



**REVIEW BY FORT BEND COUNTY  
COMMISSIONERS COURT**

**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: 2017-12354

**Applicant:** Durwood Greene Construction Co.

**Job Location Site:** NW corner of Lost Lake Drive and Harvest Corner Drive, Richmond, TX 77406

**Bond No.**                      **Date of Bond:** 2/17/2017 **Amount:** \$18,585.50

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 25th day of April, 2017, Upon Motion of Commissioner Meyers, 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**

By: Charles O. Ay

for County Engineer

N/A

By: \_\_\_\_\_

Drainage District Engineer/Manager

Presented to Commissioners Court and approved.

Date Recorded 5-2-2017 Comm. Court No. 13CC

Clerk of Commissioners Court

By: Arnell Wilho  
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@fortbendcountytexas.gov](mailto:Permits@fortbendcountytexas.gov)

☐

Right of Way Permit

☒

Commercial Driveway Permit

Permit No: 2017-12354

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:**

X
X
X

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: [REDACTED]

Amount: \$18,585.50

☐

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.**

*Chandy O. Aj*

Permit Administrator

*4/17/17*

Date



27

3 PGS  
BOND

2017046625

\*\*\***DUPLICATE ORIGINAL**\*\*\*

**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 §

COUNTY OF FORT BEND §

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, Durwood Greene Construction Co., whose (address, phone) is P.O. Box 1338, Stafford, TX 77497, (281) 499-1551 Texas, hereinafter called the Principal, and Federal Insurance Company, a Corporation existing under and by virtue of the laws of the state of Indiana and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at (name/address/phone) 15 Mountain View Road, Warren, NJ 07059, (908) 903-3493, whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought within said state is Marie Garcia and whose address is C.T. Corporation System, 350 North St. Paul Street, Dallas, TX 75201, (214) 979-1172, 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 Eighteen Thousand Five Hundred Eighty-Five and 50/100 Dollars (\$ 18,585.50 ) 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 17th day of February, 2017.

Durwood Greene Construction Co.  
PRINCIPAL

*[Signature]*  
BY

*[Signature]*  
Jerry L. Berry  
Vice President

Federal Insurance Company  
SURETY

*[Signature]*  
BY

Richard Covington, Attorney-in-Fact



CHUBB

## Power of Attorney

Federal Insurance Company | Vigilant Insurance Company | Pacific Indemnity Company

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint Joseph R. Aulbert, Marc W. Boots, Richard Covington, Ashley Koletar, Vickie Lacy and Maria D. Zuniga of Houston, Texas; Susan Golla of San Antonio, Texas

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said **FEDERAL INSURANCE COMPANY**, **VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY** have each executed and affixed these presents and affixed their corporate seals on this 15<sup>th</sup> day of February, 2017.

Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

Stephen M. Haney

Stephen M. Haney, Vice President



STATE OF NEW JERSEY

County of Hunterdon

SS.

On this 15<sup>th</sup> day of February, 2017 before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of **FEDERAL INSURANCE COMPANY**, **VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY**, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of **FEDERAL INSURANCE COMPANY**, **VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY** and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with Stephen M. Haney, and knows him to be Vice President of said Companies; and that the signature of Stephen M. Haney, subscribed to said Power of Attorney is in the genuine handwriting of Stephen M. Haney, and was thereto subscribed by authority of said Companies and in deponent's presence.

Notarial Seal



KATHERINE J. ADELAAR  
NOTARY PUBLIC OF NEW JERSEY  
No. 2518866  
Commission Expires July 16, 2019

Katherine J. Adelaar

Notary Public

## CERTIFICATION

Resolutions adopted by the Boards of Directors of **FEDERAL INSURANCE COMPANY**, **VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY** on August 30, 2016:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into in the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such person's written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing to any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested."

I, Dawn M. Chloros, Assistant Secretary of **FEDERAL INSURANCE COMPANY**, **VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY** (the "Companies"), do hereby certify that

- (i) the foregoing Resolutions adopted by the Board of Directors of the Companies are true, correct and in full force and effect,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia, and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in the U.S. Virgin Islands, and Federal is licensed in Guam, Puerto Rico, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Whitehouse Station, NJ, this 17th Day of February, 2017



Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT:

Telephone (908) 903-3493 Fax (908) 903-3656 e-mail: surety@chubb.com



**FILED AND RECORDED**  
**OFFICIAL PUBLIC RECORDS**

*Laura Richard*

Laura Richard, County Clerk  
Fort Bend County, Texas

May 01, 2017 03:45:01 PM

FEE: \$0.00 CR1  
BOND

2017046625

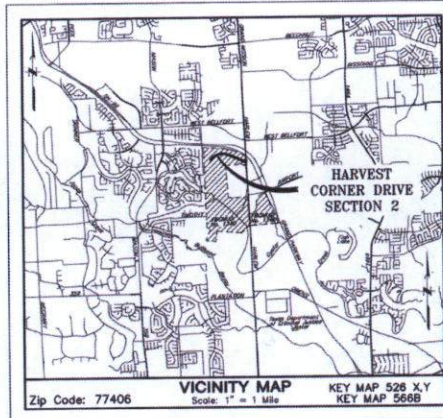




# CONSTRUCTION OF WATER, SANITARY, DRAINAGE & PAVING FACILITIES IN HARVEST CORNER DRIVE SEC 2 FOR FORT BEND COUNTY MUNICIPAL UTILITY DISTRICT No. 134-D

## INDEX OF DRAWINGS

SHEET No.	TITLE
1	COVER SHEET & INDEX
2	GENERAL CONSTRUCTION LAYOUT - WATER & SANITARY SEWER
3	GENERAL CONSTRUCTION LAYOUT - PAVING & DRAINAGE
4	GENERAL CONSTRUCTION LAYOUT - SIGNING & PAVEMENT MARKING PLAN
5	STORM DRAINAGE TABLES
6	CONSTRUCTION NOTES
<b>PLAN &amp; PROFILE</b>	
	<b>STREET NAME</b> <b>STATION</b>
7	HARVEST CORNER DRIVE              45+00 TO 56+00
8	HARVEST CORNER DRIVE              56+00 TO 67+00
9	HARVEST CORNER DRIVE              67+00 TO 76+13.21
10	OFFSITE STORM                          9+00 TO 16+00
11	HARLEM ROAD                          3+00 TO 6+50
12	HARLEM ROAD                          6+50 TO 10+00
13	HARLEM ROAD                          10+00 TO 13+00
14	CROSS SECTIONS
<b>DETAILS</b>	
15	MISCELLANEOUS DETAILS I
16	MISCELLANEOUS DETAILS II
17	PAVING DETAILS
18	PAVEMENT MARKING DETAILS
19	GRADING PLAN
20	STORM WATER POLLUTION PREVENTION PLAN
21	STORM WATER POLLUTION PREVENTION PLAN DETAILS
22	HARVEST CORNER DRIVE PAVEMENT GEOMETRY
23	HEADWALL DETAIL
24	TRAFFIC CONTROL PLAN I
25	TRAFFIC CONTROL PLAN II
26	TxDOT PED-12A CURB RAMPS



TEXAS811 NOTIFICATION SYSTEM  
CALL BEFORE YOU DIG!!!  
www.texas811.org  
1-800-344-8377

**100-Year Flood Plain**  
According to Map No. 48157C0140L of The Federal Emergency Management Agency's Flood Insurance Rate Maps dated April 2, 2014, the subject tract is within Unshaded Zone "X".  
Note: The 100-Year base flood elevation is approximately 83.0 feet as per the FEMA Insurance Rate Map for Fort Bend County, Texas Community Panel No. 48157C0140L, Dated April 2, 2014. The 100-Year Flood Plain, elevation 83.0, is contained in the channel north of the detention pond.

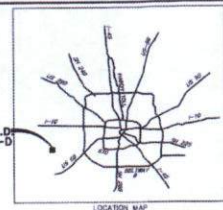
I, Christopher C. Jousan, a Professional Engineer licensed in the State of Texas do hereby certify that these plans were prepared under my supervision to meet or exceed the specifications and requirements of Fort Bend County, Texas.

*Christopher C. Jousan, P.E.*                      1/11/2017  
Date

**J/C JONES | CARTER**  
Texas Board of Professional Engineers Registration No. F-439  
6500 West Loop South, Suite 150 - Bellaire, TX 77401 - 713.777.5337

ILMS No. 16118201  
C.O.M. LOG No. 18-1700

F.B.C.M.U.D.  
No. 134-D



**FORT BEND COUNTY ENGINEER**

ENGINEER: *Richard W. Stollers, P.E.*  
DATE: 2/1/17

THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN ONE (1) YEAR FROM DATE OF APPROVAL.

APPROVED: *Maxine J. Carter*  
DEVELOPMENT COORDINATOR

DATE: 2/10/17


**NOTES:**  
These plans were prepared to meet or exceed the specifications and requirements of City of Houston and Fort Bend County as currently amended.  
Approval by Fort Bend County will be deemed void if construction has not begun within one year of approval date.

Construction shall not begin before the plot of this section is filed in the Fort Bend County Map Records.

Construction will be monitored under the supervision of a licensed engineer professional JONES & CARTER, INC.

Contractor shall notify the Fort Bend County Engineering Department at least 48 hours prior to commencement at E-MAIL: CONSTRUCTION@FORTBENDCOUNTYTX.GOV

Contractor shall notify the City of Houston, Department of Public Works and Engineering, Office of the City Engineer, 48 hours before starting work on this project. Telephone No. 832-394-9098

 CHRISTOPHER C. JOUSAN 11567 PROFESSIONAL ENGINEER 1/11/2017	
SURVEYED BY:                      FB NO.:	
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES.	
<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER	TRAFFIC & STREET/BRIDGE
SEWER	STORM WATER QUALITY
STORM	UTILITIES
CITY ENGINEER	FOR CITY OF HOUSTON USE ONLY
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	CITY ENGINEER
SHEET No. 1	OF 26

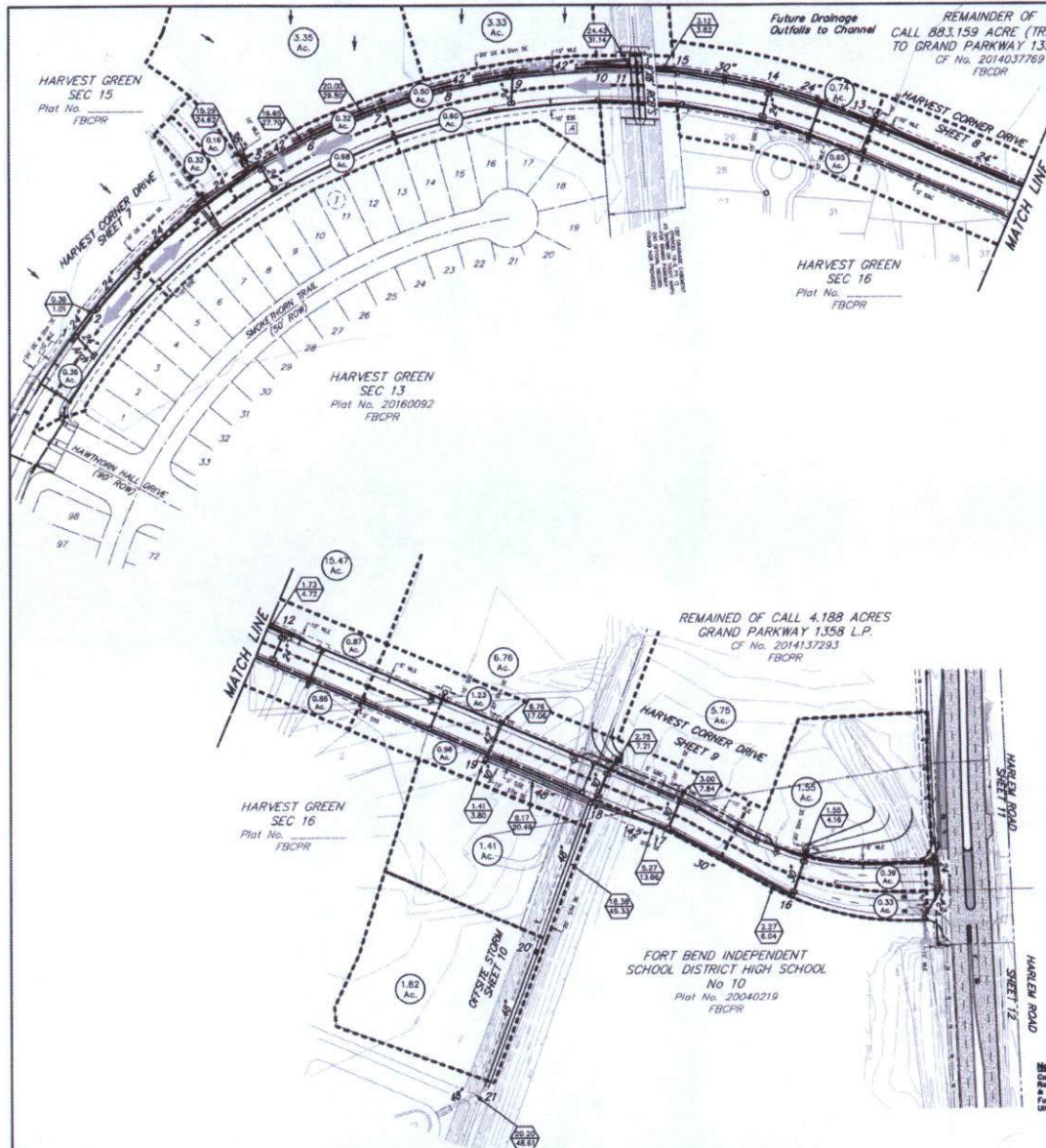
HARVEST CORNER DRIVE SEC 2 - WATER, SANITARY, DRAINAGE & PAVING FACILITIES

J/C JONES | CARTER  
BELLAIRE, TEXAS









**100-Year Flood Plain**

According to Map No. 487570040L of The Federal Emergency Management Agency's Flood Insurance Rate Map dated April 2, 2014, the subject tract is within Unshaded Zone "X".

Note: The 100-Year base flood elevation is approximately 83.6 feet as per the FEMA Insurance Rate Map for Fort Bend County, Texas Community Panel No. 481370240L, dated April 2, 2014. The 100-Year Flood Plain, elevation 83.6 is contained in the channel north of the detention pond.

**BENCHMARK**

2008 FORT BEND COUNTY LEARN BENCHMARK NO. 25, 784' NAD 83, IN APPROXIMATELY 3.0' WEST OF THE FIRST MEDIAN NOSE WEST OF F.M. 350 ON HIGHWAY 90-A, ELEVATION=84.09 HAHN (2001 ADJUSTMENT).

NOTE: ALL ELEVATIONS SHOWN WERE DERIVED FROM GPS/RTK OBSERVATIONS AND UTILIZED GEOGAC.

APPROVED: [Signature]  
DEVELOPMENT COORDINATOR

DATE: 2/10/17

NO.	DATE	REVISIONS	APP.

FORT BEND COUNTY MUD NO. 134-D  
FORT BEND COUNTY, TEXAS

**J.C. JONES & CARTER**

Texas Board of Professional Engineers Registration No. 4-499  
6500 West Loop South, Suite 150 • Houston, TX 77057 • (713) 777-3337

HARVEST CORNER DRIVE SEC 2  
GENERAL CONSTRUCTION LAYOUT

PAVING & DRAINAGE

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

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 1-12-17	DATE: 1/12/17
BY: [Signature]	BY: [Signature]
FOR: [Signature]	FOR: [Signature]

FILE NO.: [Blank]  
JOB NO.: 05002-0022-01

DATE: JANUARY 2017  
DRA. BY: JAC  
DWG. BY: JAC

SCALE: 1"=100'

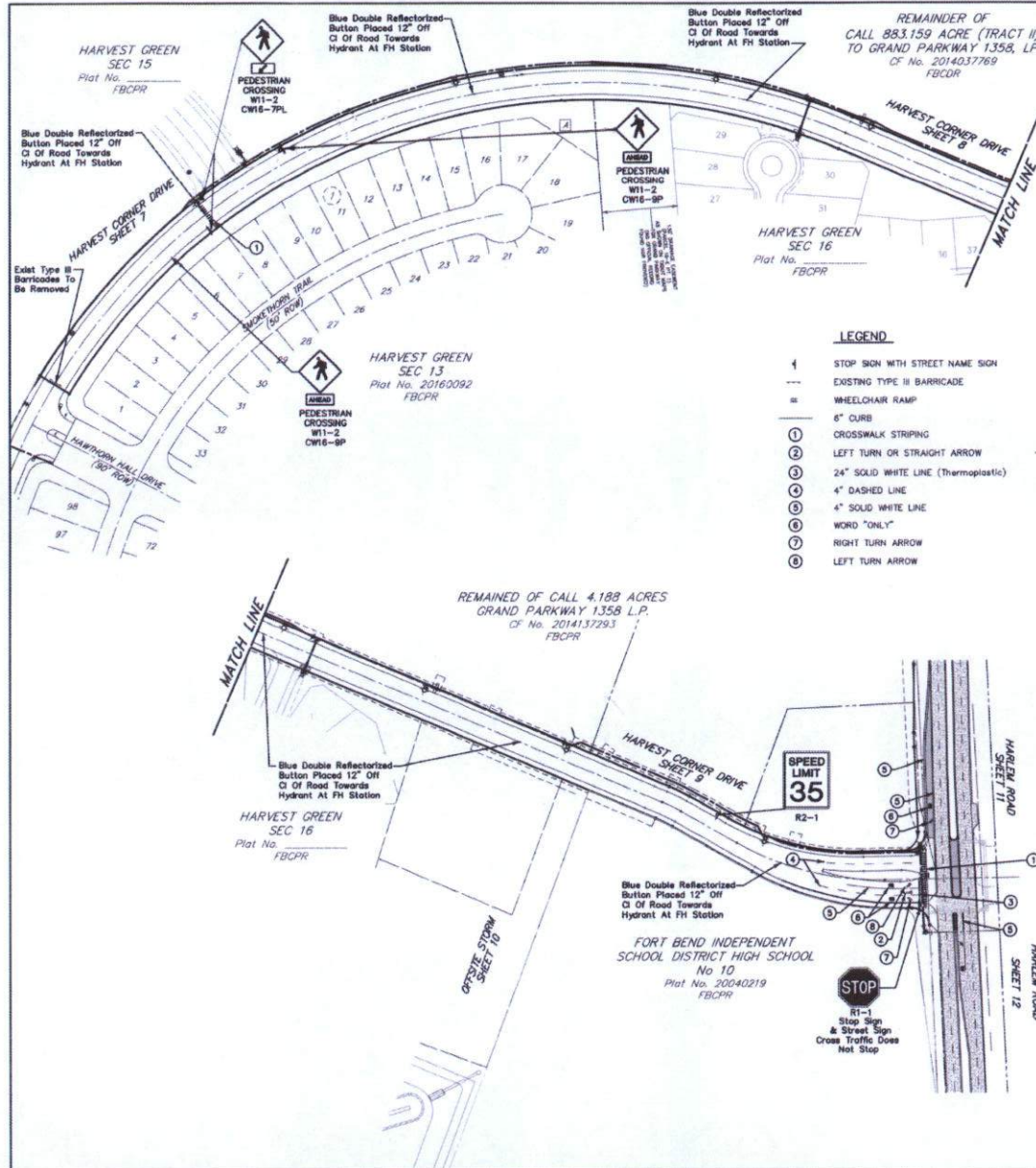
SHEET No. 3 OF 26

FOR CITY OF HOUSTON USE ONLY  
CITY-ENG. NO. [Blank]

DATE: [Blank]  
DWG. NO.: 57867







**100-Year Flood Plain**

According to Map No. 481570240L of The Federal Emergency Management Agency's Flood Insurance Rate Map dated April 2, 2014, the subject tract is within Unshaded Zone "X".

Note: The 100-Year base flood elevation is approximately 83.0 feet as per the FEMA Insurance Rate Map for Fort Bend County, Texas Community Panel No. 481570240L, dated April 2, 2014. The 100-Year Flood Plain, elevation 83.0, is contained in the channel north of the detention pond.

**BENCH MARK**

3005 FORT BEND COUNTY LEGAL BENCHMARK NO. 25 "T" B.M. IS APPROXIMATELY LOCATED 3.5' WEST OF THE FIRST MEDIAN NOSE WEST OF F.M. 350 ON HIGHWAY 80-A. ELEVATION=84.09 NAUSOM (GOOD ADJUSTMENT)

NOTE: ALL ELEVATIONS SHOWN WERE DERIVED FROM GPS/RTK OBSERVATIONS AND UTILIZED GEOIDCS.

**APPROVED:** *M. Jones*  
DEVELOPMENT COORDINATOR

**DATE:** 2/10/17

NO.	DATE	REVISIONS	APP.

FORT BEND COUNTY MUD NO. 134-D  
FORT BEND COUNTY, TEXAS

**JC JONES CARTER**  
Texas Board of Professional Engineers Registration No. 1-489  
2300 West Loop South, Suite 100, Houston, TX 77025-7733 (713) 773-1387

**HARVEST CORNER DRIVE SEC 2  
GENERAL CONSTRUCTION LAYOUT**

**SIGNING & PAVEMENT MARKING PLAN**

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

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

NAME	DATE & TIME/NO.	STAMP
<i>M. Jones</i>	1-12-17	
<i>Christopher C. Jordan</i>	1-12-17	

FILE NO. 2014-000000-01  
JOB NO. 2014-000000-01

DATE: JANUARY 2017  
SHEET NO. 4 OF 28

SCALE: 1"=100'

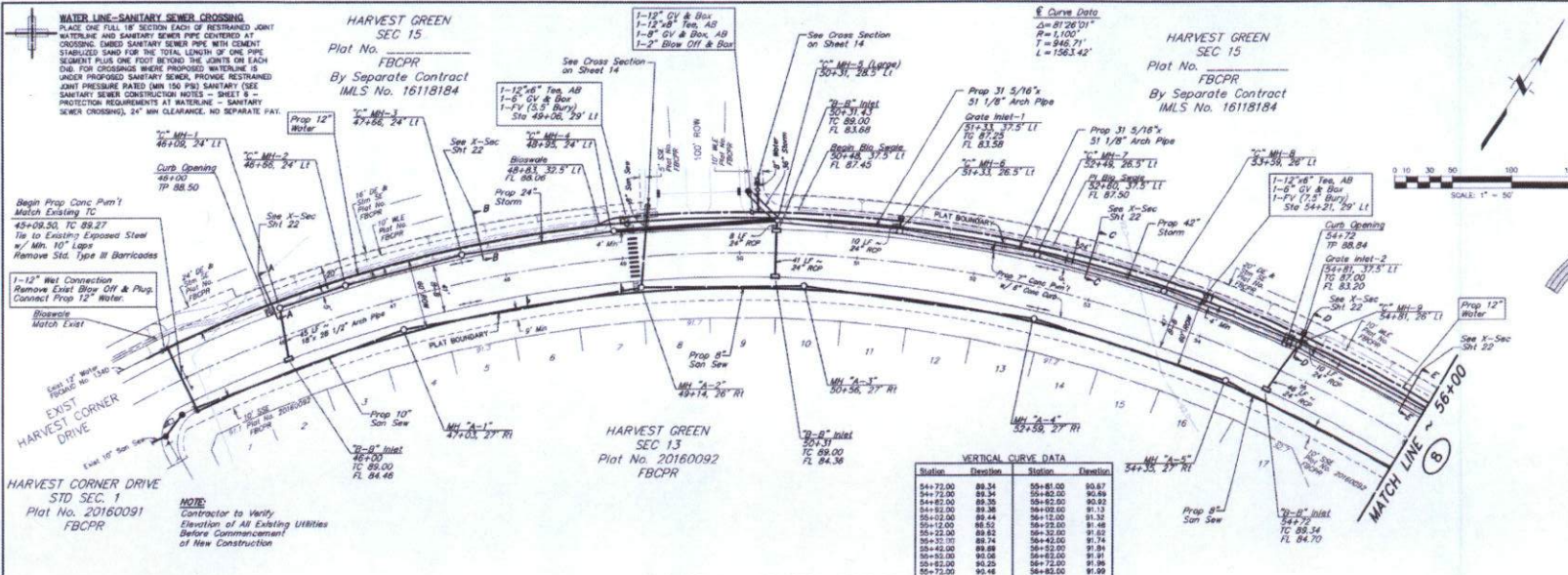


[illegible]



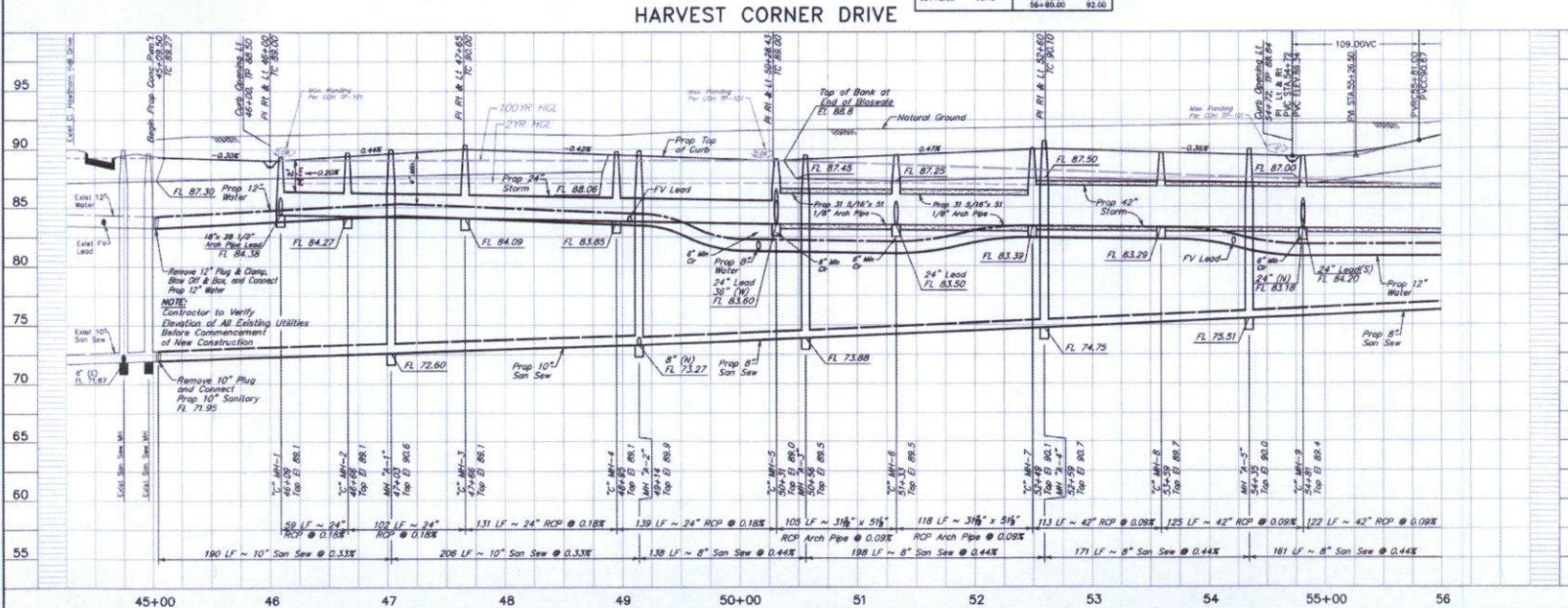






**100-Year Flood Plain**  
 According to Map No. 4815702140, of The Federal Emergency Management Agency's Flood Insurance Rate Map dated April 2, 2014, the subject tract is within Unshaded Zone "X".

**BENCH MARK**  
 2005 FORT BEND COUNTY LEAD BENCHMARK NO. 25, "PK" NAIL IN ASPHALT LOCATED 2.5' WEST OF THE FIRST MEDIAN HOSE WEST OF F.B. 369 ON HIGHWAY 90-A. ELEVATION=84.09 NAVD83 (2001 ADJUSTMENT). NOTE: ALL ELEVATIONS SHOWN WERE DERIVED FROM GPS/RTK OBSERVATIONS AND UTILIZED GEODETIC.



**APPROVED:** *Maxi Dost*  
 DEVELOPMENT COORDINATOR

**DATE:** 2/10/17

**REVISIONS**

NO.	DATE	REVISIONS	APP.
1	2/10/17	ISSUED FOR PERMIT	

**FORT BEND COUNTY MUD NO. 134-D**  
 FORT BEND COUNTY, TEXAS

**JONES CARTER**  
 Texas Board of Professional Engineers Registration No. 1-439  
 1301 West Loop South, Suite 120, Houston, TX 77027-7337 (713) 797-1547

**HARVEST CORNER DRIVE SEC 2**  
**HARVEST CORNER DRIVE**  
**45+00 TO 56+00**

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

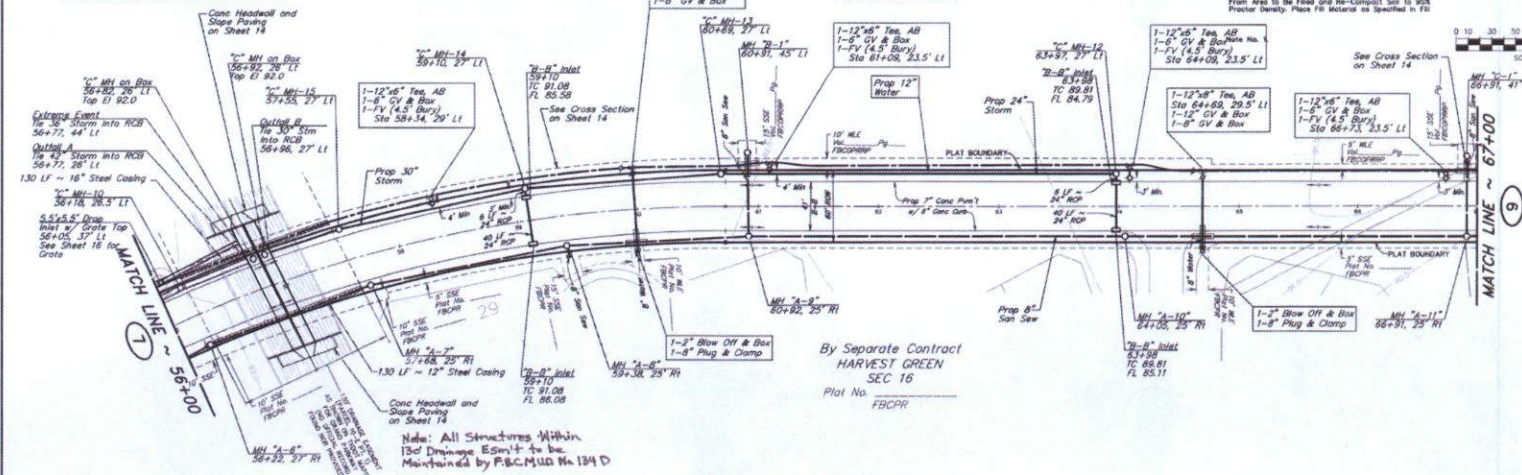
**DATE:** JANUARY 2017  
**SCALE:** 1"=50' H, 1"=5' V

**SHEET 7 OF 26**

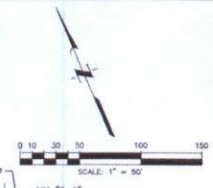


**WATER LINE-SANITARY SEWER CROSSING**  
 PLACE ONE FULL 18" SECTION EACH OF RESTRAINED JOINT WATERLINE AND SANITARY SEWER PIPE COVERED AT CROSSING. EMBED SANITARY SEWER PIPE WITH CONCRETE STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS ONE FOOT BEYOND THE JOINTS ON EACH END. FOR CROSSINGS WHERE PROPOSED WATERLINE IS UNDER PROPOSED SANITARY SEWER, PROVIDE RESTRAINED JOINT PRESSURE RATES (MIN 150 PSI) SANITARY (SEE SANITARY SEWER CONSTRUCTION NOTES - SHEET 8 - PROTECTION REQUIREMENTS AT WATERLINE - SANITARY SEWER CROSSING), 24" MIN CLEARANCE, NO SEPARATE PAY.

**Curve Data**  
 $\Delta = 87.26^\circ$   
 $R = 1.032$   
 $T = 546.71'$   
 $L = 1563.42'$

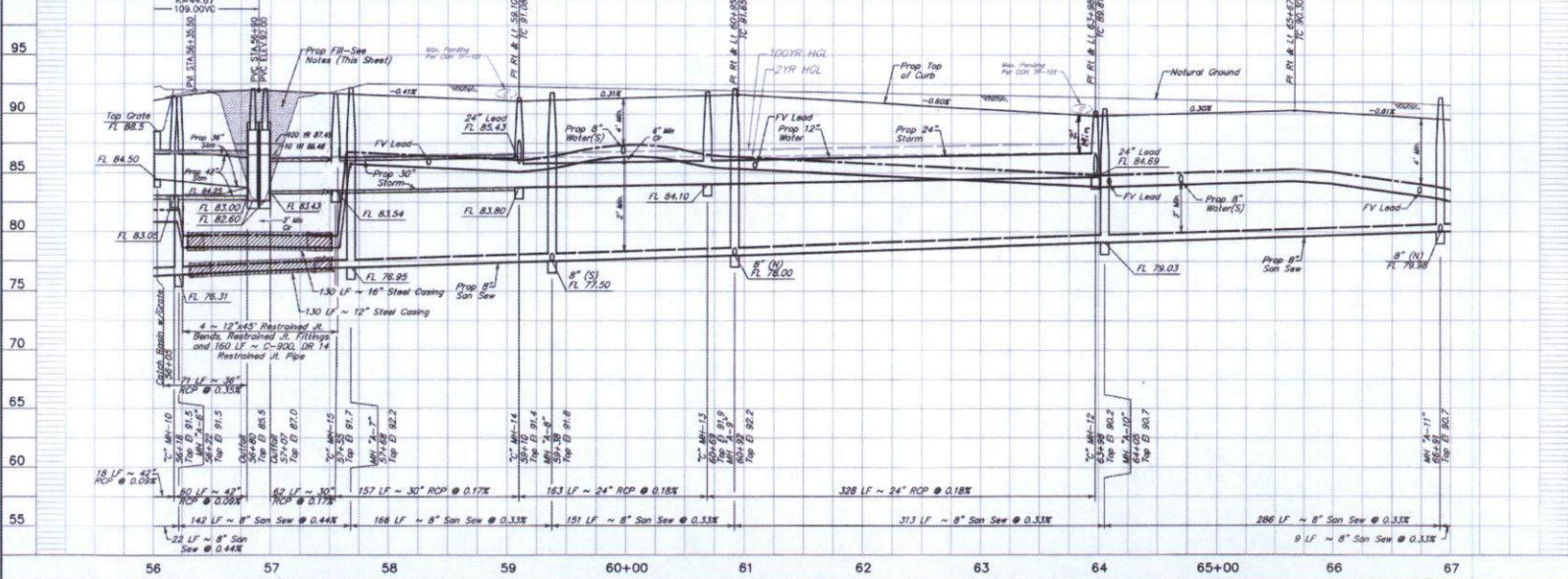


**ALL NOTES**  
 1) DRAINAGE SWALES: All Existing Drainage Swales Shall Be Filled as Shown with Material From Existing Adjacent Road Bed to a Maximum of 1' Loose Lifts and Compacted to 95% Proctor Density as Per AASHTO Test Method T-99.  
 2) DRAINAGE SWALES: All Existing Drainage Swales Under Proposed Concrete Pavement Shall Be Cleared, Mowed and Sealed to a Minimum Depth of 6" and Filled as Specified Above in Fill Note No. 1.  
 3) ROADWAY EMBANKMENT: Strip 3" of Vegetation From Area to Be Filled and Re-Compact 50% to 95% Proctor Density. Place Fill Material as Specified in Fill Note No. 1.



**100-Year Flood Plain**  
 According to Map No. 481570D-405, of The Federal Emergency Management Agency's Flood Insurance Rate Maps dated April 2, 2014, the subject tract is within Unshaded Zone "X".  
 Note: The 100-Year base flood elevation is approximately 83.0 feet as per the FEMA Insurance Rate Map for Fort Bend County, Texas Community Panel No. 481570D-405, Dated April 2, 2014. The 100-Year Flood Plain, elevation 83.0, is outlined in the shaded area of the elevation pond.  
**BENCH MARK**  
 2005 FORT BEND COUNTY LEARN BENCHMARK NO. 25, "TNC" MARK, IN ASPHALT LOCATED 2.5' WEST OF THE FIRST MEDIAN NORTH WEST OF F.M. 358 ON HIGHWAY 90-A, ELEVATION=84.09 HAINES (2005 ADJUSTMENT).  
 NOTE: ALL ELEVATIONS SHOWN WERE DERIVED FROM GPS/RTK OBSERVATIONS AND UTILIZED GEOGODS.

**HARVEST CORNER DRIVE**



NO. DATE	REVISIONS	APP.
FORT BEND COUNTY MUD NO. 134-D FORT BEND COUNTY, TEXAS <b>JONES CARTER</b> Texas Board of Professional Engineers Registration No. 1-108 6300 West Loop South, Suite 100 • Dallas, TX 75241 • 713.777.3997 <b>HARVEST CORNER DRIVE SEC 2</b> <b>HARVEST CORNER DRIVE</b> <b>56+00 TO 67+00</b>		
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES. <b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
DESIGN	DATE: 1-12-17	STOWN WATER ONLY
REVISIONS	1-12-17	PAID
FILE NO.	FOR CITY OF HOUSTON USE ONLY	
DATE: JANUARY 2017	CITY OF HOUSTON	
SCALE: 1"=40' V.		
SHEET NO. 8	OF 26	







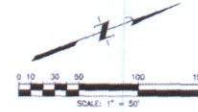
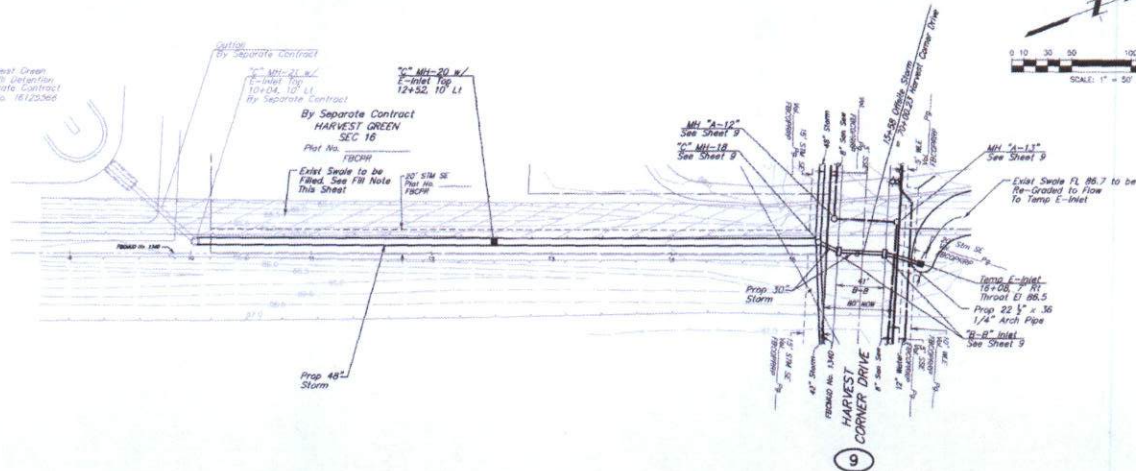




# **FBI NOTES**

- 1) DRAINAGE SWALES: At Existing Drainage Swales, Soil Be Filled to Show with Sidelap From Existing Adjacent Spot Bents in Minimum 8" Loose Lifts and Compacted to 95% Proctor Density as per AGC-10 Test Method 1-95.
- 2) DRAINAGE SWALES: At Existing Drainage Swales Under Proposed Concrete Pavement Shall Be Cleaned, Mowed Out and Filled to a Minimum Depth of 8" and Filled as Specified Above in FBI Note No. 1. No Separate Pkg.
- 3) ROADWAY EMBANKMENT: Strip 3" of Vegetation From Area to Be Filled and Re-Compact Soil to 95% Proctor Density. Place F&E Material as Specified in FBI Note No. 1.

Harvest Green  
Phase II Detention  
By Separate Contract  
CDN 445 No. 1612266



## **100-Year Flood Plain**

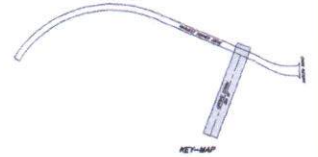
According to Map No. 4815700140L of The Federal Emergency Management Agency's Flood Insurance Rate Map dated April 5, 2014, the subject tract is within Unshaded Zone "X".

Note: The 100-Year base flood elevation is approximately 83.0 feet as per the FEMA Insurance Rate Map for Fort Bend County, Texas Community Panel No. 4815700140L, dated April 5, 2014. The 100-Year Flood Plain, elevation 83.0, is contained in the general north of the detention pond.

## **BENCH MARK**

2005 FORT BEND COUNTY LEAD BENCHMARK NO. 25, "PVC" NAIL IN ASPHALT LOCATED 2.5' WEST OF THE FIRST MEDIAN RISE WEST OF T.J. 308 ON HIGHWAY 80-A, ELEVATION=84.08 (2001 ADJUSTMENT)

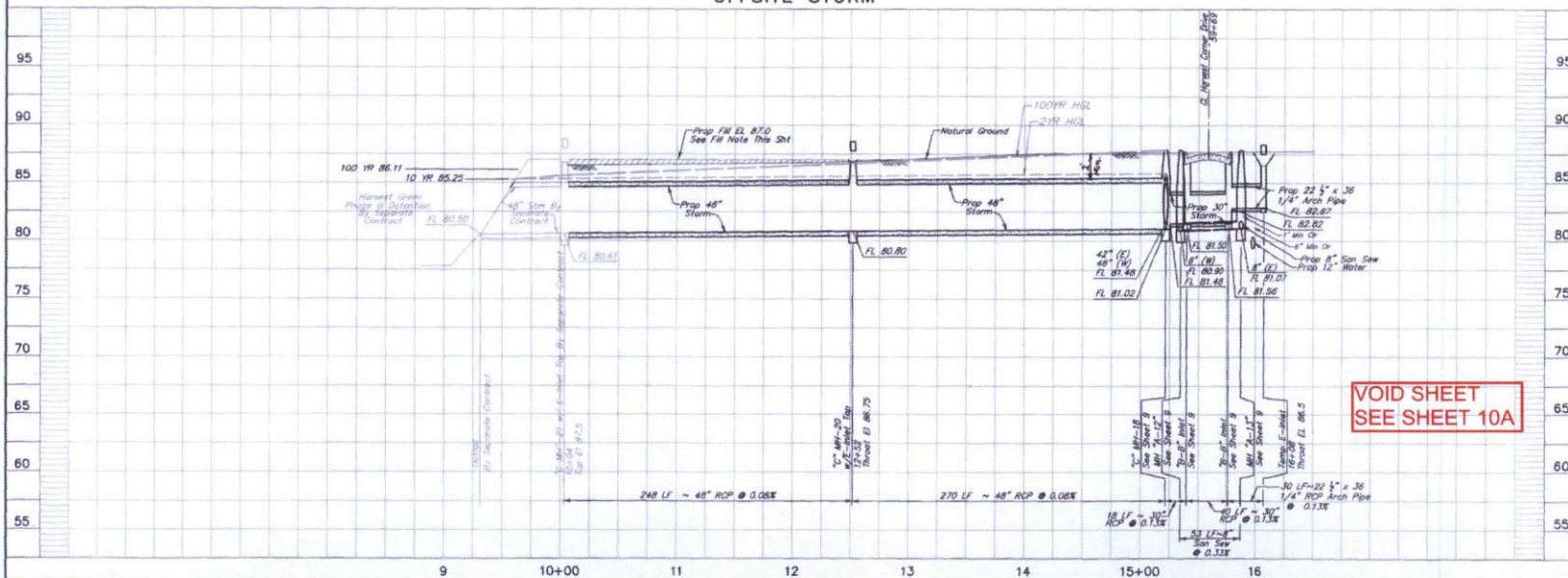
NOTE: ALL ELEVATIONS SHOWN WERE DERIVED FROM GPS/RTK OBSERVATIONS AND UTILIZED GCG003.



APPROVED: *Manfred*  
DEVELOPMENT COORDINATOR

DATE: 2/10/17

## **OFFSITE STORM**





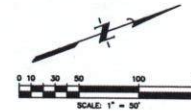
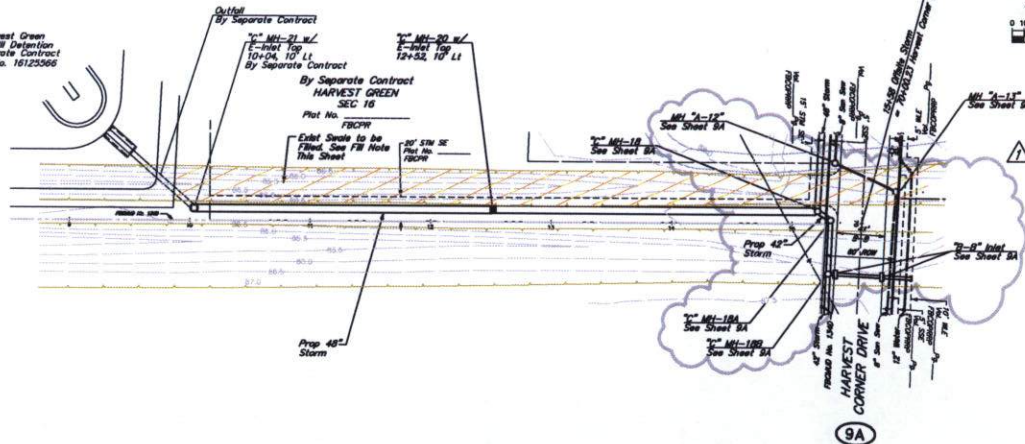
# **FILE NOTES**

1.) DRAINAGE SWALES: All Existing Drainage Swales shall be Filled or Shown with Material From Existing Adjacent Road Slopes to Minimum 4" Loose Luffs and Compacted to 90% Proctor Density as Per AASHTO Test Method T-99.

2.) DRAINAGE SWALES: All Existing Drainage Swales Under Proposed Concrete Pavement Shall be Grouted, Hauled Out and Sealed to a Minimum Depth of 6" and Filled as Specified Above in FB Note No. 1. No Separate Pay.

3.) ROADWAY IMPROVEMENT: Strip 2" of Vegetation From Area to be Filled and Re-Compacted Silt to 90% Proctor Density. Place FB Material as Specified in FB Note No. 1.

Harvest Green  
Phase II Detention  
By Separate Contract  
COH LMS No. 16123566



**100-Year Flood Plain**  
According to Map No. 48170D140, of The Federal Emergency Management Agency's Flood Insurance Rate Maps dated April 5, 2014, the subject tract is within Undeveloped Zone "X".

Note: The 100-Year base flood elevation is approximately 83.0 feet on per the FEMA Insurance Rate Map for Fort Bend County, Texas Community Panel No. 48170D140, dated April 5, 2014. The 100-Year Flood Plain elevation 83.0 is contained in the shaded north of the detention pond.

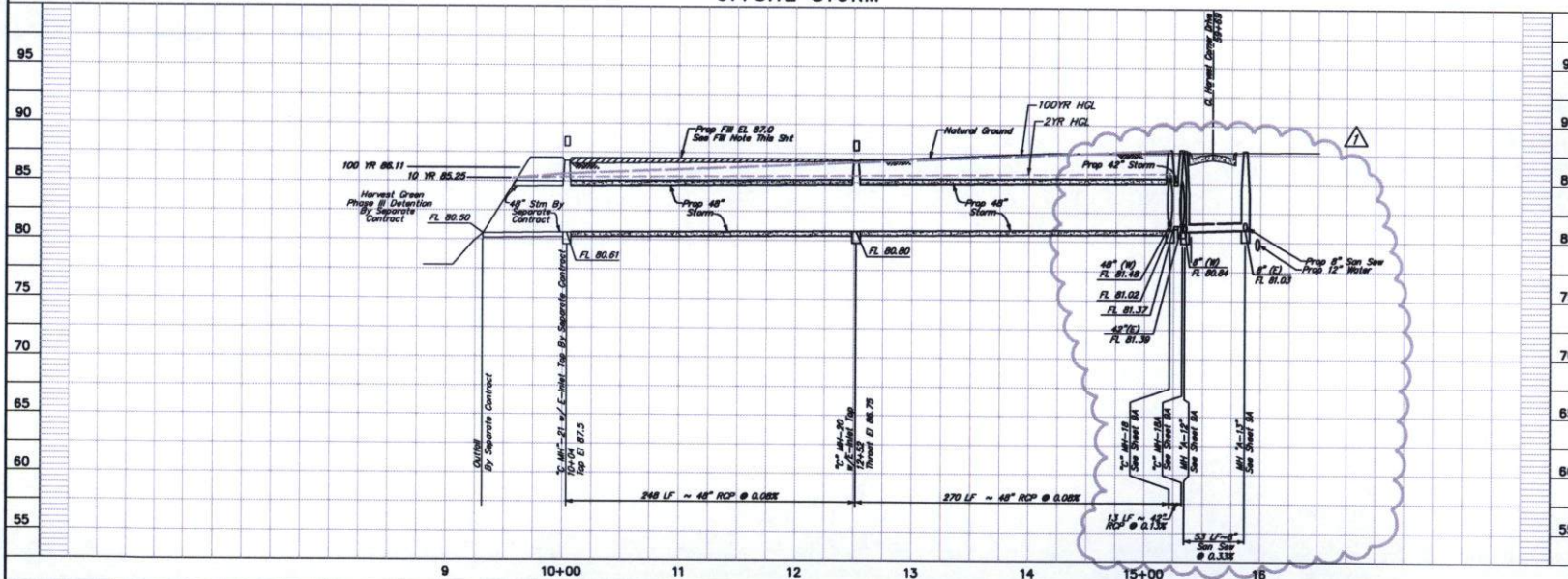
**BENCH MARK**  
2004 FORT BEND COUNTY LIDAR BENCHMARK NO. 25, 1/4\"/>



APPROVED: \_\_\_\_\_  
DEVELOPMENT COORDINATOR

DATE: \_\_\_\_\_

## **OFFSITE STORM**



2-17 Revised, Silt, Sand and Clay		DCU
NO. DATE REVISIONS APP.		
FORT BEND COUNTY MUD No. 134-D FORT BEND COUNTY, TEXAS		
<b>JONES &amp; CARTER</b> Texas Board of Professional Engineers Registration No. 1-439 6330 West Loop South, Suite 150 • Houston, TX 77057 • 713.771.1517		
HARVEST CORNER DRIVE SEC 2		
<b>OFFSITE STORM</b> 9+00 TO 16+00		
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY OF THE DATE OF SIGNATURES		
<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
DESIGNED	DRAWN & CHECKED	
INCHES	STRAIN WIRE GAUGE	
FOOT	INCHES	
FILE NO.	FOR CITY OF HOUSTON USE ONLY	
JOB NO. 08049-0033-01	CITY ENG. NO.	
DATE: FEBRUARY 2017		
SIGN BY: J.C.J.		
SCALE: 1\"/>		
SHEET NO. 10A OF 26		

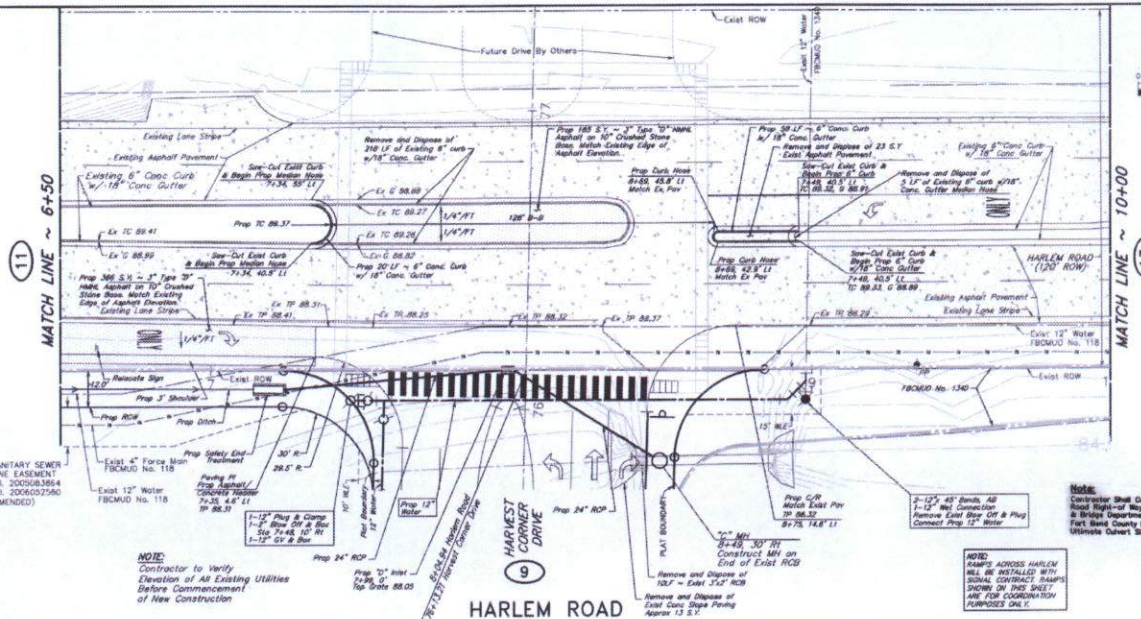






# **FILE NOTES**

1. DRAINAGE SWALES: All Existing Drainage Swales Shall Be Filled as Shown with Material From Existing Adjacent Spoil Banks in Maximum 8" Loose Lifts and Compacted to 95% Proctor Density as Per ASTM Test Method T-99.
2. DRAINAGE SWALES: All Existing Drainage Swales Under Proposed Concrete Pavement Shall Be Cleared, Matted Out and Filled to a Minimum Depth of 8" and Filled as Specified Above in File Note No. 1. No Superiority.
3. ROADWAY ENHANCEMENT: Strip 3" of Vegetation From Area to Be Filled and Re-Compacted to 95% Proctor Density. Place File Material as Specified in File Note No. 1.



CALL 12" SANITARY SEWER & WATERLINE EASEMENT  
F.B.C.M.U. NO. 200608364  
F.B.C.M.U. NO. 200602580  
(AS AMENDED)

**NOTE:**  
Contractor to Verify  
Location of All Existing Utilities  
Before Commencement  
of New Construction

**NOTE:**  
Contractor Shall Coordinate All Work Within the Harlem  
Road Right-of-Way with the Fort Bend County Road  
& Bridge Department, (281) 541-2562. Coordinate with  
Fort Bend County Road & Bridge Department for  
Ultimate Cut-off Size.

## **Notes:**

Contractor Shall Coordinate All Work Within the Harlem  
Road Right-of-Way with the Fort Bend County Road  
& Bridge Department, (281) 541-2562. Coordinate with  
Fort Bend County Road & Bridge Department for  
Ultimate Cut-off Size.

## **100-Year Flood Plain**

According to Map No. 485702448, of The Federal  
Emergency Management Agency's Flood Insurance Rate  
Maps dated April 2, 2014, the subject tract is within  
Unshaded Zone "X".

**Note:** The 100-Year base flood elevation is approximately  
83.0 feet as per the FEMA Insurance Rate Map for Fort  
Bend County, Texas Community Panel No. 485702448,  
dated April 2, 2014. The 100-Year Flood Plain, elevation  
83.0, is contained in the shaded north of the detention  
pond.

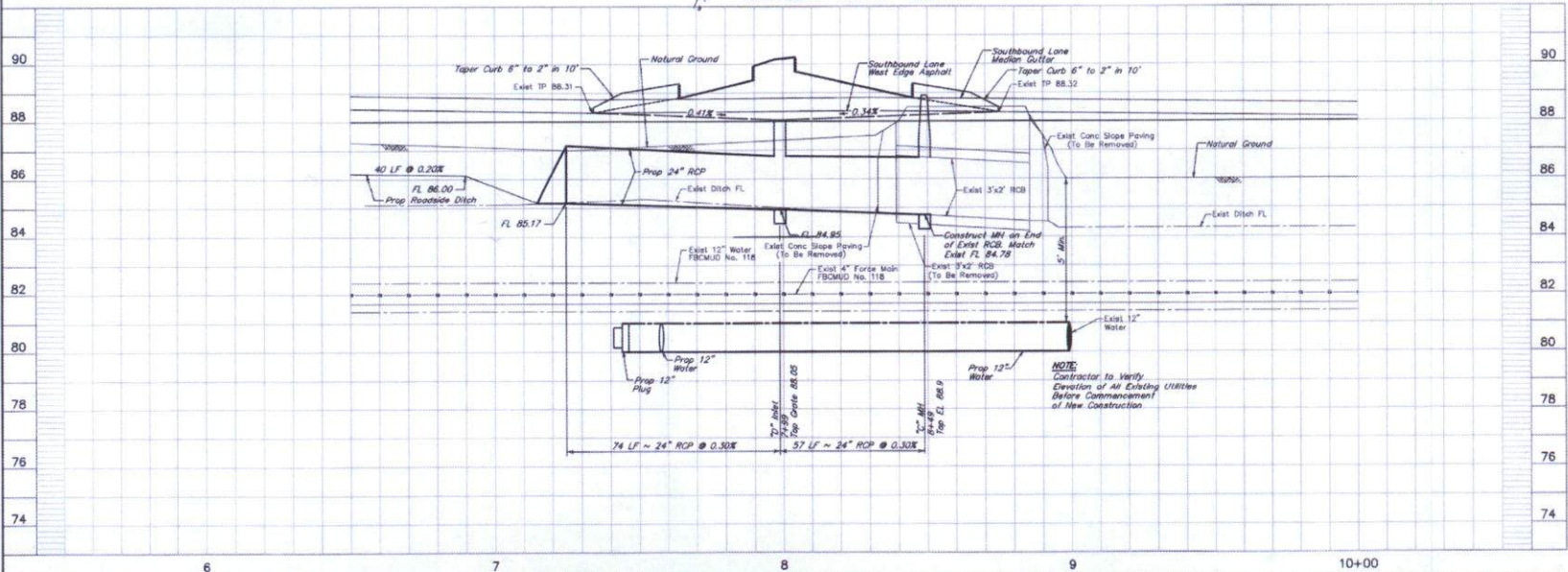
## **BENCH MARK**

2005 FORT BEND COUNTY LEAS BENCHMARK NO. 25,  
"PK" NAIL IN ASPHALT LOCATED 2.5' WEST OF THE  
FIRST MEDIAN NOSE WEST OF I-45, 358 ON HIGHWAY  
90-A, ELEVATION=84.08 NAVD83 (2001 ADJUSTMENT)  
**NOTE:** ALL ELEVATIONS SHOWN HERE DERIVED FROM  
GPS/RTK SURVEYING AND UNADJUSTED SECOND.



APPROVED: *[Signature]*  
DEVELOPMENT COORDINATOR

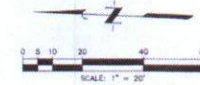
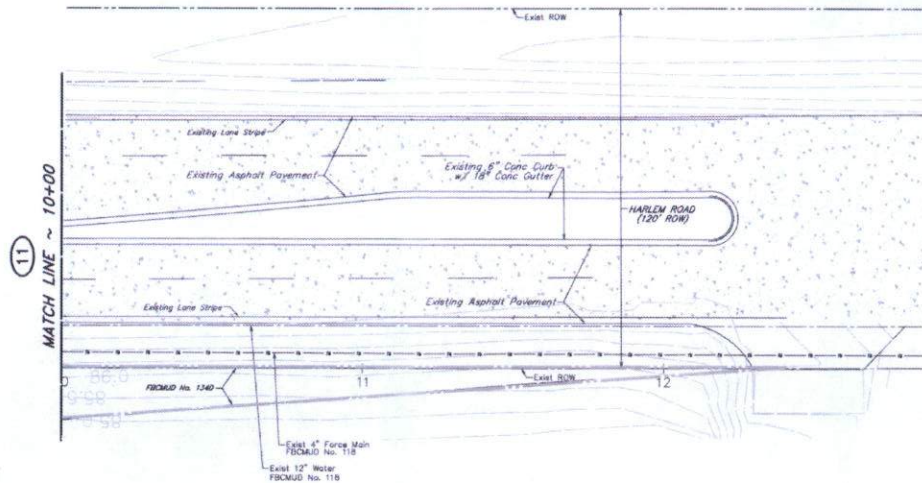
DATE: 2/10/17



**NOTE:**  
Contractor to Verify  
Elevation of All Existing Utilities  
Before Commencement  
of New Construction

NO.	DATE	REVISIONS	APP.
1			
FORT BEND COUNTY MUD NO. 134-D FORT BEND COUNTY, TEXAS			
<b>JONES CARTER</b> Texas Board of Professional Engineers Registration No. 1-429 1400 West Loop South, Suite 100, Houston, TX 77057-1701, TX 77057			
HARVEST CORNER DRIVE SEC 2			
HARLEM ROAD 6+50 TO 10+00			
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURE			
<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING			
DESIGN	DATE & TIME/PHONE		
 1-12-17 11/11/2017	STAMP WITH SHEET		
 11/11/2017	FOILES		
FILE NO.	FOR CITY OF HOUSTON USE ONLY		
JOB NO. 2016-0332-01	CITY ENG. NO.		
DATE: JANUARY 2017			
DESIGN: JWC			
DWG. BY: JWC			
SCALE: 1"=20' H. 1"=40' V.			
SHEET NO. 12 OF 26			





**100-Year Flood Plain**  
According to Map No. 485702044L of the Federal Emergency Management Agency's Flood Insurance Rate Maps dated April 2, 2014, the subject tract is within Unshaded Zone "X".

Note: The 100-Year base flood elevation is approximately 83.0 feet as per the FEMA Insurance Rate Map for Fort Bend County, Texas Community Flood No. 485702044L, dated April 2, 2014. The 100-Year Flood Plain, elevation 83.0, is contained in the channel north of the station point.

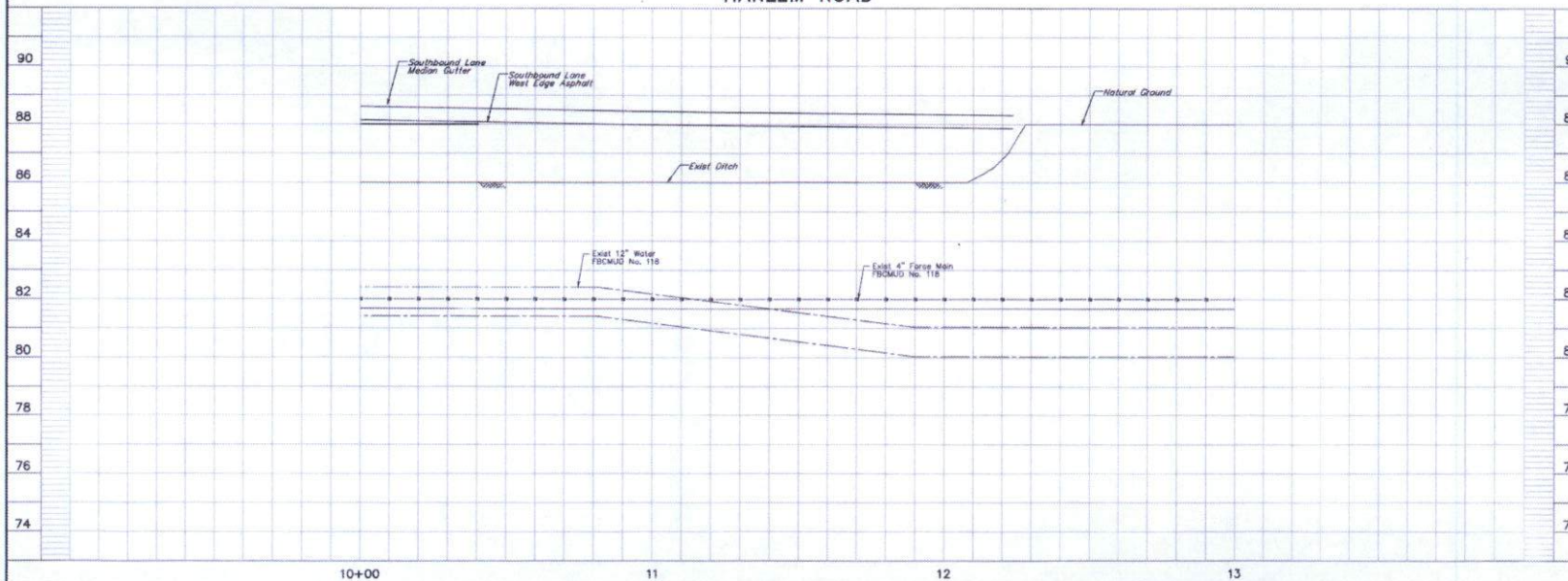
**BENCH MARK**  
2009 FORT BEND COUNTY LEARN BENCHMARK NO. 25, 7"X1" NAIL IN ASPHALT LOCATED 2.0' WEST OF THE FIRST MEDIAN ROSE WEST OF F.A. 300 ON HIGHWAY 90-A. ELEVATION=84.08 NAVD83 (2001 ADJUSTMENT)  
NOTE: ALL ELEVATIONS SHOWN WERE DERIVED FROM GPS/RTK OBSERVATIONS AND UTILIZED GEODOS.



APPROVED: *Max Deet*  
DEVELOPMENT COORDINATOR

DATE: 2/10/17

## HARLEM ROAD



NO.	DATE	REVISIONS	APP.

FORT BEND COUNTY MUD No. 134-D  
FORT BEND COUNTY, TEXAS

**J/C JONES CARTER**  
Texas Board of Professional Engineers Registration No. T-429  
4300 West Loop South, Suite 100 Houston, TX 77061-7111 (713) 771-2207

HARVEST CORNER DRIVE SEC 2

**HARLEM ROAD**  
10+00 TO 13+00

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

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DESIGNER <i>Max Deet</i>	DATE 1-12-17	STATION 10+00 TO 13+00
CHECKER <i>Max Deet</i>	DATE 1-12-17	STATION 10+00 TO 13+00
DESIGNER <i>Max Deet</i>	DATE 1-12-17	STATION 10+00 TO 13+00

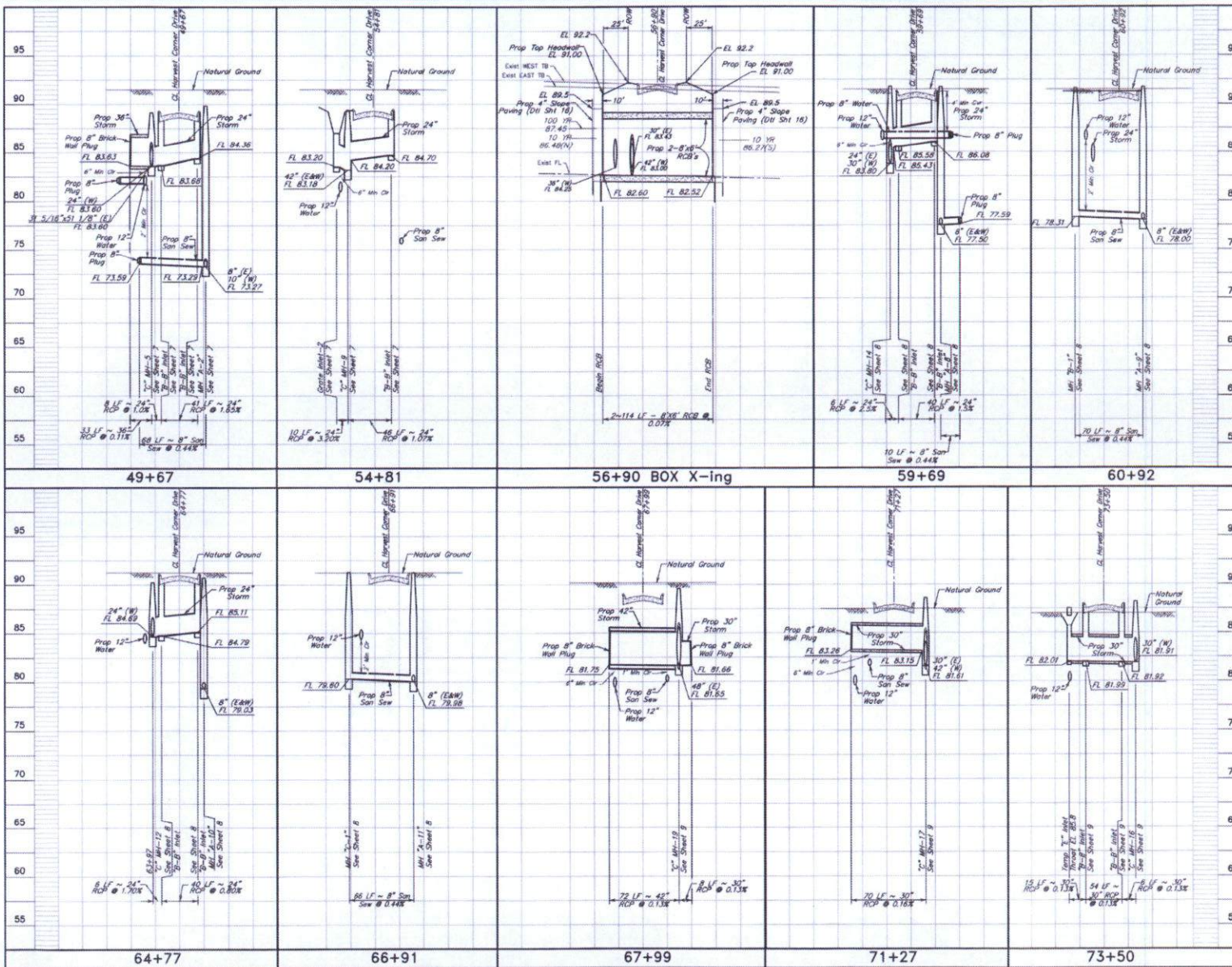
FILE NO.  
JOB NO. 05040-0000-01

DATE: JANUARY 2017  
OUR OFFICE: J.M.  
SCALE: 1"=20' H.  
1"=40' V.

FOR CITY OF HOUSTON USE ONLY  
CITY ENG. NO.  
**57887**

SHEET NO. 13 OF 28





VOID SHEET  
SEE SHEET 14A



APPROVED: *Max D...*  
DEVELOPMENT COORDINATOR

DATE: 2/10/17

NO.	DATE	REVISIONS	APP.

FORT BEND COUNTY MUD No. 134-D  
FORT BEND COUNTY, TEXAS

**JONES CARTER**  
Texas Board of Professional Engineers Registration No. 1-438  
6300 West Loop South, Suite 100, Houston, TX 77057-1333  
HARVEST CORNER DRIVE SEC 2

CROSS SECTIONS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY  
AS PER DATE OF SIGNATURES

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 2/10/17

FOR CITY OF HOUSTON USE ONLY

DATE: 2/10/17

SCALE: 1"=10' H.

SCALE: 1"=10' V.

SCALE: 1"=10' H.

SCALE: 1"=10' V.

SCALE: 1"=10' H.

SCALE: 1"=10' V.

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SCALE: 1"=10' H.

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SCALE: 1"=10' H.

SCALE: 1"=10' V.

SCALE: 1"=10' H.

SCALE: 1"=10' V.

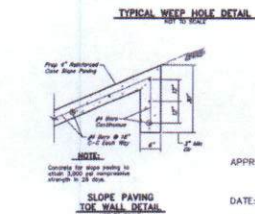
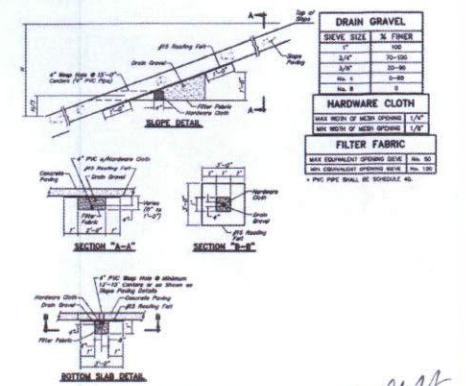
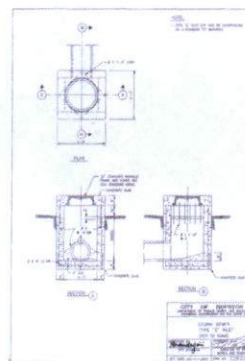
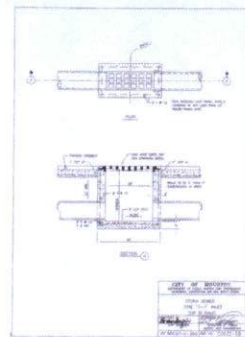
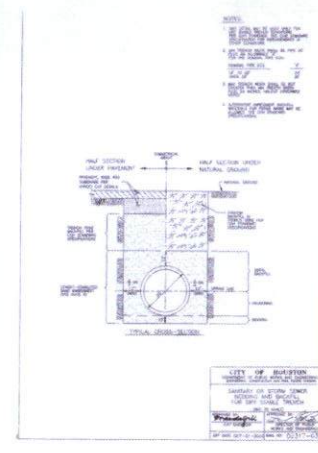
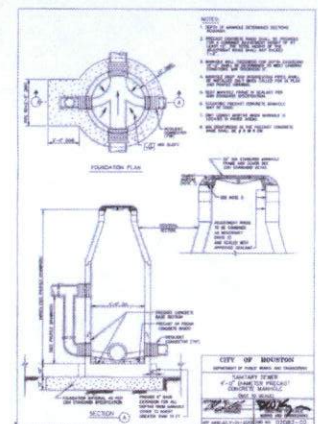
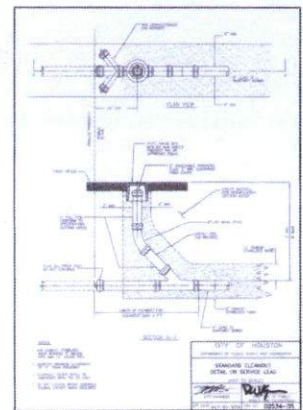
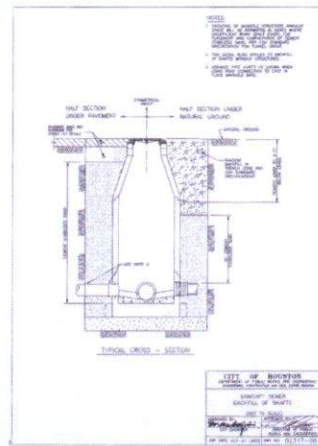
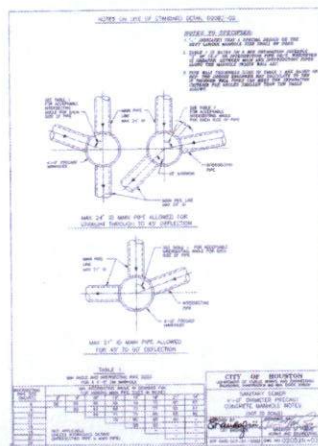
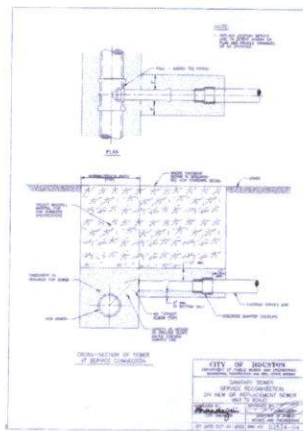




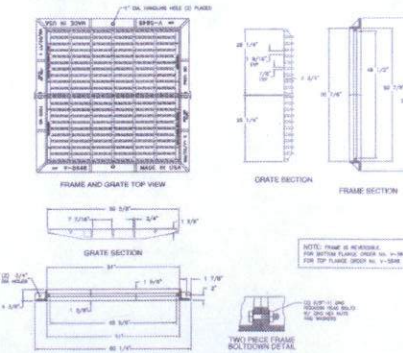








V5648 Assembly



Product Number  
V5648  
Drawing Number  
V5648-01  
Revision  
1  
Date  
11/11/2017  
Drawing Location  
V5648-01  
Drawing Date  
11/11/2017  
Drawing By  
J. Jones  
Drawing Check  
J. Jones  
Drawing Date  
11/11/2017  
Drawing By  
J. Jones



APPROVED: *Christopher C. Jones*  
DEVELOPMENT COORDINATOR  
DATE: 2/10/17

NO.	DATE	REVISIONS	APP.

FORT BEND COUNTY MUD No. 134-D  
FORT BEND COUNTY, TEXAS

J.C. JONES CARTER  
Texas Board of Professional Engineers Registration No. F-428  
4300 West Loop South, Suite 200 • Houston, TX 77063 • 713.777.8807

HARVEST CORNER DRIVE SEC 2

MISCELLANEOUS DETAILS II

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

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER  
SEWER  
STORM  
SLOPE

DATE: 1/11/17  
BY: *Christopher C. Jones*  
FOR CITY OF HOUSTON USE ONLY  
CITY OF HOUSTON

DATE: JANUARY 2017  
DWN BY: JMA  
ENG BY: JMA  
SCALE: N.T.S.

SHEET No. 16 OF 28

37883







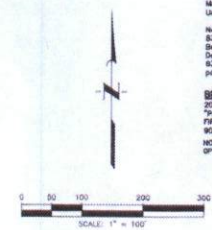




**100-Year Flood Plots**  
 According to Map No. 485702/40, of The Federal Emergency Management Agency's Flood Insurance Rate Maps dated April 2, 2014, the subject tract is within Unshaded Zone "X".

Note: The 100-Year base flood elevation is approximately 83.0 feet as per the FEMA Insurance Rate Map for Fort Bend County, Texas Community Panel No. 4815702/40, dated April 2, 2014. The 100-Year Flood Plots, elevation 83.0, is contained in the channel north of the station road.

**BENCH MARK**  
 2000 FORT BEND COUNTY LIDAR BENCHMARK NO. 25, 7"X" NAIL IN ASPHALT LOCATED 2.5' WEST OF THE FIRST MEDIAN NOSE WEST OF I.A. 358 ON HIGHWAY 90-A. ELEVATION=84.09 NAVD83 (2001 ADJUSTMENT)  
 NOTE: ALL ELEVATIONS SHOWN WERE DERIVED FROM GPS/RTK OBSERVATIONS AND UTILIZED GEOID03.



**LEGEND**

- |          |          |   |
|----------|----------|---|
| EXISTING | PROPOSED |   |
| ---      | ---      | GROUND CONTOUR  |
| ---      | ---      | PROPOSED TOP OF CURB  |
| ---      | ---      | FINISH ELEVATIONS   |
|          |          | SLOPE OF FINISHED GRADE   |
|          |          | APPROXIMATE LIMITS OF CUT<br>(SEE LOT GRADING NOTES FOR<br>PLACEMENT AND COMPACTION)  |
|          |          | APPROXIMATE LIMITS OF FILL<br>(SEE LOT GRADING NOTES FOR<br>PLACEMENT AND COMPACTION) |

APPROVED: *[Signature]*  
 DEVELOPMENT COORDINATOR

DATE: 2/10/17

NO.	DATE	REVISIONS	APP.

FORT BEND COUNTY MUD NO. 134-D  
 FORT BEND COUNTY, TEXAS

**J.C. JONES CARTER**  
 Texas Board of Professional Engineers Registration No. P-439  
 1510 West Loop South, Suite 100 - Houston, TX 77061-1702 7707 5291

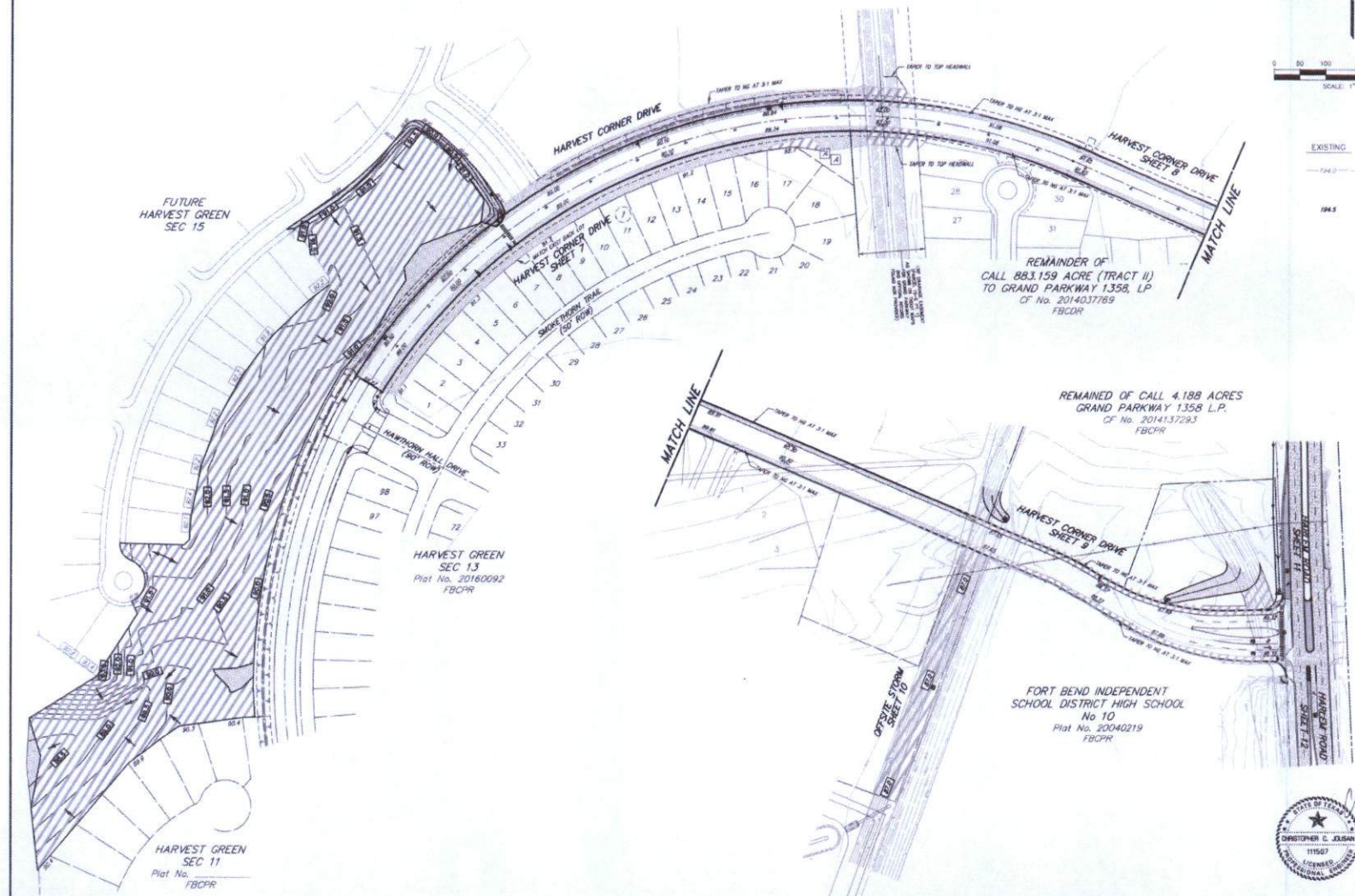
HARVEST CORNER DRIVE SEC 2  
**GRADING PLAN**

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

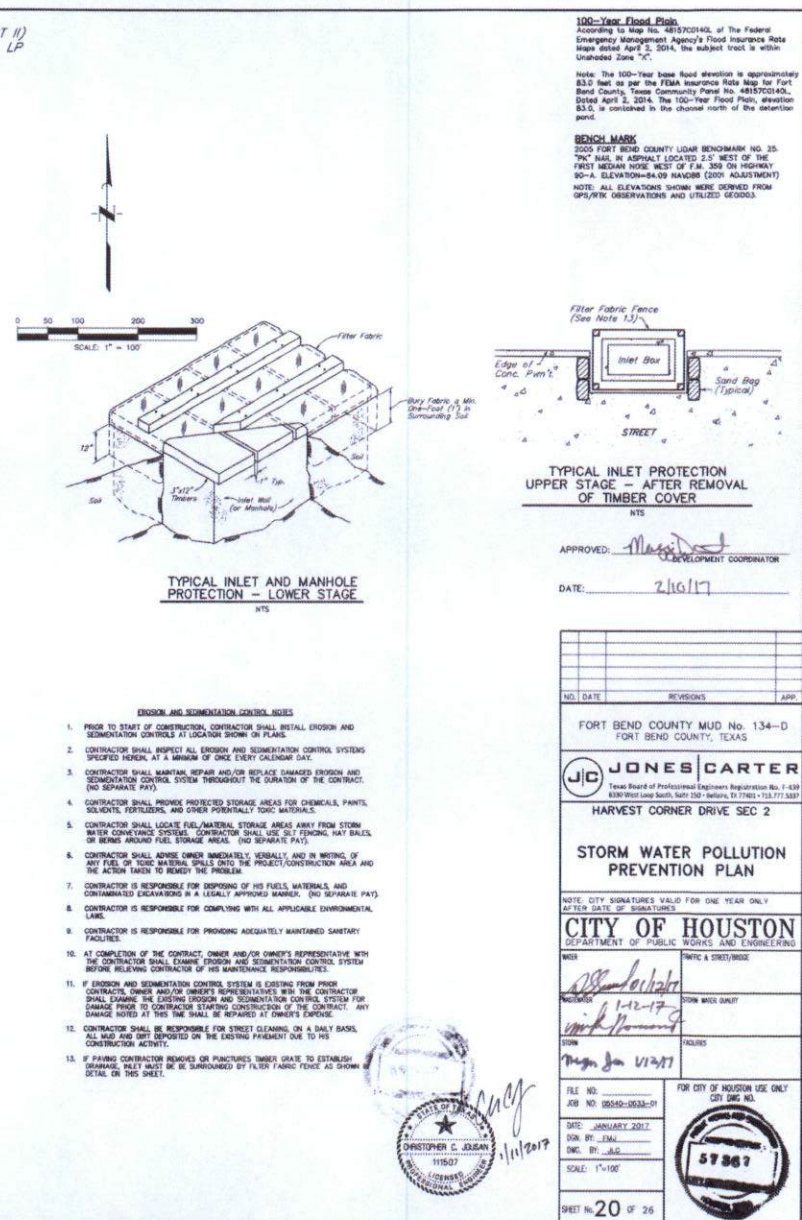
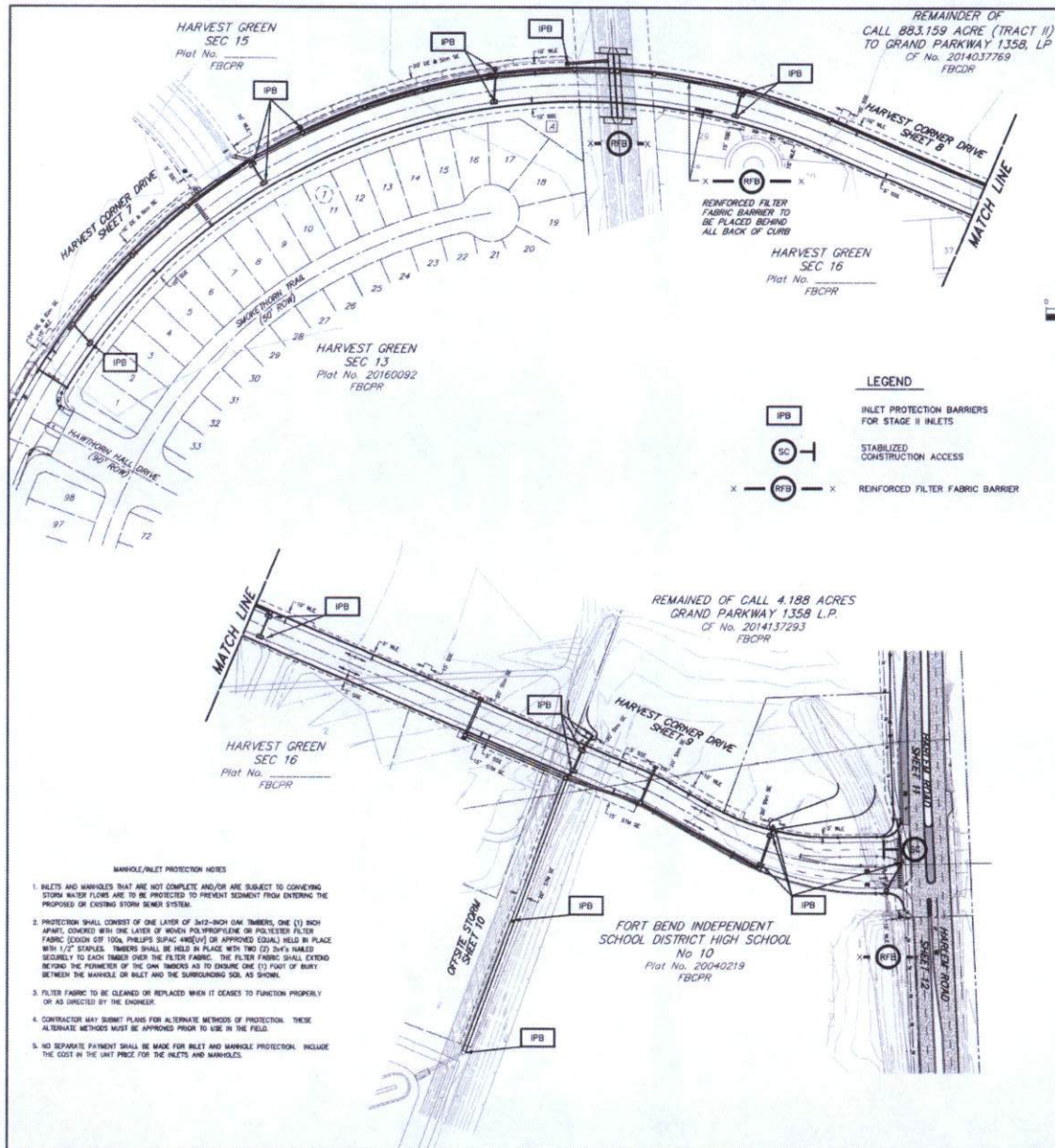
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 2/10/17	DATE & SHEET/NO.
1-12-17	DATE WITH DATE
1-12-17	DATE
1-12-17	DATE

FILE NO.: 09042-0032-01	FOR CITY OF HOUSTON USE ONLY
DATE: JANUARY 2017	CITY USE ONLY
DRAWN BY: J.M.	
CHECKED BY: J.M.	
SCALE: 1"=100'	
SHEET No. 19 OF 28	



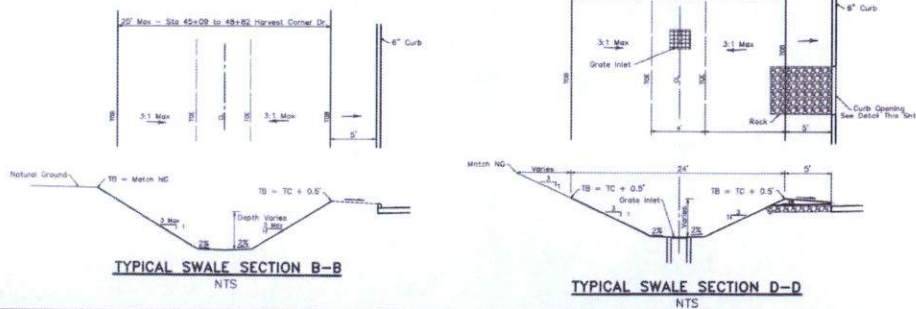
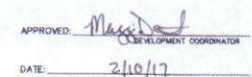
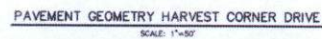














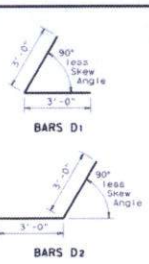
NO. DATE	REVISIONS	APP.
FORT BEND COUNTY MUD NO. 134-D FORT BEND COUNTY, TEXAS		
 <b>JONES &amp; CARTER</b> Texas Division of Professional Engineers Registration No. 1-419 8370 White Loop South, Suite 302 • Dallas, TX 75243 • 713.773.1337		
<b>HARVEST CORNER DRIVE SEC 2</b>		
<b>HARVEST CORNER DRIVE PAVEMENT GEOMETRY</b>		
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AT THE DATE OF SIGNATURES		
<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
NAME <i>Jeffery D. Hester</i>	TITLE & STREET/ROUTE DISTRICT MANAGER	
SIGNATURE <i>Jeffery D. Hester</i>	DATE 1-12-17	
NAME <i>Michael J. Jones</i>	TITLE & STREET/ROUTE DISTRICT MANAGER	
SIGNATURE <i>Michael J. Jones</i>	DATE 1-12-17	
FILE NO. NO. 155452-0033-P	FOR THE CITY OF HOUSTON USE ONLY CITY DESIGN NO.	
DATE: JANUARY 2017 FOR BY: J.M. D.W.C. BY: J.G.		
SCALE: 1"=100'	SHEET NO. 22 OF 26	



TABLE OF DIMENSIONS & REINFORCING STEEL (Wings for One Structure End)									
Dimensions				Vertical Reinforcing		Estimated Quantities per Wing (11' Wing)			
Maximum Wing Height Hw	N	X	Y	Z	Bars J1 No. Spacing	Bars J2 No. Spacing	Reinf. (Lb/Ft)	Conc. (CY/Ft)	Reinf. (Lb/Ft)
1'-6"	2'-10"	10'-1"	0'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	48.64	0.406	6.95
2'-0"	2'-10"	10'-1"	0'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	49.31	0.424	6.95
2'-6"	2'-10"	10'-1"	0'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	49.98	0.444	6.95
3'-0"	2'-10"	10'-1"	0'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	53.32	0.462	6.95
3'-6"	2'-10"	10'-1"	0'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	53.98	0.480	6.95
4'-0"	3'-2"	1'-2"	1'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	55.77	0.532	6.95
4'-6"	3'-2"	1'-2"	1'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	59.77	0.568	6.95
5'-0"	3'-2"	1'-2"	1'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	63.45	0.632	6.96
5'-6"	3'-2"	1'-2"	1'-0"	0'-0"	7 #4 1'-0"	4 #1'-0"	67.46	0.668	6.96
6'-0"	4'-4"	2'-0"	1'-0"	4'-0"	7 #5 1'-0"	4 #1'-0"	80.67	0.730	7.07
6'-6"	4'-4"	2'-0"	1'-0"	4'-0"	7 #5 1'-0"	4 #1'-0"	85.05	0.768	7.07
7'-0"	5'-0"	2'-0"	1'-0"	4'-0"	8 #5 1'-0"	4 #1'-0"	92.15	0.864	8.07
7'-6"	5'-0"	2'-0"	1'-0"	4'-0"	8 #5 1'-0"	4 #1'-0"	96.54	0.902	8.07
8'-0"	5'-6"	2'-0"	1'-0"	4'-0"	8 #5 1'-0"	4 #1'-0"	139.04	0.962	8.13
8'-6"	5'-6"	2'-0"	1'-0"	4'-0"	8 #5 1'-0"	4 #1'-0"	144.47	1.009	8.13
9'-0"	6'-0"	2'-0"	1'-0"	4'-0"	9 #5 1'-0"	4 #1'-0"	156.93	1.136	8.41
10'-0"	6'-6"	2'-0"	1'-0"	4'-0"	9 #6 1'-0"	4 #1'-0"	196.27	1.234	8.57
11'-0"	7'-2"	3'-0"	1'-0"	4'-0"	11 #6 1'-0"	4 #1'-0"	230.13	1.438	9.52
11'-6"	7'-8"	3'-0"	1'-0"	4'-0"	11 #6 1'-0"	4 #1'-0"	263.41	1.592	9.74
12'-0"	8'-0"	3'-0"	1'-0"	4'-0"	11 #6 1'-0"	4 #1'-0"	328.72	1.804	10.52
14'-0"	8'-10"	4'-0"	1'-0"	4'-0"	13 #6 1'-0"	4 #1'-0"	432.94	2.046	10.30
15'-0"	9'-6"	4'-0"	1'-0"	4'-0"	15 #7 1'-0"	4 #1'-0"	489.52	2.302	11.24
16'-0"	9'-11"	5'-0"	1'-0"	4'-0"	16 #7 1'-0"	4 #1'-0"	505.72	2.448	11.47

TABLE OF WINGWALL REINFORCING (2-Wings)			
Bar Size	No.	Spa.	
D #6	~ 1'-0"		
E #4	~ 1'-0"		
F #4	~ 1'-0"		
G #6	~ 8'		
M #4	4		
P #4	~ 1'-0"		
V #4	~ 1'-0"		

TABLE OF TOEWALL REINFORCING			
Bar Size	No.	Spa.	
J1 #4	2		
E2 #4	~ 1'-0"		



**WING DIMENSION CALCULATIONS:**  
Formulas: (All values are in feet)

$Hw = H + T + C$   
 $Lw = (Hw) \cos \theta$  for Ty PW-1  
 $= (Hw) \cos \theta$  for Ty PW-2 and  $Hw \geq 4'$   
 $= (Hw - 0.5') \cos \theta$  for Ty PW-2 and  $Hw < 4'$

For Cast-in-place culverts:  
 $Ltw = (N) (S) + (N + 1) (U) \div \cos \theta$

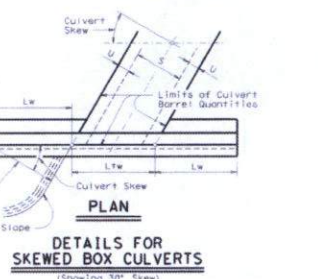
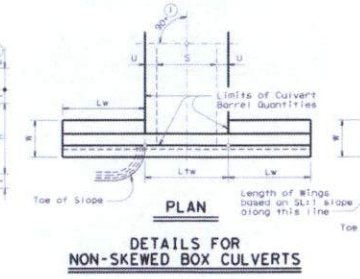
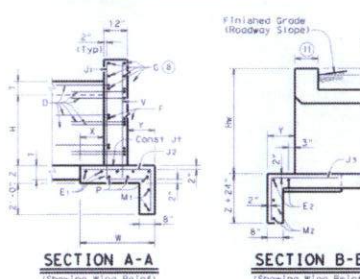
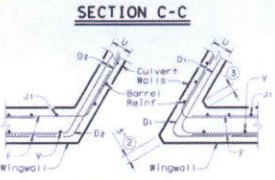
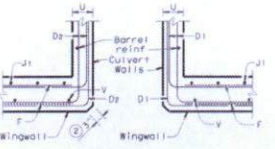
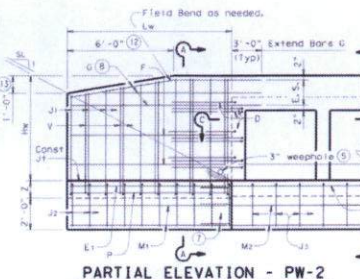
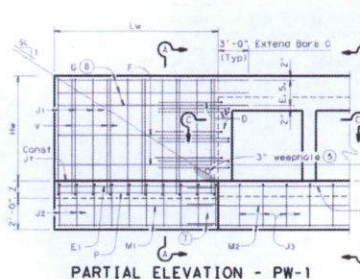
For Precast culverts:  
 $Ltw = (N) (S) + (N + 1) (U) \div \cos \theta$

Total Wingwall Area (Two Wings - SF)  
 $= (2) (Lw) \div \cos \theta$  for Ty PW-1  
 $= (2) (Lw) \div \cos \theta$  for Ty PW-2 and  $Hw \geq 4'$   
 $= (2) (Lw) \div \cos \theta$  for Ty PW-2 and  $Hw < 4'$

$Hw$  = Height of Wingwall  
 $Lw$  = Length of Wingwall  
 $Ltw$  = Culvert Topwall Length  
 $N$  = Number of Culvert Spans  
 $S$  = Channel Slope ratio, Horizontal : Vertical  
 $U$  = Culvert Skew  
 $\theta$  = Culvert Skew

See applicable box culvert standard for S, H, T and U values.

- Skew Angle = 0°
- At discharge end, chamfer may be 1/2".
- For 15° Skew = 1"  
For 30° Skew = 2"  
For 45° Skew = 3"
- Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by 1.4.
- Provide weepholes for  $Hw = 5'-0"$  and greater. Fill ground weepholes with coarse gravel.
- Extend Bars E2 1'-6" minimum into the wingwall footing.
- Lap Bars M 1'-6" minimum with Bars M.
- Bars G equally spaced at 8" maximum, place as shown. Provide at least two pair Bars G per wing.
- 0' min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian roll, bicycle roll or curb taller than 1'-0", refer to ECD standards. For structures with 16 bridge rail, refer to 16-0M standard. For structures with traffic rail, other than 16, refer to RAC standard.
- For vehicle safety, the following requirements must be met:  
 - For structures without bridge rail, curbs cannot project more than 3" above finished grade.  
 - For structures with bridge rail, build curbs flush with finished grade.  
 Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 1'-0" typical, 2'-0" typical when RAC standard is referenced elsewhere in the plans.
- 3'-0" for  $Hw < 4'$ .
- 6" for  $Hw \geq 4'$ .



**GENERAL NOTES:**  
 Designed in accordance with AASHTO LRFD Bridge Design Specifications.  
 Provide Class II Concrete (f'c = 3,600 psi Min) and Grade 60 reinforcing steel.  
 Provide 1 1/4" Min clear cover to reinforcing steel. Depth of footings for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.  
 See ECD sheet for wingwall type and additional dimensions and information.  
 The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

**DESIGNER NOTES:**  
 Type PW-1 can be used for all applications and must be used if rolling is to be mounted to the wingwall.  
 Type PW-2 can only be used for applications without a rolling mounted to the wingwall.

Texas Department of Transportation			
Bridge Division Standard			
CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS TYPES PW-1 AND PW-2			
PW			
Rev	Revised By	Rev	Revised By
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APPROVED: *Christopher C. Jordan*  
 DEVELOPMENT COORDINATOR

DATE: 2/10/17

NO.	DATE	REVISIONS	APP.

FORT BEND COUNTY MUD NO. 134-D  
 FORT BEND COUNTY, TEXAS

**JONES CARTER**  
 Texas Board of Professional Engineers Registration No. 1-439  
 10000 West Loop South, Suite 200, Houston, TX 77063-7133  
 HARVEST CORNER DRIVE SEC 2

**HEADWALL DETAIL**

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

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

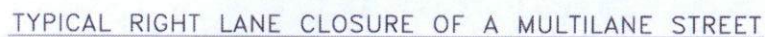
DATE: 2/10/17  
 DRAWN: *W. J. Jones*  
 CHECKED: *W. J. Jones*  
 IN CHARGE: *W. J. Jones*

FILE NO.: *2014-000000-01*  
 JOB NO.: *2014-000000-01*  
 DATE: JANUARY 2017  
 DOW BY: *W. J. Jones*  
 DOW TO: *W. J. Jones*  
 SCALE: 1"=100'

FOR CITY OF HOUSTON USE ONLY  
 CITY ENG. NO.

SHEET NO. 23 OF 26

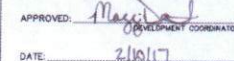




1. Contractor shall provide and install traffic control devices in conformance with part VI of the Texas Manual on Uniform Traffic Control Devices (Texas MUTCD), most recent edition with revisions; during construction.
2. Contractor shall be responsible for replacing and maintaining pavement markings which include centerline, barrier lines, lane lines and raised pavement markings.
3. No traffic control plan represents the final traffic control plan for any traffic conditions in the field. Contractor to maintain access to adjacent properties at all times.
4. No lanes shall be closed from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 8:00 p.m. Monday thru Friday, except for lane closures for emergency maintenance or construction in the posted work zone area.
5. Exception to these times, if necessary, should be sought during lane closure permit application.
6. Contractor shall cover open pavement excavations with anchored steel plates during non-working hours.
7. Off-duty Uniformed Police Officers are required to direct traffic when lanes are blocked.
8. The work zone limits shall be specified on the contract drawings.
9. If the contractor chooses to use a different method of "Traffic Control Plans" during the construction than what is outlined in the contract drawings, they shall be responsible to prepare and submit alternate plans to the District Engineer to the District Engineer for review and working days prior to implementation.
10. These plans shall be drawn to scale on reproducible mylar and sealed by a Licensed Engineer in the State of Texas. Plans will become a part of the contract drawings.
11. Approved copies of Traffic Control Plans and lane closure permits shall be available for review at the job site and at the District Engineer's Office in Austin, Texas.
12. Traffic Management and Maintenance Branch before closing a lane/sidewalk. The request must be made at least three business days prior to the date for which the closure is sought. Note that work hours may be restricted or the request may be denied. Call 713-537-7260 for more information.
13. Lanes should be kept closed during pavement surface restoration and opened only after pavement is completely completed.

- 1. Plastic drums on merge lanes • 30' c-c with chevron sign • 60' c-c and type 'C' warning light (for overnight closure)
- 2. Plastic drums on downstream travel • 35' c-c
- 3. Plastic drums on road • 5' c-c
- 4. Plastic drums on tangent • 35' c-c with vertical panel • 70' c-c and type 'C' warning light • 70'
- 5. Plastic (for overnight closure)
- 6. Plastic (for overnight construction zone) • 20' c-c with vertical panel • 40' c-c and type 'A' warning light • 40' c-c (for overnight closure)
- 7. Plastic (for overnight construction zone) • 20' c-c with concrete traffic barrier (c/tb) with reflectors • 10' c-c if pavement drop is more than twelve inches (12")
- 8. Pavement marker • 20' c-c
- 9. When an urban or traffic control plans shall supersede the above spacing.

\* ENGINEER TO STRIKE THROUGH ALL SPEED LIMITS NOT APPLICABLE



NO.	DATE	REVISIONS	

FORT BEND COUNTY MUD No. 134-D  
FORT BEND COUNTY, TEXAS



HARVEST CORNER DRIVE SEC 2

TRAFFIC CONTROL PLAN |

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

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER	UNITS & STREET/BRIDGE

2011

10/12/17	
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WASTEWATER	11-12-17	STORM WATER QUALITY
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with Name


STORM	FACTS
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Reg. Jan V14/17

FOR CITY OF JAMISON USE ONLY
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FILE NO: \_\_\_\_\_  
JOB NO: 05540-0033-01

FOR CITY OF HOUSTON USE ONLY  
CITY DWG NO. \_\_\_\_\_



DATE: JANUARY 2017  
 DON BY: FMJ

DWG. BY: J.G.

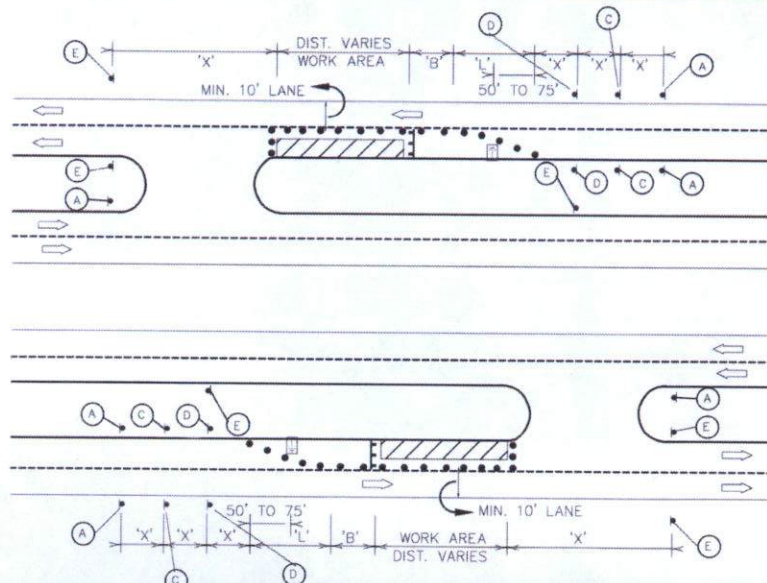
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SHEET No. 24 OF 26

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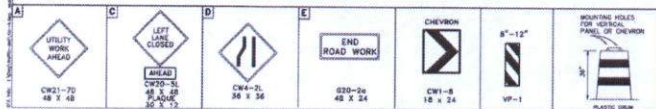




TYPICAL LEFT LANE CLOSURE OF A MULTILANE STREET

Length for Longitudinal Buffer		LEGEND (TYPICAL)	TYPICAL SIGN SPACING AND TAPER LENGTHS			
Posted Speed (mph)	Length in Feet (B)		Posted Speed (mph)	Sign Spacing "X"	10' Offset	11' Offset
20	35	• PLASTIC DRUM (see spacing for channelizing devices) • OFF-DUTY UNIFORMED POLICE OFFICER • TYPE III BARRICADE • FLASHING ARROW PANEL • TUBULAR MARKER	30	120'	150'	165'
25	55		35	160'	205'	225'
30	85		40	240'	285'	320'
35	120		45	320'	450'	495'
40	170		50	400'	500'	550'
45	220		55	500'	550'	600'
50	280					
55	335					

\* ENGINEER TO STRIKE THROUGH ALL SPEED LIMITS NOT APPLICABLE



#### SPECIAL TRAFFIC REQUIREMENTS

- Contractor shall provide and install traffic control devices in conformance with part VI of the Texas Manual on Uniform Traffic Control Devices (Texas MUTCD, most recent edition with revisions) during construction.
- Contractor will be responsible for replacing and maintaining pavement markings which include centerline, barrier lines, lane lines and raised pavement markings.
- This traffic control plan represents the minimum required by traffic conditions in the field. Contractor to maintain access to adjacent properties at all times.
- No lanes shall be closed from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Monday thru Friday.
- No lanes shall be blocked between 7:00 a.m. to 6:00 p.m. Monday thru Friday in downtown area. Exception to these times, if necessary, should be sought during lane closure permit application.
- Contractor shall cover open pavement excavations with anchored steel plates during non-working hours, and open lanes for normal traffic flow.
- Off-duty Uniformed Police Officers are required to direct traffic when lanes are blocked.
- Lane closure time(s) shall be specified on the lane closure permit.
- If the contractor chooses to use a different method of "Traffic Control Plans" during the construction than what is outlined in the contract drawings, they shall be responsible to prepare and submit an alternate set of plans to Plan Review Section for approval ten working days prior to implementation.
- These plans shall be drawn to scale on reproducible mylar and sealed by a Licensed Engineer in the State of Texas. Plans will become a part of the contract drawings.
- Approved copies of Traffic Control Plans and lane closure permits shall be available for inspection at job site at all times. Contractor must secure "Lane Closure Permits" from City's Traffic Management and Maintenance Branch before closing a lane/sidewalk. The request must be made at least three business days prior to the date for which the closure is sought. Note that working hours may be restricted or the request may be denied. Call 713-837-7280 for an application.
- Lanes shall be kept closed during pavement surface restoration and opened only after pavement is restored completely.

#### SPACING FOR CHANNELIZING DEVICES

- Plastic drums on merging taper @ 30' c-c with chevron sign @ 60' c-c and type "C" warning light (for overnight closure).
- Plastic drums on downstream taper @ 35' c-c.
- Plastic drums on radii @ 5' c-c.
- Plastic drums on tangent @ 35' c-c with vertical panel @ 70' c-c and type "C" warning light @ 70' c-c (for overnight closure).
- Plastic drums in front of construction zone @ 20' c-c with vertical panel @ 40' c-c and type "A" warning light @ 40' c-c (for overnight closure).
- Concrete traffic barrier (CTB) or low profile concrete traffic barrier (lpctb) with reflectors @ 10' c-c if pavement drop is more than twelve inches (12").
- Tubular marker @ 20' c-c.

Note: Spacing shown on traffic control plans shall supersede the above spacings.



APPROVED: *Christopher C. Jones*  
DATE: 2/10/17

NO.	DATE	REVISIONS	APP.

FORT BEND COUNTY MUD No. 134-D  
FORT BEND COUNTY, TEXAS

**JONES CARTER**  
Texas Board of Professional Engineers Registration No. P-639  
6300 West Loop South, Suite 100 • Dallas, TX 75201 • 714.777.8887

HARVEST CORNER DRIVE SEC 2

TRAFFIC CONTROL PLAN II

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

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

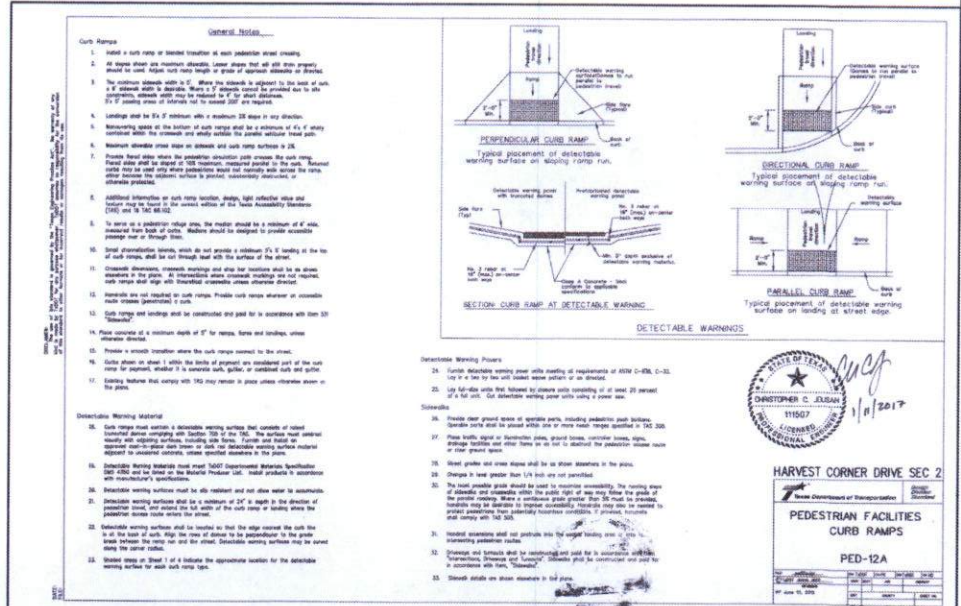
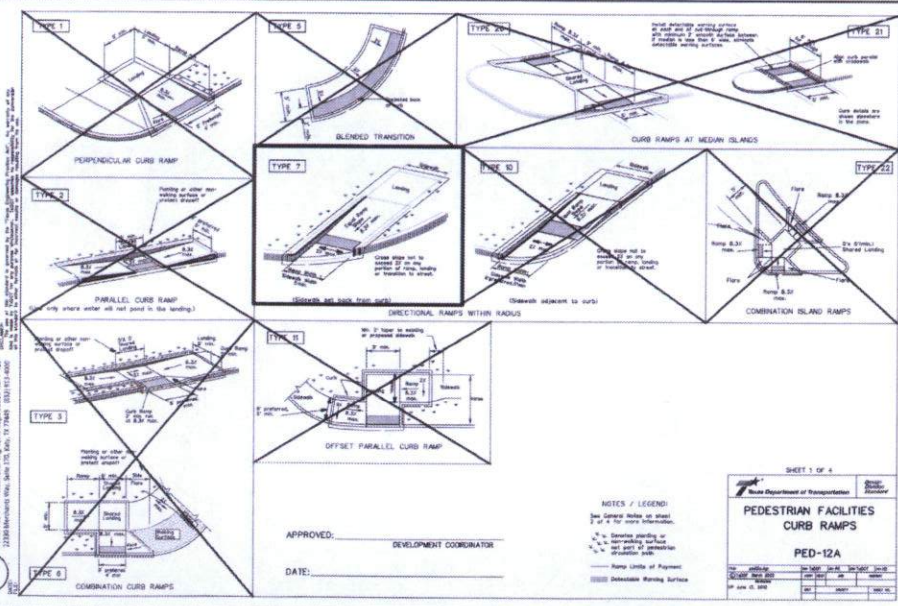
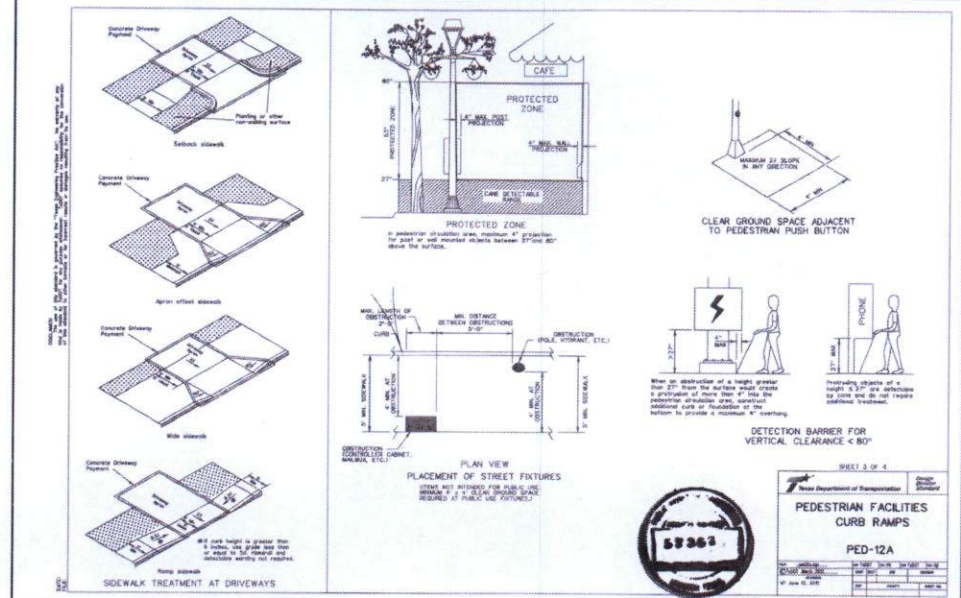
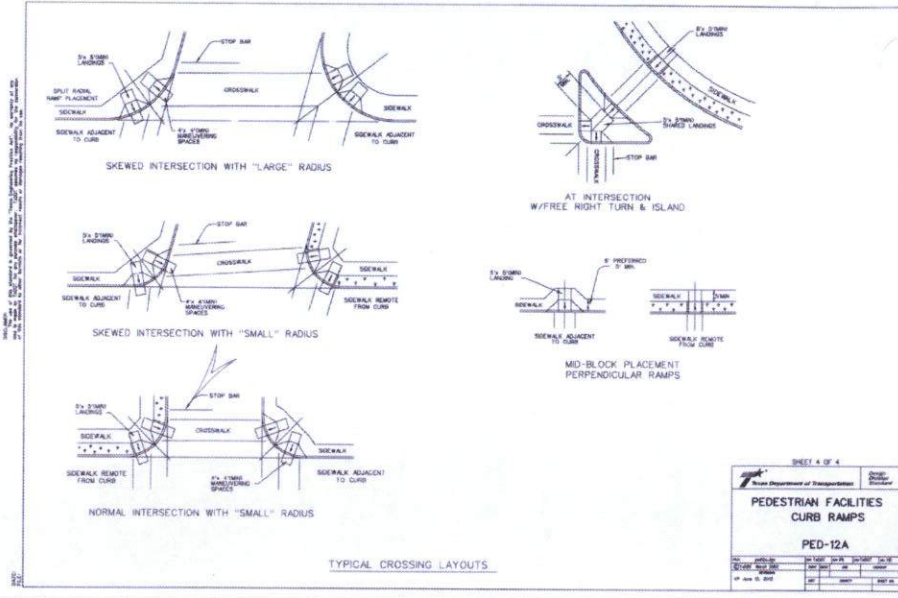
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DATE: JANUARY 2017  
DRAWN BY: JMA  
CHECKED BY: JAO  
SCALE: 1"=100'

FOR CITY OF HOUSTON USE ONLY  
CITY Dwg. NO.:  
DATE: 1/18/17  
Dwg. NO.: 57367

SHEET NO. 25 OF 26





JONES CARTER

May 21/2017