

STATE OF TEXAS §
 §
COUNTY OF FORT BEND §

**AMENDMENT TO AGREEMENT FOR
PROFESSIONAL ENGINEERING SERVICES**

THIS AMENDMENT, is made and entered into by and between Fort Bend County (hereinafter "County"), a body corporate and politic under the laws of the State of Texas, and Halff Associates, Inc., (hereinafter "Contractor"), a company authorized to conduct business in the State of Texas.

WHEREAS, the parties executed and accepted that certain Agreement for Professional Engineering Services on June 2, 2015, (hereinafter "Agreement"); and

WHEREAS, the parties desire to amend the Agreement for additional services to be provided and increase the total Maximum Compensation for the completion of such additional services.

NOW, THEREFORE, the parties do mutually agree as follows:

1. County shall pay Contractor an additional twenty-nine thousand dollars and no/100 (\$29,000.00) for the drainage analysis as described in the proposal dated October 23, 2015 attached hereto as Exhibit "A" and incorporated herein for all purposes.
2. The Maximum Compensation payable to Contractor for Services rendered is hereby increased to an amount not to exceed three hundred fifty-four thousand dollars and no/100 (\$354,000.00), authorized as follows:
 \$325,000.00 under the Agreement; and
 \$29,000.00 under this Amendment.
3. In no case shall the amount paid by County for all Services under the Agreement and this Amendment exceed the Maximum Compensation without an approved change order.

Except as provided herein, all terms and conditions of the Agreement shall remain unchanged.

FORT BEND COUNTY

HALFF ASSOCIATES, INC.

Robert E. Hebert, County Judge



Mike Voinis, P.E., Vice President

Date

11/20/15

Date

ATTEST:

Laura Richard, County Clerk

APPROVED:

Richard W. Stolleis, P.E., County Engineer

APPROVED AS TO LEGAL FORM:

Marcus D. Spencer, First Assistant County Attorney

AUDITOR'S CERTIFICATE

I hereby certify that funds are available in the amount of \$ _____ to accomplish and pay the obligation of Fort Bend County under this contract.

Robert Edward Sturdivant, County Auditor

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EXHIBIT A



October 23, 2015

Fort Bend County Engineering Department
301 Jackson Street
Richmond, Texas 77469

Attn: Richard Stolleis, P.E.

**RE: Beechnut Drainage Mitigation and Analysis associated with
Beechnut Improvements from F.M. 1464 to Lobera Drive**

Dear Mr. Stolleis:

Halff Associates Inc. is pleased to submit this proposal for professional surveying and engineering services for the above referenced project. The scope of work is defined in Attachment A. A detailed labor breakdown and level of effort is included as Attachment B. The estimated cost to perform the preliminary design work is \$29,000.

We appreciate the opportunity to work on this important assignment. We are available to discuss this proposal at your convenience and stand ready to commence work immediately upon receipt of the notice to proceed.

Sincerely,
Halff Associates, Inc.

A handwritten signature in blue ink, appearing to read "JB", is positioned above the typed name of James Baker.

James Baker, P.E.
Director of Transportation – Houston Region

Attachment 'A'

Scope of Work for Beechnut Drainage Analysis

Halff Associates, Inc. (Halff) has been contracted with Fort Bend County for engineering services to design a segment of Beechnut Avenue from F.M. 1464 to Lobera Drive. A review of the existing drainage information available for the project revealed that some additional analysis is needed to complete the design. **Exhibit 1** shows the area proposed for the additional analysis. The area bounded by the pink line on Exhibit 1 drains to an existing detention pond south of Beechnut and west of Clodine Reddick. A review of the record drawings for that portion of Beechnut shows that both the existing and future lanes were included in the design of the storm sewer trunk line for that segment. However, the area bound in green is not currently drained by a storm sewer trunk line, but instead drains via curb inlets to the roadside ditch north of Beechnut. This roadside ditch drains directly into an existing ditch, which flows to Harris County Flood Control District (HCFCD) Unit No. D132-00-00. Furthermore, the drainage calculations for that portion of Beechnut show that only the existing lanes were considered in the calculations with no provisions for future lanes. Given this information, it has been concluded that Halff must determine the appropriate mitigation for the improvements to the portion of Beechnut within the green boundary shown on Exhibit 1.

The Beechnut improvements east of Clodine Reddick will involve the installation of new storm sewers and adding impervious cover. Halff must determine the hydrologic impact from the Beechnut improvements and identify mitigation needs for the project. Discussions with the Fort Bend County Drainage District indicate that it may be acceptable to discharge from the proposed Beechnut drainage system into the existing outfall ditch with only minimal provisions for detention.

In order to determine the mitigation necessary for the proposed improvements to Beechnut, Halff proposes the following scope of work.

Impact and Mitigation Analysis

1. Collect field survey cross-sections at six locations (2 at each structure) to supplement LiDAR data.
2. Extend HEC-RAS model of Brays Tributary (D132-00-00) from Addicks-Clodine in Harris County to outfall at Beechnut (about 2 miles) using field survey and LiDAR data.
3. Determine peak discharges for extended RAS model using HEC-HMS based on the existing Beechnut drainage system.
4. Determine peak discharges for extended RAS model using HEC-HMS based on the proposed Beechnut drainage system.
5. Compute 100-year and 10-year water surface profiles in extended RAS model for both existing and proposed conditions.
6. Compare water surface elevations to critical elevations based on LiDAR data.
7. If it is determined that there is not adequate freeboard available in the outfall ditch, identify an alternative for detention to mitigate the proposed improvements.

