WACO SRTS - INDIAN SPRINGS MIDDLE SCHOOL

REGISTERED ACCESSIBILITY SPECIALIST (RHS) INSPECTION REQUIRED TDLR NO# _____

PUBLIC WORKS DEPARTMENT

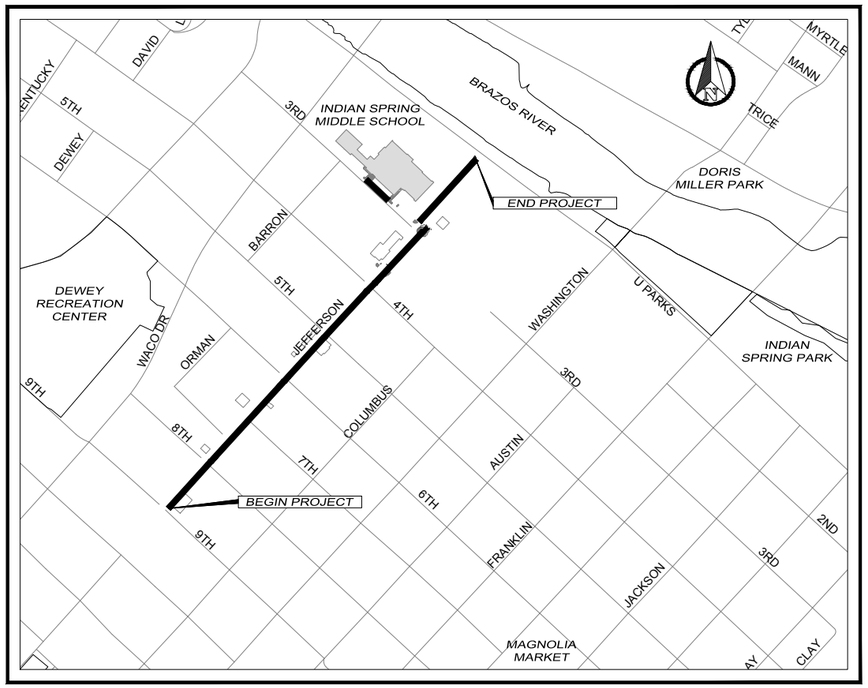
ENGINEERING DIVISION

FOR THE CONSTRUCTION OF PEDESTRIAN IMPROVEMENTS CONSISTING OF SIDEWALKS

MAYOR
KYLE DEAVER

CITY COUNCIL
ANDREA J. BAREFIELD - COUNCIL DIST. 1
HECTOR SABIDO- COUNCIL DIST. 2
JOHN KINNAIRD - COUNCIL DIST. 3
DILLON MEEK - COUNCIL DIST. 4
JIM HOLMES - COUNCIL. DIST. 5

CITY MANAGER
WILEY STEM III



SHEET INDEX

PROJECT ENGINEER (COMPLETE & CORRECT) _____ DATE _____

CITY ENGINEER (RECOMMENDED FOR BIDDING) _____ DATE _____

DEPARTMENT DIRECTOR (APPROVED FOR BIDDING) _____ DATE _____

Know what's below. Call before you dig.

Better Streets Waco

www.betterstreetswaco.com

90% FOR REVIEW ONLY

JULY 2019

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION NOVEMBER 1, 2014, AND SPECIFICATION ITEMS LISTED AS FOLLOWS SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 2012)

WACO SRTS - INDIAN SPRINGS MIDDLE SCHOOL (ST0007)

GENERAL NOTES

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WACO STANDARD SPECIFICATIONS FOR CONSTRUCTION (THE CURRENT VERSION), THE CURRENT CITY OF WACO CODE OF ORDINANCES, AND APPLICABLE CITY OF WACO MANUAL OF STANDARD DETAILS (WMSD) UNLESS OTHERWISE NOTED.

CONTRACT ADMINISTRATION

THE CONTRACT IS A WRITTEN AGREEMENT BY WHICH THE CONTRACTOR HAS COMMITTED TO COMPLETE THE SPECIFIC SCOPE OF WORK, IN COMPLIANCE WITH THE DRAWINGS, SPECIFICATIONS, SCHEDULE, AND ALL APPLICABLE LAWS, RULES AND REGULATIONS. COMPENSATION FOR SAID WORK SHALL BE MADE AS DESCRIBED IN THE AGREED-UPON PROPOSAL.

ANY REQUEST FOR CHANGE TO THE DESIGN, SCHEDULE, OR PROJECT COST MUST BE MADE IN WRITING AND APPROVED PRIOR TO IMPLEMENTATION.

SUBMITTALS

THE CONTRACTOR SHALL SUBMIT, WITHIN 10 DAYS OF THE EFFECTIVE DATE OF THE NOTICE TO PROCEED, THE FOLLOWING:

- THE NAME AND CONTACT INFORMATION OF THE PROJECT SUPERINTENDENT;
- THE NAME AND CONTACT INFORMATION OF THE EMERGENCY CONTACT;
- THE NAME, QUALIFICATIONS, AND CONTACT INFORMATION OF THE DESIGNATED
- SAFETY REPRESENTATIVE(S);
- THE NAME AND CONTACT INFORMATION FOR THE DESIGNATED PROJECT MANAGER FOR THIS CONTRACT.

ENVIRONMENTAL AND SAFETY PLANS

THE CONTRACTOR SHALL SUBMIT FOR REVIEW ALL REQUIRED ENVIRONMENTAL AND SAFETY PLANS FOR THE COMPLETION OF THE WORK. THE WORK WILL NOT BE PERMITTED TO BEGIN UNTIL ALL RELATED PLANS HAVE BEEN REVIEWED BY THE APPROPRIATE PARTY(IES).

TRAFFIC CONTROL PLAN (TCP)

WHEN REQUIRED, THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A TRAFFIC CONTROL PLAN FOR REVIEW. THE PLAN SHALL BE BASED UPON APPLICABLE CITY AND STATE REQUIREMENTS AND ESTABLISHED STANDARDS.

THE CONTRACTOR IS RESPONSIBLE FOR MONITORING THE PLAN AS THE WORK PROGRESSES AND SUBMITTING MODIFICATIONS FOR REVIEW AS NEEDED.

THE CONTRACTOR IS ALSO RESPONSIBLE FOR ENSURING THE INSPECTOR IS PROVIDED A COPY OF THE SIGNED PLAN 15 DAYS PRIOR TO BEGINNING WORK.

TRENCH SAFETY PLANS

WHEN REQUIRED BY THE WORK, THE CONTRACTOR SHALL SUBMIT A TRENCH SAFETY PLAN FOR REVIEW. THE PLAN SHALL INCLUDE THE RECOMMENDED SAFETY PROTECTION MEASURES WITH THE APPROPRIATE LOADING REQUIREMENTS.

THE CONTRACTOR SHALL ENSURE THAT THE PROTECTIVE MEASURES LOCATED ON SITE AND ALL PROCEDURES ON THE PROJECT ARE IN COMPLIANCE WITH ALL ASPECTS OF THE PLAN.

THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS.

ALL RELATED DOCUMENTATION WILL BE MADE AVAILABLE TO THE INSPECTOR ON A DAILY BASIS. THE CONTRACTOR SHALL PROVIDE COPIES OF ALL RELATED DOCUMENTATION TO THE OWNER UPON REQUEST.

CONFINED SPACE PLANS

WHEN REQUIRED BY THE WORK, THE CONTRACTOR SHALL SUBMIT A CONFINED SPACE PLAN FOR REVIEW.

THE CONTRACTOR SHALL ENSURE THAT ALL PROCEDURES EMPLOYED ON THE PROJECT ARE IN COMPLIANCE WITH ALL ASPECTS OF THE PLAN.

THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS.

ALL RELATED DOCUMENTATION WILL BE MADE AVAILABLE TO THE INSPECTOR ON A DAILY BASIS. THE CONTRACTOR SHALL PROVIDE COPIES OF ALL RELATED DOCUMENTATION TO THE OWNER UPON REQUEST.

SANITARY SEWER PROJECTS

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE EACH SANITARY SEWER SERVICE AFFECTED BY THE PROJECT AND REPLACE EACH WITH AN EQUAL SIZE NEW SERVICE (4" MIN.), COMPLETE WITH 2-WAY CLEANOUT UNLESS OTHERWISE SPECIFIED.

ALL SANITARY SEWER MANHOLES SHOWN TO BE ABANDONED SHALL HAVE THE RING AND COVER REMOVED AND DELIVERED TO THE CITY OF WACO STORAGE YARD AT 4TH AND COLCORD. ALL PIPES INSIDE THE MANHOLE SHALL BE PLUGGED WITH CONCRETE, THE MANHOLE BACKFILLED WITH FLOWABLE FILL, FOLLOWED BY THE APPROPRIATE SURFACE REPLACEMENT. THE TOP OF THE MANHOLE SHALL BE BROKEN DOWN TO A POINT AT LEAST 12" BELOW NATURAL GROUND OR FINISHED PAVEMENT GRADE, OR 12" BELOW LIMITS OF CONSTRUCTION.

WATER LINES

SHALL HAVE A MINIMUM COVER OF 3.5' BELOW FINISHED STREET GRADE UNLESS OTHERWISE SPECIFIED.

EXISTING FIRE HYDRANTS THAT ARE TO BE REMOVED SHALL REMAIN THE PROPERTY OF THE CITY OF WACO, AND SHALL BE DELIVERED IN WHOLE TO THE CITY OF WACO STORAGE YARD AT 4TH AND COLCORD.

UTILITIES

EXISTING UTILITIES HAVE BEEN SHOWN AS BEST AS CAN BE DETERMINED FROM UTILITY COMPANY RECORDS AND INVESTIGATION. THE UTILITY LINE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY AND ARE FURNISHED AS A GUIDE FOR THE CONTRACTOR. THE CONTRACTOR WILL VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES BEFORE BEGINNING EXCAVATION.

GAS LINES TO BE RELOCATED OR ADJUSTED BY OTHERS. TELEPHONE LINES TO BE RELOCATED OR ADJUSTED BY OTHERS. UTILITY POLES TO BE RELOCATED BY OTHERS.

THE CONTRACTOR SHALL NOTIFY, (SEE DETAILED LIST BELOW), PRIOR TO STARTING CONSTRUCTION ON ANY STREET IN THE VICINITY OF ANY EXISTING UTILITIES SO THAT ANY ADJUSTMENTS OF EXISTING UTILITIES THAT HAVE NOT PREVIOUSLY BEEN MADE CAN BE MADE PRIOR TO CONSTRUCTION.

STORM WATER POLLUTION PREVENTION PLAN

THE EROSION CONTROL PLAN PROVIDED IN THE PLAN SET SHALL BE CONSIDERED THE MINIMUM EROSION CONTROL MEASURES FOR THE PROJECT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY "TO DEVELOP AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH TCEQ GENERAL PERMIT TXR150000 PRIOR TO THE BEGINNING OF CONSTRUCTION ACTIVITY", AS DESCRIBED IN SECTION 1.10: STORM WATER POLLUTION PREVENTION IN THE CITY OF WACO'S 2013 STANDARD SPECIFICATIONS FOR CONSTRUCTION, IF NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR MONITORING THE PLAN AS THE WORK PROGRESSES AND SUBMITTING MODIFICATIONS FOR REVIEW AS NEEDED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ENSURING THE INSPECTOR IS PROVIDED A COPY OF THE APPROVED AND SIGNED PLAN PRIOR TO BEGINNING WORK.

STREET CONSTRUCTION

WHERE NEW CURB AND GUTTER IS PLACED NEXT TO EXISTING CURB AND GUTTER, THE GUTTER GRADES SHALL MATCH.

EXISTING PAVEMENT SHALL BE SAWED TO A SMOOTH STRAIGHT LINE AT THE BEGINNING AND END OF STREET CONSTRUCTION WHERE SHOWN AND AT ALL CONSTRUCTION LIMITS WHERE SHOWN.

IN THE CASE OF A STREET BEING LIME STABILIZED AND CURB & GUTTER BEING REPLACED, OR NEW CURB & GUTTER BEING CONSTRUCTED, EACH EXISTING WATER METER THAT IS NOT AT LEAST 2' BEHIND THE PROPOSED BACK OF CURB SHALL BE RELOCATED TO AT LEAST 2' BEHIND THE PROPOSED BACK OF CURB. EACH NEW WATER SERVICE IN THIS CASE SHALL BE CONSTRUCTED SUCH THAT THE METER IS AT LEAST 2' BEHIND THE PROPOSED BACK OF CURB.

INSTALLATION OF ANY PIPE WITHIN THE RIGHT-OF-WAY PROPOSED OR EXISTING STREET SHALL REQUIRE THE SAME EMBEDMENT AS FOR INSTALLATION IN STREETS.

STORM SEWER

MEASURE FOR PAYMENT FOR REINFORCED CONCRETE PIPE SHALL EXTEND ONLY TO THE INSIDE FACE OF MANHOLE WALLS AND SHALL EXCLUDE THE INSIDE MANHOLE DIMENSION.

EXISTING R.C.P. SHALL BECOME THE PROPERTY OF THE CONTRACTOR UPON REMOVAL FROM THE PROJECT.

THE APPROPRIATE CONTACTS FOR UTILITIES ARE AS FOLLOWS:

UTILITY COMPANIES

AT&T
CALVIN PEWITT
(254) 757-7810 (O)
(254) 715-7869 (M)

ATMOS ENERGY (PAETAC)
RICK SULAK
(254) 722-6566
DUSTIN CUMMINGS
(254) 715-8107

GRANDE COMMUNICATIONS
JOHNNY HUTYRA
(254) 235-2072

LEVEL 3 COMMUNICATIONS
HUGH NIELSEN
(512) 656-4763

CONSOLIDATED COMMUNICATIONS INC.
BRIAN STORY
(214) 232-7119

CITY OF WACO SANITARY SEWER DISTRIBUTION
DANA JOHNSTON
(254) 749-7835

CITY OF WACO WATER DISTRIBUTION
DANA JOHNSTON
(254) 749-7835

CITY OF WACO OPERATIONS DIVISION
FRANK BUTLER
(254) 749-8481

CITY OF WACO TRAFFIC MANAGER
ERIC GALLT
(254) 750-6639

CITY OF WACO TRAFFIC SECTION - ELECTRICAL CONDUIT
BILLY DEHART
(254) 749-4087

MCI
FRANK WALKER
(254) 753-3442

MCLEOD USA
TRACY COVINGTON
(512) 934-1469

ONCOR ELECTRIC
MELINDA CARSON
(817) 992-8465

SPECTRUM/CHARTER
JOHNNY TINDLE
(254) 761-3806

FIBERLIGHT LLC
CHRIS BIGLEY
(214) 714-0296

ONE CALL NOTIFICATION CENTERS

LONESTAR NOTIFICATION CENTER
WEBSITE: HTTP://WWW.OCCINC.COM/LOCATIONS/LONE_STAR.ASP
(800) 669-8344

TEXAS EXCAVATION SAFETY SYSTEM
WEBSITE: HTTP://WWW.DIGTESS.ORG
(800) DIG-TESS OR (800) 344-8377

TEXAS ONE CALL SYSTEM
WEBSITE: HTTP://WWW.TEXASONECALL.COM
(800) 245-4545

UNDERGROUND PIPELINE (GAS) DAMAGE REPORTING

WEBSITE:
HTTP://WWW.RRC.STATE.TX.US/PROGRAMS/DAMAGEPREVENTION/INDEX.PHP
OPERATIONS CENTER: (800) 460-3030 OR (800) 545-6005

PUBLIC WORKS

ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

GENERAL NOTES

NO.	REVISION	DATE

90% PRELIMINARY EXISTING PLANS

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No. ST0007
Date JULY 2019
Scale
Sheet No. C001

Work Activities	Quantity	Unit	Unit Price	Amount
100 6002 PREP ROW	32	STA	$500.00	$16,000.00
* PREP ROW (MINOR LOCATE & ADJUST EXISTING UTILITIES)	1	LS		
* PREP ROW (REMOVE TREE / BRUSH)	1	LS		
* PREP ROW (REMOVE & REPLACE CURB STOPS)	10	Ea		
104 6029 REMOV CONC (CURB OR CURB & G)	1,496	LF	$5.00	$7,480.00
104 6036 REMOV CONC (SIDEWALK OR RAMP)	1,306	SY	$18.00	$23,508.00
104 6017 REMOVING CONC (DRIVEWAYS)	330	SY	$27.00	$8,910.00
105 6015 REMOV STAB BASE AND ASPH PAV	1,085	SY	$18.00	$19,530.00
479 6004 ADJUSTING MANHOLES (SANITARY)	5	Ea	$900.00	$4,500.00
500 6001 MOBILIZATION	1	LS	$57,000.00	$57,000.00
502 6001 BARRICADES, SIGNS AND TRAFFIC	7	MO	$2,600.00	$18,200.00
529 6008 CONC CURB & G (TY II)(REINF)	1,283	LF	$18.00	$23,094.00
530 6010 INTRS DRVWYS & TRNOUTS (CONC)	388	SY	$115.00	$44,620.00
531 6002 CONC SIDEWALK (6' TYP)(5")(REINF)	2,143	SY	$135.00	$289,305.00
531 6004 CURB RAMPS (TY 1)(ADA)	1	Ea	$2,200.00	$2,200.00
531 6005 CURB RAMPS (TY 2)(ADA)	3	Ea	$2,600.00	$7,800.00
531 6010 CURB RAMPS (TY 7)(ADA)	9	Ea	$2,000.00	$18,000.00
531 6013 CURB RAMPS (TY 10)(ADA)	1	Ea	$2,000.00	$2,000.00
644 6071 RELOCATE SM RD SN SUP&AM TWT	3	Ea	$375.00	$1,125.00
666 6047 RPAV MK TY I (W)24"(SLD)(090MIL)	307	LF	$7.00	$2,149.00
7104 6001 ADJUST WATER METER & BOXES	3	Ea	$225.00	$675.00
7104 6002 REPOS & ADJ WATER M & BOXES	3	Ea	$375.00	$1,125.00
7122 6005 SANITARY SEWER (ADJ MANHOLE)	5	Ea	$375.00	$1,875.00
COW-1 INSTALL LIMESTONE MAILBOX (ADA)	1	Ea	$1,200.00	$1,200.00
COW-2 INST AND REMOV CURB INLET FILTER	4	Ea	$500.00	$2,000.00
COW-3 BROADCAST SEED (PERM)(RURAL)(CLY)	110	SY	$1.00	$110.00
COW-4 BLOCK SOD (BERMUDA)	3,269	SY	$4.00	$13,076.00
COW-5 WATERING (TEMP / PERM)	33	MG	$150.00	$4,950.00
COW-6 TREE REMOVAL AND TRIMMING	3	LS	$2,500.00	$7,500.00
*PAID UNDER BID ITEM 100, PREP ROW				
				$577,932.00

PUBLIC WORKS

ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

SCHEDULE OF QUANTITIES

NO.	REVISION	DATE

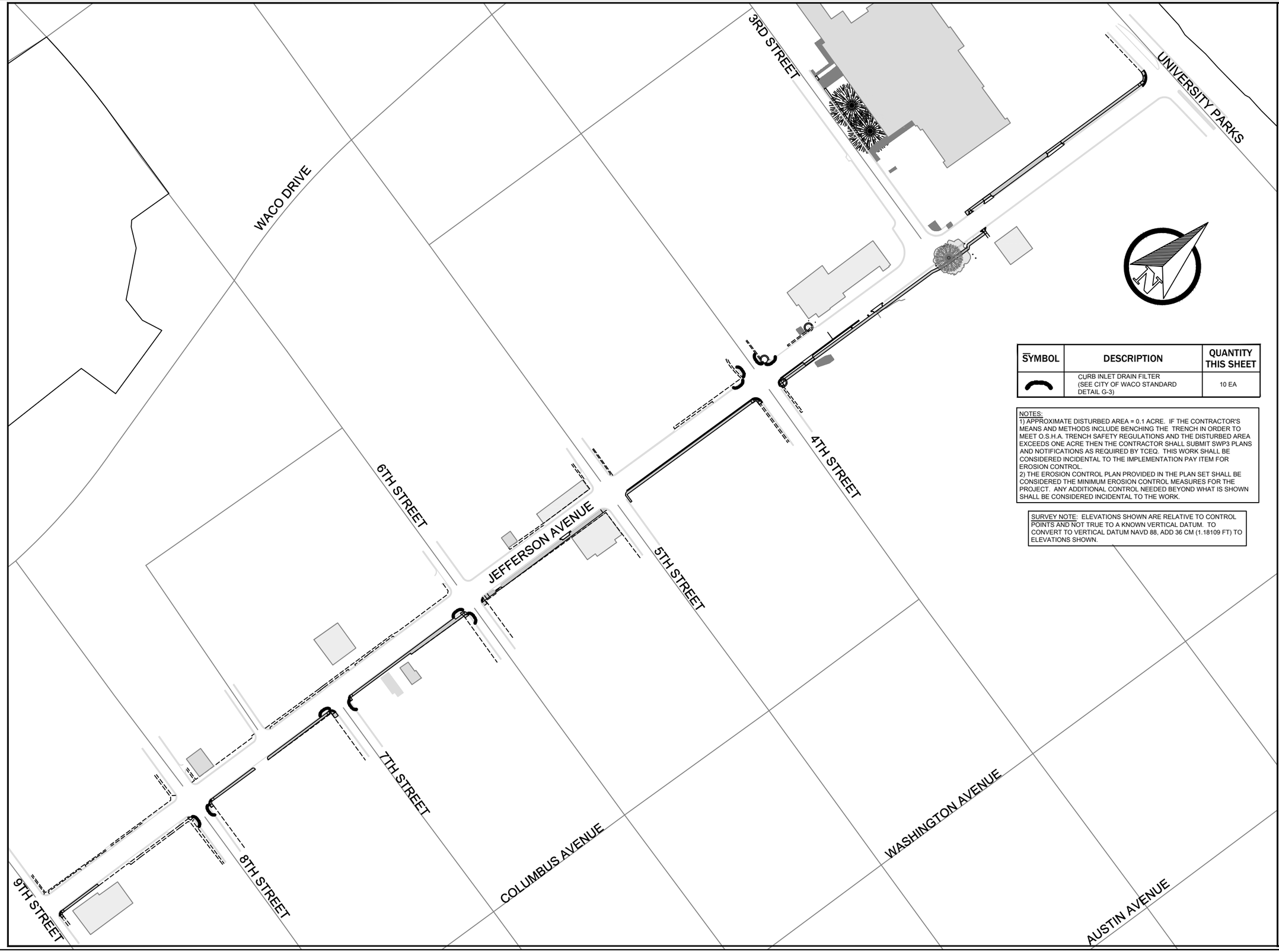
90% PRELIMINARY EXISTING PLANS

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No. ST0007	Sheet No. C002
Date JULY 2019	
Scale	



SYMBOL	DESCRIPTION	QUANTITY THIS SHEET
	CURB INLET DRAIN FILTER (SEE CITY OF WACO STANDARD DETAIL G-3)	10 EA

NOTES:
1) APPROXIMATE DISTURBED AREA = 0.1 ACRE. IF THE CONTRACTOR'S MEANS AND METHODS INCLUDE BENCHING THE TRENCH IN ORDER TO MEET O.S.H.A. TRENCH SAFETY REGULATIONS AND THE DISTURBED AREA EXCEEDS ONE ACRE THEN THE CONTRACTOR SHALL SUBMIT SWP3 PLANS AND NOTIFICATIONS AS REQUIRED BY TCEQ. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE IMPLEMENTATION PAY ITEM FOR EROSION CONTROL.
2) THE EROSION CONTROL PLAN PROVIDED IN THE PLAN SET SHALL BE CONSIDERED THE MINIMUM EROSION CONTROL MEASURES FOR THE PROJECT. ANY ADDITIONAL CONTROL NEEDED BEYOND WHAT IS SHOWN SHALL BE CONSIDERED INCIDENTAL TO THE WORK.

SURVEY NOTE: ELEVATIONS SHOWN ARE RELATIVE TO CONTROL POINTS AND NOT TRUE TO A KNOWN VERTICAL DATUM. TO CONVERT TO VERTICAL DATUM NAVD 88, ADD 36 CM (1.18109 FT) TO ELEVATIONS SHOWN.

PUBLIC WORKS

ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

EROSION CONTROL

NO.	REVISION	DATE

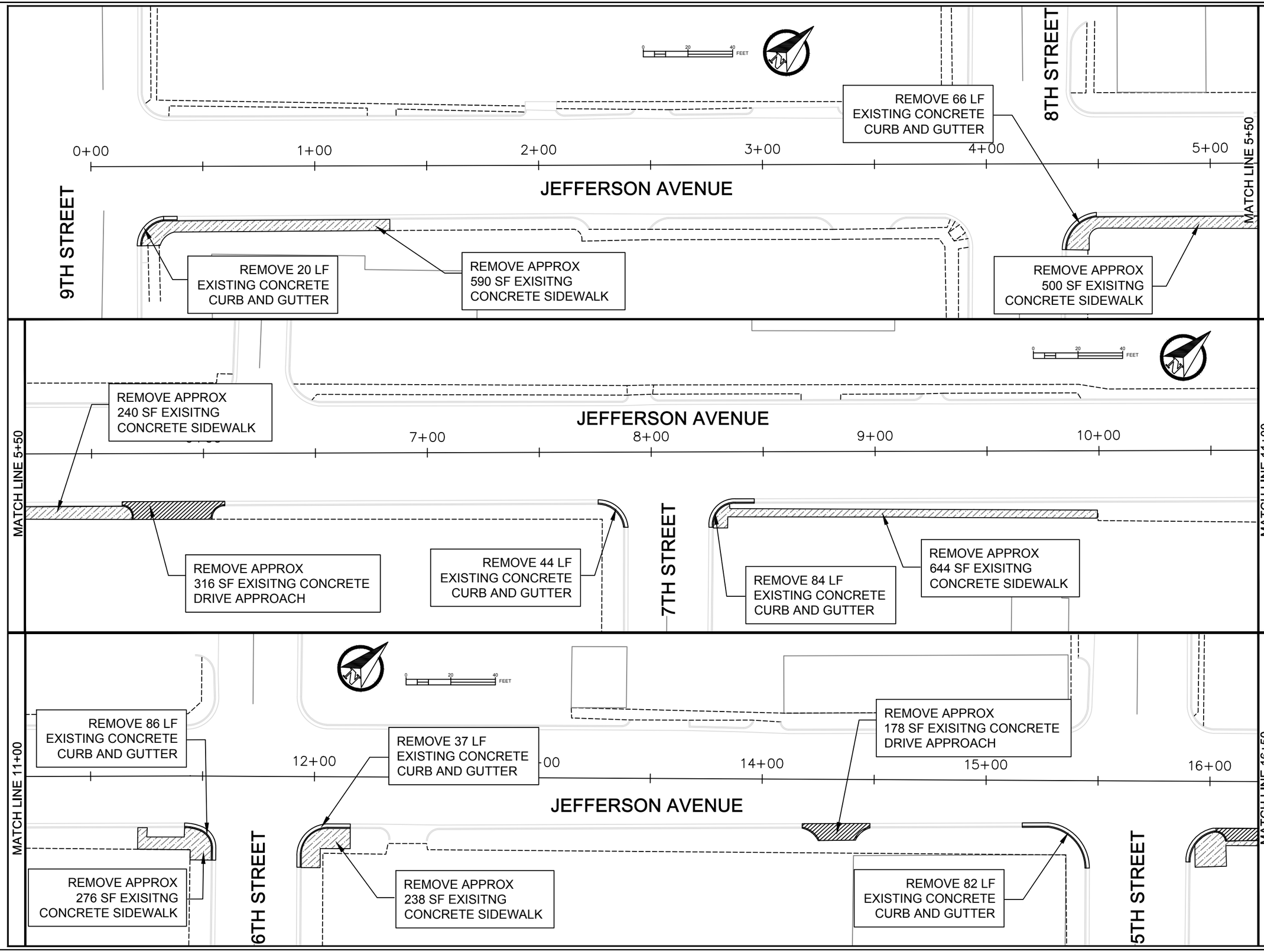
90% PRELIMINARY EXISTING PLANS

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No. ST0007	Sheet No. C100
Date JULY 2019	
Scale	



PUBLIC WORKS

ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

DEMOLITION PLAN SHEET 1

NO.	REVISION	DATE

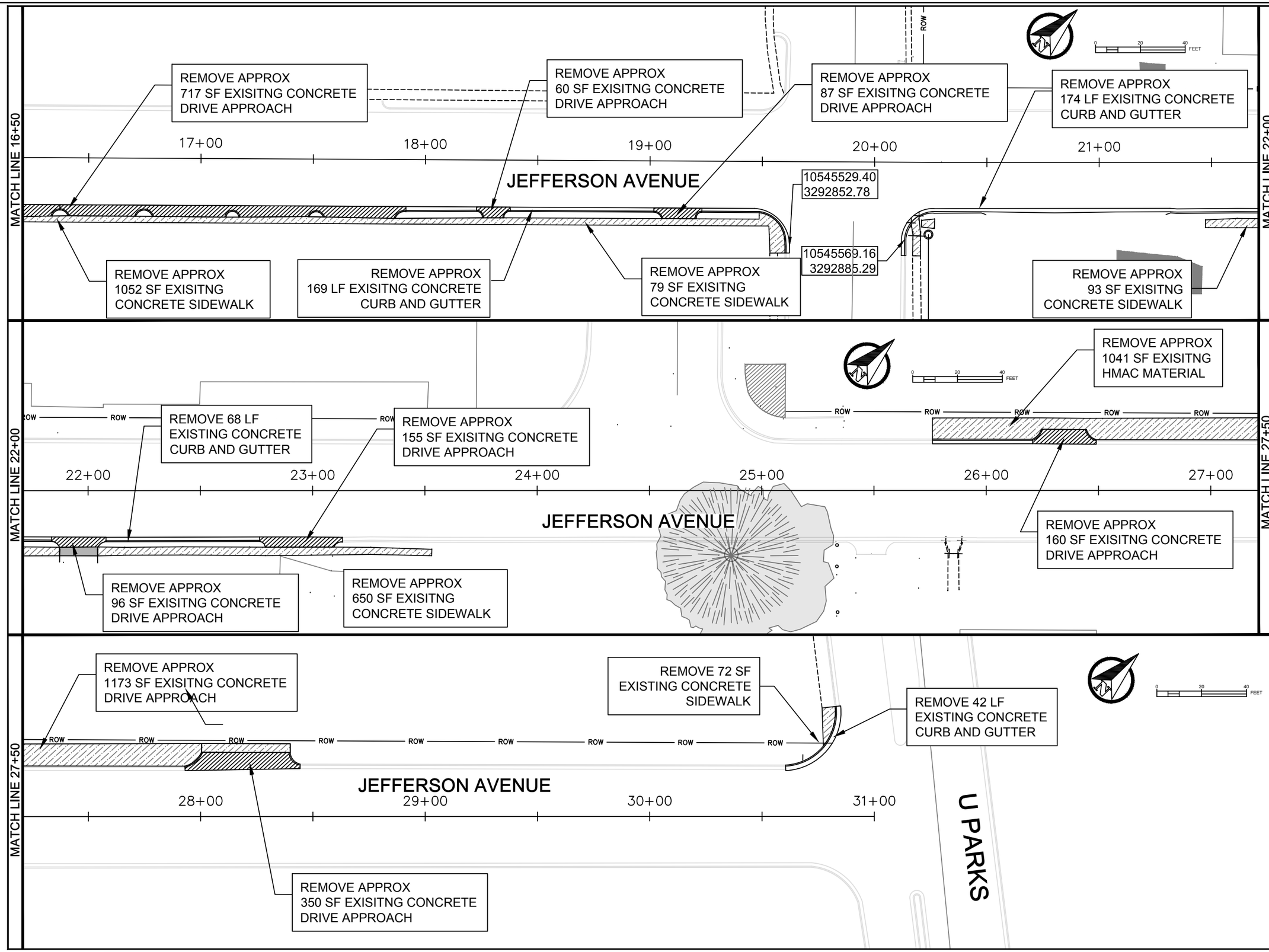
90% PRELIMINARY EXISTING PLANS

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No. ST0007	Sheet No. C101
Date JULY 2019	
Scale	



PUBLIC WORKS

ENGINEERING
DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

DEMOLITION PLAN SHEET 2

NO.	REVISION	DATE

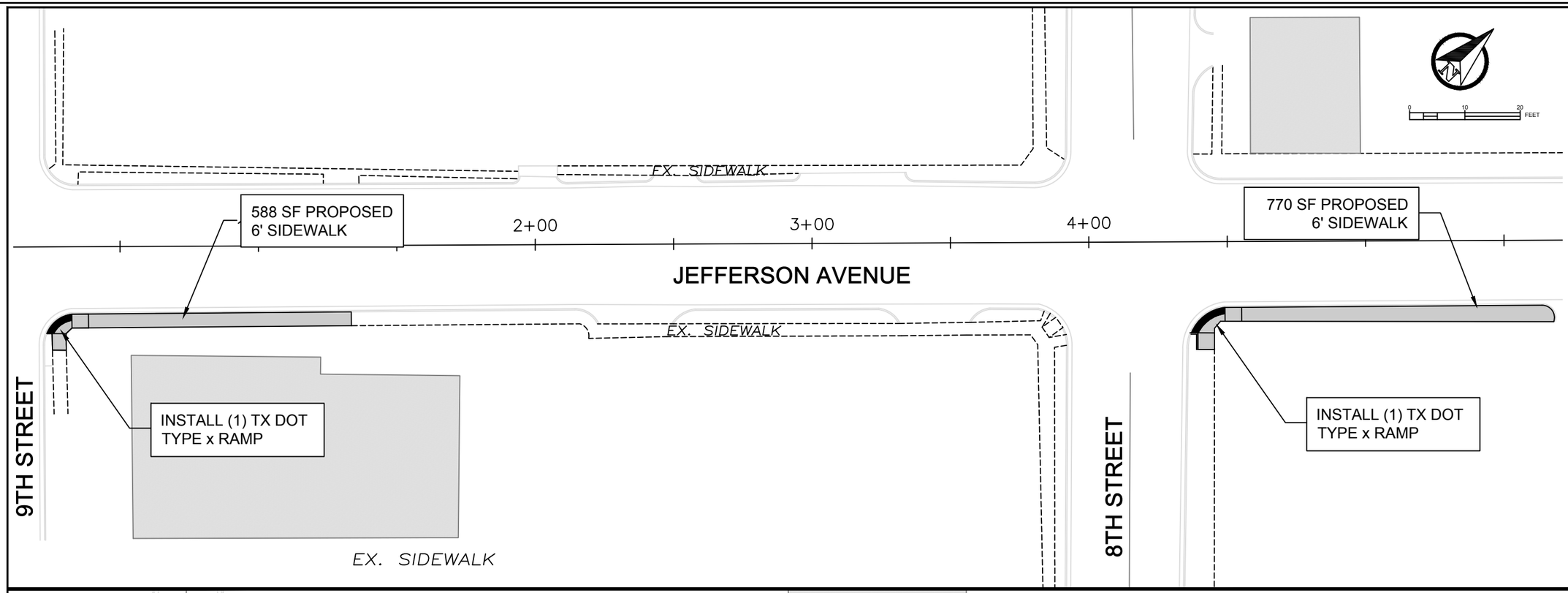
90% PRELIMINARY
EXISTING PLANS

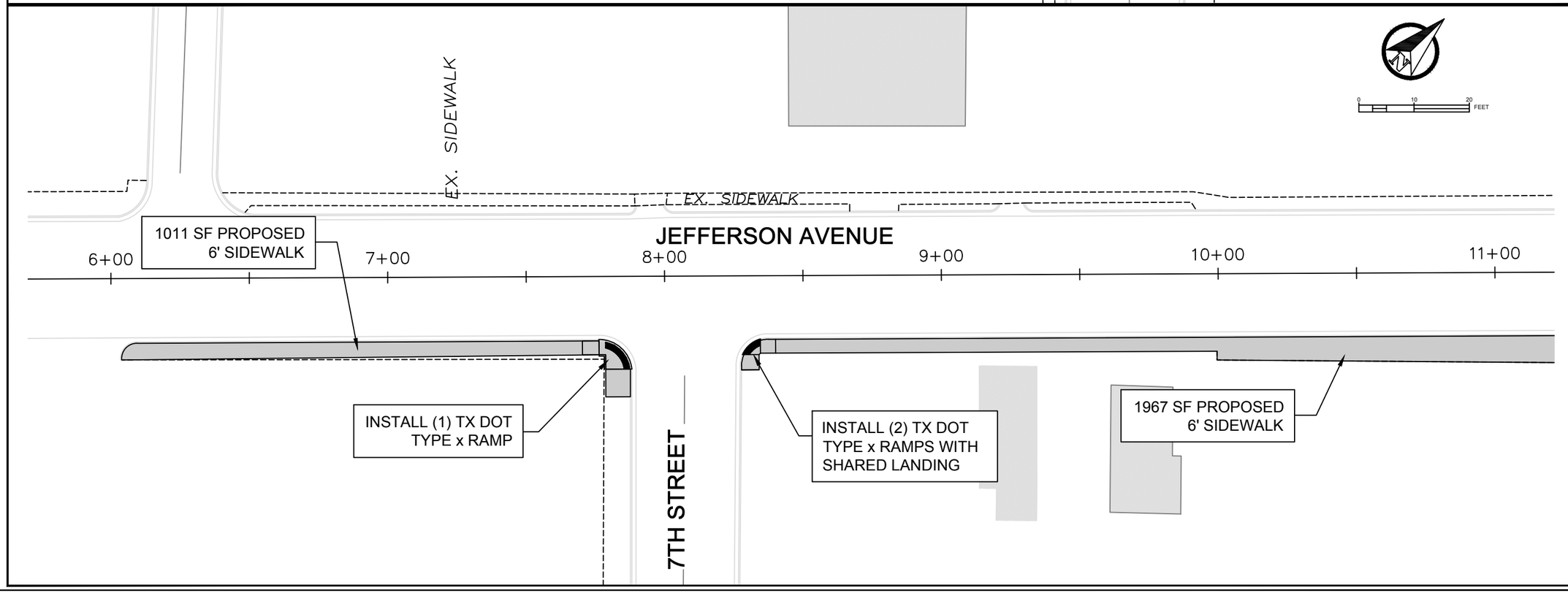
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No.	Sheet No.
ST0007	C102
Date: JULY 2019	
Scale:	





PUBLIC WORKS

ENGINEERING
DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

SIDEWALK PLAN SHEET 1

NO.	REVISION	DATE

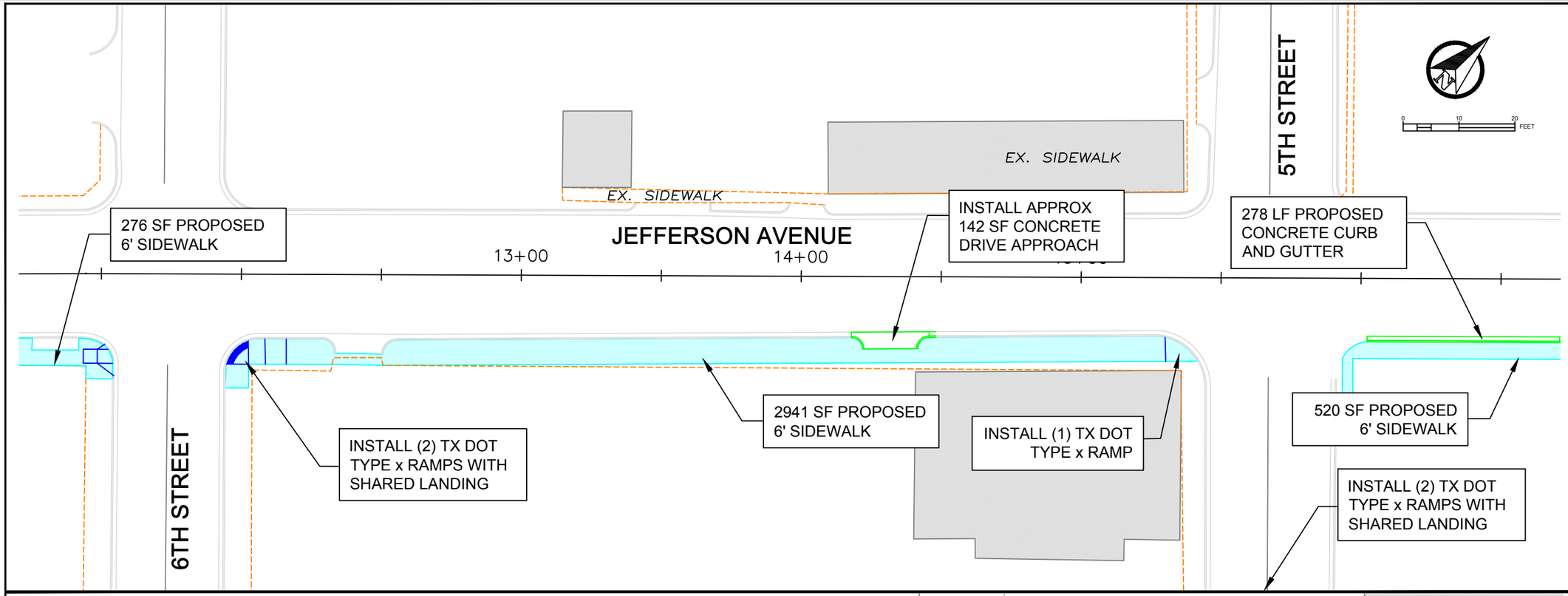
90% PRELIMINARY
EXISTING PLANS

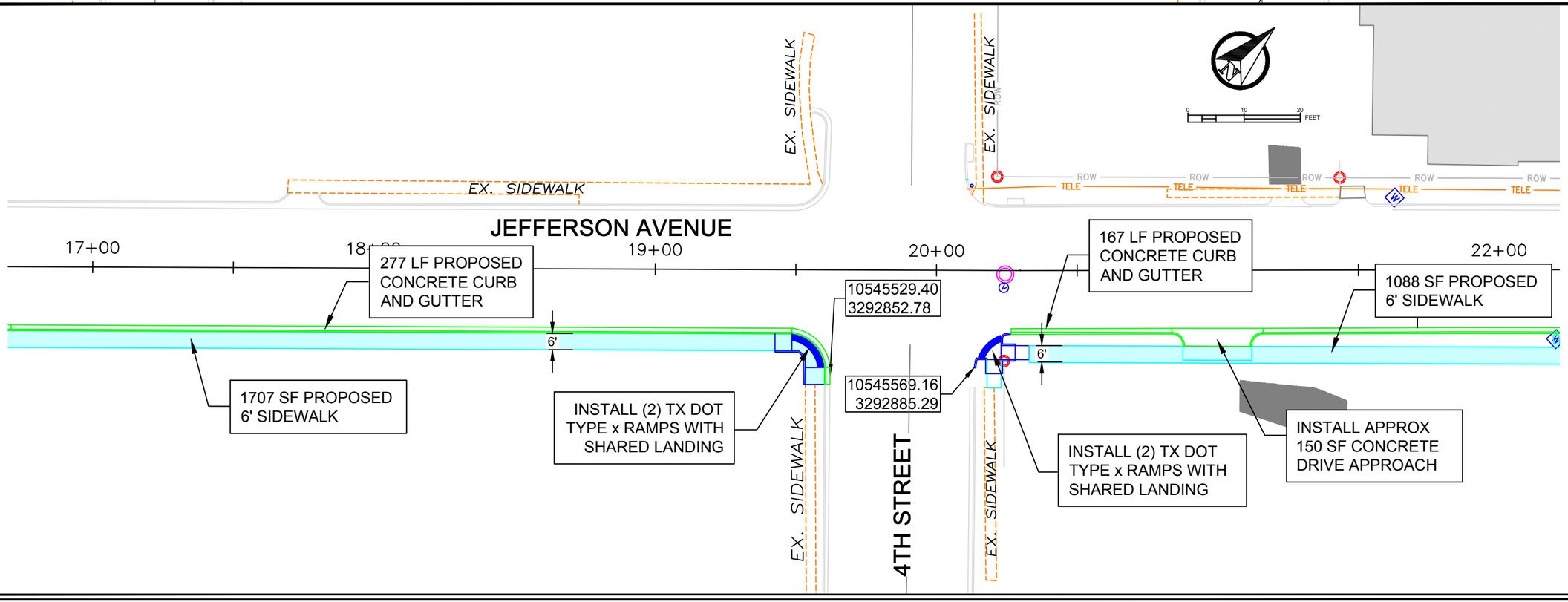
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No.	Sheet No.
ST0007	C200
Date: JULY 2019	
Scale:	





PUBLIC WORKS

ENGINEERING
DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

SIDEWALK PLAN SHEET 2

NO.	REVISION	DATE

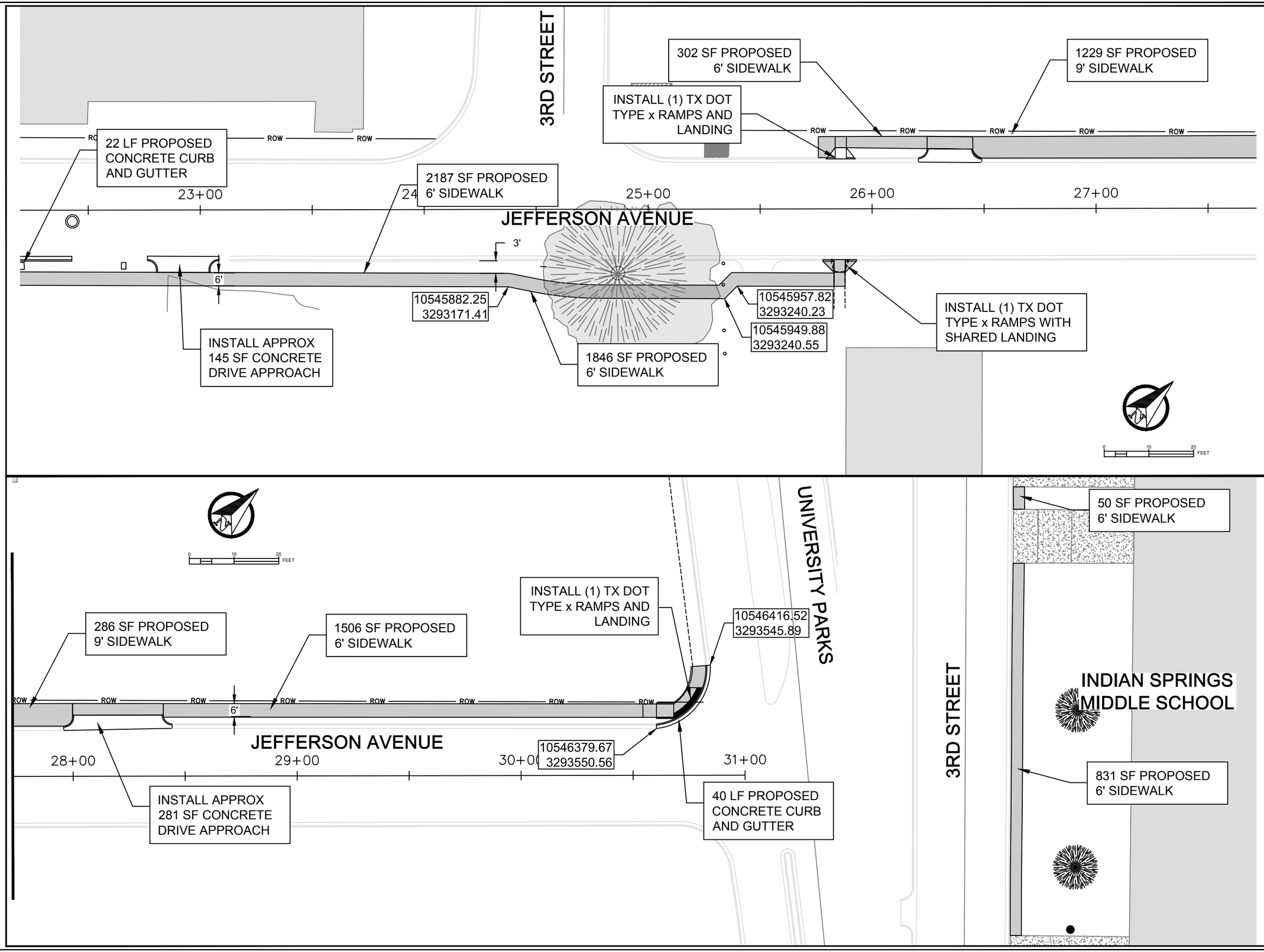
90% PRELIMINARY EXISTING PLANS

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No.	Sheet No.
ST0007	C201
Date: JULY 2019	
Scale:	



PUBLIC WORKS

ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

SIDEWALK PLAN SHEET 3

NO.	REVISION	DATE

90% PRELIMINARY EXISTING PLANS

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER STEVE MARTIN *IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.*

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.

Checked: J.R. Project Mgr.: K.L.P.

File Name: _____

Project No.	Sheet No.
ST0007	C202
Date: JULY 2019	
Scale:	

SW-1

SIDEWALKS - GENERAL

GENERAL

1. ALL CONCRETE AND REINFORCEMENT MATERIALS AND PLACEMENT MUST COMPLY WITH SECTION 5.1 OF THE CITY OF WACO STANDARD SPECIFICATIONS FOR CONSTRUCTION AND WITH ALL NOTES ON SHEET G-10 OF THE CITY OF WACO MANUAL OF STANDARD DETAILS.

2. PROPOSED SIDEWALKS MUST COMPLY WITH THE CITY OF WACO CODES AND ORDINANCES, CHAPTER 22, ARTICLE III, SIDEWALKS.

3. TX-DOT STANDARDS PED-12A, SHEETS 1, 2, AND 3, INCLUDING NOTES, SHALL BE INCORPORATED AS PART OF THE CITY OF WACO STANDARD DETAILS. IN CASE OF CONFLICT, THE WACO DETAILS SHALL GOVERN. TRUNCATED BRICK PAVERS ARE REQUIRED FOR DETECTABLE WARNING STRIPS

4. TX-DOT PED-12A, SHEET 1 SHOWS SOME TYPICAL RAMPS, ILLUSTRATING REQUIRED SLOPES AND DIMENSIONS AS THEY MIGHT BE APPLIED IN A FEW PARTICULAR CIRCUMSTANCES. IF ADEQUATE RIGHT OF WAY IS NOT AVAILABLE FOR THESE TYPICAL RAMPS, ALTERNATE DESIGNS MUST BE CREATED TO FIT WITHIN AVAILABLE RIGHT OF WAY AND STILL SATISFY THE GENERAL SLOPE AND DIMENSIONAL REQUIREMENTS ILLUSTRATED.

CONFIGURATION

5. SIDEWALKS IN C-4 ZONING ARE INTENDED TO BE PEDESTRIAN MEDALLION PATHS. SEE SW-10 THROUGH SW-17.

6. SIDEWALKS AND LANDINGS SHALL BE FORMED AND PLACED AT A MAXIMUM CROSS-SLOPE OF 1.5%. CROSS-SLOPES EXCEEDING 2% WILL NOT BE ACCEPTED.

7. NEW SIDEWALK SHALL BE CONNECTED TO ALL EXISTING ADJACENT WALKS AND STEPS.

8. LANDINGS SHALL BE 5' X 5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION, GRADED FOR POSITIVE DRAINAGE TO STREET.

9. IF AN EXISTING GUTTER AT THE ENTRANCE TO A NEW RAMP OR LANDING HAS A CROSS SLOPE GREATER THAN 2%, THE EXISTING GUTTER MUST BE REMOVED AND REPLACED WITH GUTTER TIED TO THE 2% CROSS SLOPE ON ONE SIDE AN THE EXISTING STREET ON THE OTHER. THE SLOPE OF THE NEW GUTTER TOWARD THE STREET MAY NOT EXCEED 1:12.

10. SLOPE OF RAMPS SHALL NOT EXCEED 1:12 UNLESS OTHERWISE NOTED.

11. MINIMUM RAMP WIDTH IS 3' EXCLUSIVE OF FLARED SIDES.

CONSTRUCTION

12. PLACE CONSTRUCTION JOINTS WITH EXPANSION MATERIAL AT MINIMUM 50' INTERVALS. EXPANSION JOINTS SHALL EXTEND THROUGH ANY ADJACENT RETAINING WALL OR TRANSITION CURB.

13. PLACE TOOLED, CRACK CONTROL (DUMMY) JOINTS AT A SPACING EQUAL TO THE WIDTH OF THE WALK.

14. CHANGES IN LEVEL GREATER THAN 1/4 INCH ARE NOT PERMITTED ALONG SIDEWALKS.

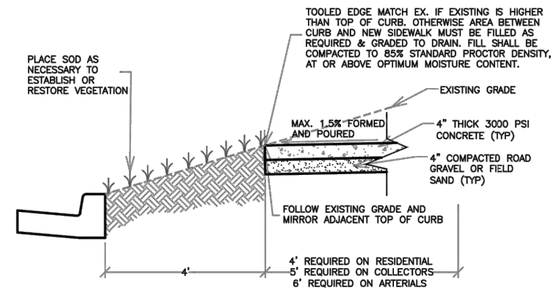
15. WHERE SIDEWALK OR WHEELCHAIR RAMP TOUCHES BACK OF CURB, INLET, POLE OR ANY STRUCTURE, PLACE 1/2" EXPANSION JOINT MATERIAL AND #4 DOWEL PINS @ 24" C-C.

16. WORKMANSHIP MUST BE SUCH AS TO PRODUCE A RAMP WITH A NEAT, UNIFORM APPEARANCE. POOR WORKMANSHIP OR APPEARANCE SHALL BE GROUNDS FOR REMOVAL OR REJECTION OF RAMP AREAS.

WACO ENGINEERING SERVICES

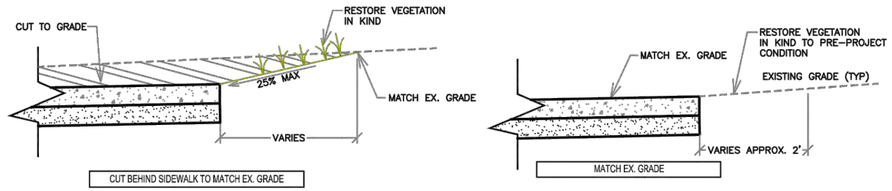
REVISIONS				BOOK PAGE NUMBER
NO.	COMMENTS	BY	DATE	0000
04	REMOVE SEAL	DG	09/03/2014	DATE
03	ADD NOTES #10 & 11.	DG	05/02/2014	09/03/2014
02	REVISED ALL NOTES.	DG	02/01/2013	
01	REVISE NOTE 2 - GRADE 40 TO GRADE 60.	DG	12/15/2011	

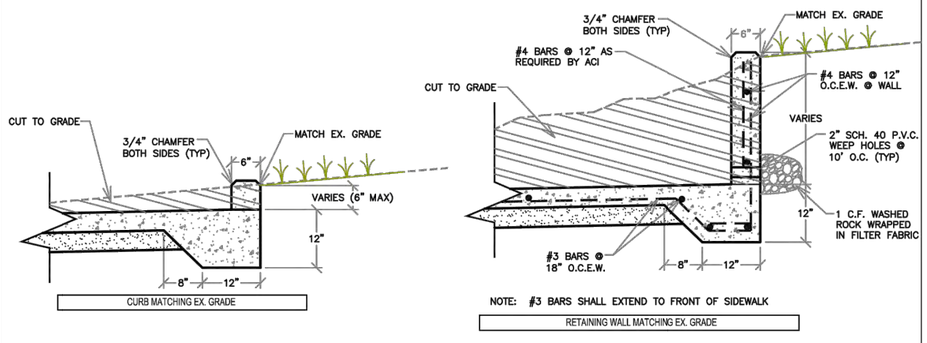
SW-2



NOTE:
IF EXISTING GRADE IS LOWER THAN NEW BACK OF SIDEWALK, FILL SHALL BE PLACED WITH MAXIMUM SLOPE OF 25% DOWN TO EXISTING GRADE. FILL SHALL BE COMPACTED TO 85% STANDARD PROCTOR DENSITY AT OR ABOVE OPTIMUM MOISTURE CONTENT.

TYPICAL DETAIL OF FRONT OF SIDEWALKS





TYPICAL DETAILS OF BACK OF SIDEWALKS

WACO ENGINEERING SERVICES

REVISIONS				BOOK PAGE NUMBER
NO.	COMMENTS	BY	DATE	0000
				DATE
				09/03/2014
01	REMOVE SEAL	DG	09/03/2014	

PUBLIC WORKS
ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE
SIDEWALK IMPROVEMENTS

SIDEWALKS GENERAL NOTES
& TYPICAL DETAILS OF BACK
OF SIDEWALKS

NO.	REVISION	DATE

60% PRELIMINARY
EXISTING PLANS

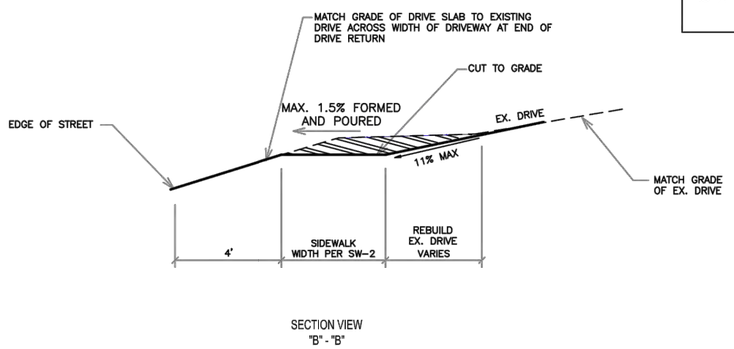
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

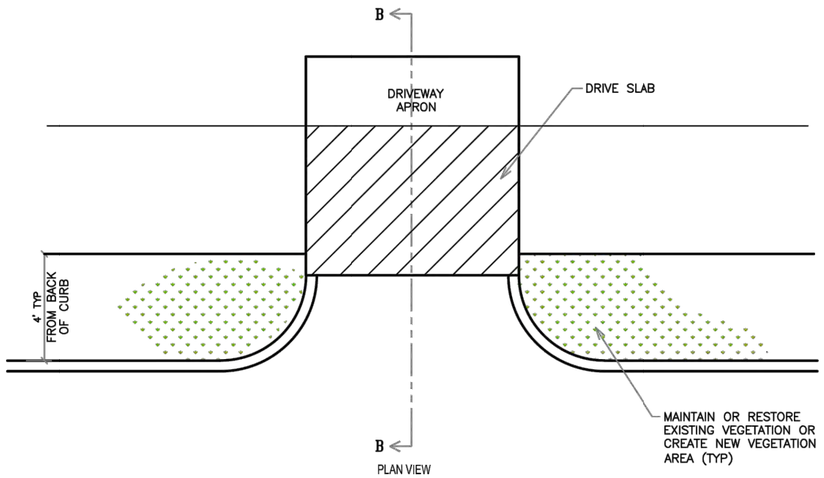
Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No. ST0007
Date JULY 2019
Scale N.T.S.
Sheet No. C300

SW-3



SECTION VIEW
"B" - "B"



PLAN VIEW

TYPICAL SIDEWALK TREATMENT AT NEW DRIVEWAYS

SCALE
NTS

ENGINEERING SERVICES

WACO

REVISIONS				BOOK PAGE NUMBER
NO.	COMMENTS	BY	DATE	0000
				DATE
03	REMOVE SEAL	DG	09/03/2014	09/03/2014
02	SLOPE FOR REBUILDING DRIVES FROM 15% MAX. TO 11% MAX.	DG	02/01/2013	
01	UPDATED	DG/CA	07/03/2009	

ST-1

STREETS - GENERAL NOTES

GENERAL

1. ALL CONCRETE AND REINFORCEMENT MATERIALS AND PLACEMENT MUST COMPLY WITH SECTION 5.1 OF THE CITY OF WACO STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. PLEASE REFER TO CITY OF WACO MANUAL OF STANDARD DETAILS G-10 FOR GENERAL CONCRETE AND REINFORCEMENT NOTES.

STREETS

3. SAWED JOINTS MUST BE SAWED AS SOON AS CONCRETE CAN SUPPORT THE WEIGHT OF THE SAW.
4. A BURLAP DRAG FINISH IS SPECIFIED FOR CONCRETE PAVEMENT.
5. AT THE CONTRACTOR'S OPTION, EVERY OTHER LONGITUDINAL CONSTRUCTION JOINT MAY BE DELETED AND A SAWED JOINT OF THE SAME DETAIL AS THE TRANSVERSE JOINT USED IN IT'S PLACE.
6. TRANSVERSE CONSTRUCTION JOINTS SHALL BE OF THE SAME DETAIL AS LONGITUDINAL CONSTRUCTION JOINTS AND SHALL BE LOCATED AT A NORMAL JOINT LOCATION.

CURB AND GUTTER

7. CURB AND GUTTER FORMS NEED TO BE "TAPPED" TO MINIMIZE VOIDS. WITHIN 24 HOURS OF REMOVAL OF THE FORMS, ANY VOIDS SHALL BE PATCHED WITH PORTLAND CEMENT MORTAR.
8. CONSTRUCTION JOINTS WITH EXPANSION MATERIAL SHALL BE PLACED AT 50' INTERVALS, AND AT THE BEGINNING AND END OF ALL CURB RETURNS AND DRIVE APPROACHES.
9. TOOLED, CRACK CONTROL (DUMMY) JOINTS WILL BE CUT ON 10' SPACING. JOINTS WILL BE CUT AT LEAST HALFWAY THROUGH THE FACE, TOP, AND GUTTER.
10. CURB AND GUTTER SHALL CURE A MINIMUM OF 7 DAYS PRIOR TO INSTALLATION OF BASE COURSE, OR WITH THE PRIOR APPROVAL OF THE CITY ENGINEER, SHALL REACH A COMPRESSIVE STRENGTH OF 3000 PSI AS TESTED BY CYLINDER BREAK.
11. CURB AND GUTTER SHALL BE PLACED USING A MULE AND GOOSENECK. OR WITH THE PRIOR APPROVAL OF THE CITY ENGINEER, OTHER APPROVED EQUIVALENT MEANS TO PRODUCE A UNIFORM PRODUCT.

ENGINEERING SERVICES

WACO

REVISIONS				BOOK PAGE NUMBER
NO.	COMMENTS	BY	DATE	0000
				DATE
03	REMOVE SEAL	DG	09/03/2014	09/03/2014
02	REVISED ALL NOTES	DG	02/01/2013	
01	UPDATED	DG	10/01/2010	

PUBLIC WORKS

ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

TYPICAL SIDEWALK DETAILS AT DRIVEWAYS & STREETS GENERAL NOTES

NO.	REVISION	DATE

60% PRELIMINARY EXISTING PLANS

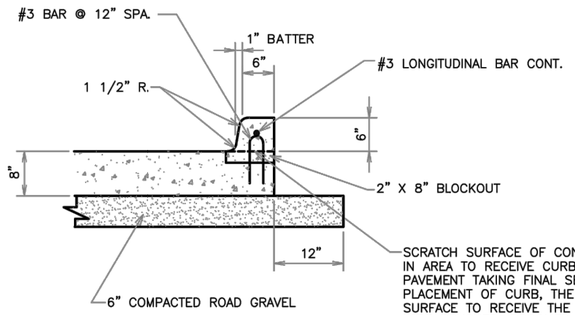
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No. ST0007
Date JULY 2019
Scale N.T.S.
Sheet No. C301

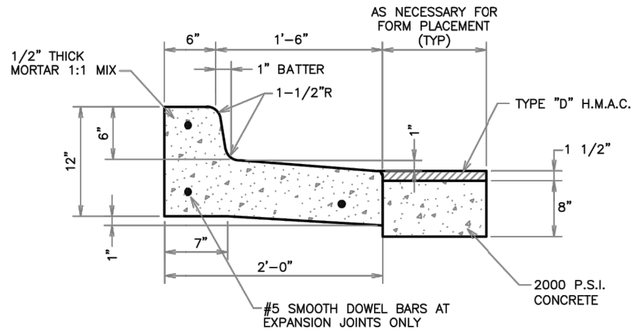
ST-4



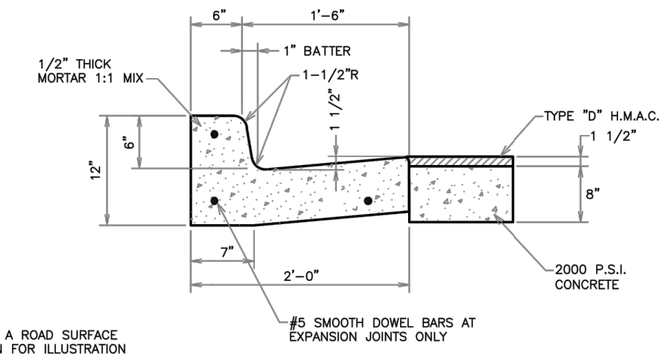
CURB MAY BE POURED MONOLITHICALLY WITH STANDUP PAVEMENT. IF SO THE #3 REBAR MAY BE DELETED.

CURB DETAILS FOR CONCRETE STREET

ST-8



INDIRECT FLOW



NOTE:
CLASS A ROAD SURFACE SHOWN FOR ILLUSTRATION PURPOSES ONLY.

DIRECT FLOW

STANDARD CURB & GUTTER

ENGINEERING SERVICES

WACO

REVISIONS				BOOK PAGE NUMBER
NO.	COMMENTS	BY	DATE	0000
				DATE
02	REMOVE SEAL	DG	09/03/2014	09/03/2014
01	UPDATED	DG	10/01/2010	

ENGINEERING SERVICES

WACO

REVISIONS				BOOK PAGE NUMBER
NO.	COMMENTS	BY	DATE	0000
				DATE
02	REMOVE SEAL	DG	09/03/2014	09/03/2014
01	UPDATED	DG	10/01/2010	

PUBLIC WORKS

ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE SIDEWALK IMPROVEMENTS

CURB DETAILS FOR CONCRETE STREET & STANDARD CURB & GUTTER

NO.	REVISION	DATE

60% PRELIMINARY EXISTING PLANS

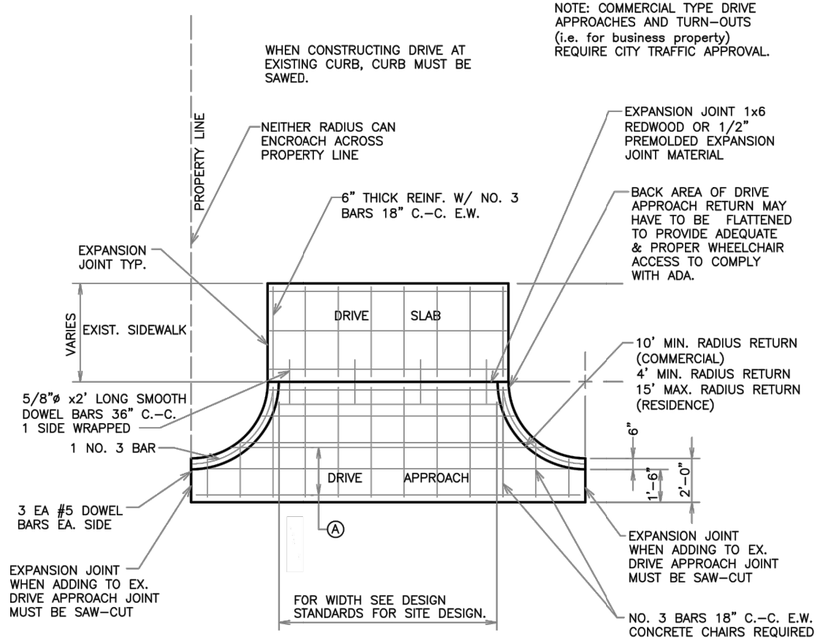
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No. ST0007
Date JULY 2019
Scale N.T.S.
Sheet No. C302

ST-10



STANDARD DRIVE APPROACH

WACO

ENGINEERING SERVICES

REVISIONS				BOOK PAGE NUMBER
NO.	COMMENTS	BY	DATE	0000
03	REMOVE SEAL	DG	09/03/2014	DATE
02	UPDATED	DG	01/05/2012	09/03/2014
01	UPDATED	DG	10/01/2010	

PUBLIC WORKS

ENGINEERING DIVISION

WACO TA - INDIAN SPRINGS MIDDLE
SIDEWALK IMPROVEMENTS
STANDARD DRIVE APPROACH

NO.	REVISION	DATE

60% PRELIMINARY EXISTING PLANS

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF PROFESSIONAL ENGINEER
STEVE MARTIN
IT IS NOT TO BE USED FOR CONSTRUCTION, BUYING, OR PERMIT PURPOSES.

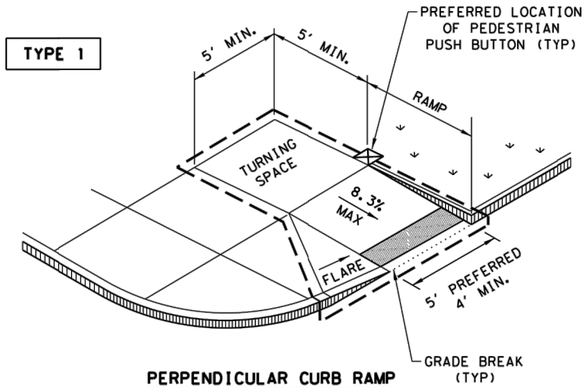
NAME _____ DATE _____

Design: B.A.S. Approved: K.L.P.
Checked: J.R. Project Mgr.: K.L.P.
File Name: _____

Project No.	Sheet No.
ST0007	C303
Date: JULY 2019	
Scale: N.T.S.	

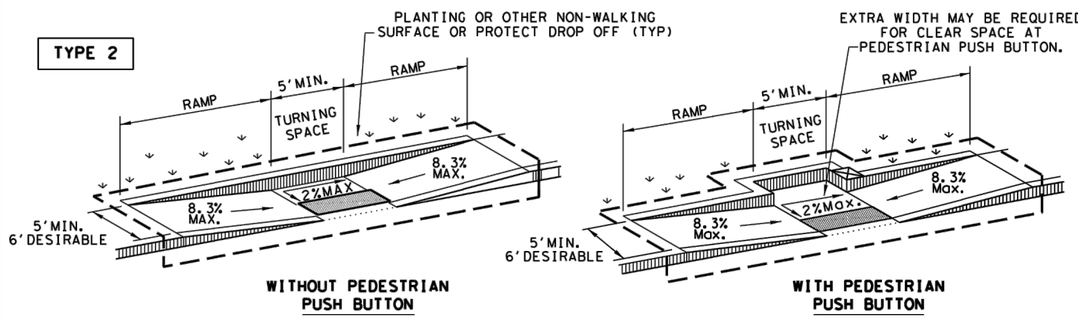
DATE:
FILE:

TYPE 1



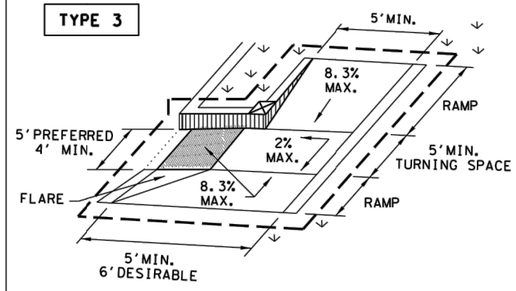
PERPENDICULAR CURB RAMP

TYPE 2

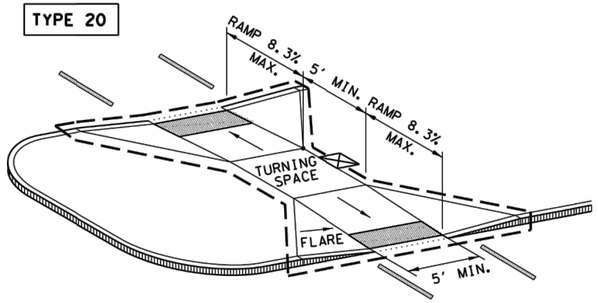


PARALLEL CURB RAMP

TYPE 3

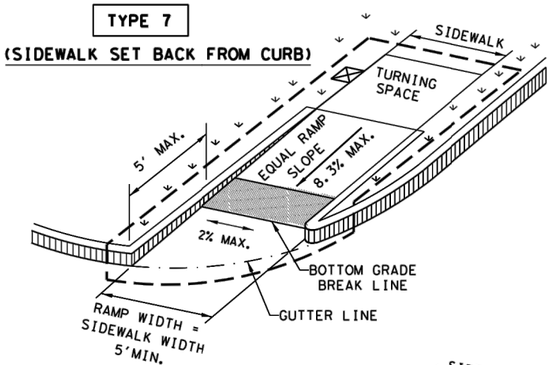


TYPE 20

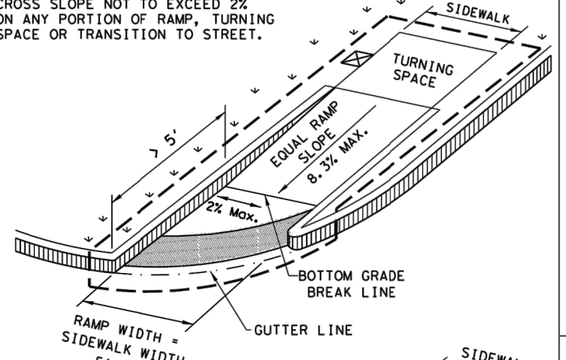


CURB RAMPS AT MEDIAN ISLANDS

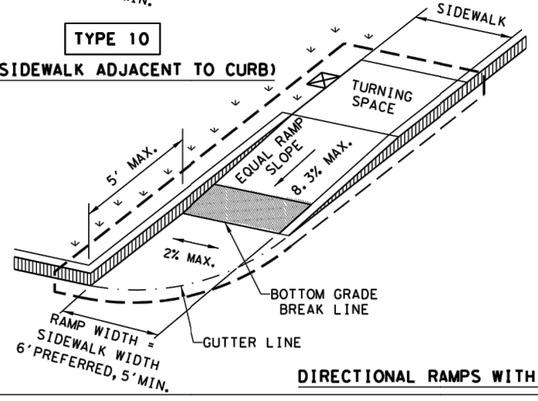
TYPE 7
(SIDEWALK SET BACK FROM CURB)



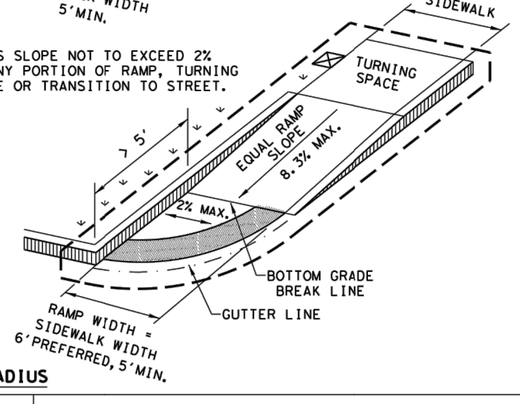
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



TYPE 10
(SIDEWALK ADJACENT TO CURB)

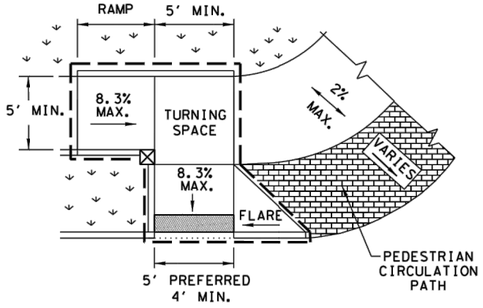


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



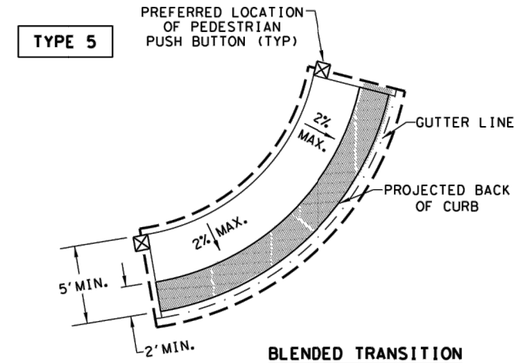
DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 6



COMBINATION CURB RAMPS

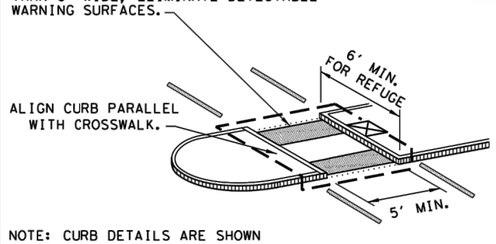
TYPE 5



BLENDED TRANSITION
(FLUSH LANDING)

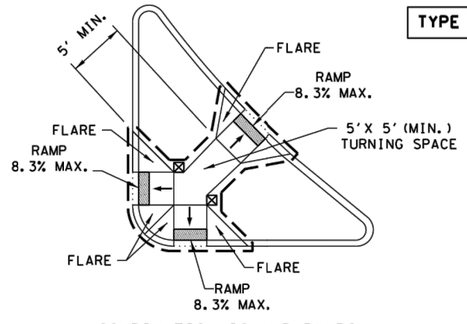
TYPE 21

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.

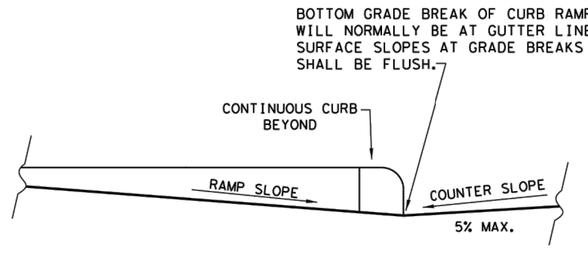


NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS



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				
REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.
				C400

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

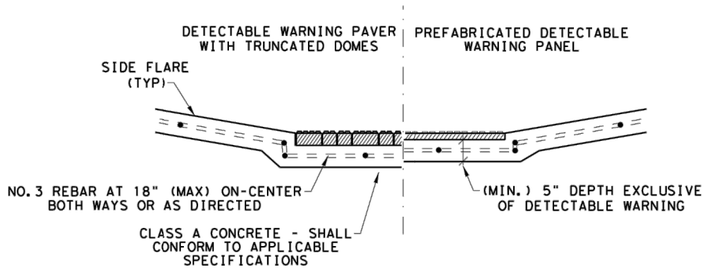
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material 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.

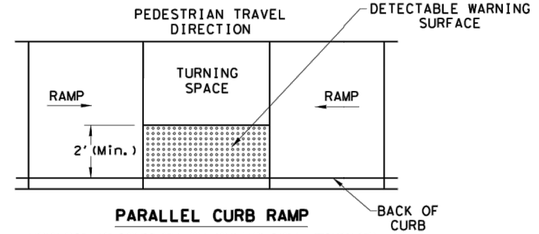
SIDEWALKS

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.

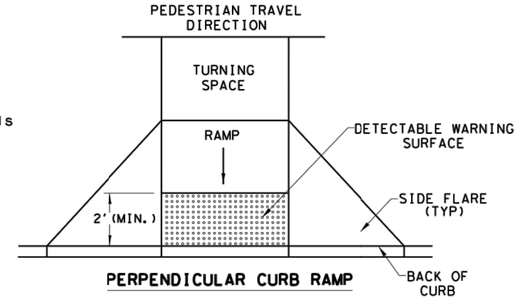


SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

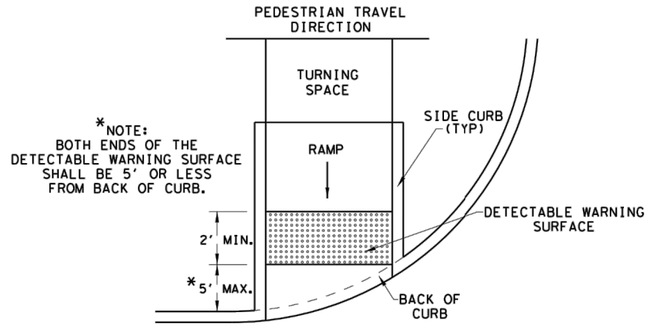
DETECTABLE WARNING SURFACE DETAILS



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

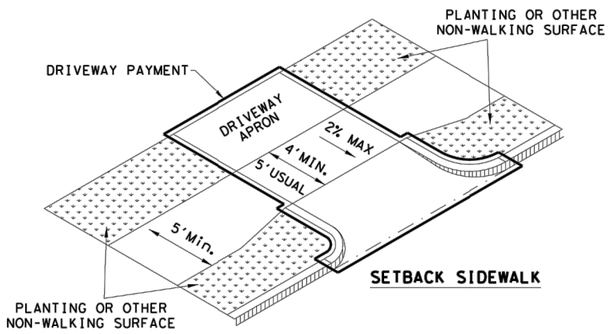
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

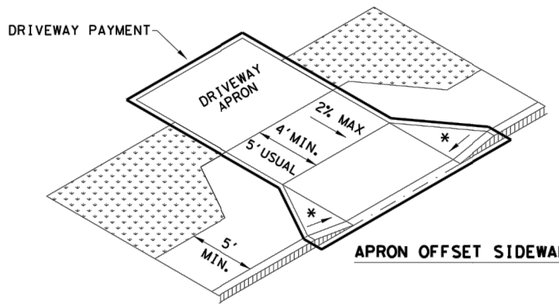
FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JC	
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.	
				C401	

DATE:
FILE:

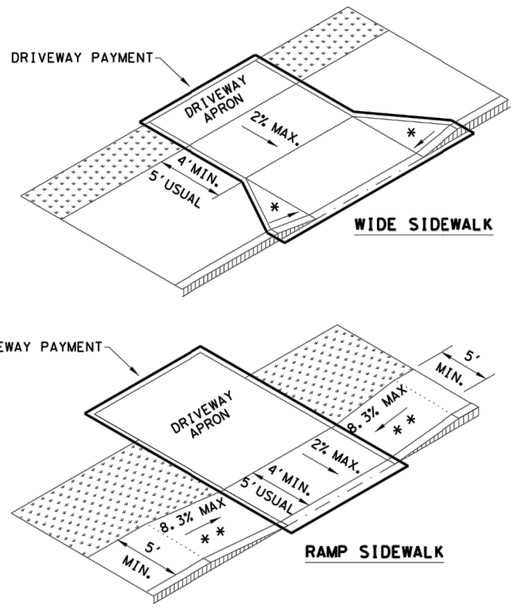
SIDEWALK TREATMENT AT DRIVEWAYS



SETBACK SIDEWALK



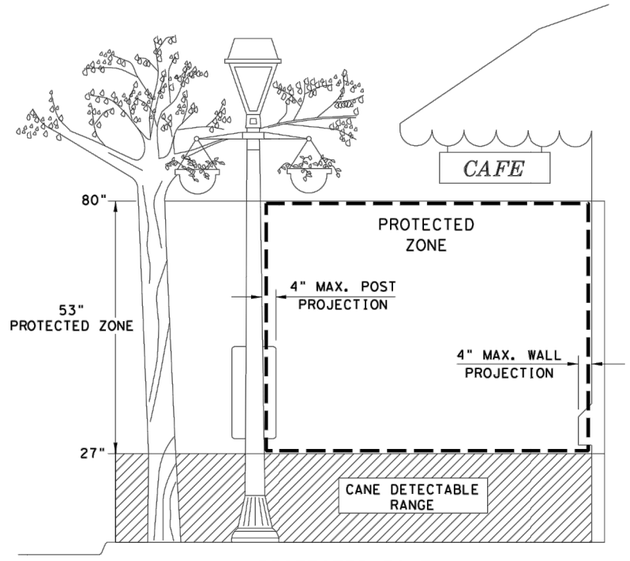
APRON OFFSET SIDEWALK



NOTES:

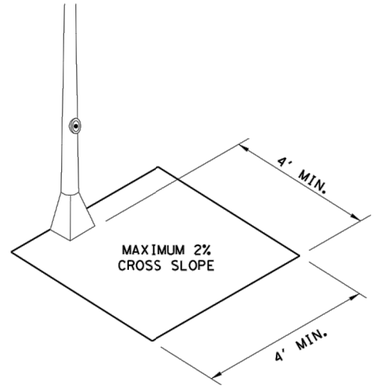
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

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

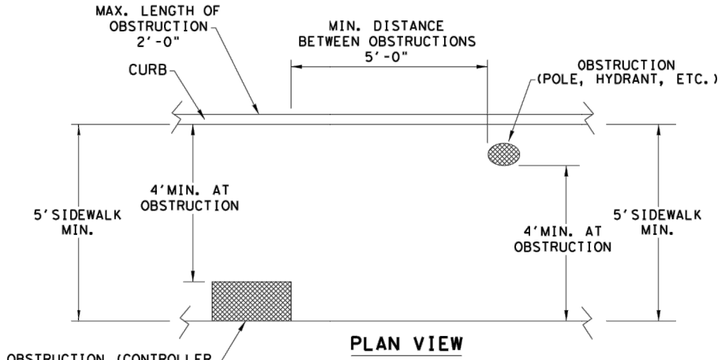


PROTECTED ZONE

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



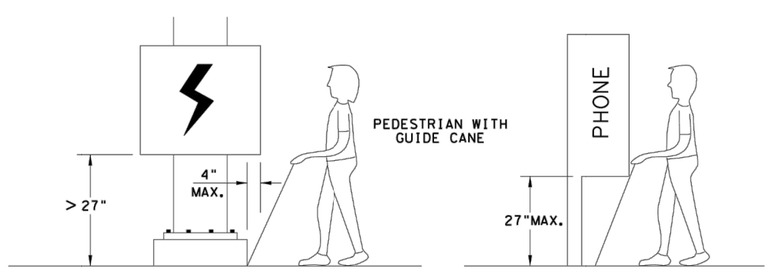
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



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.



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

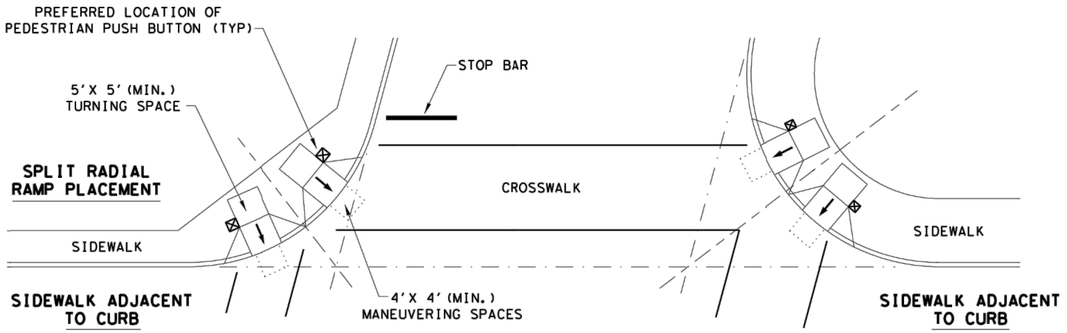
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JC
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS: REVISED 08,2005; REVISED 06,2012; REVISED 01,2018	DIST	COUNTY		SHEET NO. C402

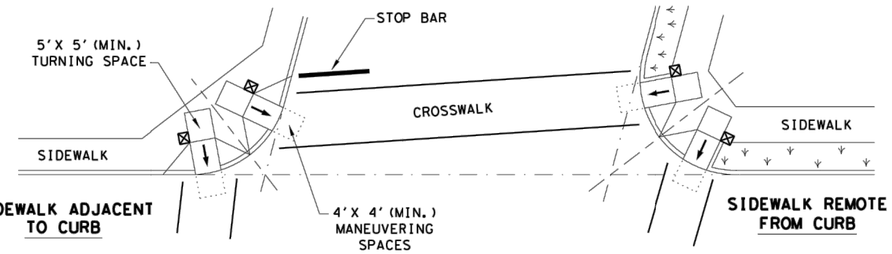
DATE:
FILE:

TYPICAL CROSSING LAYOUTS

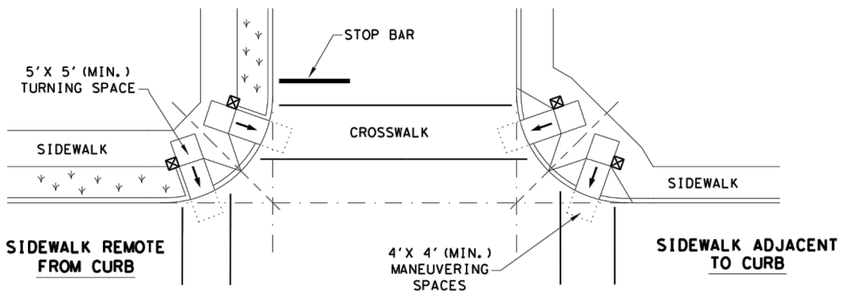
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



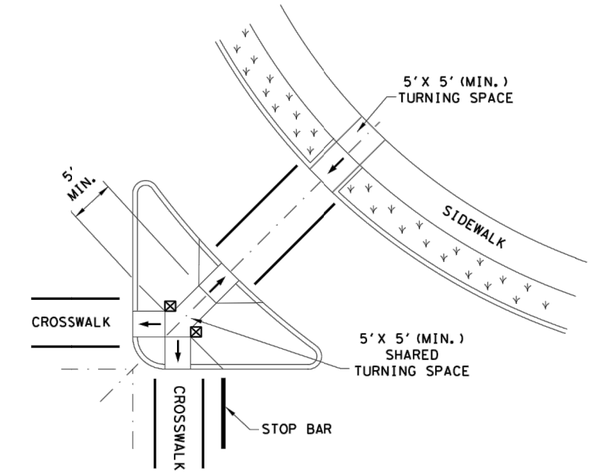
SKEWED INTERSECTION WITH "LARGE" RADIUS



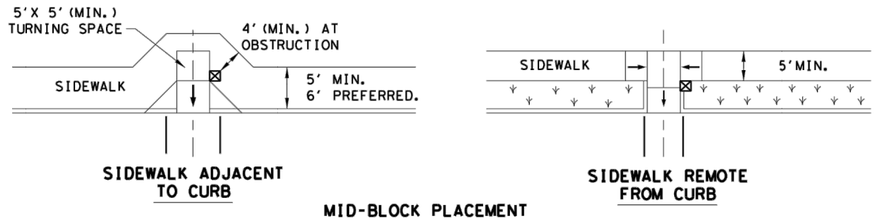
SKEWED INTERSECTION WITH "SMALL" RADIUS



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.

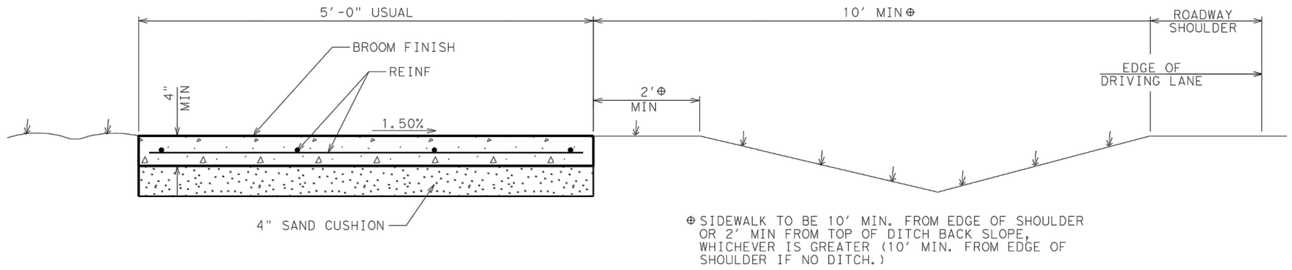
Texas Department of Transportation

Design Division Standard

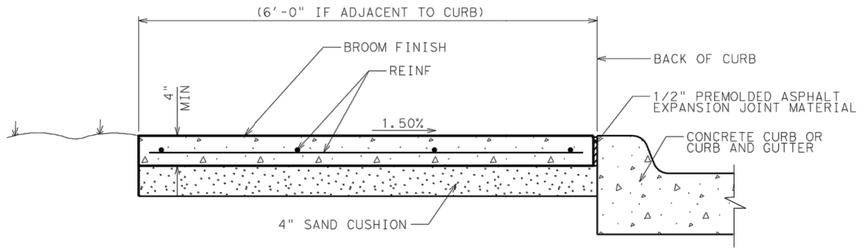
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

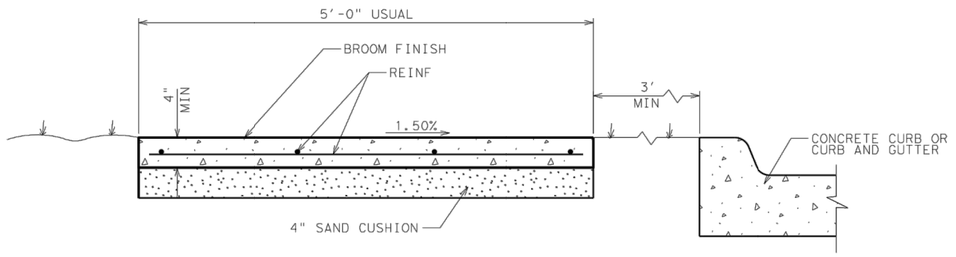
FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JC	
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
REVISED 08, 2005 REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY		SHEET NO.	
				C403	



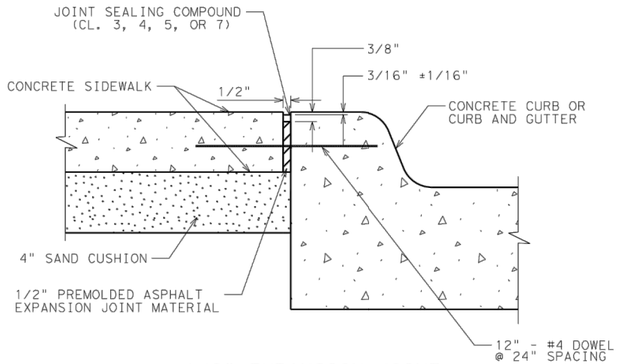
CONCRETE SIDEWALK
(ROADWAY W/O CURB)



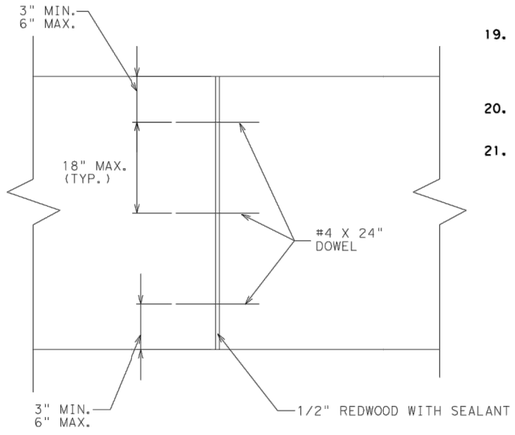
CONCRETE SIDEWALK
(ADJACENT TO CURB)



CONCRETE SIDEWALK
(OFFSET FROM CURB)



1/2" EXPANSION JOINT
(SIDEWALK ADJACENT TO CURB)



TRANSVERSE EXPANSION JOINT

GENERAL NOTES

1. SEE PLAN SHEETS FOR LOCATIONS OF SIDEWALKS AND RETAINING WALLS.
2. SEE TXDOT PED STANDARD FOR ADDITIONAL PEDESTRIAN ELEMENT CRITERIA.
3. CONSTRUCT SIDEWALK IN ACCORDANCE WITH ITEM #531.
4. UNLESS SPECIFIED ELSEWHERE IN THE PLANS TO BE ONLY REINFORCING BARS, THE REINFORCEMENT MAY BE COMPOSED OF REINFORCING BARS, WELDED WIRE REINFORCEMENT (WWR) OR ANY SUITABLE COMBINATION OF BOTH TYPES. UNLESS SPECIFIED ELSEWHERE IN THE PLANS, REINFORCING BARS SHALL BE #3 @ 18" C-C, GRADE 40 WITH LAP SPLICES 40 BAR DIAMETERS LONG. WELDED WIRE REINFORCEMENT (WWR) SHALL BE 6x6-#6 WIRE MESH.
5. ALL DOWELS SHALL BE ADEQUATELY SUPPORTED TO RETAIN PROPER ALIGNMENT.
6. REBAR CHAIRS SHALL BE PLACED ON 4" MAXIMUM SPACING EACH WAY.
7. DRILL & DOWEL INTO EXISTING CURB & GUTTER #4 BARS, 12" @ 24" SPACING.
8. CURING MEMBRANE SHALL BE APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
9. PLACE EXPANSION JOINTS EVERY 40'.
10. EXPANSION JOINTS SHALL ALIGN WITH CURB AND GUTTER JOINTS.
11. PLACE CONTRACTION OR DUMMY JOINTS AT A SPACING EQUAL TO THE WIDTH OF THE WALK.
12. TYPICAL SIDEWALKS SHALL BE FORMED AND POURED AT A MAXIMUM CROSS-SLOPE OF 1.5%. ANY CROSS-SLOPES EXCEEDING 2% WILL NOT BE ACCEPTED.
13. LOGITUDINAL SLOPE OF SIDEWALKS SHALL NOT EXCEED 5% EXCEPT IN CASES WHERE THE ADJACENT ROADWAY SLOPE EXCEEDS 5%. IF ROADWAY SLOPE EXCEEDS 5%, LONGITUDINAL SLOPE OF SIDEWALKS MAY MATCH THAT OF ROADWAY.
14. CHANGES IN LEVEL GREATER THAN 1/4 INCH ARE NOT PERMITTED ALONG SIDEWALKS.
15. NEW SIDEWALK SHALL BE CONNECTED TO ALL EXISTING ADJACENT WALKS AND STEPS.
16. MINIMUM COVER OVER REINF SHOULD BE 2". MAXIMUM LATERAL COVER OVER REINF IS 3".
17. WHERE SIDEWALK OR WHEELCHAIR RAMP ADJOINS BACK OF CURB, INLET, POLE OR ANY STRUCTURE, APPROVED EXPANSION MATERIAL SHALL BE USED.
18. IF SIDEWALK WIDTH IS LESS THAN 5', PROVIDE 5' X 5' PASSING AREAS AT INTERVALS NOT TO EXCEED 200' SPACING.
19. WHERE SIDEWALK WITH RETAINING WALL IS SPECIFIED, RETAINING WALL WILL BE SUBSIDIARY TO THE ITEM, "CONCRETE SIDEWALK (SPECIAL)(RETAINING WALL)", WITH LIMITS OF PAY AS SHOWN HEREON.
20. SIDEWALK EXPANSION JOINTS SHOULD EXTEND THROUGH ADJACENT CONCRETE STRUCTURES SUCH AS CURB AND CURB AND GUTTERS.
21. BRICK SAND UNDER SIDEWALK WILL BE UNACCEPTABLE.

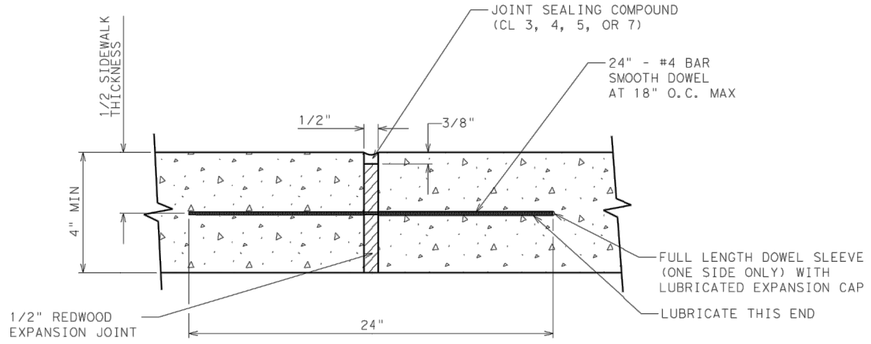
WACO DISTRICT STANDARD

CONCRETE SIDEWALK DETAILS

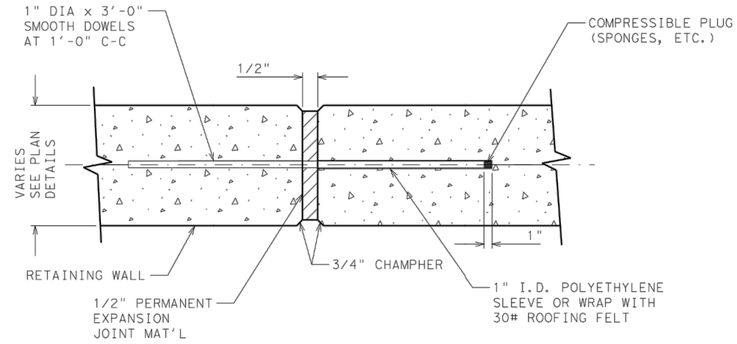
SHEET 1 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			C404
STATE	DIST.	COUNTY	
TEXAS	WACO		
CONT.	SECT.	JOB	HIGHWAY NO.

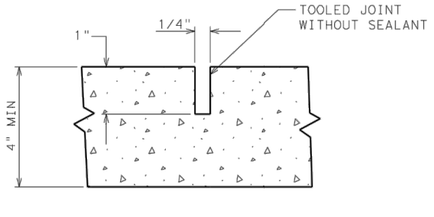
CONCRETE SIDEWALK DETAILS



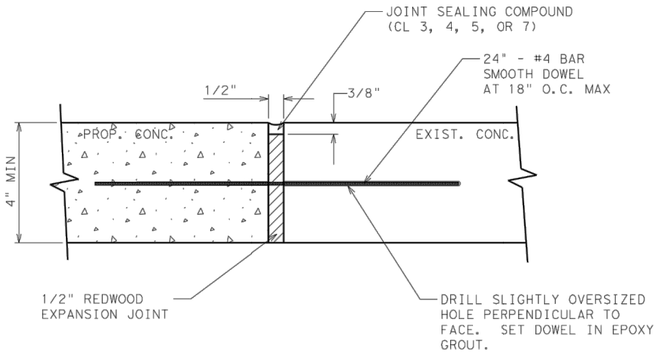
EXPANSION JOINT
(SIDEWALK)



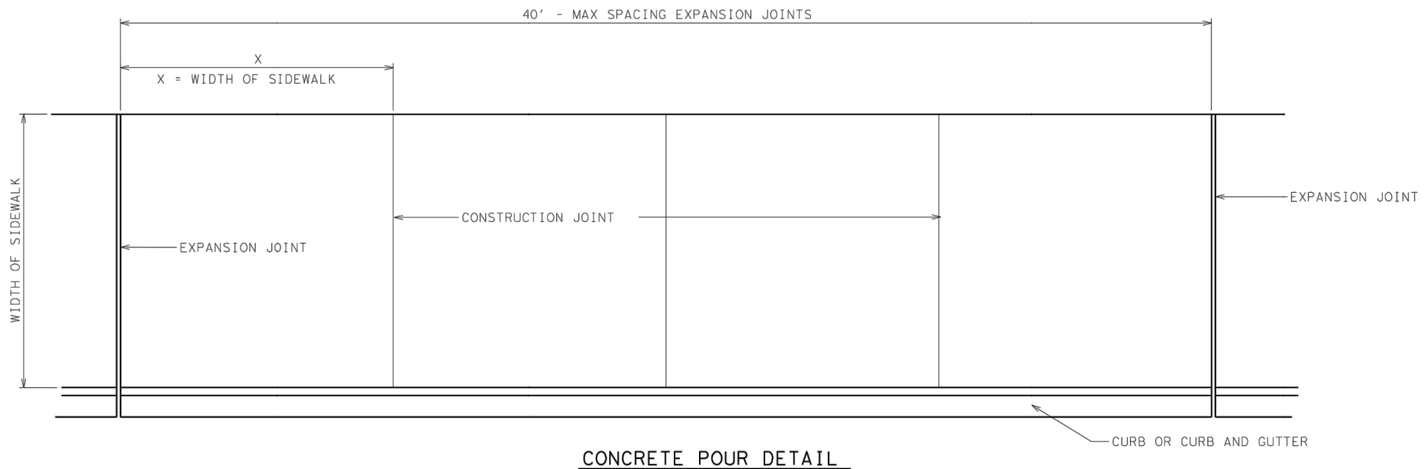
EXPANSION JOINT
(RETAINING WALL)



CONTRACTION JOINT



DOWEL TO EXISTING DETAIL



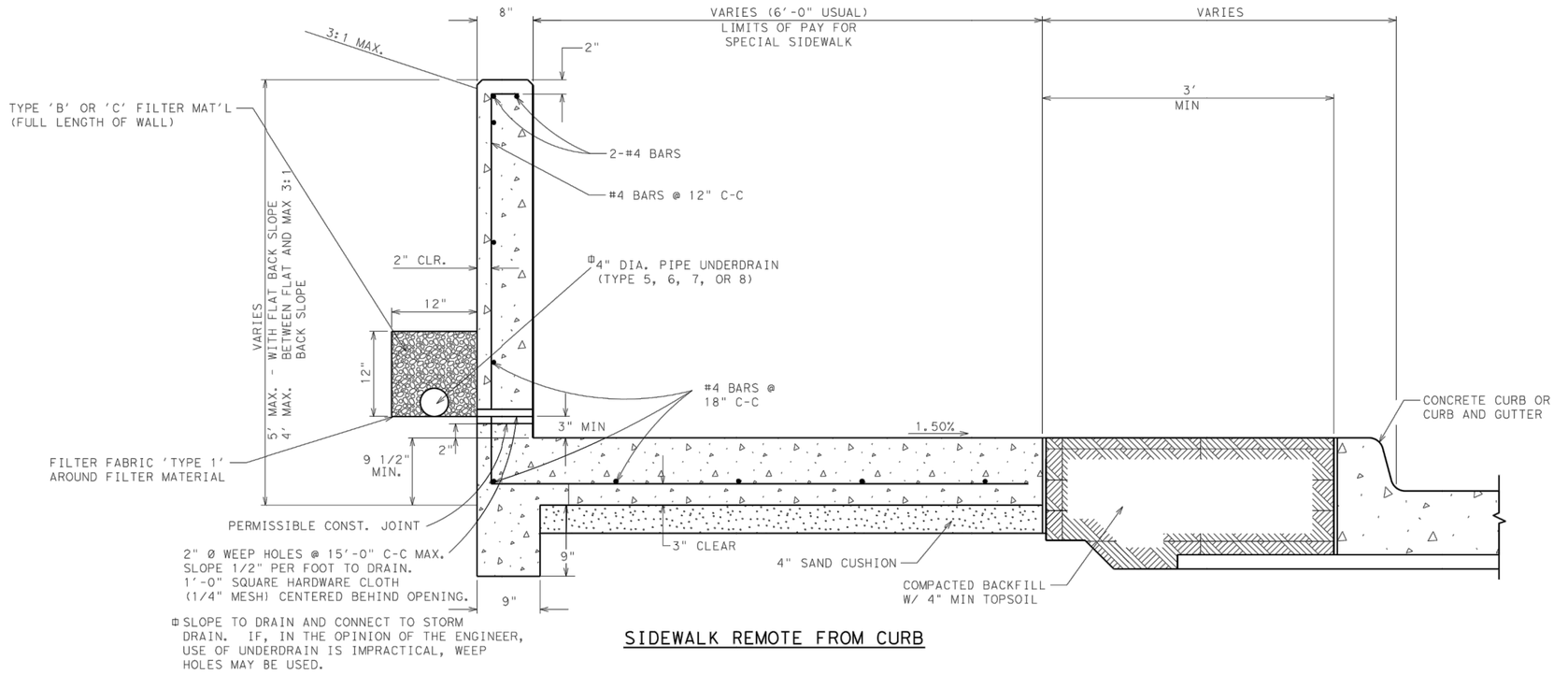
CONCRETE POUR DETAIL

WACO DISTRICT STANDARD

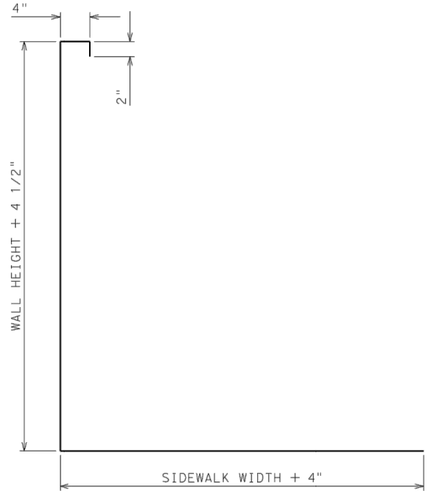
CONCRETE SIDEWALK DETAILS

SHEET 2 OF 3

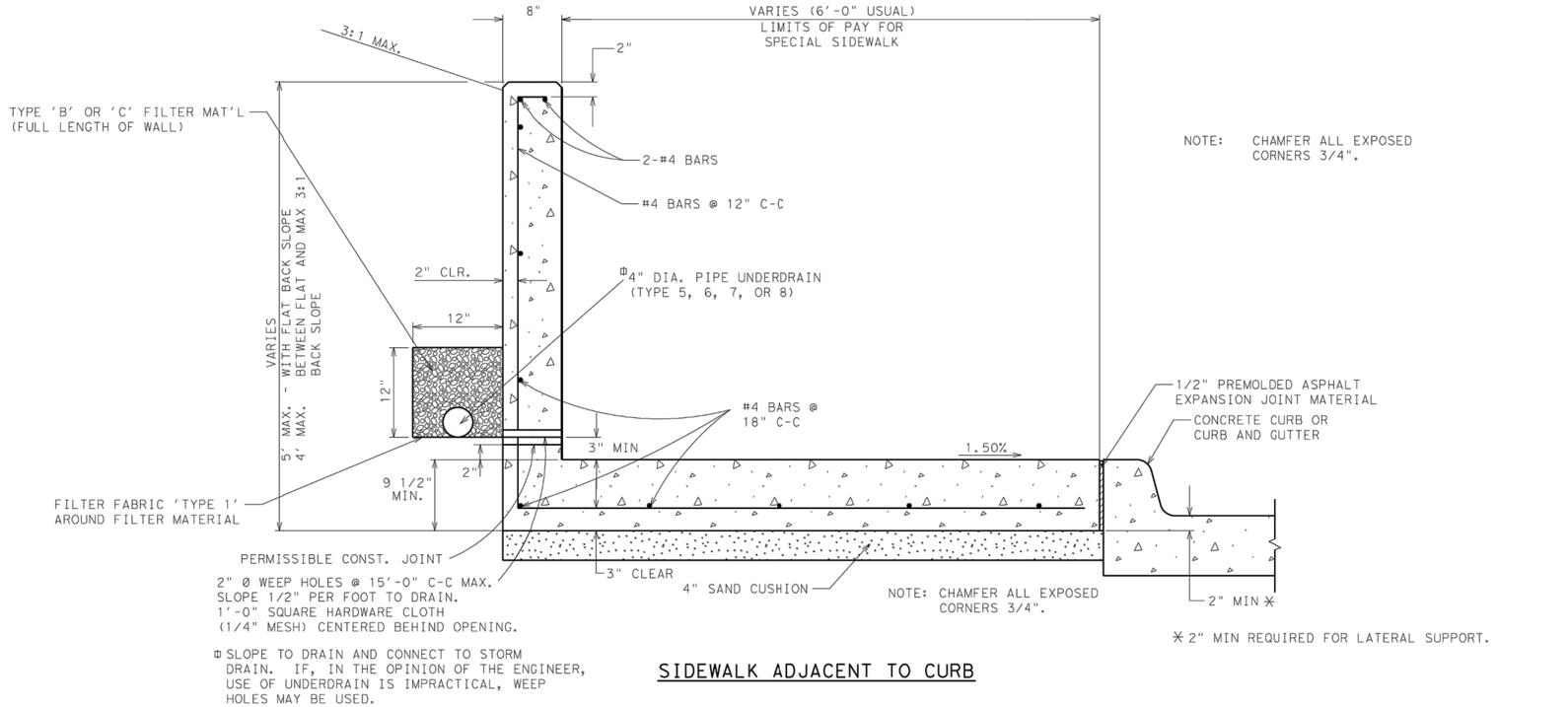
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			C405
STATE	DIST.	COUNTY	
TEXAS	WACO		
CONT.	SECT.	JOB	HIGHWAY NO.



SIDEWALK REMOTE FROM CURB



REINFORCING STEEL DETAIL



NOTE: CHAMFER ALL EXPOSED CORNERS 3/4".

✳ 2" MIN REQUIRED FOR LATERAL SUPPORT.

SIDEWALK ADJACENT TO CURB

SPECIAL CONCRETE SIDEWALK W/RETAINING WALL

WACO DISTRICT STANDARD

CONCRETE SIDEWALK DETAILS

SHEET 3 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			C406
STATE	DIST.	COUNTY	
TEXAS	WACO		
CONT.	SECT.	JOB	HIGHWAY NO.

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.

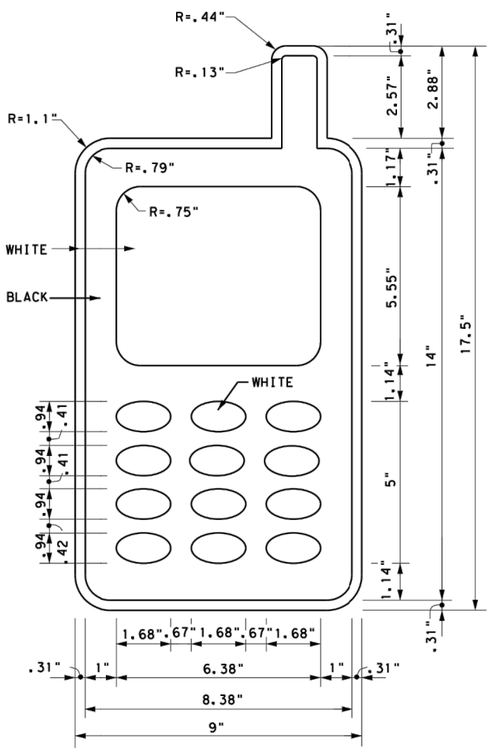
11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.

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 APPAREL 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.



3.0" Radius, 1.25" Border, 0.75" Indent, Black on Yellow;
[STAY ALERT] Font: D
3.0" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[TALK OR TEXT LATER] Font: C specified length;

SIGN DETAIL (G20-10T)

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3118

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

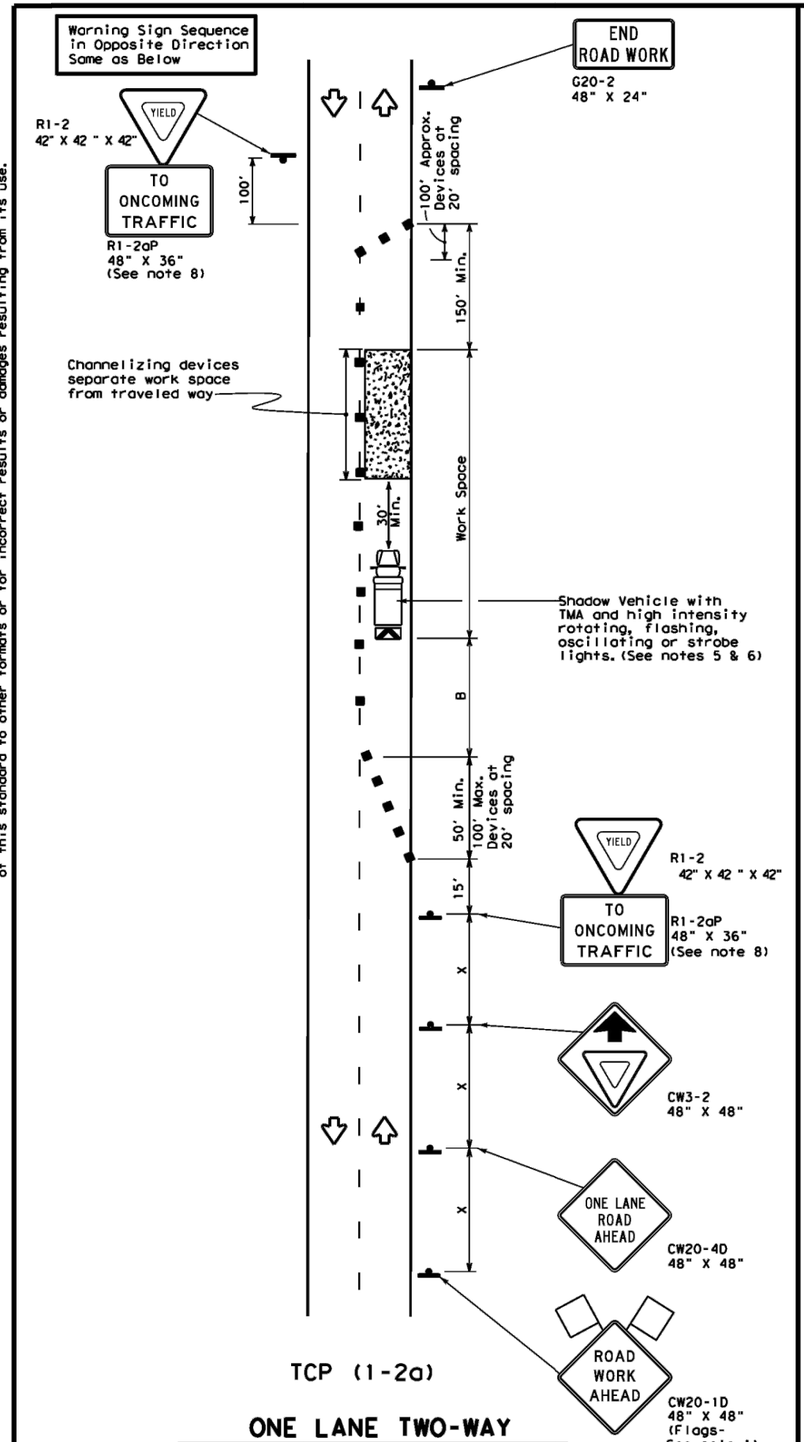
Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-14

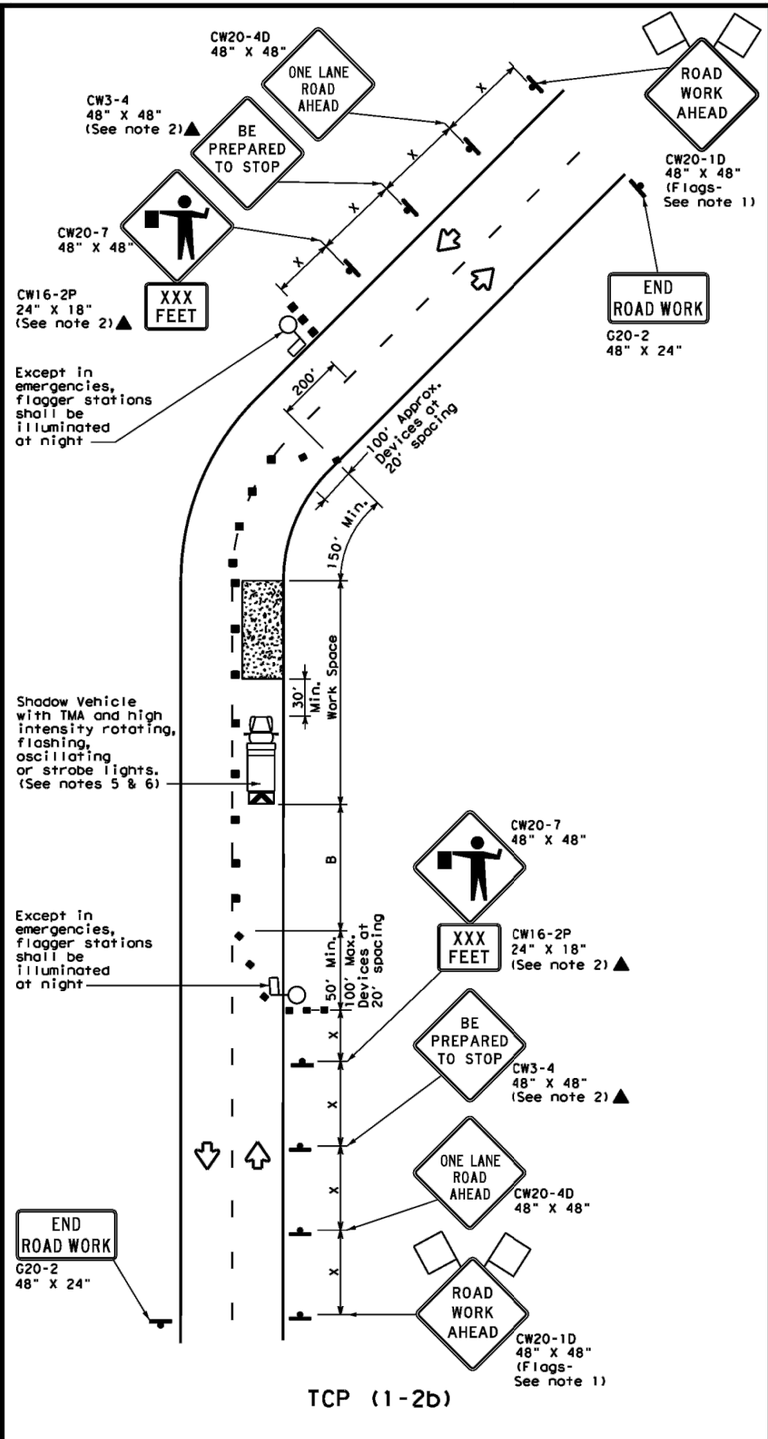
FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-03 5-10 8-14	DIST	COUNTY		SHEET NO.
9-07 7-13				C407

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.

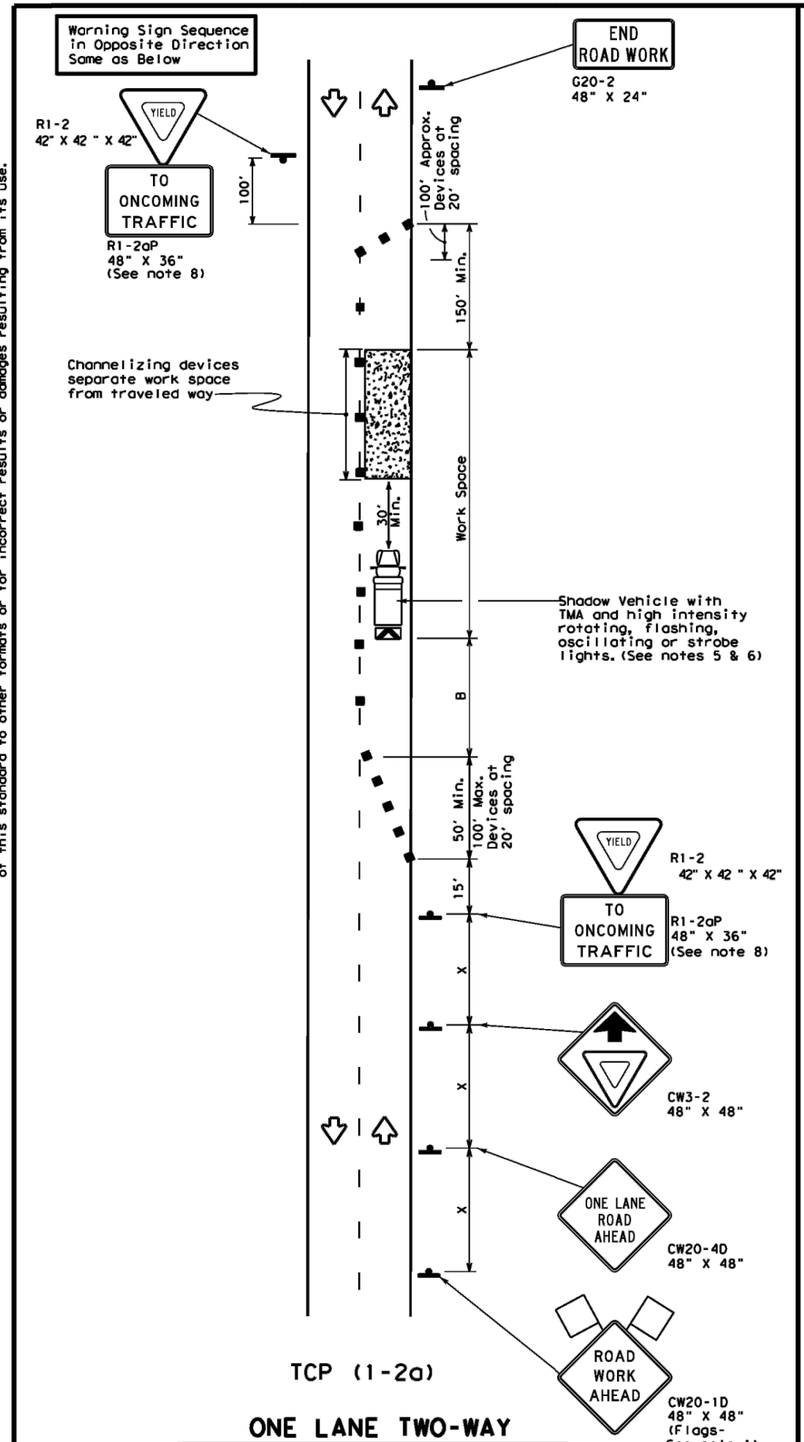
Texas Department of Transportation | Traffic Operations Division Standard

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	DIST	COUNTY		SHEET NO. C408

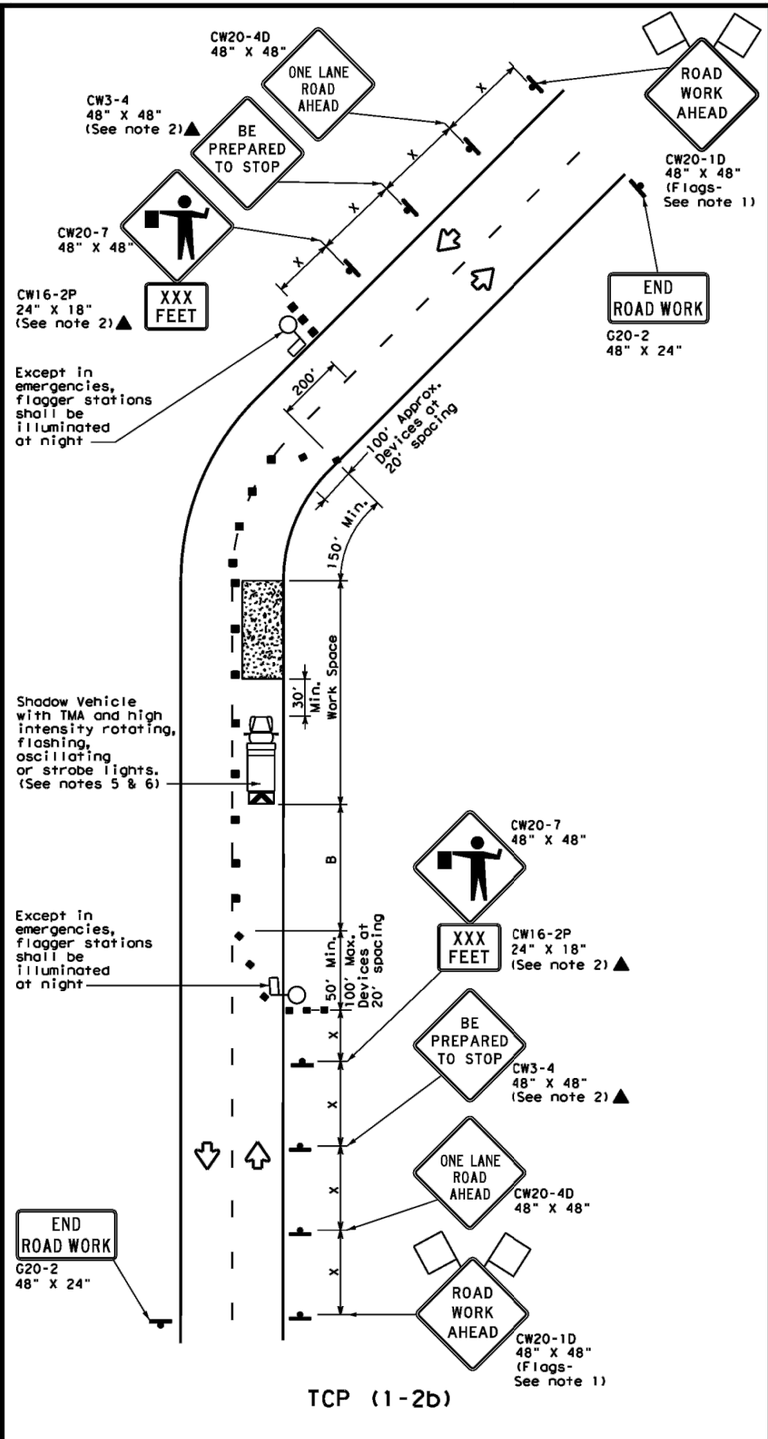
DATE:
FILE:



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

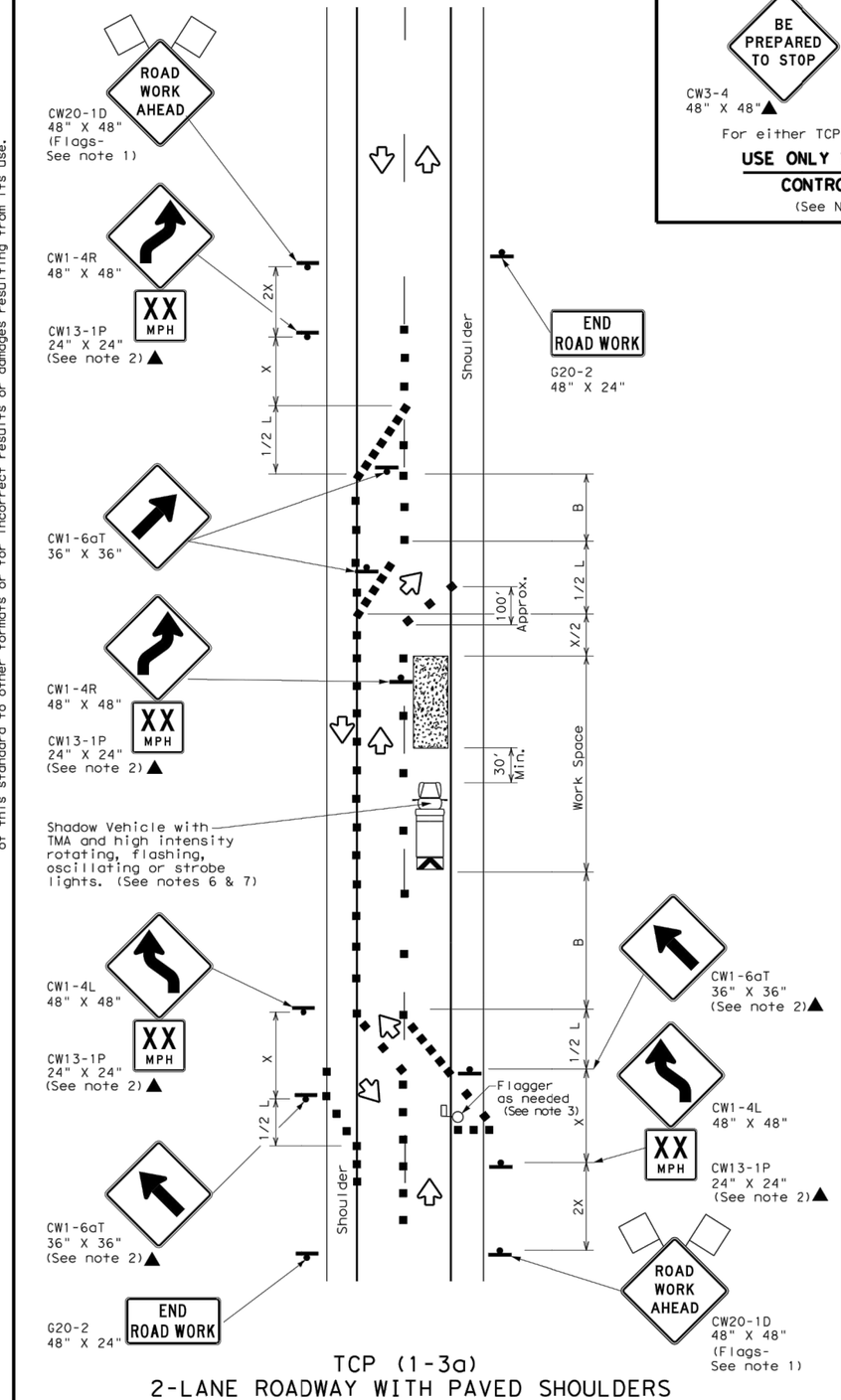
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(1-2)-18

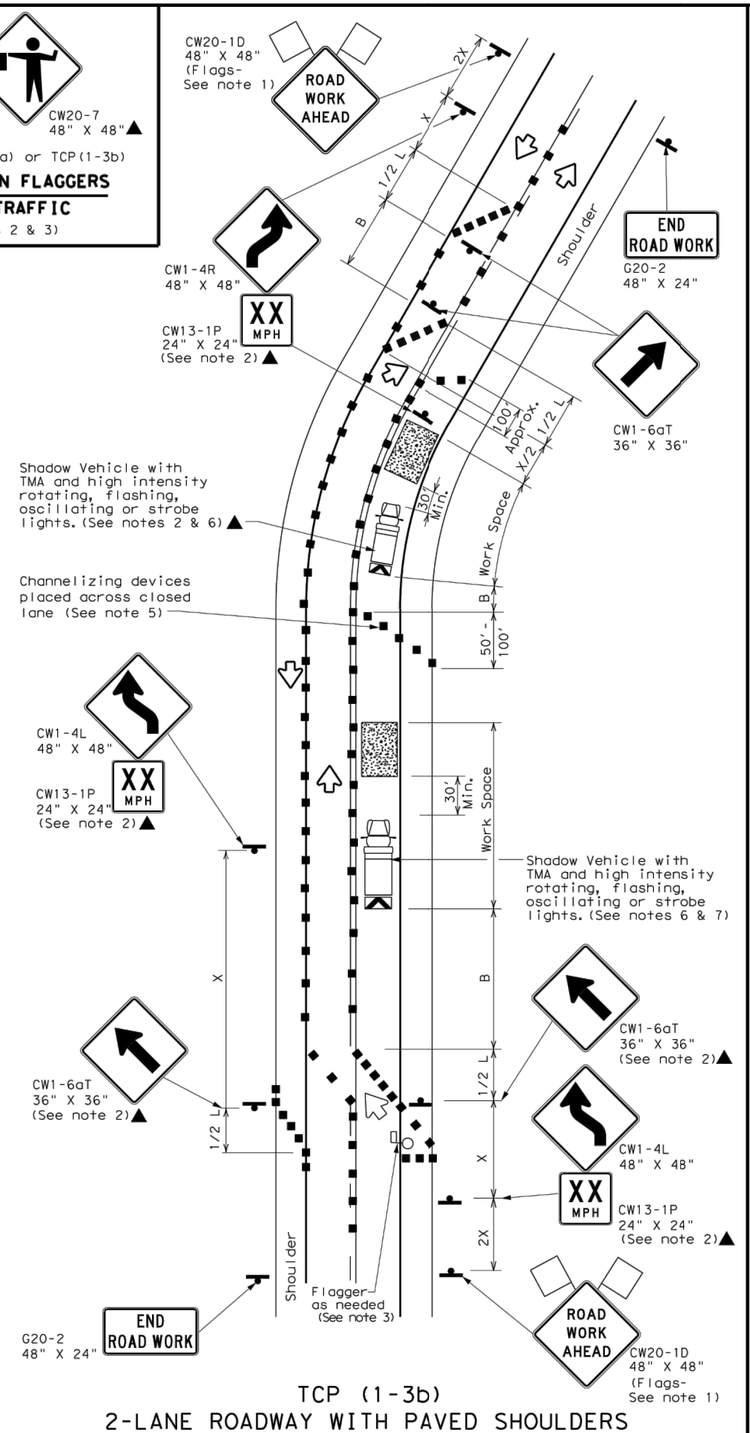
FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-90 4-98 2-94 2-12 1-97 2-18	DIST	COUNTY		SHEET NO. C409

152



TCP (1-3a)
2-LANE ROADWAY WITH PAVED SHOULDERS

ONE LANE CLOSED
ADEQUATE FIELD OF VIEW



TCP (1-3b)
2-LANE ROADWAY WITH PAVED SHOULDERS

ONE LANE CLOSED
INADEQUATE FIELD OF VIEW

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. Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
4. DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
5. When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
6. 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.
7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
8. 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 speed are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device 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 TRAFFIC SHIFTS ON TWO LANE ROADS

TCP(1-3)-18

FILE: tcp1-3-18.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	DIST	COUNTY		SHEET NO. C410

153

DATE:
FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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)

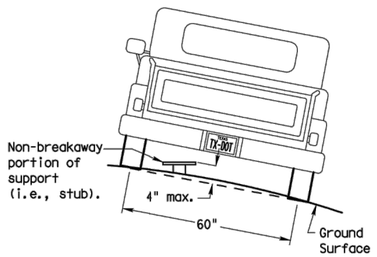
Anchor Type

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))

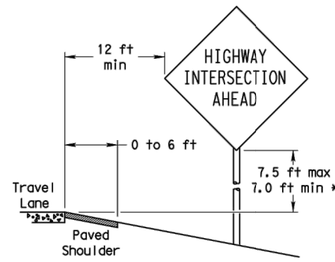
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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).

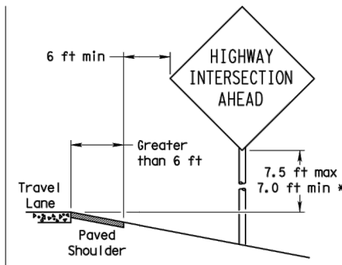
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

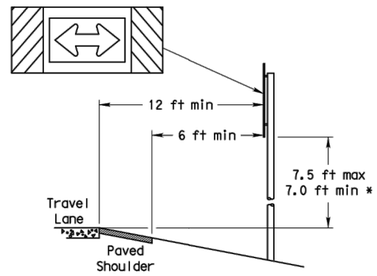
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



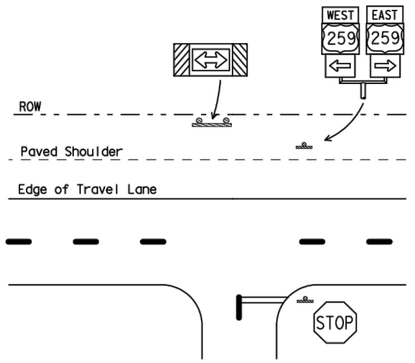
GREATER THAN 6 FT. WIDE

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.

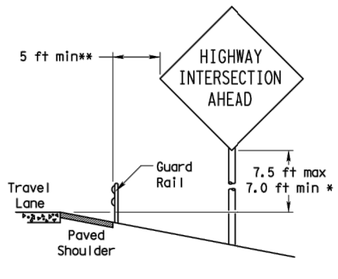
T-INTERSECTION



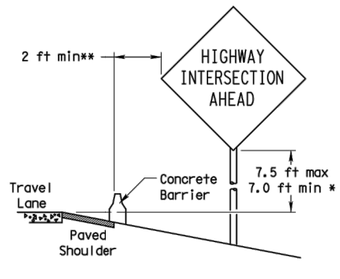
When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



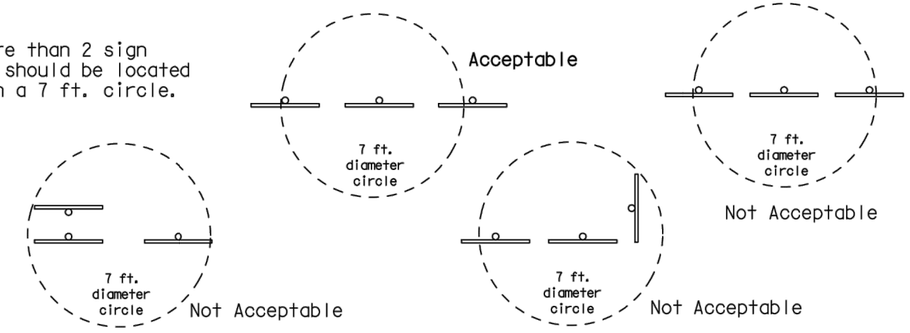
BEHIND GUARDRAIL



BEHIND CONCRETE BARRIER

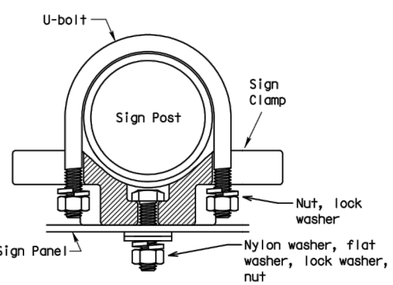
**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

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



TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

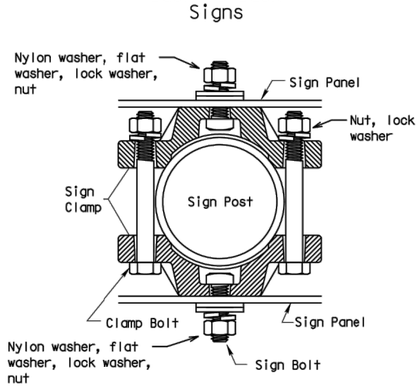


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

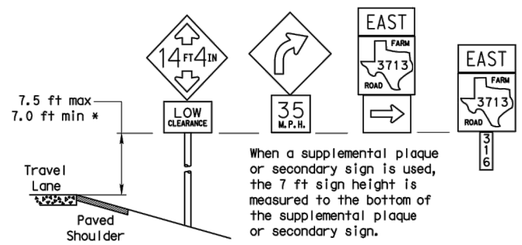
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs

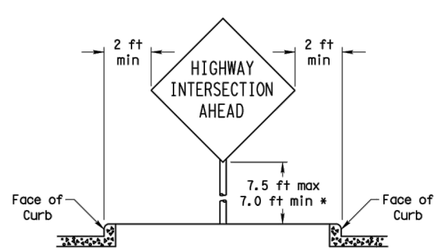


Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

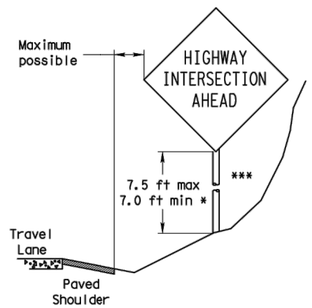


CURB & GUTTER OR RAISED ISLAND



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.

* 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

Texas Department of Transportation
Traffic Operations Division

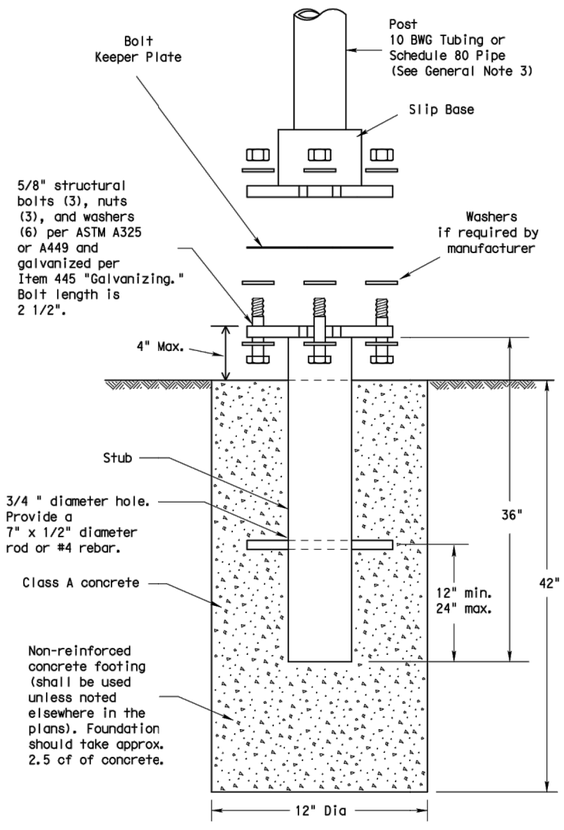
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

©TxDOT July 2002	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.
				C411

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.

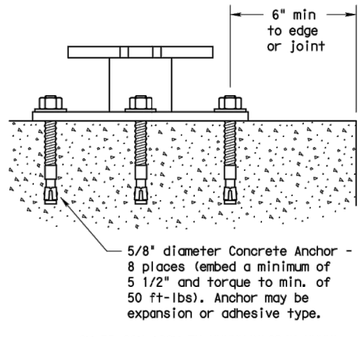
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum 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.

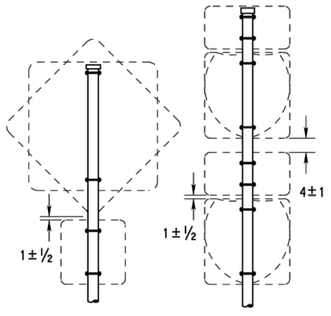
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

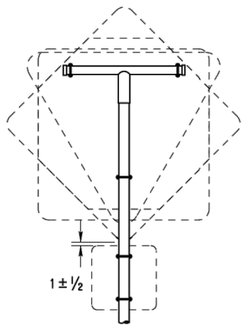
SMD(SLIP-1)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY	SHEET NO.
			C412

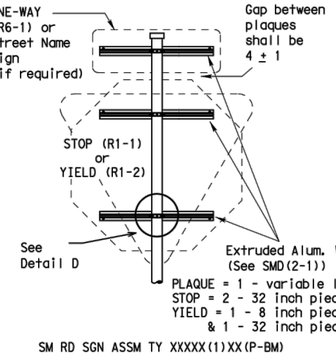
DATE:
FILE:



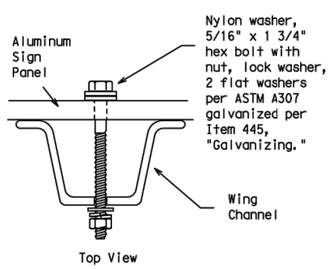
SM RD SGN ASSM TY XXXXX(1)XX(P)



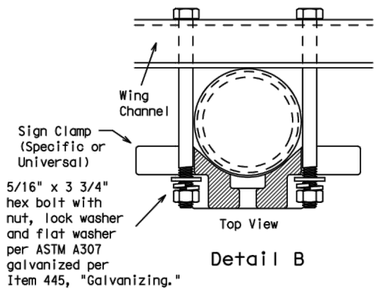
SM RD SGN ASSM TY XXXXX(1)XX(T)



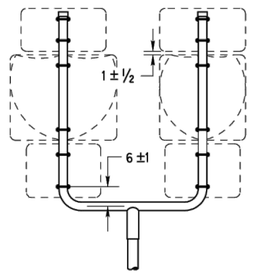
SM RD SGN ASSM TY XXXXX(1)XX(P-BM)



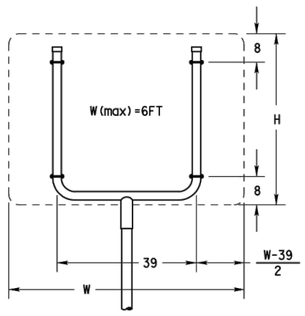
Detail A



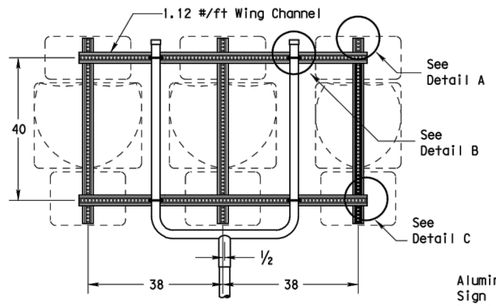
Detail B



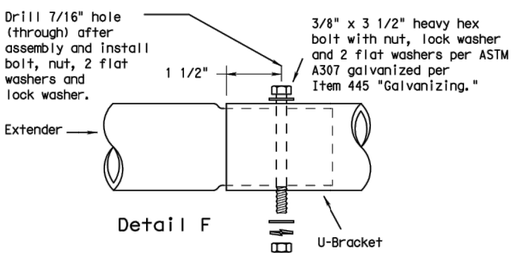
SM RD SGN ASSM TY XXXXX(1)XX(U)



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

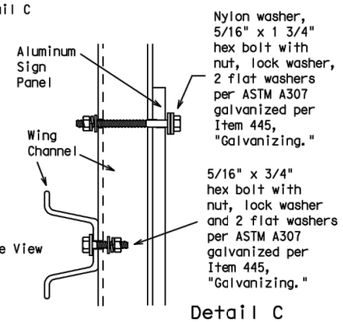


SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)

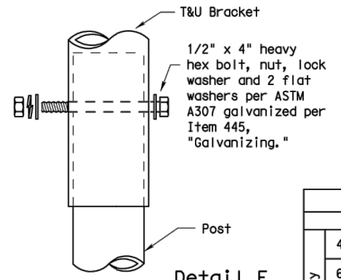


Detail F

Splices shall only be allowed behind the sign substrate.

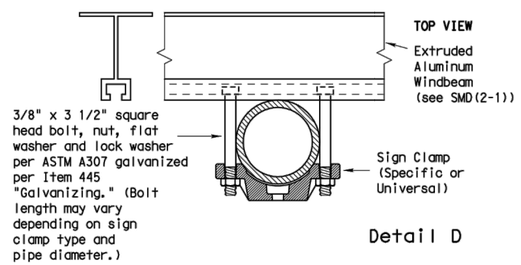


Detail C

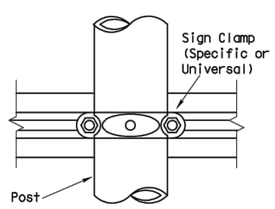


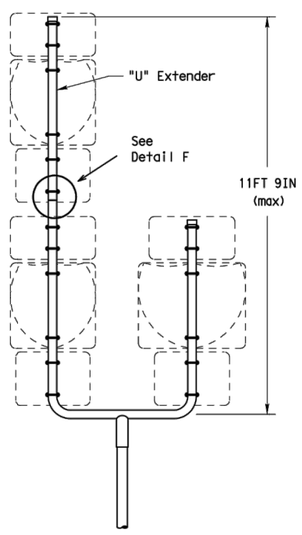
Detail E

SIDE VIEW

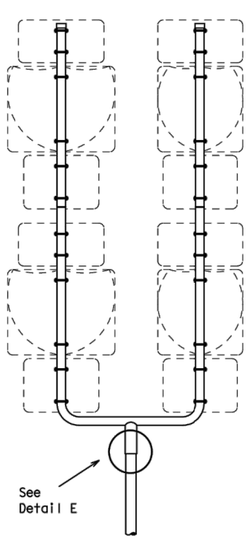


Detail D

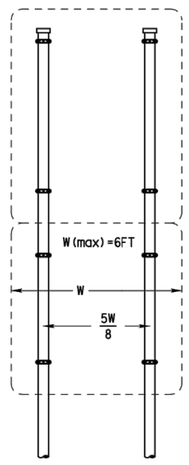




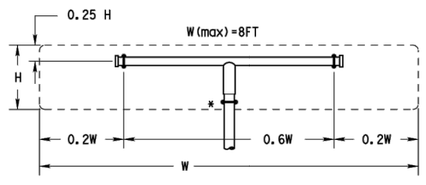
SM RD SGN ASSM TY S80(1)XX(U-1EXT)



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



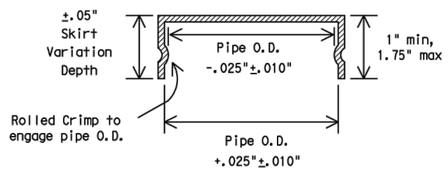
SM RD SGN ASSYM TY XXXXX(2)XX(P)



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.

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.

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-2)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
COUNT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.

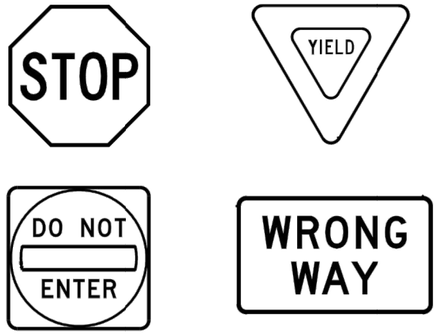
9-08 REVISIONS

C413

26C

DATE:
FILE:

REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS
(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

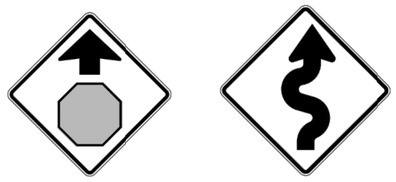
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS
(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)

TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR WARNING SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR SCHOOL SIGNS

TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

GENERAL NOTES

1. Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
2. Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
3. Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
4. Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
5. White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
6. Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
8. Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

Texas Department of Transportation

Traffic Operations Division Standard

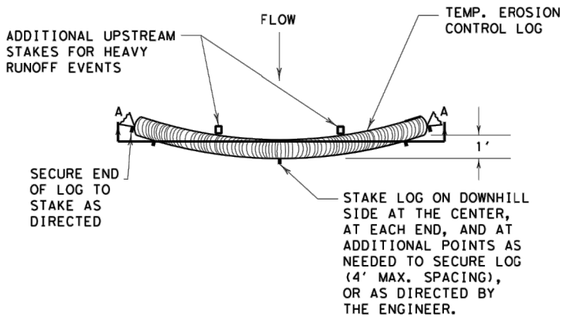
TYPICAL SIGN REQUIREMENTS

TSR(4)-13

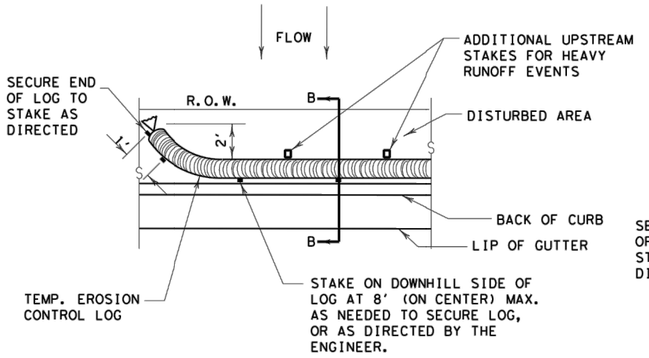
FILE: tsr4-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS 12-03 7-13 9-08	DIST	COUNTY		SHEET NO. C414

DATE:
FILE:

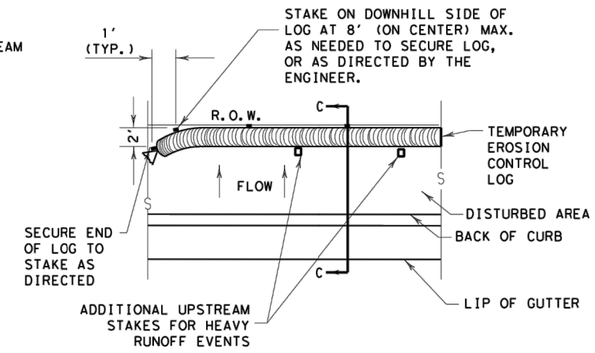
DATE:
FILE:



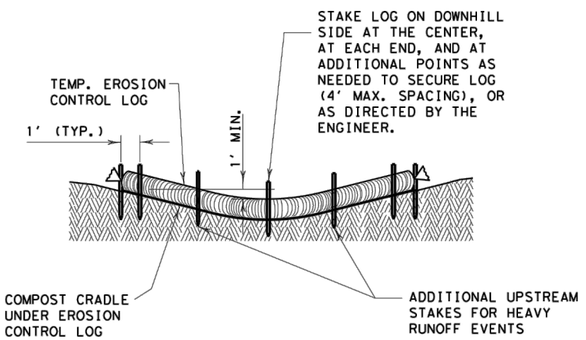
PLAN VIEW



PLAN VIEW



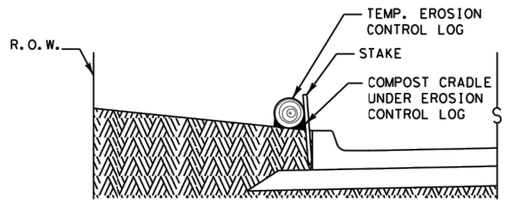
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

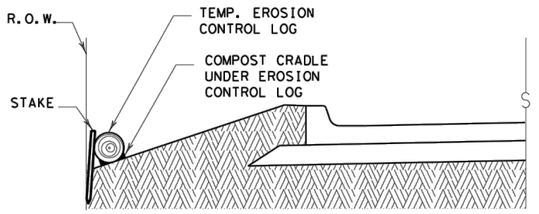
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

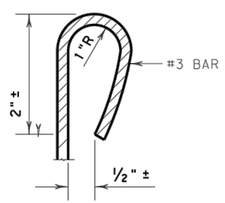
CL-BOC



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.

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.

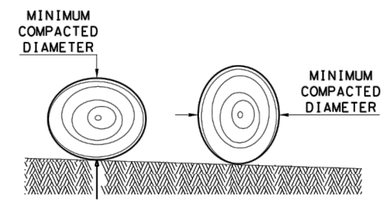
Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

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.



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

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						
	DIST	COUNTY			SHEET NO.	
					C415	