



**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

- Right of Way Permit
 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:

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

(2) BOND:

- County Attorney, approval when applicable.
- Perpetual bond currently posted. Bond No: _____ Amount: _____
- Performance bond submitted. Bond No: _____ Amount: _____
- 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.

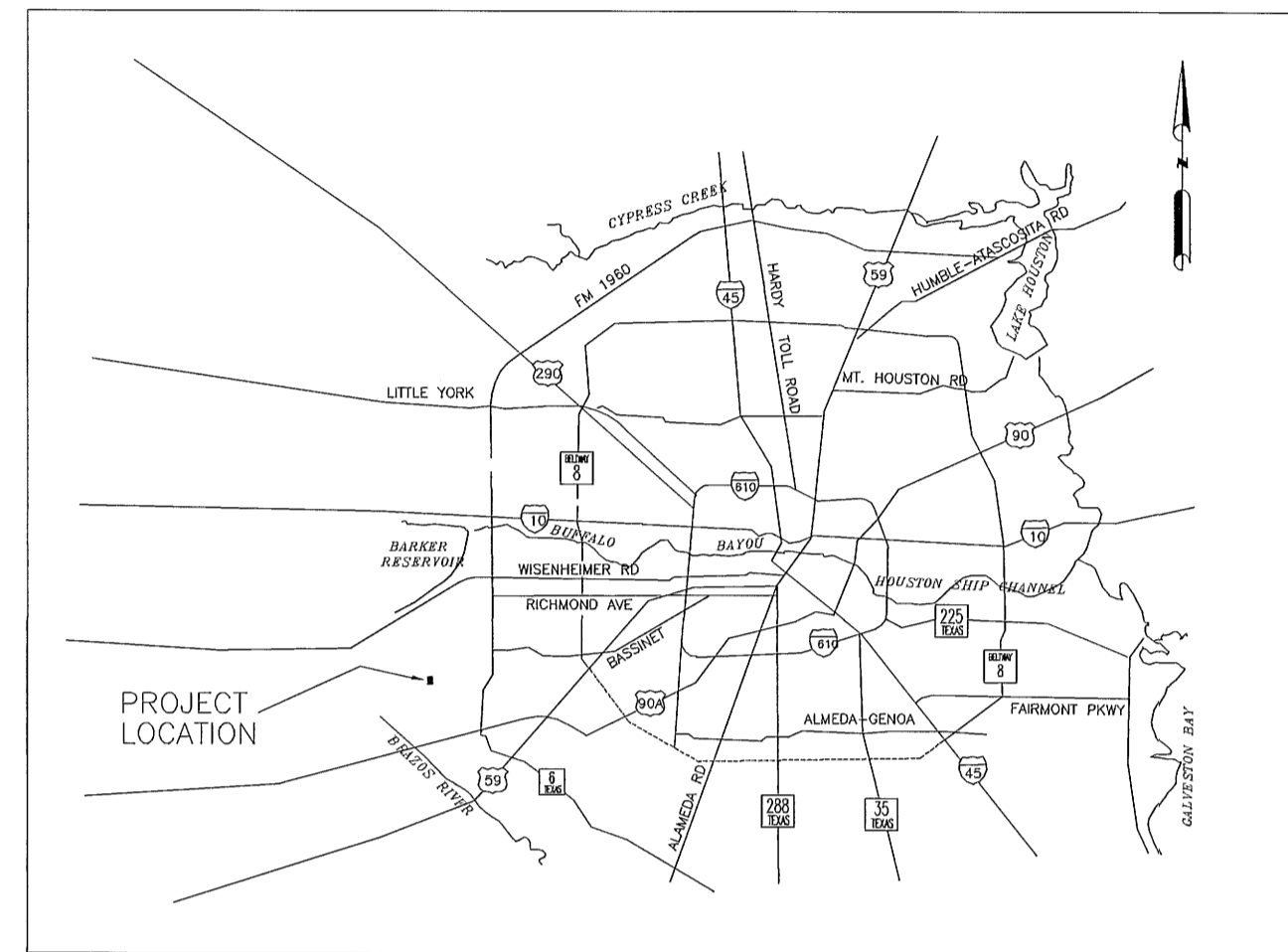


Permit Administrator

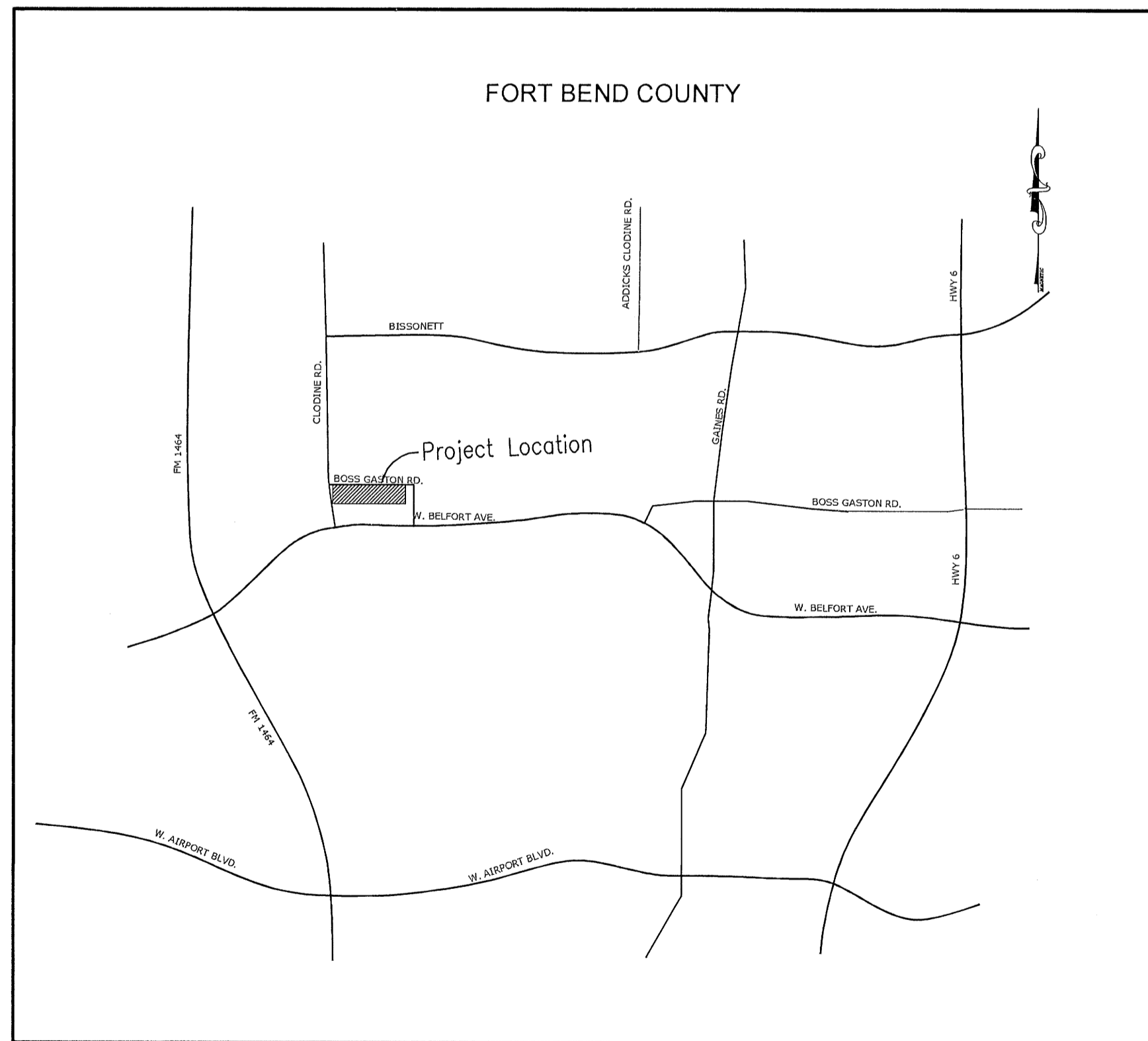
11/2/2018

Date

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

NOTE:

This tract is located within the boundaries 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

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:

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.

NOTE:

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

FORT BEND COUNTY ENGINEER

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

DATE: 8/2/18

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

APPROVED: Richard W. Staldis
for Development Coordinator

DATE: 8-1-18

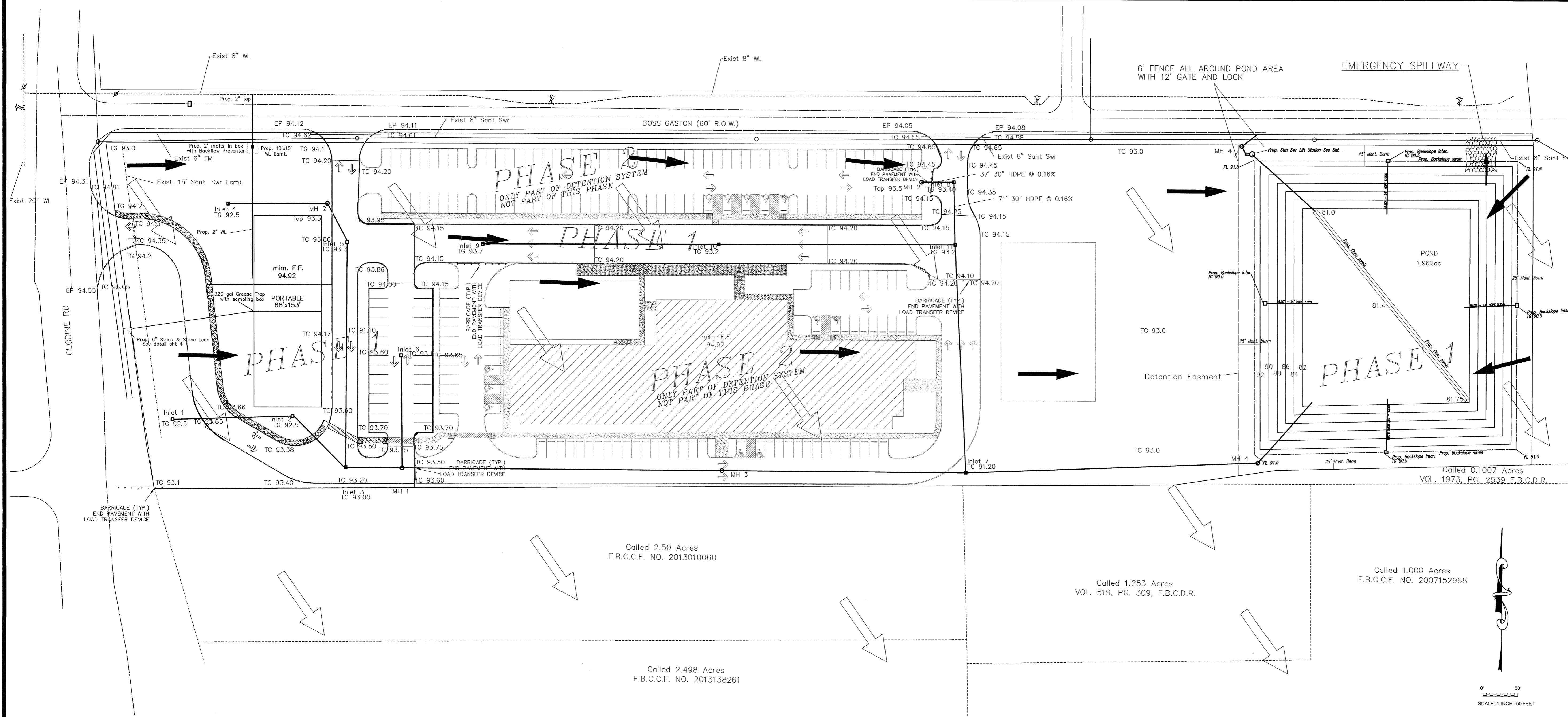


Michael V. Baldwin
7/2/18

PEI PROVIDENT ENGINEERS, INC.
REG. NO. E-1508
8406 BUFFALO CREEK DR.
RICHMOND, TEXAS 77406
281-313-9393

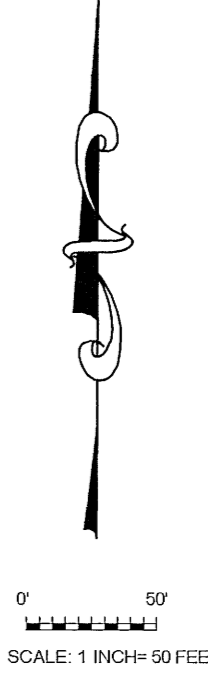
SURVEYED BY:
FB NO.

SCHOOL OF SCIENCE & TECHNOLOGY RICHMOND, TX



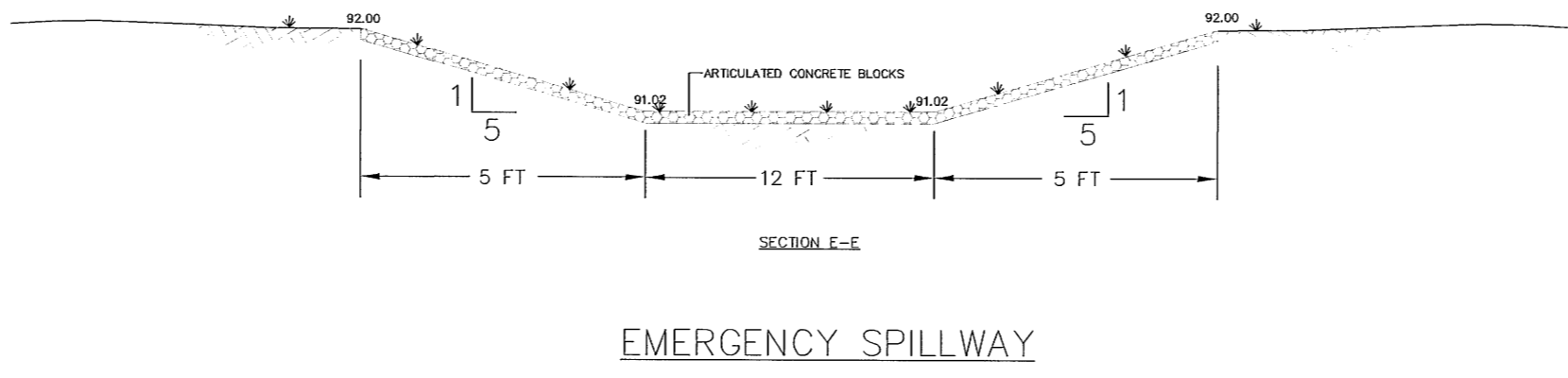
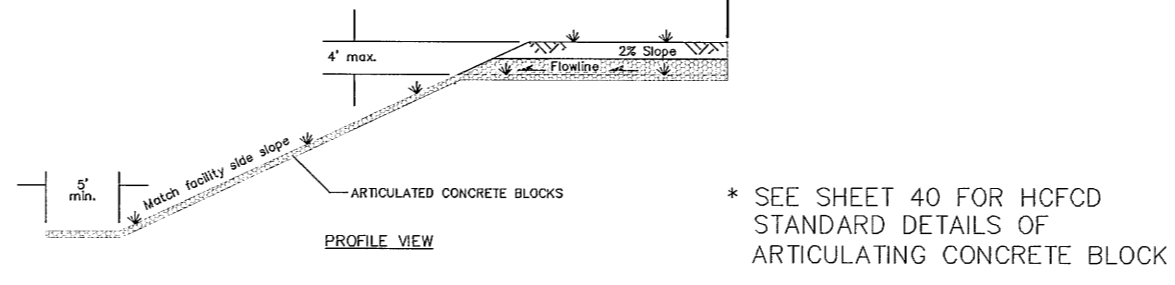
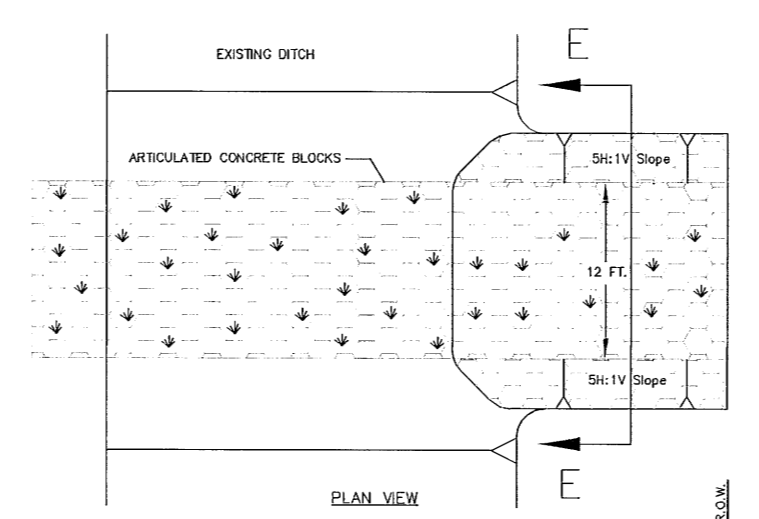
BENCH MARK
 REFERENCE BENCHMARK:
 TBM No. 8 IS A BOX CUT ON TOP OF CURB AT EAST END OF MEDIAN BULLETNOSE AT THE CENTERLINE OF WEST BELLFORT AT THE WEST SIDE OF SUGAR SPICE DRIVE, PER PLANS FOR "WEST BELLFORT PAVING AND DRAINAGE IMPROVEMENTS FROM MARTINEZ STREET TO F.M. 1464" BY KELLY R. KALUZA & ASSOCIATES,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

FLOOD PLAIN MANAGEMENT INFORMATION:
 PER FIRM PANEL NO. 4815700120J, 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%



LEGENDS

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

APPROVED: *[Signature]*
 Development Coordinator

DATE: 8/1/18



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

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

PROVIDENT ENGINEERS, INC.
 REG. NUM. F-1508
 8408 BUFFALO CREEK DR.
 RICHMOND, TEXAS 77406
 281-313-9393

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

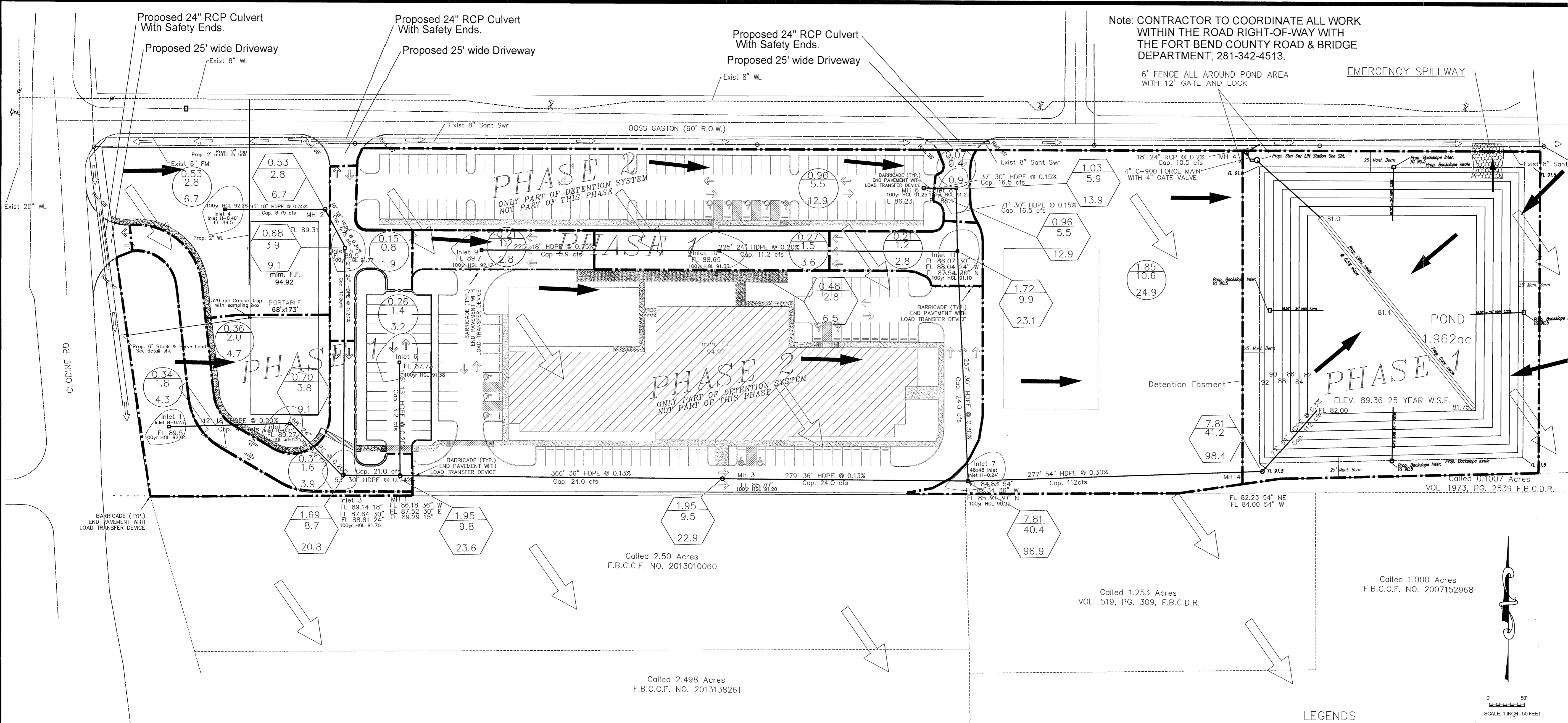
SBC VALID FOR ONE YEAR
 APPROVED ONLY FOR UNDERGROUND FACILITIES

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

FBCFWD#2
 OVERALL SITE LAYOUT
 &
 GRADING PLAN

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO:
 DRAWING SCALE: 50
 SHEET No: 2 OF 9



BENCH MARK
REFERENCE BENCHMARK:
FEM No. 8 IS A BOX CUT ON TOP OF CURB AT EAST END OF MEDIAN BULLENOISE 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. 4815700120, DATED JANUARY 03, 1997. THIS PROJECT LIES TOTALLY IN THE UNSHADED "ZONE X", AND IS TOTALLY OUT OF THE 100 & 500 YEAR FLOODPLAINS.

Area AC
3yr storm
100yr storm
Total Area AC
3yr storm
100yr storm

Inlet #	Inlet Type	Inlet Cap.	@ ponding
Inlet 1	24"x24"	3.5	0.26
Inlet 2	24"x24"	3.75	0.27
Inlet 3	24"x24"	4.25	0.28
Inlet 4	24"x24"	6.7	0.40
Inlet 5	24"x24"	1.9	0.16
Inlet 6	24"x24"	3.3	0.25
Inlet 7	48"x48"	30.0	0.60
Inlet 8	24"x24"	1.9	0.16
Inlet 9	24"x24"	2.8	0.22
Inlet 10	24"x24"	3.6	0.27
Inlet 11	24"x24"	2.8	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	Intensity 100yr in/hr	Q 100yr cfs	Intensity 3yr in/hr	Q 3yr cfs	Manning's "n"	Design Cap. (cfs)	Design Vel. (fps)	Actual Vel. (fps)	H.G. %	Elev. HG Up (ft)	Elev. HG Dw (ft)	INLET CAP. (cfs)	PONDING (ft)	3yr (ft)	100yr (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	88	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	6.6	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	3	3.4	4.4	0.2	91.38	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	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	Intensity 100yr in/hr	Q 100yr cfs	Intensity 3yr in/hr	Q 3yr 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	88	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	1.5	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	3.4	7.4	0.6	8.0	12.4	22.9	6.5	9.6	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	0.8	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

APPROVED: *CDG*
Development Coordinator
DATE: 8-1-18

Inlet Cap. Cal.

	Q 24"x24"	Q 24"x36"	Q 36"x36"	Q 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

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

STATE OF TEXAS
REGISTERED PROFESSIONAL ENGINEER
MICHAEL W. BALDWIN
70639

7/21/18

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

SBC VALID FOR ONE YEAR
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

CENTERPOINT ENERGY
APPROVED ONLY FOR OVERGROUND CONDUIT FACILITIES
UNLESS NOTED VALID AT TIME OF REVIEW ONLY.

FBCFD#2
OVERALL SITE LAYOUT
&
DRAINAGE PLAN

WATER	WASTEWATER	TRAFFIC
Sf. & BRIDGE	STORMWATER	SWO

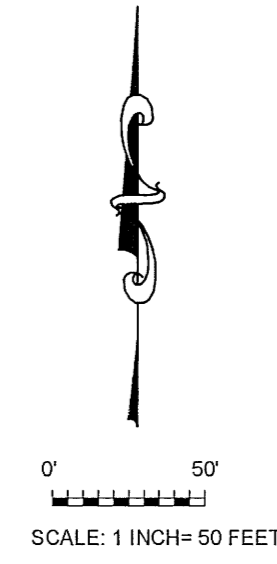
FILE NO:

DRAWING SCALE: 50

SHEET No: 3 OF 9

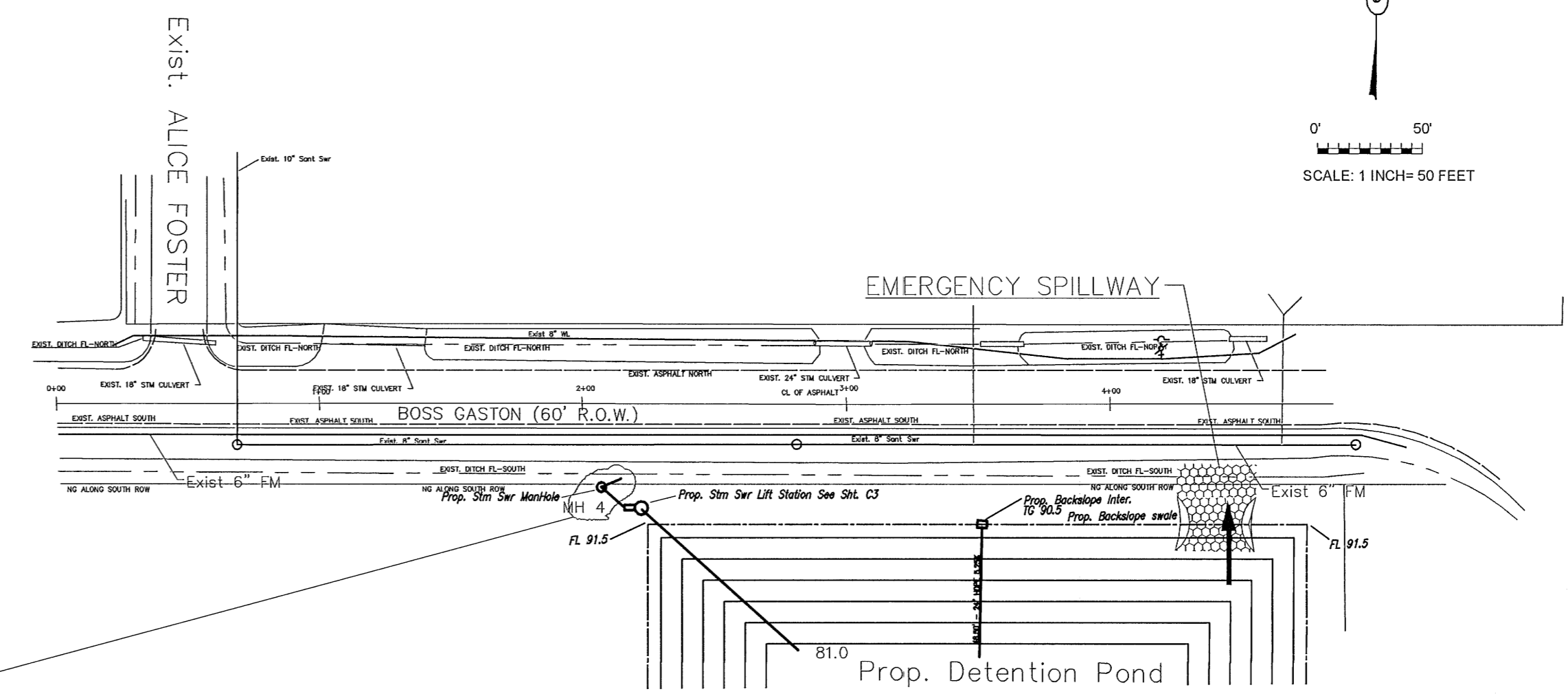
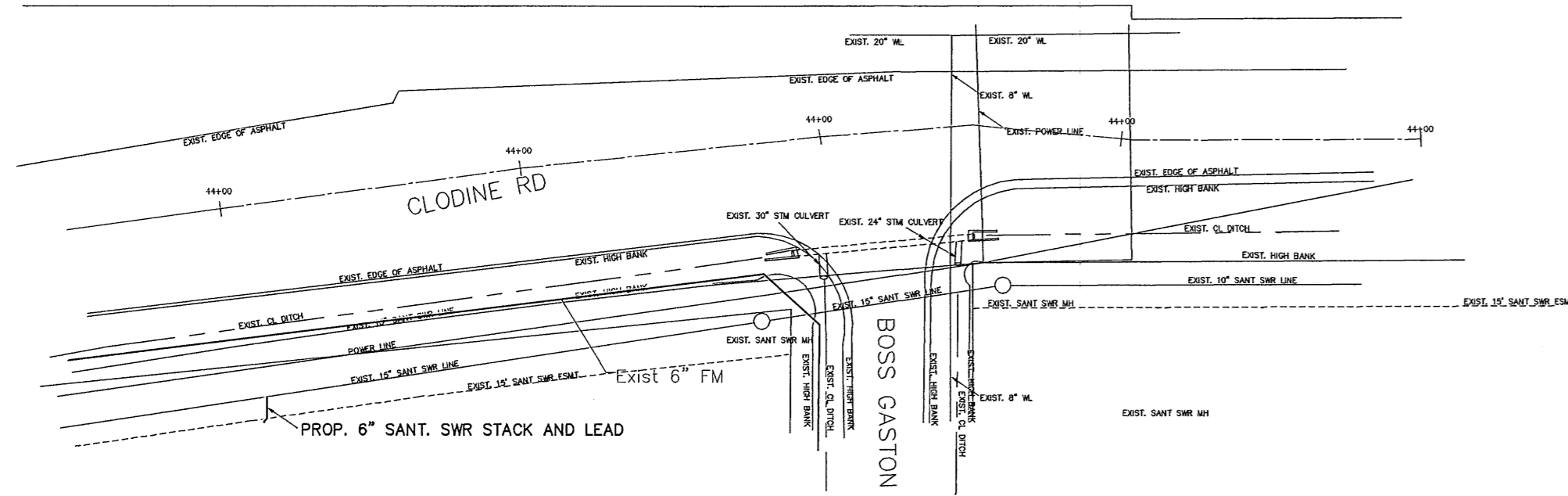
BENCH MARK

BENCHMARK:
FLOODPLAIN REFERENCE MARK NUMBER 150895 IS AN ALUMINUM ROD STAMPED 150895 AT THE INTERSECTION OF EAST HARDY STREET AND ARTEX BLVD LOCATED IN GROUND EAST OF INTERSECTION ON WEST SIDE OF INTERSECTION, ON WEST END OF MEDIAN BETWEEN WEST AND EAST BOUND ARTEX BLVD IN KEY MAP 372A, IN THE GREENS WATERSHED, NEAR STREAM PHOENIX.
ELEVATION = 91.01'
(NAVD 1988, 2001 ADJUSTED)
TBM: NORTH RIM OF STORM MANHOLE ON SOUTH SIDE OF ARTEX DRIVE 250' EAST OF IMPERIAL GREEN DRIVE.
ELEVATION = 88.10'

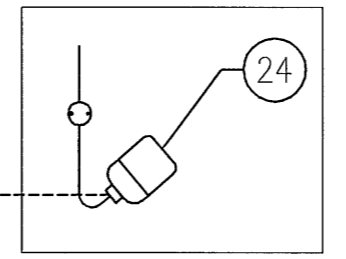


LEGEND

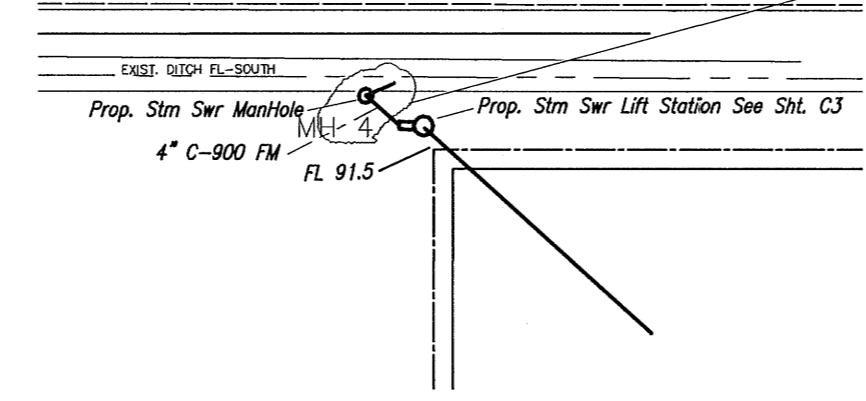
ALL SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 17 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE 18" JOINT OF 150 PSI DUCTILE IRON OR (GREEN) CPVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.
SEE GENERAL CONSTRUCTION - WATER NOTES 7-10, SHEET 7 FOR SPECIAL WATER LINE PROTECTION FOR WATER LINE CROSSING SANITARY SEWER LINE.



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

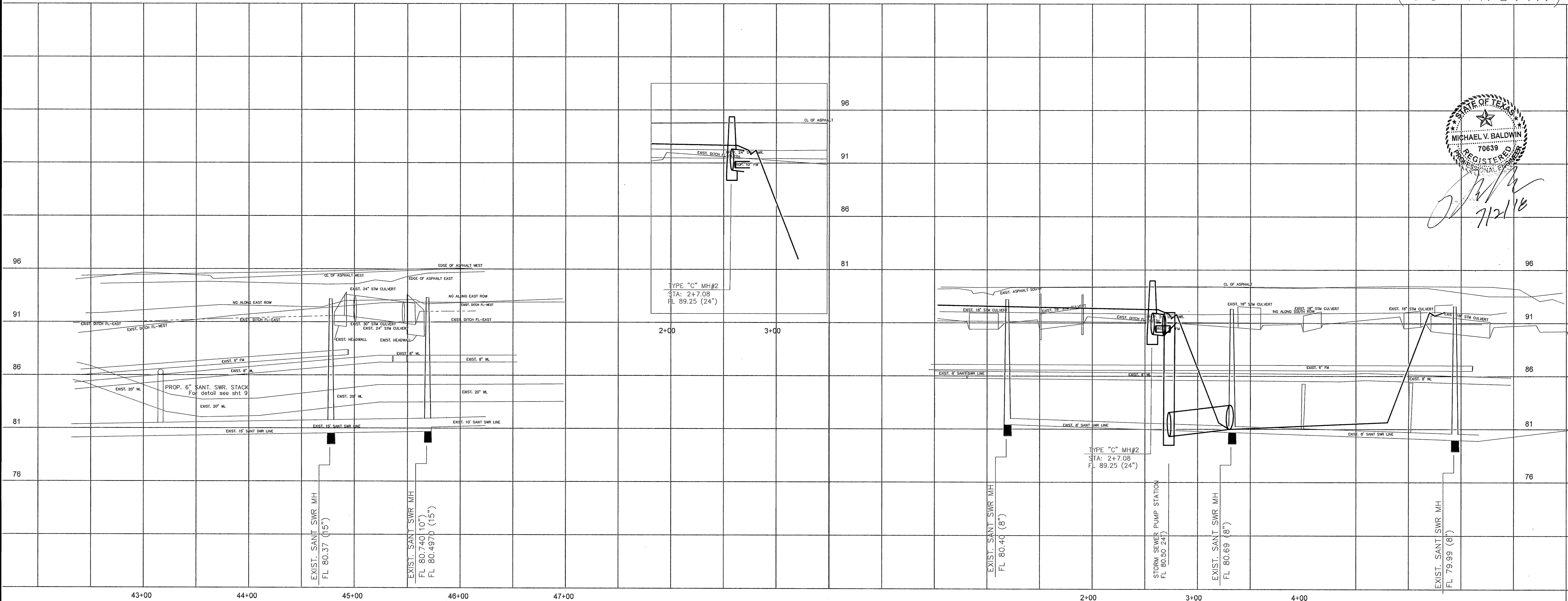


at MH4 see sht 4
INSTALLED AND WIRED

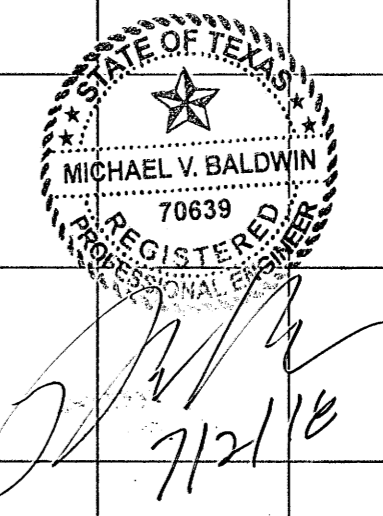


Exist. CLODINE ROAD (R.O.W. VAR)

Exist. BOSS GASTON (60' R.O.W.)



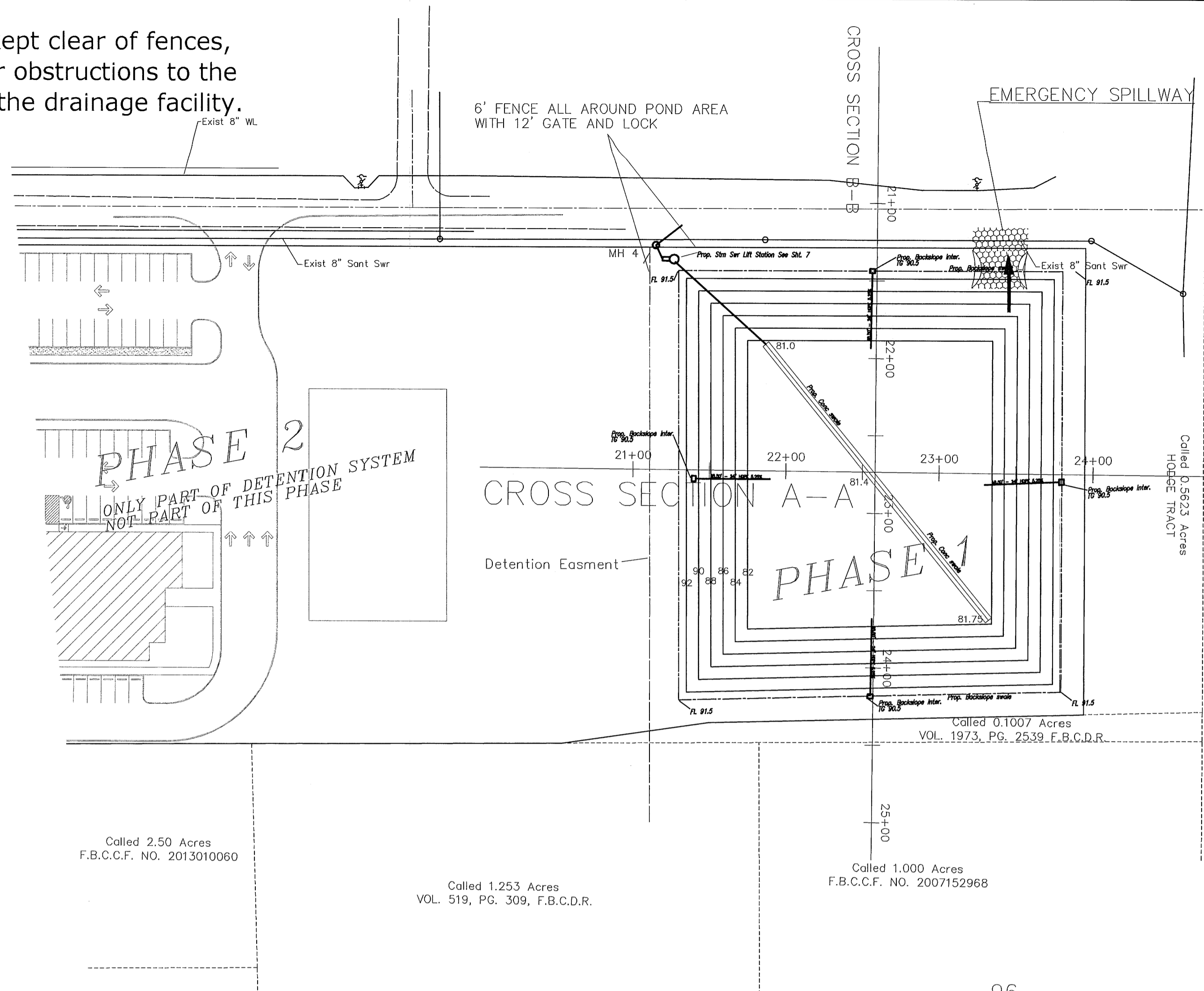
AKB 8-1-18



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

Rev.	Date	Description	App.
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 DUCTILES UNLESS NOTED VALID AT TIME OF REVIEW ONLY.			
FBCFD#2 CLODINE ROAD & BOSS GASTON			
WATER	WASTEWATER	TRAFFIC	
ST. & BRIDGE	STORMWATER	SWD	
FILE NO:			
DRAWING SCALE: 50			
VERT: 5 HORIZ: 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.

DETENTION SUMMARY EXTREME EVENT:

1. Area Served = 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*0.478*9.778*1.25
Q100 = 4.67
I100 = 12.5-1.03 = 11.47
S100 = 1' * A = 11.47/12*9.778
S100 = 9.35 ac-ft

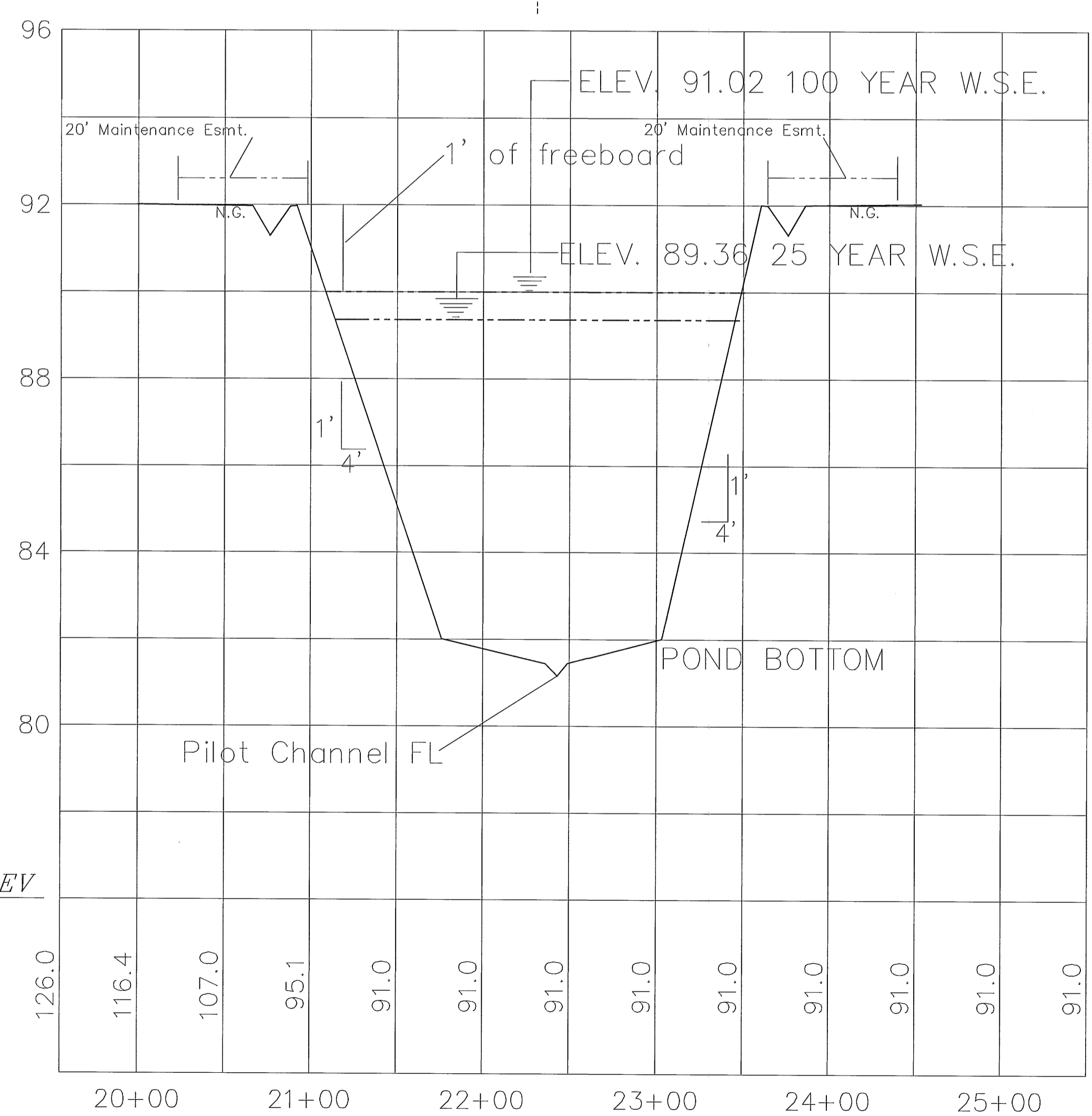
DETENTION SUMMARY 25yr STORM EVENT:

1. Area Served = 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

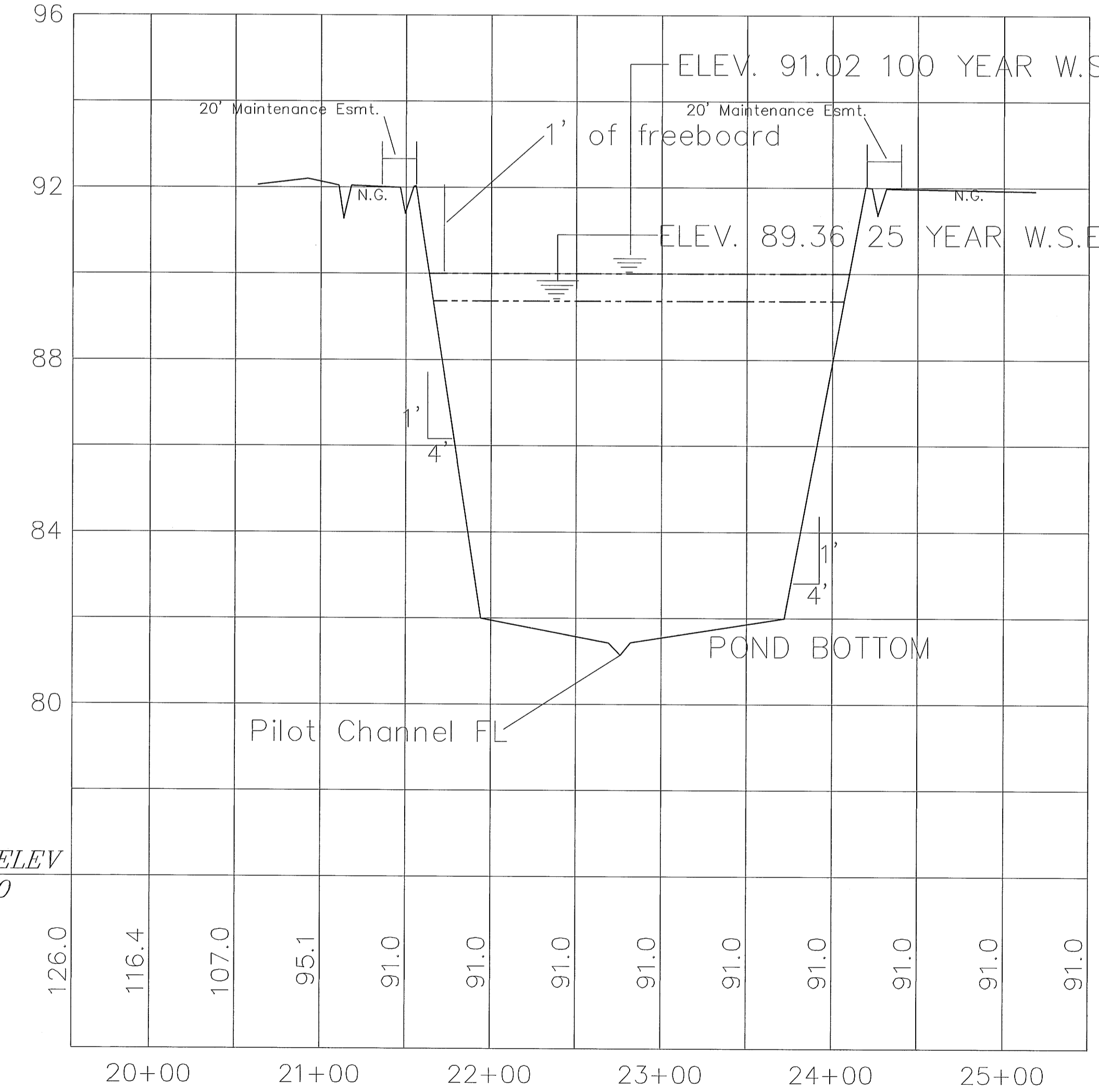
Q25 = CIA
Q25 = C*I*A*Cf
C = 0.90
I25 = 0.323
Q = 9.778 ac
Cf = 1.1
Q25 = 0.80*0.323*9.778*1.1
Q25 = 2.78
I25 = 9.6-0.89 = 8.71
S2 = 1' * A = 8.71/12*9.778
S2 = 7.10 ac-ft

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

APPROVED: *[Signature]*
Development Coordinator
DATE: 8-1-18

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

BENCH MARK
REFERENCE BENCHMARK:
TBM No. 8 IS A BOX CUT ON TOP OF CURB AT EAST END OF MEDIAN BULLETSIDE AT THE CENTERLINE OF WEST BELFORT AT THE WEST SIDE OF SUGAR SPICE DRIVE, PER PLANS FOR "WEST BELFORT PAVING AND DRAINAGE IMPROVEMENTS FROM MARTINEZ STREET TO F.M. 1484" BY KELLY R. KALLAZA & ASSOCIATES, INC. DATED DECEMBER 22, 2008.
ELEV. = 88.75' (NAVD '88, GEOID '03)

FLOOD PLAIN MANAGEMENT INFORMATION:
PER FIRM PANEL No. 48157C0315L, DATED JANUARY 03, 1997. THIS PROJECT LIES TOTALLY IN THE UNSHADDED "ZONE X", AND IS TOTALLY OUT OF THE 100 & 500 YEAR FLOODPLAINS.

PEI 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 OUTLINES
UNLESS NOTED VALID AT TIME OF REVIEW ONLY.

FBCFWD#2
DETENTION POND CROSS SECTIONS

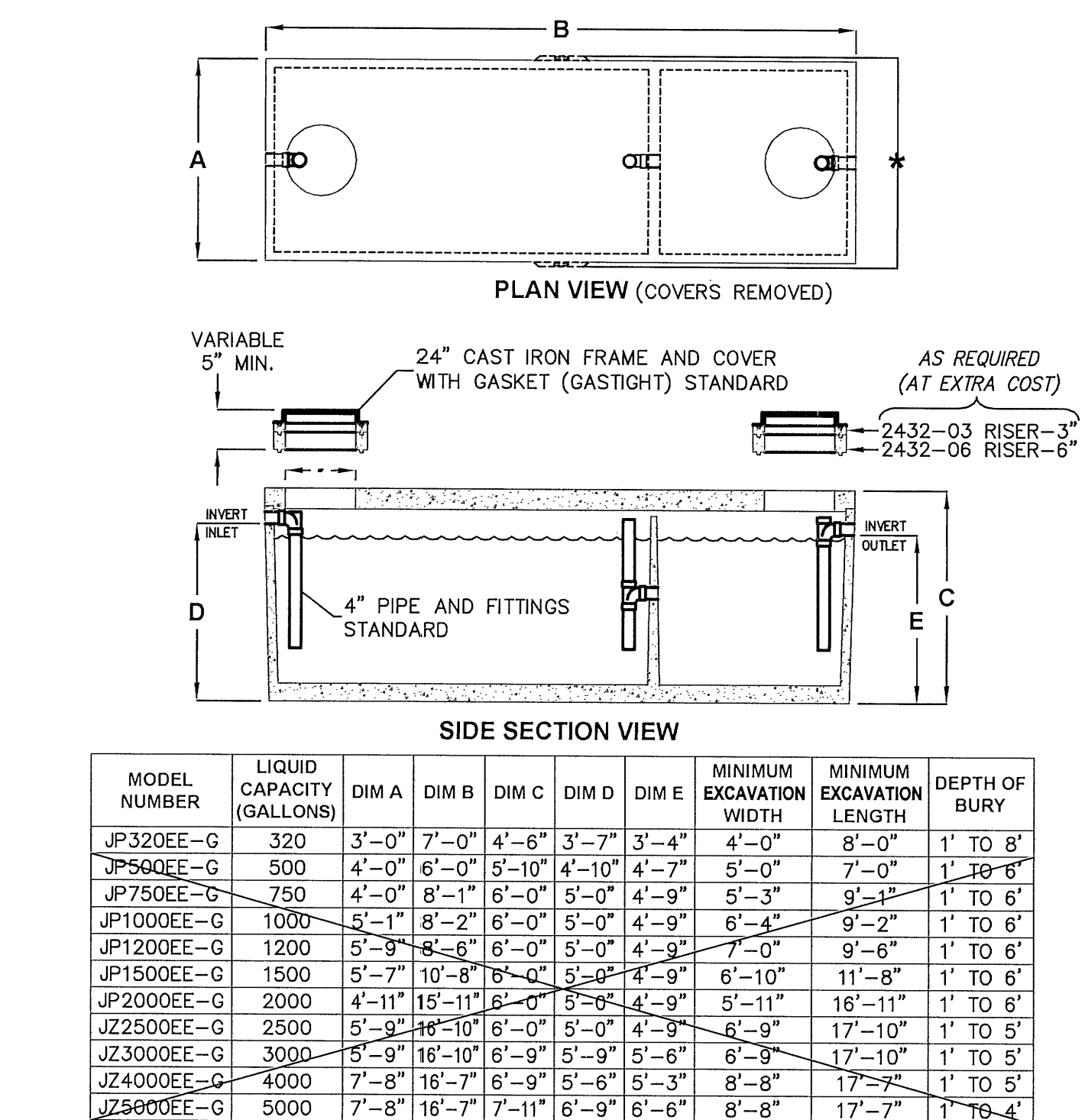
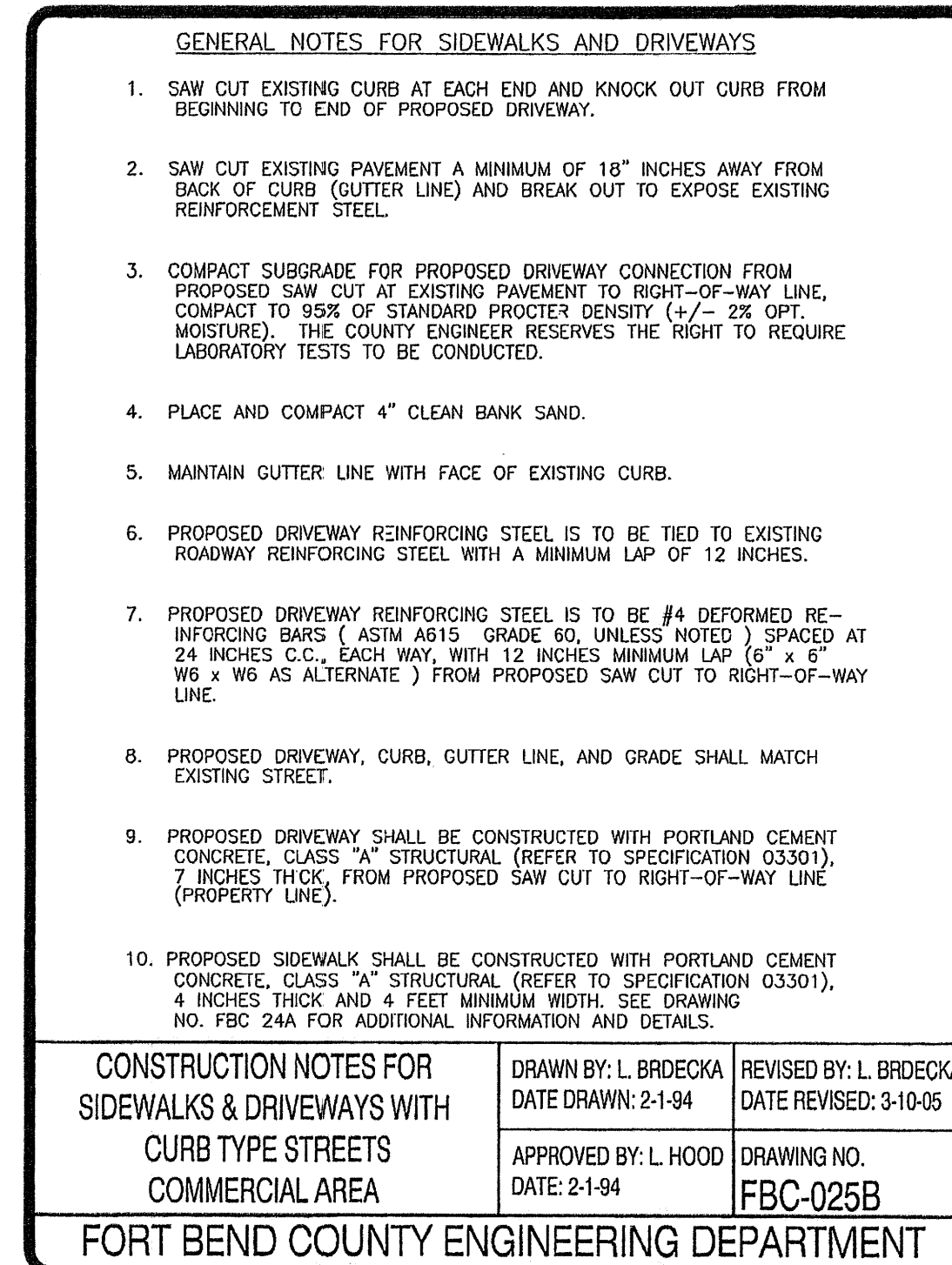
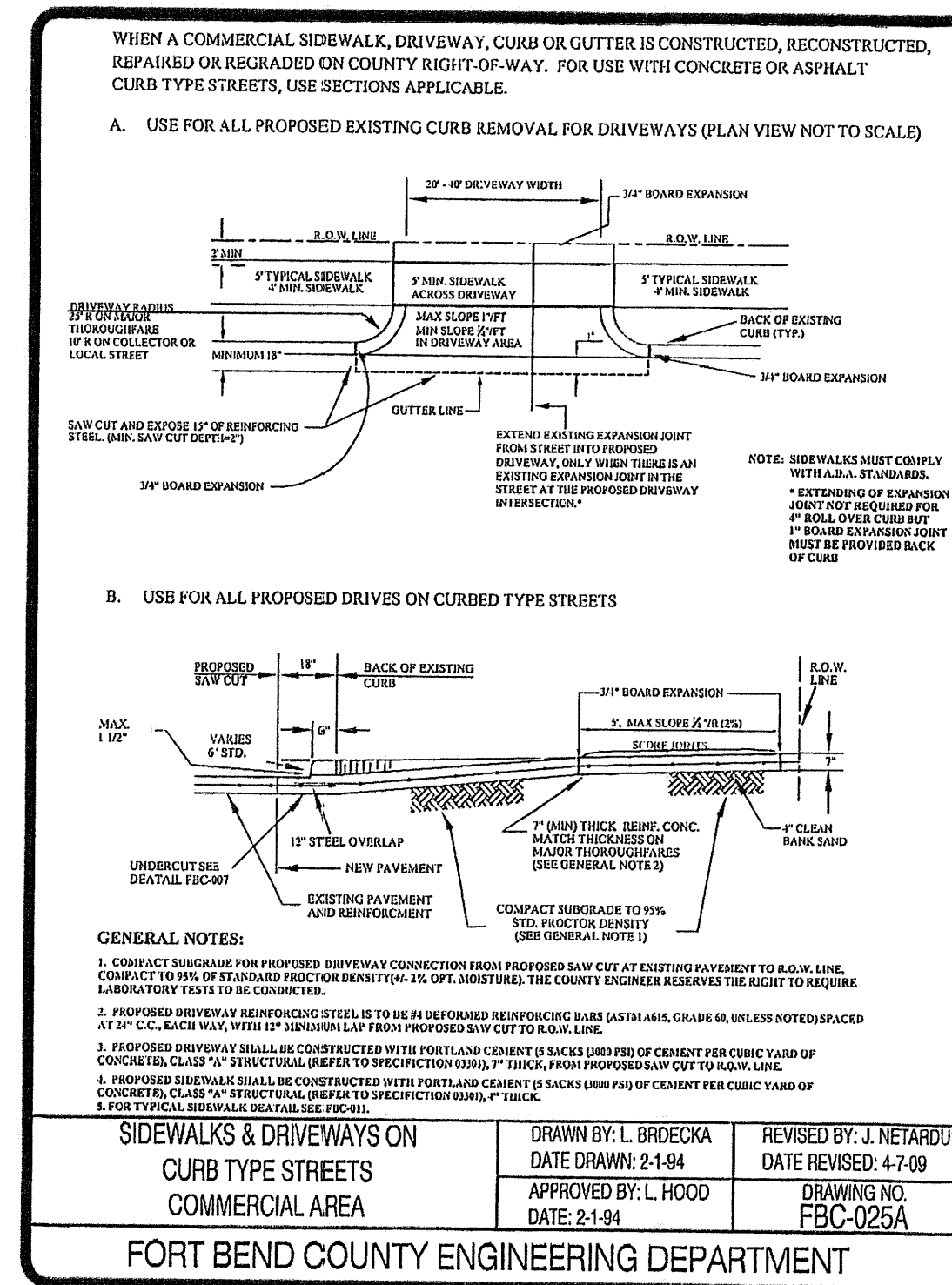
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

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

**Fort Bend County
Construction - General Notes**

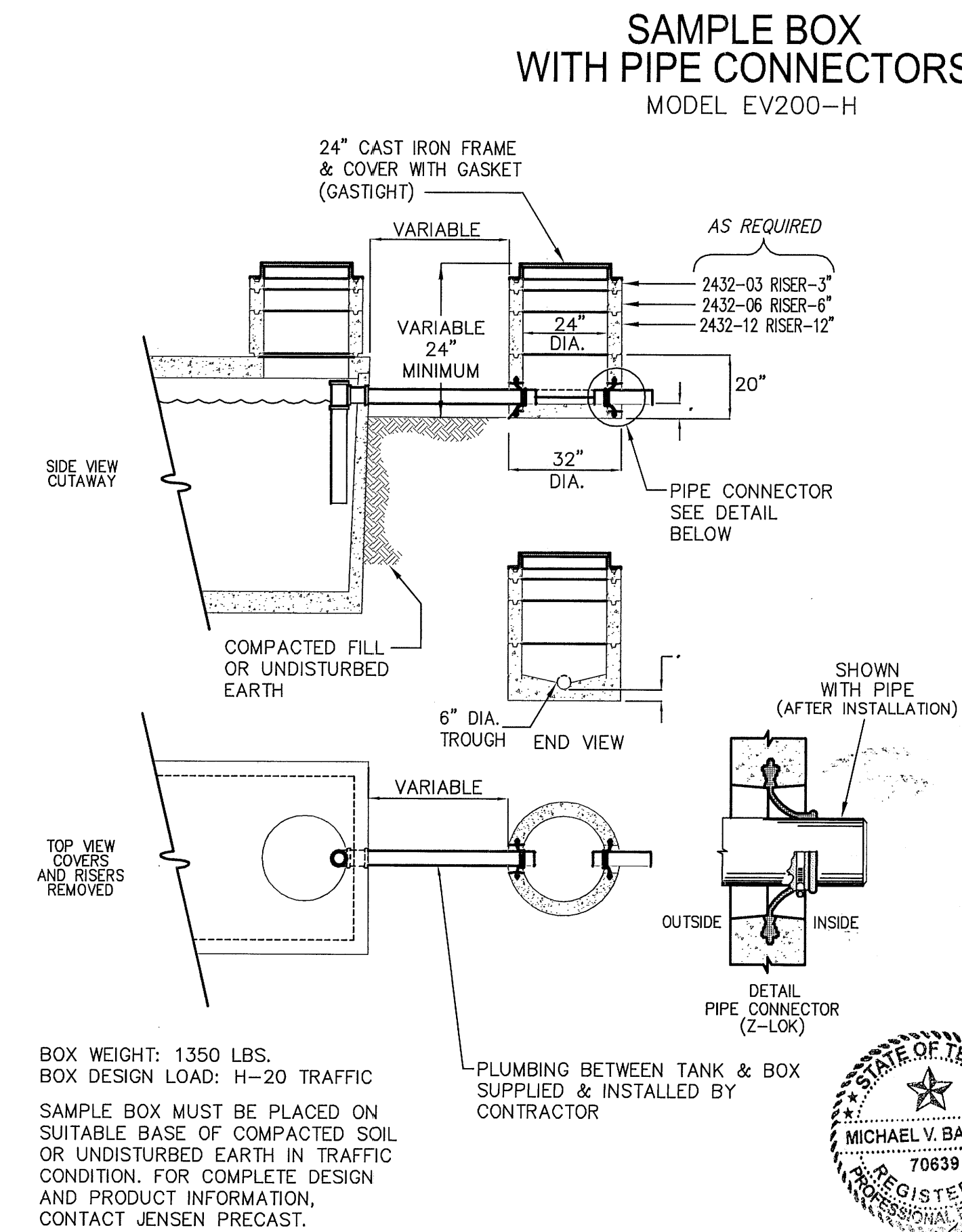
- Fort Bend County must be invited to the Pre-Construction Meeting.
- Contractor shall notify Fort Bend County Engineering Department **48 hours prior to commencing construction and 48 hour notice to any construction activity within the limits of the paving** at Construction@fortbendcountytexas.gov.
- 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.
- 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.
- All road widths, curb radii and curb alignment shown indicates back of curb
- A continuous longitudinal reinforcing bar shall be used in the curbs.
- 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 60 feet.
- All weather access to all existing streets and driveways shall be maintained at all times.
- 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.**
- 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.
- Curb headers are required at curb connections to Handicap Ramps, with no construction joint within 5' of ramps.
- All intersections utilizing Traffic Control measures shall have A.D.A. wheel chair ramps installed.
- 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.
- All R1-1 stop signs shall be 30"x30" with diamond grade sheeting per Texas manual on uniform traffic control devices.
- 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.
- 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.
- 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.

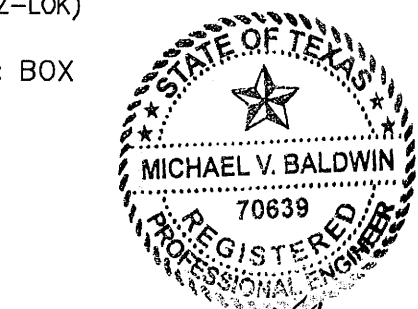


MODEL NUMBER	LIQUID CAPACITY (GALLONS)	DIM A	DIM B	DIM C	DIM D	DIM E	MINIMUM EXCAVATION WIDTH	MINIMUM EXCAVATION LENGTH	DEPTH OF BURY
JP320EE-G	320	3'-0"	7'-0"	4'-6"	3'-7"	3'-4"	4'-0"	8'-0"	1' TO 8"
JP500EE-G	500	4'-0"	6'-0"	5'-10"	4'-10"	4'-7"	5'-0"	7'-0"	1' TO 8"
JP750EE-G	750	4'-0"	8'-1"	6'-0"	5'-0"	4'-9"	5'-3"	9'-2"	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.



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.



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.
PRIVATE UTILITY LINES SHOWN			
CENTERPOINT ENERGY, ENTEX			
SBC VALID FOR ONE YEAR <small>APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES</small>			
CENTERPOINT ENERGY <small>APPROVED ONLY FOR UNDERGROUND DUCTILES UNLESS NOTED VALID AT TIME OF REVIEW ONLY.</small>			
FBCFD#2 NOTES Driveway Detail & Grease Trap Detail			
WATER	WASTEWATER	TRAFFIC	
ST. & BRIDGE	STORMWATER	SNQ	
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.

NAMEPLATE INDICATING:
MFG: PARK EQUIP. CO.
(800) 256-8041

MODEL: WW60-WGD30-21
DATE MANUFACTURED

30" X 36" SINGLE LEAF
ALUMINUM HATCH w/ SS
HINGES & SLAMLOCK
(300 PSF)

HATCHWAY SAFETY NET

DUPLEX CONTROL PANEL w/
HIGH LEVEL ALARM BEACON

NEMA-4X JUNCTION
BOX

ELECTRICAL CABLE &
CONDUIT (BY OTHERS)

CONTROL CABLE BRACKET

PRECAST CONCRETE WET WELL
BASIN MANUFACTURED BY
PARK EQUIPMENT 800-256-8041
OR EQUAL - MODEL WW48

FLOAT SWITCH (TYP)

HIGH WATER "ALARM" 88.50

LAG PUMP ON 91.10

LEAD PUMP ON 82.00

24" INLET PIPE

INV EL = 80.50'

PUMP "OFF" 80.30

T.O.C. EL = 78.00'

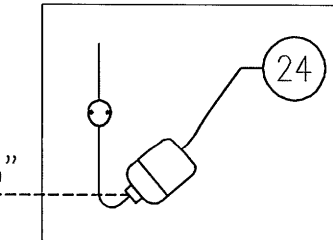
SUBMERSIBLE
PUMP

4" GALV VENT
w/ SCREEN

T.O.C. EL = 92.50'

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

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:



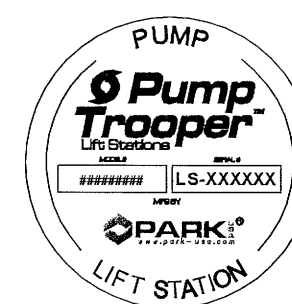
MODEL NUMBER: WW60-NCD3-420-10-20-43

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 - 1.0 HP
20 - 2.0 HP
30 - 3.0 HP
50 - 5.0 HP
75 - 7.5 HP



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

APPROVED: *cds*
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 BULLENOSE 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

MAR K	QTY	DESCRIPTION
1	2	3" GRUNDOSFOS 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, ENTGX

SBC VALID FOR ONE YEAR
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

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

FBCFW#2
STORMWATER LIFT STATION

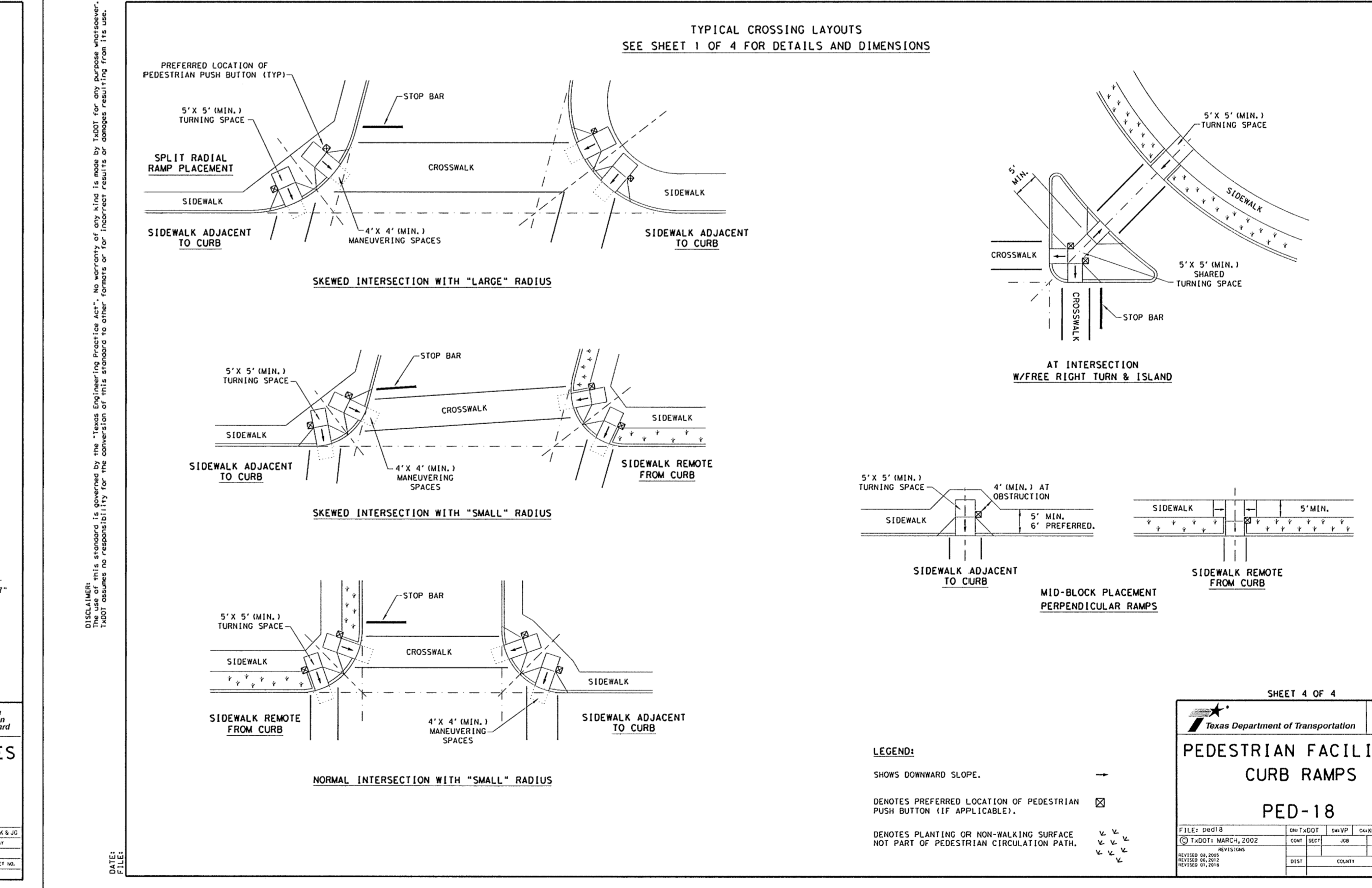
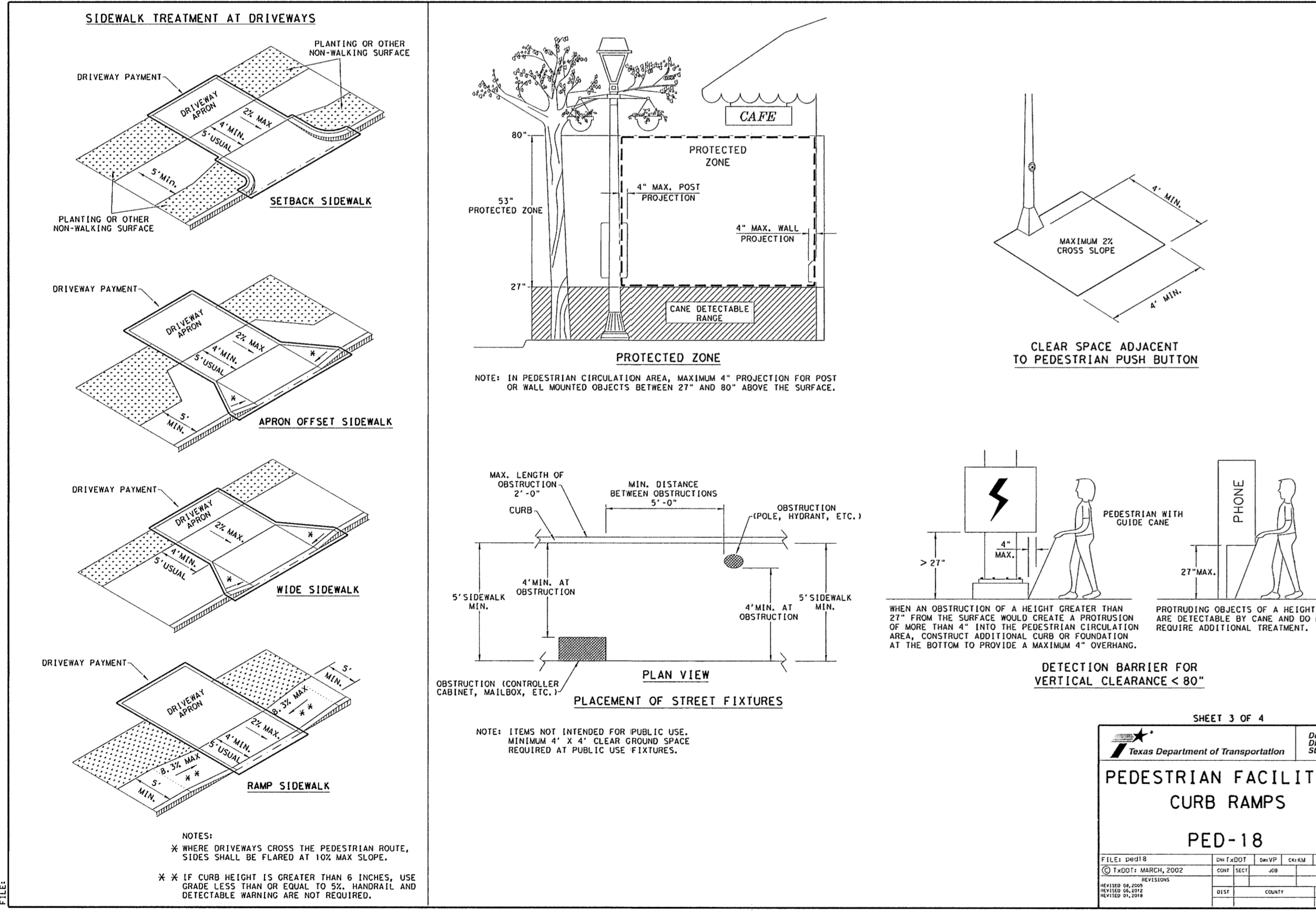
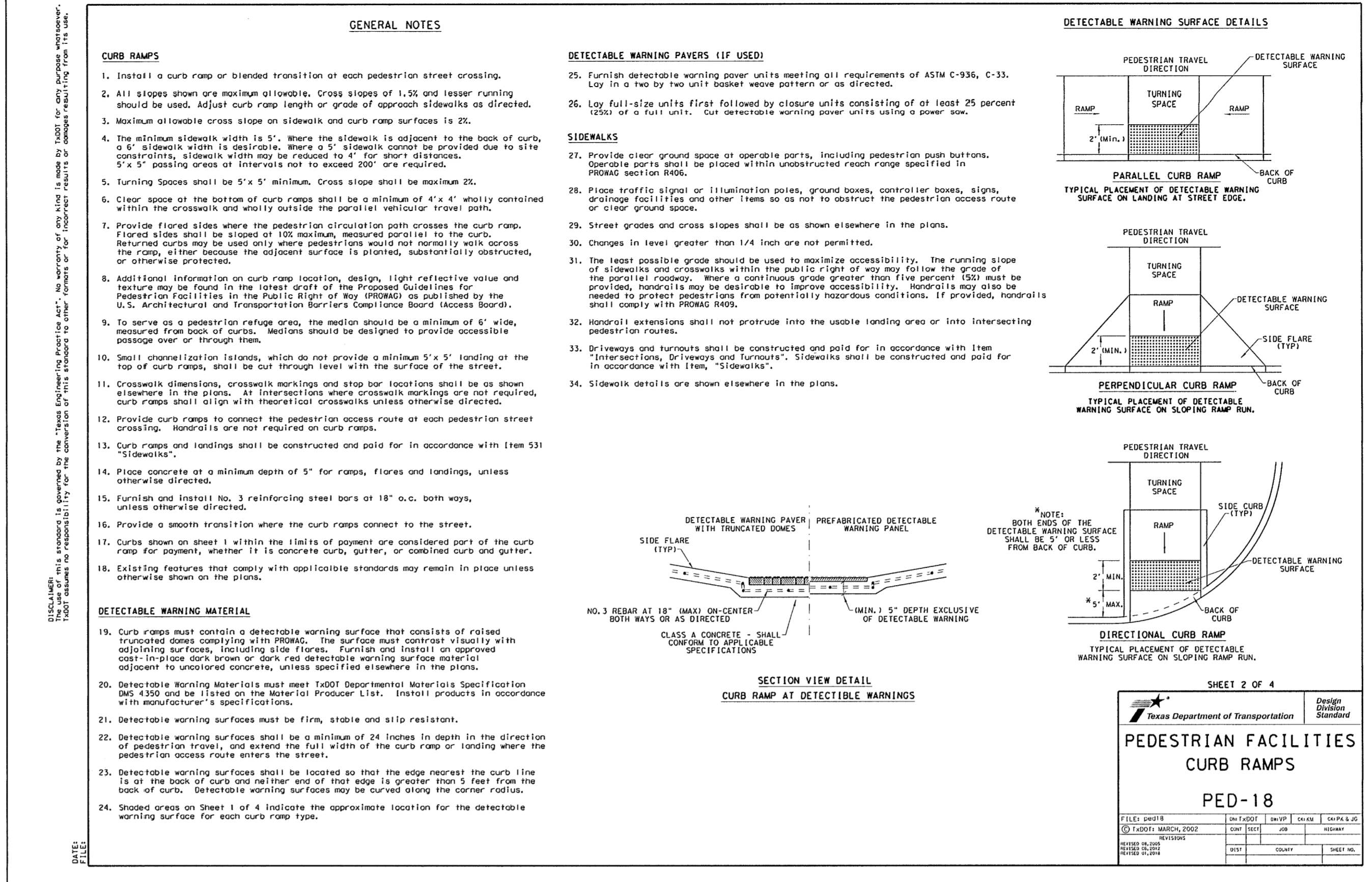
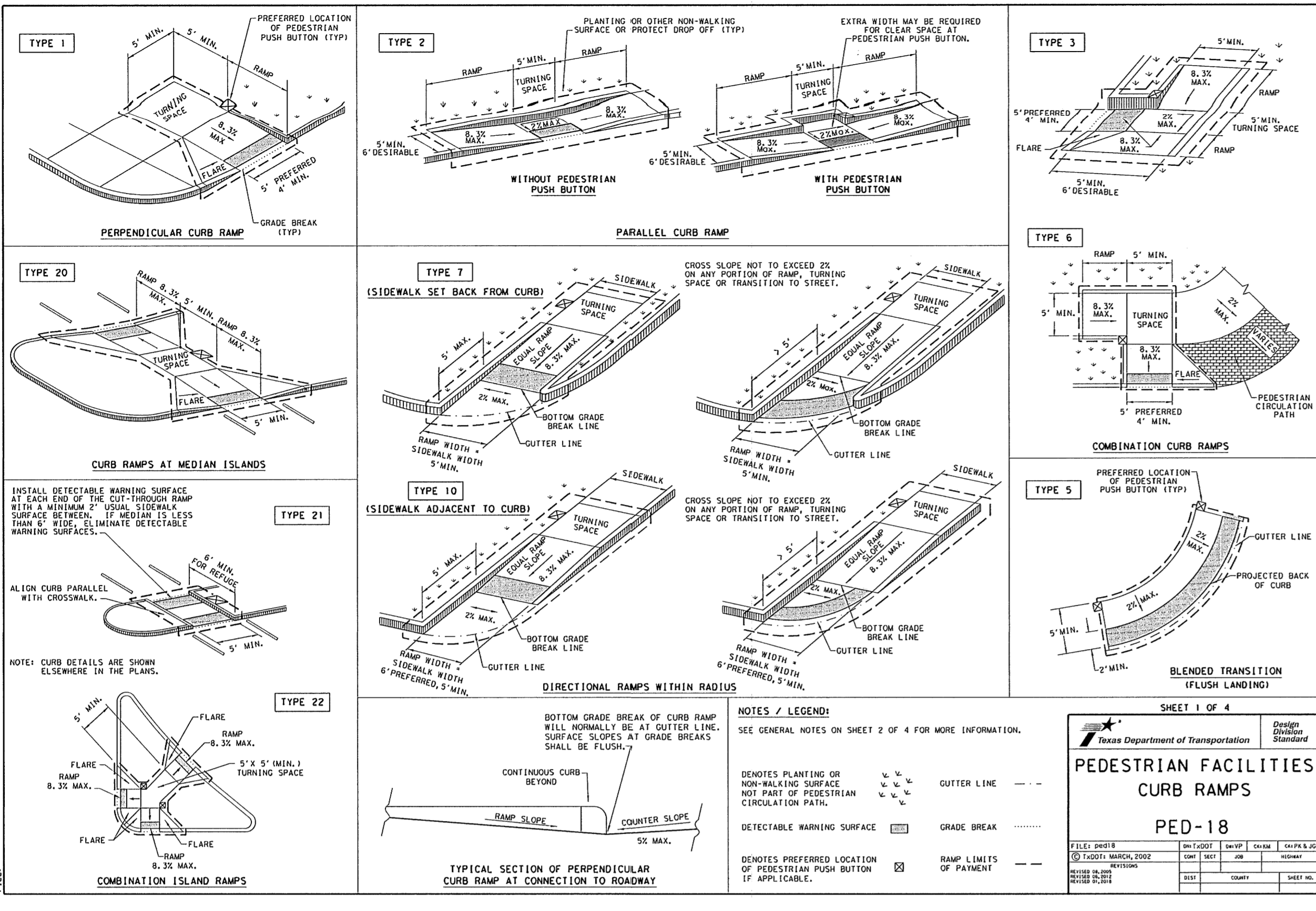
WATER	WASTEWATER	TRAFFIC

FILE NO:

DRAWING SCALE: N/A

VERT: N/A HORIZ: N/A

SHEET No: 7 OF 9



REG 8-1-18

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

FBCFD#2

TXDOT DETAILS #1

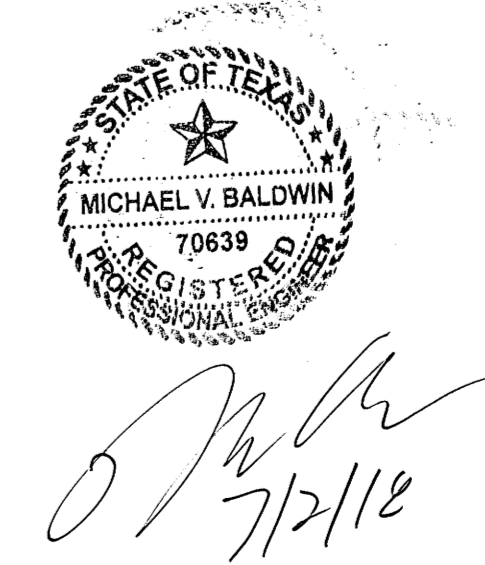
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWO

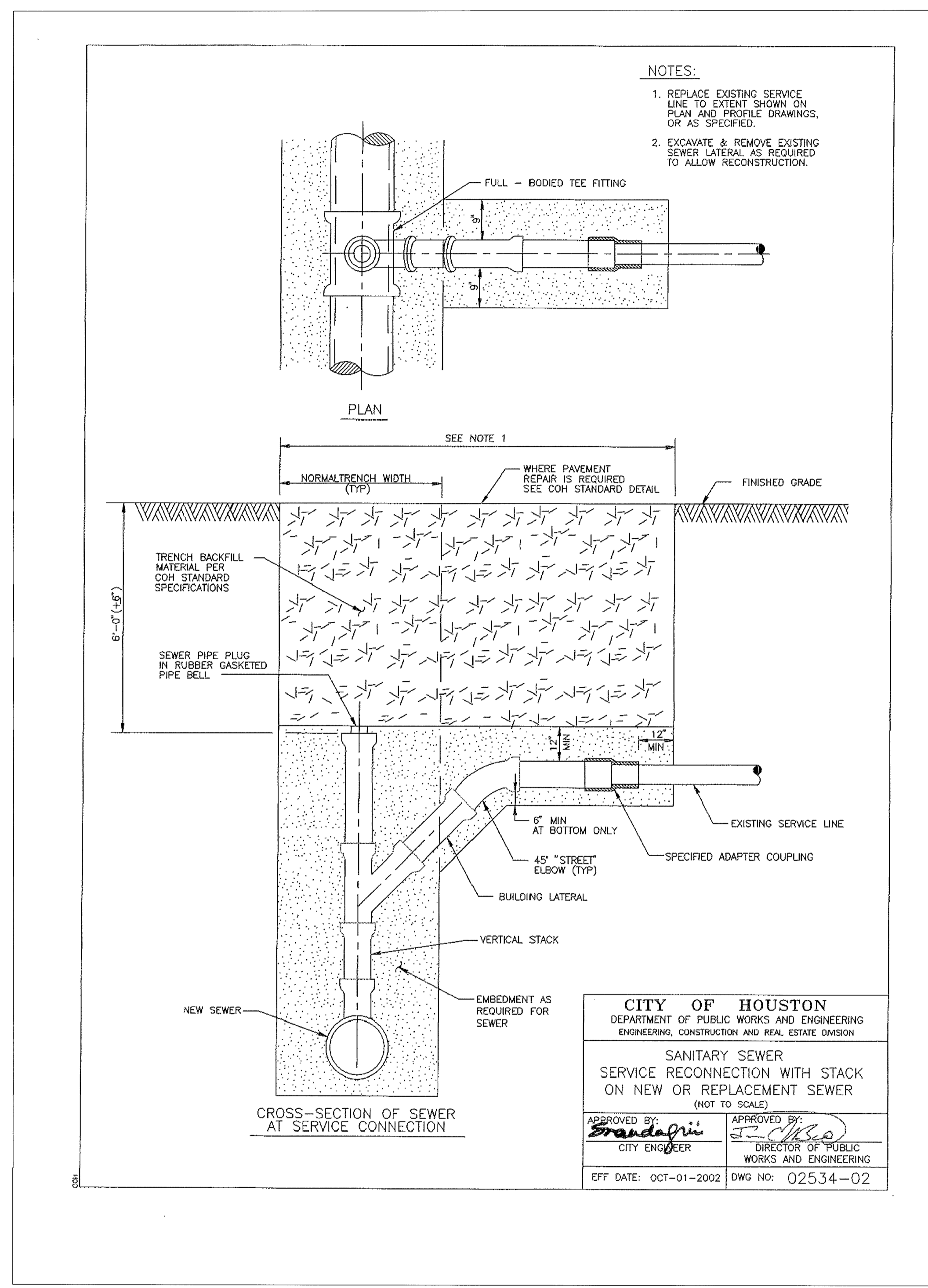
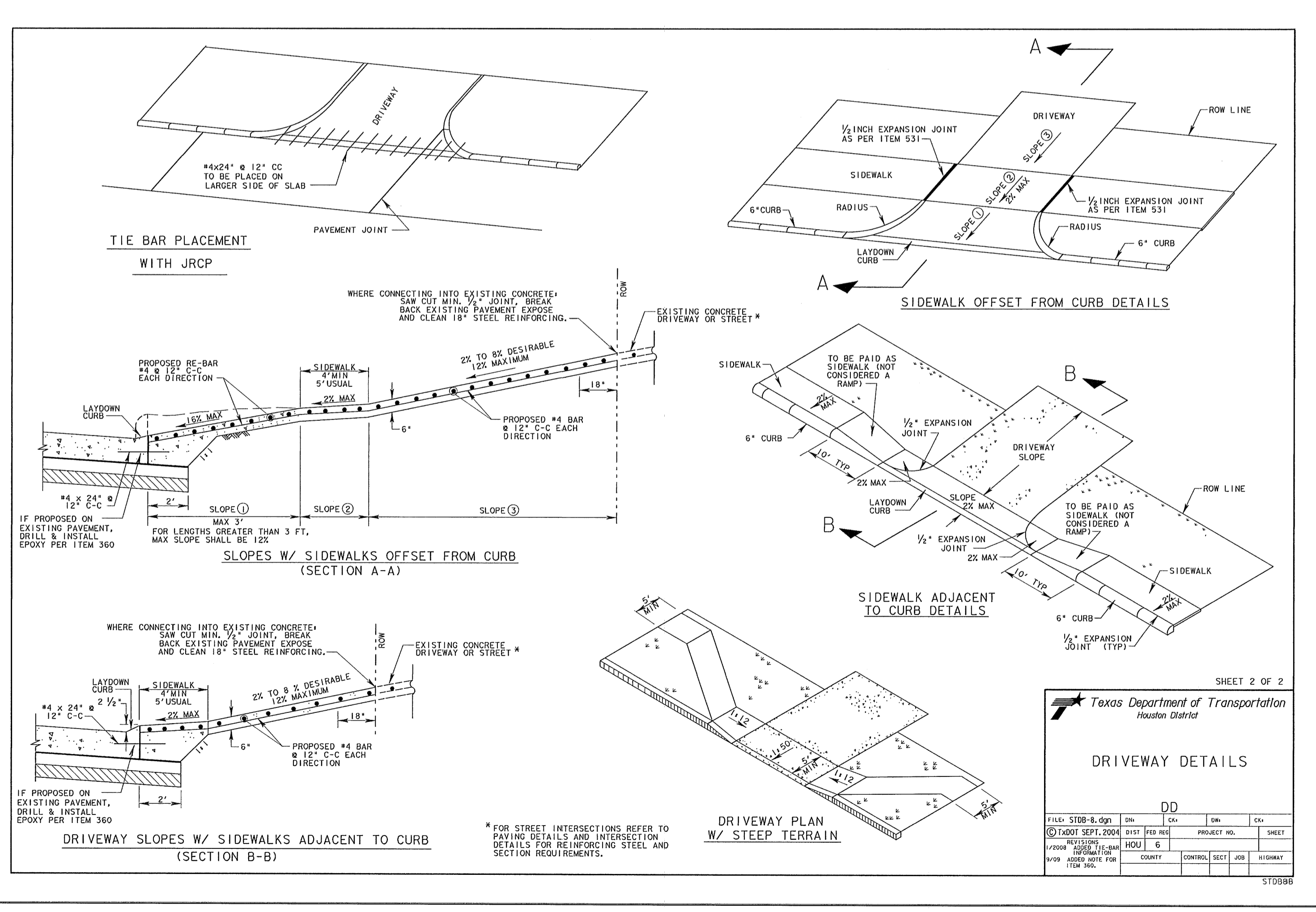
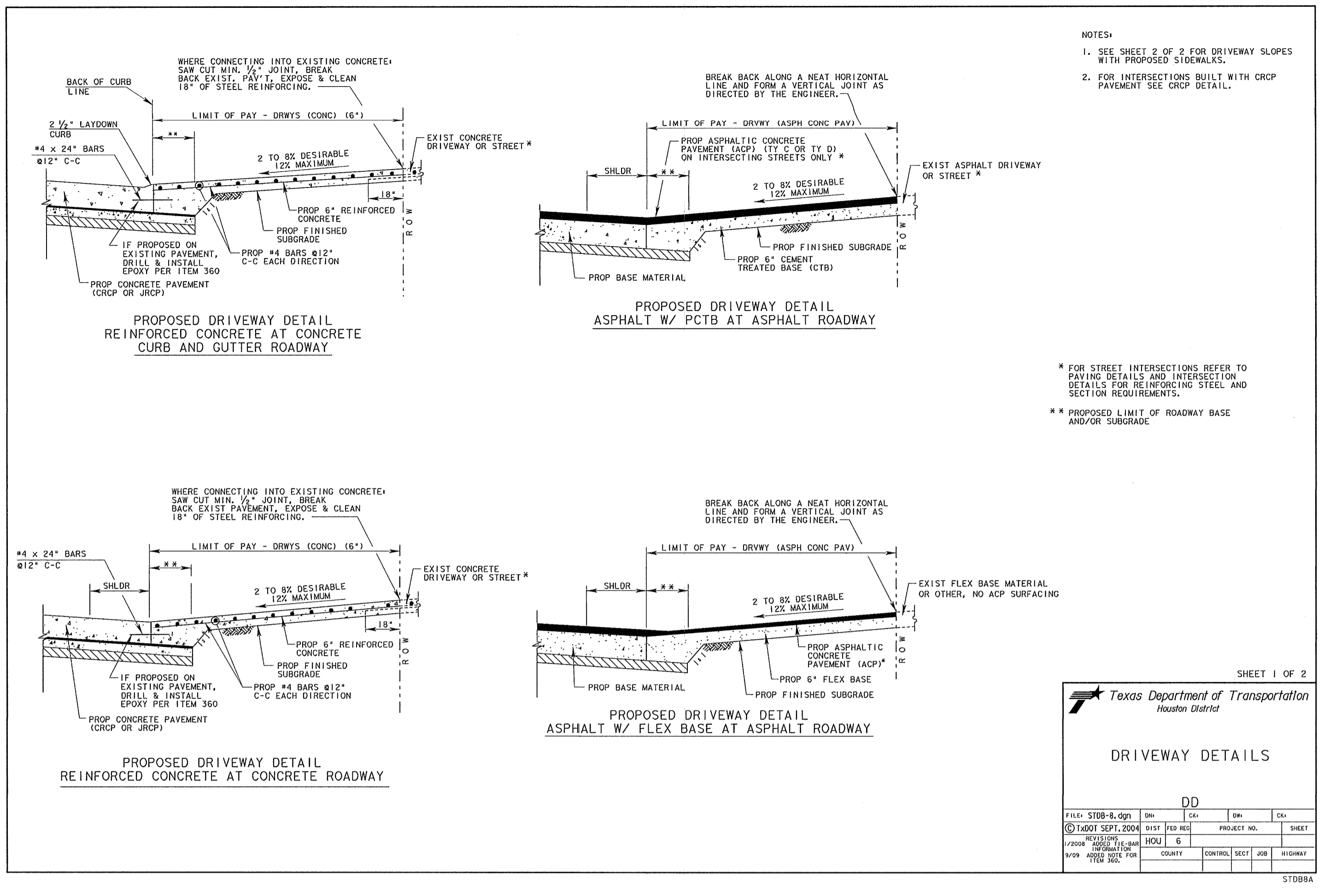
FILE NO:

DRAWING SCALE: N/A

VERT: N/A HORZ: N/A

SHEET No: 8 OF 8





CLG 8-178

PROVIDENT ENGINEERS, INC.
 REG. NUM. F-1509
 8406 BUFFALO CREEK DR.
 RICHMOND, TEXAS 77406
 281-313-9393

Rev.	Date	Description	App.

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: *Brandaghi*
 CITY ENGINEER

APPROVED BY: *[Signature]*
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: OCT-01-2002 DWG NO: 02534-02

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY, ENTEX

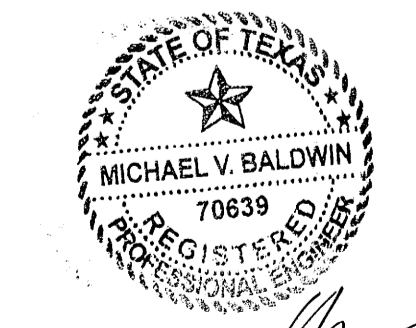
SBC VALID FOR ONE YEAR
 APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES

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

FBCFWD#2
 TXDOT DETAILS #2
 & Sant. Stack Detail

WATER	WASTEWATER	TRAFFIC

FILE NO:
 DRAWING SCALE: 60
 VERT:N/AHORZ: 60
 SHEET No:9 OF 9



[Signature]
 7/2/18

PROPOSED TRAFFIC CONTROL PLAN
SCHOOL OF SCIENCE DRIVEWAYS

CONSTRUCTION
AHEAD

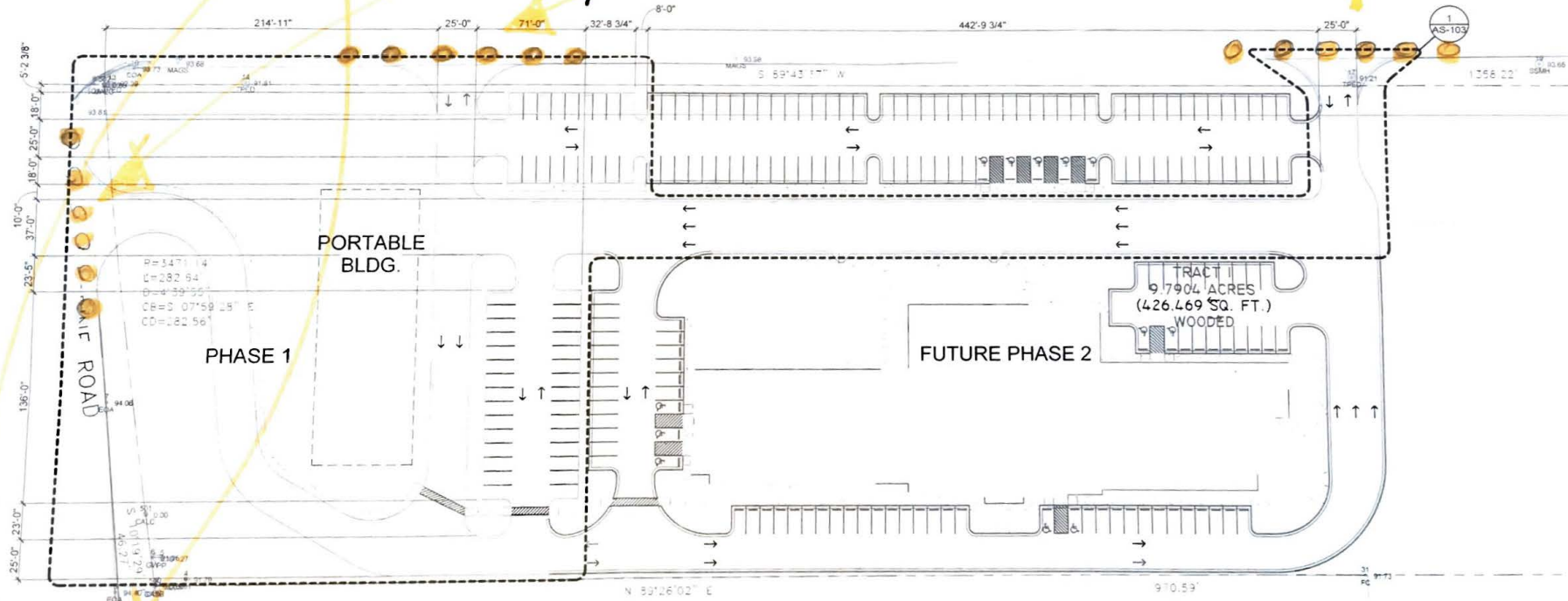
END
CONSTRUCTION



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

CLGDINE ROAD

BOSS GASTON RD



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

1