

# REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

**Fort Bend County** 

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

X Right of Way P	ermit										
Commercial Dr	iveway Permit										
Permit No: 2018-219	23										
Applicant: Fellers and Clark, LP./Lischka Utilities LL	<u>c</u>										
Job Location Site: 8000 Katy Gaston Road, Sugar Land TX 77494											
Bond No. Date of Bond: 7/5/2018 Amount: \$50,000.00											
long transfer of the state of t	THE DESCRIPTION OF THE PROPERTY OF THE PROPERT										
Roads, Streets, Highways, and Drainage Ditches in Fort Be	Cables, Conduits, and Pole Lines, In, Under, Across or Along and County, Texas, Under the Jurisdiction of the seed by the Commissioners Court of Fort Bend County, Texas, County, Texas, to the extent that such order is not										
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grounds for job shutdown.  2. Written notices are required:  a. 48 hours in advance of construction s	ready for final inspection, submit notification to Permit Iline.org portal.										
On this <u>24th</u> day of <u>July</u> , <u>2018</u> , Upon Motion of Commission Commissioner	carried, it is ORDERED, ADJUDGED AND DECREED that said he Commissioners Court of Fort Bend County, Texas, and										
By: County Engineer	Presented to Commissioners Court and approved.  Date Recorded 2-1-2-18 comm. Court No										
N/A  By:  Drainage District Engineer/Manager	Clerk of Commissioners Court  By: Deputy										



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

# Fort Bend County Engineering Department 301 Jackson Suite 401

Richmond, Texas 77469 281.633.7500 Permits@fortbendcountytx.gov

X Righ	nt of Way Permit							
Com	nmercial Driveway Pe	ermit						
	: 2018-21923							
The following "Notice of Proposed Cable, Condattachments have been reviewed and the notice Fort Bend County, Texas.	uit, and/or Pole Line a se conforms to approp	ctivity in Fort Bend County" and accompanying riate regulations set by Commissioner's Court of						
(1) COMPLETE APPLICATION FORM:								
X a. Name of road, street, and/or	drainage ditch affecte	ed.						
x b. Vicinity map showing course	of directions							
X c. Plans and specifications								
(2) BOND:								
County Attorney, approval when applicable.	n							
Perpetual bond currently posted.	Bond No:	Amount:						
X Performance bond submitted.	Bond No:	Amount: \$50,000.00						
Cashier's Check	Check No:	Amount:						
(3) DRAINAGE DISTRICT APPROVAL (WHE	N APPLICABLE):							
Drainage District Approval	-	Date						
We have reviewed this project and agree it n	neets minimum requi	irements.						
1011								
han Eghten		7/16/2018						
Permit Administrator		Date						



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

BOND NO

THE STATE OF TEXAS

§

KNOW ALL MEN BY THESE PRESENTS:

**COUNTY OF FORT BEND** 

§

THAT WE, Fellers & Clark, LP. whose (address, phone) is P.O. Box 853, Bellville, TX 77418 / 281-581-0770 of the laws of the state of Massachusetts and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at (name/address/phone) Allen Knepper / 10713 W. Sam Houston Parkway N., Suite 650, Houston, Texas 77064/713-744-1756 whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is Massachusetts and whose address is 175 Berkeley St. Boston, MA 02117, 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 Fifty Thousand and No/100 Dollars (\$50,000.00) current, lawful money of the United States of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, to which payment well and truly to be made and done, we, the undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors, assigns, and legal representatives, jointly and severally, by these presents.

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

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

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

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

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

EXECUTED this 5th day of July, 2018.

PRINCIPAL

Fellers & Clar

BY

Liberty Mutual Insurance Company

SURETY

BY Michelle Ulery, Attorney in Fact

CCM 7-24-2018 # 136
Fort Bend County Clerk
Return Admin Serv Coord
Remit # 2018 21923 RAC

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 8015125

Liberty Mutual Insurance Company The Ohio Casualty Insurance Company

West American Insurance Company

### POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Michelle Ulery; Kelly J. Brooks; C.A. McClure; Kenneth L. Meyer

all of the city of CYPRESS \_, state of TX each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed day of February 2018

STATE OF PENNSYLVANIA COUNTY OF MONTGOMERY

guarantees.

Not valid for mortgage, note, loan, letter of credit,

interest rate or residual value

rate,

currency

The Ohio Casualty Insurance Company Liberty Mutual Insurance Company West American Insurance Company

David M. Carey, Assistant Secretary

, 2018, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance On this 21st day of February Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA

Notarial Seal Teresa Pastella, Notary Public Upper Merion Twp., Montgomery County My Commission Expires March 28, 2021

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS - Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority

ARTICLE XIII - Execution of Contracts - SECTION 5. Surety Bonds and Undertakings, Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-infact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this

day of

Renee C. Llewellyn, Assistant Secretary



## TEXAS IMPORTANT NOTICE

To obtain information or make a complaint:

You may call toll-free for information or to make a complaint at 1-877-751-2640

You may also write to:

2200 Renaissance Blvd., Ste. 400 King of Prussia, PA 19406-2755

You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights or complaints at 1-800-252-3439

You may write the Texas Department of Insurance Consumer Protection (111-1A) P. O. Box 149091

Austin, TX 78714-9091 FAX: (512) 490-1007

Web: http://www.tdi.texas.gov

E-mail: ConsumerProtection@tdi.texas.gov

#### PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim you should first contact the agent or call 1-800-843-6446. If the dispute is not resolved, you may contact the Texas Department of Insurance.

## ATTACH THIS NOTICE TO YOUR POLICY:

This notice is for information only and does not become a part or condition of the attached document.

### TEXAS AVISO IMPORTANTE

Para obtener información o para someter una queja:

Usted puede llamar al numero de telefono gratis para informacion o para someter una queja al 1-877-751-2640

Usted tambien puede escribir a:

2200 Renaissance Blvd., Ste. 400 King of Prussia, PA 19406-2755

Puede comunicarse con el Departamento de Seguros de Texas para obtener informacion acerca de companias, coberturas, derechos o quejas al 1-800-252-3439

Puede escribir al Departamento de Seguros de Texas Consumer Protection (111-1A) P. O. Box 149091 Austin, TX 78714-9091 FAX # (512) 490-1007 Web: http://www.tdi.texas.gov

E-mail: ConsumerProtection@tdi.texas.gov

#### DISPUTAS SOBRE PRIMAS O RECLAMOS:

Si tiena una disputa concerniente a su prima o a un reclamo, debe comunicarse con el agente o primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI)

### UNA ESTE AVISO A SU POLIZA:

Este aviso es solo para proposito de informacion y no se convierte en parte o condicion del documento adjunto.

NP 70 68 09 01 LMS-15292 10/15

FILED AND RECORDED OFFICIAL PUBLIC RECORDS



Laura Richard, County Clerk Fort Bend County Texas August 01, 2018 01:09:29 PM

FEE: \$0.00

ADS

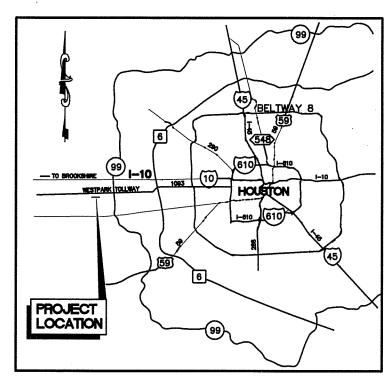
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# FORT BEND COUNTY M.U.D. No. 133

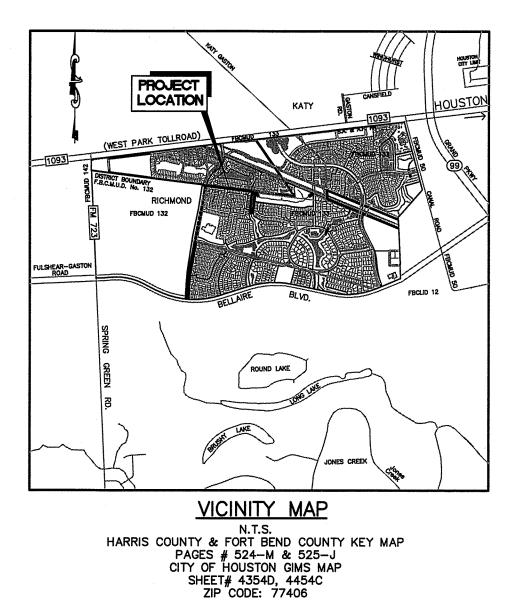
# CONSTRUCTION PLANS FOR PROPOSED OFFSITE STORM SEWER AND DETENTION BASIN IMPROVEMENTS SERVING

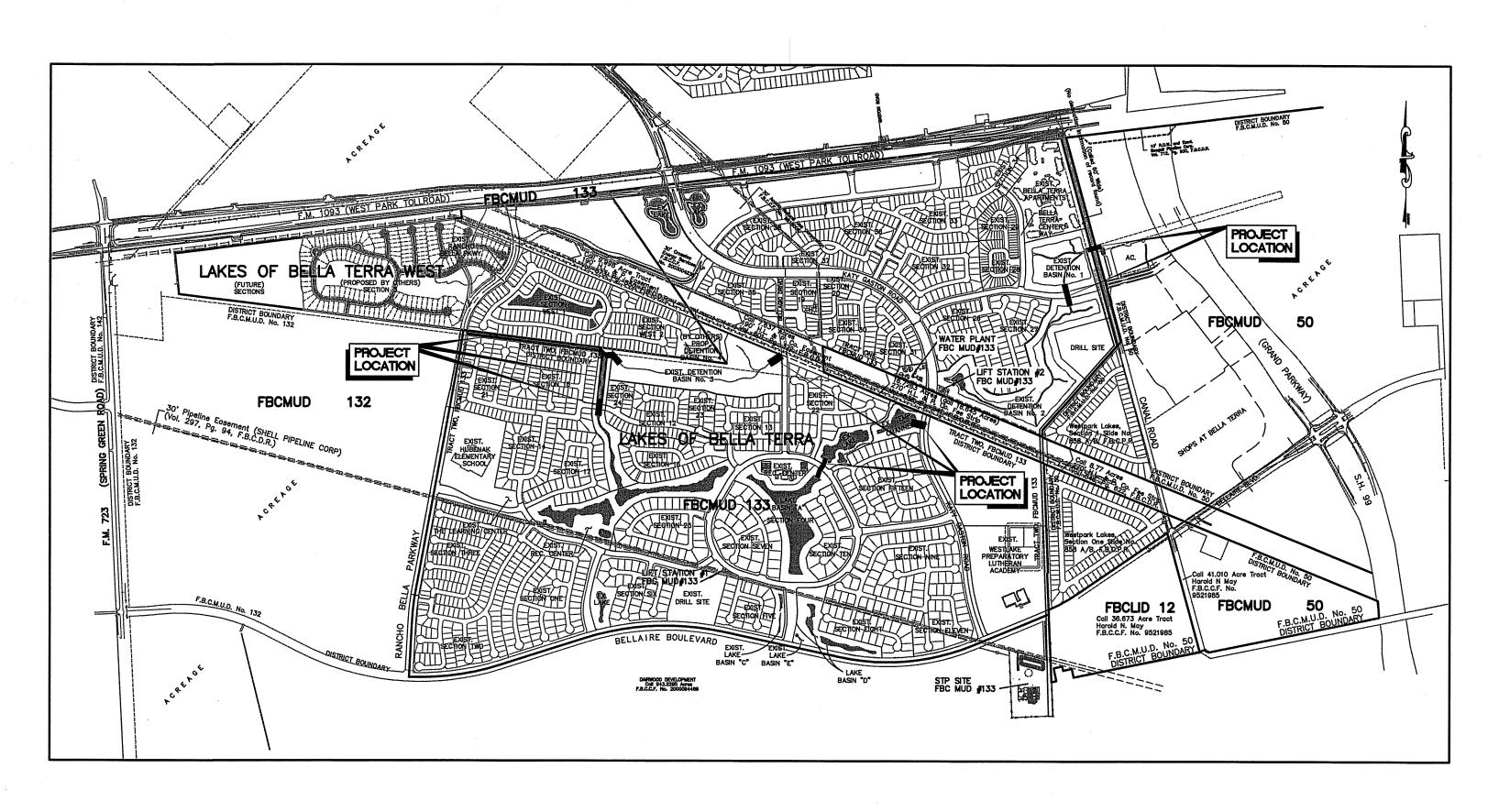
# LAKES OF BELLA TERRA WEST DEVELOPMENT

IN FORT BEND COUNTY, TEXAS



**LOCATION MAP** 





## DRAWING INDEX

# 1. COVER SHEET 2. OVERALL LAYOUT PLAN 3. OVERALL STORM SEWER LAYOUT 4. OVERALL DRAINAGE AREA MAP 5. DRAINAGE AREA CALCULATIONS 6. OVERALL GRADING AND DRAINAGE PLAN 7. OVERALL STORM WATER POLLUTION PREVENTION PLAN 8. PLAN AND PROFILE: OFFSITE 48" STORM SEWER—STA. 0+00 TO 10+00 9. PLAN AND PROFILE: OFFSITE 48" STORM SEWER—STA. 10+00 TO END 10. PLAN AND PROFILE: INTERCONNECT "0"—STA. 10+00 TO 20+00 11. PLAN AND PROFILE: INTERCONNECT "0"—STA. 10+00 TO 20+00 12. PLAN AND PROFILE: INTERCONNECT "E" 13. TRAFFIC CONTROL PLAN 14. STANDARD CONSTRUCTION NOTES AND MISCELLANEOUS DETAIL 15. STANDARD STORM SEWER DETAILS SHEET (SHEET 1 OF 4) 16. STANDARD STORM SEWER DETAILS SHEET (SHEET 2 OF 4) 17. STANDARD STORM SEWER DETAILS SHEET (SHEET 3 OF 4) 18. STANDARD STORM SEWER DETAILS SHEET (SHEET 4 OF 4)

### NOTES: -

1. 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.

2. FIRM
FLOOD INSURANCE RATE MAP
PANEL(110) OF (575)
MAP# 48157C0110L, FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS,
REVISED DATE: APRIL 2, 2014. THE SUBJECT PROPERTIES LIES IN ZONE X (UNSHADED),
BFE ELEVATION 94.00'

I, WILLIAM H. SAOUR, P.E., CERTIFY THAT THIS PROJECT IS ENTIRELY LOCATED
OUTSIDE THE AREA WITH 100—YEAR FLOOD FREQUENCY.

ONE CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG!!

(713) 223-4567 (IN HOUSTON)
(NEW STATEWIDE NUMBER OUTSIDE HOUSTON)

CATION SYSTEM   E YOU DIG!!	
(IN HOUSTON) R OUTSIDE HOUSTON) 4-8377	→ BENCHMARK ENGINE
	Consulting Engineers-
	2401 Fountainview

ENGINEERING CORPORATION
Engineers—Planners—Surveyors
Countainview Suite 500
m. Texas 77057 U.S.A.
9930 Fax (713)266-3804
TRATION NUMBER F-6788

WILLIAM H. SAOUR
116018

CENSO
ONAL
Fibruar 12, 201

F.B. NO. N/A

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

# CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER TRAFFIC AND TRANSPORTATION

WASTEWATER STORM WATER QUALITY

STORM WATER

FACILITIES

STREET & BRIDGE

DIRECTOR OF PUBLIC WORKS

AND ENGINEERING

OF 21

## OWNER:

LOB WEST, INC. 7500 San Felipe St., Ste. 400 Houston, Texas 77057 (713) 952-0200

PREPARED BY:

## BENCHMARK ENGINEERING CORPORATION

Consulting Engineers - Planners - Surveyors 2401 Fountainview Suite 500

Houston, Texas 77057 U.S.A. (713)266-9930 Fax (713)266-3804

Texas Board of Professional Engineers Registration Number F-6788 TBPLS Firm Registration Number 10009000 THESE SIGNATURE ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN

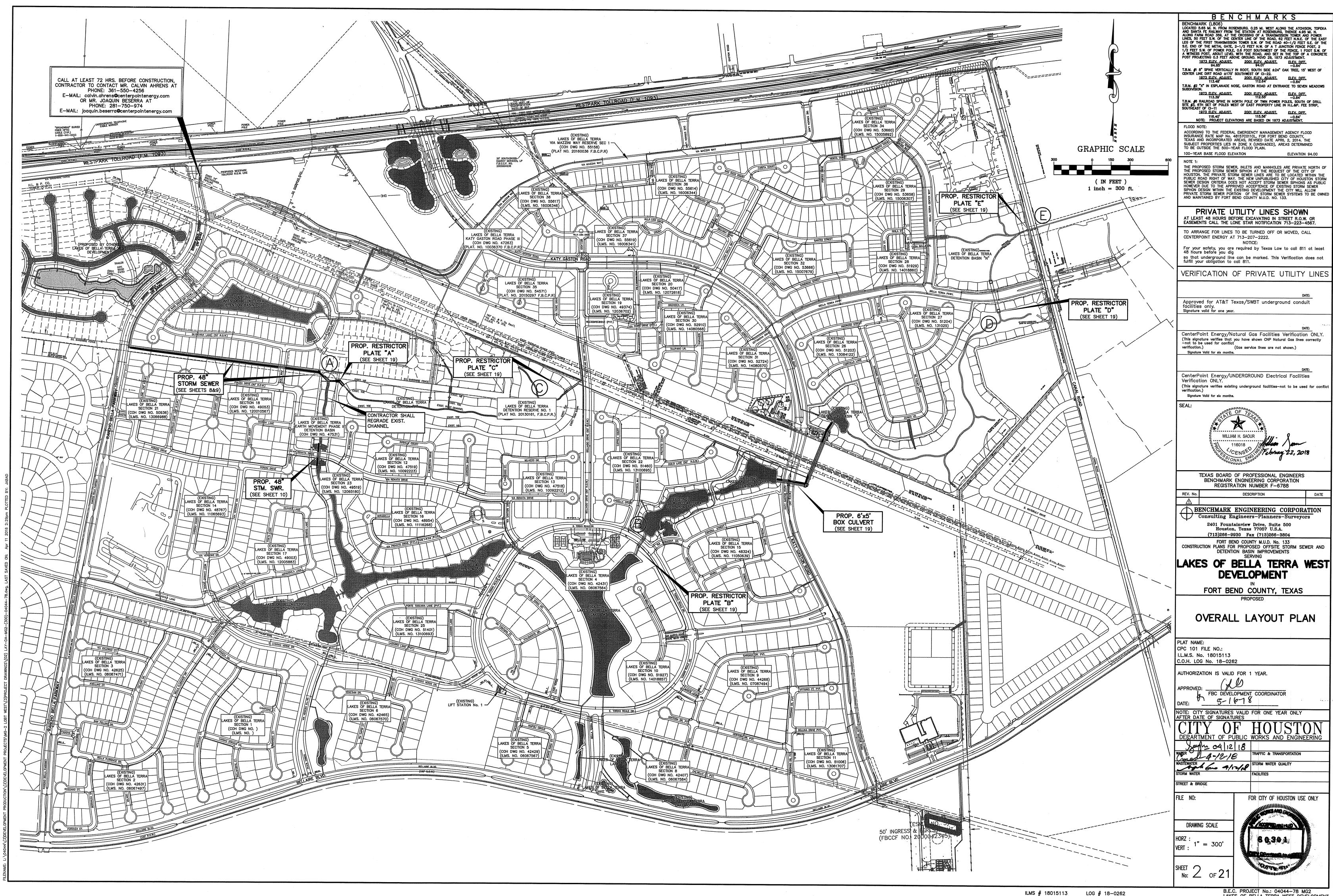
FORT BEND COUNTY ENGINEER

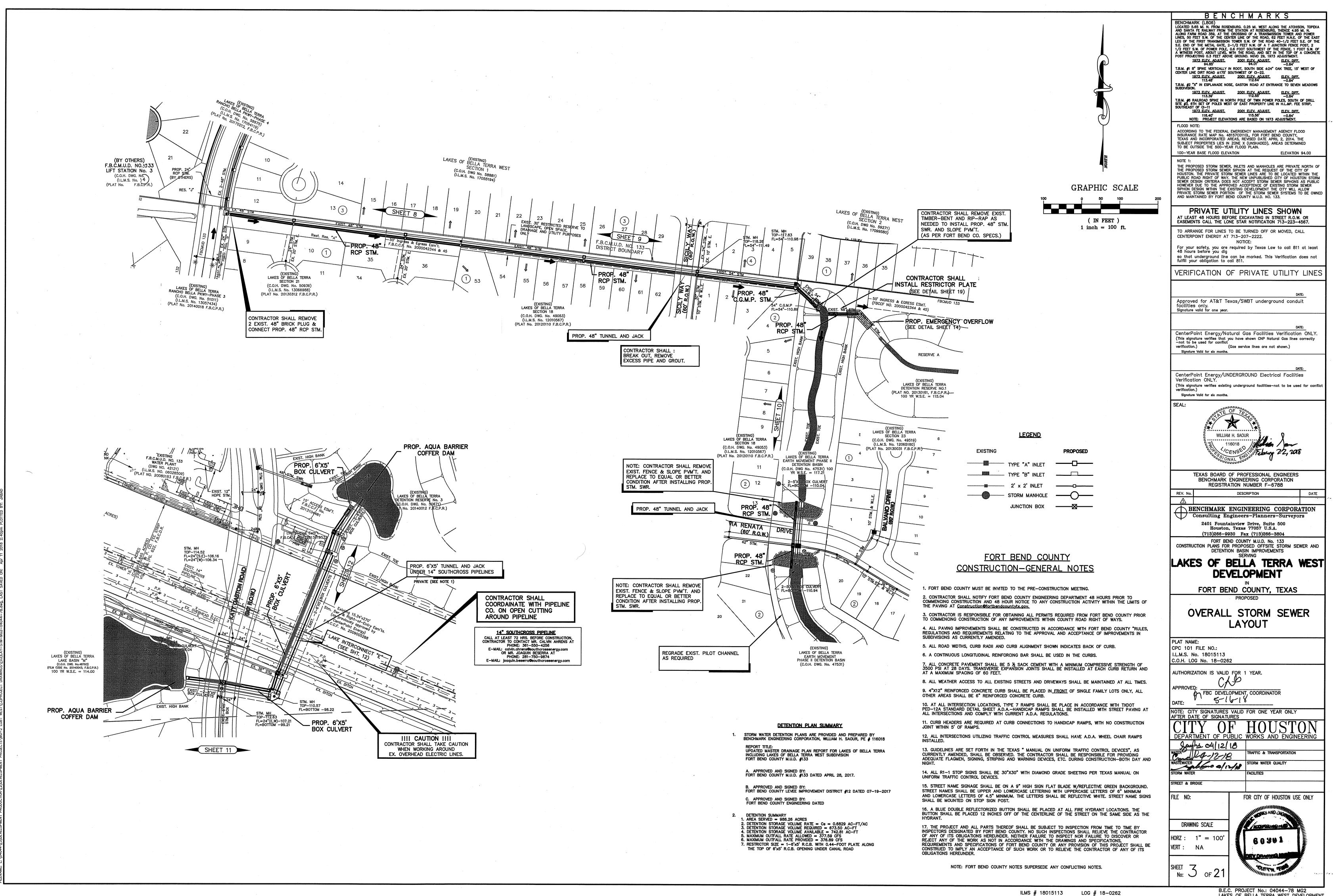
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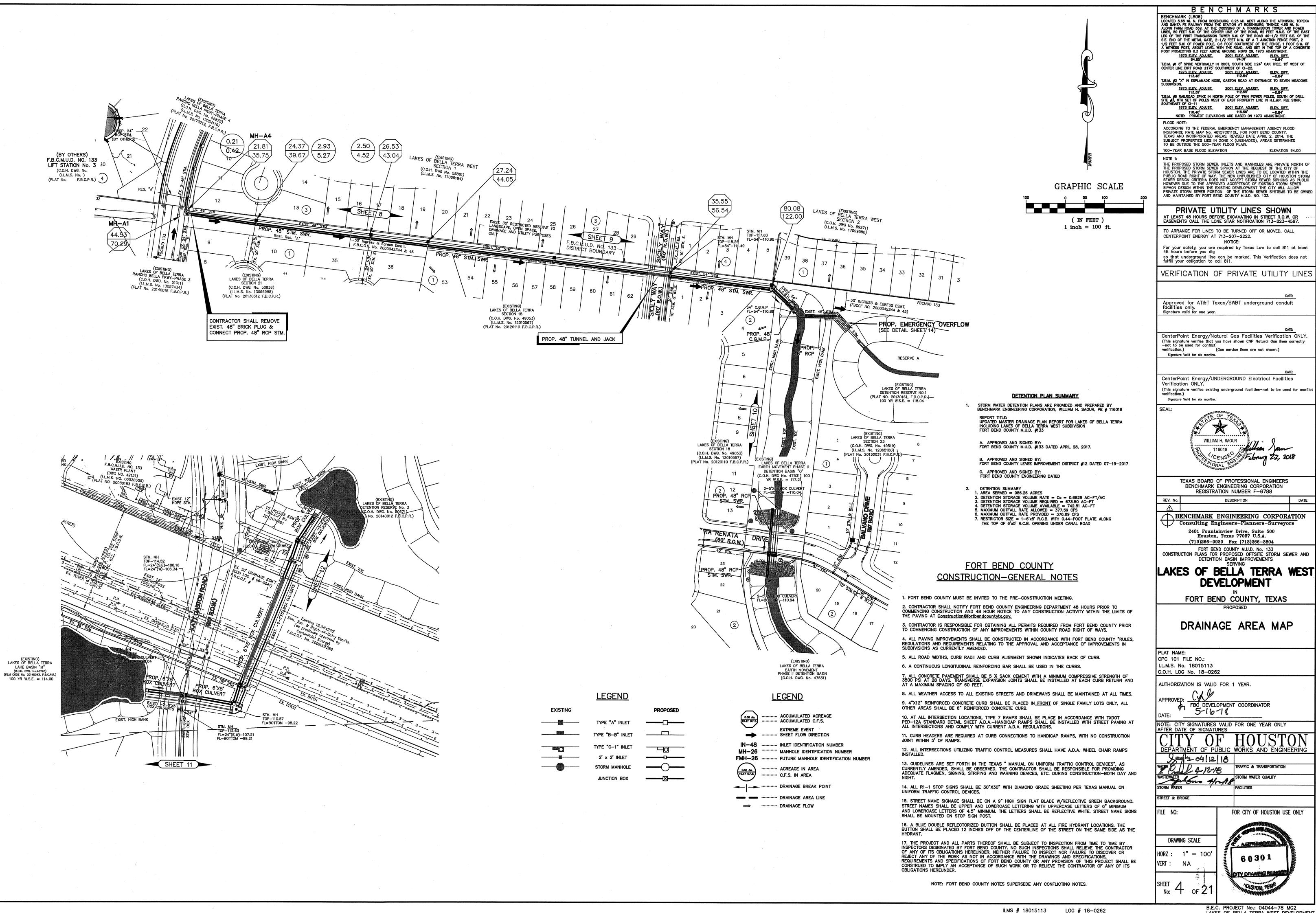
ENGINEER: Pul & Starge, PE, PTOE FOR RICHARD W. STOLLEIS, P.E.

(1) YEAR FROM DATE OF APPROVAL.

DATE:







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<del></del>	A5 (4)	OUT		118.45				18 5.8								3 417.60												108.02				TUO	108 0	2 112.55	ACCEPTABLE	, "	

0.045 | 0.013 | 417.60 | 4.68 | 0.03 | 0.00 | 97.38 | 97.35 | 4.25 | 0.04 | 0.03 | 108.04 | 108.02

A5 (4)

(4) 1 PROP. 6'x5' BOX CULVERT IMMEDIATELY ADJACENT TO 2 EXIST. 6'x5' BOX CULVERTS

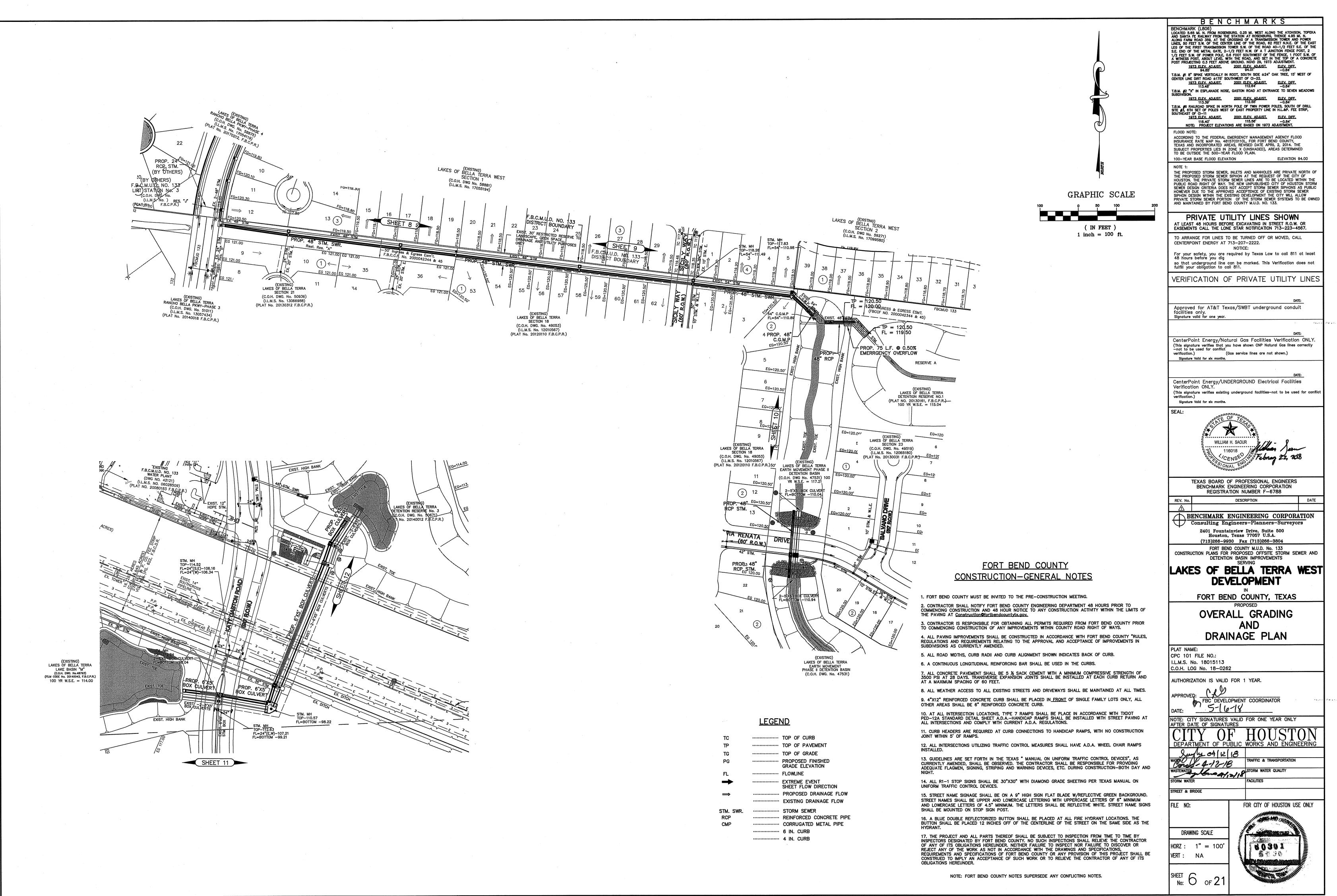
BENCHMARKS BENCHMARK (L806)
LOCATED 5.65 MI. N. FROM ROSENBURG. 0.25 MI. WEST ALONG THE ATCHISON, TOPEKA AND SANTA FE RAILWAY FROM THE STATION AT ROSENBURG, THENCE 4.95 MI. N. ALONG FARM ROAD 359, AT THE CROSSING OF A TRANSMISSION TOWER AND POWER LINES, 50 FEET S.W. OF THE CENTER LINE OF THE ROAD, 62 FEET N.M. OF THE EAST LEG OF THE FIRST TRANSMISSION TOWER S.W. OF THE ROAD 40-1/2 FEET S.E. OF THE S.E. END OF THE METAL GATE, 2-1/2 FEET N.W. OF A T JUNCTION FENCE POST, 2
1/2 FEET S.W. OF POWER POLE, 0.6 FOOT SOUTHWEST OF THE FENCE, 1 FOOT S.W. OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.3 FEET ABOVE GROUND. NGVD 29, 1973 ADJUSTMENT.

1973 FLEV. ADJUST.
2001 FLEV. ADJUST.
94.85'

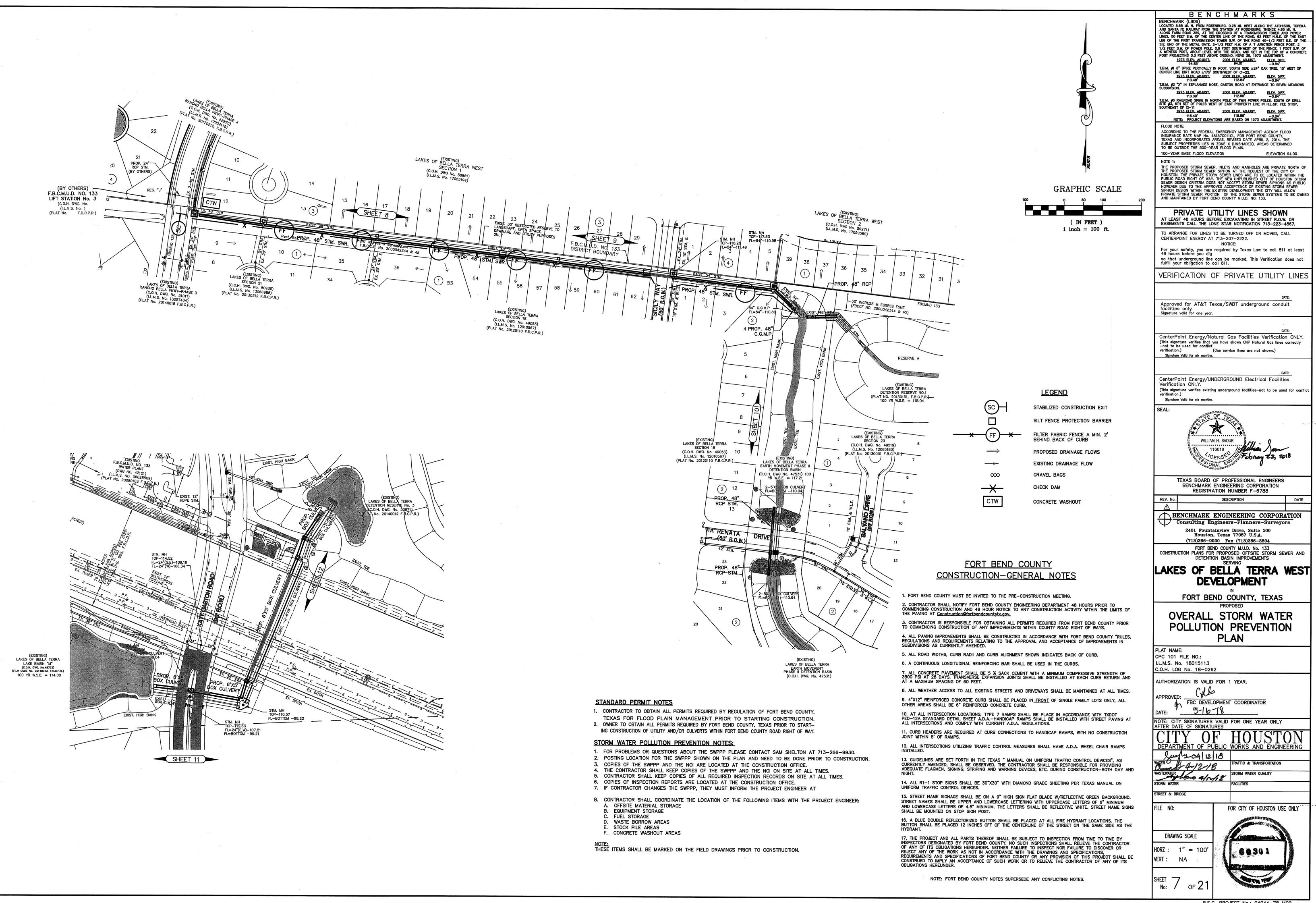
2011 FLEV. ADJUST.
1974 FLEVEL FORMAL AND ROOT SOUTHWEST OF THE FEV. DIFF.
94.85'

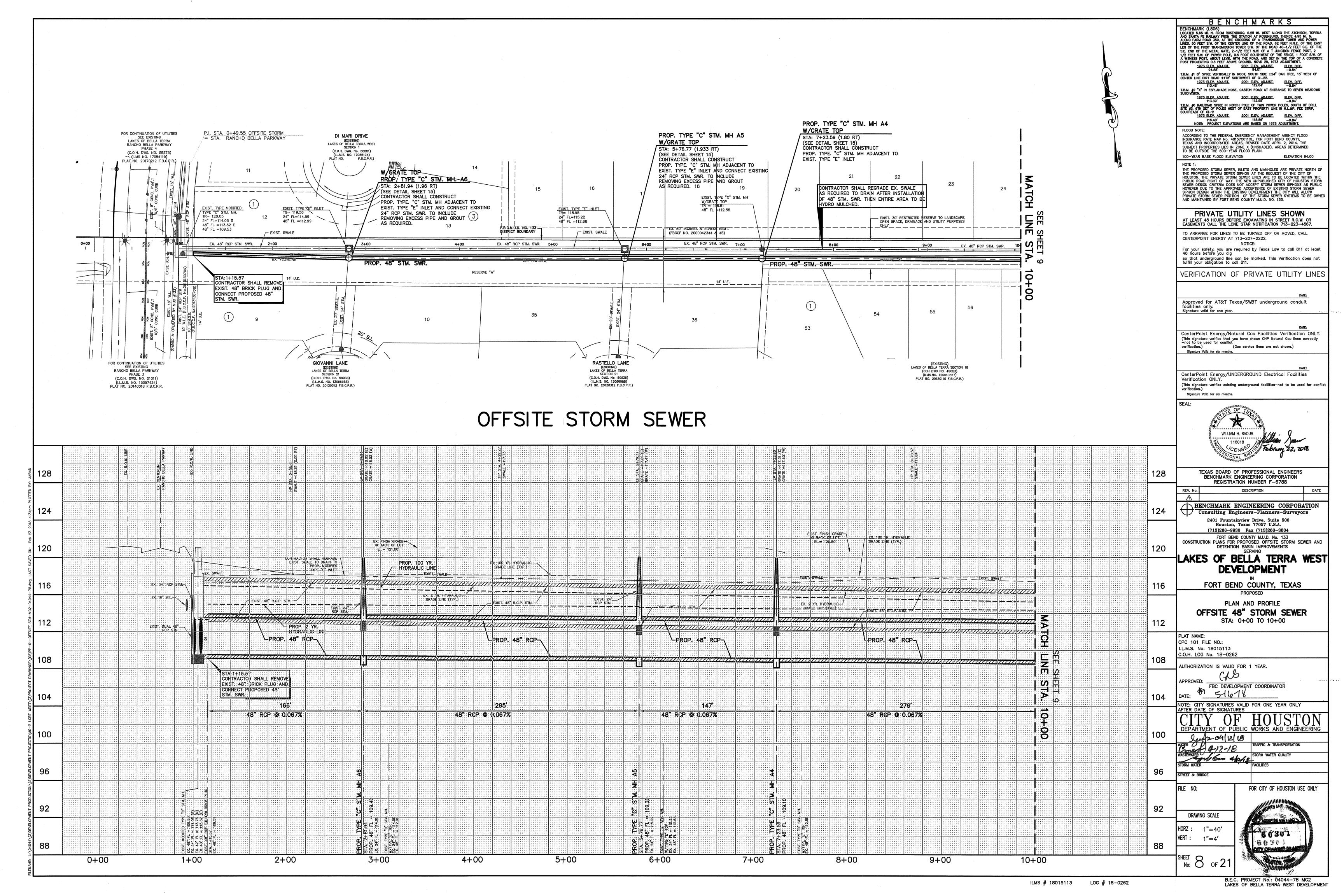
2011 FLEV. ADJUST.
1975 FLEV. ADJUST.
1976 FLEV. ADJUST.
1977 FLEV. ADJUST.
1978 FLEV. ADJUST.
1978 FLEV. ADJUST.
1978 FLEV. ADJUST.
1979 FLEV. ADJUST. T.B.M. #2 "X" IN ESPLANADE NOSE, GASTON ROAD AT ENTRANCE TO SEVEN MEADOWS SUBDIVISION. 1973 FLEV. ADJUST. 2001 FLEV. ADJUST. FLEV. DIFF. 113.39' 112.55' -0.84' ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP No. 48157C0110L, FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, REVISED DATE APRIL 2, 2014. THE SUBJECT PROPERTIES LIES IN ZONE X (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN. 100-YEAR BASE FLOOD ELEVATION ELEVATION 94.00 THE PROPOSED STORM SEWER, INLETS AND MANHOLES ARE PRIVATE NORTH OF THE PROPOSED STORM SEWER SIPHON AT THE REQUEST OF THE CITY OF HOUSTON. THE PRIVATE STORM SEWER LINES ARE TO BE LOCATED WITHIN THE PUBLIC ROAD RIGHT OF WAY. THE NEW UNPUBLISHED CITY OF HOUSTON STORM SEWER DESIGN CRITERIA DOES NOT ACCEPT STORM SEWER SIPHONS AS PUBLIC HOWEVER DUE TO THE APPROVED ACCEPTENCE OF EXISTING STORM SEWER SIPHON DESIGN WITHIN THE EXISTING DEVELOPMENT THE CITY WILL ALLOW PRIVATE STORM SEWER PORTION OF THE STORM SEWER SYSTEMS TO BE OWNED AND MAINTAINED BY FORT BEND COUNTY M.U.D. NO. 133. PRIVATE UTILITY LINES SHOWN AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EASEMENTS CALL THE LONE STAR NOTIFICATION 713-223-4567. TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222. For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground line can be marked. This Verification does not fulfill your obligation to call 811. VERIFICATION OF PRIVATE UTILITY LINES Approved for AT&T Texas/SWBT underground conduit facilities only.
Signature valid for one year. CenterPoint Energy/Natural Gas Facilities Verification ONLY. (This signature verifies that you have shown CNP Natural Gas lines correctly—not to be used for conflict (Gas service lines are not shown.) Signature Valid for six months. CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities—not to be used for conflict verification.) Signature Valid for six months. SAIB YACOOB SAOUR 40094 Feb 22,2016 TEXAS BOARD OF PROFESSIONAL ENGINEERS BENCHMARK ENGINEERING CORPORATION REGISTRATION NUMBER F-6788 DESCRIPTION BENCHMARK ENGINEERING CORPORATION
Consulting Engineers-Planners-Surveyors 2401 Fountainview Drive, Suite 500 Houston, Texas 77057 U.S.A. (713)266-9930 Fax (713)266-3804 FORT BEND COUNTY M.U.D. No. 133
CONSTRUCTION PLANS FOR PROPOSED OFFSITE STORM SEWER AND
DETENTION BASIN IMPROVEMENTS
SERVING

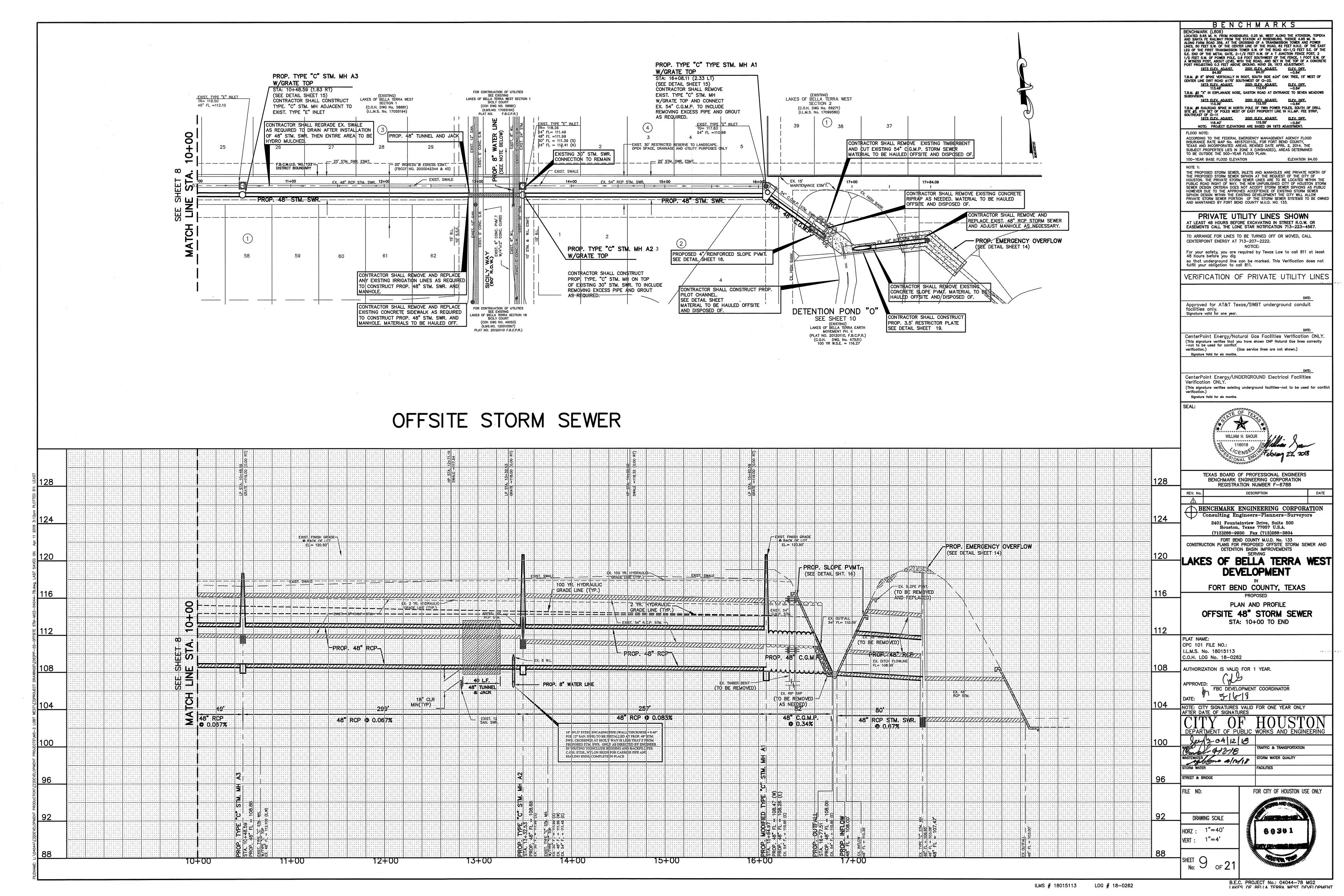
LAKES OF BELLA TERRA WEST DEVELOPMENT FORT BEND COUNTY, TEXAS DRAINAGE AREA CALCULATION PLAT NAME: CPC 101 FILE NO.: I.L.M.S. No. 18015113 C.O.H. LOG No. 18-0262 AUTHORIZATION IS VALID FOR 1 YEAR. FBC DEVELOPMENT COORDINATOR 5-16-18 NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING July 04-12-18 FILE NO: FOR CITY OF HOUSTON USE ONLY DRAWING SCALE N.T.S

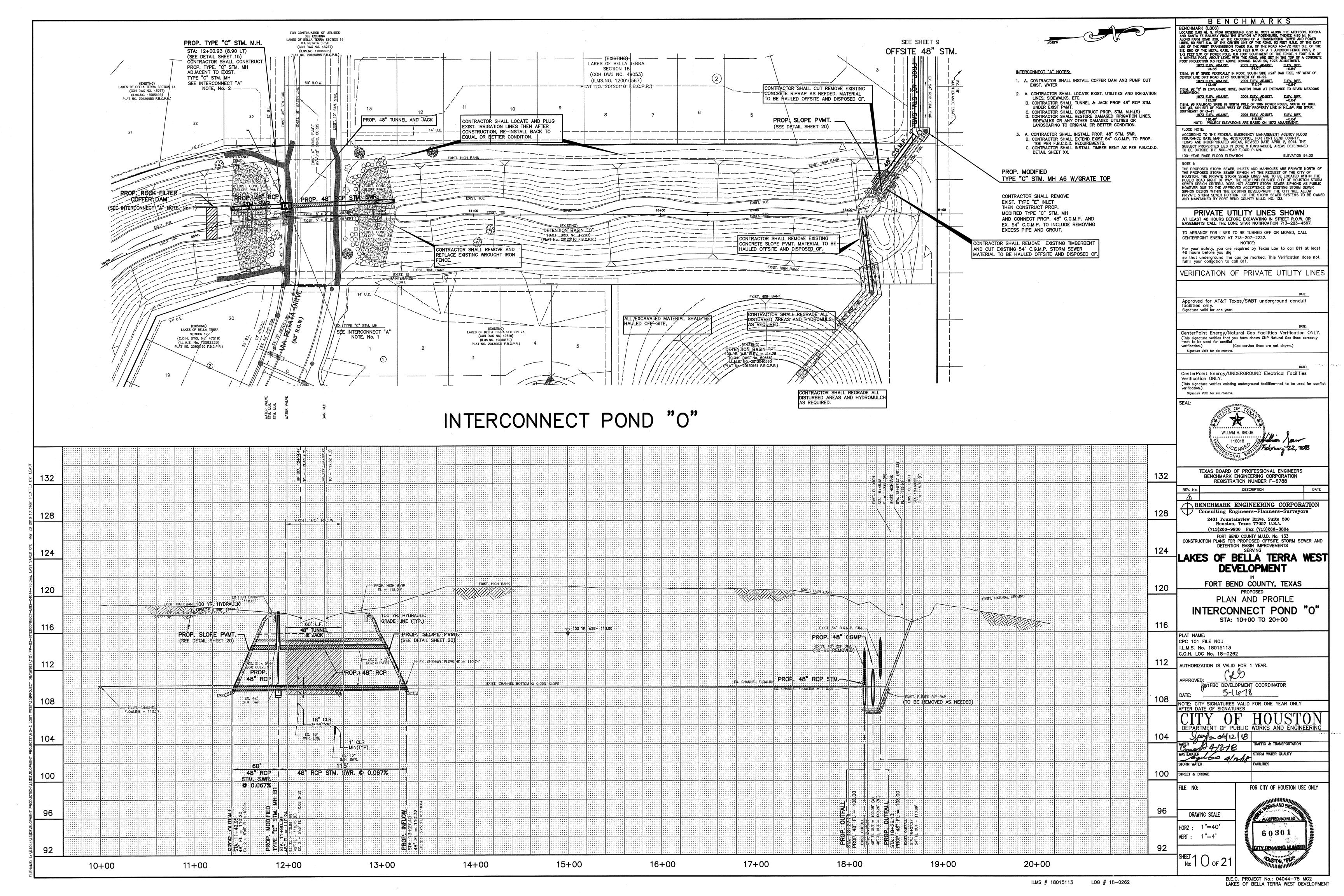


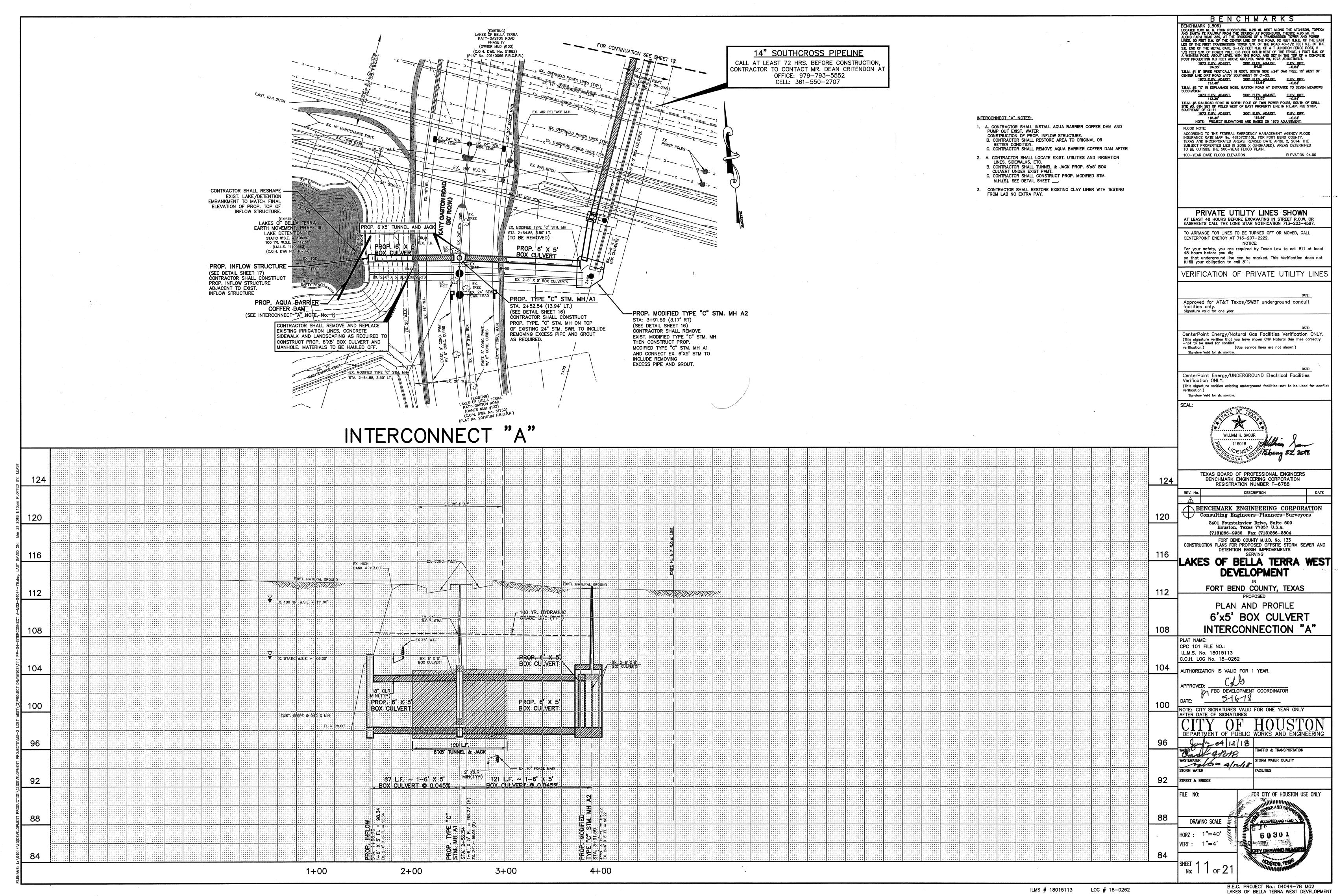
B.E.C. PROJECT No.: 04044-78 MG2 LAKES OF BELLA TERRA WEST DEVELOPMENT

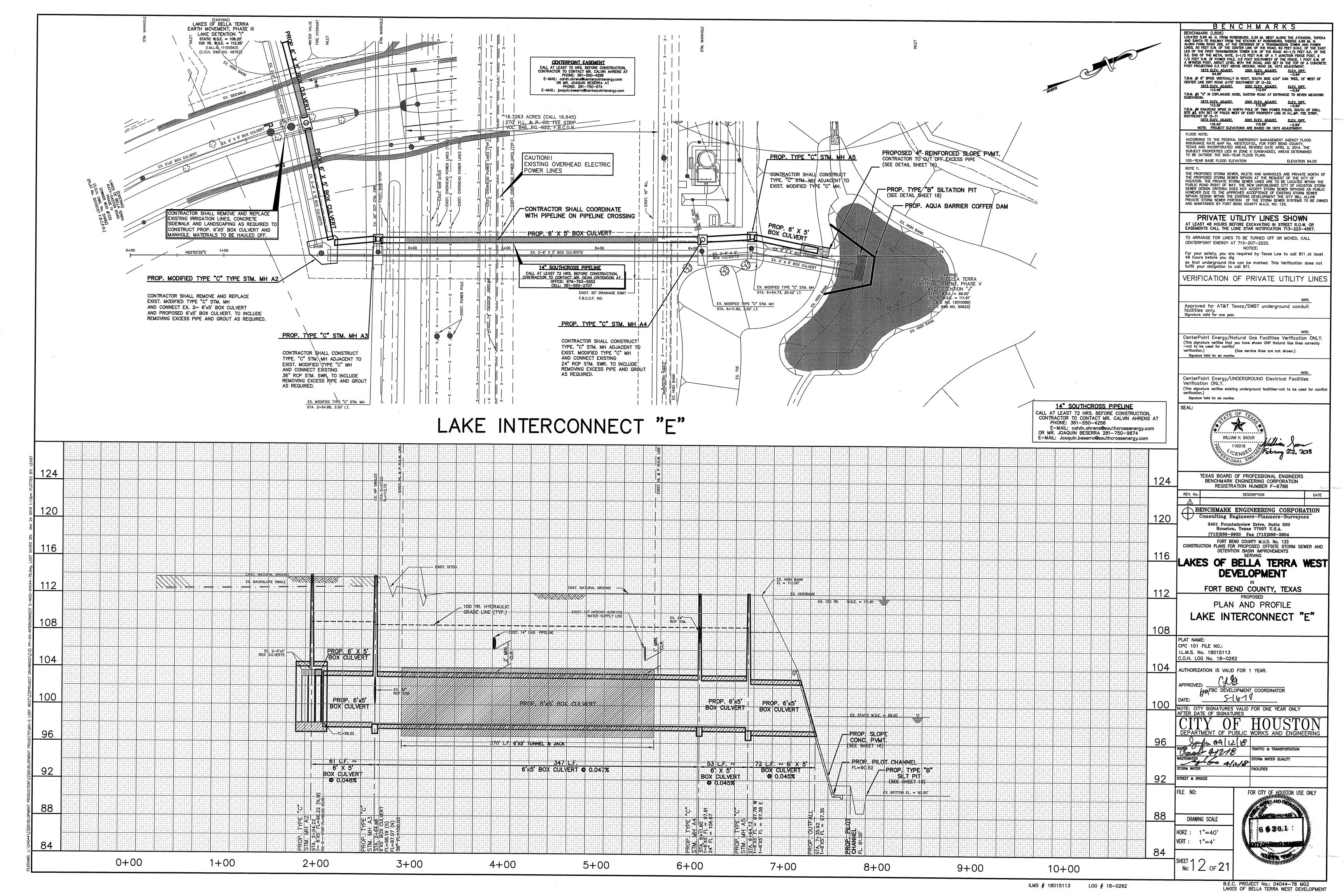


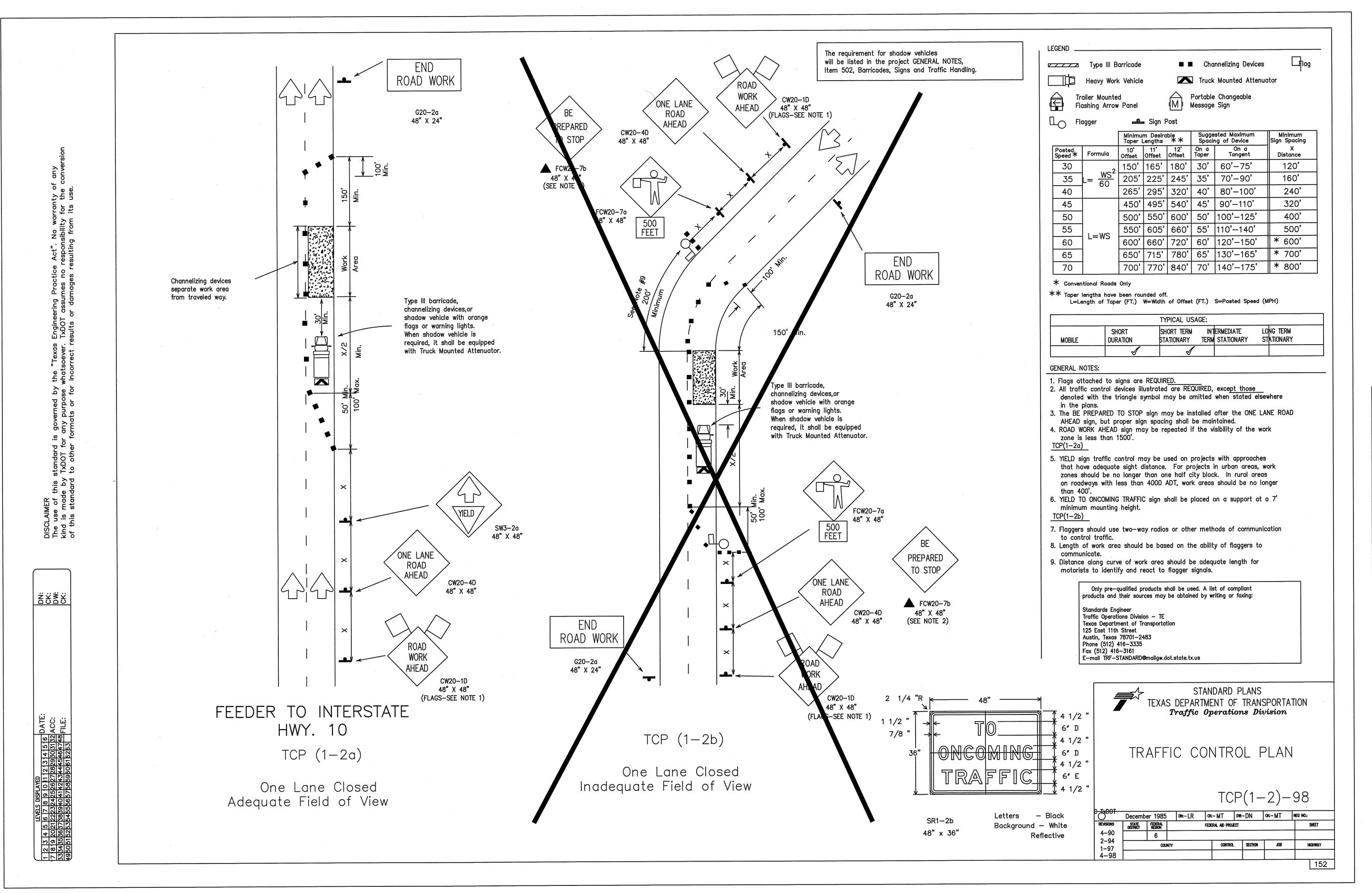


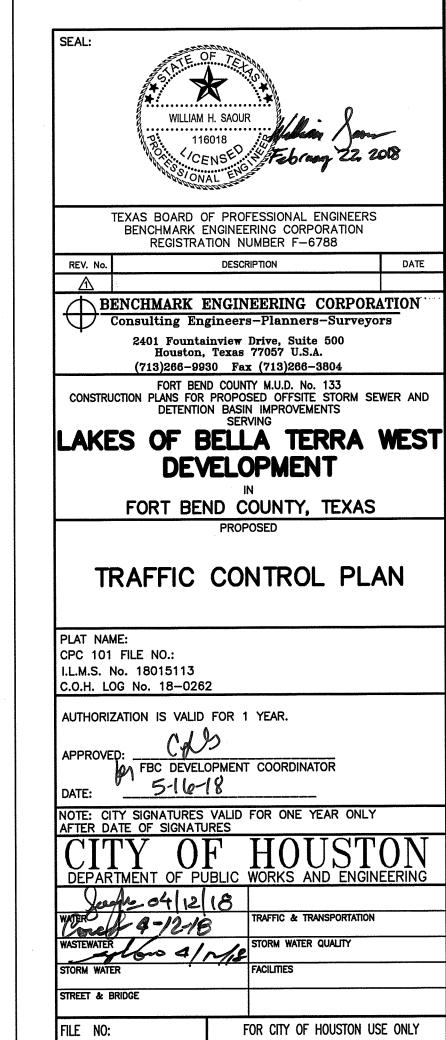












DRAWING SCALE

N.T.S.

HORZ:

"STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE" AND "INFRASTRUCTURE DESIGN MANUAL" THE CONTRACTOR SHALL OBTAIN AND USE COPIES OF THE MOST RECENT EDITIONS OF THESE DOCUMENTS WITH ALL SUBSEQUENT AMENDMENTS ADDED THERETO UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS.

S THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT HE HAS THE MOST RECENT EDITIONS. AS OF 8/19/05, THE MOST RECENT EDITIONS OF THESE DOCUMENTS ARE DATED OCTOBER 2002. THESE DOCUMENTS MAY BE OBTAINED FROM THE CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS, 611 WALKER. WHERE CONFLICTS ARISE BETWEEN CITY OF HOUSTON RULES, AS GIVEN IN CITY DOCUMENTS, AND FEDERAL STATE OF TEXAS (TCEQ), FORT BEND, MONTGOMERY OR FORT BEND DESIGN RULES AND SPECIFICATIONS. THE CITY RULES SHALL GOVERN. TCEQ RULES WILL BE FOLLOWED WHEN NO CITY DOCUMENT COVERS THE ISSUE CONTRACTOR SHALL OBTAIN AND USE COPIES OF THE LATEST EDITIONS OF TCEQ RULES GOVERNING THIS PROJECT 4. ALL WORK IS SUBJECT TO INSPECTION BY THE CITY OF HOUSTON, TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ), FORT BEND COUNTY, FORT BEND COUNTY FLOOD CONTROL DISTRICT, AND THE ENGINEER OR HIS DESIGNEE. IN MONTGOMERY AND FORT BEND COUNTIES, THEIR EQUIVALENT AGENCIES DO IT. 5. PROJECTS WITHIN THE HOUSTON CITY LIMITS ARE SUBJECT TO THE "CITY OF HOUSTON STREET CUT

ORDINANCE". CONTRACTOR SHALL OBTAIN A COPY OF SAID DOCUMENT AND OBSERVE ITS RULES AND REGULATIONS TO THE SATISFACTION OF THE CITY OF HOUSTON

6. CONTRACTOR SHALL NOTIFY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING, ENGINEERING CONSTRUCTION AND REAL ESTATE GROUP (TELEPHONE NO. 713 863 1450), FORTY-EIGHT (48) HOURS BEFORE STARTING WORK ON THIS PROJECT. CHANGES TO PLANS AFTER SIGNATURE WILL REQUIRE REVIEW AND UPDATE OF SIGNATURES. THE DESIGN

NEER, NOT THE CONTRACTOR SHALL RESUBMIT SUCH CHANGES. 8. LETTERS OF AVAILABILITY ARE REQUIRED FOR PROJECTS LOCATED WITHIN OR SERVED BY THE CITY OF HOUSTON. LETTERS OF AVAILABILITY FOR STORM, WASTEWATER AND WATE EXPIRE AFTER ONE YEAR.

CONTRACTOR SHALL MAKE SURE THAT ALL PLAN SIGNATURES AND LETTERS OF AVAILABILITY HAVE CURRENT DATES AS OF START OF CONSTRUCTION. IF CONSTRUCTION DOES NOT BEGIN WITHIN 1 YEAR AFTER PLANS ARE SIGNED, PLANS MUST BE RESIGNED AND LETTERS OF AVAILABILITY MUST BE UPDATED. 10. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE COUNTY OF LOCATION, THE CITY OF HOUSTON,

11. CONTRACTOR SHALL NOTIFY BENCHMARK ENGINEERING CORP. (TELEPHONE NO. 713-266-9930) FORTY-EIGHT (48) HRS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND TWO (2) WORKING DAYS NOTICE FOR ONSTRUCTION CONTROL STAKING. 12. THESE PLANS PREPARED BY BENCHMARK ENGINEERING CORP. DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE REGISTERED ENGINEER(S) HEREON 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. INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY THE HOUSE BILLS 652 AND 655 ENACTED BY THE TEXAS LEGISLATURE REGULAR SESSION AND CURRENT OSHA STANDARDS FOR TRENCH SAFETY. DESIGN OF TRENCH SAFETY SYSTEMS, SEALED BY A LICENSED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED BY THE CONTRACTOR PRIOR TO EXECUTION OF A CONTRACT FOR THIS WORK. 13. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD BEFORE COMMENCING WORK, I SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPORT ANY DISCREPANCIES TO OWNER IN A TIMELY MANNER 14. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE DRAWINGS. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL (TELEPHONE NO. 713 223 4567) AT LEAST FORTY-EIGHT (48)

HOURS BEFORE PROCEEDING WITH ANY EXCAVATION 15. CONTRACTOR SHALL NOTIFY THE OPERATOR FOR THE DISTRICT CONTRACTOR SHALL NOTIFY THE OPERATOR FOR THE DISTRICT \_\_\_\_\_\_\_, TELEPHONE NO.\_\_\_\_\_\_, FORTY-EIGHT (48) HOURS BEFORE STARTING WORK ON THIS PROJECT.
 CONTRACTOR SHALL CONFINE ALL WORK EFFORTS WITHIN THE DESIGNATED AREA, UNLESS SPECIFICALLY AUTHORIZED BY THE OWNER. EXTREME CARE SHOULD BE EXERCISED NEAR ADJACENT PROPERTY TO PROTECT ANY EXISTING TREES. FENCES. LANDSCAPING AND OTHER EXISTING FEATURES.

17. ALL EXISTING LANDSCAPING, SIDEWALKS, FENCES, UTILITIES AND OTHER EXISTING FACILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE ORIGINAL OR BETTER CONDITION BY THE CONTRACTOR AT HIS EXPENSE. 18. THERE WILL BE NO SEPARATE PAYMENT FOR WORK SHOWN ON THESE PLANS UNLESS SPECIFICALLY ESTABLISHED IN THE CONTRACT DOCUMENTS. 19. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY REGULATION OF THE APPROPRIATE COUNTY FLOOD PLAIN MANAGEMENT AGENCY PRIOR TO STARTING CONSTRUCTION. (FORT BEND COUNTY FLOOD CONTROL OR THE EQUIVALENT

FORT BEND OR MONTGOMERY COUNTY AGENCIES). 20. OWNER WILL PROVIDE CONTROL STAKING ONLY. CONTRACTOR TO BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING SUPERVISED BY A LICENSED SURVEYOR IN THE STATE OF TEXAS. SURVEYOR MUST CARRY ERROR AND SIONS INSURANCE. INCLUDE THE COST FOR THIS WORK IN OTHER ITEMS. 21. ALL UNSATISFACTORY AND/OR WASTE MATERIALS INCLUDING VEGETATION, ROOTS, CONCRETE, AND DEBRIS SHALL

BE HAULED OFF SITE AND DISPOSED OF BY THE CONTRACTOR. INCLUDE COST OF THIS WORK, INCLUDING HAUL, IN OTHER ITEMS OF THIS PROJECT. 22. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION OF PROPOSED FACILITIES. ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY. ALL CONSTRUCTION ACTIVITIES SHALL COMPLY WITH THE FINAL DRAFT OF STORMWATER MANAGEMENT HANDBOOK FOR CONSTRUCTION ACTIVITIES" AS PREPARED BY FORT BEND COUNTY/FORT BEND COUNTY FLOOD CONTROL DISTRICT AND THE CITY OF HOUSTON IN COMPLIANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM ("NPDES") REQUIREMENTS. IN MONTGOMERY AND FORT BEND COUNTIES

CONFORM TO THE RULES OF THEIR SIMILAR AGENCIES.

23. CONTRACTOR SHALL BE RESPONSIBLE FOR PURCHASING WATER NEEDED FOR CONSTRUCTION OR TESTING. THE PURCHASE OF WATER FOR CONSTRUCTION OR TESTING WILL BE CONSIDERED INCIDENTAL TO THE VARIOUS OTHER 24. ALL EXISTING UNDERGROUND UTILITIES ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE. BUT WERE OBTAINED FROM INFORMATION AVAILABLE. CONTRACTOR HAS SOLE RESPONSIBILITY FOR FIELD VERIFICATION OF ALL EXISTING FACILITIES SHOWN ON DRAWINGS. CONTRACTOR SHALL COORDINATE ALL CONFLICTS WITH THE APPROPRIATE

GOVERNING AGENCIES. NO SEPARATE PAY. 25. CONTRACTOR SHALL REMOVE PLUGS AND CONNECT TO EXISTING UTILITY LINES AS INDICATED ON THE 26. ALL UTILITY TRENCHES TO BE BACKFILLED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D 698).

27. MAINTAIN A MINIMUM OF 12 INCHES OF CLEARANCE BETWEEN ALL UTILITIES UNLESS SHOWN OTHERWISE ON

28. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGES, MADE DURING CONSTRUCTION, TO EXISTING WASTEWATER LINES, WATER LINES, STORM DRAINAGE LINES, PAVING AND TRAFFIC SIGNAL CONDUITS. CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE OR REPAIR TO CITY OF HOUSTON STANDARDS OR TO THEIR ORIGINAL CONDITION; WHICHEVER IS BETTER, BY THE CONTRACTOR AT HIS EXPENSE.

29. CONDITION OF THE ROAD AND RIGHT-OF-WAY, UPON COMPLETION OF THE JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK. 30. CONTRACTOR SHALL REMOVE ANY DEBRIS THAT MAY BE FOUND WITHIN THE WORK SITE. ENGINEER SHALL IDENTIFY SAID DEBRIS AND CONTRACTOR SHALL DISPOSE OF SAME OFFSITE. 31. CONSTRUCTION ACCESS TO THE SITE WILL BE VIA F.M. HWY. NO. 723 (SPRING GREEN ROAD) AND CANAL ROAD, UNLESS SPECIFICALLY AUTHORIZED OTHERWISE IN ADVANCE BY THE ENGINEER 32. ALL EASEMENTS, (PLATTED OR BY SEPARATE INSTRUMENT), CALLED FOR ON THE PLANS MUST HAVE BEEN

EDICATED AND RECORDED PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY THIS AS FACT. 33. IN CASES OF SPECIALIZED UTILITY EASEMENTS SUCH AS WATER, SANITARY AND DRAINAGE THE DESIGN ENGINEER IS EXPECTED TO INCLUDE, IN THE INSTRUMENT OF DEDICATION, THE RIGHT OF INGRESS AND EGRESS FOR MAINTENANCE OF ANY UTILITIES LOCATED ON THE OTHER SIDE OF SAID EASEMENT. MOVEMENT ( CONSTRUCTION EQUIPMENT ACROSS SAID EASEMENT SHOULD ALSO BE PERMITTED. CONTRACTOR IS, HOWEVER. WARNED TO READ THE ORIGINAL INSTRUMENTS OF DEDICATION FOR SUCH EASEMENTS TO AVOID LEGAL PROBLEMS SINCE THE DOCUMENTS SIGNED BY THE LANDOWNER GOVERN THE LEGAL SITUATION.

34. CONTRACTOR SHALL PREPARE A SET OF "AS-BUILT" DRAWINGS SHOWING ANY FIELD CHANGES MADE TO THE ENGINEER'S DESIGN. FOR INSIDE CITY LIMITS PROJECTS THIS SET SHALL BE DELIVERED TO THE CITY MAP RECORDS OFFICE. FOR ETJ JOBS, IT GOES TO THE UTILITY DISTRICT FN 55. Contractor shall not leave uncovered holes in pavement at the end of the day and shall not

LEAVE STEEL PLATES IN PLACE FOR MORE THAN 4 DAYS WHILE WORK IS PROCEEDING AT OTHER LOCATIONS. 36. CONTRACTOR TO PROVIDE FLAGMEN AND TRAFFIC CONTROL DEVICES TO MAINTAIN THE PROPER FLOW OF TRAFFIC AROUND THE CONSTRUCTION SITE. 37. WATERLINES, WASTEWATER COLLECTION SYSTEMS, AND DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S "STANDARDS CONSTRUCTION SPECIFICATIONS DATED OCTOBER 2002, AND "STANDARD CONSTRUCTION

DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAYING DATED OCTOBER 2002 WITH ALL SUBSEQUENT AMENDMENTS ADDED THERETO UNLESS NOTED OTHERWISE AND APPROVED ON THESE PLANS. THE DESIGN MUST AGREE WITH THE MINIMUM STANDARDS ESTABLISHED IN THE "DESIGN MANUAL FOR STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" DATED OCTOBER 2002, NOTE THAT THE PLAN SIGNATURES EXPIRE AFTER 1 YEAR AND THE LATEST EDITIONS OF DESIGN RULES, SPECIFICATIONS & MANUALS SHALL GOVERN AS OF THE DATE OF RESIGNING. 38. ALL EXISTING UNDERGROUND UTILITIES ARE NOT GUARANTEED TO BE COMPLETED OR DEFINITE,

BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE. CONTRACTOR HAS SOLE RESPONSIBILITY FOR THE FIELD VERIFICATION OF ALL EXISTING FACILITIES SHOWN ON DRAWINGS. CONTRACTOR SHALL COORDINATE ALL CONFLICTS WITH THE APPROPRIATE

39. THE LOCATION OF SOUTHWESTERN BELL TELEPHONE COMPANY, CENTERPOINT ENERGY/GAS SHALL REQUEST THE EXACT LOCATION OF THESE FACILITIES BY CALLING THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 OR TOLL FREE 1-800- 245-4545. AT LEAST 48 HOURS BEFORE COMMENCING WORK. THE CONTRACTOR IF FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO HIS FAILURE TO REQUEST THE LOCATION AND PRESERVATION OF THESE UNDERGROUND FACILITIES.

41. TEXAS LAW ARTICLE 1436C, PROHIBITS ALL ACTIVITIES IN WHICH PERSONS OR EQUIPMENT MAY COME WITHIN 8 FEET OF ENERGIZED OVERHEAD POWER LINES, AND FEDERAL REGULATION, TITLE 29, PART 1910.190(1) AND PART 1926.440(A)(15) REQUIRE A MINIMUM CLEARANCE OF 20 FEET FROM THESE FACILITIES. THE ABOVE LAWS CARRY BOTH CRIMINAL AND CIVIL JABILITIES, WITH CONTRACTORS AND OWNERS BEING LEGALLY RESPONSIBLE FOR THE SAFETY OF WORKERS UNDER THESE LAWS. IF YOU OR YOUR COMPANY MUST WORK NEAR OVERHEAD POWER LINES CALL (713) 228-7400 FOR LINES TO BE DE- ENERGIZED AND/OR MOVED AT YOUR

43. TRENCH SAFETY SYSTEMS SHALL BE IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS STANDARDS FOR TRENCH SAFETY THAT WILL BE IN EFFECT DURING THE PERIOD OF CONSTRUCTION OF THAT PROJECT. CONTRACTORS ATTENTION IS DIRECTED TO THE REQUIREMENTS OF OCCUPATIONAL SAFETY AND HEALTH STANDARDS: EXCAVATION: PROPOSED RULE (29 CFR PART 1926) AS PUBLISHED IN THE FEDERAL REGISTER VOLUME 52, NO. 72, SECTIONS 1926-650 THROUGH 1926-653 AND DATED WEDNESDAY, APRIL 15, APPLICABLE STATE LAW ENACTED BY THE TEXAS LEGISLATURE (H.B. NO. 1569), AND TO

CITY OF HOUSTON ORDINANCE 87-1457. ALSO REFER TO NOTE 12.

44. ALL NECESSARY QUALITY CONTROL OF TESTING OF MATERIALS AND PAVING SHALL BE CONDUCTED AND PAID FOR BY THE CONTRACTOR.
45. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK. B. CONTRACTOR SHALL SUBMIT TO BENCHMARK ENGINEERING CORPORATION AND OWNER ALL TESTING RESULTS PERTAINING TO, BUT NOT LIMITED TO THE FOLLOWING SUBJECTS:

1. PRESSURE TESTS FOR LEAKAGE 2. PURIFICATION LAB RESULTS

SANITARY SEWER - LEAKAGE TESTS 2. DEFECTION TEST (WHEN REQUIRED BY CITY) PAVING OF ASPHALT AND CONCRETE -

1. MATERIAL, THICKNESS, SLUMP AND STRENGTH (7 & 28 DAYS) 2. BASE MATERIAL AND STRENGTH TESTS

3. SUBGRADE MATERIAL, STRENGTH, COMPACTION AND MOISTURE CONTENT
FILL AREAS - MOISTURE CONTENT, COMPACTION TEST; DRY DENSITY; PLASTICITY INDEX. 47. ALL CONSTRUCTION NOTES THAT APPEAR ON THIS SET OF CONSTRUCTION DOCUMENTS SHALL BE PART OF THE CONSTRUCTION SPECIFICATIONS 48. TOP OF MANHOLES, INLETS AND CLEANOUTS SHALL CONFORM TO FINISHED GRADE AND PER

49. GRADES SHALL VARY UNIFORMLY BETWEEN SPOT ELEVATIONS SHOWN. 50. SHOULD THE CONTRACTOR FIND ANY DISCREPANCY OR OMISSIONS FROM THE PLANS, HE SHALL

NOTIFY THE ENGINEER AT ONCE TO OBTAIN CLARIFICATION PRIOR TO STARTING 51. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UNDERGROUND UTILITIES. 52. ALL BEDDING FOR SANITARY AND STORM SEWER SHALL BE AS PER REQUIRED SPECIFICATIONS.

53. BACKFILL: AFTER THE PIPES ARE BEDDED AS SPECIFIED, BACKFILL MATERIAL SHALL BE DEPOSITED IN 6-INCH MAXIMUM THICKNESS LAYERS AND COMPACTED WITH SUITABLE MECHANICAL TAMPERS TO THE DENSITY REQUIRED. 54. CONTRACTOR SHALL COORDINATE STORM, SANITARY SEWER AND WATER LINE CONSTRUCTION

WITH OTHER UNDERGROUND LINES TO AVOID CONFLICTS. 55. CLEARING AND STRIPPING: STRIP SURFACE OF SITE UNDER BUILDING AREAS, UNDER PAYED AREAS AND AREAS TO BE COVERED WITH SITE IMPROVEMENTS TO A DEPTH OF AT LEAST 4 INCHES BUT SUFFICIENT TO CLEAR GRASS, ROOTS AND DEBRIS. STRIP SURFACE OF SITE AREAS THAT ARE TO BE LEFT OPEN BUT WILL BE COVERED WITH FILL, TO A DEPTH OF 4

56. GRUBBING: REMOVE STUMPS, ROOTS OVER 4 INCHES IN DIAMETER AND MATTED ROOTS WITHIN THE LIMITS OF CLEARING TO THE FOLLOWING DEPTH: UNDER WALKING - 12 INCHES

UNDER ROADS - 18 INCHES UNDER PARKING AREAS - 12 INCHES UNDER LAWN AREAS - 8 INCHES UNDER FILL — 2 INCHES (WHERE FOOTING AND ROADS WILL BE CONSTRUCTED ON FILL. REMOVAL SHALL BE TO 18 INCHES) FILLS: PRIOR TO PLACING ANY FILL, ALL CLEARING AND GRUBBING OPERATIONS SHALL HAVE

BEEN COMPLETED ON THE AREAS WHERE THE FILL IS TO BE PLACED, STUMP HOLES OR OTHER SMALL EXCAVATIONS IN THE LIMITS OF THE EMBANKMENT SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND THOROUGHLY TAMPED BY APPROVED METHODS. THE FILLING MATERIAL SHALL HAVE A PLASTICITY INDEX OF NOT GREATER THAN 14. FILL SHALL BE CONSTRUCTED IN UNIFORM LAYERS NOT TO EXCEED 8" IN THICKNESS LOOSE MEASURE, EACH LAYER SHALL EXTEND ACROSS THE ENTIRE FILL AREA AND SHALL BE COMPACTED TO AT LEAST 95% STANDARD PROCTOR DENSITY BETWEEN OPTIMUM MOISTURE CONTENT AND 2% ABOVE OPTIMUM MOISTURE CONTENT. FILL MATERIAL DEPOSITED IN PLACE BY MEANS OF SCRAPERS, DUMP TRUCKS OR SIMILAR EQUIPMENT SHALL BE THOROUGHLY BROKEN UP BEFORE BEING SPREAD INTO UNIFORM LAYERS.

SANITARY AND STORM SEWER LINES ARE TO BE LAID AT TRUE AND ACCURATE GRADES WITH GOOD BEDDING AND BACKFILL TO ASSURE AGAINST FUTURE SETTLING OF LINES RESULTING IN POOR DRAINAGE AND EVENTUAL STOPPAGE DUE TO DEBRIS SETTLEMENT. 59. CONTRACTOR SHALL COORDINATE INTERNAL AND EXTERNAL BUILDING PLUMBING FOR PROPER

TRAFFIC CONSTRUCTION CONTROL

ALL WORK SHALL BE PURSUED IN ACCORDANCE WITH CITY ORDINANCE NO. 40-28. NO WORK SHALL BE DONE ON ROADWAY BETWEEN HOURS OF 7:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 6:00 P.M. (MONDAY THROUGH FRIDAY) AND USE UNIFORMED POLICE OFFICER TO CONTROL SITE TRAFFIC. NO WORK ON RESIDENTIAL STREETS FROM 7:00 P.M. TO 7:00 A.M. SEVEN DAYS A WEEK,

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 AS REVISED) DURING CONSTRUCTION.

CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE TRAFFIC IN EACH DIRECTION DURING WORKING HOURS AND USE UNIFORMED POLICE OFFICER TO CONTROL TRAFFIC.

CONTRACTOR SHALL COVER OPEN EXCAVATIONS WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS. THERE WILL BE NO EXTRA PAY FOR STEEL PLATES OFF DUTY UNIFORMED POLICE OFFICER(S) ARE REQUIRED TO DIRECT TRAFFIC TWO WAYS

IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS. (S)HE SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATE SET OF PLANS\* TO PLAN REVIEW SECTION FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION.

DURING CONSTRUCTION AROUND INTERSECTIONS AND WHEN TRAFFIC BLOCKED TO ONE (1)

\* THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLARS 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/SIDEWALK CLOSURE PERMITS SHALL BE CONTRACTOR MUST SECURE "LANE/SIDEWALK 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

THE SIGNS AND BARRICADES SHOWN ON THESE DRAWINGS CONSTITUTE MINIMUM REQUIREMENTS AND ARE NOT INTENDED TO COVER SPECIAL CIRCUMSTANCES OR OTHER CONDITIONS THAT MAY ARISE DUE TO UNFORESEEN FIELD CONDITIONS. THE CONTRACTOR SHALL PLACE AND MAINTAIN SUFFICIENT ADDITIONAL SIGNS, BARRICADES, AND WARNING DEVICES TO WARN THE PUBLIC AND PROVIDE FOR THE SAFE MOVEMENT OF TRAFFIC, WHERE PROJECT REQUIREMENTS ARE NOT FULLY SATISFIED BY THE STANDARDS SHOWN HEREON, THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"

DRUMS SHALL BE PLACED AS SHOWN ON PLANS.

(713) 837-7280 FOR AN APPLICATION.

INGRESS AND EGRESS SHALL BE PROVED ED FOR THE PROPERTY OWNERS AND BUSINESSES OF THE ABUTTING PROPERTY AND AT THE CROSS STREETS WHICH ARE AFFECTED BY THE CONSTRUCTION OF

ALL NON-PERMANENT PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH CITY OF HOUSTON SPECIAL PROVISION, "TEMPORARY AND REMOVABLE PERFORMED PLASTIC PAVEMENT MARKINGS". MINIMUM LANE WIDTH SHALL BE 10' (FEET).

ALL EXISTING REGULATORY, WARNING & GUIDE SIGNS SHALL BE MAINTAINED IN PLACE AS NECESSARY DURING THE ENTIRE PERIOD OF CONSTRUCTION BY THE CONTRACTOR. HOWEVER, THE CONTRACTOR SHALL REMOVE ANY EXISTING SIGNS AND STRIPINGS WHICH ARE IN CONFLICT WITH THE CONSTRUCTION SIGNS AND STRIPING. EXISTING PAVEMENT MARKINGS SHALL BE REMOVED IN AREAS WHERE TRAFFIC IS

. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER SUCH THAT TRUCKS AND OTHER VEHICLES DO NOT CREATE A DIRT NUISANCE OR SAFETY HAZARD IN ANY STREETS. PUBLIC OR PRIVATE CONTRACTOR SHALL REALIGN AND READJUST SIGNAL HEADS AS REQUIRED AND DIRECTED BY THE CITY

OF HOUSTON AND THE FIELD ENGINEER DURING ENTIRE CONSTRUCTION ACTIVITY. L TEMPORARY SIGNAL TIMING CHANGES DURING CONSTRUCTION PHASES SHALL BE DONE BY THE CITY OF HOUSTON, CONTRACTOR SHALL NOTIFY THE CITY (MR. STEPHEN HA AT 881-3174) AT LEAST 5 WORKING DAYS PRIOR TO EACH CONSTRUCTION PHASE AT THE SIGNALIZED INTERSECTIONS SO THAT THE

SIGNAL TIMING CHANGES CAN BE MADE. (ONLY IF REQUIRED BY THE CITY OF HOUSTON) SIGNS MOUNTED ON TYPE III BARRICADES SHALL BE EQUIPPED WITH A TYPE "A"

BARRICADES, SIGNS, CHANNELING DEVICES AND TRAFFIC HANDLING DEVICES, AS SHOWN, SHALL BE ADJUSTED TO FIT FIELD CONDITIONS, AS DIRECTED BY ENGINEER.

CONTRACTOR WILL NOT BE REQUIRED TO FURNISH SIGNS AND BARRICADES FOR ENTIRE PROJECT AT ONE TIME. CONTRACTOR SHALL, AS DIRECTED BY THE ENGINEER, FURNISH ENOUGH OF THE VARIOUS SIGNS AND BARRICADES TO COVER THAT PORTION OF THE PROJECT THAT IS ACTUALLY UNDER

CONTRACTOR SHALL INSURE THAT BARRICADES, SIGNS AND TRAFFIC DEVICES ARE MAINTAINED IN A CLEAN AND FUNCTIONAL CONDITION AT ALL TIMES.

FOR OPEN-CUT CONSTRUCTION CROSSING A STREET, CONTRACTOR SHALL COMPLETE NO MORE THAN ONE-HALF OF THE STREET AT A TIME. BACKFILL & OPEN TO TRAFFIC BEFORE CONTINUING CONSTRUC-TION ONLY IF CALLED OUT ON THE LANE CLOSURE PLANS. CONTRACTOR SHALL PROVIDE BARRICADES SIGNS, CHANNELING DEVICES & TRAFFIC HANDLING DEVICES AS SHOWN ON DETOURING PLAN AND REFERENCED ON LAND CLOSURE PLAN.

PAVING CONSTRUCTION NOTES

 PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON AND OR FORT BEND COUNTY STANDARDS FOR CONCRETE PAVEMENT, INCLUDING LATEST REVISIONS AND SUPPLEMENTS. 2. GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE

3. FILL UNDER PAVEMENT SHALL BE PLACED IN MAXIMUM 6" LOOSE LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY AT 2% + OPTIMUM MOISTURE CONTENT.

 ALL PIPELINE CROSSINGS SHALL BE IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATIONS ADOPTED MAY 12, 1977, AND RECORDED IN VOLUME 95, PAGE 328. 5. ALL INTERSECTIONS SHALL BE CONSTRUCTED WITH WHEELCHAIR RAMPS IN ACCORDANCE WITH THE GOVERNOR'S OFFICE OF TRAFFIC SAFETY MEMORANDUM DATED MAY 6, 1975. (HIGHWAY SAFETY ACT — 1973 SECTION 288). SEE PEDESTRIAN FACILITIES DETAILS SHEETS (PED-05

6. CONTRACTOR TO OBTAIN REQUIRED PERMITS FROM THE CITY OF HOUSTON AND OR FORT BEND COUNTY AT HIS OWN EXPENSE PRIOR TO BEGINNING CONSTRUCTION. NOTIFY FORT BEND COUNTY, ENGINEERING AND INSPECTIONS, AND BENCHMARK ENGINEERING CORPORATION (713) 266-9930, AND THE DESIGNATED LABORATORY, A MINIMUM OF 24 HOURS PRIOR TO ANY CONCRETE PLACEMENT.

3. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING BARRICADES TO PREVENT TRAFFIC FROM USING NEW PAVEMENT UNTIL PROJECT IS COMPLETED AND ACCEPTED BY PROPER AUTHORITY OR AS AUTHORIZED BY ENGINEER.

EXISTING PAVEMENT, CURBS, SIDEWALKS & DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO ORIGINAL CONDITION, NO SEPARATE PAY. EXISTING DITCH FLOWLINES SHALL BE REALIGNED AS DIRECTED BY ENGINEER AS PER CITY OF HOUSTON

STANDARDS WITH LATEST ADDENDA AND AMENDMENTS THERTO. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF ALL HANDICAP RAMPS PER TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS PED-05 (PEDESTRIAN FACILITIES CURB RAMPS SIDEWALKS AND INTERSECTION LAYOUTS AND DETECTABLE WARNINGS).

CONTRACTOR IS RESPONSIBLE FOR PLACEMENT AND INSTALLATION OF BLUE ROAD BUTTONS OPPOSITE EACH FIRE HYDRANT 6" OFF CENTERLINE OF PAVEMENT TO SIDE OF FIRE HYDRANT.

STORM SEWER 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. 02317-05, 02317-06, AND 02317-07 (OCT. 2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS

2. ALL STORM SEWER CONSTRUCTED IN SIDELOT EASEMENT 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, 02317-05, 02317-06, AND 02317-07 AS

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 CEMENTS/C.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.

4. ALL TRENCH BACKFILLS 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 C877 RESPECTIVELY. 6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24-INCH AND LARGER R.C.P.

7. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLETS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.

8. CONTRACTOR SHALL PROVIDE 18" MINIMUM CLEARANCE AT STORM SEWER AND WATER 9. ADJUST MANHOLE COVERS 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

11. ALL DITCHES SHALL BE REGRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERTY BACKFILLED AND COMPACTED. ALL DISTURBED AREAS SHALL BE REGRADED, SEEDED, AND FERTILIZED.

12. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS, AT A MINIMUM, MEET TCEQ'S "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS.

2. AN APPOINTED ENGINEER SHALL NOTIFY IN WRITING THE LOCAL TCEQ'S REGIONAL OFFICE WHEN CONSTRUCTION WILL START. PLEASE KEEP IN MIND THAT UPON COMPLETION OF THE WATER WORKS PROJECT, THE ENGINEER OR OWNER SHALL NOTIFY THE COMMISSION'S WATER SUPPLY DIVISION, IN WRITING, AS TO ITS COMPLETION AND ATTEST TO THE FACT THAT THE WORK HAS BEEN COMPLETED ESSENTIALLY ACCORDING TO THE PLANS AND CHANGE ORDERS ON FILE WIT-THE COMMISSION AS REQUIRED IN 30 TAC \$290.39(H)(3)

3. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61-G AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI, AS REQUIRED 30 TAC

4. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF PW-G) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATION OF 26 OR LESS, AS REQUIRED BY 30 TAC

5. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER

6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE. AS REQUIRED BY 30 TAC \$290.44(A)(4)

7. PURSUANT TO 30 TAC \$290.44(A)(5), THE HYDROPSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE, INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS. O THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC \$290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT

 $Q = \frac{LD\sqrt{P}}{148,000}$ 

Q = THE QUANTITY OF MAKEUP WATER IN GALLON PER HOL L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE

 $L = \frac{SD\sqrt{P}}{148,000}$ 

L = THE QUANTITY OF MAKEUP WATER IN GALLON PER HOUR, S = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET, D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE

8. PROJECTS CONSTRUCTED ON OR AFTER JANUARY 4, 2014 MUST COMPLY WITH CHANGES TO THE SAFE DRINKING WATER ACT THAT REDUCE THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES TO 0.25 PERCENT.

9. THE SYSTEM MUST BE DESIGNED TO MAINTAIN A MINIMUM PRESSURE OF 35 PSI AT POINTS WITHIN THE DISTRIBUTION NETWORK AT FLOW RATES OF AT LEAST 1.5 GALLONS PER MINUTE PER CONNECTION. WHEN THE SYSTEM IS INTENDED TO PROVIDE FIREFIGHTING CAPABILITY, IT MUST ALSO BE DESIGNED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI UNDER COMBINED FIRE AND DRINKING WATER FLOW CONDITIONS AS REQUIRED BY 30 TAC 10. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES IN THE DISTRIBUTION SYSTEM AT POINTS WHERE TOPOGRAPHY OR OTHER FACTORS MAY CREATE AIR LOCKS IN THE LINES. ALL VENT OPENINGS TO THE ATMOSPHERE SHALL BE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT AS

REQUIRED BY 30 TAC \$290.44(D)(I). 11. PURSUANT TO 30 TAC \$290.44(D)(4), ACCURATE WATER METERS SHALL BE PROVIDED. SERVICE CONNECTIONS AND METER LOCATIONS SHOULD BE SHOWN ON THE PLANS. 12. PURSUANT TO 30 TAC \( \frac{2}{2} \) 290.44(D)(5), SUFFICIENT VALVES AND BLOWOFFS TO MAKE REPAIRS. THE ENGINEERING REPORT SHALL ESTABLISH CRITERIA FOR THIS DESIGN.

13. PURSUANT TO 30 TAC \$290.44(D)(6), THE SYSTEM SHALL BE DESIGNED TO AFFORD EFFECTIVE CIRCULATION OF WATER WITH A MINIMUM OF DEAD ENDS. ALL DEAD—ENDS MAINS SHALL BE PROVIDED WITH ACCEPTABLE FLUSH VALVES AND DISCHARGE PIPING. ALL DEAD—END LINES LESS THAN TWO INCHES IN DIAMETER WILL NOT REQUIRE FLUSH VALVES IF THEY END AT CUSTOMER SERVICE. WHERE DEAD—ENDS ARE NECESSARY AS A STAGE IN THE GROWTH OF THE SYSTEM, THEY SHALL BE LOCATED AND ARRANGED TO ULTIMATELY CONNECT THE ENDS TO

14. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES AND SEPTIC TANK DRAINFIELDS. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET 30 TAC \$290.44(E)(1-4) OF THE CURRENT RULES.

15. PURSUANT TO 30 TAC \$290.44(E)(5), THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE—FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE.
THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE—FOOT INTERVALS WITH
SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE
SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR
MANUFACTURED SEALANT.

16. PURSUANT TO 30 TAC \$290.44(E)(6), FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.

17. PURSUANT TO 30 TAC \$290.44(E)(7), SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE. 18. PURSUANT TO 30 TAC \$290.44(E)(8), WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS.

19. PURSUANT TO 30 TAC \$290.44(F)(1), THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION.

20. PURSUANT TO 30 TAC \$290.44(F)(2), WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON

EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED. 21. THE CONTRACTOR SHALL DISINFECT THE NEW WATER MAINS IN ACCORDANCE WITH ASSW STANDARD C-651 AND THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICES. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATER LINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER, IN ACCORDANCE WITH 30 TAC \$290.44(F)(3).

PRIVATE UTILITY NOTES

CONTRACTOR TO NOTIFY THE "UNDERGROUND UTILITY COORDINATING COMMITTEE" (TEL: 713-223-4567) 48 HOURS BEFORE STARTING WORK IN STREET RIGHT-OF-WAYS OR EASEMENTS.

TRENCH SAFETY SYSTEMS SHALL BE IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS (O.S.H.A.) STANDARDS FOR TRENCH SAFETY THAT WILL BE IN FEAT DURING THE PERIOD OF CONSTRUCTION OF THIS PROJECT, CONTRACTOR'S ATTENTION IS DIRECTED TO THE REQUIREMENTS OF O.S.H.A. EXCAVATION: PROPOSED RULE (29 CRAFT PART PART 1926) AS PUBLISHED IN THE FEDERAL REGISTER, VOL. 52, NO. 72, SECTIONS 1926-653, AND DATED WEDNESDAY, APRIL 15, 1987, AND TO CITY OF SUGAR LAND ORDINANCE NO. 87-1457.

ATT & TEXAS\SWBT FACILITIES

THE LOCATION OF AT&T TEXAS\SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. HE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO TRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS \SWBT FACILITIES,ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS\SWBT FACILITIES.

WHEN AT&T TEXAS\SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.

PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT (713) 567-4552 OR E-MAIL HIM AT r17259 att.com, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWRT FACILITIES.

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. OUR 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 (713) 223-4567 OR 1-800-669-8344 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) 967-8037 (7:00 AM TO 4:30 PM). FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGIN

- 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.  $\mathord{\hspace{1pt}\text{--}}$  When center point energy facilities are exposed, sufficient support must be provided to the facilities to prevent excessive stress on the piping. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL 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 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 PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD VOLTAGE LINES; AND OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 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 ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

### **GENERAL NOTES:**

1. "B.L." INDICATES BUILDING LINE.

2. "U.E." INDICATES UTILITY EASEMENT.

3. "P.U.E." INDICATES PUBLIC UTILITY EASEMENT. 4. "W.L.E." INDICATES WATERLINE EASEMENT.

5. "STM. SWR. ESM'T." INDICATES STORM SEWER EASEMENT. 6. "S.S.E." INDICATES SANITARY SEWER EASEMENT. 7. UNLESS OTHER LESS NOTED, ALL STREETS SHOWN HEREON ARE PRIVATE WITHIN

PERMANENT ACCESS EASEMENTS. ALL "P.A.E.'s" (PERMANENT ACCESS EASEMENTS) CONTAIN WITHIN

THESE PLAN, ALSO CONTAIN AN OVERLAPPING PUBLIC UTILITY EASEMENT. 9. ALL STREETS IN THIS SUBDIVISION CONTAIN ONE OR MORE PERMANENT ACCESS ESM'T. THAT HAVE NOT BEEN DEDICATED TO OR ACCEPTED BY THE CITY OF HOUSTON OR ANY OTHER LOCAL NIALAGENCY AS PUBLIC RIGHT-OF -WAY, THE CITY OF HOUSTON HAS NO OBLIGATION. NOP DOES ANY OTHER LOCAL GOVERNMENTAL AGENCY HAVE ANY OBLIGATION TO MAINTAIN, OR IMPROVE

ANY PERMANENT ACCESS ESM'T. WITHIN DIVISION, WHICH OBLIGATION SHALL BE THE SOLE

RESPONSIBILITY OF THE OWNERS OF PROPERTY IN THIS SUBDIVISION. 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 COLLECTIONS SYSTEMS AND STORM SEWERS DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING "STANDARD CONSTRUCTION SPECIFICATIONS" WITH LATEST ADDENDA AND AMENDMENTS THERE TO WITH NO COST TO

NOTE TO DEVELOPERS, ENGINEERS AND CONTRACTORS

THIS PROJECT INCLUDES THE CONSTRUCTION OF PUBLIC WATER MAINS. PRIOR TO THE CONSTRUCTION OF THE MAINS THE CONTRACTOR IS TO OBTAIN THE PROPER BONDS AND EXECUTE THE PROPER DOCUMENTS SUPPLIED BY THE PLAN REVIEW SECTION OF THE DEPARTMENT OF PUBLIC BY THE PLAN REVIEW SECTION OF THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING. FAILURE TO DO SO MAY RESULT IN THE REMOVAL AND RECONSTRUCTION OF THOSE PORTIONS OF THE PUBLIC WATER MAIN INSTALLED PRIOR TO THE ISSUANCE OF THE WORK ORDER GIVEN BY THE WATER ENGINFERING BRANCH. WORK ORDER GIVEN BY THE WATER ENGINEERING BRANCH.



devices.

PROP. GRADE

ELEV.=116.00

ELEV.=115.80

**GENERAL NOTES:** 

3' MIN.

SIDE SLOPE

PROFILE VIEW

2. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 03310-CONCRETE.

1. STRUCTURAL CONCRETE FOR CONCRETE CHANNEL SECTIONS AND SLOPE PAVING AND NONSTRUCTURAL CONCRETE FOR SEAL SLAB SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 03310—CONCRETE.

CONCRETE

**EMERGENCY OVERFLOW** 

### Fort Bend County Engineering FORT BEND COUNTY, TEXAS

Richard W. Stolleis, P.E. County Engineer

### **Fort Bend County Construction - General Notes**

1. Fort Bend County must be invited to the Pre-Construction Meeting.

2. Contractor shall notify Fort Bend County Engineering Department 48 hours prior to commencing construction and 48 hour notice to any construction activity within the limits of the paving at Construction@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 ways.

4. All Paving Improvements shall be constructed in accordance with Fort Bend County "Rules, Regulations and Requirements" relating to the Approval and Acceptance of Improvements in Subdivisions as currently amended.

5. All road widths, curb radii and curb alignment shown indicates back of curb 6. A continuous longitudinal reinforcing bar shall be used in the curbs.

8. All weather access to all existing streets and driveways shall be maintained at all times.

7. All concrete pavement shall be 5 ½ sack cement with a minimum compressive strength of 3500 psi at 28 days. Transverse expansion joints shall be installed at each curb return and at a maximum spacing of 60 feet.

9. 4"x 12" reinforced concrete curb shall be placed in front of single family lots only. All other areas shall be 6" reinforced concrete curb. 10. At all intersection locations, Type 7 ramps shall be place in accordance with TXDOT Ped-12a standard detail sheet.

A.D.A. - Handicap Ramps shall be installed with street paving at all intersections and comply with current A.D.A.

11. Curb headers are required at curb connections to Handicap Ramps, with no construction joint within 5' of ramps. 12. All Intersections utilizing Traffic Control measures shall have A.D.A. wheel chair ramps installed.

13. Guidelines are set forth in the Texas "Manual on Uniform Traffic Control Devices", as currently amended, shall be observed. The Contractor shall be responsible for providing adequate flagmen, signing, striping and warning devices, etc., during construction - both day and night. 14. All R1-1 stop signs shall be 30"x30" with diamond grade sheeting per Texas manual on uniform traffic control

upper and lowercase lettering with uppercase letters of 6" minimum and lowercase letters of 4.5" minimum. The letters shall be reflective white. Street name signs shall be mounted on stop sign post. 16. A Blue Double Reflectorized button shall be placed at all Fire Hydrant locations. The Button shall be placed 12

15. Street name signage shall be on a 9" high sign flat blade w/reflective green background. Street names shall be

inches off of the centerline of the street on the same side as the hydrant. 17. The project and all parts thereof shall be subject to inspection from time to time by inspectors designated by Fort Bend County. No such inspections shall relieve the Contractor of any of its obligations hereunder. Neither failure to inspect nor failure to discover or reject any of the work as not in accordance with the drawings and specifications, requirements and specifications of Fort Bend County or any provision of this project shall be construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder.

NOTE: Fort Bend County notes supersede any conflicting notes.

301 Jackson St., Sulte 401, Richmond, TX 77469 Phone 281-633-7500

## WILLIAM H. SAOUR 116018 CENSEY TEXAS BOARD OF PROFESSIONAL ENGINEERS BENCHMARK ENGINEERING CORPORATION REGISTRATION NUMBER F-6788 BENCHMARK ENGINEERING CORPORATION Consulting Engineers-Planners-Surveyors

×

### FORT BEND COUNTY M.U.D. No. 133 CONSTRUCTION PLANS FOR PROPOSED OFFSITE STORM SEWER AND DETENTION BASIN IMPROVEMENTS LAKES OF BELLA TERRA WEST

2401 Fountainview Drive, Suite 500

Houston, Texas 77057 U.S.A.

(713)266-9930 Fax (713)266-3804

FORT BEND COUNTY, TEXAS

DEVELOPMENT

STANDARD CONSTRUCTION **NOTES & MISCELLANEOUS** DETAIL

CPC 101 FILE NO.: I.L.M.S. No. 18015113 C.O.H. LOG No. 18-0262 AUTHORIZATION IS VALID FOR 1 YEAR. FBC DEVELOPMENT COORDINATOR

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

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING Treet 12/18 21218 - 4-1218

DRAWING SCALE N.T.S.

LOG # 18-0262

B.E.C. PROJECT No.: 04044-78 MG2 LAKES OF BELLA TERRA WEST DEVELOPMENT

PROP. GRADE ----

--- 8"

ELEV.=115.80

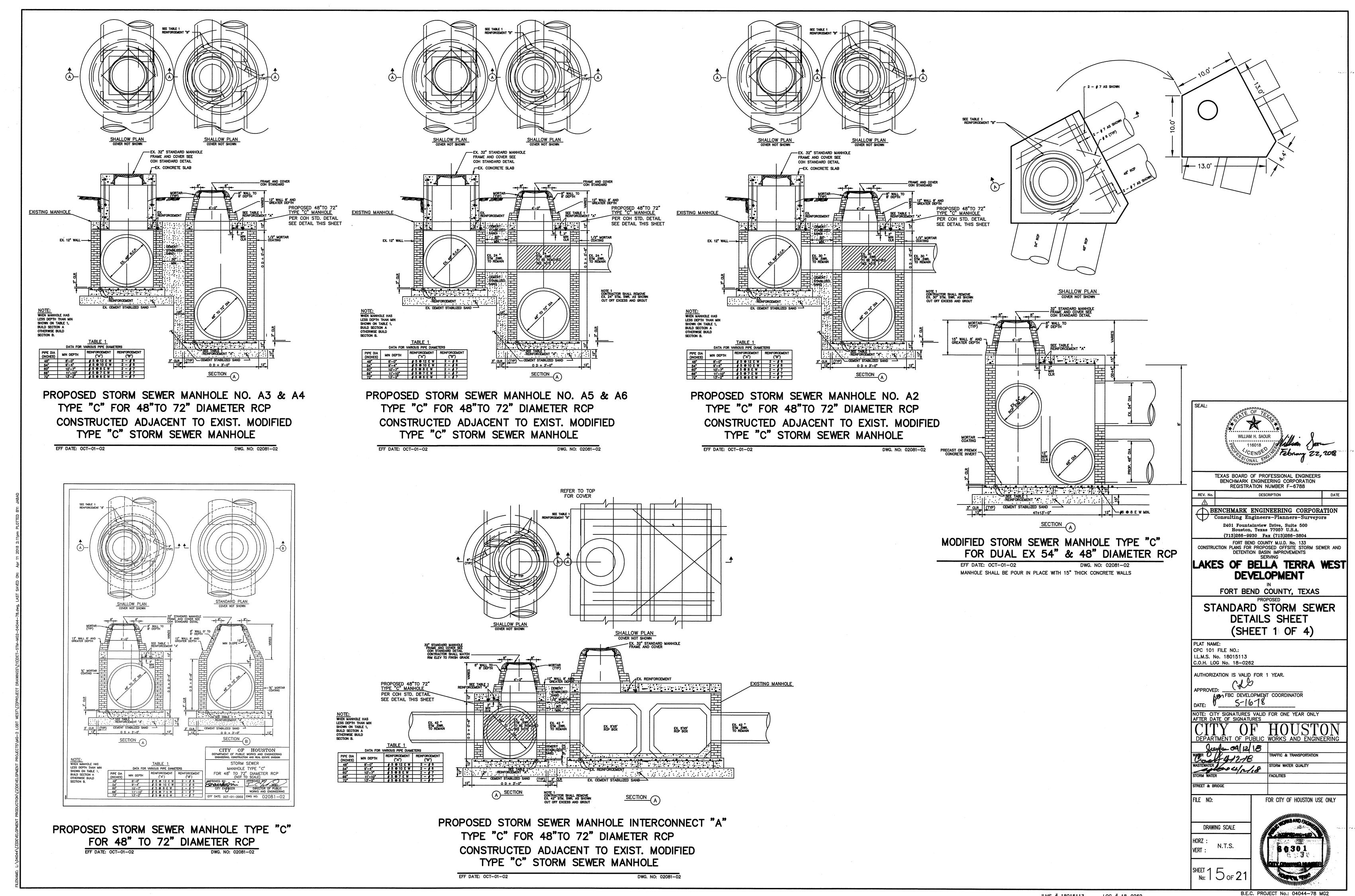
SIDE SLOPE

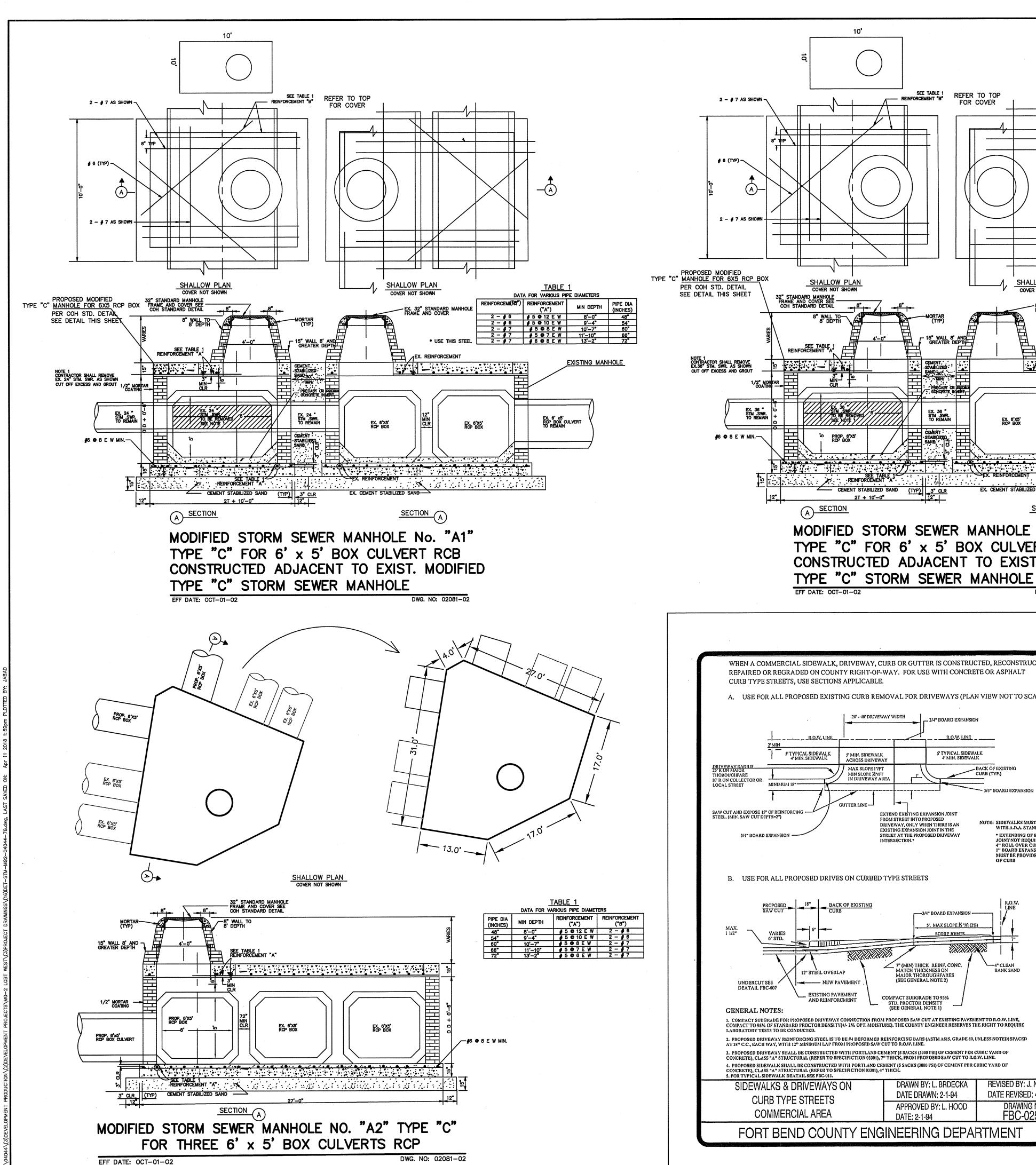
ILMS # 18015113

ELEV.=116.00

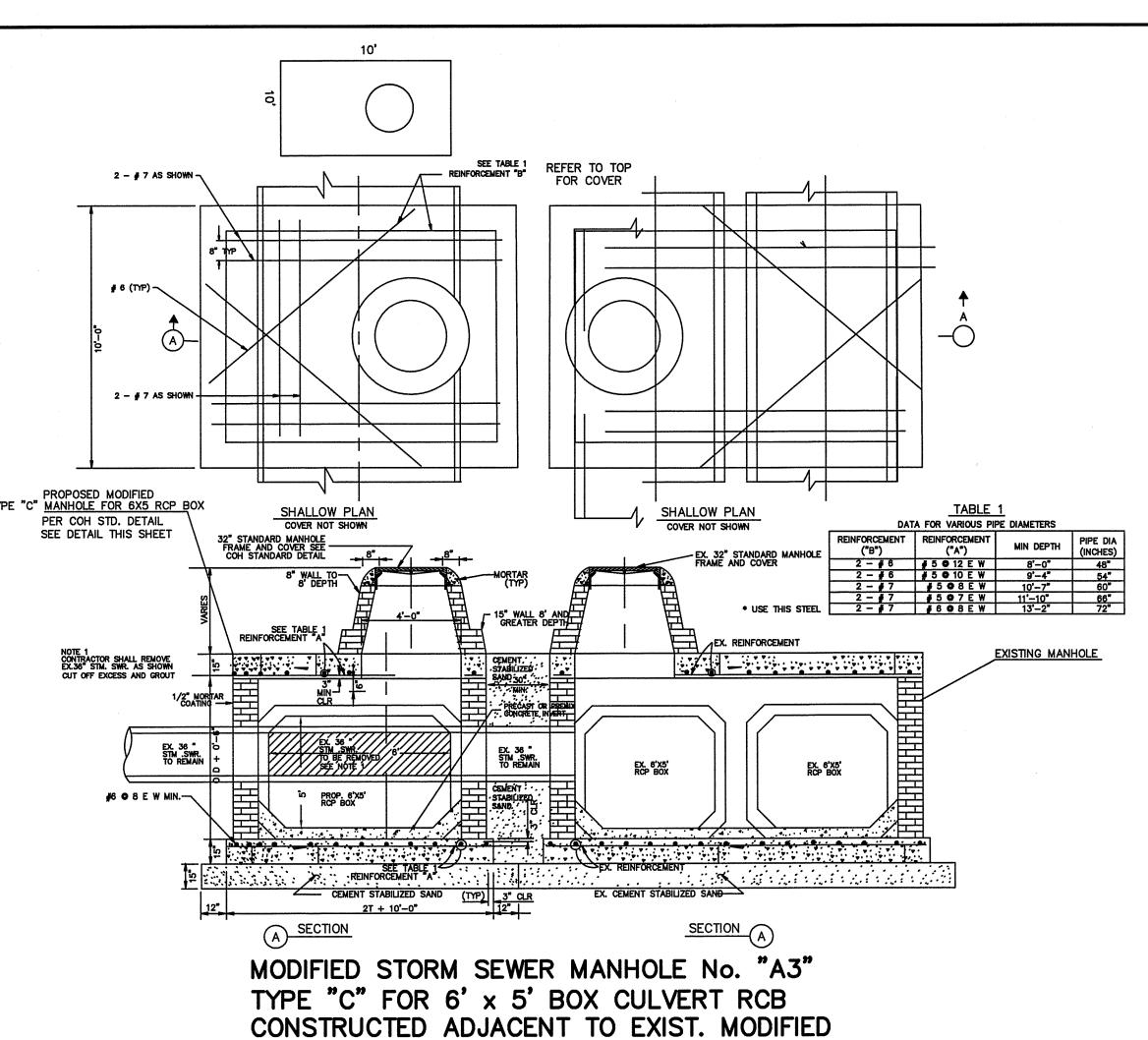
STORM WALL.
FACILITIES

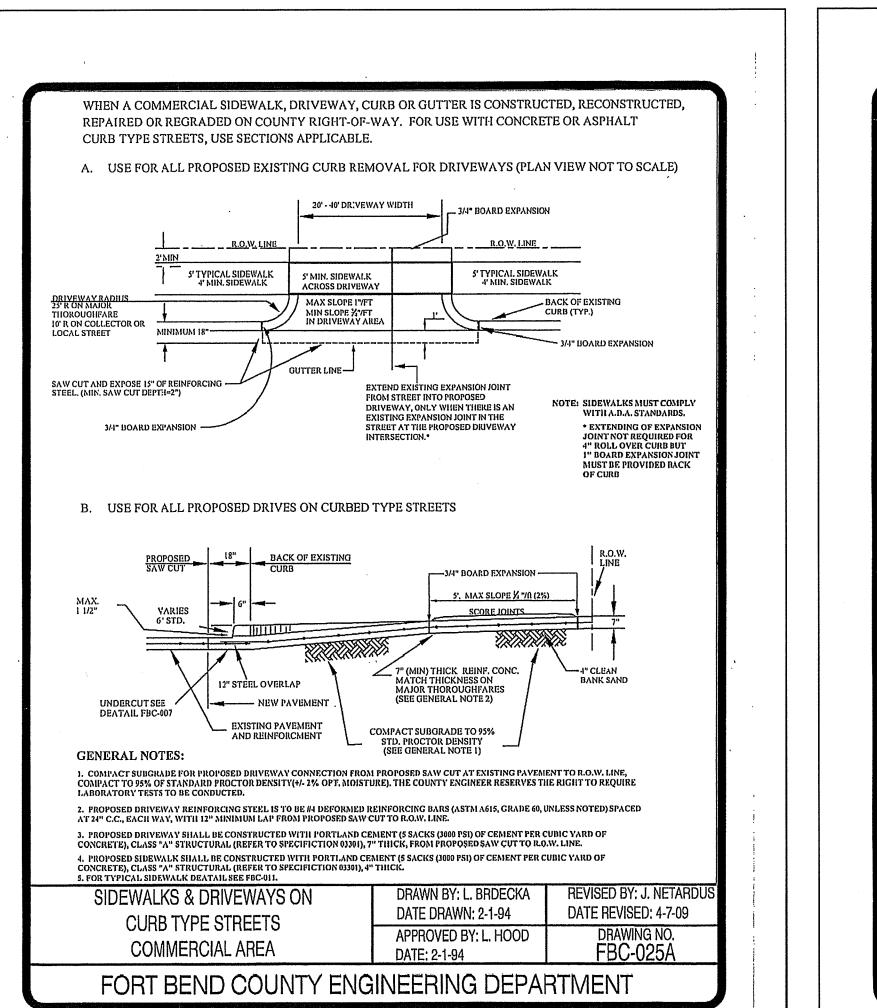
FOR CITY OF HOUSTON USE ONLY file no:

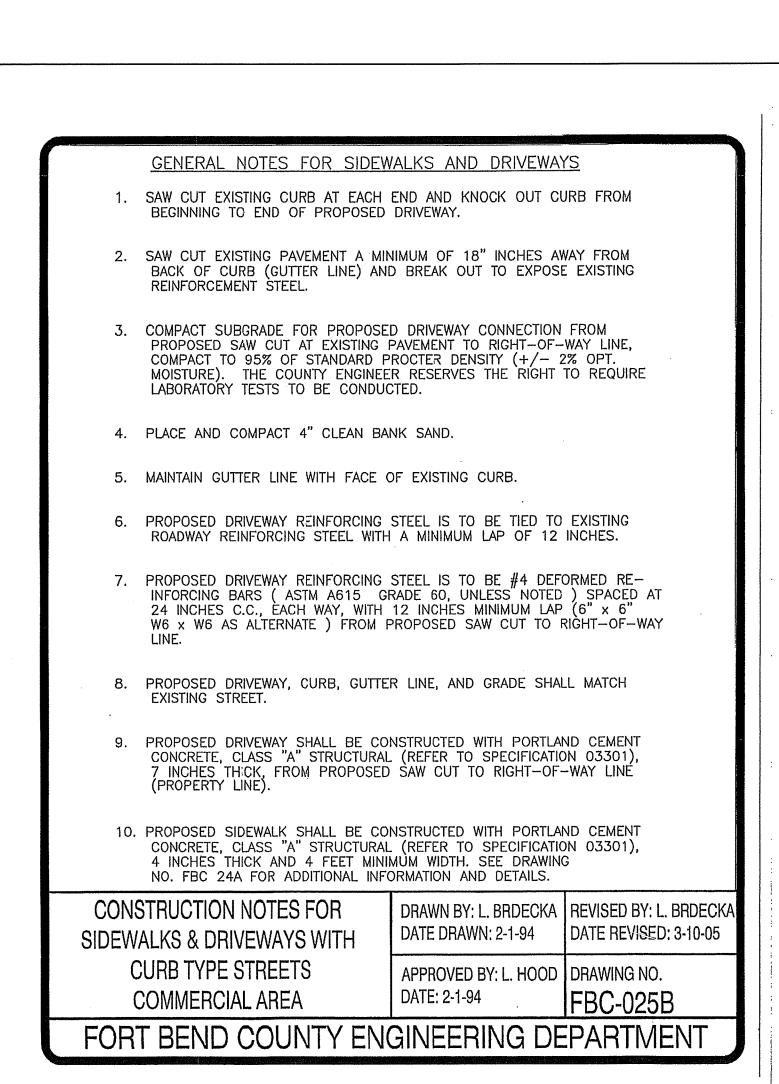


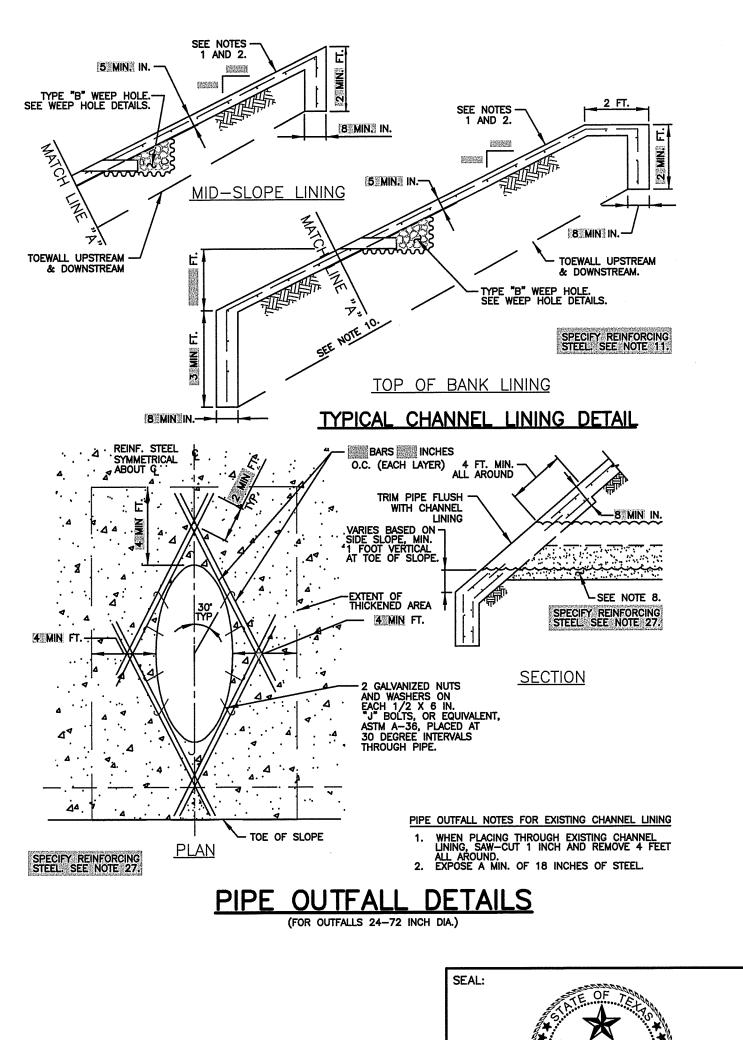


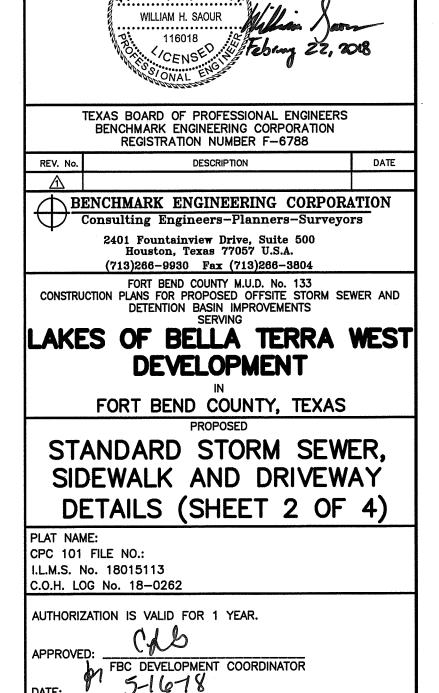
MANHOLE SHALL BE POUR IN PLACE WITH 15" CONCRETE WALLS.







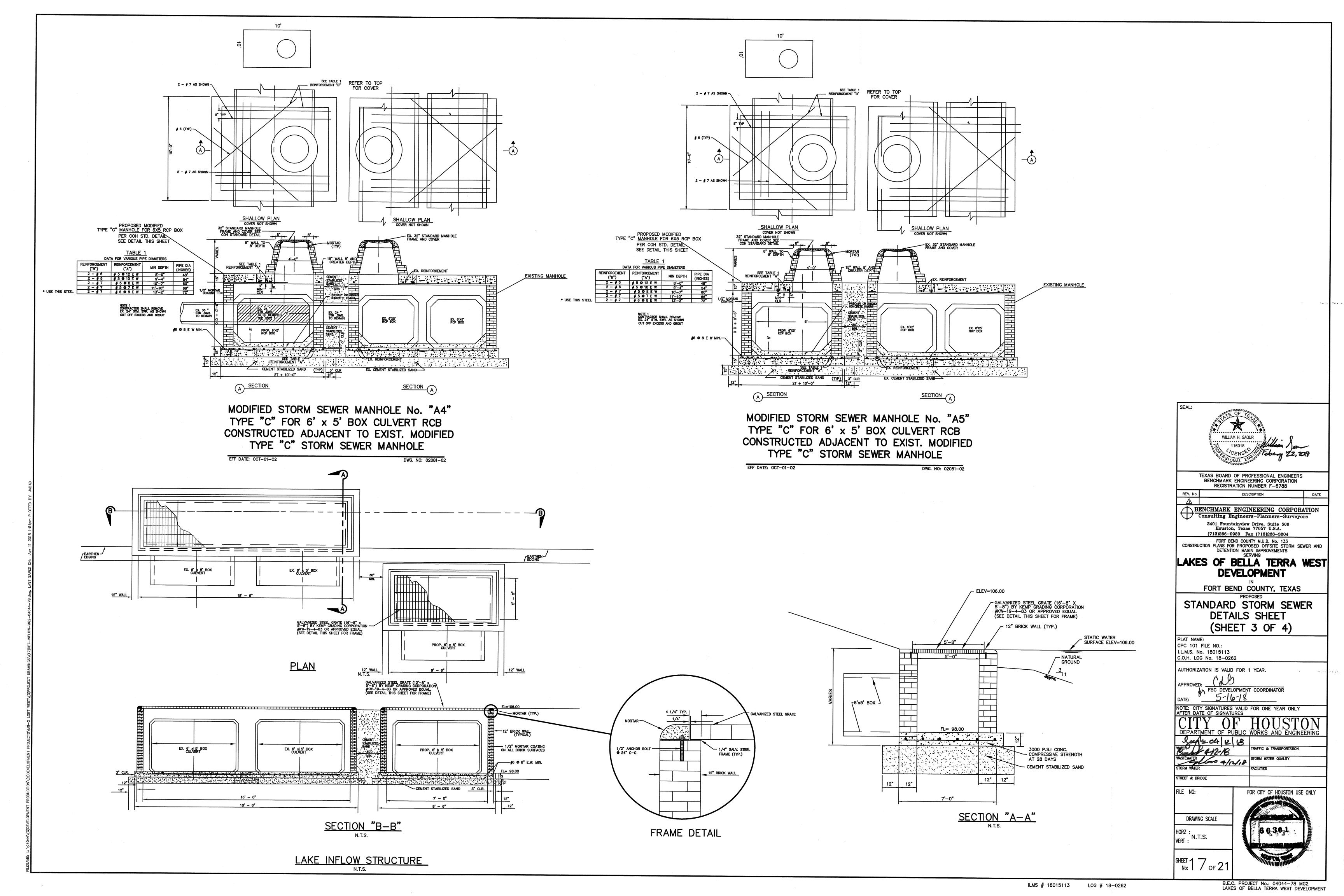


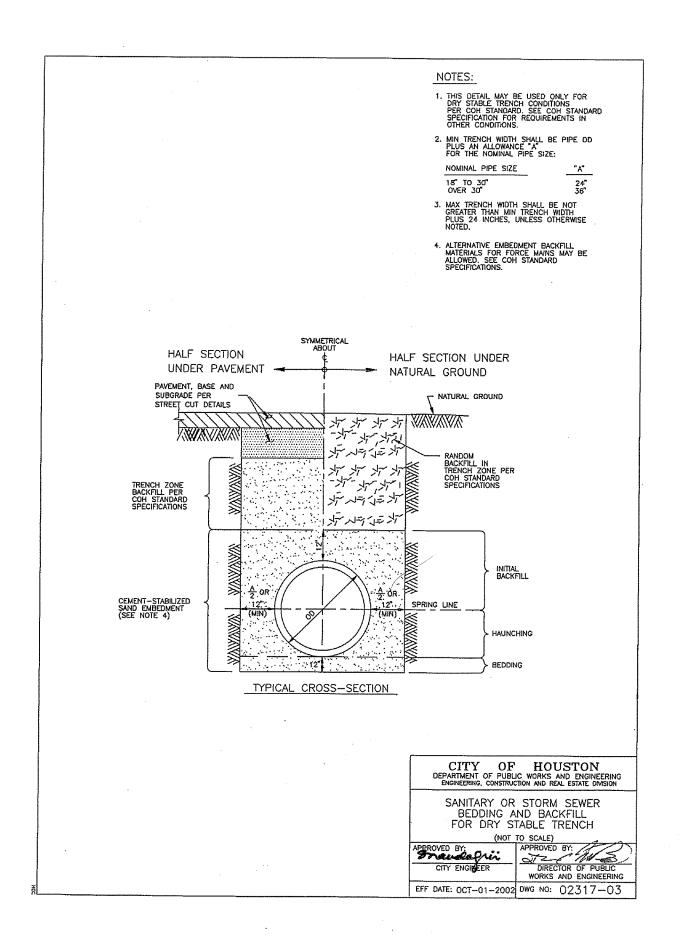


NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

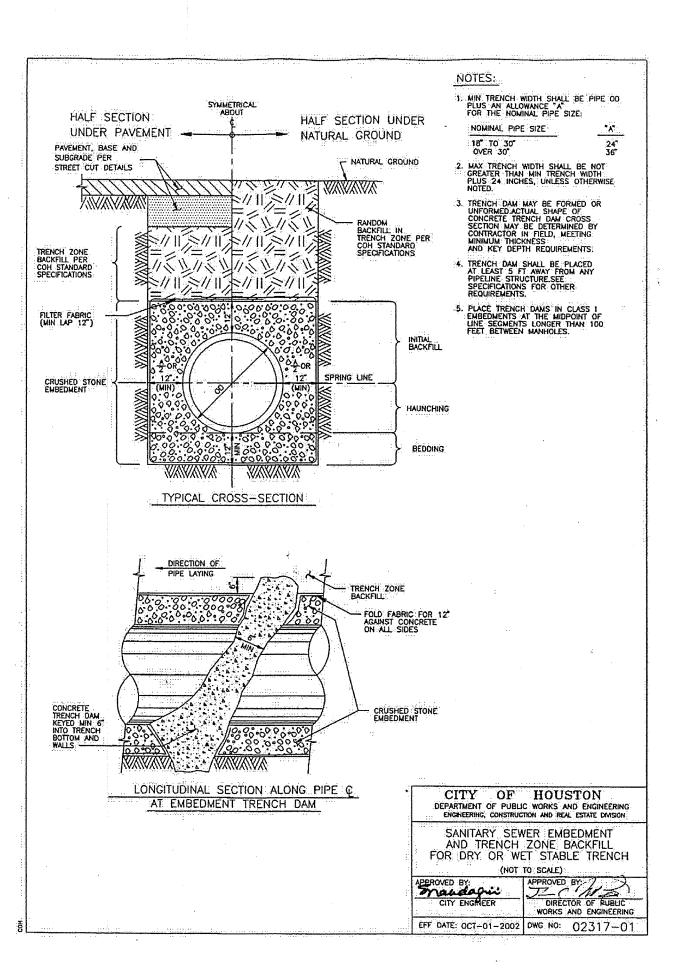
FILE NO:

FOR CITY OF HOUSTON USE ONLY

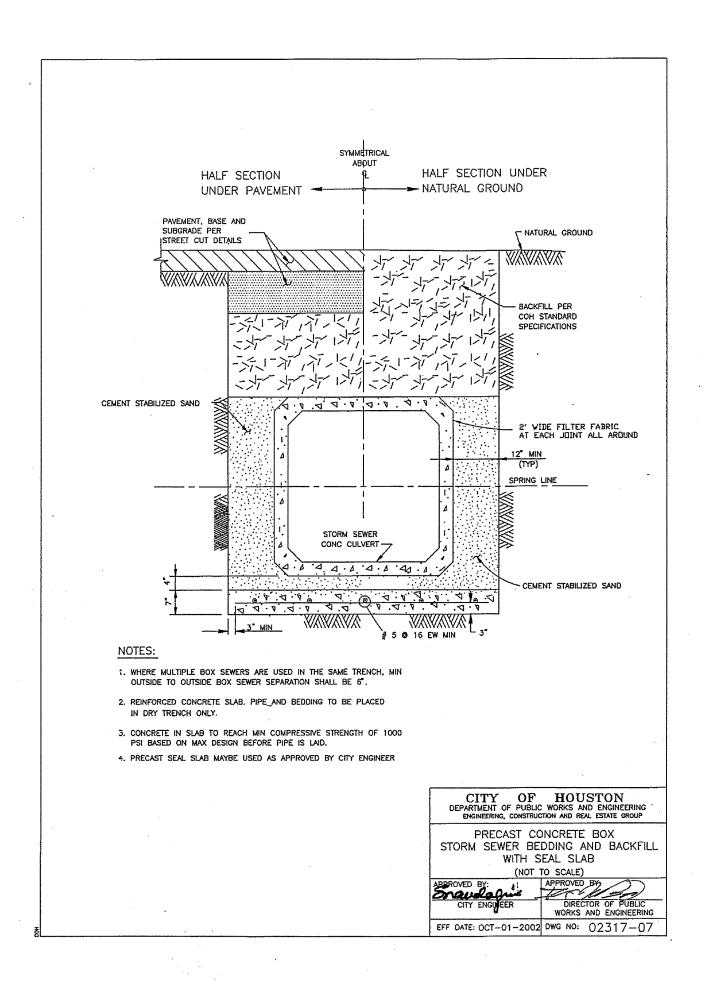




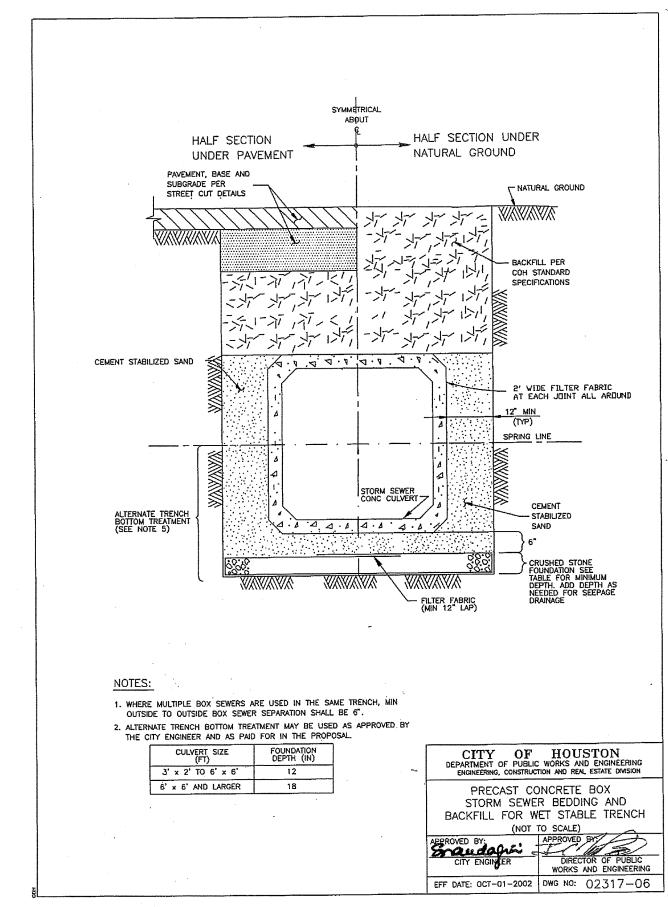
SANITARY OR STORM SEWER
BEDDING AND BACKFILL FOR DRY STABLE TRENCH DWG NO: 02317-03 EFF DATE: OCT-01-2002



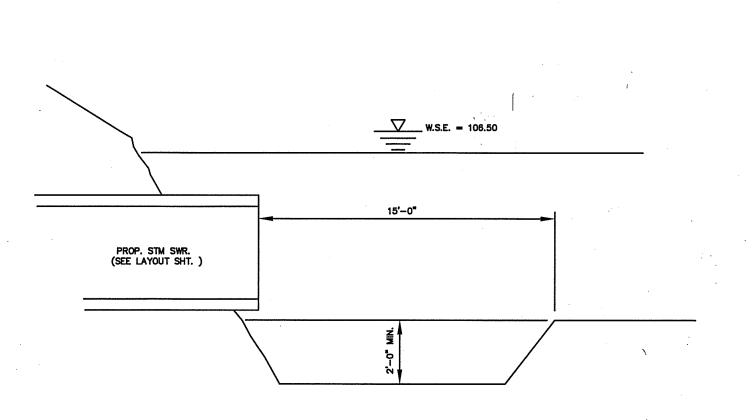
STORM SEWER EMBEDMENT AND TRENCH ZONE BACKFILL FOR DRY OR WET STABLE TRENCH DWG NO: 02317-01 EFF DATE: OCT-01-02



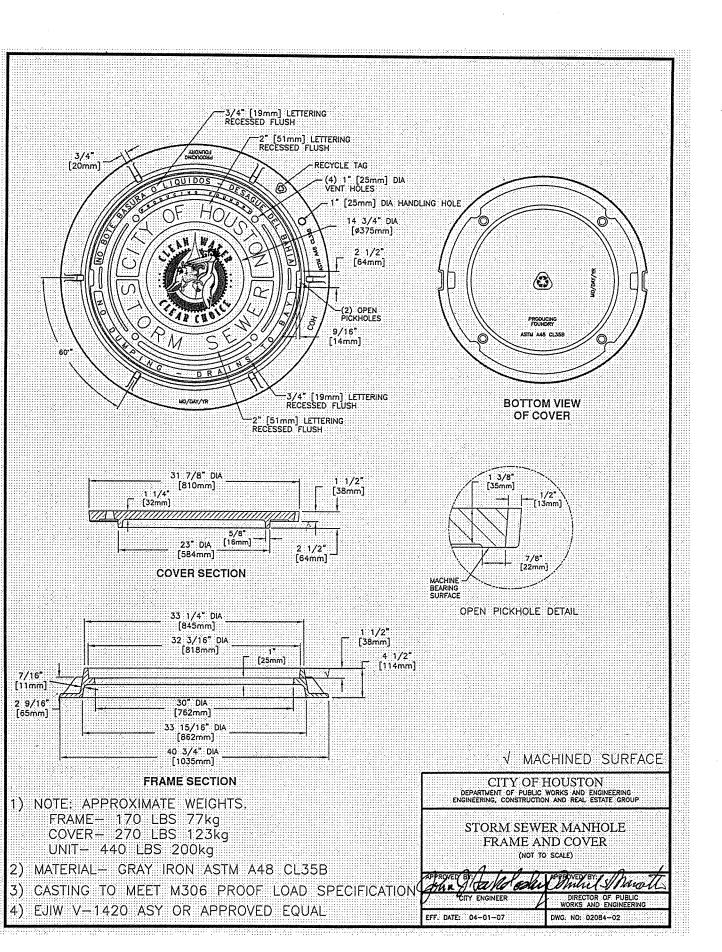
STORM SEWER BEDDING AND BACKFILL FOR PRECAST CONCRETE BOX WHERE UNSATISFACTORY SOIL CONDITIONS EXIST EFF DATE: OCT-01-02 DWG NO. 2317-07

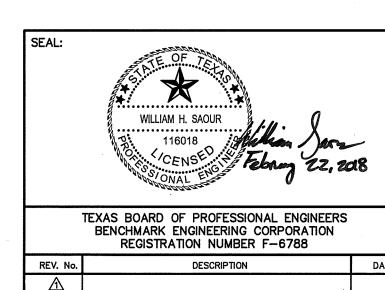


PRECAST CONCRETE BOX
STORM SEWER BEDDING AND
BACKFILL FOR WET STABLE TRENCH



TYPE "B" LAKE OUTFALL SILT PIT DETAIL





BENCHMARK ENGINEERING CORPORATION FORT BEND COUNTY M.U.D. No. 133
CONSTRUCTION PLANS FOR PROPOSED OFFSITE STORM SEWER AND DETENTION BASIN IMPROVEMENTS LAKES OF BELLA TERRA WEST

DEVELOPMENT FORT BEND COUNTY, TEXAS

STANDARD STORM SEWER **DETAILS SHEET** (SHEET 4 OF 4)

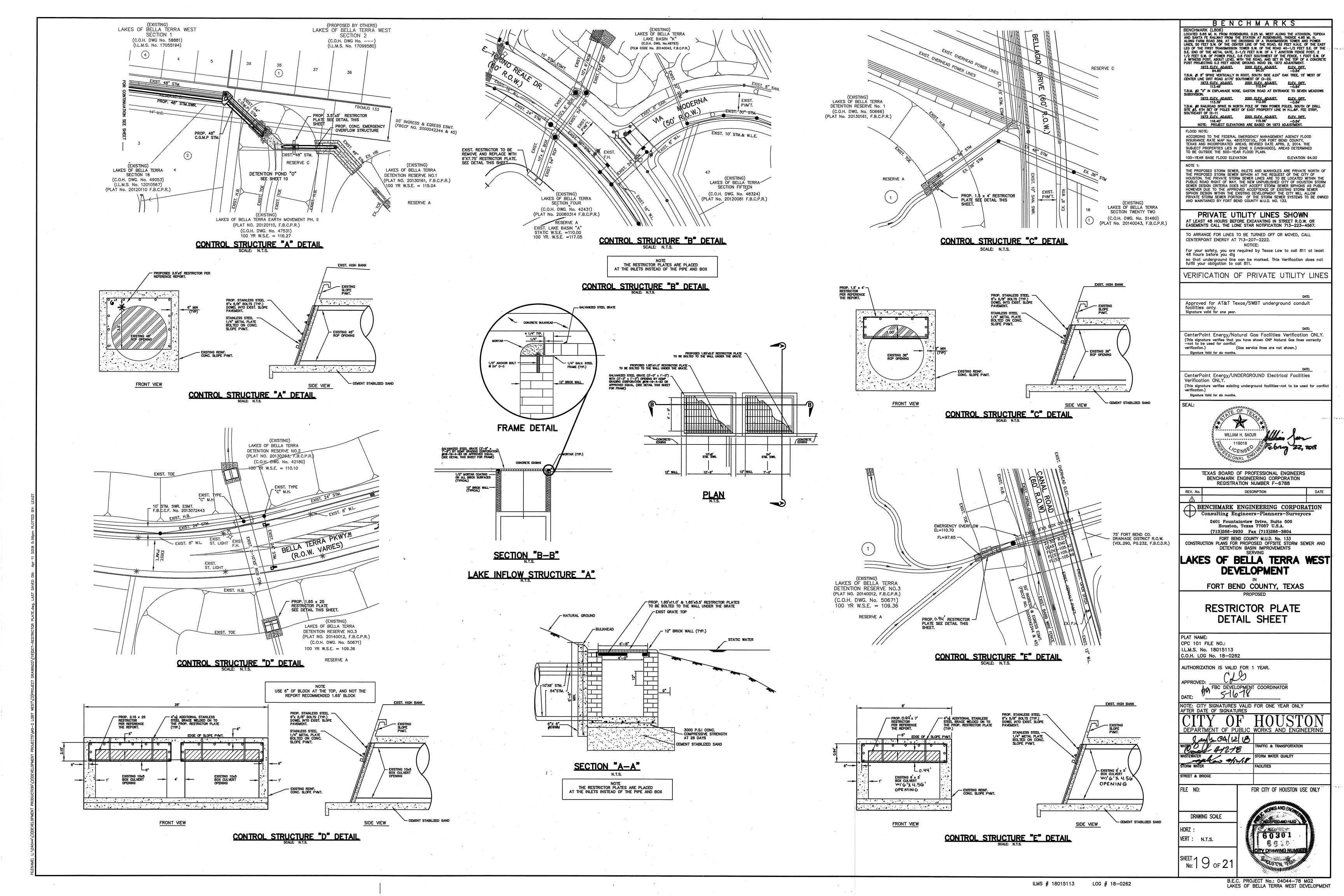
PLAT NAME: CPC 101 FILE NO.: I.L.M.S. No. 18015113 C.O.H. LOG No. 18-0262 AUTHORIZATION IS VALID FOR 1 YEAR. FBC DEVELOPMENT COORDINATO

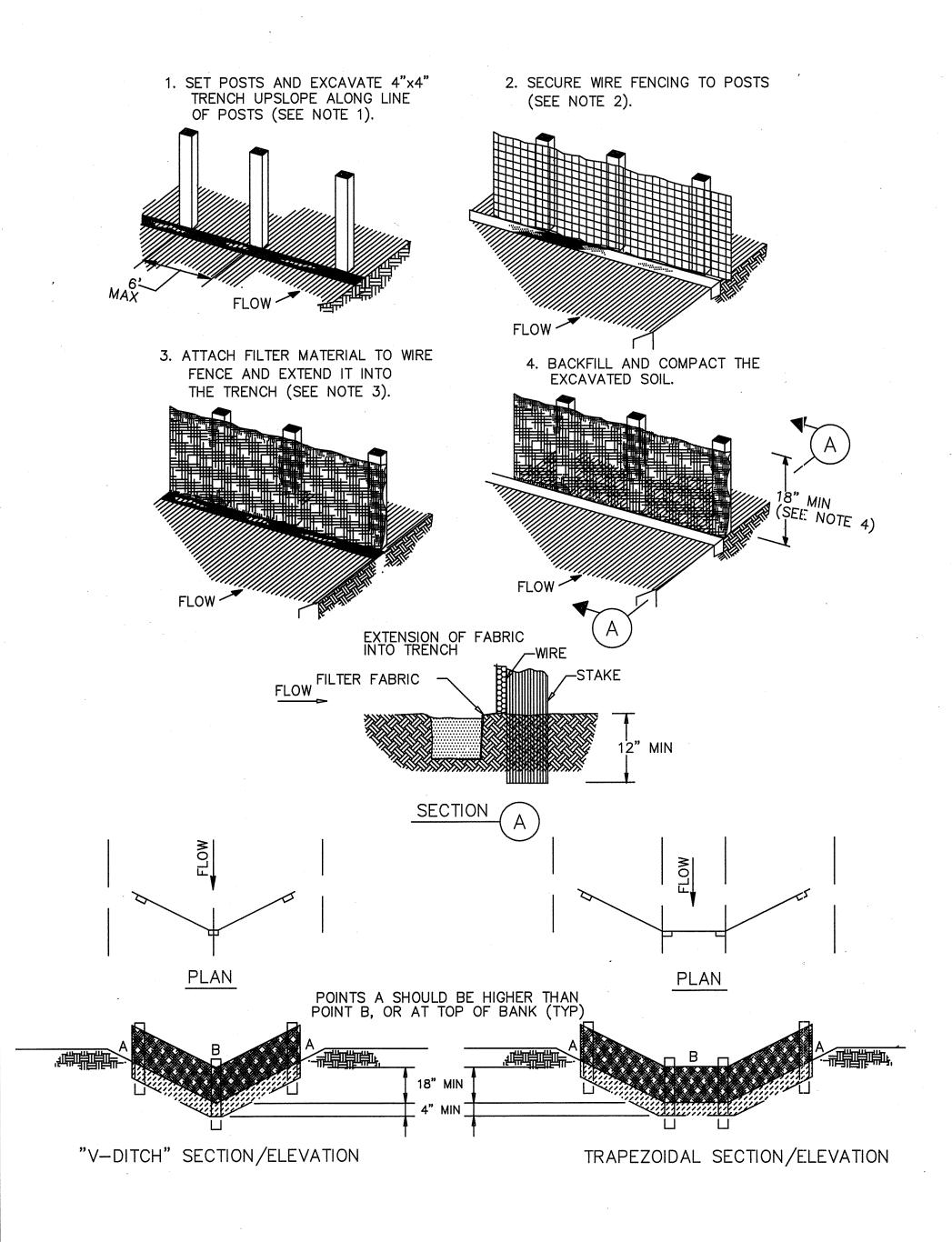
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

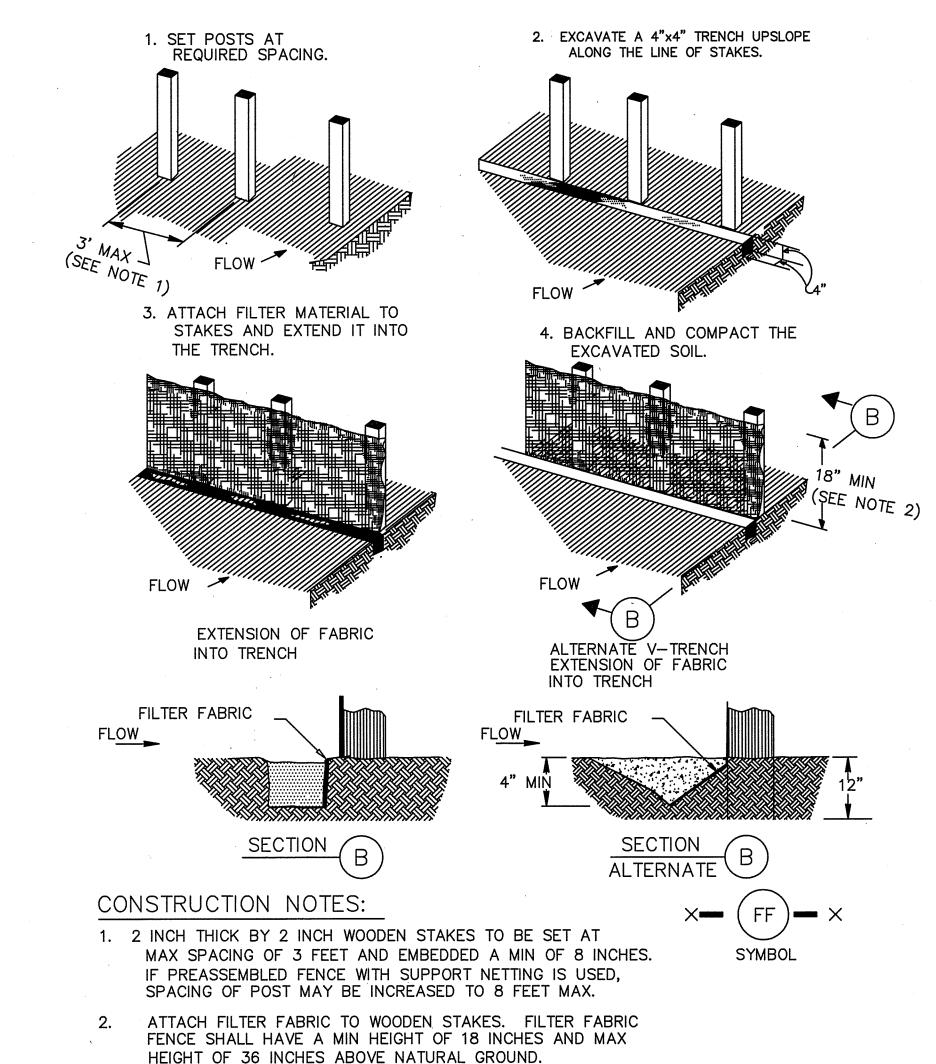
FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE HORZ : VERT:









WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER

THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS.

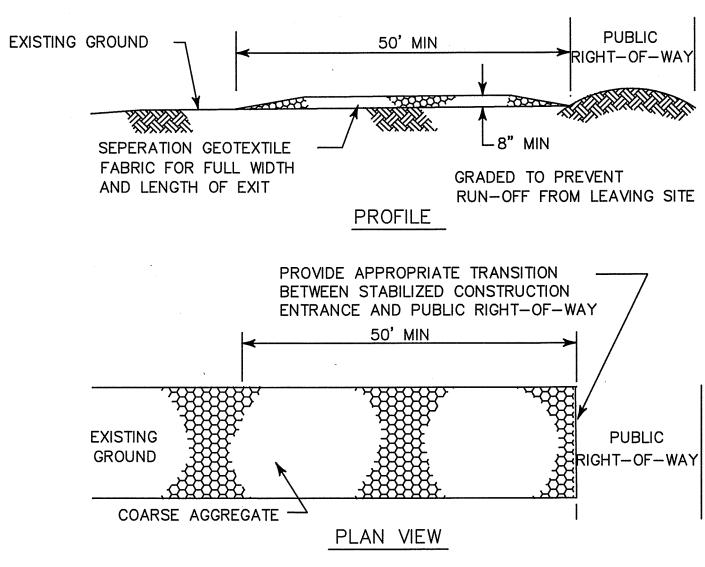
SEE SECTION 01567 - FILTER FABRIC FENCE.

AND FOLDED.

WITH 2 STAKES PER BALE

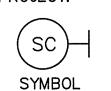
PLAN

STRAW BALES STAKED

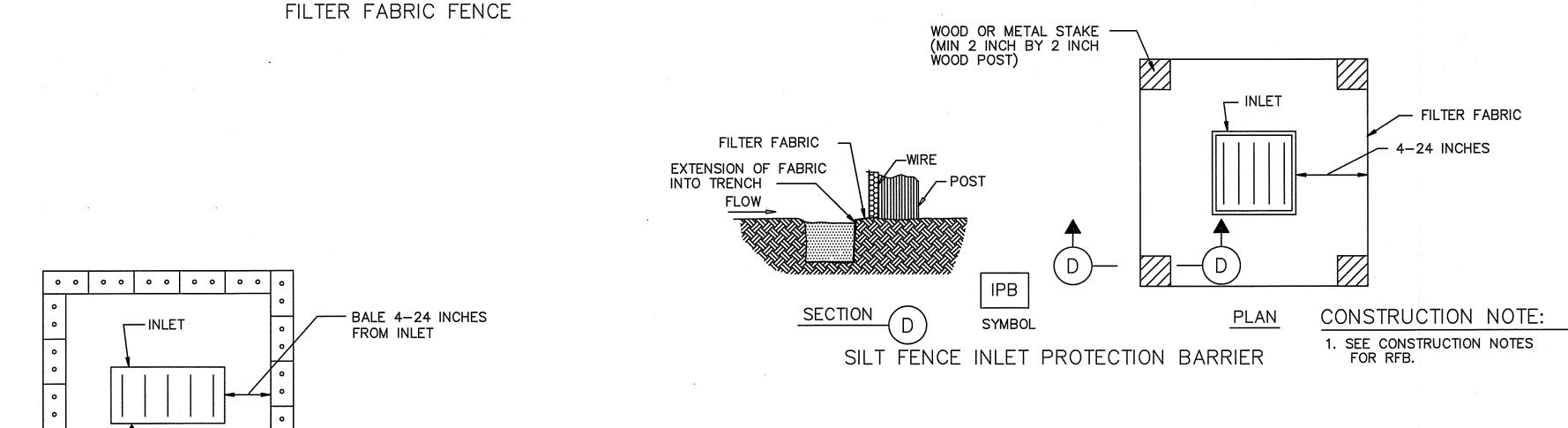


### CONSTRUCTION NOTES:

- 1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
- 2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
- 3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
- 4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
- 5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A TRUCK WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE TRUCK WASHING AREA.
- 6. SEE SECTION 01569 STABILIZED CONSTRUCTION EXIT.
- 7. STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.



STABILIZED CONSTRUCTION EXIT



- 2 INCH BY 2 INCH WOOD STAKE EMBEDED 8 INCHES

— STAKED STRAW BALE

SYMBOL

REINFORCED FILTER FABRIC BARRIER

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX

2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO

OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.

FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE

MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.

FENCE, WITH TIES SPACED EVERY 24 INCHES AT TOP AND

WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER

THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS,

6. SEE SECTION 01568 - REINFORCED FILTER FABRIC BARRIER.

CONSTRUCTION NOTES:

MIDSECTION.

AND FOLDED.

FENCE POSTS WITH STAPLES.

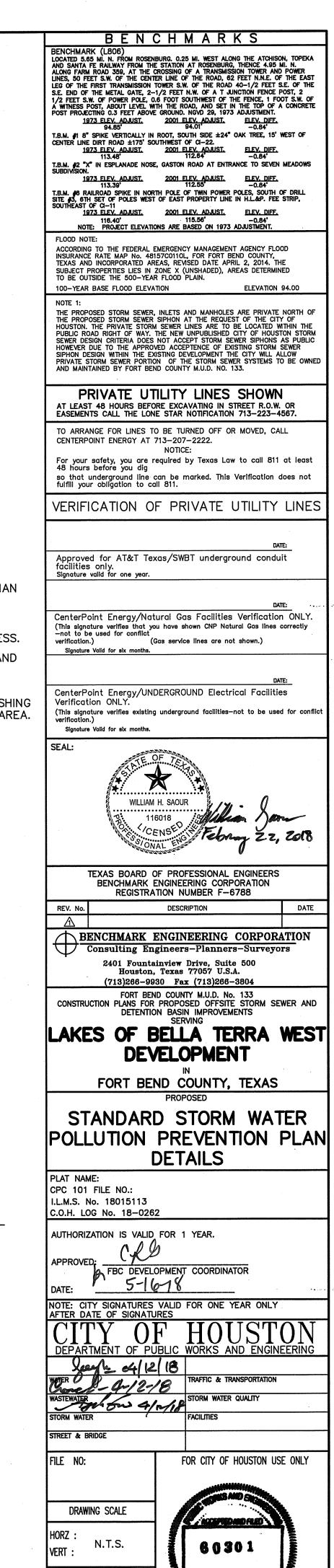


IPB

SYMBOL

COMPACTED SOIL

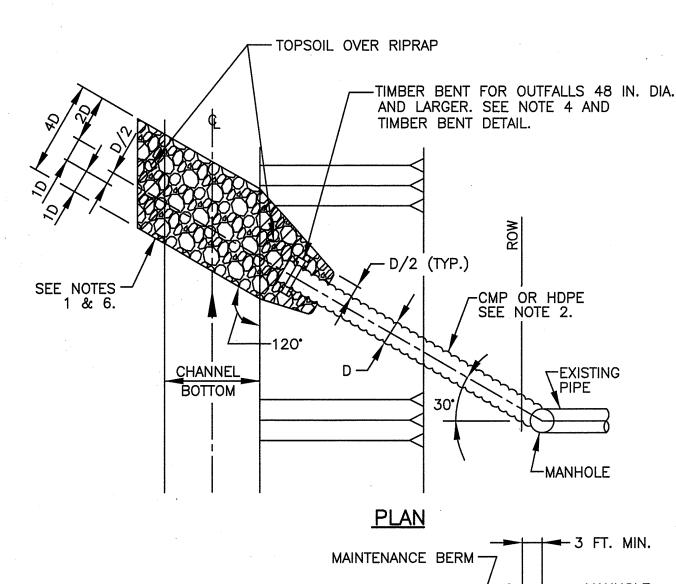
TO PREVENT PIPING



TOWN HERE

I 1/2 ?

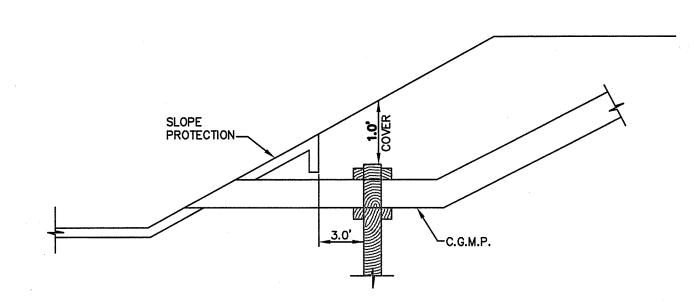
TIM T

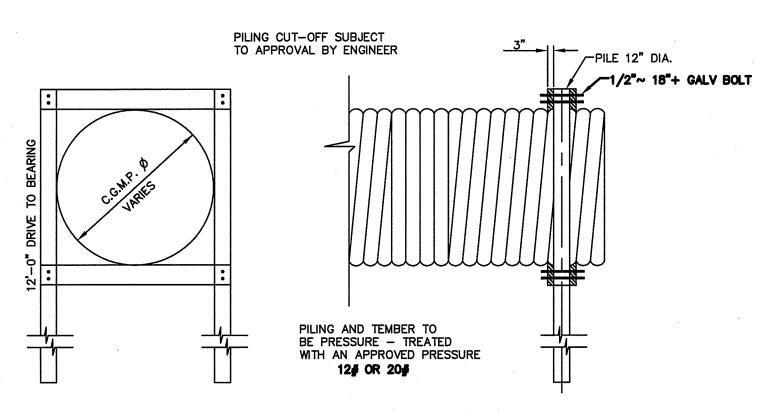


### CMP OR HDPE. SEE NOTE 2. -- MANHOLE TIMBER BENT FOR OUTFALLS -48 IN. DIA. AND LARGER. SEE TIMBER BENT DETAIL. SEE NOTE 4. IF CONCRETE LINED,-SEE NOTE 8. -EXISTING PIPE SEE NOTE 3.--CONCRETE 6D OR TOP OF SLOPE 6 IN. 20 FT. (MIN.) PIPE ELEVATION ON OPPOSITE BANK, WHICHEVER IS SMALLER. <u>SECTION</u>

# TEMPORARY STORM SEWER OUTFALL AND EROSION PROTECTION LAYOUT

(THIS DETAIL MAY ONLY BE USED IN TEMPORARY CONDITION)

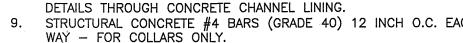


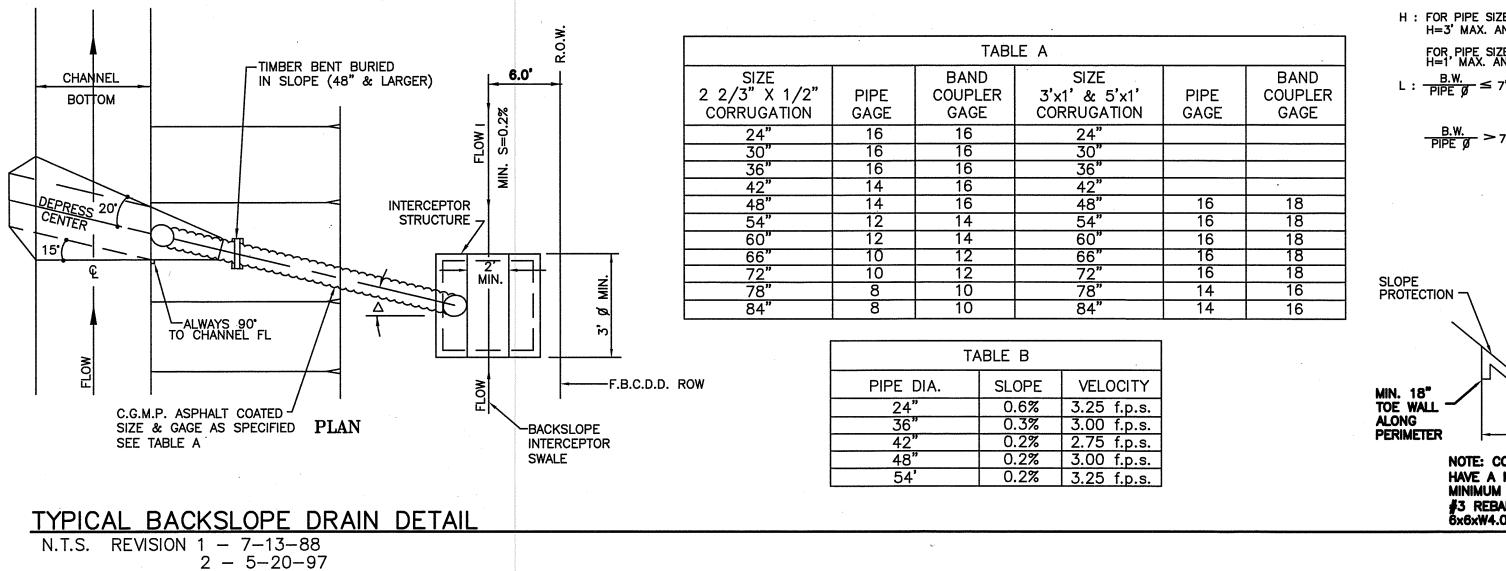


TIMBER BENT FOR CORRUGATED METAL PIPE OUTFALL 48-INCH AND LARGER

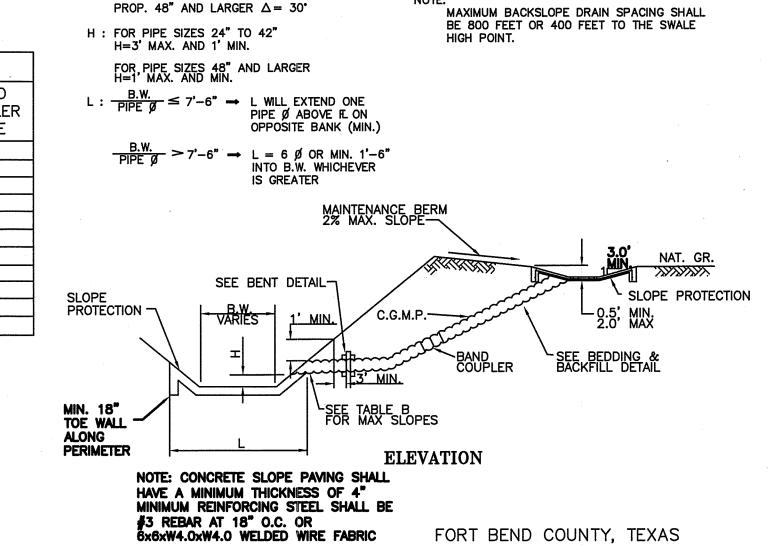
### STORM SEWER OUTFALL NOTES:

- INSTALL OUTFALLS 48 INCHES OR LARGER, AND STORM SEWER AND TREATMENT PLANT OUTFALLS OF ANY DIAMETER, WITH RIPRAP EROSION DIMENSIONED AS
- SHOWN IN "TYPICAL STORM SEWER OUTFALL STRUCTURE LAYOUT." STORM SEWER OUTFALL PIPES WITHIN THE HCFCD RIGHT-OF-WAY SHALL BE CMP OR HDPE IN ACCORDANCE WITH SPECIFICATION SECTION 02642-CORRUGATED METAL PIPE, HIGH DENSITY POLYETHYLENE PIPE (HDPE) IN ACCORDANCE WITH SPECIFICATION SECTION 02505-HIGH DENSITY
- POLYETHYLENE PIPE, OR APPROVED EQUAL. PROVIDE AND PLACE CEMENT STABILIZED SAND IN ACCORDANCE WITH SPECIFICATION SECTION NO. 02321-CEMENT STABILIZED SAND.
- TIMBER BENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02464-TIMBER BENTS.
- STORM SEWER OUTFALLS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02316-STRUCTURAL EXCAVATING AND BACKFILLING. CONTRACTOR SHALL INSTALL TEMPORARY BURIED RIPRAP TO PREVENT EROSION
- AS DIRECTED BY THE ENGINEER. SET FLOWLINE OF OUTFALLS 1 FOOT ABOVE CHANNEL FLOWLINE OR 1 FOOT
- ABOVE NORMAL WATER SURFACE ELEVATION. SEE CONCRETE CHANNEL LINING DETAIL SHEET FOR CMP OR HDPE OUTFALL
- 9. STRUCTURAL CONCRETE #4 BARS (GRADE 40) 12 INCH O.C. EACH



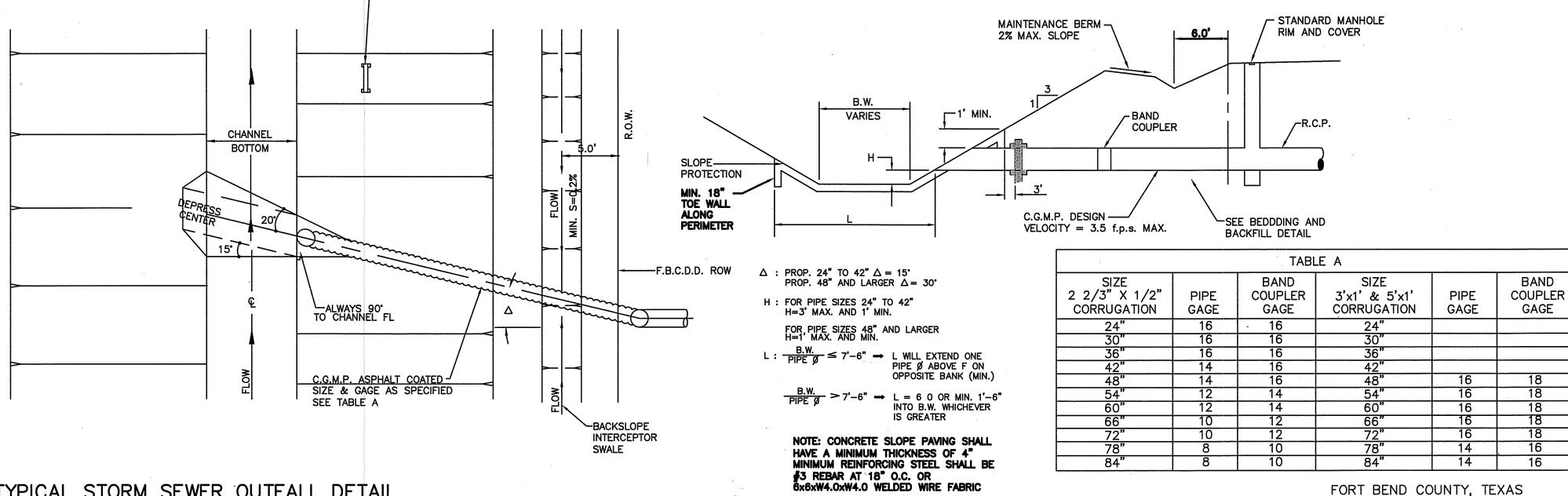


\_TIMBER BENT BURIED



 $\triangle$  : PROP. 24" TO 42"  $\triangle$  = 15"

FORT BEND COUNTY, TEXAS FIG. 3 - 4DATE: AUGUST 1986



TYPICAL STORM SEWER OUTFALL DETAIL N.T.S. REVISION 1 - 7-13-88 2 - 5-20-97

3 - 12-01-10

3 - 12-01-10

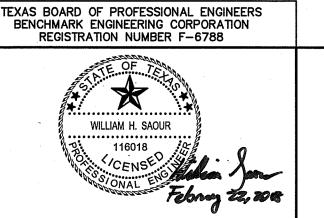
60301

AUTHORIZATION IS VALID FOR 1 YEAR. APPROVED: FBC DEVELOPMENT COORDINATOR

FIG. 3 - 5

FORT BEND COUNTY, TEXAS

FORT BEND COUNTY ENGINEERING DEPARTMENT



PROJECT TITLE: LAKES	OF BELLA TERRA WEST 👛 DE	VELOPMENT
DRAWN BY: BEC	STANDARD STORM OUTFALL	DETAILS 04044-78
BEC	The state of the s	FILE NAME: MG2
N.T.S.		FILE NO:
DATE: 12/2009	APPROVED BY:	<sup>SHT NO:</sup> 21/ <b>21</b>