sign structure locations.

7.15 30% Bridge and Structural Plan Submittal

A. At completion of this phase, design and plan development should be approximately 30 percent complete. The Consultant shall refer to FDOT Structural Design Guidelines for plan contents and submittal requirements. Preliminary geotechnical results and recommendations should also be included with this submittal.

7.16 60% Roadway and Toll Plaza Plan Submittal

A. At completion of this phase, design and plan development should be approximately 60 percent complete except stormwater pond designs. The designs of the stormwater ponds shall be at 100% complete. The following material shall be developed and submitted for review:

1. Key Map

a) Project description and number shown.

b) Equations, exceptions and bridge stations shown.

c) North arrow and scale included.

d) Consultant and Authority sign-off included.

e) Contract set index complete.

f) Index of sheets updated.

2. Drainage Maps

a) Flood data shown.

b) Cross drains and storm sewer shown.

c) Bridges shown with beginning and ending stations.

d) Interchange supplemental sheets updated.

3. Typical Section Sheets

a) All required typical sections are included.

b) Limited access right-of-way lines are shown.

c) Design speed and traffic are shown.

d) Special details have been completed.

e) Station limits of each typical section are shown.

4. Plan and Profile Sheets

a) Match lines shown.

b) Limited access right-of-way lines shown.

c) Stations and offset shown for all fence corners and angles.

d) All work shown should be within right-of-way or proposed easement.

e) Drainage structures and numbers are shown.

f) Drainage ponds shown.

g) Curve data and superelevation included.

h) Pavement edges, shoulders and dimensions shown.

i) Project and construction limits shown.

j) Bridges shown with beginning and ending stations.

k) General Notes.

5. Drainage Structures

a) Drainage structures plotted and numbered.

b) Station location and offsets identified.

6. Cross Sections

a) Templates are shown at all stations.

b) Limited access right-of-way lines are shown.

c) Cross section pattern sheet included.

d) Miscellaneous notes included.

e) Boring profiles.

7. Interchange Layouts, Ramp Profiles and Intersection Details

a) Geometric data shown.

b) Profiles finalized.

c) Coordinate data shown.

d) Limited access right-of-way lines shown.

e) Curve data shown.

f) Bearings and bridges shown.

g) Cross roads, frontage roads, and access roads shown.

h) Intersection details shown.

8. Traffic Control Plans

9. Utility Adjustments

10. Signing and Pavement Marking Plans

11. Highway Lighting Plans

12. Selective Clearing and Grubbing (if required)

7.17 90 % Bridge and Structure Plan Submittal

A. At completion of this phase, design and plan development should be approximately 90 percent complete. The Consultant shall refer to FDOT Structural Design Guidelines for plan contents and submittal requirements.

7.18 90% Roadway and Toll Plaza Plan Submittal

A. At completion of this phase, design and plan development should be approximately 90 percent complete. The following material shall be developed and submitted for review:

1. Key Map

a) Length of Project with exceptions shown.

b) Index of sheets updated.

2. Drainage Maps

a) Drainage divides, areas and flow arrows shown.

b) Elevation datum and design high water information shown.

c) Disclaimer and other appropriate notes added.

3. Typical Section Sheets

4. Plan and Profile Sheets

a) Curve Control Points (P.C., P.I., P.T.) flagged and labeled.

b) Limits of side road construction.

c) Angle and stationing for intersections.

d) Treatment for non-standard superelevation transitions diagramed.

e) General notes shown.

f) Special ditches profiled.

5. Drainage Structures

a) Existing structures requiring modifications are shown.

b) Existing and proposed utilities are shown.

6 Soil Borings

a) Soils data and estimated high seasonal groundwater table shown.

7. Cross Section Sheets

a) Scale and special ditch grades shown.

b) Utilities plotted.

c) Sub-excavation shown.

d) Volumes computed and shown.

8. Utility Relocation Plans

a) Utility relocation plans prepared.

9. Traffic Control Plans

10. Signing and Pavement Marking Plans

11. Highway Lighting Plans

12. Selective Clearing and Grubbing (if required)

7.19 100% Roadway, Toll Plaza, Bridge and Structural Plans

A. At the completion of this phase, the design plans, technical specifications and special provisions shall be 100 percent complete.

7.20 Pre-Bid Plans

7.21 Bid Set

# EXHIBIT B

# METHOD OF COMPENSATION

**EXHIBIT "B"**
**METHOD OF COMPENSATION**

1.00 PURPOSE:

This Exhibit describes and defines the limits of compensation to be made to the CONSULTANT for the services set forth in Exhibit "A" of this Agreement and the method by which payments shall be made.

2.00 AMOUNT OF COMPENSATION:

2.10 CFX agrees to pay the CONSULTANT for the performance of services described in Exhibit "A" an amount not to exceed a Total Maximum Limiting Amount of $2,575,000.00.

2.11 The Total Maximum Limiting Amount for the project assigned under this Agreement shall include:

- A Limiting Amount for Salary Related Costs consisting of the sum of actual salary and wages and the applicable administrative overhead and payroll burden (fringe benefits) costs;
- A Fixed Fee as the Operating Margin or profit paid for the professional services described in this Agreement;
- A Lump Sum Amount for Expenses;
- A Limiting Amount for Subconsultants (as identified in paragraph 5.0 of the Agreement for Professional Services);
- An Allowance Amount for CFX to utilize as necessary.

2.12 The Total Maximum Limiting Amount for the project assigned under this Agreement shall consist of the following:

**DEWBERRY ENGINEERS, INC.**

| | |
|---|---|
| Total Activity Salary Costs | $519,688.03 |
| (a) Overhead Additives | |
| (1) Combined (131.46%) | 683,181.88 |
| Subtotal (Salary + Overhead) | 1,202,869.91 |
| (b) Lump Sum for Operating Margin (12.00%) | 144,344.39 |
| Subtotal (Salary Related) | 1,347,214.30 |
| (c) Design Survey - Field (Prime) | 147,858.72 |
| (d) Direct Expenses - Lump Sum (Prime) | 25,300.00 |
| BASIC FEE | 1,520,373.02 |
| (e) Subcontracts (Limiting Amount) | 827,863.92 |
| (f) Allowance | 226,763.06 |
| **TOTAL MAXIMUM LIMITING AMOUNT** | **$2,575,000.00** |

2.13 It shall be the responsibility of the CONSULTANT to ensure at all times that sufficient funding remains within the Total Maximum Limiting Amount stated above in Section 2.12 to complete the services for the project. Changes in the Total Maximum Limiting Amount for the project shall require execution of a Supplemental Agreement. The CONSULTANT is obligated to complete project services within the Total Maximum Limiting Amount established herein.

3.00 ALLOWABLE COSTS:

CFX shall reimburse the CONSULTANT for all reasonable allocable and allowable costs. The reasonableness, allocability and allowability of reimbursements sought under this Agreement are expressly made subject to the terms of (1) this Agreement (2) Federal Acquisition Regulations sub-part 31-2 (3) Office of Management and Budget (OMB) Circular A-87 (46FR9548, January 28, 1981) and A-102 (45FR55086, August 18, 1980) and (4) other pertinent federal and state regulations. By reference hereto, said sub-part of Federal Acquisition Regulations and OMB circulars are hereby incorporated in and made a part of this Agreement. Allowable Costs and Fees are defined as follows:

3.10 Direct Salaries and Wages: All direct salaries and wages of the CONSULTANT and Subconsultants (as identified in paragraph 5.0 of the Agreement for Professional Services) for time expended by personnel in the performance of the work (exclusive of unit price based work performed by Class 2 Subconsultants); however, this shall specifically exclude salaries and payroll burden of Corporate Officers and Principals when expended in the performance of indirect functions.

Direct Salaries and Wages (salary costs) include both straight time payments and all overtime payments made for an employee's services on a project. Straight time costs shall be the hourly rate paid for an employee based on a forty (40) hour work week. Overtime costs shall be the salary costs paid for an employee for work exceeding a forty (40) hour work week. Overtime costs shall be paid as either Straight Overtime costs or Premium Overtime costs.

- Straight Overtime: Straight overtime shall be the portion of overtime compensation paid for employees at the straight time hourly rate and shall be burdened with overhead and fringe benefits.

- Premium Overtime: Premium overtime costs shall be the portion of overtime compensation paid in excess of the straight time hourly rate and shall not be burdened with overhead and fringe benefits.

- Payment of Overtime: Straight Overtime or Premium Overtime shall be paid in accordance with the CONSULTANT'S overtime policies and practices, provided that such compensation plan or practice is so consistently followed, in effect, to imply an equitable treatment of overtime to all the CONSULTANT'S clients.

Premium Overtime is not authorized unless approved in writing by CFX'S DIRECTOR.

3.11 Indirect Charges: Administrative overhead and payroll burden costs not to exceed a combined maximum rate of 131.46% when applied to the CONSULTANT'S chargeable salaries and wages. Administrative overhead and payroll burden costs for Subconsultants shall be as established in Exhibit "C".

3.12 Expenses: A Lump Sum Amount shall be paid to the CONSULTANT and all subconsultants for miscellaneous and out-of-pocket expenses as established in Exhibit "C".

3.13 Class 2 Subconsultants: Compensation shall be based on a unit price basis not to exceed the limiting amount established herein. The unit prices acceptable for this agreement shall be at the unit prices established in Exhibit "C".

3.14 Field Survey by subconsultant: Compensation shall be based on a unit price basis not to exceed the limiting amount established herein. The unit prices acceptable for this agreement shall be at the unit prices established in Exhibit "C".

3.15 Fixed Fee: Fixed Fee is the operating margin paid to the CONSULTANT and the Subconsultants for the professional services described in this Agreement (exclusive of unit price based work performed by Class 2 Subconsultants). The fixed fee shall remain fixed regardless of the relation of the actual salary related costs to the estimated salary related costs and regardless of any extension of contract time granted pursuant to paragraph 4.0 of the Agreement for Professional Services. Salary related costs are defined as the sum of direct salaries and wages and the applicable administrative overhead and payroll burden costs.

4.00 METHOD OF PAYMENT:

No more than the Total Maximum Limiting Amount provided for in Section 2.00 shall be paid by CFX to the CONSULTANT as follows, subject to the provisions of Section 3.00:

4.10 The CONSULTANT shall be reimbursed monthly for authorized services performed. Payment to the CONSULTANT shall be in an amount to cover costs incurred during the preceding month for actual direct salary and wages, a provisional allowance for the administrative overhead and payroll burden, a portion of Lump Sum expenses and Subconsultant Costs, plus an allowance for Fixed Fee (Operating Margin), less retainage.

The basis for all CONSULTANT and Class 1 Subconsultant (as defined in Section 5.0 in the Agreement for Professional Services) invoices shall be the actual employee salary and wages at the time work was performed on the project by such employee. Staff classification maximum rates have been established in Exhibit "C" for the CONSULTANT and all Class 1 Subconsultants. It is understood that the staff classification maximum rates shall not be exceeded without prior written approval from CFX. It is further understood that the staff classification average rates used to generate the Total Maximum Limiting Amount in Exhibit "C" will not be revised throughout the term of the Agreement. All future Supplemental Agreements executed as part of this Agreement shall be based on the negotiated staff classification average rates detailed in Exhibit "C". Class 2 Subconsultants shall prepare their invoices in accordance with the provisions of Section 3.13.

4.11 The combined provisional allowance for administrative overhead and payroll burden, expressed as a percentage of salary related costs, for the CONSULTANT is 131.46 percent.

The provisional allowance for administrative overhead and fringe benefits established herein will be adjusted, as necessary, upon completion of an interim audit during the term of the project, or a post audit following project completion, subject to the following limitations:

- The combined allowance for administrative overhead and fringe benefits shall not exceed 131.46%; and

- Adjustments to the combined allowance for administrative overhead and fringe benefits shall not increase the compensation to the CONSULTANT beyond the Total Maximum Limiting Amount.

4.12 The Fixed Fee (Operating Margin) approved by CFX to be paid to the CONSULTANT for the services set forth in this Agreement is established as shown in Section 2.12 of this Exhibit "B".

The CONSULTANT shall earn monthly a portion of its approved fixed fee at 12.00 percent of actual approved salary related costs. Accumulated fixed fee earnings are subject to the aforementioned fixed fee amount. When project services have been satisfactorily completed, the difference between the approved and previously earned fixed fee shall be due and payable to the CONSULTANT and Subconsultants (exclusive of unit price based work performed by Class 2 Subconsultants).

4.13 The CONSULTANT shall earn a portion of its established Lump Sum expense cost in the amount equal to such Lump Sum equally distributed over the project's anticipated duration. Any balance due the CONSULTANT upon completion of a project shall be paid in the final invoice.

4.14 The CONSULTANT shall be compensated for Subconsultant Services in accordance with Section 3.00 of this Exhibit "B" for actual work performed.

4.15 Payments to the CONSULTANT shall be subject to retainage. Retainage shall be calculated as a percent of the sum of salary costs, administrative overhead and payroll burden, and operating margin. No retainage shall be withheld on expenses or Subconsultant Services.

CFX shall withhold from monthly payments a retainage of ten percent (10%) until fifty percent (50%) of the work is completed, and five percent (5%) thereafter until all work is completed. Retainage withheld at project completion shall be released to the CONSULTANT upon satisfactory completion of all services and acceptance of all deliverables by CFX.

4.16 The CONSULTANT shall be responsible for the consolidation and submittal of one (1) original monthly invoice, in the form and detail established or approved by CFX. All payments on such invoices are conditional and subject to adjustment as a result of a final audit as to the allowability of costs in accordance with this Agreement. Invoices shall

include an itemization and substantiation of costs incurred. The itemization must include the amount budgeted, current amount billed, total billed to date and amount to complete.

4.17 The CONSULTANT shall promptly pay all subconsultants their proportionate share of payments received from CFX.

4.18 CFX reserves the right to withhold payment or payments in whole or in part, and to continue to withhold any such payments for work not completed, completed unsatisfactorily, work that is behind schedule or work that is otherwise performed in an inadequate or untimely fashion as determined by CFX. Any and all such payment previously withheld shall be released and paid to CONSULTANT promptly when the work is subsequently satisfactorily performed notwithstanding paragraph 4.0 of the Agreement for Professional Services.

5.00 PROJECT CLOSEOUT:

5.10 Final Audit: The CONSULTANT shall permit CFX to perform or have performed an audit of the records of the CONSULTANT and any or all subconsultants to support the compensation paid the CONSULTANT. The audit will be performed as soon as practical after completion and acceptance of the contracted services. In the event funds paid to the CONSULTANT under this Agreement are subsequently properly disallowed by CFX because of accounting errors or charges not in conformity with this Agreement, the CONSULTANT agrees that such disallowed amounts are due to CFX upon demand. Further, CFX shall have the right to deduct from any payment due the CONSULTANT under any other contract between CFX and the CONSULTANT an amount sufficient to satisfy any amount due and owing CFX by the CONSULTANT under this Agreement. Final payment to the CONSULTANT shall be adjusted for audit results.

5.11 Certificate of Completion: Subsequent to the completion of the final audit, a Certificate of Completion will be prepared for execution by both parties stating the total compensation due the CONSULTANT, the amount previously paid, and the difference.

Upon execution of the Certificate of Completion, the CONSULTANT shall either submit a termination invoice for an amount due or refund to CFX for the overpayment, provided the net difference is not zero.

# EXHIBIT C

# DETAILS OF COST AND FEES

**Dewberry**

**SR 417 Widening - Econlockhatchee Trail to Orange/Seminole Co. Line**
**417-134**
**C #**

# Contract Summary Sheet

| | Firm Name | Overhead | Fixed Fee | Total Multiplier for Class II Subs (Unit Price) |
|---|---|---|---|---|
| Class I | Dewberry | 131.46% | 12.00% | |
| Class II | Aerial | 250.00% | 8.1221% | 3.78 |
| Class I | Balmoral | 159.94% | 12.00% | |
| Class II | Tierra | 164.75% | 12.00% | 2.97 |
| Class I | Comprehensive | 177.42% | 11.4447% | |

* **Class I will be billed using overhead and fixed fee.**
* **Class II subs will be billed at unit price for classification.**

## ESTIMATE OF WORK EFFORT AND COST - PRIME CONSULTANT

Name of Project: SR 417, Econlockhatchee Trail to Seminole County Line
County: Orange County
FPN: 417-134
FAP No.: N/A

Consultant Name: Dewberry
Consultant No.: enter consultants proj. number
Date: 6/7/2016
Estimator: Kevin Knudsen

| Staff Classification | Total Staff Hours From "SH Summary - | Project Manager | Senior Engineer | Engineer | Engineer Intern | Sr. Engr. Technician | Engr. Technician | Sr. Envir. Scientist | Envir. Specialist | Senior Surveyor | Surveyor | Survey Technician | Staff Classi- fication 12 | SH By Activity | Salary Cost By Activity | Average Rate Per Task |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $87.70 | $60.34 | $41.73 | $29.28 | $35.98 | $19.73 | $38.00 | $26.72 | $67.21 | $44.09 | $26.06 | $0.00 | | | |
| 3. Project General and Project Common Tasks | 420 | 252 | 84 | 42 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 420 | $30,433 | $72.46 |
| 4. Roadway Analysis | 3,322 | 498 | 1,330 | 664 | 166 | 498 | 166 | 0 | 0 | 0 | 0 | 0 | 0 | 3,322 | $177,689 | $53.49 |
| 5. Roadway Plans | 1,432 | 143 | 358 | 358 | 72 | 358 | 143 | 0 | 0 | 0 | 0 | 0 | 0 | 1,432 | $66,893 | $46.71 |
| 6a. Drainage Analysis | 1,140 | 114 | 456 | 342 | 0 | 228 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,140 | $59,988 | $52.62 |
| 6b. Drainage Plans | 976 | 98 | 244 | 244 | 49 | 292 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 976 | $46,407 | $47.55 |
| 7. Utilities | 42 | 25 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | $3,218 | $76.63 |
| 8. Environmental Permits, Compliance & Clearances | 214 | 21 | 21 | 43 | 0 | 0 | 0 | 86 | 43 | 0 | 0 | 0 | 0 | 214 | $9,320 | $43.55 |
| 9. Structures - Misc. Tasks, Dwgs, Non-Tech. | 323 | 16 | 129 | 81 | 16 | 65 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 323 | $15,690 | $48.58 |
| 10. Structures - Bridge Development Report | 160 | 8 | 56 | 40 | 8 | 32 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 160 | $7,451 | $46.57 |
| 11. Structures - Temporary Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 12. Structures - Short Span Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 13. Structures - Medium Span Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 14. Structures - Structural Steel Bridge | 840 | 42 | 210 | 210 | 84 | 252 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 840 | $37,473 | $44.61 |
| 15. Structures - Segmental Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 16. Structures - Movable Span | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 17. Structures - Retaining Walls | 64 | 4 | 16 | 16 | 6 | 19 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | $2,902 | $45.35 |
| 18. Structures - Miscellaneous | 812 | 40 | 203 | 203 | 81 | 244 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 812 | $36,188 | $44.57 |
| 19. Signing & Pavement Marking Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 20. Signing & Pavement Marking Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 21. Signalization Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 22. Signalization Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 23. Lighting Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 24. Lighting Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 25. Landscape Architecture Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 26. Landscape Architecture Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 27. Survey (Field & Office Support) | 655 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 196 | 327 | 0 | 655 | $26,035 | $39.75 |
| 28. Photogrammetry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 29. Mapping | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 30. Terrestrial Mobile LiDAR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 31. Architecture Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 32. Noise Barriers Impact Design Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 33. Intelligent Transportation Systems Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 34. Intelligent Transportation Systems Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 35. Geotechnical | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| **Total Staff Hours** | 10,400 | 1,261 | 3,124 | 2,243 | 482 | 2,030 | 476 | 86 | 43 | 132 | 196 | 327 | 0 | 10,400 | | |
| **Total Staff Cost** | | $110,589.70 | $188,502.16 | $93,600.39 | $14,112.96 | $73,039.40 | $9,391.48 | $3,268.00 | $1,148.96 | $8,871.72 | $8,641.64 | $8,521.62 | $0.00 | | $519,688.03 | $49.97 |

Check = $519,688.03

Survey Field Days by Subconsultant
4 - Person Crew:

Notes:
1. This sheet to be used by Prime Consultant to calculate the Grand Total fee.
2. Manually enter fee from each subconsultant. Unused subconsultant rows may be hidden.

| | | | |
|---|---|---|---|
| **SALARY RELATED COSTS:** | | | **$519,688.03** |
| OVERHEAD: | 131.46% | | $683,181.88 |
| OPERATING MARGIN: | 12% | | $144,344.39 |
| EXPENSES: | | | $25,300.00 |
| Survey (Field - if by Prime) | 118 | 4-man crew days @ $ 1,253.04 / day | $147,858.72 |
| **SUBTOTAL ESTIMATED FEE:** | | | **$1,520,373.02** |
| Subconsultant: CES | | | $373,441.99 |
| Subconsultant: Balmoral | | | $123,465.44 |
| Subconsultant: Tierra | | | $189,290.64 |
| Subconsultant: ACA | | | $141,665.85 |
| Subconsultant: Sub 5 | | | $0.00 |
| **SUBTOTAL SUBCONSULTANTS:** | | | **$827,863.92** |
| Geotechnical Field and Lab Testing | | | $0.00 |
| **SUBTOTAL ESTIMATED FEE:** | | | **$2,348,236.94** |
| Optional Services | | | $0.00 |
| **GRAND TOTAL ESTIMATED FEE:** | | | **$2,348,236.94** |

## Project Staff Hour Summary

**Name of Consultant:** Dewberry

**SR 417, Econlockhatchee Trail to Seminole County Line**
**417-134**

| Activity No. | Activity | Project Staff Hours | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Dewberry | CES | Balmoral | Tierra | Sub 4 | Sub 5 | Sub 6 | Sub 7 | Sub 8 | Sub 9 | Sub 10 | Sub 11 | Sub 12 | Total Hours |
| 3 | Project Common and General Tasks | 420 | | | | | | | | | | | | | 420 |
| 4 | Roadway Analysis | 3322 | 140 | | | | | | | | | | | | 3462 |
| 5 | Roadway Plans | 1432 | | | | | | | | | | | | | 1432 |
| 6a | Drainage Analysis | 1140 | | 40 | | | | | | | | | | | 1180 |
| 6b | Drainage Plans | 976 | | | | | | | | | | | | | 976 |
| 7 | Utilities | 42 | 382 | | | | | | | | | | | | 424 |
| 8 | Env. Permits, Compliance & Clearances | 214 | | | 45 | | | | | | | | | | 259 |
| 9 | Structures - Summary, Misc. Tasks, Dwgs. | 323 | | | | | | | | | | | | | 323 |
| 10 | BDR | 160 | | | | | | | | | | | | | 160 |
| 11 | Temporary Bridge | 0 | | | | | | | | | | | | | 0 |
| 12 | Short Span Concrete Bridge | 0 | | | | | | | | | | | | | 0 |
| 13 | Medium Span Concrete Bridge | 0 | | | | | | | | | | | | | 0 |
| 14 | Structural Steel Bridge | 840 | | | | | | | | | | | | | 840 |
| 15 | Segmental Concrete Bridge | 0 | | | | | | | | | | | | | 0 |
| 16 | Movable Span | 0 | | | | | | | | | | | | | 0 |
| 17 | Retaining Walls | 64 | | | | | | | | | | | | | 64 |
| 18 | Miscellaneous Structures | 812 | | | | | | | | | | | | | 812 |
| 19 | Signing & Pavement Marking Analysis | 0 | 65 | 680 | | | | | | | | | | | 745 |
| 20 | Signing & Pavement Marking Plans | 0 | | 389 | | | | | | | | | | | 389 |
| 21 | Signalization Analysis | 0 | | | | | | | | | | | | | 0 |
| 22 | Signalization Plans | 0 | | | | | | | | | | | | | 0 |
| 23 | Lighting Analysis | 0 | 934 | | | | | | | | | | | | 934 |
| 24 | Lighting Plans | 0 | 342 | | | | | | | | | | | | 342 |
| 25 | Landscape Architecture Analysis | 0 | | | | | | | | | | | | | 0 |
| 26 | Landscape Architecture Plans | 0 | | | | | | | | | | | | | 0 |
| 27 | Survey - Field and Office Support | 655 | | | | | | | | | | | | | 655 |
| 28 | Photogrammetry | 0 | | | | | | | | | | | | | 0 |
| 29 | Mapping | 0 | | | | | | | | | | | | | 0 |
| 30 | Terrestrial Mobile LiDAR | 0 | | | | | | | | | | | | | 0 |
| 31 | Architecture Development | 0 | | | | | | | | | | | | | 0 |
| 32 | Noise Barriers Impact Design Assessment | 0 | | | | | | | | | | | | | 0 |
| 33 | ITS Analysis | 0 | 433 | | | | | | | | | | | | 433 |
| 34 | ITS Plans | 0 | 288 | | | | | | | | | | | | 288 |
| 35 | Geotechnical | 0 | | | 811 | | | | | | | | | | 811 |
| | **Project Total** | **10,400** | **2,584** | **1,109** | **856** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **14,949** |
| 27 | Survey Field Crew Days | 118 | | | | | | | | | | | | | 118 |

Notes: 1. Staff hours for prime consultant come directly from each discipline's worksheet.
2. Staff hours for subconsultants are to be entered manually into columns D through O.
3. For workbooks prepared by subconsultants, their project hours will be totaled in column C.

## Project Activity 3: General Tasks

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 3.1 | Public Involvement | | | | | |
| 3.1.1 | Community Awareness Plan | LS | 1 | 0 | 0 | |
| 3.1.2 | Notifications | LS | 1 | 0 | 0 | |
| 3.1.3 | Prepare Mailing Lists | LS | 1 | 0 | 0 | |
| 3.1.4 | Median Modification Letters | LS | 1 | 0 | 0 | |
| 3.1.5 | Driveway Modification Letters | LS | 1 | 0 | 0 | |
| 3.1.6 | Newsletters | LS | 1 | 0 | 0 | |
| 3.1.7 | Renderings and Fly Throughs | LS | 1 | 0 | 0 | |
| 3.1.8 | PowerPoint Presentation | LS | 1 | 0 | 0 | |
| 3.1.9 | Public Meeting Preparations | LS | 1 | 60 | 60 | Exhibit Preparation |
| 3.1.10 | Public Meeting Attendance/Followup | LS | 1 | 12 | 12 | 3 people @ 4 hrs/ea |
| 3.1.11 | Other Agency Meetings | LS | 4 | 7 | 28 | 2 people (1 hr travel, 2 hr meeting ea) + 1 hr/mtg agenda & minutes |
| 3.1.12 | Web Site | LS | 1 | 0 | 0 | |
| | **3.1 Public Involvement Subtotal** | | | | **100** | |
| 3.2 | Joint Project Agreements | EA | 0 | 0 | 0 | |
| 3.3 | Specifications Package Preparation | LS | 1 | 24 | 24 | Review Spec Package preparred by Atkins |
| 3.4 | Contract Maintenance and EDMS | LS | 1 | 40 | 40 | 16 hrs setup + 2/hrs/mo for 12 months |
| 3.5 | Value Engineering (Multi-Discipline Team) Review | LS | 1 | 0 | 0 | |
| 3.6 | Prime Consultant Project Manager Meetings | LS | 1 | 240 | 240 | See listing below |
| 3.7 | Plans Update | LS | 1 | 0 | 0 | |

## Project Activity 3: General Tasks

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 3.8 | Post Design Services | LS | 1 | 0 | 0 | |
| 3.9 | Digital Delivery | LS | 1 | 16 | 16 | |
| 3.10 | Risk Assessment Workshop | LS | 1 | 0 | 0 | |
| 3.11 | Railroad, Transit, and/or Airport Coordination | LS | 1 | 0 | 0 | |
| 3.12 | Other Project General Tasks | LS | 1 | 0 | 0 | |
| **3. Project Common and Project General Tasks Total** | | | | | **420** | |

| 3.6 - List of Project Manager Meetings | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|
| Roadway Analysis | EA | 0 | 0 | 0 | |
| Drainage | EA | 0 | 0 | 0 | |
| Utilities | EA | 0 | 0 | 0 | |
| Environmental | EA | 0 | 0 | 0 | |
| Structures | EA | 0 | 0 | 0 | |
| Signing & Pavement Marking | EA | 0 | 0 | 0 | |
| Signalization | EA | 0 | 0 | 0 | |
| Lighting | EA | 0 | 0 | 0 | |
| Landscape Architecture | EA | 0 | 0 | 0 | |
| Survey | EA | 0 | 0 | 0 | |
| Photogrammetry | EA | 0 | 0 | 0 | |
| ROW & Mapping | EA | 0 | 0 | 0 | |
| Terrestrial Mobile LiDAR | EA | 0 | 0 | 0 | |
| Architecture | EA | 0 | 0 | 0 | |
| Noise Barriers | EA | 0 | 0 | 0 | |
| ITS Analysis | EA | 0 | 0 | 0 | |
| Geotechnical | EA | 0 | 0 | 0 | |
| Progress Meetings | EA | 24 | 9 | 216 | Bi-Weekly for 12 months (4 people @ 2hrs/ea) + 1 hr/mtg for agenda & mintes |
| Phase Reviews | EA | 4 | 4 | 16 | 2 people @ 2 hrs/ea |
| Field Reviews | EA | 2 | 4 | 8 | 2 people @ 4 hrs/ea |
| **Total Project Manager Meetings** | | 30 | | 240 | Total PM Meeting Hours carries to Task 3.6 above |

**Notes:**

1. **If the hours per meeting vary in length (hours) enter the average in the hour/unit column.**
2. **Do not double count agency meetings between permitting agencies.**
3. **Project manager meetings are calculated in each discipline sheet and brought forward to Column D, except for Photogrammetry.**

## Project Activity 4: Roadway Analysis

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 4.1 | Typical Section Package | LS | 1 | 0 | 0 | Included in Preliminary Design Review |
| 4.2 | Pavement Type Selection Report | LS | 1 | 0 | 0 | |
| 4.3 | Pavement Design Package | LS | 1 | 50 | 50 | SR 417 Widening, SR 417 M&R, University Blvd Ramp (20 hrs set-up + 10 hrs/typical) |
| 4.4 | Cross-Slope Correction | LS | 1 | 60 | 60 | Widening Transitions |
| 4.5 | Horizontal /Vertical Master Design Files | LS | 1 | 996 | 996 | SR 417 ( 1 mile @ 300 hrs/mi + 2 miles @ 240 hrs/mi) + Toll Plaza Cash Lanes (0.5 mi @ 200 hrs/mi) + Univ Blvd On-Ramp (0.5 mi @ 200 hrs/mi)+ 16 hrs for gen files |
| 4.6 | Access Management | LS | 1 | 0 | 0 | |
| 4.7 | Roundabout Evaluation | LS | 1 | 0 | 0 | |
| 4.8 | Roundabout Final Design Analysis | LS | 1 | 0 | 0 | |
| 4.9 | Cross Section Design Files | LS | 1 | 525 | 525 | SR 417 (3 mi) + Ramps (0.5 mi) = 3.5 mi @ 150 hrs/mi) |
| 4.10 | Traffic Control Analysis | LS | 1 | 360 | 360 | Level 3 @ 3 miles, Analysis LS = 80 hrs, Cross Sections (Critical Locations) - SR 417 (1.5 mi x 3 phases x 40 hrs/phase) = 240 hrs, Univ Ramp (0.5 mi x 2 phases x 40 hrs/phase) = 40 hrs |
| 4.11 | Master TCP Design Files | LS | 1 | 400 | 400 | Level 3 @ 3 miles, SR 417 (40 hrs/mi x 3 phases x 3 miles) = 360 hrs, Univ Ramp (0.5 mi x 2 phases x 40 hrs/phase) = 40 hrs |
| 4.12 | Design Variations and Exceptions | LS | 1 | 0 | 0 | |
| 4.13 | Design Report | LS | 1 | 52 | 52 | Design Notebook |
| 4.14 | Quantities | LS | 1 | 140 | 140 | |
| 4.15 | Cost Estimate | LS | 1 | 60 | 60 | 3 @ 20 hrs/ea |
| 4.16 | Technical Special Provisions | LS | 1 | 0 | 0 | |
| 4.17 | Other Roadway Analyses | LS | 1 | 288 | 288 | Preliminary Design Review (3 people x 3 weeks x 32 hrs/wk) |
| | **Roadway Analysis Technical Subtotal** | | | | **2931** | |

## Project Activity 4: Roadway Analysis

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 4.18 | Field Reviews | LS | 1 | 0 | 0 | |
| 4.19 | Monitor Existing Structures | LS | 1 | 0 | 0 | |
| 4.20 | Technical Meetings | LS | 1 | 0 | 0 | Meetings are listed below |
| 4.21 | Quality Assurance/Quality Control | LS | % | 5% | 147 | |
| 4.22 | Independent Peer Review | LS | % | 0% | 0 | |
| 4.23 | Supervision | LS | % | 5% | 147 | |
| | **Roadway Analysis Nontechnical Subtotal** | | | | **294** | |
| 4.24 | Coordination | LS | % | 3% | 97 | |
| | **4. Roadway Analysis Total** | | | | **3322** | |

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| Typical Section | EA | 0 | 0 | 0 | | 0 |
| Pavement | EA | 1 | 0 | 0 | | 0 |
| Access Management | EA | 0 | 0 | 0 | | 0 |
| 15% Line and Grade | EA | 1 | 0 | 0 | | 0 |
| Driveways | EA | 0 | 0 | 0 | | 0 |
| Local Governments (cities, counties, MPO) | EA | 0 | 0 | 0 | | 0 |
| Work Zone Traffic Control | EA | 0 | 0 | 0 | | 0 |
| 30/60/90/100% Comment Review Meetings | EA | 3 | 0 | 0 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | **0** | **Subtotal Project Manager Meetings** | 0 |
| Progress Meetings (if required by FDOT) | EA | 0 | 0 | 0 | *PM attendance at Progress Meetings is manually entered on General Task 3* | -- |
| Phase Review Meetings | EA | 0 | 0 | 0 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | -- |
| **Total Meetings** | | | | **0** | **Total Project Manager Meetings (carries to Tab 3)** | **0** |

Carries to 4.17

Carries to Tab 3

## Project Activity 5: Roadway Plans

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | | Print Name | Signature / Date |
|---|---|---|---|
| FDOT District | | | |
| Dewberry | | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Scale | Units | No. of Units or Sheet | Hours/ Unit or Sheet | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| 5.1 | Key Sheet | | Sheet | 1 | 8 | 8 | |
| 5.2 | Summary of Pay Items Including Quantity Input | | Sheet | 2 | 20 | 40 | |
| 5.3 | Typical Section Sheets | | | | | | |
| 5.3.1 | Typical Sections | | EA | 7 | 9 | 63 | SR 417 (3), Cash Lanes (1), Ramp (3) |
| 5.3.2 | Typical Section Details | | EA | 3 | 10 | 30 | Cross Slope Correction/Mill & Resurface and shoulder treatment Details |
| 5.4 | General Notes/Pay Item Notes | | Sheet | 2 | 16 | 32 | |
| 5.5 | Summary of Quantities Sheets | | Sheet | 25 | 5 | 125 | FDOT Method |
| 5.6 | Project Layout | | Sheet | 1 | 8 | 8 | |
| 5.7 | Plan/Profile Sheet | | Sheet | 0 | 0 | 0 | |
| 5.8 | Profile Sheet | | Sheet | 34 | 4 | 136 | SR 417 (24), Cash Lanes (4), University Ramp (4) |
| 5.9 | Plan Sheet | | Sheet | 28 | 4 | 112 | SR 417 (24), University Ramp (2) |
| 5.10 | Special Profile | | Sheet | 0 | 0 | 0 | |
| 5.11 | Back-of-Sidewalk Profile Sheet | | Sheet | 0 | 0 | 0 | |
| 5.12 | Interchange Layout Sheet | | Sheet | 1 | 24 | 24 | University Blvd |
| 5.13 | Ramp Terminal Details (Plan View) | | Sheet | 7 | 10 | 70 | Cash Lanes (4), University Blvd (2), Aloma (1) |
| 5.14 | Intersection Layout Details | | Sheet | 0 | 0 | 0 | |
| 5.15 | Special Details | | EA | 0 | 0 | 0 | |
| 5.16 | Cross-Section Pattern Sheet(s) | | Sheet | 2 | 6 | 12 | |

## Project Activity 5: Roadway Plans

| Task No. | Task | Scale | Units | No. of Units or Sheet | Hours/ Unit or Sheet | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| 5.17 | Roadway Soil Survey Sheet(s) | | Sheet | 1 | 1 | 1 | |
| 5.18 | Cross Sections | | EA | 205 | 0.25 | 51 | SR 417 (3 mi) + University Blvd Ramp (0.5 mi) = 3.5 mi = 18,480 LF @ 100' spacing |
| 5.19 | Temporary Traffic Control Plan Sheets | | Sheet | 72 | 5 | 360 | 3 mi @ 50 Scale = 24 sheets x 3 Phases = 72 sheets |
| 5.20 | Temporary Traffic Control Cross Section Sheets | | EA | 96 | 0.25 | 24 | 3 mi @ 500' spacing = 32 sections x 3 phases = 96 sections |
| 5.21 | Temporary Traffic Control Detail Sheets | | Sheet | 12 | 6 | 72 | General Notes, Quantities, Pfasing Typicals & Notes, Detour Sheets, Advanced Signing, etc. |
| 5.22 | Utility Adjustment Sheets | | Sheet | 30 | 3 | 90 | |
| 5.23 | Selective Clearing and Grubbing Sheet(s) | | Sheet | 12 | 3 | 36 | |
| 5.24 | Project Network Control Sheet(s) | | Sheet | 0 | 0 | 0 | Not Required |
| 5.25 | Environmental Detail Sheets | | Sheet | 0 | 0 | 0 | Not Required |
| 5.26 | Utility Verification Sheet(s) (SUE Data) | | Sheet | 2 | 4 | 8 | |
| | | | | | **Roadway Plans Technical Subtotal** | **1302** | |
| 5.27 | Quality Assurance/Quality Control | | LS | % | 5% | 65 | |
| 5.28 | Supervision | | LS | % | 5% | 65 | |
| | | | | | **5. Roadway Plans Total** | **1432** | |

## Project Activity 6a: Drainage Analysis

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 6a.1 | Drainage Map Hydrology | Per Map | 9 | 12 | 108 | 9-Basins |
| 6a.2 | Base Clearance Report | Per Location | 1 | 12 | 12 | Aloma Auxiliary Lane (Turnpike) |
| 6a.3 | Pond Siting Analysis and Report | Per Basin | 0 | 0 | 0 | |
| 6a.4 | Design of Cross Drains | EA | 9 | 8 | 72 | |
| 6a.5 | Design of Ditches | Per Ditch Mile | 7 | 15 | 105 | 3.5 miles (lt & rt) |
| 6a.6 | Design of Stormwater Management Facility (Offsite or Infield Pond) | EA | 6 | 40 | 240 | Ponds 4,7,8,6E & 6U, Watermill |
| 6a.7 | Design of Stormwater Management Facility (Roadside Ditch as Linear Pond) | Per Cell | 0 | 0 | 0 | |
| 6a.8 | Design of Floodplain Compensation | Per Floodplain Basin | 1 | 40 | 40 | Lake Telfer Floodplain |
| 6a.9 | Design of Storm Drains | EA | 116 | 2 | 232 | |
| 6a.10 | Optional Culvert Material | EA | 0 | 0 | 0 | |
| 6a.11 | French Drain Systems | Per Cell | 0 | 0 | 0 | |
| 6a.12 | Drainage Wells | EA | 0 | 0 | 0 | |
| 6a.13 | Drainage Design Documentation Report | LS | 1 | 80 | 80 | |
| 6a.14 | Bridge Hydraulic Report | EA | 0 | 0 | 0 | |

## Project Activity 6a: Drainage Analysis

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 6a.15 | Temporary Drainage Analysis | LS | 1 | 40 | 40 | Toll Plaza Area |
| 6a.16 | Cost Estimate | LS | 1 | 8 | 8 | |
| 6a.17 | Technical Special Provisions | LS | 1 | 0 | 0 | |
| 6a.18 | Other Drainage Analysis | LS | 1 | 0 | 0 | |
| | | | **Drainage Analysis Technical Subtotal** | | **937** | |
| 6a.19 | Field Reviews | LS | 1 | 32 | 32 | 2 reviews x 2 people x 8 hrs |
| 6a.20 | Technical Meetings | LS | 1 | 44 | 44 | Meetings are listed below |
| 6a.21 | Environmental Look-Around (ELA) Meeting | LS | 1 | 0 | 0 | |
| 6a.22 | Quality Assurance/Quality Control | LS | % | 5% | 47 | |
| 6a.23 | Independent Peer Review | LS | % | 0% | 0 | |
| 6a.24 | Supervision | LS | % | 5% | 47 | |
| | | | **Drainage Analysis Nontechnical Subtotal** | | **170** | |
| 6a.25 | Coordination | LS | % | 3% | 33 | |
| | | | **6a. Drainage Analysis Total** | | **1140** | |

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| Base Clearance Water Elevation | EA | 0 | 0 | 0 | | 0 |
| Pond Siting | EA | 0 | 0 | 0 | | 0 |
| Agency | EA | 2 | 8 | 16 | | 0 |
| Local Governments (cities, counties) | EA | 0 | 0 | 0 | | 0 |
| FDOT Drainage (Mtg w/Atkins) | EA | 1 | 4 | 4 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | **20** | | 0 |
| Progress Meetings (if required by FDOT) | EA | 12 | 2 | 24 | *PM attendance at Progress Meetings is manually entered on General Task 3* | -- |
| Phase Review Meetings | EA | 0 | 0 | 0 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | -- |
| **Total Meetings** | | | | **44** | **Total Project Manager Meetings (carries to Tab 3)** | **0** |

Carries to 6.19

Carries to Tab 3

## 6b. Drainage Plans

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Scale | Units | No. of Units or Sheet | Hours/ Unit or Sheet | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| 6b.1 | Drainage Map (Including Interchanges) | | Sheet | 5 | 40 | 200 | 1" = 200' |
| 6b.2 | Bridge Hydraulics Recommendation Sheets | | Sheet | 0 | 0 | 0 | |
| 6b.3 | Summary of Drainage Structures | | Sheet | 4 | 28 | 112 | |
| 6b.4 | Optional Pipe/Culvert Material | | Sheet | 0 | 0 | 0 | |
| 6b.5 | Drainage Structure Sheet(s) (Per Structure) | | EA | 116 | 2.5 | 290 | |
| 6b.6 | Miscellaneous Drainage Detail Sheets | | Sheet | 3 | 24 | 72 | |
| 6b.7 | Lateral Ditch Plan/Profile | | Sheet | 0 | 0 | 0 | |
| 6b.8 | Lateral Ditch Cross Sections | | EA | 0 | 0 | 0 | |
| 6b.9 | Retention/Detention Ponds Detail Sheet(s) | | Sheet | 6 | 32 | 192 | |
| 6b.10 | Retention Pond Cross Sections | | EA | 48 | 0.3 | 14 | 8 per pond |
| 6b.11 | Erosion Control Plan Sheet(s) | | Sheet | 1 | 8 | 8 | Notes only. |
| 6b.12 | SWPPP Sheet(s) | | Sheet | 0 | 0 | 0 | Not Required |
| | | | | | **Drainage Plans Technical Subtotal** | **888** | |
| 6b.13 | Quality Assurance/Quality Control | | LS | % | 5% | 44 | |
| 6b.14 | Supervision | | LS | % | 5% | 44 | |
| | | | | | **6. Drainage Plans Total** | **976** | |

## Project Activity 7: Utilities

Estimator:

SR 417, Econlockhatchee Trail to Seminol

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 7.1 | Utility Kickoff Meeting | LS | 1 | 4 | 4 | 1 MTG X (2) ATTENDEES X 2 HR MTG |
| 7.2 | Identify Existing Utility Agency Owners (UAO(s)) | LS | 1 | | 0 | |
| 7.3 | Make Utility Contacts | LS | 1 | | 0 | |
| 7.4 | Exception Processing | LS | 1 | 0 | 0 | |
| 7.5 | Preliminary Utility Meeting | LS | 1 | 5 | 5 | 1 HR PRE-MTG PREP. + 2 hr DURATION x 2 ATTENDEES |
| 7.6 | Individual/Field Meetings | LS | 1 | 8 | 8 | 2 HR MEETING DURATION x 1 ATTENDEES X 4 MEETINGS |
| 7.7 | Collect and Review Plans and Data from UAO(s) | LS | 1 | 0 | 0 | |
| 7.8 | Subordination of Easements Coordination | LS | 1 | 0 | 0 | |
| 7.9 | Utility Design Meeting | LS | 1 | 5 | 5 | 1 HR PRE-MTG PREP. + 2 HR DURATION x 2 ATTENDEES |
| 7.10 | Review Utility Markups & Work Schedules, and Processing of Schedules & Agreements | LS | 1 | 20 | 20 | (1) HOURS X (1) UTILITY DOCUMENTS x 20 UAO's |
| 7.11 | Utility Coordination/Followup | LS | 1 | 0 | 0 | |
| 7.12 | Utility Constructability Review | LS | 1 | 0 | 0 | |
| 7.13 | Additional Utility Services | LS | 1 | 0 | 0 | |
| 7.14 | Processing Utility Work by Highway Contractor (UWHC) | LS | 1 | 0 | 0 | |
| 7.15 | Contract Plans to UAO(s) | LS | 1 | 0 | 0 | |

## Project Activity 7: Utilities

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.16 | Certification/Close-Out | LS | 1 | 0 | 0 | |
| 7.17 | Other Utilities | LS | 1 | 0 | 0 | |
| | | | | **7. Utilities Total** | **42** | |

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? |
|---|---|---|---|---|---|
| Kickoff (see 7.1) | EA | 0 | 0 | 0 | |
| Preliminary Meeting (see 7.5) | EA | 0 | 0 | 0 | |
| Individual UAO Meetings (see 7.6) | EA | 0 | 0 | 0 | |
| Field Meetings (see 7.6) | EA | 0 | 0 | 0 | |
| Design Meeting (see 7.9) | EA | 0 | 0 | 0 | |
| Other Meetings *(this is automatically added into Utilities Total (cell F27))* | EA | 0 | 0 | 0 | |
| **Total Meetings** | | | | **0** | **Total Project Manager Meetings (carries to Tab 3)** |

## Project Activity 8: Environmental Permits

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| | **Environmental Permits, Compliances and Clearances** | | | | | |
| 8.1 | Preliminary Project Research | LS | 1 | 16 | 16 | |
| | **Permits** | | | | | |
| 8.2 | **Field Work** | | | | | |
| 8.2.1 | Pond Site Alternatives | per pond site | 0 | 0 | 0 | |
| 8.2.2 | Establish Wetland Jurisdictional Lines and Assessments | LS | 1 | 0 | 0 | |
| 8.2.3 | Species Surveys | LS | 1 | 0 | 0 | |
| 8.2.4 | Archeological Surveys | LS | 1 | 0 | 0 | |
| 8.3 | Agency Verification of Wetland Data | LS | 1 | 0 | 0 | |
| 8.4 | **Complete And Submit All Required Permit Applications** | | | | | |
| 8.4.1 | Complete and Submit All Required Wetland Permit Applications | LS | 1 | 120 | 120 | |
| 8.4.2 | Complete and Submit All Required Species Permit Applications | LS | 1 | 0 | 0 | |
| 8.5 | Prepare Dredge and Fill Sketches (as needed) | LS | 1 | 24 | 24 | |
| 8.6 | Prepare USCG Permit Sketches | LS | 1 | 0 | 0 | |
| 8.7 | Prepare Water Management District Right-of-Way Occupancy Permit | LS | 1 | 0 | 0 | |
| 8.8 | Prepare Coastal Construction Control Line (CCCL) Permit Application | LS | 1 | 0 | 0 | |
| 8.9 | Prepare Tree Permit Information | LS | 1 | 0 | 0 | |
| 8.10 | Mitigation Design | LS | 1 | 0 | 0 | |
| 8.11 | Mitigation Coordination and Meetings | LS | 1 | 0 | 0 | |

## Project Activity 8: Environmental Permits

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 8.12 | Other Environmental Permits | LS | 1 | 0 | 0 | |
| | **Environmental Clearances/Reevaluations** | | | | | |
| 8.13 | **Technical support to Department for Environmental Clearances and Reevaluations (use when consultant provides technical support only)** | | | | | |
| 8.13.1 | NEPA or SEIR Reevaluation | LS | 1 | 0 | 0 | |
| 8.13.2 | Archaeological and Historical Features | LS | 1 | 0 | 0 | |
| 8.13.3 | Wetland Impact Analysis | LS | 1 | 0 | 0 | |
| 8.13.4 | Essential Fish Habitat | LS | 1 | 0 | 0 | |
| 8.13.5 | Wildlife and Habitat Impact Analysis | LS | 1 | 0 | 0 | |
| 8.13.6 | Section 7 or Section 10 Consultation | LS | 1 | 0 | 0 | |
| 8.14 | **Preparation of Environmental Clearances and Reevaluations (use when consultant prepares all documents associated with reevaluation)** | | | | | |
| 8.14.1 | NEPA or SEIR Reevaluation | LS | 1 | 0 | 0 | |
| 8.14.2 | Archaeological and Historical Features | LS | 1 | 0 | 0 | |
| 8.14.3 | Wetland Impact Analysis | LS | 1 | 0 | 0 | |
| 8.14.4 | Essential Fish Habitat | LS | 1 | 0 | 0 | |
| 8.14.5 | Wildlife and Habitat Impact Analysis | LS | 1 | 0 | 0 | |
| 8.14.6 | Section 7 or Section 10 Consultation | LS | 1 | 0 | 0 | |
| 8.15 | Contamination Impact Analysis | LS | 1 | 0 | 0 | |
| 8.16 | Asbestos Survey | LS | 1 | 0 | 0 | |
| | **Environmental Permits, Compliance, and Clearances/Reevaluations Technical Subtotal** | | | | **160** | |
| 8.17 | Technical Meetings | LS | 1 | 32 | 32 | Meetings are listed below |
| 8.18 | Quality Assurance/Quality Control | LS | % | 5% | 8 | |
| 8.19 | Supervision | LS | % | 5% | 8 | |
| | **Environmental Permits, Compliance and Clearances Nontechnical Subtotal** | | | | **48** | |
| 8.20 | Coordination | LS | % | 3% | 6 | |
| | **8. Environmental Permits, Compliance and Clearances Total** | | | | **214** | |

## Project Activity 8: Environmental Permits

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| WMD | EA | 1 | 8 | 8 | | 0 |
| NMFS | EA | 0 | 0 | 0 | | 0 |
| USACE | EA | 1 | 8 | 8 | | 0 |
| USCG | EA | 0 | 0 | 0 | | 0 |
| USFWS | EA | 0 | 0 | 0 | | 0 |
| FFWCC | EA | 0 | 0 | 0 | | 0 |
| FDOT | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | EA | 2 | 8 | 16 | | 0 |
| **Subtotal Technical Meetings** | | | | 32 | **Subtotal Project Manager Meetings** | 0 |
| Progress Meetings (if required by FDOT) | EA | 0 | 0 | 0 | *PM attendance at Progress Meetings is manually entered on General Task 3* | - - |
| Phase Review Meetings | EA | 0 | 0 | 0 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | - - |
| **Total Meetings** | | | | 32 | **Total Project Manager Meetings (carries to Tab 3)** | 0 |

Carries to 8.18

Carries to Tab 3

## Project Activity 9: Structures Summary and Miscellaneous Tasks and Drawings

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | Design and Production Staffhours | | | | Comments |
|---|---|---|---|---|---|---|---|
| | | | No. of Units | Hours per Unit | No. of Sheets | Total | |
| | **General Drawings** | | | | | | |
| 9.1 | Key Sheet and Index of Drawings | Sheet | 1 | 8 | 1 | 8 | |
| 9.2 | Project Layout | Sheet | 0 | 0 | 0 | 0 | |
| 9.3 | General Notes and Bid Item Notes | Sheet | 2 | 16 | 2 | 32 | |
| 9.4 | Miscellaneous Common Details | Sheet | 0 | 0 | 0 | 0 | |
| 9.5 | Incorporate Report of Core Borings | Sheet | 1 | 1 | 1 | 1 | |
| 9.6 | Existing Bridge Plans | LS | 1 | 4 | | 4 | |
| 9.7 | Assemble Plan Summary Boxes and Quantities | LS | 1 | 16 | | 16 | |
| 9.8 | Cost Estimate | LS | 1 | 8 | | 8 | |
| 9.9 | Technical Special Provisions | LS | 1 | 0 | | 0 | |
| | **Structures - Summary and Miscellaneous Tasks and Drawings Subtotal** | | | | 4 | 69 | |

| Task No. | Task | Total | Task 10 | Task 11 | Task 12 | Task 13 | Task 14 | Task 15 | Task 16 | Task 17 | Task 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10-16 | Bridge 1 | 1000 | 160 | 0 | 0 | 0 | 840 | 0 | 0 | | |
| 10-16 | Bridge 2 | 0 | | | | | | | | | |
| 10-16 | Bridge 3 | 0 | | | | | | | | | |
| 10-16 | Bridge 4 | 0 | | | | | | | | | |
| 10-16 | Bridge 5 | 0 | | | | | | | | | |
| 10-16 | Bridge 6 | 0 | | | | | | | | | |

## Project Activity 9: Structures Summary and Miscellaneous Tasks and Drawings

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10-16 | Bridge 7 | 0 | | | | | | | | | |
| 10-16 | Bridge 8 | 0 | | | | | | | | | |
| 10-16 | Bridge 9 | 0 | | | | | | | | | |
| 10-16 | Bridge 10 | 0 | | | | | | | | | |
| 17 | Retaining Walls | 64 | | | | | | | | 64 | |
| 18 | Miscellaneous Structures | 812 | | | | | | | | | 812 |
| | **Structures Technical Subtotal** | 1876 | 160 | 0 | 0 | 0 | 840 | 0 | 0 | 64 | 812 |

| Task No. | Task | Units | No. of Units | Hours per Unit | Total | Comments |
|---|---|---|---|---|---|---|
| 9.10 | Field Reviews | LS | 1 | 0 | 0 | |
| 9.11 | Technical Meetings | LS | 1 | 12 | 12 | Meetings are listed below |
| 9.12 | Quality Assurance/Quality Control | LS | 5% | 5% | 97 | This should be (5% to 10%) x ("Structures - Summary and Miscellaneous Tasks and Drawings Subtotal, cell G21" + "Structures Technical Subtotal, cell C35") |
| 9.13 | Independent Peer Review | LS | 1 | 0 | 0 | |
| 9.14 | Supervision | LS | 5% | 5% | 97 | This should be (3% to 7%) x ("Structures - Summary and Miscellaneous Tasks and Drawings Subtotal, cell G21" + "Structures Technical Subtotal, cell C35") |
| | **Structures Nontechnical Subtotal** | | | | 206 | |
| 9.15 | Coordination | LS | 1 | 48 | 48 | Miscellaneous Str. Coord. - retaining walls, signs, noise walls. |
| | **9. Structures - Summary and Miscellaneous Tasks and Drawings Nontechnical and Coordination Total** | | | | 323 | |

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| BDR Coordination/Review | EA | 1 | 4 | 4 | | 0 |
| 90/100% Comment Review | EA | 1 | 4 | 4 | | 0 |
| Aesthetics Coordination | EA | 1 | 4 | 4 | | 0 |
| Regulatory Agency | EA | 0 | 0 | 0 | | 0 |
| Local Governments (cities, counties) | EA | 0 | 0 | 0 | | 0 |
| Utility Companies | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | 12 | | 0 |
| Progress Meetings (if required by FDOT) | EA | 0 | 0 | 0 | *PM attendance at Progress Meetings is manually entered on General Task 3* | - - |
| Phase Review Meetings | EA | 0 | 0 | 0 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | - - |
| **Total Meetings** | | | | 12 | **Total Project Manager Meetings (carries to Tab 3)** | 0 |

Carries to 9.11 — Carries to Tab 3

## Project Activity 10: BDR

Estimator:

Bridge Identifier (Number or Name):

SR 417, Econlockhatchee Trail to Seminole County Line

417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| | **General Requirement** | | | | | | |
| 10.1 | Bridge Geometry | LS | 1 | 8 | | 8 | |
| 10.2 | Ship Impact Data Collection | LS | 0 | 0 | | 0 | |
| 10.3 | Ship Impact Criteria | EA | 0 | 0 | | 0 | |
| | **Superstructure Alternatives** | | | | | | |
| 10.4 | Short Span Concrete Bridge | EA ALT | 0 | 0 | | 0 | |
| 10.5 | Medium Span Concrete Bridge | EA ALT | 0 | 0 | | 0 | |
| 10.6 | Long Span Concrete Bridge | EA ALT | 0 | 0 | | 0 | |
| 10.7 | Structural Steel Bridge | EA ALT | 1 | 16 | | 16 | |
| | **Foundation & Substructure Alternatives** | | | | | | |
| 10.8 | Pier/Bent | EA Type | 1 | 4 | | 4 | Match Existing |
| 10.9 | Shallow Foundations / GRS Abutments | EA Type | 0 | 0 | | 0 | |
| 10.10 | Deep Foundations | EA Foundation Evaluated | 2 | 4 | | 8 | Steel and concrete piles |
| | **Movable Span** | | | | | | |
| 10.11 | Data Collection and Design Criteria | LS | 1 | 0 | | 0 | |
| 10.12 | Movable Span Geometrics and Clearances | LS | 1 | 0 | | 0 | |
| 10.13 | Deck System Evaluation | LS | 1 | 0 | | 0 | |
| 10.14 | Framing Plan Development | LS | 1 | 0 | | 0 | |
| 10.15 | Main Girder Preliminary Design | LS | 1 | 0 | | 0 | |
| 10.16 | Conceptual Span Balance/Counterweight | LS | 1 | 0 | | 0 | |

## Project Activity 10: BDR

| Task No. | Task | Units | No of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| 10.17 | Support System Development | LS | 1 | 0 | | 0 | |
| 10.18 | Drive Power Calculations | LS | 1 | 0 | | 0 | |
| 10.19 | Drive System Development | LS | 1 | 0 | | 0 | |
| 10.20 | Power and Control Development | LS | 1 | 0 | | 0 | |
| 10.21 | Conceptual Pier Design | LS | 1 | 0 | | 0 | |
| 10.22 | Foundation Analysis (FL PIER) | LS | 1 | 0 | | 0 | |
| 10.23 | Tender Visibility Study | LS | 1 | 0 | | 0 | |
| | **Other BDR Issues** | | | | | | |
| 10.24 | Aesthetics | LS | 1 | 2 | | 2 | |
| 10.25 | TCP/Staged Construction Requirements | LS | 1 | 16 | | 16 | |
| 10.26 | Constructibility Requirements | LS | 1 | 0 | | 0 | |
| 10.27 | Load Rating for damaged/widened structures | EA Unit | 1 | 0 | | 0 | We will do the load rating with final design |
| 10.28 | Quantity and Cost Estimates | EA ALT | 2 | 8 | | 16 | |
| 10.29 | Quantity and Cost Estimates - Movable Span | LS | 1 | 0 | | 0 | |
| 10.30 | Wall Type Justification | LS | 1 | 2 | | 2 | Match Existing |
| | **Report Preparation** | | | | | | |
| 10.31 | Exhibits | EA SHEET | 4 | 16 | | 64 | Plan and Elevation, Typ Section, End Bents/ Wall modifications and phasing plan |
| 10.32 | Exhibits - Movable Span | EA SHEET | 0 | 0 | | 0 | |
| 10.33 | Report Preparation | LS | 1 | 24 | | 24 | |
| 10.34 | Report Preparation - Movable Span | LS | 1 | 0 | | 0 | |
| 10.35 | BDR Submittal Package | LS | 1 | 0 | | 0 | |
| | **10. Structures - Bridge Development Report Total** | | | | | **160** | |
| | **When ONLY 30% plans are final deliverable, use Task Nos. as shown for applicable bridge types for project Activities 12 thru 16. Staffhours to be negotiated and scaled appropriately.** | | | | | | |

## Project Activity 14: Structures -Structural Steel

Estimator:

Bridge Identifier (Number or Name):

SR 417, Econlockhatchee Trail to Seminole County Line

417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Unit | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| | **General Layout Design and Plans** | | | | | | |
| 14.1 | Overall Bridge Final Geometry | LS | 1 | 8 | | 8 | |
| 14.2 | Expansion/Contraction Analysis | EA Unit | 1 | 8 | | 8 | |
| 14.3 | General Plan and Elevation | Sheet | 1 | 32 | 1 | 32 | Update preliminary plan |
| 14.4 | Construction Staging | Sheet | 0 | 0 | 0 | 0 | |
| 14.5 | Approach Slab Plan and Details | Sheet | 1 | 32 | 1 | 32 | |
| 14.6 | Miscellaneous Details | Sheet | 1 | 8 | 1 | 8 | slope protection details |
| | **End Bent Design and Plans** | | | | | | |
| 14.7 | End Bent Geometry | EA Bent | 2 | 8 | | 16 | |
| 14.8 | Wingwall Design and Geometry | EA Bent | 2 | 8 | | 16 | |
| 14.9 | End Bent Structural Design | EA Design | 1 | 24 | | 24 | |
| 14.10 | End Bent Plan and Elevation | Sheet | 2 | 20 | 2 | 40 | |
| 14.11 | End Bent Details | Sheet | 2 | 18 | 2 | 36 | |
| | **Intermediate Bent Design and Plans** | | | | | | |
| 14.12 | Bent Geometry | EA bent | 0 | 0 | | 0 | |
| 14.13 | Bent Stability Analysis | EA design | 0 | 0 | | 0 | |
| 14.14 | Bent Structural Design | EA design | 0 | 0 | | 0 | |
| 14.15 | Bent Plan and Elevation | Sheet | 0 | 0 | 0 | 0 | |
| 14.16 | Bent Details | Sheet | 0 | 0 | 0 | 0 | |
| | **Pier Design and Plans** | | | | | | |
| 14.17 | Pier Geometry | EA pier | 0 | 0 | | 0 | |

## Project Activity 14: Structures -Structural Steel

| Task No. | Task | Unit | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| 14.18 | Pier Stability Analysis | EA design | 0 | 0 | | 0 | |
| 14.19 | Pier Structural Design | EA design | 0 | 0 | | 0 | |
| 14.20 | Pier Plan and Elevation | Sheet | 0 | 0 | 0 | 0 | |
| 14.21 | Pier Details | Sheet | 0 | 0 | 0 | 0 | |
| | **Miscellaneous Substructure Design and Plans** | | | | | | |
| 14.22 | Foundation Layout | Sheet | 1 | 16 | 1 | 16 | |
| | **Superstructure Deck Design and Plans** | | | | | | |
| 14.23 | Finish Grade Elevation (FGE) Calculation | LS | 1 | 24 | | 24 | |
| 14.24 | Finish Grade Elevations | Sheet | 2 | 16 | 2 | 32 | |
| 14.25 | Bridge Deck Design | EA section | 1 | 24 | | 24 | |
| 14.26 | Bridge Deck Reinforcing and Concrete Quantities | EA Unit | 1 | 8 | | 8 | |
| 14.27 | Superstructure Plan | Sheet | 1 | 24 | 1 | 24 | |
| 14.28 | Superstructure Section | Sheet | 1 | 24 | 1 | 24 | |
| 14.29 | Miscellaneous Bridge Deck Details | Sheet | 1 | 24 | 1 | 24 | Phasing |
| | **Reinforcing Bar Lists** | | | | | | |
| 14.30 | Preparation of Reinforcing Bar List | Sheet | 1 | 12 | 1 | 12 | |
| | **Structural Steel Plate Girder Design** | | | | | | |
| 14.31 | Unit Modeling | EA Unit | 1 | 40 | | 40 | |
| 14.32 | Section Design | EA Unit | 1 | 16 | | 16 | |
| 14.33 | Stiffener Design and Locations | EA Unit | 1 | 16 | | 16 | |
| 14.34 | Cross-Frame Design | EA Unit | 1 | 8 | | 8 | |
| 14.35 | Connections | EA Unit | 1 | 24 | | 24 | |
| 14.36 | Bearing Assembly Design and Detailing (with Jacking Analysis) | EA Unit | 1 | 16 | | 16 | |
| 14.37 | Splice Design | EA Unit | 1 | 24 | | 24 | |
| 14.38 | Shear Stud Connectors | EA Unit | 1 | 12 | | 12 | |
| 14.39 | Deflection Analysis | EA Unit | 1 | 16 | | 16 | |
| 14.40 | Framing Plan | Sheet | 1 | 16 | 1 | 16 | |

## Project Activity 14: Structures -Structural Steel

| Task No. | Task | Unit | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| 14.41 | Girder Elevation | Sheet | 1 | 16 | 1 | 16 | |
| 14.42 | Structural Steel Details | Sheet | 3 | 28 | 3 | 84 | |
| 14.43 | Splice Details | Sheet | 1 | 16 | 1 | 16 | |
| 14.44 | Girder Deflections and Camber | Sheet | 1 | 16 | 1 | 16 | |
| | **Structural Steel Box Girder Design** | | | | | | |
| 14.45 | Unit Modeling | EA Unit | 0 | 0 | | 0 | |
| 14.46 | Section Design | EA Unit | 0 | 0 | | 0 | |
| 14.47 | Stiffener Design and Locations | EA Unit | 0 | 0 | | 0 | |
| 14.48 | Interior Cross-Frame Design | EA Unit | 0 | 0 | | 0 | |
| 14.49 | Exterior Cross-Frame Design | EA Unit | 0 | 0 | | 0 | |
| 14.50 | Connections | EA Unit | 0 | 0 | | 0 | |
| 14.51 | Bearing Assembly Design and Detailing (with Jacking Analysis) | EA Unit | 0 | 0 | | 0 | |
| 14.52 | Splice Design | EA Unit | 0 | 0 | | 0 | |
| 14.53 | Shear Stud Connectors | EA Unit | 0 | 0 | | 0 | |
| 14.54 | Deflection Analysis | EA Unit | 0 | 0 | | 0 | |
| 14.55 | Framing Plan | Sheet | 0 | 0 | 0 | 0 | |
| 14.56 | Girder Elevation | Sheet | 0 | 0 | 0 | 0 | |
| 14.57 | Structural Steel Details | Sheet | 0 | 0 | 0 | 0 | |
| 14.58 | Splice Details | Sheet | 0 | 0 | 0 | 0 | |
| 14.59 | Girder Deflections and Camber | Sheet | 0 | 0 | 0 | 0 | |
| | **Erection Scheme** | | | | | | |
| 14.60 | Erection scheme analysis | EA Critical Stage | 2 | 24 | | 48 | |
| 14.61 | Erection scheme | Sheet | 1 | 24 | 1 | 24 | |
| | **Load Rating** | | | | | | |
| 14.62 | Load Rating | EA Unit | 1 | 40 | | 40 | |
| | **14. Structures - Structural Steel Bridge Total** | | | | **22** | **840** | |

## Project Activity 17: Retaining Walls

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Unit | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| | **General Requirements** | | | | | | |
| 17.1 | Key Sheet | Sheet | 0 | 0 | 0 | 0 | |
| 17.2 | Horizontal Wall Geometry | Per Wall | 1 | 6 | | 6 | |
| | **Permanent Proprietary Walls** | | | | | | |
| 17.3 | Vertical Wall Geometry | Per Wall | 1 | 6 | | 6 | |
| 17.4 | Semi-Standard Drawings | Sheet | 1 | 4 | 1 | 4 | |
| 17.5 | Wall Plan and Elevations (Control Drawings) | Sheet | 2 | 16 | 2 | 32 | |
| 17.6 | Details | Sheet | 1 | 16 | 1 | 16 | |
| | **Temporary Proprietary Walls** | | | | | | |
| 17.7 | Vertical Wall Geometry | Per Wall | 0 | 0 | | 0 | |
| 17.8 | Semi-Standard Drawings | Sheet | 0 | 0 | 0 | 0 | |
| 17.9 | Wall Plan and Elevations (Control Drawings) | Sheet | 0 | 0 | 0 | 0 | |
| 17.10 | Details | Sheet | 0 | 0 | 0 | 0 | |
| | **Cast-in-Place Retaining Walls** | | | | | | |
| 17.11 | Design | EA Design | 0 | 0 | | 0 | |
| 17.12 | Vertical Wall Geometry | EA Wall | 0 | 0 | | 0 | |
| 17.13 | General Notes | Sheet | 0 | 0 | 0 | 0 | |
| 17.14 | Wall Plan and Elevations (Control Drawings) | Sheet | 0 | 0 | 0 | 0 | |
| 17.15 | Sections and Details | Sheet | 0 | 0 | 0 | 0 | |
| 17.16 | Reinforcing Bar List | Sheet | 0 | 0 | 0 | 0 | |

## Project Activity 17: Retaining Walls

| Task No. | Task | Unit | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| | Other Retaining Walls and Bulkheads | | | | | | |
| 17.17 | Design | EA Design | 0 | 0 | | 0 | |
| 17.18 | Vertical Wall Geometry | EA Wall | 0 | 0 | | 0 | |
| 17.19 | General Notes, Tables and Misc. Details | Sheet | 0 | 0 | 0 | 0 | |
| 17.20 | Wall Plan and Elevations | Sheet | 0 | 0 | 0 | 0 | |
| 17.21 | Details | Sheet | 0 | 0 | 0 | 0 | |
| | 17. Structures - Retaining Walls Total | | | | 4 | 64 | |

## Project Activity 18: Miscellaneous Structures

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

*NOTE: Signature Block is optional, per District preference*

| Task No. | Task | Unit | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| | **Concrete Box Culvert** | | | | | | |
| 18.1 | Concrete Box Culverts | EA | 0 | 0 | | 0 | |
| 18.2 | Concrete Box Culverts Extensions | EA Extension | 0 | 0 | | 0 | |
| 18.3 | Concrete Box Culvert Data Table Plan Sheets | Sheet | 0 | 0 | 0 | 0 | |
| 18.4 | Concrete Box Culvert Special Details Plan Sheets | Sheet | 0 | 0 | 0 | 0 | |
| | **Strain Poles** | | | | | | |
| 18.5 | Steel Strain Poles | Initial Config | 0 | 0 | | 0 | |
| | | EA Add'l Config | 0 | 0 | | 0 | |
| 18.6 | Concrete Strain Poles | Initial Config | 0 | 0 | | 0 | |
| | | EA Add'l Config | 0 | 0 | | 0 | |
| 18.7 | Strain Pole Data Table Plan Sheets | Sheet | 0 | 0 | 0 | 0 | |
| 18.8 | Strain Pole Special Details Plan Sheets | Sheet | 0 | 0 | 0 | 0 | |
| | **Mast Arms** | | | | | | |
| 18.9 | Mast Arms | EA Design | 0 | 0 | | 0 | |
| 18.10 | Mast Arms Data Table Plan Sheets | Sheet | 0 | 0 | 0 | 0 | |
| 18.11 | Mast Arm Special Details Plan Sheets | Sheet | 0 | 0 | 0 | 0 | |
| | **Overhead/Cantilever Sign Structures** | | | | | | |
| 18.12 | Cantilever Sign Structures | EA Design | 8 | 16 | | 128 | |
| 18.13 | Overhead Span Sign Structures | EA Design | 7 | 16 | | 112 | |
| 18.14 | Special (Long Span) Overhead Span Sign Structures | EA Design | 0 | 0 | | 0 | |
| 18.15 | Monotube Overhead Sign Structure | EA Design | 0 | 0 | | 0 | |
| 18.16 | Bridge Mounted Signs (Attached to Superstr.) | EA Design | 0 | 0 | | 0 | |
| 18.17 | Overhead and Cantilever Sign Structures Data Table Plan Sheets | Sheet | 3 | 8 | 3 | 24 | |
| 18.18 | Overhead and Cantilever Sign Structures Special Details Plan Sheets | Sheet | 1 | 16 | 1 | 16 | Special Foundation Details. Steep Slope. |
| | **High Mast Lighting** | | | | | | |
| 18.19 | Non-Standard High Mast Lighting Structures | EA Design | 0 | 0 | | 0 | |
| 18.20 | High Mast Lighting Special Details Plan Sheets | Sheet | 0 | 0 | 0 | 0 | |
| | **Noise Barrier Walls (Ground Mount)** | | | | | | |
| 18.21 | Horizontal Wall Geometry | EA Wall | 2 | 8 | | 16 | |
| 18.22 | Vertical Wall Geometry | EA Wall | 2 | 16 | | 32 | |
| 18.23 | Summary of Quantities - Aesthetic Requirements | Sheet | 2 | 12 | 2 | 24 | |
| 18.24 | Control Drawings | Sheet | 4 | 18 | 4 | 72 | |
| 18.25 | Design of Noise Barrier Walls Covered by Standards | EA Design | 2 | 12 | | 24 | |
| 18.26 | Design of Noise Barrier Walls Not Covered by Standards | EA Design | 0 | 0 | | 0 | |
| 18.27 | Aesthetic Details | LS | 1 | 4 | | 4 | |
| | **Special Structures** | | | | | | |

## Project Activity 18: Miscellaneous Structures

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 18.28 | Fender System | LS | 1 | 0 | | 0 | |
| 18.29 | Fender System Access | LS | 1 | 0 | | 0 | |
| 18.30 | Special Structures | LS | 1 | 0 | | 0 | |
| 18.31 | Other Structures | LS | 1 | 360 | | 360 | Toll Plaza Revisions |
| | **18. Structures - Miscellaneous Total** | | | | **10** | **812** | |

# 27. Survey

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Dewberry | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Field Crew Days/Unit | Crew Days | Field Support Hours / Crew Days | Field Support Hours | Office Support Hours / Crew Days | Office Support Hours | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 27.1 | Horizontal Project Control (HPC) | | | | | | | | | Establish horizontal control as needed for tasks below, datum to match that used for previous Survey by Turnpike Authority. |
| | 2-Lane Roadway | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| | Multi-lane Roadway | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| | Interstate | Mile | 3.05 | 1.75 | 5.34 | | 0.00 | 4.00 | 21.35 | |
| | | | | | | | | | | |
| 27.2 | Vertical PC / Bench Line | | | | | | | | | Establish vertical control as needed for tasks below, set project benchmarks at 1000'± intervals along project corridor. Datum to match that used for previous Survey by Turnpike Authority. Add Benchmark information to PNC sheets. |
| | 2-Lane Roadway | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| | Multi-lane Roadway | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| | Interstate | Mile | 3.05 | 1.75 | 5.34 | | 0.00 | 5.00 | 26.69 | |
| | | | | | | | | | | |
| 27.3 | Alignment and Existing R/W Lines | | | | | | | | | Re-trace alignment from the first PT south of Econ Trail to the first PC north of Aloma Avenue. Compuute existing R/W lines through project corridor. |
| | | Mile | 4.50 | 2.00 | 9.00 | 1.00 | 9.00 | 6.00 | 54.00 | |
| 27.4 | Aerial Targets | | | Units/Day | | | | | | Locate (XYZ) targets set by ACA |
| | 2-Lane Roadway | EA | | | 0.00 | | 0.00 | | 0.00 | |
| | Multi-lane Roadway | EA | | | 0.00 | | 0.00 | | 0.00 | |
| | Interstate | EA | 72.00 | 12.00 | 6.00 | | 0.00 | 5.00 | 30.00 | |
| | | | | | | | | | | |
| 27.5 | Reference Points | "A" | | Units/Day | | | | | | Stake and reference alignment through project corridor. Prepare PNC sheets with reference point details for EOR use in construction plans prep. |
| | 2-Lane Roadway | EA | | | 0.00 | | 0.00 | | 0.00 | |
| | Multi-lane Roadway | EA | | | 0.00 | | 0.00 | | 0.00 | |
| | Interstate | EA | 18.00 | 2.00 | 9.00 | 1.00 | 9.00 | 10.00 | 90.00 | |
| | | | | | | | | | | |
| | Reference Points | "B" | | Units/Day | | | | | | |

## 27. Survey

| Task No. | Task | Units | No of Units | Field Crew Days/Unit | Crew Days | Field Support Hours / Crew Days | Field Support Hours | Office Support Hours / Crew Days | Office Support Hours | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | Non Alignment Points/Approximate | EA | | | 0.00 | | 0.00 | | 0.00 | |
| | | | | | | | | | | |
| 27.6 | Topography/DTM (3D) | | | | | | | | | Topo / DTM Survey of project corridor, lateral limits from outside edge of shoulder to 25' past R/W and within median. Prepare TIN, TOPORD.DGN, DREXRD.DGN and UTEXRD.DGN files - ACA to merge with their files. |
| | | Mile | 3.05 | 5.00 | 15.25 | | 0.00 | 6.00 | 91.50 | |
| 27.7 | Planimetric (2D) | | | | | | | | | Included in 27.6 |
| | | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| 27.8 | Roadway Cross-Sections/Profiles | | | | | | | | | Check cross sections at 500' intervals through project corridor. |
| | | EA | 33.00 | 0.1667 | 5.50 | | 0.00 | 4.00 | 22.00 | |
| 27.9 | Side Street Surveys | | | | | | | | | Topo / DTM Survey of obscure areas on side streets, add information to TIN, TOPORD.DGN, DREXRD.DGN and UTEXRD.DGN files. |
| | | Mile | 0.50 | 4.00 | 2.00 | | 0.00 | 6.00 | 12.00 | |
| 27.10 | Underground Utilities | | | | | | | | | Designate: estimated 2 utilities through project corridor (6.1 miles); 5 utilities crossing at Trevarthon and Econlockhatchee (2.8 miles); 6 utilities crossing at University (2.2 miles); 3 utilities crossing at Watermill and toll plaza (0.4 miles). 40 VVH's at potential conflicts, locations to be provided by EOR. Locate same and add information to UTEXRD.DGN file |
| | Designates | Mile/Site | 11.50 | 1.00 | 11.50 | | 0.00 | 3.00 | 34.50 | |
| | Locates | Point | 40 | 0.125 | 5.00 | | 0.00 | 4.00 | 20.00 | |
| | Survey | | 35% | 16.50 | 5.78 | | 0.00 | 5.00 | 28.88 | |
| | | | | | | | | | | |
| 27.11 | Outfall Survey | | | | | | | | | Included in 27.6 if needed |
| | | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| 27.12 | Drainage Survey | | | Units/Day | | | | | | Detail an estimated 60 existing drainage structures. Add information to DREXRD.DGN file. |
| | | EA | 60.00 | 12.00 | 5.00 | | 0.00 | 4.00 | 20.00 | |
| 27.13 | Bridge Survey | | | | | | | | | Detail bridges over University |
| | Minor / Major | EA | 2.00 | 1.00 | 2.00 | | 0.00 | 6.00 | 12.00 | |
| | | | | | | | | | | |
| 27.14 | Channel Survey | | | | | | | | | Included in 27.6 if needed |
| | | EA | | | 0.00 | | 0.00 | | 0.00 | |
| 27.15 | Pond Site Survey | | | | | | | | | TOPO/DTM Survey 8 existing ponds within the R/W to waters edge (bottom of wet ponds not to be surveyed). Add information to TIN, TOPORD.DGN, DREXRD.DGN and UTEXRD.DGN files |
| | | EA | 8.00 | 1.00 | 8.00 | | 0.00 | 6.00 | 48.00 | |
| 27.16 | Mitigation Survey | | | | | | | | | Not Included |
| | | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| 27.17 | Jurisdiction Line Survey | | | | | | | | | Locate up to one mile of wetland lines to be flagged by others. |
| | | Mile | 1.00 | 2.00 | 2.00 | | 0.00 | 6.00 | 12.00 | |

## 27. Survey

| Task No. | Task | Units | No of Units | Field Crew Days/Unit | Crew Days | Field Support Hours / Crew Days | Field Support Hours | Office Support Hours / Crew Days | Office Support Hours | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 27.18 | Geotechnical Support | | | Units/Day | | | | | | |
| | | EA | 30 | 8 | 3.75 | | 0.00 | 4.00 | 15.00 | Stake or locate 30 borings for walls and bridges. |
| 27.19 | Sectional / Grant Survey | | | | | | | | | |
| | | Corner | | | 0.00 | | 0.00 | | 0.00 | Not Included |
| | | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| 27.20 | Subdivision Location | | | | | | | | | |
| | | Block | | | 0.00 | | 0.00 | | 0.00 | Not Included |
| 27.21 | Maintained R/W | | | | | | | | | |
| | | Mile | | | 0.00 | | 0.00 | | 0.00 | Not Included |
| 27.22 | Boundary Survey | | | | | | | | | |
| | | EA | | | 0.00 | | 0.00 | | 0.00 | Not Included |
| 27.23 | Water Boundary Survey | | | | | | | | | |
| | | EA | | | 0.00 | | 0.00 | | 0.00 | Not Included |
| 27.24 | R/W Staking / R/W Line | | | | | | | | | |
| | | EA | | | 0.00 | | 0.00 | | 0.00 | Not Included |
| | | Mile | | | 0.00 | | 0.00 | | 0.00 | |
| | | | | | | | | | | |
| 27.25 | R/W Monumentation | | | | | | | | | |
| | | Point | | | 0.00 | | 0.00 | | 0.00 | Not Included |
| 27.26 | Line Cutting | | | | | | | | | |
| | | Mile | | | 0.00 | | | | | Included in other tasks if required |
| 27.27 | Work Zone Safety | | | | | | | | | |
| | | | 100 | 0.125 | 12.50 | | | | | One hour per day |
| 27.28 | Miscellaneous Surveys | | | | | | | | | |
| | | | | | 0.00 | | 0.00 | | 0.00 | |
| **Survey Subtotal** | | | | **Crew Days** | **113** | **Field Support Hours** | **18** | **Office Support Hours** | **538** | |
| 27.29 | Supplemental Surveys | | | | | | | | | THE % FOR SUPPLEMENTAL WILL BE DETERMINED AT NEGOTIATIONS. THIS ITEM CAN ONLY BE USED IF AUTHORIZED IN WRITING BY THE DISTRICT SURVEYOR |
| | | | 4.5% | 113 | 5 | | 1 | | 27 | |
| 27.30 | Document Research | Units | | | | | | | | |
| | | | | | | | | | 0 | |

## 27. Survey

| Task No. | Task | Units | No of Units | Field Crew Days/Unit | Crew Days | Field Support Hours / Crew Days | Field Support Hours | Office Support Hours / Crew Days | Office Support Hours | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 27.31 | Field Reviews | Units | | | | | | | | |
| | | | | | | | | | 0 | |
| 27.32 | Technical Meetings | LS | | | | | | | | |
| | | | 0.00 | | | | | | 0 | |
| 27.33 | Quality Assurance / Quality Control | LS | | | | | | | | |
| | | | | | | | | 5% | 27 | |
| 27.34 | Supervision | LS | | | | | | | | |
| | | | | | | | | 5% | 28 | |
| 27.35 | Coordination | LS | | | | | | | | |
| | | | | | | | | 3% | 16 | |
| | | 27. Survey Total | | Crew Days | 118 | Field Support Hours | 19 | Office Support Hours | 636 | |

SPLS =
PLS =
Office Support =
Total Hours = 655

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| Kickoff Meeting with FDOT | EA | 0 | 0 | 0 | | 0 |
| Baseline Approval Review | EA | 0 | 0 | 0 | | 0 |
| Network Control Review | EA | 0 | 0 | 0 | | 0 |
| Vertical Control Review | EA | 0 | 0 | 0 | | 0 |
| Local Governments (cities, counties) | EA | 0 | 0 | 0 | | 0 |
| Final Submittal Review | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | 0 | **Subtotal PM Meetings** | 0 |
| Progress Meetings (if required by FDOT) | EA | 0 | 0 | 0 | ** | -- |
| Phase Review Meetings | EA | 0 | 0 | 0 | ** | -- |
| **Total Meetings** | | | | 0 | **Total PM Mtgs (carries to Tab 3)** | 0 |

Carries to 27.32 | Carries to Tab 3

**** Project Manager attendance at progress, phase and field review meetings are manually entered on General Task 3**

## MISCELLANEOUS & DIRECT EXPENSES

Central Florida Expressway Authority — Consultant: Dewberry

Name of Job: SR 417 - Econ Trail to Orange/Seminole County Line - 417-134

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aerial Photography: Right-of-Way Maps | Sheets | Cost | Amount | | | | | |
| Drafting Medium (Mylar): | 0 | $0.00 | $0 | | | | $0.00 | $0.00 |
| | Blue Line | Vellum | 11X17 | 8.5X11 | | | | |
| 30% Plans | | | 6000 | 1000 | Sheets | | | |
| 60% Plans | | | 12000 | 8000 | Sheets | | | |
| 90% Plans | | | 15000 | 10000 | Sheets | | | |
| 100% Plans | | | 15000 | 6000 | Sheets | | | |
| Final Plans | | | 3000 | 5000 | Sheets | | | |
| Misc. Prints | | | 18000 | 10000 | Sheets | | | |
| Total | 0 | 0 | 69000 | 40000 | Sheets | | | |
| Costs: | Blue Line | | 0 | Sheets @ | 0.60 | | $0.00 | |
| | Vellum | | 0 | Sheets @ | 3.60 | | $0.00 | |
| | Photocopy - 11X17 | | 69000 | Sheets @ | 0.30 | | $20,700.00 | |
| | Photocopy - 8.5X11 | | 40000 | Sheets @ | 0.10 | | $4,000.00 | $24,700.00 |
| Travel From: | [Consultant Office Location] | | | | | | | |
| To Project: | Trips | | | | | | | |
| (Overnight) | | x | | people x | | days @$50 | $0.00 | |
| (Per Diem) | | x | | people x | | days @$6 | $0.00 | |
| Transport. - (Comm.) | | x | | people x | 0.00 | per trip | $0.00 | |
| - (POV) | 0 | x | 0 | miles x | 0.29 | per mile | $0.00 | |
| - (Rental) | 0 | x | 0 | (days x $ | 0.00 | Day Rate) | | |
| | | + | 0 | (miles x $ | 0.00 | Mi. Rate) | $0.00 | |
| To District: | Trips | | | | | | | |
| (Per Diem) | 0 | x | 0 | people x | 0.00 | days @$6 | $0.00 | |
| Transport. - (Comm.) | 0 | x | 0 | people x | 0.00 | per trip | $0.00 | |
| - (POV) | 0 | x | 0 | miles x | 0.29 | per mile | $0.00 | |
| - (Rental) | 0 | x | 0 | (days x $ | 0.00 | Day Rate) | | |
| | | | 0 | (miles x $ | 0.00 | Mi. Rate) | $0.00 | $0.00 |
| Shipping & Telephone | 12 | months @ $ | $50.00 | /Month) | | | | $600.00 |
| TOTAL EXPENSES | | | | | | | LUMP SUM | $25,300.00 |

Kevin Knudsen — 04/25/16

## ESTIMATE OF WORK EFFORT AND COST - SUBCONSULTANT

Name of Project: SR 417, Econlockhatchee Trail to Seminole County Line
County: Orange
CFX Contract Number 417-134

Consultant Name: Comprehensive Engineering Services, Inc.
Consultant No.: TBD
Date: 6/7/2016
Estimator: C. Simoneaux

| Staff Classification | Total Staff Hours From "SH Summary Firm" | Chief Engineer | Senior Engineer | Project Engineer | Engineer Intern | Senior Designer | Admin Assistant | Staff Classification 7 | Staff Classification 8 | Staff Classification 9 | Staff Classification 10 | Staff Classification 11 | Staff Classification 12 | SH By Activity | Salary Cost By Activity | Average Rate Per Task |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $90.55 | $62.50 | $38.31 | $24.70 | $36.05 | $25.48 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | | | |
| 3. Project General and Project Common Tasks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 4. Roadway Analysis | 140 | 14 | 28 | 35 | 28 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | $6,382 | $45.59 |
| 5. Roadway Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 6a. Drainage Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 6b. Drainage Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 7. Utilities | 382 | 38 | 76 | 96 | 76 | 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 382 | $17,399 | $45.55 |
| 8. Environmental Permits, Compliance & Clearances | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 9. Structures - Misc. Tasks, Dwgs, Non-Tech. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 10. Structures - Bridge Development Report | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 11. Structures - Temporary Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 12. Structures - Short Span Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 13. Structures - Medium Span Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 14. Structures - Structural Steel Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 15. Structures - Segmental Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 16. Structures - Movable Span | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 17. Structures - Retaining Walls | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 18. Structures - Miscellaneous | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 19. Signing & Pavement Marking Analysis | 65 | 7 | 13 | 16 | 13 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 | $2,989 | $45.99 |
| 20. Signing & Pavement Marking Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 21. Signalization Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 22. Signalization Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 23. Lighting Analysis | 934 | 93 | 187 | 234 | 187 | 233 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 934 | $42,558 | $45.57 |
| 24. Lighting Plans | 342 | 34 | 68 | 86 | 68 | 86 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 342 | $15,575 | $45.54 |
| 25. Landscape Architecture Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 26. Landscape Architecture Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 27. Survey (Field & Office Support) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 28. Photogrammetry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 29. Mapping | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 30. Terrestrial Mobile LiDAR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 31. Architecture Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 32. Noise Barriers Impact Design Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 33. Intelligent Transportation Systems Analysis | 433 | 43 | 87 | 108 | 87 | 108 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 433 | $19,727 | $45.56 |
| 34. Intelligent Transportation Systems Plans | 288 | 29 | 58 | 72 | 58 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 288 | $13,143 | $45.64 |
| 35. Geotechnical | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| **Total Staff Hours** | 2,584 | 258 | 517 | 647 | 517 | 645 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,584 | | |
| **Total Staff Cost** | | $23,361.90 | $32,312.50 | $24,786.57 | $12,769.90 | $24,542.25 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | | **$117,773.12** | **$45.58** |
| | | | | | | | | | | | | | | Check = | $117,773.12 | |

| | | |
|---|---|---|
| SALARY RELATED COSTS: | | $ 117,773.12 |
| OVERHEAD: | 177.42% | $ 208,953.07 |
| OPERATING MARGIN: | 11.4447% | $ 37,392.83 |
| EXPENSES: | | $ 9,322.97 |
| **SUBTOTAL ESTIMATED FEE:** | | **$ 373,441.99** |
| **SUBTOTAL ESTIMATED FEE:** | | **$ 373,441.99** |
| Optional Services | | $ - |
| **GRAND TOTAL ESTIMATED FEE:** | | **$ 373,441.99** |

Notes:

1. This sheet to be used by Subconsultant to calculate its fee.

## EXPENSES

Prepared by: **Comprehensive Engineering Services, Inc.**
Project Identification No.: **417-134**
Project Description: **SR 417 - Econ Trail to Seminole County Line**

| REPRODUCTION | 8½"x11" COLOR | 8½"x11" XEROX | 8½"x14" XEROX | 11" X 17" COLOR | 11" X 17" XEROX | 11" X 17" Laminate | Drill & Post Binding | 24" X 36" Bond Paper Plots | 24" X 36" Mylar Plots |
|---|---|---|---|---|---|---|---|---|---|
| Printing | 665 | 4814 | | 4120 | 23165 | | | | |
| Lanminated Covers & Backs | | | | | | 156 | | | |
| 30%, 60% & Final Submittals | | | | | | | 156 | | |
| Signed & Sealed Originals | | | | | | | | 0 | 0 |
| SUBTOTAL | 665 | 4814 | 0 | 4120 | 23165 | 156 | 156 | 0 | 0 |
| UNIT COST | $0.60 | $0.04 | $0.06 | $1.10 | $0.070 | $1.70 | $2.25 | $0.60 | $8.40 |
| TOTALS COST | $399.00 | $192.56 | $0.00 | $4,532.00 | $1,621.55 | $265.20 | $351.00 | $0.00 | $0.00 |
| | | | | | | | Sub Total | $7,361.31 | |

| TRAVEL EXPENSES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| TRAVEL (From Orlando Office) | | | | Round Trip | | | | | |
| To Project : | 12 | Trips @ | 35 | Miles @ | $0.445 | Per Mile = | $186.90 | | |
| Tolls: | 12 | Trips @ | $4.00 | /round trip | | = | $48.00 | | |
| Meals | 0 | Trips with | $0.00 | per diem x | 0 | People = | $0.00 | | |
| TRAVEL (From Orlando Office) | | | | | | | | | |
| To CFX Office: | 10 | Trips @ | 8.8 | Miles @ | $0.445 | Per Mile = | $39.16 | | |
| Tolls: | 10 | Trips @ | $2.00 | /round trip | | = | $20.00 | | |
| TRAVEL (From Orlando Office) | | | | | | | | | |
| | 0 | Trips @ | | Miles @ | $0.445 | Per Mile = | $0.00 | | |
| TRAVEL (From Orlando Office) | | | | | | | | | |
| To Other Office: | 0 | Trips @ | | Miles @ | $0.445 | Per Mile = | $0.00 | | |
| | | | | | | | Sub Total | $294.06 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SHIPPING | 12 | Months @ | $126.70 | Per Month | | = | $1,520.40 | |
| SHIPPING (Regular Mail) | 10 | Letters/Mo | @ | $0.47 | /letter | = | $4.70 | |
| SHIPPING (FEDEX) | 2 | Overnight Letters @ | | $12.25 | /letter | = | $24.50 | |
| (Includes Utilities Submittals) | 6 | Overnight Boxes @ | | $16.25 | /Box | = | $97.50 | |
| | | | | | Monthly Total = | | $126.70 | |
| COURIER SHIPPING | 0 | Trips @ | $32.85 | per Trip | | = | $0.00 | Final & Final Mylar Plots |
| PUBLIC MEETINGs | | | | | | = | $0.00 | |

**Public Meeting No. 1**
2' x 10' Project Board - 20sf =
3 - 3' x 2' Exhibits Boards - 18 sf =
(Tyipcal Section, Sample Landscaping layout, Landscaping Typical)
Handouts (10 color sheets - 30 sets) =

**Public Meeting No. 2**
2' x 10' Project Board - 20sf =
3 - 3' x 2' Exhibits Boards - 18 sf =
(Tyipcal Section, Sample Landscaping layout, Landscaping Typical)
Handouts (10 color sheets - 30 sets) =

| MISCELLANEOUS | | | | | |
|---|---|---|---|---|---|
| | | | | | $147.20 |
| CD Rcordable Disks | = | | | | |
| Comp Book Covers | = | | | | |
| Report Binding | = | $147.20 | 32 @ $4.60 | | |
| | = | | | | |
| | | $147.20 | | | |
| | | | | Sub Total | $1,667.60 |

| TOTAL EXPENSES | $9,322.97 |
|---|---|

## Project Activity 4: Roadway Analysis

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Comprehensive Engineering Services | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 4.1 | Typical Section Package | LS | 1 | 0 | 0 | |
| 4.2 | Pavement Type Selection Report | LS | 1 | 0 | 0 | |
| 4.3 | Pavement Design Package | LS | 1 | 0 | 0 | |
| 4.4 | Cross-Slope Correction | LS | 1 | 0 | 0 | |
| 4.5 | Horizontal /Vertical Master Design Files | LS | 1 | 0 | 0 | |
| 4.6 | Access Management | LS | 1 | 0 | 0 | |
| 4.7 | Roundabout Evaluation | LS | 1 | 0 | 0 | |
| 4.8 | Roundabout Final Design Analysis | LS | 1 | 0 | 0 | |
| 4.9 | Cross Section Design Files | LS | 1 | 0 | 0 | |
| 4.10 | Traffic Control Analysis | LS | 1 | 0 | 0 | |
| 4.11 | Master TCP Design Files | LS | 1 | 0 | 0 | |
| 4.12 | Design Variations and Exceptions | LS | 1 | 0 | 0 | |
| 4.13 | Design Report | LS | 1 | 140 | 140 | Traffic data reduction, field reviews, traffic projection & operational review, modeling, crash review, meetings, traffic analysis documentation |
| 4.14 | Quantities | LS | 1 | 0 | 0 | |
| 4.15 | Cost Estimate | LS | 1 | 0 | 0 | |
| 4.16 | Technical Special Provisions | LS | 1 | 0 | 0 | |
| 4.17 | Other Roadway Analyses | LS | 1 | 0 | 0 | |
| **Roadway Analysis Technical Subtotal** | | | | | **140** | |

## Project Activity 4: Roadway Analysis

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 4.18 | Field Reviews | LS | 1 | 0 | 0 | |
| 4.19 | Monitor Existing Structures | LS | 1 | 0 | 0 | |
| 4.20 | Technical Meetings | LS | 1 | 0 | 0 | Meetings are listed below |
| 4.21 | Quality Assurance/Quality Control | LS | % | 0% | 0 | |
| 4.22 | Independent Peer Review | LS | % | 0% | 0 | |
| 4.23 | Supervision | LS | % | 0% | 0 | |
| | | | | **Roadway Analysis Nontechnical Subtotal** | **0** | |
| 4.24 | Coordination | LS | % | 0% | 0 | |
| | | | | **4. Roadway Analysis Total** | **140** | |

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| Typical Section | EA | 0 | 0 | 0 | | 0 |
| Pavement | EA | 0 | 0 | 0 | | 0 |
| Access Management | EA | 0 | 0 | 0 | | 0 |
| 15% Line and Grade | EA | 0 | 0 | 0 | | 0 |
| Driveways | EA | 0 | 0 | 0 | | 0 |
| Local Governments (cities, counties, MPO) | EA | 0 | 0 | 0 | | 0 |
| Work Zone Traffic Control | EA | 0 | 0 | 0 | | 0 |
| 30/60/90/100% Comment Review Meetings | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | **0** | **Subtotal Project Manager Meetings** | 0 |
| Progress Meetings (if required by FDOT) | EA | 0 | 0 | 0 | *PM attendance at Progress Meetings is manually entered on General Task 3* | -- |
| Phase Review Meetings | EA | 0 | 0 | 0 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | -- |
| **Total Meetings** | | | | **0** | **Total Project Manager Meetings (carries to Tab 3)** | **0** |

Carries to 4.17

Carries to Tab 3

## Project Activity 7: Utilities

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Comprehensive Engineering Services | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 7.1 | Utility Kickoff Meeting | LS | 1 | 4 | 4 | 2 people x 2 hours |
| 7.2 | Identify Existing Utility Agency Owners (UAO(s)) | LS | 1 | 10 | 10 | 0.5 hr x 20 utilities (Bright House, City of Orlando - wastewater, City of Winter Park, Duke Energy Distribution, Duke Energy Transmission, FPI Fibernet, Level 3, Lovelace Gas Service, Verizon Business fks MCI, Orange County Utilities Wastewater, Orange County Public Works, Central Florida Expressway Authority, Orange County Utilities, Orlando Telephone Company, TECO Gas, Centurylink fka Qwest, AT&T Florida, Seminole County, Comcast Cablevision, CenturyLink |
| 7.3 | Make Utility Contacts | LS | 1 | 40 | 40 | 2 hr x 20 utilities |
| 7.4 | Exception Processing | LS | 1 | 0 | 0 | not anticipated |
| 7.5 | Preliminary Utility Meeting | LS | 1 | 8 | 8 | phase I meeting include prep & documentation |
| 7.6 | Individual/Field Meetings | LS | 1 | 32 | 32 | 2 people x 4 hours for 4 meetings |
| 7.7 | Collect and Review Plans and Data from UAO(s) | LS | 1 | 20 | 20 | 1 hr x 20 utilities |
| 7.8 | Subordination of Easements Coordination | LS | 1 | 0 | 0 | not anticipated |
| 7.9 | Utility Design Meeting | LS | 1 | 8 | 8 | Phase II meeting includes prep and documentation |
| 7.10 | Review Utility Markups & Work Schedules, and Processing of Schedules & Agreements | LS | 1 | 80 | 80 | 2 hrs x 2 docs x 20 utilities |
| 7.11 | Utility Coordination/Followup | LS | 1 | 60 | 60 | 20 utilities x 2 follow up x 1.5 complexity |
| 7.12 | Utility Constructability Review | LS | 1 | 60 | 60 | 20 utilities x 2 follow up x 1.5 complexity |
| 7.13 | Additional Utility Services | LS | 1 | 0 | 0 | not anticipated |
| 7.14 | Processing Utility Work by Highway Contractor (UWHC) | LS | 1 | 0 | 0 | not anticipated |
| 7.15 | Contract Plans to UAO(s) | LS | 1 | 20 | 20 | 1 hr x 20 utilities |
| 7.16 | Certification/Close-Out | LS | 1 | 40 | 40 | 2 hr x 20 utilities |
| 7.17 | Other Utilities | LS | 1 | 0 | 0 | |
| | | | | **7. Utilities Total** | **382** | |

## Project Activity 19: Signing and Pavement Marking Analysis

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line

417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Comprehensive Engineering Services | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 19.1 | Traffic Data Analysis | LS | 1 | 0 | 0 | |
| 19.2 | No Passing Zone Study | LS | 1 | 0 | 0 | |
| 19.3 | Reference and Master Design File | LS | 1 | 0 | 0 | |
| 19.4 | Multi-Post Sign Support Calculations | EA | 1 | 0 | 0 | |
| 19.5 | Sign Panel Design Analysis | EA | 1 | 0 | 0 | |
| 19.6 | Sign Lighting/Electrical Calculations | EA | 1 | 57 | 57 | 11 cantilevers, 8 span truss structures, and 2 bridge mounted signs. Total of 38 sign panels to be lighted, including 18 existing sign panels anticipated to be upgraded to LED. 38 signs * 1.5 hours per sign = 76 hours. |
| 19.7 | Quantities | LS | 1 | 0 | 0 | |
| 19.8 | Cost Estimate | LS | 1 | 0 | 0 | |
| 19.9 | Technical Special Provisions | LS | 1 | 0 | 0 | |
| 19.10 | Other Signing and Pavement Marking | LS | 1 | 0 | 0 | |
| | **Signing and Pavement Marking Analysis Technical Subtotal** | | | | **57** | |
| 19.11 | Field Reviews | LS | 1 | 0 | 0 | |
| 19.12 | Technical Meetings | LS | 1 | 0 | 0 | Meetings are listed below |
| 19.13 | Quality Assurance/Quality Control | LS | % | 5% | 3 | |
| 19.14 | Independent Peer Review | LS | % | 0% | 0 | |
| 19.15 | Supervision | LS | % | 5% | 3 | |
| | **Signing and Pavement Marking Analysis Nontechnical Subtotal** | | | | **6** | |
| 19.16 | Coordination | LS | % | 3% | 2 | |
| | **19. Signing and Pavement Marking Analysis Total** | | | | **65** | |

## Project Activity 23: Lighting Analysis

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line

417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Comprehensive Engineering Services | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 23.1 | Lighting Justification Report | LS | 0 | 0 | 0 | N/A |
| 23.2 | Lighting Design Analysis Report | LS | 1 | 120 | 120 | Full photometric calculation color sheets of corridor (mainline, ramps, and underdeck), evaluate areas without outside widening where existing light poles may be salvaged, veiling luminance calculations for each typical section, sign lighting calculations, and design fixture correspondence for CFX preference, includes relamping University Interchange with LED |
| 23.3 | Aeronautical Evaluation | LS | 1 | 40 | 40 | FAA filing required based on notice criteria tool - online approval process where information for each light pole is input for determination (latitude, longitude, ground elevation, pole height, and traverseway) |
| 23.4 | Voltage Drop Calculations | LS | 1 | 48 | 48 | Estimate 4 load centers and 9 circuits average per load center (alternating circuits) |
| 23.5 | FDEP Coordination and Report | LS | 0 | 0 | 0 | N/A |
| 23.6 | Reference and Master Design Files | LS | 1 | 459 | 459 | Project lengths: SR 417 mainline 3 miles, toll plaza 1.1 miles, University ramps 0.5 miles. Middle range (limited access with interchange spacing greater than two miles), 45 hours setup + (4.6 miles mainline/toll plaza/ramps) * 90 hours per mile = 459 hours (Toll plaza area redo with LED assumed & relamp University Interchange) |
| 23.7 | Temporary Lighting | LS | 1 | 8 | 8 | Notes only with spacing ranges based on temporary lighting fixture |
| 23.8 | Design Documentation | LS | 1 | 16 | 16 | Included with each submittal |
| 23.9 | Quantities | LS | 1 | 70 | 70 | 35 plan sheets @ 2 hour per sheet |
| 23.10 | Cost Estimate | LS | 1 | 16 | 16 | 3 estimates - initial, phase III, and final |
| 23.11 | Technical Special Provisions | LS | 0 | 0 | 0 | Not anticipated |
| 23.12 | Other Lighting Analysis | LS | 0 | 0 | 0 | Not anticipated |
| | **Lighting Analysis Technical Subtotal** | | | | **777** | |
| 23.13 | Field Reviews | LS | 1 | 24 | 24 | 3 field reviews, 2 people @ 4 hours |
| 23.14 | Technical Meetings | LS | 1 | 28 | 28 | See listed meetings for breakdown |
| 23.15 | Quality Assurance/Quality Control | LS | % | 5% | 39 | |
| 23.16 | Independent Peer Review | LS | % | 0% | 0 | |
| 23.17 | Supervision | LS | % | 5% | 39 | |
| | **Lighting Analysis Nontechnical Subtotal** | | | | **130** | |
| 23.18 | Coordination | LS | % | 3% | 27 | |

## Project Activity 23: Lighting Analysis

| 23. Lighting Analysis Total | 934 | |
|---|---|---|

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| FDOT Lighting Design | EA | 0 | 0 | 0 | | 0 |
| FDOT Traffic Design | EA | 0 | 0 | 0 | | 0 |
| Power Company (service point coordination) | EA | 1 | 6 | 6 | | 0 |
| Maintaining Agency (cities, counties) | EA | 1 | 6 | 6 | | 0 |
| Airport authority | EA | 0 | 0 | 0 | | 0 |
| FDEP Lighting (coast areas) | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | 12 | **Subtotal Project Manager Meetings** | 0 |
| Progress Meetings (if required by FDOT) | EA | 4 | 2 | 8 | *PM attendance at Progress Meetings is manually entered on General Task 3* | - - |
| Phase Review Meetings | EA | 2 | 4 | 8 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | - - |
| **Total Meetings** | | | | 28 | **Total Project Manager Meetings (carries to Tab 3)** | 0 |

Carries to 23.14

Carries to Tab 3

# 24. Lighting Plans

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Comprehensive Engineering Services | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Scale | Units | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| 24.1 | Key Sheet | | Sheet | 1 | 4 | 1 | 4 | |
| 24.2 | Summary of Pay Items Including Designer Interface (TRNS•Port) Input | | Sheet | 0 | 0 | 0 | 0 | |
| 24.3 | Tabulation of Quantities | | Sheet | 5 | 7.2 | 5 | 36 | 4 sheets for 35 plan sheets and 3 underdeck sheets |
| 24.4 | General Notes/Pay Item Notes | | Sheet | 1 | 8 | 1 | 8 | |
| 24.5 | Pole Data, Legend and Criteria | | Sheet | 6 | 16 | 6 | 96 | Legend/criteria sheet and 4 pole data sheets (3 conventional lighting, 1 underdeck lighting) |
| 24.6 | Service Point Details | | Sheet | 4 | 12 | 4 | 48 | 4 load centers |
| 24.7 | Project Layout | | Sheet | 1 | 4 | 1 | 4 | |
| 24.8 | Plan Sheet | 1" = 50' | Sheet | 35 | 2 | 35 | 70 | 700' per panel for 24,288' of lighting + tie in to existing lighting to remain |
| 24.9 | Special Details | | Sheet | 3 | 12 | 3 | 36 | Under deck at 3 crossings |
| 24.10 | Temporary Lighting Data and Details | | Sheet | 1 | 8 | 1 | 8 | Notes only with spacing ranges based on temporary lighting fixture |
| 24.11 | Traffic Control Plan Sheets | | Sheet | 0 | 0 | 0 | 0 | |
| 24.12 | Interim Standards | | LS | 0 | 0 | | 0 | |
| | | | **Lighting Plans Technical Subtotal** | | | **57** | **310** | |
| 24.13 | Quality Assurance/Quality Control | | LS | % | 5% | | 16 | |
| 24.14 | Supervision | | LS | % | 5% | | 16 | |
| | | | **24. Lighting Plans Total** | | | **57** | **342** | |

# 33. ITS Analysis

Estimator: RLS

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Comprehensive Engineering Services | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 33.1 | ITS Analysis | LS | 1 | 16 | 16 | |
| 33.2 | Communications Plan Analysis | LS | 1 | 24 | 24 | |
| 33.3 | Lightning Protection Analysis | Per Site | 0 | 0 | 0 | N/A |
| 33.4 | Power Subsystem | LS | 1 | 100 | 100 | |
| 33.5 | Voltage Drop Calculations | LS | 1 | 16 | 16 | 4 power service circuits |
| 33.6 | Design Documentation | LS | 1 | 20 | 20 | |
| 33.7 | Existing ITS System | LS | 1 | 16 | 16 | |
| 33.8 | Queue Analysis | PI | 0 | 0 | 0 | N/A |
| 33.9 | Reference and Master ITS Design File | PI | 0 | 0 | 0 | N/A |
| 33.10 | Reference and Master Communications Design File | PI | 1 | 58 | 58 | 20 hrs/mile, SR 417 from Econlockhatchee Trail to Orange/Seminole County line - 2.9 miles |
| 33.11 | Pole Elevation Analysis | LS | 1 | 7 | 7 | 6 CCTV locations |
| 33.12 | Sign Panel Design Analysis | LS | 0 | 0 | 0 | N/A |
| 33.13 | Quantities | Sheet | 29 | 3 | 87 | 23 plan sheets, 6 MOT sheets |
| 33.14 | Cost Estimate | LS | 1 | 8 | 8 | Phase II, Phase III, Phase IV, Pre-Bid |
| 33.15 | Technical Special Provisions | LS | 0 | 0 | 0 | N/A |
| 33.16 | Other ITS Analyses | LS | 1 | 0 | 0 | |
| **Intelligent Transportation Systems Analysis Technical Subtotal** | | | | | **352** | |

## 33. ITS Analysis

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 33.17 | Field Reviews | LS | 1 | 16 | 16 | 2 reviews, 2 people, 4 hours |
| 33.18 | Technical Meetings | LS | 1 | 16 | 16 | Meetings are listed below |
| 33.19 | Quality Assurance/Quality Control | LS | % | 5% | 18 | |
| 33.20 | Supervision | LS | % | 5% | 18 | |
| **Intelligent Transportation Systems Analysis Nontechnical Subtotal** | | | | | **68** | |
| 33.21 | Coordination | LS | % | 3% | 13 | |
| **33. Intelligent Transportation Systems Analysis Total** | | | | | **433** | |

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| Kickoff Meeting with FDOT | EA | 0 | 0 | 0 | | 0 |
| Local Governments (cities, counties, MPO) | EA | 0 | 0 | 0 | | 0 |
| Utility Owners | EA | 0 | 0 | 0 | | 0 |
| Field Meetings | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | **0** | **Subtotal Project Manager Meetings** | 0 |
| Progress Meetings (if required by FDOT) | EA | 2 | 4 | 8 | *PM attendance at Progress Meetings is manually entered on General Task 3* | - - |
| Phase Review Meetings | EA | 2 | 4 | 8 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | - - |
| **Total Meetings** | | | | **16** | **Total Project Manager Meetings (carries to Tab 3)** | **0** |

Carries to 33.18

Carries to Tab 3

# 34. ITS Plans

Estimator: RLS

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Comprehensive Engineering Services | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Scale | Units | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| 34.1 | Key Sheet | | Sheet | 1 | 4 | 1 | 4 | |
| 34.2 | Summary of Pay Items-including Designer Interface (Trns•port) Input | | Sheet | 0 | 0 | 0 | 0 | Included in Rdwy |
| 34.3 | Tabulation of Quantities | | Sheet | 3 | 5 | 3 | 15 | |
| 34.4 | General Notes/Pay Item Notes | | Sheet | 1 | 8 | 1 | 8 | |
| 34.5 | Project Layout | | Sheet | 1 | 6 | 1 | 6 | |
| 34.6 | Typical and Special Details | | Sheet | 3 | 6 | 3 | 18 | Wiring/cabinet details for CCTV, DMS, DCS |
| 34.7 | Plan Sheet | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 34.8 | ITS Communications Plans | | Sheet | 23 | 6 | 23 | 138 | |
| 34.9 | Fiber Optic Splice Diagrams | | Sheet | 17 | 2 | 17 | 34 | |
| 34.10 | Lightning Protection Plans | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 34.11 | Cross Sections | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 34.12 | Guide Sign Worksheet(s) | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 34.13 | Special Service Point Details | | Sheet | 1 | 6 | 1 | 6 | Electrical power service |
| 34.14 | Strain Pole Schedule | | Sheet | 1 | 3 | 1 | 3 | Pole data tabulation |
| 34.15 | Overhead/Cantilever Sign Structure | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 34.16 | Other Overhead Sign Structures (Long Span, Monotube, etc.) | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 34.17 | Traffic Control Plans | | Sheet | 6 | 5 | 6 | 30 | FON MOT Plan |
| 34.18 | Interim Standards | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 34.19 | GIS Data and Asset Management Requirements | | LS | 0 | 0 | 0 | 0 | N/A |

## 34. ITS Plans

| Task No. | Task | Scale | Units | No. of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| | **Intelligent Transportation System Plans Technical Subtotal** | | | | | **57** | **262** | |
| 34.20 | Quality Assurance/Quality Control | | LS | % | 5% | | 13 | |
| 34.21 | Supervision | | LS | % | 5% | | 13 | |
| | **34. Intelligent Transportation System Plans Total** | | | | | **57** | **288** | |

## ESTIMATE OF WORK EFFORT AND COST - SUBCONSULTANT

Name of Project: SR 417, Econlockhatchee Trail to Seminole County Line
County: 0
FPN: 417-134
FAP No.:

Consultant Name: The Balmoral Group
Consultant No.: enter consultants proj. number
Date: 6/7/2016
Estimator: S. Klaus

| Staff Classification | Total Staff Hours From "SH Summary Firm" | Chief Engineer | Project Manager | Senior Engineer | Project Engineer | Engineer Intern | Staff Classification 6 | Staff Classification 7 | Staff Classification 8 | Staff Classification 9 | Staff Classification 10 | Staff Classification 11 | Staff Classification 12 | SH By Activity | Salary Cost By Activity | Average Rate Per Task |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $68.75 | $57.69 | $46.75 | $40.15 | $25.72 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | | | |
| 3. Project General and Project Common Tasks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 4. Roadway Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 5. Roadway Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 6a. Drainage Analysis | 40 | 20 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | $2,353 | $58.84 |
| 6b. Drainage Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 7. Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 8. Environmental Permits, Compliance & Clearances | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 9. Structures - Misc. Tasks, Dwgs, Non-Tech. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 10. Structures - Bridge Development Report | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 11. Structures - Temporary Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 12. Structures - Short Span Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 13. Structures - Medium Span Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 14. Structures - Structural Steel Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 15. Structures - Segmental Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 16. Structures - Movable Span | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 17. Structures - Retaining Walls | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 18. Structures - Miscellaneous | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 19. Signing & Pavement Marking Analysis | 680 | 34 | 0 | 170 | 238 | 238 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 680 | $25,962 | $38.18 |
| 20. Signing & Pavement Marking Plans | 389 | 19 | 0 | 39 | 156 | 175 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 389 | $13,894 | $35.72 |
| 21. Signalization Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 22. Signalization Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 23. Lighting Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 24. Lighting Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 25. Landscape Architecture Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 26. Landscape Architecture Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 27. Survey (Field & Office Support) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 28. Photogrammetry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 29. Mapping | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 30. Terrestrial Mobile LiDAR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 31. Architecture Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 32. Noise Barriers Impact Design Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 33. Intelligent Transportation Systems Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 34. Intelligent Transportation Systems Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 35. Geotechnical | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| **Total Staff Hours** | 1,109 | 73 | 10 | 209 | 404 | 413 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,109 | | |
| **Total Staff Cost** | | $5,018.75 | $576.90 | $9,770.75 | $16,220.60 | $10,622.36 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | | **$42,209.36** | **$38.06** |
| | | | | | | | | | | | | | | Check = | $42,209.36 | |

| | | | | |
|---|---|---|---|---|
| SALARY RELATED COSTS: | | | | $42,209.36 |
| OVERHEAD: | 159.94% | | | $67,509.65 |
| OPERATING MARGIN: | 12% | | | $13,166.28 |
| FCCM (Facilities Capital Cost Money): | 0.00% | | | $0.00 |
| EXPENSES: | 0.4721% | | | $580.15 |
| **SUBTOTAL ESTIMATED FEE:** | | | | **$123,465.44** |
| Survey (Field) 0 | 4-man crew da | $ - | / day | $0.00 |
| Geotechnical Field and Lab Testing | | | | $0.00 |
| **SUBTOTAL ESTIMATED FEE:** | | | | **$123,465.44** |
| Optional Services | | | | $0.00 |
| **GRAND TOTAL ESTIMATED FEE:** | | | | **$123,465.44** |

Notes:
1. This sheet to be used by Subconsultant to calculate its fee.

## Project Activity 6a: Drainage Analysis

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Balmoral | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 6a.1 | Drainage Map Hydrology | Per Map | 0 | 0 | 0 | |
| 6a.2 | Base Clearance Report | Per Location | 0 | 0 | 0 | |
| 6a.3 | Pond Siting Analysis and Report | Per Basin | 0 | 0 | 0 | |
| 6a.4 | Design of Cross Drains | EA | 0 | 0 | 0 | |
| 6a.5 | Design of Ditches | Per Ditch Mile | 0 | 0 | 0 | |
| 6a.6 | Design of Stormwater Management Facility (Offsite or Infield Pond) | EA | 0 | 0 | 0 | |
| 6a.7 | Design of Stormwater Management Facility (Roadside Ditch as Linear Pond) | Per Cell | 0 | 0 | 0 | |
| 6a.8 | Design of Floodplain Compensation | Per Floodplain Basin | 0 | 0 | 0 | |
| 6a.9 | Design of Storm Drains | EA | 0 | 0 | 0 | |
| 6a.10 | Optional Culvert Material | EA | 0 | 0 | 0 | |
| 6a.11 | French Drain Systems | Per Cell | 0 | 0 | 0 | |
| 6a.12 | Drainage Wells | EA | 0 | 0 | 0 | |
| 6a.13 | Drainage Design Documentation Report | LS | 1 | 0 | 0 | |
| 6a.14 | Bridge Hydraulic Report | EA | 0 | 0 | 0 | |

## Project Activity 6a: Drainage Analysis

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 6a.15 | Temporary Drainage Analysis | LS | 1 | 0 | 0 | |
| 6a.16 | Cost Estimate | LS | 1 | 0 | 0 | |
| 6a.17 | Technical Special Provisions | LS | 1 | 0 | 0 | |
| 6a.18 | Other Drainage Analysis | LS | 1 | 0 | 0 | |
| | | | **Drainage Analysis Technical Subtotal** | | **0** | |
| 6a.19 | Field Reviews | LS | 1 | 0 | 0 | |
| 6a.20 | Technical Meetings | LS | 1 | 0 | 0 | Meetings are listed below |
| 6a.21 | Environmental Look-Around (ELA) Meeting | LS | 1 | 0 | 0 | |
| 6a.22 | Quality Assurance/Quality Control | LS | % | 0% | 0 | |
| 6a.23 | Independent Peer Review | LS | 1 | 40 | 40 | Peer review by TBG - focus on stormwater management |
| 6a.24 | Supervision | LS | % | 0% | 0 | |
| | | | **Drainage Analysis Nontechnical Subtotal** | | **40** | |
| 6a.25 | Coordination | LS | % | 0% | 0 | |
| | | | **6a. Drainage Analysis Total** | | **40** | |

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| Base Clearance Water Elevation | EA | 0 | 0 | 0 | | 0 |
| Pond Siting | EA | 0 | 0 | 0 | | 0 |
| Agency | EA | 0 | 0 | 0 | | 0 |
| Local Governments (cities, counties) | EA | 0 | 0 | 0 | | 0 |
| FDOT Drainage | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | **0** | | 0 |
| Progress Meetings (if required by FDOT) | EA | 0 | 0 | 0 | *PM attendance at Progress Meetings is manually entered on General Task 3* | - - |
| Phase Review Meetings | EA | 0 | 0 | 0 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | - - |
| **Total Meetings** | | | | **0** | **Total Project Manager Meetings (carries to Tab 3)** | **0** |

Carries to 6.19

Carries to Tab 3

## Project Activity 19: Signing and Pavement Marking Analysis

Estimator: S. Klaus

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Consultant Name | The Balmoral Group | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 19.1 | Traffic Data Analysis | LS | 1 | 0 | 0 | |
| 19.2 | No Passing Zone Study | LS | 1 | 0 | 0 | |
| 19.3 | Reference and Master Design File | LS | 1 | 369 | 369 | Middle range: interchange/toll plaza spacing ~ 2 miles. Mainline = 2.85 miles; Ramps = 0.8 miles<br>45 hours setup + 90 hrs. X 3.6 miles |
| 19.4 | Multi-Post Sign Support Calculations | EA | 4 | 3 | 12 | 4 ground mounted guide signs |
| 19.5 | Sign Panel Design Analysis | EA | 24 | 4 | 96 | 18 Overhead panels (11 Replacements 7 New) & 4 multi-post ground mount; very detailed sign panels |
| 19.6 | Sign Lighting/Electrical Calculations | EA | 0 | 0 | 0 | By CES |
| 19.7 | Quantities | LS | 1 | 75 | 75 | 3 hrs. X 25 sheets |
| 19.8 | Cost Estimate | LS | 1 | 18 | 18 | 6 hours for initial estimate + 3 hrs X 4 add'l submittals |
| 19.9 | Technical Special Provisions | LS | 1 | 0 | 0 | |
| 19.10 | Other Signing and Pavement Marking | LS | 1 | 0 | 0 | |
| **Signing and Pavement Marking Analysis Technical Subtotal** | | | | | **570** | |
| 19.11 | Field Reviews | LS | 1 | 18 | 18 | 3 reviews X 2 people X 3 hrs. average (incl. travel time) |
| 19.12 | Technical Meetings | LS | 1 | 14 | 14 | Meetings are listed below |
| 19.13 | Quality Assurance/Quality Control | LS | % | 5% | 29 | |
| 19.14 | Independent Peer Review | LS | % | 0% | 0 | |
| 19.15 | Supervision | LS | % | 5% | 29 | |
| **Signing and Pavement Marking Analysis Nontechnical Subtotal** | | | | | **90** | |
| 19.16 | Coordination | LS | % | 3% | 20 | |
| **19. Signing and Pavement Marking Analysis Total** | | | | | **680** | |

## Project Activity 19: Signing and Pavement Marking Analysis

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments | |
|---|---|---|---|---|---|---|---|
| **Technical Meetings** | | **Units** | **No of Units** | **Hours/ Unit** | **Total Hours** | **PM Attendance at Meeting Required?** | **Number** |
| Sign Panel Design | | EA | 1 | 2 | 2 | | 0 |
| Queue Length Analysis | | EA | 0 | 0 | 0 | | 0 |
| Local Governments (cities, counties) | | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | | **2** | **Subtotal Project Manager Meetings** | 0 |
| Progress Meetings (if required by FDOT) | | EA | 4 | 3 | 12 | *PM attendance at Progress Meetings is manually entered on General Task 3* | -- |
| Phase Review Meetings | | EA | 0 | 0 | 0 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | -- |
| **Total Meetings** | | | | | **14** | **Total Project Manager Meetings (carries to Tab 3)** | **0** |

Carries to 19.12

Carries to Tab 3

## Project Activity 20: Signing and Pavement Marking Plans

S. Klaus

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Consultant Name | The Balmoral Group | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Scale | Units | No of Units | Hours/ Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| 20.1 | Key Sheet | | Sheet | 1 | 6 | 1 | 6 | |
| 20.2 | Summary of Pay Items Including TRNS•Port Input | | LS | 1 | 0 | | 0 | N/A - included in roadway |
| 20.3 | Tabulation of Quantities | | Sheet | 3 | 6 | 3 | 18 | 10 plan sheets per column. 12 hours for the 1st tabulation sheet and 6 hours X 2 add'l sheets. |
| 20.4 | General Notes/Pay Item Notes | | Sheet | 1 | 4 | 1 | 4 | Modify standard CFX notes |
| 20.5 | Project Layout | | Sheet | 1 | 6 | 1 | 6 | |
| 20.6 | Plan Sheet | 1"=50' | Sheet | 28 | 4 | 28 | 112 | 700' per sheet. Project length: Mainline=15,032 ft. (22 sheets); ramp=2700 ft. (4 sheets) |
| 20.7 | Typical Details | | EA | 11 | 4 | 6 | 44 | Incorporate CFX details into plans for exit gore signs, route confirmation markers, milepost signs, toll route shield, curve warning signs, loop ramp signs, option lane arrow, toll plaza signs, line of sight. Estimate 11 details X 2 hrs. + 2 hrs. X 6 sheets |
| 20.8 | Guide Sign Worksheet(s) | | EA | 22 | 2 | 6 | 44 | 17 sign panels; 4 per sheet |
| 20.9 | Traffic Monitoring Site | | EA | 0 | 0 | | 0 | |
| 20.10 | Cross Sections | | EA | 17 | 7 | 4 | 119 | Develop full sections for 6 cantilever, 7 span truss & 4 ground mount<br>8 hrs. X 13 OH structures + 3 hrs. X 4 multi-post = 116 hrs. (~ 7 hrs. per section) |
| 20.11 | Special Service Point Details | | EA | 0 | 0 | | 0 | |
| 20.12 | Special Details | | LS | 1 | 0 | | 0 | |
| 20.13 | Interim Standards | | LS | 1 | 0 | | 0 | |
| | **Signing and Pavement Marking Plans Technical Subtotal** | | | | | **50** | **353** | |
| 20.14 | Quality Assurance/Quality Control | | LS | % | 5% | | 18 | |
| 20.15 | Supervision | | LS | % | 5% | | 18 | |
| | **20. Signing and Pavement Marking Plans Total** | | | | | **50** | **389** | |

# MISCELLANEOUS & DIRECT EXPENSES

Central Florida Expressway Authority — Consultant: The Balmoral Group, LLC

Name of Job: SR 417 - Econ Trail to Orange/Seminole County Line - 417-134

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aerial Photography: Right-of-Way Maps | Sheets | Cost | Amount | | | | | |
| Drafting Medium (Mylar): | 0 | $0.00 | $0 | | | | $0.00 | $0.00 |
| | BlueLine | Vellum | 11X17 | 8.5X11 | | | | |
| 30% Plans | | | 30 | 0 | Sheets | | | |
| 60% Plans | | | 47 | 0 | Sheets | | | |
| 90% Plans | | | 47 | 0 | Sheets | | | |
| 100% Plans | | | 47 | 0 | Sheets | | | |
| Final Plans | | | 47 | 0 | Sheets | | | |
| Misc. Prints | | | 2,180 | 0 | Sheets | | | |
| Total | 0 | 0 | 2,398 | 0 | Sheets | | | |
| Costs: | Blue Line | | 0 | Sheets @ | 0.00 | | $0.00 | |
| | Vellum | | 0 | Sheets @ | 0.00 | | $0.00 | |
| | Photocopy - 11X17 | | 2,398 | Sheets @ | 0.19 | | $455.62 | |
| | Photocopy - 8.5X11 | | 0 | Sheets @ | 0.11 | | $0.00 | $455.62 |
| Travel From: | 165 Lincoln Avenue Winter Park, FL | | | | | | | |
| To Project: | Trips | | | | | | | |
| (Overnight) | | x | | people x | | | days @$50 | $0.00 |
| (Per Diem) | | x | | people x | | | days @$6 | $0.00 |
| Transport. - (Comm.) | | x | | people x | | 0.00 | per trip | $0.00 |
| - (POV) | 3 | x | 19 | miles x | | 0.445 | per mile | $25.37 |
| - (Rental) | 0 | x | 0 | (days x | $ | 0.00 | Day Rate) | |
| | | + | 0 | (miles x | $ | 0.00 | Mi. Rate) | $0.00 |
| To District: | Trips | | | | | | | |
| (Per Diem) | 0 | x | 0 | people x | | 0.00 | days @$6 | $0.00 |
| Transport. - (Comm.) | 0 | x | 0 | people x | | 0.00 | per trip | $0.00 |
| - (POV) | 4 | x | 22 | miles x | | 0.445 | per mile | $39.16 |
| - (Rental) | 0 | x | 0 | (days x | $ | 0.00 | Day Rate) | |
| | | | 0 | (miles x | $ | 0.00 | Mi. Rate) | $0.00 |
| | | | | | | | | $64.53 |
| Shipping & Telephone | 12 | months @ $ | $5.00 | /Month) | | | | $60.00 |
| TOTAL EXPENSES | | | | | | | LUMP SUM | $580.15 |

Date: 04/22/16

## ESTIMATE OF WORK EFFORT AND COST - SUBCONSULTANT

Name of Project: SR 417, Econlockhatchee Trail to Seminole County Line
County: Orange
FPN: 417-134
FAP No.: 1/0/1900

Consultant Name: Tierra, Inc.
Consultant No.: enter consultants proj. number
Date: 6/7/2016
Estimator: insert name

| Staff Classification | Total Staff Hours From "SH Summary Firm" | Project Manager | Senior Engineer | Chief Scientist | Senior Project Engineer | Geotechnical Engineer | Engineering Intern | Senior Scientist | Designer | Senior Engineering Technician | Geotechnical Technician | Secretarial/Clerical | Staff Classification 12 | SH By Activity | Salary Cost By Activity | Average Rate Per Task |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $198.25 | $188.18 | $151.47 | $158.36 | $134.69 | $95.28 | $117.34 | $91.06 | $83.16 | $87.03 | $68.31 | $0.00 | | | |
| 3. Project General and Project Common Tasks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 4. Roadway Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 5. Roadway Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 6a. Drainage Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 6b. Drainage Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 7. Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 8. Environmental Permits, Compliance & Clearances | 45 | 2 | 0 | 7 | 0 | 0 | 0 | 18 | 7 | 5 | 5 | 1 | 0 | 45 | $5,025.59 | $111.68 |
| 9. Structures - Misc. Tasks, Dwgs, Non-Tech. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 10. Structures - Bridge Development Report | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 11. Structures - Temporary Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 12. Structures - Short Span Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 13. Structures - Medium Span Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 14. Structures - Structural Steel Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 15. Structures - Segmental Concrete Bridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 16. Structures - Movable Span | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 17. Structures - Retaining Walls | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 18. Structures - Miscellaneous | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 19. Signing & Pavement Marking Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 20. Signing & Pavement Marking Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 21. Signalization Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 22. Signalization Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 23. Lighting Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 24. Lighting Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 25. Landscape Architecture Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 26. Landscape Architecture Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 27. Survey (Field & Office Support) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 28. Photogrammetry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 29. Mapping | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 30. Terrestrial Mobile LiDAR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 31. Architecture Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 32. Noise Barriers Impact Design Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 33. Intelligent Transportation Systems Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 34. Intelligent Transportation Systems Plans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 | #DIV/0! |
| 35. Geotechnical | 811 | 41 | 65 | 0 | 81 | 122 | 260 | 0 | 162 | 32 | 32 | 16 | 0 | 0 | $0 | #DIV/0! |
| **Total Staff Hours** | 856 | 43 | 65 | 7 | 81 | 122 | 260 | 18 | 169 | 37 | 37 | 17 | 0 | 811 | $95,042.85 | $117.19 |
| **Total Staff Cost** | | $8,524.75 | $12,231.70 | $1,060.29 | $12,827.16 | $16,432.18 | $24,772.80 | $2,112.12 | $15,389.14 | $3,076.92 | $2,480.11 | $1,161.27 | $0.00 | 856 | | |
| | | | | | | | | | | | | | | | **$100,068.44** | **$116.90** |
| | | | | | | | | | | | | | | Check = | $100,068.44 | |

| | | |
|---|---|---|
| SALARY RELATED COSTS: | | $100,068.44 |
| OVERHEAD: | 0% | $0.00 |
| OPERATING MARGIN: | 0% | $0.00 |
| FCCM (Facilities Capital Cost Money): | 0.00% | $0.00 |
| EXPENSES: | 0.00% | $0.00 |
| **SUBTOTAL ESTIMATED FEE:** | | **$100,068.44** |
| Contamination ODCs | | $152.00 |
| Geotechnical Field and Lab Testing | | $89,070.20 |
| **SUBTOTAL ESTIMATED FEE:** | | **$189,290.64** |
| Optional Services | | $0.00 |
| **GRAND TOTAL ESTIMATED FEE:** | | **$189,290.64** |

Notes:
1. This sheet to be used by Subconsultant to calculate its fee.

## Project Activity 8: Environmental Permits

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| FDOT District | | |
| Tierra, Inc. | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| | **Environmental Permits, Compliances and Clearances** | | | | | |
| 8.1 | Preliminary Project Research | LS | 1 | 0 | 0 | |
| | **Permits** | | | | | |
| 8.2 | **Field Work** | | | | | |
| 8.2.1 | Pond Site Alternatives | per pond site | 0 | 0 | 0 | |
| 8.2.2 | Establish Wetland Jurisdictional Lines and Assessments | LS | 1 | 0 | 0 | |
| 8.2.3 | Species Surveys | LS | 1 | 0 | 0 | |
| 8.2.4 | Archeological Surveys | LS | 1 | 0 | 0 | |
| 8.3 | Agency Verification of Wetland Data | LS | 1 | 0 | 0 | |
| 8.4 | **Complete And Submit All Required Permit Applications** | | | | | |
| 8.4.1 | Complete and Submit All Required Wetland Permit Applications | LS | 1 | 0 | 0 | |
| 8.4.2 | Complete and Submit All Required Species Permit Applications | LS | 1 | 0 | 0 | |
| 8.5 | Prepare Dredge and Fill Sketches (as needed) | LS | 1 | 0 | 0 | |
| 8.6 | Prepare USCG Permit Sketches | LS | 1 | 0 | 0 | |
| 8.7 | Prepare Water Management District Right-of-Way Occupancy Permit | LS | 1 | 0 | 0 | |
| 8.8 | Prepare Coastal Construction Control Line (CCCL) Permit Application | LS | 1 | 0 | 0 | |
| 8.9 | Prepare Tree Permit Information | LS | 1 | 0 | 0 | |
| 8.10 | Mitigation Design | LS | 1 | 0 | 0 | |
| 8.11 | Mitigation Coordination and Meetings | LS | 1 | 0 | 0 | |

## Project Activity 8: Environmental Permits

| Task No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 8.12 | Other Environmental Permits | LS | 1 | 0 | 0 | |
| | **Environmental Clearances/Reevaluations** | | | | | |
| 8.13 | **Technical support to Department for Environmental Clearances and Reevaluations (use when consultant provides technical support only)** | | | | | |
| 8.13.1 | NEPA or SEIR Reevaluation | LS | 1 | 0 | 0 | |
| 8.13.2 | Archaeological and Historical Features | LS | 1 | 0 | 0 | |
| 8.13.3 | Wetland Impact Analysis | LS | 1 | 0 | 0 | |
| 8.13.4 | Essential Fish Habitat | LS | 1 | 0 | 0 | |
| 8.13.5 | Wildlife and Habitat Impact Analysis | LS | 1 | 0 | 0 | |
| 8.13.6 | Section 7 or Section 10 Consultation | LS | 1 | 0 | 0 | |
| 8.14 | **Preparation of Environmental Clearances and Reevaluations (use when consultant prepares all documents associated with reevaluation)** | | | | | |
| 8.14.1 | NEPA or SEIR Reevaluation | LS | 1 | 0 | 0 | |
| 8.14.2 | Archaeological and Historical Features | LS | 1 | 0 | 0 | |
| 8.14.3 | Wetland Impact Analysis | LS | 1 | 0 | 0 | |
| 8.14.4 | Essential Fish Habitat | LS | 1 | 0 | 0 | |
| 8.14.5 | Wildlife and Habitat Impact Analysis | LS | 1 | 0 | 0 | |
| 8.14.6 | Section 7 or Section 10 Consultation | LS | 1 | 0 | 0 | |
| 8.15 | Contamination Impact Analysis | LS | 1 | 40 | 40 | desktop/windshield Level 1 update; appx 3 miles; analysis&field review 25 hrs + 15 hrs memo = 40 MH |
| 8.16 | Asbestos Survey | LS | 1 | 0 | 0 | no asbestos, no Level 2, no EDR report (CLM only) |
| **Environmental Permits, Compliance, and Clearances/Reevaluations Technical Subtotal** | | | | | **40** | |
| 8.17 | Technical Meetings | LS | 1 | 0 | 0 | Meetings are listed below |
| 8.18 | Quality Assurance/Quality Control | LS | % | 5% | 2 | |
| 8.19 | Supervision | LS | % | 5% | 2 | |
| **Environmental Permits, Compliance and Clearances Nontechnical Subtotal** | | | | | **4** | |
| 8.20 | Coordination | LS | % | 3% | 1 | |
| **8. Environmental Permits, Compliance and Clearances Total** | | | | | **45** | |

# 35. Geotechnical

Estimator:

SR 417, Econlockhatchee Trail to Seminole County Line
417-134

| Representing | Print Name | Signature / Date |
|---|---|---|
| CFX | | |
| Tierra, Inc. | | |

***NOTE: Signature Block is optional, per District preference***

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| | **Roadway** | | | | | |
| 35.1 | Document Collection and Review | LS | 1 | 10 | 10 | Literature Survey (Existing Plans, USDA, USGS, Potentiometric, etc.) |
| 35.2 | Develop Detailed Boring Location Plan | LS | 1 | 8 | 8 | 195 roadway borings. 55 SPTs, 140 Augers: Total 1,800 LF. |
| 35.3 | Stake Borings/Utility Clearance | Boring | 195 | 0.25 | 49 | |
| 35.4 | Muck Probing | Crew Day | 0 | 0 | 0 | Tierra will use separate pay item in fee schedule to perform muck probing. |
| 35.5 | Coordinate and Develop MOT Plans for Field Investigation | EA | 2 | 4 | 8 | Toll Plaza |
| 35.6 | Drilling Access Permits | Location | 0 | 0 | 0 | N/A |
| 35.7 | Property Clearances | EA | 0 | 0 | 0 | All Work within ROW |
| 35.8 | Groundwater Monitoring | EA | 0 | 0 | 0 | N/A |
| 35.9 | LBR/Resilient Modulus Sampling | EA | 12 | 1.5 | 18 | Collecting LBR/Mr samples. |
| 35.10 | Coordination of Field Work | 100 lf of boring | 18 | 1 | 18 | |
| 35.11 | Soil and Rock Classification - Roadway | 100 lf of boring | 18 | 2 | 36 | |
| 35.12 | Design LBR | LS | 1 | 8 | 8 | |
| 35.13 | Laboratory Data | 100 lf of boring | 18 | 0.75 | 14 | |
| 35.14 | Seasonal High Water Table | Boring | 195 | 0.2 | 39 | |
| 35.15 | Parameters for Water Retention Areas | EA | 2 | 1 | 2 | Contingency, If Required. |
| 35.16 | Delineate Limits of Unsuitable Material | Cross-section | 10 | 1.3 | 13 | Assume 10 cross sections @ 0.5 hr/cross section (5 hrs) + 2 plan reviews @ 4 hrs each (8 hrs). Sum = 13 hrs |
| 35.17 | Electronic Files for Cross-Sections | 100 lf of boring | 18 | 1 | 18 | |
| 35.18 | Embankment Settlement and Stability | Embankment Boring | 2 | 4 | 8 | |
| 35.19 | Monitor Existing Structures | LS | 1 | 20 | 20 | *2 hrs preliminary review + 10 hrs field visit + 8 hrs reccomendations* |

## 35. Geotechnical

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 35.20 | Stormwater Volume Recovery and/or Background Seepage Analysis | EA | 0 | 0 | 0 | To be performed by others. |
| 35.21 | Geotechnical Recommendations | LS | 1 | 20 | 20 | |
| 35.22 | Pavement Condition Survey and Pavement Evaluation Report | LS | 0 | 0 | 0 | Pavement Coring and Evaluation Not Required. |
| 35.23 | Preliminary Roadway Report | LS | 1 | 16 | 16 | |
| 35.24 | Final Report | EA | 1 | 16 | 16 | |
| 35.25 | Auger Boring Drafting | 100 lf boring | 7 | 4 | 28 | |
| 35.26 | SPT Boring Drafting | 100 lf boring | 11 | 5 | 55 | |
| | | | | **Roadway Geotechnical Subtotal** | **404** | |
| | **Structures** | | | | | |
| 35.27 | Develop Detailed Boring Location Plan | LS | 1 | 4 | 4 | 38 structure borings. Total 1,445 LF |
| 35.28 | Stake Borings/Utility Clearance | Boring | 38 | 0.3 | 11 | |
| 35.29 | Coordinate and Develop MOT Plans for Field Investigation | EA | 3 | 2 | 6 | Bridge, Walls, Misc Structures |
| 35.30 | Drilling Access Permits | Location | 0 | 0 | 0 | N/A |
| 35.31 | Property Clearances | EA | 0 | 0 | 0 | All Work within ROW |
| 35.32 | Collection of Corrosion Samples | EA | 0 | 0 | 0 | To be collected at time of drilling. |
| 35.33 | Coordination of Field Work | 100 lf of boring | 14.45 | 1 | 14 | |
| 35.34 | Soil and Rock Classification - Structures | 100 lf of boring | 14.45 | 2 | 29 | |
| 35.35 | Tabulation of Laboratory Data | 100 lf of boring | 14.45 | 0.75 | 11 | |
| 35.36 | Estimate Design Groundwater Level for Structures | EA | 38 | 0.25 | 10 | |
| 35.37 | Selection of Foundation Alternatives (BDR) | Bridge boring | 2 | 4 | 8 | Two borings at End Bents. |
| 35.38 | Detailed Analysis of Selected Foundation Alternate(s) | Bridge boring | 2 | 4 | 8 | |
| 35.39 | Bridge Construction and Testing Recommendations | Bridge boring | 2 | 4 | 8 | Anticipate standard foundation work. |
| 35.40 | Lateral Load Analysis (Optional) | Bridge boring | 2 | 1.5 | 3 | Provide soil parameters only. |
| 35.41 | Walls | Wall Boring | 6 | 2 | 12 | |
| 35.42 | Sheet Pile Wall Analysis (Optional) | Wall Boring | 0 | 0 | 0 | N/A |
| 35.43 | Design Soil Parameters for Signs, Signals, High Mast Lights, and Strain Poles and Geotechnical Recommendations | Boring | 23 | 1 | 23 | 14 Sign Borings, 1 Signal Boring, 8 ITS Borings |

## 35. Geotechnical

| Task No. | Task | Units | No of Units | Hours/ Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 35.44 | Box Culvert Analysis | EA | 0 | 0 | 0 | No Culvert Extensions. |
| 35.45 | Preliminary Report - BDR | EA | 1 | 20 | 20 | |
| 35.46 | Final Report - Bridge and Associated Walls | EA | 1 | 20 | 20 | |
| 35.47 | Final Reports - Signs, Signals, Box Culvert, Walls and High Mast Lights | EA | 4 | 8 | 32 | Reports for Signs, Signals, ITS and Sound Wall |
| 35.48 | SPT Boring Drafting | 100 lf of boring | 14.45 | 5 | 72 | |
| 35.49 | Other Geotechnical | LS | 0 | 0 | 0 | N/A |
| | | | | **Structural Geotechnical Subtotal** | **291** | |
| | | | | **Geotechnical Technical Subtotal** | **695** | |
| 35.50 | Technical Special Provisions | EA | 0 | 0 | 0 | |
| 35.51 | Field Reviews | LS | 1 | 8 | 8 | |
| 35.52 | Technical Meetings | LS | 1 | 14 | 14 | Meetings listed below |
| 35.53 | Quality Assurance/Quality Control | LS | % | 5% | 35 | |
| 35.54 | Supervision | LS | % | 5% | 35 | |
| | | | | **Geotechnical Nontechnical Subtotal** | **92** | |
| 35.55 | Coordination | LS | % | 3% | 24 | |
| | | | | **35. Geotechnical Total** | **811** | |

| Technical Meetings | Units | No of Units | Hours/ Unit | Total Hours | PM Attendance at Meeting Required? | Number |
|---|---|---|---|---|---|---|
| Kickoff Meeting with CFX | EA | 1 | 2 | 2 | | 0 |
| Boring Layout Approval | EA | 0 | 0 | 0 | | 0 |
| Attend in BDR Review Meeting | EA | 0 | 0 | 0 | | 0 |
| 30/60/90% Submittal Review | EA | 0 | 0 | 0 | | 0 |
| Other Meetings | EA | 0 | 0 | 0 | | 0 |
| **Subtotal Technical Meetings** | | | | **2** | **Subtotal Project Manager Meetings** | 0 |
| Progress Meetings (if required by FDOT) | EA | 6 | 2 | 12 | *PM attendance at Progress Meetings is manually entered on General Task 3* | -- |
| Phase Review Meetings | EA | 0 | 0 | 0 | *PM attendance at Phase Review Meetings is manually entered on General Task 3* | -- |
| **Total Meetings** | | | | **14** | **Total Project Manager Meetings (carries to Tab 3)** | **0** |

*Carries to 33.18

Carries to Tab 3

| Item Description | Unit | Unit Price | Quantity | Total |
|---|---|---|---|---|
| **Geotechnical Field Investigation** | | | | |
| 612-Geo Mobilization Drill Rig Truck Mount | Each | $ 337.00 | 0 | $ - |
| 614-Geo Mobilization Mudbug/All Terrain Vehicle | Each | $ 500.00 | 0 | $ - |
| 610-Geo Mobilization Drill Rig Track Mount | Each | $ 3,110.00 | 0 | $ - |
| 418-Geo Drill Crew Support Vehicle | Day | $ 152.00 | 1 | $ 152.00 |
| 609-Geo Mobilization Drill Rig Barge Mount | Each | $ 7,420.00 | 0 | $ - |
| 405-Geo Barge (Owned) | Day | $ 2,500.00 | 0 | $ - |
| 618-Geo Mobilization Support Boat | Each | $ 500.00 | 0 | $ - |
| Geo Support Safety Boat | Day | $ 275.00 | 0 | $ - |
| 619-Geo Mobilization Tri-Pod | Each | $ 1,250.00 | 0 | $ - |
| 419-Geo Drilling Crew 2-Person | Hour | $ 135.00 | 0 | $ - |
| 420-Geo Drilling Crew 3-Person | Hour | $ 185.00 | 0 | $ - |
| Geo SPT Truck 0-50 Ft | LF | $ 12.00 | 0 | $ - |
| Geo SPT Truck 50-100 Ft | LF | $ 14.00 | 0 | $ - |
| Geo SPT Truck 100-150 Ft | LF | $ 20.00 | 0 | $ - |
| Geo SPT Truck 150-200 Ft | LF | $ 39.00 | 0 | $ - |
| 478-Geo SPT Truck-Mud Bug 0-50 Ft | LF | $ 12.50 | 0 | $ - |
| 479-Geo SPT Truck-Mud Bug 50-100 Ft | LF | $ 16.00 | 0 | $ - |
| 480-Geo SPT Truck-Mud Bug 100-150 Ft | LF | $ 27.50 | 0 | $ - |
| 481-Geo SPT Truck-Mud Bug 150-200 Ft | LF | $ 42.00 | 0 | $ - |
| 473-Geo SPT Barge/Track/Amphibious 000-050 Ft | LF | $ 18.50 | 0 | $ - |
| 474-Geo SPT Barge/Track/Amphibious 050-100 Ft | LF | $ 25.00 | 0 | $ - |
| 475-Geo SPT Barge/Track/Amphibious 100-150 Ft | LF | $ 40.00 | 0 | $ - |
| 476-Geo SPT Barge/Track/Amphibious 150-200 Ft | LF | $ 70.00 | 0 | $ - |
| Geo Grout Boreholes- Truck 0-050 Ft | LF | $ 4.50 | 0 | $ - |
| Geo Grout Boreholes- Truck 50-100 Ft | LF | $ 5.00 | 0 | $ - |
| Geo Grout Boreholes- Truck 100-150 Ft | LF | $ 5.50 | 0 | $ - |
| Geo Grout Boreholes- Truck 150-200 Ft | LF | $ 14.00 | 0 | $ - |
| 440-Geo Grout Boreholes- Truck/Mud Bug 000-050 Ft | LF | $ 5.95 | 0 | $ - |
| 441-Geo Grout Boreholes- Truck/Mud Bug 050-100 Ft | LF | $ 7.10 | 0 | $ - |
| 442-Geo Grout Boreholes- Truck/Mud Bug 100-150 Ft | LF | $ 9.00 | 0 | $ - |
| 443-Geo Grout Boreholes- Truck/Mud Bug 150-200 Ft | LF | $ 18.00 | 0 | $ - |
| 435-Geo Grout Boreholes- Barge/Track/Amphibious 000-050 Ft | LF | $ 8.50 | 0 | $ - |
| 436-Geo Grout Boreholes- Barge/Track/Amphibious 050-100 Ft | LF | $ 9.00 | 0 | $ - |
| 437-Geo Grout Boreholes- Barge/Track/Amphibious 100-150 Ft | LF | $ 10.00 | 0 | $ - |
| 438-Geo Grout Boreholes- Barge/Track/Amphibious 150-200 Ft | LF | $ 25.00 | 0 | $ - |
| Geo Temp Casing 3" Truck 0-050 Ft | LF | $ 7.50 | 0 | $ - |
| Geo Temp Casing 3" Truck 50-100 Ft | LF | $ 8.75 | 0 | $ - |
| Geo Temp Casing 3" Truck 100-150 Ft | LF | $ 10.50 | 0 | $ - |
| Geo Temp Casing 3" Truck 150-200 Ft | LF | $ 15.00 | 0 | $ - |

| Item Description | Unit | Unit Price | Quantity | Total |
|---|---|---|---|---|
| 488-Geo Temp Casing 3" Truck/Mud Bug 000-050 Ft | LF | $ 9.80 | 0 | $ - |
| 489-Geo Temp Casing 3" Truck/Mud Bug 050-100 Ft | LF | $ 12.75 | 0 | $ - |
| 490-Geo Temp Casing 3" Truck/Mud Bug 100-150 Ft | LF | $ 15.75 | 0 | $ - |
| 491-Geo Temp Casing 3" Truck/Mud Bug 150-200 Ft | LF | $ 22.00 | 0 | $ - |
| 483-Geo Temp Casing 3" Barge/Track/Amphibious 0-050 Ft | LF | $ 12.90 | 0 | $ - |
| 484-Geo Temp Casing 3" Barge/Track/Amphibious 50-100 Ft | LF | $ 14.70 | 0 | $ - |
| 485-Geo Temp Casing 3" Barge/Track/Amphibious 100-150 Ft | LF | $ 17.65 | 0 | $ - |
| 486-Geo Temp Casing 3" Barge/Track/Amphibious 150-200 Ft | LF | $ 25.00 | 0 | $ - |
| 463-Geo Rock Coring Truck/Mud Bug 000-050 Ft less than 4" ID | LF | $ 34.25 | 0 | $ - |
| 465-Geo Rock Coring Truck/Mud Bug 050-100 Ft less than 4" ID | LF | $ 36.55 | 0 | $ - |
| 467-Geo Rock Coring Truck/Mud Bug 100-150 Ft less than 4" ID | LF | $ 39.90 | 0 | $ - |
| 453-Geo Rock Coring Barge/Track/Amphibious 000-050 Ft less than 4" ID | LF | $ 45.79 | 0 | $ - |
| 455-Geo Rock Coring Barge/Track/Amphibious 050-100 Ft less than 4" ID | LF | $ 60.74 | 0 | $ - |
| 457-Geo Rock Coring Barge/Track/Amphibious 100-150 Ft less than 4" ID | LF | $ 65.00 | 0 | $ - |
| 459-Geo Rock Coring Barge/Track/Amphibious 150-200 Ft less than 4" ID | LF | $ 94.00 | 0 | $ - |
| 427-Geo Extra SPT Samples-Truck/Mud Bug 000-050 Ft | Each | $ 31.40 | 0 | $ - |
| 428-Geo Extra SPT Samples-Truck/Mud Bug 050-100 Ft | Each | $ 36.44 | 0 | $ - |
| 429-Geo Extra SPT Samples-Truck/Mud Bug 100-150 Ft | Each | $ 42.20 | 0 | $ - |
| 430-Geo Extra SPT Samples-Truck/Mud Bug 150-200 Ft | Each | $ 85.00 | 0 | $ - |
| 422-Geo Extra SPT Samples-Barge/Track/Amphibious 000-050 Ft | Each | $ 47.15 | 0 | $ - |
| 423-Geo Extra SPT Samples-Barge/Track/Amphibious 050-100 Ft | Each | $ 54.80 | 0 | $ - |
| 424-Geo Extra SPT Samples-Barge/Track/Amphibious 100-150 Ft | Each | $ 63.30 | 0 | $ - |
| 425-Geo Extra SPT Samples-Barge/Track/Amphibious 150-200 Ft | Each | $ 85.00 | 0 | $ - |
| 519-Geo Undisturbed Samples Truck/Mud Bug 000-050 Ft | Each | $ 119.50 | 0 | $ - |
| 520-Geo Undisturbed Samples Truck/Mud Bug 050-100 Ft | Each | $ 130.40 | 0 | $ - |
| 521-Geo Undisturbed Samples Truck/Mud Bug 100-150 Ft | Each | $ 195.60 | 0 | $ - |
| 522-Geo Undisturbed Samples Truck/Mud Bug 150-200 Ft | Each | $ 200.00 | 0 | $ - |
| 515-Geo Undisturbed Samples Barge/Track/Amphibious 000-050 Ft | Each | $ 179.00 | 0 | $ - |
| 516-Geo Undisturbed Samples Barge/Track/Amphibious 050-100 Ft | Each | $ 195.60 | 0 | $ - |
| 517-Geo Undisturbed Samples Barge/Track/Amphibious 100-150 Ft | Each | $ 293.40 | 0 | $ - |
| 518-Geo Undisturbed Samples Barge/Track/Amphibious 150-200 Ft | Each | $ 375.00 | 0 | $ - |
| 401-Geo Auger Borings- Hand & Truck/Mud Bug | LF | $ 9.25 | 0 | $ - |
| 402-Geo Auger Borings- Track | LF | $ 9.25 | 0 | $ - |
| 432-Geo Field Permeability 0-10 Ft (Open - End Borehole Method) | Each | $ 270.00 | 0 | $ - |
| Flagman and Barricades 2-Man Crew Own Equipment | Day | $ 850.00 | 0 | $ - |
| 450-Geo Piezometer 2" 000-050 Ft | LF | $ 30.00 | 0 | $ - |
| 445-Geo Grouted Monitor Well 2" 000-050 Ft | LF | $ 6.25 | 0 | $ - |
| 450.1 Piezometer Permit Cost Actual | Each | $ 50.00 | 0 | $ - |
| 403-Geo Backhoe (Owned) | Day | $ 600.00 | 0 | $ - |
| 416-Geo Dozer (Owned) | Day | $ 800.00 | 0 | $ - |
| Site Clearing to Access Boring or Test Locations | Hour | $ 150.00 | 0 | $ - |
| 407-Geo Chainsaw (Owned) | Day | $ 28.00 | 0 | $ - |
| 415-Geo Double Ring Infiltration (ASTM D3385) | Each | $ 460.00 | 0 | $ - |
| 434-Geo Ground Penetrating Radar (GPR) | Day | $ 2,800.00 | 0 | $ - |

| Item Description | Unit | Unit Price | Quantity | Total |
|---|---|---|---|---|
| **Asphalt and Concrete Pavement Coring** | | | | |
| 209-Asphalt Pavement Coring – 4" dia with Base Depth Check | Each | $ 125.00 | 0 | $ - |
| 210-Asphalt Pavement Coring – 4" dia without Base Depth Check | Each | $ 110.00 | 0 | $ - |
| 211-Asphalt Pavement Coring – 6" dia with Base Depth Check | Each | $ 125.00 | 0 | $ - |
| 212-Asphalt Pavement Coring – 6" dia without Base Depth Check | Each | $ 110.00 | 0 | $ - |
| 305-Concrete Pavement Coring - 4" Dia | Each | $ 110.00 | 0 | $ - |
| 306-Concrete Pavement Coring - 6" Dia | Each | $ 110.00 | 0 | $ - |
| 603-Mobilization Asphalt Coring equipment | Each | $ 250.00 | 0 | $ - |
| 606-Mobilization Concrete Coring | Each | $ 250.00 | 0 | $ - |
| **Geotechnical Soil Laboratory Testing** | | | | |
| 812-Soils Materials Finer than 200 Sieve (FM 1-T011) | Test | $ 35.00 | 0 | $ - |
| 817-Soils Moisture Content Laboratory (AASHTO T 265) | Test | $ 9.58 | 0 | $ - |
| 821-Soils Particle Size Analysis (AASHTO T 88) (Including Hydrometer) | Test | $ 131.00 | 0 | $ - |
| 822-Soils Particle Size Analysis (AASHTO T 88) (No Hydrometer) | Test | $ 67.00 | 0 | $ - |
| 805-Soils Corrosion Series (FM 5-550 through 5-553) | Test | $ 145.00 | 0 | $ - |
| 825-Soils pH Soil or Water (FM 5-550) | Test | $ 30.00 | 0 | $ - |
| 829-Soils Resistivity Soil or Water (FM 5-551) | Test | $ 35.00 | 0 | $ - |
| 800-Soils Chloride Soil or Water (FM 5-552) | Test | $ 40.00 | 0 | $ - |
| 833-Soils Sulfate Soil or Water (FM 5-553) | Test | $ 40.00 | 0 | $ - |
| 819-Soils Organic Content Ignition (FM 1 T-267) | Test | $ 35.00 | 0 | $ - |
| Atterberg Limit Tests (AASHTO T-89 and T-90) Combined | Test | $ 81.00 | 0 | $ - |
| 826-Soils Plastic Limit & Plasticity Index (AASHTO T 90) | Test | $ 81.00 | 0 | $ - |
| 811-Soils Liquid Limit (AASHTO T 89) | Test | $ 41.00 | 0 | $ - |
| 823-Soils Permeability Constant Head (AASHTO T 215) | Test | $ 155.00 | 0 | $ - |
| 824-Soils Permeability Falling Head (FM 5-513) | Test | $ 155.00 | 0 | $ - |
| 827-Soils Proctor Modified (FM 1-T 180) | Test | $ 115.00 | 0 | $ - |
| 828-Soils Proctor Standard (AASHTO T 99) | Test | $ 111.00 | 0 | $ - |
| 832-Soils Splitting Tensile Strength of Rock Cores (ASTM D3967) | Test | $ 105.00 | 0 | $ - |
| 838-Soils Unconfined Compression - Rock (ASTM D7012, Method C) | Test | $ 105.00 | 0 | $ - |
| 803-Soils Consolidation - Constant Strain (ASTM D4186) | Test | $ 500.00 | 0 | $ - |
| 804-Soils Consolidation - Extended Load Increments (AASHTO T216) | Each | $ 50.00 | 0 | $ - |
| 806-Soils Direct Shear Consolidated Drained/ Point AASHTO T 236 | Test | $ 250.00 | 0 | $ - |
| 810-Soils Limerock Bearing Ratio (LBR)(FM 5-515) | Test | $ 326.18 | 0 | $ - |
| **Engineering and Technical Support Services** | | | | |
| Project Manager | Hour | $ 198.25 | 2 | $ 396.50 |
| Senior Engineer | Hour | $ 188.18 | 0 | $ - |
| Chief Scientist | Hour | $ 151.47 | 7 | $ 1,060.29 |
| Senior Project Engineer | Hour | $ 158.36 | 0 | $ - |
| Geotechnical Engineer | Hour | $ 134.69 | 0 | $ - |
| Engineering Intern | Hour | $ 95.28 | 0 | $ - |
| Senior Scientist | Hour | $ 117.34 | 18 | $ 2,112.12 |
| Designer | Hour | $ 91.06 | 7 | $ 637.42 |
| Sr Engineering Technician | Hour | $ 83.16 | 5 | $ 415.80 |
| Geotechnical Technician | Hour | $ 67.03 | 5 | $ 335.15 |
| Secretary/Clerical | Hour | $ 68.31 | 1 | $ 68.31 |
| | **Total Estimated Fee** | | | $ 5,177.59 |

| Item Description | Unit | Unit Price | Quantity | Total |
|---|---|---|---|---|
| **Geotechnical Field Investigation** | | | | |
| 612-Geo Mobilization Drill Rig Truck Mount | Each | $ 337.00 | 4 | $ 1,348.00 |
| 614-Geo Mobilization Mudbug/All Terrain Vehicle | Each | $ 500.00 | 4 | $ 2,000.00 |
| 610-Geo Mobilization Drill Rig Track Mount | Each | $ 3,110.00 | 0 | $ - |
| 418-Geo Drill Crew Support Vehicle | Day | $ 152.00 | 40 | $ 6,080.00 |
| 609-Geo Mobilization Drill Rig Barge Mount | Each | $ 7,420.00 | 0 | $ - |
| 405-Geo Barge (Owned) | Day | $ 2,500.00 | 0 | $ - |
| 618-Geo Mobilization Support Boat | Each | $ 500.00 | 0 | $ - |
| Geo Support Safety Boat | Day | $ 275.00 | 0 | $ - |
| 619-Geo Mobilization Tri-Pod | Each | $ 1,250.00 | 0 | $ - |
| 419-Geo Drilling Crew 2-Person | Hour | $ 135.00 | 0 | $ - |
| 420-Geo Drilling Crew 3-Person | Hour | $ 185.00 | 0 | $ - |
| Geo SPT Truck 0-50 Ft | LF | $ 12.00 | 1585 | $ 19,020.00 |
| Geo SPT Truck 50-100 Ft | LF | $ 14.00 | 100 | $ 1,400.00 |
| Geo SPT Truck 100-150 Ft | LF | $ 20.00 | 60 | $ 1,200.00 |
| Geo SPT Truck 150-200 Ft | LF | $ 39.00 | 0 | $ - |
| 478-Geo SPT Truck-Mud Bug 0-50 Ft | LF | $ 12.50 | 800 | $ 10,000.00 |
| 479-Geo SPT Truck-Mud Bug 50-100 Ft | LF | $ 16.00 | 0 | $ - |
| 480-Geo SPT Truck-Mud Bug 100-150 Ft | LF | $ 27.50 | 0 | $ - |
| 481-Geo SPT Truck-Mud Bug 150-200 Ft | LF | $ 42.00 | 0 | $ - |
| 473-Geo SPT Barge/Track/Amphibious 000-050 Ft | LF | $ 18.50 | 0 | $ - |
| 474-Geo SPT Barge/Track/Amphibious 050-100 Ft | LF | $ 25.00 | 0 | $ - |
| 475-Geo SPT Barge/Track/Amphibious 100-150 Ft | LF | $ 40.00 | 0 | $ - |
| 476-Geo SPT Barge/Track/Amphibious 150-200 Ft | LF | $ 70.00 | 0 | $ - |
| Geo Grout Boreholes- Truck 0-050 Ft | LF | $ 4.50 | 1585 | $ 7,132.50 |
| Geo Grout Boreholes- Truck 50-100 Ft | LF | $ 5.00 | 100 | $ 500.00 |
| Geo Grout Boreholes- Truck 100-150 Ft | LF | $ 5.50 | 60 | $ 330.00 |
| Geo Grout Boreholes- Truck 150-200 Ft | LF | $ 14.00 | 0 | $ - |
| 440-Geo Grout Boreholes- Truck/Mud Bug 000-050 Ft | LF | $ 5.95 | 800 | $ 4,760.00 |
| 441-Geo Grout Boreholes- Truck/Mud Bug 050-100 Ft | LF | $ 7.10 | 0 | $ - |
| 442-Geo Grout Boreholes- Truck/Mud Bug 100-150 Ft | LF | $ 9.00 | 0 | $ - |
| 443-Geo Grout Boreholes- Truck/Mud Bug 150-200 Ft | LF | $ 18.00 | 0 | $ - |
| 435-Geo Grout Boreholes- Barge/Track/Amphibious 000-050 Ft | LF | $ 8.50 | 0 | $ - |
| 436-Geo Grout Boreholes- Barge/Track/Amphibious 050-100 Ft | LF | $ 9.00 | 0 | $ - |
| 437-Geo Grout Boreholes- Barge/Track/Amphibious 100-150 Ft | LF | $ 10.00 | 0 | $ - |
| 438-Geo Grout Boreholes- Barge/Track/Amphibious 150-200 Ft | LF | $ 25.00 | 0 | $ - |
| Geo Temp Casing 3" Truck 0-050 Ft | LF | $ 7.50 | 400 | $ 3,000.00 |
| Geo Temp Casing 3" Truck 50-100 Ft | LF | $ 8.75 | 80 | $ 700.00 |
| Geo Temp Casing 3" Truck 100-150 Ft | LF | $ 10.50 | 0 | $ - |
| Geo Temp Casing 3" Truck 150-200 Ft | LF | $ 15.00 | 0 | $ - |

| Item Description | Unit | Unit Price | Quantity | Total |
|---|---|---|---|---|
| 488-Geo Temp Casing 3" Truck/Mud Bug 000-050 Ft | LF | $ 9.80 | 150 | $ 1,470.00 |
| 489-Geo Temp Casing 3" Truck/Mud Bug 050-100 Ft | LF | $ 12.75 | 0 | $ - |
| 490-Geo Temp Casing 3" Truck/Mud Bug 100-150 Ft | LF | $ 15.75 | 0 | $ - |
| 491-Geo Temp Casing 3" Truck/Mud Bug 150-200 Ft | LF | $ 22.00 | 0 | $ - |
| 483-Geo Temp Casing 3" Barge/Track/Amphibious 0-050 Ft | LF | $ 12.90 | 0 | $ - |
| 484-Geo Temp Casing 3" Barge/Track/Amphibious 50-100 Ft | LF | $ 14.70 | 0 | $ - |
| 485-Geo Temp Casing 3" Barge/Track/Amphibious 100-150 Ft | LF | $ 17.65 | 0 | $ - |
| 486-Geo Temp Casing 3" Barge/Track/Amphibious 150-200 Ft | LF | $ 25.00 | 0 | $ - |
| 463-Geo Rock Coring Truck/Mud Bug 000-050 Ft less than 4" ID | LF | $ 34.25 | 0 | $ - |
| 465-Geo Rock Coring Truck/Mud Bug 050-100 Ft less than 4" ID | LF | $ 36.55 | 0 | $ - |
| 467-Geo Rock Coring Truck/Mud Bug 100-150 Ft less than 4" ID | LF | $ 39.90 | 0 | $ - |
| 453-Geo Rock Coring Barge/Track/Amphibious 000-050 Ft less than 4" ID | LF | $ 45.79 | 0 | $ - |
| 455-Geo Rock Coring Barge/Track/Amphibious 050-100 Ft less than 4" ID | LF | $ 60.74 | 0 | $ - |
| 457-Geo Rock Coring Barge/Track/Amphibious 100-150 Ft less than 4" ID | LF | $ 65.00 | 0 | $ - |
| 459-Geo Rock Coring Barge/Track/Amphibious 150-200 Ft less than 4" ID | LF | $ 94.00 | 0 | $ - |
| 427-Geo Extra SPT Samples-Truck/Mud Bug 000-050 Ft | Each | $ 31.40 | 14 | $ 439.60 |
| 428-Geo Extra SPT Samples-Truck/Mud Bug 050-100 Ft | Each | $ 36.44 | 20 | $ 728.80 |
| 429-Geo Extra SPT Samples-Truck/Mud Bug 100-150 Ft | Each | $ 42.20 | 12 | $ 506.40 |
| 430-Geo Extra SPT Samples-Truck/Mud Bug 150-200 Ft | Each | $ 85.00 | 0 | $ - |
| 422-Geo Extra SPT Samples-Barge/Track/Amphibious 000-050 Ft | Each | $ 47.15 | 0 | $ - |
| 423-Geo Extra SPT Samples-Barge/Track/Amphibious 050-100 Ft | Each | $ 54.80 | 0 | $ - |
| 424-Geo Extra SPT Samples-Barge/Track/Amphibious 100-150 Ft | Each | $ 63.30 | 0 | $ - |
| 425-Geo Extra SPT Samples-Barge/Track/Amphibious 150-200 Ft | Each | $ 85.00 | 0 | $ - |
| 519-Geo Undisturbed Samples Truck/Mud Bug 000-050 Ft | Each | $ 119.50 | 2 | $ 239.00 |
| 520-Geo Undisturbed Samples Truck/Mud Bug 050-100 Ft | Each | $ 130.40 | 0 | $ - |
| 521-Geo Undisturbed Samples Truck/Mud Bug 100-150 Ft | Each | $ 195.60 | 0 | $ - |
| 522-Geo Undisturbed Samples Truck/Mud Bug 150-200 Ft | Each | $ 200.00 | 0 | $ - |
| 515-Geo Undisturbed Samples Barge/Track/Amphibious 000-050 Ft | Each | $ 179.00 | 0 | $ - |
| 516-Geo Undisturbed Samples Barge/Track/Amphibious 050-100 Ft | Each | $ 195.60 | 0 | $ - |
| 517-Geo Undisturbed Samples Barge/Track/Amphibious 100-150 Ft | Each | $ 293.40 | 0 | $ - |
| 518-Geo Undisturbed Samples Barge/Track/Amphibious 150-200 Ft | Each | $ 375.00 | 0 | $ - |
| 401-Geo Auger Borings- Hand & Truck/Mud Bug | LF | $ 9.25 | 700 | $ 6,475.00 |
| 402-Geo Auger Borings- Track | LF | $ 9.25 | 0 | $ - |
| 432-Geo Field Permeability 0-10 Ft (Open - End Borehole Method) | Each | $ 270.00 | 4 | $ 1,080.00 |
| Flagman and Barricades 2-Man Crew Own Equipment | Day | $ 850.00 | 3 | $ 2,550.00 |
| 450-Geo Piezometer 2" 000-050 Ft | LF | $ 30.00 | 0 | $ - |
| 445-Geo Grouted Monitor Well 2" 000-050 Ft | LF | $ 6.25 | 0 | $ - |
| 450.1 Piezometer Permit Cost Actual | Each | $ 50.00 | 0 | $ - |
| 403-Geo Backhoe (Owned) | Day | $ 600.00 | 0 | $ - |
| 416-Geo Dozer (Owned) | Day | $ 800.00 | 1 | $ 800.00 |
| Site Clearing to Access Boring or Test Locations | Hour | $ 150.00 | 8 | $ 1,200.00 |
| 407-Geo Chainsaw (Owned) | Day | $ 28.00 | 1 | $ 28.00 |
| 415-Geo Double Ring Infiltration (ASTM D3385) | Each | $ 460.00 | 0 | $ - |
| 434-Geo Ground Penetrating Radar (GPR) | Day | $ 2,800.00 | 0 | $ - |

| Item Description | Unit | Unit Price | Quantity | Total |
|---|---|---|---|---|
| **Asphalt and Concrete Pavement Coring** | | | | |
| 209-Asphalt Pavement Coring – 4" dia with Base Depth Check | Each | $ 125.00 | 0 | $ - |
| 210-Asphalt Pavement Coring – 4" dia without Base Depth Check | Each | $ 110.00 | 0 | $ - |
| 211-Asphalt Pavement Coring – 6" dia with Base Depth Check | Each | $ 125.00 | 0 | $ - |
| 212-Asphalt Pavement Coring – 6" dia without Base Depth Check | Each | $ 110.00 | 0 | $ - |
| 305-Concrete Pavement Coring - 4" Dia | Each | $ 110.00 | 0 | $ - |
| 306-Concrete Pavement Coring - 6" Dia | Each | $ 110.00 | 0 | $ - |
| 603-Mobilization Asphalt Coring equipment | Each | $ 250.00 | 0 | $ - |
| 606-Mobilization Concrete Coring | Each | $ 250.00 | 0 | $ - |
| **Geotechnical Soil Laboratory Testing** | | | | |
| 812-Soils Materials Finer than 200 Sieve (FM 1-T011) | Test | $ 35.00 | 40 | $ 1,400.00 |
| 817-Soils Moisture Content Laboratory (AASHTO T 265) | Test | $ 9.58 | 45 | $ 431.10 |
| 821-Soils Particle Size Analysis (AASHTO T 88) (Including Hydrometer) | Test | $ 131.00 | 0 | $ - |
| 822-Soils Particle Size Analysis (AASHTO T 88) (No Hydrometer) | Test | $ 67.00 | 80 | $ 5,360.00 |
| 805-Soils Corrosion Series (FM 5-550 through 5-553) | Test | $ 145.00 | 15 | $ 2,175.00 |
| 825-Soils pH Soil or Water (FM 5-550) | Test | $ 30.00 | 0 | $ - |
| 829-Soils Resistivity Soil or Water (FM 5-551) | Test | $ 35.00 | 0 | $ - |
| 800-Soils Chloride Soil or Water (FM 5-552) | Test | $ 40.00 | 0 | $ - |
| 833-Soils Sulfate Soil or Water (FM 5-553) | Test | $ 40.00 | 0 | $ - |
| 819-Soils Organic Content Ignition (FM 1 T-267) | Test | $ 35.00 | 15 | $ 525.00 |
| Atterberg Limit Tests (AASHTO T-89 and T-90) Combined | Test | $ 81.00 | 0 | $ - |
| 826-Soils Plastic Limit & Plasticity Index (AASHTO T 90) | Test | $ 81.00 | 30 | $ 2,430.00 |
| 811-Soils Liquid Limit (AASHTO T 89) | Test | $ 41.00 | 0 | $ - |
| 823-Soils Permeability Constant Head (AASHTO T 215) | Test | $ 155.00 | 0 | $ - |
| 824-Soils Permeability Falling Head (FM 5-513) | Test | $ 155.00 | 0 | $ - |
| 827-Soils Proctor Modified (FM 1-T 180) | Test | $ 115.00 | 0 | $ - |
| 828-Soils Proctor Standard (AASHTO T 99) | Test | $ 111.00 | 0 | $ - |
| 832-Soils Splitting Tensile Strength of Rock Cores (ASTM D3967) | Test | $ 105.00 | 0 | $ - |
| 838-Soils Unconfined Compression - Rock (ASTM D7012, Method C) | Test | $ 105.00 | 0 | $ - |
| 803-Soils Consolidation - Constant Strain (ASTM D4186) | Test | $ 500.00 | 1 | $ 500.00 |
| 804-Soils Consolidation - Extended Load Increments (AASHTO T216) | Each | $ 50.00 | 0 | $ - |
| 806-Soils Direct Shear Consolidated Drained/ Point AASHTO T 236 | Test | $ 250.00 | 0 | $ - |
| 810-Soils Limerock Bearing Ratio (LBR)(FM 5-515) | Test | $ 326.18 | 10 | $ 3,261.80 |
| **Engineering and Technical Support Services** | | | | |
| Project Manager | Hour | $ 198.25 | 41 | $ 8,128.25 |
| Senior Engineer | Hour | $ 188.18 | 65 | $ 12,231.70 |
| Chief Scientist | Hour | $ 151.47 | 0 | $ - |
| Senior Project Engineer | Hour | $ 158.36 | 81 | $ 12,827.16 |
| Geotechnical Engineer | Hour | $ 134.69 | 122 | $ 16,432.18 |
| Engineering Intern | Hour | $ 95.28 | 260 | $ 24,772.80 |
| Senior Scientist | Hour | $ 117.34 | 0 | $ - |
| Designer | Hour | $ 91.06 | 162 | $ 14,751.72 |
| Sr Engineering Technician | Hour | $ 83.16 | 32 | $ 2,661.12 |
| Geotechnical Technician | Hour | $ 67.03 | 32 | $ 2,144.96 |
| Secretary/Clerical | Hour | $ 68.31 | 16 | $ 1,092.96 |
| | **Total Estimated Fee** | | | $ 184,113.05 |

**Mobile LIDAR MAPPING**

**Consultant: Dewberry**
**ACA Proposal #: 17607**
**Date: 5/31/2016**
**Estimator's Name: Aerial Cartographics of America, Inc.**

**Job Name: SR 417**
**From: Econ Trail**
**To: Ornage/Seminole County Line**
**Project Length: 7.0 Corridor Miles/31.5 Scan Miles**

| | Mobile LiDAR Item | Scale 1" = | Unit | No. of Unit | Price per Unit | Total Cost | Comments |
|---|---|---|---|---|---|---|---|
| 1 | LiDAR Mission Planning (MOC Item D.1.) | | Mile | 31.5 | $342.45 | $10,787.18 | Scan miles (Task 30.1- 18 hours and 30.2 - 24 hours) |
| 2 | Mobile LiDAR Acquisition Full Day (MOC Item E.1.) | | Day | 1 | $16,000.00 | $16,000.00 | (Tasks 30.3 and 30.4) |
| 3 | LiDAR Mission Data Processing (MOC Item F.1.a.) | | Mile | 31.5 | $482.14 | $15,187.41 | (Task 30.5 - 40 hours and Task 30.7 - 96 hours) |
| 4 | LiDAR Survey Report (MOC Item F.1.b.) | | Each | 1 | $1,258.62 | $1,258.62 | (Task 30.14 - 24 hours) |
| 5 | LiDAR Mission Digital Imagery Processing (MOC Item F.1.c.) | | Mile | 31.5 | $212.08 | $6,679.89 | (Task 30.6 - 24 hours) |
| 6 | LiDAR Point Cloud Classification Urban (MOC Item F.1.d.) | | Mile | 7 | $1,447.46 | $10,132.22 | Corridor miles (SR 417, Sidestreets & Ramps) (Task 30.8 - 60 hours) |
| 7 | LiDAR Specific Surface Reporting (MOC Item F.1.e.) | | Each | | $1,812.49 | $0.00 | N/A |
| 8 | LiDAR Mapp Den Urb Rdwy 6-lane (MOC Item G.1.a.) | | Mile | 0.41 | $9,062.45 | $3,715.60 | 3D Topo University Blvd (Task 30.10 - 246 Total Hours) |
| 9 | LiDAR Mapp Mod Urb Rdwy 3-lane (MOC Item G.1.b.) | | Mile | 0.22 | $2,900.20 | $638.04 | 3D Topo Econ Trail & Trevarthon (Task 30.10) |
| 10 | LiDAR Mapp Multi-Lane Rdwy/Int 6-lane (MOC Item G.1.c.) | | Mile | 6 | $5,097.76 | $30,586.56 | 3D Topo SR 417 (Task 30.10) |
| 11 | LiDAR Mapp Multi-Lane Rdwy/Int 2-lane ramp (MOC Item G.1.c.) | | Mile | 0.37 | $2,038.26 | $754.16 | 3D Topo Ramps (Task 30.10) |
| 12 | LiDAR CAD Den Urb Rdwy 6-lane (MOC Item G.2.a.) | | Mile | 0.41 | $906.25 | $371.56 | Cadd Edits University Blvd. (Task 30.12 - 26 Total hours) |
| 13 | LiDAR CAD Mod Urb Rdwy 3-lane (MOC Item G.2.b.) | | Mile | 0.22 | $340.77 | $74.97 | Cadd Edits Econ Trail & Trevarthon (Task 30.12) |
| 14 | LiDAR CAD Multi-Lane Rdwy/Int 6-lane (MOC Item G.2.c.) | | Mile | 6 | $906.25 | $5,437.50 | Cadd Edits SR 417 (Task 30.12) |
| 15 | LiDAR CAD Multi-Lane Rdwy/Int 2-lane ramp (MOC Item G.2.c.) | | Mile | 0.37 | $452.60 | $167.46 | Cadd Edits Ramps (Task 30.12) |
| 16 | LiDAR Data Merging (MOC Item G.3.a.) | | Mile | 6 | $2,831.62 | $16,989.72 | Merging Survey Data Furnished By Dewberry (Task 30.13 - 26 Hours) |
| 17 | Mapping 4-man crew (MOC Item G.4.a.) | | Day | 4 | $1,948.58 | $7,794.32 | Set and maintain control targets (Task 27.4 & 27.27- 4 man crew @ 4 days) |
| 18 | Mapping 4-man crew (MOC Item G.4.a.) | | Day | 2 | $1,948.58 | $3,897.16 | Field Review (Task 30.15 - 4 man crew @ 2 days) |
| 19 | Senior Surveyor and Mapper | | Hour | 59 | $189.72 | $11,193.48 | Includes Tasks 30.16 thru 30.19 (59 hours total) |
| 20 | Professional Surveyor and Mapper | | Hour | 0 | $160.65 | $0.00 | N/A |
| | TOTAL FEES | | | | | $141,665.85 | |

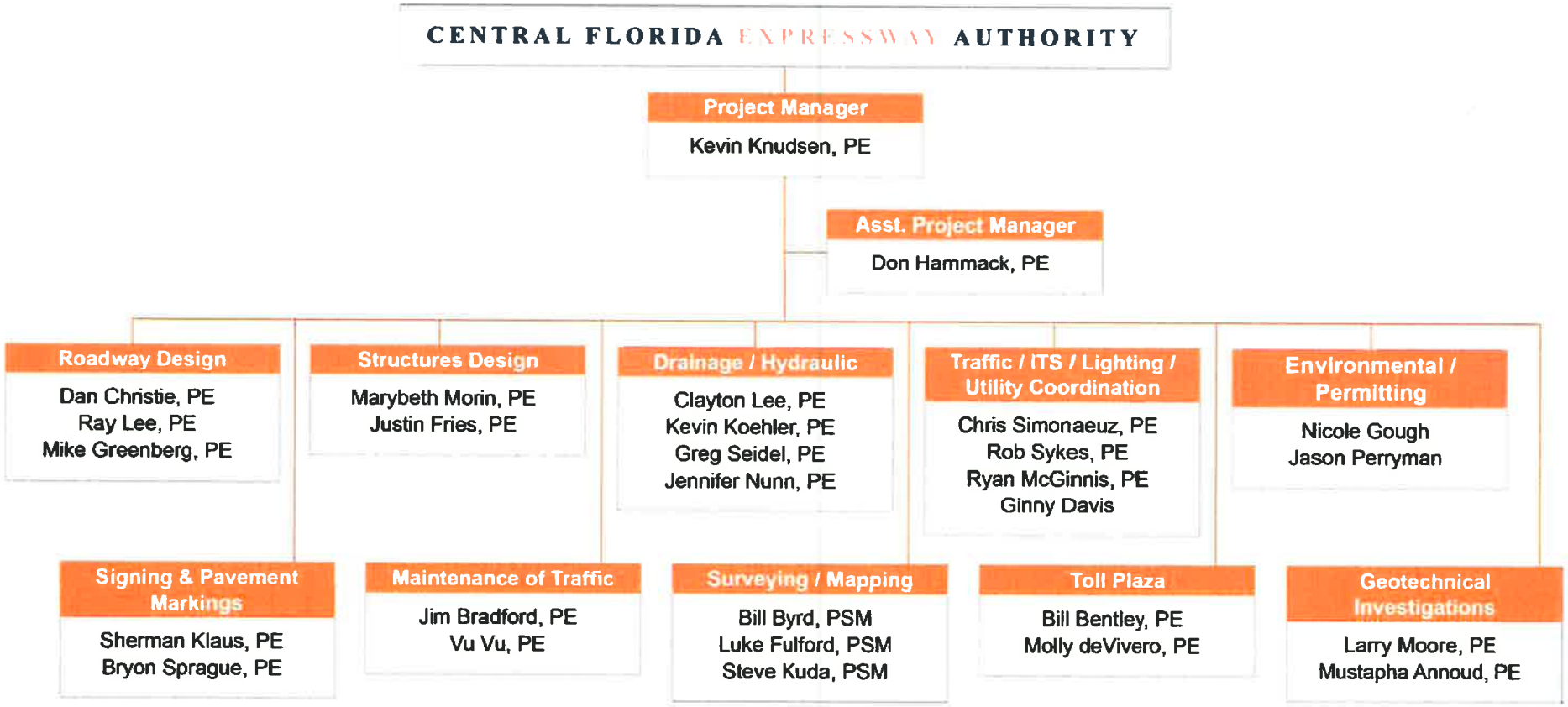
**Prepared by:** Patrick Senne, PSM, Sr. Vice President

**Date:** May 31, 2016

# EXHIBIT D

# PROJECT ORGANIZATIONAL CHART

# Organization and Management

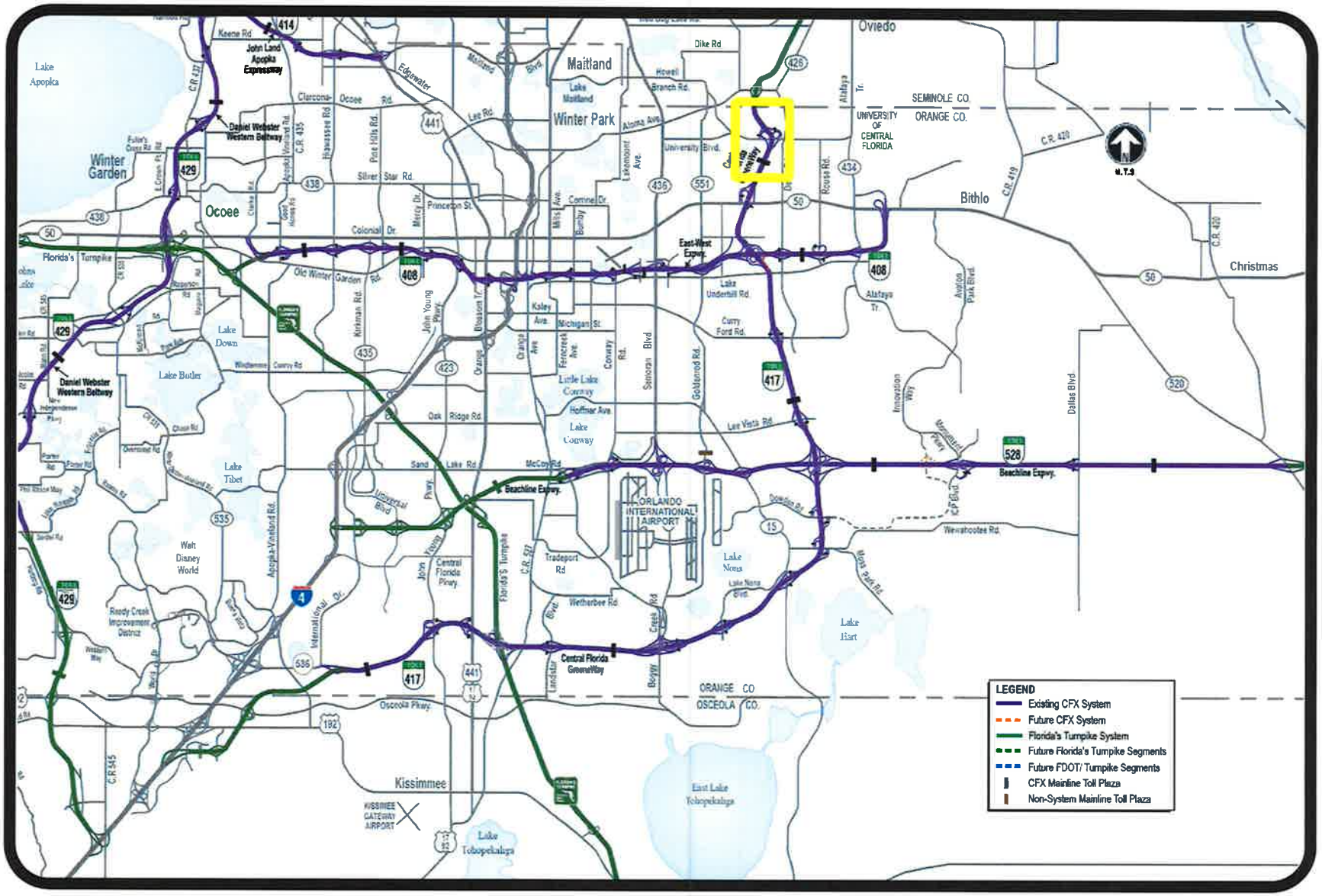





Dewberry

# EXHIBIT E

# PROJECT LOCATION MAP




Project Location Map for
S.R. 417 Widening from Econlockhatchee Trail to Seminole County Line (417-134)

# EXHIBIT F

# SCHEDULE

Contract No. 001153, Project 417-134

# SR 417 Widening from Econlockhatchee Trail to Orange / Seminole County Line

***Project Schedule***