

## EXHIBIT B-1

### ADDITIONAL ENGINEERING SERVICES TO BE PROVIDED BY THE ENGINEER

#### For Roadway Improvements on Old Fitzhugh Road

#### Dripping Springs, Texas

The following additional services are required for the Old Fitzhugh Road project:

- Addition of sidewalk along the west side of RM 12 between Old Fitzhugh Road and Roger Hanks Parkway.
- Provide additional drainage services as described below.
- Provide continuous illumination as an add alternative.
- Provide design of Old Fitzhugh Road Historic District Gateway at the southwest corner of the RM 12 intersection.

The additional services for this work are further described below. Services in Exhibit B of the approved contract will remain in place.

#### **PROJECT MANAGEMENT**

Project Management services needed to complete the design phase are anticipated to span a period of 24 months. (Originally August 2023 bid, now August 2025 bid.)

#### **ROADWAY DESIGN**

*This includes work in the 90% and 100% Design Phase.*

Additional design is required to extend the sidewalk between Old Fitzhugh Road and the south side of Roger Hanks Parkway on the west side of RM 12 within TxDOT Right of Way. The design work will follow TxDOT design standards and specifications. The required tasks will remain consistent with the approved scope of services.

#### **DRAINAGE DESIGN**

*This includes work in the 30%, 60%, and 90% Design Phase.*

##### 30% Design Phase - Water Quality Design

Based on the Concept Design, water quality design was to be achieved through rain gardens (shallow infiltration basins) along Old Fitzhugh Road. During the 30% design process, Doucet evaluated the feasibility of rain gardens and worked with HDR and MAS in developing typical rain gardens with planting and materials selection. It was determined that there was not sufficient space within the existing right-of-way to fit rain gardens along the roadway without

acquisition of additional right-of-way for water quality purposes. Doucet developed an alternative means to achieving the City's water quality regulations. Doucet began to review stormwater conveyance options at the rear of selected lots abutting a small tributary of Onion Creek. Two extended detention basins were proposed with nominal capacity to treat runoff from additional impervious cover from the roadway project and preliminary locations were identified.

#### 60% Design Phase - Water Quality Design

At the 60% design phase, Doucet began to evaluate water quality facility options. At this point, the drainage aspects of the project were still in a schematic option phase for consideration without going straight into design of an approved schematic plan. Recognizing that additional drainage easement areas would be necessary to accommodate rear of lot water quality and possible detention ponds, Doucet was asked to evaluate several options for meeting the water quality requirements for the project as well as future development for the lots of interest. Doucet developed alternative water quality and detention ponds, designing the shape, volume, and discharge concepts for the fully developed lots. Exhibits were prepared to share with the City. Several iterations were performed to reduce the footprint and work with the topography, trees, and developable area of each lot to minimize impact. Towards the end of the 60% design phase, Doucet was asked to proceed forward with designs at the rear of lot only for proposed roadway improvements.

#### 90% Design Phase - Water Quality Design

As revealed in the 60% design, stormwater flows from contributing drainage areas from the east need to be captured and conveyed for the roadway design to meet emergency vehicle access design criteria and to make the roadway safer during more intense rains. This requires the addition of drainage inlets on the east side of the road with piped laterals to connect with the main storm drain system on along the west side of the road. An existing wastewater main in the center of the existing road may create conflicts with the proposed storm drain laterals and additional engineering is required to address this.

**SIGNING AND PAVEMENT MARKING** – No additional services are required.

**TRAFFIC CALMING** – No additional services are required.

#### **TRAFFIC CONTROL PLAN, DETOURS, AND SEQUENCE OF CONSTRUCTION**

***This includes work in the 90% and 100% Design Phase.***

The ENGINEER shall prepare one additional phases of Traffic Control Plans (TCP) for the extension of the sidewalk on the west side of RM 12. A detailed TCP shall be developed in accordance with the latest edition of the TMUTCD including:

- A. Traffic Control Narrative:** Provide a written narrative of the construction sequencing and work activities per phase and determine the existing and proposed traffic control

devices (regulatory signs, warning signs, work zone pavement markings, barricades, flaggers, temporary traffic signals, etc.) to be used to handle traffic during each construction sequence.

- B. Traffic Control Phasing Layouts:** Prepare Traffic Control Phasing Layouts (1 Additional Phase assumed) including typical sections that identify the travel lanes and work zones. The ENGINEER shall show proposed traffic control devices for at-grade intersections during each construction phase (stop signs, flaggers, signals, etc.).

## **ILLUMINATION**

HDR will provide supplemental engineering services for the illumination design and the irrigation systems electrical design along the roadway improvements of Old Fitzhugh. The supplemental services are required for continuous pedestrian-level illumination and provision of electric services for irrigation systems. ***This includes work in the 60%, 90%, and 100% Design Phase.***

### **E. Project Task List**

The following tasks included in the approved scope were initially proposed for pedestrian level illumination at activity nodes and intersections. Additional scope is required to complete the following tasks for continuous pedestrian level illumination and irrigation electrical service provisions. Details are provided in the approved scope of services.

- a. Data Collection
- b. Survey
- c. Continuous Illumination & Irrigation Systems Electrical Design
  - i. Utility power company coordination
  - ii. ANSI/IES RP-8-21 Roadway & Landscape Illumination Compliance
  - iii. Landscape Illumination assembly selections and options
  - iv. Photometric analysis (Project Limits)
  - v. Overcurrent protection of electric services and branch circuits
  - vi. Voltage drop analysis for electrical services and branch circuits
  - vii. Electrical service load analysis and schematics
  - viii. NEC, City, and TxDOT compliance
  - ix. Landscape Illumination & Irrigation Systems Electrical Removal Plans
  - x. Landscape Illumination & Irrigation Systems Electrical Summary & Plans
  - xi. Landscape Illumination & Irrigation System Electrical mounting details (if applicable)
- d. Electrical for Continuous Pedestrian Illumination System & Irrigation Systems
  - i. Utility Power Coordination

- ii. ANSI/IES RP-8-21 Roadway & Landscape Illumination Compliance
- iii. Photometric Analysis
- iv. Overcurrent Protection
- v. Voltage Drop
- vi. Electrical Service Load Analysis and Schematics
- vii. NEC, City and TxDOT Compliance
- viii. Landscape Illumination & Irrigation Systems Electrical Removal Plans
- ix. Landscape Illumination & Irrigation Systems Electrical Summary & Plans
- x. Landscape Illumination & Irrigation Systems Electrical Details & Specifications

The following new tasks included are required to complete the following tasks for continuous pedestrian level illumination and irrigation electrical service provisions.

- a. Landscape Illumination Assembly Selections and Options
  - i. Coordinate the landscape illumination design options with the City (and other Engineers as required) for overall final landscape illumination assembly selections and layout.

**Design Fee Qualifications**

- a. All illumination drawing files will be produced in 2D utilizing Microstation.
- b. Visual 2020 Lighting Software will be utilized for the photometric analysis.
- c. Utility Power Company to provide power source voltage availability for existing / new landscape illumination and irrigation systems electrical services and existing overhead and/or underground power source infrastructure.

**Exclusions – The Scope of Services DOES NOT include the following:**

- a. Revising or adding new electrical loads to any existing illumination electrical services within project limits.
- b. Removal of existing utility company pole mounted illumination heads and arms controlled and owned by the utility power company.
- c. Final Coordination Study & Arc Flash Analysis.

**STORM WATER POLLUTION PREVENTION PLANS (SW3P)** – No additional services are required.

**UTILITY COORDINATION** – No additional services are required.

**ENVIRONMENTAL** – No additional services are required.

**PUBLIC OUTREACH** – No additional services are required.

**RIGHT OF WAY SURVEYING**

*This includes work in the 30%, 60%, and 90% Design Phase.*

Additional survey work was requested to survey the two rear lot locations where water quality and possible detention were being investigated. There was also additional survey information requested along Old Fitzhugh Road corridor for driveway and elevation grade tie-ins, along with title abstracts review and researching parcels. The survey also picked up the Crumley Tract for an impervious cover evaluation.

Given the proposed drainage design to be inclusive of offsite flows from the east while maintaining emergency vehicle transportation design criteria, conflict avoidance with the existing wastewater line in Old Fitzhugh is important. The original survey did not pick up one of the manholes (MH#5) in the system as it was buried underground. There was also some discrepancy between the survey of MH#4 and that of record as-built drawings provided. Doucet proposed to have a survey crew go back out into the field and survey MH#5 horizontal and vertical information and verify flowlines of MH#4.

## **URBAN DESIGN AND LANDSCAPE ARCHITECTURE**

***This includes work in the 90% and 100% Design Phase.***

The following landscape-related, additional services are required for the Old Fitzhugh Road project for MAS, the Project Landscape Architect:

- Assist in designing the extension of the shared-use path (SUP) along the west side of RM 12 between Old Fitzhugh Road and the south side of Roger Hanks Parkway, including a possible trailhead or “Node #6” at this junction, if City deems appropriate.
- Provide additional landscape and irrigation design services needed for the new extension of the SUP.
- Assist with determining locations of illumination poles to be included in the “continuous illumination” add-alternate.
- Provide landscape, hardscape, furnishings and irrigation design for the newly-scoped Old Fitzhugh Road Historic District Gateway at the southwest side of the intersection of Old Fitzhugh Road and RM 12.
- Lead meetings with stakeholders (City’s historic group and native plant/landscape) to develop design of the Old Fitzhugh Road Historic District Gateway to gain design approval or “go-ahead” from City.
- Assist with finalizing locations and specifying illumination poles and fixtures for the gateway the Old Fitzhugh Road Historic District Gateway.

### **A. Landscape Sheets**

The required, 11” X 17” format plan sheets will be prepared using HDR’s roadway (civil) drawings as a base and will show other existing and planned utilities in a half-tone. Landscaping and hardscaping sheet will include those in the original scope of services with the following additional sheets:

- Landscape Planting Plans, describing the location and type of all landscape elements including street trees, existing trees, planting beds, etc. These plans will include the Old Fitzhugh Road Historic District Gateway.

- Enlarged Plans of the gateway landscape / hardscape;
- Perspective View Renderings, up to three, conceptual renderings to illustrate the treatment of the streetscape as well as the “gateway” view to the existing Dripping Springs sign near the RM 12 intersection. (Note: The Old Fitzhugh Road Historic District Gateway will be designed in collaboration with the Native Plant Society of Central Texas, with the assumption that this group will assist with the initial and ongoing maintenance of this specialty garden. It is assumed that a MAS principal will lead a workshop with the CODS and its historic group, the Native Plant Society and others to further develop the concept depicted in the 60% Landscape Plans.)

**GEOTECHNICAL ENGINEERING AND PAVEMENT DESIGN** – No additional services are required.

**ACCESSIBILITY REVIEW** – No additional services are required.

**PS&E PREPARATION** – No additional services are required.

**BID PHASE SERVICES (Hourly)**

- Provide increased Bid Phase services appropriate to this revised Scope for the Old Fitzhugh Road Historic District Gateway.

**CONSTRUCTION PHASE SERVICES (Hourly)**

- Provide increased Construction Phase services appropriate to this revised Scope for the Old Fitzhugh Road Historic District Gateway.

**EXCLUSIONS**

- Construction Inspection and Materials Testing services are excluded from this contract. These services will be performed by the CITY through other contracting measures
- Design services beyond those specifically stated in this scope and any previously approved scopes
- Additional construction surveying
- Daily or repeated Construction Inspection Services beyond field meetings established in the scope
- Renderings or animated models
- Retaining Wall Design
- Traffic Signal Warrant Studies or Signal Design
- Utility Relocation Design
- Bid advertisement for the construction project