



**REVIEW BY FORT BEND COUNTY
COMMISSIONERS COURT**

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

☒ Right of Way Permit
☐ Commercial Driveway Permit

Permit No: 2017-12542

Applicant: Reliance Construction Services, L.P./Costello, Inc.

Job Location Site: 8125 Homeward Way, Sugar Land, TX 77479

Bond No. ██████████ **Date of Bond:** 5/3/2017 **Amount:** \$167,393.00

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

Notes:

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

On this 23rd day of May, 2017, Upon Motion of Commissioner Meyer, seconded by Commissioner Morales, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Signature

Presented to Commissioners Court and approved.

By: Charles O. Ay
County Engineer

Date Recorded 5-30-2017 Comm. Court No. 9P

N/A
By: _____
Drainage District Engineer/Manager

Clerk of Commissioners Court
By: Jonda Wilks
Deputy



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

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

- ☒ Right of Way Permit
☐ Commercial Driveway Permit

Permit No: 2017-12542

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

(1) COMPLETE APPLICATION FORM:

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

(2) BOND:

- ☐ County Attorney, approval when applicable.
- ☐ Perpetual bond currently posted. Bond No: _____ Amount: _____
- ☒ Performance bond submitted. Bond No: XXXXXXXXXX Amount: \$167,393.00
- ☐ Cashier's Check Check No: _____ Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

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

Charles O. Ay

Permit Administrator

5/15/17

Date



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

BOND NO [REDACTED]

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND §

THAT WE, Reliance Construction Services, L.P. whose address is 4302 Almeda Genoa Road, Houston Texas 77048; (713) 991-6685, hereinafter called the Principal, and Continental Casualty Company, a Corporation existing under and by virtue of the laws of the state of Illinois and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at 333 S. Wabash Avenue, Chicago, IL 60604; (312) 822-5000, whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is John G. Sutter and whose address is 5999 Summerside Drive, Suite 200, Dallas, TX 75252, 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 One Hundred Sixty Seven Thousand Three Hundred Ninety Three and 00/100 Dollars (\$167,393.00) 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 3rd day of May, 2017.

Reliance Construction Services, L.P.
PRINCIPAL

H. S. Sidhu H. S. SIDHU
BY PRESIDENT OF H. S. SIDHU, LLC
GENERAL PARTNER

Continental Casualty Company
SURETY

John L. Budde
BY John L. Budde, Attorney-in-Fact

CCM 5-23-17 # 9P
Fort Bend County Clerk
Return Admin Serv Coord *RAU*

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company (herein called "the CNA Companies"), are duly organized and existing insurance companies having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

T J Griffin, William A Pirret, Steven K Brandon, John L Budde, Susan L Small, Terence J Griffin, Individually

of Farmington Hills, MI, their true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their insurance companies and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the insurance companies.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Vice President and their corporate seals to be hereto affixed on this 1st day of July, 2015.

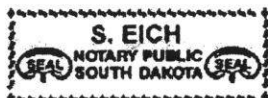


Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Paul T. Bruflat
Paul T. Bruflat Vice President

State of South Dakota, County of Minnehaha, ss:

On this 1st day of July, 2015, before me personally came Paul T. Bruflat to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is a Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that he knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.



My Commission Expires February 12, 2021

S. Eich
S. Eich Notary Public

CERTIFICATE

I, D. Bult, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 3rd day of May, 2017.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

D. Bult
D. Bult Assistant Secretary

Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company at a meeting held on May 12, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of Continental Casualty Company.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of National Fire Insurance Company of Hartford.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of American Casualty Company of Reading, Pennsylvania.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company."



LETTER OF TRANSMITTAL

TO: Ms. Carmen Escobar
Fort Bend County Engineering Dept.
301 Jackson Street, Suite 401
Richmond, TX 77469

DATE: 5/9/17 **JOB NO:** 1992020-CON-02-142

RE: New Territory Blvd Re-used Water Line
in New Territory

We are sending you the following items:

- | | | | |
|---|---|---------------------------------------|--------------------------------|
| <input type="checkbox"/> Attached | <input type="checkbox"/> Shop Drawings | <input type="checkbox"/> Prints | <input type="checkbox"/> Plans |
| <input type="checkbox"/> Under separate cover | <input type="checkbox"/> Specifications | <input type="checkbox"/> Change Order | <input type="checkbox"/> Other |

COPIES	DATE	NO.	DESCRIPTION
1	4/27/17	1	Performance Bond for Permit No. 2017-12542

These are transmitted as checked below:

- | | | |
|--|---|---|
| <input type="checkbox"/> For Approval | <input type="checkbox"/> Approved as submitted | <input type="checkbox"/> Resubmit _____ copies for approval |
| <input checked="" type="checkbox"/> For your use | <input type="checkbox"/> Approved as noted | <input type="checkbox"/> Submit _____ copies for distribution |
| <input checked="" type="checkbox"/> As requested | <input type="checkbox"/> Returned for revisions | <input type="checkbox"/> Return _____ corrected prints |
| <input type="checkbox"/> For Review and Comment | <input type="checkbox"/> For your files | <input type="checkbox"/> For signature |
| <input type="checkbox"/> For bids due _____ | | |

Please see the attached signed original of the performance bond in the amount of \$167,393 which is 25% of the contract amount for this project. If you have any questions or need additional information, please call me at 713-783-7788.

Copy to: _____

Signed: _____

Julia M. Horié, P.E.
Project Engineer

\\\\HAL9000\\wordprocessing\\data\\1992\\92020\\140 Water Reuse System\\142 Final Design\\New Territory Blvd (BGE)\\20170509 - Transmittal - FBC Bonds.docx

FILED AND RECORDED
OFFICIAL PUBLIC RECORDS

Laura Richard

Laura Richard, County Clerk
Fort Bend County, Texas

May 30, 2017 03:00:57 PM

FEE: \$0.00 CR1
BOND

2017058555

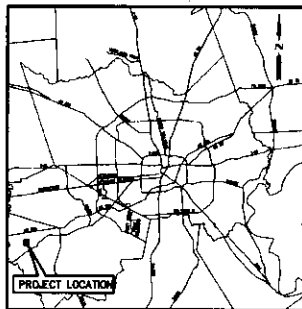


FORT BEND COUNTY L.I.D. 7 CONSTRUCTION PLANS FOR NEW TERRITORY RECLAIMED WATERLINE SYSTEM

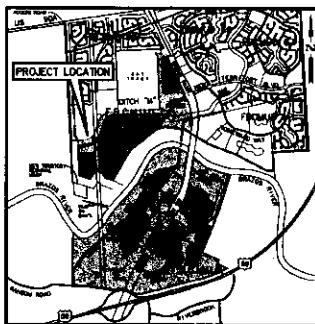
OCTOBER 2016

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| 2. GENERAL CONSTRUCTION NOTES | 26. PLAN AND PROFILE - KNIGHTS BRANCH DRIVE STA. 6+00 TO 11+00 |
| 3. OVERALL AND STORM WATER POLLUTION PREVENTION LAYOUT (SHEET 1 OF 3) | 27. PLAN AND PROFILE - KNIGHTS BRANCH DRIVE STA. 11+00 TO 15+59 |
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| 20. PLAN AND PROFILE - SUNCLIFF PARK LANE STA. 9+20 TO 14+00 | 44. TxDOT PEDESTRIAN FACILITIES GENERAL NOTES AND DETECTABLE WARNINGS |
| 21. PLAN AND PROFILE - PLATO PARK DRIVE STA. 14+00 TO 17+66 | 45. TxDOT PEDESTRIAN FACILITIES SIDEWALKS |
| 22. PLAN AND PROFILE - WOODLEY BEND STA. 1+00 TO 4+60 | 46. TxDOT PEDESTRIAN FACILITIES INTERSECTION LAYOUTS |
| 23. PLAN AND PROFILE - WOODLEY BEND STA. 4+60 TO 7+40 | 47. TxDOT TRAFFIC CONTROL PLAN |
| 24. PLAN AND PROFILE - WOODLEY BEND STA. 7+40 TO END AND LATERAL TWO | |



LOCATION MAP
N.T.S.



VICINITY MAP
N.T.S.

KEY MAP 606 D AND 607 A
SUGARLAND, TEXAS 77479

APPROVED
CITY OF SUGAR LAND

Timothy L. Steubing 10/27/16
CITY ENGINEER
CHRISTOPHER L. STEUBING, P.E., CFM

Timothy L. Steubing 10/27/16
ASSISTANT CITY ENGINEER

FORT BEND COUNTY ENGINEER

ENGINEER: *Richard M. Stolleis*
RICHARD M. STOLLEIS, P.E.

DATE: 11/19/16

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

APPROVED: *Michael J. Davidson*
DEVELOPMENT COORDINATOR

DATE: 11/14/16

REV. NO.	DATE	DESCRIPTION	P.E. APPROVAL

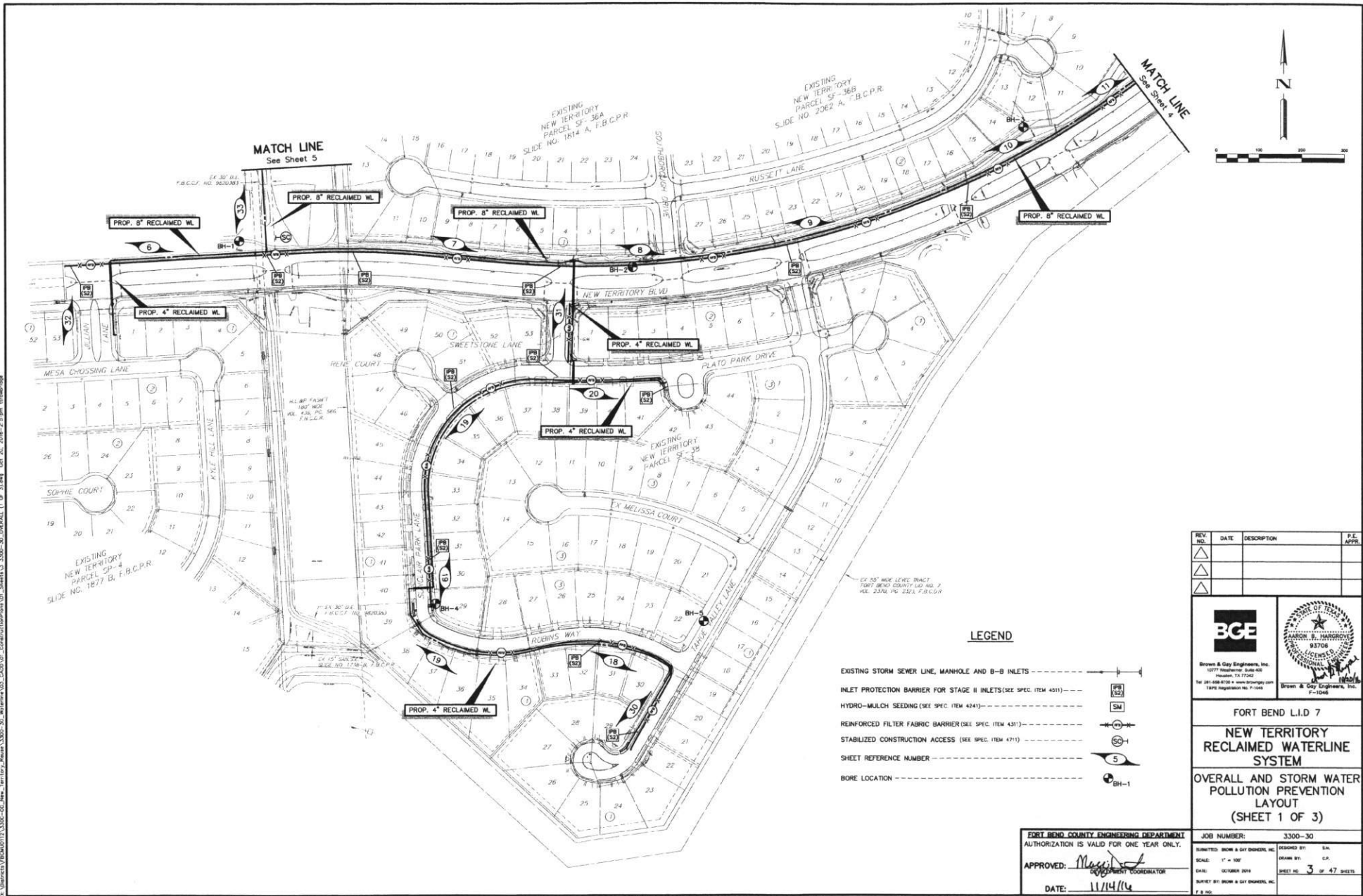


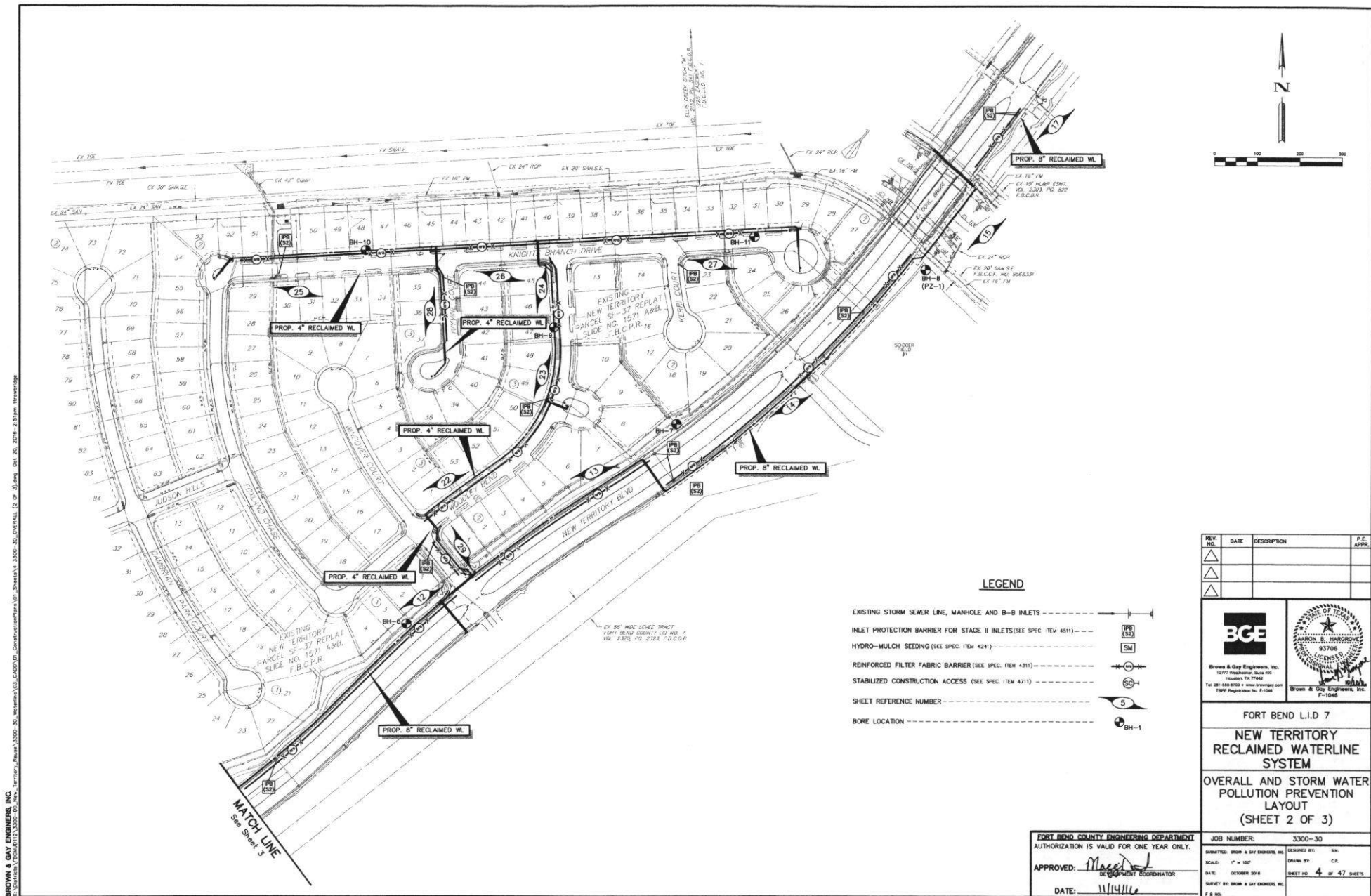
Brown & Gray Engineers, Inc.
1977 Henderson Road
Houston, TX 77058
Tel 281-488-0751 • www.browngray.com
TSP# Registered by P-1248

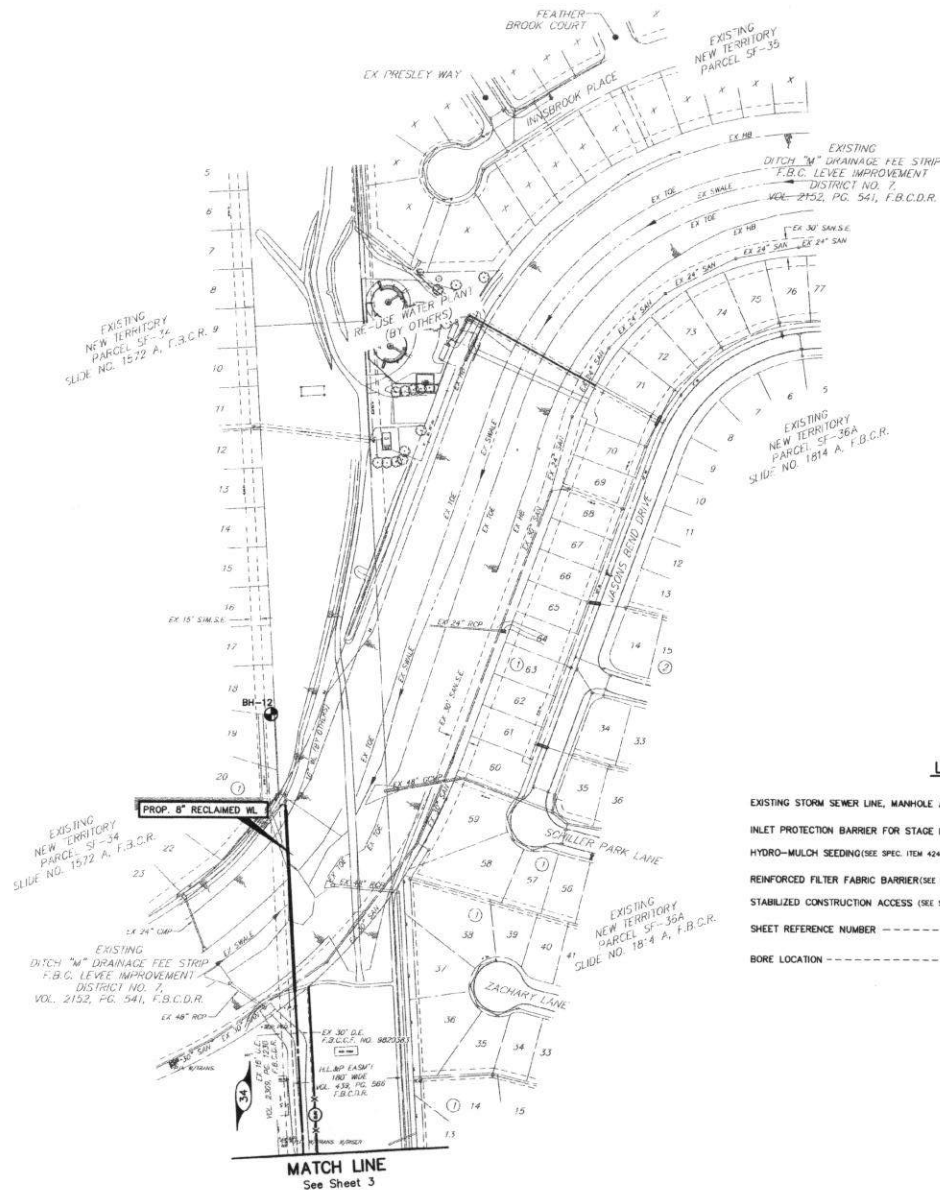


SHEET
NO. 1 OF 47

ONE-CALL NOTIFICATION SYSTEM:
CALL BEFORE YOU DIG!!!
DIAL 811







LEGEND

- EXISTING STORM SEWER LINE, MANHOLE AND B-B INLETS
- INLET PROTECTION BARRIER FOR STAGE II INLETS (SEE SPEC. ITEM 4511)
- HYDRO-MULCH SEEDING (SEE SPEC. ITEM 4241)
- REINFORCED FILTER FABRIC BARRIER (SEE SPEC. ITEM 4311)
- STABILIZED CONSTRUCTION ACCESS (SEE SPEC. ITEM 4711)
- SHEET REFERENCE NUMBER
- BORE LOCATION

REV. NO.	DATE	DESCRIPTION	P.E. APPR.
1			
2			
3			

BCE
 Brown & Gay Engineers, Inc.
 10777 Westview, Suite 400
 Denver, CO 80231
 Tel: 303-755-8800 • Fax: 303-755-8801
 100% Registered for F-1046

PROFESSIONAL ENGINEER
 AARON B. MANGROVE
 No. 93706
 State of Colorado

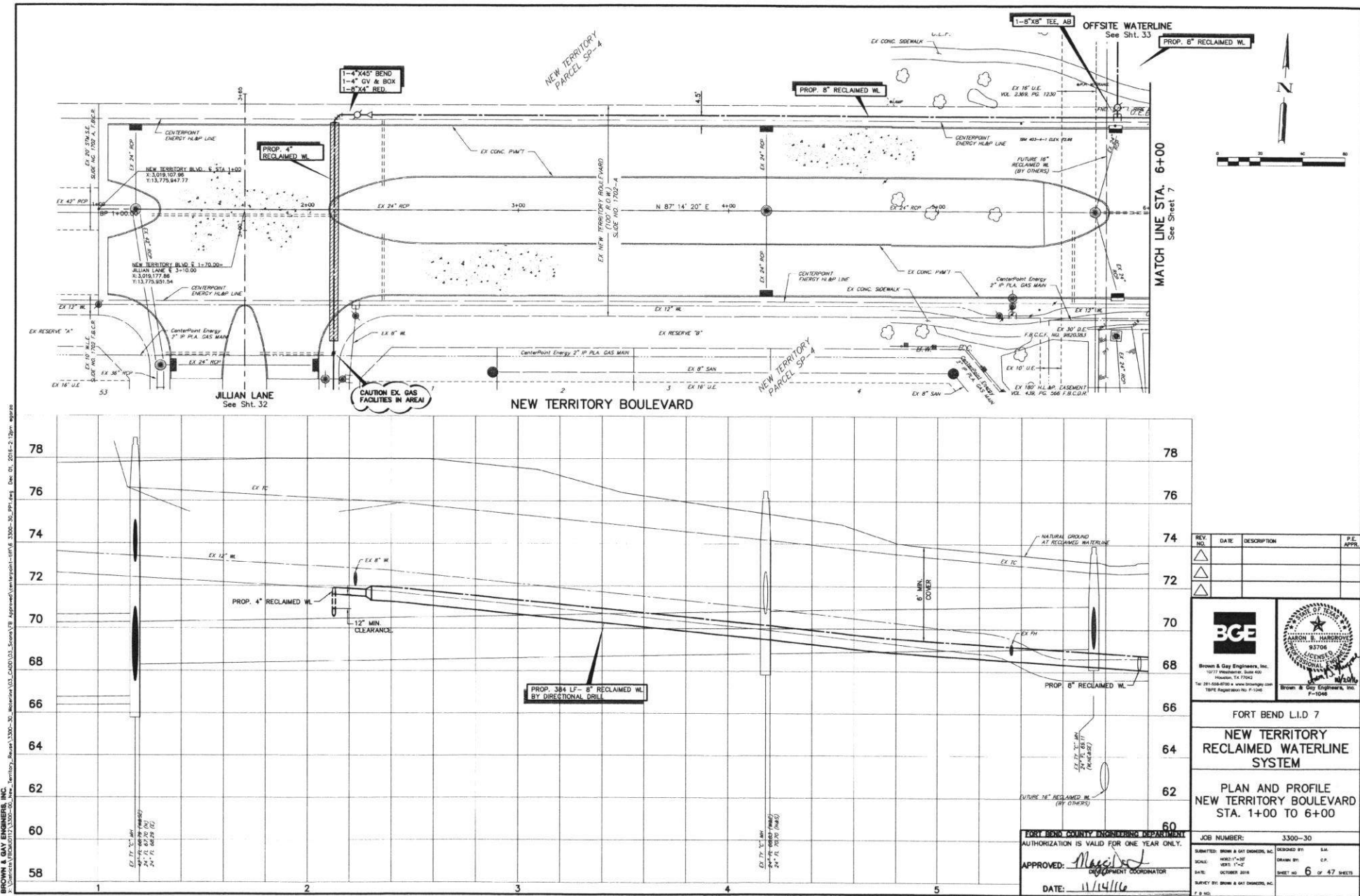
FORT BEND L.I.D. 7

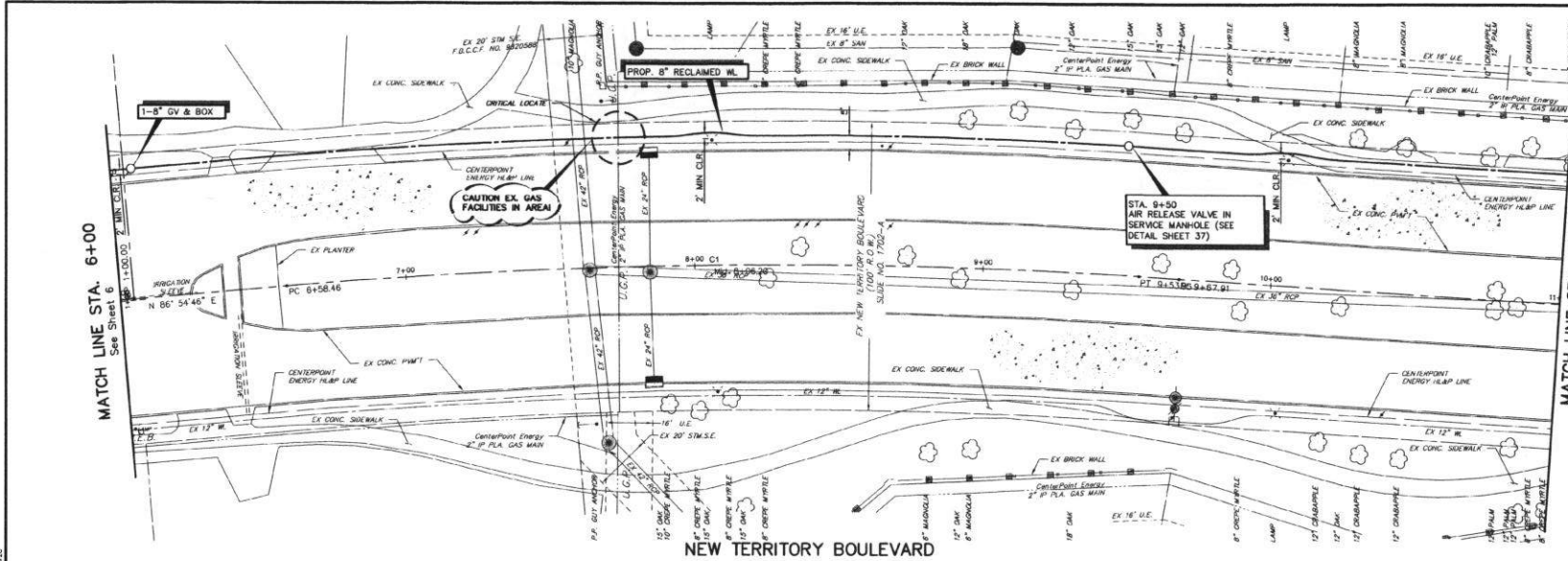
NEW TERRITORY RECLAIMED WATERLINE SYSTEM

OVERALL AND STORM WATER POLLUTION PREVENTION LAYOUT

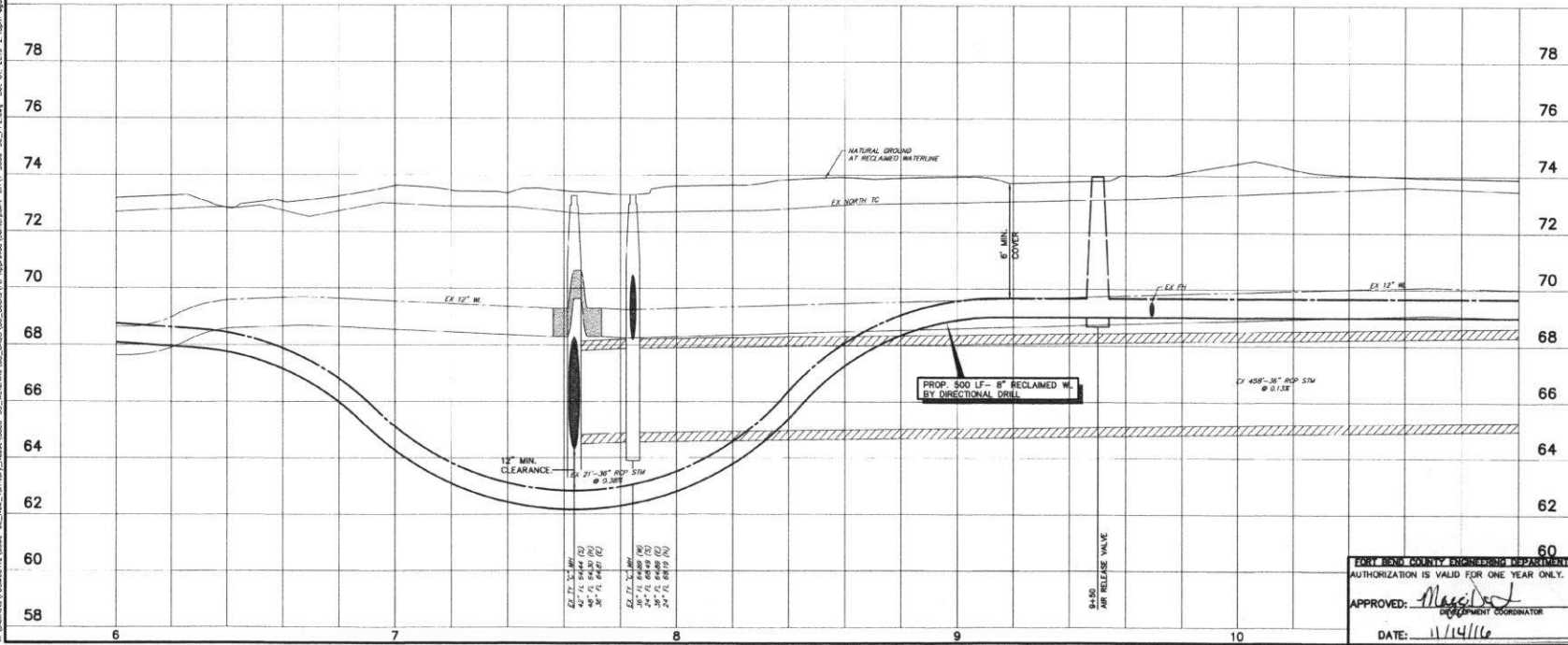
(SHEET 3 OF 3)

FORT BEND COUNTY ENGINEERING DEPARTMENT AUTHORIZATION IS VALID FOR ONE YEAR ONLY.		JOB NUMBER: 3300-30	
APPROVED: <i>[Signature]</i> DEPARTMENT COORDINATOR	DESIGNED BY: S.A.	SCALE: 1" = 100'	DRAWN BY: C.A.
DATE: 11/14/16	DATE: OCTOBER 2016	SHEET NO. 5 OF 47 SHEETS	





CURVE TABLE			
CURVE	RADIUS	LENGTH	BEARING
C1	2000.255	295.482	308° 51' 16.81"E



REV.	NO.	DATE	DESCRIPTION	P.L. APPR.
1				
2				
3				

Brown & Gay Engineers, Inc.
 11001 Westheimer Road, Suite 100
 Houston, TX 77042
 Tel: 281-486-8710 Fax: 281-486-8711
 www.brown-gay.com
 1987E Registered No. 7-10498

FORT BEND L.I.D. 7

NEW TERRITORY RECLAIMED WATERLINE SYSTEM

PLAN AND PROFILE NEW TERRITORY BOULEVARD STA. 6+00 TO 11+00

JOB NUMBER: 3300-30

SUBMITTED: BROWN & GAY ENGINEERS, INC. DESIGNED BY: B.G.

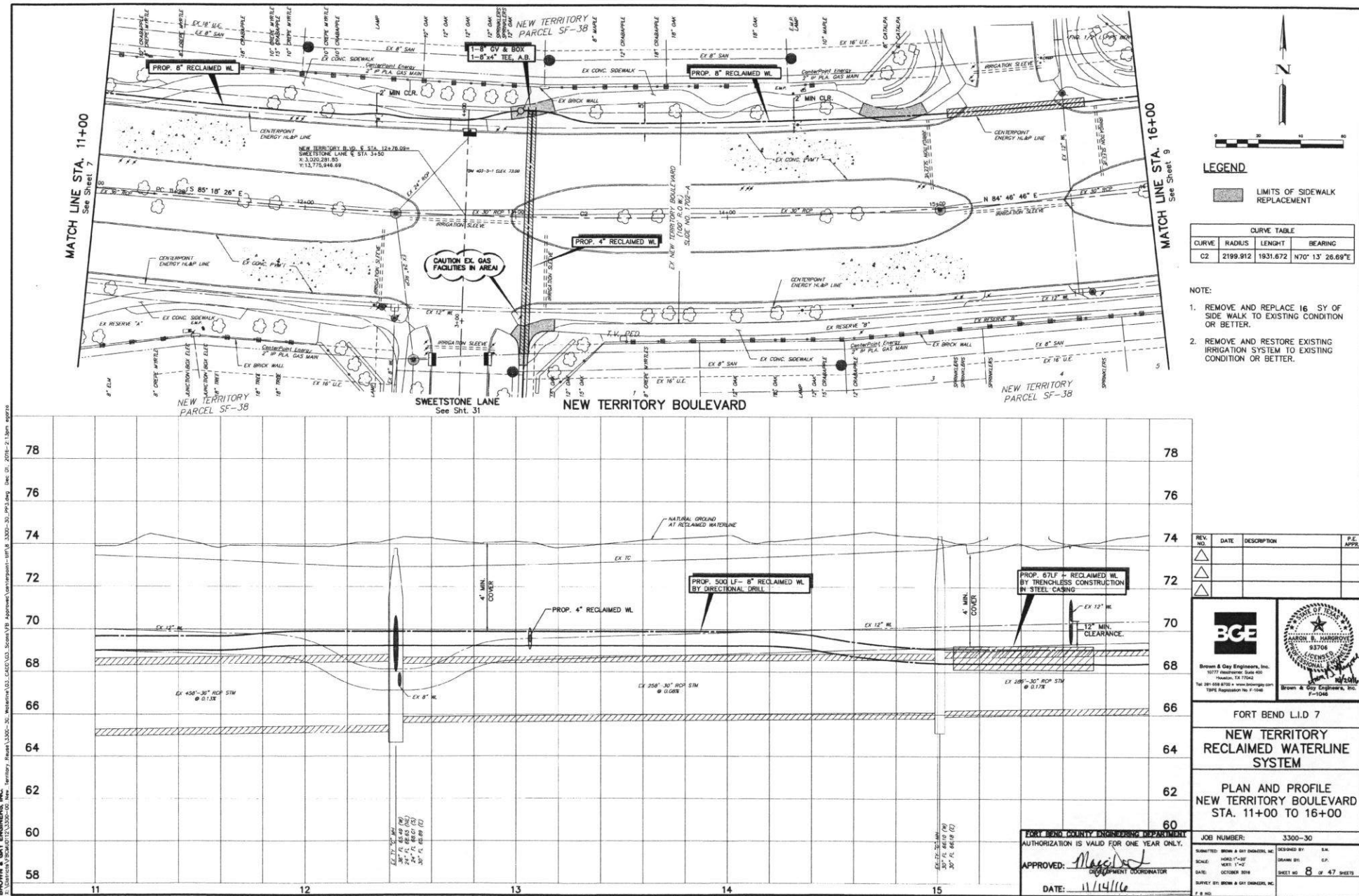
SCALE: HORIZ. 1"=40' VERT. 1"=4' DRAWN BY: C.F.

DATE: OCTOBER 2008 SHEET NO: 7 OF 47 SHEETS

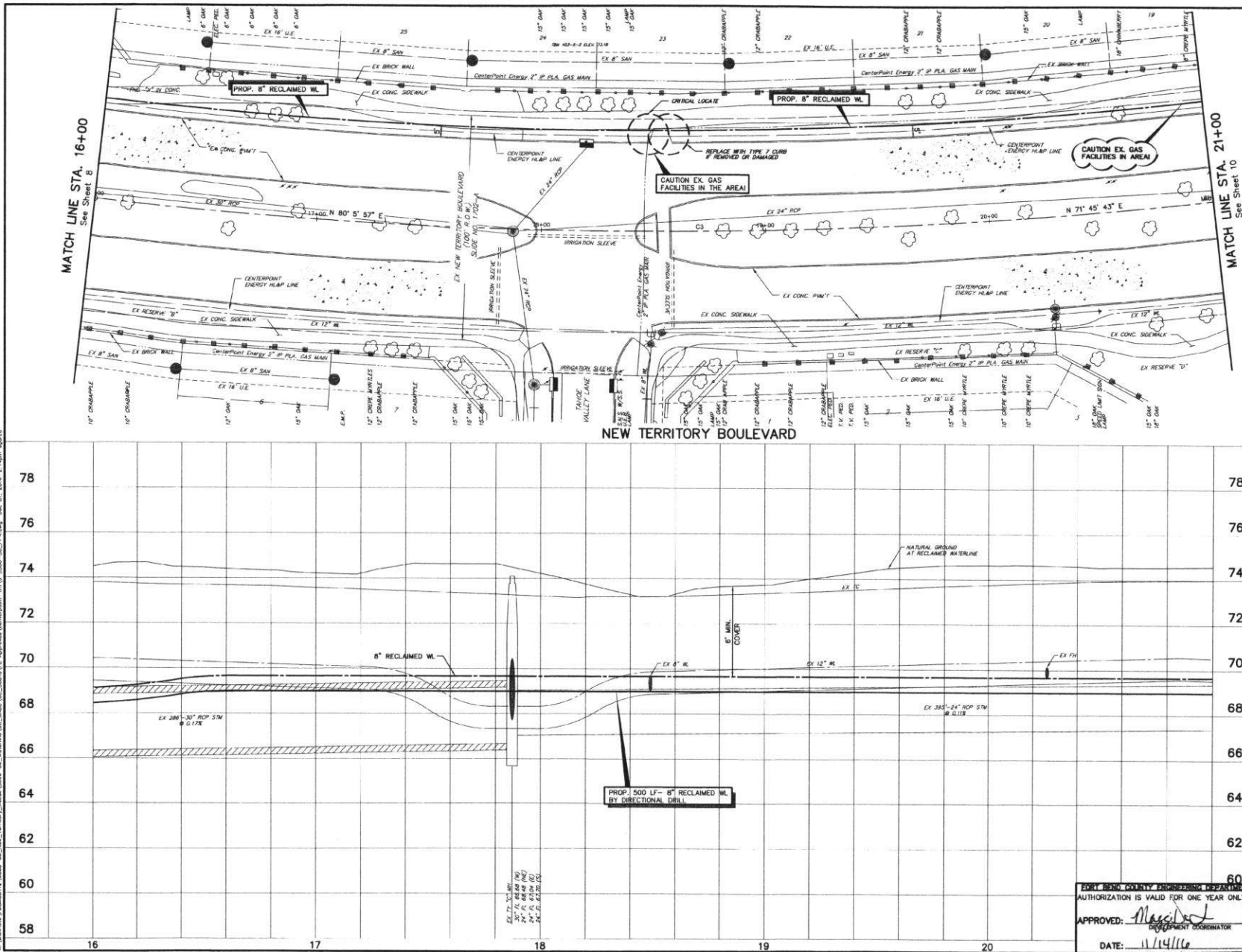
DUPLET: BY BROWN & GAY ENGINEERS, INC. P. 8 OF 10

APPROVED: *[Signature]*
 DEPARTMENT COORDINATOR

DATE: 11/14/16



BROWN & GAY ENGINEERS, INC.
10000 Highway 101, Suite 100, Houston, Texas 77066
Tel: 281-486-8100 Fax: 281-486-8101
www.brown-gay.com
SHEET 9 OF 47 SHEETS



CURVE TABLE			
CURVE	RADIUS	LENGTH	BEARING
C3	2199.912	1931.672	N70° 13' 26.69\"/>

REV.	NO.	DATE	DESCRIPTION	P.E. APPR.
1				
2				
3				

Brown & Gay Engineers, Inc.
10000 Highway 101, Suite 100
Houston, Texas 77066
Tel: 281-486-8100 Fax: 281-486-8101
www.brown-gay.com
SHEET 9 OF 47 SHEETS

FORT BEND L.I.D. 7
NEW TERRITORY RECLAIMED WATERLINE SYSTEM
PLAN AND PROFILE
NEW TERRITORY BOULEVARD
STA. 16+00 TO 21+00

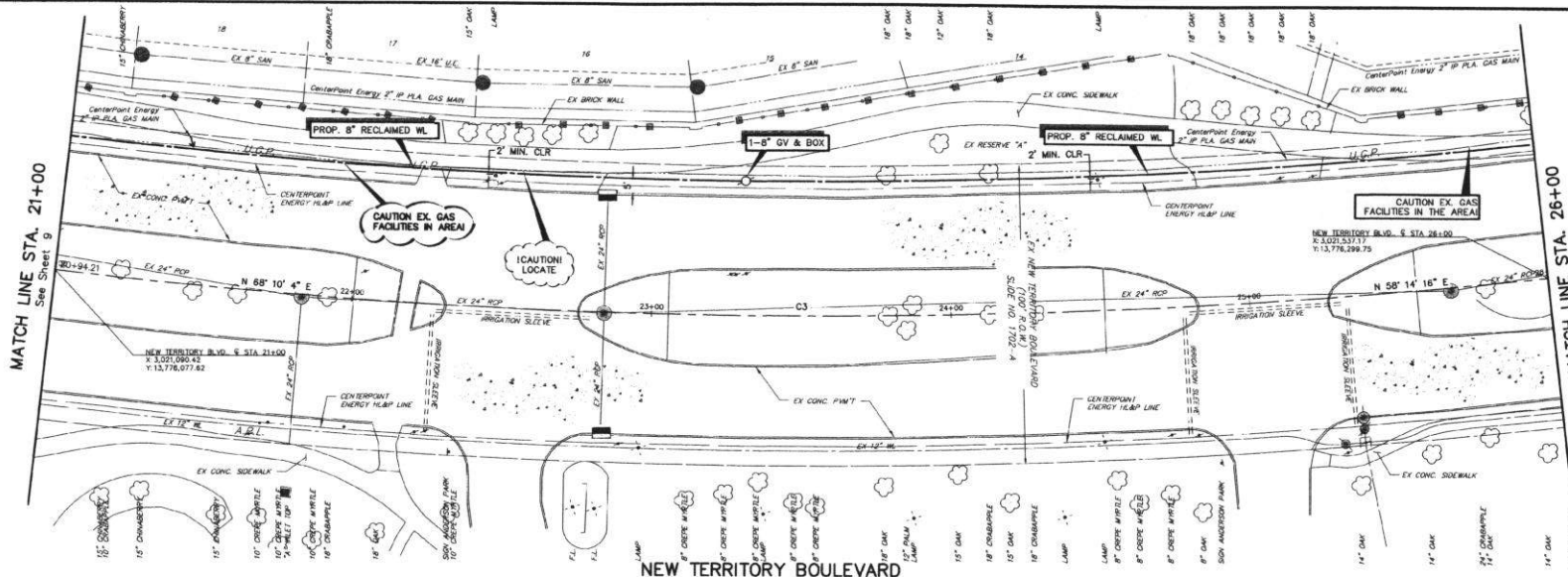
JOB NUMBER: 3300-30	
SUBMITTED BY: BROWN & GAY ENGINEERS, INC.	DESIGNED BY: S.M.
SCALE: HORIZ. 1"=50'	DRAWN BY: C.P.
DATE: OCTOBER 2008	SHEET NO. 9 OF 47 SHEETS
APPROVED: <i>[Signature]</i> ENGINEERING COORDINATOR	
DATE: 11/14/16	

MATCH LINE STA. 21+00
 See Sheet 9

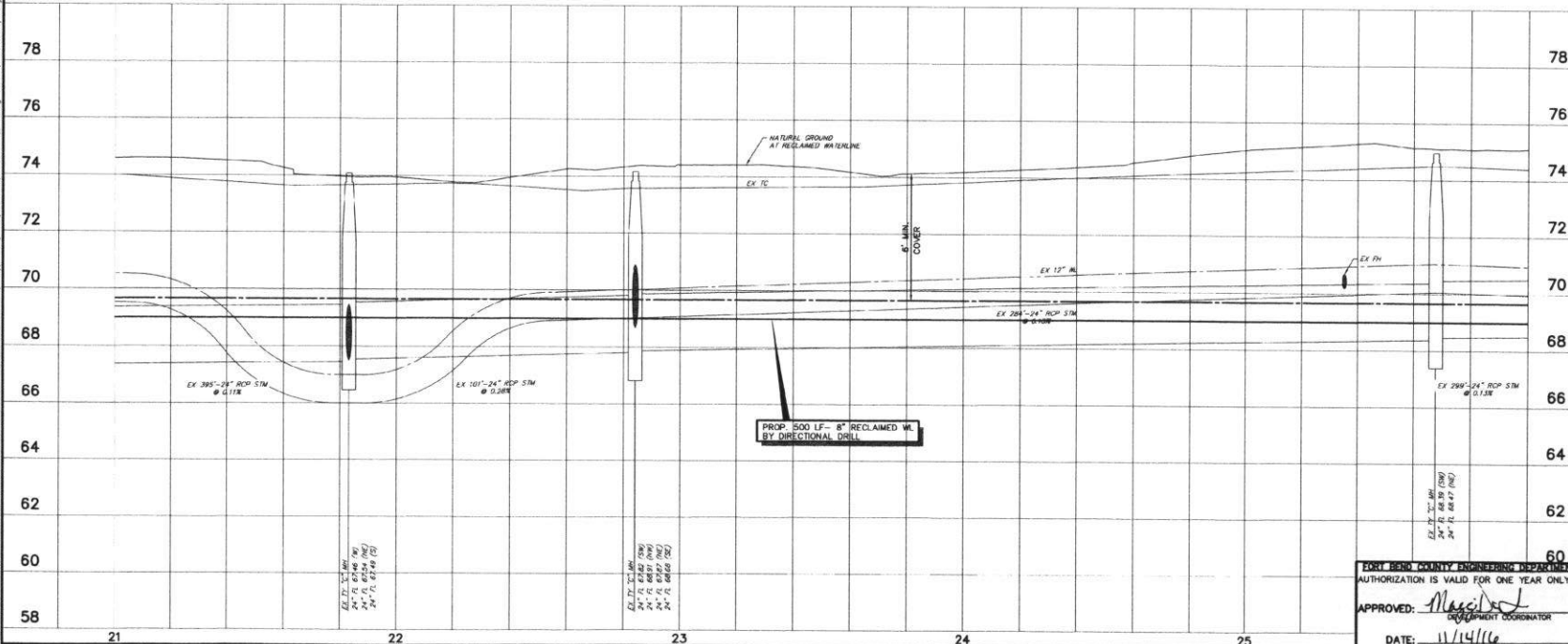
MATCH LINE STA. 26+00
 See Sheet 11



CURVE TABLE		
CURVE	RADIUS	BEARING
C3	2199.912	N70° 13' 28.69"E



NEW TERRITORY BOULEVARD



REV. NO.	DATE	DESCRIPTION	P.E. APPR.
1			
2			
3			

Brown & Gay Engineers, Inc.
 1100 West 11th Street, Suite 100
 Fort Bend, Texas 77450
 Tel: 281-291-8800 Fax: 281-291-8801
 www.brown-gay.com

FORT BEND L.I.D. 7

NEW TERRITORY RECLAIMED WATERLINE SYSTEM

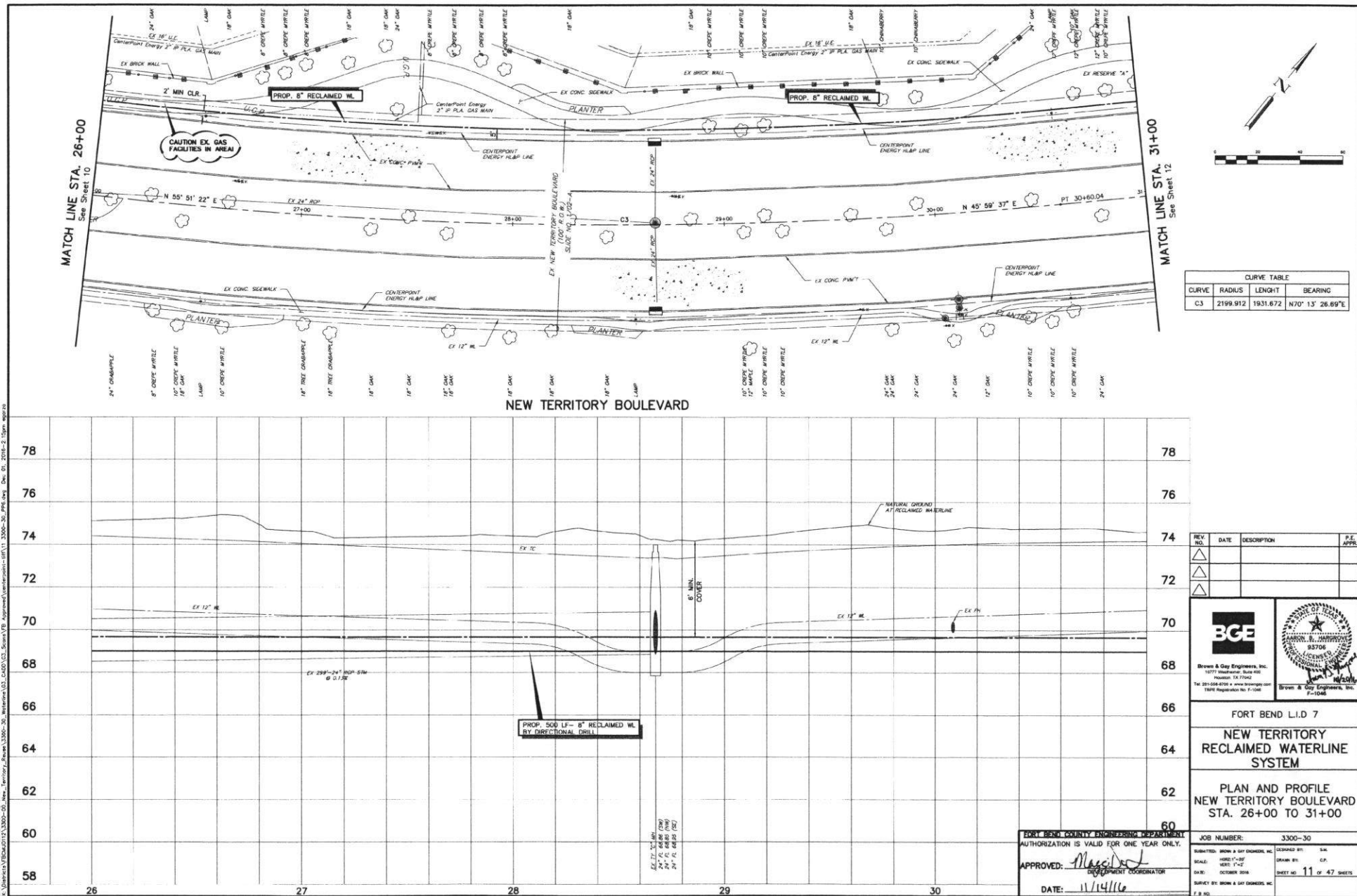
PLAN AND PROFILE
NEW TERRITORY BOULEVARD
STA. 21+00 TO 26+00

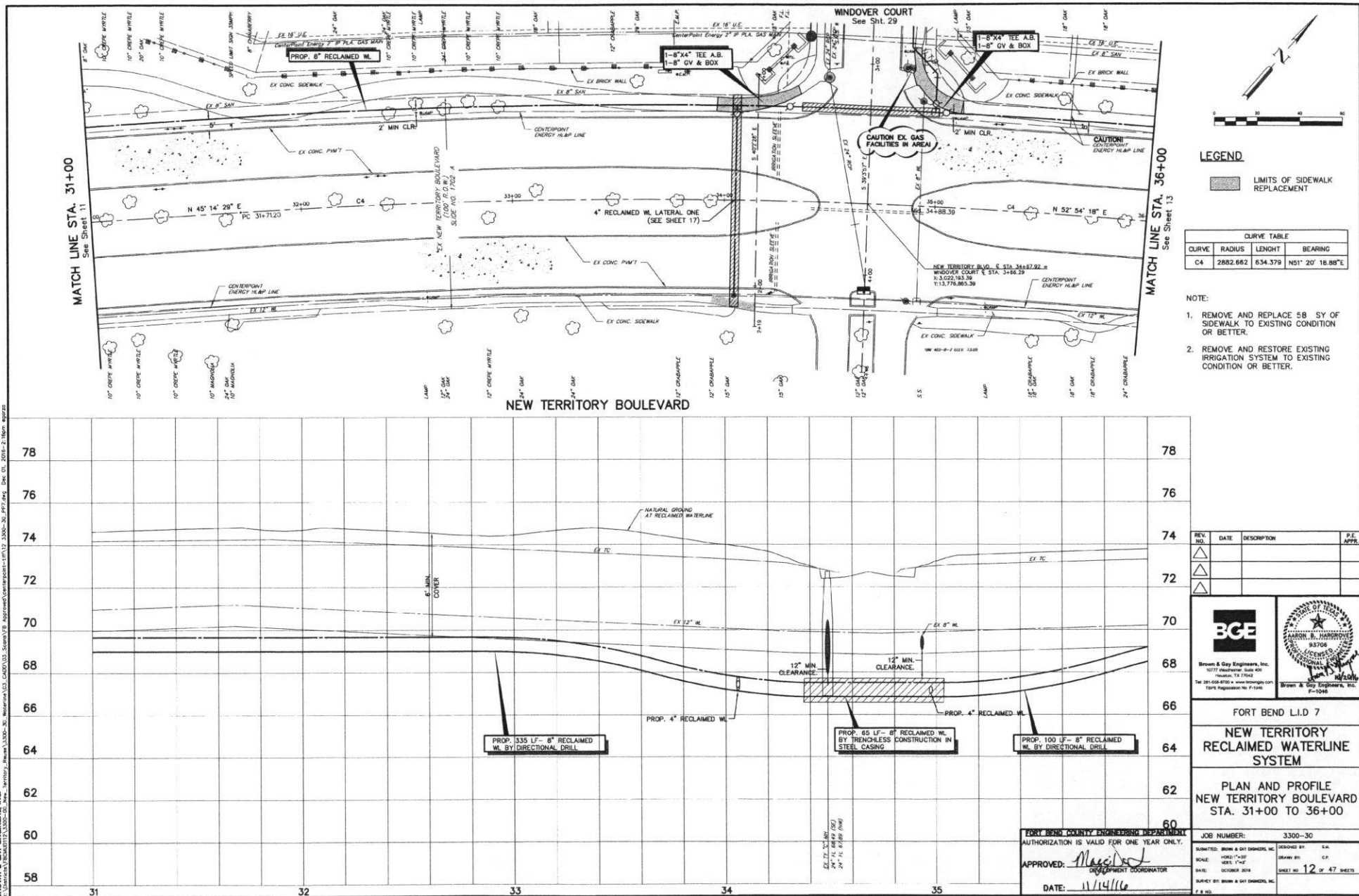
JOB NUMBER: 3300-30	
Submitted: Brown & Gay Engineers, Inc.	DESIGNED BY: S.M.
SCALE: HORIZ. 1"=50'	DRAWN BY: C.P.
DATE: OCTOBER 2014	SHEET NO. 10 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.	
F. & M.	

FORT BEND COUNTY ENGINEERING DEPARTMENT
 AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: *[Signature]*
 DEPARTMENT COORDINATOR

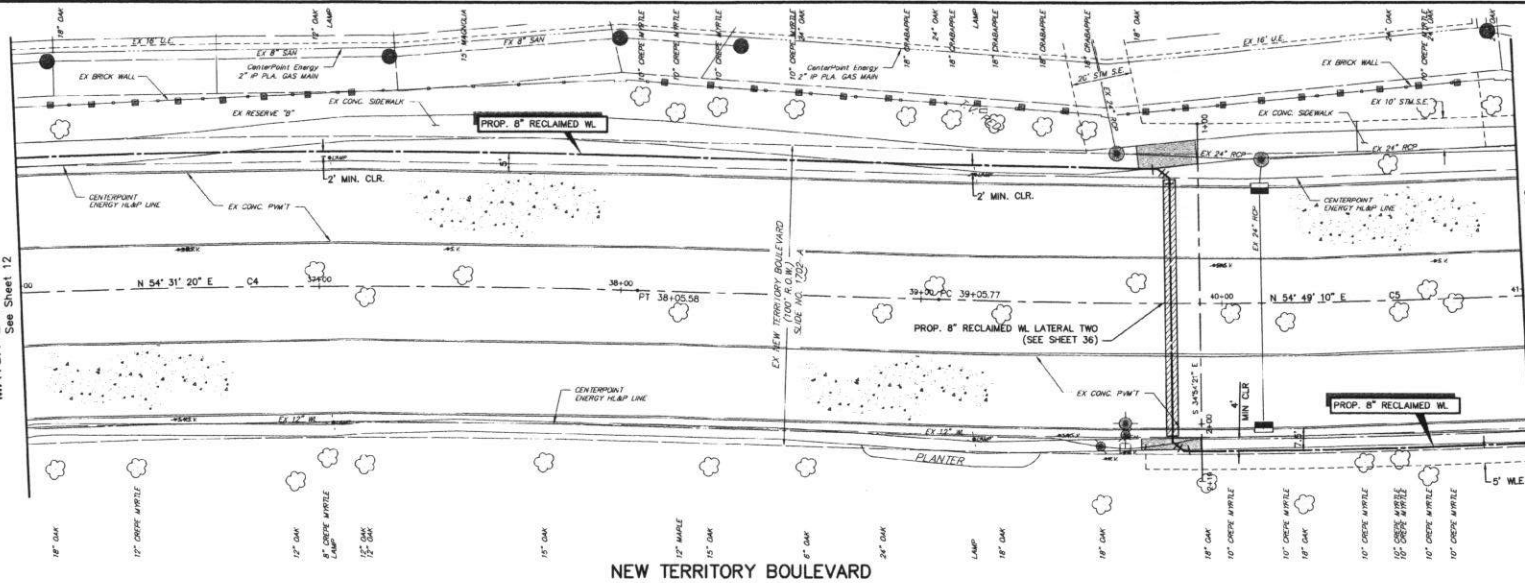
DATE: 11/14/16





BROWN & GAY ENGINEERS, INC.
10010 Highway 190, Suite 400, Houston, Texas 77058
Tel: 281-688-8700 • Fax: 281-688-8701 • www.browngay.com
TSP# Registration No. F-10485

MATCH LINE STA. 36+00
See Sheet 12



NEW TERRITORY BOULEVARD

MATCH LINE STA. 41+00
See Sheet 14

LEGEND

LIMITS OF SIDEWALK REPLACEMENT

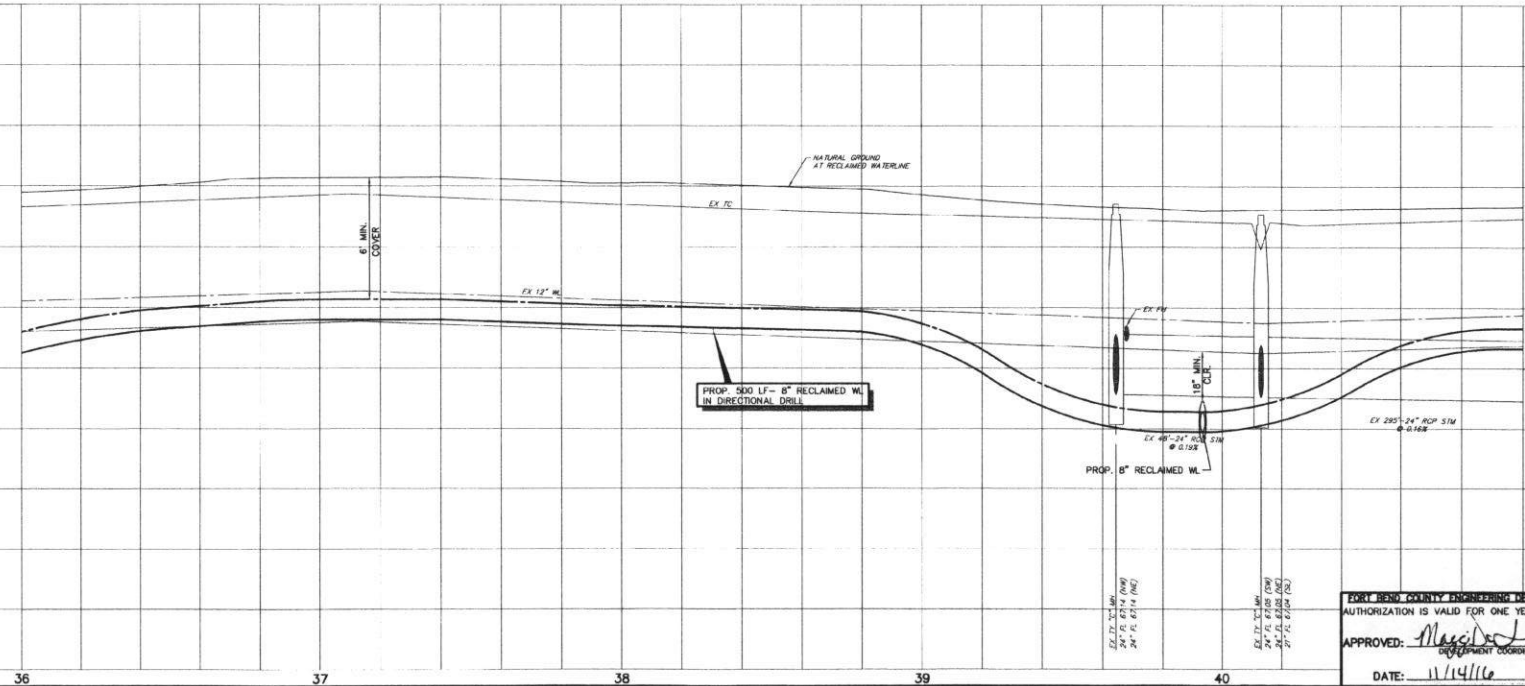
CURVE TABLE			
CURVE	RADIUS	LENGTH	BEARING
C4	2882.662	634.379	N51° 20' 18.88"E
C5	2500.000	488.852	N52° 00' 12.11"E

NOTE:

1. REMOVE AND REPLACE 26' SY OF SIDE WALK TO EXISTING CONDITION OR BETTER.
2. REMOVE AND RESTORE EXISTING IRRIGATION SYSTEM TO EXISTING CONDITION OR BETTER.

78
76
74
72
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68
66
64
62
60
58

78
76
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62
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58



REV. NO.	DATE	DESCRIPTION	P.E. APPR.
1			
2			
3			



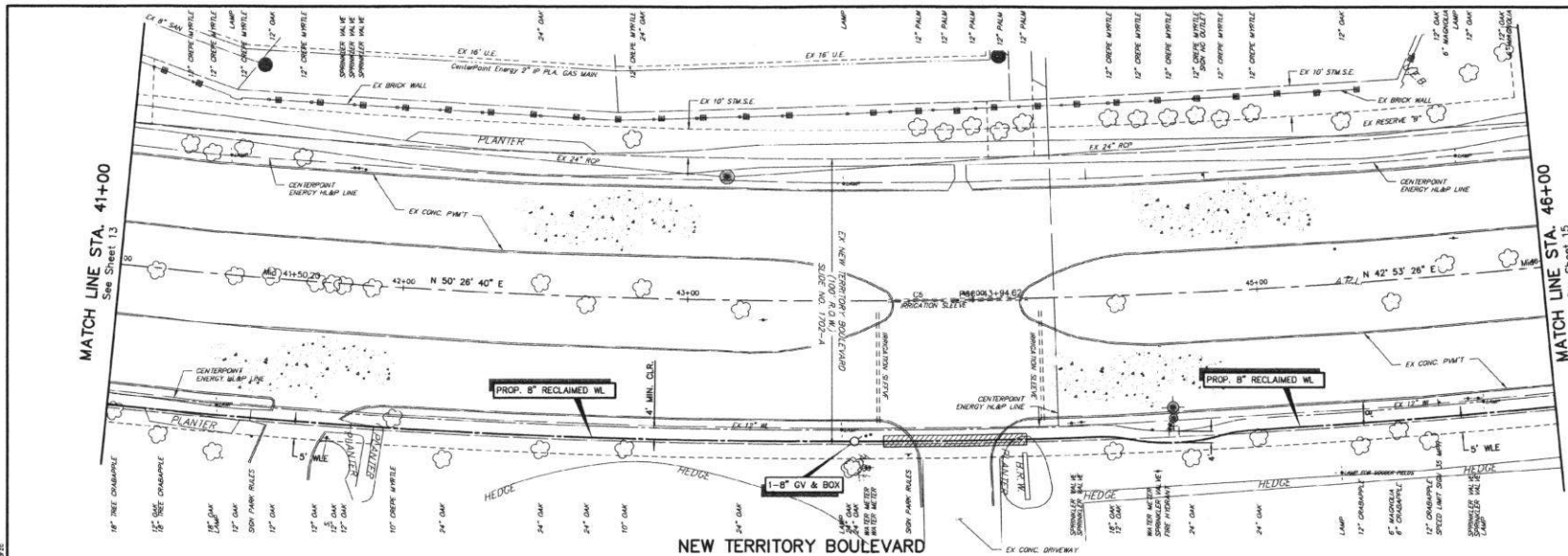
FORT BEND L.I.D 7

NEW TERRITORY
RECLAIMED WATERLINE
SYSTEM

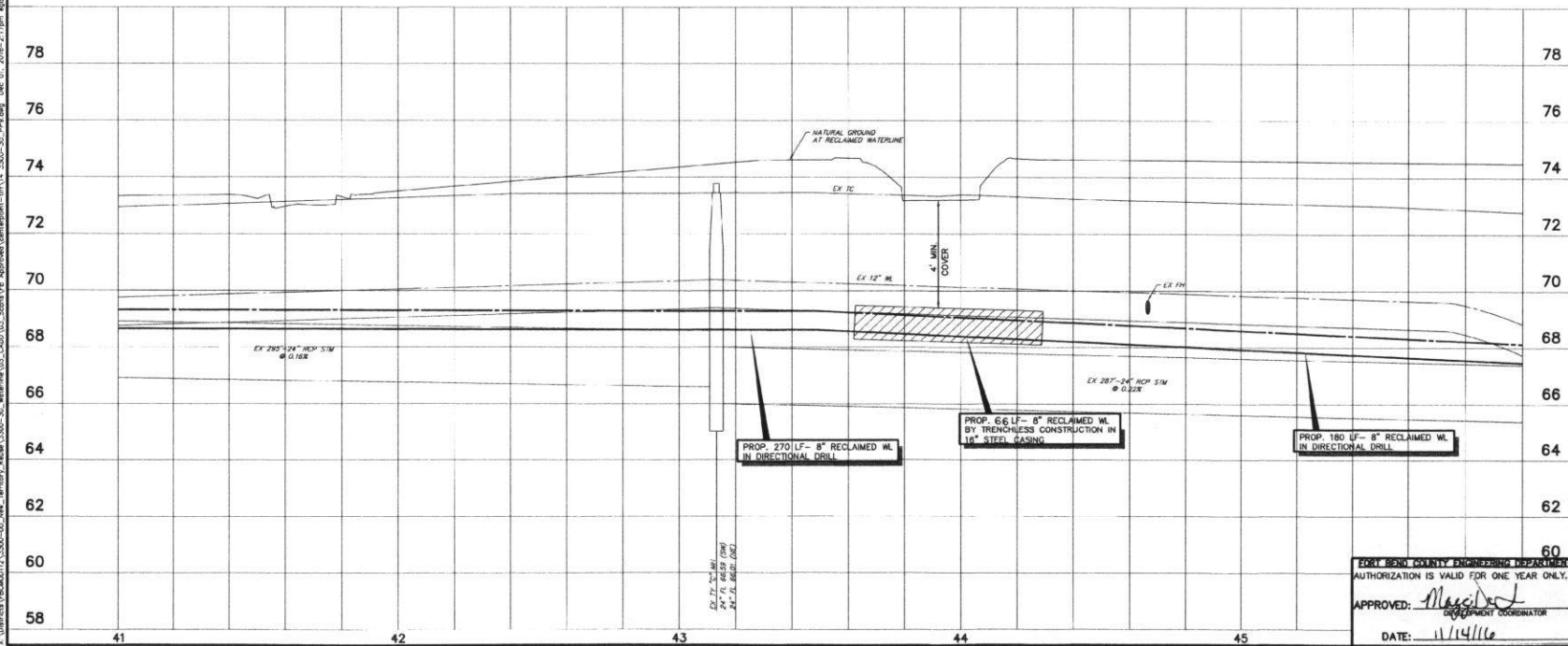
PLAN AND PROFILE
NEW TERRITORY BOULEVARD
STA. 36+00 TO 41+00

FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.
APPROVED: *[Signature]*
DATE: 11/14/16

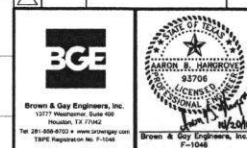
JOB NUMBER: 3300-30
SUBMITTED: BROWN & GAY ENGINEERS, INC.
SCALE: HORIZ. 1"=40'
DATE: OCTOBER 2016
SHEET NO. 13 OF 47 SHEETS
DESIGNED BY: S.H.
DRAWN BY: L.P.
CHECKED BY: S.H.
SURVEY BY: BROWN & GAY ENGINEERS, INC.



CURVE TABLE			
CURVE	RADIUS	LENGHT	BEARING
C5	2500.000	488.852	N52° 00' 12.11\"



REV. NO.	DATE	DESCRIPTION	P.E. APPR.
1			
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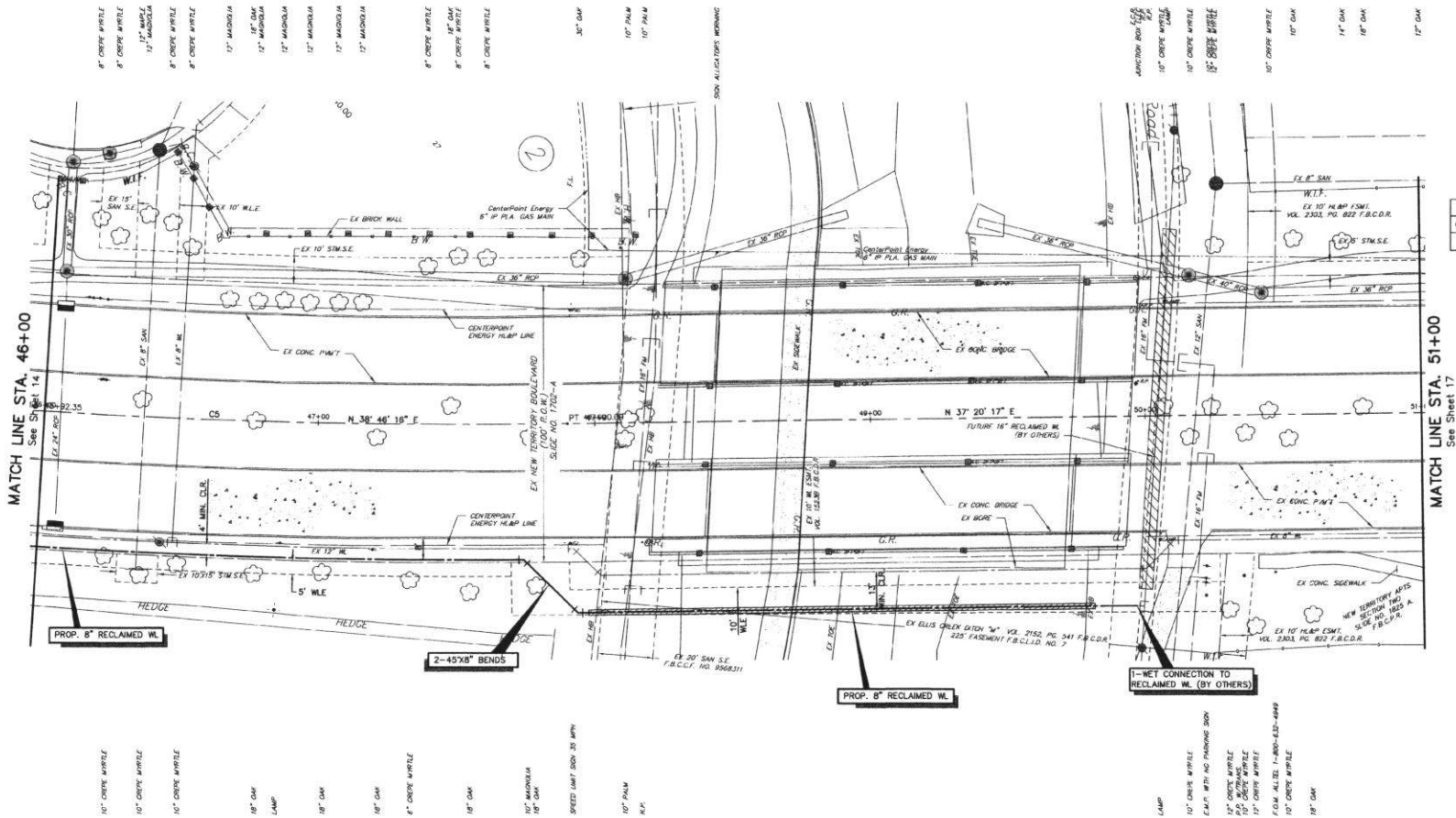
FORT BEND COUNTY ENGINEERING DEPARTMENT
 AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: *[Signature]*
 DEPARTMENT COORDINATOR

DATE: 11/14/16

JOB NUMBER: 3300-30

DESIGNED BY: S.A.
DRAWN BY: C.F.
SCALE: HORIZ. 1\"/>

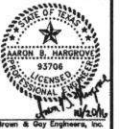


CURVE TABLE			
CURVE	RADIUS	LENGHT	BEARING
C5	2500.000	488.852	N52° 00' 12.11"E

REV. NO.	DATE	DESCRIPTION	P.E. APPR.
△			
△			
△			



Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 400
Houston, TX 77042
Tel: 281-556-8700 • www.browngay.com



FORT BEND L.I.D 7

NEW TERRITORY RECLAIMED WATERLINE SYSTEM

PLAN
NEW TERRITORY BOULEVARD
STA. 46+00 TO 51+00

FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: Maggie DeJ
DEVELOPMENT COORDINATOR

DATE: 11/14/16

JOB NUMBER: 3300-30	
SUBMITTED BY: BROWN & GAY ENGINEERS, INC.	DESIGNED BY: S.R.
SCALE: HORIZ: 1"=30' VERT: 1"=2'	DRAWN BY: C.P.
DATE: OCTOBER 2016	SHEET NO 15 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.	
F.B.N.O.	

NEW TERRITORY BOULEVARD



NOTE:

1. CONTRACTOR TO CONNECT TO 8" RECLAIMED WATER LINE.
2. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING 16" RECLAIMED WL PRIOR TO CONSTRUCTION.

TO AVOID ANY LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-337-3333. **NOTICE**

For your safety, you are required to leave lines to call 811 at least 48 hours before any dig or test under ground they can be marked. This verification does not nullify your obligation to call 811.

One Signature within 30 days from project start. CDP location does not normally require signature until 48 hours prior. (See service what are not shown.)

Signature: *[Signature]* Date: *1/11/16*

Signature: *[Signature]* Date: *1/11/16*

Signature: *[Signature]* Date: *1/11/16*

REV.	DATE	DESCRIPTION	P.L.
1			
2			
3			

Brown & Gay Engineers, Inc.
10717 Macmillan, Suite 400
Houston, TX 77036
Tel: 281-458-8700 • Fax: 281-458-8701
EPC Registration No. F-1006

FORT BEND L.I.D. 7

NEW TERRITORY RECLAIMED WATERLINE SYSTEM

PROFILE

NEW TERRITORY BOULEVARD

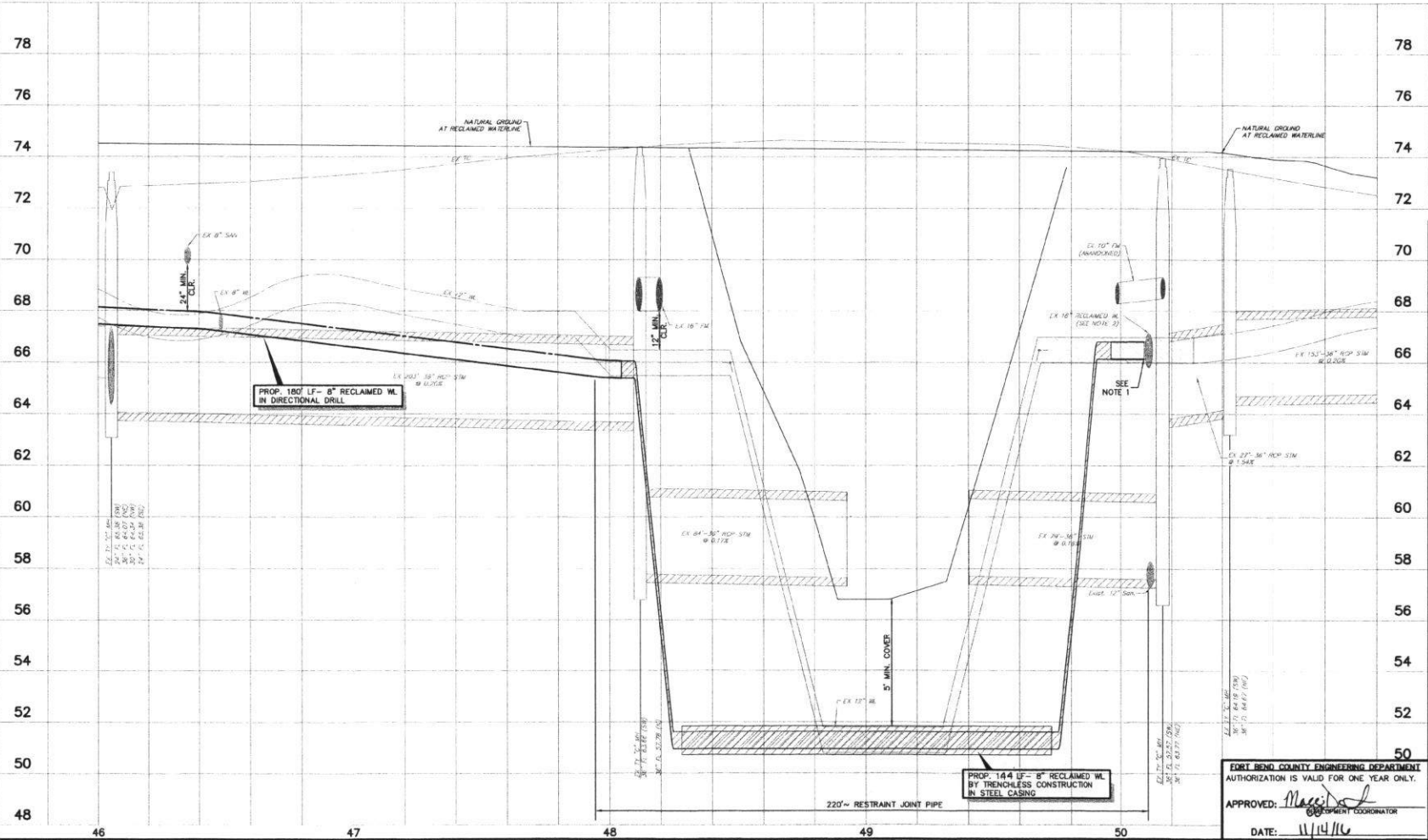
STA. 46+00 TO 51+00

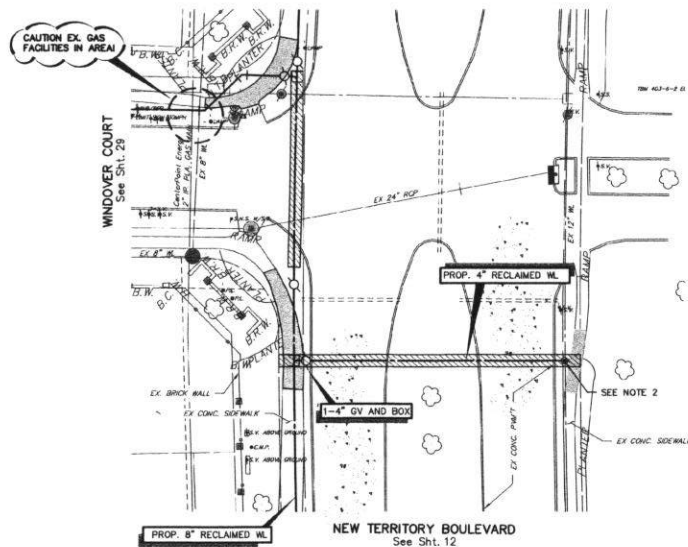
JOB NUMBER: 3300-30

DESIGNED BY: S.M.
DRAWN BY: C.P.
DATE: OCTOBER 2016
SHEET NO. 16 OF 47 SHEETS

APPROVED: *[Signature]*
DATE: 11/14/16

BROWN & GAY ENGINEERS, INC. 10717 MACMILLAN, SUITE 400 HOUSTON, TEXAS 77036-3300 TEL: 281-458-8700 FAX: 281-458-8701 EPC REGISTRATION NO. F-1006



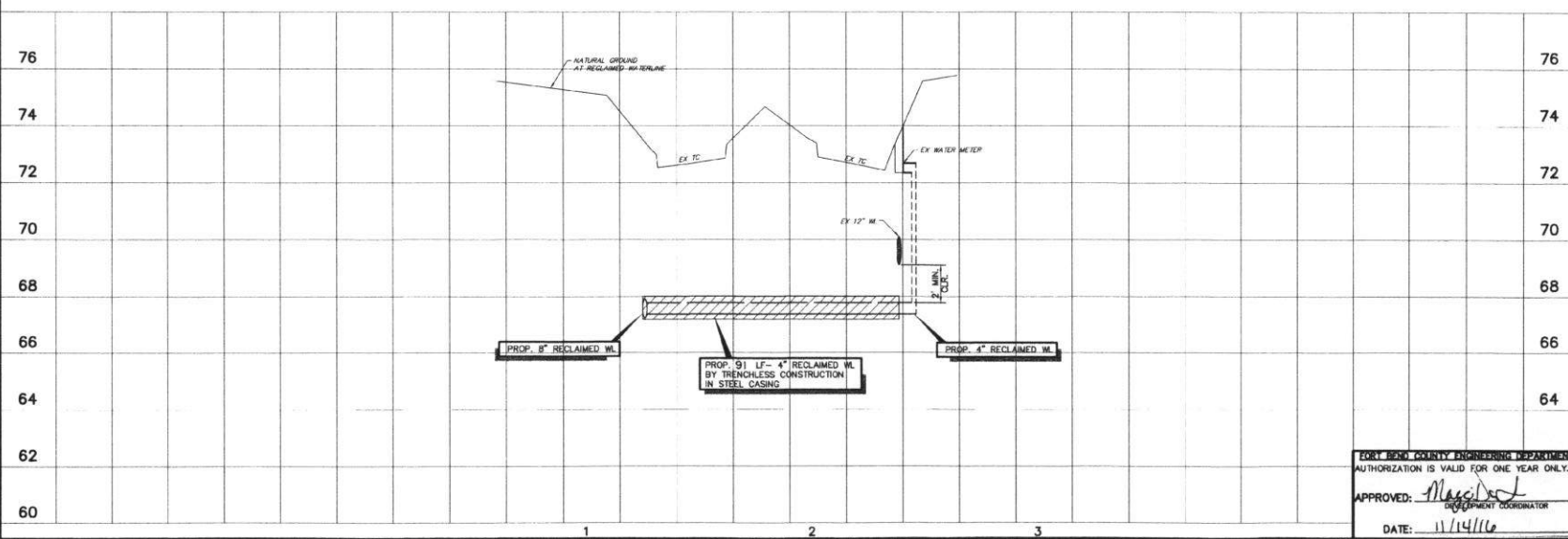


LEGEND

LIMITS OF SIDEWALK REPLACEMENT

NOTE:

1. REMOVE AND RESTORE EXISTING IRRIGATION SYSTEM TO EXISTING CONDITION OR BETTER, IF NECESSARY.
2. CONNECT PROPOSED RECLAIMED WL TO EXISTING IRRIGATION WATER METER. (SEE DETAIL SHEET 37)



REV. NO.	DATE	DESCRIPTION	P.E. APPR.
1			
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BGE
 Brown & Gay Engineers, Inc.
 10777 Sandstone, Suite 400
 Houston, TX 77042
 Tel: 281-558-4700 • www.browngay.com
 EPC Registration No. F-1248

FORT BEND L.I.D. 7

NEW TERRITORY RECLAIMED WATERLINE SYSTEM

PLAN AND PROFILE LATERAL ONE

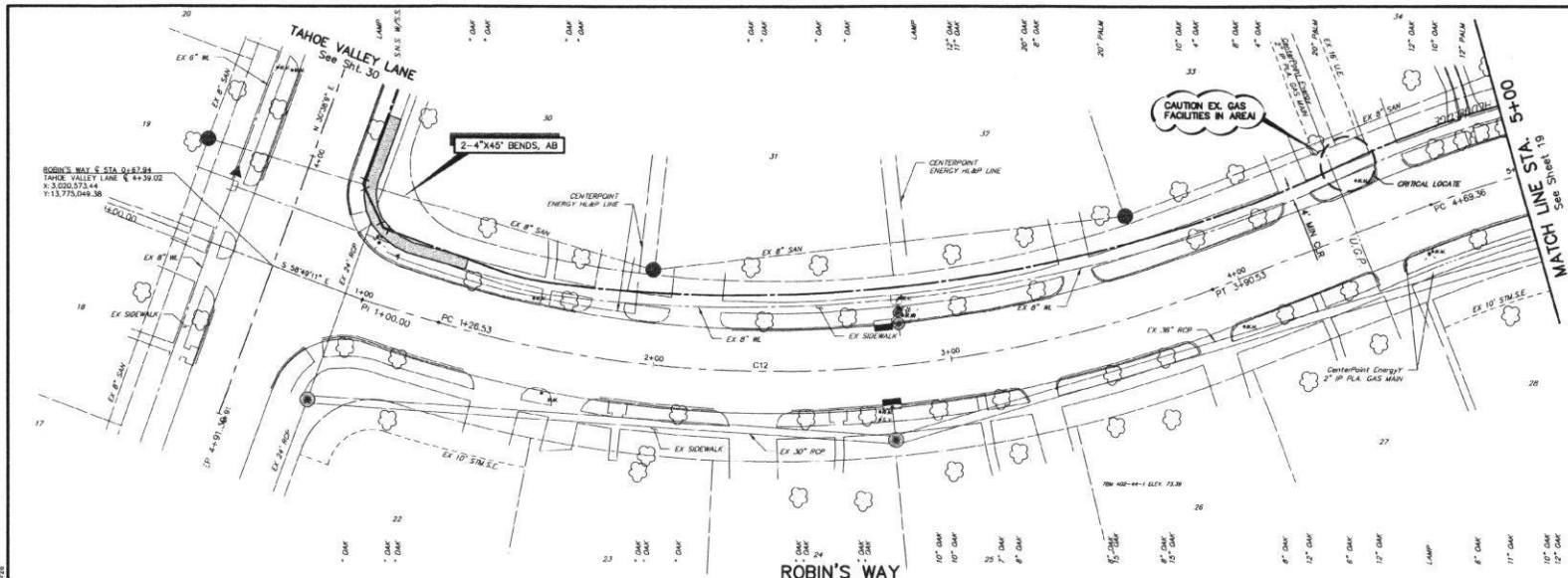
JOB NUMBER: 3300-30	
DESIGNED BY: SM	DRAWN BY: C.P.
SCALE: HORIZ. 1"=20'	VERT. 1"=2'
DATE: OCTOBER 2016	SHEET NO. 17 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.	

FORT BEND COUNTY ENGINEERING DEPARTMENT
 AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: **DEVELOPMENT COORDINATOR**

DATE: 11/14/16

BROWN & GAY ENGINEERS, INC.
A Unit of BROWN & GAY HOLDINGS, INC.
10000 N. CENTRAL EXPRESSWAY, SUITE 100, DALLAS, TEXAS 75243
TEL: 972.346.1000 FAX: 972.346.1001
WWW.BROWN-AND-GAY.COM
TERMINAL 10000 N. CENTRAL EXPRESSWAY, SUITE 100, DALLAS, TEXAS 75243
TEL: 972.346.1000 FAX: 972.346.1001
WWW.BROWN-AND-GAY.COM

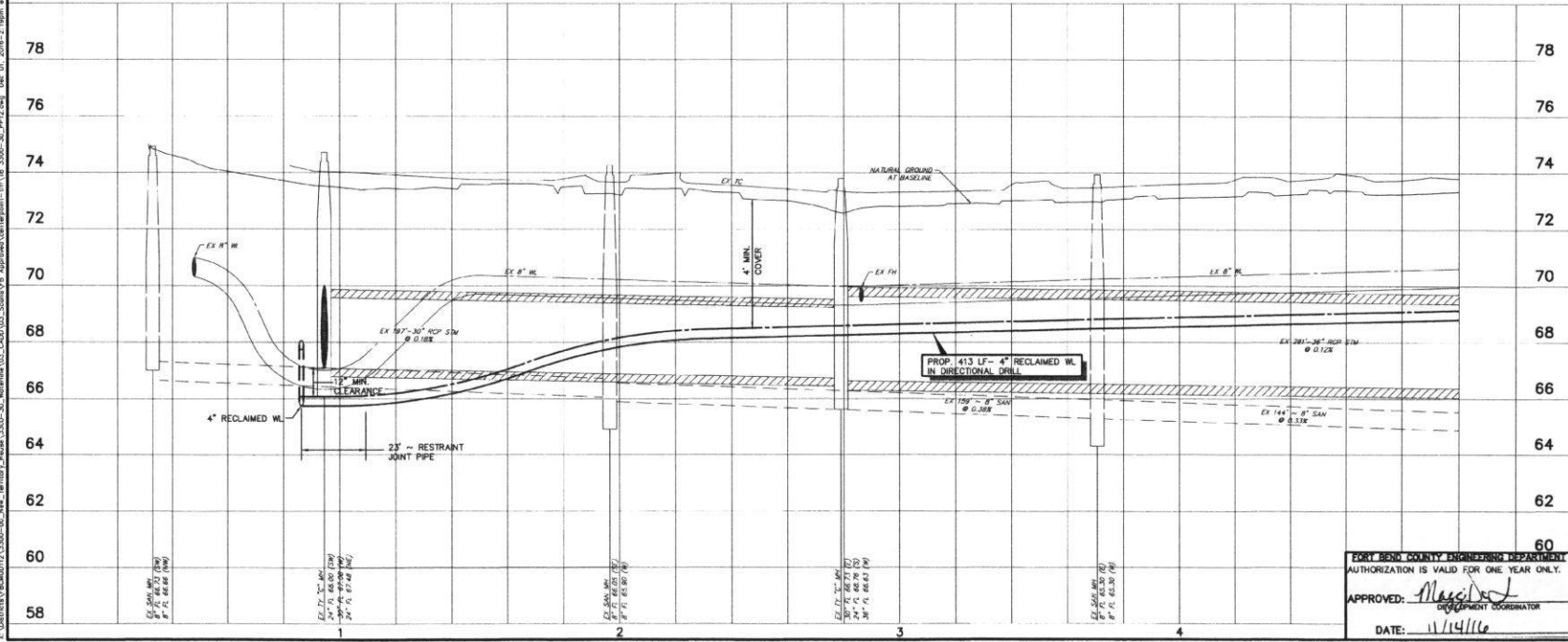


LEGEND

LIMITS OF SIDEWALK REPLACEMENT

CURVE	RADIUS	LENGTH	BEARING
C12	400.000	263.995	N81° 57' 12.65"W

NOTE:
1. REMOVE AND REPLACE 278 SY OF SIDEWALK TO EXISTING CONDITION OR BETTER.



REV. NO.	DATE	DESCRIPTION	P.E. APPR.
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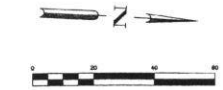
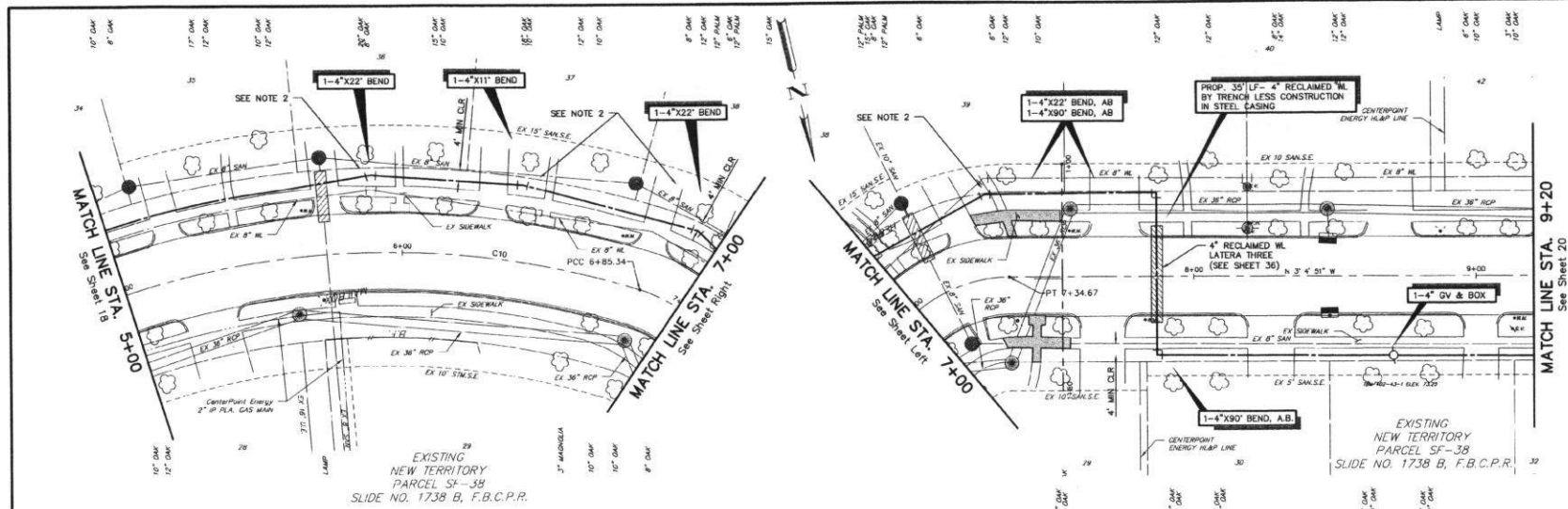
Brown & Gay Engineers, Inc.
10000 N. CENTRAL EXPRESSWAY, SUITE 100
DALLAS, TEXAS 75243
TEL: 972.346.1000 FAX: 972.346.1001
WWW.BROWN-AND-GAY.COM
10000 N. CENTRAL EXPRESSWAY, SUITE 100, DALLAS, TEXAS 75243
TEL: 972.346.1000 FAX: 972.346.1001
WWW.BROWN-AND-GAY.COM

FORT BEND L.I.D. 7
NEW TERRITORY RECLAIMED WATERLINE SYSTEM
PLAN AND PROFILE
ROBIN'S WAY
STA. 1+00 TO 5+00

FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.
APPROVED:
DATE: 11/14/16
DESIGNATION: COORDINATOR

JOB NUMBER: 3300-30	
SUBMITTED BY: BROWN & GAY ENGINEERS, INC.	DESIGNED BY: B.G.
SCALE: HORIZ. 1"=40'	DRAWN BY: C.P.
DATE: OCTOBER 2016	SHEET NO. 18 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.	

BROWN & GAY ENGINEERS, INC.
10000 Highway 100, Suite 100, Houston, TX 77036
Tel: 281-255-4100 • Fax: 281-255-4101
www.brown-gay.com
Professional Seal No. 93706
Professional Engineer
State of Texas
F-1046



LEGEND

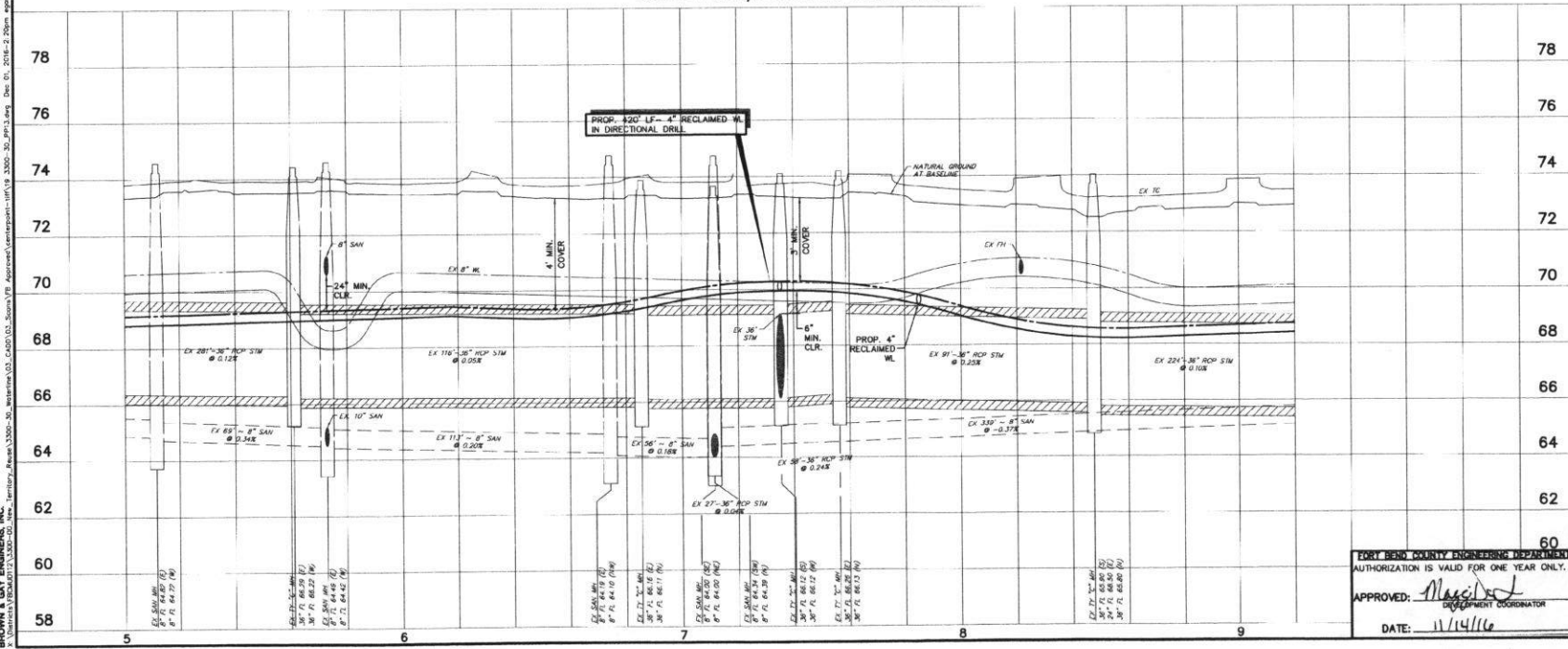
LIMITS OF SIDEWALK REPLACEMENT

CURVE TABLE			
CURVE	RADIUS	LENGTH	BEARING
C10	300.000	215.976	N80° 14' 11.51\"W

NOTE:

1. REMOVE AND REPLACE 3' SY OF SIDE WALK TO EXISTING CONDITION OR BETTER.
2. CONTRACTOR TO OPEN CUT AT ALL BENDS.

ROBIN'S WAY/SUNCLAIR PARK LANE



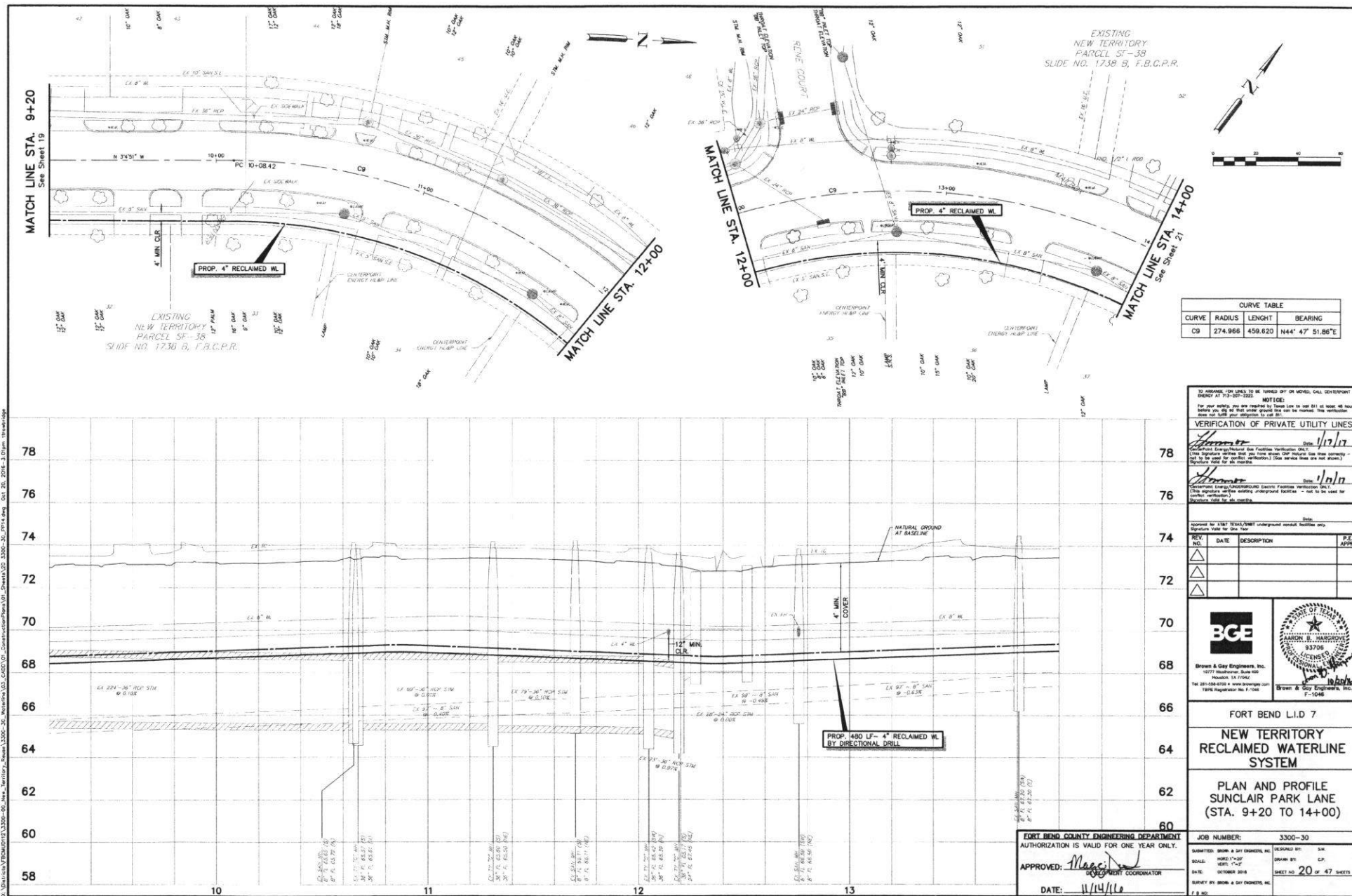
REV. NO.	DATE	DESCRIPTION	P.E. APPROV.
1			
2			
3			



FORT BEND COUNTY WATER RECLAMATION
NEW TERRITORY
RECLAIMED WATERLINE
SYSTEM
PLAN AND PROFILE
ROBIN'S WAY/SUNCLAIR PARK LANE
STA. 5+00 TO 9+20

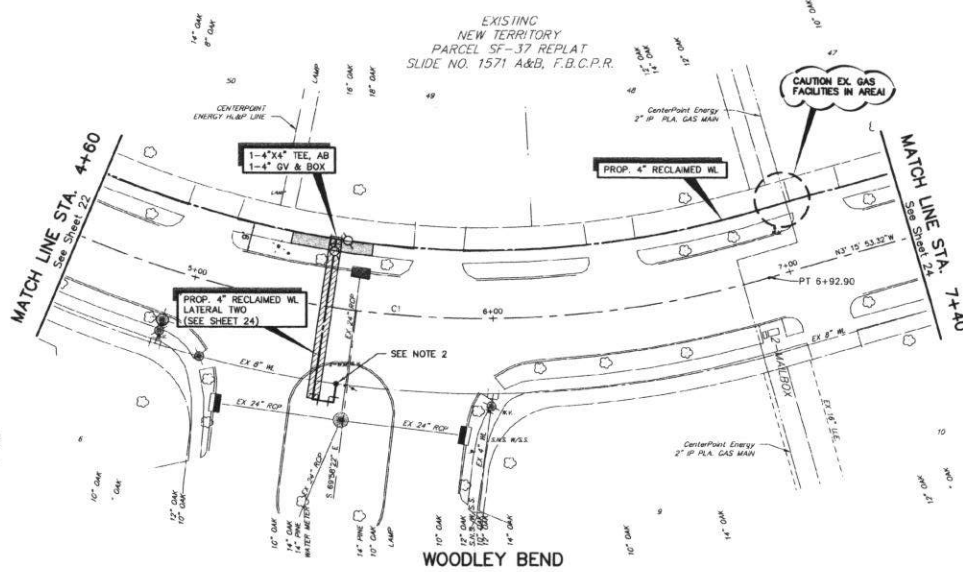
FORT BEND COUNTY WATER RECLAMATION
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.
APPROVED: *[Signature]*
DATE: 11/14/16
DEVELOPMENT COORDINATOR

JOB NUMBER: 3300-30
SUBMITTED: BROWN & GAY ENGINEERS, INC.
SCALE: HORIZONTAL: 1\"=40'
DATE: OCTOBER 2016
DESIGNED BY: S.A.
DRAWN BY: C.P.
SHEET NO. 19 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.
F.B.E.



EXISTING
NEW TERRITORY
PARCEL 5F-37 REPLAT
SLIDE NO. 1571 A&B, F.B.C.P.R.

CURVE TABLE			
CURVE	RADIUS	LENGTH	BEARING
C1	339.05	345.96	N25° 52' 37.49"E



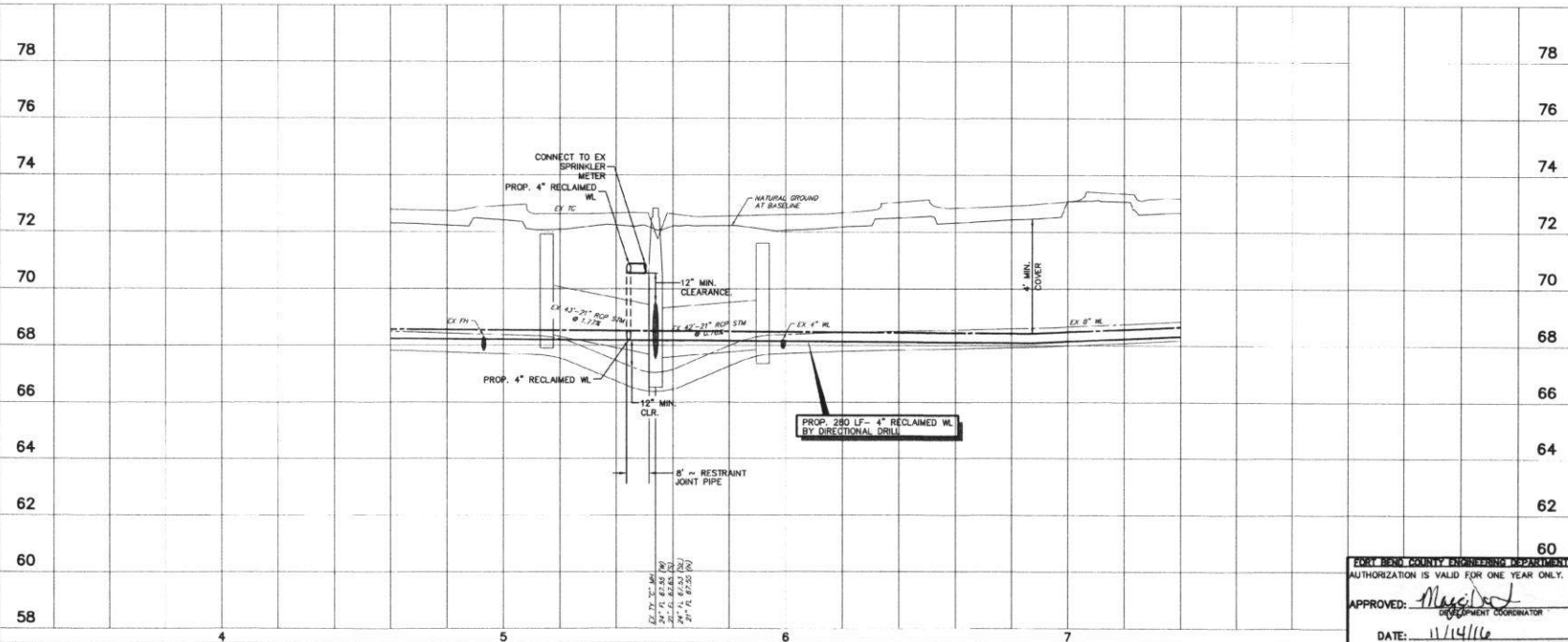
LEGEND

LIMITS OF SIDEWALK REPLACEMENT

NOTE:

1. REMOVE AND REPLACE 12' SY OF SIDE WALK TO EXISTING CONDITION OR BETTER.
2. CONNECT PROPOSED RECLAIMED WL TO EXISTING IRRIGATION WATER METER. CONTRACTOR TO ALIGN PROP. 4" WL TO CONNECT TO CORRECT SIDE OF METER. (SEE DETAIL SHEET 37)

WOODLEY BEND



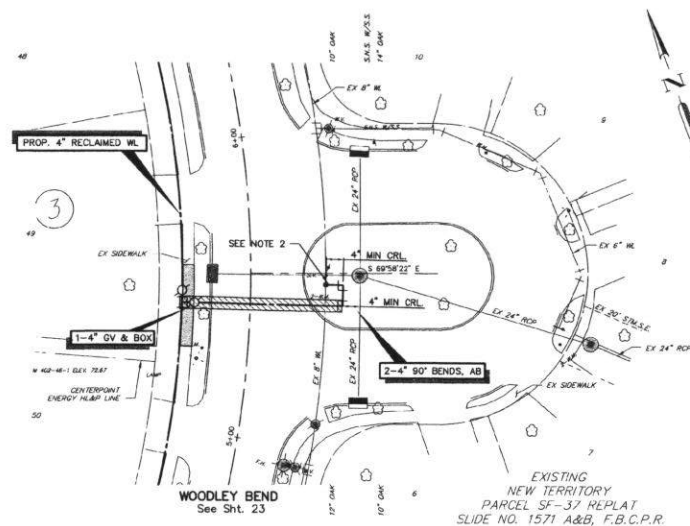
REV. NO.	DATE	DESCRIPTION	P.E. APPROV.
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FORT BEND L.I.D 7
NEW TERRITORY
RECLAIMED WATERLINE
SYSTEM
PLAN AND PROFILE
WOODLEY BEND
STA. 4+60 TO 7+40

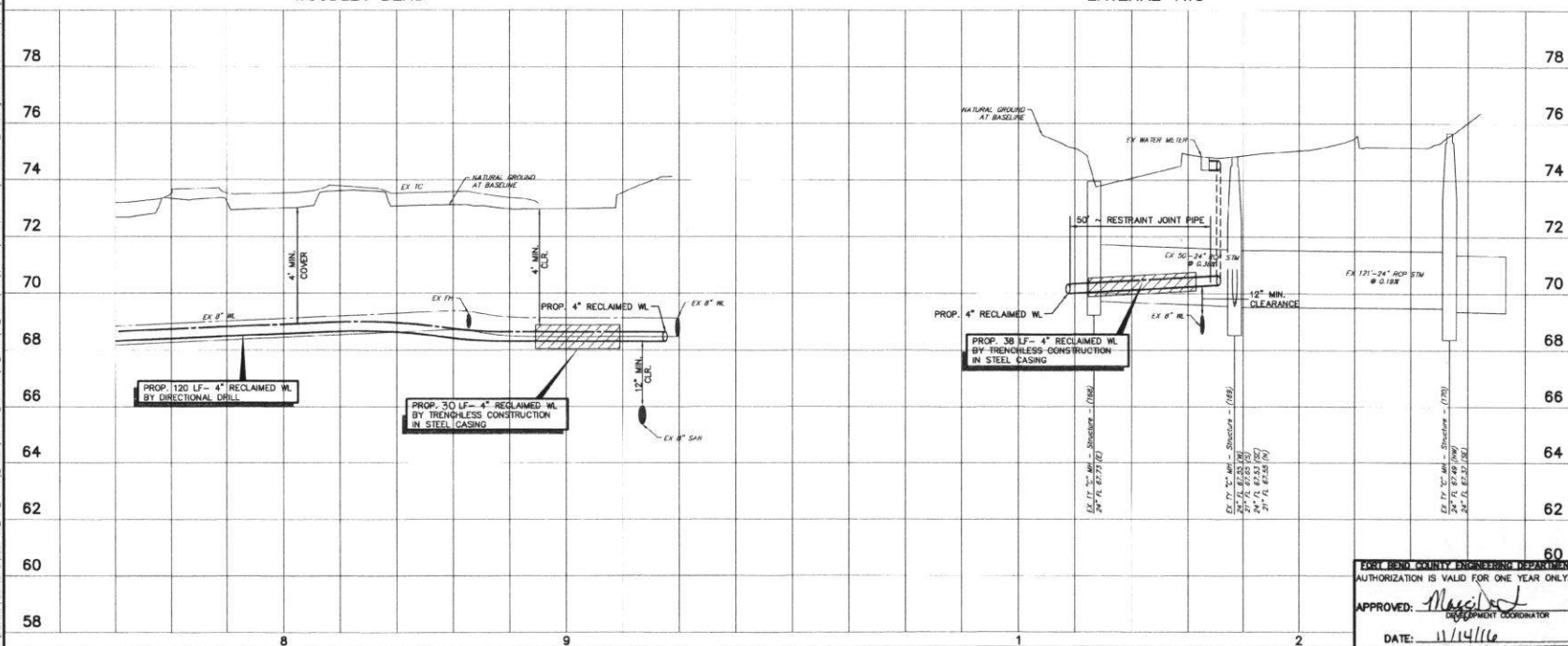
FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.
APPROVED: *[Signature]*
DATE: 11/14/16

JOB NUMBER: 3300-30
DESIGNED BY: TM
SCALE: HORIZ. 1"=50'
DATE: OCTOBER 2016
SHEET NO. 23 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.
F.B.C.D.

 LIMITS OF SIDEWALK REPLACEMENT

NOTE:

1. REMOVE AND REPLACE 37 SY OF SIDE WALK TO EXISTING CONDITION OR BETTER.
2. CONNECT PROPOSED RECLAIMED WL TO EXISTING IRRIGATION WATER METER. (SEE DETAIL SHEET 37)



REV. NO.	DATE	DESCRIPTION	P.E. APPR.
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Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 400
Houston, TX 77042
Tel: 281-558-8700 • www.browngay.com
TSP# Registration No. F-1046



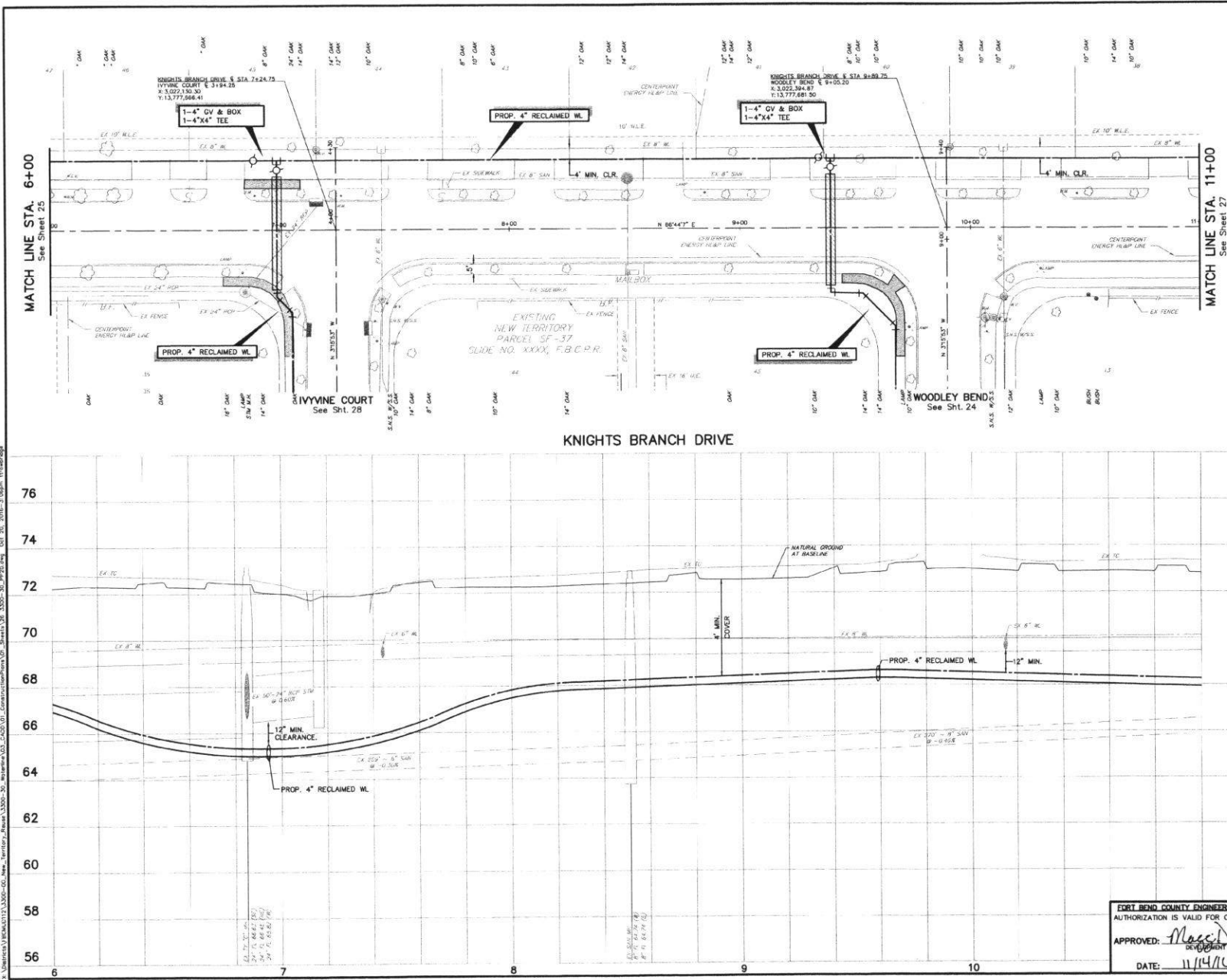
FORT BEND L.I.D 7

NEW TERRITORY
RECLAIMED WATERLINE
SYSTEM

PLAN AND PROFILE
WOODLEY BEND
STA. 7+40 TO END
LATERAL TWO

JOB NUMBER: 3300-30	
SUBMITTED BY: BROWN & GAY ENGINEERS, INC.	DESIGNED BY: S.W.
SCALE: HORIZ. 1"=30'	DRAWN BY: C.P.
VERT. 1"=2'	
DATE: OCTOBER 2014	SHEET NO. 24 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.	
F. S. NO.	

60
FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY
APPROVED: *Maggie D. J.*
DEVELOPMENT COORDINATOR
DATE: 11/14/16



LEGEND

LIMITS OF SIDEWALK REPLACEMENT

NOTE:

1. REMOVE AND REPLACE SIDEWALK TO EXISTING CONDITION OR BETTER.

TO AVOID FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-557-5252.

NOTICE:

For your safety and the safety of the public, please do not use this drawing for any purpose other than that for which it was prepared. This drawing is not to be used for any other purpose without the written consent of Brown & Gay Engineers, Inc.

VERIFICATION OF PRIVATE UTILITY LINES

Signature: *[Signature]* Date: 1/11/17

Signature: *[Signature]* Date: 1/11/17

Signature: *[Signature]* Date: 1/11/17

Signature: *[Signature]* Date: 1/11/17

Signature: *[Signature]* Date: 1/11/17

Signature: *[Signature]* Date: 1/11/17

Signature: *[Signature]* Date: 1/11/17

Signature: *[Signature]* Date: 1/11/17

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Signature: *[Signature]* Date: 1/11/17

Signature: *[Signature]* Date: 1/11/17

FORT BEND COUNTY ENGINEERING DEPARTMENT
 AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: *[Signature]*
 DEPARTMENT COORDINATOR

DATE: 11/14/16

JOB NUMBER: 3300-30

SUBMITTED: BROWN & GAY ENGINEERS, INC. DESIGNED BY: B.G.

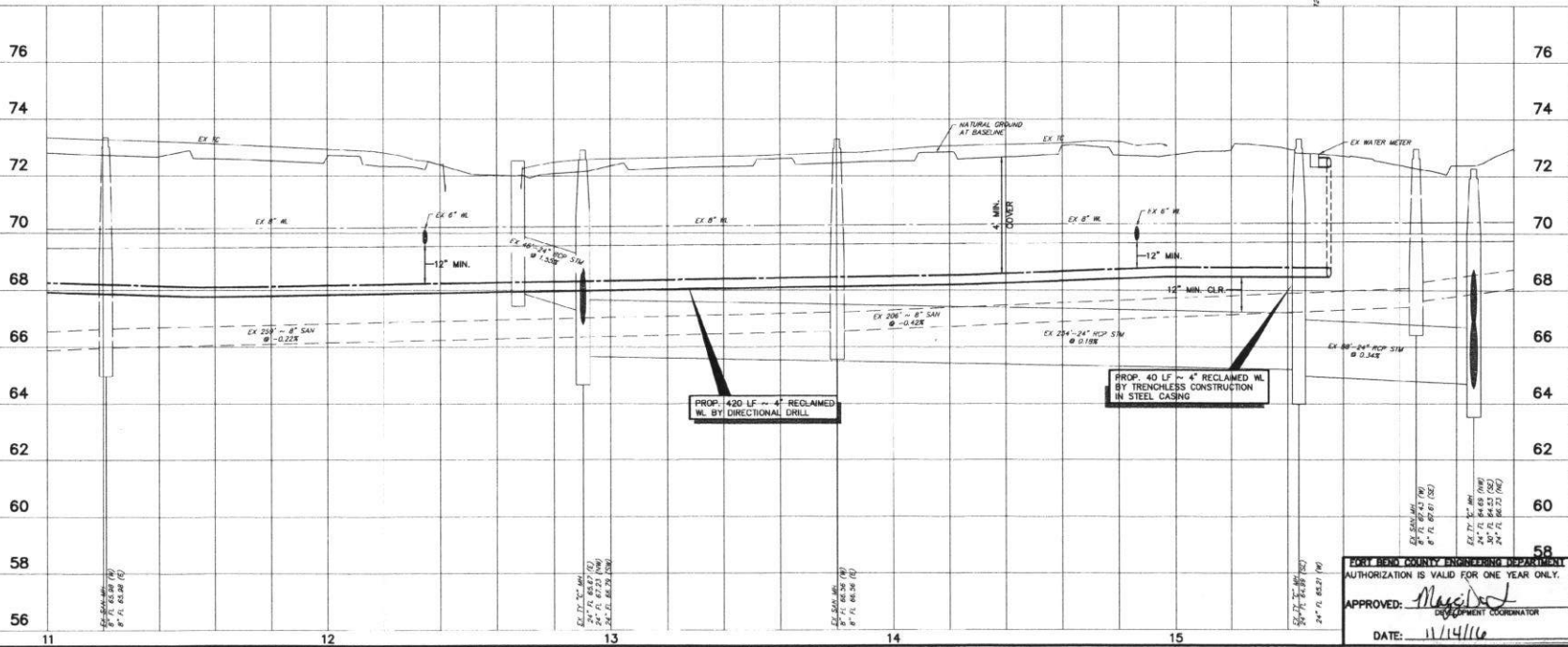
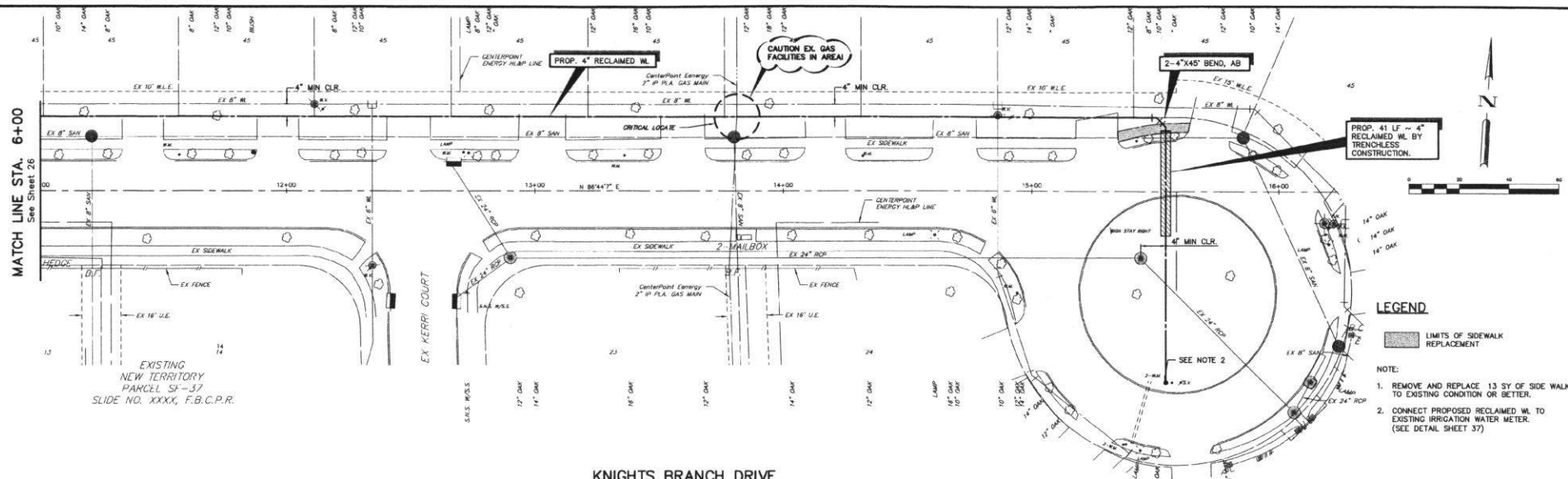
SCALE: HORIZ. 1"=40' VERT. 1"=4'

DATE: OCTOBER 2016 DRAWN BY: C.P.

SHEET NO. 26 OF 47 SHEETS

DATE: 11/14/16





REV. NO.	DATE	DESCRIPTION	P.E. APPR.
1			
2			
3			

BGE

Brown & Gay Engineers, Inc.
 10717 Westchase, Suite 400
 Houston, TX 77042
 Tel: 281-358-0000 Fax: 281-358-0001
 www.brown-gay.com

SEAL

STATE OF TEXAS
 PROFESSIONAL ENGINEER
 93706
 BROWN & GAY ENGINEERS, INC.
 F-10486

FORT BEND COUNTY ENGINEERING DEPARTMENT

PLAN AND PROFILE

KNIGHTS BRANCH DRIVE

STA. 11+00 TO 15+59

JOB NUMBER: 3300-30

DATE: 11/14/16

APPROVED: [Signature]

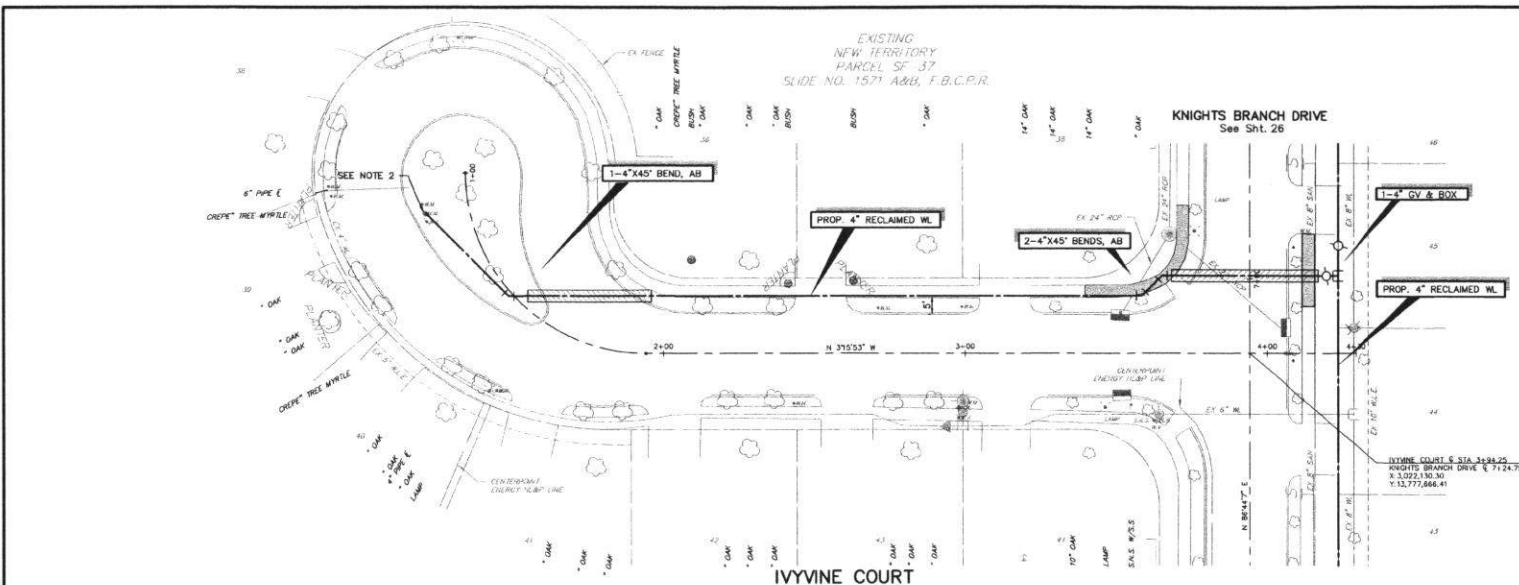
DESIGN COORDINATOR

SCALE: HORIZ. 1"=50'

DATE: OCTOBER 2016

SHEET NO. 27 OF 47 SHEETS

BROWN & GAY ENGINEERS, INC.
1400 N. DALLAS STREET, SUITE 200, FORT BEND COUNTY, TEXAS 78122
TEL: 281-336-1111 FAX: 281-336-1112
WWW.BROWN-AND-GAY.COM



LEGEND

LIMITS OF SIDEWALK REPLACEMENT

NOTE:

1. REMOVE AND REPLACE 3.4 SY OF SIDE WALK TO EXISTING CONDITION OR BETTER.
2. CONNECT PROPOSED RECLAIMED WL. TO EXISTING IRRIGATION WATER METER. (SEE DETAIL SHEET 37)

TO AVOID FOR LINES TO BE TURNED OFF OR MOVED CALL CENTROPART
AT 713-357-2323

NOTICE:
For your safety, you are required by Texas Law to call 811 at least 48 hours before any dig or test work is done. Call 811 to get the location of all underground utilities. This notice does not hold your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

Date: 1/10/16
Professional Engineer/Professional Geotechnical Engineer ONLY
(This signature certifies that you have proper, safe practice. One time signature - Signature valid for six months. (One signature valid for six months.))

Date: 1/10/16
Professional Engineer/Professional Geotechnical Engineer ONLY
(This signature certifies that you have proper, safe practice. One time signature - Signature valid for six months. (One signature valid for six months.))

Approved for 415P 1500/1500 underground utilities only.
Signature valid for one year.

REV.	DATE	DESCRIPTION	P.L.	APPRO.
1				
2				
3				

Brown & Gay Engineers, Inc.
1400 N. DALLAS STREET, SUITE 200
FORT BEND COUNTY, TEXAS 78122
TEL: 281-336-1111 FAX: 281-336-1112
WWW.BROWN-AND-GAY.COM

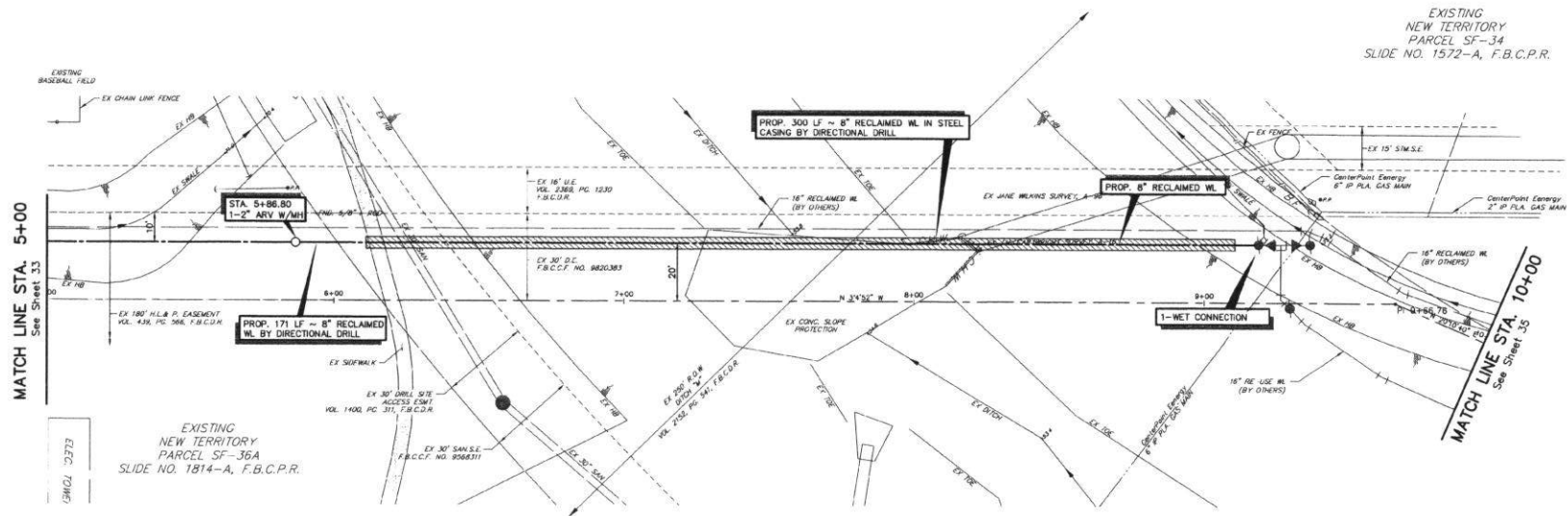
FORT BEND L.I.D. 7 NEW TERRITORY RECLAIMED WATERLINE SYSTEM PLAN AND PROFILE IVYVINE COURT

FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED:
DESIGN COORDINATOR

DATE: 11/14/16

JOB NUMBER: 3300-30
SUBMITTED: BROWN & GAY ENGINEERS, INC. DESIGNED BY: S.M.
SCALE: HORIZ: 1"=50' VERT: 1"=10' DRAWN BY: C.P.
DATE: OCTOBER 2014 SHEET NO. 28 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.
P. & S.



EXISTING
 NEW TERRITORY
 PARCEL SF-34
 SLIDE NO. 1572-A, F.B.C.P.R.

EXISTING
 NEW TERRITORY
 PARCEL SF-36A
 SLIDE NO. 1814-A, F.B.C.P.R.

REV. NO.	DATE	DESCRIPTION	P.E. APPR.
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2			
3			



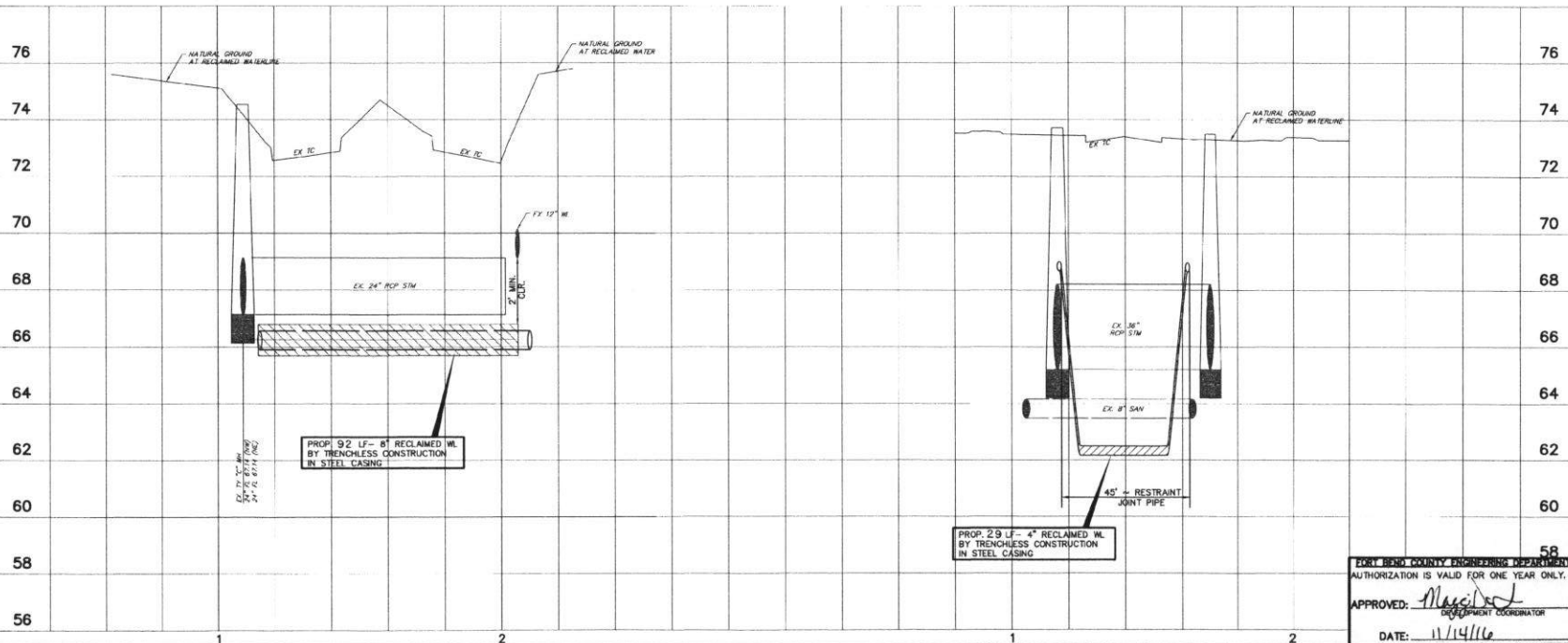
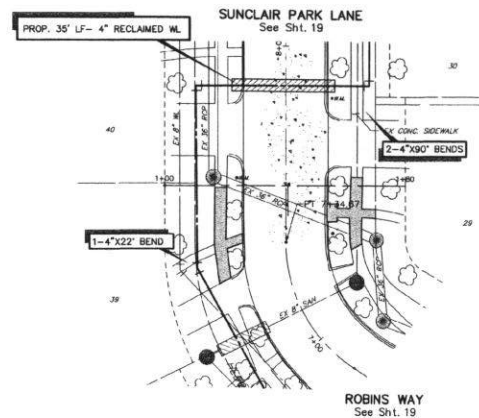
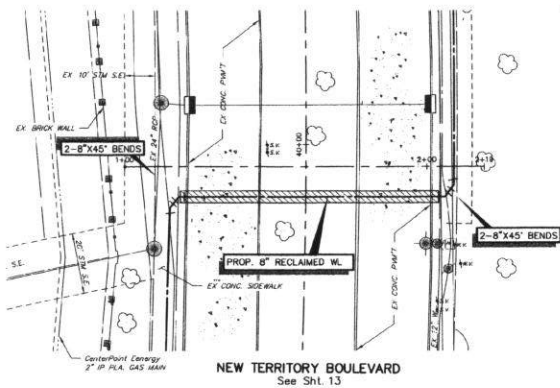
FORT BEND L.I.D. 7
NEW TERRITORY
RECLAIMED WATERLINE
SYSTEM
PLAN
OFFSITE WATERLINE
STA. 5+00 TO 10+00

FORT BEND COUNTY ENGINEERING DEPARTMENT
 AUTHORIZATION IS VALID FOR ONE YEAR ONLY.
 APPROVED: *[Signature]*
 DATE: 11/14/16

JOB NUMBER:	3300-30
DESIGNED BY:	S.A.
DRAWN BY:	C.P.
SCALE:	HORIZ. 1"=50'
DATE:	OCTOBER 2016
SHEET NO. 34 OF 47 SHEETS	

[illegible]

BROWN & GAY ENGINEERS, INC.
 3000 N. TERRITORY BOULEVARD, SUITE 100, FORT BEND COUNTY, TEXAS 78443
 TEL: 281-556-6700 FAX: 281-556-6701 WWW.BG-ENGINEERS.COM
 DATE: 11/14/16



REV. NO.	DATE	DESCRIPTION	P.E. APPROV.
1			
2			
3			

BGE
 Brown & Gay Engineers, Inc.
 3000 N. Territory Boulevard, Suite 100
 Fort Bend County, Texas 78443
 Tel: 281-556-6700 • Fax: 281-556-6701
 www.bg-engineers.com
 TSP# Registration No. F-1048

Professional Engineer
 AARON B. HARGROVE
 93706
 EXPIRATION DATE: 12/31/2024
 F-1048

FORT BEND COUNTY ENGINEERING DEPARTMENT
 AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

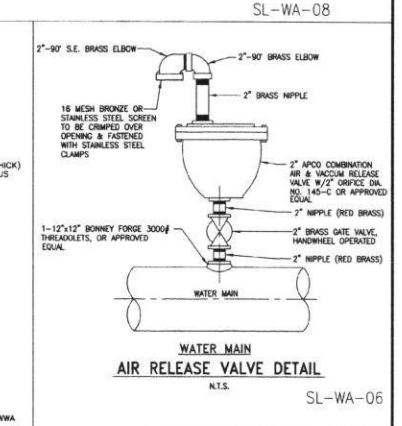
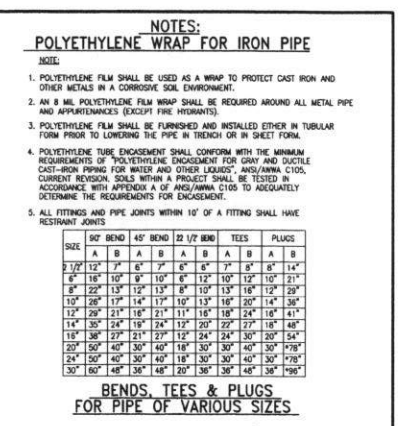
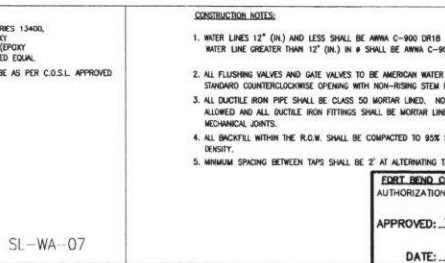
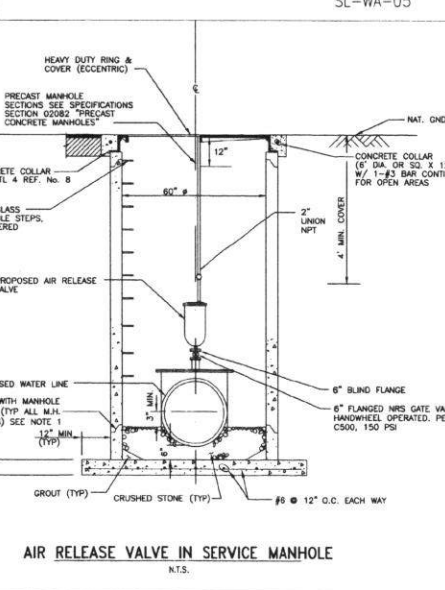
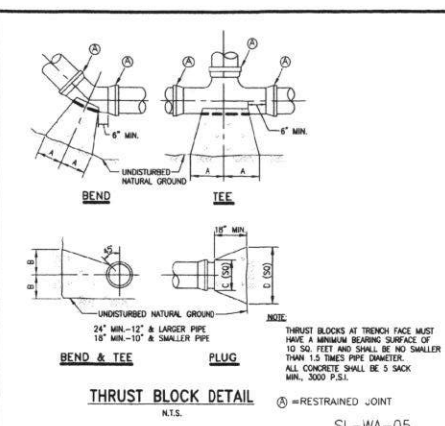
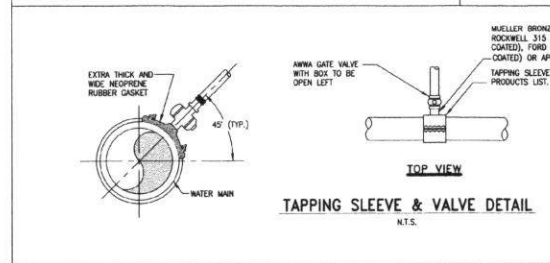
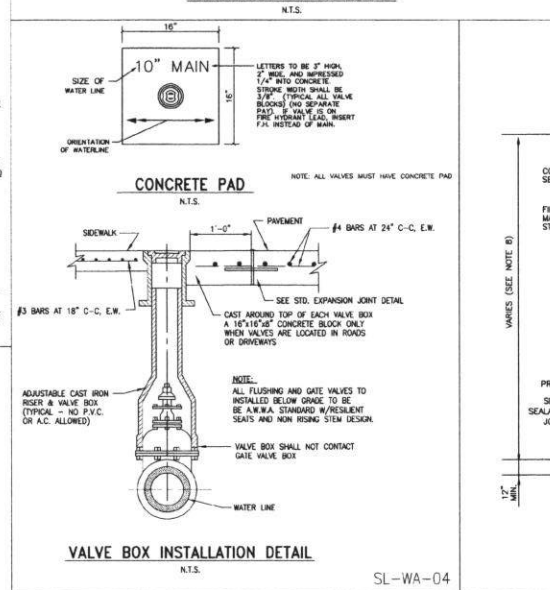
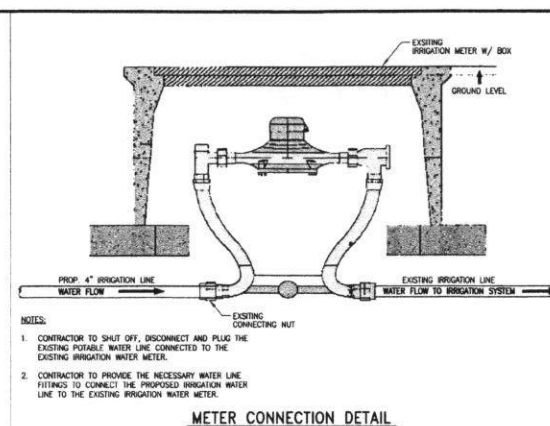
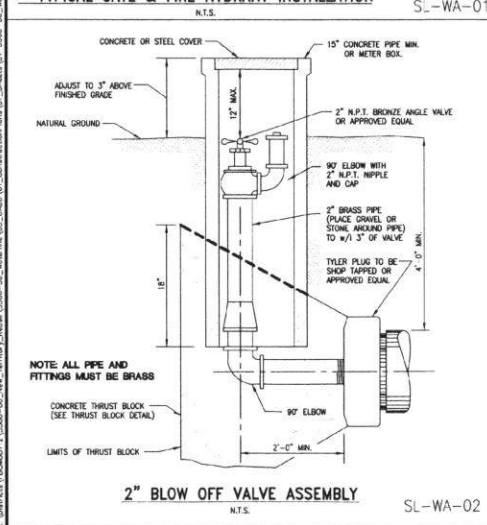
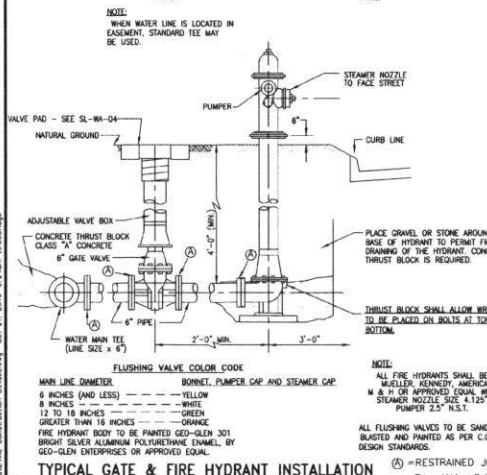
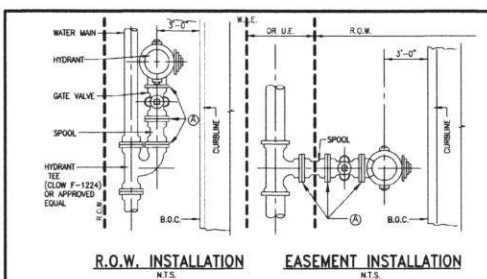
APPROVED: *[Signature]*
 DEPARTMENT COORDINATOR

DATE: 11/14/16

JOB NUMBER:	3300-30
SUBMITTED BY:	BROWN & GAY ENGINEERS, INC.
SCALE:	HORIZ: 1"=40' VERT: 1"=4'
DATE:	OCTOBER 2016
SURVEY BY:	BROWN & GAY ENGINEERS, INC.
DESIGNED BY:	S.G.
DRAWN BY:	E.P.
SHEET NO.	36 OF 47 SHEETS

BROWN & GAY ENGINEERS, INC.
10771 Westheimer Road, Suite 400
Houston, Texas 77042
Tel. 281-666-8700 • Fax 281-666-8701
TSPC Registration No. F-1046

Oct. 27, 2014 - 6:24am. Time: 10:00:00
SL-WA-01, SL-WA-02, SL-WA-03, SL-WA-04, SL-WA-05, SL-WA-06, SL-WA-07, SL-WA-08, SL-WA-09, SL-WA-10, SL-WA-11, SL-WA-12, SL-WA-13, SL-WA-14, SL-WA-15, SL-WA-16, SL-WA-17, SL-WA-18, SL-WA-19, SL-WA-20, SL-WA-21, SL-WA-22, SL-WA-23, SL-WA-24, SL-WA-25, SL-WA-26, SL-WA-27, SL-WA-28, SL-WA-29, SL-WA-30, SL-WA-31, SL-WA-32, SL-WA-33, SL-WA-34, SL-WA-35, SL-WA-36, SL-WA-37, SL-WA-38, SL-WA-39, SL-WA-40, SL-WA-41, SL-WA-42, SL-WA-43, SL-WA-44, SL-WA-45, SL-WA-46, SL-WA-47, SL-WA-48, SL-WA-49, SL-WA-50, SL-WA-51, SL-WA-52, SL-WA-53, SL-WA-54, SL-WA-55, SL-WA-56, SL-WA-57, SL-WA-58, SL-WA-59, SL-WA-60, SL-WA-61, SL-WA-62, SL-WA-63, SL-WA-64, SL-WA-65, SL-WA-66, SL-WA-67, SL-WA-68, SL-WA-69, SL-WA-70, SL-WA-71, SL-WA-72, SL-WA-73, SL-WA-74, SL-WA-75, SL-WA-76, SL-WA-77, SL-WA-78, SL-WA-79, SL-WA-80, SL-WA-81, SL-WA-82, SL-WA-83, SL-WA-84, SL-WA-85, SL-WA-86, SL-WA-87, SL-WA-88, SL-WA-89, SL-WA-90, SL-WA-91, SL-WA-92, SL-WA-93, SL-WA-94, SL-WA-95, SL-WA-96, SL-WA-97, SL-WA-98, SL-WA-99, SL-WA-100



Brown & Gay Engineers, Inc.
10771 Westheimer Road, Suite 400
Houston, Texas 77042
Tel. 281-666-8700 • Fax 281-666-8701
TSPC Registration No. F-1046

FORT BEND L.I.D. 7

NEW TERRITORY RECLAIMED WATERLINE SYSTEM

WATER LINE CONSTRUCTION DETAILS

CONSTRUCTION NOTES:

- WATER LINES 12" (N) AND LESS SHALL BE ANNA C-900 DR18 WATER LINE GREATER THAN 12" (N) IN Ø SHALL BE ANNA C-905 DR 18
- ALL FLUSHING VALVES AND GATE VALVES TO BE AMERICAN WATER WORKS ASSOC. (AMWA) STANDARD COUNTERLOCKING OPENING WITH NON-RISING STEM DESIGN.
- ALL DUCTILE IRON PIPE SHALL BE CLASS 50 MORTAR LINED. NO A.C. PIPE WILL BE ALLOWED AND ALL DUCTILE IRON FITTINGS SHALL BE MORTAR LINED PUSH ON OR MECHANICAL JOINTS.
- ALL BACKFILL WITHIN THE R.O.W. SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- MINIMUM SPACING BETWEEN TAPS SHALL BE 2' AT ALTERNATING TAP ANGLES.

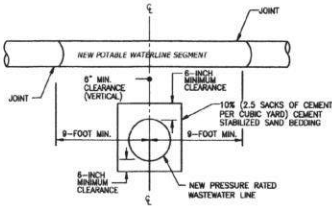
APPROVED: *Maged El-Deghaidy*
DATE: 11/14/16

JOB NUMBER: 3300-30

SUBMITTED: JERRY & GAY ENGINEERS, INC.
DESIGNED BY: J.M.
SCALE: N.T.S.
DRAWN BY: C.P.
DATE: OCTOBER 2016
SHEET NO. 37 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.
F-1046

BROWN & GAY ENGINEERS, INC. 10777 Westheimer, Suite 200 Houston, Texas 77042-3302-30, Westheimer Crossing Details.dwg Oct. 20, 2014 - 3:12pm (10/20/2014)

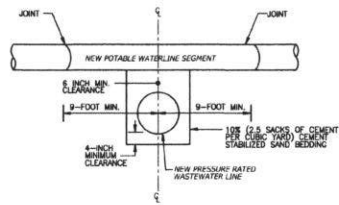
I
NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE WITH SEGMENT LENGTHS OF EIGHTEEN (18) FEET OR GREATER, HAVING 6 INCHES OF VERTICAL CLEARANCE AND 4 FEET OF HORIZONTAL CLEARANCE



- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER LINE.
- MINIMUM WASTEWATER PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- EMBED WASTEWATER LINE IN CEMENT STABILIZED SAND TO AT LEAST 12" INCHES BEYOND EACH JOINT OF CROSSED SECTION OF PIPE.

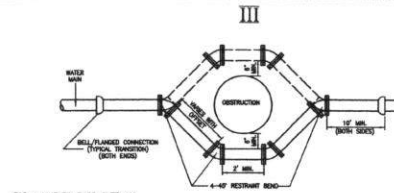
SL-WA-09

II
NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE



- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER LINE.
- MINIMUM WASTEWATER PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- EMBED WASTEWATER LINE IN CEMENT STABILIZED SAND TO AT LEAST 12" INCHES BEYOND EACH JOINT OF CROSSED SECTION OF PIPE.

SL-WA-10



FOR A LINE TO PASS OVER AN OBSTRUCTION FATHER THAN UNDER IT MUST HAVE ADEQUATE COVER AND BE APPROVED BY THE ENGINEERING DEPARTMENT.

MIN. PIPE WALL THICKNESS	
4"	0.250"
6"	0.300"
8"	0.325"
12"	0.375"
AND LARGER	

PVC WATER PIPE OFFSET ASSEMBLY

SL-WA-11

DETAIL OF WATER LINE CROSSING WASTEWATER FACILITIES WHERE SEPARATION IS LESS THAN 9' (NINE FEET)

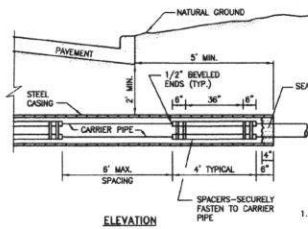


ENCASING PIPE

- 150 PSI PRESSURE CLASS PIPE MINIMUM 18 FEET LONG DIAMETER = 2 X WATERLINE DIAMETER
- SPACE AROUND CARRIER PIPE SHALL BE SUPPORTED AT FIVE (5) FOOT (OR LESS INTERVALS WITH SPACERS)
- CENTERED ON CROSSING
- BOTH ENDS SEALED WITH CEMENT GROUT OR A MANUFACTURED WATER TIGHT SEAL.

MANHOLE CLEARANCE

SL-WA-12



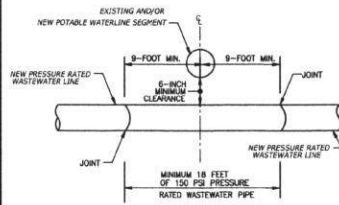
ELEVATION

1. CASING SIZE AND THICKNESS SHALL CONFORM TO THE MINIMUM REQUIREMENTS AS SHOWN ON CASING SCHEDULE, OTHER PERMITS AS REQUIRED.
2. MAINTAIN 2" MINIMUM CLEARANCE BETWEEN THE MAXIMUM OUTSIDE DIAMETER OF CARRIER PIPE AND CASING AT ALL LOCATIONS.
3. DIMENSIONS ARE APPROXIMATE ONLY. CONTRACTOR SHALL INSTALL ADEQUATELY SIZED CASING TO ACCOMMODATE THE CARRIER PIPE.

CARRIER PIPE	NOMINAL CASING	MIN. WALL THICKNESS (IN.)
6"	12"	0.11
8"	14"	0.15
10"	16"	0.18
12"	18"	0.20

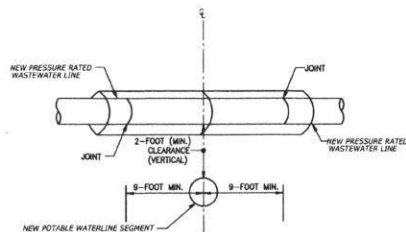
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ALTERNATIVE A:
PRESSURE RATED WASTEWATER PIPE



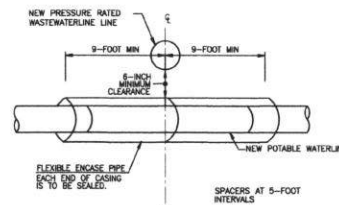
SL-WA-14

ALTERNATIVE B:
EXISTING POTABLE WATERLINE CROSSING EXISTING PRESSURE RATED WASTEWATER LINE



SL-WA-15

ALTERNATIVE C:
ENCASE NEW POTABLE WATERLINE UNDER A NEW PRESSURE RATED WASTEWATER LINE



- SAME ENCASEMENT CRITERIA AS "ALTERNATIVE B" OR
- NEW WATERLINE (WITHOUT CASING) TO BE CONSTRUCTED OF PVC C-900 (OR-18), DUCTILE IRON WITH MECHANICAL JOINT OR STEEL PIPE WITH WELDED JOINTS.
- BOTH WATERLINE AND WASTEWATER LINE MUST PASS A PRESSURE AND LEAKAGE TEST AS SPECIFIED IN AWWA C600 STANDARDS.

SL-WA-16

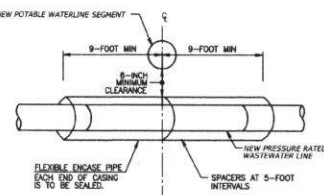
GENERAL NOTES:

1. CONTRACTOR SHALL CONTACT CITY OF SUGAR LAND ENGINEERING DEPARTMENT AT (281) 275-2780 IF WET SAND OR OTHER UNSTABLE SOIL CONDITIONS, HIGH WATER TABLE AND/OR UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED.
2. SHOULD A CONFLICT ARISE BETWEEN INFORMATION DEPICTED ON APPROVED CONSTRUCTION DRAWINGS AND INFORMATION INCLUDED IN PROJECT SPECIFICATIONS, CITY OF SUGAR LAND DESIGN STANDARDS SHALL GOVERN.
3. ALL NEW POTABLE WATER LINES AND SANITARY SEWER FORCE MAINS SHALL BE BEDDED IN COMPACTED BANK SAND A MINIMUM OF 6 INCHES BELOW, ABOVE AND TO EITHER SIDE OF SUCH PIPING.
4. ALL NEW SANITARY SEWER GRAVITY DRAIN LINES SHALL BE BEDDED IN CEMENT STABILIZED SAND CONFORMING TO THE REQUIREMENTS FOR OTHER CLASS "A" STANDARD BEDDING OR CLASS "A-A" BEDDING AS APPLICABLE. USE OF MODIFIED "A" OR MODIFIED "A-A" BEDDING FOR SANITARY SEWER INSTALLATIONS WHERE WET SAND CONDITIONS ARE ENCOUNTERED AND SEPARATION DISTANCE TO POTABLE WATER LINES IS LESS THAN 9 FEET REQUIRES APPROVAL BY CITY ENGINEER.
5. CEMENT STABILIZED BEDDING SHALL BE A MINIMUM 1.5 SACK PER CUBIC YARD C.S.S., INSTALLED IN MAXIMUM LIFTS OF 8 INCHES AND MECHANICALLY TAMPED TO 95% PROCTOR.
6. WHERE REQUIRED, SLEEVING (ENCASEMENT) OF POTABLE WATER PIPING AND/OR SANITARY SEWER GRAVITY DRAIN LINES AND FORCE MAINS SHALL BE PROVIDED. SUCH SLEEVING (ENCASEMENT) SHALL BE CONSTRUCTED OF APPROVED PIPING MATERIALS HAVING A MINIMUM PRESSURE RATING OF 150 PSI AND ANNUAL SPACES AT EACH END SHALL BE SEALED WITH A MATERIAL APPROVED FOR SUCH USE.
7. ALL NEW POTABLE WATER LINES SHALL BE SLEEVED (ENCASED) WHERE A MINIMUM OF 9 FEET SEPARATION DISTANCE TO EXISTING OR PROPOSED SANITARY SEWER MANHOLE, LIFT STATION OR WASTEWATER TREATMENT PLANT CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CLOSEST PROXIMITY.
8. ALL NEW POTABLE WATER LINES SHALL BE SLEEVED (ENCASED) WHERE LESS THAN 2 FEET VERTICAL OR 4 FEET HORIZONTAL CLEARANCE TO EXISTING OR PROPOSED SANITARY SEWER GRAVITY LINES OR FORCE MAINS CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING. WHERE PIPING IS LAD PARALLEL AND MINIMUM SEPARATION DISTANCES CANNOT BE MAINTAINED, SLEEVING SHALL EXTEND AT LEAST 9 FEET PAST THE POINT WHERE MINIMUM SEPARATION DISTANCES ARE ACHIEVED.
9. ALL NEW POTABLE WATER LINES SHALL BE CONSTRUCTED ABOVE EXISTING OR PROPOSED SANITARY SEWER GRAVITY LINES OR FORCE MAINS WHERE POSSIBLE. WHERE INSTALLATION BENEATH SANITARY SEWER GRAVITY LINES OR FORCE MAINS IS UNAVOIDABLE AT POINTS OF CROSSING, SLEEVING (ENCASEMENT) IS REQUIRED FOR ALL NEW POTABLE WATER LINES CONSTRUCTED OF PVC PIPING MATERIALS, REGARDLESS OF SEPARATION DISTANCE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
10. ALL NEW SANITARY SEWER GRAVITY LINES AND/OR FORCE MAINS CONSTRUCTED OF PVC PIPING MATERIALS SHALL BE SLEEVED (ENCASED) WHERE LESS THAN 2 FEET VERTICAL OR 4 FEET HORIZONTAL CLEARANCE TO EXISTING POTABLE WATER PIPING CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CLOSEST PROXIMITY.
11. ALL NEW SANITARY SEWER GRAVITY LINES AND/OR FORCE MAINS SHALL BE CONSTRUCTED BELOW EXISTING POTABLE WATER LINES WHERE POSSIBLE. WHERE INSTALLATION ABOVE POTABLE WATER LINES IS UNAVOIDABLE, SLEEVING (ENCASEMENT) IS REQUIRED FOR ALL SUCH SANITARY SEWER LINES CONSTRUCTED OF PVC PIPING MATERIALS, REGARDLESS OF SEPARATION DISTANCE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
12. WHERE NEW SANITARY SEWER SIZING (24 INCH AND GREATER) PRECLUDES THE USE OF PVC PIPING MATERIALS AND SLEEVING (ENCASEMENT) OF THE SANITARY SEWER WOULD OTHERWISE BE REQUIRED BUT IS IMPRACTICAL, THE EXISTING POTABLE WATER PIPING SHALL EITHER BE OFFSET TO PROVIDE THE REQUIRED MINIMUM CLEARANCES OR SLEEVED (ENCASED) IN LEU OF SLEEVING (ENCASING) THE SANITARY SEWER LINE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
13. IN NO INSTANCE SHALL A FIRE HYDRANT BE INSTALLED WITHIN 9 LINEAR FEET OF A SANITARY SEWER SYSTEM.
14. NOTE: SEPARATION DISTANCES ARE MEASURED FROM THE OUTSIDE DIAMETERS OF EACH PIPE AND FROM THE EXTERIOR SURFACES OF MANHOLES, LIFT STATIONS, WASTEWATER TREATMENT PLANTS AND ASSOCIATED APPURTENANCES.
15. REFER TO GENERAL SANITARY, WATER AND C.S.S. NOTES.

SL-WA-18

IV
ENCASED WASTEWATER LINE

NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE WITH SEGMENT LENGTHS OF LESS THAN EIGHTEEN (18) FEET



- MINIMUM CASING PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- MINIMUM CASING PIPE DIAMETER = 2 X WASTEWATER LINE DIAMETER.
- THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE (5) FOOT (OR LESS) INTERVALS WITH SPACERS
- EACH END CASING IS TO BE SEALED WITH WATER TIGHT NO-SHRINK GROUT OR MANUFACTURED WATER TIGHT SEAL.

SL-WA-17

FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: *Maggie D. [Signature]*
SEAL: *[Signature]*
DATE: 11/24/16

REV. NO.	DATE	DESCRIPTION	P.E. NO.
1			
2			
3			

Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 200
Houston, Texas 77042
Tel: 281-858-8100 • www.browngay.com
TCEC Registration No. 7-1048

Brown & Gay Engineers, Inc.
P-1048

FORT BEND L.I.D. 7
NEW TERRITORY
RECLAIMED WATERLINE
SYSTEM
WATER LINE CROSSING
DETAILS

JOB NUMBER:	3300-30
SUBMITTED BY:	BROWN & GAY ENGINEERS, INC.
DESIGNED BY:	S.A.
SCALE:	N.T.S.
DRAWN BY:	C.P.
DATE:	OCTOBER 2014
CHECKED BY:	BROWN & GAY ENGINEERS, INC.
DATE:	7.8.16

SHEET NO. 38 OF 47 SHEETS

HYPER-CHLORINATED WATER NOTES

1. HYPER-CHLORINATED WATER SHALL NOT BE DISCHARGED TO THE STORM SEWER OR DRAINAGE SYSTEM UNLESS THE CHLORINE CONCENTRATION IS REDUCED TO 4 PPM OR LESS BY CHEMICALLY TREATING THE DECHLORINATE OR BY ONSITE RETENTION UNTIL NATURAL ATTENUATION OCCURS.
2. DISCHARGE OF HIGH FLOW RATE AND VELOCITIES SHALL BE DIRECTED TO VELOCITY DISSIPATION DEVICES.
3. CHLORINE CAN BURN VEGETATION, SO IT SHOULD NOT BE USED TO WATER VEGETATION THAT IS BEING USED FOR STABILIZATION, VEGETATED FILTERS OR BUFFERS, OR OTHER VEGETATION TO BE PRESERVED.
4. HYPER-CHLORINATED WATER MAY BE DISCHARGED TO AN ONSITE RETENTION AREA UNTIL NATURAL ATTENUATION OCCURS. THE AREA MAY BE A DRY STORMWATER RETENTION BASIN, OR A PORTION OF THE SITE MAY BE GRADED TO FORM A TEMPORARY PIT OR BURNED AREA.
5. NATURAL ATTENUATION OF THE CHLORINE MAY BE AIDED BY AERATION. AIR CAN BE ADDED TO THE WATER BY DIRECTING THE DISCHARGE OVER A ROUGH SURFACE BEFORE IT ENTERS THE TEMPORARY RETENTION AREA OR AN AERATION DEVICE CAN BE PLACED IN THE RETENTION AREA.
6. ONSITE DISCHARGE MAY REQUIRE SEVERAL HOURS TO A FEW DAYS BEFORE THE WATER IS SAFE TO DISCHARGE. THE RATE AT WHICH CHLORINE WILL ATTENUATE IS AFFECTED BY SOIL CONDITIONS AND WEATHER CONDITIONS. ATTENUATION WILL OCCUR QUICKEST DURING WARM, SUNNY, AND DRY PERIODS.

SANITARY WASTE NOTES

1. THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE NUMBER OF PORTABLE TOILETS BASED ON THE NUMBER OF EMPLOYEES USING THE TOILETS AND THE HOURS THEY WILL WORK.
2. SANITARY FACILITIES SHALL BE PLACED ON A MINIMUM OF 50 FEET AWAY FROM STORM DRAIN INLETS, CONVEYANCE CHANNELS OR SURFACE WATERS. IF UNABLE TO MEET THE 50 FOOT REQUIREMENT DUE TO SITE CONFIGURATION, PORTABLE TOILETS SHALL BE A MINIMUM OF 20 FEET AWAY FROM STORM DRAIN INLETS, CONVEYANCE CHANNELS OR SURFACE WATER AND SECONDARY CONTAINMENT SHALL BE PROVIDED IN CASE OF SPILLS.
3. THE LOCATION OF THE PORTABLE TOILETS SHALL BE ACCESSIBLE TO MAINTENANCE TRUCKS WITHOUT DAMAGING EROSION AND SEDIMENT CONTROLS OR CAUSING EROSION OR TRACKING PROBLEMS.
4. SANITARY FACILITIES SHALL BE FULLY ENCLOSED AND DESIGNED IN A MANNER THAT MINIMIZES THE EXPOSURE OF SANITARY WASTE TO PRECIPITATION AND STORMWATER RUNOFF.
5. WHEN HIGH WINDS ARE EXPECTED, PORTABLE TOILETS SHALL BE ANCHORED OR OTHERWISE SECURED TO PREVENT THEM FROM BEING BLOWN OVER.
6. THE COMPANY THAT SUPPLIES AND MAINTAINS THE PORTABLE TOILETS SHALL BE NOTIFIED IMMEDIATELY IF A TOILET IS TIPPED OVER OR DAMAGED IN A WAY THAT THE RESULTS IN A DISCHARGE. DISCHARGED SOLID WASTE SHALL BE VACUUMED INTO A SEPTIC TRUCK BY THE COMPANY THAT MAINTAINS THE TOILETS.
7. THE OPERATOR OF THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) SHALL BE NOTIFIED IF A DISCHARGE FROM THE PORTABLE TOILETS ENTERS THE MS4 OR A NATURAL CHANNEL.
8. SANITARY FACILITIES SHALL NOT BE PERMITTED ON PUBLIC SIDEWALKS, STREETS OR INLETS.

DEBRIS AND TRASH NOTES

1. ALL WASTE SOURCES AND STORAGE AREAS SHALL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS AND OTHER WATERS. IF THE SITE CONFIGURATION PROVIDES SUFFICIENT SPACE TO DO SO, IN NO CASE SHALL MATERIAL AND WASTE SOURCES BE CLOSER THAN 20 FEET FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS, AND OTHER WATERS.
2. CONSTRUCTION WASTE AND TRASH SHALL BE STORED IN A MANNER THAT MINIMIZES ITS EXPOSURE TO PRECIPITATION AND STORMWATER RUNOFF.
3. WHENEVER POSSIBLE, MINIMIZE PRODUCTION OF DEBRIS AND TRASH.
4. INSTRUCT CONSTRUCTION WORKERS IN PROPER DEBRIS AND TRASH STORAGE AND HANDLING PROCEDURES.
5. SEGREGATE POTENTIAL HAZARDOUS WASTE FROM NON-HAZARDOUS CONSTRUCTION SITE DEBRIS.
6. PROHIBIT LITTERING BY WORKERS AND VISITORS.
7. POLICE SITE DAILY FOR LITTER AND DEBRIS.
8. ENFORCE SOLID WASTE HANDLING AND STORAGE PROCEDURES.
9. IF FEASIBLE, RECYCLE CONSTRUCTION AND DEMOLITION DEBRIS SUCH AS WOOD, METAL, AND CONCRETE.
10. TRASH AND DEBRIS SHALL BE REMOVED FROM THE SITE AT REGULAR INTERVALS THAT ARE SCHEDULED TO EMPTY CONTAINERS WHEN THEY ARE 90 PERCENT FULL OR MORE FREQUENTLY.
11. GENERAL CONSTRUCTION DEBRIS MAY BE HAULED TO A LICENSED CONSTRUCTION DEBRIS LANDFILL.
12. USE WASTE AND RECYCLING HAULERS/FACILITIES APPROVED BY THE LOCAL MUNICIPALITY.
13. CHIPPING OF TREES AND BRUSH FOR USE SUCH AS MULCH IS PREFERRED ALTERNATIVE TO OFFSITE DISPOSAL.
14. NO WASTE, TRASH, OR DEBRIS SHALL BE BURIED, BURNED OR OTHERWISE DEPOSED OF ONSITE.
15. CLEARLY MARK ON ALL DEBRIS AND TRASH CONTAINERS WHICH MATERIALS ARE ACCEPTABLE. FOREMAN AND/OR CONSTRUCTION SUPERVISOR SHALL MONITOR ONSITE SOLID WASTE STORAGE AND DISPOSAL PROCEDURES DAILY.

SPILL AND LEAK RESPONSE NOTES

1. RECORDS OF RELEASES THAT EXCEED THE REPORTABLE QUANTITY (RQ) FOR OIL AND HAZARDOUS SUBSTANCES SHOULD BE MAINTAINED IN ACCORDANCE WITH THE FEDERAL AND STATE REGULATIONS.
2. EMERGENCY CONTACT INFORMATION AND SPILL RESPONSE PROCEDURES SHALL BE POSTED IN A READILY AVAILABLE REA FOR ACCESS BY ALL EMPLOYEES AND SUBCONTRACTORS.
3. SPILL CONTAINMENT KITS SHOULD BE MAINTAINED FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS THAT ARE REGULARLY ONSITE. MATERIALS IN KITS SHOULD BE BASED ON CONTAMINATION GUIDELINES IN THE MATERIALS SAFETY AND DATA SHEETS (MSDS) FOR THE SUBSTANCE MOST FREQUENTLY ONSITE.
4. SPILL KITS ARE INTENDED FOR RESPONSE TO SPILLS, TYPICALLY LESS THAN 5 GALLONS, OF SUBSTANCES THAT ARE NOT EXTREMELY HAZARDOUS.
5. SIGNIFICANT SPILLS OR OTHER RELEASES WARRANT IMMEDIATE RESPONSE BY TRAINED PROFESSIONALS.
6. SUSPECTED JOB-SITE CONTAMINATION SHOULD BE IMMEDIATELY REPORTED TO REGULATORY AUTHORITIES AND PROTECTIVE ACTIONS TAKEN.
7. THE CONTRACTOR SHOULD BE REQUIRED TO DESIGNATE A SITE SUPERVISOR, FOREMAN, SAFETY OFFICER, OR OTHER SENIOR PERSON WHO IS ONSITE DAILY TO BE THE SPILL AND LEAK RESPONSE COORDINATOR (SRLC) AND MUST HAVE KNOWLEDGE OF AND BE TRAINED IN CORRECT SPILL AND LEAK RESPONSE PROCEDURES.

SUBGRADE STABILIZATION NOTES

1. MINIMIZE THE DISCHARGE OF THE CHEMICAL STABILIZERS BY THE CONTRACTOR LIMITING THE AMOUNT OF STABILIZING AGENT ONSITE TO THAT WHICH CAN BE THOROUGHLY MIXED AND COMPACTED BY THE END OF EACH WORKDAY.
2. STABILIZERS SHALL BE APPLIED AT RATES THAT RESULT IN NO RUN OFF.
3. STABILIZATION SHALL NOT OCCUR IMMEDIATELY BEFORE AND DURING RAINFALL EVENTS.
4. NO TRAFFIC OTHER THAN WATER TRUCKS AND MIXING EQUIPMENT SHALL BE ALLOWED TO PASS OVER THE AREA BEING STABILIZED UNTIL AFTER COMPLETION OF MIXING THE CHEMICAL.
5. AREA ADJACENT AND DOWNSTREAM OF STABILIZED AREAS SHALL BE ROUGHENED TO INTERCEPT CHEMICAL RUNOFF AND REDUCE RUNOFF VELOCITY.
6. GEOTEXTILE FABRICS SUCH AS THOSE USED FOR SALT FENCE SHOULD NOT BE USED TO TREAT CHEMICAL RUNOFF, BECAUSE THE CHEMICALS ARE DISSOLVED IN THE WATER AND WON'T BE AFFECTED BY A BARRIER AND THE SUSPENDED SOLIDS ARE SIGNIFICANTLY SMALLER THAN THE APPARENT OPENING SIZE OF THE FABRIC.
7. IF SOIL STABILIZERS ARE STORED ONSITE, THEY SHALL BE CONSIDERED HAZARDOUS MATERIAL AND SHALL BE MANAGED ACCORDING TO THE CRITERIA OF CHEMICAL MANAGEMENT TO CAPTURE ANY ACCIDENTAL LEAK OR CHEMICAL OVERFLOW.
8. THE CONTRACTOR SHALL INSTALL BMP'S TO ALL INLETS AND OPENINGS CONNECTED TO THE STORM SEWER SYSTEMS TO PREVENT LEAK FROM ENTERING THE MS4 SYSTEM.

REV. NO.	DATE	DESCRIPTION	P.E. APPR.
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TSPS Registration No. F-1048



FORT BEND L.I.D. 7

NEW TERRITORY
RECLAIMED WATERLINE
SYSTEM

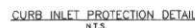
GENERAL EROSION
CONTROL NOTES

FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: *Maggie D. [Signature]*
PROJECT COORDINATOR

DATE: 11/14/16

JOB NUMBER:	3300-30
SUBMITTED BY: BROWN & GAY ENGINEERS, INC.	DESIGNED BY: JLM
SCALE: A.S.E.	DRAWN BY: J.P.
DATE: OCTOBER 2016	SHEET NO. 39 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.	F & M



- NOTES:
1. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL TO PROVIDE A 4" MINIMUM CLEAR OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION
 2. INSPECTION SHALL BE MADE BY CONTRACTOR AND SILT ACCUMULATION MUST BE MEASURED WHEN DEPTH REACHES 2"
 3. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTION IF THE STORMWATER BEGINS TO OVERTOP THE CURB.
 4. THE PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF THE SEDIMENT IS STABILIZED.

INLET OPENING	MINIMUM NUMBER OF SAND BAGS	
	TOP	FRONT
6"	2	3
10"	3	3
15"	3	4
20"	4	4



1. USE ONLY OPEN GRADED ROCK 4-8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3-5 INCHES IN DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND AN IRON WIRE SIZE GO GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
3. THE ROCK BERM SHALL BE INSPECTED EVERY TWO WEEKS OR AFTER EACH 1/2" RAIN EVENT AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHED, CONSTRUCTION TRAFFIC, DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.
6. ROCK BERM SHOULD BE USED AS CHECK DAMS FOR SLOWING DOWN FLOW BUT ARE NOT INTENDED FOR USE IN PERMITTER PROTECTION.



FILTER FABRIC WYE INLET PROTECTION
N.T.S.



1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPACE OF 2 INCHES BETWEEN THE BOTTOM OF THE FENCE AND THE SURFACE OF THE FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCES CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPSTREAM SIDE TO HOLD FENCE DOWN FROM SEEPING UNDER FENCE.

3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE Laid IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST. POSTS SHOULD BE PLACED CLOSE ENOUGH TO EACH OTHER TO ATTACH TO THE SILL VENEER. THERE SHALL BE A 3' FOOT OVERLAP. SECURELY FASTENED WHERE ENDS OF FABRIC MEET

5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED OR WHEN THERE IS NO RISK OF EROSION OR FLOODING.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL EROSION.

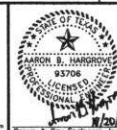


NOTE: STONE OVERFLOW STRUCTURES OF OTHER OUTLET CONTROL DEVICES SHALL BE INSTALLED AT ALL LOW POINTS ALONG THE FENCE OR EVERY 300 FEET IF THERE IS NO APPARENT LOW POINT.

REV. NO.	DATE	DESCRIPTION	P. APP.
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FORT BEND L.I.D 7

NEW TERRITORY RECLAIMED WATERLINE SYSTEM

EROSION CONTROL
DETAILS
(SHEET 1 OF 2)

FORT BEND COUNTY ENGINEERING DEPARTMENT
AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: *Massi*

APPROVED: [Signature]
DEVELOPMENT COORDINATOR

DATE: 11/14/16

II	JOB NUMBER:	3300-30
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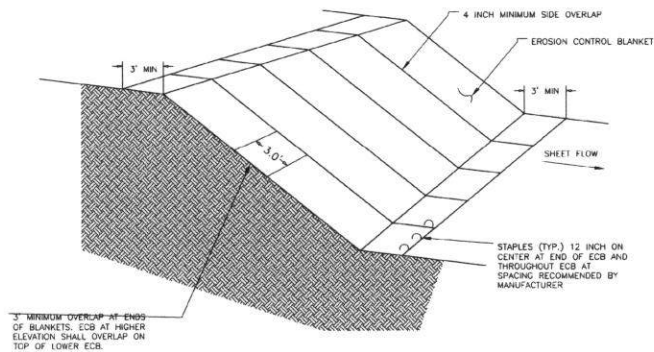
SUBMITTED: BROWN & GAY PRINTERS, INC.		DESIGNED BY:
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SCALE: N.T.S. DRAWN BY:

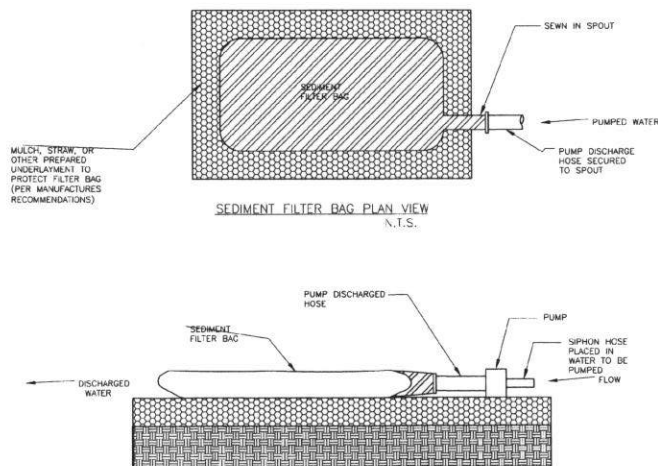
DATE: OCTOBER 2016	SHEET NO 40
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SURVEY BY: BROWN & GAY ENGINEERS, INC.

BROWN & GAY ENGINEERS, INC.
 10000 FORT BEND ROAD, SUITE 400, FORT BEND COUNTY, TEXAS 77404
 281-291-8800 FAX 281-291-8801 WWW.BROWN-AND-GAY.COM
 SHEET 2 OF 47
 DATE: 11/14/16



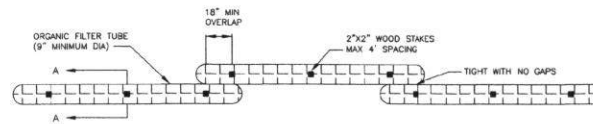
EROSION CONTROL BLANKETS
 N.T.S.



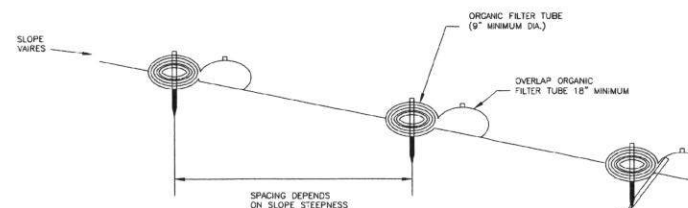
SEDIMENT FILTER BAG PROFILE
 N.T.S.

NOTE: A FILTRATION BAG IS NOT REQUIRED IF THE DRAINAGE SYSTEM CAN BE ADEQUATELY PROTECTED

DEWATERING CONTROLS
 N.T.S.



ORGANIC FILTER TUBE PERIMETER CONTROL PLAN VIEW
 N.T.S.



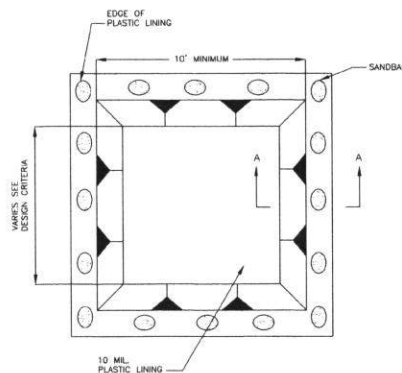
FOR SLOPES OF 2:1 OR STEEPER, A SECOND STAKE AGAINST THE DOWNSLOPE FACE OF THE TUBE MAY BE NEEDED DEPENDING ON SOIL TYPE

ORGANIC FILTER TUBE PERIMETER CONTROL PROFILE
 N.T.S.

ORGANIC FILTER TUBES NOTES

1. TYPE OF NETTING, FILTER MATERIAL, DIAMETER OF TUBE, AND SPACING OF TUBES SHALL BE SPECIFIED BY THE DESIGNER BASED ON THE FOLLOWING SITE PARAMETERS:
 - SIZE OF CONTRIBUTING DRAINAGE AREA
 - STEEPNESS OF SLOPE
 - GROUND CONDITIONS (SOIL OR PAVEMENT)
2. DESIGNER SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE TUBE ARE TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE MINIMUM OF 10 FEET.

FILTER TUBE
 N.T.S.

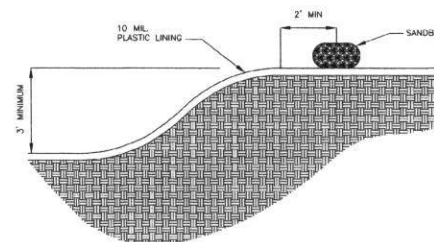


CONCRETE WASHOUT PLAN VIEW
 N.T.S.

CONCRETE WASHOUT NOTES

1. SANDBAGS MAYBE REPLACED BY A SOIL BERM TO ANCHOR THE PLASTIC BAG

CONCRETE WASHOUT AREA
 N.T.S.



CONCRETE WASHOUT SECTION A-A
 N.T.S.

REV. NO.	DATE	DESCRIPTION	P.E. APPR.
1			
2			
3			



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 Houston, TX 77042
 Tel: 281-888-8700 • Fax: 281-888-8701
 TSPS Registration No. T-1046



FORT BEND L.I.D 7
 NEW TERRITORY
 RECLAIMED WATERLINE
 SYSTEM

EROSION CONTROL
 DETAILS
 (SHEET 2 OF 2)

FORT BEND COUNTY ENGINEERING DEPARTMENT
 AUTHORIZATION IS VALID FOR ONE YEAR ONLY.

APPROVED: *Maggy D. Janssen*
 DESIGNER
 DATE: 11/14/16

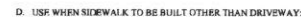
JOB NUMBER: 3300-30
 SUBMITTED: BROWN & GAY ENGINEERS, INC.
 SCALE: N.T.S.
 DATE: OCTOBER 2016
 SURVEY BY: BROWN & GAY ENGINEERS, INC.
 DESIGNED BY: S.W.
 DRAWN BY: C.P.
 SHEET NO. 41 OF 47 SHEETS

A. USE FOR ALL PROPOSED EXISTING CURB REMOVAL FOR DRIVEWAYS (PLAN VIEW NOT TO SCALE)



- [illegible]

C. USE WHEN PROPOSED DRIVEWAY IS TO BE BUILT WITH EXISTING SIDEWALKS WITH EXCESSIVE GRADE:



1. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT (1 BAGS (900 PSI) OF CEMENT PER CUBIC YARD OF CONCRETE), CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 8311), 4" THICK AND MINIMUM 4' WIDTH.

GENERAL NOTES FOR SIDEWALKS AND DRIVEWAYS

1. PROPOSED DRIVEWAY, SIDEWALK, CURB, GUTTER LINE AND GRADE SHALL MATCH EXISTING STREET.
2. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT, CLASS 3 CONCRETE (REFER TO SPECIFICATION 03030), 4 INCHES THICK WITH A 4 FEET MINIMUM WIDTH.
3. PROPOSED DRIVEWAY AND CURB SHALL BE BUILT WITH PORTLAND CEMENT CONCRETE, CLASS 3 STRUCTURAL (REFER TO SPECIFICATION 03030), 8 INCHES THICK. FROM PROPOSED DAW TO EXISTING PAVEMENT TO EXISTING SIDEWALK AND CURB, THERE SHALL BE A REINFORCED REINFORCING BARS 1 INCH DIA. ASTM A615 GRADE 60, (LAPERS LAPPED) SPACED AT 24 INCHES C/S, EACH WAY, WITH 10 INCHES MINIMUM LAP.
4. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE TIED TO EXISTING ROADWAY REINFORCING STEEL, WITH A MINIMUM 12 INCH LAP.
5. PROPOSED GUTTER LINE IS TO BE MAINTAINED AT FACE OF EXISTING CURB.
6. SAW CUT EXISTING CURB AT EACH END OF PROPOSED DRIVEWAY AND KNOCK OUT EXISTING CURB.
7. SAW CUT EXISTING PAVEMENT MINIMUM 2 INCHES AND BREAK OUT TO EXPOSE EXISTING REINFORCING STEEL. AT LEAST 13 INCHES A PROPOSED DRIVEWAY INTERSECTION, FLAT TOPFUT CHISEL CUT ACCEPTABLE PREENDING 13" LONG. CONCRETE AND CURB SHALL BE REMOVED TO EXPOSE EXISTING REINFORCING STEEL.
8. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONSTRUCTION FROM PROPOSED SAW CUT DRIVEWAY TO RIGHT-OF-WAY LINE, COMPACT TO 95% OF STANDARD PROCTOR DENSITY (A-7.5) OR, USE MOISTURE, THE COUNTY ENGINEER TO REVIEW THE RESULTS OF STANDARD PROCTOR TESTS IF HE DEEMS THEM NECESSARY.
9. PLACE AND COMPACT 4 INCH CLAYEY BROWN SAND.
10. PROPOSED AREA FROM BAR OF CURB TO SIDEWALK AND FROM SIDEWALK TO RIGHT-OF-WAY LINE MAY BE CONCRETE OR DIRT (ROADWAYS WITH CURBS AND SIDEWALKS).
11. IF MORE THAN ONE PROPOSED DRIVEWAY IS BUILT ON THE SAME PROPERTY, SAW DRIVEWAYS SHALL BE SPACED AT A MINIMUM SEPARATION OF AT LEAST 20 FEET (ROADWAYS WITH CURBS AND SIDEWALKS).
12. SIDEWALKS SHALL HAVE 3/4 INCH REINFORCING BARS EXPANSION JOINTS EVERY 20 FEET ON CENTER.
13. PLACE ONE-INCH ROAD EXPANSION JOINT AT RIGHT-OF-WAY LINE.
14. E-1212 INTERIOR FILLER SHALL BE THE FORMER CONFORMING TO ASTM D-153 OR
D-1531 BETWEEN SIDEWALK AND CURB, AROUND FIVE HYDRANTS AND 33 OR

FORT BEND COUNTY ENGINEERING DEPARTMENT

BGE

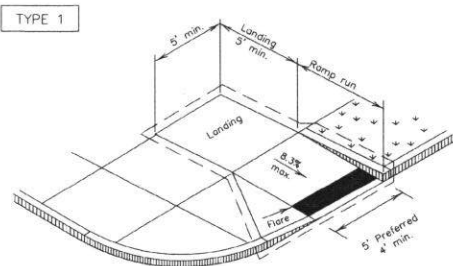
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STATE OF TEXAS
93706
LICENSED PROFESSIONAL ENGINEER
Brown & Gay Engineers, Inc.
F-1046

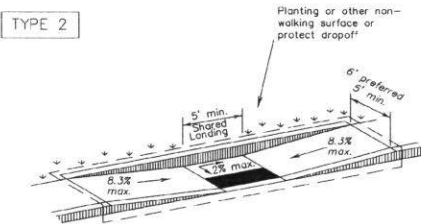
SIDEWALK DETAILS

JOB NUMBER: 3300-30	
SUBMITTED BY: BROWN & GAY ENGINEERS, INC.	DESIGNED BY: S.W.
SCALE: N.T.S.	DRAWN BY: C.F.
DATE: OCTOBER 2018	SHEET NO. 42 OF 47 SHEETS
SURVEY BY: BROWN & GAY ENGINEERS, INC.	
C.B.M.	

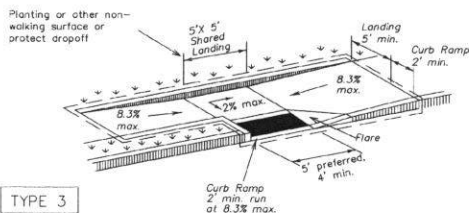
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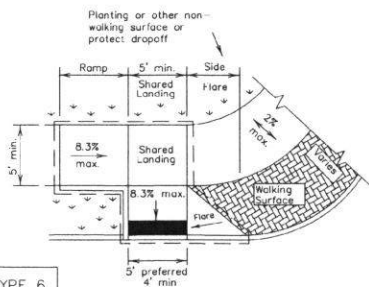
PERPENDICULAR CURB RAMP



PARALLEL CURB RAMP
(Use only where water will not pond in the landing.)

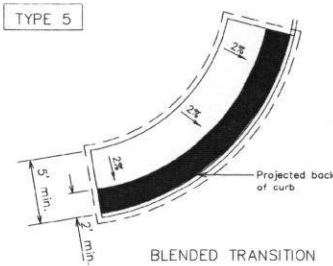


TYPE 3



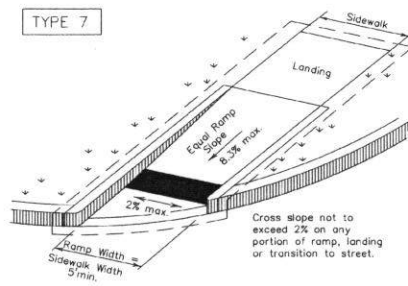
TYPE 6

COMBINATION CURB RAMPS



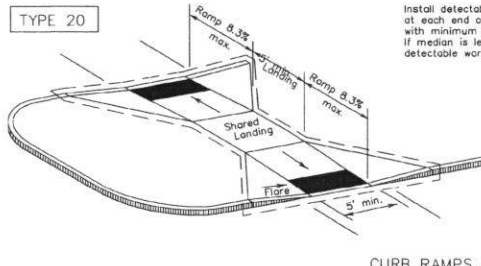
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BLENDED TRANSITION



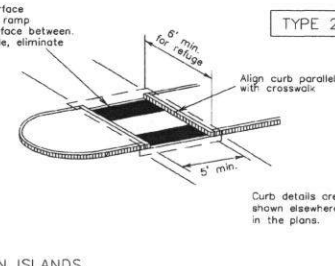
TYPE 7

(Sidewalk set back from curb)



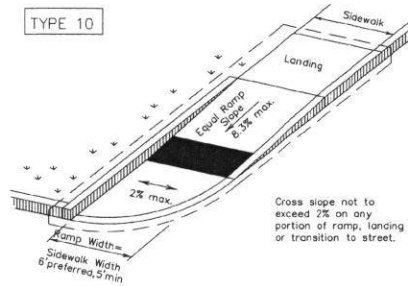
TYPE 20

CURB RAMPS AT MEDIAN ISLANDS



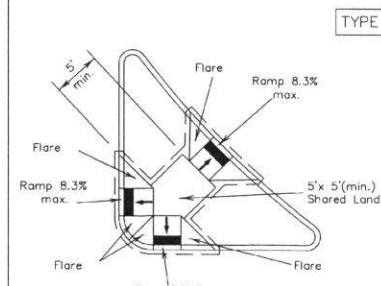
TYPE 21

Curb details are shown elsewhere in the plans.



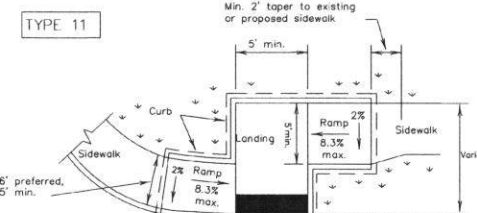
TYPE 10

(Sidewalk adjacent to curb)



TYPE 22

COMBINATION ISLAND RAMPS



TYPE 11

OFFSET PARALLEL CURB RAMP

NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

Denotes planting or non-walking surface not part of pedestrian circulation path.

— Ramp Limits of Payment
 Detectable Warning Surface



Brown & Gay Engineers, Inc.
 F-1046

SHEET 1 OF 4



Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

FILE: ped12a.dgn	DATE: 01/20/02	DATE: 01/20/02	DATE: 01/20/02
© TxDOT March 2002	CONT: 3300-30	JOB: 3300-30	HIGHWAY: 3300-30
REVISED: June 13, 2012	DIST: 112	COUNTY: FORT BEND	SHEET NO. 43 OF 47

Maggie J 11/14/16

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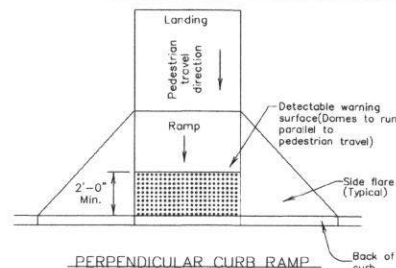
General Notes

Curb Ramps

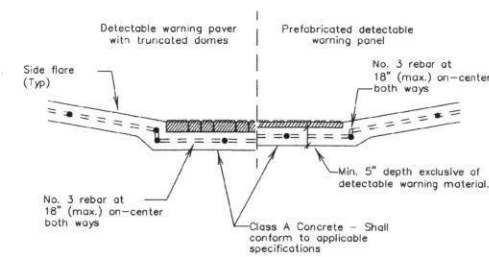
- Install a curb ramp or blended transition at each pedestrian street crossing.
- All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
- The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 5' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
- Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
- Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
- Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
- Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
- Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
- To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
- Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
- Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
- Handrails are not required on curb ramps. Provide curb ramps wherever an accessible route crosses (penetrates) a curb.
- Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
- Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
- Provide a smooth transition where the curb ramps connect to the street.
- Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
- Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

Detectable Warning Material

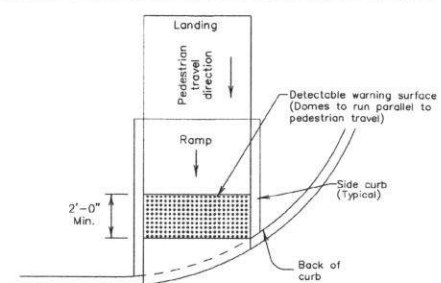
- Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
- Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
- Detectable warning surfaces must be slip resistant and not allow water to accumulate.
- Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
- Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
- Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



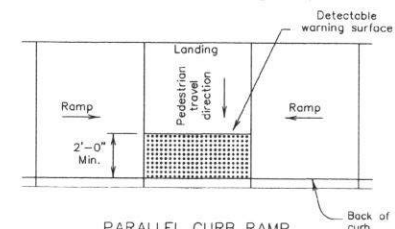
PERPENDICULAR CURB RAMP
Typical placement of detectable warning surface on sloping ramp run.



SECTION: CURB RAMP AT DETECTABLE WARNING



DIRECTIONAL CURB RAMP
Typical placement of detectable warning surface on sloping ramp run.



PARALLEL CURB RAMP
Typical placement of detectable warning surface on landing at street edge.

DETECTABLE WARNINGS

Detectable Warning Pavers

- Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
- Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

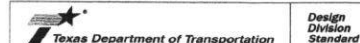
Sidewalks

- Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
- Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
- Street grades and cross slopes shall be as shown elsewhere in the plans.
- Changes in level greater than 1/4 inch are not permitted.
- The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
- Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
- Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item: "Sidewalks".
- Sidewalk details are shown elsewhere in the plans.



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F-1046

SHEET 2 OF 4



Design
Division
Standard

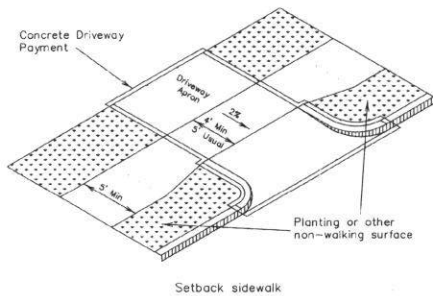
PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

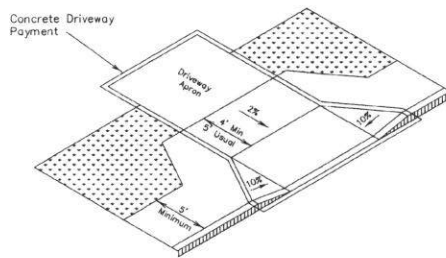
FILE: ped12a.dgn	DATE: TxDOT	DATE: PK	DATE: TxDOT	DATE: HD
©TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS			3300-30	
VP June 13, 2012	DES	COUNTY		SHEET NO.
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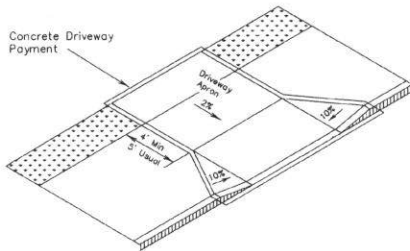
DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty is made by TxDOT for any purpose whatsoever. The use of this standard by contractors or other persons is at their own risk. TxDOT is not responsible for any errors or omissions or for any consequences resulting from its use. FILE: X:\Districts\BOMD\12-3300-00-New-Territory\Re-use\3300-30-Waterline\03-Capd\01-ConstructionPlans\01-Sheets\45-3300-30-TxDOT13



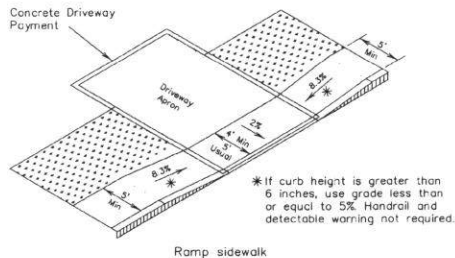
Setback sidewalk



Apron offset sidewalk

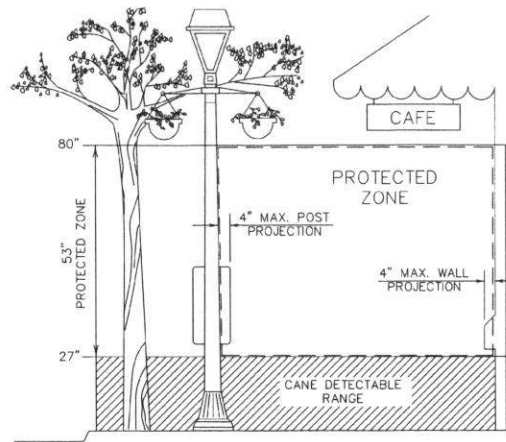


Wide sidewalk



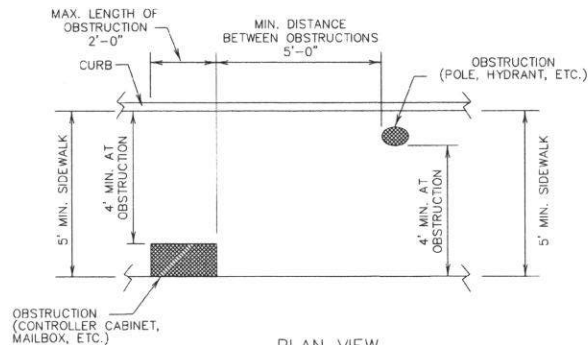
Ramp sidewalk

SIDEWALK TREATMENT AT DRIVEWAYS



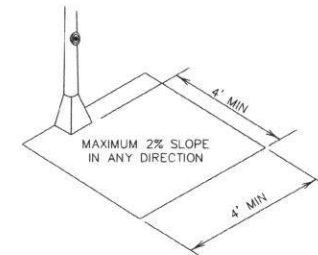
PROTECTED ZONE

In pedestrian circulation area, maximum 4" projection for post or wall mounted objects between 27" and 80" above the surface.

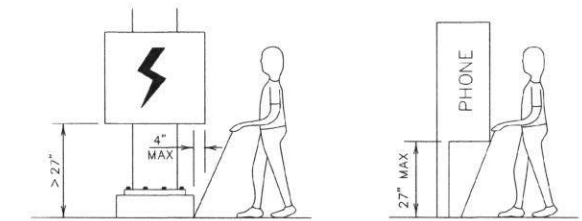


PLAN VIEW
PLACEMENT OF STREET FIXTURES

(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)



CLEAR GROUND SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



When an obstruction of a height greater than 27" from the surface would create a protrusion of more than 4" into the pedestrian circulation area, construct additional curb or foundation at the bottom to provide a maximum 4" overhang.

Protruding objects of a height 27" are detectable by cane and do not require additional treatment.

DETECTION BARRIER FOR VERTICAL CLEARANCE <80"



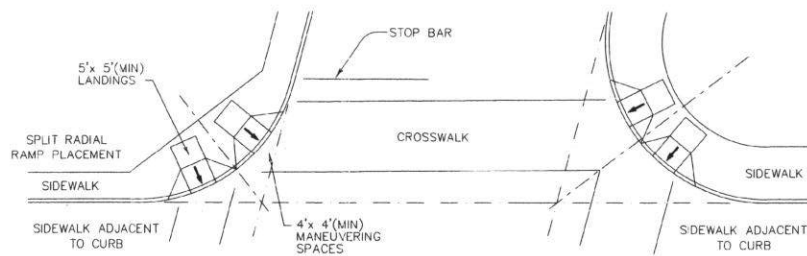
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SHEET 3 OF 4

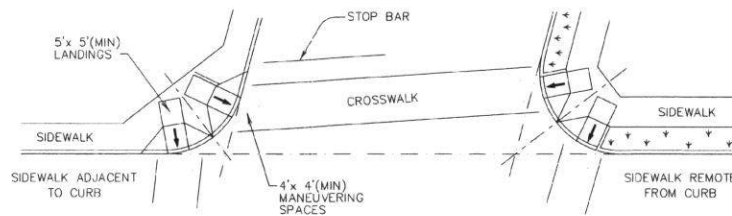
Texas Department of Transportation		Design Division Standard	
PEDESTRIAN FACILITIES CURB RAMPS			
PED-12A			
FILE: ped12c.dgn	DATE: 12/01/02	OK: PK	DATE: 12/01/02
©TxDOT March 2002	DATE: 12/01/02	OK: PK	DATE: 12/01/02
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VP June 13, 2012	112	FORT BEND	45 OF 47

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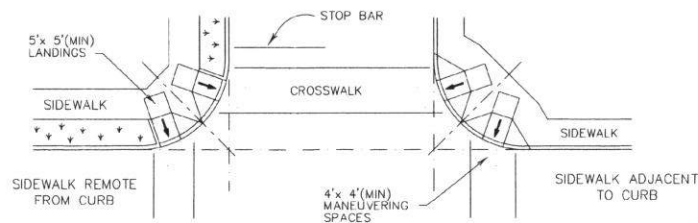
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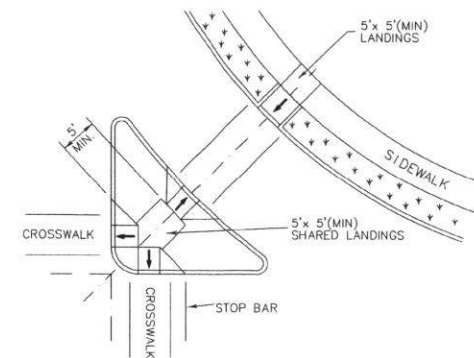
SKewed INTERSECTION WITH "LARGE" RADIUS



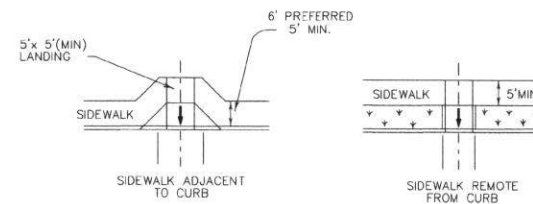
SKewed INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT
PERPENDICULAR RAMPs

TYPICAL CROSSING LAYOUTS

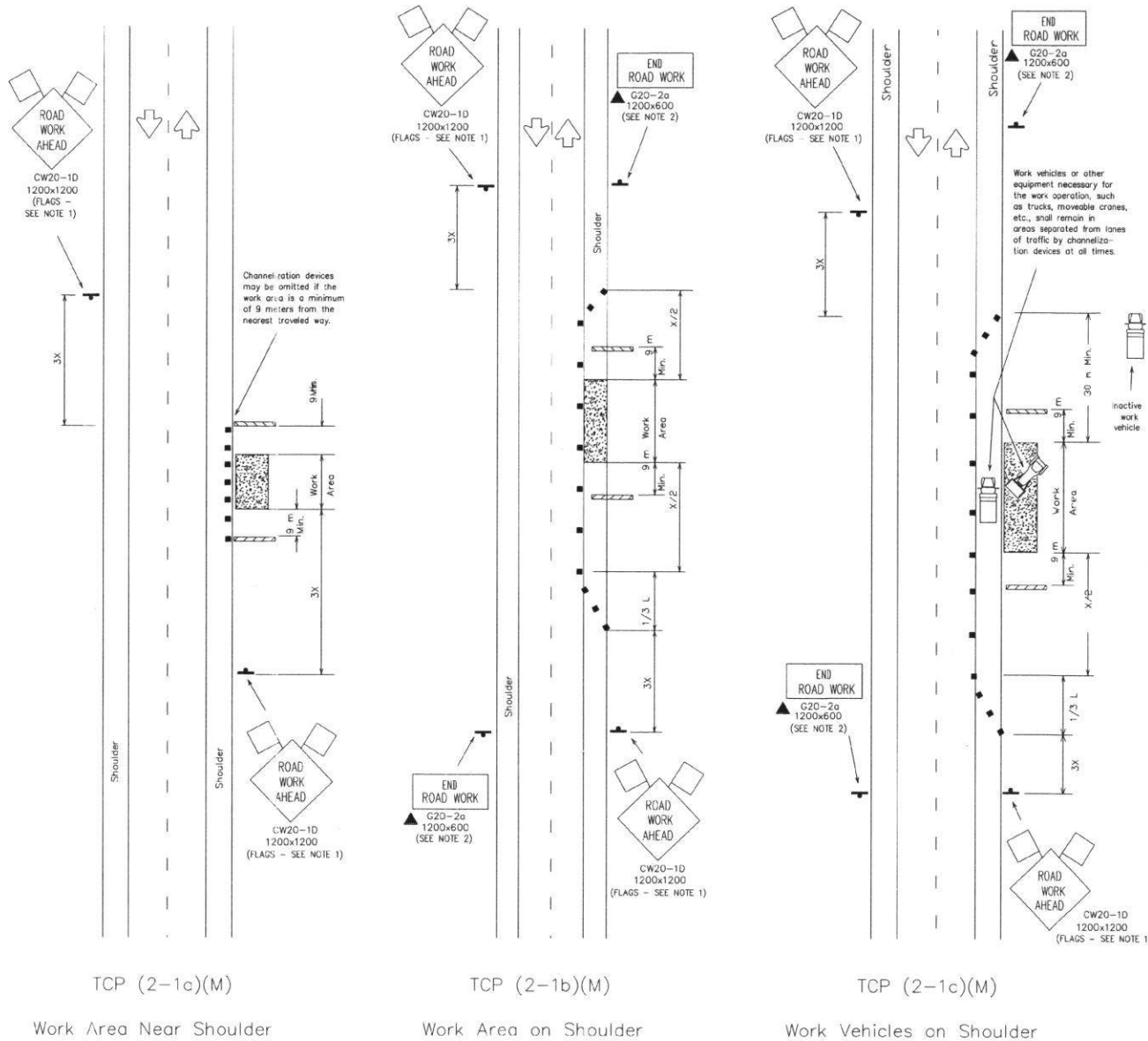
SHEET 4 OF 4

		Design Division Standard	
PEDESTRIAN FACILITIES CURB RAMPS			
PED-12A			
FILE: ped12a.dgn	DATE: TxDOT	OK: PK	DATE: TxDOT
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VP June 13, 2012	REVISIONS	DIST: COUNTY	SHEET NO.
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LEGEND

Type III Barricade Channelizing Devices Flag

Heavy Work Vehicle Mounted Attenuator

Trailer Mounted Flashing Arrow Panel Portable Changeable Message Sign

Flagger Sign Post

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Device		Minimum Sign Spacing X Distance (meters)
		3.0 m Offset (meters)	3.3 m Offset (meters)	3.6 m Offset (meters)	On a Taper (meters)	On a Tangent (meters)	
30	$L = \frac{WS^2}{60}$	45	50	55	9	15-20	40
35		65	70	75	10	20-25	50
40		80	90	100	12	25-30	75
45		135	150	165	13	25-30	100
50	$L = WS$	150	165	180	15	30-35	120
55		165	185	200	16	35-40	150
60		180	200	220	18	40-45	* 180
65		195	215	235	19	40-50	* 210
70		210	235	255	20	40-50	* 240

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper (m) W=Width of Offset (m) S=Posted Speed (MPH)

MOBILE	TYPICAL USAGE:			
	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

- GENERAL NOTES:
- Unless otherwise stated in the plans, flags attached to signs are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
 - Type III barricades are required on both sides of work area at all times. (See BC Standards for barricade details.)
 - Stockpiled material should be placed a minimum 9 m from nearest traveled way.
 - On high speed facilities advance warning signs should be installed approximately 3X from the work area or from the beginning of a lane or shoulder taper. On low speed facilities the advance warning sign should be placed on the "X" minimum distance.
- Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:
- Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3335
Fax (512) 416-3161
E-mail TRF-STANDARD@mailgw.dot.state.tx.us



STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC CONTROL PLAN

TCP(2-1)-98(M)

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REVISION	DATE	BY	CHKD	APPD	REASON FOR PROJECT	SHEET
2-94						47 OF 47
8-95						
1-97						
4-98						

DIST COUNTY CORRAL SECTION JOB PROJECT

112 FORT BEND 3300-30

Modified 11/14/16 Metric 161