14L

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

REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

☐ Right of Way Permit
☒ Commercial Driveway Permit
Permit No: 2018-22608

Applicant: VMB Equity Properties LLC

Job Location Site: 10007 Clodine Road, Richmond, TX 77407

Bond No. [redacted] **Date of Bond:** _____ **Amount:** $15,000.00

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

Notes:

1. Evidence of review by the Commissioners Court must be kept on the job site and failure to do so constitutes grounds for job shutdown.
2. Written notices are required:
   a. 48 hours in advance of construction start up, and
   b. When construction is completed and ready for final inspection, submit notification to Permit Administrator thru MyGovernmentOnline.org portal.
3. This permit expires one (1) year from date of permit if construction has not commenced.
4. This permit applies to work performed within right-of-ways owned and maintained by Fort Bend County only, and it is the responsibility of the applicant to acquire all other necessary permits.

On this 13th day of November, 2018, Upon Motion of Commissioner Meyers, seconded by Commissioner Morales, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Signature

By: _____
County Engineer

N/A
By: _____
Drainage District Engineer/Manager

Presented to Commissioners Court and approved.

Date Recorded 11-26-2018 Comm. Court No. 14L

Clerk of Commissioners Court

By: _____
Deputy

11/26/2018 Original sent to Sean Eglinton, Engineering dept.

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

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

[ ] **Right of Way Permit**

[X] **Commercial Driveway Permit**

Permit No: 2018-22608

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

(1) COMPLETE APPLICATION FORM:

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

(2) BOND:

- [ ] County Attorney, approval when applicable.
- [ ] Perpetual bond currently posted. Bond No: _____ Amount: _____
- [ ] Performance bond submitted. Bond No: _____ Amount: _____
- [X] Cashier's Check Check No: [redacted] Amount: $15,000.00

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

_____ Drainage District Approval

_____ Date

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

_____ Permit Administrator

11/2/2018
Date

PROSPERITY BANK®
MEMBER FDIC

CASHIER'S CHECK N [redacted]

REMITTER VMB EQUITY PROPERTIES LLC

[redacted]

Aug 8, 2018

PAY TO THE ORDER OF FORT BEND COUNTY $ $15,000.00

Fifteen Thousand and 00/100********** DOLLARS

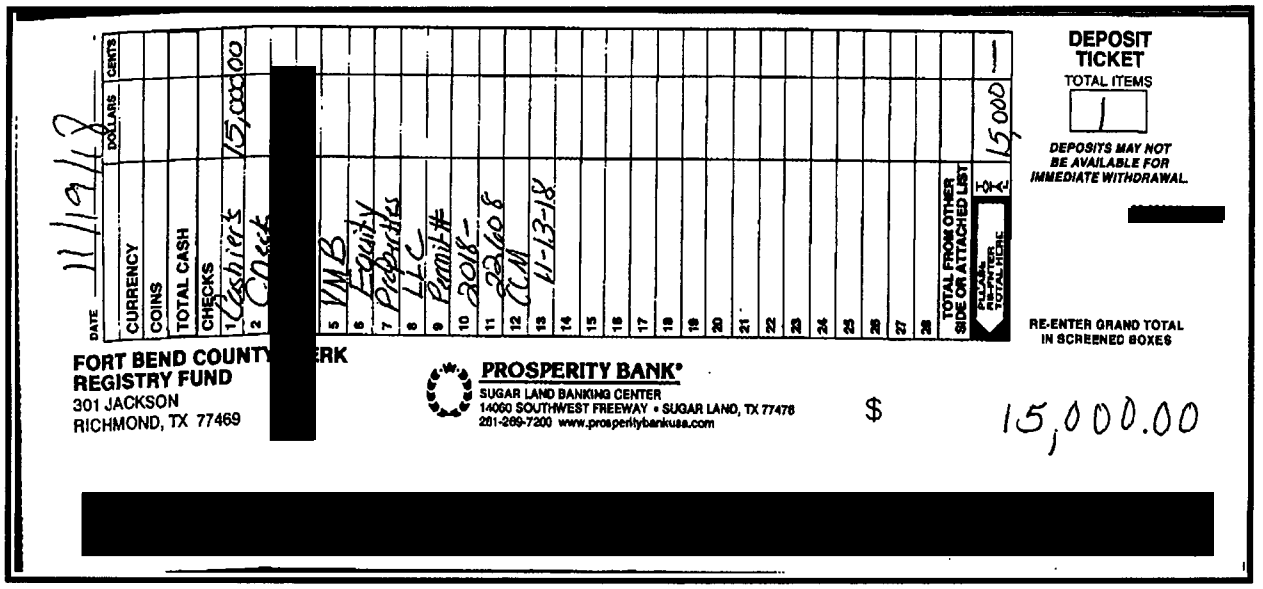
TWO SIGNATURES REQUIRED

AUTHORIZED SIGNATURE MP

AUTHORIZED SIGNATURE

NOTICE TO CUSTOMERS
THE PURCHASE OF AN INDEMNITY BOND WILL BE REQUIRED BEFORE THIS CHECK WILL BE REPLACED OR REFUNDED IN THE EVENT IT IS LOST, MISPLACED OR STOLEN.

[redacted]



DEPOSIT TICKET

DATE 11/19/18

	DOLLARS	CENTS
CURRENCY		
COINS		
TOTAL CASH		
CHECKS 1 Cashiers	15,000	00
2 Check	[redacted]	
3		
4		
5 VMB		
6		
7 Properties		
8 LLC		
9 Permit #		
10 2018-		
11 22608		
12 CM		
13 11-13-18		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28 TOTAL FROM OTHER SIDE OR ATTACHED LIST		
TOTAL	15,000	—

PLEASE RE-ENTER TOTAL HERE

TOTAL ITEMS 1

DEPOSITS MAY NOT BE AVAILABLE FOR IMMEDIATE WITHDRAWAL.

[redacted]

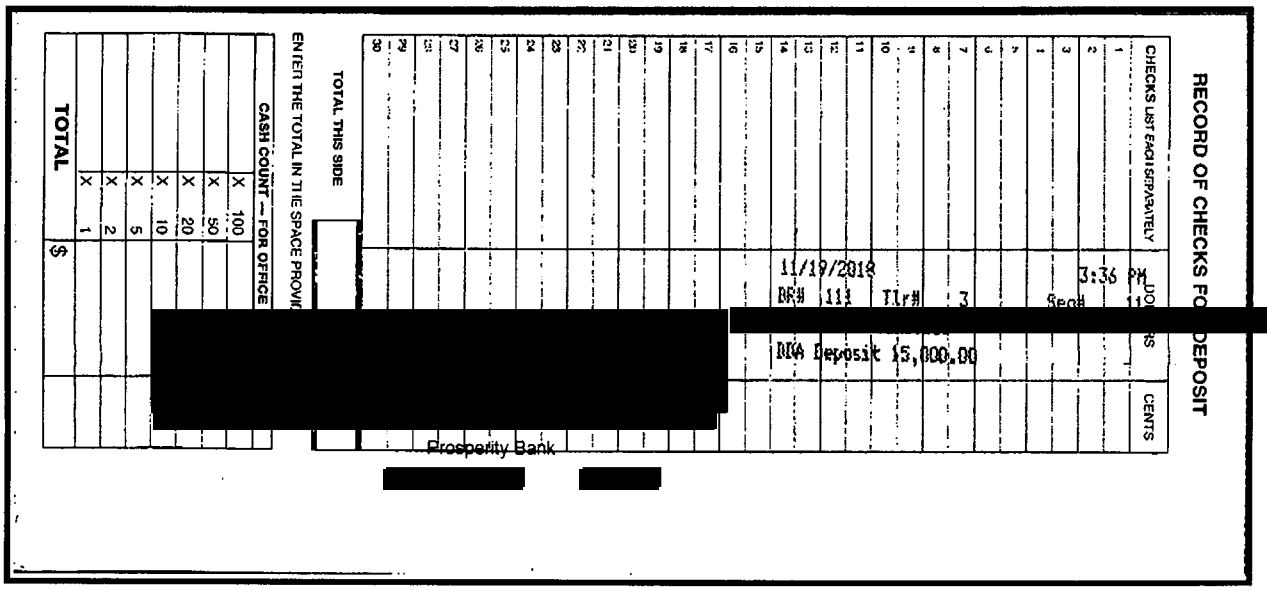
RE-ENTER GRAND TOTAL IN SCREENED BOXES

FORT BEND COUNTY [redacted]ERK
REGISTRY FUND
301 JACKSON
RICHMOND, TX 77469

PROSPERITY BANK®
SUGAR LAND BANKING CENTER
14060 SOUTHWEST FREEWAY • SUGAR LAND, TX 77478
281-269-7200 www.prosperitybankusa.com

$ 15,000.00

[redacted]



RECORD OF CHECKS FOR DEPOSIT

CHECKS LIST EACH SEPARATELY

	DOLLARS	CENTS
1		
2		
3		
4		
5		
6		
7		
8		
9		
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11		
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28		
29		
30		
TOTAL THIS SIDE		

ENTER THE TOTAL IN THE SPACE PROVIDED

CASH COUNT — FOR OFFICE USE ONLY

X 100		
X 50		
X 20		
X 10		
X 5		
X 2		
X 1		
TOTAL $		

11/19/2018 3:36 PM
BR# 111 TLr# 3 Seq# 11
[redacted]
MA Deposit 15,000.00

Prosperity Bank

[redacted]

Texas CLASS®

PRINT

Order Confirmation

Fort Bend County, Office of County Clerk
301 Jackson Street
Richmond, TX 77469

TXCLASS

Order Date:	11/21/2018	Order Number:	[redacted]
Participant Name:	Fort Bend County, Office of County Clerk		
Account Name:	CCM2018-		
Account Number:	[redacted]	Authorized	Linda Willis
Transaction Type:	Contribution		
Transaction Amount:	$15,000.00		
Bank Name:	PROSPERITY BANK		
Bank Account No:	[redacted]		
Payment Type:	[redacted]		
ABA:			
Payment Instructions:			

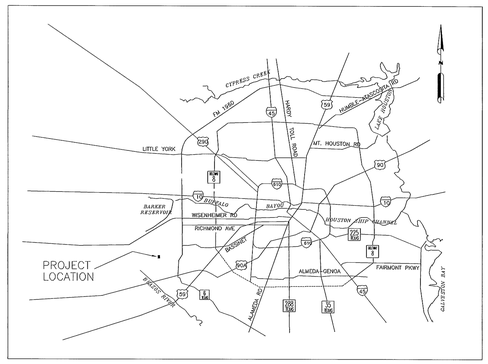
Please note you have made an ACH Contribution, these funds will not be available for withdrawal until the following business day.

Memo:

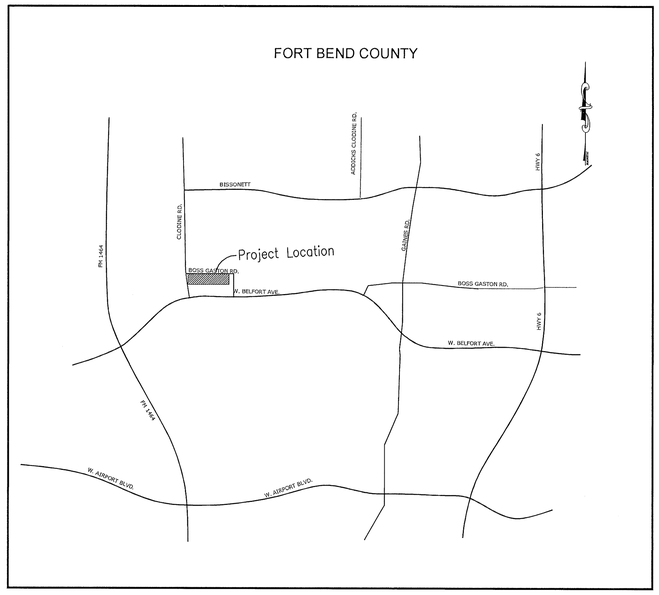
DEPOSIT

PERMIT #	2018-22608
STYLE:	VMB Equity Properties LLC
NAME PUT INTO TEXAS CLASS AS:	CCM2018- [redacted]
TEXAS CLASS ACCOUNT NUMBER	[redacted]
DEPOSIT AMOUNT:	$15,000.00
DATE RECEIVED:	11/13/2018
DATE TRANSFERRED TO TEXAS CLASS:	11/20/2018

SCHOOL OF SCIENCE & TECHNOLOGY RICHMOND, TX
PHASE 1
FORT BEND COUNTY
FBCFWD #2



LOCATION MAP



VICINITY MAP
N.T.S.
FORT BEND COUNTY, TEXAS KEY MAP: 527-T & U

SHEET INDEX

NO.	DESCRIPTION
1	COVER
2	OVERALL SITE LAYOUT & GRADING PLAN
3	OVERALL SITE LAYOUT & DRAINAGE PLAN
4	PLAN & PROFILES
5	DETENTION POND CROSS SEC.
6	NOTES, DRIVEWAY & GREASE TRAP DETAILS
7	STORM WATER LIFT STATION
8	TXDOT DETAILS #1
9	TXDOT DETAILS #1 & SANT. STACK DETAIL

NOTE:
Owner will be responsible
for all maintenance of detention pond and
Pumping system.

NOTE:
This tract is located within the bounderies of
Fort Bend County Fresh Water Supply District 2.

Contractor is to contact both the District's Operator
and Engineer 48 hours in advance of mobilizing to the site.

Operator:
Environmental Development Partners
17495 Village Green
Houston, TX 77040
832-467-1599

Engineer:
Sherrington-Humble, LLC
9829 Whithorn Drive
Houston, TX 77095
281-656-8837

NOTE:
1. Only the District Operator is authorized to operate the District's water distribution facilities.
2. The District Operator will furnish and install all meters and make all taps in accordance with the District's Rate Order.
3. The Contractor will furnish and install all backflow preventors.
4. The District Operator is to inspect all water, sanitary, and storm utilities prior to placement of any bedding and backfill material.

FORT BEND COUNTY ENGINEER

APPROVED: for Richard W. Stolleis, P.E.

DATE: 8/2/18

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

APPROVED: for Development Coordinator

DATE: 8-1-18

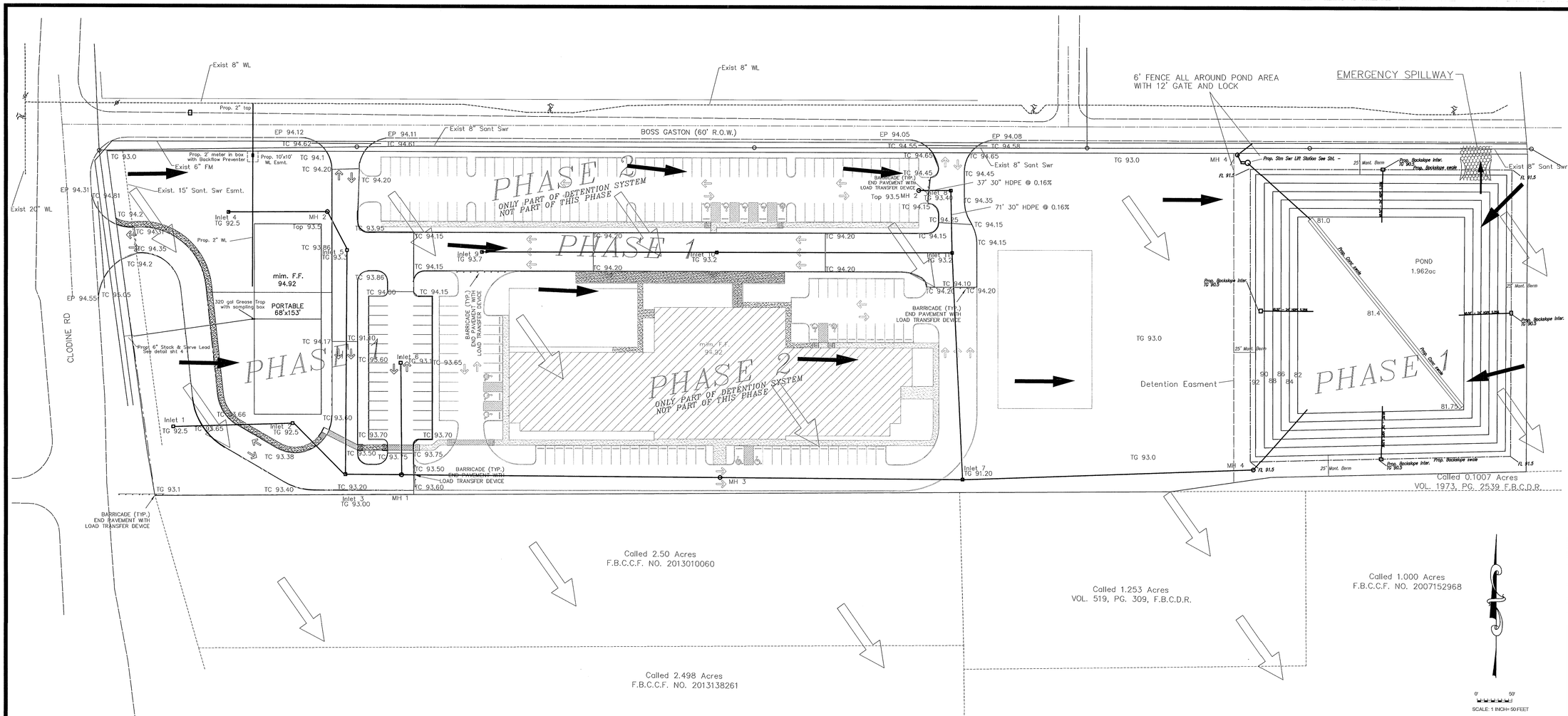
STATE OF TEXAS
MICHAEL V. BALDWIN
70639
REGISTERED
PROFESSIONAL ENGINEER
7/27/18

PEI PROVIDENT ENGINEERS, INC.
PROVIDENT ENGINEERS, INC.
REG NUM. F-1508
8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

SURVEYED BY:
FB NO.

SHEET NO 1 OF 9 SHEETS

SCHOOL OF SCIENCE & TECHNOLOGY RICHMOND, TX



BENCH MARK

REFERENCE BENCHMARK:
TBM No. 8 IS A BOX CUT ON TOP OF CURB AT EAST END OF MEDIAN BULLETNOSE AT THE CENTERLINE OF WEST BELLFORT AT THE WEST SIDE OF SUGAR SPICE DRIVE, PER PLANS FOR "WEST BELLFORT PAVING AND DRAINAGE IMPROVEMENTS FROM MARTINEZ STREET TO F.M. 1464" BY KELLY R. KALUZA & ASSOCIATES, INC. DATED DECEMBER 22, 2008.
ELEV. = 88.75' (NAVD '88, GEOID '03)

FLOOD PLAIN MANAGEMENT INFORMATION:
PER FIRM PANEL No. 48157C0120J, DATED JANUARY 03, 1997. THIS PROJECT LIES TOTALLY IN THE UNSHADED "ZONE X", AND IS TOTALLY OUT OF THE 100 & 500 YEAR FLOODPLAINS.

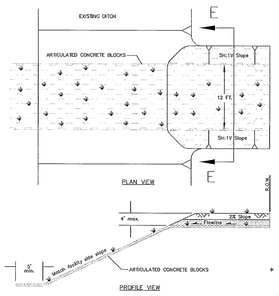
School of Science & Technology Richmond, TX

Area Phase 1 & 2
Proposed Conditions

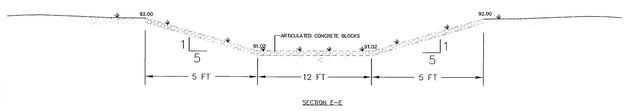
Item	Description	Area AC	Area imp	% imp
A	Buildings	1.25	1.25	100.00%
B	Dry Detention Pond	1.962	1.472	75.03%
C	Paving & Sidewalks	2.962	2.962	100.00%
D	Open Space & Rec. Area	1.849	0	0.00%
E	Grass	1.755	0	0.00%
	Totals	9.778	5.684	58.13%

NOTE:

Phase II will be submitted to all governing agencies for review prior to construction.



* SEE SHEET 40 FOR HCFCD STANDARD DETAILS OF ARTICULATING CONCRETE BLOCK



EMERGENCY SPILLWAY

LEGENDS

EXTREME SHEET FLOW EVENT PONDING AREA

PROPOSED EXTREME EVENT FLOW DIRECTION

EXIST. SHEET FLOW

APPROVED: _____
for Development Coordinator

DATE: 8/1/18

Note:
Minimum Slab Elevation 94.92
NEAREST 100YR FLOOD ELEV-91.02 - 18" ABOVE = 92.52
EXTREME EVENT PONDING - 93.92 - 1' ABOVE = 94.92
LOWEST SIGNIFICANT CONTOUR- 92.00 - 18" ABOVE = 93.50

PEI PROVIDENT ENGINEERS, INC.
REG NUM. F-1508
8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

Rev.	Date	Description	App.
1			
2			
3			

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

SBC VALID FOR ONE YEAR
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

CENTERPOINT ENERGY
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES UNLESS NOTED VALID AT TIME OF REVIEW ONLY.

FBCFWD#2

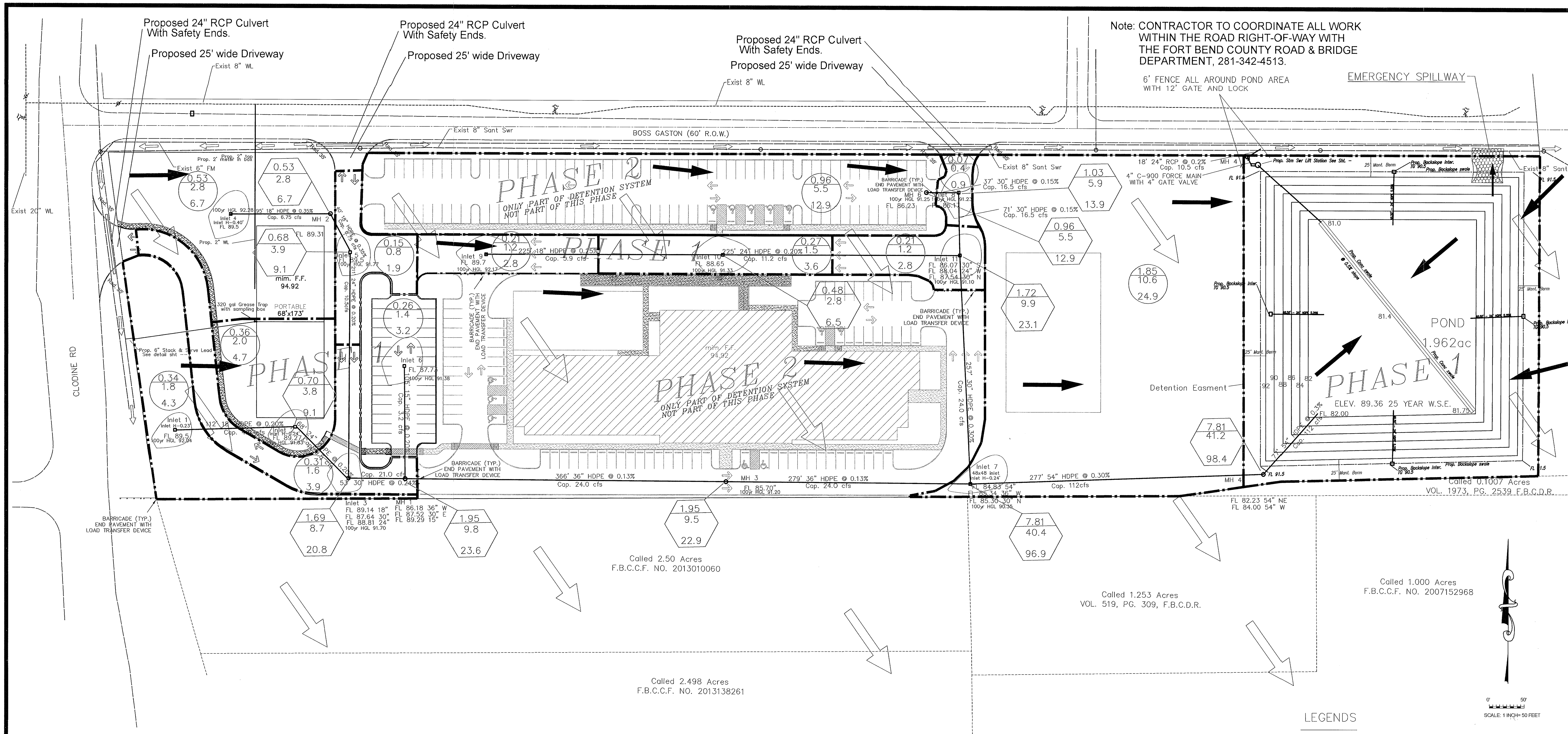
OVERALL SITE LAYOUT
&
GRADING PLAN

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO:

DRAWING SCALE: 50

SHEET No: 2 OF 9



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ELEV. = 88.75' (NAVD '88, GEOID '03)

FLOOD PLAIN MANAGEMENT INFORMATION:
PER FIRM PANEL No. 48157C0120J, DATED JANUARY 03, 1997. THIS PROJECT LIES TOTALLY IN THE UNSHADED "ZONE X", AND IS TOTALLY OUT OF THE 100 & 500 YEAR FLOODPLAINS.

0.53 / 1.3 / 3.4 — Area AC, 3yr storm, 100yr storm

0.53 / 2.1 / 5.3 — Total Area AC, 3yr storm, 100yr storm

Inlet #	Inlet Type	Inlet Cap. @ ponding
Inlet 1	24"x24"	3.5 cfs@0.26'
Inlet 2	24"x24"	3.75 cfs@0.27'
Inlet 3	24"x24"	4.25 cfs@0.28'
Inlet 4	24"x24"	6.7 cfs@0.40'
Inlet 5	24"x24"	1.9 cfs@0.16'
Inlet 6	24"x24"	3.3 cfs@0.25'
Inlet 7	48"x48"	30.0 cfs@0.60'
Inlet 8	24"x24"	1.9 cfs@0.16'
Inlet 9	24"x24"	2.8 cfs@0.22'
Inlet 10	24"x24"	3.6 cfs@0.27'
Inlet 11	24"x24"	2.8 cfs@0.22'

Table for 100 yr storm Cf = 1.25 and 2yr storm Cf=1.00

M.H. From	M.H. to	A	C	A x C	Total AC	Flow Dist Ft	Flow V fps	Pipe Dist Ft	Dia. of rise (in)	Span (in)	Slope %	Pipe V fps	Inlet Time min	Travel Time min	Total Time min	100yr Intensity in/hr	100yr Q cfs	3yr Intensity in/hr	3yr Q cfs	Manning's "n"	Design Cap. (cfs)	Design Vel. (fps)	Actual Vel. (fps)	H.G. %	100yr Elev. HG Up (ft)	100yr Elev. HG Dw (ft)	INLET CAP. (cfs)	3yr PONDING (ft)	100yr PONDING (ft)
Inlet 1	Inlet 2	0.34	0.8	0.272	0.272	170	1.75	112	18	18	0.2	2.9	6.6	0.6	7.3	12.7	4.3	6.7	1.8	0.13	4.9	3.1	3.4	0.19	92.04	91.83	3.5	0	0.26
Inlet 2	Inlet 3	0.7	0.8	0.560	0.560	140	1.75	68	24	24	0.2	3.5	6.3	0.3	6.7	13.0	9.1	6.9	3.8	0.13	10.3	3.5	3.3	0.19	91.83	91.70	3.75	0	0.27
Inlet 4	MH2	0.53	0.8	0.424	0.424	130	1.75	53	18	18	0.35	4.2	7.4	0.2	7.6	12.6	6.7	6.6	2.8	0.13	6.3	4.2	4.3	0.35	92.28	92.10	6.7	0	0.4
MH2	Inlet 5	0.53	0.8	0.424	0.424	0	1.75	94	18	18	0.35	4.2	7.4	0.4	7.8	12.5	6.6	6.5	2.8	0.13	6.3	4.2	4.4	0.35	92.10	91.77	n/a	0	0
Inlet 5	Inlet 3	0.68	0.8	0.544	0.544	75	1.75	40	24	24	0.2	3.5	7.4	0.2	7.6	12.6	8.6	6.6	3.6	0.13	10.3	3.5	3	0.18	91.77	91.70	1.9	0	0.19
Inlet 3	MH1	1.69	0.8	1.352	1.352	110	1.75	211	30	30	0.24	4.4	7.4	0.8	8.2	12.3	20.8	6.4	8.7	0.13	20	4.4	4.4	0.24	91.70	91.19	4.25	0	0.28
Inlet 6	MH1	0.26	0.8	0.208	0.208	120	1.75	95	15	15	0.2	3.4	7.4	0.5	7.9	12.5	3.2	6.5	1.4	0.13	3	3.4	3.4	0.2	91.38	91.19	3.3	0	0.25
MH1	MH3	1.95	0.8	1.560	1.560	0	1.75	366	36	36	0.13	3.5	7.4	1.7	9.1	12.0	23.3	6.2	9.6	0.13	24	3.5	3.4	0.13	91.19	90.71	n/a	0	0
MH3	Inlet 7	1.95	0.8	1.560	1.560	650	1.75	279	36	36	0.13	3.5	7.4	1.3	8.7	12.1	23.6	6.3	9.8	0.13	24	3.5	3.4	0.13	90.71	90.35	n/a	0	0
MH5	Inlet 8	1.55	0.8	1.240	1.240	250	1.75	50	30	30	0.15	3.4	7.4	0.2	7.6	12.6	19.5	6.6	8.2	0.13	10.2	3.4	3.3	0.13	91.23	91.17	n/a	0	0
Inlet 8	Inlet 11	1.03	0.8	0.824	0.824	50	1.75	50	30	30	0.15	3.4	5.5	0.2	5.7	13.5	13.9	7.2	5.9	0.13	10.2	3.4	3.3	0.13	91.17	91.10	1.9	0	0.16
Inlet 9	Inlet 10	0.21	0.8	0.168	0.168	75	1.75	125	18	18	0.25	3.2	5.7	0.7	6.4	13.2	2.8	7.0	1.2	0.13	5.3	3.2	3.2	0.25	91.64	91.33	2.8	0	0.22
Inlet 10	Inlet 11	0.48	0.8	0.384	0.384	100	1.75	125	24	24	0.2	3.5	6.0	0.6	6.5	13.1	6.3	6.9	2.7	0.13	10.3	3.5	3.2	0.18	91.33	91.10	3.6	0	0.27
Inlet 11	Inlet 7	1.72	0.8	1.376	1.376	75	1.75	250	30	30	0.3	4.9	5.7	0.9	6.6	13.1	22.5	6.9	9.5	0.13	14.9	4.9	5.5	0.3	91.10	90.35	2.8	0	0.22
Inlet 7	MH4	7.81	0.8	6.248	6.248	300	1.75	277	54	54	0.3	7.3	7.4	0.6	8.0	12.4	96.9	6.5	40.4	0.13	112	7.3	7	0.28	90.35	89.58	30	0	0.6
MH4	Pond	7.81	0.8	6.248	6.248	250	1.75	77	54	54	0.3	7.3	7.4	0.2	7.6	12.6	98.4	6.6	41.2	0.13	112	7.3	7	0.28	89.58	89.36	n/a	0	0

M.H. to	A	C	A x C	Total AC	Flow Dist Ft	Flow V fps	Pipe Dist Ft	Dia. of rise (in)	Span (in)	Slope %	Pipe V fps	Inlet Time min	Travel Time min	Total Time min	100yr Intensity in/hr	100yr Q cfs	3yr Intensity in/hr	3yr Q cfs	INLET CAP. (cfs)	100yr PONDING (ft)
Inlet 1	0.34	0.8	0.272	0.272	170	1.75	112	18	18	0.26	2.5	6.6	0.7	7.4	12.7	4.3	6.7	1.8	3.5	0.26
Inlet 2	0.36	0.8	0.288	0.288	125	1.75	68	24	24	0.2	3.5	6.2	0.3	6.5	13.1	4.7	6.9	2.0	3.75	0.27
Inlet 3	0.31	0.8	0.248	0.248	360	1.75	53	30	30	0.24	2.9	7.4	0.3	7.7	12.5	3.9	6.6	1.6	4.25	0.28
Inlet 4	0.53	0.8	0.424	0.424	135	1.75	95	18	18	0.35	4	7.4	0.4	7.8	12.5	6.6	6.5	2.8	6.7	0.4
Inlet 5	0.15	0.8	0.120	0.120	95	1.75	211	24	24	0.2	3.5	7.4	1.0	8.4	12.2	1.8	6.4	0.8	1.9	0.16
Inlet 6	0.26	0.8	0.208	0.208	85	1.75	211	15	15	0.2	2.3	7.4	1.5	8.9	12.0	3.1	6.2	1.3	3.3	0.25
Inlet 7	1.85	0.8	1.480	1.480	400	1.5	277	54	54	0.3	7.3	7.4	0.6	8.0	12.4	22.9	6.5	9.6	30	0.6
Inlet 8	0.07	0.8	0.056	0.056	50	1.75	71	30	30	0.15	2.5	7.4	0.5	7.9	12.5	0.9	6.5	0.4	1.9	0.16
Inlet 9	0.21	0.8	0.168	0.168	110	1.75	225	18	18	0.25	3	7.4	1.3	8.7	12.1	2.6	6.3	1.1	2.8	0.22
Inlet 10	0.27	0.8	0.216	0.216	110	1.75	225	24	24	0.2	3.5	6.0	1.1	7.1	12.8	3.5	6.7	1.5	3.6	0.27
Inlet 11	0.21	0.8	0.168	0.168	125	1.75	257	30	30	0.3	4.9	6.2	0.9	7.1	12.8	2.7	6.7	1.1	2.8	0.22

LEGENDS

EXTREME SHEET FLOW EVENT PONDING AREA
PROPOSED EXTREME EVENT FLOW DIRECTION
EXIST. SHEET FLOW
DRAINAGE AREA
Roadside Ditch FLOW

STATE OF TEXAS — MICHAEL V. BALDWIN — 70639 — REGISTERED PROFESSIONAL ENGINEER
7/12/18

APPROVED: CLG
Development Coordinator

DATE: 8-1-18

Inlet Cap. Cal.				
	Q	Q	Q	Q
	24"x24"	24"x36"	36"x36"	48"x48"
P	8	10	12	16
0.25	3.3	4.1	5.0	6.6
0.5	9.3	11.7	14.0	18.7
0.75	17.1	21.4	25.7	34.3
1	26.4	33.0	39.6	52.8
1.25	36.9	46.1	55.3	73.8
1.5	48.5	60.6	72.7	97.0

PEI
PROVIDENT ENGINEERS, INC.
REG NUM. F-1508
8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

Rev.	Date	Description	App.
1			

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

SBC VALID FOR ONE YEAR
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

CENTERPOINT ENERGY
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES UNLESS NOTIED VALID AT TIME OF REVIEW ONLY.

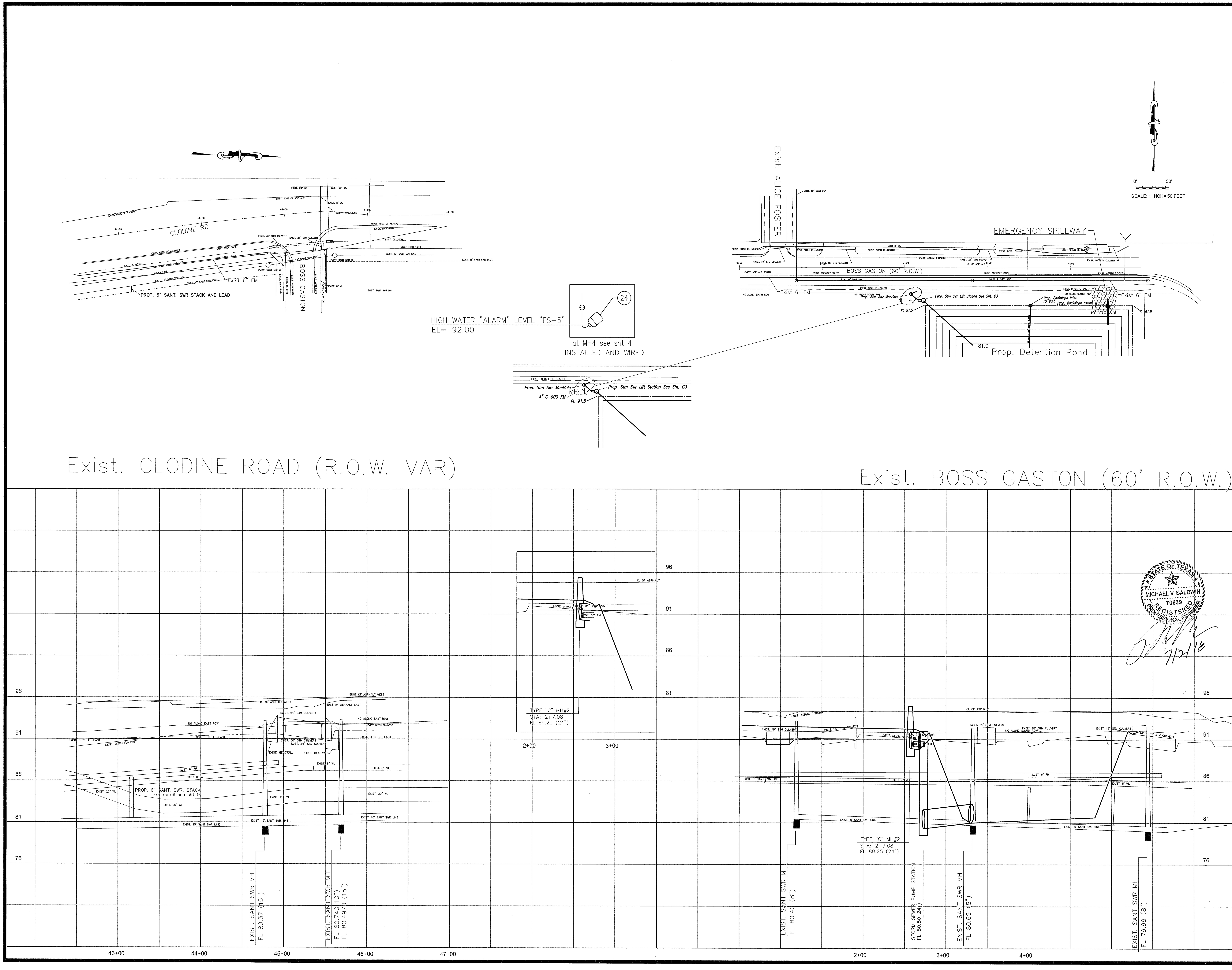
FBCFWD#2

OVERALL SITE LAYOUT
&
DRAINAGE PLAN

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO:

DRAWING SCALE: 50



BENCH MARK

BENCHMARK:

FLOODPLAIN REFERENCE MARK NUMBER 150685 IS AN ALUMINUM ROD STAMPED 150685 AT THE INTERSECTION OF EAST HARDY STREET AND AIRTEX BLVD LOCATED IN GROUND EAST OF INTERSECTION, ON WEST SIDE OF INTERSECTION, ON WEST END OF MEDIAN BETWEEN WEST AND EAST BOUND AIRTEX BLVD IN KEY MAP 373A, IN THE GREENS WATERSHED, NEAR STREAM P140-04-03.

ELEVATION = 101.01'

(NAVD 1988, 2001 ADJUSTED)

TBM: NORTH RIM OF STORM MANHOLE ON SOUTH SIDE OF AIRTEX DRIVE 250'± EAST OF IMPERIAL GREEN DRIVE.

ELEVATION = 98.10'

LEGEND

ALL SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 12 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE 18' JOINT OF 150 PSI DUCTILE IRON OR (GREEN) C900 PVC PIPE MEETIING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.

SEE GENERAL CONSTRUCTION - WATER NOTES 7-10, SHEET 7 FOR SPECIAL WATER LINE PROTECTION FOR WATER LINE CROSSING SANITARY SEWER LINE.

8-1-18

STATE OF TEXAS
MICHAEL V. BALDWIN
70639
REGISTERED
PROFESSIONAL ENGINEER

7/21/18

PEI
PROVIDENT ENGINEERS, INC.
PROVIDENT ENGINEERS, INC.
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FBCFWD#2

CLODINE ROAD
&
BOSS GASTON

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

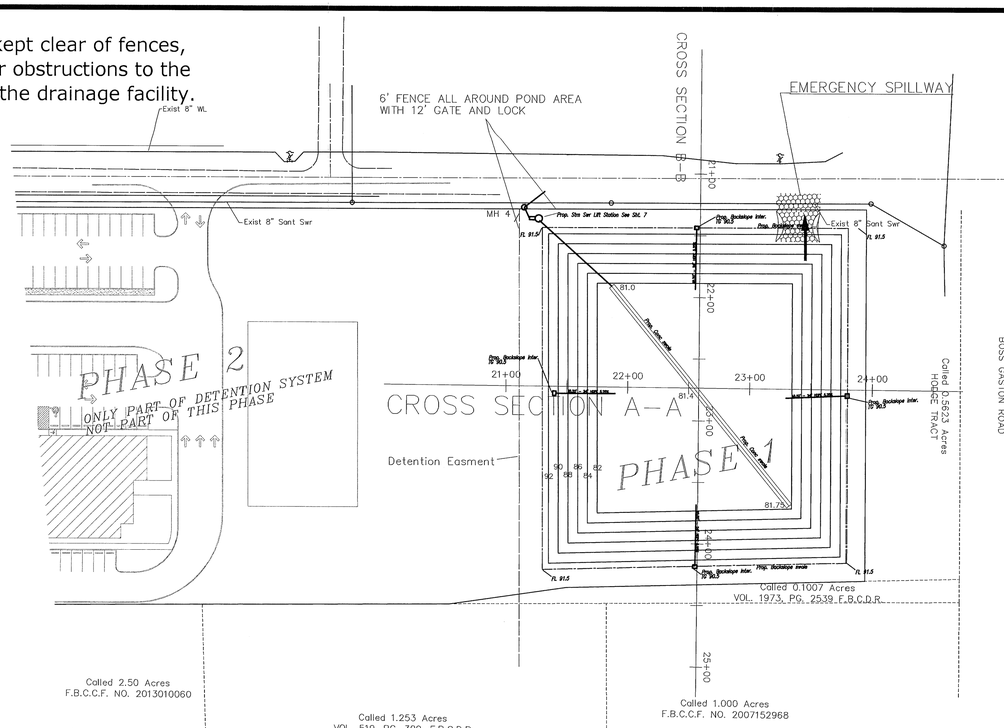
FILE NO:

DRAWING SCALE: 50

VERT: 5 HORZ: 50

SHEET No: 4 OF 9

Note:
All drainage easements to be kept clear of fences, buildings, vegetation and other obstructions to the operation and maintenance of the drainage facility.



Note:

Minimum Slab Elevation 94.92

NEAREST 100YR FLOOD ELEV-91.02 – 18" ABOVE = 92.52
EXTREME EVENT PONDING – 93.92 – 1' ABOVE = 94.92
LOWEST SIGNIFICANT CONTOUR- 92.00 – 18" ABOVE = 93.50

PROPOSED MAXIMUM DESIGN WATER SURFACE ELEVATION

25 YEAR FREQUENCY: EL = 89.36 POND
100 YEAR FREQUENCY: EL = 91.02 POND

PROPOSED DETENTION BASIN SUMMARY

TOTAL CONTRIBUTING ACREAGE SERVED THIS DETENTION SYSTEM:
9.778 ACRES with no offsite flow through.

DESIGNED STORAGE COEFFICIENT: 1.00

STORAGE VOLUME REQUIRED

25 YEAR: 4.0 AC-FT.
100 YEAR: 9.35 AC-FT.

PROPOSED STORAGE VOLUME

25 YEAR: 4.08 AC-FT. POND
100 YEAR: 9.91 AC-FT. POND

EXTREME SHEET FLOW EVENT CALCULATIONS

TOTAL CONTRIBUTING ACREAGE SERVED THIS DETENTION SYSTEM:
9.778 ACRES with no offsite flow through.

9.778 ac @ 80% imp. = 4.17 ac-ft 100 yr event
Storage needed 4.78 +1.11 – 1.78 = 4.11 ac-ft
Assuming 25 yr tailwater, in this case no out fall.
Pond at bank full holds 10.76 ac-ft, that means no flow will over flow the pond and sheet flow through the site.

SCALE: 1 INCH= 50 FEET

DETENTION SUMMARY EXTREME EVENT:

1. Area Serviced = 9.778 acres
2. Detention Storage Rate = C = 0.9
3. Detention Storage Volume Required = 8.8 acre-feet
4. Maximum Detention Storage Volume Provided = 9.36 acre-feet
5. Maximum Storage Volume Provided = 10.76 ac-ft
6. Maximum Design Water Surface Elevation = 91.02 POND
7. Maximum Outflow Rate Allowed =0.125*9.778=1.22 cfs =540 gpm
8. Maximum Outflow Rate Provided = 1.2 cfs = 500 gpm
9. Pump Rate = 500 gpm

Q100 = CIA
Q100 = C*I*A*Cf
C= 0.90
I100 = 0.478
Q = 9.778 ac
Cf= 1.25
Q = 0.80*0.4781*9.778*1.25
Q100 = 4.67
I100 = 12.5-1.03 =11.47
S100 = I * A = 11.47/12*9.778
S100 = 9.35 ac-ft

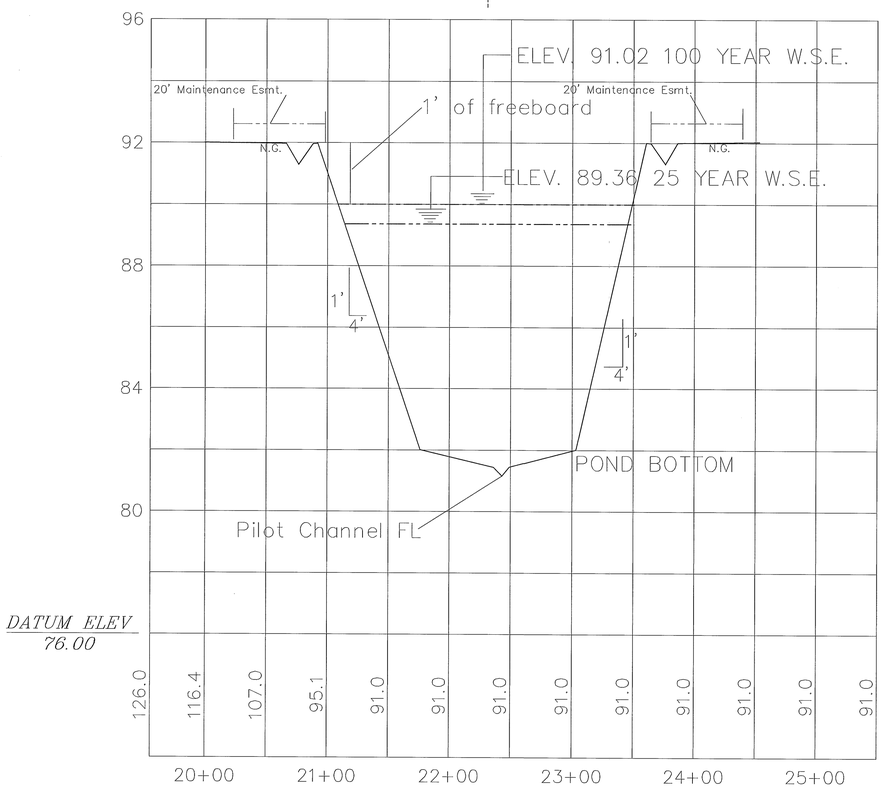
DETENTION SUMMARY 25yr STORM EVENT:

1. Area Serviced = 9.778 acres.
2. Detention Storage Rate = C = 0.90
3. Detention Storage Volume Required = 7.1 acre-feet
4. Maximum Detention Storage Volume Provided = 10.76 acre-feet
5. Maximum Storage Volume Provided = 7.2 ac-ft
6. Maximum Design Water Surface Elevation = 89.36 POND
7. Maximum Outflow Rate Allowed =0.125*9.778=1.22 cfs =540 gpm
8. Maximum Outflow Rate Provided = 1.2 cfs = 500 gpm
9. Pump Rate = 500 gpm

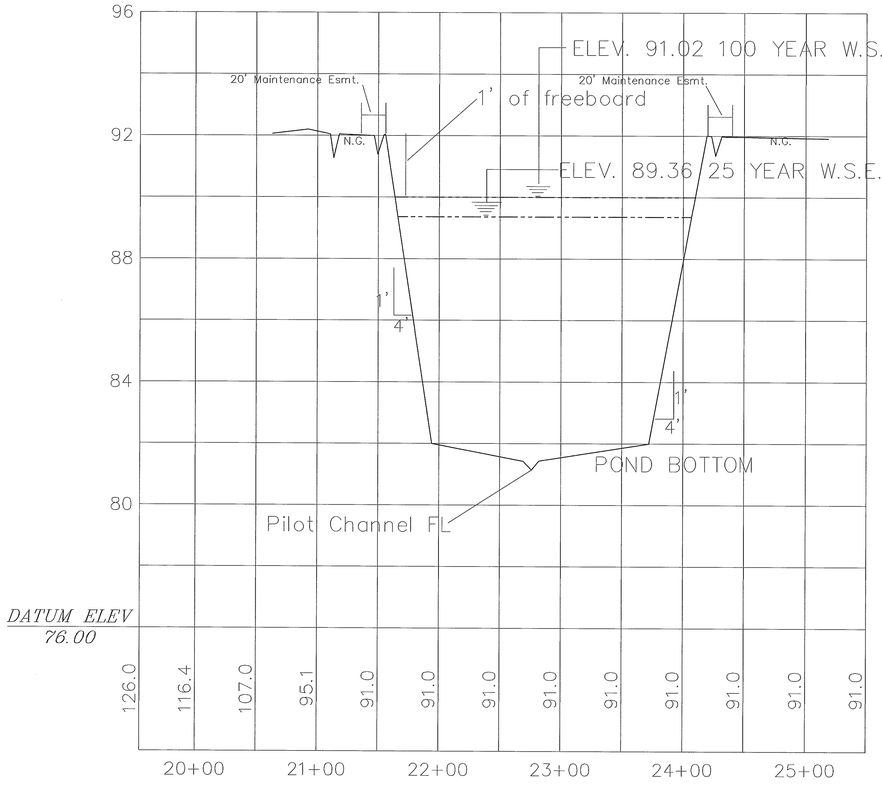
Q25 = CIA
Q25 = C*I*A*Cf
C= 0.80
I25 = 0.323
Q = 9.778 ac
Cf= 1.1
Q25 = 0.80*0.323*9.778*1.1
Q25 = 2.78
I25 = 9.6-0.89 =8.71
S2 = I * A = 8.71/12*9.778
S2 = 7.10 ac-ft

Note:
This property lies in Zone X as per the Flood Insurance Rate Map, Community Panel 48157C0315L, Effective date April 2, 2014.

Note:
All property to drain into the drainage easement only through an approved drainage structure.



CROSS SECTION A-A



CROSS SECTION B-B

LEGENDS

EXTREME SHEET FLOW EVENT PONDING AREA
EXTREME EVENT FLOW DIRECTION
EXIST. SHEET FLOW

APPROVED: _____
Development Coordinator
DATE: 8-1-18

BENCH MARK

REFERENCE BENCHMARK:
TBM No. 8 IS A BOX CUT ON TOP OF CURB AT EAST END OF MEDIAN BULLETNOSE AT THE CENTERLINE OF WEST BELLFORT AT THE WEST SIDE OF SUGAR SPICE DRIVE, PER PLANS FOR "WEST BELLFORT PAVING AND DRAINAGE IMPROVEMENTS FROM MARTINEZ STREET TO F.M. 1464" BY KELLY R. KALUZA & ASSOCIATES, INC. DATED DECEMBER 22, 2008.
ELEV. = 88.75' (NAVD '88, GEOID '03)

FLOOD PLAIN MANAGEMENT INFORMATION:
PER FIRM PANEL No. 48157C0120J, DATED JANUARY 03, 1997. THIS PROJECT LIES TOTALLY IN THE UNSHADED "ZONE X", AND IS TOTALLY OUT OF THE 100 & 500 YEAR FLOODPLAINS.

PROVIDENT ENGINEERS, INC.
REG NUM. F-1508
8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

Rev.	Date	Description	App.
1			
2			
3			

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

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APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

CENTERPOINT ENERGY
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTURES UNLESS NOTED VALID AT TIME OF REVIEW ONLY.

FBCFWD#2

DETENTION POND CROSS SECTIONS

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO:
DRAWING SCALE: 50
VERT: 5 HORZ: 50
SHEET No:5 OF 9

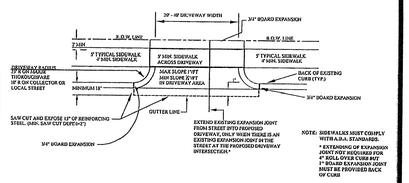
Fort Bend County
Construction - General Notes

1. Fort Bend County must be invited to the Pre-Construction Meeting.
2. Contractor shall notify Fort Bend County Engineering Department **48 hours prior to commencing construction and 48 hour notice to any construction activity within the limits of the paving** at Construction@fortbendcountytx.gov.
3. Contractor is responsible for obtaining all permits required from Fort Bend County prior to commencing construction of any improvements within County road right of ways.
4. All Paving Improvements shall be constructed in accordance with Fort Bend County "Rules, Regulations and Requirements" relating to the Approval and Acceptance of Improvements in Subdivisions as currently amended.
5. All road widths, curb radii and curb alignment shown indicates back of curb
6. A continuous longitudinal reinforcing bar shall be used in the curbs.
7. All concrete pavement shall be 5 ½ sack cement with a minimum compressive strength of 3500 psi at 28 days. Transverse expansion joints shall be installed at each curb return and at a maximum spacing of 60 feet.
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 place in accordance with **TXDOT Ped-12a** standard detail sheet. A.D.A. – Handicap Ramps shall be installed with street paving at all intersections and comply with current A.D.A. 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, striping and warning devices, etc., during construction – both day and night.
14. All R1-1 stop signs shall be 30"x30" with diamond grade sheeting per Texas manual on uniform traffic control devices.
15. Street name signage shall be on a 9" high sign flat blade w/reflective green background. Street names shall be upper and lowercase lettering with uppercase letters of 6" minimum and lowercase letters of 4.5" minimum. The letters shall be reflective white. Street name signs shall be mounted on stop sign post.
16. A Blue Double Reflectorized button shall be placed at all Fire Hydrant locations. The Button shall be placed 12 inches off of the centerline of the street on the same side as the hydrant.
17. The project and all parts thereof shall be subject to inspection from time to time by inspectors designated by Fort Bend County. No such inspections shall relieve the Contractor of any of its obligations hereunder. Neither failure to inspect nor failure to discover or reject any of the work as not in accordance with the drawings and specifications, requirements and specifications of Fort Bend County or any provision of this project shall be construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder.

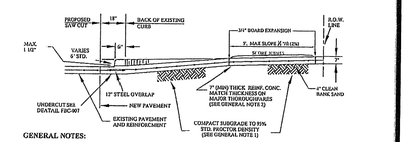
NOTE: Fort Bend County notes supersede any conflicting notes.

WHEN A COMMERCIAL SIDEWALK, DRIVEWAY, CURB OR GUTTER IS CONSTRUCTED, RECONSTRUCTED, REPAIRED OR REGRADED ON COUNTY RIGHT-OF-WAY. FOR USE WITH CONCRETE OR ASPHALT CURB TYPE STREETS, USE SECTIONS APPLICABLE.

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



B. USE FOR ALL PROPOSED DRIVES ON CURBED TYPE STREETS



GENERAL NOTES:

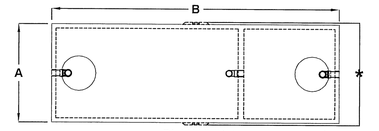
1. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO R.O.W. LINE, COMPACT TO 95% OF STANDARD PROCTOR DENSITY(+- 1% OPT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
2. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE #4 DEFORMED REINFORCING BARS (ASTM A615, GRADE 60, UNLESS NOTED) SPACED AT 24" O.C. EACH WAY, WITH 12" MINIMUM LAP FROM PROPOSED SAW CUT TO R.O.W. LINE.
3. PROPOSED DRIVEWAY SHALL BE CONSTRUCTED WITH PORTLAND CEMENT (5 SACKS (3000 PSI) OF CEMENT PER CUBIC YARD OF CONCRETE), CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 7" THICK, FROM PROPOSED SAW CUT TO R.O.W. LINE.
4. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT (5 SACKS (3000 PSI) OF CEMENT PER CUBIC YARD OF CONCRETE), CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4" THICK.
5. FOR TYPICAL SIDEWALK DETAIL SEE FBC-011.

SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS COMMERCIAL AREA	DRAWN BY: L. BRDECKA DATE DRAWN: 2-1-94	REVISED BY: J. NETARDUS DATE REVISED: 4-7-09
	APPROVED BY: L. HOOD DATE: 2-1-94	DRAWING NO. FBC-025A
FORT BEND COUNTY ENGINEERING DEPARTMENT		

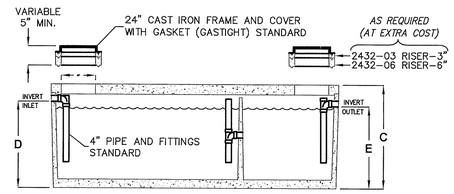
GENERAL NOTES FOR SIDEWALKS AND DRIVEWAYS

1. SAW CUT EXISTING CURB AT EACH END AND KNOCK OUT CURB FROM BEGINNING TO END OF PROPOSED DRIVEWAY.
2. SAW CUT EXISTING PAVEMENT A MINIMUM OF 18" INCHES AWAY FROM BACK OF CURB (GUTTER LINE) AND BREAK OUT TO EXPOSE EXISTING REINFORCEMENT STEEL.
3. 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% OPT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
4. PLACE AND COMPACT 4" CLEAN BANK SAND.
5. MAINTAIN GUTTER LINE WITH FACE OF EXISTING CURB.
6. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE TIED TO EXISTING ROADWAY REINFORCING STEEL WITH A MINIMUM LAP OF 12 INCHES.
7. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE #4 DEFORMED RE-INFORCING BARS (ASTM A615 GRADE 60, UNLESS NOTED) SPACED AT 24 INCHES C.C., EACH WAY, WITH 12 INCHES MINIMUM LAP (6" x 6" W6 x W6 AS ALTERNATE) FROM PROPOSED SAW CUT TO RIGHT-OF-WAY LINE.
8. PROPOSED DRIVEWAY, CURB, GUTTER LINE, AND GRADE SHALL MATCH EXISTING STREET.
9. PROPOSED DRIVEWAY SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 7 INCHES THICK, FROM PROPOSED SAW CUT TO RIGHT-OF-WAY LINE (PROPERTY LINE).
10. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4 INCHES THICK AND 4 FEET MINIMUM WIDTH. SEE DRAWING NO. FBC 24A FOR ADDITIONAL INFORMATION AND DETAILS.

CONSTRUCTION NOTES FOR SIDEWALKS & DRIVEWAYS WITH CURB TYPE STREETS COMMERCIAL AREA	DRAWN BY: L. BRDECKA DATE DRAWN: 2-1-94	REVISED BY: L. BRDECKA DATE REVISED: 3-10-05
	APPROVED BY: L. HOOD DATE: 2-1-94	DRAWING NO. FBC-025B
FORT BEND COUNTY ENGINEERING DEPARTMENT		



PLAN VIEW (COVERS REMOVED)



SIDE SECTION VIEW

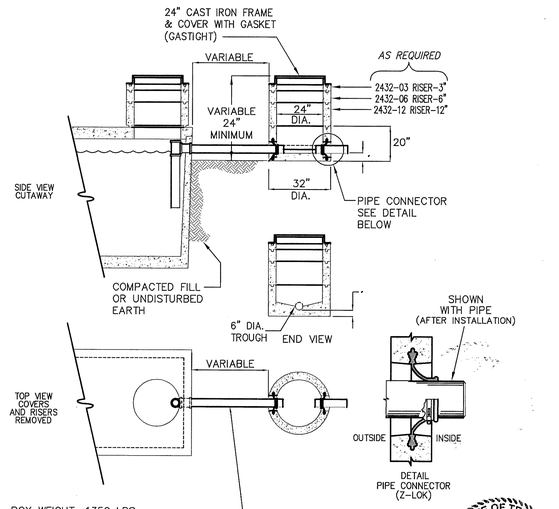
MODEL NUMBER	LIQUID CAPACITY (GALLONS)	DIM A	DIM B	DIM C	DIM D	DIM E	MINIMUM EXCAVATION WIDTH	MINIMUM EXCAVATION LENGTH	DEPTH OF BURY
JP320EE-G	320	3'-0"	7'-0"	4'-6"	3'-7"	3'-4"	4'-0"	8'-0"	1' TO 8'
JP500EE-G	500	4'-0"	6'-0"	5'-10"	4'-10"	4'-7"	5'-0"	7'-0"	1' TO 6'
JP750EE-G	750	4'-0"	8'-1"	6'-0"	5'-0"	4'-9"	5'-3"	9'-1"	1' TO 6'
JP1000EE-G	1000	5'-1"	8'-2"	6'-0"	5'-0"	4'-9"	6'-4"	9'-2"	1' TO 6'
JP1200EE-G	1200	5'-9"	8'-6"	6'-0"	5'-0"	4'-9"	7'-0"	9'-6"	1' TO 6'
JP1500EE-G	1500	5'-7"	10'-8"	6'-0"	5'-0"	4'-9"	6'-10"	11'-8"	1' TO 6'
JP2000EE-G	2000	4'-11"	15'-11"	6'-0"	5'-0"	4'-9"	5'-11"	16'-11"	1' TO 6'
JZ2500EE-G	2500	5'-9"	16'-10"	6'-0"	5'-0"	4'-9"	6'-9"	17'-10"	1' TO 5'
JZ3000EE-G	3000	5'-9"	16'-10"	6'-9"	5'-9"	5'-6"	6'-9"	17'-10"	1' TO 5'
JZ4000EE-G	4000	7'-8"	16'-7"	6'-9"	5'-6"	5'-3"	8'-8"	17'-7"	1' TO 5'
JZ5000EE-G	5000	7'-8"	16'-7"	7'-11"	6'-9"	6'-6"	8'-8"	17'-7"	1' TO 4'

*OVERALL WIDTH CAN VARY WITH TANK MODEL. USE EXCAVATION WIDTH FOR SITE PLANNING.

BOX DESIGN LOAD: H-20 TRAFFIC

FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.

SAMPLE BOX WITH PIPE CONNECTORS
MODEL EV200-H



BOX WEIGHT: 1350 LBS.
BOX DESIGN LOAD: H-20 TRAFFIC

SAMPLE BOX MUST BE PLACED ON SUITABLE BASE OF COMPACTED SOIL OR UNDISTURBED EARTH IN TRAFFIC CONDITION. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.

STATE OF TEXAS
MICHAEL V. BALDWIN
70639
REGISTERED PROFESSIONAL ENGINEER
7/2/18

BENCH MARK

8-1-18

PEI PROVIDENT ENGINEERS, INC.
REG NUM. F-1508
8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

Rev.	Date	Description	App.
1			
2			
3			

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

SBC VALID FOR ONE YEAR
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

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FBCFWD#2

NOTES
Driveway Detail
&
Grease Trap Detail

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

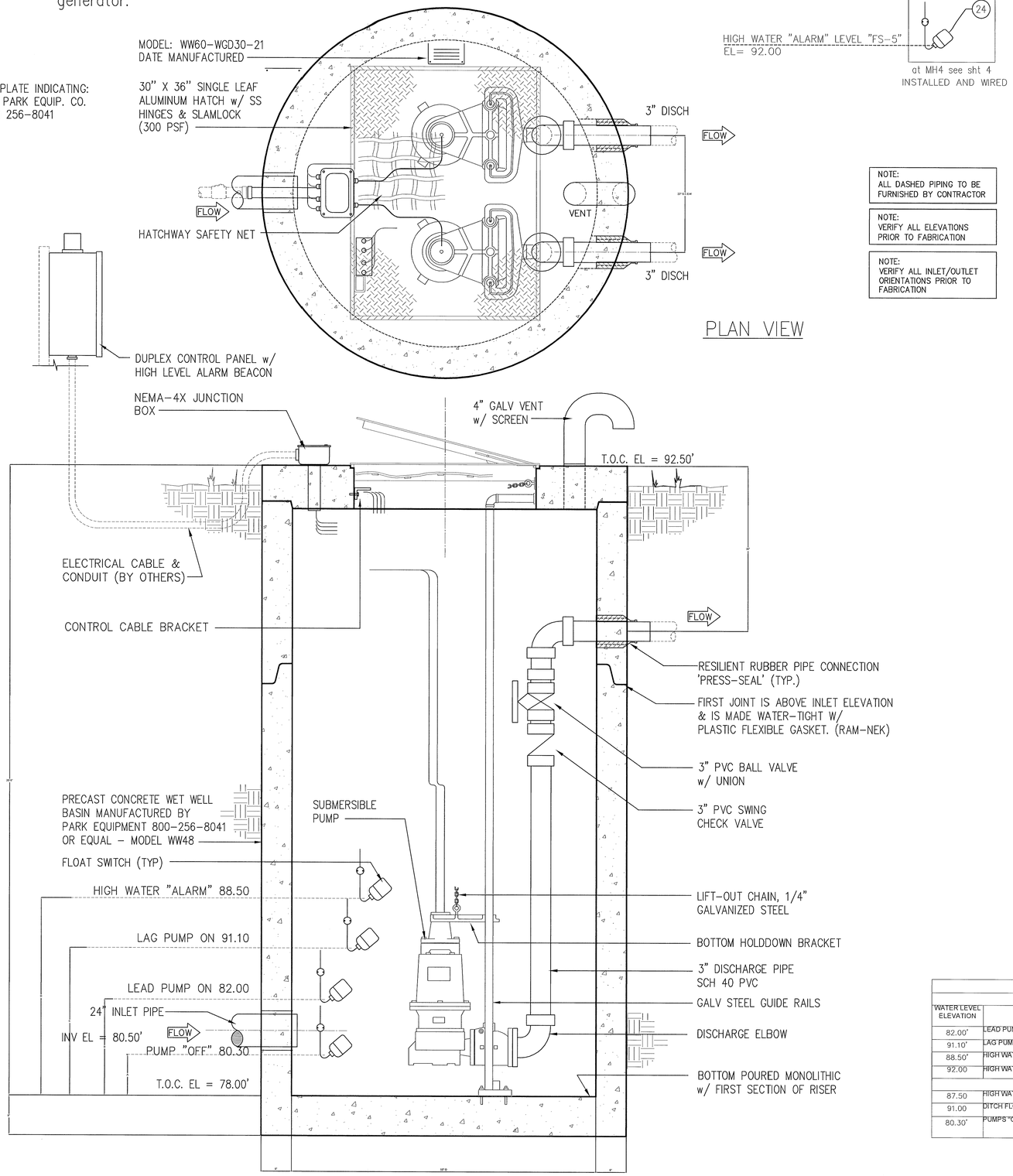
FILE NO:

DRAWING SCALE: N/A

VERT:N/A HORZ:N/A

SHEET No:6 OF 9

Note: Emergency Power will provided by a portable generator.



PLAN VIEW

HIGH WATER "ALARM" LEVEL "FS-5"
EL= 92.00

at MH4 see sht 4
INSTALLED AND WIRED

NOTE:
ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

NOTE:
VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

NOTE:
VERIFY ALL INLET/OUTLET ORIENTATIONS PRIOR TO FABRICATION

STATION OPERATION LEVELS		
RISING LEVEL CYCLE		
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION
82.00'	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"
91.10'	LAG PUMP TURNS "ON", FS-3	LEAD & LAG PUMPS "ON"
88.50'	HIGH WATER "ALARM" LEVEL, FS-4	HIGH LEVEL ALARM "ON"
92.00	HIGH WATER IN DITCH, FS-5	ALL PUMPS "OFF"
87.50	HIGH WATER ALARM, FS-4	HIGH LEVEL ALARM "OFF"
91.00	DITCH FLOAT HIGH WATER, FS-5	ALL PUMPS "ON"
80.30'	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF" LAG PUMP SWITCHES TO LEAD PUMP

Specifications

CONCRETE :

Class 1 concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth.

REINFORCEMENT:

Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

ALUMINUM HATCH:

300 PSF rated, 1/4" aluminum skid-resistant floor plate, stainless steel tamperproof bolting & hinges & slamlock. (H-20 Rating Optional)

PUMPS:

Pumps shall be centrifugal type with integral grinder unit and submersible type motor. Pumps shall have a capacity as follows:

PUMP No.	TYPE	GPM	TDH	RPM	ELECTRICAL HP	V	PH	Hz
1	GRINDER	500	12'	1750	2	230/460	3	60
2	GRINDER	500	12'	1750	2	230/460	3	60

CONTROLS:

Pump controls shall be mounted inside a UL Listed NEMA-4X enclosure and include circuit breakers, alarm circuit fuse, IEC rated motor starter, pump HOA, and alternator relay. Panel shall have a visual alarm becon. Panel is designed for remote mounting.

Engineering Data

Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown. All pipe, valves and fittings of the assembly are approved by one of the following associations:

NPCA CERTIFIED PLANT · B64.5 · UL · AMERICAN SOCIETY OF SANITARY ENGINEERING

WW60-NCD3-420-10-20-43

MODEL NUMBER: WW60-NCD20-43

WET WELL SIZE (ID)
- 48 - 48" DIA
- 60 - 60" DIA
- 72 - 72" DIA

PUMP CONFIGURATION
- S - SIMPLEX
- D - DUPLEX

POWER CHARACTERISTICS
- 43 - 460V/3PH/60Hz
- 23 - 230V/3PH/60hz
- 21 - 230V/1PH/60Hz
- 03 - 208V/3PH/60Hz

GRINDER PUMP SIZE
- 01 - 1.O HP
- 20 - 2.O HP
- 30 - 3.0 HP
- 50 - 5.0 HP
- 75 - 7.5 HP

PUMP Trooper LIFT STATION

STATE OF TEXAS · MICHAEL V. BALDWIN · 70639 · REGISTERED PROFESSIONAL ENGINEER

7/2/18

APPROVED: _____
Development Coordinator

DATE: 8-1-18

BENCH MARK

REFERENCE BENCHMARK:
TBM No. 8 IS A BOX CUT ON TOP OF CURB AT EAST END OF MEDIAN BULLETNOSE AT THE CENTERLINE OF WEST BELLFORT AT THE WEST SIDE OF SUGAR SPICE DRIVE, PER PLANS FOR "WEST BELLFORT PAVING AND DRAINAGE IMPROVEMENTS FROM MARTINEZ STREET TO F.M. 1464" BY KELLY R. KALUZA & ASSOCIATES, INC. DATED DECEMBER 22, 2008.
ELEV. = 88.75' (NAVD '88, GEOID '03)

FLOOD PLAIN MANAGEMENT INFORMATION:
PER FIRM PANEL No. 48157C0120J, DATED JANUARY 03, 1997. THIS PROJECT LIES TOTALLY IN THE UNSHADED "ZONE X", AND IS TOTALLY OUT OF THE 100 & 500 YEAR FLOODPLAINS.

SEE GENERAL CONSTRUCTION - WATER NOTES 7-10, SHEET 7 FOR SPECIAL WATER LINE PROTECTION FOR WATER LINE CROSSING SANITARY SEWER LINE.

KEYED NOTES

MARK	QTY	DESCRIPTION
1	2	3" GRUNDFOS SUBMERSIBLE PUMP
2	2	3"x3" AUTO COUPLING BASE ELBOW
3	2	STAINLESS STEEL CHAINS
4	1	DUPLEX CONTROL PANEL NEMA 4X FRP (MOUNTED BY CONTRACTOR)
5	1	NOT USED
6	1	SS CABLE BRACKET
7	1	60" DIA x 19'-0" DEEP CONCRETE WET WELL
8	1	6" THK FLAT CONCRETE TOP
9	1	30"x48" SINGLE LEAF ALUMINUM HATCHWAY
10	1	SAFETY NET
11	1	4" GALVANIZED VENT
12	2	3" SCH 80 PVC DISCHARGE PIPE
13	2	3" SCH 80 PVC 90° ELL
14	2	SS UPPER GUIDE BRACKETS
15	2	3" FLG BALL CHECK VALVE
16	2	3" PVC BALL VALVE w/ UNIONS
17	4	SS GUIDE RAILS
18	2	3" ELECTRICAL COUPLING
19	4	FLOAT SWITCH
20	-	REBAR AS REQ'D
21	2	LIFT-OUT ASSEMBLY
22	2	RESILIENT RUBBER BOOT
23	-	ALL JOINTS MADE WATER-TIGHT w/ PLASTIC FLEXIBLE GASKET (RAM-NEK)
24	1	REMOTE MOUNT DITCH FLOAT (MOUNTED BY OTHERS)
25	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARK-USA.COM MODEL: ########## DATE MANUFACTURED

PROVIDENT ENGINEERS, INC.
REG NUM. F-1508
8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

Rev.	Date	Description	App.
△			
△			
△			

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

SBC VALID FOR ONE YEAR
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

CENTERPOINT ENERGY
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES UNLESS NOTED VALID AT TIME OF REVIEW ONLY.

FBCFWD#2

STORMWATER LIFT STATION

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

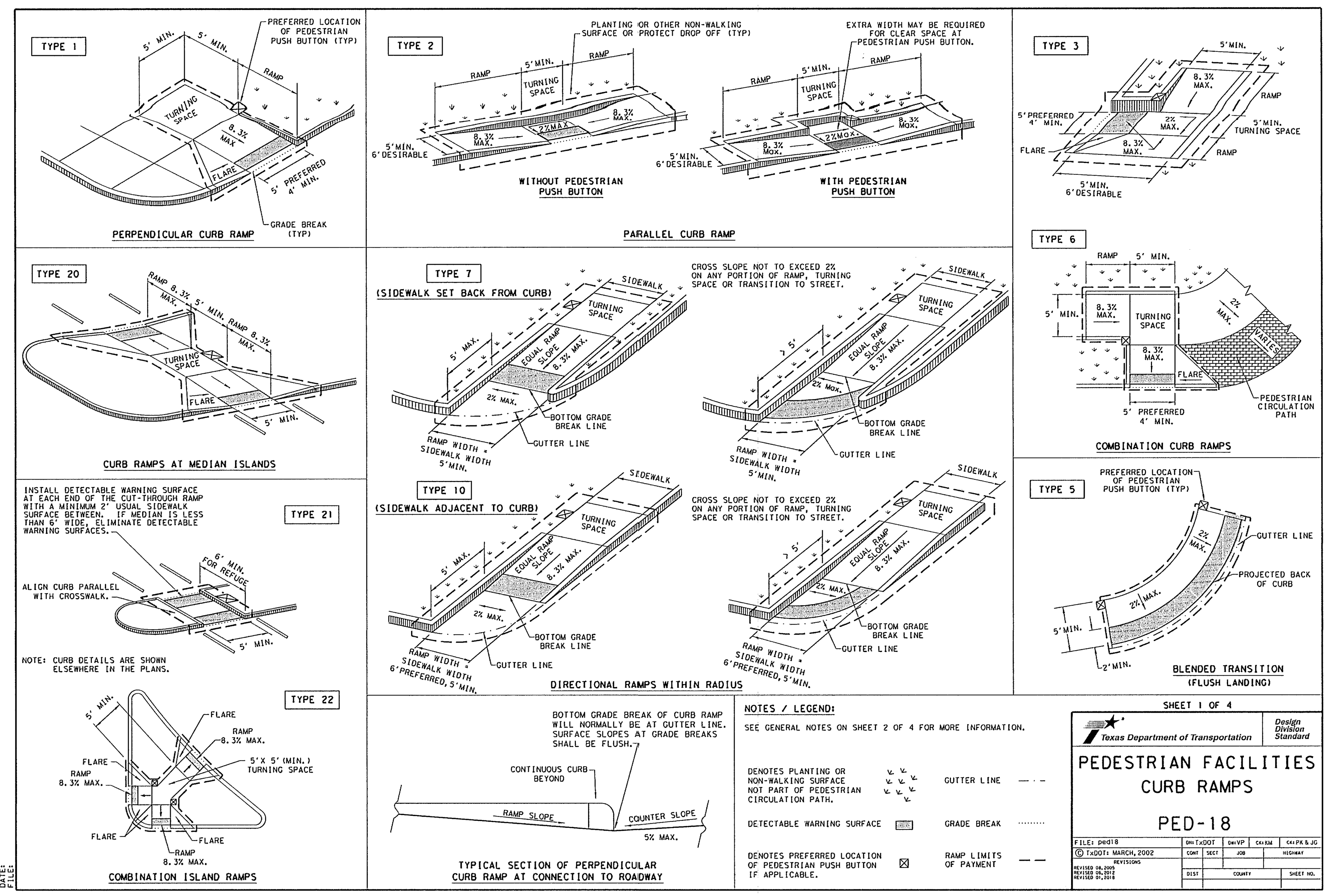
FILE NO:

DRAWING SCALE: N/A

VERT: N/A HORZ: N/A

SHEET No: 7 OF 9

BENCH MARK



SHEET 1 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-18

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5" passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicalble standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

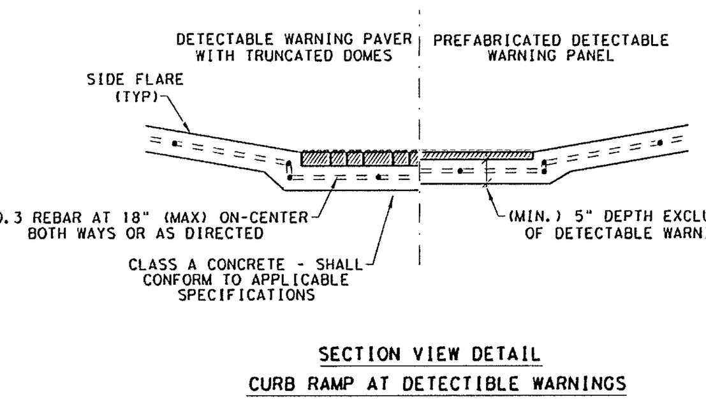
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4.350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

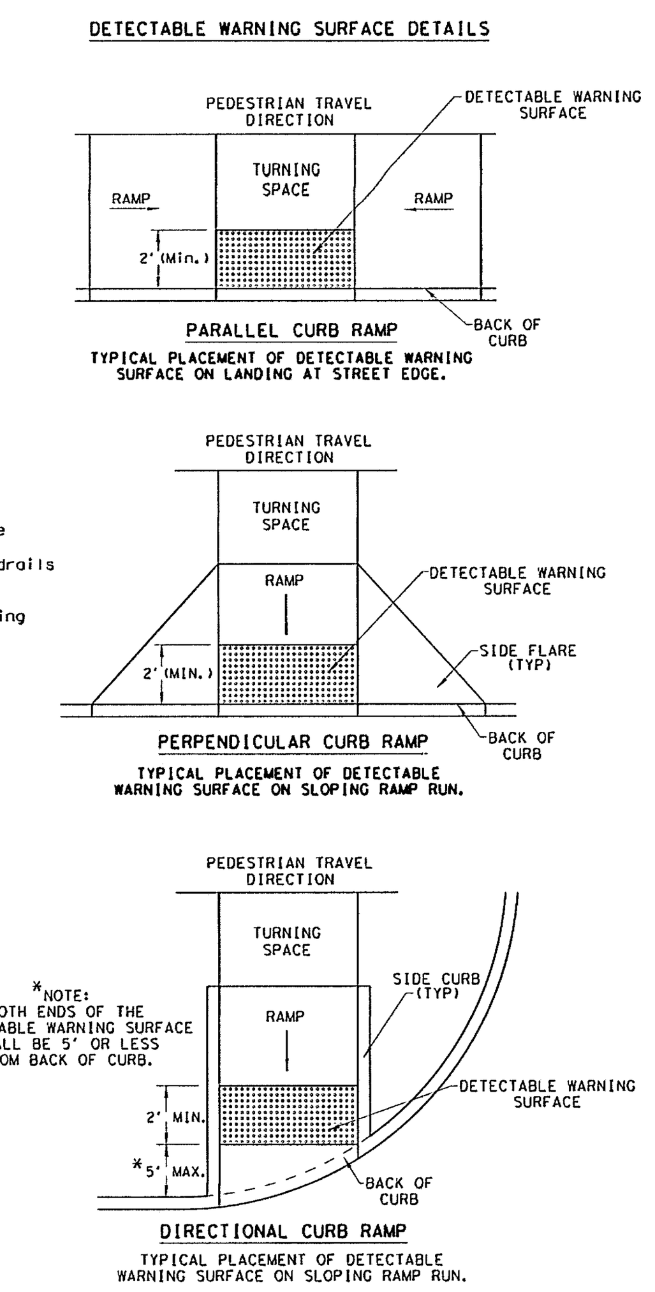
DETECTABLE WARNING PAVERS (IF USED)

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

SIDEWALKS

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.



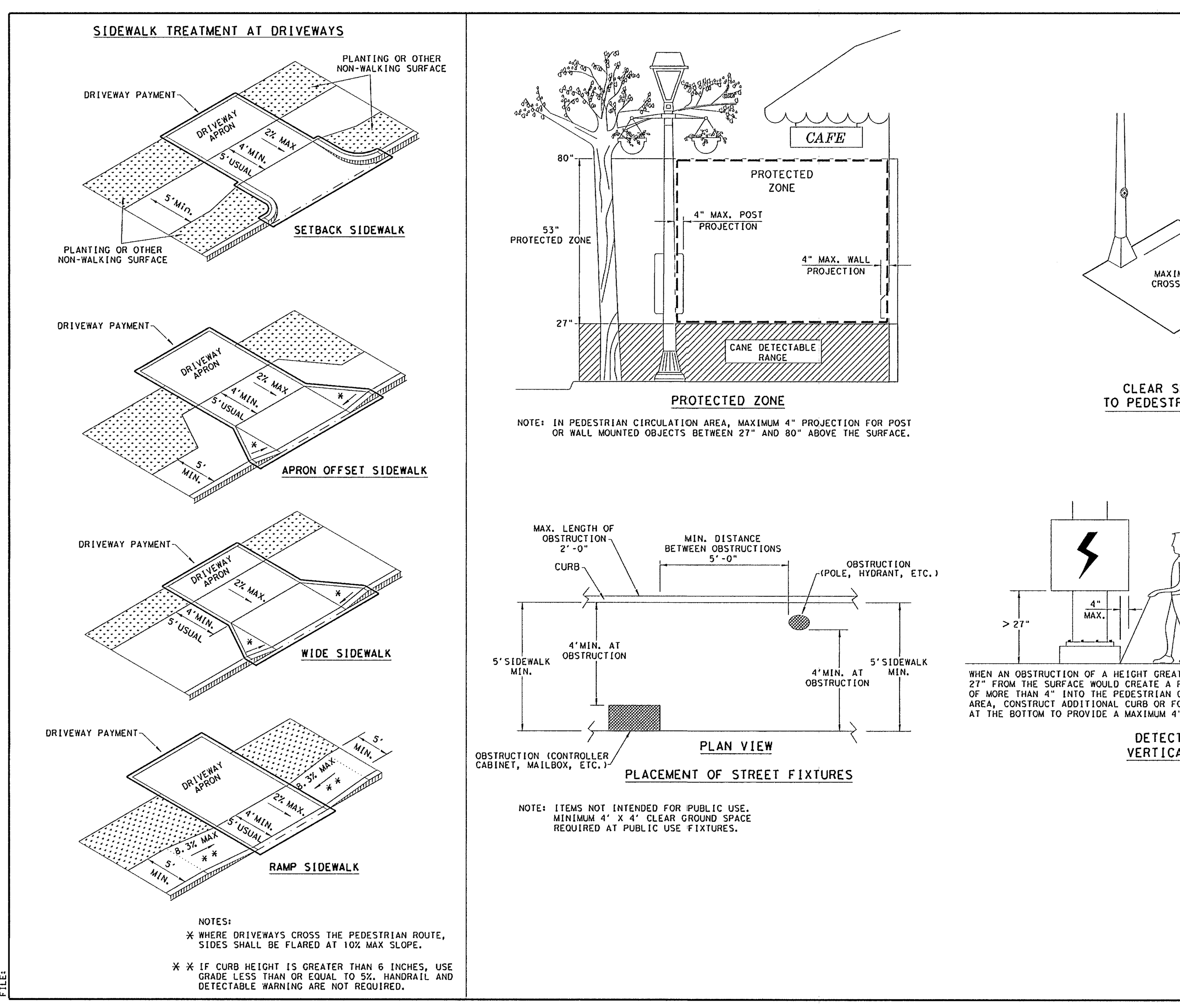


SHEET 2 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-18

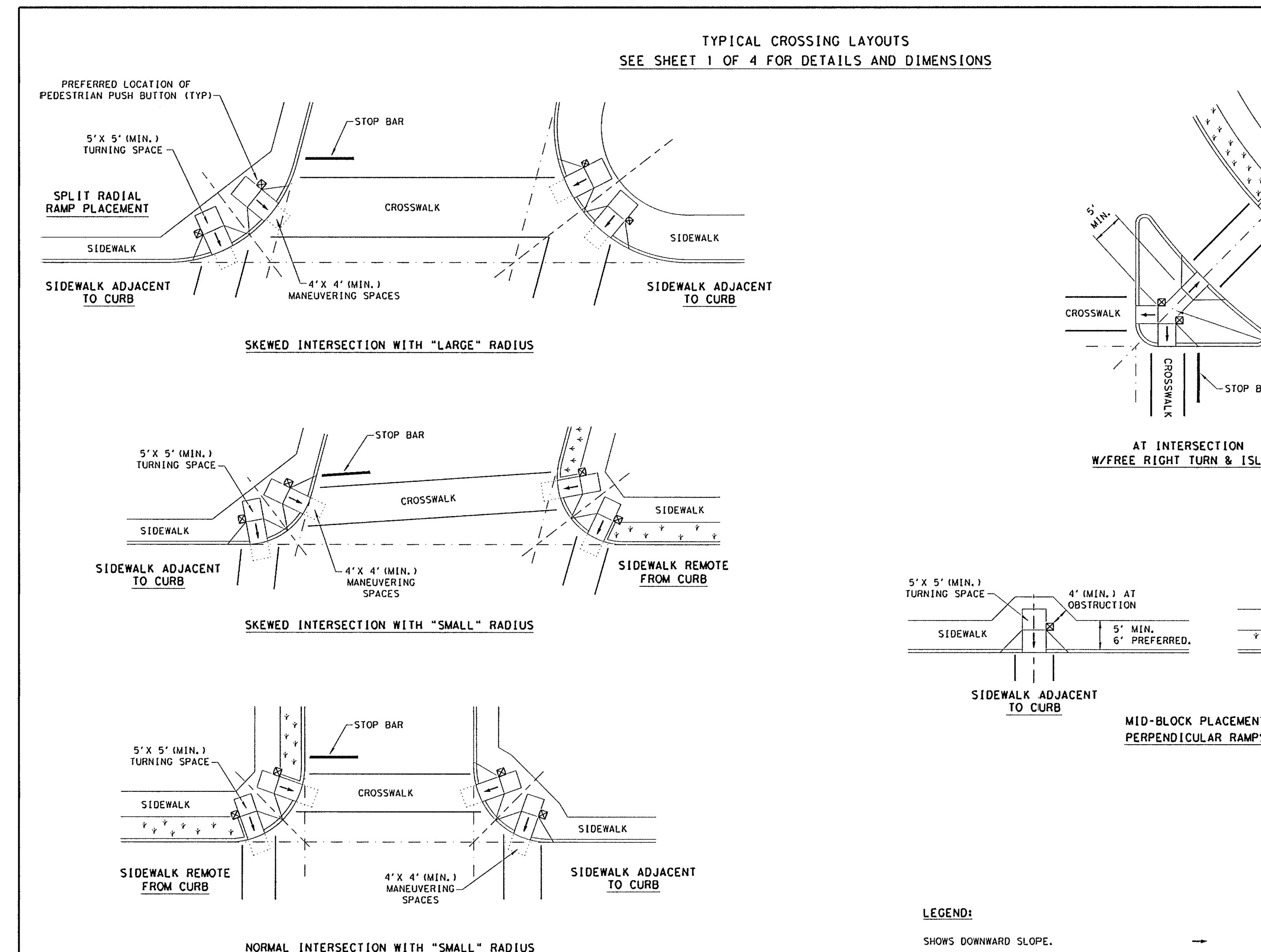


SHEET 3 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-18



SHEET 4 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-18

CLG 8-1-18

PROVIDENT ENGINEERS, INC.
REG NUM. F-1508
8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

Rev.	Date	Description	App.
1			

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

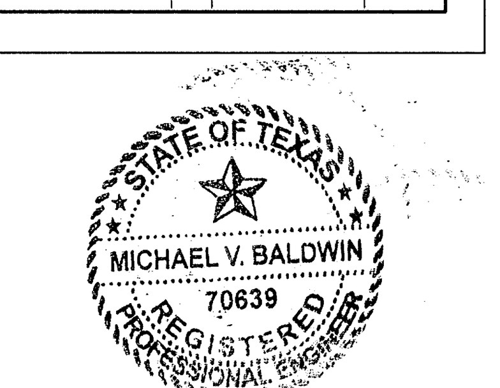
SBC VALID FOR ONE YEAR
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

CENTERPOINT ENERGY
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES
UNLESS NOTIED VALID AT TIME OF REVIEW ONLY.

FBCFWD#2

TXDOT DETAILS #1

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ



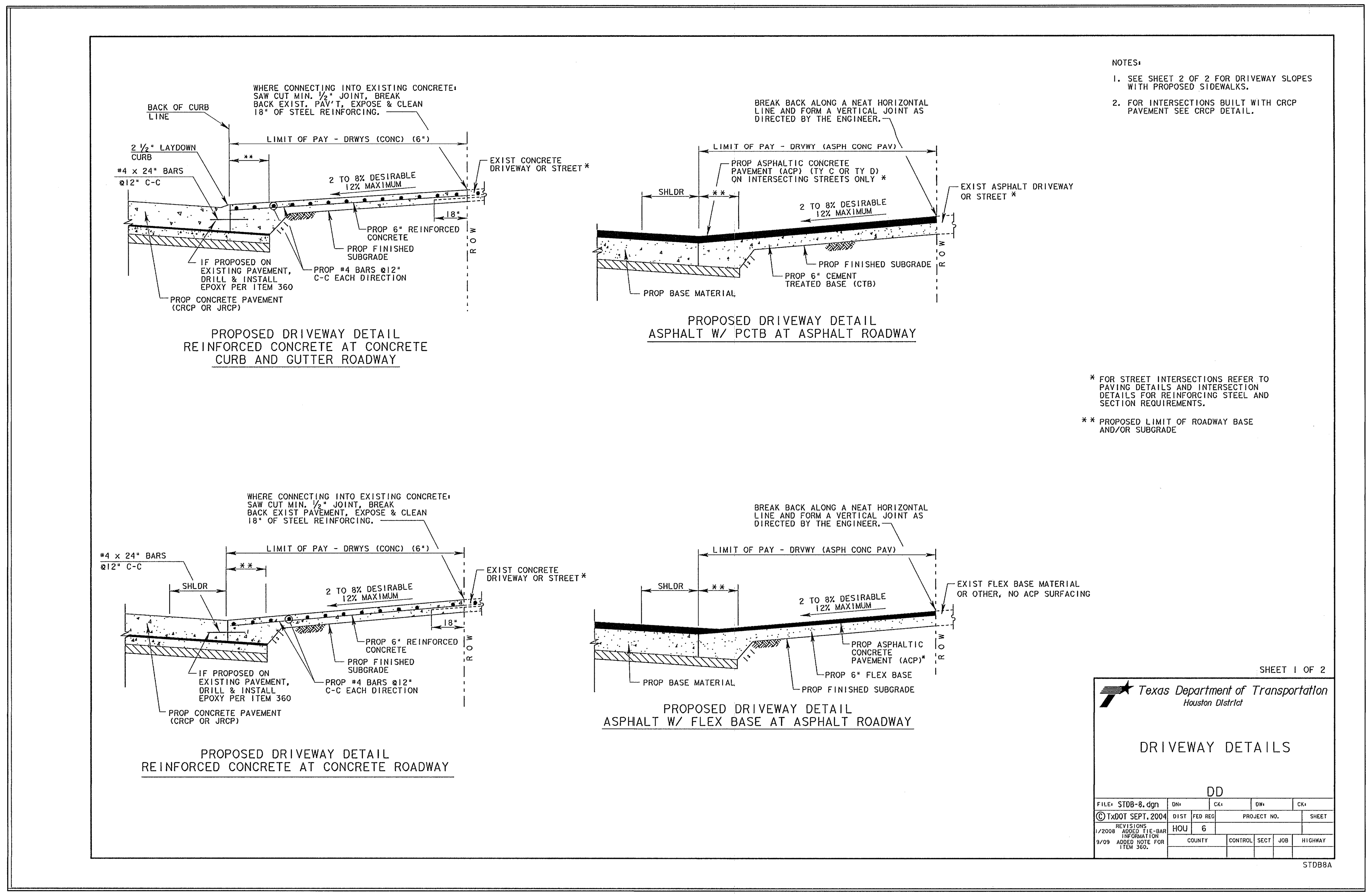
7/2/18

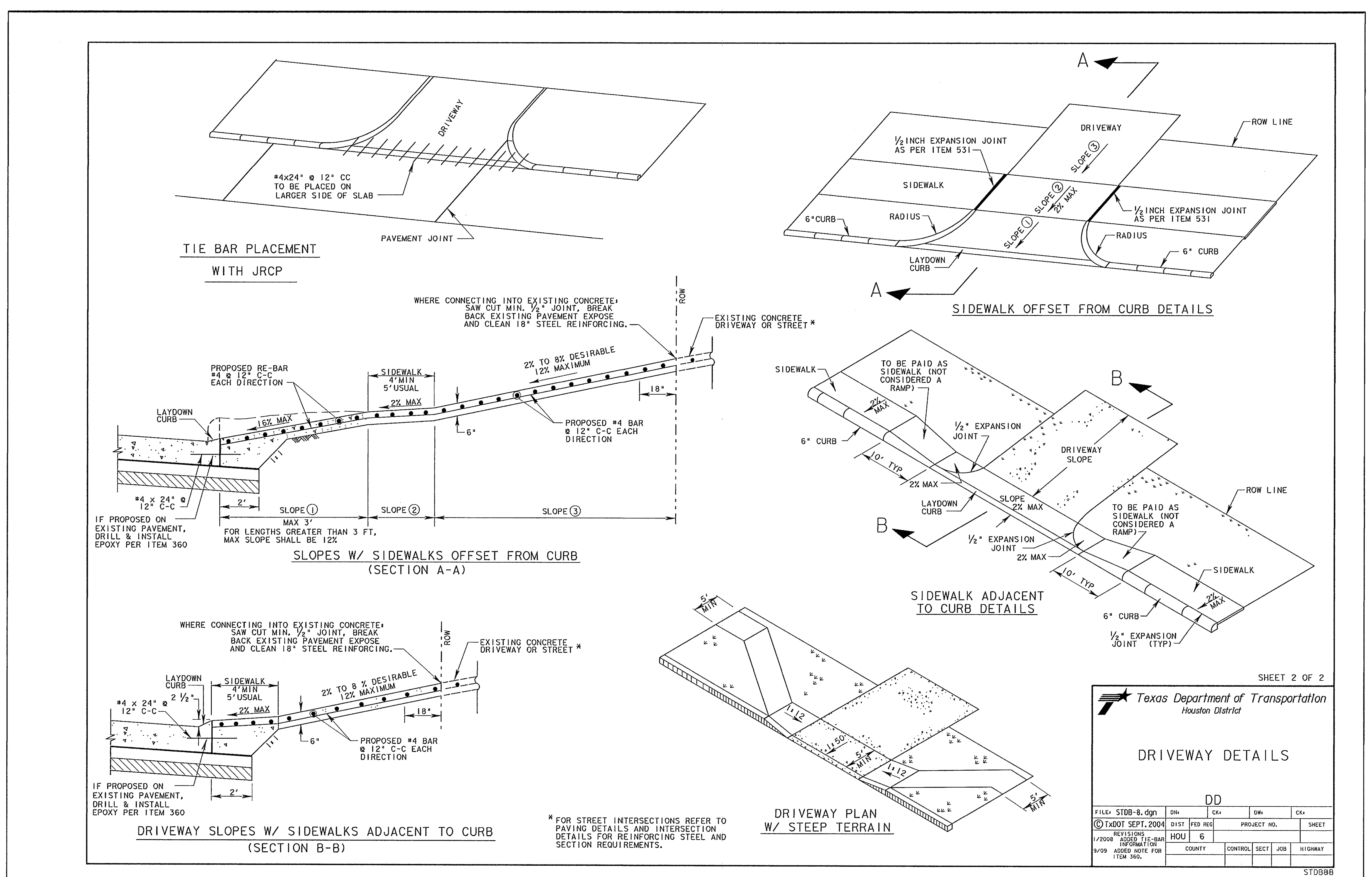
FILE NO:

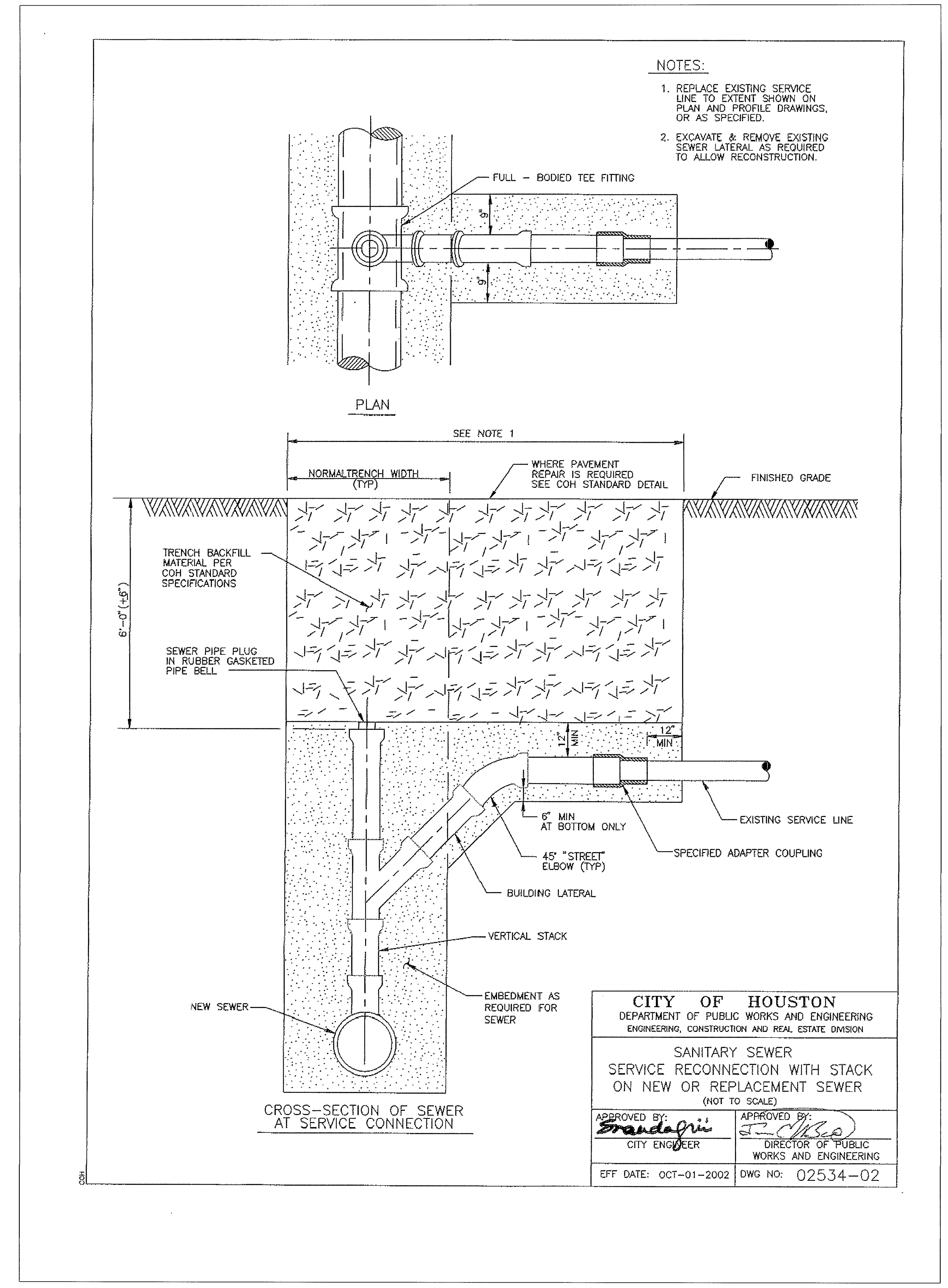
DRAWING SCALE: N/A

VERT: N/A HORZ: N/A

SHEET No: 8 OF 8


NOTES:
1. SEE SHEET 2 OF 2 FOR DRIVEWAY SLOPES WITH PROPOSED SIDEWALKS.
2. FOR INTERSECTIONS BUILT WITH CRCP PAVEMENT SEE CRCP DETAIL.
PROPOSED DRIVEWAY DETAIL
REINFORCED CONCRETE AT CONCRETE CURB AND GUTTER ROADWAY
PROPOSED DRIVEWAY DETAIL
ASPHALT W/ PCTB AT ASPHALT ROADWAY
* FOR STREET INTERSECTIONS REFER TO PAVING DETAILS AND INTERSECTION DETAILS FOR REINFORCING STEEL AND SECTION REQUIREMENTS.
** PROPOSED LIMIT OF ROADWAY BASE AND/OR SUBGRADE
PROPOSED DRIVEWAY DETAIL
REINFORCED CONCRETE AT CONCRETE ROADWAY
PROPOSED DRIVEWAY DETAIL
ASPHALT W/ FLEX BASE AT ASPHALT ROADWAY
SHEET 1 OF 2
Texas Department of Transportation
Houston District
DRIVEWAY DETAILS
DD


TIE BAR PLACEMENT
WITH JRCP
SIDEWALK OFFSET FROM CURB DETAILS
SLOPES W/ SIDEWALKS OFFSET FROM CURB
(SECTION A-A)
SIDEWALK ADJACENT TO CURB DETAILS
DRIVEWAY SLOPES W/ SIDEWALKS ADJACENT TO CURB
(SECTION B-B)
DRIVEWAY PLAN
W/ STEEP TERRAIN
* FOR STREET INTERSECTIONS REFER TO PAVING DETAILS AND INTERSECTION DETAILS FOR REINFORCING STEEL AND SECTION REQUIREMENTS.
SHEET 2 OF 2
Texas Department of Transportation
Houston District
DRIVEWAY DETAILS
DD


NOTES:
1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR AS SPECIFIED.
2. EXCAVATE & REMOVE EXISTING SEWER LATERAL AS REQUIRED TO ALLOW RECONSTRUCTION.
FULL - BODIED TEE FITTING
PLAN
SEE NOTE 1
NORMAL TRENCH WIDTH (TYP)
WHERE PAVEMENT REPAIR IS REQUIRED SEE COH STANDARD DETAIL
FINISHED GRADE
TRENCH BACKFILL MATERIAL PER COH STANDARD SPECIFICATIONS
SEWER PIPE PLUG IN RUBBER GASKETED PIPE BELL
6" MIN AT BOTTOM ONLY
EXISTING SERVICE LINE
45° "STREET" ELBOW (TYP)
SPECIFIED ADAPTER COUPLING
BUILDING LATERAL
VERTICAL STACK
NEW SEWER
EMBEDMENT AS REQUIRED FOR SEWER
CROSS-SECTION OF SEWER AT SERVICE CONNECTION
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION
SANITARY SEWER
SERVICE RECONNECTION WITH STACK ON NEW OR REPLACEMENT SEWER
(NOT TO SCALE)
APPROVED BY: CITY ENGINEER
APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002
DWG NO: 02534-02

CAG 8-1-18

PROVIDENT ENGINEERS, INC.
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8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

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PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

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FBCFWD#2

TXDOT DETAILS #2
& Sant. Stack Detail

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

STATE OF TEXAS
MICHAEL V. BALDWIN
70639
REGISTERED PROFESSIONAL ENGINEER

7/2/18

FILE NO:

DRAWING SCALE: 60

VERT:N/AHORZ: 60

SHEET No:9 OF 9

PROPOSED TRAFFIC CONTROL PLAN
SCHOOL OF SCIENCE DRIVEWAYS

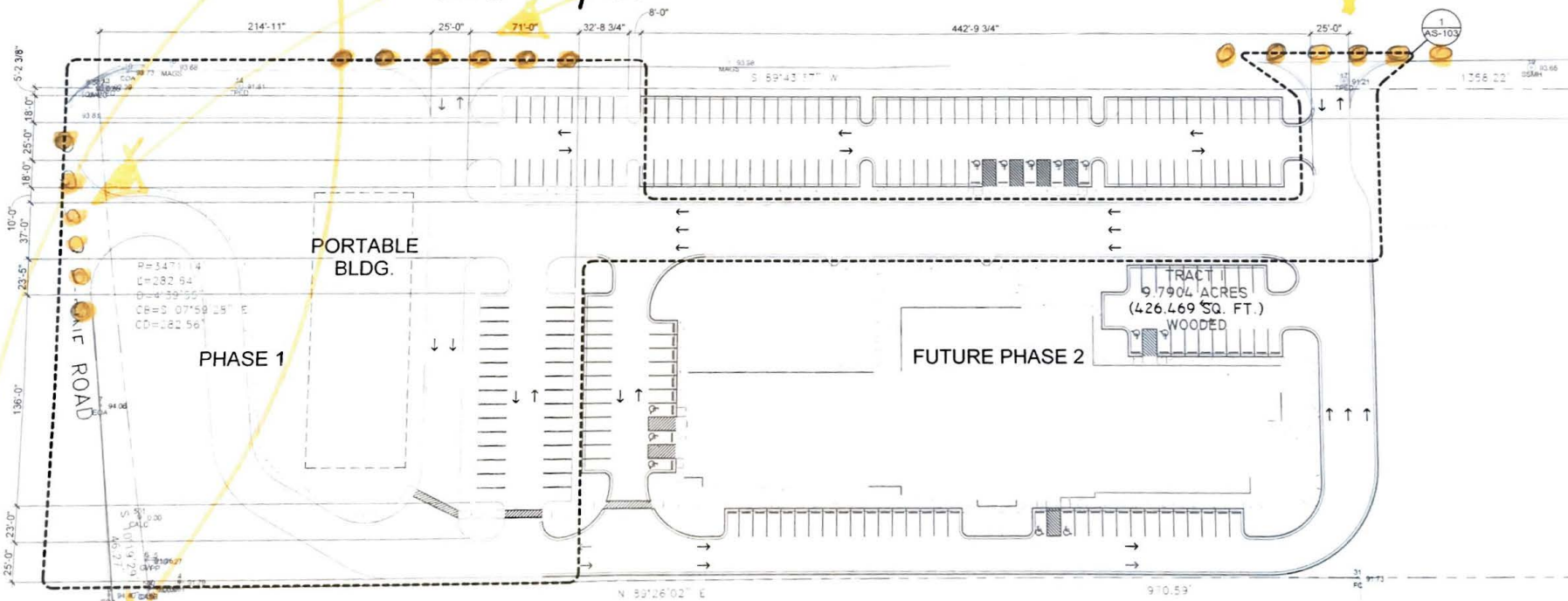
CONSTRUCTION AHEAD

END CONSTRUCTION

TRAFFIC DRUM
HIGH DENSITY
HIGH VISIBILITY
6 AT EACH DRIVE LOCATION WHILE UNDER CONSTRUCTION

CLODINE ROAD

BOSS GASTON RD



1 OVERALL ARCHITECTURAL SITE PLAN - PHASE 1
SCALE: 1" = 50'-0"