

Office of Michael H. Barnes, P.E.

City of Richland Hills, Texas

## Memorandum

To: Honorable Mayor Bill Agan and members of the Richland Hills City Council  
From: Michael Barnes, P.E., City Engineer  
Date: September 24, 2013  
Subject: Kingsbury Interceptor Drainage Project

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### Council Action Requested:

Consider Halff Associates Design Proposal to design the Kingsbury Interceptor Drainage Project in the amount of \$182,000.00.

### Background Information:

In 2009 the council approved a Drainage Utility Fee (DUF) for residents and businesses in order to fund drainage improvements in areas that have had a history of flooding. One of the areas that has been most prone to flooding is Stream BFC 5. Halff Associates was selected to develop a profile model for Stream BFC 5 and design the proposed improvements. The master plan included three phases, which are outlined below:

- Phase I:**
1. Richland Elementary and Latham Detention Ponds
  2. Baker Detention Pond
  3. Design of Matthews Interceptor

Estimated Project Time: 2010-2012  
Estimated Cost: \$2,000,000.00  
Bonds Sold: \$2,500,000.00

**Phase II:** 1. Construction of Matthews Interceptor  
2. Design and construction of Kingsbury Interceptor

Estimated Project Time: 2013-2015  
Estimated Cost: \$2,750,000  
Bonds Sold: \$3,000,000

**Phase III:** 1. Design and construction of Lower Hardisty  
2. Design and Construction of Partial Upper Hardisty

Estimated Project Time: 2016-2018  
Estimated Cost: \$3,000,000.00

Phase I of the master drainage plan proposed by Halff has been completed. The design of the Kingsbury Interceptor will be the beginning of Phase II. The design of Phase II will take approximately six months to complete, barring any issues with obtaining required easements. The design proposal from Halff (attached) is divided into a Design Phase and Special Services Phase. The design fee is not to exceed \$125,800 and the Special Services fee is estimated at a cost plus not-to-exceed amount of \$56,200. The design fee is approx. 9.6% of the estimated construction amount of \$1,330,000.00 (includes CPI Index of 6.5% from 2009 estimate) and the special services fee is 4.2%. The Special Services includes work such as Easement/Right of Way Acquisition, Geotechnical and Environmental Services, and assistance in the Bidding and Construction phases of the project.

In 2012 council approved a preliminary design and easement contract with Halff in the amount of \$21,622. This preliminary work included acquisition of an easement from Oncor, preliminary surveying of 4 additional properties, and preliminary design from Kingsbury to Rufe Snow. Including the costs from last year brings the total design cost to \$203,522 (Design: \$136,892 and Special Services: \$66,730). This represents 15.3% of the estimated construction cost.

The above numbers are fair and reasonable in the engineering design industry. Therefore, staff is recommending Halff Associates to design the Kingsbury Interceptor in the amount not to exceed \$182,000.00. Please contact me if you have any questions.

**Board/Citizen Input:**

N/A

**Financial Impact:**

\$182,000 - Funding is available from Drainage Bonds

**Staff Contacts:**

Michael Barnes, P.E., City Engineer  
817-616-3835  
[mbarnes@richlandhills.com](mailto:mbarnes@richlandhills.com)

**Attachments:** Halff Associate Proposal

**STANDARD FORM OF AGREEMENT BETWEEN CLIENT AND ENGINEER FOR  
PROFESSIONAL SERVICES**

THIS IS AN AGREEMENT EFFECTIVE THE LATEST DATE OF EXECUTION AS PROVIDED BELOW BETWEEN  
THE CITY OF RICHLAND HILLS, TEXAS (CLIENT) AND HALFF ASSOCIATES, INC. (ENGINEER).

**I. SCOPE**

Halff Associates, Inc. (hereinafter "Engineer") agrees to perform the services described in the attached Scope of Services, Exhibit A, which incorporates these terms and conditions. Unless modified in writing by the parties hereto, the duties of Halff shall not be construed to exceed those services specifically set forth in the Scope of Services. The Scope of Services and these General Terms and Conditions, when executed by The City of Richland Hills, Texas (hereinafter "Client"), shall constitute a binding Agreement on both parties.

**II. COMPENSATION**

Client agrees to pay monthly invoices or their undisputed portions within 30 days of receipt. Payment later than 30 days shall include interest at 1-1/2 percent per month or lesser maximum enforceable interest rate, from the date the Client received the invoice until the date Engineer receives payment. Such interest is due and payable when the overdue payment is made.

It is understood and agreed by the parties that receipt of payment(s) by Engineer from Client is in no way contingent upon Client's receipt of payment, funding, reimbursement or any other remuneration from others.

Time-related charges will be billed as specified in this Agreement. Unless stated otherwise in this Agreement, direct expenses will be billed at actual cost and subcontracted services and costs will be billed at actual cost plus a service charge of 10 percent. Mileage incurred will be billed at current IRS rates.

**III. RESPONSIBILITY**

Engineer is employed to render a professional service only, and any payments made by Client are compensation solely for such services rendered and recommendations made in carrying out the work. Engineer shall follow the standard practices of the engineering profession to make findings, provide opinions, make factual presentations, and provide professional advice and recommendations. Engineer shall not be required to provide any certification, assignment or warranty of its work but, upon request and for a separate fee, Engineer may provide written statements regarding its services under this Agreement. Such statements shall be in a form acceptable to Engineer and shall be requested with sufficient advance notice to allow Engineer to review the documents and prepare a suitable statement.

Engineer's review or supervision of work prepared or performed by other individuals or firms employed by Client shall not relieve those individuals or firms of complete responsibility for the adequacy of their work.

It is understood that any resident engineering or inspection provided by Engineer is for the purpose of determining compliance with the technical provisions of the project specifications and does not constitute any form of guarantee or insurance with respect to the performance of a contractor. Engineer does not assume responsibility for methods or appliances used by a contractor, for safety of construction work, or for compliance by contractors with laws and regulations.

**IV. SCOPE OF CLIENT SERVICES**

Client agrees to provide site access, and to provide those services described in the attached Scope of Services.

**V. OWNERSHIP OF DOCUMENTS**

Upon Engineer's completion of services and receipt of payment

in full, Engineer grants to Client an exclusive license to all drawings, instruments and data produced in connection with Engineer's performance of the work under this Agreement. Said drawings, instruments and data may be copied, duplicated, reproduced, used and disclosed by Client for any purposes Client deems appropriate in connection with the work under this Agreement. Client agrees that such documents are not intended or represented to be suitable for reuse by Client or others for purposes outside the Scope of Services of this Agreement. Any reuse by Client, or by those who obtain said information from Client, without written verification or adaptation by Engineer will be at Client's sole risk and without liability or legal exposure to Engineer, Engineer's subconsultants or independent associates. Client shall indemnify Engineer, Engineer's subconsultants and independent associates for all damage, liability or cost arising therefrom. Engineer may reuse all drawings, reports, data and other information developed in performing the services described by this Agreement in Engineer's other activities.

**VI. INDEMNIFICATION**

Engineer agrees to indemnify and hold Client harmless from any actual damage, liability or costs, including reasonable attorney's fees and expenses, to the extent caused directly by a negligent act or omission or willful misconduct of Engineer, Engineer's subconsultants or those for whom Engineer is legally liable, in the performance of the professional services which are the subject of this Agreement.

In the event that Client is found to be concurrently negligent, Engineer shall not indemnify for the proportionate negligence of Client, but shall indemnify for the portion of negligence solely attributable to Engineer, its agents, servants, employees, and subcontractors of any tier, their agents, servants and employees.

Neither party shall be liable to the other for incidental or consequential damages, whether or not the possibility of such damages has been disclosed or could have been reasonably foreseen.

The parties shall indemnify one another against damages of third parties recoverable from the indemnitee to the extent caused by the comparative negligence of the indemnitor. Such negligence shall be measured by standards in effect at the time services are rendered, not by later standards. All legal actions by either party against the other arising out of or in any way connected with the services to be performed hereunder shall be barred and under no circumstances shall any such claim be initiated by either party after three (3) years have passed from the date of issuance of the Certificate of Completion, unless the Engineer's services shall be terminated earlier, in which case the date of termination of this Agreement shall be used.

Client acknowledges Engineer may perform work at facilities that may contain hazardous materials or conditions, and that Engineer had no prior role in the generation, treatment, storage, or disposition of such materials. In consideration of the associated risks that may give rise to claims by third parties or employees of Client, Client agrees to indemnify, defend, and hold Engineer harmless (including attorneys' fees) from any and all losses, damages, claims, or actions brought by any third party or employee of Client against Engineer or Engineer's employees, agents, officers or directors, in any way arising out

**HALFF ASSOCIATES, INC.**

**General Terms and Conditions (continued)**

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of the presence of hazardous materials at the facilities, except for claims shown by final judgment of a court of competent jurisdiction to arise out of the sole negligence of Engineer.

**VII. INSURANCE**

Engineer shall maintain during the life of the Agreement the following minimum insurance:

- A. Commercial general liability insurance, including personal injury liability, blanket contractual liability, and broad form property damage liability. The limit shall be not less than \$1,000,000.
- B. Automobile bodily injury and property damage liability insurance with a limit of not less than \$1,000,000.
- C. Statutory workers' compensation and employers' liability insurance as required by state law.
- D. Professional liability insurance.

**VIII. SUBCONTRACTS**

Engineer shall be entitled, to the extent determined appropriate by Engineer, to subcontract any portion of the work described in the Scope of Services.

**IX. ASSIGNMENT**

This Agreement is binding on the heirs, successors, and assigns of the parties hereto. Neither this Agreement, nor any claims, rights, obligations or duties associated hereto, shall be assigned or assignable by either Client or Engineer without the prior written consent of the other party.

**X. INTEGRATION**

These terms and conditions and the letter agreement (Scope of Services) to which they are attached represent the entire understanding of Client and Engineer as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered herein. The Agreement may not be modified or altered except in writing signed by both parties.

**XI. JURISDICTION AND VENUE**

This Agreement shall be administered and interpreted under the laws of the State in which the Engineer's office performing the majority of the work described in the Scope of Services is located. Jurisdiction of litigation arising from the Agreement shall be in that State. If any part of the Agreement is found to be in conflict with applicable laws, such part shall be inoperative, null and void insofar as it is in conflict with said laws, but the remainder of the Agreement shall be in full force and effect. Exclusive venue shall lie in the county in which the Engineer's office performing the majority of the work described in the Scope of Services is located.

**XII. SUSPENSION OF SERVICES**

- A. If work under this Agreement is suspended for more than thirty (30) calendar days in the aggregate, the Engineer shall be compensated for services performed and charges incurred prior to receipt of notice to suspend and, upon resumption, an equitable adjustment in fees to accommodate the resulting demobilization and mobilization costs. In addition, there shall be an equitable adjustment in the work schedule based on the delay caused by the suspension. If work under this Agreement is suspended for more than ninety (90) calendar days in the aggregate, the Engineer may, at its option, terminate this Agreement upon giving notice in writing to the Client. Engineer may request that the work be suspended by notifying Client, in writing, of circumstances that are interfering with normal progress of the work.

- B. If the Client fails to make payments when due or otherwise is in breach of this Agreement, the Engineer may suspend performance of services upon five (5) calendar days notice to the Client. The Engineer shall have no liability whatsoever to the Client for any costs or damages as a result of such suspension caused by any breach of this Agreement by the Client.

**XIII. TERMINATION OF WORK**

Either the Client or the Engineer may terminate this Agreement at any time with or without cause upon giving the other party ten (10) calendar days prior written notice. Client agrees that termination of Engineer for Client's convenience shall only be utilized in good faith, and shall not be utilized if the purpose or result is performance of all or part of Engineer's services under this Agreement by Client or by another service provider. The Client shall within ten (10) calendar days of termination pay the Engineer for all services rendered and all costs incurred up to the date of termination, in accordance with the compensation provisions of this contract.

**XIV. TAXES**

The fees and costs stated in this Agreement, unless stated otherwise, exclude all sales, consumer, use and other taxes which are promulgated following execution of this Agreement. Client agrees to reimburse Engineer and its subconsultants for the taxes paid by Engineer and its subconsultants in accordance with the laws and regulations of the applicable taxing authorities.

**XV. ALTERNATIVE DISPUTE RESOLUTION**

Any conflicts that arise during the work described by this Agreement or following the completion thereof shall be submitted to nonbinding mediation unless the parties agree otherwise. The parties further agree to require all independent contractors and consultants retained in connection with this Agreement to include a similar mediation provision in all Agreements with subcontractors, subconsultants, suppliers or fabricators.

**XVI. SEVERABILITY**

In case any one or more of the provisions contained in this Agreement shall for any reason be held to be void, invalid, illegal, or unenforceable in any respect, such voiding, invalidity, illegality, or unenforceability shall not affect any other provision hereof and this Agreement shall be considered as if the entirety of such void, invalid, illegal, or unenforceable provision had never been contained in this Agreement.

**XVII. TIMELINESS OF PERFORMANCE**

The Engineer will perform its services with due and reasonable diligence consistent with sound professional practices.

**XVIII. WAIVER**

Any failure by Engineer to require strict compliance with any provision of this Agreement shall not be construed as a waiver of such provision, and Engineer may subsequently require strict compliance at any time, notwithstanding any prior failure to do so.

**HALFF ASSOCIATES, INC.**  
**General Terms and Conditions (continued)**

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APPROVED:

Engineer: HALFF ASSOCIATES, INC.

Signature: *Andrew Ickert*

Typed or Printed Name: *Andrew Ickert*

Title: *Halff Authorized Agent*

Date: *09/17/13*

APPROVED:

Client: CITY OF RICHLAND HILLS, TEXAS

Signature: \_\_\_\_\_

Typed or Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

City of Richland Hills, Texas  
BFC-5 Drainage Improvements: Kingsbury Bypass  
September 2013

Exhibit 'A'  
Scope of Work

Assumptions

- This contract and scope of work covers the design of the Kingsbury Bypass Line as shown on Exhibit D – Proposed Drainage Conditions of the Richland Hills – BFC-5 Preliminary Design Analysis submitted in October of 2009. Preliminary design (~30%) of about half of the proposed project has been completed in order to coordinate the proposed alignment through Oncor Electric's easement.
- Per the agreement with Oncor, any storm drain facilities located within their easement must be designed to handle an H20 loading so they can bring in heavy equipment to maintain their overhead transmission lines.
- The proposed Kingsbury Bypass Line will connect to the proposed Matthews Interceptor line (construction to begin Fall 2013). Final Design of the Kingsbury Bypass line will tie into the As-built stub-out done with the Matthews Interceptor project. Halff will coordinate with contractor to get survey of the completed stub-out before the box culvert is capped and backfilled.
- Field survey for the lower half of the Kingsbury alignment has been completed in the original contract. Additional survey below in the scope of services is for the remainder of the alignment and tying of the Matthews Interceptor project.
- Two routes (one as shown in the Drainage Analysis and one alternate route) will be studied for the upper portion Kingsbury Bypass Line, within the limits of detailed survey. The particular area of interest for the alternatives will be the area along Pecan Park where the existing drainage channel runs through the residences, and the crossing of the existing 60" RCP storm drain line that runs south along Kingsbury.
- Halff will investigate existing storm drain and will propose improvements to the inlet and line that runs between Pecan Park Drive and John Drive to the east of Kingsbury Drive.
- Halff has identified four sanitary sewer conflicts or crossings within the proposed alignment. Halff assumes it will have to design at least 2 sanitary sewer mains in order to provide service for all properties affected by the proposed storm drain.
- Halff will investigate and design improvements around the existing 60" storm drain main that runs south down Kingsbury at Pecan Park Drive. Halff will have to adjust hydraulic model and determine optimum design to account for the conflict.

## I. Design Services

### 1. Preliminary Design

#### A. Topographic and planimetric survey.

- 1) Halff Associates surveyors will perform Topographic/Planimetric survey of Kingsbury Bypass route as shown on the attached exhibit. Halff Survey services include:
  - a. Obtain permission to survey on private property from property owners.
  - b. Obtain complete and accurate topographic information of the area along the proposed route as shown in the attached exhibit.
  - c. Provide all field surveys necessary to determine the limits of existing right-of-way and/or easements.
  - d. Provide horizontal and vertical control monuments at approximately 500 feet intervals along the project route.
  - e. Construct existing topographic digital terrain model (DTM).
  - f. Stake bore holes.
  - g. Any SUE designating work (paint marks, pin flags, and all above ground utility appurtenances) and SUE locating work (iron rod with cap or "x-cut") will be surveyed and tied to the project survey control.
- 2) Halff will tie 8'x7' RCB stub-out on Matthews Interceptor project to confirm downstream starting point for Kingsbury Bypass. Halff will coordinate with Matthews' contractor in order to survey line while under construction.

#### B. Kick-off / Data Collection

- 1) Kick-off Meeting – Upon receipt of Notice to Proceed, The Engineer will meet with the City to introduce the project team and confirm project goals, schedule and budget. Engineer and City will go over proposed alignment as shown on Exhibit D – Proposed Drainage Conditions of the Richland Hills – BFC-5 Preliminary Design Analysis submitted in October of 2009. Any possible alternate routes will be discussed and the City will give the Engineer direction as to which preferred alternative, if any, should be pursued. The Engineer will prepare minutes for the meeting.
- 2) Coordination – The Engineer will contact and begin coordination with outside agencies including TXU, pipeline, and franchised utility companies. Utility companies will be contacted to determine if plans exist for existing and proposed utility improvements.
- 3) Perform field reconnaissance of the proposed project area or corridor and prepare a photographic record of major features.
- 4) Obtain deeds, easements, plats, and other property records from office of County Deed Records.

- 5) Obtain copies of record drawings for improvements from the City.
- 6) Obtain plans for the utilities crossing the corridor from the City and franchise utility companies.
- 7) Obtain horizontal and vertical control points, datum, and benchmarks from the City.
- 8) Obtain copies and electronic files from the City for all standard portions of the Project Manual including Advertisement, Notice to Bidders, Bid Proposals, Bonds, Construction Contract, General Conditions, and Special Conditions.
- 9) Obtain copies and electronic files of standard instruments for right-of-way and easement takings used by the City.

C. Preliminary Plans (30%)

- 1) Halff Associates will prepare 30% plans on the remaining half of the Kingsbury Bypass line following field survey and data collection. 30% plans will consist of plan and profile of storm drain line alignment only, showing all existing conflicts. Any conflicts that would result in re-aligning any sanitary sewer or water lines will be identified.
- 2) One alternative alignment, as identified at the Kick-off/Coordination meeting or as a result of Hydraulic Modeling will be presented as a plan/profile deliverable at the City's request.
- 3) Coordination Meeting – Halff will meet with City to discuss 30% design and which alignment to proceed with.

D. Preliminary Plans (60%)

- 1) The first official/full-project design submittal will be prepared on 22-inch by 34-inch sheets, suitable for reduction to 11-inch by 17-inch size. Three (3) sets of plans will be submitted to the City. Plans will include the following:
  - a. Title Sheet with project name, Engineer name, vicinity map, and sheet index
  - b. Project Layout Sheet(s) and General Notes
  - c. Right-of-Way Map showing existing right of way, existing easements, proposed taking lines, property owner name, and area of taking
  - d. Drainage Area Maps – As part of the Preliminary Design Analysis: BFC-5 Drainage Improvements (Halff 2009), the storm water watershed drainage runoff area and existing street, right-of-way, and storm sewer capacities for the subject sites have been examined and documented. Information regarding the proposed capacities and design discharges (25-year and 100-year frequencies) at selected critical locations will be based on the results from the Wallingford InfoWorks SD.

- e. Culvert and Storm Drain Plan and Profile Sheets (1 inch = 20 feet horizontal and 1-inch = 4 feet vertical scale)
  - f. Inlet Calculations
  - g. Storm Drain Plan and Profile Sheets (1 inch = 20 feet horizontal scale and 1 inch = 4 feet vertical scale with approximately 500 feet storm drain shown per sheet). (Construction Package 'B')
  - h. Drainage Details
  - i. Pavement Section Details
  - j. Pavement Repair Details
  - k. Water and Sanitary Sewer Adjustment Plan and Profiles – Halff has noted 4 sanitary sewer conflicts and/or crossings. Halff anticipates the need to design at least two new sanitary sewer mains as a result of these conflicts. Full plans, profiles, and details will be included in the final construction package.
  - l. Structural design – As noted in the project assumptions, Oncor Electric is requiring that all storm drain facilities located within their easement must be designed to carry an H20 loading. Due to expected shallow cover, structural design of the box culverts will be necessary.
  - m. Erosion Control Plan
- 2) Estimates of Probable Cost – The Engineer will prepare an estimate of probable cost for the construction as shown in the 60% plans.
- 3) Utility Coordination – The Engineer shall coordinate with all utilities, including utilities owned by the City, as to any proposed utility lines or adjustments to existing utility lines within the project limits. The information obtained during the data collection phase shall be shown on the 60% plans. Copies of the 60% plans shall be provided to each utility for review.
- 4) Coordination Meeting – Halff will meet with City to discuss 60% design plans and comments.

## 2. Final Design

### A. 90% Plans, Specifications, and Estimate

- 1) 90% Final Plans will address comments from the 60% submittal and include the following additional: Three (3) sets of plans will be prepared on 22-inch by 34-inch sheets, suitable for reduction to 11-inch by 17-inch size and submitted to the City. Additional plan sheets (not included in 60% submittal) will include:
- a. Right-of-Way Map to show proposed parcels and all dimensions
  - b. Culvert Headwall structural details
  - c. Detailed Grading Plans for Detention Ponds showing existing and proposed one-foot contours (1 inch = 20 feet scale) (Construction Package 'A')

- d. Pavement Replacement Plan and Profile Sheets(1 inch = 20 feet horizontal scale and 1 inch = 4 feet vertical scale with approximately 500 feet street shown per sheet). (Construction Package 'B')
  - e. Temporary Traffic Control Details
  - f. Erosion Control Details
  - g. Water and Sanitary Sewer Line Adjustment Details
  - h. Structural design details – for the box culvert in the Oncor easement and for large junction boxes that will require additional design effort.
  - i. Special Details
- 2) Coordination Meeting – After City review, the Engineer shall meet with the City to discuss comments from the plans and specifications.
- B. 100% Final Plans, Specifications, and Estimate
- 1) Upon receipt of 90% Preliminary Engineering Plan comments from the City, the Engineer will begin preparation of final plans. Final plans will address comments from the 90% submittal. The Stormwater Pollution Prevention Plan (SWPPP) and project specific traffic control plan will be the responsibility of the contractor.
  - 2) Project Manual – A project manual will be prepared in the format prescribed by the City. The latest edition of the North Central Texas Council of Governments Standard Specifications for Public Works Construction will be used for the technical specifications and supplemented as necessary for any work special to the project. The project manual will include a requirement for consent of surety. The Project Manual will include the following:
    - a. Advertisement and Notice to Bidders
    - b. Bid Proposal – The bid proposal will be divided into separate pond sections for internal City accounting purposes, if necessary.
    - c. Bid Bond
    - d. Standard Form of Agreement
    - e. Performance Bond and Payment Bond
    - f. Maintenance Bond
    - g. General Conditions of Agreement
    - h. Special Conditions of Agreement
    - i. Special Technical Specifications
    - j. Appendices (permits, ROW documents, etc.)
  - 3) Utility Coordination – Copies of Final plans shall be furnished to each franchise utility company. The Engineer will coordinate with the utility companies for adjustment of the utility lines; however, the design of such adjustments will be the responsibility of the individual utility companies. The Engineer will not be responsible for delay or inaction on the part of the franchise utilities.

- 4) The Engineer will meet with the City upon submittal of the 100% plans. All final plans shall bear the seal of licensed professional engineer. Five (5) sets of plans and specs will be submitted to the City along with a CD containing digital pdfs of the signed documents. The Engineer will also attend a public meeting to help explain the proposed project to residents. The City will select a suitable site and mail the invitation letters to the residents.
- 5) Final Construction Cost Estimate – The Engineer will prepare an estimate of probable cost for the construction as shown in the final plans.

## II. Special Services

### 1. Preliminary Services

#### A. Easement/ROW Documents

- 1) Easement Documents – As soon as the City completes review of preliminary plans, preparation of final ROW maps along with parcels and exhibits shall begin. An estimated total of seven (7) permanent drainage/utility easements will be required. No temporary construction easements will be prepared. If required, Halff Associates surveyors will show offsets from the permanent drainage/utility easements on those documents, but no meets and bounds descriptions will be provided and they will not be set with the permanent easements. It is Halff's assumption that the City Attorney will include language in the Easement documents which will allow for the contractor to work on their property.

Upon approval of 60% preliminary plans, the Engineer shall survey, render field notes, and prepare detailed right-of-way plans and individual exhibits for all right-of-way or easement parcels. Right-of-way plans will include:

- a. Right-of-Way Map
- b. City title block
- c. Property owner name, mailing address, and volume and page of deed
- d. Location of all existing property pins and monuments
- e. Location of easements of record
- f. Bearings and calls of existing property line
- g. Existing rights-of-way and fence lines
- h. Location of proposed easement pins
- i. Area of easement
- j. Parcel number
- k. Property owner name, mailing address, and volume and page of deed
- l. Existing easements

- Exhibits will be drawn to scale. All of the above shall be placed on one page of 8-1/2" x 11", as well as full legal descriptions for each parcel which will reference the volume, page, and owner of the parent tract and shall be incorporated into a standard City conveyance document. Individual parcels will be cross-referenced on the plan and profile sheets. Upon approval by the City and property owner, Halff field survey crews will set pins on the easement corners and the official documents will be signed and sealed by a registered professional land surveyor.
- 2) Easement Documents will be paid at an hourly rate with a not to exceed sum. Should fewer easements be necessary, the City will not be charged the full amount. Any changes to the proposed alignment after the approved 60% submittal that affect and change the easements will require a change order. Should official temporary construction easements be deemed necessary, or shall additional permanent drainage easements be necessary, a change order shall be required for Halff's additional services.
- B. Geotechnical Engineering – The City of Richland Hills will obtain a subcontractor to perform the geotechnical services listed below. Halff will coordinate with geotechnical engineer regarding project scope and limits.
- 1) Subsurface Exploration
    - a. Obtain approximately 5 borings at approximate 500 foot intervals, minimum depth of at least 15 feet.
    - b. Provide boring logs for each boring
    - c. Notify Dig-Tess in advance of borings
  - 2) Laboratory Services - Perform tests on samples from the bores.
    - a. Moisture content and soil identification
    - b. Percent passing No. 200 sieve
    - c. Liquid and plastic limit determinations
    - d. Unconsolidated, undrained, triaxial shear
    - e. Unit weight determinations
    - f. Absorption pressure and/or one-point pressure swell tests
  - 3) Engineering Report – An engineering test will be prepared to present the results of field and laboratory data and recommendations.
    - a. General soil and groundwater conditions
    - b. Evaluation of the swell characteristics of the soils
    - c. Earthwork recommendations
    - d. Street and Pavement recommendations
- C. Environmental Services – Halff Environmental Engineers will coordinate all permits necessary in working within jurisdictional Waters of the United States.

- 1) Jurisdictional Determination - The U.S. Army Corps of Engineers (USACE) regulates, under the authority of Section 404 of the Clean Water Act, the placement of fill material into waters of the United States and special aquatic sites that include wetlands. Waters of the United States include any part of the surface water tributary system down to the smallest of streams, any lake, pond, or water body on those streams, and adjacent wetlands. The USACE defines wetlands as, "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." This authority of the regulatory agency can drastically impact future development if not addressed in the planning phase of the project. The approach in obtaining Section 404 permits can be separated into three steps:
  - a. Verify the limits of waters of the United States in the field and prepare a jurisdictional determination map.
  - b. Overlay the proposed project over the waters of the United States map to determine areas of conflict and determine the acreage of impacted waters of the United States. The proposed activity is then refined to avoid or minimize impacts to waters of the United States.
  - c. Submit the permit application and mitigation plan to the regulatory agencies and working with the agencies to resolve any concerns.

This scope includes only the jurisdictional determination to determine potential limits of fill without requiring a Section 404 permit and will be performed on a time and materials basis with a not-to-exceed amount.. Based on the jurisdictional determination (items a and b above) Halfp will make every attempt to avoid impacts that would trigger the need for a 404 permit and a separate work order authorization will be necessary.

- D. Hydraulic Modeling – Engineer will coordinate proposed improvements with the existing drainage study as completed in October 2009. Hydraulic modeling will be performed on a time and materials basis with a not-to-exceed amount.

- 1) Revise Existing Conditions
  - a. Incorporate the new construction into the models. This includes the addition of the designed Baker Detention Ponds and Elementary Detention Pond. It also includes the newly designed Matthews Interceptor.
  - b. Make adjustments in order to accurately reflect the drainage system and ensure proper model function.
  - c. Model Run and Troubleshooting
    - i. Execute the model for specified rainfall events and monitor the runs for computational stability and volume balance.
    - ii. Adjust model to achieve optimum stability.

- 2) Revise Proposed Improvements
  - a. Use the updated Existing Conditions model and add in the proposed Kingsbury improvements.
  - b. Adjust the original Kingsbury model to optimize the design based on the revised Existing Conditions model.
  - c. Adjust ground model to reflect grading changes for the proposed improvements.
  - d. Model Run and Troubleshooting
    - i. Execute the model for specified rainfall events and monitor the runs for computational stability and volume balance.
    - ii. Adjust model to achieve optimum stability
  - e. Ensure that there are no negative impacts downstream as a result of the improvements made.
  - f. Use the information provided by the model to aid in the design of the Kingsbury Bypass.
  
2. Bidding and Construction Phase Services (all on Time and Materials, not-to-exceed basis).
  - A. Bidding – During the bidding phase, The Engineer will provide the services listed below.
    - 1) Print up to fifteen (15) sets of bid documents (plans and project manuals).
    - 2) Prepare the advertisement and furnish to the City Purchasing Manager (City to pay advertisement costs).
    - 3) Distribute plans to prospective bidders and plan rooms. Engineer will also maintain a bidders list.
    - 4) Prepare an agenda and attend the pre-bid conference.
    - 5) Prepare bid addenda as required.
    - 6) Tabulate bids, review qualifications of apparent low bidder, and make a written recommendation for the award of contract.
  
  - B. Construction - During the construction phase, The Engineer will provide the services listed below.
    - 1) Prepare five (5) sets of construction contract documents (bid documents with addenda and MOUs) for execution by the Contractor.
    - 2) Distribute five (5) sets of construction documents to the Contractor after execution by the City.

- 3) Attend a pre-construction meeting and monthly progress meetings as required. Document each meeting with written minutes.
  - 4) Visit the project site as necessary to observe and report on the progress and quality of the executed work. In performing these services the Engineer will endeavor to protect the City against defects and deficiencies in the work of the Contractor. However, The Engineer cannot guarantee the performance of the Contractor, nor be responsible for the actual supervision of the construction operations or for the safety measures that the Contractor takes or should take.
  - 5) Review shop drawings and Contractor submittals.
  - 6) Review laboratory test reports on materials and equipment.
  - 7) Prepare and assist in negotiations for Change Orders between the Contractor and the City.
  - 8) Review and process monthly and final pay applications from the Contractor.
  - 9) Attend a final inspection and prepare a punch list report.
  - 10) This will include a total of 5 trips, including pre-construction meeting and final inspection.
- C. Construction Staking – During the construction phase, the Engineer shall provide construction staking for use by the Contractor (one time). Staking will include:
- 1) Offset line and grade stakes for storm drain, culvert, and pond outlets. Stakes will be set at 50 foot intervals (25 feet on curves) and at all P.C's, P.Ts, manholes, inlets, valves, and other critical points.
  - 2) A minimum of five (5) days' notice must be given before staking.
  - 3) A maximum of three trips will be allowed. Any lost or destroyed stakes will be replaced at the Contractor's expense. Blue top staking is not included.
- D. Record Drawings – Based on information supplied by the Contractor, the Engineer shall provide the CITY with one set of record drawings on mylar and electronic files on CD in Microstation CAD format and pdf.

3. Optional Services – (Not included – Fee can be provided upon request).

A. Subsurface Utility Engineering (SUE)

- 1) Research available utility records.
- 2) Designate “toneable” subsurface utilities using geophysical prospecting equipment and mark with paint and/or pin flags within the project area. These may include water, wastewater, cable television, telephone, electric, and gas. Traffic signal and irrigation lines are excluded. The Engineer will perform SUE in accordance with ASCE CI/ASCE 38-02 “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data.”
- 3) The Engineer’s services will be performed in a manner consistent with that degree of skill and care ordinarily exercised by members of the same profession currently practicing under similar circumstances. Because of limited record information, The Engineer cannot guarantee that all utilities will be located. The Engineer Associates will make a good faith effort to designate all utilities, but shall be compensated for work performed even if the utility is not designated.
- 4) Locate Utilities by vacuum excavating 12-inch x 12-inch test hole. Record the depth, backfill and compact the hole, and restore the surface to its original condition. An iron rod with cap or “x-cut” will be set to mark and the location of the test hole and reference the depth of the utility.
- 5) Test hole data forms will be completed for each hole performed indicating depth, size, condition, and material of the utility.
- 6) Provide routine/ordinary traffic control consisting of cones and free-standing signage. Lane closure(s), flag person(s), arrow board(s), and changeable message board(s) are not included.

B. Additional Hydraulic Modeling Services

1) Reporting/Mapping

- a. Update the model after final drawings are approved by the City.
- b. Pull results from the Existing and Proposed models.
- c. Provide a project description/write-up of tasks performed (Memo-Style)
- d. Provide maps (Existing Conditions Results Map, Proposed Conditions Results Map, and Existing System vs. Proposed System Map)

C. Environmental Services – Full Permit Application

- 1) As mentioned above under section 2.C, if necessary Halff will submit the permit application and mitigation plan to the regulatory agencies and working with the agencies to resolve any concerns. This will be accomplished by the following services:
  - a. An on-the-ground jurisdictional determination will be performed to verify the limits of waters of the United States, including wetlands. The jurisdictional determination will employ the use of GPS surveying techniques to locate the edge of jurisdictional areas. Wetland data forms and on-site photography will be completed for representative sites.
  - b. A jurisdictional determination report consistent with the USACE "Procedures for Jurisdictional Determinations" (dated March 24, 2003) will be prepared describing the methodology and results of the investigation, so that the report may satisfy the jurisdictional determination requirement for a permit application, if a permit is required. The report will include the following:
    - i. Purpose
    - ii. Methods, including:
      1. the name, address, telephone number, and other appropriate contact information for the property owner;
      2. a description of the approach used to delineate wetlands and other waters of the United States; and
      3. a description of the conventions used to map the limits of waters of the United States.
    - iii. Results, including:
      1. a vicinity map or maps, (preferably USGS 7.5 minute or other smaller scale topographic maps) depicting the location of the site and showing the limits of the site investigated;
      2. a narrative addressing the size of the site in square feet and/or acres; a description of any physical features;
      3. a characterization of hydrology addressing direction, source, frequency, and duration of on-site drainage;
      4. identification of any named waterways on or in the vicinity of the site; and other pertinent information on hydrology;
      5. a characterization of vegetative communities and dominant species occurring within each community type;
      6. a characterization of soils present on the project site using information derived from county soil surveys, evaluation of soil samples, and other sources;
      7. a comparison of the soils, vegetative, and hydrologic conditions between wetland and upland areas, a description of riparian and other buffer features around water features;
      8. photographs taken from several locations throughout the project site;
      9. current and historic aerial photographs; and
      10. any other relevant descriptions or maps.

- iv. Conclusions, including:
  - 1. a description of, and map depicting, potential waters of the United States (water features that have an ordinary high water mark or are wetlands) present in the study area, including:
  - 2. the wetland type(s), e.g. emergent, forested, scrub-shrub, etc. and the other water type(s), e.g. perennial, intermittent, or ephemeral stream, reservoir, pond, etc., as appropriate.
- c. Coordination with USACE – Halff will coordinate and address any comments as necessary to secure the appropriate permit for the proposed construction.
- D. FEMA Letter of Map Revision – Upon completion of the construction, The Engineer and the City will evaluate whether or not a Letter of Map Revision (LOMR) would be beneficial to the City and to property owners within the effective floodplain. If a LOMR is warranted, those services can be provided under a separate contract.
- E. As-Built Survey – The Engineer will provide spot checks of the completed project by surveying selected locations. For storm sewers, selected pipe inverts, inlets, and portions of the road will be surveyed. This item should be included in the Contractor's bid and will have a fixed value.

City of Richland Hills, Texas  
BFC-5 Drainage Improvements  
Kingsbury Bypass

Exhibit "B"  
Fee Summary

**I. Design Services\***

|                                       |           |
|---------------------------------------|-----------|
| 1. Preliminary Design                 |           |
| A. Topographic and Planimetric Survey | \$ 9,000  |
| B. Kick-off/Data Collection           | \$ 2,900  |
| C. 60% Construction Plans             | \$ 45,400 |
| Subtotal                              | \$ 57,300 |
| 2. Final Design                       |           |
| A. 100% PS&E                          | \$ 68,500 |
| Subtotal                              | \$ 68,500 |

**II. Special Services\*\***

|   |           |
|---|-----------|
| 1. Preliminary Services                     |           |
| A. Easement/ROW Documents*                  | \$ 18,200 |
| B. Coordinate with Geotechnical Engineering | \$ 900    |
| C. Environmental Services                   | \$ 1,000  |
| D. Hydraulic Modeling                       | \$ 13,700 |
| Subtotal                                    | \$ 33,800 |
| 2. Bidding and Construction Phase Services  |           |
| A. Bidding Assistance                       | \$ 4,100  |
| B. Construction Assistance                  | \$ 10,800 |
| C. Construction Staking                     | \$ 4,800  |
| D. Record Drawings                          | \$ 2,700  |
| Subtotal                                    | \$ 22,400 |

\*Design Services will be lump-sum.

\*\* Special Services will be charged on at Time and Materials basis with amounts not to exceed those listed above.

|                               |                   |
|-------------------------------|-------------------|
| <b>Design Services Total</b>  | <b>\$ 125,800</b> |
| <b>Special Services Total</b> | <b>\$ 56,200</b>  |
| <b>MAXIMUM FEE</b>            | <b>\$ 182,000</b> |

(Includes all reimbursables and subconsultant fees. Does not include optional services)

**BFC-5 DRAINAGE IMPROVEMENTS:  
MATTHEWS INTERCEPTOR**

RICHLAND HILLS, TEXAS

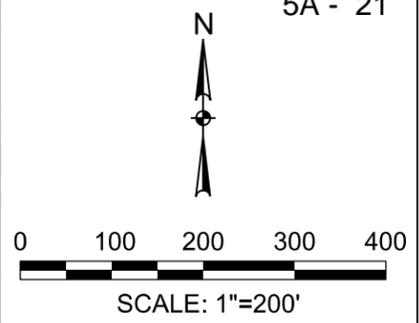


| Revision No. | Date | Description |
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| Project No.: | 27224M                          |
| Issued:      | 09/17/2013                      |
| Drawn By:    | CADD                            |
| Checked By:  | JL                              |
| Scale:       | 1"=100'                         |
| Sheet Title  | Kingsbury Bypass Survey Exhibit |

|                  |  |
|------------------|--|
| <b>EXHIBIT C</b> |  |
| Sheet Number     |  |



| LEGEND |  |
|--------|--|
|        | PROPOSED SURVEY LIMITS                 |
|        | EXISTING SURVEY                        |
|        | NEED PERMANENT AND TEMPORARY EASEMENTS |
|        | NEED TEMPORARY EASEMENTS ONLY          |
|        | PROPOSED STORM DRAIN IMPROVEMENTS      |
|        | CONTROL POINT                          |
|        | BENCH MARK                             |



- MONUMENT 1    LOCATED NEAR A CONCRETE DRAINAGE INLET ON THE NORTH SIDE OF LAVON AT THE INTERSECTION WITH CECIL.    ELEVATION = 502.41'  
N = 6978330.1019  
E = 2357209.2474
- MONUMENT 2    LOCATED ON THE SOUTHWEST CORNER OF BAKER BLVD., SCRUGGS PARK DRIVE, AND LATHAM DRIVE.    ELEVATION = 542.07

| SECONDARY CONTROL POINTS TABLE |              |              |           |                                       |
|--------------------------------|--------------|--------------|-----------|---------------------------------------|
| CP #                           | NORTHING     | EASTING      | ELEVATION | DESCRIPTION                           |
| 101                            | 6979410.6115 | 2356882.1869 | 523.4862  | SET MAG NAIL W/SHINER                 |
| 102                            | 6979074.4156 | 2356923.1564 | 509.8142  | SET MAG NAIL W/SHINER                 |
| 103                            | 6978344.5290 | 2356888.4832 | 502.5580  | SET MAG NAIL W/SHINER                 |
| 104                            | 6977740.2534 | 2356895.7375 | 499.0663  | SET MAG NAIL W/SHINER                 |
| 105                            | 6979595.9739 | 2357287.5435 | 525.7794  | SET MAG NAIL W/SHINER                 |
| 106                            | 6979988.0725 | 2357299.8255 | 532.3833  | SET MAG NAIL W/SHINER                 |
| 107                            | 6979579.5268 | 2356922.9398 | 527.2213  | 1/2" SET IRON ROD W/RED *TRAV PT* CAP |
| 108                            | 6979550.7447 | 2357162.7525 | 524.4334  | 1/2" SET IRON ROD W/RED *TRAV PT* CAP |