

SECOND AMENDMENT TO AGREEMENT FOR ENGINEERING SERVICES

THE STATE OF TEXAS §
 §
COUNTY OF HARRIS §

THIS SECOND AMENDMENT TO AGREEMENT is made, entered into, and executed by and between the **Harris County Flood Control District**, a body corporate and politic under the laws of the State of Texas, hereinafter called "District," and **Freese and Nichols, Inc.**, a Texas corporation, hereinafter called "Engineer." The District and Engineer are referred to herein collectively as the "Parties" and individually as a "Party."

RECITALS:

The Parties previously entered into an Agreement for Engineering Services ("the Agreement"), dated May 19, 2020, to provide design, bidding, and construction phase engineering services in support of construction of the Dinner Creek Detention Basin located southeast of FM 529 and Greenhouse Road at Harris County Flood Control Unit U520-01-00.

The Parties previously amended the Agreement, on September 19, 2023, to provide for additional design, bidding, and construction phase engineering services to be performed by Engineer, extend the Time and Performance, set a MWBE Enterprise goal, replace Exhibit A & B, and additional compensation to be paid to Engineer *in connection with the projects* (the "First Amendment").

The Parties now desire to amend the Master Agreement for the second time (the "Second Amendment").

The District requires additional design, bidding, and construction phase engineering services as provided under Section II, Character and Extent of Services, Section III, Additional Services, and under Appendix A (Revised) and Appendix B (Revised) of the Agreement.

The District and the Engineer desire to replace Appendix B (Revised) General Scope of General Services with Appendix B (Revised) General Scope of Additional Services, to the Agreement and to provide for additional engineering services to be performed by the Engineer.

The Engineer is willing to provide the necessary additional engineering services for further consideration.

The District and the Engineer desire to add rate classifications and increase the existing rate classifications under Section V, The Engineer's Compensation.

The District and the Engineer now desire to increase the Limit of Appropriation by \$198,375.00, to \$1,645,171.58.

NOW, THEREFORE, the District and the Engineer, in consideration of the mutual covenants and agreements herein contained, do mutually agree as follows:

Section V of the Agreement, entitled, "The Engineer's Compensation," is hereby amended to read:

For and in consideration of the Basic Services performed by the Engineer, as set forth in Section I, the District shall pay the Engineer a fixed fee of \$890,821.88 with monthly payments toward same based on the percentage of each task completed during the preceding calendar month, subject to acceptance by the District. The fee allocation by task to be used for billing purposes is as follows:

	<u>Amount</u>
1 CONSTRUCTION DOCUMENTS	
1.A 50% Submittal	\$148,594.98
1.B Bid Ready Submittal	\$293,795.22
1.C Final Submittal	<u>\$448,431.68</u>
	\$890,821.88

Adjustments to the fee allocation may be made within the Total Basic Services Fee with prior review and written approval by the Director.

The District shall reimburse the Engineer according to the following rates for Additional Services provided pursuant to Section III by employees of the Engineer:

<u>Responsibility</u>	<u>Maximum Hourly Rate</u>
Principal	\$361.00
Group Manager	\$270.00
Engineer VIII	\$260.00
Engineer VII	\$249.00
Engineer VI	\$289.00
Engineer V	\$244.00
Engineer IV	\$187.00
Engineer III	\$160.00
Engineer II	\$150.00
Engineer I	\$140.00
3D Visualization Coordinator	\$195.00
CAD Designer	\$151.00
Technician IV	\$122.00
Technician III	\$102.00
Technician II	\$ 84.00
Technician I	\$ 70.00
GIS Analyst V	\$138.00
GIS Analyst IV	\$125.00
GIS Analyst III	\$114.00
GIS Analyst II	\$ 85.00
GIS Analyst I	\$ 72.00
Construction Manager V	\$175.00
Construction Manager IV	\$162.00
Construction Manager III	\$147.00
Construction Manager II	\$127.00
Construction Manager I	\$ 97.00
Senior Geologist	\$151.00
Environmental Scientist VIII	\$246.00

Environmental Scientist VII	\$235.00
Environmental Scientist VI	\$192.00
Environmental Scientist V	\$167.00
Environmental Scientist IV	\$140.00
Environmental Scientist III.....	\$109.00
Environmental Scientist II.....	\$ 92.00
Environmental Scientist I.....	\$ 77.00
Hydrologist VII.....	\$230.00
Hydrologist VI.....	\$192.00
Hydrologist V.....	\$160.00
Hydrologist IV.....	\$146.00
Hydrologist III.....	\$123.00
Hydrologist II.....	\$115.00
Hydrologist I.....	\$100.00
Operations Analyst / Accounting Specialist	\$125.00
Project Control Specialist II / Contract Admin.....	\$ 99.00
Administrative Assistant / Clerical Support	\$ 79.00
Co-Op / Intern	\$ 56.00
BIM/CAD Designer I.....	\$ 157.00
BIM/CAD Designer II.....	\$ 201.00
BIM/CAD Manager.....	\$ 248.00

The District may also authorize Additional Services to be compensated on a fixed fee basis upon acceptance by the Engineer. The District shall pay the Engineer a prorated amount of the fixed fee monthly, based on the percentage of the task completed during the preceding calendar month, subject to acceptance by the District. Where authorization of Additional Services is made on a fixed fee basis, the hourly rates set out above shall not apply.

Notwithstanding anything that may be construed to the contrary herein, in no event shall the Engineer be entitled to compensation and reimbursement in excess of \$754,349.70 for performing Additional Services hereunder. Nor shall the Engineer be required to perform Additional Services hereunder after becoming entitled to compensation and reimbursement of \$754,349.70 for Additional Services.

Adjustments to the Additional Services budget allocation may be made with written approval by the Director.

It is expressly understood that the Engineer shall neither seek reimbursement nor will the District be obligated to pay or reimburse the Engineer for normal business expenses such as overtime, postage, messenger services, delivery charges, mileage within Harris County, parking fees, facsimile (fax) transmissions, computer time on in-house computers and graphic systems, blueline drawings or photocopies specifically required in Section II, or other costs or expenses, except those for which reimbursement is specifically provided in the following sentence. If approved in writing by the Director prior to their being incurred, the Engineer may be reimbursed the reasonable and necessary cost of the following, to the extent they are incurred in providing services hereunder: services performed by a subcontractor pursuant to authorization for such expenses and as permitted by the County Purchasing Act, copies of reports or other documents to be delivered to the District or in accordance with instructions of the District in excess of the number specifically required by Section II, costs of travel outside of Harris County, rental costs of transportation equipment necessary to gain access to the Project site, costs of presentation materials (i.e., charts, slides, transparencies), costs of abstracting, and costs of photographic and video services.

SECTION VII of the Agreement, entitled, "Limit of Appropriation," as amended and now reading:

The Engineer clearly understands and agrees, such understanding and agreement being of the absolute essence to this Agreement, that the District shall have available the total maximum sum of \$1,645,171.58 specifically allocated to fully discharge any and all liabilities that may be incurred by the District pursuant to the terms of this Agreement, and that the total maximum compensation the Engineer may become entitled to hereunder and the total maximum sum the District shall become liable to pay to the Engineer hereunder, shall not under any conditions, circumstances, or interpretations hereof exceed the said total maximum sum provided for in this Section and certified as available therefor by the County Auditor as evidenced by the issuance of a purchase order from the Harris County Purchasing Agent.

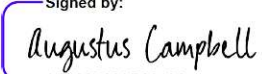
All other terms and provisions of the Master Agreement and the previous First Amendment shall remain in full force and effect as originally written.

EXECUTED on _____.

APPROVED AS TO FORM:

JONATHAN FOMBONNE
HARRIS COUNTY ATTORNEY

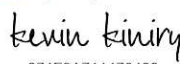
HARRIS COUNTY FLOOD CONTROL
DISTRICT


Signed by:

By _____
Augustus L. Campbell
Senior Assistant County Attorney
26GEN1229

By _____
Lina Hidalgo
County Judge

ATTEST:

FREESE AND NICHOLS, INC.

Signed by:

By _____
Kevin Kiniry
Name
Project Manager
Title

Signed by:

By _____
Cory J. Stull
Name
Principal and Vice President
Title

Appendix B (Revised)

GENERAL SCOPE OF ADDITIONAL SERVICES

The Engineer shall render the following Additional Services in connection with the Project when authorized in writing by the Director:

1. NEPA COMPLIANCE EVALUATION

Engineer understands that HCFCD prefers for the design concept to be prepared in accordance with NEPA requirements, to be adequately prepared for pursuing funds from the Community Development Block Grant (CDBG). Engineer's proposed Environmental Science activities associated with this are discussed below. To support the anticipated coordination activities in pursuit of the grant, Engineer proposes to engage a sub-consultant for support, which is included in Task B.4.

Engineer believes that the project would qualify as one that would require the preparation of an Environmental Assessment (EA). Engineer further assumes that the result of the EA process would be the issuance of a Finding of No Significant Impact (FONSI).

A. Develop the Environmental Review Record (ERR)

Engineer will collect all the required environmental review documents, public notices and written determinations or environmental findings as evidence of review, decision-making and actions pertaining to the project and develop the ERR.

B. Prepare the Environmental Assessment (EA)

Engineer will develop a format for the EA or use a format provided by HCFCD for the EA.

C. Prepare the Notice of Intent to Request Release of Funds (NOI/RROF)

If HCFCD desires, Engineer will publish the FONSI notice at the same time it disseminates or publishes the NOI/RROF required by §58.70.

Engineer will review any comments received and if necessary, upon the advice and consent of HCFCD make reasonable modifications to the project. Engineer will provide responses to the comments as part of the environmental certification before submitting the RROF.

Engineer assumes no re-evaluations will be required.

D. Phase I & II Environmental Site Assessment (ESA):

Engineer's geoscientists have reviewed the Phase I ESA that was previously performed by Carter & Burgess in 1994, and the Phase II ESA that ESE Partners performed in 2015. Due to the methods and age of the previous site assessments Engineer recommends that a new Phase I and Phase II ESA be performed. A Phase I Environmental Site Assessment is recommended to capture the potential presence of chemicals of concern (COCs) commonly associated with oil and gas infrastructure. Common COCs associated with historical oil and gas infrastructure operations include total petroleum hydrocarbons (TPH), total recoverable metals, volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). ASTM standard Guide E1527 defines a recognized

environmental concern as “(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment..”

A Phase II ESA is recommended to provide an up-to-date report as well as capture several additional data points, such as RCRA 8 metals on groundwater samples, analyzing soil samples every two feet in each boring, and collecting groundwater samples within each boring that soil samples are collected. The Phase II ESA will include a subsurface investigation to assess soil and groundwater conditions to confirm the presence/absence of possible COCs that might exceed protective concentration limits (PCLs) established by the TCEQ under the Texas Risk Reduction Program (TRRP). Samples will be collected in suspected source areas where COCs might have been spilled, dumped, or improperly used. This phase II ESA will be conducted based on the minimum guidelines published by ASTM International (Standard Guide E1903) and general guidelines for site investigations established by TCEQ under TRRP.

Based on correspondence with HCFCD, these Phase I and Phase II efforts will exclusively focus on the southwest and southeast cells within the project limits (e.g., Phase I of HCFCD’s project implementation). The Phase II ESA would ultimately provide recommendations for HCFCD to decide on whether remediation, design adjustments, or controls are the most cost-effective path forward.

1) Phase I ESA

- a. Phase I ESA will be conducted in accordance with the guidelines contained in the American Society for Testing and Materials (ASTM) Designation E 1527-21, Standard practice for Environmental Site Assessments: Phase I environmental Site Assessment Process as modified by Houston Public Works Infrastructure Design Manual Chapter 11 “Geotechnical and Environmental Requirements”. This Phase I ESA will cover both the north and south properties.
- b. Phase I ESA will include reviewing available current and historical aerial photographs (1940’s through 1990’s) and historical city directories. Historical directories will be reviewed for the main thoroughfares in the project area and up to two additional streets for five (5) decades. Due to the location of the project, some fire insurance (e.g., Sanborn or other) rate maps may not be available (outside of IH-610 Loop). These maps will be obtained and reviewed if available. If no Sanborn’s are available, a Sanborn “no coverage” letter can be provided. Current and available historical USGS topographic maps will be reviewed. Historical chains-of-title (COT) will not be obtained for this project. Historical data will be supplemented with interviews of knowledgeable parties if those parties can be identified during this study.
- c. Environmental data will be obtained for registered hazardous waste and petroleum sites in the immediate vicinity of the site. Data will be obtained as follows:
 - i. Federal, state, and local government agency records concerning generation, use, storage, and disposal of hazardous wastes and/or regulated wastes.
 - ii. Leaking and registered petroleum storage tank sites adjacent to the property; and
 - iii. Federal and state spills and local HAZMAT response files in immediate vicinity.
 - iv. Oil/gas and water well searches will be conducted. This scope includes a review of files of regulated environmental sites that may pose a concern to

the project. We assume that since the project area is large there might be several sites whose files need to be reviewed.

- v. Engineer shall also review any existing studies provided by DISTRICT or property tenants that might contain information related to known or potential RECs on the site.
 - d. Phase I ESA will include a review of the local/regional hydrogeology and soil conditions to determine preferential pathways for the migration of contaminants to or from the site. A literature review and site reconnaissance will be conducted to determine if active geologic faults are present on or near the site that could impact any proposed facilities.
 - e. Site reconnaissance will be conducted on all streets and right of ways where the proposed site assessments are planned. Interviews will be conducted with key site individuals of regulated environmental sites and sites that may store or use potential contaminants. Adjoining properties will be observed for the potential to impact the site and any regulated sites adjacent to the property will be observed. Photographs will be taken during the site visit to document observations.
 - f. Engineer will prepare a report, in compliance with HCFCD Regulatory Report Guidelines, summarizing the findings and conclusions. The report will include: a summary of field observation data; figures and/or drawings depicting general, environmental, and geologic conditions; photographs with labels, a review for the potential for contamination to impact the site; and recommendations for further environmental studies (if necessary).
- 2) Phase II ESA Fieldwork & Analysis
- a. The objective of the Phase II subsurface investigation will be to confirm the presence/absence of possible environmental contamination associated within the Subject Property Area that might pose a liability or risk to HCFCD and future operations at the site. Focus for this task will be exclusive to the southwest and southeast cells within the project limits (e.g., Phase I of HCFCD's project implementation). Engineer will engage a drilling subcontractor to perform the exploration program described herein. Engineer will engage a lab/testing subcontractor to perform the laboratory testing program described herein.
 - b. A drilling subcontractor, under the supervision of Engineer's geologists, will install up to 10 borings at select locations, to a depth of up to approximately 30 feet below ground surface (bgs) or until the bottom of the shallow groundwater water bearing zone is encountered. If the shallow groundwater bearing zone is encountered before 30' bgs, the boring will be terminated one foot into the underlying lithology. Actual boring/monitor well depth will be determined based upon field and subsurface conditions. Each boring will be advanced using direct push (Geoprobe) techniques and will be continuously logged and sampled from the surface to the total depth of the boring.
 - i. Prior to commencing field work, an OSHA-required health and safety plan will be prepared in accordance with OSHA Health and Safety protocols as defined in 40 CFR 1910.120. Field operations will be supervised by OSHA trained personnel. A traffic-control flagman will not be required for the project.
 - ii. The drilling subcontractor will notify 811 of the planned boring locations prior to mobilization.

- iii. Drilling and sampling equipment will be decontaminated prior to commencing field activities, between boring locations and upon completion of the project. Decontaminated equipment will also be used to collect each sample.
 - iv. During drilling and sampling, a photo ionization detector (PID) will be used to monitor the air to ensure that crew breathing air remains within Level D requirements and to screen for potential contaminants in soils.
 - c. Soil samples will be screened for evidence of impacts in the field using a PID. PID readings, along with visual evidence of impact and a physical description of the soils, will be recorded on a boring log. Soil cuttings shall be containerized for waste characterization and eventual disposal. Each soil bore will be backfilled with bentonite chips once all samples are collected.
 - d. Up to 8 soil samples will be collected from each bore and submitted for laboratory analysis. The soil samples will be obtained from each two-foot interval above the shallow groundwater bearing unit. This will allow Engineer to characterize soils in the first 16 feet of each bore. If the shallow groundwater bearing unit is encountered above 16 feet, the number of samples per bore will be reduced. In the event the shallow groundwater bearing unit is encountered below 16 feet, the number of samples per bore will be adjusted or increased. If this occurs, Engineer will ensure to collect one sample from the zone directly above the shallow water bearing unit. If visual evidence of COC's or elevated PID readings are encountered, the geologist on site will note those observations and sample the two-foot zone in which the field observations are present. Engineer's Geologists will base sampling intervals on subsurface conditions and observed groundwater elevations. Soil samples will be analyzed for the following COCs:
 - i. Total Petroleum Hydrocarbons (TPH)
 - ii. Volatile Organic Compounds (VOC's)
 - iii. Semi-volatile Organic Compounds (SVOC's)
 - iv. RCRA 8 Metals – Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver.
 - v. TCLP Metals Analysis – if soil samples exhibit concentrations of heavy metals in excess of critical PCLs, the sample containing the highest concentration for each metal shall be subjected to additional analysis by the TCLP method to evaluate the potential for leaching of that metal to groundwater.
 - e. In 2015, ESE Partners noted that groundwater was encountered during the initial subsurface investigation at the site at depths of approximately 6 to 10 feet below ground surface (bgs). In 2016, a geotechnical investigation encountered groundwater at depths ranging from 16.7 and 35 feet bgs. Due to the varying data concerning groundwater elevations across the site, Engineer has scoped this Phase II ESA to target a total depth at each bore to 30 feet bgs. Each of the ten soil bores will be converted to a 1" diameter temporary monitor well using direct push technology if groundwater is encountered. If groundwater is not encountered, Engineer will only collect soil from that location. Because of the possible presence of dense, non-aqueous phase liquids at the site, each temporary monitor well should be installed to a depth that reaches the bottom of the shallow aquifer. Each monitor well should be screened from the interval 2 feet above the water table to the total depth of the well. A clean siliceous sand filter pack will be installed in the annular space between the screen and the borehole. Temporary monitor wells

shall be flush mount with the ground and constructed in accordance with industry standards. Each temporary well will be purged to remove suspended solids prior to sampling according to industry standards. Purge water shall be containerized for waste characterization and eventual disposal. Prior to groundwater sample collection, each temporary well will be plugged and abandoned. One groundwater sample shall be collected from each temporary monitor well using a peristaltic pump with dedicated tubing. Each temporary well shall be purged using low-flow sampling techniques if wells show sufficient stabilization of water quality parameters. Groundwater samples shall be analyzed for the following COCs:

- i. Total Petroleum Hydrocarbons (TPH)
 - ii. Volatile Organic Compounds (VOC's)
 - iii. Semi-volatile Organic Compounds (SVOC's)
 - iv. RCRA 8 Metals – Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver.
- f. Field quality control samples shall be collected per industry standards. One trip blank shall be analyzed for VOCs for each cooler containing samples and one field blank shall be collected per day of sampling activities. Field blanks shall be analyzed for VOCs and RCRA 8 Metals.
- g. Duplicate soil and groundwater samples shall be taken for every 20 samples collected. This will include 4 duplicate soil samples, and 1 duplicate groundwater sample. These samples will be randomly selected in the field at the discretion of the on-site geologist.
- h. Soil and groundwater samples will be placed into laboratory-supplied jars or bottles, stored in an ice chest with water ice, and shipped to the analytical laboratory.
- i. Drilling subcontractor will provide for handling and management of Investigation Derived Waste (IDW) associated with the field exploration. As appropriate, waste classification testing will be performed by lab/testing subcontractor.
- j. All laboratory analyses shall be conducted in accordance with TCEQ's data quality standards under the Texas Risk Reduction Program (TRRP). A sample breakdown is provided below:

	Southwest and Southeast Basin Cells Phase II				
Sample Type	TPH	VOCs	SVOCs	RCRA 8 Metals	TCLP Metals
Soil Boring Samples	80	80	80	80	10
Soil Boring QC Samples	4	4	4	4	0
Groundwater Samples	10	10	10	10	10
Groundwater QC Samples	1	1	1	1	0
Field Blank	0	2	0	2	0
Total:	95	97	95	97	20

3) Phase II ESA Report

- a. Upon completion of field activities, a report will be prepared, in compliance with HCFCD Regulatory Report Guidelines, summarizing findings and conclusions following receipt of laboratory data. In general, the report will include:
- i. Boring logs, field survey data, and field sampling documentation.
 - ii. Figures and/or drawings depicting general and environmental site conditions.
 - iii. Comparison of sample results to protective concentration limits, Texas-specific background concentrations, and other criteria established under the Texas Risk Reduction Program (TRRP).

- iv. Laboratory data and chain-of-custody documentation.
- v. A discussion of the regulatory issues that are relevant during the property transaction.
- vi. A discussion on whether any mitigation is recommended, and if so, this would include an outline of some potential mitigation options

E. WOTUS/404 Permitting Review

- 1) NWP Project Information:
 - a. Engineer will review the existing USACE AJD, project design plans, and the Dinner Creek OHWM to prepare a NWP general project information table to document project details and impacts for HCFCD's records. If the project impacts exceed NWP pre-construction notification (PCN) thresholds, then this table would help HCFCD in the preparation of a PCN.
 - b. Additionally, Engineer will prepare Plan and Cross-Section views illustrating the locations of fill proposed below the OHWM of Dinner Creek. A summary table communicating the following information will also be prepared: Total Impacted Project Length (LF), Total Impacted Project Area (AC), Average Project Impacted Volume (CY/LF). Further, a breakdown of fill material will be prepared (e.g., CY of concrete, CY of riprap, CY of soil, etc.).
- 2) Wetland Impact Evaluation: Engineer will evaluate the proposed wetland impacts against the proposed wetland benches associated with the detention basin design to determine if onsite 1:1 mitigation is feasible. This would include coordination with HCFCD vegetation staff and potential recommendations for plantings.
- 3) Optional Task – Level 1 SCA: Perform a Level 1 Stream Condition Assessment for impacted reach of Dinner Creek in the event that USACE requires mitigation. The Level 1 SCA include visual assessment of the channel condition, assessment of the riparian buffer condition using GIS (supported by field observations), assessment of aquatic use, and visual assessment of channel alteration condition. These variables are utilized to determine the reach condition index. The reach condition index for Dinner Creek would be utilized to determine the functional value of the impacted reach of stream in terms of mitigation credits.
- 4) Optional Task – iHGM Wetlands: Perform an iHGM Wetland Assessment for impacted (non-jurisdictional) wetlands in the event that GLO requires mitigation, and if it is determined that wetlands are not to be mitigated on site.
- 5) Optional Task – PCN Preparation: Preparation of a USACE NWP PCN submittal in the event that a PCN is required, and HCFCD requires Engineer's assistance.

F. Threatened & Endangered Species Assessment

- 1) T&E Species Evaluation: Engineer's biologists will conduct a review of the Project Area in the USFWS Information for Planning and Consultation (IPaC) tool as well as a review of the TPWD's Texas Natural Diversity Database (TXNDD) to determine what federal and state-listed threatened and endangered species have the potential to occur in Harris County. A site visit will be performed to assess for potential species' habitat that occurs in the Project Area. Based on the findings of the desktop evaluation and site visit, Engineer will develop a standalone report for HCFCD records. The IPaC and TXNDD lists will be included in NEPA documentation.
- 2) Optional Task – WHAB: If the results of the T&E Species Evaluation indicate the Project has the potential to impact state-listed species, then formal coordination with TPWD's Wildlife Habitat Assessment (WHAB) Program is required. Engineer will coordinate with HCFCD environmental staff to prepare the WHAB form and support

the submittal to TPWD with documents prepared for Task B.1.F.1. Develop a comment/response matrix to track correspondence with TPWD.

G. Freshwater Mussel Survey

Engineer understands that project construction will include impacts within the wetted stream width of Dinner Creek, and survey efforts are intended to prevent impacts to native freshwater mussels (Unionidae) that could potentially be present within the creek. Engineer will first conduct an initial field reconnaissance effort to determine the presence of mussel habitat in the creek, and if necessary search for and relocate native mussels per the methodology in the joint TPWD and USFWS 2023 Texas Freshwater Mussel Sampling Protocol (Protocol). For the purposes of the proposed mussel survey, Dinner Creek is considered a Group 5 Stream. Group 5 streams are perennial streams where it is anticipated that live freshwater mussels occur, but presence or diversity is unknown prior to survey.

- 1) Reconnaissance: Conduct a mussel reconnaissance survey to document conditions and identify the potential for the presence of mussels and/or habitat in Dinner Creek. Engineer will draft a mussel reconnaissance letter report and include the "Freshwater Reconnaissance Survey Form" included in the 2023 Protocol for submittal to HCFCD for review. Upon completion of the report, Engineer will coordinate with HCFCD and TPWD on the results of the survey and the need for further mussel recovery and relocation efforts. If TPWD concurs in writing that the project site and affected areas in Dinner Creek do not contain appropriate habitat for mussel habitation, no further efforts will be necessary. The reconnaissance survey will not include grubbing for or collection of mussel specimens.
- 2) Optional Task – Phase 1 Qualitative Survey: Based on the results of the above task to confirm mussel habitat, and guidance from HCFCD and TPWD, Engineer will develop an Aquatic Resource Relocation Plan (ARRP) for the project mussel survey. After approval of the ARRP, Engineer will also prepare and submit an Application for Permit to Introduce Fish, Shellfish, or Aquatic Plants into Public Waters to the TPWD Inland Fisheries Permit Coordinator at least 30 days prior to beginning the mussel survey effort.
 - a. Engineer will submit an electronic copy of the ARRP to HCFCD for review and comment prior to submittal to TPWD.
 - b. Engineer biologists, under the direction of a qualified malacologist, will conduct a freshwater mussel survey between the months of April and November and within one year of the start of construction. As a Group 5 Stream, the Dinner Creek effort will likely consist of a minimum five (5) person-hour qualitative survey within the area of direct impact and including upstream and downstream buffers.
 - c. Prior to relocation, representative photographs including lateral exterior view, dorsal view, anterior view, and interior view (if dead), with scale reference will be taken of at least one individual of each species collected. The relocation site will preferably be located a minimum of 100 m upstream from the impact area in similar or better quality habitat than that of the recovery area. A GPS waypoint will be taken at the relocation site to be included on project map figures.
- 3) Optional Task – Phase 2 Multiple-pass Depletion (MPD) Survey: If the results of Task B.1.G result in the observation of a state-listed freshwater mussel species in Dinner Creek, Engineer will notify HCFCD and TPWD and begin a multiple-pass depletion survey to ensure total coverage within the salvage zone and removal of the majority of state-listed species. The additional multiple pass survey will entail either moving transects or cells not to exceed 100 m², with a minimum effort of one min/m² (0.5 min/m² first pass and 0.5 minutes/m² second pass). For example, a transect survey

would involve two 2.5-minute surveys across the same 5 m² segment until less than 10% of the original number of live mussels are recovered in the final pass. Additional passes would be required if a state-listed species is found, regardless of the percentage threshold.

- a. Following the completion of all survey and relocation efforts, Engineer will draft a report that includes background, methodology, results, and conclusions as well as appropriate map figures, photographs, and datasheets as defined in the 2023 Protocol. This deliverable would either be prepared at the completion of a qualitative survey (B.1.G.2) or completion of a multiple-pass depletion survey (B.1.G.3), if required.

H. NEPA Documentation

- 1) Preparing ERR & Supporting Documents: Engineer's scientists will prepare the Environmental Review Record (ERR) to meet the most up-to-date GLO requirements and in accordance with HCFCD writing style. Additionally, Engineer will format and organize the ERR supporting documentation in appendix format.
 - a. Perform detailed review of existing ERR document that was previously developed. This will include a review of spatial data and literature to understand the most up-to-date information pertaining to the various components of the ERR.
 - b. Update ERR document to match HCFCD's provided template as aligned with GLO/HUD requirements. This will include the Part 55 8-step process, assuming this phase is within the 100-year floodplain.
 - c. Update/develop figures/exhibits necessary to support the ERR document.
 - d. Update/develop associated appendices and format appropriately to be included in support of the overall ERR package.
- 2) Optional Task - Public Involvement:
 - a. Early (1st) public notice prior to publishing EA. This notice will be published in the Houston Chronicle newspaper. Includes response to any comments received and includes coordination with GLO for response to comments.
 - b. 2nd public notice after GLO acceptance of the EA. This notice would also document the 8-step process for work in floodplain. This notice will be published in the Houston Chronicle newspaper. Includes response to any comments received and includes coordination with GLO for response to comments.
 - c. 3rd public notice after GLO RROF/FONSI (before release of funds). This notice will be published in the Houston Chronicle newspaper. Includes response to any comments received and includes coordination with GLO for response to comments.

2. COMMUNITY ENGAGEMENT SERVICES

- A. Engage a public relations sub-consultant to provide support services required to plan, prepare for, and conduct one (1) community engagement meeting related to the Project in accordance with District guidelines.
- B. The Engineer will provide support through:
 - 1) Preparing and attending up to four (4) coordination meetings with HCFCD and the sub

consultant.

- 2) Assist with development of the presentation materials.
 - 3) Prepare for and attend the dry rehearsal.
 - 4) Prepare for and attend the public meeting.
 - 5) Review of public comments.
 - 6) Attend close-out meeting to debrief the public meeting.
- C. At the request of HCFCD, review presentation content (e.g., slides and exhibits) prepared by others. A total of 16-hours of anticipated effort has been estimated for this task.

3. LANDSCAPE ARCHITECTURE

- A. Engage a landscape architect sub-consultant to:
- 1) Prepare a schematic design of landscape architecture options for inclusion in the project. The landscape design goals will mainly consist of the identification of vegetation and tree buffer opportunities.
 - 2) Support the Engineer with the development of construction documents commensurate with the preferred configuration of landscape architecture amenities.

4. GRANT MANAGEMENT SERVICES

- A. Engage a grant management sub-consultant to:
- 1) Assist HCFCD and Engineer with identifying a viable funding avenue through CDBG (i.e., DR, MIT, etc.).
 - 2) Support HCFCD and Engineer with developing the applicable CDBG grant application.
 - 3) Periodically participate in project meetings with HCFCD and Engineer to keep the project team aligned with the applicable requirements of the grant funding.

5. DEVELOP ADDITIONAL EXCAVATION AND REMOVAL CONSTRUCTION PLANS

- A. As required, and as explicitly authorized by HCFCD, Engineer will prepare up to (2) additional sets of E&R construction plans for the northern basin cells.

6. BIDDING PHASE

- A. Attend and assist the District in conducting the pre-bid conference including answering questions and interpreting the drawings and specifications.
- B. Prepare necessary addenda to address issues or clarifications necessary for completion of the bidding process.
- C. Review tabulated bid results for discrepancies including potential unbalancing of unit bid prices and provide a written recommendation issued on company letterhead for the award of a construction contract.
- D. Provide clarification, correct discrepancies, correct errors and omissions; assist the District in evaluating the bid proposals; and assist in the preparation of a construction contract between the District and the successful bidder.
- E. Prepare a Submittal Log in coordination with the District Design and Construction Project Managers for District approval. The log shall list those items identified in the Contract Documents that require a submittal by the Contractor for District approval. Issue the Submittal Log to the Contractor within one week after the Project is awarded.
- F. Prepare a set of "Issued for Construction Drawings" within 10 business days after bids are received. Revise the "Issued for Construction Drawings" to reflect all addenda changes made to the Bid Documents during the bid period.

7. CONSTRUCTION PHASE

A. Assign a Professional Engineer licensed in the State of Texas to review and respond to Submittals and Requests for Information (RFIs) as requested by the District within three (3) business days. FNI understands that HCFCD's designated Construction Manager will be responsible for managing the Unifier and KiSSFLOW systems related to project administrative activities. FNI's use of Unifier will therefore be exclusive to the submittal review process. All submittal approvals and Request for Information (RFI) responses must include the signature of either the Engineer of Record or their equally qualified designee also licensed as a professional engineer in the State of Texas. The format for the approval block on submittals and RFIs will be provided by the District. Review up to one-hundred and forty-eight (148) total Submittals and RFIs. It is anticipated that submittal reviews will consist of the following:

- 1) Requests for Information (RFIs) (Up to 20);
- 2) Schedules of Progress (Up to 28);
- 3) Construction Materials Testing Lab Reports (Up to 50); and
- 4) Additional Submittal Reviews (Up to 50):
 - a. Shop Drawings;
 - b. Product Data;
 - c. Reinforcement Schedules for Concrete Structures;
 - d. Temporary Excavation and Shoring Plan; and
 - e. Care and Control of Water Plan.

B. Attend the pre-construction conference scheduled and conducted by the District.

C. Make up to fifty-six (56) periodic visits to the Project site as requested by the District to observe the quality of the executed work with respect to the signed and sealed design plans. Personal Protective Equipment (PPE) requirements at the Project site shall be followed. When making a site visit, the Engineer shall check in with the District's Inspector at the site so it can be noted in the Daily Work Report. If the inspector is not present, the Engineer shall notify the District Construction Project Manager of he or she being on-site.

D. Immediately notify the District Inspector and the District Construction Project Manager of any unsafe conditions or major work deficiencies observed during the site visits.

E. Attend a Substantial Completion inspection (a definition of Substantially Complete is provided in the Project Manual General Conditions or as provided in Special Provisions). The Engineer shall notify the District of any deficient items.

F. Revise the construction drawings in accordance with the information furnished by the construction Contractor to reflect changes in the Project made during construction. "Red-lines" will be developed and maintained by Contractor during construction.

G. Construction Surveying (See Attachment 3 for detailed proposal)

- 1) Pre-Construction Earthwork Quantity Survey (Assumes 1 Instance)
- 2) Final Earthwork Quantity Survey (Assumes 1 Instance)

8. REVISIONS

A. Make requested revisions to documents and materials prepared under this Agreement.

- B. Provide such engineering services necessary for such revision, when they are not necessitated by any fault of the Engineer and such revisions are inconsistent with approvals or instructions previously given by the District, or are made necessary by the enactment or revision of codes, laws, or regulations issued subsequent to the preparation of such documents.

9. SURVEY

Surveyor subcontractor to collect topographic data of the project area reflective of current conditions. These efforts are planned to be completed by the use of an Unmanned Aerial System (UAS) and include the following:

- A. LiDAR data will be captured with Unmanned Aerial System (UAS) at an altitude of 170-ft. AGL on a multirotor platform. The LiDAR will have a point cloud containing a minimum of 500 points per square meter (PPSM) nominal post spacing. The survey extents will generally capture the southeast and southwest basin cells and corresponding section of Dinner Creek, with LiDAR data captured beyond the full extents (100' buffer) of the boundary. LiDAR data coordinates will be referenced using the Texas State Plane Coordinate System North American Datum 1983 (NAD 83) and the North American Vertical Datum 1988 (NAVD 88) systems. Coordinates will be expressed in U.S. Survey Feet.
- B. The LiDAR data will be processed and will be constrained to Surveyor provided survey control. The LiDAR dataset will be processed and classified to bare-earth. Absolute accuracy of LIDAR 0.33-ft. vertical accuracy on paved and unpaved surfaces, suitable to generate 1.0-ft. contours. A Surveyor Project Manager will generate an RMSE report to show the comparison between LiDAR data and ground truthing data. For each ground truth site, a report will be compiled to show the differences between the data sets in X,Y and Z.
- C. Supplemental Ground Survey: All ground survey work will be undertaken by a surveyor licensed in the State of Texas. Surveyor will perform the following:
 - 1) Six (6) control panels will be set prior to LiDAR data acquisition.
 - 2) Ground survey information to support aerial LIDAR will be provided for Quality Assurance/Quality Control using a minimum of ten (10) Ground Truthing checks along the project length to validate the XYZ accuracy of the LIDAR data.
 - 3) Supplemental ground survey will be conducted in areas that are obscured by vegetation, water, etc.

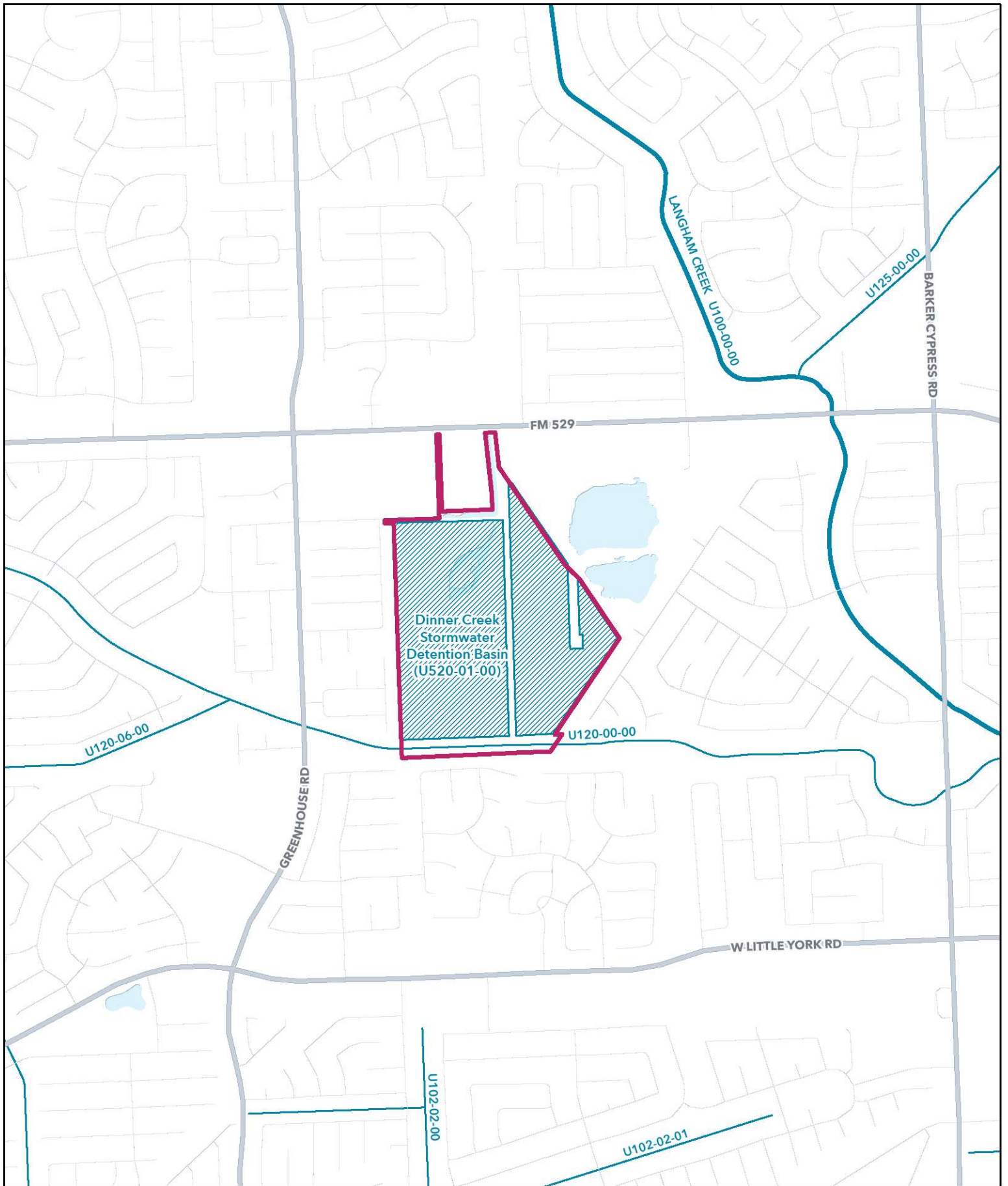
rate classifications under Section V, The Engineer's Compensation.

The District and the Engineer now desire to increase the Limit of Appropriation by \$198,375.00, to \$1,645,171.58.

NOW, THEREFORE, BE IT ORDERED BY THE COMMISSIONERS COURT OF HARRIS COUNTY, TEXAS THAT:

- Section 1: The recitals set forth in this order are true and correct.
- Section 2: Exemption from the County Purchasing Act under Texas Local Government Code § 262.024(a)(4) is hereby granted.
- Section 3: County Judge Lina Hidalgo is hereby authorized to execute for and on behalf of the Harris County Flood Control District, Second Amendment to Agreement for Engineering Services by and between the Harris County Flood Control District and Freese and Nichols, Inc., to provide additional design, bidding, and construction phase engineering services in support of construction of the Dinner Creek Detention Basin located southeast of FM 529 and Greenhouse Road at Harris County Flood Control Unit U520-01-00, for a fee increase of \$198,375.00, raising the maximum fee to be paid by the District to \$1,645,171.58, said Second Amendment to Agreement being incorporated herein by reference for all purposes as though fully set forth verbatim herein.
- Section 4: All Harris County and Harris County Flood Control District officials and employees are authorized to any and all things necessary or convenient to accomplish the purposes of this order.

cip-s freese and nichols U520-01-E003 2021-21 amend 2.docx



Project ID: U520-01-00-E003

Watershed: Addicks Reservoir

Precinct: 4

- Project Boundary
- Harris County Precincts**
- Judge Lina Hidalgo
- 1 - Rodney Ellis
- 2 - Adrian Garcia
- 3 - Tom S. Ramsey, P.E.
- 4 - Lesley Briones

