

Memorandum

To: Honorable Mayor Bill Agan and members of the Richland Hills City Council
From: Jason Moore, Assistant to the City Manager
Date: February 2, 2016
Subject: Engineering Services for Storm Sewer Extension – FC1501

Council Action: Authorize the City Manager to execute a contract for engineering services with Pacheco Koch in an amount not to exceed \$59,190.

Background Information: From the inception of the design phase of the Richland Hills Activities Center project, storm drainage has been evaluated from various perspectives. Whether or not to sheet flow any storm water that falls on the building and site across the parking areas and onto Matthews Drive, to build a detention pond, or to take water underground were the main considerations. The sheet flow option (moving water across the top of surface areas) would involve long term maintenance issues, regarding erosion and potential compromise to the parking areas. A detention pond takes up considerable space, thus losing valuable plaza and/or parking space. Therefore, taking all water underground in and around the building, as well as throughout the plaza area and depositing it into an underground pipe proves to be the most effective and responsible option. The design and costs associated with tying-in underground drainage between the project site and an existing storm sewer was not included in the original scope for engineering services. The existing system, which was recently installed along Matthews Drive, at the intersection of Park Place, is the system that we are proposing to tie-into.

Instead of going through Barker Rinker Seacat to coordinate this work, city staff proposes to just contract with Pacheco Koch directly so that costs remain as efficient as possible. Pacheco Koch is the civil engineer on the RHAC project (a sub-consultant to BRS) and will engineer the storm pipe from the existing storm drain system (Matthews Interceptor project) to the new RHAC project site. This work will require a portion of the street be trenched and replaced along with a full-width asphalt overlay upon completion.

Staff also considered replacing water and sewer lines in this stretch of improvements while the road would be opened but the costs associated were not justified due to the fairly good condition of the lines and the fact that full street removal would be required.

The engineer's opinion of probable construction costs are approximately \$435,000. The project is proposed to be funded with existing drainage funds for both engineering and construction.

Board/Citizen Input: N/A

Financial Impact: \$59,190 for engineering services

Staff Contacts: Jason Moore, Assistant to the City Manager, jmoore@richlandhills.com

Attachments: Proposal from Pacheco Koch; Project Map; & Opinion of Probable Construction Costs

EXHIBIT A to Agreement between the
City of Richland Hills Texas (CITY)
and Pacheco Koch LLC,
(CONSULTANT) for Consulting
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EXHIBIT 'A' – SCOPE OF SERVICES

MATTHEWS DRIVE ROADWAY IMPROVEMENTS

PROJECT DESCRIPTION:

The project consists of preparation of construction plans and bid documents for the pavement reconstruction of Matthews Drive between Baker Blvd. and Park Place Drive. The design includes paving, drainage, and replacement of water and sewer line under new pavement limits. The project generally consists of paving and drainage design along the project limits.

BASIC SERVICES:

- A. Project Management, Coordination & Permitting
1. Manage the Team:
 - Lead, manage and direct design team activities
 - Ensure quality control is practiced in performance of the work
 - Communicate internally among team members
 - Task and allocate team resources
 2. Communications and Reporting:
 - Attend a pre-design project kickoff meeting with CITY staff to confirm and clarify scope, understand CITY objectives, and ensure economical and functional designs that meet CITY requirements
 - Conduct review meetings with the CITY at the end of each design phase
 - Prepare invoices and submit monthly in the format requested by the CITY.
 - Prepare and submit monthly progress reports
 - Prepare and submit baseline Project Schedule initially and Project Schedule updates
 - Coordinate with other agencies and entities as necessary for the design of the proposed infrastructure and provide and obtain information needed to prepare the design
 - With respect to coordination with permitting authorities, CONSULTANT shall communicate with permitting authorities such that their regulatory requirements are appropriately reflected in the designs. CONSULTANT shall work with regulatory authorities to obtain approval of the designs, and make changes necessary to meet their requirements as part of the design scope.

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3. Constructability Review:
 - Prior to the 90 percent review meeting with the CITY, the CONSULTANT shall schedule and attend a project site visit with the CITY Project Manager and Construction personnel to walk the project. The CONSULTANT shall summarize the CITY's comments from the field visit and submit this information to the CITY in writing.

4. Utility Clearance:
 - The CONSULTANT will consult with the CITY public utilities, private utilities and government agencies to determine the approximate location of above and underground utilities, and other facilities (current and future) that have an impact or influence on the project. CONSULTANT will design CITY facilities to avoid or minimize conflicts with existing utilities, and where known and possible consider potential future utilities in designs.

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- B. Preliminary Design (0-60% Submittal) –
The Preliminary Design shall be submitted to CITY per the approved Project Schedule.

CONSULTANT will develop the preliminary design of the infrastructure as follows.

1. Data Collection

- In addition to data obtained from the CITY, CONSULTANT will research proposed improvements in conjunction with any other planned future improvements known by the CITY that may influence the project.
- The CONSULTANT will also identify and seek to obtain data for existing conditions that may impact the project including but not limited to; utilities, agencies (TxDOT), City Master Plans, and property ownership as available from the Tax Assessor's office.
- The data collection efforts will also include conducting special coordination meetings with affected property owners and businesses as necessary to develop roadway alignment plans.

2. Prepare 60% construction plans. Prepare the following sheets at the engineering scale indicated:

- Cover Sheet
- Quantity sheet and General Notes
- Project Layout & Control Sheet
- Detail sheets
- Pavement plan and profile sheets for improvements.
 - Scale 1" = 20' Horizontal; 1" = 2' Vertical
- Cross Section sheets
 - Scale 1" = 20' Horizontal; 1" = 4' Vertical
- Drainage Area Map
 - Scale 1" = 100'
- Drainage Plan and Profile
 - Scale 1" = 20' Horizontal; 1" = 2' Vertical
- Traffic control plan

Information required can be combined on sheets if the information can be clearly shown and is approved by the City of Richland Hills project manager.

3. Prepare an estimate of construction quantities and develop the preliminary opinion of probable construction costs.
4. Submit two (2) 22"x34" and two (2) 11"x17" sets of preliminary 60% plans, one (1) set of construction contract documents, special conditions and preliminary opinion of probable construction costs to the CITY for review.
5. Meet with CITY staff to discuss CITY comments on 60% plans, contract documents, and opinion of construction cost.

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6. Revise 60% plans incorporating comments from the CITY.
7. Begin final design construction plans for proposed improvements.

C. Final Design (90% & 100% Submittal) –

1. Prepare 90% construction plans. Prepare the following sheets at the engineering scale indicated:
 - Cover Sheet
 - Quantity sheet and General Notes
 - Project Layout & Control Sheet
 - Detail sheets
 - Pavement plan and profile sheets for improvements.
 - Scale 1" = 20' Horizontal; 1" = 2' Vertical
 - Cross Section sheets
 - Scale 1" = 20' Horizontal; 1" = 4' Vertical
 - Drainage Area Map
 - Scale 1" = 100'
 - Drainage Plan and Profile
 - Scale 1" = 20' Horizontal; 1" = 2' Vertical
 - Traffic control plan
 - Erosion control plans

Information required can be combined on sheets if the information can be clearly shown and is approved by the CITY project manager.

2. Prepare an estimate of construction quantities and develop the final opinion of probable construction costs.
3. Submit two (2) 22"x34" and two (2) 11"x17" sets of preliminary 90% plans, one (1) set of construction contract documents, special conditions and preliminary opinion of probable construction costs to the CITY for review.
4. Meet with CITY staff to discuss CITY comments on 90% plans, contract documents, and opinion of construction cost.
5. Revise 90% plans incorporating comments from the CITY.
6. Finalize construction plans for proposed improvements.
7. Assemble and finalize construction contract documents including CITY standard specifications, special technical specifications and special conditions (if any).
8. Estimate of final construction quantities and final opinions of construction cost.

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9. Submit two (2) sets of final plans (100% plans) and contract documents. One (1) set of half size (11"x17") plans will be submitted with the 100% plan submittal.
10. Once approved by the CITY prepare:
 - Twenty (20) bound copies of the bid documents (Plans & Specifications) for bidding
 - Three (3) half-sized sets of the final plans.
 - An additional ten (10) sets of Plans and Specifications will be prepared as needed.

D. Bid Phase Services –
CONSULTANT will support the bid phase of the project as follows.

1. Plan Distribution:
 - The CONSULTANT shall sell contract documents and maintain a plan holders list of documents sold.
2. Bidder Assistance:
 - The CONSULTANT will develop and implement procedures for receiving and answering bidders' questions and requests for additional information. The procedures shall include a log of all significant bidders questions and requests and the response thereto. The CONSULTANT will provide technical interpretation of the contract bid documents and will prepare proposed responses to all bidders' questions and requests, in the form of addenda.
 - Conduct the bid opening in support of the CITY.
3. Bid Analysis:
 - Tabulate and review all bids received for the construction project, assist the CITY in evaluating bids, and recommend award of the contract.
 - Assist the CITY in determining the qualifications and acceptability of prospective contractors, subcontractors, and suppliers.
 - Incorporate all addenda into the contract documents and issue conformed sets.
4. Recommendation & Notice of Award:
 - The CONSULTANT shall review the qualifications of the successful bidder and prepare a Recommendation of Award for the CITY.
 - Once approved by the CITY, the CONSULTANT shall prepare a Notice of Award for the successful Contractor.
5. Document Assembly:
 - The CONSULTANT shall prepare six (6) duplicate sets of conformed contract documents for execution by the CITY and Contractor.

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E. Construction Administration –

1. The CONSULTANT shall prepare a Notice to Proceed for the Contractor.
2. The CONSULTANT shall conduct the preconstruction conference.
3. The CONSULTANT shall review all shop drawings and test reports for compliance with the Contract Documents.
4. After the pre-construction conference, the CONSULTANT shall provide project exhibits and attend public meeting, if any, to help explain the proposed project to residents. The CITY shall select a suitable location and mail the invitation letters to the affected customers.
5. The CONSULTANT shall visit the project site at requested intervals as construction proceeds to observe and report on progress.
6. The CONSULTANT shall review and provide payment recommendations on Contractor's monthly pay applications.

G. Project Completion –

1. The CONSULTANT shall attend a final inspection and prepare a final "punch list" for the contractor.
2. Prepare construction "Record Drawings" based upon mark-ups and information provided by the construction contractor(s). Submit one (1) set of the record drawings (with "record drawing stamp" bearing the signature of the Engineer and the date) to the City on a CD-ROM disk or flash drive containing scanned 22"x34" black and white PDF images.

SPECIAL SERVICES:

A. Field Survey

1. Establish Survey Control

Establish survey control along each street or intersecting streets as necessary. These control points will be established based on and tied to established City horizontal and vertical control points. The horizontal control for each street in the PROJECT will be established on the State Plane Coordinate System (NAD'83 Surface Coordinates) from CITY monumentation. Control points will be established using 5/8" iron rods, 18" long. These control points will be established using GPS and conventional surveying methods.

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2. Benchmark Loop

A benchmark circuit will be established, based on the vertical control points provided. These benchmarks will be located outside of the construction limits and put in such a place so that they may be easily found for future use. Benchmarks will be located at about 1,000' intervals and will be referenced. Benchmarks shall be looped in accordance with good surveying practice prior to field surveys. All control leveling work will be performed using appropriate modified second order procedures with closed loops into the PROJECT vertical control.

3. Existing Streets, Driveways and Right-of-Way

Existing streets, driveways and right-of-way will be profiled and cross-sectioned at 50' intervals and to a point at least 20' outside of the Right-of-Way line. Low points, high points and other unique features will be noted. Pavement surfacing will be determined by visual inspection only. Intersecting streets will be profiled and cross-sectioned to a point at least 50' beyond the roadway being replaced.

4. Existing Underground and/or Overhead Utilities

Utility owner's will be contacted, on an as-needed basis, and requested to assist in locating existing utilities identified for the PROJECT. Above ground features of existing utilities within the proposed Right-of-Way for the limits of the PROJECT will be field located, including elevations of sanitary and storm sewer manhole flowlines and water/gas valve stems. The location of utilities between above ground features will be determined from visual inspection, utility records, and/or from locations determined by the respective utility companies. The utilities will be tied to the PROJECT control points and depths determined in sufficient detail to identify potential conflicts with proposed construction. The excavation and other costs required to expose or probe the underground utilities will be the responsibility of others.

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6. Right-of-Way

Right-of-Way lines along the PROJECT will be located. This information will be included on the PROJECT's plan sheets.

7. Existing Storm Sewers and Culverts

The size of existing culverts will be measured and tied along with existing headwalls, channels and aprons. The size, length, and flowline elevation of existing storm sewers will be surveyed. Drainage areas contributing to the PROJECT or conveying water from the PROJECT will be determined through field investigations and available topographic mapping.

8. Temporary Signs, Traffic Control, Flags, Safety Equipment, Etc.

The Surveyor will exercise care in completing this surveying assignment by using traffic control devices, flags and safety equipment when necessary.

Services not included in Basic Services for this contract:

- *Construction inspection services*
- *Easement Preparation*
- *Subsurface Utility Engineering (SUE)*
- *Geotechnical Investigation*
- *As-built surveys of constructed improvements*
- *Public hearings or City Council/Commission meetings*
- *Attend a utility coordination meeting to start relocation process with affected franchise utilities. Distribute copies of preliminary and final plans and proposed schedule for bid letting and construction to affected franchise utilities.*
- *Reset property corner monumentation disturbed or removed during or after construction.*

END OF EXHIBIT 'A'

EXHIBIT B to Agreement between the
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EXHIBIT 'B' – SCHEDULE

MATTHEWS DRIVE ROADWAY IMPROVEMENTS

Activity	Estimated Duration (weeks)	Estimated Completion N.T.P.
Notice-To-Proceed		-
Field Survey	2	2 Weeks
Preliminary Design Submittal (60%)	4	6 Weeks
Preliminary City Review Complete	2	8 Weeks
Final Design Submittal (90%)	3	11 Weeks
Final City Review Complete	1	12 Weeks
Final Plans Complete (100%)	1	13 Weeks
Receive Bids	4	17 Weeks
Contract Award	2	19 Weeks
Begin Construction	1	20 Weeks
Compete Construction	9	29 Weeks
Record Drawings	2	31 Weeks

The CONSULTANT is not responsible for delays beyond it's' control.

END OF EXHIBIT 'B'

EXHIBIT C to Agreement between the
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EXHIBIT 'C' – COMPENSATION AND METHOD OF PAYMENT

MATTHEWS DRIVE ROADWAY IMPROVEMENTS

COMPENSATION:

For all professional engineering services included in EXHIBIT 'A', Scope of Services, the CONSULTANT shall be compensated a lump sum fee of \$59,190.00 as summarized below. The total lump sum fee shall be considered full compensation for the services described in EXHIBIT A, including all labor materials, supplies, and equipment necessary to deliver the services.

Basic & Special Services

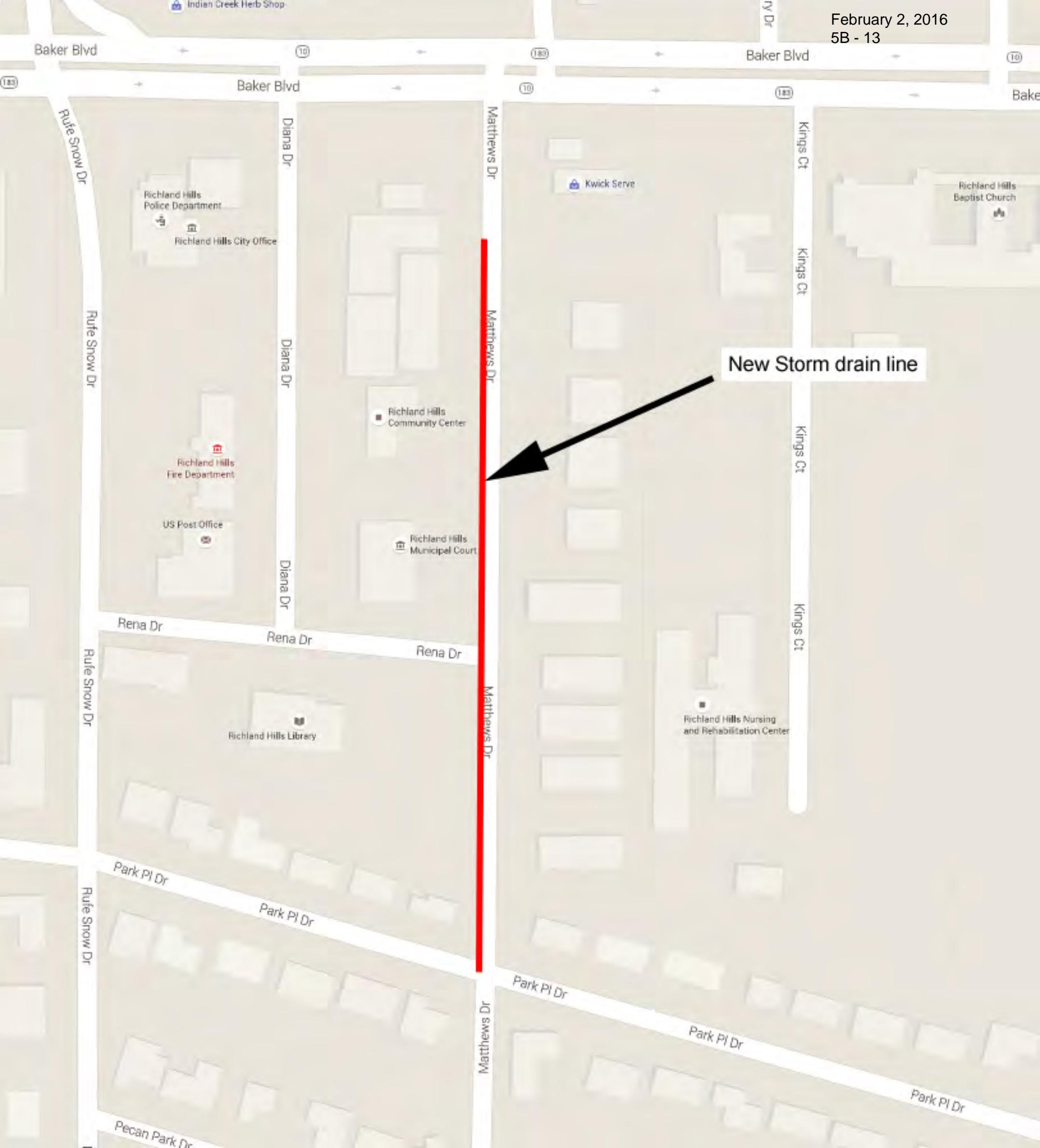
A.	Project Management, Coordination & Permitting	\$4,250
B.	Preliminary Design (60% Submittal)	26,100
C.	Final Design (90% & 100% Submittals)	12,750
D.	Bid Phase Services	5,040
E.	Construction Administration	4,350
F.	Project Completion	1,000
G.	Reimbursable Expense (Not to Exceed)	1,200
J.	Field Survey	<u>4,500</u>
GRAND TOTAL NOT TO EXCEED		\$ 59,190.00

METHOD OF PAYMENT:

The CONSULTANT shall be paid monthly payments as described in Article IV of the AGREEMENT. The cumulative sum of such monthly partial fee payments shall not exceed the total current project budget including all approved Amendments. Each invoice shall be verified as to its accuracy and compliance with the terms of this Agreement by an officer of the CONSULTANT.

Monthly statements for reimbursable services performed by sub consultants will be based upon the actual cost to the CONSULTANT plus ten percent (10%). Direct reimbursable expenses for services such as printing, express mail, fees, mileage and other direct expenses that are incurred during the progress of the project will be billed at 1.1 times the CONSULTANT'S cost.

END OF EXHIBIT 'C'



New Storm drain line



Matthews Dr

Baker Blvd

Baker Blvd

Baker Blvd

Baker Blvd

Rufe Snow Dr

Diana Dr

Matthews Dr

Kings Ct

Richland Hills Police Department
Richland Hills City Office

Kwick Serve

Richland Hills Baptist Church

Rufe Snow Dr

Diana Dr

Matthews Dr

Kings Ct

New Storm drain line

Richland Hills Community Center

Richland Hills Fire Department

US Post Office

Richland Hills Municipal Court

Kings Ct

Rena Dr

Rena Dr

Rena Dr

Rufe Snow Dr

Richland Hills Library

Matthews Dr

Kings Ct

Richland Hills Nursing and Rehabilitation Center

Park Pl Dr

Park Pl Dr

Park Pl Dr

Rufe Snow Dr

Park Pl Dr

Park Pl Dr

Matthews Dr

Pecan Park Dr

ENGINEER'S PRE-DESIGN OPINION OF CONSTRUCTION COST

CLIENT: City of Richland Hills

Prepared By: Pacheco Koch, LLC

DATE: January 13, 2015

6100 Western Place, Suite 1001

PROJECT: Matthews Drive Roadway Improvements

Fort Worth, Texas 76107

LIMITS: Baker Blvd to Park Place Drive

(817) 412-7155

LENGTH: 1,030 LF

WIDTH: Existing 30' HMAc Road

DESIGN ASSUMPTIONS:

- ◇ Pavement through curb returns to intersection but not through the intersection
- ◇ ADA Ramp improvements along one side of the road
- ◇ Roadway will be completely reconstructed to a width of 30' Back to Back.
- ◇ Paving will be constructed with curb and gutter.
- ◇ Existing right-of-way is 50' throughout project limits.
- ◇ Driveways will be concrete pavement constructed to the right-of-way.
- ◇ No right-of-way acquisition required for construction.
- ◇ Roadway section will be 2" Type D HMAc course, 6" crushed stone base and 6" lime stabilized subgrade (half road then overlay)
- ◇ Excavation for roadway and parkway is assumed 6" across ROW for length of the project
- ◇ The road will remain open to one direction each way during construction
- ◇ Specifications for Richland Hills are NCTCOG Specifications
- ◇ Sidewalk will be constructed on the west side of the road only. No sidewalk on East Side.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL AMOUNT
Paving Improvements:					
1P	Mobilization	LS	1	\$ 15,000.00	\$ 15,000.00
2P	Right-of-Way Preparation	LS	1	7,500.00	7,500.00
3P	Project Signage	LS	1	2,000.00	2,000.00
4P	Traffic Control	LS	1	7,500.00	7,500.00
5P	SW3P Implementation & Maintenance	LS	1	2,500.00	2,500.00
6P	Unclassified Street Excavation	CY	400	12.00	4,800.00
7P	6" Lime Stabilized Subgrade	SY	1,720	3.50	6,020.00
8P	Lime for Subgrade Stabilization (40 lbs/sy)	TONS	34	150.00	5,160.00
9P	6" Thick Compacted Flex-Base (Type A, Grade 1)	SY	1,720	18.00	30,960.00
10P	1" Wedge Mill	SY	3,090	4.00	12,360.00
11P	2" Type "D" DGHMA (PG 64-22) (Overlay)	SY	3,090	12.00	37,080.00
12P	6" Curb with 18" Gutter	LF	1,350	7.50	10,125.00
13P	6" Thick Concrete Driveway	SY	275	42.00	11,550.00
14P	4" Thick Concrete Sidewalk	SY	460	35.00	16,100.00
15P	ADA Ramp	EA	4	2,800.00	11,200.00
16P	4" Thick Topsoil, Complete in Place	SY	1,550	5.00	7,750.00
17P	Turfgrass Planting	SY	1,550	8.00	12,400.00
18P	Pavement Markings	LS	1	2,500.00	2,500.00
	Paving Subtotal				\$ 202,505.00
	Contingencies (25%)				\$ 50,630.00
	Paving Engineering Cost				\$ 30,600.00
	Paving Total				\$ 283,735.00
Drainage Improvements:					
1D	Connect to Box Culvert with Access Manhole	EA	1	\$ 5,200.00	5,200.00
2D	10' Curb Inlet	EA	4	3,200.00	12,800.00
3D	18" Reinforced Concrete Pipe	LF	90	65.00	5,850.00
4D	24" Reinforced Concrete Pipe	LF	660	85.00	56,100.00
5D	30" Reinforced Concrete Pipe	LF	200	95.00	19,000.00
6D	Temporary Asphalt Trench Repair	LF	950	12.00	11,400.00
	Drainage Subtotal				\$ 110,350.00
	Contingencies (25%)				\$ 27,590.00
	Drainage Engineering Cost				\$ 12,500.00
	Drainage Total				\$ 150,440.00
	TOTAL OPINION OF CONSTRUCTION COSTS				\$ 434,175.00