

ATTACHMENT "B"
SCOPE OF SERVICES
For
Construction Plans, Specifications and Estimates
HUFFINES BOULEVARD WIDENING
In
THE CITY OF LEWISVILLE

1. DESCRIPTION

The purpose of this project is to design the roadway improvements of Huffines Boulevard from the newly constructed Corporate Drive intersection to the Riverview Drive intersection with Huffines Boulevard, approximately 2,175 linear feet. The project's intent is to design infrastructure, widening and realignment improvements within the corridor to provide for improved accessibility to adjacent developments and the Republic Services Landfill south of Corporate Drive. The scope of this project includes topographic and boundary design surveys, SUE Quality Level A-B locating, designation and investigation, geotechnical engineering services, right-of-way and easement parcel preparation, tree survey and associated mitigation, environmental permitting services, H&H analysis, roadway lighting, conceptual, preliminary and final design, construction plans, specifications, and opinions of probable construction cost, and bidding and construction administration services.

2. ASSUMPTIONS

- A. Professional services shall include only services that are normal and customary and are not represented as including special services or those requiring expertise that is greater than that provided by other comparable service providers.
- B. It is assumed that tree preservation/mitigation plans shall be provided for this project for any proposed tree loss caused by the roadway widening and realignment. Tree plantings and irrigation design shall also be provided for this project to show new tree locations and associated tree bubblers and drip irrigation locations. Hardscape and other landscape design shall not be included in this contract.
- C. No traffic signal design plans, tables or details shall be provided under this contract. A conduit layout plan for future traffic signal modifications at Corporate Drive and Huffines Boulevard intersection was provided with Corporate Drive Segment 4 (G1124) construction plans. It is assumed the future traffic signal design for the Corporate Drive and Huffines Boulevard intersection shall be provided at a later date under a separate contract.
- D. No trail or shared-use path design shall be provided under this contract. Sidewalks shall be assumed to be 6-feet in width per the zoned Industrial area and shall meet all PROWAG and TDLR requirements for accessible routes.

Sidewalks shall be meandered as is feasible within available Right-of-Way limits.

- E. Consultant will provide a Traffic Control and Sequencing Plan following TMUTCD established minimums. The Contractor will be responsible for submitting the final Traffic Control Plan, signed and sealed by a Licensed Professional Engineer in the State of Texas, for City approval.
- F. No ROW services, including but not limited to parcel acquisition, negotiation, title, closing, appraisals, appraisal review, relocation assistance, condemnation, or any other ROW assistance services shall be provided under this contract. If it is determined that ROW services are needed, they can be provided for an additional fee to be negotiated at a later date
- G. No traffic impact analysis, traffic counts or traffic study shall be provided under this contract. If it is determined during design that a traffic study or traffic impact analysis services are needed, they can be provided for an additional fee.
- H. No illumination study, photometric analysis, voltage drop calculations, or pedestrian lighting shall be provided under this contract. Roadway lighting/illumination plans and details shall be provided adhering to the City's Unified Development Code Section IX.4.9. Streetlights on fixture/pole type and spacing.
- I. Construction Staking, Management, Inspection and Materials Testing are not included in this contract.
- J. The Consultant shall not be required to attend any City Council meetings under this contract.
- K. The Consultant shall not be required to attend any public meetings under this contract.
- L. A Nationwide Permit submittal package is not anticipated to be needed at the time of this contract and effort for this is not included in this contract. If it is determined that a Nationwide Permit submittal package is needed, it can be provided for an additional fee to be negotiated at a later date.
- M. Structural design is not anticipated at the time of this contract and is not included in this contract. If it is determined that structural design is needed for any proposed culvert, headwall, wingwall, retaining wall or other structural improvements, it can be provided for an additional fee to be negotiated at a later date.
- N. It is assumed that the funding for this project comes from general local revenue and no federal or state funds will be utilized for the purposes of this projects design and/or construction. If federal or state funds are pursued at a later date that would in turn necessitate the completion of additional environmental or

other studies then said efforts can be provided at a later date under a separate contract.

O. It is assumed that the entrance to the Republic Services Landfill will generally remain in its existing configuration and no major operational and/or ingress and egress modifications shall be required as part of this project.

3. PROJECT MANAGEMENT

A. Manage the Team:

- Lead, manage and direct design team activities
- Ensure quality control is practiced in performance of the work
- Communicate internally among team members
- Allocate team resources

B. Communications and Reporting:

- Attend one (1) pre-design project kickoff meeting with City staff to confirm and clarify scope, understand City objectives, and ensure economical and functional designs that meet City requirements. The Consultant shall prepare agenda for meeting and provide meeting minutes afterwards.
- Conduct plans-in-hand review meetings with the City at the end of each design milestone. Up to three (3) total.
- Prepare and submit a maximum of thirty (30) monthly invoices with progress reports in the format acceptable to the City.
- Coordinate with internal private/land development teams for the adjacent development sites, specifically Prologis, for driveway and other site design improvements to confirm cohesion between projects.
- Consultant shall assist the City with franchise utility coordination as necessary for the design of the proposed infrastructure. Consultant shall distribute the construction plans at each design submittal to a list of franchise utility owner contacts provided by the City. Consultant shall address comments from utility companies, limited to showing conflicts and franchise utility adjustments on the plans based on information provided by the franchise utility companies. Design of franchise utility improvements and direct coordination with the franchise utilities pertaining to relocations are excluded from this contract. Attendance of up to one (1) virtual, franchise utility coordination meeting, incorporating all pertinent franchise utility representatives, is included.
- Consultant shall assist the City with Republic Services coordination as needed to determine and incorporate into the design operational and security constraints both during and after construction. Attendance of up to two (2) in-person meetings is included.

C. Data Collection:

- (1) Research and make efforts to obtain any additional design criteria, available GIS information, pertinent utility plans, street plans, plats and right-of-way maps, existing easement information, previous studies prepared by others, as-built plans for portions of surrounding infrastructure, historical drainage complaints and other information available for the project area. This shall coincide with the project kickoff meeting.
- (2) The Consultant shall attend one (1) site visit to the project site during the design phase of the project, to walk the project limits, observe, measure and/or note any specific site conditions, including driveway and side street joint dimensions, any unique or specific parkway conditions or features, and confirm surveyed features and above-ground appurtenances.
- (3) The City shall provide any existing, available data concerning the Project including as-built plans for existing developments and streets, drainage facilities, water and wastewater mains, and any available future, planned development plans to assist in determining median opening locations along the corridor.

4. DESIGN SURVEY (TOPOGRAPHIC AND BOUNDARY)

The Consultant shall provide a Boundary, Topographic survey and Tree Survey of approximately 2,250 +/- linear feet of Huffines Boulevard (a variable width R.O.W.), from the intersection of Riverview Drive, south to the centerline of Corporate Drive (a variable width right-of-way). Survey limits are from projected, proposed right-of-way to existing right-of-way along Huffines Boulevard. The roadway is proposed to be a 49-foot wide, 4 lane divided roadway. Topo will include the area for realignment to be an average of 100 foot wide throughout the corridor, accounting for the proposed 80 foot R.O.W.

Design Topographic Limits – Huffines Boulevard



- A. Perform all necessary topographic survey operations required for the complete design as described in survey scope.
- B. The design survey shall establish all horizontal and vertical control points using Global Positioning System (GPS) methodology. Horizontal values will be based on the Texas State Plane Coordinate System, North American Datum of 1983, North Central Zone (4202). The vertical values will be referenced to NAVD88 and computed using GEOID 18, control to be set at 500-foot intervals with a minimum of two vertical benchmarks per site.
- C. Survey shall tie in all right-of-way lines and corners, property lines, tag and tie trees 6" and larger in caliper, fence lines, and all other present and visible surface features and up to the drive returns in each direction of intersections.
- D. Topographic information shall be acquired with cross sections collected at 50-ft intervals, producing one-foot contours of existing grade.

- E. Horizontal and vertical location of all existing facilities within the Project limits including existing paving, driveways, sidewalks, buildings, mailboxes, landscaping, etc.
- F. Tie existing visible franchise utilities and appurtenances, and public utilities such as water valves, fire hydrants, manholes, etc.
- G. Verify horizontal and vertical location of existing sanitary sewer facilities.
- H. Texas 811 - Tie underground utilities if located at the time of the survey.
- I. Label existing ownership information according to current appraisal district information.
- J. Deliverables in AutoCAD.

5. RIGHT-OF-WAY REQUIREMENTS

The Consultant shall evaluate where right-of-way may be required.

- A. Prepare a preliminary list of right-of-way, easement and/or temporary construction easement (TCE) parcels necessary to construct the project (if any). Submit to the City of Lewisville as soon as possible and prior to the final plan submittal.
- B. Preparation of a Boundary Map/Right-of-Way Strip Map that will include:
 - City title block
 - Property owner name, address, and recording information of deed
 - Location of all existing property pins and monuments
 - Location of easements of record
 - Existing rights-of-way
 - Location of proposed easement pins
 - Easement areas
 - Parcel numbers
 - All of the above shall be placed on standard plan sheets and bear the seal of a Texas Licensed Professional Engineer.
- C. Meet with the City of Lewisville Staff to determine right-of-way, easement or TCE requirements for preparation of field notes and exhibits.
- D. At this time, it is assumed that a maximum of eight (8) Right-of-Way parcels, four (4) miscellaneous permanent easements, and eight (8) temporary construction easements (TCE) may be required for this project. A cost per document/exhibit preparation has been established and will only be billed for on an as-needed basis.
- E. Individual Exhibits for each parcel shall be prepared to contain the following:

- Area required
- Parcel number
- Property owner name, mailing address, and volume and page of deed
- Existing easements
- Exhibits will be drawn to scale
- All of the above shall be placed on one page of 8-1/2" x 11" paper, labeled as Exhibit "B" and signed and sealed by a Texas Registered Professional Land Surveyor.

F. Legal descriptions for each parcel shall reference the volume, page, and owner of the parent tract and shall be incorporated into a standard City of Lewisville conveyance document as Exhibit "A". Individual parcels will be cross-referenced on the plans. Front end documents shall be provided by the City.

G. Submit right-of-way and easement documents to the City and make necessary corrections.

H. Upon approval of the right-of-way and easements by the City, and if required, the Consultant shall stake and flag the right-of-way for inspection by the appraiser and property owner. The documents, including legal description, shall be furnished to the City in Microsoft Word and PDF format.

6. GEOTECHNICAL INVESTIGATION/PAVEMENT DESIGN

The Consultant shall subcontract with a Geotechnical engineering firm to provide sub-surface soil investigation, testing and pavement design including the following:

- A. Soil investigations, including field and laboratory tests, borings, related engineering analysis and recommendations for determining soil conditions will be made.
- B. Borings shall be of sufficient depth and spacing to provide general information needed for the design and construction of the project. Three (3) borings will be advanced to a depth of 10 feet below the existing ground surface and two (2) borings will be advanced to a depth of 15 feet below the existing ground surface at each end of the culvert crossing where culverts and associated wingwalls are anticipated.
- C. Testing will be in accordance with ASTM or TxDOT procedures. The specific types and quantities of tests will be determined based on geologic conditions encountered in the borings. Laboratory testing will include moisture content, soil classification according to USCS, Atterberg limits and California bearing ratio. In the event the subgrade requires lime treatment the optimum percentage of lime will be determined by the Eades and Grim pH test.
- D. An engineering report will be prepared by a registered engineer and will present the results of the field and laboratory data together with analyses of the results and recommendations. The report will address:

- General soil and groundwater conditions encountered at the boring locations.
- An evaluation of the swell characteristics of the subgrade soils.
- Recommendations for pavement subgrade stabilization type, depth and concentration.
- Recommendations for concrete pavement thickness design.
- Recommendations for utility/storm drain installation, including bedding and backfill.
- Recommendations for culvert structure foundation type, depth and allowable loading
- Recommendations for foundation construction requirements.
- Recommendations for lateral pressures for the design of below-grade walls and retaining structures.
- Earthwork recommendations.

E. Deliverables:

- Boring logs with location map
- Soil testing results
- Geotechnical report

7. SUBSURFACE UTILITY ENGINEERING

Services will be performed in a manner consistent with that degree of skill and care ordinarily exercised by members of the same profession currently practicing under similar circumstances and in accordance with ASCE/UESI/CI 38-22 "Standard Guideline for Investigating and Documenting Existing Utilities."

A. Project Limits: Approximately 2,200 linear feet of Huffines Boulevard from Corporate Drive to Riverview Drive.

B. Quality Level-A Utility Test Holes (Vacuum Excavation):

- Up to Six (6) test holes will be performed on various subsurface utilities at locations specified by the Consultant, and concurred by the City. Consultant will cut up to a 12-in. square test hole, non-destructively excavate down to utility, record the depth to top of utility, backfill & compact the hole, and restore the surface to its original condition. An iron rod with cap or "x-cut" will be set to mark the approximate centerline of the utility.
- The Consultant will make a good faith effort to locate all utilities but shall be compensated for work performed even if the utility is not located.
- This Scope of Services includes all test holes being performed under one (1) mobilization.

C. Quality Level-B Utility Designating:

- The Consultant will designate toneable subsurface utilities and note electronic depths using geophysical prospecting equipment and mark the locations with paint and/or pin flags.
- The Consultant anticipates designating approximately 10,000 LF linear feet of utilities including buried communication, electric, natural gas, petroleum pipeline, traffic signal, water, wastewater/sanitary sewer.
- Designation of irrigation lines, HDPE lines, gathering lines, asbestos concrete and/or pvc lines, as well as pvc lines without tracer wire or access are not part of this Scope of Services.
- Because of limited record information and the possibility of non-toneable utilities, Consultant cannot guarantee that all utilities will be found and marked on the project.

D. Permitting: Street Cut permits will be coordinated with the City of Lewisville, Denton County and/or TxDOT as required. Three (3) concrete cores are assumed to be needed with this scope of services and will be billed under a separate task item.

E. Work Zone Traffic Control: Consultant will provide standard temporary work zone traffic control consisting of cones and free-standing signage for this project. Certified Traffic Control by third-party provider i.e. lane closures, flaggers, messaging signage, etc., is included with this contract to be used and invoiced on an as-needed basis upon confirmation from the Consultant and written authorization to proceed from the City.

If an engineered traffic control plan is required for permit approval or if unique traffic control conditions exist, Consultant will notify the City and submit a supplemental agreement for authorization prior to proceeding with additional work.

F. SUE Deliverables:

- QL-B will be 11-in. x 17-in. SUE plan sheets depicting the findings of the investigation.
- QL-A will be 8.5-in. x 11-in. Test Hole Data Forms indicating depth, size, location, etc. of the utility.
- Electronic files in AutoCAD format.
- Received records, PDFs, KMZ, and project photos/notes.
- Utility Investigation Report in accordance with ASCE/UESI/CI 38-22 and 75-22.

G. Right-of-Entry: Right-of-Entry is not part of this Scope of Services as work is anticipated within the existing road right-of-way. If right-of-entry is required, it will be performed and provided to Consultant by the City. It is assumed the City will gain right of entry concurrence from the City of Farmers Branch for the

parcels owned by Farmers Branch with the project limits. Consultant will coordinate with property owner(s) once right-of-entry has been obtained.

H. Schedule: See Project Schedule below for SUE deliverables schedule. Due to uncontrollable factors such as ground conditions, weather, and safety hazards, Consultant reserves the right to request more time to facilitate field efforts should one of these circumstances exist.

Work performed in the right-of-way shall be performed Monday through Friday, 9 am to 4 pm, barring foul weather.

I. Exclusions:

- QL-B of irrigation lines, services, asbestos concrete and/or pvc lines, and pvc lines without tracer wire or access
- Engineered Traffic Control Plans
- Survey

8. HYDROLOGIC & HYDRAULIC SERVICES

A. Data Collection:

- Request, receive, and review available FEMA, City, and/or County models, maps, and output to support existing condition model development. Leverage available information within the FEMA products, if applicable.
- Process the most recent, available LIDAR dataset and topo survey to support topographical representation within the models.
- Request, receive, and review as-built drawings/records for the Stonewall and Corporate crossings, if available, to support model accuracy and impact limitations.
- Request available GIS shapefiles of storm drain infrastructure from the City.

B. Hydrologic Analysis:

- Leverage FEMA effective information, hydrology associated with private development in the area, and/or recent hydrology developed by the City, where available, to provide a basis for hydrologic information. Update watershed and subbasins of the Unnamed Tributary from just downstream of Corporate Drive to approximately 200 feet upstream of Huffines Blvd.
- Leverage the Corporate Drive Hydrology
- Compare delineated watersheds with available storm drain GIS shapefiles to verify subbasin alignments. Prepare hydrologic watershed map.
- Calculate existing conditions hydrologic parameters. Develop time of concentration, soil, land use, and curve number maps using the most current information and aerial imagery available.

- Develop an ultimate conditions hydrologic land use map based on available future land use and zoning maps. Calculate ultimate conditions land use hydrologic parameters.
- Prepare a 1D, steady state, modified puls flood routing model to determine storage-discharge relationships for stream reaches upstream Corporate Drive to Huffines Blvd.
- Compute existing peak discharges for the 1-, 5-, 10-, 25-, 50-, 100-, 500-, and ultimate 1-, 5-, and 100-year storm events using the SCS method, NOAA Atlas 14 rainfall data and the latest version of HEC-HMS . Compare computed discharges to previous studies, if applicable.

C. Hydraulic Analysis:

- Study Limits:
 - Unnamed Tributary from just downstream of Corporate Drive to approximately 200 feet upstream of Huffines Blvd.
- Develop a pre-project condition HEC-RAS hydraulic model for the study limits in the latest version of HEC-RAS. If available, leverage the FEMA effective model as the baseline conditions for hydraulic analysis, models associated with recent City studies, and/or private development. Incorporate best available LIDAR data, as-built structure data and field survey cross-sections.
- Execute pre- and post-project condition flood profiles based on existing conditions hydrology for the 1-, 5-, 10-, 25-, 50-, 100-, 500-, and ultimate 1-, 5-, and 100-year storm events. The pre- and post-project condition simulations will be the basis to confirm no adverse impact per local drainage criteria.
- Develop post-project condition HEC-RAS models by incorporating the 30%, 60%, 90%, and 100% schematic submittals into the pre-project HEC-RAS geometry.
- Size the proposed culverts and demonstrate compliance with City/County/Federal criteria for upstream or downstream impacts.
- Delineate 100-year, 500-year, and ultimate 100-year floodplain mapping in GIS format along the study limits described above for pre- and post-project conditions.
- Leverage the Corporate Drive study and models to inform the design of the proposed Huffines Blvd improvements.

D. Drainage Report:

- Develop a drainage report documenting methodology and results of the study including supporting tables and figures. Submit to the City for review.
- Respond to one (1) round of QC comments by the City. Schedule assumes City review will be completed within two weeks of draft report submittal. Resubmit final report.

E. Deliverables:

- Floodplain Development Permit (FDP) Application
- Drainage Report in PDF format
- Pre- and post-project H&H Models in HEC-HMS and HEC-RAS software
- GIS-based hydrologic and hydraulic supporting information

9. ENVIRONMENTAL SERVICES

A. Jurisdictional Determination/Delineation: The Consultant will perform an Aquatic Resources Delineation in general accordance with the U.S. Army Corps of Engineers (USACE) 1987 Wetlands Delineation Manual and appropriate USACE Regional Supplement (Great Plains Region) as detailed below:

- Desktop Review: The Consultant will perform a desktop review by locating readily available resource documents which may include aerial photographs, historic topographic maps, soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, National Hydrography Dataset (NHD), Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), historic aerial photographs, and other related data for a desktop review of site conditions.
- Field Delineation: The Consultant will perform a site visit to evaluate the existence and locations of aquatic resources on the site generally following the USACE 1987 Wetlands Delineation Manual and the applicable USACE 2010 Great Plains Regional Supplement. Completion of USACE wetland determination data forms will be completed if applicable. The ordinary high-water mark (OHWM) for streams will be identified in the field. Following the site visit, Halff will prepare exhibits showing the boundaries (polygons) and acreage and/or linear footage (if applicable) of aquatic resources identified onsite during the site visit as collected utilizing a GPS with sub-meter accuracy.
- Delineation Report: The Consultant will prepare a report documenting the results of the aquatic resources delineation performed onsite. The report will address the applicable regulatory framework, describe the assessment methodology, limitations and findings, provide site-specific conclusions and jurisdictional analysis of identified features. The report will also include applicable maps/exhibits, site photographs, and data sheets/forms.

B. Permitting Assessment: This task assumes the project would not exceed the impact thresholds of Nationwide Permit 14 – Linear Transportation (NWP 14). Upon the completion of the wetland delineation, it will be determined if the project will result in a regulated activity under Section 404 of the Clean Water Act and likely require a permit with the USACE. Halff specialists will coordinate with design engineers to evaluate site alternatives pursuant to the Section 404

NWP program. Halff will outline Section 404 permitting responsibility as appropriate for the ultimate design scenario and incorporate as a separate memorandum. This task does not assume the preparation and submittal of any Section 404 permit documents to the USACE.

As a Section 404 permit is a federal action, documentation must be provided to make an effect determination under the Endangered Species Act and Section 106 of the National Historic Preservation Act of 1966 (Section 106) to remain in compliance with the conditions of the Section 404 permit program.

- Cultural Resources Desktop Review and Agency Coordination: Because the project is being developed by the City of Lewisville (City), a political sub-entity of the State of Texas, it falls under purview of the Antiquities Code of Texas (Title 9, Chapter 191 of the Texas Natural Resources Code), which requires that the Texas Historical Commission (THC) review actions that have the potential to impact archeological historic properties within the public domain. Halff will perform desktop research and agency consultation as described below to enable the City to comply with the Texas Antiquities Code (TAC) for the proposed project.

The Consultant will review the Texas Archeological Sites Atlas to determine whether any archeological sites and above ground historic resources (cultural resources) eligible for listing on the National Register of Historic Places (NRHP) or designation as a State Antiquities Landmark (SAL), or cemeteries are documented within or adjacent to the project area. Background research will also include a review of local soil, geological and other physiographic data to evaluate the potential for buried archeological deposits as it pertains to the horizontal and vertical footprint of the proposed project design. Historic topographic maps and aerial photography will be reviewed to identify any potential above-ground historic resources within and adjacent to the project area. The results of the desktop review will inform a recommendation regarding the potential for the project to affect cemeteries and cultural resources eligible for listing in the NRHP or SAL designation.

The results of the desktop review will be summarized in a report submitted for review by the THC. Should the desktop review and agency consultation determine that additional cultural resources investigations are warranted (e.g., archeological or historic resources field surveys), the work will be considered an additional service and addressed under a separate scope. In that event, the results of the desktop review will be incorporated into a Scope of Work detailing the proposed survey methodology for the project area, to be submitted to the THC with an Antiquities Permit Application for review and approval.

- Threatened and Endangered Species Assessment:

- Obtaining an official species list for the project area and other related construction areas utilizing the USFWS Information for Planning and Consultation (IPAC) service;
- Conducting background research including review of aerial photography, topographic maps, vegetation maps, and soil survey maps to identify potentially suitable habitat for species listed in the IPaC report;
- An opinion regarding the potential of the proposed projects to affect federally listed threatened and endangered species.

C. Tree Species Identification and Documentation: Once existing trees six (6") inches in caliper or larger within the PROJECT area have been located and tagged as described under Design Survey, the Consultant's certified arborist will confirm species, health condition and diameter-at-breast height and produce a spreadsheet of surveyed trees consistent with requirements outlined in the City of Lewisville Development Code: Subpart 3, Article 8, Chapter 4.

D. Exclusions:

- Preparation of a standard individual permit.
- Preparation of a Nationwide Permit Pre-Construction Notification (PCN). It is assumed the project will not go beyond the thresholds of NWP 14.
- Pursuit of a No Permit Required letter from the USACE.
- Preparation or submittal of an Approved Jurisdictional Determination to/from the USACE
- Preparation of a permittee-responsible mitigation plan.
- This scope of services assumes that there will be appropriate mitigation credits available at local mitigation banks to cover potential compensatory mitigation needs.
- Threatened/Endangered species presence absence surveys
- Section 7 formal consultation with the USFWS
- Archeology site investigations
- Right of entry coordination.
- Mechanical trenching
- Historical resources survey and archeological assessment.
- Formal NRHP/SAL eligibility evaluations of archeological historic properties documented in the project area.
- Documentation or removal of human burials encountered during the field investigations or inadvertent discovery during construction.

10. CONSTRUCTION PLANS

The Consultant shall develop construction plans for review, permitting, bidding, construction, inspection and record keeping. In general, construction plans shall be consistent with normal practice for projects of this nature. The construction plans will consist of numerous sheets ordered as follows:

- A. Cover Sheet and Sheet Index: The cover sheet shall include a location map. Additionally, the cover sheet shall show the project name, project number, date, City logo, Consultant's name, address, and telephone number and other items as may be specified. Following the title sheet shall be a sheet index with drawings numbered consecutively and without subscripts.
- B. Project General Notes and Legend: These sheets will include a listing of abbreviations, legend, and general notes.
- C. Project Layout Sheet(s): The project layout sheet(s) will be laid out with the north arrow up or to the right. The purpose of the project layout is to depict the project in a simplified view. Major items of work will be shown without excessive detail. Additionally, survey control points shall be shown.
- D. Typical Sections: Typical sections shall be drawn to depict a view looking north or east. As a minimum, typical sections will be drawn showing the relationship of the existing street and proposed improvements within the corridor and parkway. Typical sections will include existing roadways, right-of-way lines, etc., along with all proposed roadway, sidewalk/trail and parkway improvements and will depict all significant items of work.
- E. Plan and Profile Sheets (Paving, Storm Drain, Wastewater, and Water): Plan-profile sheets will be arranged from south to north and from west to east, with the north arrow up or to the right on the sheet. Stationing will be from south to north or west to east with the beginning station being set at approximately 1+00. The plan and profile station will align vertically on the sheet with the proposed centerline drawn parallel to the profile grid. When there is a centerline curvature, the plan-profile should be drawn so that as much of the plan view is in alignment as possible. Plan-profile sheets shall depict all existing and proposed items pertinent to the project. Water line profiles shall only be provided for lines 12-inch and larger. Lines smaller than 12-inch shall be designed in plan only. Wastewater profiles shall be provided for all pipe sizes.
- F. Grading Plans: Consultant will provide grading plans that include 1' proposed contours, cross and longitudinal slopes, with spot elevations labeled at PC, PT, PI, top of curb, top of pavement and maximum 50 feet spacing.
- G. Drainage Plans and Calculations: Consultant will provide a drainage area map and calculations to support the design of a closed conduit system and determine inlets needed to appropriately convey runoff for the street corridor. Existing storm drain infrastructure will remain in place wherever practicable.
- H. Culvert Design for Stream/Channel Crossing: Consultant will provide culvert drainage design and calculations for the stream/channel crossing just south of Stonewall Drive and design for infall and outfall structures, as needed.
- I. Tree Preservation/Mitigation Plans & Details: Consultant will prepare Tree Preservation Plans in accordance with the Sept. 12, 2024 version of the City ordinances. Plans will be limited to the area inside the project boundaries.

Plans will reference the trees measured and identified during design survey and include the exact location, size, condition and common name of each tree that is six (6) inches DBH and larger. If an area is to be left in its natural state and undisturbed during and after construction, the area will be designated as such on the preservation plans, and individual identification of protected trees may not be shown. Plans will also include protection fencing locations, a table of trees preserved or removed and a schedule of tree preservation credits and mitigation fees. Plans will include details pertaining to the work.

- J. Tree Planting and Irrigation Plans & Details: Consultant will prepare tree planting and irrigation plans for planting between the proposed curb and the ROW on the outside of the street. Tree planting design will meet City of Lewisville Landscaping Standards in accordance with the Sept 12, 2024 version of the city ordinances. Plans will include plant locations, quantities, and an overall schedule of plants with notes indicating the proper planting requirements, as well as details for plant installation and a warranty period. Irrigation plans will specify tree bubblers and drip irrigation and be zoned for efficient use of water.
- K. Roadway Illumination Plans & Details: Consultant will provide illumination layout plans, electrical conduit plans and details for roadway lighting systems. These plans shall include roadway illumination at locations as necessary to meet City standards for spacing. A photometric study and voltage drop calculations will not be provided. Standard lighting fixtures meeting City UDC requirements shall be assumed to be used for installation.
- L. Detail Sheets: The City's standard drawings will be used as a beginning point in developing standard details for this project. They will be reviewed and modified for this project. Where other agency standards are used, they shall be reduced as necessary to fit on the City's standard sheet format with complete title block.
- M. Miscellaneous: Construction plans will also address demolition and removals, right of way strip map, erosion control, utility adjustments, temporary and permanent fencing, traffic control (including phasing, detours, road closures, signing, barricading, etc.), pavement markings and signage, and other improvements.
- N. Cross Sections: Cross sections shall be arranged from bottom to top of the sheet looking up station and shall show existing and proposed features and improvements. Generally, no more than eight (8) sections per sheet are to be plotted. Each section should extend beyond the easement and rights-of-way a sufficient distance to clearly show the relationship between the proposed improvements and the existing properties. Full sections will be drawn at maximum spacings of 500 feet.
- O. Review Plans: The Consultant shall develop conceptual schematic and estimates of probable cost for the 30% milestone. A rolled schematic will be provided for review and comment and to determine the feasibility of the project

and confirm constructability and cost prior to developing preliminary plans. Preliminary plans shall then be prepared and submitted at the 60% milestone. Pre-Final plans shall be prepared and submitted at the 90% milestone and Final plans shall be prepared and submitted at the 100% milestone. Also, the Consultant may submit plan sheets or working drawings to the City for review and comment to reduce the number of revisions that otherwise would be required. During development of the plans, the Consultant shall attend meetings as needed. The Consultant shall, in company with the City, perform at least three (3) plans-in-hand review meetings for each submittal. Deliverables for each design submission are as follows:

- (1) 30% Design Package
 - (a) Roll schematic depicting plan layout for horizontal alignment of roadway (with vertical alignment), storm drain conduit, water line and wastewater line.
 - (b) Typical Corridor/Parkway Sections
 - (c) Engineer's Preliminary Opinion of Probable Construction Cost
- (2) 60% Design Package
 - (a) Information provided in previous design package revised per City comments
 - (b) Cover sheet, sheet index and legend, general notes sheets
 - (c) Project layout and control sheet
 - (d) Right of Way map sheets
 - (e) Demolition and utility adjustments plan sheets
 - (f) Roadway plan and profiles sheets
 - (g) Side Street plan and profiles and Driveway profiles
 - (h) Preliminary grading plan sheets
 - (i) Drainage area map, hydraulic and inlet computations
 - (j) Storm drain and culvert plan and profile sheets
 - (k) Water line plan and profiles sheets
 - (l) Wastewater line plan and profile sheets
 - (m) Traffic control and phasing sheets
 - (n) Roadway Cross Sections
 - (o) Project bid proposal
 - (p) Engineer's 60% Opinion of Probable Construction Cost
- (3) 90% Design Package
 - (a) Information provided in previous design package revised per City comments and progressed to pre-final design.
 - (b) Temporary and permanent fencing plan sheets
 - (c) Roadway Illumination plan sheets
 - (d) Pavement markings and signage sheets
 - (e) Erosion control plans
 - (f) Tree preservation/mitigation plan sheets
 - (g) Tree plantings and irrigation plan sheets
 - (h) Project detail sheets
 - (i) Project standard and technical specifications

- (j) Engineer's 90% Opinion of Probable Construction Cost
- (4) 100% Final Design Package
 - (a) Information provided in previous design package revised per City comment, signed and sealed for bidding.
 - (b) Engineer's 100% Opinion of Probable Construction Cost

P. Design: The design of the project shall be in general accordance with the City of Lewisville ordinances, standard details, PROWAG, and good consulting practices.

Q. Utility Coordination: During the design phase, the Consultant shall contact various utility companies and obtain information relating to existing utility lines. The design should avoid major utility relocations, where practical. When required, proposed relocations or replacements will be shown in plan and profile. The Consultant will provide utility companies with electronic PDF files of 60% plans for review. The City shall provide local utility contact information to assist with distribution.

R. Prints: Two (2) 11x17 sets of hard-copy plans and electronic files in PDF format shall be submitted to the City for each review stage and will include an opinion of probable construction costs.

S. General: Construction plans shall be furnished half-size. The Consultant will provide one 11x17 set of hard-copy plans, electronic pdf files and AutoCAD files for bidding and construction. The City's standard format shall be used. Electronic files in PDF and DWG format shall be provided to the Contractor for use during construction.

T. Generic Sheet List: Following is a general list of plan sheets required for each relevant construction package.

- (1) Cover Sheet
- (2) Sheet Index and Legend
- (3) Project General Notes
- (4) Typical Corridor/Parkway Sections
- (5) Project Layout Sheet(s)
- (6) Right-of-Way Maps
- (7) Demolition Plans and Utility Adjustments Plans
- (8) Temporary and Permanent Fencing Plans
- (9) Paving Plan and Profile Sheets
- (10) Driveway Profile Sheets
- (11) City of Lewisville Pavement Standard Details
- (12) Miscellaneous Pavement Details
- (13) Grading Plans
- (14) Drainage Area Map and Calculations
- (15) Inlet Computations
- (16) Hydraulic Grade Line Computations
- (17) Storm Drain Plan and Profile Sheets

- (18) Culvert Plan and Profile Sheets
- (19) Storm Drain Lateral Profile Sheets
- (20) City of Lewisville Storm Drain Standard Details
- (21) Miscellaneous Storm Drain Details
- (22) Water Line Plan and Profile Sheets
- (23) City of Lewisville Water Standard Details
- (24) Miscellaneous Water Details
- (25) Wastewater Line Plan and Profile Sheets
- (26) City of Lewisville Wastewater Standard Details
- (27) Miscellaneous Wastewater Details
- (28) Tree Preservation/Mitigation Plan Sheets
- (29) Tree Preservation/Mitigation Details
- (30) Tree Plantings and Irrigation Plan Sheets
- (31) Tree Plantings and Irrigation Details
- (32) Erosion Control Plans
- (33) City of Lewisville Erosion Control Details
- (34) Pavement Markings and Signage Plans
- (35) City of Lewisville Pavement Markings and Signage Details
- (36) Roadway Illumination Plans
- (37) Illumination Details
- (38) Traffic Control and Sequencing Plans
- (39) Traffic Control Details
- (40) Miscellaneous TxDOT Details (as needed)
- (41) Roadway Cross Sections

- U. Specifications:** The Consultant shall prepare a bid proposal and technical specifications required for bidding and constructing the project. Only specifications amending or supplementing NCTCOG specifications need be furnished. Under this section, the Consultant shall also provide a listing of bid items with quantities and opinion of probable construction cost estimates (OPCC). Specifications, bid items and quantities shall be furnished by electronic file.
- V. Miscellaneous:** Miscellaneous services not provided for herein and not generally associated with a project of this type will be paid for under an amendment to this Agreement and for an additional fee.

11. PERMITTING

The Consultant shall prepare applications to the Texas Department of Licensing and Review (TDLR) for code review of sidewalks and ramps. After construction the Consultant shall notify TDLR of completion date. Consultant shall address any questions or issues by TDLR as a result of review and inspection. TDLR review and inspection fees are included in this proposal.

12. BIDDING AND CONSTRUCTION PHASE SERVICES

A. Bidding – During the bidding phase, the Consultant will prepare bid documents and assist the City in advertising the project for bids. The Consultant will address technical questions and prepare addenda and issue to the bidders. The Consultant shall attend and prepare agenda for one (1) pre-bid meeting and prepare minutes.

B. Construction:

- 1) Attend one (1) pre-construction meeting and monthly progress meetings as required and assumed to be in-person at the City.
- 2) This scope includes attendance and meeting agenda preparation for up to ten (10) progress meetings, based on the estimated construction schedule. Document each meeting with written minutes. These meetings are assumed to be in-person at the City.
- 3) Visit the project site at appropriate intervals as construction proceeds to observe the progress and quality of the executed work. In performing these services the Consultant will endeavor to protect the City against defects and deficiencies in the work of the Contractor. However, the Consultant cannot guarantee the performance of the Contractor, nor be responsible for the actual supervision of the construction operations or for the safety measures that the Contractor takes or should take. Intervals shall not exceed four (4) site visits throughout the duration of the project.
- 4) Review up to thirteen (13) monthly pay application requests submitted by the Contractor.
- 5) Review up to twenty-four (24) shop drawings and Contractor submittals.
- 6) Review laboratory test reports on materials.
- 7) Prepare and negotiate construction contract amendments between the Contractor and the City.
- 8) Prepare record drawings from information supplied by the Contractor.
- 9) Attend up to one (1) final inspection site walks upon substantial completion of the street segment and prepare a punch list report for City consideration.

C. Closure – The Consultant shall prepare “record drawing” as-built plans, incorporating all changes and known variations to provide the City the best possible set of record drawings. The final record drawings shall be furnished in PDF format. AutoCAD CADD files shall be furnished as well.

13. EXCLUSIONS

Other additional services, not included in this contract, will be negotiated with the City as needed. Compensation will be based upon a mutually agreed lump sum fee or an hourly rate as described below. Items that are considered additional services include:

- Any service not specifically listed herein
- Revisions to the horizontal or vertical alignment requested by the City after the 30% design milestone.
- Revisions to plans requested by the City after plans are approved
- Attendance or preparation for Public Meeting(s)

- Attendance or preparation for City Council Meetings
- Public Engagement tasks
- Revisions to plans requested by the City after plans are approved
- Permit fees, filing fees, pro-rated fees, impact fees and taxes
- Right of Way Services
- Right of Way Acquisition, Negotiation, Title, Closing, Appraisal, Appraisal Review, Condemnation, or Relocation Assistance services
- Provide expert witness preparation and testimony related to ROW services
- Provide a copy to the Consultant's performance evaluation at end of project or as needed throughout the project
- Initiate, coordinate, and administer environmental investigation surveys
- Provide Bill of Sale for disposal of improvements
- Analysis and/or design of electrical, gas, telephone, cable, fiber optic, or other utility improvements except as noted herein
- Graphic products except as noted herein
- Design of utilities or other improvements outside of the project boundary or roadway rights of way (not in scope)
- Design of trail wayfinding or signage
- Hardscape Design
- Additional Landscaping or Irrigation Design except as noted herein
- Structural components to any landscape item(s)
- Traffic Engineering Services
- Traffic Evaluation
- Data Collection for Traffic Evaluation
- Traffic Impact Analysis
- Traffic Study or Reports
- SWPPP preparation
- Construction staking
- FEMA CLOMR and/or LOMR submittal
- Advanced, 2D hydraulic analysis
- Sediment transport analysis
- Scour Analysis
- Illumination Study
- Pedestrian Lighting Plans
- Photometric Analysis
- Voltage Drop Calculations
- Design for additional power connection or circuiting to other devices not mentioned above
- Design for receptacles located at the base of the electrical lighting pole
- Design for foundations of light fixtures
- Additional Environmental services except as noted herein
- Preparation of a Nationwide Permit Pre-Construction Notification (PCN)

- Preparation of a Standard Individual Permit
- Preparation of an AJD request and any required supporting documentation in support of an AJD
- Threatened/Endangered Species Presence Absence Surveys
- Section 7 formal consultation with the USFWS
- Pursuit of a No Permit Required letter from the USACE
- Preparation of a compensatory mitigation plan.
- Mechanical trenching
- Historical resources survey and architectural assessment.
- Formal NRHP/SAL eligibility evaluations of archeological historic properties documented in the project area.
- Documentation or removal of human burials encountered during the field investigations or inadvertent discovery during construction.
- Preparation of a Pedestrian Survey for Cultural Resources
- Structural Design services including but not limited to deep foundations for culverts or bridges.
- Downstream stream/channel protection or stabilization improvements
- Preparation of contract books, bonds or agreements
- Phase I Environmental Site Assessment (ESA) for surface or subsurface contamination due to proximity to a landfill
- Attendance of Bid Opening
- Preparation of Bid Tabs
- Preparation of Low Bidder Referral Letter

14. PROJECT SCHEDULE

The Scope of Services for this PROJECT is based on the following schedule:

- A. Completion of design surveys and SUE level "B" investigation, and geotechnical investigation field work: 60 calendar days from date of written authorization to begin work.
- B. Completion/furnishing 30% conceptual roll-plot schematic and construction cost estimate: 120 calendar days from date of written authorization to begin.
- C. Completion/furnishing 60% preliminary plans, preliminary drainage study, ROW and easement exhibits, Environmental memorandum, bid quantities, and construction cost estimate: 90 calendar days from date of receipt of City 30% submittal comments.
- D. Completion/furnishing 90% pre-final plans, final drainage study, final SUE Level A testhole data sheets, preliminary specifications and bid quantities, and construction cost estimate: 75 calendar days from date of receipt of City 60% submittal comments.

- E. Completion/furnishing 100% final plans, specifications, bid quantities, and construction cost estimate: 45 calendar days from date of receipt of City 90% submittal comments.
- F. Bidding services: 60 calendar days from city's approval of final plans.
- G. Construction services: In accordance with construction schedule (estimated to be 360 calendar days total)
- H. Closure: 30 calendar days from the date of construction completion.

**COMPENSATION
for
HUFFINES BOULEVARD WIDENING**

This section of Attachment "B" defines the basis of compensation to the Consultant for the services rendered.

Basic Fee Services (Project Management and Construction Plans) – The basic fee for the services as described in the Scope of Services section Attachment "B" as Project Management and Construction Plans will be **\$533,900** which includes printing, direct costs and computer charges normally associated with production of these services.

The basis of compensation for Basic Fee services shall be as follows:

1. \$107,200 for Conceptual Design Phase (30% submittal)
2. \$175,900 for Preliminary Design Phase (60% submittal)
3. \$168,800 for Pre-Final Design Phase (90% submittal)
4. \$82,000 for Final Design Phase (100% submittal)

Items (1) through (4) will be billed lump sum monthly based on actual completion of the tasks and may include partial payments of the total amounts designated for each item.

Special Services – The maximum not-to-exceed fee for special services as described in the Scope of Services section of Attachment "B" will be **\$374,000**, which includes printing, direct costs and computer charges normally associated with production of these services. The basis of compensation for special services shall be lump sum unless noted otherwise. The table below summarizes special services fees.

TASK DESCRIPTION	FEE
I. Geotechnical Investigation	\$13,900
II. Design Surveys (Topographic, Tree Survey and Boundary)	\$41,200
III. Right-of-Way Parcels (\$5,000 per each)	\$40,000
IV. Permanent Easements (\$3,500 per each)	\$14,000
V. Temporary Construction Easements (\$2,500 per each)	\$20,000
VI. Subsurface Utility Engineering Level A Testholes	\$14,100

VII.	Subsurface Utility Engineering Level B Designating	\$22,600
VIII.	Certified Traffic Control for SUE	\$2,000
IX.	Hydrologic & Hydraulic Services	\$122,800
X.	Environmental Services	\$29,500
XI.	Bidding and Construction Phase Services	\$49,900
XII.	TDLR Plan Review, State Filing and Inspection Fees	\$4,000
TOTAL SPECIAL SERVICES		\$374,000

Miscellaneous Services – The fee for additional services not provided herein will be negotiated based on the scope of work and included in a contract amendment.

The total maximum fee for all services is **\$907,900.00 (Nine Hundred Seven Thousand Nine Hundred Dollars and Zero Cents)**.

Item III. The City will only be billed for the number of right-of-way parcels produced.

Item IV. and V. The City will only be billed for the number of easement parcels produced.

Item VIII. The City will only be billed for this task if Certified Traffic Control is deemed to be necessary and written authorization is provided by the City.

Reimbursable costs including printing, deliveries, mileage and other direct costs associated with the project, subcontract expenses and outside services shall be reimbursed at cost to Consultant plus a markup of ten percent (10%). These costs are included with the total fee above.