



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

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

<input checked="" type="checkbox"/>	Right of Way Permit
<input type="checkbox"/>	Commercial Driveway Permit

Permit No: 2018-20696

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:

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | a. Name of road, street, and/or drainage ditch affected. |
| <input checked="" type="checkbox"/> | b. Vicinity map showing course of directions |
| <input checked="" type="checkbox"/> | c. Plans and specifications |

(2) BOND:

<input type="checkbox"/>	County Attorney, approval when applicable.		
<input checked="" type="checkbox"/>	Perpetual bond currently posted.	Bond No: [REDACTED]	Amount: \$50,000.00
<input type="checkbox"/>	Performance bond submitted.	Bond No: _____	Amount: _____
<input type="checkbox"/>	Cashier's Check	Check No: _____	Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

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

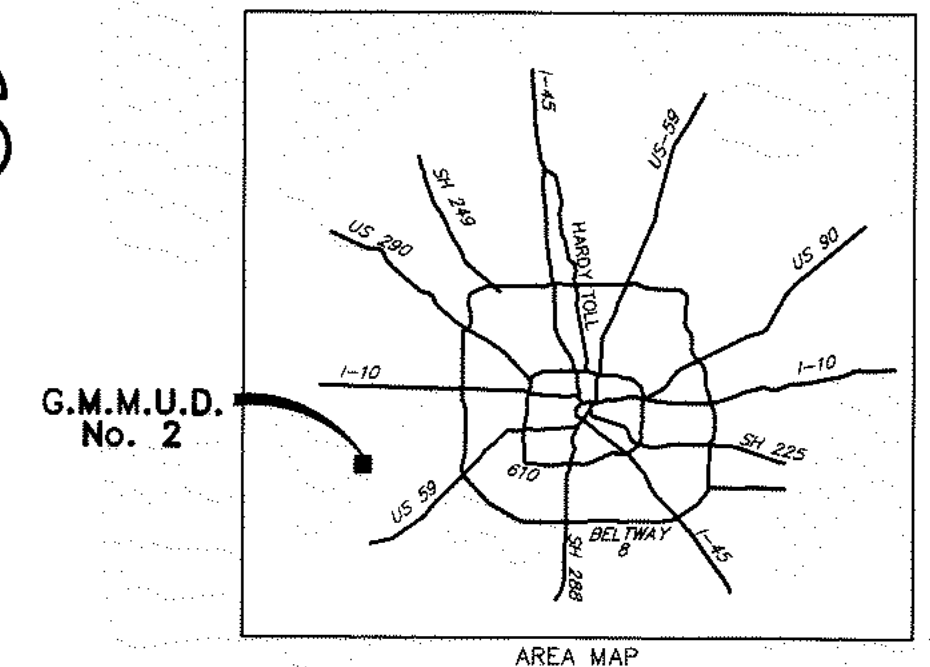


Permit Administrator

5/14/2018

Date

CONSTRUCTION
OF
WATER, SANITARY & DRAINAGE FACILITIES
IN
GRAND MISSION ESTATES
SECTION 21
FOR
688 DEVELOPMENT, INC
ON BEHALF OF
GRAND MISSION MUNICIPAL
UTILITY DISTRICT NO. 2
FORT BEND COUNTY, TEXAS



NOTES:

These plans were prepared to meet or exceed the specifications and requirements of City of Houston and Fort Bend County as currently amended.

Approval by Fort Bend County will be deemed void if construction has not begun within one year of approval date.

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

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

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

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

Blair M. Bazoarth
Blair M. Bazoarth, P.E. 4-12-18
Date

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

FORT BEND COUNTY ENGINEER

ENGINEER: *Richard Stangle, P.E.*
for RICHARD W. STOLLEIS, P.E.

DATE: 5/8/18
THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN ONE (1) YEAR FROM DATE OF APPROVAL.

APPROVED: *Max*
DEVELOPMENT COORDINATOR

DATE: 5/8/18

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

ISSUED FOR
CONSTRUCTION

ILMS No. 18017580
C.O.H. LOG No. 18-0334
CPC 101 REF. No. 2018-0397 C3F

INDEX OF DRAWINGS

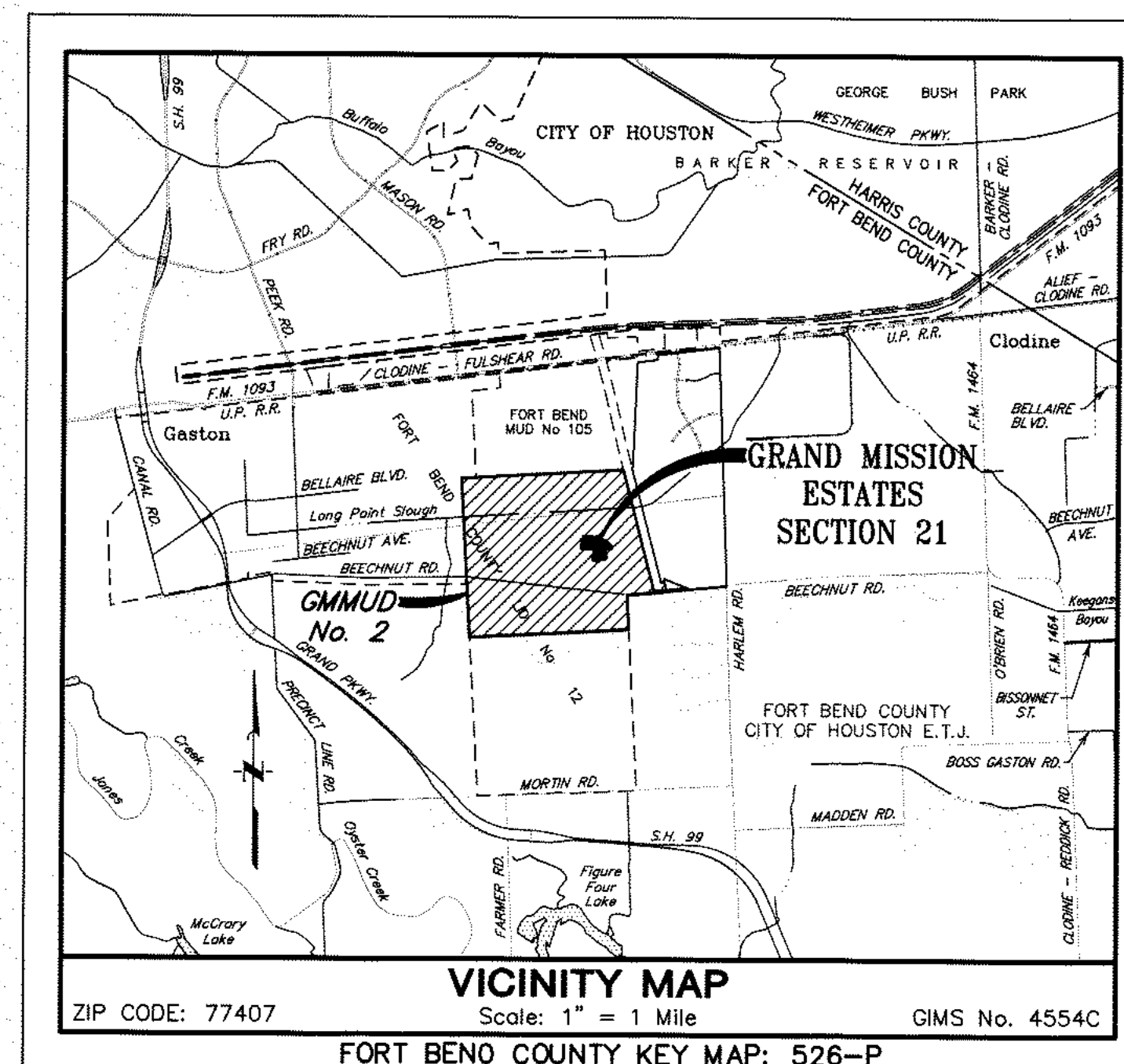
SHEET No.	TITLE
1	COVER SHEET AND INDEX
2	GENERAL CONSTRUCTION LAYOUT - WATER AND SANITARY SEWER
3	GENERAL CONSTRUCTION LAYOUT - PAVING AND DRAINAGE
4	GENERAL CONSTRUCTION LAYOUT - SIGNAGE AND PAVEMENT MARKINGS
5	DRAINAGE TABLES
6	GENERAL NOTES

PLAN & PROFILE

STREET NAME	STATION
7 REMINGTON BLUFF	7+83.77 TO 19+19.42
8 ALBANY OAKS LANE	0+00 TO 1+73.12
9 CROCKETT COVE LANE	1+00 TO 4+00
10 VICTORIA SPRINGS DRIVE	12+21.15 TO 16+59.55
BEECHNUT STREET	58+50 TO 60+50
GLENWICK FALLS COURT	0+00 TO 5+97.48

DETAILS

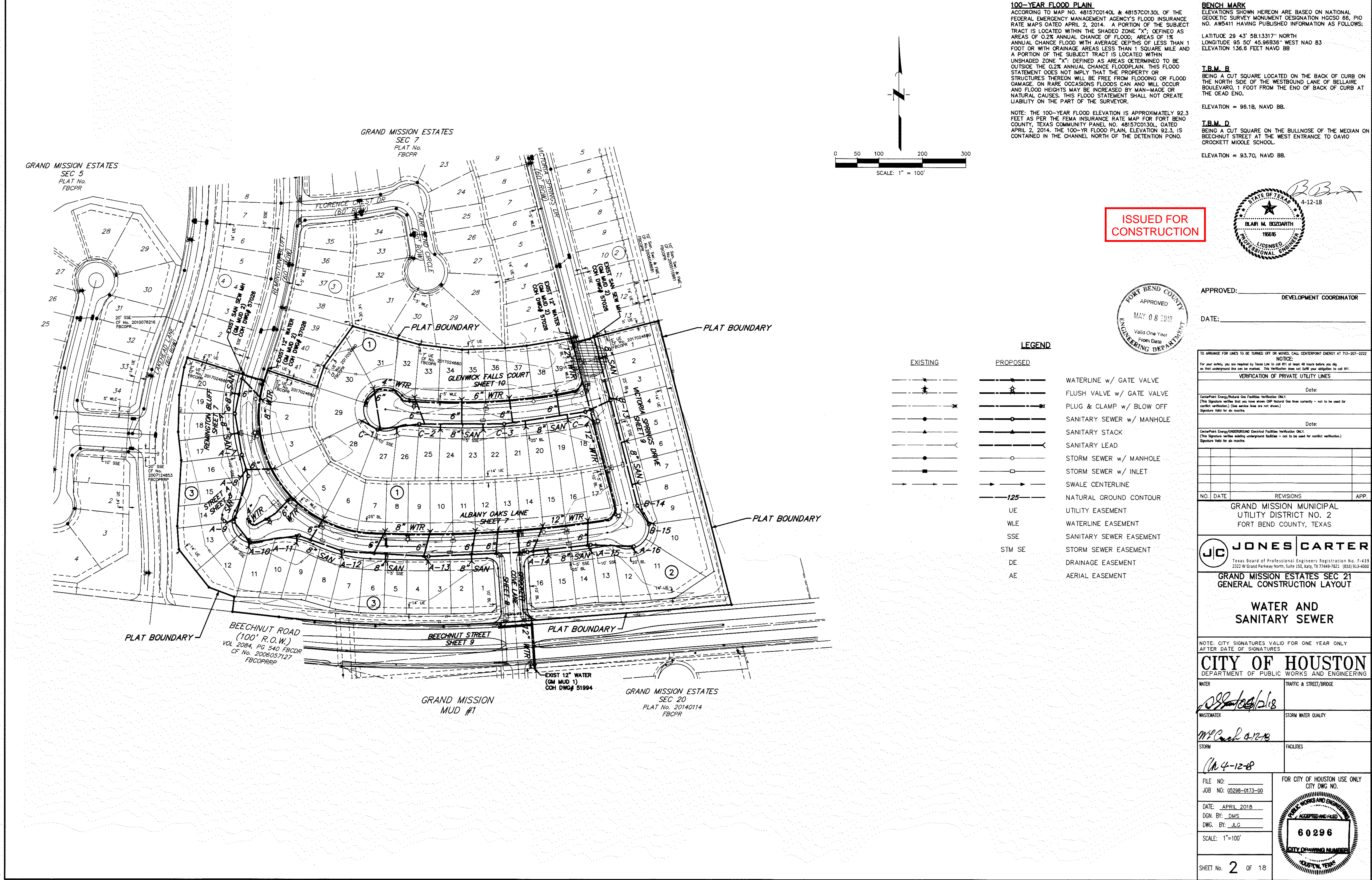
11 MISCELLANEOUS DETAILS
12 PAVING DETAILS
13 PAVEMENT MARKING DETAILS
14 TRAFFIC CONTROL PLAN
15 GRAOING PLAN
16 STORM WATER POLLUTION PREVENTION PLAN
17 STORM WATER POLLUTION PREVENTION DETAILS
18 TXOOT PED-12A



APRIL 2018

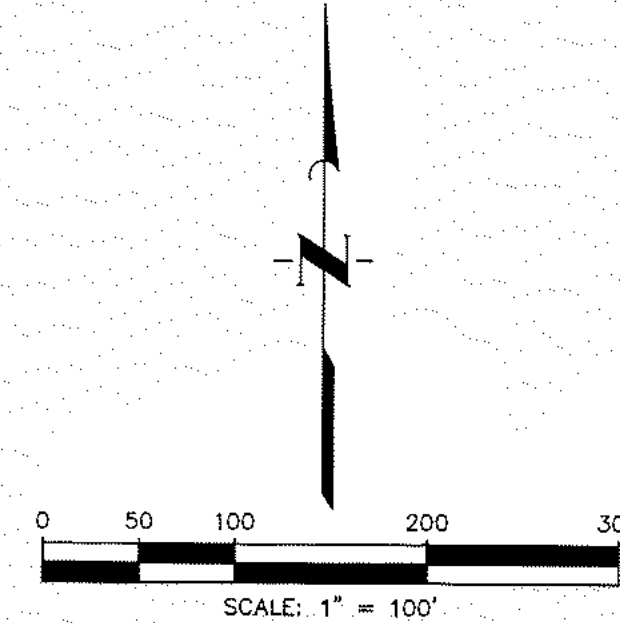
J|C JONES|CARTER
Texas Board of Professional Engineers Registration No. F-439
2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 913-4000

SURVEYED BY: FB NO.:	
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES	
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	
CITY ENGINEER	FOR CITY OF HOUSTON USE ONLY
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	
SHEET 1 OF 18	
60296 CITY DRAWING NUMBER	



GRAND MISSION ESTATES
SEC 5
PLAT No.
FBCPR

GRAND MISSION ESTATES
SEC 7
PLAT No.
FBCPR



100-YEAR FLOOD PLAIN

ACCORDING TO MAP NO. 48157C0140L & 48157C0130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS DATED APRIL 2, 2014. A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN THE SHADED ZONE "X"; DEFINED AS AREAS OF 0.2% ANNUAL CHANCE OF FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE AND A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN UNSHADED ZONE "X"; DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

NOTE: THE 100-YEAR FLOOD ELEVATION IS APPROXIMATELY 92.3 FEET AS PER THE FEMA INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS COMMUNITY PANEL NO. 48157C0130L, DATED APRIL 2, 2014. THE 100-YR FLOOD PLAIN, ELEVATION 92.3, IS CONTAINED IN THE CHANNEL NORTH OF THE OTEENTON POND.

BENCH MARK

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HGCD 66, P10 NO. AWS411 HAVING PUBLISHED INFORMATION AS FOLLOWS:

LATITUDE 29 43' 58.13317" NORTH
LONGITUDE 95 50' 45.96836" WEST NAD 83
ELEVATION 136.6 FEET NAVD 88

T.B.M. B

BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE OEO ENO.

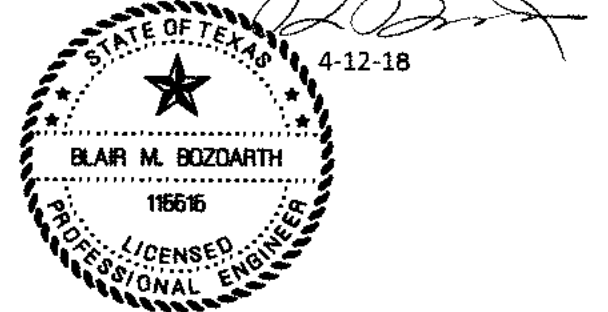
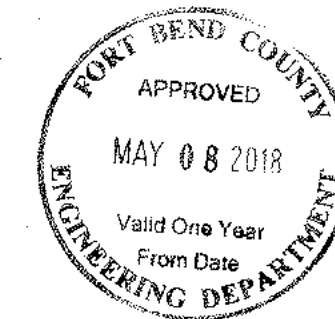
ELEVATION = 96.18, NAVD 88.

T.B.M. D

BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON BEECHNUT STREET AT THE WEST ENTRANCE TO DAVID CROCKETT MIDDLE SCHOOL.

ELEVATION = 93.70, NAVD 88.

ISSUED FOR
CONSTRUCTION



APPROVED: _____
DEVELOPMENT COORDINATOR

DATE: _____

LEGEND

EXISTING	PROPOSED	
		WATERLINE w/ GATE VALVE
		FLUSH VALVE w/ GATE VALVE
		PLUG & CLAMP w/ BLOW OFF
		SANITARY SEWER w/ MANHOLE
		SANITARY STACK
		SANITARY LEAD
		STORM SEWER w/ MANHOLE
		STORM SEWER w/ INLET
		SWALE CENTERLINE
		NATURAL GROUND CONTOUR
		UTILITY EASEMENT
		WATERLINE EASEMENT
		SANITARY SEWER EASEMENT
		STORM SEWER EASEMENT
		DRAINAGE EASEMENT
		AERIAL EASEMENT
		INLET
		STORM SEWER
		DRAINAGE AREA IN ACRES
		RUNOFF IN C.F.S.
		DRAINAGE AREA LINE
		DRAINAGE AREA NUMBER
		EXTREME EVENT SHEET FLOW

ETJ DETENTION PLANS INFORMATION:

- Storm Water Detention Plan
Is provided in Construction of Detention Basin Excavation Phase II
(COH Log No. 06-1438, COH DWG No. 42935)
Engineering Firm: Jones & Carter
Date Signed and Approved By: February 2007
- Storm Water Drainage Design Report
Report Title: Drainage and Detention Analysis for 640 Acre Development
Date: Engineering Firm: Jones & Carter
Date of Acknowledgement by Fort Bend County: July 5, 2006
Amendment:
Date: December 2006
Engineering Firm: Jones & Carter
Date of Acknowledgement by Fort Bend County LID No. 12: January 2007
- Increased Impervious Cover = 3.881 Acres
Detention Rate Required = 0.60 Acre-Feet/Acre
Detention Rate Provided = 0.67 Acre-Feet/Acre

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222		
NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground lines can be marked. This verification does not fulfill your obligation to call 811.		
VERIFICATION OF PRIVATE UTILITY LINES		
Date:		
CenterPoint Energy/Natural Gas Facilities Verification ONLY (This Signature verifies that you have shown CPE Natural Gas lines correctly - not to be used for conflict verification.) (Use separate lines for all utilities.) Signature valid for all months.		
Date:		
CenterPoint Energy/MIDCONTINENTAL Electrical Facilities Verification ONLY (This Signature verifies existing underground facilities - not to be used for conflict verification.) Signature valid for all months.		
Date:		
NO.	DATE	REVISIONS
		APP.

GRAND MISSION MUNICIPAL
UTILITY DISTRICT NO. 2
FORT BEND COUNTY, TEXAS



GRAND MISSION ESTATES SEC 21
GENERAL CONSTRUCTION LAYOUT

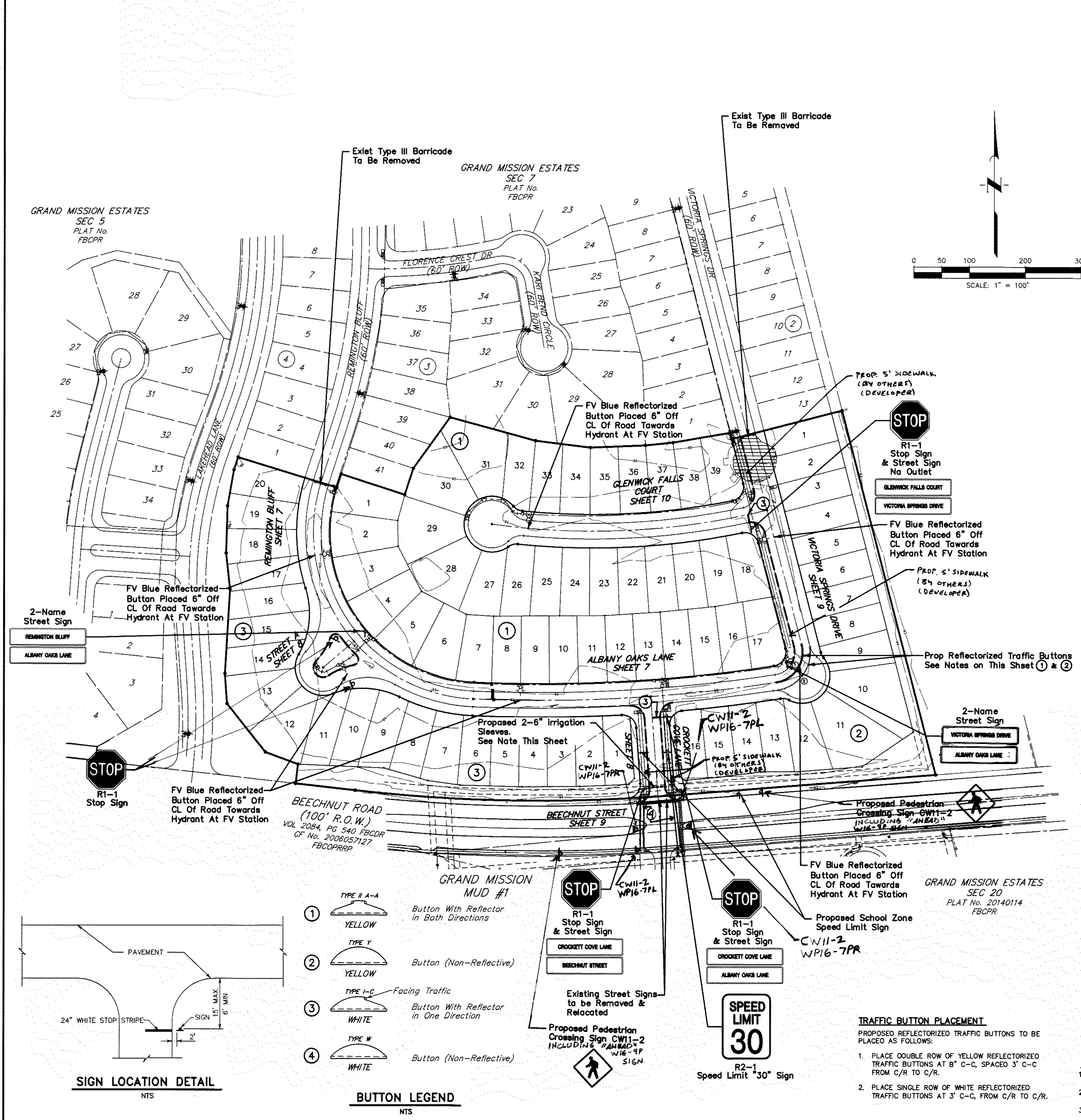
PAVING AND DRAINAGE

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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & STREET/BRIDGE
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES

FILE NO.: JOB NO: 05298-0173-00	FOR CITY OF HOUSTON USE ONLY CITY DWG NO.
DATE: APRIL 2018 DGN BY: DMS DWG BY: J.G.	60296
SCALE: 1"=100'	CITY DRAWING NUMBER
SHEET No. 3 OF 18	HOUSTON, TEXAS



LEGEND

- STREET SIGN (AS LABELED)
- STREET NAME SIGNS ONLY
- WHEELCHAIR RAMP (TYPE 7)
- EXIST TYPE III BARRICADE
- 6" CONCRETE CURB
- 4"x12" CURB
- 24" SOLID WHITE LINE
- 12" SOLID WHITE REFL. PAINT

100-YEAR FLOOD PLAIN

ACCORDING TO MAP NO. 48157C0140L & 48157C0130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS DATED APRIL 2, 2014. A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN THE SHADED ZONE "X", DEFINED AS AREAS OF 0.2% ANNUAL CHANCE OF FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE AND A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN UNSHADED ZONE "X": DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

NOTE: THE 100-YEAR FLOOD ELEVATION IS APPROXIMATELY 92.3 FEET AS PER THE FEMA INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS COMMUNITY PANEL NO. 48157C0130L, DATED APRIL 2, 2014. THE 100-YR FLOOD PLAIN, ELEVATION 92.3, IS CONTAINED IN THE CHANNEL NORTH OF THE DETENTION POND.

BENCH MARK

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HCCSD 66, PLO NO. AWS411 HAVING PUBLISHED INFORMATION AS FOLLOWS:

LATITUDE 29 43' 58.13317" NORTH
LONGITUDE 95 50' 45.98836" WEST NAD 83
ELEVATION 136.5 FEET NAVD 88

T.B.M. B

BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE DEAD END.

ELEVATION = 96.18, NAVD 88.

T.B.M. D

BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON BEECHNUT STREET AT THE WEST ENTRANCE TO OAVD CROCKETT MIDDLE SCHOOL.

ELEVATION = 93.70, NAVD 88.

ISSUED FOR CONSTRUCTION

STATE OF TEXAS
JULIAN M. BOGDARTH
16616
LICENSED PROFESSIONAL ENGINEER
4-12-18

APPROVED: _____
DEVELOPMENT COORDINATOR

DATE: _____

STREET NAME SIGN DETAIL

NTS

NOTES:
ALL STREET BLADES SHALL BE 9" IN HEIGHT

NOTES:
1. SECURELY ATTACH STREET NAME SIGN TO TRAFFIC SIGNAL SUPPORT WIRES WITH MULTI-LEVELING, WIND CUMMING BRACKETS.
2. SUPPORT WIRES SHOULD NOT BE PROHIBITED FROM INDEPENDENT MOVEMENT.
3. INSTALL ONE STREET NAME SIGN APPROXIMATE 2' FROM POLE ABOVE ON-COMING TRAFFIC ON EACH TRAFFIC SIGNAL SPAN.
4. THE FIRST LETTER OF EACH WORD SHALL BE UPPER CASE, SUBSEQUENT LETTERS SHALL BE LOWER CASE. ALL INDIVIDUAL LETTERS FOR EXAMPLE "F.M." SHALL BE UPPER CASE. STREET SUFFIXES & "NO OUTLET" SHALL BE UPPER CASE.
5. ALL SHEETING SHALL BE "DIAMOND GRADE" OR APPROVED EQUAL.
6. USE ANODIZED BLANKS ONLY.
7. MINIMUM SIGN THICKNESS:
9" SIGNS = .080"
14" SIGNS = .1875"

NOTE:
All Combination Street and Regulatory Signs Shall be Located at Curb Returns Unless Otherwise Noted.

COMBINATION STREET NAME SIGN AND REGULATORY SIGN INSTALLATION DETAIL

NTS

CURB NOTE

1. CONTRACTOR TO CONSTRUCT 6" CONCRETE CURB ON PAVEMENT FRONTING LANDSCAPE RESERVES, SIDE LOTS AND ESPLANADES PER FORT BEND COUNTY REQUIREMENTS.

2. CONTRACTOR TO CONSTRUCT 4"x12" CONCRETE CURB IN FRONT OF ALL LOTS.

IRRIGATION SLEEVES:

1. SLEEVES SHALL BE CLASS 200 PVC EXTENDING A MIN. 2' BEYOND BACK OF CURB WITH ENDS CAPPED.

2. INSTALL A MIN. 24" BELOW TOP OF P.V.M.T. TO TOP OF PIPE.

3. CONTRACTOR TO MARK LOCATION ON CURB WITH CHISELED MARK PAINTED GREEN.

NOTE:
All Combination Street and Regulatory Signs Shall be Located at Curb Returns Unless Otherwise Noted.

SIGN LOCATION DETAIL

NTS

BUTTON LEGEND

NTS

1. TYPE II A-A
YELLOW
Button With Reflector in Both Directions

2. TYPE Y
YELLOW
Button (Non-Reflective)

3. TYPE I-C
WHITE
Facing Traffic
Button With Reflector in One Direction

4. TYPE W
WHITE
Button (Non-Reflective)

TRAFFIC BUTTON PLACEMENT

PROPOSED REFLECTORIZED TRAFFIC BUTTONS TO BE PLACED AS FOLLOWS:

1. PLACE DOUBLE ROW OF YELLOW REFLECTORIZED TRAFFIC BUTTONS AT 8" C-C, SPACED 3' C-C FROM C/R TO C/R.

2. PLACE SINGLE ROW OF WHITE REFLECTORIZED TRAFFIC BUTTONS AT 3' C-C, FROM C/R TO C/R.

Project: Grand Mission Estates Section 21
Job No: 05298-0173-00
System: 2-YEAR STORM
By: DMS
Checked By: BMB

HGL Starting Elevation = Crown of Outfall Pipe
Design Storm = 2-YEAR STORM
b = 75.01
d = 16.2
e = 0.8315

Drainage Area	Manhole From	Manhole To	Contributing Area (Acres)	Total Area (Acres)	Runoff Coefficient C	Sum of C/A	Intensity (in/hr)			Flow (ft ³ /s)			Time of Concentration (mins)	Pipe Length (feet)	Pipe Diameter or Size (in)	Bios Spot (in)	Slope (%)	Manning "n"	Design Capacity (cfs)	Design Velocity (ft/sec)	Full (feet)		Manhole Drop (feet)	Flowline Elevation Upstream (feet)	Flowline Elevation Downstream (feet)	Actual Velocity (ft/sec)	Hydraulic Gradient (%)	Change in Head (feet)	Friction of Pipe, Gravel Upstream (feet)	Elevation of Bed, Gravel Downstream (feet)	Top of Curb Upstream (feet)	Gravel Elevation Upstream (feet)
							2 yr	25 yr	100 yr	2 yr	25 yr	100 yr																				
GLENWICK FALLS COURT																																
I	Inlet 26A	Inlet 26B	2.29	2.29	0.55	1.3	3.30	5.66	6.84	4.16	7.13	8.61	26.57	29	24		0.70	0.013	18.93	6.02	0.20			87.94	87.74	1.32	0.03	0.01	89.94	89.74	92.69	92.19
II	Inlet 26B	26	2.07	4.36	0.55	2.4	3.22	5.54	6.69	7.71	13.28	16.05	27.96	7	24		2.75	0.013	37.52	11.94	0.19			87.74	87.54	2.45	0.12	0.01	89.74	89.54	92.70	92.20
SUM	26	23	0.00	4.36	0.55	2.4	3.22	5.54	6.69	7.71	13.28	16.05	27.97	249	24		0.18	0.013	9.60	3.06	0.45			87.54	87.10	2.45	0.12	0.29	89.54	89.10	92.70	92.20
VICTORIA SPRINGS DRIVE																																
III	Inlet 27A	Inlet 27B	1.39	1.39	0.55	0.8	3.37	5.75	6.94	2.57	4.40	5.31	25.60	28	24		0.70	0.013	18.93	6.02	0.20			88.10	87.90	0.82	0.01	0.00	90.10	89.90	92.85	92.35
IV	Inlet 27B	27	0.24	1.63	0.55	0.9	3.35	5.73	6.91	3.00	5.13	6.19	25.90	7	24		2.75	0.013	37.52	11.94	0.19			87.90	87.71	0.95	0.02	0.00	89.90	89.44	92.85	92.35
SUM	27	23	0.00	1.63	0.55	0.9	3.35	5.72	6.91	3.00	5.13	6.19	25.91	195	24		0.18	0.013	9.60	3.06	0.35			87.44	87.09	0.95	0.02	0.03	89.44	89.10	92.85	92.35
SUM	23	22	0.00	5.99	0.55	3.3	3.14	5.42	6.56	10.33	17.85	21.61	29.33	47	30		0.13	0.013	14.79	3.01	0.06	0.50		86.60	86.54	2.10	0.06	0.03	89.10	86.67	93.40	92.90
V	Inlet 22A	Inlet 22B	0.53	0.53	0.55	0.3	3.48	5.92	7.13	1.01	1.73	2.08	23.94	28	24		0.70	0.013	18.93	6.02	0.20			88.50	88.30	0.32	0.00	0.00	90.50	90.30	93.28	92.78
VI	Inlet 22B	22	0.09	0.62	0.55	0.3	3.46	5.89	7.10	1.18	2.01	2.42	24.19	7	24		2.75	0.013	37.52	11.94	0.19			88.30	88.11	0.38	0.00	0.00	90.30	86.67	93.25	92.75
SUM	22	Exist Stub Out	0.00	6.61	0.55	3.6	3.12	5.40	6.53	11.34	19.62	23.75	29.59	50	42		0.10	0.013	31.82	3.31	0.05	3.37		83.17	83.12	1.18	0.01	0.01	86.67	86.62	93.25	92.75
ALBANY OAKS LANE																																
VII	Inlet 37A	Inlet 37B	1.25	1.25	0.55	0.7	3.38	5.77	6.96	2.32	3.97	4.79	25.40	28	24		0.70	0.013	18.93	6.02	0.20			88.37	88.17	0.74	0.01	0.00	90.37	90.17	93.11	92.61
VIII	Inlet 37B	37	0.91	2.16	0.55	1.2	3.31	5.67	6.85	3.93	6.74	8.14	26.45	6	24		2.75	0.013	37.52	11.94	0.17			88.17	88.01	1.25	0.03	0.00	90.17	88.59	93.12	92.62
SUM	37	35	0.00	2.16	0.55	1.2	3.31	5.67	6.85	3.93	6.74	8.14	26.46	261	24		0.18	0.013	9.60	3.06	0.47			86.59	86.12	1.25	0.03	0.08	88.59	88.12	93.12	92.62
IX	Inlet 35A	Inlet 35B	1.04	1.04	0.55	0.6	3.40	5.81	7.00	1.95	3.32	4.00	25.07	29	24		0.70	0.013	18.93	6.02	0.20			88.39	88.19	0.62	0.01	0.00	90.39	90.19	93.14	92.64
X	Inlet 35B	35	0.90	1.94	0.55	1.1	3.32	5.69	6.87	3.55	6.07	7.33	26.24	7	24		2.75	0.013	37.52	11.94	0.19			88.19	87.99	1.13	0.02	0.00	90.19	88.12	93.15	92.65
SUM	35	32	0.00	4.10	0.55	2.3	3.31	5.67	6.85	7.46	12.79	15.44	26.46	303	24		0.18	0.013	9.60	3.06	0.55			86.12	85.57	2.38	0.11	0.33	88.12	87.57	93.15	92.65
XI	Inlet 32A	Inlet 32B	1.53	1.53	0.55	0.8	3.35	5.74	6.92	2.82	4.83	5.83	25.78	31	24		0.64	0.013	18.10	5.76	0.20			88.25	88.05	0.90	0.02	0.00	90.25	90.05	93.00	92.50
XII	Inlet 32B	32	0.70	2.23	0.55	1.2	3.31	5.67	6.84	4.05	6.95	8.39	26.52	7	24		2.75	0.013	37.52	11.94	0.19			88.05	87.86	1.29	0.03	0.00	90.05	87.57	93.00	92.50
SUM	32	29	0.00	6.33	0.55	3.5	3.21	5.52	6.68	11.16	19.23	23.25	28.11	264	36		0.11	0.013	22.12	3.13	0.29	1.00		84.57	84.28	1.58	0.03	0.07	87.57	87.28	93.00	92.50
REMINGTON BLUFF																																
XIII	Inlet 29A	Inlet 29B	1.67	1.67	0.55	0.9	3.34	5.72	6.90	3.07	5.25	6.34	25.95	31	24		0.64	0.013	18.10	5.76	0.20			88.13	87.93	0.98	0.02	0.01	90.13	89.93	92.88	92.38
XIV	Inlet 29B	29	0.91	2.58	0.55	1.4	3.29	5.64	6.81	4.66	8.00	9.66	26.82	7	24		2.75	0.013	37.52	11.94	0.19			87.93	87.74	1.48	0.04	0.00	89.93	87.28	92.88	92.38
SUM	29	Exist Stub Out	0.00	8.91	0.55	4.9	3.12	5.40	6.54	15.31	26.48	32.05	29.52	132	36		0.11	0.013	22.12	3.13	0.15			84.28	84.14	2.17	0.05	0.07	87.28	87.15	92.88	92.38
EXISTING BEECHNUT																																
EXIST 1	Inlet 9A	9	0.30	0.30	0.55	0.2	3.54	6.01	7.23	0.58	0.99	1.19	23.09	52	24		0.38	0.013	13.95	4.44	0.20			88.21	88.01	0.19	0.00	0.00	90.21	90.01	92.30	91.80
EXIST 2	Inlet 9A	9	0.48	0.78	0.55	0.4	3.44	5.85	7.06	1.47	2.51	3.03	24.57	52	24		0.38	0.013	13.95	4.44	0.20			88.21	88.01	0.47	0.00	0.00	90.01	90.01	92.30	91.80
SUM	9	11	0.00	0.78	0.55	0.4	3.44	5.85	7.06	1.47	2.51	3.03	24.57	367	30		0.18	0.013	17.40	3.55	0.66			88.01	87.35	0.30	0.00	0.00	90.51	86.80	92.60	92.10

Project: Grand Mission Estates Section 21
Job No: 05298-0173-00
System: 100-YEAR STORM
By: DMS
Checked By: BMB

HGL Starting Elevation = 25-Year Storm = 89.39
Design Storm = 100-YEAR STORM
b = 125.4
d = 21.8
e = 0.75

Drainage Area	Manhole From	Manhole To	Contributing Area (Acres)	Total Area (Acres)	Runoff Coefficient C	Sum of C/A	Intensity (in/hr)			Flow (ft ³ /s)			Time of Concentration (min)	Pipe Length (feet)	Pipe Diameter or Size (in)	Pipe Slope (in)	Slope (N)	Manning "n"	Design Capacity (cfs)	Design Velocity (ft/sec)	Full Depth (feet)	Manhole Drop (feet)	Invert Elevation Upstream (feet)	Invert Elevation Downstream (feet)	Actual Velocity (ft/sec)	Hydraulic Gradient (ft)	Change in Head (feet)	Elevation of Bed, Gravel Upstream (feet)	Elevation of Bed, Gravel Downstream (feet)	Top of Curb Upstream (feet)	Invert Elevation Upstream (feet)	Invert Elevation Downstream (feet)	Top of Curb Upstream (feet)	Invert Elevation Upstream (feet)	Invert Elevation Downstream (feet)	Top of Curb Upstream (feet)	Invert Elevation Upstream (feet)	Invert Elevation Downstream (feet)	Top of Curb Upstream (feet)	Invert Elevation Upstream (feet)	Invert Elevation Downstream (feet)	Top of Curb Upstream (feet)	Invert Elevation 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1. WASTEWATER COLLECTION SYSTEMS, WATER, PAVING, TRAFFIC SIGNALS AND DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING CITY OCCUMENTS. THESE OCCUMENTS ARE: "STANDARD CONSTRUCTION SPECIFICATIONS (MOST RECENT ISSUE: DECEMBER 2014) AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION: SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" (MOST RECENT ISSUE: DECEMBER 2014) WITH ALL SUBSEQUENT AMENDMENTS ADDED THERETO UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE DESIGN MUST AGREE WITH THE MINIMUM STANDARDS ESTABLISHED IN THE LATEST ISSUE OF THE "INFRASTRUCTURE DESIGN MANUAL" (MOST RECENT ISSUE JULY 2018). NOTE THAT PLAN SIGNATURES AND LETTERS OF CAPACITY AVAILABILITY FOR STORM, WASTEWATER AND WATER EXPOSE ARE REQUIRED. ONE YEAR AND THE LATEST EDITIONS OF DESIGN RULES, SPECIFICATIONS, STANDARD DETAILS AND MANUALS SHALL GVERN AS OF THE DATES FOR RESIGNING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT HE/SHE HAS THE MOST RECENT EDITIONS. THESE OCCUMENTS MAY BE OBTAINED FROM THE CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS, 611 WALKER.
2. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO PAVING, WATER LINES, WASTEWATER COLLECTION SYSTEMS, STORM SEWER AND TRAFFIC SIGNALS DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH CURRENT EDITIONS OF CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS, DESIGN DETAILS AND DESIGN MANUALS. REPAIRS SHALL BE AT NO COST TO THE CITY OF HOUSTON.
3. ALIGNMENT, CENTERLINE CURVE DATA, AND STATIONING TO BE DETERMINED FROM APPROVED, RECORDED SUBDIVISION PLAT OR ROAD RIGHT-OF-WAY.
4. PLACEMENT OF UTILITIES IN EASEMENTS SHALL BE GOVERNED BY THE "STANDARD 10-FOOT AND 14-FOOT EASEMENTS" AS ADOPTED BY THE UTILITY COORDINATING COMMITTEE FOR THE HOUSTON METROPOLITAN AREA.
5. THE APPROXIMATE LOCATION OF EXISTING UTILITIES ARE GIVEN FOR REFERENCE ONLY. BEFORE COMMENCING THE WORK ON THIS CONTRACT, THE CONTRACTOR SHALL VERIFY BY FIELD INVESTIGATION THE ACTUAL LOCATIONS OF ALL UTILITY FACILITIES WITHIN AND ADJACENT TO THE LIMITS OF THE WORK THAT MAY BE AFFECTED BY THE WORK. CONFLICTS WHICH RESULT DUE TO NEGLIGENCE BY THE CONTRACTOR TO LOCATE, HORIZONTALLY AND VERTICALLY, EXISTING UTILITIES WHICH ARE SHOWN ON THE CONSTRUCTION DRAWINGS, OR WHICH THE CONTRACTOR HAS BEEN GIVEN NOTICE OR HAS KNOWLEDGE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. AT THE COST OF REPAIR WORK, REMOVAL OF PORTIONS OF THE WORK OR EXTENSIVE DESIGN CHANGES OCCASIONED BY THE FAILURE OF THE CONTRACTOR TO VERIFY THE LOCATION OF EXISTING UTILITIES AS DESCRIBED ABOVE SHALL BE BOPNE BY THE CONTRACTOR.
6. CONTRACTOR IS TO CONTACT TEXASB11 OR (800)344-8377 FOR LOCATION OF EXISTING FACILITIES MAY NOT BE SHOWN ON THE PLANS AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
7. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY THE "REGULATIONS OF FORT BEND COUNTY, TEXAS, FOR FLOOD PLAIN MANACEMENT" PRIOR TO STARTING CONSTRUCTION.
8. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY FORT BEND COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN FORT BEND COUNTY ROAD RIGHTS-OF-WAY.
9. CONTRACTOR SHALL COMPLY WITH O.S.H.A. REGULATIONS AND TEXAS STATE LAW CONCERNING TRENCH SAFETY SYSTEMS.
10. CONTRACTOR TO FOLLOW CONSTRUCTION DETAILS IF DRAWINGS DEVIATE FROM CITY OF HOUSTON STANDARDS.
11. THE CONTRACTOR SHALL RETURN ALL EXISTING FACILITIES TO EXISTING OR BETTER CONDIOTON UNLESS OTHERWISE NOTED AT AN ADDITIONAL COST TO THE OWNER.
12. NOTE: "AUTHORIZATION NOTICE ISSUED BY FORT BEND COUNTY PUBLIC INFRASTRUCTURE ENGINEERING DEPARTMENT PERMIT OFFICE REQUIRED PRIOR TO CONSTRUCTION OF UTILITIES OR LEFT TURN LANES WITHIN FORT BEND COUNTY RIGHT-OF-WAY." CONTACT FORT BEND COUNTY PERMIT OFFICE (281-633-7502).
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING RED LINE RECORD DRAWINGS (INCLUDING MEASUREMENTS FROM TWO FIXED OBJECTS TO ENDS OF SANITARY SEWER SERVICES) AT THE COMPLETION OF THIS JOB. PRIOR TO FINAL PAYMENT.
14. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SITE DRAINAGE AT ALL TIMES AT NO ADDITIONAL COST TO THE OWNER WHETHER BY GRAOING OR PUMPING.

1. ALL FOUR (4) INCH THROUGH TWELVE (12) WATERLINES TO BE CLASS 150 (DR-18), PVC (AWWA C-900), OR DUCTILE IRON AS SPECIFIED. ASBESTOS CEMENT WATERLINE ~~WILL NOT~~ BE APPROVED FOR THIS PROJECT.
2. TWELVE (12) INCH OR SMALLER WATERLINES SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET BELOW TOP OF CURB. THE CONTRACTOR SHALL UNIFORMLY VARY THE ELEVATION OF THE WATERLINE FROM THE OPTH SHOWN ON THE PLANS TO FACILITATE CONFLICT AVOIDANCE AND MAINTAIN MINIMUM CLEARANCES. MAXIMUM DEFLECTION OF JOINTS SHALL NOT EXCEED THE PIPE MANUFACTURER'S RECOMMENDATIONS.
3. WATERLINE FITTINGS SHALL BE CAST OR DUCTILE IRON UNLESS OTHERWISE NOTED.
4. WATERLINES SHALL BE CONSTRUCTED SO THAT ALL CROSSES AND TEES WILL NOT BE LOCATED UNDER PROPOSED OR FUTURE PAVING.
5. VALVES SHALL BE LOCATED OPPOSITE PROPERTY CORNERS EXCEPT AS SHOWN ON THE PLANS.
6. MAINTAIN 6-INCH MINIMUM CLEARANCE BETWEEN ALL WATERLINES, STORM SEWERS, AND CULVERTS UNLESS OTHERWISE NOTED.
7. FOR SPECIAL WATERLINE / SANITARY SEWER CLEARANCES, SEE SANITARY SEWER CONSTRUCTION NOTES.
8. WATERLINES SHALL BE BANK SAND-BEDDED AND BACKFILLED IN ACCORDANCE WITH THE LATEST EDITION OF CITY OF HOUSTON SPECIFICATIONS AND DETAILS.
9. SANITARY PRECAUTIONS MUST BE TAKEN DURING WATERLINE CONSTRUCTION, AS CALLED FOR BY AWWA STANDARDS. PRECAUTIONS INCLUDE KEEPING PIPE CLEAN AND CAPPING, OR OTHERWISE EFFECTIVELY COVERING OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS, OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.
10. ALL NEWLY INSTALLED PIPES, COATINGS, AND RELATED PRODUCTS SHALL CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE / NATIONAL SANITATION FOUNDATION (ANSI / NSF) STANDARDS AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI.
11. DO NOT INCLUDE SERVICE CONNECTIONS IN THIS CONTRACT, HOWEVER, WHEN CONSTRUCTED, THEY WILL BE IN ACCORDANCE WITH THE LATEST EDITION OF CITY OF HOUSTON SPECIFICATIONS.
12. ALL FLUSHING VALVES AND VALVE BOXES SHALL BE ADJUSTED TO FINISH GRADE AFTER PAVING IS COMPLETE. FLUSHING VALVES SHALL BE TURNED TO FACE STREET.
13. PROVIDE GATE VALVE EXTENSION STEM PER CITY OF HOUSTON AND/OR AS DIRECTED BY THE ENGINEER.

1. ALL PROPOSED 8-INCH TO 12-INCH GRAVITY SANITARY SEWER LINES WILL BE DUCTILE IRON OR 28 PVC PIPE ASTM D-3034, UNLESS OTHERWISE NOTED ON PLANS. 15 INCH GRAVITY LINES WILL BE 808 - 35% AWWA C-900, 18 TO 27 INCH GRAVITY LINES WILL BE SDR-35 PVC, ASTM F-679, UNLESS OTHERWISE NOTED ON PLANS. NON-PRESSURE PVC MAY NOT BE SUBSTITUTED FOR OIP OR C-900 PIPE, (DR 1B ONLY).
2. ALL TYPES OF SANITARY SEWER PIPES SHALL BE CEMENT SAND BEDDED AND BACKFILLED AS NOTED ON CITY OF HOUSTON DWG. D2317-03 FOR DRY STABLE TRENCH (NO SEPARATE PAY).
3. MAINTAIN 12-INCH MINIMUM CLEARANCE BETWEEN ALL SANITARY SEWERS, STORM SEWERS AND CULVERTS UNLESS OTHERWISE NOTED.
4. SEWER TRENCHES UNDER OR WITHIN ONE (1) FOOT OF PROPOSED OR FUTURE PAVEMENT TO BE BACKFILLED WITH GEMFILL-SAND BACKFILL AS SPECIFIED, TO WITHIN ONE (1) FOOT OF SUBGRADE. INCLUDE COST OF BACKFILL IN UNIT PRICE BID FOR LINEAR FOOT OF PIPE.
5. ALL SEWER LINES SHALL BE AIR-TESTED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
6. FOR ALL PVC PIPE, USE MANHOLE WATERSTOP GASKET AND CLAMP ASSEMBLY AT MANHOLE CONNECTIONS (NO SEPARATE PAY).
7. SANITARY SEWER MANHOLES SHALL BE STANDARD PRECAST CITY OF HOUSTON, UNLESS OTHERWISE NOTED. ALL SANITARY MANHOLES WITHIN THE 100-YEAR FLOOD HAVE THE TOP SET AT LEAST TWELVE (12) INCHES ABOVE THE BASE FLOOD ELEVATION OR SEALED AND VENTED.
8. ALL MANHOLES SHALL BE SET SO THAT THE TOP OF THE CONE IS NO HIGHER THAN THE ADJACENT TOP OF CURB ELEVATION, UNLESS DETERMINED OTHERWISE BY THE ENGINEER. THE FINISH RIM ELEVATION SHALL BE MET WITH PRE-CAST RIMS.
9. ALL FAR SIDE LEADS SHALL BE SIX (6) INCHES OR EIGHT (8) INCHES AT 0.70% MINIMUM SLOPE AND SHALL BE PVC, DR 26, 180 PSI PRESSURE PIPE CONFORMING TO ASTM D-2241. STUBS AND FAR-SIDE LEADS WILL BE AWWA C-900, OR 18, WHERE THERE IS LESS THAN THREE (3) FOOT COVER TO TOP OF CURBS.
10. LEADS SERVING TWO LOTS SHALL HAVE A SERVICE "WYE" WITH PLUGS (NO SEPARATE PAY). THE "WYE" SHALL BE LOCATED WITHIN THE STREET RIGHT-OF-WAY OR ADJOINING UTILITY EASEMENT.
11. ALL DUCTILE IRON PIPE SHALL BE 150 PSI WITH EIGHT (8) MIL, BLACK VIRGIN POLYETHYLENE WRAP AS SPECIFIED IN ANSI/AWWA C105/A21.5.
12. ALL D.I.P. SHALL BE LINED WITH VIRGIN POLYETHYLENE CONFORMING TO ASTM D-1248; 40 MIL THICKNESS (NOMINAL), 35 MILS (MINIMUM). LINER TO BE POLYZIC, POLYBOND, OR EQUAL. AT ANY POINT WHERE D.I.P. CAN NOT BE WRAPPED IN POLYETHYLENE TUBING, COAT THE EXTERIOR WITH POLYBOND OR APPROVED EQUAL.
13. MANHOLE RIMS ARE TO BE SET AT THE ELEVATIONS SHOWN ON THE PLANS. AFTER PAVING AND GRADING IS COMPLETED, RIMS ARE TO BE ADJUSTED TO THREE (3) TO SIX (6) INCHES ABOVE FINAL GRADE AND BACK-DRESSED WITH DIRT TO PROVIDE DRAINAGE AHEAD FROM THE MANHOLE.
14. ALL PVC PIPE (ALL TYPES AND SDR/DR WALL THICKNESS TO BE USED) SHALL HAVE RUBBER GASKET CONFORMED BELL AND SPIGOT JOINTS CONFORMING TO ASTM D-3212. THE GASKET MATERIAL SHALL CONFORM TO ASTM F-477. SOLVENT WELDED JOINTS WILL NOT BE APPROVED FOR THIS PROJECT.
15. IF WET SAND IS ENCOUNTERED IN THE FIELD, USE SPECIAL BEDDING PER CITY OF HOUSTON DWG D2317-D1, D2317-02 AND AS DIRECTED BY THE ENGINEER.
16. WATER AND SANITARY SEWER SEPARATION DISTANCES SHALL BE IN ACCORDANCE WITH THE PROTECTION REQUIREMENTS LISTED IN 3D TASK \$290.44, WHICHEVER IS MORE STRINGENT.
17. ALL SANITARY SEWER FACILITIES AND POTABLE WATERLINES MUST BE INSTALLED SO AS TO PROVIDE A MINIMUM OF NINE FEET OF HORIZONTAL CLEARANCE BETWEEN THEM. WHERE THE NINE FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, FOLLOW THE SPECIAL PROCEDURES IN THE PROCEDURES LISTED IN 3D TASK \$290.44.
18. ALL PENETRATIONS INTO A SANITARY SEWER MANHOLE, INCLUDING SERVICE LEADS, SHALL BE SERVED BY AN INVERT. ALL INVERTS SHALL EXTEND ALL THE WAY TO THE WALLS OF THE MANHOLE.

1. PROPOSED DRIVEWAY, SIDEWALK, CURB, GUTTER LINE AND GRADE SHALL MATCH EXISTING STREET.
2. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT, CLASS A STRUCTURAL (REFER TO SPECIFICATION 03301), 4 INCHES THICK AND 4 FEET MINIMUM WIDTH.
3. PROPOSED DRIVEWAY AND CURB SHALL BE BUILT WITH PORTLAND CEMENT CONCRETE, CLASS A STRUCTURAL (REFER TO SPECIFICATION 03301), 10 INCHES THICK, FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE AND TO BE REINFORCED WITH #4 DEFORMED REINFORCING BARS (MINIMUM ASTM A615 GRADE 60, UNLESS NOTED) SPACED AT 24 INCHES C.C., 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 INCHES 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 REINFORCEMENT STEEL AT LEAST 12 INCHES AT PROPOSED DRIVEWAY INTERSECTION. FULL DEPTH CUT IS ACCEPTABLE PROVIDING 18" LONG DRILL IN DOWELS ARE INSTALLED AT A SPACING TO MATCH EXISTING WITH A MIN. 6" EMBEDMENT.
8. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE, COMPACT TO 95% OF STANDARD PROCTER DENSITY (+/- 2% ORT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS IF HE DEEMS THEM NECESSARY.
9. PLACE AND COMPACT 4 INCH CLEAN BANK SAND.
10. PROPOSED AREA FROM BACK 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, SAID DRIVEWAYS SHALL SEPARATED BY A MINIMUM DISTANCE OF AT LEAST 20 FEET (ROADWAYS WITH CURBS AND SIDEWALKS).
12. SIDEWALK SHALL HAVE 3/4 INCH REDWOOD BOARD EXPANSION JOINTS EVERY 20 FEET ON CENTER.
13. PLACE ONE-INCH BOARD EXPANSION JOINT AT RIGHT-OF-WAY LINE.
14. EXPANSION JOINT FILLER SHALL BE PRE FORMED CONFORMING TO AASHTO M-33 OR M-213 BETWEEN SIDEWALK AND CURB, AROUND FIRE HYDRANTS AND UTILITY POLES.

1. ALL STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED , AND BACK FILLED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD DETAILS DRAWING NOS. D2317-D2, D2317-3, D2317-05, D2317-06, AND D2317-07 (OCT. 2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. ALL STORM SEWER CONSTRUCTED IN SIDE LOT EASEMENT SHALL BE R.C.P. (C-76, CLASS III) AND SHALL BE EMBEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD DETAILS DRAWING NOS. D2317-02, D2317-03, D2317-05, D2317-06, AND D2317-07 AS APPLICABLE.
3. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
4. ALL TRENCH BACKFILL SHALL BE IN 8' LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN EACH LIFT, AND ALL LIFTS TO BE LIFTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (-3% TO +5%) OPTIMUM MOISTURE CONTENT (ASTM O-698/AAASHTO T99).
5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.
6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASSIII).
7. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH B' BRICK WALLS UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL PROVIDE 18" MINIMUM VERTICLE CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
9. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLORE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.
11. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO ENSURE PROPER FLOW. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.
12. ALL DRIVEWAYS SHALL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURE.
13. THE CONTRACTOR(S) SHALL NOTIFY FORT BEND COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT- ENGINEERING DIVISION-PEWEE OFFICE, TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING UTILITY AND/OR PAVING CONSTRUCTION AT (281)833-7514 AND WRITTEN NOTIFICATION FORTY-EIGHT (48) HOURS AND/OR COMMENCING CONSTRUCTION.
14. ALL MANHOLES SHALL BE SET SO THAT THE TOP OF THE CONE IS NO HIGHER THAN THE ADJACENT TOP OF CURB ELEVATION, UNLESS DIRECTED OTHERWISE BY THE ENGINEER. THE FINISH TOP ELEVATION SHALL BE MET WITH PRE-CAST RINGS.
15. ALL MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE AFTER PAVING IS COMPLETE.

1. PAVEMENT SHALL BE IN ACCORDANCE WITH THE "REGULATIONS OF FORT BEND COUNTY, TEXAS FOR THE APPROVAL AND ACCEPTANCE OF INFRASTRUCTURE" AND/OR AMENDMENTS OF SAME.
2. THE CONTRACTOR(S) SHALL NOTIFY FORT BEND COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT - ENGINEERING DIVISION- PERMIT OFFICE, TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING UTILITY AND/OR PAVING CONSTRUCTION AT EMAIL: CONSTRUCTION@FORTBENDCOUNTYTX.GOV AND WRITTEN NOTIFICATION FORTY-EIGHT (48) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
3. ALL RETURNS SHALL HAVE A 25-FOOT RADIUS AT FACE OF CURB UNLESS OTHERWISE NOTED. ALL ROAD WIDTHS, CURB RADII AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.
4. GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
5. ALL INTERSECTIONS SHALL BE CONSTRUCTED WITH WHEELCHAIR RAMPS IN ACCORDANCE WITH THE GOVERNOR'S OFFICE OF TRAFFIC SAFETY MEMORANDUM DATED MAY 6, 1976, (HIGHWAY SAFETY ACT - 1973 SECTION 288). SEE TDD PED-05 SHEET. WHEELCHAIR RAMPS SHALL COMPLY WITH CURRENT "THE AMERICANS WITH DISABILITIES ACT" (A.D.A.) SPECIFICATIONS. RAMPS TO BE COLORED WITH A COLOR TO BE DETERMINED BY THE ENGINEER CONFORMING TO ASTM-C979.
6. ALL FILL IN EXISTING OR PROPOSED FORT BEND COUNTY RIGHT-OF-WAY, INCLUDING BACKDRESSING BEHIND THE CURB, SHALL BE PLACED IN MAXIMUM LOOSE LIFTS OF EIGHT INCHES (8") OR LESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT -3% TO +5% MOISTURE CONTENT AS DETERMINED BY AASHTO TEST METHOD T-99.
7. ALL CONCRETE PAVING TO BE 28-FOOT B-B SIX (6) INCH REINFORCED CONCRETE WITH SIX (6) INCH REINFORCED CONCRETE CURBS, UNLESS OTHERWISE NOTED. ALL CONCRETE FOR PAVING TO BE 5 1/2 SACK, 3500 PSI - 28 DAYS.
8. PAVEMENT REINFORCEMENT FOR 28-FOOT B-B SIX (6) INCH REINF. CONCRETE SHALL BE #4, GRADE 60 STEEL REBARS 20'-0" INCH CENTERS FOR LONGITUDINAL STEEL AND ON 16'-0" INCH CENTERS FOR TRANSVERSE STEEL. REINFORCEMENT SHALL BE PLACED ON CHAIRS SPACED 36" CENTER TO CENTER. BENT BARS SHALL BE GRADE 40.
9. REFER TO THE LATEST FORT BEND COUNTY PAVEMENT MARKING DETAILS AND FORT BEND COUNTY SUBDIVISION DATE NOVEMBER 15, 2005.
10. SIDEWALK BOLLINOSES CONSTRUCTED IN EXPLANADES SHALL BE SIX INCHES (6") THICK.
11. WHEEL CHAIR RAMPS SHALL BE TYPE "7" RAMPS. SEE TDDT PED-12A DETAIL SHEET.

1. FORT BENO COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL NOTIFY FORT BENO COUNTY ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOUR NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAYING AT CONSTRUCTION ~~FOR FORT BENO COUNTY TX, GOV.~~
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BENO COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT OF WAYS.
4. ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BENO COUNTY "RULES, REGULATIONS AND REQUIREMENTS RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS" AS CURRENTLY AMENDED.
5. ALL ROAD WIDTHS, CURB RADI AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.
6. A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS.
7. ALL CONCRETE PAVEMENT SHALL BE 5 1/2 SACK CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 80 FEET.
8. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
9. 4" x 12" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.
10. AT ALL INTERSECTION LOCATIONS, TYPE 7 RAMPS SHALL BE PLACED IN ACCORDANCE WITH TXDOT PED-12A STANDARD DETAIL SHEET, A.D.A. - HANDICAP RAMPS SHALL BE INSTALLED WITH STREET PAVING AT ALL INTERSECTIONS AND COMPLY WITH CURRENT A.D.A. REGULATIONS.
11. CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5' OF RAMPS.
12. ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A.D.A. WHEEL CHAIR RAMPS INSTALLED.
13. GUIDELINES ARE SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STOPPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION - BOTH DAY AND NIGHT.
14. ALL R1-1 STOP SIGNS SHALL BE 30"x30" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
15. STREET NAME SIGNAGE SHALL BE ON A 9" HIGH SIGN PLAT BLADE W/ REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.
16. BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF OF THE CENTERLINE OF THE STREET ON THE SAME SIDE OF THE HYDRANT.
17. THE PROJECT AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY INSPECTORS DESIGNATED BY FORT BENO COUNTY. NO SUCH INSPECTIONS SHALL RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR REJECT ANY OF THE WORK OR AS CONSTRUCTION PROCEEDS, SHALL BE CONSIDERED AN ACCEPTANCE OF THE WORK OR ANY PART THEREOF. NO RELIEF OR ANY PROVISION OF THIS PROJECT SHALL BE CONSTRUED TO IMPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER.

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



Professional Engineer Seal for Blair M. Bozdarth, State of Texas, License No. 16516, dated 4-12-18.

DATE: _____

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2100.

so that underground line can be marked. This verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

Date: _____

CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CNP Natural Gas lines correctly - not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.

Date: _____

(This Signature verifies existing underground facilities - not to be used for conflict verification.)

[illegible][illegible][illegible][illegible]

GRAND MISSION MUNICIPAL

UTILITY DISTRICT NO. 2
FORT BEND COUNTY, TEXAS

 JONES CARTER

Texas Board of Professional Engineers Registration No. F-2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 933-

GRAND MISSION ESTATES SEC 21

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

CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & STREET/BRIDGE
-------	-------------------------

11/2/18

WASTEWATER	STORM WATER QUALITY
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WFO 2

112604-4/673	
070014	0101000

11

127-12-68

FILE NO: _____ FOR CITY OF HOUSTON USE ONLY

JOB NO: 05298-0173-00

DATE: APRIL 2018

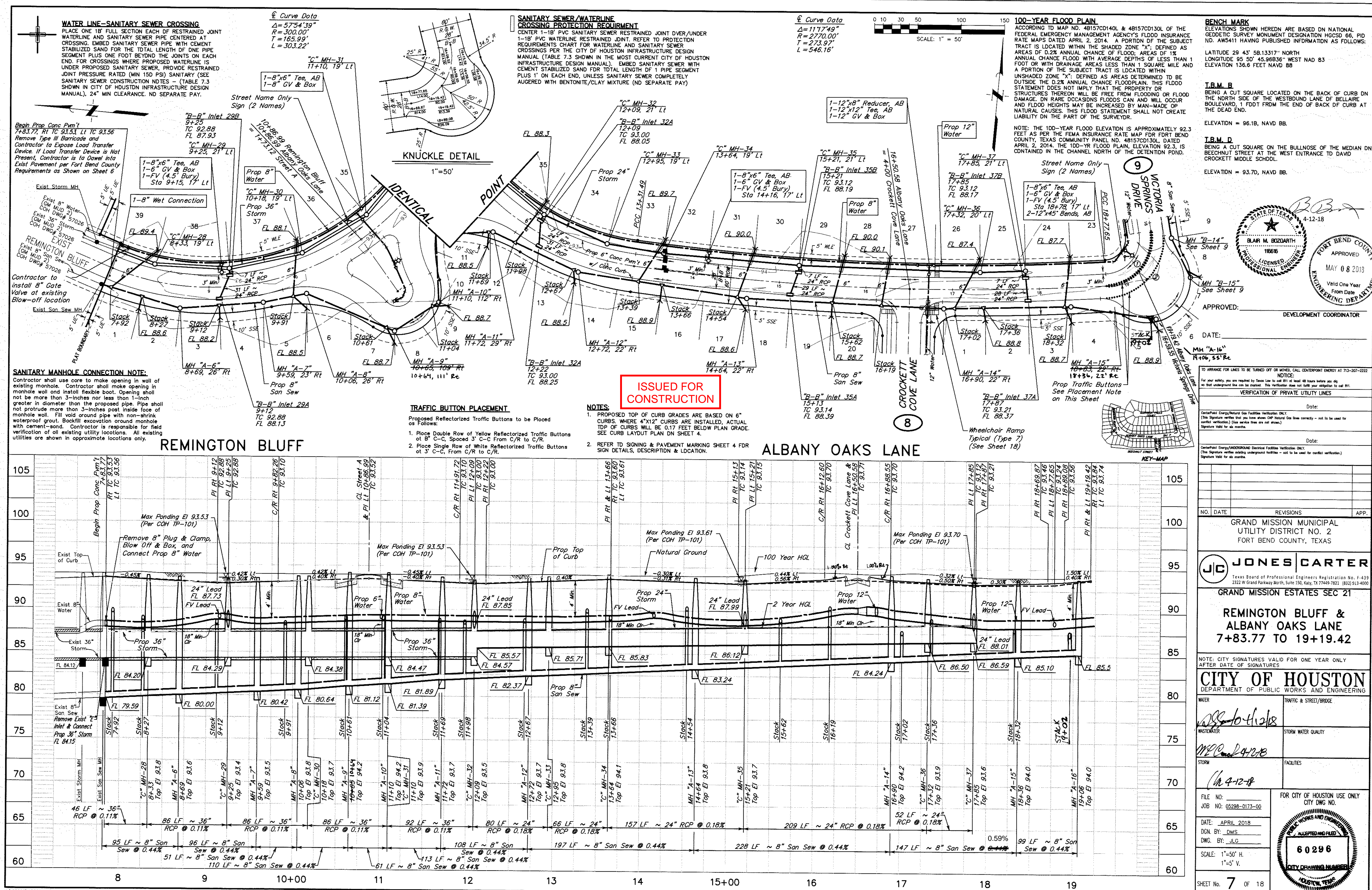
DGN. DT. DMS
DWG BY: JLG

SCALE: 1"=100'

CITY DRAWING NUMBER

6

SHEET NO. 0 OF 10



BENCH MARK

ELEVATIONS SHOWN HEREIN ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HGCS 66, PID NO. AWS411 HAVING PUBLISHED INFORMATION AS FOLLOWS:

LATITUDE 29 43' 58.1331" NORTH
LONGITUDE 95 50' 45.96836" WEST NAD 83
ELEVATION 136.6 FEET NAVD 88

T.B.M. B

BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE DEAD END.

ELEVATION = 96.18, NAVD 88.

T.B.M. D

BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON BECHNUT STREET AT THE WEST ENTRANCE TO DAVID CROCKETT MIDDLE SCHOOL.

ELEVATION = 93.70, NAVD 88.

APPROVED:

APPROVED:

APPROVED:

DATE: 4-12-18

FOR CITY OF HOUSTON USE ONLY
CITY DWS NO. 60296

NO.	DATE	REVISIONS	APP.
1	4-12-18	ISSUED FOR CONSTRUCTION	

GRAND MISSION MUNICIPAL UTILITY DISTRICT NO. 2
FORT BEND COUNTY, TEXAS

JONES CARTER
Texas Board of Professional Engineers Registration No. F-439
2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 913-4000

GRAND MISSION ESTATES SEC 21

REMINGTON BLUFF & ALBANY OAKS LANE
7+83.77 TO 19+19.42

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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER:

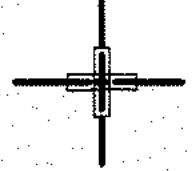
STORM:

TRAFFIC & STREET/BIDGE:

STORM WATER QUALITY:

FACILITIES:

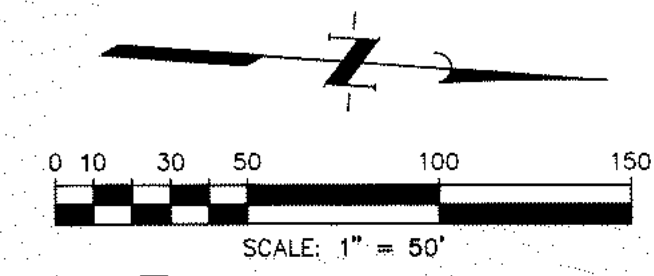
ISSUED FOR CONSTRUCTION



WATER LINE-SANITARY SEWER CROSSING
PLACE ONE 18" FULL SECTION EACH OF RESTRAINED JOINT WATERLINE AND SANITARY SEWER PIPE CENTERED AT CROSSING. EMBED SANITARY SEWER PIPE WITH CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS ONE FOOT BEYOND THE JOINTS ON EACH END. FOR CROSSINGS WHERE PROPOSED WATERLINE IS UNDER PROPOSED SANITARY SEWER, PROVIDE RESTRAINED JOINT PRESSURE RATED (MIN 150 PSI) SANITARY (SEE SANITARY SEWER CONSTRUCTION NOTES - (TABLE 7.3 SHOWN IN CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL), 24" MIN CLEARANCE. NO SEPARATE PAY.

SANITARY SEWER/WATERLINE CROSSING PROTECTION REQUIREMENT
CENTER 1-18" PVC SANITARY SEWER RESTRAINED JOINT OVER/UNDER 1-18" PVC WATERLINE RESTRAINED JOINT. REFER TO PROTECTION REQUIREMENTS CHART FOR WATERLINE AND SANITARY SEWER CROSSINGS PER THE CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL (TABLE 7.3 SHOWN IN THE MOST CURRENT CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL). EMBED SANITARY SEWER WITH CEMENT STABILIZED SAND FOR TOTAL LENGTH OF 1 PIPE SEGMENT PLUS 1' ON EACH END, UNLESS SANITARY SEWER COMPLETELY AUGERED WITH BENTONITE/CLAY MIXTURE (NO SEPARATE PAY)

- NOTES:**
- PROPOSED TOP OF CURB GRADES ARE BASED ON 6" CURBS, WHERE 4"x12" CURBS ARE INSTALLED, ACTUAL TOP OF CURBS WILL BE 0.17 FEET BELOW PLAN GRADE. SEE CURB LAYOUT PLAN ON SHEET 4.
 - REFER TO SIGNING & PAVEMENT MARKING SHEET 4 FOR SIGN DETAILS, DESCRIPTION & LOCATION.



100-YEAR FLOOD PLAIN
ACCORDING TO MAP NO. 48157C0140L & 48157C0130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS DATED APRIL 2, 2014. A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN THE SHADZON ZONE "X", DEFINED AS AREAS OF 0.2% ANNUAL CHANCE OF FLOOD. AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE AND A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN UNSHADZONED ZONE "X", DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

NOTE: THE 100-YEAR FLOOD ELEVATION IS APPROXIMATELY 92.3 FEET AS PER THE FEMA INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS COMMUNITY PANEL NO. 48157C0130L, DATED APRIL 2, 2014. THE 100-YR FLOOD PLAIN, ELEVATION 92.3, IS CONTAINED IN THE CHANNEL NORTH OF THE DETENTION POND.

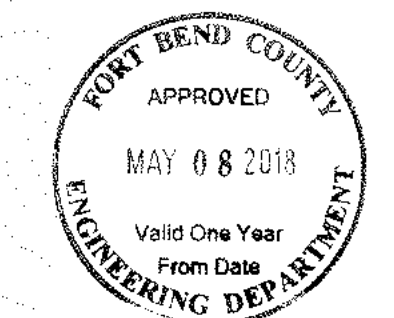
BENCH MARK
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HGCSO 66, P10 NO. AWS411 HAVING PUBLISHED INFORMATION AS FOLLOWS:
LATITUDE 29 43' 58.13317" NORTH
LONGITUDE 95 50' 45.96836" WEST NAD 83
ELEVATION 136.6 FEET NAVD 88

T.B.M. B
BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE CEAO ENO.
ELEVATION = 96.18, NAVD 88.

T.B.M. D
BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON BECHNUT STREET AT THE WEST ENTRANCE TO DAVID CROCKETT MIDDLE SCHOOL.
ELEVATION = 93.70, NAVD 88.

CROSS WALK NOTE
CROSS SLOPE THROUGH CROSS WALK SHALL NOT EXCEED 2.0% IN ACCORDANCE WITH ADA REQUIREMENTS.
CONTRACTOR TO ENSURE CROSS SLOPE DOES NOT EXCEED 2.0%.

ISSUED FOR CONSTRUCTION



APPROVED: _____
DEVELOPMENT COORDINATOR

DATE: _____

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE:
For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground lines can be marked. This Verification does not fulfill your obligation to call 811.

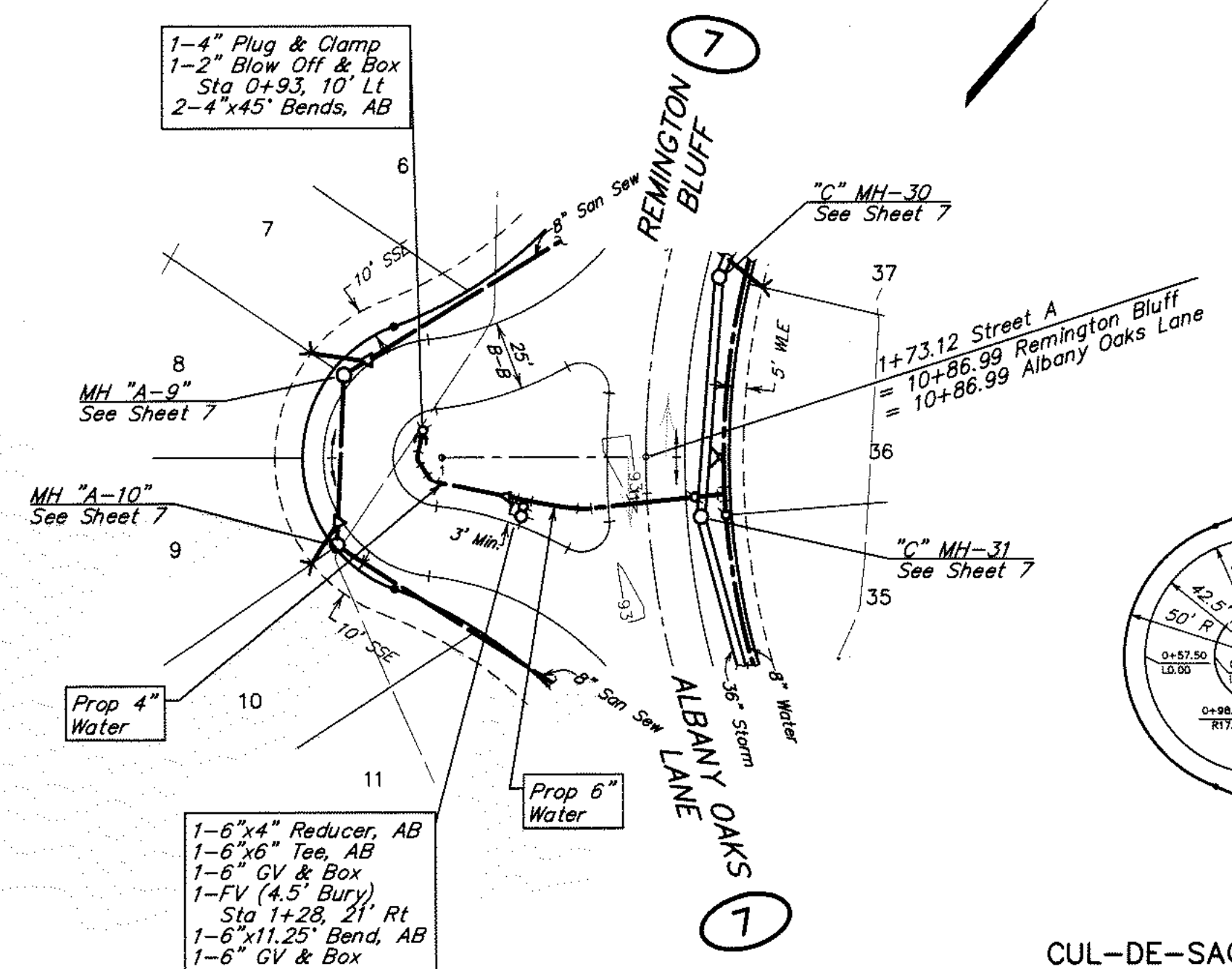
VERIFICATION OF PRIVATE UTILITY LINES

Date: _____

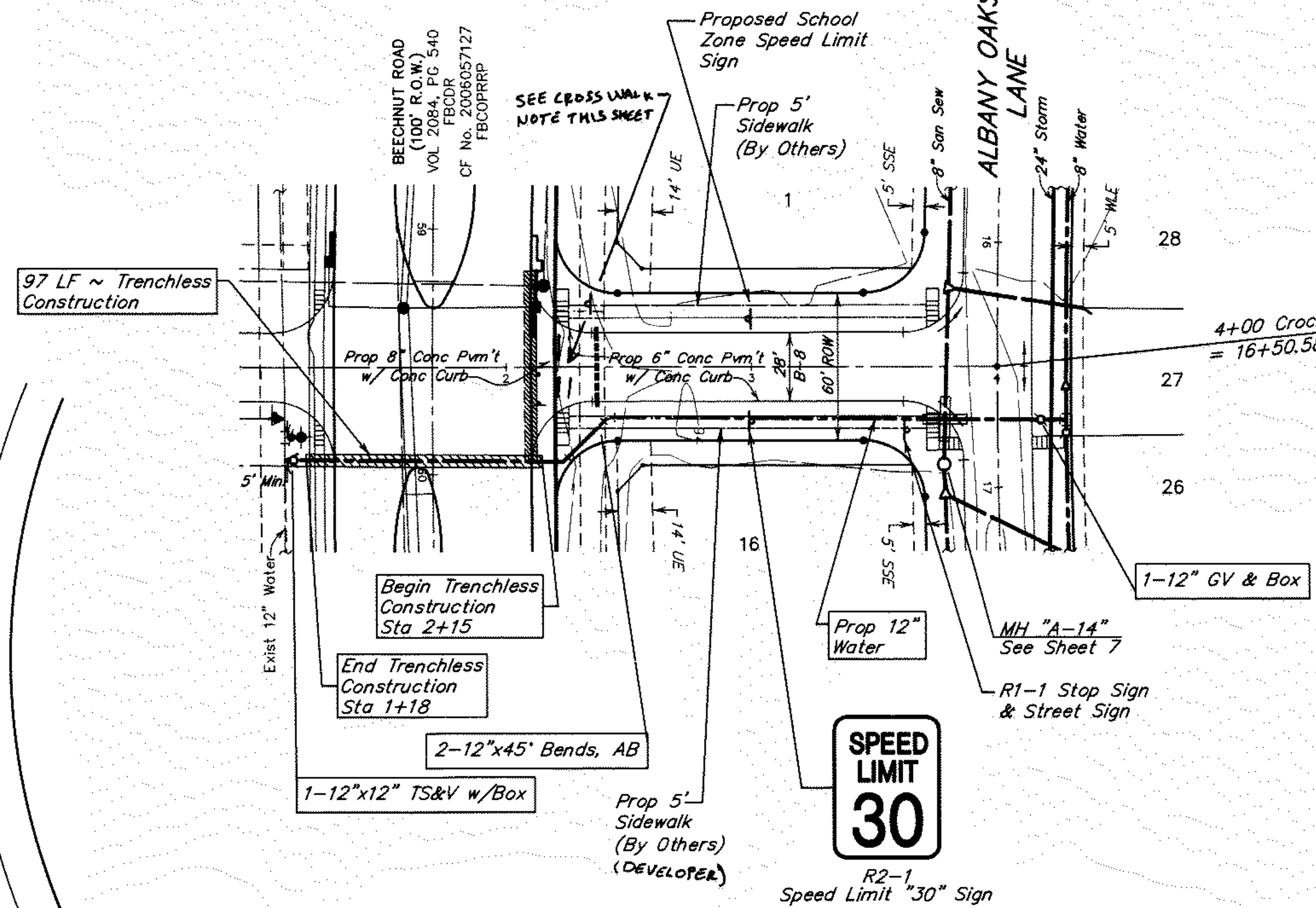
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CPEP Natural Gas lines correctly - not to be used for conflict verification.) (See service lines are not shown.)
Signature Valid for six months.

Date: _____

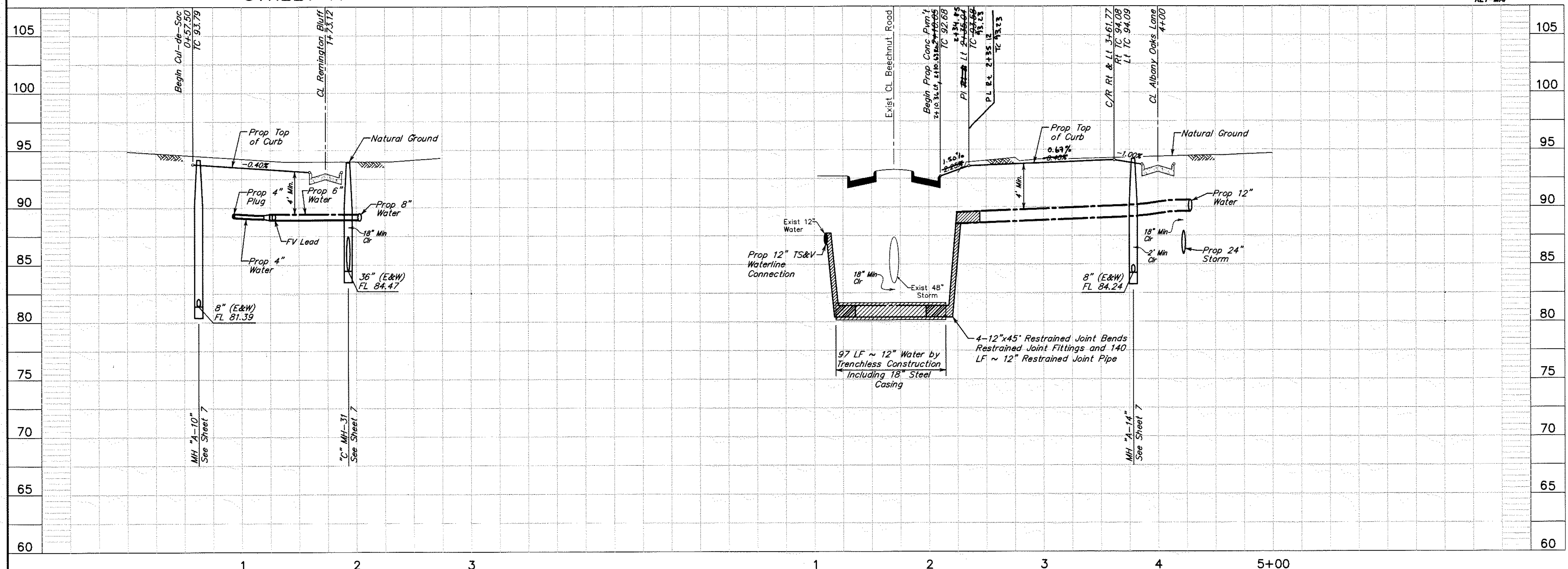
CenterPoint Energy/Underground Electrical Facilities Verification ONLY.
(This Signature verifies existing underground facilities - not to be used for conflict verification.)
Signature Valid for six months.



CUL-DE-SAC DETAIL
1"=50'



CROCKETT COVE LANE



NO.	DATE	REVISIONS	APP.
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GRAND MISSION MUNICIPAL UTILITY DISTRICT NO. 2
FORT BEND COUNTY, TEXAS

JONES CARTER
Texas Board of Professional Engineers Registration No. 1-439
2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 913-4000

GRAND MISSION ESTATES SEC 21
STREET A
0+00 TO 1+73.12
CROCKETT COVE LANE
1+00 TO 4+00

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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & STREET/BRIDGE
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES

FILE NO: _____
JOB NO: 05298-0173-00

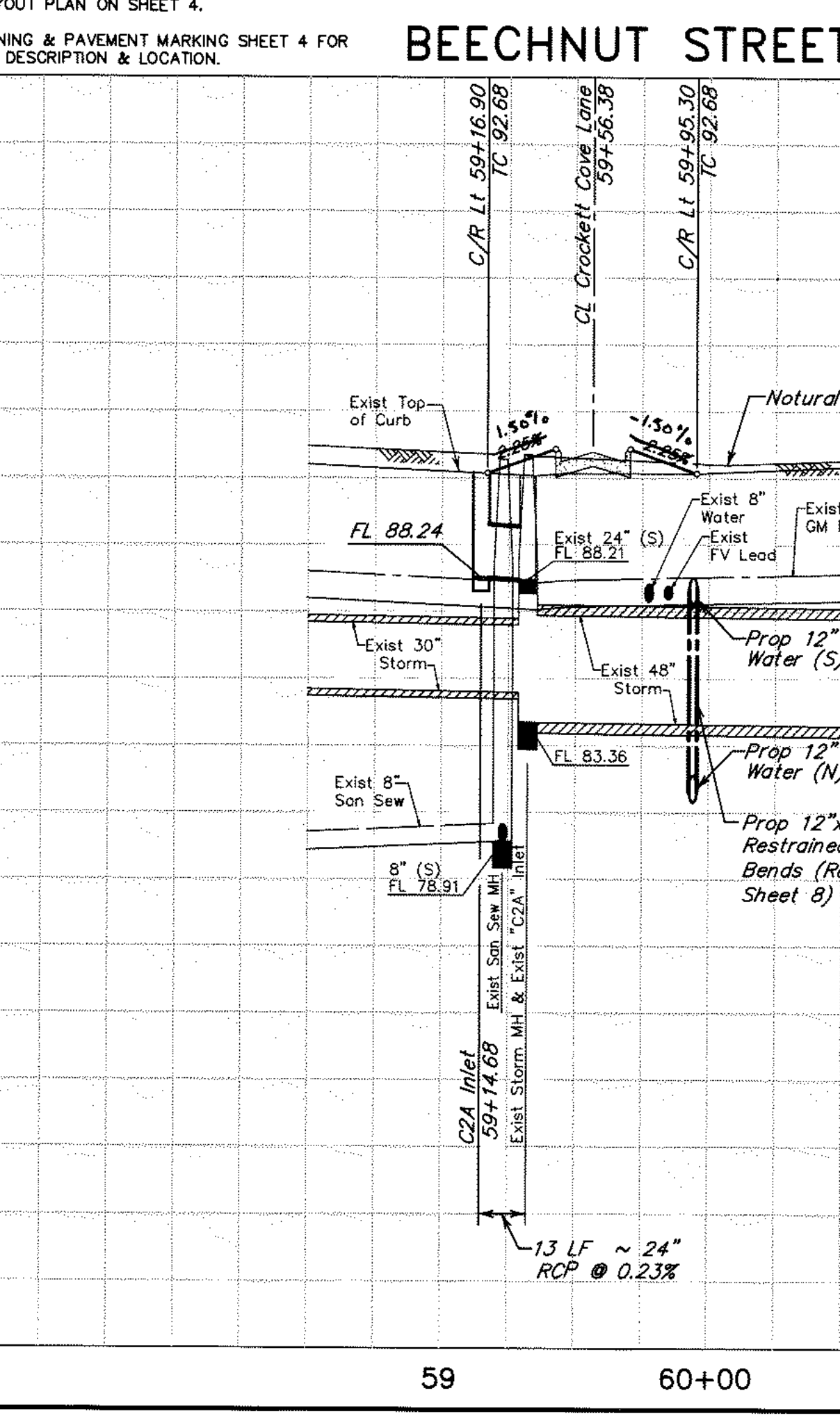
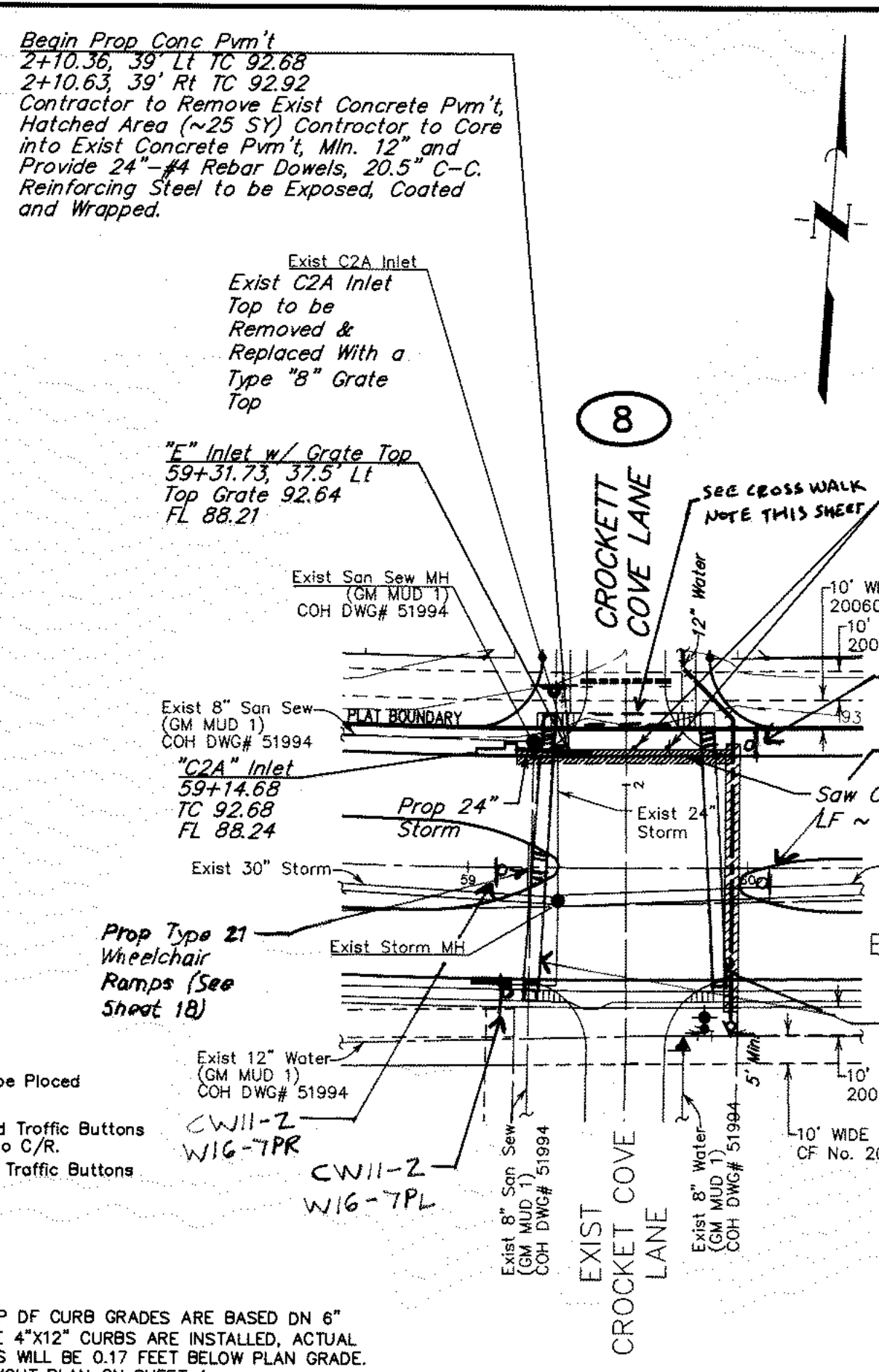
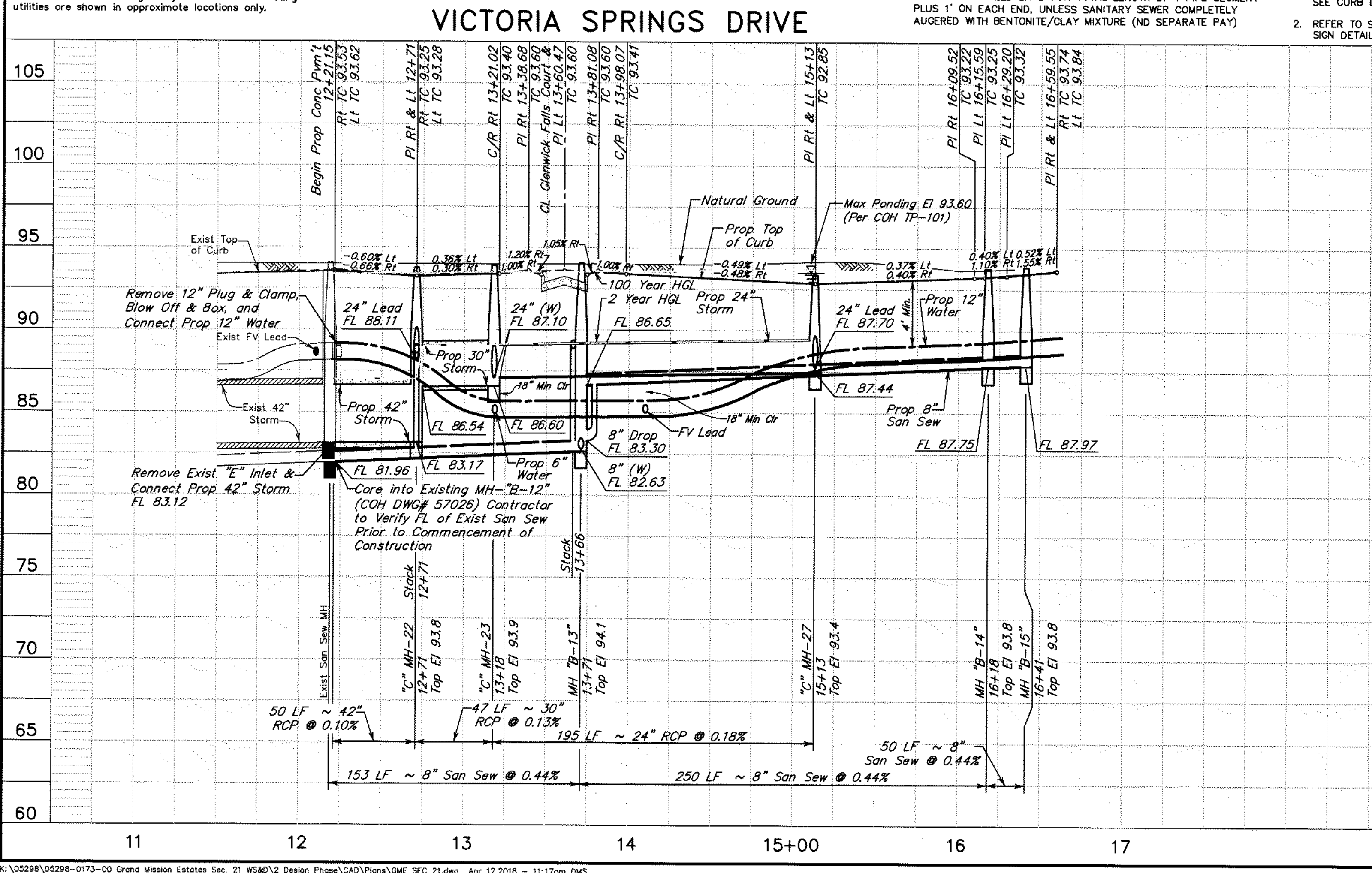
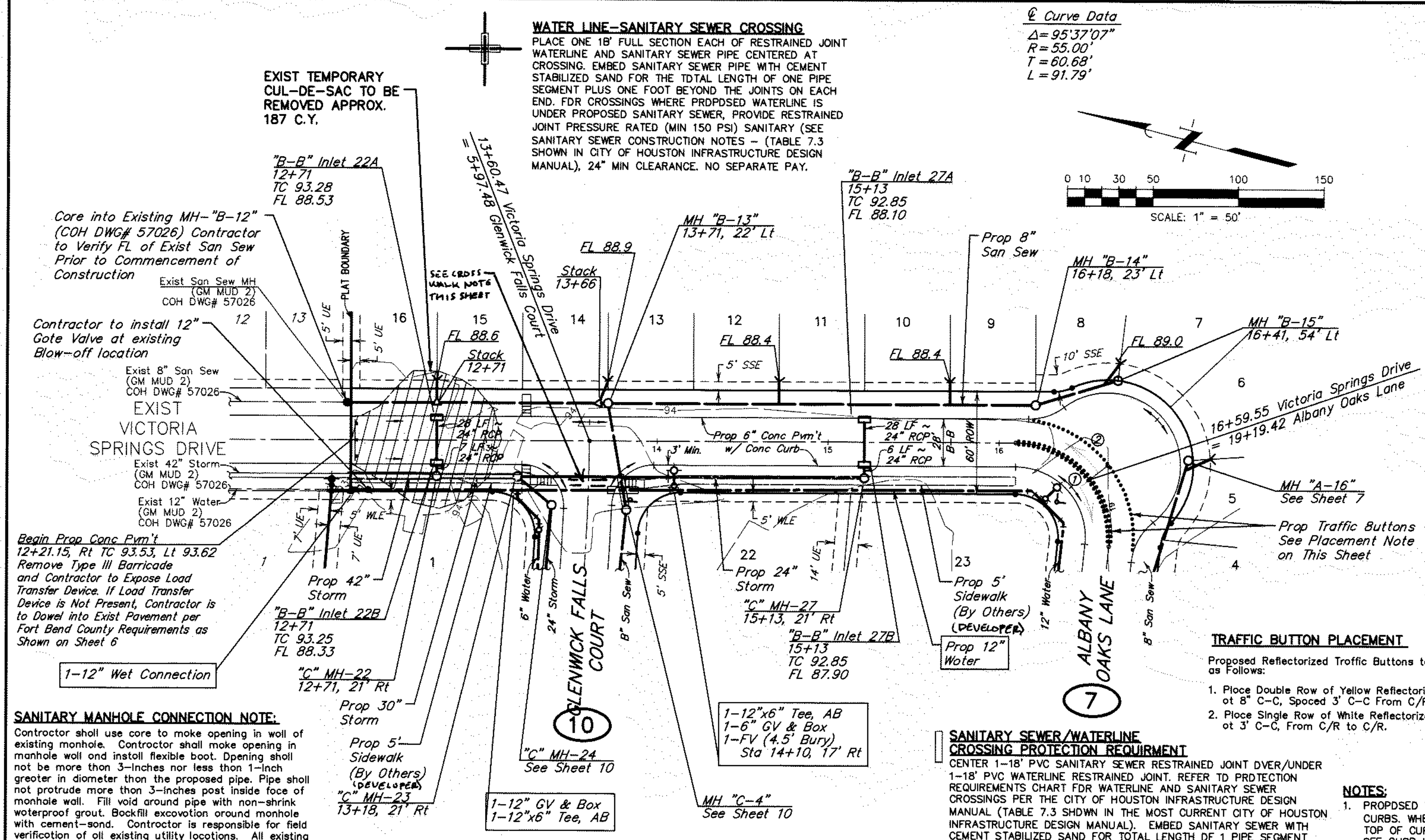
DATE: APRIL 2018
DGN. BY: DMS
DWG. BY: JLG

SCALE: 1"=50' H.
1"=5' V.

SHEET No. 8 OF 18

FOR CITY OF HOUSTON USE ONLY
CITY DOW NO.

60286
CITY DRAWING NUMBER



BENCH MARK
ELEVATIONS SHOWN HEREDN ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HGCD 68, PID NO. AW5411 HAVING PUBLISHED INFORMATION AS FOLLOWS:
LATITUDE 29 43' 58.13317" NORTH
LONGITUDE 95 50' 45.96836" WEST NAD 83
ELEVATION 136.6 FEET NAVD 88

T.B.M. B
BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE DEAD END.
ELEVATION = 96.18, NAVD 88.

T.B.M. D
BEING A CUT SQUARE ON THE BULLNDSE OF THE MEDIAN ON BEECHNUT STREET AT THE WEST ENTRANCE TO DAVID CROCKETT MIDDLE SCHOOL.
ELEVATION = 93.70, NAVD 88.

APPROVED: _____
DEVELOPMENT COORDINATOR

DATE: _____

NOTICE:
TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222
For your safety, you are required by Texas law to call 811 at least 48 hours before you dig so that underground lines can be marked. This verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES
Date: _____
Signature: _____

VERIFICATION OF PUBLIC UTILITY LINES
Date: _____
Signature: _____

NO. DATE REVISIONS APP.

GRAND MISSION MUNICIPAL UTILITY DISTRICT NO. 2 FORT BEND COUNTY, TEXAS

J.C. JONES CARTER
Texas Board of Professional Engineers Registration No. F-439
2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 913-4000

GRAND MISSION ESTATES SEC 21 VICTORIA SPRINGS DRIVE 12+21.15 TO 16+59.55 BEECHNUT STREET 58+50 TO 60+50

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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER
TRAFFIC & STREET/BIDGE

WASTEWATER
STORM WATER QUALITY

STORM
FACILITIES

FILE NO.: _____
JOB NO.: 05298-0173-00

DATE: APRIL 2018
DGN. BY: DMS
DWG. BY: JLG

SCALE: 1"=50' H.
1"=5' V.

FOR CITY OF HOUSTON USE ONLY
CITY NO. _____
CITY WORKS AND ENGINEERING
ACCEPTED AND FILED
60296
CITY DRAWING NUMBER
HOUSTON, TEXAS

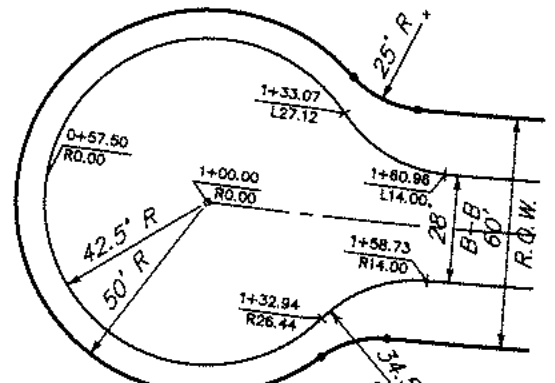
SHEET NO. 9 OF 18

FILL NOTES

- 1.) DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES SHALL BE FILLED AS SHOWN WITH MATERIAL FROM EXISTING ADJACENT SLOPE BANKS IN MAXIMUM 5' LOOSE LIFTS AND COMPACTED TO 95% PROCTOR DENSITY AS PER AASHTO TEST METHOD T-99. (-3% TO +5%) OPTIMUM MOISTURE CONTENT.
- 2.) DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES UNDER PROPOSED CONCRETE PAVEMENT SHALL BE CLEANED, MUCKED OUT AND SCARIFIED TO A MINIMUM DEPTH OF 6" AND FILLED AS SPECIFIED ABOVE IN FILL NOTE NO. 1. NO SEPARATE PAY.
- 3.) ROADWAY EMBANKMENT: STRIP 3" OF VEGETATION FROM AREA TO BE FILLED AND RE-COMPACT SOIL TO 95% PROCTOR DENSITY AT -3% TO +5% OPTIMUM MOISTURE CONTENT. PLACE FILL MATERIAL AS SPECIFIED IN FILL NOTE NO. 1.

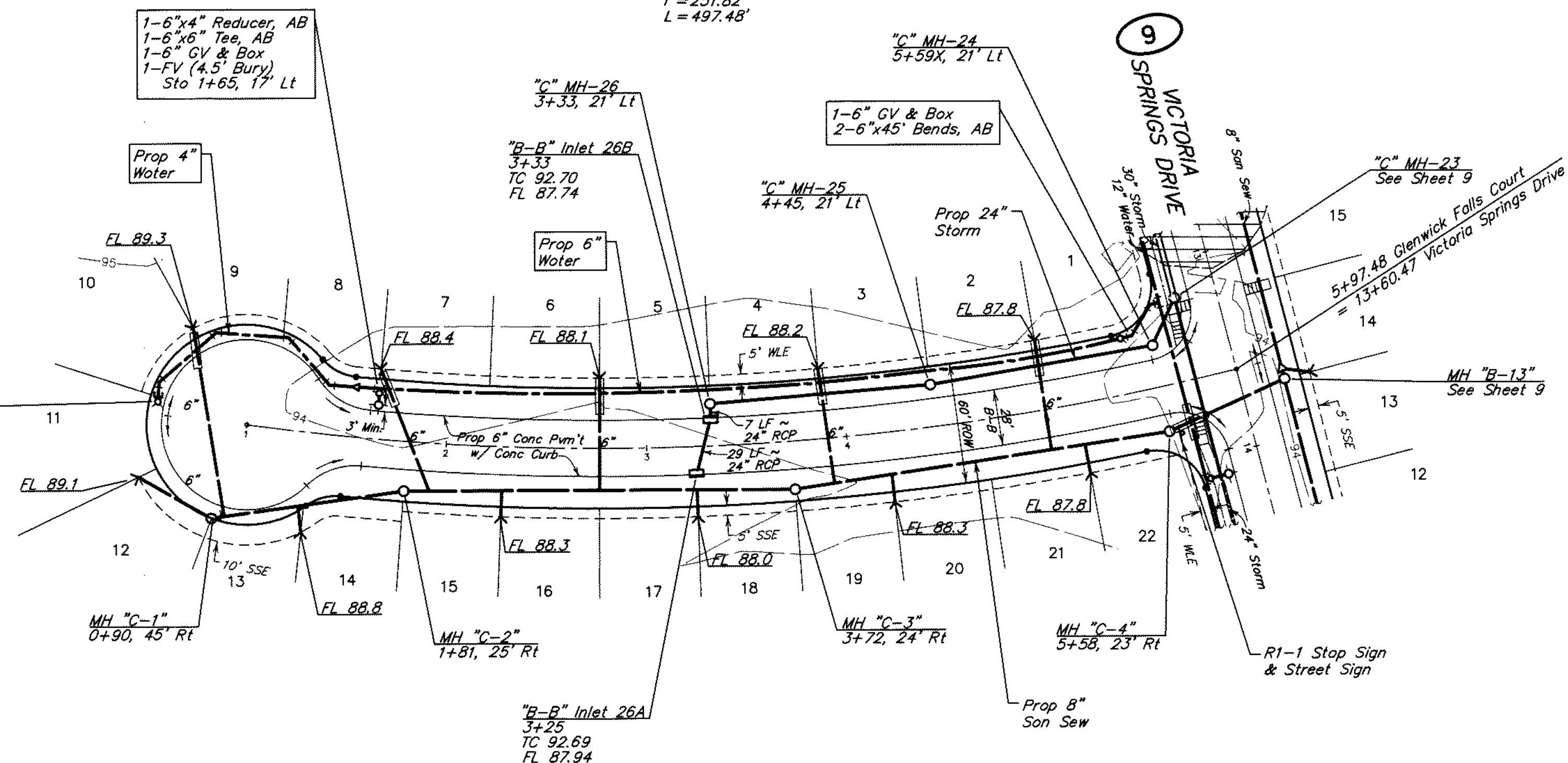
WATER LINE-SANITARY SEWER CROSSING
PLACE ONE 18" FULL SECTION EACH OF RESTRAINED JOINT WATERLINE AND SANITARY SEWER PIPE CENTERED AT CROSSING. EMBED SANITARY SEWER PIPE WITH CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS ONE FOOT BEYOND THE JOINTS ON EACH END. FOR CROSSINGS WHERE PROPOSED WATERLINE IS UNDER PROPOSED SANITARY SEWER, PROVIDE RESTRAINED JOINT PRESSURE RATED (MIN 150 PSI) SANITARY (SEE SANITARY SEWER CONSTRUCTION NOTES - (TABLE 7.3 SHOWN IN CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL), 24" MIN CLEARANCE. NO SEPARATE PAY.

1-4" Plug & Clamp
1-2" Blow Off & Box
Sta 0+54.5, 5' Lt
4-4"x45" Bends, AB



CUL-DE-SAC DETAIL
1"=50'

Curve Data
 $\Delta = 21^\circ 55' 33''$
 $R = 1300.00'$
 $T = 251.82'$
 $L = 497.48'$

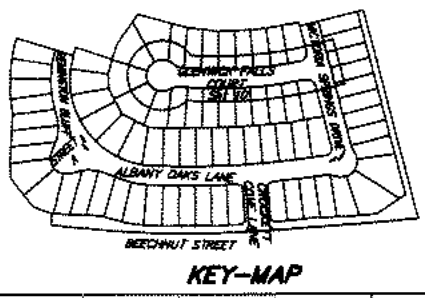


SANITARY SEWER/WATERLINE CROSSING PROTECTION REQUIREMENT

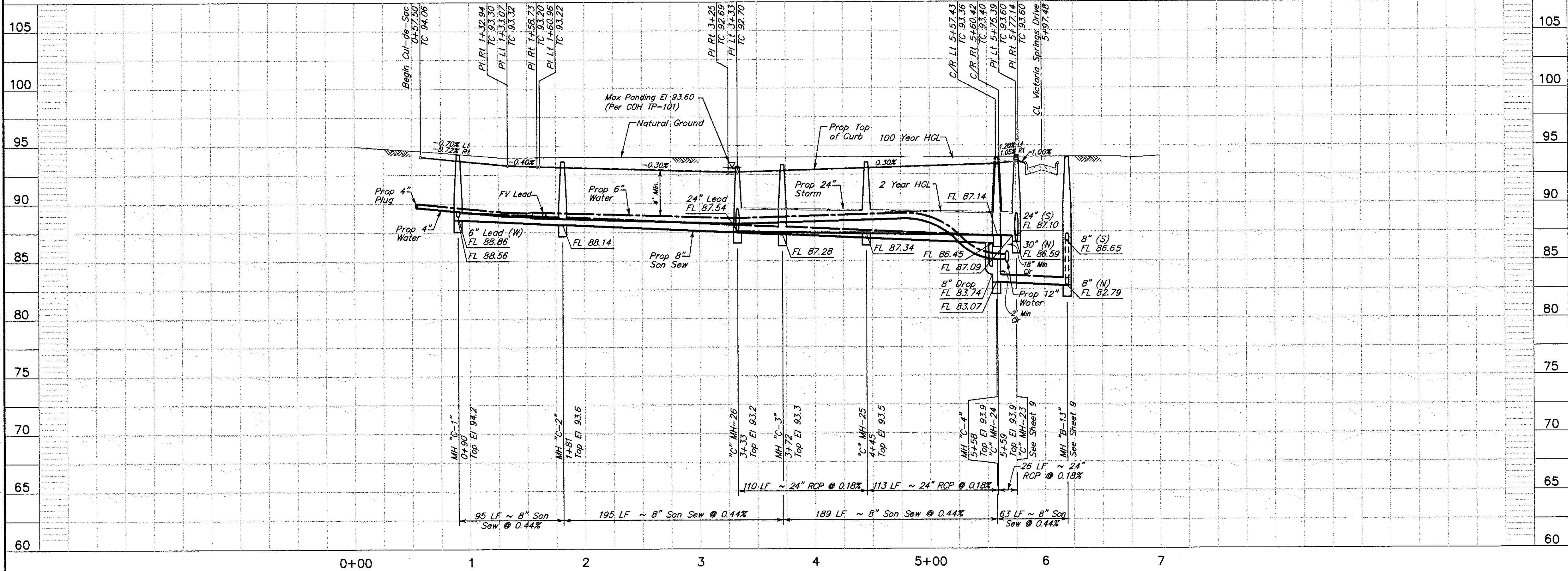
CENTER 18" PVC SANITARY SEWER RESTRAINED JOINT OVER/UNDER 18" PVC WATERLINE RESTRAINED JOINT. REFER TO PROTECTION REQUIREMENTS CHART FOR WATERLINE AND SANITARY SEWER CROSSINGS PER THE CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL (TABLE 7.3 SHOWN IN THE MOST CURRENT CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL). EMBED SANITARY SEWER WITH CEMENT STABILIZED SAND FOR TOTAL LENGTH OF 1 PIPE SEGMENT PLUS 1' ON EACH END, UNLESS SANITARY SEWER COMPLETELY AUGERED WITH BENTONITE/CLAY MIXTURE (NO SEPARATE PAY)

NOTES:

1. PROPOSED TOP OF CURB GRADES ARE BASED ON 6" CURBS, WHERE 4"x12" CURBS ARE INSTALLED, ACTUAL TDP OF CURBS WILL BE 0.17 FEET BELOW PLAN GRADE. SEE CURB LAYOUT PLAN ON SHEET 4.
2. REFER TO SIGNING & PAVEMENT MARKING SHEET 4 FOR SIGN DETAILS, DESCRIPTION & LOCATION.



GLENWICK FALLS COURT



100-YEAR FLOOD PLAIN

ACCORDING TO MAP NO. 48157CD140L & 48157CD130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS DATED APRIL 2, 2014. A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN THE SHADED ZONE "X", DEFINED AS AREAS OF 0.2% ANNUAL CHANCE OF FLOOD. AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE AND A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN UNSHADED ZONE "X", DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE, ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

NOTE: THE 100-YEAR FLOOD ELEVATION IS APPROXIMATELY 92.3 FEET AS PER THE FEMA INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS COMMUNITY PANEL NO. 48157CD130L, DATED APRIL 2, 2014. THE 100-YR FLOOD PLAIN, ELEVATION 92.3, IS CONTAINED IN THE CHANNEL NORTH OF THE DETENTION POND.

BENCH MARK

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HGCSO 66, PID NO. AWS411 HAVING PUBLISHED INFORMATION AS FOLLOWS:

LATITUDE 29 43' 58.1317" NORTH
LONGITUDE 95 50' 45.96836" WEST NAD 83
ELEVATION 136.6 FEET NAVD 88

I.B.M. B

BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE DEAD END.

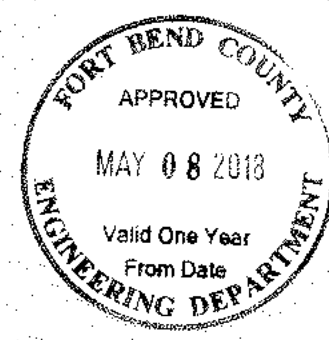
ELEVATION = 96.18, NAVD 88.

I.B.M. D

BEING A CUT SQUARE ON THE BULBDOSE OF THE MEDIAN ON BEECHNUT STREET AT THE WEST ENTRANCE TO DAVID CROCKETT MIDDLE SCHOOL.

ELEVATION = 93.70, NAVD 88.

ISSUED FOR CONSTRUCTION



APPROVED: _____
DEVELOPMENT COORDINATOR

DATE: _____

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222
NOTICE:
For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground lines can be marked. This verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

Date: _____
CenterPoint Energy/Nebraska Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CPE Natural Gas lines correctly - not to be used for conflict verification.) (See service lines are not shown.)
Signatures Valid for six months.

Date: _____
CenterPoint Energy/Nebraska Electrical Facilities Verification ONLY.
(This Signature verifies existing underground facilities - not to be used for conflict verification.)
Signatures Valid for six months.

NO. DATE REVISIONS APP.
GRAND MISSION MUNICIPAL
UTILITY DISTRICT NO. 2
FORT BEND COUNTY, TEXAS

JC JONES CARTER
Texas Board of Professional Engineers Registration No. F-4339
2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7822 (832) 913-4000

GRAND MISSION ESTATES SEC 21

GLENWICK FALLS COURT
0+00 TO 1+73.12

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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

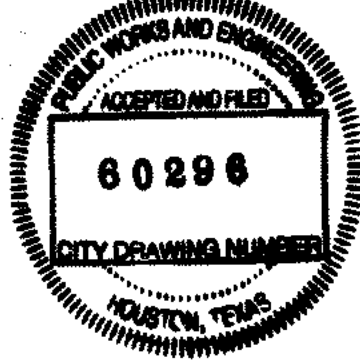
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WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES

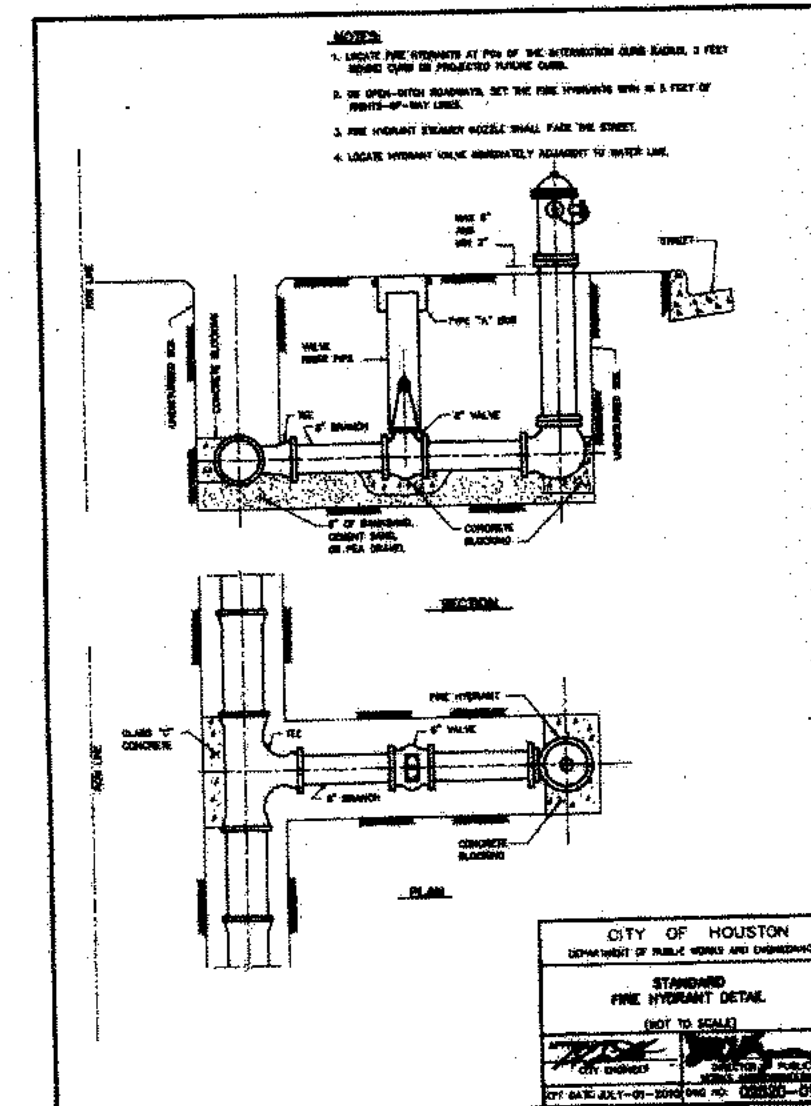
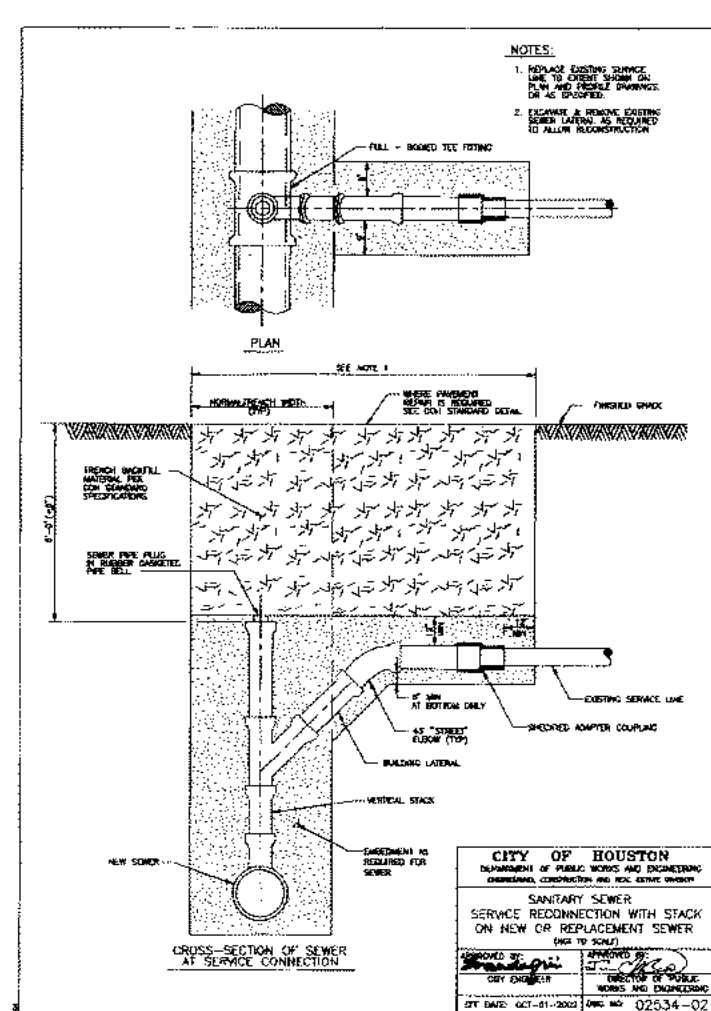
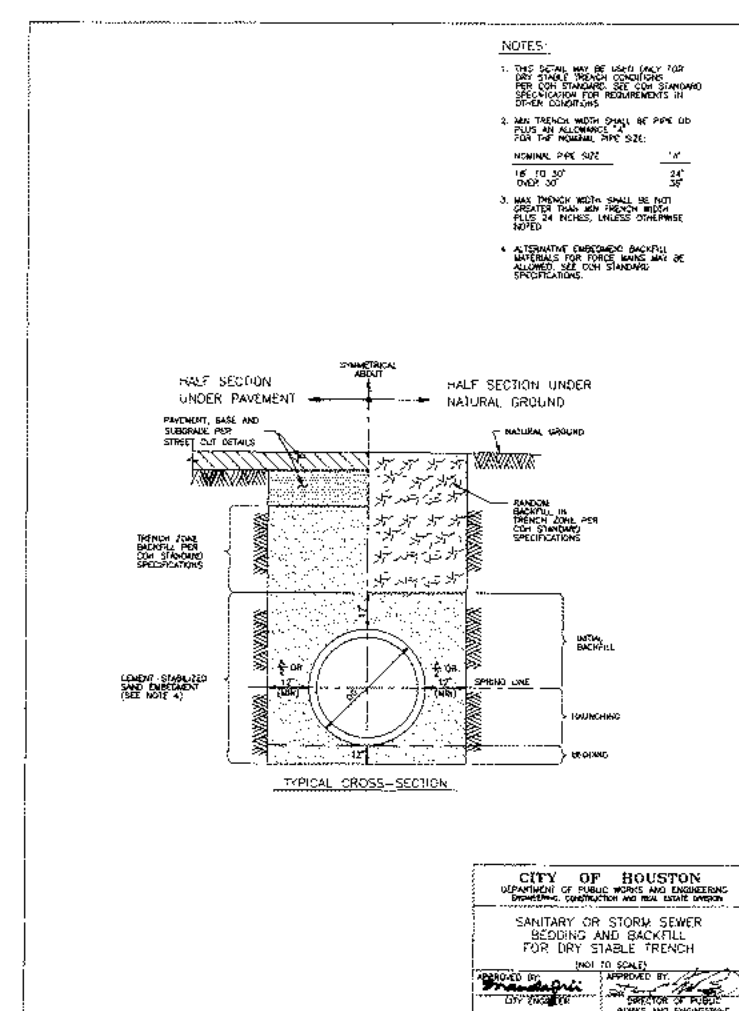
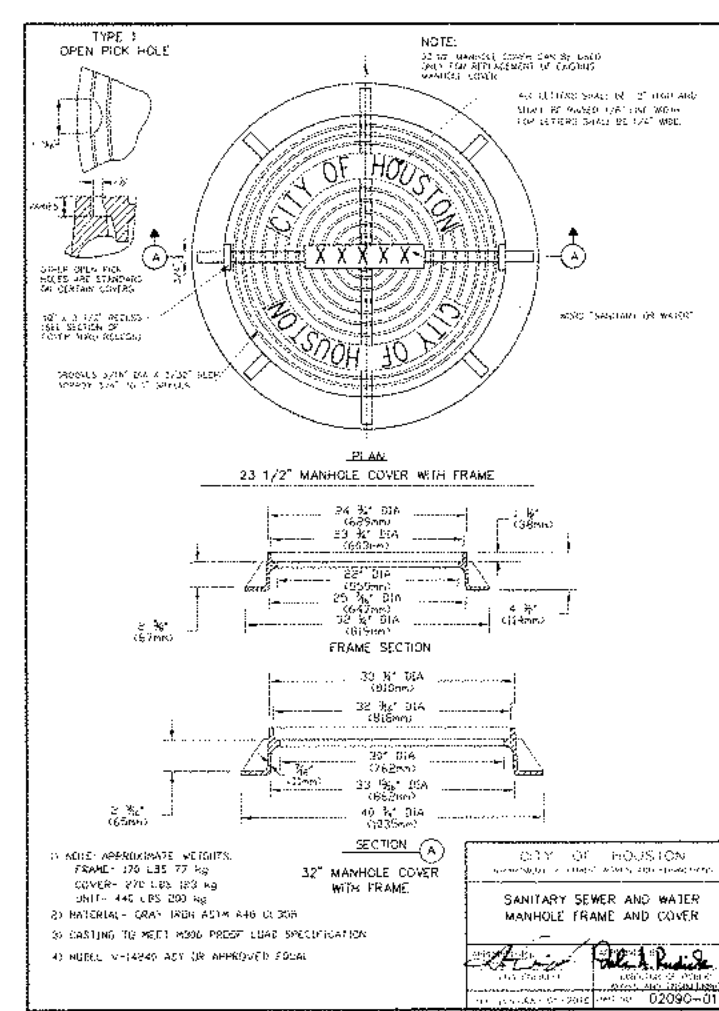
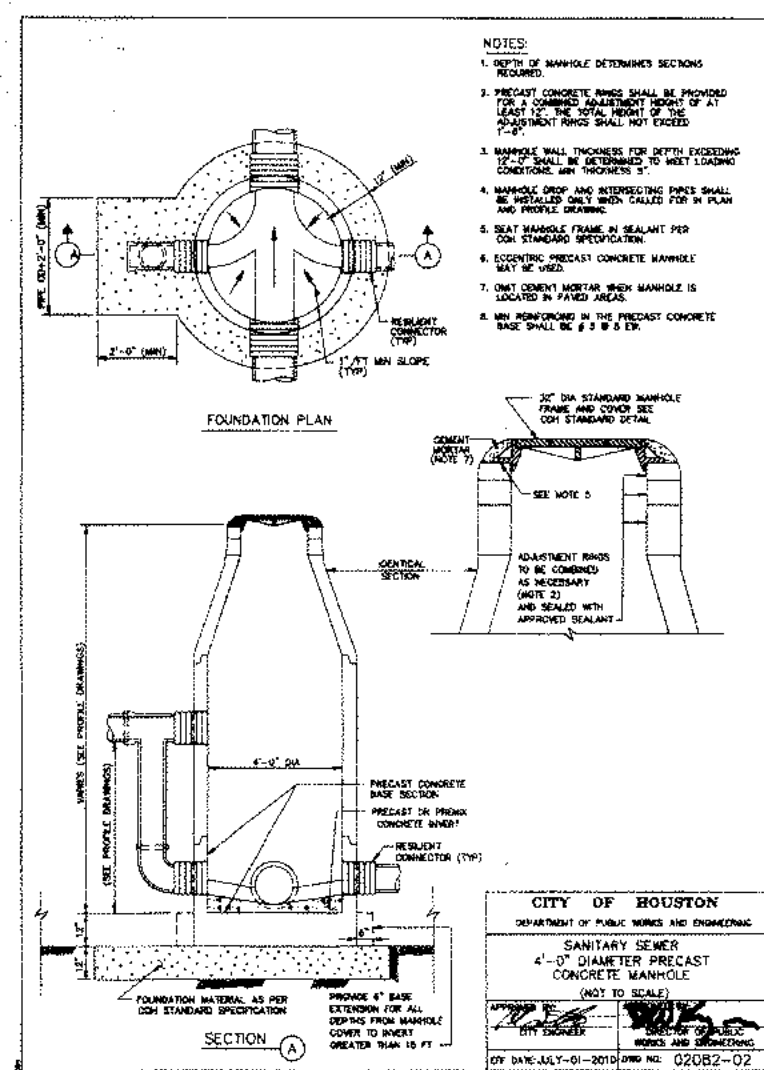
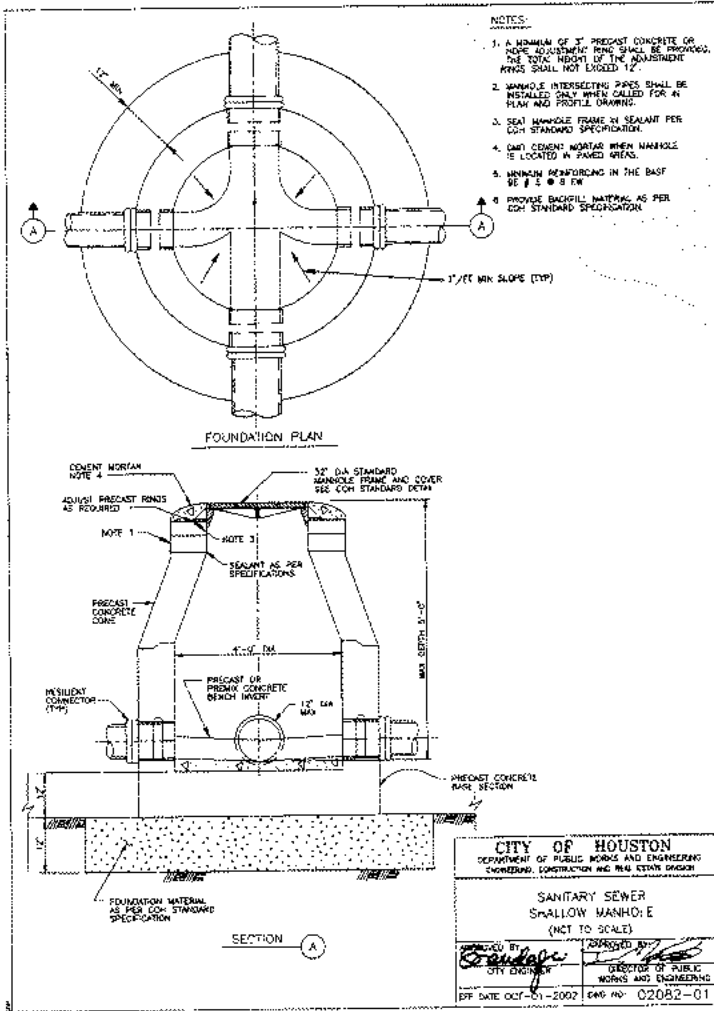
FILE NO: _____
JOB NO: 05298-0173-00

DATE: APRIL 2018
DGN. BY: DMS
DWG. BY: JLG

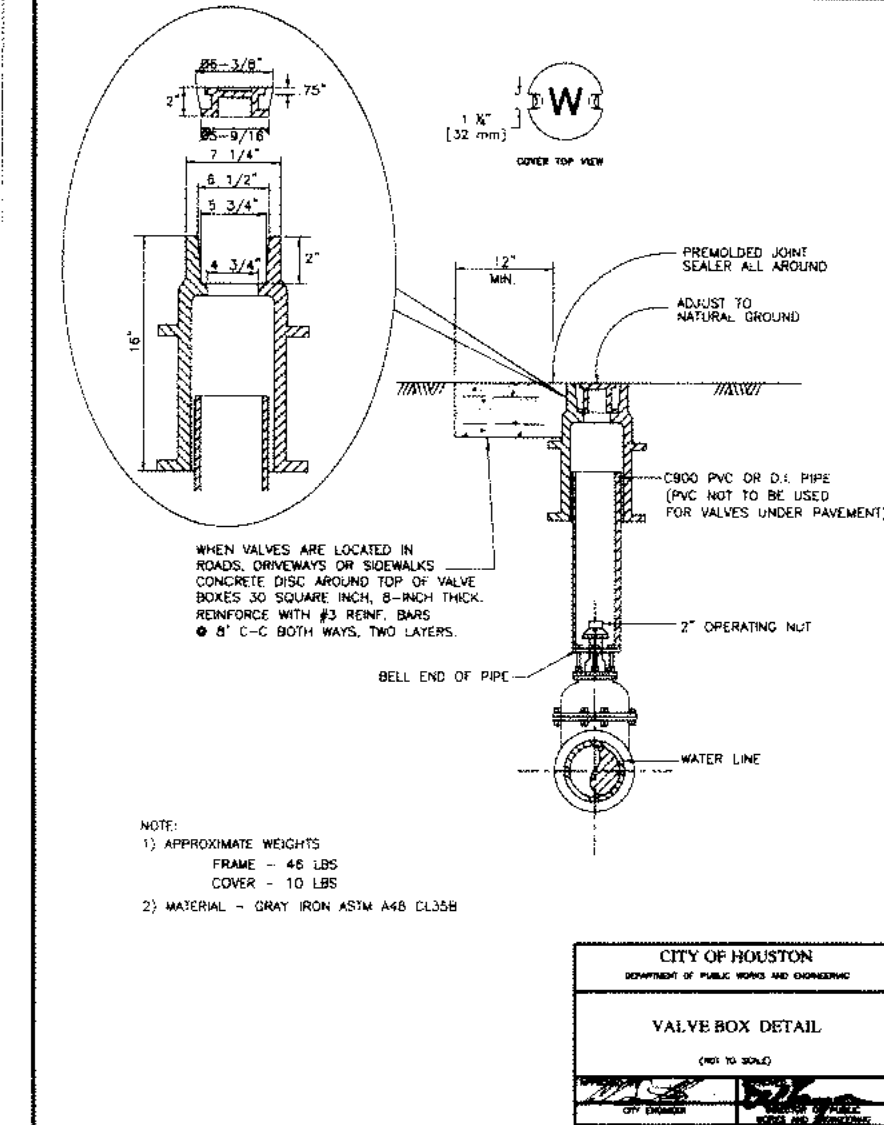
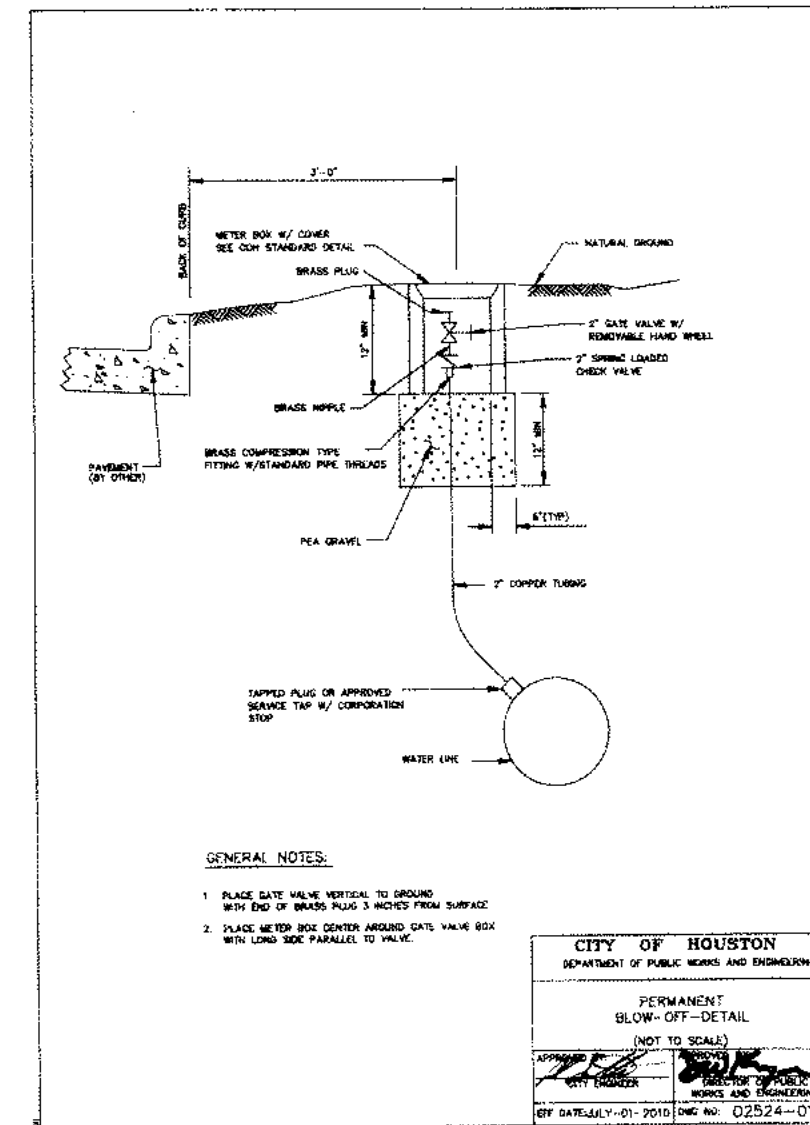
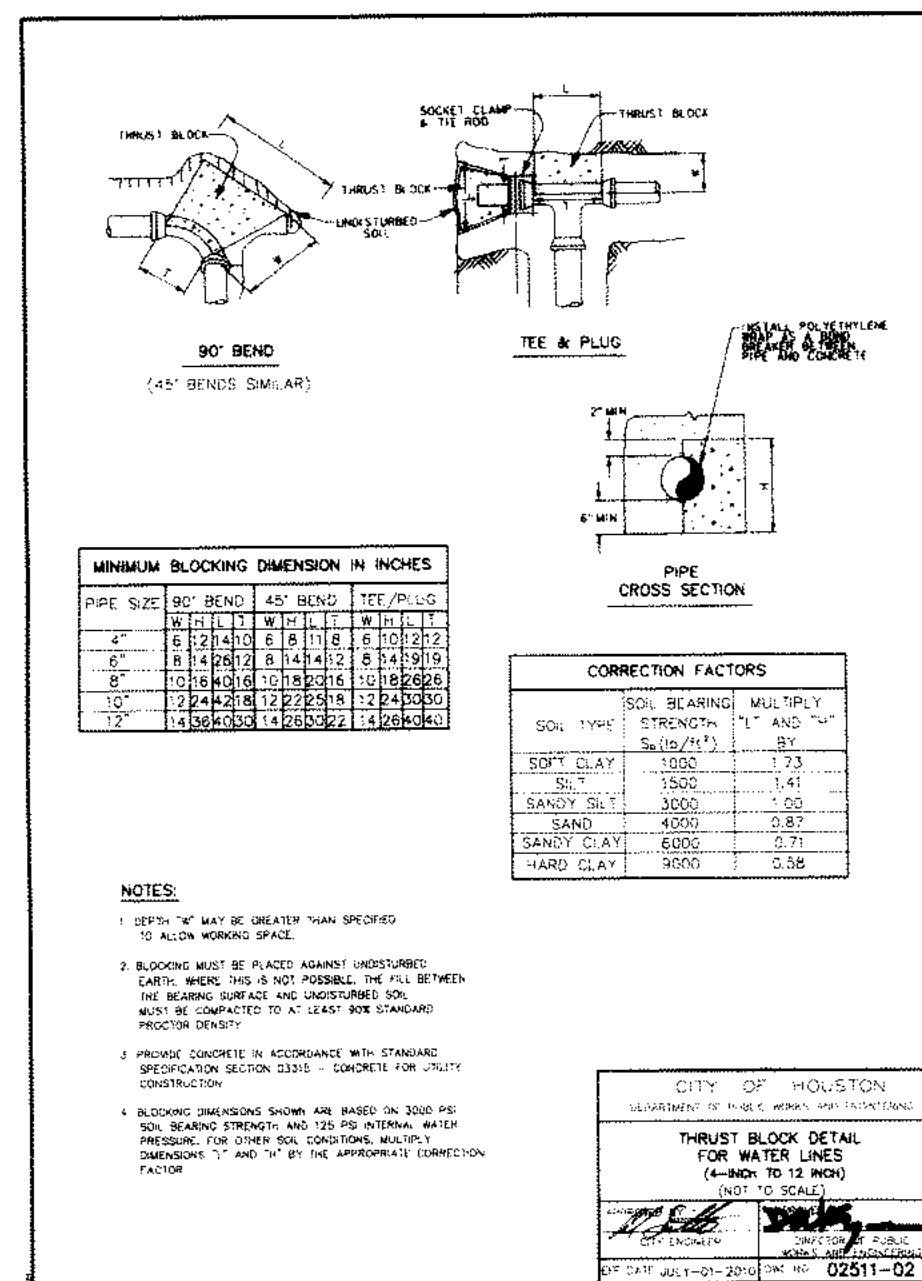
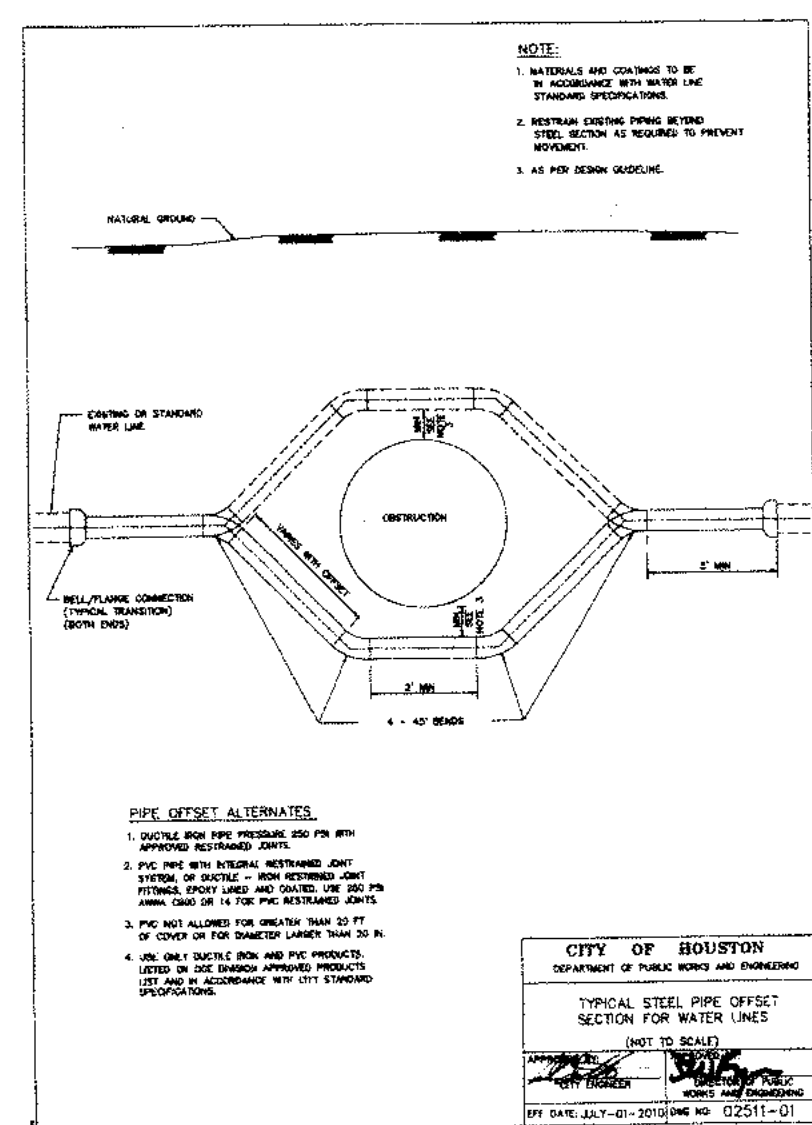
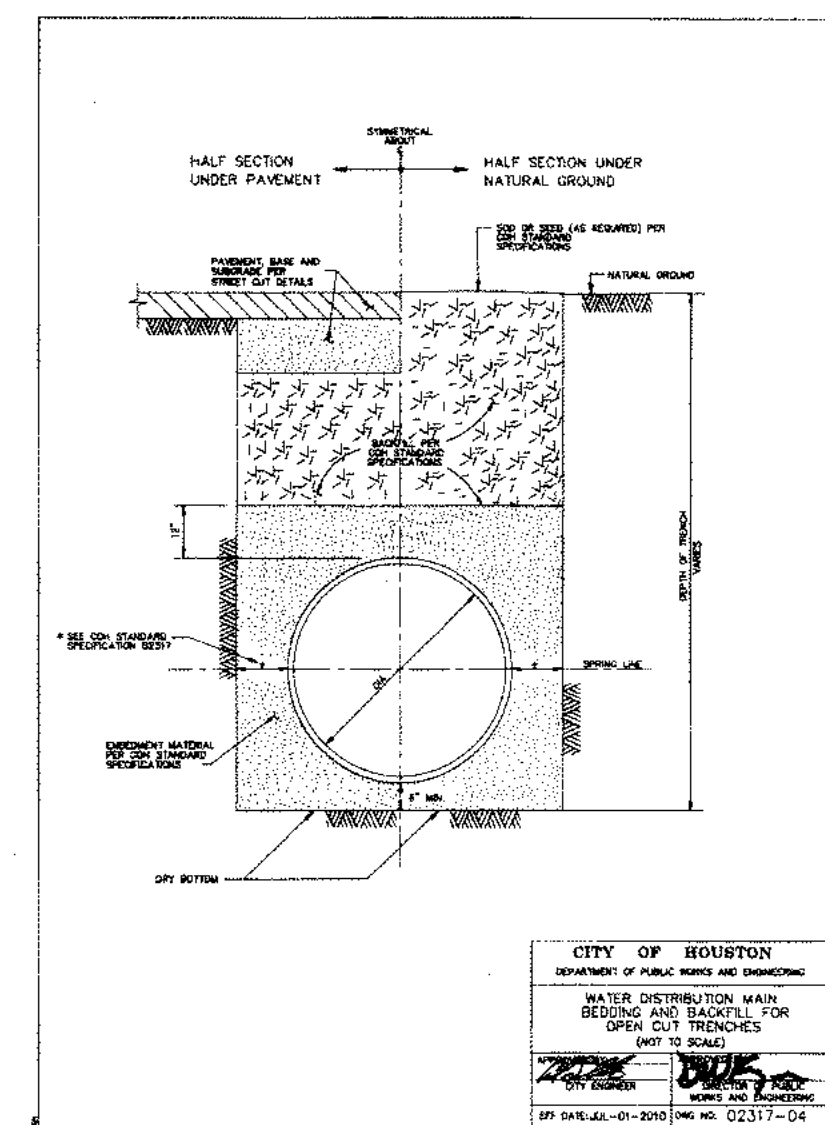
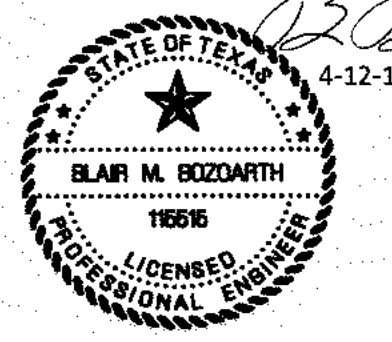
SCALE: 1"=50' H.
1"=5' V.

SHEET No. 10 OF 18





ISSUED FOR CONSTRUCTION



APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: _____

NO.	DATE	REVISIONS	APP.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

GRAND MISSION MUNICIPAL UTILITY DISTRICT NO. 2 FORT BEND COUNTY, TEXAS

JONES CARTER Texas Board of Professional Engineers Registration No. F-439 2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 913-4000

GRAND MISSION ESTATES SEC 21

MISCELLANEOUS DETAILS

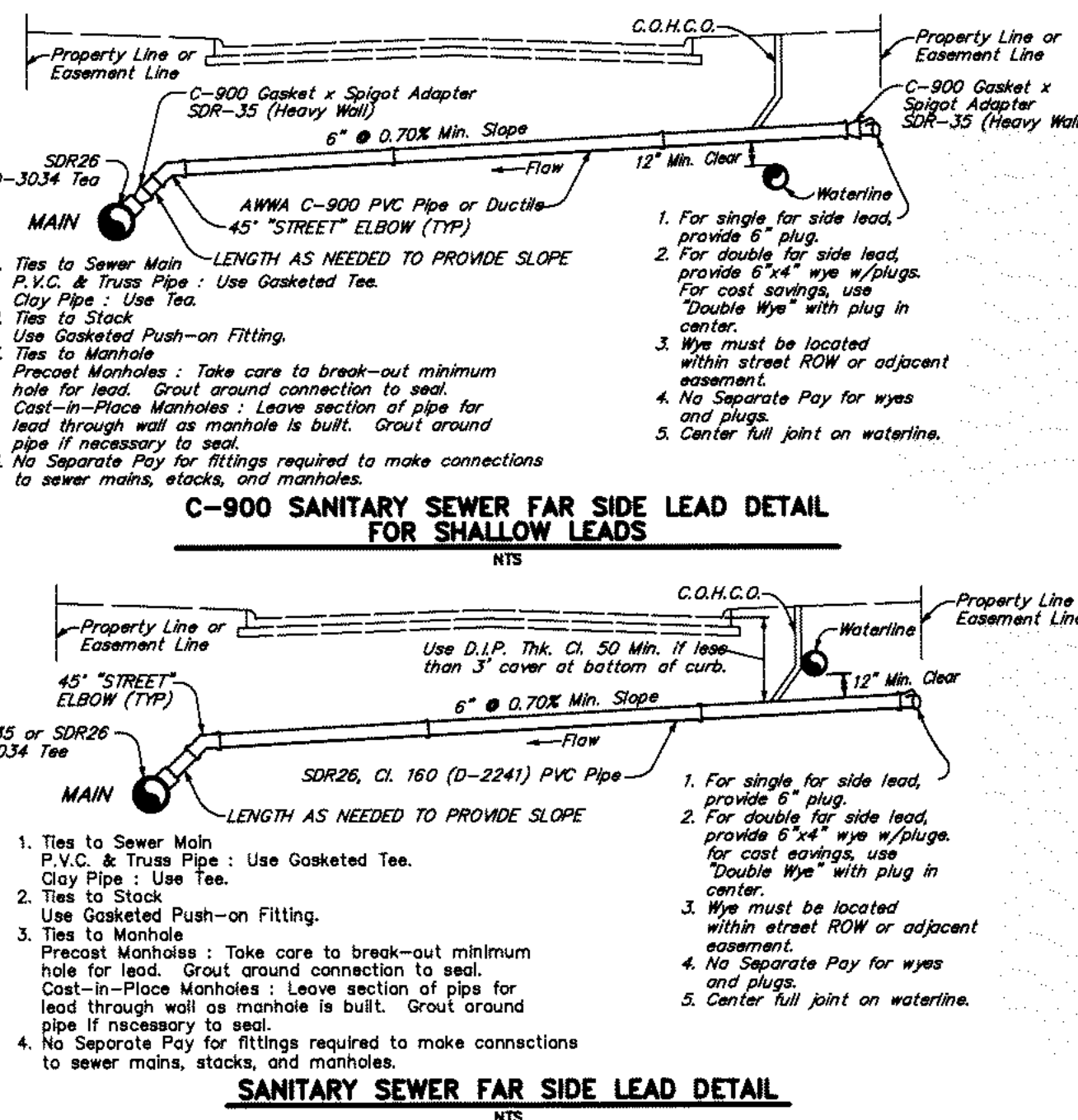
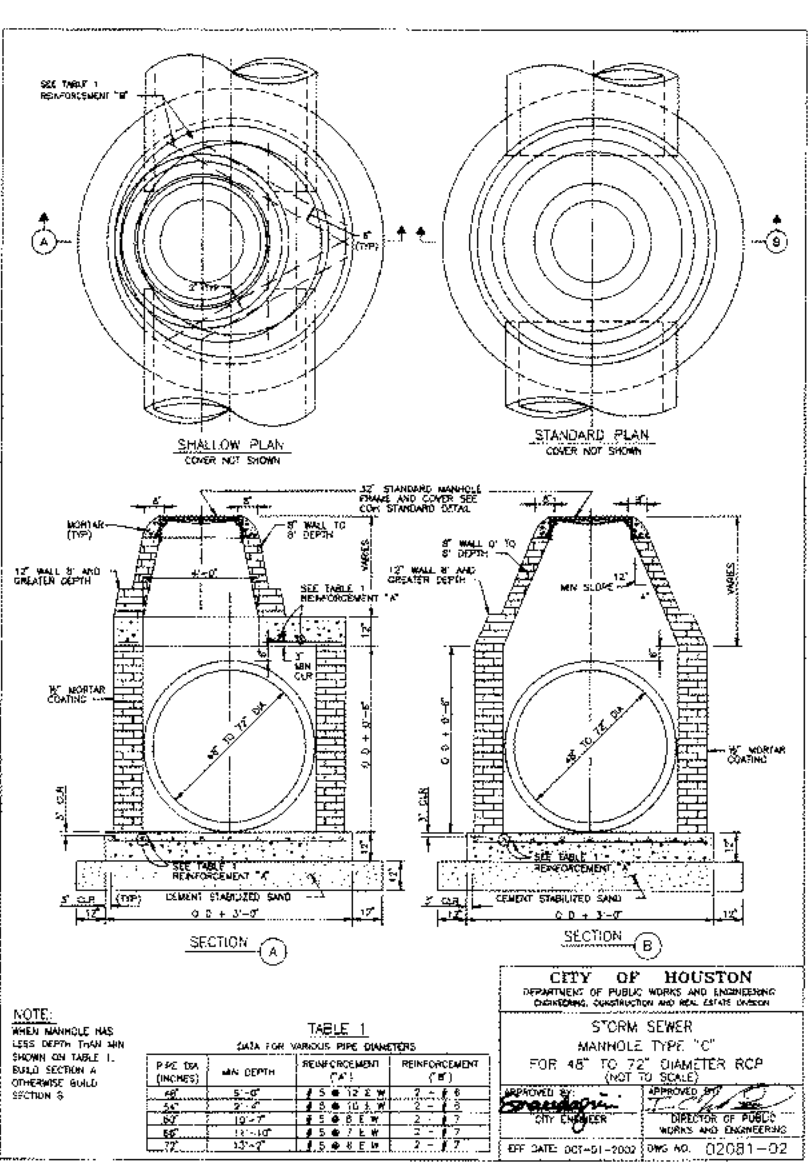
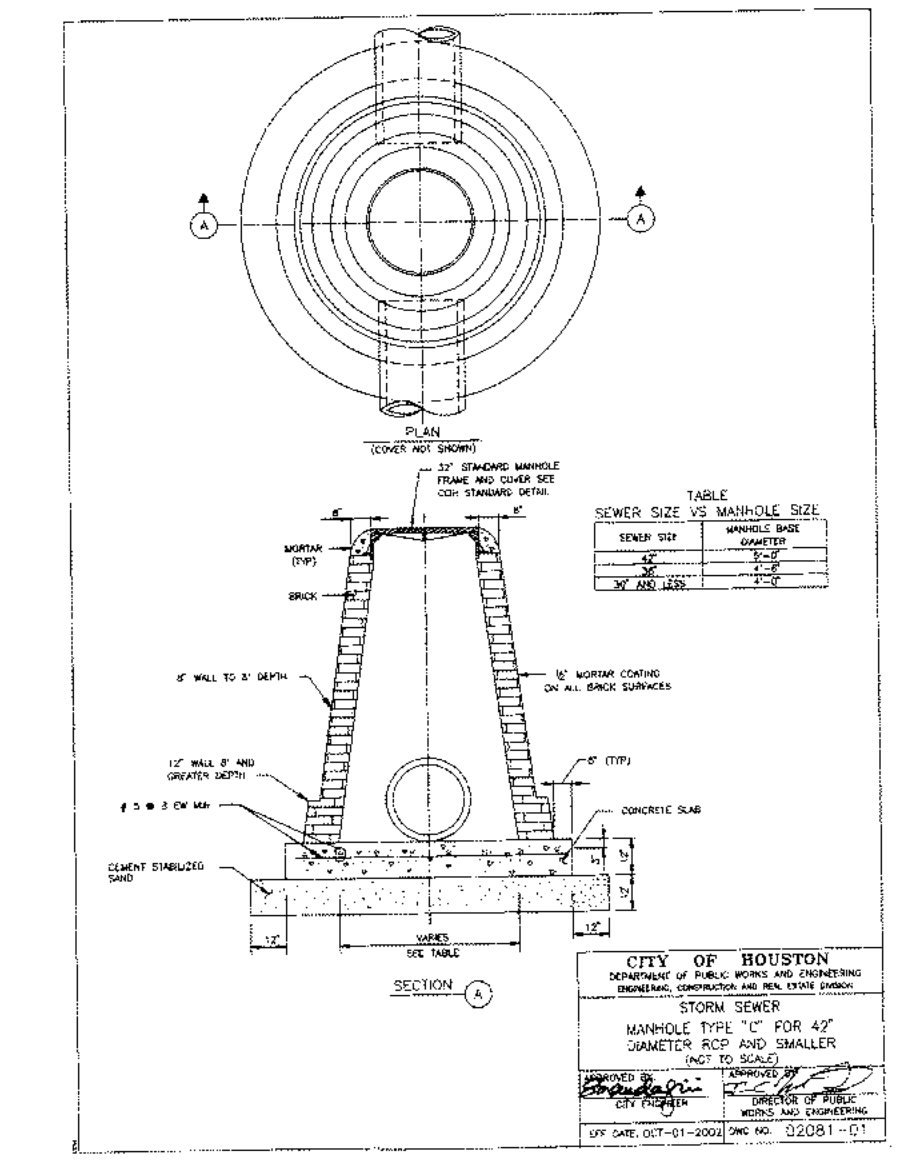
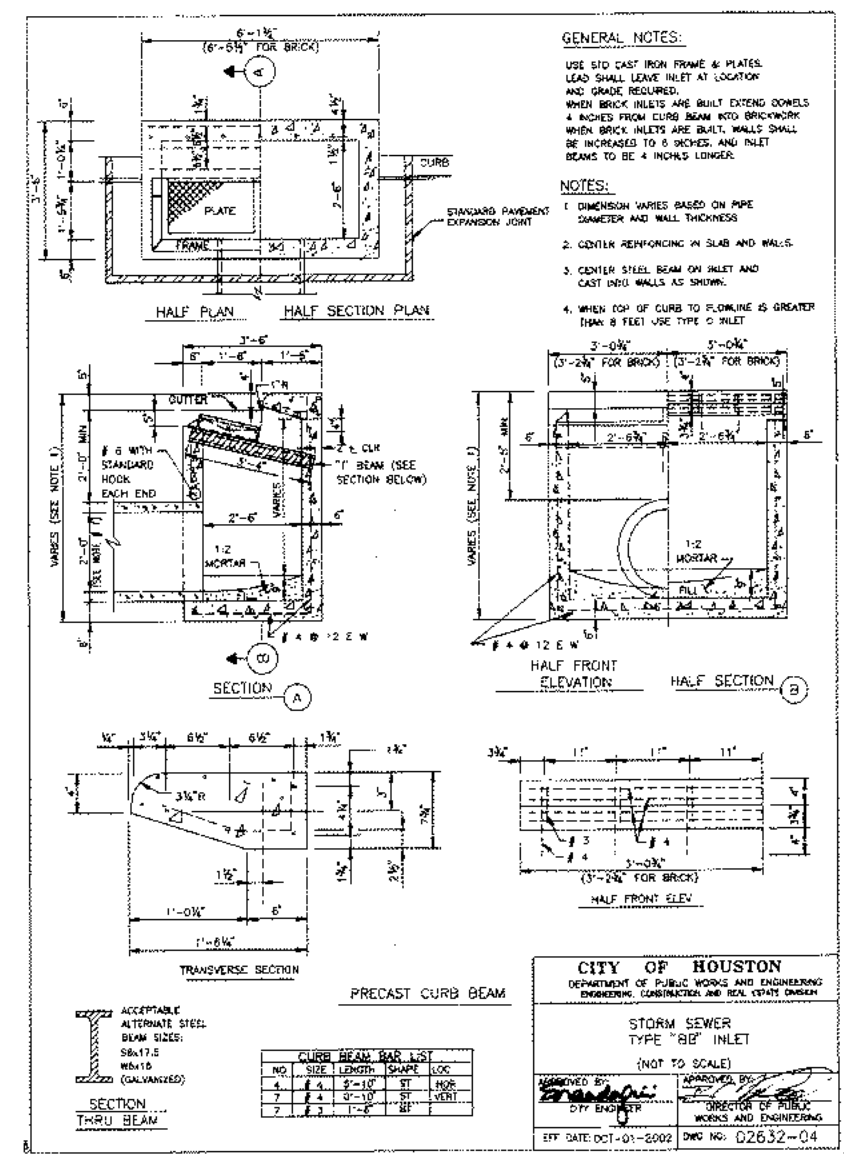
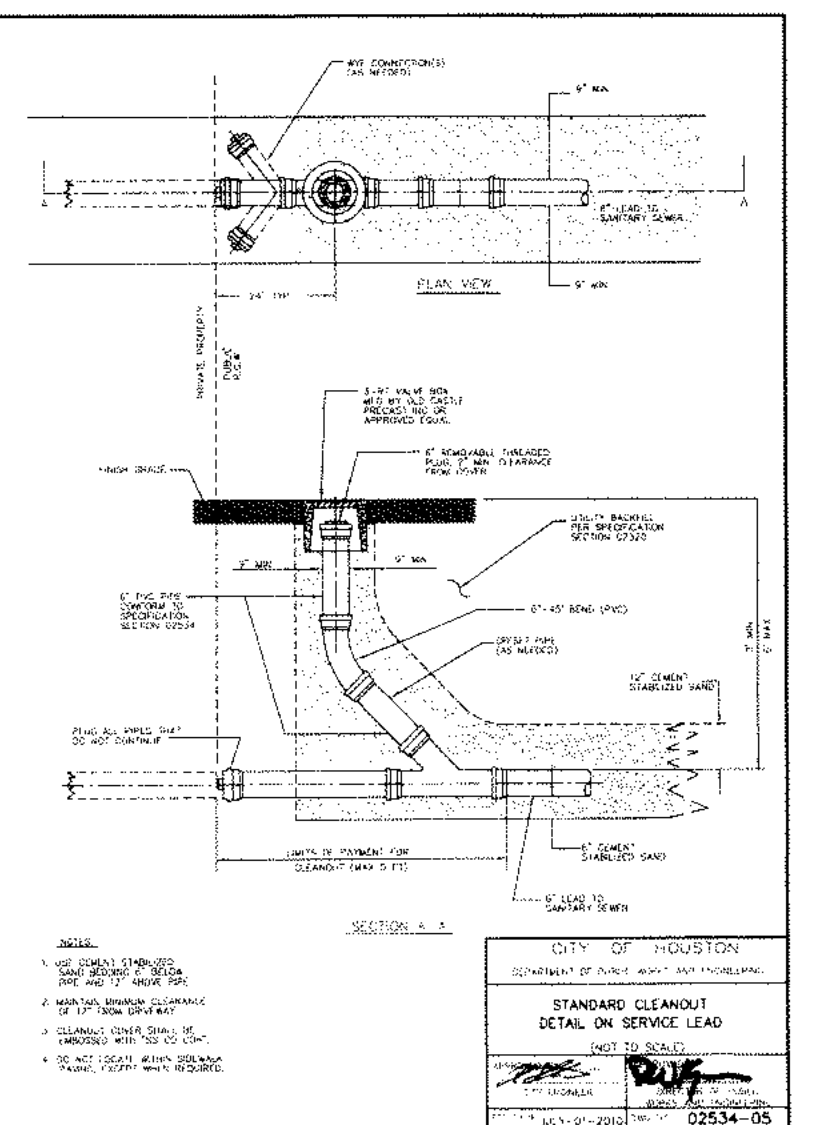
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

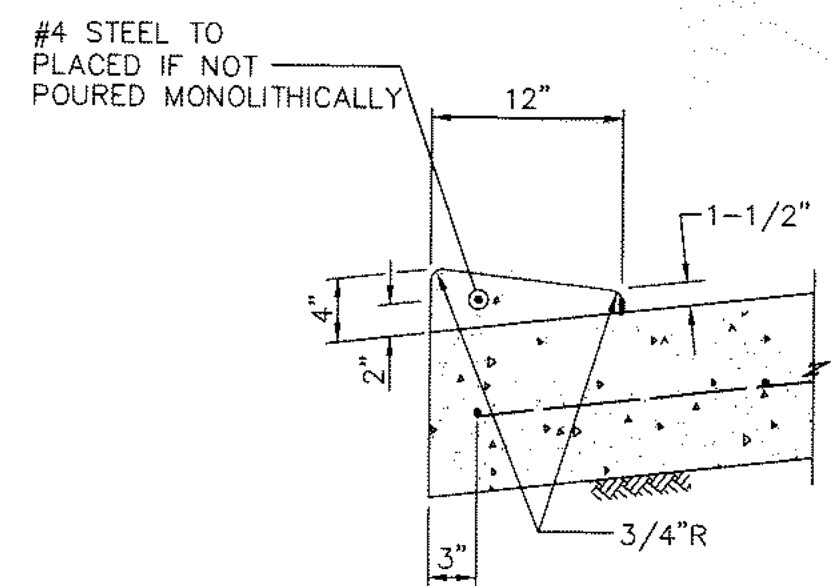
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & STREET BRIDGE
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES

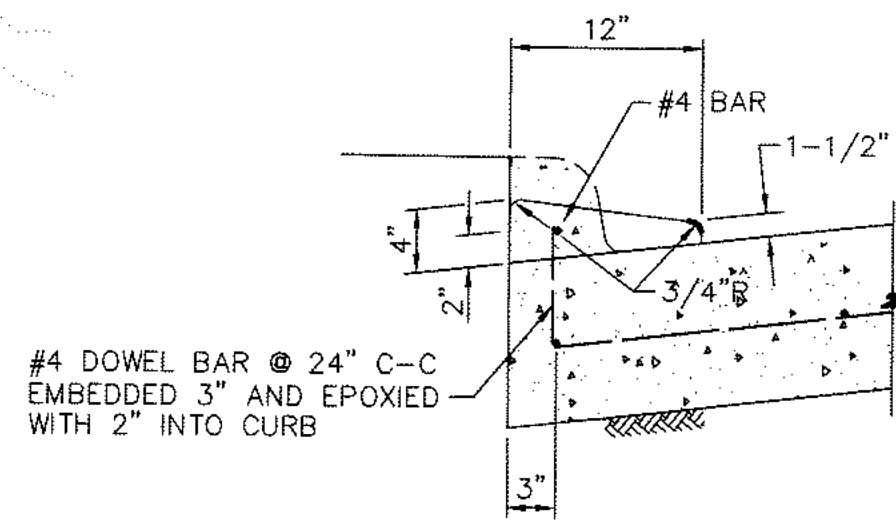
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FOR CITY OF HOUSTON USE ONLY CITY DWG NO. 60296

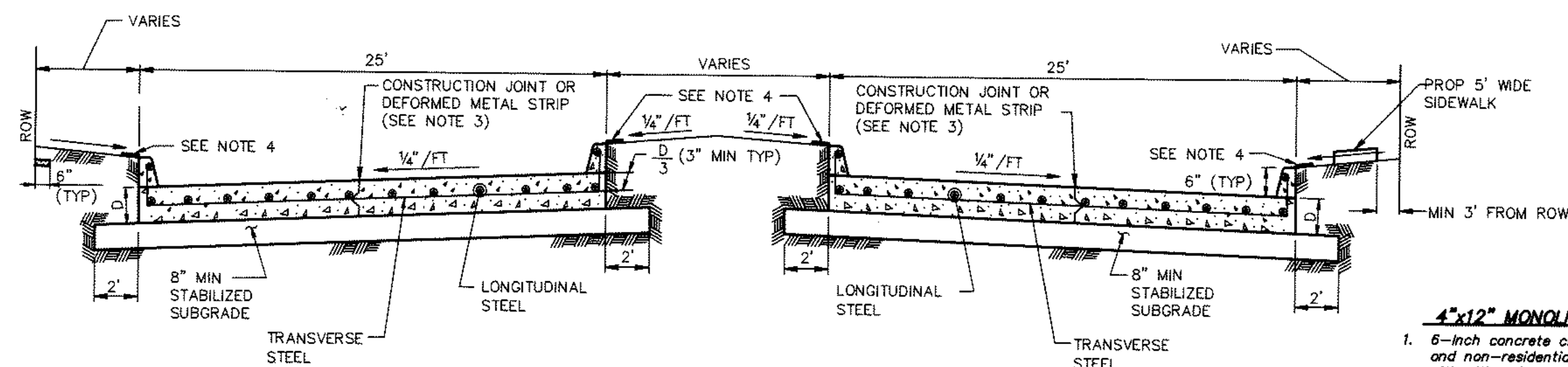




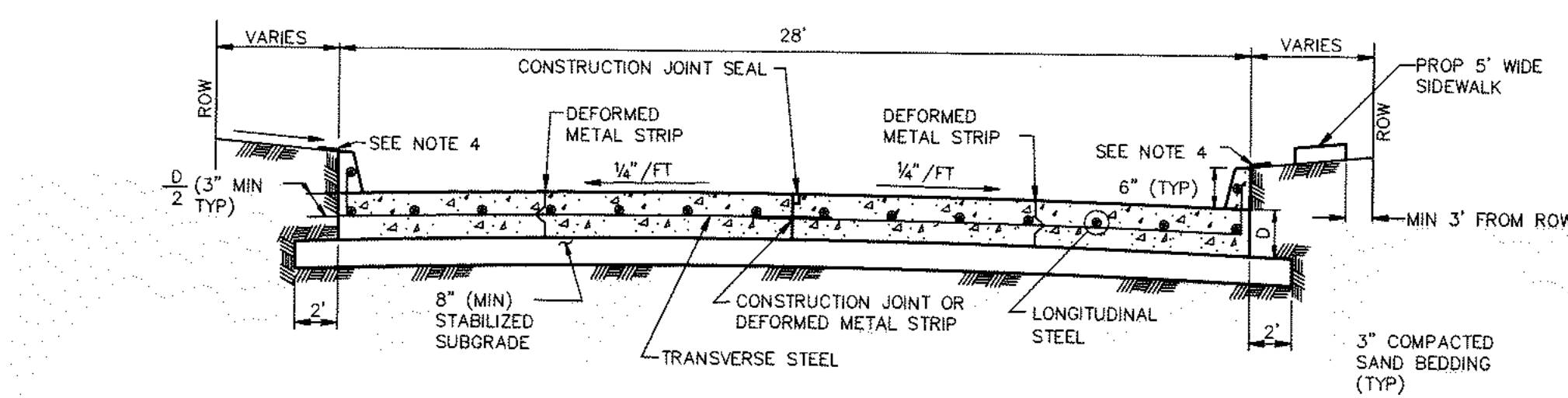
**TYPICAL DETAIL
4'x12' CURB**
NTS



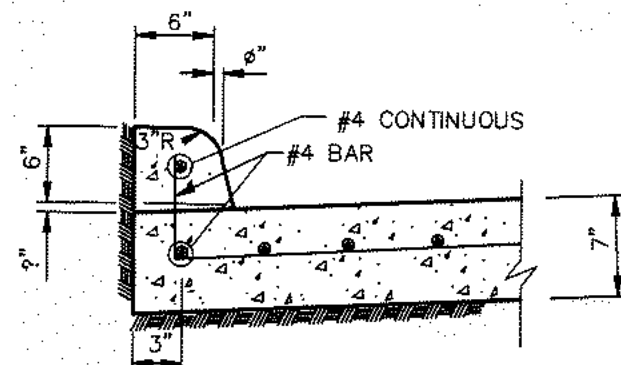
**TYPICAL DETAIL
4'x12' TRANSITION CURB**
NTS



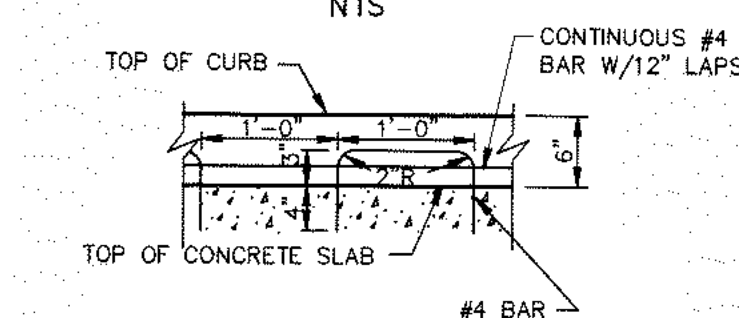
TYPICAL DOUBLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS
NTS



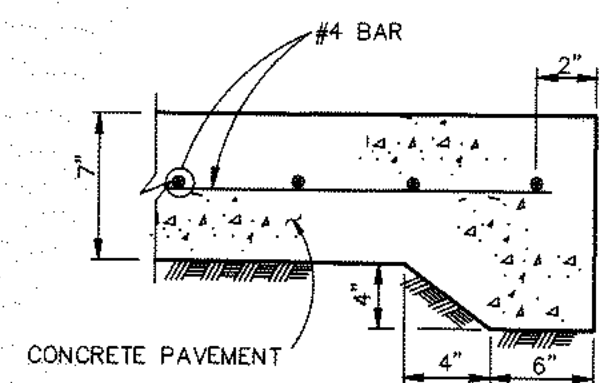
TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS
NTS



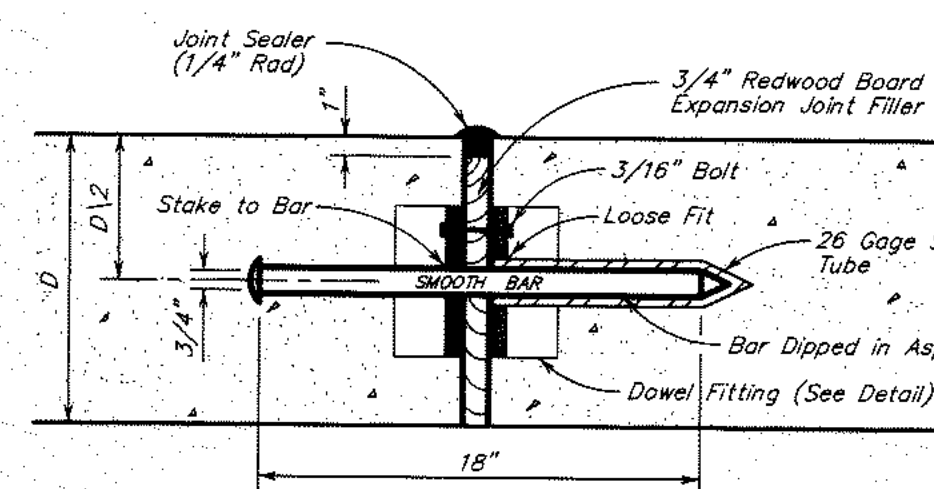
CONCRETE CURB
NTS



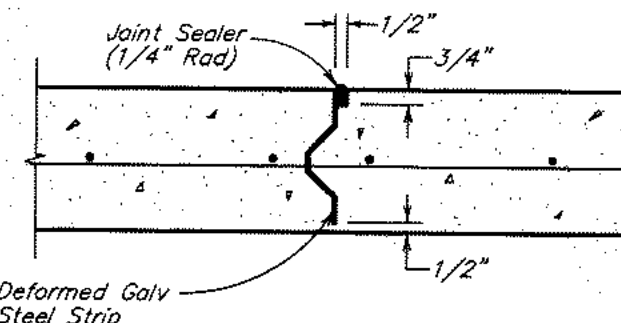
**ALTERNATE CONCRETE
CURB REINFORCEMENT**
NTS



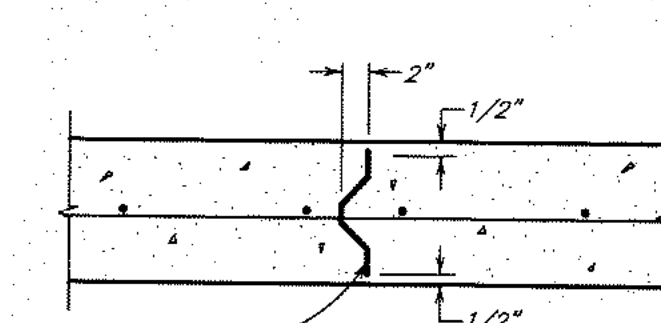
**STANDARD CONCRETE
PAVING HEADER**
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KEYLOAD EXPANSION JOINT
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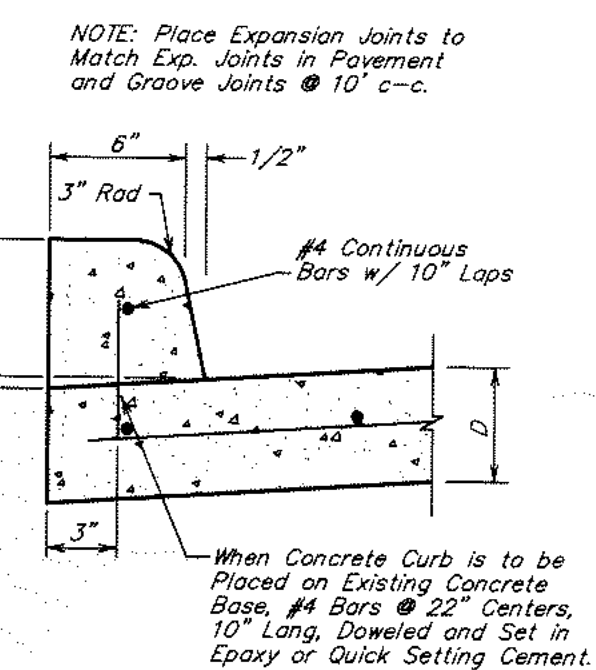
**TYPICAL KEYED
CONSTRUCTION JOINT**
NTS



DEFORMED METAL STRIP
NTS

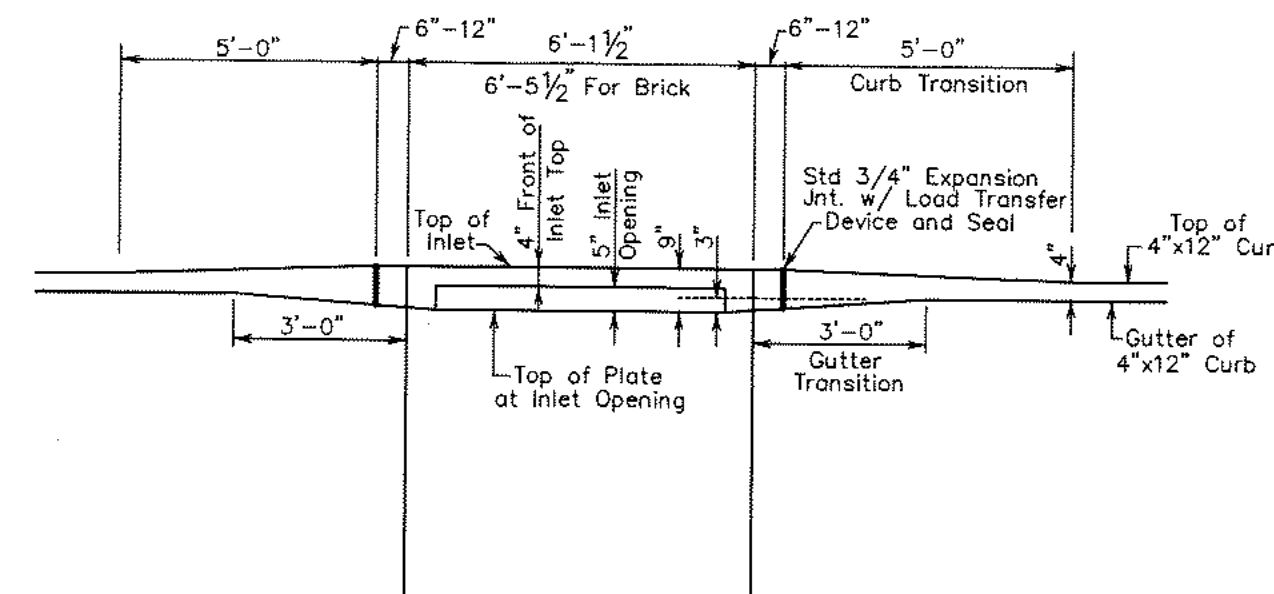
DOWELED-ON CONCRETE CURB INTO CONCRETE PAVEMENT

NTS

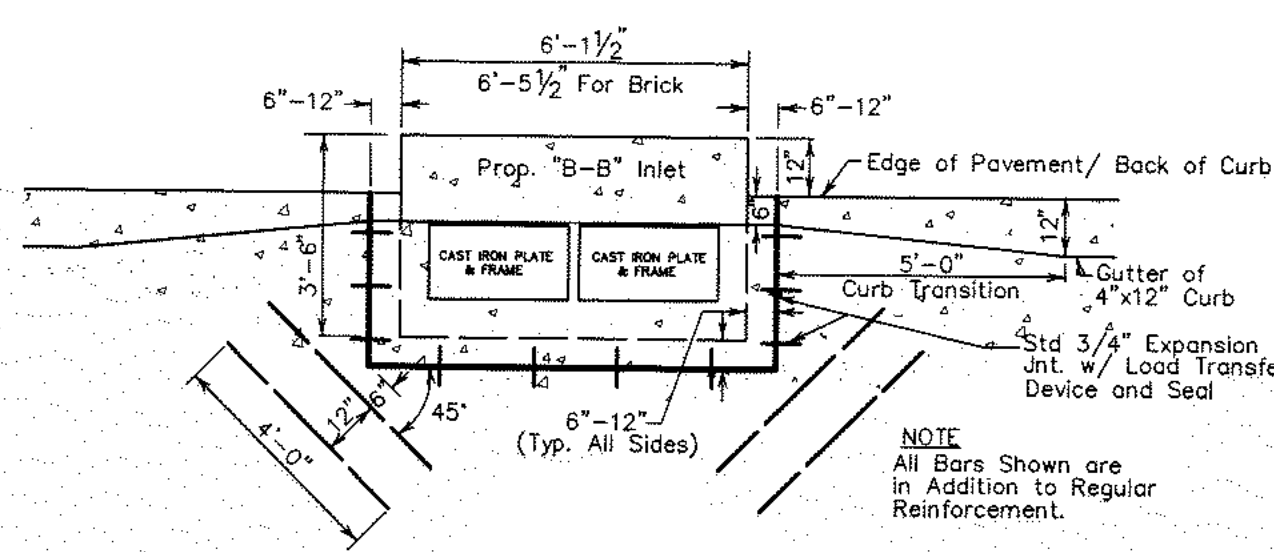


NOTE: Place Expansion Joints to Match Exp. Joints in Pavement and Groove Joints @ 10' c-c.

Finish Shall be Accomplished by Floating, Steel Troweling and Then Brushing. Hand Finish Not Required When Curb and Gutter is Poured by a Machine, but Curb Shall Have the Same Outside Dimensions and Have a Brushed Finish.



FRONT VIEW



TOP VIEW

INLET BLOCK-OUT REINFORCING AND CURB TRANSITION DETAIL

NTS

NOTES:

1. THE MAXIMUM WIDTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 15'-0".
2. ALL EARTHEN AREAS ARE TO BE HYDOMULCHED UNLESS SHOWN OTHERWISE ON DRAWINGS.
3. CONTRACTOR MAY SAW CUT IN LIEU OF DEFORMED METAL STRIP.
4. USE 16" STRIP OF SOD GRASS TO PREVENT EROSION UNTIL STAND OF GRASS IS ESTABLISHED.
5. MINIMUM LAP LENGTHS (L):
A. # 4 BARS; L = 22 INCHES
B. # 5 BARS; L = 27 INCHES
C. # 6 BARS; L = 32 INCHES

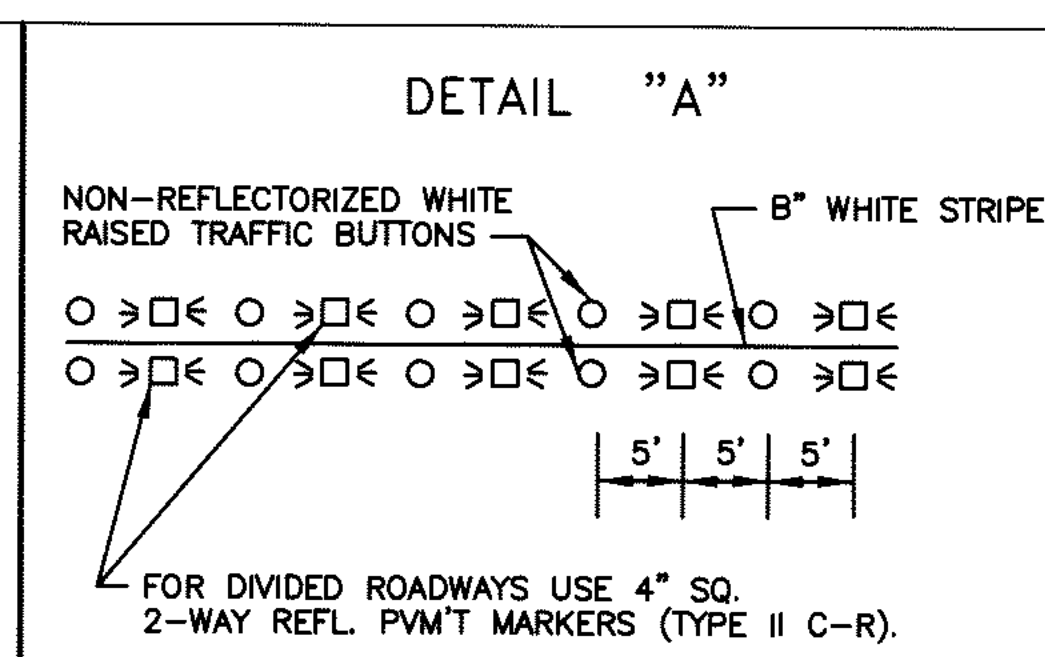
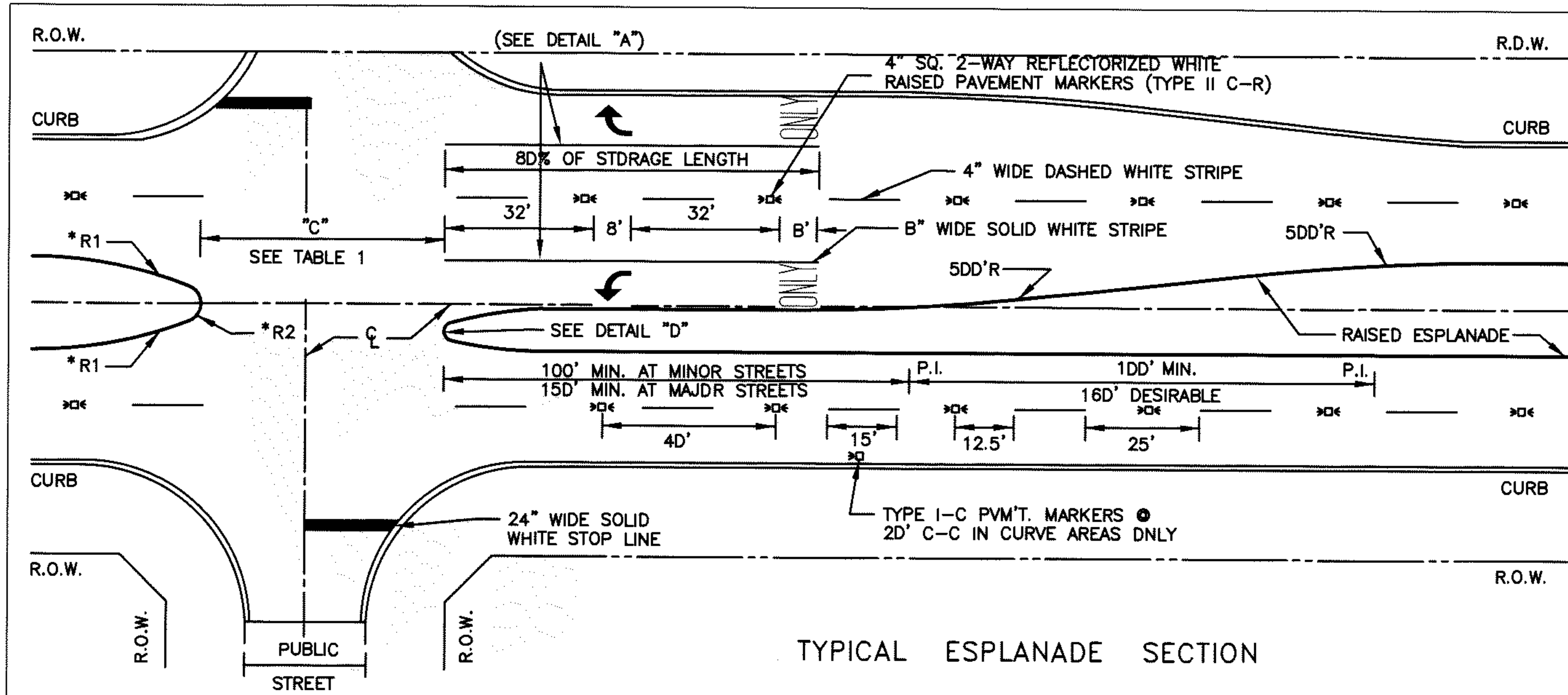


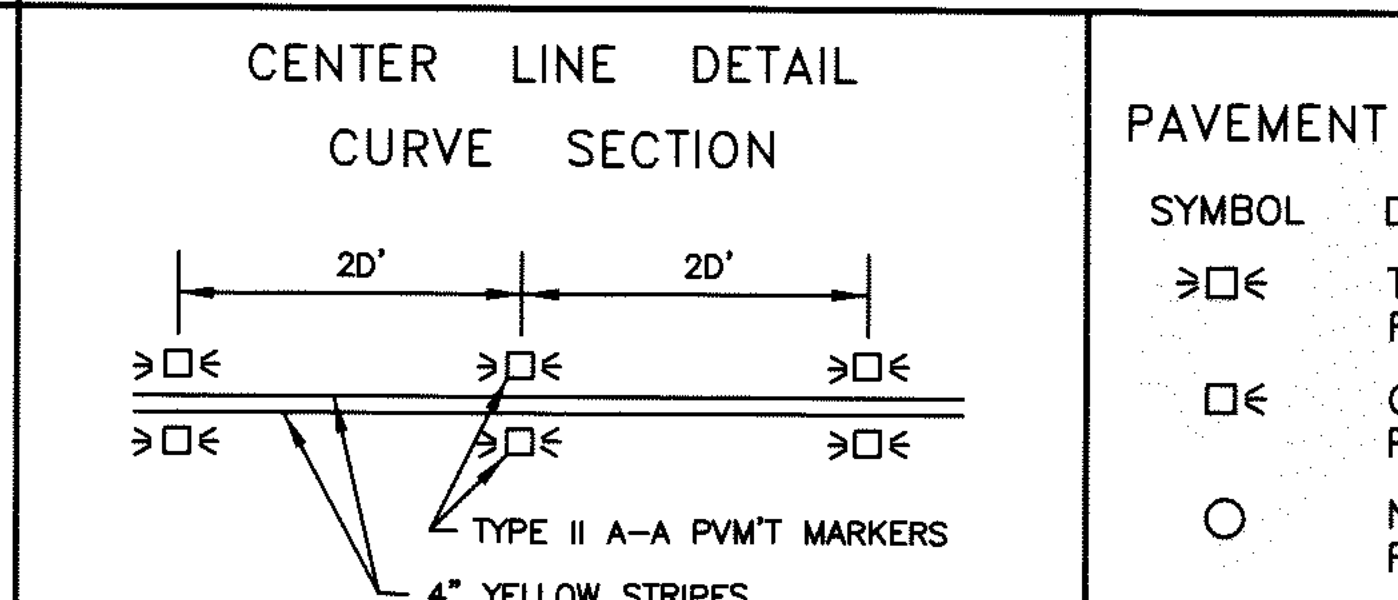
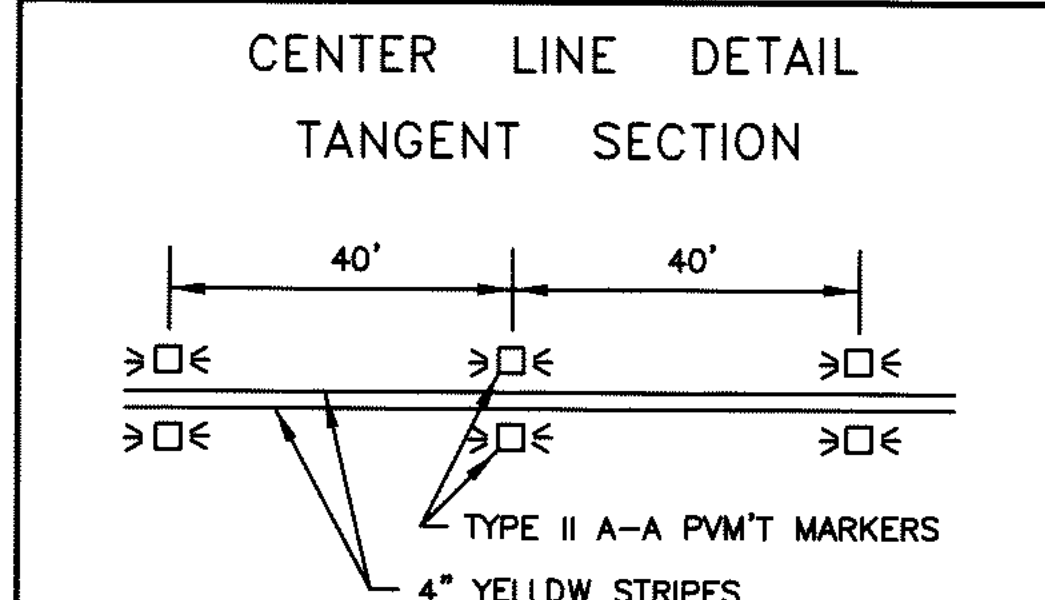
TABLE 1
TYPICAL LENGTH OF ESPLANADE OPENING "C" FOR PUBLIC STREET

ESPLANADE INTERRUPTION	NO LTB (1)	1 LTB (1)	2 LTB (1)
UNDIVIDED STREET < 40' 44"	45' 50"	55' 50"	60' 50"
DIVIDED STREET	D+1D'	D+1D'	D+1D'

NOTES:
(1) LEFT TURN BAY
(2) DISTANCE FROM CENTERLINE OF OPENING TO ESPLANADE NDSE WITH LEFT TURN LANE MUST BE 30'

RADIUS DIMENSIONS

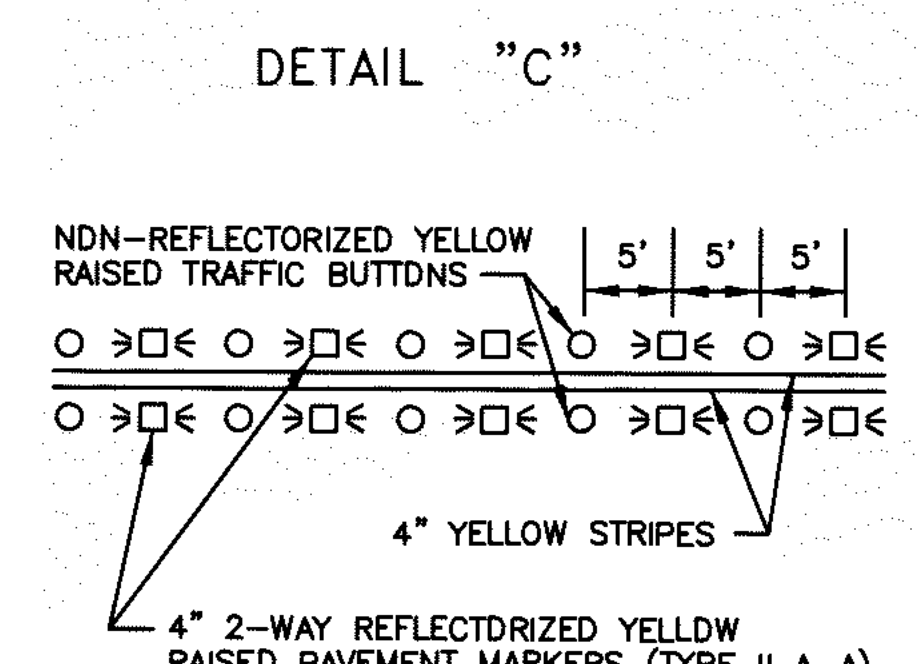
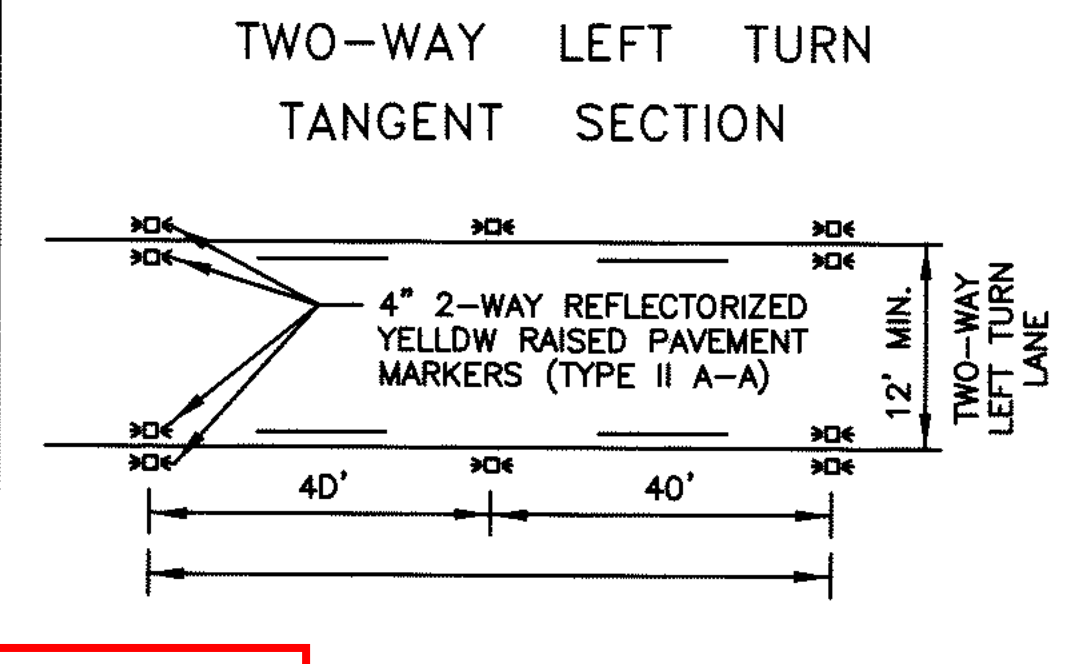
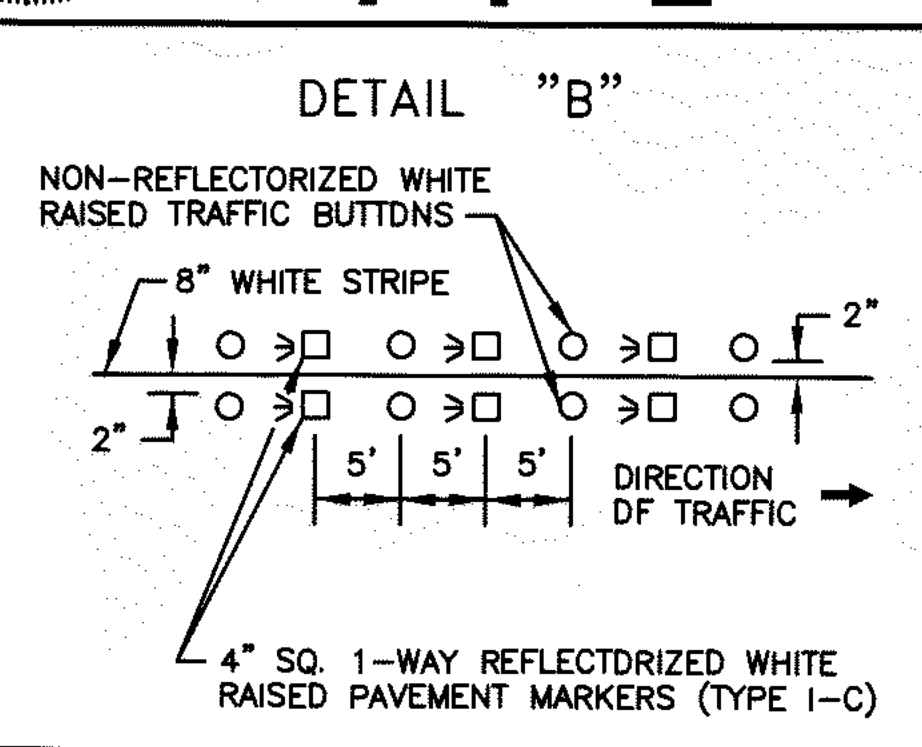
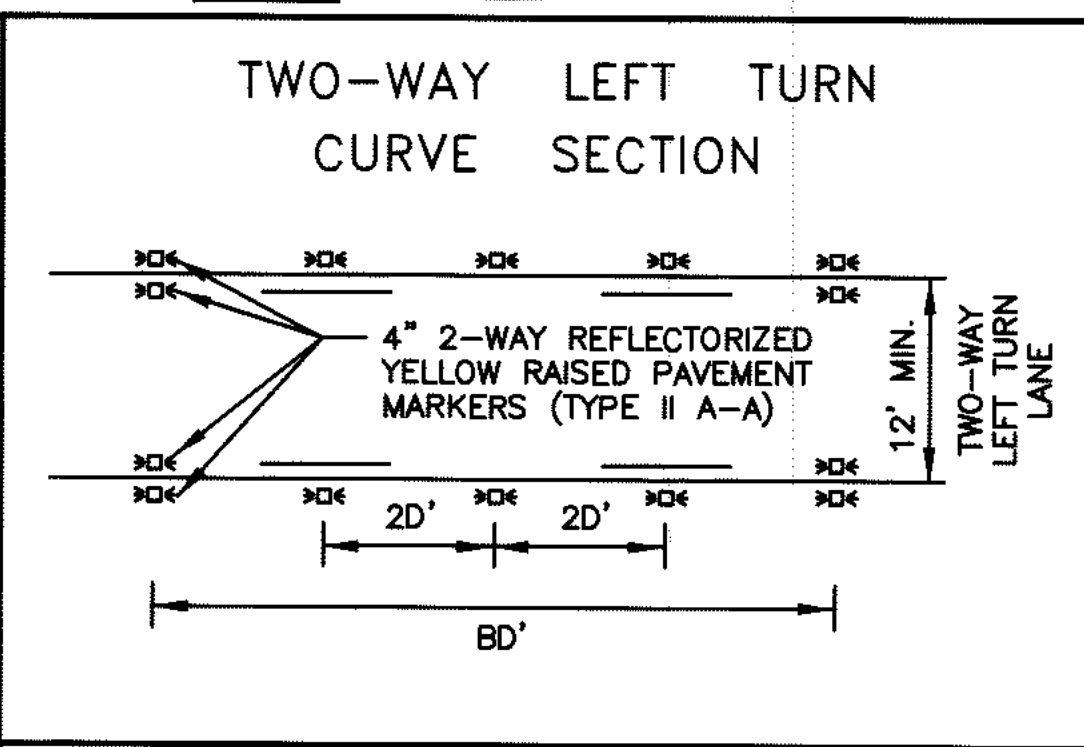
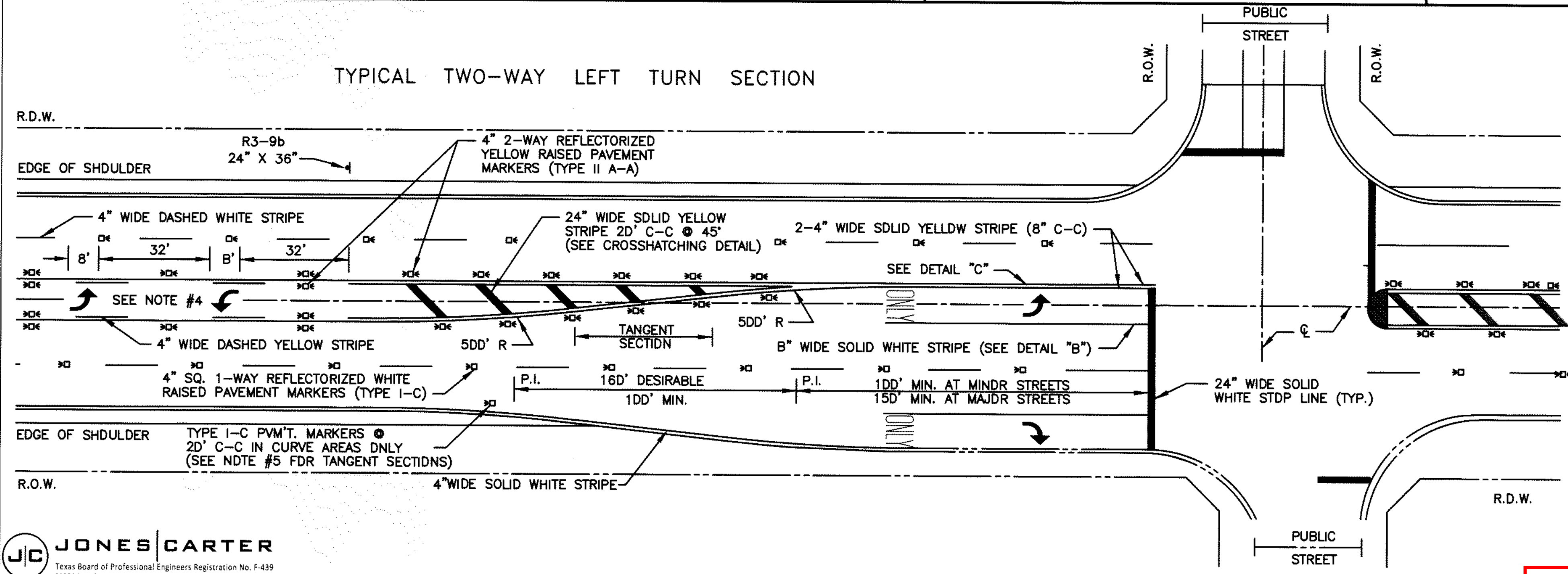
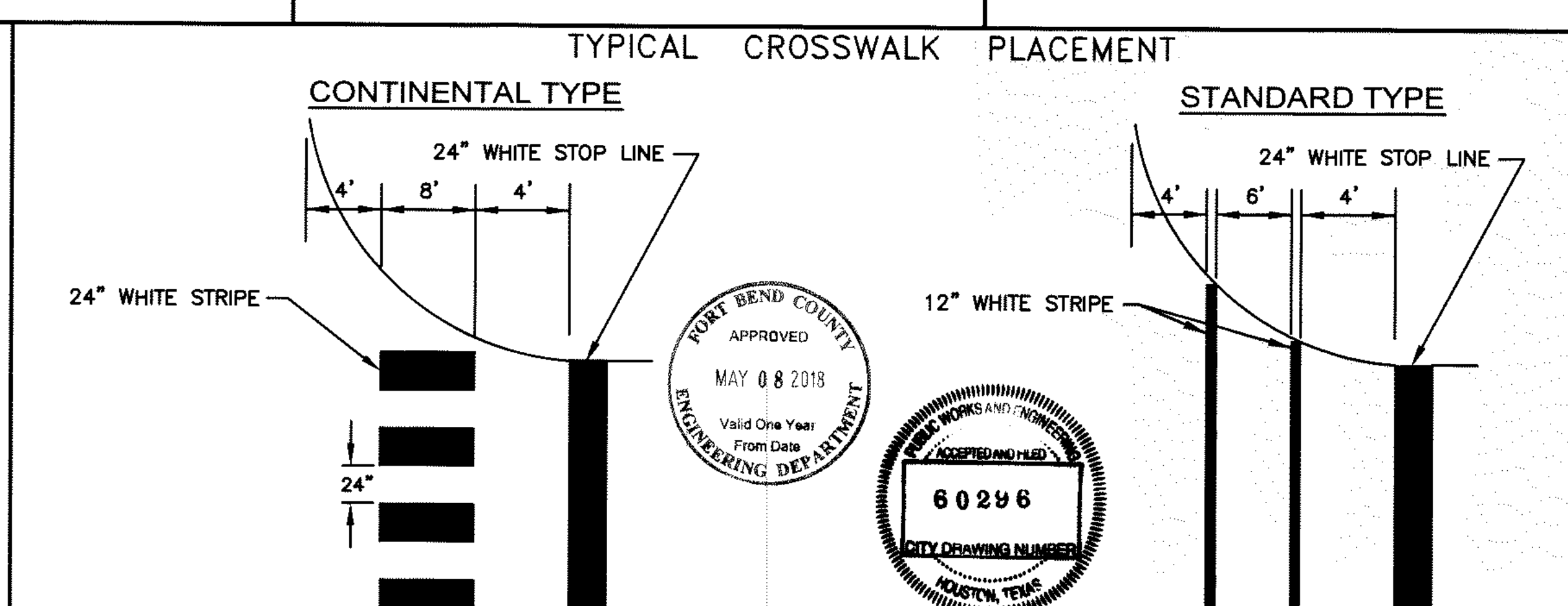
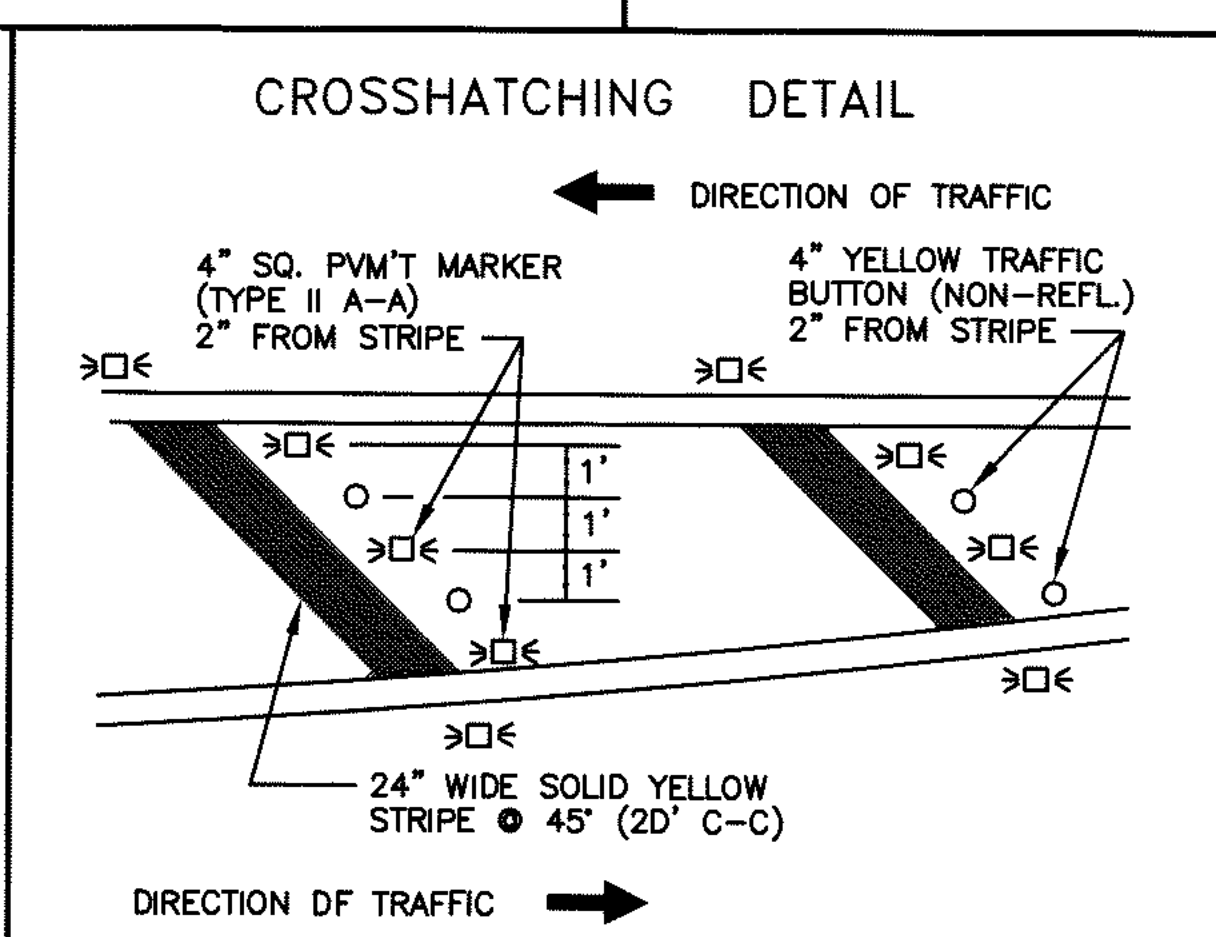
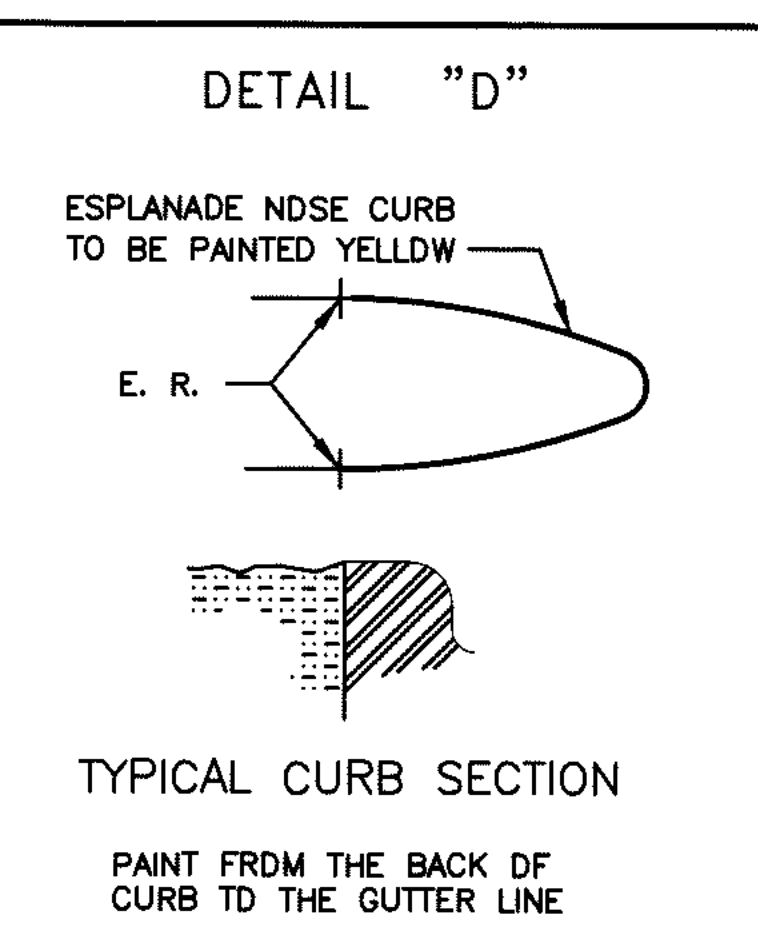
ESPLANADE	*R1	*R2
<8'	N/A	W/2
8'-38'	90'	W/5
>38'	N/A	15'



PAVEMENT MARKER LEGEND

SYMBOL	DESCRIPTION
◻◻◻	TWO SIDED REFLECTORIZED RAISED PAVEMENT MARKER
◻◻	ONE SIDED REFLECTORIZED PAVEMENT MARKER
○	NON-REFLECTIVE 4" DIA. RAISED TRAFFIC BUTTON

- NOTES:
1. ALL STRIPING & MARKERS SHALL CONFORM WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
 2. ALL TRAFFIC BUTTONS AND MARKERS SHALL BE INSTALLED ADJACENT TO STRIPES (APPROX. 2").
 3. LEFT TURN STORAGE BAYS SHALL BE A MIN. OF 100' AT MINOR STREETS AND A MIN. OF 150' AT MAJOR STREETS.
 4. REPEAT ARROWS AT APPROX. 1000' INTERVALS WITHIN TWO-WAY LEFT TURN SECTION.
 5. WITHIN A TANGENT SECTION THE TYPE I-C PAVEMENT MARKERS CAN BE PLACED AT 40' C-C ON ROADWAYS WITHOUT CURB AND GUTTERS.

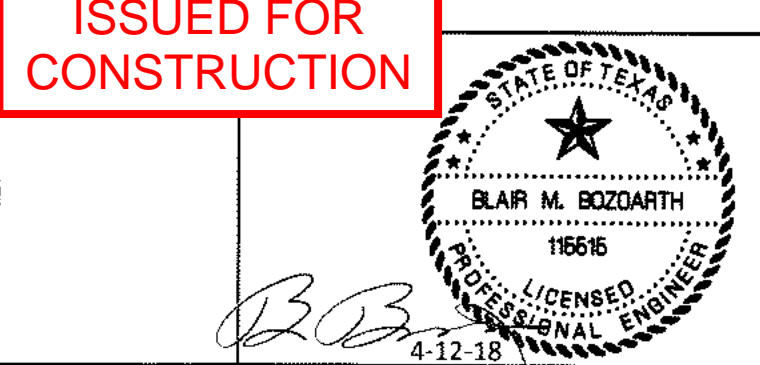


JONES CARTER

Texas Board of Professional Engineers Registration No. F-439
22330 Merchants Way, Suite 170, Katy, TX 77449 (832) 933-4000

NO.	REVISIONS	DATE	NAME
1	CHANGED TITLE BLOCK	7/21/28	R.L.S.
2	ADDED CONTINENTAL CROSSWALK	8/2/28	ALP
3	ADDED RIGHT TURN LANE	4/19/01	ALP
4	MODIFIED BUTTON LEGEND	1/31/03	ADS

FORT BEND COUNTY
ENGINEERING DEPARTMENT



PROJECT TITLE: GRAND MISSION ESTATES SEC 21

DRAWN BY: RLS

CHECKED BY: NTS

DATE: 9/99

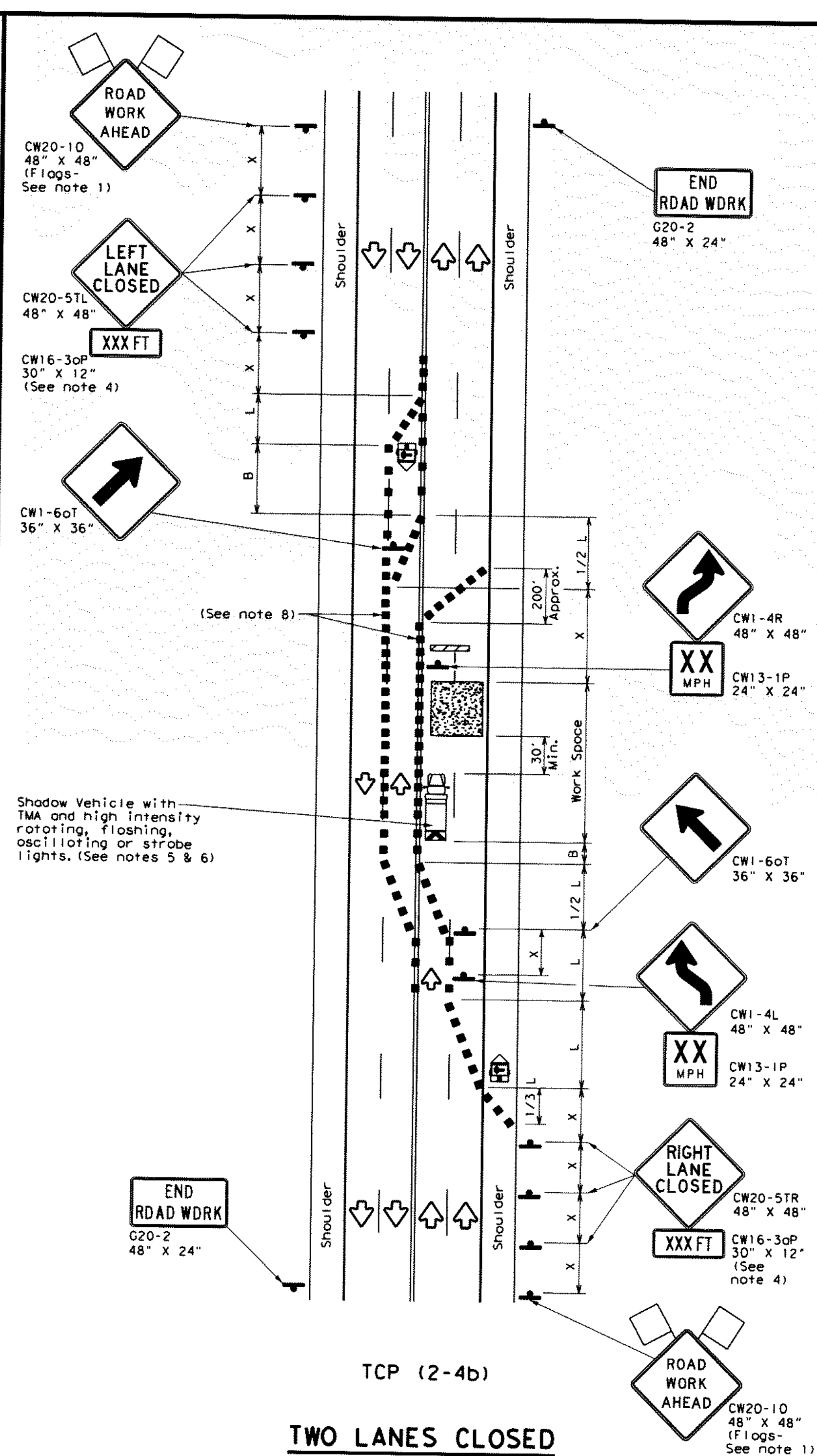
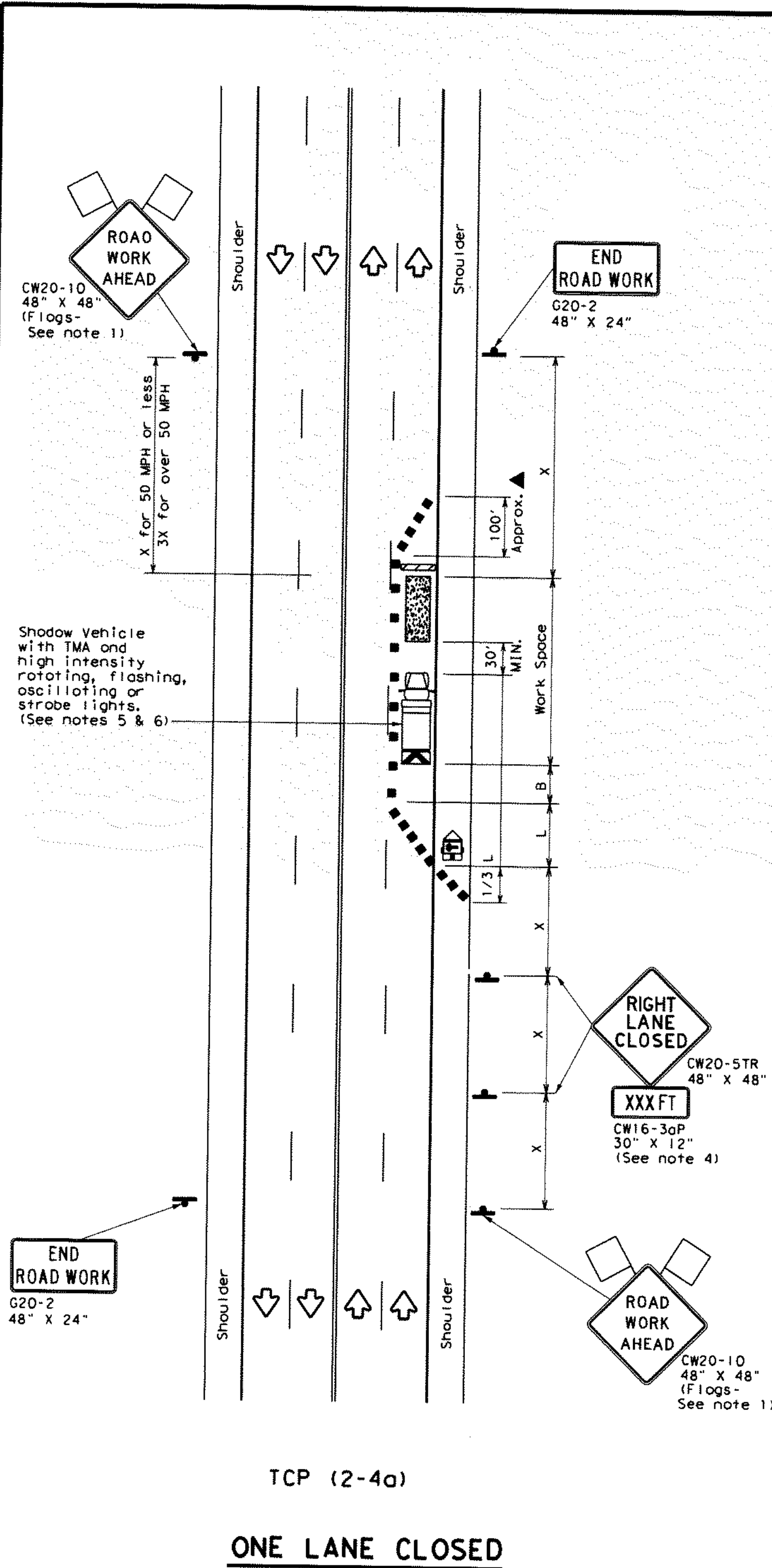
SHEET DESCRIPTION: PAVEMENT MARKING DETAILS

FILE NAME: pmdetl.dwg

FILE NO: 13 / 17

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the consequences of the use of this standard for any purpose other than that for which it was intended.

DATE: FILE:



LEGEND					
	Type 3 Barricade		Channelizing Devices		
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)		
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)		
	Sign		Traffic Flow		
	Flag		Flagger		

Posted Speed	Formula	Minimum Desirable Taper Lengths	Suggested Maximum Spacing of Channelizing Devices	Minimum Sign Spacing	Suggested Longitudinal Buffer Space
*		10' 11' 12' Offset Offset Offset	On a Taper On a Tangent	"x" Distance	"B"
30	$L = \frac{WS^2}{60}$	150' 165' 180'	30' 60'	120'	90'
35		205' 225' 245'	35' 70'	160'	120'
40		265' 295' 320'	40' 80'	240'	155'
45	$L = WS$	450' 495' 540'	45' 90'	320'	195'
50		500' 550' 600'	50' 100'	400'	240'
55		550' 605' 660'	55' 110'	500'	295'
60		600' 660' 720'	60' 120'	600'	350'
65		650' 715' 780'	65' 130'	700'	410'
70		700' 770' 840'	70' 140'	800'	475'
75		750' 825' 900'	75' 150'	900'	540'

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

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY

GENERAL NOTES

- Flags attached to signs where shown, 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, or for routine maintenance work, when approved by the Engineer.
 - The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
 - For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than an a CW16-30P supplemental plaque.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-4a)**
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.
- TCP (2-4b)**
- For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP (2-4) - 12

© TxDOT December 1985	DOI TxDOT	CKI TxDOT	DOI TxDOT	CKI TxDOT
8-95	2-12			
1-97				
4-98				
3-03				
164				

DATE: APRIL 2018
DGN. BY: DMS
DWG. BY: JLG
SCALE: 1"=100'
SHEET No. 14 OF 18

100-YEAR FLOOD PLAIN

ACCORDING TO MAP NO. 48157C0140L & 48157C0130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS DATED APRIL 2, 2014, A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN THE SHADED ZONE "X", DEFINED AS AREAS OF 0.2% ANNUAL CHANCE OF FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE AND A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN UNSHADED ZONE "X", DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

NOTE: THE 100-YEAR FLOOD ELEVATION IS APPROXIMATELY 92.3 FEET AS PER THE FEMA INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS COMMUNITY PANEL NO. 48157C0130L, DATED APRIL 2, 2014. THE 100-YR FLOOD PLAIN, ELEVATION 92.3, IS CONTAINED IN THE CHANNEL NORTH OF THE DETENTION POND.

BENCH MARK

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HGSD 66, PID NO. AW5411 HAVING PUBLISHED INFORMATION AS FOLLOWS:
LATITUDE 29 43' 58.13317" NORTH
LONGITUDE 95 50' 45.98836" WEST NAD 83
ELEVATION 136.6 FEET NAVD 88

T.B.M. B

BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIR BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE DEAD END.

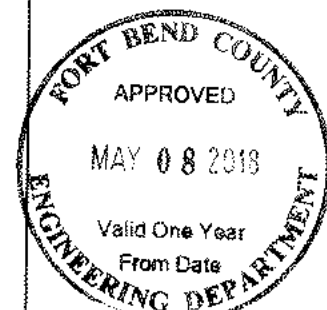
ELEVATION = 96.18, NAVD 88.

T.B.M. D

BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON BEECHNUT STREET AT THE WEST ENTRANCE TO DAVID CROCKETT MIDDLE SCHOOL.

ELEVATION = 93.70, NAVD 88.

ISSUED FOR CONSTRUCTION



APPROVED: DEVELOPMENT COORDINATOR

DATE:

NO. DATE REVISIONS APP.

GRAND MISSION MUNICIPAL UTILITY DISTRICT NO. 2 FORT BEND COUNTY, TEXAS

JONES CARTER Texas Board of Professional Engineers Registration No. F-439 2322 W Grand Parkway North, Suite 150, Katy, TX 77469-7812, (832) 913-4000

GRAND MISSION ESTATES SEC 21

TRAFFIC CONTROL PLAN

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

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER TRAFFIC & STREET BRIDGE

WASTEWATER STORM WATER QUALITY

STORM FACILITIES

FILE NO. JOB NO. 05298-0173-00

DATE: APRIL 2018

DGN. BY: DMS

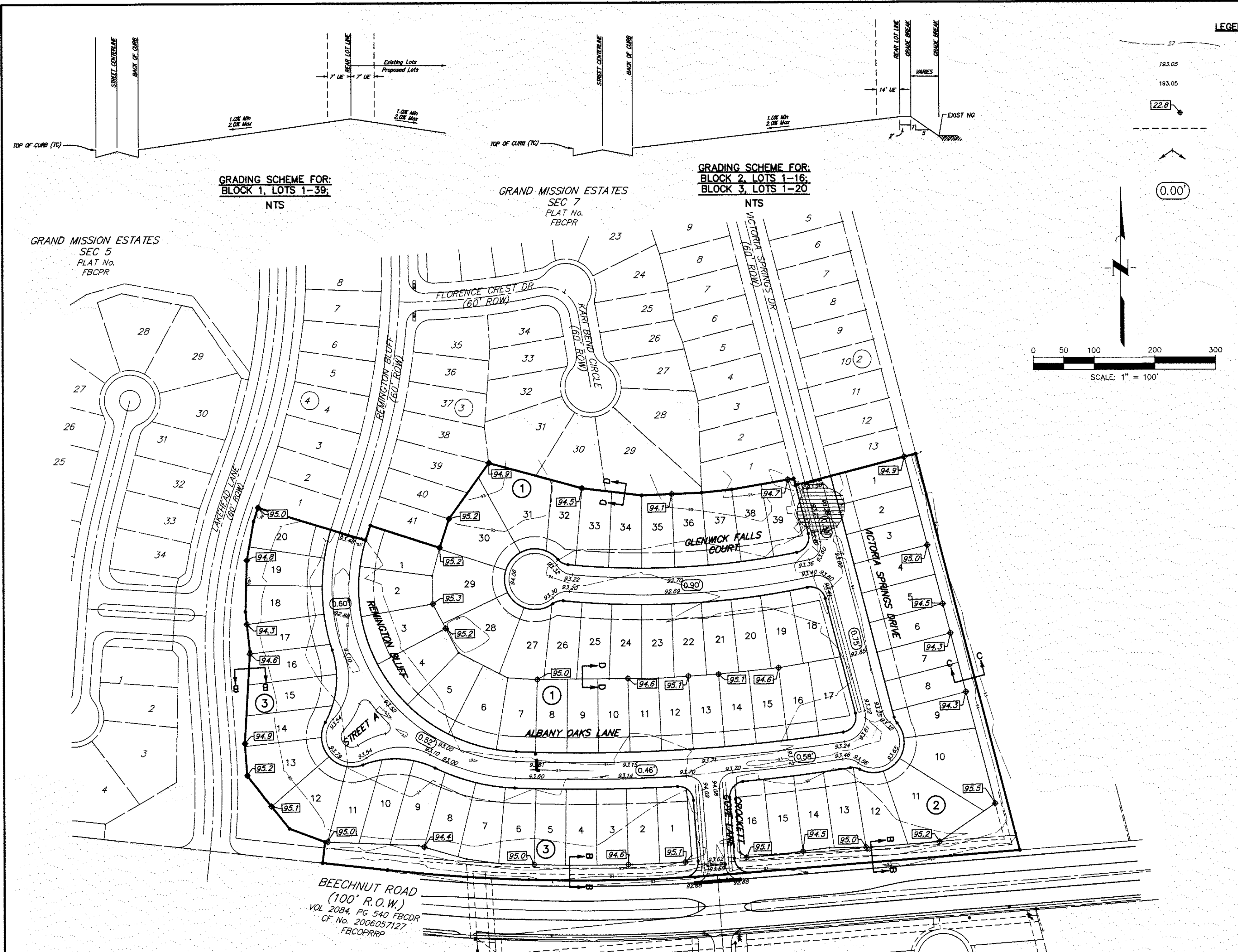
DWG. BY: JLG

SCALE: 1"=100'

SHEET No. 14 OF 18

FOR CITY OF HOUSTON USE ONLY CITY DWG. NO.

60296



LEGEND

- EXIST GROUND CONTOUR
- PROPOSED TOP OF CURB
- EXISTING TOP OF CURB
- FINISH ELEVATIONS
- GRADE BREAK LINE
- SLOPE OF FINISHED GRADE
- MAX PONDING ABOVE TOP OF CURB AT INLETS BEFORE SHEET FLOW

100-YEAR FLOOD PLAIN

ACCORDING TO MAP NO. 48157CD140L & 48157CD130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS DATED APRIL 2, 2014, A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN THE SHADOWN ZONE "X", DEFINED AS AREAS OF 0.2% ANNUAL CHANCE OF FLOOD. AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE AND A PORTION OF THE SUBJECT TRACT IS LOCATED WITHIN UNSHADOWN ZONE "X", DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE, ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

NOTE: THE 100-YEAR FLOOD ELEVATION IS APPROXIMATELY 92.3 FEET AS PER THE FEMA INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS COMMUNITY PANEL NO. 48157CD130L, DATED APRIL 2, 2014. THE 100-YR FLOOD PLAIN, ELEVATION 92.3, IS CONTAINED IN THE CHANNEL NORTH OF THE DETENTION POND.

BENCH MARK

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HGCSO 66, P.O. NO. AWS411 HAVING PUBLISHED INFORMATION AS FOLLOWS:

LATITUDE 29 43' 58.1317" NORTH
LONGITUDE 95 50' 45.96836" WEST NAD 83
ELEVATION 136.6 FEET NAVD 88

T.B.M. B

BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE DEAD END.

ELEVATION = 96.18, NAVD 88.

T.B.M. D

BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON BEECHNUT STREET AT THE WEST ENTRANCE TO OAVO CROCKETT MIDDLE SCHOOL.

ELEVATION = 93.70, NAVD 88.

ISSUED FOR CONSTRUCTION

MINIMUM SLAB ELEVATION NOTES

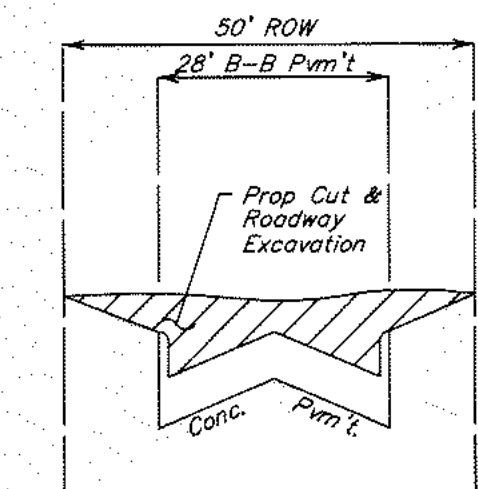
THE MINIMUM SLAB ELEVATION FOR EACH LOT WILL BE THE HIGHEST ELEVATION OF THE FOLLOWING CRITERIA:

1. TWELVE INCHES ABOVE THE ANTICIPATED PONDING LEVEL IN THE STREET SYSTEM AND SITE PLAN DURING THE EXTREME EVENT.
2. EIGHTEEN INCHES ABOVE THE 100-YEAR FLOOD PLAIN OR IMPACTING WATER SURFACE ELEVATION.
100-YEAR FLOOD PLAIN ELEVATION = 92.30
3. THE TOP OF SLAB ELEVATION AT ANY POINT ON THE PERIMETER OF THE SLAB SHALL NOT BE LESS THAN EIGHTEEN (18) INCHES ABOVE LOWEST NATURAL GROUND.
4. THE TOP OF ALL FLOOR SLAB SHALL BE A MINIMUM OF 95.8 FEET ABOVE MEAN SEA LEVEL SUBJECT TO EIGHTEEN (18) INCHES ABOVE LOWEST NATURAL GROUND.

GRADING NOTES

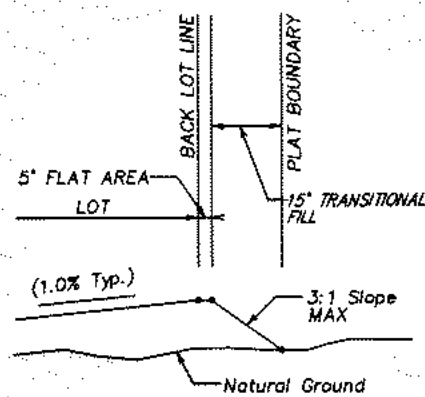
- LINES AND GRADES ON THIS GRADING PLAN DO NOT IMPLY AUTHORIZATION TO PERFORM ANY GRADING WORK ON OTHER PROPERTIES. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN SUCH APPROVALS FROM THE ENGINEER PRIOR TO COMMENCING WORK.
- THE CONTRACTOR SHALL COMPLETE ALL EXCAVATION ACTIVITIES TO THE LINES AND GRADES SHOWN BY THIS PLAN. UNIFORM SMOOTH GRADING OF ALL AREAS SHALL BE ACCOMPLISHED. ALL AREAS TO BE STRAIGHT GRADED FROM ELEVATION TO ELEVATION AS SHOWN. THE FINISHED SURFACE SHALL BE REASONABLY SMOOTH AND FREE FROM IRREGULARITIES.
- THE CONTRACTOR MAY FIELD ADJUST THE PROPOSED LOCATION AND ROUTING OF SURFACE DRAINAGE SWALES TO OPTIMIZE DRAINAGE, AS REQUIRED. CONTRACTOR TO OBTAIN APPROVAL FROM ENGINEER PRIOR TO MAKING ADJUSTMENTS (NO SEPARATE PAY).
- LOT AREAS THAT ARE TO RECEIVE FILL SHALL BE PREPARED AS FOLLOWS (NO SEPARATE PAY)
 - o AREAS TO RECEIVE FILL WITH EXISTING GRASS OR SHRUBBERY HIGHER THAN 2 FEET MUST BE MOWED PRIOR TO THE PLACEMENT OF FILL STAKES.
 - o CLEARING OF SCATTERED TREES UP TO 4 INCH CALIPER IN AREAS DESIGNATED TO RECEIVE FILL IS INCIDENTAL TO THE CONTRACT. INCLUDE COSTS IN PRICE BID FOR LOT GRADING.
 - o AREAS TO RECEIVE FILL WILL BE STRIPPED TO A DEPTH OF 3 INCHES. STRIPPINGS SHALL BE STOCKPILED AND THEN SPREAD EVENLY ON THE SURFACE OF FILLED AREAS. FINAL LOT ELEVATIONS ARE BASED ON FINISH GRADES WITH STRIPPING SPREAD ON GRADED AREAS. STRIPPINGS PLACED WITHIN FUTURE BUILDING PADS TO BE PLACED NO MORE THAN 3 INCHES THICK AND COMPACTED.
 - o CONTRACTOR TO PROOF ROLL ALL LOTS WITHIN THE PROJECT BOUNDARY AS PART OF LOT GRADING. PRIOR TO THE PLACEMENT OF ANY MATERIAL ON NATIVE EARTH, THE AREA SHALL BE PROOF ROLLED. THE NATIVE SOIL SHALL BE ROLLED WITH SUFFICIENT INTENSITY TO BRING OUT WEAK SPOTS IN THE SUB-GRADE WHICH WOULD OTHERWISE FAIL DURING THE CONSTRUCTION PROCESS. THE PROOF ROLLING SHALL BE COMPLETED WITH EQUIPMENT WEIGHING AT LEAST 20 TONS WITH TIRE PRESSURES BETWEEN 50 PSI AND 150 PSI. A MINIMUM OF TWO COVERAGES OF THE PROOF ROLLER WILL BE REQUIRED. EACH SUCCEEDING TRIP OF THE PROOF ROLLER SHALL BE OFFSET BY NOT GREATER THAN ONE TIRE WIDTH. ROLLERS SHALL BE OPERATED AT SPEEDS BETWEEN 2 AND 6 MPH. SHOULD SOFT UNSTABLE AREAS APPEAR IN THE LOTS, THE CONTRACTOR SHALL REMOVE THE UNSTABLE MATERIAL AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL REPLACE THIS WITH A SUITABLE MATERIAL COMPACTED AS REQUIRED (NO SEPARATE PAY FOR A DEPTH UP TO 1.5 FDT).
- PLACEMENT OF FILL SHALL NOT CREATE PONDING ON ADJACENT LOTS OR PROPERTY.
- LOT FILL SHALL BE PLACED IN A MAXIMUM LOOSE LIFTS OF 8 INCHES OR LESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT ORIMUM TO +5% MOISTURE CONTENT AS DETERMINED BY AASHTO TEST METHOD T-99.
- ALL EXISTING DRAINAGE SWALES IN FILL AREAS SHALL BE STRIPPED OF ANY VEGETATION, CLEANED AND MUCKED OUT TO SUITABLE SUBGRADE MATERIAL AND THEN FILLED AS SHOWN WITH EXCAVATION MATERIAL IN MAXIMUM 8 INCH LOOSE LIFTS, WITH EACH LIFT COMPACTED TO AT LEAST 95% PROCTOR DENSITY AS DETERMINED BY AASHTO TEST METHOD T-99.
- ENGINEER WILL PROVIDE APPROXIMATE BACK LOT LINE FINISH ELEVATIONS. CONTRACTOR SHALL VERIFY FINAL LOT GRADES AND ELEVATIONS TIED TO PROJECT BENCH MARK. CONTRACTOR SHALL INCLUDE COST IN BID ITEM FOR LOT GRADING.
- EROSION CONTROL MEASURES ARE TO BE COMPLETELY IMPLEMENTED PRIOR TO ANY GRADING WORK.
- FINAL PAYMENT SHALL BE CONTINGENT ON THE ENGINEER'S VERIFICATION THAT LOT GRADING IS IN ACCORDANCE WITH THE GRADING PLAN, AND THAT SOIL COMPACTION TESTS WERE PERFORMED AS REQUIRED.
- ALL LOTS SHALL BE GRADED SO THAT NO PORTION OF ANY LOT SHALL DRAIN ONTO OR ACROSS ANY OTHER LOT, BUT SHALL DRAIN DIRECTLY TO STREET UNLESS DESIGNATED OTHER THAN TYPE "A" GRADING.

GRAND MISSION MUD #1

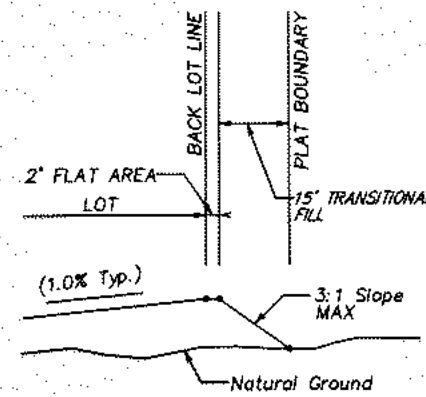


STREET EXCAVATION SECTION A-A
NTS

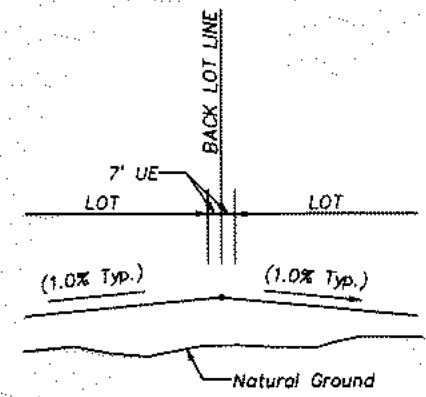
GRAND MISSION ESTATES SEC 20 PLAT No. FBCPR



LOT CROSS SECTION B-B
NTS



LOT CROSS SECTION C-C
NTS



LOT CROSS SECTION D-D
NTS

APPROVED: DEVELOPMENT COORDINATOR

DATE:

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE: For your safety, you are required by Texas Law to use 911 or 48 hours before you dig so that underground lines can be marked. This verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

Date:

CenterPoint Energy/Natural Gas Facilities Verification ONLY. (This Signature verifies that you have shown CPEI Natural Gas lines correctly - not to be used for contract verification.) (See service lines are not shown.) Signature valid for six months.

Date:

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

Date:

NO. DATE REVISIONS APP.

GRAND MISSION MUNICIPAL UTILITY DISTRICT NO. 2 FORT BEND COUNTY, TEXAS

JC JONES CARTER

Texas Board of Professional Engineers Registration No. F-439 2322 W Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 913-4000

GRAND MISSION ESTATES SEC 21

GRADING PLAN

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

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER TRAFFIC & STREET/BIDGE

WASTEWATER STORM WATER QUALITY

STORM FACILITIES

FILE NO. JOB NO. 05298-0173-00

DATE: APRIL 2018 DGN. BY: DMS

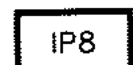
DWG. BY: JLG

SCALE: 1"=100'

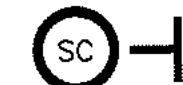
SHEET No. 15 OF 18

FOR CITY OF HOUSTON USE ONLY CITY DWG. NO. 60296

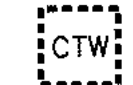
LEGEND



INLET PROTECTION BARRIERS
FOR STAGE II INLETS



STABILIZED
CONSTRUCTION ACCESS



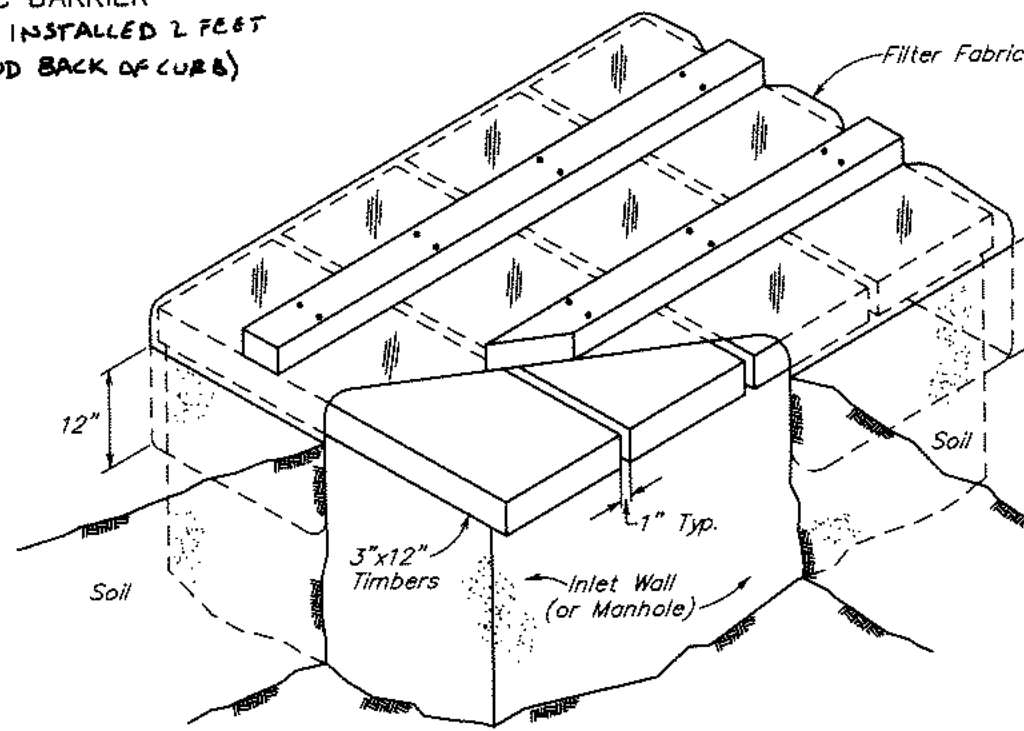
CONCRETE TRUCK WASHOUT AREA



REINFORCED FILTER
FABRIC BARRIER
(TO BE INSTALLED 2 FEET
BEHIND BACK OF CURB)

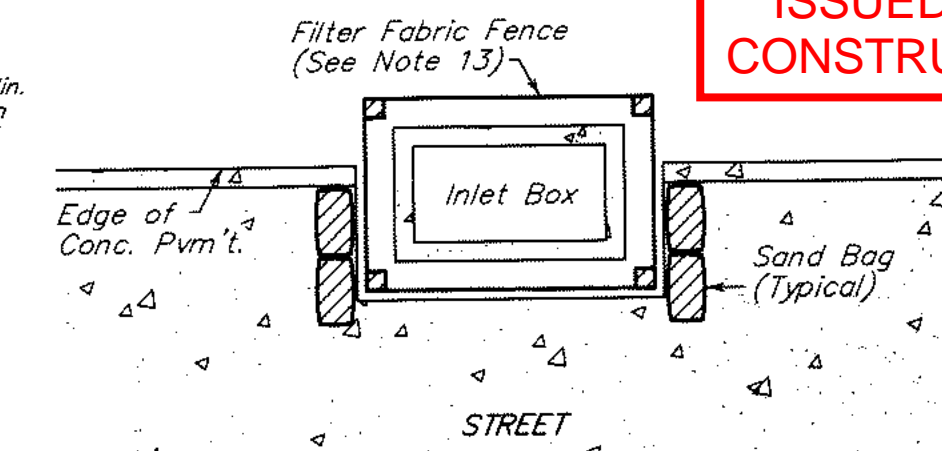
NOTE

CONTRACTOR TO SUBMIT COPIES OF
CONSTRUCTION SITE NOTICE (CSN) AND/OR
NOTICE OF INTENT (NOI) TO MSA OPERATOR PRIOR
TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES



TYPICAL INLET AND MANHOLE
PROTECTION - LOWER STAGE

NTS



TYPICAL INLET PROTECTION
UPPER STAGE - AFTER REMOVAL
OF TIMBER COVER

NTS

INSTALLATION SEQUENCE

UTILITY CONTRACTOR:

1. Install at start of construction.
2. Install for Stage I inlets.
3. Install x along back of curb, and across roadside ditches

PAVING CONTRACTOR:

1. Maintain existing facilities.
2. Broadcast Seeding of disturbed areas after final grading

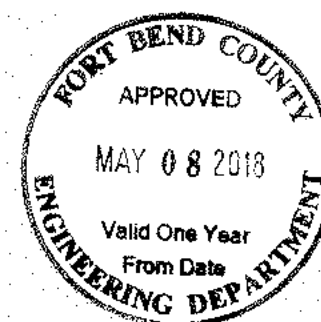
UTILITY CONTRACTOR:

1. Install x behind all back of curb upon completion of paving.
2. Install for Stage II inlets upon completion of paving
3. Area within ROW and Adjacent Easements Disturbed during Construction of Utilities to be Hydro-Mulch Seeded upon completion of Utilities.

Utility and Paving Contractor to follow all protection requirements and complete all forms as listed in bound SWPPP.

EROSION AND SEDIMENTATION CONTROL NOTES

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



BENCH MARK

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL
GEODETIC SURVEY MONUMENT DESIGNATION HGCS 66, PID
NO. AWS411 HAVING PUBLISHED INFORMATION AS FOLLOWS:

LATITUDE 29 43' 58.13317" NORTH
LONGITUDE 95 50' 45.96836" WEST NAD 83
ELEVATION 136.6 FEET NAVD 88

T.B.M. B

BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON
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BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT
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ELEVATION = 96.18, NAVD 88.

T.B.M. D

BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON
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CROCKETT MIDDLE SCHOOL.

ELEVATION = 93.70, NAVD 88.

ISSUED FOR
CONSTRUCTION

APPROVED: _____
DEVELOPMENT COORDINATOR

DATE: _____

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE:
For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig
so that underground lines can be marked. This verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

Date: _____

CenterPoint Energy/Natural Gas Facilities Verification ONLY:
(This Signature verifies that you have shown CPE Natural Gas lines correctly - not to be used for
conflict verification.) (One signature line per utility line.)

Signature Valid for six months.

Date: _____

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

Signature Valid for six months.

Date: _____

NO. DATE REVISIONS APP.

GRAND MISSION MUNICIPAL
UTILITY DISTRICT NO. 2
FORT BEND COUNTY, TEXAS

JONES CARTER

Texas Board of Professional Engineers Registration No. F-439
2320 W. Grand Parkway North, Suite 150, Katy, TX 77449-7821 (832) 913-4000

GRAND MISSION ESTATES SEC 21

STORM WATER
POLLUTION
PREVENTION PLAN

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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER TRAFFIC & STREET/BIDGE

WASTEWATER STORM WATER QUALITY

STORM FACILITIES

FILE NO. _____

JOB NO. 05298-0173-00

DATE: APRIL 2018

DCN. BY: DMS

DWG. BY: JLG

SCALE: 1"=100'

SHEET No. 16 OF 18

FOR CITY OF HOUSTON USE ONLY
CITY DWG NO.

60296

CITY DRAWING NUMBER

HOUSTON, TEXAS

GRAND MISSION ESTATES
SEC 5
PLAT No.
FBCPR

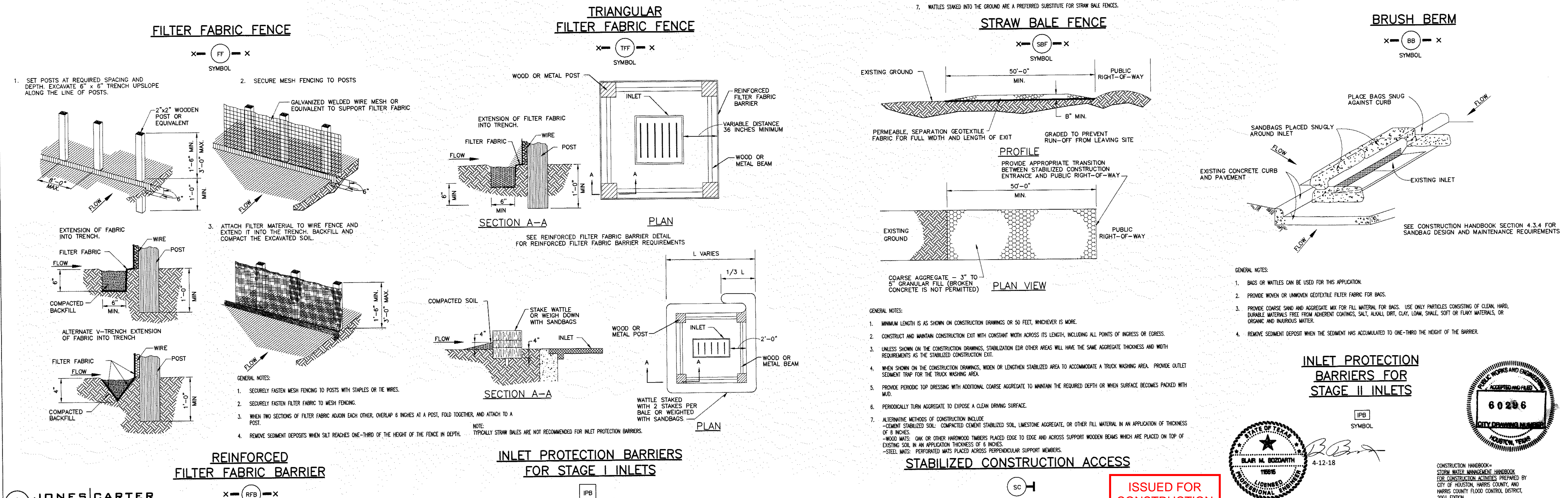
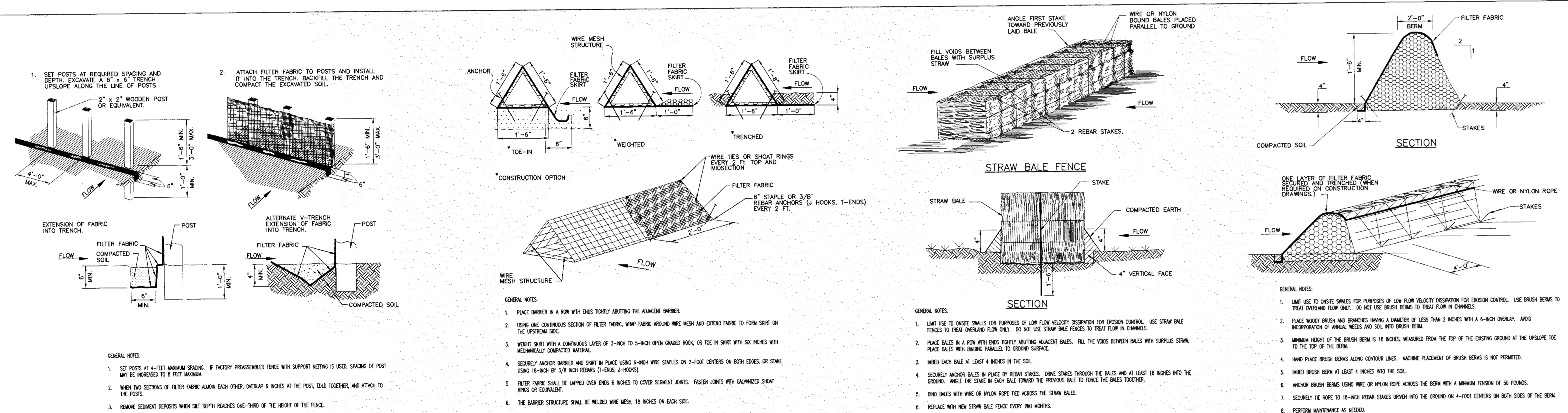
0 50 100 200 300
SCALE: 1" = 100'

GRAND MISSION ESTATES
SEC 7
PLAT No.
FBCPR

BEECHNUT ROAD
(100' R.O.W.)
VOL 2084, PG 540 FBCOR
OF No. 2006057127
FBCOPRRP

GRAND MISSION
MUD #1

GRAND MISSION ESTATES
SEC 20
PLAT No.
FBCPR



Jones Carter

NO. 1
CHANGED TITLE BLOCK
2
ADDED CONTINENTAL CROSSWALK

DATE
7/21/98
8/3/98
NAME
R.L.S.
ALP

REVISIONS

DATE
7/21/98
8/3/98
NAME
R.L.S.
ALP

Fort Bend County Engineering Department

EXCELLENCE
FORT BEND COUNTY, TEXAS

APPROVED
MAY 08 2013
Valid One Year
From Date

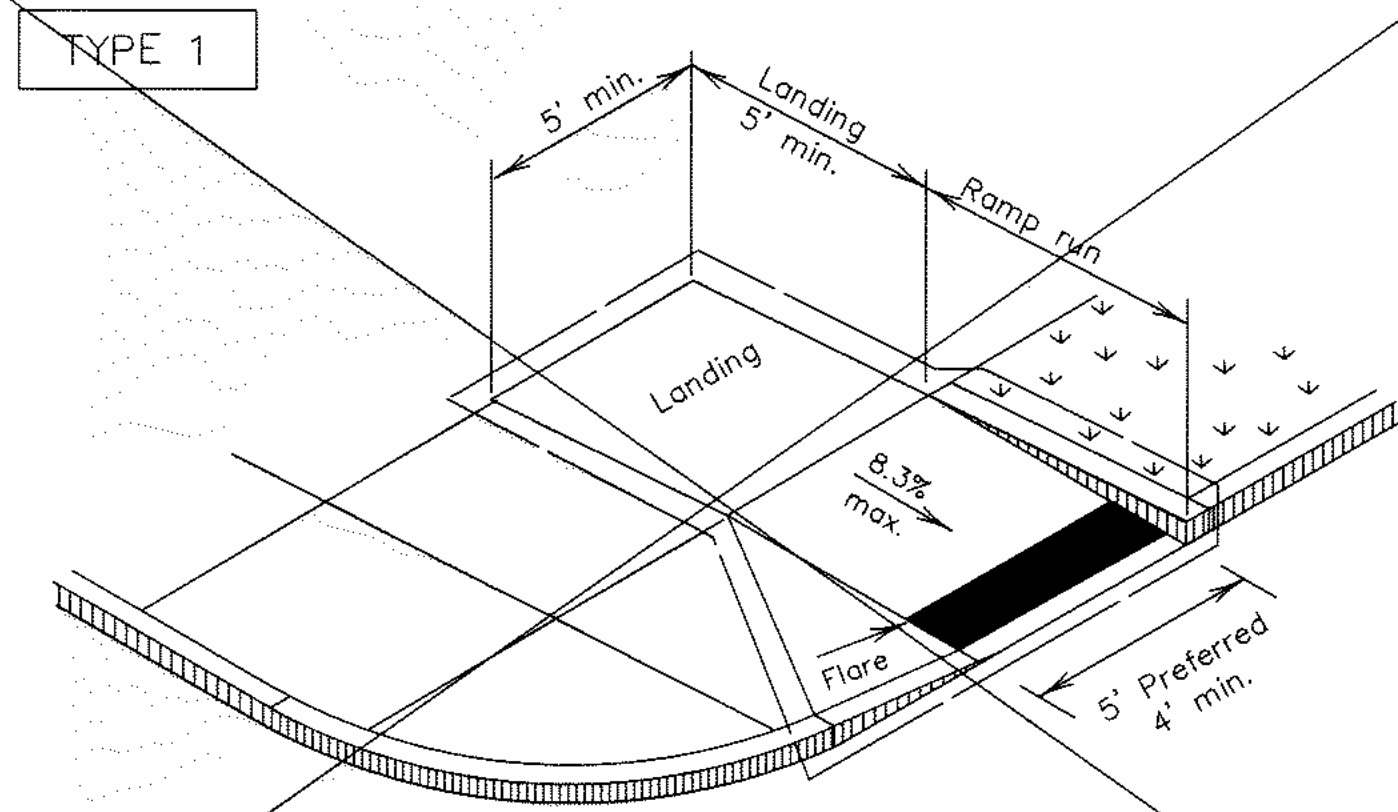
ISSUED FOR CONSTRUCTION

GRAND MISSION ESTATES SEC 21
STORM WATER POLLUTION PREVENTION DETAILS
6/27/01

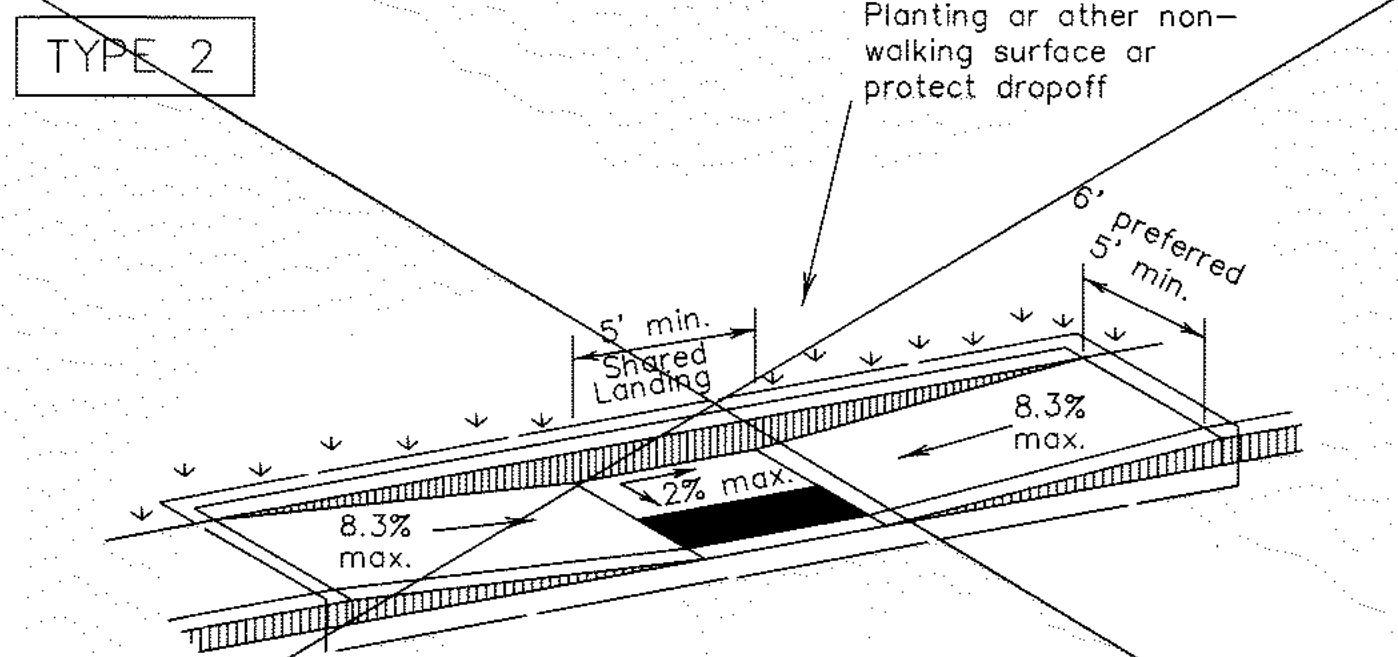
60296
CITY OF HOUSTON
HARRIS COUNTY
2001 EDITION

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JONES CARTER
Texas Based Professional Engineering Firm, No. 4,438
22330 Merchants Way, Suite 120 • Katy, TX 77449 • 832.333.4300
DATE: _____
FILE: _____

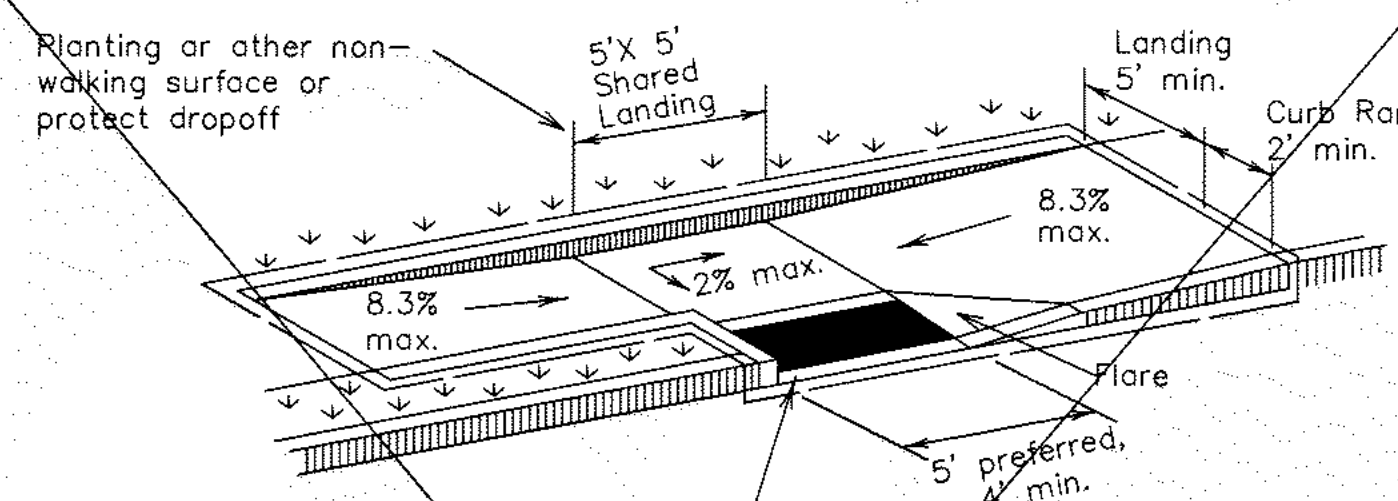


PERPENDICULAR CURB RAMP

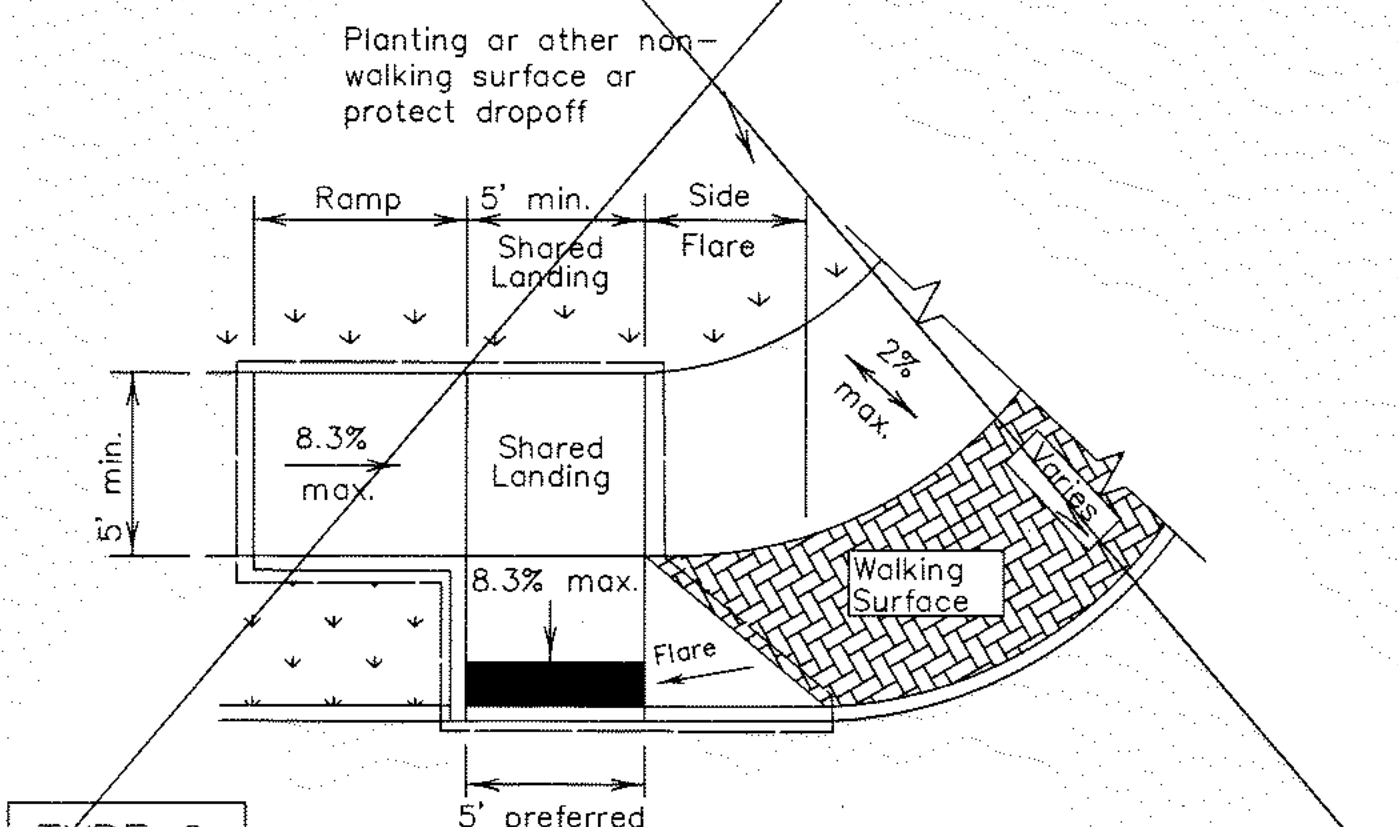


PARALLEL CURB RAMP

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

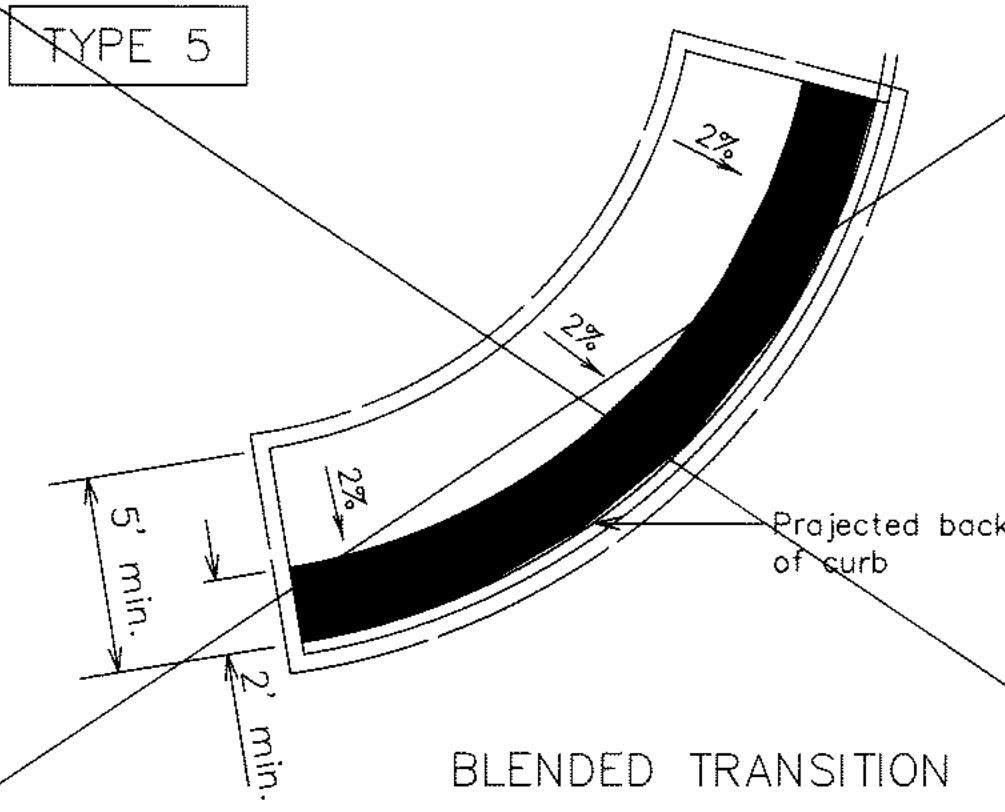


TYPE 3

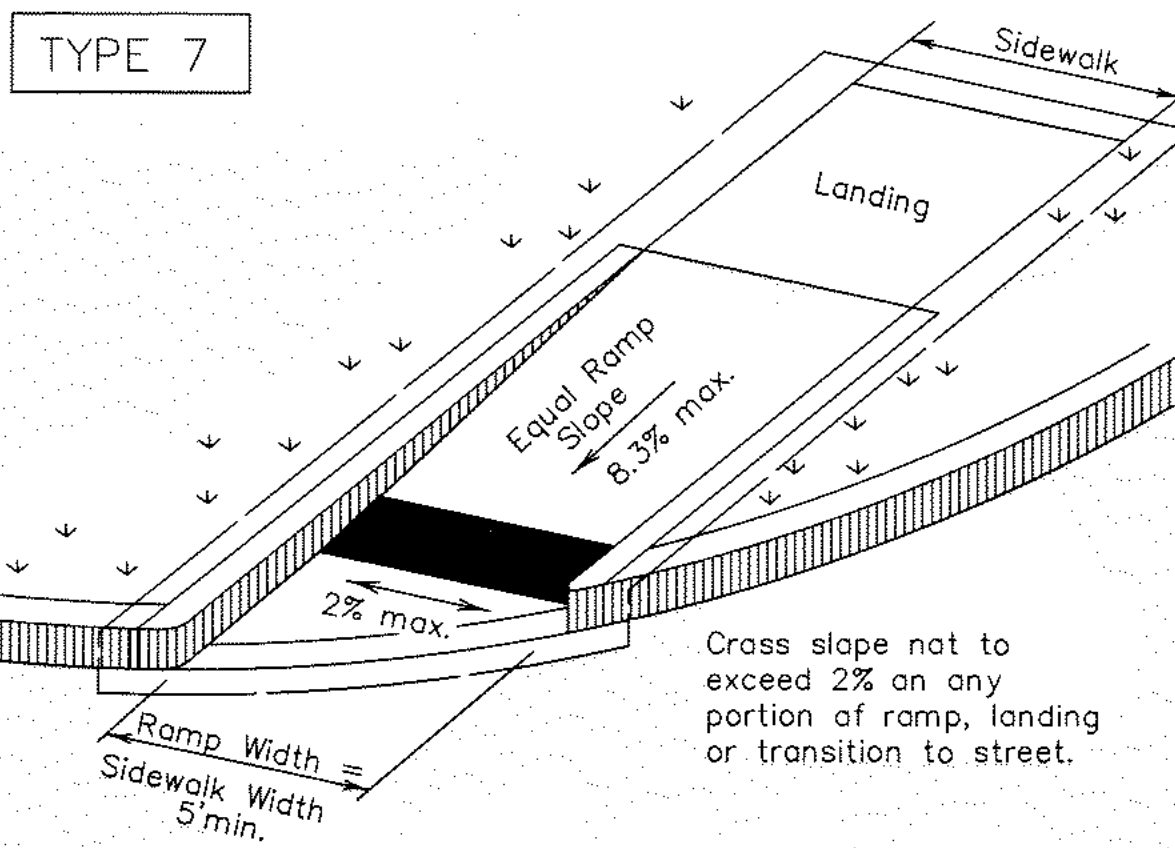


TYPE 6

COMBINATION CURB RAMPS

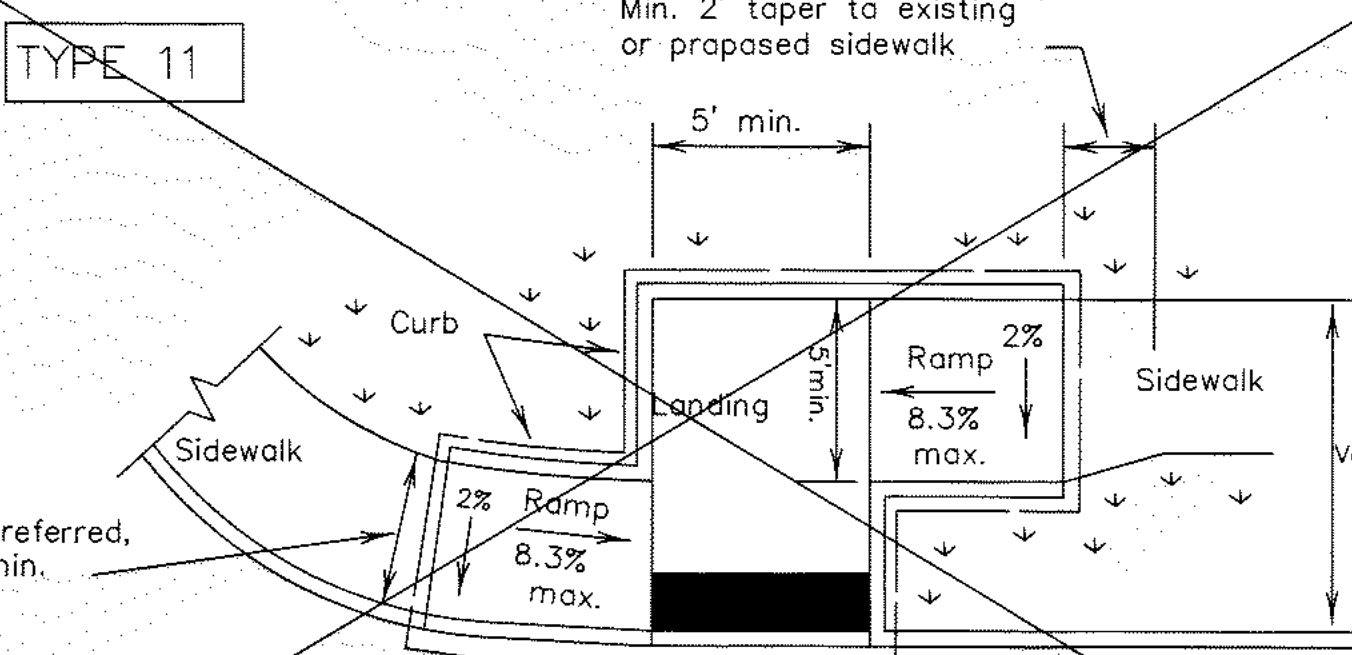


BLENDED TRANSITION

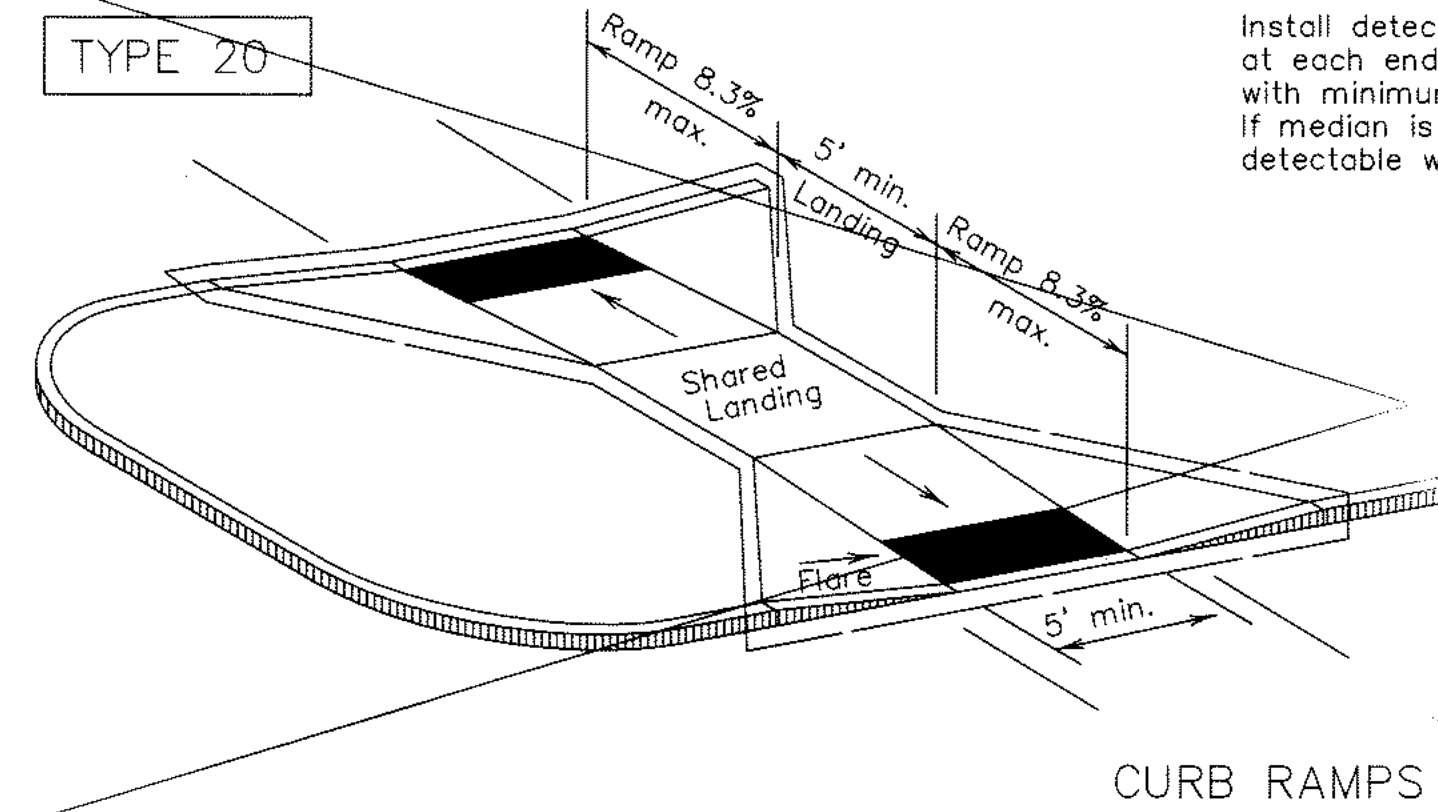


(Sidewalk set back from curb)

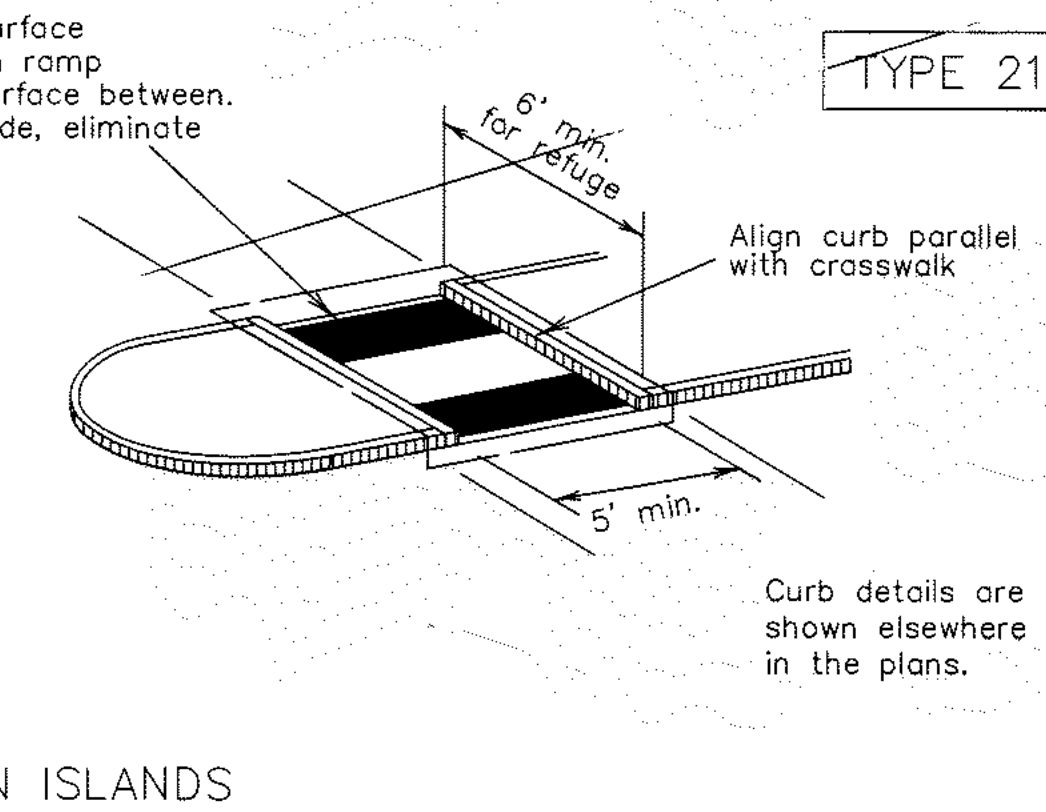
DIRECTIONAL RAMPS WITHIN RADIUS



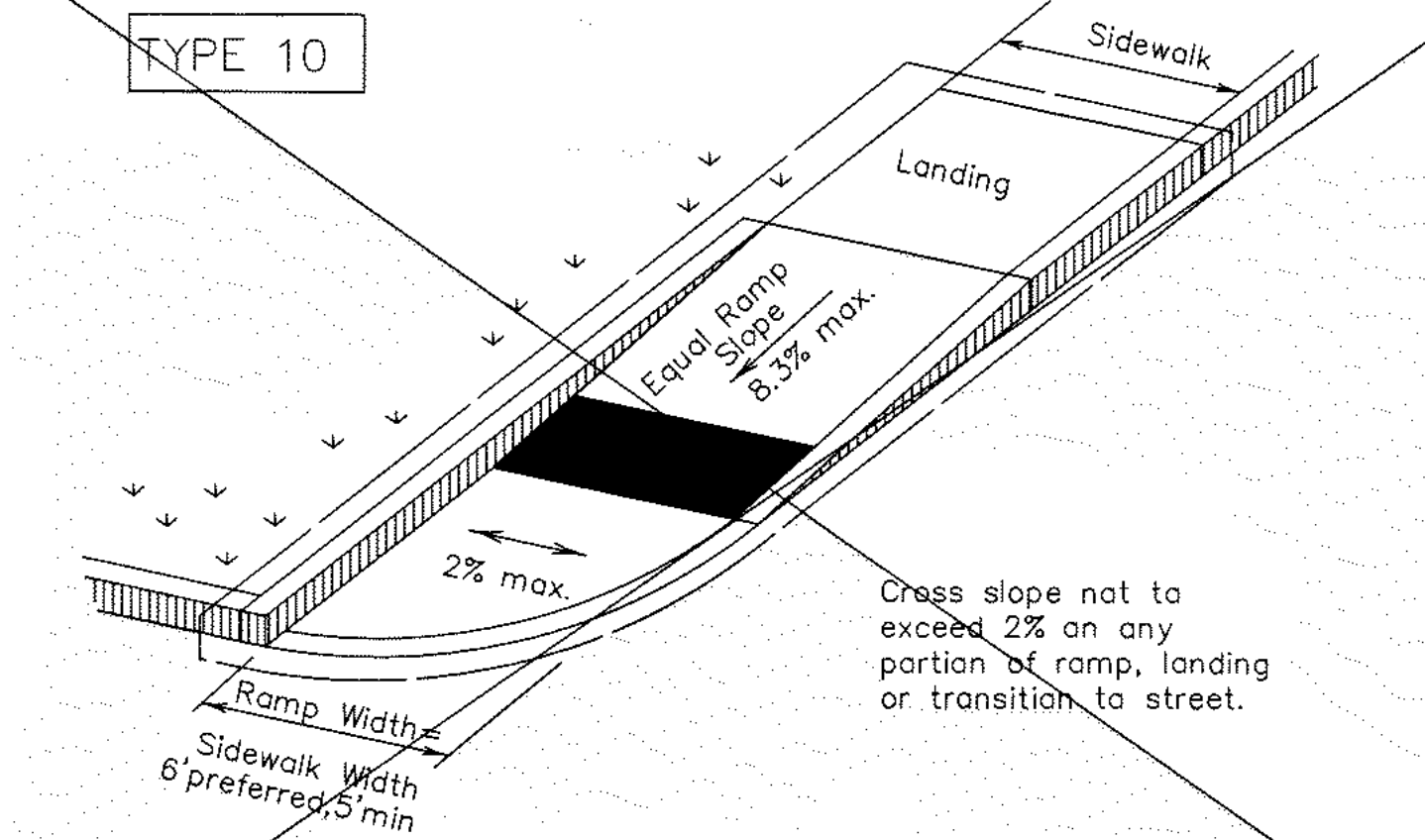
OFFSET PARALLEL CURB RAMP



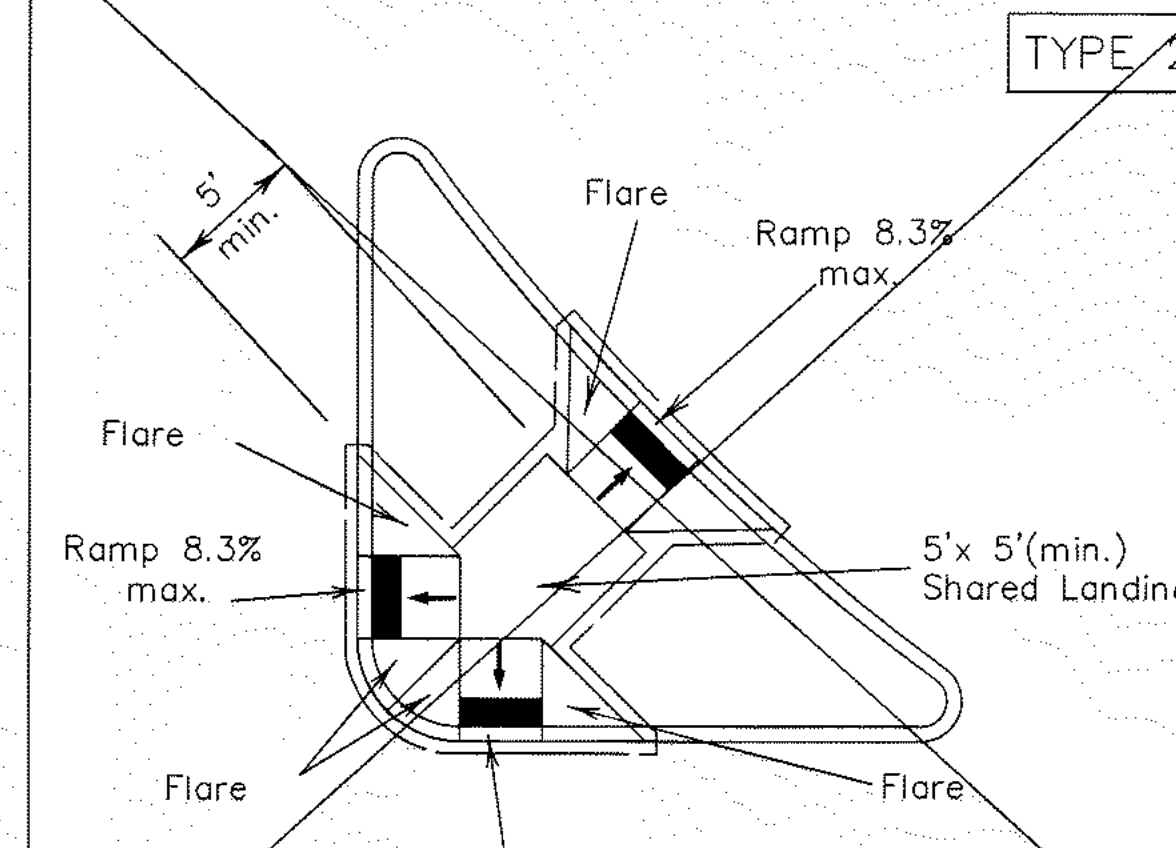
CURB RAMPS AT MEDIAN ISLANDS



Curb details are shown elsewhere in the plans.



(Sidewalk adjacent to curb)



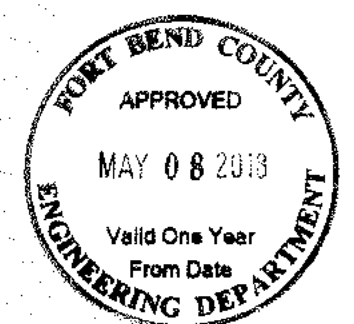
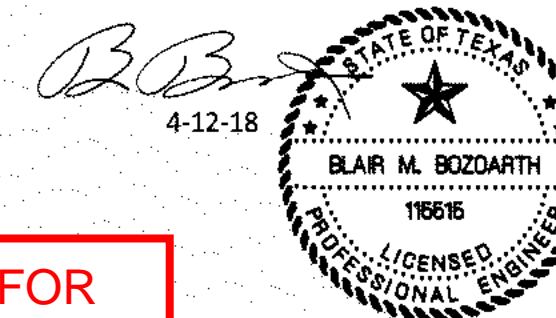
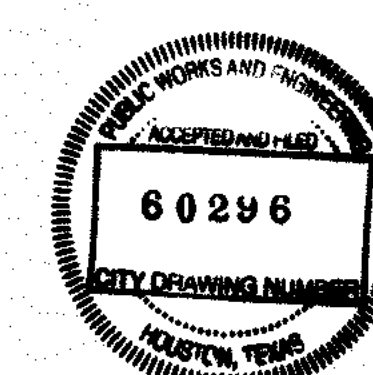
COMBINATION ISLAND RAMPS

ISSUED FOR CONSTRUCTION

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




APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: _____

GRAND MISSION ESTATES SEC 21

SHEET 1 OF 4

 Texas Department of Transportation		Design Division Standard	
PEDESTRIAN FACILITIES CURB RAMPS PED-12A			
FILE: ped12a.dgn	DN: TxDOT	CK: PK	DW: TxDOT
© TxDOT March 2002	CONT	SECT	JOB
VP June 13, 2012	DIST	COUNTY	SHEET NO.
			18 of 18