

WEBB COUNTY SUPPLEMENTAL #2 TO WORK AUTHORIZATION #3
MAGANA HEIN ROADWAY PROJECT

This Supplemental Work Authorization #2 is granted pursuant to Work Authorization #3 entered into between Webb County, a Political Subdivision of the State of Texas, and GDJ Engineering, LLC. This Supplemental Work Authorization #2 to Work Authorization #3 is approved by the Webb County Commissioner's Court on November ____, 2023 for the Webb County Magana Hein Roadway Project.

Know therefore, both Parties agree to amend the original Work Authorization (Work Authorization #3, executed July 18, 2023) with this Supplemental Work Authorization #2 as follows:

1.) EXHIBITS INCORPORATED

This Supplemental Work Authorization shall amend the project limits to include the segment of Mangana Hein from US 83 East to Loop 20 (Cuatro Vientos) and provide the scope, fee schedule and fee proposal.

Approved for the CLIENT

By: [Signature]

Title: WEBB COUNTY JUDGE

Date: 2/21/2024

Approved for the ENGINEER

By: [Signature]

Title: Executive Vice-President

Date: 11-27-23

Attachments:

- Exhibit A "Scope of Services By Owner"
- Exhibit B "Scope of Services By Engineer"
- Exhibit C "Project Schedule"
- Exhibit D "Fee Estimate"
- Project Location Map

ATTESTED:
Margie Ramirez Ibarra *all*
Margie Ramirez Ibarra
Webb County Clerk

BY: [Signature] DEPUTY
2024 FEB 21 PM 4: 26
WEBB COUNTY, TEXAS
MARGIE R IBARRA
COUNTY CLERK
FILED

EXHIBIT "A"
SCOPE OF SERVICES TO BE PROVIDED BY THE OWNER

The following provides an outline of the services to be provided by the **Owner** in the development of the PS&E for the necessary improvements for the Mangana Hein Road project, located within Webb County, hereinafter denoted as the **Project**.

GENERAL:

The **Owner** will provide to the **Engineer** the following:

- 1) Provide the authorization to proceed with services through coordination with the **Engineer**.
- 2) Payment for work performed by the **Engineer** and accepted by the **Owner** in accordance with the Agreement.
- 3) Assistance to the **Engineer**, as necessary, to obtain the required data and information from other local, regional, State and Federal agencies the **Engineer** cannot easily obtain.
- 4) Provide any available relevant data the **Owner** may have on file concerning the **Project** including existing engineering documents or survey data.
- 5) 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 the agreed upon work schedule prepared in accordance with Exhibit "C" attached to this Work Authorization.
- 6) Attend and participate in progress meetings as required and as coordinated and conducted by **Engineer**.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

PROJECT DESCRIPTION

The services designated herein as "Services provided by the ENGINEER" shall include the performance of all engineering services for the following described facility:

COUNTY/CITY: Webb County

CONTROL: _____

PROJECT/DESCRIPTION: Survey, Schematic, Environmental, Traffic
Geotechnical and PS&E

LENGTH: Approx. 1.3 miles

HIGHWAY: Mangana Hein Road

LIMITS: From US 83 to SH 20

PROJECT CLASSIFICATION

(Place an "X" in only one Project Classification)

- Surface Treatment
- Overlay
- Rehabilitation Existing Road (Scarify & Reshape)
- Convert Non-Freeway to Freeway
- Widen Freeway
- Widen Non-Freeway
- New Location Toll Freeway
- New Location Non-Freeway
- Interchange (New or Reconstruct)
- Bridge Widening or Rehabilitation
- Bridge Replacement
- Upgrade to Standards - Freeway
- Upgrade to Standards - Non-Freeway
- Miscellaneous Studies (Use Function Code 110 for All Tasks)

ENGINEER shall mean GDJ Engineering.

LPA shall mean Webb County.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

PRELIMINARY PROJECT DEVELOPMENT
(Function Code 102)

ADVANCED PLANNING MPO COORDINATION:

The ENGINEER will perform any needed preliminary/ongoing project planning which will include:

1. Meetings, Coordination & Support for Project Development
 - a. The Engineer will coordinate with the LPAs representatives at the MPO Technical Advisory Committee (TAC) and Policy Committee and serve in an advisory position to assist the LPA in obtaining funding for projects. The Engineer shall serve as representative for the LPA in coordination items. The Engineer shall coordinate with the LPA's staff on all Project related items.

2. Evaluate the LPAs Projects on Regional Planning Documents.
 - a. The Engineer will work with the LPA and the MPO to evaluate the status of the LPAs projects in the regional planning documents.
 - b. The Engineer will review the local Transportation Improvement Program (TIP) to ensure there are no delays to the letting of projects in an advanced state of project development. This includes coordination with project engineers to ensure estimates and schedules are accurate.
 - c. The Engineer will review the Unified Transportation Program (UTP) to ensure the LPAs Projects are properly listed on the TxDOT UTP to ensure there are no delays to project development.
 - d. The Engineer will review the Metropolitan Transportation Plan (MTP) to ensure the LPAs long range goals are properly listed on the MTP to advance opportunities for additional funding.
 - e. The Engineer will review and assess potential opportunities to advance the construction of the LPAs projects.
 - f. The Engineer will coordinate with the LPA to develop project mitigation plans in the event that there is a decrease in available funding for projects.

3. Capital Improvements Program (CIP) Development
 - a. The Engineer will assist the LPA with the Development of the CIP as it relates to available opportunities to leverage funding from the MPO.

4. Audit and Periodically Update Regional Planning Documents
 - a. The Engineer will review the local Transportation Improvement Program (TIP) to ensure there are no delays to the letting of projects in an advanced state of project development. This includes coordination with project engineers to ensure estimates and schedules are accurate.
 - b. The Engineer will review the Unified Transportation Program (UTP) to ensure the LPAs Projects are properly listed on the TxDOT UTP to ensure there are no delays to project development.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

- c. The Engineer will review the Metropolitan Transportation Plan (MTP) to ensure the LPAs long range goals are properly listed on the MTP to advance opportunities for additional funding.
 - d. The Engineer will review and assess potential opportunities to advance the construction of the LPAs projects.
 - e. The Engineer will coordinate with the LPA to develop project mitigation plans if there is a decrease in regional funding for projects.
- 5. Prepare Exhibits / Preliminary Estimates
 - a. The Engineer will assist the LPA with the preparation of preliminary project exhibits, maps, typical sections to allow for the development of preliminary project cost estimates for planning purposes.
 - 6. Draft Correspondence
 - a. The Engineer will assist the LPA with the preparation of draft correspondence to be used to advance the development of the LPAs priority projects.
 - 7. Develop Project Agreements
 - a. The Engineer will assist the LPA with the development of Interlocal Agreements and project agreements with TxDOT, for example Advanced Funding Agreements (AFA), to ensure the LPAs projects can be reviewed by TxDOT.
 - 8. State and Federal Grants
 - a. The Engineer will monitor opportunities for additional funding for the LPAs projects including non-conventional State and Federal funding that may become available.

PRELIMINARY PROJECT DEVELOPMENT:

The ENGINEER will perform any needed preliminary project development which will include:

- 1. Establish Preliminary Design Values
 - a. The Engineer will work with the LPA to establish basic design concepts, project controls and a general scope for the Project.
- 2. Prepare/Evaluate Preliminary Route Locations on Uncontrolled Mapping*
 - a. The Engineer will evaluate various alternatives (route locations, alignment shifts, geometry) for the Project.
- 3. Uncontrolled Mapping (w/Contours & GIS Data)
 - a. The Engineer will investigate the existing routes and coordinate with the LPA on establishing the best-fit alignments and mapping proposed geometry for Projects. A Preliminary Location Exhibit will be developed.
- 4. Prepare Preliminary Hydrologic Map
 - a. The Engineer will develop a Hydrologic Map for the Projects. The Hydrologic Maps will be based on LIDAR and GIS information.
- 5. Investigate Preliminary ROW Requirements
 - a. The Engineer will research and identify affected property owners on the Projects alignment and proposed ROW utilizing the latest appraisal district file information from the Hidalgo County Appraisal District and subdivision plat information from Carson Maps.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

6. Prepare Preliminary Cost Estimates
 - a. The Engineer will calculate preliminary construction cost estimates for the location and geometry of the Projects.

7. Preliminary Environmental Analysis (for Fatal Flaws)
 - a. The Engineer will perform Preliminary Environmental Constraint Mapping to determine if any fatal flaws exist along the proposed alignment.

8. Prepare a Project Fact Sheet for All Anticipated Costs
 - a. The Engineer will produce a Project Fact Sheet providing summaries of all pertinent items in the scope of services (as required) and providing estimated local costs vs. total project costs for the Projects.

9. Meetings, Coordination & Support for Project Development
 - a. The Engineer shall provide coordination services and shall assist in meetings and workshops with TxDOT, County, Drainage Districts, Irrigation Districts, and all other affected parties. The Engineer shall serve as representative for the LPA in coordination items. The Engineer shall coordinate with the LPA's staff on all Project related items.

* A Phase I or better survey for hazardous materials should be included as a determining factor of route selection. Projects which do not require additional ROW should be considered separately from an expansion or new location.

ROUTE AND DESIGN STUDIES
(Function Code 110)

ROUTE AND DESIGN STUDIES:

The ENGINEER will perform any of the following tasks needed for the route and design studies:

1. Analyze Level of Service for Proposed Improvements

2. Provide Traffic Evaluations and Projections

3. Develop Roadway Design Criteria

4. Prepare the Design Schematic
 - a. Horizontal and Vertical Alignment (Preliminary based on office surveys)
 - b. Schematic Layout
 - i. Identify the location of interchanges, main lanes, grade separations, frontage roads and ramps, if applicable.
 - ii. Develop vertical and horizontal alignment of main lanes, ramps and cross roads at proposed interchanges or grade separations, if applicable. Frontage road alignment data need not be shown on the schematic; however, it should be developed in sufficient detail to determine ROW needs. The degree of horizontal curves and vertical curve data, including "K" values, shall also be shown for ease of checking.
 - iii. For freeways, show the location and text of the proposed main lane guide signs. Lane lines and/or arrows indicating the number of lanes shall also be shown.
 - iv. Provide a complete explanation of the sequence and methods of stage construction, if proposed, including the initial and ultimate proposed treatment of crossovers and ramps.
 - v. Identify the tentative ROW limits

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

1. Provide a roadway Design System (RDS) or (GEOPAK) computer tape of the preliminary earthwork to verify ROW requirements.
 2. Provide a graphics file containing the approved schematic.
 - vi. Provide the geometric configuration (pavement cross slopes, lane and shoulder widths, slope rates for fills and cuts) of the typical sections of the proposed highway main lanes, ramps, frontage roads, and cross roads.
 - vii. Identify the current and projected traffic volumes as provided by TxDOT (if On-System roadway) or by ENGINEER (if Off-System roadway) based on a 20 year traffic projection.
 - viii. Label the control of access lines if Interstate or designated under House Bill 179.
 - ix. Label the direction of traffic flow on all roadways.
 - x. Identify the location and width of any proposed median openings for highways without access control.
 - xi. Identify the geometrics of any speed change lanes (acceleration, deceleration, climbing, etc...).
5. Coordinate and Attend a Project Design Concept Conference
6. General Guidelines for Project Development
- a. Prior to preparing detailed plans for a proposed project, a preliminary schematic layout shall be prepared which indicates the general geometric features and location requirements peculiar to the project. An uncontrolled aerial mosaic will be provided for this use. Four copies of the schematic layout shall be submitted through the district to the Design Division for approval and subsequent coordination with the Federal Highway Administration (FHWA) where applicable. The layout shall be submitted for two-lane arterial highway projects on new locations and for all multi-lane highway projects. **No geometric design is to be performed until the LPA has given the engineer written approval of the preliminary schematic layout.**
 - b. All geometric design shall be in conformance with the State's Design Division, Operations and Procedures Manual, except where variances are permitted in writing by the STATE.
 - c. The schematic layout shall include basic information which is necessary for the proper review and evaluation including the items listed above and in the schematic checklist provided by the STATE.
 - d. Handling of traffic during construction shall be a consideration in the development of preliminary designs.
 - e. Upon approval of the schematic layout by Design Division (FHWA on Federal-aid projects), it shall be the basis for an exhibit at any required public hearing prior to final development of the project. If there are any changes to the schematic after the Design Division and FHWA approval and before the public hearing, four copies of the revised schematic, as displayed at the hearing, shall be submitted either prior to or accompanying the public hearing data. If there are no changes in the schematic as displayed at the hearing, only photographs of the schematic and other displays shall be submitted with the public hearing data.
 - f. For all freeway construction projects, these schematics shall show the location and text of the proposed main lane guide signs. A schematic layout shall be submitted through the district to the Traffic Operations Division, Traffic Safety Section for approval and subsequent coordination with the FHWA. All signing shall be in conformance with the Texas MUTCD.
 - g. On complex projects, informal contact through the district with the Design Division and FHWA personnel is encouraged with regard to development of preliminary design prior to official schematic submission.

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SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

- h. The engineer shall furnish a project tape that is compatible with the STATE's computer system, a project listing, and a cross section plot showing the original design sections containing the earthwork input and original cross sections for the project. **Accuracy of the earthwork design is of utmost importance since it is the basis for contractor payments and construction staking.**

- 7. Traffic Analysis and Projections
 - a. If the project is Off-System, the ENGINEER will provide all traffic analysis and projection data for the project as previously provided by TxDOT's Transportation Planning and Programming Division. The analysis will follow the STATE's SOP and the data will be approved by the STATE.

- 8. Final Hydrologic Map & Report
 - a. The ENGINEER will provide a final hydrologic map to be submitted with the Schematic. This map will be considered part of the Schematic submittal.
 - b. A H&H report will be submitted along with the Hydrologic Map. The report will follow the guidelines set forth in TxDOT's Hydraulic Design Manual.

- 9. Geotechnical Investigations, Engineering & Report
 - a. The ENGINEER shall provide geotechnical explorations and laboratory testing as needed for the project. All exploration soil borings shall be drilled in general accordance with ASTM D420 procedures, the samples will be collected in general conformance with ASTM D1586 procedures, and laboratory testing procedures will be performed in general accordance with Texas Department of Transportation TEX methods (or ASTM methods as required).
 - b. The ENGINEER shall provide geotechnical engineering and analysis of the explorations and laboratory testing.
 - c. The ENGINEER shall provide a signed/sealed geotechnical report of all findings including relevant recommendations for pavement design utilizing Flexible Pavement Design System FPS 21 published by the Texas Department of Transportation. The ENGINEER will specifically recommend pavement sections and materials needed for the pavement design. (lime percentage, salvage, thicknesses, etc...)

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT
(Function Code 120)

1. Environmental Reports (All Environmental Reports shall be in accordance with 43 Texas Administrative Code (TAC) 2.40-2.51, Code of Federal Regulations, Title 23, Part 771 and Highway Design Operations and Procedures Manual, Part II-B.)
 - a. An Environmental Document shall be prepared anticipating one of the following levels of clearance:
 - i. A Categorical Exclusion
 - ii. A Finding of No Significant Impact
 - b. If it is determined that an Environmental Assessment is not sufficient, an Environmental Impact Statement shall be prepared under a supplemental agreement.
 - i. A Draft Environmental Impact Statement shall be prepared. After appropriate interagency and public reviews within time limits prescribed by the Code of Federal Regulations, Title 23, Part 771 and 43 Texas Administrative Code 2.40-2.51, a Final Environmental Impact Statement shall be prepared.
 - ii. A Section 4(f) Statement (Department of Transportation Act) shall be provided by the ENGINEER. The format and content of the statement is found in FHWA Technical Advisory T6640.8A.
2. Public Involvement (All Public Involvement procedures shall be in accordance with 43 Texas Administrative Code (TAC) 2.101-2.110, Code of Federal Regulations Title 23, Part 771 and Highway Design Operations and Procedures Manual, Part II-B.)
 - a. A public involvement meeting(s)/hearing(s) shall be scheduled, coordinated and conducted.*
 - b. Technical assistance, meeting(s)/hearing(s) preparation, maintenance of contracts lists, minutes of meeting(s), exhibit preparation, and other tasks outlined by the LPA, shall be provided.
3. Cultural Resources (Formal consultation with the State Historic Preservation Office (SHPO) and the Texas Historical Commission (THC) will be conducted by the LPA.)
 - a. Historic Structure Studies
 - i. A records search and reconnaissance survey shall be performed, and documentation prepared regarding identification efforts, National Register eligibility and potential impacts to historic properties in accordance with the state's historic structure requirements.
 - b. Archeological Studies
 - i. Files searches shall be conducted to determine if known archeological sites are present; to identify whether these sites have been listed or determined eligible for the National Register of Historic Places or have been designated State Archeological Landmarks; and to identify the need (if any) to perform additional archeological investigations.
 - ii. Archeological reconnaissance will be performed under a Texas Antiquities Permit (13 TAC 26) signed for the Sponsor by a professional archeologist with the STATE.
 - iii. Archeological survey shall be performed under a Texas Antiquities Permit (13 TAC 26) signed for the Sponsor by a professional archeologist with the STATE.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

4. Technical Reports

Technical reports will be scoped with TxDOT's Work Plan Development Tool (WPD) and prepared in accordance with the TxDOT Environmental Toolkit.

- a. Traffic Noise Analysis
 - i. A traffic noise analysis shall be prepared, including predicted noise levels and the consideration and evaluation of noise mitigation, in accordance with the STATE'S Noise Guidelines. The noise analysis or a summary of the noise analysis shall be provided as a Technical Report and results included in the administratively complete document.
- b. Air Quality Analysis
 - i. An air quality analysis shall be prepared in accordance with the STATE'S Air Quality Guidelines. The air quality analysis or a summary of the air quality shall be provided as a Technical Report and results included in the administratively complete document for the project.
- c. Hazardous Materials
 - i. The ENGINEER shall perform an Initial Site Assessment (ISA) for hazardous materials impact in accordance with the American Society for Testing and Materials (ASTM) 1528.93 (Transaction Screen Process).
- d. Biological Assessment
 - i. A Species Analysis and Site Assessment will be completed in accordance with the STATE'S guidelines. The assessment shall be provided as a Technical Report and results included in the administratively complete document for the project.
- e. Water Resources
 - i. A Surface Water Analysis will be completed in accordance with the STATE'S guidelines. The analysis shall be provided as a Technical Report and results included in the administratively complete document for the project.
- f. Community Impact Analysis
 - i. A Community Impact Assessment will be completed in accordance with the STATE'S guidelines. The analysis shall be provided as a Technical Report and results included in the administratively complete document for the project.

5. General Guidelines for Preparation of Environmental Documents

- a. All technical reports will be submitted electronically to TxDOT.
- b. All cultural resource reports (i.e. Archeological and Historical Project Coordination Requests (PCRs), background and reconnaissance surveys) will be submitted electronically to TxDOT.
- c. The draft administratively complete document will be submitted to TxDOT electronically.
- d. The administratively complete document will be prepared in accordance with the content and format of TxDOT Administrative Code 43 TAC §2.48 and the TxDOT Environmental Toolkit.
- e. The administratively complete document will be submitted to TxDOT electronically.
- f. Upon completion and approval of the administratively and technically complete document, the Engineer will provide one (1) hard copy to the Client.
- g. Exhibits in the environmental document shall be color copies and text shall be black and white.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

FIELD SURVEYING AND PHOTOGRAMMETRY
(Function Code 150)

TOPOGRAPHY AND CONSTRUCTION SURVEYS:

The SURVEYOR will perform Topography and Construction Surveying for the project which will include:

1. Primary Project Control: 3 to 5 mile spacing (Precision shall be 1 part in 20,000 or better, unless otherwise directed by the ENGINEER).
 - a. Establish Horizontal Control Points
 - b. Establish Vertical Control Points

NOTE: ALL BEARING AND DISTANCE SHALL BE BASED ON THE STATE PLANE COORDINATE SYSTEM NAD 1983, SOUTH ZONE.

ALL DISTANCES AND COORDINATES SHALL BE SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999960

2. Secondary Project Control (Surveyor shall recover and/or reset H&V Control Points as provided by the Engineer and create Survey Data Sheets for inclusion in the Project Plans).
 - a. No traverse should exceed 25 angle points. Planimetrics shall be 20 ft Lt & Rt from the proposed ROW as per the schematic provided by the Engineer.
 - b. The unadjusted angular error should not exceed 2 seconds per angle, plus 14 seconds.
 - c. The unadjusted ratio of precision should be one part in 10,000 or better (The ratio of precision is the total length of the traverse divided by the total error.).
 - d. The unadjusted vertical error should not exceed 0.03 foot per mile of traverse.
3. Other Field Surveying
 - a. **The limit of the Design surveys shall be 1,500-ft before and after the limits of the project as identified by the Project Engineer on the schematic. Establish horizontal and vertical control. Set benchmarks at 1000-ft intervals along the project proposed right-of-way. Provide x, y, z for each Benchmark. Provide a BM along each outfall identified on the Hydrologic Map. The BM's shall be #5 I.R. 2-ft in depth set in concrete. The surveyor shall provide an H&V Book (a Sample shall be provided by the Engineer to the Surveyor). The Surveyor will provide a 3-pt reference sketch with ties to the BMs for inclusion the existing H&V Control Book. Establish benchmark circuit throughout the project with a tolerance of 0.03'/ft per mile error vertically.**
 - b. The Surveyor shall provide complete topographic and cross section survey, data processing, and CADD mapping (2D & 3D) for the limits of the project.
 - c. The Surveyor shall locate all visible utilities, data processing and CADD mapping (2D & 3D) including irrigation lines. Follow sample provided by the Engineer.
 - d. The Surveyor shall field locate cross culverts, driveway culverts, inverts, irrigation lines, within the project limits, data processing and CADD mapping (2D & 3D).
 - e. Right of Entry, Right of Way Research, and Appraisal District Records is the responsibility of the Surveyor.
 - f. The Surveyor shall also paint the proposed centerline on the existing pavement as approved by the ENGINEER (at 500-ft stations and a tick mark at 100-ft stations, 12 inches long with approved paint by ENGINEER) before construction for the purpose of utility adjustments and project location.
 - g. Profile and cross section intersecting streets for ties into project (500-ft. beyond the proposed ROW per schematic and 20-ft wider than the existing ROW of intersecting street). Reference missing voids as per CD provided by the Engineer.

EXHIBIT "B"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

- h. Cross section irrigation crossings for a distance of 20-ft beyond the proposed ROW at 100-ft intervals in a DTM file. Provide a complete description of irrigation appurtenances as identified by the engineer sample layout.
 - i. Tie Horizontally and Vertically the existing storm drain system that lies within the existing proposed ROW including the elevation of the outfall of said recovered existing storm drain systems.
 - j. Tie to existing underground and overhead utilities (location, elevation and direction)
 - i. Horizontally - The surveyor shall call the 1-800 number for the utilities to be marked on the ground as well as any city water and sewer lines. He shall tie all visible utility crossings with name, address and Phone #'s of utility companies. The engineer will coordinate with the utility companies and jointly the Surveyor and the Engineer will identify which utilities were missed and need to be tied down.
 - ii. Vertically - The engineer shall identify all utilities that are potential conflicts and that need to be tied vertically. The engineer will advise the surveyor in writing of the needed vertical ties and the surveyor will tie the lines vertically once the surveyor has coordinated the exposure and provide the information to the engineer.
 - k. Additional Field Surveying as shown below:
 - i. Irrigation Lines - The surveyor will meet with the engineer before he ties down any irrigation lines. The Engineer will provide him the existing Irrigation District Maps and the A&M Data of existing irrigation lines that are identified of record. He will follow the sample given to him by the engineer and tie the structures horizontally and vertically and provide Field Books to the engineer.
 - ii. Outfalls - The surveyor will provide a complete 2D & 3D File including utilities of the outfall identified on the Hydrologic Map.
 - l. Driveways and Turnouts
 - i. Inventory commercial entrances, public roads and side streets separately.
 - ii. Obtain centerline station (Width at ROW, Pavement and existing radius).
 - iii. Inventory by type (dirt, caliche, gravel or paved). If paved, indicate condition in terms of no patches, has patches or has potholes.
 - iv. Obtain width at ROW line
 - v. Obtain elevations at both edges of the driveway or turnout in line with any side drain.
 - m. ROW Staking (Existing and proposed @ 1,000 ft stations, PC's, PT's and Angle points as per ROW Map)
 - n. Soil core hole staking
 - o. Determine changes in topography from voids and outdated maps due to development, erosion, etc.
 - p. Profile existing drainage facilities, if applicable
 - q. Measure hydraulic openings under existing bridges, if applicable
 - r. Obtain elevations of manholes and valves of utilities, if applicable
 - s. Provide temporary signs, traffic control, flags, safety equipment, etc.
 - t. Provide ties to existing bridges or culverts that may conflict with new construction
 - u. If there is a Bridge widening, provide top of deck and/or top of cap elevations at the Profile Grade Line (PGL) and the edges of slab at bent locations.
 - v. Inventory signs, mailboxes and driveways
 - w. Survey controlled data sheets as per STATE guidelines
4. Subsurface Utility Engineering (SUE)
- a. Quality Level C - Existing Records: Utilities are plotted from review of available existing records that will be generated by the Engineer on the schematic and provided to the surveyor for his further creation of a Utility Map which will be turned in as a deliverable as part of this work order.

EXHIBIT "B"

SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

- b. Quality Level B - Surface Visible Feature Survey: The Surveyor shall gather the field tied Utility Information and compare it to the existing records (if any) as provided by the Engineer and correlate with surveyed surface-visible features. The surveyor shall create a Utility Layout Map or plan layout 2D, 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. 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. The Layout Map will include all utilities that have been field tied – 2D Horizontal Utilities. This Layout will be provided to the Engineer and a meeting held with Engineer to identify which utilities will need to be tied down vertically. 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 Engineer. This information will be provided in the latest version of Micro Station or Geopak used by the State. The electronic file will be delivered on C.D. or DVD. A hard copy is required and must be signed, sealed, and dated by the Surveyor. Note: Determine and inform the Engineer of the approximate utility depths at critical locations. This depth indication is understood by the Engineer to be approximate only and is not intended to be used for preparing the construction plans.
- c. Quality Level A (Subsurface Utility Locate (Test Hole)) **THE SURVEYOR SHALL COORDINATE WITH THE ENGINEER ON THE NUMBER OF HOLES.** Locate shall mean 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 and C. The Surveyor shall:
- i. Review the requested test hole locations that have been identified by the Engineer and Coordinate with utility owner inspectors as may be required by law or utility owner policy.
 - ii. Measure and record the following data on an appropriately formatted test hole data sheet that has been sealed and dated by the Engineer:
 - Elevation of top and/or bottom of utility tied to the datum of the furnished plan.
 - Identify a minimum of two benchmarks utilized. Elevations shall be within an accuracy of 15mm (.591 inches) of utilized benchmarks.
 - Elevation of existing grade over utility at test hole location.
 - Horizontal location referenced to project coordinate datum.
 - Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems.
 - Utility facility material(s).
 - Utility facility condition.
 - Coating/Wrapping information and condition.
 - Unusual circumstances or field conditions.
 - iii. 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.
 - iv. Backfill 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.
 - v. Provide complete restoration of work site and landscape to equal or better condition than before excavation.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

- vi. Plot utility location position information on the Utility Layout sheet and identify the vertical elevation and sealed by the responsible Surveyor. This information will be provided in the latest version of Micro Station or Geopak format used by the State. The electronic file will be delivered via file share links.

ADDITIONAL RESPONSIBILITIES

A. TRAFFIC CONTROL:

The SURVEYOR shall control traffic in and near surveying operations adequately to comply with provisions of the latest edition of the TxDOT Manual on Uniform Traffic Control Devices – Part VI and the latest edition of the Occupational Safety Manual both of which can be found on the TxDOT internet site.

In the event field crew personnel must divert traffic or close traveled lanes, a Traffic Control Plan based upon principles outlined in the latest edition of the TxDOT Manual on Uniform Traffic Control Devices – Part VI shall be prepared by the SURVEYOR and approved by the ENGINEER prior to commencement of field work. A copy of the approved plan shall be in the possession of field crew personnel on the job site at all times and shall be made available to the ENGINEER for inspection upon request.

B. INVOICING:

Payment requests shall include a SURVEYOR's invoice. With each payment request, the SURVEYOR shall submit a project status report which will, as a minimum, include the percentage of total work complete as of the date of the payment request and a description of current work activity. The percentage of total work complete shall not be based simply on the percentage of funds expended, but shall be based on the best judgment of the SURVEYOR as to the percentage of actual work complete.

C. EASEMENTS, LETTERS OF PERMISSION, ETC.

The SURVEYOR shall be responsible for delineating easements. The SURVEYOR will be responsible for securing the necessary legal instruments and obtaining all Right-of-Entries (ROEs).

D. MEETINGS:

The ENGINEER shall setup the necessary meetings with the SURVEYOR in order to assure all field information is provided on-time and products are delivered in accordance with TxDOT's/LPA's specifications. SURVEYOR must attend all meetings involving data provided if requested by ENGINEER.

E. PROJECT MANAGER/SURVEYOR COMMUNICATION:

The SURVEYOR shall designate one Texas Registered Professional Land Surveyor (RPLS) to be responsible throughout the project for project surveying coordination and all communications, including billing, with the ENGINEER.

F. OFFICE LOCATION:

The SURVEYOR will perform the services to be provided under this agreement out of a local office and have a crew available to perform requested tasks within 24 hours of request. The coordinating SURVEYOR's Project Manager (RPLS) shall be accessible at all times and working from the local office.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

ROADWAY DESIGN CONTROLS
(Function Code 160)

ROADWAY DESIGN:

The ENGINEER will perform roadway design services for the needed construction repairs along the project limits. The services will include:

1. Geometric Design
 - a. Horizontal and Vertical Alignment
 - b. All geometric design shall be in conformance with the State's Design Division, Operations and Procedures Manual, except where variances are permitted in writing by the LPA.
 - c. Handling of traffic during construction shall be a consideration in the development of preliminary designs.

2. Exhibits for Airway/Highway clearance permits (if within airport vicinity)

3. Grading Design
 - a. Refine the horizontal alignment including the following items
 - i. Typical Sections
 - ii. Design Cross Sections
 - iii. Determine Cut and Fill Quantities
 - iv. Slope Stability Analysis, if applicable
 - v. Embankment Foundation Stability Analysis, if applicable
 - vi. Embankment Settlement Analysis, if applicable

4. Pavement Design
 - a. Prior to initiating detailed plan preparations for a project, a preliminary investigation shall be made to determine the approximate section and pavement type to be used for the pavement structure. The Flexible Pavement Design Manual for flexible pavement, "Appendix F" of the Design Division, Operations and Procedures Manual, and the current AASHTO Guide for the Design of Pavement Structures, may be used for this purpose.
 - b. The typical section shall also reflect proposed geometric including pavement cross slopes, lane and shoulder widths, and slope rates whenever this data have not been previously shown on a schematic submission.
 - c. Embankment and Subgrade
 - i. Provide Soil Core Holes (location and number to be agreed upon with Owner)
 1. Along center line of each roadway
 - ii. Identify, interpret and summarize the geological features that affect engineering design (PI, sulfate content & % of lime)
 - d. Traffic Data for Pavement Design
 - e. Basic Design Criteria
 - f. Life Cycle Cost Analysis(es)
 - g. Cost Data
 - h. Pavement Material Properties
 - i. Rehabilitation Investigations
 - i. Soil Core Holes to determine type and depth of existing material, pavement, etc. The ENGINEER, in coordination with LPA, will determine whether to salvage the existing ACP and Flexbase.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

DRAINAGE
(Function Code 161)

DRAINAGE DESIGN:

The ENGINEER will perform drainage design services for the needed construction repairs along the project limits. All hydraulic design shall be in accordance with TxDOT's Hydraulic Manual, except where variances are permitted in writing by the LPA. The services will include:

1. Hydrologic & Hydraulic Studies, Discharges
 - a. Hydrologic Map showing drainage areas, contours and drainage Q's.
 - b. Drainage area maps showing existing conditions and proposed improvements.
 - c. Hydrologic data/discharge determination

2. Hydraulic Drainage Study & Documentation
 - a. Hydraulic Computations, if applicable
 - i. Storm water detention available within the ROW (linear ft. along side drain ditch).
 - ii. Storm water detention available outside the ROW (as per local Drainage District)
 - iii. Culverts
 - iv. Bridge Waterways
 - v. Channels
 - vi. Storm sewers/inlets
 - vii. Storm Water Management Facilities
 - viii. Irrigation Canals/Siphons
 - b. Hydraulic Reports
 - c. Federal Emergency Management Agency (FEMA) floodway requirements
 - d. Determine impact of proposed drainage plan on Drainage District or Irrigation District receiving streams

3. Layout, Structural Design and Detailing of Drainage Features
 - a. Culverts
 - i. New Culverts
 - ii. Culvert widening and/or lengthening
 - iii. Culvert replacements
 - b. Storm Sewers
 - i. New storm sewers
 - ii. Modify existing storm sewers
 - iii. Inlets
 - iv. Manholes
 - v. Trunk lines
 - c. Outfall channel(s) within the ROW
 - d. Outfall channel(s) outside the ROW
 - e. Detention Pond(s) within the ROW
 - f. Detention Pond(s) outside the ROW
 - g. Summary of Quantities

4. Storm Water Pollution Prevention Plan (SW3P)

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

SIGNING, MARKINGS AND SIGNALIZATION
(Function Code 162)

PAVEMENT MARKINGS:

The ENGINEER will provide pavement marking layouts for the needed construction repairs along the project limits. The services will include:

1. Signing and Markings Layout
 - a. Roadway layout
 - b. Center line with station numbering
 - c. ROW lines
 - d. Culverts and other structures that present a hazard to traffic
 - e. Location of utilities, if not shown on plan and profile
 - f. Existing signs to remain, to be removed, to be relocated
 - g. Proposed signs (illustrated and numbered)
 - h. Existing overhead sign bridges to remain, to be revised, removed or relocated
 - i. Proposed overhead sign bridges indicating location by plan layout (electrical details need not be shown on this layout)
 - j. Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation
 - k. Quantities of existing pavement markings to be removed
 - l. Proposed delineators and object markers
2. For projects involving freeway to freeway or other types of directional interchanges, projects including left-hand ramps or connections, the following information must be provided:
 - a. The location of interchanges, main lanes, grade separations, frontage roads and ramps
 - b. Complete explanation of the sequence and methods of stage construction, where applicable, which would include the initial and ultimate proposed treatment of crossovers and ramps
 - c. The number of lanes in each section of proposed highway and the location of changes in number of lanes
 - d. The projected traffic volumes as provided by the STATE (20 year traffic projection, unless otherwise determined by the District Engineer)
 - e. Tentative ROW limits
 - f. Direction of traffic flow on all roadways
 - g. Main lane, ramp, frontage road and necessary cross road profiles at proposed interchanges or grade separations
3. Summary of Small Sign Tabulation
4. Summary of Large Sign Tabulation including all Guide Signs (if applicable)
5. Sign Detail Sheets
 - a. All signs except for route markers
 - b. Design details for large guide signs
 - c. Dimensions of letters, shields, borders, corner radii, etc.
 - d. Designation of shields attached to guide signs
 - e. Designation of arrow used on exit direction signs

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

6. Traffic Signals (if applicable)
 - a. Development of Justification (Warrant) Data
 - i. Location Map
 - ii. Photographs as appropriate
 - iii. Accident data as appropriate
 - iv. Vehicle volumes (existing, estimated, projected, and pedestrian)
 - v. Traffic Survey – Count Analysis
 - vi. Recommendation based on the collected data
 - b. Layout
 - i. Title Sheet (when applicable)
 1. Describe the location
 2. Type of installation
 3. Area map with project limits for each location
 4. Index of sheets
 5. Space for official signatures
 - ii. Estimate and quantity sheet (when applicable)
 1. List of all bid items
 2. Bid item quantities
 3. Specification item number
 4. Paid item description and unit of measure
 - iii. Basis of estimate sheet
 - iv. General notes and specification data sheet
 - v. Condition Diagram
 1. Highway and intersection design features
 2. Roadside development
 3. Traffic control including illumination
 - vi. Plan Sheets(s)
 1. Existing traffic control that will remain (signs and markings)
 2. Existing utilities
 3. Proposed highway improvements
 4. Proposed installation
 5. Proposed additional traffic controls
 6. When applicable, proposed conduit for Railroad interconnect with standard details for runs under tracks
 7. Proposed illumination attached to signal poles
 - vii. Notes for plan layout
 - viii. Elevation sheet(s) (span wire design)
 - ix. Phase sequence diagram(s)
 1. Signal locations
 2. Signal indications
 3. Phase Diagram
 4. Signal sequence table
 5. Flashing operation
 6. Preemption operation
 7. Interval timing, cycle length and offset
 - x. Construction Detail Sheets
 1. Poles, Detectors, Pull box and conduit layout & Controller Foundation
 - xi. Marking Details (when applicable)
 - xii. Barricade and warning sign standard sheet and any special details for work zone traffic control for special conditions
 - xiii. Aerial or underground interconnect details (when applicable)

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

- c. General Requirements
 - i. Contact the local utility company
 - 1. Confirm Power Source
 - 2. Discuss route of aerial or underground interconnect cable
 - 3. Adjustment of overhead utility lines
 - ii. Prepare governing specifications, special provisions list and estimate
- d. Summary of Quantities

MISCELLANEOUS ROADWAY
(Function Code 163)

TRAFFIC CONTROL PLAN, DETOURS AND SEQUENCE OF CONSTRUCTION:

The ENGINEER will provide a Traffic Control Plan (TCP) for the needed construction repairs along the project limits. TCP's are required for all projects; therefore a detailed TCP shall be developed when traffic handling during construction involves complications for which a feasible solution is not covered by the Texas MUTCD or the current Barricade and Construction (BC) standards. The following items are required on all TCP Layouts:

1. The Sequence of Construction and method of handling traffic during each phase
2. Roadway layout
3. Center line with station numbering
4. The existing and proposed traffic control devices that will be used to handle traffic during each construction sequence. Include signals, regulatory signs, warning signs, construction warning signs, guide signs, route markers, construction pavement markings, channelizing devices, portable changeable message signs, flashing arrow boards, barricades, barriers, etc...
5. The proposed traffic control devices (stop signs, signals, flag person, etc.) at grade intersections during each construction sequence.
6. Where detours are provided, typical cross sections shall be shown.
7. Road construction work hours shall be developed after an investigation of the traffic volumes has been performed.

COMPUTE AND TABULATE QUANTITIES:

The ENGINEER will provide a summary of quantities sheet in the plans identifying all estimated project quantities.

PROJECT ESTIMATE:

The ENGINEER will provide a project estimate summarizing all estimated construction costs.

SPECIFICATIONS AND GENERAL NOTES:

The ENGINEER will provide all relevant project specification and general notes to the project construction activities.

PROJECT MANAGEMENT
(Function Code 164)

MEETINGS, COORDINATION & SUPPORT FOR PROJECT MANAGEMENT:

The ENGINEER shall meet and coordinate with all relevant entities (i.e. County, Regional Mobility Authority, Texas Department of Transportation, Rio Grande Valley Metropolitan Planning Organization, etc...) and all other affected parties. The Engineer shall serve as representative for the Owner in coordination items. The Engineer shall coordinate with the Owner's staff on all Project related items.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

ADDITIONAL RESONSIBILITIES

EASEMENTS, LETTERS OF PERMISSION, ETC.:

The ENGINEER shall be responsible for delineating easements. The ENGINEER will be responsible for securing the necessary legal instruments.

MEETINGS:

Meetings will be held with the FHWA, State Officials, local governments, property owners, utility owners, railroad companies, other consulting firms, etc., as needed or required by the LPA. The ENGINEER shall coordinate through the LPA for the development of this project with any local entity having jurisdiction or interest in the project (i.e., city, county, etc).

SPECIFICATIONS, SPECIAL PROVISIONS, SPECIAL SPECIFICATIONS:

Use the State's standard specifications or previously approved special provisions and/or special specifications. If a special provision and/or special specification is developed for this project, it shall be in the State's format and incorporate references to approved State test procedures.

PROJECT MANAGER/ENGINEER COMMUNICATION:

The ENGINEER shall designate one Texas Registered Professional Engineer to be responsible throughout the project for project management and all communications, including billing, with the LPA's Director. Any replacements to the ENGINEER's designated Project Manager/Engineer must be approved by the LPA.

Engineering documents produced for the department's engineering projects shall be signed, sealed and dated or CADD sealed in accordance with Administrative Order No. 5-89 and Administrative Circular No. 26-91.

DESIGN RESPONSIBILITIES:

The ENGINEER is responsible for design errors and/or omissions that become evident before, during or after construction of the project. The ENGINEER's responsibility for all questions arising from design errors and/or omissions will be determined by the LPA and all decisions shall be final and binding. This would include, but not necessarily be limited to:

1. All design errors and/or omissions resulting in additional design work to correct the errors and/or omissions.
2. Preparation of design documents and detail drawings necessary for a field change due to design errors and/or omissions.
3. Revision of original tracings to the extent required for a field change due to design errors and/or omissions.

The ENGINEER shall promptly make necessary revisions or corrections resulting from the ENGINEER's errors, omissions or negligent acts without additional compensation. Acceptance of the work by the LPA will not relieve the ENGINEER of the responsibility for subsequent correction of any such errors or omissions or for clarification of any ambiguities.

EXHIBIT "B"
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

DOCUMENT AND INFORMATION EXCHANGE:

Data, Plan Sheets, General Notes and/or Specifications provided to the LPA shall be furnished via file share links complete with a table of contents on what is transmitted. The Table of Contents shall indicate the locations of files within the directory structure of the documentation.

General Notes and specifications shall be provided in the latest Office 365 file formats (.docx, .xlsx, etc...). Plan sheets shall be provided in Microstation Open Roads Designer (ORD)/Power GEOPAK format. PDF copies of plan sheets shall also be provided.

Two copies of the documentation shall be provided to the LPA.

If required, the ENGINEER shall provide to the LPA, a CD that contains all the plan sheets for the project. The graphics tape shall be compatible with the LPA's computer system.

CD Tape Required (YES or NO): YES

PROPOSAL TIME:

The time indicated in the proposal and the contract shall include time necessary for reviews, approval, etc.

OFFICE LOCATION:

The ENGINEER will perform all services to be provided under this agreement out of their office located at: 2805 Fountain Plaza Blvd., Suite A, Edinburg, Texas 78539



**"Exhibit D"
Fee Estimate**

**Webb County Precinct #2 : Mangana Hein - Project Development & Design Fee Proposal
Mangana Hein Road US 83 to SH 20**

		MANHOURS									
<i>Project Development (Schematic, Environmental, PS&E, ROW) Fee Proposal - Webb County: Mangana Hein Road US 83 to SH 20</i>		Principal/Senior Project Manager	Project Manager	Agency Coordination/ Utility Manager	Project/Design Engineer	Environ Specialist	EIT	Engineering Tech	Admin/Clerical	Total Hours	Total Line Item Cost
TASK											
PHASE I - Schematic, Environmental & Project Funding											
1	Environmental Document (TxDOT/FHWA Clearance)	20	60	242	180	180			80	762	\$ 87,060.00
2	Public Involvement for the Project w/1 Public Meeting, Hearing and/or Opportunity	16	24	96	120	40			40	336	\$ 39,480.00
3	Archeological & Historical Research										\$ 32,000.00
4	Topographic Survey										\$ 65,000.00
5	Schematic Development & TxDOT Approval	32	74	80	148	199	260			793	\$ 86,085.00
6	Hydrologic Map/H&H Report	15	45	30	110	40	110			350	\$ 40,145.00
7	Project Development (Funding/Entity Coordination/AFA Development, etc...)	40	90	120					80	330	\$ 40,600.00
8	Traffic Signal Warrants (SH 20)										\$ 25,000.00
9	Traffic & LOS Analysis for Off-System Rdwy (Env & Pvmnt Des Purposes)										\$ 30,000.00
13	Project Management	12	32	24	24					92	\$ 13,220.00
Subtotal (PHASE I)		135	325	592	582	220	239	370	200	2663	\$ 458,590.00
PHASE II - PS&E, ROW Mapping & ROW Acquisition											
14	PS&E Development	132	224	212	644	0	902	1133	210	3457	\$ 356,346.00
15	Geotechnical Testing & Pavement Design										\$ 50,000.00
16	Permitted Utility Coordination	6	20	24	57	0	27	64	2	200	\$ 22,238.00
17	Compensable Utility Coordination	17	35	41	111	0	50	141	6	401	\$ 44,182.00
18	Subsurface Utility Engineering (7 potholes)										\$ 10,500.00
19	Project Management	30	60	40	40					170	\$ 24,950.00
20	Project Site Visits	3	11	11	15					40	\$ 5,510.00
Subtotal (PHASE II)		188	350	328	867	0	979	1338	218	4268	\$ 513,726.00
PHASE III - Construction Letting & Project Management											
21	Local Let Bid Package Development Assistance	12	29	57	62				4	164	\$ 21,670.00
22	Letting Assistance (Pre-Bid Meeting, RFI's, Pre-Con Meeting, etc...)	11	32	40	55					138	\$ 18,830.00
Subtotal (PHASE III)		23	61	97	117	0	0	0	4	302	\$ 40,500.00
Total Labor Hours		346	736	1017	1566	220	1218	1708	422	7233	
Contract Rate		\$ 185.00	\$ 160.00	\$ 120.00	\$ 125.00	\$ 99.00	\$ 95.00	\$ 82.00	\$ 55.00		
Total Labor Costs		\$ 64,010.00	\$ 117,760.00	\$ 122,040.00	\$ 195,750.00	\$ 21,780.00	\$ 115,710.00	\$ 140,056.00	\$ 23,210.00		\$ 1,012,816.00

LINE ITEM EXPENSES
N/A

\$ -

Total Expenses

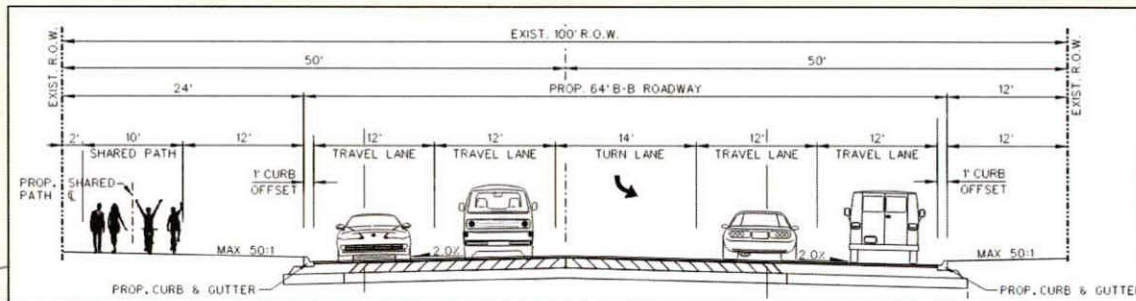
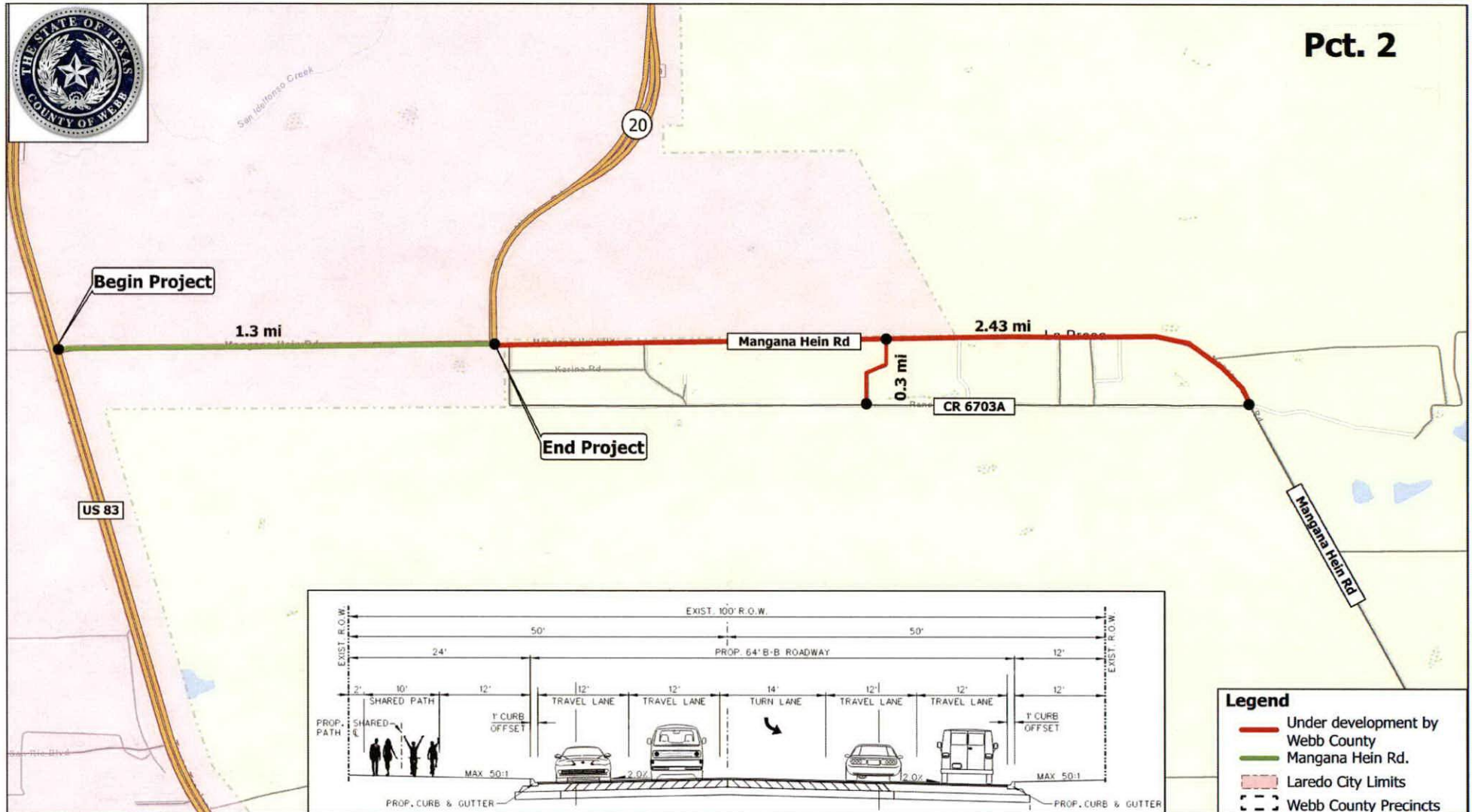
\$ -

GDJ Engineering Total Cost

\$ 1,012,816.00



Pct. 2



- Legend**
- Under development by Webb County
 - Mangana Hein Rd.
 - Laredo City Limits
 - Webb County Precincts



Mangana Hein Road

From US 83 to SH 20 (1.3 mi)

