DATE: 9/23/2016 11:08:01 AM
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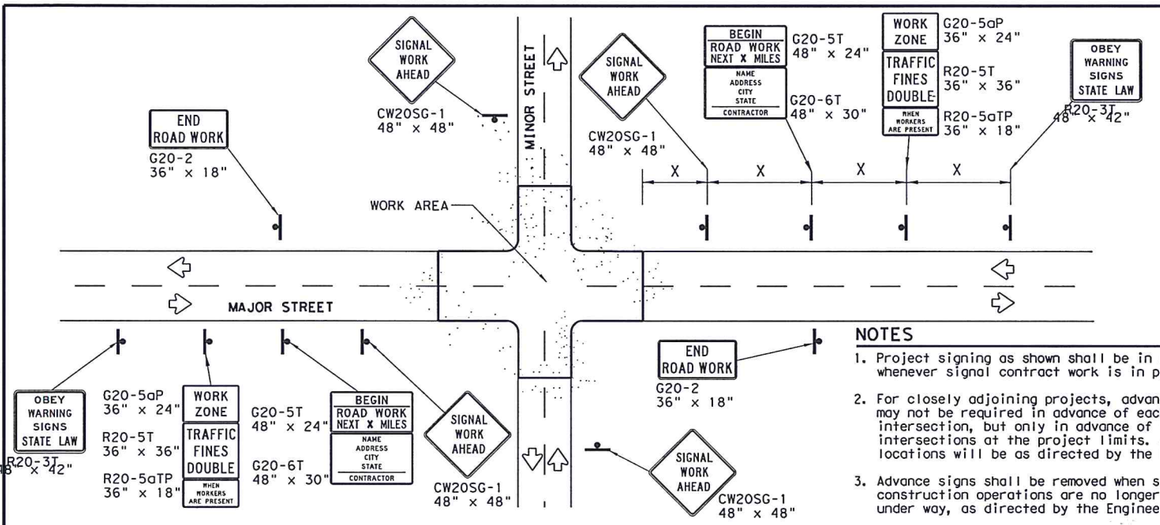


TYPICAL ADVANCE SIGNAL PROJECT SIGNING

FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

NOTES

1. Project signing as shown shall be in place whenever signal contract work is in progress.
2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
4. Warning sign spacing shown is typical for both directions.
5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. 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".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

DURATION OF WORK

1. Work zone durations are defined in Part 6, Section 6G.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

SIGN MOUNTING HEIGHT

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. 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. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

SIGN SUPPORT WEIGHTS

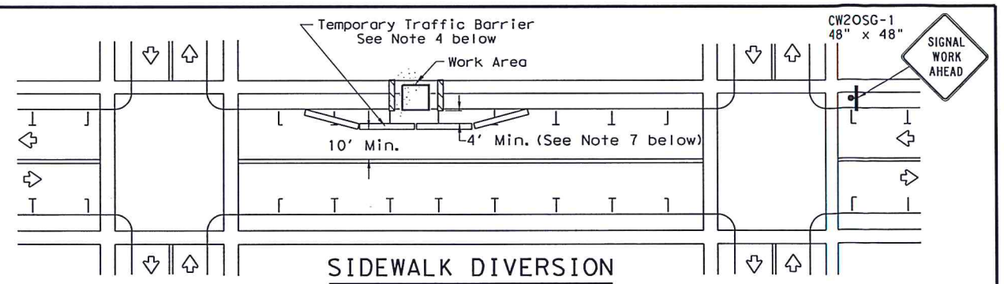
1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support 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 fastners. 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.

LEGEND	
	Sign
	Channelizing Devices
	Type 3 Barricade

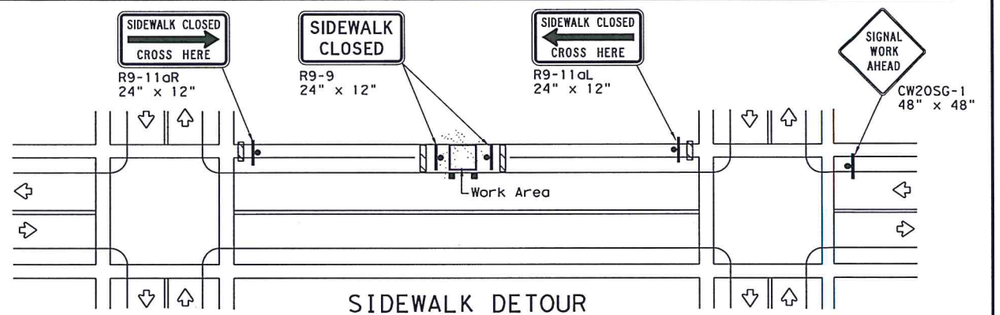
DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B_{FL} OR TYPE C_{FL} SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

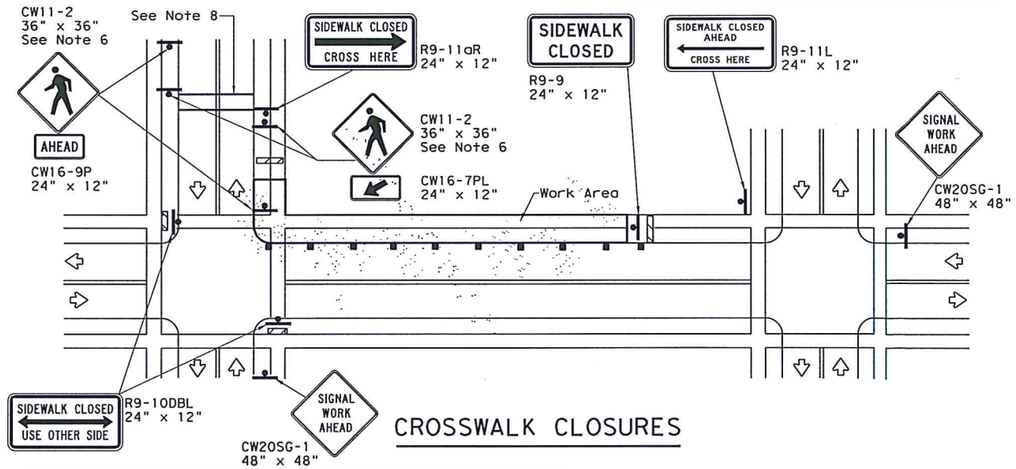
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



SIDEWALK DIVERSION



SIDEWALK DETOUR



CROSSWALK CLOSURES

PEDESTRIAN CONTROL

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

WZ(BTS-2)-13

FILE: wzbts-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS				SOUTHLAND
2-98 10-99 7-13	DIST	COUNTY		SHEET NO.
4-98 3-03		TOM GREEN		28

DATE: 9/23/2016 11:08:03 AM
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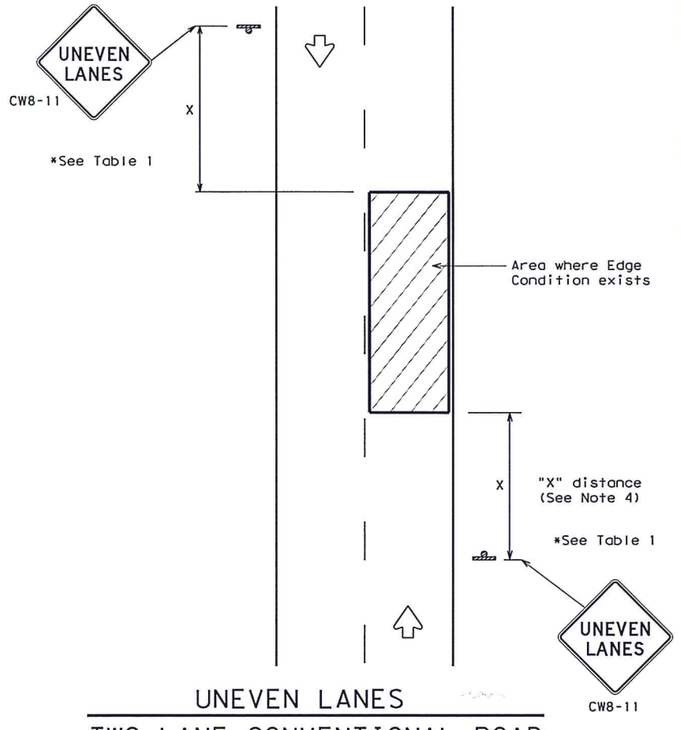
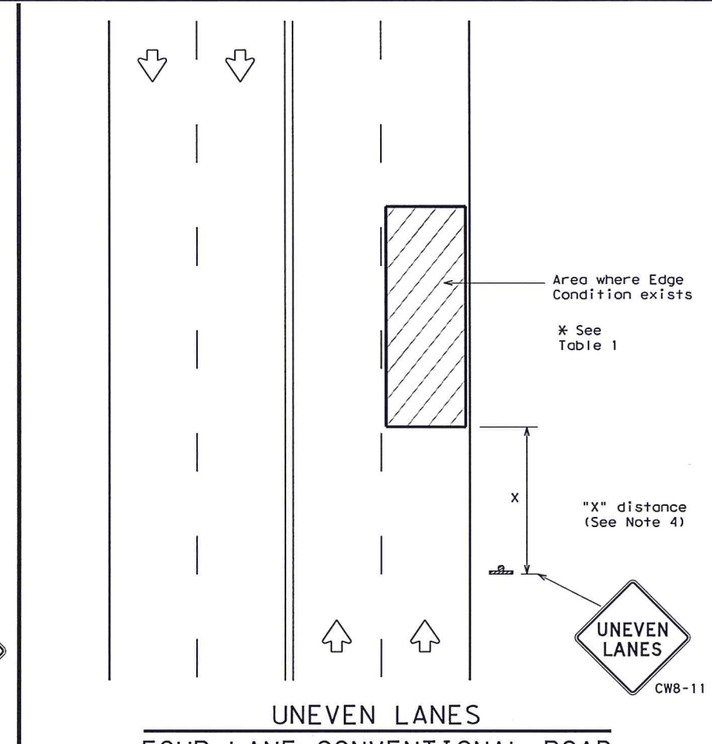
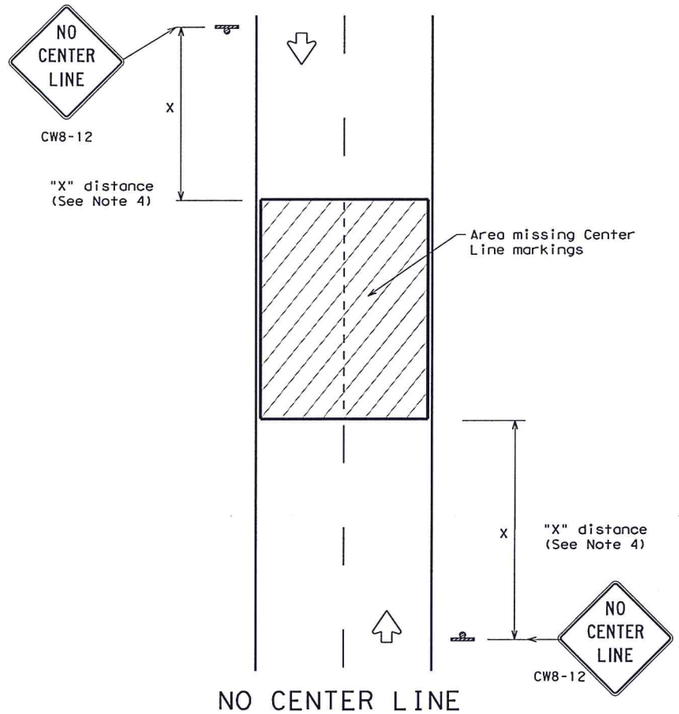


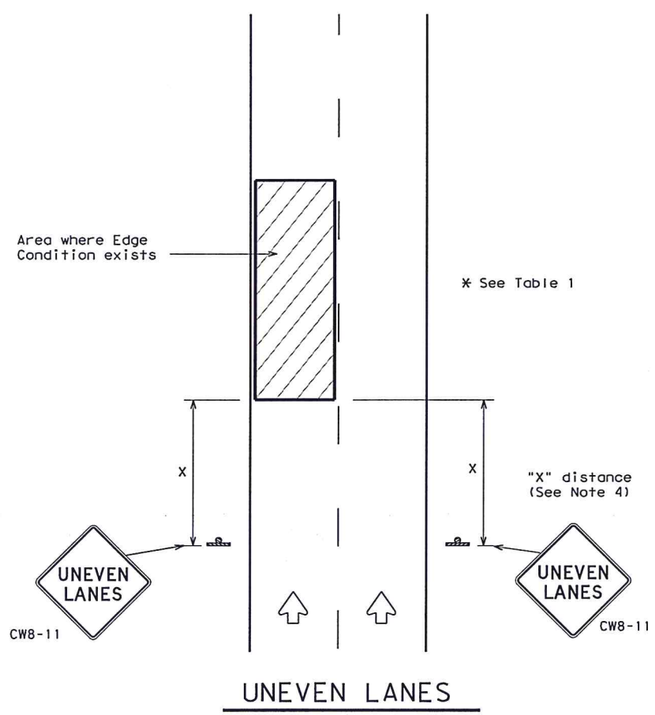
UNEVEN LANES
TWO LANE CONVENTIONAL ROAD



UNEVEN LANES
FOUR LANE CONVENTIONAL ROAD



NO CENTER LINE
TWO LANE CONVENTIONAL ROAD



UNEVEN LANES
DIVIDED ROADWAY

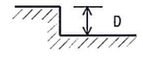
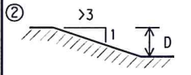
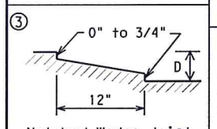
DEPARTMENTAL MATERIAL SPECIFICATIONS	
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY (REMOVABLE) PREFABRICATED PAVEMENT MARKINGS	DMS-8241
SIGN FACE MATERIALS	DMS-8300

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B_{FL} OR TYPE C_{FL} SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

GENERAL NOTES

1. If spalling or holes occur, ROUGH ROAD (CW8-8) signs should be placed in advance of the condition and be repeated every two miles where the condition persists.
2. UNEVEN LANES (CW8-11) signs shall be installed in advance of the condition and repeated every mile. Signs installed along the uneven lane condition may be supplemented with the NEXT XX MILES (CW7-3aP) plaque or Advisory Speed (CW13-1P) plaque.
3. NO CENTER LINE (CW8-12) signs and temporary pavement markings as per the WZ(STPM) standard shall be installed if yellow centerlines separating two way traffic are obscured or obliterated. Repeat NO CENTER LINE signs every two miles where the center line markings are not in place. The signs and markings shall remain in place until permanent pavement markings are installed.
4. Signs shall be spaced at the distances recommended as per BC standards.
5. Additional signs may be required as directed by the Engineer. Signs shall remain in place until final surface is applied. Signs shall be considered subsidiary to Item 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING."
6. Signs shall be fabricated and mounted on supports as shown on the BC standards and/or listed on the "Compliant Work Zone Traffic Control Devices" list.
7. Short term markings shall not be used to simulate edge lines.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition.

TABLE 1

Edge Condition	Edge Height (D)	* Warning Devices
① 	Less than or equal to: 1¼" (maximum-planing) 1½" (typical-overlay)	Sign: CW8-11
	Distance "D" may be a maximum of 1 1/4 " for planing operations and 2" for overlay operations if uneven lanes with edge condition 1 are open to traffic after work operations cease.	
② 	Less than or equal to 3"	Sign: CW8-11
③  Notched Wedge Joint	Distance "D" may be a maximum of 3" if uneven lanes with edge condition 2 or 3 are open to traffic after work operations cease. Uneven lanes should not be open to traffic when "D" is greater than 3".	

TRAFFIC CONTROL DURING PLANING, OVERLAY AND LEVELING OPERATIONS ARE SHOWN ELSEWHERE IN THE PLANS.

MINIMUM WARNING SIGN SIZE	
Conventional roads	36" x 36"
Freeways/expressways, divided roadways	48" x 48"

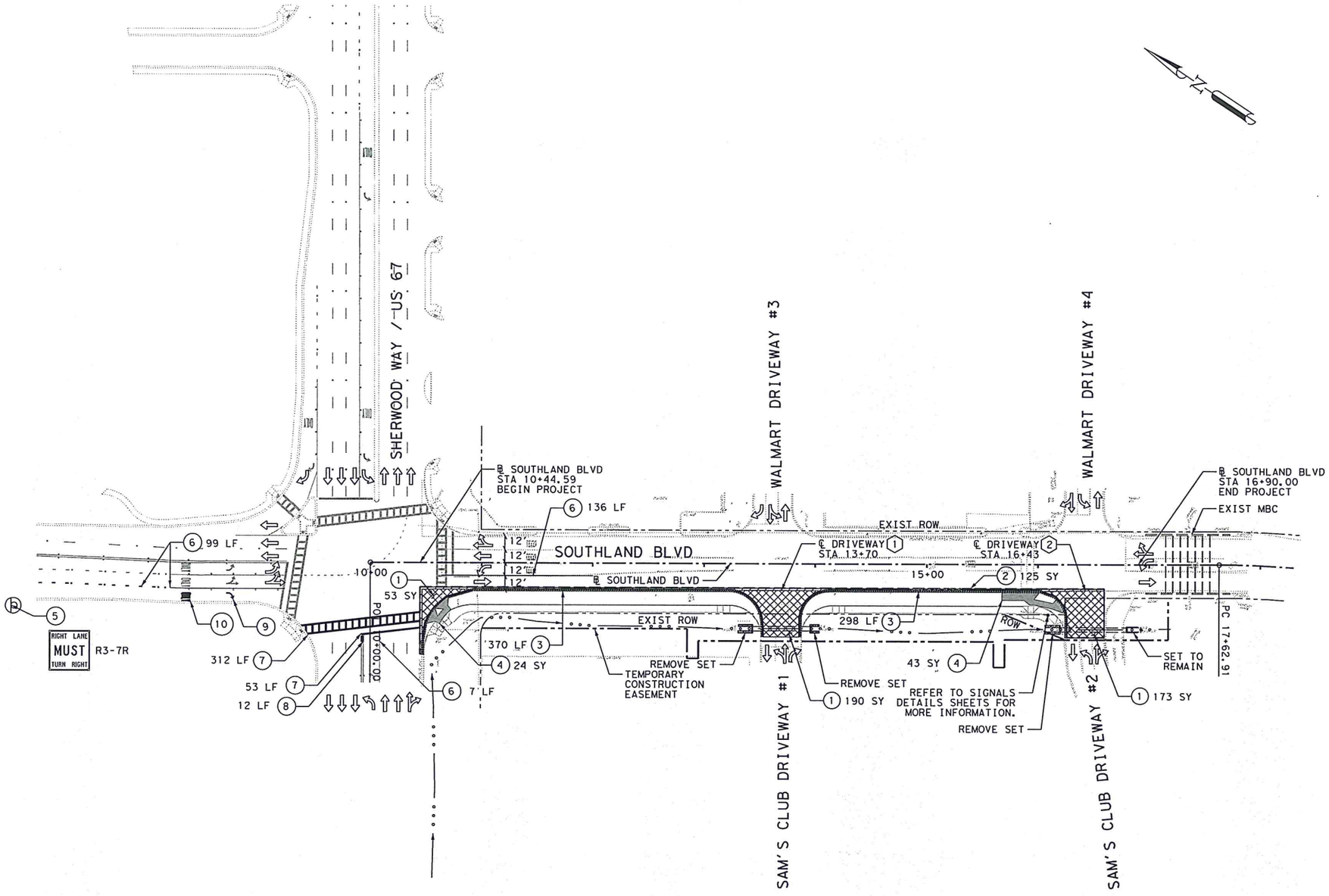
Texas Department of Transportation

Traffic Operations Division Standard

SIGNING FOR UNEVEN LANES

WZ(UL)-13

FILE:	wzul-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS					SOUTHLAND
8-95 2-98 7-13		DIST	COUNTY		SHEET NO.
1-97 3-03			TOM GREEN		29



LEGEND

▨	1	REMOVE CONCRETE PAVEMENT & BASE
▨	2	REMOVE ASPHALT PAVEMENT & BASE
═	3	REMOVE CURB AND GUTTER
▬	4	REMOVE CONC SDWK OR RAMP
Ⓟ	5	REMOVE EXISTING SIGN
—	6	REMOVE PAV MRK (W)8"(SLD)
—	7	REMOVE PAV MRK (W)24"(SLD)
—	8	REMOVE PAV MRK (Y)4"(SLD)
↰	9	REMOVE PAV MRK (W)(ARROW)
	10	REMOVE PAV MRK (W)(WORD)

NOTES:

1. ALL EXISTING FOUNDATIONS WILL BE REMOVED AT DEPTH OF 2' BELOW EXISTING GRADE UNLESS OTHERWISE NOTED.
2. SEE PLAN AND PROFILE SHEETS FOR LIMITS OF SAWCUT.

09/23/2016

STATE OF TEXAS
MICHAEL C. COYLE
95634
LICENSED PROFESSIONAL ENGINEER

0' 25' 50' 100'
SCALE: 1"=100'

REV. NO.	DATE	DESCRIPTION	BY

LJA Engineering, Inc.
FRN - F-1386

THE CITY OF SAN ANGELO TEXAS

SOUTHLAND BOULEVARD

ROADWAY REMOVAL LAYOUT

SHEET 1 OF 1

SHEET NO. 30

6:27:03 PM 9/23/2016
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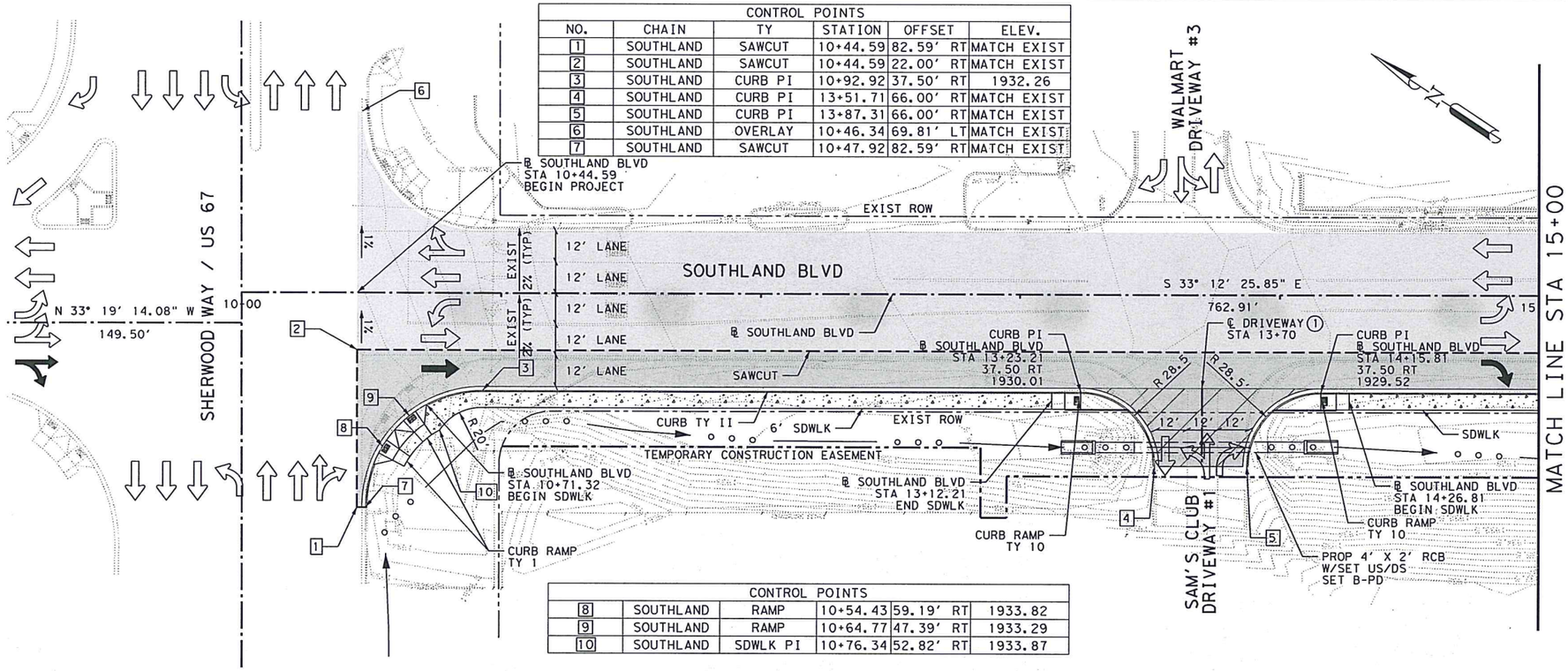
CONTROL POINTS					
NO.	CHAIN	TY	STATION	OFFSET	ELEV.
1	SOUTHLAND	SAWCUT	10+44.59	82.59' RT	MATCH EXIST
2	SOUTHLAND	SAWCUT	10+44.59	22.00' RT	MATCH EXIST
3	SOUTHLAND	CURB PI	10+92.92	37.50' RT	1932.26
4	SOUTHLAND	CURB PI	13+51.71	66.00' RT	MATCH EXIST
5	SOUTHLAND	CURB PI	13+87.31	66.00' RT	MATCH EXIST
6	SOUTHLAND	OVERLAY	10+46.34	69.81' LT	MATCH EXIST
7	SOUTHLAND	SAWCUT	10+47.92	82.59' RT	MATCH EXIST

CONTROL POINTS					
8	SOUTHLAND	RAMP	10+54.43	59.19' RT	1933.82
9	SOUTHLAND	RAMP	10+64.77	47.39' RT	1933.29
10	SOUTHLAND	SDWLK PI	10+76.34	52.82' RT	1933.87

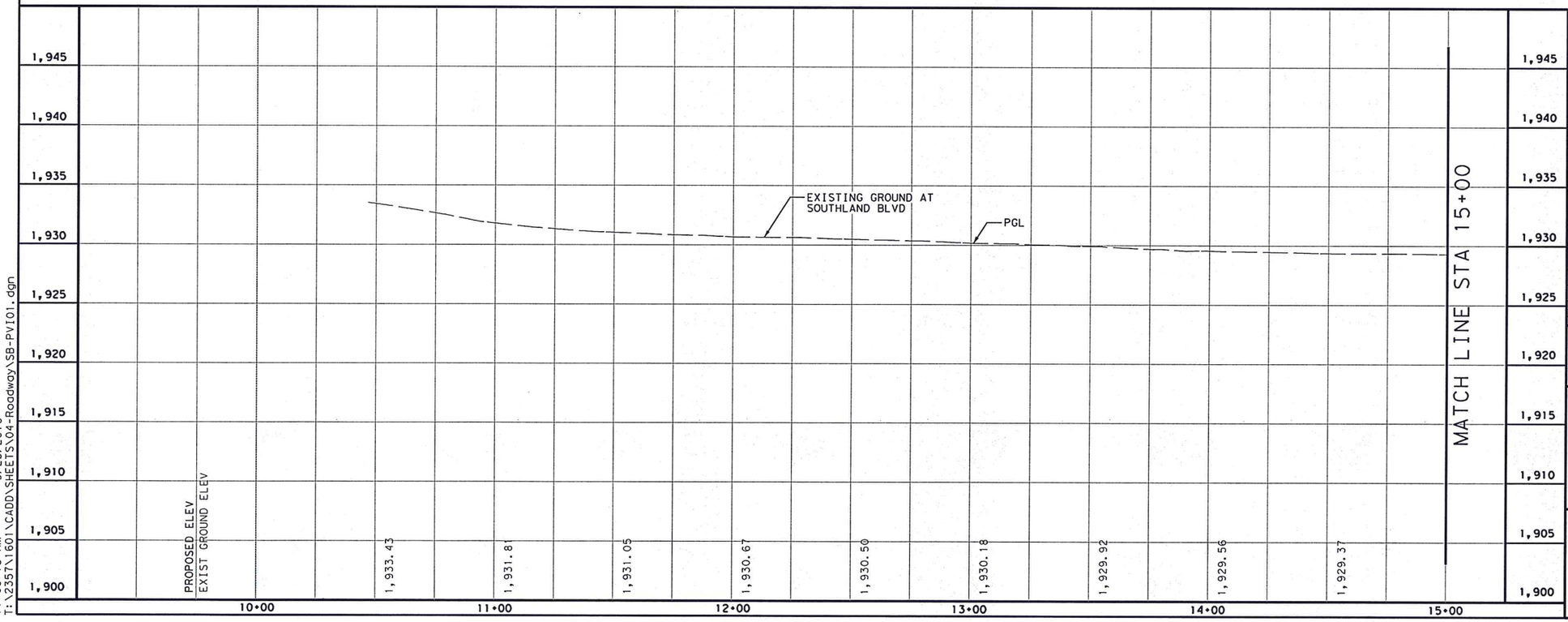


LEGEND

- PROPOSED TRAFFIC DIRECTION ARROW
- EXISTING TRAFFIC DIRECTION ARROW
- PROPOSED FULL DEPTH PAVEMENT
- PROPOSED CONC. DRIVEWAY
- PROPOSED SIDEWALK
- PROPOSED OVERLAY/INLAY
- XXX-X HORIZONTAL CURVE
- SAWCUT
- (X) DRIVEWAY NUMBER

NOTES:

1. ALL CALLOUTS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED
2. REFER TO DRAINAGE SHEETS
3. REFER TO DRIVEWAY DETAILS FOR CULVERT INFORMATION



09/23/2016

STATE OF TEXAS
MICHAEL C. COYLE
95634
LICENSED PROFESSIONAL ENGINEER

0' 25' 50'
SCALE: 1"=50'- HORZ
1"=10'- VERT

REV. NO.	DATE	DESCRIPTION	BY

LJA Engineering, Inc.
FRN - F-1386

THE CITY OF SAN ANGELO TEXAS

SOUTHLAND BOULEVARD
INTERSECTION
PLAN AND PROFILE

SHEET 1 OF 2

SHEET NO. 31

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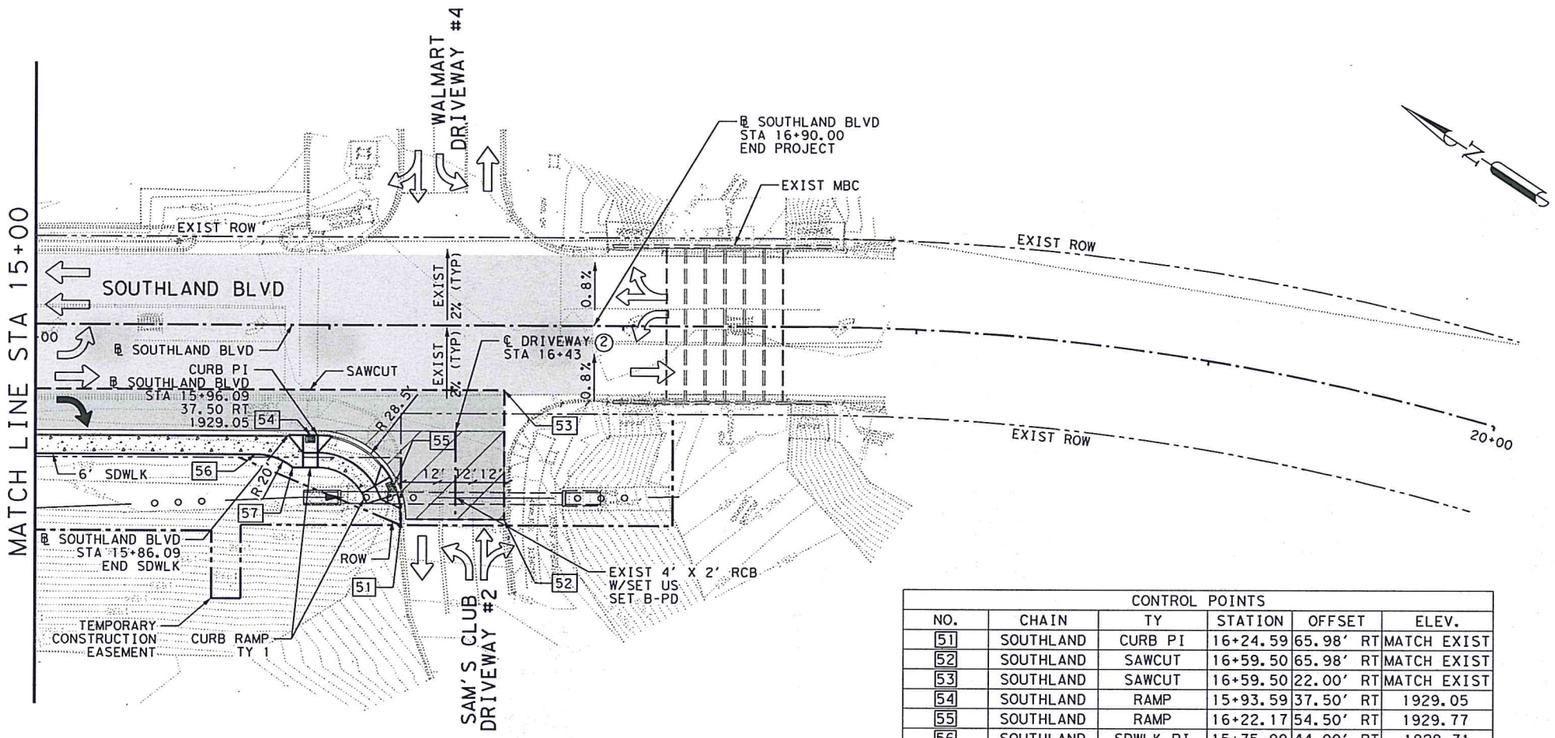


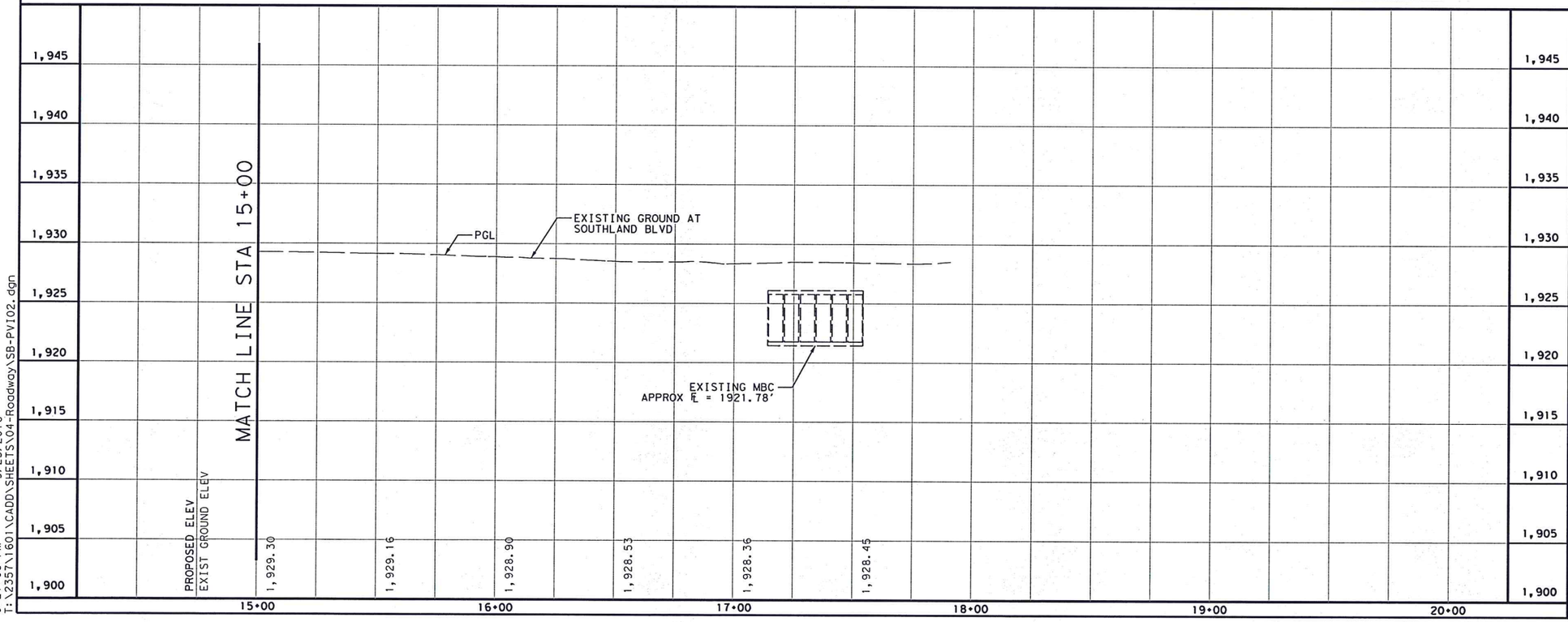
LEGEND

- PROPOSED TRAFFIC DIRECTION ARROW
- EXISTING TRAFFIC DIRECTION ARROW
- PROPOSED FULL DEPTH PAVEMENT
- PROPOSED CONC. DRIVEWAY
- PROPOSED SIDEWALK
- PROPOSED OVERLAY/INLAY
- XXX-X HORIZONTAL CURVE
- SAWCUT
- (X) DRIVEWAY NUMBER

NOTES:

1. ALL CALLOUTS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED
2. REFER TO DRAINAGE SHEETS
3. REFER TO DRIVEWAY DETAILS FOR CULVERT INFORMATION

CONTROL POINTS					
NO.	CHAIN	TY	STATION	OFFSET	ELEV.
51	SOUTHLAND	CURB PI	16+24.59	65.98' RT	MATCH EXIST
52	SOUTHLAND	SAWCUT	16+59.50	65.98' RT	MATCH EXIST
53	SOUTHLAND	SAWCUT	16+59.50	22.00' RT	MATCH EXIST
54	SOUTHLAND	RAMP	15+93.59	37.50' RT	1929.05
55	SOUTHLAND	RAMP	16+22.17	54.50' RT	1929.77
56	SOUTHLAND	SDWLK PI	15+75.00	44.00' RT	1929.71
57	SOUTHLAND	SDWLK PI	15+87.64	48.50' RT	1929.63



09/23/2016

STATE OF TEXAS
MICHAEL C. COYLE
95634
LICENSED
PROFESSIONAL ENGINEER

0' 25' 50'
SCALE: 1"=50'- HORZ
1"=10'- VERT

REV. NO.	DATE	DESCRIPTION	BY

LJA Engineering, Inc.
FRN - F-1386

THE CITY OF SAN ANGELO TEXAS

SOUTHLAND BOULEVARD
INTERSECTION
PLAN AND PROFILE

SHEET 2 OF 2

SHEET NO. 32

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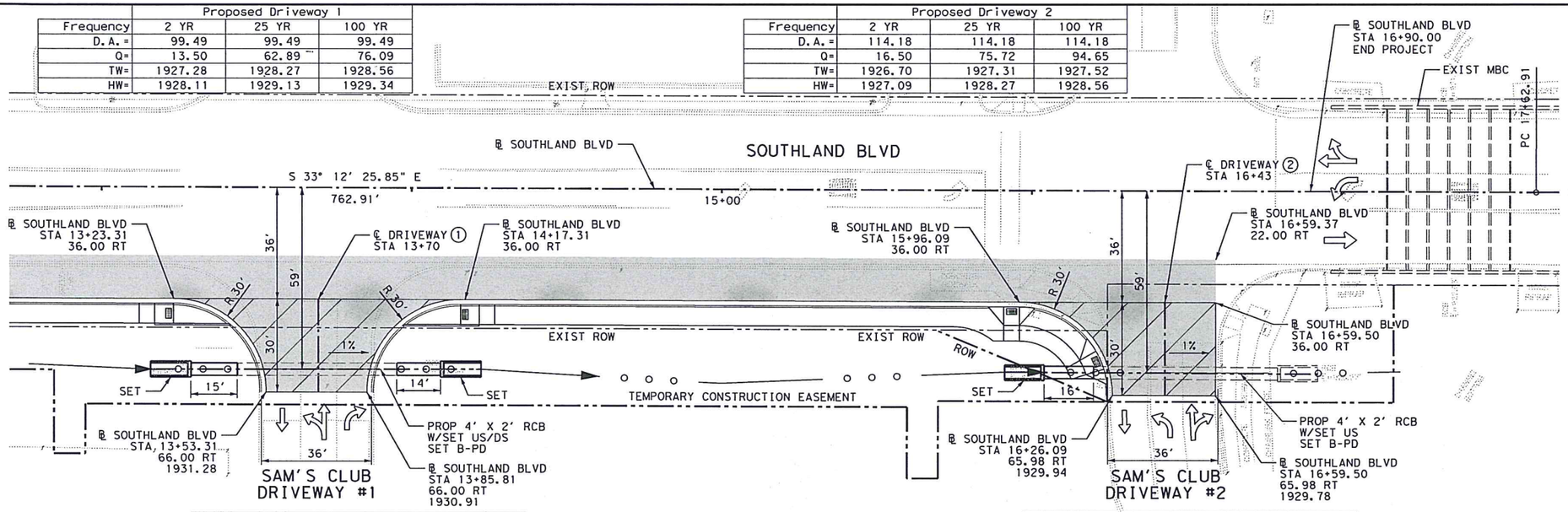
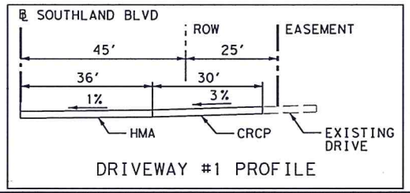
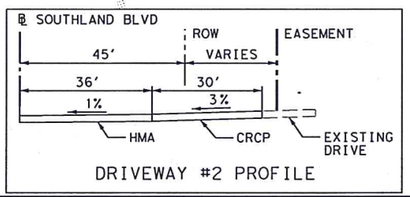
Proposed Driveway 1			
Frequency	2 YR	25 YR	100 YR
D.A.=	99.49	99.49	99.49
Q=	13.50	62.89	76.09
TW=	1927.28	1928.27	1928.56
HW=	1928.11	1929.13	1929.34

Proposed Driveway 2			
Frequency	2 YR	25 YR	100 YR
D.A.=	114.18	114.18	114.18
Q=	16.50	75.72	94.65
TW=	1926.70	1927.31	1927.52
HW=	1927.09	1928.27	1928.56





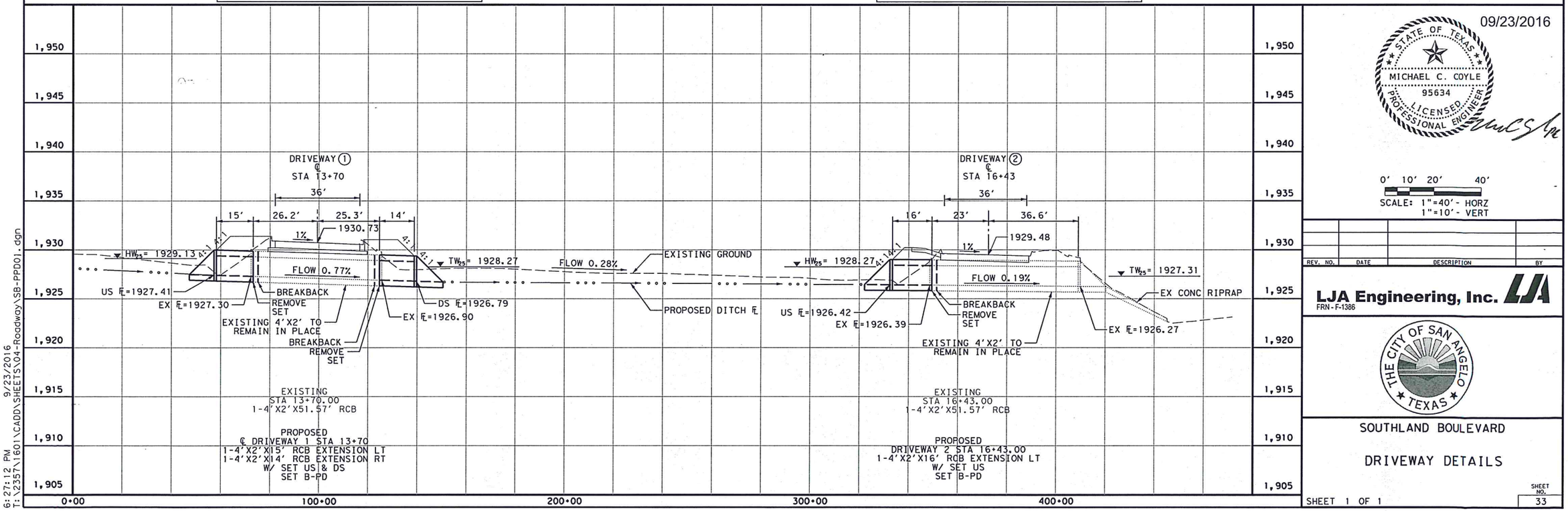


LEGEND

- PROPOSED FULL DEPTH PAVEMENT
- PROPOSED CONC. DRIVEWAY
- (X) DRIVEWAY NUMBER

NOTES:

1. COLLAR DETAIL SHALL BE APPROVED BY INSPECTOR BEFORE CONSTRUCTION OF CULVERT EXTENSIONS.



09/23/2016

STATE OF TEXAS
MICHAEL C. COYLE
95634
LICENSED PROFESSIONAL ENGINEER

0' 10' 20' 40'
SCALE: 1"=40'- HORZ
1"=10'- VERT

REV. NO.	DATE	DESCRIPTION	BY

LJA Engineering, Inc.
FRN-F-1386

THE CITY OF SAN ANGELO TEXAS

SOUTHLAND BOULEVARD

DRIVEWAY DETAILS

SHEET NO. 33

SHEET 1 OF 1

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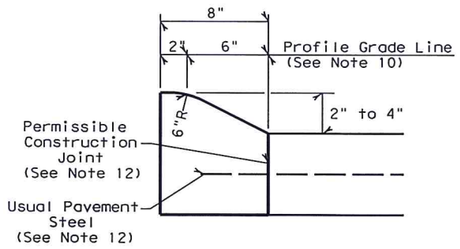

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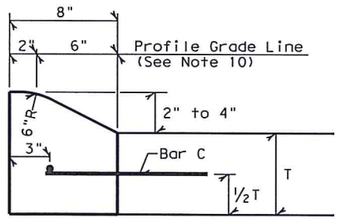
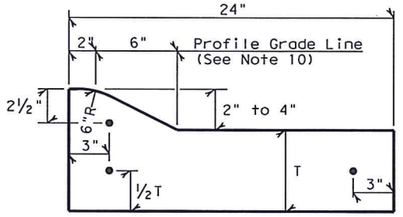
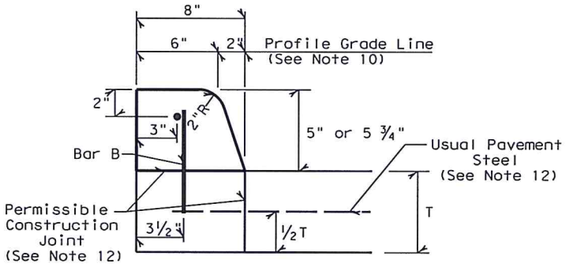
2" - 4" HEIGHT



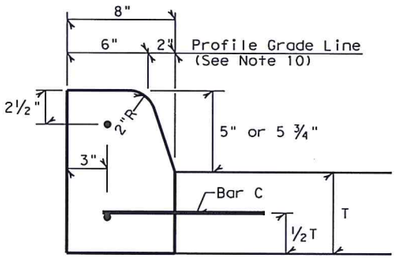
TYPE I CURB
2" - 4" HEIGHT



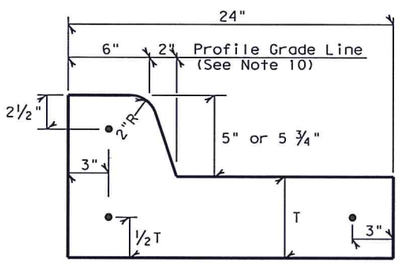
TYPE I CURB AND GUTTER
2" - 4" HEIGHT



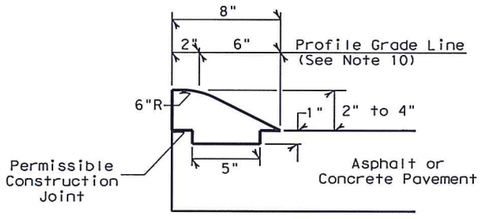
TYPE II CURB (MONOLITHIC)
5" - 5 ¾" HEIGHT



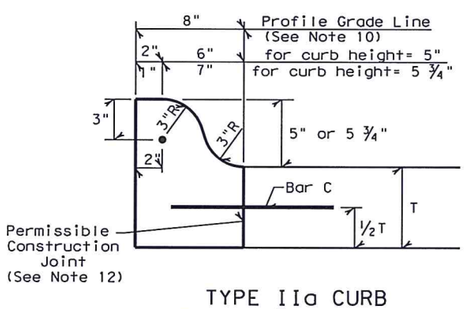
TYPE II CURB
5" - 5 ¾" HEIGHT



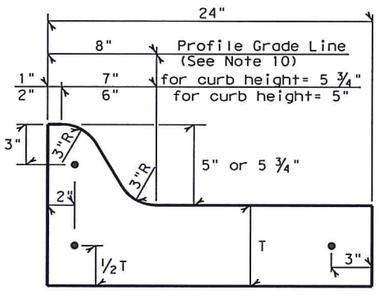
TYPE II CURB AND GUTTER
5" - 5 ¾" HEIGHT



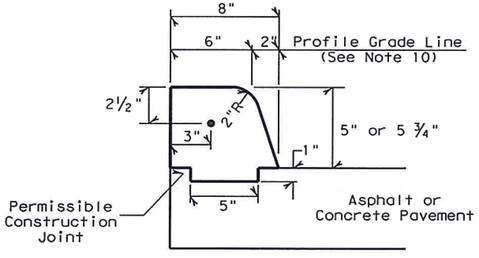
TYPE III CURB (KEYED)
2" - 4" HEIGHT



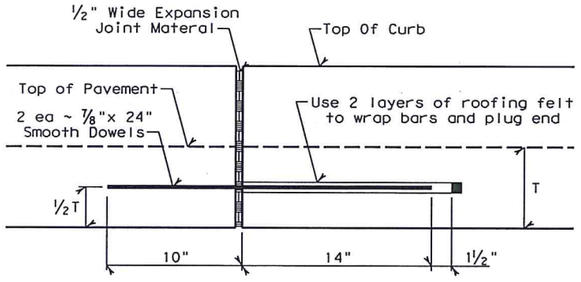
TYPE IIa CURB
5" - 5 ¾" HEIGHT



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

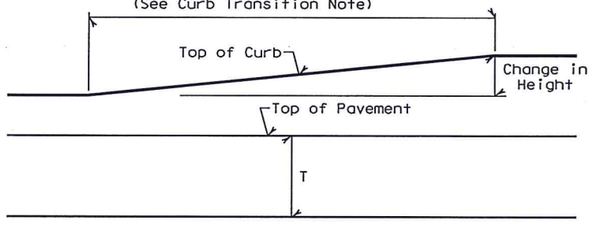


TYPE IV CURB (KEYED)
5" - 5 ¾" HEIGHT



EXPANSION JOINT DETAIL

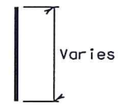
Curb Transition Note:
Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans, or as directed by the Engineer.



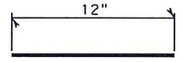
CURB TRANSITION
Note: To be paid for as Highest Curb

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 synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Producer List (MPL), maintained by TxDOT, Construction Division.
4. Round exposed sharp edges with a rounding tool, to a minimum radius of ¼inch.
5. All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
6. Where concrete curb is placed on existing concrete pavement, the pavement shall be drilled and the reinforcing bars grouted in place.
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 vertical permissible construction joints are used, resulting in a longitudinal construction joint in the pavement, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans for longitudinal construction joints. Reinforcing steel for curb section shall then conform to that required for concrete curb.



BAR B



BAR C

Texas Department of Transportation

Design Division Standard

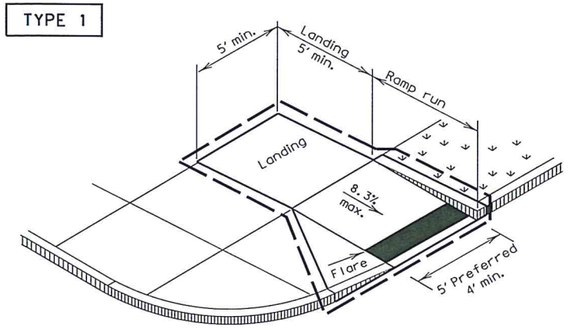
CONCRETE CURB AND CURB AND GUTTER

CCCG-12

FILE: cccg12.dgn	DN: TxDOT	CK: AM	DW: VP	CK:
©TxDOT: 1995	CONT	SECT	JOB	HIGHWAY
REVISIONS UPDATED 2012 - VP				SOUTHLAND
	DIST	COUNTY		SHEET NO.
		TOM GREEN		34

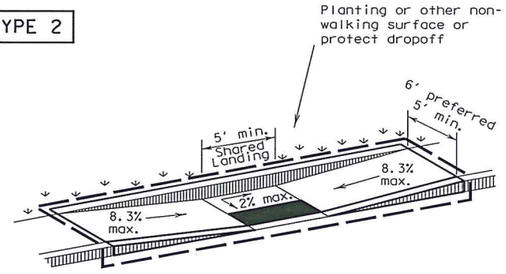
DATE: 9/23/2016 11:08:21 AM
FILE: T:\2357\1601\CADD\SHEETS\04-Roadway\Standards\ped12a-1.dgn

TYPE 1



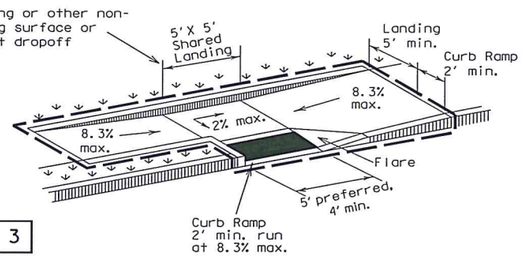
PERPENDICULAR CURB RAMP

TYPE 2

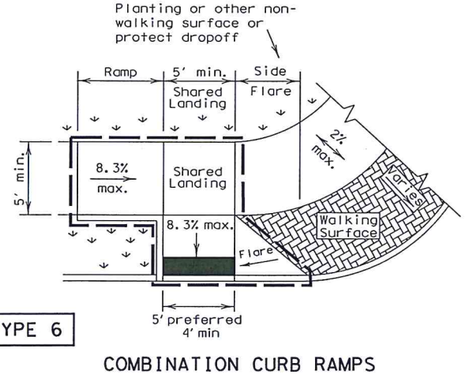


PARALLEL CURB RAMP
(Use only where water will not pond in the landing.)

TYPE 3

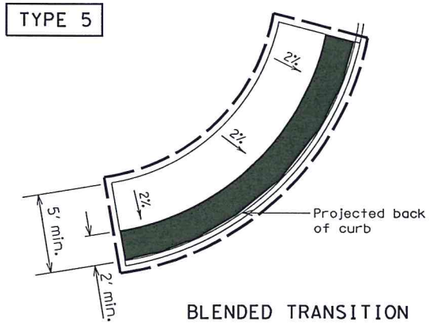


TYPE 6



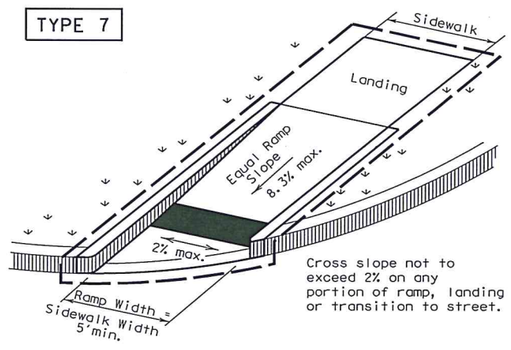
COMBINATION CURB RAMPS

TYPE 5



BLENDED TRANSITION

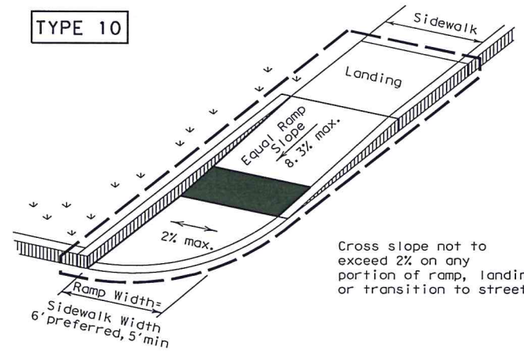
TYPE 7



Cross slope not to exceed 2% on any portion of ramp, landing or transition to street.

(Sidewalk set back from curb)

TYPE 10

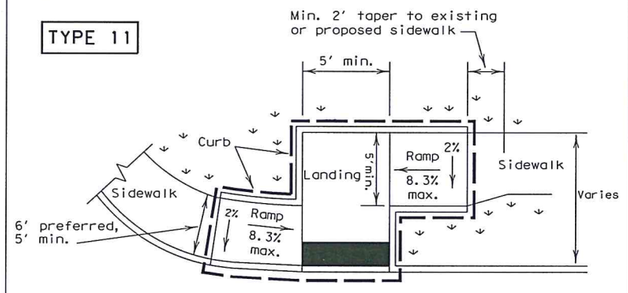


Cross slope not to exceed 2% on any portion of ramp, landing or transition to street.

(Sidewalk adjacent to curb)

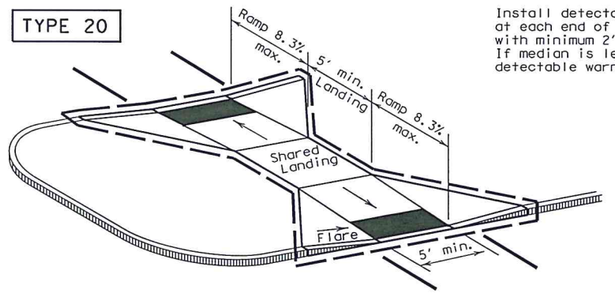
DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 11



OFFSET PARALLEL CURB RAMP

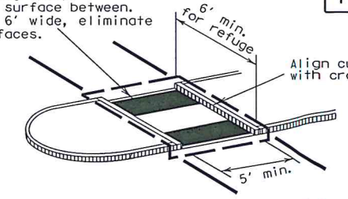
TYPE 20



Install detectable warning surface at each end of cut-through ramp with minimum 2' smooth surface between. If median is less than 6' wide, eliminate detectable warning surfaces.

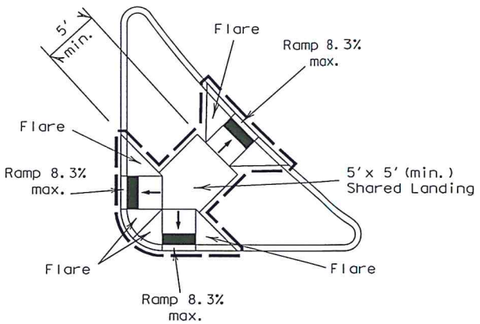
CURB RAMPS AT MEDIAN ISLANDS

TYPE 21



Curb details are shown elsewhere in the plans.

TYPE 22



COMBINATION ISLAND RAMPS

NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

Denotes planting or non-walking surface not part of pedestrian circulation path.

Ramp Limits of Payment

Detectable Warning Surface

SHEET 1 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP	
© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY	
REVISIONS				SOUTHLAND	
VP June 13, 2012	DIST	COUNTY		SHEET NO.	
		TOM GREEN		35	

DATE: 9/23/2016 11:08:23 AM
FILE: T:\2357\1601\CADD\SHEETS\04-Roadway\Standards\ped12a-2.dgn

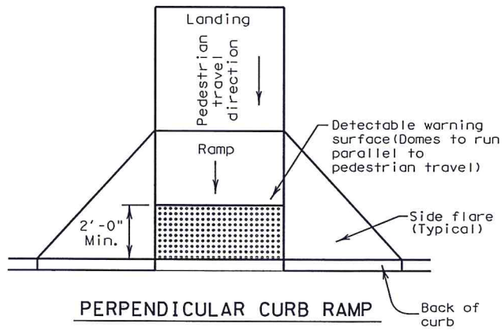
General Notes

Curb Ramps

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5'x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever on accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

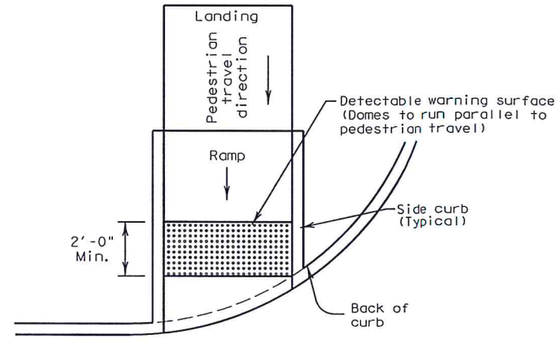
Detectable Warning Material

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



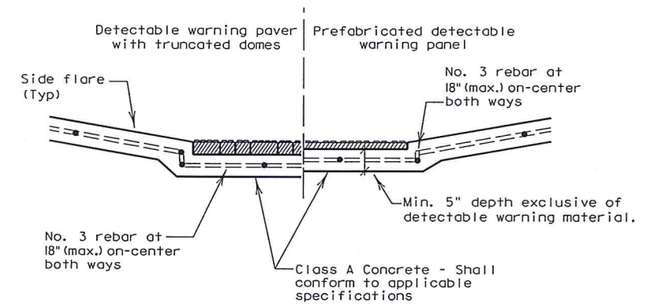
PERPENDICULAR CURB RAMP

Typical placement of detectable warning surface on sloping ramp run.

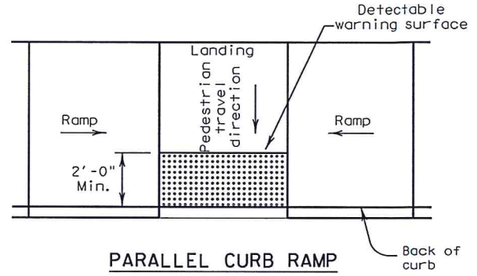


DIRECTIONAL CURB RAMP

Typical placement of detectable warning surface on sloping ramp run.



SECTION: CURB RAMP AT DETECTABLE WARNING



PARALLEL CURB RAMP

Typical placement of detectable warning surface on landing at street edge.

DETECTABLE WARNINGS

Detectable Warning Pavers

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

Sidewalks

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

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP	
© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY	
REVISIONS				SOUTHLAND	
VP June 13, 2012	DIST	COUNTY		SHEET NO.	
		TOM GREEN		36	

DATE: 9/23/2016 11:08:24 AM
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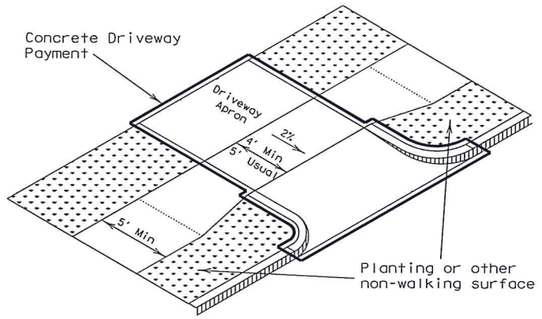
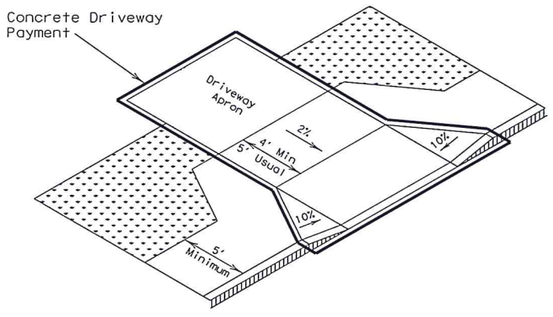
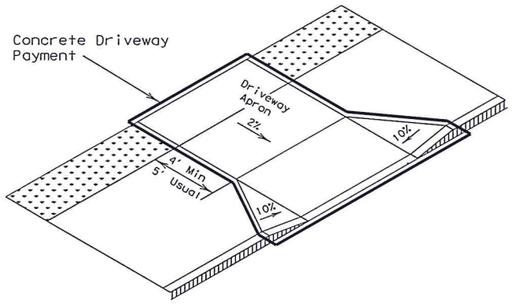


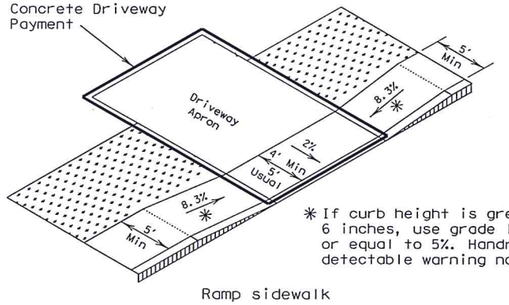
Setback sidewalk



Apron offset sidewalk



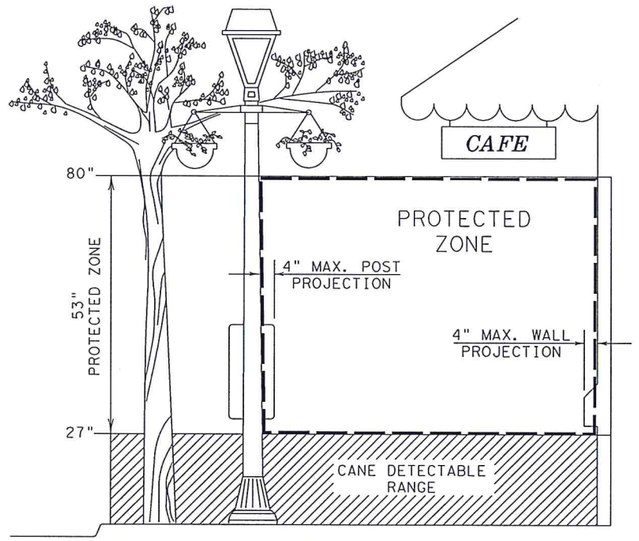
Wide sidewalk



* If curb height is greater than 6 inches, use grade less than or equal to 5%. Handrail and detectable warning not required.

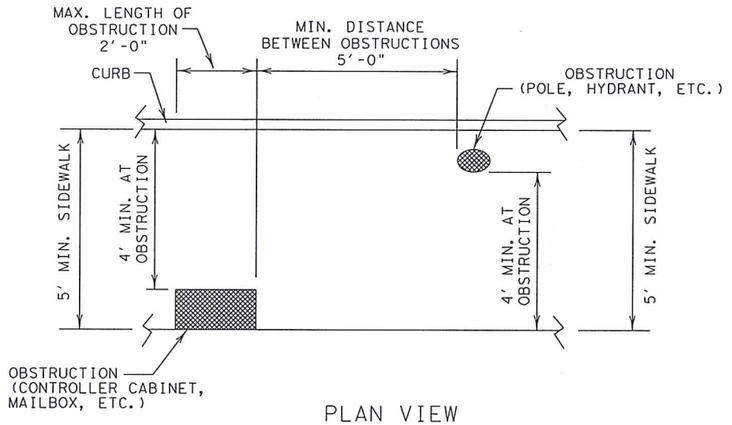
Ramp sidewalk

SIDEWALK TREATMENT AT DRIVEWAYS



PROTECTED ZONE

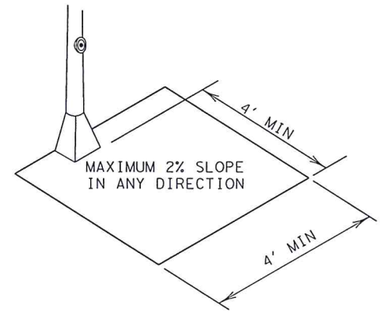
In pedestrian circulation area, maximum 4" projection for post or wall mounted objects between 27"and 80" above the surface.



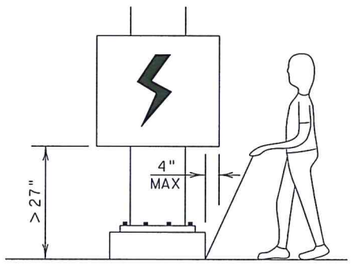
PLAN VIEW

PLACEMENT OF STREET FIXTURES

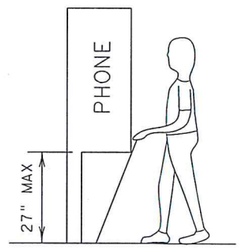
(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)



CLEAR GROUND SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



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-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP
© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS VP June 13, 2012				SOUTHLAND
	DIST	COUNTY		SHEET NO.
		TOM GREEN		37