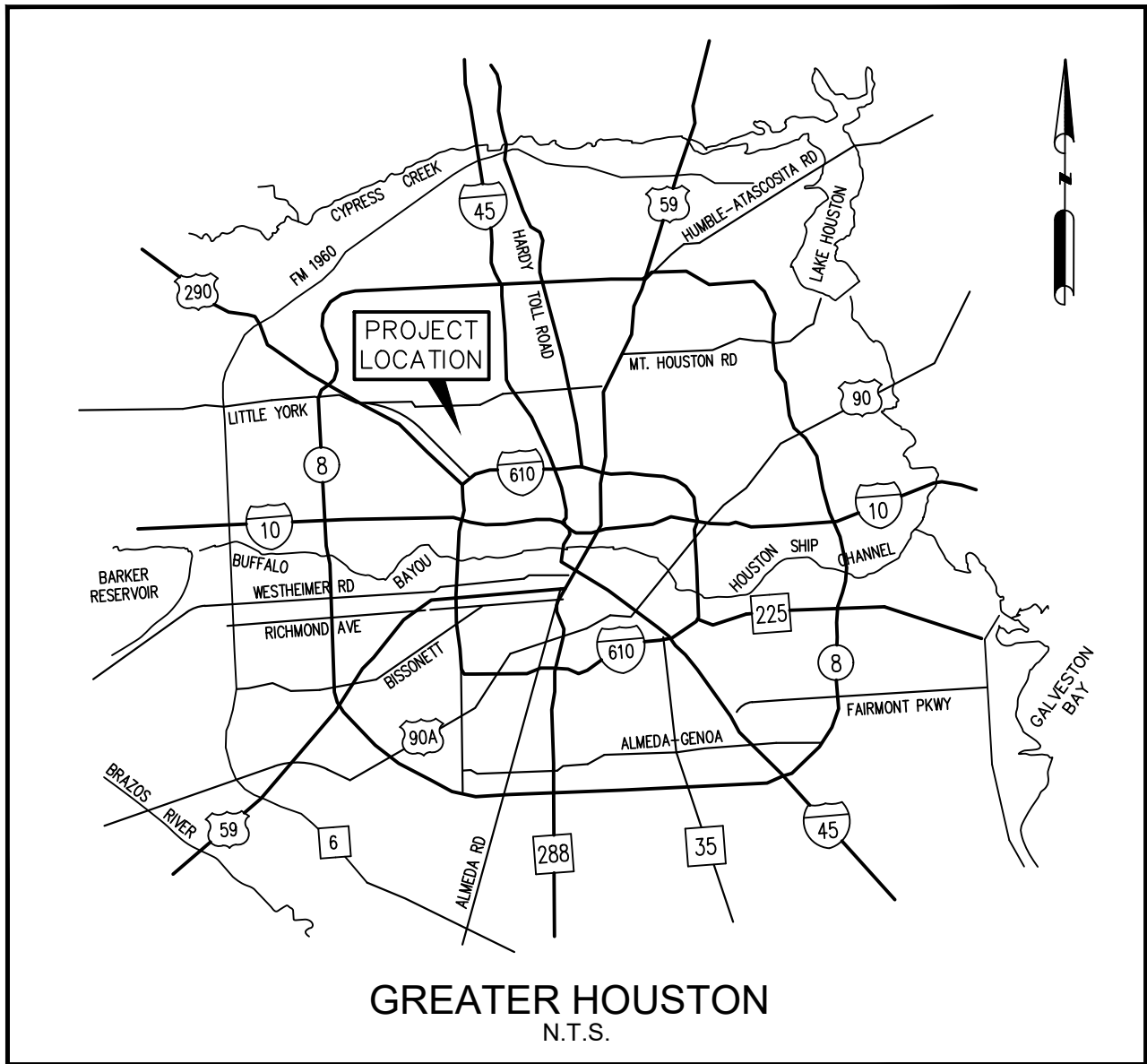


PRELIMINARY DRAINAGE & MITIGATION PLAN

FOR FUTURE SITE DEVELOPMENT AT

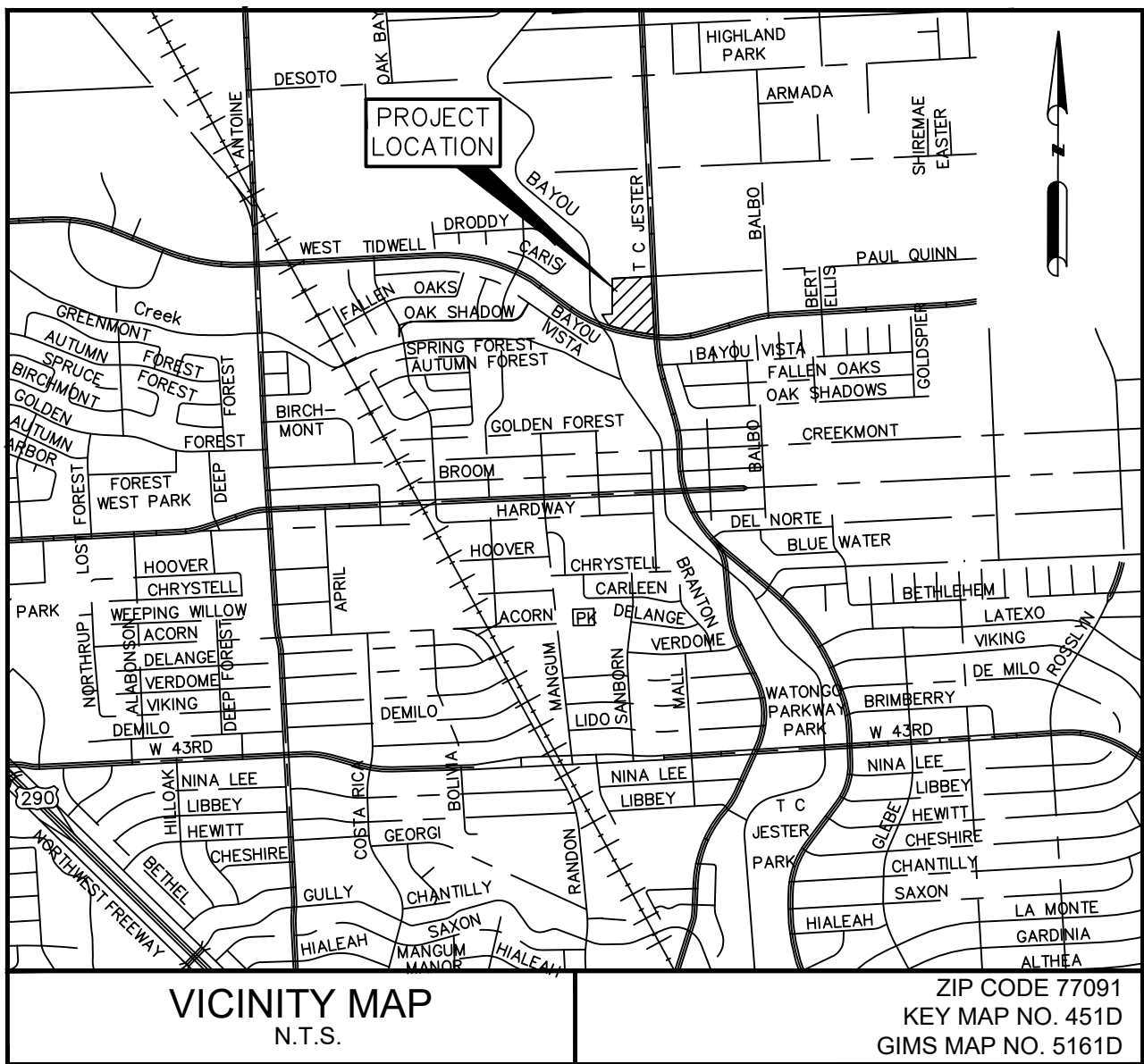
5651 T.C JESTER BOULEVARD

HOUSTON, TX 77091



Sheet List Table

Sheet Number	Sheet Title
01	COVER SHEET
02	DRAINAGE PLAN
03	MITIGATIONE PLAN
04	SURVEY (FOR REFERENCE ONLY)



Know what's below.
Call before you dig.

CALL BEFORE YOU DIG!
TEXAS 811 CALL PARTICIPANTS REQUEST
48 HOURS NOTICE BEFORE YOU DIG, DRILL,
OR BLAST – STOP CALL

Texas 811 Call System
811 or 1-800-344-8377

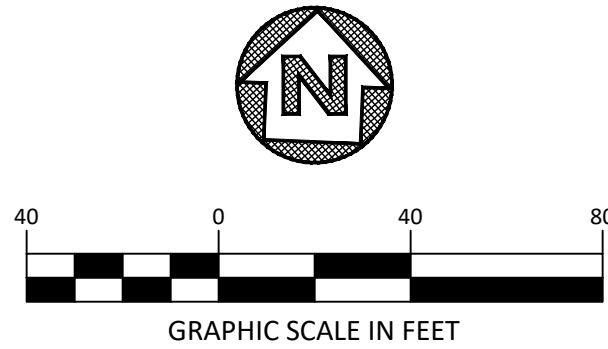
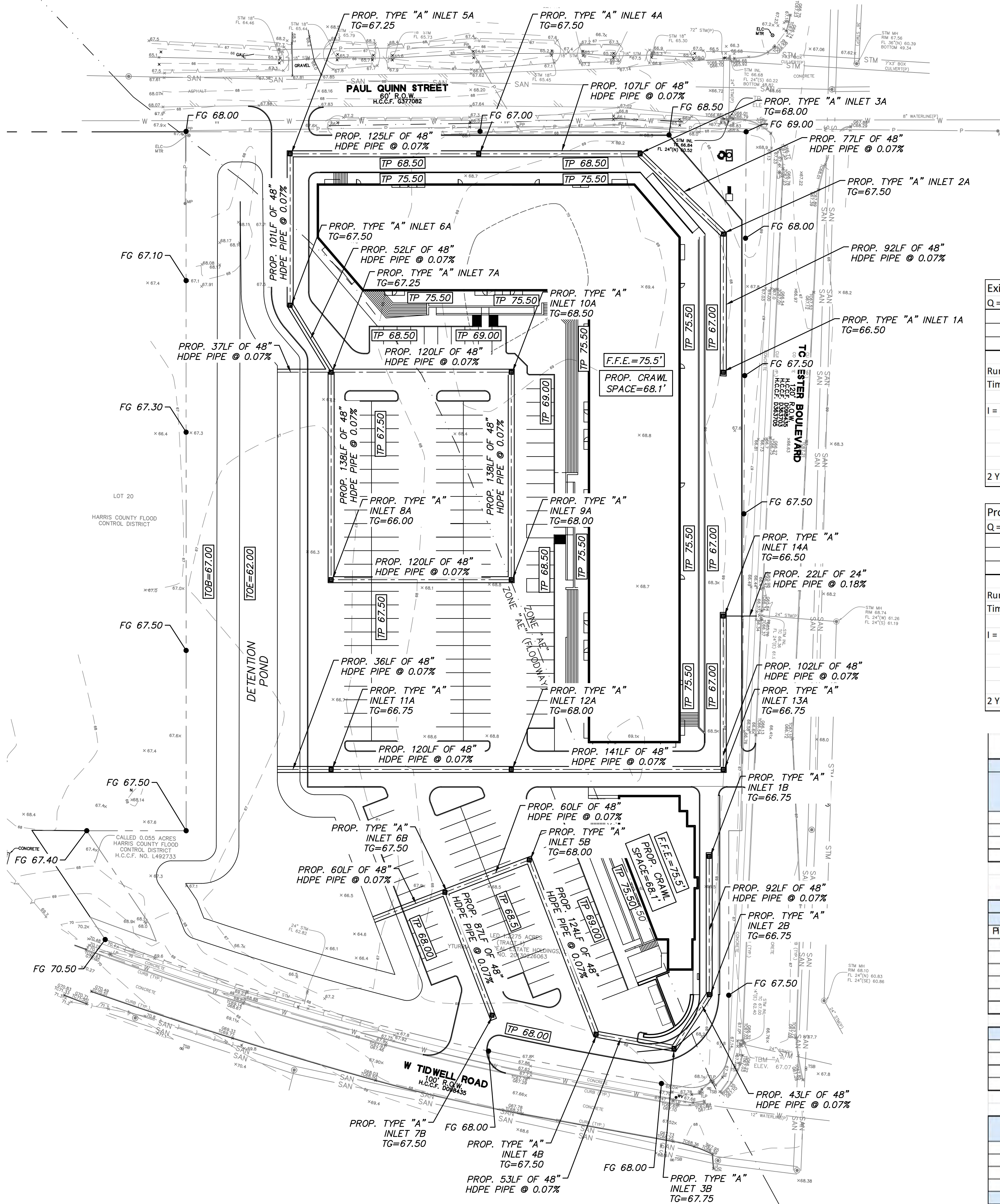
STOP!! CALL BEFORE YOU DIG

AS REQUIRED BY "TEXAS ADMINISTRATIVE CODE TITLE 16, PART 1, CH. 18,"
TEXAS ON CALL SYSTEM MUST BE CONTACTED (811) AT LEAST 48 HOURS
PRIOR TO ANY EXCAVATION OPERATIONS BEING PERFORMED. IT IS THE
CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM.
(IN HOUSTON) 713-223-4567

(NEW STATE WIDE NUMBER OUTSIDE HOUSTON 1-800-344-8377)

ACCORDING TO MAP NO. 48201C0655M OF THE FEDERAL EMERGENCY
MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR HARRIS COUNTY
AND INCORPORATED AREAS, DATED FEMA 06/09/2014 IS ENTIRELY WITHIN
"ZONE AE"

NO.	DATE	DESCRIPTION	APPR.
DUNAWAY		KARL JOHN BRECKON 73425 REGISTERED PROFESSIONAL ENGINEER 2/5/2025	
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES			
CITY OF HOUSTON HOUSTON PUBLIC WORKS			
WATER		STORM WATER QUALITY	
WASTE WATER		FACILITIES	
STORM WATER		TRAFFIC & TRANSPORTATION/ STREET & BRIDGE	
CITY ENGINEER		DIRECTOR OF HOUSTON PUBLIC WORKS	
DATE		DATE	
SHEET NO. 01 OF 04 SHEETS			
FOR CITY OF HOUSTON USE ONLY			



NOTE:
DRAINAGE PLAN IS CONCEPTUAL IN NATURE. AND THE FINAL DRAINAGE DESIGN SHALL BE IN CONFORMANCE WITH THE LATEST CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL.

Existing Site Condition (2 Years):				Existing Site Condition (100 Years):			
Q = CIA =				Q = CIA =			
Area of Lot	225438	Acres =	5.175	Area of Lot	225438	Acres =	5.175
Impervious Area	0	Acres =	0.000	Impervious Area	0	Acres =	0.000
% Coverage	0.00%			% Coverage	0.00%		
Runoff Coefficient =		C = 0.6 IA + 0.2 =		Runoff Coefficient =		C = 0.6 IA + 0.2 =	
Time of Concentration		TC = '10*A^0.1761+15		Time of Concentration		TC = '10*A^0.1761+15	
		0.20				0.20	
		28.36 min				28.36 min	
I = b/(d+tc)^e		3.5057196 inches/hour		I = b/(d+tc)^e		7.091496 inches/hour	
2 YR STORM =				100 YR STORM =			
b= 48.35				b= 60.66			
d= 9.07				d= 4.44			
e= 0.7244				e= 0.5797			
2 Year peak flow =		Q = CI A =		100 Year peak flow =		Q = CI A =	
		0.00 CFS				0.00 CFS	

Prop Site Condition (2 Years):				Prop Site Condition (100 Years):			
Q = CIA =				Q = CIA =			
Area of Lot	225438	Acres =	5.175	Area of Lot	225438	Acres =	5.175
Impervious Area	202041	Acres =	4.638	Impervious Area	202041	Acres =	4.638
% Coverage	89.62%			% Coverage	89.62%		
Runoff Coefficient =		C = 0.6 IA + 0.2 =		Runoff Coefficient =		C = 0.6 IA + 0.2 =	
Time of Concentration		TC = '10*A^0.1761+15		Time of Concentration		TC = '10*A^0.1761+15	
		0.74				0.74	
		28.36 min				28.36 min	
I = b/(d+tc)^e		3.5057196 inches/hour		I = b/(d+tc)^e		7.091496 inches/hour	
2 YR STORM =				100 YR STORM =			
b= 48.35				b= 60.66			
d= 9.07				d= 4.44			
e= 0.7244				e= 0.5797			
2 Year peak flow =		Q = CI A =		100 Year peak flow =		Q = CI A =	
		12.00 CFS				24.27 CFS	

Detention Provided			
Pond Volume Calculation			
$V = \frac{1}{3} \times h \times (A_1 + A_2 + \sqrt{A_1 \times A_2})$			
Area Top (High Bank)	35,441.00	SF	
Area Bottom (Toe)	16,259.00	SF	
Min. Depth of Pond	5.00	FT	
Detention Volume Provided:	126,174.83	CF	

Pipe Volume			
Volume = Area of Pipe * Length			
Pipe Size (in)	Pipe Area (sq.ft.)	Length (ft)	Volume cu.ft.)
48.00	12.57	2,025.00	25,446.90
	0.00	0.00	0.00
	0.00	0.00	0.00
	0.00	0.00	0.00
	0.00	0.00	0.00
		2,025.00	25,446.90

Street/Pavement Detention		
	Area - SF	Volume - CF
Existing	0.00	0.00
Proposed	94,386.00	47,193.00
Total	94,386.00	47,193.00

Total Volume Required		
	CF	AC-FT
	191,938.95	4.41
Total Pond Volume	126,174.83	2.90
Total Pipe Volume	25,446.90	0.58
Total Road Volume	47,193.00	1.08
Total Designed Volume	198,814.73	4.56

Detention Required		
V _r = PROPOSED IMPERVIOUS COVER * DETENTION RATE		
Proposed Impervious Cover	SF	AC
Building/Garage/Loggia	38,604.00	0.89
Driveway/Parking Lot	94,386.00	2.17
Sidewalk/Patios/Porches	33,610.00	0.77
Pond	35,441.00	0.81
Total Proposed Impervious Cover	202,041.00	4.64
Tract Size	225,438.00	5.18
Proposed Percent Impervious	89.62	%
Detention Rate	0.95	AC/FT/AC
Total Volume Required	191,938.95	4.41

ELEVATION INFORMATION

BENCHMARK - REFERENCE MARKS NO. 050073
FROM THE INTERSECTION OF I-45 (NORTH FREEWAY) WITH WEST TIDWELL ROAD,
TRAVEL WEST ON WEST TIDWELL ROAD A DISTANCE OF 4.3 MILES, MAKE A
U-TURN AT DEERCREEK LANE AND TRAVEL EAST ON WEST TIDWELL ROAD A
DISTANCE OF 0.2 MILES TO A HARRIS COUNTY FLOOD CONTROL DISTRICT DISK
LOCATED IN SIDEWALK ON DOWNSTREAM SIDE OF EAST BOUND BRIDGE AND
STREAM CENTERLINE.

ELEVATION = 71.41(NAD83)

TEMPORARY BENCHMARK "A" - BEING A BOX CUT SET ON A "C" TYPE INLET
LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF TC JESTER
BOULEVARD AND WEST TIDWELL ROAD.

ELEVATION = 67.07(NAD83)

TEMPORARY BENCHMARK "B" - BEING A BOX CUT SET ON A "C" TYPE INLET
LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF TC JESTER
BOULEVARD AND PAUL QUINN ST.
ELEVATION = 66.84 (NAVD83)

BASE FLOOD INFORMATION

SUBJECT PROPERTY PARTIALLY LOCATED IN
ZONE "AE"
B.F.E. = 71.7
D.F.E. = 73.5
PER FEMA MAP PANEL #48201C0655
EFFECTIVE DATE: 06/09/2014

NOTICE:

FOR YOUR SAFETY. YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS
BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES
NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not
be used for conflict verification.
Signature valid for six months.

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This signature verifies existing underground facilities - not to be used for conflict verification)
Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature valid for
one year.



PRELIMINARY DRAINAGE & MITIGATION PLAN
FOR FUTURE SITE DEVELOPMENT AT
5651 T.C JESTER BOULEVARD
HOUSTON, TX 77091

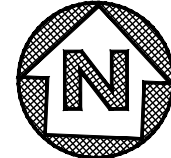
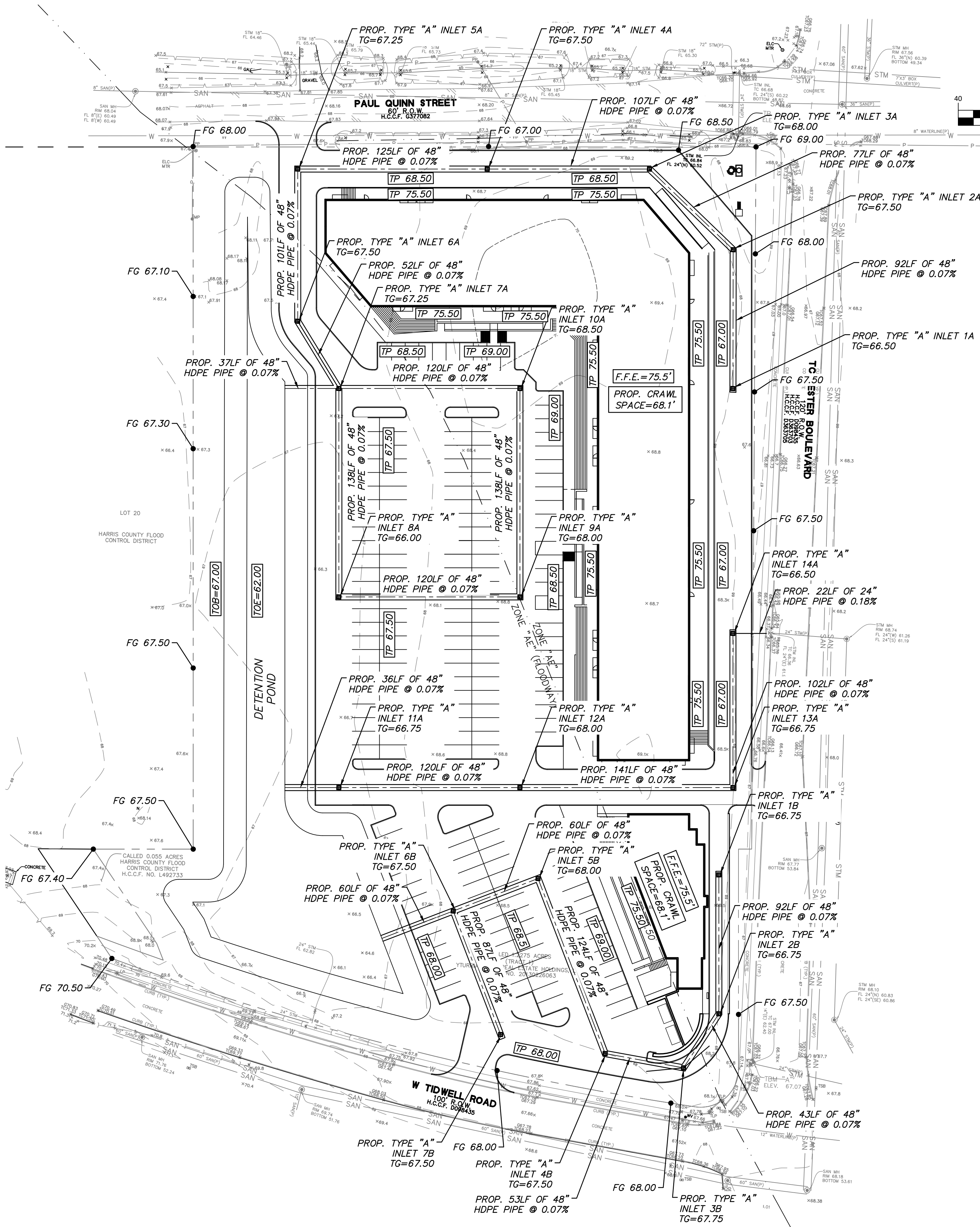
DRAINAGE PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

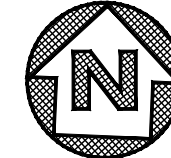
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

WATER STORM WATER QUALITY
WASTE WATER FACILITIES
STORM WATER TRAFFIC & TRANSPORTATION/
STREET & BRIDGE

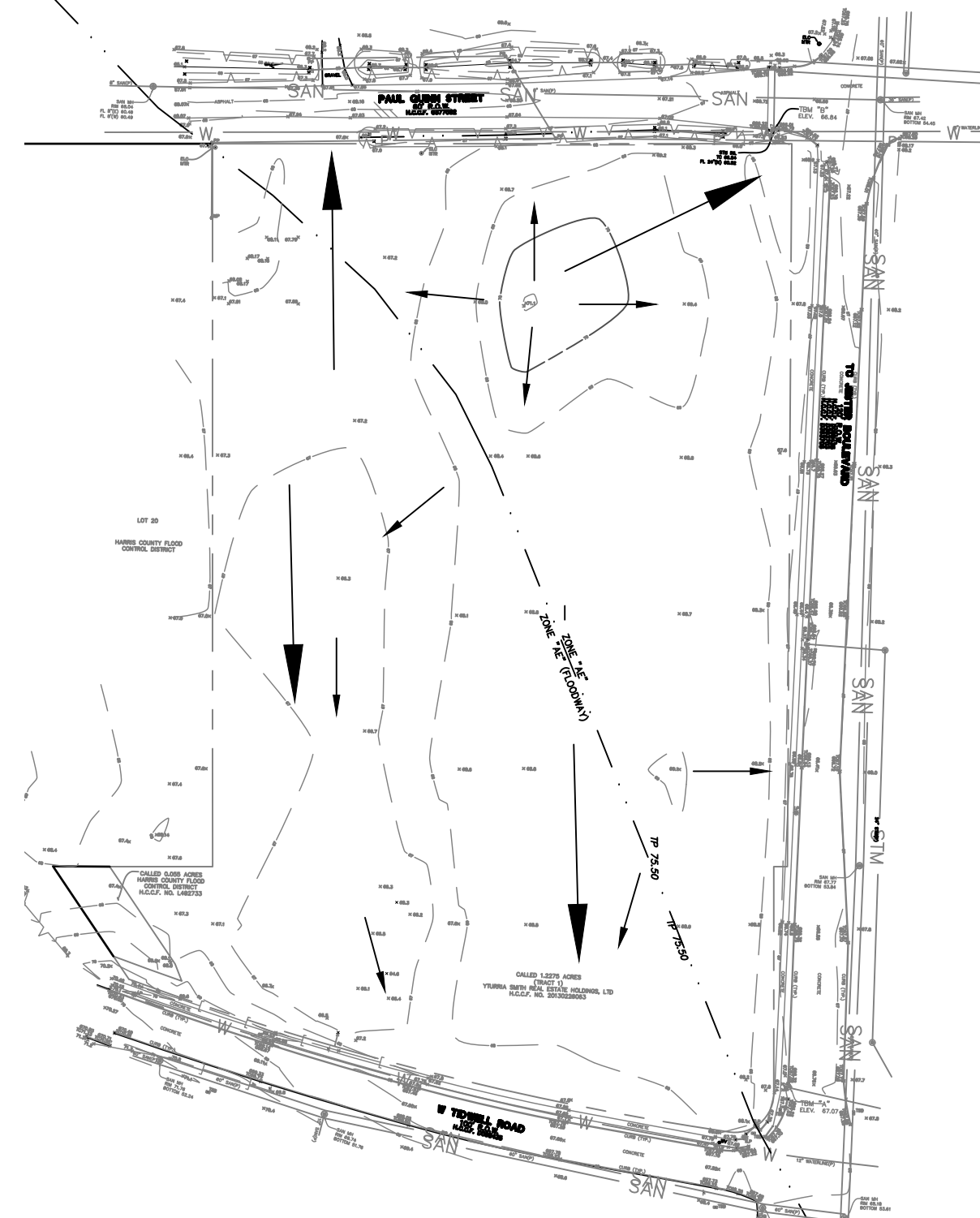
FILE NO. HORIZ:
SHEET NO. 02 OF 04 VERT:
DRAWING SCALE
FOR CITY OF HOUSTON USE ONLY



GRAPHIC SCALE IN FEET



GRAPHIC SCALE IN FEET



2-YEAR FLOW PATTERN

100-YEAR FLOW PATTERN

Mitigation Calculations							
Proposed Structure Impact							
Description	500YR DFE (FT)	Prop FF (FT)	Lowest Adjacent or Avg Grade or Grade of Existing Str (FT)	SF of Proposed Structure Impact	Avg Change in Elevation Below DFE	Volume Cut (CF)	Volume Fill (CF)
Supports	73.50	75.50	68.10	455.7	5.40	0.0	2,460.7
Support walls including veranda/entry/stairs	73.50	75.50	68.10	816.5	5.40	0.0	4,409.1
						0.0	
Total						0.0	6,869.8
MITIGATION VOLUME IS INCLUDED IN THE DETENTION CALCULATIONS SEE SHEET 2							

ELEVATION INFORMATION

BENCHMARK - REFERENCE MARKS NO. 050073 FROM THE INTERSECTION OF I-45 (NORTH FREEWAY) WITH WEST TIDWELL ROAD, TRAVEL WEST ON WEST TIDWELL ROAD A DISTANCE OF 4.3 MILES, MAKE A U-TURN AT DEERCREEK LANE AND TRAVEL EAST ON WEST TIDWELL ROAD A DISTANCE OF 0.2 MILES TO A HARRIS COUNTY FLOOD CONTROL DISTRICT DISK LOCATED IN SIDEWALK ON DOWNSTREAM SIDE OF EAST BOUND BRIDGE AND STREAM CENTERLINE.

ELEVATION = 71.41(NAD83)

TEMPORARY BENCHMARK "A" - BEING A BOX CUT SET ON A "C" TYPE INLET LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF TC JESTER BOULEVARD AND WEST TIDWELL ROAD.

ELEVATION = 67.07(NAD83)

TEMPORARY BENCHMARK "B" - BEING A BOX CUT SET ON A "C" TYPE INLET LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF TC JESTER BOULEVARD AND PAUL QUINN ST. ELEVATION = 66.84 (NAVD83)

BASE FLOOD INFORMATION

SUBJECT PROPERTY PARTIALLY LOCATED IN ZONE "AE"
B.F.E. = 71.7
D.F.E. = 73.5
PER FEMA MAP PANEL #48201C0655
EFFECTIVE DATE: 06/09/2014

NOTE:

DRAINAGE PLAN IS CONCEPTUAL IN NATURE AND THE FINAL DRAINAGE DESIGN SHALL BE IN CONFORMANCE WITH THE LATEST CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL.

NOTE:

ALL MATERIALS PROPOSED BELOW THE DFE WILL BE FLOODPROOFED. INDICATE THE FLOODPROOFING MATERIAL TYPE. THIS CAN BE A NOTE ON THE APPLICABLE ENGINEERED PLAN SHEET.
FFE MUST BE AT LEAST 2 ABOVE DFE.

NOTICE:

FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)

Signature valid for six months.

Date

Approved for AT&T underground conduit facilities only. Signature valid for one year.



PRELIMINARY DRAINAGE & MITIGATION PLAN FOR FUTURE SITE DEVELOPMENT AT 5651 T.C JESTER BOULEVARD HOUSTON, TX 77091

MITIGATION PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

WATER _____ STORM WATER QUALITY _____
WASTE WATER _____ FACILITIES _____
STORM WATER _____ TRAFFIC & TRANSPORTATION/
STREET & BRIDGE _____

FILE NO. _____ HORIZ. _____
SHEET NO. 03 of 04 VERT. _____

DRAWING SCALE

FOR CITY OF HOUSTON USE ONLY

