DANNENBAUM ENGINEERING CORPORATION
LAREDO OFFICE:
8610 MCPHERSON, SUITE 130 LAREDO, TEXAS 78040 (956)712-9817 OFFICE (956)712-9857 FAX

December 6, 2016

Webb County
1620 Santa Ursula, 2nd Floor
Laredo, Texas 78040

Attn: ***Luis Perez Garcia, P.E.***
Webb County Engineer

Ref: ***Supplemental Agreement No. 7 to Main Contract - (TxDOT CSJ 0086-14-058) is Adding Engineering Services/Fee and the New (TxDOT CSJ 0086-14-910) Defined as R.O.W / Utilities and PS&E for Loop 20 Main Lanes and Frontage Roads from Sta. 257+85.56 to Just North of Loop 20 / US 59 Overpass (Sta. 115+5.40)(TxDOT CSJ 0086-14-910)(Loop 20 Extension)***

Subj: ***Supplemental Agreement No. 7 to Main Contract***

Dear Mr. Perez Garcia,

Please find attached herewith: three (3) partially executed copies of Supplemental Agreement No. 7 to Main Contract for Engineering Services for the above referenced project, each bearing an original signature. This Supplemental No. 7 is adding TxDOT CSJ: 0086-14-910 defined as R.O.W./Utilities and PS&E for Loop 20 Mainlanes and frontage roads from Sta. 257+85.56 to just North of Loop 20/US 59 Overpass (Sta. 115+5.40) including offsite detention ponds (Work Authorization No. 3). This Supplemental Agreement No. 7 to the Main Contract is being increased by Work Authorization No. 3 for PS&E (TxDOT CSJ: 0086-14-910) of **$4,937,340.65** increasing the total Main Contract to **$7,680,965.70**.

The Laredo MPO voted to provide funding for the R.O.W/Utilities; and as well as PS&E including offsite detention ponds. TxDOT set up CSJ: 0086-14-910 for this section (Work Authorization No. 3) utilizing the design/bid/build delivery method. The engineering contract between Webb County and Dannenbaum TxDOT CSJ: 0086-14-058 allows for the contract to be amended if design/bid/build is chosen as the delivery method.

Please execute each of the three (3) copies of Supplemental Agreement No. 7 to Main Contract using blue ink. Thereafter, please retain one (1) original for your files, transmit one (1) original to TxDOT, and return one (1) original to our office for our records.

Provided below in Attachment E-2 in this Supplemental No. 7 to Main Contract are the justifications for the man-hours for the disciplines of the work required to provide services for the development of Proposed Work Authorization No. 3 for the R.O.W/utilities and PS&E including offsite detention ponds for TxDOT CSJ 0086-14-910.

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Should you have any questions or require further information regarding this matter, please contact me at your earliest convenience by telephone at (956) 682-3677 or by email at louis.jones@dannenbaum.com or Anthony Garza (956) 639-2404 or by email at Anthony.garza@dannenbaum.com.

Sincerely,

Louis H. Jones, P.E.
Principal

cc:	File No. 4688-01	Dannenbaum Engineering Corporation
	Richard D. Seitz, P.E.	Dannenbaum Engineering Corporation
	Nathaniel Olivarez, P.E.	Dannenbaum Engineering Corporation
	Cynthia M. Luera	Dannenbaum Engineering Corporation

Letter Inclusions: 1. Three (3) partially executed copies of Supplemental Agreement No. 7 to the Main Contract for Engineering Services for the above referenced project, each bearing an original signature.

CONTRACT FOR ENGINEERING SERVICES
SUPPLEMENTAL AGREEMENT NO. 7 to the MAIN CONTRACT

THIS SUPPLEMENTAL AGREEMENT to The Main Contract for Engineering Services is made by and between the County of Webb, a subdivision of the State of Texas, hereinafter called "County" and Dannenbaum Engineering Corporation, having its principal business address at 8610 McPherson Road, Laredo, Texas 78045 hereinafter called "Engineer," for the purpose of contracting for engineering services.

BACKGROUND

The County and the Engineer executed a Contract on August 2013 for engineering services generally described as preliminary engineering, including the preparation of schematics, environmental documents and right of way parcel maps, to support a possible future design/build project, and if design/build is not chosen as the preferred method of project delivery, then the County may amend the Contract to include the development of PS&E. This Supplemental No. 7 to the Main Contract add will the R.O.W./Utilities and PS&E for Loop 20 main lanes and frontage roads from Sta. 257+85.56 to Just North of Loop 20 / US 59 Overpass Sta. 115+85.40 (approximately 2.69 miles) (TxDOT CSJ 0086-14-910) (Work Authorization No. 3) situated in Webb County, Texas.

The Contract was amended by Supplemental Agreements 1, 2, 3, 4, 5, and 6 to reflect revisions to the Scope of Services to be provided by the Engineer. (Last revision was on 11/1/2016) for the Phase I-Advanced Project Development Services (FC110).

The Laredo MPO voted to provide funds to Webb County (Loop 20 Sponsor) to provide the necessary services for the development of PS&E including required detention ponds for the project generally described as Loop 20 Mainlanes; Airport and Jacaman Grade Separations and frontage roads from US 59/Loop 20 Overpass (Sta. 115+85.40) to just North of Jacaman approximately (Sta. 257+85.56) and TxDOT added this project under CSJ: 0086-14-910. This CSJ: 0086-14-910 will be added to this contract by approval of this Supplemental No. 7 to Main Contract.

AGREEMENT

The County and the Engineer agree that the Contract is amended as follows:

ARTICLE 1. SCOPE OF SERVICES.

The original scope of services in the Main Contract is amended by this Supplemental Agreement No. 7 to include:

ARTICLE 2. CONTRACT PERIOD.

This Supplemental Agreement No. 7 to the Main Contract becomes effective when fully executed by all parties hereto and it shall terminate at the close of business on **August 1, 2020** unless the contract period is: (1) modified by written supplemental agreement prior to the date of termination as set forth in Attachment A, General Provisions, Article 6, Supplemental Agreements; (2) extended due to a work suspension as provided for in Attachment A, Article 3, Paragraph C; or (3) otherwise terminated in accordance with Attachment A, General Provisions, Article 15, Termination. Any work performed or cost incurred before or after the contract period shall be ineligible for reimbursement.

ARTICLE 3. COMPENSATION.

Maximum Amount Payable. The current Maximum Amount Payable under the Main Contract including Supplemental 1 thru 6 of Main Contract is $**2,743,625.05** is hereby modified by this Supplemental Agreement No. 7 to Main Contract to $**7,680,965.70** an increase of $**4,937,340.65** which includes

$4,937,340.65 for Work Authorization No. 3 as outlined in Attachment E-2. These attachments are made a part of this Supplemental No. 7 to the Main Contract.

All other provisions of the Main Contract are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, this Supplemental Agreement is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE ENGINEER	**THE COUNTY**
(Signature)	(Signature)
Louis H. Jones Jr. PE (Printed Name)	(Printed Name)
Principal (Title)	(Title)
12/7/16 (Date)	(Date)

LIST OF ATTACHMENTS:

Attachment B	Services To Be Provided By the County (Rev 11-01-2016) (Added by CSJ: 0086-14-910)
Attachment C	Services To Be Provided By the Engineer (Rev 11-01-2016) For Work Authorization No. 3; (CSJ: 0086-14-910)
Attachment E	Summary of Detailed Fee Schedule for Phase II, III, (Added by CSJ: 0086-14-910) Supporting Lump Sum Calculations (Rev 11-01-2016) For Supplemental No. 7 to Main Contract for CSJ: 0086-14-058 and CSJ: 0086-14-910 (Work Authorization No. 3)
Attachment F	Work Schedule (Revised 11/01/2016) (Added by CSJ: 0086-14-910 and 0086-14-058)

ATTACHMENT B

SERVICES TO BE PROVIDED BY THE COUNTY

1. The County shall provide prompt review of all submittals; process monthly invoices and review monthly progress reports within ten (10) days of receiving such documents.

2. The County shall contact TxDOT Laredo with three (3) business days of receiving request from Engineer on any required information or documents from TxDOT.

3. The County Engineer will provide the Engineer with all available existing information on the Projects from TxDOT or other available sources.

4. The County, through TxDOT, will be responsible for preparing, holding and documenting the Value Engineering Study with Engineer's Staff only. Based on One Day attendance by Project Manager; Deputy Project Manager and Senior Engineer.

DESIGN SCHEMATICS

Provide hard copy of the approved schematic developed by Kellogg Brown & Root (KBR) – 1Large format roll.

Provide hard copy of 90% schematic developed by Parson Brinkerhoff of Americas (PB America) – 1 Large format roll.

VALUE ENGINEERING REPORT – hard copy dated November 2007, Electronic in pdf format contained in CD along with construction plans (as builts).

ENVIRONMENTAL DOCUMENT – None available.

HYDRAULIC STUDIES

PAVEMENT DESIGN REPORT – Provided by TxDOT

PRELIMINARY CONSTRUCTION ESTIMATE- Provided for information only.

DSR PRELIMINARY – Provided for information only.

TRAFFIC STUDY – Provided by TxDOT and/or TTI

TRAFFIC DATA – Provided by TxDOT and/or TTI

CROSS SECTION FILES

UTILITY DATA – The State does not up-date schematic utility data.

CONSTRUCTION PLANS (All Microstation working files for original plans and As-Builts contained on CD)

- Existing Loop 20 from Sta. 257+85.56 to just North of Loop 20/US 59 Overpass Sta. 115+85.40
- Existing plans on any modification to Loop 20 or crossing roadways from Sta. 115+85.40 to just North of Loop 20/US 59 Overpass (Sta. 115+85.40)

SURVEYING DATA:

ALL EXISTING TOPOGRAPHIC SURVEY
Geopak DTM files
Geopak TIN files
Geopak DAT files
Microstation 2d CADD files
Microstation 3d CADD files
Existing ROW in 2d Microstation CADD files
XYZ text files of survey data
Existing Survey Control Monumentation in PDF Format
2007 Webb CADD Aerial Mosicac in ECW format @ 1 ft. pixel resolution

Note:
The survey data began provided by the State, DOES NOT reflect current site conditions. Topographic survey will required to be updated prior to final schematic development. See section IV. FIELD SURVEYING AND PHOTOGRAMMETRY for other information needed.

ALL SURVEY CONTROL
The survey control for this project was set back in 2003
Please check control points before use
Note that some of these points may have been disturbed and/or destroyed, therefore the coordinates and elevations shown might not be valid

ALL HYDRAULIC DATA
County will provide (obtained from TxDOT) all working files of drainage area maps and Windstorm runs for all existing storm sewer lines within project right-of-way in a condition and format that the Engineer can readily verify and for adequacy and accuracy of existing storm sewer systems

ALL HIGH MAST LIGHTING
County will provide (obtained from TxDOT) all microstation working files associated with the existing high mast lighting within project limits

ALL GEOTECHNICAL
County will provide (obtained from TxDOT) all existing geotechnical reports associated information within the project limits

SCOPE AND FEE SCHEDULE ASSUMPTIONS

1. Public meeting/public hearing court reporter to be provided by the County
2. The TxDOT Laredo District has a VRS network
3. The project surveyors can utilize VRS in a two rover configuration
4. Highway Capacity Analysis and preparation of design report will be done by TTI
5. Preparation of Interstate Access Justification Report will be done by TTI
6. TxDOT/County will provide all design working files in Microstation format for all plans of existing roadways. TxDOT/County will provide all electronic files of computer runs (actual working data) of Winstorm for existing drainage
7. Pavement design is to be done by TxDOT
8. TxDOT will review and approve all PS&E Packages during the fifteen (15) month schedule proposed for the Scope outlined in Work Authorization No. 3

ATTACHMENT C
(Revised 12-06-2016)
Additional Services to be Provided by the Engineer

CSJ:	0086-14-058 and 0086-14-910
Highway:	SL 20
County:	Webb County
Project No.:	
Limits:	Advanced Planning Loop 20 from Sta. 554+00 to Just North of Loop 20 / US 59 Overpass (CSJ: 0086-14-058)
Limits:	(R.O.W. Utilities and PS&E Including Offsite Detention Ponds) Loop 20 Mainlanes; Airport and Jacaman Grade Separations and Frontage Roads from US 59 to Just North of Jacaman (Sta. 257+85.56 (CSJ: 0086-14-910)
Project Length:	7.0 Miles (CSJ: 0086-14-058)
Project Length:	2.69 Miles (CSJ: 0086-14-910)-(Included in CSJ: 0086-14-058)
Area Office:	Laredo Area Office

Proposed Improvements-Advanced Planning (CSJ: 0086-14-058)
The proposed Loop 20 from Sta. 554+00 to Just North of Loop 20 / US 59 Overpass will consist of eight (8) lane main lanes and no frontage roads from US 59 Hwy to Airport Drive and six (6) lane main lanes and three (3) lane frontage roads from Airport Drive to International Road for the advanced project planning Phase I and Phase II (Schematic / Environmental / Right of Way), and the Phase III – PS&E phase, may be performed at a later date, with Amendment to the Contract, which will consist of eight (8) lane main lanes and no frontage roads from US 59 Hwy to Airport Drive and six (6) lane main lanes and three (3) lane frontage roads from Airport Drive to International Road with overpasses over Shiloh Road; Del Mar Road; University Drive; Jacaman Road and Laredo International Airport Road, including corresponding underground storm sewers; cross culverts; signage and traffic signals at frontage roads.

Sidewalks on both sides of the proposed Loop 20 Freeway from the Loop 20 / US 59 overpass to the Loop 20/ International Boulevard overpass.

Hike and Bike Trail along one side of the proposed Loop 20 Freeway from the Loop 20 / US 59 overpass to the Loop 20/ International Boulevard overpass.

Proposed Improvements-R.O.W Utilities and PS&E Including Offsite Detention Ponds (CSJ: 0086-14-910)
The proposed Loop 20 North of Loop 20 / US 59 Overpass to Just North of Jacaman Sta. 257+85.56 will consist of eight (8) lane main lanes and no frontage roads from US 59 Hwy to Airport Drive and six (6) lane main lanes and three (3) lane frontage roads from Airport Drive to Just North of Jacaman for the R.O.W Utilities and PS&E Including Offsite Detention Ponds (CSJ: 0086-14-910) eight (8) lane main lanes and no frontage roads from US 59 Hwy to Airport Drive and six (6) lane main lanes and three (3) lane frontage roads from Airport Drive to Just North of Jacaman with overpasses over Jacaman Road and Laredo International Airport Road, including corresponding underground storm sewers; cross culverts; offsite detention ponds; signage and traffic signals at frontage roads. Also, included will be sidewalks on both sides of the proposed Loop 20 Freeway from the Loop 20 / US 59 overpass to just North of the Loop 20/Jacaman Overpass (Sta. 257+85.56). Including a Hike and Bike Trail along east side of Project.

PHASE II – PS&E DEVELOPMENT FOR WORK AUTHORIZATION NO. 3
GENERAL MANAGEMENT/COORDINATION

Function Code 164 is for PS&E Development Services

Task: Contract and Work Authorization Management/Coordination (FC: 164)

The Engineer will manage and coordinate all the activities associated with this work authorization.

All communications associated with the work in this work authorization will be directly channeled through the Engineer, the Webb County Engineer and the State's designated project manager.

The Engineer will ensure compliance with "Article 4. Payment requirements" of the contract by providing a Monthly billing statement in addition to the requirements listed by the contract.

The Monthly Billing Statements should be provided no more frequently than monthly and no later than ninety (90) days after any costs are incurred and should include one original and one copy of the following documents:

- Provider's Invoice that should include vendor's name, address, contact information, telephone number, Texas Payee Identification Number (TINS), complete charge information, and description of services/goods provided.
- Completed Form 132- Accurate information such as Control Section Job (CSJ) numbers, function codes, work authorization balances and dates are required.
- Progress report that will include the activities previously completed, activities completed during the billing period, and any pending actions from the State. The progress report should also include all work performed by sub providers.
- Progress assessment reports with actual payments made to Disadvantage Business Enterprises or Historically Underutilized Business Program as detailed in the contract.

The monthly billing statements must be mailed to:
Luis Perez Garcia, P.E., Webb County Engineer
Webb County, Texas
1620 Santa Ursula, 2nd Floor
Laredo, Texas 78040

Task: Work Scheduling and Deliverables (FC: 164)

The Engineer should secure all resources necessary to produce the project deliverables listed in this work authorization and to meet the project schedule as presented in "Exhibit C". The project schedule should include milestone activities and specific delivery dates. The Engineer may identify the percentage of payment expected with each deliverable made.

The Engineer should continuously monitor the sub provider's schedules to ensure that the delivery dates are accomplished.

Task: Data Management (FC: 164)

The Engineer will utilize MicroStation V8 native files. The computer graphics files will have the same integrity, singularity and attributes as elements generated by the Texas Department of Transportation

(the State) State's computer system. The Engineer should obtain from the State the latest level naming criteria.

The Engineer will provide the State's graphics coordinator with a user name and password to access the provider's ftp (internet) site to upload and download large files that cannot be transmitted by e-mail.

Task: Meetings (FC: 164)
The Engineer will be required to meet one (1) progress meeting with designated Webb County and TxDOT representatives, utility companies, and adjacent and affected landowners to report on the

project's progress. The Engineer shall be required to prepare the minutes for the meeting and provide an electronic and hardcopy to the County and/or State for review.

Task: QC/QA (FC: 164)
The Engineer should meet the project schedule as presented in "Exhibit C" of this work authorization.

The Engineer will perform quality control and quality assurance (QC/QA) review and approve any deliverables including those provided by sub providers before submission to the state.

Peer review will be provided at all levels. Internal mark-ups (redlines) and/or comments developed as part of the Engineer's QC/QA will be maintained for inspection when requested by County and/or the State.

PHASE II - RIGHT OF WAY / UTILITY

I. RIGHT OF WAY DATA

FC 130 – Right-of-Way Data

FC 130 Right-of-Way Data All standards, procedures and equipment used by the Surveyor shall be such that the results of the survey will be in accordance with Board Rule 663.15, as promulgated by the Texas Board of Professional Land Surveyors. The Engineer shall locate the existing ROW within the project limits from the current project control monuments and prepare a layout map for the project.

130.1. Right-of-Way Map. The Engineer shall review and evaluate the proposed or existing right-of-way map to verify that all construction staging and alignment considerations have been taken into account. The Engineer shall make every effort to prevent detours and utility relocations from extending beyond the proposed right-of-way lines. The Engineer shall notify the State in writing if it is necessary to obtain additional construction easements or rights-of-entry and shall provide justification for such action. The Engineer shall be responsible for identifying and delineating any temporary construction easements in areas outside the State's Right of Way. The State shall secure the necessary legal instruments.

130.2. Utility Locations and Layouts. The Engineer shall coordinate with the State to determine the location of each existing and proposed utility and attend meetings with the various utility companies to discuss potential conflicts. The Engineer shall identify and coordinate with each utility company for relocations required within each construction easement or right-of entry.

130.3. Access Management. The Engineer shall coordinate and evaluate access management within the project limits in accordance with the latest State Access Management Manual or as directed by the State.

FC 150 – Field Surveying and Photogrammetry

The Engineer shall provide design surveys as described within each work authorization as defined below:
Design survey – The combined performance of research, field work, analysis, computation and documentation necessary to provide detailed topographic (3dimensional) mapping of a project site. A design survey may include, but need not be limited to, cross-sections, horizontal and vertical location of utilities and improvements, detailing of bridges and other structures, review of right-of-way maps, establishing control points, etc.

It shall be the responsibility of the Engineer to secure right of entry to private property for the purpose of performing any surveying and soil boring activities. In pursuance of the State's policy with the general public, the Engineer shall not commit acts which will result in damages to private property and the Engineer will make every effort to comply with the wishes and address the concerns of private property owners.

150.1. Field Surveying. The Engineer shall verify the benchmark coordinates and establish additional horizontal and vertical control for the project. The Engineer shall provide supplemental field surveying services necessary to verify the Digital Terrain Model (DTM), produce topographic maps, establish the project baseline on the ground, locate and tie existing utilities to the project baseline, to tie the soil boring locations, and update topography. Coordinate geometry shall be based on and tied into State plane surface coordinate system. The Engineer shall:

1. Determine Project Baseline: The project base line must be coincidental with, or parallel to, the stationed "Design Center Line." Base line control points shall be established using 15M(ASTM) (5/8 inch) iron rods, 36 inches long, at Point of Curvatures (P.C.' s), Point of Intersections (P.I.'s) and Point of Tangents (P.T.'s) of horizontal curves and at 1000 feet maximum intervals on tangents. Baseline control points shall be offset with set iron rods on both sides near the existing ROW lines at a measured distance. If available, coordinate to field tie to the Project baseline set by adjacent Engineers for consistency and accuracy.

2. Horizontal and Vertical Control Surveys (Project Control):
The maximum distance between control points shall not exceed 1500 feet. The coordinate location and elevation of control points or center panel points based on GPS surveys conducted by the Surveyor shall meet standards of accuracy as set forth below. Reference may be made to standards of accuracy for First Authorization surveys as described in the Federal Geodetic Control Committee publication entitled Geometric Geodetic Accuracy

Standards and Specifications for Using GPS Relative Positioning Techniques.

The accuracy standard at the 95 percent confidence level for First Authorization Surveys may be calculated using the formula s= maximum allowable error in centimeters d= distance in kilometers between any two stations p= the minimum geometric relative position accuracy standard in parts per million (10 ppm) e= base error in centimeters (1.0 cm.)

DATUM. All coordinates shall be based on the North American datum (NAD) 83 (1993 Adjustment). All elevations shall be based on the North American vertical datum (NAVD) of 1988

$s = \sqrt{e^2 + (0.1pd)^2}$ where, All traverses conducted by the Surveyor shall be tied to the National Geodetic Survey system, either directly or indirectly as follows:

The Surveyor shall make sufficient measurements to existing National Geodetic Survey monuments to assess the angular, horizontal and vertical closure of each traverse. The Surveyor shall make sufficient measurements to monuments established by the State to assess the angular, horizontal and vertical closure of each traverse. All monuments established by the State for purposes of aerial photography control are based on the National Geodetic Survey system.

HORIZONTAL GROUND CONTROL The coordinate location of the control or traverse points shall be based on traverses conducted by the Surveyor meeting standards of accuracy as set forth below. Reference may be made to standards of accuracy for Second Order, Class II, horizontal control traverses as described in the latest edition Federal Geodetic Control Committee publication entitled Standards and Specifications for Geodetic Control Networks.

a. Azimuth closure shall not exceed 4.5 seconds times the square root of the number of traverse segments.
b. Position closure after azimuth adjustment shall not exceed 1 in 20,000.

In cases where a traverse approaches but does not entirely meet these standards of accuracy and the Surveyor has assured itself that gross errors, mistakes and blunders have been eliminated, the Surveyor shall submit the traverse data to the State for further review. The State will make a determination as to the acceptability of the traverse as an exception to the standard and notify the Surveyor accordingly.

VERTICAL GROUND CONTROL Elevations established on the control and benchmarks shall be conducted by the Surveyor meeting standards of accuracy as set forth below. Reference may be made to standards of accuracy for third order vertical control traverses as described in the latest edition of the Federal Geodetic Control Committee publication entitled Standards and Specifications for Geodetic Control Networks.

a. Vertical closure shall not exceed 0.05 feet times the square root of the distance in miles. In case where a traverse approaches but does not entirely meet these standards of accuracy and the Surveyor has assured itself that gross errors,

mistakes and blunders have been eliminated, the Surveyor shall submit the traverse data to the State for review. The State will make a determination as to the acceptability of the traverse as an exception to the standard, and the State will notify the Surveyor accordingly. Document field work and submit field data to the State.

Additionally, the Engineer shall locate previously set control points and benchmarks established by State (State Datum); establish benchmark circuit (run levels) throughout the Project; establish additional benchmarks at intervals not to exceed 1,000 feet for the limits of the Project; tie benchmarks (station/offset) to Project baseline. Benchmarks shall be 20M (ASTM) (3/4-inch) diameter, 48 inches long, located near the existing ROW line at a measured distance. All benchmark circuits shall be tied to the State's elevation datum. Perform the benchmark circuits in accordance with good surveying practices. The Surveyor shall verify the closure and submit adjustments to State for approval prior to beginning the field surveys.
Provide 8 ½" x 11" location sketches for all control points and benchmarks. These sketches shall be signed, sealed and dated by a Registered Professional Land Surveyor (RPLS).

3. Survey Control Index Sheets. The Engineer's Surveyor shall prepare a Survey Control Index Sheet and a Horizontal and Vertical Control Sheet, signed, sealed and dated by the professional engineer in direct responsible charge of the surveying and the responsible RPLS for insertion into the plan set. The Survey Control Index Sheet shows an overall view of the project control and the relationship or primary monumentation and control used in the preparation of the project; whereas, the Horizontal and Vertical Control sheet identifies the primary survey control and the survey control monumentation used in the preparation of the project. Both the Survey Control Index Sheet and the Horizontal and Vertical Control Sheet should be used in conjunction with each other. The following information should be shown on the Survey Control Index Sheet:

    a. Overall view of the project and primary control monuments set for control of the project.
    b. Identification of the control points.
    c. Baseline and centerline.
    d. Graphic (Bar) Scale.
    e. North Arrow.
    f. Placement of note "The survey control information has been accepted and incorporated into this PS&E" which is signed, sealed, and dated by a Texas Professional Engineer.
    g. RPLS signature, seal and date.

The following information should be shown on the Horizontal and Vertical Control Sheet:

a. Location for each control point, showing baseline and centerline alignment and North arrow.
b. Station and offset (with respect to the baseline or centerline alignments) of each identified control point.
c. Basis of Datum for horizontal control (base control monument, benchmark name and number, datum).
d. Basis of Datum for the vertical control (base control monument, benchmark name, number, datum).
e. Date of current adjustment of the datum.
f. Monumentation set for Control (Description, District name/number and Location ties).
g. Surface Adjustment Factor and unit of measurement.
h. Coordinates (SPC Zone and surface or grid).
i. Relevant metadata.
j. Graphic (Bar) Scale.
k. Placement of note “The survey control information has been accepted and incorporated into this PS&E” which is signed, sealed and dated by a Texas Professional Engineer.
m. RPLS signature, seal and date.
n. TxDOT title block containing District Name, County, Highway No., and CSJ.

4. Perform datum ties as required. If required, establish an elevation base on the project control’s datum to other public entities published benchmarks.
5. Profile and cross section intersecting streets and driveways (to 50 feet outside ROW for driveways, and 200 feet for intersecting streets and 500 feet for intersecting streets greater than two lanes wide) for tie into project.
6. Cross section drainage channels for a distance of 200 feet each way outside the ROW lines. Cross sections shall not exceed 100 feet intervals and shall be taken at right angles to the channels. The width of the cross sections shall cover the top of the channel over bank extending at least 50 feet beyond. Cross section data shall include flow line of the channel.
7. Secure right-of-entry (short of litigation), as needed for the project and the Engineer shall not commit acts which will result in damages to private property and the Engineer will make every effort to comply with the wishes and address the concerns of private property owners.
8. Tie to existing underground and overhead utilities (location, elevation, size and direction).
9. ROW staking for additional field topography related to design work.
10. Determine any changes in topography from outdated maps due to development, erosion, etc.
11. Determine type of existing material, existing pavements, etc.
12. Obtain profiles of existing drainage facilities.
13. Obtain measurement of hydraulic opening under existing bridges.
14. Obtain top of manhole and flowline elevations, type and size, etc. of manholes, inlets, and valves of utilities.
15. Provide temporary signs, traffic control, flags, safety equipment, etc. and obtain necessary permits.
16. Obtain ties to existing bridges or culverts that may conflict with new construction.
17. Verify Digital Terrain Model (DTM) (cross sections at panel points) and planimetric mapping (DGN). Obtain additional existing ground cross sections as necessary to supplement the DTM

files. Obtain cross sections at the center panel points to verify the DTM.

18. Obtain line (PGL) and the edges of slab at bent location.
19. Tie down soil boring locations by station, offset and surface elevation.
20. The Engineer's Surveyor using wetlands delineation information provided by the State shall stake and fence the areas containing wetlands. The Surveyor is to provide information back to the Engineer in an electronic file to be incorporated onto the Plan and Profile (P&P) sheets. This staking and fencing at the wetland areas shall be handled under separate agreement.
21. The Surveyor shall control traffic in and near surveying operations adequately to comply with the latest edition of the TMUTCD. In the event field personnel must divert traffic or close traveled lanes, a Traffic Control Plan shall be prepared by the Engineer's surveyor and approved by the State prior to commencement of field work. A copy of the approved plans shall be in the possession of field personnel on the job site at all times and shall be made available to State personnel upon request.
22. If at any time during the contract period, the Surveyor encounters unforeseen circumstances which may materially affect the scope, complexity or character of the work authorized by the State, the Surveyor shall notify the State in writing immediately with a complete description of the circumstances encountered.
23. The following definitions shall apply:
    a. DGN-Two dimensional digital map containing natural ground features and improvements plotted in a horizontal plane along the X and Y axes. A planimetric map does not include relief elements such as spot elevations, cross-sections, or contours.
    b. DTM-Three dimensional digital model of the ground containing those features necessary to define surface relief. A three dimensional model does not normally contain those planimetric features not necessary to define relief.
    c. Horizontal and vertical ground control-Survey control points for which the X and Y coordinate and elevation have been determined by on the ground surveys.

150.2. Low Altitude Aerial Photography. Generally flown at 1,500 feet above mean terrain to obtain a 1:3,000 photo scale.

1. The Surveyor shall provide aerial photography in black and white for low altitude aerial mapping appropriate for detailed design.
2. Film negatives shall be provided and labeled as to county, highway, date of flight, photograph panel number and photograph scale.
3. Provide two (2) copies of black white contact prints and negatives.
4. Provide certification, signed by the airplane pilot or aerial photographer, that the photographs were taken on the date indicated.

150.3. Digital Planimetric Mapping (DGN) and Digital Terrain Modeling (DTM).

1. The Surveyor shall prepare DGN files covering the specific work location, meeting the State's standards and specifications. All areas obscured by vegetation or other obstructions resulting in voids shall be surveyed on the ground.
2. The Surveyor shall prepare DTM files covering the specific work location, meeting the State's standards and specifications. All areas obscured by vegetation or other obstructions resulting in voids shall be surveyed on the ground.
3. The Surveyor shall provide DGN and DTM files on a medium and in a format acceptable to the State.

4. Provide scanned photography (scanned negative aerial film) delivered on CD.
5. Orthophotography (created using the dtm) delivered on CD (tif format with world file)
6. The State's Photogrammetry Mapping Legend as supplemented by the Surveyor

150.4. Survey Technical Requirements. The Engineer shall perform each design and construction survey in compliance with the following technical requirements:

1. Each design survey and construction survey shall be performed under the direct supervision of a registered professional land surveyor currently registered with the Texas Board of Professional Land Surveying.
2. Horizontal and Vertical ground control established by conventional methods conducted by the Surveyor shall meet standards of accuracy as set forth in the Texas Society of Professional Surveyors (TSPS) *Manual of Practice for Land Surveying in the State of Texas* to the category and condition delineated in each Work Authorization. The Engineer shall run vertical control using digital levels only unless otherwise approved by the State.
3. Horizontal and vertical ground control used for design surveys and construction surveys based on Global Positioning system (GPS) surveys conducted by the Surveyor shall meet standards of accuracy as set forth in the Federal Geodetic Control Committee publication entitled *Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques*, reprinted with corrections August 1, 1989, or the State's *GPS Manual of Practice*, latest edition, as specified in each Work Authorization.
4. Side shots or short traverse procedures used to determine horizontal and vertical locations shall meet the following criteria: Side shots or short traverses shall begin and end on horizontal and vertical ground control as described in the TSPS *Manual of Practice for Land Surveying in the State of Texas* to the category and condition delineated in each Work Authorization.
    a. The Engineer shall use standards, procedures and equipment such that horizontal locations relative to the control may be reported within the following limits:
        i. Bridges and other roadway structures less than 0.1 of one foot.
        ii. Utilities and improvements less than 0.2 of one foot
        iii. Cross-sections and profiles less than 1 foot.
        iv. Bore holes less than 3 feet.
    b. The Engineer shall use standards, procedures and equipment such that vertical locations relative to the control may be reported within the following limits:
        i. Bridges and other roadway structures less than 0.02 of one foot.
        ii. Utilities and improvements less than 0.03 of one foot.
        iii. Cross-sections and profiles less than 0.1 of one foot.
        iv. Bore holes less than 0.5 of one foot.

FC 164 – Project Management and Administration

FC 164 – Project Management and Administration (PS&E-FC 160170)

The Engineer shall:

1. Prepare monthly written progress reports for each project.
2. Develop and maintain a detailed project schedule to track project conformance to Attachment F, Main Contract and Exhibit C, Work Schedule, for each work authorization. The schedule submittals shall be hard copy and electronic format.

3. Meet on a scheduled basis with the State to review project progress. 4. Prepare, distribute, and file both written and electronic correspondence.
4. Document phone calls and conference calls as required during the project to coordinate the work for various team members.

PHASE III – PS&E

I. PS&E

FC 130 – Right of Way Data

FC 130 – Right-of-Way Data All standards, procedures and equipment used by the Surveyor shall be such that the results of the survey will be in accordance with Board Rule 663.15, as promulgated by the Texas Board of Professional Land Surveyors.
The Engineer shall locate the existing ROW within the project limits from the current project control monuments and prepare a layout map for the project.

130.1. Right-of-Way Map. The Engineer shall review and evaluate the proposed or existing right-of-way map to verify that all construction staging and alignment considerations have been taken into account. The Engineer shall make every effort to prevent detours and utility relocations from extending beyond the proposed right-of-way lines. The Engineer shall notify the State in writing if it is necessary to obtain additional construction easements or rights-of-entry and shall provide justification for such action. The Engineer shall be responsible for identifying and delineating any temporary construction easements in areas outside the State's Right of Way. The State shall secure the necessary legal instruments.

130.2. Utility Locations and Layouts. The Engineer shall coordinate with the State to determine the location of each existing and proposed utility and attend meetings with the various utility companies to discuss potential conflicts. The Engineer shall identify and coordinate with each utility company for relocations required within each construction easement or right-of entry.

130.3. Access Management. The Engineer shall coordinate and evaluate access management within the project limits in accordance with the latest State Access Management Manual or as directed by the State.

FC 164 – Project Management and Administration

164 – Project Management and Administration (PS&E-FC 160170)
The Engineer shall:

1. Prepare monthly written progress reports for each project.
2. Develop and maintain a detailed project schedule to track project conformance to Exhibit C, Work Schedule, for each work authorization. The schedule submittals shall be hard copy and electronic format.
3. Meet on a scheduled basis with the State to review project progress. 4. Prepare, distribute, and file both written and electronic correspondence.
4. Document phone calls and conference calls as required during the project to coordinate the work for various team members.

FC 164 – Roadway Design Controls

FC 160 – Roadway Design Controls

The Engineer shall inform the State of changes made from previous initial meetings regarding each exception, waiver, and variance that may affect the design. The Engineer shall cease all work under this task until the exceptions, waivers, and variances have been resolved between the Engineer and the State unless otherwise directed by the State to proceed. The Engineer shall identify, prepare exhibits and complete all necessary forms for Design Exceptions and Waivers within project limits prior to the 30% Submittal. These exceptions shall be provided to the State for coordination and processing of approvals.

160.1. Geometric Design. The Engineer shall:

1. Refine Schematic (This task may be deleted if the schematic is not available and replaced with Preliminary Geometric layout). The Engineer shall review the schematic provided by the State to confirm their understanding of the project and to verify completeness and accuracy of the information. The Engineer shall refine the horizontal and vertical alignment of the design schematic in English units for main lanes, ramps, direct connectors, frontage roads, cross streets, including grade separation structures. The Engineer shall determine vertical clearances at grade separations and overpasses, taking into account the appropriate percent grade and super-elevation rate. Minor modifications in the alignment will be considered to provide optimal design. Modifications must be coordinated with the State and adjacent Engineers. The State must approve the refined schematic prior to the Engineer proceeding to the 30 % milestone submittal, and prior to starting on the bridge layouts.
2. Preliminary Geometric Project Layout. The Engineer shall develop a preliminary geometric project layout (Layout) for the full length of the project to be reviewed and approved by the State prior to the Engineer proceeding with the 30 percent milestone submittal package. The Layout shall consist of a planimetric file of existing features and the proposed improvements within the existing and any proposed ROW. The Layout shall also include the following features: existing/Proposed ROW, existing/proposed horizontal and vertical alignment and profile grade line, cross culverts, lane widths, cross slopes, ditch slopes, pavement structure, clear zone, dedicated right turn lanes, corner clips, retaining walls (if applicable) guard rail (if applicable), and water surface elevations for various rainfall frequencies, etc. Existing major subsurface and surface utilities shall be shown. The proposed alignment shall avoid as much as possible the relocation of existing utilities. The Engineer shall consider Americans with Disabilities Act (ADA) requirements when developing the layout. The Layout shall be prepared in accordance with the current Roadway Design Manual. The Engineer shall provide horizontal and vertical alignment of the project layout in English units for main lanes and cross streets. Minor alignment alternatives will be considered to provide for an optimal design. The project layout must be coordinated with the State and adjacent Engineers, if any. The Engineer shall also provide proposed and existing typical sections with the profile grade line (PGL), lane widths, cross slopes, ROW lines, ditch shapes, pavement structures and clear zones depicted, etc. Flush vs. raised curbed median:

160.2. Roadway Design.

The Engineer shall provide roadway plan and profile drawings using CADD standards as required by the State. The drawings shall consist of a planimetric file of existing features and files of the proposed improvements. The roadway base map shall contain line work that depicts existing surface features obtained from the schematic drawing. Existing major subsurface and surface utilities shall be shown. Existing and proposed right-of-way lines shall be shown. Plan and Profile to be shown on separate or same sheets (this depends upon width of pavement) for main lanes,

frontage roads, and direct connectors. The plan view shall contain the following design elements:

1. Calculated roadway centerlines for mainlanes, ramps, cross streets and frontage roads, as applicable. Horizontal control points shall be shown. The alignments shall be calculated using GEOPAK.
2. Pavement edges for all improvements (mainlanes, direct connectors, ramps, cross streets, driveways and frontage roads, if applicable).
3. Lane and pavement width dimensions.
4. The geometrics of ramps, auxiliary and managed lanes.
5. Proposed structure locations, lengths and widths.
6. Direction of traffic flow on all roadways. Lane lines and arrows indicating the number of lanes shall also be shown.
7. Drawing scale shall be 1"=100'
8. Control of access line, & ROW lines and easements.
9. Begin/end superelevation transitions and cross slope changes.
10. Limits of rip rap, block sod, and seeding.
11. Existing utilities and structures.
12. Benchmark information.
13. Radii call outs, curb location, Concrete Traffic Barrier (CTB), guard fence, crash safety items and American with Disabilities Act Accessibility Guidelines (ADAAG) compliance items.

The profile view shall contain the following design elements:

1. Calculated profile grade for proposed mainlanes (cite direction), direct connectors, ramps, cross streets and frontage roads, if applicable. Vertical curve data, including "K" values shall be shown.
2. Existing and proposed profiles along the proposed centerline of the mainlanes, the outside shoulder line of ramps, and the outside gutter line of the designated (north, south, east or west) bound frontage roads.
3. Water surface elevations at major stream crossing for 2, 5, 10, 25, 50, and 100 year storms.
4. Calculated vertical clearances at grade separations and overpasses, taking into account the appropriate superelevation rate, superstructure depth and required clearance.
5. The location of interchanges, mainlanes, grade separations and ramps (shall include cross sections of any proposed or existing roadway, structure, or utility crossing).
6. Drawing vertical scale to be 1"=10'.

160.3. Typical Sections:
Typical sections shall be required for all proposed and existing roadways and structures. Typical sections shall include width of travel lanes, shoulders, outer separations, border widths, curb offsets, managed lanes, and ROW. The typical section shall also include PGL, centerline, pavement design, longitudinal joints, side slopes, sodding/seeding limits, concrete traffic barriers and sidewalks, if required, station limits, common proposed and existing structures including retaining walls, existing pavement removal (pavement coring shall be performed by the Engineer to determine existing pavement structure for removal items only, see FC 110) riprap, limits of embankment and excavation, etc. The typical sections shall also reference Pay Schedule for Item of work "Ride Quality of Pavement Surface".

160.4. Mainlane and Frontage Road Design: The Engineer shall provide the design of mainlanes with full shoulders, frontage roads, entrance and exit ramps, managed lanes and auxiliary lanes. The

design shall be consistent with the approved schematic or refined schematic and the current Roadway Design Manual.

160.5. Interchange (Grade Separation) (Overpasses). The Engineer shall be responsible for the complete design of the mainlanes and ramps, auxiliary lanes; frontage roads and grade separation (overpasses) at Airport and Jacaman as shown on the approved schematic. The structural details of the two(2) grade separation (overpasses) will be provided by the Engineer and will be included with the PS&E submittal. The grade separation (overpasses) design shall be consistent with the schematic design and shall include a plan and profile of the thoroughfares, intersection layout, drainage structures, sidewalks, geometrics, signalization, turnaround details, and transitions to existing roadway.

160.6. Cross Streets. The Engineer shall provide an intersection layout detailing the pavement design and drainage design at the intersection of each cross street. The layout shall include the curb returns, geometrics, transition length, stationing, pavement and drainage details. The Engineer shall design for full pavement width to the ROW and provide a transition to the existing roadway.

160.7. Cut and Fill Quantities. The Engineer shall develop an earthwork analysis to determine cut and fill quantities and provide final design cross sections at 100 feet intervals. Cross sections shall be delivered in standard GEOPAK format on 11”x17” sheets or roll plots and electronic files. The Engineer shall provide all criteria and input files used to generate the design cross sections. Cross sections and quantities shall consider existing pavement removals. Annotation shall include at a minimum existing/proposed right of way, side slopes (front & back), profiles, etc.
Two sets of drawings shall be submitted by the Engineer at the 30%, 60%, and 90%, and final submittals, respectively.

160.8. Plan Preparation. The Engineer shall prepare roadway plans, profiles and typical sections for the proposed improvements. Prior to the 30% submittal the Engineer shall schedule a workshop to review profiles and cross-sections with the State. The profile and cross sections shall depict the 2, 5, 10, 25, 50, 100 and 500 year (if available) water surface elevations. The drawings will provide an overall view of the roadway and existing ground elevations with respect to the various storm design frequencies for the length of the project. This will enable the State to determine the most feasible proposed roadway profile. The State will approve the proposed profiles and cross sections before the Engineer continues with the subsequent submittals. This scope of services and the corresponding cost proposal are based on the Engineer preparing plans to construct freeway main lanes, two(2) grade separations (overpasses), ramps, frontage roads, and cross streets at intersections as well as a hike and bike trail in accordance with the approved schematic. The roadway plans shall consist of the types and be organized in the sequence as described in “Stand Alone Manual Notice Number 00-1”.

160.9. Wetlands Information. From the information provided by the State, the wetland areas are to be staked, fenced and the delineation surveyed by the Engineer. The survey data shall be electronically transferred to the P&P sheets and the volumes calculated for the delineated areas. The surveying delineation work and electronic transfer of information will be performed under a separate agreement.

160.10. Pavement Design. If applicable, the Engineer shall incorporate the pavement design developed by the State for this project. The Engineer shall implement mainlane and frontage road pavement design of Continuously Reinforced Concrete Pavement (CRCP), Asphalt Stabilized Base (ASB),

Portland Cement Treated Base (PCTB), and Lime Treated Subgrade (LTS) as specified in the work authorization.

160.11. Pedestrian and Bicycle Facilities. The Engineer shall coordinate with the State to incorporate pedestrian and bicycle facilities as required or shown on the project's schematic. All pedestrian/bicycle facilities must be designed in accordance with the latest Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Texas Accessibility Standards (TAS), and the AASHTO Guide for the Development of Bicycle Facilities

FC 161 – Drainage

FC 161 – Drainage

161.1. Drainage Report.

1. The Engineer shall prepare a single comprehensive drainage study and report of the project area. The report shall be divided into two phases:

The first phase will include the following items:

a. Obtain existing HEC-2 or HEC-RAS models from applicable drainage authorities to the extent possible, for use in analysis and determination of the existing 2, 5, 10, 25, 50, 100 and 500 year (if available), water surface elevations at bayous, creeks, and ditch crossings along the project. This data will be utilized in the development of design roadway profiles.
b. Profile of natural ground along each proposed grade line of the roadway.
c. Profile of tentative proposed grade line of the roadway.
d. Profile of existing roadway.
e. Identify the existing drainage outfalls.
f. Identify the names of existing creeks, bayous and ditches within the project limits.

2. These profiles will be superimposed on a drawing along with the 2, 5, 10, 25, 50, 100 and 500 year (if available) water surface elevations. The profile drawing will provide an overall view of the roadway/existing ground elevations with respect to the various storm design frequencies for the length of the project. This will enable the State to determine the most feasible proposed roadway profile. These profiles must be submitted to the State and approved before continuing with the preparation of the comprehensive drainage report. NOTE: THE ENGINEER WILL COORDINATE WITH ALL GOVERNMENT AGENCIES THROUGH THE STATE'S DISTRICT OFFICE.

The second phase will include the following items:

a. Manhole head losses are to be computed as per the State's direction. Also, THYSYS (WINSTORM) computations are not needed for hydraulic grade line investigations. The head losses will be computed with a pressure flow equation generally applicable to pipe running full flow. A hydraulic grade line starting at the outfall channel will be determined for each storm sewer system in order to obtain a design tailwater for each existing system. The design tailwater will be the starting basis for the design of the proposed storm sewer system.
b. For drainage areas, the Engineer shall limit the outfalls into existing storm sewer to existing capacity flows, which will be determined by the Engineer. Alternate flow routes, if feasible, will be looked into for relieving storm sewer overload. The amount of the total detention storage to control storm sewer runoff for the design frequency will be determined based on hydrograph routing, as well as a rough estimate of the available on-site volume.
c. Drainage areas and flows for cross culvert drainage systems will be determined as part of the comprehensive drainage report. Once determined, the sizing of the drainage crossings,

hydrologic and hydraulics information will be provided to the State.

d. The Engineer shall prepare a report signed, sealed and dated by a registered/licensed engineer and shall include the preliminary findings of the storm sewer capacities, requirement for line rerouting, preliminary detention storage volumes based on hydrograph and initial recommendations on how to mitigate the storm impact on the receiving streams. The report will also include preliminary sizing of the trunkline for the proposed gravity storm sewer within the limits of the project, conceptual and generic discussions of the alternatives considered, a comparative cost associated with each alternative and a recommended solution.

e. Recommendations at this point should be generic and conceptual in nature, mainly for discussions with the State and the local government entities.

Guideline approach to the 100 year impact analysis:

An impact analysis is required on bayous, creeks and ditches as related to the State and FEMA criteria 10 and 100 year storm. The State required approach for impact prediction is as follows:

a. Drainage areas for the existing and proposed conditions.

b. The Engineer shall identify the existing drainage outfalls.

c. Compute right of way corridor 100 year flood plain volumes for existing and proposed roadway elevations. A decrease in 100 year flood plain volumes is not allowed by the State or other governmental agencies, without adequate offsite mitigation.

d. Compute existing and proposed peak flows by using hydraulics and hydrologic methodology and computer models. The additional lanes should be accounted for by increasing percent development.

e. Storage computations will be based on hydrograph calculations and peak flows obtained in the item above. A mitigation volume for the 100 year storm will be computed.

f. Analyze existing and proposed drainage system and quantify the increase in 100 year peak flows resulting from the roadway improvements.

g. Hand calculations shall be provided which quantify the cut and fill within the 100 year flood plain, if any occur.

h. Prepare conceptual 100 year sheet flow analysis for project utilizing existing and proposed conditions.

i. Obtain current hydrologic and hydraulic computer models from government agencies and review and comment on the models.

j. Current models will be updated to existing condition using the available State aerial photographs, and submitted to governmental agencies as the revised existing condition model.

k. Analyze proposed roadway and outfall drainage improvements to quantify impacts to revised existing condition model.

This contract does not include the detailed design of outfall improvements outside of the right of way, except for ditch outfall transitions of cross drainage culvert structures to the existing ditch.

161.2. Scour Analyses and Stream Migration Studies. The Engineer shall prepare each scour analysis using methodology approved by the State as required in the work authorization. The Engineer shall select the methodology depending on the site conditions such as the presence of cohesive or cohesionless soil, rock or depth of rock, proposed foundation type, and existing site performance. The Engineer shall use HEC-18 for sites with cohesionless soils unless otherwise approved by the State. For other conditions, the Engineer may use the TSEAS 1993 (Texas Secondary Evaluation and Analysis for Scour) guidelines as approved by the State.

161.3 Culvert and Storm Drain Design. The Engineer shall develop design details that minimize the interference with the passage of traffic or incur damage to the highway and local property. The Engineer shall provide layouts, drainage area maps, and design of all drainage components. The Engineer shall design all conventional storm drainage and cross drainage in conformance with the latest edition of State Hydraulic Manual, Districts' criteria, and any specific guidance provided by the State. Storm drain design shall be performed using WinStorm or GEOPAK Drainage. Cross drainage design shall be performed using WINSTORM, HY 8 or HEC RAS. When oversized storm drains are used for detention, the Engineer shall evaluate the hydraulic gradeline throughout the whole system, within project limits, for the design frequency(ies). The Engineer shall coordinate with the State any proposed changes to the detention systems. The State will assess the effects of such changes on the comprehensive drainage studies. The Engineer shall coordinate with the State and designers of adjacent projects to check that all proposed drainage systems accommodate the proposed construction phasing plan.

The Engineer shall perform the following:

1. Prepare culvert cross sections. (The Engineer should list station locations)
2. Identify areas requiring trench protection, excavation, shoring and de-watering.
3. Prepare drainage area maps.
4. If applicable, prepare plan/profile sheets for storm drain systems and outfall ditches.
5. Select standard details from State or District's list of standards for items such as inlets, manholes, junction boxes and end treatment, etc.
6. Prepare details for non-standard inlets, manholes and junction boxes.
7. Prepare drainage details for outlet protection, outlet structures and utility accommodation structures.
8. Identify pipe strength requirements.
9. Prepare drainage facility quantity summaries.
10. Identify potential utility conflicts and design around them, wherever possible.
11. Take into consideration pedestrian facilities, utility impacts, driveway grades, retaining wall and concrete traffic barrier drainage impacts.
12. Identify existing ground elevation profiles at the ROW lines on storm sewer plan and profile sheets.
13. Locate soil borings every 500 feet along the storm sewer alignment and at every 2000 feet take a piezometric reading.
14. If applicable, prepare Hydraulic Data Sheets for any bridge or cross drainage structures at outfall channel. (Indicate site location such as name of creeks or bayou and stations)

The scope may include extending, adjusting or replacing non bridge-class culvert crossing(s) as specified in the work authorization.

161.4. Temporary Drainage Facilities. The Engineer shall develop plans for all temporary drainage facilities necessary to allow staged construction of the project and to conform with the phasing of adjacent construction projects without significant impact to the hydraulic capacity of the area. Drainage area maps are not required for temporary drainage.

161.5. Layout, Structural Design and Detailing of Drainage Features.

The Engineer shall develop layouts for the following:

1. Culverts: New culverts; culvert replacement.
2. Storm Sewers: New or modified storm sewers; inlets; manholes; trunk lines.
3. Subsurface drainage at retaining walls.
4. Outfall channels within existing ROW
5. Bridge deck drainage systems, including internal drainage piping within the bents where required on structures.
6. Detention ponds, associated outlet structures and details, if applicable. If information not available at the time of initial scoping this work shall be considered as additional work.

The Engineer shall use standard details where practical.

161.6. Floodplain Cut and Fill. Using water surface elevation profiles determined by the comprehensive drainage study, the Engineer shall calculate proposed cut and fill volumes below the 100 year flood elevation.

FC 162 – Signing, Pavement Markings and Signalization (Permanent)

FC 162 – Signing, Pavement Markings and Signalization (Permanent)

162.1. Signing. The Engineer shall prepare drawings, specifications and details for all signs. The Engineer shall coordinate with the State (and other Engineers as required) for overall temporary, interim and final signing strategies and placement of signs outside contract limits. The Engineer shall:

1. Prepare sign detail sheets for large guide signs showing dimensions, lettering, shields, borders, corner radii, etc., and shall provide a summary of large and small signs.
2. Designate the shields to be attached to guide signs.
3. Illustrate and number the proposed signs on plan sheets.
4. Select each sign foundation from State Standards.

162.2. Pavement Marking. The Engineer shall detail both permanent and temporary pavement markings and channelization devices on plan sheets. The Engineer shall coordinate with the State (and other Engineers as required) for overall temporary, interim, and final pavement marking strategies. The Engineer shall select Pavement markings from the latest State standards.

The Engineer shall provide the following information on sign/pavement marking layouts:

1. Roadway layout.
2. Center line with station numbering.
3. Designation of arrow used on exit direction signs
4. Culverts and other structures that present a hazard to traffic.
5. Location of utilities.
6. Existing signs to remain, to be removed, or to be relocated.
7. Proposed signs (illustrated, numbered and size).
8. Proposed overhead sign bridges to remain, to be revised, removed or relocated.
9. Proposed overhead sign bridges, indicating location by plan.
10. Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation.
11. Quantities of existing pavement markings to be removed.

12. Proposed delineators and object markers.
13. The location of interchanges, mainlanes, grade separations, frontage roads and ramps.
14. The number of lanes in each section of proposed highway and the location of changes in numbers of lanes.
15. Right-of-way limits.
16. Direction of traffic flow on all roadways.

162.3. Traffic Warrant Studies. The Engineer shall prepare a traffic signal warrant study to support their recommendation for the continuous activation of an existing traffic signal or a proposed traffic signal based on projected volumes. Each warrant study shall include addressing pedestrian signals along with obtaining both traffic and pedestrian counts. The Engineer shall implement each proposed traffic signal improvement within existing State right-of-way unless otherwise approved by the State. The Engineer shall refer to latest version of the TMUTCD, *Traffic Signal Manual*, and The State's roadway (ramp) and traffic standards for work performed for either temporary or permanent traffic signals. The Engineer shall develop and include a timing plan for each signal improvement.

162.4. Traffic Signals. Based upon the results of the Traffic Warrant Studies, the Engineer shall identify and prepare Traffic Signal Plans for all warranted traffic signals. The Engineer shall confirm the power source for all signals and coordinate with the appropriate utility agency. Traffic Signal Plans shall be signed and sealed by a Texas Registered Professional Engineer. The Engineer shall develop all quantities, general notes, specifications and incorporate the appropriate agency standards required to complete construction. Traffic signal poles, fixtures, signs, and lighting shall be designed per the Green Ribbon Report recommendations and standards.

The following information shall be provided in the Traffic Signal Plans:

1. Layout
    a. Estimate and quantity sheet
        (1) List of all bid items
        (2) Bid item quantities
        (3) Specification item number
        (4) Paid item description and unit of measure
    b. Basis of estimate sheet (list of materials)
    c. General notes and specification data.
    d. Condition diagram
        (1) Highway and intersection design features
        (2) Roadside development
        (3) Traffic control including illumination
    e. Plan sheet(s)
        (1) Existing traffic control that will remain (signs and markings)
        (2) Existing utilities
        (3) Proposed highway improvements
        (4) Proposed installation
        (5) Proposed additional traffic controls
        (6) Proposed illumination attached to signal poles.
        (7) Proposed power pole source
    f. Notes for plan layout
    g. Phase sequence diagram(s)
        (1) Signal locations
        (2) Signal indications

(3) Phase diagram
(4) Signal sequence table
(5) Flashing operation (normal and emergency)
(6) Preemption operation (when applicable)
(7) Contact responsible Agency to obtain interval timing, cycle length and offset

h. Construction detail sheets(s)
(1) Poles (State standard sheets)
(2) Detectors
(3) Pull Box and conduit layout
(4) Controller Foundation standard sheet
(5) Electrical chart

i. Marking details (when applicable)
j. Aerial or underground interconnect details (when applicable)

2. General Requirements

a. Contact local utility company
(1) Confirm power source
b. Prepare governing specifications and special provisions list
c. Prepare project estimate
d. Conduct traffic counts and prepare Traffic Signal Warrant Studies for all proposed and existing traffic signals at designated locations.

3. Summary of Quantities
a. Small signs tabulation
b. Large signs tabulation including all guide signs

4. Sign Detail Sheets
a. All signs except route markers
b. Design details for large guide signs
c. Dimensioning (letters, shields, borders, etc.)
d. Designation of shields attached to guide signs

FC 161 – Miscellaneous (Roadway)

FC 163 – Miscellaneous (Roadway) The Engineer shall provide the following services:

163.1. Retaining Walls and Miscellaneous Structures. The Engineer shall develop each retaining wall design and determine the location of each soil boring needed for the foundation design of each retaining wall in accordance with the *Geotechnical Manual*. Prior to preparation of retaining wall layouts, the Engineer shall prepare a comparative cost analysis of different types of retaining walls versus roadway embankment, pavement, soil stabilization, retaining walls type, and available ROW to determine optimum selection based on economics, construction time duration, ROW encroachments (need for construction easements) and construction feasibility. The Engineer shall submit early in the plan preparation the retaining wall layouts to obtain approval from the State. The Engineer shall incorporate all necessary information from above referenced manuals and respective checklists into the retaining wall layouts. For stage construction, the Engineer shall indicate limits of existing retaining walls for removal and reconstruction, and determine limits of temporary retaining walls to be shown on the TCP.

The approximate limits of each retaining wall shall be based on Station or length. The Engineer shall notify the State the type of retaining walls that will be used for and Cut and Fill location. Retaining wall types shall include:

1. Spread Footing Walls (High Footing Pressure Design and Low Footing Pressure Design). The Engineer shall select a spread footing wall for fill situation when considerable room behind the walls is available for forming, constructing, and backfilling the footings and stem. The Engineer shall notify the State when the quantity is less than 1000 SF to have as option in the plans to cast in place a spread footing wall design. This selection has to be approved to State.
2. Mechanically Stabilized Earth (MSE) Walls. The Engineer shall prepare the retaining wall layouts showing plan and profile or retaining walls for design by a State approved vendor. The Engineer is responsible for design of geometry and wall stability. The Engineer shall incorporate a slope of 4:1 or flatter from the existing and finished ground line elevation to the face of the retaining wall.
3. Concrete Block Walls (Structural and Landscape).
4. Tied Back Walls.
5. Soil Nailed Walls.
6. Rock Nailed Walls.
7. Drilled Shaft Walls.
8. Temporary MSE Walls.

The Engineer shall provide layouts (scale 1”=100’), elevations, quantity estimate, summary of quantities, typical cross sections and structural details of all retaining walls within the project. Approximate lengths of the retaining walls as shown on the schematic are listed as below. The Engineer shall determine if any additional walls are required and verify the need for and length of the retaining walls as shown on the schematic.

If applicable, architectural standard drawings will be provided by the State and shall be incorporated into design details. The specific requirements for each item are as follows:

1. Layout Plan
   (1) Designation of reference line
   (2) Beginning and ending retaining wall stations
   (3) Offset from reference line
   (4) Horizontal curve data
   (5) Total length of wall
   (6) Indicate face of wall
   (7) All wall dimensions and alignment relations (alignment data as necessary)
   (8) Soil boring locations
   (9) Drainage, signing, lightning, etc. that is mounted on or passing through the wall.
   (10) Subsurface drainage structures or utilities which could be impacted by wall construction.

2. Elevation:
   (a) Top of wall elevations
   (b) Existing and finished ground line elevations
   (c) Vertical limits of measurement for payment
   (d) Type, limits and anchorage details of railing (only if Traffic Railing foundation standard is not being used on this project)
   (e) Top and bottom of wall profiles plotted at correct station & elevation.
   (f) Underdrains
   (g) Any soil improvement, if applicable.
   (h) Drainage, signing, lighting etc. as noted above

(i) Drainage structures and utilities as noted above

3. Sectional View:
   (a) Reinforced volume
   (b) Underdrain location
   (c) Soil improvements, if applicable.

4. General Guidelines for Retaining Walls
   (a) The Engineer shall perform design calculations to check the external stability of the walls including slope stability, bearing, sliding and overturning and detail drawings in accordance with the standard requirements of the State.
   (b) For retaining wall submittals, the Engineer shall look at State's Bridge Division website for current requirements.

163.2. Traffic Control Plan, Detours, Sequence of Construction. The Engineer shall prepare Traffic Control Plans (TCP) for the project. The Engineer is to complete Form 2229-Significant Project Procedures along with Page 4 of Form 1002, specifically titled Accelerated Construction Procedures. A detailed TCP shall be developed in accordance with the latest edition of the TMUTCD. The Engineer is to implement the current Barricade and Construction (BC) standards as applicable. The Engineer shall interface and coordinate phases of work, including the TCP, with adjacent Engineers.

1. The Engineer shall provide a written narrative of the construction sequencing and work activities per phase and determine the existing and proposed traffic control devices (regulatory signs, warning signs, guide signs, route markers, construction pavement markings, barricades, flag personnel, temporary traffic signals, etc.) to be used to handle traffic during each construction sequence. The Engineer shall show proposed traffic control devices at grade intersections during each construction phase (stop signs, flagperson, signals, etc.). The Engineer shall show temporary roadways, ramps, structures (including railroad shoo-fly) and detours required to maintain lane continuity throughout the construction phasing. If temporary retaining walls are required, show the limits on the applicable TCP.
2. Coordinate with the State in scheduling a Traffic Control Workshop and submittal of the TCP for approval by the Traffic Control Approval Team (TCAT). The Engineer shall assist the State in coordinating mitigation of impacts to adjacent schools, emergency vehicles, pedestrians, bicyclists and neighborhoods.
3. Develop each TCP to provide continuous, safe access to each adjacent property during all phases of construction and to preserve existing access. The Engineer shall notify the State in the event existing access must be eliminated, and must receive approval from the State prior to any elimination of existing access.
4. Design temporary drainage to replace existing drainage disturbed by construction activities or to drain detour pavement. The Engineer shall show horizontal and vertical location of culverts and required cross sectional area of culverts.
5. Prepare each TCP in coordination with the State. The TCP shall include interim signing for every phase of construction. Interim signing shall include regulatory, warning, construction, route, and guide signs. The Engineer shall interface and coordinate phases of work, including the TCP, with adjacent Engineers, which are responsible for the preparation of the PS&E for adjacent projects.
6. Maintain continuous access to abutting properties during all phases of the TCP. The Engineer shall develop a list of each abutting property along its alignment. The Engineer shall prepare exhibits for and attend meetings with the public, as requested by the State.

7. Make every effort to prevent detours and utility relocations from extending beyond the proposed Right-of-way lines. If it is necessary to obtain additional permanent or temporary easements and Right-of-Entry, the Engineer shall notify the State in writing of the need and justification for such action. The Engineer shall identify and coordinate with all utility companies for relocations required.
8. Describe the type of work to be performed for each phase of sequence of construction and any special instructions (e.g. storm sewer, culverts, bridges, railing, illumination, signals, retaining walls, signing, paving surface sequencing or concrete placement, ROW restrictions, utilities, etc.) that the contractor should be made aware to include limits of construction, obliteration, and shifting or detouring of traffic prior to the proceeding phase.
9. Include the work limits, the location of channelizing devices, positive barrier, location and direction of traffic, work area, stations, pavement markings, and other information deemed necessary for each phase of construction.
10. The Engineer shall identify and delineate any outstanding ROW parcels.
11. Delineate areas of wetlands on traffic control plans.

163.3. Temporary Traffic Signals and Illumination: If the Engineer determines that an existing traffic signal will be affected by the project, then the Engineer shall address the adjustment/realignment of traffic signal heads and the use of detection for mainlanes and side streets on the plans. The Engineer shall obtain traffic movement counts to address any new timing plans to minimize the impact during construction and to determine the storage length needed for left and right turn movements. The Engineer shall address lighting of signalized intersections, and shall coordinate with local utilities as approved by the State.

163.4. Illumination. The Engineer shall refer to TxDOT's *Highway Illumination Manual* and other deemed necessary State approved manuals for design of continuous lighting and safety lighting for all conventional, high-mast, and underpass lighting. The Engineer shall include safety lighting as part of each design on each flashing beacon and traffic signal. The Engineer shall provide a preliminary layout for initial review and approval by the State. The Engineer shall prepare circuit wiring diagrams showing the number of luminaries on each circuit, electrical conductors, length of runs, service pole assemblies. Underpass lighting shall be used on all structures within each project. The Engineer shall integrate existing illumination within the project limits into the proposed design. The Engineer shall coordinate with the State to determine the location of proposed high-mast, conventional, and underpass lighting.

163.5. StormWater Pollution Prevention Plans (SW3P). The Engineer shall develop SW3P, on separate sheets from (but in conformance with) the TCP, to minimize potential impact to receiving waterways. The SW3P shall include text describing the plan, quantities, type, phase and locations of erosion control devices and any required permanent erosion control

163.6. Compute and Tabulate Quantities. The Engineer shall provide the summaries and quantities within all formal submittals.

163.7. Special Utility Details (Water, Sanitary Sewer, *etc.*) The Engineer shall develop special details to accommodate or adjust utilities. Prior to developing any special utility detail, the Engineer shall notify the State in writing regarding each utility conflict that may require an accommodation. As directed by the State the Engineer shall coordinate with each utility to develop each special detail. The Engineer shall develop each utility detail or accommodation in compliance with the State's *Utility Accommodation Rules*. The Engineer shall prepare each plan sheet, detail sheet, special specification, special provision, and special note required to incorporate the details into the State's plans.

163.8. Miscellaneous Structural Details. The Engineer shall provide necessary details required to supplement standard details.

163.9. Agreements (Railroad, *etc*.) and Layouts. The Engineer shall prepare each railroad or other agency agreement, exhibit, and layout sheet in accordance with the requirements of each railroad and as directed by the State. The Engineer shall coordinate with each railroad or agency and the State to determine submittal requirements, processing schedules, and exhibit formats. The Engineer shall submit each exhibit to the State for review and processing.

163.10. Estimate. The Engineer shall independently develop and report quantities necessary to construct contract in standard State bid format at the specified milestones and Final PS&E submittals. The Engineer shall prepare each construction estimates using Estimator. The estimate shall be provided in DCIS format at the 95% and Final PS&E submittals.

163.11. Specifications and General Notes. The Engineer shall identify necessary standard specifications, special specifications, special provisions and the appropriate reference items. The Engineer shall prepare General Notes from the District's *Master List of General Notes*, Special Specifications and Special Provisions for inclusion in the plans and bidding documents. The Engineer shall provide General Notes, Special Specifications and Special Provisions in the required format.

FC 165 – Traffic Management Systems (Permanent)

The Engineer shall design and provide details as a part of the State's Intelligent Transportation System to be managed from the Combined Transportation, Emergency and Communications Center (CTECC). The design shall include elements such as lane-use control signals, variable message signs, closed-circuit Television (TV) cameras, and loop or other vehicle detection devices. The Engineer shall prepare the design and details including conduit and cable, support structures, control equipment, etc. necessary to implement the system. Design specifications shall be defined in the work authorization. The Engineer shall also coordinate with the State Computerized Transportation Management Systems (CTMS) Section should the State have a computerized traffic management system under construction or in place and operating within the project limits.

FC 170 – Bridge Design

FC 170 – Bridge Design

170.1. Bridge Layout. The Engineer shall prepare the bridge layout plan sheet. The Engineer shall determine the location of each soil boring needed for foundation design in accordance with the *Geotechnical Manual*.

Prior to preparation of each bridge layout, the Engineer shall prepare a comparative cost analysis of bridge structures to determine: (1) the optimum bridge beams for vertical clearance over railroads, roadway, or waterways, (2) the optimum bridge structure versus roadway embankment, pavement, soil stabilization, and retaining walls, and (3) to determine optimum in bridge beams for the direct connectors.

The Engineer shall submit each bridge layout early in the plan preparation process to obtain approval from the State. The Engineer shall comply with all relevant sections of the latest edition of the State's LRFD Bridge Design Manual, Bridge Project Development Manual, Bridge Detailing Manual, and AASHTO LRFD Bridge Design Specifications and respective checklists. Each bridge layout sheet shall include bridge typical sections, structural dimensions, abutment and bent locations, superstructure and substructure types. The Engineer shall locate and plot all soil borings and utilities, show proposed retaining walls, and, for staged construction, indicate limits of existing bridge for removal and reconstruction.

170.2. Bridge Detail Summary. The Engineer shall prepare bridge quantities, estimates and

specifications in accordance to the above-listed manuals.

170.3. Bridge Structural Details. The Engineer shall prepare each structural design and develop detailed structural drawings of all required details in compliance with above-listed manuals. Additionally, the Engineer shall perform the following tasks:

1. Perform calculations for design of bridge abutments.
2. Perform calculations for bridge slab design.
3. Perform calculations to determine elevations of bridge substructure and super structure elements.
4. Perform calculations for bridge box beam design.
5. Prepare necessary foundation details and plan sheets.
6. Prepare plan sheets for abutment design.
7. Prepare plan sheets for additional abutment details.
8. Prepare framing plan and slab plan sheets.
9. Compute and prepare tables for slab and bearing seat elevations, dead load deflections, etc.
10. Design beams and prepare beam design tables.
11. Prepare Bridge Summary Sheet.

Deliverables Plans

The Engineer shall provide the following information at each submittal:

1.0 30% Plans Submittal
1.1. 8 sets of 11” x 17” plan sheets for the State District Review.
1.2. Estimate of construction cost.
1.3. Engineer’s internal QA/QC markup set.
1.4. Form 1002 and Design Exceptions with existing and proposed typical sections, location map and design exception exhibits.
2. 0 Between 30% Submittal and 60% Submittal:
2.1. 8 sets of 11” x 17” bridge and retaining wall layouts for the State District review.
2.2. External stability analysis for retaining walls.
2.3. Engineer’s internal QA/QC marked up set.
2.4. 1 set of a roll format TCP phasing layouts, 1 .pdf of plans sheets for TCP concept, and significant project procedures form (State Form 2229) to present at the DSRT for the State review.
2.5. 1 set of a roll format of illumination plan concept to State review.
2.6. For Division Hydraulic Review of existing Bridge Class Culverts, 5 sets of 11” x 17” Bridge Class Culvert Plan and Profile sheets and Hydrology & Hydraulics sheets, include project title sheet and project layout sheet.
3. 0 60% Plans Submittal:
3.1. 8 sets of 11” x 17” plan sets for the State District review.
3.2. Estimate of construction cost.
3.3. Engineer’s internal QA/QC marked up set.
3.4. 1 set of a roll format TCP phasing layouts, 1 .pdf of plans sheets for TCP concept, and significant project procedures form (State Form 2229) to present at the DSRT for the State review.
4.0 State Bridge Review (7 sets of Bridge Layouts)
5.0 Review Submittal (90%)
5.1.10 sets of 11” x 17” plan sheets for the State District Review.
5.2. Estimate of construction cost.
5.3. Marked up general notes

5.4. Construction schedule.
5.5. New Special Specifications and Special Provisions with Form 1814, if applicable.
5.6. Engineer's internal QA/QC marked up set.
5.7. Other supporting documents.
6. 0District Review Submittal (95%):
6.1. 12 sets of 11" x 17" plan sheets for the State district review
6.2. List of governing Specifications and Special Provisions in addition to those required.
6.3. Marked up general notes.
6.4. Plans estimate.
6.5. New Special Specifications and Special Provisions with Form 1814, if applicable.
6.6. Triple Zero Special Provisions.
6.7. Engineer sign, seal and date supplemental sheets (8 ½" x 11").
6.8. Contract time determination summary.
6.9. Significant project procedures form.
6.10. Right-of-Way and utilities certification.
6.11. Temporary road closure letters.
6.12. Construction speed zone request.
6.13. Engineer's internal QA/QC marked-up set.
6.14. Other supporting documents.
7. 0 Final submittal (100%).
7.1. 1 mylar set (11" x 17") and 13 paper sets of 11" x 17"
7.2. Revised supporting documents from 95% review comments.

Electronic Copies

The Engineer shall furnish the State with a CD/DVD of the final plans in the current CADD system used by the STATE, .pdf format, and in the District's File Management System (FMS) format.

The Engineer shall also provide separate CD/DVD containing cross section information (in dgn, XLR & ASCII formats) for the contractor's use.

Primavera (P3) file or the latest scheduling program used by the State for construction time estimate.

Calculations

The Engineer shall provide a 3-ring binder with all quantity and non-structural design calculations.

Provide a bound copy of all engineering calculations, analysis, input calculations, quantities, geometric designs (GEOPAK GPK files), etc. relating to the project's structural elements. Project structural elements include, but are not limited to: bridges, retaining walls, overhead sign foundations, high-mast illumination foundations, non-standard culverts, custom headwalls and drainage appurtenances.

Provide working copies of all spreadsheets and output from any programs utilized on a CD/DVD in a universally reliable format.

The Engineer may provide the requested information on a CD/DVD. Submit element normally bound using a .pdf format.

SECTION 3: UTILITY ENGINEERING AND COORDINATION

1. Responsible Parties:
   1.1. **Utility Coordinator:** Herein referred to as the provider performing services in a non-engineering capacity.
   1.2. **Utility Engineer:** Herein referred to as the registered Professional Engineer, who is an employee of the Engineer, performing services in a professional engineering capacity.
2. **Function Code 163: Utility Engineering Investigation (currently Subsurface Utility Engineering)** including utility investigations subsurface and above ground prepared in accordance with AASHTO standards [ASCE C-1 38-02 (http://www.fhwa.dot.gov/programadmin/asce.cfm)] and Utility Quality Levels as follows.

2.1. Utility Quality Levels are defined in cumulative order (least to greatest) as follows:

2.1.1. Quality Level D - Existing Records: Utilities are plotted from review of available existing records.

2.1.2. Quality Level C - Surface Visible Feature Survey: Quality level "D" information from existing records is correlated with surveyed surface-visible features. Includes Quality Level D information. If there are variances in the designated work area of Level D, a new schematic or plan layout will be necessary to identify the limits of the proposed project and the limits of the work area required for the work authorization; including highway stations, limits within existing or proposed right of way, additional areas outside the proposed right of way, and distances or areas to be included along existing intersecting roadways.

2.1.3. Quality Level B - Designate: Two-dimensional horizontal mapping. This information is obtained through the application and interpretation of appropriate non-destructive surface geophysical methods. Utility indications are referenced to established survey control. Incorporates quality levels C and D information to produce Quality Level B. If there are variances in the designated work area of Level D, a new schematic or plan layout will be necessary to identify the limits of the proposed project and the limits of the work area required for the work authorization; including highway stations, limits within existing or proposed right of way, additional areas outside the proposed right of way, and distances or areas to be included along existing intersecting roadways.

2.1.4. Quality Level A - Locate (Test Hole): Three-dimensional mapping and other characterization data. This information is obtained through exposing utility facilities through test holes and measuring and recording (to appropriate survey control) utility/environment data. Incorporates quality levels B, C and D information to produce Quality Level A.

2.2. Designate (Quality Level B), Designate means to indicate the horizontal location of underground utilities by the application and interpretation of appropriate nondestructive surface geophysical techniques and reference to established survey control. Designate (Quality Level B) Services are inclusive of Quality levels C and D.

2.2.1. The Engineer shall:

2.2.1.1. As requested by the State compile "As Built" information from plans, plats and other location data as provided by the utility owners.

2.2.1.2. Coordinate with utility owner when utility owner's policy is to designate their own facilities at no cost for preliminary survey purposes. The Engineer shall examine utility owner's work to ensure accuracy and completeness.

2.2.1.3. Designate, record, and mark the horizontal location of the existing utility facilities and their service laterals to existing buildings using non-destructive surface geophysical techniques. No storm sewer facilities are to be designated unless authorized by the State. A non-water base paint, utilizing the APWA color code scheme, must be used on all surface markings of underground utilities.

2.2.1.4. Correlate utility owner records with designating data and resolve discrepancies using professional judgment. A color-coded composite utility facility plan with utility owner names, quality levels, line sizes and subsurface utility locate (test hole) locations, shall be prepared and delivered to the State. It is understood by both the Engineer and the State that the line sizes of designated utility facilities detailed on the deliverable are from the best available records and that an actual line size is normally determined from a test hole vacuum excavation. A note must be placed on the designate deliverable only that states "lines sizes are from best available records". All above ground appurtenance locations must be included in the deliverable to the State. This information shall be provided in the latest version of

Micro Station or Geopak used by the State. The electronic file will be delivered on CD or DVD, as required by the State. A hard copy is required and must be signed, sealed, and dated by the Engineer. When requested by the State, the designated utility information must be over laid on the State's design plans.

2.2.1.5. Determine and inform the State of the approximate utility depths at critical locations as determined by the State. This depth indication is understood by both the Engineer and the State to be approximate only and is not intended to be used preparing the right of way and construction plans.

2.2.1.6. Provide a monthly summary of work completed and in process with adequate detail to verify compliance with agreed work schedule.

2.2.1.7. Close-out permits as required.

2.2.1.8. Clearly identify all utilities that were discovered from quality levels C and D investigation, but can not be depicted in quality level B standards. These utilities must have a unique line style and symbology in the designate (Quality Level B) deliverable.

2.2.1.9. Comply with all applicable State policy and procedural manuals.

2.3. Subsurface Utility Locate (Test Hole) Service (Quality Level A), Locate means to obtain precise horizontal and vertical position, material type, condition, size and other data that may be obtainable about the utility facility and its surrounding environment through exposure by non-destructive excavation techniques that ensures the integrity of the utility facility. Subsurface Utility Locate (Test Hole) Services (Quality Level A) are inclusive of Quality Levels B, C, and D.

2.3.1. The Engineer shall:

2.3.1.1. Review requested test hole locations and advise the State in the development of an appropriate locate (test hole) work plan relative to the existing utility infrastructure and proposed highway design elements.

2.3.1.2. Coordinate with utility owner inspectors as may be required by law or utility owner policy.

2.3.1.3. Neatly cut and remove existing pavement material, such that the cut not to exceed 0.10 square meters (1.076 square feet) unless unusual circumstances exist.

2.3.1.4. Measure and record the following data on an appropriately formatted test hole data sheet that has been sealed and dated by the Engineer:

2.3.1.4.1. Elevation of top and/or bottom of utility tied to the datum of the furnished plan.

2.3.1.4.2. Identify a minimum of two benchmarks utilized. Elevations shall be within an accuracy of 15mm (.591 inches) of utilized benchmarks.

2.3.1.4.3. Elevation of existing grade over utility at test hole location.

2.3.1.4.4. Horizontal location referenced to project coordinate datum.

2.3.1.4.5. Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems.

2.3.1.4.6. Utility facility material(s).

2.3.1.4.7. Utility facility condition.

2.3.1.4.8. Pavement thickness and type.

2.3.1.4.9. Coating/Wrapping information and condition.

2.3.1.4.10. Unusual circumstances or field conditions.

2.3.1.5. Excavate test holes in such a manner as to prevent any damage to wrappings, coatings, cathodic protection or other protective coverings and features. Water excavation can only be utilized with written approval from the appropriate State District Office.

2.3.1.6. Be responsible for any damage to the utility during the locating process. In the event of damage, the Engineer shall stop work, notify the appropriate utility facility owner, the

State and appropriate regulatory agencies. The regulatory agencies include, but are not limited to the Railroad Commission of Texas and the Texas Commission on Environmental Quality. The Engineer shall not resume work until the utility facility owner has determined the corrective action to be taken. The Engineer shall be liable for all costs involved in the repair or replacement of the utility facility.

2.3.1.7. Back fill all excavations with appropriate material, compact backfill by mechanical means, and restore pavement and surface material. The Engineer shall be responsible for the integrity of the backfill and surface restoration for a period of three years. Install a marker ribbon throughout the backfill.

2.3.1.8. Furnish and install a permanent above ground marker (as specified by the State, directly above center line of the utility facility.

2.3.1.9. Provide complete restoration of work site and landscape to equal or better condition than before excavation. If a work site and landscape is not appropriately restored, the Engineer shall return to correct the condition at no extra charge to the State.

2.3.1.10. Plot utility location position information to scale and provide a comprehensive utility plan sign and sealed by the responsible Engineer. This information shall be provided in the latest version of Micro Station or Geopak format used by the State. The electronic file will be delivered on C.D or DVD. When requested by the State, the Locate information must be over laid on the State's design plans.

2.3.1.11. Return plans, profiles, and test hole data sheets to the State. If requested, conduct a review of the findings with the State.

2.3.1.12. Close-out permits as required.

3. **Function Code 130: Utility Adjustment Coordination** including utility coordination meetings with individual utility companies, communication and coordination with utilities, and preparation of utility agreement assemblies including utility agreements, joint use agreements, and advanced funding agreements.

3.1. The Utility Coordinator shall perform utility coordination and liaison activities with involved utility owners, their consultants, and the State to achieve timely project notifications, formal coordination meetings, conflict analysis and resolution. The Utility Coordinator shall act as the "Responsible Party" as indicated in the State's– Utility Cooperative Management Process (See the State's ROW Utility Manual, chapter 2).

3.1.1. The Utility Coordinator shall coordinate all activities with the State, or their designee, to facilitate the orderly progress and timely completion of the State design phase. The Utility Coordinator shall be responsible for the following:

3.1.1.1. Work Plan. Coordinate a work plan including a list of the proposed meetings and coordination activities, and related tasks to be performed, a schedule and an estimate. The work plan must satisfy the requirements of the project and must be approved by the State prior to commencing work.

3.1.1.2. Orientation. Prepare and present, in collaboration with State staff, instruction and orientation sessions as required by the State. The instruction shall introduce the subsurface utility engineering process, demonstrate the technology and facilitate the preparation of work orders, billings, and contract related documentation.

3.1.1.3. Initial Project Meeting. Attend an initial meeting and an on-site inspection (when appropriate) to ensure familiarity with existing conditions, project requirements and prepare a written report of the meeting.

3.1.1.4. External Communications. The Utility Coordinator shall coordinate all activities with the State and its consultants or other contractors or representatives, as authorized by the State. Also, the Utility Coordinator shall provide the State copies of diaries, correspondence and other documentation of work-related communications between

the Utility Coordinator, utility owners and other outside entities when requested by the State.

3.1.1.5. Permits and rights of entry. Obtain all necessary permits from city, county, municipality, railroad or other jurisdiction to allow the Engineer to work within existing streets, roads or private property for additional designating and/or subsurface utility locating.

3.1.1.6. Progress Meetings. The Utility Coordinator shall implement a schedule of periodic meetings with each utility company and owner or owner's representatives for coordination purposes. Such meetings shall commence as early as possible in the design process and shall continue until completion of the project. The Utility Coordinator shall notify the State at least two (2) business days in advance of each meeting to allow the State the opportunity to participate in the meeting. The Utility Coordinator shall provide and produce meeting minutes of all meetings with said utility companies, owners or owners' representatives within seven (7) business days. The frequency of such meetings shall be appropriate to the matters under discussion with each utility owner.

3.1.2 As required the Utility Coordinator shall coordinate with the local utilities committees to present a foot print of the State's projects with represented utility companies and owners. The Utility Coordinator shall also coordinate with any other utility committees which may include county, city, or other officials, if needed.

3.1.3 The Utility Coordinator shall provide initial project notification letters to all affected utility companies, owners, and other concerned parties, if needed.

3.1.4 The Utility Coordinator shall provide the State and all affected utility companies and owners a Utility Contact List for each project with all information such as: (a) Owner's Name; (b) Contact Person; (c) Telephone Numbers; (d) Emergency Contact Number; (e) E-mail addresses; (f) as well as all pertinent information concerning their respective affected utilities and facilities, including but not limited to: size, number of poles, material, and other information which readily identifies the utilities companies' facilities.

3.1.5 The Utility Coordinator shall advise utility companies and owners of the general characteristics of the Project and provide an illustration of the project footprint for mark-up of the utility facility locations that occupy the project area.

3.2. The Utility Coordinator shall coordinate which utilities will conflict with highway construction or the "Utility Accommodation Rules" (UAR), and make the utility company aware of these conflicts. The Utility Coordinator shall assist the utility companies in the preparation of required agreements associated with the funding of adjustments and the occupation of state right of way;

3.2.1. Utility Agreement Assemblies: A packaged agreement consisting of a Utility Joint Use Acknowledgement, Standard Utility Agreements, Plans on 11x17 sheets, Statement of contract work form, Affidavit form and copy of recorded easement, schedule of work and various attachments as detailed in the UAR and the State's Utility Manual.

3.2.1.1. Utility Agreements: If a utility is located within an easement, the utility company may have a compensable interest. The utility company must furnish a copy of their easement to the Utility Coordinator. The Utility Coordinator shall determine whether or not a compensable interest exists and the owner's degree of eligibility. The Utility Coordinator shall assist the utility company with adjustment plans and cost estimate for these adjustments. The Utility Coordinator shall review plans to ensure compliance with UAR and ensure the proposal will not conflict with highway construction. The Utility Coordinator shall submit a copy of the easement, plans, and estimate to the State by letter recommending approval (6 copies of each). The utility should be

reimbursed all cost incurred within their easement limits for replacement in kind.

3.2.1.2. Utility Acknowledgement: For this project, all Non-Reimbursable Utility Adjustments shall be submitted with the form ROW-U-JUAB "Utility Joint Use Acknowledgement, Non-Reimbursable Utility Adjustment. This form replaces the Notice of Proposed Installation" (Form 1082). The term permit refers to form 1082 or form ROW-UJUAB. The Utility Coordinator shall furnish the appropriate form to the utility company and assist them with adjustment plan preparation. The utility company should submit the Utility Joint Use Acknowledgement and adjustment plans to the Utility Coordinator for review. The Utility Coordinator shall review plans to ensure compliance with UAR and ensure the proposal will not conflict with highway construction. The Utility Coordinator shall submit the Utility Joint Use Acknowledgement to the State by letter recommending approval (6 copies).

3.2.1.3. Escrow Agreements: If it is determined that the utility will be adjusted as part of the highway contract; the State's project manager must be notified immediately. The Utility Coordinator shall determine what funding amount is required based upon the applicable betterment or eligibility ratio. The State shall be notified immediately of the need for an Advanced Funding Agreement (AFA) by the Utility Coordinator. The Engineer shall coordinate the development of the required AFA with the utility owner and the State in accordance with established procedures of the State's Contracts Services Section. Procure or verify all AFA payments have been submitted to the State.

3.2.1.4. Federal Utility Procedures, . Where there is Federal-Aid in the right of way, inclusive of utility costs, the Federal Utility Procedures (FUP) Approval is Federal Highway Administration (FHWA) authorization for TxDOT to assume total oversight of the utility adjustment process. Necessary information for the FUP approval shall include the utility name(s), location(s) of existing facilities by station number and estimated cost of adjustment(s) by utility

3.2.1.5. State Utility Procedures.

3.2.1.6. Local Utility Procedures.

3.2.2. The Utility Coordinator shall submit the required number of executed copies of the Utility Agreement assemblies, which include the appropriate Forms as detailed in the UAR and supplied by the State, a copy of the recorded easement Deed, plans, and estimate to the State by letter recommending approval (6 copies of each). The utility should be reimbursed eligible costs incurred within their easement limits for replacement in kind." The transmittal should also provide a description of the work being done as well as the estimated cost and schedule of work. The Utility Coordinator shall not perform engineering of relocation plans relative to a particular Utility Agreement under this supplemental as this is a cost of Right of Way that is subsidiary to the specific Utility Agreement.

3.2.3. The Utility Coordinator shall be solely responsible for determining which utilities will be installed by "ROW-U-JUAB", or by "Agreement". The Utility Coordinator shall Process all ROW-U-JUAB requests, Utility Agreements and determine necessity of any Escrow Agreements and forward to the State for final approval;

3.2.4. The Engineer with the assistance of the Utility Coordinator shall be responsible for the timely coordination, review and submittal of all documentation to be included in all the Utility Agreements with such documents conforming to the requirements of 23 C.F.R. Section 645A. The Engineer with the assistance of the Utility Coordinator shall assist in the preparation, compilation, gathering, and collection of all required and supporting documents to be included with the Utility Agreements.

3.2.5. For each Utility, the records for all utility owners' costs shall be in accordance with the

requirements of 23 C.F.R. Section 645A, in a format that is compatible with the estimate attached to the Utility Adjustment Agreement and insufficient detail for analysis. The totals for labor, overhead, construction costs, travel, transportation, equipment, materials, supplies and other services shall be shown in such a manner as to permit comparison with the approved estimate.

3.2.6. The Engineer shall maintain a complete set of records for all Utility Adjustment Costs for each Utility for a period of time sufficient to complete all final payments to the utility companies or owners.

4. **Function Code 163: Utility Engineering** including the identification of utility conflicts, coordination, compliance with the UAR, and resolution of utility conflicts. The Engineer shall coordinate all activities with the State, or their designee, to facilitate the orderly progress and timely completion of the State's design phase.

4.1. Coordination of engineering activities include:

4.1.1. Utility Layout: The Engineer shall maintain a utility layout in the latest version of Micro Station used by the State. This layout shall include all existing utilities which are to remain in place or be abandoned, and all adjusted utilities. This layout shall be utilized to monitor the necessity and evaluate alternatives. The Utility Engineer shall utilize the layout of existing utilities as prepared, if available, and make a determination of the following;

4.1.1.1. Facilities in conflict with the proposed project that are to be relocated.

4.1.1.2. Facilities to be abandoned in place.

4.1.1.3. Facilities to remain in service and in place as a result roadway design adjustments and meeting the current UAR.

4.1.1.4. The Utility Engineer shall be responsible for determining if there are additional facilities, not shown in the Subsurface Utility Engineering (SUE) documents, which require relocation. The Engineer shall coordinate this information with the State immediately upon discovery.

4.2. Public & Individual Meetings with Utility Companies, as required, to facilitate utility conflict identification and resolution.

4.2.1. Establish contact with all existing utilities within and adjacent to the project limits and set up utility coordination meetings to discuss concepts and options for construction.

4.2.2. Schedule all utility coordination meetings and ensure compatibility with the schedule of the State.

4.2.3. Set agenda for all coordination meetings as directed by the State.

4.2.4. Establish and promote the desired agenda and methodologies for utility construction within the project limits. The agenda and methodologies will consist primarily of promoting the construction of utilities as a part of the Highway Contract.

4.2.5. Orientation: Prepare and present, in collaboration with the State, instruction and orientation sessions as required. The instruction shall introduce the SUE Plans, the proposed utility layout, processes, demonstrate the technology and facilitate the preparation of work orders, billings, and contract related documentation as it pertains to utility adjustment work.

4.2.6. Initial Project Meeting: Attend an initial meeting and an on-site inspection (when appropriate) to ensure familiarity with existing conditions, project requirements and prepare a written report of the meeting.

4.2.7. Work Plan: Develop a work plan including a list of the tasks to be performed, a schedule and an estimate. The work plan must satisfy the requirements of the project and must be approved by the State prior to commencing work.

4.2.8. Progress Meetings: Meet with the State periodically to coordinate the work effort and resolve problems and prepare a written report of such meetings. The meetings shall review:

4.2.8.1. Activities completed since the last meeting

4.2.8.2. Problems encountered.

4.2.8.3. Late activities.

4.2.8.4. Activities required by the next progress meeting.

4.2.8.5. Solutions for unresolved and/or anticipated problems.

4.2.8.6. Information or items required from other agencies/consultants.

4.3. Review of Utility's Proposed Adjustments

4.3.1. Evaluate Alternatives: The Utility Engineer shall evaluate alternatives in the adjustment of utilities balancing the needs of both the State and the Utility.

4.3.2. Review Estimates and Schedules: The Utility Engineer shall review the utility adjustment estimates for reasonableness of cost and the timely scheduling of the adjustment.

4.3.3. Review Plans for compliance with Utility Accommodation Rules and proposed location data. The responsibility for quality and accuracy of Utility adjustment plans will remain with the Utility Company.

4.3.4. Inspect Traffic control setup. Ensure necessary traffic control, labor and equipment is utilized where applicable during the utility relocation process. The Utility Engineer shall ensure compliance with the regulations of the most recent edition of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD). The Utility Engineer must obtain approval from the State concerning the proposed method of handling traffic prior to allowing commencement of work.

4.4. The Engineer shall not provide services for the sole benefit of third parties.

4.5. The Engineer shall prepare a Signed and Sealed Proposed Utility Layout in the latest version of Micro Station used by the State that can be overlaid on the base file with drainage. The Engineer shall;

4.5.1. Ensure all facilities conflicts have been resolved.

4.5.2. Ensure all stakeholders have concurred with the various alignments.

4.5.3. Establish the sequence of construction for all utility relocation work whether it is included as a part of the Highway Construction or not.

4.5.4. Determine which utilities will be built as part of the contract.

4.5.5. Determine which facilities will be relocated prior to construction.

4.6. The Engineer shall coordinate, develop and or review PS&E for all utilities included in the construction contract.

4.7. Utility Certification/Special Provisions: The Utility Engineer shall submit upon request from the State, a Utility Certification or a Special Provisions report. The Utility Certification or Special Provisions report will certify that all utilities are clear for highway construction. However, if the utility adjustments are not complete prior to highway project letting, a Special Provision shall be required outlining all outstanding utility conflicts and their affects on highway construction. Furthermore, a Utility Clearance schedule, signed by the utility owner shall be provided with the certification as noted above. The formats for the Certification and the Clearance schedule will be provided by the State.

4.8. The Utility Coordinator shall submit the required number of executed copies of the Utility Agreement assemblies, which include the appropriate Forms as detailed in the UAR and supplied by the State, a copy of the recorded easement Deed, plans, and estimate to the State by letter recommending approval (6 copies of each). The Transmittal letter should include the following statement "The proposed utility adjustment will not conflict with proposed highway construction and will comply with UAR. The utility should be reimbursed eligible costs incurred within their easement limits for replacement in kind." The transmittal should also provide a description of the work being done as well as the estimated cost and schedule of work. The Engineer shall not perform engineering of relocation plans relative to a particular Utility Agreement under this contract as this is a cost of Right of Way that is subsidiary to the specific Utility Agreement.

5. **Function Code 130: Utility Adjustment Monitoring and Verification**, including the utility location installation verification, compliance with Utility Accommodation Rules, monitoring, reporting, and as-built surveying as required for the State.

5.1. The Engineer shall schedule a Pre-Construction meeting for each utility adjustment for which they are required to perform field verification and inspection duties. The Engineer is responsible for ensuring the necessary State representatives are present.

5.2. Verification:

5.2.1. The Utility Engineer shall field verify all utility adjustments to ensure that the new facilities are located according to plans, specifications, and the Proposed Utility Layout. This shall include all surveying and right of way staking as needed to clear the proposed construction.

5.2.2. The Utility Engineer shall insure that the utility is in compliance with the TMUTCD, "Storm Water Pollution Prevention Plan" (SW3P), backfill specifications, and restoration of right of way upon completion of work.

5.3. Status Reports: The Engineer shall provide the State with a status report for all utility adjustments on a monthly basis. The State will provide the status report format to the Engineer.

5.4. Review Payment Request: The Engineer shall review all payment requests for conformance with the utility estimate and verify the work has been performed.

5.5. Notification. The Engineer shall notify the State if demobilizing occurs before the approved scope of services is completed. This notification must occur before the demobilization process begins. This requirement may only entail documentation into diaries.

5.6. As-Built Drawings and GPS File: The Engineer shall, per work authorization, provide a GPS file showing all bends, installation types, casings, and above ground appurtenances and shall be supplied upon completion of the utility work in a format specified by the State. The drawings and GPS files shall also include all utility adjustments and installations that are not to be constructed as a part of the Highway Project. A set of 11" x 17" as built drawings, signed and sealed by the Engineer along with a CD containing electronic files shall be submitted prior to final payment and acceptance of all Utility Coordination activities.-

5.7. The Utility Company retains all responsibility for all inspections related to compliance with Utility Codes, Industry standards, and design of the Utility Facility.

5.8. The Engineer shall not provide services for the sole benefit of third parties.

PHASE III- PLAN, SPECIFICATIONS AND ESTIMATE SERVICES

The Engineer shall prepare and submit the 30%, 60%, 90% and final submissions in accordance to the Laredo District PS&E Submissions requirements. The County Project Manager is responsible for the coordination, review, and the quality submission of the PS&E packages prepared by consultants. The following tasks identify the responsibilities and deliverables that shall be carried out by the Engineer as part of PS&E development and submissions:

I. GENERAL

Task: Title Sheet (FC: 163)
The Engineer shall prepare and submit this work under this task in accordance to the PS&E Preparation Manual and other deemed necessary TxDOT approved manuals.

Task: Project Layout/ Index (FC: 163)
The Engineer shall prepare and submit work under this task in accordance to the PS&E Preparation Manual and other deemed necessary TxDOT approved manuals. The location of project should depict the entire project with beginning and ending (Station Numbers/Reference Markers) for each noted CSJ. Mapping landmarks (side streets, creeks, etc.) along with North Arrow and a scale should be shown to help relate the physical location of the project. By use of shading or cross-hatching, the proposed areas of construction should be shown.

Task: Typical Sections –Configuration (Lane/Shoulder/Cut/Fill/etc.) (FC: 160)
The Engineer shall use the Design Speed, the Funding Category, Average Daily Traffic, ADT, Roadway Classification, Location Type, and the appropriate Design Criteria to develop the typical sections as set forth in the Roadway Design Manual, PS&E Preparation Manual and other deemed necessary TxDOT approved manuals to prepare and submit the work under this task. The existing typical section should be shown with current roadway (pavement, right of way, etc.) characteristics. The proposed typical sections should be shown below the existing typical section with all related pertinent (pavement, right of way, etc.) information for the proposed roadway construction.

Task: Typical Sections – Pavement Design (FC: 160)
Pavement Design to be provided by TxDOT.
Task: Typical Sections – Pavement Design Foundation Studies (FC: 110)
Pavement Design Foundation Studies to be provided by the Engineer.

Task: General Notes (FC: 163)
The Engineer shall prepare and submit work under this task in accordance to the PS&E Preparation Manual and other deemed necessary TxDOT approved manuals. The Engineer shall compile all pertinent General Notes and develop any Special Provisions/Special Specifications applicable and required for this project. Specifications and General Notes will be provided to the County electronically in acceptable format for transferring data.

Task: Estimate and Quantity (FC: 163)
The Engineer shall prepare and submit work under this task in accordance to the PS&E Preparation Manual and other deemed necessary TxDOT approved manuals. For all items, the Engineer shall prepare a complete listing of construction bid items and all applicable provisions, compute estimated quantities required for each item, and compute estimated cost of construction work based on current TxDOT average low bid unit prices and estimated quantities.

Task: Consolidated Summaries (FC: 163)
For Roadway, Bridge and Traffic quantities, the Engineer shall prepare and submit work under this task in accordance to the PS&E Preparation Manual and other deemed necessary County and TxDOT approved manuals. All summaries shall be consolidated per CSJ, City or County participation, etc. In addition some summaries (Traffic Control Plan, SW3P, etc.) shall be consolidated if applicable according to each phases of sequence of construction. Any quantities shown “For Contractor Information Only” should be shown as such.

II. TRAFFIC CONTROL PLANS (TCP)

The Engineer shall contact the County Project Manager prior to the 30% plan submission to address the approval of the Traffic Control Plan. The Engineer attends a meeting to make a presentation to the County and the TxDOT Laredo District Traffic Safety Review Team, DTSRT to obtain approval. At this time, the Engineer shall notify the State if they plan on requesting a speed reduction at the work zones. The Engineer shall prepare the request form using the latest approved Strip Map within the project limits in conjunction with the Traffic Standards for this request. If the project limits is within the city limits, the request shall be coordinated with the State and the local municipality at the early design process.

Prior to making a presentation to the County and the TxDOT DTSRT, the Engineer shall be responsible to advise County Project Manager of any traffic control issues that may affect the design from any previous initial meetings. The plans shall address the Typical Sections, Phases Narrative, Phase Layouts, and Temporary Traffic Signals and Illumination for each respective phase.

The Engineer shall provide the County with a hardcopy and accompanying electronic file of a schedule and Critical Path Method for project duration for each phase of construction using Primavera software.

Task: Phase Narrative (FC: 163)
The Engineer shall describe the type of work to be performed for each phase of sequence of construction and any special instructions (ex: storm sewer, culverts, bridges, railing, illumination,

signals, retaining walls, signing, paving surface sequencing or concrete placement, ROW restrictions, utilities, etc.) that the contractor should be made aware to include limits of construction, obliteration, and shifting or detouring of traffic prior to the proceeding phase.

Loop 20 Extension Project – PS&E (Work Authorization No. 3) Project Length: 2.69 Miles
– Development of PS&E from Just North of Loop 20/US59 Overpass (Sta. 115+85.40 to Just North of Jacaman (Sta. 257+85.56 including overpasses over Airport Blvd. and Jacaman including frontage roads and hike and bike trail on eastside of roadway. The PS&E will be organized in no more than four(4) packages; limits determined during PS&E development.

Task: Typical Sections (FC: 163)
The Engineer shall include the work limits, the location of channelizing devices, positive barrier, location & direction of traffic, work area, stations, pavement markings, and other information deemed necessary for each phase of sequence of construction.

Task: Phases Layouts (FC: 163)
If Engineer determines that a standard is not applicable to address the entire project, then the Engineer shall prepare layouts for each respective phase of sequence of construction to illustrate any necessary additional construction details not covered by the Standards to address work limits for each sequence in stations, channelizing devices, barricades, positive barrier, tapers, buffer zones, TCP signage, SIGNS, work zone pavement markings, work area, location & direction of traffic, locations for pedestrian crossings, and other information deemed necessary for each phase of sequence of construction. The Engineer shall develop the layouts by referring to the TxDOT standards, latest version of the TxMUTCD and the Sign Crew Field Book for non-TCP signage that may be needed as part of the TCP signage for intersections. The layouts shall address construction of detours, access to business, homes, side streets, and driveways, and reroute of traffic to other roads. In addition, the Engineer shall assure that drainage issues have been addressed as result of changes in horizontal and vertical profiles by specifying the location and size of the temporary drainage structures. The Engineer shall determine the hydrology and hydraulics in accordance the information shown on “V. DRAINAGE DETAILS”. Show all necessary documentation required for “V. DRAINAGE DETAILS” on the traffic control plans as for Contractor information only. When using positive barrier, the engineer shall check for sight distance from adjacent roads and streets.

The Engineer shall prepare the plan and profile sheets and cross sections for all detours using the criteria established under “III. ROADWAY DETAILS, Task: Plans and Profile, Function Code: 160”. These sheets and cross sections shall follow the phase layouts on the plans.

Task: Standards (FC: 163)
The Engineer shall identify and insert, as frequent as feasible, all applicable, current TxDOT standards. District Standards and/or miscellaneous details that have been approved for use at other Districts shall be signed, sealed, and dated by a Registered/Licensed Engineer in Texas for use in the Laredo District. The use of these details shall be approved during the early stages of design by the Project Manager. In addition, these details shall be accompanied by the appropriate general notes, special specifications, special provisions, and method of payment.

The Engineer shall identify and insert all applicable TxDOT standards preferably at all times. Standards that have not been approved for use in the Laredo District shall be signed, sealed, and dated by a Registered Engineer in Texas for use as details. Approval shall be requested at the early stage of the plan preparation from TxDOT regarding the use of these details. In addition, these details shall be accompanied by the appropriate general notes, special specifications, special provisions, and method of payment.

III. ROADWAY DETAILS

The Engineer shall design, prepare and submit the work under this section in accordance to the Roadway Design Manual, Hydraulic Design Manual, PS&E Preparation Manual, latest version of TxMUTCD and other deemed necessary State approved manuals. In addition, when criteria is not identified in TxDOT manuals, the Engineer will reference design elements from AASHTO, A Policy on Geometric Design of Highways and Street (2011-6th Edition) and obtain written approval from TxDOT for their use prior to commencing any design work.

The Engineer shall be responsible, at the early plan development stage, to inform the County of changes made from previous initial meetings regarding all exceptions, waivers, and variances that may affect the design. The Engineer shall cease all work under this task until the exceptions, waivers, and variances have been resolved between the Engineer, the County, and TxDOT, unless otherwise directed by the County to proceed.

Task: Alignment Sheets (FC: 160)
The alignment sheet(s) include the following for complex projects and/or where it is not desirable to show the following information on the plan and profiles sheet(s): include the project limits for the entire project, label curve date bearings/coordinates for each alignment, computer generated data may be graphically place on the sheet(s) and applicable surface adjustment factor of 1.00003 the State Plane Coordinates System should be noted on this sheet(s). Alignment sheets will not be included for the existing frontage roads.

Task: Benchmark Data Sheet (FC: 160)
The Benchmark Data sheet shall be developed in tabulated form and accompanied by surveyor's sketch showing the Station Number from respective alignment, Offset, and Elevation and Physical Description. All coordinates shall be shown in surface by using the combined scale factor of 1.00003.

Task: Plan and Profile (FC: 160)
The Engineer shall design the plan (horizontal) and profile (vertical) including roadway transitions based on the controlling criteria previously defined and as set forth in the previously listed. The Engineer shall develop the alignment for the project in GEOPAK format. This task (Plan and Profile – FC 160) includes new location frontage roads as well as hike and bike trails.

The Engineer shall identify and notify the County, of all locations not meeting the set criteria. In addition, the Engineer shall provide alternatives and a recommendation to address these design issues.

The Engineer shall verify the roadway's existing profile and plan, the superelevation transition lengths (according to the superelevation rate and distance between the axis of rotation and the edge of travel way), and all ponding areas.

The Engineer shall develop and verify all cross sections in preparation of the proposed traffic control plan, drainage, utilities, right-of-way, and access onto adjacent properties. In addition, the cross sections shall be drained to maintain the natural watershed unless otherwise directed by the County.

The Engineer shall determine all cut and fill quantities.

Task: Slope Stability Design Foundation Studies (FC: 110)

The Engineer shall perform a global stability analysis on fill areas on bridge approaches and other areas where the height of fill is determined to be greater than 15 feet typically. No geotechnical investigations are to be initiated until the County has given the Engineer written approval. The Engineer shall prepare an engineering report showing all material testing locations, with a summary of all geotechnical investigations, project background, and a summary of recommendations.

Task: Intersection Details (FC: 160)

The Engineer shall design all proposed intersections to accommodate the design vehicles turning radius. The ADA-wheelchair ramps shall be designed in accordance to the TDLR compliance and the latest TxDOT's Pedestrian Ramp Standards in conjunction with the requirement of the latest version of the TxMUTCD as it relates location of the traffic signals pedestrian heads, signage, and pavement markings. Also, the Engineer shall design all intersections in accordance to TxDOT's, "Regulations for Access Driveways to State Highways" or any approved latest version of the "Access Management Manual". In addition, the Engineer shall assure the location and verification of any storm sewer inlets, and utilities are not within pathway of the pedestrian element nor outside of the limitations of the right of away. In those instances where the Engineer has identified a variance for this task, the Engineer shall notify the State immediately and cease any work further until this issue has been resolved between Engineer and the State-Area Office. The Engineer shall design the intersection by preventing the bottom of the vehicles to be wedged when accessing onto a street.

Task: Driveway Details (FC: 160)

The Engineer shall design all proposed driveways in accordance TxDOT's, "Regulations for Access Driveways to State Highways", any approved latest version of the "Access Management Manual", and the Laredo District Standard Driveway Details. The scope of this project does not include any work on existing driveways from I 35 to Havana. The Engineer shall note on the plans and during early design process when a construction license agreement is needed to construct a portion of the driveway outside of the State's Right of Way. The Engineer shall design the intersection by preventing the bottom of the vehicles to be wedged when accessing onto an adjacent property.

Task: Miscellaneous Details, Etc. (FC: 160)

The Engineer shall design all longitudinal barriers (railing and guardrail), raised median, fencing, bus bays, parking areas, mailboxes, and shoulder texturing in accordance to the criteria set forth in the roadway design manual and standards. Miscellaneous Details Sheet(s) may be developed to illustrate any necessary additional construction details not covered by the Standards. Standards that have not been approved for use in the Laredo District shall be signed, sealed, and dated by a Registered Professional Engineer in Texas for use as details. Approval shall be requested at the early

stage of the plan preparation from TxDOT throughout the County regarding the use of these details. In addition as part of the approval process, these details shall be accompanied by the appropriate general notes, special specifications, special provisions, and method of payment.

Task: Standards (FC: 160)

The Engineer shall identify and insert all applicable TxDOT standards preferably at all times.

R.O.W /Utilities and PS&E Deliverables – Work Authorization No. 3 (CSJ: 0086-14-910)

RIGHT OF WAY DELIVERABLES

a. Right of Entry letters
b. ROW Map; Parcel Plats and Metes and Bounds Property Descriptions

III PS&E DELIVERABLES

The Engineer shall deliver to the County and the TxDOT Project Manager assigned by TxDOT three (3) copies of the 1st, 2nd, 3rd, and final submittal. For the final submittal, the Engineer shall submit three(3) plan set in paper copy. The Engineer shall develop an Exhibit C, Work Schedule for all project submissions.

I. **1st PS&E Submittal 30%**

A. Approved (signed form) Design Summary Report
B. Title Sheet
C. Typical Sections (existing and proposed)
D. Traffic Control Plan
E. Plan & Profile
F. Alignment Data Sheet, if applicable
G. Benchmark Data Sheet, if applicable
H. Vertical Alignment (existing and proposed)
I. Horizontal Alignment (existing and proposed)
J. Design Exceptions/Waivers/Variance-Identified
K. Hydrological Drainage Area Map for areas for the proposed storm lines and cross culverts
L. Utility Layout (conflicts identified)
M. Bridge Layouts (including bridge class structures)
N. Miscellaneous Details
O. Corresponding Quantity Summary Sheets
P. Corresponding Standard Detail Sheets for all Items of Work in this submittal
Q. Preliminary Estimate
R. Newly created Special Provisions/Specifications to be used (Form 1814)
S. Applicable General Notes
T. Applicable Pay Items
U. R.O.W. (issues identified)
V. FEMA coordination, status if required
W. Draft Hydraulic Report
X. Draft Geotechnical Report
Y. Draft Traffic Studies Report, if required
Z. Surveying Information
AA. Submit 30% plan set in PDF format including general notes and proposed bid items. Plan Sheets will have watermark indicate a “30% PS&E” on every plan sheet.

II. **2nd PS&E Submittal - The 60% PS&E submission includes updates from the previous submissions and the following:**

A. Index Sheet (1)
B. Hydrologic Computation Sheets (1)
C. Hydraulic Data Sheets (1)
D. Drainage Area Maps (1)
E. Drainage Plan & Profile (1)
F. Drainage Structure Details (1)
G. Storm Sewer Details (1)
H. Storm Water Pollution Prevention Plan
I. Bridge Details
J. Railroad Exhibit A
K. Retaining Walls
L. Miscellaneous Details (EPIC Sheet)
M. Corresponding Quantity Summary Sheets
N. Corresponding Standard Detail Sheets for all Items of Work in this submittal
O. Updated General Notes
P. Updated Estimate
Q. Utility Adjustment/Relocation Details
R. R.O.W. Acquisition Detail
S. 2 Rolls of Cross Sections
T. District Design Review Team, DDRT Form
U. District Traffic Safety Review Team, DTSRT Form
V. Hydraulic Report
W. Geotechnical Report
X. Traffic Studies Report, if required
Y. Submit 60% plan set in PDF format including general notes and proposed bid items. Plan Sheets will have watermark indicate a “60% PS&E” on every plan sheet.

(1) All drainage items designated with the (1) symbol will only be provided for the proposed storm sewer and cross culverts within the project limits. These items will not be prepared for any existing storm sewer within the project limits.

III. 3rd S&E Submittal –The 90% PS&E submission includes updates from the previous submissions and the following:

a. Final Index of Sheets
b. Pavement Marking Layout/Details
c. Signalization (existing and proposed) –NOT INCLUDED IN THIS SCOPE
d. Illumination
e. Traffic Management Items, if required
f. Miscellaneous Details
g. Corresponding Quantity Summary Sheets
h. Corresponding Standard Detail Sheets for all Items of Work in this submittal
i. Cross Sections (1 set) (Paper or disk/CD format)
j. Estimate(DCIS)
k. General Notes
l. Certifications
m. Form 1002
n. Specification List (DCIS)
o. New Special Provisions & Special Specifications. If required, include Form 1814.
p. Contract Time Determination
q. Request for Construction Speed Zone. If required, include Form 1204 with District Engineer approval or a copy of the county or city ordinance.
r. Third Party Agreements – NOT INCLUDED IN THIS SCOPE
s. Airway-Highway Clearance, if required
t. List of any commitments made during the Public Involvement Process
u. Submit 90% plan set in PDF format including general notes and proposed bid items. Plan Sheets will have watermark indicate a “90% PS&E” on every plan sheet.

IV. Final PS&E Submittal

a. PS&E Package 100% complete
Four Months prior to letting.
b. N/A
c. Construction in Excel format (See attached example –shown on Exhibit “A” – Services to be provided by the State, Item K)
d. Form 1002
e. General Notes
f. Special Specifications and Special Provisions with a completed Form 1814 in TxDOT format
g. (2) each signed and sealed Specification Certifications
h. Utility, ROW Encroachment, ROW Acquisition, ROW Relocation Certifications – (3) originals of each signed and sealed.
i. Special Specifications, Special Provisions and applicable reference items to all items involved in the PS&E in Excel spreadsheet format ((See attached example –shown on Exhibit “A” – Services to be provided by the State, Item K)
j. Construction CPM Schedule
k. It suggested that the Engineer follow these steps to assure a proper submission of the Engineer’s estimate.
l. Submit 100% plan set in PDF format including general notes and proposed bid items. Plan Sheets will have watermark indicate a “100% PS&E” on every plan sheet.

- The Engineer shall download the latest 2014 English Descriptive Codes from the TxDOT website prior to commencing to generate the Engineer's estimate, this is to assure that the proper Item and Descriptive Codes as required by DCIS are being used.
- The Engineer shall upload the Engineer's estimate to State's Mainframe (DCIS) upon 100% submittal.
- The Engineer shall verify the "Unit Bid" prices for each of the items on the estimate by checking the district wide unit bid prices on the TxDOT website, if a particular item has not been used in this district, the Engineer shall check a neighboring district for the use of the item, or if that is unsuccessful, the Engineer shall refer to the statewide unit bid averages.
- The Engineer shall breakout all items for every bridge or bridge class culvert per bridge or bridge class culvert. This means all bridge items shall be coded correctly by having every bridge or bridge class culvert item coded with a B1, B2, B3, etc. as a suffix on the Estimator input. Example: All bridge items for bridge #1 shall have a B1 suffix in the description. The same would be done for all other subsequent bridges or bridge class culverts in the estimate.
- The Engineer shall submit a Microsoft Excel® Spreadsheet that specifies the required special provisions and reference items that are required for each of the standard specifications and or special specifications used on the project estimate.
- The Engineer shall verify the required special provisions and reference items for each item by checking the 2014 Special Provisions Required Checklist and 2014 Specification Guidelines, which are available on the TxDOT website. (N/A)

ATTACHMENT E
For Work Authorization No. 3
(Revised 12/06/2016)

Summary of Detailed Fee Schedule For Phase II, III (Added by CSJ: 0086-014-910)
Supporting Lump Sum Calculations (Revised 11/01/2016) For
Supplemental No. 7 to Main Contract for CSJ: 0086-014-058 and CSJ: 0086-014-910

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASES II & III - SUMMARY

Provide Utility Investigations (Quality Level A&B), Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) & Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

From US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE SUMMARY

PHASES II & III - SUMMARY											$4,937,340.65	
	PRIME		DBE		DBE		NON-DBE		NON-DBE			
PHASE	Dannenbaum Engineering Corporation		Arredondo, Zepeda&Brunz, LLC		RODS, SUE, Inc.		Gilpin Engineering Company		Howland Engineering & Surveying Company		TOTAL HOURS AND FEE	
	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee
PHASE II - ROW/UTILITY SERVICES (US 59 TO JACAMAN)	222	$ 39,404.53				$ 149,282.00	1459	$ 173,111.45			1,681	$ 361,797.98
PHASE IIA - SPECIAL SERVICES (POND SIGHTING STUDY, SCOUR ANALYSIS, TRAFFIC WARRANT STUDY & ILLUMINATION STUDY)	868	$ 118,098.83	202	$ 27,703.78							1,070	$ 145,802.61
PHASE III - PS&E SERVICES (US 59 TO JACAMAN)	30413	$ 4,228,711.90	995	$ 134,811.86			575	$ 66,216.30			31,983	$ 4,429,740.06
Total	31503	$ 4,386,215.26	1197	$ 162,515.64	0	$ 149,282.00	2034	$ 239,327.75	0	$ -	34734	$ 4,937,340.65
Percent Participation	90.70%	88.84%	3.45%	3.29%	0.00%	3.02%	5.86%	4.85%	0.00%	0.00%	100%	100.00%

	% PARTICIPATION =	
NON-DBE	$ 4,625,543.01	93.68%
DBE	$ 311,797.64	6.32%
TOTAL	$ 4,937,340.65	100.00%

Roadway & Bridge CC =	$61,000,000.00
Detention Pond CC =	$2,372,476.00
Total CC =	$63,372,476.00
PS+E ENG Fee % of Total CC =	6.990%
(PH III PS&E Services Fee:	$4,429,740.06 / CC)

ATTACHMENT E
For Work Authorization No. 3
(Revised 12/06/2016)

Detailed Fee Schedule For Phase II, III (Added by CSJ: 0086-014-910) Supporting Lump Sum Calculations (Revised 12/06/2016) For Supplemental No. 7 to Main Contract for CSJ: 0086-014-058 and CSJ: 0086-014-910

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASES II & III - SUMMARY

Provide Utility Investigations (Quality Level A&B), Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) & Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

From US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE SUMMARY

PHASES II & III - SUMMARY											$4,937,340.65	
	PRIME		DBE		DBE		NON-DBE		NON-DBE			
PHASE	Dannenbaum Engineering Corporation		Arredondo, Zepeda&Brunz, LLC		RODS, SUE, Inc.		Gilpin Engineering Company		Howland Engineering & Surveying Company		TOTAL HOURS AND FEE	
	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee
PHASE II - ROW/UTILITY SERVICES (US 59 TO JACAMAN)	222	$ 39,404.53				$ 149,282.00	1459	$ 173,111.45			1,681	$ 361,797.98
PHASE IIA - SPECIAL SERVICES (POND SIGHTING STUDY, SCOUR ANALYSIS, TRAFFIC WARRANT STUDY & ILLUMINATION STUDY)	868	$ 118,098.83	202	$ 27,703.78							1,070	$ 145,802.61
PHASE III - PS&E SERVICES (US 59 TO JACAMAN)	30413	$ 4,228,711.90	995	$ 134,811.86			575	$ 66,216.30			31,983	$ 4,429,740.06
Total	31503	$ 4,386,215.26	1197	$ 162,515.64	0	$ 149,282.00	2034	$ 239,327.75	0	$ -	34734	$ 4,937,340.65
Percent Participation	90.70%	88.84%	3.45%	3.29%	0.00%	3.02%	5.86%	4.85%	0.00%	0.00%	100%	100.00%

	% PARTICIPATION =	
NON-DBE	$ 4,625,543.01	93.68%
DBE	$ 311,797.64	6.32%
TOTAL	$ 4,937,340.65	100.00%

Roadway & Bridge CC = $61,000,000.00
Detention Pond CC = $2,372,476.00
Total CC = $63,372,476.00

PS+E ENG Fee % of Total CC = 6.990%
(PH III PS&E Services Fee: $4,429,740.06 / CC)

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE II - RIGHT OF WAY/UTILITY SERVICES

US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE II SUMMARY

PHASE II - RIGHT OF WAY/UTILITY SERVICES SUMMARY BY FUNCTION CODES									Total Phase II Services =	$361,797.98
	PRIME		DBE		DBE		NON-DBE			
Function Codes	Dannenbaum Engineering Corporation		Arredondo, Zepeda&Brunz, LLC		RODS, SUE, Inc.		Gilpin Engineering Company		Grand Total PHASE II SUMMARY	
	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Total
FC 110 Route and Design Studies										$ -
FC 130 Right of Way Data						$ 149,282.00	1101	$ 122,473.37	1101	$ 271,755.37
FC 150 Field Surveying							358	$ 50,638.08	358	$ 50,638.08
FC 160 Roadway Design Controls										$ -
FC 161 Drainage										$ -
FC 162 Signing, Pavement Markings, Signalization										$ -
FC 163 Miscellaneous (Roadway)										$ -
FC 164 Managing ROW&Surveying Services	222	$ 36,136.63							222	$ 36,136.63
FC 165 Traffic Management Systems										$ -
FC 170 Bridge Design										$ -
DIRECT EXPENSES		$ 3,267.90								$ 3,267.90
Total	**222**	**$ 39,404.53**	**0**	**$ -**	**0**	**$ 149,282.00**	**1459**	**$ 173,111.45**	1681	$ 361,797.98
Percent Participation		**11%**		**0%**		**41%**		**48%**		**100.00%**

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE IIA - POND SIGHTING STUDY, SCOUR ANALYSIS, TRAFFIC WARRANT STUDY & ILLUMINATION STUDY

SPECIAL SERVICES

US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE IIA SUMMARY

PHASE IIA - POND SIGHTING STUDY, SCOUR ANALYSIS, TRAFFIC WARRANT STUDY & ILLUMINATION STUDY SUMMARY BY FUNCTION CODES — **Total Phase II Services = $145,802.61**

	PRIME		DBE		DBE		NON-DBE			
Function Codes	**Dannenbaum Engineering Corporation**		**Arredondo, Zepeda&Brunz, LLC**		**RODS, SUE, Inc.**		**Gilpin Engineering Company**		**Grand Total PHASE IIA SUMMARY**	
	Hrs	**Fee**	**Hrs**	**Fee**	**Hrs**	**Fee**	**Hrs**	**Fee**	**Hrs**	**Total**
FC 110 Route and Design Studies	868	$ 118,098.83	202	$ 27,703.78						$ 145,802.61
DIRECT EXPENSES										$ -
Total	**868**	**$ 118,098.83**	**202**	**$ 27,703.78**	**0**	**$ -**	**0**	**$ -**	1070	$ 145,802.61
Percent Participation		**81%**		**19%**		**0%**		**0%**		**100.00%**

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - PLAN, SPECIFICATIONS AND ESTIMATE SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

From US 59, Approximate STA 115+85.40 to just East of Jacaman STA 257+85.56

DANNENBAUM ENGINEERING CO.

PHASE III SUMMARY

PHASE III - PLAN, SPECIFICATIONS AND ESTIMATE SERVICES SUMMARY BY FUNCTION CODES — **Total Phase III Services = $4,429,740.06**

DANNENBAUM ENGINEERING CO.

Function Codes	US 59 to Airport Drive		Airport Drive Overpass		Airport Drive Overpass Hike&Bike		Airport Drive to Jacaman		Airport Drive to Jacaman Hike&Bike		Jacaman Overpass		Jacaman Overpass Hike&Bike		Grand Total US 59 to Jacaman	
	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Total
FC 130 Right of Way Data	141	$ 18,417.81	45	$ 5,895.75			48	$ 6,217.92			45	$ 5,895.75			279	$ 36,427.23
FC 160 Roadway Design Controls	1452	$ 188,291.31	997	$ 128,425.56	62	$ 8,345.70	840	$ 108,625.59	82	$ 10,525.77	1275	$ 164,175.78	102	$ 13,308.46	4810	$ 621,698.15
FC 161 Drainage (Roadway)	769	$ 101,315.00	309	$ 40,042.47			361	$ 47,168.65			484	$ 63,084.38			1923	$ 251,610.50
FC 161 Drainage (Offsite Detention Ponds)	1172	$ 155,575.55					897	$ 122,516.68							2069	$ 278,092.23
FC 161 Drainage(SW3P)	276	$ 35,735.65	208	$ 26,553.07			203	$ 26,259.23			221	$ 28,705.98			908	$ 117,253.91
FC 162 Signing, Pavement Markings, Signalization	714	$ 91,586.81	485	$ 62,476.52	21	$ 2,643.29	118	$ 15,185.77	44	$ 5,671.38	460	$ 59,096.49	43	$ 5,563.61	1885	$ 242,223.86
FC 163 Miscellaneous (Roadway)(General)	2745	$ 352,584.55	2278	$ 298,144.59	81	$ 11,837.01	2416	$ 315,443.01	57	$ 7,283.28	2354	$ 308,774.31	57	$ 7,283.28	9988	$ 1,301,350.03
FC 163 Miscellaneous (Roadway)(Retaining Wall)			197	$ 25,429.19							263	$ 33,897.32			460	$ 59,326.51
FC 163 Miscellaneous (Roadway)(Illumination)	297	$ 38,129.28	180	$ 23,583.00			192	$ 24,871.68			180	$ 23,583.00			849	$ 110,166.96
FC 163 Miscellaneous (Roadway)(Cross Sections)	527	$ 67,122.03	91	$ 12,009.81			101	$ 12,644.57			120	$ 15,555.48			839	$ 107,331.89
FC 164 Project Management (All Projects: US 59 to Jacaman Overpas)	2479	$ 497,335.04													2479	$ 497,335.04
FC 170 Bridge Design	1343	$ 190,939.05	1288	$ 185,034.00							1293	$ 183,666.10			3924	$ 559,639.15
DIRECT EXPENSES		$ 20,280.36		$ 3,614.36				$ 18,648.36				$ 3,713.36			0	$ 46,256.44
Total	**11915**	**$ 1,757,312.43**	**6078**	**$ 811,208.31**	**164**	**$ 22,826.00**	**5176**	**$ 697,581.45**	**183**	**$ 23,480.43**	**6695**	**$ 890,147.94**	**202**	**$ 26,155.35**	**30413**	**$ 4,228,711.90**
Percent Participation		**39.67%**		**18.31%**		**0.52%**		**15.75%**		**0.53%**		**20.09%**		**0.59%**		**95.46%**

GILPIN ENGINEERING CO.

Function Codes	US 59 to Airport Drive		Airport Drive Overpass		Airport Drive Overpass Hike&Bike		Airport Drive to Jacaman		Airport Drive to Jacaman Hike&Bike		Jacaman Overpass		Jacaman Overpass Hike&Bike		Grand Total US 59 to Jacaman	
	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Total
FC 130 Right of Way Data	230	$ 25,886.52					115	$ 12,943.26			230	$ 25,886.52			575	$ 64,716.30
DIRECT EXPENSES		$ 500.00		$ -				$ 500.00				$ 500.00			0	$ 1,500.00
Total	**230**	**$ 26,386.52**	**0**	**$ -**	**0**	**$ -**	**115**	**$ 13,443.26**	**0**	**$ -**	**230**	**$ 26,386.52**	**0**	**$ -**	**575**	**$ 66,216.30**
Percent Of Total Project		**0.60%**		**0.00%**		**0.00%**		**0.30%**		**0.00%**		**0.60%**		**0.00%**		**1.49%**

ARREDONDO, ZEPEDA&BRUNZ, LLC

Function Codes	US 59 to Airport Drive		Airport Drive Overpass		Airport Drive Overpass Hike&Bike		Airport Drive to Jacaman		Airport Drive to Jacaman Hike&Bike		Jacaman Overpass		Jacaman Overpass Hike&Bike		Grand Total US 59 to Jacaman	
	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Fee	Hrs	Total
FC 161 Drainage (Offsite Detention Ponds)											995	$ 126,561.86			995	$ 126,561.86
DIRECT EXPENSES		$ -		$ -				$ -				$ 8,250.00			0	$ 8,250.00
Total	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**0**	**$ -**	**995**	**$ 134,811.86**	**0**	**$ -**	**995**	**$ 134,811.86**
Percent Of Total Project		**0.00%**		**0.00%**		**0.00%**		**0.00%**		**0.00%**		**3.04%**		**0.00%**		**3.04%**

% PARTICIPATION =

NON-DBE	$	4,294,928.20	96.96%
DBE	$	134,811.86	3.04%
TOTAL	$	4,429,740.06	100.00%

PHASE II - ROW/UTILITY MANAGEMENT

(US 59 TO JACAMAN)

DANNENBAUM ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE II - RIGHT OF WAY/UTILITY SERVICES
Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) for Extension of Loop 20
US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE II

SPECIAL SERVICES PROJECT MANAGEMENT FOR ROW/UTIILTY SERVICES & ROUTE & DESIGN STUDIES TASK DESCRIPTION	Principal/PM	DEPUTY PM	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
FC 164 - PROJECT MANAGEMENT (FC 130) (ROW SERVICES) (8 MONTHS)										
PREPARE/MANAGE WORK AUTHORIZATIONS (ROW SPECIAL SERVICES AND UTILITY SPECIAL SERVICES)	2	9	18	0		0	0	8	37	$ 7,358.61
SCHEDULE & ATTEND WORK AUTHORIZATION DEVELOPMENT MEETINGS	3	8	9			0	0	4	24	$ 5,161.41
COORDINATION/PREPARE SUB WORK AUTHORIZATIONS/MANAGE SUBCONSULTANTS						0	0		0	$ -
PREPARATION OF INVOICES AND PROGRESS REPORTS (TOTAL = 8 EA) (INCLUDED IN PH III-PS&E)						0	0		0	$ -
SCHEDULE & ATTEND PRE-DESIGN MEETING (TOTAL= 1) (INCLUDED IN PH III-PS&E)						0	0		0	$ -
SCHEDULE, ATTEND AND PREPARE MINUTES FOR 10 PROGRESS MEETINGS (INCLUDED IN PH III-PS&E)						0	0		0	$ -
RESEARCH / REVIEW EXISTING PLANS & DATA (INCLUDED IN PH III-PS&E)						0	0		0	$ -
PREPARE PROJECT SCHEDULE (UPDATE MONTHLY) (INCLUDED IN PH III-PS&E)						0	0		0	$ -
MONITOR SUB-PROVIDER'S SCHEDULES ON MONTHLY BASIS (INCLUDED IN PH III-PS&E)						0	0		0	$ -
PREPARE & ASSEMBLE PRELIMINARY COST ESTIMATE (INCLUDED IN PH III-PS&E)						0	0		0	$ -
CONDUCT SITE VISIT OF PROJECT AREA (INCLUDED IN OTHER PHASES) (INCLUDED IN PH III-PS&E)						0	0		0	$ -
QC/QA - OVERALL 30% SUBMITTAL (1 SUBMITTAL)		1	2			0	0		3	$ 687.07
QC/QA - OVERALL 60% SUBMITTAL (1 SUBMITTAL)		2	9	0	68	0	0	2	81	$ 11,613.54
QC/QA - OVERALL 90% SUBMITTAL (1 SUBMITTAL)				0		0	0		0	$ -
QC/QA - OVERALL 100% SUBMITTAL (1 SUBMITTAL)		4	9	0	48	0	0	8	69	$ 9,833.22
ORGANIZE AND DOWNLOAD ELECTRONIC FILE DELIVERABLES			6	0		0	0	2	8	$ 1,482.78
SUB-TOTAL - FC 164 - PROJECT MANAGEMENT (FC 130) (ROW SERVICES) (8 MONTHS)	**5**	**24**	**53**	**0**	**116**	**0**	**0**	**24**	**222**	**$ 36,136.63**
TOTAL DIRECT EXPENSES (FROM BELOW)										$ 3,267.90
SUBTOTAL SPECIAL SERVICES PROJECT MANAGEMENT FOR ROW/UTIILTY SERVICES & ROUTE & DESIGN STUDIES	**5**	**24**	**53**	**0**	**116**	**0**	**0**	**24**	**222**	**$ 39,404.53**
HOURS SUB-TOTALS	**5**	**24**	**53**	**0**	**116**	**0**	**0**	**24**	**222**	
LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		
DIRECT LABOR COSTS	$ 1,639.65	$ 5,665.68	$ 11,951.50	$ -	$ 15,322.44	$ -	$ -	$ 1,557.36	$ 36,136.63	
TOTAL	**$ 1,639.65**	**$ 5,665.68**	**$ 11,951.50**	**$ -**	**$ 15,322.44**	**$ -**	**$ -**	**$ 1,557.36**	**$ 36,136.63**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**4.54%**	**15.68%**	**33.07%**	**0.00%**	**42.40%**	**0.00%**	**0.00%**	**4.31%**	**100.00%**	**CHECK**
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**2.25%**	**10.81%**	**23.87%**	**0.00%**	**52.25%**	**0.00%**	**0.00%**	**10.81%**	**100.00%**	**$ 36,136.63**
DIRECT EXPENSES										
PER DIEM - $121 /NIGHT STAY X 2 PERSON X 6 NIGHT ($85 hotel/$36 meals)										**$ 1,452.00**
DELIVERY SERVICES - $50 / PACKAGE X 4 PACKAGES										**$ 200.00**

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE II - RIGHT OF WAY/UTILITY SERVICES
Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) for Extension of Loop 20
US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE II

SPECIAL SERVICES PROJECT MANAGEMENT FOR ROW/UTIILTY SERVICES & ROUTE & DESIGN STUDIES TASK DESCRIPTION	Principal/PM	DEPUTY PM	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
MILEAGE 10 TRIP x 286 MI / TRIP @ $0.565/mile										$ 1,615.90
TOTAL DIRECT EXPENSES										$ 3,267.90
BASIC SERVICES (SUBCONSULTANT)										
- ARCADIS US, INC.										$ -
- HOWLAND ENGINEERING & SURVEYING CO.										$ -
- ARREDONDO, ZEPEDA & BRUNZ, LLC										$ -
- ARIAS & ASSOCIATES, INC.										$ -
- AERIAL DATA SERVICE, INC.										$ -
- AMMA TERRA ENVIRONMENTAL, INC.										$ -
- RODS SUBSURFACE UTILITY ENGINEERING, INC.										$ -
- GILPIN ENGINEERING COMPANY										$ -
TOTAL DANNENBAUM SUBCONSULTANT MANAGEMENT FEE FOR BASIC SERVICES (0% OF SUBCONSULTANT FEE)										$ -
TOTAL ENGINEERING (CONSULTANT) - BASIC SERVICES										$ -
SPECIAL SERVICES (DANNENBAUM)										
TOTAL RAILROAD COORDINATION / PERMITS / EXHIBITS										$ -
TOTAL SURVEYING SERVICES - FC 130										
TOTAL SURVEYING SERVICES - FC 150										
TOTAL PREPARE HYDROLOGY/HYDRAULIC REPORT / VERIFY EXISTING STORM SEWER SIZING										
TOTAL TRAFFIC SERVICES										
TOTAL ENGINEERING (DANNENBAUM) - SPECIAL SERVICES										$ -
SPECIAL SERVICES (SUBCONSULTANTS)										
- HOWLAND ENGINEERING & SURVEYING CO. (FC 130) - SUE										
- HOWLAND ENGINEERING & SURVEYING CO. (FC 130) - ROW MAPPING (25 PARCELS)										
- GILPIN ENGINEERING COMPANY (SURVEYING, CADD AND CREATION OF FILES FOR SUE SERVICES) (FC 130) - SUE										$ 70,848.26
- GILPIN ENGINEERING COMPANY (FC 130) - ROW MAPPING (42 PARCELS)										$ 51,625.11
- GILPIN ENGINEERING COMPANY (FC 150) - ROW MAPPING										$ 50,638.08
- ARREDONDO, ZEPEDA & BRUNZ, LLC										$ -
- RODS SUBSURFACE UTILITY ENGINEERING, INC. (FC 130) - SUE										$ 149,282.00

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE II - RIGHT OF WAY/UTILITY SERVICES
Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) for Extension of Loop 20
US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE II

SPECIAL SERVICES PROJECT MANAGEMENT FOR ROW/UTIILTY SERVICES & ROUTE & DESIGN STUDIES TASK DESCRIPTION	Principal/PM	DEPUTY PM	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
TOTAL DANNENBAUM SUBCONSULTANT MANAGEMENT FEE FOR SPECIAL SERVICES (0% OF SUBCONSULTANT FEE)								$ -		
TOTAL ENGINEERING (SUBCONSULTANT) - SPECIAL SERVICES								$ 322,393.45		
GRAND TOTAL - PHASE II SERVICES										$ 361,797.98

PHASE II - ROW/UTILITY SERVICES (SUE SURVEYING)

(US 59 TO JACAMAN)

GILPIN ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE II - RIGHT OF WAY/UTILITY SERVICES
Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) for Extension of Loop 20
US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

GILPIN ENGINEERING COMPANY
PHASE II

SPECIAL SERVICES (FC 130) (SUE SURVEYING) ROW SERVICES (SUE) TASK DESCRIPTION	PM	SIT	RPLS	Survey Crew (3-Man) w/GPS	CADD Operator/ Tech	Admin Assistant	Total Labor Hrs.	Task Cost
FIELD SURVEYING								
FIELD SURVEY								
FC 130 - RIGHT-OF-WAY (SURVEYING FOR SUE LOCATIONS AND CADD WORK TO PRODUCE FILES)								
PRELIMINARY DATA ACQUISITION					42	8	50	$ 4,011.60
DEVELOP WORKING SKETCHES	18	12	**40**	60	**80**		**210**	$ 25,175.58
REDUCTION AND QUALITY CONTROL OF FIELD SURVEY DATA	12	12	30				54	$ 7,029.36
OFFICE COMPUTATIONS	12	12	30		34		88	$ 9,962.88
PREPARE LOCATION MAPS AND CADD FILES		12	30		**120**		**162**	$ 15,226.92
PREPARE SURVEYORS REPORT	12	12	20			12	56	$ 6,376.92
							0	$ -
							0	$ -
							0	$ -
SUB-TOTAL - FC 130 - RIGHT-OF-WAY (SURVEYING FOR SUE LOCATIONS AND CADD WORK TO PRODUCE FILES)	**54**	**60**	**150**	**60**	**276**	**20**	**620**	**$ 67,783.26**
							0	
HOURS SUB-TOTALS	**54**	**60**	**150**	**60**	**276**	**20**	**620**	
LABOR RATE PER HOUR	$ 179.67	$ 97.56	$ 123.42	$ 148.86	$ 86.28	$ 48.48		
DIRECT LABOR COSTS	$ 9,702.18	$ 5,853.60	$ 18,513.00	$ 8,931.60	$ 23,813.28	$ 969.60	$ 67,783.26	
TOTAL	**$ 9,702.18**	**$ 5,853.60**	**$ 18,513.00**	**$ 8,931.60**	**$ 23,813.28**	**$ 969.60**	**$ 67,783.26**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**14.31%**	**8.64%**	**27.31%**	**13.18%**	**35.13%**	**1.43%**	**100.00%**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**8.71%**	**9.68%**	**24.19%**	**9.68%**	**44.52%**	**3.23%**	**100.00%**	
DIRECT EXPENSES: SUBSURFACE UTILITY ENGINEERING								
DELIVERY SERVICES - $50 / PACKAGE X 10 PACKAGES								**$ 500.00**
MILEAGE (APPROX 1,000 MI @ $0.565/mile								**$ 565.00**
TRAFFIC CONTROL								**$ 2,000.00**
TOTAL DIRECT EXPENSES								**$ 3,065.00**
GRAND TOTAL - ENGINEERING SERVICES								**$ 70,848.26**

PHASE II - ROW/UTILITY SERVICES (SUBSURFACE UTILITY ENGINEERING)

(US 59 TO JACAMAN)

RODS SUBSURFACE UTILITY ENGINEERING, INC.

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE II - RIGHT OF WAY/UTILITY SERVICES
Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) for Extension of Loop 20
US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

RODS Subsurface Utility Engineering, Inc.
PHASE II

SPECIAL SERVICES (FC 130) (SUE POTHOLING) ROW SERVICES (SUE) TASK DESCRIPTION	SUE PM	PROJECT ENGINEER	CADD OPERATOR	ENGINEER TECH	CLERICAL	DESIGNATION FIELD TECH	2 MAN EXCAVATION CREW	Total Labor Hrs.	Task Cost
SUBSURFACE UTILITY ENGINEERING									
FC 130 - ROW DATA									
								0	$ -
								0	$ -
								0	$ -
								0	$ -
								0	$ -
								0	$ -
								0	$ -
SUBTOTAL FC 130 - ROW DATA	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**
TOTAL DIRECT EXPENSES (FROM BELOW)									**$ 149,282.00**
HOURS SUB-TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
LABOR RATE PER HOUR	$ 126.00	$ 110.00	$ 78.00	$ 84.00	$ 58.00	$ 90.00	$ 300.00		
TOTAL	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	

DIRECT EXPENSES:			QUANTITY	UNIT PRICE	TOTAL
MOBILIZATION / DEMOBILIZATION VACUUM EXCAVATION VEHICLE		PER MILE	**360**	**$ 3.70**	**$ 1,332.00**
SUE QL A SERVICES - TEST HOLES - 0-4.99' DEPTH		EACH	**27**	**$ 760.00**	**$ 20,520.00**
SUE QL A SERVICES - TEST HOLES -5.0-7.99'' DEPTH		EACH	**37**	**$ 1,020.00**	**$ 37,740.00**
SUE QL A SERVICES - TEST HOLES - 8.0-12.99' DEPTH		EACH	**43**	**$ 1,180.00**	**$ 50,740.00**
SUE QL A SERVICES - TEST HOLES -13.0-19.99' DEPTH		EACH	**18**	**$ 1,400.00**	**$ 25,200.00**
TRAFFIC CONTROL		AT COST	**15**	**$ 500.00**	**$ 7,500.00**
PERMIT EXCAVATION FEES		AT COST	**125**	**$ 50.00**	**$ 6,250.00**
TOTAL DIRECT EXPENSES					**$ 149,282.00**

Assumptions:

1. Qty of Test Holes : assumed 15 locations per overpass, **none for detention pond**, 5 per mile to cover other locations 135
2. Precise test hole location recommendations to be made by Client. Existing utility records are to be provided to RODSSUE for use in locating utility in field.
3. SUE Quality Level A rates are inclusive of any/all associated costs for QL B designation to pinpoint utility at requested location, vacuum excavation, engineering and cadd to create signed and sealed test hole data sheets.
4. RODS SUE will not be responsible for signed and sealed SUE Quality Level A Test Hole Data Sheets
5. RODS SUE will serve as a vacuum excavation consultant.
6. RODS SUE will require test hole placement by client and utility records to assist in locating the utilities via electromagnetic designation. Utilities that cannot be located via electromagnetic methods may require an additional labor charge.
7. Test holes will be excavated and backfilled to TxDOT standards, and a 2" PVC will be left in place above utility for others to survey at a later date. No sketches or photographs will be provided. Test holes will be billed at actu

PHASE II - ROW/UTILITY SERVICES (ROW Mapping)

(US 59 TO JACAMAN)

GILPIN ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE II - RIGHT OF WAY/UTILITY SERVICES
Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) for Extension of Loop 20 US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

GILPIN ENGINEERING COMPANY
PHASE II

SPECIAL SERVICES (FC 130) ROW SERVICES (MAPPING) TASK DESCRIPTION	PM	RPLS	Survey Crew (3-Man) w/GPS	CADD Operator/ Tech	Total Labor Hrs.	Task Cost
FIELD SURVEYING						
FIELD SURVEY						
FC 130 - RIGHT-OF-WAY MAPPING - ASSUMING 42 PARCELS					0	$ -
PRELIMINARY DATA ACQUISITION				12	20	$ 1,423.20
DEVELOP WORKING SKETCHES				34	34	$ 2,933.52
PREPARE ABSTRACT MAP - 17 SHEETS	1	12		23	36	$ 3,645.15
PREPARE EXISTING RIGHT-OF-WAY SOLUTION AND LAYOUT	2	3			5	$ 729.60
PREPARE PRELIMINARY R.O.W. MAP FOR DISTRICT APPROVAL - 17 SHEETS	8	16		80	104	$ 10,314.48
OFFICE COMPUTATION OF PARCELS		18		28	46	$ 4,637.40
DEVELOP FINAL R.O.W. MAP SET - 17 SHEETS	5	24		40	69	$ 7,311.63
PREPARE PARCEL PLATS AND FIELD NOTE DESCRIPTIONS - 42 PARCELS		42		84	126	$ 12,431.16
					0	$ -
COORDINATION MEETINGS		8			8	$ 987.36
GENERAL PROJECT MANAGEMENT					0	$ -
REDUCTION OF SURVEY DATA	20				20	$ 3,593.40
SURVEY QA/QC	13				13	$ 2,335.71
					0	$ -
					0	$ -
SUB-TOTAL - FC 130 - RIGHT-OF-WAY MAPPING - ASSUMING 42 PARCELS	**49**	**123**	**0**	**301**	**481**	**$ 50,342.61**
					0	
FC 150 - FIELD SURVEYING					0	$ -
RECOVER AND FIELD LOCATE EXISTING R.O.W. CORNERS AND MONUMENTS	1	10	25	15	51	$ 6,429.57
LOCATE AND FIELD SURVEY PARENT TRACT CORNERS, FRONT AND REAR		8	80		88	$ 12,896.16
FIELD SURVEY MISC ELEMENTS ON SIDE STREETS		4	40		44	$ 6,448.08
REDUCTION AND QUALITY CONTROL OF FIELD SURVEY DATA	5	12			17	$ 2,379.39
FIELD STAKE PARCELS		40	80	12	132	$ 17,880.96
PREPARE SURVEYORS REPORT	2	24			26	$ 3,321.42
					0	$ -
					0	$ -
SUB-TOTAL - FC 150 - FIELD SURVEYING	**8**	**98**	**225**	**27**	**358**	**$ 49,355.58**
TOTALS - SURVEY UTILITIES	**57**	**221**	**225**	**328**	**839**	**$ 99,698.19**
HOURS SUB-TOTALS	**57**	**221**	**225**	**328**	**839**	
LABOR RATE PER HOUR	$ 179.67	$ 123.42	$ 148.86	$ 86.28		
DIRECT LABOR COSTS	$ 10,241.19	$ 27,275.82	$ 33,493.50	$ 28,299.84	$ 99,698.19	
TOTAL	**$ 10,241.19**	**$ 27,275.82**	**$ 33,493.50**	**$ 28,299.84**	**$ 99,698.19**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**10.27%**	**27.36%**	**33.59%**	**28.39%**	**100.00%**	

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE II - RIGHT OF WAY/UTILITY SERVICES

Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) for Extension of Loop 20 US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

GILPIN ENGINEERING COMPANY

PHASE II

SPECIAL SERVICES (FC 130) ROW SERVICES (MAPPING) TASK DESCRIPTION	PM	RPLS	Survey Crew (3-Man) w/GPS	CADD Operator/ Tech	Total Labor Hrs.	Task Cost
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**6.79%**	**26.34%**	**26.82%**	**39.09%**	**100.00%**	
DIRECT EXPENSES						
DELIVERY SERVICES - $50 / PACKAGE X 10 PACKAGES						**$ 500.00**
MILEAGE (APPROX 1,000 MI @ $0.565/mile						**$ 565.00**
TRAFFIC CONTROL						**$ 1,500.00**
TOTAL DIRECT EXPENSES						**$ 2,565.00**
GRAND TOTAL - ENGINEERING SERVICES						**$ 102,263.19**

PHASE IIA - SPECIAL SERVICES - POND SIGHTING STUDY, SCOUR ANALYSIS, TRAFFIC WARRANT STUDY & ILLUMINATION STUDY

(US 59 TO JACAMAN)

DANNENBAUM ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE IIA - SPECIAL SERVICES
Develop - POND SIGHTING STUDY, SCOUR ANALYSIS, TRAFFIC WARRANT STUDY & ILLUMINATION STUDY For the Extension of Loop 20
US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE IIA

SPECIAL SERVICES STUDY SERVICES TASK DESCRIPTION	Principal/PM	DEPUTY PM	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
FC 110 - ROUTE AND DESIGN STUDIES										
SCOUR ANALYSIS: EAST BOUND FRTG RD 3-LANE BRIDGE (AT APPROX STA 124+50 - 127+30)										
SCOUR ANALYSIS & REPORT				24	48	48	40	4	164	$ 20,468.20
SUB-TOTAL - FC 110 - ROUTE AND DESIGN STUDIES - SCOUR ANALYSIS: EAST BOUND FRTG RD 3-LANE BRIDGE (AT APPROX STA 124+50 - 127+30)	**0**	**0**	**0**	**24**	**48**	**48**	**40**	**4**	**164**	**$ 20,468.20**
FC 110 - ROUTE AND DESIGN STUDIES (AIRPORT & JACAMAN)										
TRAFFIC WARRANT STUDIES										
PERFORM TRAFFIC SIGNAL WARRANT STUDY (W/EXHIBITS)			6		8	4	24		42	$ 4,838.84
ANALYZE INCORPORATION OF PEDESTRIAN / BICYCLE FACILITIES WITHIN PROJECT LIMITS (COORDINATION INCLUDED)			4		8	4	8		24	$ 3,052.80
FINAL REPORT & RECOMMENDATIONS									0	$ -
PREPARE TRAFFIC ANALYSIS REPORT & EXHIBITS (INCLUDING SUMMARY OF ALL TRAFFIC ENGINEERING TASKS)	4		18		24	4	24		74	$ 10,970.00
SUB-TOTAL - FC 110 - ROUTE AND DESIGN STUDIES (AIRPORT & JACAMAN)	**4**	**0**	**28**	**0**	**40**	**12**	**56**	**0**	**140**	**$ 18,861.64**
FC 110 - ILLULMINATION STUDIES (US 59 TO NORTH OF JACAMAN)										
CONDUCT ILLUMINATION STUDY / CONTOURS (W/EXHIBITS)			6		20	12	40		78	$ 8,612.08
FINAL REPORT & RECOMMENDATIONS									0	$ -
PREPARE TRAFFIC ANALYSIS REPORT & EXHIBITS (INCLUDING SUMMARY OF ALL TRAFFIC ENGINEERING TASKS)	4		18		24	4	24		74	$ 10,970.00
BICYCLE AND PEDESTRIAN ACCOMMODATIONS									0	$ -
INCORPORATE SAFE AND CONVENIENT WALKING AND BICYCLING FACILITIES	4		6		20	16	16		62	$ 8,347.80
									0	$ -
SUB-TOTAL - FC 110 - ILLULMINATION STUDIES (US 59 TO NORTH OF JACAMAN)	**8**	**0**	**30**	**0**	**64**	**32**	**80**	**0**	**214**	**$ 27,929.88**
FC 110 - DETENTION POND ANALYSIS										
FC 110 - DETENTION POND ANALYSIS - US 569 TO AIRPORT										
RESEARCH & EVALUATE 2 DETENTION STORAGE LOCATIONS	2		6		20	12	12		52	$ 6,931.62
SIZE 2 DETENTION POND SURFACE AREA AND OUTFALL LOCATIONS	2		14		14	12	20		62	$ 8,610.60
SUBMIT FOR REVIEW AND COMMENTS	2		14		6	6			28	$ 5,245.24
ADDRESS COMMENTS AND SUBMIT REVISED REPORT	2		10		6	10	6		34	$ 5,270.44
Scour Analysis for Bridge	2		9		42	33			86	$ 11,752.26
DETENTION POND ANALYSIS - AIRPORT TO JACAMAN									0	$ -
RESEARCH & EVALUATE 1 DETENTION STORAGE LOCATIONS	1		3		10	6	6		26	$ 3,465.81
SIZE 1 DETENTION POND SURFACE AREA AND OUTFALL LOCATIONS	1		7		7	6	10		31	$ 4,305.30

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE IIA - SPECIAL SERVICES
Develop - POND SIGHTING STUDY, SCOUR ANALYSIS, TRAFFIC WARRANT STUDY & ILLUMINATION STUDY For the Extension of Loop 20
US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

DANNENBAUM ENGINEERING CO.
PHASE IIA

SPECIAL SERVICES STUDY SERVICES TASK DESCRIPTION	Principal/PM	DEPUTY PM	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
SUBMIT FOR REVIEW AND COMMENTS	1		7		3	3			14	$ 2,622.62
ADDRESS COMMENTS AND SUBMIT REVISED REPORT	1		5		3	5	3		17	$ 2,635.22
SUB-TOTAL - FC 110 - DETENTION POND ANALYSIS	**14**	**0**	**75**	**0**	**111**	**93**	**57**	**0**	**350**	**$ 50,839.11**
TOTAL DIRECT EXPENSES (FROM BELOW)										$ -
SUBTOTAL SPECIAL SERVICES POND SIGHTING STUDY, SCOUR ANALYSIS, TRAFFIC WARRANT STUDY & ILLUMINATION STUDY	**26**	**0**	**133**	**24**	**263**	**185**	**233**	**4**	**868**	**$ 118,098.83**
HOURS SUB-TOTALS	**26**	**0**	**133**	**24**	**263**	**185**	**233**	**4**	**868**	
LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		
DIRECT LABOR COSTS	$ 8,526.18	$ -	$ 29,991.50	$ 5,412.00	$ 34,739.67	$ 19,728.40	$ 19,441.52	$ 259.56	$ 118,098.83	
TOTAL	**$ 8,526.18**	**$ -**	**$ 29,991.50**	**$ 5,412.00**	**$ 34,739.67**	**$ 19,728.40**	**$ 19,441.52**	**$ 259.56**	**$ 118,098.83**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**7.22%**	**0.00%**	**25.40%**	**4.58%**	**29.42%**	**16.70%**	**16.46%**	**0.22%**	**100.00%**	**CHECK**
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**3.00%**	**0.00%**	**15.32%**	**2.76%**	**30.30%**	**21.31%**	**26.84%**	**0.46%**	**100.00%**	**$ 118,098.83**
DIRECT EXPENSES										
PER DIEM - $121 /NIGHT STAY X 2 PERSON X 6 NIGHT ($85 hotel/$36 meals)										
DELIVERY SERVICES - $50 / PACKAGE X 4 PACKAGES										
MILEAGE 10 TRIP x 286 MI / TRIP @ $0.565/mile										
TOTAL DIRECT EXPENSES										**$ -**
GRAND TOTAL - PHASE IIA - SPECIAL SERVICES										**$ 118,098.83**

PHASE IIA - SPECIAL SERVICES - POND SIGHTING STUDY

(US 59 TO JACAMAN)

ARREDONDO, ZEPEDA & BRUNZ, LLC

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE IIA - SPECIAL SERVICES
Develop - POND SIGHTING STUDY For the Extension of Loop 20
US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

Arredondo, Zepeda & Brunz, LLC
PHASE IIA

SPECIAL SERVICES POND SIGHTING STUDY SERVICES TASK DESCRIPTION	Principal	Senior Engineer (Eng V)	Project Engineer (Eng IV)	Senior Designer	Eng/Tech/CADD	Admin Assistant	Total Labor Hrs.	Task Cost
FC 110 - DETENTION POND ANALYSIS								
DETENTION POND ANALYSIS - JACAMAN OVERPASS								
RESEARCH & EVALUATE 2 DETENTION STORAGE LOCATIONS	2	6	20	12	12		52	$ 6,834.42
SIZE 2 DETENTION POND SURFACE AREA AND OUTFALL LOCATIONS	2	14	14	12	20		62	$ 8,176.92
SUBMIT FOR REVIEW AND COMMENTS	2	14	6	6			28	$ 4,342.56
ADDRESS COMMENTS AND SUBMIT REVISED REPORT	4	18	10	18	10		60	$ 8,349.88
SUB-TOTAL - FC 110 - DETENTION POND ANALYSIS	**10**	**52**	**50**	**48**	**42**	**0**	**202**	**$ 27,703.78**
TOTAL DIRECT EXPENSES (FROM BELOW)								$ -
SUBTOTAL SPECIAL SERVICES POND SIGHTING STUDY	**10**	**52**	**50**	**48**	**42**	**0**	**202**	**$ 27,703.78**
HOURS SUB-TOTALS	**10**	**52**	**50**	**48**	**42**	**0**	**202**	
LABOR RATE PER HOUR	$ 224.83	$ 171.62	$ 142.37	$ 106.00	$ 102.97	$ 67.49		
DIRECT LABOR COSTS	$ 2,248.30	$ 8,924.24	$ 7,118.50	$ 5,088.00	$ 4,324.74	$ -	$ 27,703.78	
TOTAL	**$ 2,248.30**	**$ 8,924.24**	**$ 7,118.50**	**$ 5,088.00**	**$ 4,324.74**	**$ -**	**$ 27,703.78**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**8.12%**	**32.21%**	**25.70%**	**18.37%**	**15.61%**	**0.00%**	**100.00%**	**CHECK**
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**4.95%**	**25.74%**	**24.75%**	**23.76%**	**20.79%**	**0.00%**	**100.00%**	**$ 27,703.78**
DIRECT EXPENSES								
PER DIEM - $121 /NIGHT STAY X 2 PERSON X 6 NIGHT ($85 hotel/$36 meals)								
DELIVERY SERVICES - $50 / PACKAGE X 4 PACKAGES								
MILEAGE 10 TRIP x 286 MI / TRIP @ $0.565/mile								
TOTAL DIRECT EXPENSES								**$ -**
GRAND TOTAL - PHASE IIA - SPECIAL SERVICES								**$ 27,703.78**

PHASE III - BASIC PS&E SERVICES

(US 59 TO AIRPORT)

DANNENBAUM ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Project Management is All Inclusive: From US 59 to Jacaman

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		FC 164 - PROJECT MANAGEMENT (FC 160 TO FC 190) (PS&E SERVICES) (15 MONTHS) (All PROJECTS: US 59 TO JACAMAN OVERPASS)(ADDITIONAL FEE REQUIRED IF MOR THAN 15 MONTHS)										
		PREPARE/MANAGE WORK AUTHORIZATIONS (PS&E DEVELOPMENT) (INCLUDING RECORD KEEPING, FILING, ADMINISTRATION, ETC) AND OVERALL QA/QC	86	108			10			216	420	$ 69,034.68
		SCHEDULE & ATTEND WORK AUTHORIZATION DEVELOPMENT MEETINGS									0	$ -
		COORDINATION/PREPARE SUB WORK AUTHORIZATIONS/MANAGE SUBCONSULTANTS	10	14	19					72	115	$ 15,540.86
		PREPARATION OF INVOICES AND PROGRESS REPORTS (TOTAL = 15 **EA**)	18	60	30					30	138	$ 28,778.64
		SCHEDULE & ATTEND PRE-DESIGN MEETING (TOTAL= 1)	10	10			13			10	43	$ 8,006.07
		SCHEDULE & ATTEND TRAF SAFETY REVIEW MEETING (TOTAL= 1)	10	10			10			0	**30**	**$ 6,960.90**
		SCHEDULE, ATTEND AND PREPARE MINUTES FOR **8 MONTHLY**PROGRESS MEETING	64	64	64		64			40	296	$ 61,577.36
		RESEARCH / REVIEW EXISTING PLANS & DATA								0	0	$ -
		PREPARE PROJECT SCHEDULE (UPDATE **TWICE**)	2	14	14			10	10	5	55	$ 9,343.09
		MONITOR SUB-PROVIDER'S SCHEDULES ON MONTHLY BASIS **(NOT REQUIRED)**								0	0	$ -
		PREPARE & ASSEMBLE PRELIMINARY COST ESTIMATES (1 @ 60% AND 1 @ 100%)		2	2	5	48	48		5	110	$ 13,834.13
		CONDUCT SITE VISIT OF PROJECT AREA (**1** SITE VISITS)		10			10			1	21	$ 3,746.49
		ATTEND MONTHLY MPO MEETINGS (8)	**64**	64						24	152	$ 37,653.36
		ATTEND/UPDATE COMMISSION CONSTRUCTION MEETING (4)	32	32	32					16	112	$ 26,302.24
		MEET WITH STATE PARK OFFICIALS (4)	32	32	32					16	112	$ 26,302.24
		MEET WITH COUNTY ON GOLF COURSE (2)	16	16	16					6	54	$ 13,021.34
		MEET WITH CITY/AIRPORT OFFICIALS (4)	32	32	32					16	112	$ 26,302.24
		MEET WITH UTILITY COMPANIES	6	40	40					20	106	$ 21,728.18

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Project Management is All Inclusive: From US 59 to Jacaman

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		QC/QA - OVERALL 30% SUBMITTAL (1 SUBMITTAL)	4	40		24				2	70	$ 16,296.30
		QC/QA - OVERALL 60% SUBMITTAL (1 SUBMITTAL)	6	80	40	30				2	158	$ 36,767.96
		QC/QA - OVERALL 90% SUBMITTAL (1 SUBMITTAL)	6	72	72	24				2	176	$ 40,742.40
		QC/QA - OVERALL 100% SUBMITTAL (1 SUBMITTAL)	6	29	24	16				2	77	$ 17,963.39
		ORGANIZE AND DOWNLOAD ELECTRONIC FILE DELIVERABLES			1		5	10		2	18	$ 2,082.13
		COMPLETION OF CPM SCHEDULE (FORMS 1823 & 1002 NOT INCLUDED)	2	10	20		32	24		16	104	$ 15,351.04
		SUB-TOTAL - FC 164 - PROJECT MANAGEMENT (FC 160 TO FC 190) (PS&E SERVICES) (15 MONTHS) (All PROJECTS: US 59 TO JACAMAN OVERPASS)(ADDITIONAL FEE REQUIRED IF MOR THAN 15 MONTHS)	**406**	**739**	**438**	**99**	**192**	**92**	**10**	**503**	**2479**	**$ 497,335.04**
		HOURS SUB-TOTALS	**406**	**739**	**438**	**99**	**192**	**92**	**10**	**503**	**2,479**	
		LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		
		DIRECT LABOR COSTS	$ 133,139.58	$ 174,455.73	$ 98,769.00	$ 22,324.50	$ 25,361.28	$ 9,810.88	$ 834.40	$ 32,639.67	$ 497,335.04	
		TOTAL	**$ 133,139.58**	**$ 174,455.73**	**$ 98,769.00**	**$ 22,324.50**	**$ 25,361.28**	**$ 9,810.88**	**$ 834.40**	**$ 32,639.67**	**$ 497,335.04**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**26.77%**	**35.08%**	**19.86%**	**4.49%**	**5.10%**	**1.97%**	**0.17%**	**6.56%**	**100.00%**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**16.38%**	**29.81%**	**17.67%**	**3.99%**	**7.75%**	**3.71%**	**0.40%**	**20.29%**	**100.00%**	
		GRAND TOTAL (FC 164)	**406**	**739**	**438**	**99**	**192**	**92**	**10**	**503**	**2,479**	**$ 497,335.04**
TOTAL DANNENBAUM DIRECT EXPENSES (FROM BELOW)												**$ -**
SUBTOTAL BASIC SERVICES SUB CONSULTANTS (FROM BELOW)												
GRAND TOTAL - PHASE III SERVICES US 59 TO SOUTH OF JACAMAN (DIRECT EXPENSES, BASIC, SPECIAL AND SUB CONSULTANT SERVICES)												**$ 497,335.04**
		DIRECT EXPENSES										
		REPRO - 0 SHEETS X $0.20 / SHEET (BOND) - CHECK PLOTS & REVIEW SETS) X 0 X 30 SUBMITTAL SETS)										$ -
		PLOTS (B/W ON BOND) $1.00/LINEAR FOOT (30 FT/PLOT x 20 PLOTS)										$ -
		PLOTS (COLOR ON BOND) $2.00/LINEAR FOOT (30 FT/PLOT x20 PLOTS)										$ -
		COURT REPORTER (PUBLIC HEARINGS AND TRANSCRIPTION) ($100 / HR)										$ -
		COLOR GRAPHICS ON FOAM BOARD ($5.00/SF) (3'x6'x 10 Ea)										$ -
		CAR RENTAL - $90 / TRIP X 4 TRIP										$ -
		PER DIEM - $121 /NIGHT STAY X 2 PERSON X 2 NIGHT ($85 hotel/$36 meals)										$ -

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Project Management is All Inclusive: From US 59 to Jacaman

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		DELIVERY SERVICES - $50 / PACKAGE X 6 PACKAGES										$ -
		MILEAGE 4 TRIP x 286 MI / TRIP @ $0.565/mile										$ -
		TOTAL DIRECT EXPENSES										$ -

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		I. GENERAL										
		FC 163 - MISCELLANEOUS (ROADWAY)										
1	1	TITLE SHEET		1	3		7	12	7		30	$ 3,700.96
2	2 - 3	2 - INDEX OF SHEETS		2	4		11	18	11		46	$ 5,664.49
2	4 - 5	2 - PROJECT LAYOUT (1" = 200') (DBL BANKED)		2	6		12	18	11		49	$ 6,247.58
0	6 - 5	TYPICAL SECTIONS - CONFIGURATION (LANES/SHOULDERS/CUT/FILL/ETC) (PAVEMENT DESIGN):										
4	6 - 9	4 - EXISTING TYPICAL SECTIONS	1	7	13		28	44	27		120	$ 15,555.48
6	10 - 15	6 - PROP TYPICAL SECTIONS	2	11	19		41	65	39		177	$ 23,138.58
20	16 - 35	20 - GENERAL NOTES & SPECIFICATION DATA	2	8	15		33	52	31		141	$ 18,417.81
6	36 - 41	6 - ESTIMATE & QUANTITIES	2	11	19		41	65	39		177	$ 23,138.58
2	42 - 43	2 - SUMMARY OF TRAFFIC CONTROL QUANTITIES	1	2	4		11	18	11		47	$ 5,992.42
4	44 - 47	4 - SUMMARY OF ROADWAY QUANTITIES	2	8	15		33	52	31		141	$ 18,417.81
1	48 - 48	1 - SUMMARY OF RETAINING WALL QUANTITIES		2	3		8	13	8		34	$ 4,259.20
2	49 - 50	2 - SUMMARY OF CULVERT QUANTITIES	1	3	7		17	27	15		70	$ 8,991.05
2	51 - 52	2 - SUMMARY OF STORM SEWER QUANTITIES	1	3	7		17	27	15		70	$ 8,991.05
1	53 - 53	1- SUMMARY OF BRIDGES		1	3		7	12	7		30	$ 3,700.96
1	54 - 54	1 - SUMMARY OF ILLUMINATION QUANTITIES		1	2		6	8	4		21	$ 2,666.49
2	55 - 56	2 - SUMMARY OF TRAFFIC SIGNAL QUANTITIES	1	2	4		11	18	11		47	$ 5,992.42
4	57 - 60	4 - SUMMARY OF SMALL SIGNS	1	6	11		22	34	20		94	$ 12,425.39
1	61 - 61	1 - SUMMARY OF LARGE SIGNS		1	2		6	8	4		21	$ 2,666.49

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	62 - 62	1 - SUMMARY OF PAVEMENT MARKINGS		1	2		6	8	4		21	$ 2,666.49
1	63 - 63	1 - SUMMARY OF DELINEATION & OBJ MRKR QUANTITIES		1	2		6	8	4		21	$ 2,666.49
1	64 - 64	1 - SUMMARY OF SW3P (EROSION CONTROL)		1	2		6	8	4		21	$ 2,666.49
1	65 - 65	1- SUMMARY OF REMOVAL ITEMS		1	2		6	8	4		21	$ 2,666.49
0	66 - 65	**II. TRAFFIC CONTROL PLANS (TCP)**										
2	66 - 67	2 - SEQUENCE OF CONSTRUCTION NARRATIVE	1	3	7		17	27	15		70	$ 8,991.05
4	68 - 71	4 - TRAFFIC CONTROL PLAN TYPICAL SECTIONS (1:100)	1	6	11		22	34	20		94	$ 12,425.39
2	**72 - 73**	**2 - TRAFFIC CONTROL PLAN GENERAL NOTES**	1	2	4		11	18	11		**47**	**$ 5,992.42**
2	74 - 75	2 - TCP ADVANCE WARNING SIGNS	1	2	4		11	18	11		47	$ 5,992.42
9	76 - 84	9 - ML TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-48 STA)** (1:100)	3	18	34		74	117	70		316	$ 40,992.39
3	85 - 87	3 - NBFR TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-10 STA)** (1:100)	1	6	12		24	39	23		105	$ 13,698.59
9	88 - 96	9 - SBFR TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-48 STA)** (1:100)	3	18	34		74	117	70		316	$ 40,992.39
4	97 - 100	4 - TEMPORARY TRAFFIC SIGNALS AND ILLUMINATION	1	2	4		11	18	11		47	$ 5,992.42
32	101 - 132	**32 - PRELIM CROSS SECTIONS (ROLL PLOT) '32 - PRELIMINARY CROSS SECTIONS (50 FOOT INCREMENTS ON 11x17 SHEETS @ 3 SECTIONS / SHEET)**	2	8	17		35	55	33		150	$ 19,619.79
0	133 - 132	0 - STANDARDS										
1	133 - 133	1 - BC 1 THRU 12					0.50		0.50		1	$ 107.77
1	134 - 134	1-WZ (TD)-03					0.50		0.50		1	$ 107.77
1	135 - 135	1-WZ (STPM)-03					0.50		0.50		1	$ 107.77
1	136 - 136	1-WZ (UL)-03					0.50		0.50		1	$ 107.77
1	137 - 137	1-WZ I(DERD)-03					0.50		0.50		1	$ 107.77

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LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

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US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	138 - 138	1-WZ (BTS-1)-03					0.50		0.50		1	$ 107.77
1	139 - 139	1-WZ (BTS-2)-03					0.50		0.50		1	$ 107.77
1	140 - 140	1-WZ (BRK)-03					0.50		0.50		1	$ 107.77
1	141 - 141	1-TCP (2-1)-98					0.50		0.50		1	$ 107.77
1	142 - 142	1-TCP (2-3)-03					0.50		0.50		1	$ 107.77
1	143 - 143	1-TCP (2-5)-03					0.50		0.50		1	$ 107.77
1	144 - 144	1-TCP (2-6)-98					0.50		0.50		1	$ 107.77
3	145 - 147	3 - TCP (3-1) THRU (3-3)-98					1.50		1.50		3	$ 323.30
1	148 - 148	1-TCP (7-1)-98					0.50		0.50		1	$ 107.77
0	149 - 148	0 - CPM SCHEDULE	2	9	18		44	27			100	$ 15,530.73
148		**SUB-TOTAL - FC 163 - MISCELLANEOUS (ROADWAY)**	**30**	**149**	**290**	**0**	**666**	**993**	**579**	**0**	**2707**	**$ 352,584.55**
		III. ROADWAY DETAILS (US 59 TO AIRPORT DR) (STA 115+85.4 TO STA 163+73.42)										
0	149 - 148	**FC 160 - ROADWAY DESIGN CONTROLS**										
4	149 - 152	4 - HORIZONTAL ALIGNMENT LAYOUT SHEETS **(1:100 - DOUBLE BANKED)**	1	7	13		28	44	27		120	$ 15,555.48
0	153 - 152	0 - BENCHMARK DATA SHEETS:										
4	153 - 156	4 - SURVEY CONTROL INDEX OF SHEETS (1:100 DOUBLE BANKED)		1	2		4	7	3		17	$ 2,212.23
4	157 - 160	4 - REMOVAL PLAN (1:100 - DOUBLE BANKED)		6	11		22	34	20		93	$ 12,097.46
0	161 - 160	0 - PLAN AND PROFILE										
8	161 - 168	8 - ROADWAY P & P SHEETS - EB & WB MAIN LANES TOGETHER	4	21	41		89	138	82		375	$ 48,829.10
3	169 - 171	3 - SB ENT RAMP P & P SHEETS - STA 152+00 TO STA 166+00	1	6	12		24	39	23		105	$ 13,698.59
2	172 - 173	2-ROADWAY P&P SHEETS - NB FRONTAGE ROAD - STA 154+00 TO STA 163+73.42	1	6	11		22	34	20		94	$ 12,425.39

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

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US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
8	174 - 181	8-ROADWAY P&P SHEETS - SB FRONTAGE ROAD - STA 115+85.4 TO STA163+25	4	21	41		89	138	82		375	$ 48,829.10
2	182 - 183	2 - INTERSECTION LAYOUTS - US 59 & LP 20	1	6	11		22	34	20		94	$ 12,425.39
2	184 - 185	2 - DRIVEWAY LAYOUTS (2 PER SHEET)	1	2	4		11	18	11		47	$ 5,992.42
1	186	DRIVEWAY DETAILS		1	1		2	4	2		10	$ 1,319.19
2	187 - 188	2 - MISCELLANEOUS ROADWAY DETAILS	1	2	4		11	18	11		47	$ 5,992.42
2	189 - 190	2 - LONGITUDINAL BARRIER									0	$ -
0	191 - 190	**0** - RAISED MEDIANS **(NO RAISED MEDIANS)**									0	$ -
0	191 - 190	0 - FENCING **(NO FENCING)**									0	$ -
0	191 - 190	0 - BUS BAYS **(NO BUS BAYS)**									0	$ -
0	191 - 190	0 - PARKING AREAS **(NO PARKING AREAS)**									0	$ -
0	191 - 190	0 - STANDARDS										
1	191	CCCG-01					0.50		0.50		1	$ 107.77
1	192	CRCP (1)-09					0.50		0.50		1	$ 107.77
1	193	TA (CP)-99					0.50		0.50		1	$ 107.77
1	194	JS-94					0.50		0.50		1	$ 107.77
1	195	GF(31)-11					0.50		0.50		1	$ 107.77
1	196	GF(31)DAT-11					0.50		0.50		1	$ 107.77
1	197	GF(31)LS-11					0.50		0.50		1	$ 107.77
1	198	GF(31)TR-11					0.50		0.50		1	$ 107.77
1	199	GF(31)T101-13					0.50		0.50		1	$ 107.77
1	200	SGT 7-09					0.50		0.50		1	$ 107.77

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1	201	SGT 8-09					0.50		0.50		1	$ 107.77
1	202	BED-09					0.50		0.50		1	$ 107.77
1	203	SSCB (1)-99					0.50		0.50		1	$ 107.77
1	204	SSCB (2)-00A					0.50		0.50		1	$ 107.77
1	205	SSCB (3)-02					0.50		0.50		1	$ 107.77
1	206	TRACC (N)-05					0.50		0.50		1	$ 107.77
1	207	REACT (N)-05					0.50		0.50		1	$ 107.77
1	208	QUAD (N)-99					0.50		0.50		1	$ 107.77
1	209	TE(HMAC)-11					0.50		0.50		1	$ 107.77
4	210 - 213	4 - RS(1)-10					2		2		4	$ 431.06
0	214 - 213	0 - PREPARE PLANS FOR FINAL ELECTRONIC DELIVERABLES		2	6	4	0	16	24		52	$ 6,435.94
65		**SUB-TOTAL - 0 - FC 160 - ROADWAY DESIGN CONTROLS**	**14**	**81**	**157**	**4**	**336**	**524**	**337**	**0**	**1452**	**$ 188,291.31**
		V. DRAINAGE DETAILS										
		FC 161 - DRAINAGE										
0	214 - 213	0 - DATA COLLECTION/REVIEW DATA		**4**	**8**		**27**	**43**	**17**		99	$ 12,318.71
0	214 - 213	0 - FIELD TRIP TO VERIFY EXISTING CONDITIONS (TWO TRIPS)		**19**			**19**				38	$ 6,995.04
4	214 - 217	4 - PREPARE LARGE AND SMALL DRAINAGE AREA MAPS:	**1**	**6**	**11**		**22**	**34**	**20**		94	$ 12,425.39
4	218 - 221	4 - HYDROLOGY CALCULATIONS (STORM SEWER, CULVERTS, DITCHES):	**2**	**8**	**15**		**33**	**52**	**31**		141	$ 18,417.81
4	222 - 225	4 - HYDRAULIC COMPUTATIONS SHEETS (STORM SEWER, CULVERTS, DITCHES):	**2**	**8**	**15**		**33**	**52**	**31**		141	$ 18,417.81
0	226 - 225	0 - CULVERT P & P SHEETS									0	$ -
0	226 - 225	0 - INCLUDE SPECIAL DITCHES ON RDWY P&P SHEETS									0	$ -

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PHASE III

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4	226 - 229	4 - STORM SEWER P & P SHEETS	**2**	**11**	**20**		**45**	**70**	**41**		189	$ 24,592.52
2	230 - 231	2 - PREPARE MISCELLANEOUS DETAILS	**1**	**2**	**4**		**11**	**18**	**11**		47	$ 5,992.42
0	232 - 231	STANDARDS										
1	232 - 232	1-SCC-3&4					0.50		0.50		1	$ 107.77
1	233 - 233	1-SCC-5&6					0.50		0.50		1	$ 107.77
1	234 - 234	1-SCC-7					0.50		0.50		1	$ 107.77
1	235 - 235	1-SCC-8					0.50		0.50		1	$ 107.77
1	236 - 236	1-SCC-MD					0.50		0.50		1	$ 107.77
1	237 - 237	1-MC-MD					0.50		0.50		1	$ 107.77
1	238 - 238	1-MC-4-23					0.50		0.50		1	$ 107.77
1	239 - 239	1-MC-6-20					0.50		0.50		1	$ 107.77
1	240 - 240	1-MC-7-20					0.50		0.50		1	$ 107.77
1	241 - 241	1-ECD					0.50		0.50		1	$ 107.77
1	242 - 242	1-BCS					0.50		0.50		1	$ 107.77
1	243 - 243	1-SW-0					0.50		0.50		1	$ 107.77
1	244 - 244	1-FW-S					0.50		0.50		1	$ 107.77
1	245 - 245	1-PW					0.50		0.50		1	$ 107.77
1	246 - 246	1-SETB-SW-0					0.50		0.50		1	$ 107.77
1	247 - 247	1-SETB-FW-0					0.50		0.50		1	$ 107.77
1	248 - 248	1-SETB-FW-S					0.50		0.50		1	$ 107.77
1	249 - 249	1-SETP-CD					0.50		0.50		1	$ 107.77

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1	250 - 250	1-C-6-20					0.50		0.50		1	$ 107.77
1	251 - 251	1-MC-7-20					0.50		0.50		1	$ 107.77
38		**SUB-TOTAL - 0 - FC 161 - DRAINAGE**	**8**	**58**	**73**	**0**	**200**	**269**	**161**	**0**	**769**	**$ 101,315.00**
		VI. UTILITIES										
0	252 - 251	**0 - FC 130 - ROW (UTILITIES)**										
6	252 - 257	6 - PREPARE EXISTING UTILITY LAYOUTS (1:100)(DOUBLE BANKED)	**2**	**8**	**15**		**33**	**52**	**31**		141	$ 18,417.81
0	258 - 257	0 - PREPARE PROPOSED UTILITY LAYOUTS AND P&P SHEETS (WHEN JOINT BIDDING ONLY) **(NOT INCLUDED)**									0	$ -
0	258 - 257	0 - STANDARDS									0	$ -
6		**SUB-TOTAL - 0 - FC 130 - ROW (UTILITIES)**	**2**	**8**	**15**	**0**	**33**	**52**	**31**	**0**	**141**	**$ 18,417.81**
		FC 170 - BRIDGE DESIGN										
		EAST BOUND FRTG RD 3-LANE BRIDGE (AT APPROX STA 124+50 - 127+30)										
1	258 - 258	1 - BRIDGE LAYOUTS	**1**	**4**		**49**		**62**			116	$ 18,933.39
1	259 - 259	1 -SUMMARY OF QUANTITIES (BRIDGE) AND BEARING SEAT ELEVATION	**1**	**2**		**24**	**71**	**4**	**20**		122	$ 17,685.82
2	260 - 261	2 - FOUNDATION LAYOUTS	**1**	**2**		**30**		**40**	**31**		104	$ 14,417.31
3	262 - 264	3 - ABUTMENTS	**1**	**2**		**58**	**60**	**82**	**40**		243	$ 33,886.55
2	265 - 266	2- INTERIOR BENTS	**1**	**2**		**58**	**40**	**51**	**51**		203	$ 28,856.75
2	267 - 268	2 - CONC SLAB SPAN	**1**	**2**		**24**	**11**	**40**	**20**		98	$ 13,599.46
1	269 - 269	1 - CONC FRAMING PLAN & BENT REPORT	**1**	**2**		**24**	**40**	**20**	**20**		107	$ 15,297.27
1	270 - 270	1 - CONC TYPICAL SECTIONS AND DEFLECTIONS	**1**	**2**		**24**	**31**	**20**	**20**		98	$ 14,108.46
1	271 - 271	1 - PRESTR CONC I-GIRDER DESIGN	**1**	**2**		**20**	**40**	**20**	**11**		94	$ 13,644.31
0	272 - 271	0 - ARCHITECTURAL TREATMENT		**1**		**4**	**4**	**7**	**4**		20	$ 2,746.67
1	272 - 272	1 - DRAIN DETAILS		**2**		**20**	**11**	**20**	**20**		73	$ 10,236.73
1	273 - 273	1 - BRIDGE BORING LOGS		**2**		**2**	**4**	**17**	**2**		27	$ 3,431.26

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16		**SUB-TOTAL SHEETS - EAST BOUND FRTG RD 3-LANE BRIDGE (AT APPROX STA 124+50 - 127+30)**	**9**	**25**	**0**	**337**	**312**	**383**	**239**	**0**	**1305**	**$ 186,843.98**
		BRIDGE STANDARDS					0.50		0.50		1	$ 107.77
1	274	BAS-C BRIDGE APPROACH SLAB					0.50		0.50		1	$ 107.77
1	275	FD FOUNDATION DETAILS (1 OF 2)					0.50		0.50		1	$ 107.77
1	276	FD FOUNDATION DETAILS (2 OF 2)					0.50		0.50		1	$ 107.77
1	277	MEBRS MINIMUM ERECTION					0.50		0.50		1	$ 107.77
1	278	ODSR OPTIONAL DRILLED SHAFT REINFORCING					0.50		0.50		1	$ 107.77
1	279	PCP PRESTRESSED CONCRETE PANELS (1 OF 4)					0.50		0.50		1	$ 107.77
1	280	PCP PRESTRESSED CONCRETE PANELS (2 OF 4)					0.50		0.50		1	$ 107.77
1	281	PCP PRESTRESSED CONCRETE PANELS (3 OF 4)					0.50		0.50		1	$ 107.77
1	282	PCP PRESTRESSED CONCRETE PANELS (4 OF 4)					0.50		0.50		1	$ 107.77
1	283	PMDF PERMANENT METAL DECK FORMS (1 OF 2)					0.50		0.50		1	$ 107.77
1	284	PMDF PERMANENT METAL DECK FORMS (2 OF 2)					0.50		0.50		1	$ 107.77
1	285	SBTS THICKENED SLAB STEEL GIRDERS					0.50		0.50		1	$ 107.77
1	286	SBMS MISCELLANEOUS SLAB DETAIL STEEL GIRDERS					0.50		0.50		1	$ 107.77
1	287	SEJ-A SEALED EXPANSION JOINT					0.50		0.50		1	$ 107.77
1	288	SGEB ELASTOMERIC BEARING STEEL GIRDERS (1 OF 3)					0.50		0.50		1	$ 107.77
1	289	SGEB ELASTOMERIC BEARING STEEL GIRDERS (2 OF 3)					0.50		0.50		1	$ 107.77
1	290	SGEB ELASTOMERIC BEARING STEEL GIRDERS (3 OF 3)					0.50		0.50		1	$ 107.77
1	291	SGMD MISCELLANEOUS DETAILS STEEL GIRDERS (1 OF 3)					0.50		0.50		1	$ 107.77
1	292	SGMD MISCELLANEOUS DETAILS STEEL GIRDERS (2 OF 3)					0.50		0.50		1	$ 107.77
1	293	SGMD MISCELLANEOUS DETAILS STEEL GIRDERS (3 OF 3)					0.50		0.50		1	$ 107.77
1	294	T551 CONCRETE SAFTEY F-SHAPE RAIL (1 OF 2)					0.50		0.50		1	$ 107.77
1	295	T551 CONCRETE SAFTEY F-SHAPE RAIL (2 OF 2)					0.50		0.50		1	$ 107.77
1	296	BD-1 BRIDGE DRAIN					0.50		0.50		1	$ 107.77
1	297	IGCS CONTINUOUS SLAB DETAILS					1.00		1.00		2	$ 215.53
1	298	IGD PRESTRESSED CONCRETE I-GIRDER DETAILS (1 OF 2)					0.50		0.50		1	$ 107.77

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	299	IGD PRESTRESSED CONCRETE I-GIRDER DETAILS (2 OF 2)					0.50		0.50		1	$ 107.77
1	300	IGEB ELASTOMERIC BEARING AND GRDER END (1 OF 2)					0.50		0.50		1	$ 107.77
1	301	IGEB ELASTOMERIC BEARING AND GRDER END (2 OF 2)					0.50		0.50		1	$ 107.77
1	302	IGMS MISCELLANEOUS SLAB DETAIL					0.50		0.50		1	$ 107.77
1	303	IGTS THICKEND SLAB END DETAILS					0.50		0.50		1	$ 107.77
1	304	MEBRC MINIMUM ERECTION					0.50		0.50		1	$ 107.77
1	305	BL BRIDGE LIGHTING DETAILS					0.50		0.50		1	$ 107.77
1	306	CSAB CEMENT STABILIZED ABUTMENT BACKFILL					0.50		0.50		1	$ 107.77
1	307	CLF-RO 8 FT CHAINLINK FENCE FOR RAILROAD OVERPASS (1 OF 2)					0.50		0.50		1	$ 107.77
1	308	CLF-RO 8 FT CHAINLINK FENCE FOR RAILROAD OVERPASS (2 OF 2)					0.50		0.50		1	$ 107.77
1	309	CRR CONCRETE RIP RAP (TYPE RR 8 AND RR9)					0.50		0.50		1	$ 107.77
36		**SUB-TOTAL SHEETS - BRIDGE STANDARDS**	**0**	**0**	**0**	**0**	**19.00**	**0**	**19.00**	**0**	**38**	**$ 4,095.07**
52		**SUB-TOTAL BRIDGE SHEETS**	**9**	**25**	**0**	**337**	**331**	**383**	**258**	**0**	**1343**	**$ 190,939.05**
		VIII. TRAFFIC ITEMS										
0	310 - 309	**FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION**										
0	310 - 309	**SIGNALIZATION (AIRPORT DR)**										
1	310	TRAFFIC SIGNAL SUMMARY OF QUANTITIES	**1**	**3**	**7**		**17**	**27**	**15**		70	$ 8,991.05
2	311 - 312	2 - TRAFFIC SIGNAL EXISTING CONDITIONS LAYOUT	**1**	**2**	**4**		**11**	**18**	**11**		47	$ 5,992.42
2	313 - 314	2 - TRAFFIC SIGNAL PROPOSED LAYOUT	**1**	**4**	**8**		**19**	**30**	**18**		80	$ 10,287.04
1	315 - 315	1 - TRAFFIC SIGNAL INTERVAL SEQUENCE		**1**	**2**		**3**	**6**	**3**		15	$ 1,973.50
1	316 - 316	1 - TRAFFIC SIGNAL TIMING PLAN		**1**	**2**		**6**	**10**	**6**		25	$ 3,046.65
1	317 - 317	1 - TRAFFIC SIGNAL CONDUIT AND CONDUCTOR PLAN		**2**	**4**		**8**	**13**	**8**		35	$ 4,484.70
2	318 - 319	2 - TRAFFIC SIGNAL ELEVATION DETAILS	**1**	**2**	**4**		**11**	**18**	**11**		47	$ 5,992.42
1	320 - 320	1 - TRAFFIC SIGNAL WIRING DIAGRAM		**1**	**2**		**6**	**8**	**4**		21	$ 2,666.49
1	321 - 321	1 - TRAFFIC SIGNAL NOTES & DETAILS		**1**	**2**		**6**	**8**	**4**		21	$ 2,666.49
10	322 - 331	10 - TRAFFIC SIGNAL STANDARDS		**1**	**2**		**6**	**8**	**4**		21	$ 2,666.49
0	332 - 331	**FC 162-PREPARE SIGNING & PAVEMENT MARKING DESIGN**										

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
8	332 - 339	8- SIGNING & PAVEMENT MARKING LAYOUT (1:100)(DOUBLE BANKED)	2	11	20		45	70	41		189	$ 24,592.52
1	340 - 340	1 - LARGE SIGN DETAILS		1	2		6	8	4		21	$ 2,666.49
2	341 - 342	2 - SMALL SIGN SUMMARY	1	6	12		22	34	20		95	$ 12,650.89
0	343 - 342	0 - SIGNING AND PAVEMENT MARKING STANDARDS:										
5	343 - 347	5 - TSR(1)-08 THRU TSR(5)-08					2.50		2.50		5	$ 538.83
1	348	SMD(GEN)-08					0.50		0.50		1	$ 107.77
3	349 - 351	3 - SMD(SLIP-1)-08 THRU (SLIP-3)-08					1.50		1.50		3	$ 323.30
4	352 - 355	4 - SMD(2-1) THRU (2-4)-08					0.50		0.50		1	$ 107.77
1	356	SMD (TY G)-08					0.50		0.50		1	$ 107.77
1	357	SMD (8W1)-08					0.50		0.50		1	$ 107.77
1	358	SMD (8W2)-08					0.50		0.50		1	$ 107.77
1	359	BMCS					0.50		0.50		1	$ 107.77
1	360	SPECIAL SIGN MOUNT DETAILS					0.50		0.50		1	$ 107.77
5	361 - 365	5 - D&OM(1) THRU (5)-04					2.50		2.50		5	$ 538.83
1	366	D&OM(VIA)-04					0.50		0.50		1	$ 107.77
1	367	PM(1)-03					0.50		0.50		1	$ 107.77
1	368	PM(2)-08					0.50		0.50		1	$ 107.77
1	369	PM(4)-03					0.50		0.50		1	$ 107.77
2	370 - 371	2 - PM(5) THRU (6)-01					0.50		0.50		1	$ 107.77
1	372	FPM(1)-08					0.50		0.50		1	$ 107.77
3	373 - 375	3 - FPM(2) THRU (4)-00A					0.50		0.50		1	$ 107.77
0	376 - 375	0 - PREPARE TMS DESIGN **(NOT REQUIRED)**									0	$ -
0	376 - 375	0 - TMS STANDARDS **(NOT REQUIRED)**									0	$ -
66		**SUB-TOTAL - FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION**	**7**	**36**	**71**	**0**	**180**	**258**	**163**	**0**	**714**	**$ 91,586.81**
		FC 163 - MISCELLANEOUS - ILLUMINATION										
0	376 - 375	0 - PREPARE ILLUMINATION DESIGN:									0	$ -
1	376	SUMMARY OF QUANTITIES	1	2	4		11	18	11		47	$ 5,992.42

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
6	377 - 382	6 - ILLUMINATION LAYOUT (1;100)(DOUBLE BANKED)	2	8	16		33	52	31		142	$ 18,643.31
2	383 - 384	2 - ILLUMINATION CIRCUIT DIAGRAM	1	2	4		11	18	11		47	$ 5,992.42
2	385 - 386	2 - MISCELLANEOUS ILLUMINATION DETAILS	1	2	4		11	18	11		47	$ 5,992.42
0	387 - 386	0 - ILLUMINATION STANDARDS										
7	387 - 393	7 - ED(1) THRU ED(7)-03					3.50		3.50		7	$ 754.36
2	394 - 395	2 - RID(LUM 1) THRU (LUM2)-07					1.00		1.00		2	$ 215.53
2	396 - 397	2 - SP-80 (1) THRU (2)					1.00		1.00		2	$ 215.53
1	398	TS-FD-99					0.50		0.50		1	$ 107.77
1	399	LUM-A-99					0.50		0.50		1	$ 107.77
1	400	RID (UP)-07					0.50		0.50		1	$ 107.77
25		**SUB-TOTAL - FC 163 - MISCELLANEOUS - ILLUMINATION**	**5**	**14**	**28**	**0**	**73**	**106**	**71**	**0**	**297**	**$ 38,129.28**
		IX. ENVIRONMENTAL										
		FC 161 - DRAINAGE										
0	401 - 400	PREPARE SW3P :										
2	401 - 402	2 - 'SW3P NARRATIVE		2	4		8	14	8		36	$ 4,591.34
8	403 - 410	8 - SW3P LAYOUTS	2	12	20		45	70	41		190	$ 24,828.59
2	411 - 412	2 - MISCELLANEOUS SW3P DETAILS	1	2	4		11	18	11		47	$ 5,992.42
0	413 - 412	SW3P STANDARDS:									0	
3	413 - 415	3 - EC-(1)THRU (3)-93					1.50		1.50		3	$ 323.30
0	416 - 415	CONDUCT SENSITIVE AREAS INVESTIGATION **(NOT REQUIRED)**									0	$ -
0	416 - 415	0 - PREPARE WETLAND MITIGATION PLAN									0	$ -
0	416 - 415	0 - PREPARE MISCELLANEOUS DETAILS									0	$ -
15		**SUB-TOTAL - FC 161 - DRAINAGE**	**3**	**16**	**28**	**0**	**66**	**102**	**62**	**0**	**276**	**$ 35,735.65**
		X. MISCELLANEOUS										
		FC 163 - MISCELLANEOUS - LANDSCAPING/AESTHETICS (NOT REQUIRED)										
10	416 - 425	10 - LANDSCAPING/IRRIGATION									0	$ -
10	426 - 435	10 - AESTHETIC PLAN									0	$ -

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
4	436 - 439	4 - AESTHETIC DETAILS									0	$ -
24		**SUB-TOTAL - FC 163 - MISCELLANEOUS - LANDSCAPING/AESTHETICS (NOT REQUIRED)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**
		XI. CROSS SECTIONS										
		FC 163 - MISCELLANEOUS - CROSS SECTIONS										
101	440 - 540	**101 - FINAL CROSS SECTIONS (ROLL PLOT) '101 - FINAL CROSS SECTIONS (50 FOOT INCREMENTS ON 11x17 SHEETS @ 3 SECTIONS / SHEET)**	**6**	**28**	**52**		**113**	**195**	**133**		527	$ 67,122.03
101		**SUB-TOTAL - FC 163 - MISCELLANEOUS - CROSS SECTIONS**	**6**	**28**	**52**	**0**	**113**	**195**	**133**	**0**	**527**	**$ 67,122.03**
		HOURS SUB-TOTALS	**84**	**415**	**714**	**341**	**1,997**	**2,882**	**1,794**	**0**	**8,226**	
		LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		
		DIRECT LABOR COSTS	$ 27,546.12	$ 97,969.05	$ 161,007.00	$ 76,895.50	$ 263,717.69	$ 307,336.48	$ 149,649.64	$ -	$ 1,084,121.48	
		TOTAL	**$ 27,546.12**	**$ 97,969.05**	**$ 161,007.00**	**$ 76,895.50**	**$ 263,717.69**	**$ 307,336.48**	**$ 149,649.64**	**$ -**	**$ 1,084,121.48**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**2.54%**	**9.04%**	**14.85%**	**7.09%**	**24.33%**	**28.35%**	**13.80%**	**0.00%**	**100.00%**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**1.02%**	**5.04%**	**8.68%**	**4.15%**	**24.27%**	**35.04%**	**21.80%**	**0.00%**	**100.00%**	
540		**GRAND TOTAL (NOT INCLUDING FC 164)**	**84**	**415**	**714**	**341**	**1,997**	**2,882**	**1,794**	**0**	**8226**	**$ 1,084,121.48**
TOTAL DANNENBAUM DIRECT EXPENSES (FROM BELOW)												**$ 5,030.36**
SUBTOTAL BASIC SERVICES SUB CONSULTANTS (FROM BELOW)												**$ 26,386.52**
SUBTOTAL SPECIAL SERVICES DANNENBAUM (FROM BELOW)												**$ 170,825.55**
GRAND TOTAL - PHASE III SERVICES US 59 TO SOUTH OF JACAMAN (DIRECT EXPENSES, BASIC, SPECIAL AND SUB CONSULTANT SERVICES)												**$ 1,286,363.91**
		DIRECT EXPENSES										
		REPRO - 540 SHEETS X $0.20 / SHEET (BOND) - CHECK PLOTS & REVIEW SETS) X 540 X 30 SUBMITTAL SETS)										**$ 3,240.00**
		PLOTS (B/W ON BOND) $1.00/LINEAR FOOT (30 FT/PLOT x 20 PLOTS)										**$ -**
		PLOTS (COLOR ON BOND) $2.00/LINEAR FOOT (30 FT/PLOT x20 PLOTS)										**$ -**
		COURT REPORTER (PUBLIC HEARINGS AND TRANSCRIPTION) ($100 / HR)										**$ -**
		COLOR GRAPHICS ON FOAM BOARD ($5.00/SF) (3'x6'x 10 Ea)										**$ -**
		CAR RENTAL - $90 / TRIP X 4 TRIP										**$ 360.00**
		PER DIEM - $121 /NIGHT STAY X 2 PERSON X 2 NIGHT ($85 hotel/$36 meals)										**$ 484.00**

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer Civil	Senior Engineer Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		DELIVERY SERVICES - $50 / PACKAGE X 6 PACKAGES										$ 300.00
		MILEAGE 4 TRIP x 286 MI / TRIP @ $0.565/mile										$ 646.36
		TOTAL DIRECT EXPENSES										$ 5,030.36
		BASIC SERVICES (SUBCONSULTANT)										
		- HOWLAND ENGINEERING & SURVEYING CO.								$ -		
		- ARREDONDO, ZEPEDA & BRUNZ, LLC								$ -		
		- ARIAS & ASSOCIATES, INC.								$ -		
		- AMMA TERRA ENVIRONMENTAL, INC.								$ -		
		- RODS SUBSURFACE UTILITY ENGINEERING, INC.								$ -		
		- GILPIN ENGINEERING COMPANY								$ 26,386.52		
		TOTAL DANNENBAUM SUBCONSULTANT MANAGEMENT FEE FOR BASIC SERVICES (0% OF SUBCONSULTANT FEE)								$ -		
		TOTAL ENGINEERING (CONSULTANT) - BASIC SERVICES								$ 26,386.52		
		SPECIAL SERVICES (DANNENBAUM)										
		HIKE & BIKE TRAIL								$ -		
		OFFSITE DETENTION PONDS PS&E								$ 170,825.55		
		TOTAL ENGINEERING (DANNENBAUM) - SPECIAL SERVICES								$ 170,825.55		

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Design

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)
Dannenbaum Engineering Corporation
PHASE III

SPECIAL SERVICES (FC 161) HYDROLOGIC TASK DESCRIPTION	Principal/PM	Senior Engineer-Civil	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Remarks	Task Cost
FC 161 - DRAINAGE									
PS&E (2 Ponds)									
Runoff Comupations	2	2	9	9	7		29		$ 3,839.51
Hydraulic Data sheets	2	2	9	9	7		29		$ 3,839.51
Cross Culverts Plan and Rrofile (7 Culverts)							0		$ -
Bridge Hydraulic Data sheet (1 Bridge)	1	9	18	18	27		73		$ 8,907.45
Dentention pond Plan (5 Sheets)	2	3	9	13	18		45		$ 5,409.41
Dentention pond Profiles (5 Sheets)	2	3	9	13	18		45		$ 5,409.41
Dentention pond Inlet & Outlet Structures (5 Sheets)	2	3	9	13	18		45		$ 5,409.41
Detention Pond Point Table (5 sheets)	2	3	9	9	18		41		$ 4,982.85
Miscellaneous Details (3 Sheets)	1	6	9	9	14		39		$ 4,997.66
30% Cost Estimate & Quantities	1	9	18	27	18	4	77		$ 9,375.81
60% Cost Estimate, Qunatities and Specifications	1	9	27	35	27	4	103		$ 12,168.70
90% Cost Estimate & Quantities	1	9	18	27	18	4	77		$ 9,375.81
100% Cost Estimate, Qunatities and Specifications	1	9	27	35	27	4	103		$ 12,168.70
30% Deliverables	2	9	9	18		4	42		$ 6,053.25
60% Deliverables	2	9	9	18		4	42		$ 6,053.25
90% Deliverables	2	9	9	18		4	42		$ 6,053.25
100% Deliverables	2	18	18	27		9	74		$ 10,555.77
QA/QC	3	14	14	14			45		$ 7,483.01
Coordination	3	9	12	14		3	41		$ 6,286.00
FEMA APLICATIONS									
CLOMR (For **1** Crossing) Does not include FEMA Fee	3	30	22	22	12	12	101		$ 14,780.81
LOMR (For **1** Crossing) Does not include FEMA FEE	3	30	14	14	9	9	79		$ 12,425.98
SUB-TOTAL - FC 161 - DRAINAGE	**38**	**195**	**278**	**362**	**238**	**61**	**1172**		**$ 155,575.55**

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Design

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)
Dannenbaum Engineering Corporation
PHASE III

SPECIAL SERVICES (FC 161) HYDROLOGIC TASK DESCRIPTION	Principal/PM	Senior Engineer-Civil	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Remarks	Task Cost
FC 161 - DRAINAGE									
TOTAL DIRECT EXPENSES (FROM BELOW)									$15,250.00
TOTAL - FC 161 - DRAINAGE INCLUDING DIRECT EXPENSES									$ 170,825.55
TOTAL ENGINEERING (SUBCONSULTANT) - SPECIAL SERVICES (FROM BELOW)									$ -
TOTAL FC 161 - DRAINAGE									$ 170,825.55
HOURS SUB-TOTALS	38	195	278	362	238	61			
LABOR RATE PER HOUR	$ 327.93	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89			
DIRECT LABOR COSTS	$ 12,461.34	$ 43,972.50	$ 36,721.02	$ 38,603.68	$ 19,858.72	$ 3,958.29	$ 155,575.55		
TOTAL	**$ 12,461.34**	**$ 43,972.50**	**$ 36,721.02**	**$ 38,603.68**	**$ 19,858.72**	**$ 3,958.29**	**$ 155,575.55**		
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**8.01%**	**28.26%**	**23.60%**	**24.81%**	**12.76%**	**2.54%**	**100.00%**	**CHECK**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**3.24%**	**16.64%**	**23.72%**	**30.89%**	**20.31%**	**5.20%**	**100.00%**	**$ 155,575.55**	
DIRECT EXPENSES									
REPRO -400 SHEETS X $0.20 / PAPER SHEET x 10 Sets								$ -	
REPRO -200 8 1/2" x 11" COLOR COPIES X $1.00 / PAPER SHEET x 10 Sets								$ -	
CLOMR FEE (1 @ $7,000.00)								$ 7,000.00	
LOMR FEE (1 @ $8,250.00)								$ 8,250.00	
PER DIEM - $121 /NIGHT STAY X 2 PERSON X 4 NIGHT ($85 hotel/$36 meals)								$ -	
DELIVERY SERVICES - $50 / PACKAGE X 4 PACKAGES								$ -	
MILEAGE 4 TRIP x 286 MI / TRIP @ $0.565/mile								$ -	
TOTAL DIRECT EXPENSES								**$ 15,250.00**	

PHASE III - SPECIAL SERVICES (PARCEL SURVEYING)

(US 59 TO AIRPORT)

GILPIN ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Parcel Taking

US 59 to Airport Dr (STA 115+85.4 TO STA 163+73.42)

GILPIN ENGINEERING COMPANY
PHASE III

SPECIAL SERVICES (FC 130) (PARCEL SURVEYING) TASK DESCRIPTION	PM	SIT	RPLS	Survey Crew (3-Man) w/GPS	CADD Operator/ Tech	Admin Assistant	Total Labor Hrs.	Task Cost
FIELD SURVEYING								
FIELD SURVEY								
FC 130 - RIGHT-OF-WAY (SURVEYING FOR PARCELS (2 PONDS) AND CADD WORK TO PRODUCE FILES)								
PARCEL ABSTRACT	2	8	6		14		30	$ 3,088.26
DEVELOP WORKING SKETCHES		8	6		14		28	$ 2,728.92
COORDINATE WITH LAND OWNER	2	8	6				16	$ 1,880.34
LOCATE AND TIE CORNERS		8	6	26	14		54	$ 6,599.28
RESOLVE BOUNDARIES			6		14		20	$ 1,948.44
PREPARE ROW MAP		8	6		14		28	$ 2,728.92
PREPARE PARCELS AND METES AND BOUNDS		8	6				14	$ 1,521.00
STAKE PARCEL TAKINGS		8	6	26			40	$ 5,391.36
							0	$ -
SUB-TOTAL - FC 130 - RIGHT-OF-WAY (SURVEYING FOR PARCELS (2 PONDS) AND CADD WORK TO PRODUCE FILES)	**4**	**56**	**48**	**52**	**70**	**0**	**230**	**$ 25,886.52**
							0	
HOURS SUB-TOTALS	**4**	**56**	**48**	**52**	**70**	**0**	**230**	
LABOR RATE PER HOUR	$ 179.67	$ 97.56	$ 123.42	$ 148.86	$ 86.28	$ 48.48		
DIRECT LABOR COSTS	$ 718.68	$ 5,463.36	$ 5,924.16	$ 7,740.72	$ 6,039.60	$ -	$ 25,886.52	
TOTAL	**$ 718.68**	**$ 5,463.36**	**$ 5,924.16**	**$ 7,740.72**	**$ 6,039.60**	**$ -**	**$ 25,886.52**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**2.78%**	**21.11%**	**22.89%**	**29.90%**	**23.33%**	**0.00%**	**100.00%**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**1.74%**	**24.35%**	**20.87%**	**22.61%**	**30.43%**	**0.00%**	**100.00%**	
DIRECT EXPENSES: SUBSURFACE UTILITY ENGINEERING								
DELIVERY SERVICES - $50 / PACKAGE X 10 PACKAGES								**$ 500.00**
TOTAL DIRECT EXPENSES								**$ 500.00**
GRAND TOTAL - ENGINEERING SERVICES								**$ 26,386.52**

PHASE III - BASIC PS&E SERVICES

(AIRPORT DR OVERPASS)

DANNENBAUM ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		III. ROADWAY DETAILS (AIRPORT DR OVERPASS) (STA 163+73.42 TO STA 192+87.14)										
		I. GENERAL										
		FC 163 - MISCELLANEOUS (ROADWAY)										
1	1	TITLE SHEET		1	3		7	11	7		29	$ 3,594.32
2	2 - 3	2 - INDEX OF SHEETS		2	5		10	17	10		44	$ 5,567.82
2	4 - 5	2 - PROJECT LAYOUT (1" = 200') (DBL BANKED)		2	6		11	17	10		46	$ 5,925.41
0	6 - 5	TYPICAL SECTIONS - CONFIGURATION (LANES/SHOULDERS/CUT/FILL/ETC) (PAVEMENT DESIGN):										
4	6 - 9	4 - EXISTING TYPICAL SECTIONS	1	6	10		22	33	19		91	$ 12,009.81
6	10 - 15	6 - PROP TYPICAL SECTIONS	2	8	15		32	50	30		137	$ 17,989.00
20	16 - 35	20 - GENERAL NOTES & SPECIFICATION DATA	2	8	15		32	50	30		137	$ 17,989.00
6	36 - 41	6 - ESTIMATE & QUANTITIES	2	9	16		35	55	33		150	$ 19,630.36
2	42 - 43	2 - SUMMARY OF TRAFFIC CONTROL QUANTITIES	1	2	5		10	17	10		45	$ 5,895.75
4	44 - 47	4 - SUMMARY OF ROADWAY QUANTITIES	1	6	10		22	33	19		91	$ 12,009.81
1	48 - 48	1 - SUMMARY OF RETAINING WALL QUANTITIES		1	2		6	8	5		22	$ 2,749.93
2	49 - 50	2 - SUMMARY OF CULVERT QUANTITIES	1	2	5		10	17	10		45	$ 5,895.75
2	51 - 52	2 - SUMMARY OF STORM SEWER QUANTITIES	1	2	5		10	17	10		45	$ 5,895.75
1	53 - 53	1- SUMMARY OF BRIDGES		1	3		7	11	7		29	$ 3,594.32
1	54 - 54	1 - SUMMARY OF ILLUMINATION QUANTITIES		1	2		6	8	5		22	$ 2,749.93

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
2	55 - 56	2 - SUMMARY OF TRAFFIC SIGNAL QUANTITIES	1	2	5		10	17	10		45	$ 5,895.75
4	57 - 60	4 - SUMMARY OF SMALL SIGNS	1	6	10		22	33	19		91	$ 12,009.81
1	61 - 61	1 - SUMMARY OF LARGE SIGNS		1	2		6	8	5		22	$ 2,749.93
1	62 - 62	1 - SUMMARY OF PAVEMENT MARKINGS		1	2		6	8	5		22	$ 2,749.93
1	63 - 63	1 - SUMMARY OF DELINEATION & OBJ MRKR QUANTITIES		1	2		6	8	5		22	$ 2,749.93
1	64 - 64	1 - SUMMARY OF SW3P (EROSION CONTROL)		1	2		6	8	5		22	$ 2,749.93
1	65 - 65	1- SUMMARY OF REMOVAL ITEMS		1	2		6	8	5		22	$ 2,749.93
0	66 - 65	**II. TRAFFIC CONTROL PLANS (TCP)**										
2	66 - 67	2 - SEQUENCE OF CONSTRUCTION NARRATIVE	1	3	7		16	25	15		67	$ 8,645.68
4	68 - 71	4 - TRAFFIC CONTROL PLAN TYPICAL SECTIONS (1:100)	1	6	10		22	33	19		91	$ 12,009.81
2	72 - 73	2 - TRAFFIC CONTROL PLAN GENERAL NOTES	1	2	5		10	17	10		45	$ 5,895.75
2	74 - 75	2 - TCP ADVANCE WARNING SIGNS	1	2	5		10	17	10		45	$ 5,895.75
6	76 - 81	6 - ML TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-30 STA)** (1:100)	2	11	22		48	75	45		203	$ 26,306.75
6	82 - 87	6 - NBFR TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-29 STA)** (1:100)	2	11	22		48	75	45		203	$ 26,306.75
6	88 - 93	6 - SBFR TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-30 STA)** (1:100)	2	11	22		48	75	45		203	$ 26,306.75
4	94 - 97	4 - TEMPORARY TRAFFIC SIGNALS AND ILLUMINATION	1	2	5		10	17	10		45	$ 5,895.75
20	98 - 117	**20 - PRELIM CROSS SECTIONS (ROLL PLOT) '20 - PRELIMINARY CROSS SECTIONS (50 FOOT INCREMENTS ON 11x17 SHEETS @ 3 SECTIONS / SHEET)**	1	6	10		22	33	19		91	$ 12,009.81
0	118 - 117	0 - STANDARDS										
1	118 - 118	1 - BC 1 THRU 12					0.50		0.50		1	$ 107.77

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	119 - 119	1-WZ (TD)-03					0.50		0.50		1	$ 107.77
1	120 - 120	1-WZ (STPM)-03					0.50		0.50		1	$ 107.77
1	121 - 121	1-WZ (UL)-03					0.50		0.50		1	$ 107.77
1	122 - 122	1-WZ I(DERD)-03					0.50		0.50		1	$ 107.77
1	123 - 123	1-WZ (BTS-1)-03					0.50		0.50		1	$ 107.77
1	124 - 124	1-WZ (BTS-2)-03					0.50		0.50		1	$ 107.77
1	125 - 125	1-WZ (BRK)-03					0.50		0.50		1	$ 107.77
1	126 - 126	1-TCP (2-1)-98					0.50		0.50		1	$ 107.77
1	127 - 127	1-TCP (2-3)-03					0.50		0.50		1	$ 107.77
1	128 - 128	1-TCP (2-5)-03					0.50		0.50		1	$ 107.77
1	129 - 129	1-TCP (2-6)-98					0.50		0.50		1	$ 107.77
3	130 - 132	3 - TCP (3-1) THRU (3-3)-98					1.50		1.50		3	$ 323.30
1	133 - 133	1-TCP (7-1)-98					0.50		0.50		1	$ 107.77
0	134 - 133	0 - CPM SCHEDULE	2	8	16		40	24			90	$ 13,995.38
133		**SUB-TOTAL - FC 163 - MISCELLANEOUS (ROADWAY)**	**27**	**126**	**251**	**0**	**564**	**825**	**485**	**0**	**2278**	**$ 298,144.59**
		FC 160 - ROADWAY DESIGN CONTROLS										
2	2	2 - HORIZONTAL ALIGNMENT LAYOUT SHEETS **(1:100 - DOUBLE BANKED)**	**1**	**2**	**5**		**10**	**17**	**10**		45	$ 5,895.75
0	3 - 2	0 - BENCHMARK DATA SHEETS:										
3	3 - 5	3 - SURVEY CONTROL INDEX OF SHEETS (1:100 DOUBLE BANKED)		**1**	**1**		**3**	**5**	**3**		13	$ 1,641.36
2	6 - 7	2 - REMOVAL PLAN (1:100 - DOUBLE BANKED)		**2**	**5**		**10**	**17**	**10**		44	$ 5,567.82

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
0	8 - 7	0 - PLAN AND PROFILE										
5	8 - 12	5 - ROADWAY P & P SHEETS - EB & WB MAIN LANES TOGETHER (STA 153+73.42 TO STA 202+87.14)(INCL 1,000 FT TRANSITIONS @ BEG & END)	2	10	18		40	63	38		171	$ 22,248.20
2	13 - 14	2 - NB EXIT RAMP P & P SHEETS - STA 182+50 TO STA 202+00	1	3	7		16	25	15		67	$ 8,645.68
2	15 - 16	2 - SB ENT RAMP P & P SHEETS - STA 184+00 TO STA 194+24	1	3	7		16	25	15		67	$ 8,645.68
5	17 - 21	5-ROADWAY P&P SHEETS - NB FRONTAGE ROAD (STA 153+73.42 TO STA 202+00)(INCL 1000FT TRANSITIONS @ BEG & END)	2	10	18		40	63	38		171	$ 22,248.20
6	22 - 27	6-ROADWAY P&P SHEETS - SB FRONTAGE ROAD - STA 153+25 TO STA 203+96.35(INCL 1000FT TRANSITIONS @ BEG & END)	2	11	22		48	75	45		203	$ 26,306.75
2	28 - 29	2 - INTERSECTION LAYOUTS - AIRPORT DR	1	3	7		16	25	15		67	$ 8,645.68
1	30 - 30	1 - DRIVEWAY LAYOUTS (2 PER SHEET)		1	2		5	7	3		18	$ 2,344.32
1	31	DRIVEWAY DETAILS		1	1		2	5	2		11	$ 1,425.83
2	32 - 33	2 - MISCELLANEOUS ROADWAY DETAILS	1	2	5		10	17	10		45	$ 5,895.75
2	34 - 35	2 - LONGITUDINAL BARRIER									0	$ -
0	36 - 35	0 - RAISED MEDIANS **(NO RAISED MEDIANS)**									0	$ -
2	36 - 37	2 - FENCING **(NO FENCING)**									0	$ -
4	38 - 41	4 - BUS BAYS **(NO BUS BAYS)**									0	$ -
4	42 - 45	4 - PARKING AREAS **(NO PARKING AREAS)**									0	$ -
0	46 - 45	0 - STANDARDS										
1	46	CCCG-01					0.50		0.50		1	$ 107.77
1	47	CRCP (1)-09					0.50		0.50		1	$ 107.77
1	48	TA (CP)-99					0.50		0.50		1	$ 107.77
1	49	JS-94					0.50		0.50		1	$ 107.77

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	50	GF(31)-11					0.50		0.50		1	$ 107.77
1	51	GF(31)DAT-11					0.50		0.50		1	$ 107.77
1	52	GF(31)LS-11					0.50		0.50		1	$ 107.77
1	53	GF(31)TR-11					0.50		0.50		1	$ 107.77
1	54	GF(31)T101-13					0.50		0.50		1	$ 107.77
1	55	SGT 7-09					0.50		0.50		1	$ 107.77
1	56	SGT 8-09					0.50		0.50		1	$ 107.77
1	57	BED-09					0.50		0.50		1	$ 107.77
1	58	SSCB (1)-99					0.50		0.50		1	$ 107.77
1	59	SSCB (2)-00A					0.50		0.50		1	$ 107.77
1	60	SSCB (3)-02					0.50		0.50		1	$ 107.77
1	61	TRACC (N)-05					0.50		0.50		1	$ 107.77
1	62	REACT (N)-05					0.50		0.50		1	$ 107.77
1	63	QUAD (N)-99					0.50		0.50		1	$ 107.77
1	64	TE(HMAC)-11					0.50		0.50		1	$ 107.77
4	65 - 68	4 - RS(1)-10					2		2		4	$ 431.06
0	69 - 68	0 - PREPARE PLANS FOR FINAL ELECTRONIC DELIVERABLES		2	6	4	0	16	24		52	$ 6,435.94
45		**SUB-TOTAL - 0 - FC 160 - ROADWAY DESIGN CONTROLS**	**11**	**51**	**104**	**4**	**228**	**360**	**240**	**0**	**997**	**$ 128,425.56**
		0 - IV. WALL DETAILS										
0	69 - 68	**FC 163 - MISCELLANEOUS - RETAINING WALL**										

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

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Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
4	69 - 72	4 - PREPARE RETAINING WALL PLAN AND PROFILE SHEETS/BORING DATA/INCL EXT SLOPE STABILITY (100:1)(4 WALLS @ 1 SHEET/ WALL)	2	8	15		32	50	30		137	$ 17,989.00
1	73 - 73	1 - PREPARE RETAINING WALL MISCELLANEOUS DETAILS		2	3		8	13	8		34	$ 4,259.20
1	74 - 74	1 - MSE WALL UNDERCUT AND REPLACE DETAILS		1	2		6	8	5		22	$ 2,749.93
0	75 - 74	0 - STANDARDS:										
1	75	RW (MSE)					0.50		0.50		1	$ 107.77
1	76	RW (TRF)					0.50		0.50		1	$ 107.77
1	77	RW (TEW)					0.50		0.50		1	$ 107.77
1	78	EMRW-94					0.50		0.50		1	$ 107.77
10		**SUB-TOTAL - 0 - FC 163 - MISCELLANEOUS - RETAINING WALL**	**2**	**11**	**20**	**0**	**48**	**71**	**45**	**0**	**197**	**$ 25,429.19**
		V. DRAINAGE DETAILS										
		FC 161 - DRAINAGE										
0	79 - 78	0 - DATA COLLECTION/REVIEW DATA									0	$ -
0	79 - 78	0 - FIELD TRIP TO VERIFY EXISTING CONDITIONS (TWO TRIPS)									0	$ -
4	79 - 82	4 - PREPARE LARGE AND SMALL DRAINAGE AREA MAPS:	1	6	10		22	33	19		91	$ 12,009.81
1	83 - 83	1 - HYDROLOGY CALCULATIONS (STORM SEWER, CULVERTS, DITCHES):		1	3		7	10	6		27	$ 3,404.24
1	84 - 84	1 - HYDRAULIC COMPUTATIONS SHEETS (STORM SEWER, CULVERTS, DITCHES):	1	2	3		8	13	8		35	$ 4,587.13
3	85 - 87	3 - CULVERT P & P SHEETS	1	3	7		16	25	15		67	$ 8,645.68
0	88 - 87	0 - INCLUDE SPECIAL DITCHES ON RDWY P&P SHEETS									0	$ -
2	88 - 89	2 - STORM SEWER P & P SHEETS	1	3	7		16	25	15		67	$ 8,645.68
1	90 - 90	1 - PREPARE MISCELLANEOUS DETAILS		1	2		6	8	5		22	$ 2,749.93

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
0	91 - 90	STANDARDS										
12		**SUB-TOTAL - 0 - FC 161 - DRAINAGE**	**4**	**16**	**32**	**0**	**75**	**114**	**68**	**0**	**309**	**$ 40,042.47**
		VI. UTILITIES										
1	91	**FC 130 - ROW (UTILITIES)**										
2	92 - 93	2 - PREPARE EXISTING UTILITY LAYOUTS (1:100)(DOUBLE BANKED)	1	2	5		10	17	10		45	$ 5,895.75
0	94 - 93	0 - PREPARE PROPOSED UTILITY LAYOUTS AND P&P SHEETS (WHEN JOINT BIDDING ONLY) **(NOT INCLUDED)**									0	$ -
0	94 - 93	0 - STANDARDS									0	$ -
2		**SUB-TOTAL - FC 130 - ROW (UTILITIES)**	**1**	**2**	**5**	**0**	**10**	**17**	**10**	**0**	**45**	**$ 5,895.75**
		FC 170 - BRIDGE DESIGN										
		EAST & WEST BOUND MAIN LANE BRIDGE OVER AIRPORT (ONE COMPLETE BRIDGE)										
1	94 - 94	1 - BRIDGE LAYOUTS	1	4		48		60			113	$ 18,494.61
1	95 - 95	1 -SUMMARY OF QUANTITIES (BRIDGE) AND BEARING SEAT ELEVATION	1	2		24	70	4	20		121	$ 17,553.73
2	96 - 97	2 - FOUNDATION LAYOUTS	1	2		32		40	30		105	$ 14,784.87
3	98 - 100	3 - ABUTMENTS	1	2		56	58	80	40		237	$ 32,958.09
2	101 - 102	2- INTERIOR BENTS	1	2		56	40	50	50		199	$ 28,215.67
2	103 - 104	2 - CONC SLAB SPAN	1	2		24	10	40	20		97	$ 13,467.37
1	105 - 105	1 - CONC FRAMING PLAN & BENT REPORT	1	2		24	40	20	20		107	$ 15,297.27
1	106 - 106	1 - CONC TYPICAL SECTIONS AND DEFLECTIONS	1	2		24	30	20	20		97	$ 13,976.37
1	107 - 107	1 - PRESTR CONC I-GIRDER DESIGN	1	2		20	40	20	10		93	$ 13,560.87
0	108 - 107	0 - ARCHITECTURAL TREATMENT		1		4	4	6	4		19	$ 2,640.03
1	108 - 108	1 - DRAIN DETAILS	1	2		20	10	20	20		73	$ 10,432.57
1	109 - 109	1 - BRIDGE BORING LOGS	1	2		2	4	16	2		27	$ 3,652.55
16		**SUB-TOTAL SHEETS - EAST & WEST BOUND MAIN LANE BRIDGE OVER AIRPORT (ONE COMPLETE BRIDGE)**	**11**	**25**	**0**	**334**	**306**	**376**	**236**	**0**	**1288**	**$ 185,034.00**

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
16		SUB-TOTAL BRIDGE SHEETS	11	25	0	334	306	376	236	0	1288	$ 185,034.00
		VIII. TRAFFIC ITEMS										
0	110 - 109	FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION										
0	110 - 109	SIGNALIZATION (AIRPORT DR)										
1	110	TRAFFIC SIGNAL SUMMARY OF QUANTITIES	1	3	7		16	25	15		67	$ 8,645.68
2	111 - 112	2 - TRAFFIC SIGNAL EXISTING CONDITIONS LAYOUT	1	2	5		10	17	10		45	$ 5,895.75
2	113 - 114	2 - TRAFFIC SIGNAL PROPOSED LAYOUT	1	3	7		16	25	15		67	$ 8,645.68
1	115 - 115	1 - TRAFFIC SIGNAL INTERVAL SEQUENCE		1	2		6	8	5		22	$ 2,749.93
1	116 - 116	1 - TRAFFIC SIGNAL TIMING PLAN		1	2		6	8	5		22	$ 2,749.93
1	117 - 117	1 - TRAFFIC SIGNAL CONDUIT AND CONDUCTOR PLAN		2	3		8	13	8		34	$ 4,259.20
2	118 - 119	2 - TRAFFIC SIGNAL ELEVATION DETAILS	1	2	5		10	17	10		45	$ 5,895.75
1	120 - 120	1 - TRAFFIC SIGNAL WIRING DIAGRAM		1	3		6	8	5		23	$ 2,975.43
1	121 - 121	1 - TRAFFIC SIGNAL NOTES & DETAILS		1	3		6	8	5		23	$ 2,975.43
10	122 - 131	10 - TRAFFIC SIGNAL STANDARDS		1	3		6	8	5		23	$ 2,975.43
	132 - 131	FC 162-PREPARE SIGNING & PAVEMENT MARKING DESIGN										
2	132 - 133	2- SIGNING & PAVEMENT MARKING LAYOUT (1:100)(DOUBLE BANKED)	1	2	5		10	17	12		47	$ 6,062.63
1	134 - 134	1 - LARGE SIGN DETAILS		1	2		6	8	5		22	$ 2,749.93
1	135	SMALL SIGN SUMMARY	1	2	5		10	17	10		45	$ 5,895.75
0	136 - 135	0 - SIGNING AND PAVEMENT MARKING STANDARDS:										$ -
26		SUB-TOTAL - FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION	6	22	52	0	116	179	110	0	485	$ 62,476.52
		FC 163 - MISCELLANEOUS - ILLUMINATION										
1	136	PREPARE ILLUMINATION DESIGN:										
1	137	SUMMARY OF QUANTITIES	1	2	5		10	17	10		45	$ 5,895.75
2	138 - 139	2 - ILLUMINATION LAYOUT (1:100)(DOUBLE BANKED)	1	2	5		10	17	10		45	$ 5,895.75
2	140 - 141	2 - ILLUMINATION CIRCUIT DIAGRAM	1	2	5		10	17	10		45	$ 5,895.75
2	142 - 143	2 - MISCELLANEOUS ILLUMINATION DETAILS	1	2	5		10	17	10		45	$ 5,895.75

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
0	144 - 143	0 - ILLUMINATION STANDARDS										
8		**SUB-TOTAL - FC 163 - MISCELLANEOUS - ILLUMINATION**	**4**	**8**	**20**	**0**	**40**	**68**	**40**	**0**	**180**	**$ 23,583.00**
		IX. ENVIRONMENTAL										
		FC 161 - DRAINAGE										
0	144 - 143	PREPARE SW3P :										
2	144 - 145	2 - 'SW3P NARRATIVE		**2**	**3**		**8**	**13**	**8**		34	$ 4,259.20
5	146 - 150	5 - SW3P LAYOUTS	**1**	**7**	**13**		**26**	**42**	**24**		113	$ 14,827.70
2	151 - 152	2 - MISCELLANEOUS SW3P DETAILS	**1**	**2**	**5**		**10**	**24**	**16**		58	$ 7,142.87
0	153 - 152	SW3P STANDARDS:									0	$ -
3	153 - 155	3 - EC-(1)THRU (3)-93					1.50		1.50		3	$ 323.30
0	156 - 155	CONDUCT SENSITIVE AREAS INVESTIGATION **(NOT REQUIRED)**									0	$ -
0	156 - 155	0 - PREPARE WETLAND MITIGATION PLAN									0	$ -
0	156 - 155	0 - PREPARE MISCELLANEOUS DETAILS									0	$ -
12		**SUB-TOTAL - FC 161 - DRAINAGE**	**2**	**11**	**21**	**0**	**46**	**79**	**50**	**0**	**208**	**$ 26,553.07**
		X. MISCELLANEOUS										
		FC 163 - MISCELLANEOUS - LANDSCAPING/AESTHETICS (NOT REQUIRED)										
0	156 - 155	0 - LANDSCAPING/IRRIGATION									0	$ -
0	156 - 155	0 - AESTHETIC PLAN									0	$ -
0	156 - 155	0 - AESTHETIC DETAILS									0	$ -
0		**SUB-TOTAL - FC 163 - MISCELLANEOUS - LANDSCAPING/AESTHETICS (NOT REQUIRED)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**
		XI. CROSS SECTIONS										
		FC 163 - MISCELLANEOUS - CROSS SECTIONS										
20	156 - 175	**20 - FINAL CROSS SECTIONS (ROLL PLOT) '20 - FINAL CROSS SECTIONS (50 FOOT INCREMENTS ON 11x17 SHEETS @ 3 SECTIONS / SHEET)**	**1**	**6**	**10**		**22**	**33**	**19**		91	$ 12,009.81
20		**SUB-TOTAL - FC 163 - MISCELLANEOUS - CROSS SECTIONS**	**1**	**6**	**10**	**0**	**22**	**33**	**19**	**0**	**91**	**$ 12,009.81**
		HOURS SUB-TOTALS	**69**	**278**	**515**	**338**	**1,454**	**2,122**	**1,302**	**0**	**6,078**	

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		
		DIRECT LABOR COSTS	$ 22,627.17	$ 65,627.46	$ 116,132.50	$ 76,219.00	$ 192,058.86	$ 226,290.08	$ 108,638.88	$ -	$ 807,593.95	
		TOTAL	**$ 22,627.17**	**$ 65,627.46**	**$ 116,132.50**	**$ 76,219.00**	**$ 192,058.86**	**$ 226,290.08**	**$ 108,638.88**	**$ -**	**$ 807,593.95**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**2.80%**	**8.13%**	**14.38%**	**9.44%**	**23.78%**	**28.02%**	**13.45%**	**0.00%**	**100.00%**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**1.14%**	**4.57%**	**8.47%**	**5.56%**	**23.92%**	**34.91%**	**21.42%**	**0.00%**	**100.00%**	
304		**GRAND TOTAL**	**69**	**278**	**515**	**338**	**1,454**	**2,122**	**1,302**	**0**	**6078**	**$ 807,593.95**
TOTAL DANNENBAUM DIRECT EXPENSES (FROM BELOW)												**$ 3,614.36**
SUBTOTAL BASIC SERVICES SUB CONSULTANTS (FROM BELOW)												
SUBTOTAL SPECIAL SERVICES DANNENBAUM (FROM BELOW)												**$ 22,826.00**
GRAND TOTAL - PHASE III SERVICES (DIRECT EXPENSES, BASIC, SPECIAL AND SUB CONSULTANT SERVICES)												**$ 834,034.31**
		DIRECT EXPENSES										
		REPRO - 304 SHEETS X $0.20 / SHEET (BOND) - CHECK PLOTS & REVIEW SETS) X 304 X 30 SUBMITTAL SETS)										$ 1,824.00
		PLOTS (B/W ON BOND) $1.00/LINEAR FOOT (30 FT/PLOT x 20 PLOTS)										$ -
		PLOTS (COLOR ON BOND) $2.00/LINEAR FOOT (30 FT/PLOT x20 PLOTS)										$ -
		COURT REPORTER (PUBLIC HEARINGS AND TRANSCRIPTION) ($100 / HR)										$ -
		COLOR GRAPHICS ON FOAM BOARD ($5.00/SF) (3'x6'x 10 Ea)										$ -
		CAR RENTAL - $90 / TRIP X 4 TRIP										$ 360.00
		PER DIEM - $121 /NIGHT STAY X 2 PERSON X 2 NIGHT ($85 hotel/$36 meals)										$ 484.00
		DELIVERY SERVICES - $50 / PACKAGE X 6 PACKAGES										$ 300.00
		MILEAGE 4 TRIP x 286 MI / TRIP @ $0.565/mile										$ 646.36
		TOTAL DIRECT EXPENSES										$ 3,614.36
		BASIC SERVICES (SUBCONSULTANT)										

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Dr Overpass (STA 163+73.42 TO STA 192+87.14)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		- ARCADIS US, INC.								$ -		
		- HOWLAND ENGINEERING & SURVEYING CO.										
		- ARREDONDO, ZEPEDA & BRUNZ, LLC										
		- ARIAS & ASSOCIATES, INC.										
		- AERIAL DATA SERVICE, INC.										
		- AMMA TERRA ENVIRONMENTAL, INC.										
		- RODS SUBSURFACE UTILITY ENGINEERING, INC.										
		- GILPIN ENGINEERING COMPANY										
		TOTAL DANNENBAUM SUBCONSULTANT MANAGEMENT FEE FOR BASIC SERVICES (0% OF SUBCONSULTANT FEE)										
		TOTAL ENGINEERING (CONSULTANT) - BASIC SERVICES								$ -		
		SPECIAL SERVICES (DANNENBAUM)										
		HIKE & BIKE TRAIL								$ 22,826.00		
		BRAIDED RAMP REVISION										
		TOTAL ENGINEERING (DANNENBAUM) - SPECIAL SERVICES								$ 22,826.00		

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC PS&E SPECIAL SERVICES - HIKE & BIKE TRAIL

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Drive Overpass Section - From Approximate STA 179+50 to STA 192+87.14

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	SPECIAL SERVICES DESCRIPTION	Principal/PM	DEPUTY PM QA/QC OFFICER	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
		I. GENERAL										
		FC 163 - MISCELLANEOUS (ROADWAY-HIKE&BIKE)										
1	1	1 - EXIST & PROP TYPICAL SECTIONS	1	2	4		8	8	4		27	$ 3,945.67
1	2 - 2	1 - SUMMARY OF ROADWAY QUANTITIES	1	2	4		8	8	4		27	$ 3,945.67
1	3 - 3	1 - SIGNS AND PAVEMENT MARKINGS SUMMARY OF QUANTITIES	1	2	4		8	8	4		27	$ 3,945.67
		SUB-TOTAL - FC 163 - MISCELLANEOUS (ROADWAY-HIKE&BIKE)	**3**	**6**	**12**	**0**	**24**	**24**	**12**	**0**	**81**	**$ 11,837.01**
		III. ROADWAY DETAILS										
		FC 160 - ROADWAY (HIKE&BIKE) DESIGN CONTROLS										
2	4 - 5	2 - HIKE&BIKE P & P SHEETS	1	2	6		9	15	9		42	$ 5,692.44
1	6 - 6	1 - MISCELLANEOUS HIKE&BIKE DETAILS		1	3		5	7	4		20	$ 2,653.26
		SUB-TOTAL - FC 160 - ROADWAY (HIKE&BIKE) DESIGN CONTROLS	**1**	**3**	**9**	**0**	**14**	**22**	**13**	**0**	**62**	**$ 8,345.70**
		VIII. TRAFFIC ITEMS										
		FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION										
1	7 - 7	1 - HIKE&BIKE PAVEMENT MARKING LAYOUTS (1:100)(DOUBLE BANKED)		1	2		5	7	4		19	$ 2,427.76
		SIGNING AND PAVEMENT MARKING STANDARDS:										
		BLPM-10					1		1		2	$ 215.53
		SUB-TOTAL - FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION	**0**	**1**	**2**	**0**	**6**	**7**	**5**	**0**	**21**	**$ 2,643.29**
		HOURS SUB-TOTALS	**4**	**10**	**23**	**0**	**44**	**53**	**30**	**0**	**164**	
		LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC PS&E SPECIAL SERVICES - HIKE & BIKE TRAIL

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Airport Drive Overpass Section - From Approximate STA 179+50 to STA 192+87.14

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	SPECIAL SERVICES DESCRIPTION	Principal/PM	DEPUTY PM QA/QC OFFICER	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
		DIRECT LABOR COSTS	$ 1,311.72	$ 2,360.70	$ 5,186.50	$ -	$ 5,811.96	$ 5,651.92	$ 2,503.20	$ -	$ 22,826.00	
		TOTAL	**$ 1,311.72**	**$ 2,360.70**	**$ 5,186.50**	**$ -**	**$ 5,811.96**	**$ 5,651.92**	**$ 2,503.20**	**$ -**	**$ 22,826.00**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**5.75%**	**10.34%**	**22.72%**	**0.00%**	**25.46%**	**24.76%**	**10.97%**	**0.00%**	**100.00%**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**2.44%**	**6.10%**	**14.02%**	**0.00%**	**26.83%**	**32.32%**	**18.29%**	**0.00%**	**100.00%**	
		GRAND TOTAL - BASIC SERVICES	**4**	**10**	**23**	**0**	**44**	**53**	**30**	**0**	**164**	**$ 22,826.00**
TOTAL DANNENBAUM DIRECT EXPENSES (FROM BELOW)												**$ -**
GRAND TOTAL - HIKE&BIKE SERVICES (BASIC & DIRECT EXPENSES)												**$ 22,826.00**
		DIRECT EXPENSES										
												$ -
												$ -
		TOTAL DIRECT EXPENSES										$ -

PHASE III - BASIC PS&E SERVICES

(JUST N OF AIRPORT DR OVERPASS TO JACAMAN)

DANNENBAUM ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		III. ROADWAY DETAILS (US 59 TO AIRPORT DR) (STA 115+85.4 TO STA 163+73.42)										
		I. GENERAL										
		FC 163 - MISCELLANEOUS (ROADWAY)										
1	1	TITLE SHEET		1	4		7	12	7		31	$ 3,926.46
2	2 - 3	2 - INDEX OF SHEETS		2	5		11	18	11		47	$ 5,889.99
2	4 - 5	2 - PROJECT LAYOUT (1" = 200') (DBL BANKED)		2	6		12	18	11		49	$ 6,247.58
0	6 - 5	TYPICAL SECTIONS - CONFIGURATION (LANES/SHOULDERS/CUT/FILL/ETC) (PAVEMENT DESIGN):										$ -
4	6 - 9	4 - EXISTING TYPICAL SECTIONS	1	6	12		22	34	20		95	$ 12,650.89
6	10 - 15	6 - PROP TYPICAL SECTIONS	2	8	18		36	52	31		147	$ 19,490.58
20	16 - 35	20 - GENERAL NOTES & SPECIFICATION DATA	2	8	18		36	52	31		147	$ 19,490.58
6	36 - 41	6 - ESTIMATE & QUANTITIES	2	9	18		40	56	34		159	$ 20,931.89
2	42 - 43	2 - SUMMARY OF TRAFFIC CONTROL QUANTITIES	1	2	6		12	18	11		50	$ 6,575.51
4	44 - 47	4 - SUMMARY OF ROADWAY QUANTITIES	1	6	12		22	34	20		95	$ 12,650.89
1	48 - 48	1 - SUMMARY OF RETAINING WALL QUANTITIES		1	2		8	10	6		27	$ 3,310.83
2	49 - 50	2 - SUMMARY OF CULVERT QUANTITIES	1	2	5		12	20	11		51	$ 6,563.29
2	51 - 52	2 - SUMMARY OF STORM SEWER QUANTITIES	1	2	5		12	20	11		51	$ 6,563.29
1	53 - 53	1- SUMMARY OF BRIDGES		1	4		8	12	7		32	$ 4,058.55
1	54 - 54	1 - SUMMARY OF ILLUMINATION QUANTITIES		1	2		8	10	6		27	$ 3,310.83
2	55 - 56	2 - SUMMARY OF TRAFFIC SIGNAL QUANTITIES	1	2	5		12	20	11		51	$ 6,563.29

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
4	57 - 60	4 - SUMMARY OF SMALL SIGNS	1	6	11		22	34	20		94	$ 12,425.39
1	61 - 61	1 - SUMMARY OF LARGE SIGNS		1	2		6	10	6		25	$ 3,046.65
1	62 - 62	1 - SUMMARY OF PAVEMENT MARKINGS		1	2		6	10	6		25	$ 3,046.65
1	63 - 63	1 - SUMMARY OF DELINEATION & OBJ MRKR QUANTITIES		1	2		6	10	6		25	$ 3,046.65
1	64 - 64	1 - SUMMARY OF SW3P (EROSION CONTROL)		1	2		6	10	6		25	$ 3,046.65
1	65 - 65	1- SUMMARY OF REMOVAL ITEMS		1	2		6	10	6		25	$ 3,046.65
0	66 - 65	**II. TRAFFIC CONTROL PLANS (TCP)**										$ -
2	66 - 67	2 - SEQUENCE OF CONSTRUCTION NARRATIVE	1	4	7		18	30	15		75	$ 9,679.13
4	68 - 71	4 - TRAFFIC CONTROL PLAN TYPICAL SECTIONS (1:100)	1	6	11		22	34	20		94	$ 12,425.39
2	72 - 73	2 - TRAFFIC CONTROL PLAN GENERAL NOTES	1	2	5		12	18	12		50	$ 6,433.45
2	74 - 75	2 - TCP ADVANCE WARNING SIGNS	1	2	5		12	18	12		50	$ 6,433.45
6	76 - 81	6 - ML TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-27 STA)** (1:100)	2	12	22		49	78	46		209	$ 27,078.27
6	82 - 87	6 - NBFR TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-27 STA)** (1:100)	2	12	22		49	78	46		209	$ 27,078.27
6	88 - 93	6 - SBFR TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-28 STA)** (1:100)	2	12	22		49	78	46		209	$ 27,078.27
4	94 - 97	4 - TEMPORARY TRAFFIC SIGNALS AND ILLUMINATION	1	2	5		11	18	11		48	$ 6,217.92
19	98 - 116	**19 - PRELIM CROSS SECTIONS (ROLL PLOT) '19 - PRELIMINARY CROSS SECTIONS (50 FOOT INCREMENTS ON 11x17 SHEETS @ 3 SECTIONS / SHEET)**	1	5	9		21	33	19		88	$ 11,416.15
0	117 - 116	0 - STANDARDS										$ -
1	117 - 117	1 - BC 1 THRU 12					0.50		0.50		1	$ 107.77
1	118 - 118	1-WZ (TD)-03					0.50		0.50		1	$ 107.77

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	119 - 119	1-WZ (STPM)-03					0.50		0.50		1	$ 107.77
1	120 - 120	1-WZ (UL)-03					0.50		0.50		1	$ 107.77
1	121 - 121	1-WZ I(DERD)-03					0.50		0.50		1	$ 107.77
1	122 - 122	1-WZ (BTS-1)-03					0.50		0.50		1	$ 107.77
1	123 - 123	1-WZ (BTS-2)-03					0.50		0.50		1	$ 107.77
1	124 - 124	1-WZ (BRK)-03					0.50		0.50		1	$ 107.77
1	125 - 125	1-TCP (2-1)-98					0.50		0.50		1	$ 107.77
1	126 - 126	1-TCP (2-3)-03					0.50		0.50		1	$ 107.77
1	127 - 127	1-TCP (2-5)-03					0.50		0.50		1	$ 107.77
1	128 - 128	1-TCP (2-6)-98					0.50		0.50		1	$ 107.77
3	129 - 131	3 - TCP (3-1) THRU (3-3)-98					1.50		1.50		3	$ 323.30
1	132 - 132	1-TCP (7-1)-98					0.50		0.50		1	$ 107.77
0	133 - 132	0 - CPM SCHEDULE	2	8	16		40	24			90	$ 13,995.38
132		**SUB-TOTAL - FC 163 - MISCELLANEOUS (ROADWAY)**	**27**	**129**	**267**	**0**	**601**	**879**	**513**	**0**	**2416**	**$ 315,443.01**
		FC 160 - ROADWAY DESIGN CONTROLS										
2	2	2 - HORIZONTAL ALIGNMENT LAYOUT SHEETS **(1:100 - DOUBLE BANKED)**	**1**	**2**	**5**		**11**	**18**	**11**		48	$ 6,217.92
0	3 - 2	0 - BENCHMARK DATA SHEETS:										$ -
2	3 - 4	2 - SURVEY CONTROL INDEX OF SHEETS (1:100 DOUBLE BANKED)		**2**	**1**		**2**	**4**	**2**		11	$ 1,555.26
2	5 - 6	2 - REMOVAL PLAN (1:100 - DOUBLE BANKED)		**2**	**5**		**11**	**18**	**11**		47	$ 5,889.99
1	7	PLAN AND PROFILE										$ -

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
5	8 - 12	5 - ROADWAY P & P SHEETS - EB & WB MAIN LANES TOGETHER STA 182+87.14 TO STA 229+25.62 (INCL 1,000 FT TRANSITIONS @ BEG & END)	2	11	19		41	65	39		177	$ 23,138.58
0	13 - 12	0 - RAMP P & P SHEETS - STA XXX+XX TO STA XXX+XX **(NOT REQUIRED)**									0	$ -
5	13 - 17	5-ROADWAY P&P SHEETS - NB FRONTAGE ROAD (STA 182+00 TO STA 228+00)(INCL 1000FT TRANSITIONS @ BEG & END)	2	11	19		41	65	39		177	$ 23,138.58
5	18 - 22	5-ROADWAY P&P SHEETS - SB FRONTAGE ROAD - STA 183+96.35 TO STA 231+46.35(INCL 1000FT TRANSITIONS @ BEG & END)	2	11	19		41	65	39		177	$ 23,138.58
0	23 - 22	0 - INTERSECTION LAYOUTS									0	$ -
4	23 - 26	4 - DRIVEWAY LAYOUTS (2 PER SHEET)	1	4	7		16	26	15		69	$ 8,988.39
1	27	DRIVEWAY DETAILS		1	1		2	5	2		11	$ 1,425.83
2	28 - 29	2 - MISCELLANEOUS ROADWAY DETAILS	1	2	5		11	18	11		48	$ 6,217.92
2	30 - 31	2 - LONGITUDINAL BARRIER									0	$ -
0	32 - 31	**0** - RAISED MEDIANS **(NO RAISED MEDIANS)**									0	$ -
2	32 - 33	2 - FENCING **(NO FENCING)**									0	$ -
4	34 - 37	4 - BUS BAYS **(NO BUS BAYS)**									0	$ -
4	38 - 41	4 - PARKING AREAS **(NO PARKING AREAS)**									0	$ -
0	42 - 41	0 - STANDARDS										$ -
1	42	CCCG-01					0.50		0.50		1	$ 107.77
1	43	CRCP (1)-09					0.50		0.50		1	$ 107.77
1	44	TA (CP)-99					0.50		0.50		1	$ 107.77
1	45	JS-94					0.50		0.50		1	$ 107.77
1	46	GF(31)-11					0.50		0.50		1	$ 107.77
1	47	GF(31)DAT-11					0.50		0.50		1	$ 107.77

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	48	GF(31)LS-11					0.50		0.50		1	$ 107.77
1	49	GF(31)TR-11					0.50		0.50		1	$ 107.77
1	50	GF(31)T101-13					0.50		0.50		1	$ 107.77
1	51	SGT 7-09					0.50		0.50		1	$ 107.77
1	52	SGT 8-09					0.50		0.50		1	$ 107.77
1	53	BED-09					0.50		0.50		1	$ 107.77
1	54	SSCB (1)-99					0.50		0.50		1	$ 107.77
1	55	SSCB (2)-00A					0.50		0.50		1	$ 107.77
1	56	SSCB (3)-02					0.50		0.50		1	$ 107.77
1	57	TRACC (N)-05					0.50		0.50		1	$ 107.77
1	58	REACT (N)-05					0.50		0.50		1	$ 107.77
1	59	QUAD (N)-99					0.50		0.50		1	$ 107.77
1	60	TE(HMAC)-11					0.50		0.50		1	$ 107.77
4	61 - 64	4 - RS(1)-10					2		2		4	$ 431.06
0	65 - 64	0 - PREPARE PLANS FOR FINAL ELECTRONIC DELIVERABLES		2	6	4	0	16	24		52	$ 6,435.94
41		**SUB-TOTAL - 0 - FC 160 - ROADWAY DESIGN CONTROLS**	**9**	**48**	**87**	**4**	**188**	**300**	**205**	**0**	**840**	**$ 108,625.59**
		V. DRAINAGE DETAILS										
		FC 161 - DRAINAGE										
0	65 - 64	0 - DATA COLLECTION/REVIEW DATA									0	$ -
0	65 - 64	0 - FIELD TRIP TO VERIFY EXISTING CONDITIONS (TWO TRIPS)									0	$ -

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

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PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
4	65 - 68	4 - PREPARE LARGE AND SMALL DRAINAGE AREA MAPS:	1	6	11		22	34	20		94	$ 12,425.39
2	69 - 70	2 - HYDROLOGY CALCULATIONS (STORM SEWER, CULVERTS, DITCHES):	1	4	6		14	21	13		59	$ 7,798.63
2	71 - 72	2 - HYDRAULIC COMPUTATIONS SHEETS (STORM SEWER, CULVERTS, DITCHES):	1	4	7		16	26	15		69	$ 8,988.39
2	73 - 74	2 - CULVERT P & P SHEETS	1	2	5		11	18	11		48	$ 6,217.92
0	75 - 74	0 - INCLUDE SPECIAL DITCHES ON RDWY P&P SHEETS									0	$ -
2	75 - 76	2 - STORM SEWER P & P SHEETS	1	4	7		16	26	15		69	$ 8,988.39
1	77 - 77	1 - PREPARE MISCELLANEOUS DETAILS		1	2		6	8	5		22	$ 2,749.93
0	78 - 77	STANDARDS										
13		**SUB-TOTAL - 0 - FC 161 - DRAINAGE**	**5**	**21**	**38**	**0**	**85**	**133**	**79**	**0**	**361**	**$ 47,168.65**
		VI. UTILITIES										
1	78	**FC 130 - ROW (UTILITIES)**										
2	79 - 80	2 - PREPARE EXISTING UTILITY LAYOUTS (1:100)(DOUBLE BANKED)	1	2	5		11	18	11		48	$ 6,217.92
0	81 - 80	0 - PREPARE PROPOSED UTILITY LAYOUTS AND P&P SHEETS (WHEN JOINT BIDDING ONLY)									0	$ -
0	81 - 80	0 - STANDARDS									0	$ -
2		**SUB-TOTAL - FC 130 - ROW (UTILITIES)**	**1**	**2**	**5**	**0**	**11**	**18**	**11**	**0**	**48**	**$ 6,217.92**
		VIII. TRAFFIC ITEMS										
0	81 - 80	**FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION**										
	81 - 80	**FC 162-PREPARE SIGNING & PAVEMENT MARKING DESIGN**										
2	81 - 82	2- SIGNING & PAVEMENT MARKING LAYOUT (1:100)(DOUBLE BANKED)	1	2	5		11	18	11		48	$ 6,217.92
1	83 - 83	1 - LARGE SIGN DETAILS		1	2		6	8	5		22	$ 2,749.93
1	84	SMALL SIGN SUMMARY	1	2	5		11	18	11		48	$ 6,217.92
1	85	SIGNING AND PAVEMENT MARKING STANDARDS:										$ -

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
0	86 - 85	0 - PREPARE TMS DESIGN **(NOT REQUIRED)**									0	$ -
0	86 - 85	0 - TMS STANDARDS **(NOT REQUIRED)**									0	$ -
5		**SUB-TOTAL - FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION**	**2**	**5**	**12**	**0**	**28**	**44**	**27**	**0**	**118**	**$ 15,185.77**
		FC 163 - MISCELLANEOUS - ILLUMINATION										
1	86	PREPARE ILLUMINATION DESIGN:										
1	87	SUMMARY OF QUANTITIES	**1**	**2**	**5**		**11**	**18**	**11**		48	$ 6,217.92
2	88 - 89	2 - ILLUMINATION LAYOUT (1:100)(DOUBLE BANKED)	**1**	**2**	**5**		**11**	**18**	**11**		48	$ 6,217.92
2	90 - 91	2 - ILLUMINATION CIRCUIT DIAGRAM	**1**	**2**	**5**		**11**	**18**	**11**		48	$ 6,217.92
2	92 - 93	2 - MISCELLANEOUS ILLUMINATION DETAILS	**1**	**2**	**5**		**11**	**18**	**11**		48	$ 6,217.92
0	94 - 93	0 - ILLUMINATION STANDARDS										
8		**SUB-TOTAL - FC 163 - MISCELLANEOUS - ILLUMINATION**	**4**	**8**	**20**	**0**	**44**	**72**	**44**	**0**	**192**	**$ 24,871.68**
		IX. ENVIRONMENTAL										
		FC 161 - DRAINAGE										
0	94 - 93	PREPARE SW3P :										
2	94 - 95	2 - 'SW3P NARRATIVE		**2**	**4**		**8**	**13**	**8**		35	$ 4,484.70
5	96 - 100	5 - SW3P LAYOUTS	**1**	**7**	**13**		**27**	**43**	**26**		117	$ 15,233.31
2	101 - 102	2 - MISCELLANEOUS SW3P DETAILS	**1**	**2**	**5**		**11**	**18**	**11**		48	$ 6,217.92
0	103 - 102	SW3P STANDARDS:									0	$ -
3	103 - 105	3 - EC-(1)THRU (3)-93					1.50		1.50		3	$ 323.30
0	106 - 105	CONDUCT SENSITIVE AREAS INVESTIGATION **(NOT REQUIRED)**									0	$ -
0	106 - 105	0 - PREPARE WETLAND MITIGATION PLAN									0	$ -
0	106 - 105	0 - PREPARE MISCELLANEOUS DETAILS									0	$ -
12		**SUB-TOTAL - FC 161 - DRAINAGE**	**2**	**11**	**22**	**0**	**48**	**74**	**47**	**0**	**203**	**$ 26,259.23**
		X. MISCELLANEOUS										
		FC 163 - MISCELLANEOUS - LANDSCAPING/AESTHETICS (NOT REQUIRED)										
10	106 - 115	10 - LANDSCAPING/IRRIGATION									0	$ -

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
10	116 - 125	10 - AESTHETIC PLAN									0	$ -
4	126 - 129	4 - AESTHETIC DETAILS									0	$ -
24		**SUB-TOTAL - FC 163 - MISCELLANEOUS - LANDSCAPING/AESTHETICS (NOT REQUIRED)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**
		XI. CROSS SECTIONS										
		FC 163 - MISCELLANEOUS - CROSS SECTIONS										
19	130 - 148	**19 - FINAL CROSS SECTIONS (ROLL PLOT) '19 - FINAL CROSS SECTIONS (50 FOOT INCREMENTS ON 11x17 SHEETS @ 3 SECTIONS / SHEET)**	**1**	**5**	**9**		**23**	**35**	**28**		101	$ 12,644.57
19		**SUB-TOTAL - FC 163 - MISCELLANEOUS - CROSS SECTIONS**	**1**	**5**	**9**	**0**	**23**	**35**	**28**	**0**	**101**	**$ 12,644.57**
		HOURS SUB-TOTALS	**51**	**229**	**460**	**4**	**1,027**	**1,555**	**953**	**0**	**4,279**	
		LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		
		DIRECT LABOR COSTS	$ 16,724.43	$ 54,060.03	$ 103,730.00	$ 902.00	$ 135,656.43	$ 165,825.20	$ 79,518.32	$ -	$ 556,416.41	
		TOTAL	**$ 16,724.43**	**$ 54,060.03**	**$ 103,730.00**	**$ 902.00**	**$ 135,656.43**	**$ 165,825.20**	**$ 79,518.32**	**$ -**	**$ 556,416.41**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**3.01%**	**9.72%**	**18.64%**	**0.16%**	**24.38%**	**29.80%**	**14.29%**	**0.00%**	**100.00%**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**1.19%**	**5.35%**	**10.75%**	**0.09%**	**24.00%**	**36.34%**	**22.27%**	**0.00%**	**100.00%**	
268		**GRAND TOTAL**	**51**	**229**	**460**	**4**	**1,027**	**1,555**	**953**	**0**	**4279**	**$ 556,416.41**
TOTAL DANNENBAUM DIRECT EXPENSES (FROM BELOW)												**$ 3,398.36**
SUBTOTAL BASIC SERVICES SUB CONSULTANTS (FROM BELOW)												**$ 13,443.26**
SUBTOTAL SPECIAL SERVICES DANNENBAUM (FROM BELOW)												**$ 161,247.11**
GRAND TOTAL - PHASE III SERVICES (DIRECT EXPENSES, BASIC, SPECIAL AND SUB CONSULTANT SERVICES)												**$ 734,505.14**
		DIRECT EXPENSES										
		REPRO - 268 SHEETS X $0.20 / SHEET (BOND) - CHECK PLOTS & REVIEW SETS) X 268 X 30 SUBMITTAL SETS)										**$ 1,608.00**
		PLOTS (B/W ON BOND) $1.00/LINEAR FOOT (30 FT/PLOT x 20 PLOTS)										**$ -**
		PLOTS (COLOR ON BOND) $2.00/LINEAR FOOT (30 FT/PLOT x20 PLOTS)										**$ -**

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		COURT REPORTER (PUBLIC HEARINGS AND TRANSCRIPTION) ($100 / HR)										$ -
		COLOR GRAPHICS ON FOAM BOARD ($5.00/SF) (3'x6'x 10 Ea)										$ -
		CAR RENTAL - $90 / TRIP X 4 TRIP										$ 360.00
		PER DIEM - $121 /NIGHT STAY X 2 PERSON X 2 NIGHT ($85 hotel/$36 meals)										$ 484.00
		DELIVERY SERVICES - $50 / PACKAGE X 6 PACKAGES										$ 300.00
		MILEAGE 4 TRIP x 286 MI / TRIP @ $0.565/mile										$ 646.36
		TOTAL DIRECT EXPENSES										$ 3,398.36
		BASIC SERVICES (SUBCONSULTANT)										
		- ARCADIS US, INC.										
		- HOWLAND ENGINEERING & SURVEYING CO.										
		- ARREDONDO, ZEPEDA & BRUNZ, LLC										
		- ARIAS & ASSOCIATES, INC.										
		- AERIAL DATA SERVICE, INC.										
		- AMMA TERRA ENVIRONMENTAL, INC.										
		- RODS SUBSURFACE UTILITY ENGINEERING, INC.										
		- GILPIN ENGINEERING COMPANY										$ 13,443.26
		TOTAL DANNENBAUM SUBCONSULTANT MANAGEMENT FEE FOR BASIC SERVICES (0% OF SUBCONSULTANT FEE)										
		TOTAL ENGINEERING (CONSULTANT) - BASIC SERVICES										$ 13,443.26
		SPECIAL SERVICES (DANNENBAUM)										
		HIKE & BIKE TRAIL										$ 23,480.43
		DETENTION POND										$ 137,766.68
		TOTAL ENGINEERING (DANNENBAUM) - SPECIAL SERVICES										$ 161,247.11

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC PS&E SPECIAL SERVICES - HIKE & BIKE TRAIL

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	SPECIAL SERVICES DESCRIPTION	Principal/PM	DEPUTY PM QA/QC OFFICER	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
		I. GENERAL										
		FC 163 - MISCELLANEOUS (ROADWAY-HIKE&BIKE)										
1	1	1 - EXIST & PROP TYPICAL SECTIONS		1	2		5	7	4		19	$ 2,427.76
1	2 - 2	1 - SUMMARY OF ROADWAY QUANTITIES		1	2		5	7	4		19	$ 2,427.76
1	3 - 3	1 - SIGNS AND PAVEMENT MARKINGS SUMMARY OF QUANTITIES		1	2		5	7	4		19	$ 2,427.76
		SUB-TOTAL - FC 163 - MISCELLANEOUS (ROADWAY-HIKE&BIKE)	**0**	**3**	**6**	**0**	**15**	**21**	**12**	**0**	**57**	**$ 7,283.28**
		III. ROADWAY DETAILS										
		FC 160 - ROADWAY (HIKE&BIKE) DESIGN CONTROLS										
3	4 - 6	3 - HIKE&BIKE P & P SHEETS	1	3	6		15	24	14		63	$ 8,098.01
1	7 - 7	1 - MISCELLANEOUS HIKE&BIKE DETAILS		1	2		5	7	4		19	$ 2,427.76
		SUB-TOTAL - FC 160 - ROADWAY (HIKE&BIKE) DESIGN CONTROLS	**1**	**4**	**8**	**0**	**20**	**31**	**18**	**0**	**82**	**$ 10,525.77**
		VIII. TRAFFIC ITEMS										
		FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION										
2	8 - 9	2 - HIKE&BIKE PAVEMENT MARKING LAYOUTS (1:100)(DOUBLE BANKED)	1	2	4		10	16	10		43	$ 5,563.61
		SIGNING AND PAVEMENT MARKING STANDARDS:										
		BLPM-10					1		1		1	$ 107.77
		SUB-TOTAL - FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION	**1**	**2**	**4**	**0**	**11**	**16**	**11**	**0**	**44**	**$ 5,671.38**
		HOURS SUB-TOTALS	**2**	**9**	**18**	**0**	**46**	**68**	**41**	**0**	**184**	
		LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC PS&E SPECIAL SERVICES - HIKE & BIKE TRAIL

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	SPECIAL SERVICES DESCRIPTION	Principal/PM	DEPUTY PM QA/QC OFFICER	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
		DIRECT LABOR COSTS	$ 657.98	$ 2,131.37	$ 4,071.19	$ 11.39	$ 6,025.61	$ 7,271.09	$ 3,388.36	$ 0.52	$ 23,557.51	
		TOTAL	**$ 657.98**	**$ 2,131.37**	**$ 4,071.19**	**$ 11.39**	**$ 6,025.61**	**$ 7,271.09**	**$ 3,388.36**	**$ 0.52**	**$ 23,557.51**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**2.79%**	**9.05%**	**17.28%**	**0.05%**	**25.58%**	**30.87%**	**14.38%**	**0.00%**	**100.00%**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**1.09%**	**4.92%**	**9.84%**	**0.03%**	**24.85%**	**37.15%**	**22.12%**	**0.00%**	**100.00%**	
		GRAND TOTAL - BASIC SERVICES	**2**	**9**	**18**	**0**	**46**	**68**	**41**	**0**	**184**	**$ 23,480.43**
TOTAL DANNENBAUM DIRECT EXPENSES (FROM BELOW)												**$ -**
GRAND TOTAL - HIKE&BIKE SERVICES (BASIC & DIRECT EXPENSES)												**$ 23,480.43**
		DIRECT EXPENSES										
												$ -
												$ -
		TOTAL DIRECT EXPENSES										$ -

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Design

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)
Dannenbaum Engineering Corporation
PHASE III

SPECIAL SERVICES (FC 161) HYDROLOGIC TASK DESCRIPTION	Principal/PM	Senior Engineer-Civil	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Remarks	Task Cost
FC 161 - DRAINAGE									
PS&E (1 Pond)									
Runoff Comupations	2	1	4	4	3		14		$ 2,086.60
Hydraulic Data sheets	2	1	4	4	3		14		$ 2,086.60
Dentention pond Plan (5 Sheets)	2	2	4	6	8		22		$ 2,942.58
Dentention pond Profiles (5 Sheets)	2	2	4	6	8		22		$ 2,942.58
Dentention pond Inlet & Outlet Structures (5 Sheets)	2	2	4	6	8		22		$ 2,942.58
Detention Pond Point Table (5 sheets)	2	2	4	4	8		20		$ 2,729.30
Miscellaneous Details (3 Sheets)	1	5	8	8	13		35		$ 4,449.99
30% Cost Estimate & Quantities	1	8	16	24	16	4	69		$ 8,399.33
60% Cost Estimate, Qunatities and Specifications	1	8	24	32	24	4	93		$ 10,976.69
90% Cost Estimate & Quantities	1	8	16	24	16	4	69		$ 8,399.33
100% Cost Estimate, Qunatities and Specifications	1	8	24	32	24	4	93		$ 10,976.69
30% Deliverables	2	8	8	16		4	38		$ 5,482.38
60% Deliverables	2	8	8	16		4	38		$ 5,482.38
90% Deliverables	2	8	8	16		4	38		$ 5,482.38
100% Deliverables	2	16	16	24		8	66		$ 9,455.78
QA/QC	3	13	13	13			42		$ 7,018.78
Coordination	3	8	11	13		3	38		$ 5,821.77
FEMA APLICATIONS									
CLOMR (For **1** Crossing) Does not include FEMA Fee	3	27	20	20	11	11	92		$ 13,478.52
LOMR (For **1** Crossing) Does not include FEMA FEE	3	27	13	13	8	8	72		$ 11,362.42
SUB-TOTAL - FC 161 - DRAINAGE	**37**	**162**	**209**	**281**	**150**	**58**	**897**		**$ 122,516.68**
ROW SERVICES									
FC 130 - RIGHT-OF-WAY (DETENTION POND)									
PARCEL ABSTRACT									$ -
DEVELOP WORKING SKETCHES									$ -

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Design

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)
Dannenbaum Engineering Corporation
PHASE III

SPECIAL SERVICES (FC 161) HYDROLOGIC TASK DESCRIPTION	Principal/PM	Senior Engineer-Civil	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Remarks	Task Cost
FC 161 - DRAINAGE									
COORDINATE WITH LAND OWNER									$ -
LOCATE AND TIE CORNERS									$ -
RESOLVE BOUNDARIES									$ -
PREPARE ROW MAP									$ -
PREPARE PARCELS AND METES AND BOUNDS									$ -
STAKE PARCEL TAKINGS									$ -
SUB-TOTAL - ROW SERVICES	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**
TOTALS - RIGHT OF WAY	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**
TOTAL DIRECT EXPENSES (FROM BELOW)									**$15,250.00**
TOTAL - FC 161 - DRAINAGE INCLUDING DIRECT EXPENSES									**$ 137,766.68**
TOTAL ENGINEERING (SUBCONSULTANT) - SPECIAL SERVICES (FROM BELOW)									**$ -**
TOTAL FC 161 - DRAINAGE									**$ 137,766.68**
HOURS SUB-TOTALS	**37**	**162**	**209**	**281**	**150**	**58**			
LABOR RATE PER HOUR	$ 327.93	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89			
DIRECT LABOR COSTS	$ 12,133.41	$ 36,531.00	$ 27,606.81	$ 29,965.84	$ 12,516.00	$ 3,763.62	$ 122,516.68		
TOTAL	**$ 12,133.41**	**$ 36,531.00**	**$ 27,606.81**	**$ 29,965.84**	**$ 12,516.00**	**$ 3,763.62**	**$ 122,516.68**		
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**9.90%**	**29.82%**	**22.53%**	**24.46%**	**10.22%**	**3.07%**	**100.00%**	**CHECK**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**4.12%**	**18.06%**	**23.30%**	**31.33%**	**16.72%**	**6.47%**	**100.00%**	**$ 122,516.68**	
DIRECT EXPENSES									
REPRO -400 SHEETS X $0.20 / PAPER SHEET x 10 Sets								$ -	
REPRO -200 8 1/2" x 11" COLOR COPIES X $1.00 / PAPER SHEET x 10 Sets								$ -	
CLOMR FEE (1 @ $7,000.00)								$ 7,000.00	
LOMR FEE (1 @ $8,250.00)								$ 8,250.00	
PER DIEM - $121 /NIGHT STAY X 2 PERSON X 4 NIGHT ($85 hotel/$36 meals)								$ -	
DELIVERY SERVICES - $50 / PACKAGE X 4 PACKAGES								$ -	
MILEAGE 4 TRIP x 286 MI / TRIP @ $0.565/mile								$ -	
TOTAL DIRECT EXPENSES								**$ 15,250.00**	

PHASE III - SPECIAL SERVICES (PARCEL SURVEYING)

(JUST N OF AIRPORT DR OVERPASS TO JACAMAN)

GILPIN ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Parcel Taking

Just North of Airport Dr Overpass to Jacaman (STA 192+87.14 to STA 219+25.62)

GILPIN ENGINEERING COMPANY
PHASE III

SPECIAL SERVICES (FC 130) (PARCEL SURVEYING) TASK DESCRIPTION	PM	SIT	RPLS	Survey Crew (3-Man) w/GPS	CADD Operator/ Tech	Admin Assistant	Total Labor Hrs.	Task Cost
FIELD SURVEYING								
FIELD SURVEY								
FC 130 - RIGHT-OF-WAY (SURVEYING FOR PARCELS (1 POND) AND CADD WORK TO PRODUCE FILES)								
PARCEL ABSTRACT	1	4	3		7		15	$ 1,544.13
DEVELOP WORKING SKETCHES		4	3		7		14	$ 1,364.46
COORDINATE WITH LAND OWNER	1	4	3				8	$ 940.17
LOCATE AND TIE CORNERS		4	3	13	7		27	$ 3,299.64
RESOLVE BOUNDARIES			3		7		10	$ 974.22
PREPARE ROW MAP		4	3		7		14	$ 1,364.46
PREPARE PARCELS AND METES AND BOUNDS		4	3				7	$ 760.50
STAKE PARCEL TAKINGS		4	3	13			20	$ 2,695.68
							0	$ -
SUB-TOTAL - FC 130 - RIGHT-OF-WAY (SURVEYING FOR PARCELS (1 POND) AND CADD WORK TO PRODUCE FILES)	**2**	**28**	**24**	**26**	**35**	**0**	**115**	**$ 12,943.26**
							0	
HOURS SUB-TOTALS	**2**	**28**	**24**	**26**	**35**	**0**	**115**	
LABOR RATE PER HOUR	$ 179.67	$ 97.56	$ 123.42	$ 148.86	$ 86.28	$ 48.48		
DIRECT LABOR COSTS	$ 359.34	$ 2,731.68	$ 2,962.08	$ 3,870.36	$ 3,019.80	$ -	$ 12,943.26	
TOTAL	**$ 359.34**	**$ 2,731.68**	**$ 2,962.08**	**$ 3,870.36**	**$ 3,019.80**	**$ -**	**$ 12,943.26**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**2.78%**	**21.11%**	**22.89%**	**29.90%**	**23.33%**	**0.00%**	**100.00%**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**1.74%**	**24.35%**	**20.87%**	**22.61%**	**30.43%**	**0.00%**	**100.00%**	
DIRECT EXPENSES: SUBSURFACE UTILITY ENGINEERING								
DELIVERY SERVICES - $50 / PACKAGE X 10 PACKAGES								**$ 500.00**
TOTAL DIRECT EXPENSES								**$ 500.00**
GRAND TOTAL - ENGINEERING SERVICES								**$ 13,443.26**

PHASE III - BASIC PS&E SERVICES

(JACAMAN OVERPASS)

DANNENBAUM ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		III. ROADWAY DETAILS (US 59 TO AIRPORT DR) (STA 115+85.4 TO STA 163+73.42)										
		I. GENERAL										
		FC 163 - MISCELLANEOUS (ROADWAY)										
1	1	TITLE SHEET		1	3		8	12	7		31	$ 3,833.05
2	2 - 3	2 - INDEX OF SHEETS		2	6		12	17	10		47	$ 6,057.50
2	4 - 5	2 - PROJECT LAYOUT (1" = 200') (DBL BANKED)		2	8		12	17	10		49	$ 6,508.50
0	6 - 5	TYPICAL SECTIONS - CONFIGURATION (LANES/SHOULDERS/CUT/FILL/ETC) (PAVEMENT DESIGN):										$ -
4	6 - 9	4 - EXISTING TYPICAL SECTIONS	1	6	12		22	34	20		95	$ 12,650.89
6	10 - 15	6 - PROP TYPICAL SECTIONS	2	8	15		33	51	30		139	$ 18,227.73
20	16 - 35	20 - GENERAL NOTES & SPECIFICATION DATA	2	8	15		33	51	30		139	$ 18,227.73
6	36 - 41	6 - ESTIMATE & QUANTITIES	2	9	20		36	56	34		157	$ 20,854.53
2	42 - 43	2 - SUMMARY OF TRAFFIC CONTROL QUANTITIES	1	2	6		10	17	10		46	$ 6,121.25
4	44 - 47	4 - SUMMARY OF ROADWAY QUANTITIES	1	6	12		22	34	20		95	$ 12,650.89
1	48 - 48	1 - SUMMARY OF RETAINING WALL QUANTITIES		1	2		6	8	5		22	$ 2,749.93
2	49 - 50	2 - SUMMARY OF CULVERT QUANTITIES	1	2	6		10	17	10		46	$ 6,121.25
2	51 - 52	2 - SUMMARY OF STORM SEWER QUANTITIES	1	2	5		10	17	10		45	$ 5,895.75
1	53 - 53	1- SUMMARY OF BRIDGES		1	3		7	12	7		30	$ 3,700.96
1	54 - 54	1 - SUMMARY OF ILLUMINATION QUANTITIES		1	2		6	8	5		22	$ 2,749.93
2	55 - 56	2 - SUMMARY OF TRAFFIC SIGNAL QUANTITIES	1	2	5		10	17	10		45	$ 5,895.75

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
4	57 - 60	4 - SUMMARY OF SMALL SIGNS	1	6	10		22	34	20		93	$ 12,199.89
1	61 - 61	1 - SUMMARY OF LARGE SIGNS		1	2		6	8	5		22	$ 2,749.93
1	62 - 62	1 - SUMMARY OF PAVEMENT MARKINGS		1	2		6	8	5		22	$ 2,749.93
1	63 - 63	1 - SUMMARY OF DELINEATION & OBJ MRKR QUANTITIES		1	2		6	8	5		22	$ 2,749.93
1	64 - 64	1 - SUMMARY OF SW3P (EROSION CONTROL)		1	2		6	8	5		22	$ 2,749.93
1	65 - 65	1- SUMMARY OF REMOVAL ITEMS		1	2		6	8	5		22	$ 2,749.93
0	66 - 65	**II. TRAFFIC CONTROL PLANS (TCP)**										$ -
2	66 - 67	2 - SEQUENCE OF CONSTRUCTION NARRATIVE	1	3	7		16	26	15		68	$ 8,752.32
4	68 - 71	4 - TRAFFIC CONTROL PLAN TYPICAL SECTIONS (1:100)	1	6	10		22	34	20		93	$ 12,199.89
2	72 - 73	2 - TRAFFIC CONTROL PLAN GENERAL NOTES	1	2	5		10	17	10		45	$ 5,895.75
2	74 - 75	2 - TCP ADVANCE WARNING SIGNS	1	2	5		10	17	10		45	$ 5,895.75
6	76 - 81	6 - ML TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-39 STA)** (1:100)	2	12	22		49	77	45		207	$ 26,888.19
6	82 - 87	6 - NBFR TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-39 STA)** (1:100)	2	12	22		49	77	45		207	$ 26,888.19
6	88 - 93	6 - SBFR TRAFFIC CONTROL PLAN - PHASE LAYOUTS **(THREE PHASES-38 STA)** (1:100)	2	12	22		49	77	45		207	$ 26,888.19
4	94 - 97	4 - TEMPORARY TRAFFIC SIGNALS AND ILLUMINATION	1	2	5		10	17	10		45	$ 5,895.75
26	98 - 123	**26 - PRELIM CROSS SECTIONS (ROLL PLOT) '26 - PRELIMINARY CROSS SECTIONS (50 FOOT INCREMENTS ON 11x17 SHEETS @ 3 SECTIONS / SHEET)**	1	7	13		28	44	27		120	$ 15,555.48
0	124 - 123	0 - STANDARDS										$ -
1	124 - 124	1 - BC 1 THRU 12					0.50		0.50		1	$ 107.77
1	125 - 125	1-WZ (TD)-03					0.50		0.50		1	$ 107.77

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	126 - 126	1-WZ (STPM)-03					0.50		0.50		1	$ 107.77
1	127 - 127	1-WZ (UL)-03					0.50		0.50		1	$ 107.77
1	128 - 128	1-WZ I(DERD)-03					0.50		0.50		1	$ 107.77
1	129 - 129	1-WZ (BTS-1)-03					0.50		0.50		1	$ 107.77
1	130 - 130	1-WZ (BTS-2)-03					0.50		0.50		1	$ 107.77
1	131 - 131	1-WZ (BRK)-03					0.50		0.50		1	$ 107.77
1	132 - 132	1-TCP (2-1)-98					0.50		0.50		1	$ 107.77
1	133 - 133	1-TCP (2-3)-03					0.50		0.50		1	$ 107.77
1	134 - 134	1-TCP (2-5)-03					0.50		0.50		1	$ 107.77
1	135 - 135	1-TCP (2-6)-98					0.50		0.50		1	$ 107.77
3	136 - 138	3 - TCP (3-1) THRU (3-3)-98					1.50		1.50		3	$ 323.30
1	139 - 139	1-TCP (7-1)-98					0.50		0.50		1	$ 107.77
0	140 - 139	0 - CPM SCHEDULE	2	8	16		40	24			90	$ 13,995.38
139		**SUB-TOTAL - FC 163 - MISCELLANEOUS (ROADWAY)**	**27**	**130**	**267**	**0**	**580**	**852**	**498**	**0**	**2354**	**$ 308,774.31**
		FC 160 - ROADWAY DESIGN CONTROLS										
3	3	2 - HORIZONTAL ALIGNMENT LAYOUT SHEETS **(1:100 - DOUBLE BANKED)**	**1**	**3**	**7**		**16**	**26**	**15**		68	$ 8,752.32
0	4 - 3	0 - BENCHMARK DATA SHEETS:										
2	4 - 5	2 - SURVEY CONTROL INDEX OF SHEETS (1:100 DOUBLE BANKED)			**1**		**2**	**3**	**2**		8	$ 976.48
2	6 - 7	2 - REMOVAL PLAN (1:100 - DOUBLE BANKED)		**2**	**5**		**10**	**17**	**10**		44	$ 5,567.82
1	8	PLAN AND PROFILE										

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
6	9 - 14	6 - ROADWAY P & P SHEETS - EB & WB MAIN LANES TOGETHER STA 182+87.14 TO STA 229+25.62 (INCL 1,000 FT TRANSITIONS @ BEG & END)	2	12	22		49	77	45		207	$ 26,888.19
2	15 - 16	2 - NB ENT RAMP P & P SHEETS - STA 224+00 TO STA 236+63.96	1	3	7		16	26	15		68	$ 8,752.32
2	17 - 18	2 - SB EXIT RAMP P & P SHEETS - STA 224+00 TO STA 237+08.49	1	3	7		16	26	15		68	$ 8,752.32
2	19 - 20	2 - NB EXIT RAMP P & P SHEETS - STA 246+00 TO STA 260+73.99	1	3	7		16	26	15		68	$ 8,752.32
2	21 - 22	2 - SB ENT RAMP P & P SHEETS - STA 246+00 TO STA 256+26.89	1	3	7		15	23	14		63	$ 8,216.87
6	23 - 28	6-ROADWAY P&P SHEETS - NB FRONTAGE ROAD (STA 208+00 TO STA 266+35)(INCL 1000FT TRANSITIONS @ BEG & END)	2	12	22		49	77	45		207	$ 26,888.19
6	29 - 34	6-ROADWAY P&P SHEETS - SB FRONTAGE ROAD - STA 211+46.35 TO STA 269+06.35(INCL 1000FT TRANSITIONS @ BEG & END)	2	12	22		49	77	45		207	$ 26,888.19
2	35 - 36	2 - INTERSECTION LAYOUTS - JACAMAN	1	3	7		16	26	15		68	$ 8,752.32
4	37 - 40	4 - DRIVEWAY LAYOUTS (2 PER SHEET)	1	3	7		16	26	15		68	$ 8,752.32
1	41	DRIVEWAY DETAILS		1	1		2	5	2		11	$ 1,425.83
2	42 - 43	2 - MISCELLANEOUS ROADWAY DETAILS	1	2	5		10	17	10		45	$ 5,895.75
2	44 - 45	2 - LONGITUDINAL BARRIER									0	$ -
0	46 - 45	0 - RAISED MEDIANS **(NO RAISED MEDIANS)**									0	$ -
2	46 - 47	2 - FENCING **(NO FENCING)**									0	$ -
4	48 - 51	4 - BUS BAYS **(NO BUS BAYS)**									0	$ -
4	52 - 55	4 - PARKING AREAS **(NO PARKING AREAS)**									0	$ -
0	56 - 55	0 - STANDARDS										
1	56	CCCG-01					0.50		0.50		1	$ 107.77
1	57	CRCP (1)-09					0.50		0.50		1	$ 107.77
1	58	TA (CP)-99					0.50		0.50		1	$ 107.77

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	59	JS-94					0.50		0.50		1	$ 107.77
1	60	GF(31)-11					0.50		0.50		1	$ 107.77
1	61	GF(31)DAT-11					0.50		0.50		1	$ 107.77
1	62	GF(31)LS-11					0.50		0.50		1	$ 107.77
1	63	GF(31)TR-11					0.50		0.50		1	$ 107.77
1	64	GF(31)T101-13					0.50		0.50		1	$ 107.77
1	65	SGT 7-09					0.50		0.50		1	$ 107.77
1	66	SGT 8-09					0.50		0.50		1	$ 107.77
1	67	BED-09					0.50		0.50		1	$ 107.77
1	68	SSCB (1)-99					0.50		0.50		1	$ 107.77
1	69	SSCB (2)-00A					0.50		0.50		1	$ 107.77
1	70	SSCB (3)-02					0.50		0.50		1	$ 107.77
1	71	TRACC (N)-05					0.50		0.50		1	$ 107.77
1	72	REACT (N)-05					0.50		0.50		1	$ 107.77
1	73	QUAD (N)-99					0.50		0.50		1	$ 107.77
1	74	TE(HMAC)-11					0.50		0.50		1	$ 107.77
4	75 - 78	4 - RS(1)-10					2		2		4	$ 431.06
0	79 - 78	0 - PREPARE PLANS FOR FINAL ELECTRONIC DELIVERABLES		2	6	4	0	16	24		52	$ 6,435.94
55		**SUB-TOTAL - 0 - FC 160 - ROADWAY DESIGN CONTROLS**	**14**	**64**	**133**	**4**	**294**	**468**	**299**	**0**	**1275**	**$ 164,175.78**
		0 - IV. WALL DETAILS										

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
0	79 - 78	**FC 163 - MISCELLANEOUS - RETAINING WALL**										
6	79 - 84	6 - PREPARE RETAINING WALL PLAN AND PROFILE SHEETS/BORING DATA/INCL EXT SLOPE STABILITY (100:1)	2	12	22		49	77	45		207	$ 26,888.19
1	85 - 85	1 - PREPARE RETAINING WALL MISCELLANEOUS DETAILS		2	3		8	13	8		34	$ 4,259.20
1	86 - 86	1 - MSE WALL UNDERCUT AND REPLACE DETAILS		1	2		6	8	5		22	$ 2,749.93
0	87 - 86	0 - STANDARDS:										
8		**SUB-TOTAL - 0 - FC 163 - MISCELLANEOUS - RETAINING WALL**	**2**	**15**	**27**	**0**	**63**	**98**	**58**	**0**	**263**	**$ 33,897.32**
		V. DRAINAGE DETAILS										
		FC 161 - DRAINAGE										
0	87 - 86	0 - DATA COLLECTION/REVIEW DATA									0	$ -
0	87 - 86	0 - FIELD TRIP TO VERIFY EXISTING CONDITIONS (TWO TRIPS)									0	$ -
4	87 - 90	4 - PREPARE LARGE AND SMALL DRAINAGE AREA MAPS:	1	6	10		22	34	20		93	$ 12,199.89
2	91 - 92	2 - HYDROLOGY CALCULATIONS (STORM SEWER, CULVERTS, DITCHES):	1	3	6		14	21	13		58	$ 7,562.56
2	93 - 94	2 - HYDRAULIC COMPUTATIONS SHEETS (STORM SEWER, CULVERTS, DITCHES):	1	3	7		16	26	15		68	$ 8,752.32
3	95 - 97	3 - CULVERT P & P SHEETS									0	$ -
0	98 - 97	0 - INCLUDE SPECIAL DITCHES ON RDWY P&P SHEETS									0	$ -
7	98 - 104	7 - STORM SEWER P & P SHEETS	3	14	27		57	89	53		243	$ 31,819.68
1	105 - 105	1 - PREPARE MISCELLANEOUS DETAILS		1	2		6	8	5		22	$ 2,749.93
0	106 - 105	STANDARDS										
19		**SUB-TOTAL - 0 - FC 161 - DRAINAGE**	**6**	**27**	**52**	**0**	**115**	**178**	**106**	**0**	**484**	**$ 63,084.38**
		VI. UTILITIES										

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
1	106	**FC 130 - ROW (UTILITIES)**										
2	107 - 108	2 - PREPARE EXISTING UTILITY LAYOUTS (1:100)(DOUBLE BANKED)	1	2	5		10	17	10		45	$ 5,895.75
0	109 - 108	0 - PREPARE PROPOSED UTILITY LAYOUTS AND P&P SHEETS (WHEN JOINT BIDDING ONLY)									0	$ -
0	109 - 108	0 - STANDARDS									0	$ -
3		**SUB-TOTAL - FC 130 - ROW (UTILITIES)**	**1**	**2**	**5**	**0**	**10**	**17**	**10**	**0**	**45**	**$ 5,895.75**
		FC 170 - BRIDGE DESIGN										
		EAST & WEST BOUND MAIN LANE BRIDGE OVER JACAMAN (ONE COMPLETE BRIDGE)										
1	109 - 109	1 - BRIDGE LAYOUTS		4		49		61			114	$ 18,498.82
1	110 - 110	1 -SUMMARY OF QUANTITIES (BRIDGE) AND BEARING SEAT ELEVATION		2		24	71	4	20		121	$ 17,357.89
2	111 - 112	2 - FOUNDATION LAYOUTS		2		33		40	31		106	$ 14,765.88
3	113 - 115	3 - ABUTMENTS		2		57	59	82	40		240	$ 33,201.03
2	116 - 117	2- INTERIOR BENTS		2		57	40	51	51		201	$ 28,303.32
2	118 - 119	2 - CONC SLAB SPAN		2		24	11	40	20		97	$ 13,271.53
1	120 - 120	1 - CONC FRAMING PLAN & BENT REPORT		2		24	40	20	20		106	$ 14,969.34
1	121 - 121	1 - CONC TYPICAL SECTIONS AND DEFLECTIONS		2		24	31	20	20		97	$ 13,780.53
1	122 - 122	1 - PRESTR CONC I-GIRDER DESIGN		2		20	40	20	11		93	$ 13,316.38
0	123 - 122	0 - ARCHITECTURAL TREATMENT		1		4	4	6	4		19	$ 2,640.03
1	123 - 123	1 - DRAIN DETAILS		2		20	11	20	20		73	$ 10,236.73
1	124 - 124	1 - BRIDGE BORING LOGS		2		2	4	16	2		26	$ 3,324.62
16		**SUB-TOTAL SHEETS - EAST & WEST BOUND MAIN LANE BRIDGE OVER JACAMAN (ONE COMPLETE BRIDGE)**	**0**	**25**	**0**	**338**	**311**	**380**	**239**	**0**	**1293**	**$ 183,666.10**
16		**SUB-TOTAL BRIDGE SHEETS**	**0**	**25**	**0**	**338**	**311**	**380**	**239**	**0**	**1293**	**$ 183,666.10**
		VIII. TRAFFIC ITEMS										
0	125 - 124	**FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION**										

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
0	125 - 124	**SIGNALIZATION (JACAMAN)**										
1	125	TRAFFIC SIGNAL SUMMARY OF QUANTITIES	1	3	7		16	26	15		68	$ 8,752.32
2	126 - 127	2 - TRAFFIC SIGNAL EXISTING CONDITIONS LAYOUT	1	2	5		10	17	10		45	$ 5,895.75
2	128 - 129	2 - TRAFFIC SIGNAL PROPOSED LAYOUT	1	3	7		16	26	15		68	$ 8,752.32
1	130 - 130	1 - TRAFFIC SIGNAL INTERVAL SEQUENCE		1	2		6	8	5		22	$ 2,749.93
1	131 - 131	1 - TRAFFIC SIGNAL TIMING PLAN		1	2		6	8	5		22	$ 2,749.93
1	132 - 132	1 - TRAFFIC SIGNAL CONDUIT AND CONDUCTOR PLAN		2	3		8	13	8		34	$ 4,259.20
2	133 - 134	2 - TRAFFIC SIGNAL ELEVATION DETAILS	1	2	5		10	17	10		45	$ 5,895.75
1	135 - 135	1 - TRAFFIC SIGNAL WIRING DIAGRAM		1	2		6	8	5		22	$ 2,749.93
1	136 - 136	1 - TRAFFIC SIGNAL NOTES & DETAILS		1	2		6	8	5		22	$ 2,749.93
0	137 - 136	0 - TRAFFIC SIGNAL STANDARDS									0	$ -
	137 - 136	**FC 162-PREPARE SIGNING & PAVEMENT MARKING DESIGN**										
2	137 - 138	2- SIGNING & PAVEMENT MARKING LAYOUT (1:100)(DOUBLE BANKED)	1	2	5		10	17	10		45	$ 5,895.75
1	139 - 139	1 - LARGE SIGN DETAILS		1	2		6	8	5		22	$ 2,749.93
1	140	SMALL SIGN SUMMARY	1	2	5		10	17	10		45	$ 5,895.75
0	141 - 140	0 - SIGNING AND PAVEMENT MARKING STANDARDS:										$ -
0	141 - 140	**0** - PREPARE TMS DESIGN **(NOT REQUIRED)**									0	$ -
0	141 - 140	**0** - TMS STANDARDS **(NOT REQUIRED)**									0	$ -
16		**SUB-TOTAL - FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION**	**6**	**21**	**47**	**0**	**110**	**173**	**103**	**0**	**460**	**$ 59,096.49**
		FC 163 - MISCELLANEOUS - ILLUMINATION										
1	141	PREPARE ILLUMINATION DESIGN:									0	$ -
1	142	SUMMARY OF QUANTITIES	1	2	5		10	17	10		45	$ 5,895.75
2	143 - 144	2 - ILLUMINATION LAYOUT (1;100)(DOUBLE BANKED)	1	2	5		10	17	10		45	$ 5,895.75
2	145 - 146	2 - ILLUMINATION CIRCUIT DIAGRAM	1	2	5		10	17	10		45	$ 5,895.75
2	147 - 148	2 - MISCELLANEOUS ILLUMINATION DETAILS	1	2	5		10	17	10		45	$ 5,895.75
0	149 - 148	0 - ILLUMINATION STANDARDS										

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
8		**SUB-TOTAL - FC 163 - MISCELLANEOUS - ILLUMINATION**	**4**	**8**	**20**	**0**	**40**	**68**	**40**	**0**	**180**	**$ 23,583.00**
		IX. ENVIRONMENTAL										
		FC 161 - DRAINAGE										
0	149 - 148	PREPARE SW3P :										
2	149 - 150	2 - 'SW3P NARRATIVE		**2**	**3**		**8**	**13**	**8**		34	$ 4,259.20
6	151 - 156	6 - SW3P LAYOUTS	**2**	**8**	**15**		**33**	**51**	**30**		139	$ 18,227.73
2	157 - 158	2 - MISCELLANEOUS SW3P DETAILS	**1**	**2**	**5**		**10**	**17**	**10**		45	$ 5,895.75
0	159 - 158	SW3P STANDARDS:									0	$ -
3	159 - 161	3 - EC-(1)THRU (3)-93					1.50		1.50		3	$ 323.30
0	162 - 161	CONDUCT SENSITIVE AREAS INVESTIGATION **(NOT REQUIRED)**									0	$ -
0	162 - 161	0 - PREPARE WETLAND MITIGATION PLAN									0	$ -
0	162 - 161	0 - PREPARE MISCELLANEOUS DETAILS									0	$ -
13		**SUB-TOTAL - FC 161 - DRAINAGE**	**3**	**12**	**23**	**0**	**53**	**81**	**50**	**0**	**221**	**$ 28,705.98**
		X. MISCELLANEOUS										
		FC 163 - MISCELLANEOUS - LANDSCAPING/AESTHETICS (NOT REQUIRED)										
10	162 - 171	10 - LANDSCAPING/IRRIGATION									0	$ -
10	172 - 181	10 - AESTHETIC PLAN									0	$ -
4	182 - 185	4 - AESTHETIC DETAILS									0	$ -
24		**SUB-TOTAL - FC 163 - MISCELLANEOUS - LANDSCAPING/AESTHETICS (NOT REQUIRED)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**
		XI. CROSS SECTIONS										
		FC 163 - MISCELLANEOUS - CROSS SECTIONS										
26	186 - 211	**26 - FINAL CROSS SECTIONS (ROLL PLOT) '26 - FINAL CROSS SECTIONS (50 FOOT INCREMENTS ON 11x17 SHEETS @ 3 SECTIONS / SHEET)**	**1**	**7**	**13**		**28**	**44**	**27**		120	$ 15,555.48
26		**SUB-TOTAL - FC 163 - MISCELLANEOUS - CROSS SECTIONS**	**1**	**7**	**13**	**0**	**28**	**44**	**27**	**0**	**120**	**$ 15,555.48**
		HOURS SUB-TOTALS	**64**	**311**	**587**	**342**	**1,603**	**2,359**	**1,429**	**0**	**6,695**	
		LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		DIRECT LABOR COSTS	$ 20,987.52	$ 73,417.77	$ 132,368.50	$ 77,121.00	$ 211,740.27	$ 251,563.76	$ 119,235.76	$ -	$ 886,434.58	
		TOTAL	**$ 20,987.52**	**$ 73,417.77**	**$ 132,368.50**	**$ 77,121.00**	**$ 211,740.27**	**$ 251,563.76**	**$ 119,235.76**	**$ -**	**$ 886,434.58**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**2.37%**	**8.28%**	**14.93%**	**8.70%**	**23.89%**	**28.38%**	**13.45%**	**0.00%**	**100.00%**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**0.96%**	**4.65%**	**8.77%**	**5.11%**	**23.94%**	**35.24%**	**21.34%**	**0.00%**	**100.00%**	
321		**GRAND TOTAL**	**64**	**311**	**587**	**342**	**1,603**	**2,359**	**1,429**	**0**	**6695**	**$ 886,434.58**
TOTAL DANNENBAUM DIRECT EXPENSES (FROM BELOW)												**$ 3,713.36**
SUBTOTAL BASIC SERVICES SUB CONSULTANTS (FROM BELOW)												**$ 161,198.38**
SUBTOTAL SPECIAL SERVICES DANNENBAUM (FROM BELOW)												**$ 26,155.35**
GRAND TOTAL - PHASE III SERVICES (DIRECT EXPENSES, BASIC, SPECIAL AND SUB CONSULTANT SERVICES)												**$ 1,077,501.67**
		DIRECT EXPENSES										
		REPRO - 320.5 SHEETS X $0.20 / SHEET (BOND) - CHECK PLOTS & REVIEW SETS) X 320.5 X 30 SUBMITTAL SETS)										$ 1,923.00
		PLOTS (B/W ON BOND) $1.00/LINEAR FOOT (30 FT/PLOT x 20 PLOTS)										$ -
		PLOTS (COLOR ON BOND) $2.00/LINEAR FOOT (30 FT/PLOT x20 PLOTS)										$ -
		COURT REPORTER (PUBLIC HEARINGS AND TRANSCRIPTION) ($100 / HR)										$ -
		COLOR GRAPHICS ON FOAM BOARD ($5.00/SF) (3'x6'x 10 Ea)										$ -
		CAR RENTAL - $90 / TRIP X 4 TRIP										$ 360.00
		PER DIEM - $121 /NIGHT STAY X 2 PERSON X 2 NIGHT ($85 hotel/$36 meals)										$ 484.00
		DELIVERY SERVICES - $50 / PACKAGE X 6 PACKAGES										$ 300.00
		MILEAGE 4 TRIP x 286 MI / TRIP @ $0.565/mile										$ 646.36
		TOTAL DIRECT EXPENSES										**$ 3,713.36**
		BASIC SERVICES (SUBCONSULTANT)										
		- ARCADIS US, INC.								**$ -**		

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC BASIC PS&E SERVICES

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/Program Manager	DEPUTY PM (Engr VI)	Senior Engineer-Civil	Senior Engineer-Bridge	Civil Engineer	Senior Designer	Engr Tech/CADD	Clerical	Total Labor Hrs.	Task Cost
		- HOWLAND ENGINEERING & SURVEYING CO.										
		- ARREDONDO, ZEPEDA & BRUNZ, LLC								$ 134,811.86		
		- ARIAS & ASSOCIATES, INC.										
		- AERIAL DATA SERVICE, INC.										
		- AMMA TERRA ENVIRONMENTAL, INC.										
		- RODS SUBSURFACE UTILITY ENGINEERING, INC.										
		- GILPIN ENGINEERING COMPANY								$ 26,386.52		
		TOTAL DANNENBAUM SUBCONSULTANT MANAGEMENT FEE FOR BASIC SERVICES (0% OF SUBCONSULTANT FEE)										
		TOTAL ENGINEERING (CONSULTANT) - BASIC SERVICES								$ 161,198.38		
		SPECIAL SERVICES (DANNENBAUM)										
		HIKE & BIKE TRAIL								$ 26,155.35		
		BRAIDED RAMP REVISION										
		TOTAL ENGINEERING (DANNENBAUM) - SPECIAL SERVICES								$ 26,155.35		

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC PS&E SPECIAL SERVICES - HIKE & BIKE TRAIL

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass Section - From Approximate STA 219+25.62 to STA 257+42.91

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/PM	DEPUTY PM QA/QC OFFICER	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
		I. GENERAL										
		FC 163 - MISCELLANEOUS (ROADWAY-HIKE&BIKE)										
1	1	1 - EXIST & PROP TYPICAL SECTIONS		1	2		5	7	4		19	$ 2,427.76
1	2 - 2	1 - SUMMARY OF ROADWAY QUANTITIES		1	2		5	7	4		19	$ 2,427.76
1	3 - 3	1 - SIGNS AND PAVEMENT MARKINGS SUMMARY OF QUANTITIES		1	2		5	7	4		19	$ 2,427.76
		SUB-TOTAL - FC 163 - MISCELLANEOUS (ROADWAY-HIKE&BIKE)	0	3	6	0	15	21	12	0	57	$ 7,283.28
		III. ROADWAY DETAILS										
		FC 160 - ROADWAY (HIKE&BIKE) DESIGN CONTROLS										
4	4 - 7	4 - HIKE&BIKE P & P SHEETS	1	5	9		20	30	18		83	$ 10,880.70
1	8 - 8	1 - MISCELLANEOUS HIKE&BIKE DETAILS		1	2		5	7	4		19	$ 2,427.76
		SUB-TOTAL - FC 160 - ROADWAY (HIKE&BIKE) DESIGN CONTROLS	1	6	11	0	25	37	22	0	102	$ 13,308.46
		VIII. TRAFFIC ITEMS										
		FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION										
2	9 - 10	2 - HIKE&BIKE PAVEMENT MARKING LAYOUTS (1:100)(DOUBLE BANKED)	1	2	4		9	16	9		41	$ 5,348.08
		SIGNING AND PAVEMENT MARKING STANDARDS:										
		BLPM-10					1		1		2	$ 215.53
		SUB-TOTAL - FC 162 - SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION	1	2	4	0	10	16	10	0	43	$ 5,563.61
		HOURS SUB-TOTALS	2	11	21	0	50	74	44	0	202	
		LABOR RATE PER HOUR	$ 327.93	$ 236.07	$ 225.50	$ 225.50	$ 132.09	$ 106.64	$ 83.44	$ 64.89		

MAXIMUM AMOUNT PAYABLE

LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)

PHASE III - DEC PS&E SPECIAL SERVICES - HIKE & BIKE TRAIL

Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds

Jacaman Overpass Section - From Approximate STA 219+25.62 to STA 257+42.91

Dannenbaum Engineering Corporation

PHASE III

NO. OF DWGS	SHEET	BASIC SERVICES DESCRIPTION	Principal/PM	DEPUTY PM QA/QC OFFICER	Senior Engineer-Civil	Senior Engineer-Bridge	Engineer	Senior Designer	CADD Operator/ Tech	Clerical	Total Labor Hrs.	Task Cost
		DIRECT LABOR COSTS	$ 655.86	$ 2,596.77	$ 4,735.50	$ -	$ 6,604.50	$ 7,891.36	$ 3,671.36	$ -	$ 26,155.35	
		TOTAL	**$ 655.86**	**$ 2,596.77**	**$ 4,735.50**	**$ -**	**$ 6,604.50**	**$ 7,891.36**	**$ 3,671.36**	**$ -**	**$ 26,155.35**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**2.51%**	**9.93%**	**18.11%**	**0.00%**	**25.25%**	**30.17%**	**14.04%**	**0.00%**	**100.00%**	
		PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**0.99%**	**5.45%**	**10.40%**	**0.00%**	**24.75%**	**36.63%**	**21.78%**	**0.00%**	**100.00%**	
		GRAND TOTAL - BASIC SERVICES	**2**	**11**	**21**	**0**	**50**	**74**	**44**	**0**	**202**	**$ 26,155.35**
TOTAL DANNENBAUM DIRECT EXPENSES (FROM BELOW)												**$ -**
GRAND TOTAL - HIKE&BIKE SERVICES (BASIC & DIRECT EXPENSES)												**$ 26,155.35**
		DIRECT EXPENSES										
												$ -
												$ -
		TOTAL DIRECT EXPENSES										$ -

PHASE III - BASIC PS&E SERVICES

(JACAMAN OVERPASS)

ARREDONDO, ZEPEDA & BRUNZ, LLC

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Design

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)
Dannenbaum Engineering Corporation
Arredondo, Zepeda & Brunz, LLC
PHASE III

SPECIAL SERVICES (FC 161) HYDROLOGIC TASK DESCRIPTION	Principal	Senior Engineer (Eng V)	Project Engineer (Eng IV)	Senior Designer	Eng/Tech/CADD	Admin Assistant	Total Labor Hrs.	Remarks	Task Cost
FC 161 - DRAINAGE									
PS&E (2 Ponds)									
Runoff Comupations	2	2	8	8	6		26		$ 3,397.68
Hydraulic Data sheets	2	2	8	8	6		26		$ 3,397.68
Dentention pond Plan (5 Sheets)	2	3	8	12	16		41		$ 5,023.00
Dentention pond Profiles (5 Sheets)	2	3	8	12	16		41		$ 5,023.00
Dentention pond Inlet & Outlet Structures (5 Sheets)	2	3	8	12	16		41		$ 5,023.00
Detention Pond Point Table (5 sheets)	2	3	8	8	16		37		$ 4,599.00
Miscellaneous Details (3 Sheets)	1	5	8	8	13		35		$ 4,408.50
30% Cost Estimate & Quantities	1	8	16	24	16	4	69		$ 8,337.19
60% Cost Estimate, Qunatities and Specifications	1	8	24	32	24	4	93		$ 11,147.91
90% Cost Estimate & Quantities	1	8	16	24	16	4	69		$ 8,337.19
100% Cost Estimate, Qunatities and Specifications	1	8	24	32	24	4	93		$ 11,147.91
30% Deliverables	2	8	8	16		4	38		$ 4,927.54
60% Deliverables	2	8	8	16		4	38		$ 4,927.54
90% Deliverables	2	8	8	16		4	38		$ 4,927.54
100% Deliverables	2	16	16	24		8	66		$ 8,557.42
QA/QC	3	13	13	13			42		$ 6,134.36
Coordination	3	8	11	13		3	38		$ 5,193.99
FEMA APLICATIONS									
CLOMR (For **1** Crossing) Does not include FEMA Fee	3	27	20	20	11	11	92		$ 12,150.69
LOMR (For **1** Crossing) Does not include FEMA FEE	3	27	13	13	8	8	72		$ 9,900.72
SUB-TOTAL - FC 161 - DRAINAGE	**37**	**168**	**233**	**311**	**188**	**58**	**995**		**$ 126,561.86**
TOTAL DIRECT EXPENSES (FROM BELOW)									**$8,250.00**
TOTAL - FC 161 - DRAINAGE INCLUDING DIRECT EXPENSES									**$ 134,811.86**

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Design

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)
Dannenbaum Engineering Corporation
Arredondo, Zepeda & Brunz, LLC
PHASE III

SPECIAL SERVICES (FC 161) HYDROLOGIC TASK DESCRIPTION	Principal	Senior Engineer (Eng V)	Project Engineer (Eng IV)	Senior Designer	Eng/Tech/CADD	Admin Assistant	Total Labor Hrs.	Remarks	Task Cost
FC 161 - DRAINAGE									
TOTAL ENGINEERING (SUBCONSULTANT) - SPECIAL SERVICES (FROM BELOW)									$ -
TOTAL FC 161 - DRAINAGE									$ 134,811.86
HOURS SUB-TOTALS	37	168	233	311	188	58			
LABOR RATE PER HOUR	$ 224.83	$ 171.62	$ 142.37	$ 106.00	$ 102.97	$ 67.49			
DIRECT LABOR COSTS	$ 8,318.71	$ 28,832.16	$ 33,172.21	$ 32,966.00	$ 19,358.36	$ 3,914.42	$ 126,561.86		
TOTAL	**$ 8,318.71**	**$ 28,832.16**	**$ 33,172.21**	**$ 32,966.00**	**$ 19,358.36**	**$ 3,914.42**	**$ 126,561.86**		
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**6.57%**	**22.78%**	**26.21%**	**26.05%**	**15.30%**	**3.09%**	**100.00%**	**CHECK**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**3.72%**	**16.88%**	**23.42%**	**31.26%**	**18.89%**	**5.83%**	**100.00%**	**$ 126,561.86**	
DIRECT EXPENSES									
REPRO -400 SHEETS X $0.20 / PAPER SHEET x 10 Sets								$ -	
REPRO -200 8 1/2" x 11" COLOR COPIES X $1.00 / PAPER SHEET x 10 Sets								$ -	
LOMR FEE (1 @ $8,250.00)								$ 8,250.00	
PER DIEM - $121 /NIGHT STAY X 2 PERSON X 4 NIGHT ($85 hotel/$36 meals)								$ -	
DELIVERY SERVICES - $50 / PACKAGE X 4 PACKAGES								$ -	
MILEAGE 4 TRIP x 286 MI / TRIP @ $0.565/mile								$ -	
TOTAL DIRECT EXPENSES								$ 8,250.00	

PHASE III - SPECIAL SERVICES (PARCEL SURVEYING)

(JACAMAN OVERPASS)

GILPIN ENGINEERING CO.

MAXIMUM AMOUNT PAYABLE
LOOP 20 STIMULUS PROJECT (CSJ: 0086-14-910)
PHASE III - DEC SPECIAL PS&E SERVICES

Offsite Detention Pond Parcel Taking

Jacaman Overpass (STA 219+25.62 TO STA 257+42.91)

GILPIN ENGINEERING COMPANY
PHASE III

SPECIAL SERVICES (FC 130) (PARCEL SURVEYING) TASK DESCRIPTION	PM	SIT	RPLS	Survey Crew (3-Man) w/GPS	CADD Operator/ Tech	Admin Assistant	Total Labor Hrs.	Task Cost
FIELD SURVEYING								
FIELD SURVEY								
FC 130 - RIGHT-OF-WAY (SURVEYING FOR PARCELS (2 PONDS) AND CADD WORK TO PRODUCE FILES)								
PARCEL ABSTRACT	2	8	6		14		30	$ 3,088.26
DEVELOP WORKING SKETCHES		8	6		14		28	$ 2,728.92
COORDINATE WITH LAND OWNER	2	8	6				16	$ 1,880.34
LOCATE AND TIE CORNERS		8	6	26	14		54	$ 6,599.28
RESOLVE BOUNDARIES			6		14		20	$ 1,948.44
PREPARE ROW MAP		8	6		14		28	$ 2,728.92
PREPARE PARCELS AND METES AND BOUNDS		8	6				14	$ 1,521.00
STAKE PARCEL TAKINGS		8	6	26			40	$ 5,391.36
							0	$ -
SUB-TOTAL - FC 130 - RIGHT-OF-WAY (SURVEYING FOR PARCELS (2 PONDS) AND CADD WORK TO PRODUCE FILES)	**4**	**56**	**48**	**52**	**70**	**0**	**230**	**$ 25,886.52**
							0	
HOURS SUB-TOTALS	**4**	**56**	**48**	**52**	**70**	**0**	**230**	
LABOR RATE PER HOUR	$ 179.67	$ 97.56	$ 123.42	$ 148.86	$ 86.28	$ 48.48		
DIRECT LABOR COSTS	$ 718.68	$ 5,463.36	$ 5,924.16	$ 7,740.72	$ 6,039.60	$ -	$ 25,886.52	
TOTAL	**$ 718.68**	**$ 5,463.36**	**$ 5,924.16**	**$ 7,740.72**	**$ 6,039.60**	**$ -**	**$ 25,886.52**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	**2.78%**	**21.11%**	**22.89%**	**29.90%**	**23.33%**	**0.00%**	**100.00%**	
PERCENT LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	**1.74%**	**24.35%**	**20.87%**	**22.61%**	**30.43%**	**0.00%**	**100.00%**	
DIRECT EXPENSES: SUBSURFACE UTILITY ENGINEERING								
DELIVERY SERVICES - $50 / PACKAGE X 10 PACKAGES								**$ 500.00**
TOTAL DIRECT EXPENSES								**$ 500.00**
GRAND TOTAL - ENGINEERING SERVICES								**$ 26,386.52**

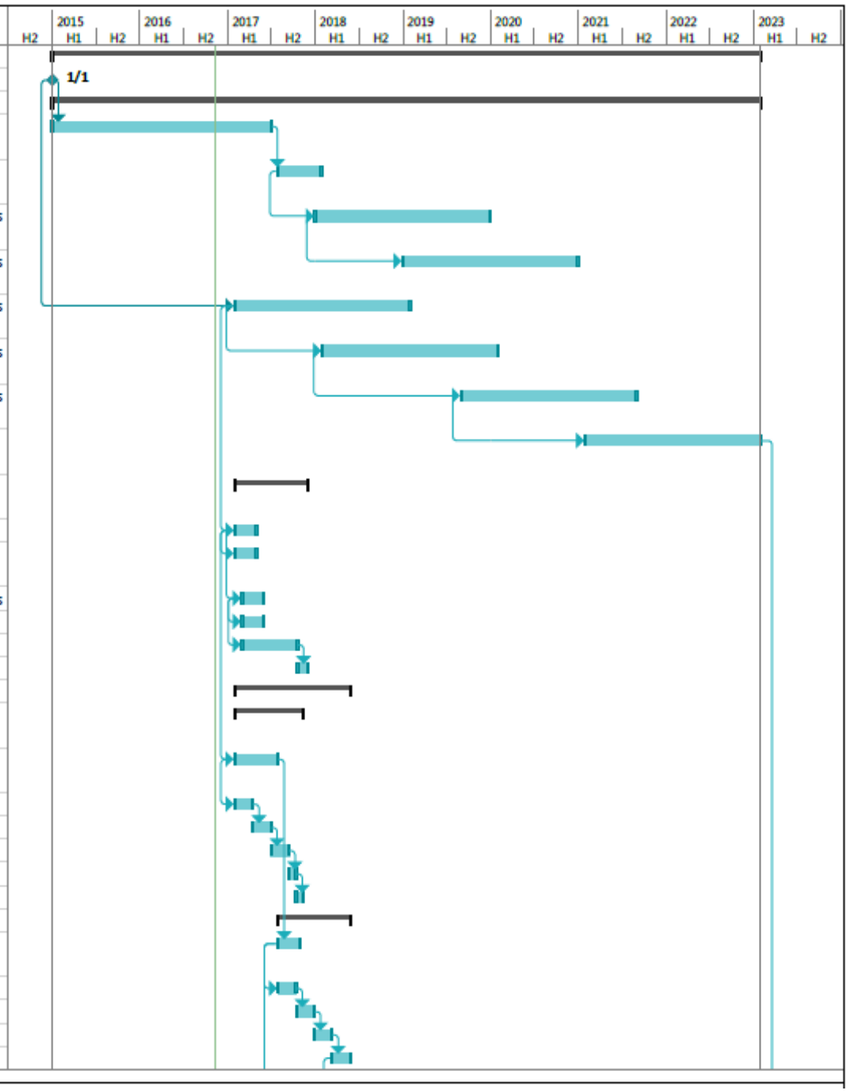
ATTACHMENT F
(Revised 12/06/2016)

Work Schedule
Adding CSJ: 0086-014-910
For Supplemental No. 7 to Main Contract
for
CSJ: 0086-014-058 and CSJ: 0086-014-910

ATTACHMENT F
Work Schedule
(Revised 12/06/2016)

Supplemental No. 7 to Main Contract
for
CSJ: 0086-014-058 and CSJ: 0086-014-910
WA#3
LOOP 20 STIMULUS PROJECT
PHASES II, & III
Provide Utility Investigations (Quality Level A&B), Develop Utility Special Services and Right of Way Acquisition Services (Parcel Maps) & Develop PS&E for the Extension of Loop 20 - Including Off-Site Detention Ponds From US 59 TO JACAMAN (STA 115+85.40 TO STA 257+85.56)

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**LOOP 20 EXTENSION WORK**	**2952 days**	**Thu 1/1/15**	**Mon 1/30/23**	
2		PROJECT START	0 days	Thu 1/1/15	Thu 1/1/15	
3		**GENERAL**	**2952 days**	**Thu 1/1/15**	**Mon 1/30/23**	
4		ENVIRONMENTAL CLEARANCE (TxDOT)	913 days	Thu 1/1/15	Sat 7/1/17	2
5		ROW ACQUISTION - HWY 59 TO AIRPORT (TxDOT)	180 days	Mon 7/31/17	Fri 1/26/18	4FS+29 days
6		ROW ACQUISTION - JACAMAN OVP. (TxDOT)	731 days	Mon 1/1/18	Wed 1/1/20	5SS+154 days
7		ROW ACQUISTION - AIRPORT TO JACAMAN (TxDOT)	730 days	Tue 1/1/19	Wed 12/30/20	6SS+365 days
8		CONSTRUCTION - LOOP 20 @I-35 (TxDOT)	731 days	Tue 1/31/17	Thu 1/31/19	2SS+761 days
9		CONSTRUCTION - HWY 59 TO AIRPORT (TxDOT)	731 days	Wed 1/31/18	Fri 1/31/20	8SS+365 days
10		CONSTRUCTION - JACAMAN OVP. (TxDOT)	731 days	Sun 9/1/19	Tue 8/31/21	9SS+578 days
11		CONSTRUCTION - AIRPORT TO JACAMAN (TxDOT)	730 days	Sun 1/31/21	Mon 1/30/23	10SS+518 days
12		**PHASE IIA ROW/UTILITIES - HWY 59 TO JACAMAN**	**306 days**	**Tue 1/31/17**	**Sat 12/2/17**	
13		PREPARE MAPS	90 days	Tue 1/31/17	Sun 4/30/17	8SS
14		COLLECT ROW DATA / FIELD SURVEY / SUE	90 days	Tue 1/31/17	Sun 4/30/17	13SS
15		PREPARE MAPS	90 days	Thu 3/2/17	Tue 5/30/17	13SS+30 days
16		PREPARE REPORT / PLATS	90 days	Thu 3/2/17	Tue 5/30/17	15SS
17		COORDINATE WITH UTILITIES	231 days	Thu 3/2/17	Wed 10/18/17	15SS
18		SURVEY, PARCEL PLATS FINAL	45 days	Thu 10/19/17	Sat 12/2/17	17
19		**PHASE III - PS&E - HWY 59 TO JACAMAN**	**481 days**	**Tue 1/31/17**	**Sat 5/26/18**	
20		**SUBTASK - PHASE III (HWY 59 TO AIRPORT)**	**286 days**	**Tue 1/31/17**	**Sun 11/12/17**	
21		HYDRAULIC / HYDROLOGY STUDIES / POND SITING & DESIGN	181 days	Tue 1/31/17	Sun 7/30/17	13SS
22		30% PS&E	76 days	Tue 1/31/17	Sun 4/16/17	21SS
23		60% PS&E	75 days	Mon 4/17/17	Fri 6/30/17	22
24		90% PS&E	75 days	Sat 7/1/17	Wed 9/13/17	23
25		FINAL PS&E	30 days	Thu 9/14/17	Fri 10/13/17	24
26		TxDOT / FHWA APPROVAL(S)	30 days	Sat 10/14/17	Sun 11/12/17	25
27		**SUBTASK - PHASE III (JACAMAN OVP.)**	**300 days**	**Mon 7/31/17**	**Sat 5/26/18**	
28		HYDRAULIC / HYDROLOGY STUDIES / POND SITING & DESIGN	90 days	Mon 7/31/17	Sat 10/28/17	21
29		30% PS&E	75 days	Mon 7/31/17	Fri 10/13/17	28SS
30		60% PS&E	75 days	Sun 10/15/17	Thu 12/28/17	29
31		90% PS&E	73 days	Sat 12/30/17	Mon 3/12/18	30
32		FINAL PS&E	75 days	Tue 3/13/18	Sat 5/26/18	31



ATTACHMENT F
Work Schedule
(Revised 12/06/2016)

Supplemental No. 7 to Main Contract
for
CSJ: 0086-014-058 and CSJ: 0086-014-910
WA#3
LOOP 20 STIMULUS PROJECT
PHASES II, & III
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ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
33		TxDOT / FHWA APPROVAL(S)	31 days	Wed 4/11/18	Fri 5/11/18	32SS+29 days
34		**SUBTASK - PHASE III (AIRPORT TO JACAMAN)**	**300 days**	**Mon 7/31/17**	**Sat 5/26/18**	
35		HYDRAULIC / HYDROLOGY STUDIES / POND SITING & DESIGN	90 days	Mon 7/31/17	Sat 10/28/17	28SS
36		30% PS&E	75 days	Mon 7/31/17	Fri 10/13/17	35SS
37		60% PS&E	75 days	Sat 10/14/17	Wed 12/27/17	36
38		90% PS&E	75 days	Thu 12/28/17	Mon 3/12/18	37
39		FINAL PS&E	75 days	Tue 3/13/18	Sat 5/26/18	38
40		TxDOT / FHWA APPROVAL(S)	31 days	Wed 4/11/18	Fri 5/11/18	39SS+29 days
41		PROJECT COMPLETION	0 days	Mon 1/30/23	Mon 1/30/23	11FF