

**INTERLOCAL AGREEMENT BETWEEN  
FORT BEND COUNTY AND  
FORT BEND COUNTY MUNICIPAL UTILITY DISTRICT NO. 190**

This Interlocal Agreement (“Agreement”) is made and entered into, to be effective on the date signed by the last party hereto, by and between **FORT BEND COUNTY**, a political subdivision of the State of Texas (the “County”) and **FORT BEND COUNTY MUNICIPAL UTILITY DISTRICT NO. 190**, a political subdivision of the State of Texas (the “District”). The County and the District may be referred to herein collectively as “Parties” and individually as a “Party.”

**BACKGROUND**

The County participated in a project to improve and expand the Fort Bend Westpark Tollway (“Tollway”); and

The District was legally created and operates pursuant to the general laws of the State of Texas applicable to conservation and reclamation districts for the purpose, among others, to provide for the construction, acquisition, maintenance, and operation of water, sewer, and drainage facilities to serve the District; and

The Parties are authorized to make and enter into this Agreement under Chapter 791 of the of the Texas Government Code, and as otherwise authorized and permitted by the laws of the State of Texas, as applicable; and

The County owns fee title to that certain 11.322-acre tract of land adjacent to the Tollway and surrounded by the District, as more fully described on **Exhibit A** attached hereto (“Property”), previously owned by the Fort Bend County Toll Road Authority through acquisition from TXI OPERATIONS, LP (“TXI”) by virtue of that certain Special Warranty Deed recorded in the Fort Bend County Real Property Records under Clerk’s File No. 2004049483 (“Deed”); and

The County has constructed and maintains a detention basin on the Property, as generally shown on **Exhibit B** attached hereto (“Facilities”); which serves approximately 34.6 acre feet of detention from the Tollway; and

Pursuant to the terms of the Deed, TXI reserved for itself, its successors and assigns a non-exclusive easement to utilize the Property for drainage and detention purposes and expand the detention basin subject to the terms therein (collectively, “Easement Rights”), and TXI has assigned the District the Easement Rights; and

The District now desires to expand and make certain improvements to the Facilities pursuant to its Easement Rights to provide an additional 49.1 acre feet of detention capacity (“Additional Detention Capacity”), as generally shown on **Exhibit C** attached hereto (“Improvements”), for certain surrounding property located within the boundaries of the District; and

The District shall fund the cost of constructing the Improvements, and the County shall grant the District the right to maintain the Facilities (as improved by the Improvements), pursuant to the terms and conditions set forth herein; and

NOW, THEREFORE, for and in consideration of the mutual agreements contained herein, the Parties agree as follows:

### **AGREEMENT**

Section 1.     Scope and Cost of Improvements.     The District will cause its engineer to design and construct the Improvements as generally shown on **Exhibit C**. The Improvements will consist of the expansion and modification of the Facilities necessary to provide the Additional Detention Capacity, including (i) the widening and adding onto the existing basin to provide detention for approximately 64.61 acres of the Lakeview Retreat subdivision west of Longpoint Slough, north of Bellaire Blvd., and east of Harlem Road, (ii) excavating the existing detention basin deeper and converting the basin from a dry bottom to a wet bottom basin, and (iii) excavation of material to be placed within the Lakeview Retreat subdivision. For the purposes herein, the completed facilities shall be defined as the "Expanded Facility." The District shall be responsible for all costs associated with the construction of the Improvements, including but not limited to, costs associated with design and construction phase engineering services, as well as actual construction costs. The County shall not be obligated to reimburse the District for any portion of the Improvements.

Section 2.     Design and Award of Improvements.

(a)     The District shall oversee the design and construction of the Improvements. The District shall cause its engineer to design the Improvements to meet the requirements of the District, the County, and all other applicable jurisdictions. The plans and specifications shall be subject to review and approval by the County, or their respective authorized agents, which review and approval will not be unreasonably withheld, conditioned or delayed.

(b)     The District, in its sole discretion, will award and enter into a contract for the construction of the Improvements ("Construction Contract"). The District will notify the County in writing of the award of the Construction Contract.

Section 3.     Construction.

(a)     The District shall administer the Construction Contract in its sole discretion. Such construction shall meet all County and District construction standards and requirements. The District, through its engineer or authorized representative, shall provide on-site inspection of the construction of the Improvements in accordance with the Construction Contract. The District shall approve or deny all pay applications and requests for extensions of time' and shall pay all valid pay applications issued under the Construction Contract within forty-five (45) days of receipt. The County, at its sole cost, shall at all times have the right to have its engineer or other authorized agent access and inspect the construction of the Improvements.

(b)     The District, in its sole discretion, shall have the right to terminate the Construction Contract and to enforce its remedies thereunder. In the event of any such termination, the District shall have the right to complete and/ or cause the completion of the Improvements itself and/or through such other contractor(s) as the District determines to be appropriate; provided that all work done in connection with such completion shall be in compliance with the plans and specifications approved therefore. The cost of any necessary and approved work necessary for the completion of the Improvements shall be borne by the District.

(c) The District shall cause the District's engineer to notify the County or its designated representative in writing of the time and date of the final inspection of the Improvements at least 5 business days in advance of such inspection. Prior to granting final acceptance of the Improvements, the District shall cause the construction contractor to address all of the County's inspection comments necessary for the Improvements to comply with the approved plans and specifications.

Section 4. Grant of Access. The County hereby authorizes the District the right to enter onto, over, upon, along, across, and under the Property to carry out any inspections, testing, surveying, construction work, or other related activities necessary to construct the Improvements to exercise the District's rights under the Easement Rights. The District's right of access shall continue until this Agreement is terminated as set forth in Section 6 hereof.

Section 5. Ownership and Maintenance of the Improvements. Upon completion of the Improvements, the County shall retain ownership of the Property, subject to the Easement Rights and the District shall retain any ownership of their property on which the Additional Detention Capacity is constructed. Upon completion of the Improvements, the County shall have 34.6 acre feet of capacity and the District shall have 49.1 acre feet of capacity in the Expanded Facility. During construction of the Improvements, the District shall be responsible for maintaining the Facilities, including the Improvements, to the standard at which the County generally maintains its detention facilities. The District will warrant that the Improvements will be free from defects for a period of one (1) year from the date of final acceptance and will include and enforce such warranty within the Construction Contract. Following completion of the Improvements, the District hereby agrees to maintain the Expanded Facility to the standard to which the County generally maintains its detention facilities for the entirety of the term of this Agreement; provided however, that the District shall retain the right, but not the obligation, to maintain the Expanded Facility to a higher standard in its sole discretion. The District shall perform all regular maintenance of the Expanded Facility, including, routine mowing and fertilization. The County shall retain the right, but not the obligation, to maintain the Expanded Facility to the standard to which the County generally maintains its detention facilities in the event the District fails to maintain the Expanded Facility.

In the event that in the course of performing regular maintenance the District's maintenance contractor observes any repairs or extraordinary maintenance that needs to be performed on the Expanded Facility, the District's maintenance contractor shall provide information related to such repair or maintenance to the District's Board of Directors at its next regular meeting, and the District shall in turn notify the County in writing within fourteen (14) calendar days of the date of such meeting. Upon receipt of the written notification by the District, the District and the County shall work in good faith to jointly determine a scope of work mutually agreeable to both Parties to perform any repairs or extraordinary maintenance, with costs associated for such work to be borne based on each Party's pro-rata share of the Detention Capacity and the Additional Detention Capacity relative to the overall capacity of the Facilities, which for purposes of this Agreement is 58.66% by the District and 41.34% by the County. In the event that the Parties cannot mutually agree on a scope of work within ninety (90) days following the delivery of written notification of the repair or extraordinary maintenance by the District to the County, either Party may proceed with the necessary work as determined in that Party's sole and reasonable discretion, with costs associated for such work to be borne based on each Party's pro-rata share of the Detention Capacity and the Additional Detention Capacity relative to the overall capacity of the Expanded Facility. The Parties agree that the District shall have the right to make emergency repairs to the Expanded Facility, as determined necessary in

the sole and reasonable discretion of the District's Board of Directors, in order to protect the structural integrity or functionality of the Expanded Facility; provided, however that should the District opt to make such emergency repairs, such repairs shall be made at the District's sole cost and expense, subject to the County's right to pay for its pro-rata share in its sole discretion.

Section 6. Termination of Agreement. This Agreement is to remain in full force and effect unless terminated by mutual agreement of the Parties hereto.

Section 7. Notices. Any notice, demand, request, or other instrument authorized or required to be given under this Agreement shall be deemed to have been given only upon receipt. Notices may be given by (i) electronic mail, (ii) first class mail, postage prepaid or (iii) overnight delivery service to the addresses set forth herein or such other address as may be designated by a Party.

If to the District: Fort Bend County Municipal Utility District No. 190  
c/o Allen Boone Humphries Robinson LLP  
3200 Southwest Freeway, Suite 2600  
Houston, Texas 77027  
Attn: Greer Pagan  
[gpagan@abhr.com](mailto:gpagan@abhr.com)  
Tel: (713) 860-6417

If to the County: Fort Bend County  
Attn: County Judge  
401 Jackson Street  
Richmond, Texas 77469

With a copy to:  
Fort Bend County Engineering  
Attn: County Engineer  
301 Jackson Street  
Richmond, Texas 77469

Section 9. Entire Agreement; Modification. This Agreement and the Deed constitute the entire agreement between the Parties concerning the Improvements. There have been and are no agreements, covenants, representations, or warranties between the parties other than those expressly stated or provided for herein. No modification hereof or subsequent agreement relative to the subject matter hereof shall be binding on any party unless reduced to writing and signed by the parties.

Section 10. Parties in Interest. This Agreement shall be for the sole and exclusive benefit of the County and the District and shall not be construed to confer any benefit or right upon any other party, including particularly any resident of the District.

Section 11. Severability. The provisions of this Agreement are severable, and if any word, phrase, clause, sentence, paragraph, section, or other part of this Agreement or the application thereof to any other person or circumstance shall ever be held by any court of competent jurisdiction to contravene or be invalid under the constitution or laws of the State of Texas for any reason, that contravention or invalidity shall not invalidate the entire Agreement. Instead, this Agreement shall be construed as if it did not contain the particular provision or provisions held to be invalid, the rights

and obligations of the parties shall be enforced accordingly, and this Agreement shall remain in full force and effect, as construed. The remainder of this Agreement and the application of such word, phrase, clause, sentence, paragraph, section, or other part of this Agreement to the other parties or circumstances shall not be affected thereby.

Section 12. Successors and Assigns. This Agreement shall apply to and be binding upon the parties hereto and their respective officers, directors, successors, and assigns. This Agreement and any of the rights obtained hereunder are not assignable by any party hereto without the express written consent of the other parties, which consent shall not be unreasonably withheld.

Section 13. Authorization. Each party represents that (i) execution and delivery of this Agreement by it has been duly authorized by its governing body or other persons from whom such party is legally bound to obtain authorization; (ii) that the consummation of the contemplated transactions will not result in a breach or violation of, or a default under, any agreement by which it or any of its properties is bound, or by any statute, rule, regulation, order, or other law to which it is subject; and (iii) this Agreement is a binding and enforceable agreement on its part.

Section 14. Assignment. This Agreement is not assignable by either Party except with the prior written consent of the other Party.

Section 15. Applicable Law. This Agreement shall be governed and construed in accordance with the laws of the State of Texas. Venue shall be in Fort Bend County.

[Execution pages follow.]

The Parties have executed this Agreement in multiple counterparts, each of which shall be deemed to be an original, as of the date and year first written above.

FORT BEND COUNTY MUNICIPAL UTILITY  
DISTRICT NO. 190

By: 

\_\_\_\_\_  
President, Board of Directors

FORT BEND COUNTY

*KP George*

County Judge KP George

KP George, County Judge

ATTEST:

*Laura Richard*

Laura Richard, County Clerk



## **EXHIBIT A**

### **Property Description**

(see attached)



Exhibit "C"

Property Description for Parcel 11A

Being a 11.322 acre (493,181 square feet) parcel of land situated in the Day Land & Cattle Survey, Abstract Number 451, Fort Bend County, Texas; being out of and part of a called 88.27 acre tract conveyed to Texas Industries, Inc., as recorded in Volume 534, Page 480 of the Fort Bend County Deed Records (F.B.C.D.R.); said 11.322 acre parcel being more particularly described by metes and bounds as follows:

**COMMENCING** from the P.O.B. (Point of Beginning) of proposed Parcel 11 of Fort Bend Westpark Tollway, being at the intersection of the east right-of-way line of Harlem Road and the south line of the remainder of a Metropolitan Transit Authority Right-of-Way as recorded in Volume 2478, Page 1664 of Official Records of Fort Bend County (O.R.F.B.C.), having surface coordinates of X=3,011,422.11 and Y=13,820,319.94 (All bearings and coordinates are based on the Texas State Plane Coordinate System, South Central Zone, NAD 83, 1993 adjustment); thence as follows;

South 02°02'40" East, along said east right-of-way line of Harlem Road, a distance of 113.22 feet to a point;

Thence, North 87°57'20" East, along said south right-of-way line of Fort Bend Westpark Tollway, a distance of 25.00 feet to a point;

Thence, North 40°30'08" East, continuing along said south right-of-way line of Fort Bend Westpark Tollway, a distance of 21.00 feet to a point;

Thence, North 83°02'15" East, continuing along said south right-of-way line of Fort Bend Westpark Tollway, a distance of 1,411.36 feet to a point;

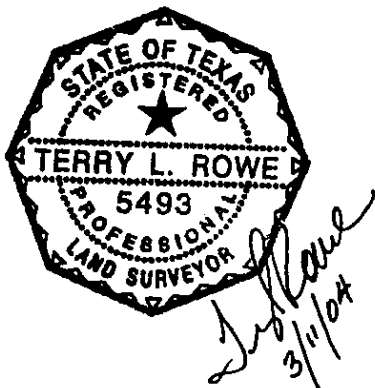
Thence, North 87°42'50" East, continuing along said proposed south right-of-way line of Fort Bend Westpark Tollway, a distance of 116.38 feet to a 5/8 inch iron rod with cap stamped "PBS&J" set at the **POINT OF BEGINNING** at engineer's station 886+83.58, 200.38' Rt., having surface coordinates of X=3,012,982.87 and Y=13,820,399.60;

- 1.) **THENCE**, North 87°42'50" East, along said proposed south right-of-way line of Fort Bend Westpark Tollway, a distance of 353.85 feet to a 5/8 inch iron rod with cap stamped "PBS&J" set for corner;
- 2.) **THENCE**, South 22°59'25" West, over and across said 88.27 acre tract, a distance of 1,329.56 feet to a 5/8 inch iron rod with cap stamped "PBS&J" set at the beginning of a curve to the right;

- 3.) **THENCE**, along said curve to the right, having a radius of 78.00 feet, a central angle of  $100^{\circ}31'51''$ , an arc length of 136.86 feet, and a chord bearing and distance of South  $73^{\circ}15'20''$  West, 119.97 feet to a set 5/8 inch iron rod with cap stamped "PBS&J";
- 4.) **THENCE**, North  $56^{\circ}28'44''$  West, a distance of 284.61 feet to a 5/8 inch iron rod with cap stamped "PBS&J" set at the beginning of a curve to the right;
- 5.) **THENCE**, along said curve to the right, having a radius of 78.00 feet, a central angle of  $85^{\circ}21'42''$ , an arc length of 116.21 feet, and a chord bearing and distance of North  $13^{\circ}47'53''$  West, 105.75 feet to a set 5/8 inch iron rod with cap stamped "PBS&J";
- 6.) **THENCE**, North  $28^{\circ}52'58''$  East, a distance of 1,124.39 feet to the **POINT OF BEGINNING** and containing a computed 11.322 acres (493,181 square feet) of land.

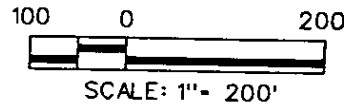
Notes:

1. All coordinates and distances are surface and may be converted to grid by multiplying by a combined scale factor of 0.999884341.
2. This metes and bounds description was prepared in conjunction with a survey plat of even date.
3. This metes and bounds description was prepared based on data provided by Weisser Engineering and Brown and Gay Engineers.



DAY LAND & CATTLE  
COMPANY SURVEY  
A-451

REMAINDER OF  
METROPOLITAN  
TRANSIT AUTHORITY R.O.W.  
VOL. 2478, PG. 1664  
O.R.F.B.C.



F.M. 1093  
(100' R.O.W.)

PROPOSED B.L. F.M. 1093

HARLEM RD.

PROPOSED F.M. 1093 R.O.W.

P.O.C. PARCEL 11A  
(P.O.B. PARCEL 11)  
X=3,011,422.11  
Y=13,820,319.94

L1 = S02° 02' 40" E 113.22'  
L2 = N87° 57' 20" E 25.00'  
L3 = N40° 30' 08" E 21.00'  
L4 = N83° 02' 15" E 1,411.36'  
L5 = N87° 42' 50" E 116.38'

TEXAS INDUSTRIES, INC.  
VOL. 534, PG. 480  
F.B.C.D.R.  
CALLED 88.27 AC.

**LEGEND**

○ SET 5/8" IRON ROD WITH  
PBS&J CAP UNLESS  
OTHERWISE NOTED



R=78.00'  
L=116.21'  
Δ=85° 21' 42"  
CHD=N13° 47' 53" W  
105.75'

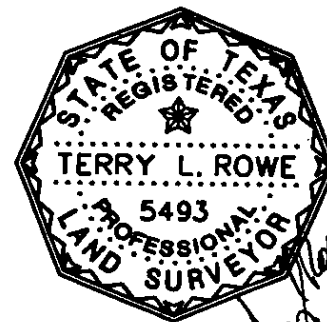
N56° 28' 44" W  
284.61'

R=78.00'  
L=136.86'  
Δ=100° 31' 51"  
CHD=S73° 15' 20" W  
119.97'

P.O.B.  
PARCEL 11A  
X=3,012,982.87  
Y=13,820,399.60  
STA. 886+83.58  
200.38' RT.

110' DRAINAGE ESMT.  
LONGPOINT CREEK

TEXAS INDUSTRIES, INC.  
VOL. 496, PG. 64  
O.R.F.B.C.  
CALLED 229.47 AC.



EXISTING	TAKING	REMAINING
83.214 AC. (CALC)	11.322 AC.	71.892 AC.

PARCEL SKETCH  
SHOWING PROPERTY OF

PARCEL 11A

FORT BEND COUNTY

**PBSJ**

SCALE: 1" = 200' JANUARY, 2004

NOTES:  
ALL BEARINGS ARE BASED ON THE TEXAS STATE PLANE  
COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83 (1993  
ADJUSTMENT). ALL COORDINATES AND DISTANCES ARE SURFACE  
AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A COMBINED  
ADJUSTMENT FACTOR OF 0.999884341.  
F.B.C.D.R. DENOTES FORT BEND COUNTY DEED RECORDS,  
O.R.F.B.C. DENOTES OFFICIAL RECORDS OF FORT BEND COUNTY.  
ABSTRACTING WAS NOT PERFORMED BY SURVEYOR.  
PREPARED IN CONJUNCTION WITH A PROPERTY DESCRIPTION  
OF EVEN DATE.

## **EXHIBIT B**

### **Diagram of the Facilities**

(see attached)



Fort Bend  
Westpark Tollway

Harlem Road

FBCTRA  
Existing  
Detention  
Pond

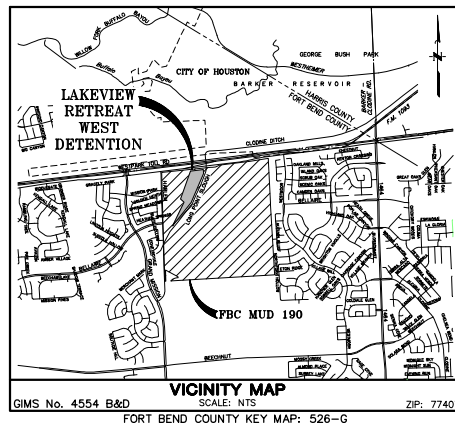
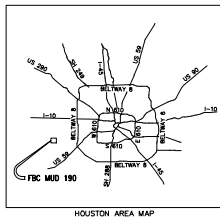
## **EXHIBIT C**

### **Diagram of the Improvements**

(see attached)

# CONSTRUCTION OF LAKEVIEW RETREAT WEST DETENTION FOR FORT BEND COUNTY M.U.D. No. 190 IN FORT BEND COUNTY, TX

MARCH 2021



## INDEX OF DRAWINGS

<u>SHEET No.</u>	<u>TITLE</u>
1	COVER SHEET & INDEX
2	GENERAL CONSTRUCTION NOTES
3	VICINITY MAP
4	OVERALL LAYOUT
5	BASELINE A STA. 0+00 TO 8+00
6	BASELINE A STA. 8+00 TO 16+00
7	BASELINE A STA. 16+00 TO 25+00
8	CROSS SECTIONS A-A & B-B
9	OUTFALL A & OUTFALL B
10	STORM WATER POLLUTION PREVENTION PLAN
11	STORM WATER POLLUTION PREVENTION PLAN DETAILS
12	MISCELLANEOUS DETAILS
13	FILL & GRADING PLAN - SHEET 1 OF 2
14	FILL & GRADING PLAN - SHEET 2 OF 2

### FORT BEND COUNTY ENGINEER

ENGINEER: J. STACY SLAWINSKI, P.E.

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

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

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

### DETENTION PLANS INFORMATION:

1) Storm Water Drainage Design Report  
Report Title: Drainage Impact Analysis for Lakeview Retreat  
8.4 Acre Expansion  
Date: July 2020, Engineering Firm: Jones & Carter  
Date of Acknowledgement by Fort Bend County Levee  
Improvement District No. 14: July 27, 2020  
Date of Acknowledgement by Fort Bend County Drainage  
District: March 2, 2021

### FEMA FIRM PANEL INFORMATION

FIRM NUMBER: 48157C0130L  
PANEL 130 OF 575  
BFE: 90.3

I, Kyle J. Blank, P.E., certify that this project is  
entirely located outside the area with 100-year  
flood frequency.

### 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 plat of this section is filed in  
the Fort Bend County Map Records.

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

Contractor shall notify the Fort Bend County Engineering Department  
at least 48 hours prior to commencement at  
construction@fortbendcountytexas.gov.

I, Kyle J. Blank, 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.

Kyle J. Blank, P.E. 03/12/2021  
Date

ILMS No. 20106791  
CPC 101 REF. No. LVR Section 11 2020-2313 C3F

NO.	DATE	REVISION	APP.
 Jones & Carter, Inc. <small>Texas Board of Professional Engineers Registration No. F-439 6300 West Loop South, Suite 150 The Woodlands, Texas 77380 713.777.5337</small>		 KYLE J. BLANK 9842 <small>Professional Engineer State of Texas</small>	
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES			
<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS			
WATER	STORM WATER QUALITY		
WASTE WATER	FACILITIES		
STORM WATER	TRAFFIC & TRANSPORTATION/ STREET & BRIDGE		
TRAFFIC SIGNAL			
CITY ENGINEER	DATE	DIRECTOR OF HOUSTON PUBLIC WORKS	DATE
SHEET NO. 1 OF 14 SHEETS			
FOR CITY OF HOUSTON USE ONLY			

**ONE-CALL NOTIFICATION SYSTEM  
CALL BEFORE YOU DIG**  
(713) 223-4567 (in Houston)  
(New Statewide Number Outside Houston)  
1-800-545-6005  
OR  
TEXAS811 (DIG TESS): 1-800-344-8377  
OR  
LONE STAR NOTIFICATION CENTER: 1-800-669-8344  
**CALL AT LEAST 2 WORKING DAYS  
(48 HOURS) BEFORE YOU DIG**

CONTRACTOR SHALL NOTIFY THE CITY OF HOUSTON,  
HOUSTON PUBLIC WORKS, OFFICE OF THE CITY  
ENGINEER, 48 HOURS BEFORE STARTING WORK ON  
THIS PROJECT. TELEPHONE No. 832-394-9098

**JONES & CARTER**  
Texas Board of Professional Engineers Registration No. F-439  
6300 West Loop South, Suite 150 • Bellaire, TX 77401 • 713.777.5337



GENERAL CONSTRUCTION NOTES:

1. WASTEWATER COLLECTION SYSTEMS, WATER PAVING, TRAFFIC SIGNALS AND DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING CITY DOCUMENTS. THESE DOCUMENTS ARE "STANDARD CONSTRUCTION SPECIFICATIONS" (MOST RECENT ISSUE DECEMBER 2011) AND "DETAILS FOR WASTEWATER COLLECTION SYSTEMS" (MOST RECENT ISSUE JANUARY 2011) AND "DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" (MOST RECENT ISSUE JANUARY 2011) WITH ALL SUPPLEMENTAL AMENDMENTS. THE DESIGN SHALL AGREE WITH THE MINIMUM STANDARDS ESTABLISHED IN THE LATEST ISSUE OF THE "INFRASTRUCTURE DESIGN MANUAL" (MOST RECENT ISSUE JULY 2010). NOTE THAT PLAN SCHEDULES EXPIRE AFTER ONE YEAR AND THE LATEST EDITIONS OF DESIGN RULES, SPECIFICATIONS, STANDARD DETAILS AND MANUALS SHALL GOVERN AS OF THE DATE OF REVISION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT HE/SHE HAS THE MOST RECENT EDITIONS. THESE DOCUMENTS MAY BE OBTAINED FROM THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS, 811 WALKER.
2. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO PAVING, WATER LINES, WASTEWATER COLLECTION SYSTEMS, STORM SEWER AND TRAFFIC SIGNALS DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH CURRENT EDITIONS OF CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS, DESIGN DETAILS AND DESIGN MANUALS. REPAIRS SHALL BE AT NO COST TO THE CITY OF HOUSTON OR THE DISTRICT. THE CONTRACTOR SHALL RETURN ALL EXISTING FACILITIES TO EXISTING OR BETTER CONDITION UNLESS OTHERWISE NOTED AT NO ADDITIONAL COST TO THE DISTRICT.
3. ALIGNMENT, CENTERLINE CURVE DATA, AND STATIONING TO BE DETERMINED FROM APPROVED, RECORDED SUBDIVISION PLAT OR ROAD RIGHT-OF-WAY.
4. PLACEMENT OF UTILITIES IN EASEMENTS SHALL BE GOVERNED BY THE "STANDARD 10-FOOT AND 14-FOOT EASEMENTS" AS ADOPTED BY THE UTILITY COORDINATING COMMITTEE FOR THE HOUSTON METROPOLITAN AREA.
5. THE APPROPRIATE LOCATION OF EXISTING UTILITIES ARE GIVEN FOR REFERENCE ONLY. BEFORE COMMENCING THE WORK ON THIS CONTRACT, THE CONTRACTOR SHALL VERIFY BY FIELD INVESTIGATION THE LOCATION OF ALL UTILITY UTILITIES WITHIN AND ADJACENT TO THE LIMITS OF THE WORK THAT MAY BE AFFECTED BY THE WORK. CONFLICTS WHICH RESULT DUE TO THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. AND VERTICALLY EXISTING UTILITIES WHICH ARE SHOWN ON THE CONSTRUCTION DRAWINGS, OR WHICH THE CONTRACTOR HAS BEEN GIVEN NOTICE OR ADVISED, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF REMEDIAL WORK, REMOVAL OF PORTIONS OF THE WORK OR EXTENSION OF THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF EXISTING UTILITIES AS DESCRIBED ABOVE SHALL BE BORNE BY THE CONTRACTOR.
6. CONTRACTOR IS TO CONTACT BUREAU OF TEXAS 811 OR 1(800)344-8377 FOR LOCATION OF EXISTING FACILITIES THAT MAY NOT BE SHOWN ON THE PLANS AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
7. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY THE "REGULATIONS OF FORT BEND COUNTY, TEXAS, FOR FLOOD PLAIN MANAGEMENT" PRIOR TO STARTING CONSTRUCTION.
8. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY FORT BEND COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN FORT BEND COUNTY ROAD RIGHTS-OF-WAY.
9. CONTRACTOR SHALL COMPLY WITH O.S.H.A. REGULATIONS AND TEXAS STATE LAW CONCERNING TRENCH SAFETY SYSTEMS.
10. CONTRACTOR TO FOLLOW CONSTRUCTION DETAILS IF DRAWINGS DEVIATE FROM CITY OF HOUSTON STANDARDS.
11. NOTE: AUTHORIZATION NOTICE ISSUED BY FORT BEND COUNTY PUBLIC INFRASTRUCTURE ENGINEERING DEPARTMENT PERMIT OFFICE REQUIRED PRIOR TO CONSTRUCTION OF UTILITIES OR LEFT TURN LANES WITHIN FORT BEND COUNTY RIGHT-OF-WAY. CONTACT FORT BEND COUNTY PERMIT OFFICE (281-433-7500).
12. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING RECORD LINE RECORD DRAWINGS AT THE COMPLETION OF THIS JOB PRIOR TO FINAL PAYMENT.
13. THESE PLANS PREPARED BY JONES & CARTER, INC. DO NOT EXTEND TO OR INCLUDE DESIGN OR SYSTEM PERTAINING TO THE SAME OR ITS SUBSIDIARIES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE JONES & CARTER, INC. REGISTERED PROFESSIONAL ENGINEER DOES NOT EXTEND TO ANY SUCH SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THESE PLANS. THE CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS).
14. 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.

STORM SEWER CONSTRUCTION NOTES:

1. CONTRACTOR SHALL NOTIFY THE FORT BEND COUNTY ENGINEERING DEPARTMENT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT AT CONSTRUCTION@FORTBENDCOUNTYTX.GOV.
2. STORM SEWER PIPE & INLET LEADS 24 INCHES AND LARGER SHALL BE REINFORCED CONCRETE PIPE ASTM C-76, CLASS III, WITH JOINTS CONFORMING TO ASTM C-361 WITH RUBBER GASKETS CONFORMING TO ASTM C-443. PIPE SHALL BE INSTALLED, BEDDED, AND BACKFILLED IN CONFORMITY WITH CITY OF HOUSTON DRAWINGS 02317-02, 02317-03, 02317-06, 02317-06, AND 02317-07 (OCT 2002), AS APPROPRIATE.
3. ALL SEWERS CONSTRUCTED IN SOD LOT EASEMENTS SHALL HAVE PIPE BEDDING AND BACKFILL AS SPECIFIED IN NOTE 2. MINIMUM EASEMENT WIDTH OF TWENTY (20) FEET SHALL BE PROVIDED.
4. ALL STORM SEWER MANHOLES SHALL BE STANDARD CITY OF HOUSTON TYPE "C" UNLESS OTHERWISE NOTED.
5. ALL PROPOSED PIPE SUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PILEDRUG WITH EIGHT (8) INCH BRICK WALLS UNLESS OTHERWISE NOTED (NO SEPARATE PAY).
6. CONTRACTOR SHALL PROVIDE 6" MINIMUM CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
7. ALL MANHOLES SHALL BE SET SO THAT THE TOP OF THE CONE IS NO HIGHER THAN THE ADJACENT TOP OF CURB ELEVATION, UNLESS DIRECTED OTHERWISE BY THE ENGINEER. THE FINISH RIM ELEVATION SHALL BE MET WITH PRE-CAST RINGS.
8. ALL MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE AFTER PAVING IS COMPLETE, CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE.
9. ALL SEWERS UNDER OR WITHIN ONE (1) FOOT OF FUTURE OR PROPOSED PAVEMENT SHALL BE BACKFILLED WITH 1-1/2 SACK/CFY CEMENT-SAND TO A POINT IMMEDIATELY BELOW THE SUBGRADE. THE REMAINING DEPTH SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN 6-INCH LAYERS, COMPACTED TO 95% STD. PROCTOR DENSITY PER AASHTO TEST METHOD T-99. MOISTURE CONTENT SHALL BE AS SPECIFIED. (NO SEPARATE PAY).
10. ALTERNATIVE TO CEMENT STABILIZED SAND BACKFILL FOR PIPES FIFTY-FOUR (54) INCH AND LARGER, FROM 1-FOOT ABOVE THE TOP OF THE PIPE TO THE BOTTOM OF THE SUBGRADE, CONTRACTOR MAY BACKFILL WITH SUITABLE MATERIAL, PROVIDED THE BACKFILL MATERIAL IS PLACED IN EIGHT (8) INCH LIFTS AND MECHANICALLY COMPACTED TO NINETY-ONE (90% STANDARD PROCTOR DENSITY AT OPTIMUM TO 1-3% MOISTURE CONTENT AS DETERMINED BY AASHTO TEST METHOD T-99. TESTS SHALL BE TAKEN AT ONE MANHOLE DIA/FOOT INTERVALS ON EACH LIFT. BACKFILL AND BACKFILL TO ONE (1) FOOT ABOVE THE TOP OF THE PIPE SHALL BE CEMENT-STABILIZED SAND.
11. ALL DITCHES SHALL BE REGRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREAS SHALL BE REGRADED, SEEDS AND FERTILIZED.

FBC 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 HOURS NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAVING AT CONSTRUCTION@FORTBENDCOUNTYTX.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 WAY.
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 SUBORDINATES AS CURRENTLY AMENDED.
5. ALL ROAD WIDTHS, CURB RAILS, 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 3/4 SACK CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 80 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 PLACED IN ACCORDANCE WITH TMDT 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 RAMPING 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 SIGNING, STRIPING, AND WARNING DEVICES, ETC., DURING CONSTRUCTION - BOTH DAY AND NIGHT.
14. ALL 81-1 STOP SIGNS SHALL BE 30" x 30" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
15. STREET NAME SIGNS SHALL BE ON A 1/4" HIGH SIGN PLAT BLADE W/ REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPER/LOWER CASES 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. U
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 THE CONTRACTORS HEREAFTER, NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR RECTIFY ANY OF THE WORK AS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, REQUIREMENTS AND OPERATIONS 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.
18. STABILIZED SUBGRADE: DETERMINE THE THICKNESS OF THE STABILIZED SUBGRADE AFTER DURING AND FOUR INCHES DEPTH IS GREATER THAN THE PROPOSED THICKNESS BY 20% OF MORE. THE CMT LAB MUST PROVIDE VERIFICATION THE PERCENTAGE OF MATERIAL BEING USED TO STABILIZE THE SUBGRADE MEETS OR EXCEEDS PROJECT REQUIREMENTS. TEST RESULTS REQUIRED.

NOTE: FORT BEND COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.

UTILITY NOTES

CAUTION: OVERHEAD POWER LINES:

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:

- ANY ACTIVITY WHERE PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
- OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PIPE DRIVER, HOISTING OR HOSTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN TEN (10) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

PARTIES RESPONSIBLE FOR THE WORK INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO AVOIDANCE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT 713-207-2222.

CAUTION: UNDERGROUND ELECTRICAL FACILITIES:

UNDERGROUND ELECTRICAL FACILITIES EXIST IN THE AREA OF THIS PROJECT. DO NOT BEGIN CONSTRUCTION UNTIL THESE FACILITIES HAVE BEEN LOCATED AND STAKED. TO HAVE THESE UNDERGROUND FACILITIES STAKED, CALL THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567, OR TOLL FREE AT 1-800-669-6344, AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION.

CAUTION: UNDERGROUND GAS FACILITIES:

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE LLC, WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. YOUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005, OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

-WHEN CENTER POINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 945-8036 OR (713) 945-8037 (7:00 AM TO 4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.

-WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTER POINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.

-WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

-FOR EMERGENCIES REGARDING GAS LINES CALL (713) 659-3552 OR (713) 207-4200.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

SHORING AND TRENCH SAFETY

1. CONTRACTOR SHALL INCLUDE COST OF SHORING IN BID PRICE FOR TRENCH SAFETY.
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE TRENCH SAFETY AND SHORING SYSTEMS IN ACCORDANCE WITH O.S.H.A. REGULATIONS.
3. TRENCH SAFETY BOXES SHALL NOT BE PLACED IN THE PIPE ZONE.

SWPPP CONSTRUCTION NOTES



1. CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEEPED BACK INTO THE EXCAVATED AREA.
3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FROM THE EXCAVATED AREA.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
5. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER
  - DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY RESTORED.
  - AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
  - STRUCTURAL CONTROL MEASURES.
  - LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN DITCHES AND OR CULVERTS FOR UNOBSERVED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

GRADING NOTES:

1. AREAS THAT ARE TO RECEIVE FILL SHALL BE PREPARED AS FOLLOWS (NO SEPARATE PAY).
  - A. AREAS THAT ARE TO RECEIVE FILL WILL BE STRIPPED TO A DEPTH OF 1". STRIPPINGS SHALL BE STOCK PILED AND THEN SPREAD EVENLY ON SURFACE OF FILL AREAS.
  - B. PRIOR TO PLACEMENT OF FILL ON STRIPPED AREAS, THE CONTRACTOR SHALL PROOF ROLL USING A PNEUMATIC ROLLER (12 TON OR APPROVED EQUIVALENT) SEPARATE PAY. SHOULD SOFT UNSTABLE AREAS APPEAR IN THE LOTS, THE CONTRACTOR SHALL REMOVE UNSTABLE MATERIAL AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL REPLACE THIS WITH A SUITABLE MATERIAL, COMPACTED AS REQUIRED (NO SEPARATE PAY FOR A DEPTH UP TO 1.5 FEET).
  - C. AREAS WITH A P.I. OF 25 OR LESS WILL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY WITH A MOISTURE CONTENT OF +/- 2% OF OPTIMUM AS DETERMINED BY AASHTO TEST METHOD T-99.
  - D. AREAS WITH A P.I. OF MORE THAN 25 WILL BE COMPACTED TO AT LEAST 90% OF THE MAXIMUM DENSITY WITH A MOISTURE CONTENT OF +/- 3% OF OPTIMUM AS DETERMINED BY AASHTO TEST METHOD T-99.
2. FILL SHALL BE PLACED IN MAXIMUM LOOSE LIFTS OF EIGHT INCHES (8") OR LESS AND TO 95% OF MAXIMUM DENSITY AT OPTIMUM TO +/- 3% MOISTURE CONTENT AS DETERMINED BY AASHTO TEST METHOD T-99.
3. ALL EXISTING DRAINAGE SWALES IN FILL AREAS SHALL BE STRIPPED OF ANY VEGETATION, CLEANED AND MOUND OUT TO SUITABLE SUBGRADE MATERIAL, AND THEN FILLED AS SHOWN WITH EXCAVATION MATERIAL IN MAXIMUM EIGHT INCH (8") LOOSE LIFTS, WITH EACH LIFT COMPACTED AT LEAST 90% PROCTOR DENSITY AS DETERMINED BY AASHTO TEST METHOD T-99.
4. UTILITY EASEMENTS THAT HAVE BEEN CLEARED SHALL BE FILLED WITH TOP 12-INCHES OF EXCAVATED MATERIAL AND GRADED TO DRAIN. FINISH SURFACE SHALL BE LEFT SMOOTH AND FREE GRADED.
5. ENGINEER WILL PROVIDE APPROXIMATE BACK LOT LINE FINISH ELEVATIONS. CONTRACTOR SHALL VERIFY FINAL GRADES AND ELEVATIONS TIED TO PROJECT BENCH MARK. CONTRACTOR SHALL INCLUDE COST IN ITEM BID FOR GRADING.
6. FINAL PAYMENT SHALL BE CONTINGENT ON THE ENGINEERS VERIFICATION THAT GRADING IS IN ACCORDANCE WITH THE GRADING PLAN, AND THAT SOIL COMPACTION TESTS WERE PERFORMED AS REQUIRED.
7. AREA SHALL BE GRADED SO THAT IT DRAINS TO THE PROPOSED SNALES.

CITY OF HOUSTON STORM CONSTRUCTION NOTES:

1. STORM SEWERS SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III) AND SHALL BE INSTALLED, BEDDED, AND BACKFILLED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 02317-02, 02317-03, 02317-06, 02317-06, AND 02317-07 (OCT. 2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. ALL STORM SEWER CONSTRUCTED IN SOD LOT EASEMENTS SHALL BE R.C.P. (C-76, CLASS III) AND SHALL BE BEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 02317-02, 02317-03, 02317-06, AND 02317-07 AS APPLICABLE.
3. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/CFY, STABILIZED SAND TO WITH IN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUSTAINABLE FORTH MATERIAL.
4. ALL TRENCH BACKFILL SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS ON EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D-698/AASHTO T99).
5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINTS CONFORMING TO ASTM C443 AND ASTM D877 RESPECTIVELY.
6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASS III).
7. ALL PROPOSED PIPE SUB-OUTS FROM MANHOLES AND INLETS ARE TO BE PILEDRUG WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
8. MINIMUM HORIZONTAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 48-INCHES FROM THE EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPROPRIATE MINIMUM VERTICAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 48-INCHES FROM THE EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR UTILITY AND OTHER APPROPRIATE.
9. ADJUST MANHOLE COVER TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS AND VALVE BOXES TO GRADE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF HIS WORK.
11. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDS, AND FERTILIZED.
12. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.

 Jones & Carter, Inc. Texas Board of Professional Engineers Registration No. 1-029 6330 West Loop South, Suite 150 The Ballrooms, Texas 77057 713.777.3333		 KYLE J. BLANK 08642 REGISTERED PROFESSIONAL ENGINEER 03/12/2021
LAKEVIEW RETREAT WEST DETENTION FORT BEND COUNTY MUD NO. 190		
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
WATER	STORM WATER QUALITY	
WASTE WATER	FACILITIES	
STORM WATER	TRAFFIC & TRANSPORTATION/ STREET & BRIDGE	
FILE NO.:	SCALE:	
PROJECT NO.:		
DGN BY:		
DWG. BY:		
SHEET NO. 2 OF 14	DATE: MARCH 2021	
FOR CITY OF HOUSTON USE ONLY		
FBC ENGINEERING APPROVAL		



K:\1490\1490-00-0000-00\_Lakeview West Retreat-Stationing\2\_Design Plans\CAD\Plans\UTL.dwg Mar 12,2021 -- 3:17pm DC



A PERMIT MUST BE OBTAINED PRIOR TO ANY WORK  
WITHIN THE FORT BEND COUNTY DRAINAGE  
DISTRICT RIGHT-OF-WAY. CONTACT THE FORT  
BEND COUNTY ENGINEERING DEPARTMENT,  
(281) 633-7500.

FBC ENGINEERING APPROVAL

LEGEND	
EXISTING	PROPOSED
AC	ACRES
CF	CLERK'S FILE
DE	DRAINAGE EASEMENT
GCOPR	GALVESTON COUNTY OFFICIAL PUBLIC RECORDS
GI	GRATE INLET
LF	LINEAR FEET
MH	MANHOLE
NO	NUMBER
PG	PAGE
RCP	REINFORCED CONC PIPE
ROW	RIGHT-OF-WAY
STM	STORM
TOB	TOP OF BANK
TOE	TOE OF SLOPE
MB	MAINTENANCE BERM

**BENCH MARK**  
ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN  
REFERENCE MARK THE NO. 214400, BEING A BRASS PEG LOCATED IN THE  
CENTER OF THE HEADWALL ON THE WEST SIDE OF TOWNLEY ROAD,  
LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF  
HARRIS ROAD AND FARM MARKET ROAD 1903.  
ELEVATION = 88.4', (NAVD 88, 2001 ADL.)  
**BM "T"**  
TEMPORARY BENCHMARK "T" BEING A SQUARE CUT ON THE CENTERLINE  
OF BRIDGE WIDE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY.  
ELEVATION = 93.08', (NAVD 88, 2001 ADL.)  
**100-YEAR FLOOD PLAIN**  
ACCORDING TO MAP NO. 481570030L OF THE FEDERAL EMERGENCY  
MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR FORT BEND  
COUNTY, TEXAS AND INCORPORATED AREAS OF CITY OF HOUSTON, DATED  
APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE  
FLOOD ZONE INDICATED ZONE A, DEEMED AS AREAS DETERMINED TO BE  
OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD  
STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES  
HEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON SOME  
OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE  
WORSE THAN SHOWN OR NATURAL CAUSES. THIS FLOOD STATEMENT  
SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

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

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

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

Date  
Approved for A/E/C underground conduit facilities only.  
Signature valid for one year.

Jones & Carter, Inc.  
Texas Board of Professional Engineers  
Registration No. F-029  
6330 West Loop South, Suite 100  
The Woodlands, Texas 77401  
713.777.3333

LAKEVIEW RETREAT WEST DETENTION  
FORT BEND COUNTY MUD NO. 190

**VICINITY MAP**

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

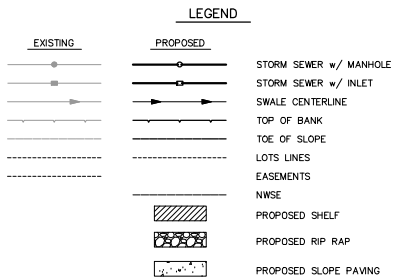
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

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

FILE NO.:  
PROJECT NO.:  
DCN BY:  
DWG. BY:

SCALE: 1"=200'  
SHEET NO. 3 OF 14  
DATE: MARCH 2021

FOR CITY OF HOUSTON USE ONLY

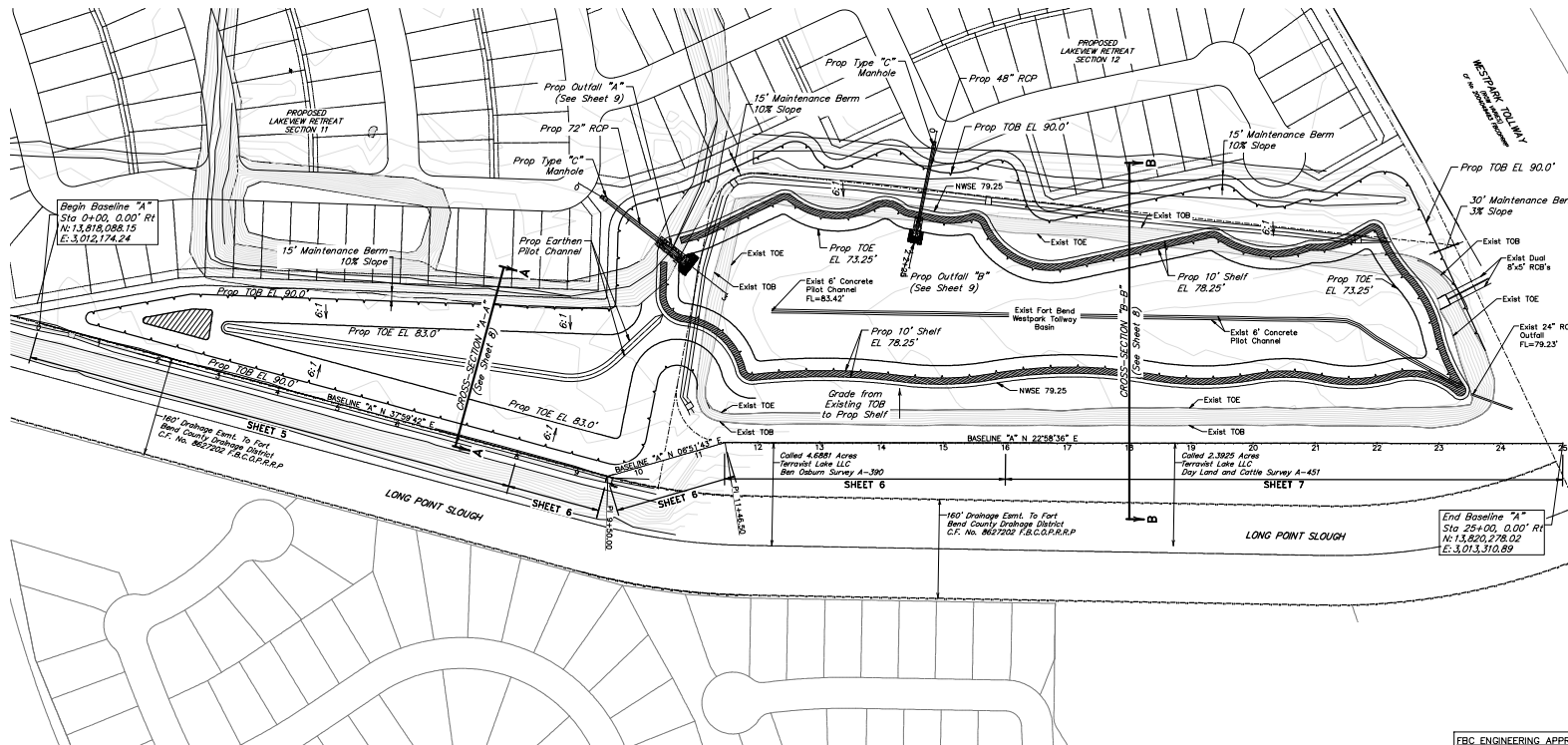


Lakeview Wetland Detection Information (per Drainage Analysis)		
Detection Service Area		124.02 Acres
Detection Storage Rate (per Report)		0.75 cu ft per acre
Required Storage		93.01 cu ft
Storage Provided		102.00 cu ft
Storage Rate Provided		0.82 cu ft per acre
Volume Exceeded for Floodplain Fill		0.00 cu ft
Mitigation		0.00 cu ft

Detention Service Area Breakdown	
TOTAL SERVICE AREA	104.02 acres
Areas:	Acres
FBCTRA - Office Area	45.53 acres
UVR West:	58.49 acres
DA 1 (Sec. 11 & Sec. 12)	37.7 acres
DA 2 (Remaining Sec. 12)	20.79 acres
Detention	36.79 acres

Elevation	Volume (ac-ft)
79.25	0.00
80	5.36
81	12.95
82	21.13
83	30.42
84	40.85
85	51.93
86	63.68
87	76.18
88	89.39
89	103.31

Area	Manhole From	Manhole To	Contributing Area (Acres)	Total Area (Acres)	Runoff Coefficient C	3 yr Intensity (in/hr)	Intensity (in/hr)			Flow (CFS)			Time of Concentration (mins)	Pipe Length (feet)	Pipe Diameter (in)	Slope (%)	Manning "n"	Design Velocity (ft/sec)	Flow Velocity (ft/sec)	Fall (feet)
							1 yr	10 yr	24 yr	1 yr	24 yr	100 yr								
DA1	NH	OUTFALL	0	37.71	0.55	4.80	4.80	6.97	8.63	95.33	144.31	223.70	15.88	32	72	0.1	0.013	135.85	4.74	0
DA2	NH	OUTFALL	0	13.96	0.55	5.59	5.59	8.30	10.62	42.91	65.36	81.36	15.88	130	48	0.1	0.013	45.42	3.61	0



A PERMIT MUST BE OBTAINED PRIOR TO ANY WORK WITHIN THE FORT BEND COUNTY DRAINAGE DISTRICT RIGHT-OF-WAY. CONTACT THE FORT BEND COUNTY ENGINEERING DEPARTMENT, (281) 633-7500.

FBC ENGINEERING APPROVAL

**BENCH MARK**  
ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN  
REFERENCE MARK RML NO. 210450, BEING A BRASS DISC LOCATED IN THE  
CENTER OF THE HEADWALL ON THE WEST SIDE OF HARLEM ROAD,  
LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF  
HARLEM ROAD AND FARM MARKET ROAD 1093.  
ELEVATION = 88.41' (NAVD 88, 2001 ADJ.)

BM 7\*  
TEMPORARY BENCHMARK 7\* BEING A SQUARE CUT ON THE CENTERLINE  
OF ORONO RIDGE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY.  
ELEVATION = 93.05'. (NAVD 88, 2001 ADJ.)

**100-YEAR FLOOD PLAIN**  
 ACCORDING TO MAP NO. 48157C0130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS OR CITY OF HOUSTON, DATED APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE 100-YEAR FLOOD PLAIN OF THE UNITED STATES. HOWEVER, THE TRACT IS OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE, OR RARE OR INFREQUENT FLOODING, OR FLOOD DAMAGE, OR FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

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

Date \_\_\_\_\_

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


Signature valid for six months.

Date \_\_\_\_\_

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

Signature valid for six months.

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

 Jones & Carter, Inc.  
Texas Board of Professional Engineers  
Registration No. F-439  
6330 River Loop South, Suite 150  
The Woodlands, Texas 77401  
713.777.5337

LAKEVIEW RETREAT WEST DETENTION  
FORT BEND COUNTY MUD NO. 190

## OVERALL LAYOUT

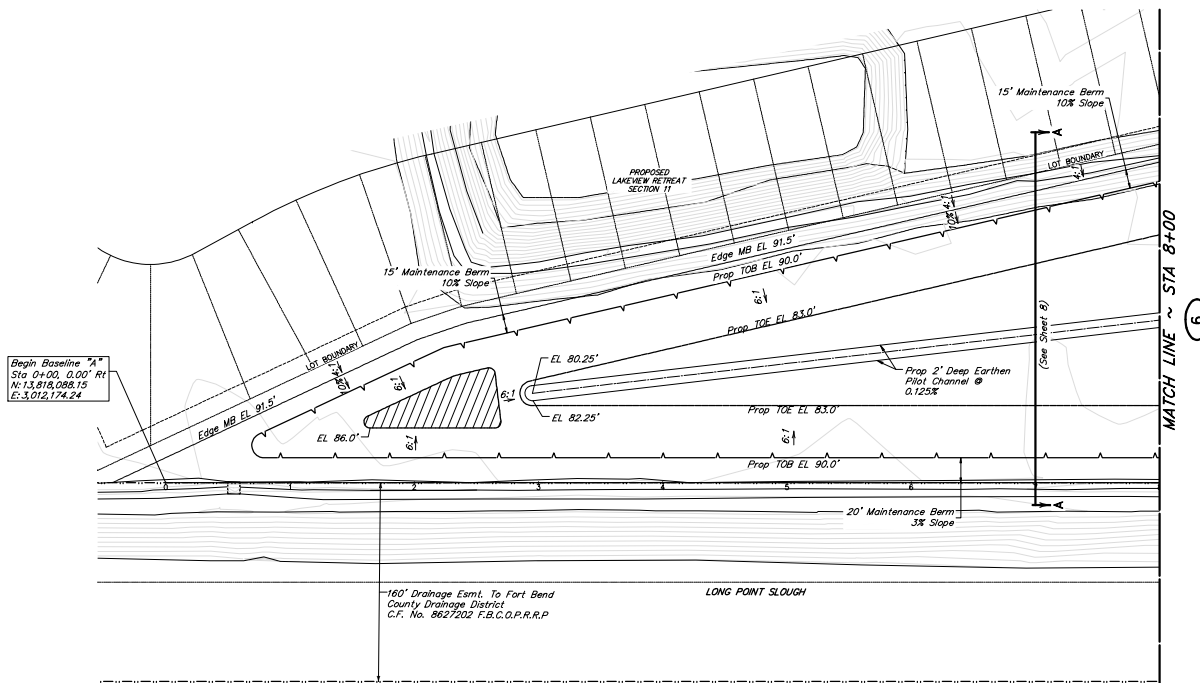
NOTE: CITY SIGNATURES VALID FOR ONE  
YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON  
HOUSTON PUBLIC WORKS

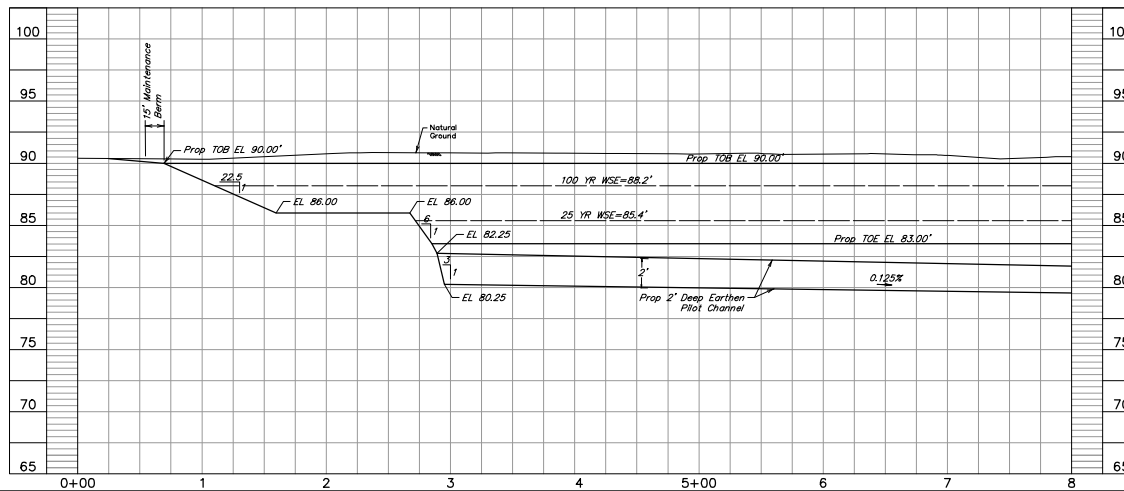
WATER	STORM WATER QUALITY
WASTE WATER	FACILITIES
SEWER WATER	

FILE NO.: PROJECT NO.: DGN BY: DWG. BY:	SCALE: 1"=100'
--	----------------

FOR CITY OF HOUSTON USE ONLY



BASELINE "A"



A PERMIT MUST BE OBTAINED PRIOR TO ANY WORK WITHIN THE FORT BEND COUNTY DRAINAGE DISTRICT RIGHT-OF-WAY. CONTACT THE FORT BEND COUNTY ENGINEERING DEPARTMENT, (281) 633-7500.

FBC ENGINEERING APPROVAL

**BENCH MARK**  
ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN REFERENCE MARK NO. 214040, BEING A BRASS PEG LOCATED IN THE CENTER OF THE HEADWALL ON THE WEST SIDE OF TRAILER ROAD, LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF WARDEN ROAD AND FARM MARKET ROAD 1903.  
ELEVATION = 88.4', (NAVD 83, 2001 ADJ.)

**TEMP. "T"**  
TEMPORARY BENCHMARK "T" BEING A SQUARE CUT ON THE CENTERLINE OF BRIDGE WIDE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY.  
ELEVATION = 93.00', (NAVD 83, 2001 ADJ.)

**100-YEAR FLOOD PLANE**  
ACCORDING TO MAP NO. 4815100130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS OF CITY OF HOUSTON, DATED APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE FLOOD ZONE INDICATED ZONE A, DENIED AS AREAS DETERMINED TO BE OUTSIDE OF THE 1% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES HEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE, OR RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE WORSE THAN MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

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

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

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

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

**JC**  
Jones & Carter, Inc.  
Texas Board of Professional Engineers  
Registration No. F-429  
6300 West Loop South, Suite 150  
The Woodlands, Texas 77463  
713.777.3333

**KYLE J. BLANK**  
08442  
03/12/2021

LAKEVIEW RETREAT WEST DETENTION  
FORT BEND COUNTY MUD NO. 190

BASELINE "A"  
0+00 TO 8+00

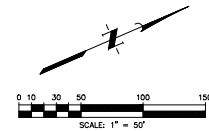
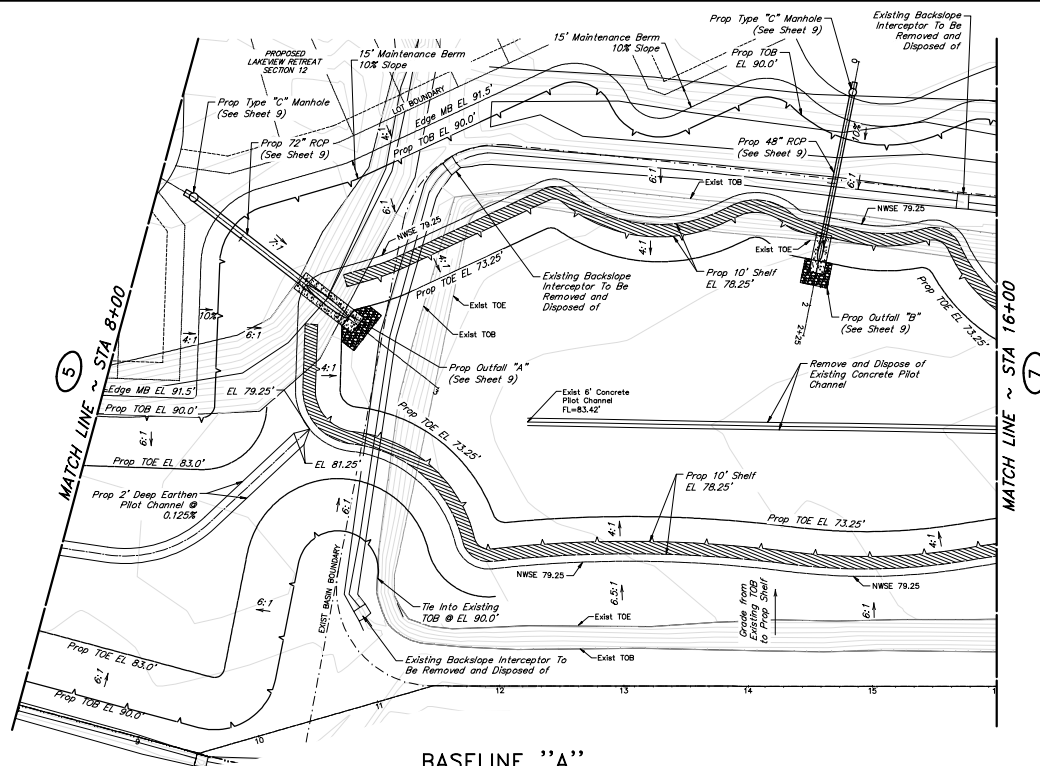
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

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

FILE NO.: PROJECT NO.:  
DCN BY: DWG. BY:  
SHEET NO. 5 OF 14 DATE: MARCH 2021

FOR CITY OF HOUSTON USE ONLY



**BENCH MARK**  
ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN REFERENCE MARK THE NO. 214000, BEING A BRASS DISC LOCATED IN THE CENTER OF THE HEADWALL OF THE WEST SIDE OF TRAILER ROAD, LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF WARDEN ROAD AND FARM MARKET ROAD 1905.  
ELEVATION = 88.4', (NAVD 88, 2001 ADL)

**TEMP. 7"**  
TEMPORARY BENCHMARK "7" BEING A SQUARE CUT ON THE CENTERLINE OF BRIDGE HOSE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY.  
ELEVATION = 93.0', (NAVD 88, 2001 ADL)

**100-YEAR FLOOD PLANE**  
ACCORDING TO MAP NO. 4815100130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS OF CITY OF HOUSTON, DATED APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE FLOOD ZONE UNDESIGNED ZONE A, DENIED AS AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE PROOF FROM FLOODING OR FLOOD DAMAGE, OR IN SOME OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE WORKED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

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

**VERIFICATION OF PRIVATE UTILITY LINES**

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

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

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

**JC**  
Jones & Carter, Inc.  
Texas Board of Professional Engineers  
Registration No. F-029  
6330 West Loop South, Suite 150  
The Woodlands, Texas 77380  
713.777.3333

**KYLE J. BLANK**  
08442  
Professional Engineer  
03/12/2021

**LAKEVIEW RETREAT WEST DETENTION  
FORT BEND COUNTY MUD NO. 190**

**BASELINE "A"  
8+00 TO 16+00**

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

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

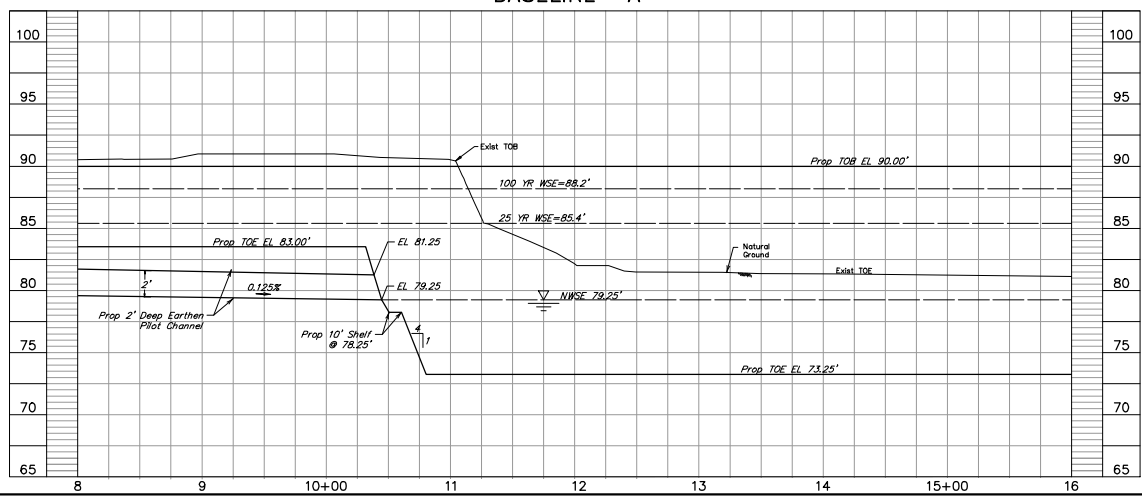
WATER \_\_\_\_\_ STORM WATER QUALITY \_\_\_\_\_  
WASTE WATER \_\_\_\_\_ FACILITIES \_\_\_\_\_  
STORM WATER \_\_\_\_\_ TRAFFIC & TRANSPORTATION/  
STREET & BRIDGE \_\_\_\_\_

FILE NO.: \_\_\_\_\_ SCALE: 1"=50' H.  
PROJECT NO.: \_\_\_\_\_ 1"=5' V.  
DCN BY: \_\_\_\_\_  
DWG. BY: \_\_\_\_\_

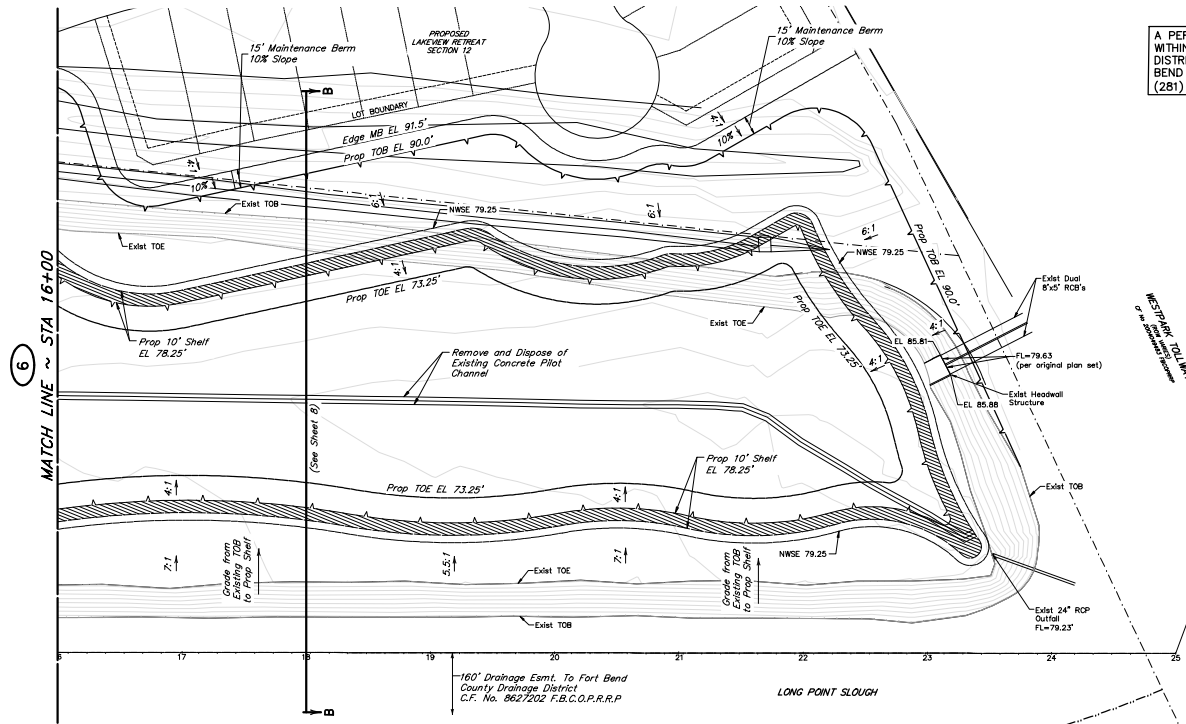
SHEET NO. **6** OF 14 DATE: MARCH 2021  
FOR CITY OF HOUSTON USE ONLY

A PERMIT MUST BE OBTAINED PRIOR TO ANY WORK WITHIN THE FORT BEND COUNTY DRAINAGE DISTRICT RIGHT-OF-WAY. CONTACT THE FORT BEND COUNTY ENGINEERING DEPARTMENT, (281) 633-7500.

FBC ENGINEERING APPROVAL





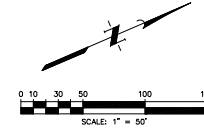


A PERMIT MUST BE OBTAINED PRIOR TO ANY WORK WITHIN THE FORT BEND COUNTY DRAINAGE DISTRICT RIGHT-OF-WAY. CONTACT THE FORT BEND COUNTY ENGINEERING DEPARTMENT, (281) 633-7500.

**BENCH MARK**  
ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN REFERENCE MARK NO. 214000, BEING A BRASS PEG LOCATED IN THE LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF WARDEN ROAD AND FIRM MARKET ROAD.  
ELEVATION = 88.4', (NAVD 88, 2001 ADJ.)

**TEMP. B.M.**  
TEMPORARY BENCHMARK "T" BEING A SQUARE CUT ON THE CENTERLINE OF BRIDGE WIDE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY.  
ELEVATION = 93.00', (NAVD 88, 2001 ADJ.)

**100-YEAR FLOOD PLAIN**  
ACCORDING TO MAP NO. 48157001.00L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS OF CITY OF HOUSTON, DATED APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE FLOOD ZONE UNDESIGNED ZONE A, DEFINED AS AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES HEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON SOME OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.



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

**VERIFICATION OF PRIVATE UTILITY LINES**  
Date \_\_\_\_\_  
CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.  
Signature valid for six months.

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

Date \_\_\_\_\_  
Approved for A/E/C underground conduit facilities only.  
Signature valid for one year.



LAKEVIEW RETREAT WEST DETENTION  
FORT BEND COUNTY MUD NO. 190

**BASELINE "A"**  
**16+00 TO 25+00**

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

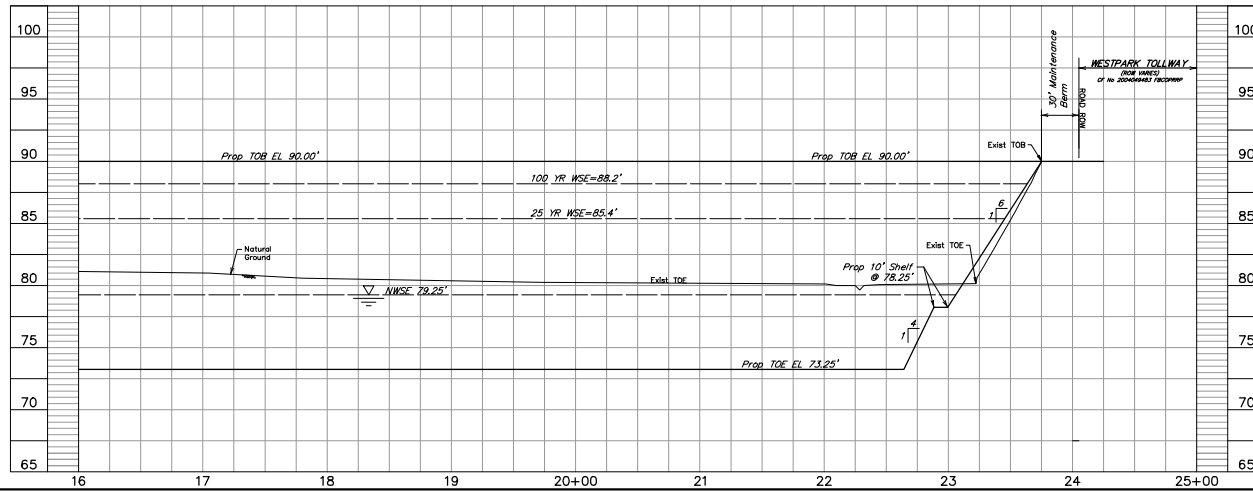
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

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

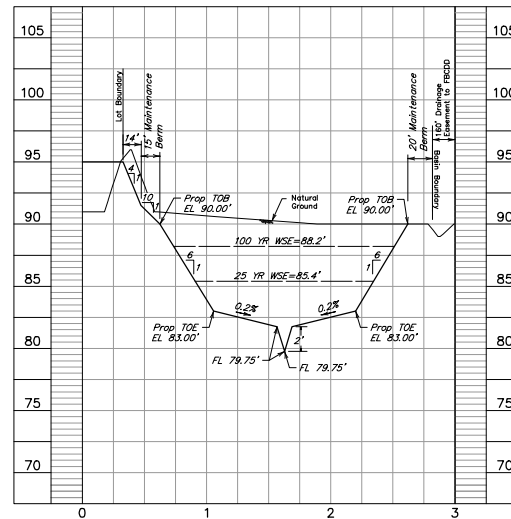
FILE NO.: \_\_\_\_\_  
PROJECT NO.: \_\_\_\_\_  
DGN BY: \_\_\_\_\_  
DWG. BY: \_\_\_\_\_  
SCALE: 1"=50' H.  
1"=5' V.

SHEET NO. 7 OF 14 DATE: MARCH 2021  
FOR CITY OF HOUSTON USE ONLY

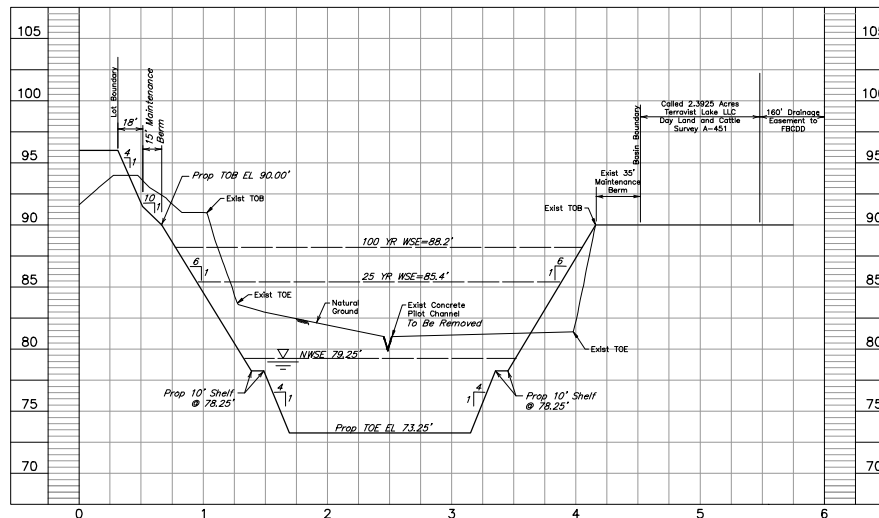
FBC ENGINEERING APPROVAL



CROSS SECTION "A-A"



CROSS SECTION "B-B"



**BENCH MARK**  
ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN  
REFERENCES MARK THE NO. 104800, BEING A BRASS PEG LOCATED IN THE  
CENTER OF THE HEADWALL OF THE WEST SIDE OF TRAILER ROAD,  
LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF  
HARLEM ROAD AND FARM MARKET ROAD 1903.  
ELEVATION = 88.4', (NAVD 88, 2001 ADL)

**TEMP. PT**  
TEMPORARY BENCHMARK "T" BEING A SQUARE CUT ON THE CENTERLINE  
OF BRIDGE WIDE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY.  
ELEVATION = 93.00', (NAVD 88, 2001 ADL)

**100-YEAR FLOOD PLAIN**  
ACCORDING TO MAP NO. 481570030L OF THE FEDERAL EMERGENCY  
MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR FORT BEND  
COUNTY, TEXAS AND INCORPORATED AREAS OF CITY OF HOUSTON, DATED  
APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE  
FLOOD ZONE UNSHADED ZONE A, DEFINED AS AREAS DETERMINED TO BE  
OUTSIDE OF THE 1% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD  
STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES  
HEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON  
OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE  
WORSENER BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT  
SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

## NOTICE:

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

## VERIFICATION OF PRIVATE UTILITY LINES

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

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

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

**JC**  
Jones & Carter, Inc.  
Texas Board of Professional Engineers  
Registration No. F-029  
6330 West Loop South, Suite 150  
The Woodlands, Texas 77380  
713.777.3333



LAKEVIEW RETREAT WEST DETENTION  
FORT BEND COUNTY MUD NO. 190

CROSS SECTIONS  
A-A & B-B

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

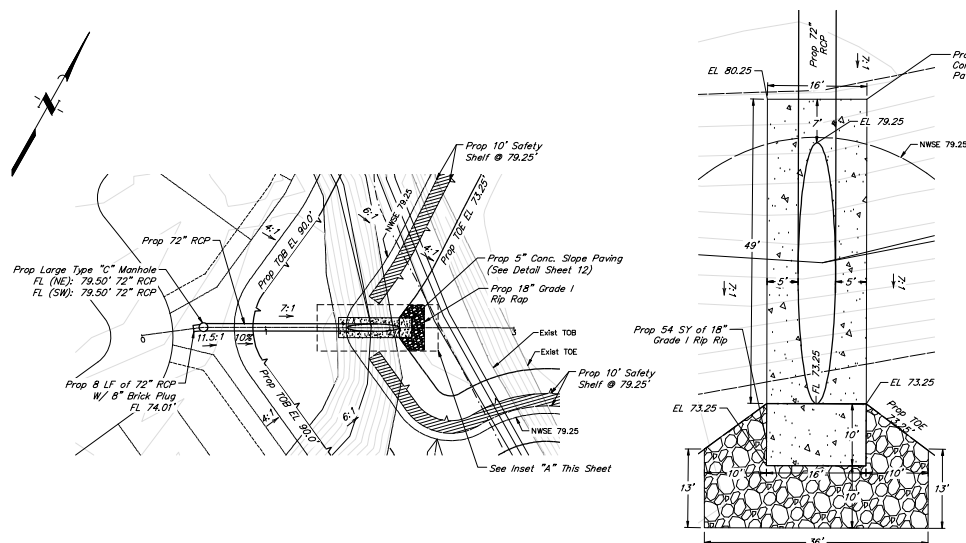
CITY OF HOUSTON  
HOUSTON PUBLIC WORKS

WATER	STORM WATER QUALITY
WASTE WATER	FACILITIES
STORM WATER	TRAFFIC & TRANSPORTATION/ STREET & BRIDGE
FILE NO.: PROJECT NO.: DCN BY: DWG. BY:	SCALE: 1"=200'
SHEET NO. 8 OF 14	DATE: MARCH 2021

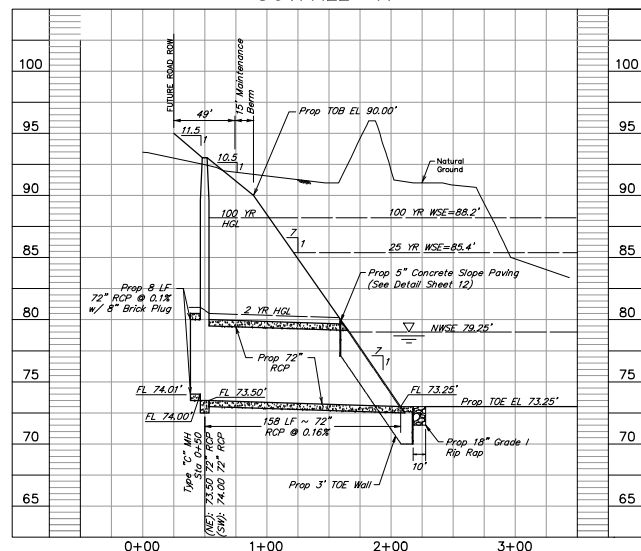
FOR CITY OF HOUSTON USE ONLY

A PERMIT MUST BE OBTAINED PRIOR TO ANY WORK  
WITHIN THE FORT BEND COUNTY DRAINAGE  
DISTRICT RIGHT-OF-WAY. CONTACT THE FORT  
BEND COUNTY ENGINEERING DEPARTMENT,  
(281) 633-7500.

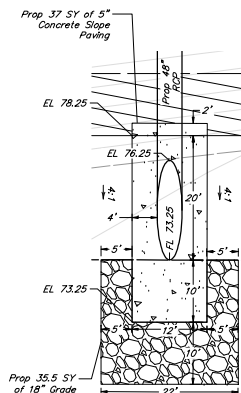
FBC ENGINEERING APPROVAL



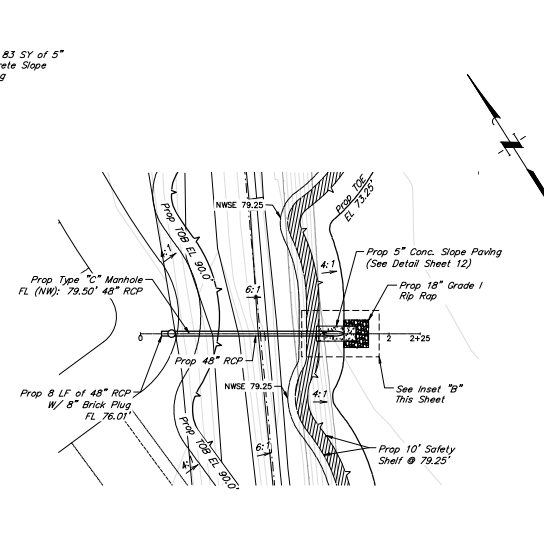
OUTFALL "A"



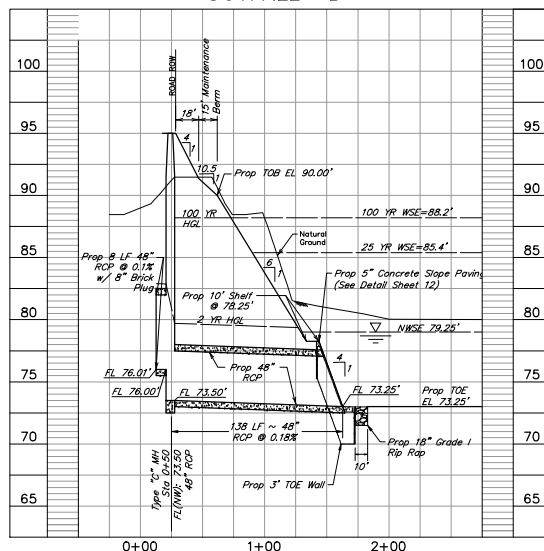
INSET "A"  
SCALE 1"=10'



INSET "B"  
SCALE 1"=10'



OUTFALL "B"



**CEMENT STABILIZED SAND BACKFILL FOR MANHOLES:**

CEMENT STABILIZED SAND SHOULD BE USED AS BACKFILL FOR ALL STORM SEWER MANHOLES. CEMENT STABILIZED SAND SHOULD MEET REQUIREMENTS IN DIVISION 2, CEMENT-SAND BACKFILL. BACKFILL TO BE PLACED AROUND MANHOLE COMPACTED IN 8 LIFTS (MAX).

FBC ENGINEERING APPROVAL

**BENCH MARK**  
ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN ELEVATIONS BASED ON THE NO. 104000, BEING A BRASS PEG LOCATED IN THE CENTER OF BRIDGE HOSE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY. LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF WARDEN ROAD AND FARM MARKET ROAD 1003.  
ELEVATION = 88.4'. (NAVD 88, 2001 ADL)

**TEMP. B.M.**  
TEMPORARY BENCHMARK "T" BEING A SQUARE CUT ON THE CENTERLINE OF BRIDGE HOSE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY. ELEVATION = 83.00'. (NAVD 88, 2001 ADL)

**100-YEAR FLOOD PLANE**  
ACCORDING TO MAP NO. 48157001-001 OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS OF CITY OF HOUSTON, DATED APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE FLOOD ZONE INDICATED ZONE A, DEFINED AS AREAS DETERMINED TO BE WITHIN THE 1% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE PROTECTED FROM FLOODING OR FLOOD DAMAGE, OR BASE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE WORKED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

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

**VERIFICATION OF PRIVATE UTILITY LINES**

Date \_\_\_\_\_

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

Date \_\_\_\_\_

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

Date \_\_\_\_\_

Approved for All underground conduit facilities only.  
Signature valid for one year.

**J.C.**  
Jones & Carter, Inc.  
Texas Board of Professional Engineers  
Registration No. F-239  
6300 West Loop South, Suite 150  
The Woodlands, Texas 77463  
713.777.3333

**KYLE J. BLANK**  
08442  
03/12/2021

**LAKEVIEW RETREAT WEST DETENTION**  
FORT BEND COUNTY MUD NO. 190

**OUTFALL A & OUTFALL B**

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

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

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

FILE NO.: \_\_\_\_\_  
PROJECT NO.: \_\_\_\_\_  
DGN BY: \_\_\_\_\_  
DWG. BY: \_\_\_\_\_

SHEET NO. **9** OF 14 DATE: MARCH 2021

FOR CITY OF HOUSTON USE ONLY

**EROSION AND SEDIMENTATION CONTROL NOTES**

1. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN ON PLANS.
2. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL SYSTEMS SPECIFIED HEREIN, AT A MINIMUM OF ONCE EVERY CALENDAR DAY.
3. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEM THROUGHOUT THE DURATION OF THE CONTRACT. (NO SEPARATE PAY).
4. CONTRACTOR SHALL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER POTENTIALLY TOXIC MATERIALS.
5. CONTRACTOR SHALL LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. CONTRACTOR SHALL USE SILT FENCING, HAY BALES, OR BOMBS AROUND FUEL STORAGE AREAS. (NO SEPARATE PAY).
6. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT/CONSTRUCTION AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
7. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF HIS FUELS, MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER. (NO SEPARATE PAY).
8. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
9. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
10. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEM BEFORE RELIEVING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
11. IF EROSION AND SEDIMENTATION CONTROL SYSTEM IS EXISTING FROM PRIOR CONTRACTS, OWNER AND/OR OWNER'S REPRESENTATIVES WITH THE CONTRACTOR SHALL EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEM FOR DAMAGE PRIOR TO CONSTRUCTION STARTING CONSTRUCTION OF THE CONTRACT. ANY DAMAGE NOTED AT THIS TIME SHALL BE REPAIRED AT OWNER'S EXPENSE.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING ON DAILY BASIS. ALL MUD AND DIRT DEPOSITED ON THE EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY.
13. IF PAVING CONTRACTOR REMOVES OR PUNCTURES TIMBER GRATE TO ESTABLISH DRAINAGE, INLET MUST BE SURROUNDED BY FILTER FABRIC FENCE AS SHOWN IN DETAIL ON THIS SHEET.

**COFFERDAM NOTE**

1. CONTRACTOR TO INSTALL COFFERDAM FOR OUTFALL F. COFFER DAM TO BE BUILT AT AN ELEVATION 1" HIGHER THAN THE PERMANENT WATER SURFACE ELEVATION (EL 13.56')

**MANHOLE/INLET PROTECTION NOTES**

1. INLETS AND MANHOLES THAT ARE NOT COMPLETE AND/OR ARE SUBJECT TO CONVEYING STORM WATER FLOWS ARE TO BE PROTECTED TO PREVENT SEDIMENT FROM ENTERING THE PROPOSED OR EXISTING STORM SEWER SYSTEM.
2. PROTECTION SHALL CONSIST OF ONE LAYER OF 3/42-INCH DAK TIMBERS, ONE (1) INCH APART, COVERED WITH ONE LAYER OF WOVEN POLYPROPYLENE OR POLYESTER FILTER FABRIC (EXION GTF 100%, PHILLIPS SUPAC 4W(U) OR APPROVED EQUAL) HELD IN PLACE WITH 1/2" STAPLES. TIMBERS SHALL BE HELD IN PLACE WITH TWO (2) 2x4s NAILD SECURELY TO EACH TIMBER OVER THE FILTER FABRIC. THE FILTER FABRIC SHALL EXTEND BEYOND THE PERIMETER OF THE DAK TIMBERS AS TO ENSURE ONE (1) FOOT OF BURY BETWEEN THE MANHOLE OR INLET AND THE SURROUNDING SOIL AS SHOWN.
3. FILTER FABRIC TO BE CLEANED OR REPLACED WHEN IT CEASES TO FUNCTION PROPERLY OR AS DIRECTED BY THE ENGINEER.
4. CONTRACTOR MAY SUBMIT PLANS FOR ALTERNATE METHODS OF PROTECTION. THESE ALTERNATE METHODS MUST BE APPROVED PRIOR TO USE IN THE FIELD.
5. NO SEPARATE PAYMENT SHALL BE MADE FOR INLET AND MANHOLE PROTECTION. INCLUDE THE COST IN THE UNIT PRICE FOR THE INLETS AND MANHOLES.

**LEGEND**

- IPB INLET PROTECTION BARRIERS FOR STAGE II INLETS
- SC STABILIZED CONSTRUCTION ACCESS
- CTW CONCRETE TRUCK WASHOUT AREA
- RFB FILTER FABRIC FENCE Min. 2' FROM E.O.C.
- CD COFFERDAM
- RFD ROCK FILTER DAM

**BENCH MARK**

ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN REFERENCES MARK THE NO. 214400, BEING A BRASS PEG LOCATED IN THE CENTER OF THE HEADLAMP ON THE WEST SIDE OF TRAILER ROAD, LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF WARDEN ROAD AND FARM MARKET ROAD 100'S.

ELEVATION = 88.47', (NAVD 88, 2001 ADJ.)

TEMP. 7" TEMPORARY BENCHMARK 7" BEING A SQUARE CUT ON THE CENTERLINE OF BRIDGE WIDE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY.

ELEVATION = 83.02', (NAVD 88, 2001 ADJ.)

**100-YEAR FLOOD PLANE**

ACCORDING TO MAP NO. 48157003.DSL OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS OF CITY OF HOUSTON, DATED APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE FLOOD ZONE UNDESIGNED ZONE A, DEFINED AS AREAS DETERMINED TO BE AT RISK OF THE 1% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES HEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE WORKED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

**NOTICE:**

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

**VERIFICATION OF PRIVATE UTILITY LINES**

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

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

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



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The Woodlands, Texas 77380  
713.777.3333



LAKEVIEW RETREAT WEST DETENTION  
FORT BEND COUNTY MUD NO. 190

## STORM WATER POLLUTION PREVENTION PLAN

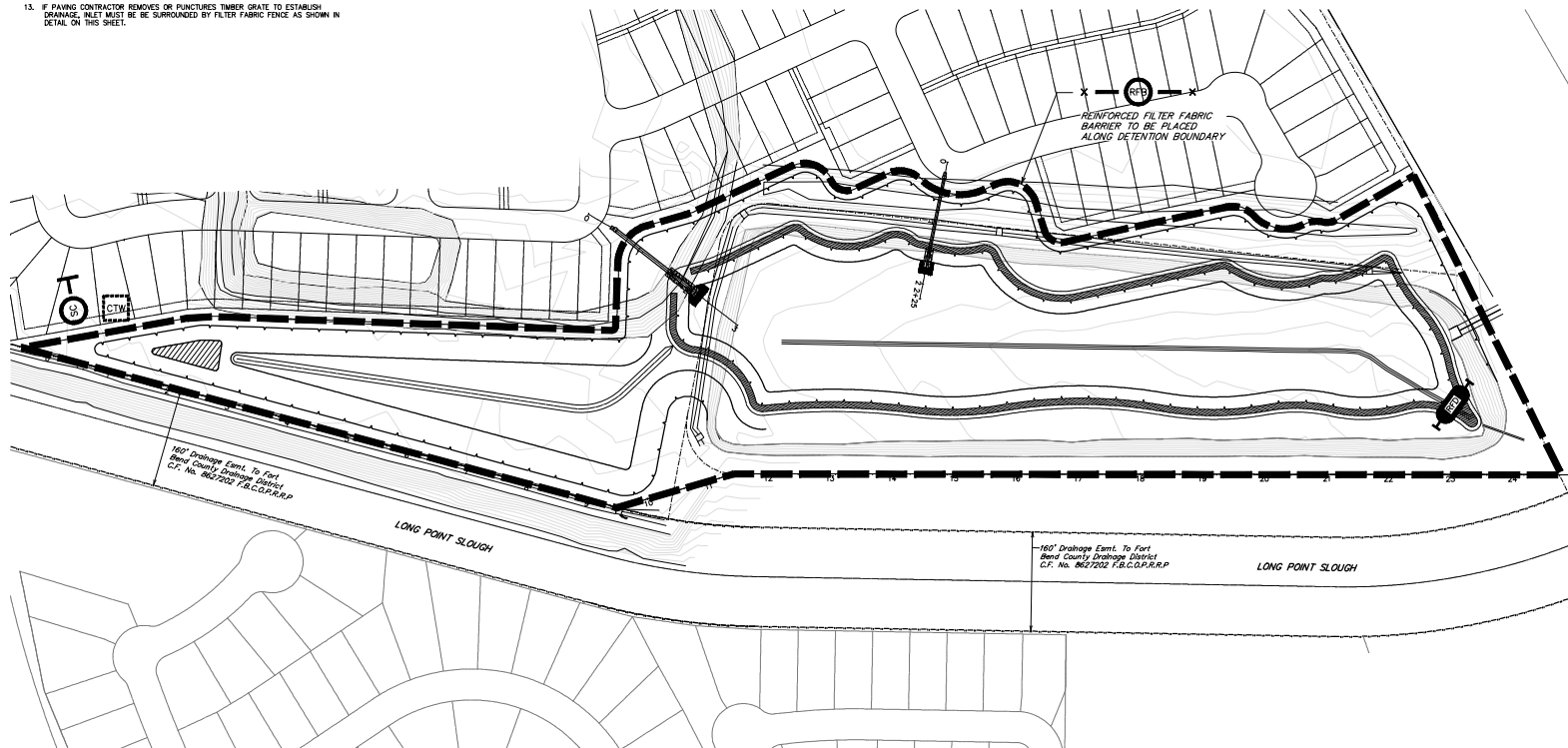
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

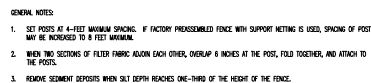
WATER	STORM WATER QUALITY
WASTE WATER	FACILITIES
STORM WATER	TRAFFIC & TRANSPORTATION/ STREET & BRIDGE
FILE NO.:	SCALE: 1"=100'
PROJECT NO.:	
DCN BY:	
DWG. BY:	
SHEET NO. <b>10</b> OF 14	DATE: MARCH 2021

FOR CITY OF HOUSTON USE ONLY

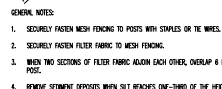
FBC ENGINEERING APPROVAL



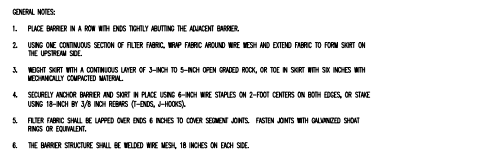




**SYMBOL**



REINFORCED  
FILTER FABRIC BARRIER



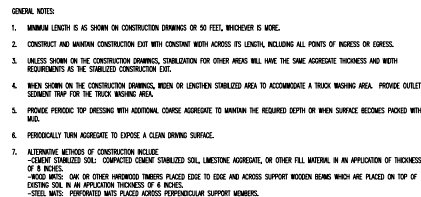
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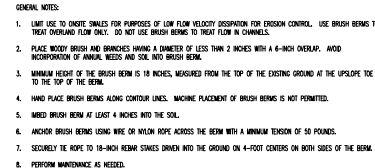
### INLET PROTECTION BARRIERS FOR STAGE I INLETS



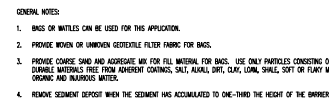
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SYMBOL



## STABILIZED CONSTRUCTION ACCESS



x



### INLET PROTECTION BARRIERS FOR STAGE II INLETS



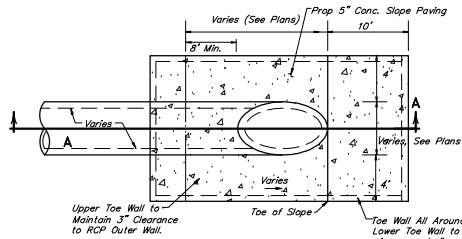
APPROVED: \_\_\_\_\_  
DEVELOPMENT COORDINATOR

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

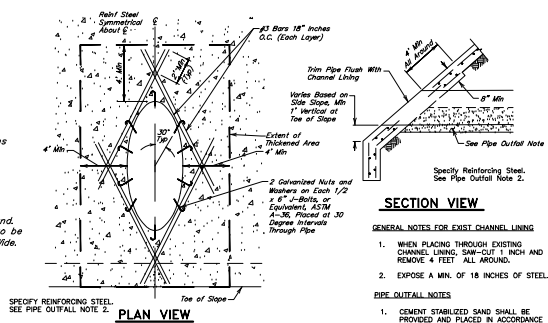
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



LAKEVIEW RETREAT WEST DETENTION			
ISSUED BY R.L.S.	SHEET DESCRIPTION STORM WATER POLLUTION PREVENTION PLAN DETAILS	DATE ISSUED 14910-0065-00	
CITY OF BOSTON		REF NO.	
SCALE N.T.S.		PROJECT YEAR BEG.	
DATE 8/27/01	APPROVED BY	SHEET NO.	11 / 14



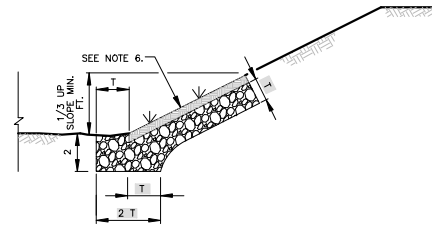
**PIPE OUTFALL DETAIL**  
NOT TO SCALE



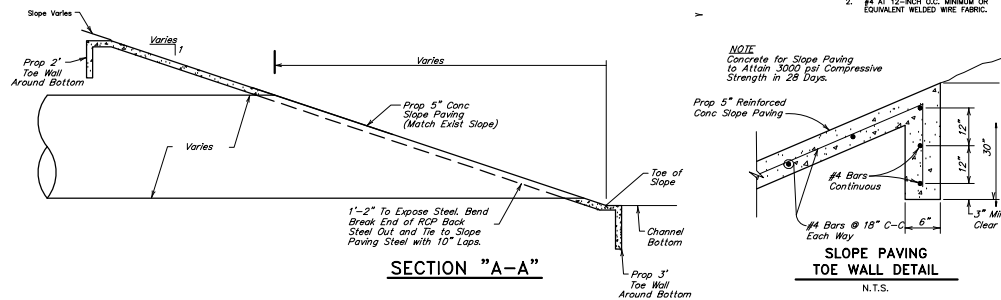
**PLAN VIEW**

**SECTION VIEW**

- GENERAL NOTES FOR EXIST CHANNEL LINING**
1. WHEN PLACING THROUGH EXISTING CHANNEL LINING, SAW-CUT 1 INCH AND REMOVE 4 FEET ALL AROUND.
  2. EXPOSE A MIN. OF 18 INCHES OF STEEL.
- PIPE OUTFALL NOTES**
1. CEMENT STABILIZED SAND SHALL BE PROVIDED AND PLACED IN ACCORDANCE WITH SPECIFICATIONS FOR CEMENT STABILIZED SAND.
  2. #4 AT 12-INCH O.C. MINIMUM OR EQUIVALENT WELDED WIRE FABRIC.

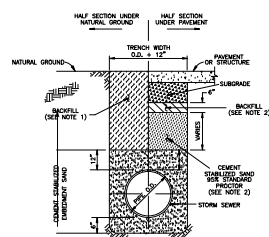


**TYPICAL RIPRAP LINING DETAIL-SIDE SLOPE ONLY**  
NOT TO SCALE

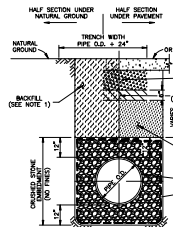


**SECTION "A-A"**

**TYPICAL BASIN OUTFALL DETAILS**



**STORM SEWER BEDDING**



**STORM SEWER BEDDING FOR WET CONDITIONS**

- NOTES**
1. BACKFILL SHALL BE NATIVE SOIL, FREE OF DEBRIS, PLACED IN LIFTS, 6" THICK OR LESS, COMPACTED TO 95% STANDARD PROCTOR DENSITY, EXCEPT AS REQUIRED BELOW.
  2. BACKFILL UNDER AND WITHIN 3 FEET OF DRIVEWAYS AND PUBLIC STREETS SHALL BE CEMENT STABILIZED SAND (1.5 BAGS OF CEMENT PER CUBIC YARD OF SAND), EXCEPT THE TOP 6" SHALL BE NATIVE SOIL, FREE OF DEBRIS. ALL BACKFILL UNDER PAVING SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- TRENCH SHORING, IN ACCORDANCE WITH OSHA, SHALL BE INSTALLED AS REQUIRED.
- FILTER FABRIC, ARMO TREX 51115 OR EQUAL, 18" LAP AT ALL EDGES.



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6330 West Loop South, Suite 150  
The Woodlands, Texas 77380  
713.777.3337



03/12/2021

**LAKEVIEW RETREAT WEST DETENTION**  
**FORT BEND COUNTY MUD NO. 190**

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

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

WATER	STORM WATER QUALITY
WASTE WATER	FACILITIES
STORM WATER	TRAFFIC & TRANSPORTATION/ STREET & BRIDGE
FILE NO.: PROJECT NO.: DCN BY: DWG. BY:	SCALE: DATE: MARCH 2021
SHEET NO. <b>12</b> OF 14	FOR CITY OF HOUSTON USE ONLY

FBC ENGINEERING APPROVAL



K:\14810\14810-0000-00\_Lakeview West Retreat-Detention\2\_Design Plans\CAD\Plans\Main\Grading\Lakeview West Retreat-Detention.dwg Plot Date: 12/20/2021 12:51pm for

- LEGEND**
- EXIST GROUND CONTOUR
  - SWALE ELEVATION
  - FUTURE LOT ELEVATION
  - FUTURE TOP OF CURB ELEVATION
  - GRADE BREAK
  - DRAINAGE FLOW PATH
  - FUTURE PAVEMENT
  - EXIST PAVEMENT
  - SLOPE OF FINISHED GRADE

**CAUTION!**  
EXIST OVERHEAD  
POWER LINES

CONTRACTOR TO USE EXTREME CAUTION WHEN WORKING  
NEAR ADJACENT UTILITIES & FENCES. ANY DAMAGES TO  
EXISTING UTILITIES OR FENCES WILL BE REPAIRED AT  
THE CONTRACTOR'S EXPENSE.

WESTPARK TOLLWAY  
(ROW VARIES)  
OF NO. 2004048431  
FBC000000

FUTURE PLAT BOUNDARY

PROP EXISTING  
BASIN EXPANSION

KEY-MAP

**GRADING NOTES**

- LINES AND GRADES ON THIS GRADING PLAN DO NOT IMPLY AUTHORIZATION TO PERFORM ANY GRADING WORK ON OTHER PROPERTIES. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN SUCH APPROVALS FROM THE OWNER PRIOR TO COMMENCING WORK.
- THE CONTRACTOR SHALL COMPLETE ALL EROSION CONTROL ACTIVITIES TO THE LINES AND GRADES SHOWN BY THIS PLAN. UNIFORM SMOOTH GRADING OF ALL AREAS SHALL BE ACCOMPLISHED. ALL AREAS TO BE STRAIGHT GRADED FROM ELEVATION TO ELEVATION AS SHOWN. THE FINISHED SURFACE SHALL BE REASONABLY SMOOTH AND FREE FROM IRREGULARITIES.
- THE CONTRACTOR MAY FIELD ADJUST THE PROPOSED LOCATION AND ROUTING OF SURFACE DRAINAGE SWALES TO OPTIMIZE DRAINAGE, AS REQUIRED, CONTRACTOR TO OBTAIN APPROVAL FROM ENGINEER PRIOR TO MAKING ADJUSTMENTS (NO SEPARATE PAY).
- LOT AREAS THAT ARE TO RECEIVE FILL SHALL BE PREPARED AS FOLLOWS (NO SEPARATE PAY)
  - AREAS TO RECEIVE FILL WITH EXISTING GRASS OR SHRUBBERY HIGHER THAN 2 FEET MUST BE MOWED PRIOR TO THE PLACEMENT OF FILL STRIPS.
  - CLEARING OF SCATTERED TREES UP TO 4 INCH CALIPER IN AREAS DESIGNATED TO RECEIVE FILL IS INCIDENTAL TO THE CONTRACT. INCLUDE COSTS IN PRICE BID FOR LOT GRADING.
  - AREAS TO RECEIVE FILL WILL BE STRIPPED TO A DEPTH OF 3 INCHES. STRIPPINGS SHALL BE STOCKPILED AND THEN SPREAD EVENLY ON THE SURFACE OF FILLED AREAS. FINAL LOT ELEVATIONS ARE BASED ON FINISH GRADES WITH STRIPPING SPREAD ON GRADED AREAS. STRIPPINGS PLACED WITHIN FUTURE BUILDING PADS TO BE PLACED NO MORE THAN 3 INCHES THICK AND COMPACTED.
- CONTRACTOR TO PROOF ROLL ALL LOTS WITHIN THE PROJECT BOUNDARY AS PART OF LOT GRADING. PRIOR TO THE PLACEMENT OF ANY MATERIAL ON NATIVE EARTH, THE AREA SHALL BE PROOF ROLLED. THE NATIVE SOIL SHALL BE ROLLED WITH SUFFICIENT INTENSITY TO BRING OUT WEAK SPOTS IN THE SUB-GRADE WHICH WOULD OTHERWISE FAIL DURING THE CONSTRUCTION PROCESS. THE PROOF ROLLING SHALL BE COMPLETED WITH EQUIPMENT WEIGHING AT LEAST 30 TONS WITH TIRE PRESSURES BETWEEN 50 PSI AND 100 PSI. A MINIMUM OF TWO COVERAGE'S OF THE PROOF ROLLER WILL BE REQUIRED. EACH SUCCESSFUL TRY OF THE PROOF ROLLER SHALL BE OFFSET BY NOT GREATER THAN ONE (1) INCH. ROLLERS SHALL BE OPERATED AT SPEEDS BETWEEN 2 AND 4 MPH. SHOULD SOFT UNSTABLE AREAS APPEAR IN THE LOTS, THE CONTRACTOR SHALL REMOVE THE UNSTABLE MATERIAL AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL REPLACE THIS WITH A SUITABLE MATERIAL, COMPACTED AS REQUIRED (NO SEPARATE PAY FOR A DEPTH UP TO 1.0 FOOT).
- PLACEMENT OF FILL SHALL NOT CREATE PONDING ON ADJACENT LOTS OR PROPERTY.
- LOT FILL SHALL BE PLACED IN A MAXIMUM COARSENESS OF 8 INCHES OF LESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM TO +5% MOISTURE CONTENT AS DETERMINED BY AASHTO TEST METHOD T-99.
- ALL EXISTING DRAINAGE SWALES IN FILL AREAS SHALL BE STRIPPED OF ANY VEGETATION, CLEANED AND MUCKED OUT TO SUITABLE SUBGRADE MATERIAL AND THEN FILLED AS SHOWN WITH DRAINAGE MATERIAL IN MAXIMUM 8 INCH LIFT. LOTS WITH EACH LIFT COMPACTED TO AT LEAST 95% PROCTOR DENSITY AS DETERMINED BY AASHTO TEST METHOD T-99.
- ENGINEER WILL PROVIDE APPROXIMATE BACK LOT LINE FINISH ELEVATIONS. CONTRACTOR SHALL VERIFY FINAL LOT GRADES AND ELEVATIONS TIED TO PROJECT BENCHMARK. CONTRACTOR SHALL INCLUDE COST IN BID ITEM FOR LOT GRADING.
- EROSION CONTROL MEASURES ARE TO BE COMPLETELY IMPLEMENTED PRIOR TO ANY GRADING WORK.
- FINAL PAYMENT SHALL BE CONTINGENT ON THE ENGINEER'S VERIFICATION THAT LOT GRADING IS IN ACCORDANCE WITH THE GRADING PLAN AND THAT SOIL COMPACTION TESTS WERE PERFORMED AS REQUIRED.
- ALL LOTS SHALL BE GRADED SO THAT NO PORTION OF ANY LOT SHALL DRAIN ONTO OR ACROSS ANY OTHER LOT, BUT SHALL DRAIN DIRECTLY TO STREET UNLESS DESIGNATED OTHER THAN TYPE "A" GRADING.

**CROSS SECTION A-A**

\*HOME BUILDER TO ENSURE RUNOFF FROM IMPERVIOUS AREAS OF STRUCTURE TO DRAIN TOWARDS STREET.

**CROSS SECTION B-B**

\*HOME BUILDER TO ENSURE RUNOFF FROM IMPERVIOUS AREAS OF STRUCTURE TO DRAIN TOWARDS STREET.

**CROSS SECTION C-C**

\*HOME BUILDER TO ENSURE RUNOFF FROM IMPERVIOUS AREAS OF STRUCTURE TO DRAIN TOWARDS STREET.

**BENCHMARK**  
ELEVATIONS SHOWN HEREON ARE BASED ON HARRIS COUNTY FLOODPLAIN REFERENCE MARK NO. 10400, BEING A BRASS PEG LOCATED IN THE EAST CORNER OF THE REAR WALL OF THE WEST SIDE OF TOWNHALL LOCATED APPROXIMATELY 0.5 MILE SOUTH FROM THE INTERSECTION OF HARLEM ROAD AND PARK MARKET ROAD 1043.  
ELEVATION = 88.4' (NAVD 88, 2001 ADJ.)

**TEMP. "T"**  
TEMPORARY BENCHMARK "T" BEING A SQUARE CUT ON THE CENTERLINE OF BRIDGE WIDE TRAIL AT GRAND VISTA LAKES SECTION 2 BOUNDARY.  
ELEVATION = 83.0' (NAVD 88, 2001 ADJ.)

**100-YEAR FLOOD PLAIN**  
ACCORDING TO MAP NO. 48157001-001 OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS OF CITY OF HOUSTON, DATED APRIL 02, 2014, THE SUBJECT TRACT IS SITUATED PARTIALLY WITHIN THE FLOOD ZONE INDICATED ZONE A, DEFINED AS AREAS ESTIMATED TO BE SUBJECT TO THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE PROTECTED FROM FLOODING OR FLOOD DAMAGE. ON SOME OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE WORKED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

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

**VERIFICATION OF PRIVATE UTILITY LINES**

Date \_\_\_\_\_  
CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.  
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CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification).  
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Date \_\_\_\_\_  
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713.777.9333



3-12-21

LAKEVIEW RETREAT WEST DETENTION  
FORT BEND COUNTY MUD NO. 190

**FILL PLAN II FOR  
FUTURE SEC 12**

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

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

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

FILE NO.: \_\_\_\_\_ SCALE: 1"=100'  
PROJECT NO.: \_\_\_\_\_  
DGN BY: \_\_\_\_\_  
DWG. BY: \_\_\_\_\_

SHEET NO. 14 OF 14 DATE: MARCH 2021

FOR CITY OF HOUSTON USE ONLY

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