

**EXHIBIT
"A"**

STATE OF TEXAS

§

§

COUNTY OF WILLIAMSON

§

**SUPPLEMENTAL CONTRACT NO. 1
TO CONTRACT FOR ENGINEERING SERVICES**

FIRM: LJA ENGINEERING ("Engineer")

ADDRESS: 2700 La Frontera Boulevard, Suite 150, Round Rock, TX 78681

PROJECT: Red Bud Lane South

This Supplemental Contract No. 1 to Contract for Engineering Services is made by and between the City of Round Rock, Texas, hereinafter called the "City" and LJA Engineering, hereinafter called the "Engineer".

WHEREAS, the City and Engineer executed a Contract for Engineering Services, hereinafter called the "Contract", on the 26th day of September, 2019 for the Red Bud Lane South Project in the amount of \$550,863.65; and

WHEREAS, it has become necessary to amend the Contract to modify the provisions for the scope of services and to increase the compensation by \$1,370,142.09 to a total of \$1,921,005.74;

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

I.

Article 1, City Services and Exhibit A, City Services shall be amended as set forth in the attached Addendum To Exhibit A.

II.

Article 2, Engineering Services and Exhibit B, Engineering Services shall be amended as set forth in the attached Addendum to Exhibit B. Exhibit C, Work Schedule shall be amended as set forth in the attached Addendum to Exhibit C.

III.

Article 4, Compensation and Exhibit D, Fee Schedule shall be amended by increasing by \$1,370,142.09 the lump sum amount payable under the Contract for a total of \$1,921,005.74, as shown by the attached Addendum to Exhibit D.

IN WITNESS WHEREOF, the City and the Engineer have executed this Supplemental Contract in duplicate.

LJA ENGINEERING

By: Kenneth G. Schrock
Kenneth G. Schrock

3/18/2021
Date

CITY OF ROUND ROCK

APPROVED AS TO FORM:

By: _____
Craig Morgan, Mayor

Stephan L. Sheets, City Attorney

Date

ADDENDUM TO EXHIBIT A

City Services

1. City of Round Rock will provide any as-built drawings for developments along Red Bud Lane based on availability.
2. City shall any existing CADD/GIS files and pertinent as-built plans of the roadway, storm sewer, and water and wastewater utilities in the area.
3. City of Round Rock will provide any available traffic information to aid in pavement design.
4. The City will provide timely reviews in conjunction with the agreed upon schedule.
5. City of Round Rock will provide all City permits necessary.
6. The City will host monthly utility coordination meetings.
7. The City will provide payment for necessary permitting fees including TCEQ

ADDENDUM TO EXHIBIT B

Engineering Services

Roadway: Red Bud Lane
County: Williamson
Limits: **PS&E:** from Gattis School Road to Forest Ridge Blvd./Evergreen Dr..

General Work Description: Develop 60%, 90% and 100% plans, specifications, and estimates (PS&E) to develop the Red Bud Lane Improvement Project. The typical section will consist of a 5-lane divided roadway with continuous turn lane. PS&E phase of the project will build off the preliminary design during the schematic phase and produce construction plans, construction cost estimates, schedules, and bidding documents.

Standards and Specifications

Designs will be based on the latest version of Texas Department of Transportation (TxDOT) Design Standards and Specifications supplemented by some specific City of Round Rock items.

FC 110.2 GEOTECHNICAL SERVICES

Geotechnical Drilling and Laboratory Testing

A total of 3 retaining wall borings will be advanced to maximum depths of 15 ft below existing ground surface utilizing a truck-mounted drilling rig. We anticipate encountering a relatively thin veneer of dark brown clay overlying the limestone formation.

Samples will be taken utilizing standard penetration tests, Shelby tube, or NX rock core sampling techniques. The borings will be staked in the field utilizing tape and right angle measurements from existing benchmarks. The scope of services does not include surveying of boring locations and assumes surveyor will collect x, y, z coordinates. Laboratory testing will include but not limited to moisture contents, Atterberg limits, and unconfined compression test.

Additional Considerations

Our scope of services and estimated cost assumes that traffic control will be required and assumes some borings will be drilled within the existing right-of-away. It is also assumed that the borings can be drilled during the day between 9 AM to 4 PM, right of entry is provided by LJA, and that all boring locations will be accessible to a truck mounted drill rig.

Geotechnical Deliverable

The results of our lab testing will be utilized to provide lateral earth pressures for retaining wall structures and bearing pressures for support of footings. Our geotechnical delivery will include supplemental letter to our original geotechnical report which addresses proposed retaining walls.

Tentative Project Schedule

Based on our present workload, we anticipate that we could begin the field exploration phase of this study within 3 to 5 working days of receiving your written authorization, provided the site is accessible to our truck-mounted drill rigs. The field exploration and laboratory testing phase of the study is expected to take approximately 5 to 10 working days to complete. Engineering analysis and report preparation is expected to take 2 weeks. We will be pleased to provide the design team with verbal design information as the data becomes available.

FC 120.2 - PUBLIC INVOLVEMENT

Concept Development and Planning, LLC (CD&P) will provide public involvement services during the PS&E Phase for the Red Bud Lane project. The purpose of this work is to share information with the public on the project and collect and document their input during the final design phase. CD&P will serve as part of the LJA project team, providing services to the City of Round Rock.

Task 1: Project Management

CD&P will provide ongoing coordination with LJA and the City of Round Rock PM as needed to support and conduct public involvement activities. CD&P will provide monthly invoicing and progress reports.

Deliverables:

- Monthly invoices and progress reports
- Attend progress meetings and coordinate activities via phone or email as needed

Task 2: Public Involvement

CD&P will provide public involvement during this phase to keep stakeholders updated on design progress, answer questions, and support the team with stakeholder communications. CD&P will schedule and facilitate meetings with affected property owners as circumstances require and document meeting outcomes. CD&P will provide updates to project materials and content for updates to the City of Round Rock project webpage. CD&P will update the project database with stakeholder contact information and communications.

Deliverables:

- Maintain Stakeholder database
- Coordinate, attend, and document up to 8 stakeholder meetings
- Respond to stakeholder inquiries and provide project email updates
- Update project materials (fact sheet, maps and infographics,)
- Provide content updates for City of Round Rock project webpage

FC 130 - ROW DATA

- ◆ ROW Exhibit preparation
- ◆ Right of Entry
 - Prepare list of property owners and verify addresses and other contact information for 24 parcels with acquisition.
 - Prepare Right of Entry Letter and Right of Entry Agreement for surveying and other required due diligence using client provided form.

- Mail Right of Entry Letter and Agreement with return, self-addressed stamped envelope.
- Assist client in negotiating modified right of entry forms, if necessary.
- A maximum of four (4) follow-up attempts will be made to contact each landowner to obtain a signed Right of Entry Agreement. These attempts to make contact with the landowner will include up to one personal visit to the parcel, as needed. At the conclusion of the attempts to obtain right of entry, signed agreements will have been signed and delivered to the client or the files will be submitted to the client for final disposition.

FC 130.3 - UTILITY COORDINATION

- ◆ Assist City in Utility Coordination
 - Attend CORR monthly coordination meetings, up to 6 meetings
 - Contact utilities monthly for relocation design status updates
 - Provide utilities recommended relocation alignments to assure accommodation of all conflicts
 - Provide utilities with roadway PDF plans, cadd files and updates to PDFs and cadd files
 - Discuss proposed relocation alignment assignments with each utility in conflict
 - Provide updates to the city and roadway design teams as needed
- ◆ Prepare Utility Contact List
 - Identify and maintain all direct POC for the project
 - Provide emails, phone numbers and address for each
- ◆ Create/Maintain Proposed and Existing Utility Cadd Files
 - Create a preliminary utility relocation alignment assignment to assist conflict mitigation with roadway design
 - Update Proposed utility file with permitted relocation designs provided by utilities
 - Updated existing utility file with confirmed missing information provided by utilities
- ◆ Prepare Conflict Assessment Matrix (60, 90, 100%)
 - Create an excel sheet to identify and track all utility conflicts
 - Provide the utility name, facility type, aerial or underground, utility size, conflict station, conflict issue, conflict resolution columns.
 - Provide update copies to the city and utilities on a monthly basis
- ◆ Review of Proposed utility relocation plans and permits.

- Identify if relocation designs submitted for permits mitigate conflicts with the roadway design
- Identify if relocation designs submitted for permit mitigate conflicts with other proposed utilities
- Track permits submitted per utility
- ◆ Prepare Utility Relocation Schedule
 - Identify and track utility relocation startschedules
 - Provide excel sheet of updates to the city and utilities
- ◆ Prepare Utility Agreements (for utilities with compensable interest). Standard agreement template language to be provided by the City.
 - Assist utilities with identifying the necessary documents required by the city
 - Review of the submitted agreements and provide comments to the city and utilities

FC 145 - PROJECT MANAGEMENT AND COMMUNICATION PLAN

1. Develop Project Management Plan
 - a. Develop a Project Management Plan that will establish all the responsibilities and roles of the team members, including the prime firm and subs. The plan will also detail the procedure process for all submittals. A project specific QA/QC plan will be submitted within 30 days of NTP for approval which will detail the QA/QC process that will be followed.
2. Develop Project Specific QA/QC Plan
3. Meetings
 - a. Kickoff with City which will include the initial development of a design summary. A final design summary document will be emailed for approval after the kick-off meeting.
 - b. Kickoff with Team - Hold initial kick-off meeting with all team members during the first week after receiving the notice to proceed.
 - c. Milestone Meetings - Milestone Meetings will be held for each of the following submittals: 60%, and 90%. These meetings will include City of Round Rock staff and the Engineer's staff and are estimated to last up to 2 hours.
 - d. Team Coordination Meetings - Hold staff/team meetings at the Engineers office beginning with the second week of the project. The staff attending will be appropriate based upon the current assignments (up to 12 meetings)
 - e. Engineer will provide meeting minutes for all meetings with City.
4. Invoicing and Contract Document Coordination
 - a. Prepare Master Contract and Sub Contracts
 - b. Prepare monthly progress reports for invoicing

- c. Prepare monthly invoices for submission to the City for all requests for payment
- 5. Manage Sub Consultants
 - a. Monitor and supervise sub consultant activities (staff and schedule).
 - b. Review and approve sub consultant invoices.
- 6. Produce Project Scheduling
 - a. Prepare an initial critical path schedule in Microsoft Project format for approval by the City indicating tasks, milestones, major meetings, and reviews. Update schedule with each milestone deliverable.
- 7. Submittals and QA/QC
 - a. QA/QC of all documents prior to milestone submittals (60%, 90%, 100%). Detailed Check Review for all designs, Inter-discipline coordination review, detailed plan and construction reviews.
 - b. Prepare Submittals for City Oversight Reviews (60%, 90%, 100%)
 - c. Document control
- 8. Deliverables
 - a. Monthly Invoices

FC 150 - TOPOGRAPHICAL & BOUNDARY SURVEY

1. General

LIMITS: Supplemental surveying for Red Bud Lane within the ROW from Evergreen Drive to the north side of CR 123.

- A. Surveys provided will be in accordance with the "Texas State Board of Land Surveying" and the applicable City of Round Rock regulations.
- B. Survey field notes will be submitted if requested by the City of Round Rock.
- C. The City of Round Rock will assist in obtaining right-of-entry agreements with property owners for the required field surveys (short of litigation).

2. Topographic Surveys for Engineering Design

- A. Inland Geodetics will perpetuate existing horizontal and vertical control system from previous work. Additional control points will be established to adequately position horizontal control points as needed for project design activities and plan notations thereof. Control points will be established with significant conformance to current TxDOT specifications for primary control. Where possible, reference ties to permanent features will be provided for each established horizontal control point. Data for the horizontal control will be based on Texas State Plane, Central Zone, NAD 83 (93) derived from OPUS solutions and verified by other measurement technologies.
- B. Vertical control will be established via differential level loops from known project control reconciled to projects within the immediate vicinity (Gattis School Road, US 79, Red Bud Lane). A vertical benchmark system will be

perpetuated at approximate 1000 foot intervals for future reference on the plans and maintained to construction, if necessary. Surveyor will use brass markers for benchmarks where available.

Topographic information will include the limits of the existing concrete riprap upstream, beneath, and downstream of the existing drainage features to the project limits, Collect spot elevations along the project route including edges of back of curbs, driveways, visible utilities and markings from 811 marking requests, drainage structures, centerline of roads, significant trees (8" and up), any other hard surfaced improvements within the defined area, grade breaks, flowlines of watercourses, and other significant features relevant to the project (MH inverts, if any). The collected data will include spot elevations and breaklines sufficient to generate and/or merge to a 1 foot contour interval DTM for the project.

D. Profiles of intersecting driveways within the project limits will extend a sufficient distance beyond the existing right of way to ensure adequate data is available to determine tie-ins with proposed vertical alignment changes.

H. Field surveys will provide the locations of all small signs, mailboxes, and other visible surface features. Field surveys will provide an elevation and a horizontal tie to the soil boring locations or converted from data provided by the geotechnical subconsultant. Survey shots will be assigned a unique point number which provides a positive identification of the point. Each point will be assigned a feature number or feature name using the TxDOT's standard feature table. An ASCII points file and a hard copy print out will be provided. Each line of the output data shall contain in this order: the point number, northing, easting, elevation, and the descriptive feature code. Surveyed data will be provided in Microstation compatible 2D and 3D files, TIN file, and Geopak DTM file. The survey shot point attributes will appear on separate levels.

3. Boundary Surveys

The Surveyor shall provide Right of Way Acquisition surveying services for the Red Bud Lane Improvement Project between Gattis School Road and Evergreen Drive. It is understood that this proposal is for up to 24 acquisition parcels within the stated limits.

NOTE: this proposal assumes that title abstracts will be provided prior to delivering parcel acquisition packages.

- A. The Surveyor understands that Right of Entry will be provided from the affected landowners along the project route. This will include landowners subject to boundary line verification or data gathering on tracts adjoining the project tracts. This number of ROEs may exceed the 24 parcels being acquired from. Copies of the signed ROE letters will be supplied to the surveyor prior to work commencing. Limitations for access will be addressed as they become known and adjustments to scope of work, fee estimates, time schedules, and other tasks will be made by supplemental proposal.

ROW Acquisition Surveys

- A. The Surveyor shall generate, recover, and/or verify existing horizontal and vertical project primary control at the site, if any, and reconcile the control to known existing intersecting projects.
- B. The Surveyor shall establish or densify additional secondary control as needed for the project to collect data along the length of the project.
- C. The Surveyor shall, at their discretion, use 5/8" iron rods with distinguishing caps, cotton spindles (paved areas) or other durable entities for the project control as applicable.
- D. Inland will perform sufficient research of property records from various sources to analyze and develop an exhibit of the record ROW and property configurations for the affected area. Inland will perform sufficient field work to recover property corners and other boundary related evidence to aid in the analysis and reconstruction of the affected properties. Final deliverables will be a signed and sealed survey plat and accompanying metes and bounds description for each parcel.
- E. Inland will perform Title Commitment review for each parcel. NOTE: Title Abstracts shall be provided in a timely fashion for the use of the surveyor in preparing the ROW acquisition documents.
- F. Inland will monument the corners of the acquired tract of land.

Deliverables

The Surveyor shall provide:

- A. ASCII point file, DGN files, and/or DWG files as appropriate.
- B. Preliminary set and final Parcel survey plats with metes and bounds sketches.
- C. Overall ROW/Property Schematic of the project limits with numbered parcels depicted.
- D. Two CD-ROM containing the specified files.
- E. PDF file of each Surveyor's project fieldbook if requested.

Assumptions

The Surveyor shall notify the client prior to performing the work if:

- A. Sufficient boundary monumentation cannot be recovered to re-construct the existing alignments and associated right-of-way lines along the project corridor or that sufficient evidence for adjoining boundary lines of affected properties cannot be recovered and utilized for preliminary boundary line reconstruction. NOTE: It may become necessary for extending the survey limits beyond the properties in question to satisfy the Texas Board of Professional Engineers and Land Surveyors regulations pertaining to sufficient research and investigation with regards to the reconstruction of the affected boundary lines. This may be due to ambiguous seniority evidence or conflicting adjoining calls or descriptions that may not be located on the ground.
- B. Traffic Control can be managed by the Surveyor's personnel. If abnormal conditions or additional TC apparatus is required, the Surveyor will notify the appropriate personnel prior to proceeding. There may be additional costs contingent to this task.
- C. The work is delayed due to weather, Right of Entry/access, or other circumstances beyond the Surveyor's direct control.

FC 160 - PLANS, SPECIFICATIONS, AND ESTIMATE (PS&E) DEVELOPMENT ROADWAY

FC 160 - ROADWAY

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

The Engineer shall provide roadway plan and profile drawings using CADD standards as required by the City. The drawings must consist of a planimetric file of existing features and files of the proposed improvements. The roadway base map must contain line work that depicts existing surface features obtained from the schematic drawing. Existing subsurface and surface utilities must be shown. Existing and proposed ROW lines must be shown. Plan and Profile must be shown on separate or same sheets.

The plan view must contain but is not limited to the following design elements. Elements shall be included as needed to provide clarity of intent and design.

1. Calculated roadway centerlines, horizontal control points must be shown. The alignments will be calculated using GeoPak OpenRoads software.
2. Pavement edges for all improvements (proposed lanes, cross streets, retaining walls, and driveways).
3. Lane and pavement width dimensions.
4. Proposed structure locations, lengths, and widths (if applicable).
5. Direction of traffic flow on all roadways. Lane lines and arrows indicating the number of lanes must also be shown.
6. Drawing scale shall be 1"=100'
7. Control of access lines, ROW lines and easements.
8. Begin and end superelevation transitions and cross slope changes.
9. Limits of riprap, block sod, and seeding.
10. Existing utilities and structures.
11. Benchmark information.
12. Radii call outs, curb location, Concrete Traffic Barrier (CTB), guard fence, crash safety items and American with Disabilities Act Accessibility Guidelines (ADAAG) compliance items.

The profile view must contain but is not limited to the following design elements:

1. Calculated profile grade for proposed roadway, cross streets and frontage roads, if applicable. Vertical curve data, including "K" values must be shown.
2. WSELs at major stream crossings for design and 100 year storms.
3. The location of interchanges, general purpose and managed lanes, grade separations and ramps (shall include cross sections of any proposed or existing roadway, structure, or utility crossing).
4. Drawing vertical scale to be 1"=10'.

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

proposed and existing structures including retaining walls, existing pavement removal, riprap, limits of embankment and excavation, and other relevant details.

Cross Streets and Side Streets: The Engineer shall provide an intersection layout detailing the pavement design and drainage design at the intersection of each cross street and side street. The layout must include the horizontal and vertical alignments, curb returns, geometrics, transition length, stationing, pavement, drainage details, and American with Disabilities Act Accessibility Guidelines (ADAAG) compliance items. The Engineer shall design for full pavement width, widening, overlay, or any combination thereof, and provide a transition to the existing roadway.

Cut and Fill Quantities: The Engineer shall develop an earthwork analysis to determine cut and fill quantities and provide final design cross sections at 100 foot intervals. Cross sections must be delivered in standard OpenRoads format on 11" x 17" sheets, and electronic files. The Engineer shall provide all templates, corridors and surfaces files used to generate the design cross sections. Cross sections and quantities must include existing pavement removals. Annotation shall include at a minimum existing and proposed ROW, cross slopes, offset and elevation callouts of key points, side slopes (front & back), profiles (centerline or baseline PGL locations), existing longitudinal utilities to be removed, relocated, or remain and proposed utilities.

Deliverables:

Produce the following PS&E Sheets:

1. Title Sheet
2. Index Sheet
3. Project Layout Sheets
4. Typical Sections; existing and proposed
5. Horizontal Alignment Sheets
6. Removal Sheets
7. Roadway Plan and Profile Sheets (100 Scale)
8. Cross Street Plan and Profile Sheets
9. Intersection Grading Sheets
10. Miscellaneous Roadway Detail Sheets
11. Driveway P&P Sheets
12. Cross Sections: Develop design cross sections at 50' intervals along corridor and along each cross street for up to 200' back from the corridor centerline or whatever length is required to tie into existing.
13. Earthwork: The Engineer shall analyze the earthwork to develop cut and fill.
14. Quantity Summaries
15. Standards
16. Cost Estimate
17. Removal Sheets

FC 161 - DRAINAGE

Storm Drains: The Engineer shall provide the following services:

1. Design and analyze storm drains using software as approved by the State/City.

2. Size inlets, laterals, trunk lines and outfalls. Develop designs that minimize the interference with the passage of traffic and minimize the likelihood to incur damage to the highway and local property in accordance with the City's design criteria.
3. Determine hydraulic grade line (HGL) for the design storm starting at the outfall channel for each storm drain design. Use the design WSEL of the outfall as the starting basis (tailwater) for the design of the proposed storm sewer system.
4. Calculate manhole head losses. Compute manhole head losses as per FHWA's Hydraulic Engineering Circular-22 (HEC-22).
5. Identify areas requiring trench protection, excavation, shoring, and dewatering.
6. Include proposed drainage structures in the 3D model. The Engineer shall use Bentley's 3D design technology in the design and preparation of the 3D model.

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

1. Finalize drainage areas, times of concentration, runoff coefficients, and flows for cross culvert drainage systems based on Atlas 14 rainfall data.
2. Prepare Culvert Cross sections and identify each cross section's station location
3. Determine the sizes of the drainage crossings, including extending, adjusting or replacing non bridge-class culvert crossings. Develop designs that minimize the interference with the passage of traffic and minimize the likelihood to incur damage to the highway and local property in accordance with the City's design criteria.
4. The Engineer shall evaluate the existing erosion and proposed erosion potential upstream and downstream of each structure and provide erosion control recommendations as necessary.

Deliverables:

Produce the following PS&E Sheets:

1. Drainage Area Map Sheets
2. Culvert Layout Sheets
3. Drainage Plan & Profile Sheets
4. Storm Sewer Lateral Profile Sheets
5. Hydraulic Data Sheets – Culverts
6. Hydraulic Data Sheets – Drainage Areas
7. Hydraulic Data Sheets – Inlets
8. Hydraulic Data Sheets – Links
9. Hydraulic Data Sheets – Ditches

- 10. Special Details
- 11. Quantity Summaries
- 12. Standards

FC 162.1 - SIGNING & PAVEMENT MARKINGS

- ◆ Signing and Pavement Marking Plans - Proposed Layouts will include pavement markings, object markers, delineators, and proposed roadside signs in accordance with the Texas Manual on Uniform Traffic Control Devices (TxMUTCD), and Texas Department of Transportation Sign Crew Field Book.
 - Pavement Marking and Signage Sheets (100 Scale)
 - Standards
 - Quantity Summaries

FC 162.3 - TRAFFIC SIGNALS

- ◆ LJA will prepare plans, general notes, specifications, and estimates for traffic signal construction. The plans will be prepared in compliance with the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and TxDOT and City of Round Rock standards, as applicable.
- ◆ LJA will prepare traffic signal plans for the Red Bud Lane at Forest Creek Blvd intersection (proposed reconstruction of existing traffic signal).
- ◆ The following plan sheets will be prepared for each intersection:
 - General Notes
 - Summary of traffic signal quantities
 - Existing Conditions Layout
 - Proposed Traffic Signal Layout
 - Signal Phasing and Writing Charts
 - Proposed Traffic Signal Elevations
 - Proposed Intersection Pavement Marking, Signing, and Curb Ramp Layouts
 - Traffic signal pole, foundation, and electrical service standard sheets with quantities.
 - Select and prepare all applicable TxDOT standard sheets for traffic signal construction and traffic control during signal construction.

FC 163.1 - RETAINING WALLS

The Engineer will utilize geotechnical recommendations to design the proposed retaining walls. The Engineer will create proposed plan and profile retaining wall sheets for each retaining wall. Proposed retaining walls will be shown in the design cross sections. Based on schematic design, 5 total walls for an approximate linear footage of 1500'.

FC 163.3 - TRAFFIC CONTROL & EROSION CONTROL

- ◆ Design a Construction Phasing plan in accordance with TxDOT design standards, the Texas Manual on Uniform Traffic Control Devices (TxMUTCD) for the reconstruction

of Red Bud Lane. It is anticipated that the construction of the project can be accomplished in 3 major phases with additional minor steps at the transitions and intersections. The phasing plan will show barricade and channelization locations, spacing, work zone areas, temporary pavement, temporary pavement markings and temporary signage necessary to construct the project and safely control traffic progression. TCP cross-sections will be developed for each phase and transition area. These cross-sections will be provided in a separate 11in by 17in plan set. The following Traffic Control Sheets will be produced:

- Phasing Typical Sections
 - Phasing Narrative
 - Phase 1 Layouts
 - Phase 2 Layouts
 - Phase 3 Layouts
 - Intersection Phasing Details
 - Temporary Signal Layouts
 - Detour Layouts
 - Standards
 - Quantity Summaries
- ◆ The temporary erosion control measures will be shown on the Traffic Control Layouts and quantity summaries per phase.
 - ◆ A Construction Time Duration Schedule will be produced using Microsoft Project to estimate the construction duration.

FC 163.5 - ILLUMINATION

The engineer will prepare plans for continuous lighting along Red Bud Lane. The engineer will provide foundation design and details for all illumination elements as necessary. Engineer will coordinate electric service details with electric service provider. Tasks not included in the scope and fee for this project include lighting design for street signs, guide signs, wayfinding signs, or neighborhood marquee signs.

- Illumination Model & Analysis
- Illumination Schematic
- Illumination Layout Sheets (100 scale)
- Electrical Details Sheets
- Circuit Diagram Sheets
- Electrical Service Sheets
- Conductor Sizing and Voltage Drop Calculations
- Standards
- Quantity Summaries

FC 163.6 -SUBSURFACE UTILITIES

TRG will perform SUE services for this project in general accordance with the recommended practices and procedures described in ASCE publication CI/ASCE 38-02 “Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility

Data.” As described in the publication, four levels have been established to describe and depict the quality of subsurface utility information. The four quality levels are as follows:

- Quality Level D (QL“D”) – Information obtained from existing utility records.
- Quality Level C (QL“C”) – Surveyed data depicting visible above-ground features supplemented with QL“D” information.
- Quality Level B (QL“B”) – Two-dimensional horizontal information obtained through the application and interpretation of non-destructive surface geophysical methods. Also known as “designating,” this level incorporates QL“C” information and provides horizontal positioning of subsurface utilities to within approximately 1.0 foot.
- Quality Level A (QL“A”) – Three-dimensional horizontal and vertical information obtained through non-destructive vacuum excavation equipment to expose utilities at critical points. Also known as “locating,” this level incorporates QL“B” information and provides horizontal and vertical positioning of subsurface utilities to within approximately 0.05 feet.

Scope of Work

Based on information provided by LJA Engineering (Client), TRG has developed a proposed scope for SUE services on this project. This scope may be modified, with Client and TRG concurrence, during the performance of work if warranted by changing or unexpected field conditions.

The scope of this proposal includes QL "A" SUE services along Red Bud Lane in Round Rock, Texas. The limits of the SUE investigation are outlined in red on Exhibit B. TRG will excavate up to forty-five (45) QL "A" SUE test holes at locations determined by the Client and TRG. To layout the test holes, TRG will attempt to designate 10-feet of the target utility on each side of the test hole location.

The survey of SUE field markings is also included in this scope of work. It is assumed that the Client will provide the necessary survey control information.

Any necessary Right-Of-Entry (ROE) permits, will be provided by the Client prior to the start of field work.

TRG Procedures

QL “B” – Designating

To layout test holes, TRG will utilize a suite of geophysical equipment that includes magnetic and electromagnetic induction to designate conductive utilities. Where access is available, a sonde will be inserted into non-conductive utilities to provide a medium for transmission, which can then be designated using geophysical equipment. Non-conductive utilities can also be designated using other proven methods, such as rodding and probing.

QL “A” – Locating

TRG will utilize non-destructive vacuum excavation equipment to excavate test holes at the requested locations. To layout the test holes, TRG will follow the QL“B” – Designating procedures described above. Once each utility is located, TRG will record the size, type,

material, and depth. Test holes will be uniquely marked. Excavations will be backfilled by mechanical means with the appropriate material, and the original surface will be restored. If necessary, TRG can core pavement up to a depth of 12 inches. Asphalt surfaces will be repaired with an asphalt cold patch, and concrete cores will be epoxied in place, flush with the surrounding surface. TRG assumes that flowable fill will not be required when backfilling test holes and that full-section pavement repair (including sidewalks) will not be required to restore the original pavement surface. If requested, these services can be provided at an additional cost.

TRG will establish any necessary routine traffic control measures at no additional cost. However, if non-routine traffic control measures (lane closures, traffic detours, flagpersons, etc.) are required, this service will be invoiced as a direct expense. Due to the risk of damage, TRG will not attempt to probe or excavate test holes on AC water lines unless approval is obtained from the owner in advance. Additionally, excavation in rock, or to a depth greater than 18 feet, is considered beyond the scope of this proposal.

TRG has made the following assumptions with regard to the test holes on this project:

- All test holes will be accessible to truck-mounted vacuum excavation equipment.
- Right-Of-Way (ROW) permits from the City of Round Rock will not be required or will be provided by the City at no cost to TRG.
- Designed traffic control plans will not be required.
- Non-routine traffic control measures may be required for up to twenty-six (26) test holes. TRG will acquire the services of a qualified Maintenance-Of-Traffic (MOT) Subcontractor, and ensure that adequate traffic control is provided.
- The coring of pavement will be required for up to fifteen (15) test holes.

FC 163.10 - UTILITY DESIGN

The Engineer will perform:

- ◆ Site visits and field investigations as necessary to confirm field data
 - The Engineer will conduct two (2) site visits to verify data on utility locations, future alignments, conflicts, and other engineering aspects, and collect additional photography of existing conditions. For the purposes of estimating the effort for this task, it is assumed that the design team will conduct two (2) site visits using two (2) personnel.
- ◆ Utility Coordination – contact and coordinate with existing utilities to determine any conflicts that may need to be mitigated.
- ◆ Conflict Analysis of water, reuse and forcemain utilizing test hole data.

Any conflicts resulting in relocation, redesign, or improvements directed by the City outside of the limits outlined below will be considered supplemental to this contract.

The Engineer will develop the following plan sheets in accordance with City of Round Rocks' guidelines.

- ◆ Water Improvements (replace 16-in with 24-in from CR 123 to Forest Creek Drive)
 - Determine Preliminary Alignment Relocations and Appurtenance Placement, Limits of Improvements
 - Prepare General Notes Sheet for water improvement installation using standard City of Round Rock notes obtained from the City. Additional notes will be added by the Engineer as necessary.

- Prepare E&Q Sheet: Estimate and Quantity Data Sheet
- Prepare Project Layout / Horizontal Alignment Layout
- Prepare Waterline Improvement Plan & Profile Sheets
- Prepare Connecting Tie-In Lines Plan and Profile
- Prepare Water Construction Detail Sheets
- Prepare a list of Water Specifications complete with standard and special specifications with applicable special provisions needed for the project.
- Tabulate Quantities and Probable Construction Costs
 - The estimate will be in Microsoft Excel spreadsheet format, reflect Travis, Williamson County, and other recent local Average Unit Bid items and descriptions. The estimate will contain all major items that will likely be on the project
- Submit improvement plans to TCEQ for approval
- Pressure Reducing Valve Vault Relocation
 - Coordinate with city for size based on water model
 - Coordinate with supplier on cost estimate

Milestone Comment Resolution

- ◆ Update plans per City of Round Rock comments received from the 60%, 90% and 100% milestone review meetings.
- ◆ Deliverables
 - Exhibits for utility meetings
 - Route Layout
 - Construction Plan Submittals (60%, 90%, 100%)
 - Specifications Submittals (90%, 100%)
 - Engineers Opinion of Probable Construction Costs (60%, 90%, 100%)
 - Electronic Graphics - provide the City an electronic deliverable of the plans (including standard drawings) submit both PDF & Microstation Format
 - Submittals – 60%, 90%, and 100% submittals - Comments and revisions requested at the review meetings shall be incorporated into the plans for the subsequent submittal.

FC 163.15 - CONTRACT TIME DETERMINATION

The engineer shall prepare a detailed graphic contract time estimate utilizing Microsoft Project to determine the approximate time required for construction of the project in calendar and working days (based on the City's standard definitions of calendar and working days) at the 60%, 90%, and final PS&E milestone submittals. The contract time estimate must follow the TCP sequence of construction and include average weather conditions, tasks, subtasks, critical dates, any joint-bid utilities, milestones, deliverables, production rates, review and inspection requirements, and adjacent construction projects in a format which depicts the interdependence of the various items. The engineer shall provide options/alternates/milestones to expedite construction. The engineer shall provide assistance to the City in interpreting the schedule.

FC 163.17 - COMMENT RESOLUTION/QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

- ◆ PS&E QA/QC & Comment Resolution at 60, 90, 100%
 - QA/QC of 60/90/100% Submittals
 - Responding to/Addressing City Comments

FC 160'S MILESTONE SUBMITTALS

- ◆ 60, 90% PS&E – 3 Sets of Hard Copies, 1 PDF
- ◆ 100% PS&E – 2 Sets of Hard Copies, 1 PDF
- ◆ Final PS&E and Project Manual, 2 Signed and Sealed originals, 1 PDF
- ◆ 60, 90, 100% and Final Construction Cost Estimates
- ◆ 60, 90, 100% and Final Construction Schedule

FC 309 - CONSTRUCTION PHASE SERVICES

FC 309.1 - Advertising, Bidding Phase

- ◆ The Engineer Will:
 - Prepare Contract Documents and Create Project Manual,
 - Assist the City with Contract advertisement for the Red Bud Lane project including preparation of notice and arranging for placement of the advertisement in appropriate newspapers and other media as required. Fees for the advertising will be paid directly by the City and are not included in this Contract.
 - LJA will provide online documents per City's request using Civcast
 - Conduct the Pre-Bid Conference,
 - Answer Bid Questions and issue any Addenda necessary,
 - Conduct the Bid Opening,
 - Prepare the Bid Tabulation and provide the City with a Letter of Recommendation for Award.
 - Assist the City with execution of the construction contract.
- ◆ **Deliverables:**
 - Notice of Invitation to Bid,
 - Pre-Bid Conference Meeting Minutes and Attendance List
 - Addenda as required
 - Bid Tabulation
 - Letter of Recommendation for Award

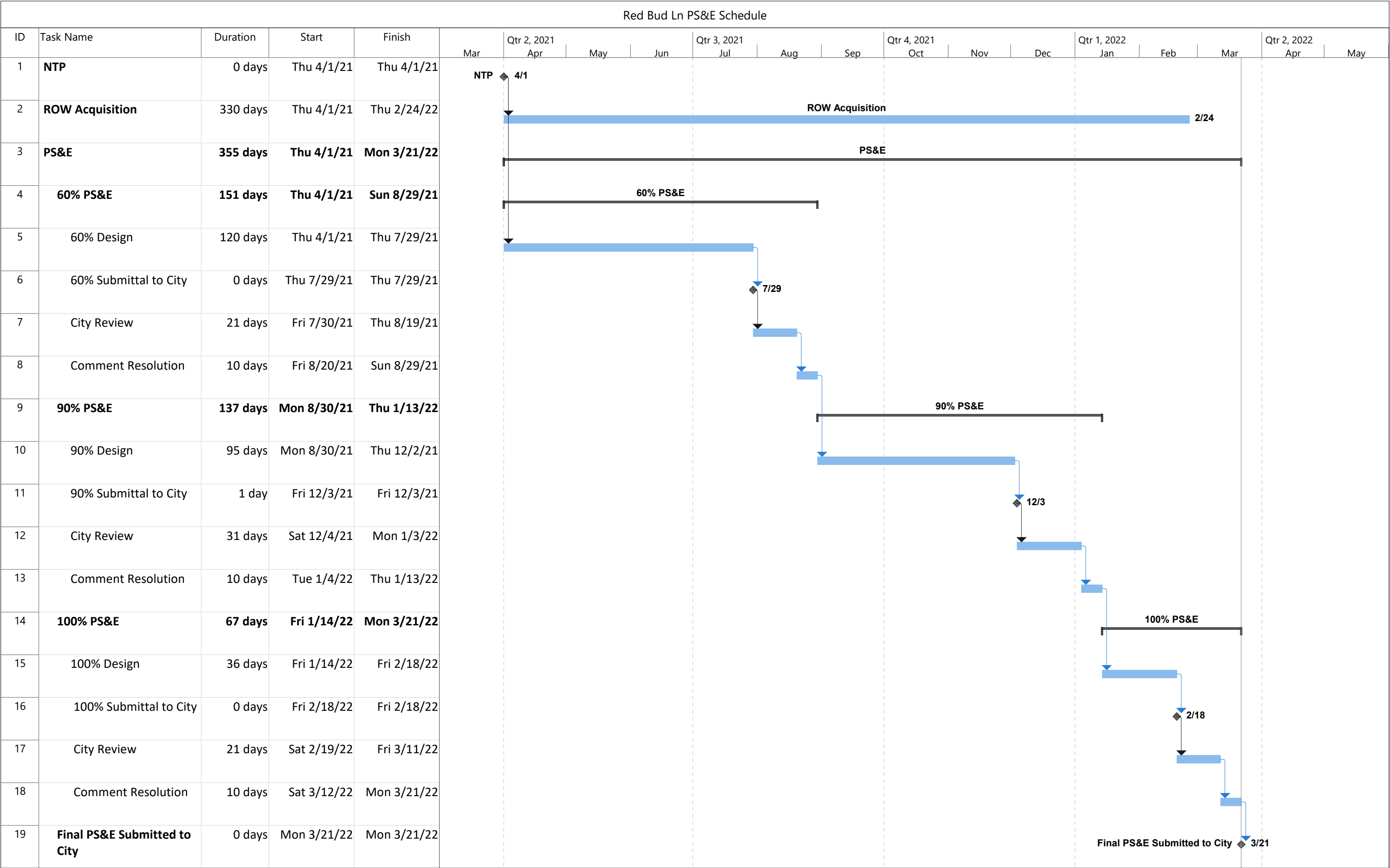
309.2 - Construction Phase Services

- ◆ The Engineer Will:
 - Attend Preconstruction Meeting (meeting to be conducted by the City's Project Manager).
 - Track, review, and approve Construction Documentation
 - Review and approve submittals/shop drawings as received

- Answer RFIs (15)
 - Prepare Design Change Notifications as necessary
- Attend Construction Meetings (15 Meetings)
- Prepare and issue meeting minutes and attendance lists for each Construction meeting
- Provide status updates of received, reviewed, approved/rejected construction documentation (schedules updates, submittals/shop drawings, RFIs, etc...)
- Process pay applications
 - Verification of quantities will be performed by others
 - Approval by engineer is dependent on the City's Inspector approving quantities
- Prepare As-built Plans
- Coordinate with City Inspector and Contractor as necessary
- Change Orders (5)
 - Review change order requests after approved by City inspector

ADDENDUM TO EXHIBIT C
Work Schedule

Attached Behind This Page



ADDENDUM TO EXHIBIT D
Fee Schedule

Attached Behind This Page

RED BUD LANE FEE ESTIMATE

EXHIBIT D
FEE SCHEDULE - Design Services for Plans, Specifications and Estimates
PROJECT NAME: Red Bud Lane
PRIME PROVIDER NAME: LJA Engineering, Inc.

Date: 3/5/2021

RED BUD LANE PROJECT												
TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 120.2 - Public Involvement												
Meet with Landowners (3-4 meetings)	16.0	16.0										32.0
Respond to public questions/comments	2.0	4.0	8.0					16.0				30.0
HOURS SUB-TOTALS	18.0	20.0	8.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0	62.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$4,140	\$3,600	\$1,280	\$0	\$0	\$0	\$0	\$1,360	\$0	\$0	\$0	\$10,380

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 130 - ROW Data												
ROW Exhibit Preparation	4.0			8.0			8.0	8.0				28.0
Rights of Entry (See Right of Entry attached fee)												0.0
HOURS SUB-TOTALS	4.0	0.0	0.0	8.0	0.0	0.0	8.0	8.0	0.0	0.0	0.0	28.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$920	\$0	\$0	\$1,080	\$0	\$0	\$960	\$680	\$0	\$0	\$0	\$3,640

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 130.3 - Utility Coordination												
Prepare Contact List	0.5		0.5		4.0	16.0					1.0	22.0
Hold Utility Kickoff Meeting	4.0				4.0	4.0					4.0	16.0
Update Existing & Proposed Utility CADD File	4.0		8.0	40.0	20.0	40.0						112.0
Prepare Conflict Assessment (60, 90, 100)	8.0		20.0	40.0	40.0	40.0						148.0
Utility Relocation Plan and Permit Reviews	5.0		30.0	50.0	30.0	50.0						165.0
Prepare Utility Relocation Schedule	8.0				10.0	20.0						38.0
Prepare Utility Agreements (for utilities with compensable interest)	8.0				20.0	40.0						68.0
Utility Coordinate update meetings with project team and utilities	16.0		20.0	80.0	20.0	80.0						216.0
HOURS SUB-TOTALS	53.5	0.0	78.5	210.0	148.0	290.0	0.0	0.0	0.0	0.0	5.0	785.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$12,305	\$0	\$12,560	\$28,350	\$23,680	\$35,380	\$0	\$0	\$0	\$0	\$350	\$112,625

RED BUD LANE FEE ESTIMATE

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 145 - Project Management												
Prepare Project Management Plan	16.0	8.0										24.0
Prepare Project Specific QA/QC Plan	8.0	8.0										16.0
Kick-off Meeting with City	2.0	2.0										4.0
Kick-off Meeting with Team	2.0	2.0	2.0	2.0			2.0	2.0				12.0
Milestone Meetings	8.0	8.0	8.0									24.0
Team Coordination Meetings (20)	12.0	12.0	12.0	12.0								48.0
Meeting Minutes (All Meetings)			40.0								24.0	64.0
Master Contract and Sub Consultant Contract Creation	8.0	8.0									8.0	24.0
Monthly Invoices	24.0										24.0	48.0
Manage Sub Consultants												0.0
CD&P	4.0											4.0
Raba Kistner	4.0		4.0									8.0
Rios	12.0		12.0									
Inland	16.0		16.0									32.0
Project Schedule	16.0	16.0										32.0
Document Control											32.0	32.0
Prepare Submittals and QA/QC	72.0	72.0	36.0								32.0	212.0
HOURS SUB-TOTALS	204.0	136.0	130.0	14.0	0.0	0.0	2.0	2.0	0.0	0.0	120.0	608.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$46,920	\$24,480	\$20,800	\$1,890	\$0	\$0	\$240	\$170	\$0	\$0	\$8,400	\$102,900

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 150 - Topographical Survey												
Boundary Survey - See INLAND Fee Schedule												

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 160 - PS&E Roadway Design												
Finalize Plan Layout		16.0	40.0	24.0								80.0
Finalize Vertical Profile		2.0	8.0	16.0								26.0
Title Sheet		2.0	4.0	8.0				8.0				22.0
Index Sheet			4.0	8.0				8.0				20.0
Project Layouts Sheets		2.0	8.0	16.0				8.0				34.0
Typical Sections Sheets		2.0	8.0	24.0				16.0				50.0
Horizontal Alignment Sheets			2.0	4.0				2.0				8.0
Roadway Plan and Profile Sheets (17 sheets)		24.0	60.0	120.0				120.0				324.0
Cross Street Plan and Profile Sheets		8.0	24.0	32.0				32.0				96.0
Intersection Layout/Grading Sheet		8.0	24.0	32.0			32.0					96.0
Miscellaneous Roadway Detail Sheets		4.0	16.0	24.0				24.0				68.0
Driveway Plan and Profile Sheets (2 Per Page)		8.0	16.0	40.0				40.0				104.0
Proposed Cross Section Sheets		8.0	8.0	24.0			80.0					120.0
Earthwork Sheet			8.0	16.0			24.0					48.0
Quantity Summaries		2.0	8.0	24.0				8.0				42.0
Cost Estimate (60, 90, 100%)			8.0	24.0								32.0
Standards		2.0	4.0	8.0				8.0				22.0
HOURS SUB-TOTALS	0.0	88.0	250.0	444.0	0.0	0.0	136.0	274.0	0.0	0.0	0.0	1192.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$0	\$15,840	\$40,000	\$59,940	\$0	\$0	\$16,320	\$23,290	\$0	\$0	\$0	\$155,390

RED BUD LANE FEE ESTIMATE

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 161 - PS&E Drainage Design												
Finalize Exterior Drainage Areas		4.0	8.0	8.0								20.0
Finalize Culvert Design	2.0	8.0	8.0	8.0								26.0
Produce Culvert Cross Sections				16.0			16.0					32.0
Delineate Interior Drainage Areas		8.0	8.0	24.0								40.0
Place Inlets		8.0	16.0	24.0								48.0
Design Storm Sewer System		16.0	16.0	24.0								56.0
Design Roadside Ditches			4.0	20.0								24.0
Drainage Area Map Sheets		2.0	2.0	40.0				40.0				84.0
Culvert Layout Sheets		4.0	8.0	40.0			24.0	24.0				100.0
Drainage Plan & Profile Sheets (17 Sheets)		24.0	60.0	120.0				120.0				324.0
Storm Sewer Lateral Profile Sheets			4.0	24.0				32.0				60.0
Hydraulic Data Sheets – Culverts		2.0	4.0	8.0				12.0				26.0
Hydraulic Data Sheets – Drainage Areas		2.0	4.0	8.0				12.0				26.0
Hydraulic Data Sheets – Inlets		2.0	4.0	8.0				12.0				26.0
Hydraulic Data Sheets – Links		2.0	4.0	8.0				12.0				26.0
Hydraulic Data Sheets – Ditches			2.0	2.0				8.0				12.0
Quantity Summaries		2.0	12.0	40.0								54.0
Drainage Standards							8.0					8.0
HOURS SUB-TOTALS	2.0	84.0	164.0	422.0	0.0	0.0	48.0	272.0	0.0	0.0	0.0	992.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$460	\$15,120	\$26,240	\$56,970	\$0	\$0	\$5,760	\$23,120	\$0	\$0	\$0	\$127,670

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 162.1 - Signing and Pavement Markings												
Pavement Marking Sheets		8.0	16.0	32.0				30.0				86.0
Small Signage Sheets		8.0	16.0	32.0				30.0				86.0
Standards		2.0	4.0	8.0				4.0				18.0
Quantity Summaries		2.0	6.0	12.0				8.0				28.0
HOURS SUB-TOTALS	0.0	20.0	42.0	84.0	0.0	0.0	0.0	72.0	0.0	0.0	0.0	218.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$0	\$3,600	\$6,720	\$11,340	\$0	\$0	\$0	\$6,120	\$0	\$0	\$0	\$27,780

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 162.3 - Traffic Signals												
Field Visits w/ RR Signal M&O Team	1.0	1.0	4.0									6.0
Existing Conditions Layout	1.0	2.0	4.0	10.0								17.0
Proposed Signal Layout	1.0	6.0	8.0	24.0								39.0
Proposed Signal Elevations	1.0	6.0	8.0	20.0								35.0
Proposed Signal Details	1.0	4.0	8.0	20.0								33.0
Proposed Wiring Diagram/Termination Chart	1.0	6.0	8.0	20.0								35.0
Standard SMA/DMA & Foundation Sheets	1.0	1.0	2.0	4.0								8.0
Other Standard Details		1.0	2.0	2.0								5.0
Signal Quantities, Summary Tables and OPC	1.0	2.0	6.0	8.0								17.0
												0.0
HOURS SUB-TOTALS	8.0	29.0	50.0	108.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	195.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$1,840	\$5,220	\$8,000	\$14,580	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,640

RED BUD LANE FEE ESTIMATE

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 163.1 - Retaining Walls												
Retaining Wall Plan & Profile Sheets	6.0	12.0	16.0	24.0				32.0				90.0
Standards	1.0	2.0	4.0	8.0				8.0				23.0
Quantity Summary	2.0	4.0	6.0	10.0				10.0				32.0
												0.0
												0.0
HOURS SUB-TOTALS	9.0	18.0	26.0	42.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	145.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$2,070	\$3,240	\$4,160	\$5,670	\$0	\$0	\$0	\$4,250	\$0	\$0	\$0	\$19,390

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 163.3 - Traffic Control and Erosion Control												
TCP Typical Sections		4.0	8.0	8.0				16.0				36.0
TCP Narrative		4.0	8.0	16.0				4.0				32.0
TCP Phase 1 Layout		8.0	8.0	40.0				40.0				96.0
TCP Phase 2 Layout		8.0	8.0	40.0				40.0				96.0
TCP Phase 3 Layout		8.0	16.0	40.0				40.0				104.0
TCP Cross-Sections by Phase		8.0	32.0	80.0				40.0				160.0
Temporary Signal Layouts		6.0	12.0	24.0				24.0				66.0
Intersection Phasing Details (3 locations)		8.0	16.0	24.0				40.0				88.0
Detour Layout		4.0	8.0	8.0				8.0				28.0
Design of Temporary Erosion Control Measures		8.0	20.0	32.0								60.0
Inclusion of Temporary Erosion Control Measures on TCP Layouts			8.0	40.0				40.0				88.0
TCP Standards			4.0	4.0				4.0				12.0
TCP Quantity Summary		4.0	8.0	24.0				4.0				40.0
Temporary Erosion Control Standards			4.0	4.0				4.0				12.0
Temporary Erosion Control Quantity Summary		4.0	8.0	24.0				4.0				40.0
Construction Time Duration Schedule		8.0	16.0	24.0								48.0
HOURS SUB-TOTALS	0.0	82.0	184.0	432.0	0.0	0.0	0.0	308.0	0.0	0.0	0.0	1006.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$0	\$14,760	\$29,440	\$58,320	\$0	\$0	\$0	\$26,180	\$0	\$0	\$0	\$128,700

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 163.5 - Illumination												
Illumination Design & Analysis		12.0	40.0	40.0								92.0
Illumination Schematic		4.0	4.0	16.0				8.0				32.0
Illumination Layout Sheets		16.0	24.0	40.0				40.0				120.0
Electrical Details Sheets		4.0	4.0	8.0				8.0				24.0
Circuit Diagram Sheets		4.0	8.0	24.0				24.0				60.0
Electrical Service Sheet		4.0	8.0	8.0				8.0				28.0
Voltage Drop Calculations		4.0	8.0	8.0								20.0
Coordination with ONCOR (including site visit)		8.0	8.0									16.0
Standards		2.0	4.0	8.0				8.0				22.0
Quantity Summaries		2.0	4.0	8.0				8.0				22.0
HOURS SUB-TOTALS	0.0	60.0	112.0	160.0	0.0	0.0	0.0	104.0	0.0	0.0	0.0	436.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$0	\$10,800	\$17,920	\$21,600	\$0	\$0	\$0	\$8,840	\$0	\$0	\$0	\$59,160

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 163.6 - Subsurface utilities												
Potholes (See Rios Fee)												

RED BUD LANE FEE ESTIMATE

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 163.10 - Utility Design												
163.10.1 Site Visit			4.0	4.0								8.0
163.10.2 Utility Coordination to collect information on existing utilities within project area						4.0						4.0
163.10.3 Water, Reuse and Forcemain Conflict Analysis		4.0	20.0	60.0								84.0
163.10.4 Prepare Exhibits for Utility Meetings				20.0								20.0
163.10.5 General Notes Sheet		1.0	1.0	3.0								5.0
163.10.6 Estimate and Quantity Data Sheet			16.0	32.0								48.0
163.10.7 Project Layout / Horizontal Alignment Layout sheet		2.0	6.0	20.0								28.0
163.10.8 Plan and profile sheets		24.0	160.0	320.0								504.0
163.10.9 Tie-In Lines Plan and Profiles		4.0	16.0	28.0								48.0
163.10.10 PRV Relocation		2.0	6.0	12.0								20.0
163.10.11 Standard Construction Details		2.0	6.0	12.0								20.0
163.10.13 PM Review	12.0											12.0
163.10.14 Project Manual with Technical Specifications		2.0	6.0	10.0								18.0
163.10.15 Engineer's Opinion of Probable Construction Costs		2.0	6.0	10.0								18.0
163.10.16 Respond to City 60% comments			4.0	10.0								14.0
163.10.17 Respond to City 90% comments			4.0	10.0								14.0
163.10.18 Respond to City 100% comments			4.0	10.0								14.0
163.10.19 Respond to TCEQ comments			2.0	10.0								12.0
163.10.20 Plan Submission to TCEQ		1.0	2.0	4.0								7.0
HOURS SUB-TOTALS	12.0	44.0	263.0	575.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	898.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$2,760	\$7,920	\$42,080	\$77,625	\$0	\$488	\$0	\$0	\$0	\$0	\$0	\$130,873

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 163.15 - Contract Time Determination												
Prepare Construction Schedule 60%	4.0	8.0										12.0
Prepare Construction Schedule 90%	2.0	8.0										10.0
Prepare Construction Schedule 100%	2.0	8.0										10.0
HOURS SUB-TOTALS	8.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$1,840	\$4,320	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,160

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 163.17 - Comment Resolution/QA/QC												
QA/QC 60% Submittal	4.0	16.0	16.0									36.0
QA/QC 90% Submittal	4.0	8.0	8.0									20.0
QA/QC 100% Submittal	4.0	8.0	8.0									20.0
Respond to City comments 60%	4.0	20.0	20.0	20.0				40.0				104.0
Respond to City comments 90%	4.0	16.0	32.0	40.0				40.0				132.0
Respond to City comments 100%	4.0	8.0	16.0	24.0				24.0				76.0
HOURS SUB-TOTALS	24.0	76.0	100.0	84.0	0.0	0.0	0.0	104.0	0.0	0.0	0.0	388.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$5,520	\$13,680	\$16,000	\$11,340	\$0	\$0	\$0	\$8,840	\$0	\$0	\$0	\$55,380

RED BUD LANE FEE ESTIMATE

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total
FC 309 - Bid/Construction Phase Services												
Advertising, Bidding Phase												0.0
Prepare Contract documents and create project manual		8.0	24.0	24.0								56.0
Assist in Advertisement		2.0		4.0								6.0
Conduct Pre-Bid Conference		4.0		4.0								8.0
Answer Bid Questions		4.0	16.0	16.0								36.0
Conduct Bid Opening		1.0		1.0								2.0
Prepare Bid Tabulation and Recommendation for Award		1.0	4.0	8.0								13.0
Assist in execution of construction contract		4.0		4.0								8.0
Construction Phase Services												0.0
Attend Pre-Construction Meeting		4.0	12.0	4.0								20.0
RFI's (15)		16.0	32.0	40.0								88.0
Approve Specifications/Submittals		16.0	40.0	64.0								120.0
Conduct Construction Progress Meetings (12) with Meeting Minutes		24.0	48.0								18.0	90.0
Process Pay Applications		12.0										12.0
Prepare As-Built Plans		4.0	16.0	40.0								60.0
Prepare, process City Directed Change Order (5)		12.0	20.0	32.0				24.0				88.0
HOURS SUB-TOTALS	0.0	112.0	212.0	241.0	0.0	0.0	0.0	24.0	0.0	0.0	18.0	607.0
LABOR RATE PER HOUR	\$230	\$180	\$160	\$135	\$160	\$122	\$120	\$85	\$110	\$95	\$70	
SUBTOTAL	\$0	\$20,160	\$33,920	\$32,535	\$0	\$0	\$0	\$2,040	\$0	\$0	\$1,260	\$89,915

TASK DESCRIPTION	Senior Project Manager	Senior Engineer/ Planner	Project Engineer	E.I.T.	Senior Utility Coordinator	Utility Coordinator	Senior Engineering Tech	CADD Operator	GIS Analyst/ Cartography	GIS Technician	Admin	Total Cost Task
FC 120.2 - Public Involvement	\$4,140	\$3,600	\$1,280	\$0	\$0	\$0	\$0	\$1,360	\$0	\$0	\$0	\$ 10,380.00
FC 130 - ROW Data	\$920	\$0	\$0	\$1,080	\$0	\$0	\$960	\$680	\$0	\$0	\$0	\$ 3,640.00
FC 130.3 - Utility Coordination	\$12,305	\$0	\$12,560	\$28,350	\$23,680	\$35,380	\$0	\$0	\$0	\$0	\$350	\$ 112,625.00
FC 145 - Project Management	\$46,920	\$24,480	\$20,800	\$1,890	\$0	\$0	\$240	\$170	\$0	\$0	\$8,400	\$ 102,900.00
FC 150 - Topographical Survey												\$ -
FC 160 - PS&E Roadway Design	\$0	\$15,840	\$40,000	\$59,940	\$0	\$0	\$16,320	\$23,290	\$0	\$0	\$0	\$ 155,390.00
FC 161 - PS&E Drainage Design	\$460	\$15,120	\$26,240	\$56,970	\$0	\$0	\$5,760	\$23,120	\$0	\$0	\$0	\$ 127,670.00
FC 162.1 - Signing and Pavement Markings	\$0	\$3,600	\$6,720	\$11,340	\$0	\$0	\$0	\$6,120	\$0	\$0	\$0	\$ 27,780.00
FC 162.3 - Traffic Signals	\$1,840	\$5,220	\$8,000	\$14,580	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ 29,640.00
FC 163.1 - Retaining Walls	\$2,070	\$3,240	\$4,160	\$5,670	\$0	\$0	\$0	\$4,250	\$0	\$0	\$0	\$ 19,390.00
FC 163.3 - Traffic Control and Erosion Control	\$0	\$14,760	\$29,440	\$58,320	\$0	\$0	\$0	\$26,180	\$0	\$0	\$0	\$ 128,700.00
FC 163.5 - Illumination	\$0	\$10,800	\$17,920	\$21,600	\$0	\$0	\$0	\$8,840	\$0	\$0	\$0	\$ 59,160.00
FC 163.10 - Utility Design	\$2,760	\$7,920	\$42,080	\$77,625	\$0	\$488	\$0	\$0	\$0	\$0	\$0	\$ 130,873.00
FC 163.15 - Contract Time Determination	\$1,840	\$4,320	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ 6,160.00
FC 163.17 - Comment Resolution/QA/QC	\$5,520	\$13,680	\$16,000	\$11,340	\$0	\$0	\$0	\$8,840	\$0	\$0	\$0	\$ 55,380.00
FC 309 - Bid/Construction Phase Services	\$0	\$20,160	\$33,920	\$32,535	\$0	\$0	\$0	\$2,040	\$0	\$0	\$1,260	\$ 89,915.00
SUBTOTAL LABOR EXPENSES	\$ 78,775	\$ 142,740	\$ 259,120	\$ 381,240	\$ 23,680	\$ 35,868	\$ 23,280	\$ 104,890	\$ -	\$ -	\$ 10,010	\$1,059,603
DIRECT EXPENSES	Rate	Quantity	Cost									
Mileage	\$0.58	500	\$287.50									\$287.50
Courier Services (Deliveries)	\$30.00	5	\$150.00									\$150.00
CADD Plotting (per SQ/FT)	\$1.50	0	\$0.00									\$0.00
Photocopies B/W (8.5 X 11)	\$0.10	500	\$50.00									\$50.00
Photocopies B/W (11 X 17)	\$0.15	1200	\$180.00									\$180.00
Photocopies Color (8 X 10)	\$0.75	60	\$45.00									\$45.00
Photocopies Color (11 X 17)	\$1.00	60	\$60.00									\$60.00
TDLR Plan Review and Registration	\$2,000.00	1	\$2,000.00									\$2,000.00
Outside Reproduction (Reports)	\$200.00	0	\$0.00									\$0.00
Postage	\$3.00	27	\$81.00									\$81.00
Exhibit Roll Plots (Mounted Color on Bond)	\$100.00	0	\$0.00									\$0.00
SUBTOTAL DIRECT EXPENSES												\$2,853.50
LJA ENGINEERING, INC. TOTAL												\$1,062,456.50

RED BUD LANE FEE ESTIMATE

SUBCONSULTANTS												
PUBLIC INVOLVEMENT (CD&P)												\$11,949.00
Right of Entry (LJA ROW)												\$18,505.00
Geotechnical Engineering Services (RKCI)												\$6,274.79
SUE Test Holes (Rios)												\$96,633.96
SURVEY (Inland)												\$174,322.84
TOTAL - SUB CONSULTANTS:												\$307,685.59
GRAND TOTAL												
												\$1,370,142.09

Task	PM (\$190/hr.)	Assistant PM (\$160/hr.)	Senior Right of Way Agent (\$145/hr.)	Junior Right of Way Agent (\$125/hr.)	Senior Right of Way Technician (\$95/hr.)	Right of Way Agent I (\$90/hr.)	ROW Coordinator (\$60/hr.)	Totals
Project Management, File Management, Ownership Research	18	4		12	12		8	54
Creating and Negotiating ROE	14	18		44	3			79
SUB TOTALS (hours)	32	22	0	56	15	0	8	133
SUB TOTALS (\$)	\$6,080	\$3,520	\$0	\$7,000	\$1,425	\$0	\$480	\$18,505

Rounded to \$18,500

Expenses	Units	Rate	Totals
Mileage	324	Current IRS Rate	\$186
Misc (postage, courier, shipping, copies, etc.)	pass through		\$514
SUB TOTALS (\$)			\$700

Total Fee Estimate: \$19,200 (\$800/parcel)

Assumptions:
It is assumed there are a maximum of twenty (27) parcels from which right of entry will be obtained

Other Miscellaneous expenses can include:
Texas Secretary of State research fees on corporations, Courthouse Direct fees on copies of recorded instruments, parking fees, tolls, certified copies of recorded instruments, etc.

CD&P

TASK DESCRIPTION	MANAGER	PI SPECIALIST	PI COORDINATOR	GRAPHICS	ADMIN	TOTAL LABOR HRS. & COSTS
	\$175	\$125	\$85	\$100	\$55	
TASK 1 PROJECT MANAGEMENT						
Coordination with LJA PM and CORR PM	5					5
Project management, invoices, progress reports	5					20
TASK 2 PUBLIC INVOLVEMENT						
Stakeholder database updates and communications log	2	4			8	14
Project materials (updates to maps, fact sheets)	4		2	2		8
Webcontent (for City to post on City's website)	1		2			3
Email updates	2		4		2	8
Stakeholder meetings (up to 8)	16	4	6			26
Stakeholder communications	12		4			
HOURS SUB-TOTALS	47	8	18	2	10	85
CONTRACT RATE PER HOUR	\$175.00	\$125.00	\$85.00	\$100.00	\$55.00	
SUBTOTAL LABOR COSTS	\$8,225.00	\$1,000.00	\$1,530.00	\$200.00	\$550.00	\$11,505.00

OTHER DIRECT EXPENSES	# OF UNITS	COST/UNIT				
Mileage (# of miles) (current state rate)	320	\$0.575				\$184.00
Photocopies Color (8.5 X 11)	100	\$0.40				\$40.00
Postage	400	\$0.55				\$220.00
SUBTOTAL DIRECT EXPENSES						\$444.00

SUMMARY	
TOTAL LABOR	\$11,505.00
TOTAL DIRECT EXPENSES	\$444.00
GRAND TOTAL	\$11,949.00



Estimate for Subsurface Utility Engineering
Red Bud Lane Reconstruction - Test Holes
City of Round Rock

EXHIBIT A

Hourly Office Labor	<i>Rate</i>	<i>Assumed Quantity</i>	<i>Unit of Measure</i>	<i>Sub-Total</i>
Supervisory Engineer IV (15-20)	\$ 158.13	6	HR	\$ 948.78
Project Engineer	\$ 136.84	16	HR	\$ 2,189.44
Engineer in Training	\$ 91.23	18	HR	\$ 1,642.14
CADD Technician	\$ 79.07	24	HR	\$ 1,897.68
Field Manager	\$ 103.39	10	HR	\$ 1,033.90
Administrative	\$ 67.42	6	HR	\$ 404.52
Sub-Total				\$ 8,116.46
Direct Expenses	<i>Rate</i>	<i>Assumed Quantity</i>	<i>Unit of Measure</i>	<i>Sub-Total</i>
Traffic Control (Lane closures)	\$ 800.00	9	DAY	\$ 7,200.00
Traffic Control (Intersection)	\$ 1,300.00	4	DAY	\$ 5,200.00
Survey	\$ 2,250.00	2.5	DAY	\$ 5,625.00
Sub-Total				\$ 18,025.00
QL"B" SUE Designating	<i>Rate</i>	<i>Assumed Quantity</i>	<i>Unit of Measure</i>	<i>Sub-Total</i>
One Designating Person - Test Hole Layout	\$ 136.50	45	HR	\$ 6,142.50
Sub-Total				\$ 6,142.50
QL"A" SUE Test Holes				
Unit Rate - Depth	<i>Outside Pavement Rate</i>	<i>Assumed Quantity</i>	<i>Unit Of Measure</i>	<i>Sub-Total</i>
0 - 5 feet	\$ 1,155.00	25	EA	\$ 28,875.00
5 - 8 feet	\$ 1,420.00	15	EA	\$ 21,300.00
8 - 13 feet	\$ 1,785.00	5	EA	\$ 8,925.00
13 - 20 feet	\$ 2,310.00	0	EA	\$ -
Over 20 feet	\$ 2,875.00	0	EA	\$ -
Pavement Coring	\$ 350.00	15	EA	\$ 5,250.00
Test Hole Total		45		
Sub-Total				\$ 64,350.00
Total Estimated Cost				\$ 96,633.96

[illegible]

GPS Receivers	\$15
Vehicle	\$60
ATV	\$55

	\$0.00
	\$0.00
	\$0.00
Total:	<u>\$0.00</u>

	\$0.00
SUPPLIES	\$450.00
	\$0.00
Total:	<u>\$450.00</u>