13D

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: 2018-21205

Applicant: **Drymalla Construction Company, Inc.**

Job Location Site: **3131 Learning Tree Lane, Rosenberg, TX 77471**

Bond No. [redacted] **Date of Bond:** **6/18/1999** **Amount:** **$50,000.00**

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.

On this 26th day of June, 2018, Upon Motion of Commissioner Meyers, seconded by Commissioner Patterson, 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: Sean Eglinton
County Engineer

N/A
By:
Drainage District Engineer/Manager

Presented to Commissioners Court and approved.

Date Recorded 7-2-2018 Comm. Court No. 13D

Clerk of Commissioners Court
By: Linda Willis
Deputy

07/02/2018 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: 2018-21205

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.

[X] Perpetual bond currently posted. Bond No [redacted] Amount: $50,000.00

[ ] Performance bond submitted. Bond No: Amount:

[ ] 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.

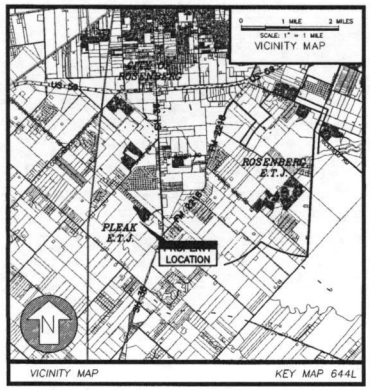
Permit Administrator

6/18/2018
Date

CONSTRUCTION PLANS FOR

LAMAR CONSOLIDATED I.S.D.
THOMAS CULVER ELEMENTARY

FORT BEND COUNTY, TEXAS



CONSTRUCTION PLANS - SHEET INDEX

SHEET No.	DESCRIPTION
COVER	COVER SHEET
TOPO	TOPOGRAPHIC SURVEY
C1.01	PAVING PLAN
C1.02	GRADING PLAN
C2.01	DRAINAGE PLAN
C2.02	DRAINAGE CALCULATIONS
C3.01	WATER & SANITARY PLAN
C4.01	EROSION CONTROL PLAN
C4.02	EROSION CONTROL DETAILS
C5.01	CONSTRUCTION DETAILS
C5.02	CONSTRUCTION DETAILS
C5.03	CONSTRUCTION DETAILS
C5.04	CONSTRUCTION NOTES & DETAILS

ENGINEER

KELLY R. KALUZA & ASSOCIATES, INC.
CONSULTING ENGINEERS AND SURVEYORS
ENGINEERING FIRM No. F-1339
3014 AVENUE I
ROSENBERG, TEXAS 77471
(281) 341-0808

MARCH 2018

STATE OF TEXAS
DUANE H. WHITEHEAD
105210
LICENSED
PROFESSIONAL ENGINEER
3/29/18

FORT BEND COUNTY ENGINEER

ENGINEER: Richard W. Stolleis, P.E., Prof. For RICHARD W. STOLLEIS, P.E.

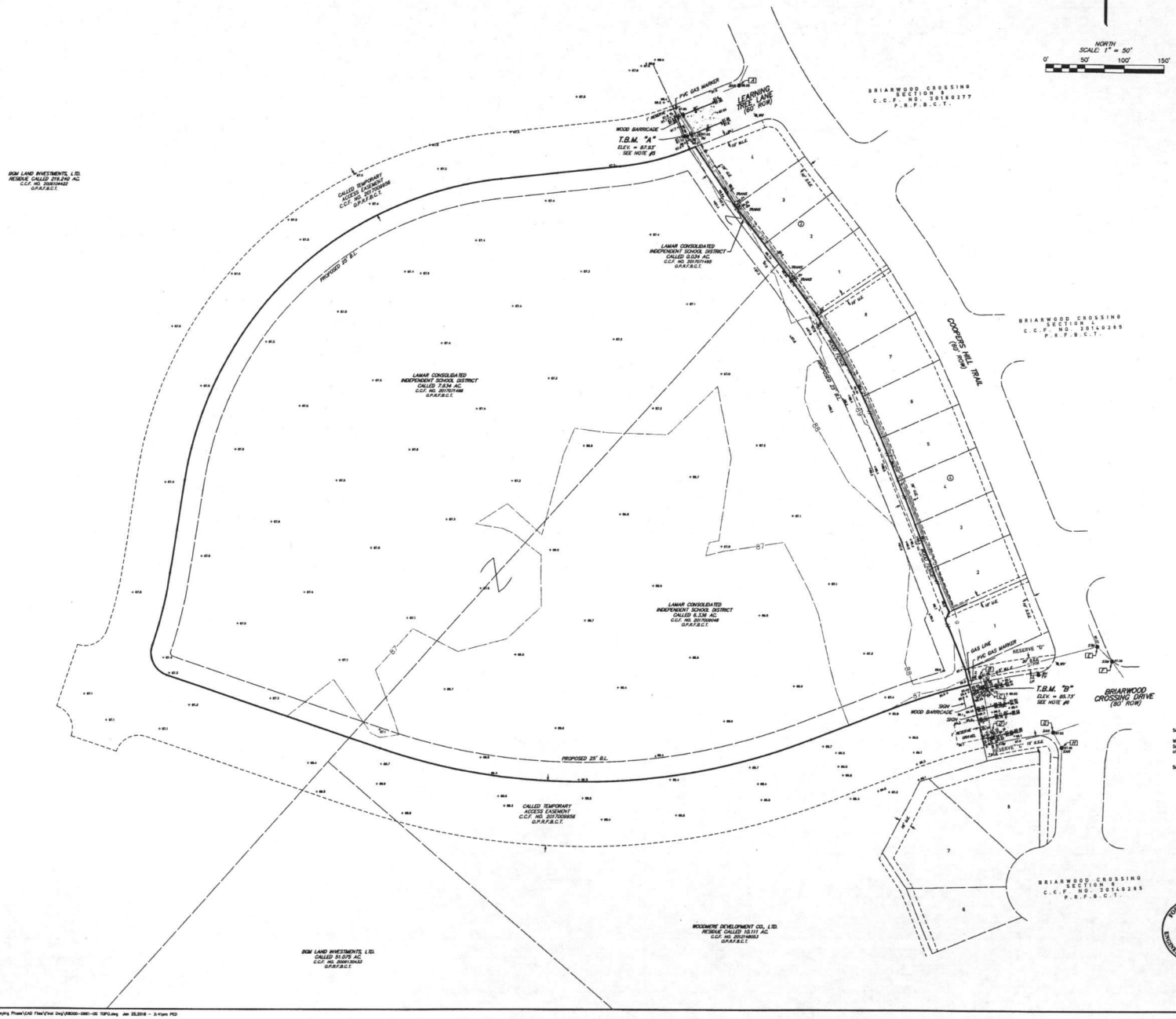
DATE: 5/31/18

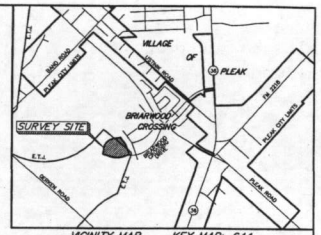
THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL.

APPROVED: Cassandra Ok For DEVELOPMENT COORDINATOR

DATE: 5-31-18

THOMAS CULVER ELEMENTARY - LAMAR C.I.S.D.





VICINITY MAP (SCALE: 1" = 2,000') KEY MAP: 644 (PANEL "L")

GENERAL NOTES:

1. This tract lies within Zone "X" of the Flood Insurance Rate Map, Community No. 480228, Map Number 48157C0400L, Panel 0400, Suffix "L" dated April 2, 2014 for Fort Bend County, Texas and Incorporated areas.
   Zone "X" is 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.

   The location of the flood zone lines shown hereon were determined by scaling from said FIRM map. The actual location as determined by elevation contours may differ. JonesCarter assumes no liability as to the accuracy of the location of the flood zone lines.
2. Bearings are based upon the Texas Coordinate System, South Central Zone, NAD83, based upon GPS observations.
3. The surveyor has not been provided with construction plans showing the location of underground utilities. Underground utilities may exist which are not shown hereon.
4. Elevations shown hereon on are based on NGS Monument J1219, located 4.45 miles south along State Highway 36, 0.25 mile north of the junction of F.M. Highway 2218 at Pleak, at the junction of Uetink Road northwest, in the top and 1.8 feet south of the north end of the west concrete headwall of a 7-barrel concrete box culverts, 24 feet of the centerline of the highway, 76 1/2 feet south of the centerline of the road and about 1/2 foot higher than the highway with a published elevation of 84.71', (NAVD88).
5. Temporary Benchmark "A" being a cut "X", located in the top of a curb as shown hereon.
   Elevation = 87.93' (NAVD88).
6. Temporary Benchmark "B" being a set "□" cut, located on top of an inlet as as shown hereon.
   Elevation = 85.73'
7. Underground utilities shown here are based on available visible evidence.
8. The tract is located partially within the E.T.J. of the Village of Pleak.

[A] SANITARY MANHOLE
RIM = 88.28'
FL 6" PVC (N) = 75.15'
FL 6" PVC (S) = 75.15'

[B] STORM MANHOLE
RIM = 87.08'
FL 24" RCP (E) = 80.32'
FL 24" RCP (S) = 80.32'

[C] STORM MANHOLE
RIM = 85.75'
CURB INLET = 84.90'
FL 24" RCP (N) = 80.45'
FL 24" RCP (S) = 80.50'

[D] STORM MANHOLE
RIM = 85.67'
CURB INLET = 85.03'
FL 24" RCP (N) = 81.15'

[E] STORM MANHOLE
RIM = 87.37'
FL 24" RCP (W) = 79.82'
FL 48" RCP (N) = 77.31'
FL 48" RCP (S) = 77.31'

[F] STORM MANHOLE
RIM = 87.30'
FL 48" RCP (N) = 77.50'
FL 48" RCP (S) = 77.50'

[G] SANITARY MANHOLE
RIM = 87.03'
FL 12" PVC (W) = 69.49'
FL 12" PVC (E) = 69.49'
FL 8" PVC (S) = 69.73'

[H] SANITARY MANHOLE
RIM = 87.09'
FL 8" PVC (N) = 69.85'
FL 8" PVC (S) = 69.85'

Subject to the General Notes shown:

We, JonesCarter, acting by and through Chris D. Kalkomey, a Registered Professional Land Surveyor, hereby certify that this survey substantially complies with the current Texas Society of Professional Surveyors Standards and Specifications for a Category 6, Condition 1 Survey.

Surveyed: 01-08-18

STATE OF TEXAS REGISTERED CHRIS D. KALKOMEY 5869 PROFESSIONAL LAND SURVEYOR

Chris D. Kalkomey
Registered Professional Land Surveyor
No. 5869
cdkalkomey@jonescarter.com

FORT BEND COUNTY ENGINEERING DEPARTMENT
APPROVED
MAY 31 2018
Valid One Year From Date

TOPOGRAPHIC SURVEY
OF
14.00 ACRES
OUT OF THE
ANGUS J. JAMES SURVEY, ABSTRACT 37
VILLAGE OF PLEAK
FORT BEND COUNTY, TEXAS
JANUARY 2018

JONES|CARTER

Texas Board of Professional Land Surveying Registration No. 10046104
6415 Reading Road • Rosenberg, Texas 77471 • 281.342.2033

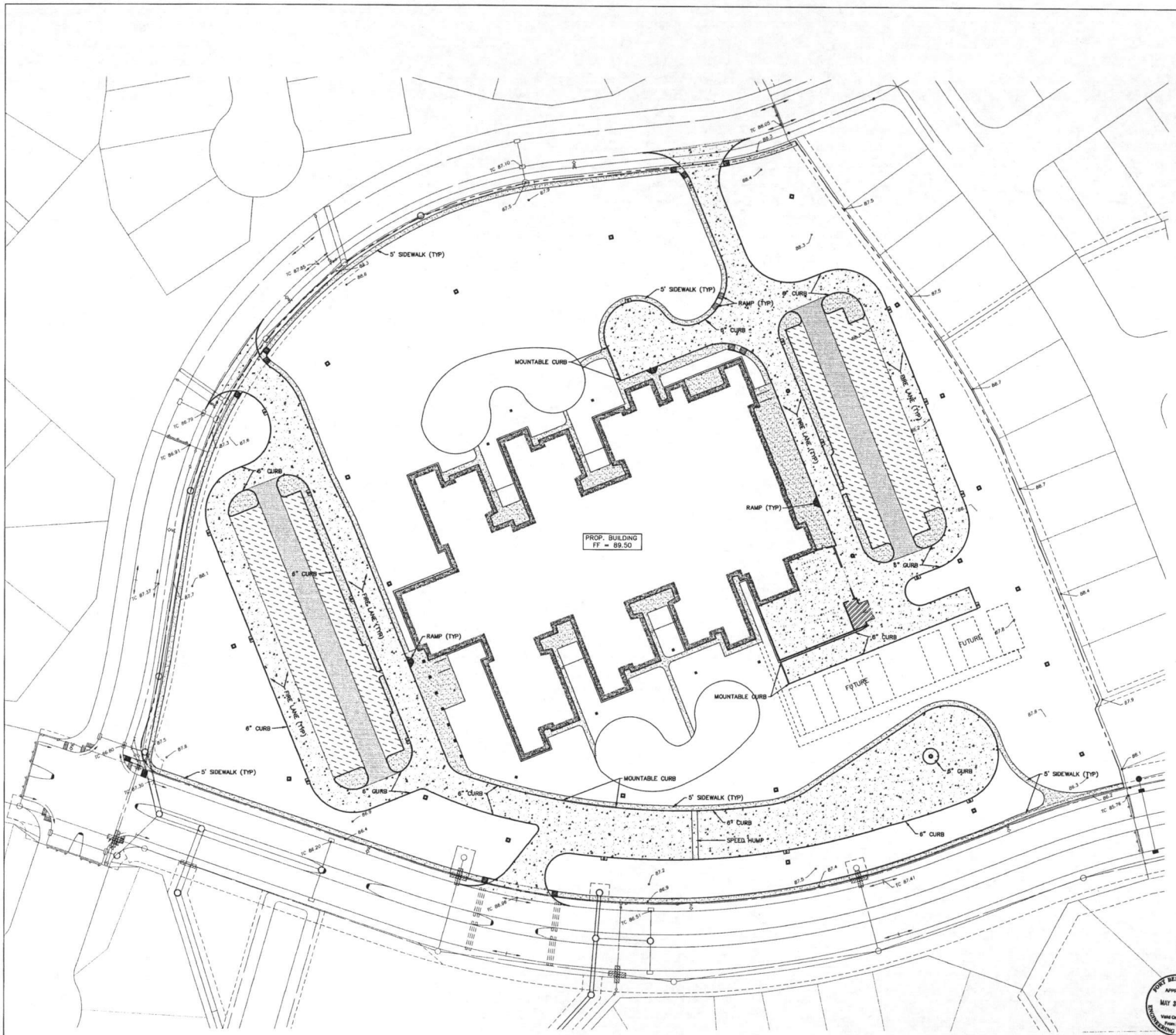
LEGEND

BC	BACK OF CURB
BO	BLOW-OFF
CONC	CONCRETE
EC	EDGE OF CONCRETE
FL	FLOW LINE
FV	FLUSH VALVE
G	GUTTER
LP	LIGHT POLE/POST
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
SAN	SANITARY MANHOLE
SN	SIGN
STM	STORM MANHOLE
TP	TELEPHONE PEDESTAL
TM	TELEPHONE/CABLE MANHOLE
TRANS	TRANSFORMER BOX
WV	WATER VALVE

CONCRETE

K:\R8000\R8000-0661-00 LCSD - 14 Acres in the Angus J. James S/J Surveying Phase\CAD Files\Final Dwg\R8000-0661-00 TOPO.dwg Jan 25,2018 - 2:41pm PED

SURVEYOR-C.D.K./DRAFTSMAN-P.E.G. JOB No. R8000-0661-00 DWG. No. 11736



SCALE 1" = 40'

LEGEND

- 98 — CONTOUR
- DETENTION TOP BANK
- DETENTION TOE OF SLOPE
- 8" PAVEMENT FOR DUMPSTER
- 7" CONCRETE PAVEMENT
- 6" CONCRETE PAVEMENT
- 5" CONCRETE PAVEMENT
- 4.5" CONCRETE SIDEWALK

FORT BEND COUNTY APPROVED MAY 31 2018 Valid One Year From Date ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: _____

Kelly R. Kaluza & Associates, Inc.
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SURVEYING FIRM No. 10010000
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STATE OF TEXAS
DUANE H. WHITEHEAD
105210
LICENSED PROFESSIONAL ENGINEER

January 17, 2018

REVISIONS
Revision No.

Director TJL	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT
1624.00

SHEET
PAVING PLAN

SHEET NO
C1.01

LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

THOMAS R. CULVER, III ELEMENTARY SCHOOL

CSP # 05-2018VRG

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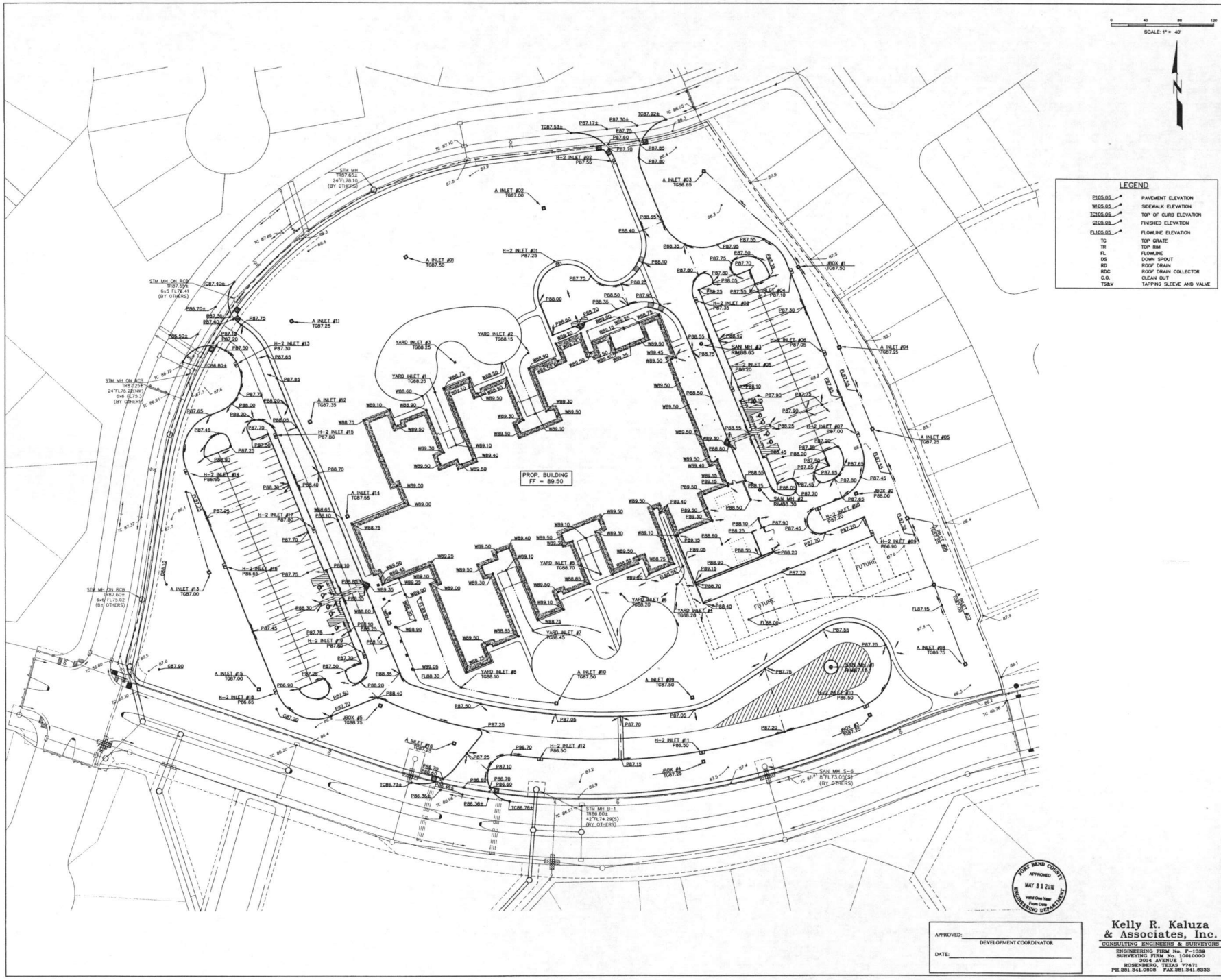

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LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

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STATE OF TEXAS
DUANE H. WHITEHEAD
105210
LICENSED
5/24/18

January 17, 2018

REVISIONS
Revision No.

Director TJL	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT
1624.00

SHEET
GRADING PLAN

SHEET NO.
C1.02

THOMAS R. CULVER, III ELEMENTARY SCHOOL
CSP # 05-2018VRG

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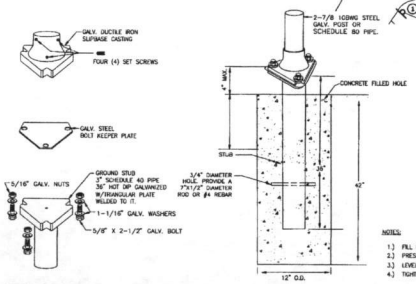
NOTES:

1. THE ROADSIDE FLASHING BEACON ASSEMBLY IS DESIGNED FOR SMALL SIGNS WHERE SOLAR POWER IS NEEDED WITH A BREAKAWAY SIGN POLE. (E.G. WARNING SIGNS OR REDUCED SIZE SIGNS). SEE DRAWING LAYOUTS FOR ACTUAL SIGN TO BE INSTALLED.
2. DETAILS SHOWN ARE FOR ONE SIGN. SEE DRAWING LAYOUTS FOR ACTUAL SIGN TO BE INSTALLED.
3. SEE TMUTCD STANDARD SHEETS FOR LATERAL AND VERTICAL CLEARANCES AND HIGH MOUNTING HEIGHTS.
4. SEE SPECIAL SPECIFICATION, "ROADSIDE FLASHING BEACON ASSEMBLY" FOR FURTHER REQUIREMENTS.
5. SIGN, POLE, AND FOUNDATION DETAILS, AS SHOWN ELSEWHERE ON THE PLANS OR, WHEN NO OTHER DETAILS ARE SHOWN, SHALL BE AS SHOWN HERE OR AS OTHERWISE APPROVED BY THE ENGINEER.
6. UNLESS OTHERWISE SHOWN ON THE PLANS, POLE SHAFT SHALL BE SCHEDULE 40 ALUMINUM PIPE, ALLOY 6061-T6 ONLY. ALUMINUM CONDUIT WILL NOT DEVELOP THE NECESSARY STRENGTH AND WILL NOT BE ALLOWED. WHEN SPECIFICALLY SHOWN ELSEWHERE ON THE PLANS, PIPE MAY BE 4 INCH SCHEDULE 40 RIGID METAL CONDUIT OR 3 INCH RIGID METAL CONDUIT WITH REDUCER.
7. USE TAMPER RESISTANT FASTENERS ON ALL EXTERIOR ITEMS TO DISCOURAGE THEFT.
8. USE MATERIALS SPECIFICALLY DESIGNED FOR ATTACHING CABINETS, BEACON HEADS, SOLAR PANELS, ETC., TO POLES.
9. PER MANUFACTURER'S RECOMMENDATIONS, ENGAGE ALL THREADS ON THE PEDESTAL POLE BASE AND PIPE UNLESS THE PIPE IS FULLY SEATED INTO BASE. IN HIGH WIND AREAS, USE POLE AND BASE COLLAR ASSEMBLY TO ADD STRENGTH AND PROVIDE LOCKING ON CONNECTION.
10. PROVIDE NON-FUSED WATERTIGHT BREAKAWAY ELECTRICAL CONNECTORS FOR BREAKAWAY POLES. (BURNDAMAN HET, LITELFUSE LET, FERRAZ-SHAWMUT FUSM, OR APPROVED EQUAL).
11. UNLESS OTHERWISE SHOWN ON THE PLANS, POLE SHAFT SHALL BE ONE PIECE, SCHEDULE 40 ALUMINUM PIPE, ASTM B429 OR B221 (ALLOY 6061-T6 ONLY). ALUMINUM CONDUIT WILL NOT DEVELOP THE NECESSARY STRENGTH AND WILL NOT BE ALLOWED.
12. MOUNT THE SIGN SO THAT THE LOWEST EDGE OF SIGNS ABOVE THE SIDEWALK OR PAVEMENT GRADE AT THE EDGE OF THE ROAD. WHEN A BOTTOM BEACON IS NOT USED, MOUNT THE SIGN AT LEAST 7 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE AT THE EDGE OF THE ROAD.
13. CONTRACTOR TO USE TWO, ORANGE SOLAR POWERED SCHOOL ZONE FLASHER ASSEMBLY. MUST BE COMPATIBLE WITH THE EXISTING FIBER SYSTEM CURRENTLY IN USE BY FORT BEND COUNTY.

ROADSIDE FLASHING BEACON ASSEMBLY

SCALE: N.T.S.

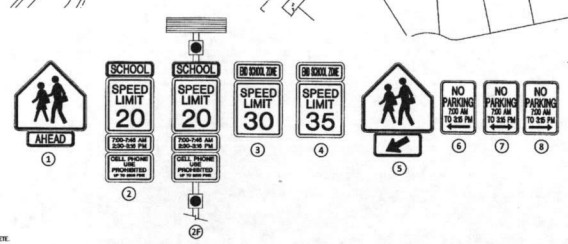


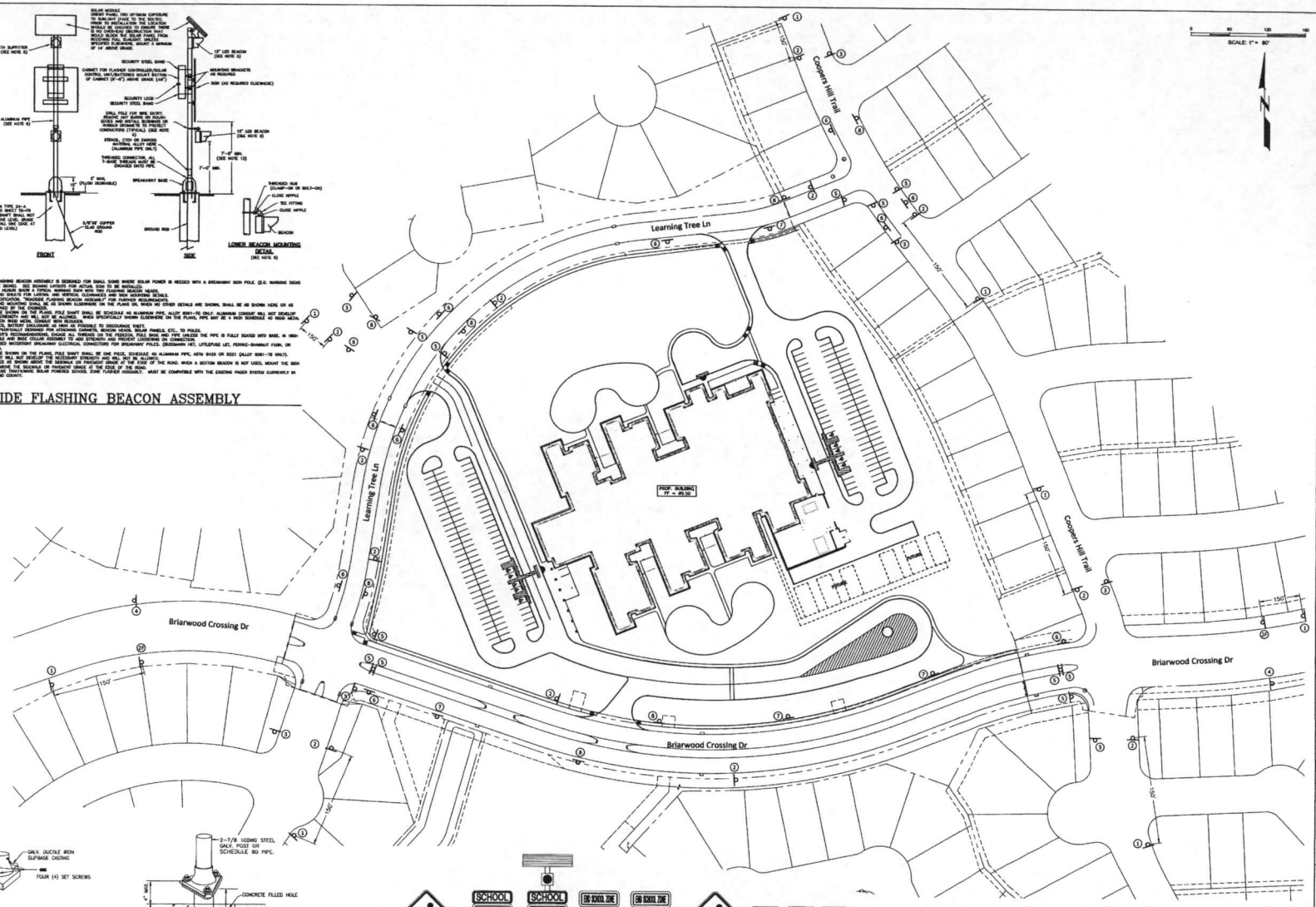
NOTES:

1.) FILL HOLE TO GROUND LEVEL.
2.) PRESS BASE INTO CENTER OF CONCRETE.
3.) LEVEL BASE 3" ABOVE GROUND.
4.) TIGHTEN (TORQUE) NUTS BETWEEN 60 TO 80 FT/LB MAX.

TRIANGULAR SLIP BASE SIGN MOUNT

SCALE: N.T.S.





APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: _____

FORT BEND COUNTY ENGINEERING DEPARTMENT — APPROVED MAY 31 2018 — Valid One Year From Date

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STATE OF TEXAS — DUANE K. WHITEHEAD — 105210 — PROFESSIONAL ENGINEER

January 17, 2018

REVISIONS
Revision No.

Director T.L	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT 1624.00

SHEET SCHOOL ZONE SIGNAGE PLAN

SHEET NO. C1.03

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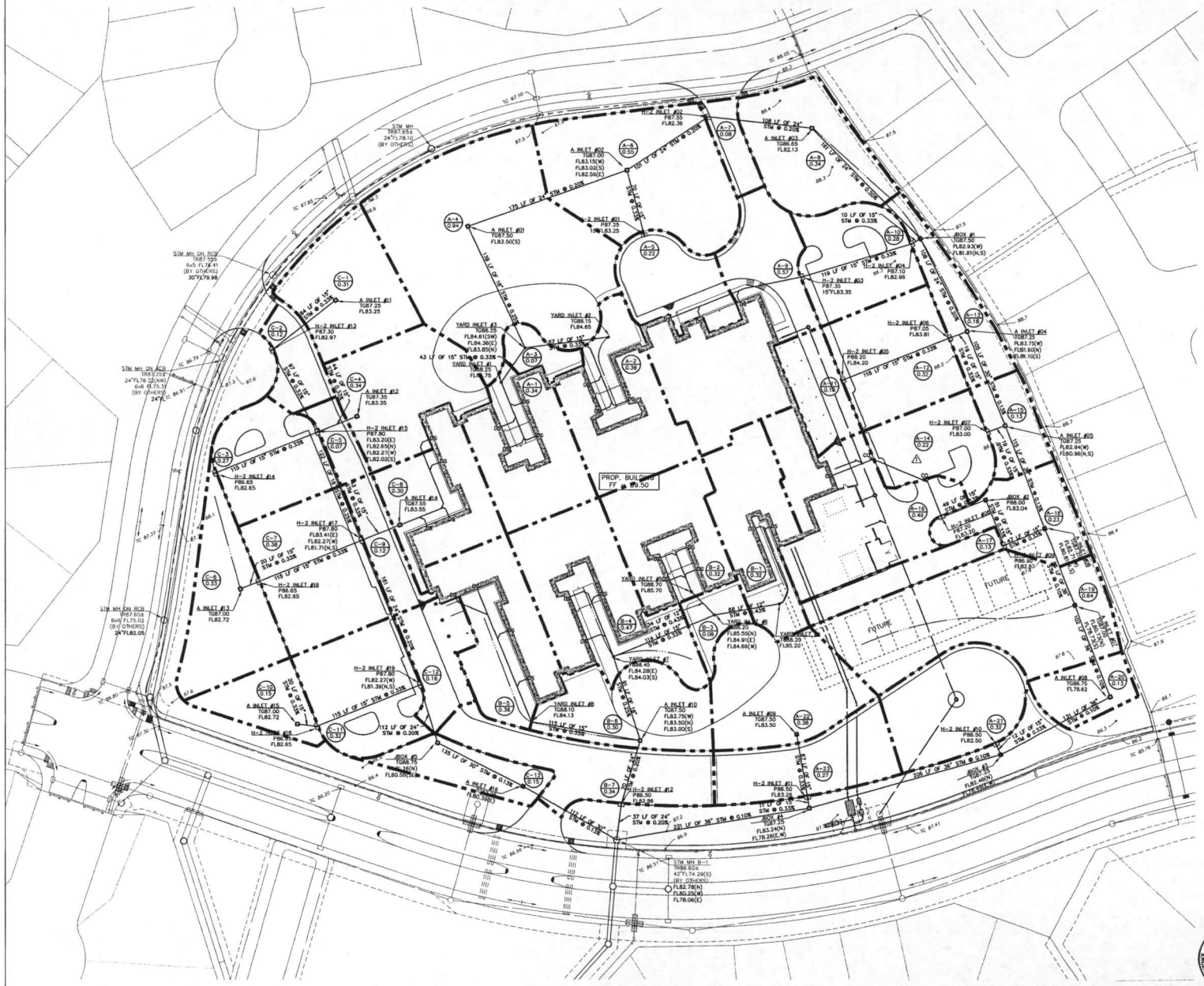
LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

THOMAS R. CULVER, III ELEMENTARY SCHOOL

CSP # 05-2018VRG



SCALE: 1" = 40'

LEGEND

TG	TOP GRATE
TR	TOP RIM
FL	FLOWLINE
DS	DOWN SPOUT
RD	ROOF DRAIN
RDC	ROOF DRAIN COLLECTOR
	STORM SEWER
	SANITARY SEWER
	SANITARY FORCE MAIN
	WATERLINE
	DRAINAGE SWALE
	DRAINAGE AREA BOUNDARY
	DIRECTIONAL FLOW OF RUNOFF
	TYPE A INLET
	TYPE H-2 CURB INLET (SEE DETAIL)
	TYPE E INLET
	YARD INLET
	STORM MANHOLE
A-1 0.00	DRAINAGE AREA DESIGNATION / AREA (ACRES)
	SANITARY MANHOLE

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STATE OF TEXAS
DUANE H. WHITEHEAD
105210
LICENSED
PROFESSIONAL ENGINEER

January 17, 2018

REVISIONS

Revision No.		
1	ADDENDUM #3	2.12.18

Director TJL	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT
1624.00

SHEET
DRAINAGE PLAN

SHEET NO.
C2.01

LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

THOMAS R. CULVER, III ELEMENTARY SCHOOL

CSP # 05-2018VRG

FORT BEND COUNTY
APPROVED
MAY 3 1 2018
Valid One Year From Date
ENGINEERING DEPARTMENT

APPROVED: _____
DEVELOPMENT COORDINATOR
DATE: _____

Kelly R. Kaluza & Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS
ENGINEERING FIRM No. F-1339
SURVEYING FIRM No. 10010000
3014 AVENUE I
ROSENBERG, TEXAS 77471
PH.281.341.0808 FAX.281.341.6333

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Sub-AREA no	UPSTREAM STRUCTURE	DOWN STREAM STRUCTURE	LENGTH (ft)	SubAREA ACREAGE	TOTAL ACREAGE	Tc UPPER (min.)	C, RUNOFF coef.	C, avg RUNOFF coef.	STORM SEWER DATA: SIZE (in.)(ft.)(ft.)	QTY (ea)	n	GRADE (%)	VELOCITY (fps)	GRAVITY CAPACITY (cfs)	i2, RAINFALL (in/hr)	Q2, RUNOFF (cfs)	i3, RAINFALL (in/hr)	Q3, RUNOFF (cfs)
A-1	Y1	Y3	43	0.34	0.34	23.27	0.71	0.71	15	1	0.013	0.32	3.02	3.71	3.59	0.87	4.02	0.98
A-2	Y2	Y3	87	0.38	0.38	23.45	0.71	0.71	15	1	0.013	0.32	3.02	3.71	3.57	0.98	4.01	1.10
A-3	Y3	A1	139	0.07	0.79	24.59	0.44	0.69	18	1	0.013	0.25	3.03	5.36	3.48	1.90	3.90	2.13
A-4	A1	A2	175	0.94	1.73	26.01	0.33	0.49	24	1	0.013	0.20	3.22	10.12	3.37	2.87	3.78	3.22
A-5	H1	A2	70	0.22	0.22	22.64	0.71	0.71	15	1	0.013	0.32	3.02	3.71	3.64	0.56	4.08	0.63
A-6	A2	H2	101	0.55	2.50	26.75	0.30	0.47	24	1	0.013	0.20	3.22	10.12	3.32	3.89	3.72	4.36
A-7	H2	A3	108	0.08	2.57	26.81	0.85	0.46	24	1	0.013	0.20	3.22	10.12	3.31	4.10	3.72	4.60
A-8	A3	JB1	161	0.34	2.92	27.07	0.30	0.46	24	1	0.013	0.20	3.22	10.12	3.29	4.41	3.69	4.95
A-9	H3	H4	119	0.57	0.57	24.05	0.30	0.30	15	1	0.013	0.32	3.02	3.71	3.52	0.60	3.95	0.67
A-10	H4	JB1	10	0.28	0.84	24.70	0.74	0.44	15	1	0.013	0.32	3.02	3.71	3.47	1.30	3.89	1.46
	JB1	A4	106	0.00	3.76	27.63	0.30	0.46	24	1	0.013	0.20	3.22	10.12	3.25	5.58	3.65	6.26
A-11	H5	H6	116	0.15	0.15	22.12	0.85	0.85	15	1	0.013	0.32	3.02	3.71	3.69	0.46	4.14	0.51
A-12	H6	A4	19	0.32	0.46	23.74	0.85	0.85	15	1	0.013	0.32	3.02	3.71	3.55	1.40	3.98	1.57
A-13	A4	A5	105	0.18	4.40	27.98	0.30	0.49	30	1	0.013	0.13	3.01	14.79	3.23	6.98	3.63	7.84
A-14	H7	A5	19	0.22	0.22	22.69	0.85	0.85	15	1	0.013	0.32	3.02	3.71	3.64	0.69	4.08	0.78
A-15	A5	A6	115	0.13	4.78	28.16	0.30	0.50	30	1	0.013	0.13	3.01	14.79	3.22	7.70	3.61	8.64
A-16	H8	JB2	49	0.49	0.49	23.83	0.85	0.85	15	1	0.013	0.32	3.02	3.71	3.54	1.48	3.97	1.66
	JB2	H9	51	0.00	0.49	23.83	0.30	0.85	15	1	0.013	0.32	3.02	3.71	3.54	1.48	3.97	1.66
A-17	H9	A6	47	0.13	0.62	24.20	0.85	0.85	15	1	0.013	0.32	3.02	3.71	3.51	1.86	3.94	2.08
A-18	A6	A7	85	0.23	5.61	28.55	0.30	0.53	36	1	0.013	0.10	3.13	22.12	3.19	9.54	3.58	10.71
A-19	A7	A8	102	0.64	6.24	28.81	0.30	0.51	36	1	0.013	0.10	3.13	22.12	3.18	10.10	3.56	11.33
A-20	A8	JB3	131	0.13	6.37	28.85	0.30	0.51	36	1	0.013	0.10	3.13	22.12	3.17	10.21	3.56	11.46
A-21	H10	JB3	12	0.32	0.32	23.19	0.85	0.85	15	1	0.013	0.32	3.02	3.71	3.60	0.99	4.03	1.11
	JB3	JB4	206	0.00	6.69	28.98	0.30	0.52	36	1	0.013	0.10	3.13	22.12	3.16	11.05	3.55	12.40
A-22	A9	H11	67	0.38	0.38	23.42	0.52	0.52	15	1	0.013	0.32	3.02	3.71	3.58	0.70	4.01	0.79
A-23	H11	JB4	11	0.27	0.65	24.27	0.85	0.66	15	1	0.013	0.32	3.02	3.71	3.51	1.50	3.93	1.68
	JB4	OUTFALL	221	0.00	7.34	29.21	0.30	0.53	36	1	0.013	0.10	3.13	22.12	3.15	12.35	3.54	13.86
B-1	Y4	Y6	68	0.32	0.32	23.19	0.71	0.71	12	1	0.013	0.44	3.01	2.36	3.60	0.82	4.03	0.92
B-2	Y5	Y6	34	0.32	0.32	23.19	0.74	0.74	12	1	0.013	0.44	3.01	2.36	3.60	0.86	4.03	0.96
B-3	Y6	Y7	114	0.08	0.72	24.44	0.36	0.68	15	1	0.013	0.32	3.02	3.71	3.49	1.73	3.91	1.94
B-4	Y7	A10	91	0.47	1.20	25.32	0.71	0.70	18	1	0.013	0.25	3.03	5.36	3.42	2.85	3.84	3.19
B-5	Y8	A10	115	0.36	0.36	23.34	0.58	0.56	15	1	0.013	0.32	3.02	3.71	3.58	0.73	4.02	0.82
B-6	A10	H12	70	0.30	1.85	26.15	0.52	0.64	24	1	0.013	0.20	3.22	10.12	3.36	4.01	3.77	4.50
B-7	H12	OUTFALL	37	0.34	2.19	26.48	0.85	0.68	24	1	0.013	0.20	3.22	10.12	3.34	4.94	3.74	5.54
C-1	A11	H13	84	0.31	0.31	23.15	0.30	0.30	15	1	0.013	0.32	3.02	3.71	3.60	0.34	4.03	0.38
C-2	H13	H15	97	0.12	0.43	23.82	0.85	0.45	15	1	0.013	0.32	3.02	3.71	3.56	0.69	3.99	0.77
C-3	H14	H15	115	0.27	0.27	22.93	0.85	0.85	15	1	0.013	0.32	3.02	3.71	3.62	0.83	4.05	0.93
C-4	A12	H15	44	0.34	0.34	23.29	0.44	0.44	15	1	0.013	0.32	3.02	3.71	3.59	0.54	4.02	0.61
C-5	H15	H17	122	0.07	1.11	25.19	0.85	0.57	18	1	0.013	0.25	3.03	5.36	3.43	2.16	3.85	2.43
C-6	A13	H16	20	0.33	0.33	23.21	0.30	0.30	15	1	0.013	0.32	3.02	3.71	3.60	0.35	4.03	0.39
C-7	H16	H17	115	0.38	0.71	24.41	0.85	0.60	15	1	0.013	0.32	3.02	3.71	3.49	1.48	3.92	1.66
C-8	A14	H17	40	0.30	0.30	23.11	0.60	0.60	15	1	0.013	0.32	3.02	3.71	3.60	0.66	4.04	0.74
C-9	H17	H19	161	0.12	2.24	26.53	0.85	0.60	24	1	0.013	0.20	3.22	10.12	3.33	4.46	3.74	5.01
C-10	A15	H18	20	0.15	0.15	22.15	0.30	0.30	15	1	0.013	0.32	3.02	3.71	3.69	0.16	4.13	0.18
C-11	H18	H19	115	0.32	0.47	23.74	0.85	0.67	15	1	0.013	0.32	3.02	3.71	3.55	1.12	3.98	1.25
C-12	H19	JB5	112	0.16	2.88	27.04	0.85	0.62	24	1	0.013	0.20	3.22	10.12	3.30	5.91	3.70	6.63
	JB5	A16	135	0.00	2.88	27.04	0.30	0.62	30	1	0.013	0.13	3.01	14.79	3.30	5.91	3.70	6.63
C-13	A16	OUTFALL	112	0.15	3.03	27.15	0.30	0.61	30	1	0.013	0.13	3.01	14.79	3.29	6.05	3.69	6.76
	OUTFALL		60	0.00	12.56	30.61	0.30	0.56	42	1	0.013	0.10	3.31	31.82	3.06	22.17	3.44	24.89

Sub-AREA no	UPSTREAM STRUCTURE	i5, RAINFALL (in/hr)	Q5, RUNOFF (cfs)	i10, RAINFALL (in/hr)	Q10, RUNOFF (cfs)	i25, RAINFALL (in/hr)	Q25, RUNOFF (cfs)	i100, RAINFALL (in/hr)	Q100, RUNOFF (cfs)	3-YEAR HGL: HYDRAULIC GRADE DOWNSTREAM	3-YEAR HGL: HYDRAULIC GRADE UPSTREAM	100-YEAR HGL: HYDRAULIC GRADE DOWNSTREAM	100-YEAR HGL: HYDRAULIC GRADE UPSTREAM	UPSTREAM FLOWLINE	DOWN STREAM FLOWLINE	TOP OF UP STREAM INLET
A-1	Y1	4.64	1.13	5.46	1.46	6.38	1.86	8.34	2.53	85.86	86.05	87.89	87.96	84.75	84.61	88.25
A-2	Y2	4.83	1.26	5.44	1.64	6.36	2.09	8.31	2.84	85.61	85.80	87.89	88.06	84.64	84.36	88.15
A-3	Y3	4.51	2.46	5.30	3.18	6.20	4.06	8.12	5.53	85.31	85.37	87.51	87.89	83.85	83.50	88.25
A-4	A1	4.37	3.72	5.14	4.82	6.02	6.16	7.90	8.41	85.06	85.31	87.27	87.51	83.41	83.06	87.50
A-5	H1	4.71	0.73	5.54	0.94	6.48	1.20	8.45	1.63	84.61	84.62	87.27	87.31	83.25	83.02	87.25
A-6	A2	4.30	5.04	5.06	6.53	5.93	8.35	7.79	11.42	84.36	84.61	87.01	87.27	82.56	82.36	87.00
A-7	H2	4.29	5.31	5.06	6.88	5.93	8.80	7.78	12.03	84.31	84.36	86.71	87.01	81.86	81.63	87.55
A-8	A3	4.27	5.72	5.03	7.41	5.90	9.48	7.74	12.96	84.23	84.31	86.18	86.71	81.63	81.31	86.65
A-9	H3	4.56	0.78	5.36	1.01	6.28	1.28	8.21	1.75	84.37	84.40	86.21	86.30	83.35	82.96	87.35
A-10	H4	4.50	1.68	5.29	2.17	6.19	2.78	8.10	3.79	84.23	84.37	86.18	86.21	82.96	82.93	87.10
	JB1	4.22	7.23	4.97	9.37	5.83	11.99	7.66	16.42	84.15	84.23	85.61	86.18	81.31	81.10	87.50
A-11	H5	4.77	0.59	5.61	0.76	6.55	0.97	8.54	1.32	85.19	85.25	85.69	85.74	84.19	83.81	88.20
A-12	H6	4.59	1.81	5.40	2.34	6.32	2.99	8.26	4.07	85.00	85.19	85.61	85.69	83.81	83.75	87.05
A-13	A4	4.19	9.06	4.94	11.73	5.79	15.02	7.61	20.57	84.11	84.15	85.35	85.61	81.10	80.96	87.25
A-14	H7	4.71	0.90	5.53	1.16	6.47	1.48	8.44	2.01	84.19	84.38	85.35	85.37	83.00	82.94	87.00
A-15	A5	4.18	9.99	4.92	12.94	5.77	16.57	7.59	22.69	84.06	84.11	85.00	85.35	80.96	80.81	87.25
A-16	H8	4.59	1.92	5.39	2.48	6.31	3.17	8.25	4.32	84.31	84.48	85.56	85.77	83.20	83.04	87.20
	JB2	4.59	1.92	5.39	2.48	6.31	3.17	8.25	4.32	84.15	84.31	85.33	85.56	83.04	82.87	88.00
A-17	H9	4.56	2.40	5.35	3.11	6.26	3.97	8.18	5.41	84.06	84.15	85.00	85.33	82.86	82.71	86.90
A-18	A6	4.14	12.38	4.88	16.04	5.73	20.54	7.54	28.16	83.73	84.06	84.85	85.00	80.81	80.73	87.25
A-19	A7	4.12	13.10	4.86	16.98	5.70	21.75	7.50	29.81	81.82	81.96	84.65	84.85	78.73	78.62	87.00
A-20	A8	4.12	13.24	4.85	17.16	5.70	21.98	7.50	30.14	81.63	81.82	84.38	84.65	78.62	78.49	86.75
A-21	H10	4.65	1.28	5.47	1.65	6.40	2.11	8.35	2.87	83.71	83.90	84.38	84.41	82.50	82.46	86.50
	JB3	4.11	14.34	4.84	18.58	5.68	23.80	7.48	32.64	81.56	81.63	83.89	84.38	78.49	78.28	87.25
A-22	A9	4.63	0.91	5.44	1.17	6.36	1.50	8.31	2.04	84.68	84.72	84.80	84.87	83.50	83.28	87.50
A-23	H11	4.54	1.94	5.34	2.52	6.25	3.21	8.17	4.38	84.49	84.68	84.49	84.80	83.28	83.24	86.50
	JB4	4.09	16.02	4.82	20.77	5.66	26.61	7.45	36.50	81.47	81.56	81.79	83.89	78.28	78.06	87.25
B-1	Y4	4.65	1.06	5.47	1.38	6.40	1.76	8.35	2.39	85.91	86.08	87.32	87.63	85.21	84.91	88.20
B-2	Y5	4.65	1.11	5.47	1.43	6.40	1.83	8.35	2.48	86.55	86.72	87.32	87.49	85.70	85.55	88.70
B-3	Y6	4.52	2.24	5.32	2.90	6.22	3.70	8.14	5.04	85.53	85.72	86.63	87.32	84.65	84.28	88.20
B-4	Y7	4.43	3.69	5.22	4.77	6.11	6.10	8.01	8.33	85.11	85.21	86.06	86.63	83.73	83.50	88.45
B-5	Y8	4.64	0.95	5.45	1.23	6.38	1.57	8.33	2.13	85.11	85.19	86.06	86.18	84.12	83.75	88.10
B-6	A10	4.36	5.20	5.13	6.73	6.01	8.60	7.88	11.75	85.03	85.11	85.87	86.06	83.00	82.86	87.50
B-7	H12	4.32	6.40	5.09	8.29	5.97	10.60	7.83	14.48	84.78	85.03	84.78	85.87	82.85	82.78	86.50
C-1	A11	4.66	0.44	5.48	0.57	6.40	0.72	8.36	0.98	84.22	84.41	86.83	86.85	83.24	82.97	87.25
C-2	H13	4.61	0.89	5.42	1.15	6.34	1.47	8.28	2.00	83.90	84.09	86.74	86.83	82.97	82.65	87.30
C-3	H14	4.68	1.07	5.50	1.38	6.43	1.76	8.40	2.40	83.85	83.87	86.74	86.90	82.64	82.27	86.65
C-4	A12	4.64	0.70	5.46	0.91	6.38	1.16	8.34	1.57	84.45	84.64	86.74	86.77	83.34	83.20	87.35
C-5	H15	4.45	2.80	5.23	3.63	6.13	4.64	8.03	6.33	83.79	83.85	86.30	86.74	82.02	81.71	87.80
C-6	A13	4.65	0.45	5.47	0.59	6.39	0.75	8.35	1.02	83.90	84.09	86.81	86.82	82.71	82.65	87.00
C-7	H16	4.52	1.92	5.32	2.49	6.23	3.17	8.15	4.32	83.79	83.86	86.30	86.81	82.64	82.27	86.65
C-8	A14	4.66	0.85	5.48	1.11	6.41	1.41	8.37	1.92	84.62	84.81	86.30	86.33	83.50	83.37	87.50
C-9	H17	4.32	5.78	5.08	7.49	5.96	9.58	7.82	13.09	83.71	83.79	85.76	86.30	81.71	81.39	87.80
C-10	A15	4.77	0.21	5.61	0.27	6.55	0.35	8.54	0.48	83.90	84.09	85.76	85.76	82.71	82.65	87.00
C-11	H18	4.59	1.44	5.40	1.87	6.32	2.38	8.26	3.25	83.52	83.71	85.47	85.76	82.64	82.27	86.65
C-12	H19	4.27	7.66	5.03	9.92	5.90	12.70	7.75	17.37	83.18	83.41	83.85	85.47	81.38	81.16	87.80
	JB5	4.27	7.66	5.03	9.92	5.90	12.70	7.75	17.37	83.04	83.18	83.61	83.85	80.56	80.39	88.75
C-13	A16	4.26	7.84	5.02	10.15	5.89	12.99	7.73	17.77	82.75	83.04	82.75	83.61	80.39	80.25	87.25
	OUTFALL	3.98	28.79	4.69	37.33	5.51	47.87	7.27	65.77	81.43	81.47	81.43	81.79	74.30	74.24	86.60

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LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

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STATE OF TEXAS
DUANE H. WHITEHEAD
105210
LICENSED
PROFESSIONAL ENGINEER
5/29/18

January 17, 2018

REVISIONS
Revision No.

Director: TJL
Drawn By: STA
Designer: TSA
Quality Control: STAFF
Proj. Arch.: RJS

PROJECT
1624.00

SHEET
DRAINAGE CALCULATIONS

SHEET NO.
C2.02

THOMAS R. CULVER, III ELEMENTARY SCHOOL
CSP # 05-2018VRG

FORT BEND COUNTY
APPROVED
MAY 3 1 2018
Valid One Year From Date
ENGINEERING DEPARTMENT

APPROVED: ____________________
DEVELOPMENT COORDINATOR
DATE: ____________________

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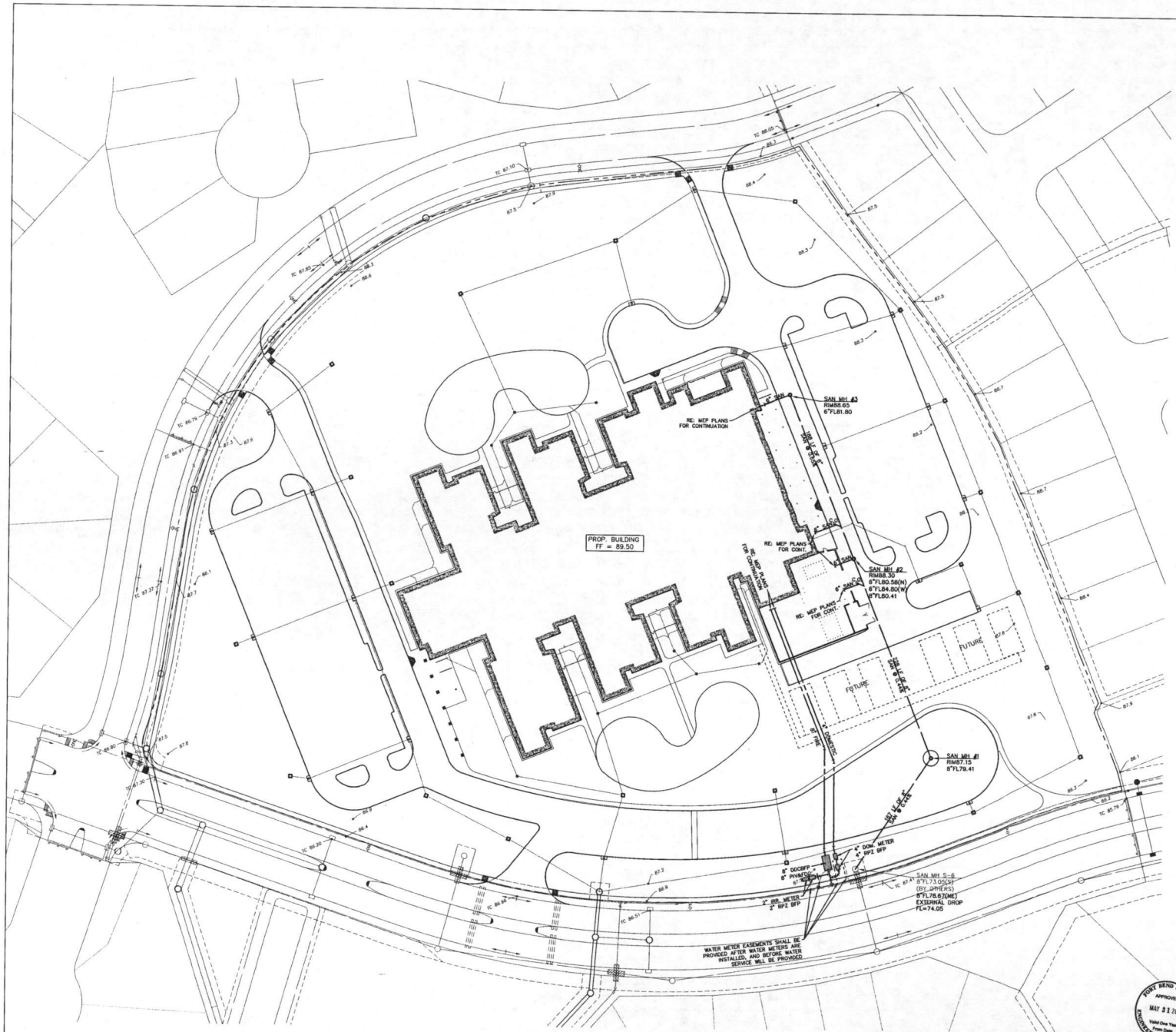

SCALE: 1" = 40'

LEGEND

TG	TOP GRATE
TR	TOP RIM
FL	FLOWLINE
DS	DOWN SPOUT
RD	ROOF DRAIN
RDC	ROOF DRAIN COLLECTOR
	STORM SEWER
	SANITARY SEWER
	SANITARY FORCE MAIN
	WATERLINE
	TYPE A INLET
	TYPE H-2 CURB INLET (SEE DETAIL)
	TYPE E INLET
	YARD INLET
	STORM MANHOLE
	SANITARY MANHOLE

FBCMUD NO. 5 NOTES:

1. CONTRACTOR TO CONTACT THE DISTRICT'S OPERATOR, GREG DUBELL WITH MUNICIPAL OPERATIONS & CONSULTING AT (281) 850-2484, 72 HOURS PRIOR TO CONSTRUCTION FOR METER TAPS, VAULTS, ETC. AS PER THE DISTRICT RATE ORDER.

FORT BEND COUNTY APPROVED MAY 31 2018 Valid One Year From Date ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: _____

Kelly R. Kaluza & Associates, Inc.
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SURVEYING FIRM No. 10010000
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STATE OF TEXAS
DUANE H. WHITEHEAD
105210
LICENSED
PROFESSIONAL ENGINEER
5/31/18

January 17, 2018

REVISIONS
Revision No.

Director TJL	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT
1624.00

SHEET
WATER & SANITARY PLAN

SHEET NO.
C3.01

LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

THOMAS R. CULVER, III ELEMENTARY SCHOOL

CSP # 05-2016VRG

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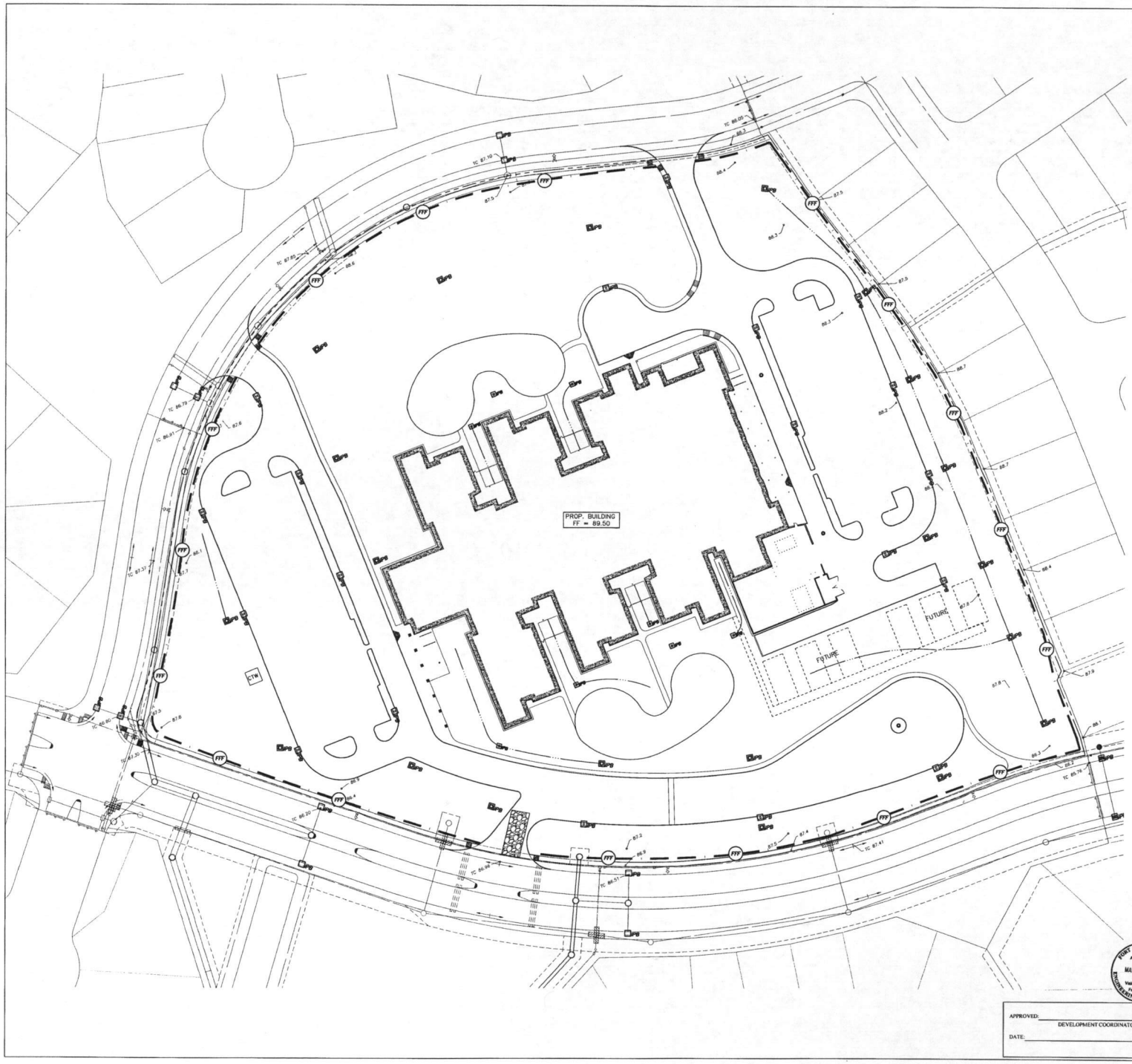

SCALE: 1" = 40'

0 40 80 120

N

LEGEND

- DIRECTIONAL FLOW OF RUNOFF
- INLET PROTECTION BARRIER
- FFF — FILTER FABRIC FENCE (MIN. 2' BEHIND BACK OF CURB)
- RFB — REINFORCED FABRIC BARRIER (MIN. 2' BEHIND BACK OF CURB)
- CTW — CONCRETE TRUCK WASHOUT (TO BE WITHIN PROJECT LIMITS)
- STABILIZED CONSTRUCTION EXIT MINIMUM 50'L x 20'W

FORT BEND COUNTY
APPROVED
MAY 31 2018
Valid One Year From Date
ENGINEERING DEPARTMENT

APPROVED: _____
DEVELOPMENT COORDINATOR

DATE: _____

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STATE OF TEXAS
DUANE H. WHITEHEAD
105210
LICENSED
PROFESSIONAL ENGINEER
5/29/18

January 17, 2018

REVISIONS

Revision No.

Director TJL	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT
1624.00

SHEET
EROSION CONTROL PLAN

SHEET NO.
C4.01

LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

THOMAS R. CULVER, III ELEMENTARY SCHOOL

CSP # 05-2018VRG

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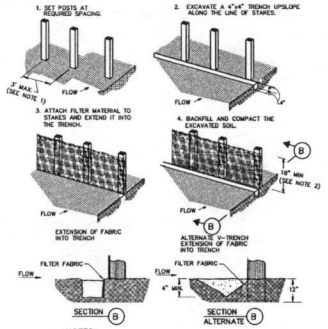


NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX. SPACING OF 3 FEET AND EMBEDDED A MIN. OF 8 INCHES. IF PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN. HEIGHT OF 18 INCHES AND MAX. HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

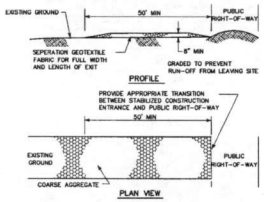
FILTER FABRIC FENCE

SCALE: N.T.S.

1

CONSTRUCTION NOTES:

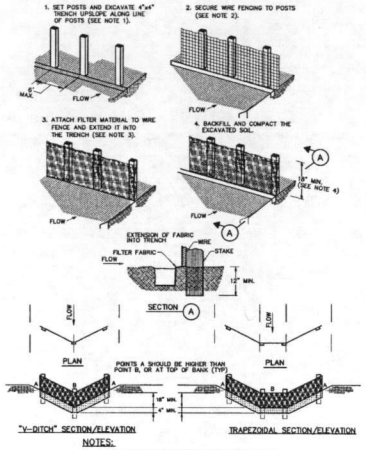
1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS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



STABILIZED CONSTRUCTION EXIT

SCALE: N.T.S.

2



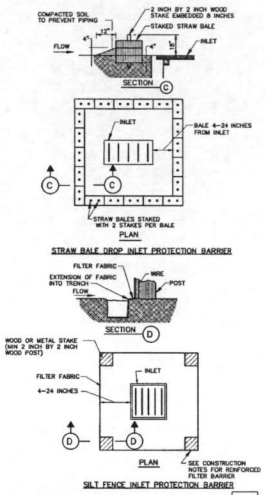
NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX. OF 6 FEET APART AND EMBEDDED A MIN. OF 12 INCHES.
2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

REINFORCED FILTER FABRIC BARRIER

SCALE: N.T.S.

3



INLET PROTECTION BARRIER

SCALE: N.T.S.

4

EROSION AND SEDIMENT CONTROL PLAN NOTES:

SW-1 STORM WATER FROM ALL AREAS DISTURBED BY THE CONSTRUCTION ACTIVITES SHALL BE DISCHARGED THROUGH AN APPROVED CONTROL DEVICE.

SW-2 CONTRACTOR SHALL PREPARE, FILE AND EXECUTE THE STORM WATER PREVENTION PLAN IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS.

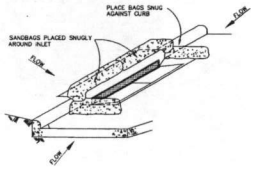
SW-3 ALL DETAILS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. REFERENCE: STORM WATER MANAGEMENT HANDBOOK, HARRIS COUNTY et.al.

SW-4 CONTRACTOR SHALL KEEP ADJOINING STREETS CLEAR OF MUD AND DEBRIS DEPOSITED DUE TO ON-SITE CONSTRUCTION ACTIVITIES.

SW-5 ALL STOCKPILED MATERIALS SHALL BE CONTAINED WITHIN AN APPROVED DISCHARGE CONTROL DEVICE ON SITE. EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

SW-6 CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL INLETS IN PUBLIC RIGHT-OF-WAYS ADJACENT TO THE SITE, ON SAME SIDE OF STREET, AS CONSTRUCTION ACTIVITIES.

SW-7 PREFABRICATED INLET PROTECTION MAY BE USED IN PLACE OF FILTER FABRIC FENCE AND/OR SAND BAGS WHEN APPROVED BY THE ENGINEER.



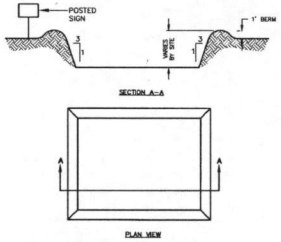
GENERAL NOTES:

1. BAGS OR WATTLES CAN BE USED FOR THIS APPLICATION.
2. PROVIDE WOVEN OR UNWOVEN GEOTEXTILE FILTER FABRIC FOR BAGS.
3. PROVIDE COARSE SAND AND AGGREGATE MIX FOR FILL MATERIAL FOR BAGS. USE ONLY PARTICLES CONSISTING OF CLEAN, HARD, DURABLE MATERIALS FREE FROM ADHERENT COATINGS, SALT, ALKALI, DIRT, CLAY, LOAM, SHALE, SOFT OR FLAKY MATERIALS, OR ORGANIC AND INJURIOUS MATTER.
4. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.
5. PRE-MANUFACTURED CURB INLET PROTECTION, SUCH AS GutterGator® OR APPROVED EQUAL, MAY BE SUBSTITUTED FOR SAND BAGS AT CURB INLETS.

CURB INLET PROTECTION

SCALE: N.T.S.

5



GENERAL NOTES:

1. POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT ONLY.
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT) THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. THE PITS SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO CLEAN FILL MATERIAL AND COMPACTED TO N-SUU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASH OUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASH OUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS & EQUIPMENT.

CONCRETE TRUCK WASH OUT AREA

SCALE: N.T.S.

6

FORT BEND COUNTY APPROVED MAY 31 2018 Valid One Year From Date ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: _____

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STATE OF TEXAS DUANE H. WHITEHEAD 105210 LICENSED PROFESSIONAL ENGINEER 1/17/18

January 17, 2018

REVISIONS

Revision No.		
1	ADDENDUM #3	2.12.18

Director TJL	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT 1624.00

SHEET: EROSION CONTROL DETAILS

SHEET NO. C4.02

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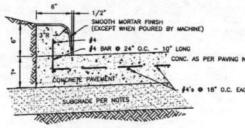
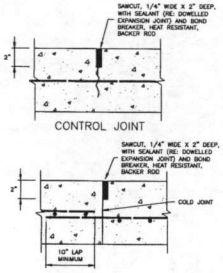


* Concrete pavement and subgrade shall be in accordance with the geotechnical report & the details. INCLUDE THICKENED EDGE.

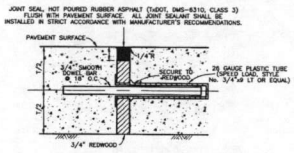
NOTES:

1. MORTAR FINISH NOT REQUIRED WHEN CURB IS POURED BY A MACHINE, BUT CURB WILL HAVE THE SAME OUTSIDE DIMENSIONS.
2. WHEN CONCRETE CURB IS TO BE PLACED ON EXISTING CONCRETE BASE #4 DEFORMED BARS, 10" LONG, 24" O.C. DOWELLED AND SET IN QUICK SETTING CEMENT.
3. REDWOOD EXPANSION JOINTS SHALL BE INSTALLED AT ALL PAVEMENT EXPANSION JOINTS.
4. BACKFILL ALL CURBS TO MATCH TOP OF CURB (AFTER SETTLEMENT HAS OCCURED).

CONCRETE CURB AND PAVEMENT 1
SCALE: N.T.S.



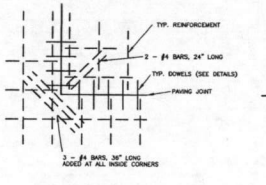
PAVING JOINTS 2
SCALE: N.T.S.



NOTES:

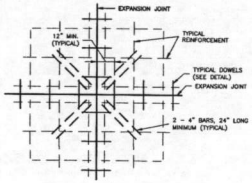
1. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED A MAXIMUM OF 40'-0" APART.
2. STAKES FOR TRANSVERSE JOINTS SHALL NOT BE PLACED CLOSER THAN 6" TO A LONGITUDINAL JOINT. THE TOP OF EACH STAKE SHALL NOT BE LESS THAN 2" BELOW THE FINISHED SURFACE.
3. DOWEL SHALL BE SECURED IN A HORIZONTAL ALIGNMENT PRIOR TO POURING CONCRETE.
4. INSTALL BACKER RODS (TxDOT, DMS-6310) IN ACCORDANCE WITH SEALANT MANUFACTURER'S RECOMMENDATIONS.

DOWELED EXPANSION JOINT 4
SCALE: N.T.S.



ADDITIONAL REINFORCMENT FOR RE–ENTRANT CORNERS AND PAVING BLOCK–OUTS

BLOCKOUT REINFORCEMENT 5
SCALE: N.T.S.

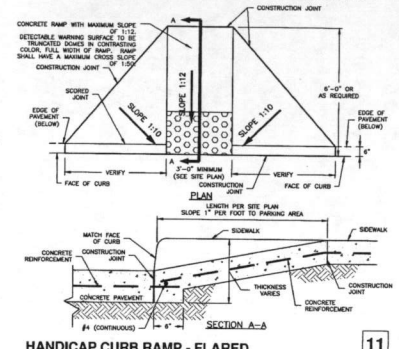


REINFORCEMENT AT INTERSECTING EXPANSION JOINTS

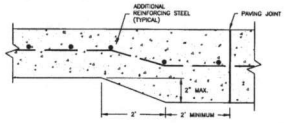
ADDITIONAL REINFORCEMENT 6
SCALE: N.T.S.

HANDICAP CURB RAMP NOTES:

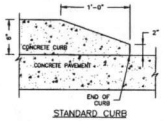
1. DETECTABLE WARNING SURFACE SHALL COMPLY WITH 2012 T.A.S. SECTION 705. CONTRACTOR SHALL SUBMIT TO ARCHITECT MATERIAL AND COLOR OF DETECTABLE WARNING SURFACE.
2. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACE SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND–ON–CANE.
3. DETECTABLE WARNING SURFACE SHALL COVER THE ENTIRE WIDTH OF RAMP WITH A MINIMUM DEPTH OF 2 FEET.
4. WHEN USING PAVERS, DETECTABLE WARNINGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
5. DETECTABLE WARNING SURFACE SHALL HAVE A TRUNCATED DOME TOP SURFACE FOR DETECTABLE WARNING TO PEDESTRIANS. DOMES SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL.
6. DETECTABLE WARNING SURFACE COLOR FOR THE RAMP SHALL BE A CONTRASTING COLOR THAT PROVIDES A LIGHT REFLECTIVE THAT SIGNIFICANTLY CONTRASTS WITH THE ADJACENT SURFACES. ADJACENT SURFACES INCLUDE SIDE FLARES. COLORS OTHER THAN RED–BROWN REQUIRE PROJECT ENGINEER APPROVAL.



HANDICAP CURB RAMP - FLARED 11
SCALE: N.T.S.

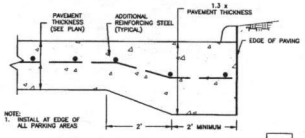


PAVEMENT THICKNESS TRANSITION 7
SCALE: N.T.S.



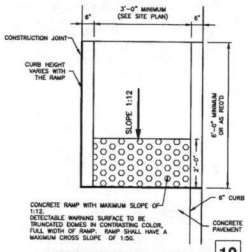
STANDARD CURB

CONCRETE CURB END 8
SCALE: N.T.S.

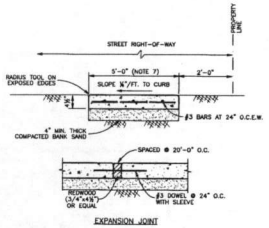


NOTE:
1. INSTALL AT EDGE OF ALL PARKING AREAS

PAVEMENT - THICKENED EDGE 9
SCALE: N.T.S.



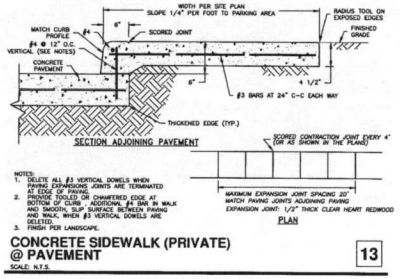
HANDICAP CURB RAMP 10
SCALE: N.T.S.



NOTES:

1. CONCRETE SHALL CONTAIN A MINIMUM OF FIVE AND ONE HALF (5½) SACKS OF CEMENT PER CUBIC YARD OF CONCRETE, 3000 P.S.I. @ 28 DAYS.
2. TIE TO EXISTING STEEL IN CONNECTION TO EXISTING WALK.
3. FINISH CONCRETE IN ACCORDANCE WITH CITY REQUIREMENTS – LIGHT BROOM FINISH.
4. SCORED CONTRACTION JOINTS AT 4'–0" O.C. EXPANSION JOINT EVERY 20'–0" O.C.
5. MAXIMUM SLOPE ALONG LENGTH OF SIDEWALK AT ANY LOCATION IS 5%. MAXIMUM SLOPE ACROSS SIDEWALK AT ANY LOCATION IS 2%.
6. SIDEWALK THICKNESS AND REINFORCEMENT SHALL MATCH DRIVEWAY REQUIREMENTS WITHIN THE LIMITS OF A DRIVEWAY.

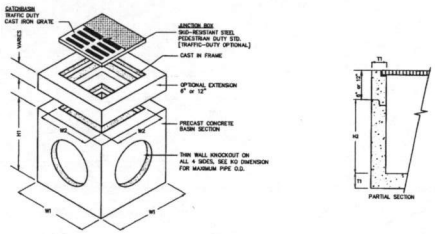
CONCRETE SIDEWALK 12
SCALE: N.T.S.



NOTES:

1. DELETE ALL #3 VERTICAL DOWELS WHEN PAVING EXPANSIONS JOINTS ARE TERMINATED AT EDGE OF PAVING.
2. FINISH EDGE OF CURB CHAMFERED EDGE AT BOTTOM OF CURB. ADDITIONAL #4 BAR IN WALK AND SMOOTH, SLIP SURFACE BETWEEN PAVING AND WALK. WHEN #3 VERTICAL DOWELS ARE DELETED.
3. FINISH PER LANDSCAPE.

CONCRETE SIDEWALK (PRIVATE) @ PAVEMENT 13
SCALE: N.T.S.



MODEL #		DIMENSIONS								
CATCH BASIN	JUNCTION BOX	W1	W2	H1	H2	T1	KO	GRATE SIZE	WEIGHT LBS.
CB12	JB12	15"	10"	25"	18"	2"	10"	12"x12"x1"	180
CB18	JB18	24"	16"	34"	30"	4"	15"	18"x18"x1"	1,000
CB20	JB20	28"	18"	34"	30"	5"	17"	20"x20"x1"	1,335
CB24	JB24	34"	22"	41"	36"	5"	22"	24"x24"x2"	2,245
CB27	JB27	37"	25"	41"	36"	6"	24"	27"x27"x2"	2,875
CB30	JB30	42"	30"	48"	36"	6"	30"	32"x32"x2"	3,875
CB36	JB36	48"	36"	54"	48"	6"	32"	36"x36"x2"	4,585

1. CB12 CATCHBASIN IS RATED FOR PEDESTRIAN LOADING. ALL OTHERS ARE TRAFFIC DUTY.
2. ALL JUNCTION BOXES ARE STANDARD PEDESTRIAN DUTY OR OPTIONAL TRAFFIC DUTY.

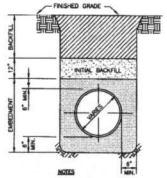
SPECIFICATIONS

CONCRETE : CLASS 1 CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48–76 CLASS 30.

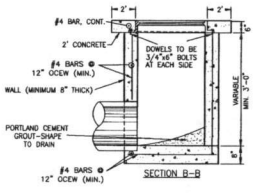
PRECAST CONCRETE CATCH BASIN / JUNCTION BOX 14
SCALE: N.T.S.



NOTES

1. BACKFILL SHALL BE NATIVE SOIL, FREE OF DEBRIS, COMPACTED TO 90% STANDARD PROCTOR DENSITY, PLACED IN 8" LIFTS.
2. INITIAL BACKFILL SHALL BE UNIFORMLY GRADED MATERIAL (MAXIMUM SIZE, 3"#) PLACED IN 8" LIFTS AND COMPACTED TO 90% STANDARD PROCTOR DENSITY.
3. EMBEDMENT SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
4. UNDER PAVING OR WITHIN 5' OF PAVEMENT, THE INITIAL BACKFILL AND ALL BACKFILL UP TO THE PAVEMENT SUBGRADE SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
5. TRENCH SHORING, IN ACCORDANCE WITH OSHA, SHALL BE INSTALLED WHERE REQUIRED.
6. SOIL IN THE PIPE ZONE SHALL CONSIST OF NON–WATERBEARING, COHESIVE SOILS WITH A SHEAR STRENGTH OF 1000 PSF OR GREATER. WHEN WET SAND EXISTS IN THE PIPE ZONE, MODIFIED BEDDING SHALL BE INSTALLED.

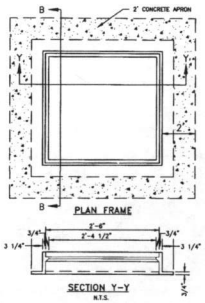
STORM AND SANITARY SEWER BEDDING AND BACKFILL 15
SCALE: N.T.S.

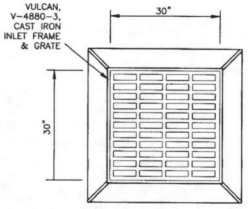


NOTES

1. INLETS TO BE PRECAST OR CAST IN PLACE ONLY.

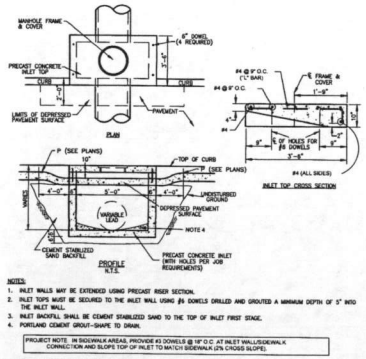
TYPE "A" INLET
SCALE: N.T.S.





PLAN VIEW

16



NOTES:

1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.
2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING #6 DOWELS DRILLED AND GROUTED A MINIMUM DEPTH OF 5" INTO THE INLET WALL.
3. INLET BACKFILL SHALL BE CEMENT STABILIZED SAND TO THE TOP OF INLET FIRST STAGE.
4. PORTLAND CEMENT GROUT–SHAPE TO DRAIN.

PROJECT NOTE: IN SIDEWALK AREAS, PROVIDE #3 DOWELS @ 18" O.C. AT INLET WALLS/SIDEWALK CONNECTION AND SLOPE TOP OF INLET TO MATCH SIDEWALK (2% CROSS SLOPE).

TYPE "H-2" INLET
SCALE: N.T.S.

FORT BEND COUNTY APPROVED MAY 31 2018 Valid One Year From Date Engineering Department

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: _____

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ROSENBERG, TX

THOMAS R. CULVER, III ELEMENTARY SCHOOL
CSP # 05-2018VRG

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DUANE H. WHITEHEAD
105210
LICENSED
STATE OF TEXAS
5/14/18

January 17, 2018

REVISIONS

Revision No.

Director	Drawn By
TJL	STA
Designer	Quality Control
TSA	STAFF
Proj. Arch.	
RJS	

PROJECT
1624.00

SHEET
CONSTRUCTION DETAILS

SHEET NO.
C5.01

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TABLE P-1 – TRENCH SHORING – MINIMUM REQUIREMENTS

DEPTH OF TRENCH	KIND OR CONDITION OF EARTH	SIZE AND SPACING OF MEMBERS										
		UPRIGHTS		STRINGERS		CROSS BRACES[1]						
						WIDTH OF TRENCH					MAXIMUM SPACING	
		MINIMUM DIMENSIONS	MAXIMUM SPACING	MINIMUM DIMENSIONS	MAXIMUM SPACING	UP TO 3 FEET	3 TO 6 FEET	6 TO 9 FEET	9 TO 12 FEET	12 TO 15 FEET	VERTICAL	HORIZONTAL
FEET	TYPE	INCHES	FEET	INCHES	FEET	INCHES	INCHES	INCHES	INCHES	INCHES	FEET	FEET
5 TO 10	(A) HARD, COMPACT	3x4 OR 2x6	6			2x6	4x4	4x6	6x6	6x8	4	6
	(B) LIKELY TO CRACK	3x4 OR 2x6	3	4x6	4	2x6	4x4	4x6	6x6	6x8	4	6
	(C) SOFT, SANDY, OR FILLED	3x4 OR 2x6	CLOSE SHEETING	4x6	4	4x4	4x6	6x6	6x6	8x8	4	6
	(D) HYDROSTATIC PRESSURE	3x4 OR 2x6	CLOSE SHEETING	6x8	4	4x4	4x6	6x6	6x8	8x8	4	6
10 TO 15	(A) HARD, COMPACT	3x4 OR 2x6	4	4x6	4	4x4	4x6	6x6	6x6	8x8	4	6
	(B) LIKELY TO CRACK	3x4 OR 2x6	2	4x6	4	4x4	4x6	6x6	6x6	8x8		6
	(C) SOFT, SANDY, OR FILLED	3x4 OR 2x6	CLOSE SHEETING	4x6	4	4x6	6x6	6x6	8x8	8x10	4	6
	(D) HYDROSTATIC PRESSURE	3x6	CLOSE SHEETING	8x10	4	4x6	6x6	6x6	8x8	8x10	4	6
15 TO 20	(E) ALL KINDS OF CONDITIONS	3x6	CLOSE SHEETING	4x12	4	4x12	6x8	8x8	8x10	10x10	4	6
OVER 20	(E) ALL KINDS OF CONDITIONS	3x6	CLOSE SHEETING	6x8	4	4x12	8x8	8x10	10x10	10x12	4	6

1. TRENCH JACKS MAY BE USED IN LIEU OF, OR IN COMBINATION WITH, CROSS BRACES. SHORING IS NOT REQUIRED IN SOLID ROCK, HARD SHALE, OR HARD SLAG. WHERE DESIRABLE, STEEL SHEET PILING AND BRACING OF EQUAL STRENGTH MAY BE SUBSTITUTED FOR WOOD.

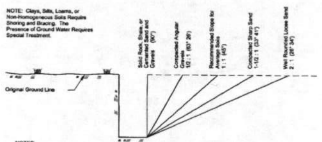
( ) DESIGNATION FOR PROPOSAL (BID) PURPOSES

(* *) FROM OSHA SAFETY AND HEALTH REGULATIONS PART 1926, SUBPART P.

2. SIZE OF TIMBER MEMBERS ARE ROUGH CUT TIMBER DIMENSIONS (FULL SIZE)

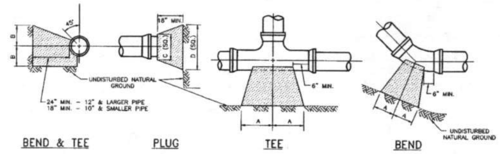
APPROXIMATE ANGLE OF REPOSE FOR SLOPING OF SIDES OF EXCAVATION

NOTE: Clays, Silts, Loams, or Non-Homogeneous Soils Require Shoring and Bracing. The Presence of Ground Water Requires Special Treatment.



NOTES:

1. Banks more than five (5) feet high shall be shored, laid back to a stable slope, or some other equivalent means of protection shall be provided where employees may be exposed to moving ground or cave-ins. Refer to Table P-1 as a guide in sloping of banks. Trenches less than five (5) feet in depth shall also be effectively protected when examination of the ground indicates hazardous ground movement may be expected.
2. Sides of trenches in unstable or soft material five (5) feet or more in depth, shall be shored, sheeted, braced, sloped, or otherwise supported by means of sufficient strength to protect the employees working within them. See Tables P-1, P-2, above.
3. Sides of trenches in hard or compact soil, including embankments, shall be shored or otherwise supported when the trench is more than five (5) feet in depth and eight (8) feet or more in length. In lieu of shoring, the side of the trench above the five (5) foot level may be sloped to preclude collapse, but shall not be steeper than a one (1) foot rise to each one-half (1/2) foot horizontal. When the outside diameter of a pipe is greater than six (6) feet, a bench of four (4) foot minimum shall be provided at the toe of sloped portion.
4. Materials used for sheeting and sheet piling, bracing, shoring, and underpinning, shall be in good serviceable condition, and timbers used shall be sound and free from large or loose knots, and shall be designed and installed so as to be effective to the bottom of the excavation.
5. Additional precautions by way of shoring and bracing shall be taken to prevent sides or cave-ins when excavations or trenches are made in locations adjacent to backfilled excavations, or where excavations are subjected to vibrations from railroad or highway traffic, the operation of machinery, or any other source.



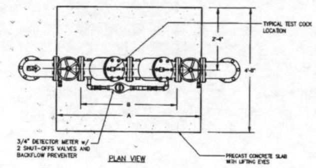
BEND & TEE PLUG TEE BEND

SIZE	90° BEND A	90° BEND B	45° BEND A	45° BEND B	22 1/2° BEND A	22 1/2° BEND B	TEES A	TEES B	PLUGS A	PLUGS B
2 1/2"	12"	7"	6"	7"	6"	6"	7"	8"	8"	14"
4"	14"	8"	7"	9"	6"	6"	8"	11"	8"	18"
6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"

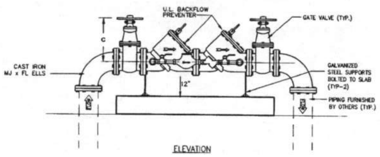
NOTE:
THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 1.0 SQ. FOOT AND THE LEAST DIMENSION SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER, BUT NOT LESS THAN 1.0 FT.

THRUST BLOCK
SCALE: N.T.S.

1



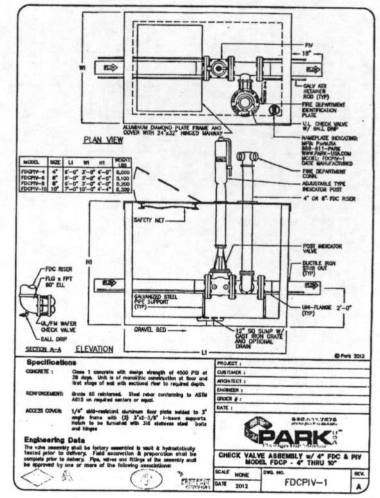
PLAN VIEW



ELEVATION

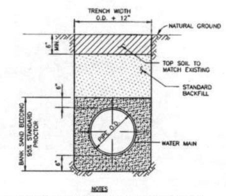
DOUBLE DETECTOR CHECK BACKFLOW PREVENTER ASSEMBLY
SCALE: N.T.S.

2



CHECK VALVE ASSEMBLY w/ FDC & PIV
SCALE: N.T.S.

3

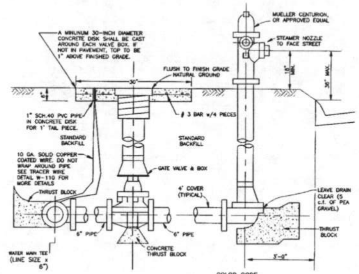


NOTES

1. BACKFILL SHALL BE NATIVE SOIL, FREE OF DEBRIS, PLACED IN LIFTS, 8" THICK OR LESS, COMPACTED TO 85% STANDARD PROCTOR DENSITY, EXCEPT AS REQUIRED BELOW.
2. BACKFILL UNDER DRIVEWAY AND PUBLIC STREETS SHALL BE CEMENT STABILIZED SAND (1.5 SACKS OF CEMENT PER CUBIC YARD OF SAND), COMPACTED TO 95% STANDARD PROCTOR DENSITY.
3. TRENCH SHORING, IN ACCORDANCE WITH OSHA, SHALL BE INSTALLED AS REQUIRED.

WATER MAIN BEDDING AND BACKFILL
SCALE: N.T.S.

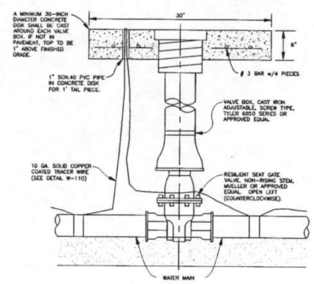
4



COLOR CODE	
BARREL	SILVER
BONNET & CAPS 6"	RED
BONNET & CAPS 8"	ORANGE
BONNET & CAPS 10"	BLUE
BONNET & CAPS 12"	GREEN
BONNET & CAPS 16"	WHITE

FIRE HYDRANT ASSEMBLY
SCALE: N.T.S.

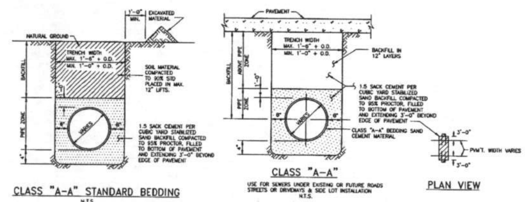
5



ELEVATION VIEW

GATE VALVE & BOX
SCALE: N.T.S.

6



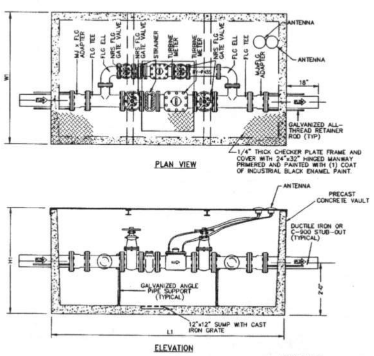
CLASS "A-A" STANDARD BEDDING
N.T.S.

CLASS "A-A"
USE FOR SEWERS UNDER EXISTING OR FUTURE ROADS STREETS OR DRIVEWAYS & SIDE LOT INSTALLATION
N.T.S.
(UNDER PAVEMENT)

PLAN VIEW

SANITARY SEWER PIPE BEDDING AND BACKFILL
SCALE: N.T.S.

7



SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
2"	2"	8'-8"	5'-0"	4'-0"	9,000
4"	2"	8'-8"	5'-0"	4'-0"	9,000
6"	3"	11'-0"	6'-0"	4'-3"	9,000
8"	4"	11'-0"	6'-0"	6'-0"	18,000
10"	6"	11'-0"	6'-0"	6'-0"	18,000

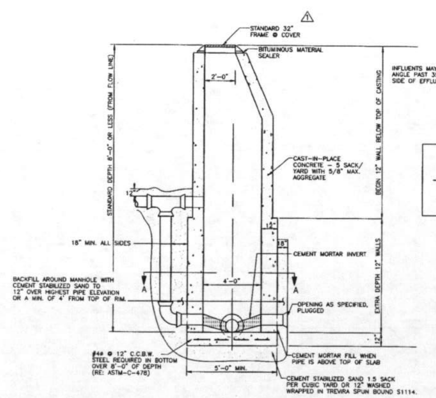
METER VAULT NOTES

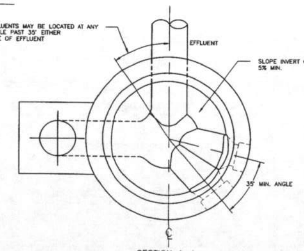
1. The vault shall not be put in any drive or parking areas and must be located in a water meter easement.
2. The strainer, meter, and flexible coupling (Neptune or approved equal) shall be provided and installed by the Owner. All water meters shall be equipped with Neptune R450 MIU and antenna.
3. The bottom of the meter vault shall have a four-inch (4") min. of C/S sand underneath (1.5 SK/CY) compacted to 95% standard proctor density.
4. Depth of vault shall be a minimum of four and one-half feet (4-1/2').
5. A Galvanized Steel Cover w/24"x32" Single Leaf Hatch w/SS Hinges, Slamlock & Safety Net or a Concrete Lid w/30"x48" Single Leaf Aluminum Hatch w/SS Hinges, Slamlock & Safety Net may be used.

NOTE: INSTALL NEPTUNE TRUE/FLOW COMPOUND SERVICE METER w/ R450 MIU & ANTENNA

DOMESTIC 4" - 10" COMPOUND WATER METER ASSEMBLY
SCALE: N.T.S.

10



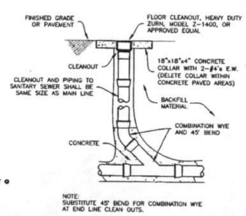


SECTION A-A

NOTES:
1. ALL SANITARY MANHOLE COVERS SHALL BE LABEDLED AS "SANITARY SEWER".
2. MINIMUM ELEVATION OF TOP OF ALL INFLUENT LINES SHALL BE EQUAL TO TOP OF THE EFFLUENT LINE. SHAPE INVERT TO MATCH ALL LINES.
3. MANHOLES MAY BE CONSTRUCTED USING PRECAST 48" R.C.P. (CLASS III). AND PRECAST CONE AND BOTTOM. BRICK WILL NOT BE ALLOWED.
4. INSIDE OF ALL MANHOLES SHALL BE COATED WITH IPAGARD EPOXY, THANE COAT FE 100, OR APPROVED EQUAL APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. (40 MIL MINIMUM THICKNESS)

SANITARY SEWER MANHOLE
SCALE: N.T.S.

9



NOTE:
SUBSTITUTE 45° BEND FOR COMBINATION WYE AT END LINE CLEAN OUTS.

CLEAN OUT
SCALE: N.T.S.

8

APPROVED: ____________________
DEVELOPMENT COORDINATOR
DATE: ____________________

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January 17, 2018

REVISIONS
Revision No.
1 ADDENDUM #3 2.12.18

THOMAS R. CULVER, III ELEMENTARY SCHOOL
CSP # 05-2018VRG

Director TJL	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT
1624.00

SHEET
CONSTRUCTION DETAILS

SHEET NO.
C5.02

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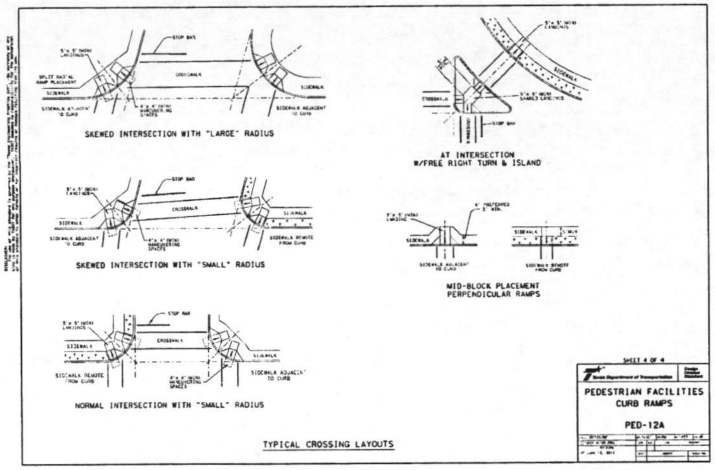
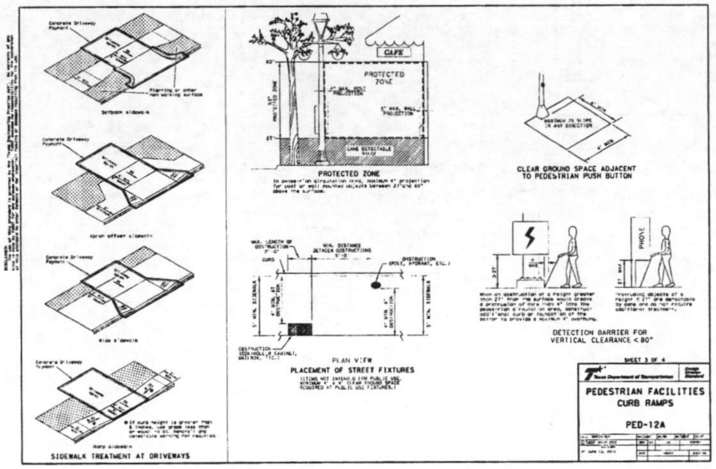




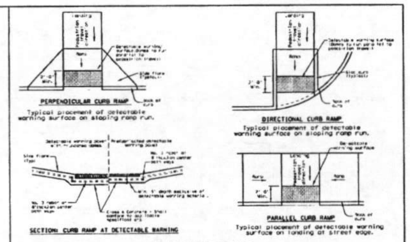
General Notes

Curb Ramps

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. 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.
4. Landings shall be 5'x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
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 current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
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. Handrails are not required on curb ramps. Provide curb ramps wherever an accessible route crosses (penetrates) a curb.
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. Provide a smooth transition where the curb ramps connect to the street.
16. 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.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

Detectable Warning Material

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



Detectable Warning Pavers

24. 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.
25. Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

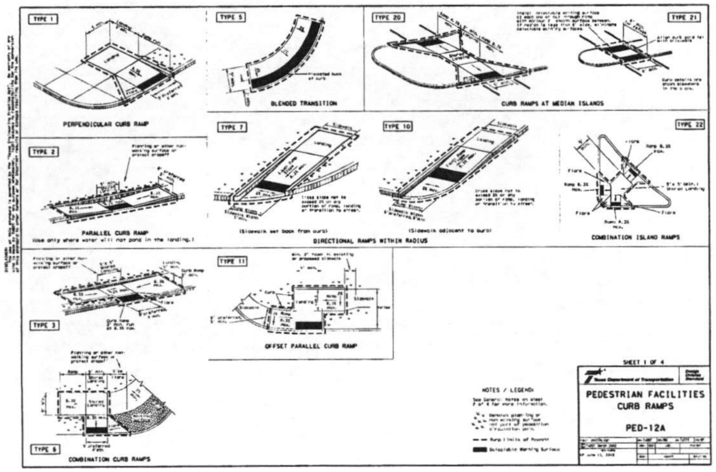
Sidewalks

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. 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.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. 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".
33. Sidewalk details are shown elsewhere in the plans.

SHEET 2 OF 4

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A



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 brackground. 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.

Note: Fort Bend County notes supersede any conflicting notes.

Inspection. 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.

Pre Construction Meeting

Notification of pre-construction meeting and all paving activites. email: construction@fortbendcountytx.gov
(provide one set of approved construction plans).

FORT BEND COUNTY APPROVED MAY 31 2018 Valid One Year From Date ENGINEERING DEPARTMENT

APPROVED: ______________________
DEVELOPMENT COORDINATOR

DATE: ______________________

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STATE OF TEXAS
DUANE H. WHITEHEAD
105210
LICENSED
PROFESSIONAL ENGINEER
3/19/18

January 17, 2018

REVISIONS
Revision No.

Director TJL	Drawn By STA
Designer TSA	Quality Control STAFF
Proj. Arch. RJS	

PROJECT
1624.00

SHEET
CONSTRUCTION DETAILS

SHEET NO.
C5.03

LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

THOMAS R. CULVER, III ELEMENTARY SCHOOL
CSP # 05-2018VRG

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GENERAL CONSTRUCTION NOTES: ⚠1

G-1 CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF CITY OF PLEAK (REFERENCED AS THE "CITY" IN THESE PLANS), FORT BEND COUNTY (COUNTY), AND FORT BEND COUNTY MUD NO. 5 (MUD) AND ALL OTHER GOVERNING AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS RELATED TO PROJECT.

G-2 CONTRACTOR SHALL NOTIFY THE COUNTY, CITY AND MUD AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO WORKING IN ANY PUBLIC RIGHT-OF-WAY OR EASEMENTS OR CONNECTING TO ANY STREET, DRAINAGE, WATER OR WASTEWATER FACILITIES. CONNECTIONS TO THE PUBLIC FACILITIES, BEYOND THE BACK OF CURB, SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE PLAN AND PROFILE AND TRAFFIC CONTROL PLANS, APPROVED SEPARATELY BY THE COUNTY, FOR THE CONSTRUCTION IN THE RIGHT-OF-WAY.

G-3 UNDERGROUND UTILITIES HAVE BEEN SHOWN BASED ON THE SURVEY. UTILITY SERVICE LINES MAY NOT BE SHOWN. UTILITY INFORMATION IS NOT GUARANTEED. CONTRACTOR SHALL NOTIFY ALL UTILITIES OF THE PROJECT PRIOR TO BEGINNING CONSTRUCTION TO VERIFY THE LOCATION OF ALL UTILITIES. CONTRACTOR SHALL NOTIFY THE "LONE STAR 811" (811 OR 1-800-669-8344) AND CONFIRM ALL UTILITY LOCATIONS PRIOR TO BEGINNING CONSTRUCTION.

G-4 THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL UNSATISFACTORY AND/OR WASTE MATERIALS INCLUDING VEGETATION, ROOTS, CONCRETE, AND DEBRIS RELATED TO THE PROJECT.

G-5 CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TEXAS MUTCD MOST RECENT EDITION AS REVISED) AND AS REQUIRED BY THE COUNTY OR GOVERNING AUTHORITY DURING CONSTRUCTION WITHIN THE PUBLIC R.O.W. CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL IN THE PROJECT AREA.

G-6 CONTRACTOR SHALL CONFINE ALL WORK TO THE PROJECT BOUNDARY AND AREAS DIRECTLY ADJOINING THE WORK IN THE PUBLIC RIGHT-OF-WAY. EXISTING PAVEMENTS, CURBS, SIDEWALKS, DRIVEWAYS, LANDSCAPING, FENCES AND OTHER EXISTING IMPROVEMENTS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE WITH THE COUNTY OR GOVERNING AUTHORITIES REQUIREMENTS. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, DURING AND UPON COMPLETION OF THE JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO CONSTRUCTION. CONTRACTOR SHALL PROMPTLY CLEAN MUD, DIRT OR DEBRIS TRACKED ONTO EXISTING STREETS FROM THE PROJECT SITE.

G-7 UNLESS OTHERWISE NOTED, MAINTAIN 6 INCHES OF VERTICAL CLEARANCE (MINIMUM) AT CROSSINGS BETWEEN ALL UNDERGROUND CONDUITS.

G-8 CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION, TRENCHING AND SHORING.

G-9 ALL TRENCH BACKFILL ABOVE THE PIPE ZONE UP TO WITHIN ONE FOOT BELOW THE TOP OF FINISHED SUBGRADE AND UNDER OR WITHIN TWO FOOT BEYOND THE EDGE OF PROPOSED PAVEMENT SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD) AND SHALL BE COMPACTED TO A DENSITY OF NINETY-FIVE (95) PERCENT, STANDARD PROCTOR, MAXIMUM DRY DENSITY, WITH MOISTURE WITHIN 3 PERCENT OF OPTIMUM (ASTM D698).

G-10 EXCEPT UNDER PAVEMENT OR AS OTHERWISE REQUIRED FOR THE PROJECT, TRENCH BACKFILL ABOVE THE PIPE ZONE MAY BE NATIVE MATERIAL. NATIVE MATERIAL BACKFILL SHALL BE PLACED IN LOOSE LIFTS OF LESS THAN EIGHT (8) INCHES COMPACTED TO A DENSITY OF NINETY-FIVE (95) PERCENT, STANDARD PROCTOR, MAXIMUM DRY DENSITY, WITH MOISTURE WITHIN 3 PERCENT OF OPTIMUM.

G-11 ALL UTILITY TRENCHES SHALL BE EXCAVATED AND BACKFILLED WHILE THE TRENCH IS DRY. DENSITY TESTING SHALL BE COMPLETED ON ALL BACKFILL AT A RATE OF ONE TEST FOR EVERY 75 FEET OF TRENCH (WITH A MINIMUM OF 3 TESTS) PER LIFT. IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT, PLACE CLAY PLUG OR EQUAL SEAL WHERE UTILITY TRENCHES ENTER THE BUILDING.

G-12 CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT.

G-13 YARD AREAS, SIDEWALKS AND PAVEMENT SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDINGS. FINISHED SURFACES IN ACCESSIBLE AREAS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARDS. ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS. ALL PAVING, SIDEWALKS AND RAMPS IN ACCESSIBLE AREAS SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, TEXAS ACCESSIBILITY STANDARDS AND WITH THE FOLLOWING:

A. PARKING AND LOADING AREAS – MAXIMUM SLOPE OF 1:50 IN ALL DIRECTIONS IN ACCESSIBLE PARKING SPACES AND AISLES.
B. ACCESSIBLE ROUTES – MAXIMUM SLOPE OF 1:20 IN THE DIRECTION OF TRAVEL. MAXIMUM CROSS SLOPE OF 1:50.
C. BUILDING ENTRANCES AND EXITS – AT ALL LOCATIONS 5'x5' (MINIMUM) ACCESSIBLE, CONCRETE WALK WITH A MAXIMUM SLOPE OF 1:50 IN ALL DIRECTIONS.

G-14 CONTRACTOR SHALL GRADE THE SITE TO MATCH EXISTING GROUND AT THE LIMITS OF THE PROJECT SITE. ALL DRAINAGE ENTERING THE PROJECT AREA SHALL BE INTERCEPTED IN THE FINAL GRADING. TRANSITIONS TO EXISTING GROUND THAT ARE DIFFERENT FROM THE PLANS SHALL BE COORDINATED WITH THE OWNER PRIOR TO FINAL GRADING.

G-15 ALL AREAS WITHIN THE PROJECT SITE SHALL BE GRADED TO DRAIN TO ON SITE DRAINAGE FACILITIES, EXCEPT AS SHOWN ON THE PLAN.

G-16 ALL AREAS DISTURBED BY CONSTRUCTION, WHICH ARE NOT PAVED OR OTHERWISE COVERED IN THE DOCUMENTS, SHALL BE SEEDED WITH HYDRO-MULCH AND MAINTAINED UNTIL A SATISFACTORY STAND OF GRASS HAS BEEN ESTABLISHED. ALL AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SOLID SOD. AREAS ADJACENT TO CURB AND/OR SIDEWALK SHALL BE SOLID SODDED WITH A MINIMUM OF 2 ROWS OF SODDING.

G-17 CONTRACTOR SHALL VERIFY ALL ELEVATIONS, DIMENSIONS AND CONDITIONS IN THE FIELD BEFORE COMMENCING ANY WORK. CONTRACTOR SHALL REPORT ANY CONFLICTS OR VARIATIONS AND RESOLVE ALL CHANGES WITH THE OWNER PRIOR TO COMMENCING THE WORK.

G-18 NOTIFICATION OF PRE-CONSTRUCTION MEETING AND ALL PAVING ACTIVITIES; EMAIL: CONSTRUCTION@FORTBENDCOUNTYTX.GOV (PROVIDE ONE SET OF APPROVED CONSTRUCTION PLANS).

⚠1

PAVING CONSTRUCTION NOTES:

P-1 REFERENCE: GEOTECHNICAL ENGINEERING REPORT, PREPARED BY TERRACON DATED OCTOBER 19, 2017. PROJECT #92175312.

P-2 PAVING AREAS SHALL BE STRIPPED OF TOPSOIL, ORGANIC MATERIALS AND ANY UNSUITABLE MATERIAL. TREE ROOTS AND VEGETATION SHALL BE REMOVED TO BELOW THE PROPOSED SUBGRADE DEPTH AS REQUIRED IN THE GEOTECHNICAL STUDY. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF TREES AND PLANTS THAT ARE BEING SAVED ADJOINING THE SITE PAVING AND WALKS.

P-3 PER THE GEOTECH REPORT, PAVING SUBGRADE SHALL BE SIX (6) INCHES THICK AND BE STABILIZED WITH LIME IN ACCORDANCE w/ TXDOT STANDARD SPECIFICATIONS ITEM 260 AT A RATE OF 6-8% LIME BY DRY WEIGHT. CONTRACTOR SHALL COMPLY WITH LIME DETERMINATION REQUIREMENTS PREPARED BY THE OWNER'S TESTING LAB AT THE TIME THE SUBGRADE IS EXCAVATED TO THE PROPOSED ELEVATIONS. PAVING SUBGRADE SHALL BE COMPACTED TO A MINIMUM DENSITY OF NINETY FIVE (95) PERCENT OF MAXIMUM DENSITY WITH MOISTURE CONTENT BETWEEN OPTIMUM AND +4 PERCENT WET OF OPTIUM (ASTM D698). PAVING SHALL BE PLACED WITHIN 14 DAYS ON COMPLETION OF THE SUBGRADE OR SHALL BE SEALED WITH AN EMULSION BASED SEALER. ALL TRAFFIC SHALL BE KEPT OFF OF THE SUBGRADE FOR AT LEAST 7 DAYS. HEAVY TRAFFIC SHALL NOT BE ALLOWED TO DRIVE DIRECTLY ON THE PAVING SUBGRADE.

P-4 CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3500 P.S.I. AT 28 DAYS. CONCRETE SHALL INCLUDE A MINIMUM OF FIVE AND ONE-HALF (5-1/2) SACKS OF CEMENT PER CUBIC YARD OF CONCRETE. COARSE AGGREGATE SHALL HAVE A MAXIMUM DIAMETER OF ONE AND ONE-HALF (1-1/2) INCHES. TRAFFIC SHALL BE PROHIBITED ON NEWLY CONSTRUCTED PAVEMENT. SAW CUT PAVEMENT JOINTS SHALL BE COMPLETED WITHIN 6 TO 12 HOURS AFTER CONCRETE IS PLACED.

P-5 REINFORCING STEEL SHALL BE NEW BILLET STEEL AS FOLLOWS: REBAR SHALL CONFORM TO ASTM A615, GRADE 60 FOR ALL BARS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. ALL REINFORCING STEEL SPLICES, TEES AND CORNERS, FOR SITE CONSTRUCTION, SHALL BE LAPPED 36 TIMES THE BAR DIAMETER UNLESS OTHERWISE REQUIRED.

P-6 ALL PAVING SHALL BE CONSTRUCTED ON A STRAIGHT LINE GRADE BETWEEN ELEVATIONS SHOWN ON THE PLANS. CONTRACTOR SHALL CONFIRM IN THE FIELD THAT ALL PAVED AREAS ARE CONSTRUCTED TO DRAIN WITHOUT HOLDING WATER.

P-7 ISOLATION JOINTS SHALL BE PLACED AT ALL LOCATIONS THAT SITE PAVING AND SIDEWALKS ABUT THE BUILDING AND OTHER SITE STRUCTURES. ISOLATION JOINTS SHALL HAVE A REMOVABLE TOP STRIP AND SHALL BE SEALED WITH PAVING JOINT SEALANT. THE PAVING THICKNESS SHALL BE INCREASED TO 1.3 TIMES THE REQUIRED THICKNESS AT ALL ISOLATION JOINTS.

P-8 PROVIDE AN ADDITIONAL THICKNESS OF CONCRETE, EQUAL TO 1.3 TIMES THE REQUIRED PAVING THICKNESS, AT THE EDGE OF ALL CONCRETE PAVING AND ADJOINING STRUCTURES (E.G. INLETS, MANHOLES) WITHIN PAVED AREAS.

P-9 PAVING JOINTS ARE TO BE ALIGNED WITH THE CENTERLINE OF THE DRIVING AISLES AND AT CURB RETURNS. WHERE DIMENSIONS ARE NOT PROVIDED, THE CONTRACTOR SHALL COORDINATE JOINT LOCATIONS WITH INLETS AND OTHER STRUCTURES AND SHALL PROVIDE THE JOINT SPACING CONSISTENT WITH THE GEOTECH RECOMMENDATIONS.

P-10 CONTRACTOR SHALL SUBMIT A PAVING JOINT PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO POURING CONCRETE.

STORM SEWER CONSTRUCTION NOTES:

ST-1 CONSTRUCTION IN STORM SEWER AND DRAINAGE EASEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH COUNTY REQUIREMENTS.

ST-2 STORM SEWERS LOCATED WITHIN A PUBLIC EASEMENT OR R.O.W. SHALL BE REINFORCED CONCRETE PIPE, ASTM C76, CLASS III, WALL B. RAM-NEK SHALL BE PROPERLY INSTALLED AT EACH JOINT BASED ON THE COUNTY'S REQUIREMENTS. STORM SEWER TEN (10) INCHES IN DIAMETER OR SMALLER, NOT WITHIN EASEMENTS OR R.O.W.'S, SHALL BE PVC, ASTM D3034, TYPE PSM, SDR-26, WITH RUBBER GASKET JOINTS (ASTM D3213), INSTALLED IN ACCORDANCE WITH ASTM D2321. STORM SEWER TWELVE (12) INCHES IN DIAMETER OR LARGER, NOT WITHIN EASEMENTS OR R.O.W.'S, SHALL BE HIGH DENSITY POLYETHYLENE, SMOOTH BORE, CORRUGATED PIPE MEETING THE REQUIREMENTS OF AASHTO M294, TYPE S, WITH WATER-TIGHT JOINTS. IN ALL CASES, CHANGES IN PIPE SIZE OR TYPE SHALL OCCUR AT AN APPROVED STRUCTURE.

ST-3 STORM SEWER BEDDING AND BACKFILL ADJOINING INLETS AND MANHOLES SHALL BE CEMENT STABILIZED SAND IN ACCORDANCE WITH THE DETAILS.

ST-4 INLETS IN THE PAVED AREAS ARE TO BE PLACED ALIGNED WITH THE CENTERLINE OF DRIVING AISLES.

ST-5 ROOF DRAIN COLLECTORS (RDC) SHALL BE PVC OR HDPE PIPE IN ACCORDANCE WITH THE NOTES. PROVIDE MANUFACTURED FITTINGS AND CONNECTIONS TO THE DOWNSPOUTS IN ACCORDANCE WITH THE ARCHITECT'S DETAIL. RDC PIPE GRADES SHALL BE 12"@0.45%, 8"@0.75% AND 6"@1.50%.

ST-6 ALL DOWNSPOUT LEADS SHALL BE 6" HDPE WITH WATER TIGHT (WT) JOINTS. WHEN TWO DOWNSPOUTS CONNECT, STORM PIPE SHALL BE 10" HDPE (WT). WHEN 4 OR MORE DOWNSPOUTS CONNECT, STORM PIPE SHALL BE 12" HDPE (WT). IF SIZES ARE CALLED OUT ON THE PLANS THAT CONFLICT WITH THIS NOTE, THE LARGER SIZE PIPE SHALL BE USED.

ST-7 THE DESIGN ENGINEER SHALL INSPECT THE OPEN TRENCH AND MAY AUTHORIZE CHANGES IN THE BEDDING INDICATED ON THE PLANS.

SANITARY SEWER CONSTRUCTION NOTES:

S-1 SANITARY SEWER CONSTRUCTION AND TESTING SHALL BE IN ACCORDANCE WITH THE RULES AND REQUIREMENTS OF THE COUNTY AND THE MUD.

S-2 SANITARY SEWER PIPE SHALL BE PVC, ASTM D3034, TYPE PSM, SDR-26, WITH RUBBER GASKET JOINTS (ASTM D3213), INSTALLED IN ACCORDANCE WITH ASTM D2321. IF REQUIRED IN THE GEOTECHNICAL STUDY, SANITARY SEWER BEDDING AND BACKFILL WITHIN 10 FEET OF THE BUILDING SHALL BE CEMENT STABILIZED SAND OR STRUCTURAL FILL.

S-3 CONTRACTOR SHALL RECORD THE LOCATION OF ALL CLEANOUTS, STUBOUTS, ETC.

S-4 SEPARATION DISTANCES FOR ALL SANITARY SEWER AND WATER MAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, THE TEXAS NATURAL RESOURCES CONSERVATION COMMISSION "RULES AND REGULATIONS FOR DESIGN CRITERIA FOR SEWERAGE SYSTEMS" (LATEST PRINTING) AND THE COUNTY REQUIREMENTS.

S-5 ALL CLEANOUTS THAT ARE PLACED WITHIN PAVING OR SIDEWALK AREAS SHALL BE INSTALLED WITH A NON-SKID, TRAFFIC RATED, SEALED METAL COVER SET FLUSH WITH THE FINISHED PAVING ELEVATION.

S-6 CONTRACTOR TO INSTALL DOUBLE CLEAN OUTS AT THE SANITARY CONNECTIONS BETWEEN CIVIL AND M.E.P. PLANS, UNLESS INCLUDED IN M.E.P. PLANS.

WATER CONSTRUCTION NOTES:

W-1 WATER CONSTRUCTION NOTES SHALL APPLY TO THE ON-SITE, DOMESTIC AND FIRE SYSTEMS FROM FIVE FEET OUTSIDE THE BUILDING TO THE METER OR SERVICE CONNECTION. INSTALLATION OF ALL WATER CONNECTIONS AND METERS SHALL COMPLY WITH THE REQUIREMENTS OF THE COUNTY AND THE MUD.

W-2 ALL WATER LINE CONSTRUCTION AND TESTING SHALL CONFORM TO THE REQUIREMENTS OF THE COUNTY AND THE MUD.

W-3 ALL WATER LINES SHALL BE CONSTRUCTED WITH A MINIMUM CLEARANCE OF NINE FEET FROM ANY SANITARY SEWER. ALL WATER LINES SHALL BE CONSTRUCTED ABOVE SANITARY SEWERS AT ALL CROSSINGS. AN EIGHTEEN_FOOT LONG, CONTINUOUS JOINT OF WATER LINE SHALL BE CENTERED AT ALL CROSSINGS WITH SANITARY SEWERS.

W-4 SEPARATION DISTANCES FOR ALL WATER MAIN AND SANITARY SEWER MAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, THE TEXAS NATURAL RESOURCES CONSERVATION COMMISSION "RULES AND REGULATIONS FOR DESIGN CRITERIA FOR SEWERAGE SYSTEMS" (LATEST PRINTING) AND THE REQUIREMENTS OF THE COUNTY, THE CITY AND THE MUD.

W-5 PRIVATE WATER LINES AND FITTINGS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF AWWA C900, DR-18, CLASS 150. ALL FITTINGS SHALL BE CAST IRON WITH CEMENT MORTAR LINING MEETING THE REQUIREMENTS OF AWWA C153 AND C104. WATER LINES SMALLER THAN 4" SHALL COMPLY WITH THE REQUIREMENTS OF ASTM D2241, SDR 21, OR EQUAL, WITH RUBBER GASKET JOINTS. ALL WATER LINES SHALL HAVE A MINIMUM PRESSURE RATING OF 150 P.S.I.

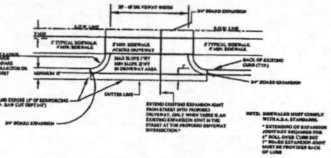
W-6 WATER LINE CONSTRUCTION SHALL INCLUDE BEDDING AND CONCRETE THRUST BLOCKING IN ACCORDANCE WITH THE DETAILS AND THE COUNTY, CITY AND MUD REQUIREMENTS.

W-7 ALL WATER AND FIRE LINES SHALL HAVE A MINIMUM COVER OF 4 FEET EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER.

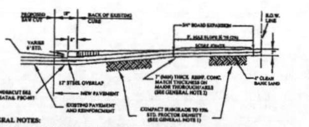
⚠1

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(+/- 2% 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" C.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 DEATAIL SEE FBC-025.

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

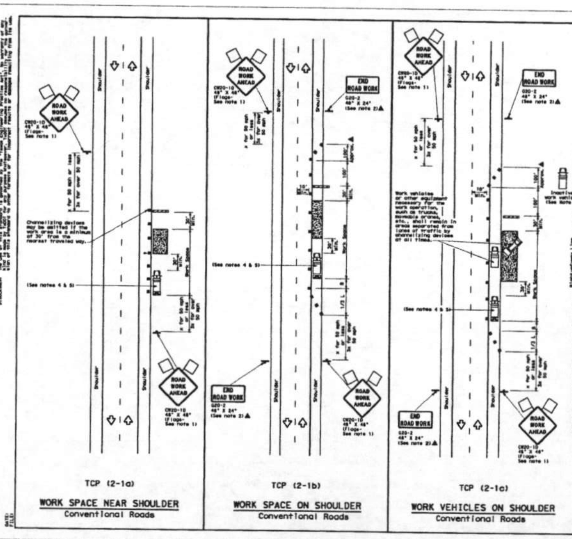
FORT BEND COUNTY ENGINEERING DEPARTMENT

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



TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads

TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads

TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "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

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. 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.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW21-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

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
CONVENTIONAL ROAD
SHOULDER WORK

TCP (2-1)-12

FORT BEND COUNTY APPROVED MAY 31 2018 Valid One Year From Date ENGINEERING DEPARTMENT

APPROVED: ____________________
DEVELOPMENT COORDINATOR
DATE: ____________________

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STATE OF TEXAS — DUANE H. WHITEHEAD — 105210 — LICENSED PROFESSIONAL ENGINEER — 3/19/18

January 17, 2018

REVISIONS

Revision No.		
⚠1	ADDENDUM #3	2.12.18

Director	Drawn By
TJL	STA
Designer	Quality Control
TSA	STAFF
Proj. Arch.	
RJS	

PROJECT
1624.00

SHEET
CONSTRUCTION NOTES & DETAILS

SHEET NO.
C5.04

LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
ROSENBERG, TX

THOMAS R. CULVER, III ELEMENTARY SCHOOL
CSP # 05-2018VRG

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