MINUTES OF THE JOINT MEETING OF THE
TIRZ 17 REDEVELOPMENT AUTHORITY/MEMORIAL CITY REDEVELOPMENT AUTHORITY and TAX REINVESTMENT ZONE NUMBER SEVENTEEN, CITY OF HOUSTON, TEXAS
BOARD OF DIRECTORS

August 28, 2018

ESTABLISH QUORUM AND CALL MEETING TO ORDER.

The Board of Directors of the TIRZ 17 Redevelopment Authority/Memorial City Redevelopment Authority and Tax Reinvestment Zone Number Seventeen, City of Houston, Texas, held a regular joint meeting on Tuesday, August 28, 2018, at 8:00 a.m., at the Four Points by Sheraton, 10655 Katy Freeway, Wycliffe Room, Houston, Texas 77024, inside the boundaries of the TIRZ, open to the public, and the roll was called of the duly appointed members of the Board, to-wit:

Position 1 – Marshall B. Heins
Position 2 – John Rickel
Position 3 – David P. Durham
Position 4 – Ann T. Givens, *Chair*
Position 5 – Zachary R. Hodges
Position 6 – Brad Freels, *Vice-Chair*
Position 7 – Glenn E. Airola, *Secretary*

and all of the above were present, with the exception of Director Durham, thus constituting a quorum. Also present were Scott Bean and Linda Clayton, both of Hawes Hill & Associates, LLP; Jessica Carr, Allen Boone Humphries Robinson, LLP; Michelle Lofton, ETI Bookkeeping Services; Virginia Blake, McCall Gibson Swedlund Barfoot PLLC; Kristin Blomquist, Masterson Advisors. Others attending the meeting were Jennifer Curley, COH - Economic Development Dept.; Council Member Greg Travis, District G; Elizeth Miranda, District A; Ben Gillis and Pat Walters, Memorial Management District; Karen Glynn and Laurie Rosenbaum, both of City of Bunker Hill; Jack Valinski and Gary Hill, COH; Muhammad Ali and Derek St. John, both of Gauge Engineering; Ricky Gonzalez and Rick Butler, both of LAN; Jim Webb, Goodman Corporation; Clayton Bruner, SWA; Kay Haslam; Dean Bixler; Jim Shroff; John Jackson; David Tresch; Madele Bohsali; Robert Benz; Emily Anderson; Cynthia Neely; and Lois Myers. Chair Givens called the meeting to order at 8:01 a.m.

RECEIVE PUBLIC COMMENTS.

The Board received public comments from Kay Haslam, John Jackson, Lois Myers and Robert Benz.

APPROVE MINUTES OF THE JULY 31, 2018, REGULAR MEETING.

Upon a motion duly made by Director Heins, and being seconded by Director Freels, the Board voted unanimously to approve the Minutes from the July 31, 2018, Board meeting, as presented.

RECEIVE FINANCIAL AND BOOKKEEPER'S REPORT, INCLUDING PAYMENT OF INVOICES, REVIEW OF INVESTMENTS AND PROJECT CASH FLOW REPORTS.

Ms. Lofton presented the Bookkeeper's Report and went over invoices, included in the Board agenda materials. Upon a motion duly made by Director Rickel, and being seconded by Director Freels, the

Board voted unanimously to accept the Bookkeeper's Report and approved payment of invoices, as presented.

AGREED UPON PROCEDURES REPORT FOR T&C WAY PARTNERS, LLC; AND AUTHORIZE RELEASE OF FUNDS.

Ms. Blake presented the Agreed-Upon Procedures Report for public improvement land costs reimbursable to T&C Way Partners, LLC, included in the Board agenda materials. She reported the total amount payable to T&C Way Partners LLC as of August 28, 2018 is $1,771.000.79 which includes accrued interest at the rate of 4.5%. Upon a motion duly made by Director Rickel, and being seconded by Director Heins, Directors Rickel, Heins, Givens, Hodges and Airola voted to approve the Agreed-Upon Procedures Report and authorized payment of $1,771,000.79 to T&C Way Partners LLC. Director Freels abstained. The motion passed.

FY2019 BUDGET.

Mr. Bean reported edits had been made to the FY2019 Budget in the board materials and distributed an amended FY2019 Budget, a copy is attached as Exhibit A. He reported the edits included increasing the Series 2018 contract revenue bond proceeds by $5 million to a total amount of $36 million. He reported Frostwood/Kingswood Detention Basin A project is assuming an 80% grant funding and if a grant is not awarded we will need to bring an amended budget back to the Board for consideration. Director Rickel reported the CIP Committee has reviewed the budget with the assumption of the grant funding and is recommending for approval. Upon a motion duly made by Director Rickel, and being seconded by Director Freels, the Board voted unanimously to approve the FY2019 Budget, as presented.

CIP COMMITTEE:

a. **Engineering Services review**

This item was tabled.

b. **Receive and consider Master Professional Services Agreement for professional engineering services from Gauge Engineering LLC**

Mr. Ali reviewed the Master Agreement for professional engineering services, included in the Board materials. Mr. Rickel reported the Committee reviewed the agreement and is recommending for approval. Upon a motion duly made by Director Rickel, and being seconded by Director Hodges, the Board voted unanimously to approve the Master Agreement for Professional Engineering Services with Gauge Engineering, LLC, as presented.

i. **Task Order for W140 project bidding and construction management**

Mr. Ali reviewed the task orders relating to W140 Briar Branch Channel and Straw Improvements, copies are attached as Exhibit B, C and D. He reported the first task order is for construction management and inspection in an amount of $725,000. He reported this is an estimated $22 Million

project and is expected to take two years to complete. He reviewed the second task order for bid and construction phase services in the amount of $217,900. He reported Gauge is expecting to advertise for bids next week. He reviewed the construction materials testing proposal in the amount of $488,000. Mr. St. John provided an overview of the project and reported the first step is the W140 channel improvement flood mitigation, second step is channel improvements, some conveyance and significant storage component and third step is the straws. He reported the project includes modifications to the Bunker Hill bridge. He reported a huge contribution to the flooding problem is the fault line which has a three-foot drop in areas. He reported the existing detention pond does currently provide a flood damage benefit to the neighborhood.

After full discussion, and upon a motion duly made by Director Rickel, and being seconded by Director Heins, the Board voted unanimously to (1) approve the task order for construction management and inspection in the amount of $725,000; (2) approve the task order for bid and construction phase services in the amount of $217,900; and (3) approve the task order for construction materials testing in an amount not to exceed $488,000.

ii. Task Order for Preliminary Engineering services on Detention Basin A

Mr. Ali reviewed the task order for preliminary engineering services for Detention Basin A in the amount of $347,900, a copy is attached as Exhibit E. Upon a motion duly made by Director Rickel, and being seconded by Director Airola, the Board voted unanimously to approve the task order for preliminary engineering services for Detention Basin A in the amount of $347,900 as presented.

iii. Task Order for Gessner Road Drainage and Mobility project

Mr. St. John reviewed the task order for plans, specifications and estimates for North Gessner Drainage and Mobility improvements from IH-10 (Katy Fwy) to South of Long Point Road in the amount of $696,200. He reported the feasibility study is complete and the next step is preliminary engineering. He reported the Board has requested detention be maximized to its fullest. Upon a motion duly made by Director Rickel, and being seconded by Director Airola, the Board voted unanimously to approve the task order for plans, specifications and estimates for North Gessner Drainage and Mobility Improvements (from IH-10 to South of Long Point Road) in the amount of $696,200 as presented.

c. Project update from LAN

Mr. Gonzalez provided an update on the Town & Country West Drainage project, a copy of the progress report is included in the Board materials. He reported the project is approximately 75-80% complete and an expected completion date by end of October. He reported the drainage component is approximately 6.5-acre feet of storage. He reported a Design Summary Report meeting with TxDOT for Memorial Drive was held August 15. He reported the project manager at TxDOT has indicated if the road is lowered they will not sign off on the project.

i. **Consider Pay Estimate No. 11 from SER Construction Partners, T&C Reconstruction and Drainage Improvements, in the amount of $778,992.67.**

Mr. Gonzalez reviewed Pay Estimated No. 11 submitted by SER Construction on the T&C Reconstruction project in the amount of $778,992.67. He reported LAN concurs with the amounts and quantities and is recommending for approval. Upon a motion duly made by Director Freels, and being seconded by Director Heins, the Board voted unanimously to approve Pay Estimated No. 11 from SER Construction Partners, T&C Reconstruction and Drainage Improvements in the amount of $778,992.67, as presented.

d. Project update from The Goodman Corporation

Mr. Webb reported the City of Bunker Hill Village approved the Interlocal Agreement for the Memorial Drive reconstruction project for the portion east of Tealwood to east of Gessner and it has been submitted to the City of Houston for approval. He reported H-GAC call for projects has opened and will be closing on October 31. No action from the Board was required.

e. Project update from SWA

Mr. Bruner provided an update on SWA projects, a copy of SWA progress report is included in the Board materials. He reported BW8 landscape enhancement plans have been finalized for bid. He reported SWA will coordinate with Gauge on the Gessner project. No action from the Board was required.

CONVENE IN EXECUTIVE SESSION PURSUANT TO SECTION 551.071, TEXAS GOVERNMENT CODE, TO CONDUCT A PRIVATE CONSULTATION WITH ATTORNEY, WITH REGARD TO PENDING OR CONTEMPLATED LITIGATION; AND CONVENE IN EXECUTIVE SESSION PURSUANT TO SECTION 551.072, TEXAS GOVERNMENT CODE, TO DELIBERATE THE PURCHASE, EXCHANGE, LEASE OR VALUE OF REAL PROPERTY.

The Board convened in Executive Session at 8:55 a.m.

RECONVENE IN OPEN SESSION AND AUTHORIZE APPROPRIATE ACTIONS REGARDING PRIVATE CONSULTATION WITH ATTORNEY; AND RECONVENE IN OPEN SESSION AND AUTHORIZE APPROPRIATE ACTIONS WITH REGARD TO PENDING OR CONTEMPLATED LITIGATION AND REGARDING THE PURCHASE, EXCHANGE, LEASE OR VALUE OF REAL PROPERTY.

The Board reconvened in Open Session at 9:05 a.m. Upon reconvening, no action was taken.

ADJOURNMENT.

There being no further business to come before the Board, Chair Givens adjourned the meeting at 9:06 a.m.

Secretary

List of Exhibits:

A. FY2019 Budget
B. Gauge Engineering Proposal for construction management & inspection - Briar Branch Channel and Straw Improvements
C. Gauge Engineering Proposal for bid and construction phase services – Briar Branch Channel and Straw Improvements
D. Gauge Engineering Proposal for construction materials testing services – Briar Branch Channel and Straw Improvements
E. Gauge Engineering Proposal for preliminary engineering services – Detention Basin A
F. Gauge Engineering Proposal for plans, specifications and estimates – N. Gessner drainage & mobility improvements

Ex. A

CITY OF HOUSTON
ECONOMIC DEVELOPMENT DIVISION
FISCAL YEAR 2019 BUDGET PROFILE

Fund Summary
Fund Name: **Memorial City Redevelopment Authority**
TIRZ: **17**
Fund Number: **7565/50**

PROFILE

Base Year:		1999
Base Year Taxable Value:	$	509,671,530
Projected Taxable Value (TY2018):	$	3,784,570,901
Current Taxable Value (TY2017):	$	3,489,987,281
Acres:		984.98
Administrator (Contact):		Scott Bean
Contact Number:		(713) 595-1213

NARRATIVE

Zone Purpose:

Tax Increment Reinvestment Zone Number Seventeen, City of Houston, Texas was created to provide plans and programs needed to address blighted conditions in the Memorial City area associated with failing infrastructure, lack of utility capacity, increased traffic congestion and declining retail sales resulting from increased competition to older inner-city malls and shopping centers from suburban retail centers.

Nearing completion of the Town & Country West Drainage and Mobility project.

Completed final design of W-140-01 Channel Improvements project. The project will be bid as soon as possible.

Nearing completion of the 60% design drawing phase of Gessner Road reconstruction from Interstate 10 to Long Point Road.

Continued design work on the reconstruction of Memorial Drive from Beltway 8 to Tallowood, a project that will be 80% grant funded.

Completed annexation and a grant proposal for the reconstruction of an additional section of Memorial Drive from Tallwood to the city limits; partnered with the City of Bunker Hill village on the grant applicaiton to include the Bunker Hill section of Memorial Drive from the Houston city limits to Gessner.

Continued preliminary design and acquisition work on a detention basin on the south side of Interstate 10 known as Detention Basin A.

PROJECT PLAN

	Total Plan	Cumulative Expenses (to 6/30/17)	Variance
Capital Projects:			
Roadway and Sidewalk Improvements	$ 53,429,681	$ 36,323,361	$ 17,106,320
Public Utility Improvements	120,856,453	35,508,463	85,347,990
Parks and Recreational Facilities	11,889,119	340,363	11,548,756
	-	-	-
Total Capital Projects	$ 186,175,253	$ 72,172,187	$ 114,003,066
Affordable Housing	-	-	-
School & Education/Cultural Facilities	-	-	-
Financing Costs	25,000,000	29,071,815	(4,071,815)
Administration Costs/ Professional Services	-	-	-
Creation Costs	5,952,851	4,938,309	1,014,542
Total Project Plan	$ 217,128,104	$ 106,182,311	$ 110,945,793

DEBT

Additional Financial Data	FY2018 Budget	FY2018 Estimate	FY2019 Budget
Debt Service	$ 3,649,846	$ 3,649,846	$ 3,765,751
Principal	$ 2,985,000	$ 2,985,000	$ 3,220,000
Interest	$ 664,846	$ 664,846	$ 545,751
	Balance as of 6/30/17	**Projected Balance as of 6/30/18**	**Projected Balance as of 6/30/19**
Year End Outstanding (Principal)			
Bond Debt	$ 39,325,000	$ 36,340,000	$ 33,120,000
Bank Loan	$ -	$ -	$ -
Line of Credit	$ -	$ -	$ -
Developer Agreement	$ -	$ -	$ -
Other	$ -	$ -	$ -

CITY OF HOUSTON
ECONOMIC DEVELOPMENT DIVISION
FISCAL YEAR 2019 BUDGET DETAIL

Fund Summary
Fund Name: **Memorial City Redevelopment Authority**
TIRZ: **17**
Fund Number: **7565/50**

TIRZ Budget Line Items	FY2018 Budget	FY2018 Estimate	FY2019 Budget
RESOURCES			
RESTRICTED Funds - Capital Projects	$ 25,993,882	$ 23,516,168	$ 26,989,028
RESTRICTED Funds - Affordable Housing	$ -	$ -	$ -
RESTRICTED Funds - Bond Debt Service	$ 4,205,676	$ 4,366,399	$ 4,205,676
Beginning Balance	**$ 30,199,558**	**$ 27,882,567**	**$ 31,194,704**
City tax revenue	$ 16,599,074	$ 15,907,739	$ 18,940,967
County tax revenue	$ -	$ -	$ -
Incremental property tax revenue	**$ 16,599,074**	**$ 15,907,739**	**$ 18,940,967**
	$ -	$ -	$ -
	$ -	$ -	$ -
	$ -	$ -	$ -
	$ -	$ -	$ -
Miscellaneous revenue	**$ -**	**$ -**	**$ -**
COH TIRZ interest	$ -	$ -	$ -
Interest Income	$ 36,969	$ 36,969	$ 36,969
Other Interest Income	**$ 36,969**	**$ 36,969**	**$ 36,969**
	$ -	$ -	$ -
	$ 3,400,000	$ -	$ -
Grant Proceeds	**$ 3,400,000**	**$ -**	**$ -**
	$ -	$ -	$ -
Proceeds from Bank Loan	**$ -**	**$ -**	**$ -**
Series 2018	$ 73,300,000	$ -	$ 36,000,000
Contract Revenue Bond Proceeds	**$ 73,300,000**	**$ -**	**$ 36,000,000**
TOTAL AVAILABLE RESOURCES	**$ 123,535,601**	**$ 43,827,275**	**$ 86,172,640**

CITY OF HOUSTON
ECONOMIC DEVELOPMENT DIVISION
FISCAL YEAR 2019 BUDGET DETAIL

Fund Summary
Fund Name: **Memorial City Redevelopment Authority**
TIRZ: **17**
Fund Number: **7565/50**

TIRZ Budget Line Items	FY2018 Budget	FY2018 Estimate	FY2019 Budget
EXPENDITURES			
Accounting	$ 10,800	$ 11,517	$ 11,500
Administration Salaries & Benefits	$ 96,000	$ 96,000	$ 102,000
Auditor	$ 20,000	$ 20,500	$ 20,500
Bond Services/Trustee/Financial Advisor	$ 3,200	$ 4,400	$ 4,400
Insurance	$ 1,290	$ 961	$ 1,000
Office Administration	$ 3,000	$ -	$ -
TIRZ Administration and Overhead	**$ 134,290**	**$ 133,378**	**$ 139,400**
Engineering Consultants	$ 20,000	$ 59,658	$ 60,000
Legal	$ 150,000	$ 68,269	$ 75,000
Construction Audit	$ 10,000	$ 3,250	$ 5,000
Planning Consultants	$ -	$ -	$ -
Program and Project Consultants	**$ 180,000**	**$ 131,177**	**$ 140,000**
Management consulting services	**$ 314,290**	**$ 264,555**	**$ 279,400**
Capital Expenditures (See CIP Schedule)	$ 12,042,100	$ 6,347,443	$ 17,716,666
TIRZ Capital Expenditures	**$ 12,042,100**	**$ 6,347,443**	**$ 17,716,666**
T&C Way Partners, LLC	$ 1,649,593	$ 1,649,593	$ 1,771,000
MetroNational - Detention & Roadway Construction	$ -	$ -	$ -
Town Center Partners, Ltd	$ -	$ -	$ -
Developer / Project Reimbursements	**$ 1,649,593**	**$ 1,649,593**	**$ 1,771,000**
Bond Debt Service (Series 2008)			
Principal	$ 490,000	$ 490,000	$ 510,000
Interest	$ 57,405	$ 57,405	$ 35,155
Bond Debt Service (Series 2011)			
Principal	$ 600,000	$ 600,000	$ 625,000
Interest	$ 249,872	$ 249,872	$ 227,332
Bond Debt Service (Series 2011A)			
Principal	$ 1,895,000	$ 1,895,000	$ 1,965,000
Interest	$ 357,569	$ 357,569	$ 283,264
Bond Series (Series 2016)			
Principal	$ 115,000	$ 115,000	$ 120,000
Interest	$ 431,330	$ 431,330	$ 428,498
Trustee Fee	$ 9,500	$ 9,500	$ 9,500
Cost of Issuance			
Bond Series (Series 2018)			
Principal	$ -	$ -	$ -
Interest	$ -	$ -	$ 595,789
Cost of Issuance	$ -	$ -	$ -
Bond Series (Series ####)			
Principal	$ -	$ -	$ -
Interest	$ -	$ -	$ -
Cost of Issuance	$ -	$ -	$ -
Loan debt service			
Principal	$ -	$ -	$ -
Interest	$ -	$ -	$ -
Line of Credit			
Principal	$ -	$ -	$ -
Interest	$ -	$ -	$ -
Convenience Fee	$ -	$ -	$ -
System debt service	**$ 4,205,676**	**$ 4,205,676**	**$ 4,799,538**
TOTAL PROJECT COSTS	**$ 18,211,659**	**$ 12,467,267**	**$ 24,566,604**

CITY OF HOUSTON
ECONOMIC DEVELOPMENT DIVISION
FISCAL YEAR 2019 BUDGET DETAIL

Fund Summary
Fund Name: **Memorial City Redevelopment Authority**
TIRZ: **17**
Fund Number: **7565/50**

TIRZ Budget Line Items	FY2018 Budget	FY2018 Estimate	FY2019 Budget
Payment/transfer to ISD - educational facilities	$ -	$ -	$ -
Adminstration Fees:			
City	$ 829,954	$ 795,387	$ 947,048
County	$ -	$ -	$ -
Affordable Housing:			
City	$ -	$ -	$ -
County	$ -	$ -	$ -
Municipal Services Charge	$ 2,256,619	$ 1,766,619	$ 1,766,619
Municipal Services - Supplemental	$ -	$ -	$ -
Total Transfers	**$ 3,086,573**	**$ 2,562,006**	**$ 2,713,667**
Total Budget	$ 21,298,232	$ 15,029,273	$ 27,280,271
RESTRICTED Funds - Capital Projects	$ 91,040,370	$ 26,989,028	$ 47,986,924
RESTRICTED Funds - Affordable Housing	$ -	$ -	$ -
RESTRICTED Funds - Bond Debt Service	$ 11,196,999	$ 4,205,676	$ 10,905,445
Ending Fund Balance	**$ 102,237,369**	**$ 31,194,704**	**$ 58,892,369**
Total Budget & Ending Fund Balance	$ 123,535,601	$ 46,223,977	$ 86,172,640

Notes:

2019 - 2023 CAPITAL IMPROVEMENT PLAN
TIRZ NO.17 - MEMORIAL CITY REDEVELOPMENT AUTHORITY

CITY OF HOUSTON - TIRZ PROGRAM
Economic Development Division

Council District	CIP No.	Project	Fiscal Year Planned Appropriations								
			Through 2017	Projected 2018	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
G	T-1701	Gessner Widening Barryknoll to I-10	$ 11,029,427	613	-	-	-	-	-	-	11,030,040
A	T-1702	Bunker Hill Widening I-10 to Long Point	$ 6,099,259	-	-	-	-	-	-	-	6,099,259
A	T-1709	Improvement to Lumpkin from I-10 to Northbrook	$ 17,505,973	-	-	-	-	-	-	-	17,505,973
G	T-1712	Bunker Hill South of IH 10 Mobility Improvements	$ 1,857	-	-	-	-	-	-	-	1,857
G	T-1714	Frostwood Drive and Kingside Drainage Improvements	$ 24,023	-	-	400,000	8,400,000	-	-	8,800,000	8,824,023
G	T-1715A	Barryknoll East Drainage Improvements	$ 7,322,178	-	-	-	-	-	-	-	7,322,178
G	T-1715B	Barryknoll West Drainage Improvements	$ 36,374	-	-	-	-	800,000	2,000,000	2,800,000	2,836,374
G	T-1716	Queensbury Drainage Improvements	$ 545,086	-	-	-	-	-	-	-	545,086
G	T-1717	Town and Country West Drainage and Mobility Improvements	$ 3,399,366	5,599,794	4,549,568	-	-	-	-	4,549,568	13,548,728
G	T-1718	Kimberly near Beltway 8 Drainage Improvements	$ 1,442,725	-	-	-	-	-	-	-	1,442,725
G	T-1719	Kingside East Bound at Gessner	$ 669,167	-	-	-	-	-	-	-	669,167
G	T-1722	Town and Country Blvd. at Queensbury Signalization	$ 13,065	1,138	-	-	-	-	-	-	14,203
G	T-1724	Gessner at Barryknoll Intersection Improvements	$ -	-	-	-	-	-	-	-	-
A,G	T-1725	Park and Green Space Improvements	$ 163,993	5,922	125,000	125,000	100,000	100,000	-	450,000	619,915
G	T-1726	West Bough Roadway Improvements	$ 5,873	-	-	-	-	-	-	-	5,873
A	T-1727	N. Gessner Preliminary Engineering	$ 18,669	-	-	-	-	-	-	-	18,669
A	T-1728	Westview and Lumpkin enhanced sidewalk/bus	$ -	-	-	-	-	-	-	-	-
A	T-1731A	Detention Basin and W-140	$ 10,554,355	8,355	-	-	-	-	-	-	10,562,710
A	T-1731B	Memorial Drive Drainage and Mobility	$ -	240	-	-	-	-	-	-	240
A	T-1732A	N. Gessner Drainage and Mobility Improvement, I-10 to Longpoint	$ 511,989	380,533	217,100	15,121,311	-	-	-	15,338,411	16,230,933
A	T-1732B	N. Gessner Drainage Phase 2 - (combined with T - 1732A)	$ 72,654	-	-	-	-	-	-	-	72,654
A	T-1733A	N. Witte Drainage and Mobility Improvement - Phase 1	$ 81,041	-	-	-	-	-	-	-	81,041
A	T-1733B	N. Witte Drainage and Mobility Improvement - Phase 2	$ 73,280	-	-	-	-	-	-	-	73,280
A	T-1734	W140 Channel Improvements with Bridge and Straws	$ 1,274,207	140,765	6,315,000	15,741,000	-	-	-	22,056,000	23,470,972
A	T-1734B	Bunker Hill Bridge and Straws (Combined with T-1734)	$ -	-	-	-	-	-	-	-	-
G	T-1735	Detention Basin A	$ -	11,026	6,000,000	1,000,000	28,000,000	-	-	35,000,000	35,011,026
G	T-1735A	Detention Basin B	$ -	-	-	-	-	-	750,000	750,000	750,000
G	T-1738A	Memorial Drive Drainage and Mobility Improvement Project - Phase 1	$ 335,038	199,057	400,000	21,300,000	-	-	-	21,700,000	22,234,095
G	T-1738B	Memorial Drive Drainage and Mobility Improvement Project - Phase 2**	$ -	-	50,000	500,000	500,000	12,400,000	-	13,450,000	13,450,000
A,G	T-1739	Regional Drainage Solution Preparatory Engineering**	$ -	-	-	-	-	-	-	-	-
A,G	T-1740	CIP FORM A	$ -	-	-	-	-	-	-	-	-
A,G	T-1741	FUTURE CIP PROJECT	$ -	-	-	-	-	-	-	-	-
A,G	T-1742	FUTURE CIP PROJECT	$ -	-	-	-	-	-	-	-	-
A,G	T-1799	Concrete Panel Replacement Program	$ -	-	60,000	60,000	60,000	60,000	60,000	300,000	300,000
Totals			$ 61,179,689	$ 6,347,443	$ 17,716,668	$ 54,247,311	$ 37,060,000	$ 13,360,000	2,810,000	125,193,977	$ 192,721,019

* NOTE: CIP T-1735 and CIP T-1735A reflects the Memorial City Redevelopment Authority's commitment to the acquisition, design and construction of detention basins to provide drainage solutions in the region.

** NOTE:

Source of Funds	Fiscal Year Planned Appropriations								
	Through 2017	Projected 2018	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
TIRZ Funds	61,179,476	6,347,443	17,716,666	37,847,311	14,660,000	3,660,000	2,810,000	76,693,977	144,220,896
City of Houston	-	-	-	-	-	-	-	-	-
Grants	-	-	-	16,400,000	22,400,000	9,700,000	-	48,500,000	48,500,000
Other	-	-	-	-	-	-	-	-	-
Project Total	**61,179,476**	**6,347,443**	**17,716,666**	**54,247,311**	**37,060,000**	**13,360,000**	**2,810,000**	**125,193,977**	**192,720,896**

Project:	Frostwood Drive and Kingsride Drainage Improvements	City Council District		Key Map:		WBS.:	T-1714
		Location:	G	Geo. Ref.:			
		Served:	G	Neighborhood:	16		

Description:	Storm sewer improvements on Frostwood Drive and Kingsride between IH-10 and Gessner. Improvements are intended to provide benefit to study area and adjacent neighborhood.
Justification:	Drainage improvement needed to adequately convey storm sewer water to a regional detention basin

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	-	-	-	-	-	-	-	-	$ -	$ -
2	Acquisition	-	-	-	-	-	-	-	-	$ -	$ -
3	Design	23,643	-	-	-	400,000	400,000	-	-	$ 800,000	$ 823,643
4	Construction	-	-	-	-	-	8,000,000		-	$ 8,000,000	$ 8,000,000
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	380	-	-	-	-	-	-	-	$ -	$ 380
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	380	-	-	-	-	-	-	-	$ -	$ 380
	Total Allocations	$ 24,023	$ -	$ -	$ -	$ 400,000	$ 8,400,000	$ -	$ -	$ 8,800,000	$ 8,824,023
	Source of Funds										
	TIRZ Funds	24,023	-	-	-	400,000	8,400,000	-	-	$ 8,800,000	$ 8,824,023
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-		-	-	-	-	$ -	$ -
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ 24,023	$ -	$ -	$ -	$ 400,000	$ 8,400,000	$ -	$ -	$ 8,800,000	$ 8,824,023

*NOTE:

Project:	Town and Country West Drainage and Mobility Improvements	City Council District		Key Map:		WBS.:	T-1717
		Location:	G	Geo. Ref.:			
		Served:	G	Neighborhood:	16		

Description:	Upgrade existing drainage system with large boxes. Extend existing 40' roadway west to intersect with Beltway 8 NB frontage road. Build a roundabout to eliminate the offset in N & S Town and Country Blvd. All public utilities will be replaced
Justification:	Drainage improvements to eliminate frequent street flooding/ponding w/ 8+ ac-ft detention. Improve traffic flow by extending road to BW 8 Frontage. Eliminate offset in Town and Country Blvd w/ roundabout. (Drainage - 57% of project cost)

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	175,691	-	-	-	-	-	-	-	$ -	$ 175,691
2	Acquisition	2,100,000	-	-	-	-	-	-	-	$ -	$ 2,100,000
3	Design	1,121,502	-	-	-	-	-	-	-	$ -	$ 1,121,502
4	Construction	-	3,520,000	5,599,794	4,549,566	-	-	-	-	$ 4,549,566	$ 10,149,360
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	2,173	-	-	-	-	-	-	-	$ -	$ 2,173
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	2,173	-	-	-	-	-	-	-	$ -	$ 2,173
	Total Allocations	$ 3,399,366	$ 3,520,000	$ 5,599,794	$ 4,549,566	$ -	$ -	$ -	$ -	$ 4,549,566	$ 13,548,726
	Source of Funds										
	TIRZ Funds	3,399,366	3,520,000	5,599,794	4,549,566	-	-	-	-	$ 4,549,566	$ 13,548,726
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-	-	-	-	-	-	$ -	$ -
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ 3,399,366	$ 3,520,000	$ 5,599,794	$ 4,549,566	$ -	$ -	$ -	$ -	$ 4,549,566	$ 13,548,726

*NOTE:

Project:	Park and Green Space Improvements	City Council District		Key Map:		WBS.:	T-1725
		Location:	A,G	Geo. Ref.:			
		Served:	A,G	Neighborhood:	10, 16		
Description:	Provide pedestrian friendly environment throughout the TIRZ. This includes pedestrian trails, bikeways, and public green space.						
Justification:	Projects include funding for route studies, design, construction, and ROW acquisition.						

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
Phase										
1 Planning	-	-	-	-	-	-	-	-	$ -	$ -
2 Acquisition	-	-	-	-	-	-	-	-	$ -	$ -
3 Design	103,835	25,000	5,922	25,000	25,000	-	-	-	$ 50,000	$ 159,757
4 Construction	60,000	100,000	-	100,000	100,000	100,000	100,000	-	$ 400,000	$ 460,000
5 Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6 Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7 Other	158	-	-	-	-	-	-	-	$ -	$ 158
	-	-	-	-	-	-	-	-	$ -	$ -
	-	-	-	-	-	-	-	-	$ -	$ -
	-	-	-	-	-	-	-	-	$ -	$ -
	-	-	-	-	-	-	-	-	$ -	$ -
Other Sub-Total:	158	-	-	-	-	-	-	-	$ -	$ 158
Total Allocations	$ 163,993	$ 125,000	$ 5,922	$ 125,000	$ 125,000	$ 100,000	$ 100,000	$ -	$ 450,000	$ 619,915
Source of Funds										
TIRZ Funds	163,993	125,000	5,922	125,000	125,000	100,000	100,000	-	$ 450,000	$ 619,915
City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
Grants	-	-	-	-	-	-	-	-	$ -	$ -
Other	-	-	-	-	-	-	-	-	$ -	$ -
Total Funds	$ 163,993	$ 125,000	$ 5,922	$ 125,000	$ 125,000	$ 100,000	$ 100,000	$ -	$ 450,000	$ 619,915

*NOTE:

Project:	Detention Basin and W-140	City Council District		Key Map:		WBS.:	T-1731A
		Location:	A	Geo. Ref.:			
		Served:	A	Neighborhood:	10, 16		

Description:	Acquire land for a detention facility as recommended by the TIRZ 17 Regional Drainage Study. Design and construct facility.
Justification:	Project will address flooding and drainage problems within the boundaries of the TIRZ.

Operating and Maintenance Costs: ($ Thousands)

	2017	2018	2019	2020	2021	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/16	2016 Budget	2016 Estimate	2017	2018	2019	2020	2021	FY17 - FY21 Total	Cumulative Total (To Date)
	Phase										
1	Planning	-	-	-	-	-	-	-	-	$ -	$ -
2	Acquisition	6,795,424	-	-	-	-	-	-	-	$ -	$ 6,795,424
3	Design	834,138	-	-	-	-	-	-	-	$ -	$ 834,138
4	Construction	2,763,401	-	-	-	-	-	-	-	$ -	$ 2,763,401
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	128,108	-	-	-	-	-	-	-	$ -	$ 128,108
7	Other	33,284	-	8,355	-	-	-	-	-	$ -	$ 41,639
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	33,284	-	8,355	-	-	-	-	-	$ -	$ 41,639
	Total Allocations	$ 10,554,355	$ -	$ 8,355	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,562,710
	Source of Funds										
	TIRZ Funds	10,554,355	-	8,355	-	-	-	-	-	$ -	$ 10,562,710
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-	-	-	-	-	-	$ -	$ -
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ 10,554,355	$ -	$ 8,355	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,562,710

*NOTE:

Project:	N. Gessner Drainage and Mobility Improvement, I-10 to Longpoint	City Council District		Key Map:	450W, 490A	WBS.:	T-1732A
		Location:	A	Geo. Ref.:			
		Served:	A	Neighborhood:	10		

Description:	Reconstruct N. Gessner between IH-10 and Westview with new pavement, improved drainage, and access management mobility improvements. Project includes updated traffic signals at Westview.
Justification:	Documented issues with drainage, mobility, access management, and pavement condition.

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	69,204	-	-	-	-	-	-	-	$ -	$ 69,204
2	Acquisition	-	-	-	-	-	-	-	-	$ -	$ -
3	Design	433,954	-	380,533	217,100	150,000	-	-	-	$ 367,100	$ 1,181,587
4	Construction	-	4,100,000	-	-	14,971,311	-	-	-	$ 14,971,311	$ 14,971,311
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	8,831	-	-	-	-	-	-	-	$ -	$ 8,831
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	8,831	-	-	-	-	-	-	-	$ -	$ 8,831
	Total Allocations	$ 511,989	$ 4,100,000	$ 380,533	$ 217,100	$ 15,121,311	$ -	$ -	$ -	$ 15,338,411	$ 16,230,933
	Source of Funds										
	TIRZ Funds	511,989	4,100,000	380,533	217,100	11,721,311	-	-	-	$ 11,938,411	$ 12,830,933
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-	-	3,400,000	-	-	-	$ 3,400,000	$ 3,400,000
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ 511,989	$ 4,100,000	$ 380,533	$ 217,100	$ 15,121,311	$ -	$ -	$ -	$ 15,338,411	$ 16,230,933

*NOTE:

Project:	W140 Channel Improvements with Bridge and Straws Straws	City Council District		Key Map:		WBS.:	T-1734
		Location:	A	Geo. Ref.:			
		Served:	A	Neighborhood:			
Description:	W140-01 Channel from Gessner Drive to the Briar Branch Detention Basin to the east.						
Justification:	Increase capacity of W140-01 Channel to reduce flooding and street ponding in surrounding areas. Will provide approximately 14 acre feet of new detention capacity to the system.						

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	-	-	-	-	-	-	-	-	$ -	$ -
2	Acquisition	-	-	-	-	-	-	-	-	$ -	$ -
3	Design	1,260,619	100,000	140,765	130,000	1,250,000	-	-	-	$ 1,380,000	$ 2,781,384
4	Construction	-	5,500,000	-	6,185,000	14,391,000	-	-	-	$ 20,576,000	$ 20,576,000
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	13,588	-	-	-	100,000	-	-	-	$ 100,000	$ 113,588
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	13,588	-	-	-	100,000	-	-	-	$ 100,000	$ 113,588
	Total Allocations	$ 1,274,207	$ 5,600,000	$ 140,765	$ 6,315,000	$ 15,741,000	$ -	$ -	$ -	$ 22,056,000	$ 23,470,972
	Source of Funds										
	TIRZ Funds	1,274,207	5,600,000	140,765	6,315,000	15,741,000	-	-	-	$ 22,056,000	$ 23,470,972
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-	-	-	-	-	-	$ -	$ -
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ 1,274,207	$ 5,600,000	$ 140,765	$ 6,315,000	$ 15,741,000	$ -	$ -	$ -	$ 22,056,000	$ 23,470,972

*NOTE:

Project:	Detention Basin A	City Council District		Key Map:		WBS.:	T-1735
		Location:	G	Geo. Ref.:			
		Served:	G	Neighborhood:			

Description:	Detention Basin A. Project may involve multiple phases.
Justification:	Storm water storage needed for Regional Drainage Study recommendations specific to 100-year flood event. Mitigate flooding in surrounding residential and commercial areas.

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	-	1,000,000	11,026	1,000,000	-	-	-	-	$ 1,000,000	$ 1,011,026
2	Acquisition	-	-	-	5,000,000	1,000,000	-	-	-	$ 6,000,000	$ 6,000,000
3	Design	-	-	-	-	-	-	-	-	$ -	$ -
4	Construction	-	-	-	-	-	28,000,000	-	-	$ 28,000,000	$ 28,000,000
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	-	-	-	-	-	-	-	-	$ -	$ -
	Total Allocations	$ -	$ 1,000,000	$ 11,026	$ 6,000,000	$ 1,000,000	$ 28,000,000	$ -	$ -	$ 35,000,000	$ 35,011,026
	Source of Funds										
	TIRZ Funds	-	1,000,000	11,026	6,000,000	1,000,000	5,600,000	-	-	$ 12,600,000	$ 12,611,026
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-	-	-	22,400,000	-	-	$ 22,400,000	$ 22,400,000
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ -	$ 1,000,000	$ 11,026	$ 6,000,000	$ 1,000,000	$ 28,000,000	$ -	$ -	$ 35,000,000	$ 35,011,026

NOTE: CIP T-1735 reflects the Memorial City Redevelopment Authority's commitment to the acquisition, design and construction of detention basins to provide drainage solutions in the region.

Project:	Detention Basin B	City Council District		Key Map:		WBS.:	T-1735A
		Location:	G	Geo. Ref.:			
		Served:	G	Neighborhood:			
Description:	Detention Basin B. Project may involve multiple phases.						
Justification:	Storm water storage needed for Regional Drainage Study recommendations specific to 100-year flood event. Mitigate flooding in surrounding residential and commercial areas.						

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	-	-	-	-	-	-	-	750,000	$ 750,000	$ 750,000
2	Acquisition	-	-	-	-	-	-	-		$ -	$ -
3	Design	-	-	-	-	-	-	-	-	$ -	$ -
4	Construction	-	-	-	-	-	-	-	-	$ -	$ -
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	-	-	-	-	-	-	-	-	$ -	$ -
	Total Allocations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 750,000	$ 750,000	$ 750,000
	Source of Funds										
	TIRZ Funds	-	-	-	-	-	-	-	750,000	$ 750,000	$ 750,000
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-	-	-	-	-	-	$ -	$ -
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 750,000	$ 750,000	$ 750,000

NOTE: CIP T-1735A reflects the Memorial City Redevelopment Authority's commitment to the acquisition, design and construction of detention basins to provide drainage solutions in the region.

Project:	Memorial Drive Drainage and Mobility Improvement Project - Phase 1	City Council District		Key Map:		WBS.:	T-1738A
		Location:	G	Geo. Ref.:			
		Served:	G	Neighborhood:			
Description:	The installation of dual 10'x10' concrete boxes to reduce overland flows to neighboring areas. The rdwy will be improved to curb and gutter w/ raised medians to improve mobility and access management. Wider sidewalks added to promote pedestrian friendly envir						
Justification:	Improve Safety, mobility & drainage. Improve rdwy to meet current standards. Drainage improvements to convey storm water to reduce frequent street flooding. Provide 10+ ac-ft detention. Add sidewalks & shared use path. (Drainage - 60% of project cost)						

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	119,491	-	-	-	-	-	-	-	$ -	$ 119,491
2	Acquisition	-	-	-	-	-	-	-	-	$ -	$ -
3	Design	210,136	1,000,000	199,057	400,000	-	-	-	-	$ 400,000	$ 809,193
4	Construction	-	-	-	-	21,300,000	-		-	$ 21,300,000	$ 21,300,000
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	5,411	-	-	-	-	-	-	-	$ -	$ 5,411
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	5,411	-	-	-	-	-	-	-	$ -	$ 5,411
	Total Allocations	$ 335,038	$ 1,000,000	$ 199,057	$ 400,000	$ 21,300,000	$ -	$ -	$ -	$ 21,700,000	$ 22,234,095
	Source of Funds										
	TIRZ Funds	335,038	1,000,000	199,057	400,000	8,300,000		-	-	$ 8,700,000	$ 9,234,095
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-	-	13,000,000	-	-	-	$ 13,000,000	$ 13,000,000
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ 335,038	$ 1,000,000	$ 199,057	$ 400,000	$ 21,300,000	$ -	$ -	$ -	$ 21,700,000	$ 22,234,095

Project:	Memorial Drive Drainage and Mobility Improvement Project - Phase 2**	City Council District		Key Map:		WBS.:	T-1738B
		Location:	G	Geo. Ref.:			
		Served:	G	Neighborhood:	16		

Description:	Flooding and drainage improvements based on recommendations of the Regional Drainage Study to address flooding on the W153-00 and improve mobility and pedestrian safety on Memorial Drive within the boundaries of the TIRZ.
Justification:	Project will improve storm water drainage system and reconstruct Memorial Drive (Tallowood to Bunker Hill City Limits).

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	-	-	-	50,000	-	-	-	-	$ 50,000	$ 50,000
2	Acquisition	-	-	-	-	-	-	-	-	$ -	$ -
3	Design	-	-	-	-	500,000	500,000	-	-	$ 1,000,000	$ 1,000,000
4	Construction	-	-	-	-	-	-	12,400,000	-	$ 12,400,000	$ 12,400,000
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	-	-	-	-	-	-	-	-	$ -	$ -
	Total Allocations	$ -	$ -	$ -	$ 50,000	$ 500,000	$ 500,000	$ 12,400,000	$ -	$ 13,450,000	$ 13,450,000
	Source of Funds										
	TIRZ Funds	-	-	-	50,000	500,000	500,000	2,700,000	-	$ 3,750,000	$ 3,750,000
	City of Houston	-	-	-	-	-		-	-	$ -	$ -
	Grants	-	-	-	-	-	-	9,700,000	-	$ 9,700,000	$ 9,700,000
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ -	$ -	$ -	$ 50,000	$ 500,000	$ 500,000	$ 12,400,000	$ -	$ 13,450,000	$ 13,450,000

NOTE:

Project:	Concrete Panel Replacement Program	City Council District		Key Map:		WBS.:	T-1799
		Location:	A,G	Geo. Ref.:			
		Served:	A,G	Neighborhood:			
Description:	Street maintenance program						
Justification:	Mobility improvements to extend life of roads.						

Operating and Maintenance Costs: ($ Thousands)

	2019	2020	2021	2022	2023	Total
Personnel	-	-	-	-	-	$ -
Supplies	-	-	-	-	-	$ -
Svcs. & Chgs.	-	-	-	-	-	$ -
Capital Outlay	-	-	-	-	-	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -
FTEs						-

Fiscal Year Planned Expenses

	Project Allocation	Projected Expenses thru 6/30/17	2018 Budget	2018 Estimate	2019	2020	2021	2022	2023	FY19 - FY23 Total	Cumulative Total (To Date)
	Phase										
1	Planning	-	-	-	-	-	-	-	-	$ -	$ -
2	Acquisition	-	-	-	-	-	-	-	-	$ -	$ -
3	Design	-	-	-	-	-	-	-	-	$ -	$ -
4	Construction	-	-	-	-	-	-	-	-	$ -	$ -
5	Equipment	-	-	-	-	-	-	-	-	$ -	$ -
6	Close-Out	-	-	-	-	-	-	-	-	$ -	$ -
7	Other	-	-	-	60,000	60,000	60,000	60,000	60,000	$ 300,000	$ 300,000
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
		-	-	-	-	-	-	-	-	$ -	$ -
	Other Sub-Total:	-	-	-	60,000	60,000	60,000	60,000	60,000	$ 300,000	$ 300,000
	Total Allocations	$ -	$ -	$ -	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 300,000	$ 300,000
	Source of Funds										
	TIRZ Funds	-	-	-	60,000	60,000	60,000	60,000	60,000	$ 300,000	$ 300,000
	City of Houston	-	-	-	-	-	-	-	-	$ -	$ -
	Grants	-	-	-	-	-	-	-	-	$ -	$ -
	Other	-	-	-	-	-	-	-	-	$ -	$ -
	Total Funds	$ -	$ -	$ -	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 300,000	$ 300,000

Ex B

August 27, 2018

Ms. Ann Givens, Chair of the Board
Memorial City Redevelopment Authority / TIRZ 17
9610 Long Point Road, Suite 150
Houston, TX 77055

Re: Proposal for Construction Management & Inspection - Briar Branch Channel and Straw Improvements WBS No. N-T17000-0018-3, (T-1734 T-1734B)

Dear Mrs. Givens,

Gauge Engineering, LLC (Gauge) is pleased to submit this proposal for Construction Management & Inspection services for Briar Branch Channel and Straw Improvements. We propose to perform the construction management & inspection services over the 2-year construction duration for a Lump Sum amount of $725,500. A detailed breakdown of the scope items and fee can be found under Exhibits "A" and "B" respectively. We are prepared to begin this work immediately.

Please feel free to contact me at (713) 254-5946 if you have any questions or need additional information.

Sincerely,

Muhammad Ali, P.E.
Principal

Accepted For
Memorial City Redevelopment Authority

_____
Signature Date

_____
Print

Accepted for City of Houston

_____
Signature Date

_____
Print

Attachments: Exhibit A - Scope of Services
Exhibit B - Level-of-Effort

EXHIBIT A
SCOPE OF SERVICES
MEMORIAL CITY REDEVELOPMENT AUTHORITY – TIRZ 17
Briar Branch Channel and Straw Improvements
WBS No. N-T17000-0018-3, (T-1734 T-1734B)
Scope of Services – Construction Management & Inspection

Construction Management (CM) Services: The Construction Manager shall provide the following services:

A. Provide evidence that all required permits, licenses and certificates have been obtained and assist in coordinating work performed by the contractor and provide this information to the City/TIRZ.

B. Review contractor's schedule to make sure that it's consistent with the contract requirements. Monitor the contractor's daily and monthly progress and compare it against scheduled progress. When anticipating schedule-related problems, work with the Contractor to analyze suggestions as to how to regain time lost on schedule delays. Initiate and conduct job coordination and progress reporting meetings to review actual progress and near-term future work.

C. Prepare a monthly summary progress report for the project to be presented at the monthly TIRZ 17 board meeting. The progress report shall present an assessment of the current status of the project and work remaining.

D. Coordinate with the Stakeholders, City of Houston, utility companies, and others who may be involved in the project.

E. Receive, log, and process Requests for Information (RFI's) and interpretations of the plans, specifications, and contract documents. Where appropriate, the requests shall be forwarded to the Engineer for response.

F. Receive and evaluate Change Proposals to the Contract and proposed Change Orders. These may be the result of change conditions, interferences or other causes identified by the Contractor, or requested by the CM. Proposal and Change Order procedures shall meet the City's reporting and contractual requirements including evaluation of the impact of the potential change in terms of the contract, the project cost and the schedule. The CM will coordinate with Engineers for recommendations. The CM shall conduct negotiations with the Contractor and prepare all necessary Proposals and Change Order documentation for appropriate approvals by the TIRZ 17 and the Contractor.

G. Review all progress payment requests submitted by the contractor and make recommendations for payment to the TIRZ. Contractor's monthly pay estimates will be reviewed based on quantities completed during the month.

H. Maintain the records provided by the material testing firm. Review monthly testing invoices and make recommendations for payment to the TIRZ.

I. Investigate customer complaints within 24 hours of receiving the complaint concerning the contractor's operations, such as traffic problems, open trenches, unpatched streets, unclean work sites, water service outage, etc. The CM shall advise the Contractor and TIRZ 17 of the complaints and any proposed remedies.

J. Establish and maintain files for all construction-related project documents, including contracts, drawings, specifications, correspondence, requests for information, submittals, shop drawings and other documents. The CM shall maintain financial records for the project, including payment requests and supporting documentation. The CM shall maintain record drawings and specifications and shall coordinate in

consultation with the Engineers, the incorporation of field changes and information from the Contractor's as-built "red-line" drawings into the Record Drawings. The CM shall confirm that all items required under the terms of the contract as a condition of final payment issuance.

K. At the end of the project, receive submittals/shop drawings from the Contractor and will coordinate the review/approval process of these items with the Engineers. The Engineer shall maintain a log to track the review process.

Construction Inspector Services: The Inspector shall provide the following services:

A. Observe contactor's work and material furnished to confirm that they are in general conformance with the drawings and specifications. This includes checking the Contractor's material certifications and samples, observing and verifying delivered materials are the same as the samples and may, if required by the City or TIRZ 17, include performing shop visits of Contractor furnished material and equipment.

B. Review the Contractor's traffic control methods with the submitted traffic control plans and identify any noncompliance. The Inspector shall verify governmental agency approvals are received prior to traffic relocations.

C. Coordinate the sampling and testing of materials to be performed by Aviles Corporation.

D. Include quantities completed and materials received in the daily reports as a means to verify monthly progress. Inspector's daily reports shall be reviewed against the plans and previously reported completed work.

E. Provide a substantial completion inspection of the project working with the CM and prepare for TIRZ/City's approval of Certificate of Substantial Completion and a list of work to be completed or corrected.

F. Provide a final inspection of the project working with the City's Project Manager and CM. The Engineer shall prepare a Certificate of Final Completion and other closeout documentation for approval by the City.

Note,
Contractor's safety program, as well as the means and methods of construction, shall remain the whole and exclusive responsibility of the contractor. Gauge will not be responsible for the contractor's means, methods, scheduling, sequencing nor safety

EXHIBIT B
Briar Branch Channel and Straw Improvements
WBS No. N-T17000-0018-3, (T-1734 T-1734B)
LEVEL OF EFFORT - CONSTRUCTION MANGAGMENT & INSPECTION

Gauge ENGINEERING

Labor & Expenses																													
Description	Billing Rate	TOTALS			2018		2019												2020										
		Hours	Amount	% of Labor	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Construction Manager	$170.00	876	$148,920	20.8%	40	24	36	36	32	32	40	40	40	36	36	36	36	24	36	36	36	36	36	36	36	36	40	60
Sr. Inspector I	$95.00	4,176	$396,720	55.3%	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174
Inspector II	$90.00	1,720	$154,800	21.6%	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	80	100
Project Controls	$110.00	152	$16,720	2.3%	8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	12
LABOR SUBTOTAL			$717,160	100.0%	$30,510	$27,570	$29,610	$29,610	$28,930	$28,930	$30,290	$30,290	$30,290	$29,610	$29,610	$29,610	$29,610	$27,570	$29,610	$29,610	$29,610	$29,610	$29,610	$29,610	$29,610	$29,610	$31,190	$37,050
EXPENSES SUBTOTAL			$8,400		$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	$350
TOTAL			$725,560		$30,860	$27,920	$29,960	$29,960	$29,280	$29,280	$30,640	$30,640	$30,640	$29,960	$29,960	$29,960	$29,960	$27,920	$29,960	$29,960	$29,960	$29,960	$29,960	$29,960	$29,960	$29,960	$31,540	$37,400

Notes:

(1) Inspector (5 day work week w/ 8hr OT M-Th and 8 hr OT on Saturday)

Ex. C

Gauge ENGINEERING

August 27, 2018

Ms. Ann Givens, Chair of the Board
Memorial City Redevelopment Authority / TIRZ 17
9610 Long Point Road, Suite 150
Houston, TX 77055

Re: Proposal for Bid and Construction Phase Services - Briar Branch Channel and Straw Improvements WBS No. N-T17000-0018-3, (T-1734 T-1734B)

Dear Mrs. Givens,

Gauge Engineering, LLC (Gauge) is pleased to submit this proposal for Bid and Construction Phase Services for Briar Branch Channel and Straw Improvements. We propose to perform these services over the 2-year construction duration of the project for a Lump Sum amount of $217,900. A detailed breakdown of the scope items and fee can be found under Exhibits "A" and "B" respectively. We are prepared to begin this work immediately.

Please feel free to contact me at (713) 254-5946 if you have any questions or need additional information.

Sincerely,

Muhammad Ali, P.E.
Principal

Accepted For
Memorial City Redevelopment Authority

_____
Signature Date

_____
Print

Accepted for City of Houston

_____
Signature Date

_____
Print

Attachments: Exhibit A - Scope of Services
Exhibit B - Level-of-Effort

EXHIBIT A
SCOPE OF SERVICES
MEMORIAL CITY REDEVELOPMENT AUTHORITY – TIRZ 17
Briar Branch Channel and Straw Improvements
WBS No. N-T17000-0018-3, (T-1734 T-1734B)
Scope of Services – Bid/Construction Phase Services

Bid Phase Services: Gauge will provide the following scope of services during the bid phase of the project:

A. **Project Management/Coordination:** Gauge will work with City/HCFCD to finalize the right-of-way acquisition of the parcels

B. **Project Advertisement:** Gauge will provide project bid documents to local plan rooms and prepare the legal notice advertising the bidding of the project in the Houston Business Journal.

C. **Conduct Mandatory Pre-Bid Conference Meeting**: Gauge will schedule and conduct a mandatory pre-bid conference meeting to provide bidders with project overview and answer questions regarding the project.

D. **Prepare Necessary Addenda**: Gauge will prepare any necessary addenda to the bidding documents to address issues or make clarifications.

E. **Conduct Bid Opening:** Gauge will conduct the bid opening, bids will be opened in order received and bid tabulation sheets comparing all bids received will be developed.

F. **Evaluate Bid Proposals:** Gauge will evaluate the bids received for accuracy and any bid irregularities. An award recommendation will be made to MCRA based on the evaluation of bids.

G. **Contract Preparation Assistance:** Gauge will assist TIRZ 17's Attorney, ABHR in final contract preparation including obtaining necessary forms and signatures from the successful low bidder, printing and compiling the final contract documents, and delivery of signed contracts to MCRA and the contractor. A Notice to Proceed will be issued for the contractor to begin the Construction Phase of the project.

Construction Phase: Gauge will provide the following scope of services during the construction phase of the project:

A. Conduct site visits (on a monthly basis at minimum) when the contractor is actively performing major construction activities. After the site visit, a "Construction Site Observation/Status Report" will be furnished ad submitted to the Construction Manager.

B. Review and fully respond to Requests for Information (RFIs) to the Construction Manager within max. 4 days, or as otherwise directed.

C. Review and fully respond to Submittals to the Construction Manager within max. 4 days, or as otherwise directed.

D. Assist Construction Manager in issuing Supplementary Instructions to the Contractor when necessary to correct and/or clarify Plans or Specifications or to avoid potential problems identified by the team.

E. If requested or there is a need, attend regularly scheduled or specially called meetings with the Contractor or Stakeholders.

F. Submit as-built record drawings within 30 days after receipt of contractor red-lined as-builts.

G. Provide any other engineering services requested by the Construction Manager and determined to be necessary and appropriate for the safe, timely and on-budget completion of the Project.

EXHIBIT B
Briar Branch Channel and Straw Improvements
WBS No. N-T17000-0018-3, (T-1734 T-1734B)
LEVEL-OF-EFFORT - BID PHASE

	DESCRIPTION OF WORK TASKS	Sr. PROJ MGR	PROJ MGR	PROJECT ENGINEER	GRAD ENGINEER	CADD TECH	ADMIN ASST	TOTAL HOURS	LABOR COSTS
	PRELIMINARY ENGINEERING REPORT								
A	Project Management/Coordination	10	10	16				36	$ 6,500.00
B	Project Advertisement		1	2	2			5	$ 720.00
C	Conduct Mandatory Pre-Bid Conference Meeting	1	1	2	4	2		10	$ 1,400.00
D	Prepare Necessary Addenda		2	8	16	4		30	$ 3,900.00
E	Conduct Bid Opening		2	6	10			18	$ 2,460.00
G	Evaluate Bid Proposals & Make Award Recommendation	1	2	4	4			11	$ 1,670.00
H	Contract Preparation Assistance		2	4				6	$ 960.00
	Total	12	20	42	36	6	0	116	$ 17,610.00
	TOTAL HOURS	12	20	42	36	6	0	116	
	Contract Labor Rate	$230.00	$180.00	$150.00	$120.00	$105.00	$95.00		
	TOTAL LABOR COSTS BASIC ENGINEERING SERVICES	$2,760.00	$3,600.00	$6,300.00	$4,320.00	$630.00	$0.00		$17,610.00

EXHIBIT B
Briar Branch Channel and Straw Improvements
WBS No. N-T17000-0018-3, (T-1734 T-1734B)
LEVEL-OF-EFFORT - CONSTRUCTION PHASE SERVICES

Gauge ENGINEERING

Labor & Expenses																															
Description	Billing Rate	TOTALS			2018		2019												2020												
		Hours	Amount	% of Labor	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Sr. PROJ MGR	$225.00	92	$20,700	10.4%	10	6	12	8	4	4	2	2	2	2	2	2	2	2	2	2	2	6	2	2	6	2	2	6
PROJ ENG	$150.00	296	$44,400	22.3%	24	12	24	24	24	24	12	12	8	8	8	8	8	8	8	8	8	8	8	8	8	8	12	16
GRAD ENG	$120.00	1,048	$125,760	63.2%	80	48	80	80	60	32	32	32	32	32	32	32	32	32	40	32	32	32	32	32	32	40	60	80
ADMIN ASSNT	$85.00	96	$8,160	4.1%	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
LABOR SUBTOTAL			$199,020	100.0%	$15,790	$9,250	$16,240	$15,340	$12,040	$8,680	$6,430	$6,430	$5,830	$5,830	$5,830	$5,830	$5,830	$5,830	$6,790	$5,830	$5,830	$6,730	$5,830	$5,830	$6,730	$6,790	$9,790	$13,690
EXPENSES SUBTOTAL			$1,250		$100	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50
TOTAL			$200,270		$15,890	$9,300	$16,290	$15,390	$12,090	$8,730	$6,480	$6,480	$5,880	$5,880	$5,880	$5,880	$5,880	$5,880	$6,840	$5,880	$5,880	$6,780	$5,880	$5,880	$6,780	$6,840	$9,840	$13,740

Ex D

Gauge ENGINEERING

August 27, 2018

Ms. Ann Givens, Chair of the Board
Memorial City Redevelopment Authority / TIRZ 17
9610 Long Point Road, Suite 150
Houston, TX 77055

Re: Proposal for Construction Materials Testing Services - Briar Branch Channel and Straw Improvements WBS No. N-T17000-0018-3, (T-1734 T-1734B)

Dear Mrs. Givens,

On behalf of Aviles Engineering Corp. (Aviles), Gauge Engineering, LLC (Gauge) is pleased to submit this proposal for Construction Materials Testing Services for Briar Branch Channel and Straw Improvements. We propose to perform these services over the 2-year construction duration of the project for a Not-to-Exceed amount of $488,000. A detailed breakdown of the scope items and fee can be found under Exhibits "A" and "B" respectively. We are prepared to begin this work immediately.

Please feel free to contact me at (713) 254-5946 if you have any questions or need additional information.

Sincerely,

Muhammad Ali, P.E.
Principal

Accepted For
Memorial City Redevelopment Authority

_____
Signature Date

_____
Print

Accepted for City of Houston

_____
Signature Date

_____
Print

Attachments: Exhibit A – Aviles 's Scope of Services/Fee
Exhibit B – Summary Fee

Exhibit A

AVILES
ENGINEERING CORP.

August 27, 2018

Mr. Muhammad M. Ali, P.E.
Gauge Engineering
2500 CityWest Blvd, Suite 300
Houston, Texas 77042

Re: Construction Materials Testing and Inspection Services on
TIRZ No. 17 - Memorial City Redevelopment Authority
Briar Branch (W140-01-00) Channel and Straws Improvements
WBS No. N-T17000-0018-3
Our Proposal Number: 18-35 Revision 1

Mr. Ali:

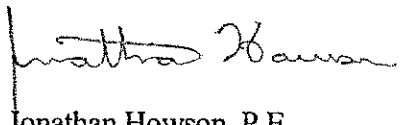
In response to your request, Aviles Engineering Corporation (AEC) is pleased to submit the following rates for providing Construction Materials Testing and Inspection Services on the above referenced project for your review.

AEC proposes to provide experienced technical personnel to perform testing and inspection services in general accordance with City of Houston requirements and specifications, project plans, ASTM Standards or other applicable procedures when requested. AEC also proposes that the work be accomplished on a unit price basis in accordance with the attached Schedule of Services and Fees and that the work be performed pursuant to agreed General Conditions. Copies of the AEC Schedule of Services and Fees and Estime are enclosed herewith and are incorporated into this document. AEC's fees would be determined by the actual amount of technical time expended for this project and the amount of laboratory testing performed.

AEC will proceed with the work on the basis of verbal authorization; however, please sign and return one (1) copy of this document intact or provide an alternate form of contract for AEC's review. AEC can not issue any reports until either a signed copy of the document or an alternate form of contract is received. When returning this document or alternate form of contract, please complete the attached Project Data Sheet so that your file can be properly established.

Aviles Engineering Corporation appreciates the opportunity to offer its services to your project and looks forward to working with you during the construction phase.

Respectfully submitted,
Aviles Engineering Corporation
(TBPE Firm Registration No. F-42)



Jonathan Howson, P.E.
CMT Department Manager

Schedule of Services & Fees
Project Data Sheet
Estimate (3 Pages)

AGREED TO THIS _____ DAY OF _____, _____

BY: _____

TITLE: _____

FIRM: _____

Aviles Engineering Corporation
Schedule of Services and Fees * Construction Materials Testing

LABORATORY TESTING SERVICES

Concrete and Aggregates

Laboratory testing of concrete, grout, mortar and lightweight roof fill cylinders, beams and cubes delivered to our laboratory in accordance with ASTM procedures and project specifications:

a. Concrete Compression Test	Each	$	17.00
b. Reserves Not Tested	Each	$	17.00
c. Lightweight Concrete Compression Test	Each	$	20.00
d. Flexural Strength of Concrete Test (Beams)	Each	$	26.00
e. Compressive Strength of Mortar or Grout (2" x 2" x 2")	Each	$	23.00
f. Compressive Strength of Grout Prism	Each	$	45.00
Sieve Analysis of Aggregates	Each	$	52.00
Washed Sieve Analysis on Flexible Base Materials	Each	$	92.00
Liquid Limit & Plasticity Index of – No. 40 from Flexible Base Materials	Each	$	75.00
Abrasion Test of Aggregates by Los Angeles Machine	Each	$	201.00
Density of Lightweight Concrete Cylinders	Each	$	81.00
Testing of Aggregates for Mix Design (Sieve Analysis, Absorption, Specific Gravity, Unit Weight)	Per Series	$	180.00
Specific Gravity & Absorption of Aggregate	Each	$	99.00
Moisture Content of Aggregate	Each	$	12.00
Concrete Mix Design Review for Compliance to ACI or ASTM Standards	Each	$	200.00
Preparation and Testing of Cores	Each	$	75.00

Soils

Moisture/Density Relationship of Soil (Proctor Test):

a. ASTM D 698 Method A or B	Each	$	196.00
b. ASTM D 1557 Method A or B	Each	$	210.00
c. ASTM D-698 & D-1557, Method C	Each	$	225.00
d. TxDOT Test Method Tex-113-E	Each	$	225.00
e. ASTM D 558 on Lime or Cement Treated Soils	Each	$	217.00
Atterberg Limits Determination (PI)	Each	$	60.00
Grain Size Analysis, Mechanical & Hydrometer	Each	$	124.00
Lime Series Curve, pH Method	Each	$	227.00
Material Finer Than #200 Sieve	Each	$	46.00
Sieve Analysis on +#200 Sieve Material	Each	$	55.00
Bearing Ratio Test (CBR), ASTM D-1883, per point (Does not include moisture/density relationship)	Each	$	215.00
Permeability Test:			
a. Falling Head or Constant Head	Each	$	250.00
c. Remolded Sample	Each	$	75.00
Organic Content	Each	$	75.00

LABORATORY TESTING SERVICES, continued

Asphaltic Concrete Testing

a. Molding Specimens (3 Specimens)	Per Set	$	61.00
b. Density (3 Specimens)	Per Set	$	52.00
c. Stability (3 Specimens)	Per Set	$	92.00
d. Extraction and Gradation	Each	$	170.00
e. Theoretical Specific Gravity	Each	$	88.00
Thickness Determination of Asphaltic Concrete Cores	Each	$	8.00
Density Determination of Asphaltic Concrete Cores	Each	$	17.50
Asphaltic Concrete Mix Design Review	Each	$	210.00

Other Items

Compressive Strength of Cement Stabilized Sand or Soil Cement	Each	$	61.00
Moisture Content of Soil, Cement Stabilized Sand or Soil Cement	Each	$	9.00
Comp. Str. - Cement or LFA Stabilized Bases or Soils (Modified Tex-120-E)	Each	$	249.00
Splitting Tensile Strength of Concrete	Each	$	106.00
Density Determination - Soil Cement	Each	$	22.00
Absorption and Saturation - Facia Brick	Each	$	69.00
Compressive Strength - Facia Brick	Each	$	32.00
Compressive Strength of Masonry Prisms	Each	$	135.00
Thickness Testing of Concrete or Asphaltic Concrete Cores (9 Point)	Each	$	11.00

FIELD TESTING SERVICES

Engineering Technician to Perform:

- .... Concrete Placement Inspection and testing
- .... Concrete Batch Plant Inspection
- .... Cylinder/Cube/Beam Pick Up
- .... Proofrolling Observation
- .... Concrete Placement and/or Batch Plant Inspection
- .... Drilled Pier, Pile and/or Foundation Inspection
- .... Post Tension Inspection
- .... Soil Cement or Lime Stabilization Inspection
- .... Field Compaction Testing and Observation
- .... Laboratory Technician
- .... Masonry Mortar, Grout or Prism Testing or Inspection
- .... Base Plate Inspection and Non-Shrink Grout Testing
- .... Sample Pick Up

Engineering Technician (Minimum 4 Hours)	Per Hour	$	55.00
Overtime	Per Hour	$	82.50
NICET II Technician (Minimum 4 Hours)	Per Hour	$	65.00
Overtime	Per Hour	$	97.50
Concrete Pavement Cores (Minimum Fee $270.00)			
6 Inches Thick or Less, 4 Inch Diameter Bit	Per Core	$	90.00
Additional Thickness – (6" to 12") = $8.00 per inch; (Over 12") = $10.00 per inch			
Coring of Structural Concrete or Core Diameters other than 4"	Will Quote Upon Request		

FIELD TESTING SERVICES, continued

Asphaltic Concrete Pavement Cores (Minimum Fee $240.00)			
a. 6 Inches Thick or Less, 4 Inch Diameter	Per Core	$	80.00
b. Additional Thickness over 6"	Per Inch	$	7.00
Reinforcing Steel Inspection (4 Hr. Min.)	Per Hour	$	77.00
Overtime	Per Hour	$	115.50
Structural Steel Inspection (4 hr. Min.)	Per Hour	$	91.00
Overtime	Per Hour	$	136.50

Other Services

Use of Nuclear Density Gauge (4 Hour Minimum)	Per Hour	$	9.00
Fireproofing – Cohesion / Adhesion Test	Each	$	29.00
Fireproofing – Density Test	Each	$	38.00
Floor Moisture Kit	Each	$	60.00
UT Equipment	Per Day	$	88.00
UT Couplant (Minimum Charge of 1 Pint)	Per Pint	$	30.00
Magnetic Particle Yoke	Per Day	$	45.00
Magnetic Powder (Minimum Charge 0.5 Pounds)	Per Pound	$	30.00
Use of James R-Meter	Per Day	$	75.00
Solids Content of Lime Slurry - Field	Per Test	$	42.00
Skidmore Wilhelm	Per Day	$	135.00
Field Sieve Analysis	Each	$	12.00
Vehicle Charge (4 Hour Minimum)	Per Hour	$	10.00

Engineering Services and Management

Principal or Chief Engineer	Per Hour	$	210.00
Senior Engineer	Per Hour	$	150.00
Project Engineer	Per Hour	$	105.00
Graduate Engineer, Project Manager	Per Hour	$	77.00
NICET Level IV	Per Hour	$	85.00
NICET Level III	Per Hour	$	75.00

Remarks

- All hours are portal to portal from 5790 Windfern, Houston, Texas. Fractions of hours will be billed as whole hours. Overtime is classified as all hours worked over eight (8) hours per day or hours worked before 6:00am, after 6:00 pm weekdays and any hours worked on Saturdays, Sundays or Holidays. Overtime will be invoiced at 1.5 times hourly rate. If a special trip is made just to pickup test cylinders, the minimum charge will be lowered to 2 hours for the technician.
- A mileage surcharge rate of $0.60 per mile will apply for travel exceeding 100 miles per day. Commercial travel and subsidence costs will be invoiced at cost + 15%.
- Badging, safety training courses and drug screen testing will be invoiced at applicable hourly rates. The drug screen and safety course fees will be invoiced at cost + 15%.
- Project Engineer / Manager to schedule and supervise personnel and evaluate and review reports will be billed at a minimum of 0.2 hours per report issued.
- Laboratory testing requiring overtime, weekend or holiday work will be invoiced at applicable test rate plus technician overtime charges.
- Services and fees not listed will be quoted upon request.

PROJECT DATA SHEET
CONSTRUCTION MATERIALS TESTING AND INSPECTION SERVICES

Project Name: _____

Project Location: _____

Your Job No: _____ Purchase Order No: _____

Project Manager: _____ Telephone No: _____

Number and Distribution of Reports:

( ) Copies To: _____ ( ) Copies To: _____

_____ _____

_____ _____

Attn: _____ Attn: _____

( ) Copies To: _____ ( ) Copies To: _____

_____ _____

_____ _____

Attn: _____ Attn: _____

Invoicing Address: _____

_____

_____

Attn: _____

Site Contact: _____ Telephone No: _____

Other Pertinent Information: _____

_____

_____

CONSTRUCTION MATERIALS TESTING/INSPECTION SERVICES TERMS AND CONDITIONS

STANDARD OF CARE

The CLIENT should expect AVILES ENGINEERING to perform Services under this PROPOSAL/AGREEMENT in a manner consistent with the level of care and skill ordinarily exercised in The Materials Testing/Inspection Services Industry contemporaneously under similar conditions in the locality of the project. No other warranty, expressed or implied, is made.

SCOPE OF SERVICES

The CLIENT will develop a scope of service based on the project information. AVILES ENGINEERING shall not be responsible for problems arising due to insufficient or invalid project or other relevant information. In the event the CLIENT or his representative orders work described in this PROPOSAL/AGREEMENT, that action shall constitute the CLIENT's acceptance of this PROPOSAL/AGREEMENT and its terms and conditions.

SITE AND SITE CONDITIONS

The CLIENT will grant or obtain free access to the site for all equipment and personnel necessary for AVILES ENGINEERING to perform the services described in this PROPOSAL/AGREEMENT. The CLIENT will notify AVILES ENGINEERING of any known toxic and/or hazardous materials on site and shall assume responsibility for the cost of occurrences due to unknown toxic and/or hazardous materials on site.

BILLING AND PAYMENT

The CLIENT will pay AVILES ENGINEERING for the work performed at the unit fees shown in the PROPOSAL/AGREEMENT. Invoices will be submitted to the CLIENT, and will be due and payable within thirty (30) days of the invoice date. CLIENT will pay an additional charge of 1.5 percent per month on any delinquent amount, and agrees to pay attorney's fees and/or other costs involved in any required collection activity.

LIMITATION OF LIABILITY / INDEMNIFICATION

If at any time, there shall be or arise any liability on the part of AVILES ENGINEERING by virtue of this agreement or because of the relation hereby established, whether due to the negligence of AVILES ENGINEERING (including gross negligence) or otherwise, such liability is and shall be limited in amount to the fee charged by AVILES ENGINEERING. AVILES ENGINEERING and CLIENT agree to indemnify each other from any claims, etc., including attorney's fees and litigation costs, to the proportionate extent caused by each party's own negligence. If AVILES ENGINEERING is found to be prevalent in any third party lawsuits relating to this AGREEMENT, the CLIENT shall pay all AVILES ENGINEERING costs, including legal fees, that were incurred as a result thereof.

AVLES ENGINEERING CORP.

CONSTRUCTION MATERIALS ESTIMATE

TIRZ No. 17 - Memorial City Redevelopment Authority
Briar Branch (W140-01-00) Channel and Straws Improvements
WBS No. N-T17000-0018-3

Soils Inspection

Soils Inspection will be provided per the Standard City of Houston and Harris County Flood Control Specifications. The inspection and testing of the utility bedding and backfill will include field density testing (3 test per 40 L. Ft., 1 for embedment and 2 for the trench zone backfill) for various sizes of open cut RCB Storm Sewers (18,745 LF), open cut RCP Storm Sewers (731 LF), 12 Junction Boxes, 29 Manholes, 62 Manhole Risers for Box Sewers, 37 precast Inlets, and 9,509 yd^2 Lime Stabilized Pavement Subgrade. CSS specimens will also be sampled for compressive strength when required. Samples to determine the moisture density relationships (MDR) and other soil constants will also be obtained. AEC estimates three hundred forty-six (346) trips for inspection and testing and eight (8) trips for sample pick ups.

Service Description	Unit Rate	Quantity	Amount
Technician per hour	$ 55.00	2616	$ 143,880.00
Technician OT per hour	$ 82.50	625	$ 51,562.50
Moisture Density Relationship (D698), each	$ 196.00	15	$ 2,940.00
Moisture Density Relationship (D1557), each	$ 217.00	1	$ 217.00
Moisture Density Relationship Cement / Lime Stab., each	$ 217.00	10	$ 2,170.00
Compressive Strength CSS, each	$ 61.00	1324	$ 80,764.00
Optimum Lime Content pH Method, each	$ 227.00	4	$ 908.00
Atterberg Limits, each	$ 60.00	19	$ 1,140.00
Percent Passing #200 Sieve, each	$ 46.00	19	$ 874.00
Mechanical Sieve Analysis, Through No. 200 Sieve, each	$ 55.00	19	$ 1,045.00
Use of Nuclear Gauge per hour	$ 10.50	3209	$ 33,694.50
Vehicle Charge per hour	$ 10.00	3241	$ 32,410.00
Project Management per hour	$ 150.00	206.8	$ 31,020.00
			$ 382,625.00

Estimate Continued on Next Page

AYLES ENGINEERING CORP.

Construction Materials Testing and Inspection Estimate, continued

Concrete Inspection

Concrete Inspection will be provided per the Standard City of Houston Specifications. It will include Concrete for the Wing Walls,8-in Channel Lining (152 yd^3), 6-in Concrete Pavement (1,264 yd^3), 6-in Concrete Driveways (162 yd^3), 4,812 LF of 6-in Concrete Curb, Sidewalks (50 yd^3), 6,634 ft^2 of Retaining Wall, and 12 cast-in-place Junction Boxes. AEC estimates ninety-six (96) concrete placements.

Service Description	Unit Rate	Quantity	Amount
Technician per hour	$ 55.00	654	$ 35,970.00
Technician OT per hour	$ 82.50	28	$ 2,310.00
Concrete Compression Tests, each	$ 17.00	384	$ 6,528.00
Concrete Coring 4" Dia. To 6" Depth, each	$ 90.00	8	$ 720.00
Additional Thickness (6" to 12") per inch	$ 8.00	32	$ 256.00
Measuring Thickness of Concrete Cores, each	$ 11.00	8	$ 88.00
Mix Design Review (*If Requested*), each	$ 200.00	4	$ 800.00
Vehicle Charge per hour	$ 10.00	682	$ 6,820.00
Project Management per hour	$ 150.00	25.2	$ 3,780.00
		Subtotal	**$ 57,272.00**

Estimate Continued on Next Page

EXHIBIT B
Briar Branch Channel and Straw Improvements
WBS No. N-T17000-0018-3, (T-1734 T-1734B)
CONSTRUCTION MATERIALS TESTING SERVICES - LEVEL OF EFFORT

Labor & Expenses					
Description	**Firm**	**Amount**	**Sub Markup**	**Sub Markup**	**% of Construction**
Construction Materials Testing Engineering Services	Aviles Engineering	$443,686	10%	$488,054	2.22%
		TOTAL CMT FEE		**$488,054**	

AVLES ENGINEERING CORP.

Construction Materials Testing and Inspection Estimate, continued

Asphalt Testing

Asphalt Testing will be provided per the Standard City of Houston Specifications. It will include the sampling and testing of 454 yd^2 of HMAC for ***Pavement Repair and Restoration***. Two (2) cores will be taken for each day's placement per COH Specification 02741 (*If requested by Gauge Engineering*). AEC estimates one (1) day and one (1) full set of asphalt tests.

Service Description	Unit Rate	Quantity	Amount
Technician per hour	$ 55.00	8	$ 440.00
Technician OT per hour	$ 82.50	2	$ 165.00
Use of Nuclear Gauge per hour	$ 10.50	10	$ 105.00
Mix Design Review, each	$ 210.00	1	$ 210.00
Maximum Theoretical Specific Gravity, each	$ 88.00	1	$ 88.00
Molding Specimens, 3 per set	$ 61.00	1	$ 61.00
Bulk Density of Lab Molded Specimen, 3 per set	$ 52.00	1	$ 52.00
Stability: Hveem, 3 per set	$ 92.00	1	$ 92.00
Extraction / Gradation, each	$ 170.00	1	$ 170.00
Asphalt Coring , min charge	$ 240.00	1	$ 240.00
Additional Thickness over 6", per inch	$ 7.00	0	$ -
Measuring Thickness of Asphalt Cores, each	$ 8.00	2	$ 16.00
Bulk Density of Field Specimen (Core), each	$ 17.33	2	$ 34.66
Vehicle Charge per hour	$ 10.00	10	$ 100.00
Project Management per hour	$ 150.00	0.9	$ 135.00
		Subtotal	**$ 1,908.66**

Meeting and Letters

Project management will be provided. It may include a pre-construction and / or task meeting. If requested, AEC will provide a 100% Completion Letter for the project.

Service Description	Unit Rate	Quantity	Amount
Project Management per hour	$ 150.00	8	$ 1,200.00
Project Management per hour (*100% Completion Letter*)	$ 150.00	4	$ 600.00
Vehicle Charge per hour	$ 10.00	8	$ 80.00
		Subtotal	**$ 1,880.00**

ESTIMATED TOTAL FOR SERVICES AND TESTING = $ 443,685.66

NOTES & ASSUMPTIONS:

- Project Duration: 715 Days
- Estimate for Construction: $22,056,000
- Two Techs may be occasionally needed on the project

Testing Budget, % of Construction Cost
2.01%

- ***No standby time is included in this estimate, it is based on the Contractor being ready for inspection at the time the inspection is scheduled.***
- ***No re-inspection or re-testing is included in this estimate.***

Ex E

Gauge ENGINEERING

August 27, 2018

Ms. Ann Givens, Chair of the Board
Memorial City Redevelopment Authority / TIRZ 17
9610 Long Point Road, Suite 150
Houston, TX 77055

Re: Proposal for Preliminary Engineering Services for Detention Basin A – (T-1735B)

Dear Mrs. Givens,

Gauge Engineering, LLC (Gauge) is pleased to submit this proposal for Preliminary Engineering Services for Detention Basin A. We propose to perform these services for a Lump Sum amount of $347,900. A detailed breakdown of the scope items and fee can be found under Exhibits "A" and "B" respectively. We are prepared to begin this work immediately.

Please feel free to contact me at (713) 254-5946 if you have any questions or need additional information.

Sincerely,

Muhammad Ali, P.E.
Principal

Accepted For
Memorial City Redevelopment Authority

_____
Signature Date

_____
Print

Accepted for City of Houston

_____
Signature Date

_____
Print

Attachments: Exhibit A - Scope of Services
Exhibit B - Level-of-Effort
Exhibit C thru F – Subconsultant Invoices

EXHIBIT A

SCOPE OF SERVICES

MEMORIAL CITY REDEVELOPMENT AUTHORITY – TIRZ 17

DETENTION BASIN A – (T-1735B)

This proposal is for providing preliminary engineering services for the tract known as Detention Basin 'A'. The project will include the analysis of a sub-regional detention structure. The Preliminary Engineering Phase is (PER) Phase I of the overall project process and will identify the impacts associated with the implementation of the PER recommendations. The following scope describes the procedures that will be followed to provide Preliminary Engineering services and produce the Preliminary Engineering Report. The details of the scope are as follows:

A. Data Collection:

- Photographs and field verification of existing features will be completed during the field visit. Field visit will also be performed to assist in drainage area boundary determination, and to verify the available data collected for the existing storm sewer system. The area will be reviewed to confirm features shown in the 2008 LiDAR information and identify areas where hydraulic reinforcements may be necessary to correctly show overland sheet flow paths.

- Previously completed reports and studies will be obtained and reviewed for relevant information regarding the proposed roadway improvements.

B. Project Coordination Meetings

Throughout the life of the contract, coordination meetings will be scheduled as needed. Coordination meetings with be organized with Mayor's office, Council Member's office, City of Houston's Department of Public Works & Engineering (PW&E), Harris County Flood Control District (HCFCD), TIRZ 17 Infrastructure Committee, Hawes Hill's team, and Stakeholders throughout the evaluation, given the complexity of the analysis. Key stakeholders include the Spring Brand Independent School District (SBISD) and the Spring Branch memorial Sports Authority (SBMSA). Documentation of the meetings will be prepared summarizing the meeting discussion topics and action items

C. Alternative Analysis:

Three detention alternatives will be analyzed by evaluating impacts of the preliminary design and preparing cost estimates to determine the recommended alternative. A detailed Preliminary layout for the recommended alternative will be prepared. Input from key stakeholders regarding the future use of the site and any identified utility information will be taken into account to develop the preliminary layouts. Additionally, the original planned depth of the underground detention was based COH GEMS and limited available record drawings obtained in the feasibility phase. Detailed survey of the infrastructure that the proposed basins will tie in to will be collected as part of the PER effort. This will finalize the and establish the maximum depth and volume of the basin. A matrix summarizing advantages, disadvantages, and recommendations will be developed. The following alternatives will be explored:

- Precast box culverts
- Precast modular system
- Underground cast-in-place system

D. Drainage Analysis:

The drainage analysis will build on the original Sub-Regional Detention Feasibility Study in 2015, and the 2018 HMGP Hurricane Harvey Grant Analysis effort which furthered the original 2015 analysis. These efforts progressed the analysis and modeling to a level that obtained a conditional no-objection letter from HCFCD, which stats that HCFCD identified no fatal flaw with the project concept or the analysis performed to date.

To complete the PER, the previous drainage analysis will be furthered to better understand key project details including maintenance, and to submit a more formal complete drainage analysis report to both the City of Houston and HCFCD. The following tasks will be performed to complete the Drainage Analysis.

- Existing Conditions:
  The 2D model prepared as the basis for the 2018 HMGP Hurricane Harvey Grant Analysis will be thoroughly reviewed to ensure appropriate baseline evaluation points are accurately captured. Additional analysis frequencies will be added to the previous existing conditions models to allow for additional comparisons and benefit cost evaluations. This is a critical step to establish the baseline for comparison for both project benefits and to ensure no potential project impacts.

- Proposed Conditions
  The alternative analysis will account for additional stakeholder input, any newly identified underground utilities, future stakeholder needs and outfall depths. This is expected to have minor but not insignificant changes to the basin volume and performance. Gauge update the previously performed proposed conditions analysis to account for the updated basin layouts.

  i. Model Proposed Improvements: Identified improvement alternatives will be modeled in the dynamic 2D hydraulic model for the project area. Model development for the proposed alternatives will build upon the existing conditions modeling effort. Impacts to adjacent areas and potential downstream impacts will be evaluated for each improvement alternative.

  ii. Document Benefits: Gauge will determine and document the benefits for each of the finalized alternatives. The project benefit will be defined as an increased level of protection as compared to the existing condition and the number of structures removed from flooded conditions in accordance with City prioritization criteria.

- Maintenance Evaluation:
  To minimize maintenance of the basin, solutions will be considered to channel normal high frequency low intensity events through the basin without utilizing the full basin. Meaning for low flows the majority of the basin will remain dry. The proposed conditions model for the recommended alternative will be analyzed to determine the frequency and design storm that is reasonable to convey and will meet the maintenance needs of the basin. This analysis effort will assist in sizing the low flow channel that will convey the normal events.

- HCFCD Watershed Evaluation:
  To conform to HCFCD requirements, the detailed 2D analysis will be used to develop a watershed level model that conforms with the current HCFCD models for Buffalo Bayou. Information and data from the 2D model will be used to update HCFCD provided HEC-HMS and HEC-RAS models for Buffalo Bayou. The intent of this analysis is to demonstrate that the proposed project has no adverse impact to the local region and the full watershed.

- Drainage Impact Analysis Report:
  A comprehensive Drainage Impact Analysis Report will be developed that will document the analysis approach and findings. The report will be developed to HCFCD and City of Houston standards and requirements. The report will be submitted to both agencies for review and conditional approval (Note: final approval can not be obtained until final detailed design drawings are prepared and submitted).

E. Preliminary Maintenance Plan

This task involves extensive coordinate with the City to device a preliminary maintenance plan that will address City's concern and minimize maintenance cost over the life span of the project. Access points, ramp locations, heavy equipment access etc. will all be explored under this effort

F. Roadway and Utility Impacts:
Roadway and utility impacts will be evaluated for the streets that will be impacted. In addition, the dry utilities that exist on the site will also be evaluated and relocated into a separate corridor to avoid conflicts with the detention system.

G. Conceptual Traffic Control Plan:
The construction sequence and a traffic control concept that will minimize impacts to the region's traffic movement pattern will be explored. Detours, phasing, sequencing, construction zones, temporary pavement requirements and temporary signalization will be identified.

H. Opinion of Probable Construction Cost:
Opinion of Probable Construction Cost (OPCC) will be developed for each alternative that will include the necessary level of detail to enable the evaluation of each alternative but will not be comprehensive.

I. Preliminary Engineering Report Preparation
The Preliminary Engineering Report will be prepared in accordance with latest version of the City of Houston Infrastructure Design Manual the City's PER Requirements included. A draft electronic report will be compiled to include text, model output, exhibits, and appendices for the City's review. A signed and sealed electronic report will be submitted after the comments have been addressed and incorporated as necessary.

J. Technical Review Committee (TRC) Meeting
Gauge will present the proposed improvements to the different City of Houston Departments for comment and approval. A presentation will be prepared and will include alternatives, recommendations, and estimated OPCC. At the end of the meeting we will develop the Records of Decisions and Action Items RD/AI.

K. Project Management/Project Controls
Project management activities are ongoing throughout the period of the contract and include items such as internal project management, kickoff meeting, monthly progress reports, invoices, and coordination with client and agencies.

L. Quality Assurance/Quality Control:
A thorough Quality Assurance/Quality Control (QA/QC) Plan will be implemented to ensure overall project constructability, cost estimate accuracy, and design conformance with industry standards and client-specific requirements and preferences are met.

M. K Thru 12 Support Services
To assist with understanding the needs that key stakeholders have for the site, a K thru 12 expert will be hired to as part of the team assisting in the final master planning effort.

N. Structural Support Services
IEA will provide structural analysis services for the project on the recommended alternative. A detailed proposal for this work is included as Exhibit C.

O. Environmental Site Assessment:
The proposed environmental site assessment required for the design effort will be prepared The Goodman Corp. A detailed scope and level of effort for this work is included as Exhibit D.

P. Geotechnical Investigation
The proposed geotechnical investigation required for the design effort will be provided by Aviles Engineering Corporation. A detailed proposal for this work is included as Exhibit E.

Q. Surveying Services

The proposed topographic survey required for the design effort will be performed by Kuo & Associates, Inc. A detailed proposal for this work is included as Exhibit F.

R. Public Meeting

A public meeting with be conducted as directed by TIRZ 17. Gauge engineering will support the TIRZ 17 Executive Director and Board with all aspects of the meeting including presentation development and meeting participation.

S. Schedule

The Preliminary Engineering Phase will be completed in 8 months from notice to proceed.

EXHIBIT B
DETENTION BASIN A – (T-1735B)
PRELIMINARY ENGINEERING REPORT - LEVEL OF EFFORT

Gauge ENGINEERING

	DESCRIPTION OF WORK TASKS	Sr. PROJ MGR	PROJ MGR	PROJECT ENGINEER	GRAD ENGINEER	CADD TECH	ADMIN ASST	TOTAL HOURS	LABOR COSTS
	PRELIMINARY ENGINEERING REPORT								
A	Data Collection	1	2	4	8	8	2	25	$3,180.00
B	Project Coordination Meetings (10 Meetings)	20	20	40	20	10	5	115	$18,125.00
C	Alternative Analysis	6	12	24	40	60		142	$18,240.00
D	Drainage Analysis								
	1 Existing Conditions Model Update	2	4	24	12	8		50	$7,060.00
	2 Proposed Conditions Model Update	4	6	48	48	8		114	$15,800.00
	3 Maintenance Evaluation	1	2	16	12	4		35	$4,850.00
	4 HCFCD Watershed Evaluation	4	12	48	64	6		134	$18,590.00
	5 Draiange Impact Analysis Report	8	16	48	60	24	2	158	$21,830.00
E	Preliminary Maintenance Plan	6	12	24	32	40		114	$15,180.00
F	Roadway and Utility Impacts	2	2	16	24	24		68	$8,620.00
G	Conceputal Traffic Plan		1	8	12	18		39	$4,710.00
H	Opinion of Probable Construction Cost	2	6	16	24			48	$6,820.00
I	Preliminary Engineering Report Preparation	6	12	36	64	80	8	206	$25,780.00
J	Technical Review Committee (TRC) Meeting & RDAI	6	12	20	36	16		90	$12,540.00
K	Project Management/Project Controls	12	16	24				52	$9,240.00
L	Quality Assurance/Quality Control:	6	8	24				38	$6,420.00
	Total	86	143	420	456	306	17	1428	$196,985.00
	TOTAL HOURS	86	143	420	456	306	17	1,428	
	Contract Labor Rate	$230.00	$180.00	$150.00	$120.00	$105.00	$95.00		
	TOTAL LABOR COSTS BASIC ENGINEERING SERVICES	$19,780.00	$25,740.00	$63,000.00	$54,720.00	$32,130.00	$1,615.00		$196,985.00

II.

	SUBCONTRACTED ENGINEERING SERVICES	COST	MARK-UP	TOTAL
M	K thru 12 Services	$15,000.00	10%	$16,500.00
N	Structural Support Services - IEA	$49,440.00	10%	$54,384.00
O	Environmental Site Assessment - Goodman	$6,000.00	10%	$6,600.00
P	Geotechnical Services	$21,976.00	10%	$24,173.60
Q	Surveying Services	$20,916.00	10%	$23,007.60
	TOTAL SUBCONTRACTED ENGINEERING SERVICES			$124,665.20

III.

	ADDITIONAL ENGINEERING SERVICES	COST	MARK-UP	TOTAL
R	Public Meeting (If necessary)	$20,000.00	-	$20,000.00
	TOTAL OTHER ENGINEERING SERVICES			$20,000.00

IV.

	EXPENSES	QUANTITY	UNIT	COST	TOTAL
1	Printing and Reproduction	1	LS	$975.00	$975.00
2	Mileage	500	MILE	$0.55	$275.00
3	Renderings				$5,000.00
	TOTAL REIMBURSABLE EXPENSES				$6,250.00

PER TOTAL	
I. Basic Services	$196,985.00
II. Sub Services	$124,665.20
III. Add Services	$20,000.00
IV. Expenses	$6,250.00

PROJECT TOTAL	$347,900

IEA, Inc.
1225 North Loop West, Suite 320
Houston, Texas 77008
832-494-3800

Project Overview

This project will include the preliminary analysis (10% conceptual design) of a sub-regional detention structure for the mitigation of high-water events. The project site is 13 acres located east of Attingham Drive, 900-ft south of IH 10 in Houston, TX.

The purpose of the analysis is to:

a. Evaluate and determine constructability of an underground cast-in-place detention structure.
b. Prepare Preliminary Engineering Report (10% conceptual design) with structural recommendations and estimated construction cost estimate.

Key Assumptions

- The topographic information, previous drainage reports and other information associated with the project will be provided.

Scope of Services

IEA will provide the following structural analysis services.

Task 1: Data Collection

1.1 **Collect Available Data and Field Reconnaissance:** This task will include collecting available data for acceptable limits of construction for temporary special shoring and permanent detention structure, and identify location of existing utilities. Field reconnaissance will include a photographic record of notable existing features.

1.2 **Establish Design Criteria:** The Engineer shall prepare all work in accordance with the latest version of applicable design specifications and requirements from drainage analysis.

1.3 **Review Geotechnical Report:** The geotechnical report, containing but not limited to boring logs, laboratory test results, generalized subsurface conditions, ground water conditions, piezometer data, skin friction tables and design capacity curves will be reviewed for site specific considerations pertinent to the construction of the detention structure.

Task 2: Preliminary Engineering Report (10% Conceptual Design)

2.1 Underground cast-in-place structure: The Engineer shall prepare a 10% preliminary design along with cost estimate, and exhibit to be included in the report.

2.2 Constructability study: This task will include reviewing the preliminary design, identifying construction constraints and evaluate constructability of the structure.

2.3 Prepare Draft Report: The pros and cons will be documented in the draft Preliminary Engineering Report. This report will document project description, data, methodology, exhibits and appendices.

2.4 Prepare Final Report: We will incorporate comments to prepare a final report (10% conceptual design).

Task 3: Coordination and Administration

3.1 Coordinate with Client: Coordination will include meetings with prime consultant and other disciplines.

3.2 Prepare Progress Report and Invoices: Progress reports and monthly invoices will be prepared and submitted.

Compensation and Schedule

Fee for the above mention scope of work has been estimated as lump sum of $49,440.00, which excludes any additional tasks. Please see the attached fee estimate for a task by task breakdown of the costs.

FEE PROPOSAL - LUMP SUM
TIRZ 17 - DETENTION STRUCTURES
PREPARED BY: IEA, Inc.
PROPOSAL DATE: AUGUST 27, 2018

Task No.	Rates	$ 220.00	$ 175.00	$ 95.00	$ 105.00	$ 60.00	Total hours	Total Cost
	Task Description	Project Manager	Sr. Structural Engineer	EIT	Structural CADD	Admin/Clerical		
Task 1.	*Data Collection*							
1.1	Collect available data	2	4	4	2		12	$ 1,730.00
1.2	Establish design criteria	4	4				8	$ 1,580.00
1.3	Review geotechcnial report	1	4	8			13	$ 1,680.00
Task 1 Subtotal		*7*	*12*	*12*	*2*	*0*	*33*	*$ 4,990.00*
Task 2.	*Preliminary Engineering Report (10% Conceptual Design)*							
2.1	Underground cast-in-place structure option							
	(1) Prepare preliminary design		40	60	20		120	$ 14,800.00
	(2) Prepare Cost Estimate		12	12			24	$ 3,240.00
	(3) Prepare Exhibits	4	16	32	32		84	$ 10,080.00
2.2	Constructability study	2	8	8			18	$ 2,600.00
2.3	Prepare Draft Report	6	10	12	4	6	38	$ 4,990.00
2.4	Prepare Final Report	3	6	6	2	4	21	$ 2,730.00
Task 3 Subtotal		*15*	*92*	*130*	*58*	*10*	*305*	*$ 38,440.00*
Task 3.	*Coordination and Administration*							
3.1	Coordinate with prime consultant	10	10			4	24	$ 4,190.00
3.2	Prepare Progress Reports and Invoices	4	4			4	12	$ 1,820.00
Task 4 Subtotal		*14*	*14*	*0*	*0*	*8*	*36*	*$ 6,010.00*
Labor Hour Subtotal		*36*	*118*	*142*	*60*	*18*	*374*	
TOTAL								$ 49,440.00

Exhibit D

THE GOODMAN CORPORATION

HOUSTON:
3200 Travis Street
Suite 200
Houston, TX 77006
(713) 951-7951

AUSTIN:
911 W. Anderson Lane
Suite 200
Austin, TX 78757
(512) 236-8002

THEGOODMANCORP.COM

PROJECT SCOPE

PHASE I ENVIRONMENTAL SITE ASSESSMENT
GAUGE ENGINEERING
MEMORIAL MIDDLE SCHOOL DETENTION PROJECT, HOUSTON, TX

This Environmental Site Assessment will be prepared for review and approval by the City of Houston and will meet the requirements outlined in the City of Houston Infrastructure Design Manual. If the assessment indicates the need for additional investigation to determine the nature and extent of contamination in the project right-of-way, the Phase I will provide a recommendation for a Phase II ESA.

Task 1 – Phase I Environmental Site Assessment

- The objective of the Phase I Environmental Site Assessment (ESA) is to review available data regarding the subject property/corridors and provide an opinion regarding the presence or absence of potential environmental impacts from current or past uses of the site. The Phase I ESA will be conducted based on the American Society for Testing and Materials (ASTM) Standard E1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*; 40 CFR Part 312 *Standards and Practices for All Appropriate Inquiries* (AAI); and the July 2016 City of Houston Department of Public Works and Engineering *Infrastructure Design Manual* "Phase I Environmental Site Assessment (ESA I) Requirements." These standards provide protection from liability when acquiring real estate and support an Innocent Landowner Defense if contamination is present. TGC will complete Phase I ESA for the Memorial Middle School project area, including:

    - **Regulatory Agency Inquiry** – An online database report will be run to review state, federal, and local regulatory records to identify registered or documented facilities that could potentially impact the site. The search radii and database review are in accordance with the guidelines set forth in ASTM 1527-13.
    - **Determine Existing Site and Site Vicinity Conditions** – TGC will perform a site visit to the project corridor and will review existing records to determine historical conditions. Staff will visually observe and record any evidence of sources of potential environmental impacts in the subject area and vicinity (gas stations, dry cleaners, transformers with PCBs, tanks, staining, distressed vegetation, etc.). TGC will document conditions with photographs. As necessary, property representatives will be interviewed regarding conditions at sites were the presence of contamination has been identified through records research.
    - **Determine Geologic Setting** – Staff will review available topographic, geologic, and hydrologic maps and published information to assess the physical setting of the corridors. Surface and sub-surface soil and hydrology characteristics will be described.
    - **Draft Phase I ESA Report** - Pertinent data and observations will be compiled and presented in a draft report for review and comment from the City of Houston. The report

will include an opinion by TGC regarding the likely absence or presence of potential environmental impacts. If it is determined that there is a possibility for environmental contamination to be present, TGC will provide a recommendation to address these findings.

- **Final Phase I ESA Report** – TGC will address any comments from the City of Houston and submit a Final Phase I ESA to the City for concurrence. Please note that the findings the Phase I ESA are opinions based on professional knowledge and judgment concerning the significance of the data gathered during the course of the site assessment. The Phase I ESA provides analysis of existing available data and visual site inspection; no sampling is performed in order to more definitively categorize the condition of soil and groundwater in the project area. If warranted, TGC will recommend the completion of a Phase II ESA to complete site-specific sampling.

Deliverables: *Draft Phase I ESA Report, Final Phase I ESA Report*

Cost: *$6,000*

Time Frame: *60 days*

BUDGET SUMMARY		
TASK	DESCRIPTION	COST
1	Draft and Final Phase I ESA Reports	$6,000

Exhibit E

AVILES
ENGINEERING CORP.

August 25, 2018

Mr. Muhammad Ali, P.E., Principal
Gauge Engineering
2500 City West Boulevard, Suite 300
Houston, TX 77042

Re: Revised Geotechnical Investigation Proposal /Agreement
Proposed Detention Basin A – (T-1735B)
Memorial City, Texas
AEC Proposal No. G2018-08-17R

Dear Mr. Ali,

Aviles Engineering Corporation (AEC) is pleased to submit this revised proposal for a geotechnical investigation for the proposed underground Detention Basin A – (T-1735B) at an existing sport fields (approximately 640'x740') located east of Attingham Drive and north of Kingsride Street (Houston/Harris County Key Map 489 D) in Memorial City, Texas. According to the information and map provided, we understand that Gauge Engineering is evaluating this tract for underground detention, which include to install concrete boxes or large vault to be at least 10-foot deep (possibly 12 feet) with a 5-foot cover. After installation of the underground detention facility and cover, the tract may be used for sport field. Therefore, we anticipate that high mast lights may be required in the future.

Based on the latest City of Houston's Geotechnical Guidelines, AEC proposes to drill six (6) borings: four 35-foot deep borings and two 50-foot deep borings as shown on the attached boring location plan. Total drilling footage is 240 feet. AEC personnel will mark the boring locations and contact Texas 811 to check underground utilities. However, Texas 811 does not check underground water line, storm sewer, and sanitary sewer. We request that the existing underground utilities drawings be provided to AEC at the project onset.

Based on Google Earth, the tract appears to be level. We anticipate that the basin borings will be drilled with a truck-mounted drill rig when ground is dry. Samples will be obtained continuously in the top 20 feet and at 5-foot intervals thereafter. Undisturbed samples will be obtained of cohesive soils by pushing a Shelby tube (ASTM D-1587). Standard Penetration Test samples will be obtained of granular soils (ASTM D-1586). We will note any visual evidence of odor indicating hazardous materials if encountered in the samples. Representative portions of all soil samples will be sealed, packaged and transported to our laboratory. Water level readings will be noted during drilling, upon completion of drilling, and 24 hours (for the borings not drill in the last day) after completion of drilling, then the boreholes will be backfilled with bentonite chips.

Laboratory testing may consist of moisture contents, Atterberg limits, percentage passing No. 200 sieve, sieve analysis, dry density, unconfined compression and unconsolidated-undrained triaxial tests depending on the soil types encountered. One consolidated-undrained (CU) triaxial test will be performed.

We will analyze the field and laboratory data to develop geotechnical engineering recommendations for (1) boring logs compiled with gINT program if required; (2) summary of subsurface soil conditions and groundwater levels encountered; (3) allowable bearing capacities, design soil parameters for lateral earth

AVILES
ENGINEERING CORP.

pressure for concrete boxes or vault(s); recommendations for backfill of underground structures; (4) criteria for cover material; (5) evaluating if the soils from the detention basin excavation can be used as select fill criteria; and (6) recommendations and dewatering guidelines for the facility construction.

The estimated lump sum fee for the services described in this proposal is **$21,976.00** as shown on the attached itemized fee estimate which include one mob/demob for a truck rig, a site visit to mark the borings, 3 copies of final report. The fee is based on the following assumptions: (1) the entry permit will be provided to AEC with no cost; (2) the field personnel will use Level D protection gear during the field exploration; (3) no standby time (weather-related or incurred due to reasons beyond AEC's control) are included; and (4) fence/gate removal, fault study, concrete pavement coring, surveying, restore the existing ground to the original conditions, plan/specification review, and environmental assessment are not included.

Weather permitting, and assuming no field delays, we plan to start the field exploration about one week after receiving your notice to proceed. The underground utilities clearing and field drilling will take about 2 weeks; soil laboratory testing will require 2 to 3 weeks to complete. We will submit final report and trench safety letter 2 to 3 weeks after completion of the laboratory soil testing.

To reduce delays in the schedule and avoid additional fees, we request that we be provided with any proposed or preferred geotechnical-related design details including existing utility drawings, and proposed detention pond and channel drawings, and design 100-year flood elevations at the onset.

If any of the project details described in this proposal are incorrect or the scope described or the assumptions listed need to be revised, please inform us immediately so we can revise the proposal as necessary. To authorize us to proceed with the proposed geotechnical services, AEC understands that Gauge Engineering will provide AEC with a Professional Services Contract to proceed with the services clearly reflecting the scope of services to be performed and referencing this proposal. We appreciate the opportunity to present this proposal, and look forward to working with you again.

Respectfully submitted,
Aviles Engineering Corporation

Shou Ting Hu, MSCE, P.E.
President

Attachments: Itemized Fee Estimates, Proposed Boring Location Plan

Geotechnical Investigation
Proposed Detention Basin A – (T-1735B)
Houston, Texas
AEC Proposal No. G2018-08-17R
8/25/2018

AVLES ENGINEERING CORP.

ITEMIZED FEE ESTIMATE

Six borings: 4@25', and 2@50'

A. FIELD EXPLORATION	QTY	UNIT		RATE	AMOUNT
Truck-Mounted Rig Mobilization/Demobilization	1	LS	@	$340.00	$340.00
Coordination and Utility Clearing (Senior Technician)	8	hrs.	@	$69.00	$552.00
Site Reconnaissance and Boring Marking (Staff Engineer, EIT)	6	hrs.	@	$83.00	$498.00
Concrete Pavement Coring (6" dia, 6" thick core, min charge $300)	0	ea.	@	$90.00	$0.00
Boring Logging (Senior Technician)	27	hrs.	@	$69.00	$1,863.00
Soil Drilling and Continuous Sampling (0 to 20 ft)	120	ft.	@	$21.00	$2,520.00
Soil Drilling and Intermittent Sampling (20 to 50 ft)	120	ft.	@	$19.00	$2,280.00
24-Hour Groundwater Reading	4	hrs.	@	$69.00	$276.00
Grouting Holes (bentonite chips)	240	ft.	@	$7.00	$1,680.00
Site Cleanup and Stanby Time	3	hrs.	@	$185.00	$555.00
Vehicle Charge	200	miles	@	$0.54	$108.00
	SUBTOTAL				**$10,672.00**
B. GEOTECHNICAL LABORATORY TESTING					
Atterberg Limits (ASTM D-4318)	24	ea.	@	$60.00	$1,440.00
Passing No. 200 Sieve (ASTM D-1140)	16	ea.	@	$46.00	$736.00
Sieve Analysis w/o Hydrometer (ASTM D-422)	2	ea.	@	$55.00	$110.00
Moisture Content (ASTM D-2216)	84	ea.	@	$9.00	$756.00
Unconfined Compression (ASTM D-2166)	12	ea.	@	$44.00	$528.00
Unconsolidated-Undrained Test (ASTM D-2850)	12	ea.	@	$61.00	$732.00
Consolidated-Undrained Triaxial Test (ASTM D-4767)	1	ea.	@	$1,800.00	$1,800.00
	SUBTOTAL				**$6,102.00**
C. ENGINEERING AND REPORT PREPARATION					
Senior Engineer, P.E.	8	hrs.	@	$150.00	$1,200.00
Project Engineer, P.E.	16	hrs.	@	$105.00	$1,680.00
Staff Engineer, E.I.T.	24	hrs.	@	$83.00	$1,992.00
Word Processor	4	hrs.	@	$60.00	$240.00
Reproduction (3 hard copies and 1 electronic copy)	3	copies	@	$30.00	$90.00
	SUBTOTAL				**$5,202.00**
TOTAL ESTIMATED FEE					**$21,976.00**

Exhibit F

KUO
& associates, Inc.
Consulting Engineers
& Surveyors

10700 Richmond Ave, Suite 113
Houston, TX 77042
Tel: (713) 975-8769
Fax: (713) 975-0920
www.kuoassociates.com

August 24, 2018

Muhammad Ali, PE
Principal
Gauge Engineering
2500 CityWest Blvd, Suite 300
Houston, Texas 77042

RE: Sports Complex, TIRZ 17
Topographic Surveying Services

Dear Mr. Ali:

Kuo & Associates, Inc. is pleased to submit this proposal to perform surveying services for the above referenced project. The project limit consists of a site (approximately 11 acres) and limited surveying of storm manholes along Attingham, Tallowood, Barryknoll and Vindon Road. Limits of survey are shown in the attached exhibits. The detail scope of work and fees are proposed to be as follows:

Scope of Work:

Scope of work will include the following:

1. Topographic Survey of the Sports Complex Site
2. Limited Survey of Storm manholes along Various Roads

Item 1: Topographic Survey of the Sports Complex Site

Topographic surveying will be performed in compliance with the Category 6, Condition 2 survey as per the latest TSPS Manual of practice and requirements as listed in the attached document, as applicable. In general our office will perform necessary field and office work for the following items:

- Survey datum will be based on NAD 83 horizontal, and NAVD 88 (2001 adj.) vertical and will be tied to nearby TSARP survey monument, if available
- Establish survey controls
- Survey spot elevations in more or less 50'x50' grid and at apparent grade breaks for the limit of topographic survey
- Survey all visible topographic features within the limit of topographic survey including all trees of 3" in and over in caliper size within the site and more or less 20' beyond the site property lines as accessible.
- Survey all buildings (if any) corners and building finished floor elevations at all doors on grade level
- Survey all visible utility features within the limit of topographic survey
- Survey east curb line of Attingham Road adjoining the site
- Obtain record drawings from the City of Houston File room for road utilities
- Invert all manholes and inlets within the limit of topographic survey
- Prepare a topo and utility plan view in AutoCAD showing all topo features, and available utility lines in AutoCAD Civil 3D 2015 or higher format. All underground public and private utility lines within the limit of topographic survey will be delineated on the plan based on the above ground features, manhole measure-downs, and best available record drawings (we are assuming your office will be assisting in obtaining site utility record drawings from the client/owner of the site).
- Prepare a contour or DTM model for the site area

The deliverable will include a signed and sealed topo/utility plan drawing, electronic version of the same in the prescribed AutoCAD format, survey point ASCII Files and copy of the field book as necessary.

August 24, 2018
Proposal for Survey

Item 2: Limited Survey of Storm Manholes along Various Roads

Limited surveying will be performed with GPS along Attingham, Tallowood, Berryknoll and Vindon Streets as shown in the attached exhibit. In general our office will perform necessary field and office work for the following items:

- Survey datum will be based on NAD 83 horizontal, and NAVD 88 (2001 adj.) vertical and will be tied to nearby TSARP survey monument, if available
- Survey storm manholes with GPS differential surveying
- Invert all storm manholes within the limit
- Obtain record drawings from the City of Houston File room for storm lines
- Prepare a plan drawing with findings on storm manholes.

The deliverable will include a drawing with storm manholes findings in AutoCAD and copy of storm record drawings.

The following items are specifically excluded from our proposed scope and fee:

- Any boundary level survey
- Any topo and utility survey along roads except as mentioned above
- Any Level A or Level B SUE survey
- Surveying findings of Level A & B SUE survey (by others)
- Accessing/opening electric and communication manholes
- Any profile drawing
- Surveying any confined space of large manhole structure (if any)
- Survey control map

Fee and Schedules:

Estimated fees and schedule for the works stated in the above scope are as follows:

Item No.	Item	Fee (lump sum)
1	Topographic Survey of the Site	$15,248.00
2	Limited Storm Manhole Survey	$5,668.00

We estimate 35 calendar days to complete the works.

We appreciate this opportunity in submitting this proposal. If you need further information, please do not hesitate to contact me.

Sincerely,

Shaheen Chowdhury

Shaheen Chowdhury, P.E., R.P.L.S.
President

August 24, 2018
Proposal for Survey

Item 1: Level of Efforts for Site Survey						
ITEM	Principal $180.00	RPLS $130.00	SIT $90.00	CADD $81.00	Survey Crew $150.00	Cost
TOPOGRAPHIC SURVEY OF SITE						
Tie to Benchmark			1		2	$390.00
Establish survey controls		1	2		12	$2,110.00
Topo survey (Site)					40	$6,000.00
Utility Research			4			$360.00
Limited abstracting						$500.00
Estiamted Property lines		4	8			$1,240.00
DTM/Contour for site			12			$1,080.00
Site plan with contour				24		$1,944.00
QA/QC		4		4	4	$1,444.00
Project Management	1					$180.00
Total Cost						**$15,248.00**

Item 2: LIMITED SURVEY ALONG ROAD						
GPS controls			1		4	$690.00
Storm manhole survey			1		16	$2,490.00
Invert storm manholes			2		8	$700.00
Obtain record drawings			4			$700.00
Prepare a plan			2	8		$828.00
QC/QA		2				$260.00
Project Management						$0.00
Total						**$5,668.00**

Ex F

Gauge ENGINEERING

August 27, 2018

Ms. Ann Givens, Chair of the Board
Memorial City Redevelopment Authority / TIRZ 17
9610 Long Point Road, Suite 150
Houston, TX 77055

Re: Proposal for Plans, Specifications, and Estimates – North Gessner Drainage and Mobility Improvements (T-1732A & T-1732B)

Dear Mrs. Givens,

Gauge Engineering, LLC (Gauge) is pleased to submit this proposal for Plans, Specifications, and Estimates (PS&E) Services for North Gessner Drainage and Mobility Improvements. We propose to perform the PS&E services for a Lump Sum amount of $696,200. A detailed breakdown of the scope items and fee can be found under Exhibits "A" and "B" respectively. We are prepared to begin this work immediately.

Please feel free to contact me at (713) 254-5946 if you have any questions or need additional information.

Sincerely,

Muhammad Ali, P.E.
Principal

Accepted For
Memorial City Redevelopment Authority

_____
Signature Date

_____
Print

Accepted for City of Houston

_____
Signature Date

_____
Print

Attachments: Exhibit A - Scope of Services
Exhibit B - Level-of-Effort
Exhibit C – TEI Scope-LOE

EXHIBIT A
SCOPE OF SERVICES
MEMORIAL CITY REDEVELOPMENT AUTHORITY – TIRZ 17
NORTH GESSNER DRAINAGE AND MOBILITY IMPROVEMENTS – (T-1732A & T-1732B)
FROM IH-10 (KATY FWY) TO SOUTH OF LONG POINT

This proposal is for the professional engineering services for the drainage and mobility improvements, and public utility upgrades and relocations for TIRZ 17's North Gessner Project. The following scope details the procedures that will be followed to provide TxDOT bid-ready construction plans:

SCOPE OF WORK

Providing bid-ready construction plans for approximately 3,200 LF of North Gessner, from the Westbound (WB) Frontage Road of IH-10 (Katy Freeway) north to just south of Long Point Drive. Scope includes advancing and building on the current design efforts that was previously prepared by RPS. It consists of the development of plans, specifications, and cost estimate (PS&E) for the project which includes roadway, drainage, permanent signage, pavement striping, traffic signals, public utilities (water & sanitary sewer) upgrades/relocation, pedestrian amenities, softscape and hardscape amenities, traffic control, street lighting, and storm water pollution prevention plans (SWPPP).

N. Gesser will be constructed with TIRZ 17 and TIP funds. Therefore, it will be a TxDOT let project and the PS&E package will be prepared in conformance with TxDOT requirements and the latest edition of the State's PS&E Preparation Manual. The PS&E package shall be suitable for the bidding and awarding of a construction contract, and in accordance with the latest State's policies and procedures and the District's PS&E Checklist. The plans and deliverables will be reviewed by both TxDOT and the City throughout the design process (60%, 90%, 95% and Final)

PS&E TASKS

A. Schematic Phase

Coordinate, update and advance existing schematic as necessary to obtain approval from TxDOT, City and TIRZ 17 on final roadway geometry (Note, Design Concept Conference has already been conducted)

B. Drainage Analysis

The objective of this effort is to build on and further advance the drainage analysis work to obtain TxDOT and City of Houston's concurrence on the drainage solution for N. Gessner. Using historical knowledge of the TIRZ 17 regional drainage solutions, Gauge Engineering will consider the proposed drainage improvements in concert with the other planned regional improvements that may impact N. Gessner.

a. Thorough Review of RPS Drainage Analysis

Gauge will review the drainage analysis efforts completed and in progress to understand the approach and results of the planned improvements. Attention will be given to the project benefits, potential impacts, and compliance with City and TxDOT criteria. It is understood that progress has been made with the Drainage Analysis. Gauge will build on the previous efforts and ensure the drainage solution meets the needs of the community. It is anticipated that preliminary models for both existing and proposed condition have been completed along with an initial draft report developed. Minimal effort is expected to finalize.

b. Finalize Hydrology

1. Calculate discharges using appropriate hydrologic methods and as approved by the State.
2. Consider the pre-construction and post-construction conditions in the hydrologic study, as required in the individual Work Authorization.
3. Adjust drainage area boundaries as necessary based on field observation, topographic maps, GIS modeling, and record drawings.

4. Include, at a minimum, the "design" frequency to be specified in the Work Authorization and the 1% Annual Exceedance Probability (AEP) storm frequency. The report must include the full range of frequencies (50%, 20% 10%, 4%, 2%, 1%, and 0.2% AEP).
5. Compare calculated discharges to the Regional Drainage Study flows. If necessary, adjust parameters to improve the hydraulic evaluation.

c. Finalize Hydraulic: This effort is to ensure that the drainage system performs adequately and meets normal standards for the City of Houston and TxDOT.

1. Ensure that the RDS was used as a base model for the analysis. Modify or update hydraulic design and analysis using appropriate hydraulic methods, which may include computer models such as XP-SWMM or InfoWorks. Data entry for appropriate hydraulic computer programs shall consist of a combination of both on-the-ground survey and other appropriate sources including but not limited to topographic maps, GIS modeling, and construction plans and existing hydrologic studies.
2. Consider pre-construction, present and post-construction conditions.

d. Mitigation Analysis: This effort is to communicate to the City of Houston and TxDOT the project mitigation plan.

1. Assess impacts, beneficial or adverse, in terms of increases in peak flow rates and water surface elevations for the above listed hydraulic conditions and hydrologic events. Impacts will be determined both upstream and downstream of the bridge crossings.
2. Anticipate minor modifications to right of way corridor storage volumes computations for existing and proposed roadway elevations. The Design team shall provide mitigation to offset a decrease in 1% AEP flood plain volumes.
3. Use hydrograph calculations and peak flows to confirm the storage required.
4. Consider alternative mitigation measures and flood damage reduction measures. Each method must consider the effects on the entire area. Include approximate construction costs in the report.

e. TxDOT Drainage Workshop:

1. The workshop will present the recommended drainage solution and coordinate related design elements including behind the curb amenities.

C. General Plan Sheets (60%, 90%, 95%, 100%)

All the General Sheets including Title Sheet, Index, Overall Sheet layouts and General Notes will be prepared in accordance to TxDOT drawing requirements. Other sheets includes Summary of Quantities of the different components of the projects along with other plant protection sheets.

Typical Sections for proposed and existing roadway will be developed. Typical sections shall include width of travel lanes, sidewalks, outer separations, border widths, curb offsets, and right-of-way (ROW). The typical section shall also include Proposed Grade Line, centerline, pavement design, side slopes, sodding/seeding limits, station limits, etc.

Demolition plans will be provided for the length of the project and shall include all pavement, drainage structures, traffic signals, sidewalks, signs, landscaping, bus shelters, other structures, etc. to be removed.

D. Traffic Control Plan (60%, 90%, 95%, 100%)

Construction Sequencing and Traffic Control Plans (TCP) will be prepared in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and TxDOT guidelines. It will show detailed construction sequences and the necessary traffic control phases, complete with all barricades, signing,

striping, delineation, detours, temporary traffic signals and any other devices, to protect the traveling public and provide safety to the construction forces. During construction, a temporary Traffic Signal will be required at the intersection of Westview Drive. As a result, temporary Traffic signal design drawings will be provided.

A Traffic Control Workshop will be conducted with TxDOT early in the project development. A safety review team meeting associated with the final TCP will also be conducted.

E. Roadway Design (60%, 90%, 95%, 100%)

1. **Roadway Plan and Profile Sheets:** Detailed roadway plan and profile sheets will existing features and the proposed improvements. Plans will also depict pedestrian facilities and shall be designed in accordance with the American with Disabilities Act Accessibility Guidelines (ADAAG) and the Texas Accessibility Standards (TAS). The plans will be submitted to the Texas Department of Licensing and Regulation (TDLR) or representative thereof for review, approval, and inspection. The plan view shall contain the following design elements:

    - Horizontal alignment for North Gessner Lane.
    - Indicated pavement edges, lane and pavement widths for all improvements
    - Direction of traffic flow arrows.
    - Indicate existing and proposed ROW/Easement lines.
    - Begin/end of cross slope transitions.
    - Existing major utilities and structures.
    - Any necessary callouts to clarify details.
    - Drawings horizontal scale 1"=40' for 11"x17" size sheets.

    The profile shall contain the following design elements:
    - The approximate existing profile grade for North Gessner road.
    - The existing north and south ROW profiles
    - Proposed profile grade for North Gessner Lane
    - The location of intersections
    - Drawing vertical scale 1"=4' for 11"x17" size sheets.

2. **Intersection Layouts:** Intersection layout and grading plan will be developed detailing the pavement design and drainage design at the intersection of each cross street. The layout shall include the curb returns, geometrics, transition to existing pavement, stationing, pavement and drainage details. Drawing scale shall be 1"=20' for 11"x17" size sheets.

3. **Horizontal geometry Sheets:** Horizontal roadway geometry sheets will be developed for the improvements.

4. **Driveway Schedule:** The Driveway schedule will show the location, size and type of proposed driveways to be reconstructed as part of the project. Driveways shall typically be reconstructed to the ROW line using standard TxDOT details.

5. **Cross Sections and Cut and Fill Quantities:** Earthwork analysis will be conducted to determine cut and fill quantities and provide final design cross sections at 50 feet intervals. Drawing scale shall be 1"=20'; V: 1"=5' for 11"x17 size sheets.

6. **Standard Details:** All the necessary standard roadway and sidewalk details will be included in the design set.

F. Signing and Markings

Drawings, specifications and details will be prepared for all regulatory signs and pavement markings on combined layout sheets. Drawings scale shall be 1"=100' for 11"x17" size sheets. All plans shall follow the Texas Manual on Uniform Traffic Control Devices (TMUTCD). A summary signs list will be provided. The proposed regulatory signs shall be illustrated and numbered on plan sheets. Sign foundation, poles, attachments, and details shall be selected from TxDOT standards. Permanent and temporary pavement markings and channelization devices on plan sheets shall be prepared. The following information will be shown on sign/pavement markings layouts:

- Roadway layout.
- Center line with station numbering.
- ROW/Easement lines.
- Culverts and other structures that present a hazard to traffic.
- Existing signs to remain, to be removed, or to be relocated.
- Proposed regulatory signs (illustrated and numbered).
- Proposed markings (illustrated and quantified) which include pavement markings and delineation.
- Quantities of existing pavement markings to be removed.
- Proposed delineators and object markers.
- The number of lanes in each section of proposed road and the location of changes in the numbers of lanes.
- Direction of traffic flow on all roadways.

G. Drainage Design

1. Storm Drains

The Design team shall provide the following services:

1. Design and analyze storm drains using software as approved by the State.
2. Size inlets, laterals, trunk line and outfall. Develop designs that minimize the interference with the passage of traffic or incur damage to the streets and local property in accordance with the State's Hydraulic Design Manual, District criteria and any specific guidance provided by the State.
3. Determine hydraulic grade line starting at the outfall channel for each storm drain design. Use the design water surface elevation of the outfall as the starting basis (tailwater) for the design of the proposed storm sewer system.
4. Calculate manhole head losses. Compute manhole head losses as per FHWA's HEC-22.
5. Limit discharge into existing storm drains and existing outfalls to the capacity of the existing system, which will be determined by the Design Team. Evaluate alternate flow routes or detention, if necessary, to relieve system overload. Determine the amount of the total detention storage to control storm drain runoff for the design frequency based on hydrograph routing for the full range of frequencies (50%, 20% 10%, 4%, 2%, 1%, and 0.2% AEP), as well as a rough estimate of the available on-site volume. When oversized storm drains are used for detention, the Design Team shall evaluate the hydraulic gradeline throughout the whole system, within project limits, for the design frequency or frequencies. The Design Team shall coordinate with the State any proposed changes to the detention systems. The State will assess the effects of such changes on the comprehensive drainage studies.
6. Identify areas requiring trench protection, excavation, shoring, and de-watering.

2. Temporary Drainage Facilities:

The Design Team shall provide the following services:

1. Develop plans for all temporary drainage facilities necessary to allow staged construction of the project and to conform with the phasing of adjacent construction projects without significant impact to the hydraulic capacity of the area. Drainage area maps are not required for temporary drainage.

3. **Environmental Permits:**
The Design Team shall notify the State project manager when site conditions may require environmental permits such as Nationwide Permit, §404 Individual Permits (including mitigation and monitoring) and U. S. Coast Guard and U.S. Army Corps of Engineers §10 Permits.

4. **Plans, Specifications and Estimates (PS&E) Development for Hydraulics:**
The Design Team shall provide the following services:

   a. Prepare the PS&E package in accordance with the applicable requirements of the State's specifications, standards, and manuals, including the PS&E Preparation Manual. Include the following sheets and documents, as appropriate:

      i. Drainage Area Maps
      ii. Storm Drain Plan/Profile Sheets
      iii. Incorporate drainage design into Roadway Plan & Profile Sheets including profile grade line of parallel ditches, if applicable.
      iv. Identify areas requiring trench protection, excavation, shoring and de-watering.
      v. Prepare drainage area maps.
      vi. Prepare plan and profile sheets for storm drain systems and outfall ditches.
      vii. Select any necessary standard details from State or District's list of standards for items such as inlets, manholes, junction boxes and end treatments.
      viii. Prepare details for non-standard inlets, manholes and junction boxes.
      ix. Prepare drainage details for outlet protection, outlet structures, control structures, and utility accommodation structures
      x. Identify pipe strength requirements and specify accordingly.
      xi. Prepare drainage facility quantity summaries
      xii. Identify potential utility conflicts and, if feasible, design to mitigate or avoid those identified conflicts.
      xiii. Consider pedestrian facilities, utility impacts, driveway grades, retaining wall and concrete traffic barrier drainage impacts.
      xiv. Identify existing ground elevation profiles at the ROW lines on storm sewer plan and profile sheets.

5. **Drainage Impact Study:**
The drainage study will be updated and finalized based on any changes to the design and analysis. The report will be compiled detailing the criteria, methodology utilized and results of the analysis.

H. **Water and Wastewater Design:** Plan and profile plans, details, specifications, quantities and estimate will be prepared for existing and proposed water lines and sanitary sewer lines. TxDOT standards and specifications will be used. Design will be consistent with the recommendations in the RDAI. Drawing scale shall be H: 1"=40', V: 1"=4' for 11"x17" size sheets.

I. **Structural Design:** Detailed structural design drawings shall be developed for retaining walls, seat-walls, and/or pedestrian toe walls. Drawing scale shall be 1"=20' for 11"x17" size sheets.

J. **Street Lighting** Street lighting standards will be coordinated with CenterPoint and the City. Street lighting layout plans/exhibits will be developed for light pole locations, lighting ground boxes, and routing of lighting underground circuits/conduits. Drawing scale shall be 1"=100' for 11"x17" size sheets.

K. **Storm Water Pollution Prevention Plan (SWPPP)** The following items will be prepared in accordance with TxDOT Standard Details and Standard Specifications

a. Pollution Prevention Plan drawings having a minimum scale of 1"=100' and showing all existing and proposed streets, Project alignments, applicable notes, proposed storm water conveyance systems, overland flow arrows, and pollution prevention measures.
b. Pollution Prevention Plan specifications.
c. Pollution Prevention Plan construction quantities.
d. The EPA Notice of Intent form (if required).

All submittals will follow TxDOT's milestone requirements, see below for more details:

60% Submittal Deliverable: 60% Construction Documents includes as a minimum:

- Title Sheet (80 percent)
- Index of Sheets (60 percent)
- Typical Sections (90 percent)
- General Notes and Legends plans (75 percent)
- Sequence of Construction (75 percent)
- Plan and Profile Sheets (75 percent) – Submit updated cross section plots with this submission.
- Intersection Layouts (95 percent)
- Drainage Design (60 percent)
- Final Culvert Layouts
- Final Outfall Drainage Study Report Complete and Approved by TxDOT City, and/or Agency.
- Finalize Utility Layouts
- 60 percent Utility Meeting
- Permanent Signing and Striping (60 percent)
- Preliminary Illumination and Signal Layouts (60 percent)
- Quantities and Summary Sheet (60 percent)
- Submit Construction Cost Estimate (60 percent on ASCII format)
- Special Provisions unique to the Project
- Overall Layout Sheets (75 percent)
- Survey Control Maps (90 percent)
- Demolition and Protection plans (75 percent)
- Sheet by Sheet Quantities (60 percent)
- Water and Wastewater Plan and Profile Sheets (75 percent)
- Drainage Area Maps (90 percent)
- Hydraulic Computations (90 percent)
- Structural Layout plans (60 percent)
- Structural Layout details (60 percent)
- Driveway Schedule Sheets (80 percent)
- Roadway Cross sections (75 percent)
- Construction details, sections and elevations (75 percent)
- Traffic Control and Phasing plans (75 percent)
- Traffic Signal layouts, signal notes, summary and chart sheets for intersections (75 percent)
- Stormwater pollution prevention (SW3P) layout plans (75 percent)
- Electrical service layout plans, electrical data sheets, and electrical details (60 percent)
- Boring Logs (90 percent)
- Architectural Layout and preliminary dimensioning plans (80 percent)
- Paving and materials plans (80 percent)
- Project Dimensioning Plans (80 percent)
- Back of curb grading plan (80 percent)

- Planting plans (80 percent)
- Irrigation and sleeving plans (80 percent)
- Retaining Wall Layouts (60 percent)
- Project Branding, wayfinding, signage and interpretive design plans (80 percent)
- Tree Protection Plans (if required) (80 percent)
- Project technical specifications (8.5x11 pdf and one hard copy)
- Project opinion of probable construction costs (pdf)
- Submit documentation that drawings were submitted to private utilities for review.
- Submit design review checklist

90% Submittal Deliverable: 90% Construction Documents includes as a minimum:

- Input Construction Cost Estimate into DCIS (P4)
- Title Sheet (95 percent)
- Index of Sheets (95 percent)
- Schedule 90 Percent Utility Meeting
- Typical Sections (98 percent)
- Quantities and Summary Sheets (100 percent)
- Traffic Control (98 percent)
- Safety Review Team MeetinFg
- Plan and Profile Sheet (98 percent)
- Intersection Layout (98 percent)
- Retaining Wall Layout (98 percent)
- Intersection Layouts (100 percent)
- Storm Sewer Design (98 percent)
- Erosion Control Plans (98 percent)
- Environmental Data Sheets (100 percent)
- Permanent Signing and striping (98 percent)
- Illumination and signal layouts (98 percent)
- Contract Time Determination/Special Provisions for contractors-incentives vs. disincentives
- 90 percent Utility Meeting
- Traffic Signal layouts, signal notes, summary and chart sheets for three intersections (98 percent)
- Stormwater pollution prevention (SW3P) layout plans (98 percent)
- Electrical service layout plans, electrical data sheets, and electrical details (98 percent)
- Boring Logs (98 percent)
- Architectural Layout and preliminary dimensioning plans (98 percent)
- Paving and materials plans (100 percent)
- Project Dimensioning Plans (98 percent)
- Back of curb grading plan (98 percent)
- Planting plans (898 percent)
- Irrigation and sleeving plans (98 percent)
- Retaining Wall Layouts (98 percent)
- Project Branding, wayfinding, signage and interpretive design plans (98 percent)
- Tree Protection Plans (if required) (98 percent)

95% Design Submittal

Upon submittal of the 90% package, this phase will consist of responding to redlines received from TxDOT. The outcome of this task will be to resolve all comments and/or coordination issues found within the TXDOT 90 % set of documents in an effort to resubmit for 100% approval.

All drawings, details, specifications, coordination, meetings and cost estimates listed in the 90% will be incorporated into this phase of work, but with additional detailing and information associated with the OPC and technical specifications.

100% Design Submittal

This design phase will commence upon approval by TxDOT of the 95% submittal. The team will make necessary drawing changes as a result of comments by review agencies during the permitting process. The intent is to have a 100% complete set with all redlines resolved, all sheets indexed, required general notes furnished, all drawings completely coordinated and work items listed.

Bidding and Negotiation

- The design team shall use TxDOT's DCIS system to prepare bid documents, including the bid form, governing specifications and provisions list, and Engineer's seal.
- If necessary, the design team will issue addenda for clarifications to the plans and specifications.
- The design team shall assist TIRZ 17 in tabulation and evaluation of the bids received.

1 MISCELLANEOUS

A. Project Management and Coordination:
During each phase of the project, the Project Manager (PM) will oversee all work and will be responsible for directing and coordinating activities and assigned personnel. The PM will manage the project scope, schedule, budget, and quality to ensure that the project progresses as agreed. The PM will submit monthly invoices, status reports, and schedules. The PM will conduct regular coordination meetings as needed with TIRZ 17, TxDOT, the City, private utilities, and others.

B. General Design Variances and Exceptions (TxDOT):
The design team will prepare requests for Design Variances and Exceptions to TxDOT criteria as required by TxDOT, and City. The design team will submit the request and obtain approval from TxDOT.

C. Cooperative Utility Process:
The design team will support the TxDOT Cooperative Utility Process. Coordination meetings are expected to occur following the 60%, 90%, and 100% submittals.

D. City of Houston Utility Relocation Ordinance Program:
The design team will follow the City's relocation ordinance for private utility relocation in order to accommodate the proposed improvements. The design team will prepare and distribute Preliminary Utility Notification Letters identifying each potential conflict with proposed improvements. A design team member will attend the City's Utility Coordination Meetings at the 60% and 90% submittal to discuss and/or resolve any utility conflicts identified. Prior to final design submittal, the design team will prepare and distribute the Final Utility Notification Letters and/or a Notice of No Conflict Letter to each private utility company within the project limits.

E. Agency Approvals and Signatures
The design team will obtain required signatures from other governmental agencies, public utilities, and private utilities, which may impact the Project prior to final approval by TxDOT. Governmental agencies include, but are not limited to City and Harris County Flood Control District. Utility signatures include, but are not limited to CenterPoint Energy Gas, CenterPoint Energy Electric, AT&T, and cable TV.

F. Meetings:
Monthly meetings with TxDOT and periodic meetings with TIRZ 17 will be held to review the progress of the engineering effort, or to address other issues which may arise. The PM will prepare and document meeting record memorandum of decisions and action items.

G. Quantities:
The design team will develop and report quantities in Standard TxDOT Estimator bid format at 60%, 90% and 100% submittals.

H. Opinion of Probable Construction Cost:
The design team will submit Opinion of Probable Construction Cost at the 60%, 90%, and 100% stages.

I. Standard and Non-standard Details:
The design team will incorporate the TxDOT Standard Details as applicable. The design team will review each Standard Detail and edit as necessary to suit Project-specific requirements and to meet the design intent of the Project. Revisions to the Standard Details shall not be incorporated based solely on preference, but are subject to review and acceptance by the TxDOT. The design team shall notify WD, TxDOT and the City of all proposed changes to Standard Details and provide reasons for such proposed changes.

The design team shall prepare additional nonstandard details necessary for bidding and construction of the Project including junction box details.

J. Standard and Non-standard Technical Specifications:
The design team shall prepare specifications in accordance with the standard TxDOT specifications. The design team will review each Standard Specification and supplement as necessary to suit Project-specific requirements and to meet the design intent of the Project. Supplements to the Standard Specifications shall not be incorporated based solely on preference. Supplements are subject to review and acceptance by TxDOT. The design team shall prepare additional nonstandard specifications necessary for bidding and construction of the Project.

K. Quality Assurance / Quality Control:
A thorough Quality Assurance/Quality Control (QA/QC) Plan will be implemented to ensure overall project constructability, cost estimate accuracy, and design conformance with industry standards and client-specific requirements and preferences.

L. Utility Plan Review

- Research all available information and show all existing water mains and appurtenances, well collection lines, sanitary sewer and storm water lines and facilities (house service lines, manholes, etc.), and lot lines from subdivision plats, telephone, power, gas, cable TV, and other private utilities. All above-referenced utilities shall be shown in plan and profile in accordance with the most recent edition of the TxDOT Design Manual.
- The design team will coordinate with the TxDOT, the City, and the various utility companies to determine the location of all existing utilities. The design team will prepare exhibits showing the location of each existing utility and identify potential conflicts and recommended solutions.
- In support of utility coordination efforts, the City's Utility Coordination Department shall assist the design team with the coordination of the utility meetings.

M. Categorical Exclusion

- The Goodman Corp will advance the environmental effort and furnish a final report. The design team shall coordinate with the consultant throughout the process.

N. Services already completed:

- Environmental Site Assessment Reports I & II
- Design Concept Conference already conducted
- Topographical Survey already completed
- Geotechnical Investigation completed

O. Standards used:

TxDOT Criteria: The latest edition and revisions of the State's "Roadway and Hydraulics Design Manual" or the American Association of State Highway and Transportation Officials "A Policy on Geometric Design of Highways and Streets", TxDOT's "Standard Specifications for Construction of Highways, Streets, and Bridges" (latest edition), the Texas Accessibility Standards of the Architectural Barriers Act, and the "Texas Manual on Uniform Traffic Control Devices" (latest edition).

EXHIBIT B
NORTH GESSNER DRAINAGE AND MOBILITY IMPROVEMENTS – (T-1732A & T-1732B)
PLANS, SPECIFICATIONS AND ESTIMATES - LEVEL OF EFFORT

Gauge ENGINEERING

I. PLANS, SPECIFICATIONS AND ESTIMATES

	DESCRIPTION OF WORK TASKS	Sr. PROJ MGR	PROJ MGR	PROJECT ENGINEER	GRAD ENGINEER	CADD TECH	ADMIN ASST	TOTAL HOURS	LABOR COSTS
A.	Schematic, TRC and Design Concept Conference (DCC)								
1	Coordinate, update and advance existing Schematic for approval	4	4	8	0	18	0	34	$4,730.00
2	Conduct TRC presentation	4	8	12	24	8	0	56	$7,880.00
	Total	8	12	20	24	26	0	90	$12,610.00
B.	Drianage Analysis								
1	Review and evaluation of RPS drainage Study	4	8	8	4	0	0	24	$4,040.00
2	Finalize Hydrology	1	3	8	12	0	0	24	$3,410.00
3	Finalize Hydfaulics	1	3	12	16	0	0	32	$4,490.00
4	Mitigation Analysis	2	6	12	20	0	0	40	$5,740.00
5	Drainage Workshop - TxDOT	4	6	12	16	0	2	40	$5,910.00
	Total	12	26	52	68	0	2	160	$23,590.00
C.	General Plan Sheets (60%, 90%, 95%, 100%)								
1	Title Sheet 1 (Sheet)	0	0.5	1	2	4	0	7.5	$900.00
2	Index of Sheets (2 Sheets)	0	.	2	2	18	0	22	$2,430.00
3	Project Layout Sheet (2 sheets)	0	0.5	2	6	16	0	24.5	$2,790.00
4	Survey Control Index Sheets (4 Sheets)	0	0	1	2	8	0	11	$1,230.00
5	Existing N. Gessner Rd Typical Sections (3 sheets)	1	2	2	8	18	0	31	$3,740.00
6	Proposed N. Gessner Rd Typical Sections (3 sheets)	2	2	4	8	24	0	40	$4,900.00
7	General Construction Notes (3 Sheets)	0	0.5	1	4	6	0	11.5	$1,350.00
8	Private Utility Notes (1 Sheet)	0	0.5	1	4	12	0	17.5	$1,980.00
9	General Landscaping Notes (1 Sheet)	0	0	3	6	4	0	13	$1,590.00
10	Summary of Quantities (15 Sheets)	0	1	2	6	48	0	57	$6,240.00
11	Demolition Plans (4 Sheets)	0	2	4	8	40	0	54	$6,120.00
12	Planting Protection Pkans (1 Sheet)	0	0	1	2	6	0	9	$1,020.00
13	Plant Protection and Removal Key Plan, Notes and Symbols (2 Sheets)	0	0	1	2	6	0	9	$1,020.00
14	Plant Protection and Removal Plan (6 Sheets)	0	0	4	2	6	0	12	$1,470.00
	Total	3	9	29	62	216	0	319	$36,780.00
D.	TRAFFIC CONTROL								
1	Sequence of construction (2 Sheets)	1	0	4	8	16	0	29	$3,470.00
2	TCP Phase 1	1	2	6	16	32	0	57	$6,770.00
3	TCP Phase 2	1	2	6	16	32	0	57	$6,770.00
4	TCP Phase 3	1	2	6	16	32	0	57	$6,770.00
5	TCP Phase 4	1	2	6	16	32	0	57	$6,770.00
6	Detour Plans	0	1	2	4	16	0	23	$2,640.00
7	TCP Standards Details (15 Sheets)	0	1	4	6	32	0	43	$4,860.00
8	Sidewalk Closure Details/Detours	0	1	2	4	18	0	25	$2,850.00
9	Traffic Control Workshop	2	4	8	16	32	0	62	$7,660.00
	Total	7	15	44	102	242	0	410	$48,560.00
E.	ROADWAY DESIGN								
1	Roadway Plan and Profile Sheets (7 Sheets)	7	14	28	90	138	0	277	$33,620.00
2	Intersection Grading Layouts (2 Sheets)	4	8	12	16	64	0	104	$12,800.00
3	Horizontal Geometry Sheets	1	4	8	18	32	0	63	$7,670.00
4	North Gessner Driveway Schedule and Details	2	4	12	24	16	0	58	$7,540.00
5	North Gessner Proposed Roadway Cross Sections (12 Sheets)	2	8	24	32	54	0	120	$15,010.00
6	Standard Details	3	6	6	12	28	0	55	$7,050.00
	Total	19	44	90	192	332	0	677	$83,690.00
F.	SIGNING AND MARKINGS								
1	Signing and Pavement Markings (4 Sheets)	2	4	16	24	32	0	78	$9,820.00
2	Summary of Small Signs (2 Sheets)	0	2	4	8	16	0	30	$3,600.00
3	Signing and Markings Details (2 Sheets)	0	0	1	2	12	0	15	$1,650.00
	Total	2	6	21	34	60	0	123	$15,070.00
1	Drainage Plan and Profile Sheets (7 Sheets)	7	14	28	56	114	0	219	$27,020.00
2	Drainage Analysis Sheets (XX Sheets)	8	22	68	104	130	0	332	$42,130.00
3	Drainage Structural/Junction Boxes Details	5	14	64	80	116	0	279	$35,050.00
4	Drainage Impact Study	6	8	24	60	16	6	120	$15,870.00
	Total	26	58	184	300	376	6	950	$120,070.00
H.	WATER/WASTEWATER PLAN & PROFILE SHEETS (7 Sheets)								
1	Review of CCTV for the sewers	0	0	4	6	0	0	10	$1,320.00
2	WATER/WASTEWATER PLAN & PROFILE SHEETS (7 Sheets)	7	14	42	84	126	0	273	$33,740.00
3	Water and Wastewater Crossings	2	4	16	24	40	0	86	$10,660.00
	Total	9	18	62	114	166	0	369	$45,720.00

EXHIBIT B

NORTH GESSNER DRAINAGE AND MOBILITY IMPROVEMENTS – (T-1732A & T-1732B)

PLANS, SPECIFICATIONS AND ESTIMATES - LEVEL OF EFFORT

Gauge ENGINEERING

I. PLANS, SPECIFICATIONS AND ESTIMATES

	DESCRIPTION OF WORK TASKS	Sr. PROJ MGR	PROJ MGR	PROJECT ENGINEER	GRAD ENGINEER	CADD TECH	ADMIN ASST	TOTAL HOURS	LABOR COSTS
I	STRUCTURAL DESIGN								
1	Coordinate structural needs with Architect	4	6	0	0	0	0	10	$2,000.00
2	Design retaining walls, seatwalls, toe-walls (2 Sheets)	2	6	12	16	18	0	54	$7,150.00
3	Structural Details (2 Sheets)	2	6	12	16	18	0	54	$7,150.00
	Total	8	18	24	32	36	0	118	$16,300.00
J	LIGHTING DESIGN								
1	Street Lighting Plans (4 sheets)	2	4	12	18	36	0	72	$8,920.00
	Total	2	4	12	18	36	0	72	$8,920.00
K	STORM WATER POLLUTION PREVENTION PLANS (SWPPP)								
1	Storm Water Pollution Prevention Plan (4 Sheets)	2	4	8	18	32	0	64	$7,900.00
2	SWPPP Details	0	1	2	4	12	0	19	$2,220.00
	Total	2	5	10	22	44	0	83	$10,120.00
L	BORING LOGS								
	North Gessner Boring Logs Sheets (3 Sheets)	0	0	6	12	24	0	42	$4,860.00
	Total	0	0	6	12	24	0	42	$4,860.00
M.	Project Management/Specs/Agencies & Team Coordination/Quantities/Misc								
1	Overall Project Management/Team Coordination/ Project Controls	48	48	24	16	0	18	154	$26,910.00
2	Utility Plan Review	0	8	20	60	40	4	132	$16,220.00
3	Design Variances	0	2	4	8	8	0	22	$2,760.00
4	TxDOT/City/HCFCD Coordination/meetings/approvals/signatures	18	24	24	18	0	8	92	$14,980.00
5	Private Utility Coordination (City and TxDOT)	6	8	24	12	0	0	50	$7,860.00
6	Specifications	6	12	36	40	0	4	98	$14,120.00
7	Opinion of Probable Construction Cost-60%,90%, 95%,100%	2	4	16	24	0	2	48	$6,650.00
8	Quantities	4	8	32	48	8	0	100	$13,760.00
9	Coordinating with Stakeholders	6	12	16	18	24	0	76	$10,620.00
10	Categorical Exclusion Coordination	4	4	0	0	0	0	8	$1,640.00
	Total	94	130	196	244	80	36	780	$115,520.00
N.	Permitting and Bid Phase								
1	95% Permit Corrections	2	8	16	24	48	0	98	$12,220.00
2	Pre Bid Conference	2	2	0	0	0	0	4	$820.00
3	Addenda Responses	1	4	6	8	0	0	19	$2,810.00
4	Review, tabulate and evaluate bids	1	2	4	8	0	0	15	$2,150.00
5	RFI responses	1	6	16	8	0	0	31	$4,670.00
	Total	7	22	42	48	48	0	167	$22,670.00
P.	QUALITY ASSURANCE/QUALITY CONTROL								
1	QA/QC (60%, 90%, 95% & 100%) & Milestone checklists	18	18	24	32	0	24	116	$17,100.00
2	Independent Constructability Review at 60% and 90%	2	16	18	0	0	0	36	$6,040.00
	Total	20	34	42	32	0	24	152	$23,140.00
	TOTAL HOURS	125	271	638	1060	1606	32	3,732	
	Contract Labor Rate	$230.00	$180.00	$150.00	$120.00	$105.00	$95.00		
	TOTAL LABOR COSTS BASIC ENGINEERING SERVICES	$28,750.00	$48,780.00	$95,700.00	$127,200.00	$168,630.00	$3,040.00		$587,620.00

II.

	SUBCONTRACTED ENGINEERING SERVICES	COST	MARK-UP	TOTAL
1	Traffic Signal @ Westview and Temp. Signal design - TEI	$ 28,641.00	10%	$ 31,505.10
2	TDLR Inspection - Accessibility Check	$ 10,000.00	10%	$ 11,000.00
3	Urban Forestry Services	$ 5,000.00	10%	$ 5,500.00
4	CCTV Inspection of Sanitary Sewer	$ 10,000.00	10%	$ 11,000.00
	TOTAL SUBCONTRACTED ENGINEERING SERVICES			$ 59,005.10

III.

	EXPENSES	QUANTITY	UNIT	COST	TOTAL
1	Printing and Reproduction	1	LS	$ 25,025.00	$ 25,025.00
2	City Review Fee ($106 Adm Fee Plus 300 sheets @ $80)	1	LS	$ 24,000.00	$ 24,000.00
3	Mileage	1,000	MILE	$ 0.55	$ 550.00
4					
	TOTAL REIMBURSABLE EXPENSES				$ 49,575.00

PS&E TOTAL	
I. Basic Services	$587,620.00
II. Sub Services	$59,005.10
III. Expenses	$49,575.00

PROJECT TOTAL	$696,200

Exhibit C

TRAFFIC ENGINEERS, INC.
INNOVATIVE TRANSPORTATION SOLUTIONS

801 Congress
Suite 325
Houston, TX 77002

Voice (713) 270-8145
Fax (281) 809-0807
www.trafficengineers.com

Texas Registration Number F-003158

August 26, 2018

Mr. Muhammad Ali, PE
Principal
Gauge Engineering
2500 CityWest Boulevard, Suite 300
Houston, TX 77042

RE: TIRZ 17 Gessner Road Traffic Signal Design Services

Dear Mr. Ali:

Enclosed is our proposal to provide Traffic Signal Design services related to construction activities on North Gessner Road between Long Point Drive and IH-10. TEI is taking over and accepting responsibility for the design of these features from another firm who has partially completed these design elements. TEI has not reviewed the design completed to date at the time this proposal was prepared.

Scope of Services

Task A: Permanent Traffic Signal Design

TEI will perform the following services related to the design of a permanent traffic signal at North Gessner Road and Westview Drive:

- Prepare mast-arm traffic signal designs to the appropriate design standards.
  - Provide submittals as determined by Gauge Engineering for the above items including an updated Construction Cost Estimate with each submittal
  - Address review comments and revise plans for final review approval
  - Coordinate and attend meetings throughout the design phase of the project
- Coordinate with CenterPoint Energy to confirm the reuse of the existing electrical service outlet locations for the traffic signal.

Task B: Temporary Signal Design

TEI will provide temporary signals at North Gessner Road and Westview Drive for the various phases of the traffic control plan during roadway construction.

Notes:

- Bid Phase and Construction Phase Services are not included in this proposal
- Gauge Engineering to provide CAD files for the design completed to date

Schedule

TEI will meet the submittal dates as determined by Gauge Engineering. TEI requests two weeks advance notice for all submittal dates.

Compensation

Based on our estimate of hours required to complete the items documented in the Scope of Services, we propose compensation in the amount of $28,641.00 to provide the scope of services detailed in this proposal. This proposal was negotiated on a fixed fee basis.

If you should have any questions regarding this proposal, you may contact me at brade@trafficengineers.com or (713) 446-4445.

Sincerely,

Bradley G Eaves PE PTOE PTP

Bradley G. Eaves, PE, PTOE, PTP
Principal

Attachment

8/26/2018

ENGINEER NAME
TRAFFIC ENGINEERS, INC.

ATTACHMENT A

COST SPREADSHEET
SUMMARY OF MANHOURS BY CLASSIFICATION
AND MAJOR TASK ANALYSIS

TRAFFIC SIGNAL DESIGN SERVICES
NORTH GESSNER ROAD FROM LONG POINT DRIVE TO IH-10

DESCRIPTION OF WORK TASK**	SENIOR PRINCIPAL *COST/HR*	PRINCIPAL *COST/HR*	PRINCIPAL ASSOCIATE *COST/HR*	SENIOR ASSOCIATE *COST/HR*	ASSOCIATE *COST/HR*	ENGINEER ASSISTANT *COST/HR*	CADD TECHNICIAN *COST/HR*	SENIOR ASSISTANT *COST/HR*	TOTAL HOURS PER TASK	COST PER TASK
	$315.00	$210.00	$168.00	$126.00	$111.00	$111.00	$96.00	$75.00		
NORTH GESSNER ROAD FROM LONG POINT DRIVE TO IH-10										
Task A - Permanent Traffic Signal		16.00	36.00	42.00	56.00			3.00	153.00	$21,141.00
Task B - Temporary Signal Design		6.00	16.00		32.00				54.00	$7,500.00
SUBTOTAL DESIGN PHASE SERVICES	0.00	22.00	52.00	42.00	88.00	0.00	0.00	3.00	207.00	$28,641.00
PERCENT OF TOTAL HOURS	0.00%	10.63%	25.12%	20.28%	42.51%	0.00%	0.00%	1.45%	100.00%	

DIRECT EXPENSES	COST		
None	$0.00	TOTAL LABOR COST	$28,641.00
		DIRECT EXPENSES	$0.00
DIRECT EXPENSES TOTAL	$0.00	REQUESTED AUTHORIZATION	$28,641.00