GEC
Gulf Engineers & Consultants

G.E.C., Inc.
8282 Goodwood Blvd.
Baton Rouge, Louisiana 70806
(225) 612-3000 Fax (225) 612-3015
Robert E. Boagni, P.E., President

ENR TOP 500 DESIGN FIRMS

June 22, 2016

City of Central
ATTN: Mayor I. M. (Junior) Shelton, Jr.
13421 Hooper Road Suite 9
Central, Louisiana 70818

RE: City of Central Hydrologic and Hydraulic Analyses and Floodplain Mapping
Blackwater Bayou and Tributaries 1, 2 and 3
Draughans and Hubbs Bayou

Dear Mayor Jr. Shelton:

G. E. C., Inc. (GEC) is pleased to present the following proposal to the City of Central to provide Hydrological Analyses and Floodplain Mapping. The Scope of Work will be performed in two phases.

- **Phase 1** tasks will include field surveys, hydrological analysis, and floodplain mapping. At the completion of Phase 1 the City of Central will have the results of the analysis and the revised floodplain maps. Based on the results of the Phase 1 analysis the City of Central can determine, which streams will be submitted to FEMA.

- **Phase 2** will be the development of documents necessary in order to request a Letter of Map Revision (LOMR) or a Physical Map Revision (PMR) from FEMA. Also under Phase 2, if authorized by the City of Central, GEC will provide the flood profiles and reports documenting the hydrological analysis and FEMA (MT-2) forms for each stream.

SCOPE OF SERVICES
GEC will perform the hydrologic and hydraulic analysis in accordance with the current FEMA study guidelines. The hydrologic and hydraulic analysis will use HEC-HMS and HEC-RAS software.
A GPS survey of bridges, culverts, and channel cross-sections will be performed on the NAVD88 datum.
LIDAR data will be used for over bank elevations and for mapping the floodplain.

Phase 1
Phase 1 deliverables will include the hydrologic model (HEC-HMS), hydraulic model, and the flood boundary maps for following study streams.

- Draughans Creek (22,400 feet)
- Hub Bayou (18,900 feet)
- Blackwater Bayou (45,000 feet)
- Blackwater Bayou Tributary 1 (31,500 feet)
- Blackwater Bayou Tributary 2 (14,700 feet)
- Blackwater Bayou Tributary 3 (5,200 feet)

Phase 1 project deliverables will include the hydrologic model (HEC-HMS), hydraulic models (HEC-RAS) and Flood Boundary Maps for each study stream. GEC will submit the HEC-HMS, HEC-RAS models and the flood boundary maps to the City of Central for their review and comments. All comments will be taken into consideration and addressed.

Phase 2
Phase 2, as requested by the City of Central, will be a report documenting the hydrological analysis, flood profiles and FEMA (MT-2 forms). GEC will submit a draft of Phase 2 deliverables to the City of Central for review and comments. All comments will be taken into consideration and addressed. After completion of Phase 2 on the study streams support documentation will be ready for submittal to FEMA for a map revision.

The City of Central will be responsible for submitting the final documents to FEMA and for requesting a LOMR. Same process as when City of Central requested LOMR on Beaver Bayou.

Request for additional information by FEMA will be provided on a time and material basis. GEC will provide an estimate of cost to the City of Central prior to performing additional services, if needed.

INDEMNIFICATION
GEC agrees, to the fullest extent permitted by law, to indemnify and hold the City of Central, hereafter referred to as the Client, harmless from any damage, liability or cost (including reasonable attorney's fees and costs of defense) to the extent caused by GEC's negligent acts, errors or omissions in the performance of professional services under this Agreement and those of his or her subconsultants or anyone for whom GEC is legally liable.

The Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless GEC, its officers, directors, employees, agents, and subconsultants from and against all damage, liability, or cost (including reasonable attorney's fees and defense costs), arising out of or in any way connected with this project or the performance by any of the parties above named of the services under this Agreement, excepting only those damages, liabilities or costs attributed to the sole negligence or willful misconduct of GEC, its officers, directors, employees, agents, and subconsultants.

GEC is not obligated to indemnify the Client in any manner whatsoever for the Client's own negligence.

In any event neither the GEC, nor its employees, its agents or its sub-consultants, individually or severally shall held liable be to the Client for an amount exceeding the compensation paid or to be paid to the Consultant for services outlined in this Agreement.

SCHEDULE
Field surveys, the hydrologic models, and floodplain mapping (Phase 1) will be performed one stream at a time. The floodplain maps for each stream will be submitted to the City of Central for review and comments. Phase 1 work will continue on remaining streams during the review and comment period. After receiving Notice to Proceed from the City of Central, Phase 2 report documentation of the hydrologic analysis, flood profiles, and FEMA (MT-2 forms) will begin.

Depending on the length of review and comments period by the City of Central Phase 1 studies on all streams should be complete within four months. After Phase 1 is completed Phase 2 should be complete within two months.

FEE
Phase 1 tasks are field survey, HEC-HMS and HEC-RAS modeling, and flood maps. The field surveys will be performed by Ferris Engineering & Surveying LLC. See attached letter from Ferris Engineering's for providing field surveying services.

Phase 2 tasks consist of a report documenting the methods used in the hydrologic analysis, preparing FEMA MT-2 forms, and flood profiles.

Table 1 shows the fee for each of the study streams.

Table 1. Fee for Study Streams

Draughans Creek			
Survey	**Phase 1**	**Phase 2**	**Total**
$20,150.00	$14,450.00	$11,600.00	$46,200.00
Hub Bayou			
Survey	**Phase 1**	**Phase 2**	**Total**
$12,950.00	$11,300.00	$11,600.00	$35,850.00
Blackwater Bayou			
Survey	**Phase 1**	**Phase 2**	**Total**
$31,075.00	$16,650.00	$14,350.00	$62,075.00
Blackwater Bayou Trib 1			
Survey	**Phase 1**	**Phase 2**	**Total**
$19,625.00	$14,600.00	$13,000.00	$47,225.00
Blackwater Bayou Trib 2			
Survey	**Phase 1**	**Phase 2**	**Total**
$9,900.00	$11,900.00	$11,600.00	$33,400.00
Blackwater Bayou Trib 3			
Survey	**Phase 1**	**Phase 2**	**Total**
$4,175.00	$8,000.00	$10,900.00	$23,075.00
Project Totals			
Survey	**Phase 1**	**Phase 2**	**Total**
$97,875.00	$76,900.00	$73,050.00	$247,825.00

Sincerely,

R Scott Kneen

Please sign and return
To: G.E.C., Inc.
Attn.: George Hudson
8282 Goodwood Blvd.
B.R., LA 70806

ghudson@gecinc.com
225/612-4177

Reviewed by:

George W Hudson
Contracts

Carole E Cant
Department Manager

Date

Ferris Engineering & Surveying LLC
Fee

Ronald K. Ferris, P.E., P.L.S.
Darvin W. Ferguson, P.L.S.
Christopher C. Ferris, P.L.A.

FERRIS
ENGINEERING & SURVEYING, LLC

Gregory A. Ferris, Managing Member
Clint J. Kennerly, P.E.
Kyle D. Haigler, E.I.

June 14, 2016

Mr. George W. Hudson, P.E.
G.E.C., INC.
8282 Goodwood Blvd.
Baton Rouge, LA 70806

VIA E-MAIL: ghudson@gecinc.com

RE: PROPOSAL FOR SURVEYING SERVICES
CITY OF CENTRAL FLOOD STUDIES
BLACKWATER BAYOU AND TRIBUTARIES 1, 2 AND 3
DRAUGHANS CREEK AND HUBBS BAYOU

Dear Mr. Hudson:

Ferris Engineering & Surveying, L.L.C. is pleased to provide you with a proposal to perform the field surveying services associated with the referenced proposed flood studies in the City of Central, East Baton Rouge Parish, Louisiana. The field surveying services will be performed much like the services we provided for you for the Beaver Bayou Flood Study. We will set a minimum of two (2) control points at each stream section, road crossing and bridge site utilizing GPS and the Leica SmartNet Network, of which we are licensed members. We will provide you with field sketches, pictures and text files with point numbers, elevations and descriptions for each section taken. Below are the estimated surveying costs for each stream, which include field and office time:

1. DRAUGHANS CREEK	**$20,150.00**
2. HUBBS BAYOU	**$12,950.00**
3. BLACKWATER BAYOU	**$31,075.00**
4. BLACKWATER BAYOU TRIBUTARY 1	**$19,625.00**
5. BLACKWATER BAYOU TRIBUTARY 2	**$ 9,900.00**
6. BLACKWATER BAYOU TRIBUTARY 3	**$ 4,175.00**

For clarification, Blackwater Bayou Tributary 1 is the first stream east of Blackwater Bayou between Hooper Road and Blackwater Road; Blackwater Bayou Tributary 2 is the second stream east of Blackwater Bayou between Carey Road & Dyer Road; and Blackwater Bayou Tributary 3 is the stream west of Blackwater Bayou starting just south of N. Old Settlement Road.

On each of the streams, we would begin at the downstream end and work our way upstream, providing you with the information as it comes into the office and processed.

Please contact me if you have any questions or comments regarding this matter.

Sincerely,
FERRIS ENGINEERING & SURVEYING, L.L.C.

Darvin W. Ferguson

Darvin W. Ferguson, P.L.S.