CENTRAL FLORIDA EXPRESSWAY AUTHORITY

MEMORANDUM

TO: CFX Board Members

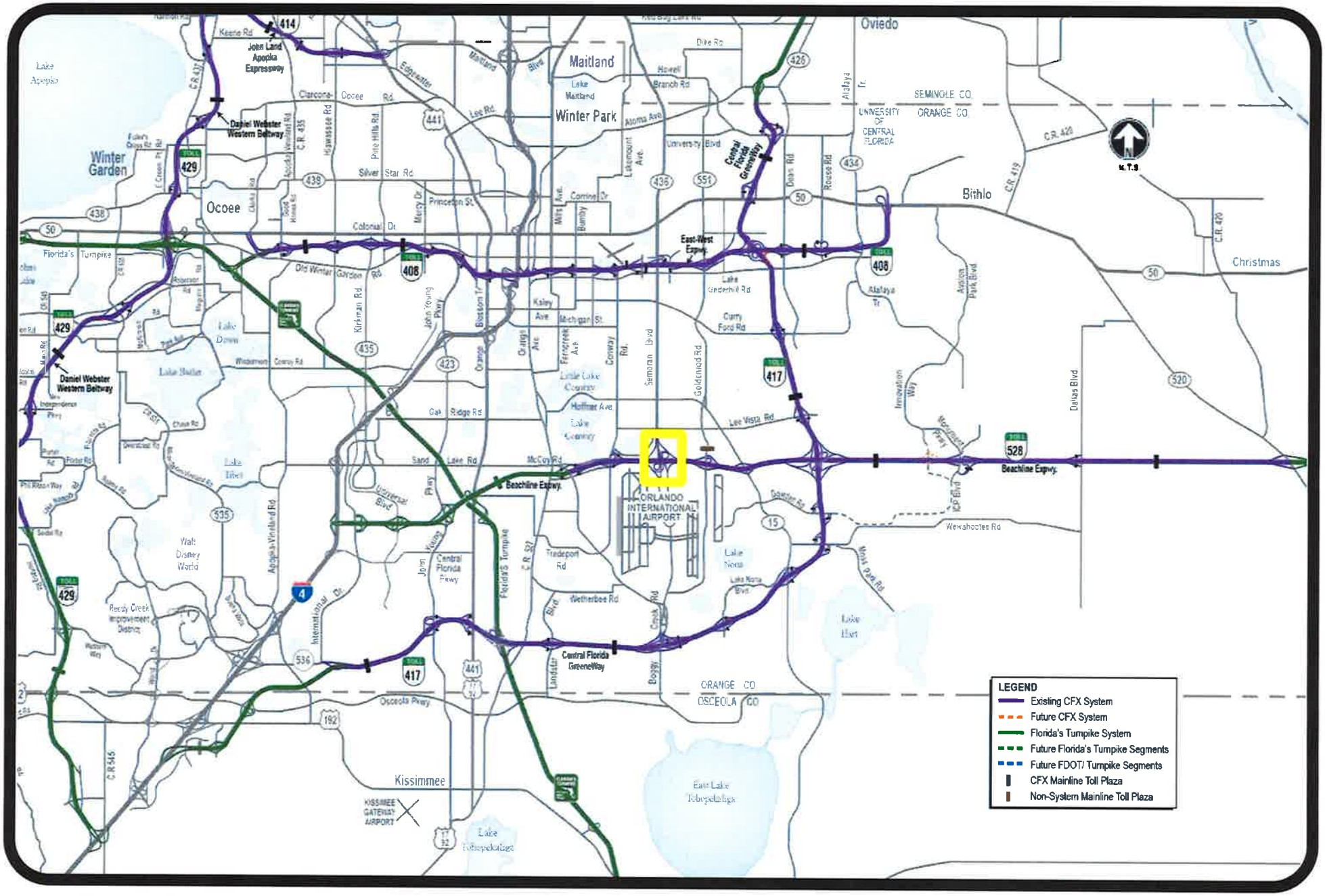
FROM: Robert Johnson
Manager of Procurement

DATE: April 26, 2016

SUBJECT: Authorization to Award of Contract to TY Lin International
S.R. 528 / S.R. 436 Bridge Deck Replacement
Project 528-130, Contract No. 001135

The Board approved on December 10, 2015, the final ranking of the firms for the referenced project and authorized staff to enter into negotiations with the highest ranked firm, TY Lin International. Those negotiations have been completed and Board award of the contract to TY Lin International is requested in the not-to-exceed amount of $1,260,000.00.

Reviewed by:
Glenn Pressimone, PE
Director of Engineering



Project Location Map for
S.R. 528 / S.R. 436 Bridge Deck Replacement (528-130)

Contract No. 001135

CENTRAL FLORIDA EXPRESSWAY AUTHORITY
AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT, made and entered into this 12th day of May, 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 T.Y. LIN INTERNATIONAL, hereinafter called "CONSULTANT", carrying on professional practice in engineering with offices located at 225 E Robinson Street, Suite 490, Orlando, Florida 32801.

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. 528 / S.R. 436 Bridge Deck Replacement identified as Contract No. 001135.

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 Amendment 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.

Nadic Engineering Services (Class 2)
WBQ Design and Engineering (Class 1 & Class 2)
Traffic Engineering & Data Solutions (Class 1)

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 AUTHORITY'S written consent shall be null and void and shall, at AUTHORITY'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 $1,260,000.00. 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 AUTHORITY 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 225 E Robinson Street, Suite 490, Orlando, Florida 32801.

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 AUTHORITY, 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 May 12th, 2016.

T.Y. LIN INTERNATIONAL

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

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SCOPE OF SERVICES

FOR

S.R. 528 / S.R 436 BRIDGE DECK REPLACEMENTS

PROJECT NO. 528-130

IN ORANGE COUNTY, FLORIDA

APRIL, 2016

1.0 GENERAL

1.01 Location

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

1.02 Description

The services will include final geometric and structural design, load rating and preparation of construction drawings/specifications to remove and replace the existing bridge decks at the following locations: the southbound S.R. 436 bridge over S.R. 528, the southbound S.R. 436 bridge over Ramp M and the northbound S.R. 436 bridge over S.R. 528. The design of temporary bridges for southbound S.R. 436 over S.R. 528 and southbound S.R. 436 over Ramp M for maintenance of traffic purposes is also included.

Additional elements include surveying, drainage evaluation and design, permitting, lighting, signing and pavement markings, maintenance of traffic, utility design and coordination, geotechnical analysis, scheduling and project control, progress reporting and other tasks and associated activities.

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. 528 / S.R. 436 Bridge Deck Replacements.

B. The Consultant shall perform those engineering services as required for final roadway/drainage plans, final bridge plans, final lighting plans, final traffic control plans, final utility plans, final fiber optic network plans, final signing and pavement marking plans and preparation of a complete environmental resource application (or permit modification) including 100% storm water management,.

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 within twelve (12) months from notice to proceed, including all reviews. Any fast track of services will be at the direction of the Authority's Project Manager.

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, 2016 edition, and updates there aftter, 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.

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 – 2037

C. Design vehicle – WB-62FL

D. Along with the 30% design submittal, the Consultant shall provide a tabulation of all applicable drainage and stormwater management criteria from Federal, State and local agencies and indicated which will be used for all segments and portions of the project. Unless otherwise directed by the Authority, the Consultant shall use the most restrictive or conservative criteria applicable.

3.02 Geometry

The following criteria are to be incorporated into the design:

DESIGN ELEMENT	EXPRESSWAY MAINLINE	EXPRESSWAY RAMPS	CROSSROADS/ COLLECTORS
Design Speed, MPH	70 mph	30 mph (Loop) 50 mph (Diamond) 50 mph (Directional)	30 Local 45 Urban 50 Rural
Horizontal Alignment a. Max. Curve, Degrees	3°° 30'	24° 45' Loop 8° 15' Diamond 8° 15' Directional	20°
b. Max. Superelevation, ft/ft.	0.10	0.10	0.05 Urban 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 a. Max. Grade	3%	5% to 7% (30 mph) 3% to 5% (50 mph)	5% Arterial Rural 7% Collector Rural
b. Vertical Curvature (K) (K=Len./%grade change) Crest	506 FDOT 290 to 540 AASHTO	31 (30 mph) 136 (50 mph) 110 to 160 Other (AASHTO)	31 to 136
Sag	206 FDOT 150 to 200 AASHTO	31 (30 mph) 136 (50 mph) 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 15 min. single lane	12 inner lanes 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) (* 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) 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) 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 will include final geometric and structural design, load rating and preparation of construction drawings/specifications to remove and replace the existing bridge decks at the following locations: the southbound S.R. 436 bridge over S.R. 528, the southbound S.R. 436 bridge over Ramp M and the northbound S.R. 436 bridge over S.R. 528. The design of temporary bridges for southbound S.R. 436 over S.R. 528 and southbound S.R. 436 over Ramp M for maintenance of traffic purposes is also included.

Additional elements include surveying, drainage evaluation and design, permitting, lighting, signing and pavement markings, maintenance of traffic, utility design and coordination, geotechnical analysis, scheduling and project control, progress reporting and other tasks and associated activities.

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 GOAA, FDEP and applicable Water Management District(s).

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 may be 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 perform 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 SR 436 and SR 528 mainline and interchange ramps impacted. All milling and resurfacing will remove friction course for only traffic control purposes only.

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 and noise wall elements. The Authority will prepare exhibits pertaining to aesthetic treatments and other design issues if applicable. This scope assumes presentations at one meeting 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 for SR 436 and SR 528 mainlines and impacted interchange ramps 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 including Erosion Control/Temp. Drainage

17. Utility Adjustment Sheets as deemed necessary

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 deck thickness to be used for the existing bridge decks being replaced. Existing bridges will be load rated if the existing beams do not load rate based on 8" deck, EOR shall contact CFX prior to proceed on the strengthening of existing beams. Temporary Bridge to be ACROW Bridge Series 700. Foundation alternatives pile type for temporary bridges to be examined.

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 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 as needed 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. If required, 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. If required, the Authority will provide a cut sheet for the type of lighting fixtures to be used for this project.

C. The Consultant will provide lighting plans for underdeck lighting fixtures using the Authority's approved LED fixtures.

D. No impacts to existing high mast lighting are expected. High mast lighting will adequately light the work zone and no adjustments will be made.

E. The Consultant will design sign lighting for any temporary overhead signs (assumed two impacted sign structures).

F. The Consultant will prepare designs and contract documents for lighting design including, but not necessarily limited to the following items.

1. Cover sheet (key sheet)
2. Tabulation of Quantities
3. General notes
4. Pole data and Legend sheet

5. Project Layout sheet
6. Plans sheets (plans at 1"=50' scale)
7. Service point detail
8. Special Details

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, including existing posted speed, lane widths and number of lanes entering and leaving Orlando International Airport unless 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 as deemed necessary.

C. The Authority in coordination with Orlando International Airport will provide preliminary aesthetic input for the architectural modification of any details necessary for sign structures possibly impacted representing Orlando International Airport signage.

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

F. For the purposes of this proposal, two (2) overhead truss signs are assumed to be required for the traffic control improvements. Also, two (2) existing overhead trusses along the project will be affected by the improvements and are assumed to require reconstruction since they do not meet current wind load criteria. Propose to relocate and reuse existing structures if they 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 two and one half (2.5) miles of ITS relocation may be required consisting of one and one quarter (1.25) miles of relocations on each side of SR 528. In this case, existing fiber optic conduit and cabling will be replaced along the relocation distance and spliced to existing fiber optic cabling in existing splice vaults at the relocation limits. Additionally, new fiber optic drop cabling will be provided to ITS devices within the relocation area.

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 for new or relocated fiber optic cabling.
   n. Fiber cable routing summaries, fiber cable allocation charts, and splice details and tables for new or relocated fiber optic cabling.
   o. Controller cabinet, CCTV pole, and foundation details for proposed CCTC sites.
   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. Determination on

conductor sizing and voltage drop limits are only required for proposed sites and existing sites where the total site load is being significantly modifiec.

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. Relocation or replacement of existing CCTV sites are anticipated under this contract, specifically the existing CCTV site at the interchange (CCTV 528-10.8-WB) will need to be replaced with a HD CCTV camera on the existing pole and lowering device.
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. 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 proposed fiber optic splices within and between manholes, ITS devices, tollbooths, and other junction points.

2. Proposed 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 proposed fiber optic conduit and 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

This proposal is not expected to require modifications and/or improvements to any existing Inside Plan FON equipment or devices.

Quantities and General Notes

1. 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 does not include modifications and/or improvements to any of the existing toll plazas, including any associated equipment and gantry systems.

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 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 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 and specifications (6 and 6 sets and 1 .PDF CD/DVD required)

8. 100% Roadway, 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 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 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 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, Bridge, Structural and Right-of-Way Plans

A. At the completion of this phase, the design plans 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 1,260,000.00.

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:

T.Y. Lin International

Total Activity Salary Costs	$269,204.24
(a) Overhead Additives	
(1) Combined (166.90%)	449,301.88
Subtotal (Salary + Overhead)	718,506.12
(b) Lump Sum for Operating Margin (12.00%)	86,220.73
Subtotal (Salary Related)	804,726.85
(c) Direct Expenses - Lump Sum (Prime)	3,663.05
BASIC FEE	808,389.90
(d) Subcontracts (Limiting Amount)	284,817.03
(e) Allowance	166,793.07
TOTAL MAXIMUM LIMITING AMOUNT	$1,260,000.00

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 166.90% 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 166.90 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 166.90%; 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

T.Y. LIN INTERNATIONAL

S.R. 528 / S.R. 436 Bridge Deck Replacements
528-130
C # 001135

Contract Summary Sheet

	Firm Name	Overhead	Fixed Fee	Total Multiplier for Class II Subs (Unit Price)
Class I	T.Y. LIN	166.90%	12.00%	
Class II	Nadic	210.41%	9.65%	3.40
Class I	Traffic Engineering Data Solutions	114.15%	12.00%	
Class I	WBQ	182.49%	11.1267%	
Class II	WBQ	182.49%	11.1267%	3.14

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

T.Y. LIN

C # 001135

528-130

S.R. 528 / S.R. 436 Bridge Deck Replacements

Staff Classification Maximum Rates For:

T.Y. LIN

	Job Classification	Max Salary
Class I	Chief Engineer	$94.52
	Project Manager	$84.19
	Senior Engineer	$91.49
	Sr. Project Engineer	$61.98
	Project Engineer	$59.89
	Engineer	$37.64
	Engineering Intern	$30.23
	Sr. Designer	$49.20
	Secretary/Clerical	$22.50

T.Y. LIN

C # 001135

528-130

S.R. 528 / S.R. 436 Bridge Deck Replacements

Staff Classification Maximum Rates For:

Nadic

Class II Sub

(Unit Price)

Job Classification	Max Salary
Project Manager	$201.31
Senior Engineer	$177.07
Sr. Project Engineer	$160.51
Engineer	$98.40
Engineering Intern	$85.95
Sr. Engineering Tech	$77.89
Sr. Designer	$83.03
Secretary/Clerical	$56.85

T.Y. LIN

C # 001135

528-130

S.R. 528 / S.R. 436 Bridge Deck Replacements

Staff Classification Maximum Rates For:

Traffic Engineering Data Solutions

Class I Sub

Job Classification	Max Salary
Chief Engineer	$74.28
Senior Engineer	$57.87
Engineer	$39.61
Engineering Intern	$26.66
Sr. Designer	$37.14
Secretary/Clerical	$24.93

T.Y. LIN

C # 001135

528-130

S.R. 528 / S.R. 436 Bridge Deck Replacements

Staff Classification Maximum Rates For:

WBQ

	Job Classification	Max Salary
Class I Sub	Contract Coordinato	$27.55
	Sr. Utility Coordinat	$54.65
Class II Sub (Unit Price)	Sr. Surveyor & Mapp	$174.21
	Surveyor & Mapper	$109.90
	Survey Technician	$76.02
	2 Person Crew	$1,288.10
	3 Person Crew	$1,711.80
	4 Person Crew	$2,135.60

TY LIN INTERNATIONAL
engineers | planners | scientists

To: Glenn M. Pressimone, P.E.
Director of Engineering
CENTRAL FLORIDA EXPRESSWAY AUTHORITY
4974 ORL Tower Rd.
Orlando, FL 32807

From: Xavier A. Arroyo,

Date: P.E. April 26, 2016

Re: Project Number 528-130

MEMORANDUM

Dear Mr. Pressimone,

Please find attached Summary Fee Sheets for Project Number 528-130 - S.R. 528 / S.R 436 BRIDGE DECK REPLACEMENTS.

Feel free to contact me if you have any questions or need additional info.

Thank You,

Xavier A Arroyo, P.E.
Project Manager
407-563-6260
xavier.arroyo@tylin.com

T.Y. Lin International

ESTIMATE OF WORK EFFORT AND COST - PRIME CONSULTANT

Name of Project: Deck Replacement - SR 436 over SR 528
County: Orange

Consultant Name: TYLI
Consultant No.: enter consultants proj. number
Date: 4/28/2016
Estimator: insert name

Staff Classification	Hours From "SH Summary - Firm"	Project Manager	Chief Engineer	Senior Engineer	Sr. Project Engineer	Project Engineer	Engineer	Engineering Intern	Senior Designer	Secretarial / Clerical	Staff Classification 10	Staff Classification 11	Staff Classification 12	SH By Activity	Salary Cost By Activity	Average Rate Per Task
		$81.74	$91.77	$75.90	$53.95	$47.67	$35.75	$28.18	$45.90	$21.84	$0.00	$0.00	$0.00			
3. Project General and Project Common Tasks	378	245	0	0	76	0	0	0	0	57	0	0	0	378	$25,371	$67.12
4. Roadway Analysis	952	49	48	0	95	0	286	379	95	0	0	0	0	952	$38,801	$40.76
5. Roadway Plans	232	0	12	0	23	58	35	81	23	0	0	0	0	232	$9,696	$41.80
6a. Drainage Analysis	92	0	5	0	0	50	0	37	0	0	0	0	0	92	$3,885	$42.23
6b. Drainage Plans	42	0	0	0	0	13	13	16	0	0	0	0	0	42	$1,535	$36.56
7. Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0	#DIV/0!
8. Environmental Permits, Compliance & Clearance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0	#DIV/0!
9. Structures - Misc. Tasks, Dwgs, Non-Tech.	601	0	31	30	120	120	209	91	0	0	0	0	0	601	$27,352	$45.51
10. Structures - Bridge Development Report	268	0	14	13	27	94	0	107	0	13	0	0	0	268	$11,506	$42.94
11. Structures - Temporary Bridge	196	0	10	20	78	59	0	29	0	0	0	0	0	196	$10,274	$52.42
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	2,630	0	143	143	401	526	658	759	0	0	0	0	0	2,630	$115,597	$43.95
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	140	0	7	0	14	42	35	42	0	0	0	0	0	140	$5,835	$41.68
18. Structures - Miscellaneous	80	0	4	0	0	44	0	32	0	0	0	0	0	80	$3,366	$42.08
19. Signing & Pavement Marking Analysis	243	0	12	0	24	73	73	37	24	0	0	0	0	243	$10,630	$43.74
20. Signing & Pavement Marking Plans	128	0	6	0	0	70	0	52	0	0	0	0	0	128	$5,353	$41.82
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	5,982	294	292	205	858	1,149	1,309	1,662	142	70	0	0	0	5,982		
Total Staff Cost		$24,031.56	$26,796.84	$15,635.40	$46,289.10	$54,772.83	$46,796.75	$46,835.16	$6,517.80	$1,528.80	$0.00	$0.00	$0.00		$269,204.24	**$45.00**

Check = $269,204.24

Survey Field Days by Subconsultant
4 - Person Crew:

SALARY RELATED COSTS:				$269,204.24
OVERHEAD:	165.90%			$449,301.88
OPERATING MARGIN:	12%			$86,220.73
Total Labor				**$804,726.85**
EXPENSES:				$3,663.05
Survey (Field - if by Prime)	0	4-man crew days @	$ - / day	$0.00
Subtotal TYLI Fee				**$808,389.90**
Subconsultant: NADIC				$73,514.74
Subconsultant: TEDS				$77,764.78
Subconsultant: WBQ Class I				$22,496.20
Subconsultant: WBQ Class II				$111,041.31
Total Subconsultants				**$284,817.03**
SUBTOTAL ESTIMATED FEE:				**$1,093,206.93**
Geotechnical Field and Lab Testing				$0.00
SUBTOTAL ESTIMATED FEE:				**$1,093,206.93**
Optional Services				$0.00
GRAND TOTAL ESTIMATED FEE:				**$1,093,206.93**

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.

REIMBURSEABLE OUT-OF-POCKET EXPENSES

Consultant: T.Y. Line International T.Y. Lin Project No.: TBD

SR 436 Bridge Replacement over SR 528

PHOTOGRAPHY

Film & Development - Color 24 exposure _____ rolls x _____ per roll= _____

PHOTOGRAPHY TOTAL: $0.00

REPRODUCTION

Number of sets required> (See Note 1 Below) / Task Description	Sheet Count	Color Plot 11 x 17	B&W Plot 24x36	Phase Rvws 11x17	B&W Ltr/Lgl	Color Ltr/Lgl
PLAN SHEETS						
Roadway/MOT Plans	40			143		
Signing & Marking Plans	10			36		
Structure Plans	150			537		
Lighting Plans						
ITS Plans						
Plans for QC	200			715		
REPORTS						
Roadway	50				825	83
Bridge	200				3300	330
BHR	200				3300	330
Drainage	200				3300	330
Geotechnical	100				1650	165
Lighting/ITS						
Subtotal	1150	0	0	1431	12375	1238
		0	0			
UNIT TOTALS:	1150	0	0	1431	12375	1238
UNIT COSTS:		$ 0.05	$ 0.05	$ 0.15	$ 0.08	$ 0.30
TOTAL COSTS:		$ -	$ -	$ 214.65	$ 990.00	$ 371.40

REPRODUCTION TOTAL: $1,576.05

OTHER MATERIALS / SERVICES

30	Plan Binding	x	$ 2.50	per copy=	$ 75.00
100	Report Binding	x	$ 5.00	per copy=	$ 500.00
5	Boards	x	$ 35.00	per sht=	$ 175.00
12	CD	x	$ 15.00	per sht=	$ 180.00
		x			

OTHER MATERIALS TOTAL: $ 930.00

TRAVEL EXPENSES

TO: _____ **FROM:** _____

Pay Diem:	_____ trips x	_____ people	x	_____	days x	_____	per day=	0
Hotel:	0 trips x	0 nites/trip	x	$ -	per nite		=	0
Rental Car:	0 trips x	0 days	x	$ -	per day		=	0
Airfare:	0 trips x	0 people	x	$ -	per trip		=	0

TO: _____ **FROM:** _____

Per Diem:	0 trips x	0 people	x	_____	days x	_____	per day=	0
Hotel:	0 trips x	0 people	x	_____	nites/trip x	$ -	per nite =	0
Rental Car:	0 trips x	0 days	x	$ -	per day		=	0
Airfare:	0 trips x	0 people	x	$ -	per trip		=	0

TO: Project Site **FROM: PB Orlando Office**

Mileage: 16 trips x 150 miles x $ 0.445 per mile = $ 1,068.00

TO: Meeting CFX Office **FROM: PB Orlando Office**

Mileage: 10 trips x 20 miles x $ 0.45 per mile = $ 89.00

TO: Meetings Other Locations **FROM: PB Orlando Office**

Mileage: _____ trips x _____ miles x $ _____ per mile = $

TOTAL TRAVEL EXPENSES: $ 1,157.00

MONTHLY SHIPPING COSTS

Shipping & Telephone Costs 0 months x 0 = $0.00

MISCELLANEOUS EXPENSES

Submittal Package Delivery	0 EA	x	0 =	$0.00
			=	$0.00
			=	$0.00

TOTAL OUT-OF-POCKET EXPENSES: $3,663.05

Note 1: Total number of plan sheets and reports required for phase reviews based on Phase 1=50% of total sheets, Phase 2 = 75%, Phase III, Phase IV and Final Plans = 100%. Plan submittals require 6 sets. Reports 3 sets, plus 2 sets of plans and drainage for permitting.

ESTIMATE OF WORK EFFORT FOR TECHNICAL PROPOSALS - FIRM TOTAL

Financial Project Number: Project No. 528-130

Project Name: Deck Replacement - SR 436 over SR 52

Date: 4/26/2016

Name of Consultant: TYLI

WORK ACTIVITY	Hours from "Summary" sheet	EMPLOYEE CLASSIFICATION												TOTAL STAFF HOURS RANGE		ON CADD
	Firm Total Hours	Project Manager Hours	Chief Engineer Hours	Senior Engineer Hours	Sr. Project Engineer Hours	Project Engineer Hours	Engineer Hours	Engineering Intern Hours	Senior Designer Hours	Secretarial / Clerical Hours	Staff Classification 10 Hours	Staff Classification 11 Hours	Staff Classification 12 Hours			PERCENT
3. Project General and Project Common Tasks	378	245	0	0	76	0	0	0	0	57	0	0	0	378	416	
4. Roadway Analysis	952	49	48	0	95	0	286	379	95	0	0	0	0	952	1047	
5. Roadway Plans	232	0	12	0	23	58	35	81	23	0	0	0	0	232	255	
6a. Drainage Analysis	92	0	5	0	0	50	0	37	0	0	0	0	0	92	101	
6b. Drainage Plans	42	0	0	0	0	13	13	16	0	0	0	0	0	42	46	
7. Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8. Environmental Permits, Compliance & Clearances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9. Structures - Misc. Tasks, Dwgs, Non-Tech.	601	0	31	30	120	120	209	91	0	0	0	0	0	601	661	
10. Structures - Bridge Development Report	268	0	14	13	27	94	0	107	0	13	0	0	0	268	295	
11. Structures - Temporary Bridge	196	0	10	20	78	59	0	29	0	0	0	0	0	196	216	
12. Structures - Short Span Concrete Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13. Structures - Medium Span Concrete Bridge	2630	0	143	143	401	526	658	759	0	0	0	0	0	2630	2893	
14. Structures - Structural Steel Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15. Structures - Segmental Concrete Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16. Structures - Movable Span	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17. Structures - Retaining Walls	140	0	7	0	14	42	35	42	0	0	0	0	0	140	154	
18. Structures - Miscellaneous	80	0	4	0	0	44	0	32	0	0	0	0	0	80	88	
19. Signing & Pavement Marking Analysis	243	0	12	0	24	73	73	37	24	0	0	0	0	243	267	
20. Signing & Pavement Marking Plans	128	0	6	0	0	70	0	52	0	0	0	0	0	128	141	
21. Signalization Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22. Signalization Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23. Lighting Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24. Lighting Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25. Landscape Architecture Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26. Landscape Architecture Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27. Survey (Field & Office Support)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28. Photogrammetry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29. Mapping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30. Terrestrial Mobile LiDAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31. Architecture Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
32. Noise Barriers Impact Design Assessment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
33. Intelligent Transportation Systems Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
34. Intelligent Transportation Systems Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35. Geotechnical	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTALS	5,982	294	292	206	858	1,149	1,309	1,662	142	70	0	0	0	**5,982**	**6,580**	

Field Survey Estimate:
0 4-man crew days

FIRM TOTAL	**5,982**	**6,580**

Notes:

1. This worksheet provides the distribution of a firm's total staff hours for a project.
2. Percentages for staff hour distribution by classification are entered below in rows 63 to 96 of this sheet.
3. Total Staff Hours (column O) may not match staff hours from Summary worksheet (column B) due to rounding. Staff hours calculated for employee classifications are to be adjusted so totals in columns B and O match.
4. Formulas under "Total Staff Hours Range" (columns O & P) may be adjusted to provide desired range.

ESTIMATE OF WORK EFFORT FOR TECHNICAL PROPOSALS - FIRM TOTAL

Financial Project Number: Project No. 528-130

Project Name: Deck Replacement - SR 436 over SR 52

FAP Number: 0

Date: 4/26/2016

Name of Consultant: TYLI

Staff Hour Distribution Percentages - Firm Total

	Hours from "Summary" sheet Firm Total	Project Manager	Chief Engineer	Senior Engineer	Sr. Project Engineer	Project Engineer	Engineer	Engineering Intern	Senior Designer	Secretarial / Clerical	Staff Classification 10	Staff Classification 11	Staff Classification 12	Total
3. Project General and Project Common Tasks	378	64.8%	0.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	15.2%	0.0%	0.0%	0.0%	100.00%
4. Roadway Analysis	952	5.1%	5.0%	0.0%	10.0%	0.0%	30.0%	39.9%	10.0%	0.0%	0.0%	0.0%	0.0%	100.00%
5. Roadway Plans	232	0.0%	5.0%	0.0%	10.0%	25.0%	15.0%	35.0%	10.0%	0.0%	0.0%	0.0%	0.0%	100.00%
6a. Drainage Analysis	92	0.0%	5.1%	0.0%	0.0%	54.9%	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
6b. Drainage Plans	42	0.0%	0.0%	0.0%	0.0%	30.0%	30.9%	39.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
7. Utilities	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
8. Environmental Permits, Compliance & Clearances	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
9. Structures - Misc. Tasks, Dwgs, Non-Tech.	601	0.0%	5.2%	5.0%	20.0%	20.0%	34.8%	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
10. Structures - Bridge Development Report	268	0.0%	5.1%	5.0%	10.0%	35.0%	0.0%	39.9%	0.0%	5.0%	0.0%	0.0%	0.0%	100.00%
11. Structures - Temporary Bridge	196	0.0%	5.0%	10.0%	40.0%	30.0%	0.0%	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
12. Structures - Short Span Concrete Bridge	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
13. Structures - Medium Span Concrete Bridge	2630	0.0%	5.4%	5.4%	15.3%	20.0%	25.0%	28.9%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
14. Structures - Structural Steel Bridge	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
15. Structures - Segmental Concrete Bridge	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
16. Structures - Movable Span	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
17. Structures - Retaining Walls	140	0.0%	5.0%	0.0%	10.0%	30.0%	25.0%	30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
18. Structures - Miscellaneous	80	0.0%	5.0%	0.0%	0.0%	55.0%	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
19. Signing & Pavement Marking Analysis	243	0.0%	5.0%	0.0%	10.0%	30.0%	30.0%	15.0%	10.0%	0.0%	0.0%	0.0%	0.0%	100.00%
20. Signing & Pavement Marking Plans	128	0.0%	5.0%	0.0%	0.0%	55.0%	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
21. Signalization Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
22. Signalization Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
23. Lighting Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
24. Lighting Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
25. Landscape Architecture Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
26. Landscape Architecture Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
27. Survey (Field & Office Support)	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
28. Photogrammetry	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
29. Mapping	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
30. Terrestrial Mobile LiDAR	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
31. Architecture Development	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
32. Noise Barriers Impact Design Assessment	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
33. Intelligent Transportation Systems Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
34. Intelligent Transportation Systems Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
35. Geotechnical	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%

Project Activity 3. Project General Tasks

Estimator: XAA

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

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	0	0	
3.1.10	Public Meeting Attendance/Followup	LS	1	0	0	
3.1.11	Other Agency Meetings	LS	1	0	0	
3.1.12	Web Site	LS	1	0	0	
	3.1 Public Involvement Subtotal				**0**	
3.2	Joint Project Agreements	EA	0	0	0	
3.3	Specifications Package Preparation	LS	1	0	0	
3.4	Contract Maintenance and EDMS	LS	1	0	0	
3.5	Value Engineering (Multi-Discipline Team) Review	LS	1	0	0	
3.6	Prime Consultant Project Manager Meetings	LS	1	90	90	See table below
3.7	Plans Update	LS	1	0	0	
3.8	Post Design Services	LS	1	0	0	TBD
3.9	Digital Delivery	LS	1	0	0	
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	288	288	Project Administration/Project Management - 9 months at 8 hrs per week.
	3. Project Common and Project General Tasks Total				**378**	

Project Activity 3. Project General Tasks

Task No.	Task	Units	No of Units	Hours/ Unit	Total Hours	Comments

3.6 - List of Project Manager Meetings	Units	No of Units	Hours/ Unit	Total Hours	Comments
Roadway Analysis	EA	1	4	4	1 Roadway/MOT/Drianage Meeting
Drainage	EA	0	0	0	
Utilities	EA	0	0	0	
Environmental	EA	0	0	0	
Structures	EA	4	4	16	4 Meetings. A meeting prior to every submittal. Minutes/Agenda to be included
Signing & Pavement Marking	EA	1	4	4	1 SPM/ITS Meeting
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	18	3	54	Progress Meetings - 2 Meetings a Month for an approximate 9 month schedule. Minutes/Agenda to be included
Phase Reviews	EA	4	2	8	Misc. Meetings/Comment Resolution
Field Reviews	EA	1	4	4	1 Kick-off Field Review
Total Project Manager Meetings		29		90	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: XAA

Deck Replacement - SR 436 over SR 528

Project No. 528-130

Representing	Print Name	Signature / Date

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	16	16	Minimum 3 Bridge Typicals and Milling and Resurfacing Typicals
4.2	Pavement Type Selection Report	LS	1	0	0	
4.3	Pavement Design Package	LS	1	32	32	Pavement Design Analyis, for Temporary and Final Pavement
4.4	Cross-Slope Correction	LS	1	16	16	Evaluate Cross Slope tie-ins at new decks
4.5	Horizontal /Vertical Master Design Files	LS	1	200	200	Preperation of files for all disciplines
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	40	40	Cross Sections every 50/100 ft
4.10	Traffic Control Analysis	LS	1	240	240	3 Phase analysis with traffic switches (SR 436 and SR 528)
4.11	Master TCP Design Files	LS	1	144	144	Design File(s) setups
4.12	Design Variations and Exceptions	LS	1	16	16	Potential Variaitions for Shoulder width
4.13	Design Report	LS	1	40	40	Design Documentation
4.14	Quantities	LS	1	80	80	Takeoffs for all Discipllines
4.15	Cost Estimate	LS	1	16	16	4 Estimates
4.16	Technical Special Provisions	LS	1	0	0	
4.17	Other Roadway Analyses	LS	1	0	0	
Roadway Analysis Technical Subtotal					**840**	

Project Activity 4. Roadway Analysis

Task No.	Task	Units	No of Units	Hours/ Unit	Total Hours	Comments
4.18	Field Reviews	LS	1	16	16	2 Field Reviews for 2 people
4.19	Monitor Existing Structures	LS	1	0	0	
4.20	Technical Meetings	LS	1	12	12	Meetings are listed below
4.21	Quality Assurance/Quality Control	LS	%	5%	42	
4.22	Independent Peer Review	LS	%	0%	0	
4.23	Supervision	LS	%	5%	42	
Roadway Analysis Nontechnical Subtotal					**112**	
4.24	Coordination	LS	%	0%	0	
4. Roadway Analysis Total					**952**	

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	4	3	12		0
Other Meetings	EA	0	0	0		0
Subtotal Technical Meetings				**12**	**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				**12**	**Total Project Manager Meetings (carries to Tab 3)**	**0**

Carries to 4.17

Carries to Tab 3

Project Activity 5, Roadway Plans

Estimator: XAA

Deck Replacement - SR 436 over SR 528

Project No. 528-130

Representing		Print Name	Signature / Date

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	TBD	Sheet	1	4	4	Key Sheet
5.2	Summary of Pay Items Including Quantity Input	NTS	Sheet	1	4	4	1 pay Item Sheet
5.3	Typical Section Sheets						
5.3.1	Typical Sections		EA	2	4	8	2 Typicla Sections
5.3.2	Typical Section Details		EA	6	2	12	6 Details
5.4	General Notes/Pay Item Notes		Sheet	1	4	4	General Notes
5.5	Summary of Quantities Sheets		Sheet	1	4	4	
5.6	Project Layout		Sheet	0	0	0	
5.7	Plan/Profile Sheet	100	Sheet	4	4	16	SR 436 and SR 528
5.8	Profile Sheet		Sheet	0	0	0	
5.9	Plan Sheet		Sheet	0	0	0	
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	0	0	0	
5.13	Ramp Terminal Details (Plan View)		Sheet	0	0	0	
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	0	0	0	

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	0	0	0	
5.18	Cross Sections	20/10	EA	50	0.25	13	Approximately 50 Cross Sections
5.19	Temporary Traffic Control Plan Sheets	50/100	Sheet	24	4	96	3 Phases - SR 436 and SR 528
5.20	Temporary Traffic Control Cross Section Sheets		EA	30	2	60	Critical Cross Sections for 3 Phases - 10 per phase
5.21	Temporary Traffic Control Detail Sheets		Sheet	0	0	0	
5.22	Utility Adjustment Sheets		Sheet	0	0	0	
5.23	Selective Clearing and Grubbing Sheet(s)		Sheet	0	0	0	
5.24	Project Network Control Sheet(s)		Sheet	0	0	0	
5.25	Environmental Detail Sheets		Sheet	0	0	0	
5.26	Utility Verification Sheet(s) (SUE Data)		Sheet	0	0	0	
					Roadway Plans Technical Subtotal	**221**	
5.27	Quality Assurance/Quality Control		LS	%	5%	11	
5.28	Supervision		LS	%	0%	0	
					5. Roadway Plans Total	**232**	

Project Activity 6a. Drainage Analysis

Estimator: XAA

Deck Replacement - SR 436 over SR 528

Project No. 528-130

Representing	Print Name	Signature / Date

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	40	40	Analyze SR 436 and SR 528 conditions
6a.16	Cost Estimate	LS	1	0	0	
6a.17	Technical Special Provisions	LS	1	0	0	
6a.18	Other Drainage Analysis	LS	1	40	40	Re-establish Roadway Drianage with MOT impacts
			Drainage Analysis Technical Subtotal		**80**	
6a.19	Field Reviews	LS	1	4	4	1 Field Meeting
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	%	5%	4	
6a.23	Independent Peer Review	LS	%	0%	0	
6a.24	Supervision	LS	%	5%	4	
			Drainage Analysis Nontechnical Subtotal		**12**	
6a.25	Coordination	LS	%	0%	0	
			6a. Drainage Analysis Total		**92**	

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 6b. Drainage Plans

Estimator: XAA

Deck Replacement - SR 436 over SR 528

Project No. 528-130

Representing	Print Name	Signature / Date

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	0	0	0	
6b.2	Bridge Hydraulics Recommendation Sheets		Sheet	0	0	0	
6b.3	Summary of Drainage Structures		Sheet	1	4	4	Establish any temporary/permanent structures
6b.4	Optional Pipe/Culvert Material		Sheet	0	0	0	
6b.5	Drainage Structure Sheet(s) (Per Structure)		EA	2	4	8	4-8 Structures depending on MOT impacts
6b.6	Miscellaneous Drainage Detail Sheets		Sheet	1	16	16	Miscellaneous Details
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	0	0	0	
6b.10	Retention Pond Cross Sections		EA	0	0	0	
6b.11	Erosion Control Plan Sheet(s)		Sheet	0	0	0	Will be provided as part of phasing sheets
6b.12	SWPPP Sheet(s)		Sheet	3	4	12	SWPPP - Assuming 1 Acre + of impacts
					Drainage Plans Technical Subtotal	**40**	
6b.13	Quality Assurance/Quality Control		LS	%	5%	2	
6b.14	Supervision		LS	%	0%	0	
					6. Drainage Plans Total	**42**	

Project Activity 9. Structures Summary

Estimator: Giovanni Orellana

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

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	2	8	2	16	Prepare Key sheet and index for all submittals.
9.2	Project Layout	Sheet	0	0	0	0	n/a
9.3	General Notes and Bid Item Notes	Sheet	1	24	1	24	General notes including deck panel demolition notes
9.4	Miscellaneous Common Details	Sheet	1	8	1	8	Expansion joint replacement detail with ultra-low modulus silicon joint
9.5	Incorporate Report of Core Borings	Sheet	2	1	2	2	For temporary bridges. 1 sheet per bridge
9.6	Existing Bridge Plans	LS	3	4		12	Label and incorporate all three exisitng bridge plans.
9.7	Assemble Plan Summary Boxes and Quantities	LS	1	26		26	6 hours per deck replacement+ 4 hours for temp brrdge. (6*3)+(2*4)=26
9.8	Cost Estimate	LS	1	26		26	12 hours per bridge. 12*3=36
9.9	Technical Special Provisions	LS	1	0		0	n/a
	Structures - Summary and Miscellaneous Tasks and Drawings Subtotal				6	114	

Task No.	Task	Total	Task 10	Task 11	Task 12	Task 13	Task 14	Task 15	Task 16	Task 17	Task 18
10-16	Temporary Bridges	464	268	196	0		0	0	0		
10-16	Bridge 750316 (SB SR 436 over SR 528)	940				940					
10-16	Bridge 750315 (SB SR 436 over Ramp M)	710				710					
10-16	Bridge 750317 (NB SR 436 over SR 528)	980				980					
10-16	Bridge 5	0									
10-16	Bridge 6	0									
10-16	Bridge 7	0									
10-16	Bridge 8	0									
10-16	Bridge 9	0									
10-16	Bridge 10	0									
17	Retaining Walls	140								140	
18	Miscellaneous Structures	80									80
	Structures Technical Subtotal	3314	268	196	0	2630	0	0	0	140	80

Project Activity 9. Structures Summary

Task No.	Task	Units	No. of Units	Hours per Unit	Total	Comments
9.10	Field Reviews	LS	1	20	20	Review inspection reports = 4 hours. Perform hands-on bridge inspection. 2 peoplex8hrsx 1 field reviewed=16 hrs.
9.11	Technical Meetings	LS	1	16	16	Meetings are listed below
9.12	Quality Assurance/Quality Control	LS	%	7%	240	This should be (5% to 10%) x ("Structures - Summary and Miscellaneous Tasks and Drawings Subtotal, cell G21" + "Structures Technical Subtotal, cell C35") **(158+3674)*.07=268**
9.13	Independent Peer Review	LS	1	0	0	n/a
9.14	Supervision	LS	%	5%	171	This should be (3% to 7%) x ("Structures - Summary and Miscellaneous Tasks and Drawings Subtotal, cell G21" + "Structures Technical Subtotal, cell C35") **(158+3674)*.05=268**
Structures Nontechnical Subtotal					447	
9.15	Coordination	LS	1	40	40	
9. Structures - Summary and Miscellaneous Tasks and Drawings Nontechnical and Coordination Total					601	

Technical Meetings	Units	No of Units	Hours/ Unit	Total Hours	PM Attendance at Meeting Required?	Number
BDR Coordination/Review	EA	1	8	8		0
90/100% Comment Review	EA	1	8	8		0
Aesthetics Coordination	EA	0	0	0		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				16		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	12	0	*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 9.11		Carries to Tab 3

Estimator: Giovanni Orellana
Bridge Identifier (Number or Name):

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

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	16		16	Assume ACROW Bride Series 700
10.2	Ship Impact Data Collection	LS	1	0		0	n/a
10.3	Ship Impact Criteria	EA	0	0		0	n/a
	Superstructure Alternatives						
10.4	Short Span Concrete Bridge	EA ALT	0	0		0	n/a
10.5	Medium Span Concrete Bridge	EA ALT	3	12		36	Evaluate exist girders/girder ratings, etc.. 3X12=36 hours. Evaluate for alternatives and check with CFX if the bridge does not load rate based on 8" thick deck.
10.6	Long Span Concrete Bridge	EA ALT	0	0		0	n/a
10.7	Structural Steel Bridge	EA ALT	1	16		16	Assume ACROW Bridge Series 700 - coordinate work, criteria, SB 436/SR 528 1 span vs. 2 spans altrnative
	Foundation & Substructure Alternatives						
10.8	Pier/Bent	EA Type	1	0		0	Assume steel frame
10.9	Analyzed Capacity of Existing Pier Columns for vehicle impact (600 Kips)	EA	3	8		24	3 sites. Analizing the columns for shear 3sites x4hr=12hrs. Optional: Thickening the column details or adding a pier protection barrier (1 sheet for all 3 sites = 12 hrs)
10.10	Deep Foundations	EA Foundation Evaluated	2	12		24	Assume steel pipe vs steel H-pile. FB-Multipier Analysis.
	Movable Span						
10.11	Data Collection and Design Criteria	LS	1	0		0	n/a
10.12	Movable Span Geometrics and Clearances	LS	1	0		0	n/a
10.13	Deck System Evaluation	LS	1	0		0	n/a
10.14	Framing Plan Development	LS	1	0		0	n/a
10.15	Main Girder Preliminary Design	LS	1	0		0	n/a
10.16	Conceptual Span Balance/Counterweight	LS	1	0		0	n/a
10.17	Support System Development	LS	1	0		0	n/a
10.18	Drive Power Calculations	LS	1	0		0	n/a
10.19	Drive System Development	LS	1	0		0	n/a
10.20	Power and Control Development	LS	1	0		0	n/a
10.21	Conceptual Pier Design	LS	1	0		0	n/a
10.22	Foundation Analysis (FL PIER)	LS	1	0		0	n/a
10.23	Tender Visibility Study	LS	1	0		0	n/a

Task No.	Task	Units	No of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	Other BDR Issues						
10.24	Aesthetics	LS	1	0		0	n/a
10.25	TCP/Staged Construction Requirements	LS	1	8		8	Coordination with TCP for underpass (SR 528) and CSX traffic
10.26	Constructibility Requirements	LS	1	8		8	Review of erection and construction sequence, stie demolition
10.27	Load Rating for Damaged/Widened Structures	EA Unit	0	0		0	n/a
10.28	Quantity and Cost Estimates	EA ALT	1	24		24	Two temporary bridges
10.29	Quantity and Cost Estimates - Movable Span	LS	1	0		0	n/a
10.30	Wall Type Justification	LS	1	0		0	n/a
	Report Preparation						
10.31	Exhibits	EA SHEET	2	12		24	P&E for each temporary bridge,
10.32	Exhibits - Movable Span	EA SHEET	0	0		0	n/a
10.33	Report Preparation	LS	1	80		80	Technical Memo
10.34	Report Preparation - Movable Span	LS	1	0		0	n/a
10.35	BDR Submittal Package	LS	1	8		8	Item used one time
	10. Structures - Bridge Development Report Total					**268**	
	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 11. Temporary Bridges

Estimator: Giovanni Orellana
Bridge Identifier (BR No. 753015 & 753016):

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

NOTE: Signature Block is optional, per District preference

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	General Layout Design and Plans [Tasks under Activity 11 are for Prefabricated Temporary Bridges only]						
11.1	Overall Bridge Final Geometry	LS	2	12		24	Vertical and Horizontal geometry over rdwy for 2 temporary bridges.
11.2	General Plan and Elevation	Sheet	2	16	2	32	1 sheet per site.
11.3	Miscellaneous Details	Sheet	2	8	2	16	One sheet for General notes and one sheet for detail for sign mounted on temporary bridge.
	End Bent Design and Plans						
11.4	End Bent Structural Design	EA Design	2	12		24	Design and check for two end bents. 1 for each temp. bridge
11.5	End Bent Details	Sheet	1	20	1	20	P&E and typical for EB's
	Intermediate Bent Design and Plans						
11.6	Intermediate Bent Structural Design	EA Design	1	24		24	Design and check proposed steel bent for temp. bridge over SR 528
11.7	Intermediate Bent Details	Sheet	1	20	1	20	P&E and typical for Intermediate Bent.
	Miscellaneous Substructure Design and Plans						
11.8	Foundation Layout	EA	3	12		36	2 foundation lay out sheets and one sheet for pile data table and notes.
	11. Temporary Bridge Total				**6**	**196**	

Estimator: Giovanni Orellana
Bridge Identifier (753016): SB SR 436 over SR 528

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

NOTE: Signature Block is optional, per District preference

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	General Layout Design and Plans						
13.1	Overall Bridge Final Geometry	LS	1	0		0	n/a
13.2	Expansion/Contraction Analysis	EA Unit	1	0		0	n/a
13.3	General Plan and Elevation	Sheet	1	40	1	40	
13.4	Construction Staging	Sheet	1	16	1	16	
13.5	Approach Slab Plan and Details	Sheet	0	0	0	0	n/a
13.6	Miscellaneous Details	Sheet	0	0	0	0	n/a
	End Bent Design and Plans						
13.7	End Bent Geometry	EA End Bent	0	0		0	n/a
13.8	Wingwall Design and Geometry	EA End Bent	0	0		0	n/a
13.9	End Bent Structural Design	EA Design	2	20		40	Analysis of existing bents caps for shear and moment based on new deck load.
13.10	End Bent Plan and Elevation	Sheet	0	0	0	0	n/a
13.11	End Bent Details	Sheet	0	0	0	0	n/a
	Intermediate Bent Design and Plans						
13.12	Bent Geometry	EA Bent	0	0		0	n/a
13.13	Bent Stability Analysis	EA Design	0	0		0	n/a
13.14	Bent Structural Design	EA Design	0	0		0	n/a
13.15	Bent Plan and Elevation	Sheet	0	0	0	0	n/a
13.16	Bent Details	Sheet	0	0	0	0	n/a
	Pier Design and Plans						
13.17	Pier Geometry	EA Pier	0	0		0	n/a
13.18	Pier Stability Analysis	EA Design	0	0		0	n/a
13.19	Pier Structural Design	EA Design	4	24		96	Analysis of existing pier caps, columns and footing based on new deck load. 4 piers total
13.20	Pier Plan and Elevation	Sheet	0	0	0	0	n/a
13.21	Pier Details	Sheet	0	0	0	0	n/a

Project Activity 13. Medium Span BR#750316

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	Miscellaneous Substructure Design and Plans						
13.22	Foundation Layout	Sheet	0	0	0	0	n/a
	Superstructure Deck Design and Plans						
13.23	Finish Grade Elevation (FGE) Calculation	LS	1	40		40	Verify existing and check for deck replacement. Variable beam spacing. 5 Spans
13.24	Finish Grade Elevations	Sheet	2	16	2	32	Plan view , x-section and FGE tables
13.25	Bridge Deck Design	EA Section	1	24		24	1 design for entire bridge deck
13.26	Bridge Deck Reinforcing and Concrete Quantities	EA Unit	1	12		12	
13.27	Diaphragm Design	EA Section	0	0		0	n/a
13.28	Superstructure Plan	Sheet	5	20	5	100	1 sheet per span.
13.29	Superstructure Section	Sheet	1	20	1	20	
13.30	Miscellaneous Superstructure Details	Sheet	1	20	1	20	Deck casting sequence and intermediate construction joints to avoid work over traffic
	Reinforcing Bar Lists						
13.31	Preparation of Reinforcing Bar List	Sheet	2	10	2	20	deck reinforcment for spans 1 - 5.
	Continuous Concrete Girder Design						
13.32	Section Properties	LS	1	0		0	n/a
13.33	Material Properties	LS	1	0		0	n/a
13.34	Construction Sequence	EA Unit	0	0		0	n/a
13.35	Tendon Layouts	EA Unit	0	0		0	n/a
13.36	Live Load Analysis	EA Unit	0	0		0	n/a
13.37	Temperature Gradient	EA Unit	0	0		0	n/a
13.38	Time Dependent Analysis	EA Unit	0	0		0	n/a
13.39	Stress Summary	EA Unit	0	0		0	n/a
13.40	Ultimate Moments	EA Unit	0	0		0	n/a
13.41	Ultimate Shear	EA Unit	0	0		0	n/a
13.42	Construction Loading	EA Unit	0	0		0	n/a

Project Activity 13. Medium Span BR#750316

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
13.43	Framing Plan	Sheet	0	0	0	0	n/a
13.44	Girder Elevation, including Grouting Plan and Vent Locations	Sheet	0	0	0	0	n/a
13.45	Girder Details	Sheet	0	0	0	0	n/a
13.46	Erection Sequence	Sheet	0	0	0	0	n/a
13.47	Splice Details	Sheet	0	0	0	0	n/a
13.48	Girder Deflections and Camber	Sheet	0	0	0	0	n/a
	Simple Span Concrete Design						
13.49	Prestressed Beam	EA Design	4	80		320	strengthening 4 beams to be strenghten for shear and/or moment using CFRP Wrap. Available funds in case the beams do not load rate and they need to be streghten.
13.50	Prestressed Beam Schedules	Sheet	2	12	2	24	P&E view , details and notes. Two sheets for all sites.Available funds in case the beams do not load rate and they need to be streghten.
13.51	Framing Plan	Sheet	0	0	0	0	n/a
	Beam Stability						
13.52	Beam/girder stability	EA Unit	0	0		0	n/a
	Bearing						
13.53	Bearing pad and bearing plate design	Type/ Span	2	12		24	Check two types of existing pads based on new deck load and possible design of new pad.
13.54	Bearing pad and bearing plate details	Sheet	1	12	1	12	Assume new bearing pad (non-standard). Jacking load to be shown for pad replacement.
	Load Rating						
13.55	Load Ratings	Per Beam	10	10		100	5 different type of beams. Type II and III with different number of strands. Type II (8-2), (10-2), Type III (12-0), (22-6), and (16-4). Run LRFR (FL120 and HL-93) and LFR (HS-20) rating so bridge can pass. 5 unique beams for LRFR and 5 unique beams for LFR.
	13. Structures - Medium Span Concrete Bridge Total				**16**	**940**	

Estimator: Giovanni Orellana
Bridge Identifier (753015): SB SR 436 over Ramp M

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

NOTE: Signature Block is optional, per District preference

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	General Layout Design and Plans						
13.1	Overall Bridge Final Geometry	LS	1	0		0	n/a
13.2	Expansion/Contraction Analysis	EA Unit	1	0		0	n/a
13.3	General Plan and Elevation	Sheet	1	40	1	40	
13.4	Construction Staging	Sheet	1	32	1	32	
13.5	Approach Slab Plan and Details	Sheet	0	0	0	0	n/a
13.6	Miscellaneous Details	Sheet	0	0	0	0	n/a
	End Bent Design and Plans						
13.7	End Bent Geometry	EA End Bent	0	0		0	n/a
13.8	Wingwall Design and Geometry	EA End Bent	0	0		0	n/a
13.9	End Bent Structural Design	EA Design	2	20		40	Analysis of existing bents caps for shear and moment based on new deck load.
13.10	End Bent Plan and Elevation	Sheet	0	0	0	0	n/a
13.11	End Bent Details	Sheet	0	0	0	0	n/a
	Intermediate Bent Design and Plans						
13.12	Bent Geometry	EA Bent	0	0		0	n/a
13.13	Bent Stability Analysis	EA Design	0	0		0	n/a
13.14	Bent Structural Design	EA Design	0	0		0	n/a
13.15	Bent Plan and Elevation	Sheet	0	0	0	0	n/a
13.16	Bent Details	Sheet	0	0	0	0	n/a
	Pier Design and Plans						
13.17	Pier Geometry	EA Pier	0	0		0	n/a
13.18	Pier Stability Analysis	EA Design	0	0		0	n/a
13.19	Pier Structural Design	EA Design	2	24		48	Analysis of existing pier caps, columns and footing based on new deck load. 2 piers total.
13.20	Pier Plan and Elevation	Sheet	0	0	0	0	n/a
13.21	Pier Details	Sheet	0	0	0	0	n/a

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	Miscellaneous Substructure Design and Plans						
13.22	Foundation Layout	Sheet	0	0	0	0	n/a
	Superstructure Deck Design and Plans						
13.23	Finish Grade Elevation (FGE) Calculation	LS	1	40		40	Verify existing and check for deck replacement. Variable beam spacing. 3 Spans
13.24	Finish Grade Elevations	Sheet	2	16	2	32	Plan view , x-section and FGE tables
13.25	Bridge Deck Design	EA Section	1	24		24	1 design for entire bridge deck
13.26	Bridge Deck Reinforcing and Concrete Quantities	EA Unit	1	12		12	
13.27	Diaphragm Design	EA Section	0	0		0	n/a
13.28	Superstructure Plan	Sheet	3	20	3	60	1 sheet per span.
13.29	Superstructure Section	Sheet	1	20	1	20	
13.30	Miscellaneous Superstructure Details	Sheet	1	20	1	20	Deck casting sequence and intermediate construction joints to avoid work over traffic
	Reinforcing Bar Lists						
13.31	Preparation of Reinforcing Bar List	Sheet	1	10	1	10	deck reinforcment for spans 1 - 3.
	Continuous Concrete Girder Design						
13.32	Section Properties	LS	1	0		0	n/a
13.33	Material Properties	LS	1	0		0	n/a
13.34	Construction Sequence	EA Unit	0	0		0	n/a
13.35	Tendon Layouts	EA Unit	0	0		0	n/a
13.36	Live Load Analysis	EA Unit	0	0		0	n/a
13.37	Temperature Gradient	EA Unit	0	0		0	n/a
13.38	Time Dependent Analysis	EA Unit	0	0		0	n/a
13.39	Stress Summary	EA Unit	0	0		0	n/a
13.40	Ultimate Moments	EA Unit	0	0		0	n/a
13.41	Ultimate Shear	EA Unit	0	0		0	n/a
13.42	Construction Loading	EA Unit	0	0		0	n/a
13.43	Framing Plan	Sheet	0	0	0	0	n/a
13.44	Girder Elevation, including Grouting Plan and Vent Locations	Sheet	0	0	0	0	n/a
13.45	Girder Details	Sheet	0	0	0	0	n/a
13.46	Erection Sequence	Sheet	0	0	0	0	n/a
13.47	Splice Details	Sheet	0	0	0	0	n/a
13.48	Girder Deflections and Camber	Sheet	0	0	0	0	n/a

Project Activity 13. Medium Span BR#750315

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	Simple Span Concrete Design						
13.49	Prestressed Beam	EA Design	2	80		160	strengthening 2 beams to be strenghten for shear and/or moment with CFRP wrap. Available funds in case the beams do not load rate and they need to be streghten.
13.50	Prestressed Beam Schedules	Sheet	0	0	0	0	Hours included under Bridge#750316.
13.51	Framing Plan	Sheet	0	0	0	0	n/a
	Beam Stability						
13.52	Beam/girder stability	EA Unit	2	12		24	Evaluate moment and shear capacity for 2 exisitng interior beams with half of composite deck during phase construction.
	Bearing						
13.53	Bearing pad and bearing plate design	Type/ Span	3	12		36	Check three types of existing pads based on new deck load and possible design of new pad.
13.54	Bearing pad and bearing plate details	Sheet	1	12	1	12	Assume new bearing pad (non-standard). Jacking load to be shown for pad replacement.
	Load Rating						
13.55	Load Ratings	Per Beam	10	10		100	5 different type of beams. Type II, III and IV beams with different number of strands. Type II (10-2), Type III (12-2), and Type IV (16-0) (two different spans) and (26-6). Run LRFR (FL120 and HL-93) and LFR (HS-20) rating so bridge can pass. 5 unique beams for LRFR and 5 unique beams for LFR.
	13. Structures - Medium Span Concrete Bridge Total				**11**	**710**	

Estimator: Giovanni Orellana
Bridge Identifier (753017): NB SR 436 over SR 528

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

NOTE: Signature Block is optional, per District preference

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	General Layout Design and Plans						
13.1	Overall Bridge Final Geometry	LS	1	0		0	n/a
13.2	Expansion/Contraction Analysis	EA Unit	1	0		0	n/a
13.3	General Plan and Elevation	Sheet	1	40	1	40	
13.4	Construction Staging	Sheet	1	32	1	32	
13.5	Approach Slab Plan and Details	Sheet	0	0	0	0	n/a
13.6	Miscellaneous Details	Sheet	0	0	0	0	n/a
	End Bent Design and Plans						
13.7	End Bent Geometry	EA End Bent	0	0		0	n/a
13.8	Wingwall Design and Geometry	EA End Bent	0	0		0	n/a
13.9	End Bent Structural Design	EA Design	2	20		40	Analysis of existing bents caps for shear and moment based on new deck load.
13.10	End Bent Plan and Elevation	Sheet	0	0	0	0	n/a
13.11	End Bent Details	Sheet	0	0	0	0	n/a
	Intermediate Bent Design and Plans						
13.12	Bent Geometry	EA Bent	0	0		0	n/a
13.13	Bent Stability Analysis	EA Design	0	0		0	n/a
13.14	Bent Structural Design	EA Design	0	0		0	n/a
13.15	Bent Plan and Elevation	Sheet	0	0	0	0	n/a
13.16	Bent Details	Sheet	0	0	0	0	n/a
	Pier Design and Plans						
13.17	Pier Geometry	EA Pier	0	0		0	n/a
13.18	Pier Stability Analysis	EA Design	0	0		0	n/a
13.19	Pier Structural Design	EA Design	4	24		96	Analysis of existing pier caps, columns and footing based on new deck load. 4 Piers total
13.20	Pier Plan and Elevation	Sheet	0	0	0	0	n/a
13.21	Pier Details	Sheet	0	0	0	0	n/a

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	Miscellaneous Substructure Design and Plans						
13.22	Foundation Layout	Sheet	0	0	0	0	n/a
	Superstructure Deck Design and Plans						
13.23	Finish Grade Elevation (FGE) Calculation	LS	1	40		40	Verify existing and check for deck replacement. Variable beam spacing. 5 Spans
13.24	Finish Grade Elevations	Sheet	2	16	2	32	Plan view , x-section and FGE tables
13.25	Bridge Deck Design	EA Section	1	24		24	1 design for entire bridge deck
13.26	Bridge Deck Reinforcing and Concrete Quantities	EA Unit	1	12		12	
13.27	Diaphragm Design	EA Section	0	0		0	n/a
13.28	Superstructure Plan	Sheet	5	20	5	100	1 sheet per span.
13.29	Superstructure Section	Sheet	1	20	1	20	
13.30	Miscellaneous Superstructure Details	Sheet	1	20	1	20	Deck casting sequence and intermediate construction joints to avoid work over traffic
	Reinforcing Bar Lists						
13.31	Preparation of Reinforcing Bar List	Sheet	2	10	2	20	deck reinforcment for spans 1 - 5.
	Continuous Concrete Girder Design						
13.32	Section Properties	LS	1	0		0	n/a
13.33	Material Properties	LS	1	0		0	n/a
13.34	Construction Sequence	EA Unit	0	0		0	n/a
13.35	Tendon Layouts	EA Unit	0	0		0	n/a
13.36	Live Load Analysis	EA Unit	0	0		0	n/a
13.37	Temperature Gradient	EA Unit	0	0		0	n/a
13.38	Time Dependent Analysis	EA Unit	0	0		0	n/a
13.39	Stress Summary	EA Unit	0	0		0	n/a
13.40	Ultimate Moments	EA Unit	0	0		0	n/a
13.41	Ultimate Shear	EA Unit	0	0		0	n/a
13.42	Construction Loading	EA Unit	0	0		0	n/a
13.43	Framing Plan	Sheet	0	0	0	0	n/a
13.44	Girder Elevation, including Grouting Plan and Vent Locations	Sheet	0	0	0	0	n/a
13.45	Girder Details	Sheet	0	0	0	0	n/a
13.46	Erection Sequence	Sheet	0	0	0	0	n/a
13.47	Splice Details	Sheet	0	0	0	0	n/a
13.48	Girder Deflections and Camber	Sheet	0	0	0	0	n/a

Project Activity 13. Medium Span BR#750317

Task No.	Task	Units	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	Simple Span Concrete Design						
13.49	Prestressed Beam	EA Design	4	80		320	strengthening 4 beams to be strenghten for shear and/or moment using CFRP wrap. Available funds in case the beams do not load rate and they need to be streghten.
13.50	Prestressed Beam Schedules	Sheet	0	0	0	0	Hours included under Bridge#750316
13.51	Framing Plan	Sheet	0	0	0	0	n/a
	Beam Stability						
13.52	Beam/girder stability	EA Unit	3	12		36	Evaluate moment and shear capacity for 3 existing interior beams with half of composite deck during phase construction.
	Bearing						
13.53	Bearing pad and bearing plate design	Type/ Span	3	12		36	Check three types of existing pads based on new deck load and possible design of new pad.
13.54	Bearing pad and bearing plate details	Sheet	1	12	1	12	Assume new bearing pad (non-standard) and jacking load to be shown for pad replacement.
	Load Rating						
13.55	Load Ratings	Per Beam	10	10		100	5 different type of beams. Type II, III and IV beams with different number of strands. Type II (8-2), Type III (18-6), and Type IV (16-0), (28-6) and (14-2).Run LRFR (FL120 and HL-93) and LFR (HS-20) rating so bridge can pass. 5 unique beams for LRFR and 5 unique beams for LFR.
	13. Structures - Medium Span Concrete Bridge Total				**14**	**980**	
	Total Structures					**2630**	

Representing	Print Name	Signature / Date

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	n/a
17.2	Horizontal Wall Geometry	Per Wall	4	8		32	
	Permanent Proprietary Walls						
17.3	Vertical Wall Geometry	Per Wall	0	0		0	n/a
17.4	Semi-Standard Drawings	Sheet	0	0	0	0	n/a
17.5	Wall Plan and Elevations (Control Drawings)	Sheet	0	0	0	0	n/a
17.6	Details	Sheet	0	0	0	0	n/a
	Temporary Proprietary Walls						
17.7	Vertical Wall Geometry	Per Wall	4	12		48	Constant offset from rdwy alignement and constant cross slope.
17.8	Semi-Standard Drawings	Sheet	1	12	1	12	
17.9	Wall Plan and Elevations (Control Drawings)	Sheet	4	12	4	48	4 wire mesh walls
17.10	Details	Sheet	0	0	0	0	n/a

Project Activity 17. Str-Retaining Walls

Task No.	Task	Unit	No. of Units	Hours/ Unit	No. of Sheets	Total Hours	Comments
	Cast-in-Place Retaining Walls						
17.11	Design	EA Design	0	0		0	n/a
17.12	Vertical Wall Geometry	EA Wall	0	0		0	n/a
17.13	General Notes	Sheet	0	0	0	0	n/a
17.14	Wall Plan and Elevations (Control Drawings)	Sheet	0	0	0	0	n/a
17.15	Sections and Details	Sheet	0	0	0	0	n/a
17.16	Reinforcing Bar List	Sheet	0	0	0	0	n/a
	Other Retaining Walls and Bulkheads						
17.17	Design	EA Design	0	0		0	n/a
17.18	Vertical Wall Geometry	EA Wall	0	0		0	n/a
17.19	General Notes, Tables and Misc. Details	Sheet	0	0	0	0	n/a
17.20	Wall Plan and Elevations	Sheet	0	0	0	0	n/a
17.21	Details	Sheet	0	0	0	0	n/a
	17. Structures - Retaining Walls Total				**5**	**140**	

Estimator: Giovanni Orellana

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

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	n/a
18.2	Concrete Box Culverts Extensions	EA Extension	0	0		0	n/a
18.3	Concrete Box Culvert Data Table Plan Sheets	Sheet	0	0	0	0	n/a
18.4	Concrete Box Culvert Special Details Plan Sheets	Sheet	0	0	0	0	n/a
	Strain Poles						
18.5	Steel Strain Poles	Initial Config	0	0		0	n/a
		EA Add'l Config	0	0		0	n/a
18.6	Concrete Strain Poles	Initial Config	0	0		0	n/a
		EA Add'l Config	0	0		0	n/a
18.7	Strain Pole Data Table Plan Sheets	Sheet	0	0	0	0	n/a
18.8	Strain Pole Special Details Plan Sheets	Sheet	0	0	0	0	n/a
	Mast Arms						
18.9	Mast Arms	EA Design	0	0		0	n/a
18.10	Mast Arms Data Table Plan Sheets	Sheet	0	0	0	0	n/a
18.11	Mast Arm Special Details Plan Sheets	Sheet	0	0	0	0	n/a
	Overhead/Cantilever Sign Structures						
18.12	Cantilever Sign Structures	EA Design	3	8		24	Design new foundation for a remove and replace sign structure. Assume no impact on the structure, 2 (SB) and 1 (NB)
18.13	Overhead Span Sign Structures	EA Design	1	8		8	Design new foundation for a remove and replace sign structure. Assume 2 temporary structures to be design under signing and pavement as multipost line 19.4
18.14	Special (Long Span) Overhead Span Sign Structures	EA Design	0	0		0	n/a
18.15	Monotube Overhead Sign Structure	EA Design	0	0		0	n/a
18.16	Bridge Mounted Signs (Attached to Superstr.)	EA Design	2	16		32	Structural design. Prepare construction plans.
18.17	Overhead and Cantilever Sign Structures Data Table Plan Sheets	Sheet	1	8	1	8	Drilled shaft data table for roadway sign structures.
18.18	Overhead and Cantilever Sign Structures Special Details Plan Sheets	Sheet	0	0	0	0	n/a

Project Activity 18. Structures-Miscellaneous

	High Mast Lighting						
18.19	Non-Standard High Mast Lighting Structures	EA Design	2	4		8	Analized new foundation for two poles to be relocated.
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	0	0		0	
18.22	Vertical Wall Geometry	EA Wall	0	0		0	
18.23	Summary of Quantities - Aesthetic Requirements	Sheet	0	0	0	0	
18.24	Control Drawings	Sheet	0	0	0	0	
18.25	Design of Noise Barrier Walls Covered by Standards	EA Design	0	0		0	
18.26	Design of Noise Barrier Walls Not Covered by Standards	EA Design	0	0		0	
18.27	Aesthetic Details	LS	1	0		0	
	Special 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	0		0	
	18. Structures - Miscellaneous Total				**1**	**80**	

Estimator: XAA

Deck Replacement - SR 436 over SR 528

Project No. 528-130

Representing	Print Name	Signature / Date

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	120	120	Analysis of Sign Relocations and SPM for SR 436 and SR 528. Coordinate adjacent job limits.
19.4	Multi-Post Sign Support Calculations	EA	2	4	8	
19.5	Sign Panel Design Analysis	EA	1	24	24	Guidesign
19.6	Sign Lighting/Electrical Calculations	EA	1	0	0	
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	40	40	Account for Temporary Sign replacements 2SB trusses
Signing and Pavement Marking Analysis Technical Subtotal					**192**	
19.11	Field Reviews	LS	2	4	8	2 Field Meeting
19.12	Technical Meetings	LS	1	16	16	Meetings are listed below
19.13	Quality Assurance/Quality Control	LS	%	5%	10	
19.14	Independent Peer Review	LS	%	0%	0	
19.15	Supervision	LS	%	5%	10	
Signing and Pavement Marking Analysis Nontechnical Subtotal					**44**	
19.16	Coordination	LS	%	3%	7	
19. Signing and Pavement Marking Analysis Total					**243**	

Project Activity 19. Signing & 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	0	0	0		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				**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	4	4	16	*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 19.12

Carries to Tab 3

Project Activity 20. Signing & Marking Plans

Estimator: XAA

Deck Replacement - SR 436 over SR 528
Project No. 528-130

Representing	Print Name	Signature / Date

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	4	1	4	Key Sheet
20.2	Summary of Pay Items Including TRNS•Port Input		LS	1	0		0	
20.3	Tabulation of Quantities		Sheet	1	16	1	16	Quantities for SR 436 and SR 528
20.4	General Notes/Pay Item Notes		Sheet	1	2	1	2	General Notes
20.5	Project Layout		Sheet	0	0	0	0	
20.6	Plan Sheet	100	Sheet	6	4	6	24	3 Sheets for SR 436 and SR 528
20.7	Typical Details		EA	1	4		4	2 Details
20.8	Guide Sign Worksheet(s)		EA	4	4		16	8 Signs potentially imapcted
20.9	Traffic Monitoring Site		EA	0	0		0	
20.10	Cross Sections		EA	4	8		32	Overhead truss cross sections
20.11	Special Service Point Details		EA	0	0		0	
20.12	Special Details		LS	1	24		24	Special detail for gores/bridge approaches
20.13	Interim Standards		LS	1	0		0	
Signing and Pavement Marking Plans Technical Subtotal						**9**	**122**	
20.14	Quality Assurance/Quality Control		LS	%	5%		6	
20.15	Supervision		LS	%	0%		0	
20. Signing and Pavement Marking Plans Total						**9**	**128**	

Nadic Engineering Services, Inc.

ESTIMATE OF WORK EFFORT AND COST - SUBCONSULTANT

Name of Project: S.R. 528 / S.R 436 BRIDGE DECK REPLACEMENTS
County: Orange
FPN: CFX 528-130
FAP No.: 1/0/1900

Consultant Name: TY Lin/Nadic Engineering Services, Inc.
Consultant No.: R16009
Date: 4/27/2016
Estimator: Godwin Nnadi

Staff Classification	Total Staff Hours From "SH Summary - Firm"	Project Manager	Senior Engineer	Senior Project Engineer	Senior Engineering Technician	Senior Designer	Engineering Intern	Secretary/ Clerical	Engineer	Staff Classification 9	Staff Classification 10	Staff Classification 11	Staff Classification 12	SH By Activity	Salary Cost By Activity	Average Rate Per Task
		$201.31	$177.07	$160.51	$77.89	$83.03	$85.95	$56.85	$98.40	$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	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	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	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	272	30	65	79	19	38	37	4	0	0	0	0	0	272	$38,272	$140.70
Total Staff Hours	272	30	65	79	19	38	37	4	0	0	0	0	0	272		
Total Staff Cost		$6,039.30	$11,509.55	$12,680.29	$1,479.91	$3,155.14	$3,180.15	$227.40	$0.00	$0.00	$0.00	$0.00	$0.00		**$38,271.74**	**$140.70**

Check = $38,271.74

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

SALARY RELATED COSTS:			$38,271.74
OVERHEAD:			$0.00
OPERATING MARGIN:			$0.00
FCCM (Facilities Capital Cost Money):			$0.00
EXPENSES:			$0.00
SUBTOTAL ESTIMATED FEE:			**$38,271.74**
Survey (Field)	0	4-man crew d: $ - / day	$0.00
Geotechnical Field and Lab Testing			$35,243.00
SUBTOTAL ESTIMATED FEE:			**$73,514.74**
Optional Services			$0.00
GRAND TOTAL ESTIMATED FEE:			**$73,514.74**

35. Geotechnical

Estimator: Godwin Nnadi

S.R. 528 / S.R 436 BRIDGE DECK REPLACEMENTS
CFX 528-130

Representing	Print Name	Signature / Date
FDOT District		
Consultant Name	**Godwin Nnadi**	

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	4	4	Collect and review available project site document
35.2	Develop Detailed Boring Location Plan	LS	1	2	2	
35.3	Stake Borings/Utility Clearance	Boring	8	0.5	4	Eight (8) Auger Boring @ 7' each
35.4	Muck Probing	Crew Day	0	0	0	
35.5	Coordinate and Develop MOT Plans for Field Investigation	EA	0	0	0	
35.6	Drilling Access Permits	Location	0	0	0	
35.7	Property Clearances	EA	0	0	0	
35.8	Groundwater Monitoring	EA	0	0	0	
35.9	LBR/Resilient Modulus Sampling	EA	5	0.5	3	
35.10	Coordination of Field Work	100 lf of boring	0.56	1	1	Eight boring @ 7 ft each = 56LF
35.11	Soil and Rock Classification - Roadway	100 lf of boring	0.56	2	1	
35.12	Design LBR	LS	1	8	8	Only if LBR tests are required
35.13	Laboratory Data	100 lf of boring	0.56	1	1	
35.14	Seasonal High Water Table	Boring	8	0.3	2	
35.15	Parameters for Water Retention Areas	EA	0	0	0	
35.16	Delineate Limits of Unsuitable Material	Cross-section	0	0	0	
35.17	Electronic Files for Cross-Sections	100 lf of boring	0	0	0	Duplication of Roadway Effort?
35.18	Embankment Settlement and Stability	Embankment Boring	0	0	0	
35.19	Monitor Existing Structures	LS	1	0	0	

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	Duplication of Drainage Effort?
35.21	Geotechnical Recommendations	LS	1	6	6	
35.22	Pavement Condition Survey and Pavement Evaluation Report	LS	1	0	0	
35.23	Preliminary Roadway Report	LS	1	10	10	
35.24	Final Report	EA	1	10	10	
35.25	Auger Boring Drafting	100 lf boring	0.56	5	3	Small project effect
35.26	SPT Boring Drafting	100 lf boring	0	0	0	
				Roadway Geotechnical Subtotal	**55**	
	Structures					
35.27	Develop Detailed Boring Location Plan	LS	1	3	3	
35.28	Stake Borings/Utility Clearance	Boring	20	0.3	6	Bridges: 5 SPT borings @ 100 ft; Walls: 5 SPT @ 40 ft and 2 SPT @ 25 ft and Signs: 8 SPT @ 40 ft. Total = 20 SPT Borings
35.29	Coordinate and Develop MOT Plans for Field Investigation	EA	1	5	5	
35.30	Drilling Access Permits	Location	0	0	0	
35.31	Property Clearances	EA	0	0	0	
35.32	Collection of Corrosion Samples	EA	0	0	0	
35.33	Coordination of Field Work	100 lf of boring	10.7	0.7	7	Bridges: 4 SPT borings @ 100 ft = 400LF; Walls: 5 SPT @ 40 ft and 2 SPT @ 25 ft = 250LF and Signs: 5 SPT @ 40 ft. = 200 LF Total footage = 850 LF
35.34	Soil and Rock Classification - Structures	100 lf of boring	10.7	2	21	
35.35	Tabulation of Laboratory Data	100 lf of boring	10.7	0.6	6	
35.36	Estimate Design Groundwater Level for Structures	EA	0	0	0	
35.37	Selection of Foundation Alternatives (BDR)	Bridge boring	5	2	10	
35.38	Detailed Analysis of Selected Foundation Alternate(s)	Bridge boring	5	6	30	See Basis for reducing by 35.35
35.39	Bridge Construction and Testing Recommendations	Bridge boring	0	0	0	
35.40	Lateral Load Analysis (Optional)	Bridge boring	0	0	0	Duplication of Structural Effort?
35.41	Walls	Wall Boring	7	2	14	
35.42	Sheet Pile Wall Analysis (Optional)	Wall Boring	0	0	0	Duplication of Structural Effort?
35.43	Design Soil Parameters for Signs, Signals, High Mast Lights, and Strain Poles and Geotechnical Recommendations	Boring	8	1.5	12	

35. Geotechnical

Task No.	Task	Units	No of Units	Hours/ Unit	Total Hours	Comments
35.44	Box Culvert Analysis	EA	1	2	2	
35.45	Preliminary Report - BDR	EA	1	20	20	
35.46	Final Report - Bridge and Associated Walls	EA	1	15	15	
35.47	Final Reports - Signs, Signals, Box Culvert, Walls and High Mast Lights	EA	1	15	15	
35.48	SPT Boring Drafting	100 lf of boring	10.7	4	43	
35.49	Other Geotechnical	LS	1	0	0	
				Structural Geotechnical Subtotal	**209**	
				Geotechnical Technical Subtotal	**264**	
35.50	Technical Special Provisions	EA	0	0	0	
35.51	Field Reviews	LS	1	0	0	
35.52	Technical Meetings	LS	1	8	8	Meetings listed below
35.53	Quality Assurance/Quality Control	LS	%	0%	0	
35.54	Supervision	LS	%	0%	0	
				Geotechnical Nontechnical Subtotal	**8**	
35.55	Coordination	LS	%	0%	0	
				35. Geotechnical Total	**272**	

Technical Meetings	Units	No of Units	Hours/ Unit	Total Hours	PM Attendance at Meeting Required?	Number
Kickoff Meeting with FDOT	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	3	2	6		0
Subtotal Technical Meetings				**8**	**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				**8**	**Total Project Manager Meetings (carries to Tab 3)**	**0**

Carries to 33.18

Carries to Tab 3

ATTACHMENT A - COMPUTATION OF GEOTECHNICAL COST
ROADWAY
SR 528/SR 436 BRIDGE DECK REPLACEMENT
ORLANDO, FLORIDA

Component/Unit Description	UNIT	ROADWAY	QTY	RATE	ROADWAY	TOTAL COST
I. FIELD EXPLORATION:						
1. Crew & Equipment Mobilization:						
606-Mobilization Asphalt Coring Equipment	Ea.		0	$550.00		$0.00
612-Mobilization Drill Rig Truck Mount	Ea.	1.0	1	$450.00	$450.00	$450.00
610-Mobilization Drill Rig Track Mount	Ea.		0	$2,400.00		$0.00
614-Mobilization Mudbug/All Terrain Vehicle	Ea.		0	$600.00		$0.00
418-Geo Drill Crew Support Vehicle	Day		0	$75.00		$0.00
706-MOT Portable Sign	Day	1	1	$150.00	$150.00	$150.00
700-MOT Arrow Board/Advance Warning Vehicle	Day	1	1	$120.00	$120.00	$120.00
701-MOT Attenuator Truck/Energy Absorption Vehicle	Day		0	$1,400.00		$0.00
708-Channeling Devices - Cone	Day		0	$5.00		$0.00
712-MOT Support Vehicle	Day	1	1	$75.00	$75.00	$75.00
2. Standard Penetration Test Borings(ASTM D-1586):						
478-Geo SPT Truck/Mud Bug 0-50 Ft	LF		0	$12.40		$0.00
479-Geo SPT Truck/Mud Bug 50-100 Ft	LF		0	$15.00		$0.00
480-Geo SPT Truck/Mud Bug 100-150 Ft	LF		0	$19.50		$0.00
8. Auger Borings(ASTM D-1452):						
401-Geo Auger Borings-H& & Truck/Mud Bug	LF	56	56	$10.00	$560.00	$560.00
402-Geo Auger Borings-Track	LF		0	$15.00		$0.00
9. B/T/A and Crew:						$0.00
419-Geo Drilling Crew 2-Person	Hr		0	$225.00		$0.00
420-Geo Drilling Crew 3-Person	Hr		0	$375.00		$0.00
11. Field Permeability Tests:						
432-Geo Field Permeability 0-10 Ft Open-End Borehole Method	Ea.		0	$275.00		
13. Soil Probing/Wash Borings:						
a. - 2 person crew	Days		0			$0.00
b. - 3 person crew	Days		0			$0.00
14. Site Reconnaissance/Utility Coordination:						
a. - Engineer	hrs.		0	$0.00		$0.00
b. -Engineering Intern	hrs.		0	$0.00		$0.00
19. Pavement Cores:	Ea.		0	$300.00		$0.00
41. MOT-Law Officer/Trooper:	Hr		0	$55.00		$0.00
Totals for Field Exploration					**$1,355.00**	**$1,355.00**

Nadic Engineering Services, Inc.
601 N. Hart Blvd.,
Orlando, FL. 32818
Phone: 407 521 4771
Fax: 407 521 4772

ATTACHMENT A - COMPUTATION OF GEOTECHNICAL COST
ROADWAY
SR 528/SR 436 BRIDGE DECK REPLACEMENT
ORLANDO, FLORIDA

Component/Unit Description	UNIT	ROADWAY	QTY	RATE	ROADWAY	TOTAL COST
II. LABORATORY TESTING:						
1. Visual Exam./Stratify(ASTM D-2488):						
-Senior Technician.	hrs.		0	$0.00		$0.00
2. Grain Size Analysis:						
822- Soils Particle Size Anlys AASHTO T88 (No Hydrometer)	Ea.	3	3	$80.00	$240.00	$240.00
812 -Soils Material Finer then 200 Sieve FM 1-T011	Ea.		0	$40.00		$0.00
821-Soils Particle Size Anlys AASHTO T88 (Inc Hydrometer)	Ea.		0	$210.00		$0.00
809-Hydrometer only (AASHTO T88):	Ea.		0	$120.00		$0.00
819-Soils Organic Content Ignition FM 1-T 267:	Ea.	1	1	$40.00	$40.00	$40.00
826-Soils Plastic Limit & Plasticity Index AASHTO T90:	Ea.	1	1	$80.00	$80.00	$80.00
811-Soils Liquid Limit AASHTO T89	Ea.		0	$40.00		$0.00
Soils Moisture Content Determination:						
816-Soils Moisture Content Lab AASHTO-T265:	Ea.	2	2	$15.00	$30.00	$30.00
823-Soils Permeability Constant Head AASHTO-T 215:	Ea.		0	$350.00		$0.00
805-Soils Corrosion Series FM 5-550 through 5-553 (pH, Sulfate, Chloride, Resistivity)	Ea.	0	0	$160.00	$0.00	$0.00
810-Soil Limerock Bearing Ratio (LBR) FM5-515:	Ea.	5	5	$300.00	$1,500.00	$1,500.00
Totals for Laboratory Testing					**$1,890.00**	**$1,890.00**
III. ENGINEERING AND TECHNICAL SERVICES:						
1. Project Manager	hrs.		30	$201.31		$6,039.30
2. Senior Engineer	hrs.		65	$177.07		$11,509.55
3. Senior Project Engineer	hrs.		79	$160.51		$12,680.29
4. Engineer:	hrs.			$98.40		$0.00
5. Engineer Intern	hrs		37	$85.95		$3,180.15
6. Senior Engineering Technician	hrs.		19	$77.89		$1,479.91
7. Senior Designer	hrs.		38	$83.03		$3,155.14
8. Secretarial/Clerical:	hrs.		4	$56.85		$227.40
Totals for Engineering and Technical Services					$0.00	$38,271.74
Totals for all Services					**$3,245.00**	**$3,245.00**

Nadic Engineering Services, Inc.
601 N. Hart Blvd.,
Orlando, FL. 32818
Phone: 407 521 4771
Fax: 407 521 4772

Component/Unit Description	UNIT	BRIDGE	QTY	RATE	BRIDGE	TOTAL COST
I. FIELD EXPLORATION:						
1. Crew & Equipment Mobilization:						
606-Mobilization Asphalt Coring Equipment	Ea.		0	$550.00		$0.00
612-Mobilization Drill Rig Truck Mount	Ea.	1.0	1	$450.00	$450.00	$450.00
610-Mobilization Drill Rig Track Mount	Ea.		0	$2,400.00		$0.00
614-Mobilization Mudbug/All Terrain Vehicle	Ea.		0	$600.00		$0.00
418-Geo Drill Crew Support Vehicle	Day		0	$75.00		$0.00
706-MOT Portable Sign	Day	3	3	$150.00	$450.00	$450.00
700-MOT Arrow Board/Advance Warning Vehicle	Day	3	3	$120.00	$360.00	$360.00
701-MOT Attenuator Truck/Energy Absorption Vehicle	Day		0	$1,400.00		$0.00
708-Channeling Devices - Cone	Day		0	$5.00		$0.00
712-MOT Support Vehicle	Day	3	3	$75.00	$225.00	$225.00
2. Standard Penetration Test Borings(ASTM D-1586):						
478-Geo SPT Truck/Mud Bug 0-50 Ft	LF	250	250	$12.40	$3,100.00	$3,100.00
479-Geo SPT Truck/Mud Bug 50-100 Ft	LF	250	250	$15.00	$3,750.00	$3,750.00
480-Geo SPT Truck/Mud Bug 100-150 Ft	LF		0	$19.50		$0.00
4. Grout Boreholes: Truck/Mud Bug:						
440-Geo Grout Boreholes - Truck/Mud Bug 0-50 Ft	LF	250	250	$5.00	$1,250.00	$1,250.00
441-Geo Grout Boreholes - Truck/Mud Bug 50-100 Ft	LF	250	250	$6.00	$1,500.00	$1,500.00
442-Geo Grout Boreholes - Truck/Mud Bug 100-150 Ft	LF		0	$8.00		$0.00
8. Auger Borings(ASTM D-1452):						
401-Geo Auger Borings-H& & Truck/Mud Bug	LF	0	0	$10.00	$0.00	$0.00
402-Geo Auger Borings-Track	LF		0	$15.00		$0.00
9. B/T/A and Crew:						
419-Geo Drilling Crew 2-Person	Hr	4	4	$225.00	$900.00	$900.00
420-Geo Drilling Crew 3-Person	Hr		0	$375.00		$0.00
11. Field Permeability Tests:						
432-Geo Field Permeability 0-10 Ft Open-End Borehole Method	Ea.		0	$275.00		0
13. Soil Probing/Wash Borings:						
a. - 2 person crew	Days		0			$0.00
b. - 3 person crew	Days		0			$0.00
14. Site R - Engineer						
a. -Engineering Intern	hrs.		0	$0.00		$0.00
b.	hrs.		0	$0.00		$0.00
19. Pavement Cores:	Ea.		0	$300.00		$0.00
41. MOT-Law Officer/Trooper:	Hr	16	16	$55.00	$880.00	$880.00
Totals for Field Exploration					**$12,865.00**	**$12,865.00**

Nadic Engineering Services, Inc.
601 N. Hart Blvd.,
Orlando, FL. 32818
Phone: 407 521 4771
Fax: 407 521 4772

ATTACHMENT A - COMPUTATION OF GEOTECHNICAL COST
BRIDGES
SR 528/SR 436 BRIDGE DECK REPLACEMENT
ORLANDO, FLORIDA

Component/Unit Description	UNIT	BRIDGE	QTY	RATE	BRIDGE	TOTAL COST
II. LABORATORY TESTING:						
1. Visual -Senior Technician.	hrs.		0	$0.00		$0.00
2. Grain Size Analysis:						
822- Soils Particle Size Anlys AASHTO T88 (No Hydrometer)	Ea.		0	$80.00		$0.00
812 -Soils Material Finer then 200 Sieve FM 1-T011	Ea.	25	25	$40.00	$1,000.00	$1,000.00
821-Soils Particle Size Anlys AASHTO T88 (Inc Hydrometer	Ea.		0	$210.00		$0.00
809-Hydrometer only (AASHTO T88):	Ea.		0	$120.00		$0.00
819-Soil Organic Content Ignition FM 1-T 267	Ea.	6	6	$40.00	$240.00	$240.00
826-Soil Plastic Limit & Plasticity Index AASHTO T90	Ea.	6	6	$80.00	$480.00	$480.00
811-Soil Liquid Limit AASHTO T89	Ea.		0	$40.00		0
816-Soil Moisture Content Lab AASHTO-T265:	Ea.	12	12	$15.00	$180.00	$180.00
823-Soils Permeability Constant Head AASHTO-T 215	Ea.		0	$350.00		$0.00
805-Soils Corrosion Series FM 5-550 through 5-553 (pH, Sulfate, Chloride, Resistivity)	Ea.	2	2	$160.00	$320.00	$320.00
810-Soil Limerock Bearing Ratio FM5-515:	Ea.		0	$300.00		$0.00
Totals for Laboratory Testing					**$2,220.00**	**$2,220.00**
III. ENGINEERING AND TECHNICAL SERVICES:						
1. Project Manager	hrs.		30	$201.31		$6,039.30
2. Senior Engineer	hrs.		65	$177.07		$11,509.55
3. Senior Project Engineer	hrs.		79	$160.51		$12,680.29
4. Engineer:	hrs.			$98.40		$0.00
5. Engineer Intern	hrs		37	$85.95		$3,180.15
6. Senior Engineering Technician	hrs.		19	$77.89		$1,479.91
7. Senior Designer	hrs.		38	$83.03		$3,155.14
8. Secretarial/Clerical:	hrs.		4	$56.85		$227.40
Totals for Engineering and Technical Services					$0.00	$38,271.74
Totals for all Services					**$15,085.00**	**$15,085.00**

Nadic Engineering Services, Inc.
601 N. Hart Blvd.,
Orlando, FL. 32818
Phone: 407 521 4771
Fax: 407 521 4772

ATTACHMENT A - COMPUTATION OF GEOTECHNICAL COST
MISCELLANEOUS STRUCTURES
SR 528/SR 436 BRIDGE DECK REPLACEMENT
ORLANDO, FLORIDA

Component/Unit Description	UNIT	MISC STRUCTURE	QTY	RATE	MISC STRUCTURE	TOTAL COST
I. FIELD EXPLORATION:						
1. Crew & Equipment Mobilization:						
606-Mobilization Asphalt Coring Equipment	Ea.		0	$550.00		$0.00
612-Mobilization Drill Rig Truck Mount	Ea.	1.0	1	$450.00	$450.00	$450.00
610-Mobilization Drill Rig Track Mount	Ea.		0	$2,400.00		$0.00
614-Mobilization Mudbug/All Terrain Vehicle	Ea.		0	$600.00		$0.00
418-Geo Drill Crew Support Vehicle	Day		0	$75.00		$0.00
706-MOT Portable Sign	Day	3	3	$150.00	$450.00	$450.00
700-MOT Arrow Board/Advance Warning Vehicle	Day	3	3	$120.00	$360.00	$360.00
701-MOT Attenuator Truck/Energy Absorption Vehicle	Day		0	$1,400.00		$0.00
708-Channeling Devices - Cone	Day		0	$5.00		$0.00
712-MOT Support Vehicle	Day	3	3	$75.00	$225.00	$225.00
2. Standard Penetration Test Borings(ASTM D-1586):						
478-Geo SPT Truck/Mud Bug 0-50 Ft	LF	570	570	$12.40	$7,068.00	$7,068.00
479-Geo SPT Truck/Mud Bug 50-100 Ft	LF		0	$15.00		$0.00
480-Geo SPT Truck/Mud Bug 100-150 Ft	LF		0	$19.50		$0.00
4. Grout Boreholes: Truck/Mud Bug:						
440-Geo Grout Boreholes - Truck/Mud Bug 0-50 Ft	LF	570	570	$5.00	$2,850.00	$2,850.00
441-Geo Grout Boreholes - Truck/Mud Bug 50-100 Ft	LF		0	$6.00		$0.00
442-Geo Grout Boreholes - Truck/Mud Bug 100-150 Ft	LF		0	$8.00		$0.00
8. Auger Borings(ASTM D-1452):						
401-Geo Auger Borings-H& & Truck/Mud Bug	LF		0	$10.00		$0.00
402-Geo Auger Borings-Track	LF		0	$15.00		$0.00
9. B/T/A and Crew:						$0.00
419-Geo Drilling Crew 2-Person	Hr	4	4	$225.00	$900.00	$900.00
420-Geo Drilling Crew 3-Person	Hr		0	$375.00		$0.00
11. Field Permeability Tests:						
432-Geo Field Permeability 0-10 Ft Open-End Borehole Method	Ea.		0	$275.00		
13. Soil Probing/Wash Borings:						
a. - 2 person crew	Days		0			$0.00
b. - 3 person crew	Days		0			$0.00
14. Site Reconnaissance/Utility Coordination:						
a. - Engineer	hrs.		0	$0.00		$0.00
b. -Engineering Intern	hrs.		0	$0.00		$0.00
19. Pavement Cores:	Ea.		0	$300.00		$0.00
41. MOT-Law Officer/Trooper:	Hr	32	32	$55.00	$1,760.00	$1,760.00
Totals for Field Exploration					**$14,063.00**	**$14,063.00**

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ATTACHMENT A - COMPUTATION OF GEOTECHNICAL COST
MISCELLANEOUS STRUCTURES
SR 528/SR 436 BRIDGE DECK REPLACEMENT
ORLANDO, FLORIDA

Component/Unit Description	UNIT	MISC STRUCTURE	QTY	RATE	MISC STRUCTURE	TOTAL COST
II. LABORATORY TESTING:						
1. Visual Exam./Stratify(ASTM D-2488):						
-Senior Technician.	hrs.		0	$0.00		$0.00
2. Grain Size Analysis:						
822- Soils Particle Size Anlys AASHTO T88 (No Hydrometer)	Ea.		0	$80.00		$0.00
812 -Soils Material Finer then 200 Sieve FM 1-T011	Ea.	29	29	$40.00	$1,160.00	$1,160.00
821-Soils Particle Size Anlys AASHTO T88 (Inc Hydrometer	Ea.		0	$210.00		$0.00
809-Hydrometer only (AASHTO T88):	Ea.		0	$120.00		$0.00
819-Soil Organic Content Ignition FM 1-T 267	Ea.	7	7	$40.00	$280.00	$280.00
826-Soil Plastic Limit & Plasticity Index AASHTO T90	Ea.	7	7	$80.00	$560.00	$560.00
811-Soil Liquid Limit AASHTO T89	Ea.		0	$40.00		$0.00
816-Soil Moisture Content Lab AASHTO-T265:	Ea.	14	14	$15.00	$210.00	$210.00
823-Soils Permeability Constant Head AASHTO-T 215	Ea.		0	$350.00		$0.00
805-Soils Corrosion Series FM 5-550 through 5-553 (pH, Sulfate, Chloride, Resistivity)	Ea.	4	4	$160.00	$640.00	$640.00
810-Soil Limerock Bearing Ratio FM5-515:	Ea.		0	$300.00		$0.00
Totals for Laboratory Testing					**$2,850.00**	**$2,850.00**
III. ENGINEERING AND TECHNICAL SERVICES:						
1. Project Manager	hrs.		30	$201.31		$6,039.30
2. Senior Engineer	hrs.		65	$177.07		$11,509.55
3. Senior Project Engineer	hrs.		79	$160.51		$12,680.29
4. Engineer:	hrs.			$98.40		$0.00
5. Engineer Intern	hrs		37	$85.95		$3,180.15
6. Senior Engineering Technician	hrs.		19	$77.89		$1,479.91
7. Senior Designer	hrs.		38	$83.03		$3,155.14
8. Secretarial/Clerical:	hrs.		4	$56.85		$227.40
Totals for Engineering and Technical Services						$38,271.74
Totals for all Services					**$16,913.00**	**$16,913.00**

Nadic Engineering Services, Inc.
601 N. Hart Blvd.,
Orlando, FL. 32818
Phone: 407 521 4771
Fax: 407 521 4772

Traffic Engineering Data Solutions, Inc.

ESTIMATE OF WORK EFFORT AND COST - SUBCONSULTANT

Name of Project: SR 528 / SR 436 Bridge Deck Replacement
County: Orange
FPN: CFX 528-130 (Contract Number 001135)
FAP No.:

Consultant Name: Traffic Engineering Data Solutions, Inc.
Consultant No.: 10833
Date: 4/27/2016
Estimator: Alex Mims

Staff Classification	Total Staff Hours From "SH Summary Firm"	Chief Engineer	Senior Engineer	Engineer	Sr. Designer	Engineering Intern	Secretary/ Clerical	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
		$72.12	$54.26	$38.46	$36.06	$25.88	$24.20	$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!
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	241	24	24	121	72	0	0	0	0	0	0	0	0	241	$10,283	$42.67
24. Lighting Plans	134	13	13	66	42	0	0	0	0	0	0	0	0	134	$5,696	$42.51
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	217	11	11	65	65	65	0	0	0	0	0	0	0	217	$7,916	$36.48
34. Intelligent Transportation Systems Plans	226	11	11	79	79	46	0	0	0	0	0	0	0	226	$8,468	$37.47
35. Geotechnical	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0	#DIV/0!
Total Staff Hours	818	59	59	331	258	111	0	0	0	0	0	0	0	818		
Total Staff Cost		$4,255.08	$3,201.34	$12,730.26	$9,303.48	$2,872.68	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00		$32,362.84	$39.56

Check = $32,362.84

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

SALARY RELATED COSTS:			$32,362.84
OVERHEAD:	114.15%		$36,942.18
OPERATING MARGIN:	12%		$8,316.60
FCCM (Facilities Capital Cost Money):	0.00%		$0.00
EXPENSES:			$143.16
SUBTOTAL ESTIMATED FEE:			**$77,764.78**
Survey (Field) 0	4-man crew da	$ - / day	$0.00
Geotechnical Field and Lab Testing			$0.00
SUBTOTAL ESTIMATED FEE:			**$77,764.78**
Optional Services			$0.00
GRAND TOTAL ESTIMATED FEE:			**$77,764.78**

TEDS Expense Summary

SR 436 over SR 528 Bridge Deck Replacement
CFX Project No. 528-130

Expense Summary

- Travel Expenses for Field Visits
  - Assume two field visits will be required
  - Distance from TEDS Office to Site (one-way) = 41.1 miles
  - Fee: 2 trips x 82.2 mile x $0.445 / mile = $73.16
- Paper for submittals
  - Assume 5 copies and 1 submittal of hard copies
  - Assume 35 ITS plan sheets (11x17) black and white
  - Rate: 11 x 17 = $0.20 / sheet
  - Fee: $0.20 x 5 copies x 35 sheets x 1 submittal = $35.00
- Shipping of submittals
  - Assume 1 submittal of hard copies
  - Rate: $35.00 per shipment
  - Fee: 1 submittal x $35.00 = $35.00
- Total Expenses
  - Fee: $73.1688.78 + $35.00 + $35.00 = $143.16

ESTIMATE OF WORK EFFORT FOR TECHNICAL PROPOSALS - FIRM TOTAL

Financial Project Number: CFX 528-130 (Contract Number 001135)

Project Name: SR 528 / SR 436 Bridge Deck Replacem

FAP Number: 0

Date: 4/27/2016

Name of Consultant: Traffic Engineering Data Solutions, Inc.

WORK ACTIVITY	Hours from "Summary" sheet	EMPLOYEE CLASSIFICATION												TOTAL STAFF HOURS		ON CADD
	Firm Total Hours	Chief Engineer Hours	Senior Engineer Hours	Engineer Hours	Sr. Designer Hours	Engineering Intern Hours	Admin Hours	Staff Classification 7 Hours	Staff Classification 8 Hours	Staff Classification 9 Hours	Staff Classification 10 Hours	Staff Classification 11 Hours	Staff Classification 12 Hours	RANGE		PERCENT
3. Project General and Project Common Tasks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4. Roadway Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5. Roadway Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6a. Drainage Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6b. Drainage Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7. Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8. Environmental Permits, Compliance & Clearances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9. Structures - Misc. Tasks, Dwgs, Non-Tech.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10. Structures - Bridge Development Report	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11. Structures - Temporary Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12. Structures - Short Span Concrete Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13. Structures - Medium Span Concrete Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14. Structures - Structural Steel Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15. Structures - Segmental Concrete Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16. Structures - Movable Span	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17. Structures - Retaining Walls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18. Structures - Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19. Signing & Pavement Marking Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20. Signing & Pavement Marking Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21. Signalization Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22. Signalization Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23. Lighting Analysis	241	24	24	121	72	0	0	0	0	0	0	0	0	241	265	
24. Lighting Plans	134	13	13	66	42	0	0	0	0	0	0	0	0	134	147	
25. Landscape Architecture Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26. Landscape Architecture Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27. Survey (Field & Office Support)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28. Photogrammetry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29. Mapping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30. Terrestrial Mobile LiDAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31. Architecture Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
32. Noise Barriers Impact Design Assessment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
33. Intelligent Transportation Systems Analysis	217	11	11	65	65	65	0	0	0	0	0	0	0	217	239	
34. Intelligent Transportation Systems Plans	226	11	11	79	79	46	0	0	0	0	0	0	0	226	249	
35. Geotechnical	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTALS	818	59	59	331	258	111	0	0	0	0	0	0	0	**818**	**900**	

Field Survey Estimate:
0 4-man crew days

FIRM TOTAL	818	900	

Notes:

1. This worksheet provides the distribution of a firm's total staff hours for a project.
2. Percentages for staff hour distribution by classification are entered below in rows 63 to 96 of this sheet.
3. Total Staff Hours (column O) may not match staff hours from Summary worksheet (column B) due to rounding. Staff hours calculated for employee classifications are to be adjusted so totals in columns B and O match.
4. Formulas under "Total Staff Hours Range" (columns O & P) may be adjusted to provide desired range.

ESTIMATE OF WORK EFFORT FOR TECHNICAL PROPOSALS - FIRM TOTAL

Financial Project Number: CFX 528-130 (Contract Number 001135)

Project Name: SR 528 / SR 436 Bridge Deck Replacem

FAP Number: 0

Date: 4/27/2016

Name of Consultant: Traffic Engineering Data Solutions, Inc.

Staff Hour Distribution Percentages - Firm Total

	Hours from "Summary" sheet Firm Total	Chief Engineer	Senior Engineer	Engineer	Sr. Designer	Engineering Intern	Admin	Staff Classification 7	Staff Classification 8	Staff Classification 9	Staff Classification 10	Staff Classification 11	Staff Classification 12	Total
3. Project General and Project Common Tasks	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
4. Roadway Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
5. Roadway Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
6a. Drainage Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
6b. Drainage Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
7. Utilities	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
8. Environmental Permits, Compliance & Clearances	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
9. Structures - Misc. Tasks, Dwgs, Non-Tech.	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
10. Structures - Bridge Development Report	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
11. Structures - Temporary Bridge	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
12. Structures - Short Span Concrete Bridge	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
13. Structures - Medium Span Concrete Bridge	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
14. Structures - Structural Steel Bridge	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
15. Structures - Segmental Concrete Bridge	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
16. Structures - Movable Span	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
17. Structures - Retaining Walls	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
18. Structures - Miscellaneous	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
19. Signing & Pavement Marking Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
20. Signing & Pavement Marking Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
21. Signalization Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
22. Signalization Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
23. Lighting Analysis	241	10.0%	10.0%	50.0%	30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
24. Lighting Plans	134	10.0%	10.0%	49.0%	31.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
25. Landscape Architecture Analysis	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
26. Landscape Architecture Plans	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
27. Survey (Field & Office Support)	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
28. Photogrammetry	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
29. Mapping	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
30. Terrestrial Mobile LiDAR	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
31. Architecture Development	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
32. Noise Barriers Impact Design Assessment	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
33. Intelligent Transportation Systems Analysis	217	5.0%	5.0%	30.0%	30.0%	30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
34. Intelligent Transportation Systems Plans	226	5.0%	5.0%	35.0%	35.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%
35. Geotechnical	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%

23. Lighting Analysis

Estimator:

SR 528 / SR 436 Bridge Deck Replacement
CFX 528-130 (Contract Number 001135)

Representing	Print Name	Signature / Date
FDOT District		
Consultant Name		

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	68	68	redesign of underdeck design to LED for two bridges (36 hrs) + redesign of lighting for 4 overhead signs @ 8 hrs each
23.3	Aeronautical Evaluation	LS	0	0	0	assumes no impact to high mast lighting and no fixtures required on the new bridge structures
23.4	Voltage Drop Calculations	LS	1	24	24	voltage calcs for the underdecks to include the LED remote driver cabinet.
23.5	FDEP Coordination and Report	LS	0	0	0	
23.6	Reference and Master Design Files	LS	1	60	60	middle range - 45 hrs setup +.25 miles @ 60 hrs per mile = 60 hrs
23.7	Temporary Lighting	LS	1	16	16	Assuming no impacts to existing high mast lighting, impacting 4 overhead signs x 4 hrs
23.8	Design Documentation	LS	1	8	8	
23.9	Quantities	LS	1	8	8	based on 4 sheets * 2 hrs
23.10	Cost Estimate	LS	0	0	0	
23.11	Technical Special Provisions	LS	0	0	0	
23.12	Other Lighting Analysis	LS	0	0	0	
	Lighting Analysis Technical Subtotal				**184**	
23.13	Field Reviews	LS	1	16	16	2 field reviews
23.14	Technical Meetings	LS	1	12	12	
23.15	Quality Assurance/Quality Control	LS	%	7%	13	
23.16	Independent Peer Review	LS	%	0%	0	
23.17	Supervision	LS	%	5%	9	
	Lighting Analysis Nontechnical Subtotal				**50**	
23.18	Coordination	LS	%	3%	7	
	23. Lighting Analysis Total				**241**	

23. Lighting Analysis

Technical Meetings	Units	No of Units	Hours/ Unit	Total Hours	PM Attendance at Meeting Required?	Number
FDOT Lighting Design	EA	1	4	4		0
FDOT Traffic Design	EA	0	0	0		0
Power Company (service point coordination)	EA	1	4	4		0
Maintaining Agency (cities, counties)	EA	1	4	4		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	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 23.14

Carries to Tab 3

24. Lighting Plans

Estimator:

SR 528 / SR 436 Bridge Deck Replacement
CFX 528-130 (Contract Number 001135)

Representing	Print Name	Signature / Date
FDOT District		
Consultant Name		

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	no map required
24.2	Summary of Pay Items Including Designer Interface (TRNS•Port) Input		Sheet	0	0	0	0	
24.3	Tabulation of Quantities		Sheet	1	12	1	12	on tab sheet required
24.4	General Notes/Pay Item Notes		Sheet	1	4	1	4	on notes sheet
24.5	Pole Data, Legend and Criteria		Sheet	1	20	1	20	
24.6	Service Point Details		Sheet	1	8	1	8	
24.7	Project Layout		Sheet	1	6	1	6	
24.8	Plan Sheet		Sheet	2	3	2	6	
24.9	Special Details		Sheet	3	12	3	36	1) conduit routing under the bridge, 2) detail sheet for each LED driver cabinet x 2
24.10	Temporary Lighting Data and Details		Sheet	2	12	2	24	Assuming no impacts to existing high mast lighting, impacting 2 overhead sign structures
24.11	Traffic Control Plan Sheets		Sheet	0	0	0	0	Assuming no impacts to existing high mast lighting
24.12	Interim Standards		LS	1	0		0	
				Lighting Plans Technical Subtotal		**13**	**120**	
24.13	Quality Assurance/Quality Control		LS	%	7%		8	
24.14	Supervision		LS	%	5%		6	
					24. Lighting Plans Total	**13**	**134**	

33. ITS Analysis

Estimator: Alex Mims - TEDS

SR 528 / SR 436 Bridge Deck Replacement
CFX 528-130 (Contract Number 001135)

Representing	Print Name	Signature / Date
FDOT District		
Consultant Name		

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	8	8	Review existing documents related to current ITS System and Components. Including power and communication design of existing system.
33.2	Communications Plan Analysis	LS	1	16	16	Design communication system for relocation of impacted FON or devices. Also if new devices are required or desired for additonal detection coverage.
33.3	Lightning Protection Analysis	Per Site	0	0	0	If required standard CFX details will be used.
33.4	Power Subsystem	LS	1	24	24	Design power system for relocated device sites, or any new sites required. Includes design of replacement eletrical system if existing is impacted.
33.5	Voltage Drop Calculations	LS	1	2	2	Voltage drop for relocated device sites, or any new sites required. Includes design of replacement conductors if existing are impacted.
33.6	Design Documentation	LS	1	16	16	Document coordination with various agencys affected. Includes discussions with UAO that may be sharing FON duct bank.
33.7	Existing ITS System	LS	1	16	16	Review existing system and determine how to protect from proposed construction--pile driving, deconstruction of existing bridges, etc. Existing DCS antenna mounted to bridge being replaced.
33.8	Queue Analysis	PI	0	0	0	Not anticipated to be required for ITS system.
33.9	Reference and Master ITS Design File	PI	1	22	22	Establish Master Design File (Low Range) for a Single Interchange
33.10	Reference and Master Communications Design File	PI	1	16	16	Establish Master Communication File (Low Range) for a Single Interchange
33.11	Pole Elevation Analysis	LS	0	0	0	If new poles are required--use standard CFX strucutres.
33.12	Sign Panel Design Analysis	LS	0	0	0	No new static sign panels for ITS required (HAR, etc.)
33.13	Quantities	Sheet	10	3	30	10 ITS Plans Sheets (1"=50')
33.14	Cost Estimate	LS	1	12	12	4 Submittals - 1 Hrs for LRE and 2 Hrs for EOPC each
33.15	Technical Special Provisions	LS	0	0	0	No TSP expected outside of CFX specifications
33.16	Other ITS Analyses	LS	1	2	2	Coordinate with Lowering Device Manufacture to determine if replacement is required to accommodate new HD CCTV camera for CCTV 528-10.8
	Intelligent Transportation Systems Analysis Technical Subtotal				**164**	

33. ITS Analysis

Task No.	Task	Units	No of Units	Hours/ Unit	Total Hours	Comments
33.17	Field Reviews	LS	1	12	12	1 Field Reivew of existing conditions - 2 Staff Members @ 6 Hours (includes drive time)
33.18	Technical Meetings	LS	1	16	16	Meetings are listed below
33.19	Quality Assurance/Quality Control	LS	%	7%	11	Mid-Range for QA-QC of plans
33.20	Supervision	LS	%	5%	8	Low-Range for Supervision
Intelligent Transportation Systems Analysis Nontechnical Subtotal					**47**	
33.21	Coordination	LS	%	3%	6	Coordinate MOT and Strucutres with ITS device detection. Will need to relocate detectors (or adjust) for MOT phasing and temporary bridge.
33. Intelligent Transportation Systems Analysis Total					**217**	

Technical Meetings	Units	No of Units	Hours/ Unit	Total Hours	PM Attendance at Meeting Required?	Number
Kickoff Meeting with FDOT	EA	1	4	4	yes	0
Local Governments (cities, counties, MPO)	EA	2	4	8	no	0
Utility Owners	EA	0	0	0		0
Field Meetings	EA	1	4	4	no	0
Other Meetings	EA	0	0	0		0
Subtotal Technical Meetings				**16**	**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				**16**	**Total Project Manager Meetings (carries to Tab 3)**	**0**

Carries to 33.18

Carries to Tab 3

34. ITS Plans

Estimator: Alex Mims - TEDS

SR 528 / SR 436 Bridge Deck Replacement
CFX 528-130 (Contract Number 001135)

Representing	Print Name	Signature / Date
FDOT District		
Consultant Name		

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	N/A	Sheet	1	4	1	4	Component Set (No Key Map)
34.2	Summary of Pay Items-including Designer Interface (Trns•port) Input	N/A	Sheet	0	0	0	0	Component Set
34.3	Tabulation of Quantities	N/A	Sheet	1	8	1	8	One sheet expected.
34.4	General Notes/Pay Item Notes	N/A	Sheet	2	6	2	12	Mid-Range to modify standard general notes provided by CFX. ITS is typically at least two sheets.
34.5	Project Layout	TBD.	Sheet	1	4	1	4	Low-Range for Single Project Layout Sheet
34.6	Typical and Special Details	N/A	Sheet	5	4	5	20	Use CFX standards as starting point (Low-Range). Includes grounding, cabinet wiring, and installation details. Develop detail for replacement of lowering device to accommodate new HD CCTV camera, will be based on information gathered from lowering device manufacturer.
34.7	Plan Sheet	1'=50'	Sheet	10	6	10	60	Low-Range for 10 Plan Sheets (1"=50' scale for 1.25 miles)
34.8	ITS Communications Plans	N/A	Sheet	1	6	1	6	Mid-Range for preparing a network block diagram for local system–single sheet.
34.9	Fiber Optic Splice Diagrams	N/A	Sheet	5	4	5	20	Low-Range for four splicing sheets. Includes backbone splicing and drop fiber splicing/terminating as needed.
34.10	Lightning Protection Plans	N/A	Sheet	0	0	0	0	Included in special details. Use standard CFX details.
34.11	Cross Sections	TBD.	Sheet	0	0	0	0	
34.12	Guide Sign Worksheet(s)	N/A	Sheet	0	0	0	0	
34.13	Special Service Point Details	N/A	Sheet	1	4	1	4	No new power services are anticipated, but documenting existing components likely required (Low-Range).
34.14	Strain Pole Schedule	N/A	Sheet	0	0	0	0	
34.15	Overhead/Cantilever Sign Structure	N/A	Sheet	0	0	0	0	
34.16	Other Overhead Sign Structures (Long Span, Monotube, etc.)	N/A	Sheet	0	0	0	0	
34.17	Traffic Control Plans	1' = 100'	Sheet	10	6	10	60	Maintenance of Fiber Opterations and Temporary ITS Device Detection during MOT.
34.18	Interim Standards		Sheet	0	0	0	0	None anticipated for ITS. Use CFX standards and specifications.
34.19	GIS Data and Asset Management Requirements		LS	1	4	0	4	Provide GPS Coordinates for relocated or proposed device locations.
	Intelligent Transportation System Plans Technical Subtotal					**37**	**202**	
34.20	Quality Assurance/Quality Control		LS	%	7%	37	14	
34.21	Supervision		LS	%	5%	37	10	
	34. Intelligent Transportation System Plans Total					**37**	**226**	

WBQ Design and Engineering, Inc.

ESTIMATE OF WORK EFFORT AND COST - PRIME CONSULTANT

Name of Project: SR 528 / SR 436 Bridge Deck Replacements
County: Orange
FPN: 528-130
FAP No.: N/A

Consultant Name: WBQ Design & Engineering, Inc
Consultant No.: Class 1
Date: 4/18/2016
Estimator: Dan Angel

Staff Classification	Total Staff Hours From "SH Summary - Firm"	Project Manager	Staff Classification 2	Senior Utility Coordinator	Staff Classification 4	Staff Classification 5	Staff Classification 6	Contract Coordinator	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
		$0.00	$0.00	$53.06	$0.00	$0.00	$0.00	$26.75	$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	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	142	0	0	128	0	0	0	14	0	0	0	0	0	142	$7,166	$50.47
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0	#DIV/0!
Total Staff Hours	142	0	0	128	0	0	0	14	0	0	0	0	0	142		
Total Staff Cost		$0.00	$0.00	$6,791.68	$0.00	$0.00	$0.00	$374.50	$0.00	$0.00	$0.00	$0.00	$0.00		**$7,166.18**	**$50.47**

Check = $7,166.18

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:			$7,166.18
OVERHEAD:	182.49%		$13,077.56
Subtotal:			$20,243.74
Fixed Fee	11.1267%		$2,252.46
FCCM (Facilities Capital Cost Money)	0.00%		$0.00
EXPENSES:	0.00%		$0.00
Survey (Field - if by Prime	0	$ - / day	$0.00
SUBTOTAL ESTIMATED FEE:			$22,496.20
Subconsultant: Sub 12			$0.00
SUBTOTAL ESTIMATED FEE:			$22,496.20
Geotechnical Field and Lab Testing			$0.00
SUBTOTAL ESTIMATED FEE:			$22,496.20
Optional Services			$0.00

Project Activity 7: Utilities

Estimator: Dan Angel

SR 528 / SR 436 Bridge Deck Replacements
528-130

Representing	Print Name	Signature / Date
CFX		
WBQ Design & Engineering. Inc.	**Dan Angel**	

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 attendee x 2 hour duration + 1 hour travel time + 1 hour meeting minutes = 4 hours
7.2	Identify Existing Utility Agency Owners (UAO(s))	LS	4	2	8	4 UAOs: AT&T Corporation, AT&T Florida, OUC Electric Engineering and City of Orlando Wastewater Bureau
7.3	Make Utility Contacts	LS	1	16	16	1 hour per UAO x 4 UAOs x 4 contacts (60%, 90%, 100% and Bid Docs)
7.4	Exception Processing	LS	0	0	0	NA - None anticipated
7.5	Preliminary Utility Meeting	LS	1	6	6	1 hour meting prep. + 1 hour travel time + 2 hour duration + 2 hour minutes prep. = 6 hours
7.6	Individual/Field Meetings	LS	1	12	12	1 hour meting prep. + 1 hour travel time + 2 hour duration + 2 hour minutes prep. = 6 hours x 2 meetings
7.7	Collect and Review Plans and Data from UAO(s)	LS	1	16	16	1 hour per UAO x 4 UAOs x 4 contacts (60%, 90%, 100% and Bid Docs)
7.8	Subordination of Easements Coordination	LS	0	0	0	NA - None anticipated
7.9	Utility Design Meeting	LS	1	4	4	1 hour meting prep. + 1 hour travel time + 1 hour duration + 1 hour minutes prep. = 4 hours
7.10	Review Utility Markups & Work Schedules, and Processing of Schedules & Agreements	LS	1	16	16	1 hour per UAO x 4 UAOs x 4 contacts (60%, 90%, 100% and Bid Docs)
7.11	Utility Coordination/Followup	LS	1	32	32	2 hour per UAO x 4 UAOs x 4 contacts (60%, 90%, 100% and Bid Docs)
7.12	Utility Constructability Review	LS	1	4	4	1 hour per UAO x 4 UAOs
7.13	Additional Utility Services	LS	0	0	0	NA - None anticipated
7.14	Processing Utility Work by Highway Contractor (UWHC)	LS	0	0	0	NA - None anticipated
7.15	Contract Plans to UAO(s)	LS	0	0	0	NA - None anticipated
7.16	Certification/Close-Out	LS	1	8	8	1 hour per UAO x 4 UAOs
7.17	Other Utilities	LS	1	16	16	Utility Conflict Matrix - Includes set-up and full plans review with an update of all conflicts and conflict resolutions at each plan submittal phase (60%, 90%, 100% and Bid Docs)
				7. Utilities Total	**142**	

Project Activity 7: Utilities

Technical Meetings	Units	No of Units	Hours/ Unit	Total Hours	PM Attendance at Meeting Required?	Number
Kickoff (see 7.1)	EA	1	4	4		1
Preliminary Meeting (see 7.5)	EA	1	6	6		0
Individual UAO Meetings (see 7.6)	EA	1	12	12		0
Field Meetings (see 7.6)	EA	0	0	0		0
Design Meeting (see 7.9)	EA	1	4	4		1
Other Meetings *(this is automatically added into Utilities Total (cell F27))*	EA	1	0	0		0
Total Meetings				**26**	**Total Project Manager Meetings (carries to Tab 3)**	**2**

Carries to Tab 3

ESTIMATE OF WORK EFFORT AND COST - PRIME CONSULTANT

Name of Project: SR 528 / SR 436 Bridge Deck Replacements
County: Orange
FPN: CFX 528-130
FAP No.: N/A

Consultant Name: WBQ Design & Engineering, Inc.
Consultant No.: Class 2
Date: 4/26/2016
Estimator: D Williams

Staff Classification	Total Staff Hours From "SH Summary - Firm"	Sr. Utility Coordinator	Sr. Surveyor & Mapper	Surveyor & Mapper	Survey Technician	Contract Coordinator	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
		$0.00	$55.48	$35.00	$24.21	$0.00	$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	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	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	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)	241	0	36	48	157	0	0	0	0	0	0	0	0	241	$7,478	$31.03
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	241	0	36	48	157	0	0	0	0	0	0	0	0	241		
Total Staff Cost		$0.00	$1,997.28	$1,680.00	$3,800.97	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00		**$7,478.25**	**$31.03**

Check = $7,478.25

Survey Field Days by Subconsultant	
4 - Person Crew:	

SALARY RELATED COSTS:				$7,478.25
Total Multiplier		3.14		$23,481.71
Survey (Field - if by Prime)	41	4-man crew 10 hr days @	$ 2,135.60 / day	$87,559.60
SUBTOTAL ESTIMATED FEE:				**$111,041.31**
Subconsulta Enter Name Sub 1				$0.00
Subconsulta Sub 2				$0.00
SUBTOTAL ESTIMATED FEE:				**$111,041.31**
Geotechnical Field and Lab Testing				$0.00
SUBTOTAL ESTIMATED FEE:				**$111,041.31**
Optional Services				$0.00
GRAND TOTAL ESTIMATED FEE:				**$111,041.31**

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.

27. Survey

Estimator: D. Williams

Staff Hours

4/25/2016 rev2

SR 528 / SR 436 Bridge Deck Replacements

CFX 528-130

Representing	Print Name	Signature / Date
CFX	Vance Carper	
WBQ	Danny Williams	

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									Research, Recon, Recover and Establish Project Horizontal Control. Will Utilize AAF Control Map as Prepared By AMEC Foster Wheeler to maintain harmony with adjacent projects. (4000' of SR 528; 2000' of SR 436 SB; 2000' of NB 436). Includes office time to develop CTL sheets for plan set
	2-Lane Roadway	Mile			0.00		0.00		0.00	
	Multi-lane Roadway	Mile			0.00		0.00		0.00	
	Interstate	Mile	3.00	1.67	5.00	0.50	2.50	5.00	25.00	
27.2	Vertical PC / Bench Line									Research, Recon, Recover and Establish Project Vertical Control. Will Utilize AAF Control Map as Prepared By AMEC Foster Wheeler to maintain harmony with adjacent projects
	2-Lane Roadway	Mile			0.00		0.00		0.00	
	Multi-lane Roadway	Mile			0.00		0.00		0.00	
	Interstate	Mile	3.00	0.75	2.25	0.50	1.13	4.00	9.00	
27.3	Alignment and Existing R/W									Research Recover and develop Right of Way file
		Mile	3.00	1.75	5.25	1.50	7.88	5.00	26.25	
27.4	Aerial Targets			Units/Day						N/A
	2-Lane Roadway	EA			0.00		0.00		0.00	
	Multi-lane Roadway	EA			0.00		0.00		0.00	
	Interstate	EA			0.00		0.00		0.00	
27.5	Reference Points	"A"		Units/Day						N/A
	2-Lane Roadway	EA			0.00		0.00		0.00	
	Multi-lane Roadway	EA			0.00		0.00		0.00	
	Interstate	EA			0.00		0.00		0.00	
	Reference Points	"B"		Units/Day						
	Non Alignment	EA			0.00		0.00		0.00	
27.6	Topography/DTM (3D)									Develop topographic 3D DTM of project limits. (4000' of SR 528; 2000' of SR 436 SB; 2000' of NB 436)
		Mile	2.00	6.00	12.00	0.50	6.00	4.00	48.00	
27.7	Planimetric (2D)									N/A
		Mile			0.00		0.00		0.00	
27.8	Roadway Cross-									N/A
		Mile			0.00		0.00		0.00	
27.9	Side Street Surveys									N/A
		Mile			0.00		0.00		0.00	

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
27.10	Underground Utilities									
	Designates	Mile/Site			0.00		0.00		0.00	N/A
	Locates	Point			0.00		0.00		0.00	
	Survey		0%	0.00	0.00		0.00		0.00	
27.11	Outfall Survey									
		Mile			0.00		0.00		0.00	N/A
27.12	Drainage Survey			Units/Day						Drainage Structures in Project Limits. Assume 20 structures
		EA	20.00	16.00	1.25	0.50	0.63	4.00	5.00	
27.13	Bridge Survey									3 bridges to survey as directed by EOR. southbound S.R. 436 bridge over S.R. 528, the southbound S.R. 436 bridge over Ramp M and the northbound S.R. 436 bridge over S.R. 528.
	Minor / Major	EA	3.00	3.00	9.00	0.50		6.00	54.00	
27.14	Channel Survey									
		EA			0.00		0.00		0.00	N/A
27.15	Pond Site Survey									
		EA			0.00		0.00		0.00	N/A
27.16	Mitigation Survey									
		Mile			0.00		0.00		0.00	N/A
27.17	Jurisdiction Line Survey									
		Mile			0.00		0.00		0.00	N/A
27.18	Geotechnical Support			Units/Day						
		EA	50	25	2.00	0.50	1.00	4.00	8.00	assume 50 geotech holes to be surveyed
27.19	Sectional / Grant Survey									
		Corner			0.00		0.00		0.00	N/A
		Mile			0.00		0.00		0.00	
27.20	Subdivision Location									
		Block			0.00		0.00		0.00	N/A
27.21	Maintained R/W									
		Mile			0.00		0.00		0.00	N/A
27.22	Boundary Survey									
		EA			0.00		0.00		0.00	N/A
27.23	Water Boundary Survey									
		EA			0.00		0.00		0.00	N/A
27.24	R/W Staking / R/W Line									
		EA			0.00		0.00		0.00	N/A
		Mile			0.00		0.00		0.00	
27.25	R/W Monumentation									
		Point			0.00		0.00		0.00	N/A
27.26	Line Cutting									
		Mile			0.00					N/A

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
27.27	Work Zone Safety									As required to maintain safe work zone
			37	0.125	4.63					
27.28	Miscellaneous Surveys									N/A
					0.00		0.00		0.00	
Survey Subtotal				**Crew Days**	**41**	**Field Support Hours**	**19**	**Office Support Hours**	**175**	
27.29	Supplemental Surveys									N/A
				10	0		0		0	
27.30	Document Research	Units								Research Review AAF R/W and Control information
			6.00						6	
27.31	Field Reviews	Units								2 field reviews
			6.00						6	
27.32	Technical Meetings	LS								meetings as required for coordination and approvals
			10.00						10	
27.33	Quality Assurance / Quality Control	LS								
								5%	9	
27.34	Supervision	LS								
								5%	11	
27.35	Coordination	LS								
								3%	5	
27. Survey Total				**Crew Days**	**41**	**Field Support Hours**	**19**	**Office Support Hours**	**222**	

SPLS =
PLS =
Office Support =
Total Hours = 241

Technical Meetings	Units	No of Units	Hours/ Unit	Total Hours	PM Attendance at Meeting Required?	Number
Kickoff Meeting with FDOT	EA	1	2	2		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	3	2	6		0
Subtotal Technical Meetings				**8**	**Subtotal PM Meetings**	**0**
Progress Meetings (if required by FDOT)	EA	0	0	0	**	- -
Phase Review Meetings	EA	1	2	2	**	- -
Total Meetings				**10**	**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**

EXHIBIT D

PROJECT ORGANIZATIONAL CHART

ORGANIZATION CHART

FIRM INDEX

1–TYLI
2–WBQ
3–NES
4–TEDS

CENTRAL FLORIDA EXPRESSWAY AUTHORITY
Glenn Pressimone, PE
Director of Engineering

PROJECT MANAGER
Xavier Arroyo, PE[1]

MANAGEMENT TEAM

Principal-in-Charge
James Moreno, PE[1]

Orlando Operations Manager
Jennifer Lewis, PE[1]

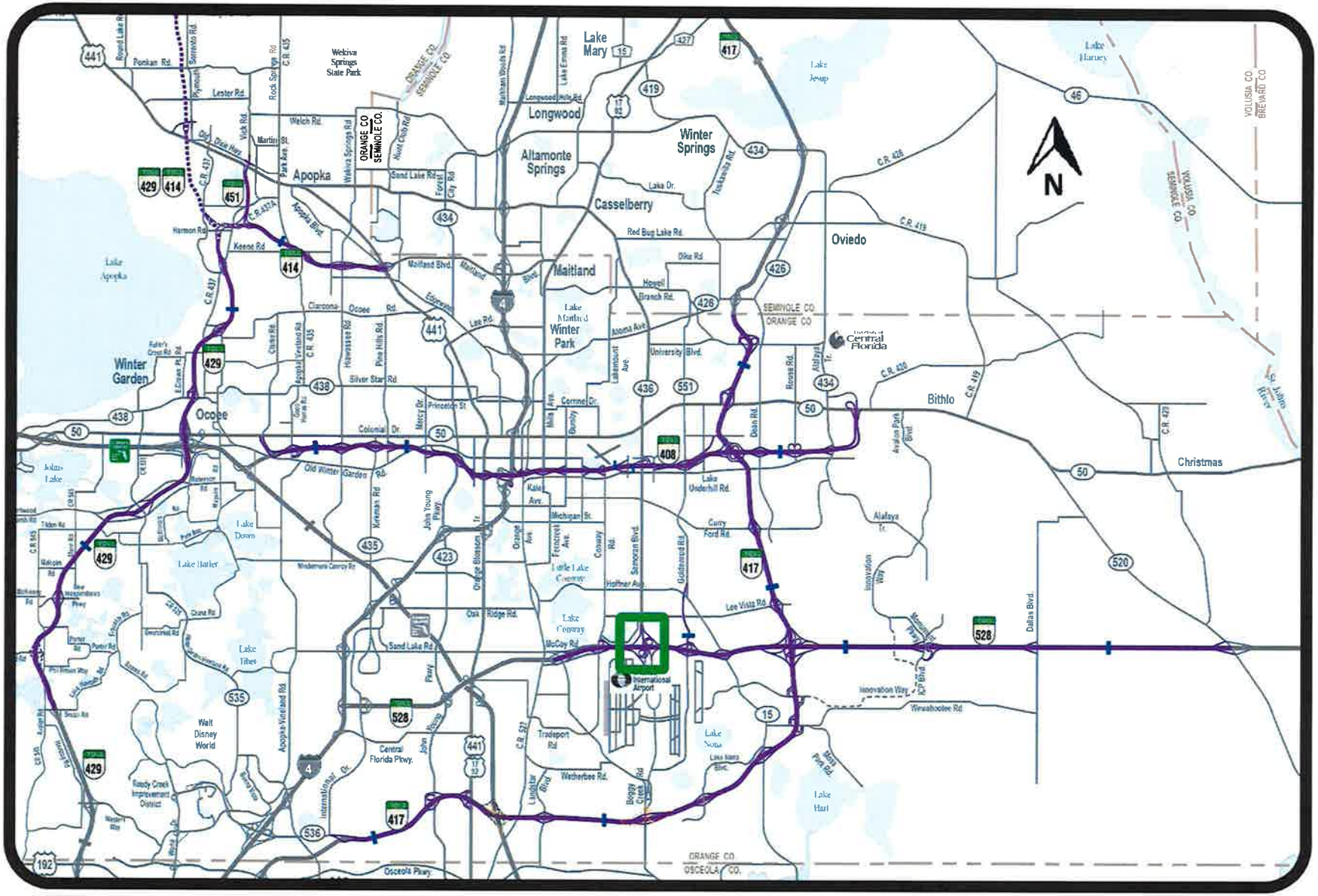
TECHNICAL ADVISOR
Boon Chong, PE[1]

HIGHWAY DESIGN	MOT	STRUCTURES DESIGN	LIGHTING	ITS	DRAINAGE/PERMITTING
Jitesh Gajera, PE[1]	John Salatino, PE[1]	Atiq Alvi, PE[1]	Enrique Sosa, PE[1]	Fred Ferrell, PE[4]	Isabel Nayab, PE[1]
Shahriar Mahmood, PE[1]	Matthew Crosby, PE[1]	Ivan Gualtero, PE[1] Giovanni Orellana, PE[1]	Brian Werner, PE[1]	Alex Mims, PE[4]	Clark Brandt, PE[1]

SIGNING & PAVEMENT MARKING/SIGNALS	DESIGN SURVEY/ LIDAR	UTILITY COORDINATION	GEOTECHNICAL	ENVIRONMENTAL
Ramfis Morales, PE[1]	Danny Williams III, PSM[2]	Dan Angel, CCS[2]	Godwin Nnadi, PhD, PE[3]	Colin Henderson[1]

EXHIBIT E

PROJECT LOCATION MAP



Project Location Map for
S.R. 528 / S.R. 436 Bridge Deck Replacement (528-130)

EXHIBIT F

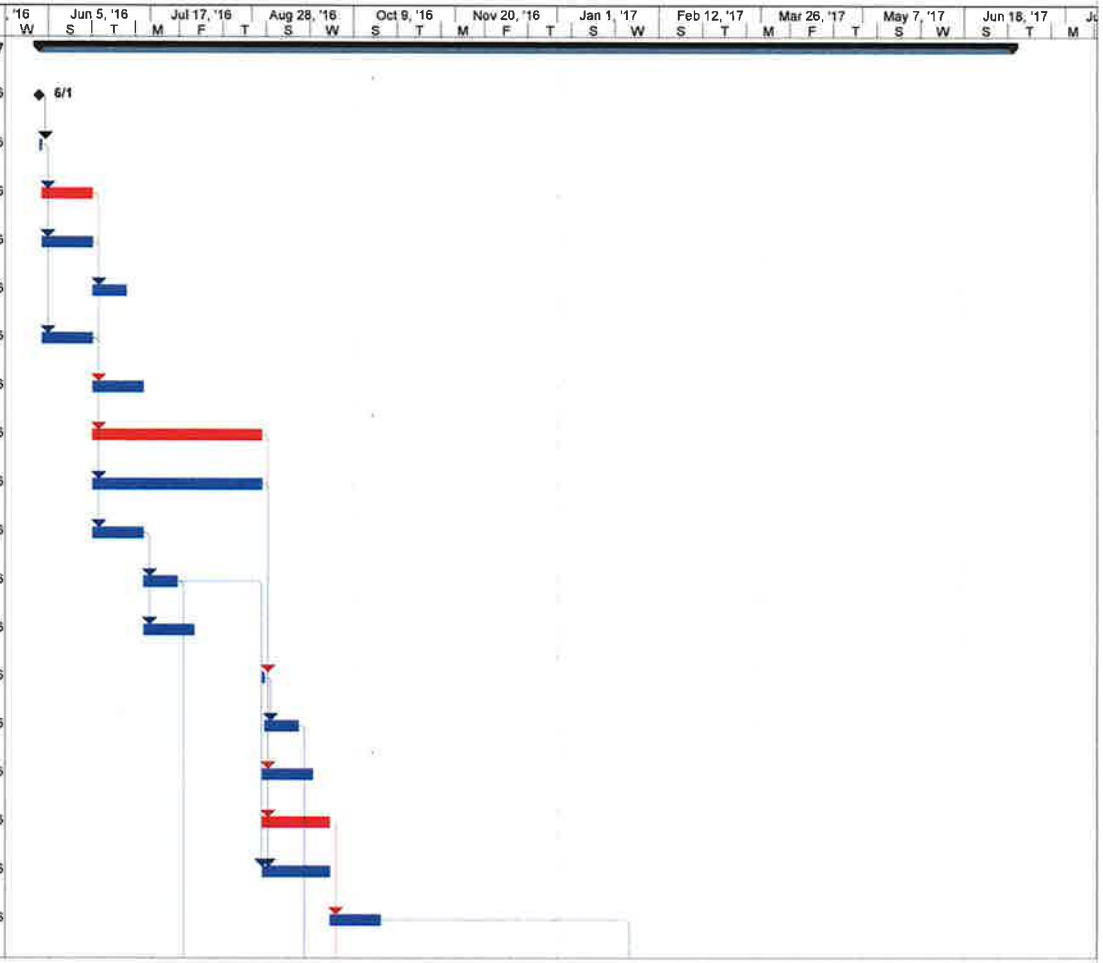
SCHEDULE

SR 436 over SR 528 Bridge Deck Replacement Project
CFX Project No. 528-130

SR 436 OVER SR 528 BRIDGE
Schedule

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ID	Task Name	Duration	Start	Finish
1	**CFX BRIDGE DECK REPLACEMENT PROJECT**	**288 days**	**Wed 6/1/16**	**Fri 7/7/17**
2	NOTICE TO PROCEED	0 days	Wed 6/1/16	Wed 6/1/16
3	KICK-OFF MEETING	1 day	Wed 6/1/16	Wed 6/1/16
4	PREPARE SURVEY (DESIGN / ROW / BRIDGE)	15 days	Thu 6/2/16	Wed 6/22/16
5	PERFORM BRIDGE INSPECTION AND PAVEMENT SURVEY	15 days	Thu 6/2/16	Wed 6/22/16
6	PAVEMENT DESIGN	10 days	Thu 6/23/16	Wed 7/6/16
7	PHASE I GEOTECH FIELD INVESTIGATIONS	15 days	Thu 6/2/16	Wed 6/22/16
8	CFX REVIEW SURVEY (DESIGN / ROW / BRIDGE)	15 days	Thu 6/23/16	Wed 7/13/16
9	PREPARE PH I (30%) DESIGN PLANS	50 days	Thu 6/23/16	Wed 8/31/16
10	PREPARE PH II (30%) PLANS/BDR	50 days	Thu 6/23/16	Wed 8/31/16
11	PHASE I GEOTECH LAB TESTING	15 days	Thu 6/23/16	Wed 7/13/16
12	PHASE I GEOTECH REPORT	10 days	Thu 7/14/16	Wed 7/27/16
13	PH I ROADWAY SOIL SURVEY / REPORT	15 days	Thu 7/14/16	Wed 8/3/16
14	TYPICAL SECTION 1ST SUBMITTAL	1 day	Thu 9/1/16	Thu 9/1/16
15	UTILITY CONTACT	10 days	Fri 9/2/16	Thu 9/15/16
16	PROCESS EXCEPTIONS / VARIANCES	15 days	Thu 9/1/16	Wed 9/21/16
17	CFX REVIEW PH I (30%) DESIGN PLANS	20 days	Thu 9/1/16	Wed 9/28/16
18	CFX REVIEW PH I (30%) BRIDGE PLANS/BDR	20 days	Thu 9/1/16	Wed 9/28/16
19	PREPARE BRIDGE LOAD RATING	15 days	Thu 9/29/16	Wed 10/19/16



TYLIN INTERNATIONAL
12802 Tampa Oaks Blvd. Suite 245

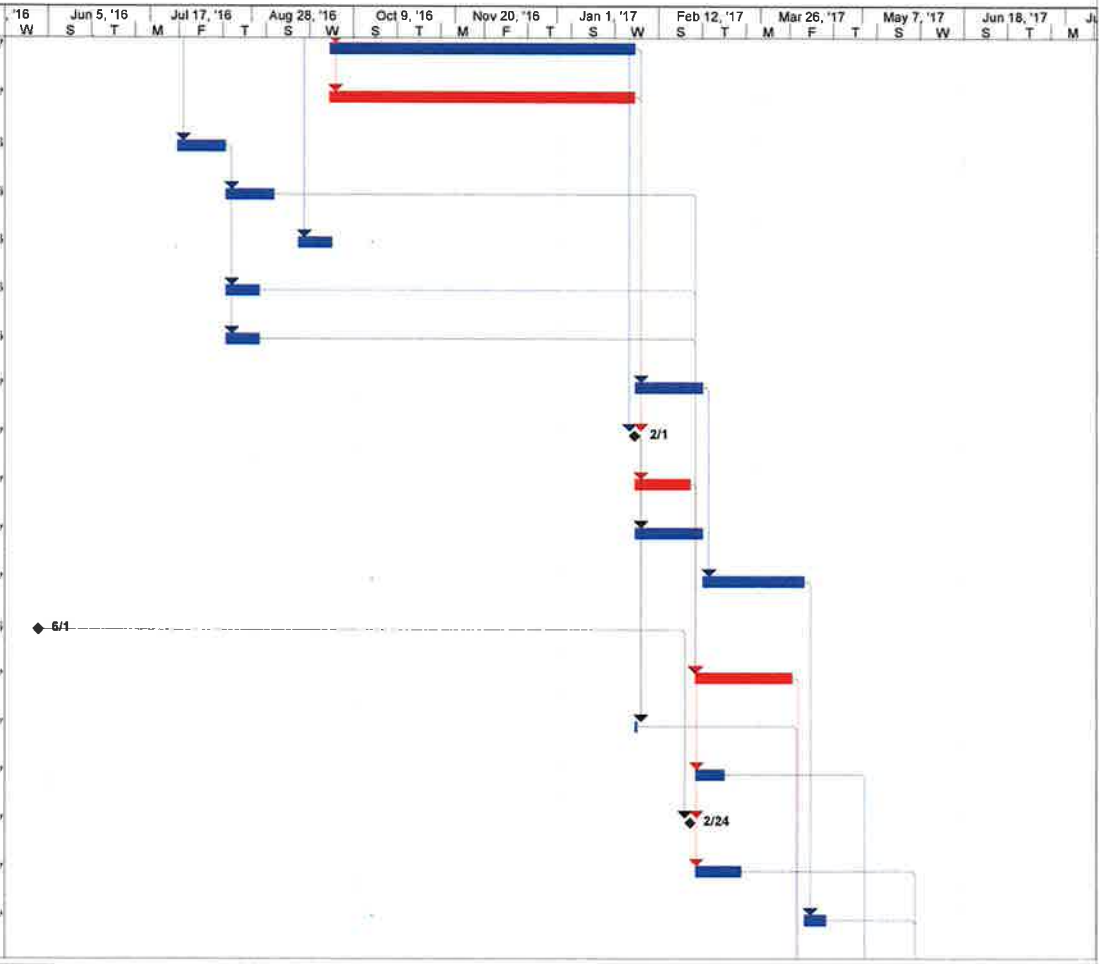
Task | Split | Milestone | Summary | Project Summary | External Tasks | External Milestone | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | Critical | Critical Split | Progress | Deadline

SR 436 over SR 528 Bridge Deck Replacement Project
CFX Project No. 528-130

SR 436 OVER SR 528 BRIDGE
Schedule

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ID	Task Name	Duration	Start	Finish
20	PREPARE PH III (90%) DESIGN PLANS	90 days	Thu 9/29/16	Wed 2/1/17
21	PREPARE PH III (90%) BRIDGE PLANS	90 days	Thu 9/29/16	Wed 2/1/17
22	PHASE II GEOTECH FIELD INVESTIGATIONS	14 days	Thu 7/28/16	Tue 8/16/16
23	PHASE II GEOTECH LAB TESTING	14 days	Wed 8/17/16	Mon 9/5/16
24	UTILITY DEPENDANT TIME TO PROJECT MANAGER	10 days	Fri 9/16/16	Thu 9/29/16
25	PHASE II GEOTECH ANALYSIS & REPORT	10 days	Wed 8/17/16	Tue 8/30/16
26	PH II ROADWAY SOIL SURVEY / REPORT	10 days	Wed 8/17/16	Tue 8/30/16
27	CFX REVIEW PH III (90%) DESIGN PLANS	20 days	Thu 2/2/17	Wed 3/1/17
28	SUBMIT BRIDGE LOAD RATING	0 days	Wed 2/1/17	Wed 2/1/17
29	CFX REVIEW PH III (90%) BRIDGE PLANS	17 days	Thu 2/2/17	Fri 2/24/17
30	CFX REVIEW BRIDGE LOAD RATING	20 days	Thu 2/2/17	Wed 3/1/17
31	PREPARE PH IV (100%) DESIGN PLANS	30 days	Thu 3/2/17	Wed 4/12/17
32	REVISE UTILITY RELOCATION SCHEDULES (Not Anticipated)	0 days	Wed 6/1/16	Wed 6/1/16
33	PREPARE PH IV (100%) BRIDGE PLANS	30 days	Mon 2/27/17	Fri 4/7/17
34	BRIDGE LOAD RATING APPROVED	1 day	Thu 2/2/17	Thu 2/2/17
35	PHASE III GEOTECH ANALYSIS	10 days	Mon 2/27/17	Fri 3/10/17
36	UTILITIES CERTIFIED	0 days	Fri 2/24/17	Fri 2/24/17
37	ROADWAY GEOTECHNICAL CONCURRENCE	15 days	Mon 2/27/17	Fri 3/17/17
38	PH IV (100%) DESIGN PLANS ESTIMATE	7 days	Thu 4/13/17	Fri 4/21/17



TYLIN INTERNATIONAL
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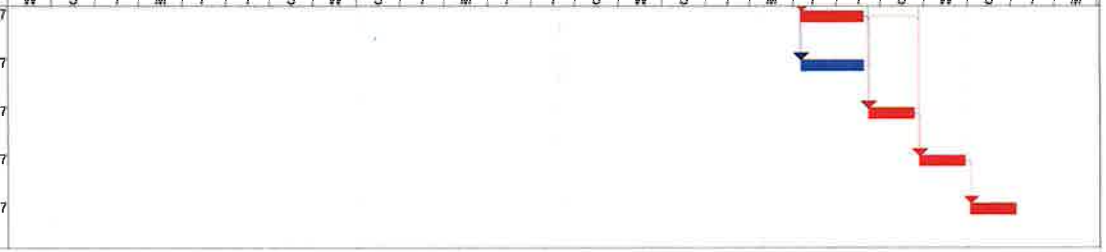
Task | Split | Milestone | Summary | Project Summary | External Tasks | External Milestone | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | Critical | Critical Split | Progress | Deadline

SR 436 over SR 528 Bridge Deck Replacement Project
CFX Project No. 528-130

SR 436 OVER SR 528 BRIDGE
Schedule

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

ID	Task Name	Duration	Start	Finish
39	CFX REVIEW PH IV (100%) DESIGN PLANS	20 days	Mon 4/10/17	Fri 5/5/17
40	CFX REVIEW PH IV (100%) BRIDGE PLANS	20 days	Mon 4/10/17	Fri 5/5/17
41	BRIDGE GEOTECHNICAL CONCURRENCE	15 days	Mon 5/8/17	Fri 5/26/17
42	PREPARE/SUBMIT PRE-BID PLAN SET	15 days	Mon 5/29/17	Fri 6/16/17
43	PREPARE/SUBMIT BID SET TO CFX	15 days	Mon 6/19/17	Fri 7/7/17



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Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Critical
Split	External Tasks	Inactive Summary	Manual Summary	Critical Split
Milestone	External Milestone	Manual Task	Start-only	Progress
Summary	Inactive Task	Duration-only	Finish-only	Deadline