STATE OF TEXAS
TEXAS DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT NO. STP 2022 (392) TAPS			
CONT	SECT	JOB	HIGHWAY
0913	09	116	CS
DIST	COUNTY		SHEET NO.
YKM	WHARTON		1

PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENTS

CSJ NO. 0913-09-116
PROJECT NO. – STP 2022 (392) TAPS

NET LENGTH OF PROJECT = 8,575.00 FEET = 1.62 MILES
- ROADWAY = 8,575.00 FEET = 1.62 MILES
- BRIDGE = 0.00 FEET = 0.000 MILES

LIMITS : ALONG AHLDAG ST., PIONEER AVE, BOLING HWY, N. FULTON ST., LAZY LN, AND N. RUSK ST. IN THE CITY OF WHARTON

FOR THE CONSTRUCTION OF MISCELLANEOUS WORK CONSISTING OF SIDEWALKS, CURBS, DRIVEWAYS AND ACCESSIBILITY RAMPS

INDEX OF SHEETS

SEE INDEX OF SHEETS 2

FINAL PLANS

DATE OF LETTING: _____

DATE WORK BEGAN: _____

DATE WORK COMPLETED AND ACCEPTED: _____

FINAL CONTRACT COST: $ _____

CONTRACTOR: _____

LIST OF APPROVED CHANGE ORDERS:

DESIGN SPEED

LOCAL ROADS: N/A
CROSS STREETS: N/A

A.D.T.

2015: N/A
2035: N/A

FUNCTIONAL CLASSIFICATION:

BOLING HIGHWAY (FM 1301): MINOR ARTERIAL

AHLDAG ST. & N. FULTON ST: MAJOR COLLECTOR

PIONEER AVE., LAZY LANE, N. RUSK ST.: LOCAL ROADS

BEGIN AHLDAG
CSJ: 0913-09-116
EAST SIDE OF FULTON
STATION 0+70

BEGIN NEWTON
CSJ: 0913-09-116
SOUTH SIDE OF AHLDAG
STATION 0+00

END NEWTON
CSJ: 0913-09-116
NORTH SIDE OF BARCLAY
STATION 2+00

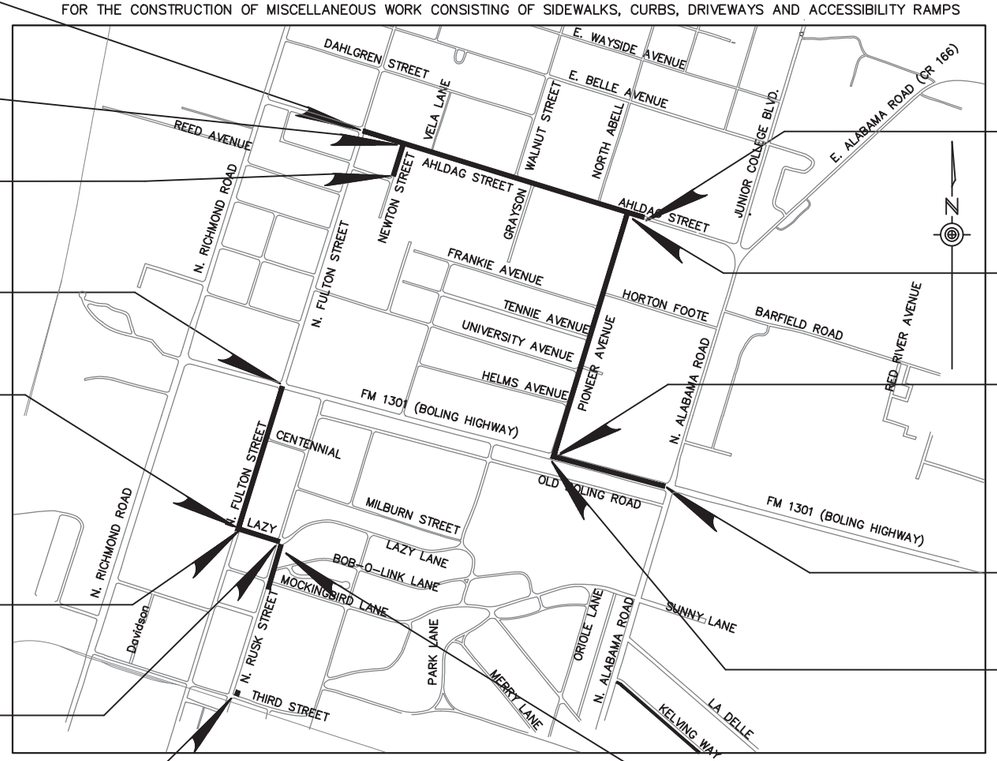
BEGIN FULTON
CSJ: 0913-09-116
SOUTH SIDE OF BOLING
STATION 1+40

END FULTON
CSJ: 0913-09-116
NORTH SIDE OF LAZY
STATION 12+90

BEGIN LAZY
CSJ: 0913-09-116
EAST SIDE OF FULTON
STATION 0+00

END LAZY
CSJ: 0913-09-116
WEST SIDE OF RUSK
STATION 3+40

END RUSK
CSJ: 0913-09-116
SOUTH SIDE OF THIRD ST
STATION 14+25



LOCATION MAP NOT TO SCALE

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

END AHLDAG
CSJ: 0913-09-116
EAST SIDE OF PIONEER
STATION 26+00

BEGIN PIONEER
CSJ: 0913-09-116
SOUTH SIDE OF AHLDAG
STATION 0+00

END PIONEER
CSJ: 0913-09-116
NORTH SIDE OF BOLING
STATION 20+50

END BOLING
CSJ: 0913-09-116
WEST SIDE OF ALABAMA
STATION 9+30

BEGIN BOLING
CSJ: 0913-09-116
EAST SIDE OF PIONEER
STATION 0+00

BEGIN RUSK
CSJ: 0913-09-116
NORTH SIDE OF LAZY
STATION 0+50

THIS IS TO CERTIFY THAT THE CONSTRUCTION WORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS, CONTRACT, AND LISTED FIELD CHANGES.

_____ P.E. _____
AREA ENGINEER DATE

STATE OF TEXAS
CHAD EMMEL
103495
LICENSED PROFESSIONAL ENGINEER
5/13/22

CORRECT: 05/13/2022

BEFCO ENGINEERING, INC (FIRM REG. F-2011)

6/30/2022

DocuSigned by:
Jeffery Vinklarek
C5D9721712F24F0...
DIRECTOR TRANSPORTATION PLANNING & DEVELOPMENT

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION REQUIRED

TDLR NO. EABPRJ TABS2022021663

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, July 2022).

CONCURRENCE FOR LETTING: 6/29/2022

DocuSigned by:
Joseph Pace
A05CAA1A39624B5...
CITY OF WHARTON

APPROVED FOR LETTING: 6/30/2022

DocuSigned by:
Martin C. Horsts, PE
894AD332139E48D...
DISTRICT ENGINEER

FILE: $FILE$ $TIME$
DATE: $DATE$

INDEX OF SHEETS

STATE OF TEXAS
CHAD EMMEL
103495
LICENSED PROFESSIONAL ENGINEER
6/29/22

CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

PLAN SET INDEX

BEFCO ENGINEERING, INC. (F-2011)
P.O. Box 615 La Grange, Texas 78945
(979) 968-6474

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			2
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\COVERSHEET AND NOTES

Benchmark/Control Point List

NO.	DESCRIPTION	COORDINATES	ELEVATION
BM: AS-1	5/8" IR - Yellow Cap - Ahldag & Walnut	N 136478983.20 E 2896171.70	95.70
BM: SS-12	Cotton Spindle - Ahldag & Newton	N 13679277.79 E 2895138.84	96.66
BM: SS-10	Cotton Spindle - Ahldag & Pioneer	N 13678639.79 E 2897014.14	95.87
BM: SS-9	Cotton Spindle - Pioneer & Tennie Ave	N 13677731.44 E 2896738.10	96.48
BM: SS-8	60d Nail - Pioneer & Helms Ave	N 13677153.24 E 2896560.64	97.30
BM: SS-7	Cotton Spindle - Pioneer & Boling Hwy	N 13676710.19 E 2896419.93	98.46
BM: SS-6	X in Concrete - Boling Hwy & Alabama	N 13676457.74 E 2897350.51	100.41
BM: SS-1	Cotton Spindle - N Fulton & Boling Hwy	N 13677183.86 E 2894160.29	99.44
BM: SS-3	Cotton Spindle - N Fulton & Centennial	N 13676811.48 E 2894044.21	101.34
BM: SS-5	Cotton Spindle - Mockingbird & Rusk	N 13675670.66 E 2893996.64	102.61
BM: RR-2	Cotton Spindle - Lazy Lane & Rusk	N 13648113.93 E 2363511.99	102.28

SHEETS 27 TO 47
Benchmark: AS-1
5/8" IR - Yellow Cap
Elev. - 95.70'
Benchmark: SS-12
Cotton Spindle
Elev. - 96.66'
SHEET 48 & 49
Benchmark: SS-10
Cotton Spindle
Elev. - 95.87'
Benchmark: SS-9
Cotton Spindle
Elev. - 96.48'
SHEETS 50 TO 65
Benchmark: SS-8
60D Nail
Elev. - 97.30'
Benchmark: SS-7
Cotton Spindle
Elev. - 98.46'
Benchmark: SS-6
X in Concrete
Elev. - 100.41'
SHEETS 67 TO 74
Benchmark: SS-1
Cotton Spindle
Elev. - 99.44'
Benchmark: SS-3
Cotton Spindle
Elev. - 101.34'
SHEETS 75 TO 84
Benchmark: RR-2
Cotton Spindle
Elev. - 102.28'
SHEETS 85 TO 87
Benchmark: SS-5
Cotton Spindle
Elev. - 102.61'
SHEET 88 TO 92

VELA
AHLDAG STREET
WALNUT ST
NORTH ABELL
E. BELLE AVENUE
JUNIOR COLLEGE BLVD.
E. ALABAMA (CR 166)
NEWTON STREET
GRAYSON
FRANKIE AVE.
TENNIE AVENUE
HORTON FOOTE
BARFIELD ROAD
UNIVERSITY AVENUE
PIONEER AVENUE
HELMS AVENUE
FM 1301 (BOLING HIGHWAY)
N. ALABAMA ROAD
RED RIVER AVENUE
CENTENNIAL
N. FULTON STREET
OLD BOLING ROAD
MILBURN STREET
LAZY
LAZY LANE
BOB-O-LINK LANE
MOCKINGBIRD LANE
N. RICHMOND ROAD
Davidson
N. RUSK STREET
THIRD STREET
PARK LANE
MERRY LANE
ORIOLE LANE
N. ALABAMA ROAD

N

NOT TO SCALE

STATE OF TEXAS
CHAD EMMEL
103495
PROFESSIONAL LICENSED ENGINEER
5/13/22

CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

PROJECT OVERALL LAYOUT

BEFCO ENGINEERING, INC. (F-2011)
P.O. Box 615 La Grange, Texas 78945
(979) 968-6474

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			3
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\COVERSHEET AND NOTES

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6001	101	SY	REMOVING CONC (PAV)
0104 6015	65	SY	REMOVING CONC (SIDEWALKS) - See Note 1
0104 6017	495	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	307	LF	REMOVING CONC (CURB AND GUTTER)
0105 6011	190	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0160 6005	30	CY	FURNISH AND REPLACING TOPSOIL - See Note 2
0162 6002	3,800	SY	BLOCK SODDING - See Note 3
0168 6001	60	MG	VEGETATIVE WATERING
0351 6002	219.9	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0360 6016	33	SY	CONC PVMT (JOINTED - CPCD) (6")
0464 6001	12	LF	RC PIPE (CL III)(12 IN)
0506 6038	65	LF	TEMP SEDMT CONT FENCE (INSTALL)
0506 6039	65	LF	TEMP SEDMT CONT FENCE (REMOVE)
0506 6043	430	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	430	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0529 6007	11	LF	CONC CURB & GUTTER (TY I)
0529 6008	104	LF	CONC CURB & GUTTER (TY II)
0530 6004	793	SY	DRIVEWAYS (CONC)
0531 6002	3,616	SY	CONC SIDEWALKS (5") - See Note 4
0531 6018	54.7	SY	CURB RAMPS (TY 1)
0531 6019	45.0	SY	CURB RAMPS (TY 2)
0531 6022	69.4	SY	CURB RAMPS (TY 5)
0531 6024	30.0	SY	CURB RAMPS (TY 7)
0531 6027	29.0	SY	CURB RAMPS (TY 10)
0560 6007	7	EA	MAILBOX INSTALL-S (WC-POST) TY 3
0644 6071	11	EA	RELOCATE SM RD SN SUP&AM TY TWT
0668 6074	673	LF	PREFAB PAV MRK TY C (W) (12") (SLD)
0677 6005	70	LF	ELIM EXT PAV MRK & MRKS (12")
0677 6006	74	LF	ELIM EXT PAV MRK & MRKS (18")
6185 6002	5	DAY	TMA (STATIONARY)

Notes:

1. Quantity shown for removing concrete sidewalk is for informational purposes only. This work is considered subsidiary to the project. Payment for removal shall be included in Item 0531 6002 - CONC SIDEWALKS (5"). No separate payment will be made.

2. Quantity shown for topsoil is an estimate. Areas of placement and actual quantities will be dictated by Area Engineer.

3. Quantity shown for block sodding is an estimate. Areas of placement and actual quantities will be dictated by Area Engineer.

4. Item No. 0531 6002 - CONC SIDEWALKS (5) includes the following items:
   - Adjustments to existing stormwater junction box as described on Sheet 29;
   - Elevation adjustment to existing water valve boxes (8 locations);
   - Elevation adjustment to existing sanitary sewer manhole frame and cover (Sheet 90);
   - Proposed plated sidewalk drains (7 locations; ±148 SF of plate) per detail on Sheet 94;
   - Sidewalk concrete toe downs and curb wall (6 locations; approx. 3.5 CY of concrete) per detail on Sheet 93.

   No separate payment will be made for these items.

STATE OF TEXAS
CHAD EMMEL
103495
PROFESSIONAL LICENSED ENGINEER
6/29/22

CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

QUANTITY SUMMARY

BEFCO ENGINEERING, INC. (F-2011)
P.O. Box 615 La Grange, Texas 78945
(979) 968-6474

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			4
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\COVERSHEET AND NOTES

GENERAL:

Contractor questions on this project are to be addressed to the following individual(s):

Ryan Simper Ryan.Simper@txdot.gov
Jeffrey Kalina Jeffrey.Kalina@txdot.gov

Contractor questions will be accepted through email, phone, and in person by the above individuals.

All contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to TxDOT's Public FTP at the following Address:
https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/

All questions submitted that generate a response will be posted through this site. The site is organized by District, Project Type (Construction or Maintenance), Letting Date, CCSJ/Project Name.

Do not work on the roadway before sunrise or after sunset unless otherwise approved.

Leave all traffic lanes open to traffic at night, weekends and holidays unless otherwise approved.

Furnish a certified copy of the legal gross weight of each vehicle hauling materials by weight and certified measurements for all trucks hauling material by volume.

The contractor's attention is directed to the fact that there are certain trees within the right-of-way that are designated for preservation. Protect these trees from abuse, marring or damage during construction operations. Continual parking and/or servicing of equipment under the branches of trees designated for preservation will not be permitted.

Leave all intersecting roadways, side streets, and entrances open during construction unless otherwise approved. Should there be a request to restrict access for such reasons as parallel culvert replacement, reconstruction, etc., approval will be required 48 hours in advance and the contractor will be required to coordinate satisfactorily with any affected property owners.

Unless otherwise approved, maintain a minimum safety clearance from the edge of the travelway for material stockpiled in proximity of traffic lanes based on the current average traffic count of the particular highway as follows:

0 - 1500 = 16 feet
Over 1500 = 30 feet

In the event the above requirements cannot be met, make arrangements to stockpile material off the right of way.

Project Number: **Sheet: 5**

County: WHARTON **Control: 0913-09-116**

Highway: CS

The Department will provide the cylinder testing machine for this project. Deliver the test specimens to the engineer's curing facilities as directed.

Do not clean out concrete trucks within the right of way.

The contractor shall field verify all existing pipe, box culvert, and safety end treatments sizes prior to fabrication of related items. All work involved with field verifying will not be measured or paid for directly but will be subsidiary to pertinent items.

ITEM 7: LEGAL RELATIONS AND RESPONSIBILITIES

The Department has determined that a USACE Nationwide or Individual Permit is not necessary for the project since all work shall be conducted outside the USACE jurisdictional areas. Any impacts to these jurisdictional areas by the Contractor without a USACE permit will be the responsibility of the Contractor. If the Contractor deems it necessary to impact the USACE jurisdictional areas, then it becomes the Contractor's entire responsibility to consult with the USACE pertaining to the need for a Nationwide or Individual Permit. TXDOT will then hold the Contractor responsible for following all conditions of the approved permit.

No significant traffic generator events identified.

If the contractor proposes work beyond the TxDOT obtained permit limitations, the contractor is responsible for additional costs, delays, and obtaining new or revised permits prior to construction.

All temporary construction access work and materials will not be measured or paid for directly but will be subsidiary to pertinent items. Prior to the scheduling of a Pre-Construction Meeting, submit a Temporary Construction Access Plan to the Area Engineer and to District Environmental Staff for their approval. The Construction Plan should contain a description of the equipment, such as barges, structures, etc., which may occupy waters of the US including jurisdictional wetlands, and a detailed work schedule. No work of any kind will be allowed until the pre-construction meeting has been held.

ITEM 8: PROSECUTION AND PROGRESS

Provide progress schedule as a Bar Chart.

ITEM 162: SODDING FOR EROSION CONTROL

Use block sodding in those areas behind the curb and gutter section at locations shown on the plans and as determined.

Use St. Augustine grass for this item.
Peg all block sodding on slopes steeper than 3:1.

ITEM 351: FLEXIBLE PAVEMENT STRUCTURE REPAIR

The Engineer will select the locations. The repairs will consist of the removal of existing subgrade, base and surfacing and replacement with asphaltic concrete pavement conforming to Item 3076, Dense Graded Hot-Mix Asphalt (Exempt), Type B, PG 64-22. All work and materials required to bring the repaired pavement section to its desired depth will be considered subsidiary to the item “Flexible Pavement Structure Repair”.

ITEM 360: CONCRETE PAVEMENT

Match existing joints where pavement adjoins the existing concrete highway.

Place 1/2 inch expansion joint material where concrete pavement is placed against other concrete such as structures, riprap, and/or curb and gutter except as otherwise shown on the plans or as directed. No direct payment will be made for this work or materials but will be considered subsidiary to the various bid items involved.

ITEMS 464: REINFORCED CONCRETE PIPE

If required, concrete collars, as approved, will be used at pipe joints. Collars will be reinforced as directed. No direct compensation will be made for concrete collars and they will be subsidiary to the pertinent items.

ITEM 502: BARRICADES, SIGNS, AND TRAFFIC HANDLING

The Contractor Force Account “Safety Contingency” that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor’s Responsible Person based on weekly or more frequent traffic management reviews on the project. The

Project Number: **Sheet: 6**

County: WHARTON **Control: 0913-09-116**

Highway: CS

Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

TCP(1-1)-18 and TCP(1-2)-18 should be used on local streets and the TCP(2-1)-18 and TCP(2-4)-18 should be used on state highways.

Use WZ(RS)-22 in conjunction with TCP (2-4).

Provide suitable warning lights mounted high enough to be visible from all directions on all construction equipment, including pilot vehicles, and operate warning lights when the equipment is within the right of way. Equip other equipment such as trucks, trailers, autos, etc., with emergency flashers and use emergency flashers while within the work area.

Place plastic drums along the gutter line at curb ramp locations during non-working hours and barricades with "Sidewalk Closed" signs while ramps and/or sidewalks are under construction.

Limit the maximum length of any individual work area to two(2) blocks at a time or as directed by the Engineer.

ITEM 506: TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

1. See SW3P plan sheet for total disturbed acreage.

2. The disturbed area in this project, all project locations in the contract, and contractor project specific locations (PSLs), within one (1) mile of the project limits, for the contract will further establish the authorization requirements for storm water discharges.

3. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans.

4. Obtain any required authorization from the TCEQ for any contractor PSLs for construction activities on or off right-of-way (ROW).

5. When the total disturbed area for all projects in the contract and PSLs within one (1) mile of the project limits exceeds five (5) acres, provide a copy of the contractor NOI.

6. Provide a signed sketch detailing the location of any contractor’s PSLs on ROW or within one (1) mile of the project.

ITEM 529: CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER

Taper the curb or curb and gutter from 5 3/4" to 0” in the last three feet when changing from a curb or curb and gutter section to an open section.

Reinforcement will be required for this item.

ITEM 530: INTERSECTIONS, DRIVEWAYS AND TURNOUTS

Notify property owners a minimum of 1 week in advance of beginning work on their driveway. Provide a list of each notification and contact prior to each closure. Only close driveways for reconstruction if duration and alternate access are approved. Install and maintain material across a work zone as temporary access. Temporary access must not have grade breaks that exceed 8%. This work is subsidiary.

ITEM 560: MAILBOX ASSEMBLIES

Furnish and place two OM-2Y Object Markers on mailbox supports, one in each direction. These will not be paid for directly but are subsidiary to this item.

Provide 12 inches of clearance from the pavement edge to the mailbox.

ITEM 644: SMALL ROADSIDE SIGN SUPPORTS AND ASSEMBLIES

Use Class B concrete for all small roadside sign assembly concrete footings.

The exact location of the foundations to be placed will be determined in the field by the Engineer.

ITEM 677: ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS

Remove existing stripe with the water blasting method unless otherwise approved.

ITEM 668: PREFABRICATED PAVEMENT MARKINGS

Pavement marking material may be placed on roadways at any time during the year, subject to temperature and moisture limitations specified.

Project Number: **Sheet: 7**

County: WHARTON **Control: 0913-09-116**

Highway: CS

ITEM 6185: TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)

Shadow vehicle(s) with TMA are set up for stationary operations. The contractor will be responsible for determining if operations will be ongoing at the same time to determine the total number of TMAs needed for the project.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0913-09-116 **DISTRICT** Yoakum **COUNTY** Wharton
HIGHWAY Various

						TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**0913-09-116**			
		PROJECT ID		**A00180843**			
		COUNTY		**Wharton**			
		HIGHWAY		**Various**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	104-6001	REMOVING CONC (PAV)	SY	101.000		101.000	
	104-6017	REMOVING CONC (DRIVEWAYS)	SY	495.000		495.000	
	104-6022	REMOVING CONC (CURB AND GUTTER)	LF	307.000		307.000	
	105-6011	REMOVING STAB BASE AND ASPH PAV (2"-6")	SY	190.000		190.000	
	160-6005	FURNISHING AND PLACING TOPSOIL	CY	30.000		30.000	
	162-6002	BLOCK SODDING	SY	3,800.000		3,800.000	
	168-6001	VEGETATIVE WATERING	MG	60.000		60.000	
	351-6002	FLEXIBLE PAVEMENT STRUCTURE REPAIR(6")	SY	219.900		219.900	
	360-6016	CONC PVMT (JOINTED - CPCD) (6")	SY	33.000		33.000	
	464-6001	RC PIPE (CL III)(12 IN)	LF	12.000		12.000	
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	8.000		8.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	65.000		65.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	65.000		65.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	430.000		430.000	
	506-6045	BIODEG EROSN CONT LOGS (INSTL) (6")	LF	430.000		430.000	
	529-6007	CONC CURB & GUTTER (TY I)	LF	11.000		11.000	
	529-6008	CONC CURB & GUTTER (TY II)	LF	104.000		104.000	
	530-6004	DRIVEWAYS (CONC)	SY	793.000		793.000	
	531-6002	CONC SIDEWALKS (5")	SY	3,616.000		3,616.000	
	531-6018	CURB RAMPS (TY 1)	SY	54.700		54.700	
	531-6019	CURB RAMPS (TY 2)	SY	45.000		45.000	
	531-6022	CURB RAMPS (TY 5)	SY	69.400		69.400	
	531-6024	CURB RAMPS (TY 7)	SY	30.000		30.000	
	531-6027	CURB RAMPS (TY 10)	SY	29.000		29.000	
	560-6007	MAILBOX INSTALL-S (WC-POST) TY 3	EA	7.000		7.000	
	644-6071	RELOCATE SM RD SN SUP&AM TY TWT	EA	11.000		11.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF	673.000		673.000	
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF	70.000		70.000	
	677-6006	ELIM EXT PAV MRK & MRKS (18")	LF	74.000		74.000	
	6185-6002	TMA (STATIONARY)	DAY	5.000		5.000	
	18	SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000		1.000	
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000		1.000	

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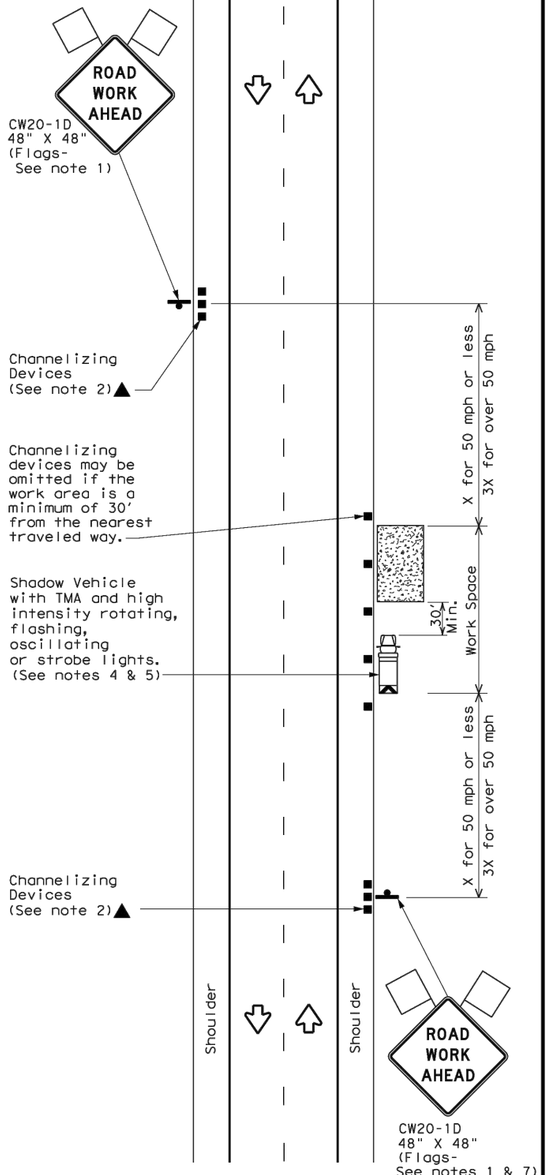
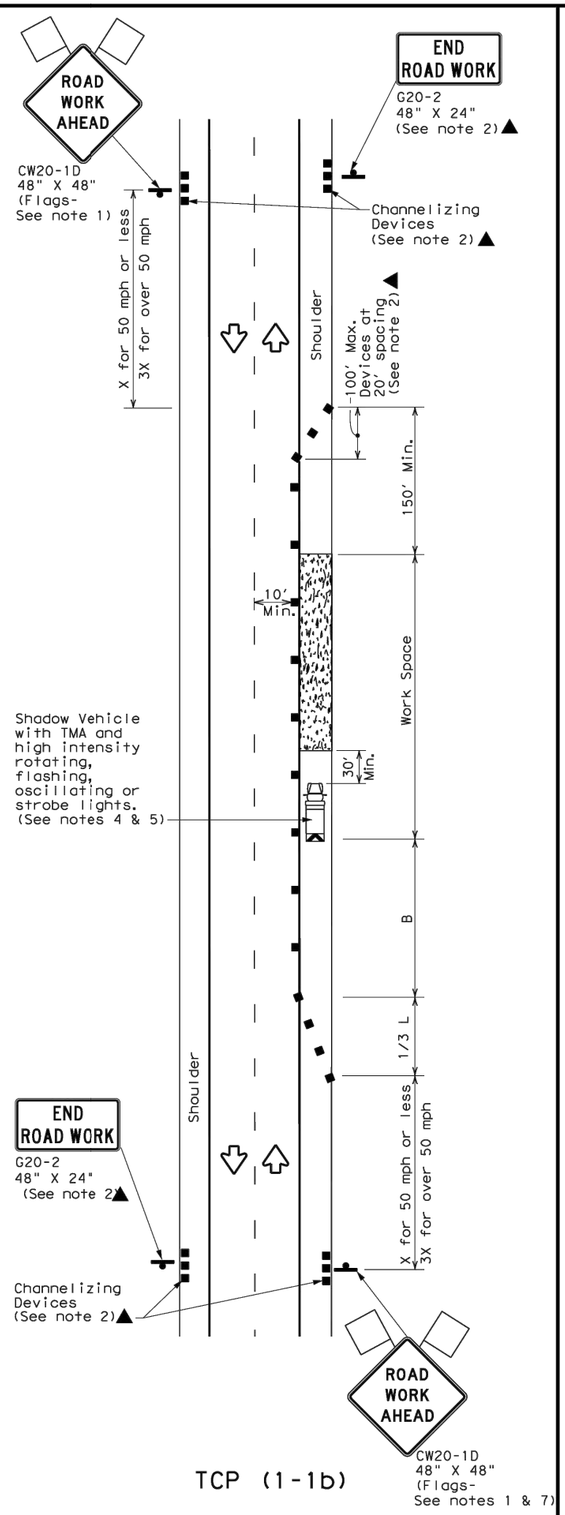
DATE:
FILE:



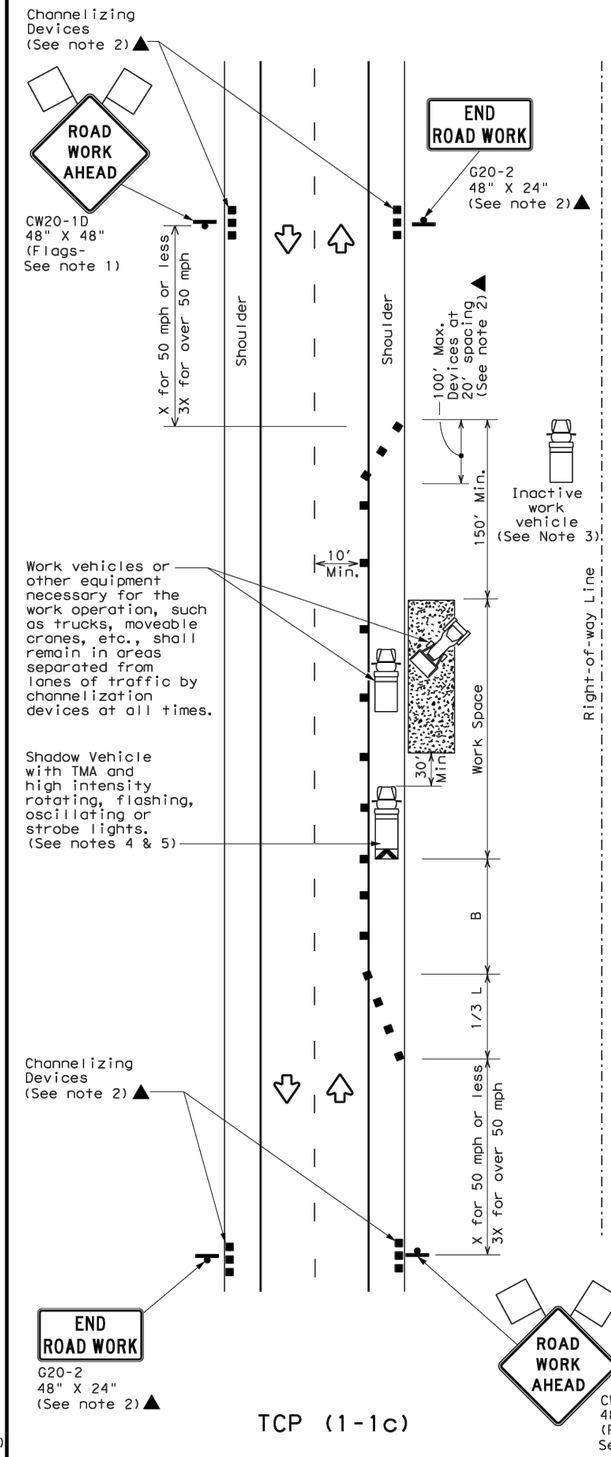
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		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 elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. 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 wider work spaces.
6. See TCP(5-1)for shoulder work on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

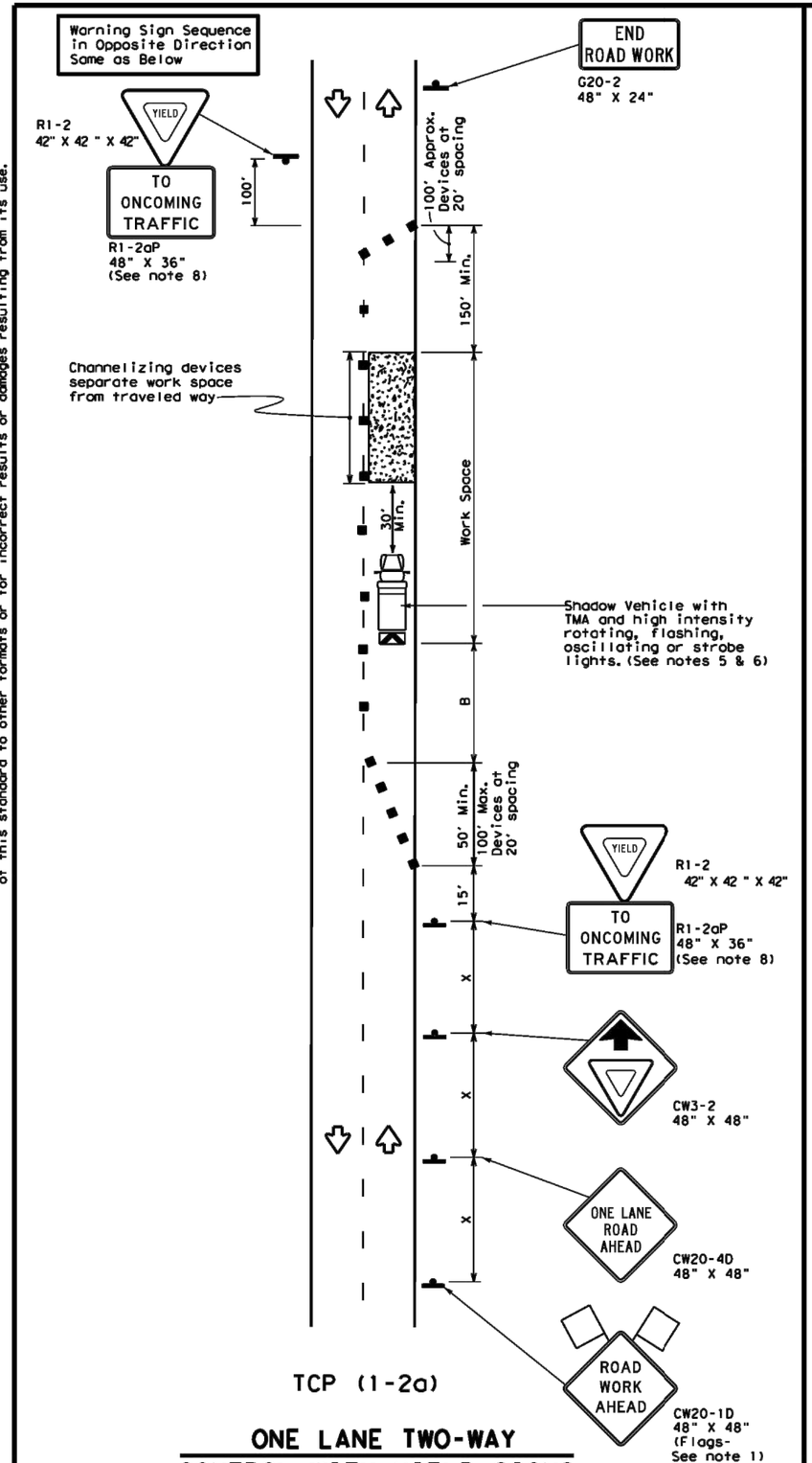
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(1-1)-18

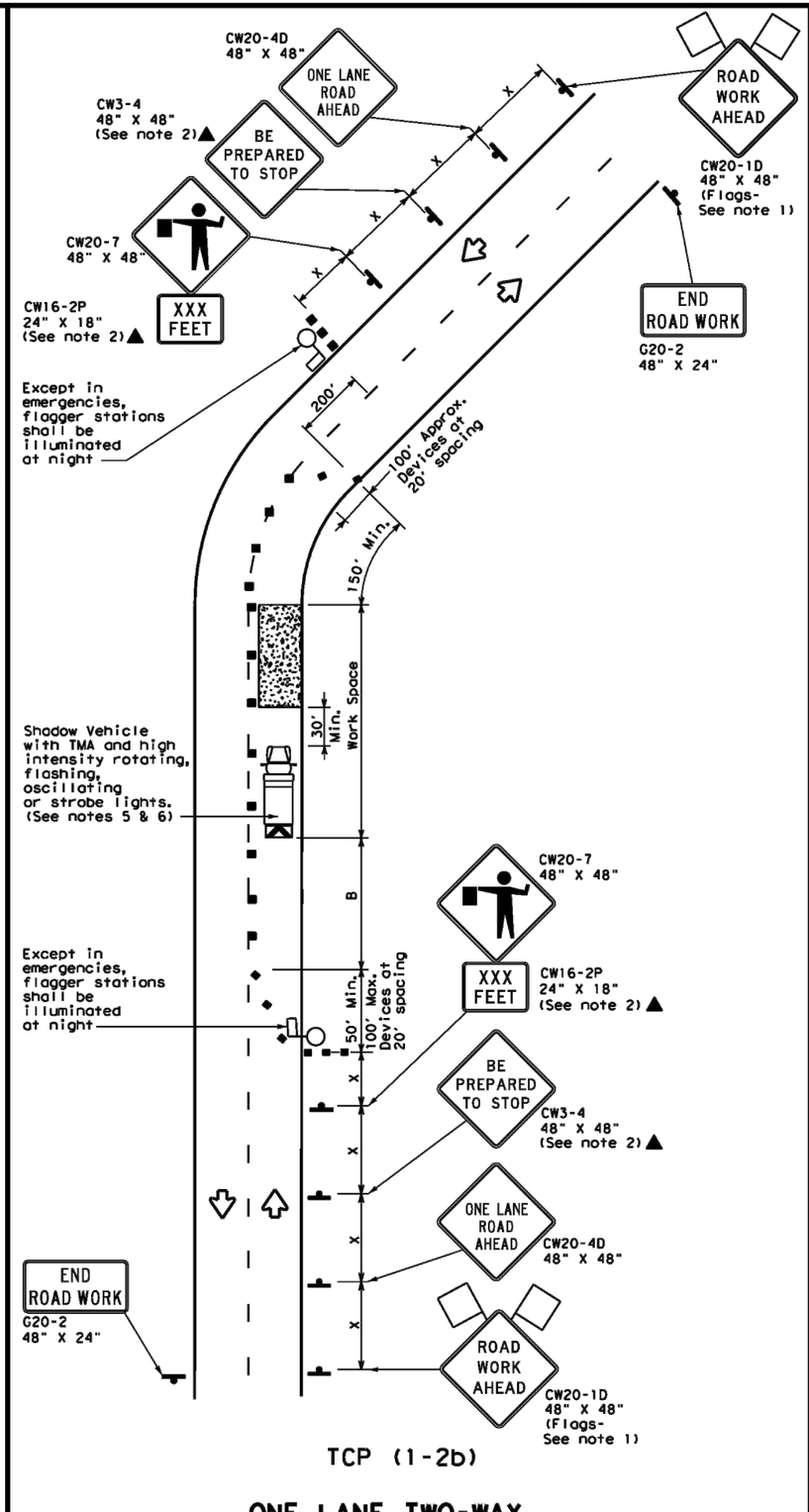
FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		10

DATE:
FILE:



TCP (1-2a)

ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See note 7)



TCP (1-2b)

ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		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"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* 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 elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. 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.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP(1-2)-18

FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-90 4-98 2-94 2-12 1-97 2-18	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		11

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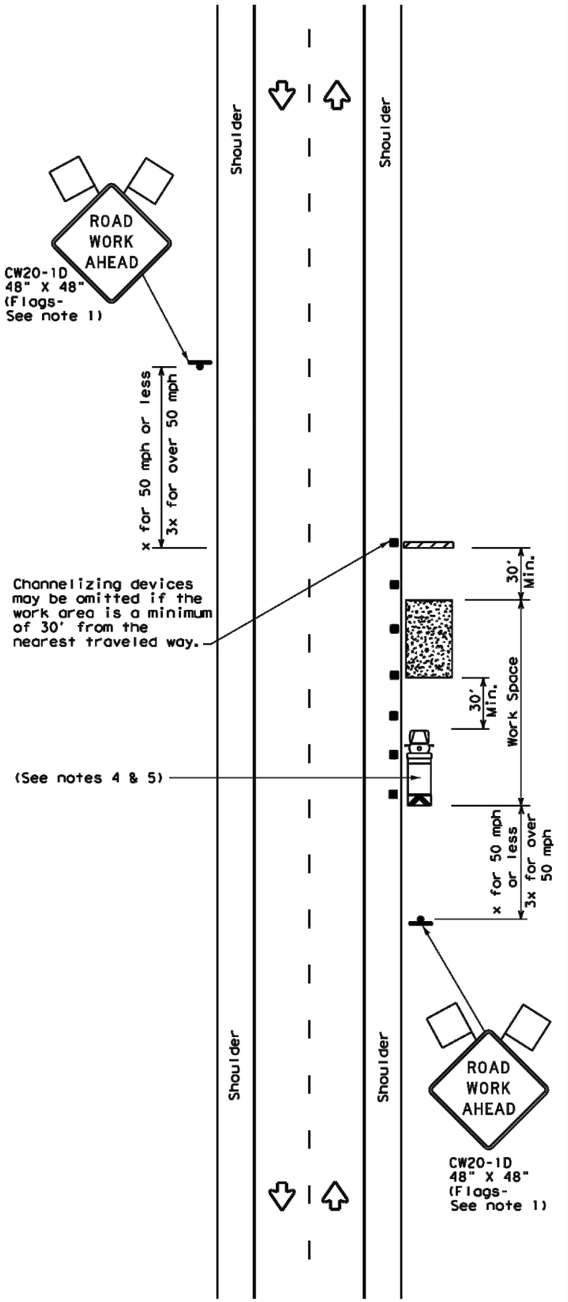
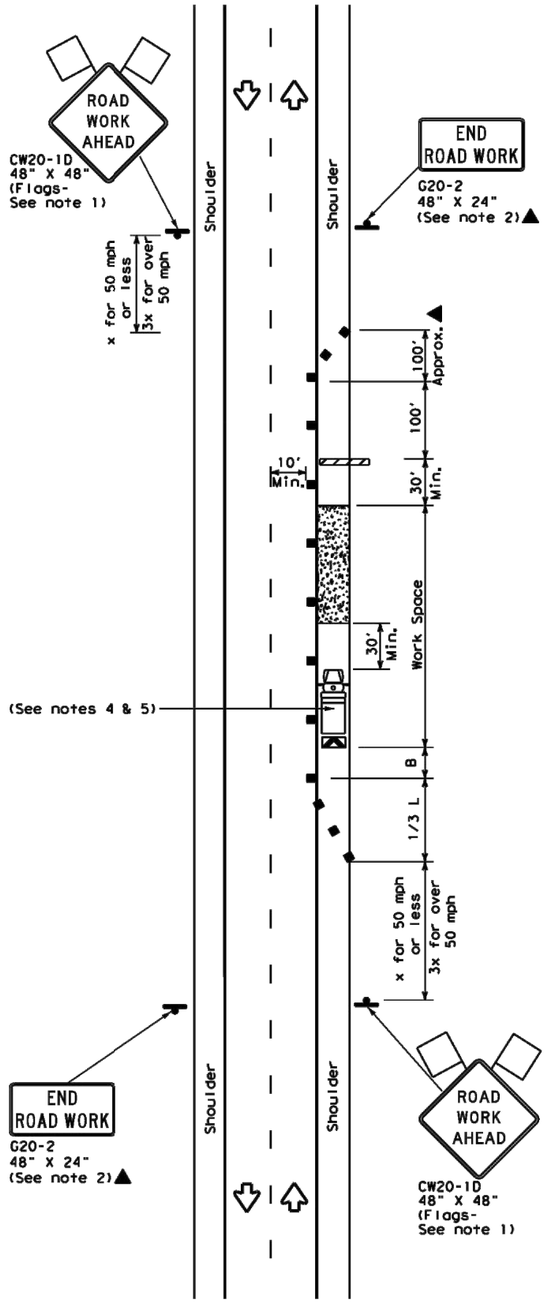


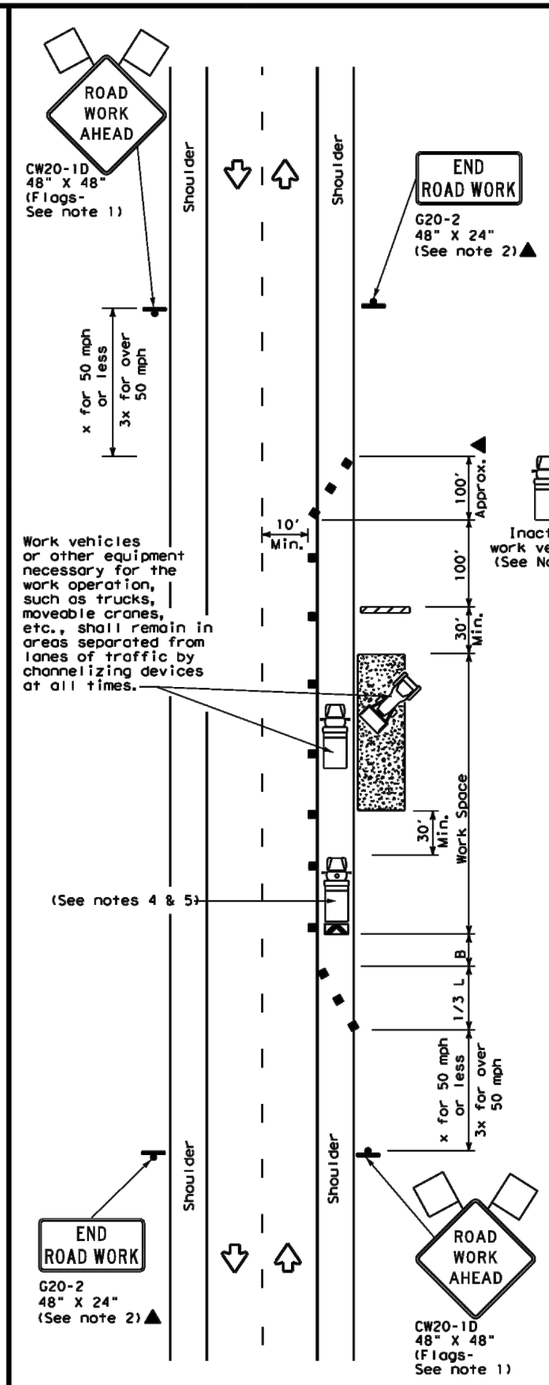
TCP (2-1a)

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			
	Type 3 Barricade	■■	Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		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 CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0913	09	116	CS
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	YKM	WHARTON		12
1-97 2-18				

DATE:
FILE:

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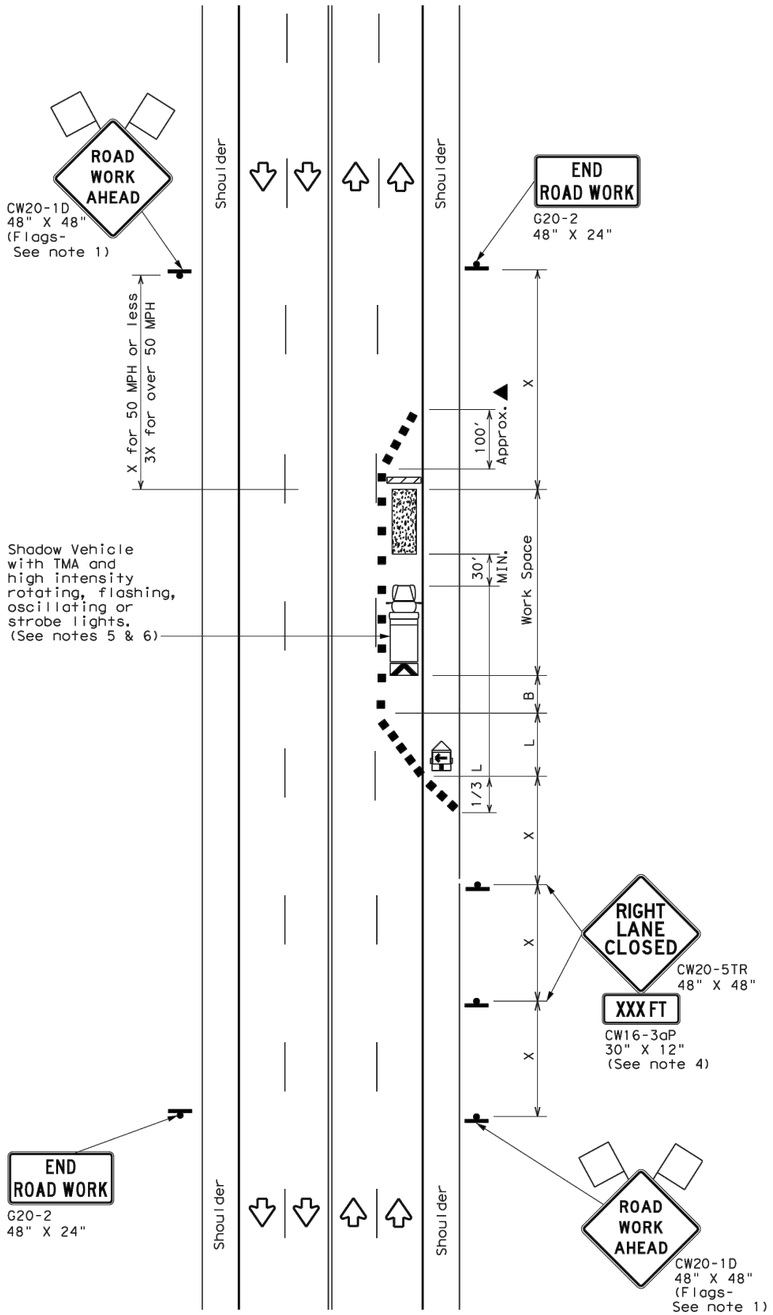
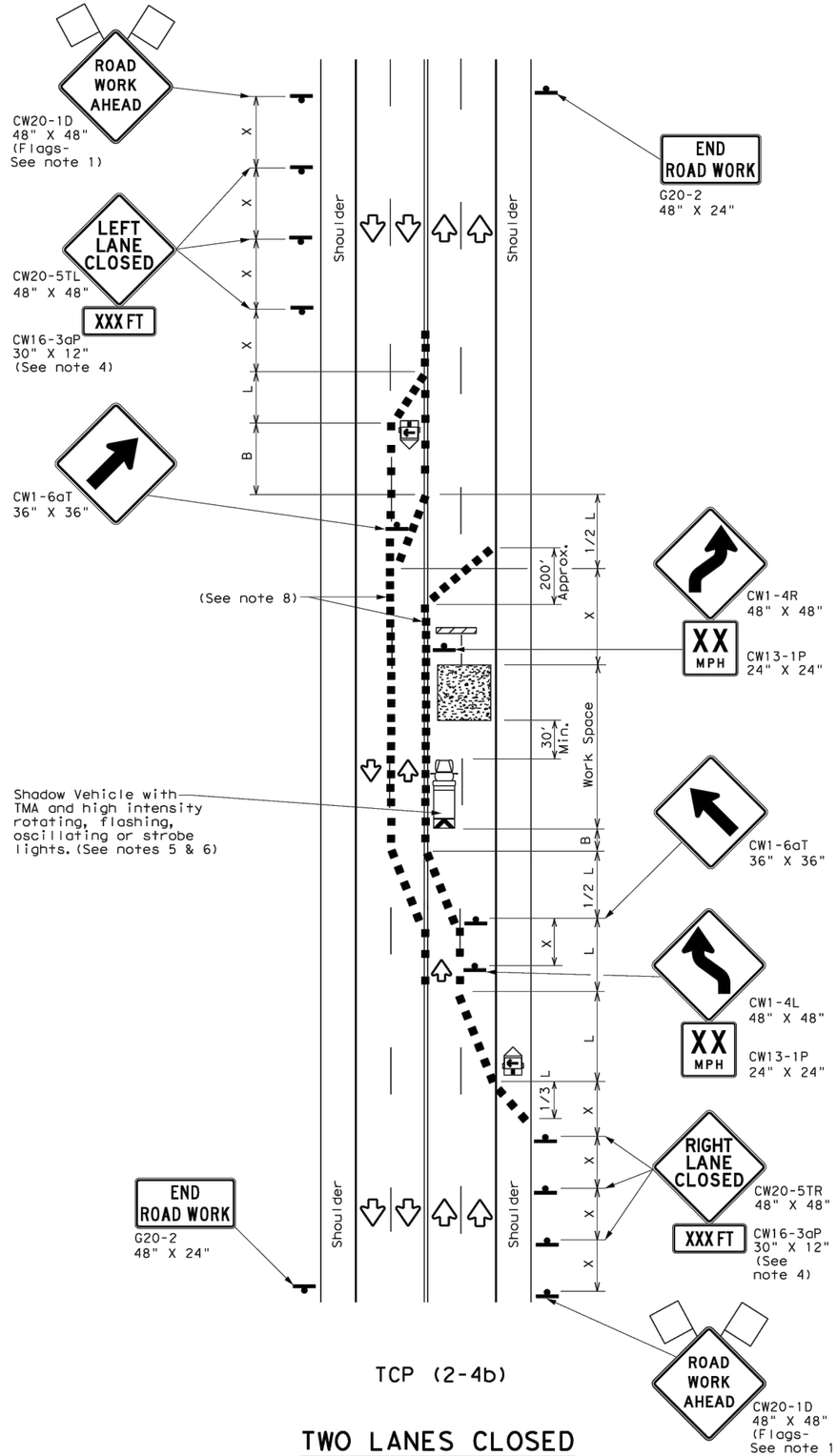


TCP (2-4a)

ONE LANE CLOSED



TCP (2-4b)

TWO LANES CLOSED

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		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 elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
4. For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
5. 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.
6. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-4a)

7. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED"signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.

TCP (2-4b)

8. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(2-4)-18

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REVISIONS 8-95 3-03	0913	09	116	CS
1-97 2-12	DIST	COUNTY		SHEET NO.
4-98 2-18	YKM	WHARTON		13

DATE:
FILE:

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

Texas Department of Transportation

Traffic Safety Division Standard

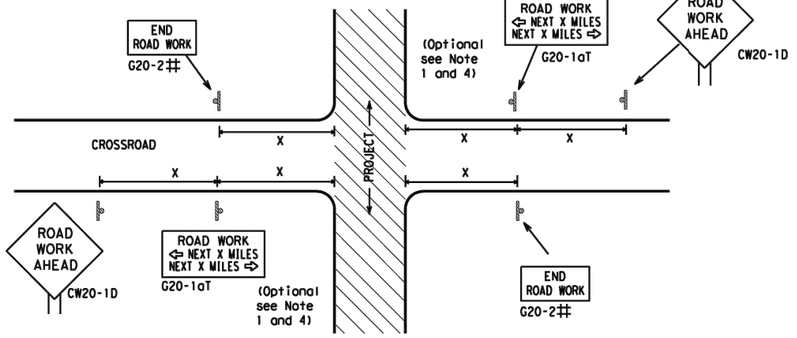
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		14

DATE:
FILE:

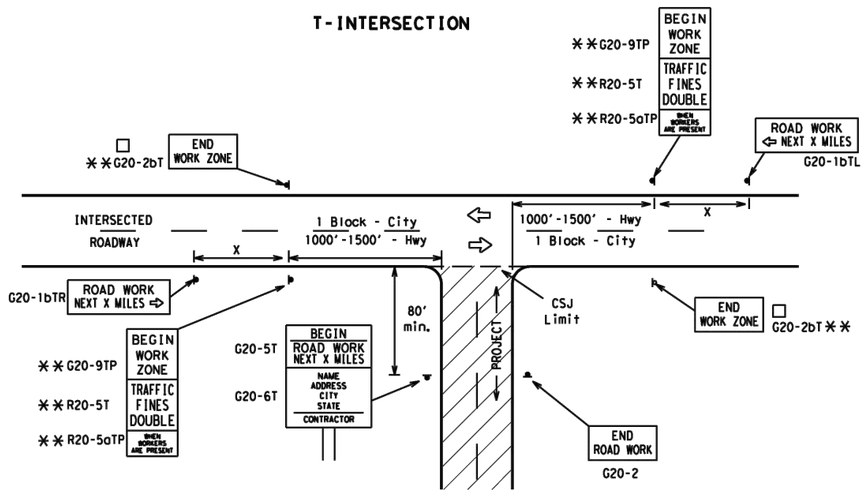
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D)sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK"(G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES"(G20-1aT)sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME"(G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4], CW21, CW22, CW23, CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign △ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
*	*[3]

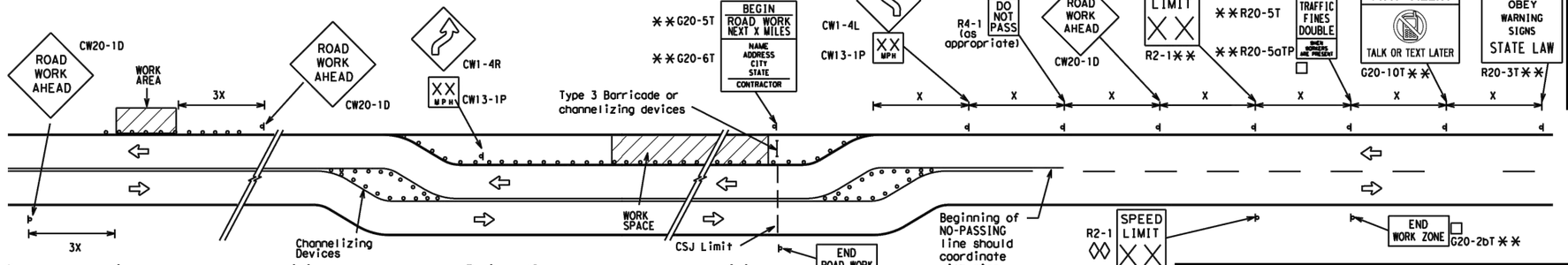
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

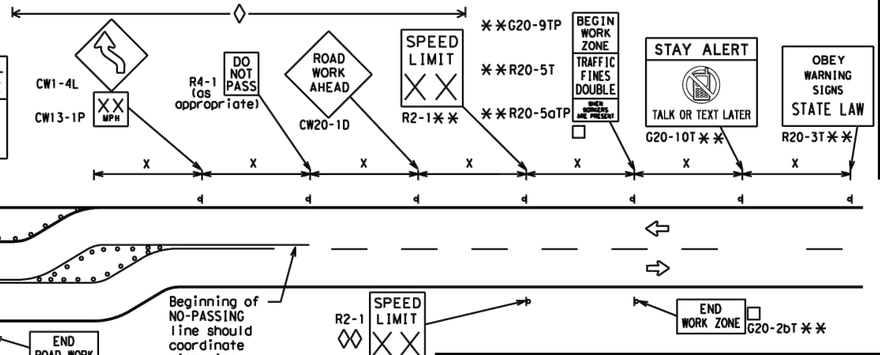
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

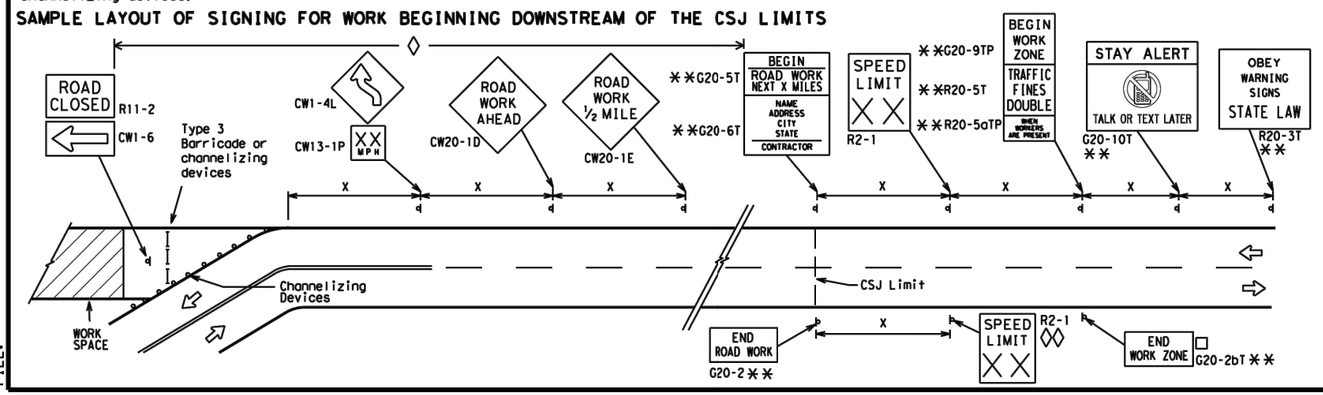


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◊ Area for placement of "ROAD WORK AHEAD" (CW20-1D)sign and other signs or devices as called for on the Traffic Control Plan.

◊◊ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND	
⊢⊣	Type 3 Barricade
○ ○ ○	Channelizing Devices
▬	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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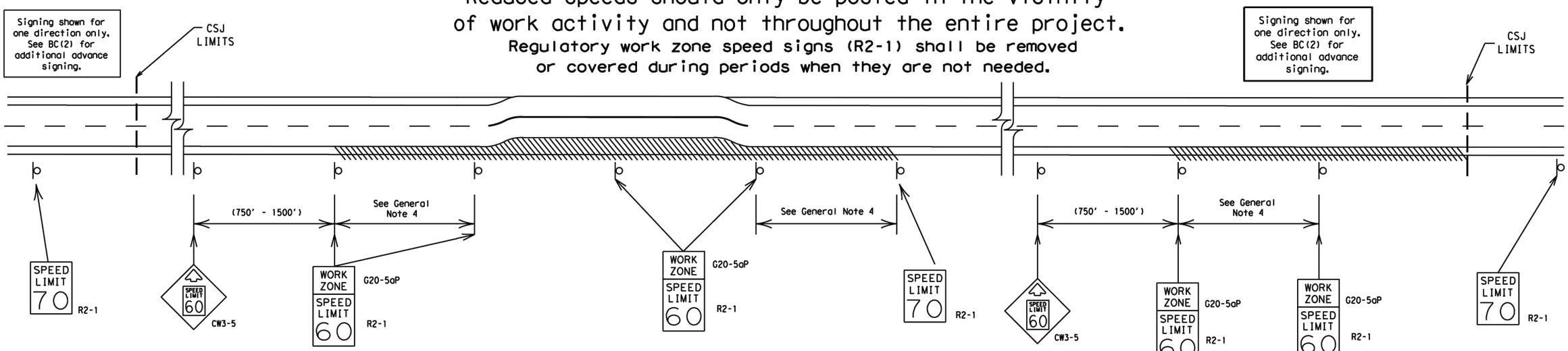
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	YKM	WHARTON		15

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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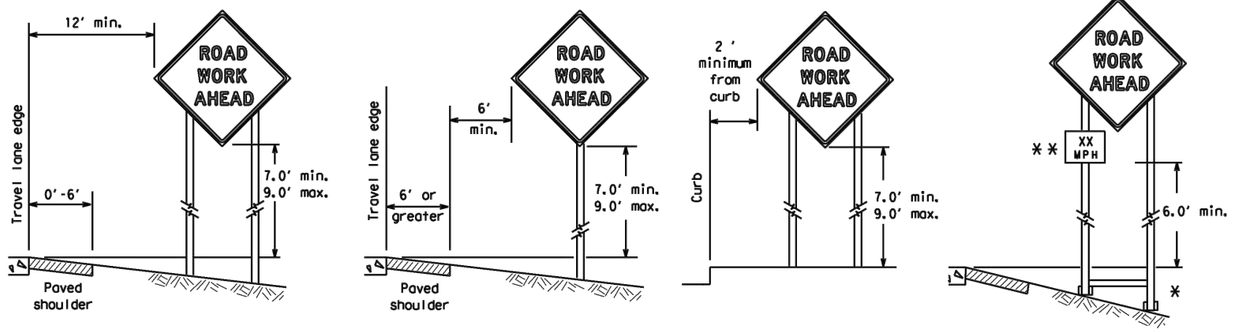
DATE:
FILE:

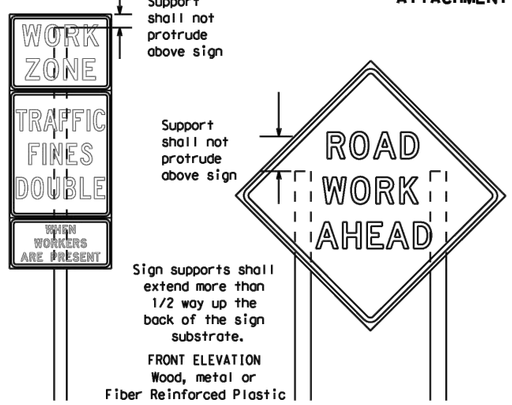
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



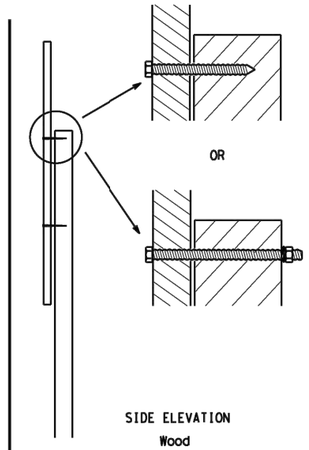
* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

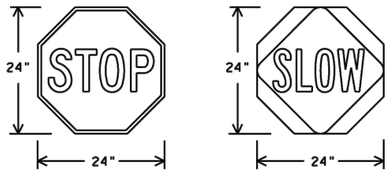


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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DATE:
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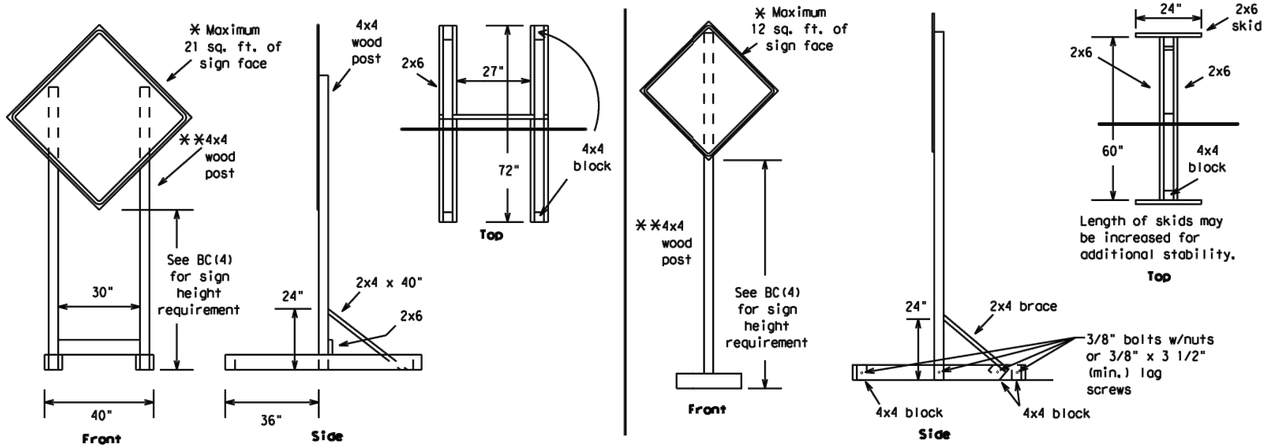
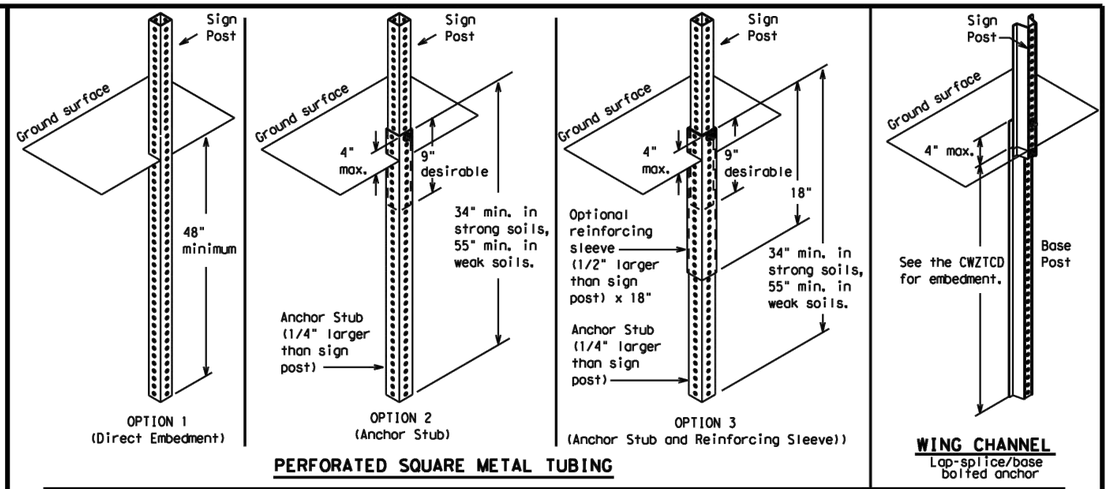


SKID MOUNTED WOOD SIGN SUPPORTS

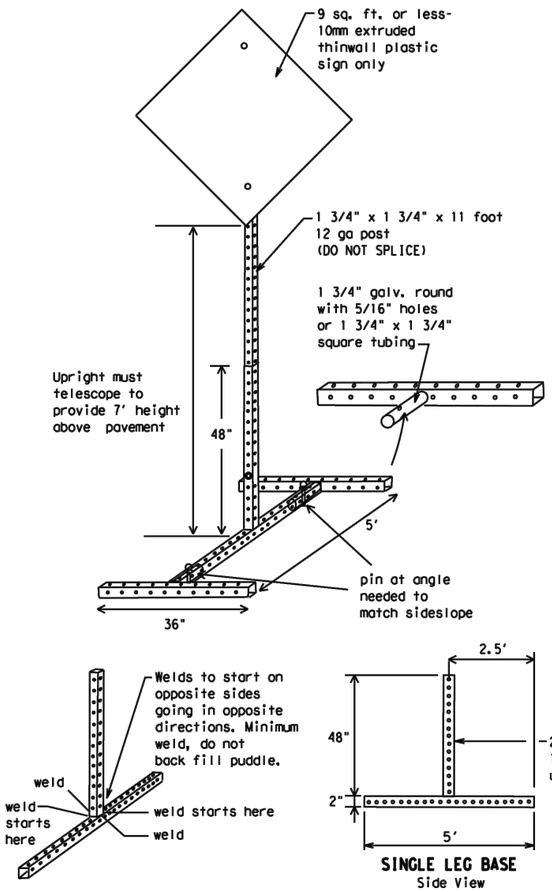
*** LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS**

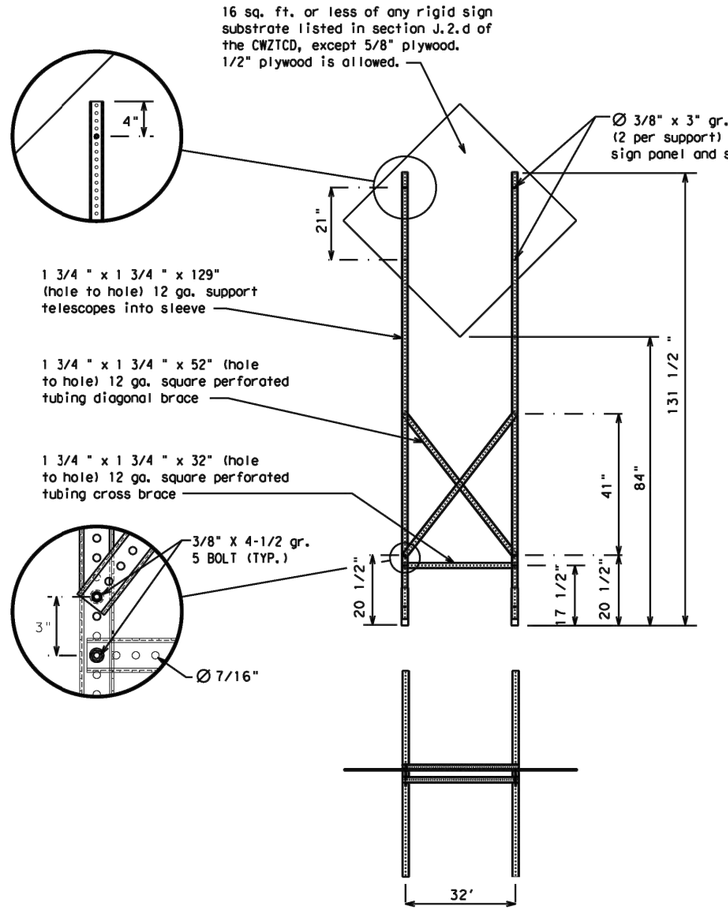


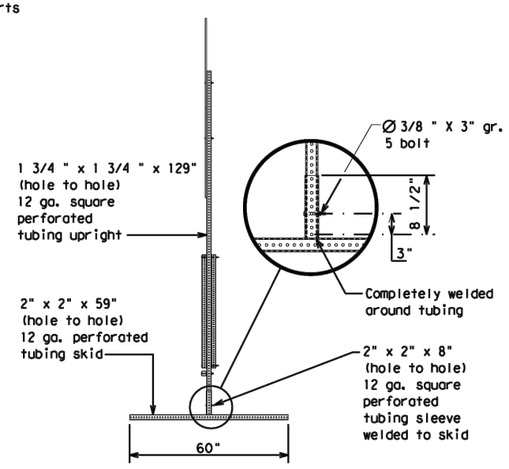
PERFORATED SQUARE METAL TUBING

GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

*** LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS**

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT
RIGHT X LANES CLOSED	RIGHT X LANES OPEN
CENTER LANE CLOSED	DAYTIME LANE CLOSURES
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE
EXIT CLOSED	RIGHT LN TO BE CLOSED
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI
XXXXXXXX BLVD CLOSED	

Other Condition List

ROADWORK XXX FT	ROAD REPAIRS XXXX FT
FLAGGER XXXX FT	LANE NARROWS XXXX FT
RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
DETOUR X MILE	ROUGH ROAD XXXX FT
ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
BUMP XXXX FT	US XXX EXIT X MILES
TRAFFIC SIGNAL XXXX FT	LANES SHIFT *

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT	FORM X LINES RIGHT
DETOUR NEXT X EXITS	USE XXXXX RD EXIT
USE EXIT XXX	USE EXIT I-XX NORTH
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N
TRUCKS USE US XXX N	WATCH FOR TRUCKS
WATCH FOR TRUCKS	EXPECT DELAYS
EXPECT DELAYS	PREPARE TO STOP
REDUCE SPEED XXX FT	END SHOULDER USE
USE OTHER ROUTES	WATCH FOR WORKERS
STAY IN LANE *	

Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXX TO XXXXXXX
US XXX TO FM XXXX

Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

** Advance Notice List

TUE-FRI XX AM- X PM
APR XX-XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM- XX AM

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol"(CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

Texas Department of Transportation

Traffic Safety Division Standard

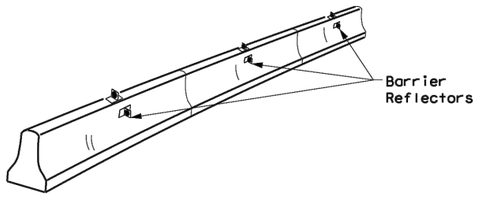
BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0913	09	116	CS
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	YKM	WHARTON		19

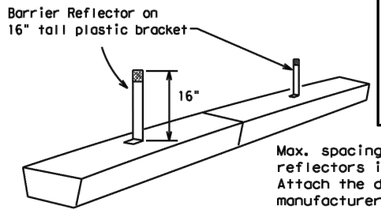
DATE:
FILE:

1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional)while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.

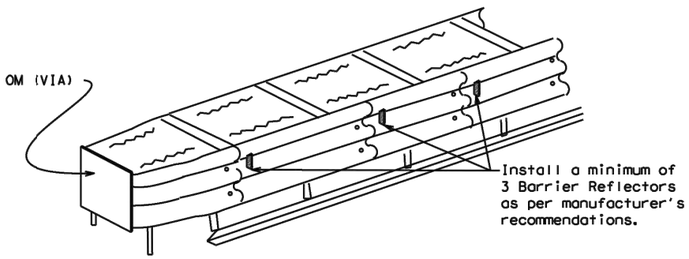


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

LOW PROFILE CONCRETE BARRIER (LPCB)

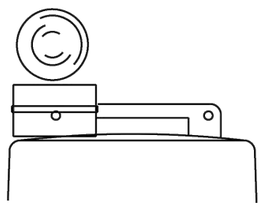


DELINEATION OF END TREATMENTS

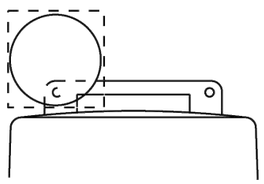
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

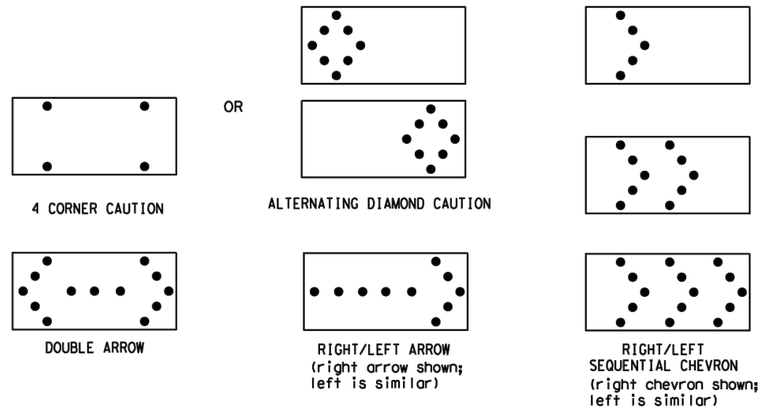
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
2. Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
14. Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0913	09	116	CS
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	YKM	WHARTON		20

101

DATE:
FILE:

GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

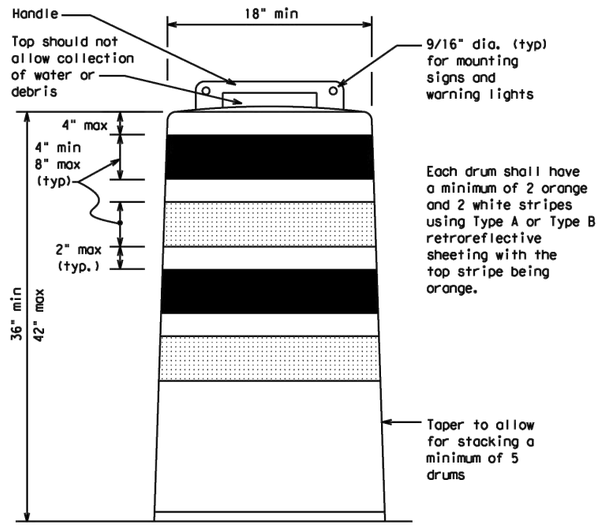
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

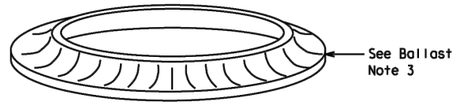
RETROREFLECTIVE SHEETING

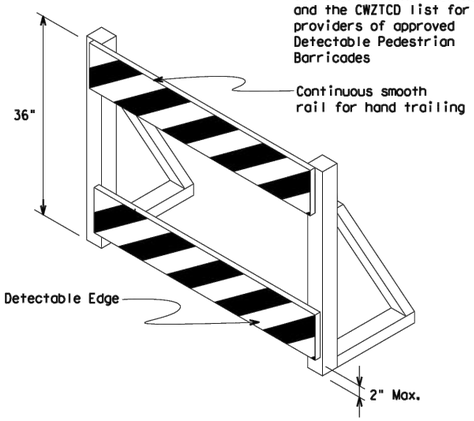
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.

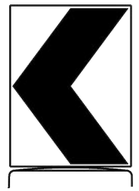




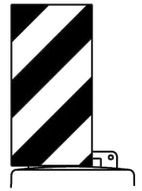


DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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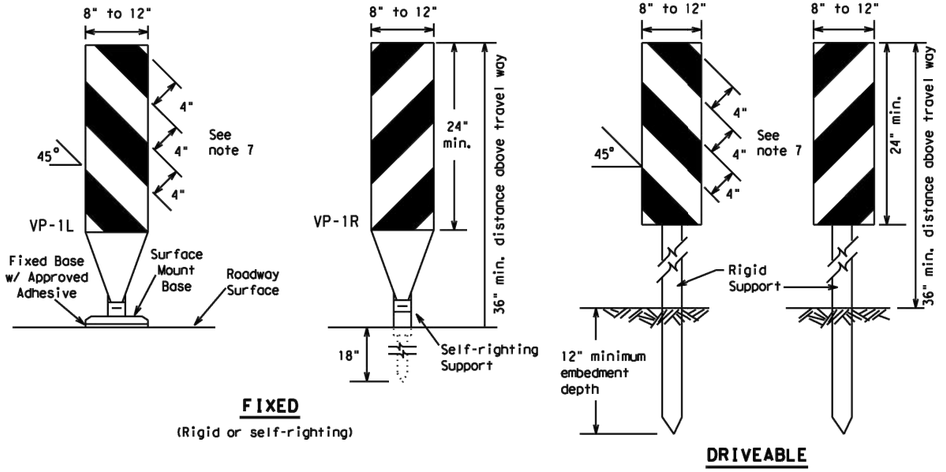
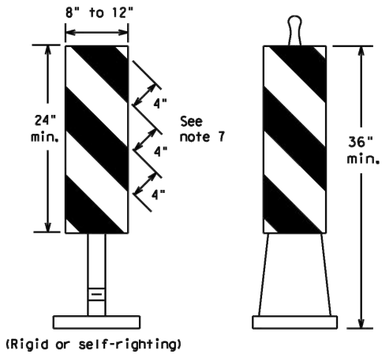


FIXED
(Rigid or self-righting)

DRIVEABLE

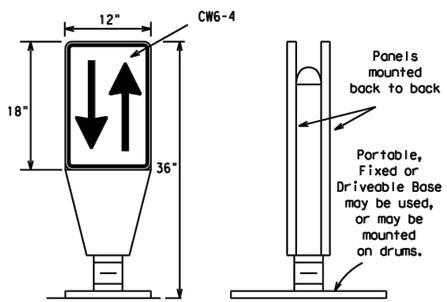


(Rigid or self-righting)

PORTABLE

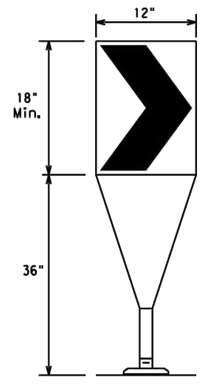
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



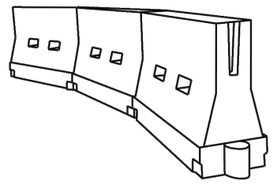
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

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
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L=WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

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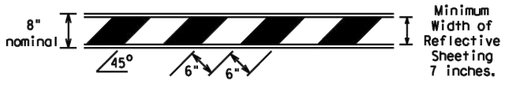
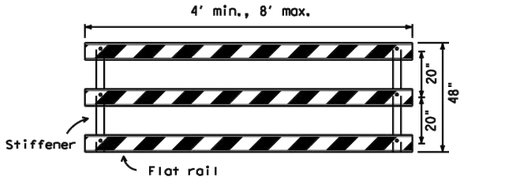
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



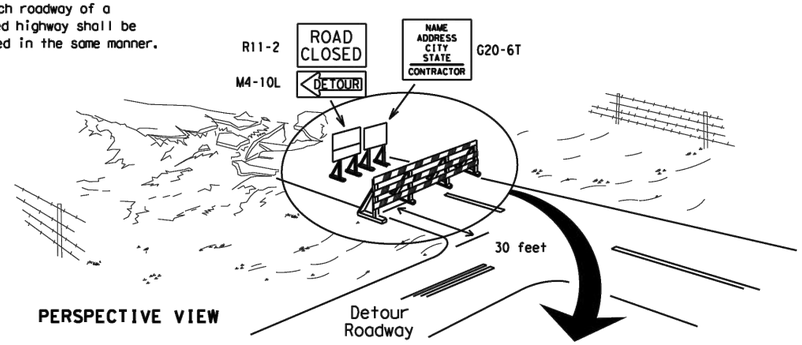
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

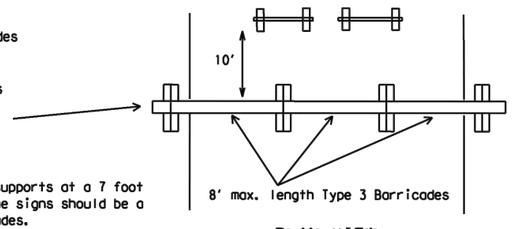
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

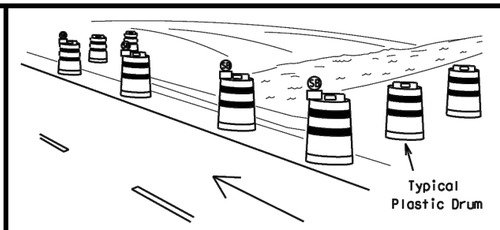
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

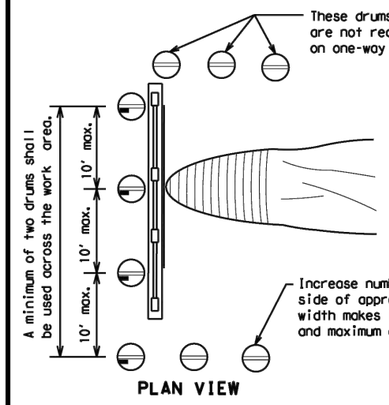
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

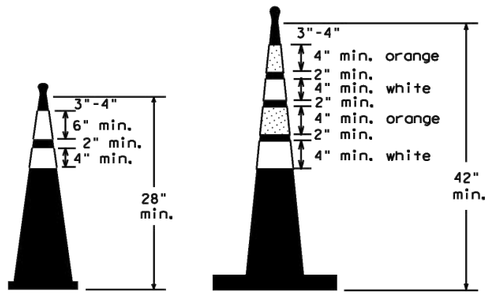
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.



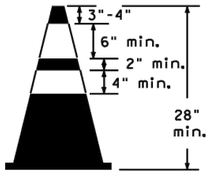
LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

PLAN VIEW

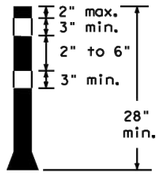
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

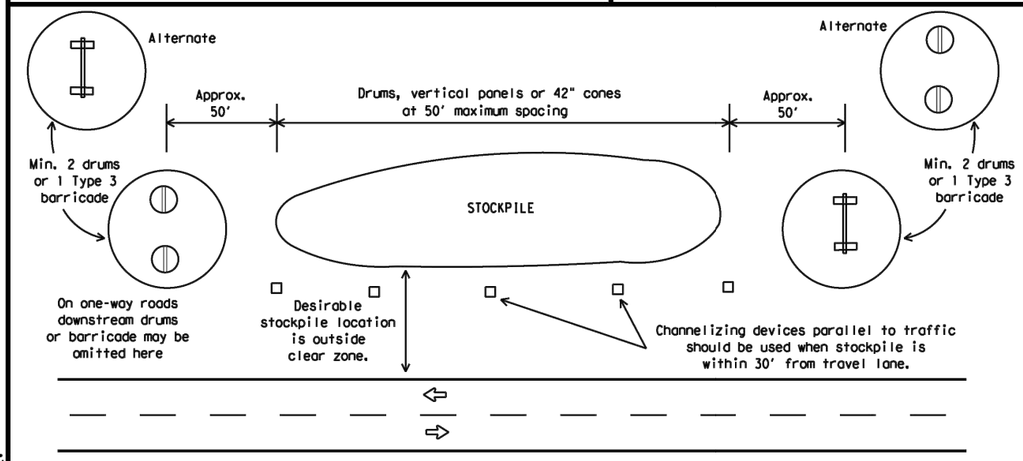


Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.

42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

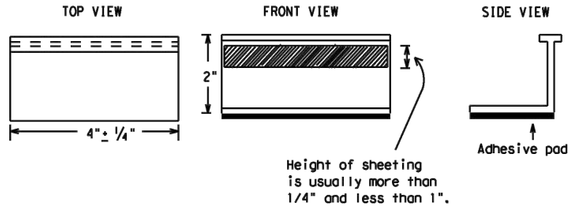
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
10. Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

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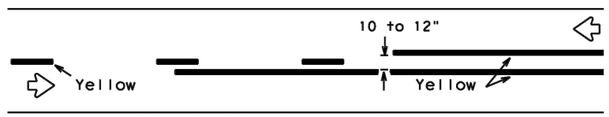
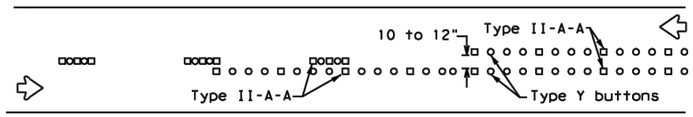
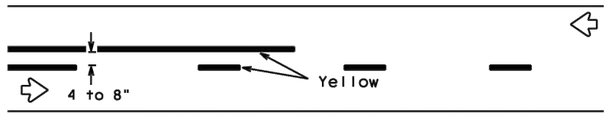
PAVEMENT MARKING PATTERNS



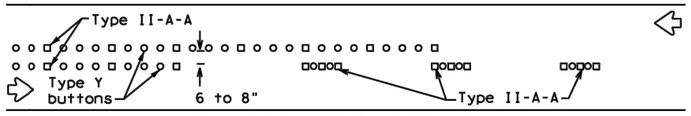
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



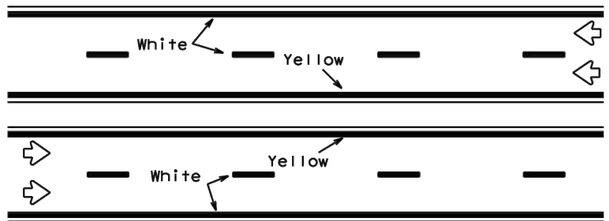
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



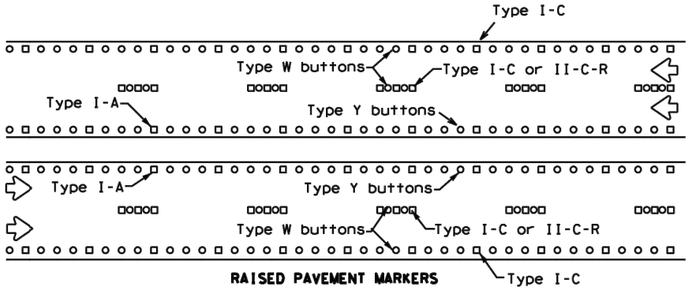
RAISED PAVEMENT MARKERS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



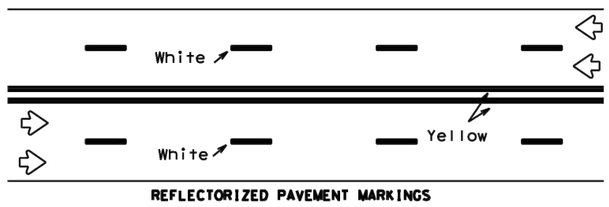
REFLECTORIZED PAVEMENT MARKINGS



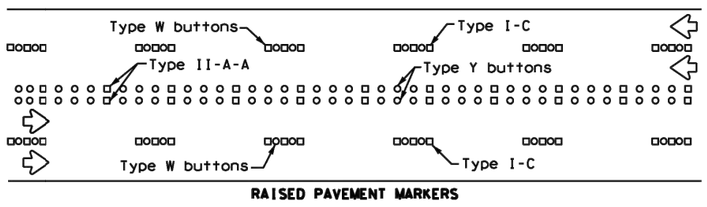
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



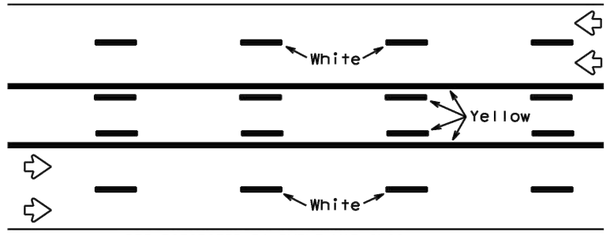
REFLECTORIZED PAVEMENT MARKINGS



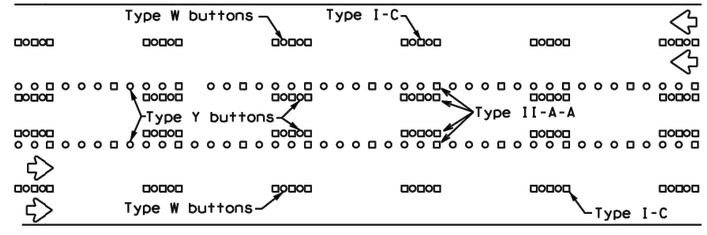
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

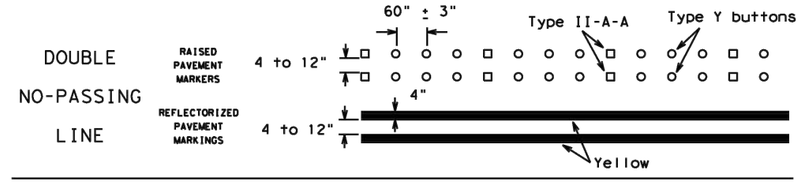
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

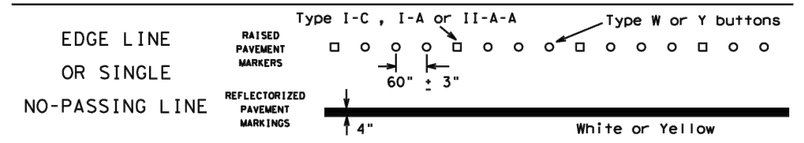
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

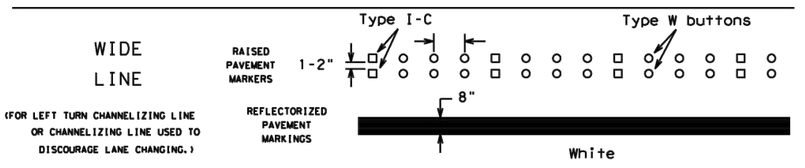


EDGE LINE OR SINGLE NO-PASSING LINE



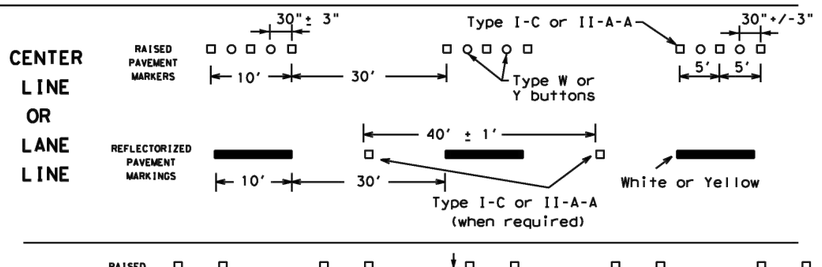
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

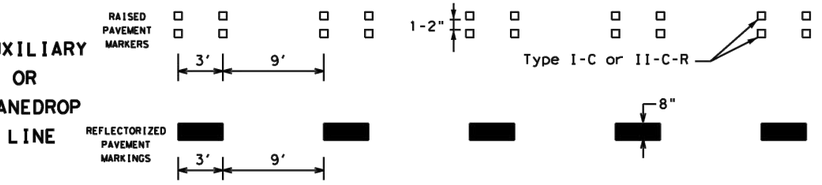


BROKEN LINES

CENTER LINE OR LANE LINE

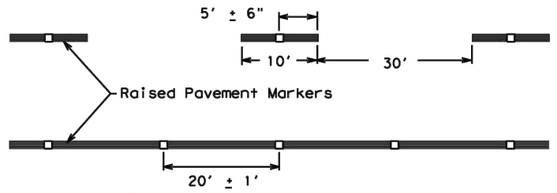


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



Centerline only - not to be used on edge lines

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

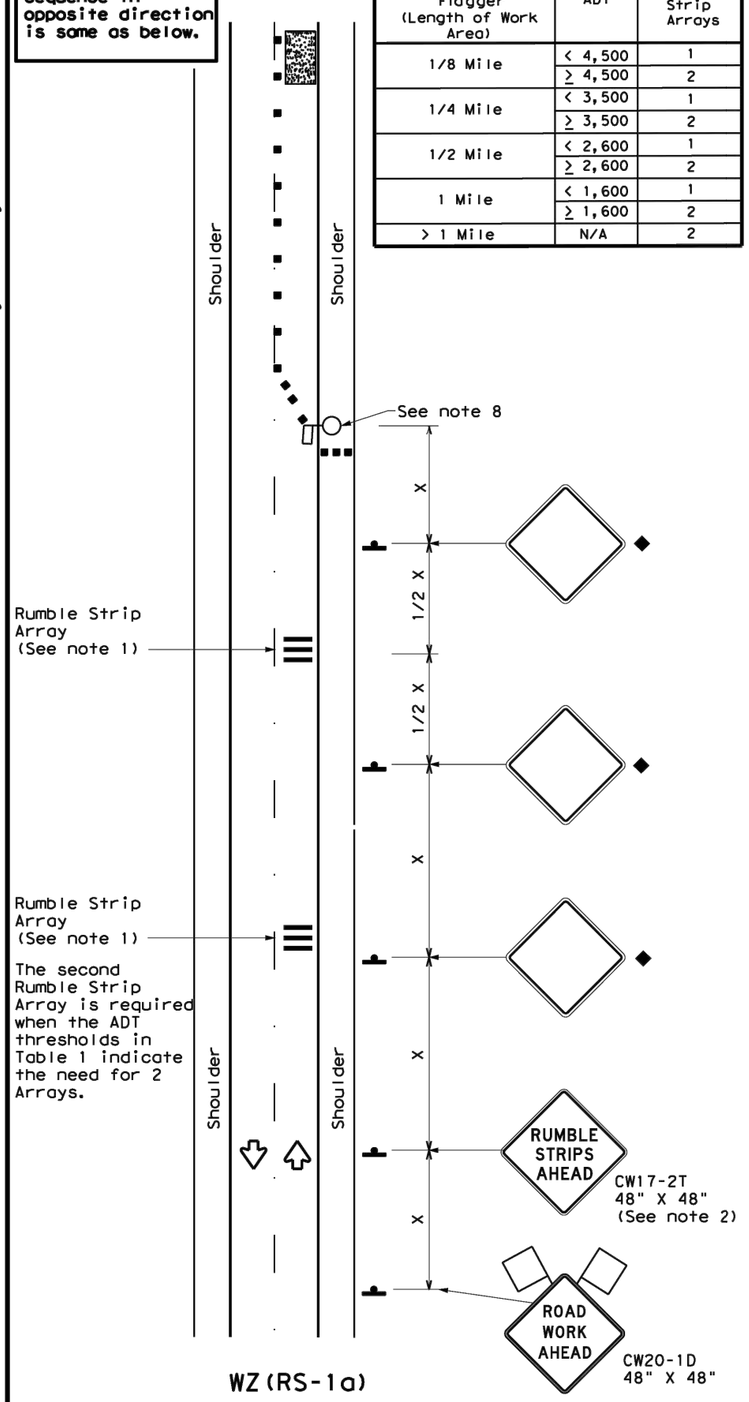
BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		25

DATE:
FILE:

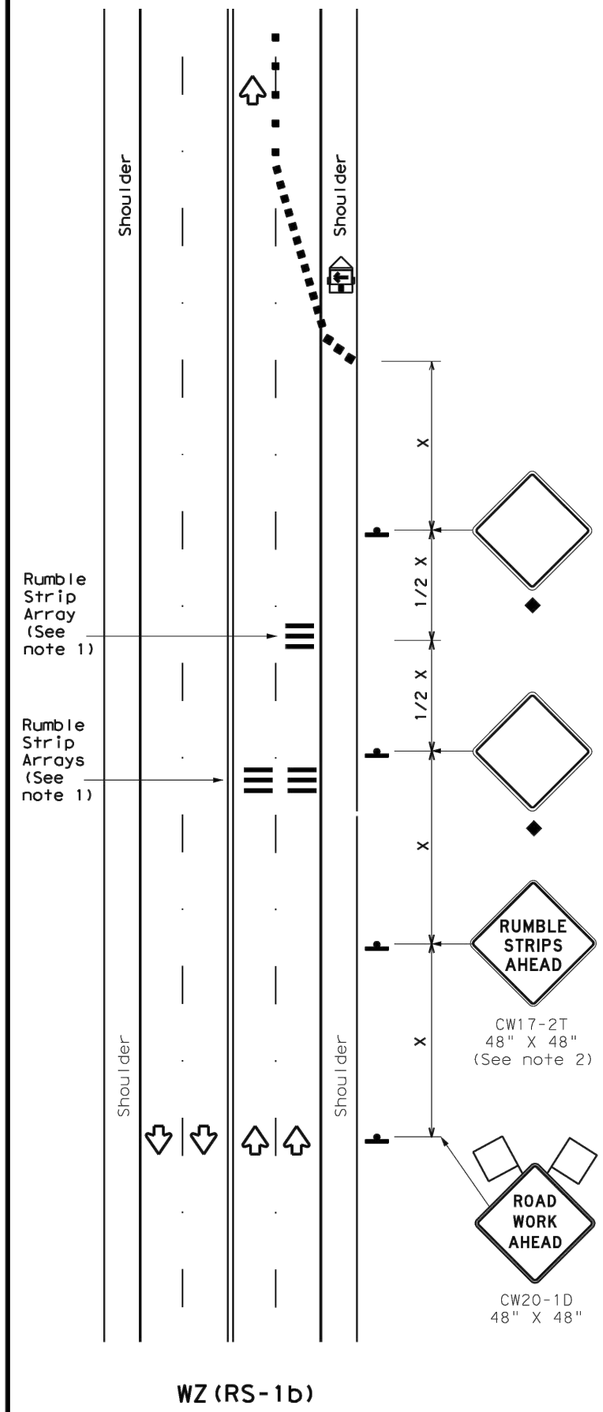
Warning sign and rumble strip sequence in opposite direction is same as below.

TABLE 1		
Flagger to Flagger (Length of Work Area)	ADT	# of Rumble Strip Arrays
1/8 Mile	< 4,500	1
	≥ 4,500	2
1/4 Mile	< 3,500	1
	≥ 3,500	2
1/2 Mile	< 2,600	1
	≥ 2,600	2
1 Mile	< 1,600	1
	≥ 1,600	2
> 1 Mile	N/A	2



WZ(RS-1a)

RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION



WZ(RS-1b)

RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

GENERAL NOTES

1. Each Rumble Strip Array should consist of three rumble strips spaced center to center at the spacing shown in Table 2, placed transverse across the lane at locations shown.
2. The CW17-2T "RUMBLE STRIPS AHEAD" sign should be located after the CW20-1D "ROAD WORK AHEAD sign and spaced as shown. If traffic is observed to be queuing, or is expected to queue beyond the Rumble Strips, the CW17-2T sign and the first Rumble Strip Array may be located upstream of the CW20-1D sign as necessary to provide needed warning.
3. Temporary Rumble Strips will be considered subsidiary to Item 502, and shall be a product listed on the Compliant Work Zone Traffic Control Devices.
4. Remove Temporary Rumble Strips before removing the advanced warning signs.
5. Temporary Rumble Strips should not be used on horizontal curves, loose gravel, soft or bleeding asphalt, heavily rutted pavements or unpaved surfaces.
6. Temporary Rumble Strips shall be installed and maintained as per manufacturer's recommendations.
7. This standard sheet shall be used in conjunction with other appropriate TCP standard, TMUTCD typical application or project specific detail for the project.
8. The one-lane two-way application may utilize a flagger, an Automated Flagger Assistance Device (AFAD) or a Portable Traffic Signal (PTS).
9. Replace defective Temporary Rumble Strips as directed by the Engineer.
10. Temporary Rumble Strips may be used on freeways or expressways based on engineering judgment and written direction from the Engineer.

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

◆ Signs are for illustrative purposes only. Signs required may vary depending on the TCP, TMUTCD Typical Application, or project specific details for the project.

* For posted speeds in excess of 65 MPH, it is recommended that spacing is increased as speed limits increase. Increasing space between rumble strips will improve effectiveness.

TABLE 2	
Speed	Approximate distance between strips in an array
≤ 40 MPH	10'
> 40 MPH & ≤ 55 MPH	15'
= 60 MPH	20'
≥ 65 MPH	* 35'+

Texas Department of Transportation

Traffic Safety Division Standard

TEMPORARY RUMBLE STRIPS

WZ(RS)-22

FILE: wzrs22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-14 1-22 4-16	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		26

GENERAL CONSTRUCTION NOTES:

1. The CONTRACTOR shall be responsible for furnishing all material and labor to construct the project as shown and described in the construction documents in accordance with the appropriate approving authorities, specifications and requirements. All equipment shall be in working condition to perform job in accordance with all contract documents, drawings and specifications. Incorporate into work only new materials unless otherwise designated and the best grade of the respective kinds for the purpose.

2. CONTRACTOR shall confine all work efforts within the designated rights-of-way (ROW) or easements unless specifically authorized. Extreme care should be exercised within adjacent property and ROW to protect existing trees, fences, landscaping, etc unless otherwise noted in the plans.

3. The CONTRACTOR shall immediately repair or replace any physical damage to private property, including, but not limited to fences, walls, pavement, grass, trees, lawn sprinkler and irrigation systems at no cost to the OWNER. Replacement of damaged items must be equal to or better than that of the condition existing previously. This work shall be subsidiary to the contract (unless otherwise noted) and is not a separate pay item.

4. Any unplanned damage caused to existing pavement, curbs, sidewalks, driveways, etc. shall be repaired by the CONTRACTOR (at no cost) to the satisfaction of the CITY and/or TXDOT prior to final inspection.

5. CONTRACTOR shall minimize damage to tree branches and roots, providing tree protection as needed.

6. The CONTRACTOR shall remove surplus material from the project area. All excess spoils shall be hauled off and disposed in a legal manner by CONTRACTOR. Disposal site is CONTRACTOR's full responsibility, including Storm Water Pollution and Prevention Plan (SWPPP). This work shall be subsidiary to the contract and is not a separate pay item.

SAFETY AND TRAFFIC CONTROL

7. The CONTRACTOR shall make every effort to complete construction and allow immediate access to adjacent property at all driveway entrances located along the streets involved in this project. If entrances or access routes are to be blocked, owners or tenants of improvements where such access/or entrance drives are located shall be notified at least twenty-four (24) hours prior to the time that the construction will be started at their drives or entrances, and informed as to the estimated duration of the blockage, which in no case shall exceed six (6) hours.

8. CONTRACTOR shall remove, salvage and relocate all traffic signage, mailboxes, etc. affected by proposed improvements. CONTRACTOR shall coordinate removal and relocation of affected item with the appropriate agency (City, TXDOT, private signage, etc.) prior to implementation.

9. The CONTRACTOR shall, at the end of each day, keep a sufficient width of roadway clear of dirt and other materials to allow emergency vehicle access and vehicular access to private property. The CONTRACTOR shall assume any and all responsibility for damage, personal or otherwise, that may be caused by the construction along public roadways or private drives.

PLANS AND CONTROL

10. CONTRACTOR shall be responsible for all construction staking and is subsidiary to all bid items. CAD files can be made available, however, sealed hard copies prevail.

11. CONTRACTOR shall verify benchmarks and datum prior to commencing construction or staking of improvements.

12. All horizontal dimensions given are to face of curb, edge of pavement, property lines and to pipe centerlines, unless otherwise noted on plans.

13. Any discrepancies on the drawings shall be immediately brought to the attention of the ENGINEER before commencing work. No field changes or deviations from design are to be made without prior approval of the OWNER and notification to the ENGINEER. No consideration will be given to change orders for which the OWNER and ENGINEER were not contacted prior to construction of the affected item.

EXISTING UTILITIES

14. Location of underground utilities shown within these plans are approximate and based on visible evidence, information supplied by utility company personnel, and lines marked as a result of TEXAS 811 utility locate request Ticket Nos.:
    - Boling Highway (FM 1301) 2250634154
    - Newton Street 2250633492
    - E. Ahldag Street 2250633217
    - Pioneer Avenue 2250633746
    - Fulton Street 2250633977
    - Mockingbird 2250634208

    Other underground utility lines may exist, with no record of their location. This

12. CONTRACTOR shall verify existence, depth and location of water, sewer, gas, telephone, cable, fiber and other buried utilities, public and private (franchise), by notifying proper utility entity and TEXAS 811 a minimum of 48 hours prior to needing locator service. The CONTRACTOR shall preserve and protect public and private utilities at all times during construction. Any damage to existing utility lines, known and unknown, resulting from CONTRACTOR'S operations shall be restored at their expense. The ENGINEER shall be notified when proposed facility grades conflict with existing utility grades. If potholing is required to determine existing utility locations, this shall be the responsibility of the CONTRACTOR.

13. All utility adjustments shall be completed prior to final paving construction.

LEGEND - EXISTING

E	Overhead electric line
ue	Underground electric line
T	Overhead telephone cable
ut	Underground telephone cable
foc	Underground fiber optic
U	Multiple overhead utilities
TV	Overhead TV cable
uc	Underground cable
s	Sanitary Sewer line
FM	Sewer force main
w	Water line
g	Underground gas line
WM	Water meter
WV	Water valve
	Fire hydrant
S	Water Shut-Off
G	Gas meter
	Utility Pole
	Light pole
	Wire guide pole
T	Telephone pedestal
S	Sanitary sewer manhole
S	Sewer clean-out
CO	Building Sewer clean-out
x	Wire fence
	Pipe fence
	Chain link fence

CONTRACTOR SHALL COMPLETE CONSTRUCTION IN PHASES OR SECTIONS OF NO MORE THAN 1,000 LINEAR FEET BEFORE BEGINNING NEW SECTION

PROPOSED ELEVATIONS

Ex. 100.00'±	Match Existing Pavement/Sidewalk	100.00'	Proposed Top of Pavement/Sidewalk
Ex. LOC 100.00'±	Match Existing Lip of Curb	LOC 100.00'	Proposed Lip of Curb
Ex. Gut 100.00'±	Match Existing Gutter Flowline	Gut 100.00'	Proposed Gutter Flowline
Ex. TC 100.00'±	Match Existing Top of Curb	TC 100.00'	Proposed Top of Curb
Ex. FL 100.00'±	Match Existing Top of Curb	FL 100.00'	Proposed Flowline

STATE OF TEXAS
CHAD EMMEL
103495
LICENSED PROFESSIONAL ENGINEER
6/29/22

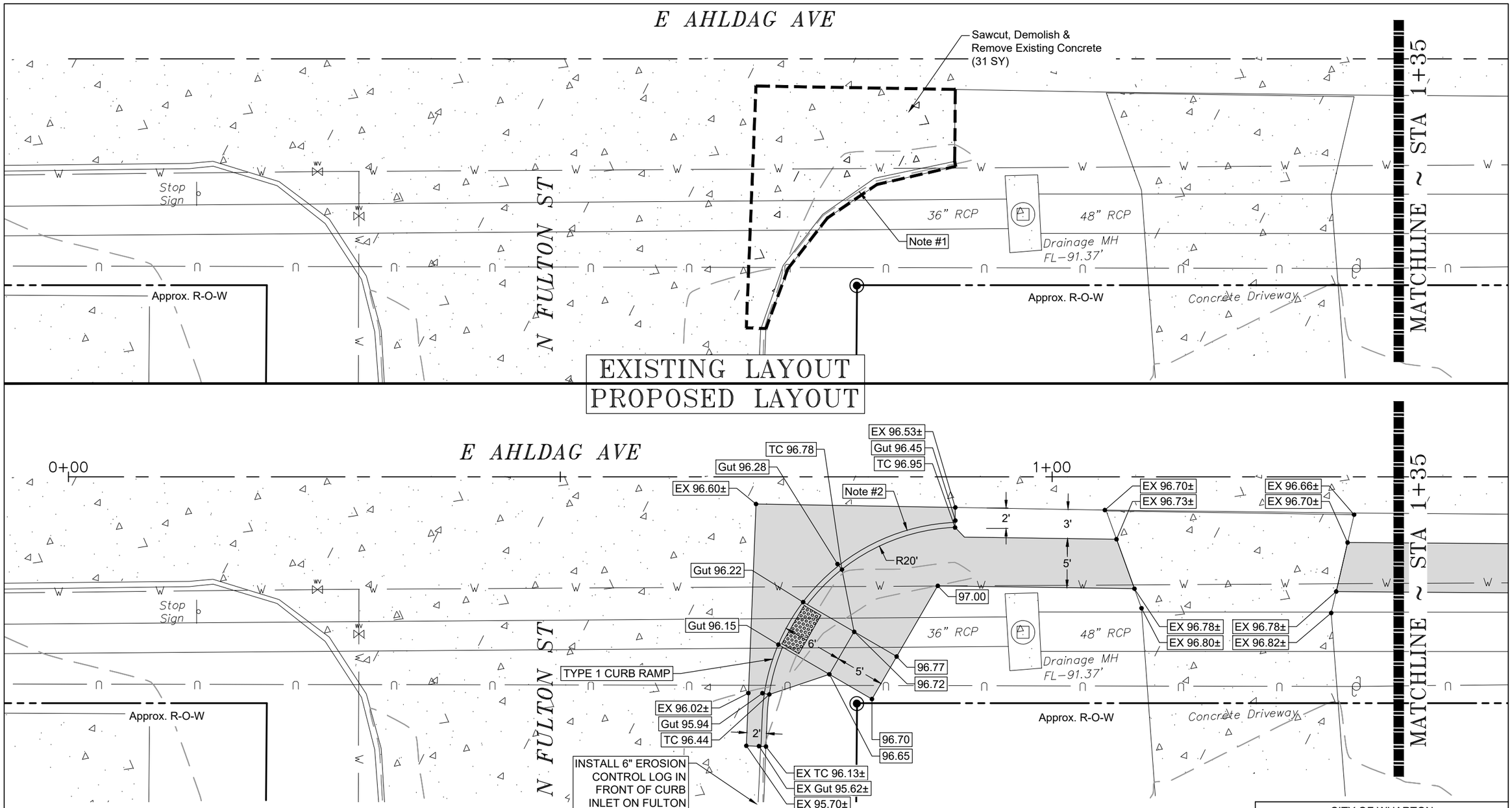
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
CONSTRUCTION NOTES

BEFCO ENGINEERING, INC. (F-2011)
P.O. Box 615 La Grange, Texas 78945
(979) 968-6474

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			26A
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\COVERSHEET AND NOTES



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Removal of curbing Subsidiary to the "Removing Conc (Pvmt)", TxDOT Specification 104. No separate payment will be made.
2. Monolithic Type II curbing Subsidiary to the "Driveways (Conc)", TxDOT Specification 530. No separate payment will be made.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6001	31	SY	REMOVING CONC (PAV)
0506 6043	12	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	12	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0529 6008	3	LF	CONC CURB & GUTTER (TY II)
0531 6002	23	SY	CONC SIDEWALKS (5")
0530 6004	17	SY	DRIVEWAYS (CONC)
0531 6018	10	SY	CURB RAMPS (TY 1)

STATE OF TEXAS
CHAD EMMEL
103495
PROFESSIONAL LICENSED ENGINEER
5/13/22

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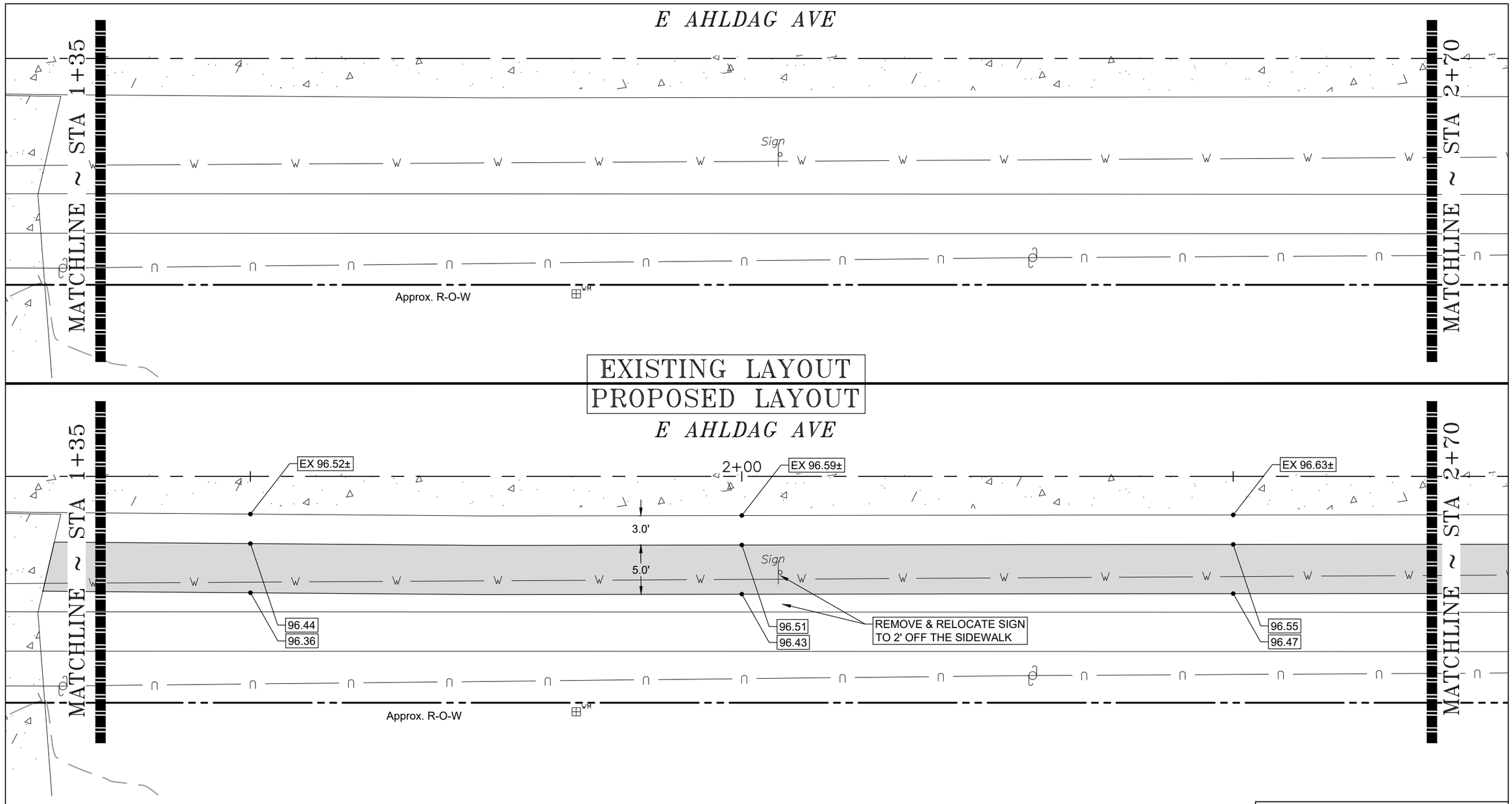
(979) 968-6474

CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			27
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	75	SY	CONC SIDEWALKS (5")
0644 6071	1	EA	RELOCATE SM RD SN SUP&AM TY TWT

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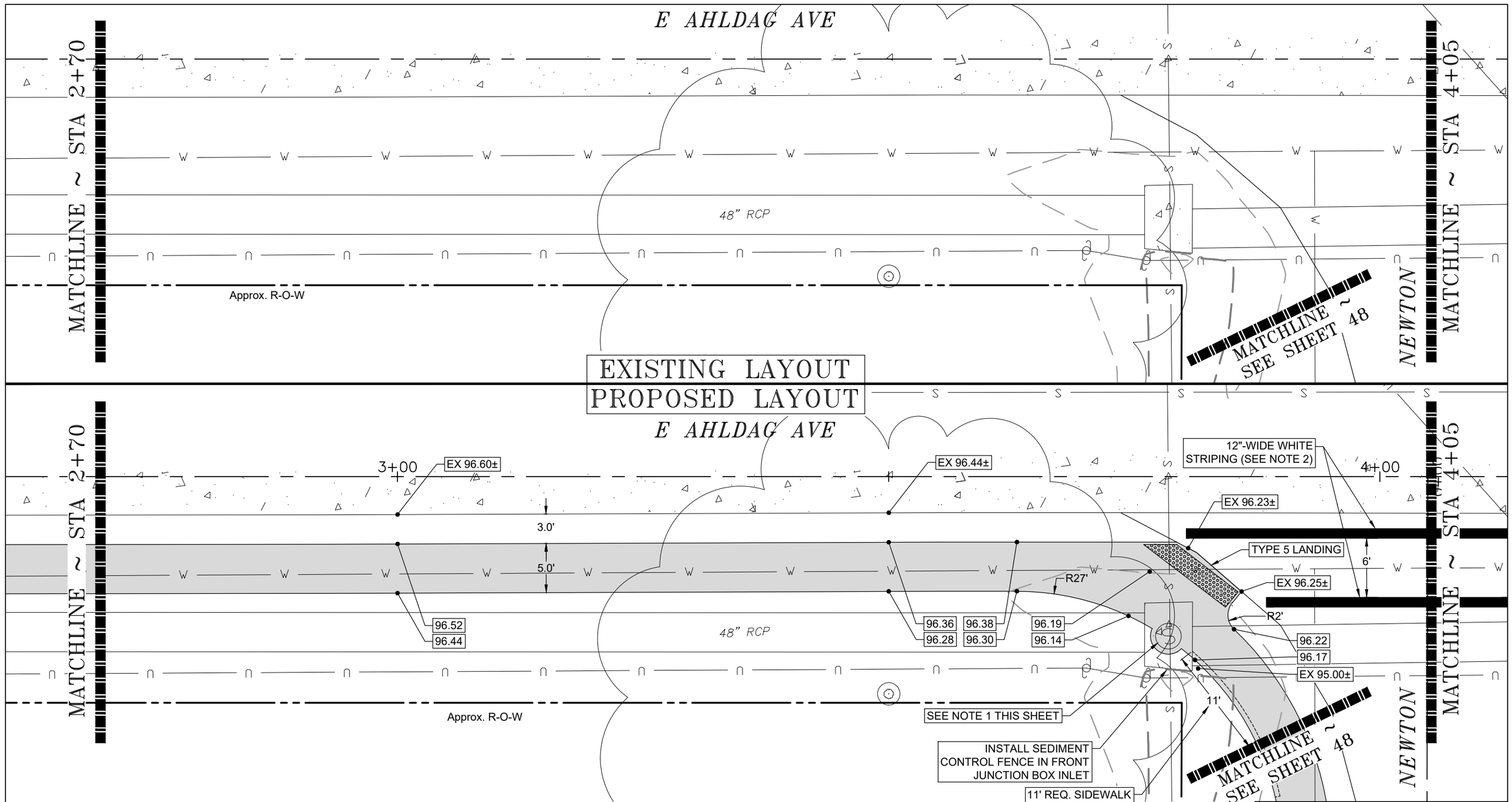
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			28
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



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GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:

1. Remove and properly dispose of existing junction box lid. Install new manhole frame and cover over the top of existing opening. New frame and cover to be set level with proposed sidewalk. Sidewalk concrete shall be placed directly atop existing junction box, adjusting concrete thickness as needed. Concrete shall provide a minimum 12" ring around new manhole frame. This work shall be subsidiary to Item 531.
2. Final placement of crosswalk shall be approved by the Engineer in the field.
3. Sidewalk toe downs and curb wall/retaining walls are subsidiary to Item 531; Concrete Sidewalks.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0351 6002	1	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6038	15	LF	TEMP SEDMT CONT FENCE (INSTALL)
0506 6039	15	LF	TEMP SEDMT CONT FENCE (REMOVE)
0531 6002	70	SY	CONC SIDEWALKS (5")
0531 6022	6.2	SY	CURB RAMPS (TY 5)
0668 6074	42	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

STATE OF TEXAS
CHAD EMMEL
103495
PROFESSIONAL LICENSED ENGINEER
5/13/22

BEFCO ENGINEERING, INC. (F-2011)
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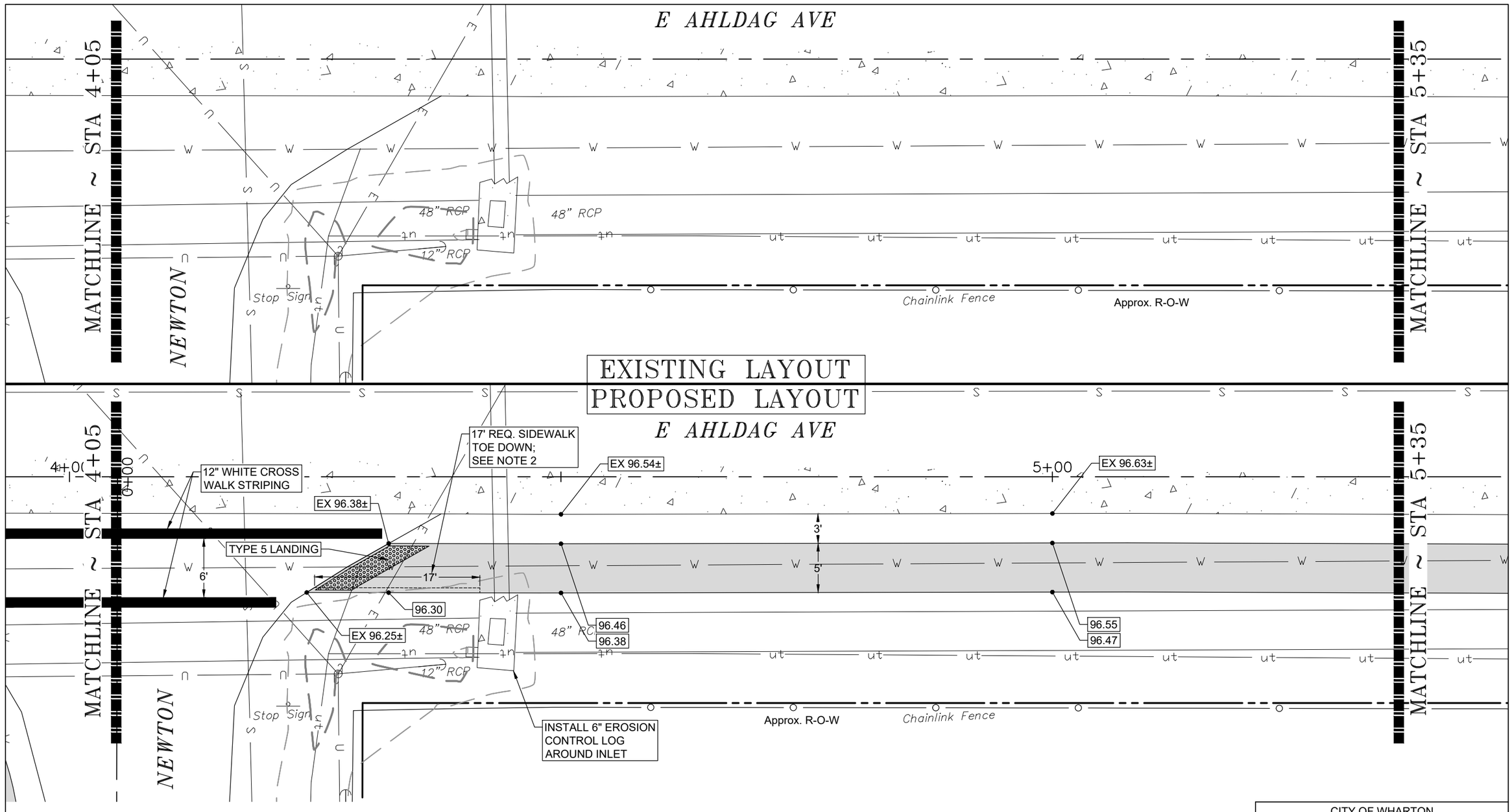
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			29
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Final placement of crosswalk shall be approved by the Engineer in the field.
2. Sidewalk toe downs and curb wall/retaining walls are subsidiary to Item 531; Concrete Sidewalks.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0351 6002	1	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	30	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	30	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0531 6002	54	SY	CONC SIDEWALKS (5")
0531 6022	5	SY	CURB RAMPS (TY 5)
0668 6074	43	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

STATE OF TEXAS
CHAD EMMEL
103495
LICENSED PROFESSIONAL ENGINEER
5/13/22

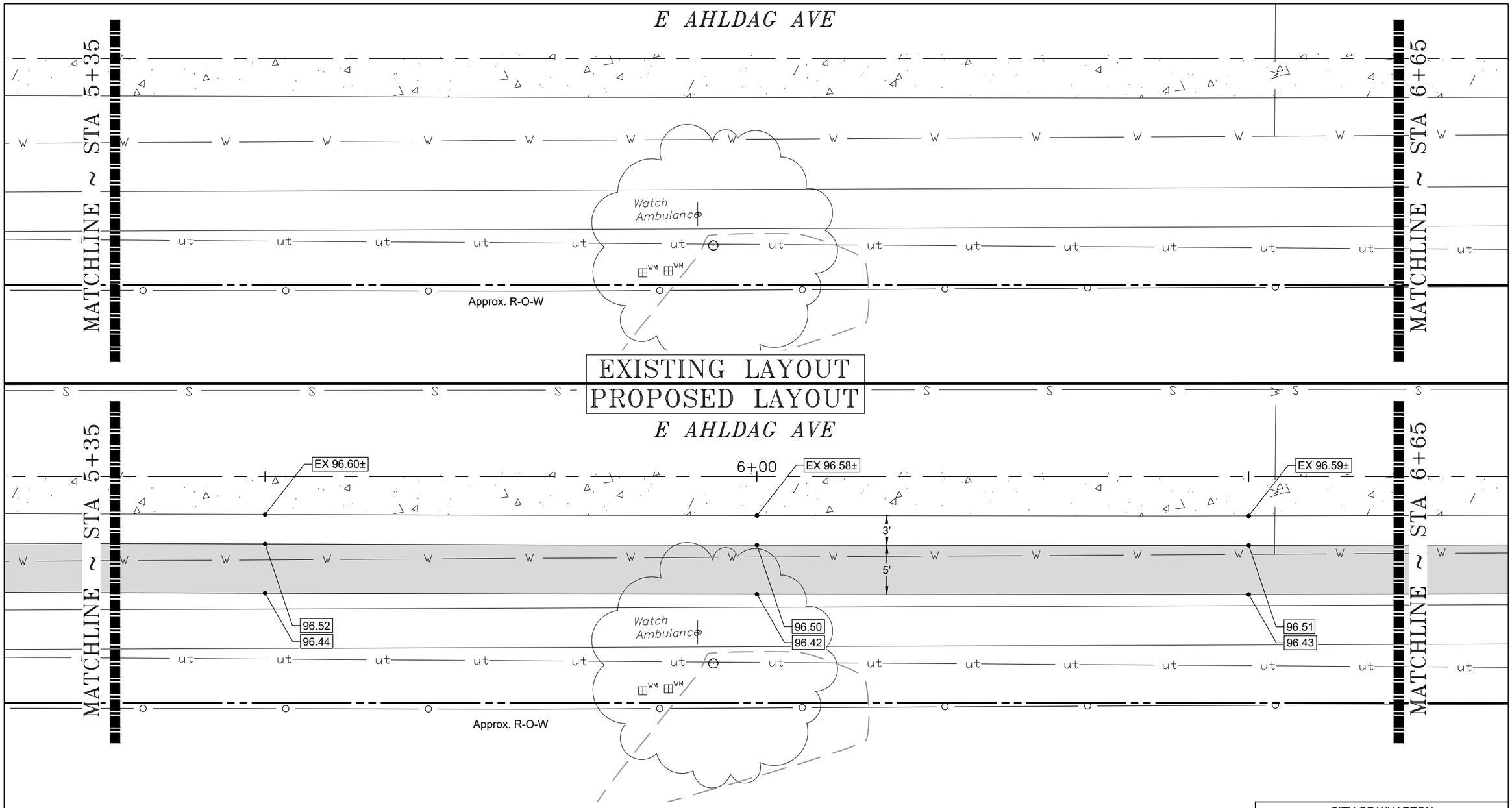
BEFCO ENGINEERING, INC. (F-2011)
P.O. Box 615 La Grange, Texas 78945
(979) 968-6474

CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			30
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
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SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	72	SY	CONC SIDEWALKS (5")

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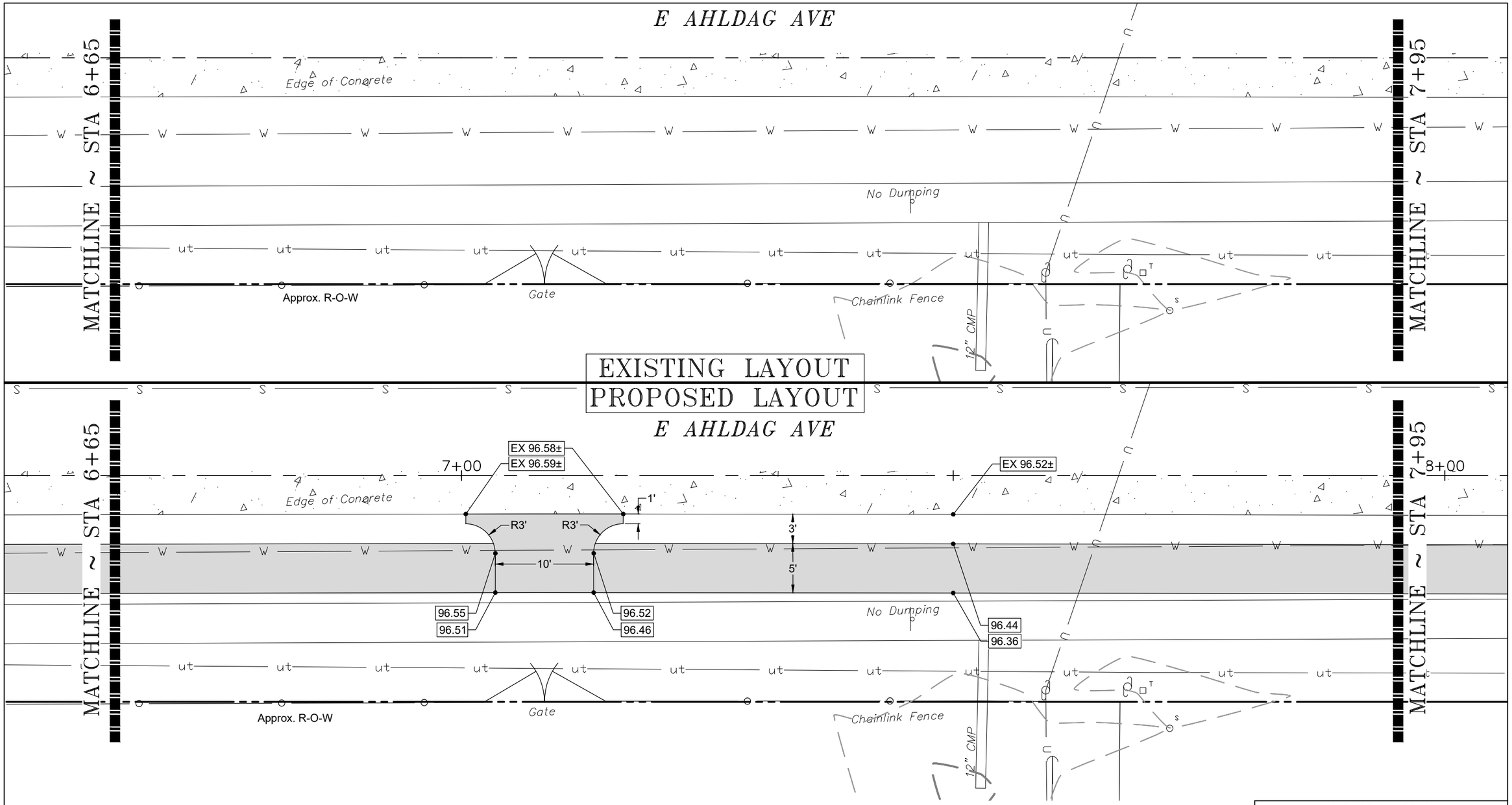
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			31
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



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SCALE: 1"=10'

NORTH

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0530 6004	10	SY	DRIVEWAYS (CONC)
0531 6002	67	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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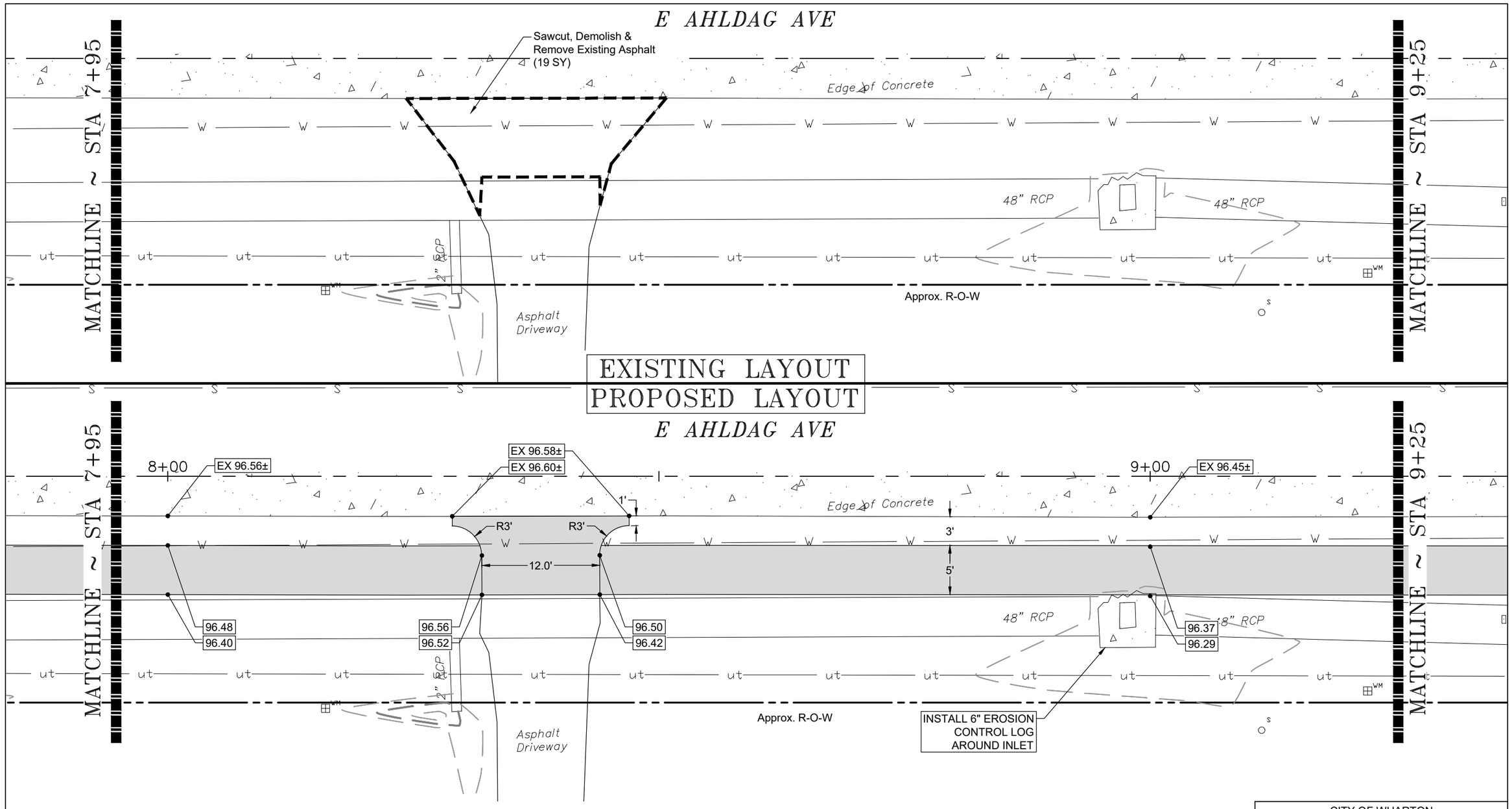
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			32
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



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SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Width of existing residential asphalt driveways were discussed on a case-by-case basis with the City of Wharton to determine reconstruction widths. Gravel driveway reconstruction widths are based on the width of the existing driveway at the right-of-way line.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0105 6011	19	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	2.7	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	26	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	26	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0530 6004	12	SY	DRIVEWAYS (CONC)
0531 6002	66	SY	CONC SIDEWALKS (5")

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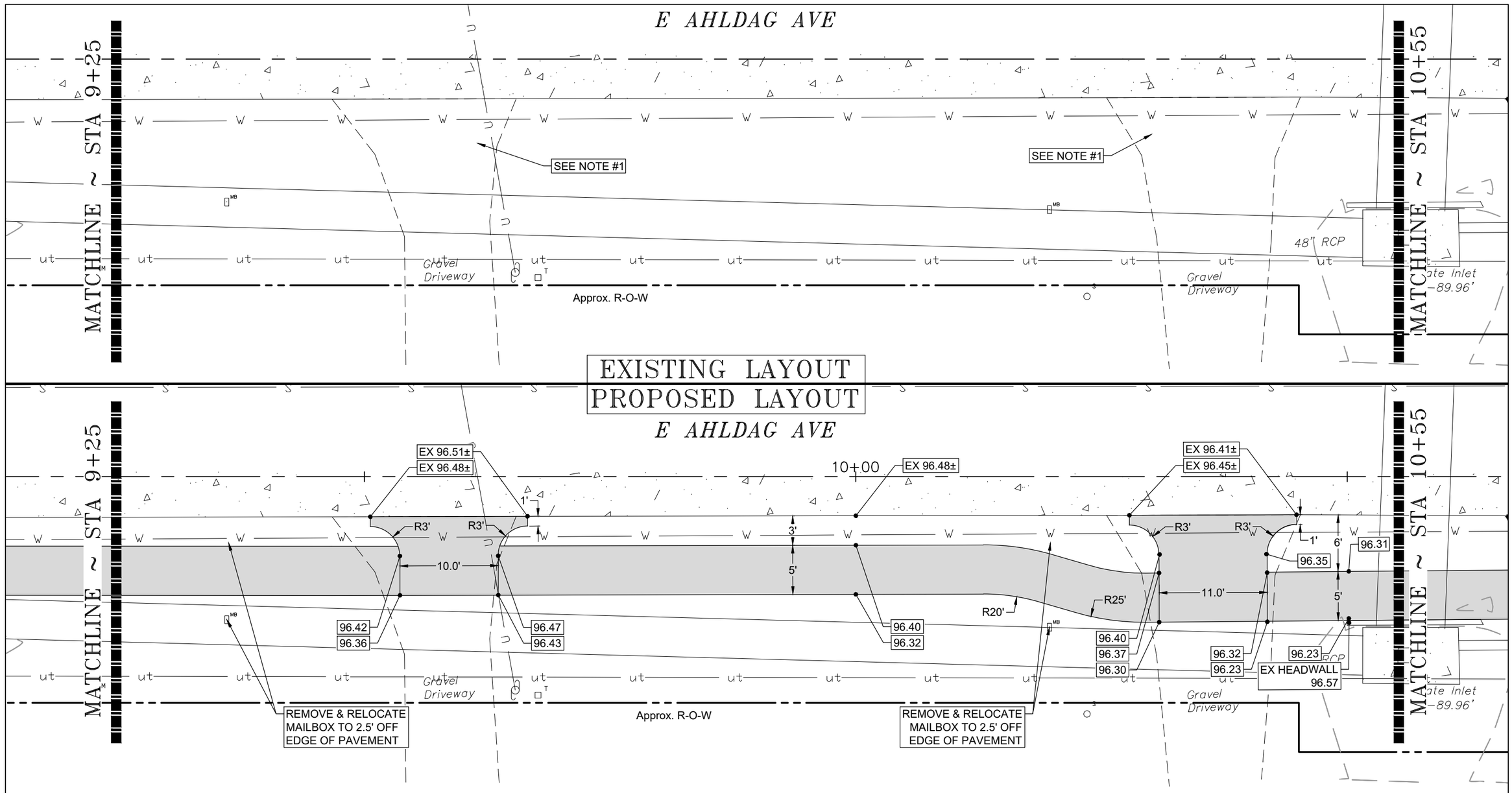
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			33
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



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GRAPHIC SCALE
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SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Remove Gravel drive for installation of sidewalk and concrete driveway. Adjust gravel driveway on R-O-W side of improvements as required. This work is subsidiary to Item 530.
2. Width of existing residential asphalt driveways were discussed on a case-by-case basis with the City of Wharton to determine reconstruction widths. Gravel driveway reconstruction widths are based on the width of the existing driveway (min. 10') at the right-of-way line.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0530 6004	24	SY	DRIVEWAYS (CONC)
0531 6002	61	SY	CONC SIDEWALKS (5")
0560 6007	2	EA	MAILBOX INSTALL-S (WC-POST) TY 3

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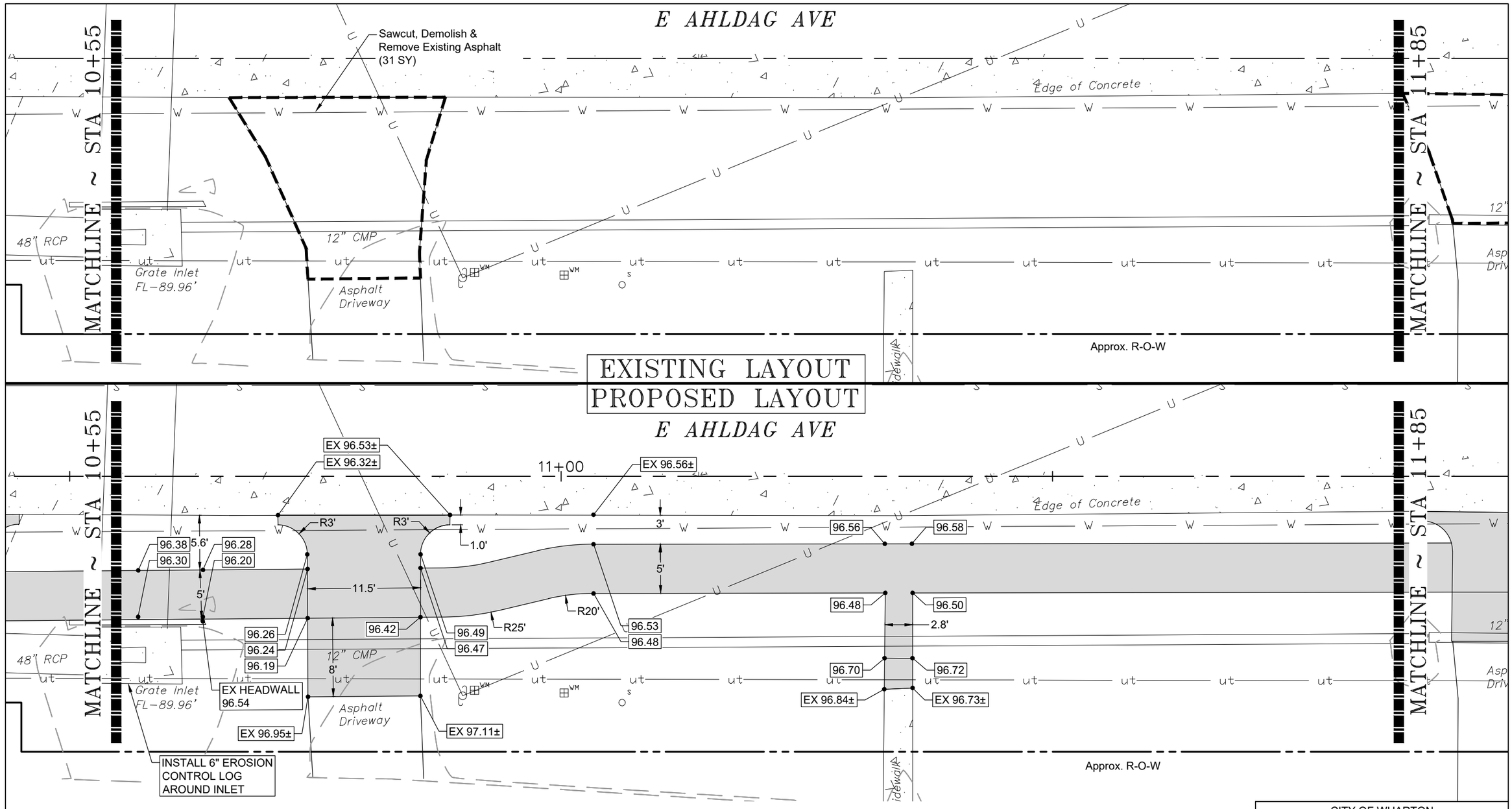
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			34
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
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SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Width of existing residential asphalt driveways were discussed on a case-by-case basis with the City of Wharton to determine reconstruction widths. Gravel driveway reconstruction widths are based on the width of the existing driveway (min. 10') at the right-of-way line.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0105 6011	31	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	2.6	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	35	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	35	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0530 6004	25	SY	DRIVEWAYS (CONC)
0531 6002	69	SY	CONC SIDEWALKS (5")

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CITY OF WHARTON
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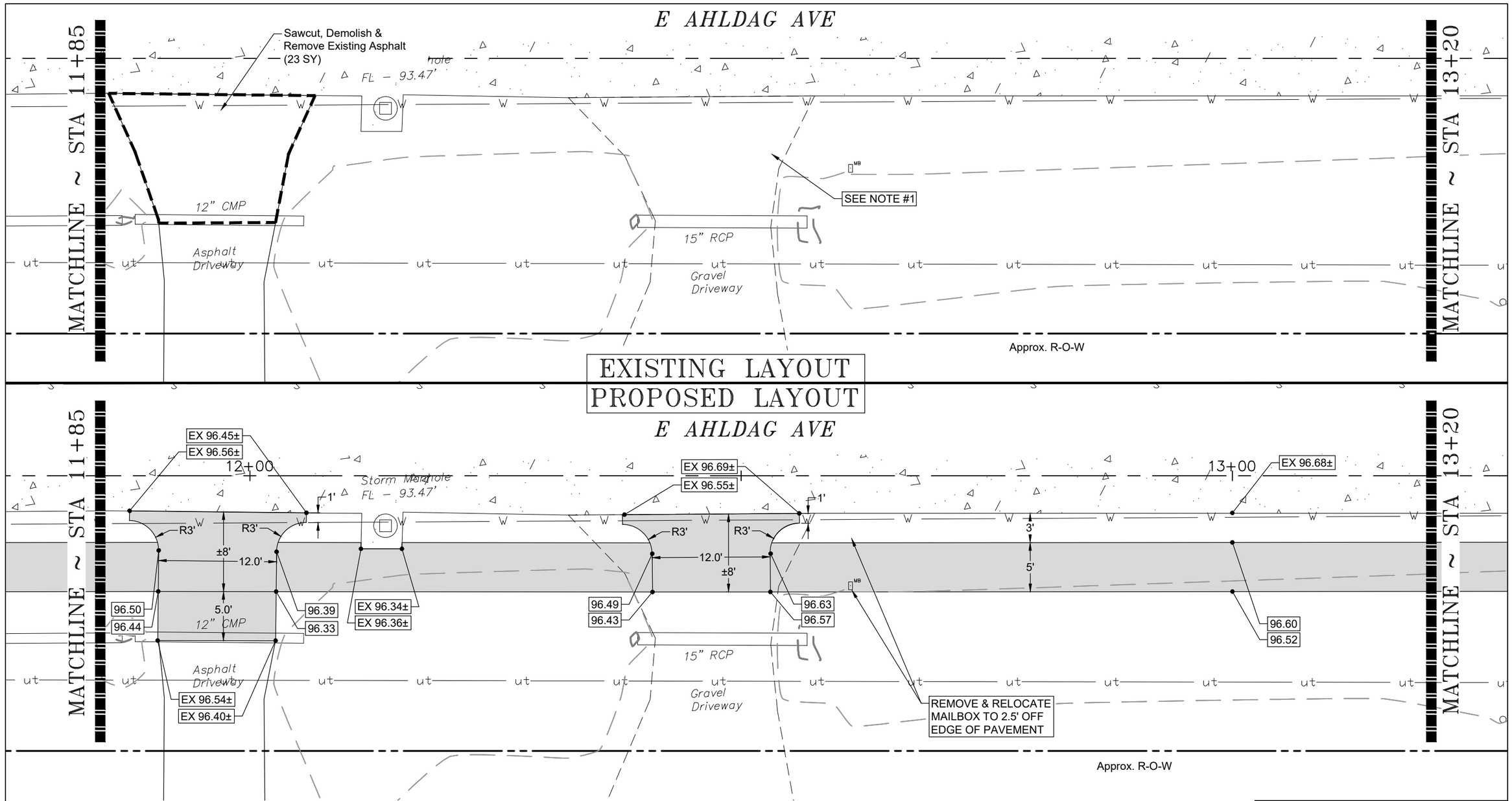
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			35
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Remove Gravel drive for installation of sidewalk and concrete driveway. Adjust gravel driveway on R-O-W side of improvements as required. This work is subsidiary to Item 530.
2. Width of existing residential asphalt driveways were discussed on a case-by-case basis with the City of Wharton to determine reconstruction widths. Gravel driveway reconstruction widths are based on the width of the existing driveway (min. 10') at the right-of-way line.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0105 6011	23	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	2.7	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0530 6004	31	SY	DRIVEWAYS (CONC)
0531 6002	61	SY	CONC SIDEWALKS (5")
0560 6007	1	EA	MAILBOX INSTALL-S (WC-POST) TY 3

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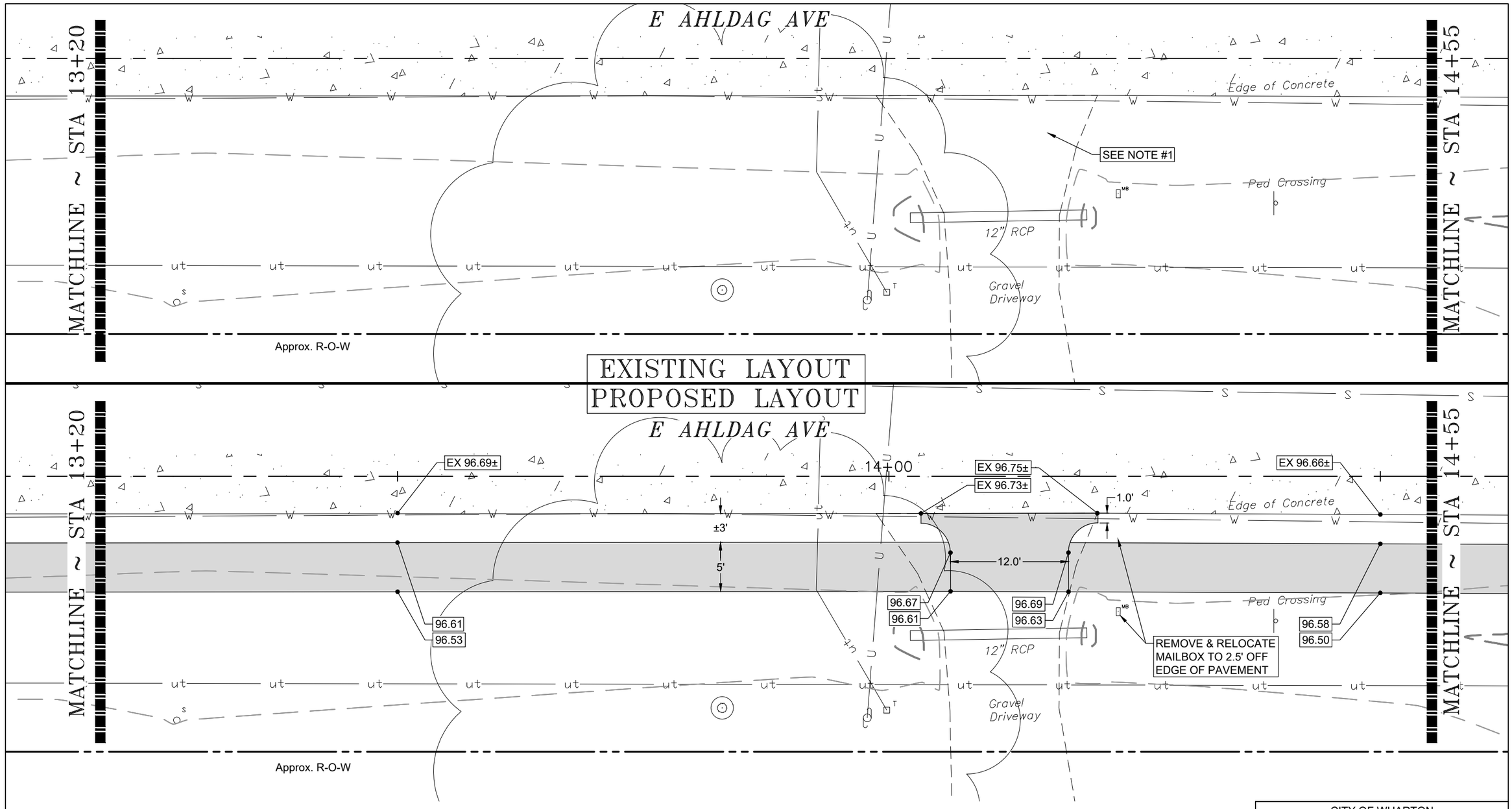
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			36
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
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5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Remove Gravel drive for installation of sidewalk and concrete driveway. Adjust gravel driveway on R-O-W side of improvements as required. This work is subsidiary to Item 530.
2. Width of existing residential asphalt driveways were discussed on a case-by-case basis with the City of Wharton to determine reconstruction widths. Gravel driveway reconstruction widths are based on the width of the existing driveway (min. 10') at the right-of-way line.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0530 6004	12	SY	DRIVEWAYS (CONC)
0531 6002	68	SY	CONC SIDEWALKS (5")
0560 6007	1	EA	MAILBOX INSTALL-S (WC-POST) TY 3

STATE OF TEXAS
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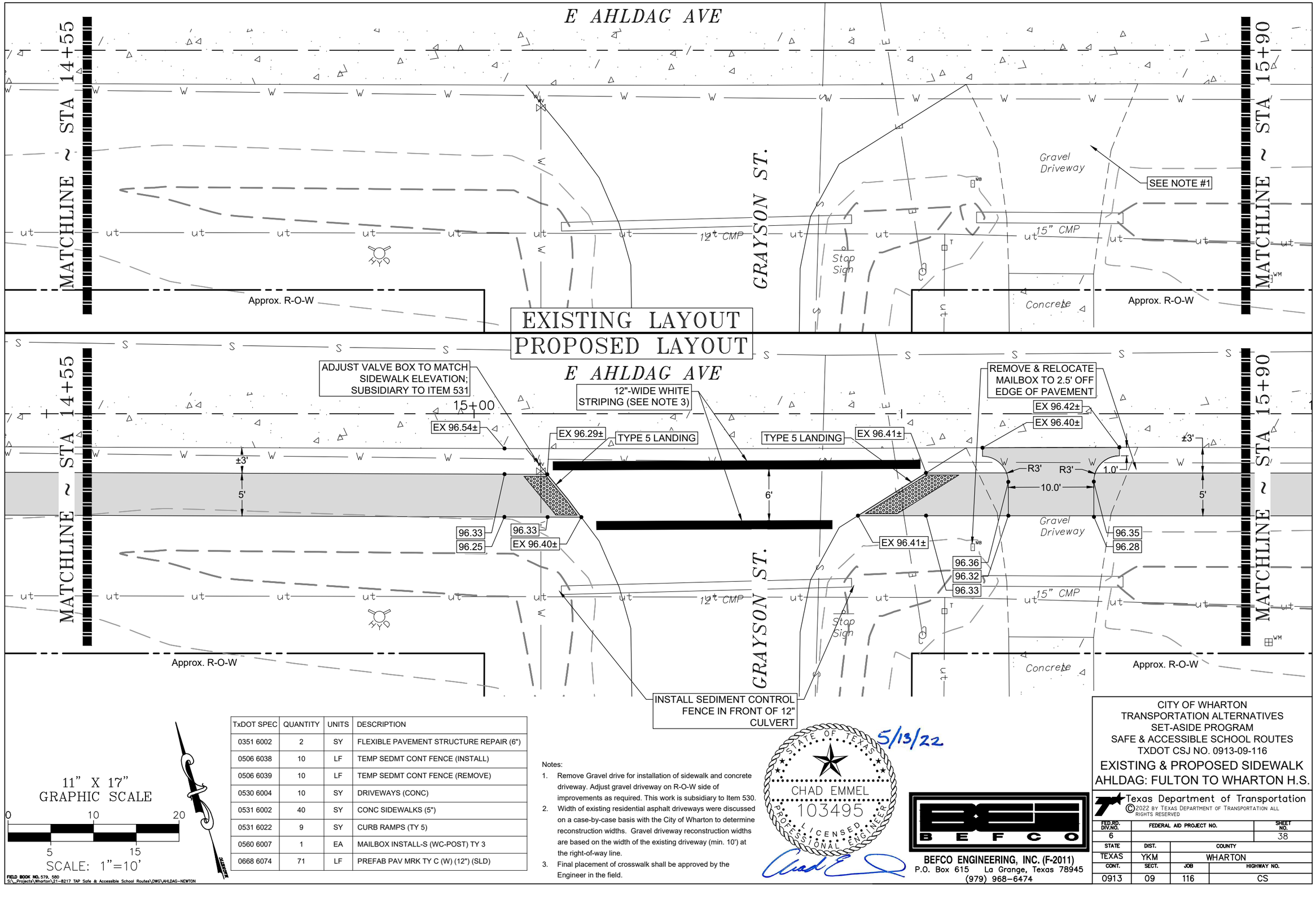
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			37
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17" GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0351 6002	2	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6038	10	LF	TEMP SEDMT CONT FENCE (INSTALL)
0506 6039	10	LF	TEMP SEDMT CONT FENCE (REMOVE)
0530 6004	10	SY	DRIVEWAYS (CONC)
0531 6002	40	SY	CONC SIDEWALKS (5")
0531 6022	9	SY	CURB RAMPS (TY 5)
0560 6007	1	EA	MAILBOX INSTALL-S (WC-POST) TY 3
0668 6074	71	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

Notes:

1. Remove Gravel drive for installation of sidewalk and concrete driveway. Adjust gravel driveway on R-O-W side of improvements as required. This work is subsidiary to Item 530.
2. Width of existing residential asphalt driveways were discussed on a case-by-case basis with the City of Wharton to determine reconstruction widths. Gravel driveway reconstruction widths are based on the width of the existing driveway (min. 10') at the right-of-way line.
3. Final placement of crosswalk shall be approved by the Engineer in the field.

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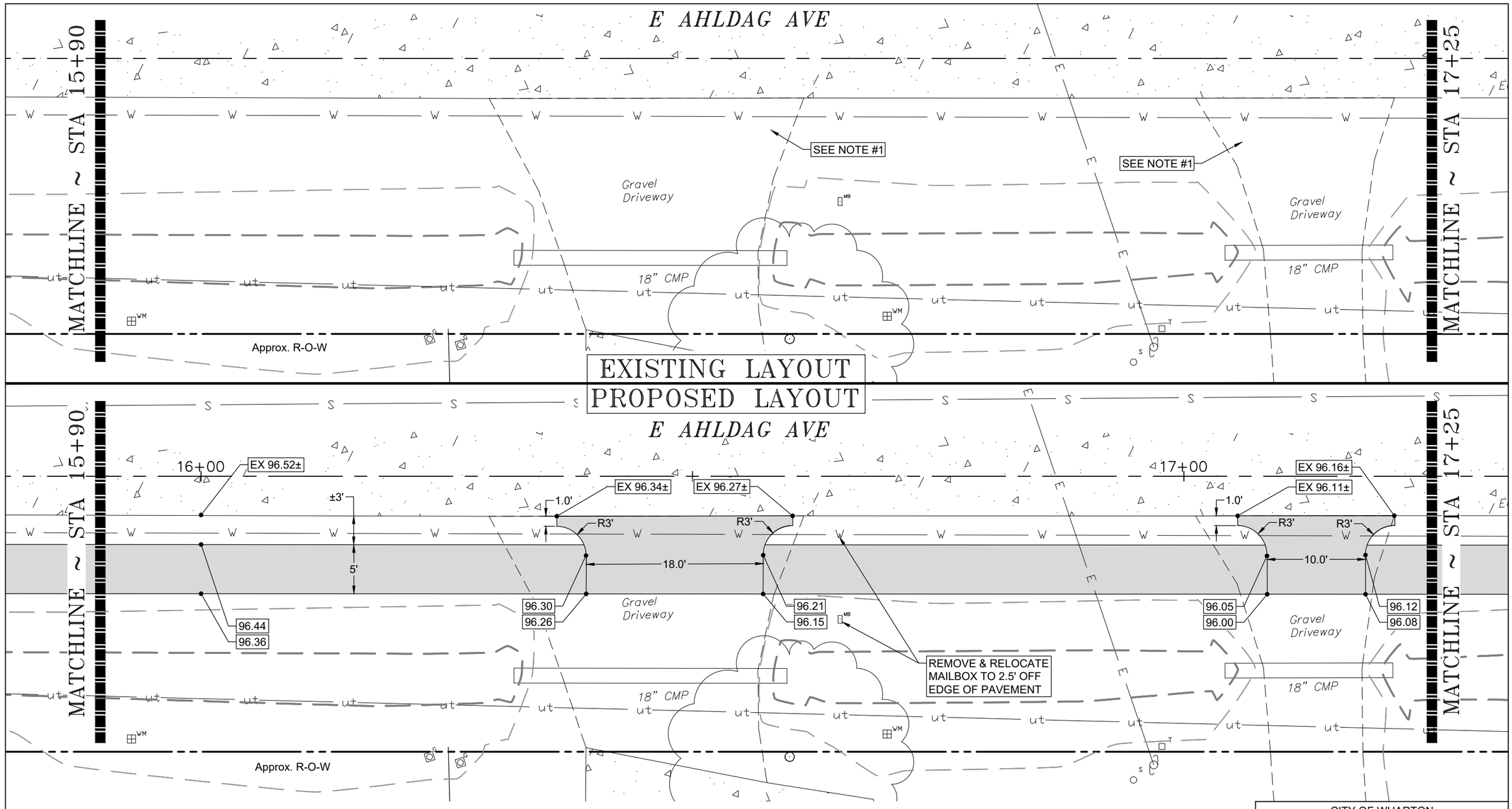
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			38
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON



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SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

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1. Remove Gravel drive for installation of sidewalk and concrete driveway. Adjust gravel driveway on R-O-W side of improvements as required. This work is subsidiary to Item 530.
2. Width of existing residential asphalt driveways were discussed on a case-by-case basis with the City of Wharton to determine reconstruction widths. Gravel driveway reconstruction widths are based on the width of the existing driveway (min. 10') at the right-of-way line.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0530 6004	27	SY	DRIVEWAYS (CONC)
0531 6002	59	SY	CONC SIDEWALKS (5")
0560 6007	1	EA	MAILBOX INSTALL-S (WC-POST) TY 3

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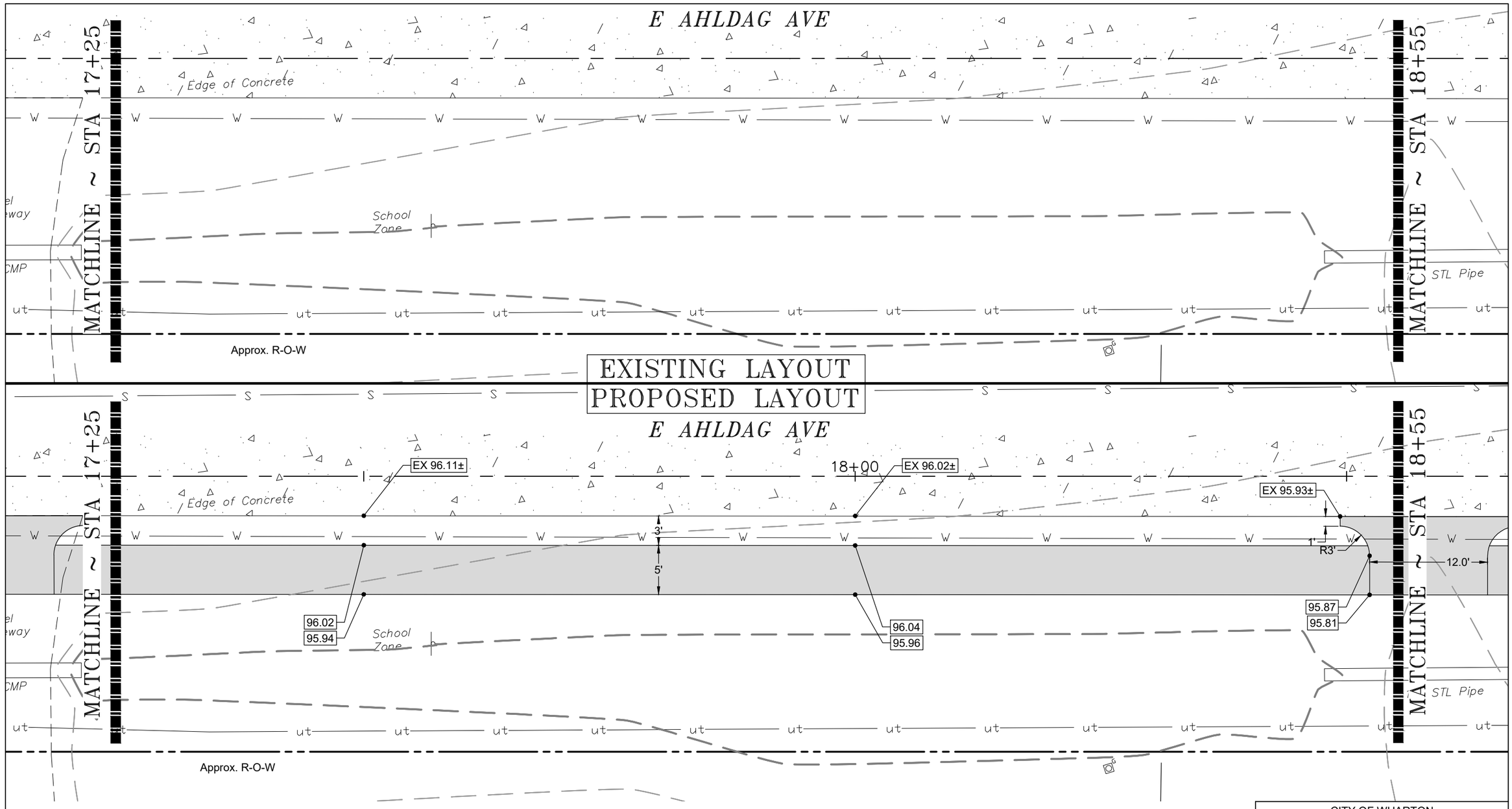
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			39
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



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SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	71	SY	CONC SIDEWALKS (5")

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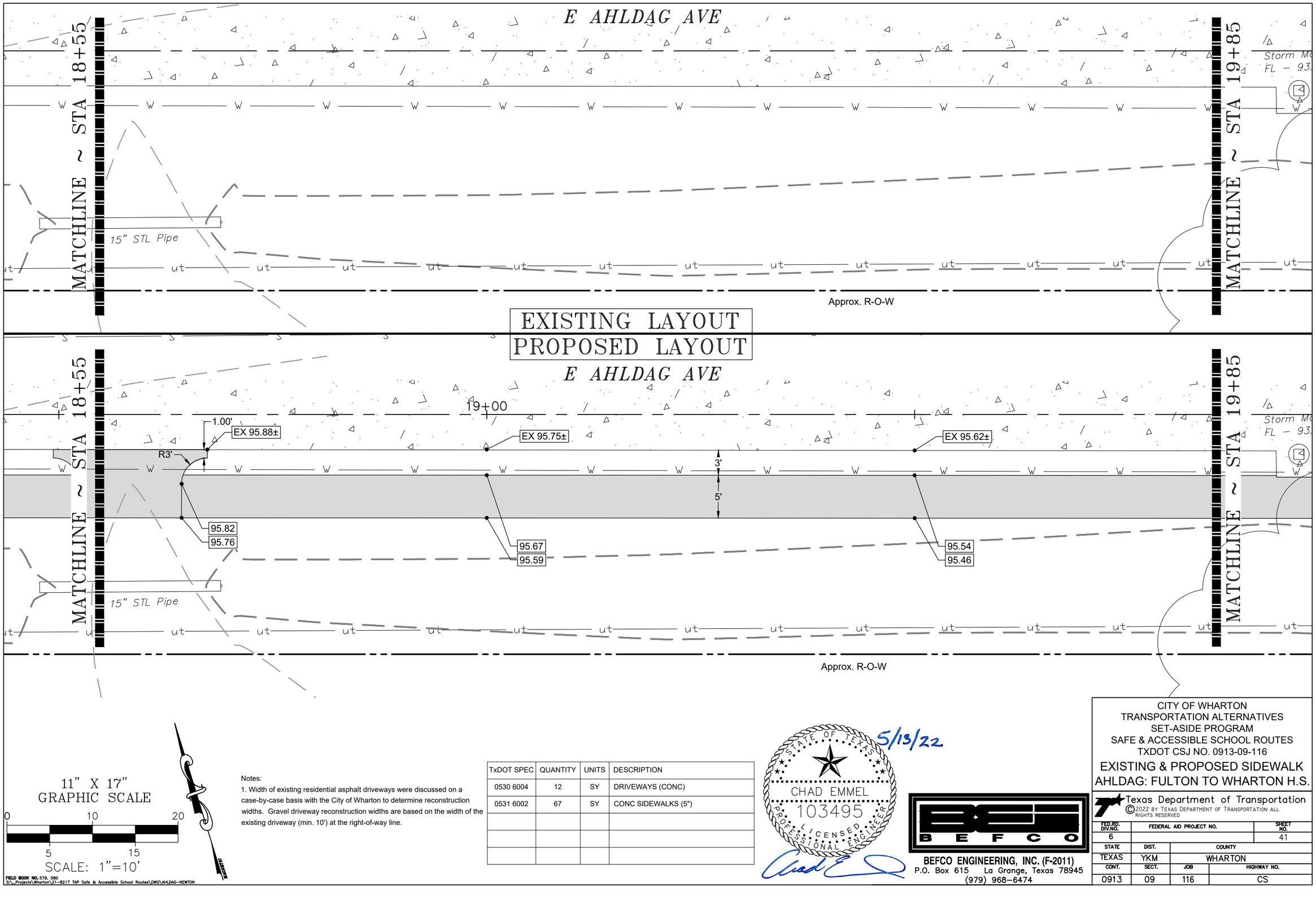
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			40
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



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SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Width of existing residential asphalt driveways were discussed on a case-by-case basis with the City of Wharton to determine reconstruction widths. Gravel driveway reconstruction widths are based on the width of the existing driveway (min. 10') at the right-of-way line.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0530 6004	12	SY	DRIVEWAYS (CONC)
0531 6002	67	SY	CONC SIDEWALKS (5")

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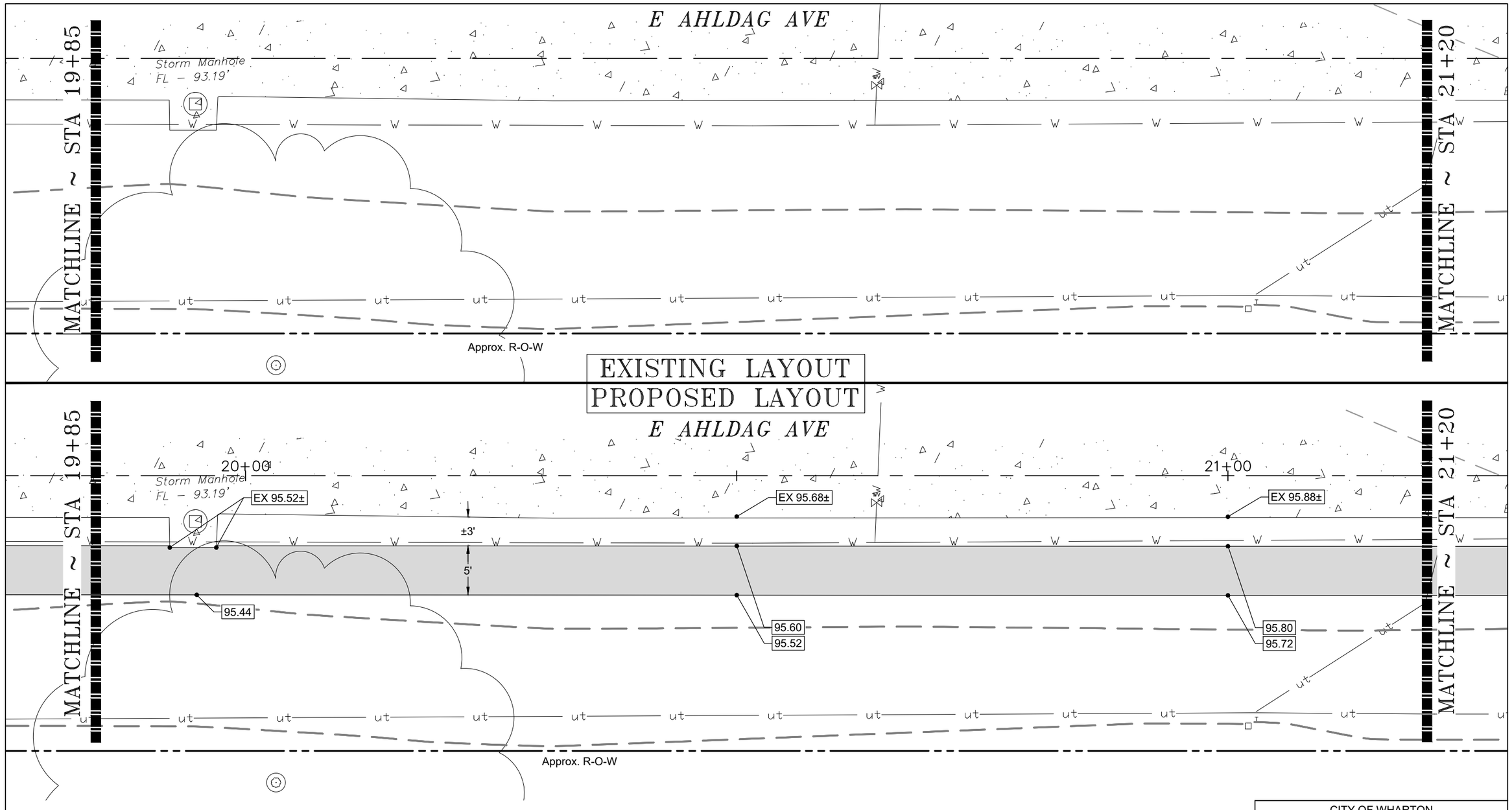
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			41
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
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5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	75	SY	CONC SIDEWALKS (5")

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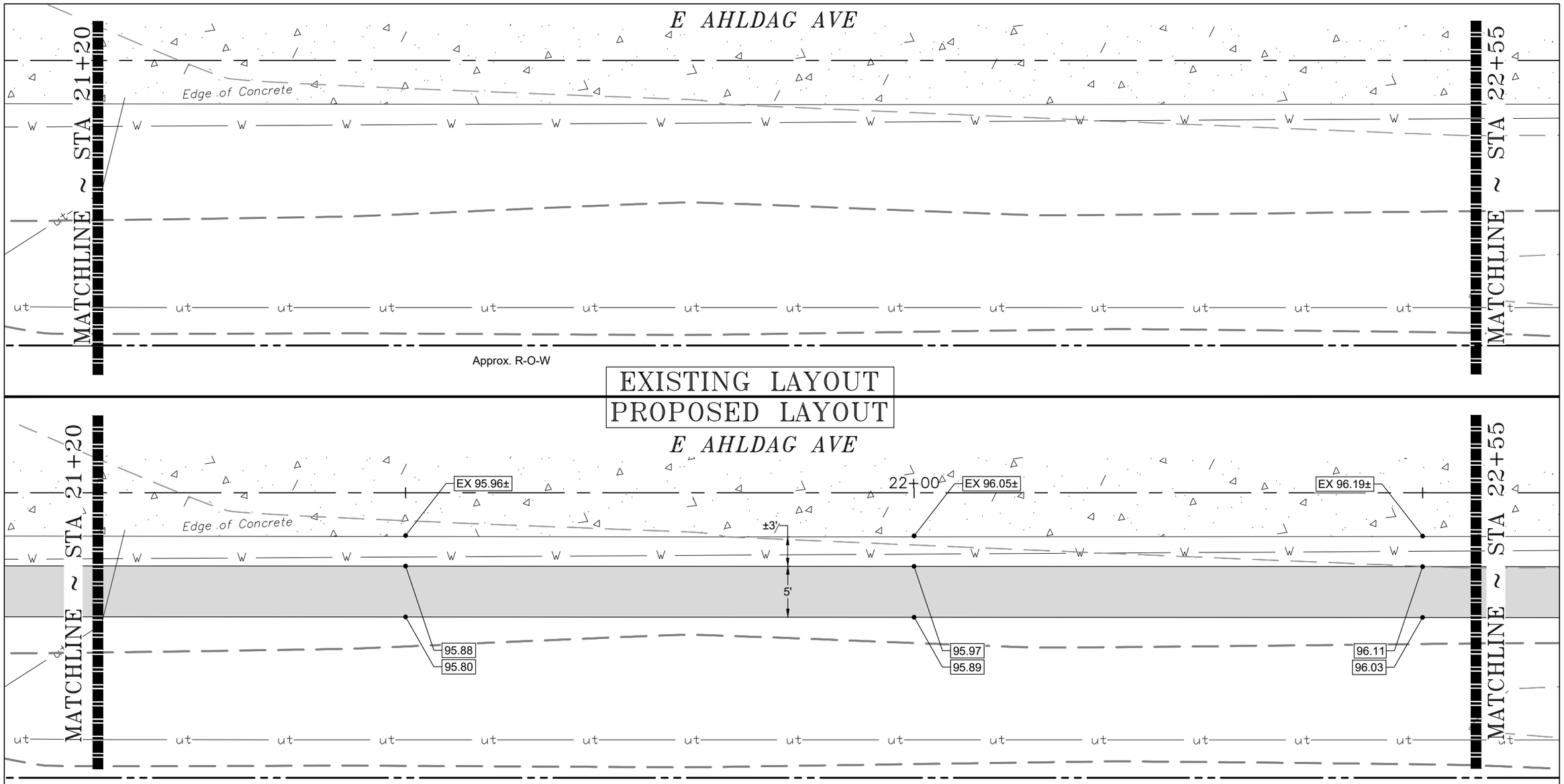
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			42
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
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SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	75	SY	CONC SIDEWALKS (5")

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TXDOT CSJ NO. 0913-09-116
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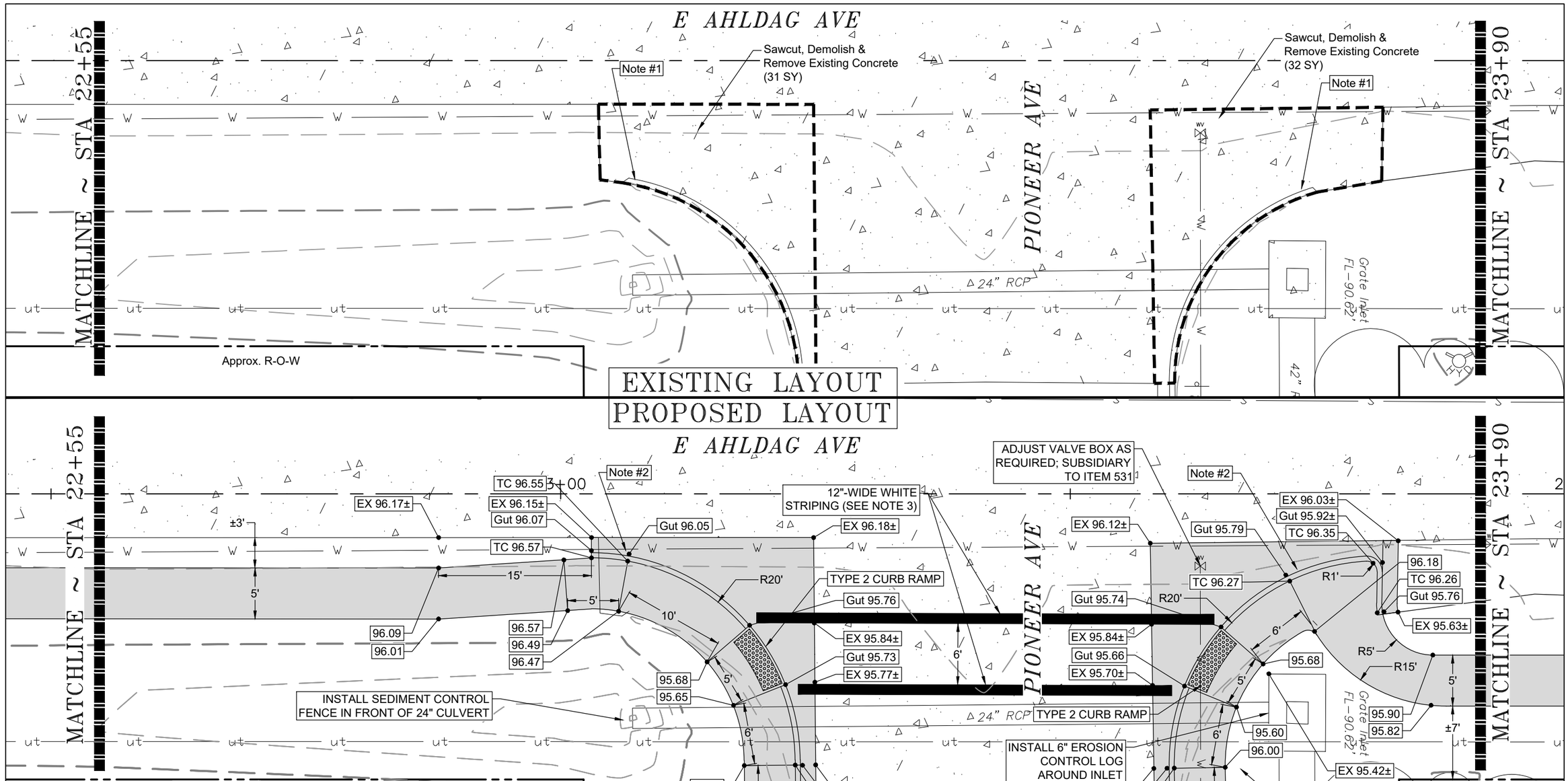
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			43
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6001	63	SY	REMOVING CONC (PAV)
0351 6002	1.6	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0360 6016	33	SY	CONC PVMT (JOINTED - CPCD) (6")
0506 6038	10	LF	TEMP SEDMT CONT FENCE (INSTALL)
0506 6039	10	LF	TEMP SEDMT CONT FENCE (REMOVE)
0506 6043	30	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	30	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0531 6002	47	SY	CONC SIDEWALKS (5")
0531 6019	34	SY	CURB RAMPS (TY 2)
0644 6071	1	EA	RELOCATE SM RD SN SUP&AM TY TWT
0668 6074	82	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

11" X 17" GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580

S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:

1. Removal of curbing Subsidiary to the "Removing Conc (Pvmt)", TxDOT Specification 104. No separate payment will be made.
2. Monolithic Type II curbing Subsidiary to the "Conc. Pvmt", TxDOT Specification 360. No separate payment will be made.
3. Final placement of crosswalk shall be approved by the Engineer in the field.

STATE OF TEXAS
CHAD EMMEL
103495
PROFESSIONAL LICENSED ENGINEER
5/13/22

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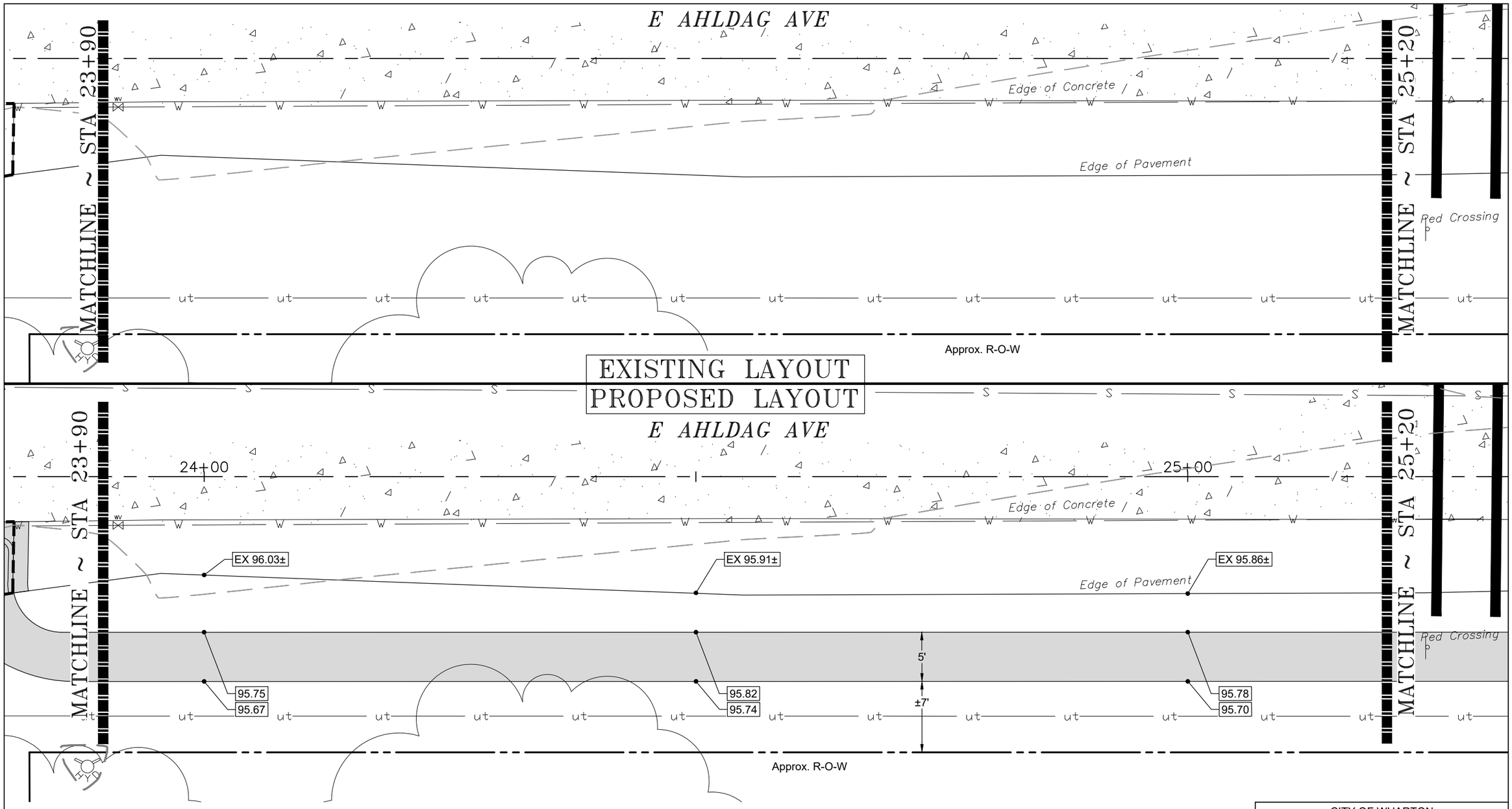
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			44
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	72	SY	CONC SIDEWALKS (5")

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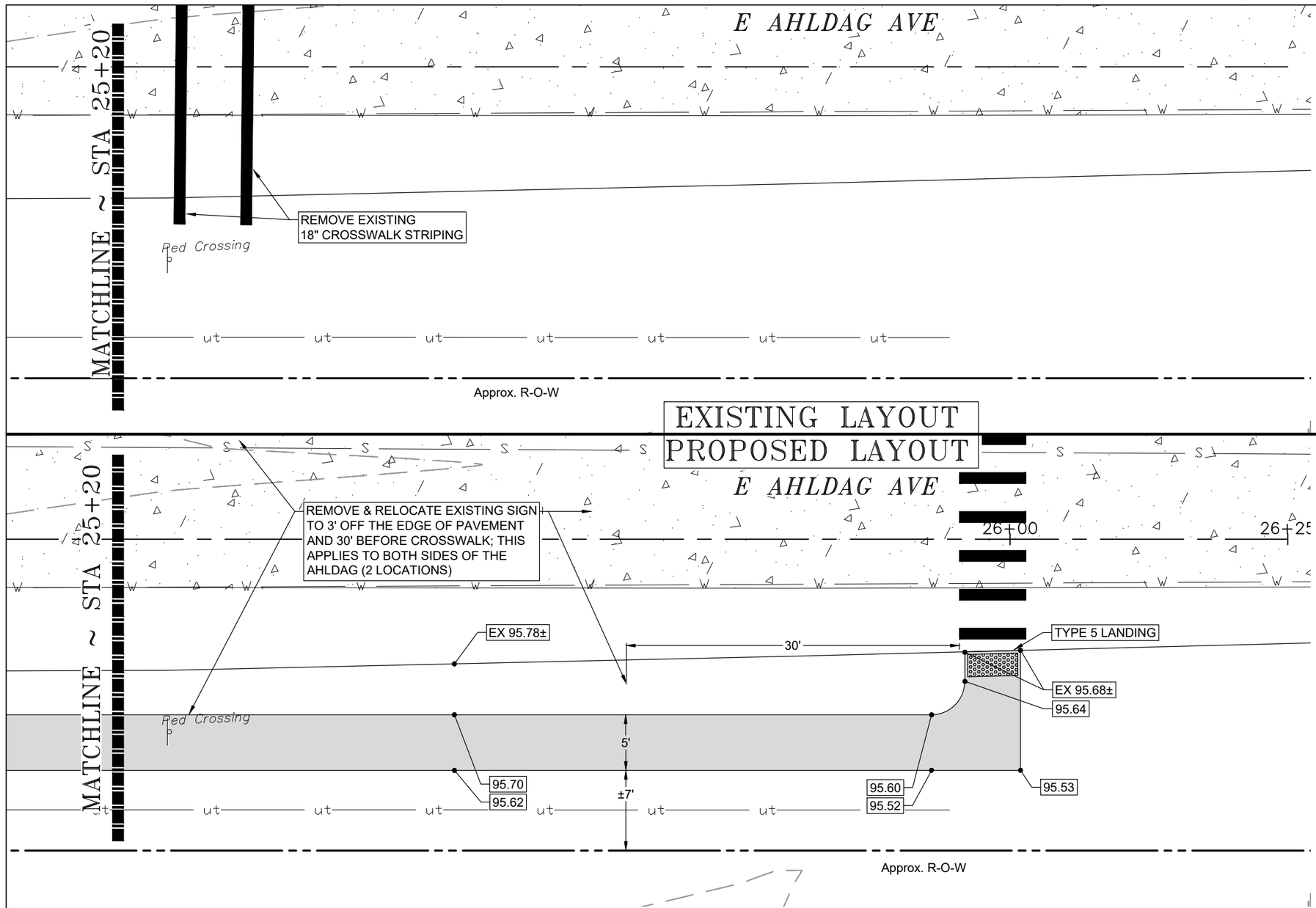
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			45
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0351 6002	1	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0531 6002	46	SY	CONC SIDEWALKS (5")
0531 6022	2.8	SY	CURB RAMPS (TY 5)
0644 6071	2	EA	RELOCATE SM RD SN SUP&AM TY TWT
0677 6006	74	LF	ELIM EXT PAV MRK & MRKS (18")

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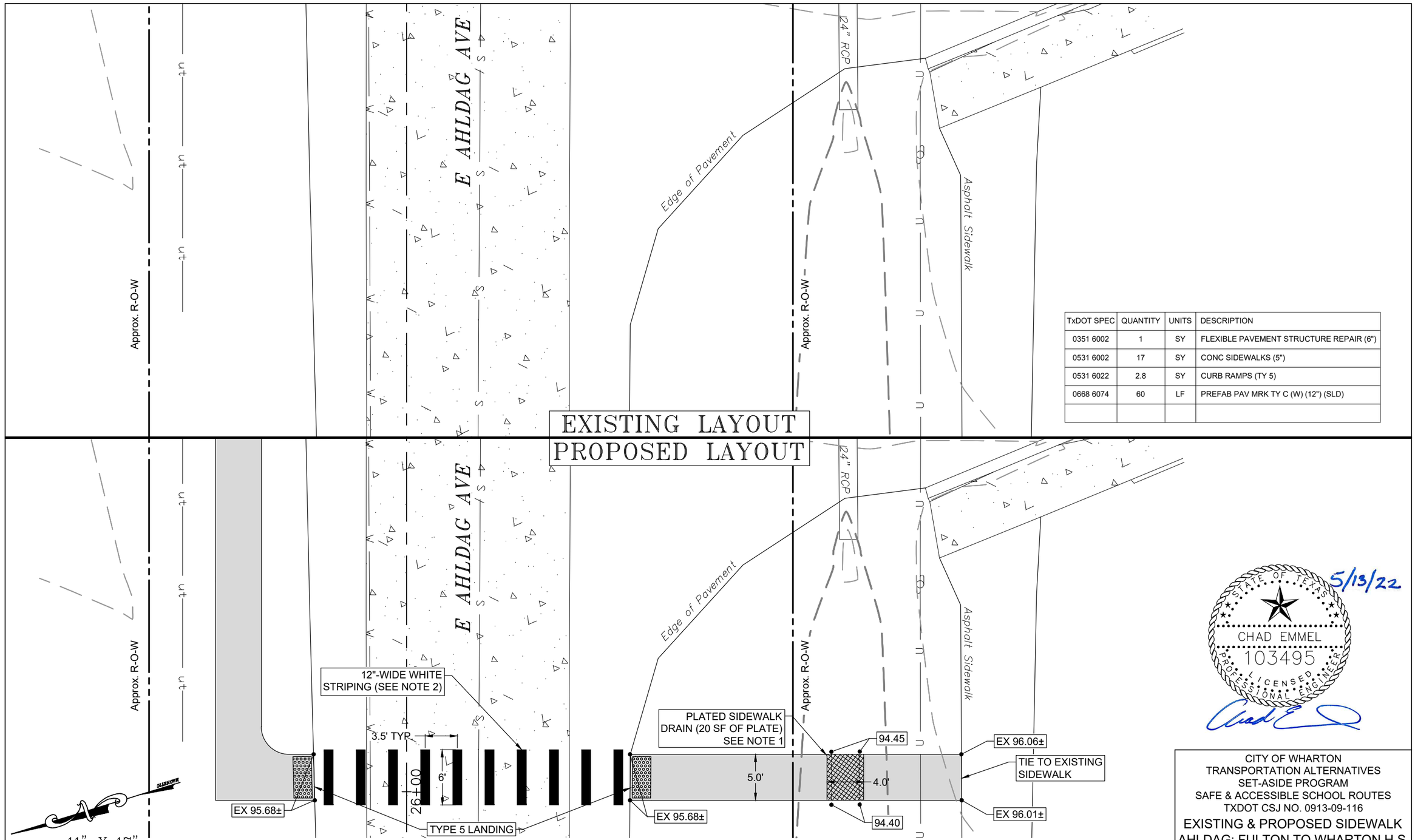
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			46
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0351 6002	1	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0531 6002	17	SY	CONC SIDEWALKS (5")
0531 6022	2.8	SY	CURB RAMPS (TY 5)
0668 6074	60	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Payment for sidewalk drains (materials, labor, equipment, etc.) shall be included in per square yard payment for sidewalks. No separate payment will be made.
2. Crosswalk notes:
   - Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center crosswalk lines on travel lanes.
   - A minimum 6" clear distance shall be provided to the face of curb or edge of roadway. If the last crosswalk line falls into this distance it must be omitted.
   - Final placement of crosswalk shall be approved by the Engineer in the field.

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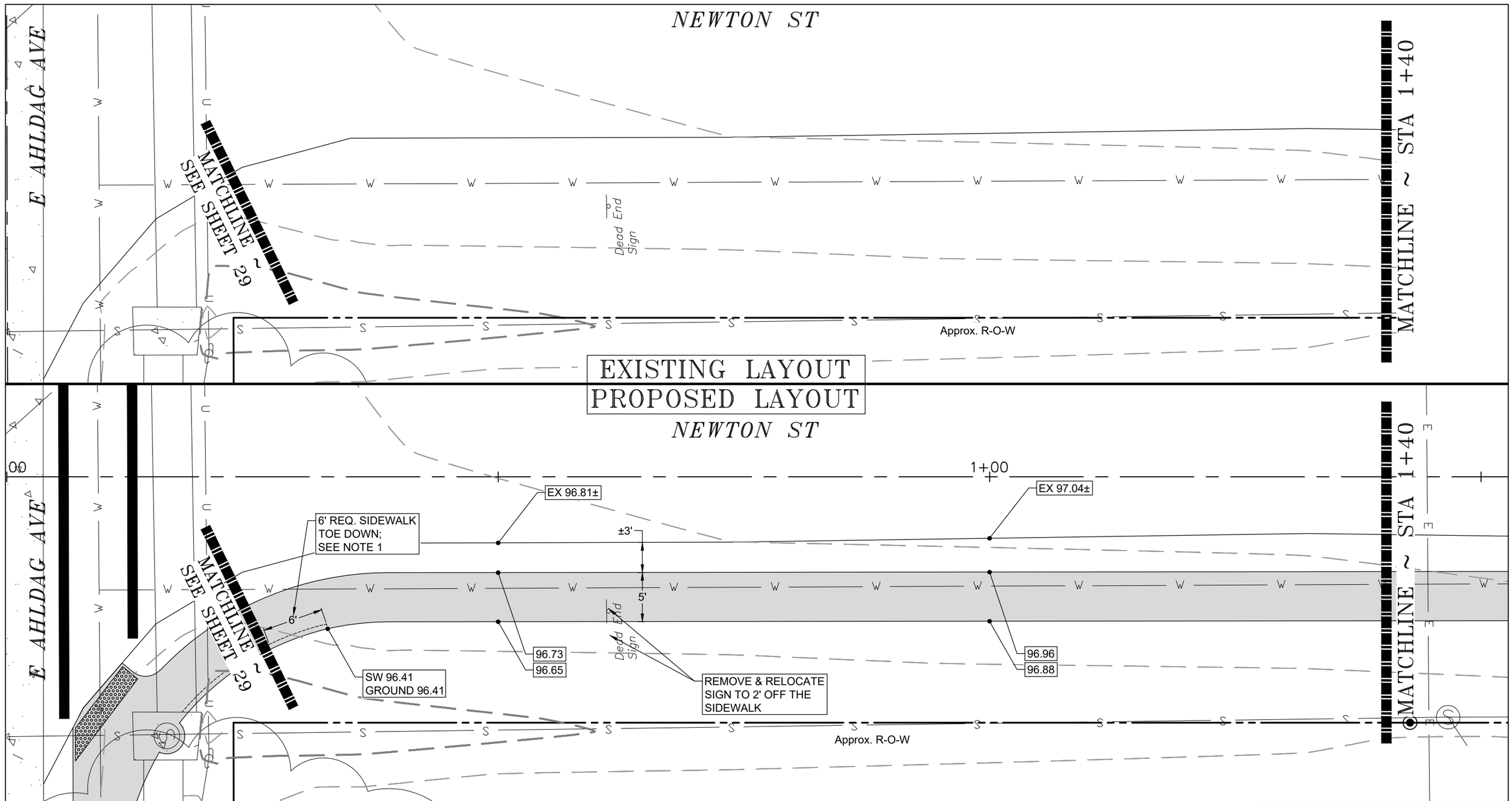
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
AHLDAG: FULTON TO WHARTON H.S.

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			47
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Sidewalk toe downs and curb wall/retaining walls are subsidiary to Item 531; Concrete Sidewalks.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	64	SY	CONC SIDEWALKS (5")
0644 6071	1	EA	RELOCATE SM RD SN SUP&AM TY TWT

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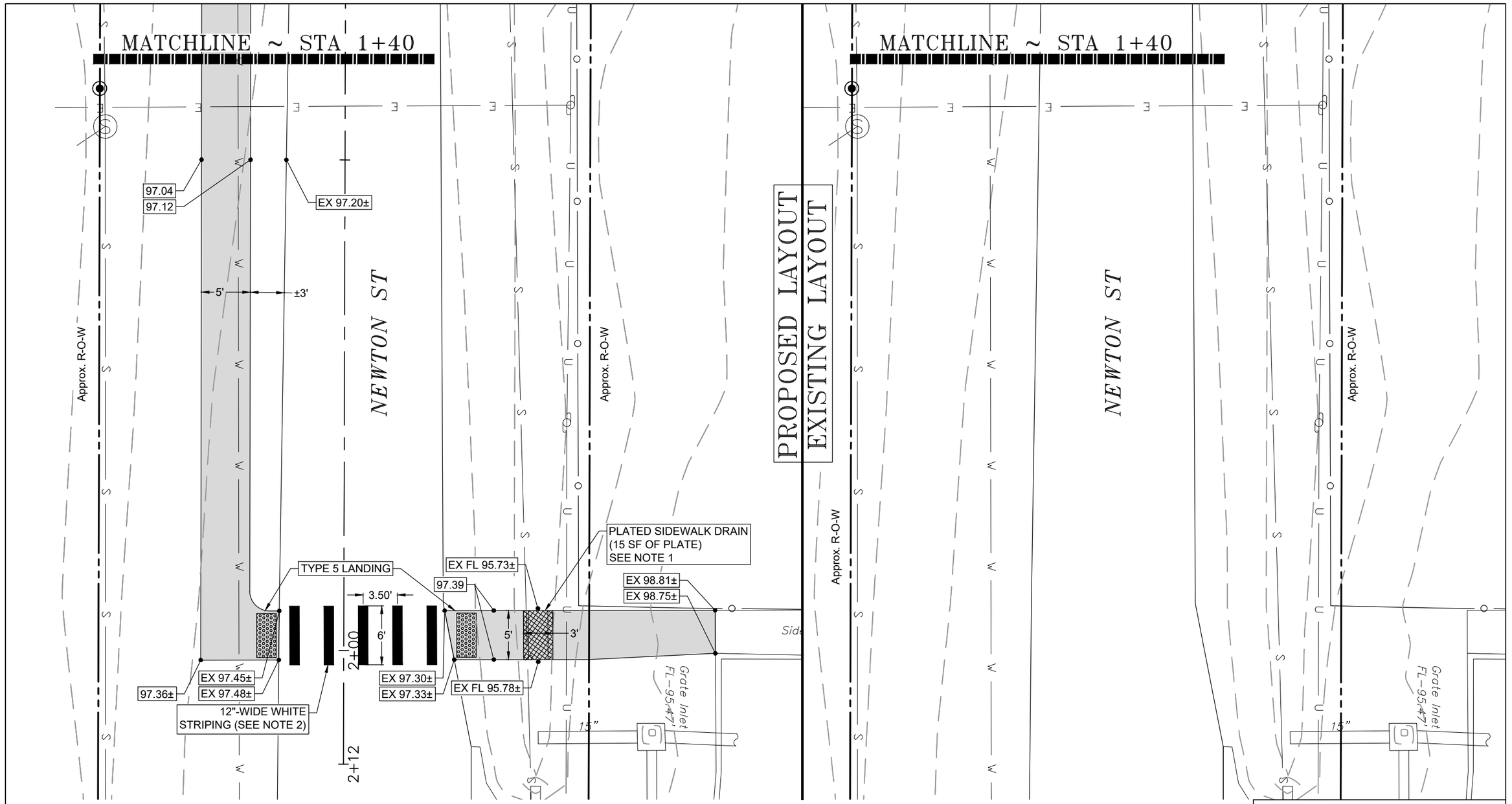
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK NEWTON: AHLDAG TO B&G CLUB

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			48
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\AHLDAG-NEWTON

Notes:
1. Payment for sidewalk drains (materials, labor, equipment, etc.) shall be included in per square yard payment for sidewalks. No separate payment will be made.
2. Crosswalk notes:
   - Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center crosswalk lines on travel lanes.
   - A minimum 6" clear distance shall be provided to the face of curb or edge of roadway. If the last crosswalk line falls into this distance it must be omitted.
   - Final placement of crosswalk shall be approved by the Engineer in the field.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0351 6002	2	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0531 6002	45	SY	CONC SIDEWALKS (5")
0531 6022	5.3	SY	CURB RAMPS (TY 5)
0668 6074	30	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

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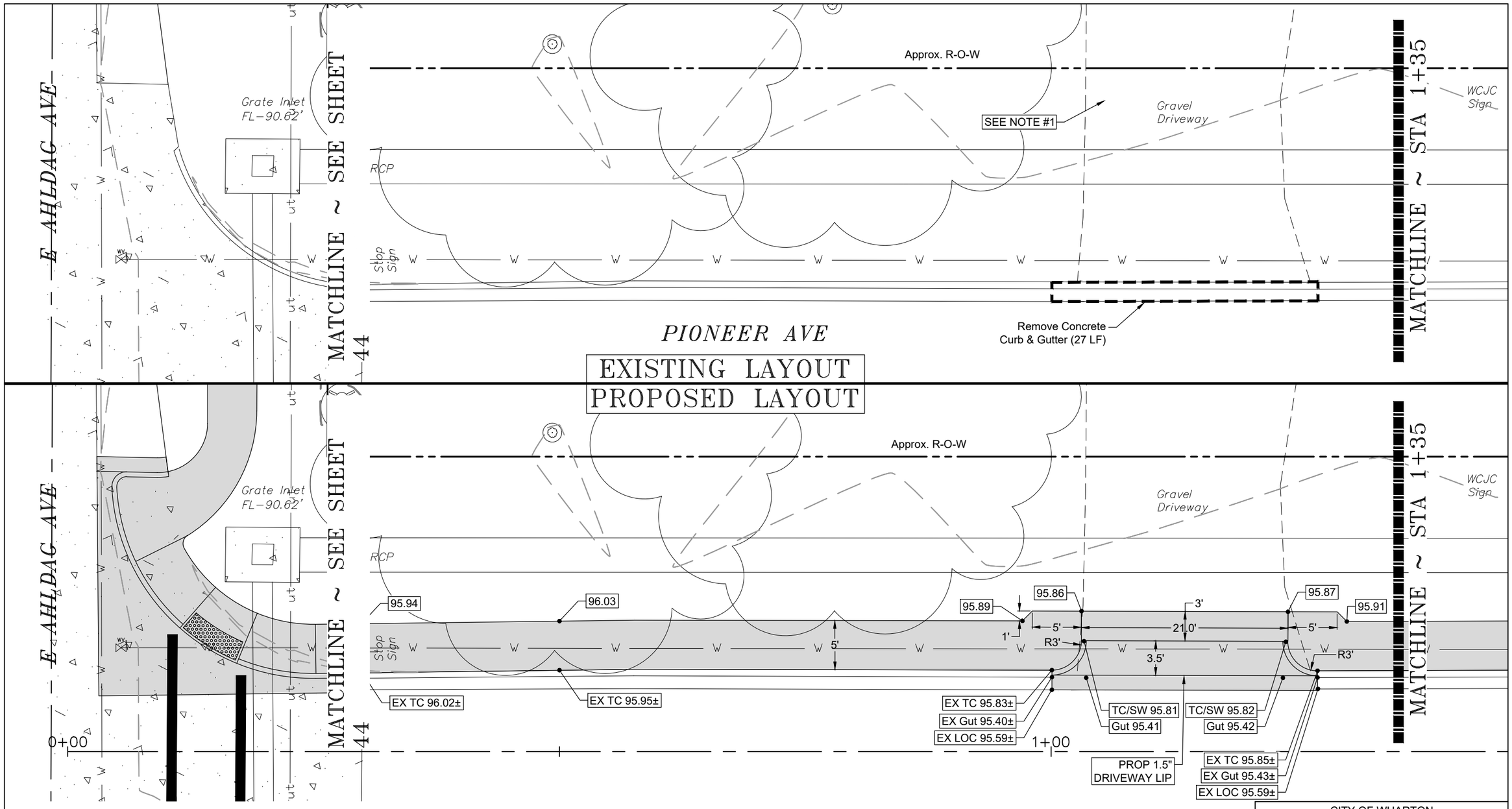
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK NEWTON: AHLDAG TO B&G CLUB

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			49
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

Notes:
1. Remove Gravel drive for installation of sidewalk and concrete driveway. Adjust gravel driveway on R-O-W side of improvements as required. This work is subsidiary to Item 530.

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6022	27	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	6	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0530 6004	20	SY	DRIVEWAYS (CONC)
0531 6002	47	SY	CONC SIDEWALKS (5")

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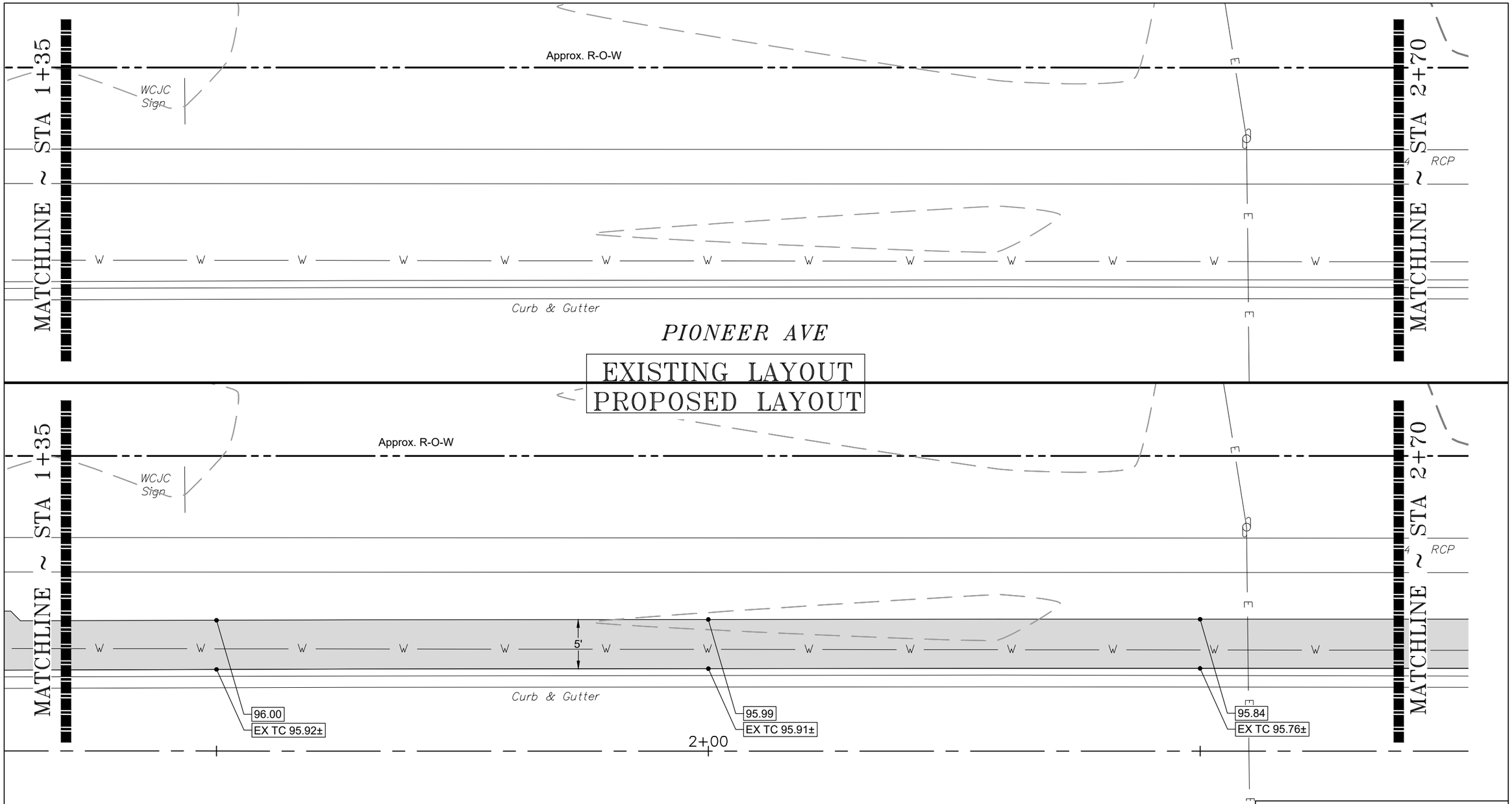
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			50
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	75	SY	CONC SIDEWALKS (5")

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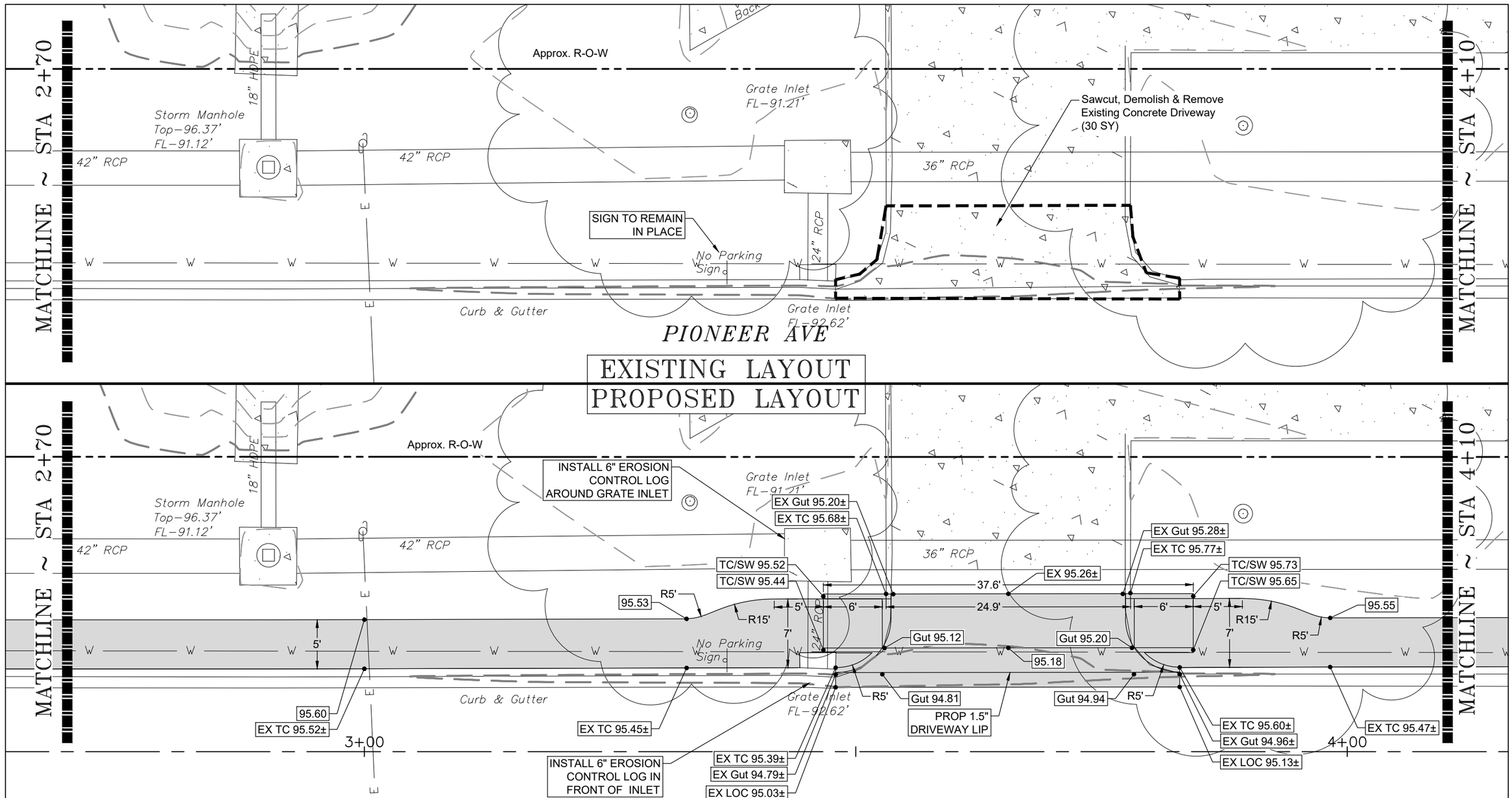
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			51
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	30	SY	REMOVING CONC (DRIVEWAYS)
0351 6002	7.8	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	35	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	35	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0530 6004	29	SY	DRIVEWAYS (CONC)
0531 6002	71	SY	CONC SIDEWALKS (5")

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO.579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

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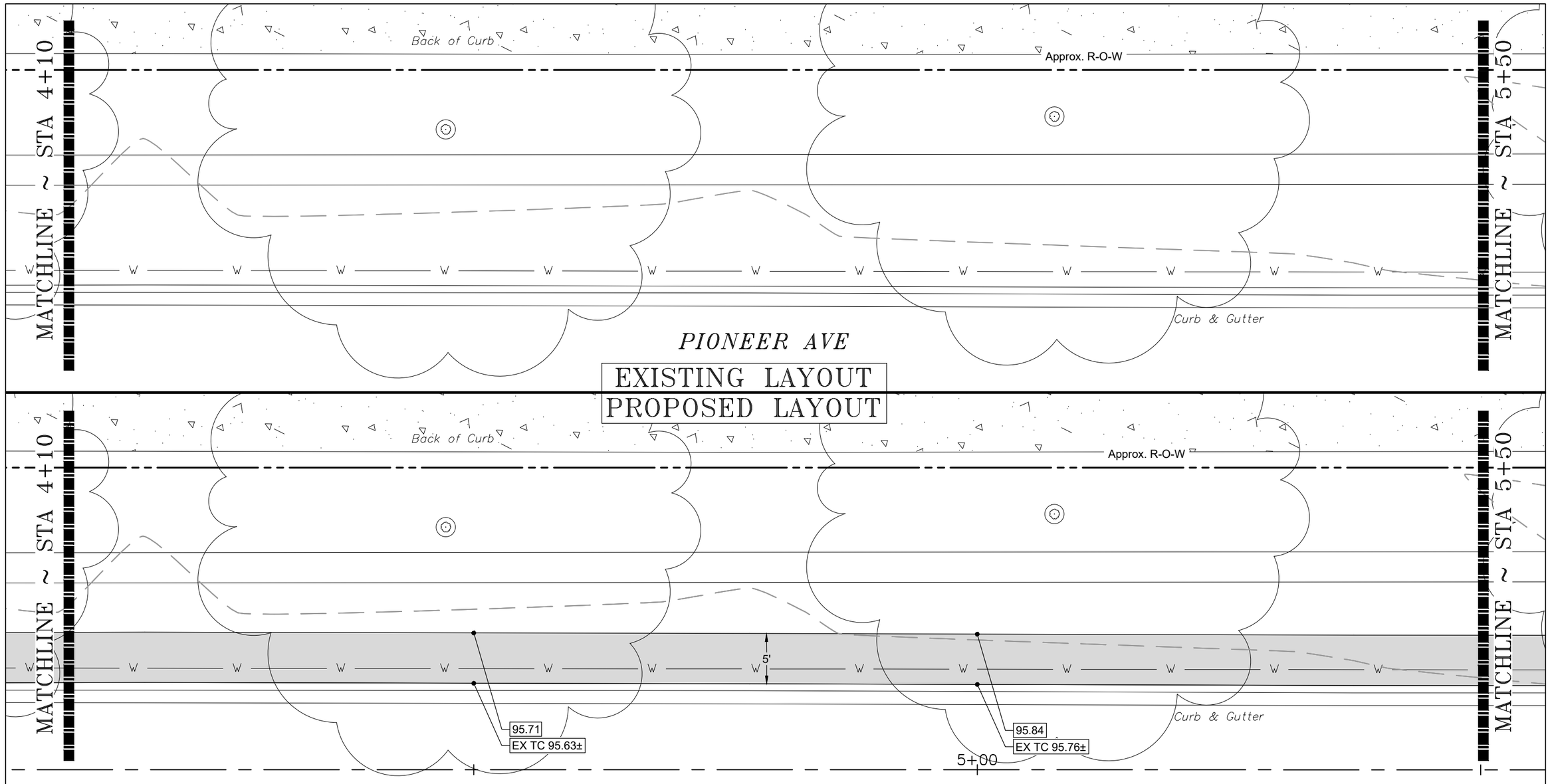
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			52
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING_DESIGN

PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	78	SY	CONC SIDEWALKS (5")

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TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			53
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

EXISTING LAYOUT

Back of Curb
Approx. R-O-W
MATCHLINE STA 5+50
MATCHLINE STA 6+85
HORTON FOOTE DR
WCJO Sign
Sawcut, Demolish & Remove Existing Concrete Driveway (22 SY)
Remove Concrete Curb & Gutter (6 LF)
Remove Concrete Curb & Gutter (6 LF)
Grate Inlet TOP–95.70 FL–91.80'
15" RCP
36" RCP
36" RCP
30' RCP
Stop Sign
No Parking Sign
SIGN TO REMAIN IN PLACE
Grate Inlet FL–92.76'
Remove Concrete Curb & Gutter (17 LF)
PIONEER AVE

PROPOSED LAYOUT

Back of Curb
Approx. R-O-W
INSTALL 6" EROSION CONTROL LOG AROUND GRATE INLET
Grate Inlet TOP–95.70 FL–91.80'
14.4' REQ. SIDEWALK TOE DOWN
EX Gut 95.92±
EX TC 96.37±
WCJO Sign
95.91
TC/SW 96.28
44.6'
21.9'
6'
6'
5'
R5.5'
R5.5'
EX TC 96.20±
EX Gut 95.68±
EX LOC 95.81±
Gut 95.73
TC 95.83
Gut 95.71
6+00
PROP 1.5" DRIVEWAY LIP
Gut 95.83
TC 95.97
Gut 95.85
EX Gut 96.02±
EX TC 96.57±
96.05
TC/SW 96.50
EX TC 96.42±
EX Gut 95.88±
EX LOC 96.02±
TYPE II CURB & GUTTER
TYPE II CURB & GUTTER
INSTALL 6" EROSION CONTROL LOG IN FRONT OF INLET
EX TC 96.38±
Grate Inlet FL–92.76'
EX TC 96.71±
96.76
96.70
6.4'
Stop Sign
96.62
96.68
EX TC 96.69±
EX Gut 96.24±
EX LOC 96.34±
14.4'
5'
5'
36" RCP
36" RCP
EX 95.75±
30' RCP
96.46
TC/Gut 96.18
TC/Gut 96.12
6'
TYPE 1 CURB RAMP
EX TC 96.49±
EX Gut 96.05±
EX LOC 96.17±
12"-WIDE WHITE STRIPING (SEE NOTE 1)
PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	22	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	29	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	13.7	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	35	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	35	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0529 6008	12	LF	CONC CURB & GUTTER (TY II)
0530 6004	20	SY	DRIVEWAYS (CONC)
0531 6002	58	SY	CONC SIDEWALKS (5")
0531 6018	12	SY	CURB RAMPS (TY 1)
0668 6074	29	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

11" X 17" GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

Notes:
1. Final placement of crosswalk shall be approved by the Engineer in the field.
2. Sidewalk toe downs and curb wall/retaining walls are subsidiary to Item 531; Concrete Sidewalks.

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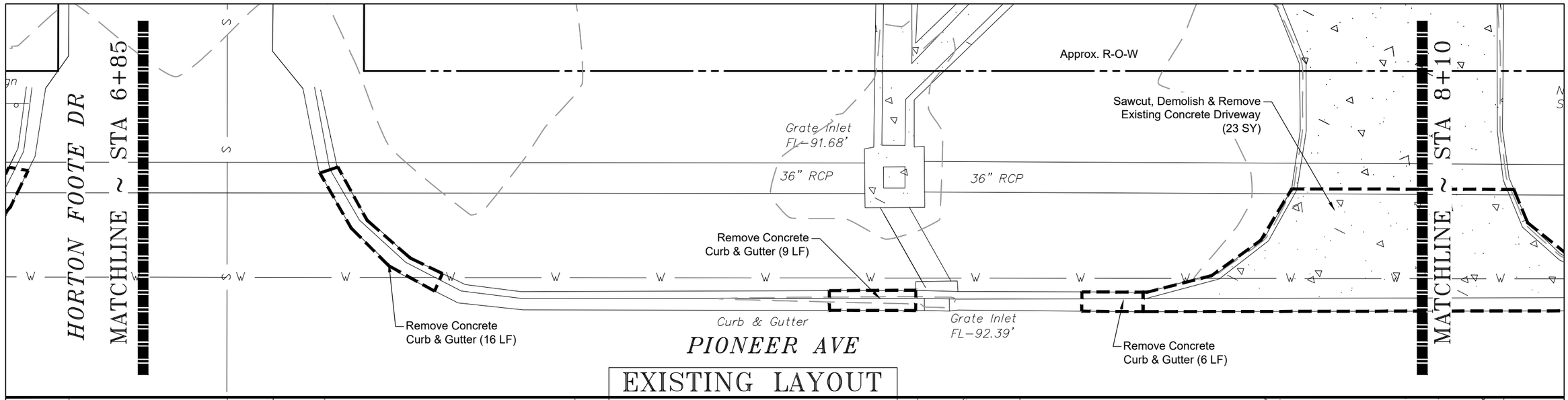
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

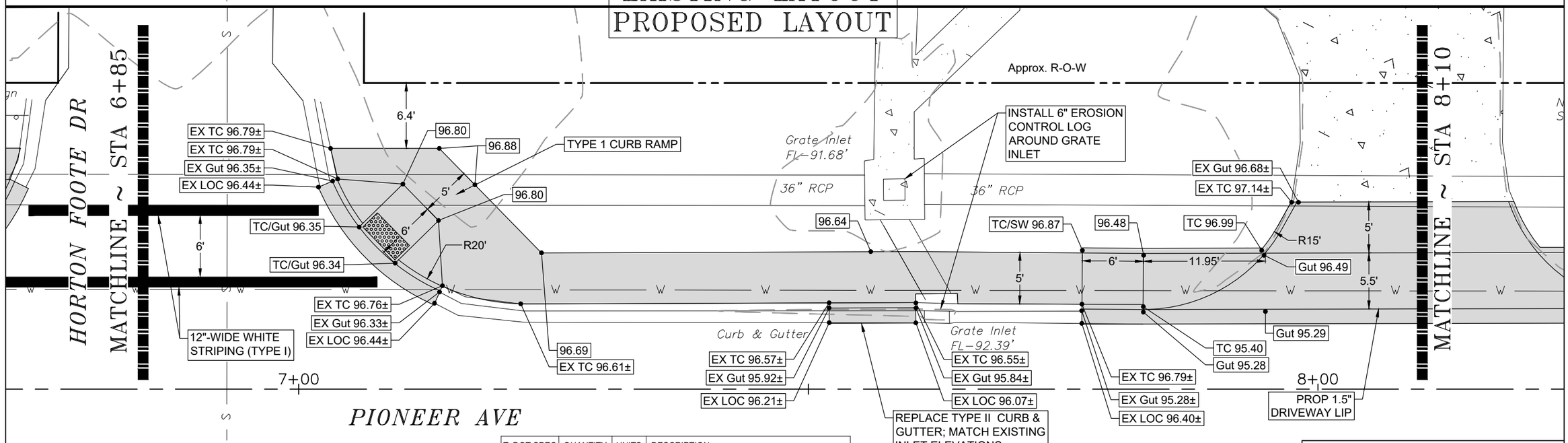
Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			54
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN



EXISTING LAYOUT
PROPOSED LAYOUT



TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	23	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	31	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	12.7	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	35	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	35	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0529 6008	15	LF	CONC CURB & GUTTER (TY II)
0530 6004	22	SY	DRIVEWAYS (CONC)
0531 6002	51	SY	CONC SIDEWALKS (5")
0531 6018	12.5	SY	CURB RAMPS (TY 1)
0668 6074	40	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

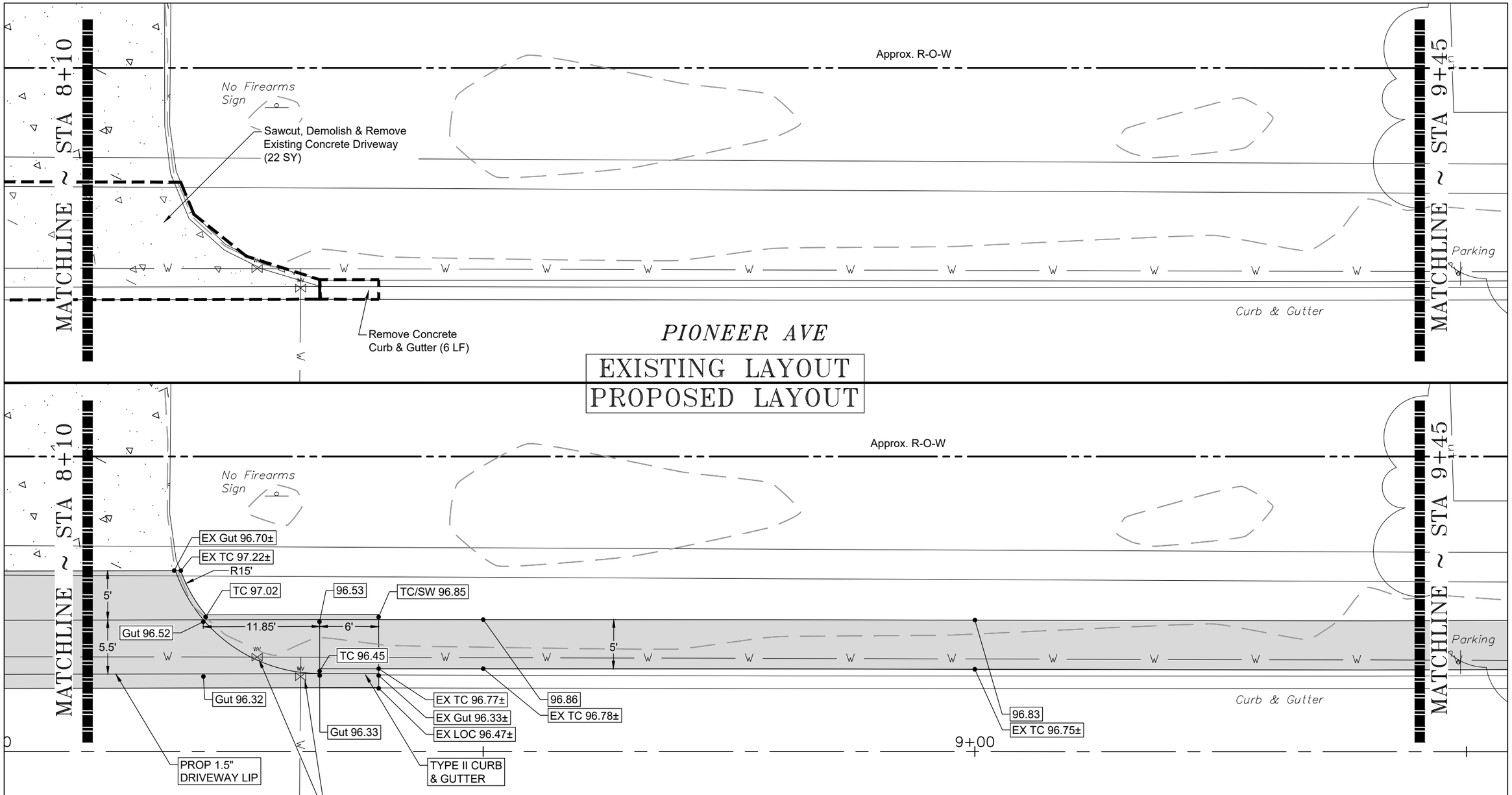
STATE OF TEXAS
CHAD EMMEL
103495
PROFESSIONAL LICENSED ENGINEER
5/13/22

BEFCO ENGINEERING, INC. (F-2011)
P.O. Box 615 La Grange, Texas 78945
(979) 968-6474

CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			55
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	22	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	6	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	6.5	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0529 6008	6	LF	CONC CURB & GUTTER (TY II)
0530 6004	21	SY	DRIVEWAYS (CONC)
0531 6002	68	SY	CONC SIDEWALKS (5")

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
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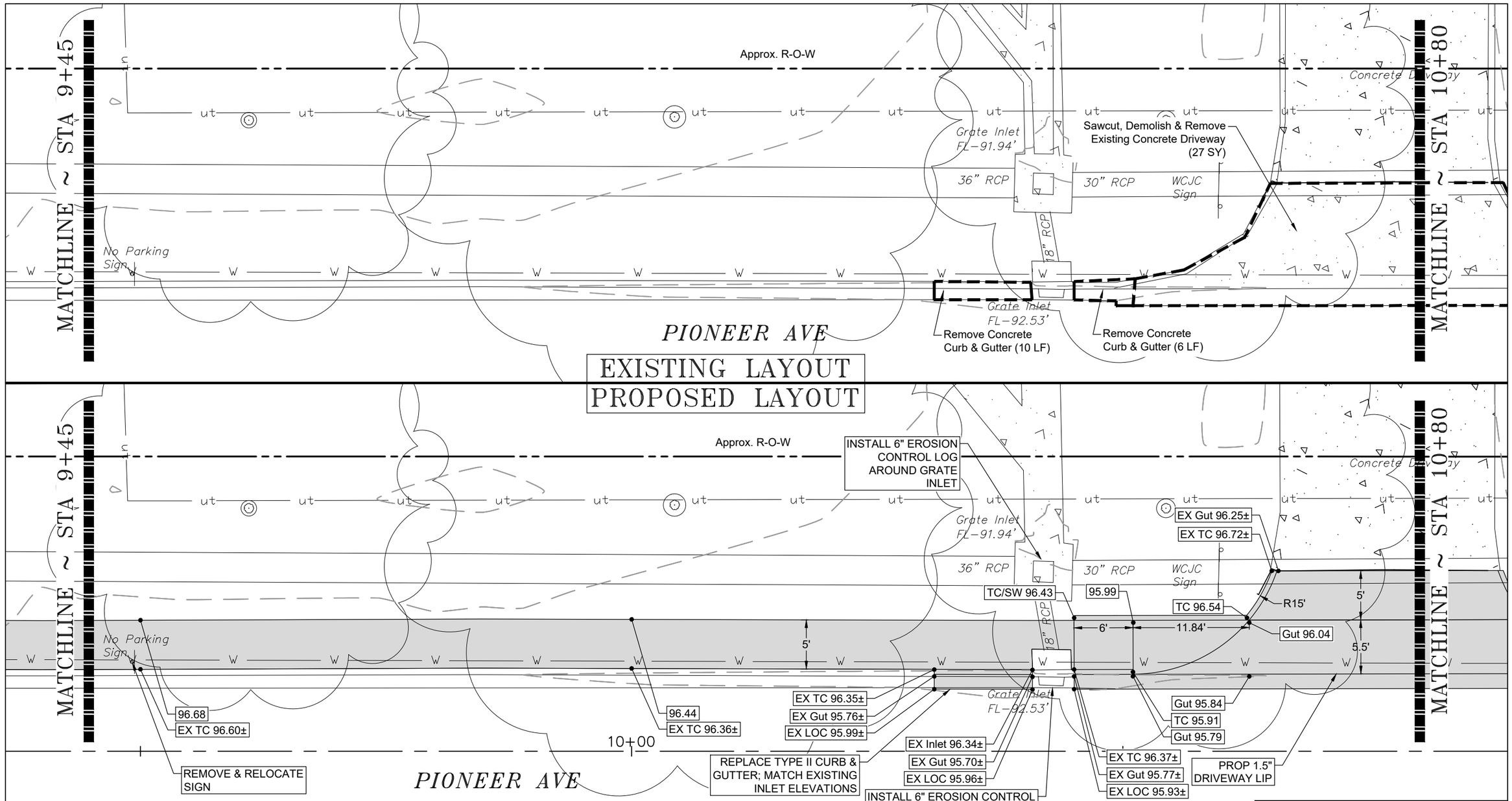
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			56
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	27	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	16	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	10.0	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	35	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	35	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0529 6008	16	LF	CONC CURB & GUTTER (TY II)
0530 6004	25	SY	DRIVEWAYS (CONC)
0531 6002	64	SY	CONC SIDEWALKS (5")
0644 6071	1	EA	RELOCATE SM RD SN SUP&AM TY TWT

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SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			57
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

MATCHLINE STA 10+80

MATCHLINE STA 12+15

Concr[illegible]riveway

Sawcut, Demolish & Remove
Existing Concrete Driveway
(23 SY)

Approx. R-O-W

Remove Concrete
Curb & Gutter (6 LF)

Curb & Gutter

PIONEER AVE

EXISTING LAYOUT
PROPOSED LAYOUT

Approx. R-O-W

EX Gut 96.37±

EX TC 96.85±

TC 96.65

96.20

TC/SW 96.58

R15'

5'

Gut 96.15

11.82'

6'

5.5'

TC 96.12

5'

Gut 95.95

EX TC 96.50±

EX Gut 96.02±

EX LOC 96.14±

Curb & Gutter

96.61

EX TC 96.53±

96.69

EX TC 96.61±

11+00

12+00

Gut 96.00

PROP 1.5"
DRIVEWAY LIP

ADJUST VALVE BOX TO
MATCH TOP OF CONCRETE;
SUBSIDIARY TO ITEM 531

TYPE II CURB
& GUTTER

PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	23	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	6	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	6.4	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0529 6008	6	LF	CONC CURB & GUTTER (TY II)
0530 6004	22	SY	DRIVEWAYS (CONC)
0531 6002	69	SY	CONC SIDEWALKS (5")

11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
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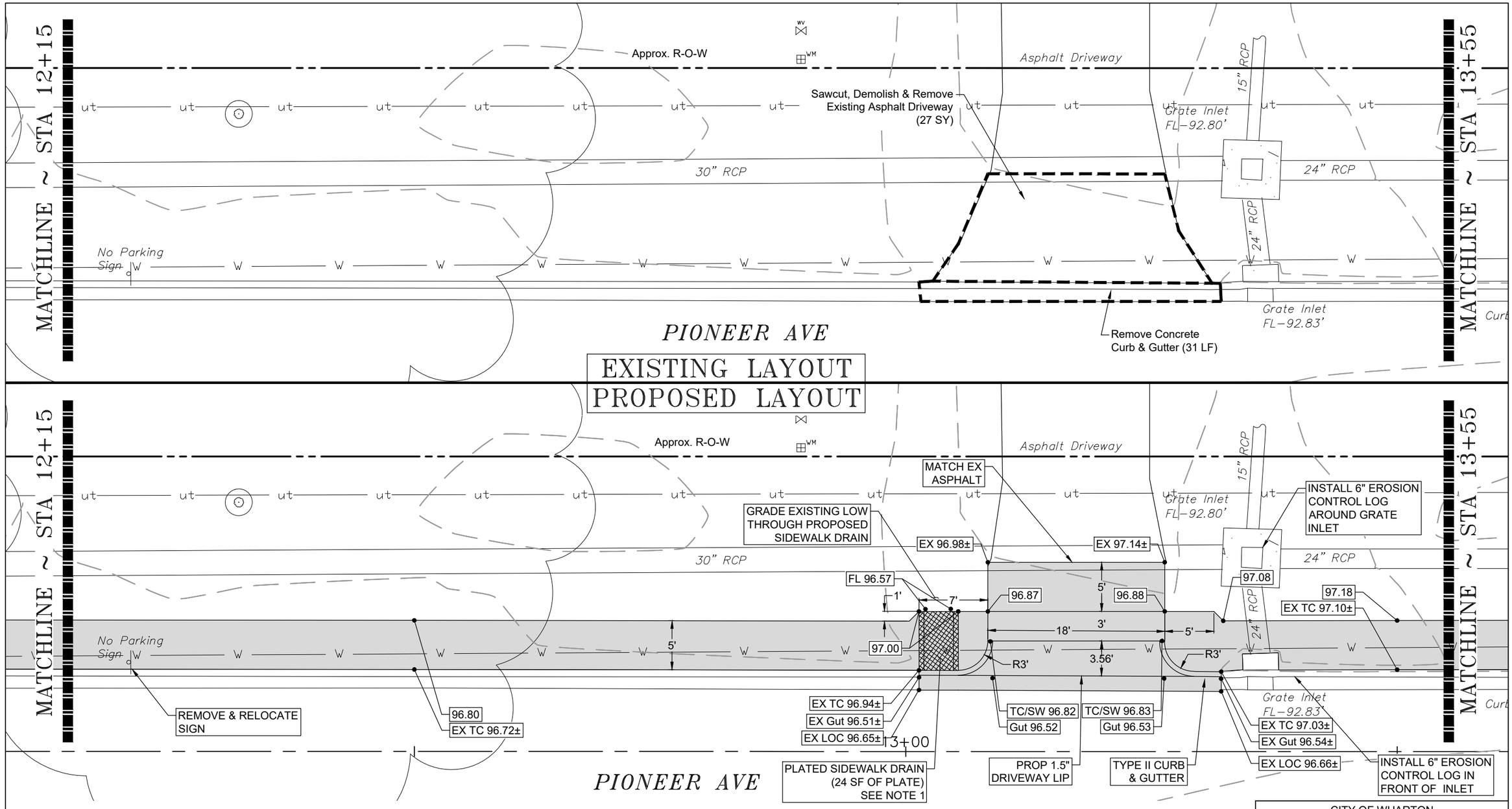
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			58
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

Notes:

1. Payment for sidewalk drains (materials, labor, equipment, etc.) shall be included in per square yard payment for sidewalks. No separate payment will be made. This includes grading to ensure proper drainage.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6022	31	LF	REMOVING CONC (CURB AND GUTTER)
0105 6011	27	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	10.8	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	35	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	35	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0529 6008	3	LF	CONC CURB & GUTTER (TY II)
0530 6004	28	SY	DRIVEWAYS (CONC)
0531 6002	68	SY	CONC SIDEWALKS (5")
0644 6071	1	EA	RELOCATE SM RD SN SUP&AM TY TWT

STATE OF TEXAS
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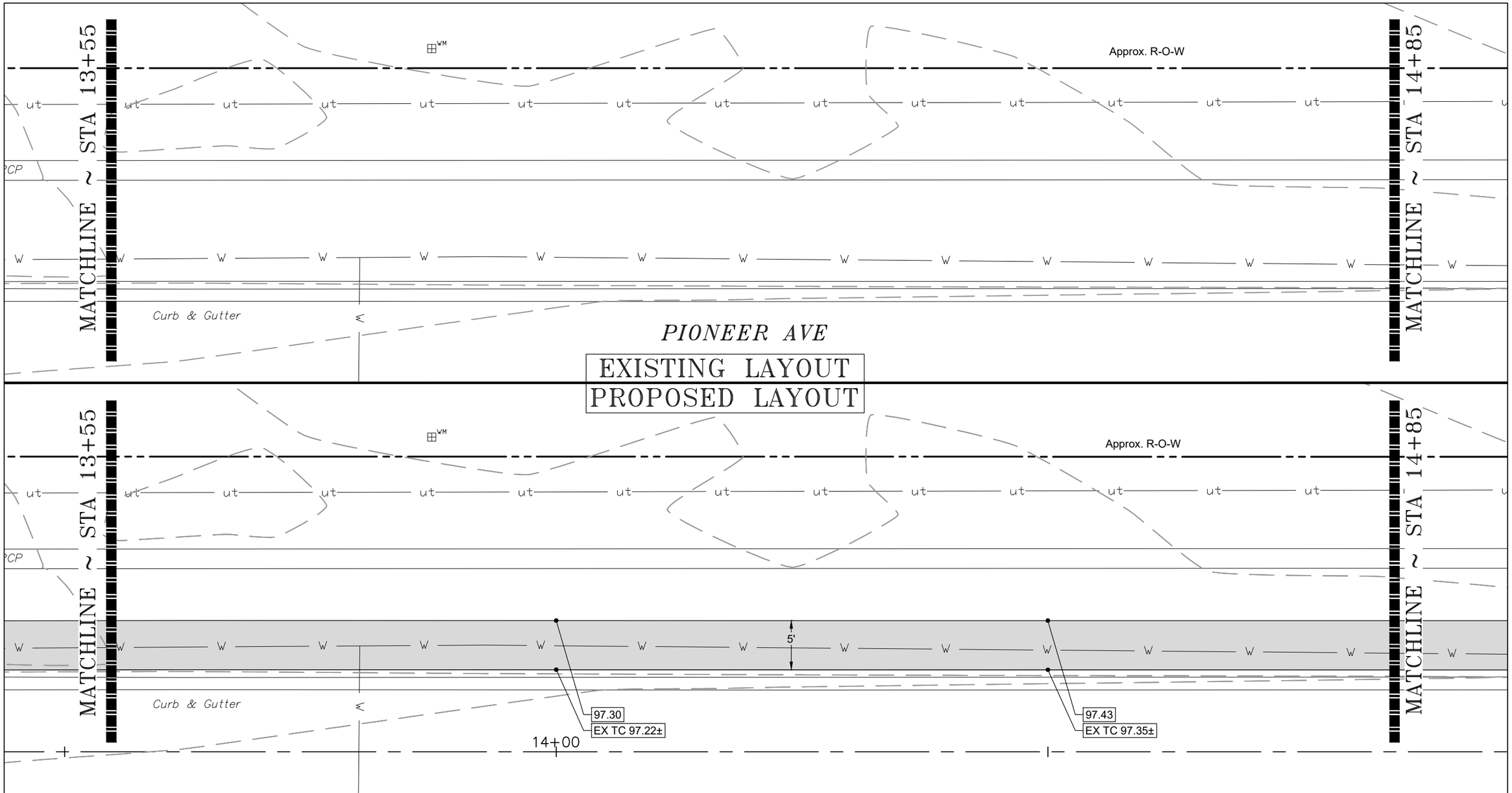
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			59
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	72	SY	CONC SIDEWALKS (5")

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

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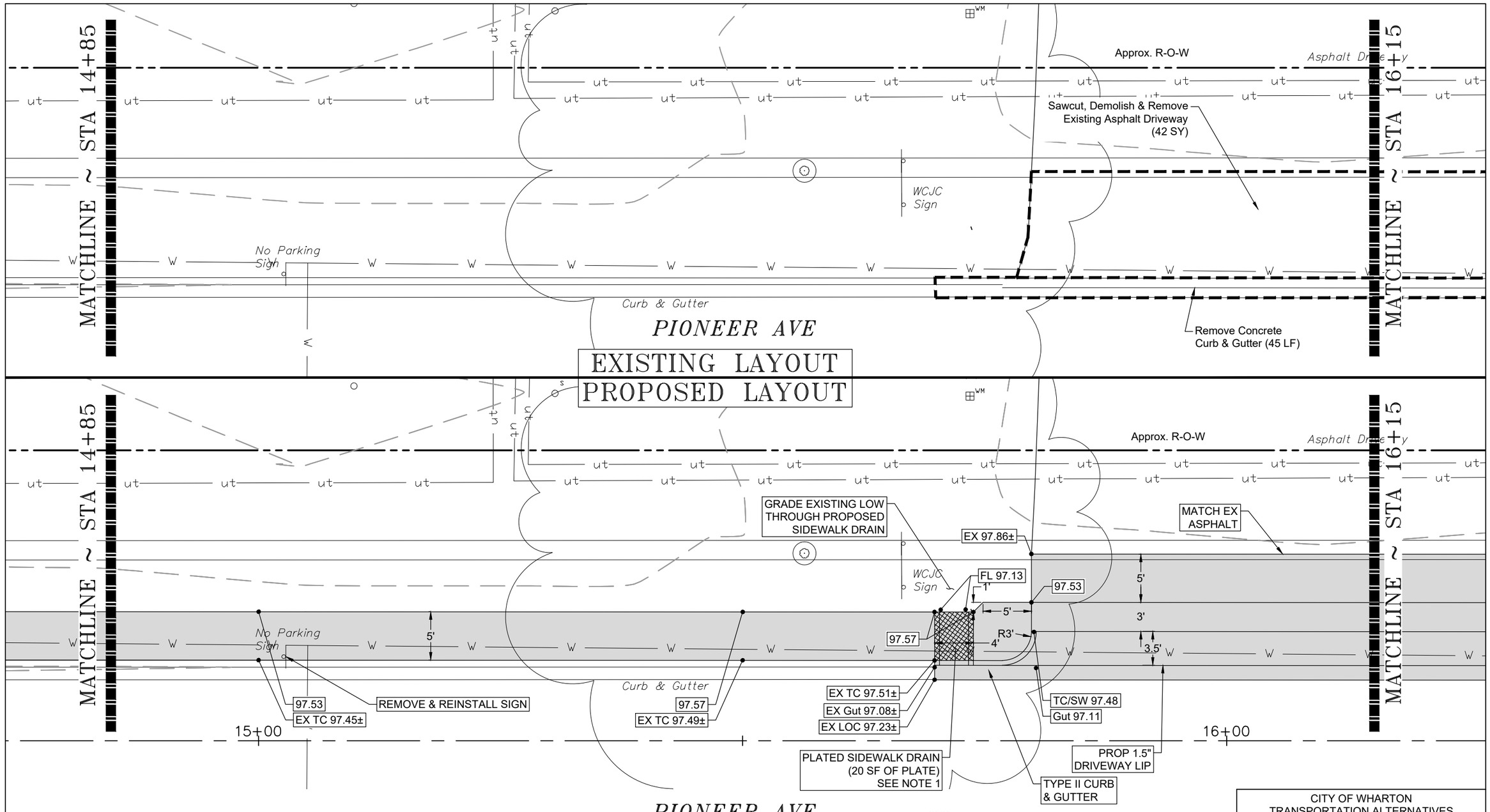
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			60
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6022	45	LF	REMOVING CONC (CURB AND GUTTER)
0105 6011	42	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	17.8	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0529 6008	3	LF	CONC CURB & GUTTER (TY II)
0530 6004	49	SY	DRIVEWAYS (CONC)
0531 6002	53	SY	CONC SIDEWALKS (5")
0644 6071	1	EA	RELOCATE SM RD SN SUP&AM TY TWT

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

Notes:
1. Payment for sidewalk drains (materials, labor, equipment, etc.) shall be included in per square yard payment for sidewalks. No separate payment will be made. This includes grading to ensure proper drainage.

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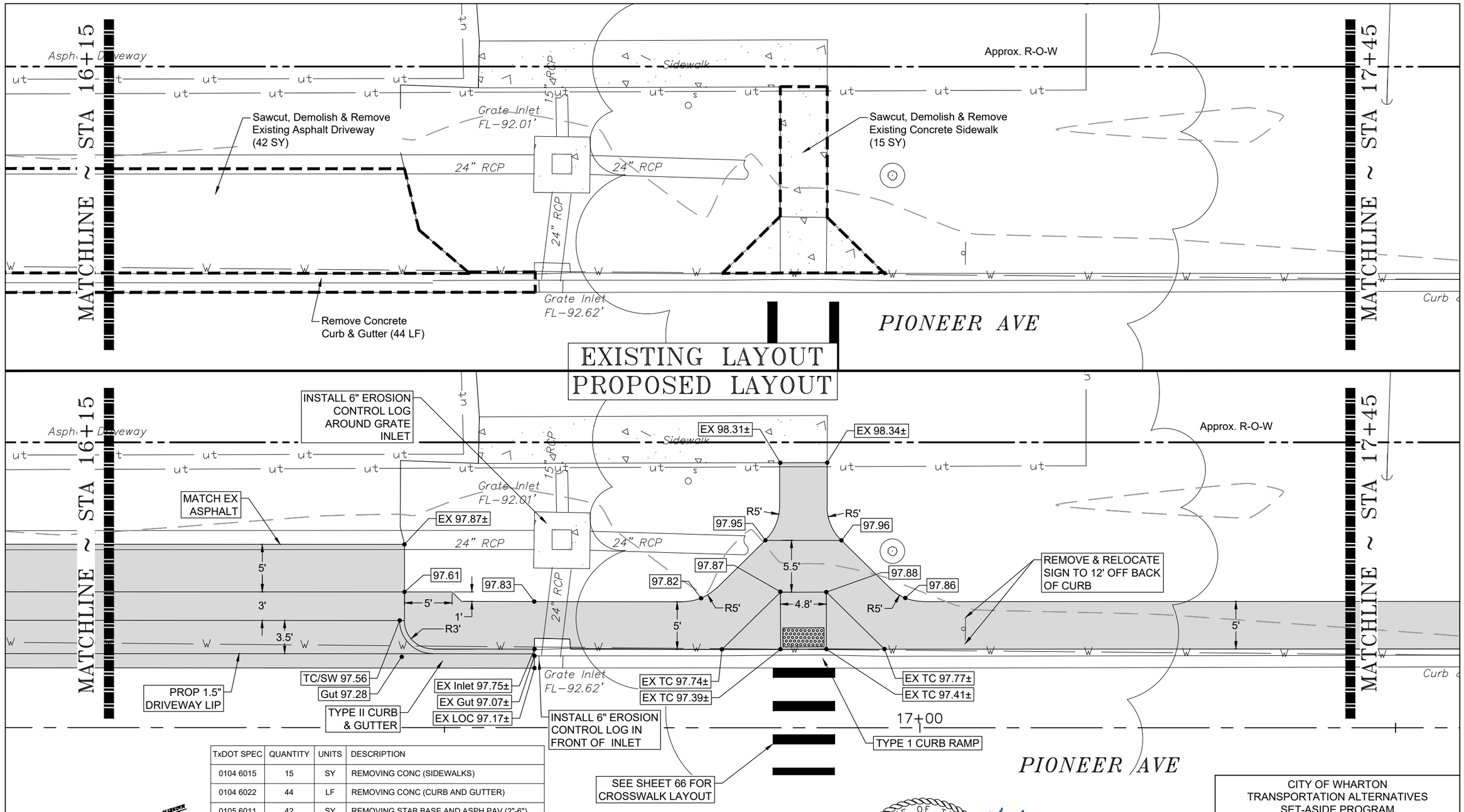
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			61
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6015	15	SY	REMOVING CONC (SIDEWALKS)
0104 6022	44	LF	REMOVING CONC (CURB AND GUTTER)
0105 6011	42	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	16.7	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	35	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	35	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0529 6008	11	LF	CONC CURB & GUTTER (TY II)
0530 6004	48	SY	DRIVEWAYS (CONC)
0531 6002	60	SY	CONC SIDEWALKS (5")
0531 6018	10.2	SY	CURB RAMPS (TY 1)
0644 6071	1	EA	RELOCATE SM RD SN SUP&AM TY TWT

Notes:
1. Quantity shown for removing concrete sidewalk is for informational purposes only. This work is considered subsidiary to the project. Payment for removal shall be included in "Conc Sidewalks (5")", TxDOT Specification 531. No separate payment will be made.

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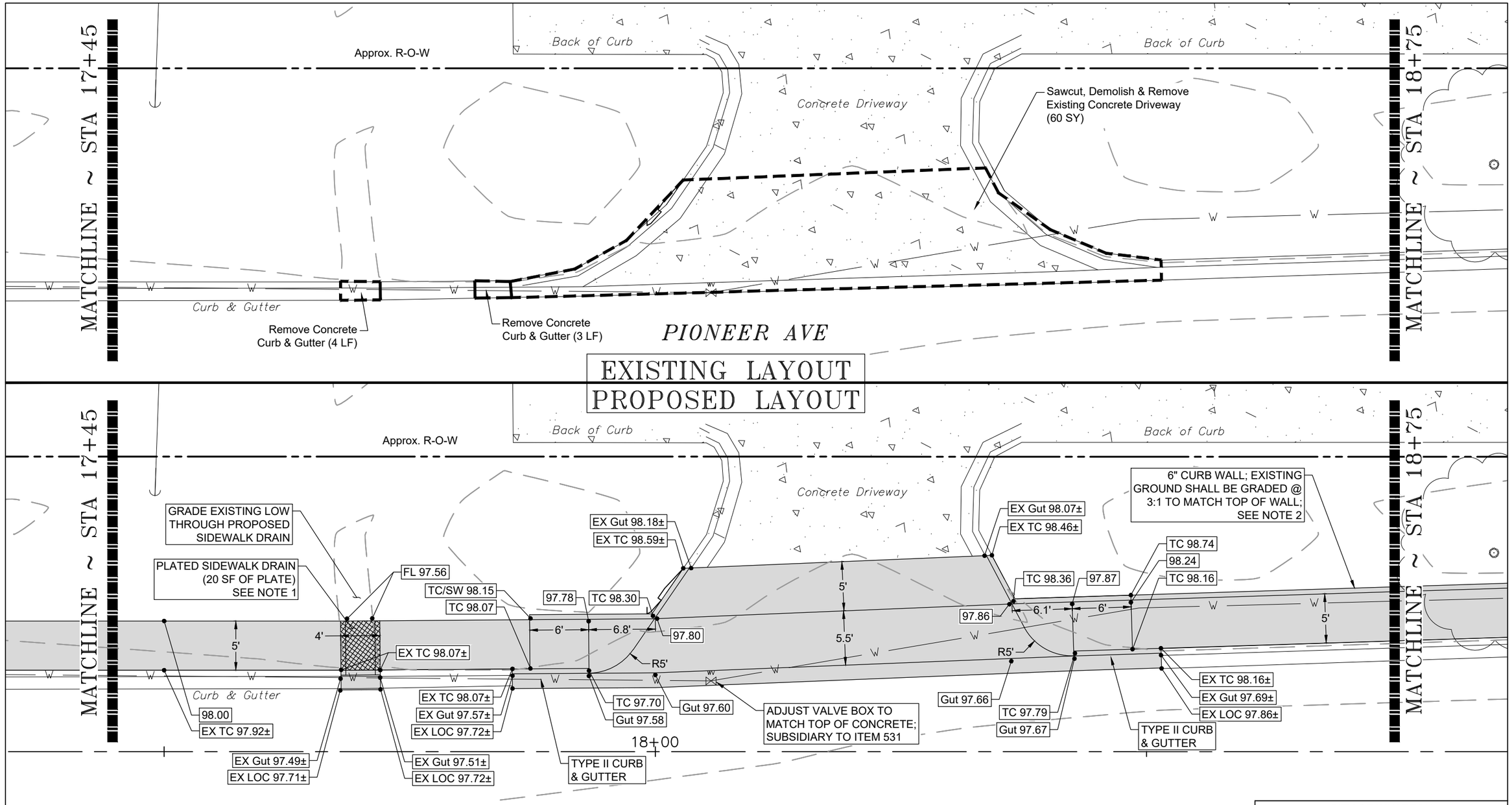
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			62
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

Notes:

1. Payment for sidewalk drains (materials, labor, equipment, etc.) shall be included in per square yard payment for sidewalks. No separate payment will be made. This includes grading to ensure proper drainage.
2. Sidewalk toe downs and curb wall/retaining walls are subsidiary to Item 531; Concrete Sidewalks.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	60	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	7	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	15.6	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0529 6008	17	LF	CONC CURB & GUTTER (TY II)
0530 6004	52	SY	DRIVEWAYS (CONC)
0531 6002	54	SY	CONC SIDEWALKS (5")

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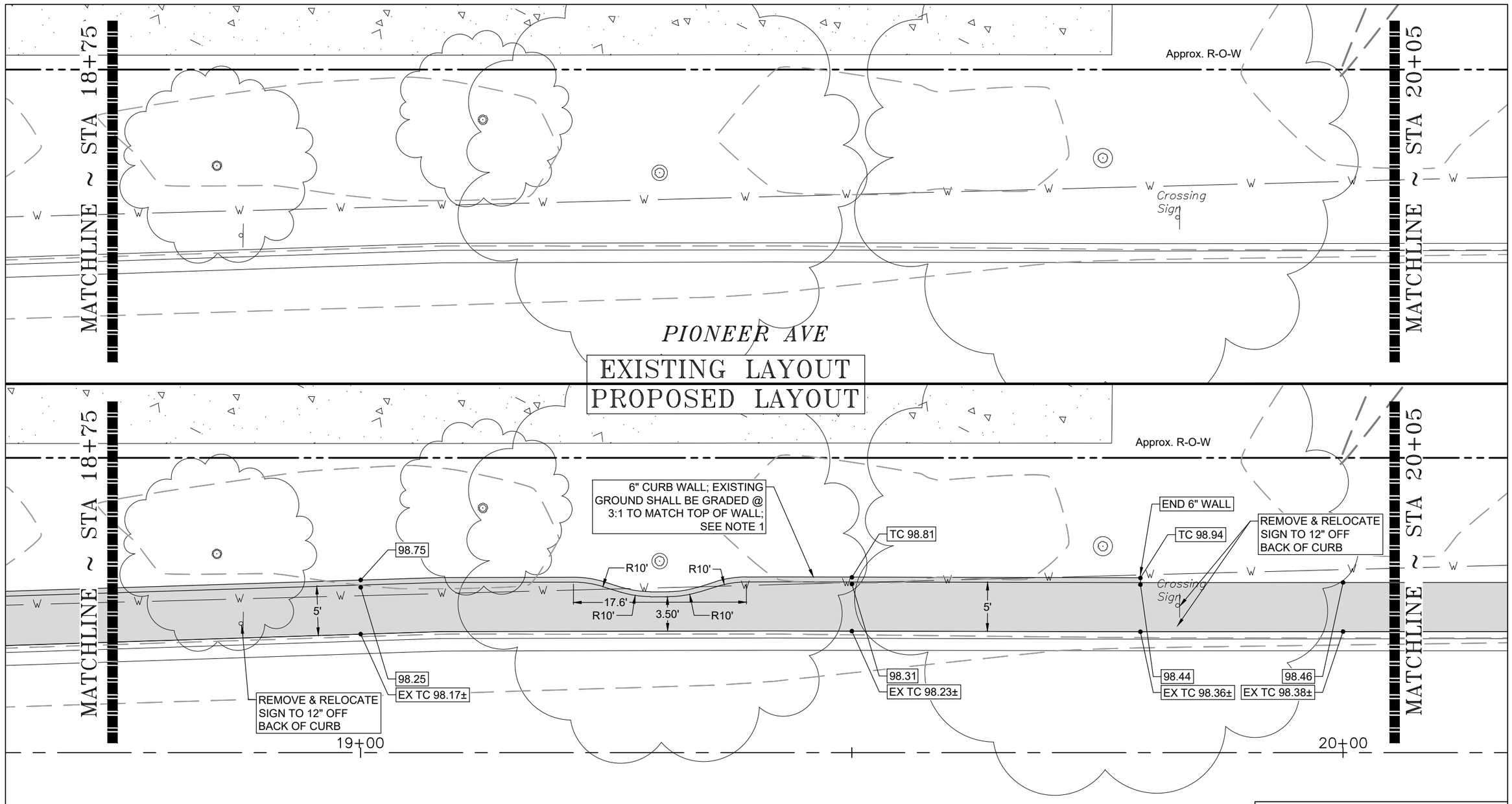
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			63
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

Notes:
1. Sidewalk toe downs and curb wall/retaining walls are subsidiary to Item 531; Concrete Sidewalks.

PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	77	SY	CONC SIDEWALKS (5")
0644 6071	2	EA	RELOCATE SM RD SN SUP&AM TY TWT

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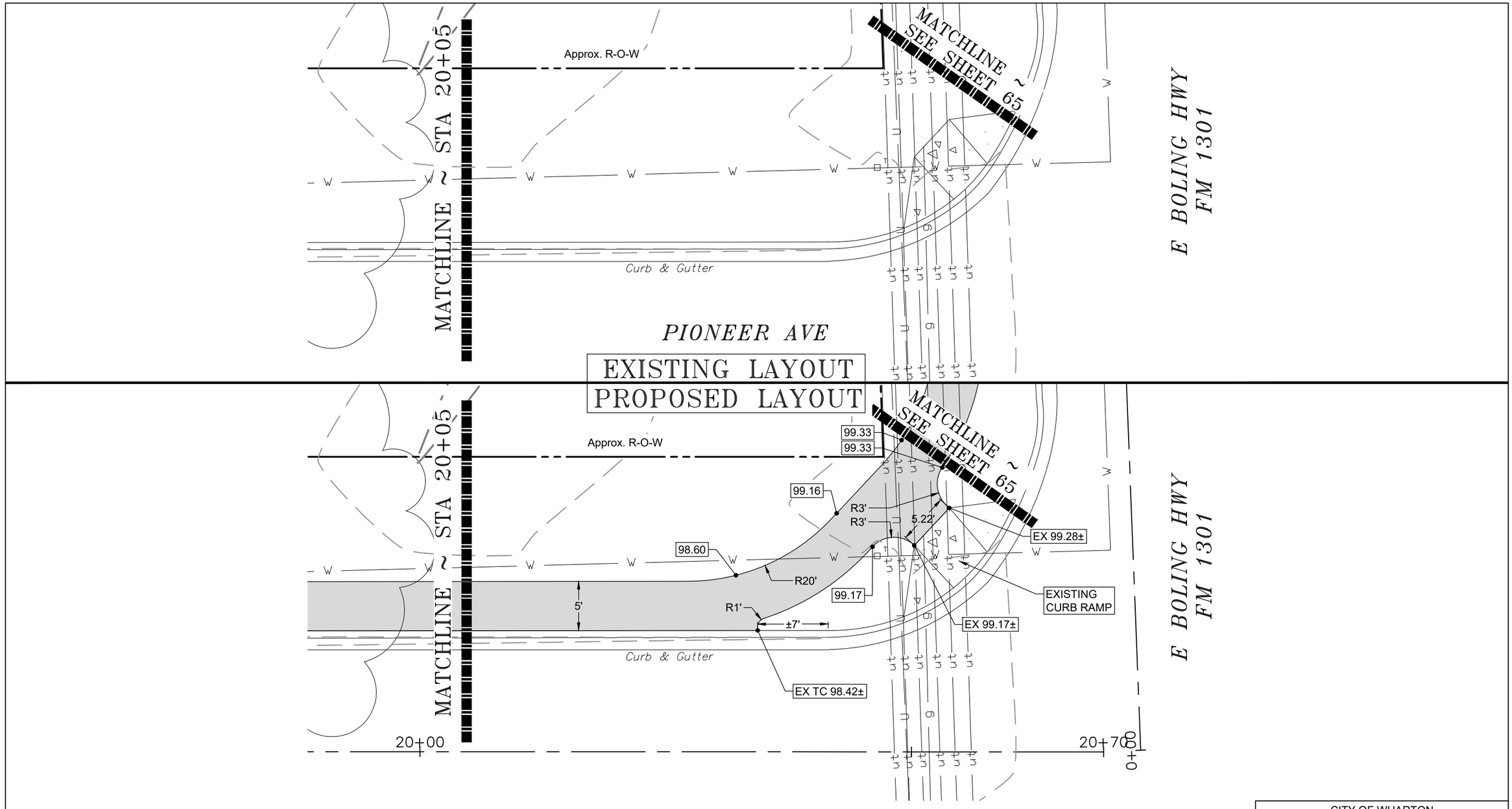
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			64
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



PIONEER AVE

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	31	SY	CONC SIDEWALKS (5")

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
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TXDOT CSJ NO. 0913-09-116

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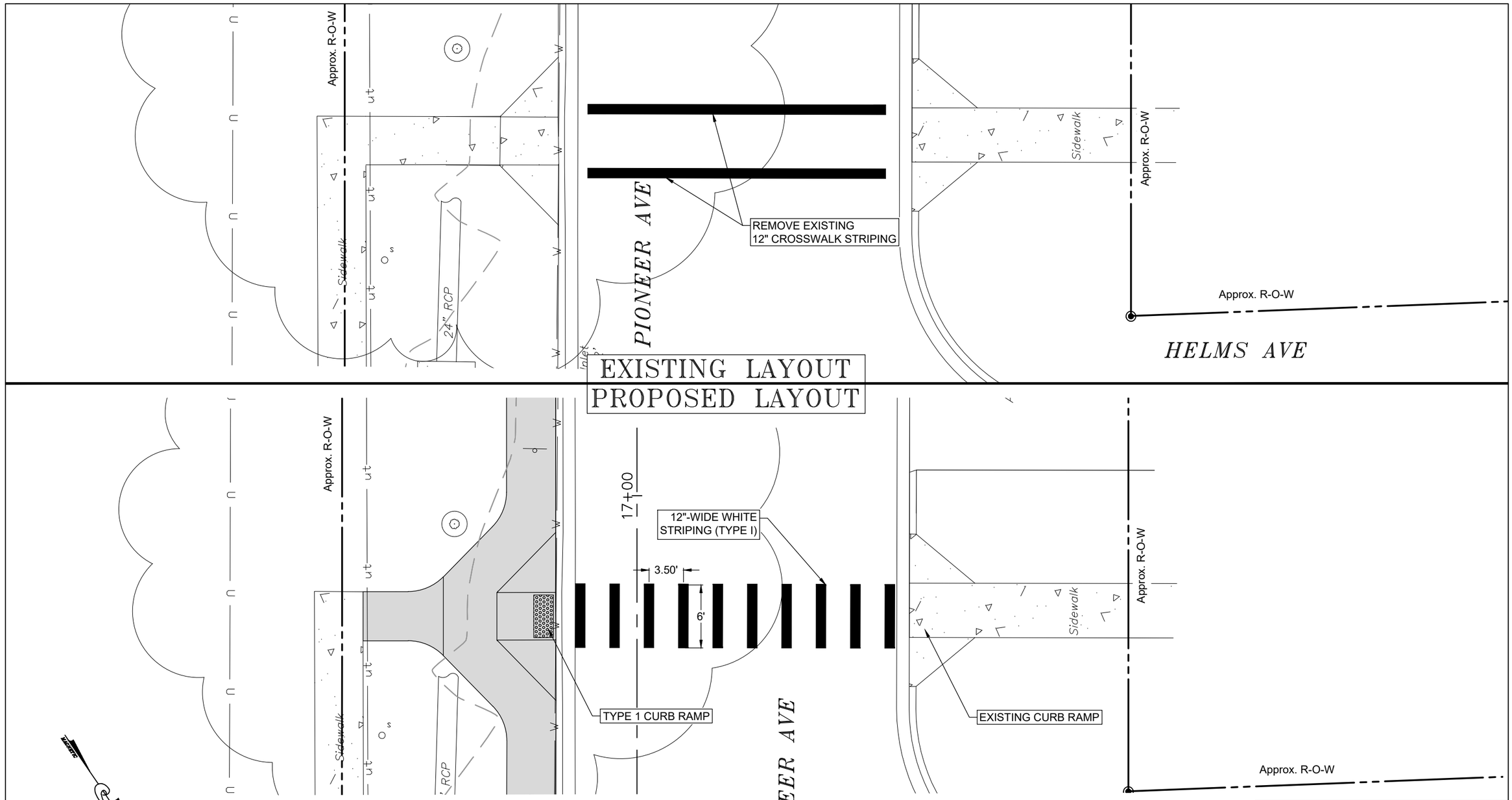
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			65
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

Notes:

1. Crosswalk notes:
   - Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center crosswalk lines on travel lanes.
   - A minimum 6" clear distance shall be provided to the face of curb or edge of roadway. If the last crosswalk line falls into this distance it must be omitted.
   - Final placement of crosswalk shall be approved by the Engineer in the field.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0668 6074	60	LF	PREFAB PAV MRK TY C (W) (12") (SLD)
0677 6006	70	LF	ELIM EXT PAV MRK & MRKS (12")

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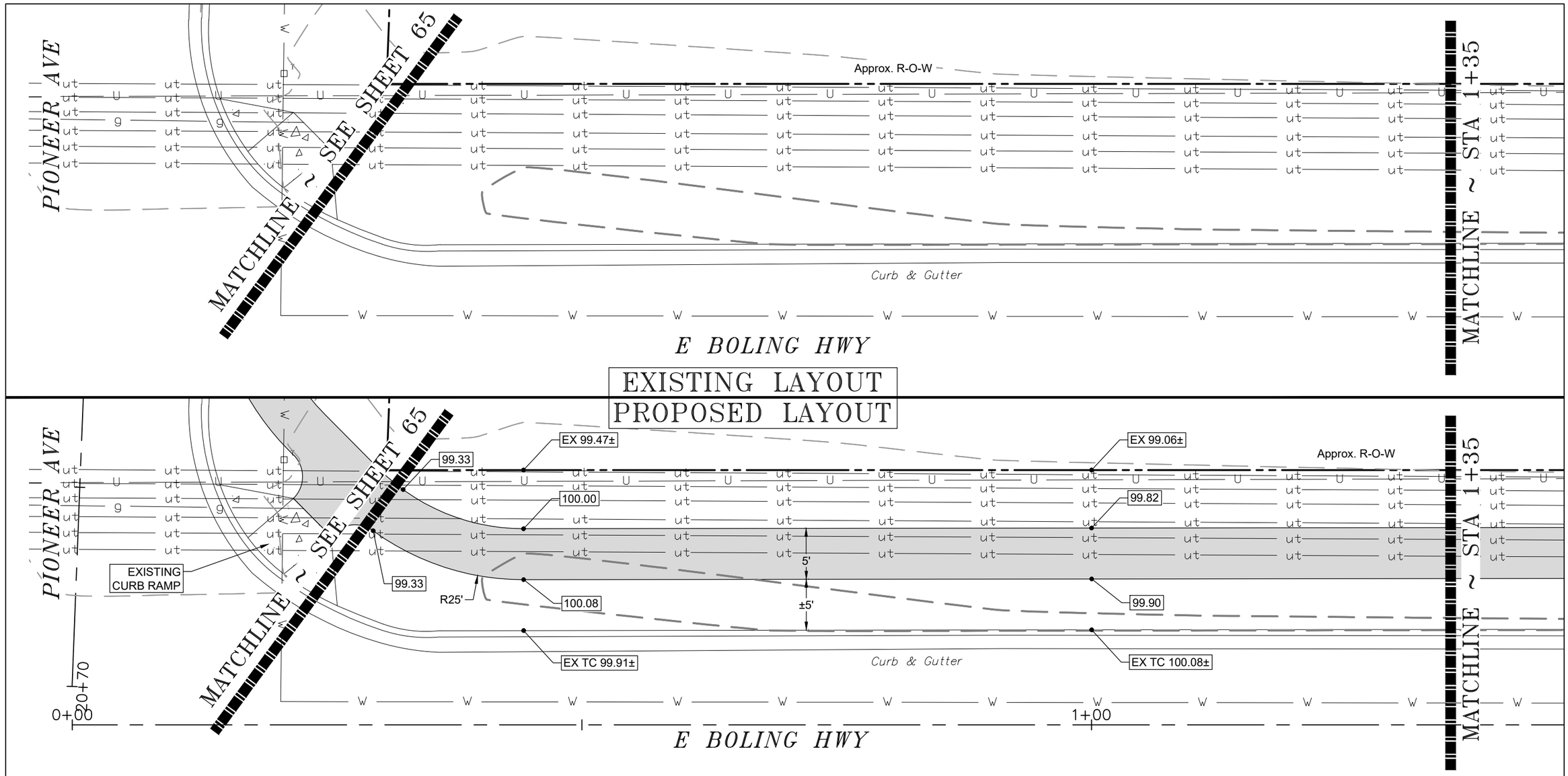
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
PIONEER: AHLDAG TO BOLING

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			66
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	58	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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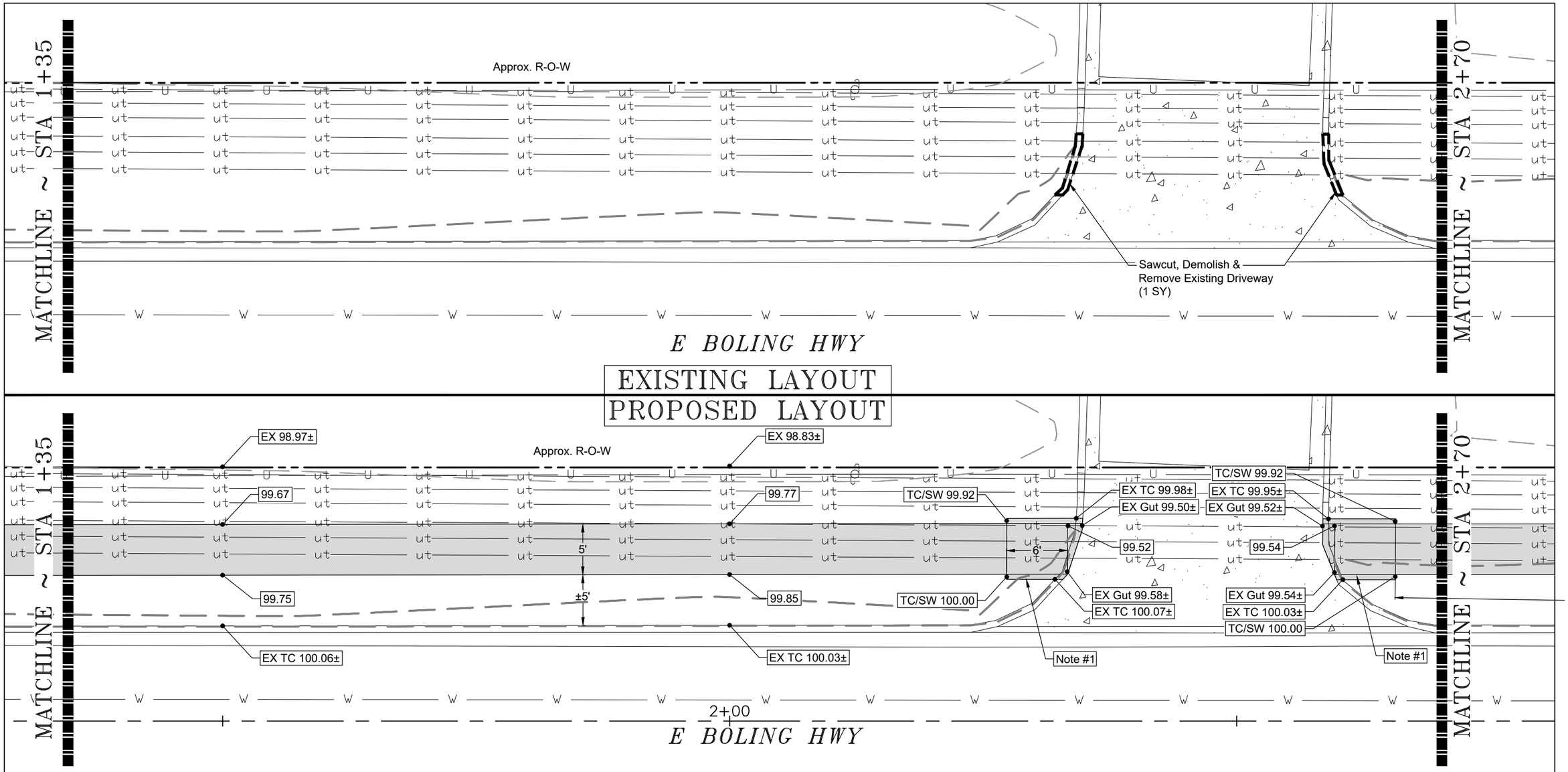
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
BOLING: PIONEER TO ALABAMA

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			67
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

Notes:
1. Curbing adjacent to sidewalk shall be inclusive of Item 531.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	1	SY	REMOVING CONC (DRIVEWAYS)
0531 6002	63	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
CHAD EMMEL
103495
PROFESSIONAL ENGINEER
LICENSED
5/13/22

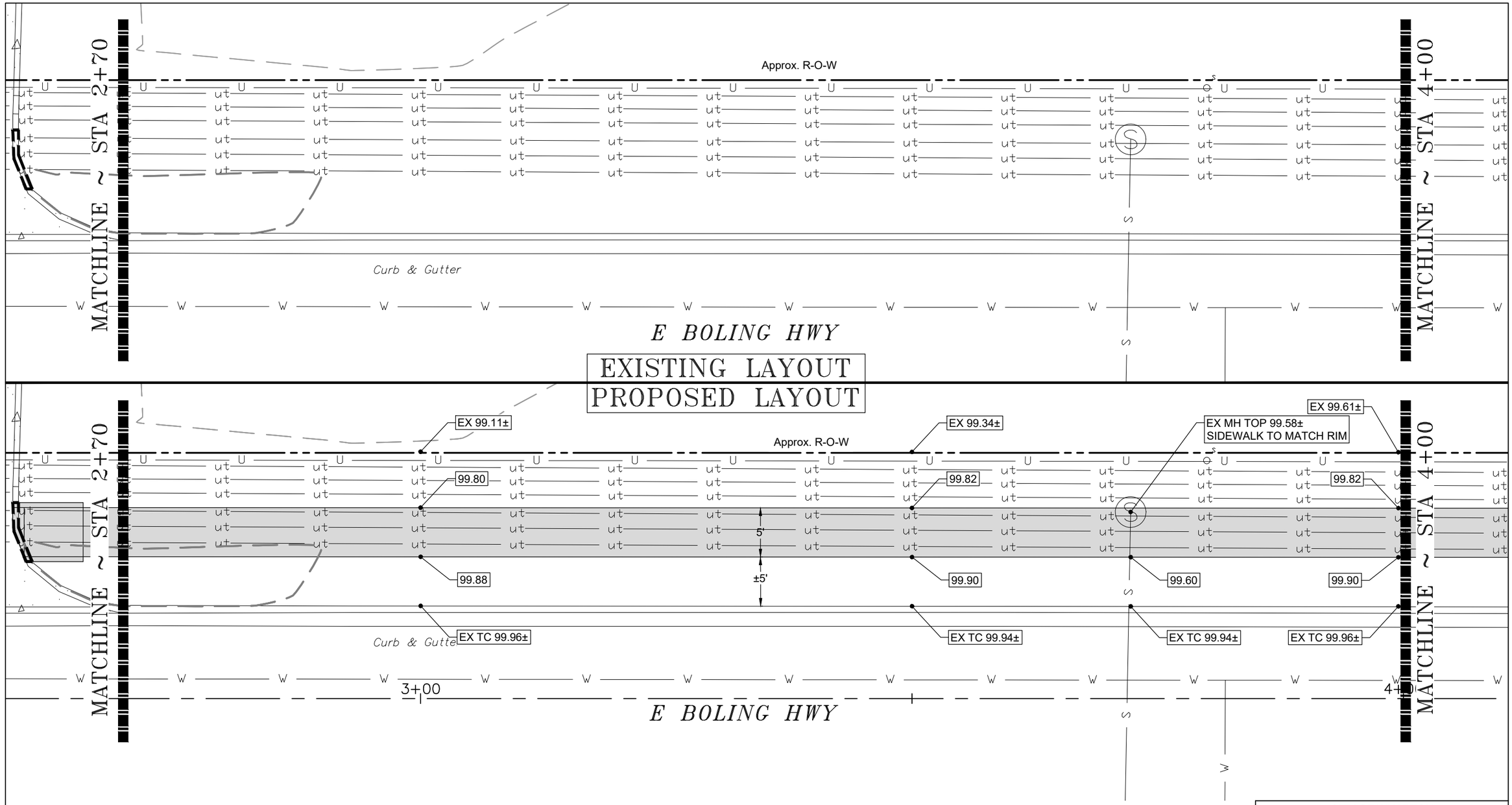
BEFCO ENGINEERING, INC. (F-2011)
P.O. Box 615 La Grange, Texas 78945
(979) 968-6474

CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
BOLING: PIONEER TO ALABAMA

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			68
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING_DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	72	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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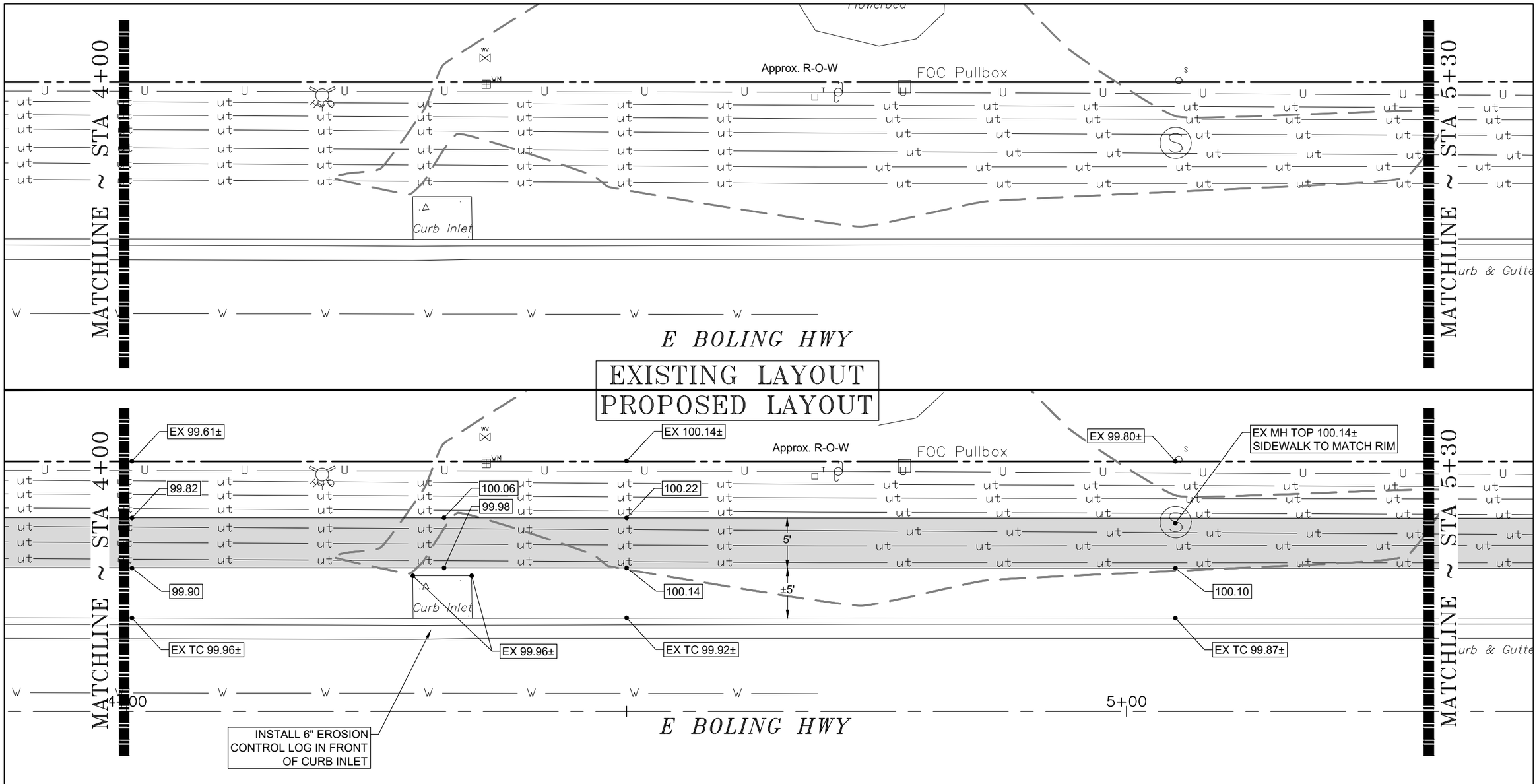
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
BOLING: PIONEER TO ALABAMA

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			69
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0506 6043	10	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	10	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0531 6002	72	SY	CONC SIDEWALKS (5")

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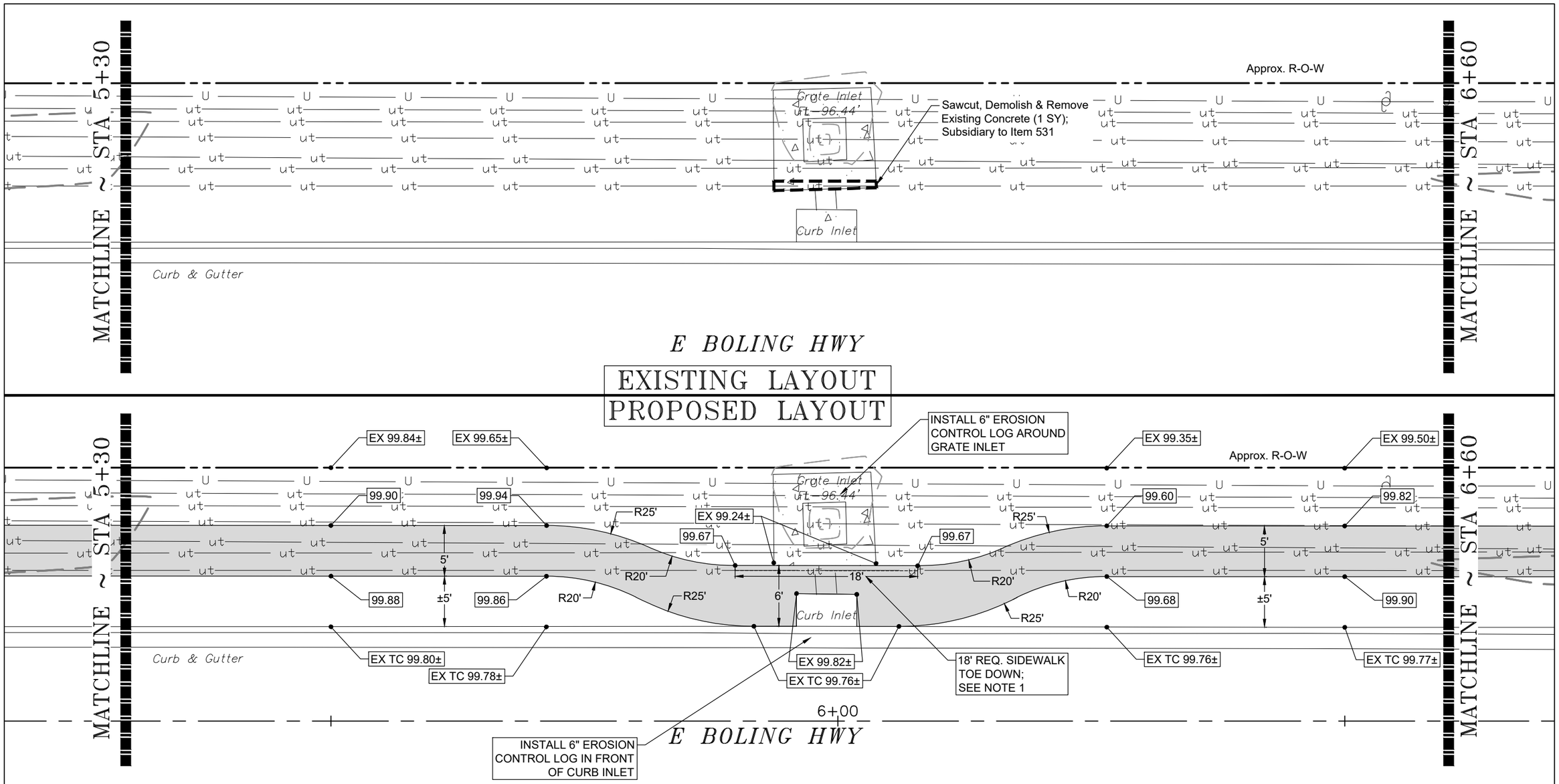
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
BOLING: PIONEER TO ALABAMA

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			70
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

Notes:
1. Sidewalk toe downs and curb wall/retaining walls are subsidiary to Item 531; Concrete Sidewalks.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0506 6043	55	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	55	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0531 6002	74	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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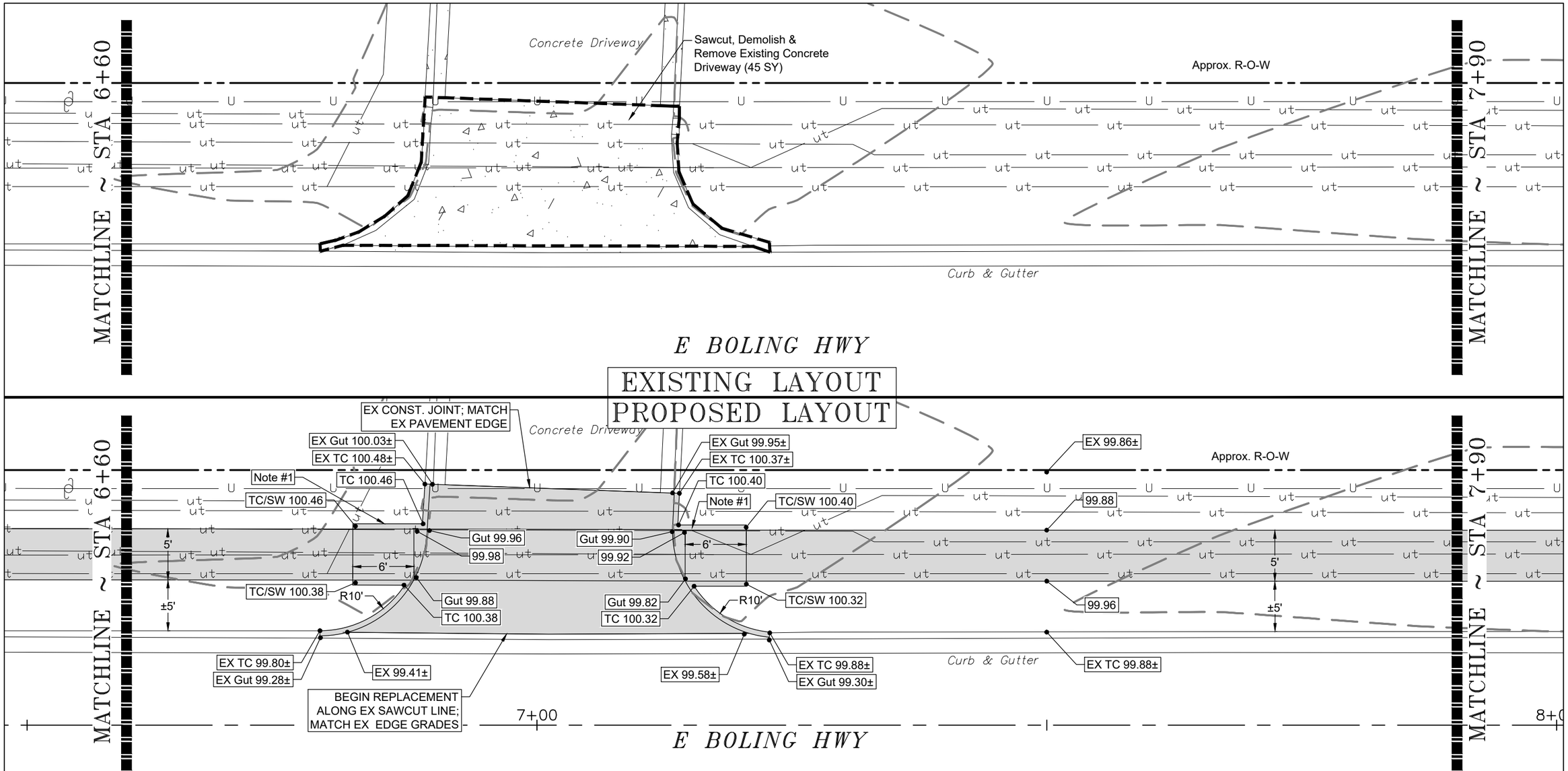
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
BOLING: PIONEER TO ALABAMA

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			71
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

Notes:
1. Curbing adjacent to sidewalk shall be inclusive of Item 531.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	45	SY	REMOVING CONC (DRIVEWAYS)
0530 6004	44	SY	DRIVEWAYS (CONC)
0531 6002	60	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
BOLING: PIONEER TO ALABAMA

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			72
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

MATCHLINE STA 7+90

MATCHLINE STA 9+20

Approx. R-O-W

Curb Inlet

E BOLING HWY

EXISTING LAYOUT

PROPOSED LAYOUT

EX 100.07±

EX 99.99±

EX 100.20±

100.33

100.28

100.53

5'

±5'

100.25

100.20

100.45

EX TC 100.00±

EX TC 100.01±

EX TC 100.15±

8+00

9+00

INSTALL 6" EROSION CONTROL LOG IN FRONT OF CURB INLET

11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0506 6043	10	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	10	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0531 6002	72	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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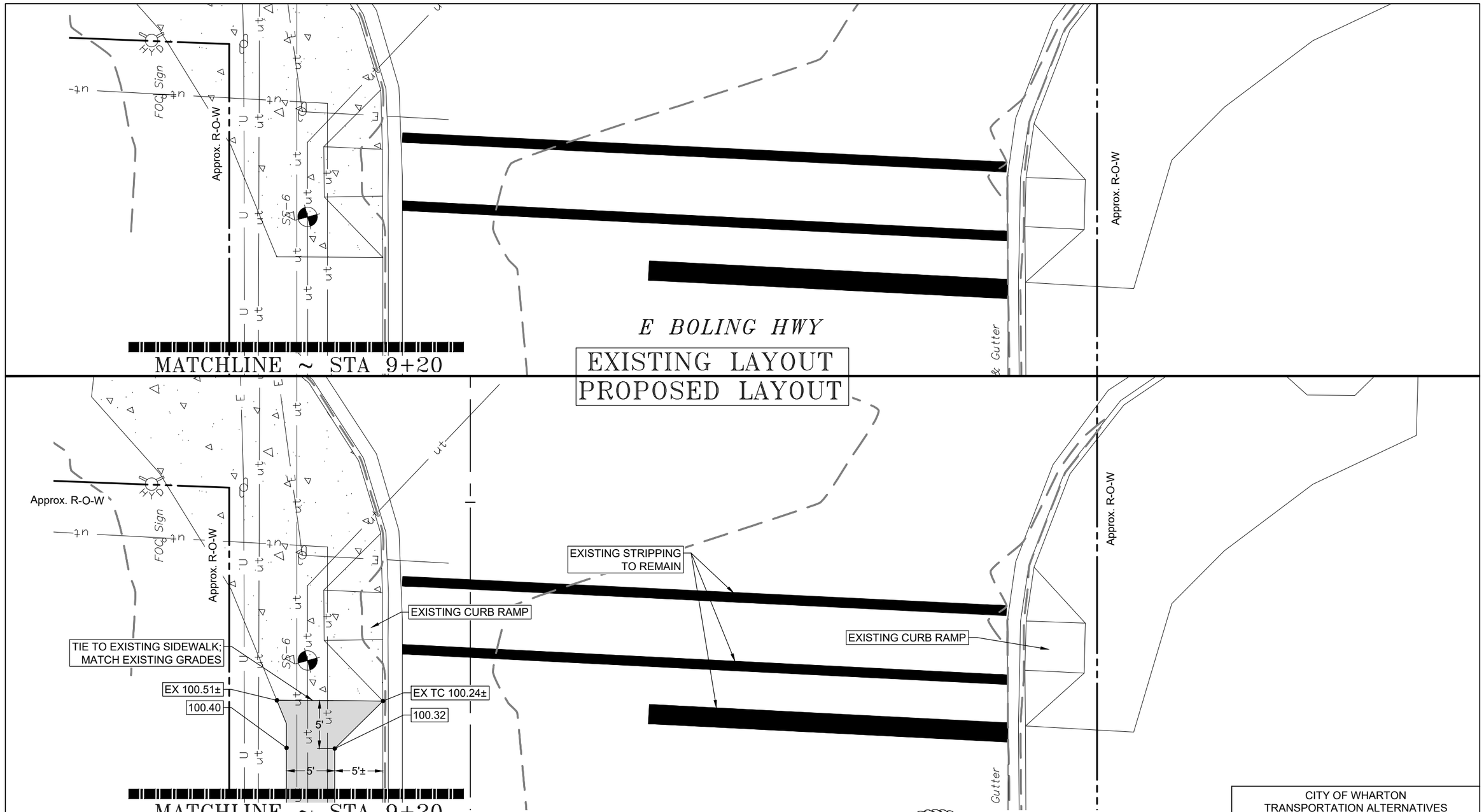
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
BOLING: PIONEER TO ALABAMA

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			73
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	7	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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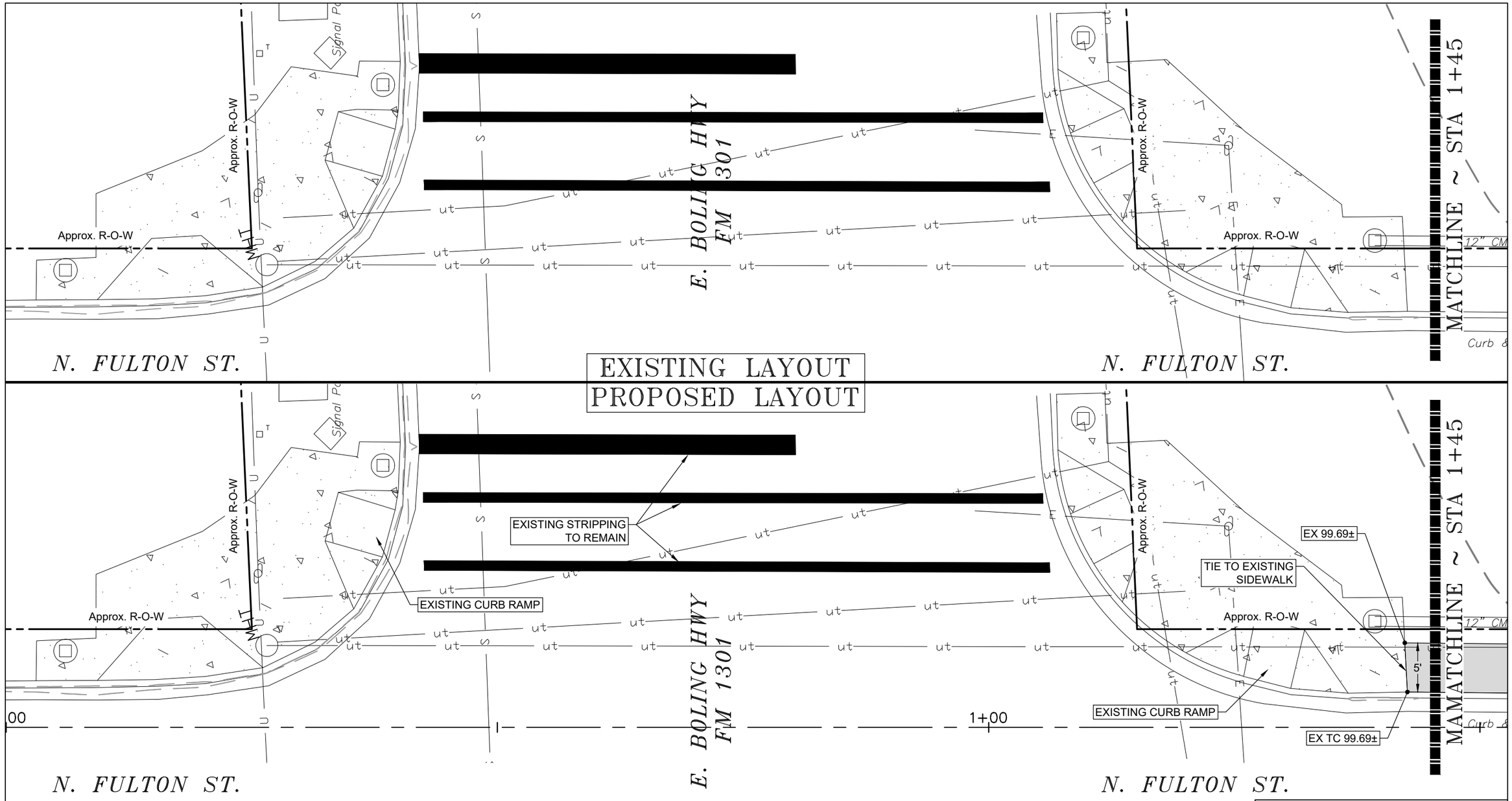
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
BOLING: PIONEER TO ALABAMA

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			74
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\PIONEER-BOLING DESIGN



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217_TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	1	SY	CONC SIDEWALKS (5")

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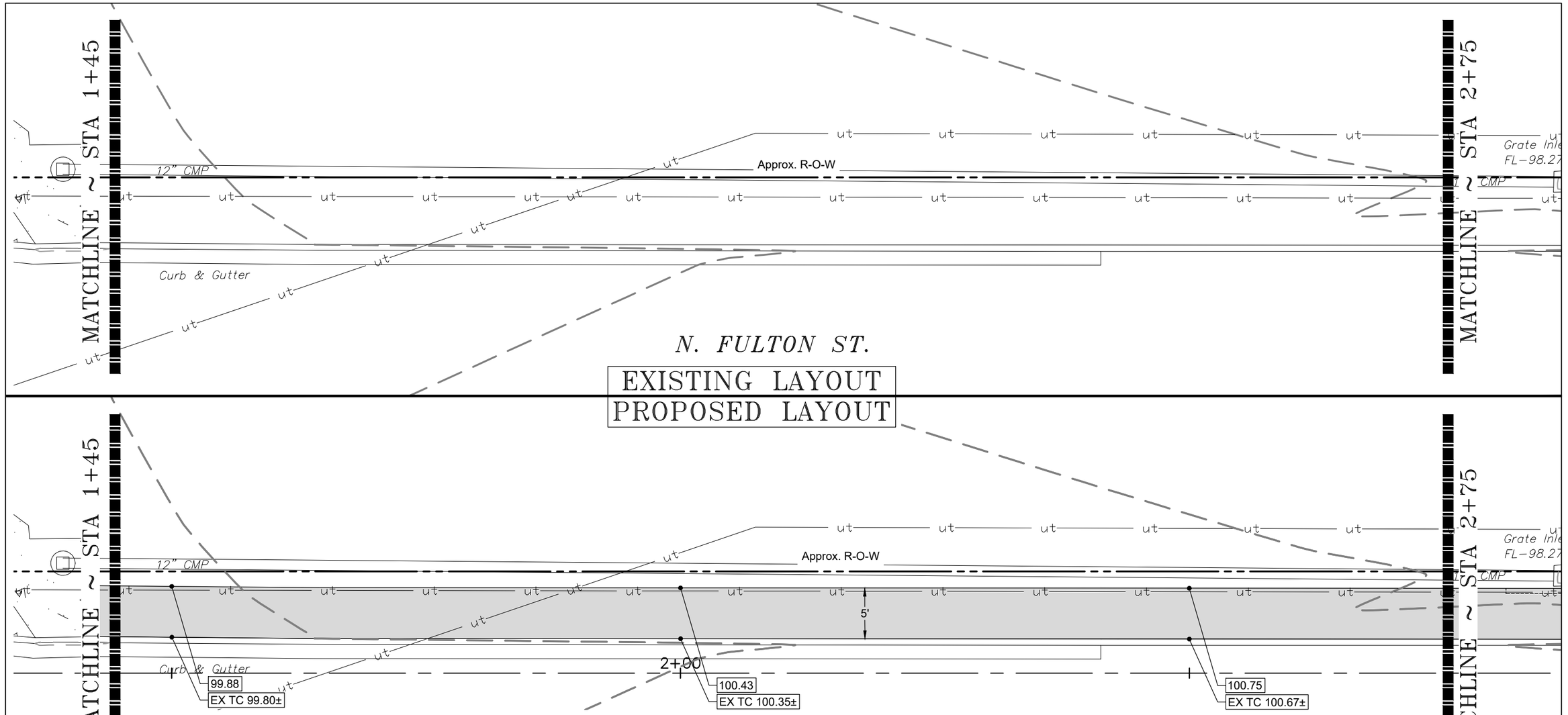
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			75
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0531 6002	72	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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6/29/22

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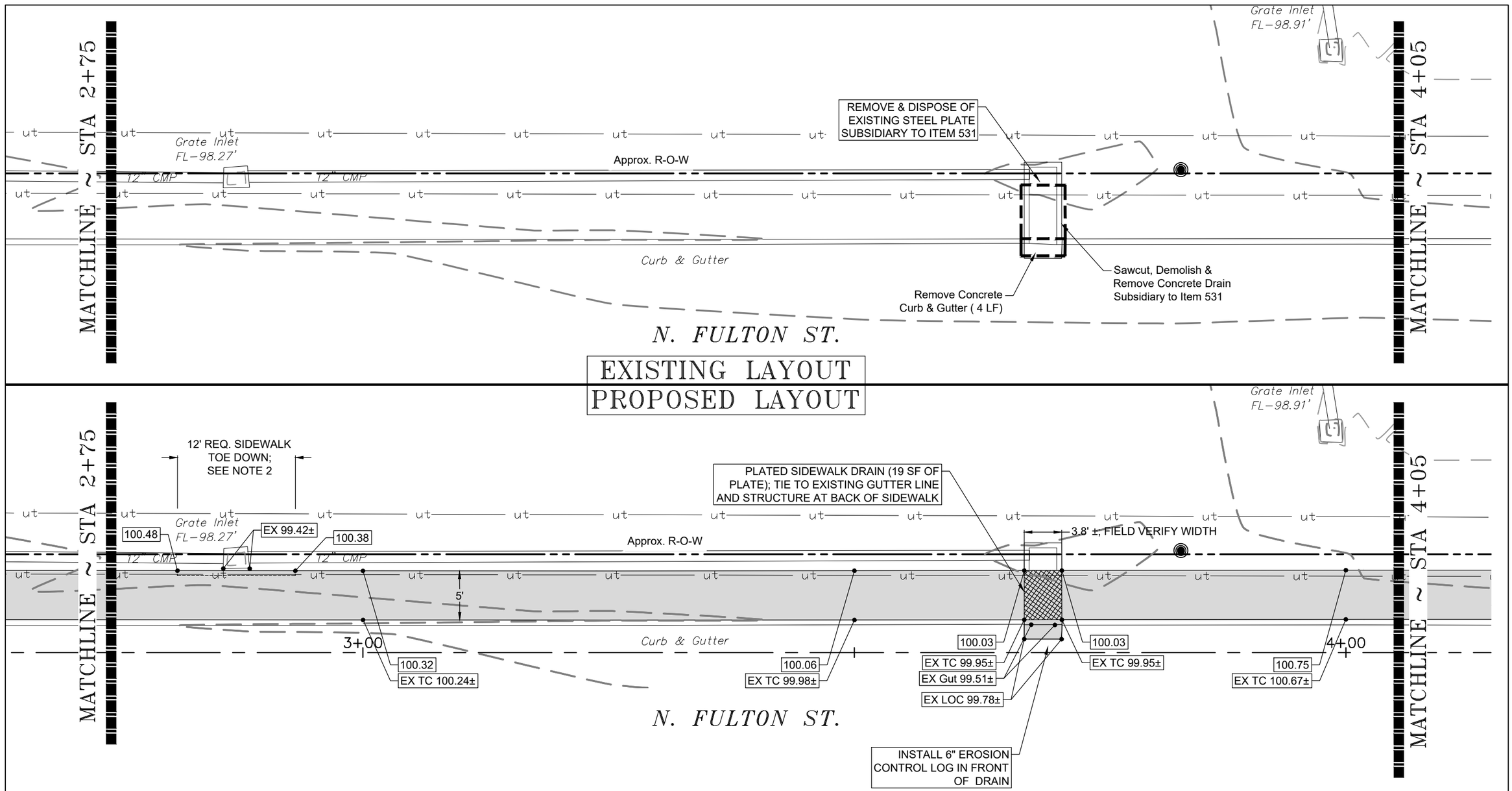
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			76
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD DESIGN

Notes:

1. Payment for sidewalk drains (materials, labor, equipment, etc.) shall be included in per square yard payment for sidewalks. No separate payment will be made.
2. Sidewalk toe downs and curb wall/retaining walls are subsidiary to Item 531; Concrete Sidewalks.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6022	4	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	1	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6043	6	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	6	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0529 6008	4	LF	CONC CURB & GUTTER (TY II)
0531 6002	72	SY	CONC SIDEWALKS (5")

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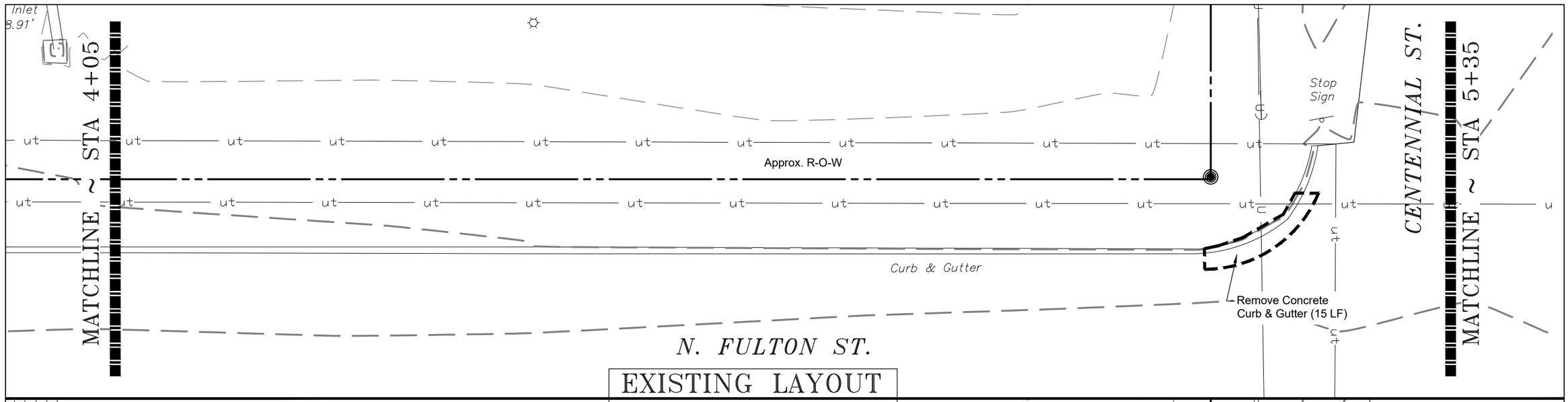
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

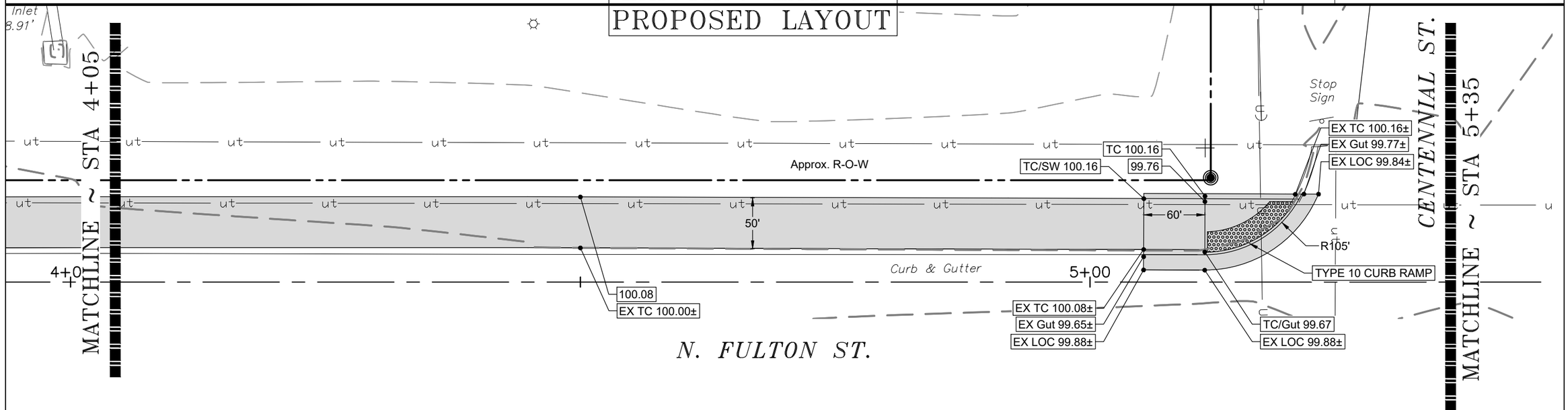
EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			77
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



EXISTING LAYOUT
PROPOSED LAYOUT



11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6022	15	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	3.3	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0531 6002	53	SY	CONC SIDEWALKS (5")
0531 6027	14.5	SY	CURB RAMPS (TY 10)

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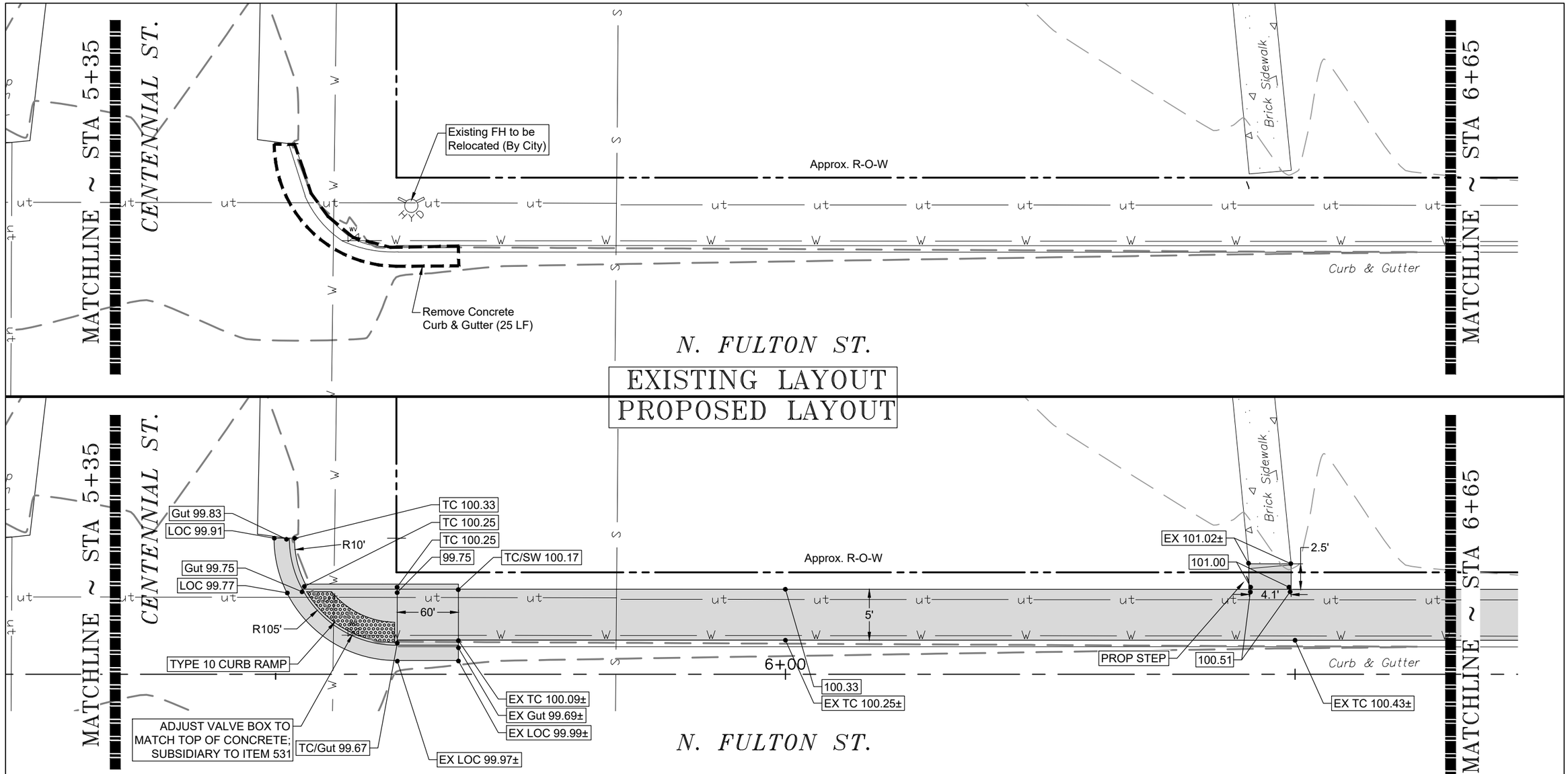
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			78
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6022	25	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	5.6	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0529 6008	5	LF	CONC CURB & GUTTER (TY II)
0531 6002	52	SY	CONC SIDEWALKS (5")
0531 6027	14.5	SY	CURB RAMPS (TY 10)

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

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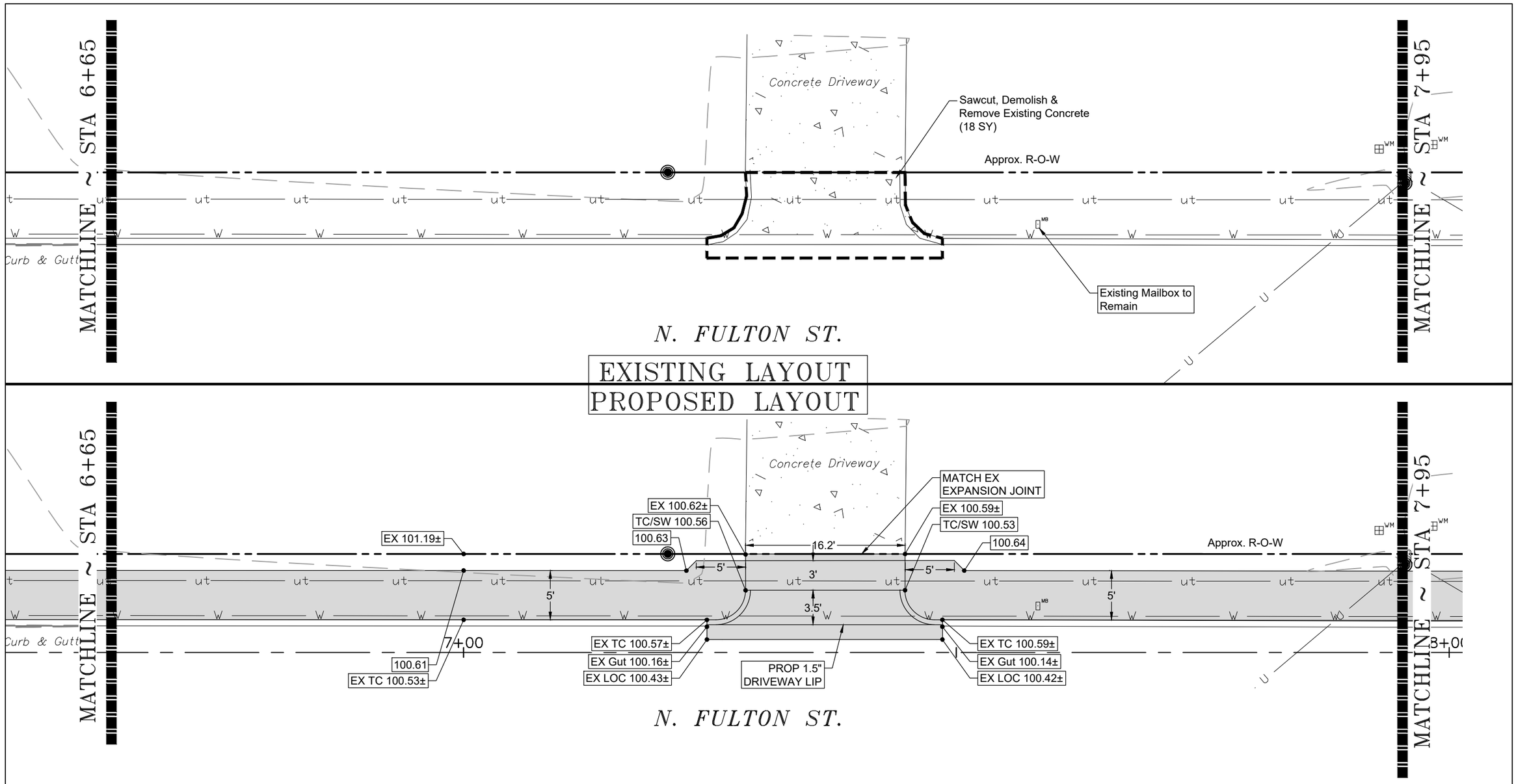
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			79
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	18	SY	REMOVING CONC (DRIVEWAYS)
0351 6002	5.3	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0530 6004	18	SY	DRIVEWAYS (CONC)
0531 6002	64	SY	CONC SIDEWALKS (5")

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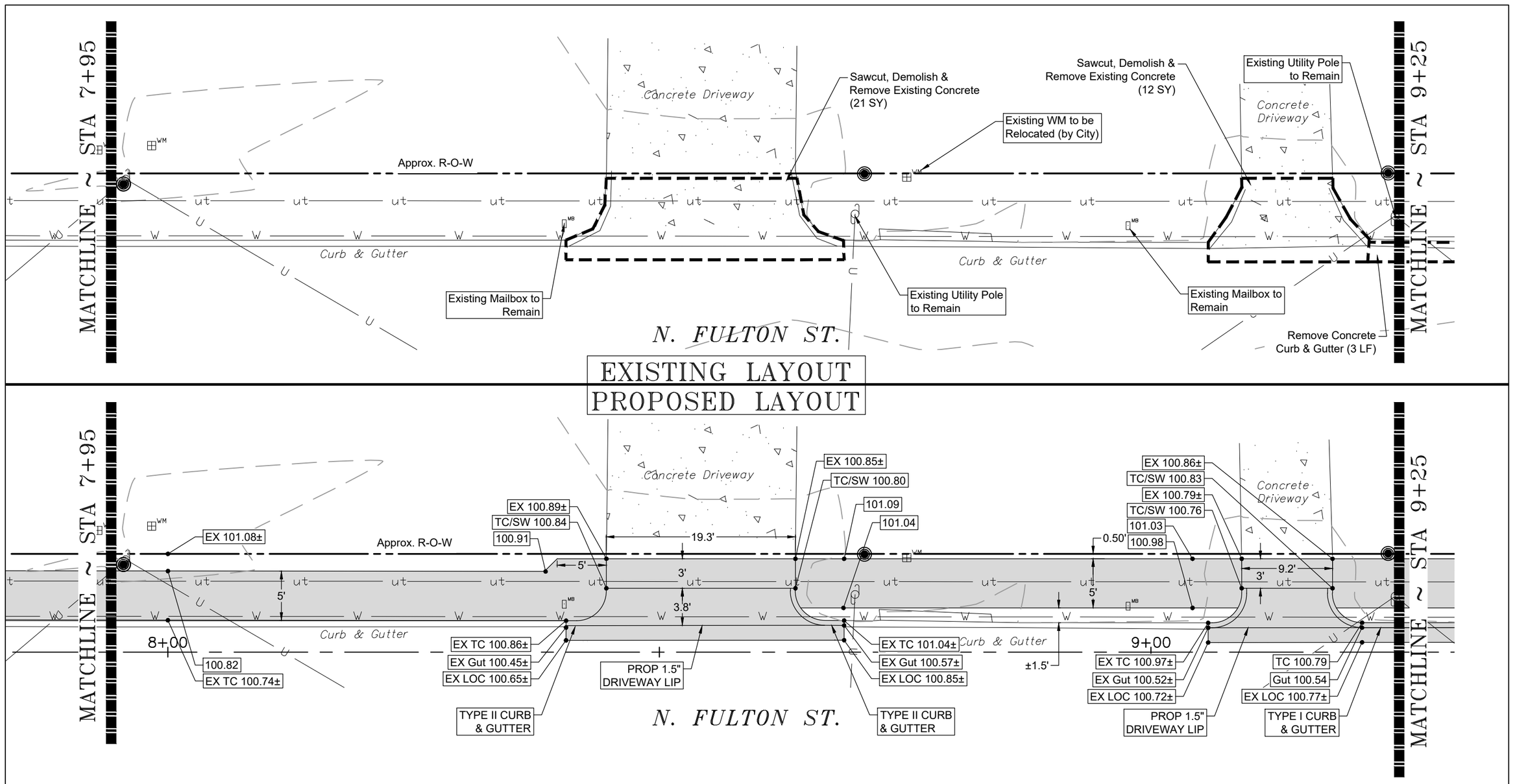
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			80
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	33	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	3	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	10.6	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0529 6007	3	LF	CONC CURB & GUTTER (TY I)
0529 6008	3	LF	CONC CURB & GUTTER (TY II)
0530 6004	31	SY	DRIVEWAYS (CONC)
0531 6002	57	SY	CONC SIDEWALKS (5")

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

STATE OF TEXAS
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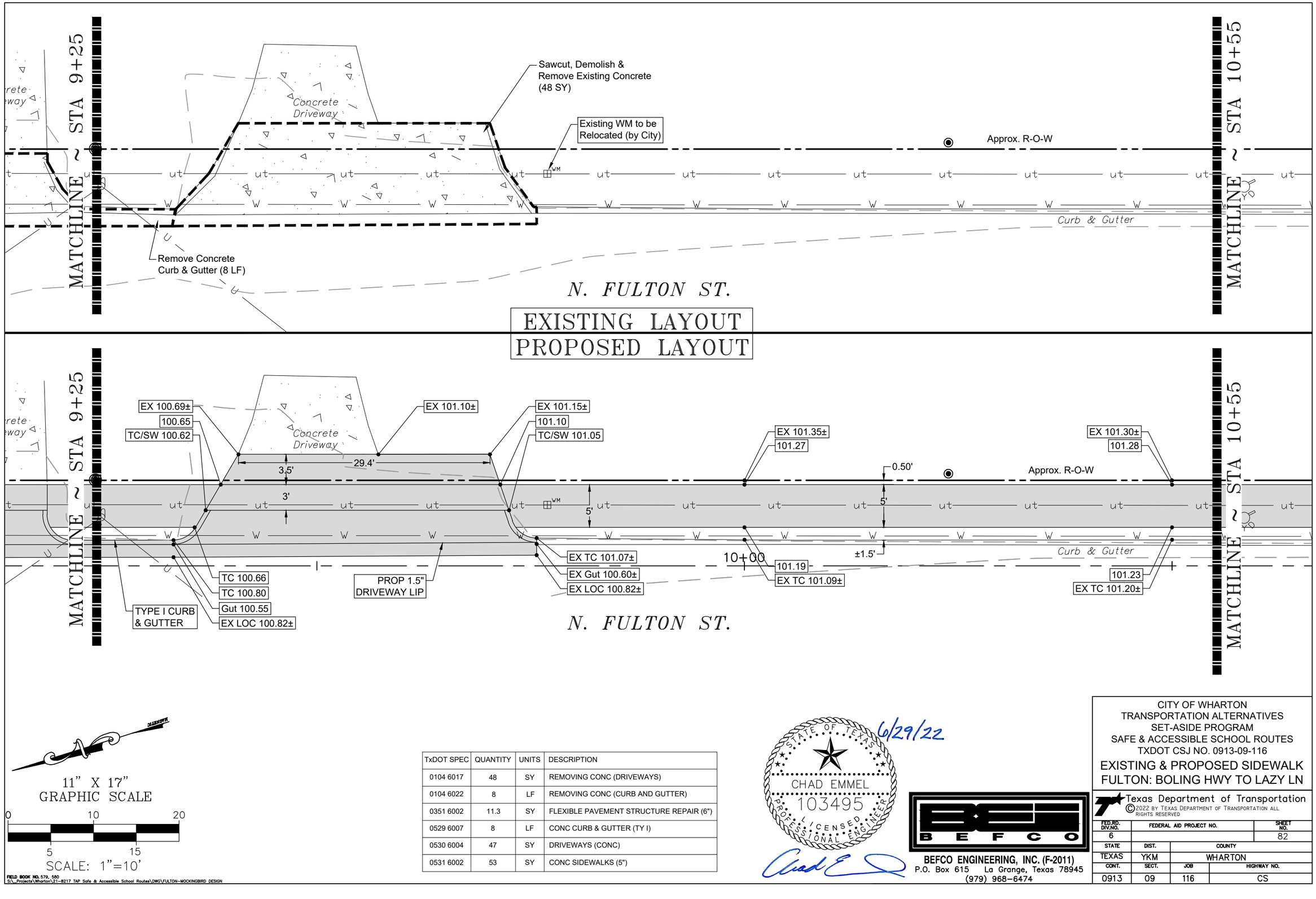
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			81
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	48	SY	REMOVING CONC (DRIVEWAYS)
0104 6022	8	LF	REMOVING CONC (CURB AND GUTTER)
0351 6002	11.3	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0529 6007	8	LF	CONC CURB & GUTTER (TY I)
0530 6004	47	SY	DRIVEWAYS (CONC)
0531 6002	53	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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103495
LICENSED PROFESSIONAL ENGINEER
6/29/22

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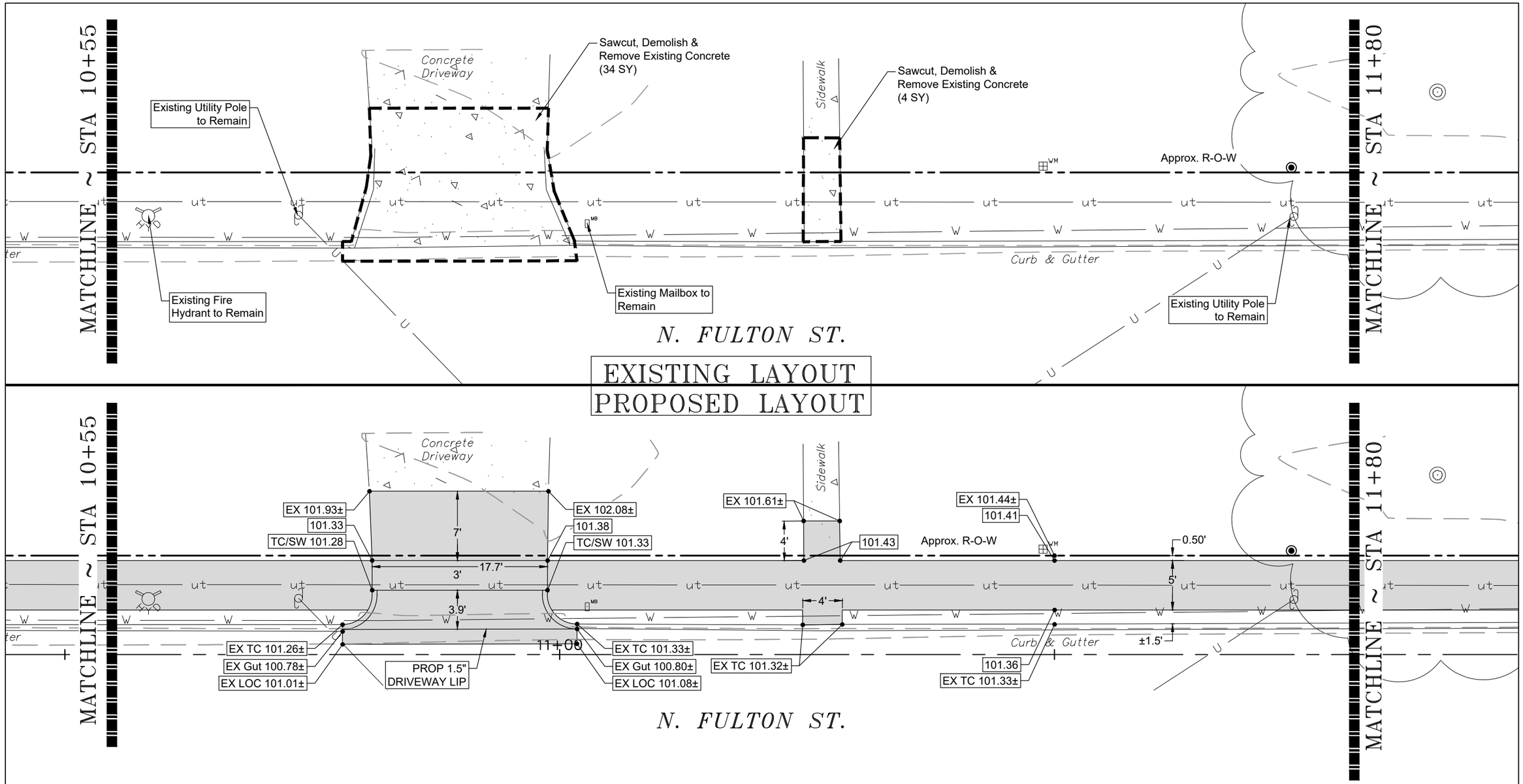
(979) 968-6474

CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			82
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD DESIGN

Notes:
1. Quantity shown for removing concrete sidewalk is for informational purposes only. This work is considered subsidiary to the project. Payment for removal shall be included in "Conc Sidewalks (5")", TxDOT Specification 531. No separate payment will be made.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6015	4	SY	REMOVING CONC (SIDEWALKS)
0104 6017	34	SY	REMOVING CONC (DRIVEWAYS)
0351 6002	5.3	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0530 6004	32	SY	DRIVEWAYS (CONC)
0531 6002	62	SY	CONC SIDEWALKS (5")

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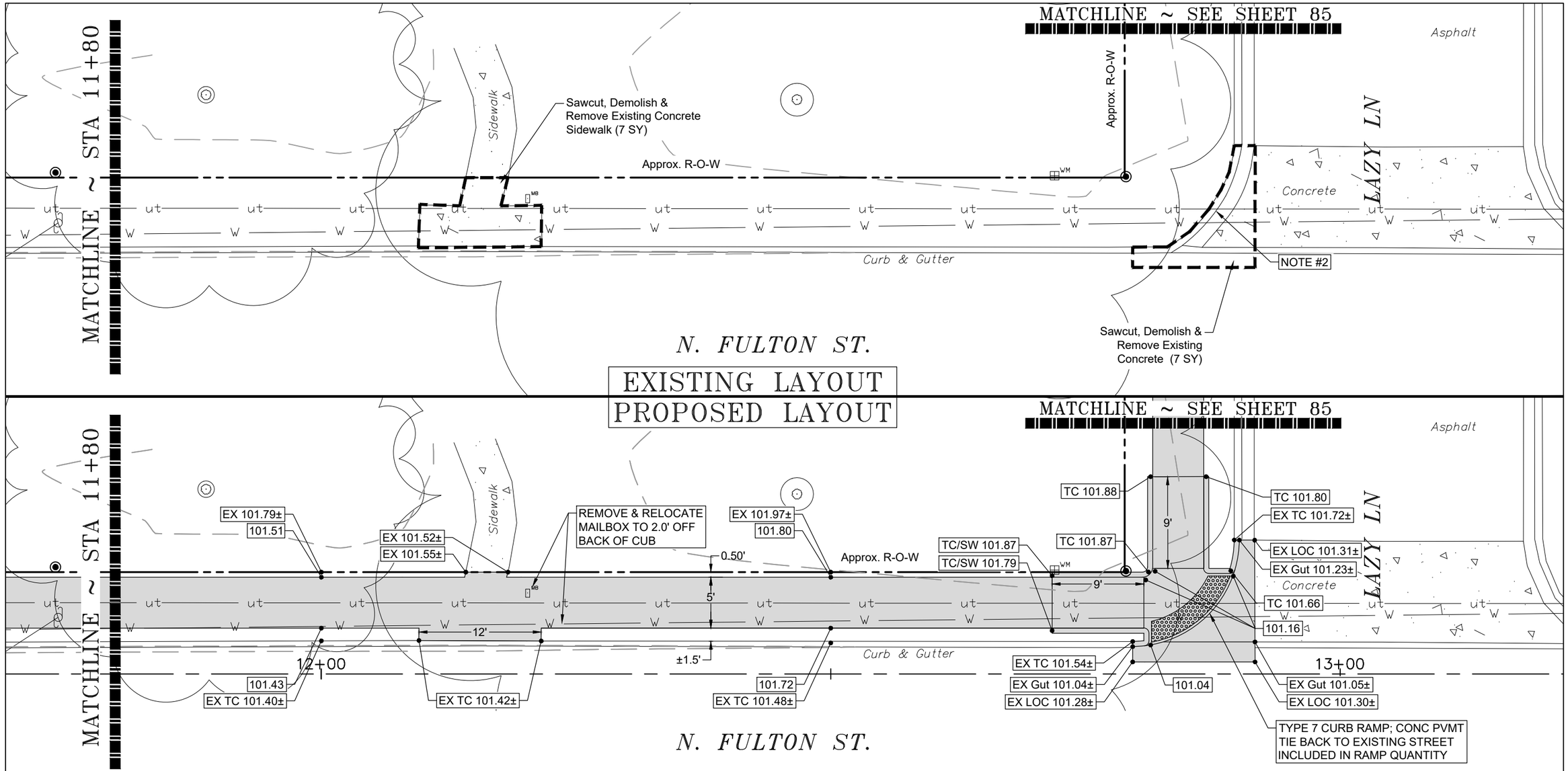
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			83
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

Notes:
1. Quantity shown for removing concrete sidewalk is for informational purposes only. This work is considered subsidiary to the project. Payment for removal shall be included in "Conc Sidewalks (5")", TxDOT Specification 531. No separate payment will be made.
2. Removal of curbing Subsidiary to the "Removing Conc (Pvmt)", TxDOT Specification 104. No separate payment will be made.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6001	7	SY	REMOVING CONC (PAV)
0104 6015	7	SY	REMOVING CONC (SIDEWALKS)
0351 6002	3.1	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0531 6002	50	SY	CONC SIDEWALKS (5")
0531 6024	30	SY	CURB RAMPS (TY 7)
0560 6007	1	EA	MAILBOX INSTALL-S (WC-POST) TY 3

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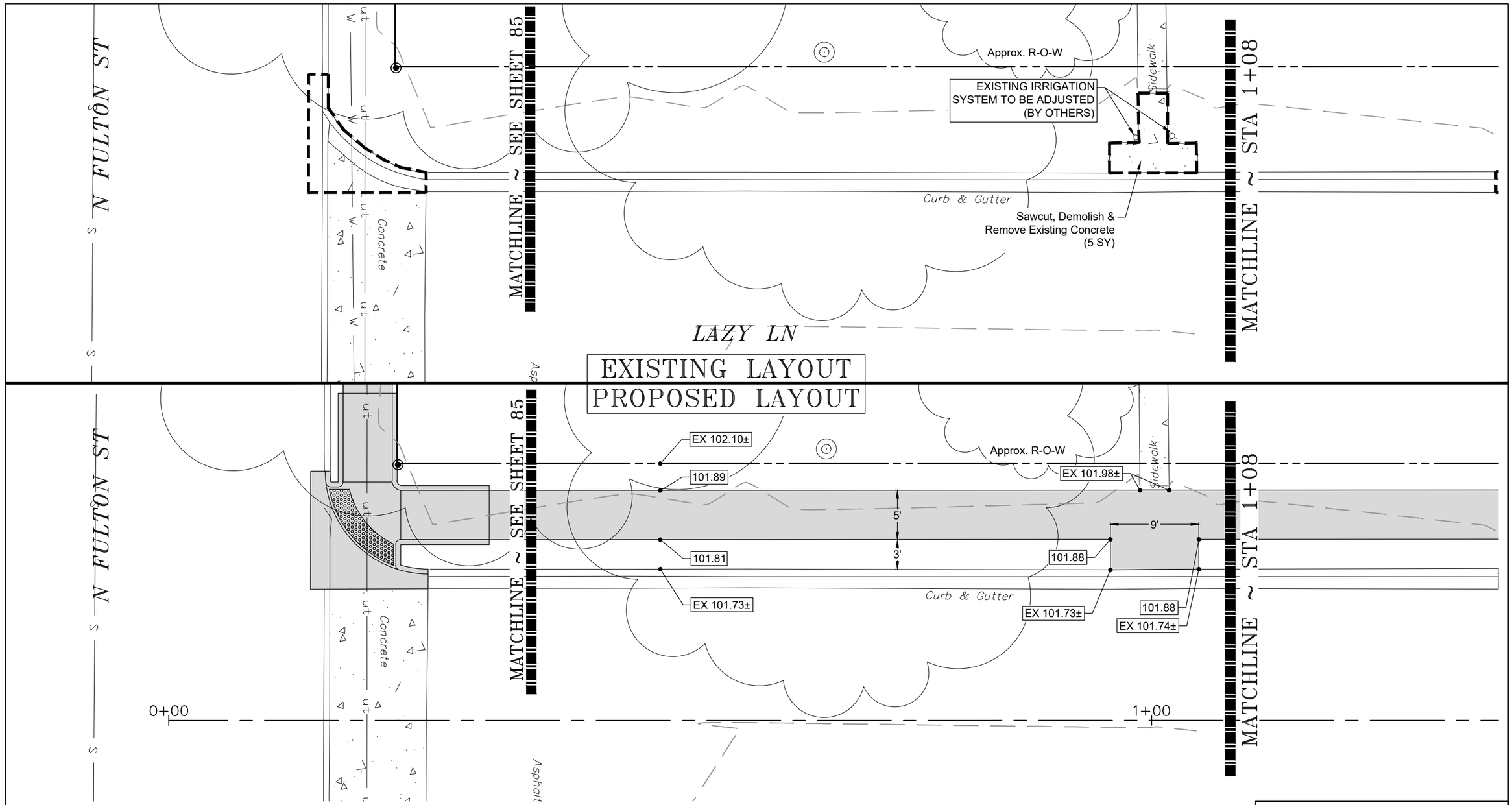
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
FULTON: BOLING HWY TO LAZY LN

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			84
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN



LAZY LN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6015	5	SY	REMOVING CONC (SIDEWALKS)
0531 6002	42	SY	CONC SIDEWALKS (5")

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

Notes:
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FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

STATE OF TEXAS
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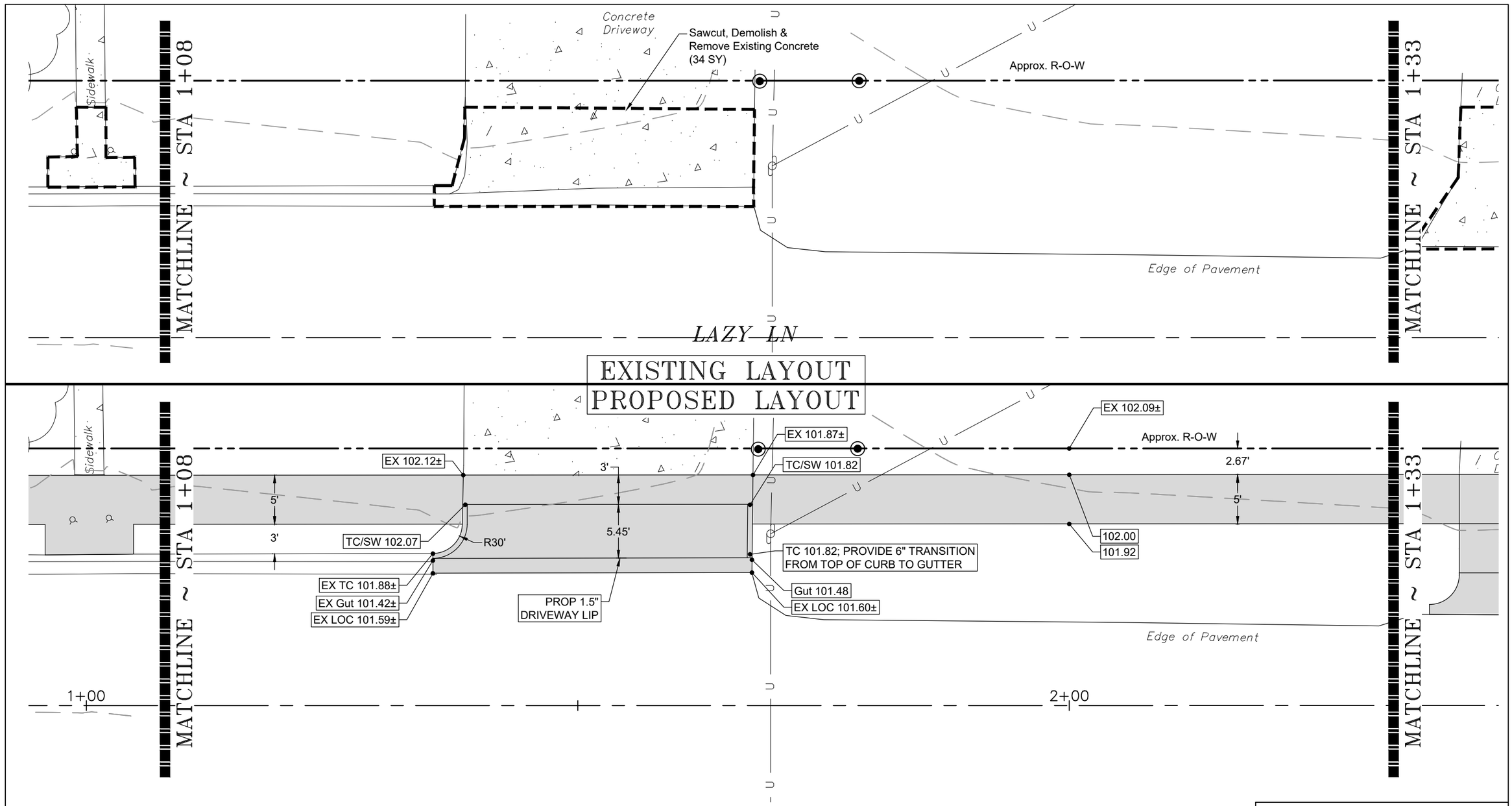
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
LAZY LANE: FULTON TO RUSK

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			85
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	34	SY	REMOVING CONC (DRIVEWAYS)
0351 6002	7.3	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0530 6004	34	SY	DRIVEWAYS (CONC)
0531 6002	53	SY	CONC SIDEWALKS (5")

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

STATE OF TEXAS
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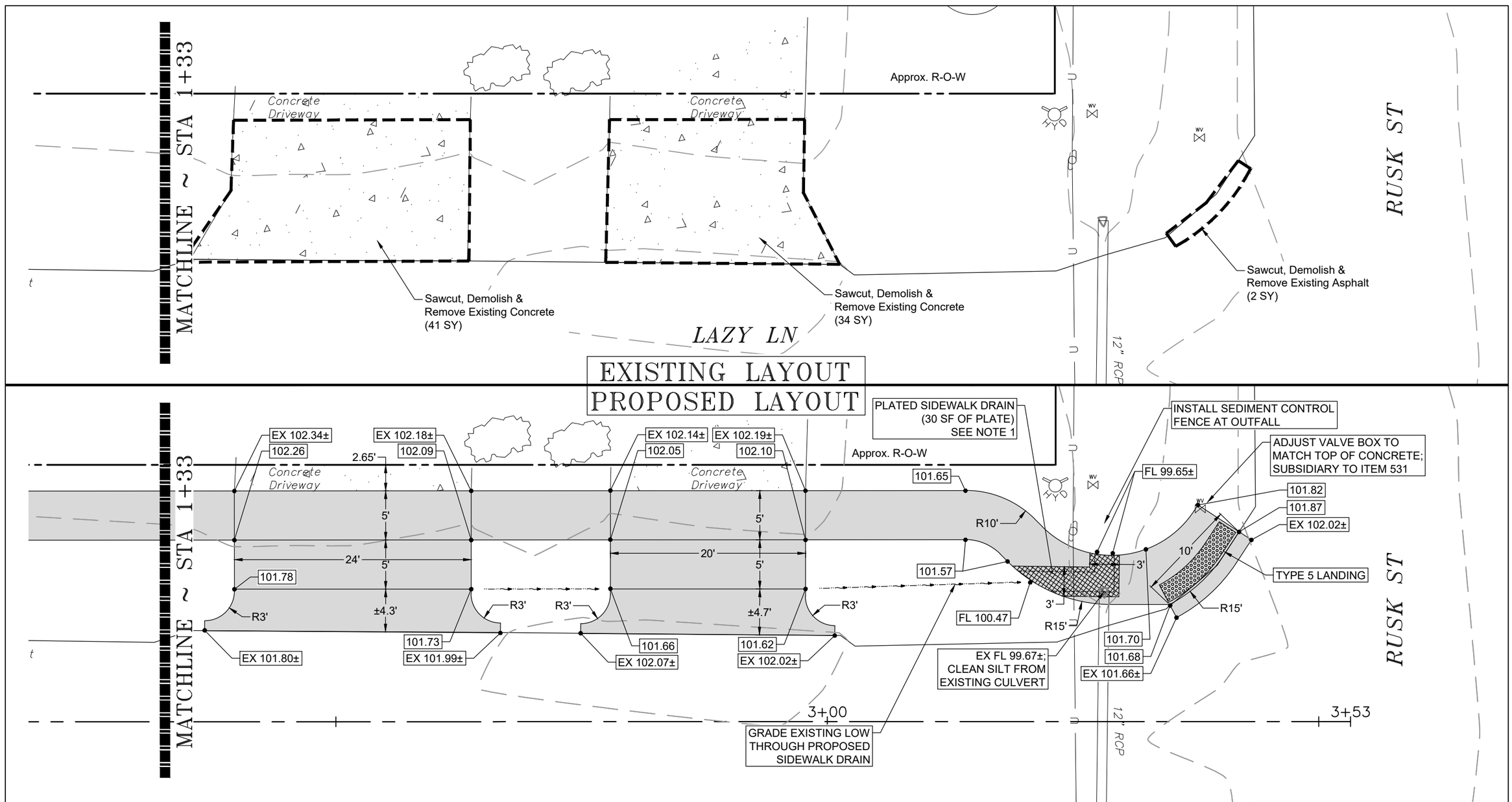
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
LAZY LANE: FULTON TO RUSK

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			86
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



LAZY LN

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6017	75	SY	REMOVING CONC (DRIVEWAYS)
0105 6011	2	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	15.5	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6038	10	LF	TEMP SEDMT CONT FENCE (INSTALL)
0506 6039	10	LF	TEMP SEDMT CONT FENCE (REMOVE)
0530 6004	73	SY	DRIVEWAYS (CONC)
0531 6002	33	SY	CONC SIDEWALKS (5")
0531 6022	7.3	SY	CURB RAMPS (TY 5)

11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

Notes:
1. Payment for sidewalk drains (materials, labor, equipment, etc.) shall be included in per square yard payment for sidewalks. No separate payment will be made. This includes grading to ensure proper drainage.

STATE OF TEXAS
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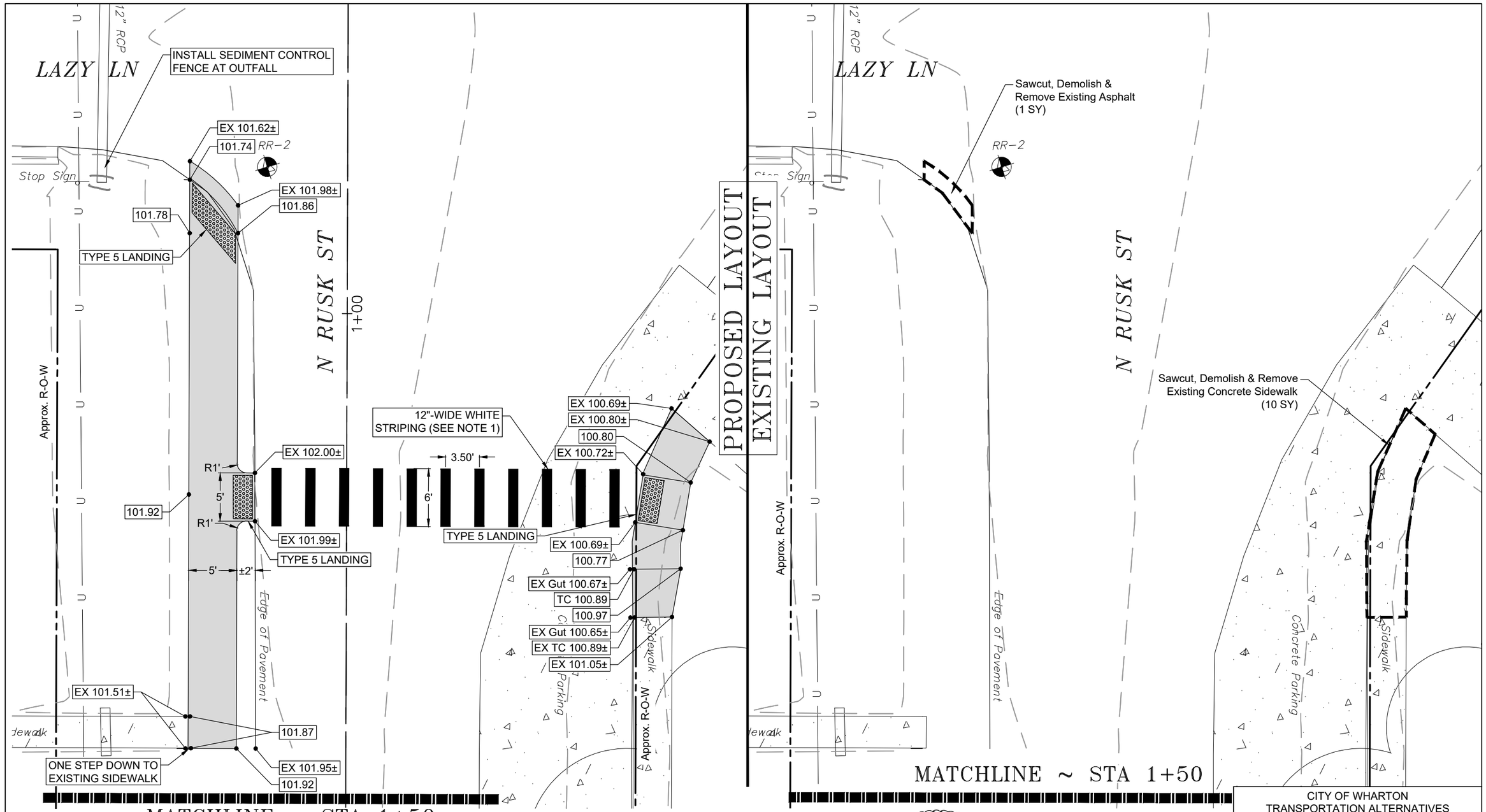
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116
EXISTING & PROPOSED SIDEWALK
LAZY LANE: FULTON TO RUSK

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			87
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

Notes:
1. Quantity shown for removing concrete sidewalk is for informational purposes only. This work is considered subsidiary to the project. Payment for removal shall be included in "Conc Sidewalks (5")", TxDOT Specification 531. No separate payment will be made.
2. Crosswalk notes:
   - Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center crosswalk lines on travel lanes.
   - A minimum 6" clear distance shall be provided to the face of curb or edge of roadway. If the last crosswalk line falls into this distance it must be omitted.
   - Final placement of crosswalk shall be approved by the Engineer in the field.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6015	10	SY	REMOVING CONC (SIDEWALKS)
0105 6011	1	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	4.2	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0506 6038	10	LF	TEMP SEDMT CONT FENCE (INSTALL)
0506 6039	10	LF	TEMP SEDMT CONT FENCE (REMOVE)
0530 6004	34	SY	DRIVEWAYS (CONC)
0531 6022	11	SY	CURB RAMPS (TY 5)
0668 6074	66	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

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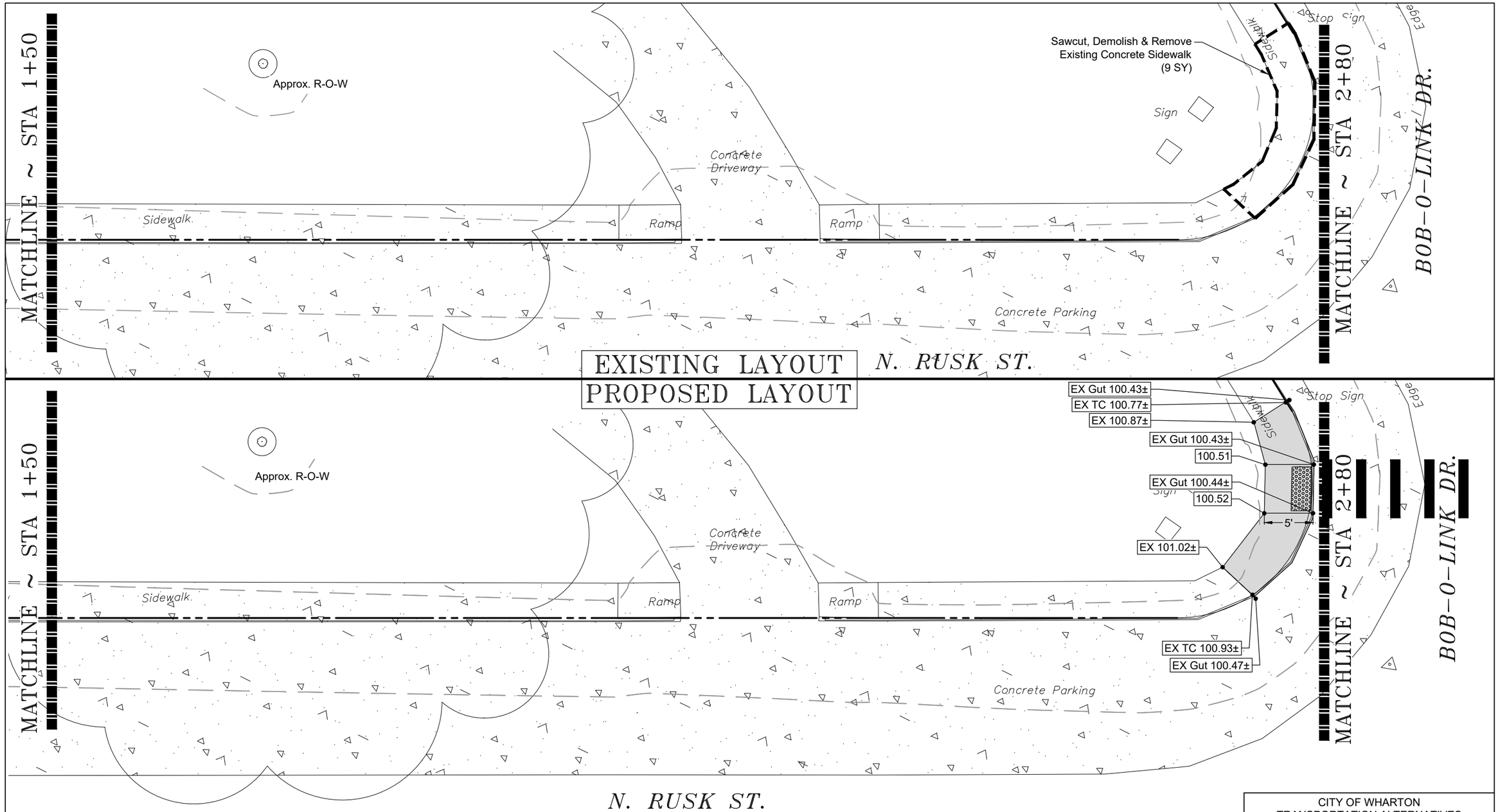
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK N RUSK: LAZY LN TO MOCKINGBIRD

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			88
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD DESIGN

Notes:
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TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6015	9	SY	REMOVING CONC (SIDEWALKS)
0531 6002	11	SY	CONC SIDEWALKS (5")

STATE OF TEXAS
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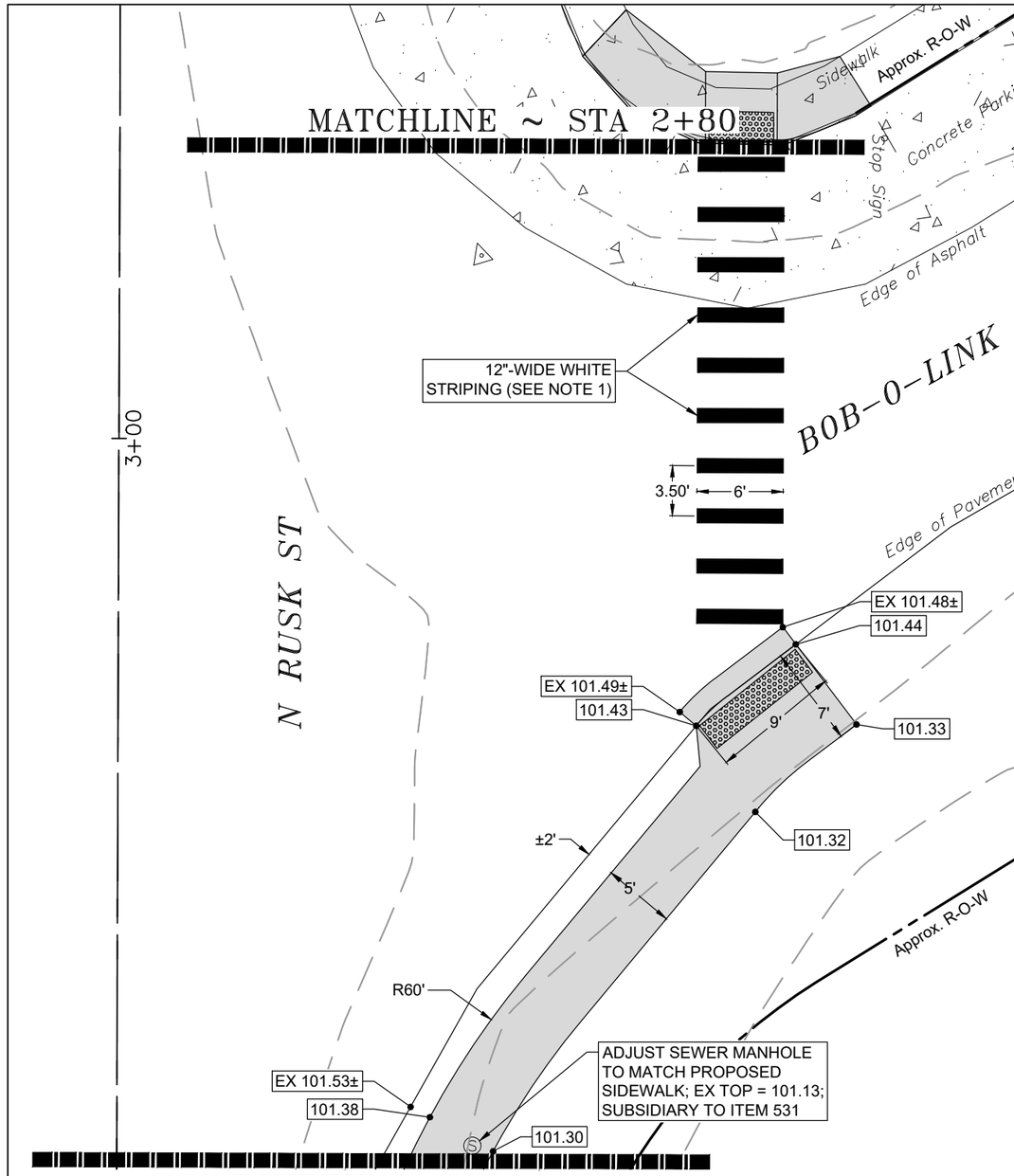
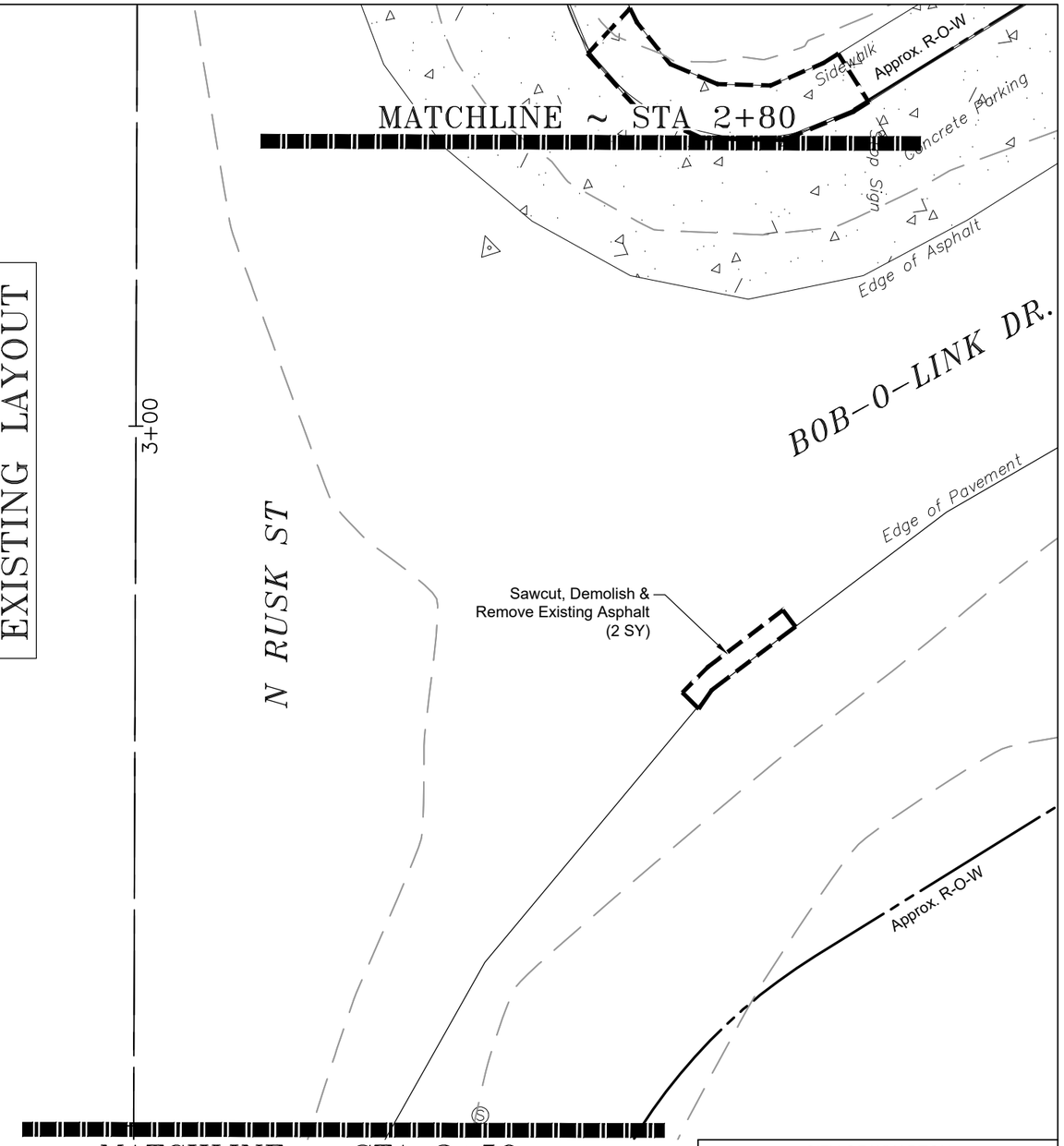
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
N RUSK: LAZY LN TO MOCKINGBIRD

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			89
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS





11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

Notes:
1. Crosswalk notes:
   - Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center crosswalk lines on travel lanes.
   - A minimum 6" clear distance shall be provided to the face of curb or edge of roadway. If the last crosswalk line falls into this distance it must be omitted.
   - Final placement of crosswalk shall be approved by the Engineer in the field.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0105 6011	2	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	2.0	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0531 6002	18	SY	CONC SIDEWALKS (5")
0531 6022	9	SY	CURB RAMPS (TY 5)
0668 6074	60	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

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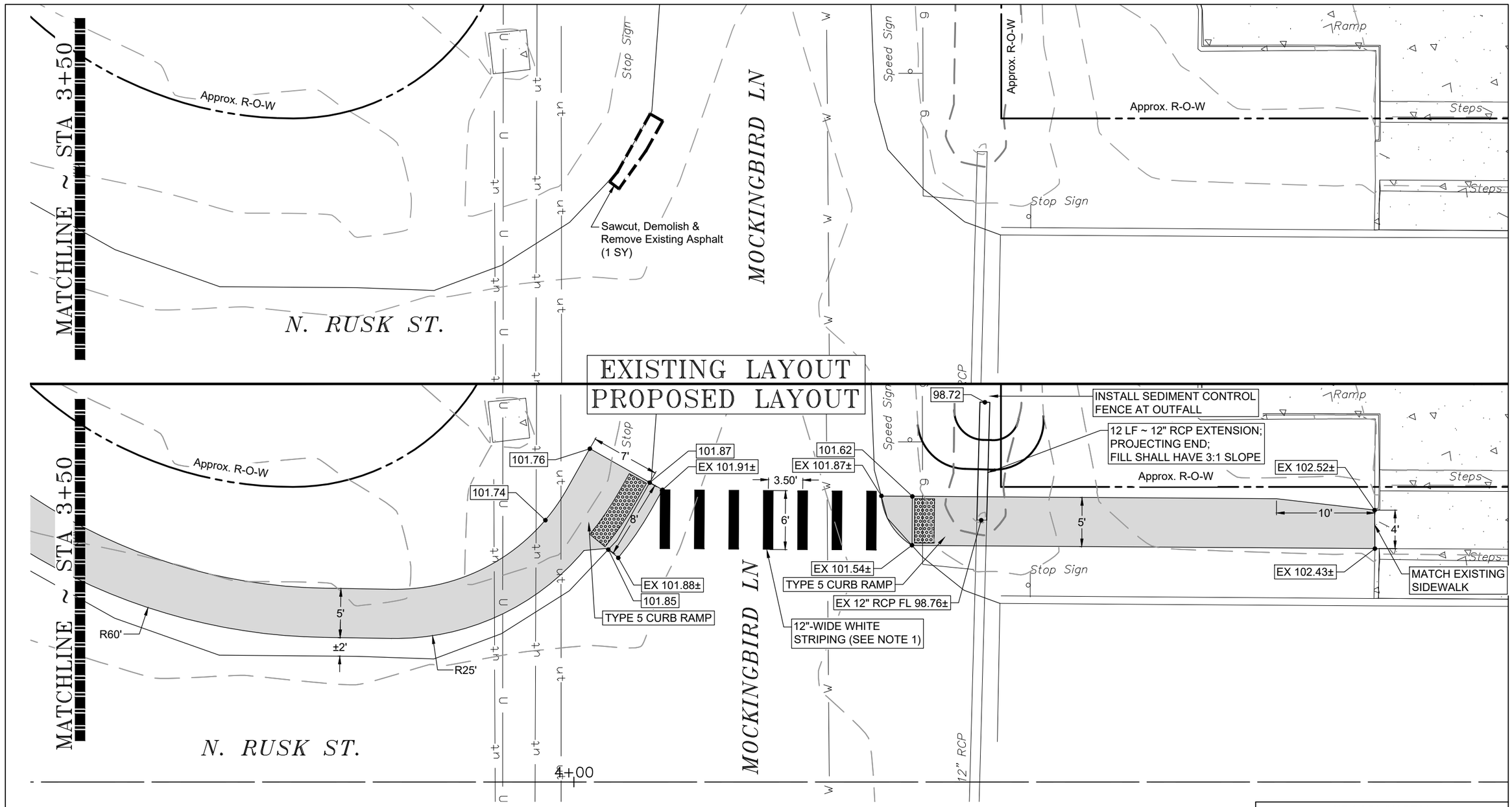
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
N RUSK: LAZY LN TO MOCKINGBIRD

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			90
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE
0 10 20
5 15
SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD_DESIGN

Notes:
1. Crosswalk notes:
   - Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center crosswalk lines on travel lanes.
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   - Final placement of crosswalk shall be approved by the Engineer in the field.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0105 6011	1	SY	REMOVING STAB BASE AND ASPH PAV (2"-6")
0351 6002	3.8	SY	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")
0464 6001	12	LF	RC PIPE (CL III)(12 IN)
0506 6038	10	LF	TEMP SEDMT CONT FENCE (INSTALL)
0506 6039	10	LF	TEMP SEDMT CONT FENCE (REMOVE)
0531 6002	53	SY	CONC SIDEWALKS (5")
0531 6022	11	SY	CURB RAMPS (TY 5)
0668 6074	42	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

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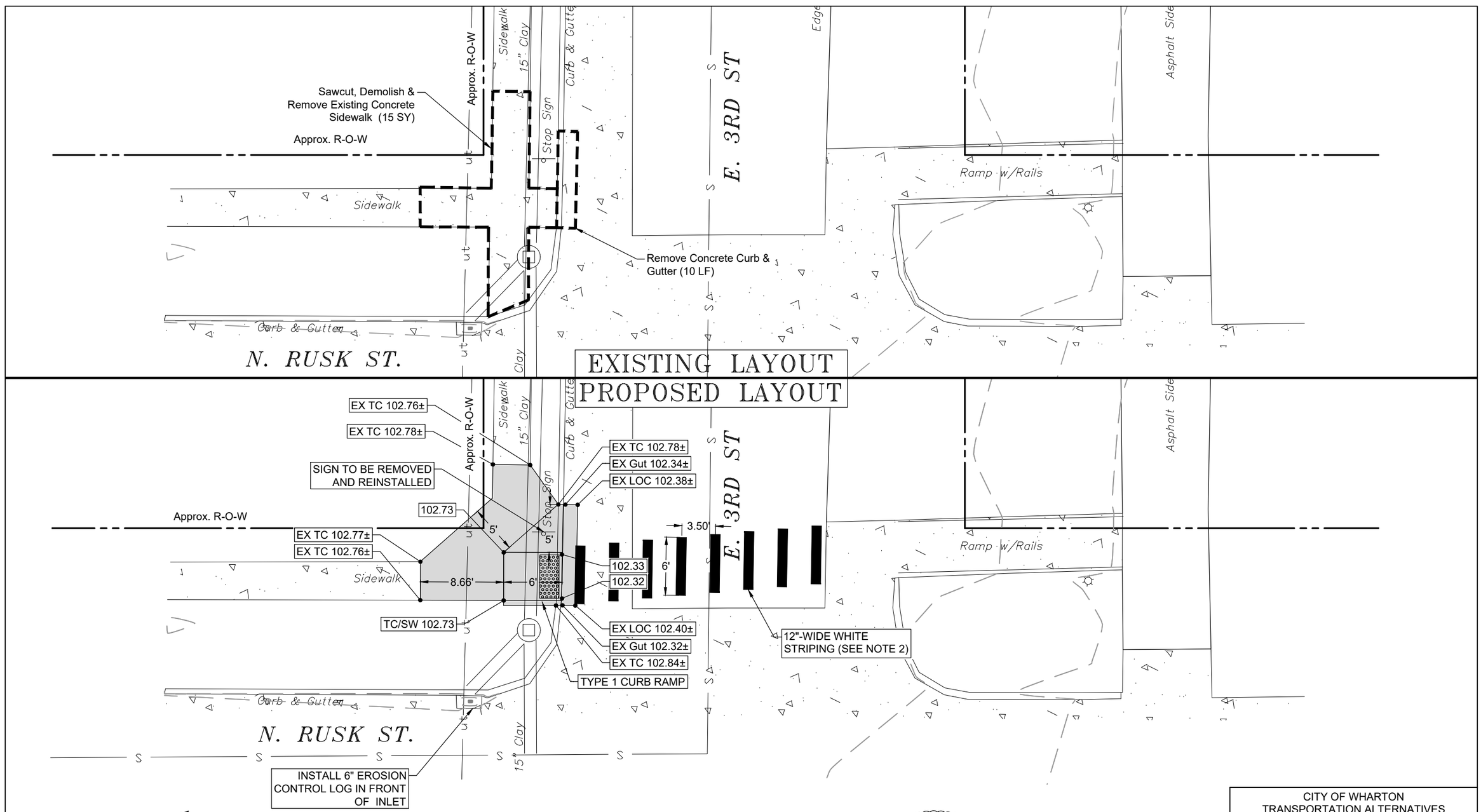
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK N RUSK: LAZY LN TO MOCKINGBIRD

Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			91
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



11" X 17"
GRAPHIC SCALE

0 10 20

5 15

SCALE: 1"=10'

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\FULTON-MOCKINGBIRD DESIGN

Notes:

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2. Crosswalk notes:
   - Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center crosswalk lines on travel lanes.
   - A minimum 6" clear distance shall be provided to the face of curb or edge of roadway. If the last crosswalk line falls into this distance it must be omitted.
   - Final placement of crosswalk shall be approved by the Engineer in the field.

TxDOT SPEC	QUANTITY	UNITS	DESCRIPTION
0104 6015	15	SY	REMOVING CONC (SIDEWALKS)
0104 6022	10	LF	REMOVING CONC (CURB AND GUTTER)
0506 6043	6	LF	BIODEG EROSN CONT LOGS (REMOVE)
0506 6045	6	LF	BIODEG EROSN CONT LOGS (INSTL) (6")
0531 6002	9	SY	CONC SIDEWALKS (5")
0531 6018	10	SY	CURB RAMPS (TY 1)
0668 6074	48	LF	PREFAB PAV MRK TY C (W) (12") (SLD)

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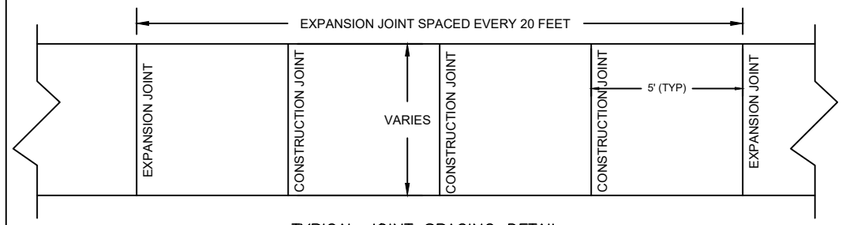
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

EXISTING & PROPOSED SIDEWALK
N RUSK ST & E 3RD ST

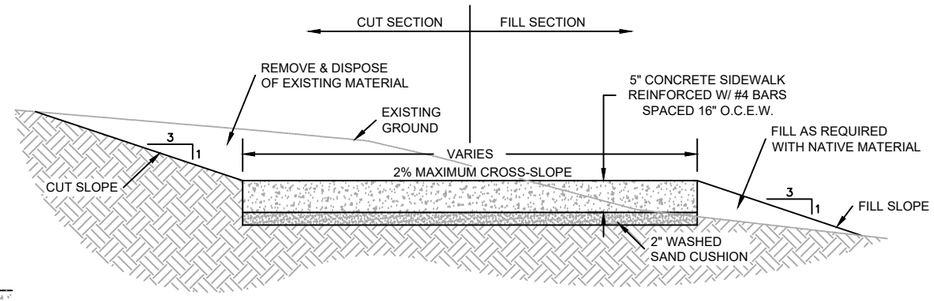
Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			92
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS



TYPICAL JOINT SPACING DETAIL

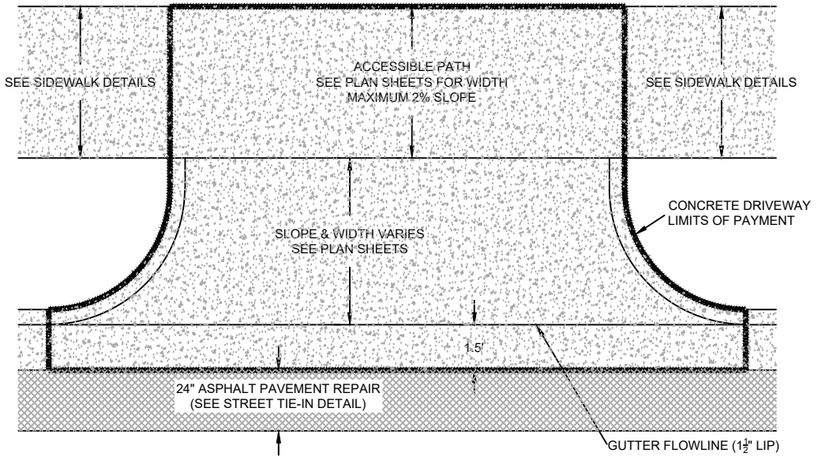
N.T.S.



TYPICAL SIDEWALK & CURB RAMP

CROSS–SECTION

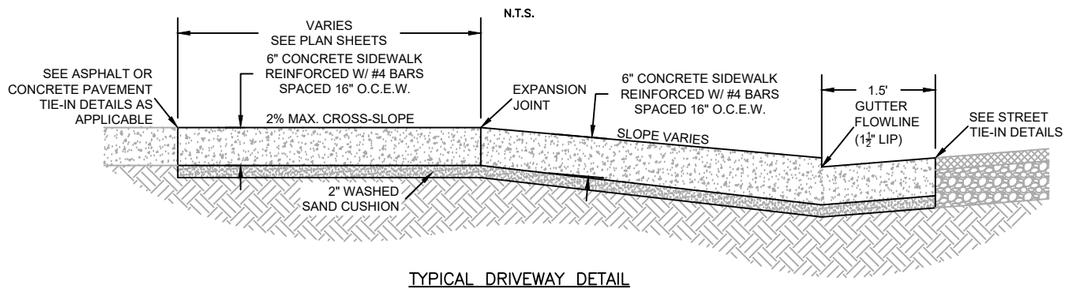
N.T.S.



TYPICAL DRIVEWAY DETAIL

PLAN VIEW

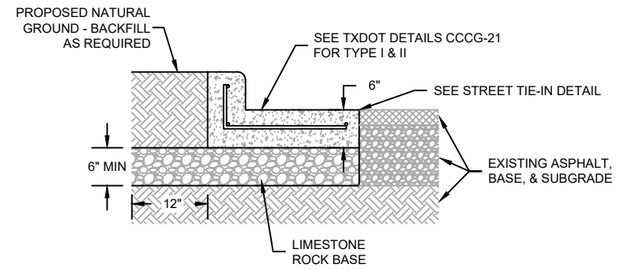
N.T.S.

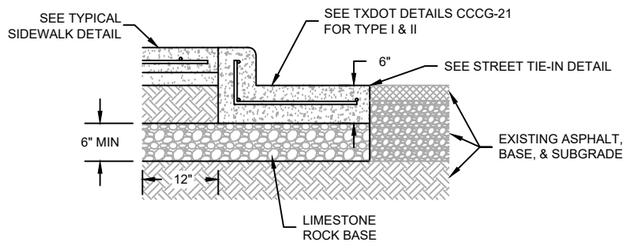


TYPICAL DRIVEWAY DETAIL

PROFILE VIEW

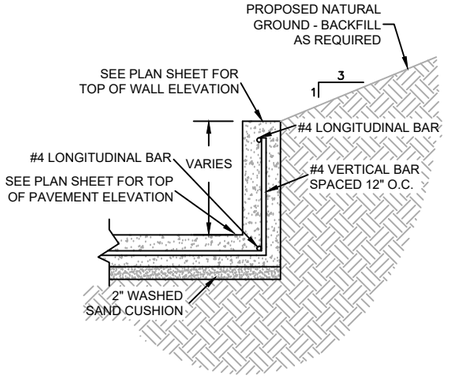
N.T.S.





CONCRETE CURB & GUTTER FOUNDATION DETAILS

N.T.S.

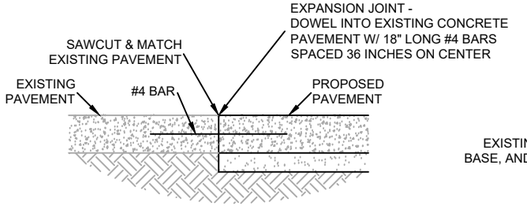


SIDEWALK CURB / RETAINING WALL

TYPICAL SECTIONS

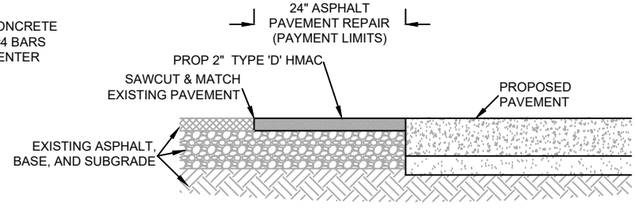
N.T.S.

Notes:
1. Proposed sidewalk shall not obstruct existing drainage paths crossing or running parallel to proposed sidewalk.
2. All sidewalks and driveways shall have hand-tooled pattern and broom finish.
3. Strength of concrete shall be a minimum 3,000 psi.
4. Contractor shall use Snap-Cap Expansion Joint Caps or approved equivalent at all straight concrete expansion joint construction and install to manufacturer's specifications
5. Limestone rock base shall meet the requirements of TxDOT 2014 Standard Specifications Item 247, Type A, Grade 1 or 2. The base material shall be compacted to at least 95 percent of the modified effort (ASTM D 1557) maximum dry density at moisture content within 2 percent of optimum.
6. Asphaltic concrete surface course shall be Type D (Fine Graded Surface Course) meeting TxDOT 2014 Standard Specification Item 340.



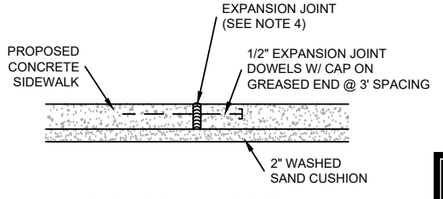
CONCRETE PAVEMENT TIE–IN DETAIL

N.T.S.



ASPHALT PAVEMENT TIE–IN DETAIL

N.T.S.



EXPANSION JOINT DETAIL

N.T.S.

STATE OF TEXAS
CHAD EMMEL
103495
LICENSED
PROFESSIONAL ENGINEER
5/13/22

BEFCO ENGINEERING, INC. (F-2011)
P.O. Box 615 La Grange, Texas 78945
(979) 968–6474

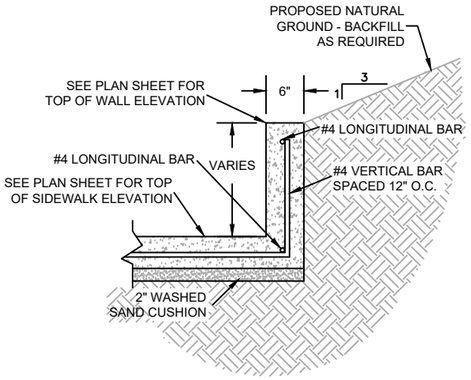
CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
SET-ASIDE PROGRAM
SAFE & ACCESSIBLE SCHOOL ROUTES
TXDOT CSJ NO. 0913-09-116

SIDEWALK DETAILS

Texas Department of Transportation

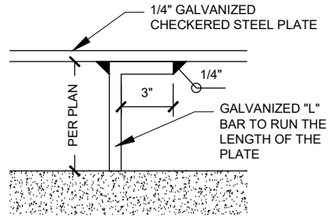
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			93
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\COVERSHEET AND NOTES

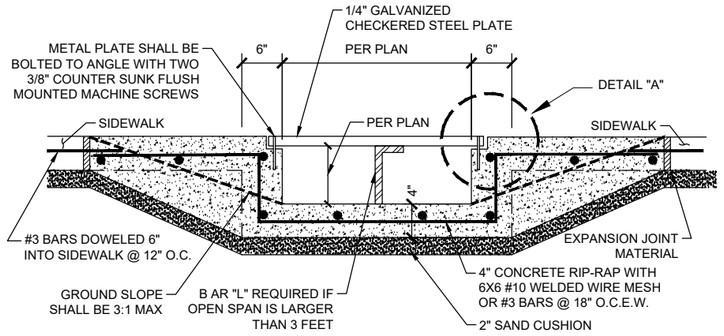


Sidewalk Curb/ Retaining Wall

NTS

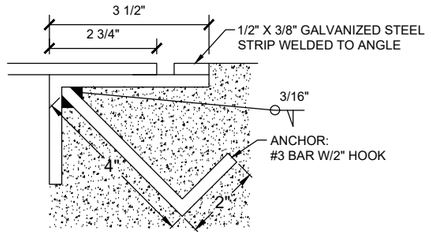


BAR "L" DETAIL



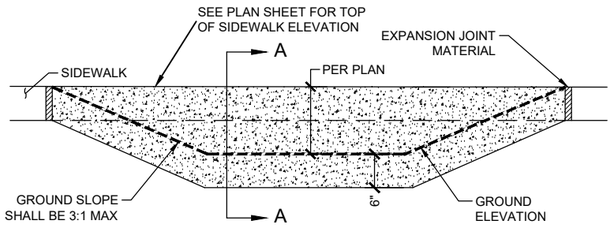
Plated Sidewalk Drain

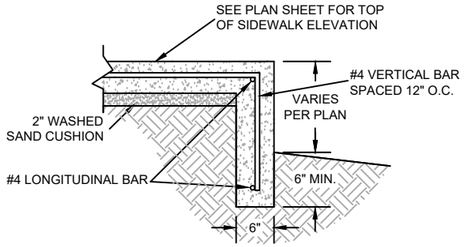
NTS



3 1/2" X 3" X 3/16" GALVANIZED STEEL ANGLE WITH TWO ANCHORS. 1/4" GALVANIZED CHECKERED STEEL PLATE TO BE ATTACHED TO ANGLE WITH TWO 3/8" COUNTER SUNK FLUSH MOUNTED MACHINE SCREW

DETAIL "A"

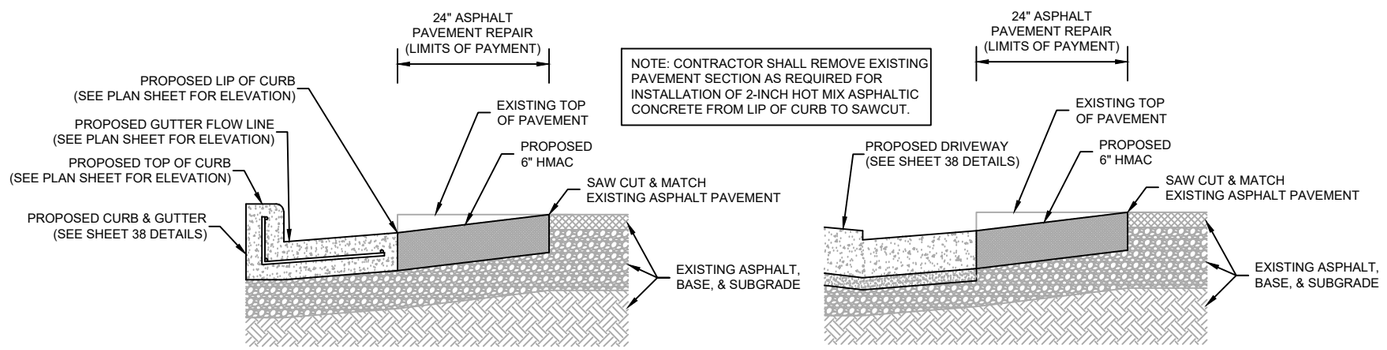




SECTION A-A

Sidewalk Toe-Down

NTS



Street Tie-In Details

NTS

Notes:
1. Proposed sidewalk shall not obstruct existing drainage paths crossing or running parallel to proposed sidewalk.
2. All sidewalks and driveways shall have hand-tooled pattern and broom finish.
3. Strength of concrete shall be a minimum 3,000 psi.
4. Contractor shall use Snap-Cap Expansion Joint Caps or approved equivalent at all straight concrete expansion joint construction and install to manufacturer's specifications
5. Limestone rock base shall meet the requirements of TxDOT 2014 Standard Specifications Item 247, Type A, Grade 1 or 2. The base material shall be compacted to at least 95 percent of the modified effort (ASTM D 1557) maximum dry density at moisture content within 2 percent of optimum.
6. Asphaltic concrete surface course shall be Type D (Fine Graded Surface Course) meeting TxDOT 2014 Standard Specification Item 340.

STATE OF TEXAS
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CITY OF WHARTON
TRANSPORTATION ALTERNATIVES
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TXDOT CSJ NO. 0913-09-116
SIDEWALK DETAILS

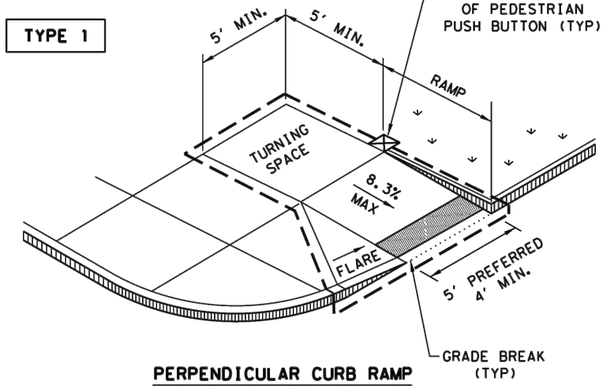
Texas Department of Transportation

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			94
STATE	DIST.	COUNTY	
TEXAS	YKM	WHARTON	
CONT.	SECT.	JOB	HIGHWAY NO.
0913	09	116	CS

FIELD BOOK NO. 579, 580
S:_Projects\Wharton\21-8217 TAP Safe & Accessible School Routes\DWG\COVERSHEET AND NOTES

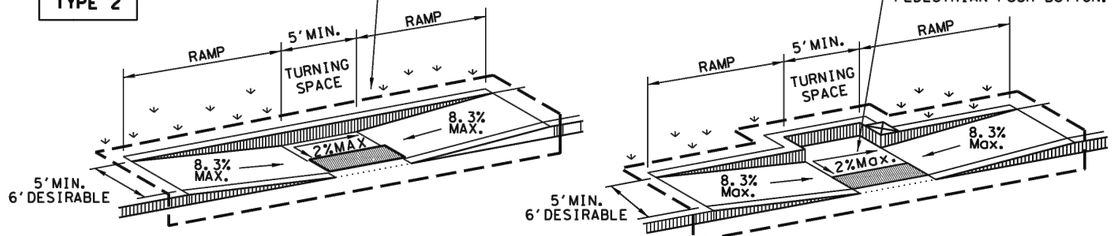
DATE:
FILE:

TYPE 1



PERPENDICULAR CURB RAMP

TYPE 2

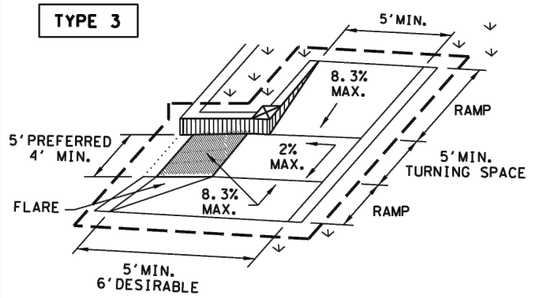


WITHOUT PEDESTRIAN PUSH BUTTON

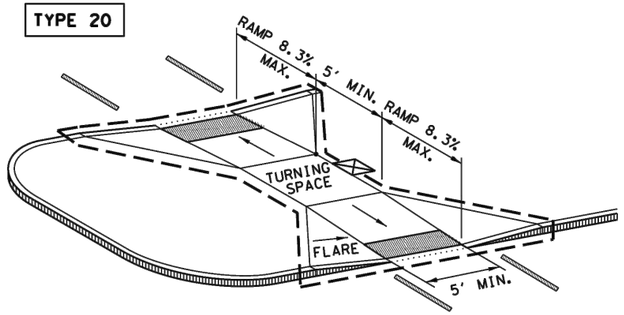
WITH PEDESTRIAN PUSH BUTTON

PARALLEL CURB RAMP

TYPE 3

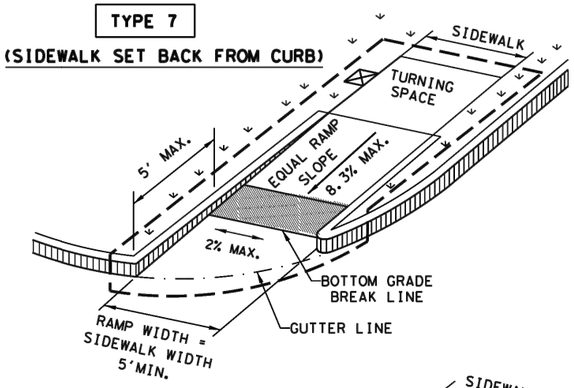


TYPE 20

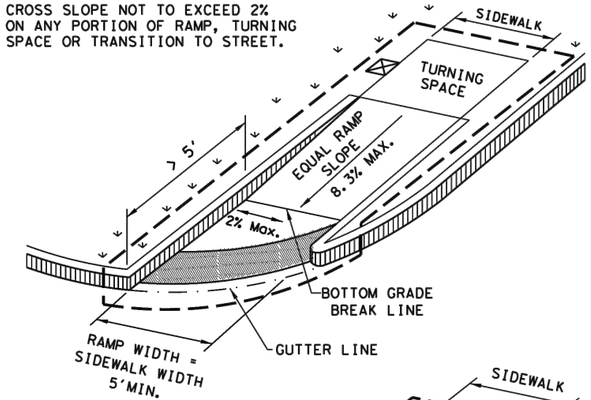


CURB RAMPS AT MEDIAN ISLANDS

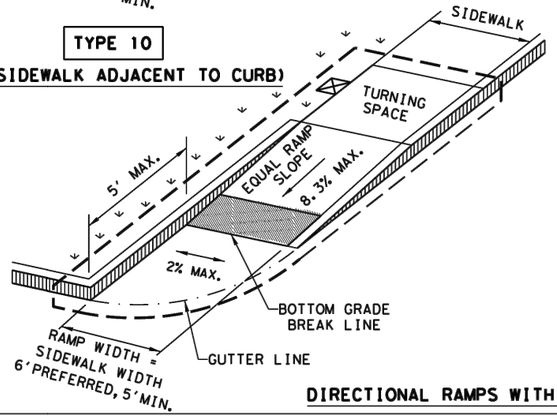
TYPE 7
(SIDEWALK SET BACK FROM CURB)



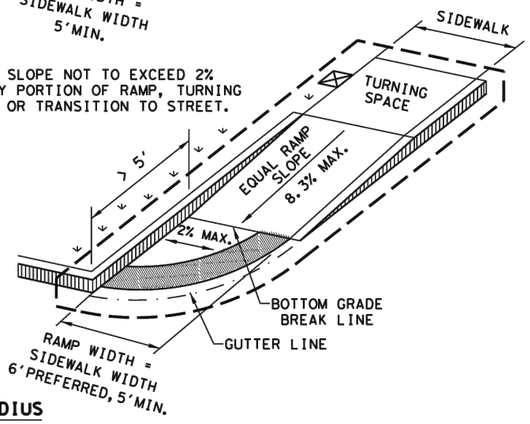
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



TYPE 10
(SIDEWALK ADJACENT TO CURB)

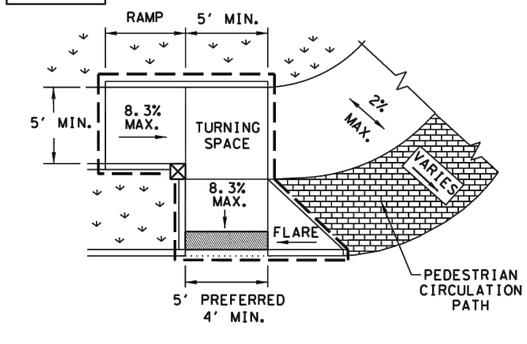


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



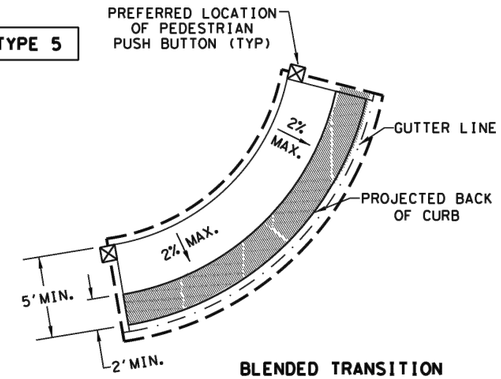
DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 6



COMBINATION CURB RAMPS

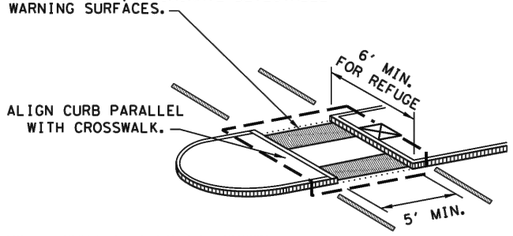
TYPE 5



BLENDED TRANSITION
(FLUSH LANDING)

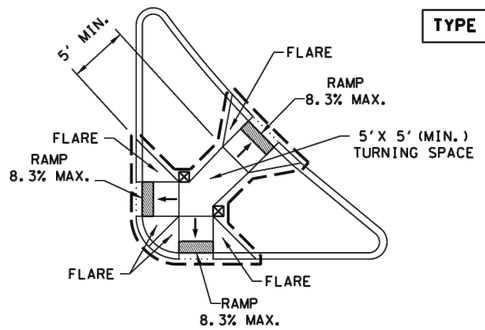
TYPE 21

INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.



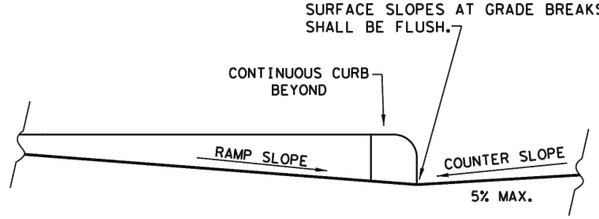
NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS

BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0913	09	116	CS
REVISED 08, 2009 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		95

DATE:
FILE:

GENERAL NOTES

CURB RAMPS

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

DETECTABLE WARNING MATERIAL

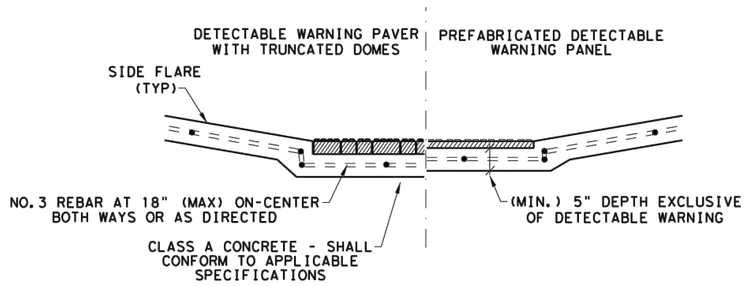
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

DETECTABLE WARNING PAVERS (IF USED)

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

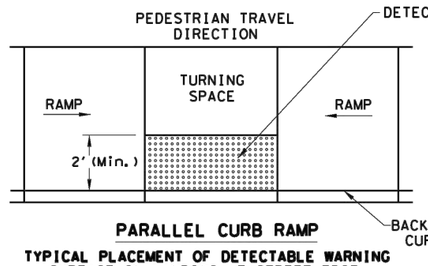
SIDEWALKS

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

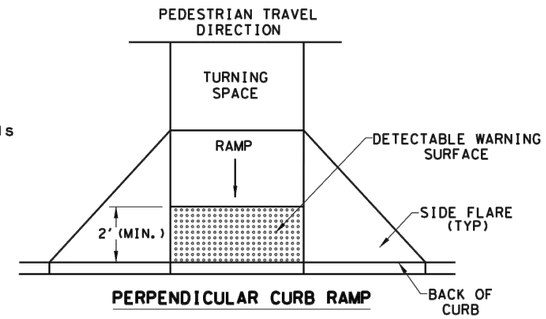


SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

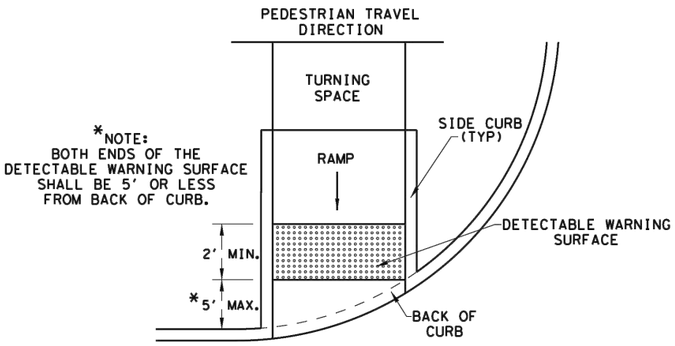
DETECTABLE WARNING SURFACE DETAILS



PARALLEL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



PERPENDICULAR CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



DIRECTIONAL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

Texas Department of Transportation — Design Division Standard

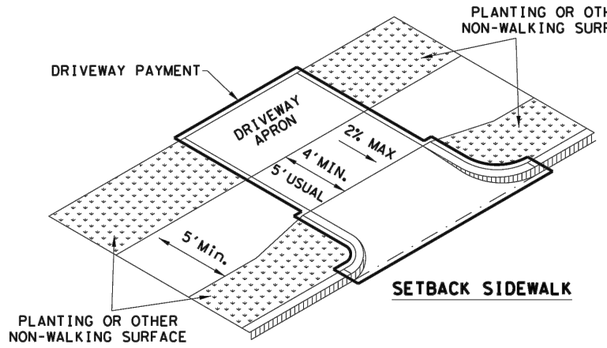
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

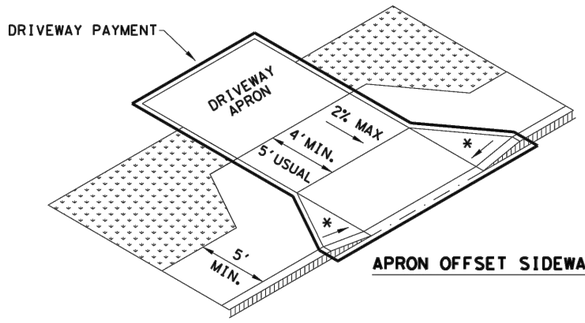
FILE: ped18	DN: TxDOT		DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY
REVISIONS	0913	09	116		CS
REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY			SHEET NO.
	YKM	WHARTON			96

DATE:
FILE:

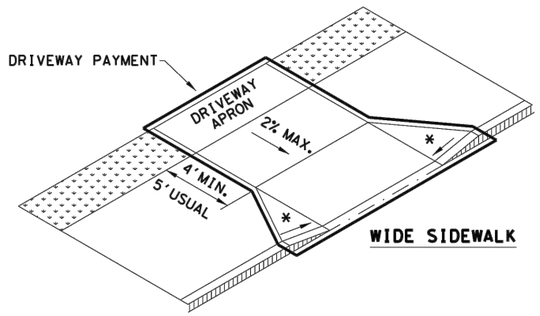
SIDEWALK TREATMENT AT DRIVEWAYS



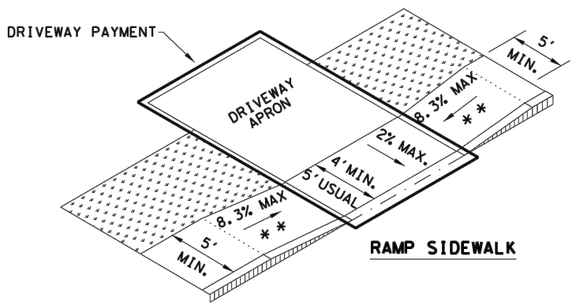
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



WIDE SIDEWALK

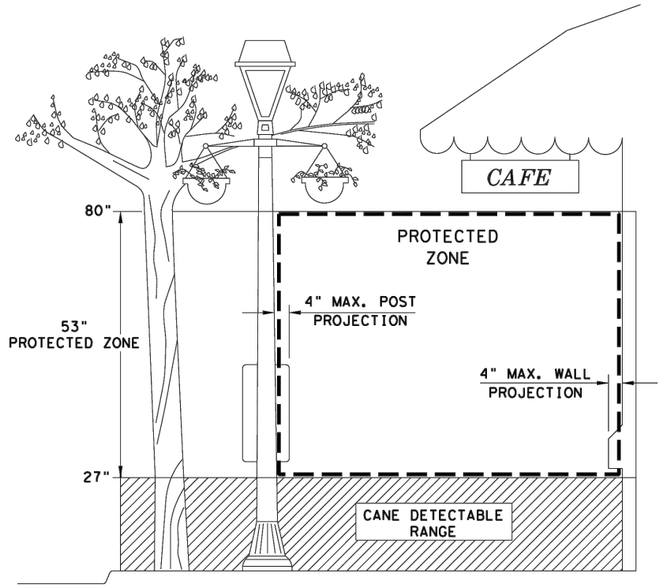


RAMP SIDEWALK

NOTES:

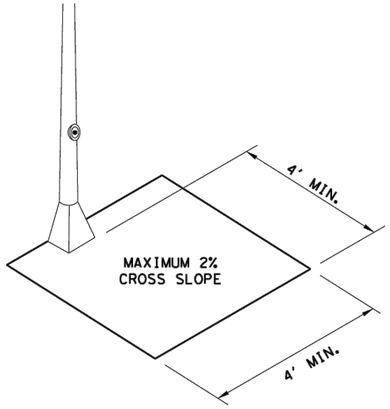
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

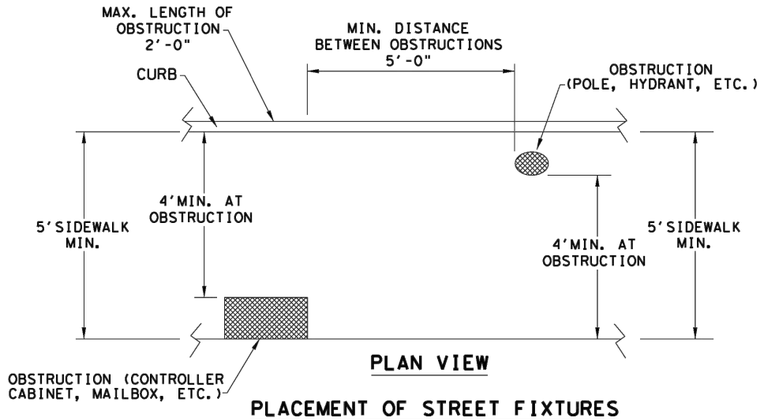


PROTECTED ZONE

NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



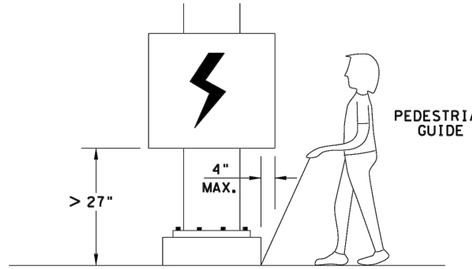
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



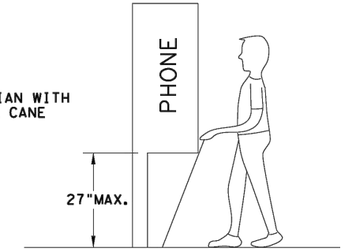
PLAN VIEW

PLACEMENT OF STREET FIXTURES

NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



PEDESTRIAN WITH GUIDE CANE



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT ≤27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

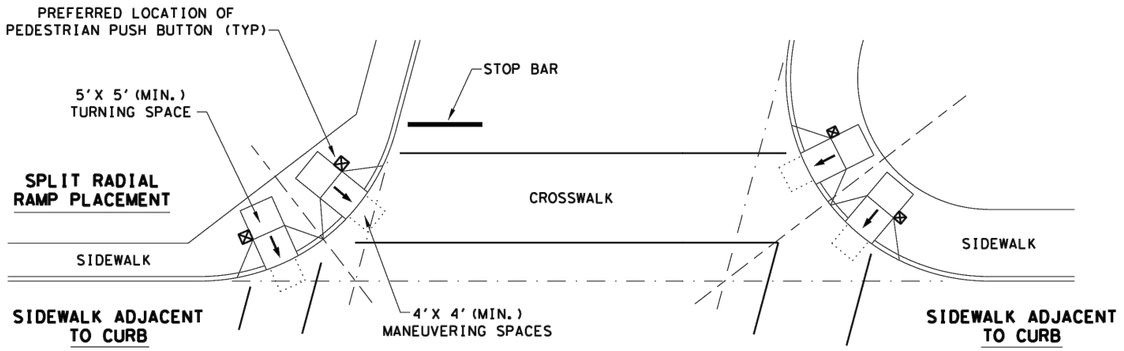
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG	
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0913	09	116	CS	
REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.	
	YKM	WHARTON		97	

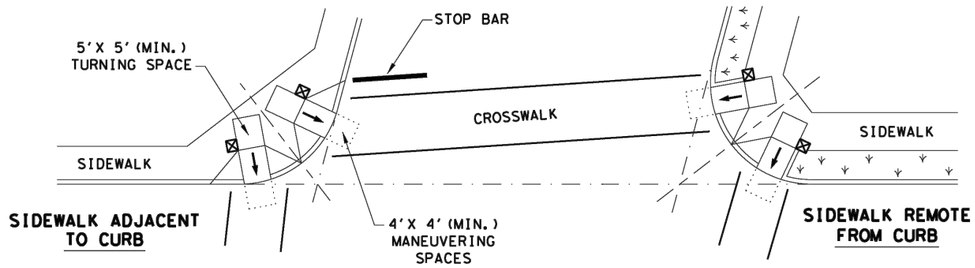
DATE:
FILE:

TYPICAL CROSSING LAYOUTS

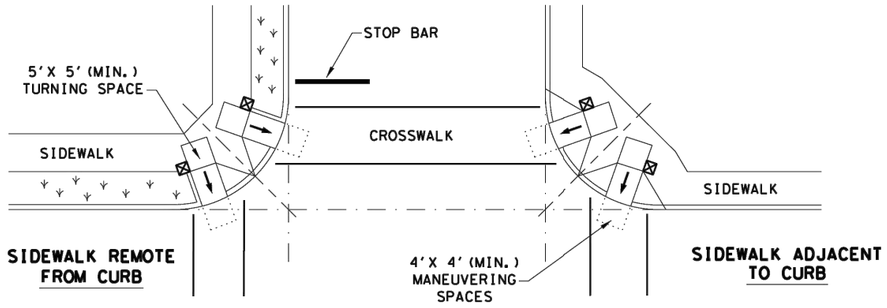
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



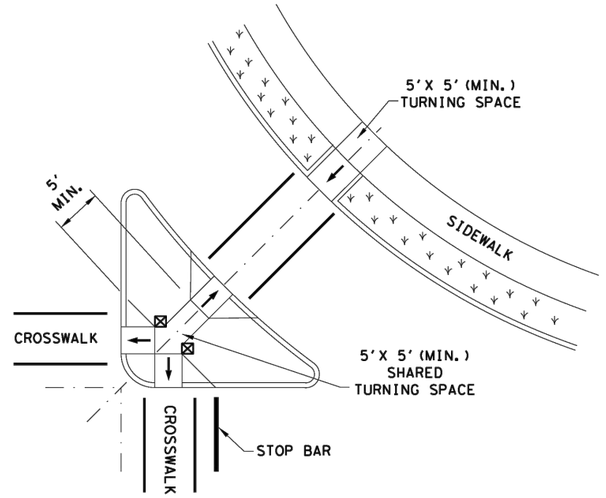
SKEWED INTERSECTION WITH "LARGE" RADIUS



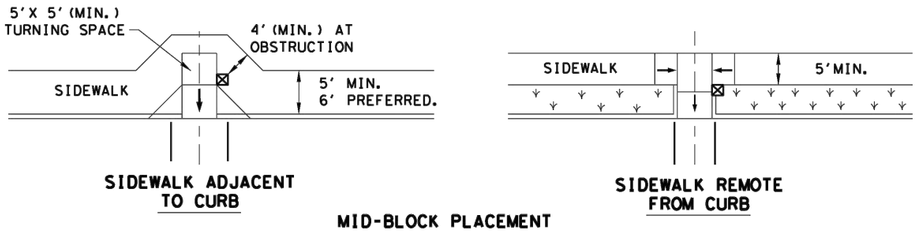
SKEWED INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

LEGEND:

SHOWS DOWNWARD SLOPE. →

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ⊠

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

Texas Department of Transportation

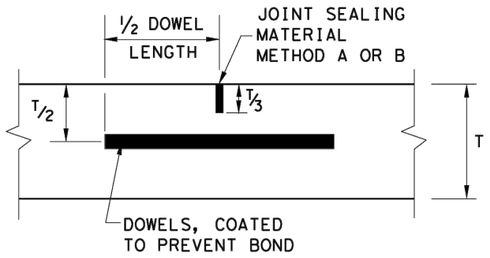
Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

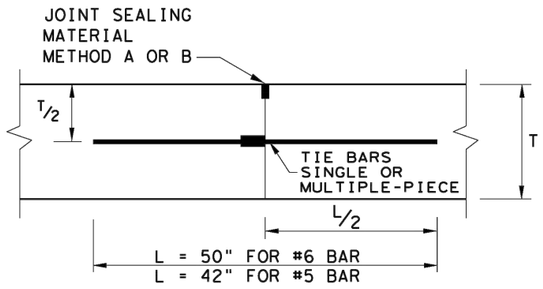
PED-18

FILE: ped18	DN: TxDOT		DW: VP	CK: KM	CK: PK & JG	
© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY	
REVISIONS REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	0913	09	116		CS	
	DIST	COUNTY			SHEET NO.	
	YKM	WHARTON			98	

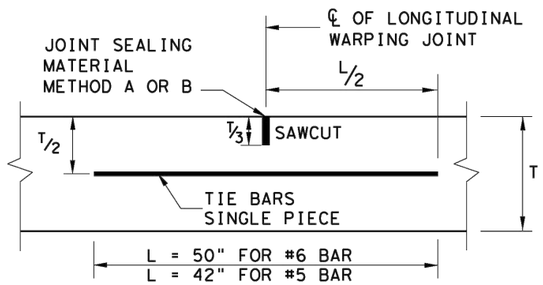
DATE:
FILE:



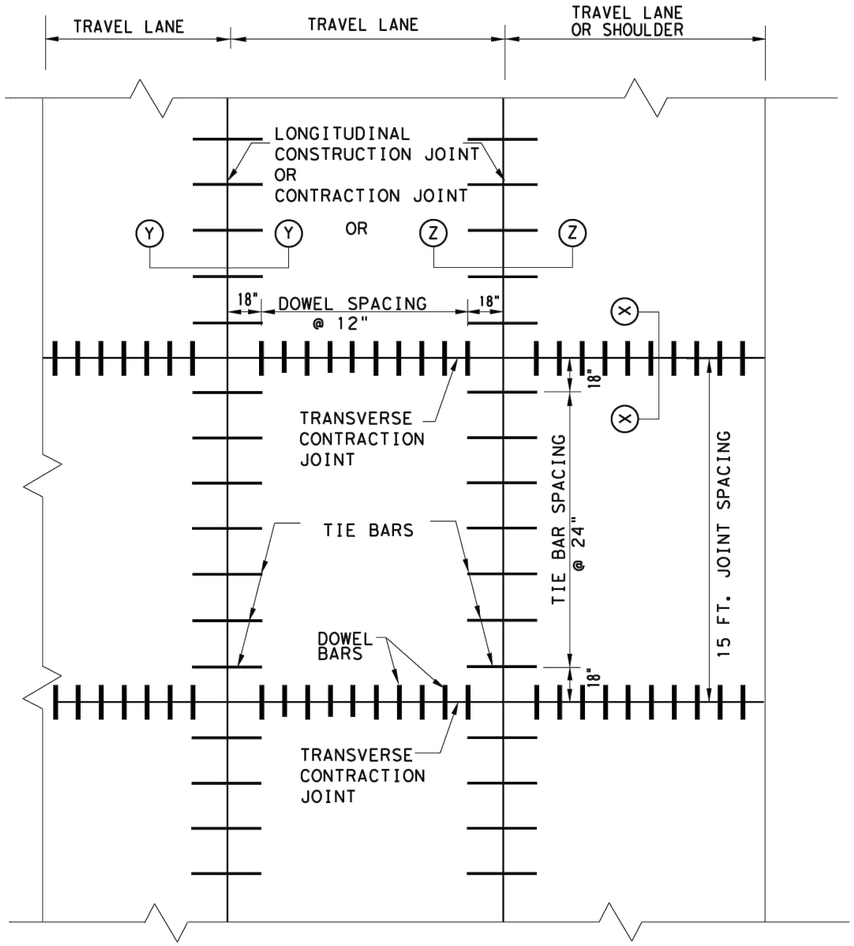
TRANSVERSE CONTRACTION JOINT
SECTION X-X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y-Y



LONGITUDINAL CONTRACTION JOINT
SECTION Z-Z



TYPICAL PAVEMENT LAYOUT
PLAN VIEW (NOT TO SCALE)

GENERAL NOTES

1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT ARE NOT COVERED BY THIS STANDARD.
2. FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND LOAD TRANSFER DEVICES REFER TO THE GOVERNING SPECIFICATION FOR "CONCRETE PAVEMENT".
3. THE SPACING BETWEEN TRANSVERSE CONTRACTION JOINTS SHALL BE 15 FT. UNLESS OTHERWISE SHOWN IN THE PLANS.
4. TRANSVERSE CONSTRUCTION JOINTS MAY BE FORMED BY USE OF METAL OR WOOD FORMS EQUAL IN DEPTH TO THE DEPTH OF PAVEMENT, OR BY METHODS APPROVED BY THE ENGINEER.
5. USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL THE FORMED JOINTS.
6. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
7. THE JOINT BETWEEN OUTSIDE LANE AND SHOULDER SHALL BE A LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z) UNLESS OTHERWISE SHOWN IN THE PLANS. THE SAW CUT DEPTH FOR THE LONGITUDIANL CONTRACTION JOINT (SECTION Z-Z) SHALL BE ONE THIRD OF THE SLABTHICKNESS (T/3).
8. WHEN TYING CONCRETE GUTTER AT A LONGITUDINAL JOINT, THE TIE BAR LENGTH OR POSITION MAY BE ADJUSTED. PROVIDE 3 IN. OF CONCRETE COVER FROM THE BACK OF GUTTER TO THE END OF TIE BAR.
9. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN. 10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
10. WHEN AN MONOLITHIIC CURB IS SPECIFIED, THE JOINT IN THE CURB SHALL COINCIDE WITH PAVEMENT JOINTS AND MAY BE FORMED BY ANY MEANS APPROVED BY THE ENGINEER.
11. DOWEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1/4 IN. HORIZONTALLY AND VERTICALLY UNLESS OTHERWISE SPECIFIED. WHERE DOWEL BAR BASKETS ARE USED, REMOVE THE SHIPPING WIRES.
12. THE DETAIL FOR JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."

TABLE NO. 1 DOWELS (SMOOTH BARS)		
SLAB THICKNESS T (IN.)	BAR DIA. AND LENGTH	AVERAGE SPACING (IN.)
6 to 7.5	1" X 18"	12
8 to 10	1 1/4" X 18"	12
>= 10.5	1 1/2" X 18"	12

TABLE NO. 2 TIE BARS (DEFORMED BARS)		
SLAB THICKNESS T (IN.)	BAR SIZE	AVERAGE SPACING (IN.)
6 to 7.5	#5	24
>= 8	#6	24

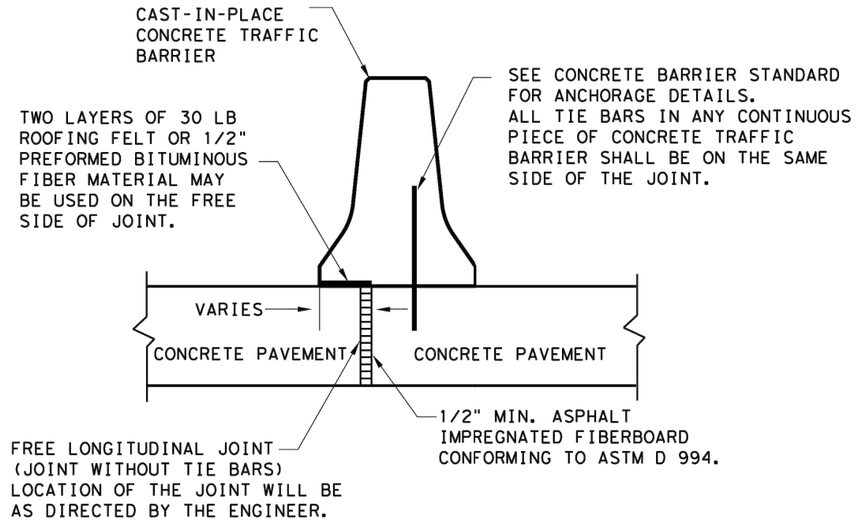
Texas Department of Transportation | Design Division Standard

CONCRETE PAVEMENT DETAILS
CONTRACTION DESIGN
T-6 to 12 INCHES

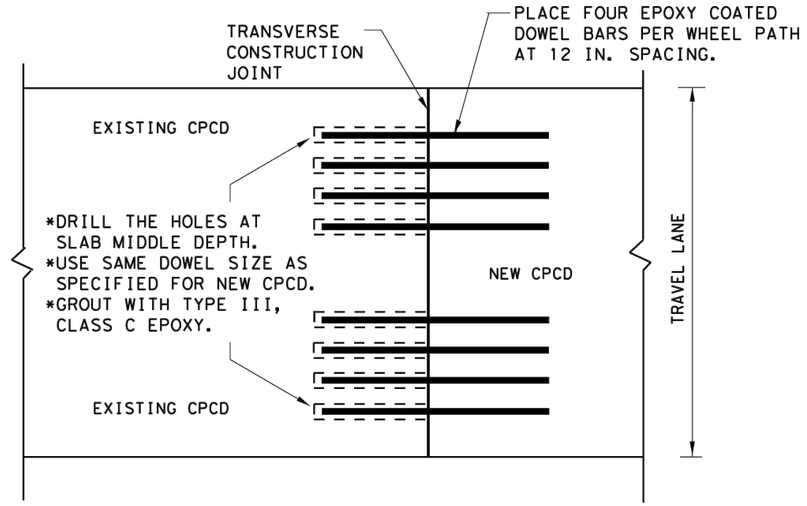
CPCD-14

FILE: cpcd14.dgn	DN: TxDOT		DN: HC	DW: HC	CK: AN
©TxDOT: DECEMBER 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0913	09	116	CS	
	DIST	COUNTY		SHEET NO.	
	YKM	WHARTON		99	

DATE:
FILE:



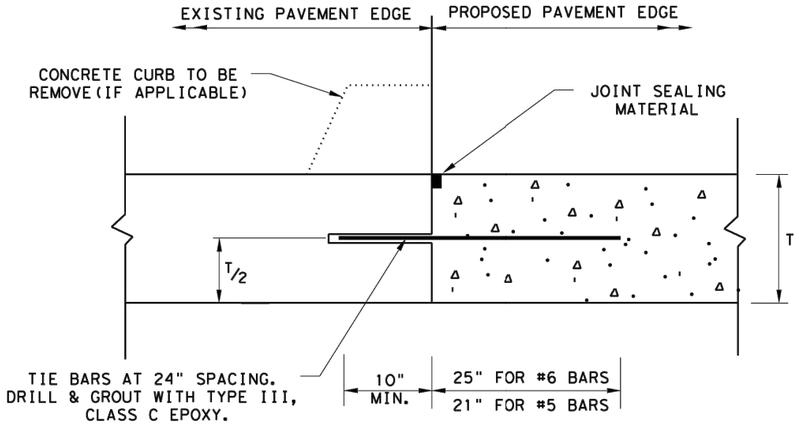
FREE LONGITUDINAL JOINT DETAIL



TRANSVERSE JOINT DETAIL

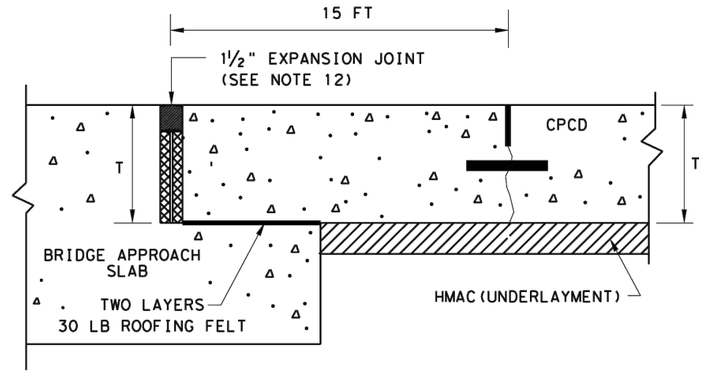
EXISTING CPCD TO NEW CPCD

PLAN VIEW (NOT TO SCALE)



1. BEFORE WIDENING WORK, DEMONSTRATE THAT THE BOND STRENGTH OF THE EPOXY-GROUTED TIE BARS MEETS THE REQUIREMENTS OF PULL-OUT TEST SPECIFIED IN ITEM 361.
2. SPACE TIE BARS AT 24" SPACING. USE #6 BARS FOR 8" AND THICKER SLABS, USE #5 BARS FOR LESS THAN 8" THICK SLABS.
3. THE TRANSVERSE JOINTS OF PROPOSED PAVEMENT SHALL COINCIDE WITH EXISTING PAVEMENT JOINTS UNLESS OTHERWISE SHOWN ON THE PLANS.

LONGITUDINAL WIDENING JOINT DETAIL



TRANSVERSE EXPANSION JOINT DETAIL

AT BRIDGE APPROACH

SHEET 2 OF 2

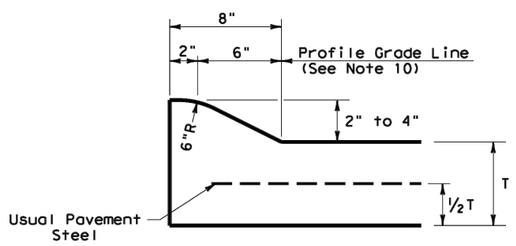
Texas Department of Transportation

Design Division Standard

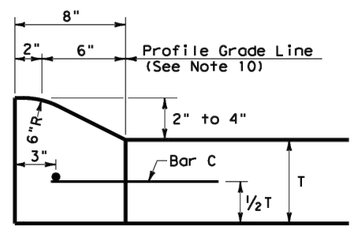
CONCRETE PAVEMENT DETAILS
CONTRACTION DESIGN
T-6 to 12 INCHES

CPCD-14

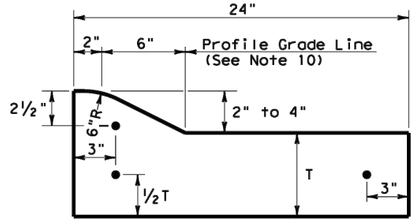
FILE: cpcd14.dgn	DN: TxDOT	DN: HC	DW: HC	CK: AN
© TxDOT: DECEMBER 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		100



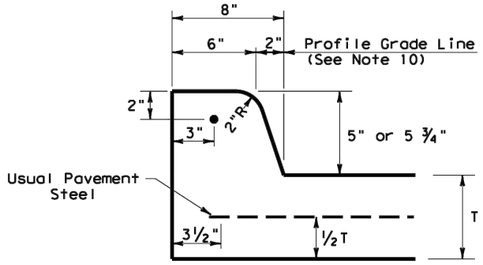
TYPE I CURB (MONOLITHIC)
2" - 4" HEIGHT



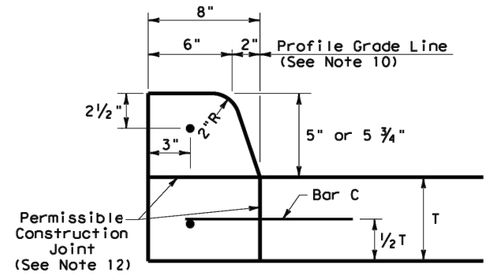
TYPE I CURB
2" - 4" HEIGHT



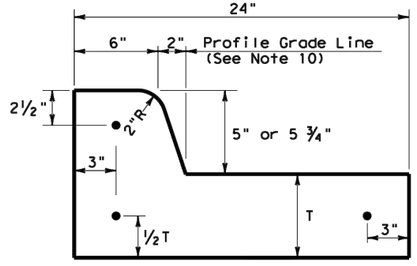
TYPE I CURB AND GUTTER
2" - 4" HEIGHT



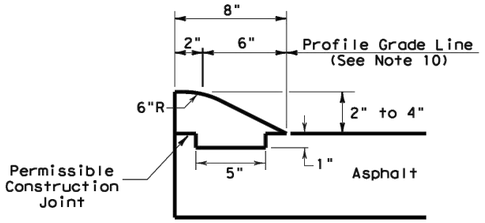
TYPE II CURB (MONOLITHIC)
5" - 5 ¾" HEIGHT



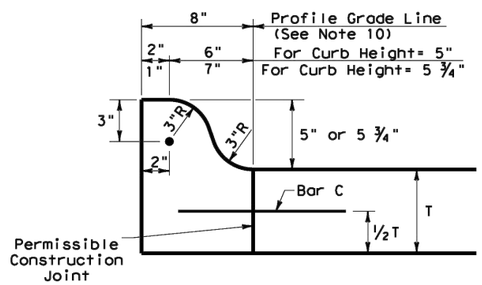
TYPE II CURB
5" - 5 ¾" HEIGHT



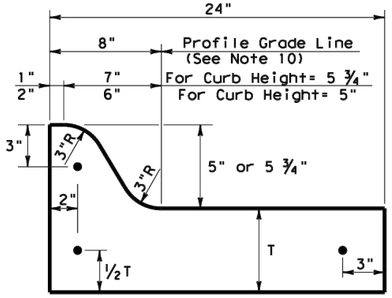
TYPE II CURB AND GUTTER
5" - 5 ¾" HEIGHT



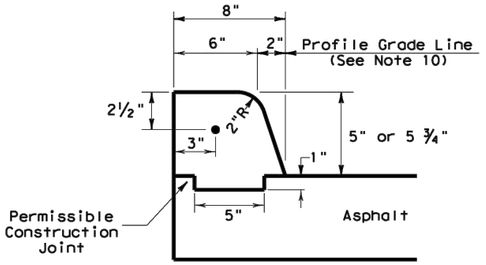
TYPE III CURB (KEYED)
2" - 4" HEIGHT



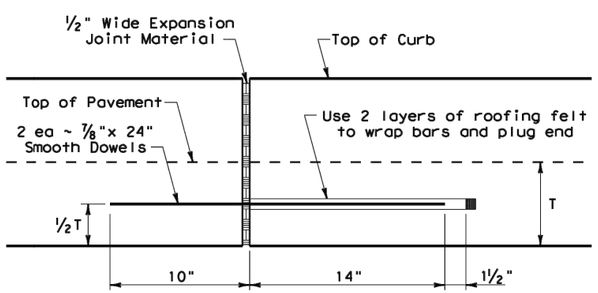
TYPE IIa CURB
5" - 5 ¾" HEIGHT



TYPE IIa CURB AND GUTTER
5" - 5 ¾" HEIGHT

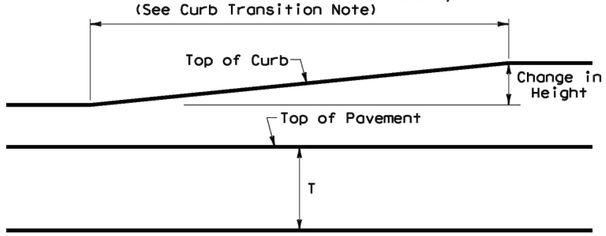


TYPE IV CURB (KEYED)
5" - 5 ¾" HEIGHT



EXPANSION JOINT DETAIL

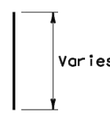
CURB TRANSITION NOTE:
Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans, or as directed by the Engineer.



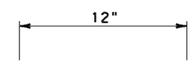
CURB TRANSITION
Note: To be paid for as Highest Curb

GENERAL NOTES

1. All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
2. Concrete shall be Class A.
3. When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of fiber reinforced concrete in lieu of reinforcing steel is acceptable. Use fibers meeting the requirements of DMS 4550, "Fibers for Concrete," and dose fibers in accordance with Material Producers List (MPL) "Fibers for Class A and B Concrete Applications."
4. Round exposed sharp edges with a rounding tool, to a minimum radius of ¼ inch.
5. All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
6. Where concrete curb is to be placed on existing concrete pavement, Bar B may be drilled and the grouted in place, or may be inserted into fresh concrete.
7. Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
8. Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C~C.
9. Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
10. Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
11. One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
12. When horizontal permissible construction joints are used, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans. Reinforcing steel for curb section shall then conform to that required for concrete curb.
13. Bar B used as needed to support curb reinforcing steel during concrete placement.



BAR B



BAR C

Texas Department of Transportation

Design Division Standard

CONCRETE CURB AND CURB AND GUTTER

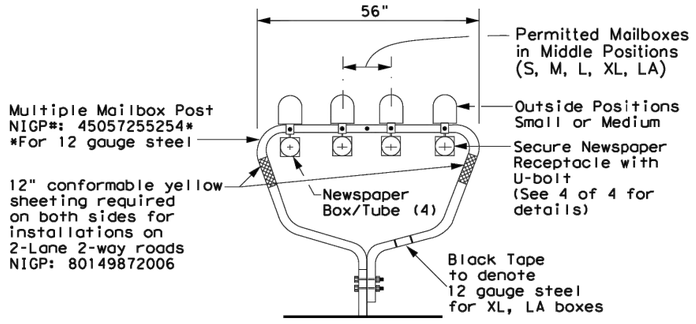
CCCG-21

FILE: cccg21.dgn	DN: TXDOT	CK: AN	DW: SS	CK: KM
©TxDOT: FEBRUARY 2021 REVISIONS	CONT	SECT	JOB	HIGHWAY
	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		101

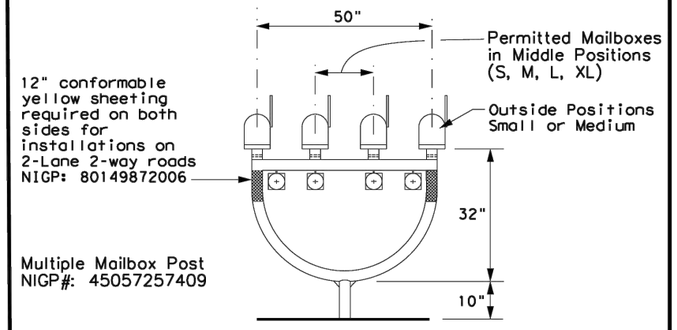
DATE:
FILE:

DATE:
FILE:

TYPE 1 - MULTIPLE



TYPE 4 - MULTIPLE



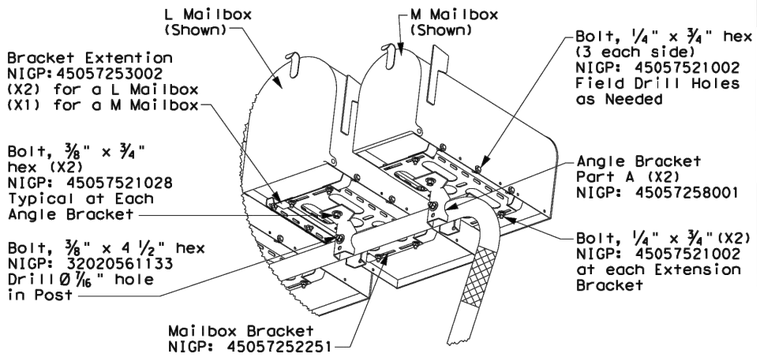
MAILBOX SIZES

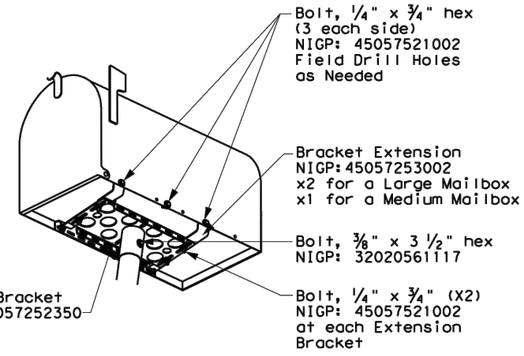
MAILBOX SIZE	TYPICAL DIMENSIONS			MAX **
	LENGTH	WIDTH	HEIGHT	WEIGHT
SMALL	19 ½"	6"	7"	6 LBS
MEDIUM	22 ½" *	8" *	11 ½" *	8 LBS
LARGE	23 ½"	11 ½"	13 ½"	11 LBS
EXTRA LARGE	18"	14"	12"	13 LBS
LOCKABLE	18"	11 ½"	15"	23 LBS

* See Note 1.
** Excluding Molded Plastic on 4 X 4 Post

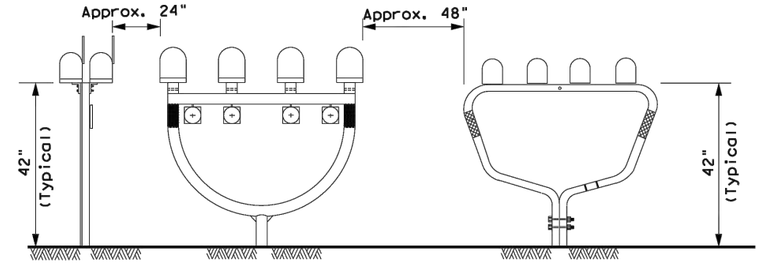
GENERAL NOTES:

1. Dimensions shown (length, width, and height) are typical, not maximums. However, anytime a medium size mailbox is mounted on a single/double mount or on the outside position on a multi mount, the dimensions shown are maximums.
2. Mailboxes shall be made of light weight sheet metal or light weight plastic. Heavy steel, cast iron or decorative mailboxes shall not be used on the state highway system.





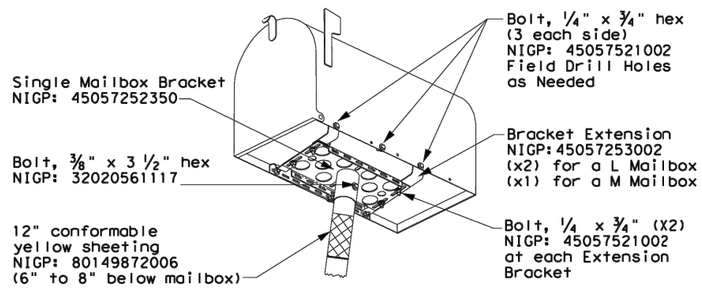
TYPICAL INSTALLATION MEASUREMENTS

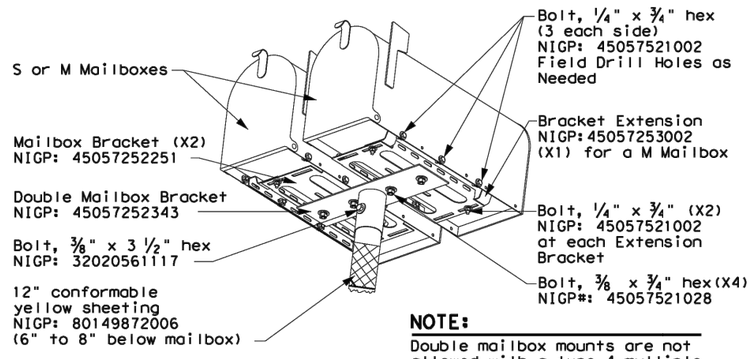


NOTE:

Mailbox installations in sidewalk areas shall be in accordance with the latest TxDOT Design Standard sheets PED-Pedestrian Facilities Curb Ramps.

TYPE 2 and 4 - SINGLE/DOUBLE

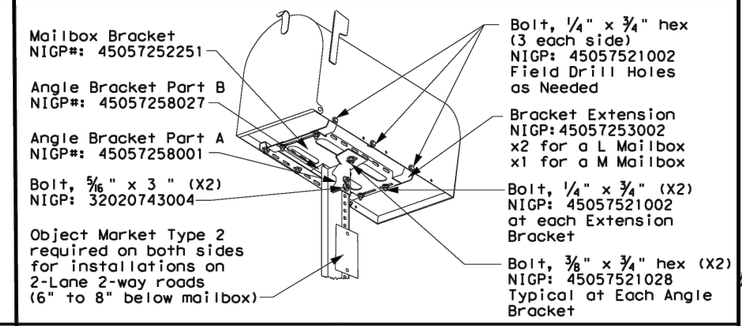


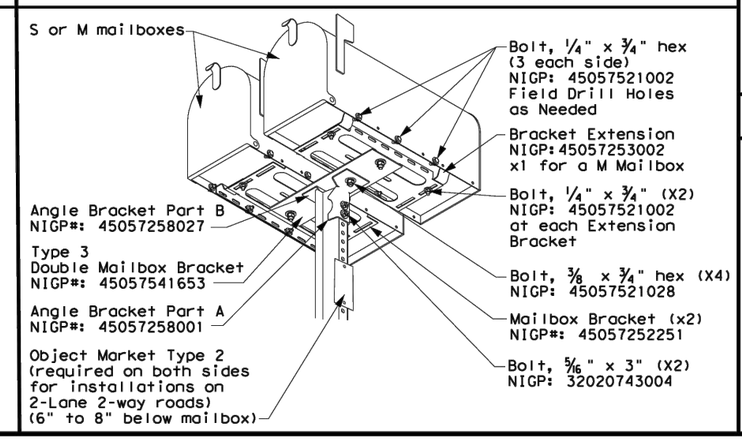


NOTE:

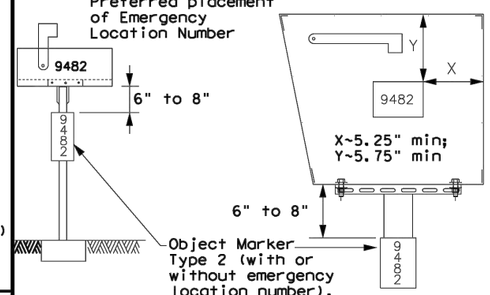
Double mailbox mounts are not allowed with a type 4 multiple mailbox installation

TYPE 3 - SINGLE/DOUBLE





PLACEMENT OF EMERGENCY LOCATION NUMBER

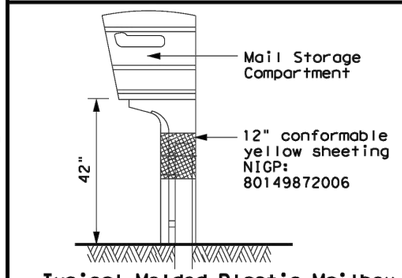


NOTES:

1. Location numbers are provided by homeowner. Minimum size 1" height.
2. Location number is typically placed on the mailbox in a contrasting color.
3. Black numbers may be placed on the Type 2 object marker if the numbers cannot be placed on the mailbox.
4. Alternatively, a green or blue plate with white numbers attached may be mounted below the object marker. Other contrasting color configuration, as approved, may be used.
5. See 3 of 4 for Foundation details.
6. See 4 of 4 for Hardware details.

SHEET 1 OF 4

TYPE 5



Typical Molded Plastic Mailbox

Texas Department of Transportation

Maintenance Division Standard

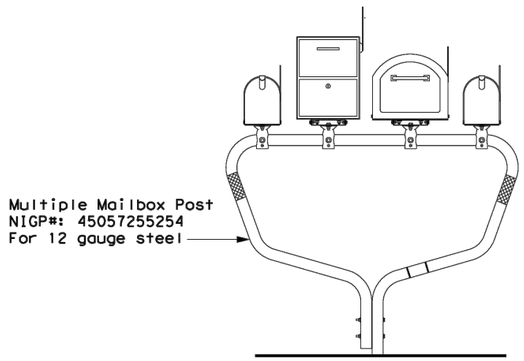
MAILBOX MOUNTING AND ASSEMBLY

MB(1)-21

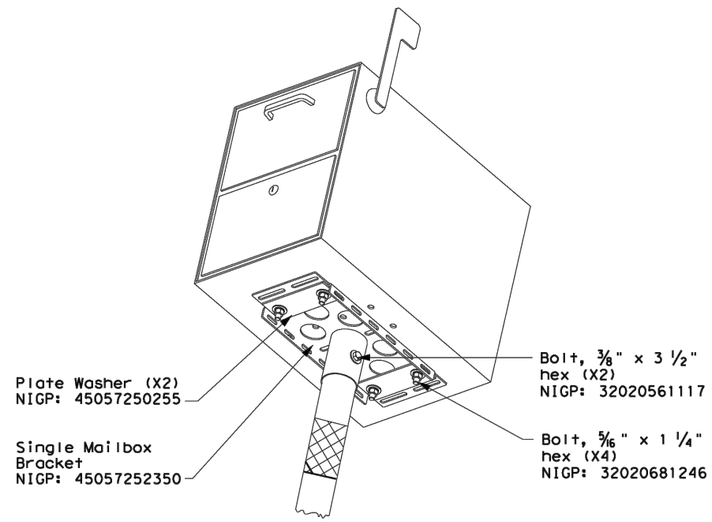
FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS 2/2005 11/2009 4/2015 6/2005 1/2011 11/2006 7/2014	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		102

DATE:
FILE:

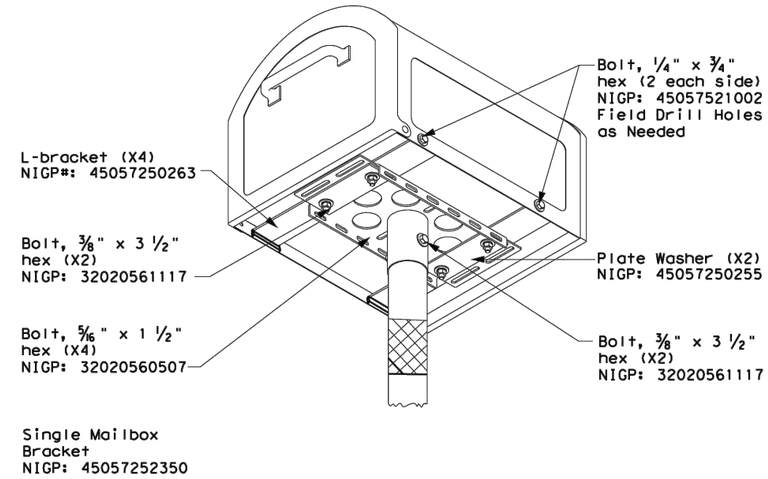
TYPE 1- MULTI LOCKABLE AND XL MAILBOX



TYPE 2/4 - SINGLE LOCKABLE MAILBOX

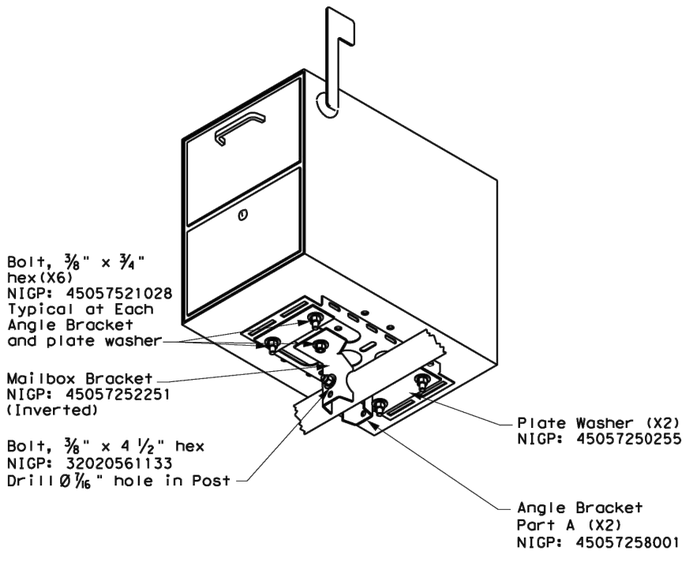


TYPE 2/4 - SINGLE XL MAILBOX

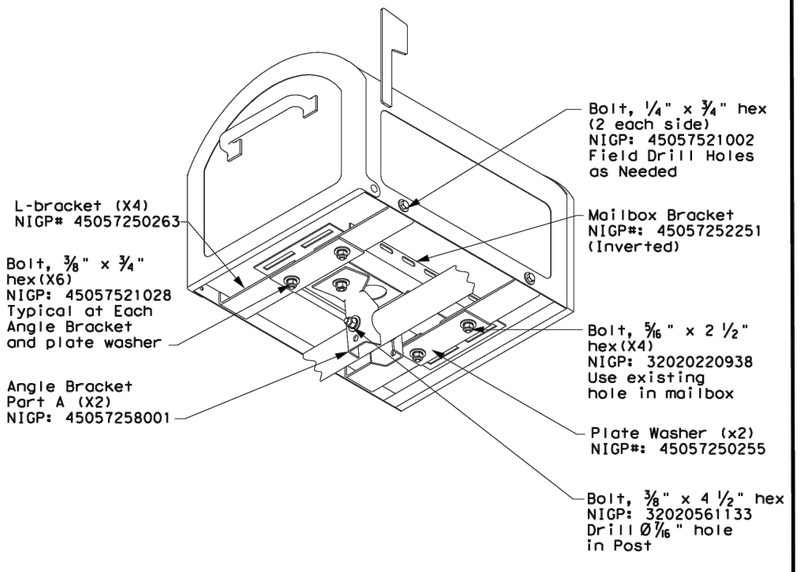


NOTE:
Follow same configuration when mounting an XL mailbox on a Type 4 multi post.

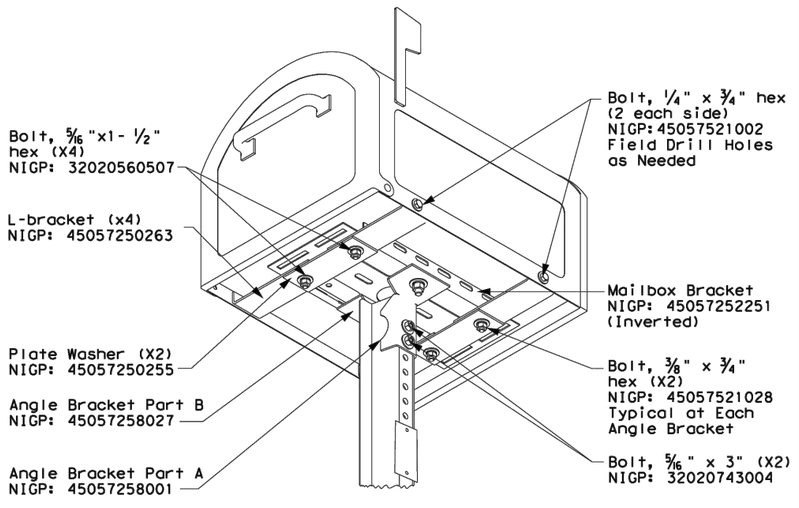
TYPE 1 MULTI – LOCKABLE ARCHITECTURAL (LA)



TYPE 1 MULTI – XL MAILBOX



TYPE 3 - XL MAILBOX MOUNTING



Texas Department of Transportation | Maintenance Division Standard

XL AND LOCKABLE ARCHITECTURAL MAILBOX ASSEMBLY

MB(2)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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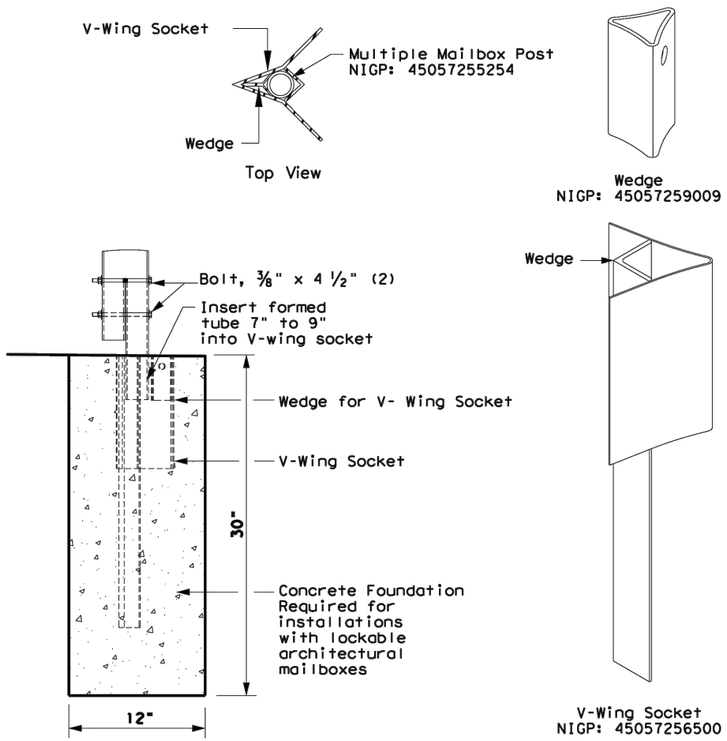
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		103

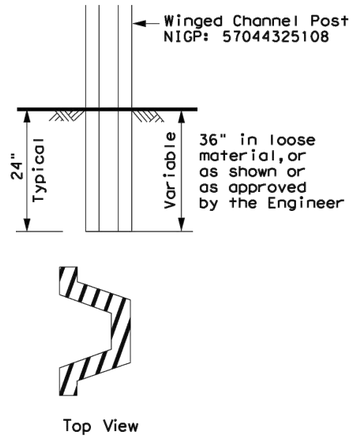
DATE:
FILE:

TYPE 1 - SUPPORT/FOUNDATION

Thin Wall Tube w/ V-LOC Anchorage



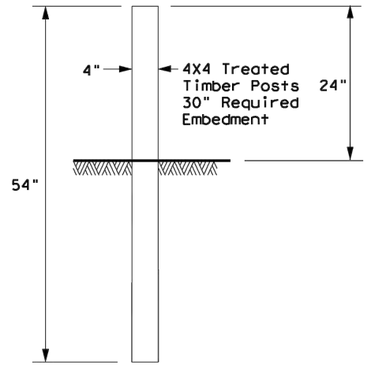
TYPE 3 - SUPPORT/FOUNDATION



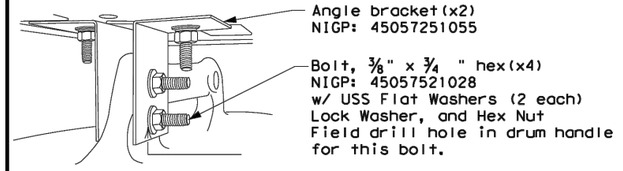
NOTES:

1. Attach Object Marker(OM) facing direction of traffic.
2. OM will also be required on opposite side if installed on a 2-Lane, 2-Way roadway.

TYPE 5 - SUPPORT/FOUNDATION



TYPE 6 - TEMPORARY MAILBOX SUPPORT



Plastic Drum NIGP: 55093383655
Rubber Collar NIGP: 55093387102

NOTES:

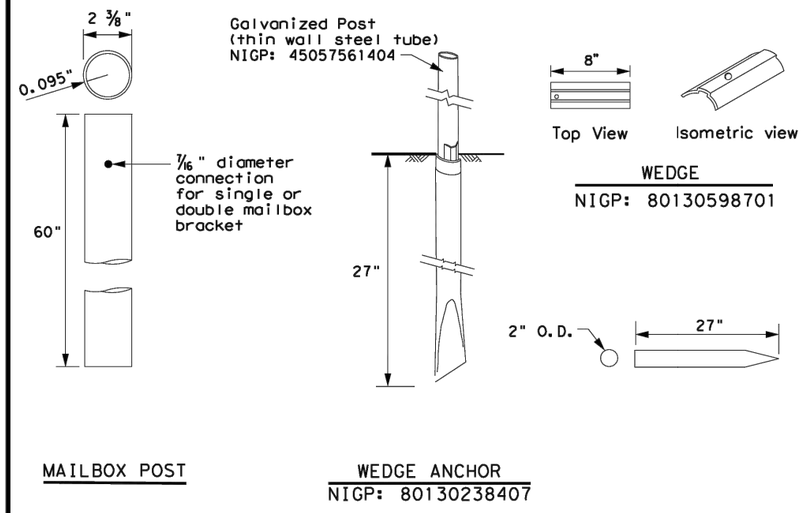
1. Place on approved plastic drum as shown in the Compliant Work Zone Traffic Control Devices (CWZTCD).
2. Existing attachment hardware shall be used unless damaged. Damaged hardware shall be replaced.

GENERAL NOTES:

1. Erect post plumb or vertical.
2. When galvanized part is required galvanize in accordance with Item 445.
3. Use a concrete footing as shown or when directed. Concrete footing will be required when soils do not hold the support/foundations in a stable condition, only on Type 1, Type 2, and Type 4

TYPE 2 - SUPPORT/FOUNDATION

Thin Wall Steel Tube w/Wedge Anchor System

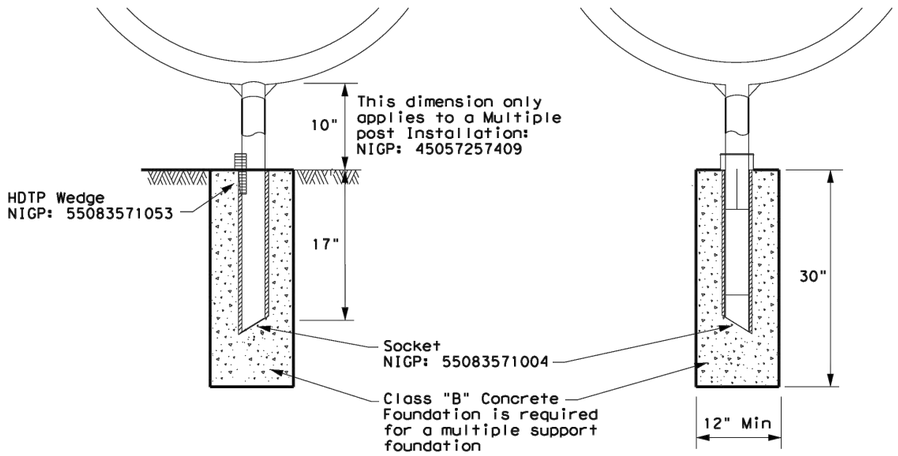


MAILBOX POST

WEDGE ANCHOR
NIGP: 80130238407

TYPE 4 - SUPPORT/FOUNDATION

Whitecoated steel post NIGP: 45057561107
Multiple post NIGP: 45057257409
Recycled Rubber post (RR) NIGP: 45057561057



SHEET 3 OF 4

Texas Department of Transportation

Maintenance Division Standard

MAILBOX SUPPORT AND FOUNDATION

MB(3)-21

FILE: MB-21.dgn	DN:	CK:	DW:	CK:
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS 2/2005 11/2009 4/2015 6/2005 1/2011 11/2006 7/2014	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		104

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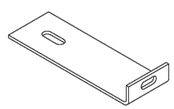
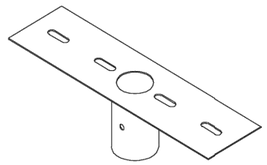
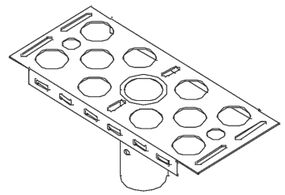
TYPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4			TYPE 5	TYPE 6
Configuration	Multiple	Single or Double	Single or Double	Single	Double	Multiple	Single	Single
Mailbox Size NIGP #	Outside Position: S or M Inside Position: S, M, L, XL, or LA	Single: S, M, L, XL, or LA Double: SS, SM, MM	Single: S, M, L, or XL Double: SS, SM, MM	S, M, L, XL, or LA	SS, SM, or MM	Outside Position: S or M Inside Position: S, M, L, or XL	Molded Plastic	S, or M
Mailbox Post NIGP #	45057255254 (Galvanized Multiple)	45057561404 (Thin Walled Gavanize)	57044325108 (Wing Channel Post)	45057561107 (Thin walled white powder coated) 45057561057 (Recycled Rubber Post: S or M only)	45057561107 (Thin Walled White Powder Coated)	45057257409 (White Powder Coated Multiple)	4x4 Timber	Construction Barrel
Post and Mailbox Hardware NIGP #	45057259009 (Wedge) 45057256500 (V-Wing Socket) 45057253002 (Bracket Extension) 45057252251 (Mailbox Bracket) 45057258001 (Part A Angle Bracket x2) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	80130598701 (Wedge) 80130238407 (Wedge Anchor) 45057253002 (Bracket Extension) 45057252343 (Double MB Bracket) 45057252350 (S. Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket forXL x4)	45057541653 (Type 3 Double Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057253002 (Bracket Extension) 45057258001 (Part A Angle Bracket) 45057258027 (Part B Angle Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057252350 (Single Mailbox Bracket) 45057253002 (Bracket Extension) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252343 (Double Mount Bracket) 45057252251 (Mailbox Bracket x2)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252350 (Single Mount Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)	None	45057251055 Angle Bracket (x2)
Foundation Used	Class B Concrete (Required for LA Mailboxes)	Class B Concrete (Required for LA Mailboxes)	None	Class B Concrete (not used with recycled rubber post, required for LA Mailboxes)	Class B Concrete (not required)	Class B Concrete	None	None



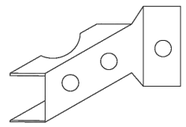
NIGP: 45057250263
L-Bracket x4 for
XL sized mailboxes



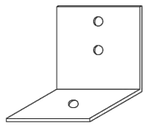
NIGP: 45057252343
Double Mailbox Bracket
For Type 2 and Type 4
double mount



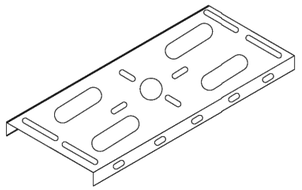
NIGP: 45057252350
Single Mailbox Bracket
For Type 2 single and for
Type 4 single and multi mount



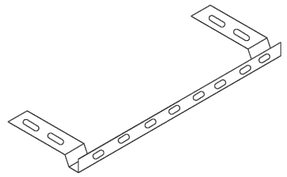
NIGP: 45057258001
Part "A" Angle Bracket
For Type 1 multi (2 per mailbox)
and Type 3 single and double



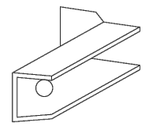
NIGP: 45057251055
Type 6 Angle Bracket
(2 per mailbox)



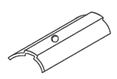
NIGP: 45057252251
Mailbox Bracket
For Type 1 multi and
any double mount (use 2)



NIGP: 45057253002
Bracket Extension
Use 1 for a medium Mailbox
Use 2 for a Large Mailbox



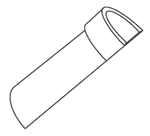
NIGP: 45057258027
Part "B" Angle Bracket
For Type 3 single
and double



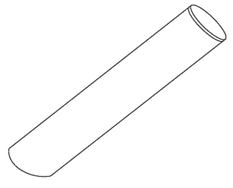
NIGP: 80130598701
Wedge for Type 2

NIGP: 45057250255
Plate Washer for Architecural
and XL Mailboxes

NIGP: 45057541653
Type 3 double mailbox bracket

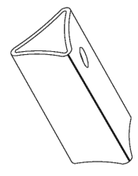


NIGP: 55083571053
Type 4 Mailbox Wedge

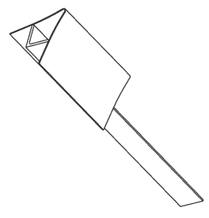


NIGP: 55083571004
Type 4 Mailbox Socket

NIGP: 80130238407
Type 2 Wedge Anchor



NIGP: 45057259009
Wedge for Type 1 V-wing Socket



NIGP: 45057256500
V-wing Socket for
Type 1 Foundation

NIGP #	OBJECT MARKERS AND CONFORMABLE SHEETING
55008311759	Type 2 OM 4"x4" (3 Needed) for Type 3 Wing Channel Post
55008312906	Type 2 OM 6"x12" (1 needed) for Type 3 Wing Channel Post
80149872006	12" Conformable Reflective Yellow Sheeting for Flexible Posts

NOTES:

1. Type 2 object marker in accordance with Traffic Engineering Standard Delineators & Object Markers.
2. A light weight receptacle for newspaper delivery can be attached to mailbox posts if the receptacle does not touch the mailbox, present a hazard to traffic or delivery of the mail, extend beyond the front of the mailbox, or display advertising, except the publication title.

BID CODES FOR CONTRACTS

MB-(X) ASSM TY (XXX) (X)

Type of Mailbox
- S = Single
- D = Double
- M = Multiple
- MP = Molded Plastic

Type of Post
- WC = Winged Channel Post
- RR = Recycled Rubber
- TWW = Thin Walled White Tubing
- TWG = Thin Walled Galvanized Tubing
- TIM = Timber

Type of Foundation
- Ty 1 = V-Loc
- Ty 2 = Wedge Anchor Steel System
- Ty 3 = Winged Channel post
- Ty 4 = Wedge Anchor Plastic System
- Ty 5 = 4 X 4 Post

Texas Department of Transportation — Maintenance Division Standard

NIGP PARTS LIST AND COMPATIBILITY

MB(4)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 2/2005 11/2009 4/2015 6/2005 1/2011 11/2006 7/2014	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		105

DATE:
FILE:

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

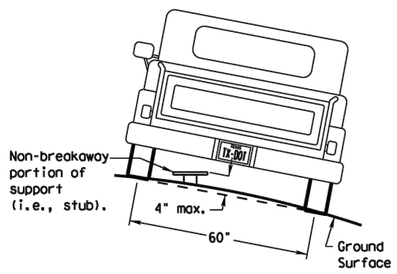
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

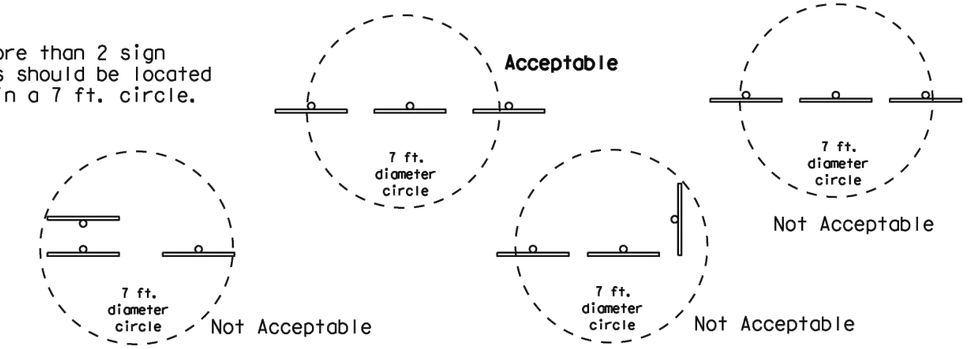
P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



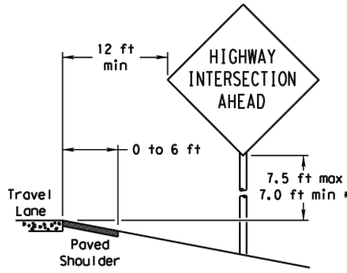
To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

No more than 2 sign posts should be located within a 7 ft. circle.



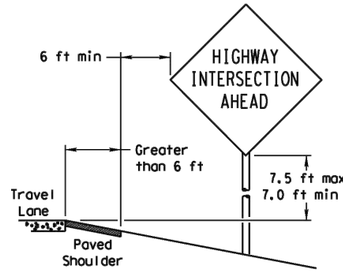
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

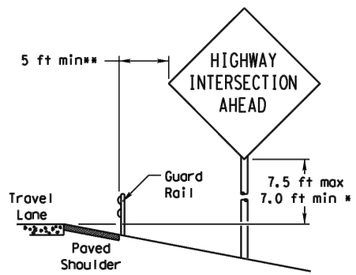
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



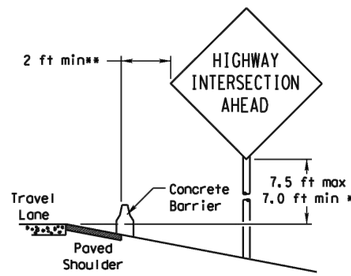
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

BEHIND BARRIER



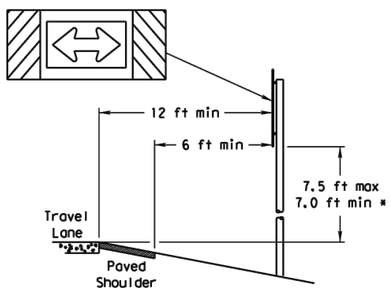
BEHIND GUARDRAIL



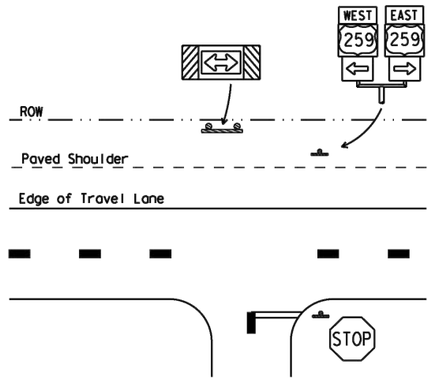
BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

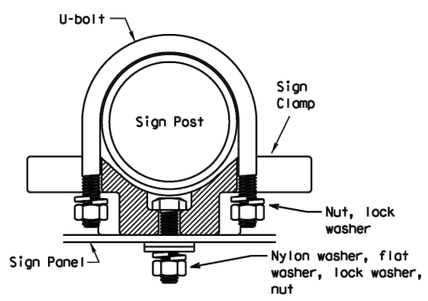
The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
http://www.txdot.gov/publications/traffic.htm

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

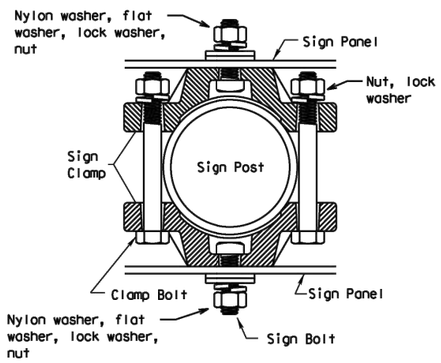


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

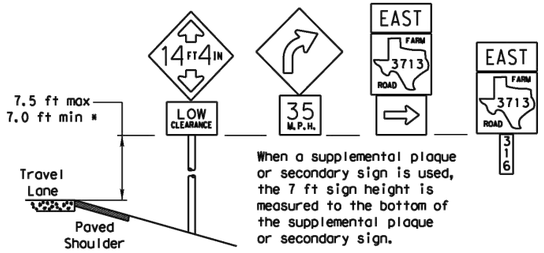
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



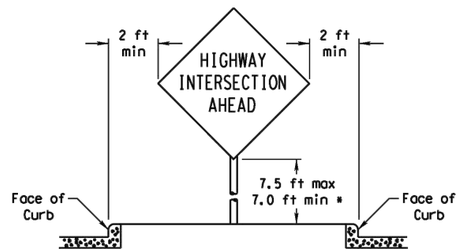
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



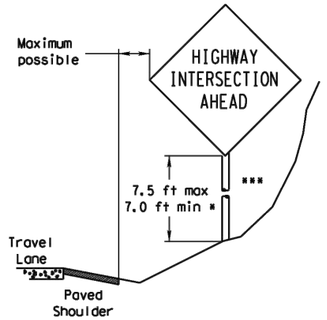
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

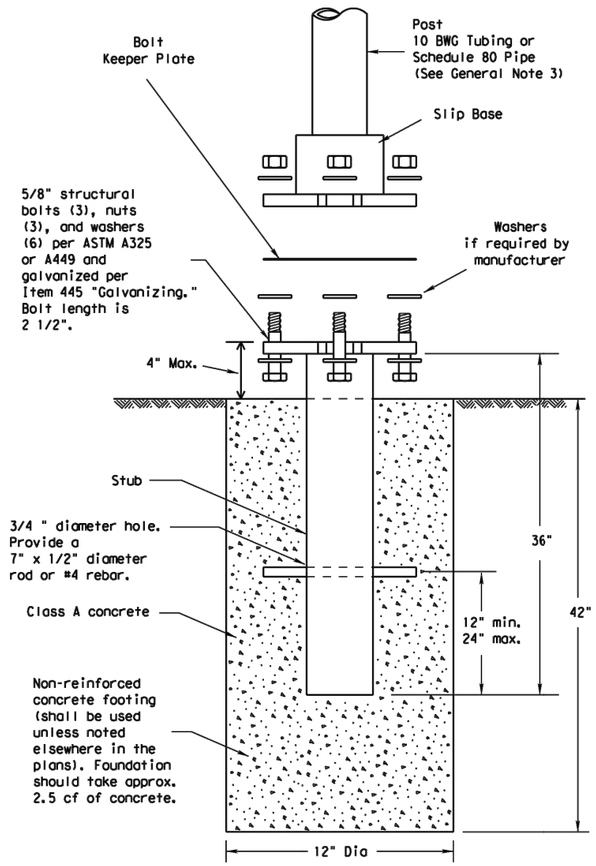
SMD(GEN)-08

REVISIONS
9-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
0913	09	116	CS
DIST	COUNTY		SHEET NO.
YKM	WHARTON		106

DATE:
FILE:

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   - 0.134" nominal wall thickness
   - Seamless or electric-resistance welded steel tubing or pipe
   - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   - Other steels may be used if they meet the following:
     - 55,000 PSI minimum yield strength
     - 70,000 PSI minimum tensile strength
     - 20% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.

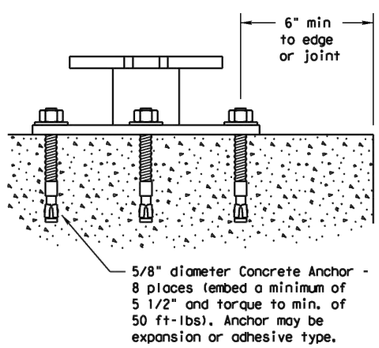
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum yield strength
     - 62,000 PSI minimum tensile strength
     - 21% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   - Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

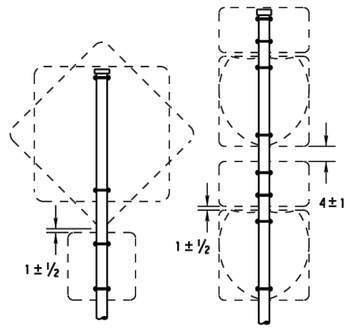
REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08	0913	09	116	CS

DIST	COUNTY	SHEET NO.
YKM	WHARTON	107

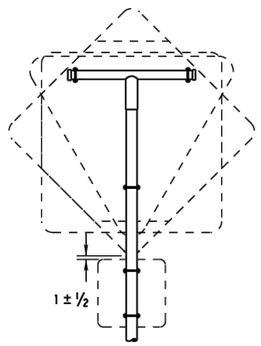
DATE:
FILE:

26B

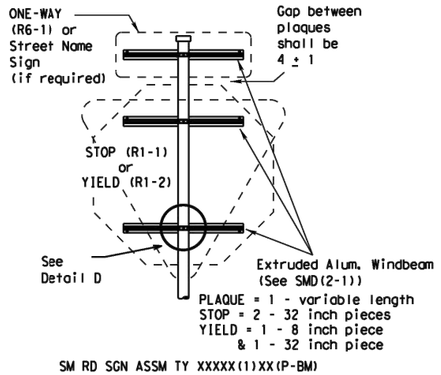
DATE:
FILE:



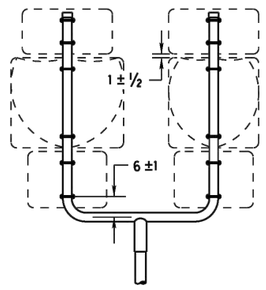
SM RD SGN ASSM TY XXXXX(1)XX(P)



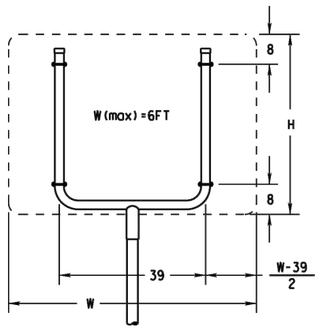
SM RD SGN ASSM TY XXXXX(1)XX(T)



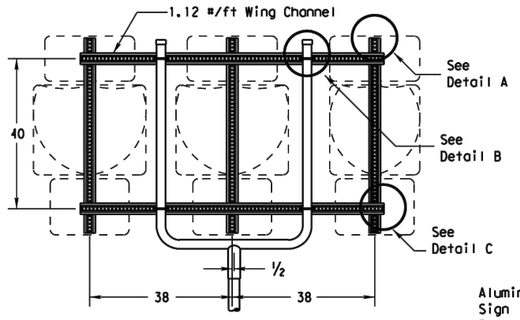
SM RD SGN ASSM TY XXXXX(1)XX(P-BM)



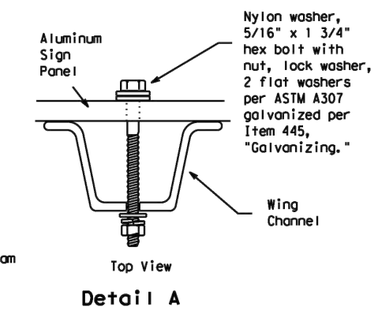
SM RD SGN ASSM TY XXXXX(1)XX(U)



SM RD SGN ASSM TY XXXXX(1)XX(U)

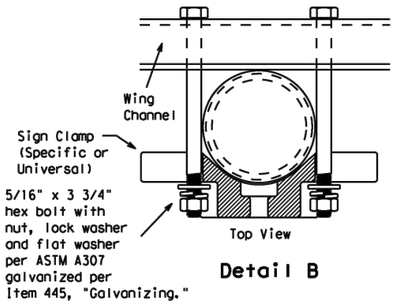


SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)



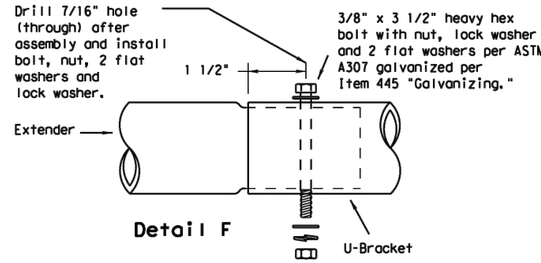
Top View

Detail A



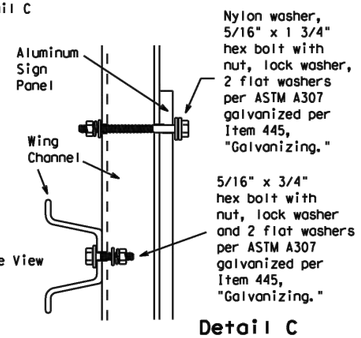
Top View

Detail B

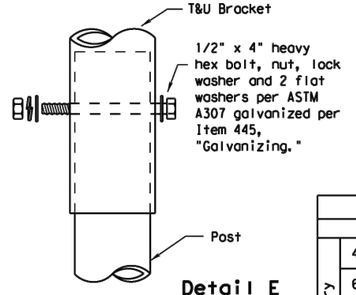


Detail F

Splices shall only be allowed behind the sign substrate.



Detail C



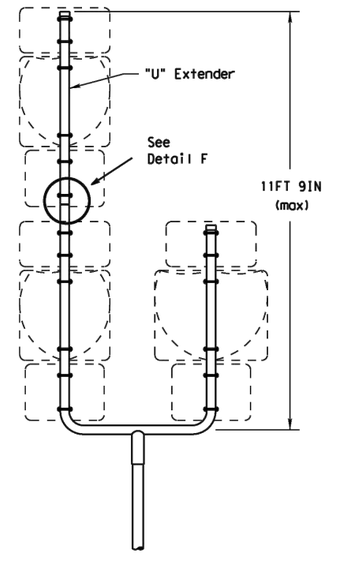
Detail E

GENERAL NOTES:

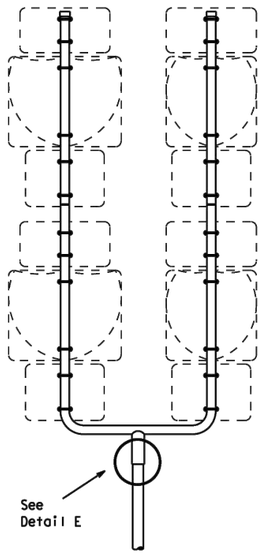
1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

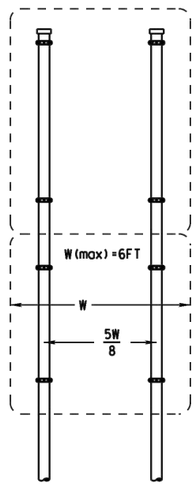
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.



SM RD SGN ASSM TY S80(1)XX(U-1EXT)

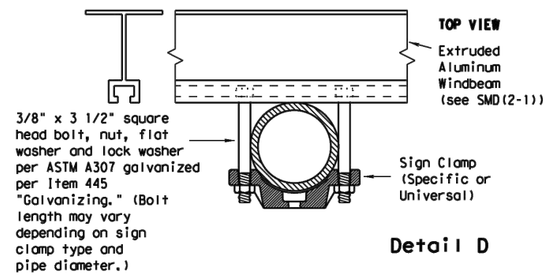


SM RD SGN ASSM TY S80(1)XX(U-2EXT)

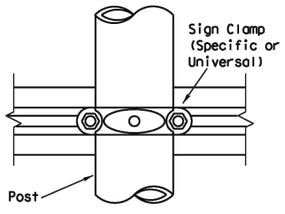


SM RD SGN ASSYM TY XXXXX(2)XX(P)

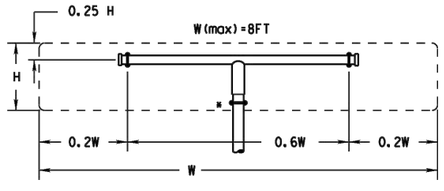
SIDE VIEW



Detail D



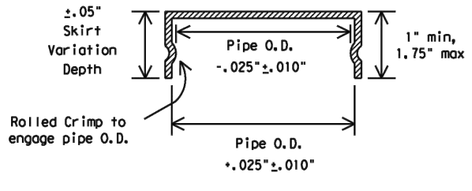
REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)



SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

Texas Department of Transportation
Traffic Operations Division

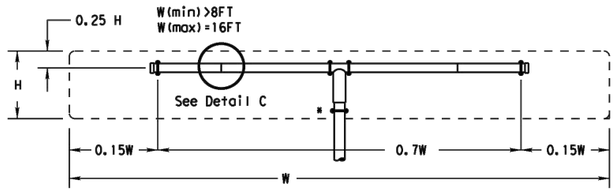
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

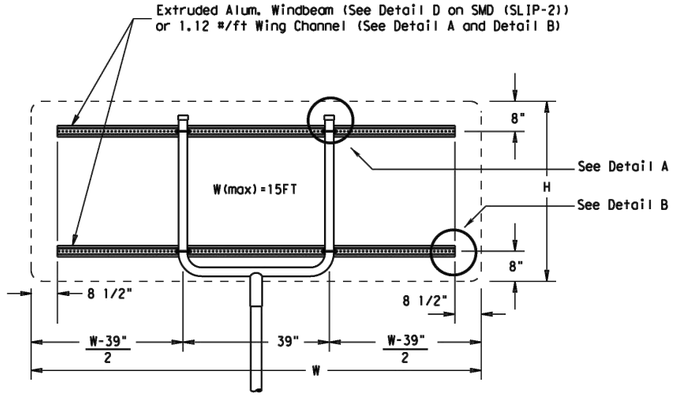
DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		108

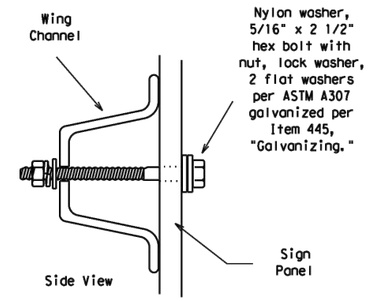
DATE:
FILE:



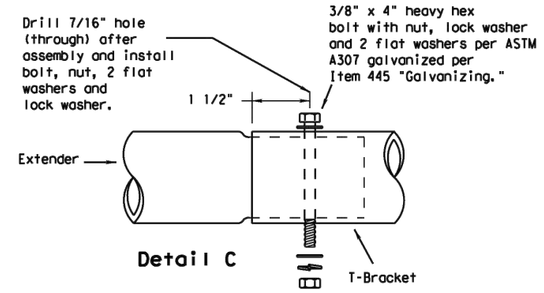
SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)



SM RD SGN ASSM TY XXXXX(1)XX(U-XX)



Detail B



Detail C

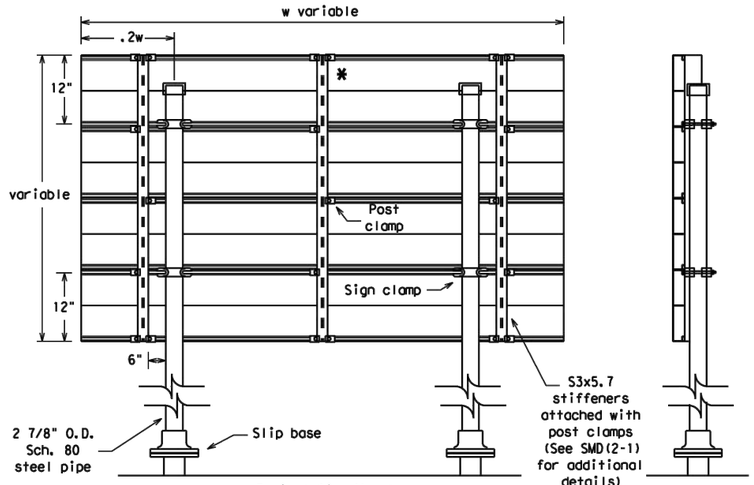
Splices shall only be allowed behind the sign substrate.

GENERAL NOTES:

1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

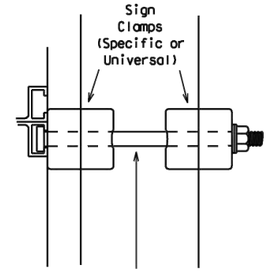
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the sizes and shapes shown on the plans.
11. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.



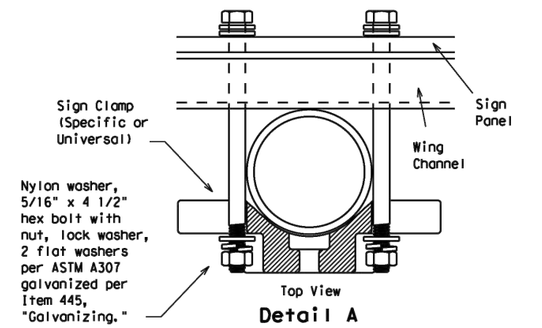
Typical Sign Mount

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

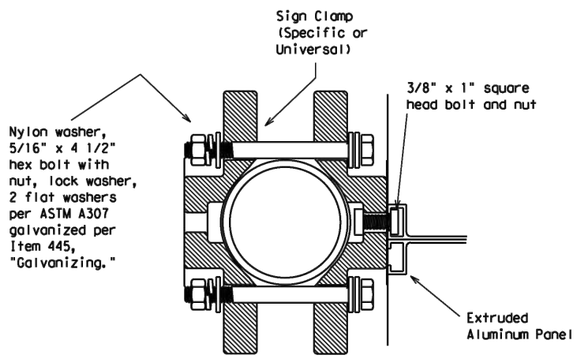
* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



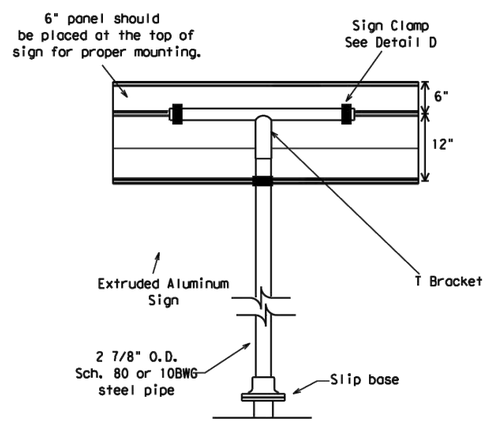
Detail E



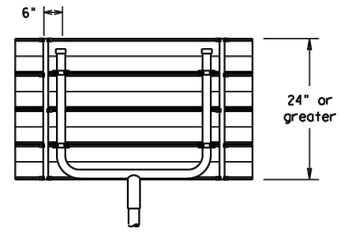
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET



Extruded Aluminum Sign
With T Bracket



Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

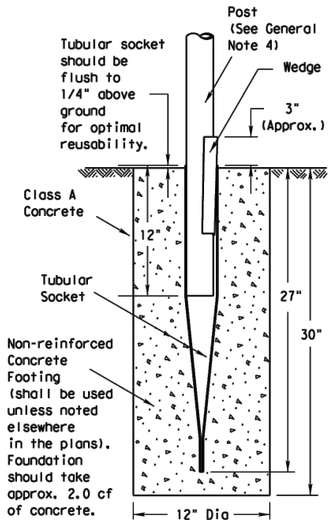
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

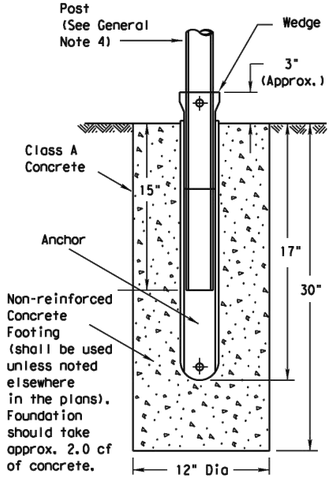
REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		109

Wedge Anchor Steel System



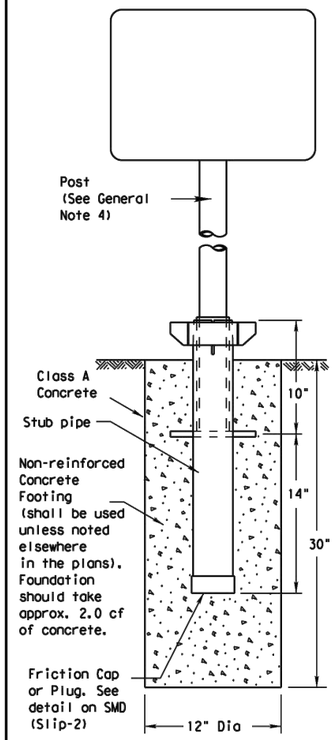
SM RD SGN ASSM TY TWT(X)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System

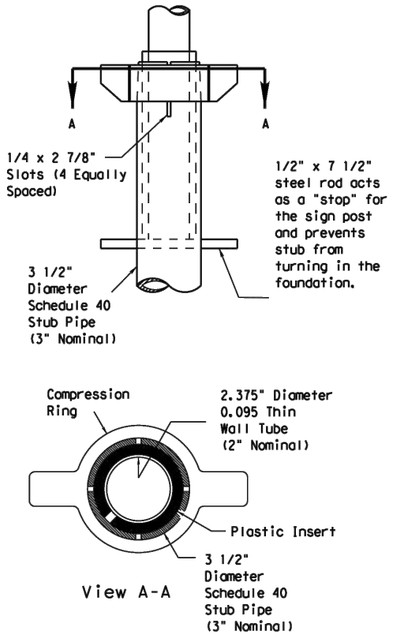


SMD RD SGN ASSM TY TWT(X)WP(X)

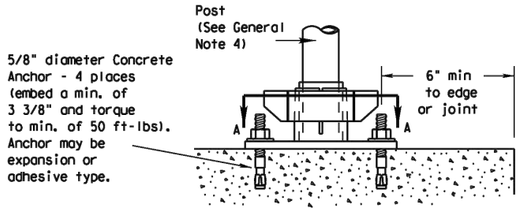
Universal Anchor System with Thin-Walled Tubing Post



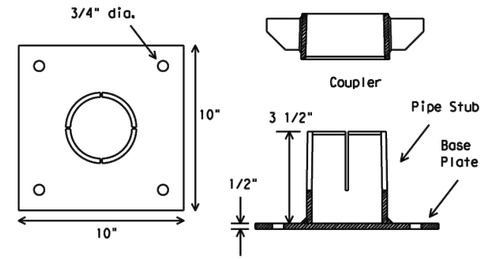
SM RD SGN ASSM TY TWT(X)UA(P)



Plastic insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.

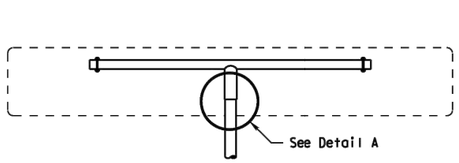


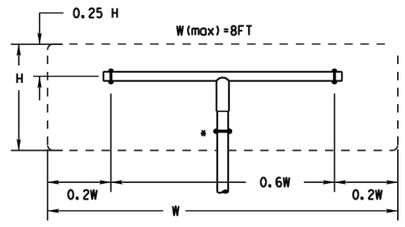
Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.



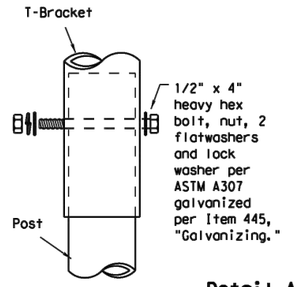
SM RD SGN ASSM TY TWT(X)UB(P)

Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post





SM RD SGN ASSM TY TWT(X)XX(T)
(* - See General Note 6)



Detail A

9/16" hole may need to be drilled through post to accommodate bolt.

NOTE

The devices shall be installed per manufacturer's recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG Tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximaely 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer..
5. Attach the sign to the sign post.
6. Insert the sign post into socket and align sign face with roadway.
7. Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. Install plastic insert around bottom of post.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Seat compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST

SMD(TWT)-08

REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		110

DATE:
FILE:

I. STORMWATER POLLUTION PREVENTION

Texas Pollutant Discharge Elimination System (TPDES) TXR 150000: Stormwater Discharge Permit or Construction General Permit is required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506. If applicable list MS4 operator that may receive discharges from this project. MS4 operator should be notified prior to construction activities.

- ☒ Prevent stormwater pollution erosion and sedimentation in accordance with TPDES Permit TXR 150000.
- ☒ Comply with the SW3P and revise when necessary to control pollution or as required by the Engineer.
- ☒ Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA, or other inspectors.
- ☒ When Contractor project specific locations (PSL) increase disturbed soil area to 5 acres or more, sumbit Notice of Intent (NOI) to TCEQ and Engineer.
- ☐ MS4 Operator(s):

No Additional Comments

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS

United States Army Corps of Engineers (USACE) Permit is required for filling, dredging, excavating or other work in water bodies, rivers, creeks, streams, wetlands or wet areas. The Contractor must adhere to all of the terms and general conditions associated with the following permit(s). If additional work not represented in the plans is required, contact the Engineer immediately.

- ☒ No USACE Permit Required
- ☐ Work is authorized by the USACE under a Nationwide Permit _____ without a Pre-Construction Notification (PCN). Project specific permit was not issued by USACE, therefore is not in the plan set.
- ☐ Work is authorized by the USACE under a Nationwide Permit _____ with a Pre-Construction Notification (PCN). The project specific permit issued by the USACE is included in the plan set.
- ☐ Work is authorized by the USACE under a Individual Permit (IP). The project specific permit issued by the USACE is included in the plan set.
- ☐ Work would be authorized by the USACE. The project specific permit issued by the USACE or Nationwide Permit will be provided to the contractor.

United States Coast Guard (USCG) Permit is required for projects that involve the construction or modification (including changes to lighting) of a bridge or causeway across a water body determined to be navigable by the United States Coast Guard (USCG) under Section 9 of the Rivers and Harbors Act. If additional work not represented in the plans is required, contact the Engineer immediately.

- ☒ No United States Coast Guard (USCG) Coordination Required
- ☐ United States Coast Guard (USCG) Permit
- ☐ United States Coast Guard (USCG) Exemption

Best Management Practices

Post Construction TSS	Sedimentation	Post Construction TSS
☒ Temporary Vegetation	☒ Silt Fence	☒ Vegetative Filter Strips
☐ Vegetation Lined Ditches	☐ Rock Filter Dam	☐ Vegetation Lined Ditches
☐ Sodding	☒ Erosion Control Logs	☐ Grassy Swales

No Additional Comments

III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the area and contact the Engineer immediately.

No Additional Comments

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical. Refer to TxDOT Standard Specifications 162, 164, 192, 193, 506, 730, 751, and 752 in order to comply with requirements for invasive species, beneficial landscaping and tree/brush removal.

Additional Comments

-Minimize the amount of vegetation proposed for clearing. Removal of native vegetation, particularly mature native trees and scrubs, will be avoided to the greatest extent possible.
-The use of any non-native plant species in re-vegetation will be discouraged.
-Avoid vegetation clearing activities during the general nesting season, March through

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS

If any of the listed species below are observed, cease work in the area, do not disturb species or habitat and contact the Engineer immediately.

The work may not remove active nests (from bridges, structures, or vegetation adjacent to the roadway, etc.) during nesting season (February 15 to October 1). If removal of structures or vegetation is necessary during the nesting season, the Contractor shall conduct a bird survey no more than 3 days in advance of the clearing/demolish start date. All bird surveys shall be conducted by a Field Biologist and adhere to the guidance document “Avoiding Migratory Birds and Handling Potential Violations” found in the TxDOT Environmental Compliance Toolkits at the time of the survey. (See below for Field Biologist and Ornithologist qualifications)

No Additional Comments

Field Biologist, Ornithologist – a field biologist is defined as an individual qualified to perform field investigations, presence/absence surveys and habitat surveys for protected avian species or species of concern. A mandatory bachelor’s degree in biology or a related science is required. At a minimum, the Field Biologist, Ornithologist, shall have completed and reported a minimum of three presence/absence and habitat surveys for protected avian species in the past five years. A minimum of three projects must have been conducted in Texas. Surveys shall have been performed for documentation of species in accordance with a protocol approved by USFWS or TPWD, or following generally accepted methodologies.

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

Refer to TxDOT Standard Specifications in the event potentially contaminated materials are observed, such as dead or distressed vegetation, trash disposal areas, drums, canisters, barrels, leaching or seepage of substances, unusual smells or odors, or stained soil, cease work in the area and contact the Engineer immediately.

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structutres not including box culverts)? Yes ☐ No ☒

No further action required.

No Additional Comments

VII. GENERAL NOTES

TxDOT has determined that a USACE Nationwide or Individual Permit is not necessary for the project since all work shall be conducted outside the USACE jurisdictional areas. Any impacts to these jurisdictioanl areas by the contractor without a USACE permit will be the responsibility of the contrator. If the contractor deems it necessary to impact the USACE jurisdcitional areas, then it becomes the contractor's entire responsibility to consult with the USACE pertaining to the need for a Nationwide or Individual Permit. TxDOT will then hold the contractor responsible for following all conditions of the approved Permit.

DATE:
FILE:

Version 13.1

Texas Department of Transportation

TxDOT Yoakum District

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: EPIC Sheet.dgn	DN:	CK:	DW:	CK:
© TxDOT: March 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS	0913	09	116	CS
	DIST	COUNTY		SHEET NO.
	YKM	WHARTON		111

SITE DESCRIPTION

PROJECT LIMITS: Along Ahldag St., Pioneer Ave. Boling Hwy., N. Fulton St., Lazy Ln., and N. Rusk St. in the city of Wharton

PROJECT DESCRIPTION: *Construction of sidewalks and curb ramps improvements.*

MAJOR SOIL DISTURBING ACTIVITIES: *Major soil disturbing activities may include but are not limited to: Cut and/or fill for sidewalk, curb ramp construction and placement of topsoil.*

Storm Water Pollution Prevention Plans (SW3P) are a part of a project's construction plans and the construction plans contain information that supplements a project SW3P; project plans provide information on changes in elevations, the locations where dirt has been removed and where dirt has been added, on construction sequencing and scheduling and other data that may be important to a full understanding of TCEQ storm water requirements and the project SW3P.

TOTAL PROJECT AREA: *Approximately* 9.81 *acres.*

TOTAL AREA TO BE DISTURBED: *Approximately* 1.96 *acres.*

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: The existing soil consists primarily of Norwood silt loam that has 0 to 1 percent slopes. It is well drained, with moderately high to high permeability.

NAME OF RECEIVING WATERS: The Colorado River below La Grange (Stream Segment 1402) receives project drainage which eventually flows into the Gulf of Mexico.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- ___ TEMPORARY SEEDING
- ✓ PERMANENT PLANTING, SODDING, OR SEEDING
- ___ MULCHING
- ___ SOIL RETENTION BLANKET
- ___ BUFFER ZONES
- ___ OTHER

NOTE: *Stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased.*

STRUCTURAL PRACTICES:

- ✓ SILT FENCES
- ___ HAY BALES
- ___ SANDBAGS
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ___ DIVERSION DIKE AND SWALE COMBINATIONS
- ___ ROCK FILTER DAMS
- ___ PAVED FLUMES/RIPRAP
- ___ ROCK BEDDING AT CONSTRUCTION EXIT
- ___ TIMBER MATTING AT CONSTRUCTION EXIT
- ___ CHANNEL LINERS
- ___ SEDIMENT TRAPS/BASINS
- ___ GABIONS
- ___ STORM INLET SEDIMENT TRAP
- ___ STONE OUTLET STRUCTURES
- ___ CURBS AND GUTTERS
- ___ STORM SEWERS
- ___ VELOCITY CONTROL DEVICES
- ✓ BIODEGRADABLE EROSION CONTROL LOGS

OTHER:

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

The order of activities will be as follows:

1. *Install structural practices as indicated above in ditches at structure locations.*
2. *Construction activities begin.*
3. *After completion of sidewalks and ramps, sod all disturbed areas & water.*
4. *Remove all temporary controls and resod any areas disturbed by their removal.*

Contractor-generated schedules are incorporated into the projects SW3P by reference.

For construction projects, the Yoakum District of the Texas Department of Transportation uses SiteManager, a computer based construction record-keeping system. Documentation describing major grading activities, temporary or permanent cessation of construction, and stabilization measures is a part of this system and is incorporated by reference into this SW3P.

For RMC/Maintenance projects, documentation describing major grading activities, temporary or permanent cessation of construction, and stabilization measures is recorded in a project diary, and is incorporated by reference into this SW3P.

STORM WATER MANAGEMENT: *Storm Water Drainage will be provided by grass "flat bottom & V bottom" ditches. This system will carry drainage within the right of way to lows in the highway where cross drainage occurs. The cross drainage structures will be protected with structural practices as indicated above.*

Sediment control devices will remain in place until at least 70% regrowth of vegetation has occurred. At this time the new vegetation will act as a filter strip for post construction TSS control upon removal of the device.

A site (visual & odor) assessment of water quality leaving the project site: water quality leaving the construction site has been of good quality, with no visually apparent sediments, litter, fertilizers, or surfactants. The water has no petroleum or other odor. Even so, it might be expected that some sediment and litter will escape the project site and that petroleum products leaking from motor vehicles that travel through the site may lower the quality of runoff water.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: *All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainage ways shall have priority followed by devices protecting storm sewer inlets. Sediment must be removed from control measures when the design capacity is reduced by 50 percent. If sediment escapes the construction site, off site accumulation of sediment must be removed at a frequency to minimize off-site impacts.*

INSPECTION: *An inspection will be performed by a TxDOT inspector at least every 7 calendar days. An inspection and Maintenance Report will be made per each inspection. Based on the inspection results, the controls shall be revised per the inspection report.*

WASTE MATERIALS: *The contractor shall adequately store all construction waste materials to prevent these materials from becoming pollutants and to minimize pollutant discharges from the storage locations. No construction waste material will be buried on site. Litter and construction chemicals shall be properly contained and prevented from becoming a pollutant in storm water discharge.*

Potential pollutants will primarily be from the sediments leaving the project right-of-way and petroleum products. Principal sources of pollution will be disturbed soil from grading and excavating and other roadway construction activities, litter and debris from construction activities, gasoline, oil, and grease from asphalt distributor vehicles, scrappers, trucks, rollers, compactors, and fuel trucks during daily, routine operations.

The contractor will maintain a clean, orderly construction site. Construction waste including trash, rubble, scrap and vegetation shall be disposed of in lidded dumpsters or in a manner approved by the Project Engineer. Disposal methods must meet Federal, State, and Local waste management guidelines. No construction waste will be buried or burned on site. Spoils disposal, material storage, and material resulting from the destruction of existing roads and structures shall be stored in areas approved by the Project Engineer and protected from runoff. All waterways shall be cleared of temporary embankment, temporary bridges, matting, false work piling, debris, or other obstructions placed during construction operations, that are not part of the finished work, as soon as practicable. All excess soil generated by the construction will be collected and disposed of by the contractor. Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, water body, or stream bed.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): *At a minimum, any product in the following categories are considered to be hazardous: Paints, Acids for cleaning masonry surfaces, Cleaning Solvents, Asphalt Products, Chemical Additives for soil stabilization, or Concrete Curing Compounds and additives. In event of a spill which may be hazardous, the Spill Coordinator should be contacted immediately.*

SANITARY WASTE: *All sanitary waste will be collected from the portable units as necessary or as required by local regulation by a licensed sanitary waste management contractor.*

OFFSITE VEHICLE TRACKING:

- ___ HAUL ROADS DAMPENED FOR DUST CONTROL
- ✓ LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- ✓ EXCESS DIRT ON ROAD REMOVED DAILY
- ___ STABILIZED CONSTRUCTION ENTRANCE

OTHER:

REMARKS: *Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, waterbody or streambed.*

On and off site project specific locations including borrow pits and equipment staging areas are under the control of the contractor. The contractor will be obligated to comply with the requirements of the construction general permit.

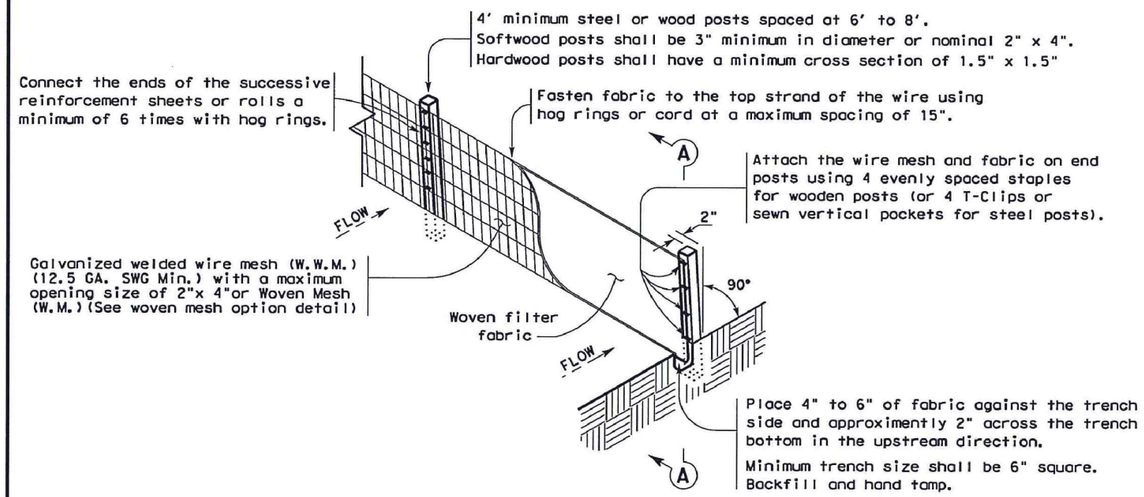
All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.

STATE OF TEXAS
CHAD EMMEL
103495
LICENSED
PROFESSIONAL ENGINEER
8/1/22

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

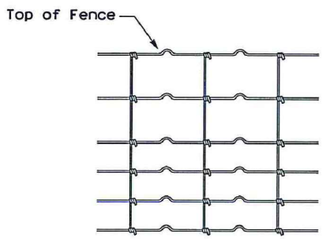
 Texas Department of Transportation

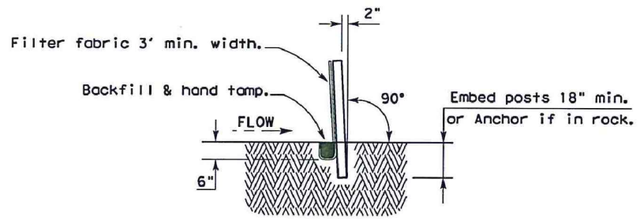
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6			CS
STATE	DISTRICT	COUNTY	
TEXAS	YKM	WHARTON	
CONTROL	SECTION	JOB	SHEET NO.
0913	09	116	112



TEMPORARY SEDIMENT CONTROL FENCE

SCF





SECTION A-A

HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

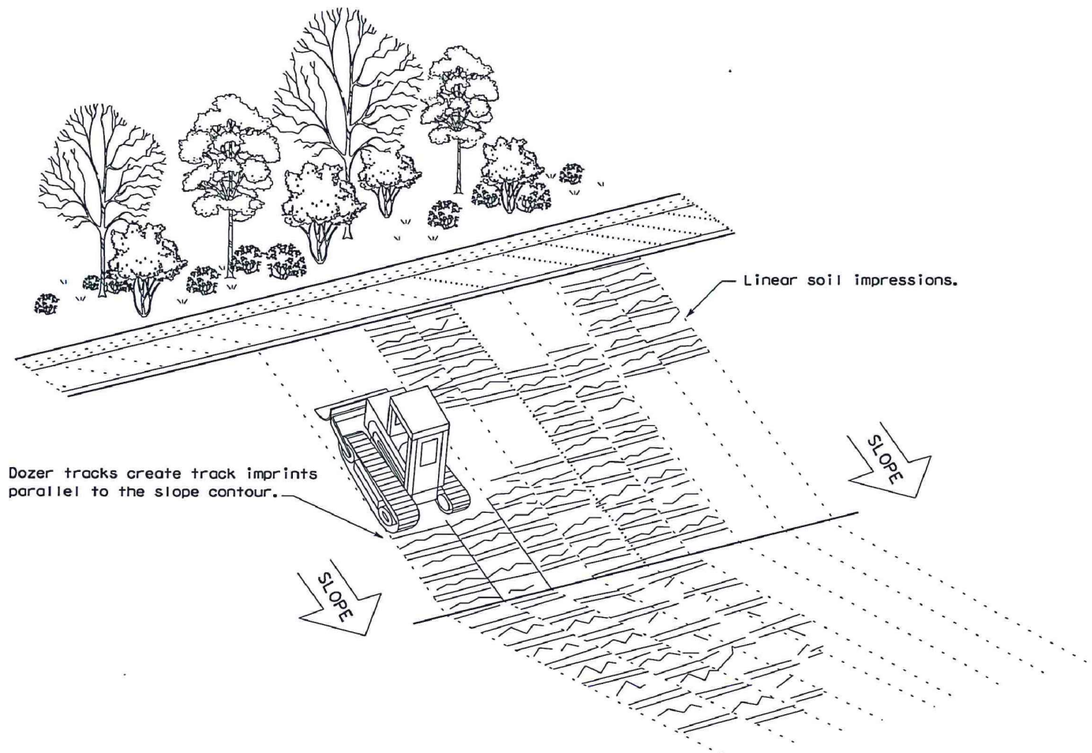
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DW/CK: LS		
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY		
REVISIONS	0913	09	116	CS		
	DIST	COUNTY		SHEET NO.		
	YKM	WHARTON		113		

DATE
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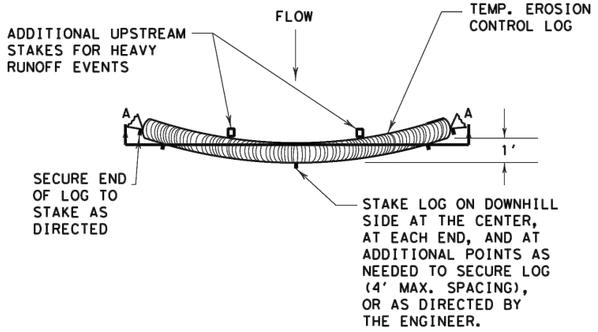
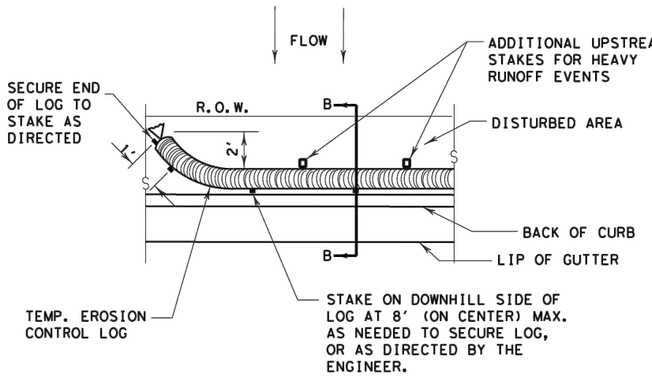
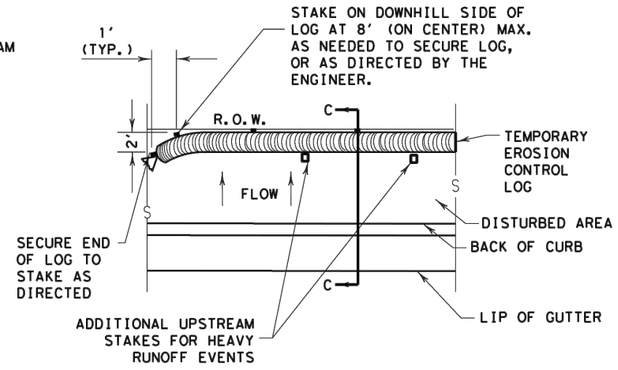


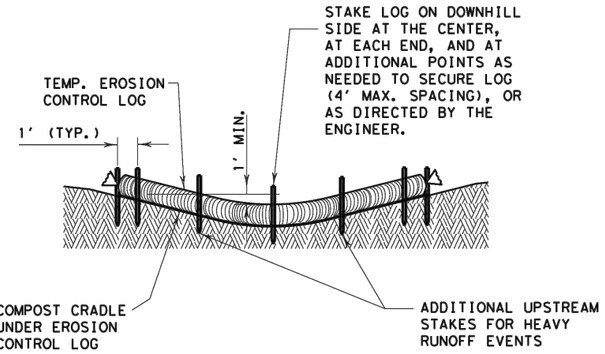
PLAN VIEW



PLAN VIEW



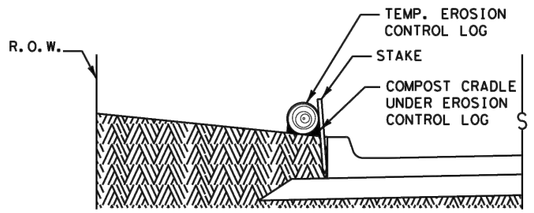
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

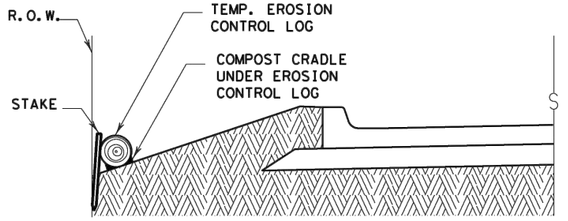
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

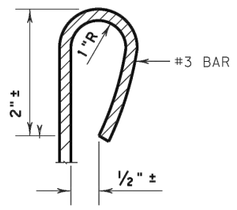
CL-BOC



SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



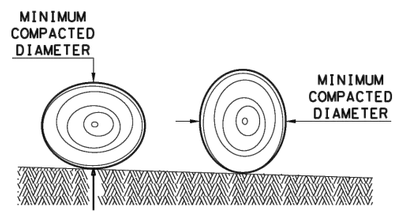
REBAR STAKE DETAIL

LEGEND

- CL-D — EROSION CONTROL LOG DAM
- CL-BOC — EROSION CONTROL LOG AT BACK OF CURB
- CL-ROW — EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
- CL-SST — EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL-SSL — EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL-DI — EROSION CONTROL LOG AT DROP INLET
- CL-CI — EROSION CONTROL LOG AT CURB INLET
- CL-GI — EROSION CONTROL LOG AT CURB & GRATE INLET

GENERAL NOTES:

1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT		CK: KM		DW: LS/PT		CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY		
REVISIONS	0913	09	116		CS		
	DIST	COUNTY					SHEET NO.
	YKM	WHARTON					114

DATE:
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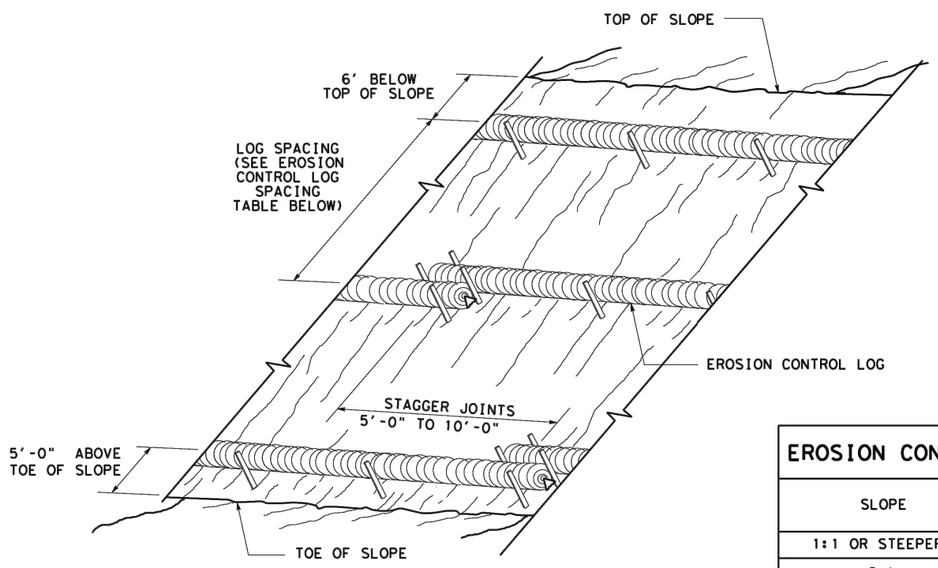
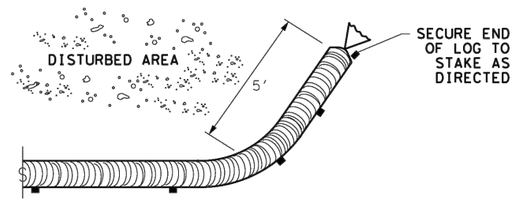


EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

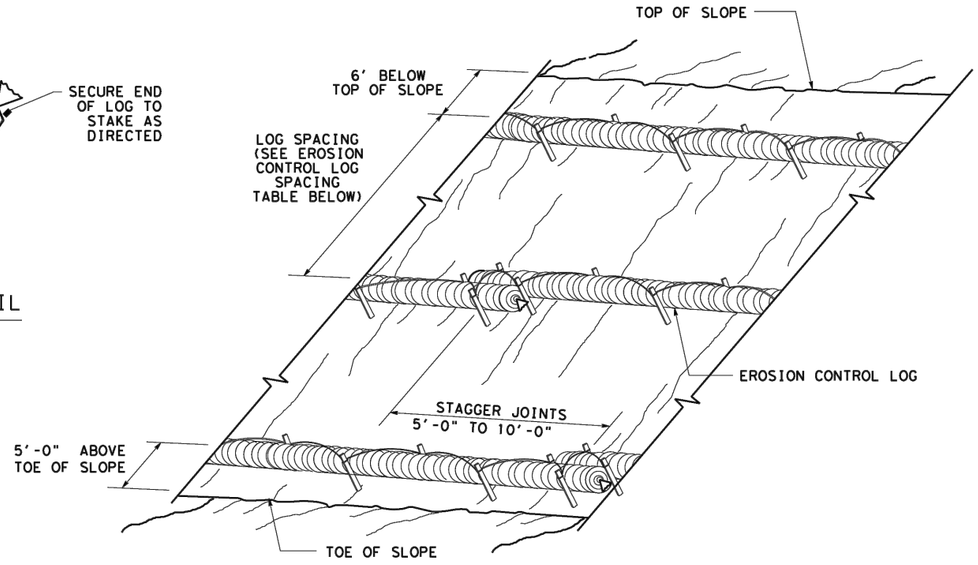
CL-SST



END SECTION RAP DETAIL

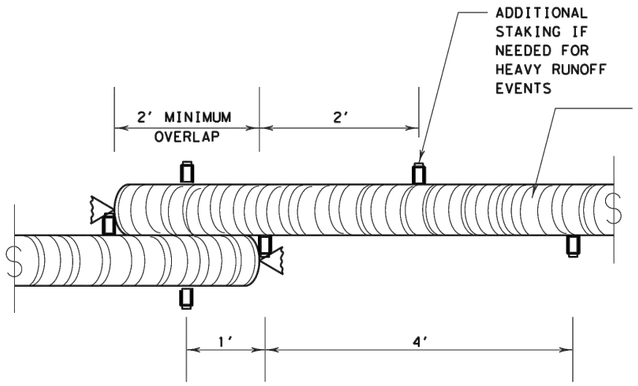
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

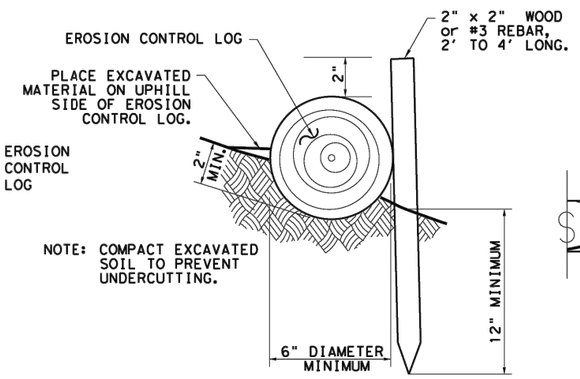
* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL

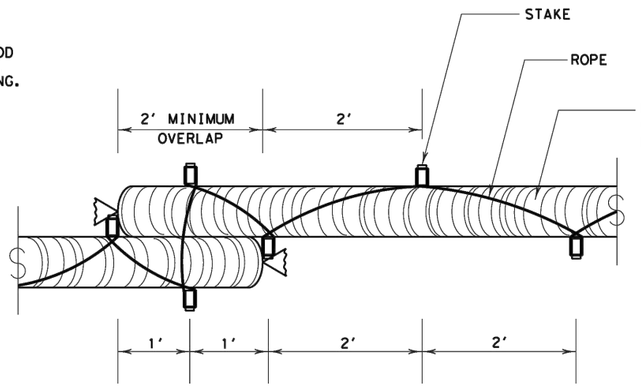


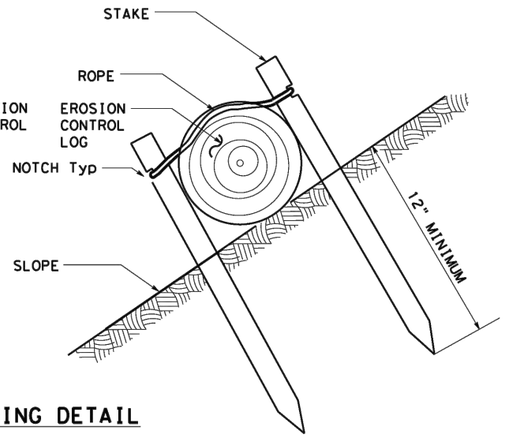


STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

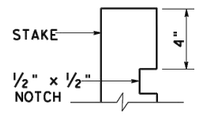
TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"





STAKE AND LASHING ANCHORING DETAIL

CL-SSL



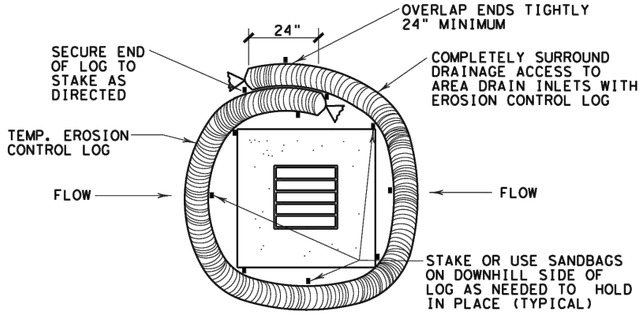
STAKE NOTCH DETAIL

Texas Department of Transportation

Design Division Standard

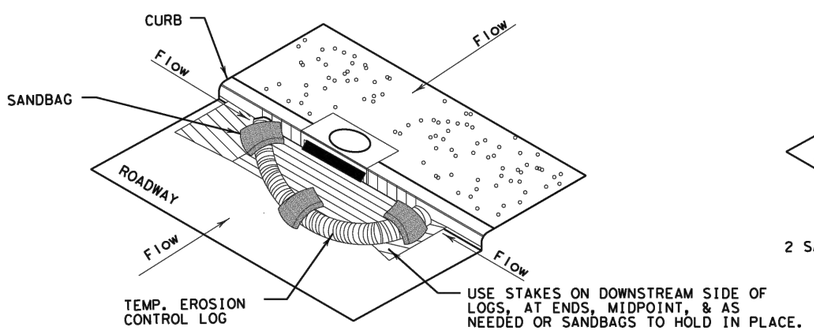
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
EROSION CONTROL LOG
EC(9)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0913	09	116	CS	
	DIST	COUNTY		SHEET NO.	
	YKM	WHARTON		115	



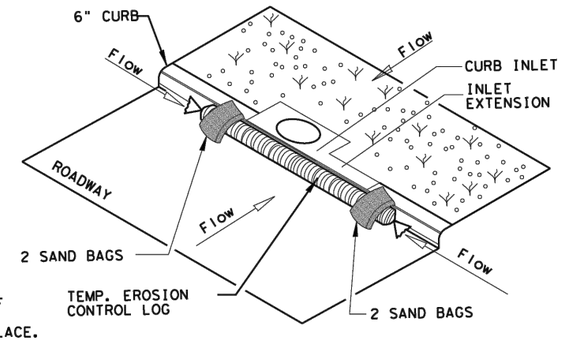
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

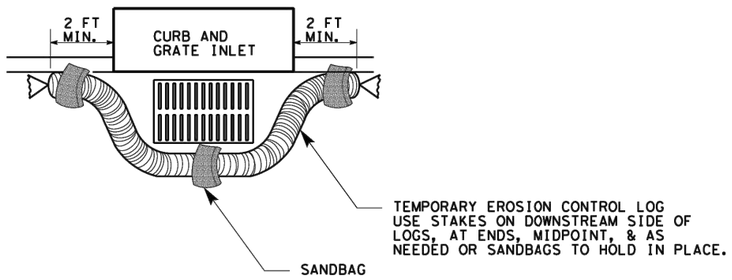
CL-CI



EROSION CONTROL LOG AT CURB INLET

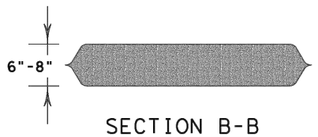
CL-CI

NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.

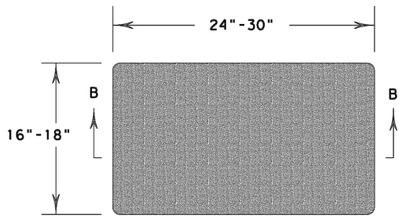


EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



SECTION B-B



SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT		CK: KM		DW: LS/PT		CK: LS
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REVISIONS	0913	09	116		CS		
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	YKM	WHARTON				116	

DATE:
FILE: