



IMPROVING MORE THAN JUST ROADS

November 21, 2024

Mr. Mark Milum
City Manager
200 N. Brazil
Los Fresnos, TX 78566

Re: Whipple Road- Funding for Professional Engineering Services

Dear Mr. Milum:

On October 31, 2024, the Board of Directors approved Supplemental Work Authorization No. 2 to Work Authorization No. 31 with R.R.P. Consulting Engineers, LLC for professional services including providing engineering services for the preparation of Plans, Specifications & Estimates (PS&E) and environmental services for Whipple Road.

The amount approved for Supplemental Work Authorization No. 2 to Work Authorization No. 31 was \$892,217.96 of which Cameron County Regional Mobility Authority will be funding \$400,000.00.

As per our discussion, the City of Los Fresnos has agreed to participate with \$492,217.96. Thus, please submit a check payable to Cameron County Regional Mobility Authority in this amount.

If you have any questions, please let me know.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Pete Sepulveda, Jr.', is written over a light blue background graphic.

Pete Sepulveda, Jr.
Executive Director

Enclosures: Invoice for Whipple Road PS&E
SWA No.2 to WA No. 31 with R.R.P. Consulting Engineers, LLC



INVOICE

Invoice Number COLF Whipple Rd-1

Invoice Date: November 21, 2024

BALANCE DUE \$ 492,217.96

Terms: Net 30

3461 Carmen Ave.
Rancho Viejo, TX 78575
(956) 621-5571

Bill To:
City of Los Fresnos
520 Ocean Blvd.
Los Fresnos, Texas 78566

Reference	Item & Description	Invoice Amount	AMOUNT
WHIPPLE ROAD	Whipple Road Engineering Services PS&E & Environmental Services	\$ 492,217.96	\$ 492,217.96
		Balance Due	\$ 492,217.96

DIRECT ALL INQUIRIES TO:

Victor J. Barron
956-621-5571
vbarron@ccrma.org

MAKE ALL CHECKS PAYABLE TO:

Cameron County Regional Mobility Authority
3461 Carmen Ave.
Rancho Viejo, TX 78575

REVIEWED

By Victor J Barron at 4:17 pm, Nov 21, 2024

Verified by CCRMA Finance Department

**SUPPLEMENTAL WORK AUTHORIZATION NO. 2
TO WORK AUTHORIZATION NO. 31**

This Supplemental Work Authorization No. 2 is made as of this 31st day of October, 2024, under the terms and conditions established in the AGREEMENT FOR GENERAL CONSULTING CIVIL ENGINEERING SERVICES, dated as of May 10, 2018 (the "Agreement"), between the Cameron County Regional Mobility Authority (the "Authority") and another engineering company that divested a portion of its assets to R.R.P. Consulting Engineers, L.L.C., General Engineering Consultant (GEC), Assignee.

The work to be performed by the GEC under this Supplemental Work Authorization is for the following purpose, consistent with the Services defined in the Agreement: *Professional services including providing engineering services for the preparation of Plans, Specifications & Estimates (PS&E) & Environmental Services for Whipple Road, Cameron County, Texas.*

Section A. – Scope of Services

GEC shall perform the Additional Services according to **Exhibit B-2**.

Section B. – Schedule

GEC shall perform the Services and deliver the related Documents according to the schedule as shown on **Exhibit C-2**.

Section C. – Compensation

Paragraph C.1 is hereby amended to increase the overall maximum amount from \$58,217.41 to \$950,435.37, an increase of \$892,217.96 based on the attached fee estimate shown on **Exhibit D-2**. Compensation shall be in accordance with the Agreement.

C.1. The Authority shall pay the GEC under the following acceptable payment method – Lump Sum Payment Method.

C.2. Compensation for Additional Services (if any) shall be paid by the Authority to the GEC according to the terms of a future Work Authorization.

Section D. – Authority's Responsibilities

The Authority shall perform and/or provide the services as stated in **Exhibit A-2** in a timely manner so as not to delay the Services of the GEC.


Section E. - Other Provisions

The parties agree to the following provisions with respect to this specific Work Authorization:
None.

-SIGNATURES ON NEXT PAGE-

Except to the extent expressly modified herein, all terms and conditions of the Agreement shall continue in full force and effect.

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY

By: 
Name: **Frank Parker, Jr., Chairman**
Date: October 31, 2024

R.R.P. CONSULTING ENGINEERS, L.L.C.

By: Ahmed Abd-EL-Meguid, PhD, PE
Name: **Ahmed Abd-El-Meguid, Vice President**
Date: 11/6/2024

Digitally signed by Ahmed Abd-El-Meguid, PhD, PE
DN: cn=Ahmed Abd-El-Meguid, PhD, PE,
c=US, o=RRP Consulting Engineers, LLC,
email=ahmeguid@rrpeng.com
Date: 2024.11.06 16:52:07 -06'00'

LIST OF EXHIBITS

- Exhibit A-2 – Authority’s Responsibilities
- Exhibit B-2 – Scope of Work
- Exhibit C-2 – Work Schedule
- Exhibit D-2 – Cost Proposal

EXHIBIT A-2 Authority's Responsibilities

The following provides an outline of the services to be provided by the Authority in the development of the Project for this work authorization.

GENERAL

The Authority will provide to the Engineer the following:

- (1) Provide Engineer with a Notice to Proceed.
- (2) Payment for work performed by the Engineer and accepted by Authority in accordance with this Agreement.
- (3) Assistance to the Engineer, as necessary, to obtain the required data and information from other local, regional, State and Federal agencies that the Engineer cannot easily obtain.
- (4) Provide timely review and decisions in response to the Engineer's request for information and/or required submittals and deliverables, in order for the Engineer to maintain an agreed-upon work schedule referred to in Exhibit B.
- (5) Coordinate with Texas Department of Transportation (TxDOT) for items as needed. The Authority will negotiate and approve all change orders and other contract revisions that the Authority finds necessary or convenient to accomplish the construction activities for the Project. For change orders and other contract revisions that affect prior environmental approvals or result in non-conformity with the specifications and standards agreed upon for the Project, the Authority must assess any potential environmental effects and any additional or revised environmental permits, issues, coordination, mitigation, and commitments required as a result of the contract revisions.

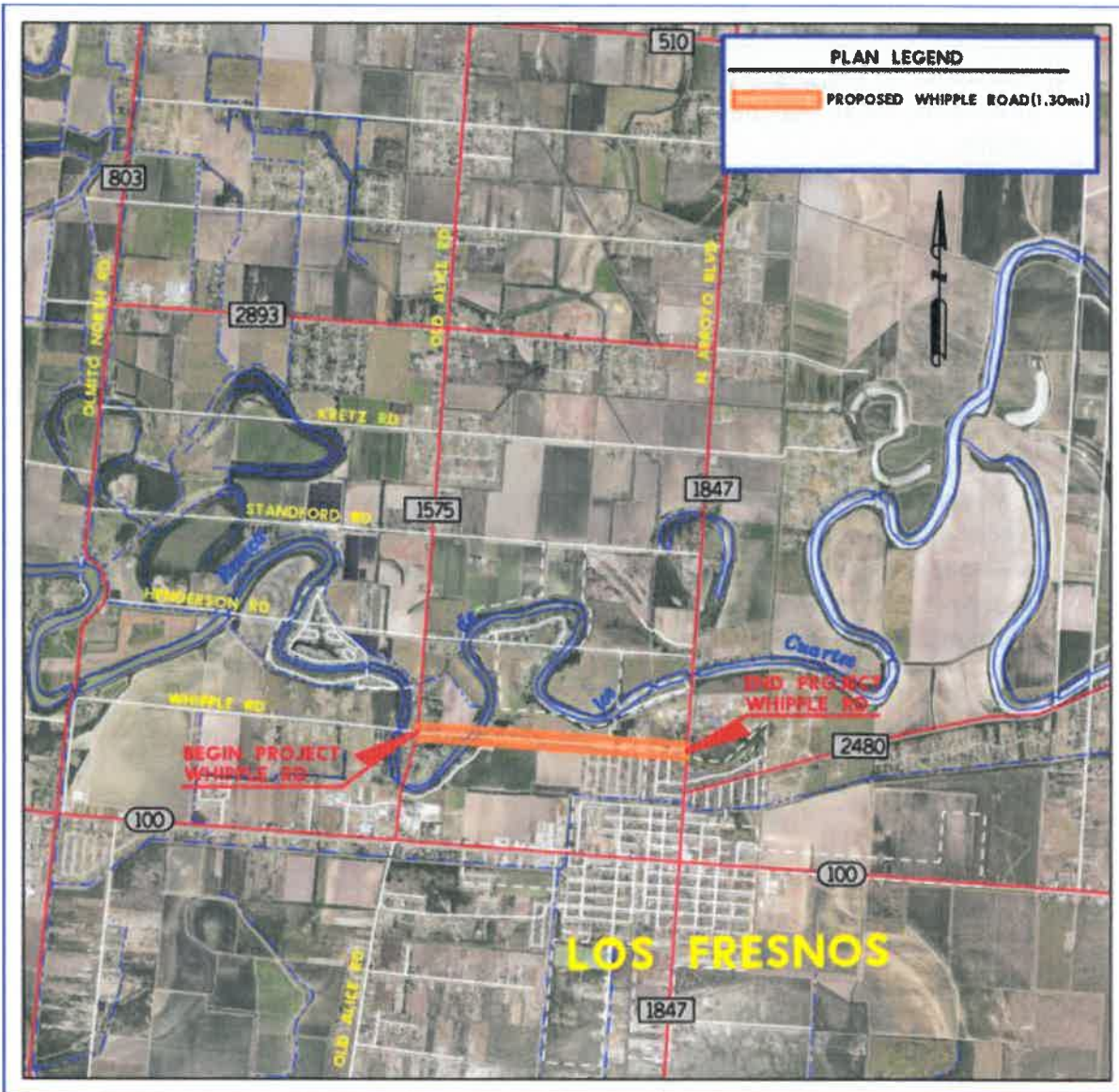
EXHIBIT B-2 SERVICES TO BE PROVIDED BY THE GEC/Engineer

County: Cameron
Project: Whipple Road
Limits: From: FM 1575 To: FM 1847
CSJ: 0921-06-022

Project Overview:

The Whipple Road Project consists of Updating/Finalizing the Schematic and Plans, Specifications and Estimate (PS&E) for the expansion of an existing 2-lane rural roadway to a 3-lane urban roadway within a varying ROW width. The limits identified above will complete the Whipple Road project.

These limits are illustrated below:



GENERAL REQUIREMENTS

1.1. Design Criteria. The Engineer shall prepare all work in accordance with the latest version of applicable Authority and State's procedures, specifications, manuals, guidelines, standard drawings, and standard specifications or previously approved special provisions and special specifications, which include: the *PS&E Preparation Manual*, *Roadway Design Manual*, *Hydraulic Design Manual*, the *Texas Manual on Uniform Traffic Control Devices (TMUTCD)*, *Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (latest Edition)*, and other State approved manuals. When design criteria are not identified in State manuals, the Engineer shall notify the Authority and refer to the American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Street*, (latest Edition). All manuals utilized will be the latest manuals of record at the time of the execution of the work order. In addition, the Engineer shall follow the Authority's guidelines in developing the PS&E package. The Engineer shall prepare each PS&E package in a form suitable for letting through the Authority's construction contract bidding and awarding process.

The Engineer shall identify, prepare exhibits, and complete all necessary forms for each Design Exception and Waiver required within project limits prior to the 30% project completion submittal. The Engineer shall submit each exception and waiver to the Authority for coordination and processing of approvals. If subsequent changes require additional exceptions, the Engineer shall notify the Authority in writing as soon as possible after identification of each condition that may warrant a design exception or waiver.

1.2. Right-of-Entry and Coordination. OMITTED

1.3. Progress Reporting and Invoicing. The Engineer shall submit a monthly written progress report to the Authority's Project Manager regardless of whether the Engineer is invoicing for that month. The Engineer's written progress report shall describe activities during the reporting period; activities planned for the following period; problems encountered and actions taken to remedy them; list of meetings attended; and overall status, including a per cent complete by task.

The Engineer shall prepare a design time schedule and an estimated construction contract time schedule. The schedules shall indicate tasks, subtasks, critical dates, milestones, deliverables, and review requirements in a format that depicts the interdependence of the various items. The Engineer shall schedule milestone submittals at 30%, 60%, 90% and final project completion phases. The Engineer shall advise the Authority in writing if the Engineer is not able to meet the scheduled milestone review date.

1.4. Use of the State's Standards. The Engineer shall identify and insert as frequently as is feasible the applicable, current State's Standard Details, District Standard Details, or miscellaneous details that have been approved for use in the plan. The Engineer shall sign, seal, and date each Standard and miscellaneous detail if the Standard selected has not been adopted for use in a District. The Engineer shall obtain approval for use of these details during the early stages of design from the Authority 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 retain the responsibility for the appropriate selection of each Standard identified for use within their design.

1.5. Organization of Plan Sheets. The PS&E shall be complete and organized in accordance with the latest edition of the State's PS&E Preparation Manual. The PS&E package shall be suitable for the bidding and awarding of a construction contract, and in accordance with the latest State's policies and procedures, and the District's PS&E Checklist.

1.6. Personal Protective Equipment (PPE). The Engineer shall, and shall require its subcontractors to, (1) provide personal protective equipment (PPE) to their personnel, (2) provide business vehicles for their personnel, and (3) require their personnel to use PPE and drive only business vehicles while performing work on or near roadways. The PPE must meet all (1) current standards set by the Occupational Safety and Health Administration (OSHA) and (2) TxDOT requirements (e.g., safety glasses, Type 3 (TY 3) pants for night work). Each business vehicle must be clearly marked with the Engineer's business name, or the name of the appropriate subcontractor, such that the name can be identified from a distance.

Environmental

TASK 120 – PUBLIC INVOLVEMENT AND SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES

TASK 120.01 – FIELD INVESTIGATIONS

The GEC shall conduct environmental investigations and field studies necessary to complete all technical reports, forms, etc., required to support the clearance of the proposed project by the Texas Department of Transportation (TxDOT) Environmental Affairs Division (ENV) as a Categorical Exclusion (CE) under the National Environmental Policy Act (NEPA) and implementing regulations. Initial field investigations will involve up to three (3) environmental scientists and encompass up to four (4) days and three (3) overnight stays per scientist. One follow-up field investigation, if required, will involve two (2) environmental scientists and encompass up to three (3) days and two (2) nights per scientist.

The GEC shall additionally conduct desk-based reviews of the project area by obtaining and reviewing publicly available data pertinent to the condition of the human and natural environment in the project area.

Prior to the initiation of field investigations, the AUTHORITY shall provide the GEC with available project data including available field survey results, correspondence, and documentation of coordination with resource and/or regulatory agencies. The GEC understands that the AUTHORITY or TxDOT may choose to lead selected agency coordination efforts.

TASK 120.02 – TECHNICAL DOCUMENTATION

The GEC shall prepare technical documentation (reports, forms, etc.) using data obtained in the course of field investigations as well as desk-based reviews of the project area. All technical documentation will be completed using current TxDOT templates and toolkits. All environmental documents shall be submitted to the AUTHORITY and TxDOT electronically though a reasonable number of hardcopies shall be accommodated upon request.

Subtask 120.02.01 – Social and Economic Impacts

The GEC shall identify and evaluate the social and economic impact of the proposed project. The GEC shall use appropriate data sources, such as US Census Bureau data, windshield surveys, maps, and aerial photographs to determine existing conditions in the project area and the potential for social and economic impacts. Potential social and economic impacts to be documented include:

- a) Demographics (population, ethnic/racial distribution, income) based on the most recent census or projections therefrom.
- b) Land uses in the project area (commercial, agricultural, community services, etc.).
- c) Other potential impacts identified in studies of social/economic impacts.

The GEC shall identify potential displacements, potential replacement housing or other replacement sites and racial, ethnic, and income levels of affected individuals and communities, in order to determine any

disproportionate impacts on minority, limited English proficiency, or low-income individuals or communities (i.e., Environmental Justice populations). Social and economic studies shall fulfill the requirements of Executive Order 12898 (on Environmental Justice).

The GEC shall conduct a Community Impacts Assessment, including displacements, changes to access and travel patterns, changes to community cohesion, Environmental Justice Analysis in accordance with Executive Order 12898, and limited English proficiency analysis in accordance with Executive Order 13166. The GEC shall conduct an analysis sufficient to meet the requirements of Federal Highway Administration (FHWA) Technical Advisory T 6640.8A. The Community Impacts Assessment shall follow guidance provided in TxDOT's *Environmental Handbook for Community Impacts, Environmental Justice, Limited English Proficiency and Title VI*.

Deliverables:

- Community Impacts Assessment Technical Report Form

Subtask 120.02.02 – Water Resources

The GEC shall document compliance with laws and regulations concerning the management of water resources in accordance with TxDOT's *Environmental Handbook for Water Resources*. Additionally, the GEC shall determine whether the proposed project requires any of the following permits related to water resources:

- a) Texas Pollutant Discharge Elimination System (TPDES)
- b) State water quality certification under Section 401 of the Clean Water Act (CWA)
- c) Nationwide or Individual Permit under Section 404 of the CWA.

The GEC shall not prepare applications for permits related to water resources under this work authorization. Such permit applications, if required, would be prepared under a separate work authorization.

120.02.02.01 – Surface Water

The GEC shall assess surface water features within the project area (e.g., streams, ponds, drainage ditches, etc.) Surface drainage and the water quality of surface waters would be additionally assessed as needed. Impacts to surface waters would be assessed. The Texas Commission on Environmental Quality (TCEQ) Section 303(d) list of impaired waters would be reviewed to evaluate the potential for the proposed project to adversely affect impaired waters.

120.02.02.02 – Waters of the US, including Wetlands

Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the US, including certain wetlands. The US Army Corps of Engineers (USACE) administers the permitting program for actions under Section 404 of CWA. The GEC shall prepare the delineation of waters of the US, including wetlands, for areas within the project area. The delineation would be conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual and the appropriate Regional Supplement.

The GEC shall collect background data (i.e., aerial/color infrared aerial photographs, topographic data, etc.) prior to the field investigation. For any areas of the project area that are inaccessible, the GEC shall use other available resources such as the Natural Resources Conservation Service (NRCS) *Web Soil Survey*, aerial photography, topographic maps, and National Wetland Inventory (NWI) data to remotely delineate wetlands to the extent practicable.

The wetland delineation would consist of staking and mapping identified waters of the US, including wetlands and other special aquatic sites. Under normal circumstances, wetlands must possess three essential characteristics: hydrophytic vegetation, wetland hydrology, and hydric soils. Indicators of these characteristics would be documented in the wetland areas, as well as in the nearby upland areas, to determine the presence or absence of wetland characteristics. Waters of the US shall be delineated in the field and recorded using hand-held Global Positioning System (GPS) technology with sub-meter accuracy. Areas extending beyond the project area will be noted but not delineated during the field investigation. Wetland data forms shall be completed at vegetative community changes within the project area and/or at defined geographic intervals to determine the geographical boundary of a wetland or the ordinary high-water mark of a water body.

The GEC shall draft a water features delineation report, following TxDOT guidance, which summarizes the methods and results of the delineation activities as well as associated mapping (i.e., vicinity, site location, topography, aerial photograph, LIDAR, soils, floodplains, NWI, etc.), site photographs, wetland data point locations, acreage summary tables, and other supporting data (e.g., antecedent precipitation data).

Deliverables:

- Surface Water Analysis Form
- Water Features Delineation Report
- Section 404/10 Impacts Table

Subtask 120.02.03 – Biological Resources

The GEC shall assess project-related impacts to vegetation, protected species, and their habitats and include a description of any unusual vegetation features or noteworthy habitat types identified during field investigations. Vegetation and plant communities shall be identified using the Texas Parks and Wildlife Department (TPWD) Ecological Mapping System of Texas (EMST) data.

For the purposes of this work authorization, protected species shall include:

- a) Species listed by the US Fish and Wildlife Service (USFWS) as threatened, endangered, or proposed for listing as threatened or endangered. (50 CFR 17.11-12).
- b) Species that are candidates for review or listing by the USFWS as threatened or endangered, as per the most recently updated list in the *Federal Register*.
- c) Species listed by the TPWD as threatened, endangered, or as species of greatest conservation need as reflected in the most recently updated Annotated List of Rare Species for Cameron County.
- d) Species protected by the Migratory Bird Treaty Act (50 CFR 10.13).

The GEC shall examine existing data to determine the likelihood that protected species, their habitat, or designated critical habitat (50 CFR 17.94-95) could be impacted by the proposed project and shall report findings in the appropriate technical documentation. Existing data shall include the records of the TPWD Natural Diversity Database. The GEC shall not conduct species-specific presence/ absence surveys for protected species or critical habitat. If required, presence/absence and/or critical habitat surveys would be conducted under a supplemental work authorization.

The GEC shall conduct an analysis of existing wildlife habitat within the project area and potential project-related impacts to wildlife habitat. If the GEC encounters protected species or habitat for protected species, the GEC shall notify the AUTHORITY immediately.

If special habitat features are present, additional details shall be included in the description to clearly describe the feature(s) and to explain why the feature(s) should be regarded as special. Special habitat features include, but are not limited to:

- a) Bottomland hardwoods,
- b) Caves,
- c) Cliffs and bluffs,
- d) Native prairies (particularly those with climax species of native grasses and forbs),
- e) Ponds (temporary or permanent, natural or artificial),
- f) Seeps or springs,
- g) Snags (standing dead trees) or groups of snags,
- h) Water bodies, and
- i) Existing bridges with known or easily observed bird or bat colonies.

The habitat analysis shall contain a description of anticipated impacts to vegetation. The description of anticipated impacts shall be based on impacts that can be predicted as a result of construction activities and the type of roadway facility proposed for the project. If lack of access limits field observations for the habitat areas, existing published sources and unmanned aerial systems shall be used to estimate the location and extent of habitat areas. The description of vegetation shall include the acreage for each EMST vegetation type observed.

Deliverables:

- Species Analysis Form
- Species Analysis Spreadsheet
- Documentation of TPWD Best Management Practices

Subtask 120.02.04 – Hazardous Materials

The GEC shall conduct an Initial Site Assessment (ISA) for potential hazardous materials impacts for the proposed project area in accordance with TxDOT's *Environmental Handbook for Hazardous Materials*. The ISA shall determine the potential for encountering hazardous materials in the general project area, including possible environmental liability, increased handling requirements (e.g., soil or groundwater), and potential construction worker health and safety issues.

The completed ISA shall include, as applicable, copies of search reports including maps depicting the locations of potential or recorded hazardous materials sites, copies of agency file information, photographs, recommendations, and any other supporting information gathered by the GEC to complete the ISA.

Should the findings of the ISA conclude that additional investigation, special considerations, or other commitments are required during future stages of project development, the GEC shall review those findings and commitments with the AUTHORITY.

Deliverables:

- Hazardous Materials Initial Site Assessment (ISA) with supporting documentation

Subtask 120.02.05 – Cultural Resources

The GEC shall coordinate with subconsultants and prepare for and attend subconsultant meetings (live or via video conferencing) for the project. The GEC, through a subconsultant, shall conduct archeological investigations designed to satisfy all applicable cultural resource laws and regulations. This subtask shall include a review of records from the Texas Archaeological Research Laboratory (TARL) available on the

Texas Historical Commission's (THC) online Texas Archaeological Sites Atlas (Atlas) to identify previously recorded surveys or cultural resources within one mile (1.6 kilometers) of the proposed project. An archaeologist shall review historical maps, aerial photographs, topographic maps, *Web Soil Survey* maps, and geologic maps to identify possible historic structures or the previous locations of structures that may now be expressed as an archaeological site within the proposed project's Area of Potential Effect (APE). In addition to identifying previously recorded archaeological sites, the Atlas review shall include the following types of information:

- a) National Register of Historic Places (NRHP) properties
- b) State Antiquities Landmarks (SALs)
- c) Official Texas Historical Markers
- d) Recorded Texas Historic Landmarks
- e) Cemeteries
- f) Local neighborhood surveys

Other critical factors to be examined include the level of previous disturbances from residential, commercial, and industrial development; types of soils; and the potential for archaeological deposits to occur. Following the completion of the background review, the subconsultant's Principal Investigator shall prepare a scope of work (including the results of the background review) and submit it to the GEC for review. Upon receipt and incorporation of comments, the subconsultant shall then submit the scope of work concurrently to TxDOT and/or FHWA for their review and comment, along with the Antiquities Permit application for THC review. In general, TxDOT and/or FHWA and THC shall review the scope of work and permit within 30 days of receipt of the application. All work on the proposed project related to cultural resources shall be conducted in accordance with TxDOT's *Guidance: Historical Studies Review Procedures and Environmental Handbook for Historic Properties*.

120.02.05. – Archeological Survey

The subconsultant's cultural resources personnel shall conduct database searches of the Atlas to identify previously documented archeological sites, cemeteries, historical markers, properties, and districts listed on the NRHP, as well as SALs. Results of the search shall be integrated with soil information, topographic maps, aerial photographs, and other appropriate data sources to guide the field approach.

Field investigations shall be conducted at the Phase I intensive-survey level according to standards finalized in March 2020 and promulgated by the THC and the Council of Texas Archeologists (CTA) in April 2020. The field investigations shall include a pedestrian survey for previously unidentified archeological resources as well as backhoe excavations where appropriate. In addition, this investigation shall evaluate archeological resources for their potential eligibility for inclusion in the NRHP per Section 106 (36 CFR 800) of the National Historic Preservation Act of 1966, as amended (NHPA), or designation as a SAL under the provisions of the Antiquities Code of Texas. Reporting of results, including preliminary NRHP/SAL evaluations of any identified archeological resources, shall comply with THC and CTA guidelines. A draft report shall be submitted first to the GEC for comments; these comments shall be incorporated into a revised draft report to be submitted to the THC for review, with a concurrent submittal to the THC via the online E-Trac portal. The AUTHORITY shall also review the submittal prior to submission to THC.

120.02.05.02 – Historic Resources Survey

The subconsultant shall conduct the database searches references above as well as any additional archival research required by the THC and TxDOT ENV to establish a historic-resources APE and produce a historic research design for review and approval by the THC and TxDOT ENV. The research design shall comply with current requirements, such as the inclusion of a contextual discussion of recorded resources within 1,300 feet of the APE. If required by TxDOT, a Project Coordination Request (PCR) shall be prepared.

Following THC approval of the historic research design, the subconsultant shall conduct the field investigation, which is assumed to be at the reconnaissance-survey level. Upon completion of the field investigation, the subconsultant's historic staff shall provide a preliminary evaluation of identified resources' potential eligibility for inclusion in the NRHP per Section 106 (36 CFR 800) of the NHPA or designation as a SAL under the provisions of the Antiquities Code.

The reporting of results, including preliminary NRHP/SAL evaluations of any identified resources, shall follow guidelines for formatting and content, including an appendix containing data sheets for all identified historic-age resources. Submission of the report, including the number and format of copies, will be coordinated with the GEC, AUTHORITY, and TxDOT (District and/or ENV).

The following assumptions and exclusions shall apply to Subtask 120.02.05:

- a) Assumes a total project length of approximately 1.3 miles within a 60- to 80-foot-wide right-of-way (ROW).
- b) Assumes mechanical trenching will be required by THC.
- c) Assumes that the project ROW is publicly accessible. If access is not available to any portion of the project area, a reasonable and good-faith effort shall be made to document inaccessible parcels from accessible areas.
- d) The following services shall be excluded and, if required or requested by TxDOT and/or the AUTHORITY, provided under a separate work authorization:
 - 1) NRHP nominations,
 - 2) Historic American Buildings Survey and/or Historic American Engineering Record documentation,
 - 3) archeological testing or data recovery, and
 - 4) evaluation/coordination/removal of human remains.

Deliverables:

- Archeological Background Study
- Historic PCR

TASK 120.03 – PUBLIC INVOLVEMENT ACTIVITIES

All public involvement activities for the proposed project shall be conducted in accordance with 43 TAC 2.41-2.52, 23 CFR 771, NEPA, and TxDOT's current policies, procedures, guidance, and document templates.

Subtask 120.03.01 – Meeting with Affected Property Owners (MAPO)

The GEC shall conduct up to four (4) MAPOs with landowners potentially impacted by the proposed project. A MAPO summary, following TxDOT guidance, shall be completed following the MAPO for documentation purposes. Items discussed in the MAPO (e.g., land use, ROW, ROE, etc.) shall be documented.

Deliverables:

- MAPO summary (if MAPO requested by landowners)

EXCLUSIONS

The following items are specifically excluded from this scope of work and, if required or requested, shall be subject to a separate work authorization as Special Services:

- Alternatives analysis.
- Archeological testing and data recovery.

- Bicycle/pedestrian connectivity study.
- Biological Assessment preparation.
- Construction Emissions Mitigation Plan.
- Coordination with resource/regulatory agencies.
- CWA Section 404 Permitting.
- Disposal or transportation of any hazardous waste that is encountered during site investigations.
- Emergency Response Control Pollution Plan.
- Environmental permitting.
- Essential Fish Habitat Assessment.
- Hazardous materials investigations beyond the level of an ISA (i.e., Phase II/III environmental site assessments).
- Incidental Take Permit activities.
- Indirect and Cumulative Impacts analysis.
- NEPA compliance documentation beyond the level of a CE (e.g., Environmental Assessment).
- Notice and Opportunity to Comment
- Public Meeting/Hearing and Summaries.
- Project newsletter or project website development.
- Quantitative analysis of Mobile Source Air Toxics.
- Section 4(f) and/or Section 6(f) evaluations.
- Species-specific Subject Matter Experts for individual critical habitat or species analyses.
- Storm Water Pollution Prevention Plan.
- Traffic noise analysis.
- US Coast Guard Bridge Permit application.
- Wetland/Stream mitigation and/or mitigation plan.
- Visual/Aesthetic impacts analysis.

Schematic

Update/Finalize Schematic. The GEC shall update/finalize the schematic with utility information as well as final design to gain final approval on the Schematic.

Field Surveying and ROW Mapping

Field Surveying

The GEC will develop a field survey for the project. Preliminary design considerations will include the following: Texas State Plane South Zone (NAD 83) and (NAVD 88) datum as derived from the TxDOT VRS Real Time Network (RTN).

ROW Retracement

Upon receiving the Notice to Proceed (NTP, the GEC, will commence collecting all Right of Way (R.O.W.) documents for Whipple Road from Cameron County and from the Texas Department of Transportation for plotting purposes in CAD. This will assist the field crews to locate and tie in the ROW monumentation as they may exist in the field and provide sufficient evidence to re-establish the existing ROW along Veterans Airport Drive.

Utilities

A call to the Texas 811 Call Center will be placed to request that all utilities within the project limits are located and marked for our field crews to tie in all above ground visible existing utilities.

Survey Control

This project will consist of the establishment of three 14 control monuments set in concrete. All control points will be set to be intervisible with one another. Each survey control monument will have both horizontal and vertical coordinates that will be referenced to official Benchmarks and Datum points on the Texas State Plane South Zone (NAD 83) and (NAVD 88) datum as derived from the TxDOT VRS Real Time Network (RTN).

Updated Topographic Survey

Will consist of 100-foot cross-sections along Whipple Road. Cross-sections will be taken at vertical breaks and horizontal curve PC's and PT's. All intersecting roads will be cross-sectioned at 100-foot intervals for length of 300 feet past the Whipple Road R.O.W. as well as irrigation canals and/or drainage ditches that intersect with the R.O.W. The cross-sections will include all grade breaks, edge of pavement centerline of road and natural ground at the R.O.W. and 10 feet outside the R.O.W.; and will locate all visible and apparent improvements within the R.O.W. to 10 feet beyond the R.O.W., to include but not limited to: driveways, fences, signs, object markers, drainage culverts and headwalls, power poles, utility poles, water meters, water valves, fire hydrants, utility markers, telephone pedestals, trees, mailboxes, irrigation siphons, etc.

Survey Deliverables

Will include the following files: 2D planimetric CAD file, 3D DTM (surface model with contours), 2D - ROW retracement file, a TIN file, Ascii (X, Y, Z) text file of all the collected survey points and PDF copy of the field notes.

RPLS Signed and Sealed 8 ½" x 11" Survey Control Sketches and an 11" x 17" Survey Control Map will also be created and included in the submittal.

Right-Of-Way Surveys

This includes the performance of surveys to establish land boundaries, preparation of parcel descriptions and parcel plats, and the preparation of right-of-way (ROW) maps for seven parcels.

The Surveyor shall prepare:

- A. boundary surveys and create Property Descriptions (metes and bounds plus plats);
- B. create GIS files for ROW/ Real Property Asset Map system; and

The standards and deliverables are detailed in Chapter 4, Section 8 of the TxDOT ROW Preliminary Procedures for the Authority to Proceed Manual, and the checklist provided by the Authority.

Property Description:

The Surveyor shall prepare a Property Description(s) for each parcel or tract in the form of a preliminary and a final deliverable(s). Each part of a Property Description shall be signed and sealed by an RPLS. The Surveyor shall prepare preliminary Property Description(s)- for review by the State.

Metes and bounds descriptions:

The Surveyor shall prepare a metes and bounds description for each parcel of land to be acquired. The Surveyor shall follow the standard formats for metes and bounds descriptions that TxDOT has developed. If requested by the Surveyor, the State will provide copies of the standard formats for metes and bounds descriptions for all purposes of the work authorizations.

Parcel plats:

The Surveyor shall prepare a parcel plat for each parcel of land to be acquired. The Engineer shall follow the standard formats for parcel plats that the State has developed. If requested by the Engineer, the State will provide copies of the standard formats. Parcel plats must include all items of information shown on the ROW map that concerns the individual parcel.

The Surveyor shall prepare final deliverables:

The Surveyor shall set appropriate monuments on the proposed ROW lines at intersecting property lines, and at all points of curvature (PC), points of tangency (PT), angle points, and intersecting ROW lines of side streets.

The Surveyor shall prepare final, signed, sealed, and dated Property Descriptions.

ROW Mapping Deliverables

The Surveyor shall provide the following:

1. Scanned copies of the ownership documents and one D-size paper copy of the Abstract Map and the associated MicroStation graphics files for review purposes.
2. Field Survey Data
 - a. A spreadsheet of the property owners and right-of-entry information.
 - b. Scanned copies of the field notes, control data sheets, and a graphics file of all field survey data.
3. Property Description Submittals
 - a. Preliminary Property Description Submittals
One paper copy of the preliminary Property Description(s) for review purposes marked "Preliminary – Not to be used for recording purposes", and an electronic copy of each Property Description in PDF format. The ROW (ArcGIS) database template "ROW_Parcel Edits" populated with the preliminary parcels, alignment, and project control points in ArcGIS 10.6.1 format or the current version in use by TxDOT.
 - b. Final Property Description Submittals
Two paper sets of the final Property Description(s) showing the metes and bounds descriptions and parcel plats, signed and sealed by a RPLS, and the associated electronic files in PDF and Word formats. Bentley MicroStation parcel plat graphics files and master reference files (MRF).

The ROW (ArcGIS) database template "ROW Parcel Edits" populated with the final parcels, final alignment, and project control points in ArcGIS 10.6.1 format or the current version in use by the State.

Plans, Specifications, and Estimates (PS&E)

Data Collection and Field Reconnaissance. The GEC shall collect, review, and evaluate data described below. The GEC shall notify the Authority in writing whenever the Engineer finds disagreement with the information or documents:

1. Data, if available, from the Authority, including "as-built plans", existing schematics, right-of-way maps, Subsurface Utility Engineering (SUE) mapping, existing cross sections, existing planimetric mapping, environmental documents, existing channel and drainage easement data, existing traffic counts, accident data, Bridge Inspection records, Project Management Information system (PMIS) data, identified endangered species, identified hazardous material sites, current unit bid price information, current special provisions, special specifications, and standard drawings.

2. Documents for existing and proposed development along proposed route from local municipalities and local ordinances related to project development.
3. Utility plans and documents from appropriate municipalities and agencies.
4. Flood plain information and studies from the Federal Emergency Management Agency (FEMA), the United States Army Corps of Engineers (USACE), local municipalities, and other governmental agencies.
5. Conduct field reconnaissance and collect data including a photographic record of notable existing features.

DESIGN CONFERENCE. The Engineer shall develop the roadway design criteria based on the controlling factors specified by the Authority (*i.e.* 4R, 3R, 2R, or special facilities), by use of the funding categories, design speed, functional classification, roadway class and any other set criteria as set forth in *PS&E Preparation Manual, Roadway Design Manual, Bridge Design Manual, Hydraulic Design Manual*, and other deemed necessary State approved manuals. In addition, the Engineer shall prepare the Design Summary Report (DSR) and submit it electronically. The GEC shall plan, attend, and document the Design Concept Conference (DCC) to be held prior to the 30 percent milestone submittal. In preparation for the DCC, the Engineer shall complete a State’s Design Summary Report for each submittal to serve as a checklist for the minimum required design considerations. The conference will provide for a brainstorming session in which decision makers, stakeholders and technical personnel may discuss and agree on:

- Roadway and drainage design parameters
- Engineering and environmental constraints
- Project development schedule
- Other issues as identified by the Authority
- Identify any Design Exceptions and Waivers
- Preliminary Construction Cost Estimate
- Brief discussion on Value Engineering items that can be utilized

ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS (EPIC) SHEETS. The GEC shall prepare the latest version of the EPIC sheets as per the Environmental Re-Evaluation findings.

Geotechnical Borings and Investigations: The Engineer shall determine the location of proposed soil borings for pavement design. The Authority will review and provide recommendations for a boring layout submitted by the Engineer showing the general location and depths of the proposed borings. Once the Engineer receives the Authority’s recommendations, they shall perform soil borings (field work), soil testing and prepare the soil borings in accordance with standard TxDOT geotechnical procedures. The Engineer shall prepare a geotechnical report to include soil boring locations, soil boring logs, lab test results, and pertinent analysis with regard to pavement design.

Geotechnical Investigations

The Engineer shall determine the location of proposed soil borings for pavement design in accordance with the latest edition of the TxDOT Geotechnical Manual.

1. The Engineer shall undertake the following drilling program:
 - Roadway Pavement Borings:
 - 7 Holes @ 10’ depth
 - Total 7 Borings
 - Total Linear Footage – 70 linear feet of borings

2. All geotechnical work should be performed in accordance with the latest version of the TxDOT Geotechnical Manual. All testing shall be performed in accordance with the latest version of the TxDOT Manual of Test Procedures and/or ASTM Procedures. All soil classification should be done in accordance with the Unified Soil Classification System.
3. The Engineer shall provide a signed, sealed and dated geotechnical report which contains, but is not limited to, soil boring locations, boring logs, laboratory test results, generalized subsurface conditions, ground water conditions, and any analyses for pavement design.
4. Pavement Design: The Engineer shall provide a signed and sealed pavement design report to reflect Flexible Pavement Structure options.

ROADWAY DESIGN AND FINAL ALIGNMENTS

ROADWAY DESIGN. The Engineer shall use Bentley's OpenRoads 3D Design technology in the design and preparation of the roadway plan sheets.

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

The plan view must contain the following design elements:

1. Calculated roadway centerlines for roadway and cross streets as applicable. Horizontal control points must be shown. The alignments must be calculated using OpenRoads horizontal geometry tools.
2. Pavement edges for all improvements
3. Lane and pavement width dimensions.
5. Proposed structure locations, lengths, and widths.
6. Direction of traffic flow on all roadways. Lane lines and arrows indicating the number of lanes must also be shown.
7. Drawing scale shall be 1"=100'
8. ROW lines and easements.
9. Begin and end superelevation transitions and cross slope changes.
10. Limits of riprap, 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 must contain the following design elements:

1. Calculated profile grade for proposed roadway and cross streets, if applicable. Vertical curve data, including "K" values must be shown. The profiles must be calculated using OpenRoads vertical geometry tools.
2. Existing and proposed profiles along the proposed centerline of the roadway.
3. Water surface elevations at major stream crossings for 25-, 50-, and 100-year storms.
4. Drawing vertical scale to be 1"=10'.

Typical Sections: The Engineer shall prepare typical sections for all proposed and existing roadways and structures. Typical sections must include width of travel lanes, shoulders, outer separations, border widths, curb offsets, managed lanes, and ROW. The typical section must also include Proposed Profile Grade Line (PGL), centerline, pavement design, longitudinal joints, side slopes, sodding or seeding limits, concrete traffic barriers and sidewalks, if required, station limits, common proposed and existing structures including retaining walls, existing pavement removal, riprap, limits of embankment and excavation, etc.

Cross Streets and Intersections. The Engineer shall provide an intersection layout detailing the pavement design and drainage design at the intersection of each cross street. The layout must include the horizontal and vertical alignments, curb returns, geometrics, transition length, stationing, pavement, drainage details, and American with Disabilities Act Accessibility Guidelines (ADAAG) compliance items. The Engineer shall design for full pavement width to the ROW and provide a transition to the existing roadway. The Engineer shall prepare layouts for the following intersections at FM 2520, FM 732, and FM 1577.

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 must be created from the 3D corridor model and must be delivered in the standard TxDOT format on 11"x17" sheets or roll plots and electronic files. The Engineer shall provide all templates and corridors used to generate the design cross sections. Cross sections and quantities must include existing pavement removals. Annotation shall include at a minimum existing and proposed ROW, side slopes (front & back), profiles, etc.

The Engineer shall submit four (4) hard copies and one (1) electronic .pdf copy of sets of drawings at the 30%, 60%, and 90%, and final submittals, respectively. The Engineer shall also submit the current OpenRoads generated 3D corridor model for each submittal.

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, OpenRoads 3D corridor models and cross-sections with the Authority. The profile and cross sections must depict the 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 Authority to determine the most feasible proposed roadway profile. The Authority will approve the proposed profiles, 3D corridor models, 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 roadway and cross streets at intersections. The roadway plans must consist of the types and be organized in the sequence as described in the *PS&E Preparation manual*.

Pavement Design. The Engineer shall incorporate the pavement design as approved by the Authority.

Pedestrian and Bicycle Facilities. The Engineer shall coordinate with the Authority to incorporate pedestrian and bicycle facilities as required or shown on the project's schematic. All pedestrian and 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.

Driveways. The Engineer shall prepare driveway details and a tabular format for each driveway along the project corridor. Unique driveways will require individual details defining their construction. If driveway grades extend past ROW Construction license agreements will be required.

HYDROLOGICAL STUDIES AND DRAINAGE DESIGN

Data Collection. The Engineer shall provide the following data collection services:

1. Conduct field inspections to observe current conditions and the outfall channels, the cross-drainage structures, drainage easements, the tributary channel, and land development projects that contribute flow to the tributary. Document field inspections with digital photos.
2. Collect available applicable data including GIS data and maps, site survey data, construction plans, previous reports and studies, and readily available rainfall history for the area. Particular sources of data collected must include, but are not limited to, the Authority, County, and Federal Emergency Management Agency (FEMA).
3. Collect available Flood Insurance Rate Maps (FIRMs), Flood Insurance Study (FIS) study data, and models.
4. Review survey data and coordinate any additional surveying needs with the Authority.
5. Present existing drainage structures in a 3D corridor MicroStation model.
6. Meet with local government officials to obtain historical flood records. Interview local residents or local government employees to obtain additional high-water information if available. Obtain frequency of road closure and any additional high-water information from the District Maintenance office.
7. Submit a letter report to the Authority Project Manager detailing completion of data collection.

HYDROLOGICAL STUDIES. The Engineer shall provide the following services:

1. Incorporate in the hydrologic study a thorough evaluation of the methodology available, comparison of the results of two or more methods, and calibration of results against measured data, if available.
2. Calculate discharges using appropriate hydrologic methods and as approved by the Authority.
3. Consider the pre-construction and post-construction conditions in the hydrologic study.
4. Obtain the drainage area boundaries and hydrologic parameters such as impervious covered areas, and overland flow paths and slopes from appropriate sources including, but are not limited to, topographic maps, GIS modeling, construction plans, and existing hydrologic studies. The Engineer shall not use existing hydrologic studies without assessing their validity. If necessary, obtain additional information such as local rainfall from official sites such as airports.
5. Include, at a minimum, the "design" frequency to be specified in the Work Authorization and the 1% Annual Exceedance Probability (AEP) storm frequency. The report must include the full range of frequencies (50%, 20%, 10%, 4%, 2%, 1%, and 0.2% AEP).
6. Compare calculated discharges to the effective FEMA flows. If calculated discharges are to be used in the model instead of the effective FEMA flows, full justification must be documented.

Complex Hydraulic Design and Documentation. The Engineer shall provide the following services:

1. Gather information regarding existing drainage facilities and features from existing plans and other available studies or sources.
2. Perform hydraulic design and analysis using appropriate hydraulic methods, which may include computer models such as HEC-RAS, unsteady HEC-RAS or 2D models such as SWMM. 2D models shall not be developed without the express permission of the Authority. Data entry for appropriate hydraulic computer programs shall consist of a combination of both on-the-ground

survey and other appropriate sources including but not limited to topographic maps, GIS modeling, and construction plans and existing hydrologic studies.

3. Use the current effective FEMA models, where appropriate, as a base model for the analysis. If a “best available data” model is provided by the local floodplain administrator, it must be utilized accordingly for this analysis. Review the provided base model for correctness and updated as needed. If the provided effective model is not in a HEC-RAS format, convert it to HEC-RAS for this analysis.
4. If the appropriate hydrologic model requires storage discharge relationships, develop HEC-RAS models or other Authority’s approved models that will compute these storage discharge relationships along the channel.
5. Consider pre-construction, present and post-construction conditions, as well as future widening, as determined in the Work Authorization.
6. Quantify impacts, beneficial or adverse, in terms of increases in peak flow rates and water surface elevations for the above listed hydraulic conditions and hydrologic events. Impacts will be determined both upstream and downstream of the bridge crossings.
7. If required in the individual Work Authorization, compute right of way corridor 1% AEP flood plain volumes for existing and proposed roadway elevations. The Engineer shall provide mitigation to offset a decrease of 1% AEP flood plain volumes.
8. Use hydrograph calculations and peak flows to determine the storage required.
9. If necessary, present mitigation measures along with the advantages and disadvantages of each. Each method must consider the effects on the entire area. Include approximate construction costs in the report.
10. Provide hand calculations which quantify the cut and fill within the 1% AEP flood plain, if any.

Cross-Drainage Structures. The Engineer shall provide the following services:

1. Determine drainage areas and flows for cross culvert drainage systems.
2. Determine the sizing of the drainage crossings. The scope may include extending, adjusting, or replacing non-bridge-class culvert crossing or crossings as specified in the Work Authorization. Develop designs that minimize the interference with the passage of traffic or cause damage to the highway and local property in accordance with the State’s Hydraulic Design Manual, District criteria and any specific guidance provided by the Authority. Cross drainage design shall be performed using HY-8 or HEC RAS.

OPERATIONAL DESIGN

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

- Prepare sign detail sheets for guide signs showing dimensions, lettering, shields, borders, corner radii, etc., and shall provide a summary of small signs to be removed, relocated, or replaced.
- Designate the shields to be attached to guide signs.
- Illustrate and number the proposed signs on plan sheets.
- Select each sign foundation from State Standards.
- Show existing signs to remain, to be removed or to be relocated on the Signing and Pavement Marking Layouts.
- Perform signing quantity calculations. Prepare summary sheets for signing.

Pavement Marking. The Engineer shall detail both permanent and temporary pavement markings and channelization devices on plan sheets. The Engineer shall coordinate with the Authority (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.

- Roadway layout.
- Center line with station numbering.
- Culverts and other structures that present a hazard to traffic.
- Location of utilities.
- Existing signs to remain, to be removed, to be relocated or replaced.
- Proposed signs (illustrated, numbered and size).
- Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation.
- Quantities of existing pavement markings to be added and removed. Prepare summary sheets.
- Proposed delineators, object markers, and mailboxes.
- The number of lanes in each section of proposed highway and the location of changes in numbers of lanes.
- Right-of-way limits.
- Direction of traffic flow on all roadways.

TRAFFIC CONTROL PLAN

The Engineer shall prepare Traffic Control Plans (TCP) including TCP typical sections, for the project. The Engineer shall complete Form 2229-Significant Project Procedures along with Page 4 of Form 1002, specifically titled Accelerated Construction Procedures. A detailed TCP must be developed in accordance with the latest edition of the TMUTCD. The Engineer shall implement the current Barricade and Construction (BC) standards and TCP standards as applicable. The Engineer shall interface and coordinate phases of work, including the TCP, with adjacent Engineers. The Engineer shall maintain a minimum of one lane of traffic in each direction for the duration of the project. Temporary daily lane closures will be permitted. The Engineer shall:

1. 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, flag person, 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 shoring is required, prepare layouts, and show the limits on the applicable TCP.
2. Coordinate with the Authority 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 Authority 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 Authority in the event existing access must be eliminated and must receive approval from the Authority 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 Authority. The TCP must include interim signing for every phase of construction. Interim signing must 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 Authority.
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 Authority 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 drain, 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. Identify and delineate any outstanding ROW parcels.
11. Delineate areas of wetlands on traffic control plans.
12. Design the TCP phasing by creating a phased 3D corridor model.

DESIGN REVIEW

The Engineer shall provide peer review at all levels. For each deliverable, the Engineer shall have some evidence of their internal review and mark-up of that deliverable as preparation for submittal. A milestone submittal is not considered complete unless the required milestone documents and associated internal red-line mark-ups are submitted. The Authority's Project Manager may require the Engineer to submit the Engineer's internal mark-up (redlines) or comments developed as part the Engineer's quality control step. When internal mark-ups are requested by the Authority in advance, the Authority, at its sole discretion, may reject the actual deliverable should the Engineer fail to provide the evidence of quality control. The Engineer shall clearly label each document submitted for quality assurance as an internal mark-up document.

COST ESTIMATE

The Engineer shall independently develop and report quantities necessary to construct the contract in standard Authority bid format at the specified milestones and Final PS&E submittals. The Engineer shall prepare each construction cost estimates using Excel or any approved method. The estimate shall be provided at each milestone submittal or in TXDOTCONNECT format at the 60%, 90% and Final PS&E submittals per Authority's requirement.

BID PACKAGE

General Notes: The Engineer will review and edit the Pharr Master General Notes and Specification Data List to supplement the standard specifications, special specifications, special provisions, and/or plan sheet notes. The notes shall be in the current Word format.

Contract time determination. The Engineer shall prepare a detailed contract time estimate to determine the approximate time required for construction of the project in calendar and working days (based on the State standard definitions of calendar and working days) at the 90% and Final PS&E milestone. The schedule must include tasks, subtasks, critical dates, milestones, deliverables, and review requirements in a format which depicts the interdependence of the various items and adjacent construction packages. The Engineer shall provide assistance to the Authority in interpreting the schedule.

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.

The Engineer will prepare any miscellaneous details for construction / design clarification. e Engineer will provide the contract proposal/upfront bidding documents

CONSTRUCTION PHASE SERVICES/LETTING

The Engineer shall assist the Authority with the following:

- Pre-bid RFI's
- Pre-bid Conference
- Bid Opening
- Bid Tabulation & Review

LGPP CHECKLIST FOR PRELIMINARY ENGINEERING

The GEC will be responsible for submitting the Local Government Project Procedures Development Checklist for Advance Project Delivery at each set milestone.

SUBSURFACE UTILITY ENGINEERING (SUE)

1. **Utility Engineering Investigation (currently a Level D being performed under APD work order)** including utility investigations subsurface and above ground prepared in accordance with ASCE standard 38-22 defining Utility Quality Levels as follows:
 - a) **Utility Quality Levels** are defined in cumulative order (least to greatest) as follows:
 - 1) Quality Level D - Existing Records: Utilities are plotted from review of available existing records.
 - 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 then a new schematic or plan layout, if needed, is required showing the limits of the proposed project and limits of the work area required for this 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 down existing intersecting roadways.

- 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 then a new schematic or plan layout, if needed, is required showing the limits of the proposed project and limits of the work area required for this 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 down existing intersecting roadways.
 - 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.
- b) Designate (Quality Level B). Designate means to indicate the horizontal location of underground utilities by the application and interpretation of appropriate non-destructive surface geophysical techniques and reference to established survey control. Designate (Quality Level B) Services are inclusive of Quality levels C and D.
- 1) The Engineer shall:
 - (a) As requested by the State/Authority compile "As Built" information from plans, plats and other location data as provided by the utility owners.
 - (b) Coordinate with utility owner when utility owner's policy is to designate their own facilities at no cost for preliminary survey purposes. The Engineer will examine utility owner's work to ensure accuracy and completeness.
 - (c) 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/Authority. A non-water base paint, utilizing the APWA color code scheme, must be used on all surface markings of underground utilities.
 - (d) 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, if applicable will be prepared and delivered to the State/Authority. It is understood by both the Engineer and the State/Authority 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/Authority. This information will be provided in the latest version of Microstation or Geopak used by the State/Authority. The electronic file will be delivered on C.D., as required by the State's District Office. A hard copy is required and must be signed, sealed, and dated by the Engineer. When requested by the State's District Office, the designated utility information must be overlaid on the State/Authority's design plans.
 - (e) Determine and inform the State/Authority of the approximate utility depths at critical locations as determined by the State/Authority. This depth indication is understood by both the Engineer and the State/Authority to be approximate only and is not intended to be used preparing the right of way and construction plans.
 - (f) When requested, provide a monthly summary of work completed and in process with adequate detail to verify compliance with agreed work schedule.
 - (g) close-out permits as required.

- (h) Clearly identify all utilities that were discovered from quality levels C and D investigation but cannot be depicted in quality level B standards. These utilities must have a unique line style and symbology in the designated (Quality Level B) deliverable.
 - (i) Comply with all applicable State policy and procedural manuals.
- c) 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.
 - 1) The Engineer shall:
 - (a) Review requested test hole locations and advise the State/Authority in the development of an appropriate locate (test hole) work plan relative to the existing utility infrastructure and proposed highway design elements.
 - (b) Coordinate with utility owner inspectors as may be required by law or utility owner policy.
 - (c) 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.
 - (d) Measure and record the following data on an appropriately formatted test hole data sheet that has been sealed and dated by the Engineer:
 - (1) Elevation of top and/or bottom of utility tied to the datum of the furnished plan.
 - (2) Identify a minimum of two benchmarks utilized. Elevations shall be within an accuracy of 15mm (.591 inches) of utilized benchmarks.
 - (3) Elevation of existing grade over utility at test hole location.
 - (4) Horizontal location referenced to project coordinate datum.
 - (5) Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems.
 - (6) Utility facility material(s).
 - (7) Utility facility condition.
 - (8) Pavement thickness and type.
 - (9) Coating/Wrapping information and condition.
 - (10) Unusual circumstances or field conditions.
 - (a) 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.
 - (b) 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 will 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.
 - (c) 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.
 - (d) Furnish and install a permanent above ground marker (as specified by the State's District Office), directly above the center line of the utility facility.

- (e) 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/Authority.
- (f) Plot utility location position information to scale and provide a comprehensive utility plan sign and sealed by the responsible Engineer. This information will be provided in the latest version of MicroStation or GeoPak format used by the State/Authority. The electronic file will be delivered on C.D. When requested by the State/Authority, the Locate information must be overlaid on the State/Authority's design plans.
- (g) Return plans, profiles, and test hole data sheets to the State/Authority. If requested, conduct a review of the findings with the State/Authority.
- (e) Close-out permits as required.

PROJECT MANAGEMENT

- A. The Engineer will continue to coordinate with AUTHORITY staff, local municipal agencies, and utility companies.
- B. The Engineer will develop geometric and design criteria to establish uniform practices to be followed. Assemble existing TxDOT standard plans and prepare supplemental details for use as standard or guide plans for pavement, drainage, structures, traffic interchange facilities, traffic control, and other necessary appurtenances, all subject to the approval of the Authority.
- C. The Engineer will provide the Authority with monthly reports of progress and a summary of key decisions that have been made or need to be made.
- D. The Engineer will recommend approved designs, plans, and specifications and deliver to the Authority for bid advertisement. Assist the Authority in the process of bidding and award of construction contracts. Prepare final estimates of construction costs prior to the opening of construction bids.
- E. Professional engineers' seals shall conform to the guidelines and regulations adopted by the Texas Board of Professional Engineers.

PS&E Deliverables:

The Engineer shall provide the following information at each submittal:

- 1. **60% Plans Submittal:**
 - Plan sheets in .pdf format for the Authority's review. The sheets shall include the following:
 - Title Sheet
 - Index Sheet (including Corresponding Standard Details Sheets)
 - Existing and Proposed Typical Sections Sheets
 - Plan & Profile Sheets
 - Alignment Data Sheets
 - Hydrologic Drainage Area Maps
 - Corresponding Quantity Summary Sheets
 - Applicable General Notes
 - Hydrologic Computation Sheets
 - Hydraulic Data Sheets
 - Drainage Area Maps
 - Drainage Plan & Profile

- Drainage Structure Details
 - Storm Sewer Details If applicable
 - Storm Water Pollution Prevention Plan
 - EPIC Sheet (Data To be Provided by TxDOT)
 - Corresponding Quantity Summary Sheets
 - Corresponding Standard Details Sheets
 - Applicable General Notes
 - Preliminary Estimate of Construction Cost.
 - Engineer's internal QA and QC marked up set.
 - Two (2) sets of 11" x 17" Cross Section Sheets.
- 2. Review Submittal (90%):**
- Plan sheets in .pdf format for the Authority's Review. In addition to updated sheets from previous submittals also include:
 - Signing and Pavement Marking Sheets
 - Corresponding Quantity Summary Sheets
 - Corresponding Standard Details Sheets
 - Applicable General Notes
 - Preliminary Estimate of Construction Cost.
 - Engineer's internal QA and QC marked up set.
 - Revised Supporting Documents from 60% Plans Submittal.
 - Two (2) sets of 11" x 17" Cross Section Sheets.
 - Estimate
 - Specification List
 - List of governing Specifications and Special Provisions in addition to those required.
 - Triple Zero Special Provisions.
 - Construction Contract Time Schedule Estimate.
- 3. Final submittal (100%):**
- One (1) paper set and PDF copy of 11" x 17" plan sheets.
 - One (1) paper set and PDF copy of 11" x 17" final cross section sheets and associated cross section information for Contractor's use.
 - Revised Supporting Documents from 90% Review Submittal.
 - Three (3) originals signed and sealed, of each of the Utility, ROW Encroachment, ROW Acquisition, ROW Relocation Certifications.
 - LGPP Checklist
- 4. Electronic Copies:** The Engineer shall furnish the Authority of the final plans in the format of the current CADD system used by the Authority, .pdf format, and in the Authority's File Management System (FMS) format.
- Each CD/DVD shall be labeled and include the following:
 - CSJ
 - County
 - Highway
 - Date of the CD Burn
 - INTERIM (in 1" letters) Note: As-built shall specify FINAL.
 - Volume sequence (i.e. Disk 1 of 3)
 - The Engineer shall also provide separate CD or DVD containing cross section information (in dgn, XLR, & ASCII formats) for the Authority contractor to use.

5. **Calculations:** The Engineer shall provide the following:
- A 3-ring binder with all quantity and non-structural design calculations.
 - 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 if applicable.
 - The Engineer may provide the calculations in .pdf format in lieu of the bound hard copies. The .pdf file should be submitted on a CD, DVD, or in ProjectWise (if applicable).

EXHIBIT C-3 - WORK SCHEDULE

ID	Task Name	Duration	Start	Finish	Predecessors
1	Whipple Road Schematic and Environmental NOTICE TO PROCEED	825 days	Mon 6/3/20	Fri 9/28/23	
2	Phase I Planning, EA, Public Involvement, Schematic - Status	0 days	Mon 5/16/22	Mon 5/16/22	
3	Project Planning (Roadway)	825 days	Mon 6/3/20	Fri 9/29/23	
4	TxDOT Provides Executed PE AFA	5 days	Mon 6/14/22	Fri 6/20/22	
5	CRMA Executes AFA	5 days	Mon 5/16/22	Fri 5/20/22	
6	Public Involvement (Roadway)	80 days	Mon 6/14/22	Fri 8/6/22	
7	Develop Alternatives & Matrix	80 days	Mon 5/16/22	Fri 8/5/22	
8	Advertise & Conduct Public Meeting	20 days	Mon 5/16/22	Fri 6/10/22	8FS-60 days
9	Select TPA	40 days	Mon 6/13/22	Fri 8/5/22	8FS-40 days
10	Schematic (Roadway)	200 days	Mon 6/16/22	Fri 2/17/23	
11	1-Utilize Geopak and Microstation for all roadway design(Hours included in items below)	0 days	Mon 5/16/22	Mon 5/16/22	
12	2-Schematic Preparation	6 days	Mon 5/16/22	Mon 5/23/22	
13	a-Horiz. Alignments, Layouts	2 days	Mon 5/16/22	Tue 5/17/22	12
14	b-Vert. Alignments	2 days	Wed 5/18/22	Thu 5/19/22	14
15	c-Typical Sections	2 days	Fri 5/20/22	Mon 5/23/22	15
16	3-Design cross-sections at 500 ft intervals/earth work quantities/check slope selection including plotting	4 days	Tue 5/24/22	Fri 5/27/22	16
17	4a - 60 % Schematic Submittal	13 days	Mon 5/30/22	Wed 6/15/22	17
18	TxDOT Review	10 days	Thu 6/16/22	Wed 6/29/22	18
19	4b - 90 % Schematic Submittal	10 days	Tue 8/13/22	Mon 11/7/22	19
20	TxDOT Review	40 days	Tue 11/8/22	Mon 12/5/22	20
21	4c- 100% Schematic Submittal	20 days	Tue 12/6/22	Mon 12/19/22	21
22	TxDOT Review	14 days	Tue 12/20/22	Fri 1/6/23	22
23	TxDOT Schematic Approval (Roadway)	30 days	Mon 1/9/23	Fri 2/17/23	23
24	Environmental Document (Roadway)	805 days	Mon 6/3/20	Fri 9/1/23	
25	1-Project Scope for CE	20 days	Mon 5/16/22	Fri 6/10/22	2
26	TxDOT Review	10 days	Mon 6/3/20	Fri 8/14/20	
27	2-Archaeological	20 days	Mon 6/13/22	Fri 7/8/22	26
28	TxDOT Review	10 days	Mon 7/11/22	Fri 7/22/22	28
29	3-Historical	20 days	Mon 6/13/22	Fri 7/8/22	26
30	TxDOT Review	10 days	Mon 7/11/22	Fri 7/22/22	30
31	4-Water Resources Technical Report	122 days	Mon 6/13/22	Tue 11/29/22	28
32	TxDOT Review	20 days	Wed 11/30/22	Tue 12/27/22	32
33	5-Hazardous Materials Technical Report	122 days	Mon 6/13/22	Tue 11/29/22	28
34	TxDOT Review	10 days	Wed 11/30/22	Tue 12/13/22	34
35	6-Community Impact Technical Report	140 days	Mon 6/13/22	Fri 12/23/22	28
36	TxDOT Review	10 days	Mon 12/28/22	Fri 1/6/23	36
37	7-Biological Evaluation	140 days	Mon 6/13/22	Fri 12/23/22	28
38	TxDOT Review & USFW Review	10 days	Mon 12/28/22	Fri 1/6/23	36
39	8-Public Meeting	1 day	Mon 1/23/23	Mon 1/23/23	
40	9-Notice and Opportunity to Comment (NAOC)	10 days	Mon 1/9/23	Fri 1/20/23	39
41	10-Environmentally Cleared	155 days	Mon 2/27/23	Fri 9/28/23	
42	Work Authorization Complete	1 day	Fri 1/31/25	Fri 1/31/25	42

Project: Whipple
Date: Thu 5/2/24

Task Split Milestone Summary

Project Summary External Tasks External Milestone Inactive Milestone

Inactive Summary Manual Task Duration-only Manual Summary Rollup

Manual Summary Start-only Finish-only External Tasks

External Milestone Progress Deadline

PROJECT: Whipple Road
 CLIENT: CCRMA
 CONTRACT: General Engineering Consulting Contract
 CSJ: 0921-06-292
 COUNTY: Cameron
 RFP JOB NO.: U2716 SWA2 to WA31

EXHIBIT D-2 - FEE ESTIMATE

FUNCTION CODE	DESCRIPTION	FIRM	SERVICE	MAN-HOURS										ESTIMATED FEE	TOTALS		
				Technical Advisor	Project Manager	Env Planner III	Env Scientist III	Env Scientist II	Env Scientist I	Engineer (Senior)	Engineer (Project)	Engineer (Design)	Senior CADD			Engineer In Training I	Admin/Clerical
110	PRELIMINARY ENGINEERING																
	Schematic	RRP	BASIC														
	Update/Finalize Schematic			4													\$10,367.60
	Sub Total (110 - Schematic)			4													
150	FIELD SURVEYING AND PHOTOGRAMMETRY																
	Update Survey and Voids (Includes ROW and ROW Mapping for 7 Parcels)	RCOE	SPECIAL														
	Sub Total (150 - FIELD SURVEYING AND PHOTOGRAMMETRY)			0	0	0	0	0	0	0	0	0	0	0	0	0	\$129,233.98
	SOCIAL & ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT																
	General IC 130 Categories (IC31-134)(Inherently)																
	120.01 - Field Investigations	RRP	BASIC				40										\$7,424.00
	120.02.01 - Social and Economic Impacts	RRP	BASIC			4	36										\$6,200.00
	120.02.02 - Water Resources	RRP	BASIC			4	24										\$0.00
	120.02.02.01 - Surface Water	RRP	BASIC			4	24										\$3,672.96
	120.02.02.02 - Wetlands of the US, including Wetlands	RRP	BASIC			4	63										\$12,093.20
	120.02.03 - Biological Resources	RRP	BASIC			4	80										\$9,084.60
	120.02.04 - Hazardous Materials	RRP	BASIC			4	80										\$9,084.60
	120.03 - Resource Coordination	RRP	SPECIAL			0	0										\$7,000.00
	120.04.01 - Meetings with Affected Property Owners (MAFO)	RRP	BASIC			4	36										\$4,769.04
	120.04.02 - Notice and Opportunity to Comment	RRP	BASIC			4	36										\$4,769.04
	Sub Total (120 - SOCIAL & ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT)			0	0	24	410	0	0	0	0	0	0	0	0	0	\$45,000
	PLANS SPECIFICATIONS & ESTIMATE																
	PS&E																
	Design Conferences	RRP	BASIC	2													\$7,469.00
	Engineers, Issues and Comments (EIPIC)	RRP	BASIC	2													\$7,469.00
	Hydrological Studies (See Drainage Design below)	RRP	BASIC	2													\$7,469.00
	Roadway Design/Final Alignments	RRP	BASIC	32													\$112,237.62
	Gravel - Traffic Projections	RRP	SPECIAL														\$37,054.86
	Traffic - Traffic Projections	RRP	SPECIAL														\$19,441.96
	Utility Coordination	RRP	BASIC	2													\$40,248.00
	Drainage Design	RRP	BASIC	30													\$43,476.00
	Operational Design	RRP	BASIC	8													\$41,921.08
	Traffic Control Plan	RRP	BASIC	8													\$40,270.00
	Cost Review	RRP	BASIC	8													\$10,970.00
	Cost Estimate	RRP	BASIC	8													\$10,970.00
	Sub Total	RRP	BASIC	8													\$42,001.44
	Letting	RRP	BASIC	20													\$15,567.76
	LGPP Checklist for Design and Bid Documents	RRP	BASIC	20													\$15,567.76
	Sub Total (- PS&E)			36	168	0	0	0	0	0	0	0	0	0	0	0	\$629,902.23
145	GENERAL COORDINATION																
	Project Manager (Proj Coord) (RSM/K)	RRP	BASIC	54													\$14,637.24
	Progress Reports and Invoicing	RRP	BASIC	8													\$4,220.52
	Progress Meetings Monthly	RRP	BASIC	8													\$4,220.52
	Normal Meetings - Bi Weekly	RRP	BASIC	18													\$9,081.36
	Project Secretary/CLERICAL (2 hrs/week)	RRP	BASIC	0	68	0	0	0	0	0	0	0	0	0	0	0	\$3,156.04
	Sub Total			36	260	24	0	0	0	0	0	0	0	0	0	0	\$37,231.32
	LABOR TOTALS																
	Total Hours			36	260	24	410	0	0	0	0	0	0	0	0	0	\$872,235.16
	CONTRACT RATES: \$/MAN-HOUR:			\$ 305.25	\$ 271.06	\$ 82.80	\$ 70.70	\$ 244.00	\$ 151.40	\$ 132.06	\$ 107.45	\$ 83.03	\$ 73.26				
	BASE RATES: \$/MAN-HOUR			125.00	111.00	38.00	55.00	31.00	190.00	62.00	54.08	44.00	34.00				

PROJECT: Whipple Road
 CLIENT: CCRMA
 CONTRACT: General Engineering Consulting Contract
 CS.J: 0921-04-292
 COUNTY: Cameron
 RRP JOB NO.: U2716 SW02 to 1W031

EXHIBIT D-3 - FEE ESTIMATE

FUNCTION CODE	DESCRIPTION	PRM	SERVICE	Technical Advisor	Project Manager	Env Planner #	Env Scientist #	Env Scientist/Scientist #	Env Scientist #	Env Scientist #	MAN-HOURS					ESTIMATED FEE	TOTALS
											Engineer (Senior)	Engineer (Project)	Engineer (Design)	Senior CADD	Engineer in Training		
160	NOT LABOR	RRP (N)	SPECIAL (N)														
	In-Person Meeting (Engineering)	RRP (N)	SPECIAL (N)														
	Travel - Mileage	RRP (N)	SPECIAL (N)														
	Field Investigations (Engineering)	RRP (N)	SPECIAL (N)														
	Travel - Mileage	RRP (N)	SPECIAL (N)														
	In-Person Project Meeting (Environmental)	RRP (N)	SPECIAL (N)														
	Travel - Lodging	RRP (N)	SPECIAL (N)														
	Travel - Meals	RRP (N)	SPECIAL (N)														
	Travel - Rental Vehicle	RRP (N)	SPECIAL (N)														
	Agency Coordination In-Person Meeting	RRP (N)	SPECIAL (N)														
	Travel - Lodging	RRP (N)	SPECIAL (N)														
	Travel - Rental Vehicle	RRP (N)	SPECIAL (N)														
	Travel - Rental Vehicle	RRP (N)	SPECIAL (N)														
	Coordination Meeting by Agency	RRP (N)	SPECIAL (N)														
	Harvesting Materials (copies, paper, printing, for public hearing and pop-up events)	RRP (N)	SPECIAL (N)														
	Miscellaneous Mileage	RRP (N)	SPECIAL (N)														
	Equipment for Field Investigations (stakes, pin flags, flagging, etc.)	RRP (N)	SPECIAL (N)														
	Media Storage Devices (CD, flash drive, etc.)	RRP (N)	SPECIAL (N)														
	Sub Total (F.C. 149)																
	PROJECT TOTAL																
																	\$19,892.00
																	\$892,217.96



EXHIBIT D-2
Geotechnical Field and Laboratory Services
Whipple Rd. Project
Prepared for RRP Consulting Engineers

	SERVICES	UNITS	UNITS	UNIT COST	TOTAL COST
I.	Project Management / Review				
	A. Project Engineer (Staff) - Op. Oversight	Hours		\$ 139.60	\$ -
II.	Utility Clearances / Boring Locates				
	A. Technician (Locate Borings)(Util Clr)	Hours		\$ 93.07	\$ -
	B. Mileage	Mile	120	\$ 0.54	\$ 64.80
III.	Field Exploration				
A	Mobilization/Demobilization (Drill Rig)	Mile	120	\$ 5.00	\$ 600.00
B	Field Exploration				
	1. Soil Boring/Rock Coring w SPT	LF	70	\$ 32.00	\$ 2,240.00
	2. Backfilling Boreholes Bentonite Plug	LF	70	\$ 10.00	\$ 700.00
	3. Supp. Vehicle-Trailer, Tools Water Supply	Mile	120	\$ 0.54	\$ 64.80
	4. Vehicle Charge	Mile	120	\$ 0.54	\$ 64.80
	5. Traffic Control Services (Med Project)	Day	1	\$ 2,500.00	\$ 2,500.00
C	Miscellaneous Field Services				
IV.	Engineering Data Analysis / Report				
	1. Eng Tech (Soil Classification)	Hours		\$ 93.07	\$ -
	2. Eng Tech (Logs & Summaries)	Hours		\$ 93.07	\$ -
	1. Moisture Content (Tex-103-E)	Ea.	35	\$ 14.00	\$ 490.00
	2a. Liquid Limit (Tex-104-E)	Ea.	21	\$ 40.00	\$ 840.00
	2b. Plastic Limit (Tex-105-E)	Ea.	21	\$ 40.00	\$ 840.00
	2c. Plasticity Index (Tex-106-E)	Ea.	21	\$ 50.00	\$ 1,050.00
	3. Sieve Analysis (w/ Hyd) (Tex-110-E)	Ea.		\$ 95.00	\$ -
	4. -200 Determination (Tex-111-E)	Ea.	21	\$ 40.00	\$ 840.00
	5. Soils Sulfate Content (Tex-145-E)	Ea.	7	\$ 90.00	\$ 630.00
	6. Lime Series Testing (Tex-121-E - Part 3)	Ea.	3	\$ 450.00	\$ 1,350.00
Project Sub-Total (Geo Field and Lab)					\$ 12,274.40

EXHIBIT D-2
COST PROPOSAL



DESCRIPTION	Project Manager	Quality Manager	Senior Engineer	Project Engineer IV	Project Engineer II	Document Controller	Total Labor Hrs.	Remarks	Task Cost
Task 0. Project Management/Coordination	4		4				8		\$ 1,876.20
Task 1. Review of Existing Information	2		4	4			10		\$ 1,888.90
Task 2. Estimate Future Developments	2		4	12	24		42		\$ 5,606.10
Task 3. Develop Traffic Projections	2		6	8	16		32		\$ 4,627.06
Task 4. Documentation (+TPP Coordination)	5	4	4	6	8	8	35		\$ 5,443.73
Subtotal	15	4	22	30	48	8	127		\$ 19,441.99
HOURS TOTAL	15	4	22	30	48	8	127		
LABOR RATE PER HOUR	\$ 252.69	\$ 249.97	\$ 216.36	\$ 129.52	\$ 111.71	\$ 80.52			
TOTAL DIRECT LABOR COST	\$ 4,043.04	\$ 998.88	\$ 2,192.64	\$ 3,885.60	\$ 5,808.92	\$ 644.16	\$ 20,574.24		
% LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON FEE)	19.65%	4.86%	25.24%	18.89%	28.23%	3.13%	100.00%	CHECK	
% LABOR UTILIZATION FOR TOTAL PROJECT (BASED ON MANHOURS)	11.94%	2.99%	17.91%	22.39%	38.81%	5.97%	100.00%	\$ 20,574.24	
TOTAL DIRECT LABOR COST									\$ 19,441.99
TOTAL DIRECT EXPENSES*									\$ -
GRAND TOTAL									\$ 19,441.99

*Direct expenses will be charged based on actual costs.

EXHIBIT D-2
COST PROPOSAL

SUB PROVIDER NAME: RODS SURVEYING, INC.
WHIPPLE ROAD FROM FM 1675 (OLD ALICE ROAD)
TO FM 1847 (ARROYO BLVD)

TASK	TASK/DESCRIPTION	LABOR					UNIT COST					
		RPLS Project Manager	Senior CADD Operator	CADD Operator	Abstractor	Admin/Clerical	1-MAN SURVEY CREW	2-MAN SURVEY CREW	3-MAN SURVEY CREW	4-MAN SURVEY CREW	Task Labor Hours	Task Labor Budget
	UNLOADED LABOR BILLING RATE	\$180.53	\$115.00	\$100.00	\$65.29	\$65.00	\$105.00	\$160.00	\$190.00	\$210.00		
TOPOGRAPHIC SURVEY AND RIGHT-OF-WAY MAPPING												
1	Establish and verify Horizontal and Vertical Survey Control. Perform digital leveling between control points as necessary. Prepare Horizontal and Vertical Survey Control Index. Sheets including control sketches and 8.5"x11" survey control data sheet, all signed by a Texas RPLS.	16	12	40				10	70		148	\$ 23,168.48
2	Establish existing right-of-way, secure vesting documents for abutting property owners and easements of record along the corridor. Secure Right-of-Entry. Prepare (6) corner clips parcel plats and M&B for acquisition.	6	60	130	80	40			60		376	\$ 41,806.38
3	Perform topographic surveys. Collect drainage features with invert data, cross-sections, signs, visible utilities not shown in the topographic file provided. Update as needed.	4	50	120				16	120		310	\$ 43,832.12
	Subtotal Hours	26	122	290	80	40	0	26	260	0	834	\$ 108,806.98
	Subtotal Labor Cost	\$ 4,693.78	\$ 14,030.00	\$ 29,000.00	\$ 6,823.20	\$ 2,600.00	\$ -	\$ 4,190.00	\$ 47,500.00	\$ -	\$ -	\$ 108,806.98
											GRAND TOTAL	\$ 129,233.98

Reimbursable Direct Expenses	Rate	Unit	Amount	Total
Mileage	\$ 0.670	mile	2,000	\$ 1,340.00
Lodging/Hotel - Taxes and Fees	\$ 45.00	day/person	67	\$ 3,015.00
Meals (Excluding alcohol & tips) (Overnight stay required)	\$ 108.00	day/person	67	\$ 7,236.00
Map Records	\$ 59.00	day/person	67	\$ 3,953.00
Deed Copies	\$ 4.00	sheet	20	\$ 80.00
Certified Letter Return Receipt (Type II ROW Measurement - Poured 2-3 Feet (includes equipment, materials, & meals).	\$ 3.00	sheet	180	\$ 540.00
Marker supplied by TxDOT	\$ 9.00	each	7	\$ 63.00
TOTAL REIMBURSABLE DIRECT EXPENSES	\$ 300.00	each	14	\$ 4,200.00
				\$ 20,427.00

**EXHIBIT D-2
COST PROPOSAL**

Sub Provider: RODS Subsurface Utility Engineering, Inc.
Specified Rate Fee Payment Basis

October 25, 2024

Salary Classification			Contract Rate	Hours/Quantity	Total
Project Manager			\$199.84	14	\$2,797.76
Engineer			\$96.82	20	\$1,936.40
Engineer-In-Training			\$85.00	0	\$0.00
Senior CADD Operator			\$102.48	0	\$0.00
CADD Operator			\$93.70	0	\$0.00
Admin/Clerical			\$65.00	24	\$1,560.00
Senior Engineer			\$178.61	28	\$5,001.08
SUBTOTAL FOR LABOR				86	\$11,295.24
	Vacuum Excavation Vehicles (Mobilization)	mi	\$4.00	986	\$3,944.00
	Pavment Coring	each	\$250.00	10	\$2,500.00
SUE Quality Level C & D (Includes labor and equipment for records research, CADD and mapping.)		LF	\$0.70	42,100	\$29,470.00
SUE Quality Level B - Utility Designation (Includes labor and equipment for records research, designating, engineering, surveying, CADD mapping and limited traffic control.)		LF	\$1.45	43,800	\$63,510.00
SUE Field Services					
One (1) Designating Person with equipment		Hour	\$105.00	36	\$3,780.00
Two (2) Designating People with equipment		Hour	\$175.00	36	\$6,300.00
SUE Quality Level A Testholes (Per testhole depth)					
	Level A: 0 to 4.99 ft.	Each	\$965.00	6	\$5,790.00
	Level A: > 5 to 7.99 ft.	Each	\$1,330.00	6	\$7,980.00
	Level A: > 8 to 12.99 ft.	Each	\$1,600.00	6	\$9,600.00
	Level A: > 13 to 19.99 ft.	Each	\$2,100.00	2	\$4,200.00
	Level A: > 20 ft.	VF	\$155.00	1	\$155.00
SUBTOTAL FOR UNIT COST					\$137,229.00

SUMMARY		
SUBTOTAL FOR LABOR	(see attached)	\$11,295.24
SUBTOTAL FOR UNIT COST	(see above)	\$137,229.00
SUBTOTAL FOR DIRECT EXPENSES	(see attached)	\$23,714.08
TOTAL		\$172,238.32

**EXHIBIT D-2
COST PROPOSAL**

LABOR BUDGET BY TASK

\$199.84 \$96.82 \$85.00 \$102.48 \$93.70 \$65.00 \$178.61

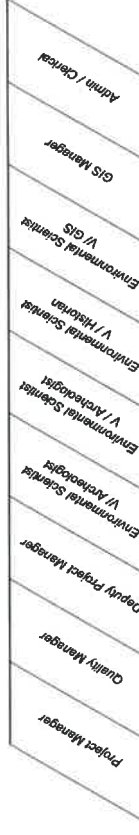
RODS Subsurface Utility Engineering, Inc. (SUB PROVIDER)		Project Manager	Engineer	Engineer-In-Training	Senior CADD Operator	CADD Operator	Admin/Clerical	Senior Engineer	TOTAL
1.0	PROJECT MANAGEMENT (FC 145)								
A	Progress Meetings - Prep, Attendance, Doc.	14	20					20	\$8,306
B	Invoicing						24	8	\$2,989
SUBTOTAL FOR LABOR		14	20	0	0	0	24	28	\$11,295

**EXHIBIT D-2
COST PROPOSAL**

RODS Subsurface Utility Engineering, Inc. Service to Be Provided	Unit	Fixed Cost	Maximum Cost	Quantity	Total
Travel					
QLB SUE Crew					
Lodging/Hotel (Taxes / fees not included)	day/person		\$ 102.00	24	\$ 2,448.00
Lodging/Hotel - Taxes and fees	day/person		\$ 35.00	24	\$ 840.00
Meals (Excluding alcohol & tips) (Overnight stay required)	day/person		\$ 56.00	24	\$ 1,344.00
Mileage	mile		\$ 0.540	1,066	\$ 575.64
QLA SUE Crew					
Lodging/Hotel (Taxes / fees not included)	day/person		\$ 102.00	18	\$ 1,836.00
Lodging/Hotel - Taxes and fees	day/person		\$ 35.00	18	\$ 630.00
Meals (Excluding alcohol & tips) (Overnight stay required)	day/person		\$ 56.00	18	\$ 1,008.00
Mileage	mile		\$ 0.540	986	\$ 532.44
Miscellaneous					
Car Rental	day		\$ 30.00		\$ -
Traffic Control Services, Arrow Boards and Attenuator trucks - Large Project (Includes labor, equipment and fuel)	day		\$ 3,000.00		\$ -
Traffic Control Services, Arrow Boards and Attenuator trucks - Medium Project (Includes labor, equipment and fuel)	day		\$ 2,500.00	5	\$ 12,500.00
Traffic Control Services, Arrow Boards and Attenuator trucks - Small Project (Includes labor, equipment and fuel)	day		\$ 1,375.00		\$ -
Attenuator trucks - (lane/Shoulder Closure) (Includes labor, equipment and fuel)	day		\$ 400.00	5	\$ 2,000.00
Attenuator trucks - (No Lane Closure) (Includes labor, equipment and fuel)	day		\$ 250.00		\$ -
SUBTOTAL FOR DIRECT EXPENSES					\$ 23,714.08

Exhibit D-2 Cost Proposal

FEE ESTIMATE - Whipple Road



Project Summary		Hours	Labour	Total
Fixed Fee		0.00	\$0.00	\$0.00
Time & Material		60.00	\$7,092.98	\$7,092.98
Total		60.00	\$7,092.98	\$7,092.98

WBS Code	Task Name	Units	Rate	Hours	Labour	Total
1	Project Management	2.00		6.00	\$63.26	\$63.26
2	Archaeological Services					
2.1	Archaeological Background Study	1.00	2.00	30.00	\$3,601.44	\$3,601.44
3	Historical Built Environment Services					
3.1	PCR	2.00	4.00	22.00	\$2,698.28	\$2,698.28