HARRIS COUNTY, TEXAS

Office of Management and Budget 1001 Preston; Suite 500 Houston, TX 77002 713-274-1135

Grants Coordination Section - Conveyance Form

Application	Award
X	

Department Name / Number	DUNs	Grant Title
Flood Control District - 090	174079756	Sims Bayou Watershed '21

Funding Source: U.S. Department of Homeland Security: CFDA# 97.047	**Grant Agency:** U.S. Department of Homeland Security
Program Year:	**Program Ending:**
Grant Begin Date: 10/01/2022	**Grant End Date:** 10/31/2024
Grant Org. Key:	**If applicable, Prior Year Org. Key:**

Grant Description:

The Building Resilient Infrastructure and Communities Program (BRIC) supports states, local communities, tribes and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program.

	Total Budget	Grant Funded	County Funded
Salary & Benefits	$0.00	$0.00	$0.00
Non-Labor	$30,074,000.00	$22,555,500.00	$7,518,500.00
Sub Tot. Incremental Cost	**$30,074,000.00**	**$22,555,500.00**	**$7,518,500.00**
Indirect Cost	$0.00	$0.00	$0.00*
TOTALS	**$30,074,000.00**	**$22,555,500.00**	**$7,518,500.00**

* under development

Full Time Equivalent Positions	0.00	**Date Guidelines are Available**	09/30/2021
% of Positions Paid by Grant	0.00 %	**Grant Submittal Deadline Date**	01/29/2022

Grant Discussion:

If awarded, this will be the first year under this grant program. Grant funds would be used for design and construction activities required to create new Stormwater Detention Basins along South Post Oak Road/Fuqua Street and construct channel flow improvements along Sims Bayou. There is a 25% local match requirement of $7,518,500.00 which will be covered by the 2018 Bond Program approved by Harris County voters on 8/25/18.

County Funded Cost Projection

Year	Required	Discretionary
2023	2,506,166.66	-
2024	2,506,166.66	-
2025	2,506,166.68	-
2026	-	-
2027	-	-

Completed by : Mattingly, Mike **Date :** 11/19/21

Reviewed by: **Date :** 11/19/21

ORDER

THE STATE OF TEXAS §

COUNTY OF HARRIS §

On this, the 30th day of November 2021, the Commissioners Court of Harris County, Texas, sitting as the governing body of Harris County and acting on behalf of the Harris County Flood Control District, upon motion of Commissioner _____, seconded by Commissioner _____, duly put and carried,

IT IS ORDERED that County Judge Lina Hidalgo or her designee, is hereby authorized to approve for, and on behalf of the Harris County Flood Control District, authorization to submit a grant application for design and construction of detention basin and channel improvements through the Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure and Communities (BRIC) Grant Program for 2021. The application period opened 9/30/21 and closes 1/29/22.

FEMA BUILDING RESILIENT INFRASTRUCTURE AND COMMUNITIES GRANT PROGRAM

Federal Share:	$22,555,500.00
Local Match Requirement:	$ 7,518,500.00
Project Cost:	$30,074,000.00

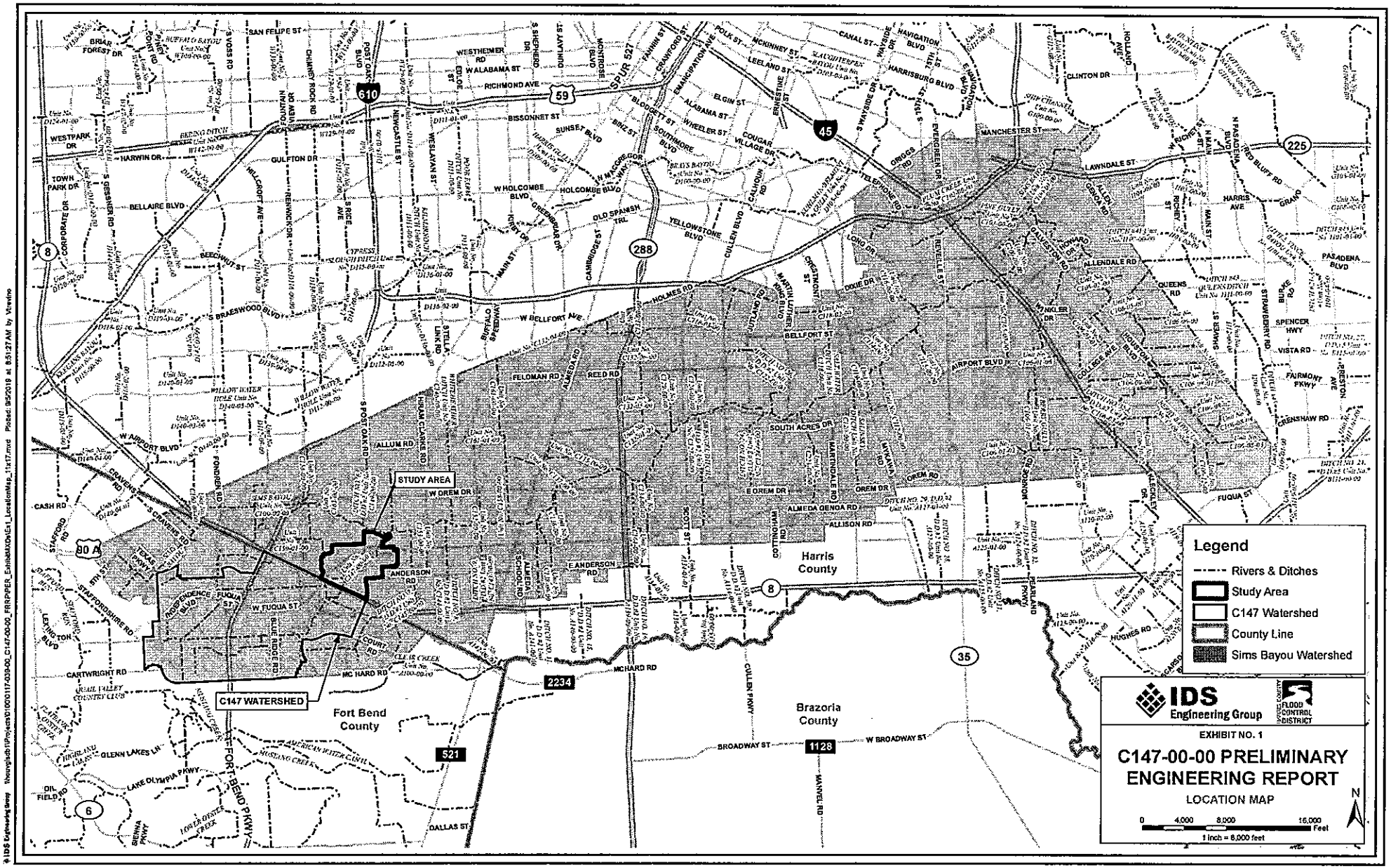
Estimated Date Range: 10/1/2022 – 10/31/2024

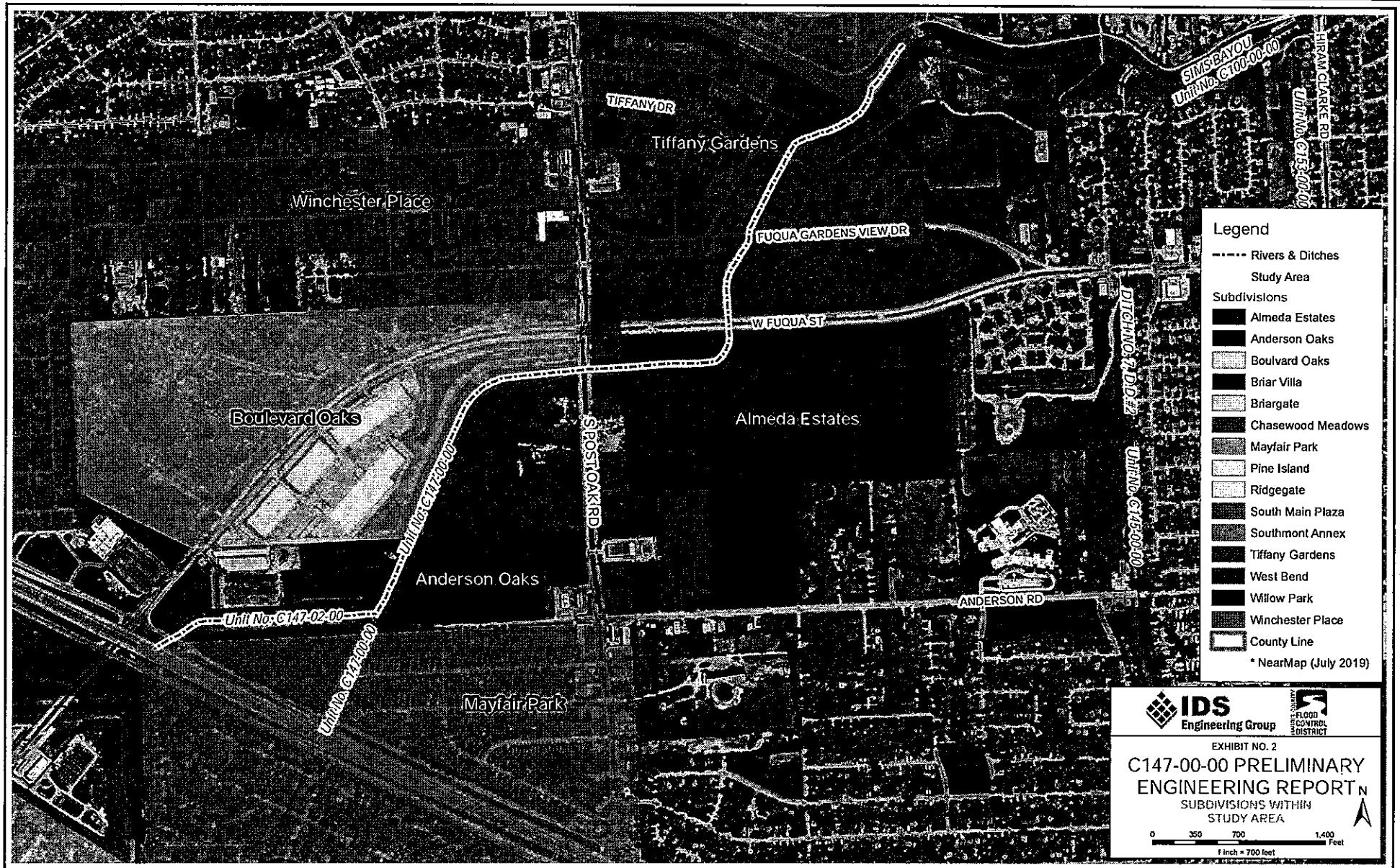
ACCOMPANYING DOCUMENTS:

Recommendation that the District be authorized to submit grant applications to address flooding risk in Sims Bayou's tributaries through the Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure and Communities (BRIC) grant program for 2021.

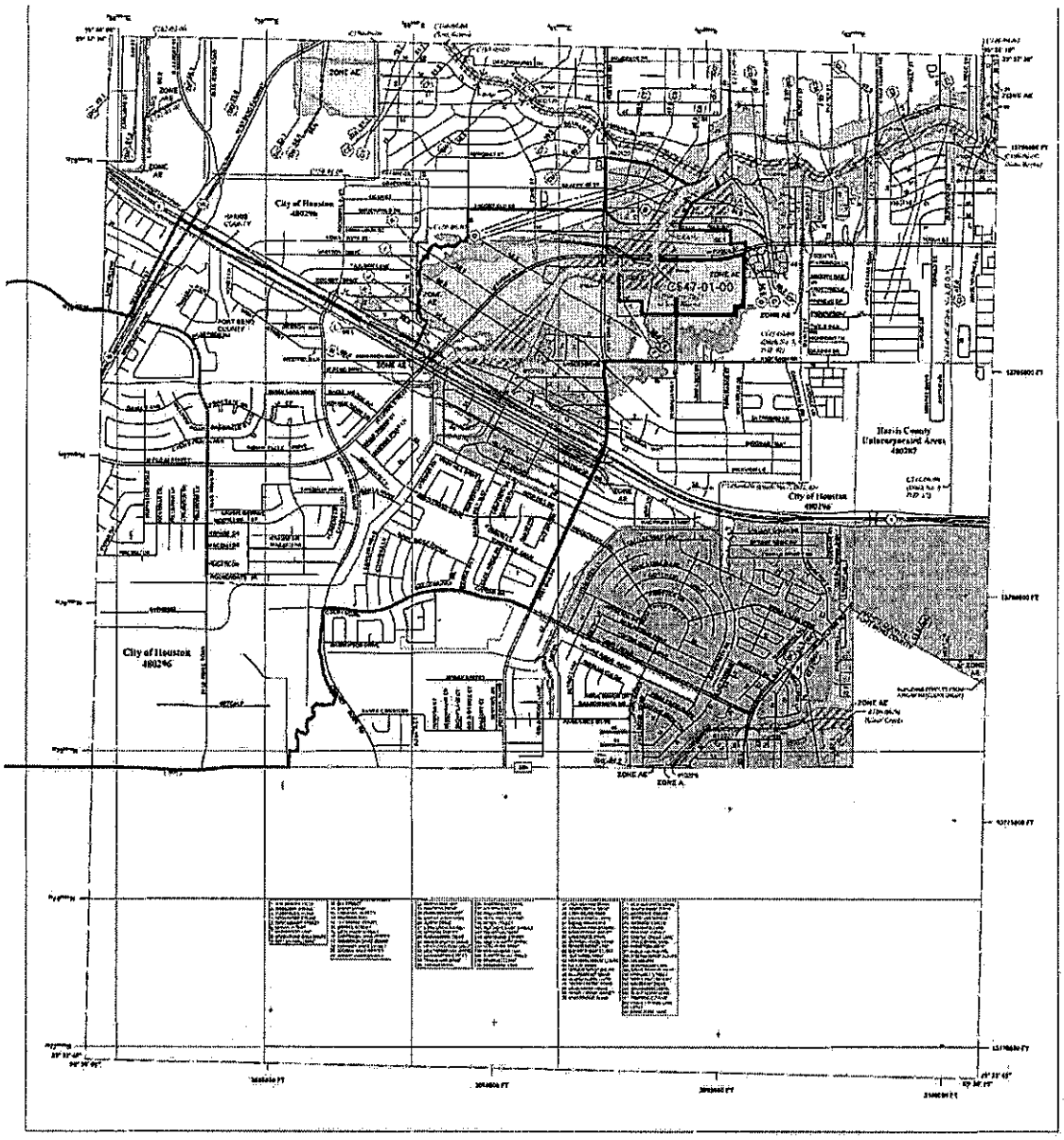
Exhibits from C147-00-00 Preliminary Engineering Report as Prepared by IDS Engineering Group

Exhibit No. 1: Location Map
Exhibit No. 2: Subdivisions within Study Area
Exhibit No. 3: Drainage Area Map
Exhibit No. 4: Effective FIRM Panel
Exhibit No. 5.1: Revised Existing Model Floodplains Map
Exhibit No. 5.2: Revised Existing Model 0.2% Inundation Depths
Exhibit No. 18: Alternate 2 500-year Inundation Map
Exhibit No. 6: Revised Existing Condition Roadways Affected
Exhibit No. 7: Revised Existing Condition Structures Affected
Exhibit No. 8: Revised Existing Conditions Flood Profiles
Exhibit No. 11: Project Phasing Cost and Schematic
Exhibit No. 15: Alternative 2 Detention Basin 30% Design Layout


STUDY AREA
C147 WATERSHED
Harris County
Fort Bend County
Brazoria County
Legend
Rivers & Ditches
Study Area
C147 Watershed
County Line
Sims Bayou Watershed
IDS Engineering Group
EXHIBIT NO. 1
C147-00-00 PRELIMINARY ENGINEERING REPORT
LOCATION MAP
0 4,000 8,000 16,000 Feet
1 inch = 8,000 feet
N


TIFFANY DR
Tiffany Gardens
Winchester Place
FUQUA GARDENS VIEW DR
W FUQUA ST
SIMS BAYOU
Unit No. C100-00-00
HIRAM CLARKE RD
Unit No. C153-00-00
DITCH NO. 74 D.E.#2
Unit No. C145-00-00
Boulevard Oaks
Almeda Estates
S POST OAK RD
Unit No. C147-00-00
Anderson Oaks
Unit No. C147-02-00
ANDERSON RD
Mayfair Park
Legend
Rivers & Ditches
Study Area
Subdivisions
Almeda Estates
Anderson Oaks
Boulvard Oaks
Briar Villa
Briargate
Chasewood Meadows
Mayfair Park
Pine Island
Ridgegate
South Main Plaza
Southmont Annex
Tiffany Gardens
West Bend
Willow Park
Winchester Place
County Line
* NearMap (July 2019)
IDS Engineering Group
HARRIS COUNTY FLOOD CONTROL DISTRICT
EXHIBIT NO. 2
C147-00-00 PRELIMINARY ENGINEERING REPORT
SUBDIVISIONS WITHIN STUDY AREA
N
0 350 700 1,400 Feet
1 inch = 700 feet

TIFFANY DR
FUQUA GARDENS VIEW DR
W FUQUA ST
S POST OAK RD
HIRAM CLARKE RD
ANDERSON RD
C547-01-00
Unit No. C147-02-00
Unit No. C147-00-00
Unit No. C147-03-00
Unit No. C147-04-00
Unit No. C147-05-00
Unit No. C147-06-00
Unit No. C147-07-00
Unit No. C147-08-00
Unit No. C147-09-00
Unit No. C147-10-00
Unit No. C147-11-00
Unit No. C147-12-00
Unit No. C147-13-00
Unit No. C147-14-00
Unit No. C147-15-00
Unit No. C147-16-00
Unit No. C147-17-00
Unit No. C147-18-00
Unit No. C147-19-00
Unit No. C147-20-00
Unit No. C147-21-00
Unit No. C147-22-00
Unit No. C147-23-00
Unit No. C147-24-00
Unit No. C147-25-00
Unit No. C147-26-00
Unit No. C147-27-00
Unit No. C147-28-00
Unit No. C147-29-00
Unit No. C147-30-00
Unit No. C147-31-00
Unit No. C147-32-00
Unit No. C147-33-00
Unit No. C147-34-00
Unit No. C147-35-00
Unit No. C147-36-00
Unit No. C147-37-00
Unit No. C147-38-00
Unit No. C147-39-00
Unit No. C147-40-00
Unit No. C147-41-00
Unit No. C147-42-00
Unit No. C147-43-00
Unit No. C147-44-00
Unit No. C147-45-00
Unit No. C147-46-00
Unit No. C147-47-00
Unit No. C147-48-00
Unit No. C147-49-00
Unit No. C147-50-00
Unit No. C147-51-00
Unit No. C147-52-00
Unit No. C147-53-00
Unit No. C147-54-00
Unit No. C147-55-00
Unit No. C147-56-00
Unit No. C147-57-00
Unit No. C147-58-00
Unit No. C147-59-00
Unit No. C147-60-00
Unit No. C147-61-00
Unit No. C147-62-00
Unit No. C147-63-00
Unit No. C147-64-00
Unit No. C147-65-00
Unit No. C147-66-00
Unit No. C147-67-00
Unit No. C147-68-00
Unit No. C147-69-00
Unit No. C147-70-00
Unit No. C147-71-00
Unit No. C147-72-00
Unit No. C147-73-00
Unit No. C147-74-00
Unit No. C147-75-00
Unit No. C147-76-00
Unit No. C147-77-00
Unit No. C147-78-00
Unit No. C147-79-00
Unit No. C147-80-00
Unit No. C147-81-00
Unit No. C147-82-00
Unit No. C147-83-00
Unit No. C147-84-00
Unit No. C147-85-00
Unit No. C147-86-00
Unit No. C147-87-00
Unit No. C147-88-00
Unit No. C147-89-00
Unit No. C147-90-00
Unit No. C147-91-00
Unit No. C147-92-00
Unit No. C147-93-00
Unit No. C147-94-00
Unit No. C147-95-00
Unit No. C147-96-00
Unit No. C147-97-00
Unit No. C147-98-00
Unit No. C147-99-00
Unit No. C147-100-00
Legend
C547-01-00 Boundary
C147 Watershed
Rivers & Ditches
Study Area
County Line
* NearMap (July 2019)
IDS Engineering Group
HARRIS COUNTY FLOOD CONTROL DISTRICT
EXHIBIT NO. 3
C147-00-00 PRELIMINARY ENGINEERING REPORT
DRAINAGE AREA MAP
N
0 350 700 1,400 Feet
1 inch = 700 feet



FLOOD HAZARD INFORMATION

SEE TO REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION IDENTIFIED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99 with BFE or Depth Zone AE, AH, VE, AR
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS OF FLOOD HAZARD	Area with Reduced Flood Risk due to Levee See Notes, Zone X
	Area with Flood Risk due to Levee Zone D
OTHER AREAS	NO SCALE Area of Minimal Flood Hazard Zone X
	Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	23.2 Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

[illegible]

SCALE

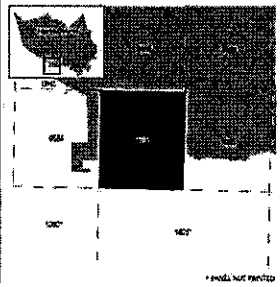
N

1 inch = 3,000 feet — 1:12,000

0 1,000 2,000 4,000 Feet

0 750 1500 3,000 Meters

PANEL LOCATOR



NOT TO SCALE

FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

HARRIS COUNTY, TEXAS
and Incorporated Areas

PANEL 1005 of 1150

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
HARRIS COUNTY	480287	1005	M
HOUSTON, CITY OF	480296	1005	M

VERSION NUMBER
2.3.3.3

MAP NUMBER
48201C1005M

MAP REVISED
MAY 2, 2019

IDS Engineering Group

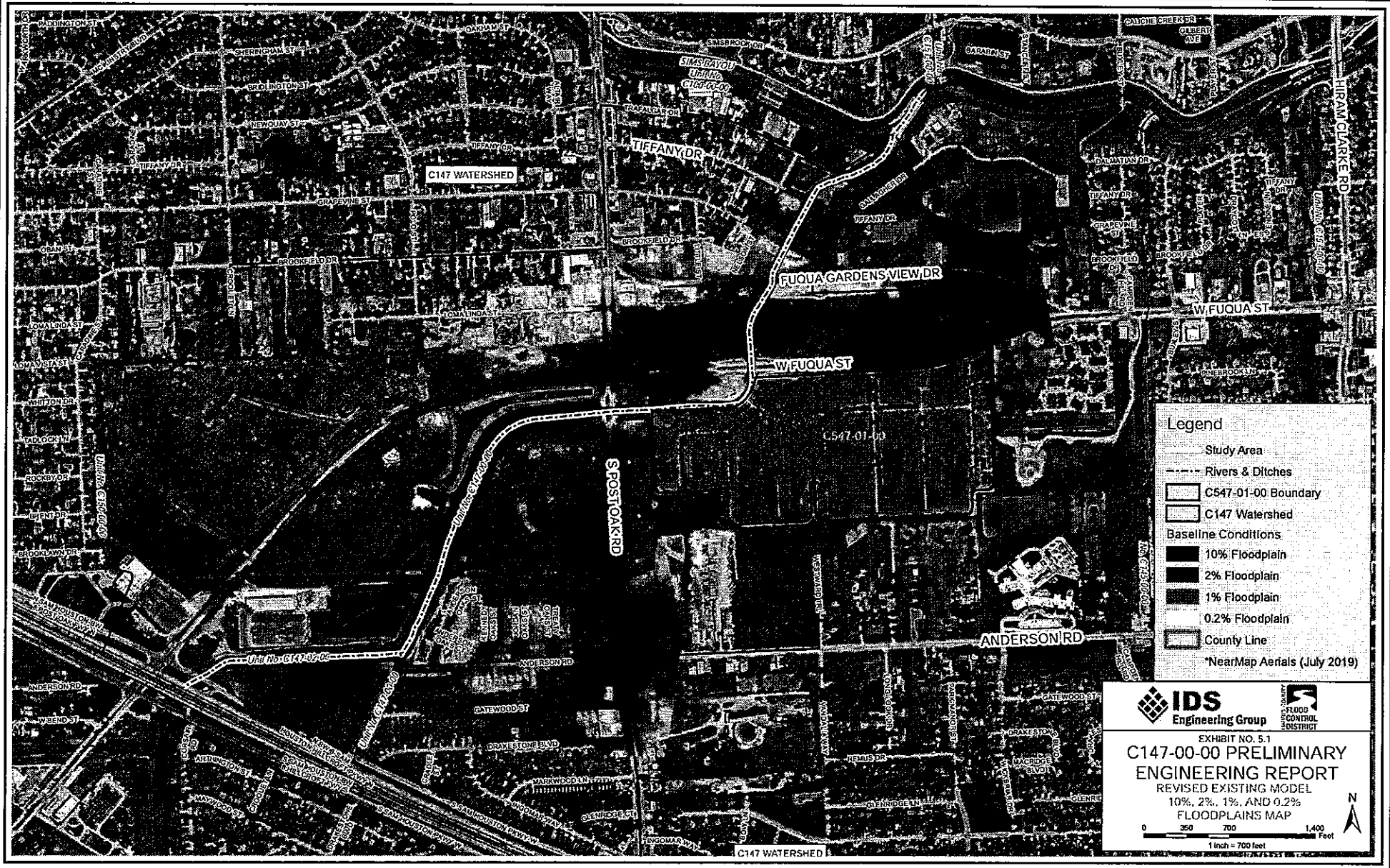
HARRIS COUNTY FLOOD CONTROL DISTRICT

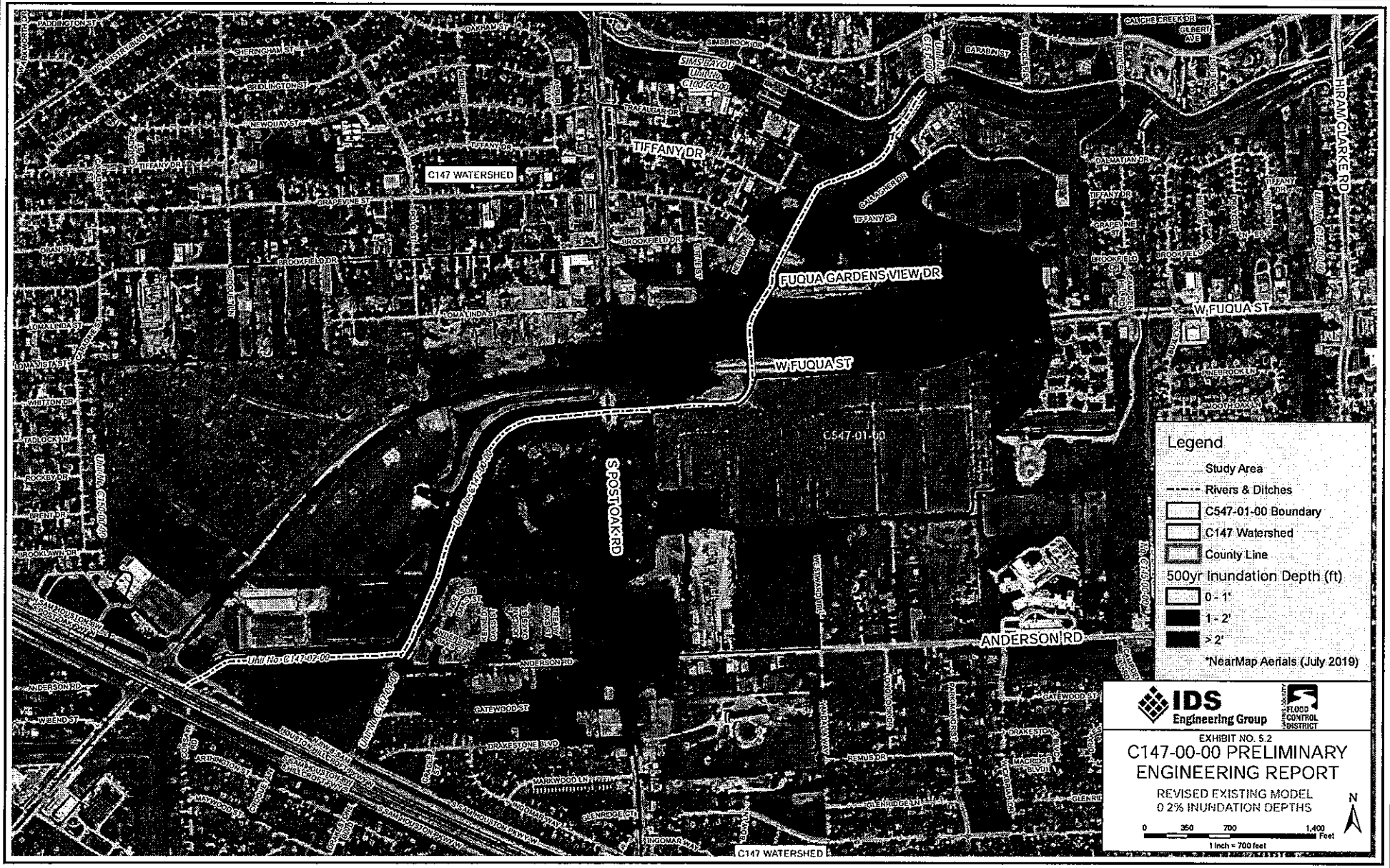
EXHIBIT NO. 4

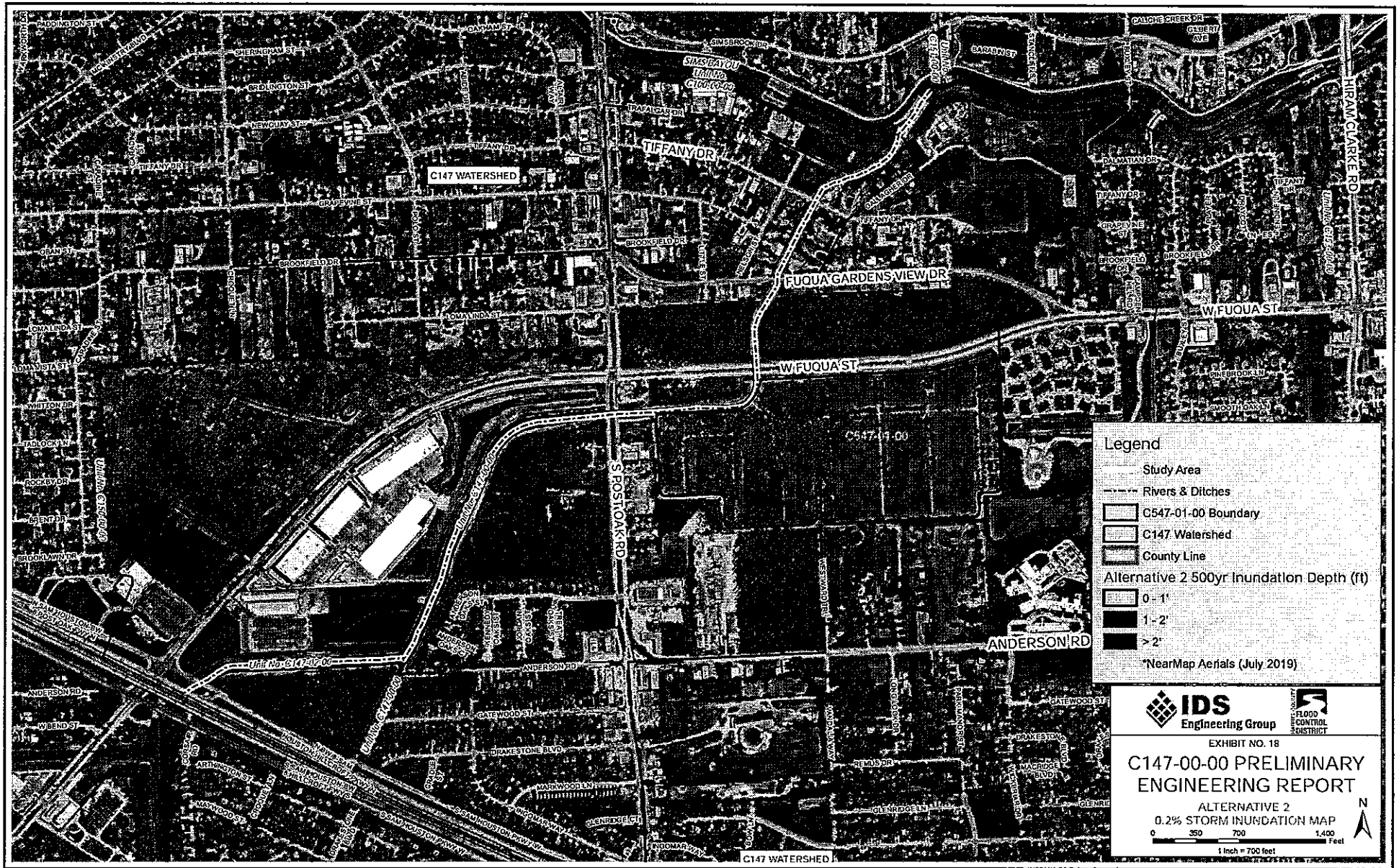
C147-00-00 PRELIMINARY ENGINEERING REPORT

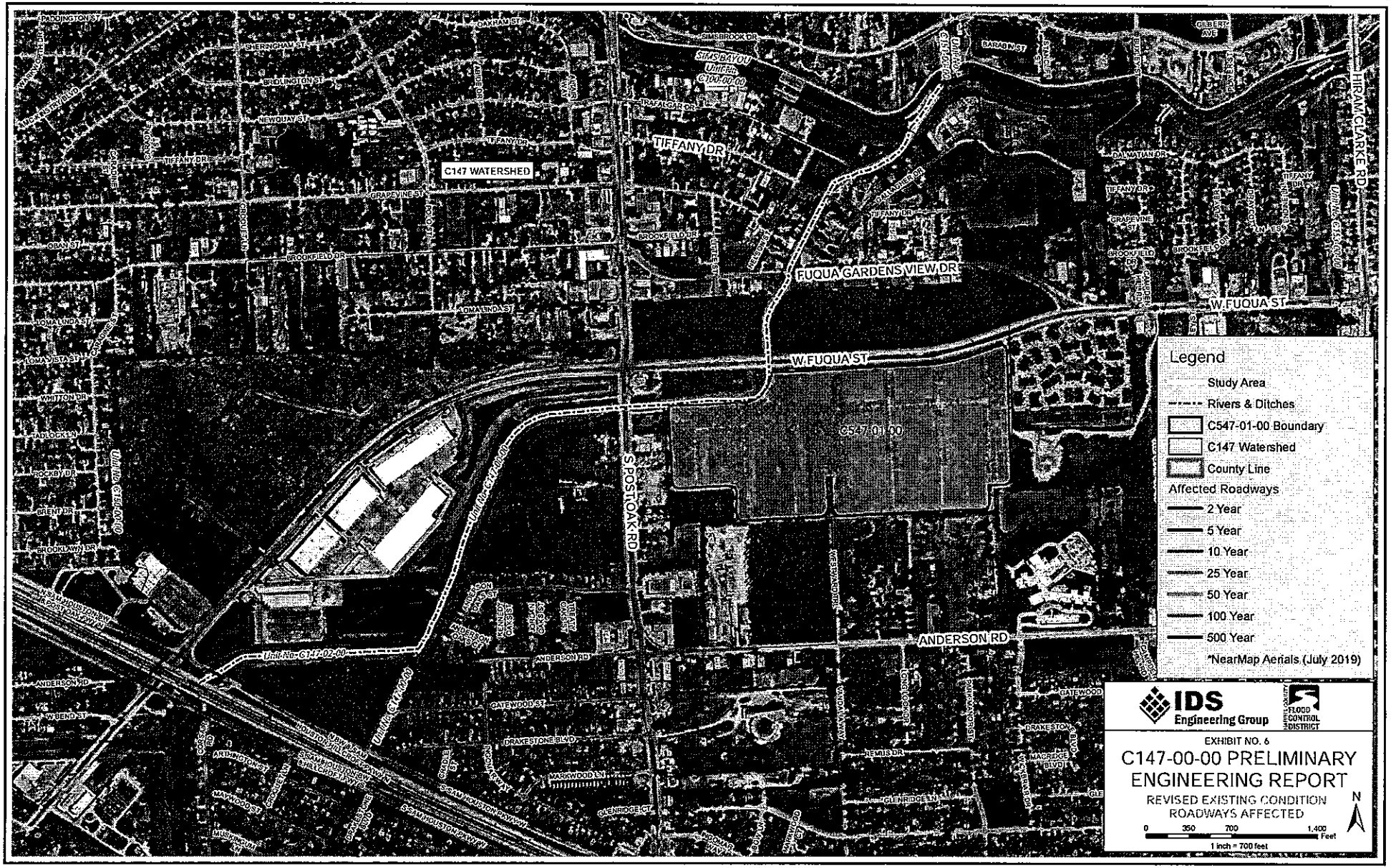
EFFECTIVE FIRM PANEL

IDS Engineering Group \\hcoughis01\Projects\01009117-009-00_C147-00-00_FRIPPER_Exhibit\MXD\Ex4_FloodInsuranceRateMapPanels_11x17.mxd Plotted: 9/25/2019 at 3:22:29 PM by pbond

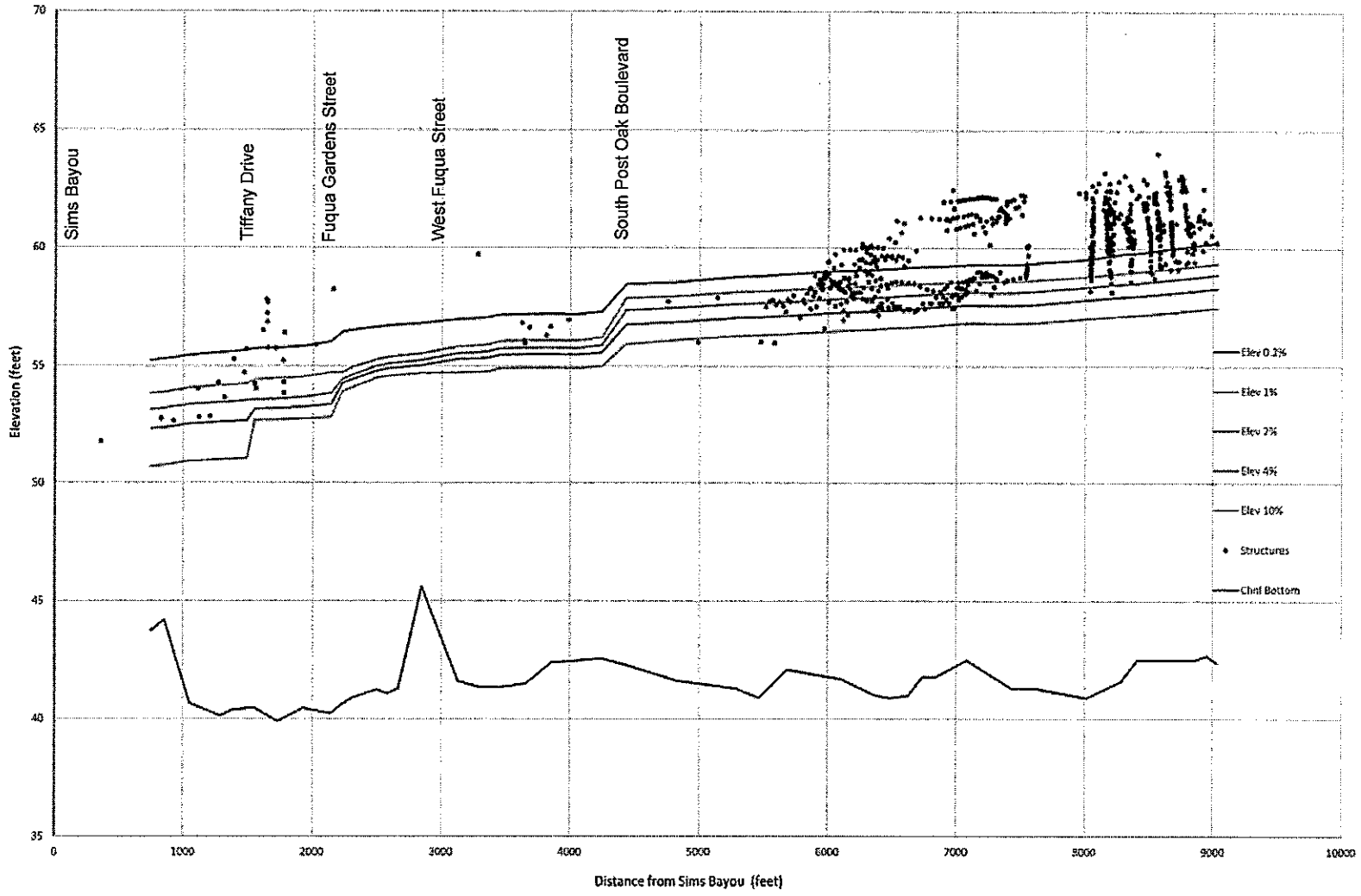

C147 WATERSHED
TIFFANY DR
FUQUA GARDENS VIEW DR
W FUQUA ST
S POSTOAK RD
ANDERSON RD
HIRAM CLARKE RD
C547-01-00
Legend
Study Area
Rivers & Ditches
C547-01-00 Boundary
C147 Watershed
Baseline Conditions
10% Floodplain
2% Floodplain
1% Floodplain
0.2% Floodplain
County Line
*NearMap Aerials (July 2019)
IDS Engineering Group
HARRIS COUNTY FLOOD CONTROL DISTRICT
EXHIBIT NO. 5.1
C147-00-00 PRELIMINARY ENGINEERING REPORT
REVISED EXISTING MODEL
10%, 2%, 1%, AND 0.2%
FLOODPLAINS MAP
N
0 350 700 1,400 Feet
1 inch = 700 feet


C147 WATERSHED
TIFFANY DR
FUQUA GARDENS VIEW DR
W FUQUA ST
S POST OAK RD
ANDERSON RD
HIRAM CLARKE RD
C547-01-00
Legend
Study Area
Rivers & Ditches
C547-01-00 Boundary
C147 Watershed
County Line
500yr Inundation Depth (ft)
0 - 1'
1 - 2'
> 2'
*NearMap Aerials (July 2019)
IDS Engineering Group
FLOOD CONTROL DISTRICT
EXHIBIT NO. 5.2
C147-00-00 PRELIMINARY ENGINEERING REPORT
REVISED EXISTING MODEL
0.2% INUNDATION DEPTHS
0 350 700 1,400 Feet
1 inch = 700 feet
N


Legend
Study Area
Rivers & Ditches
C547-01-00 Boundary
C147 Watershed
County Line
Alternative 2 500yr Inundation Depth (ft)
0 - 1'
1 - 2'
> 2'
*NearMap Aerials (July 2019)
IDS Engineering Group
HARRIS COUNTY FLOOD CONTROL DISTRICT
EXHIBIT NO. 18
C147-00-00 PRELIMINARY ENGINEERING REPORT
ALTERNATIVE 2
0.2% STORM INUNDATION MAP
0 350 700 1,400 Feet
1 Inch = 700 feet
N
C147 WATERSHED
TIFFANY DR
FUQUA GARDENS VIEW DR
W FUQUA ST
S POSTOAK RD
ANDERSON RD
HIRAM CLARKE RD
C547-01-00
Unit No. C147-00-00
SIMS BAYOU
Unit No. C100-00-00


C147 WATERSHED
TIFFANY DR
FUQUA GARDENS VIEW DR
W.FUQUA ST
S.POSTOAK RD
ANDERSON RD
HIRAM CLARKE RD
C547-01-00
SIMS BAYOU
Legend
Study Area
Rivers & Ditches
C547-01-00 Boundary
C147 Watershed
County Line
Affected Roadways
2 Year
5 Year
10 Year
25 Year
50 Year
100 Year
500 Year
*NearMap Aerials (July 2019)
IDS Engineering Group
FLOOD CONTROL DISTRICT
EXHIBIT NO. 6
C147-00-00 PRELIMINARY ENGINEERING REPORT
REVISED EXISTING CONDITION ROADWAYS AFFECTED
N
0 350 700 1,400 Feet
1 inch = 700 feet

C147 WATERSHED
TIFFANY DR
FUQUA GARDENS VIEW DR
W FUQUA ST
S POSTOAK RD
ANDERSON RD
HIRAM CLARKE RD
C547-01-00
Unit No. C147-00-00
Legend
Study Area
Rivers & Ditches
C547-01-00 Boundary
C147 Watershed
County Line
Structural Flooding
10-Year
25-Year
50-Year
100-Year
500-Year
*NearMap Aerials (July 2019)
IDS Engineering Group
HARRIS COUNTY FLOOD CONTROL DISTRICT
EXHIBIT NO. 7
C147-00-00 PRELIMINARY ENGINEERING REPORT
REVISED EXISTING CONDITION STRUCTURES AFFECTED
N
0 350 700 1,400 Feet
1 inch = 700 feet



IDS Engineering Group

HARRIS COUNTY FLOOD CONTROL DISTRICT

EXHIBIT NO. 8

C147-00-00 PRELIMINARY ENGINEERING REPORT

REVISED EXISTING CONDITION'S FLOOD PROFILES

© IDS Engineering Group

C147-00-00: FLOOD RISK REDUCTION STUDY

Project ID: C147-00-00-P002

Date 03-02-2020

EXHIBIT 11 AND APPENDIX C.2

IDS Engineering Group
TBPE F-002726 | TBPLS 10110700

PRELIMINARY ESTIMATE OF PHASE 1 COST

ITEM NO.	PAY ITEM NO.	ITEM DESCRIPTION	UNIT MEAS	UNIT PRICE	ALTERNATIVE 2 34-FT AND 34-FT BOTTOM WIDTH QTY	TOTAL	NOTES
		MOBILIZATION AND FRANCHISE UTILITY COORD					
1	1555-01	TRAFFIC CONTROL [ALT 2]	LS	$ 191,627	1	$ 191,627	2% CC FOR TRAF CNTRL DURING DEMO AND CONSTR
2	1141-01	CENTERPOINT ENERGY COORDINATION	LS	$ 7,500	2	$ 15,000	ELECTRIC, GAS, STR LT CONDUIT RELOCATE ALLOWANCE
3	1141-04	TELECOMM COORDINATION	LS	$ 5,000	1	$ 5,000	290-LF TELECOM CONDUIT RELOCATE ALLOWANCE
4	[2200-XX]	MOBILIZATION OF EQUIPMENT AND MATERIALS [ALT 2]	LS	$ 287,441	1	$ 287,441	3% CC TO MOBILIZE EQUIP AND MATLS (2% - 5% CC)
		SUBTOTAL MOBILIZATION AND FRANCHISE UTILITY COST				$ 499,068	
		CHANNEL AND BRIDGE DEMOLITION					
5	[2200-XX]	SITE PREPARATION AND RESTORATION FOR CHANNEL [ALT 2]	LS	$ 191,627	1	$ 191,627	FRRS 2% CC TO PREPARE HCFCD ROW FOR CONSTR
6	2233-01	CLEARING & GRUBBING CHANNEL PROP ROW	AC	$ 2,500	20	$ 50,000	ALTR1 REDUCED ROW DWNSTRM OF C547.
7	2120-13	REMOVE AND DISPOSE OF CONCRETE CHANNEL LINING & LOW FLOW, ALL THICKNESSES	SY	$ 48	11400	$ 547,200	11,400-SY FOR CHANNEL DWNSTRM OF S POST OAK.
8	2120-14	REMOVE AND DISPOSE OF CONCRETE STRUCTURES	CY	$ 22	230	$ 5,060	BACKSLOPE INTERCEPTOR, TRANSITION INTO SIMS, AND C147 SIDE WEIR AT STA64+00. ASSUME 5-CY PER INTERCEPTOR X 4.
9	2120-04	REMOVE & DISPOSE OF ALL PIPE	LF	$ 14	160	$ 2,240	INCL NON-OUTFALL STORM SEWER TO BE REMOVED AND REPLACED.
10	2120-21	REMOVE & DISPOSE OF SANITARY SEWER PIPE	LF	$ 30	1028	$ 30,840	S POST OAK, FUQUA GARDENS VIEW, AND TIFFANY. INCL REMOVE SS SIPHON AT FUQUA GARDENS VIEW.
11	2120-12	REMOVE & DISPOSE OF SANITARY SEWER MANHOLE	EA	$ 1,200	8	$ 9,600	
12	2120-24	REMOVE & DISPOSE OF WATER LINE	LF	$ 16	1350	$ 21,600	S POST OAK, FUQUA GARDENS VIEW, WEST FUQUA, AND TIFFANY. INCL WL ATTACHED TO BRIDGE AND APPURT.
13	[0496-10]	TIFFANY BRIDGE REMOVE	LS	$ 27,000	1	$ 27,000	SCIENTECH
14	[0496-10]	FUQUA GARDENS VIEW BRIDGE REMOVE	LS	$ 58,000	1	$ 58,000	SCIENTECH
15	[0496-10]	WEST FUQUA BRIDGE REMOVE	LS	$ 100,000	0	$ -	BRIDGE KEPT WITH MODIFICATIONS
16	[0496-10]	WEST FUQUA BRIDGE REMOVE	LS	$ 100,000	0	$ -	BRIDGE KEPT WITH MODIFICATIONS
		SUBTOTAL CHANNEL AND BRIDGE DEMOLITION COST				$ 943,167	
		BASIN DEMOLITION					
17	[2200-XX]	SITE PREPARATION AND RESTORATION FOR BASIN [ALT 2]	LS	$ 191,627	1	$ 191,627	FRRS 2% CC TO PREPARE HCFCD ROW FOR CONSTR
18	2233-01	CLEARING & GRUBBING BASIN ROW [SOUTH OF W FUQUA]	AC	$ 2,500	25	$ 62,500	87-ACRES PARTIALLY WOODED
19	2120-13	REMOVE AND DISPOSE OF DETENTION BASIN CONCRETE PILOT CHANNELS , ALL THICKNESSES	SY	$ 48	9000	$ 432,000	C547 PILOT CHANNELS AND OUTFALL.
		SUBTOTAL BASIN DEMOLITION COST				$ 686,127	
		PROPOSED CHANNEL IMPROVEMENTS AND BRIDGES					
20	2315-02	EXCAVATION & OFF-SITE DISPOSAL CHANNEL ROW	CY	$ 12	171580	$ 2,058,960	CHANNEL
21		TIFFANY BRIDGE REPLACE [ALT 2 AND 3]	LS	$ 1,020,050	0	$ -	SCIENTECH
22	2751-XX	TIFFANY BRIDGE APPROACHES REPLACE	SY	$ 65	2667	$ 173,333	500-LF X 24-FT WIDE ROADWAY, INCLUDES DEMOLITION OF EXISTING PAVEMENT
23	2751-XX	TIFFANY BRIDGE APPROACHES REPLACE WITH PGL MODIFY FOR 500-LF	SY	$ 135	0	$ -	PGL CHANGE AT APPROACHES TO ACCOMMODATE NEW BRIDGE ELEV PER COH CH19. MIN GRADE 0.30%.
24		FUQUA GARDENS VIEW BRIDGE REPLACE [ALT 2 AND 3]	LS	$ 1,083,300	1	$ 1,083,300	SCIENTECH
25	2751-XX	FUQUA GARDENS VIEW APPROACHES REPLACE	SY	$ 65	2667	$ 173,333	
26	2751-XX	FUQUA GARDENS VIEW APPROACHES REPLACE WITH PGL MODIFY FOR 500-LF	SY	$ 180	0	$ -	
27		WASTEWATER CROSSING- SIPHON AT FUQUA GARDENS VIEW	LS	$ 500,000	1	$ 500,000	
28		WEST FUQUA BRIDGE ABUTTMENT AND RETAINING WALL MODIFY	LS	$ 250,000	1	$ 250,000	ASSUMES VERTICAL CONCRETE RETAINING WALLS AND 20-FT CONCRETE BOTTOM TO MATCH EXISTING GEOMETRY.
29		HCFCD BASIN MODIFICATIONS	LS	$ 100,000	1	$ 100,000	FRRS SHIFT EXISTING BERMS
30		SWPPP	LS	$ 33,300	1	$ 33,300	FRRS
31		TURF ESTABLISHMENT	LS	$ 140,000	1	$ 140,000	FRRS
32	2378-22	RIPRAP,GRADATION NO. 1	TON	$ 55	750	$ 41,250	
33	2376-XX	CONCRETE CHANNEL LINING,10" NOMINAL THICKNESS	SY	$ 150	4500	$ 675,000	
33		NATURAL CHANNEL DESIGN	LS	$ 1,143,000	0	$ -	
		SUBTOTAL CHANNEL IMPROVEMENTS AND BRIDGES COST				$ 5,228,477	
		PROPOSED BASIN IMPROVEMENTS					
34	2315-02	EXCAVATION & OFF-SITE DISPOSAL BASIN ROW [SOUTH OF W FUQUA]	CY	$ 12	120000	$ 1,440,000	BASIN SOUTH OF W FUQUA WITH 257000-CY DEDUCTED BY HCFCD E&R AGREEMENT WITH BLVD OAKS
35		SWPPP	LS	$ 33,300	1	$ 33,300	FRRS
36		TURF ESTABLISHMENT	LS	$ 70,000	1	$ 70,000	FRRS
37	2378-22	RIPRAP,GRADATION NO. 1	TON	$ 55	500	$ 27,500	
		SUBTOTAL BASIN IMPROVEMENTS COST				$ 1,570,800	
		SUBTOTAL CONSTRUCTION COST				$ 7,984,472	
		20% CONTINGENCY				$ 1,596,894	
		TOTAL CONSTRUCTION COST				$ 9,581,367	

C147-00-00: FLOOD RISK REDUCTION STUDY

Project ID: C147-00-00-P002

IDS Engineering Group
TBPE F-002726 | TBPLS 10110700

Date 03-02-2020

PRELIMINARY ESTIMATE OF PHASE 1 COST

ITEM NO.	PAY ITEM NO.	ITEM DESCRIPTION	UNIT MEAS	UNIT PRICE	ALTERNATIVE 2 34-FT AND 34-FT BOTTOM WIDTH		NOTES
					QTY	TOTAL	
		RIGHT OF WAY					
		RIGHT OF WAY	LS	$ 1,728,138	1	$ 1,728,138	
		SUBTOTAL RIGHT OF WAY COST				$ 1,728,138	
		PROFESSIONAL SERVICES					
		ENGINEERING (12%)	LS			$ 1,149,764	12% OF TOTAL CONSTRUCTION COST
		CONSTRUCTION MANAGEMENT (3%)	LS			$ 287,441	3% OF TOTAL CONSTRUCTION COST
		SUBTOTAL PROFESSIONAL SERVICES COST				$ 1,437,205	

TOTAL PROJECT COST	$ 12,746,710

C147-00-00: FLOOD RISK REDUCTION STUDY

Project ID: C147-00-00-P002

Date 03-02-2020

EXHIBIT 11 AND APPENDIX C.2

IDS Engineering Group
TBPE F-002726 | TBPLS 10110700

PRELIMINARY ESTIMATE OF PHASE 2 COST

ITEM NO.	PAY ITEM NO.	ITEM DESCRIPTION	UNIT MEAS	UNIT PRICE	ALTERNATIVE 2 34-FT AND 34-FT BOTTOM WIDTH		NOTES
					QTY	TOTAL	
		MOBILIZATION AND FRANCHISE UTILITY COORD					
1	1555-01	TRAFFIC CONTROL [ALT 2]	LS	$ 164,863	1	$ 164,863	2% CC FOR TRAF CNTRL DURING DEMO AND CONSTR
2	1141-01	CENTERPOINT ENERGY COORDINATION	LS	$ 7,500	0	$ -	ELECTRIC, GAS, STR LT CONDUIT RELOCATE ALLOWANCE
3	1141-04	TELECOMM COORDINATION	LS	$ 5,000	0	$ -	290-LF TELECOM CONDUIT RELOCATE ALLOWANCE
4	[2200-XX]	MOBILIZATION OF EQUIPMENT AND MATERIALS [ALT 2]	LS	$ 247,295	1	$ 247,295	3% CC TO MOBILIZE EQUIP AND MATLS (2% - 5% CC)
		SUBTOTAL MOBILIZATION COST				$ 412,158	
		BASIN DEMOLITION					
5	[2200-XX]	SITE PREPARATION AND RESTORATION FOR BASIN [ALT 2]	LS	$ 189,593	1	$ 189,593	FOR 12% CC TO PREPARE HCFCD ROW FOR CONSTR
6	2233-01	CLEARING & GRUBBING BASIN ROW [SOUTH OF W FUQUA]	AC	$ 2,500	62	$ 155,000	87-ACRES PARTIALLY WOODED
7	2120-13	REMOVE AND DISPOSE OF DETENTION BASIN CONCRETE PILOT CHANNELS , ALL THICKNESSES	SY	$ 48	9000	$ 432,000	C547 PILOT CHANNELS AND OUTFALL
		SUBTOTAL BASIN DEMOLITION COST				$ 776,593	
		PROPOSED BASIN IMPROVEMENTS					
8	2315-02	EXCAVATION & OFF-SITE DISPOSAL BASIN ROW [SOUTH OF W FUQUA]	CY	$ 12	429146	$ 5,149,752	BASIN SOUTH OF W FUQUA WITH 257000-CY DEDUCTED BY HCFCD E&R AGREEMENT WITH BLVD OAKS
9	[2200-XX]	PRE-CAST RCB (5' X 4')	LS	$ 400	1000	$ 400,000	
10		SWPPP	LS	$ 33,300	1	$ 33,300	FRRS
11		TURF ESTABLISHMENT	LS	$ 70,000	1	$ 70,000	FRRS
12	2378-22	RIPRAP,GRADATION NO. 1	TON	$ 55	500	$ 27,500	
		SUBTOTAL BASIN IMPROVEMENTS COST				$ 5,680,552	
		SUBTOTAL CONSTRUCTION COST				$ 6,869,303	
		20% CONTINGENCY				$ 1,373,861	
		TOTAL CONSTRUCTION COST				$ 8,243,164	
		PROFESSIONAL SERVICES					
		ENGINEERING (12%)	LS			$ 989,180	12% OF TOTAL CONSTRUCTION COST
		CONSTRUCTION MANAGEMENT (3%)	LS			$ 247,295	3% OF TOTAL CONSTRUCTION COST
		SUBTOTAL PROFESSIONAL SERVICES COST				$ 1,236,475	

TOTAL PROJECT COST	$ 9,479,638

C147-00-00: FLOOD RISK REDUCTION STUDY

Project ID: C147-00-00-P002

Date 03-02-2020

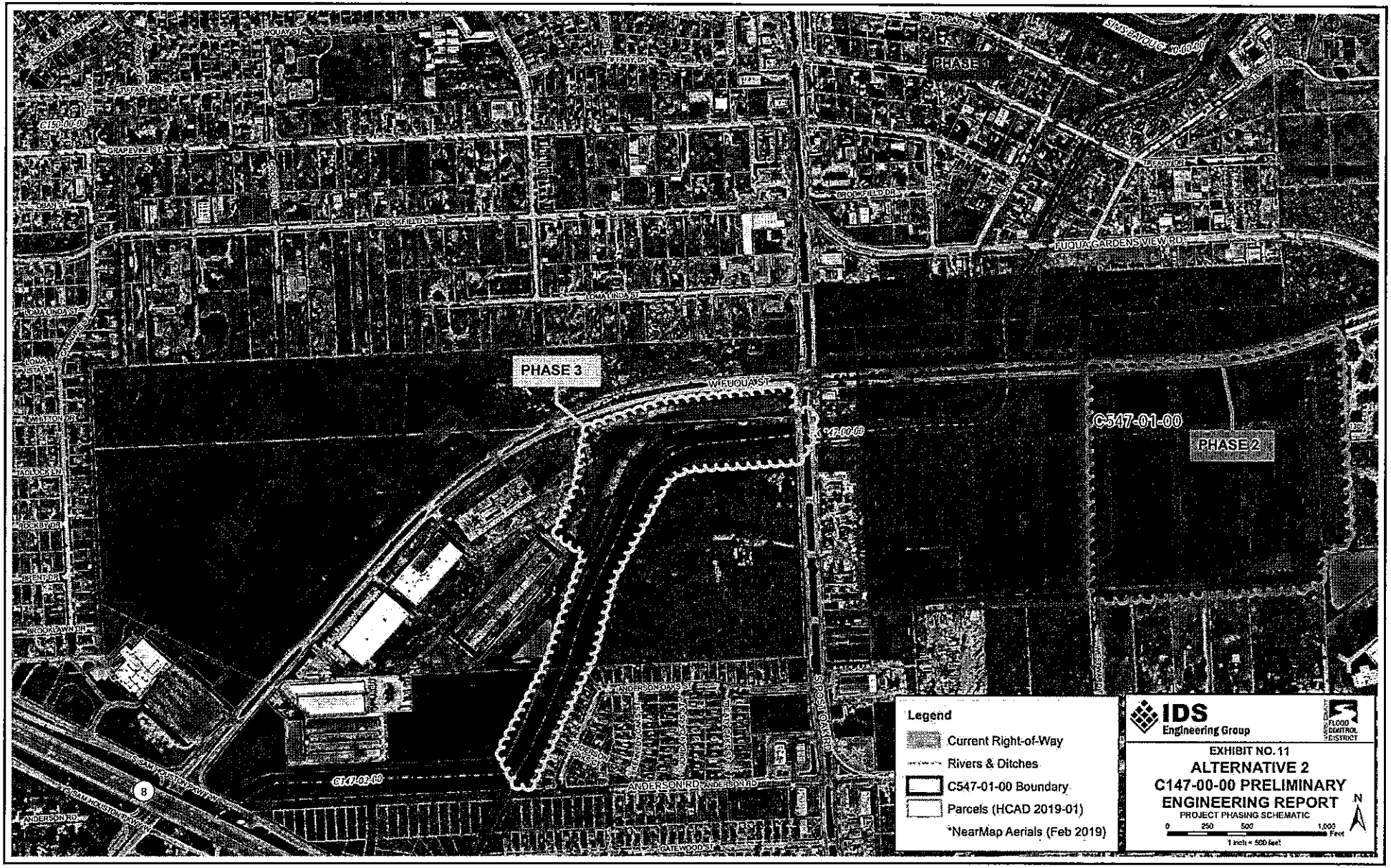
EXHIBIT 11 AND APPENDIX C.2

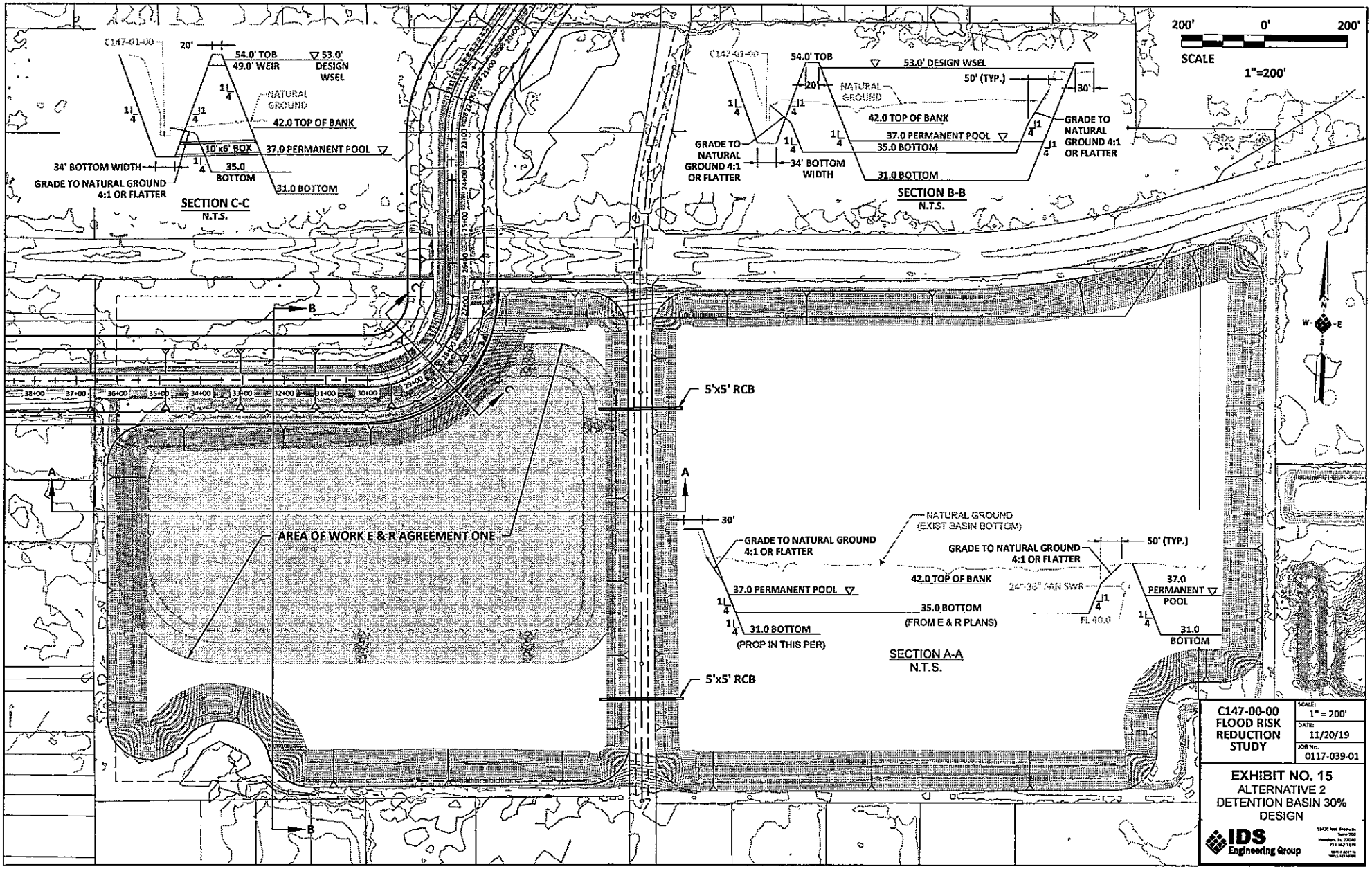
IDS Engineering Group
TBPE F-002726 | TBPLS 10110700

PRELIMINARY ESTIMATE OF PHASE 3 COST

ITEM NO.	PAY ITEM NO.	ITEM DESCRIPTION	UNIT MEAS	UNIT PRICE	ALTERNATIVE 2 34-FT AND 34-FT BOTTOM WIDTH QTY	TOTAL	NOTES
		MOBILIZATION AND FRANCHISE UTILITY COORD					
1	1555-01	TRAFFIC CONTROL [ALT 2]	LS	$ 146,251	1	$ 146,251	2% CC FOR TRAF CNTL DURING DEMO AND CONSTR
2	1141-01	CENTERPOINT ENERGY COORDINATION	LS	$ 7,500	1	$ 7,500	ELECTRIC, GAS, STR LT CONDUIT RELOCATE ALLOWANCE
3	1141-04	TELECOMM COORDINATION	LS	$ 5,000	1	$ 5,000	250-LF TELECOM CONDUIT RELOCATE ALLOWANCE
4	[2200-XX]	MOBILIZATION OF EQUIPMENT AND MATERIALS [ALT 2]	LS	$ 219,377	1	$ 219,377	3% CC TO MOBILIZE EQUIP AND MATLS (2% - 5% CC)
		SUBTOTAL MOBILZATION AND FRANCHISE COST				$ 378,128	
		CHANNEL AND BRIDGE DEMOLITION					
5	[2200-XX]	SITE PREPARATION AND RESTORATION FOR CHANNEL [ALT 2]	LS	$ 146,251	1	$ 146,251	FRRS 2% CC TO PREPARE HCFCD ROW FOR CONSTR
6	2233-01	CLEARING & GRUBBING CHANNEL PROP ROW	AC	$ 2,500	15	$ 37,500	ALT#1 REDUCED ROW DWNSTRM OF C547.
7	2120-13	REMOVE AND DISPOSE OF CONCRETE CHANNEL LINING & LOW FLOW, ALL THICKNESSES	SY	$ 48	1555	$ 74,640	11,400-SY FOR CHANNEL DWNSTRM OF S POST OAK.
8	2120-14	REMOVE AND DISPOSE OF CONCRETE STRUCTURES	CY	$ 22	90	$ 1,980	AND C147 SIDE WEIR AT STA64+00. ASSUME 5-CY PER INTERCEPTOR X 4.
9	2120-04	REMOVE & DISPOSE OF ALL PIPE	LS	$ 14	420	$ 5,880	INCL NON-OUTFALL STORM SEWER TO BE REMOVED AND REPLACED.
10	2120-21	REMOVE & DISPOSE OF SANITARY SEWER PIPE	LF	$ 30	440	$ 13,200	S POST OAK, FUQUA GARDENS VIEW, AND TIFFANY. INCL REMOVE SS SIPHON AT FUQUA GARDENS VIEW.
11	2120-12	REMOVE & DISPOSE OF SANITARY SEWER MANHOLE	EA	$ 1,200	3	$ 3,600	
12	2120-24	REMOVE & DISPOSE OF WATER LINE	LF	$ 16	450	$ 7,200	S POST OAK, FUQUA GARDENS VIEW, WEST FUQUA, AND TIFFANY. INCL WL ATTACHED TO BRIDGE AND APPURT.
13	[0496-10]	SOUTH POST OAK BRIDGE REMOVE	LS	$ 120,000	1	$ 120,000	SCIENTECH
		SUBTOTAL MOBILZATION AND FRANCHISE COST				$ 410,251	
		BASIN DEMOLITION					
14	[2200-XX]	SITE PREPARATION AND RESTORATION FOR BASIN [ALT 2]	LS	$ 113,466	1	$ 113,466	FRRS 2% CC TO PREPARE HCFCD ROW FOR CONSTR
15	2233-01	CLEARING & GRUBBING BASIN ROW (SOUTH OF W FUQUA)	AC	$ 2,500	20	$ 50,000	
16	2120-13	REMOVE AND DISPOSE OF DETENTION BASIN CONCRETE, ALL THICKNESSES	SY	$ 48	1018	$ 48,864	C147 adjacent to Boulevard Oaks basin.
		SUBTOTAL BASIN DEMOLITION COST				$ 212,330	
		PROPOSED CHANNEL IMPROVEMENTS AND BRIDGES					
17	2315-02	EXCAVATION & OFF-SITE DISPOSAL CHANNEL ROW	CY	$ 12	201420	$ 2,417,040	CHANNEL
18		SOUTH POST OAK BRIDGE REPLACE	LS	$ 1,089,000	1	$ 1,089,000	
19	2751-XX	SOUTH POST OAK APPROACHES REPLACE	SY	$ 65	0	$ -	
20	2751-XX	SOUTH POST OAK BRIDGE APPROACHES REPLACE WITH PGL MODIFY FOR 500-LF	SY	$ 180	7778	$ 1,400,000	
21		SWPPP	LS	$ 33,300	1	$ 33,300	FRRS
22		TURF ESTABLISHMENT	LS	$ 140,000	1	$ 140,000	FRRS
23	2378-22	RIPRAP,GRADATION NO. 1	TON	$ 55	250	$ 13,750	
24		NATURAL CHANNEL DESIGN	LS	$ 857,143	0	$ -	
		SUBTOTAL CHANNEL IMPROVEMENTS AND BRIDGES COST				$ 5,093,090	
		SUBTOTAL CONSTRUCTION COST				$ 6,093,799	
		20% CONTINGENCY				$ 1,218,760	
		TOTAL CONSTRUCTION COST				$ 7,312,559	
		PROFESSIONAL SERVICES					
		ENGINEERING (12%)	LS			$ 877,507	12% OF TOTAL CONSTRUCTION COST
		CONSTRUCTION MANAGEMENT (3%)	LS			$ 219,377	3% OF TOTAL CONSTRUCTION COST
		SUBTOTAL PROFESSIONAL SERVICES COST				$ 1,096,884	

TOTAL PROJECT COST	$ 8,409,443


PHASE 1
PHASE 2
PHASE 3
C547-01-00
C147-02-00
C147-00-00
C150-00-00
W HUQUA ST
FUQUA GARDENS VIEW RD
BROOKFIELD DR
TIFFANY DR
GRAPEVINE ST
LOMA LINDA ST
ANDERSON RD
ANDERSON OAKS ST
GATEWOOD
S SAM HOUSTON PKWY
Legend
Current Right-of-Way
Rivers & Ditches
C547-01-00 Boundary
Parcels (HCAD 2019-01)
*NearMap Aerials (Feb 2019)
IDS Engineering Group
HARRIS COUNTY FLOOD CONTROL DISTRICT
EXHIBIT NO. 11
ALTERNATIVE 2
C147-00-00 PRELIMINARY ENGINEERING REPORT
PROJECT PHASING SCHEMATIC
0 250 500 1,000 Feet
1 inch = 500 feet
N


200' 0' 200'
SCALE
1"=200'
C147-01-00
20'
54.0' TOB
49.0' WEIR
53.0' DESIGN WSEL
NATURAL GROUND
42.0 TOP OF BANK
10'x6' BOX
37.0 PERMANENT POOL
34' BOTTOM WIDTH
35.0 BOTTOM
31.0 BOTTOM
GRADE TO NATURAL GROUND 4:1 OR FLATTER
SECTION C-C
N.T.S.
54.0' TOB
53.0' DESIGN WSEL
50' (TYP.)
30'
NATURAL GROUND
42.0 TOP OF BANK
37.0 PERMANENT POOL
35.0 BOTTOM
34' BOTTOM WIDTH
31.0 BOTTOM
GRADE TO NATURAL GROUND 4:1 OR FLATTER
SECTION B-B
N.T.S.
5'x5' RCB
AREA OF WORK E & R AGREEMENT ONE
30'
NATURAL GROUND (EXIST BASIN BOTTOM)
GRADE TO NATURAL GROUND 4:1 OR FLATTER
50' (TYP.)
37.0 PERMANENT POOL
42.0 TOP OF BANK
24"-36" SAN SWR
35.0 BOTTOM
(FROM E & R PLANS)
31.0 BOTTOM
(PROP IN THIS PER)
FL 40.0
SECTION A-A
N.T.S.
5'x5' RCB
C147-00-00 FLOOD RISK REDUCTION STUDY
SCALE: 1" = 200'
DATE: 11/20/19
JOB No. 0117-039-01
EXHIBIT NO. 15
ALTERNATIVE 2
DETENTION BASIN 30% DESIGN
IDS Engineering Group