

REVIEW BY FORT BEND COUNTY
COMMISSIONERS COURT

10B
Fort Bend County
Engineering Department
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytexas.gov

☒ **Right of Way Permit**
☒ **Commercial Driveway Permit**
 Permit No: 2018-21520

Applicant: Houston LS Construction dba Houston Lone Star Construction LLC/Edward I. Tsao Architects

Job Location Site: 25031 Westheimer Parkway, Katy, TX 77494

Bond No. [REDACTED] **Date of Bond:** 6/1/2018 **Amount:** \$26,000.00

The above applicant came to make use of certain Fort Bend County property subject to, "The Order Regulating the Laying, Construction, Maintenance, and Repair of Buried Cables, Conduits, and Pole Lines, In, Under, Across or Along Roads, Streets, Highways, and Drainage Ditches in Fort Bend County, Texas, Under the Jurisdiction of the Commissioners Court of Fort Bend County, Texas," as passed by the Commissioners Court of Fort Bend County, Texas, of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistent with Chapter 181, Vernon's Texas Statutes and Codes Annotated.

Notes:

1. Evidence of review by the Commissioners Court must be kept on the job site and failure to do so constitutes grounds for job shutdown.
2. Written notices are required:
 - a. 48 hours in advance of construction start up, and
 - b. When construction is completed and ready for final inspection, submit notification to Permit Administrator thru MyGovernmentOnline.org portal.
3. This permit expires one (1) year from date of permit if construction has not commenced.

On this 10th day of July, 2018, Upon Motion of Commissioner T. Myers, seconded by Commissioner MORales, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Signature

Presented to Commissioners Court and approved.

By:

County Engineer

Date Recorded 7-13-2018 Comm. Court No. 10B

N/A

By:

Drainage District Engineer/Manager

Clerk of Commissioners Court

By:

Deputy



**PERMIT APPLICATION REVIEW FORM FOR
CABLE, CONDUIT, AND POLE LINE ACTIVITY
IN FORT BEND COUNTY**

**Fort Bend County
Engineering Department**
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytx.gov

- ☒ Right of Way Permit
☒ Commercial Driveway Permit

Permit No: 2018-21520

The following "Notice of Proposed Cable, Conduit, and/or Pole Line activity in Fort Bend County" and accompanying attachments have been reviewed and the notice conforms to appropriate regulations set by Commissioner's Court of Fort Bend County, Texas.

(1) COMPLETE APPLICATION FORM:

- ☒ a. Name of road, street, and/or drainage ditch affected.
☒ b. Vicinity map showing course of directions
☒ c. Plans and specifications

(2) BOND:

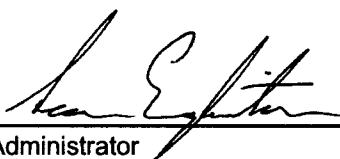
- ☐ County Attorney, approval when applicable.
- ☐ Perpetual bond currently posted. Bond No: _____ Amount: _____
- ☒ Performance bond submitted. Bond No: XXXXXXXXXX Amount: \$26,000.00
- ☐ Cashier's Check Check No: _____ Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

We have reviewed this project and agree it meets minimum requirements.



Permit Administrator

6/29/2018

Date



**PERFORMANCE BOND COVERING ALL CABLE, CONDUIT AND/OR POLE LINE
ACTIVITY IN, UNDER, ACROSS OR ALONG FORT BEND COUNTY ROAD,
COMMERCIAL DRIVEWAY AND MEDIAN OPENINGS OR MODIFICATIONS
(AUTHORIZED)**

BOND NO: [REDACTED]

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND §

THAT WE, Houston LS Construction dba Houston Lone Star Construction LLC, whose (address, phone) is 12816-D Willow Ctr., Houston, Texas 77066 (713-829-6064), hereinafter called the Principal, and YY Brothers Investment Inc., a Corporation existing under and by virtue of the laws of the state of Texas and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at (name/address/phone) 24915 Hazel Ranch Dr., Katy, TX 77494 (713-839-5577), whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is Developers Surety and Indemnity Company and whose address is 2203 Timberloch Pl., #220, The Woodlands, TX 77380, hereinafter called the Surety, and held and firmly bound unto, Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, in the full sum of Twenty-six Thousand Dollars (\$ 26,000.00) current, lawful money of the United States of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, to which payment well and truly to be made and done, we, the undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors, assigns, and legal representatives, jointly and severally, by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, the above bounden principal contemplates laying, constructing, maintaining and/or repairing one or more cables, conduits, and/or pole lines in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend, and the State of Texas, under the jurisdiction of the Commissioners' Court of Fort Bend County, Texas, pursuant to the Commissioners' Court order adopted on the 1st day of December, A.D. 1980, recorded in Volume 13, of the Commissioners' Court Minutes of Fort Bend County, Texas, regulating same, which Commissioners' Court order is hereby referred to and made a part hereof for all purposes as though fully set out herein;

AND WHEREAS, the principal desires to provide Fort Bend County with a performance bond covering all such cable, conduit and/or pole line activity, commercial driveway and median openings or modifications;

NOW, THEREFORE, if the above bounden principal shall faithfully perform all its cable, conduit and/or pole line activity (including, but not limited to the laying, construction, maintenance and/or repair of cables, conduits and/or pole lines) in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend and State of Texas, under the jurisdiction of the Commissioners Court of Fort Bend County, Texas, pursuant to and in accordance with minimum requirements and conditions of the above mentioned Commissioners' Court order set forth and specified to be by said principal done and performed, at the time and in the manner therein specified, and shall pay over and make good and reimburse Fort Bend County, all loss and damages which Fort Bend County may sustain by reason of any failure or default on the part of said principal, then this obligation shall be null and void, otherwise to remain in full force and effect.

This bond is payable at the County Courthouse in the County of Fort Bend and State of Texas.

It is understood that at any time Fort Bend County deems itself insecure under this bond, it may require further and/or additional bonds of the principal.

EXECUTED this 1st day of June, 2018.

Houston LS Construction dba
Houston Lone Star Construction, LLC
PRINCIPAL

BY


Rao Umar Farooq

CCM 7-10-2018 #10B
Fort Bend County Clerk
Return Admin Serv Coord
Rm+2018-21520 RAC

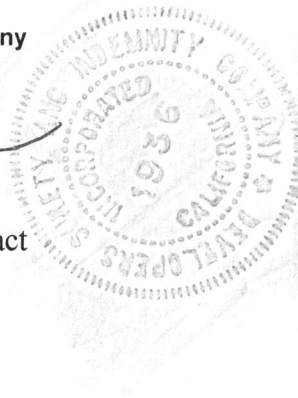
Developers Surety and Indemnity Company

SURETY

Rebecca Skillern

BY

Rebecca Skillern, Attorney-in-Fact



**POWER OF ATTORNEY FOR
DEVELOPERS SURETY AND INDEMNITY COMPANY
INDEMNITY COMPANY OF CALIFORNIA
PO Box 19725, IRVINE, CA 92623 (949) 263-3300**

KNOW ALL BY THESE PRESENTS that except as expressly limited, DEVELOPERS SURETY AND INDEMNITY COMPANY and INDEMNITY COMPANY OF CALIFORNIA, do each hereby make, constitute and appoint:

Marcy Yardas, Joe Yardas, jointly or severally

as their true and lawful Attorney(s)-in-Fact, to make, execute, deliver and acknowledge, for and on behalf of said corporations, as sureties, bonds, undertakings and contracts of suretyship giving and granting unto said Attorney(s)-in-Fact full power and authority to do and to perform every act necessary, requisite or proper to be done in connection therewith as each of said corporations could do, but reserving to each of said corporations full power of substitution and revocation, and all of the acts of said Attorney(s)-in-Fact, pursuant to these presents, are hereby ratified and confirmed.

This Power of Attorney is granted and is signed by facsimile under and by authority of the following resolutions adopted by the respective Boards of Directors of DEVELOPERS SURETY AND INDEMNITY COMPANY and INDEMNITY COMPANY OF CALIFORNIA, effective as of January 1st, 2008.

RESOLVED, that a combination of any two of the Chairman of the Board, the President, Executive Vice-President, Senior Vice-President or any Vice President of the corporations be, and that each of them hereby is, authorized to execute this Power of Attorney, qualifying the attorney(s) named in the Power of Attorney to execute, on behalf of the corporations, bonds, undertakings and contracts of suretyship; and that the Secretary or any Assistant Secretary of either of the corporations be, and each of them hereby is, authorized to attest the execution of any such Power of Attorney;

RESOLVED, FURTHER, that the signatures of such officers may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures shall be valid and binding upon the corporations when so affixed and in the future with respect to any bond, undertaking or contract of suretyship to which it is attached.

IN WITNESS WHEREOF, DEVELOPERS SURETY AND INDEMNITY COMPANY and INDEMNITY COMPANY OF CALIFORNIA have severally caused these presents to be signed by their respective officers and attested by their respective Secretary or Assistant Secretary this 6th day of February, 2017.

By: *Daniel Young*
Daniel Young, Senior Vice-President

By: *Mark Lansdon*
Mark Lansdon, Vice-President



A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Orange

On February 6, 2017 before me, Lucille Raymond, Notary Public
Date Here Insert Name and Title of the Officer

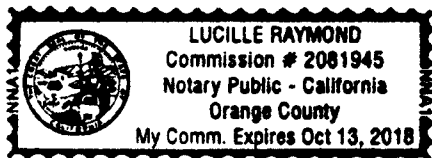
personally appeared Daniel Young and Mark Lansdon
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature *Lucille Raymond*
Lucille Raymond, Notary Public



Place Notary Seal Above

CERTIFICATE

The undersigned, as Secretary or Assistant Secretary of DEVELOPERS SURETY AND INDEMNITY COMPANY or INDEMNITY COMPANY OF CALIFORNIA, does hereby certify that the foregoing Power of Attorney remains in full force and has not been revoked and, furthermore, that the provisions of the resolutions of the respective Boards of Directors of said corporations set forth in the Power of Attorney are in force as of the date of this Certificate.

This Certificate is executed in the City of Irvine, California, this 1st day of June, 2018.

By: *Cassie J. Barrisford*
Cassie J. Barrisford, Assistant Secretary

ATS-1002 (02/17)



FILED AND RECORDED
OFFICIAL PUBLIC RECORDS

Laura Richard

Laura Richard, County Clerk

Fort Bend County Texas

July 12, 2018 03:07:09 PM



FEE: \$0.00

PG2

2018078082

SITE DEVELOPMENT PLANS

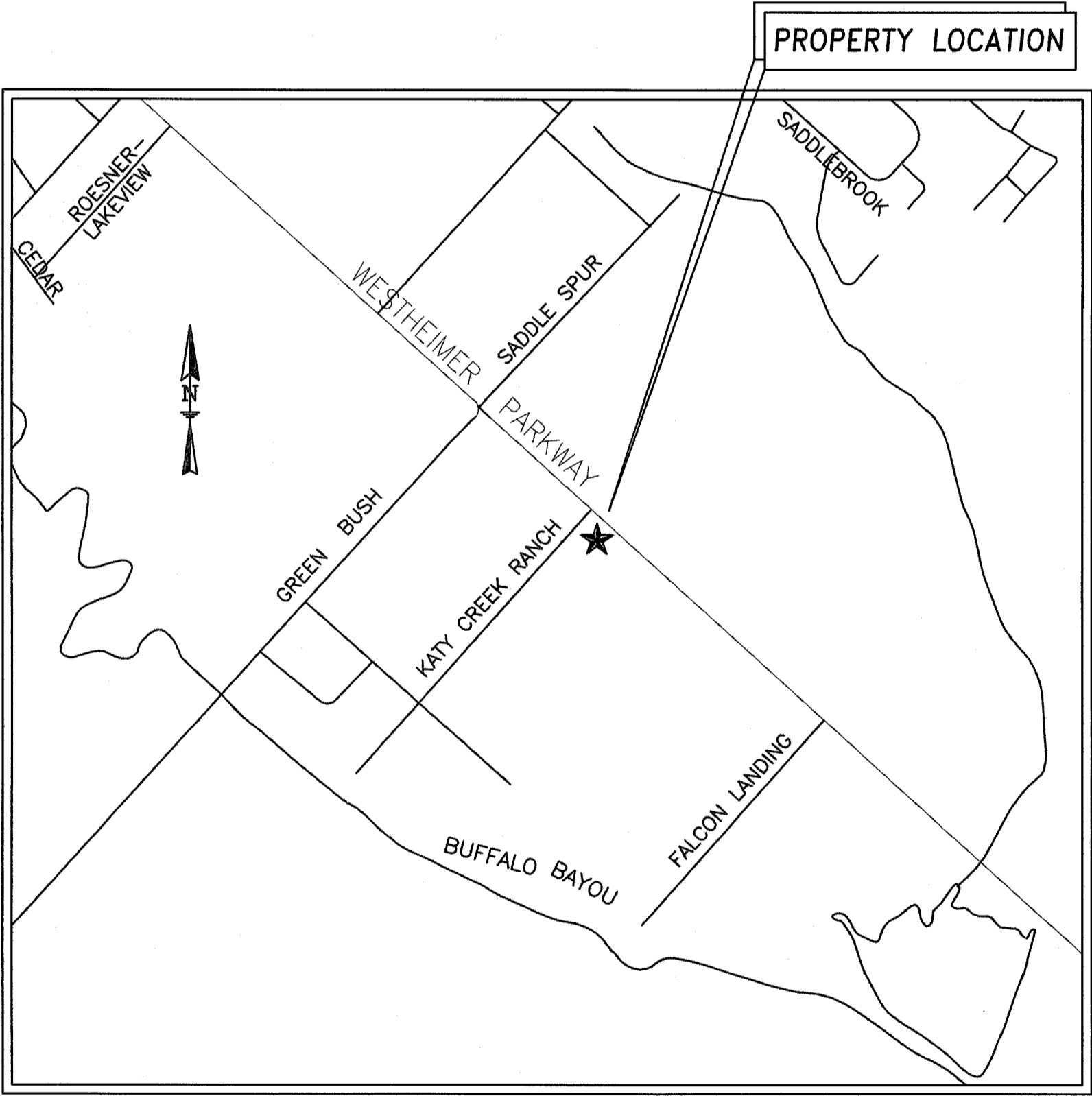
FOR
KATY CREEK RANCH PLAZA
A SUBDIVISION OF 3.0543 ACRES OF LAND
SITUATED IN THE STEPHEN HOBERMAKER
FORT BEND COUNTY, TEXAS

ADDRESS: 25031 & 25033 WESTHEIMER PARKWAY
KATY, TEXAS 77494

**Fort Bend County
Construction - General Notes**

1. Fort Bend County must be invited to the Pre-Construction Meeting.
2. Contractor shall notify Fort Bend County Engineering Department **48 hours prior to commencing construction and 48 hour notice to any construction activity within the limits of the paving** at Construction@fortbendcountytexas.gov.
3. Contractor is responsible for obtaining all permits required from Fort Bend County prior to commencing construction of any improvements within County road right of ways.
4. All Paving Improvements shall be constructed in accordance with Fort Bend County "Rules, Regulations and Requirements" relating to the Approval and Acceptance of Improvements in Subdivisions as currently amended.
5. All road widths, curb radii and curb alignment shown indicates back of curb
6. A continuous longitudinal reinforcing bar shall be used in the curbs.
7. All concrete pavement shall be 5 1/2 sack cement with a minimum compressive strength of 3500 psi at 28 days. Transverse expansion joints shall be installed at each curb return and at a maximum spacing of 60 feet.
8. All weather access to all existing streets and driveways shall be maintained at all times.
9. 4"x 12" reinforced concrete curb shall be placed in front of single family lots only. **All other areas shall be 6" reinforced concrete curb.**
10. At all intersection locations, **Type 7 ramps** shall be place in accordance with **TXDOT Ped-12a** standard detail sheet. A.D.A. - Handicap Ramps shall be installed with street paving at all intersections and comply with current A.D.A. regulations.
11. Curb headers are required at curb connections to Handicap Ramps, with no construction joint within 5' of ramps.
12. All intersections utilizing Traffic Control measures shall have A.D.A. wheel chair ramps installed.
13. Guidelines are set forth in the Texas "Manual on Uniform Traffic Control Devices", as currently amended, shall be observed. The Contractor shall be responsible for providing adequate flagmen, signing, striping and warning devices, etc., during construction - both day and night.
14. All R1-1 stop signs shall be 30"x30" with diamond grade sheeting per Texas manual on uniform traffic control devices.
15. Street name signage shall be on a 9" high sign flat blade w/reflective green background. Street names shall be upper and lowercase lettering with uppercase letters of 6" minimum and lowercase letters of 4.5" minimum. The letters shall be reflective white. Street name signs shall be mounted on stop sign post.
16. A Blue Double Reflectorized button shall be placed at all Fire Hydrant locations. The Button shall be placed 12 inches off of the centerline of the street on the same side as the hydrant.
17. The project and all parts thereof shall be subject to inspection from time to time by inspectors designated by Fort Bend County. No such inspections shall relieve the Contractor of any of its obligations hereunder. Neither failure to inspect nor failure to discover or reject any of the work as not in accordance with the drawings and specifications, requirements and specifications of Fort Bend County or any provision of this project shall be construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder.

NOTE: Fort Bend County notes supersede any conflicting notes.



VICINITY MAP
N.T.S KEY MAP 485-N

DISTRICT NAMES	
SCHOOL	KATY I.S.D.
MUD	HARRIS-FORT BEND MUD 5
D01	FORT BEND DRAINAGE DISTRICT HOUSTON ETJ
G01	FORT BEND COUNTY GEN. HOUSTON ETJ
R41	FORT BEND COUNTY ESD2 HOUSTON ETJ

INDEX OF SHEETS:

- C-0 COVER SHEET
- C-1 SITE UTILITY LAYOUT
- C-2 SITE DRAINAGE LAYOUT
- C-2A EXTREME EVENT FLOW ANALYSIS
- C-3 DRAINAGE AREA MAP & DETAILS
- C-4 S.W.P.P. LAYOUT & DETAILS
- C-5 SITE JOINT LAYOUT
- C-6 DRAINAGE AREA AND SWPPP AREA SITE PLAN
- C-7 TRAFFIC CONTROL PLAN

PREPARED BY:

HRS and Associates, LLC
Civil, Traffic Engineering, and Consulting

8318 Ivan Reid Drive
Houston, Texas
Texas 77040-1509
Phone: (713) 466-9776
Fax: (823) 328-7121
E-mail: hassassociates@aol.com

FIRM NAME: HRS and Associates, LLC
FIRM REGISTRATION NUMBER: F-4093

SUBMITTED BY:

Seal:

H.R. Shotorbani
Signature:

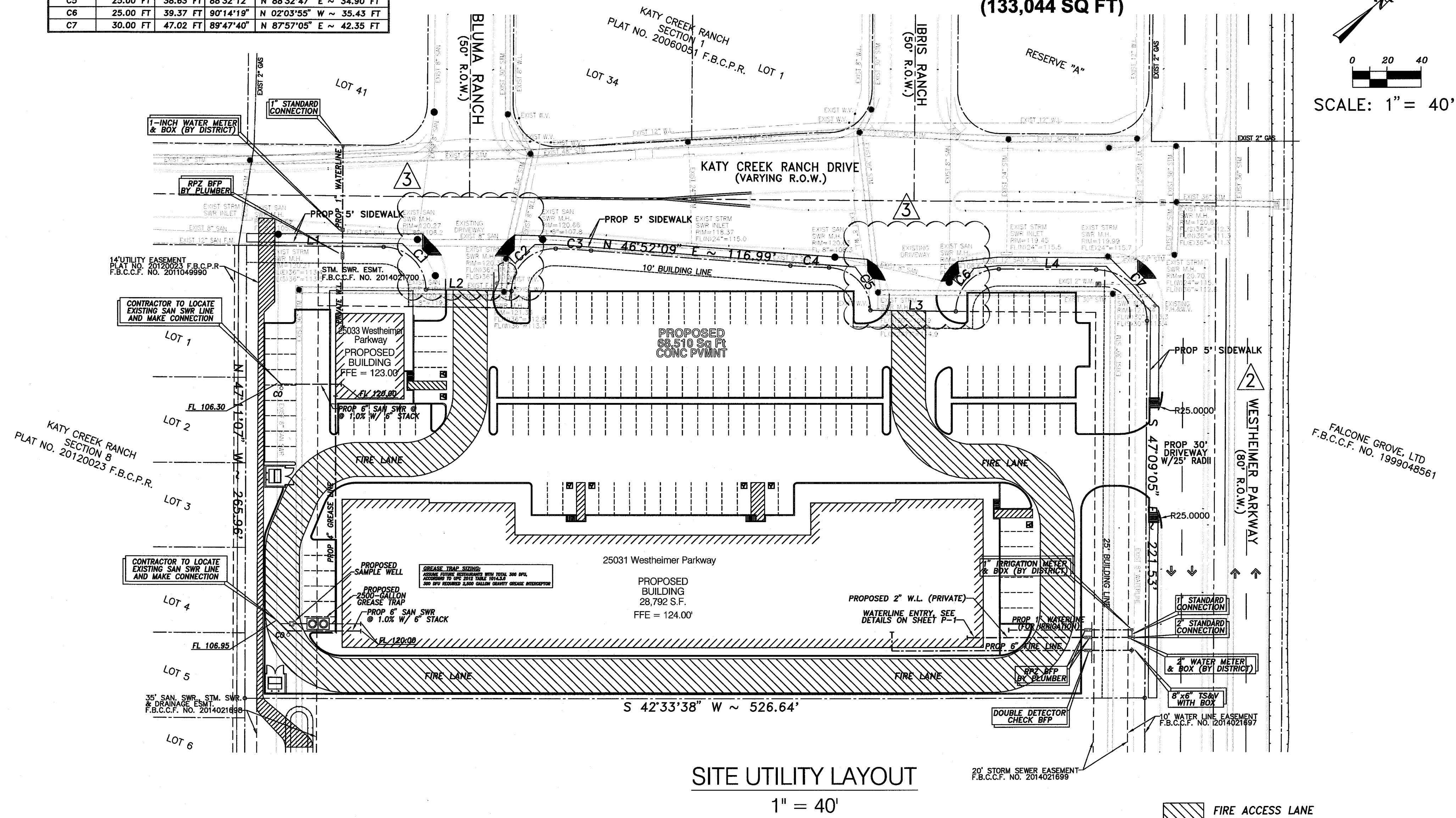
CDS 2/13/18

NOTES:

1. FINISHED FLOOR ELEVATION SHALL BE A MINIMUM OF 12" ABOVE THE TOP OF THE NEAREST SANITARY SEWER MANHOLE COVER.
2. ELEVATION OF THE NEAREST SANITARY SEWER MANHOLE COVER IS AN ACTUAL ELEVATION OF 121.11 FT.
3. PLUMBER TO CONNECT INTO EXISTING SANITARY SEWER LINE.
4. ELECTRICIAN TO RUN THREE CONDUITS TO GARAGE FOR:
 - A) ELECTRIC SERVICE
 - B) TELEPHONE SERVICE
 - C) CABLE SERVICE... AT SAME LOCATION.
5. ALL COLD WATER LINES OUTSIDE BUILDINGS TO BE: P.V.C. SCH. 40 (ASTM D-1785)
6. ALL COLD WATER LINES INSIDE BUILDINGS TO BE: COPPER PIPE, TYPE "L"
7. ALL HOT WATER LINES TO BE: COPPER PIPE, TYPE "L"
8. ALL VENT LINES TO BE: P.V.C. SCH. 40
9. ALL SANITARY SEWER LINES TO BE: P.V.C. SCH. 40 (ASTM D-1785)

CURVE	RADIUS	LENGTH	DELTA	CHORD
C1	25.00 FT	39.17 FT	89°45'36"	N 87°56'04" E ~ 35.28 FT
C2	25.00 FT	40.00 FT	91°41'17"	N 01°20'29" W ~ 35.87 FT
C3	500.00 FT	20.65 FT	02°21'59"	N 45°41'09" E ~ 20.65 FT
C4	500.00 FT	22.61 FT	02°35'28"	S 45°34'25" W ~ 22.61 FT
C5	25.00 FT	38.63 FT	88°32'12"	N 88°32'47" E ~ 34.90 FT
C6	25.00 FT	39.37 FT	90°14'19"	N 02°03'55" W ~ 35.43 FT
C7	30.00 FT	47.02 FT	89°47'40"	N 87°57'05" E ~ 42.35 FT

LINE	DISTANCE	BEARING
L1	80.11 FT	N 43°03'15" E
L2	50.00 FT	N 43°28'03" E
L3	50.00 FT	N 43°25'51" E
L4	56.78 FT	N 43°03'15" E



SITE UTILITY LAYOUT

1" = 40'

/// FIRE ACCESS LANE



NOTES:

1. At the beginning and end of the fire lane, the sign shall have a single headed arrow pointing in the direction the regulation is in effect. The intermediate signs shall have double headed arrows pointing in both directions.
2. The maximum spacing of the signs shall be 75', contingent upon Traffic Engineering's review and approval.
3. The signs shall be set at an angle of not less than 30° nor more than 45° with the curb or line of traffic flow.
4. The clearance to the bottom of the sign shall be 7 feet. There shall be no other signs attached to the sign or the sign pole.
5. The sign plate shall be a minimum of 12" x 18" with a thickness of 0.50"

Standard Details

APPROVED BY: HARRIS COUNTY

FIRE LANE SIGN

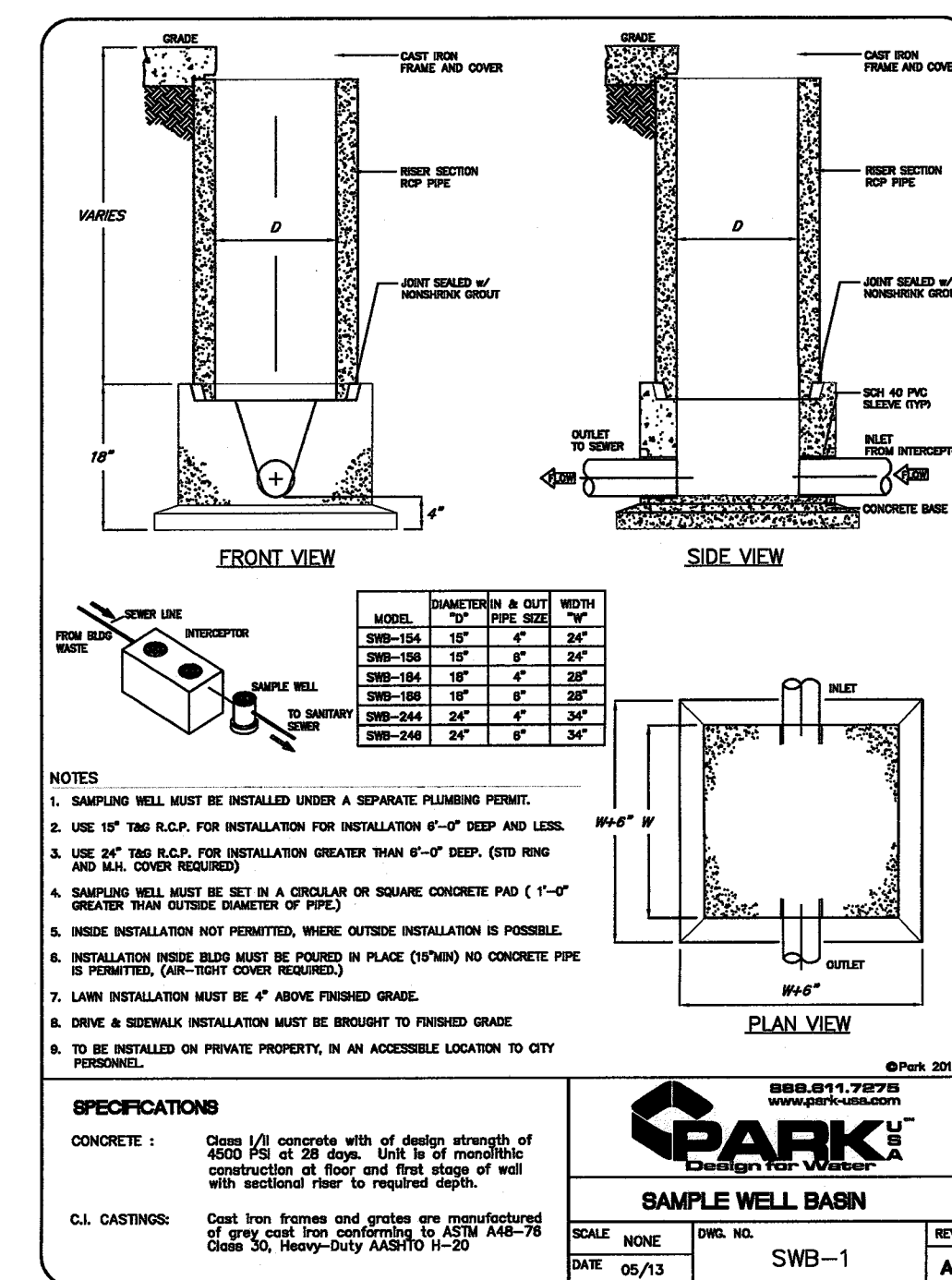
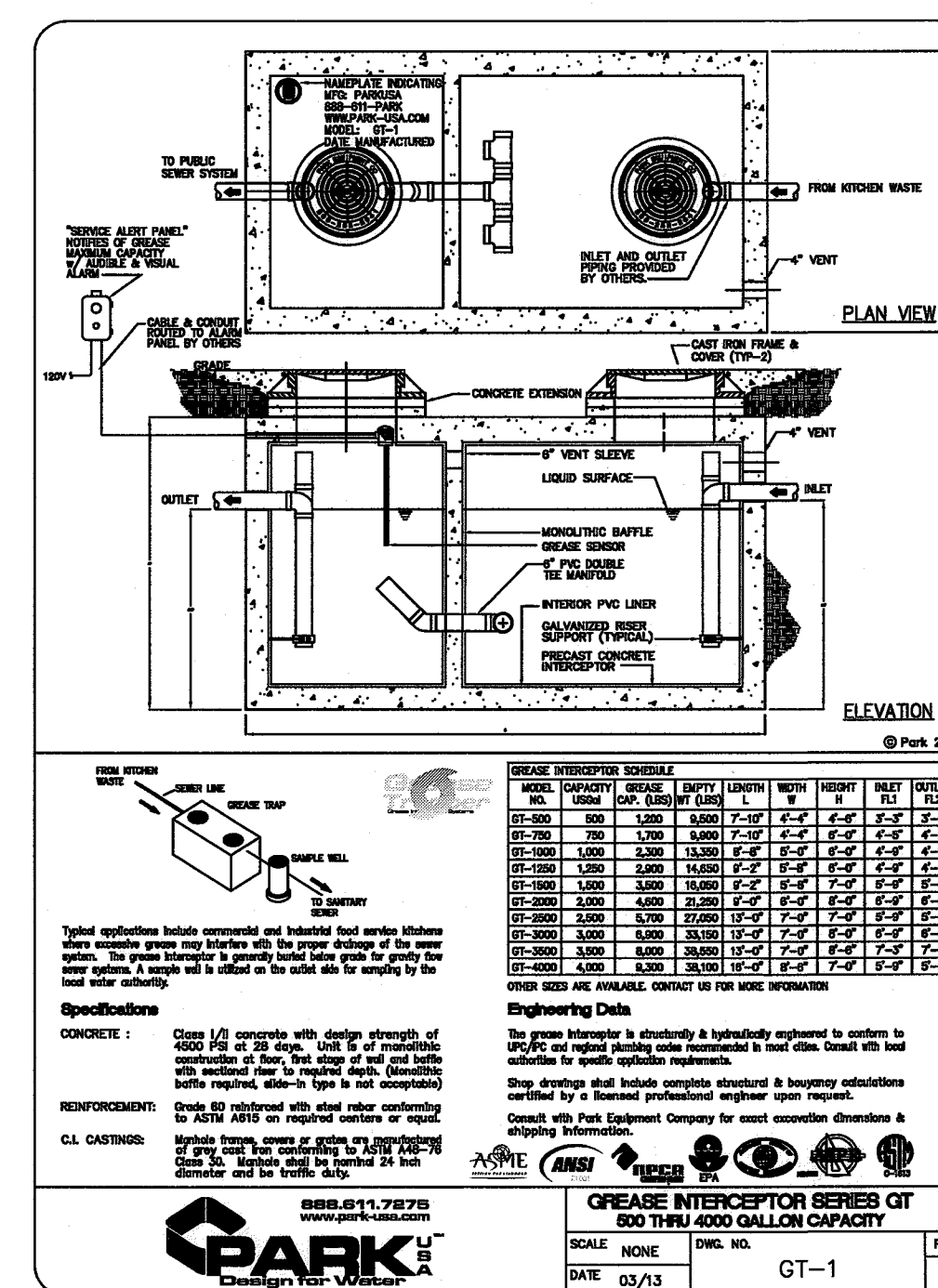
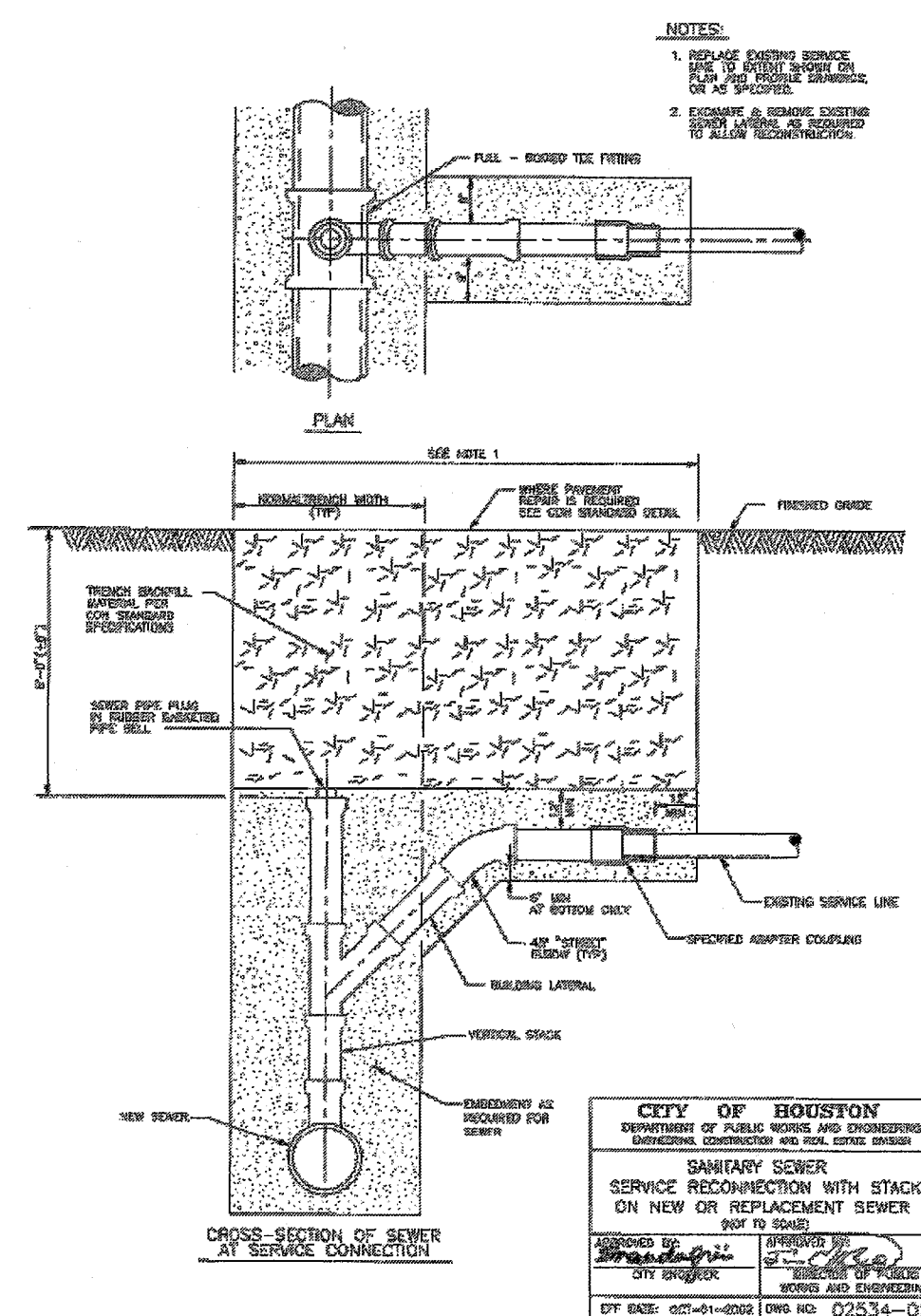
DETAIL NO.

MUD NOTES:

THE CONTRACTOR SHALL CONTACT MDS BUILDER SERVICES DEPARTMENT AT 281-290-6503 OPTION 2 OR VIA EMAIL AT bldrservices@municipaldistrictservices.com 48 HOURS PRIOR TO CONSTRUCTION AND TO REQUEST REQUIRED INSPECTIONS. ALL SITE SANITARY SEWER SHALL BE INSPECTED BY MDS PRIOR TO BACKFILL.

NO PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES WHICH CONTAIN MORE THAN A WEIGHTED AVERAGE OF 0.25% LEAD WHEN USED WITH RESPECT TO WETTED SURFACES EXIST IN PRIVATE WATER DISTRIBUTION FACILITIES INSTALLED ON OR AFTER JANUARY 4, 2014.

THE OWNER OR HIS CONTRACTOR SHALL INSTALL APPROPRIATE BACKFLOW PREVENTION DEVICES IN ACCORDANCE WITH STATE PLUMBING CODES OR AS REQUIRED BY THE DISTRICT'S OPERATOR. BACKFLOW TEST REPORTS MUST BE AVAILABLE AT THE TIME OF INSPECTION. COPIES OF ANNUAL TEST REPORTS MUST BE FORWARDED TO THE DISTRICT.



"KATY CREEK RANCH PLAZA"
25031 & 25033 Westheimer Parkway
Katy, Texas 77494
PROPOSED RETAIL BUILDING

HRS and Associates, LLC
Civil, Traffic Engineering, and Consulting
Phone: (713) 466-9776
Fax: (823) 328-7121
E-mail: hassociates@aol.com
FIRM NAME: HRS and Associates, LLC
FIRM REGISTRATION NUMBER: F-4093

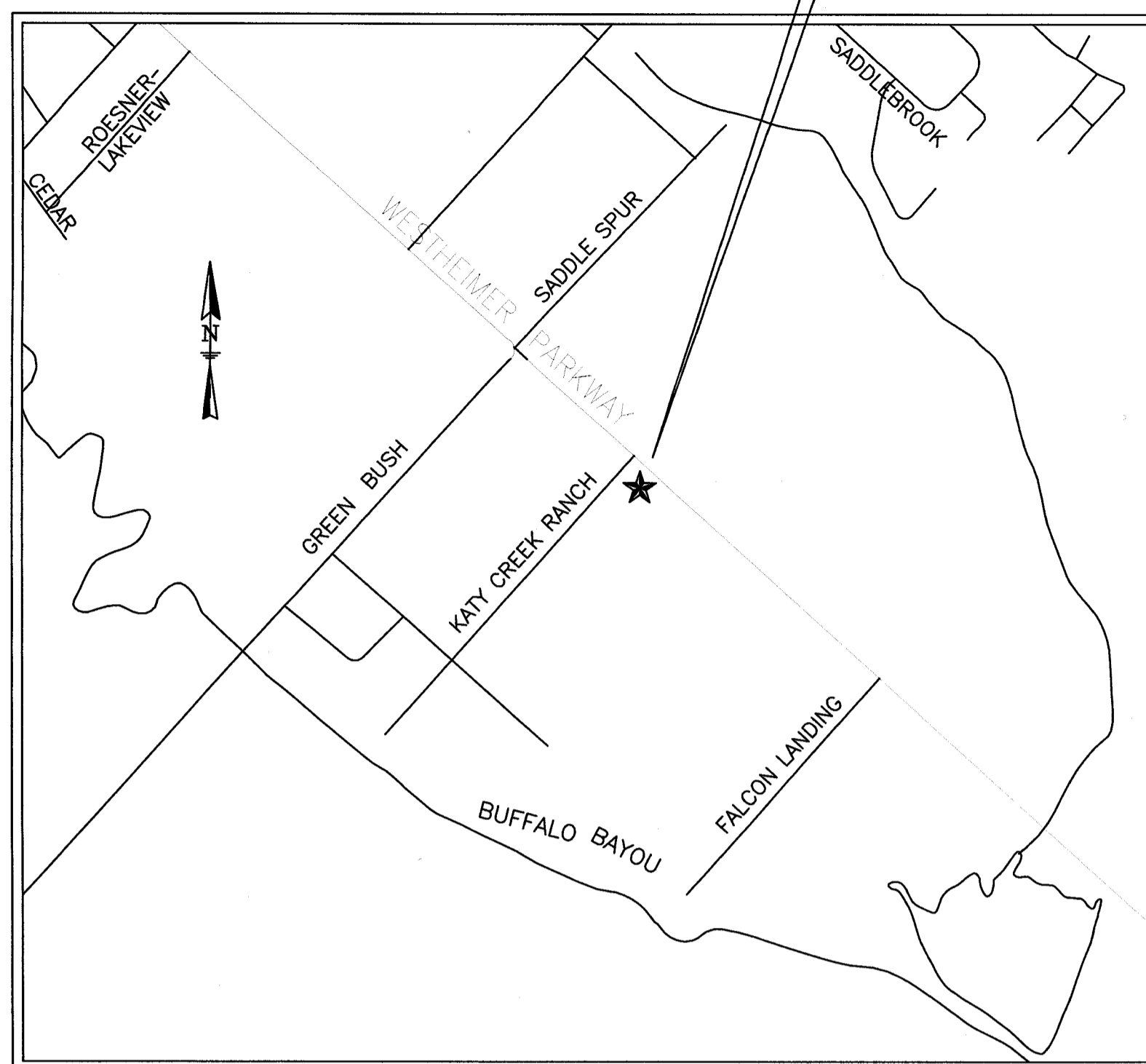
Seal:
STATE OF TEXAS
HAMD R. SHOTBORNI
55164
REGISTERED PROFESSIONAL ENGINEER
Signature:
Date: Jan. 15, 2018

NO	REVISION	DATE
1	FORT BEND COUNTY REVISION	12-12-17
2	REVISIONS OF MUD COMMENTS	01-12-18
3	FORT BEND COUNTY ENGINEERING DEPARTMENT COMMENTS	02-12-18
4	FORT BEND COUNTY ENGINEERING SIDEWALK COMMENTS	02-14-18
5		

SITE UTILITY LAYOUT
SCALE: 1" = 40'
PROJ. # 2015-07-06
SHEET 1 OF 6

C-1

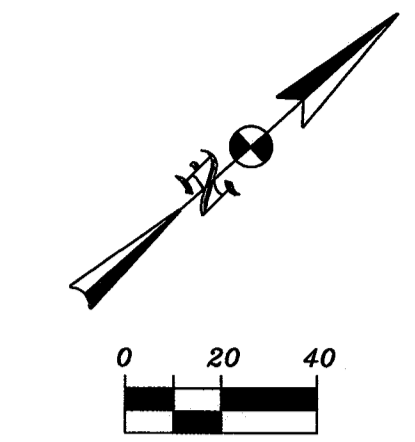
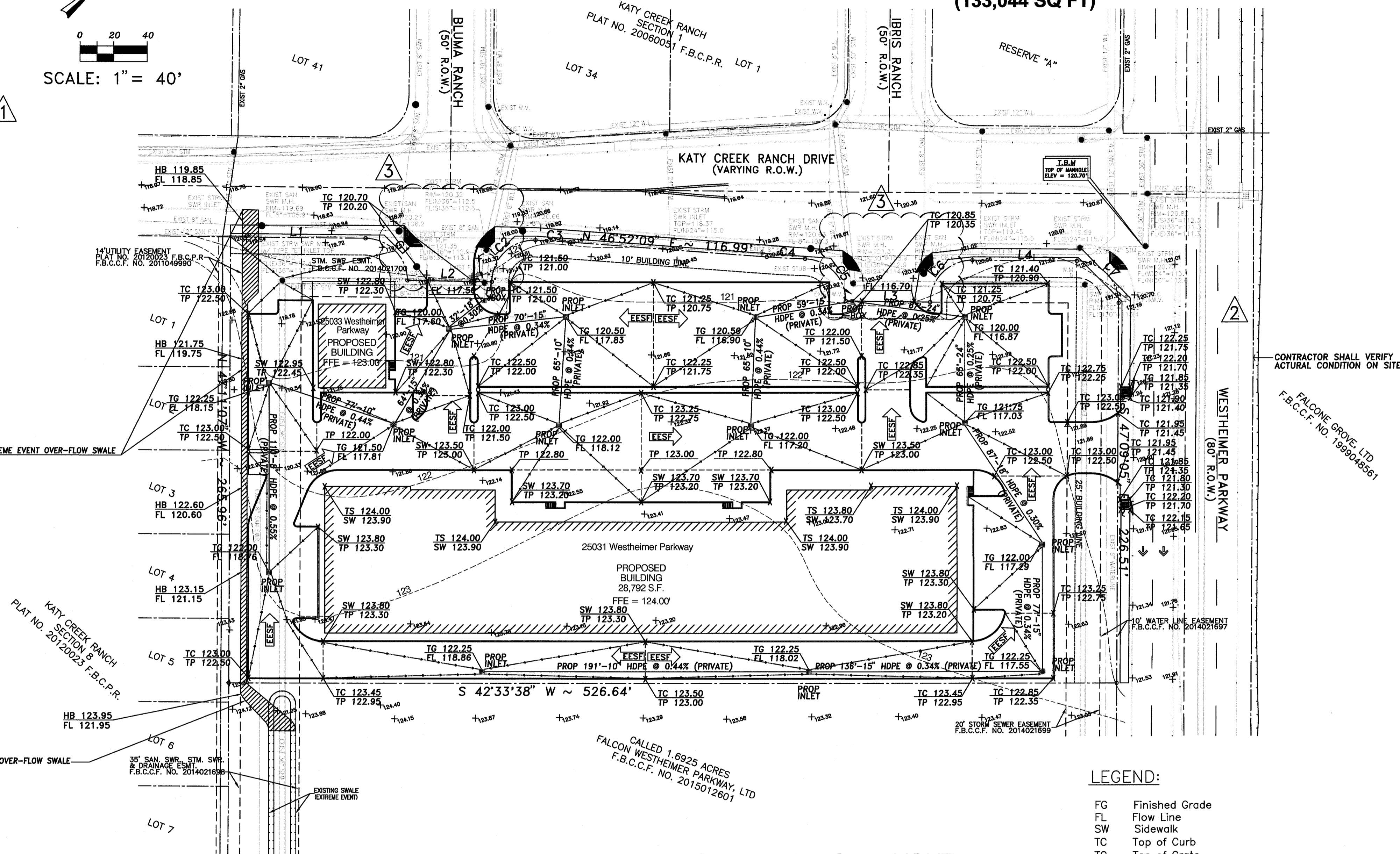
KEY MAP 485-N



PROPERTY LOCATION

VICINITY MAP
N.T.S.

SCALE: 1" = 40'

TOTAL AREA:
3.0543 ACRES
(133,044 SQ FT)

SITE DRAINAGE LAYOUT

1" = 40'

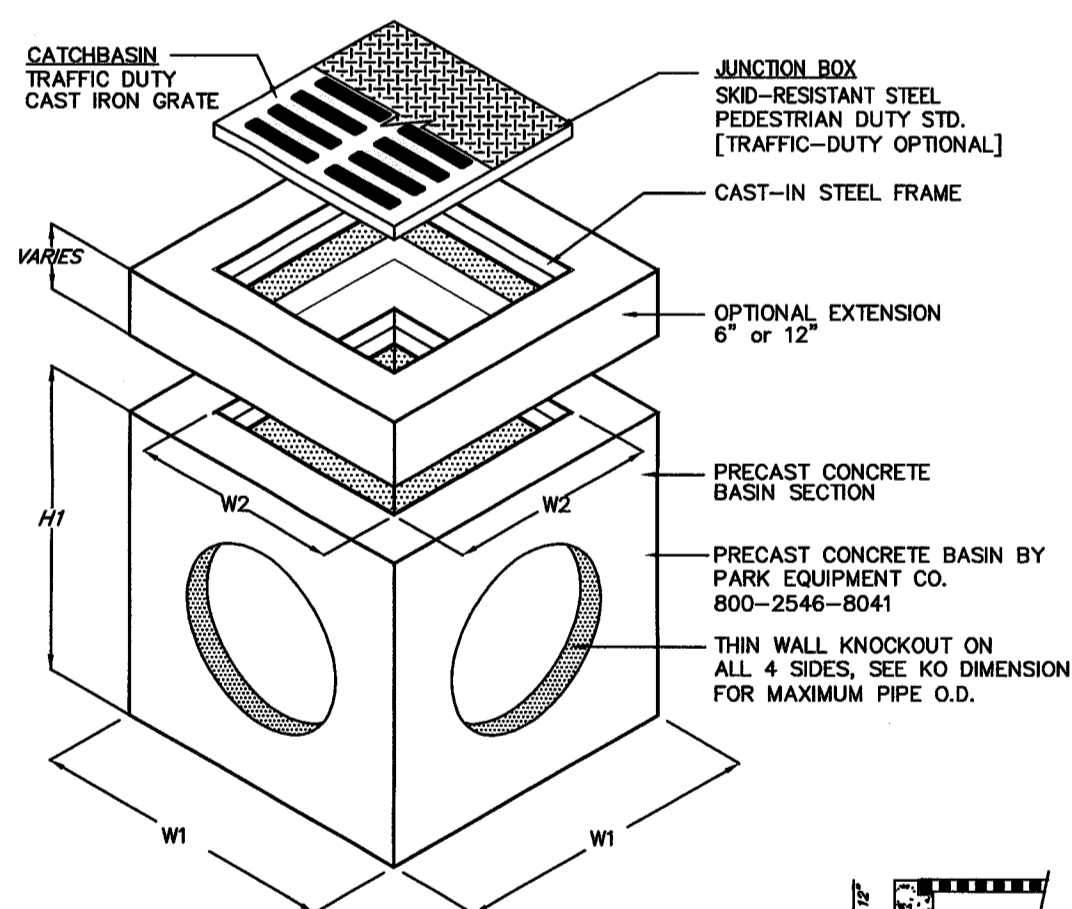
LEGEND:

FG	Finished Grade
FL	Flow Line
SW	Sidewalk
TC	Top of Curb
TG	Top of Grate
TS	Top of Slab
■	Type "A" Inlet
□	Junction Box
—	Storm Sewer
—	Pavement Edge
—	Ground Elevation
—	Direction of Flow
—	Direction of Flow
—	EXTREME EVENT SHEET FLOW
—	PROPOSED EXTREME EVENT OVER-FLOW SWALE

DETENTION NOTE:

DETENTION FOR THIS TRACT HAS BEEN ALLOCATED BY A REGIONAL DETENTION FACILITY.

REFER TO APPROVED PLANS BY MUNICIPAL UTILITY DISTRICT NO. 5, VAN DE WIELE & VOGLER, INC. CONSULTING ENGINEERS, DATED: 2014 (SHEET 5 OF 21, ATTACHED).



SPECIFICATIONS:

CONCRETE: CLASS 1 CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

MODEL #	JUNCTION BOX #	W1	W2	H1	H2	T1	KO	GRATE SIZE	WEIGHT LBS
CB12	JB12	15"	10"	21"	18"	2"	10"	12"x12"x1"	180
CB18	JB18	24"	16"	34"	30"	4"	15"	18"x18"x1 1/2"	1,000
CB20	JB20	26"	18"	34"	30"	4"	17"	20"x20"x1 1/2"	1,335
CB24	JB24	32"	22"	41"	36"	5"	22"	24"x24"x2"	2,245
CB27	JB27	37"	25"	42"	36"	6"	24"	27"x27"x2"	2,875
CB30	JB30	42"	30"	42"	36"	6"	30"	32"x32"x2"	3,675

1. CB12 CATCHBASIN IS RATED FOR PEDESTRIAN LOADING. ALL OTHERS ARE TRAFFIC DUTY.
2. ALL JUNCTION BOXES ARE STANDARD PEDESTRIAN DUTY OR OPTIONAL TRAFFIC DUTY.

PRECAST CONCRETE CATCHBASIN/JUNCTION BOX
NOT TO SCALE

Floodplain
RM No.: 190050

Elevation: 118.02 FT 2001 Adjustment
Texas South Central / NAD 83

Description: ALL THE ELEVATIONS SHOWN HEREON ARE IN NAVD88 DATUM, 2001 ADJ., AND ARE BASED ON HARRIS COUNTY TSARP RM 190050 EL.=118.02'

T.B.M.

Elevation: 120.70 FT (ACTUAL)

Top of rim of Storm Sewer Manhole, located on south corner of intersection of Westheimer Parkway and Katy Creek Ranch Drive.

MINIMUM SLAB ELEVATION ANALYSIS:
(FOR 25031 WESTHEIMER PARKWAY)

1. 10' ABOVE 100-YEAR WATER SURFACE ELEVATION OF NEAREST STREAM = 116.96
2. ONE FOOT ABOVE EXTREME EVENT PONDING = 123.00+1.0 = 124.00
3. 10' ABOVE HIGHEST SIGNIFICANT CONTOUR = 122.50+1.5 = 124.00

THEREFORE, MINIMUM SLAB ELEVATION SHALL BE 124.00 OR ABOVE.

MINIMUM SLAB ELEVATION ANALYSIS:
(FOR 25033 WESTHEIMER PARKWAY)

1. 10' ABOVE 100-YEAR WATER SURFACE ELEVATION OF NEAREST STREAM = 116.96
2. ONE FOOT ABOVE EXTREME EVENT PONDING = 122.00+1.0 = 123.00
3. 10' ABOVE HIGHEST SIGNIFICANT CONTOUR = 121.00+1.5 = 122.50

THEREFORE, MINIMUM SLAB ELEVATION SHALL BE 123.00 OR ABOVE.

According to Map No: 48157C0 Panel No: 110 L of the Federal Emergency Management Agency's Flood Insurance Rate Maps for Fort Bend County, Texas, Effective Date APRIL 2, 2014, the subject tract is situated within: Un-shaded Zone "X"; defined as areas determined to be Outside the 500-Year Flood Plain.

"KATY CREEK RANCH PLAZA"

25031 & 25033 Westheimer Parkway
Katy, Texas 77494

PROPOSED RETAIL BUILDING

HRS and Associates, LLC

Civil, Traffic Engineering, and Consulting
8318 Ivan Reid Drive
Houston, Texas
Phone: (713) 466-9776
Fax: (832) 328-7121
E-mail: hrsassociates@aol.com

FIRM NAME: HRS and Associates, LLC
FIRM REGISTRATION NUMBER: F-4093

Seal:



Date: Jan. 15, 2018

NO	REVISION	DATE
1	FOR BEND COUNTY REVISION	12-12-17
2	REVISIONS OF MUD COMMENTS	01-12-18
3	FOR BEND COUNTY ENGINEERING DEPARTMENT COMMENTS	02-12-18
4	FOR BEND COUNTY ENGINEERING SIDEWALK COMMENTS	02-14-18
5		

SITE
DRAINAGE
LAYOUT

SCALE: 1" = 40'

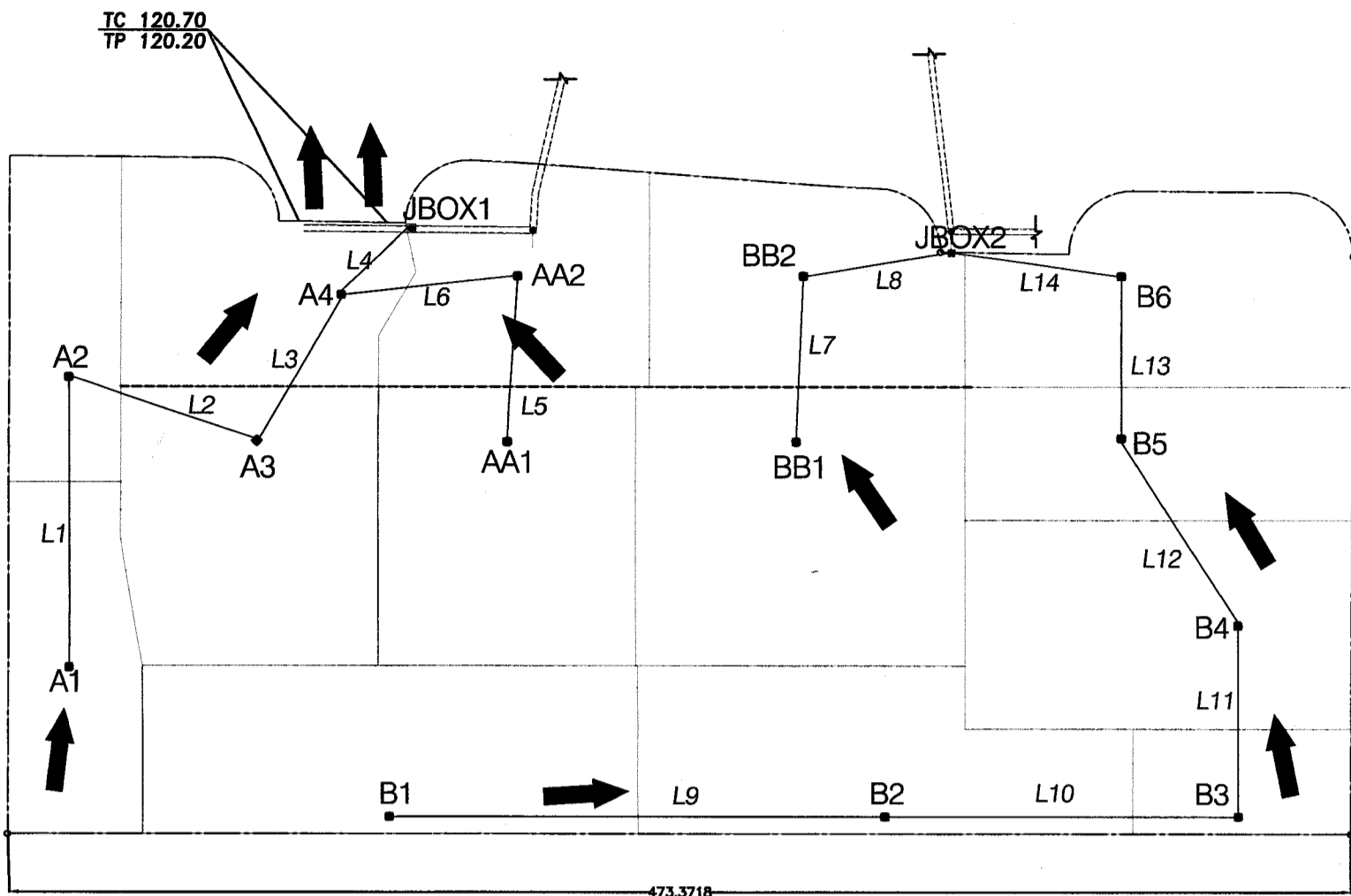
PROJ. # 2015-07-06

SHEET 2 OF 6

C-2

C/S 2/14/18

ON-SITE EXTREME EVENT SHEET FLOW ANALYSIS:



LEGEND
EXTREME EVENT FLOW DIRECTION

DRAINAGE AREA MAP
N.T.S.

ON-SITE EXTREME EVENT SHEET FLOW ANALYSIS

HIGH POINT OF THE DRIVEWAY = 120.20' (RE: SHT. C-2)
EXTREME EVENT (100-YEAR) SHEET FLOW CALCULATIONS:
TOTAL DEVELOPMENT = 2.513 AC.
ASSUMPTION: The sheet flow will occur when the storm sewer pipes are flowing full at design capacity, therefore the pipe flow must be deducted from the total site 100-year flow.
100-YEAR SHEET FLOW = (SITE 100-YEAR FLOW) - (SITE 2-YEAR FLOW)
FOR DESIGN FLOW, REFER TO STM. SWR. CALCULATION TABLE SHT. C-2
ACCUMULATED DESIGN FLOW TO JBOX 1 = 5.65 CFS
ACCUMULATED DESIGN FLOW TO JBOX 2 = 6.50 CFS
TOTAL FLOW CONVEYED BY STM. SWR. SYSTEM = 5.65 + 6.50 = 12.15 CFS
100-yr Peak Flow Calculations for 2.513 acre project:
(Criteria: Fort Bend County Drainage District)

Time of concentration (Tc) calculations:
Tc1: Sheet flow time on concrete (min.)
Average slope = 0.50%
V = Average velocity = 2.0 ft./sec.
Df = Average Flow distance (ft.)
Tc1 = Df/(V x 60) = 100 / (2.0 X 60)
Tc1 = 0.83 min.

Tc2: Pipe flow time (min.)
V = Average pipe flow velocity = 3 ft./sec.
Df = Max. pipe run length = 600 ft.
Tc2 = 600/(3 x 60) = 3.3 min.
Total Tc = Tc1 + Tc2 = 0.83 + 3.3 = 4.1 min. use 5 min.
From Duration Rainfall Intensity/Duration Curve
I (100-yr) = 10.8 in/hr

$Q(100-yr) = C \times I \times A \times Cf$
 $Q(100-yr) = 0.80 \times 10.8 \times 2.513 \times 1.25 = 27.14 \text{ CFS}$
100-YEAR SHEET FLOW = (SITE 100-YEAR FLOW) - (SITE 2-YEAR FLOW)
100-YEAR SHEET FLOW = 27.14 - 12.15 = 14.99 CFS

THE SHEET FLOW IS EXPECTED TO EXIT FROM THE PROPOSED DRIVEWAY IN EXTREME EVENT. THE STANDARD BROAD-CRESTED WEIR FORMULA CAN BE USED TO DETERMINE THE HEAD (H) OVER THE DRIVEWAY, TO CONVEY THE 14.99 CFS CALCULATED MAX. SHEET FLOW.

THE WEIR STRUCTURE (DRIVEWAY) PARAMETERS:
Max. Sheet Flow (Q) = 14.99 CFS
Length (L) = 27'
C = Weir Coefficient = 3.33
Head loss (H) = ?

$Q = (C) \times (L) \times (H)^{1.50}$
 $14.99 = (3.33) \times (27') \times (H)^{1.50}$
SOLVING FOR H:
H = 0.30'

MAXIMUM PONDING OR SHEET FLOW ELEVATION:
HIGH POINT OF DRIVEWAY (120.20') + H (0.30')
120.20' + 0.30' = 120.50'
SLAB ELEV. 122.60' WHICH IS 2.10' HIGHER THAN PONDING ELEV.

OFF-SITE EXTREME EVENT SHEET FLOW ANALYSIS:

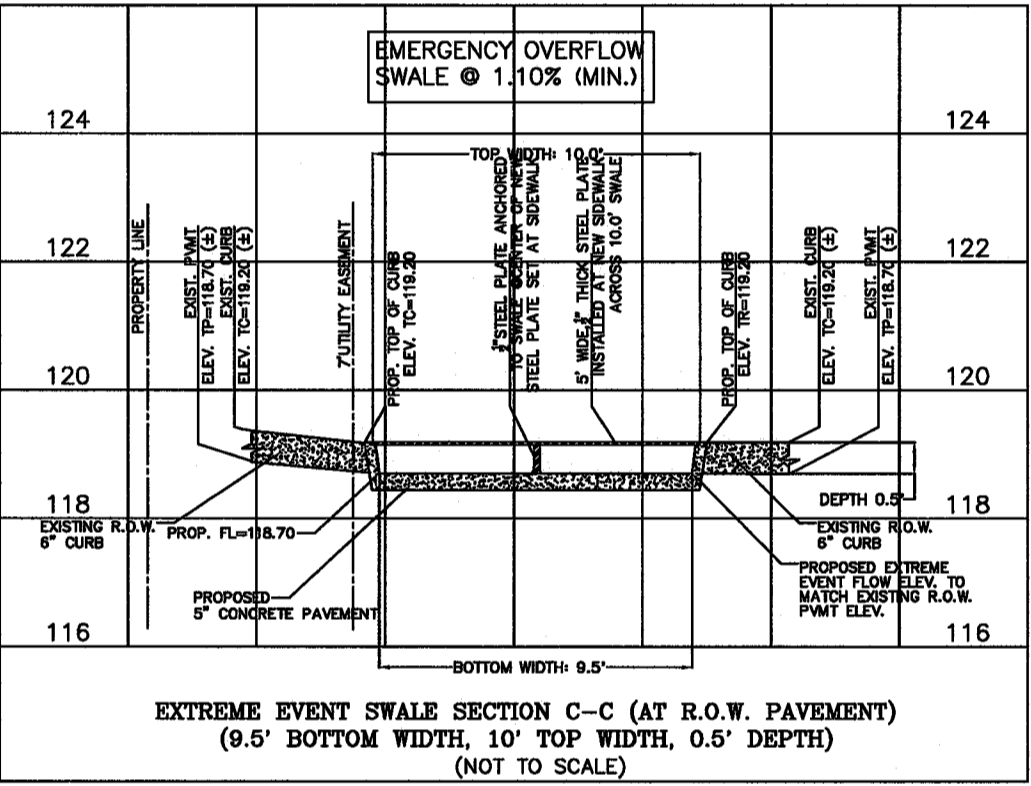
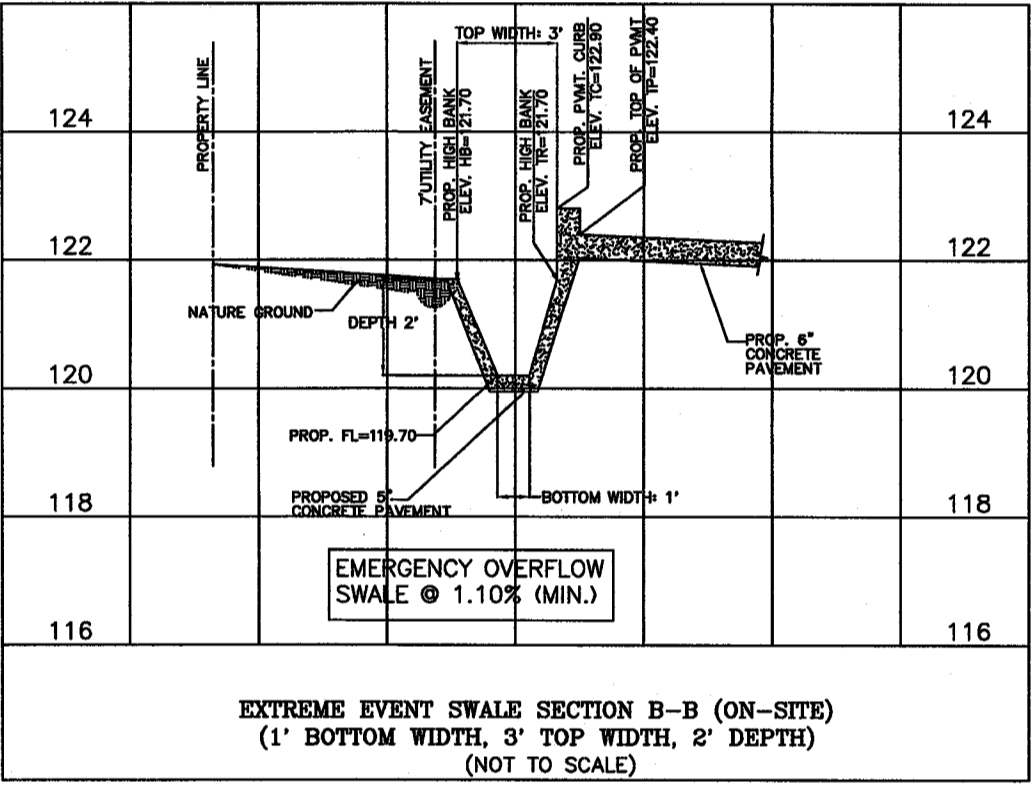
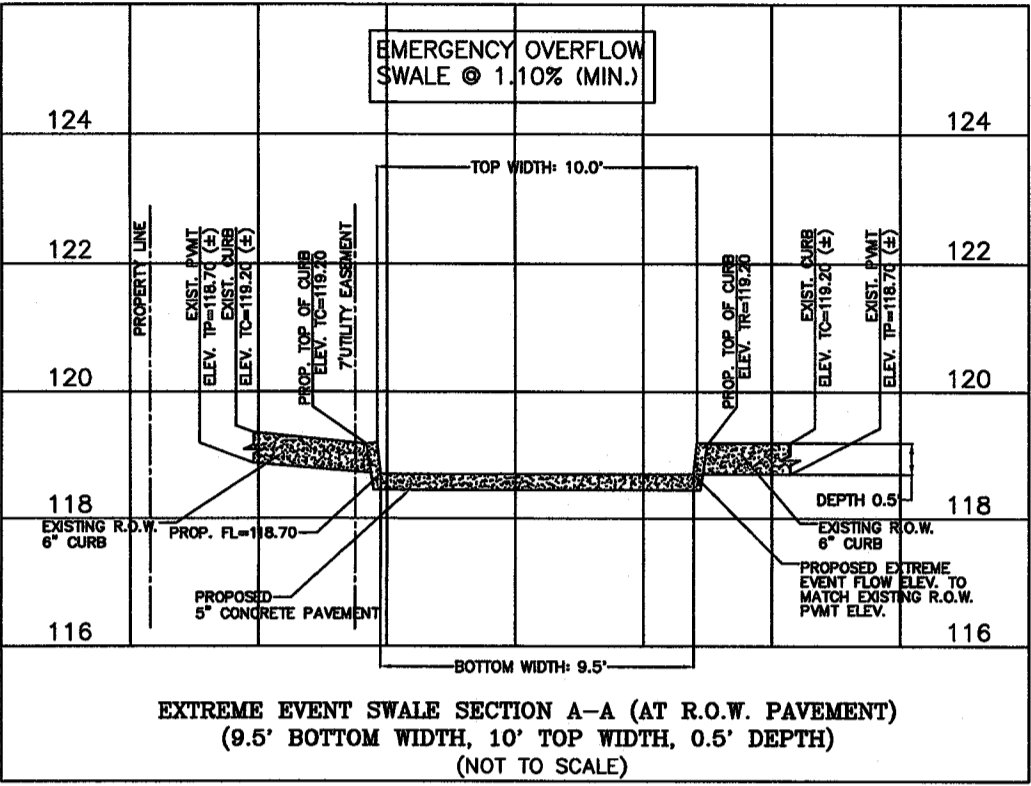
REMOVE APPROX. 11.0' EXISTING STREETCURB
& INSTALL PROPOSED CONCRETE EXTREME
EVENT OVER FLOW SWALE 10.0' WIDE BY
6" DEEP AT STREET CURB TO MATCH
EXISTING R.O.W. PAVEMENT ELEVATION @ 118.70

14' UTILITY EASEMENT
PLAT NO. 20120023 F.B.C.P.R.
F.B.C.C.F. NO. 2011049990
EXIST STRM SWR M.H.
w/ TYPE "E" INLET TOP
RIM = 120.21
FL(E) 36" = 113.4
FL(S) 36" = 113.5

PROPOSED CONCRETE EXTREME
EVENT OVER-FLOW SWALE
EXISTING SWALE TO BE FILLED
(RE: KEYED PLAN NOTE ON THIS SHEET)

14' UTILITY EASEMENT
PLAT NO. 20120023 F.B.C.P.R.
F.B.C.C.F. NO. 2011049990

PROPOSED CONCRETE EXTREME
EVENT OVER-FLOW SWALE



Storm Sewer Calculation Form (1.69 AC ADJACENT TO DEVELOPMENT)											
PROJECT: KATY CREEK RANCH PLAZA											
SYSTEM: 2 YEAR CURVE											
BY: HR											
CHECKED BY: HR											
DESIGN STORM 100 YEAR CURVE											
b= 75.01											
d= 16.2											
e= 0.8315											
2-YEAR 100-YEAR											
AREA TOTAL RUNOFF SUM OF TC INTENSITY SUM OF INTENSITY SUM OF REACH DIAM. Slope Manning's											
(ACRES) AREA COEFF. (MIN) (IN/HR) FLOWS (CFS) (IN/HR) FLOWS (CFS) (FT) (IN) % "n"											
1.69	1.69	0.85	1.44	10.00	5.38	7.73	9.36	13.45	-	-	-

PROPOSED CONCRETE EXTREME EVENT OVER-FLOW SWALE CALCULATION
PER SHEET 5 OF 21 OF APPROVED HARRIS COUNTY PLANS TITLED: "7.8 ACRE COMMERCIAL TRACT" (HC PROJECT # 51992). THE EXTREME EVENT SHEET FLOW SWALE IS DESIGNED TO CARRY 21.0 CFS. PER CALCULATION TABLE ON THIS SHEET, THE 100-YR EXTREME EVENT FLOW OF 1.69 AC DISTURBED AREA ADJACENT TO THE DEVELOPMENT IS CONSIDERED AS FULLY DEVELOPED AREA AND THE SUM OF FLOW IS 13.45 CFS. TOTAL REQUIRED EXTREME EVENT FLOW IS 21.0 + 13.45 = 34.45 CFS.

- PROPOSED CONCRETE SWALE FLOW CALCULATIONS (AT SECTION B-B)
(1' BOTTOM WIDTH, 3' TOP WIDTH, 2' DEPTH)

$$Q = 1.49/n \cdot A \cdot (A/P)^{2/3} \cdot S^{1/2}$$

n = 0.013 (CONCRETE CHANNEL)
A = (1+3) * 2 / 2 = 4
P = 1+2 * 5 / 4 = 5.4721
S = 0.011

$$Q = 1.49/0.013 \cdot 4 \cdot (4/5.4721)^{2/3} \cdot 0.011^{1/2} = 39.0 \text{ CFS} > 34.45 \text{ CFS (REQUIRED)}$$

- PROPOSED CONCRETE SWALE FLOW CALCULATIONS (AT SECTION A-A)
(9.5' BOTTOM WIDTH, 10' TOP WIDTH, 0.5' DEPTH)

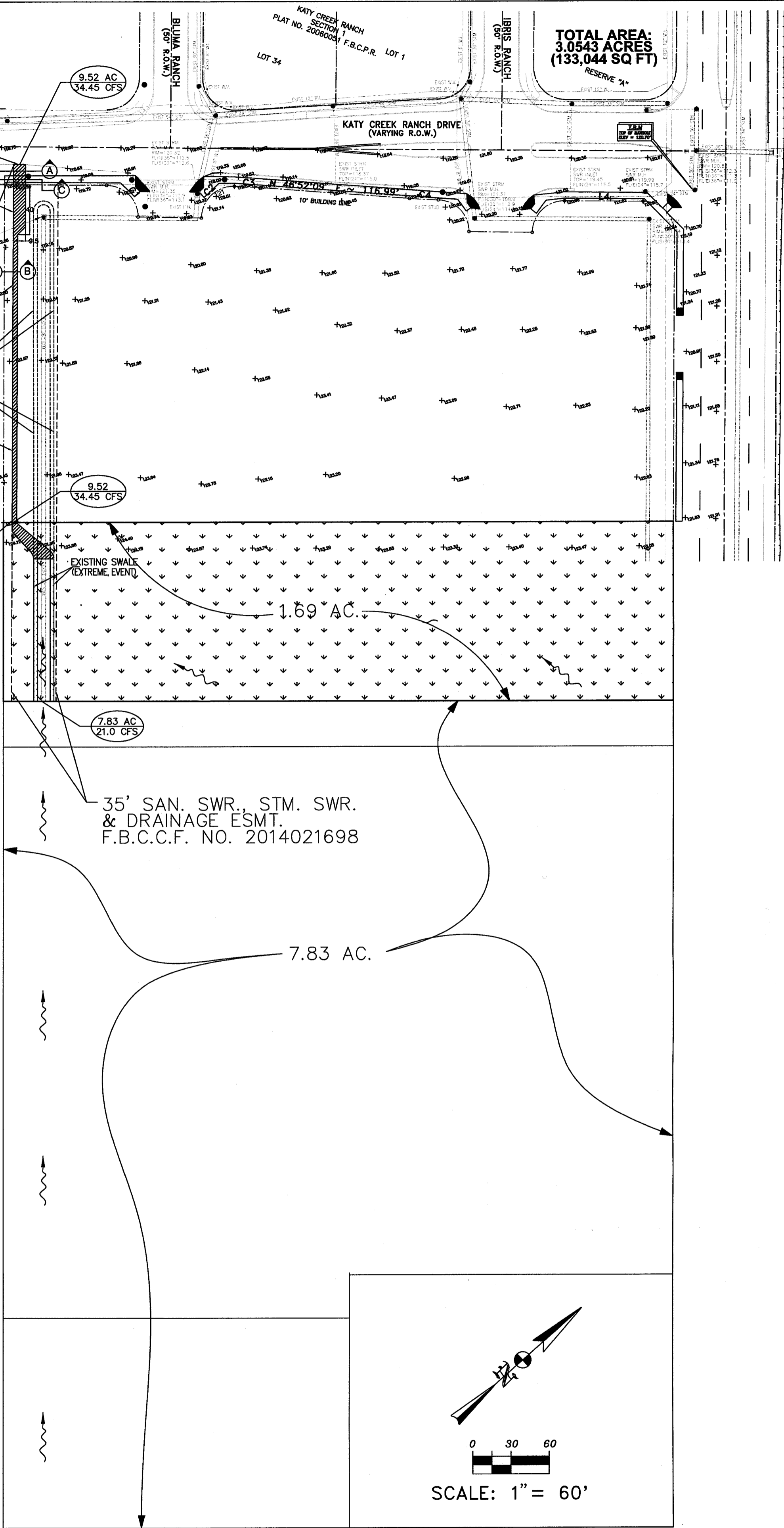
$$Q = 1.49/0.013 \cdot 4 \cdot 8.75 \cdot (4.875/10.618)^{2/3} \cdot 0.011^{1/2} = 34.88 \text{ CFS} > 34.45 \text{ CFS (REQUIRED)}$$
$$V = Q/A = 34.45/4.875 = 7.06 \text{ FT/S}$$

SO THE CONCRETE EXTREME EVENT OVER-FLOW SWALE (IN BOTH CONFIGURATION) WILL HAVE ENOUGH CAPACITY TO CARRY 100-YR EVENT FLOW FROM THE FURTHEST SITE TO THE R.O.W.

THE CONCRETE EXTREME EVENT OVER-FLOW SWALE HAS BEEN RE-SHAPED TO BE 9.5' WIDE AT BOTTOM AND 0.5' HEIGHT @ AROUND 40' FROM NORTH PROPERTY LINE AND EXTEND TO THE R.O.W. HENCE THE DESIGN FLOW RATE HAS BEEN INCREASED AND FLOW VELOCITY HAS BEEN REDUCED. PLEASE REFER TO CROSS-SECTIONS ON THIS SHEET.

KEYED PLAN NOTES:

- CONTRACTOR SHALL FILL EXISTING EXTREME EVENT SHEET FLOW SWALE AND REROUTE THE NEW CONCRETE EXTREME EVENT OVER-FLOW SWALE PER PLANS.
- CONTRACTOR TO ENSURE NO DAMAGE AND NO IMPACT ON THE STABILITY OF THE ADJACENT PROPERTY OWNER'S FENCES.



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E-mail: hrsassociates@aol.com
FIRM NAME: HRS and Associates, LLC
FIRM REGISTRATION NUMBER: F-4093

Seal:
HARRIS COUNTY REGISTERED PROFESSIONAL ENGINEER
55164
Signature: H.R. Shotlumi
Date: Jan. 15, 2018

NO	REVISION	DATE
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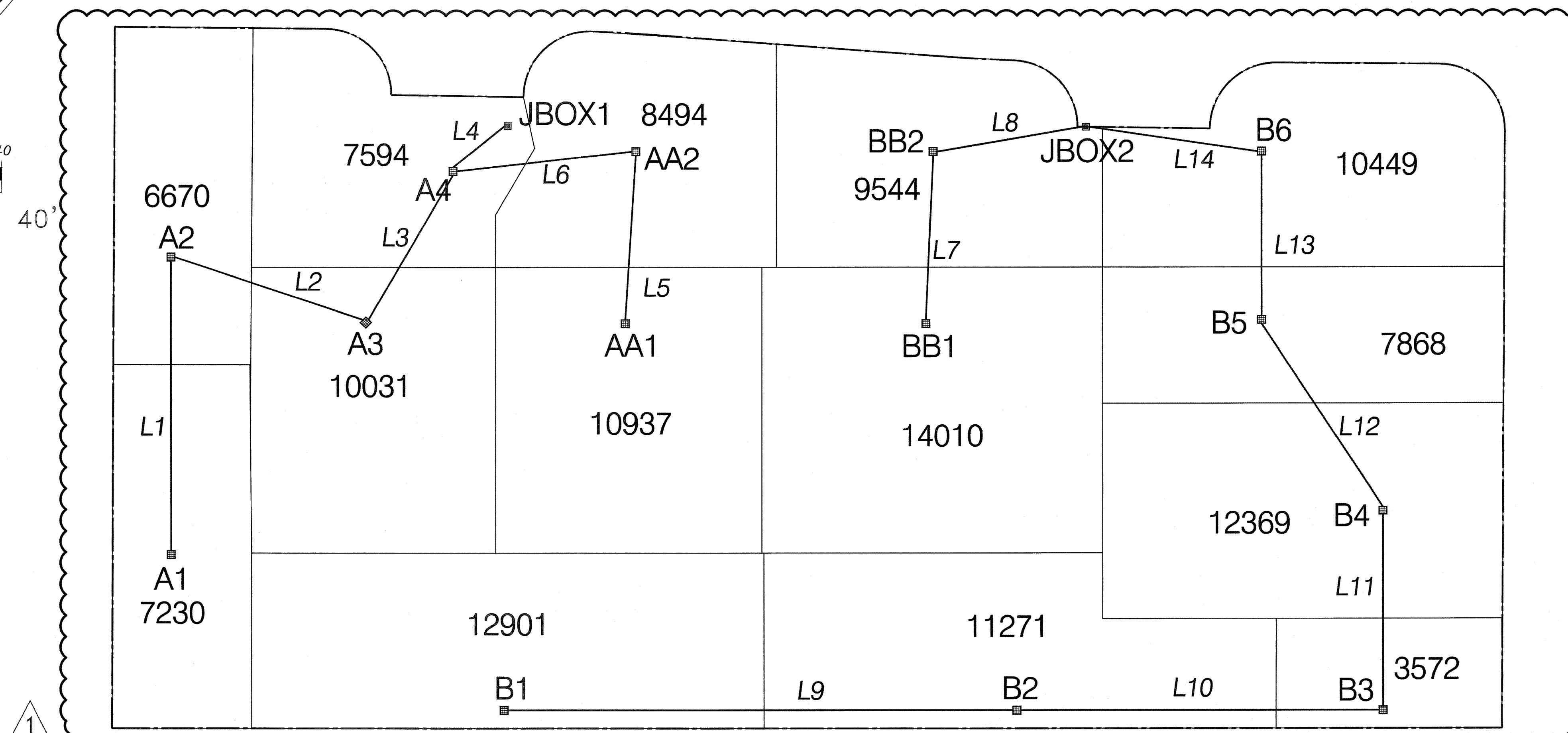
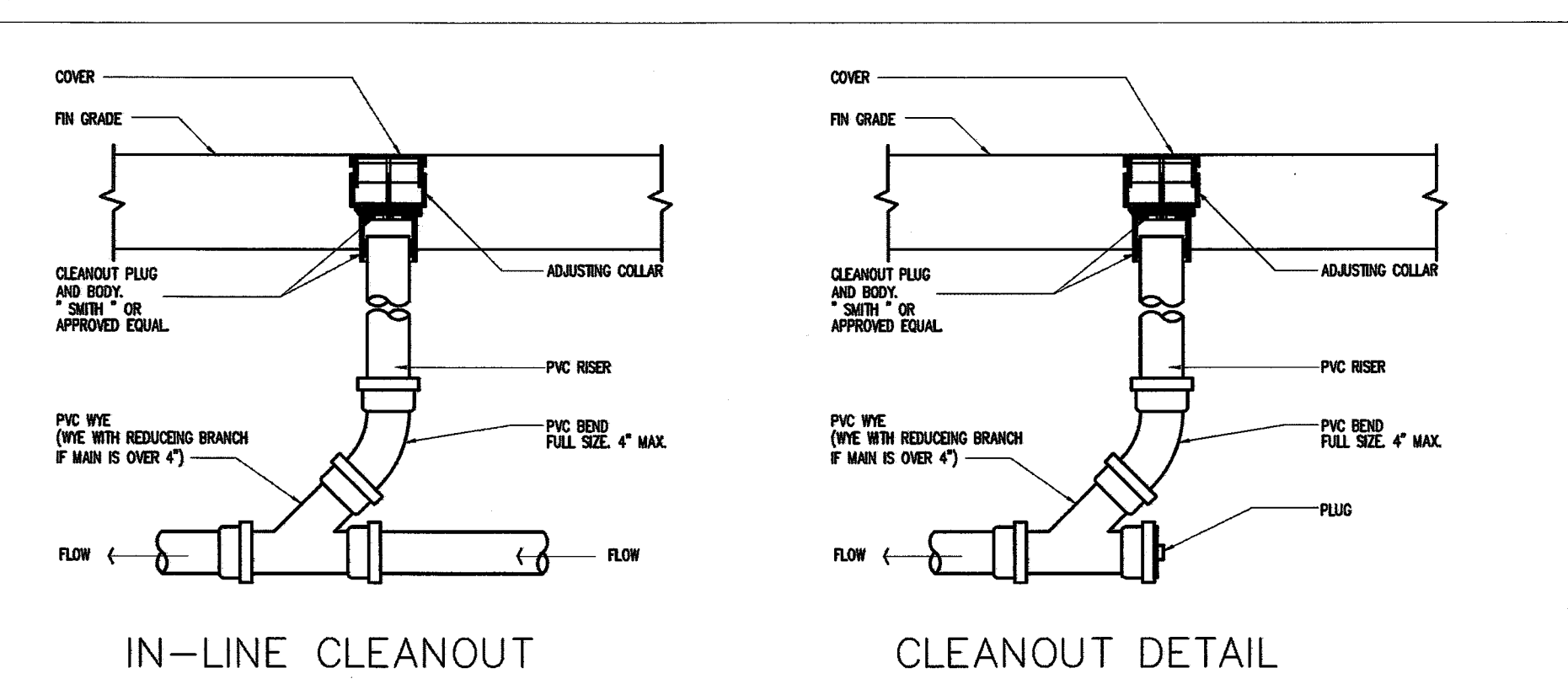
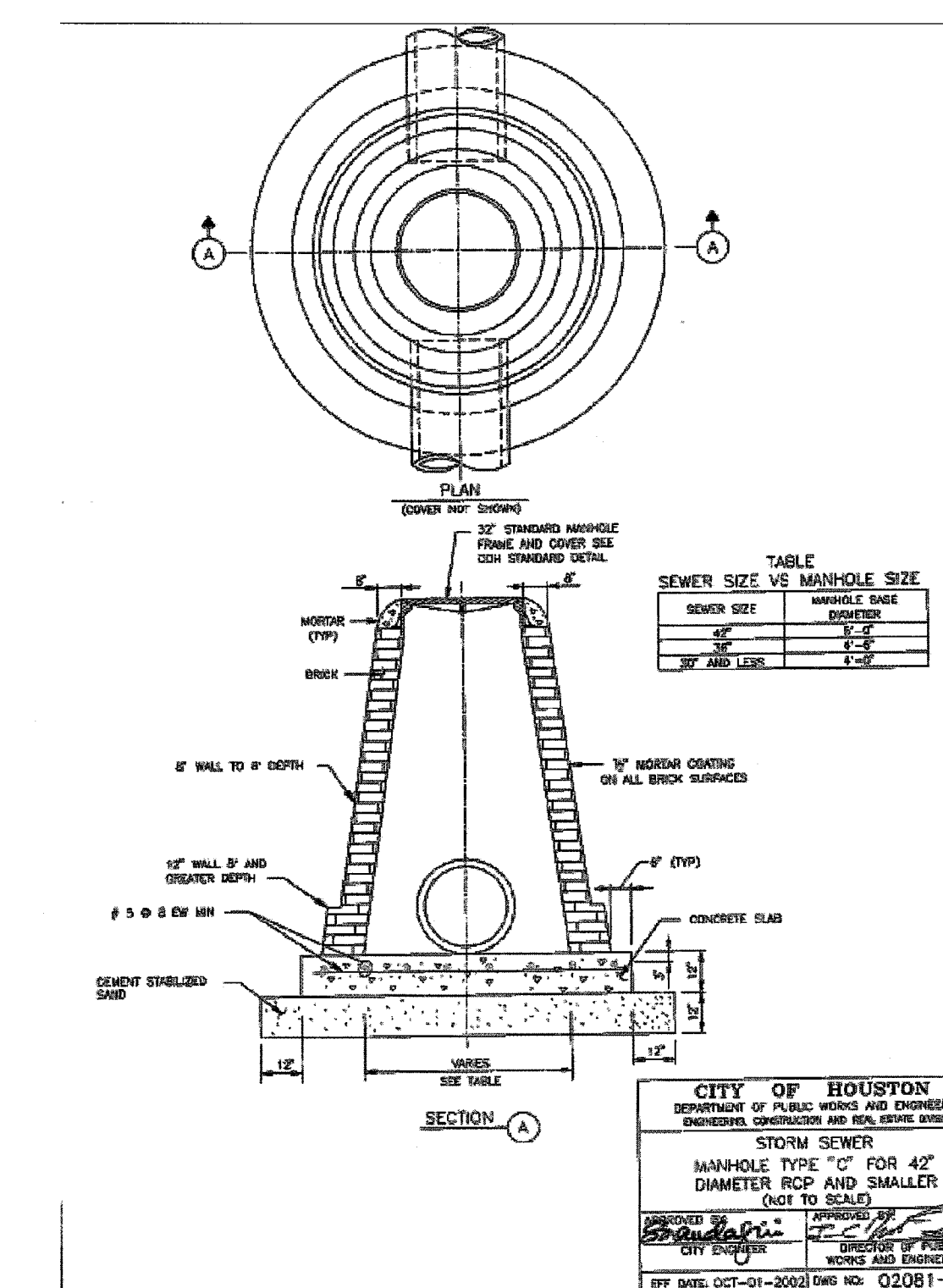
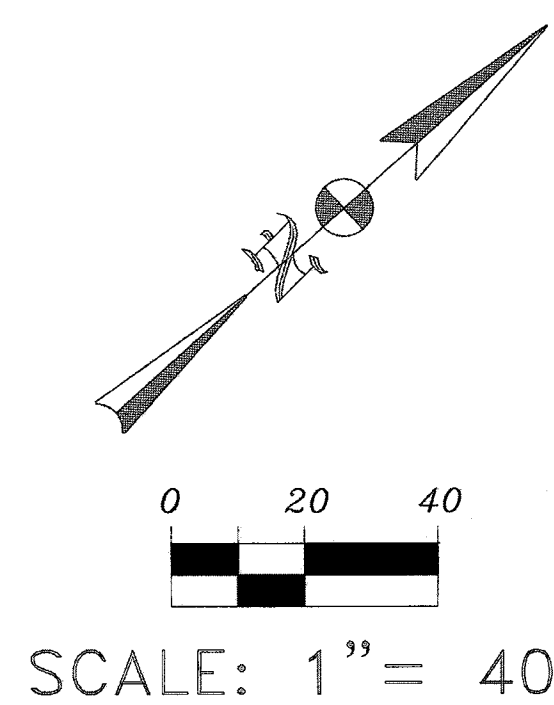
EXTREME
EVENT FLOW
ANALYSIS

SCALE: 1" = 60'

PROJ. # 2015-07-06

SHEET 2 OF 6A

C-2A



DRAINAGE AREA MAP

$$1'' = 30'$$


Storm Sewer Calculation Form																												
PROJECT:		KATY CREEK RANCH PLAZA																										
SYSTEM:								DESIGN STORM				I = b/(d+TC) ^{1/e}				FL=Flowline				R=Top of Rim								
BY:								2 YEAR CURVE				100 YEAR CURVE				Tc = 10xA^(0.1761) + 15				HG= Hydraulic Gradient				TG=Top of Grate				
CHECKED BY:								b= 75.01				b= 125.4				C = 0.60 la + 0.20				UP=Upstream				DS=Downstream				
HR								d= 16.2				d= 21.8				Q = C x I x A				G=Gutter				W.S.E. =Water Surface Elev				
HR								e= 0.8315				e= 0.75																
								2- YEAR				100- YEAR																
LINE	INLET	INLET	AREA	TOTAL	RUNOFF	SUM OF	TC	INTENSITY	SUM OF	INTENSITY	SUM OF	REACH	DIAM.	Slope	Manning's	Design	Design	Fail	FL.	FL.	Actual	TG	TG	100-yr				
	FROM	TO	(ACRES)	AREA	COEFF.	(MIN.)		I	FLOW	I	FLOW	LENGTH	OR RISE			Capacity	Velocity		Elev.	Elev.	Velocity			W.S.E				
			(ACRES)		C	C * A		(IN/HR)	(CFS)	(IN/HR)	(CFS)	(FT)	(IN)	%	"n"	(CFS)	(ft/s)	(FT)	UP	DS	(ft/s)	UP	DS	UP				
																		(FT)	(FT)									
L1	A1	A2	0.17	0.17	0.90	0.15	10.00	5.38	0.80	7.33	1.09	110	8	0.55	0.011	1.07	3.06	0.61	118.76	118.15	2.30	122.00	122.25	120.44				
L2	A2	A3	0.15	0.32	0.90	0.29	10.00	5.38	1.55	7.34	2.11	77	10	0.44	0.011	1.67	3.06	0.34	118.15	117.81	2.83	122.25	121.50	119.75				
L3	A3	A4	0.23	0.55	0.90	0.49	10.00	5.38	2.66	7.28	3.60	64	15	0.34	0.011	3.76	3.06	0.22	117.81	117.60	2.17	121.50	120.00	119.36				
L4	A4	JB1	0.17	1.17	0.90	1.05	10.00	5.38	5.30	7.32	7.71	32	18	0.30	0.011	5.41	3.06	0.10	117.60	117.50	3.00	120.00	-	119.13				
L5	AA1	AA2	0.25	0.25	0.90	0.23	10.00	5.38	1.22	7.26	1.64	65	10	0.44	0.011	1.67	3.06	0.29	118.12	117.83	2.23	122.00	120.50	119.72				
L6	AA2	A4	0.19	0.45	0.90	0.40	10.00	5.38	2.16	7.30	2.93	70	15	0.34	0.011	3.76	3.06	0.24	117.83	117.60	1.76	120.50	120.00	119.37				
L7	BB1	BB2	0.32	0.32	0.90	0.29	10.00	5.38	1.56	7.22	2.09	65	10	0.44	0.011	1.67	3.06	0.29	117.19	116.90	2.86	122.00	120.50	119.41				
L8	BB2	JB2	0.22	0.54	0.90	0.49	10.00	5.38	2.62	7.28	3.54	59	15	0.34	0.011	3.76	3.06	0.20	116.90	116.70	2.13	120.50	-	119.07				
L9	B1	B2	0.30	0.30	0.90	0.27	10.00	5.38	1.43	7.23	1.93	191	10	0.44	0.011	1.67	3.06	0.84	118.86	118.02	2.63	122.25	122.25	120.77				
L10	B2	B3	0.26	0.55	0.90	0.50	10.00	5.38	2.69	7.26	3.62	136	15	0.34	0.011	3.76	3.06	0.46	118.02	117.55	2.19	122.25	122.25	119.91				
L11	B3	B4	0.08	0.64	0.90	0.57	10.00	5.38	3.08	7.44	4.26	77	15	0.34	0.011	3.76	3.06	0.26	117.55	117.29	2.51	122.25	122.00	119.51				
L12	B4	B5	0.28	0.92	0.90	0.83	10.00	5.38	4.46	7.24	6.00	87	18	0.30	0.011	5.41	3.06	0.26	117.29	117.03	2.52	122.00	121.75	119.25				
L13	B5	B6	0.18	1.10	0.90	0.99	10.00	5.38	5.33	7.32	7.25	65	24	0.25	0.011	9.61	3.06	0.16	117.03	116.87	1.70	121.75	120.00	119.02				
L14	B6	JB2	0.24	1.34	0.90	1.21	10.00	5.38	6.49	7.27	8.78	67	24	0.25	0.011	9.61	3.06	0.17	116.87	116.70	2.07	120.00	-	118.86				

CyB 2/13/18

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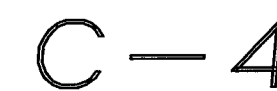
DRAINAGE AREA MAP & DETAILS

SCALE: 1" = 30'

PROJ. # 2015-07-06

SHEET 3 OF 6

C-3



GENERAL NOTES FOR SITEWORK:

(THESE NOTES CONTROL EXCEPT AS NOTED OTHERWISE IN PLANS & DETAILS)

A. EXISTING UTILITIES, FACILITIES & TREES

- CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OF PROPOSED FACILITIES. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
- CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY 48 HOURS PRIOR TO EXCAVATING NEAR THEIR UTILITY.
- CONTRACTOR SHALL TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF CONSTRUCTION OPERATIONS WILL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- CONTRACTOR SHALL TAKE EXTRA CARE TO PROTECT TREES IN AREAS ADJACENT TO CONSTRUCTION.

B. STORM SEWER SYSTEM

- STORM SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION AS CURRENTLY AMENDED.
- STORM SEWER PIPE SHALL BE HDPE, U.N.O. ON PLANS.
- SET STORM SEWER MANHOLE RIMS TO MATCH FINISH GRADE.
- STORM SEWER INLETS SHALL BE PARK EQUIPMENT CATCH BASINS.
- CONCRETE PIPE SHALL BE BEDDED WITH CEMENT STABILIZED SAND IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATIONS FOR CONCRETE PIPE.
- PVC PIPE SHALL BE BEDDED WITH A MINIMUM OF ONE FOOT OF CEMENT STABILIZED SAND. CEMENT STABILIZED SAND SHALL BE LAID IN 6" LIFTS COMPOSED TO 95% STD. PROCTOR MAX. DRY DENSITY (ASTM D698).
- EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO THE CITY OF HOUSTON STANDARDS.
- CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK.
- ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY.

C. PAVING & GRADING

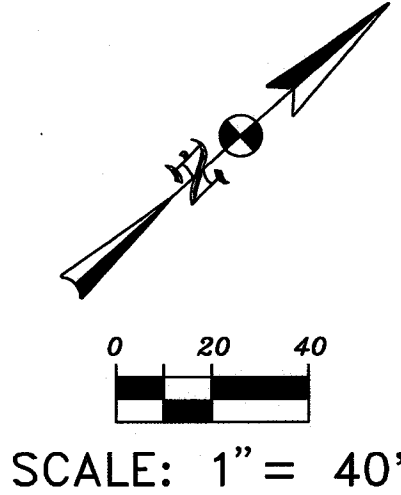
- SUBGRADE PREPARATION:
 - STRIP PAVEMENT AREAS TO REMOVE ALL TOP SOIL, DEBRIS AND VEGETATION. REMOVE TREE STUMPS AND ROOTS.
 - OVER-EXCAVATE SOFT AREAS AND REPLACE WITH SELECT FILL, FREE OF ORGANIC MATTER, WITH PLASTICITY INDEX OF 7 TO 20 AND A MINIMUM LIQUID LIMIT OF 28 PERCENT. FILL SHALL BE PLACED IN SIX(6) TO EIGHT(8) INCH LOOSE LIFTS AND COMPACTED TO 95% OF STD. PROCTOR (ASTM D698-78) MAX. DRY DENSITY.
 - PROOF-ROLL TO 95% OF STD. PROCTOR (ASTM D698-78) MAX. DRY DENSITY.
 - STABILIZE SUBGRADE WITH 6 PERCENT HYDRATED LIME BY DRY WEIGHT OR 27 POUNDS PER SQ. YARD PER 6 INCH TREATED DEPTH.
 - COMPACT TO 95% OF STD. PROCTOR (ASTM D698-78) MAX. DRY DENSITY.
- PROVIDE 5" THICK CONCRETE PAVEMENT WITHIN PARKING AREAS.
- CONCRETE COMPRESSIVE STRENGTH = 3,000 PSI @ 28 DAYS.
- REINFORCEMENT: #4 @ 18" EA. WAY. ASTM A615 GRADE 60.
- REINFORCEMENT SHALL BE SUPPORTED ON METAL OR PLASTIC CHAIRS, AT A MAXIMUM OF FOUR (4) FEET EACH WAY.
- PROVIDE EXPANSION JOINTS @ A MAXIMUM SPACING OF TWENTY (20) FEET EACH WAY. FORM JOINTS WITH METAL KEYWAYS & PROVIDE 3/4" SMOOTH DOWELS x 2'-0" @ 20' O.C., GREASE & WRAP ONE END.
- RECOMMENDED PAVEMENT SLOPE TO DRAIN = 0.50%, BUT IN NO INSTANCE LESS THAN 0.35% OR HIGHER THAN 8%.
- EXCESS SOIL MATERIAL IS THE RESPONSIBILITY OF THE CONTRACTOR & IS TO BE DISPOSED OFFSITE RESPONSIBLY AT NO SEPARATE PAY.

D. DOMESTIC WATER SYSTEM

- WATER LINE SHALL BE PVC PIPE SCHEDULE 40.
- WATER LINE SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION FOR WATER MAIN CONSTRUCTION AS CURRENTLY AMENDED.
- WATER LINE SHALL HAVE BANK SAND BEDDING AND BACKFILL.
- PROVIDE THRUST BLOCKING ACCORDING TO CITY OF HOUSTON STANDARDS & SPECIFICATIONS.
- PROVIDE A MINIMUM 6-INCHES OF CLEARANCE AT STORM SEWER AND WATER LINE CROSSING.

E. SANITARY SEWER SYSTEM

- PVC SANITARY SEWER PIPE SHALL BE SDR 26, AND SHALL HAVE BEDDING AND BACK FILL AS PER DETAIL THIS SHEET.
- SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION AS CURRENTLY AMENDED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SAFELY SHORING ALL TRENCHES IN EXCESS OF 6'-0" IN DEPTH IN COMPLIANCE W/ OSHA.
- INLINE CLEAN OUTS SHALL BE INSTALLED AT EVERY 90' FEET.
- POLY-VINYL-CHLORIDE (PVC) PIPE SHALL CONFIRM TO ASTM SPECIFICATIONS D3034 AND BE INSTALLED ACCORDING TO ASTM D2321.
- ALL SANITARY SEWER SERVICE LINES SHALL BE CONSTRUCTED TO TRUE ALIGNMENT AND GRADE.
- WATER-TIGHT ADAPTERS OF A TYPE COMPATIBLE WITH THE MATERIALS BEING JOINED WILL BE USED AT THE POINT OF CONNECTION OF THE SERVICE LINE TO THE BUILDING PLUMBING.
- EACH CLEANOUT WILL BE INSTALLED SO THAT IT OPENS IN A DIRECTION OPPOSITE TO THE FLOW OF THE WASTE AND, EXCEPT IN THE CASE OF "WYE" BRANCH AND END-OF-THE-LINE CLEANOUTS.
- CLEANOUT WILL BE MADE WITH AIRTIGHT MECHANICAL PLUG.



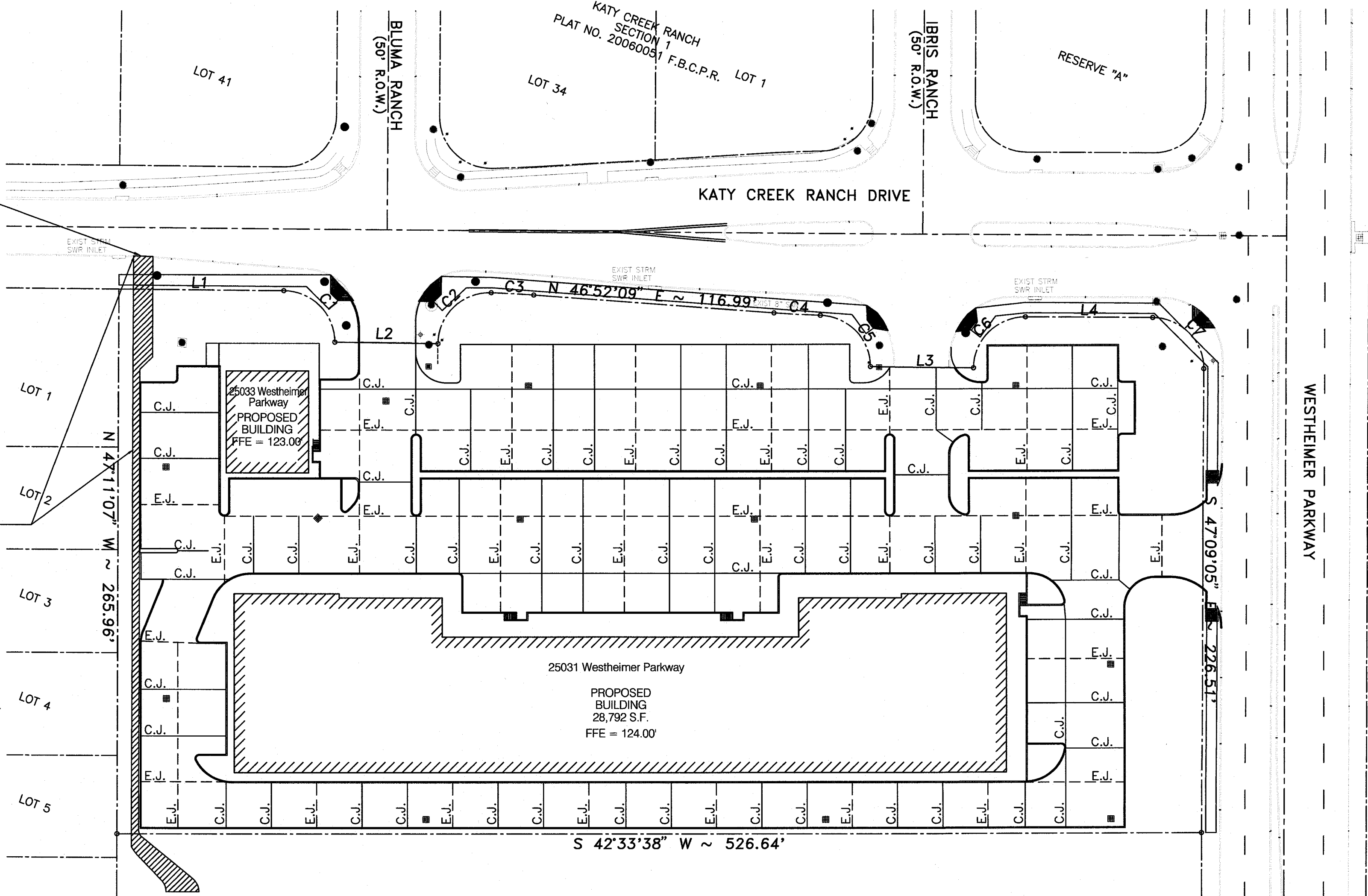
SCALE: 1" = 40'

REMOVE APPROX. 11.0' EXISTING STREET CURB & INSTALL PROPOSED CONCRETE EXTREME EVENT OVER FLOW SWALE 10.0' WIDE BY 6" DEEP AT STREET CURB TO MATCH EXISTING R.O.W. PAVEMENT ELEVATION @ 118.70

PROPOSED CONCRETE EXTREME EVENT OVER-FLOW SWALE



KATY CREEK RANCH
SECTION 8
PLAT NO. 20120023 F.B.C.P.R.

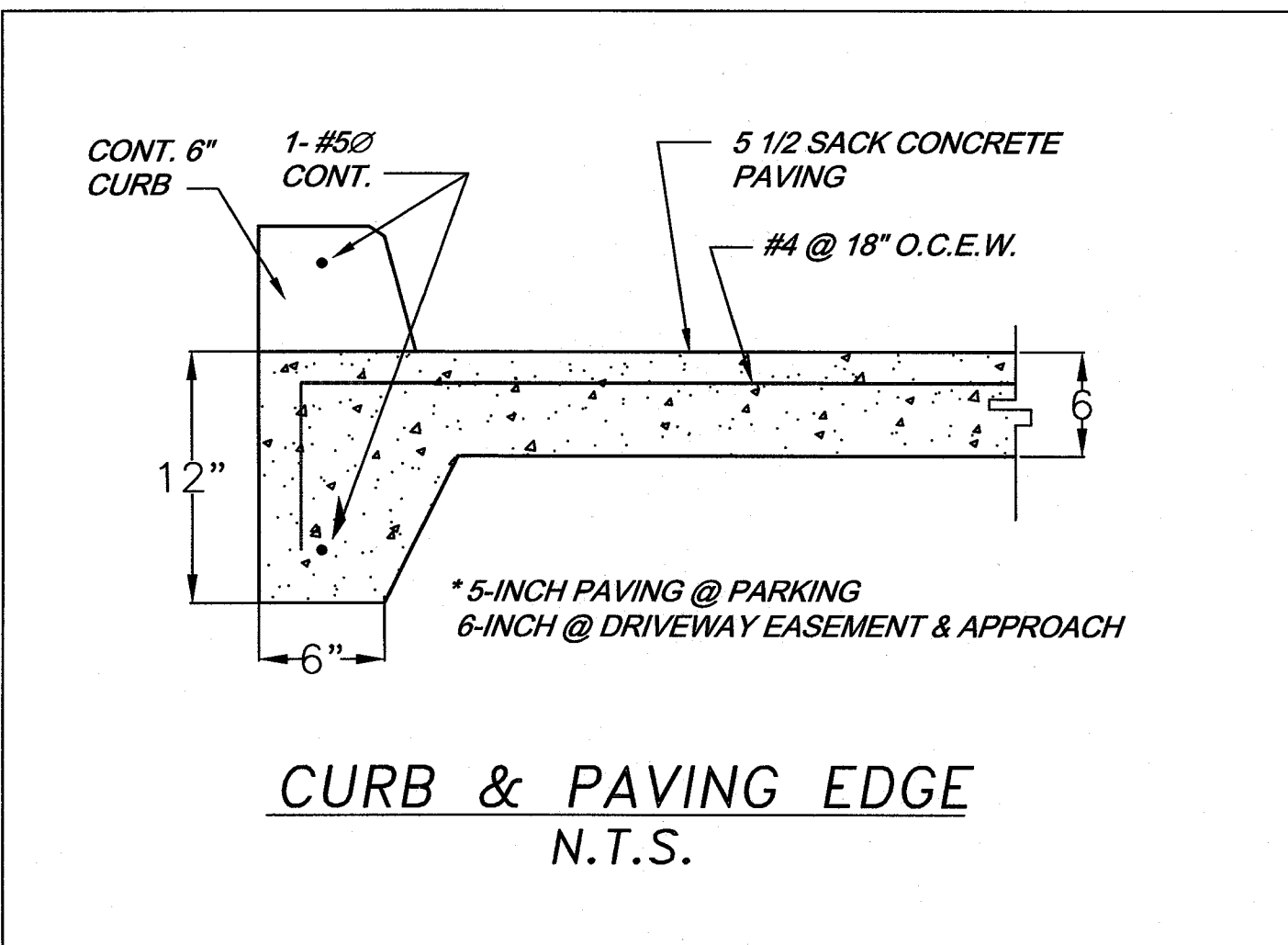


25031 Westheimer Parkway
PROPOSED BUILDING
28,792 S.F.
FFE = 124.00'

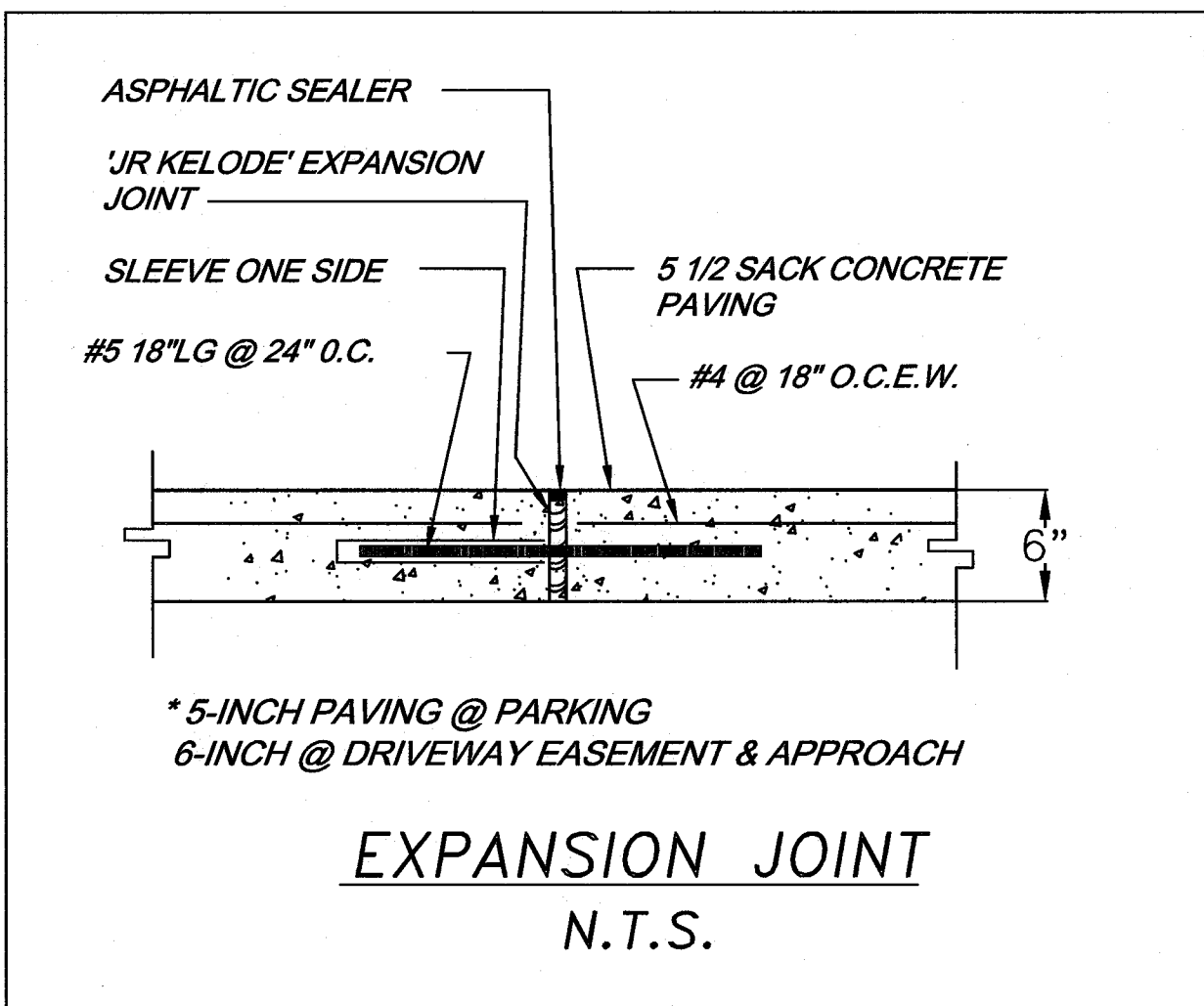
SITE JOINT LAYOUT
1" = 40'

LEGEND:

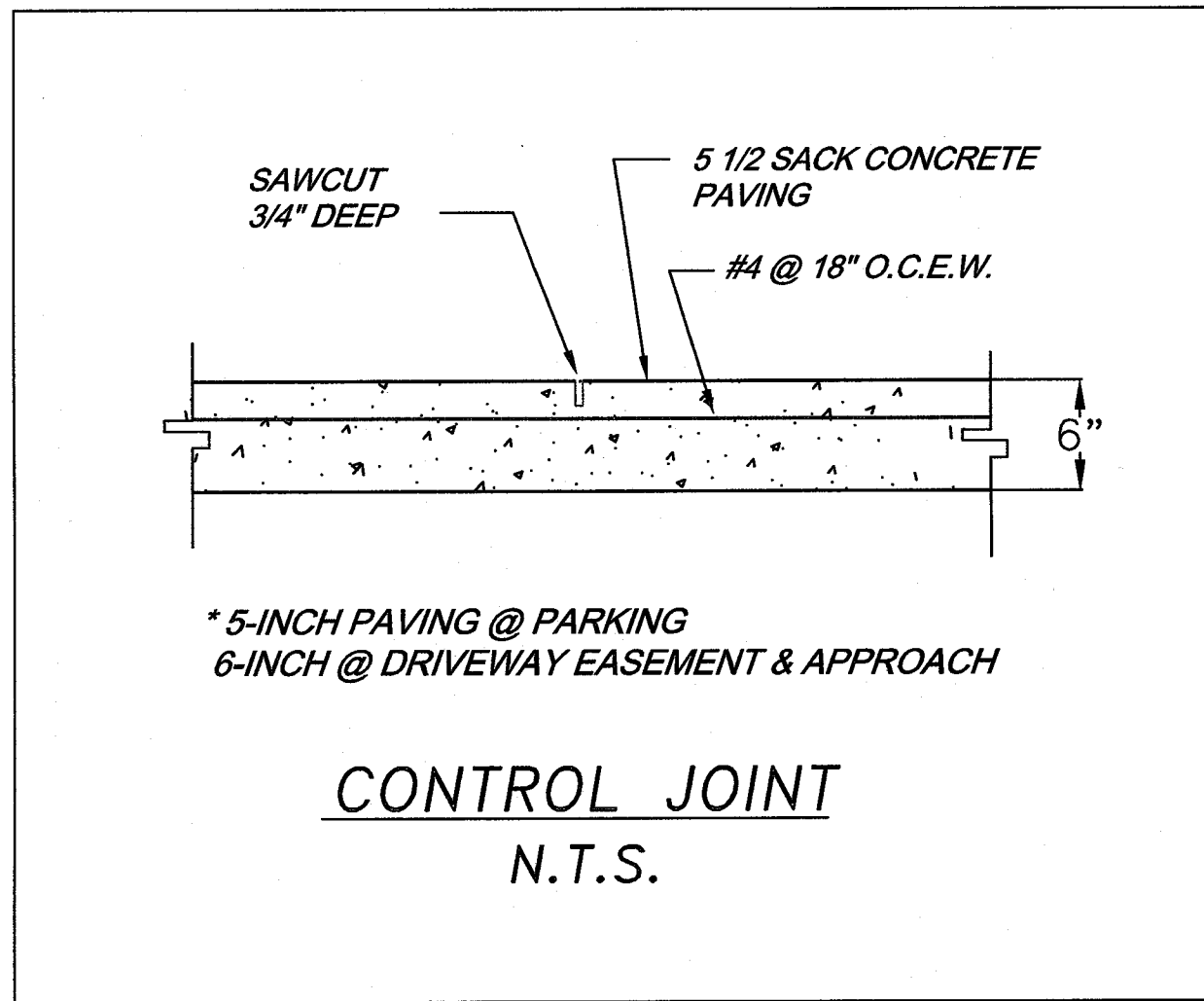
- EXPANSION JOINT (E.J.)
- CONTROL JOINT (C.J.)



CURB & PAVING EDGE
N.T.S.



EXPANSION JOINT
N.T.S.



CONTROL JOINT
N.T.S.

FALCONE GROVE, LTD
F.B.C.C.F. NO. 1999048561

Seal:



Signature: H.R. Shotland

Date: Jan. 15, 2018

NO.	REVISION	DATE
1	FORT BEND COUNTY REVISION	12-12-17
2	REVISIONS OF MUD COMMENTS	01-12-18
3	FORT BEND COUNTY ENGINEERING	02-14-18
4	SIDEWALK COMMENTS	
5		
6		
7		
8		
9		
10		

SITE JOINT LAYOUT

SCALE: 1" = 40'

PROJ. # 2015-07-06

SHEET 5 OF 6

C-5

"KATY CREEK RANCH PLAZA"

25031 & 25033 Westheimer Parkway
Katy, Texas 77494

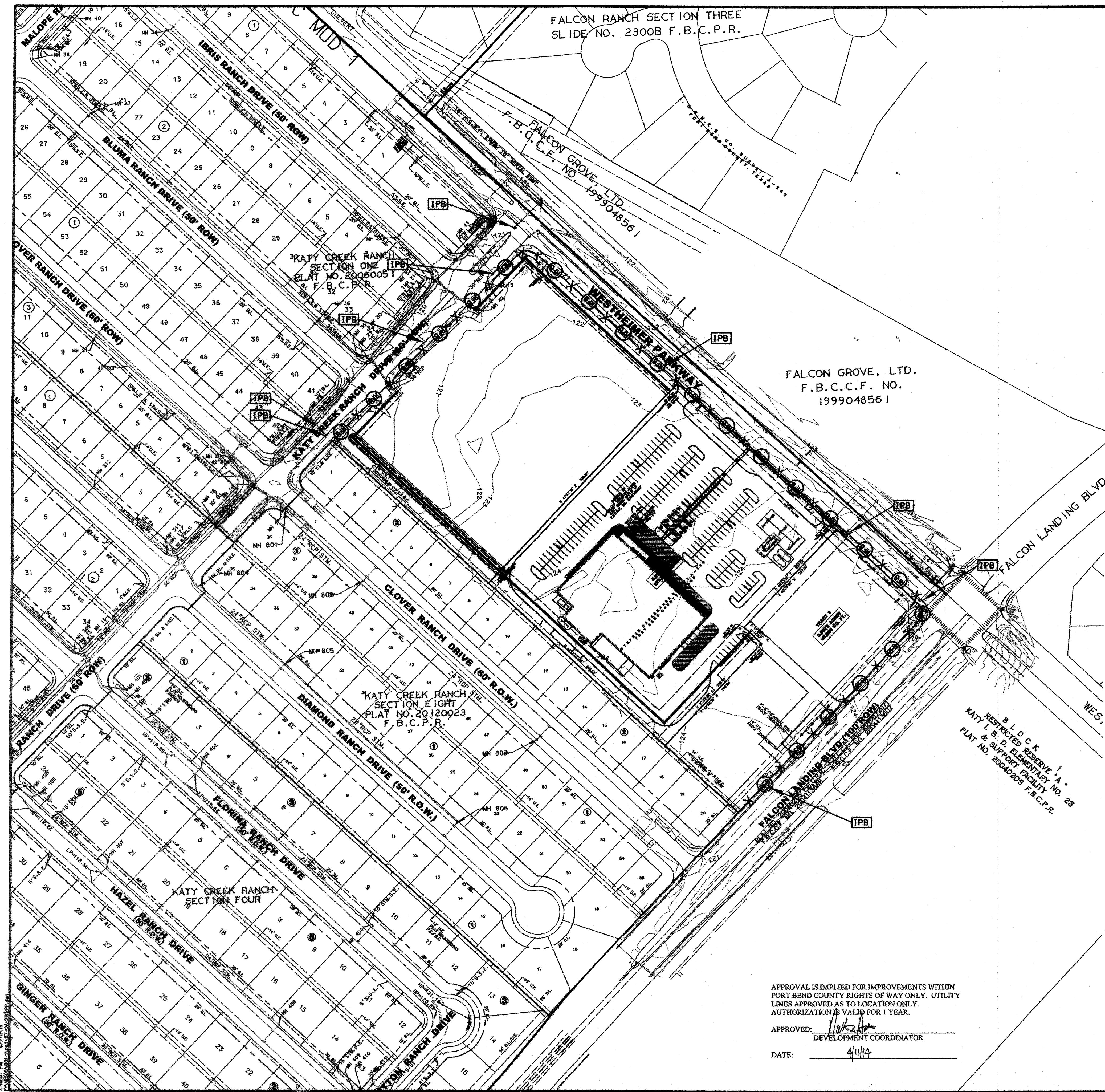
PROPOSED RETAIL BUILDING

HRS and Associates, LLC

Civil, Traffic Engineering, and Consulting

8318 Ivan Field Drive
Houston, Texas
Phone: (713) 468-9776
Fax: (832) 328-7121
E-mail: hrsassociates@aol.com

FIRM NAME: HRS and Associates, LLC
FIRM REGISTRATION NUMBER: F-4093



FALCON RANCH SECTION THREE
SLIDE NO. 2300B F.B.C.P.R.

FALCON RANCH SECTION ONE
SLIDE NO. 2134A F.B.C.P.R.

FALCON GROVE, LTD.
F.B.C.C.F. NO.
1999048561

NOTES:

1. UNLESS OTHERWISE NOTED ALL INLET PROTECTION BARRIERS REQUIRE STAGE I AND STAGE II PROTECTION SEE STORMWATER POLLUTION PREVENTION DETAILS.
2. CONTRACTOR MAY DE-WATER THE SITE BY CONSTRUCTING A SEDIMENT SUMP PIT AS SHOWN ON THE SWPPP DETAILS AND DISCHARGING TO AN AREA PROTECTED BY A SEDIMENT TRAPPING DEVICE.
3. THE CONTRACTOR MUST ESTABLISH AN APPROPRIATE CONCRETE TRUCK WASHOUT AREA.

STORM WATER QUALITY PRE-CONSTRUCTION INSPECTION REQUIREMENTS

THE PROPERTY OWNER OR THE CONTRACTOR SHALL CONTACT THE HARRIS COUNTY STORM WATER QUALITY PERMITTING SECTION AT 713-316-3000 FOR A PRE-CONSTRUCTION INSPECTION PRIOR TO COMMENCING ANY CLEARING OR CONSTRUCTION ACTIVITIES ON THE SITE.

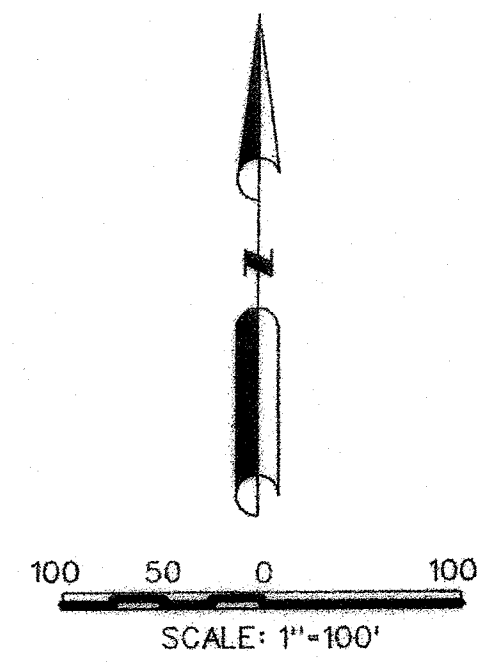
LEGEND

- PROP. STORM SEWER, MANHOLE & INLETS
- EXIST. STORM SEWER, MANHOLE & INLETS
- EXIST. CONTOUR LINE
- FILTER FABRIC FENCE
- REINFORCED FILTER FABRIC FENCE
- STRAW BALE FENCE
- VEGETATED SEDIMENT FILTER STRIP
- INLET PROTECTION BARRIERS FOR STAGE I INLETS
- INLET PROTECTION BARRIERS FOR STAGE II INLETS
- STABILIZED CONSTRUCTION ACCESS
- FD-TYPE FILTER DAM
- ABOVE GROUND TEMP. VEHICLE & EQUIPMENT FUELING AREA OPTION 1 & 2
- BARREL STORAGE AREA
- CONCRETE TRUCK WASHOUT AREA
- DIVERSION DIKE
- INTERCEPTOR DIKE
- DIVERSION DIKE AND SWALE
- DIVERSION SWALE
- INTERCEPTOR SWALE

APPROVAL IS IMPLIED FOR IMPROVEMENTS WITHIN FORT BEND COUNTY RIGHTS OF WAY ONLY. UTILITY LINES APPROVED AS TO LOCATION ONLY. AUTHORIZATION IS VALID FOR 1 YEAR.

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 4/11/14



BENCH MARK

BENCH MARK PUBLISHED ELEVATION - 103.51'

BM 1 - PROJECT BENCHMARK IS FLOODPLAIN REFERENCE MARK NO. 1900251, BEING A BRASS DISK STAMPED 1900251 LOCATED ON DOWNSTREAM CONCRETE WALL ON NORTHEAST CORNER OF BRIDGE IN KEYMAP 4852 IN THE BARKER WATERSHED NEAR STRAIN TIDOC NEAR 2001 ADJ.

TEMP. BENCHMARK "A" ELEVATION - 120.80'

TEMP. BENCHMARK "A" IS A CEMENT DISK LOCATED ON A TYPE "C" INLET AT THE INTERSECTION OF KATY CREEK RANCH DRIVE AND WESTHEIMER PARKWAY. ELEVATION = 120.80' (AS SHOWN HEREIN).

TEMP. BENCHMARK "B" ELEVATION - 123.47'

TEMP. BENCHMARK "B" IS A CEMENT DISK LOCATED ON A TYPE "C" INLET LOCATED AT THE INTERSECTION OF KATY CREEK RANCH DRIVE AND WESTHEIMER PARKWAY AND FALCON LANDING DRIVE. ELEVATION = 123.47' (AS SHOWN HEREIN).

NOTES

1. ALL STATIONS ARE CENTERLINE OF STREET RIGHT-OF-WAY UNLESS OTHERWISE NOTED.
2. ALL PAVING DIMENSIONS ARE BACK OF CURB UNLESS OTHERWISE NOTED.
3. THIS PROJECT LIES WITHIN ZONE-X (UNSHADED) AS PER CITY OF HOUSTON DESIGN MANUAL, CHAPTER 10, REVISED JAN. 05, 1997.
4. WATER LINE PROTECTION AT SANITARY SEWER CROSSING PER CITY OF HOUSTON DESIGN MANUAL, CHAPTER 10, REVISED JAN. 05, 1997.
5. ALL SANITARY SEWER MANHOLE RIMS SHALL BE (1) ONE FOOT MIN. ABOVE THE 100-YR WATER SURFACE ELEVATION.
6. ROW NOTIFICATION REQUIRED
7. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO COMMENCING WORK. REPORT ANY DISCREPANCIES TO ENGINEER IMMEDIATELY.

TO ASSURE FOR LANDS TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222.

NOTES:

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 verification does not guarantee the accuracy of the information provided.

VERIFICATION OF PRIVATE UTILITY LINES

DATE:

CenterPoint Energy/Natural Gas Facilities Verification ONLY. (This signature verifies that you have shown CIP Natural Gas lines correctly - not to be used for conflict verification.) (Use service lines are not shown) 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 Texas/SWMT underground conduit facilities only. Signature valid for one year.

REVISION BLOCK

No.	DATE	DESCRIPTION	APP'D

VanDeWilde & Vogler Incorporated

Consulting Engineers

2925 Briarpark, Suite 275
Houston, Texas 77042
713/782-0042
www.vandewilde.com
Texas Professional Engineering Firm Registration No. F148

THOMAS D. LASETER
77845
REGISTERED PROFESSIONAL ENGINEER

HARRIS - FORT BEND COUNTIES MUNICIPAL UTILITY DISTRICT No. 5

7.8 ACRE COMMERCIAL TRACT

SWPPP SITE PLAN

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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC AND TRANSPORTATION
<i>[Signature]</i>	<i>[Signature]</i>
STORM WATER QUALITY	FACILITIES
<i>[Signature]</i>	<i>[Signature]</i>
STREET & BRIDGE	
<i>[Signature]</i>	

FILE NO: *[Blank]*

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

HORZ : 1"=100'

VERT : *[Blank]*

SHEET No: 7 OF 21

51992

[Circular Stamp]

PRELIM BY: JDN, MP, TL
JOB NO: 12006-801-1

[Handwritten: CDB 2/13/14]

RIGHT LANE CLOSURE ON MAJOR STREET

SPEED LIMIT = 35 MPH

TRAFFIC NOTES

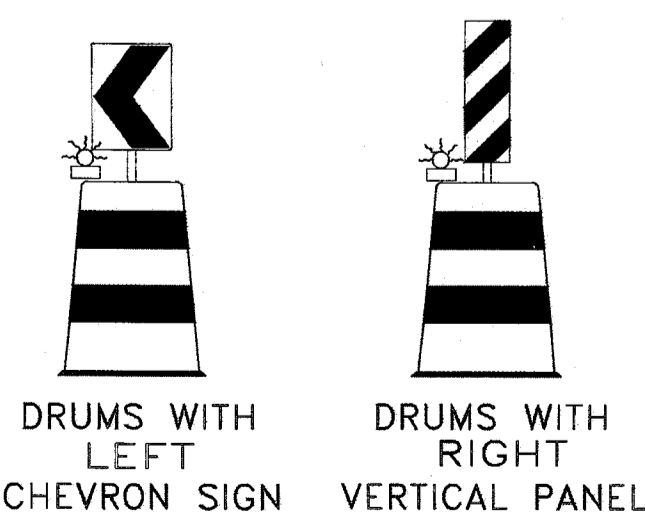
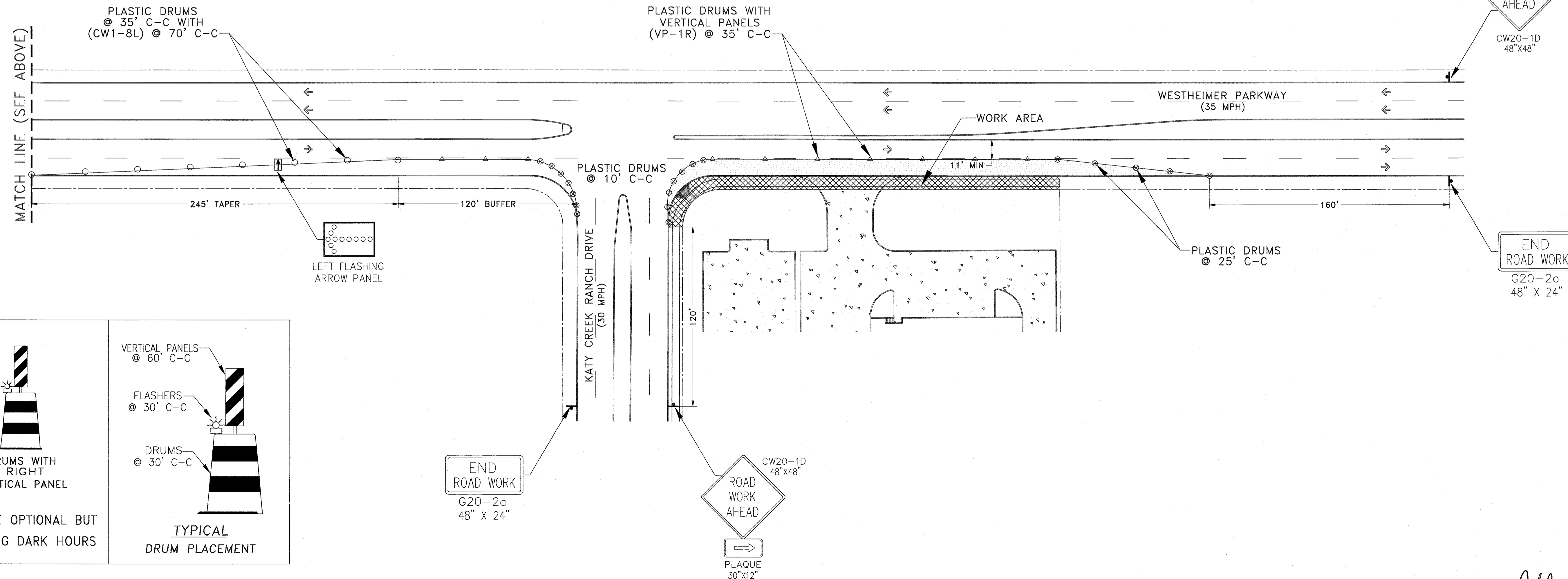
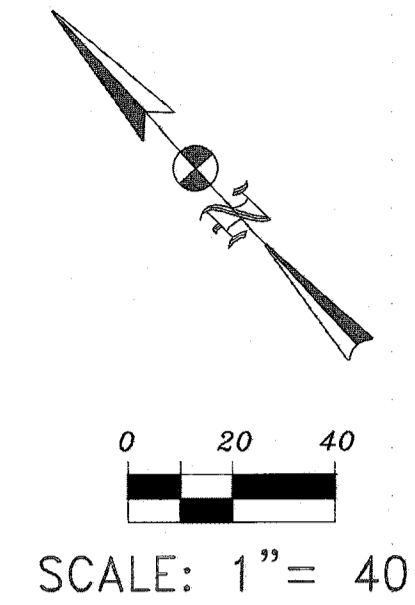
- CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TEXAS M.U.T.C.D., MOST RECENT EDITION WITH REVISIONS) DURING CONSTRUCTION.
- NO LANES SHALL BE CLOSED DURING THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM MONDAY THRU FRIDAY.
- CONTRACTOR SHALL COVER OPEN EXCAVATIONS WITH STEEL PLATES ANCHORED PROPERLY DURING NON-WORKING HOUR AND OPEN LANES FOR NORMAL TRAFFIC FLOW.
- IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, HE/SHE SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATIVE SET REPRODUCIBLE MYLARS, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS, WITH THE ENTIRE APPROVED SET OF DRAWINGS, TO PLAN REVIEW SECTION FOR REVIEW AND APPROVAL, TEN WORKING DAYS PRIOR TO IMPLEMENTATION.
- APPROVED COPIES OF THE TRAFFIC CONTROL PLANS AND LANE CLOSURE PERMITS SHALL BE AVAILABLE FOR INSPECTION AT JOB SITE AT ALL TIMES.
- ALL TRAFFIC CONTROL DEVICES USED AT NIGHT SHALL BE REFLECTORIZED OR ILLUMINATED.
- CONTRACTOR SHALL MAINTAIN LOCAL DRIVEWAY ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES ADJACENT TO WORK AREA AT ALL TIMES.

SPACING FOR CHANNELIZING DEVICES

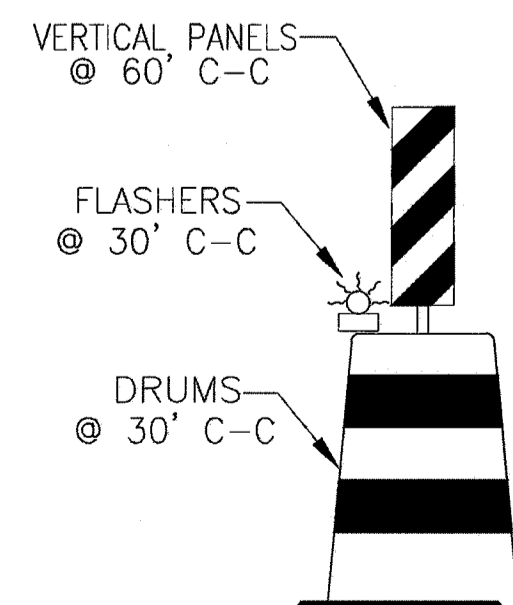
- PLASTIC DRUMS ON MERGING TAPER AT 50' C-C WITH CHEVRON SIGNS AT 70' C-C AND TYPE "C" WARNING LIGHT (FOR OVERNIGHT CLOSURE).
- PLASTIC DRUMS ON DOWNSTREAM TAPER AT 35' C-C.
- PLASTIC DRUMS ON RADIUS AT 10' C-C.
- PLASTIC DRUMS ON TANGENT @ 35' C-C WITH VERTICAL PANEL AT 70' C-C AND TYPE "C" WARNING LIGHT (FOR OVERNIGHT CLOSURE).
- PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE AT 20' C-C WITH VERTICAL PANEL AT 40' C-C AND TYPE "A" WARNING LIGHT (FOR OVERNIGHT CLOSURE).
- CONCRETE TRAFFIC BARRIER (C.T.B.) OR LOW PROFILE CONCRETE TRAFFIC BARRIER (L.P.C.T.B.) WITH REFLECTORS AT 10' C-C, IF PAVEMENT DROP IS MORE THAN TWELVE INCHES (12").

NOTES:

SPACINGS SHOWN ON TRAFFIC CONTROL PLANS SHALL SUPERSEDE THE ABOVE SPACINGS.
SPACINGS MAY BE ADJUSTED TO MISS DRIVEWAYS AND/OR MEDIAN OPENINGS.



WARNING LIGHTS ARE OPTIONAL BUT MUST BE USED DURING DARK HOURS



TYPICAL
DRUM PLACEMENT

HRS and Associates, LLC
Civil, Traffic Engineering, and Consulting

8819 Ivan Field Drive
Houston, Texas 77040-1509
Phone: (713) 466-9776
Fax: (282) 328-1121
E-mail: hrsassociates@aol.com

FIRM NAME: **HRS** and Associates, LLC
FIRM REGISTRATION NUMBER: **P-4093**

Seal:



Signature:

DATE

REVISION

NO

TRAFFIC CONTROL PLAN

SCALE: 1" = 40'

PROJ. # 2015-07-06

SHEET 6A OF 6

C7-TCP

11/13/18