



7550 IH-10 West, Northwest Center, Suite 300, San Antonio, Texas 78229
T 210 736 0425 E email@klotz.com W www.rpsgroup.com | www.klotz.com

January 13, 2017

Mr. Jose (Joe) R. Ramos, P.E.
City Engineer
205 North River Street
Seguin, Texas 78156

Re: Proposal for Engineering Services
N. King Street, Spruce Street, and Vetter Street Roadway and Drainage Improvements
Seguin, Texas
RPS Klotz Associates Project No. 0131.003.000

Dear Mr. Ramos:

As requested by the City of Seguin, RPS Klotz Associates is pleased to present this proposal to provide professional engineering services for the N. King Street, Spruce Street, and Vetter Street Roadway and Drainage Improvements project. The detailed scope of work and fee estimate are included as part of the attachment.

We propose to provide the services listed for a lump sum fee of \$354,378.40.

Should you have any questions regarding this proposal, please do not hesitate to call Luis A. Cuellar or me at 210-736-0425.

We look forward working with you on this important project.

Sincerely,

A handwritten signature in blue ink, which appears to read 'Scott Dukette', followed by the word 'FOR' in blue capital letters.

Scott Dukette, P.E.
Vice President

LAC:td

Attachments

SCOPE OF WORK
CITY OF SEGUIN
N. KING ST, SPRUCE ST, AND VETTER ST ROADWAY & DRAINAGE
IMPROVEMENTS
DESIGN AND BID PHASE SERVICES

INTRODUCTION

Klotz Associates, Inc. dba RPS Klotz Associates (ENGINEER) understands that the City of Seguin (CITY) has a need to improve roadway and drainage conditions along N. King St., Spruce St., and Vetter St. Full street reconstruction will be required along N. King Street from E. Pine Street to its northern most terminus limits near the UPRR (driveway to Hexcel Corporation), approximate length of roadway is 2,780 feet. Drainage improvements consisting of underground storm sewer and curb inlets will be required along N. King Street (between Sycamore St. and UPRR), along Spruce Street (between N. King St. and Vetter St.), and along Vetter Street (between Spruce St. and outfall at TxDOT ROW), approximate length of storm sewer is 3,030 linear feet. Street improvements along Spruce St. and Vetter St. will be limited to trench repair and possibly new curb and gutter; City forces will perform street reclamation improvements after completion of storm sewer improvements. It is anticipated that all roadway and drainage improvements will be constructed within the existing ROW (no additional ROW required). Exhibit showing roadway and drainage limits provided by the City is attached (*note correction to Exhibit that actual roadway reconstruction limits along N. King Street extend to E. Pine Street, not E. Seidemann St. as shown*).

The following is a description of the Scope of Work (SOW) for design, bidding, and construction phase services associated with the N. King Street, Spruce Street, and Vetter Street Roadway & Drainage Improvements (PROJECT) as per our understanding from our pre-scoping meeting with CITY staff on December 8, 2016.

I. PRELIMINARY ENGINEERING PHASE (30% PS&E)

PRELIMINARY PLANS AND STUDIES

A. Data Collection - The ENGINEER shall collect, review, and evaluate available data described below.

1. Record Drawing plans, right-of-way maps, existing planimetric mapping, existing channel and drainage easement data, current unit bid price information, and standard drawings.
2. Utility plans and documents from the CITY and appropriate municipalities and agencies.
3. Readily available flood plain information and studies from the Federal Emergency Management Agency (FEMA), and Texas Department of Transportation (TXDOT).
4. Available documents and data from any previous studies or schematics within the project limits, as provided by the City.

- B. Field Reconnaissance** - The ENGINEER shall conduct field reconnaissance and collect data including a photographic record of notable existing features.
- C. Establish Project Criteria** - Project specific criteria and information shall be documented by the ENGINEER. In general the project criteria shall follow relevant City of Seguin criteria and supplemental City of San Antonio and/or TxDOT specifications as needed for specific items. Per pre-scoping meeting, the following is our understanding of partial design criteria:
1. Roadway pavement section to be evaluated shall consist of 4-inch Type D, 24-inch Flexible Base, Geogrid, and 6-inch moisture conditioned subgrade. A Geotechnical Engineering report will be prepared as part of this SOW to confirm and identify pavement section options.
 2. Drainage improvements will be designed based on a 10-year design storm.
 3. Preliminary project budget is \$2.0M, not including the roadway improvements along N. King Street south of E. Seidemann St. CITY will provide updated project budget to ENGINEER to include this section of road.
 4. Improvements shall be constructed within existing right of way (ROW). No additional ROW is anticipated.
- D. Geotechnical Report** - The ENGINEER proposes to utilize a Geotechnical Engineering subconsultant, Raba-Kistner Consultants, Inc. (RKCI) to perform this scope of work. Please see attached RKCI proposal number PNA16-046-00, dated December 13, 2016, for detailed scope of work.
- E. Environmental Studies** – No Environmental studies are anticipated by ENGINEER at this time.
- F. Utility Investigation/Coordination** – Utility adjustment coordination includes communication and coordination with utilities, conflict assessment and analysis. All utility coordination activities will be in accordance with the City of Seguin requirements. ENGINEER will develop a Utility Contact List of known utilities in the project limits (will coordinate with CITY staff to confirm known utilities in project limits), prepare initial notification letters, request as-builts and record drawings, prepare Existing Utility Layouts, and formulate a preliminary Utility Conflict Matrix.
- G. Surveying Services** - The ENGINEER proposes to utilize a Surveying subconsultant, Unintech Consultant Engineers, Inc. (Unintech) to perform this scope of work. Please see attached Unintech proposal dated December 14, 2016 (rev January 13, 2017), for detailed scope of work.
- H. 30% Plans, Specifications, and Estimate (PS&E)** – The ENGINEER shall prepare 30% plans. The 30% plan set shall include a cover page, existing and proposed typical sections, preliminary roadway and drainage plan & profile sheets that will include existing right of way, and existing utilities, and drainage area maps and computations. The plan and profile sheets will have readily available aerial photography as a background as well as survey acquired by the ENGINEER. The Plan and Profile sheets will be prepared at a 1" = 40' horizontal scale and 1" = 10' vertical scale, plotted to half size (11" x 17") sheets. A list of proposed technical specifications will also be formulated. Preliminary

construction cost estimate will be developed using available recent and relevant bid data, as well as engineering judgement.

PRELIMINARY ENGINEERING PHASE DELIVERABLES:

1. **Project Criteria List**
2. **Geotechnical Report**
3. **Utility Conflict Matrix**
4. **30% Plans, Specifications, and Estimate (PS&E)**

II. FINAL ENGINEERING PHASE (90% & 100% PS&E)

A. UTILITY COORDINATION

After the 30% Plans are approved by the CITY, ENGINEER will conduct one (1) utility coordination group meeting with utility companies, and communication and coordination with utilities will include no more than two (2) phone call and/or emails, to be followed by a 90% conflict assessment and analysis, and update of the Utility Conflict Matrix.

1. **Written Notification Letters** - The ENGINEER shall prepare and mail written notification letters to all known Utility Owners within and adjacent to the project site at the 30% and 90% Design stages. A CD will be included with the letter containing milestone roadway design plan sheets, conflict assessment and utility strip map. (*.pdf and *.dgn format).

The ENGINEER shall coordinate with each utility company via phone and/or email to facilitate submittal of utility relocation plans and these plans will be submitted. Communication will be limited to 2 phone calls and/or emails per utility on each project.

2. **Updates to Existing Utility Layout** - The ENGINEER shall update the existing utility layout using the base topo files and 90% design files. This layout will be utilized to assist in conflict assessment, monitor necessity of relocations and evaluate alternatives.
3. **Conflict Assessment** – The ENGINEER shall determine which utilities will conflict with roadway and drainage construction, or OWNER guidelines based on the 90% design plans and make the utility company aware of these conflicts. The ENGINEER will review for direct conflicts with proposed roadway and drainage improvements, constructability conflicts, and conflicts with current rules/guidelines. A detailed list will be prepared at each of the design milestones (90% and 100%) and will be communicated with the Utility Owners and design team.

Preparation of Utility Agreements, preparing utility relocation plans, or reviewing utility relocation maps is not included in this scope of work. Subsurface Utility Engineering (SUE) work is also not included in this scope of work, it is anticipated that any SUE work will be performed by pertinent utility company. It was noted during pre-scoping meeting that CITY water and wastewater facilities may require replacement. ENGINEER can provide design services for CITY utility facility replacement if requested as additional services.

B. ROADWAY DESIGN – Roadway design shall be limited to the N. King Street project limits.

Roadway improvements along Spruce Street and Vetter Street due to the storm sewer improvements are not included in this scope of work. New curb or curb and gutter may be included in the plans as an additive alternate, ENGINEER will coordinate with CITY staff during 90% design phase.

1. **Typical Sections** - The ENGINEER shall refine the typical sections from the 30% Plans for inclusion into the 90% and 100% PS&E. The ENGINEER shall use the appropriate CITY Design Criteria and CITY design directives to refine the typical sections. The existing typical section shall be shown with current roadway (pavement, right of way, etc.) characteristics. The proposed typical sections shall be shown with all related pertinent information (pavement section, right of way, lane dimensions, etc.) for the proposed roadway construction.
2. **Project Layout and Survey Control Map** – Approximate scale 1" = 200' (to be determined by ENGINEER) including benchmarks.
3. **Roadway Plan & Profiles** - The ENGINEER shall provide the detailed design of N. King Street as described in the project limits and as shown on the approved 30% PS&E. The design shall be consistent with the project criteria determined in the preliminary phase. The ENGINEER shall provide roadway plan and profile drawings using CADD standards as required by the OWNER. The drawings shall consist of a planimetric file of existing features and files of the proposed improvements. The roadway base map shall contain line work that depicts existing surface features obtained from the topographic file updated by the ENGINEER. Existing major subsurface and surface utilities shall be shown. Existing and proposed right-of-way lines shall be shown. Sidewalks, curb ramps and street crossings shall be designed and shown in accordance with the Texas Accessibility Standards (TAS), Americans with Disabilities Act (ADA) and Texas Department of Licensing and Registration (TDLR) requirements.
4. **Intersection Layouts** – The ENGINEER shall prepare intersection layouts at a scale of 1" = 50' horizontal detailing the geometric design at street intersections (six locations). The layouts shall include the pavement returns, geometrics, transition length, stationing, spot elevations, and pavement details.
5. **Driveway Details** – The ENGINEER shall prepare a Driveway Layout and Summary Detail for driveways along the project corridor (eleven locations). The layout and details will include driveway slopes, width, length, and culvert data when applicable.
6. **Cross Sections and Cut/Fill Quantities** - The ENGINEER shall develop an earthwork analysis to determine cut and fill quantities. The ENGINEER shall provide final design cross-sections (station interval: 100 feet). Cross-sections shall be delivered in standard Geopak format on 11"x17" sheets and electronic files. Cross sections and quantities shall consider existing pavement removals.
7. **Roadway Standards** – Applicable OWNER, City of Seguin, City of San Antonio, or TxDOT Roadway standards and details shall be gathered and prepared for insertion into the project documents.
8. **Plan Preparation** - The ENGINEER shall prepare roadway plans, profiles and typical sections for the proposed improvements. This scope of services and the corresponding cost proposal are based on the ENGINEER preparing plans for a roadway reconstruction. The following plans sheets shall be included as a minimum:

1. Title Sheet
2. Index of Sheets
3. Project Layout and Survey Control Map (with Benchmarks)
4. Typical Sections
5. General Notes
6. Quantity Sheets
7. Traffic Control & Construction Sequence
8. Traffic Control Standards & Details
9. Plan and Profile Sheets
10. Intersection Layouts
11. Driveway Layout & Summary Detail
12. Roadway Standards & Details
13. Drainage Area Maps (External / Internal)
14. Drainage / Storm Sewer Plans
15. Culvert Layouts (if applicable)
16. Hydrologic and Hydraulic Data
17. Drainage Standards & Details
18. Existing Utility Layouts
19. Pavement Markings and Signing Plans
20. Pavement Markings and Signing Standards & Details
21. Erosion Control
22. Erosion Control Standards & Details
23. Cross Sections

C. DRAINAGE DESIGN

1. **Drainage Area Maps (External & Internal)** – The ENGINEER shall update the external drainage area map that identify the offsite drainage area for each cross drainage structure within the project limits. The drainage area maps shall include the acreage, calculated peak flows, and other pertinent hydrologic information. Internal drainage area maps shall be prepared for the design of the inlets and storm sewer system.
2. **Storm Sewer Hydraulic Tables** – The ENGINEER shall prepare hydraulic data using Geopak Drainage software for the proposed storm sewer system. The storm system shall be designed for the 10 year event per the approved design criteria.
3. **Parallel ditch grading and hydraulic tables** - Hydrologic and hydraulic modeling using HEC-HMS and Flowmaster shall be performed in support of roadside ditch design. The ENGINEER shall develop design flows and ditch cross-section configurations that meet the 10 year design frequency.
4. **Drainage Plan & Profile sheets (P&P)** - Include all proposed and existing drainage structures or ditches for the project improvements. Storm laterals shall be shown on separate layouts. The Drainage Layouts shall show approximate offsets to known utilities.

5. **Provide Culvert Hydraulic Tables** - Hydrologic and hydraulic modeling using HY-8 shall be performed in support of assessment of resulting flow conditions (frequency of overtopping, level of overtopping) for culverts if needed at driveways.
6. **Culvert Layouts** –Culvert Layout Sheets (if needed at driveways) shall be shown at a scale of 1"=40' horizontal. Plans shall show the location of culvert, roadway alignment, utilities, and channel improvements as required. Profile information for the culvert shall include size, slope, proposed and existing ground lines above the culvert, and hydraulic data.
7. **E&S Control Specifications** - The ENGINEER shall develop Erosion and Sediment Control Sheets meeting City of Seguin (or City of San Antonio if needed) guidelines.
8. **Drainage and Erosion Control Standards** – Applicable CITY, City of San Antonio, or TxDOT Drainage, Erosion and Sediment Control standards and details shall be gathered and prepared for insertion into the project documents.

D. SIGNING, MARKING AND SIGNALIZATION

1. **Signing** - The ENGINEER shall prepare drawings, specifications, and details for all project signs. Sign detail sheets shall be prepared for signs showing dimensions, lettering, shields, borders and corner radii. The ENGINEER shall provide a summary of small signs. The proposed signs shall be illustrated and numbered on plan sheets. Sign foundation shall be selected from TxDOT Standards.
 - a. **Signing and Marking Layout** – Signing and pavement marking shall be shown on plan sheets in accordance with the Texas Manual on Uniform Traffic Control Devices (TxMUTCD).
 - b. **Inventory** – The ENGINEER shall inventory existing roadway signs.
 - c. **Summary of Small Signs Sheet (SOSS)** – The ENGINEER shall complete the SOSS sheet.
 - d. **Sign Details** – The ENGINEER shall detail non-standard signs required for this project per TxDOT standards.
2. **Pavement Markings** - The ENGINEER shall detail permanent and temporary pavement markings and channelization devices on plan sheets. Pavement markings shall be selected from the latest TxDOT standards and in accordance to with the TxMUTCD.
3. **Signing and Pavement Marking Standards** – Applicable CITY, City of San Antonio, or TxDOT Signing and Pavement Marking standards and details shall be gathered and prepared for insertion into the project documents.

E. MISCELLANEOUS

1. **Title Sheet** – The ENGINEER shall prepare a title sheet formatted by the OWNER to be used for the construction plans.
2. **Index of Sheets** – The ENGINEER shall complete a detailed Index of Sheets that identifies each sheet location in the plan set, as well as its corresponding sheet number. The ENGINEER shall update the Index of Sheets throughout the submittal process to allow for easier reference during the review process.

3. **Traffic Control Plan, Detours, and Sequence of Construction** - The ENGINEER shall prepare Traffic Control Plans (TCP) for the project. A detailed TCP shall be developed in accordance with the latest edition of the *Texas Manual on Uniform Traffic Control Devices*. The ENGINEER is to implement the current Barricade and Construction (BC) standards and utilize CITY, City of San Antonio, or TxDOT San Antonio District standards.

1. The ENGINEER shall provide a written narrative of the construction sequencing and work activities per phase and determine the existing and proposed traffic control devices (e.g., regulatory signs, warning signs, guide signs, route markers, construction pavement markings, barricades, flag personnel, and temporary traffic signals) to be used to handle traffic during each construction sequence. The ENGINEER shall show proposed traffic control devices at grade intersections during each construction phase (e.g., stop signs, flag person, and signals). The ENGINEER shall show temporary roadways, structures, and detours required to maintain lane continuity throughout the construction phasing.
2. Temporary drainage shall be considered to replace existing drainage disturbed by construction activities.
3. Existing pedestrian access to be limited through the construction site. Closures for existing sidewalk access shall be shown.

It is anticipated that a detour plan shall be designed to maintain one-way traffic through the project site for the reconstruction of N. King Street. The project shall be constructed in two phases; one half of the road shall be built in each phase. Coordination with the school and emergency response agencies shall occur before, during and after the construction of each phase of work.

4. **Summary of Quantities** - Project quantities shall be estimated and displayed utilizing applicable City of San Antonio or TxDOT specifications. Summary of Quantities shall be prepared and shown in the plans for each project discipline. TxDOT bid items shall supplement City of San Antonio specifications as needed.
5. **Construction Estimate** - The ENGINEER shall prepare a project estimate of the probable cost. The estimate shall be prepared for the project at 90% and 100% submittals using MS Excel program. The MS Excel spreadsheet shall include columns with recent average low bid unit prices as well as the ENGINEER's unit price for each item.
6. **Construction Time Determination** - The ENGINEER shall prepare a construction contract time determination indicating tasks, subtasks, critical dates, and milestones. The construction time determination shall be submitted at the 90% and 100% submittals.
7. **Project Manual and Bid Package** – The ENGINEER shall prepare a project manual meeting CITY requirements. The manual shall include general CITY bid documentation, a bid item list, project specifications, and geotechnical report (if applicable).

The ENGINEER shall submit the PS&E for review to the CITY at the 90% and 100% level of completion. Three (3) sets of plans shall be submitted for each review along with an electronic copy. The bid manual shall be submitted at the 90% and 100% submittals. Upon approval by the CITY, the ENGINEER shall submit one set of final sheets signed and sealed by a registered professional engineer.

F. PROJECT MANAGEMENT

The ENGINEER shall coordinate with the CITY and sub consultants to complete the project. The ENGINEER shall conduct regular internal coordination meetings through the duration of the PS&E phase. The ENGINEER shall prepare monthly invoices, weekly progress reports, and updated schedules. The ENGINEER shall attend three (3) public meetings including City Council Meetings.

The ENGINEER shall implement a QA/QC program throughout the project for each deliverable (90%, 100% and Final Submittals) and shall provide documentation of QC reviews upon request.

G. BIDDING PHASE SERVICES

1. **Attend Pre-bid Meeting and Furnish Documents** – The ENGINEER shall be present at the pre-bid meeting and furnish construction documents to prospective bidders.
2. **Respond to Bidder's Questions** - During the bid period all questions submitted to the ENGINEER shall be answered.
3. **Prepare and Distribute Addendum** – The ENGINEER shall produce an addendum, as needed for correction, and distribute it to bidders.
4. **Prepare Bid Tab and Letter of Recommendation** – The ENGINEER shall analyze contractor bids, prepare bid tabulation, check references, and make recommendation for award to the apparent low bidder.
5. **One Time Construction Staking** – The ENGINEER shall perform a one-time staking of proposed back of curb on one side of street only for Contractor use.

H. CONSTRUCTION PHASE SERVICES – Construction Phase services are based on a construction duration period of up to 240 calendar days. It is our understanding that the CITY will provide a full time or part time inspector for duration of project, and material testing will be performed by others.

1. **Attend Pre-Construction Meeting**– The ENGINEER shall be present at the pre-construction meeting.
2. **Respond to Contractor Request for Information (RFI's)** - During Construction Phase, all RFI's submitted to the ENGINEER shall be answered, up to ten (10) RFI's.
3. **Make Periodic Site Visits** – The ENGINEER shall make periodic site visits (once a month) to observe the progress and quality of the executed work, and to determine in general if the work is proceeding in accordance with the plans and specifications. A Site Observation Report will be prepared and submitted to the CITY. The ENGINEER shall not be responsible for the means, methods, techniques, sequences, or procedures of construction selected by the Contractor or the safety precautions and programs incident to the work of the Contractor.
4. **Review Contractor Submittals** – The ENGINEER shall review and take appropriate action on Contractor approved submittals (such as shop drawings, product data, and samples) but only for conformance with the design concept. The approval of a specific item will not indicate approval of an assembly of which the item is a component.
5. **Review Monthly Pay Estimates** – The ENGINEER shall review monthly pay estimate and recommend for approval or other appropriate action regarding those estimates to the Contractor. ENGINEER shall rely on CITY inspector to confirm quantities installed.
6. **Field Alterations** – At the request of the CITY, ENGINEER will develop any changes, alterations or modifications to the PROJECT to appear to be advisable and feasible in the best interest of the City. Up to five (5) field alterations are included in scope of work.

7. **Final Inspection** – The ENGINEER, along with CITY inspector, will perform a “Conditional Approval” and a Final observation of the PROJECT to observe any apparent defects in the completed construction with regard to conformance with design concept. ENGINEER will consult with the CITY and discussions with the Contractor concerning those defects and make recommendations as to replacement or correction of defective work.
8. **Record Drawings** – The ENGINEER will transfer Record Drawings provided by the Contractor to a set of plans for the CITY’s permanent files. CITY shall not hold ENGINEER liable for the information provided by the Contractor.

Exclusions:

1. Materials testing is not included in this scope of work.
2. Inspection services are not included in this scope of work.

DELIVERABLES

Deliverable Requirements:

1. 90% and 100% PS&E design submittal (3 copies for 60% & 90%, 1 copy for the 100% submittal). An electronic copy shall be provided with each submittal.
2. Plans shall be developed on 11"x17" paper unless otherwise determined necessary.
3. An 11"x17" set shall be developed for the signed and sealed final plans.
4. Engineer’s Estimated Probable Cost of Construction shall be furnished at the 90% and Final submittals.
5. Estimated construction schedule shall be developed for 90%, and 100% submittals.
6. Project Manual shall be developed for the 90% and 100% submittals.
7. Record Drawings at end of PROJECT.

12-07-2016
NORTH KING STREET PROJECT
SEIDEMANN TO UPRR EXHIBIT



FEE SCHEDULE - Preliminary and Final Engineering Phase
PROJECT NAME: N. King St., Spruce St., and Vetter St. Roadway & Drainage Improvements
PRIME PROVIDER NAME: RPS Klotz Associates
Date: 1/12/2017

PLANS, SPECIFICATIONS AND ESTIMATES														
TASK DESCRIPTION	Principal	Senior Project Manager	Project Manager	Senior Project Engineer	Project Engineer	Associate Engineer III	Associate Engineer I/II	Senior Designer	Designer	CADD Technician	Clerical	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
PRELIMINARY PLANS & STUDIES														
Data Collection				4			8			8		20	N/A	N/A
Field Reconnaissance				4			4					8	N/A	N/A
Establish Project Criteria		1		2		2	1					6	N/A	N/A
Utility Investigation/Coordination		1		2		8						11	N/A	N/A
Subconsultant Coordination	1	6		2			4			4	2	19	N/A	N/A
30% Plans, Specifications, and Estimate (PS&E)														
- Title Sheet				1			2					3	1	3
- Existing & Proposed Typical Sections		1		2			6			4		13	1	13
- Roadway Plan & Profiles		4		24			48			32		108	8	14
- Drainage Plan & Profiles		4		18			36			32		90	9	10
- Drainage Area Maps & Computations		10				40	25					75	5	15
- List of Specifications		2		4								6		N/A
- Construction Cost Estimate		1		2			8			16		27	N/A	N/A
HOURS SUB-TOTALS	1	30	0	65	0	50	142	0	0	96	2	386	N/A	
LABOR RATE PER HOUR	\$295.00	\$255.00	\$190.00	\$165.00	\$140.00	\$105.00	\$95.00	\$125.00	\$95.00	\$90.00	\$60.00			
SUBTOTAL PRELIMINARY ENGINEERING	\$295.00	\$7,650.00	\$0.00	\$10,725.00	\$0.00	\$5,250.00	\$13,490.00	\$0.00	\$0.00	\$8,640.00	\$120.00	\$46,170.00		
DESCRIPTION	Principal	Senior Project Manager	Project Manager	Senior Project Engineer	Project Engineer	Associate Engineer III	Associate Engineer I/II	Senior Designer	Designer	CADD Technician	Clerical	TOTAL COSTS TASK	NO OF DWGS	
SUMMARY														
PRELIMINARY PLANS & STUDIES	1	30	0	65	0	50	142	0	0	96	2	\$46,170.00	N/A	
SUBTOTAL LABOR EXPENSES	1	30	0	65	0	50	142	0	0	96	2	\$46,170.00	0	
DIRECT EXPENSES														
MILEAGE @ \$0.58 per mile	270											\$156.60		
IN HOUSE PHOTO COPY (8.5"x11", @ \$0.15 per sheet)	100											\$15.00		
IN HOUSE PLAN PRINT (11" x17", @ \$0.25 per print)	384											\$96.00		
DELIVERIES (@ \$25.00 per delivery)	2											\$50.00		
SUBTOTAL DIRECT EXPENSES												\$317.60		
RPS KLOTZ ASSOCIATES TOTAL												\$46,487.60		
SUB CONSULTANTS:														
Raba-Kistner Consulti (Geotechnical)												\$11,134.00		
Unitech Consulting Engineers, Inc. (Survey)												\$42,311.00		
TOTAL - SUB CONSULTANTS:												\$53,445.00		
Total - Preliminary Plans & Studies												\$99,932.60		

FEE SCHEDULE - Preliminary and Final Engineering Phase
PROJECT NAME: N. King St., Spruce St., and Vetter St. Roadway & Drainage Improvements
PRIME PROVIDER NAME: RPS Klotz Associates
Date: 1/12/2017

TASK DESCRIPTION	Principal	Senior Project Manager	Project Manager	Senior Project Engineer	Project Engineer	Associate Engineer III	Associate Engineer I/II	Senior Designer	Designer	CADD Technician	Clerical	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
FINAL ENGINEERING PHASE														
ROADWAY DESIGN														
Typical Sections		1		4			8			12		25	1	25
Project Layout		1		4			4			8		17	1	17
Roadway Plan & Profiles		8		36			80			64		188	8	24
Intersection Layouts		4		20			32			24		80	3	27
Driveway Layouts / Summary		2		4			18			24		48	3	16
Cross Sections & Earthwork		8		32				128				168	16	11
Roadway Standards and Details		1		2			8			8		19	10	1.9
HOURS SUB-TOTALS	0	25	0	102	0	0	150	128	0	140	0	545	42	
LABOR RATE PER HOUR	\$295.00	\$255.00	\$190.00	\$165.00	\$140.00	\$105.00	\$95.00	\$125.00	\$95.00	\$90.00	\$60.00			
SUBTOTAL ROADWAY DESIGN	\$0.00	\$6,375.00	\$0.00	\$16,830.00	\$0.00	\$0.00	\$14,250.00	\$16,000.00	\$0.00	\$12,600.00	\$0.00	\$66,055.00		
TASK DESCRIPTION	Principal	Senior Project Manager	Project Manager	Senior Project Engineer	Project Engineer	Associate Engineer III	Associate Engineer I/II	Senior Designer	Designer	CADD Technician	Clerical	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
DRAINAGE DESIGN														
Drainage Area Maps (External & Internal)		4			16	36				36		92	4	23
Storm Sewer Hydraulic Data		1			8	32						41	2	20.5
Ditch Grading & Hydraulic Data		1			4	18						23	1	23
Drainage Plan & Profile Sheets		4			36	72				72		184	9	20.5
Cross Culvert Hydraulic Data		2			12			18				32	2	16
Culvert Layouts (to be included in Driveway Layouts)		1			4	16		24				45	N/A	N/A
Erosion & Sediment Control Sheets					12		18			18		48	2	24
Drainage and Erosion Control Standards and Details					1		4					5	10	0.5
HOURS SUB-TOTALS	0	13	0	0	93	174	22	42	0	126	0	470	30	
LABOR RATE PER HOUR	\$295.00	\$255.00	\$190.00	\$165.00	\$140.00	\$105.00	\$95.00	\$125.00	\$95.00	\$90.00	\$60.00			
SUBTOTAL DRAINAGE DESIGN	\$0.00	\$3,315.00	\$0.00	\$0.00	\$13,020.00	\$18,270.00	\$2,090.00	\$5,250.00	\$0.00	\$11,340.00	\$0.00	\$53,285.00		
TASK DESCRIPTION	Principal	Senior Project Manager	Project Manager	Senior Project Engineer	Project Engineer	Associate Engineer III	Associate Engineer I/II	Senior Designer	Designer	CADD Technician	Clerical	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
SIGNING, MARKING AND SIGNALIZATION DESIGN														
Signing and Marking Layouts			4		10	16				16		46	2	23
Inventory of Existing Signs					1		4			4		9	N/A	
Summary of Small Signs Sheet			2		4	8				4		18	1	18
Sign Details			2		8			20				30	2	15
Signing and Pavement Marking Standards					2		4					6	12	0.5
HOURS SUB-TOTALS	0	0	8	0	25	24	8	20	0	24	0	109	17	
LABOR RATE PER HOUR	\$295.00	\$255.00	\$190.00	\$165.00	\$140.00	\$105.00	\$95.00	\$125.00	\$95.00	\$90.00	\$60.00			
SUBTOTAL SIGNING, MARKING AND SIGNALIZATION DESIGN	\$0.00	\$0.00	\$1,520.00	\$0.00	\$3,500.00	\$2,520.00	\$760.00	\$2,500.00	\$0.00	\$2,160.00	\$0.00	\$12,960.00		

FEE SCHEDULE - Preliminary and Final Engineering Phase
PROJECT NAME: N. King St., Spruce St., and Vetter St. Roadway & Drainage Improvements
PRIME PROVIDER NAME: RPS Klotz Associates
Date: 1/12/2017

TASK DESCRIPTION	Principal	Senior Project Manager	Project Manager	Senior Project Engineer	Project Engineer	Associate Engineer III	Associate Engineer I/II	Senior Designer	Designer	CADD Technician	Clerical	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
MISCELLANEOUS DESIGN														
Title Sheet				6			8			4		18	1	18
Index of Sheets				6			8			4		18	1	18
Traffic Control Plans														
Sequence of Construction		1		8			8					17	1	17
Phase 1 Layouts / Typical Sections		4		18			27			27		76	3	25
Phase 1 Detour		1		6			6			8		21	1	21
Phase 2 Layouts / Typical Sections		4		18			27			27		76	3	25
Phase 2 Detour		1		6			6			8		21	1	21
TCP Standards and Details				1			8					9	18	0.5
Summary of Project Quantities		2		6			24			4		36	2	18
Construction Estimate		2		8			18					28	N/A	
Construction Time Determination		2		24								26	N/A	
Project Manual and Bid Package		2		14							16	32	N/A	
HOURS SUB-TOTALS	0	19	0	121	0	0	140	0	0	82	16	378	31	
LABOR RATE PER HOUR	\$295.00	\$255.00	\$190.00	\$165.00	\$140.00	\$105.00	\$95.00	\$125.00	\$95.00	\$90.00	\$60.00			
SUBTOTAL MISCELLANEOUS DESIGN	\$0.00	\$4,845.00	\$0.00	\$19,965.00	\$0.00	\$0.00	\$13,300.00	\$0.00	\$0.00	\$7,380.00	\$960.00	\$46,450.00		
PROJECT MANAGEMENT														
Coordination with City	4	12		8							8	32	N/A	
Coordination with Sub Consultants		16		8			4					28	N/A	
Maintain Schedule and Progress Reports		4		8								12	N/A	
Monthly Invoices		6									6	12	N/A	
Public Meetings - City Council Meetings		9		9								18	N/A	
QA/QC (3 Submittals)	3	3		12							4	22	N/A	
HOURS SUB-TOTALS	7	50	0	45	0	0	4	0	0	0	18	124		
LABOR RATE PER HOUR	\$295.00	\$255.00	\$190.00	\$165.00	\$140.00	\$105.00	\$95.00	\$125.00	\$95.00	\$90.00	\$60.00			
SUBTOTAL PROJECT MANAGEMENT	\$2,065.00	\$12,750.00	\$0.00	\$7,425.00	\$0.00	\$0.00	\$380.00	\$0.00	\$0.00	\$0.00	\$1,080.00	\$23,700.00		

FEE SCHEDULE - Preliminary and Final Engineering Phase
PROJECT NAME: N. King St., Spruce St., and Vetter St. Roadway & Drainage Improvements
PRIME PROVIDER NAME: RPS Klotz Associates
Date: 1/12/2017

TASK DESCRIPTION	Principal	Senior Project Manager	Project Manager	Senior Project Engineer	Project Engineer	Associate Engineer III	Associate Engineer I/II	Senior Designer	Designer	CADD Technician	Clerical	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
BID PHASE SERVICES														
Attend Pre-Bid Meeting and Furnish Documents		4		4							4	12	N/A	
Respond to Bidder's Questions		2		4							2	8	N/A	
Prepare and Distribute Addendum		2		4							4	10	N/A	
Prepare Bid Tab and Letter of Recommendation		1		3							2	6	N/A	
HOURS SUB-TOTALS	0	9	0	15	0	0	0	0	0	0	12	36		
LABOR RATE PER HOUR	\$295.00	\$255.00	\$190.00	\$165.00	\$140.00	\$105.00	\$95.00	\$125.00	\$95.00	\$90.00	\$60.00			
SUBTOTAL BID PHASE SERVICES	\$0.00	\$2,295.00	\$0.00	\$2,475.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$720.00	\$5,490.00		
CONSTRUCTION PHASE SERVICES														
Attend Pre-Construction Meeting		3		3							4	10	N/A	
Respond to Request for Information (up to 10)		10		20							2	32	N/A	
Make Periodic Site Visits, Prepare Observation Reports (up to 8)		8		24							8	40	N/A	
Review Contractor Submittals		4		24			8				2	38	N/A	
Review Monthly Pay Estimates				12								12	N/A	
Field Alterations (up to 5)		5		15			15					35	N/A	
Final Inspection		3		6							2	11	N/A	
Record Drawings		1		4					24			29	N/A	
HOURS SUB-TOTALS	0	34	0	108	0	0	23	0	24	0	18	207		
LABOR RATE PER HOUR	\$295.00	\$255.00	\$190.00	\$165.00	\$140.00	\$105.00	\$95.00	\$125.00	\$95.00	\$90.00	\$60.00			
SUBTOTAL CONSTRUCTION PHASE SERVICES	\$0.00	\$8,670.00	\$0.00	\$17,820.00	\$0.00	\$0.00	\$2,185.00	\$0.00	\$2,280.00	\$0.00	\$1,080.00	\$32,035.00		
SUB CONSULTANTS:														
Unintech Consulting Engineers, Inc. (Construction Staking Survey)												\$6,388.00		
TDLR Review & Inspection												\$2,500.00		
TOTAL - SUB CONSULTANTS:												\$6,388.00		

FEE SCHEDULE - Preliminary and Final Engineering Phase
PROJECT NAME: N. King St., Spruce St., and Vetter St. Roadway & Drainage Improvements
PRIME PROVIDER NAME: RPS Klotz Associates
Date: 1/12/2017

DESCRIPTION	0	0	0	0	0	0	0	0	0	0	0	TOTAL COSTS TASK	NO OF DWGS
SUMMARY													
Raba-Kistner Consulti (Geotechnical)	0	0	0	0	0	0	0	0	0	0	0	\$6,388.00	0
ROADWAY DESIGN	0	25	0	102	0	0	150	128	0	140	0	\$66,055.00	42
DRAINAGE DESIGN	0	13	0	0	93	174	22	42	0	126	0	\$53,285.00	30
SIGNING, MARKING AND SIGNALIZATION DESIGN	0	0	8	0	25	24	8	20	0	24	0	\$12,960.00	17
MISCELLANEOUS DESIGN	0	19	0	121	0	0	140	0	0	82	16	\$46,450.00	31
PROJECT MANAGEMENT	7	50	0	45	0	0	4	0	0	0	18	\$23,700.00	N/A
BID PHASE SERVICES	0	9	0	15	0	0	0	0	0	0	12	\$5,490.00	N/A
CONSTRUCTION PHASE SERVICES	0	34	0	108	0	0	23	0	24	0	18	\$38,423.00	N/A
SUBTOTAL LABOR EXPENSES	7	150	8	391	118	198	347	190	24	372	64	\$252,751.00	120
DIRECT EXPENSES													
MILEAGE @ \$0.54 per mile	1,620											\$874.80	
IN HOUSE ROLL PLOTS (24"x96"), @ \$3.00 per foot	100											\$300.00	
IN HOUSE PHOTO COPY (8.5"x11", @ \$0.15 per sheet)	300											\$45.00	
IN HOUSE PLAN PRINT (11" x17", @ \$0.25 per print)	1,500											\$375.00	
DELIVERIES (@ \$25.00 per delivery)	4											\$100.00	
SUBTOTAL DIRECT EXPENSES												\$1,694.80	
Total - Final Engineering Phase												\$254,445.80	
GRAND TOTAL - PRELIMINARY AND FINAL ENGINEERING												\$354,378.40	

Proposal No. PNA16-046-00
December 13, 2016

P 830 :: 214 :: 0544
F 830 :: 214 :: 0627
TBPE Firm F-3257

AUTHORIZATION FORM

I HEREBY AGREE TO THE TERMS AND CONDITIONS OF THIS AUTHORIZATION FORM, INCLUDING ATTACHMENTS, AND AUTHORIZE RABA KISTNER CONSULTANTS, INC. (RKCI) TO PERFORM THE FOLLOWING SERVICE(S): Perform a geotechnical engineering study for the proposed pavement rehabilitation and storm sewer restoration on North King Street and Spruce Street in Seguin, Texas as described in Attachment III – Scope of Work.

LOCATION WHERE SERVICES ARE TO BE PERFORMED: Seguin, Texas

NAME OF RESPONSIBLE PARTY (CLIENT) THAT APPROVES PAYMENT OF ABOVE SERVICES:
Mr. Luis A. Cuellar, P.E./RPS Klotz Associates

LUMP SUM COST: \$11,134.00

ESTIMATED SCHEDULE: See Attachment III

Our invoices are due and payable upon receipt at PO Box 971037, Dallas, Dallas County, Texas 75397-0137. All parties hereby agree that this contract upon acceptance will be performable in Guadalupe County, Texas. Our services will be performed in accordance with this letter agreement and the attachments. Please sign, date, and return one signed copy of this form to provide our firm with written authorization.

SIGNATURE:	X	DATE:	
PRINTED NAME:	Mr. Luis A. Cuellar, P.E.		
COMPANY NAME:	RPS Klotz Associates		
COMPANY ADDRESS:	7550 IH-10 West, Suite 300		
CITY, STATE, ZIP:	San Antonio, Texas 78229		
PHONE NUMBER:	210.736.0425	FAX NUMBER:	
E-MAIL:	Luis.Cuellar@klotz.com		

RABA KISTNER CONSULTANTS, INC.



T. Ian Perez, P.E.
Area Project Manager

TIP/

Attachments: I – Standard Terms and Conditions
II – Schedule of Fees
III – Scope of Work

RKCI GEOTECHNICAL ESTIMATE SHEET

City of Seguin

PROPOSAL #: PNA16-046-00
PROJECT TITLE: North King Street Project - Seguin
CLIENT NAME: RPS Klotz Associates
CONTACT NAME: Mr. Luis A. Cuellar, P.E.
PHONE #/EMAIL: 210.736.0425/Luis.Cuellar@klotz.com

PREPARED BY: TIP
DATE: 12/13/16

#STRUCTURAL 1	5	DEPTH, FT	20	# PAVEMENT	2	DEPTH, FT	10
#STRUCTURAL 2	0	DEPTH, FT	0				
#STRUCTURAL 2	0	DEPTH, FT	0				

<u>DRILLING</u>	UNIT	# UNITS	COST/UNIT	TOTAL
MOBILIZATION	MILE	60	\$4.50	\$270.00
AUGER DRILLING W/O SAMPLING 0 - 25 FT	FT	120	\$10.00	\$1,200.00
AUGER DRILLING W/O SAMPLING 25 - 50 FT	FT	0	\$11.00	\$0.00
CORE DRILING AND SAMPLING 0 - 25 FT (ROCK)	FT	0	\$28.00	\$0.00
CORE DRILING AND SAMPLING 25 - 50 FT (ROCK)	FT	0	\$29.50	\$0.00
SPT/ST 0 - 25 FT	PER SAMPLE	0	\$36.00	\$0.00
SPT/ST 25 - 50 FT	PER SAMPLE	0	\$38.00	\$0.00
TCP 0 - 25 FT	PER SAMPLE	0	\$36.00	\$0.00
TCP 25 - 50 FT	PER SAMPLE	0	\$38.00	\$0.00
GROUT BORING HOLE	FT	120	\$4.00	\$480.00
TOTAL DRILLING				\$1,950.00

<u>FIELD LOGGING/COORDINATION</u>				
BORING LAYOUT	MH	4	\$110.00	\$440.00
DRILLING - COORDINATION	MH	4	\$110.00	\$440.00
TRAFFIC CONTROL - COORDINATION	MH	2	\$110.00	\$220.00
TRAFFIC CONTROL	DAY	1	\$1,750.00	\$1,750.00
LOGGER - ENGINEER/GEOLOGIST	MH	8	\$110.00	\$880.00
VEHICLE TRIP CHARGE	MILE	60	\$0.75	\$45.00
TOTAL LOGGING				\$3,775.00

<u>LABORATORY TESTING</u>				
MOISTURE CONTENT	PER TEST	45	\$12.00	\$540.00
ATTERBERG LIMITS DETERMINATION	PER TEST	8	\$87.00	\$696.00
BEARING RATIO TEST	PER TEST	1	\$823.00	\$823.00
HYDROMETER ANALYSIS	PER TEST	0	\$285.00	\$0.00
GRAIN SIZE ANALYSIS	PER TEST	0	\$87.00	\$0.00
MATERIAL FINER THAN NO. 200 SIEVE	PER TEST	0	\$58.00	\$0.00
UNCONFINED COMPRESSIVE STRENGTH	PER TEST	0	\$49.00	\$0.00
SULFATE CONTENT	PER TEST	1	\$85.00	\$85.00
LIME STABILIZATION TEST	PER TEST	0	\$1,450.00	\$0.00
LIME SERIES CURVE	PER TEST	1	\$475.00	\$475.00
UNIT DRY DENSITY	PER TEST	0	\$30.00	\$0.00
TOTAL TESTING				\$2,619.00

<u>ENGINEERING AND REPORT PREPARATION</u>				
PRINCIPAL	MH	0	\$195.00	\$0.00
SENIOR PROJECT MANAGER	MH	2	\$185.00	\$370.00
PROJECT MANAGER	MH	6	\$165.00	\$990.00
EIT	MH	10	\$98.00	\$980.00
CADD TECH I	MH	0	\$57.00	\$0.00
CADD TECH II	MH	2	\$75.00	\$150.00
ADMIN/CLERICAL	MH	5	\$60.00	\$300.00
TOTAL ENGINEERING				\$2,790.00

TOTAL **\$11,134.00**

Raba Kistner Consultants Scope of Work

North King Street and Spruce Street Improvements Santa Clara, Texas

Project Description

To be considered in this study are:

- The full street reconstruction and addition of curb and sidewalk (one side only) on North King Street from East Pine Street to the dead end south of the Union Pacific Railroad;
- Sewer line improvements on North King Street from Sycamore Street to the dead end south of the Union Pacific Railroad; and
- Sewer line improvements on Spruce Street from North King Street to Vetter Street and North on Vetter Street to the outfall.

The project alignments are located in Seguin, Texas. It is our understanding that the City of Seguin is pursuing full reconstruction of North King Street over the alignment discussed which will include improvements to the sewer line. The Spruce Street improvements will include improvements to the sewer line and the city will come back at a later date to overlay Spruce Street. We have been asked to assume that the depth of the sewer lines will be approximately 15 ft below the existing grade. As part of our recommendations, we will include trenching and backfilling recommendations for the proposed sewer line improvements.

In the absence of traffic loading data or a City of Seguin pavement design guidance manual, the streets will be reconstructed using guidance from the City of San Antonio (or as directed by the Client). This scope was developed using the City of San Antonio guidance for street studies. There are no structures associated with the street rehabilitation regarding low water crossings, signalization, bridges, or retaining walls.

Raba Kistner Consultants, Inc. (RKCI) will perform the drilling, sampling, testing and develop the pavement designs to establish three pavement section options for the proposed reconstruction of the roadways. Prior to commencement of drilling, RKCI will utilize information from existing design plans (if available) and soils maps to determine soil conditions that may be encountered and assist in defining expected variability of soils that may be encountered.

Field Sampling and Laboratory Testing

To investigate the conditions at this site, we propose the following steps:

- Determine Locations for Proposed Geotechnical Testing (See Figure 1) –RKCI will drill 7 total borings along the existing alignments to maximum depths of 10 ft (P-1 and P-2) along the street reconstruction only portion and to maximum depths of 20 ft (Borings P-3 through P-7) along the sewer and road improvement sections. These borings will be drilled through the existing pavements. Exact locations of the borings will be determined after a brief distress survey of existing pavement condition is conducted and with the approval of the

client. The general extent and severity of distresses encountered on the existing pavement will confirm the field sampling and testing program that will be conducted for the pavement rehabilitation plan.

- Permits and Utility Clearances for Proposed Test Holes - RKCI will contact Texas Excavation Safety System, Inc. (Texas811) for clearance of certain utilities. It is expected that the Client will provide information regarding the location of any underground utilities in the vicinity of our borings. RKCI will assist in locating underground utilities provided the Client submits documentation of existing utility locations. If street cut permits are required by the City of Seguin, we will work with the client and the City to obtain those permits. No cost has been included herein for any fees associated with these permits.
- Coordinate with City of Seguin for Potential Lane Closures for Drilling of Test Holes - RKCI will provide the necessary traffic control for all sampling activities that may occur for the drilling. 1 day of traffic control has been included in our scope of work.
- Obtain Test Hole Information - Borings will be conducted at the locations and depths discussed above using industry accepted drilling practices and procedures. If contaminated soils are encountered, drilling will be suspended and environmental drilling and sampling protocols will have to be followed with additional costs to be determined.
- Complete Geotechnical Laboratory Testing of Test Samples - From the borings, representative materials will be collected to define the strength and classification characteristics of the foundation soils. The laboratory testing program may include moisture content tests, Atterberg Limits (plasticity tests), and grain size analyses. In addition to the above described testing program, a representative sample of the predominant subgrade soil will be obtained from the pavement areas and will be subjected to California Bearing Ratio (CBR), Lime-pH series testing, and sulfate content testing (1 each). The CBR testing will provide information regarding inundated strength and swell characteristics of the surficial subgrade soils for direct use in pavement design analyses. The Lime Series-pH testing will allow determination of required proportions of hydrated lime needed in conventional stabilization to sufficiently reduce the plasticity of the subgrade soils. The sulfate content testing will facilitate the evaluation of the potential for sulfate-induced heave in which is caused due to an adverse reaction to lime.
- If it is determined that reusing the existing paving materials as part of the reconstructed pavement is desired, samples of the asphaltic concrete and granular base may be collected for testing in the laboratory with an additional cost to be determined. The specific testing will be defined based upon the ultimate usage of the recycled material (i.e. will it be used as a granular base, a cement treated base, or asphalt treated base? etc.).

Develop Pavement Designs

Unless otherwise directed, the pavement design will be conducted using guidance available from City of San Antonio, specifically Article 5 Section 35-506 Subsection (p) of the Unified Development Code (UDC) (dated

January 1, 2006) titled "Pavement Standards" and using the additional requirements of Appendix 10-A of the DGM entitled "City of San Antonio Pavement Design Standards." Both flexible and rigid pavements will be considered for design.

Pavement design inputs for the reconstruction option will be based upon data collected from the field sampling and testing program as well as the UDC and Appendix 10-A of the DGM using a street classification (or ADT) to be provided by the client at a future date. Design traffic levels will be determined in accordance with DGM Appendix 10-A: *Pavement Design Parameters – Design Traffic Levels* or as directed by the client.

- Flexible Pavement Design - The following input variables are utilized to design flexible base pavements (commonly referred to as Asphaltic Cement Concrete or Asphalt pavements) when using the procedures detailed in the *1993 AASHTO Guide for Design of Pavement Structures* which will be used in accordance with the DGM:
 - Performance Period
 - Roadbed Soil Resilient Modulus psi
 - Serviceability Indices
 - Overall Standard Deviation
 - Reliability, %
 - Design Traffic, 18-kip ESALs
- Rigid Pavement Design - The following input variables are utilized to design rigid pavements (commonly referred to as Portland Cement Concrete or PCC pavements) when using the procedures detailed in the *1993 AASHTO Guide for Design of Pavement Structures* which will be used in accordance with the DGM (unless otherwise provided):
 - Performance Period
 - 28-day Concrete Modulus of Rupture, psi
 - 28-day Concrete Elastic Modulus, psi
 - Effective Modulus of Subbase/Subgrade Reaction, pci
 - Serviceability Indices
 - Load Transfer Coefficient
 - Drainage Coefficient
 - Overall Standard Deviation
 - Reliability, %
 - Design Traffic, 18-kip Equivalent Single Axle Loads (ESALs)

Prepare Design Report (Deliverable)

Pertinent information needed for the pavement design will be provided in an engineering report, which will include typical cross-sections, soil conditions encountered, and existing pavement conditions noting the general extent and severity of distresses encountered on the roadway. A recommendation as to the suitability of the existing materials for use in the reconstructed pavement may also be provided if requested by the Client at additional cost.

- The results of the field and laboratory phases of the study in support of the final pavement design will be reviewed by our staff of engineers and geologists. The results of our review, together with the supporting field and laboratory data, will be presented in a written, engineering report. Included therein will be an evaluation of the current condition of the pavement and recommendations concerning the reconstruction of the pavements. The Report will include the following information and recommendations, if applicable:
 - A summary of the field and laboratory sampling and testing program;
 - Boring logs and laboratory testing results;
 - A review of general site conditions including drainage considerations affecting pavement performance as well as a visual summary of pavement distresses encountered at the site;
 - Pavement reconstruction design recommendations;
 - Pavement construction considerations;
 - Excavation recommendations for trenches; and
 - Utility backfill recommendations.
- Submit Report to City of Seguin for Review and Approval - Project setup, boring location, obtaining permits (if necessary) and conducting the pavement distress survey will take approximately 15 working days. Drilling and sampling will take approximately 2 working days and laboratory testing will take up to an additional 15 working days (CBR testing can take up to 3 weeks). Data review, pavement design, and development of the DRAFT report will take an additional 10 working days. The DRAFT report will be submitted electronically to the Client for review and comment.
- Modify Report Per Comments Received - Comments from the City will be addressed as required and a final design report will be provided as a PDF and will be provided electronically via email.

Construction Phase Support

The activities to be preformed by the Design Engineer during the Construction Phase will be outlined in the Project Work Plan. At this point in time, the Project Work Plan is undefined and the mechanism for construction inspection and observation for this project is unknown. Therefore, RKCI's involvement during construction, at this point in time, is assumed to be limited to confirming that the project is constructed in accordance with the plans and specifications related to the geotechnical recommendations provided in our report and will be based upon visual examination only. It is our understanding that our scope of services will not include providing construction materials testing, unless required by the City.

Additional support will be provided based upon the project work plan and in accordance with the construction inspection procedures to be defined by the City.

* * * * *



UNITECH CONSULTING ENGINEERS, INC.

STRUCTURAL • CIVIL • SURVEYING

December 14, 2016
Rev January 13, 2017

Luis Cuellar
Regional Manager
Klotz Associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, Texas 78229

We are pleased to submit this proposal for Professional Surveying Services of North King Street and Spruce Street in Seguin, Texas

The following items constitute a description of the service items Unitech Consulting Engineers proposes to perform for surveying services.

Task A Design Survey Services

- Establish control and a minimum of 3 TBM's for construction
- Prepare a full DTM Design Survey along North King Street from E. Pine Street to the dead end at the UPRR approximately 2700 feet. This will include ROW verification, cross sections at a maximum of 50' intervals, Texas 811 Utility locates (SUE services not provided) visible utilities to include inverts on manholes, all improvements within the ROW, trees within the ROW 6" or larger. (This will not include any ROW Acquisition or ROE coordination)
- Prepare a partial DTM Design Survey along Spruce Street and Vetter Street from King Street to the 48" outfall and outlet structure at the north end of Vetter Street and including 50' along Norris Street. The cross sections will be run at a maximum of 50' interval and will be limited to edge of pavement and crown, Texas 811 Utility locates (SUE services not included) and visible utilities to include inverts on manholes. (Excluded will be trees and pavement markings)
- Prepare a DTM Design Survey along the alley north and parallel to Spruce Street from King Street to Vetter Street and the portion projecting north from Spruce Street to the alley north of Spruce Street approximately 1500'. The cross sections will be run at a maximum of 50' interval and will be limited to edge of pavement and crown, Texas 811 Utility locates (SUE services not included) and visible utilities to include inverts on manholes all improvements within the ROW, trees within the ROW 6" or larger.
- Provide a Microstation V8i drawing file that depicts the ROW verification and the DTM survey with all improvements for design purposes.

Task B Construction Staking Services

- Construction phase services will include a 1-time centerline staking at 50-foot intervals, PC's, PT's and PVI's.



UNINTECH CONSULTING ENGINEERS, INC.

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- 1-time staking of the back of curb with an offset along one side of the street only.

Deliverables will be a Microstation V8i file of the DTM Design survey with surfaces and point files a .tin file and a surface .csv file. There will **not** be a signed and sealed drawing produced.

To Be Provided By Client

Client to provide Surveyor with control and benchmark to reference. If the Surveyor is **not** provided with control/benchmarks it will be based on State Plane Coordinates, NAD 83, South Central Zone.

Items Excluded

A signed and sealed boundary survey will not be provided.
SUE services will not be provided.

Work will commence within 2 days of notice to proceed or signed contract and will be delivered in 6 weeks of the date of notice to proceed. The Professional Services will be **LUMP SUM of**

Task A \$42,311.00

Task B \$ 6,388.00

Total Contract Amount of \$48,699.00

If this proposal is acceptable to you, please sign and date below and return at your earliest convenience. Should you have any questions, please feel free to call me at 210-641-6003 or at tlund@unintech.com.

Thank you,

A handwritten signature in black ink that reads "Trisha Lund".

Trisha M. Lund, RPLS
Survey Division Director