

EXHIBIT "F"
Supplemental Agreement Form

THE STATE OF TEXAS §
 §
COUNTY OF HIDALGO §

**SUPPLEMENTAL AGREEMENT NO. 1
TO WORK AUTHORIZATION NO. 1
TO AGREEMENT FOR PROFESSIONAL SERVICES
C-18-304-02-26**

This **SUPPLEMENTAL AGREEMENT** is made pursuant to the terms and conditions of Article 8 of the Agreement made by and between **HIDALGO COUNTY**, hereinafter called the "**Owner**", and **L&G ENGINEERING**, professional engineers of Mercedes, Texas, hereinafter called "**Engineer**".

WITNESSETH

WHEREAS, the **Owner** and the **Engineer** executed the Main Contract Agreement on the 26TH day of February, 2019 concerning engineering services for the Re-evaluation of the Environmental Document, Public Involvement, Update Schematic, Update Hydrological Map, Update PS&E, Update the Permitted Utilities Coordination and Construction Management for FM 88 from 0.025 miles North of SH 107 (5th Ave.) North to FM 1925 (hereinafter referred to as the "**Project**"); and,

WHEREAS, it has become necessary to amend the "Exhibit B - Scope of Services to be provided by the Engineer" of Work Authorization No. 1; Complete ROW Map for the 2.41 Miles of Outfalls (estimated 12 parcels) and update the 10- year old field roadway outfall surveys; and,

WHEREAS, it has become necessary to amend the "EXHIBIT D-1 - Estimated Man-hour Breakdown" of Work Authorization No. 1 to include costs associated with the ROW Map and field surveys; and,

WHEREAS, the Estimated Cost will increase from the Work Authorization No. 1 amount of \$1,047,363.00 to \$1,333,926.00; therefore the amount of Supplemental No. 1 is \$286,563.00.

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NOW THEREFORE, premises considered, the Owner and the Engineer agree that said Agreement is amended as follows:

- I. Sections of the Agreement, "Exhibit B - Scope of Services to be provided by the Engineer" and "Exhibit D-1 - Estimated Man-hour Breakdown", are revised to reflect the above listed modifications of this Supplemental.

All other provisions are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, the Engineer and the Owner have caused this Supplemental Agreement to the Agreement for Professional Services to be executed as of the _____ day of _____, 2020.

THE ENGINEER:
ENGINEER

BY:  _____
Jacinto Garza, P.E., President

THE OWNER:
HIDALGO COUNTY

BY: _____
Richard F. Cortez, County Judge

LIST OF EXHIBITS:

- EXHIBIT "A" - "Service to be provided by the County"
- EXHIBIT "B" - "Scope of Services to be provided by Engineer"
- EXHIBIT "C" - "Work Schedule"
- EXHIBIT "D-1" - "Estimated Man-hour Breakdown"

EXHIBIT "A"
Services to be provided by the County

1. The County will issue work authorization to initiate all required services and designate the authorized representative of the coordination of each work authorization.
2. The County will provide copies of all subdivision plats of record and/or in the subdivision process.
3. The County will provide the Engineer with on-going guidance, timely reviews, and decisions necessary to complete services required by the work authorization in order to permit the Engineer to maintain an agreed upon project schedule.
4. The County will process all acceptable requests for payment in a timely manner.

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

SECTION 1-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: Hidalgo County

CONTROL: _____

PROJECT/DESCRIPTION: FM 88, 5800' of Outfall A and 6950' of Outfall B

LENGTH: _____

HIGHWAY: FM 88

LIMITS: From 3000' N of FM 1925 TO 1500' S of SH 107

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)
- Design Survey/Control Recovery

ENGINEER shall mean L&G Engineering.

STATE shall mean Texas Department of Transportation

COUNTY shall mean Hidalgo County.

Surveyor shall mean ROW Surveying Services

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

SECTION 5 - RIGHT-OF-WAY DATA

(Function Code 130)

Services
Provided By:
SURVEYOR LPA

NOTE: No work involving right-of-way (ROW) data is to be performed until the ENGINEER has given the SURVEYOR written approval of the final location of the proposed ROW lines as approved by TxDOT and the LPA.

A. RIGHT-OF-WAY MAPPING:

1. PURPOSE:

The purpose of right-of-way mapping is to prepare documents suitable for the acquisition of real property interests and the probable issuance of a title policy.

2. DEFINITIONS:

For purposes of this Contract, the following definitions shall apply:

- 2.1. Abstract Map – A drawing to scale prepared from record documents depicting proposed right-of-way lines, existing right-of-way lines, easement lines, and private property lines with relevant grantee names, recording data, and recording dates.
- 2.2. Closure/Area Calculation Sheet – A computer generated print-out of the area and the perimeter bearings, distances, curve data, and coordinates of an individual parcel of land to be acquired.
- 2.3. Access Denial Line – A line which indicates specific location where access to the roadway is denied.
- 2.4. Property Descriptions – A written metes and bounds description delineating the area and the boundary and describing the location of an individual parcel of land unique to all other parcels of land.
- 2.5. Owner – The most current title holder of record as determined by a study of the Real Property Records.
- 2.6. Parcel Plat – An 8 ½ inch by 11 inch drawing to scale depicting all the information shown on the right-of-way map regarding an individual parcel of land to be acquired.
- 2.7. Parent Tract – A unit or contiguous units of land under one ownership, comprising a single marketable tract of land consistent with the principle of highest and best use. A parent tract may be described by a single instrument or several instruments. A single parent tract cannot be severed by a public right-of-way, easement, or separate ownership which destroys unity of use.
- 2.8. Parent Tract Inset – A small line drawing, to an appropriate scale, of the parent tract perimeter placed upon the right-of-way map in the proximity of the respective parcel. Parent tract insets are used in cases where the parent tract cannot be shown to the same scale as the right-of-way map. Since parent tract insets are used to identify the limits and location of parent tracts, they should include public right-of-ways, utility easements and fee strips, and identifiable water courses which bound the parent tract.
- 2.9. Point of Beginning (P.O.B.) – A corner of the parcel of land to be acquired, located on the proposed right-of-way line and being the beginning terminus of the first course of the property description.
- 2.10. Point of Commencing (P.O.C.) – A monumented property corner which can be identified in the Real Property Records and is located outside the proposed right-of-way corridor. For title purposes, the point of commencing should be a monumented back corner of the parent tract. In the event a monumented back corner of the parent tract cannot be recovered, the nearest identifiable monumented property corner located outside the proposed right-of-way corridor may be used.

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- 2.11. Preliminary Right-of-Way Layout/Abstract Map – A drawing to scale depicting proposed right-of-way lines, existing right-of-way lines, proposed pavement, access denial lines, the proposed centerline alignment, private property lines, easement lines, visible improvements, visible utilities, the station and offset from the centerline alignment to each Point of Curvature (PC), Point of Tangency (PT), and angle point in the proposed right-of-way lines and to each PC, PT, and angle point in the existing right-of-way lines in areas of no proposed acquisition. *(Reference Sample Attached)*
- 2.12. Right-of-Way Maps/Property Description/Parcel Plats – A series of 22 inch by 34 inch and 11 inch by 17 inch drawings to scale depicting the results of relevant elements of records research, field work, analysis, computation, and map making required to determine title, delineate areas and boundaries, locate and describe utilities and improvements to the extent necessary to appraise the value and negotiate the acquisition of individual parcels of private land for a proposed right-of-way project. *(Reference Sample Attached)*

3. WORK TO BE PERFORMED:

X 3.1.

Preliminary Right-of-Way Layout/Abstract Map:

An abstract map shall be prepared sufficient to determine the following:

- 3.1.1. Any and all interests of public record held in the land to be acquired.
- 3.1.2. The total record holdings of an owner contiguous to land to be acquired from that owner.
- 3.1.3. Any and all interests in land to be acquired held in common (shopping mall parking lots, subdivision reserves, etc.)
- 3.1.4. Any and all improvements proposed by other agencies which may have a bearing on project development.
- 3.1.5. All called monuments, bearings, and distances as per recorded information.
- 3.1.6. Preliminary Parcel numbering system.
- 3.1.7. Any and all utilities (permitted or of record)
- 3.1.8. Reference Sample provided.

X _____

3.2. Right-of-Way Map:

The SURVEYOR shall field locate property corners, existing right-of-way markers, improvements, visible utilities, verify and update the planimetric file, if provided, and as directed by the ENGINEER.

A right-of-way map shall be prepared for each proposed right-of-way project. A right-of-way map shall include a title sheet, an index sheet, a survey control index sheet, a horizontal and vertical control data sheet, and sufficient plan sheets to cover the proposed project, or as directed by the ENGINEER. The STATE has developed standard title sheets, index sheets, and plan sheets, copies of which the SURVEYOR shall request and secure for all purposes of this Contract. Plan sheets shall include, but need not be limited to, the following items of information. By mutual agreement between the Texas Board of Professional Land Surveying and the TxDOT, right-of-way maps need not be signed and sealed by a Registered Professional Land Surveyor.

- 3.2.1. Proposed right-of-way lines shall be delineated with appropriate bearings, distances, and curve data. Curve data shall include the radius, delta angle, arc length, and long chord bearing and distance.
- 3.2.2. Existing right-of-way lines shall be delineated with appropriate bearings, distances, and curve data to the extent necessary to describe the individual parcels of land to be acquired. Curve data shall include the radius, delta angle, arc length, and long chord bearing and distance.

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Services
Provided By:
SURVEYOR LPA
X

- 3.2 *Right-of-Way Map Continued (continued)*
- 3.2.3. The proposed project baseline alignment shall be delineated with appropriate bearings, distances, and curve data. Curve data shall include the station of the curve Point of Intersection (PI), radius, delta angle, arc length, tangent length, long chord bearing and distance, and the N and E coordinates of the curve PI. All alignment PCs, PTs, and even 500 foot stations shall be labeled as to station.
 - 3.2.4. Proposed paving lines combined with relevant existing paving lines shall be shown to the extent necessary to compile a complete picture of proposed traffic movements. Proposed paving on the final mylars submitted to the ENGINEER shall be shaded with a dot pattern or highlighted by some other means acceptable to the ENGINEER.
 - 3.2.5. Access denial lines shall be shown sufficiently to indicate areas where access is to be denied and where access is to be permitted if required by the ENGINEER.
 - 3.2.6. Private property lines shall be delineated with appropriate bearings, distances, and curve data to the extent necessary to describe the individual parcels of land to be acquired. Curve data shall include the radius, delta angle, arc length, and long chord bearing and distance.
 - 3.2.7. Porción lines, subdivision lines and survey lines shall be shown and identified by name and Porción number.
 - 3.2.8. County lines and city limit lines shall be located and identified by name.
 - 3.2.9. A north arrow shall be shown on each sheet, and, if possible, located in the upper right corner of the sheet.
 - 3.2.10. Monumentation set or found shall be shown and described as to material and size.
 - 3.2.11. A station and offset shall be shown for each PC, PT, and angle point in the proposed right-of-way lines. Stations and offsets shall be with respect to the proposed centerline alignment.
 - 3.2.12. Intersecting and adjoining public right-of-ways shall be shown and identified by name, right-of-way width, and recording data.
 - 3.2.13. Railroads shall be shown and identified by name, right-of-way width, and recording data.
 - 3.2.14. Utility corridors shall be identified as to easement or fee and recording information shall be identified.
 - 3.2.15. Easements and fee strips shall be shown and identified by width, owner, distance of easement to a property corner of the parent track, and recording data.
 - 3.2.16. Building lines or set-back lines shall be shown and identified.
 - 3.2.17. Visible improvements located within the proposed right-of-way corridor or within 50 feet of a proposed right-of-way line shall be shown and identified.
 - 3.2.18. Structures shall be identified as commercial or residential, by number of stories, and as to type (brick, wood frame, etc.).
 - 3.2.19. Structures which are severed by a proposed right-of-way line shall be dimensioned to the extent necessary to completely delineate the severed parts.
 - 3.2.20. Parking areas, billboards, and other on-premise signs which are severed by a proposed right-of-way line shall be dimensioned to the extent necessary to delineate that portion of the parking area, billboard, or sign which is located within the proposed right-of-way corridor.

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SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

Services
Provided By:
SURVEYOR LPA
X

3.2 *Right-of-Way Map Continued (continued)*

- 3.2.21. In cases where structures are located outside the proposed right-of-way corridor and within 25 feet of a proposed right-of-way line, the shortest distance between the structure and the proposed right-of-way line shall be shown and field verified.
- 3.2.22. Visible utilities located within the proposed right-of-way corridor or within 50 feet of a proposed right-of-way line shall be shown and identified.
- 3.2.23. The location of underground utilities and fuel storage tanks situated within the proposed right-of-way corridor or within 50 feet of a proposed right-of-way line shall be determined and shown as required by the ENGINEER. The visible location of stand pipes, vents and filler caps in conjunction with a available design and as-built drawings may be used to determine a most probable location and size in the event an actual location is indeterminable.
- 3.2.24. Points of commencing and points of beginning shall be shown and labeled. Points of beginning shall be shown with their respective N and E surface coordinates. As an exception, a point of commencing will not be required in the case of a total taking without a remainder.
- 3.2.25. Each parcel of land to be acquired shall be identified by a parcel number which shall appear in the ownership tabulation and on the right-of-way map in the proximity of the respective parcel. If the SURVEYOR is unfamiliar with the criteria used by the STATE to assign parcel numbers, he shall seek the assistance of the ENGINEER at the time the abstract map is complete. THE SURVEYOR SHALL SEEK ASSISTANCE FROM THE ENGINEER IN DEVELOPING AN OWNERSHIP TABULATION TABLE.
- 3.2.26. An ownership tabulation shall be shown which shall include the parcel number, existing area of the parent tract, lot(s) and block(s) constituting the parent tract when applicable, owner's name, type of conveyance, film code, county clerk's file number, taking area, and remaining area of the parent tract located left and/or right of the centerline alignment. Types of conveyance, film code and file numbers refer to conveyances into the STATE and will be added to the right-of-way map by the STATE at a later date. Several blank lines shall be provided in the tabulation block to facilitate future map additions.
- 3.2.27. A parent tract inset shall be shown for each parent tract which cannot be shown to scale on the right-of-way map. The use of broken scale lines should be avoided. When parent tract insets are used, the point of commencing with the appropriate bearing and distance to the point of beginning may be shown on the parent tract inset.
- 3.2.28. A note shall be included on the title sheet and each map sheet stating the source of bearings, coordinates, and datum used.
- 3.2.29. Appropriate notes shall be included on the title sheet and each map sheet stating the following:
 - a. Month(s) and year abstracting upon which the map is based.
 - b. Month(s) and year field surveys were conducted upon which the map is based.
 - c. Month and year the map was completed by the SURVEYOR.
- 3.2.30. The right-of-way CSJ number, if a available, shall be shown on each right-of-way map sheet.

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

Services
Provided By:
SURVEYOR LPA

3.3. Exhibits:

An Exhibit shall be prepared for each parcel or tract consisting of a property description and a parcel plat.

X _____

3.3.1. Property Description:

A property description shall be prepared for each parcel of land to be acquired. Standard formats for property descriptions, copies of which the SURVEYOR shall request to the ENGINEER and secure for all purposes of this Contract. Property descriptions shall include, but need not be limited to, the following items of information.

All property descriptions shall be signed and sealed by a Registered Professional Land Surveyor. The property description shall begin with a general description which shall include as a minimum:

- a. State, County, and Survey within which the proposed parcel of land to be acquired is located.
- b. A reference to unrecorded and recorded subdivisions by name, lot, block, and recording data to the extent applicable.
- c. A reference by name to the grantor and grantee, date and recording data of the most current instrument(s) of conveyance describing the parent tract. Use execution dates in deed references as opposed to recording or filing dates. In any case, the property description shall make clear which date is being used.

The property description shall continue with a metes and bounds description which shall include as a minimum:

- d. A point of commencing.
- e. A point of beginning with the appropriate N and E surface coordinates.
- f. A series of courses, identified by number and proceeding in a clockwise direction, describing the perimeter of the parcel of land to be acquired, and delineated with appropriate bearings, distances, and curve data.

Curve data shall include the radius, delta angle, arc length, and long chord bearing and distance. Each course shall be identified either as a proposed right-of-way line, and existing right-of-way line, or a property line of the parent tract. Each property line of the parent tract shall be described with an appropriate adjoiner call.

- g. A description of all monumentation set or found shall include, as a minimum, size and material.
- h. A reference to the source of bearings, coordinates, and datum used.

X _____

3.3.2. Parcel Plat:

A parcel plat shall be prepared for each parcel of land to be acquired. The STATE has developed standard formats for parcel plats, copies of which the SURVEYOR shall request from the ENGINEER and secure for all purposes in this Contract. Parcel plats shall include each and every item of information shown on the right-of-way map which concerns the individual parcel. All parcel plats shall be signed and sealed by a Registered Professional Land Surveyor.

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

Services
 Provided By:
SURVEYOR LPA

4. DELIVERABLES:

In preparing right-of-way maps, the following is an outline of the work to be submitted (records should be delivered in a binder):

- | | | |
|----------|-----|--|
| <u>X</u> | ___ | 4.1. An Abstract Map of the current record title holders included in the Preliminary Map showing the proposed schematic and existing right-of-way as per General Specifications defined in 2.11. |
| <u>X</u> | ___ | 4.2. A Right-of-Way map for the project limits under cover of Title Sheet, Index Sheet, Control Data Sheet, and Exhibits of the property descriptions and parcel plats as per General Specifications defined in 2.12, 3.2 and 3.3.
<u>ROW Map Submittal Requirements:</u>
4.2.1. Two (2) papersets of half-size ROW maps (11"x 17")
4.2.2. One (1) paperset of the full-size ROW maps (22"x 34")
4.2.3. Four (4) sets of original metes & bounds descriptions (field notes) with parcel plats (signed & sealed by the surveyor). <i>Do not include traverse sheet.</i>
4.2.4. City requires one (1) electronic copy of the ROW Map on a CD, and One (1) copy of the DGN electronic file on a CD from the surveyor- Both the electronic copy of the ROW Map and the DGN file can be on one CD.
<u>IF Roadway is ON-SYSTEM and after Administrative Approval of the ROW Maps by Division (REVISIONS) Submittal Requirements:</u>
4.2.5. Two (2) paper sets of the half-size of the affected ROW map sheets (11"x17"), detailing the <u>revision</u>
4.2.6. One (1) paper set of the full-size of the affected ROW map sheets (22"x 34"), detailing the <u>revision</u>
4.2.7. Four (4) sets of any <u>revised</u> original metes & bounds descriptions (field notes) with parcel plats (signed & sealed by the surveyor). <i>Do not include traverse sheet.</i>
4.2.8. Division needs one (1) electronic copy of the <u>revised</u> ROW Map sheets on a CD, and
4.2.9. One (1) copy of the DGN electronic file on a CD from the surveyor- detailing the <u>revision</u> -Both the electronic copy of the <u>revised</u> ROW Map sheets and the DGN file can be on one CD. |
| <u>X</u> | ___ | 4.3. Appropriate monuments on the proposed right-of-way lines at intersecting property lines, and at all PCs, PTs, angle points, intersecting right-of-way lines of side streets, and at 1,000 foot stations of the proposed centerline alignment. |
| <u>X</u> | ___ | 4.4. Appropriate monuments on the existing right-of-way lines in areas of no acquisition at all PCs, PTs, angle points, and 1,000 foot stations, and as directed by the ENGINEER of the proposed centerline. |
| <u>X</u> | ___ | 4.5. A SURVEYOR's report, outlining the approach, reasons or basis for the existing right-of-way determination, and conclusions made. |
| <u>X</u> | ___ | 4.6. Records used to establish ownership. |
| <u>X</u> | ___ | 4.7. ROW and parcel filed notes signed and sealed by a RPLS. |
| <u>X</u> | ___ | 4.8. Computation sheets of survey closures, ground surveys, etc. used to develop plats and meets and bound information. |
| <u>X</u> | ___ | 4.9. Items indicated under the Automation Requirements Section 6. |
| <u>X</u> | ___ | 4.10 Completed (Attached) Checklist with submittal of ROW Map etc. |

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

Services

Provided By:

SURVEYOR LPA

X _____

5. GENERAL REQUIREMENTS:

For purposes of this Contract, the following general requirements shall apply:

- 5.1. Copies of instruments of record submitted to the ENGINEER shall be indexed by parcel number.
- 5.2. Coordinates appearing on right-of-way maps, on parcel plats, and in property descriptions shall be surface coordinates based on the Texas State Plane Coordinate System. The combined adjustment factors (sea level factor x scale factor) which have been developed by the STATE for its use are as follows:
 - 5.2.1. In (List Applicable Counties): Counties (----- Zone), grid coordinates are multiplied by a combined adjustment factor of 1.xxxxxx to obtain surface coordinates. For work in Counties other than those listed, the ENGINEER will provide the combine adjustment factor.
- 5.3. Line and curve tables may be used when necessary.
- 5.4. The number of centerline alignment stations to be shown on a single plan sheet shall be restricted to the extent necessary to allow approximately 4 inches between match lines and sheet borders for future details and notes.
- 5.5. A minimum 4 inch by 4 inch space shall be reserved at the bottom right corner of each map sheet for future revision notes.

6. AUTOMATION REQUIREMENTS:

In addition to standard hard copy plots and mylar copies, the following will be required electronically:

X _____

- 6.1. Right-of-way maps and parcel plats shall be prepared using a *Micro Station* software graphics system capable of producing graphics files that can be plotted and viewed without further modification or conversion using the State's *Micro Station V8* graphics system.
- 6.2. It is the intent of the ENGINEER to secure graphics files which have elements of equal integrity, singularity, and attributes as elements prepared using the State's *Micro Station V8* graphics system.
- 6.3. For purposes of clarity, consistency, and ease of utilization, the SURVEYOR shall request and secure standards relevant to right-of-way mapping to the extent necessary to ensure that the needs of the ENGINEER are met. This includes, but may not be limited to, TxDOT seed file and corresponding units.def file, TxDOT font resource file, TxDOT GEOPAK SMD file, TxDOT DGNLIB, associated cell libraries and custom line styles, and other files as deemed appropriate for the project.
- 6.4. Graphics files furnished to the ENGINEER by the SURVEYOR shall be submitted on a Compact Disk CD, DVD or USB, in a format compatible with the STATE's computer system. The SURVEYOR shall confer with the ENGINEER regarding acceptable media and formats before making submissions. The SURVEYOR shall request and secure a Consultant File Index form provided by the ENGINEER, to be completed by the SURVEYOR, and to be submitted to the ENGINEER along with the graphics files.
- 6.5. Property descriptions shall be prepared using a computer word processing system capable of producing data files readable using *Microsoft Office Word Version 2007* word processing software.
- 6.6. Data files furnished to the ENGINEER by the SURVEYOR shall be submitted in ACSII format on a CD, DVD or USB.
- 6.7. Provide to the ENGINEER electronic copies of all instruments of record acquired pursuant to a work authorization.

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

Services
Provided By:
SURVEYOR LPA

X _____

7. GENERAL SPECIFICATIONS:

For purposes of this Contract, the following general specifications for right-of-way mapping shall apply:

- 7.1. Completed right-of-way maps shall be submitted to the ENGINEER, 22 inches by 34 inches in size with a 21 inch by 32 inch printed border positioned ½ inch from the top, bottom, and right edge of the sheet. Two copies on 11 inch by 17 inch paper will also be supplied to the ENGINEER.
- 7.2. Parcel plats shall be submitted to the ENGINEER on 8 ½ inch by 11 inch bond paper with respective borders of 7 ½ inches by 10 inches, positioned ½ inch from the top, bottom, and right edge of the sheet. Match lines shall be used where more than one sheet is required.
- 7.3. Right-of-way maps shall be drawn to a scale of 1 inch = 50 feet. An appropriate scale other than 1 inch = 50 feet may be used on some proposed right-of-way projects upon prior approval by the ENGINEER.
- 7.4. Since right-of-way maps are reduced in size by one-half for archiving purposes, the smallest size lettering acceptable on a right-of-way map shall be 1/10 of one inch (Leroy #100). A right-of-way map which contains any lettering smaller than 1/10 of one inch will not be accepted by the ENGINEER.
- 7.5. Parcel plats shall be drawn to a preferred scale of 1 inch = 50 feet. An appropriate scale other than 1 inch = 50 feet may be used on some proposed right-of-way projects upon prior approval by the ENGINEER. In the case of a very large parcel which would be difficult to show with clarity on a single 8 ½ inch by 11 inch sheet, the SURVEYOR shall use multiple 8 ½ inch by 11 inch sheets with matching lines.
- 7.6. The smallest size lettering acceptable on a parcel plat shall be 0.06 of an inch (Leroy #60).
- 7.7. Property descriptions shall be submitted on 8 ½ inch by 11 inch bond paper.
- 7.8. Zip-A-Tone or other similar stick-on products shall not be used on right-of-way maps or parcel plats.

8. ADHERENCE TO STANDARDS:

For purposes of clarity, consistency, and ease of understanding, the LPA, as an acquiring agency of private property for public use, has adopted the STATE standards and formats for right-of-way mapping which have proven to facilitate the processes of negotiation, appraisal, relocation assistance, and condemnation. It shall be the responsibility of the SURVEYOR to adhere to these standards and formats to every extent possible to ensure that the needs of the acquiring agency are met.

SAMPLES ATTACHED FC 130:

- PRELIMINARY Right-of-Way Layout / Abstract Map
- Right-of-Way Map, Field Notes, Parcel Sketches and Area Computation Sheets

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

- Property descriptions i.e., lot, block, tract, subdivision, etc...
- Identify existing and proposed access denial locations (*if applicable*)

Proposed information:

- #5- 2-ft iron road set monumentation i.e. P.C., P.T., Break Points and 1000' stations at proposed ROW lines and where existing ROW line is the proposed ROW.
- Survey and R.O.W. lines
- Basis of bearings
- Parcel bearings and distances correspond with traverse sheet
- Outside ties (P.O.C.) corresponds with field notes
- Point of beginning (P.O.B.) established on proposed R.O.W. line
- Parcel tied to baseline
- Baseline information shown i.e. Stationing, bearings, curve data, etc...
- Conveyance information shown in tables i.e. parcel number, grantors name, amount of take, remainder etc.
- Math checked on remainder

Improvements:

- Improvements bisected or within 25' of proposed R.O.W. line are shown on map with stationing and distance from proposed R.O.W. line. Buildings are labeled and dimensioned.
- Off-premise outdoor advertising signs within proposed R.O.W. are shown and labeled.

Utilities:

- All utilities within or crossing existing and proposed right of way are shown and labeled as to size, easement or fee width, and recording data of instrument.
- Location of underground storage tanks and/or filler caps are shown and labeled

FIELD NOTES - Heading

- County
- Highway
- Parcel number
- R.O.W. CSJ
- Construction CSJ

General Description or "preamble"

- Area of parcel to be acquired is shown in acreage (0.000) for rural land and/or square feet (to nearest whole sq. ft.) for urban land or smaller parcels

Parent tract data is shown:

- Size of parent tract
- Survey data or lot, block, and subdivision
- Name of last recorded seller and buyer
- Date, volume and page or document number of last recorded conveyance
- Records and county of last recorded conveyance

Beginning Description

- Point of commencement is on outside tie and is described accurately by bearings and distances as it leads to the point of beginning.
- Point of beginning is on proposed R.O.W. line

Particular Description

- Traverse calls are clockwise sequence
- Bearings and distances correspond exactly with map, parcel sketch, and traverse sheet
- Bearings are to nearest whole second and distances are to the nearest one-hundredth of a foot
- Calls are numbered
- Denial of access shall be described from beginning to end (*if applicable*)

Closing Description

- Last call leads back to P.O.B.
- Restates area of parcel

EXHIBIT "B"
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- Establishes taking in existing road R.O.W. if applicable
- Legal description is referenced to Plat
- Sealed and signed
- Include an access clause whether access is permitted or denied (*if applicable*)

PARCEL SKETCH:

- Shows P.O.B. and P.O.C.
- All data corresponds exactly with Map and Field Notes
- Sheet size is no larger than 8 1/2" x 11"
- Plat closely matches example provided
- Plat referenced to legal description
- Sealed and signed
- Include an access clause whether access is permitted or denied (*if applicable*)
- Existing utility lines and easements (deed reference, if available);

TRAVERSE SHEET

- Computations show area to be acquired in sq. ft. or acres, whichever is applicable
- Computations show area that is existing road R.O.W. if applicable
- Traverse calls are in clockwise sequence
- Error of closure meets the following:

Secondary rural	.0003
Primary rural - secondary urban	.0002
Urban or industrial	.00013

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

SECTION 6 - FIELD SURVEYING AND PHOTOGRAMMETRY
(Function Code 150)

Services
Provided By:
SURVEYOR LPA

DESIGN AND CONSTRUCTION SURVEYS:

PURPOSE:

The purpose of a "design survey" is to provide field information in support of transportation systems design.

The purpose of a "construction survey" is to provide field data in support of highway construction.

DEFINITIONS:

A "design survey" is defined as the combined performance of research, field work, analysis, computation, and documentation necessary to provide detailed topographic (3-dimensional) mapping of a project site. A design survey may include, but need not be limited to, cross-sections or data to create cross-sections and Digital Terrain Models (DTM), horizontal and vertical location of utilities and improvements, detailing of bridges and other structures, review of right-of-way maps, establishing control points, etc.

A "construction survey" is defined as the combined performance of reconnaissance, field work, analysis, computation, and documentation necessary to provide the horizontal and vertical position of specific ground points to be used by the construction contractor for determining lines and grades.

1. Design Surveying

X —

a. Primary Project Control –

Precision shall be 1 part in 20,000 or better, unless otherwise directed by the District Engineer.

- (1) Re-Establish horizontal control points
- (2) Re-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 1.00004

X —

b. Secondary Project Control- Surveyor shall recover and/or reset H&V Control Points as provided by the Engineer and create Survey Control Data Sheets for inclusion in the Construction Project Plans signed and sealed by an R.P.L.S.

- (1) 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.
- (2) The unadjusted angular error should not exceed 2 seconds per angle, plus 14 seconds.
- (3) 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.)
- (4) The unadjusted vertical error should not exceed 0.03 foot per mile of traverse.
- (5) Project control base lines

— —

- (6) Photogrammetric ground control
 - (a) Establish horizontal control
 - (b) Establish vertical control points
 - (c) Place and maintain control point targets

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

Services
Provided By:
SURVEYOR LPA

X _____

c. Other Design Surveying

- (1) Set H&V Control at 1000-ft intervals along the project proposed right-of-way. Provide x, y, z for each H&V Control. Provide an H&V Control along each outfall identified on the Hydrologic Map. The H&V Control shall be #5 I.R. 2-ft in depth set in concrete. **The surveyor shall provide an H&V Control 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.
- (2) Complete topographic and cross section survey, data processing, and CADD mapping (2D & 3D) for the limits of the project.
- (3) Locate all visible utilities, data processing and CADD mapping (2D & 3D) including irrigation lines. Follow sample provided by the Engineer.
- (4) Field locate cross culverts, driveway culverts, inverts, irrigation lines, within the project limits, data processing and CADD mapping (2D & 3D).
- (5) Right of Entry, Right of Way Research, and Appraisal District Records is the responsibility of the Surveyor.
- (6) The Surveyor shall stake the proposed centerline on the existing fields as approved by Engineer before construction for the purpose of utility adjustments and project location.
- (7) 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).
- (8) 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 "EXHIBIT E". The SURVEYOR will meet with the ENGINEER before he ties down any irrigation lines. Jointly the SURVEYOR and the ENGINEER will identify from records such as the Irrigation District Maps and the A&M Data of existing irrigation lines that will need to be tied down. The SURVEYOR will follow the sample given to him by the ENGINEER and tie the structures horizontally and vertically and include in the field books to be submitted.
- (9) 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.
- (10) Tie to existing underground and overhead utilities (location, elevation and direction)

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.

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.

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

Services
Provided By:
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— — 2. **Photogrammetric Products**

a. Uncontrolled Photography

- (1) Contact Prints
- (2) Mosaics
- (3) Digital ortho plots

b. Mapping

- (1) Planimetric Maps
- (2) Contour Maps
- (3) Cross Sections
- (4) Profiles
- (5) Digital Terrain Models (DTM)

— — 3. **UTILITY SUBSURFACE INVESTIGATION:**

Utility Quality Levels are in cumulative order (least to greatest) as follows

— — 3.1. 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.

— — 3.2. 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 "line 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.

— — 3.3. Subsurface Utility Locate (Test Hole) Service (Quality Level A). THE SURVEYOR SHALL ESTIMATE LOCATING VERICALLY 25 UTILITES PER MILE OR AS IDENTIFIED BY THE ENGINEER. 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:

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

Services
 Provided By:
SURVEYOR LPA

3.3.1 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.

3. *Utility Subsurface (continued)*

3.3.2 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.

3.3.3 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.

3.3.4 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.

3.3.5 Provide complete restoration of work site and landscape to equal or better condition than before excavation.

3.3.6 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 on C.D or DVD.

4. **DELIVERABLES:**

The deliverables to be specified in individual work authorizations for design surveys and construction surveys may be any combination of the following:

- | | | |
|------------|-----|--|
| <u>Yes</u> | ___ | 4.1. Digital Terrain Models (DTM) in a format acceptable by the ENGINEER. |
| <u>Yes</u> | ___ | 4.2. Final H&V Field Book Binder with all pertinent information obtained in the field for Design Surveys. Maps, plans, or sketches prepared by the SURVEYOR showing the results of field surveys. |
| <u>Yes</u> | ___ | 4.3. Computer printouts or other tabulations summarizing the results of field surveys. |
| <u>Yes</u> | ___ | 4.4. Digital files or media acceptable by the ENGINEER containing field survey data. |
| <u>Yes</u> | ___ | 4.5. Maps, plats, plans, sketches, or other documents acquired from utility companies, private corporations, or other public agencies, the contents of which are relevant to the survey. |
| <u>Yes</u> | ___ | 4.6. Field survey notes, as electronic and/or hard copies. |
| <u>Yes</u> | ___ | 4.7. A H&V Control Book identifying the basis of the Primary and Secondary Control and an 8 ½ inch by 11 inch survey control data sheet for each construction control point which shall include, but need not be limited to, a location sketch, a physical description of the point including a minimum of two reference ties, surface |

EXHIBIT "B"
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coordinates, a surface adjustment factor, elevation, and the horizontal and vertical datums used. Survey control data sheets shall be signed and sealed by the supervising Registered Professional Land Surveyor.

Services
 Provided By:
SURVEYOR LPA

4. *Deliverables (continued)*
- Yes _____ 4.8. Final mylar set of 11 inch by 17 inch Survey Control data sheets sign and seal by the RPLS per TxDOT guidelines.
- Yes _____ 4.9. A digital and/or hard copy of all computer printouts of horizontal and vertical conventional traverses, GPS analysis and results, data including property descriptions with field notes and plats, right-of-way maps, and survey control data sheets to include in the H&V Field Book Binder.
- Yes _____ 4.10. Survey reports in a format requested by the ENGINEER.
- Yes _____ 4.11. Items indicated under the Automation Requirements Section 6.

5. GENERAL REQUIREMENTS:

- 5.1. Design surveys and construction surveys shall be performed under the supervision of a Registered Professional Land Surveyor currently registered with the Texas Board of Professional Land Surveying.
- 5.2. Horizontal ground control used for design surveys and construction surveys, furnished to the SURVEYOR by the ENGINEER or based on acceptable methods conducted by the SURVEYOR, shall meet the standards of accuracy required by the STATE.
- 5.3. Reference may be made to standards of accuracy for horizontal control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, the TxDOT GPS Manual of Practice, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.
- 5.4. Vertical ground control used for design surveys and construction surveys, furnished to the SURVEYOR by the ENGINEER or based on acceptable methods conducted by the SURVEYOR, shall meet the standards of accuracy required by the ENGINEER.
- 5.5. Reference may be made to standards of accuracy for vertical control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, the TxDOT GPS Manual of Practice, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.
- 5.6. Side shots or short traverse procedures used to determine horizontal and vertical locations shall meet the following criteria:
- Side shots or short traverses shall begin and end on horizontal and vertical ground control as described above.
 - Standards, procedures, and equipment used shall be such that horizontal locations relative to the control may be reported within the following limits:
 - Bridges and other roadway structures: less than 0.1 of one foot.
 - Utilities and improvements: less than 0.2 of one foot.
 - Cross-sections and profiles: less than 1 foot.
 - Bore holes: less than 3 feet.
 - Standards, procedures, and equipment used shall be such that vertical locations relative to the control may be reported within the following limits:
 - Bridges and other roadway structures: less than 0.02 of one foot.
 - Utilities and improvements: less than 0.1 of one foot.

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

- Cross-sections and profiles: less than 0.2 of one foot.
- Bore holes: less than 0.5 of one foot.

Services
Provided By:
SURVEYOR LPA

5. **AUTOMATION REQUIREMENTS:**

- 6.1 Planimetric design files (DGN) shall be fully compatible with the State's *Micro Station V8* graphics program without further modification or conversion.
- 6.2 Electronically collected and processed field survey data files shall be fully compatible with the State's *CADD* systems without further modification or conversion. All files shall incorporate only those feature codes currently being used by the STATE.
- 6.3 Digital Terrain Models (DTM) shall be fully compatible with the STATE's GEOPAK system without further modification or conversion. All DTM files shall be fully edited and rectified to provide a complete digital terrain model with all necessary break lines.

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

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 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.

REVISED EXHIBIT D-1

**ESTIMATED MAN-HOUR BREAKDOWN
SUPPLEMENTAL #1 TO WORK AUTHORIZATION #1**

FM 88 PROJECT - from 0.25 Miles N of SH 3107 (9th Ave.) North to FM 1925

	Senior Project Manager	Senior Engineer	Senior Environmental Specialist / Specialist	Project Engineer	Right-of-Way Administrator	Senior Engineer Tech	CADD Operator/GIS Analyst	Environmental Planner / Specialist	Admin / Clerical	TOTAL HOURS	Sub-Contract Amounts / ROW COST	TOTAL LINE ITEM COST
CONTRACT RATE												
SUPPLEMENTAL #1 TO WORK AUTHORIZATION NO. 1 - WITH HIDALGO COUNTY												
PHASE II - ROW MAP, SURVEYS & PS&E												
1	10	15		28		40	20		10,000	123,000	\$ 54,000.00	\$ 15,660.14
2	8	12		25		36	15		10,000	106,000	\$ 77,085.00	\$ 13,330.71
3	13	18		42		51	33		12,000	169,000	\$ 105,426.00	\$ 21,141.15
	31	45	0	95	0	127	68	0	32,000	398,000	\$ 236,511.00	\$ 50,952.00
SUB-TOTAL MANHOURS AND PROJECT FEE:											\$	286,563.00

* TOTAL PROJECT FEE W/ SUB-CONSULTANT FEE: \$

* Rounded Figure

REVISED 2-7-20

