

WACO SRTS J.H. HINES ELEMENTARY



REGISTERED ACCESSIBILITY SPECIALIST (RAS)
INSPECTION REQUIRED
TDLR NO. X

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION FOR THE CONSTRUCTION OF PEDESTRIAN IMPROVEMENTS CONSISTING OF SIDEWALKS

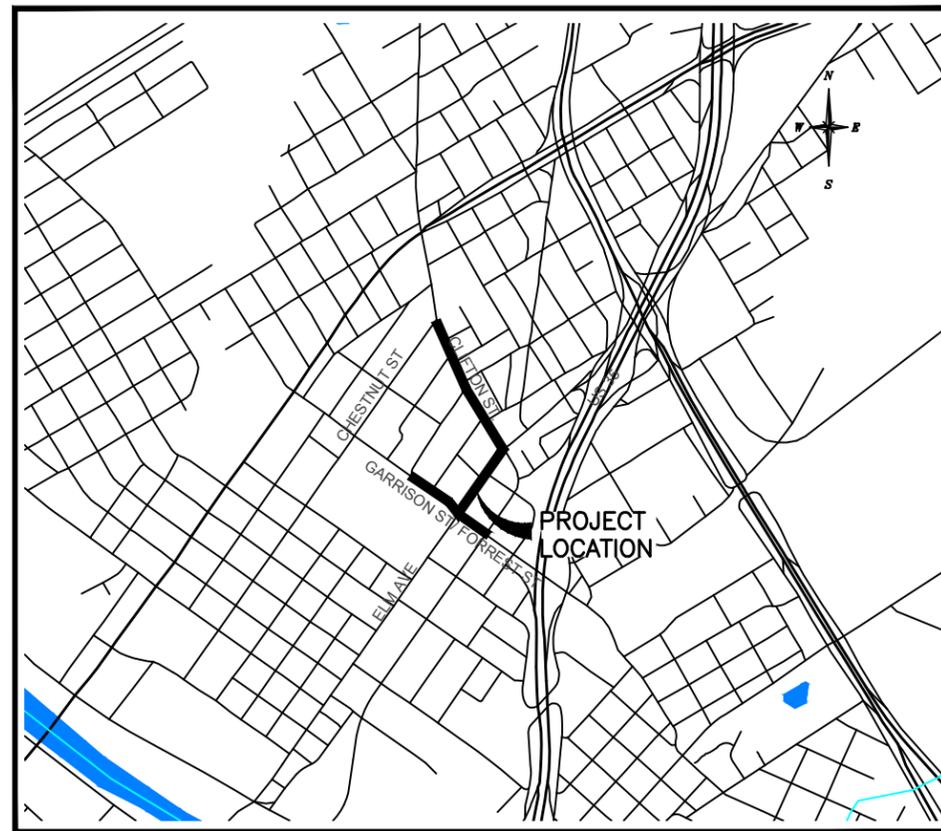
MAYOR
KYLE DEAVER

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

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PROJECT ENGINEER
(COMPLETE & CORRECT) DATE

CITY ENGINEER
(RECOMMENDED FOR BIDDING) DATE

PUBLIC WORKS DEPARTMENT DIRECTOR
(APPROVED FOR BIDDING) DATE



FOR
REVIEW ONLY

AUGUST 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)

GENERAL NOTES

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WACO STANDARD SPECIFICATIONS FOR CONSTRUCTION (THE CURRENT VERSION) 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.

WATER LINES

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

EXISTING FIRE HYDRANTS AND VALVE COVERS 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 7801 MONKEY RUN ROAD, WACO, TX, 76708.

WASTEWATER

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.

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 TXR1500000 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, AND A 1/2" EXPANSION JOINT SHALL BE ADDED BETWEEN THE OLD AND NEW CURB AND GUTTER, WITH #5 x24" SMOOTH DOWELS, ONE SIDE WRAPPED, PLACED SIMILARLY TO LONGITUDINAL REINFORCING STEEL.

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 RING AND COVER OF EXISTING STORM MANHOLES AND INLETS 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 7801 MONKEY RUN ROAD, WACO, TX, 76708.

SIDEWALKS

WHEN OPERATIONS REQUIRE A SIDEWALK CLOSURE, THE CONTRACTOR SHALL USE "SIDEWALK CLOSED" SIGNS AND TRAFFIC CONTROL DEVICES CONTROLLING PEDESTRIAN FLOWS AS NECESSARY TO ROUTE PEDESTRIANS SAFELY AROUND THE CLOSED SIDEWALK.

THE APPROPRIATE CONTACT PEOPLE FOR UTILITIES ARE AS FOLLOWS:

UTILITY COMPANIES

AT&T

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

ATMOS ENERGY

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

GRANDE COMMUNICATIONS

JOHNNY HUTYRA
(254) 235-2072

CENTURY LINK NATIONAL

HUGH NIELSEN
(512) 656-4763

CITY OF WACO WATER DISTRIBUTION AND SANITARY SEWER

DANA JOHNSTON
(254) 749-7835

CITY OF WACO OPERATIONS DIVISION

FRANK BUTLER (STREETS AND DRAINAGE)
(254) 749-8481

CITY OF WACO TRAFFIC ENGINEERING MANAGER

ERIC GALLT
(254) 750-6639

CITY OF WACO TRAFFIC SECTION - ELECTRICAL CONDUIT

BILLY DEHART
(254) 749-4087

CITY OF WACO TRANSIT

JOSEPH DVORSKY
(254) 750-1744

CITY OF WACO SOLID WASTE

ROBERT BEDERKA (OPERATIONS MANAGER)
(254) 299-2606

ONE CALL NOTIFICATION CENTERS

LONESTAR NOTIFICATION CENTER
WEBSITE: [HTTP://WWW.OCCINC.COM/LOCATIONS/LONE_STAR.ASP](http://www.occinc.com/locations/lone_star.asp)
(800) 669-8344

TEXAS EXCAVATION SAFETY SYSTEM

WEBSITE: [HTTP://WWW.DIGLESS.ORG](http://www.digless.org)
(800) DIG-TESS OR (800) 344-8377

TEXAS ONE CALL SYSTEM

WEBSITE: [HTTP://WWW.TEXASONECALL.COM](http://www.texasonecall.com)
(800) 245-4545

UNDERGROUND PIPELINE (GAS) DAMAGE REPORTING

WEBSITE:
[HTTP://WWW.RRC.STATE.TX.US/PROGRAMS/DAMAGEPREVENTION/INDEX.PHP](http://www.rrc.state.tx.us/programs/damageprevention/index.php)
OPERATIONS CENTER: (800) 460-3030 OR (800) 545-6005

MCI
FRANK WALKER
(254) 753-3442

PAETEC
TRACY COVINGTON
(512) 934-1469

ONCOR ELECTRIC
MELINDA CARSON
(817) 992-8465

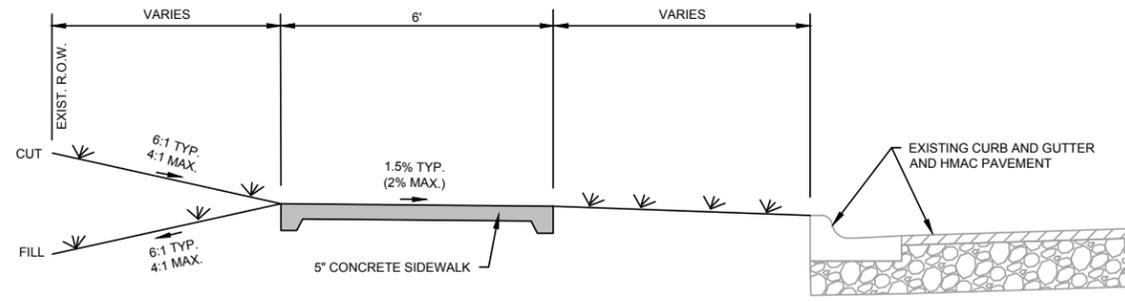
TIME WARNER (SPECTRUM/CHARTER)

JOHNNY TINDLE
(254) 761-3806
SHANNA BEACH
(254) 761-3885
(254) 217-6954

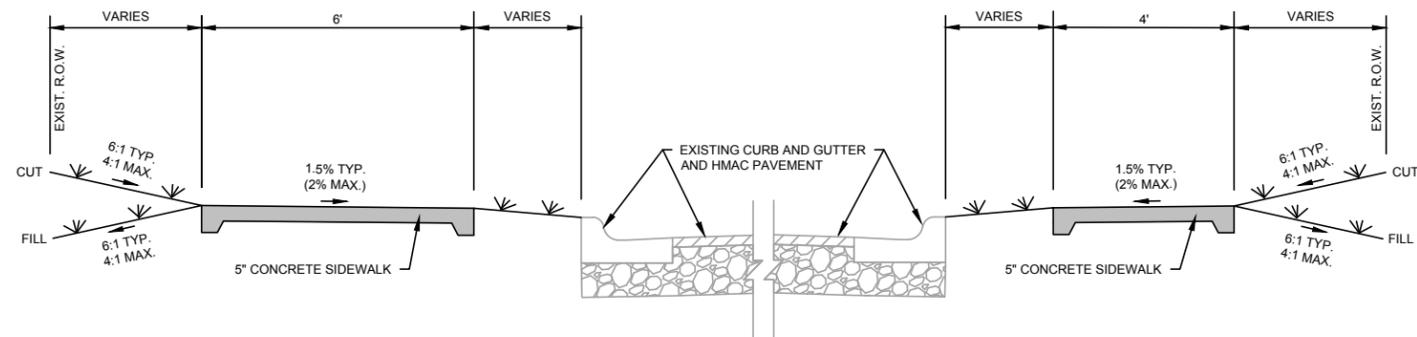
CONSOLIDATED COMMUNICATIONS INC.

BRIAN STORY
(214) 232-7119

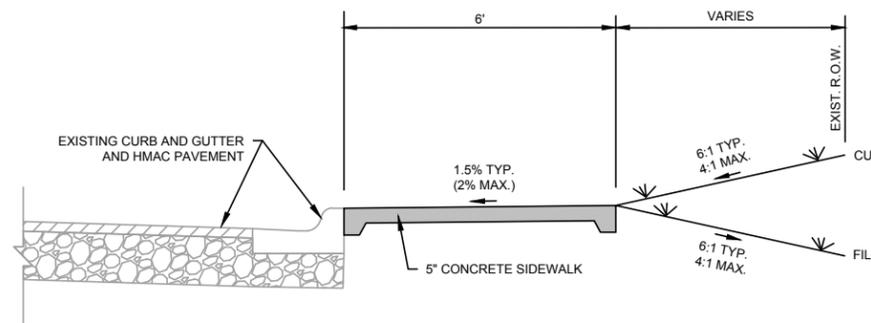
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 <p>TSBPE REGISTRATION F-7587</p>		
 <p>CITY OF WACO, TEXAS</p>		
<p>J.H. HINES ELEMENTARY SAFE ROUTES TO SCHOOL</p>		
<p>GENERAL NOTES</p>		
SCALE N/A	PROJECT NO.	DRAWING NO.
DATE 08/07/2019	SHEET NO. X of X	1.2



TYPICAL SECTION - GARRISON ST. / FORREST ST.



TYPICAL SECTION - ELM AVE.



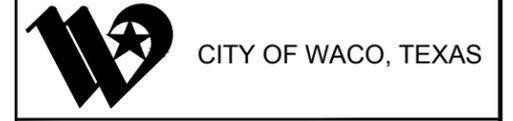
TYPICAL SECTION - CLIFTON ST.

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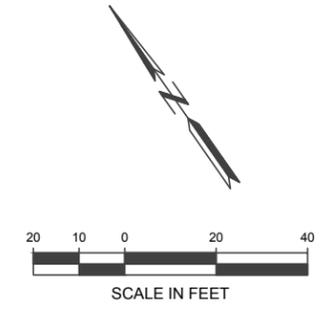
 TBPE REGISTRATION F-7587
Anthony D. Beach
 08/07/2019



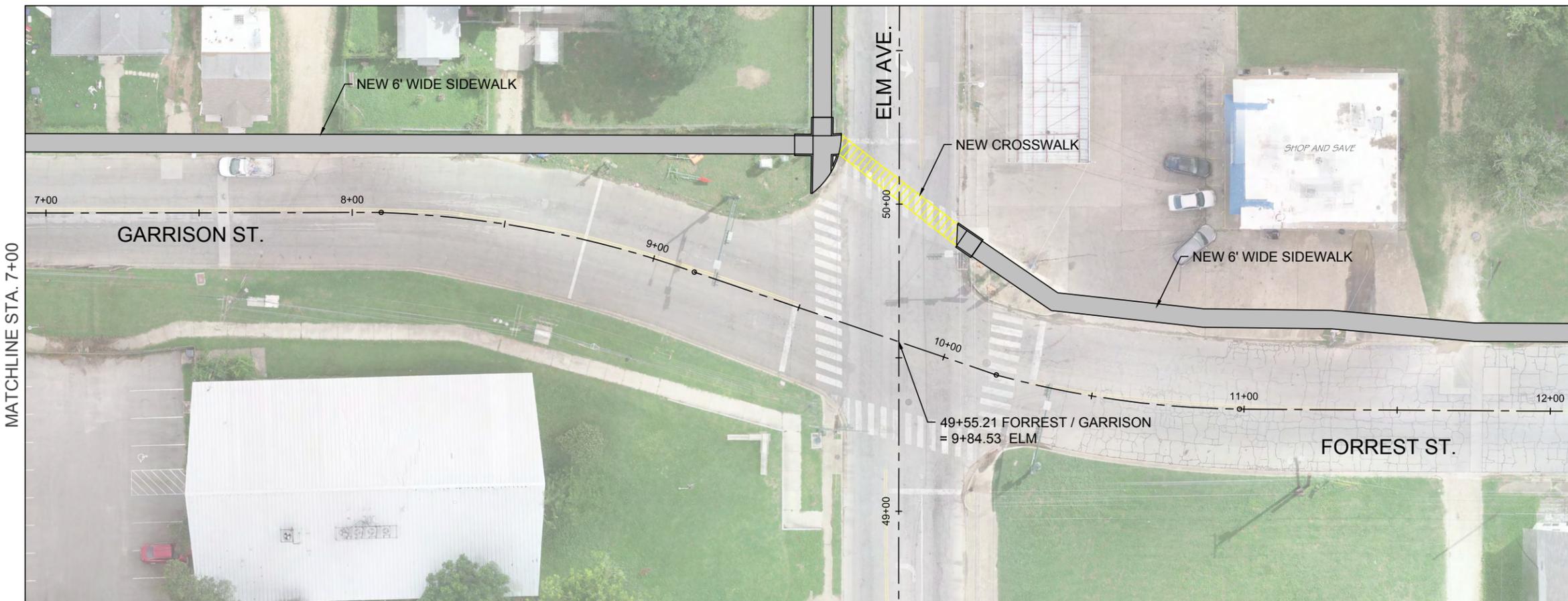
J.H. HINES ELEMENTARY
SAFE ROUTES TO SCHOOL

TYPICAL SECTIONS

SCALE N/A	PROJECT NO.	DRAWING NO. 1.3
DATE 08/07/2019	SHEET NO. X of X	



MATCHLINE STA. 7+00



MATCHLINE STA. 10+00

REV.	DESCRIPTION	DATE
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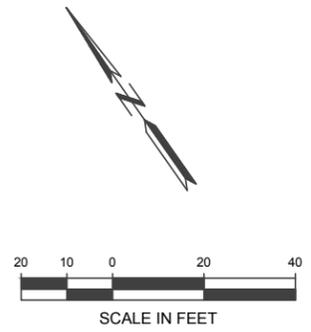
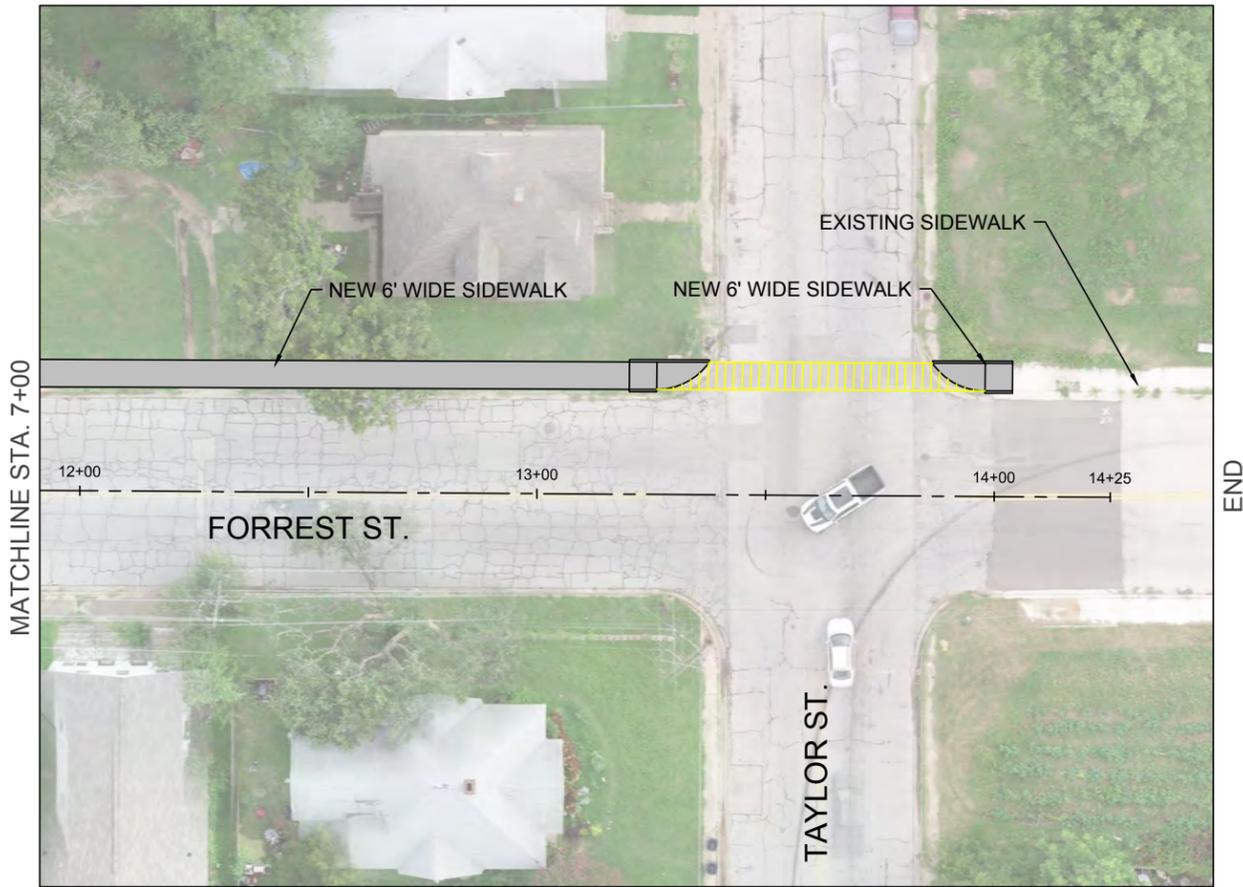
BSP engineers
F-7587
TBPE REGISTRATION F-7587



**J.H. HINES ELEMENTARY
SAFE ROUTES TO SCHOOL**

**FOREST ST. / GARRISON ST.
SIDEWALK PLAN
SHEET 1 OF 2**

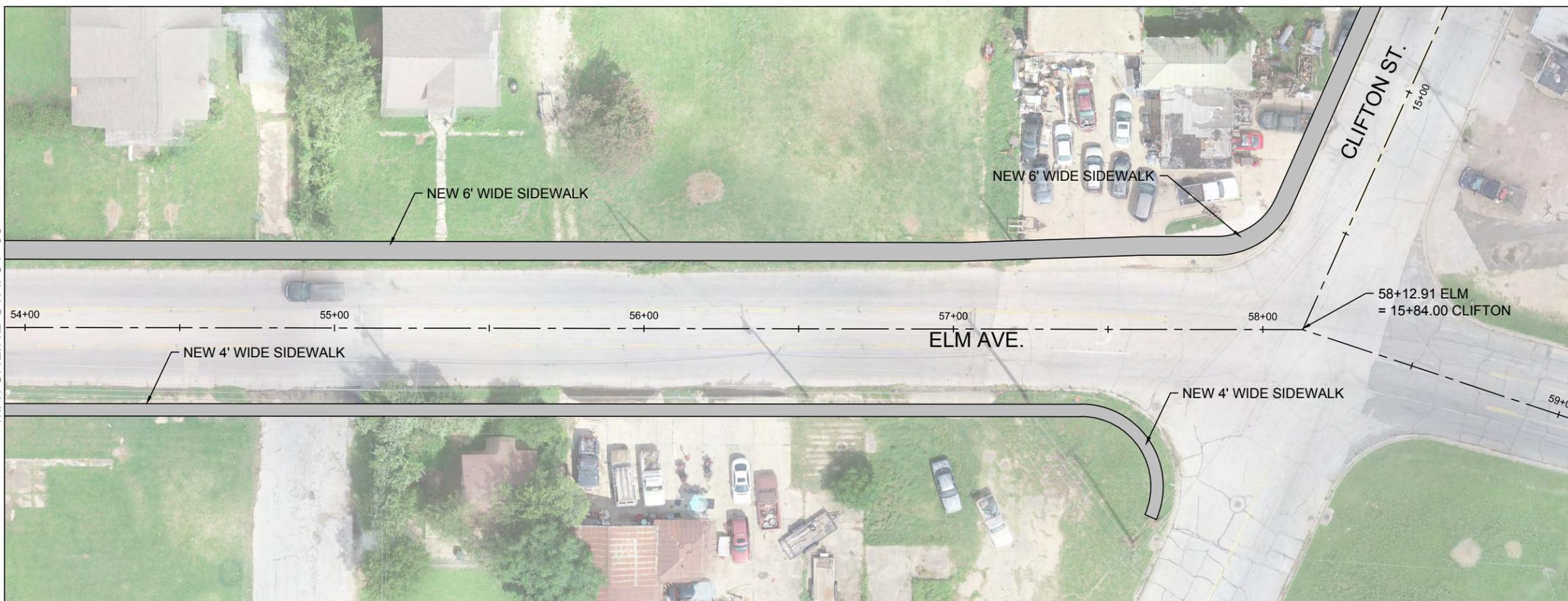
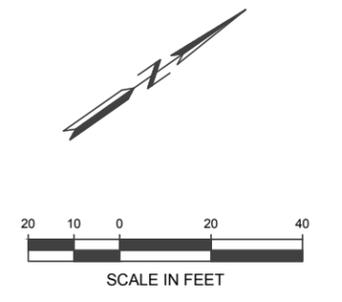
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 <p>BSP engineers</p> <p>TBPE REGISTRATION F-7587</p>		
 <p>CITY OF WACO, TEXAS</p>		
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<p>FORREST ST. / GARRISON ST. SIDEWALK PLAN SHEET 2 OF 2</p>		
SCALE N/A	PROJECT NO.	DRAWING NO.
DATE 08/07/2019	SHEET NO. X of X	1.5



MATCHLINE STA. 54+00



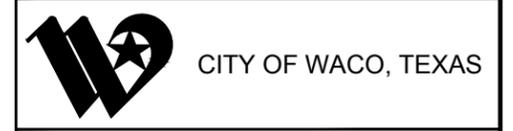
MATCHLINE STA. 54+00

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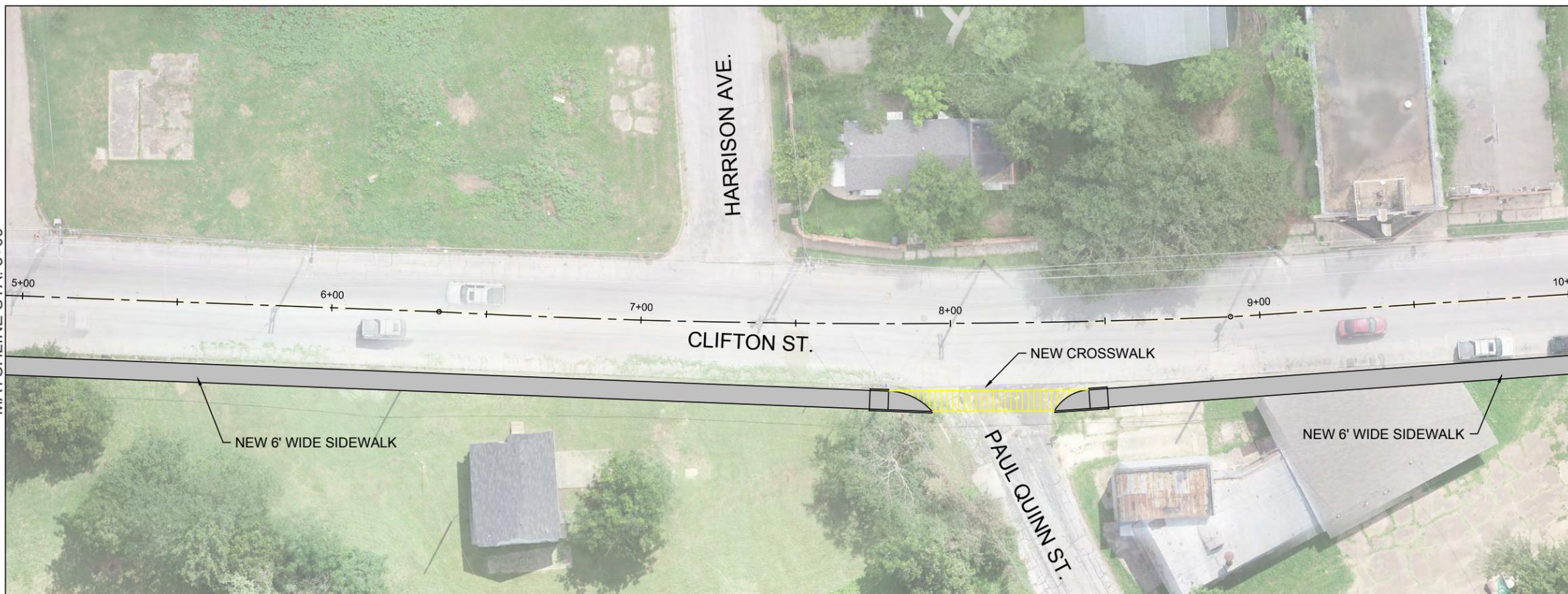
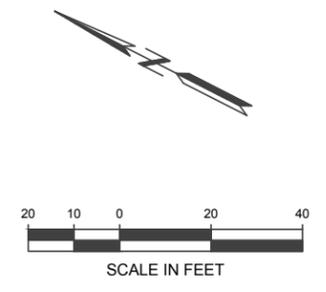
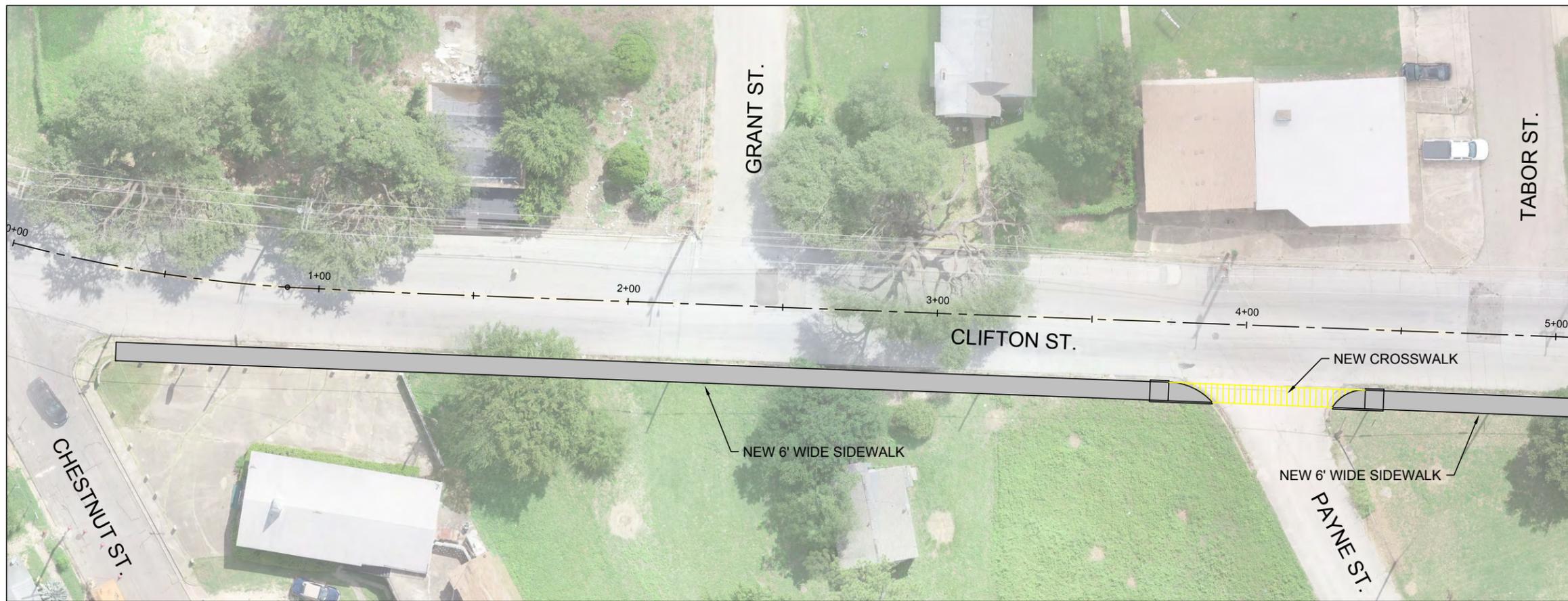
TBPE REGISTRATION F-7587



**J.H. HINES ELEMENTARY
 SAFE ROUTES TO SCHOOL**

**ELM AVE.
 SIDEWALK PLAN
 SHEET 1 OF 1**

SCALE N/A	PROJECT NO.	DRAWING NO. 1.6
DATE 08/07/2019	SHEET NO. X of X	

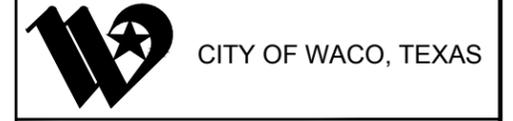


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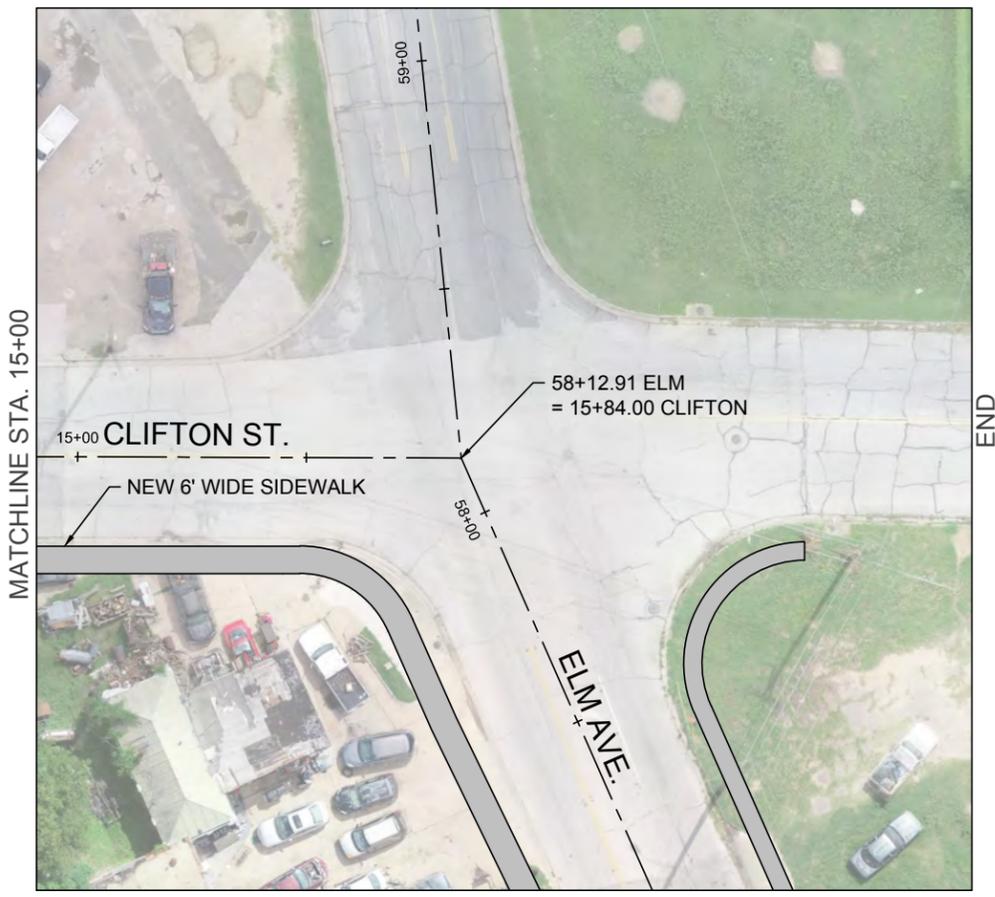
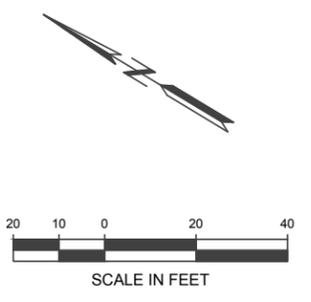
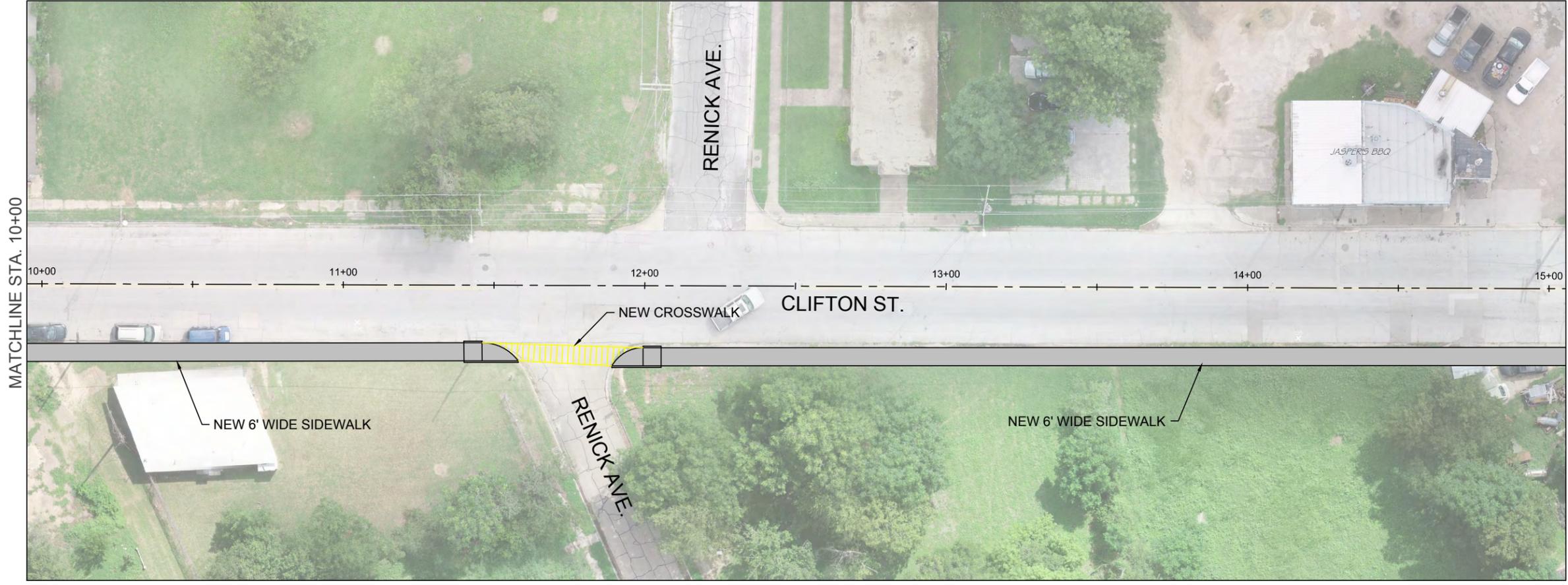
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J.H. HINES ELEMENTARY
SAFE ROUTES TO SCHOOL

CLIFTON ST.
SIDEWALK PLAN
SHEET 1 OF 2

SCALE N/A	PROJECT NO.	DRAWING NO. 1.7
DATE 08/07/2019	SHEET NO. X of X	



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<p>J.H. HINES ELEMENTARY SAFE ROUTES TO SCHOOL</p>		
<p>CLIFTON ST. SIDEWALK PLAN SHEET 2 OF 2</p>		
SCALE N/A	PROJECT NO.	DRAWING NO.
DATE 08/07/2019	SHEET NO. X of X	1.8

SIDEWALKS - GENERAL

SW-1

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.



ENGINEERING SERVICES



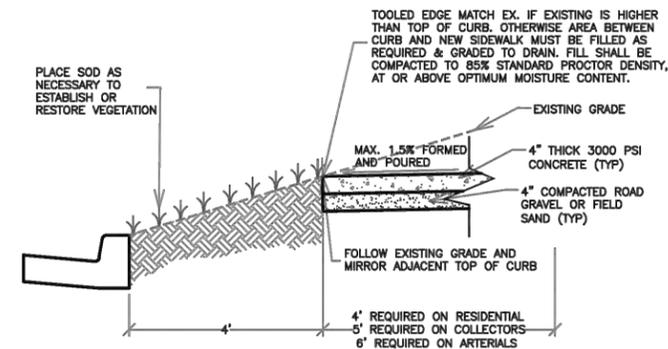
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NO.	COMMENTS	BY	DATE	
04	REMOVE SEAL	DG	09/03/2014	DATE 09/03/2014
03	ADD NOTES #10 & 11.	DG	05/02/2014	
02	REVISED ALL NOTES.	DG	02/01/2013	
01	REVISE NOTE 2 - GRADE 40 TO GRADE 60.	DG	12/15/2011	



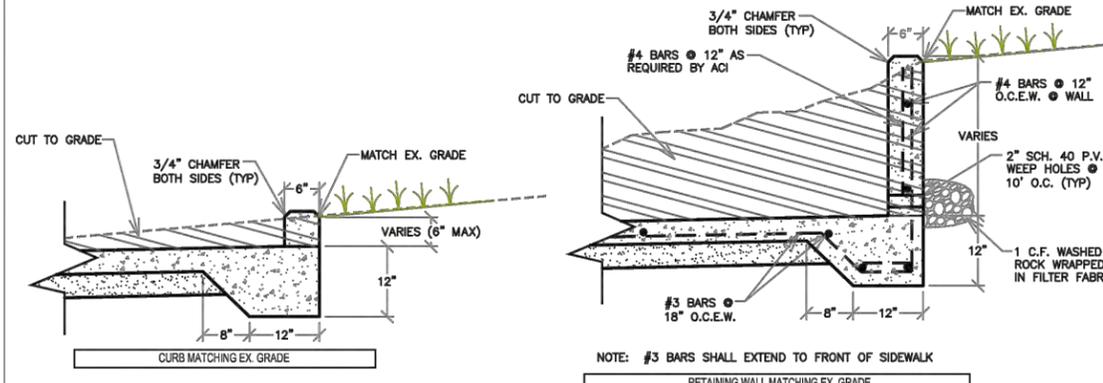
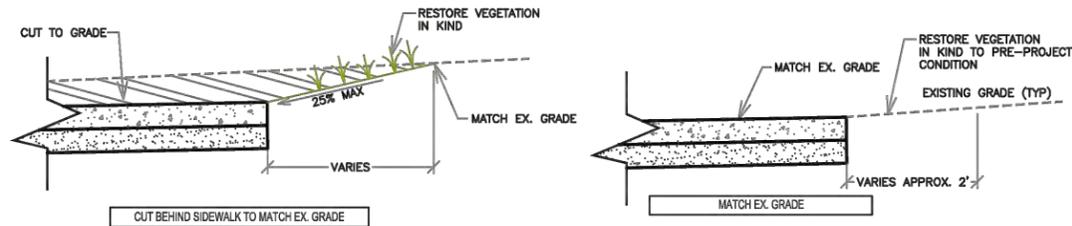
ENGINEERING SERVICES



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



TYPICAL DETAIL OF FRONT OF SIDEWALKS



TYPICAL DETAILS OF BACK OF SIDEWALKS

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.

REV.	DESCRIPTION	DATE
------	-------------	------

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Anthony D. Beach
08/07/2019

BSP engineers
F-7587
TBPE REGISTRATION F-7587

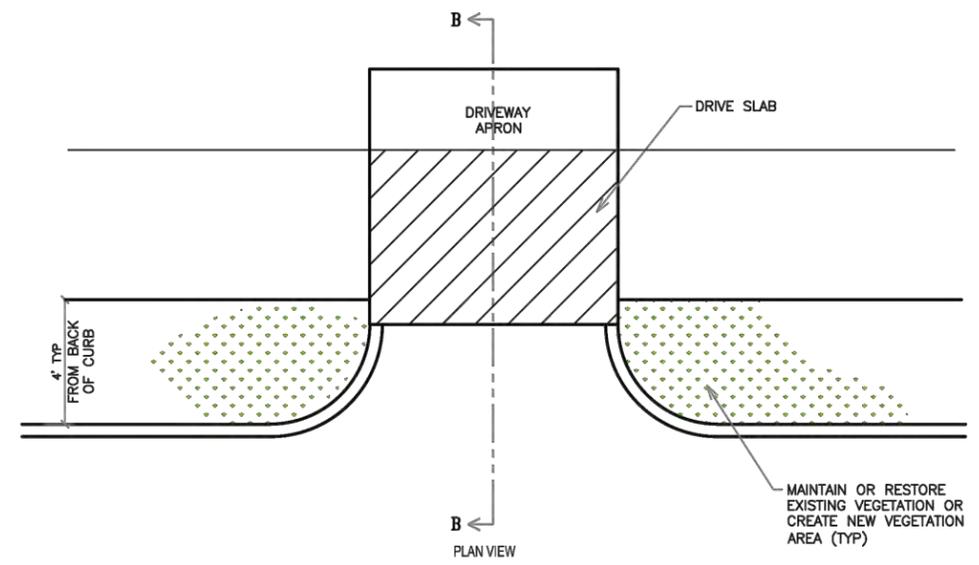
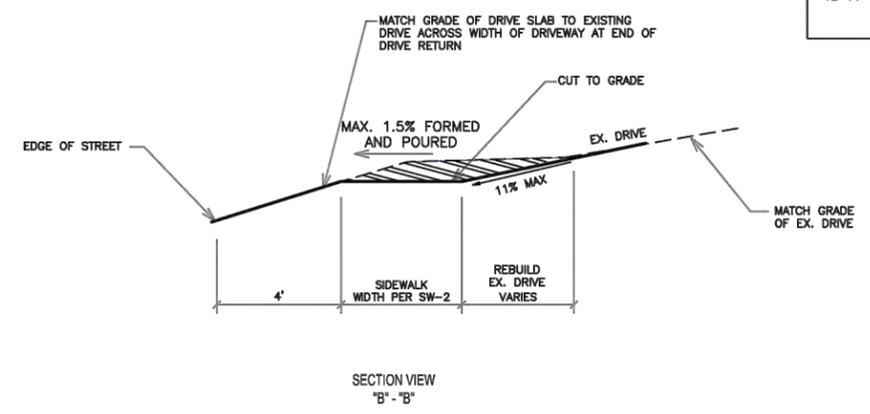


J.H. HINES ELEMENTARY SAFE ROUTES TO SCHOOL

CITY OF WACO STANDARD SIDEWALK DETAILS 1

SCALE N/A	PROJECT NO.	DRAWING NO. 1.9
DATE 08/07/2019	SHEET NO. X of X	

SW-3



TYPICAL SIDEWALK TREATMENT AT NEW DRIVEWAYS

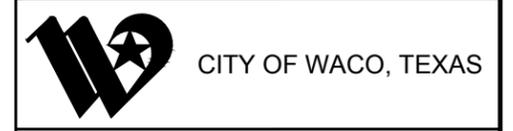
SCALE
NTS

REV.	DESCRIPTION	DATE
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Anthony D. Beach
08/07/2019

BSP engineers
F-7587
TBPE REGISTRATION F-7587



J.H. HINES ELEMENTARY
SAFE ROUTES TO SCHOOL

CITY OF WACO STANDARD
SIDEWALK DETAILS 2

SCALE N/A	PROJECT NO.	DRAWING NO. 1.10
DATE 08/07/2019	SHEET NO. X of X	



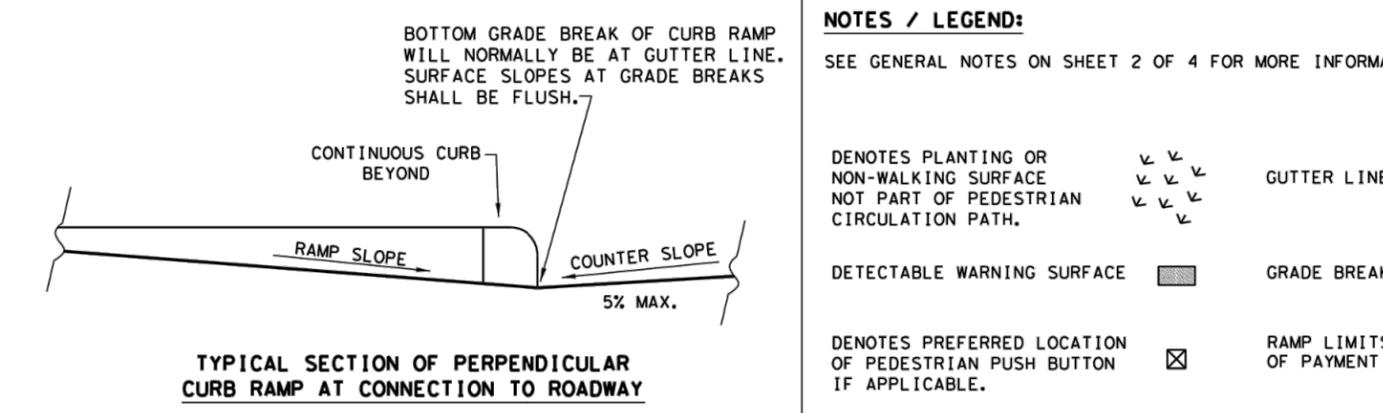
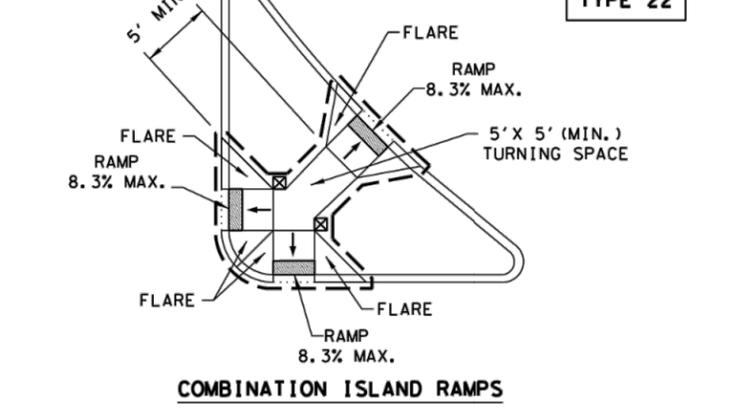
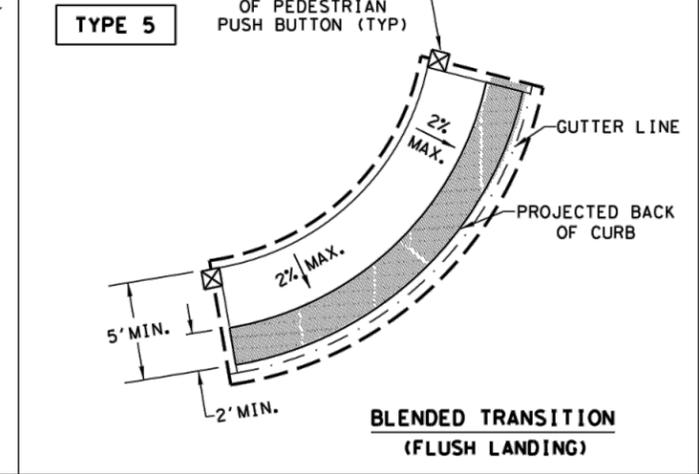
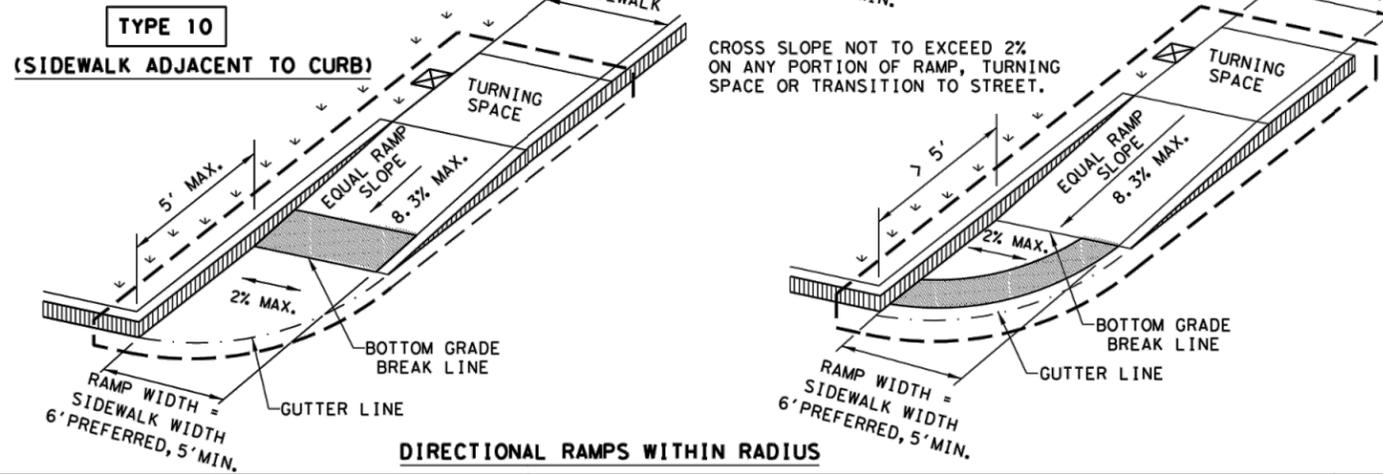
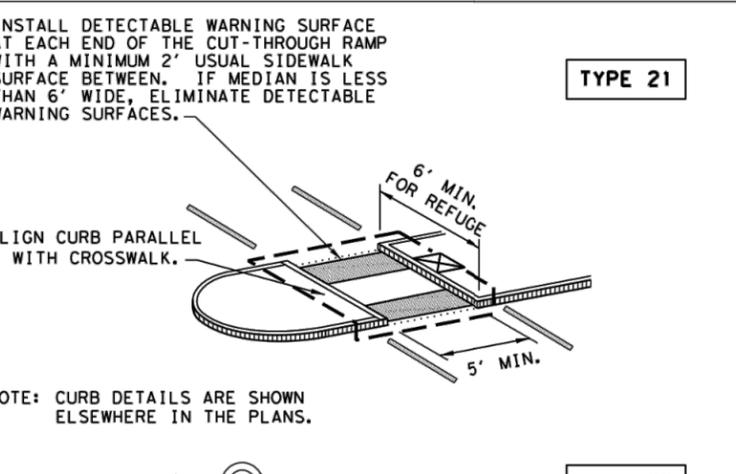
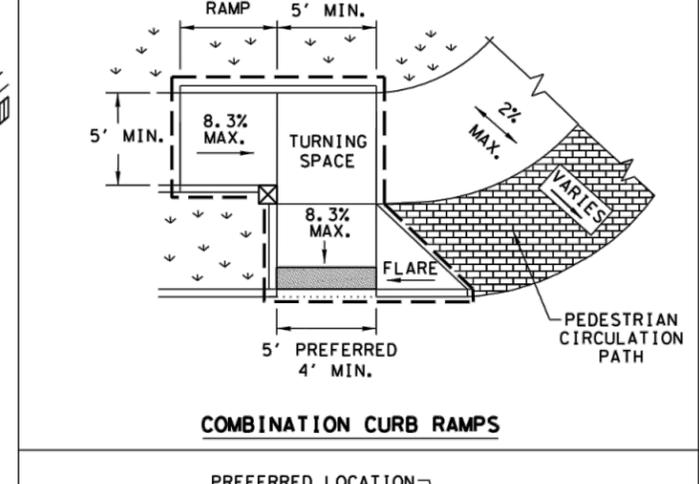
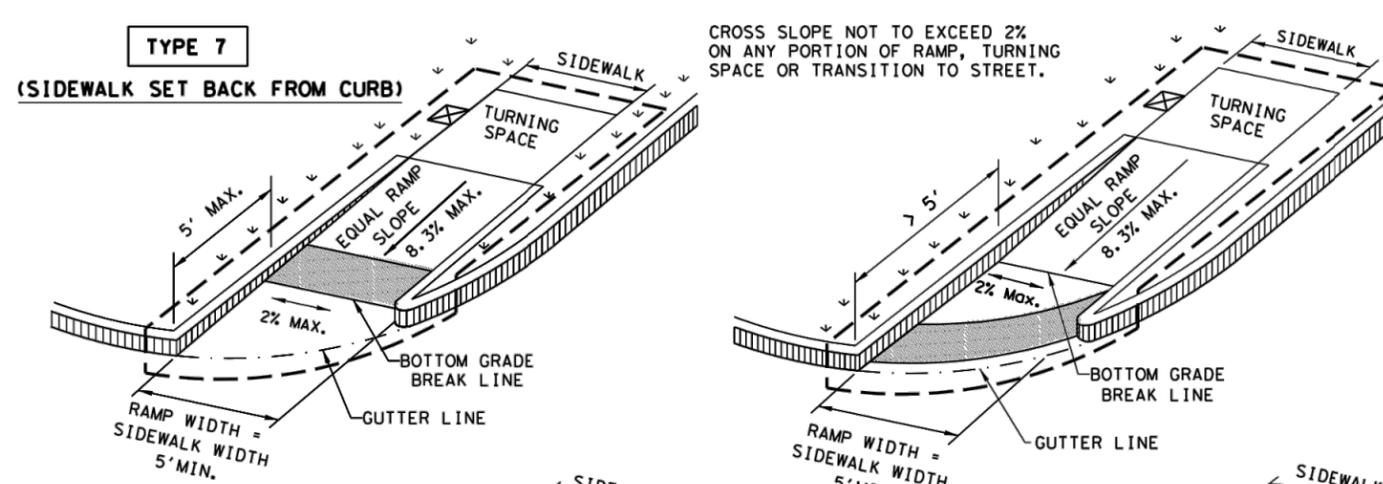
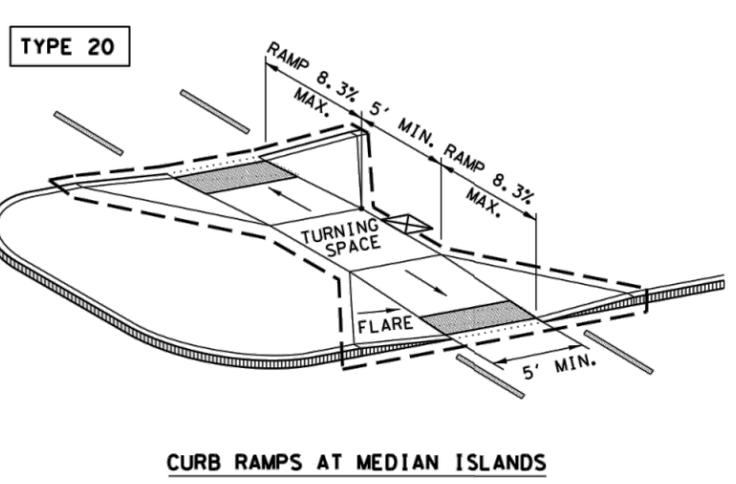
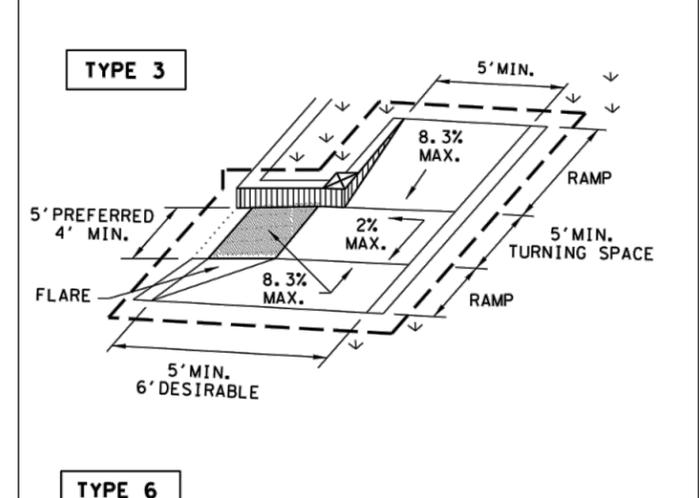
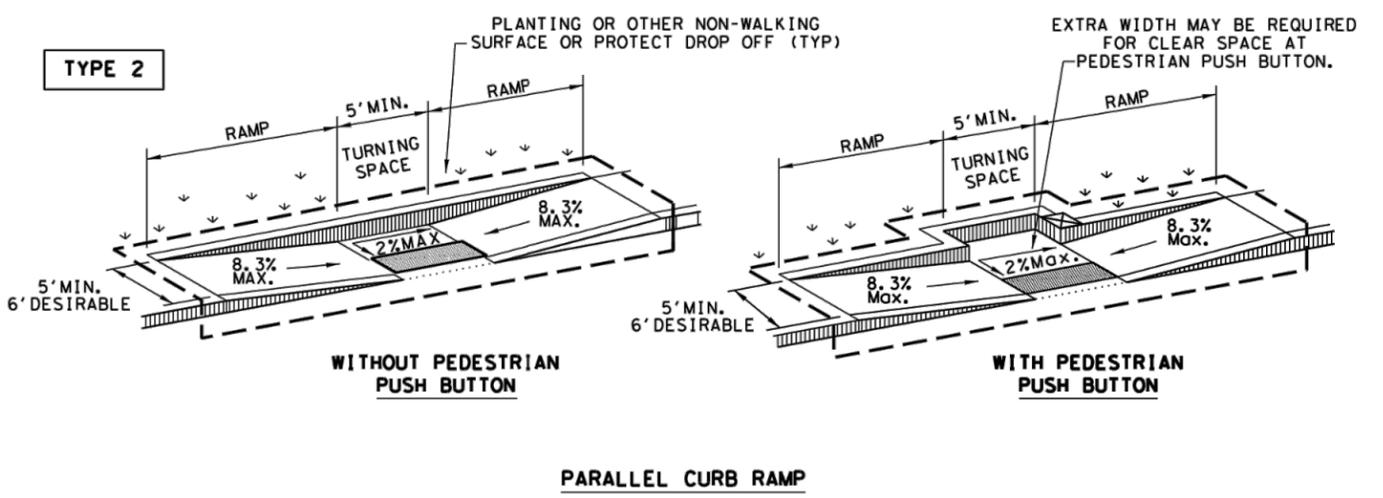
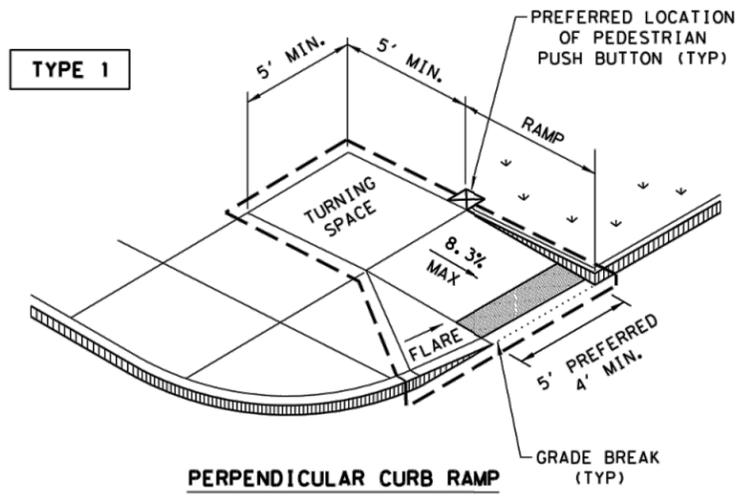
ENGINEERING
SERVICES



REVISIONS				BOOK PAGE NUMBER 0000
NO.	COMMENTS	BY	DATE	
03	REMOVE SEAL	DG	09/03/2014	DATE 08/03/2014
02	SLOPE FOR REBUILDING DRIVES FROM 15% MAX. TO 11% MAX.	DG	02/01/2013	
01	UPDATED	DG/CA	07/03/2009	

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DATE: FILE:



SHEET 1 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18

© TxDOT: MARCH, 2002

REVISED 08, 2005

REVISED 06, 2012

REVISED 01, 2018

DN: TxDOT

DW: VP

CK: KM

CK: PK & JG

CONT

SECT

JOB

HIGHWAY

DIST

COUNTY

SHEET NO.

1.11

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.

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

Detectable Warning Surface

Gutter Line

Grade Break

Ramp Limits of Payment

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GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. 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

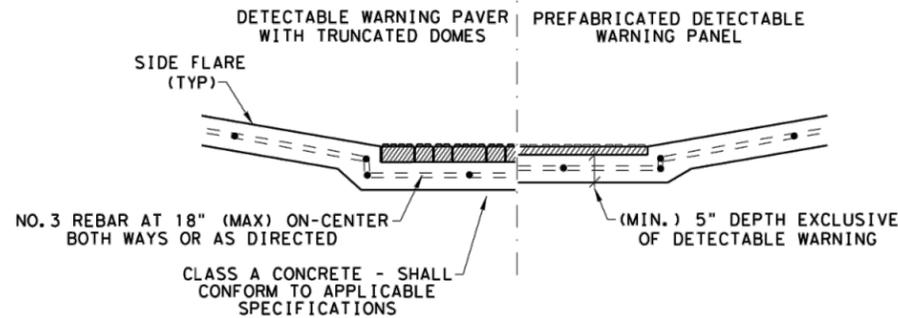
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material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

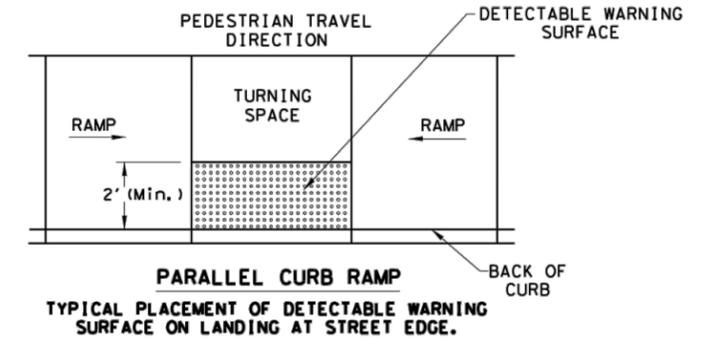
SIDEWALKS

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.

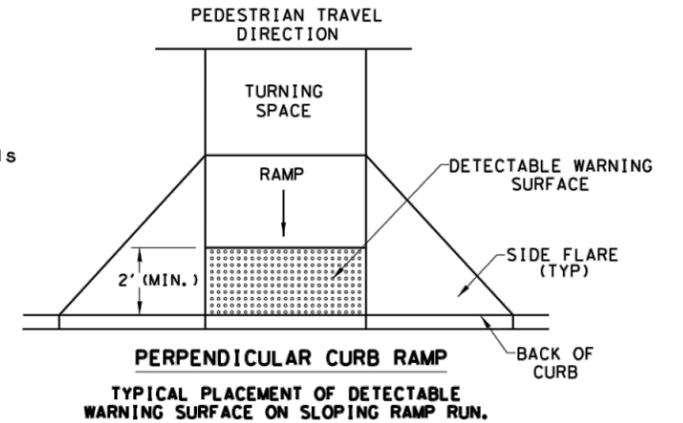


**SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS**

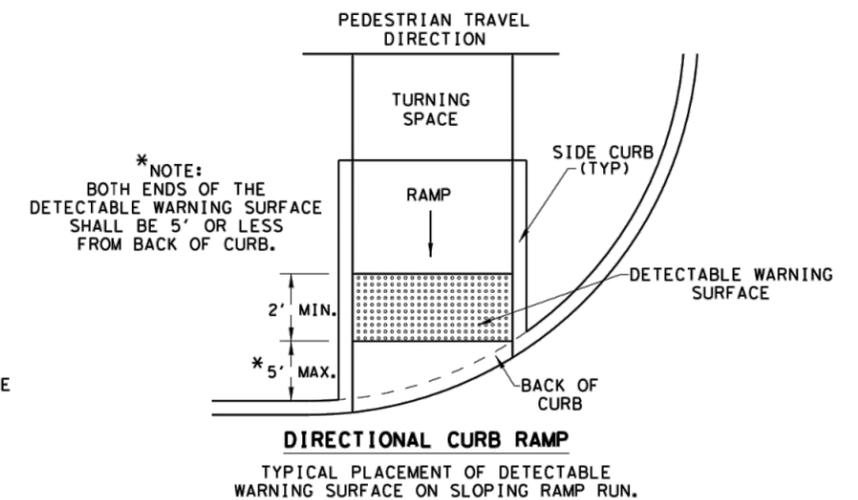
DETECTABLE WARNING SURFACE DETAILS



**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.**



* NOTE:
BOTH ENDS OF THE
DETECTABLE WARNING SURFACE
SHALL BE 5' OR LESS
FROM BACK OF CURB.

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

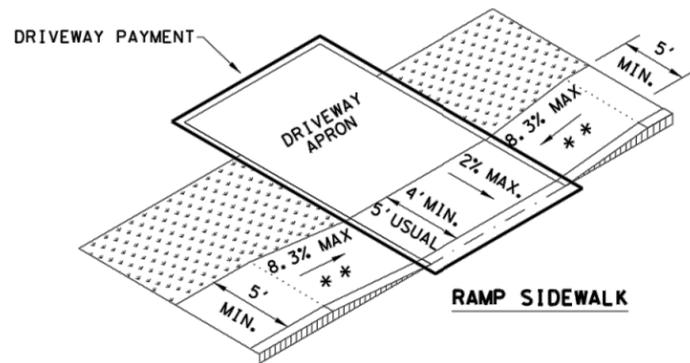
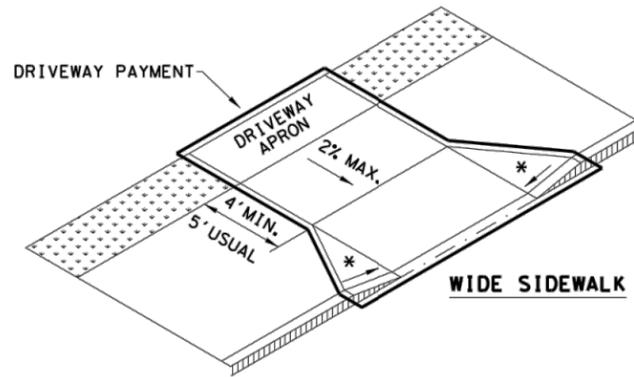
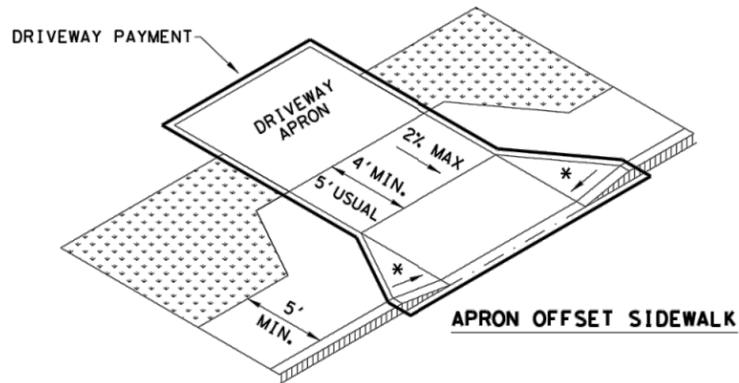
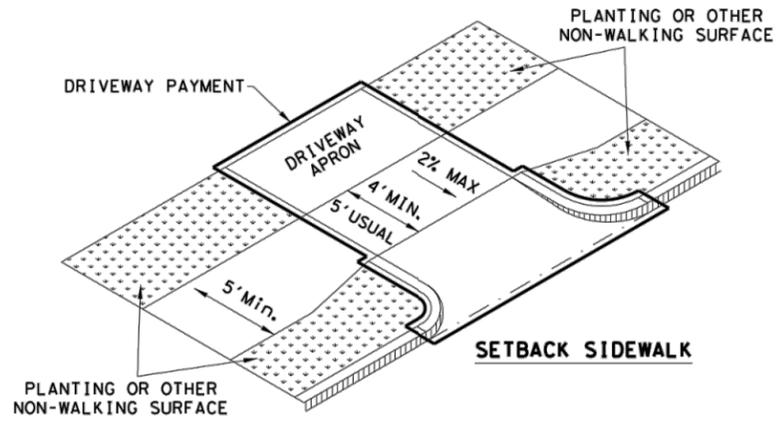
SHEET 2 OF 4

		Design Division Standard	
<h1>PEDESTRIAN FACILITIES CURB RAMPS</h1> <h2>PED-18</h2>			
FILE: ped18	DN: TxDOT	DW: VP	CK: KM
© TxDOT: MARCH, 2002	CONT	SECT	JOB
REVISIONS	DIST	COUNTY	SHEET NO.
REVISED 08, 2005			1.12
REVISED 06, 2012			
REVISED 01, 2018			

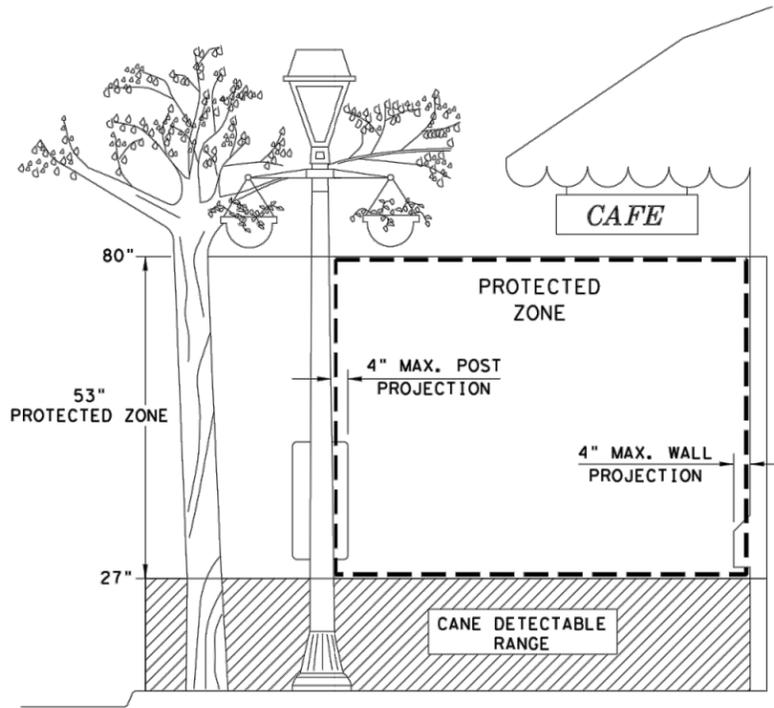
DATE:
FILE:

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SIDEWALK TREATMENT AT DRIVEWAYS

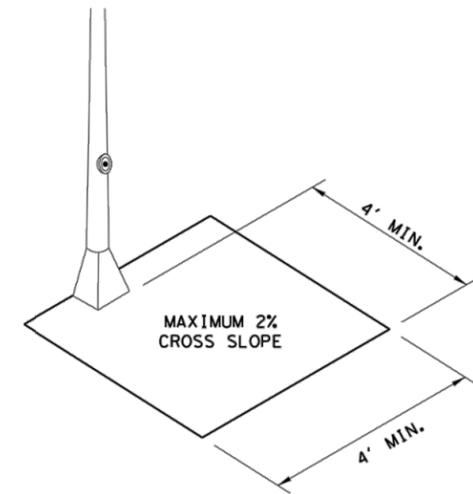


NOTES:
 * WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.
 * * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

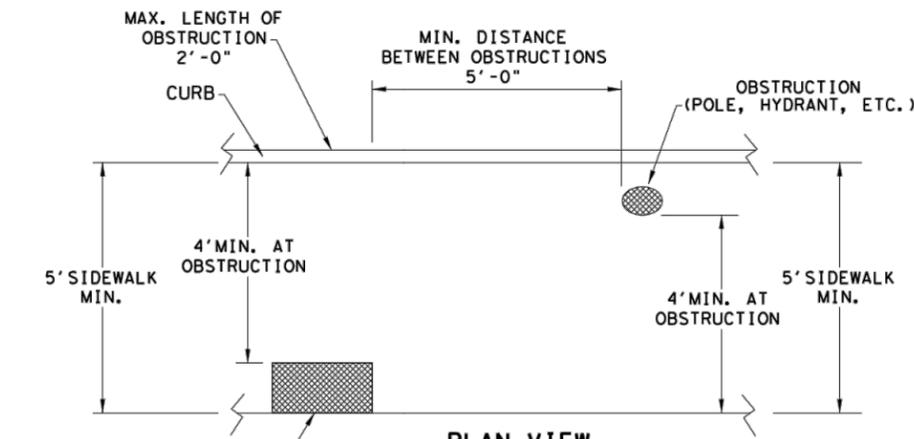


PROTECTED ZONE

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

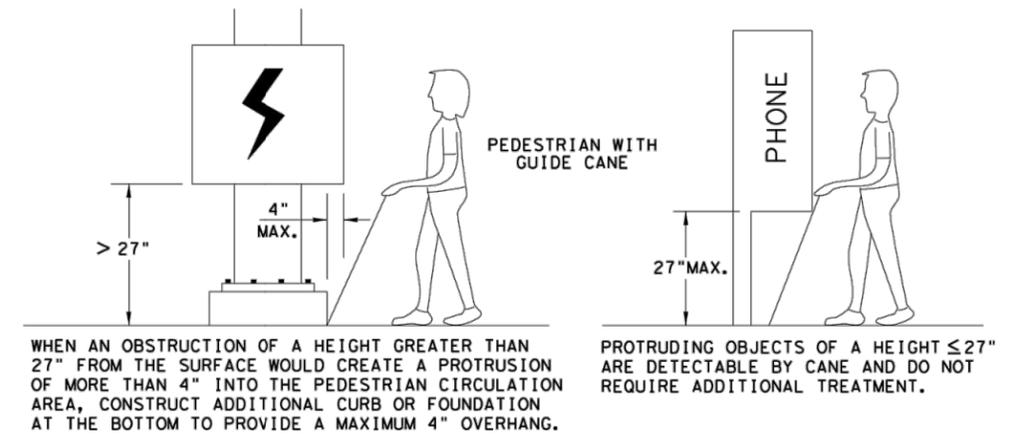


CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



PLACEMENT OF STREET FIXTURES

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



DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4



PEDESTRIAN FACILITIES CURB RAMPS

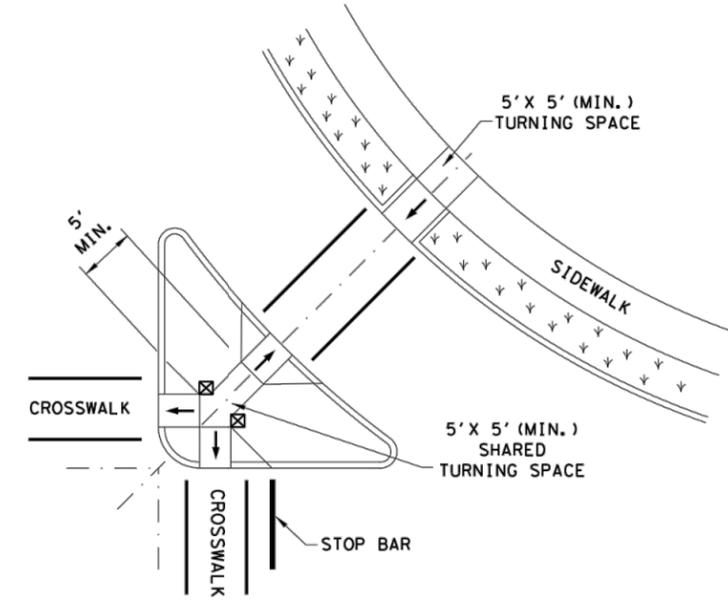
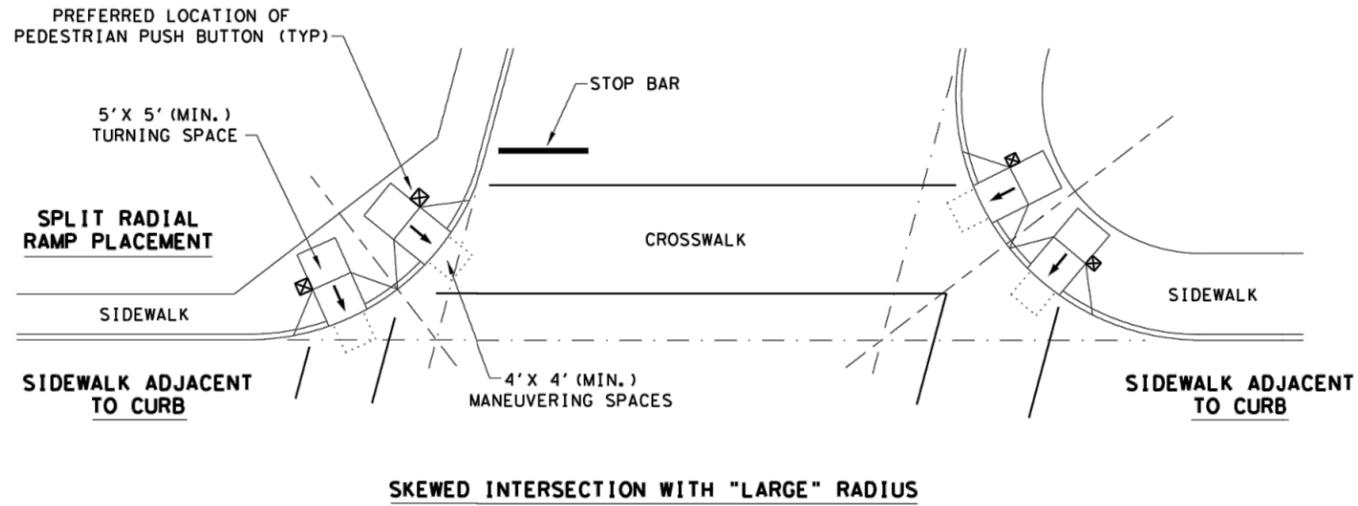
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	
REVISED 09, 2005			1.13	
REVISED 06, 2012				
REVISED 01, 2018				

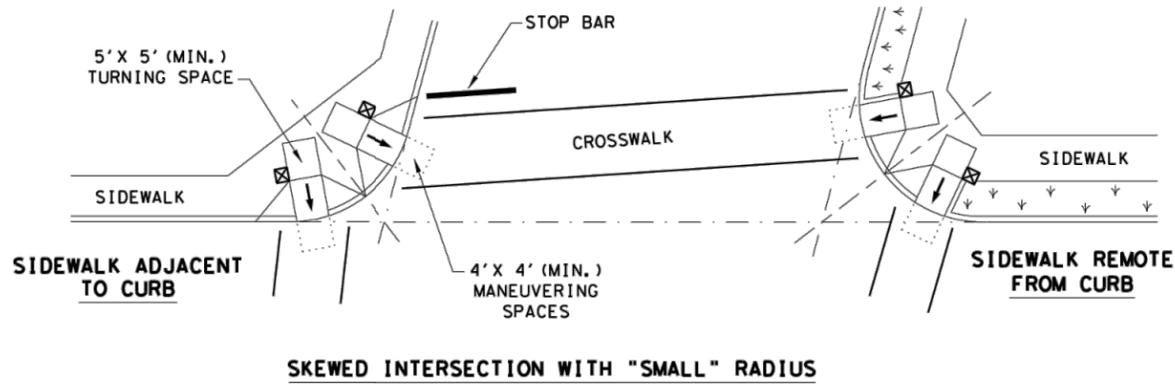
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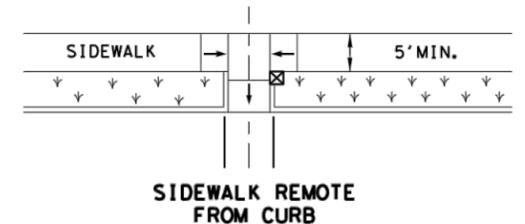
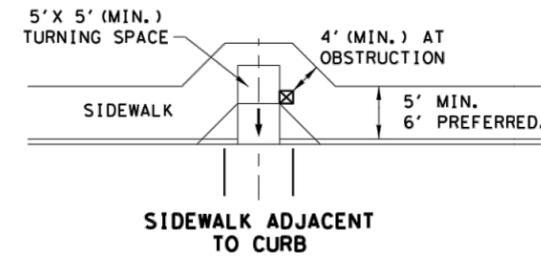
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



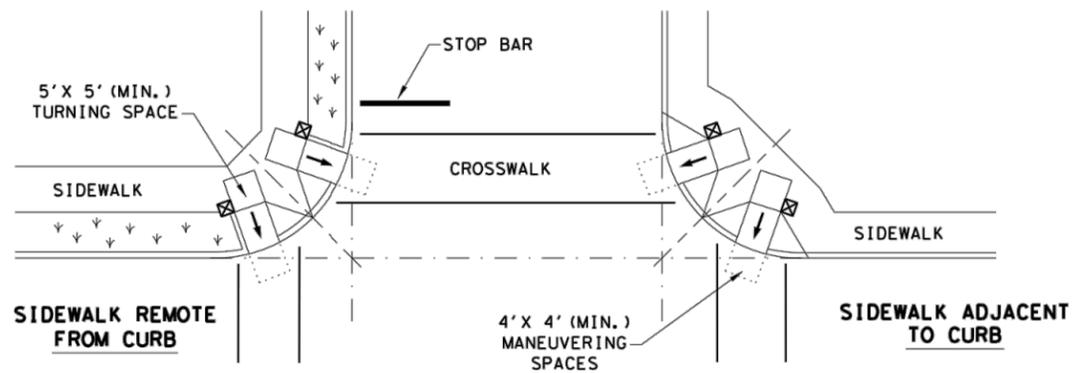
AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



SKewed INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

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. ↙ ↘ ↙ ↘ ↙ ↘

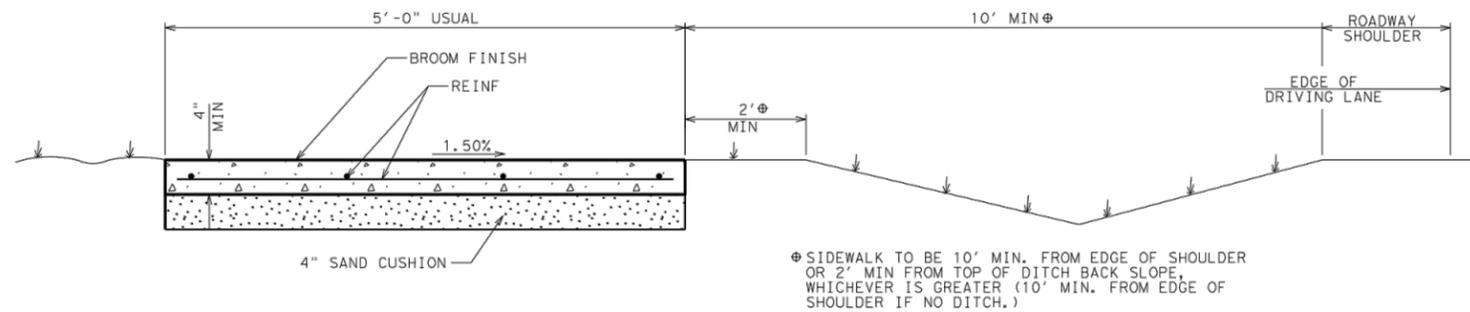
SHEET 4 OF 4



PEDESTRIAN FACILITIES
CURB RAMPS
PED-18

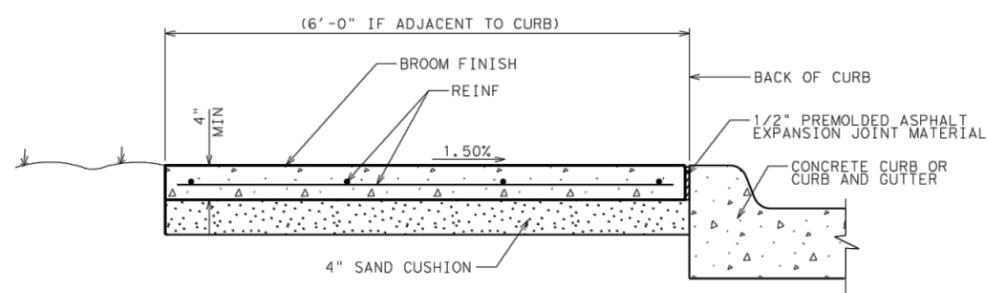
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© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
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REVISED 06, 2012				
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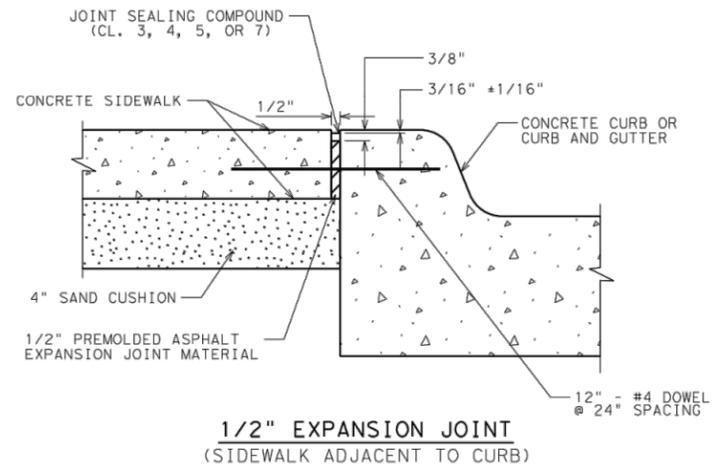


CONCRETE SIDEWALK
(ROADWAY W/O CURB)

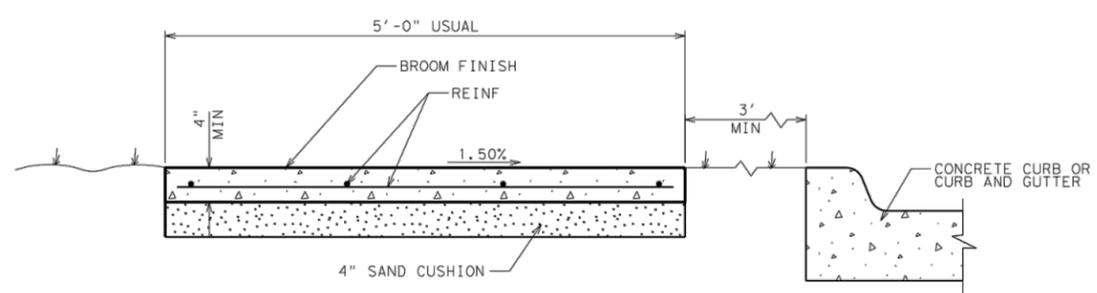
Ø SIDEWALK TO BE 10' MIN. FROM EDGE OF SHOULDER OR 2' MIN FROM TOP OF DITCH BACK SLOPE, WHICHEVER IS GREATER (10' MIN. FROM EDGE OF SHOULDER IF NO DITCH.)



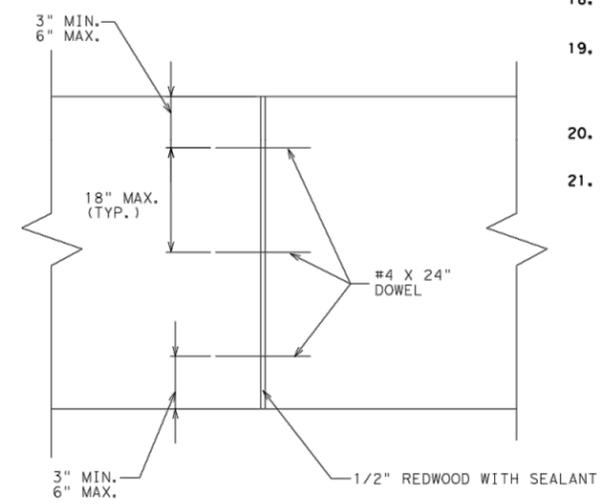
CONCRETE SIDEWALK
(ADJACENT TO CURB)



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



CONCRETE SIDEWALK
(OFFSET FROM 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.

CONCRETE SIDEWALK DETAILS

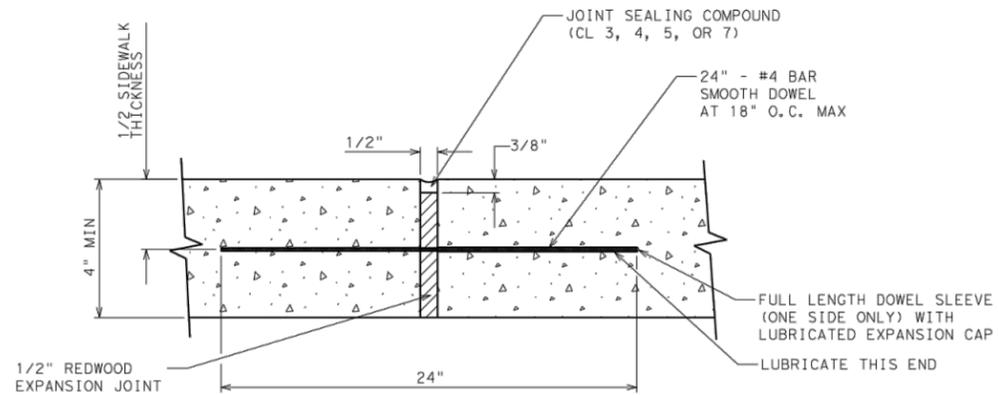
Texas Department of Transportation
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WACO DISTRICT STANDARD

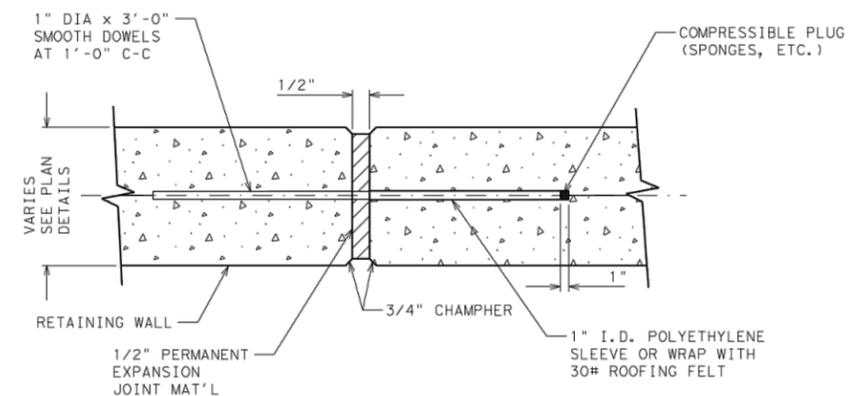
CONCRETE SIDEWALK DETAILS

SHEET 1 OF 3

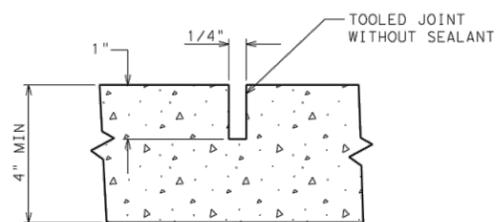
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6	X	1.15
STATE	DIST.	COUNTY
TEXAS	WACO	MCLENNAN
CONT.	SECT.	JOB
		HIGHWAY NO.
		X



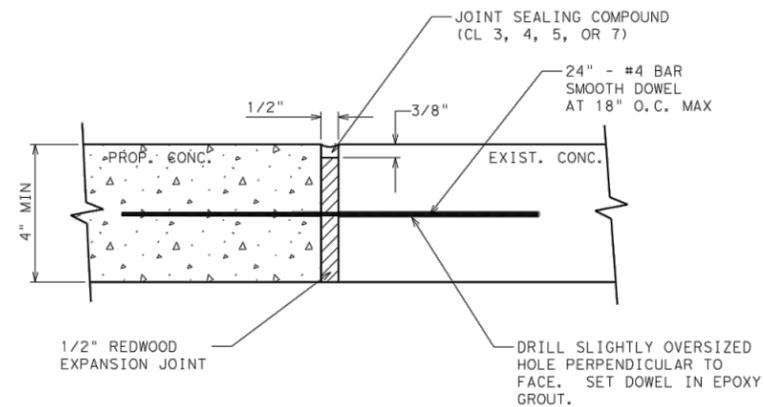
**EXPANSION JOINT
(SIDEWALK)**



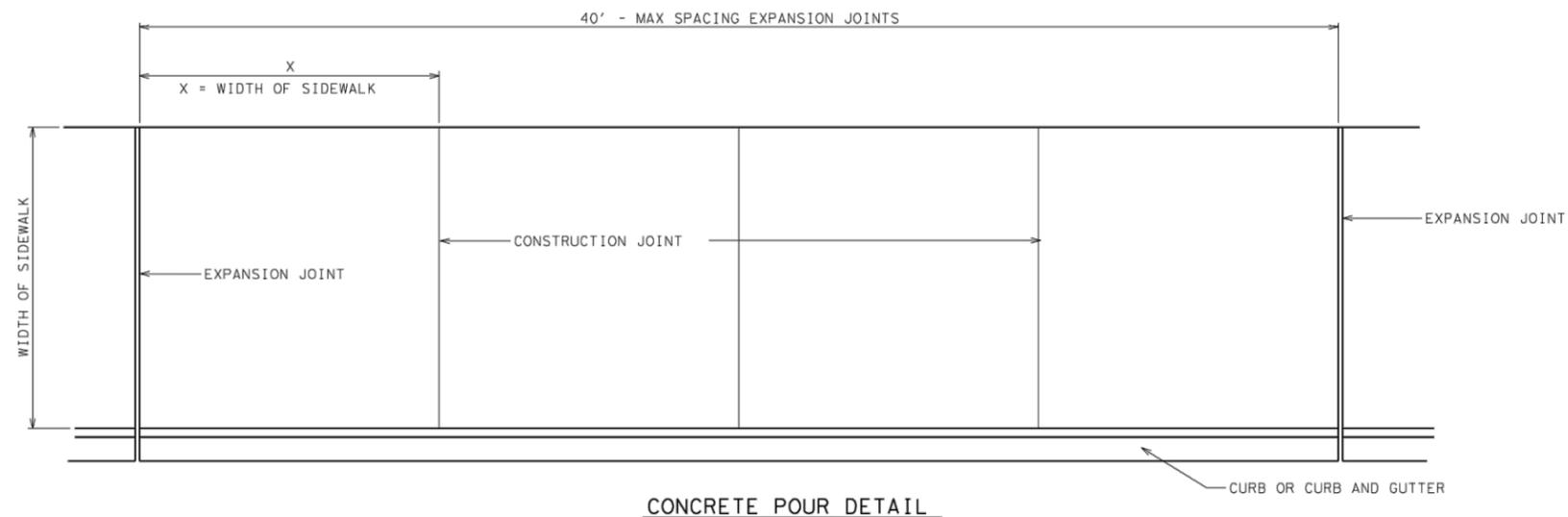
**EXPANSION JOINT
(RETAINING WALL)**



CONTRACTION JOINT



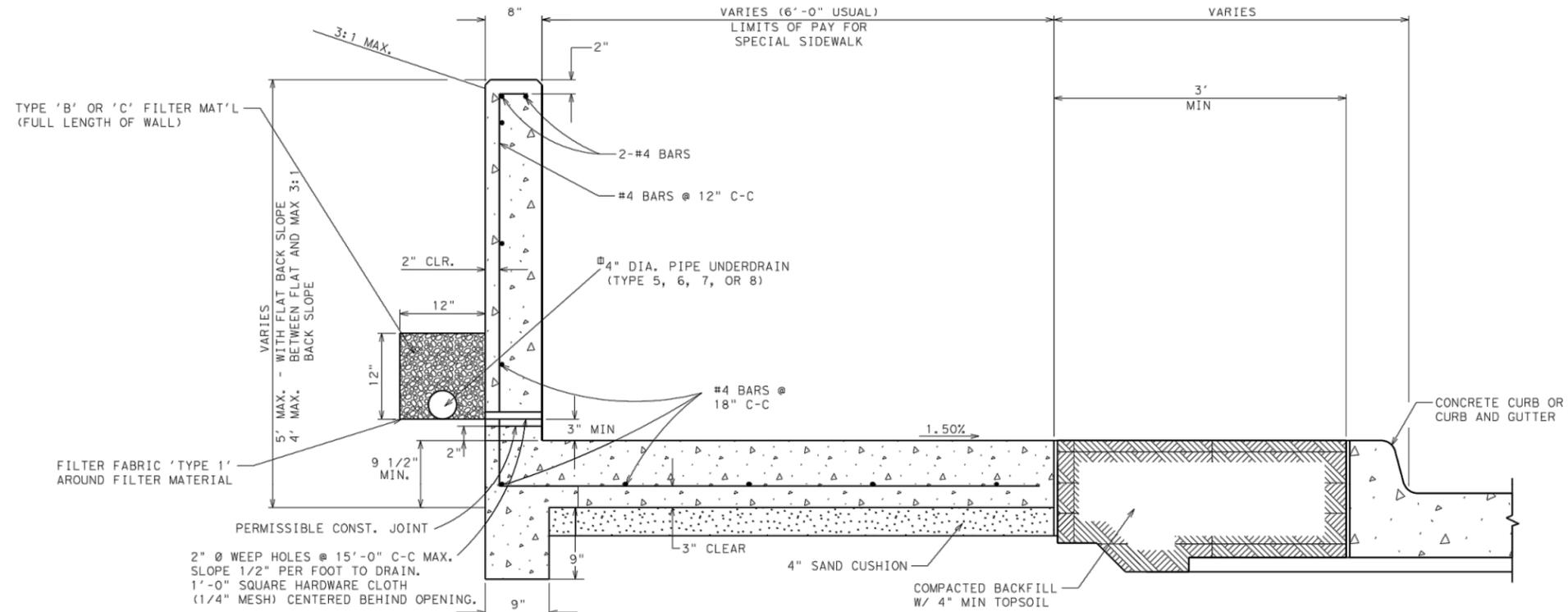
DOWEL TO EXISTING DETAIL



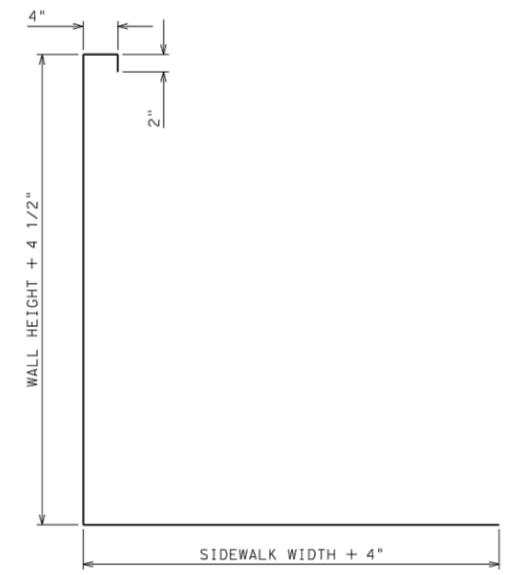
CONCRETE POUR DETAIL

Texas Department of Transportation
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WACO DISTRICT STANDARD
**CONCRETE
SIDEWALK DETAILS**
 SHEET 2 OF 3

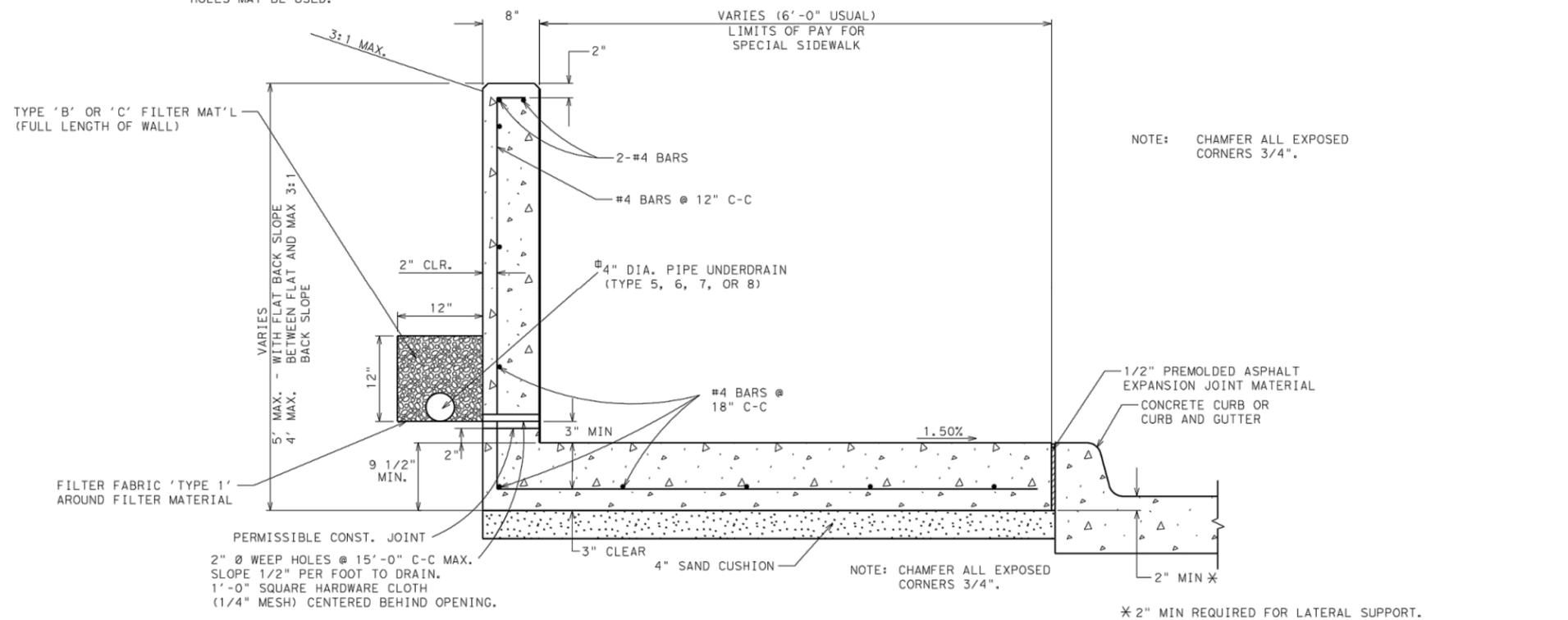
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6	X	1.16
STATE	DIST.	COUNTY
TEXAS	WACO	MCLENNAN
CONT.	SECT.	JOB
		HIGHWAY NO.
		X



SIDEWALK REMOTE FROM CURB



REINFORCING STEEL DETAIL



SIDEWALK ADJACENT TO CURB

NOTE: CHAMFER ALL EXPOSED CORNERS 3/4".

SPECIAL CONCRETE SIDEWALK W/RETAINING WALL

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WACO DISTRICT STANDARD

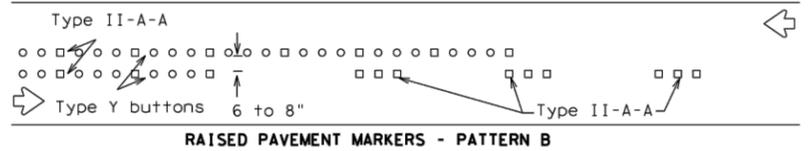
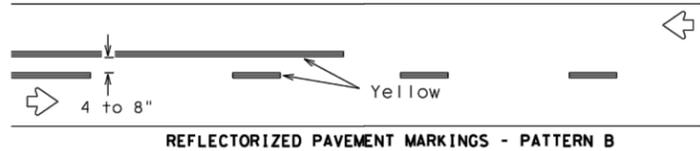
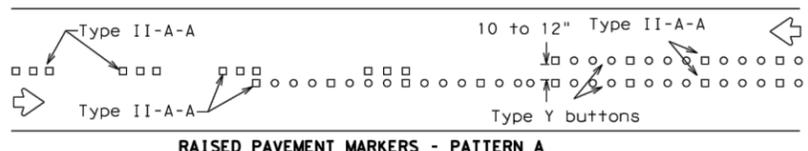
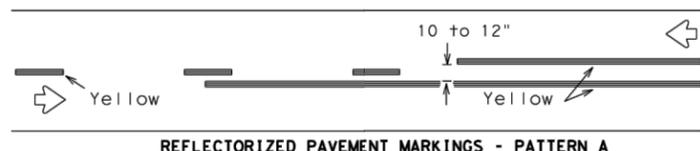
CONCRETE SIDEWALK DETAILS

SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
6	STP 2016 (106) TP ETC.	1.17
STATE	DIST.	COUNTY
TEXAS	WACO	MCLENNAN
CONT.	SECT.	JOB
		HIGHWAY NO.
		X

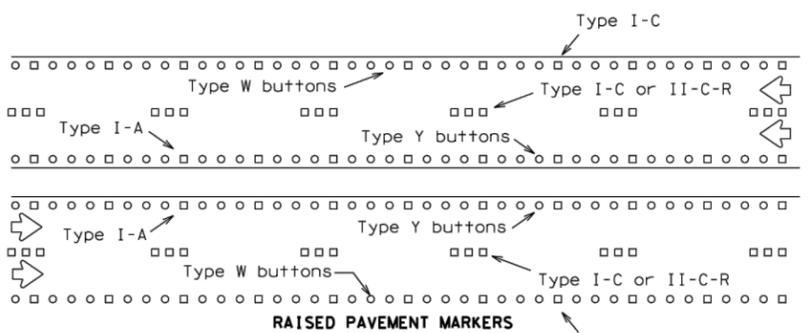
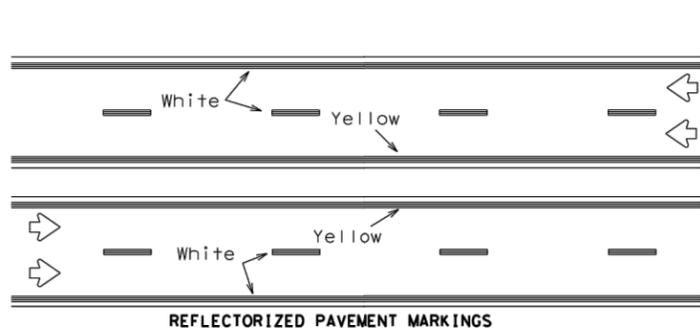
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

PAVEMENT MARKING PATTERNS



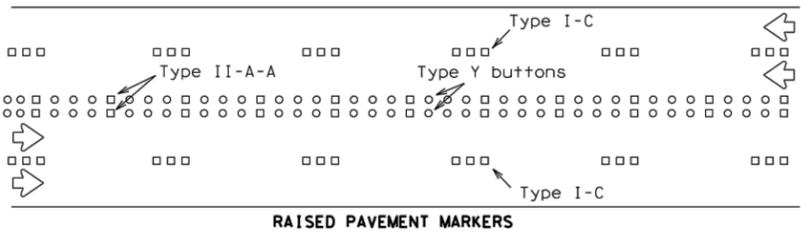
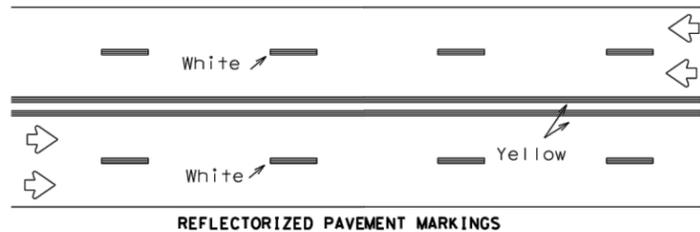
Pattern A is the TxDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectorized pavement markings.

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



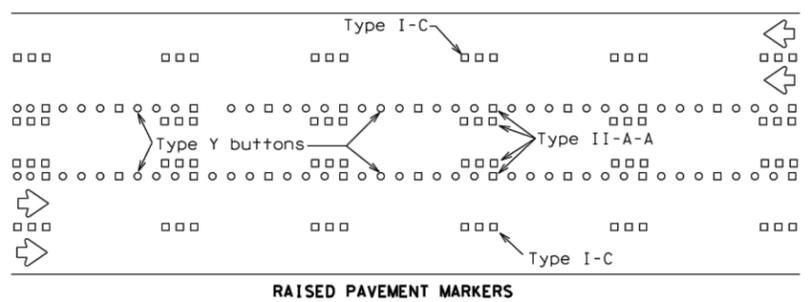
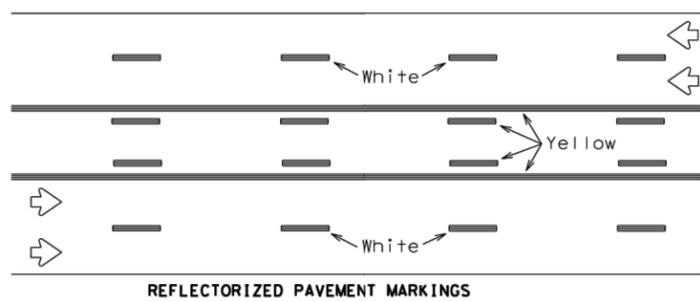
Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



Prefabricated markings may be substituted for reflectorized pavement markings.

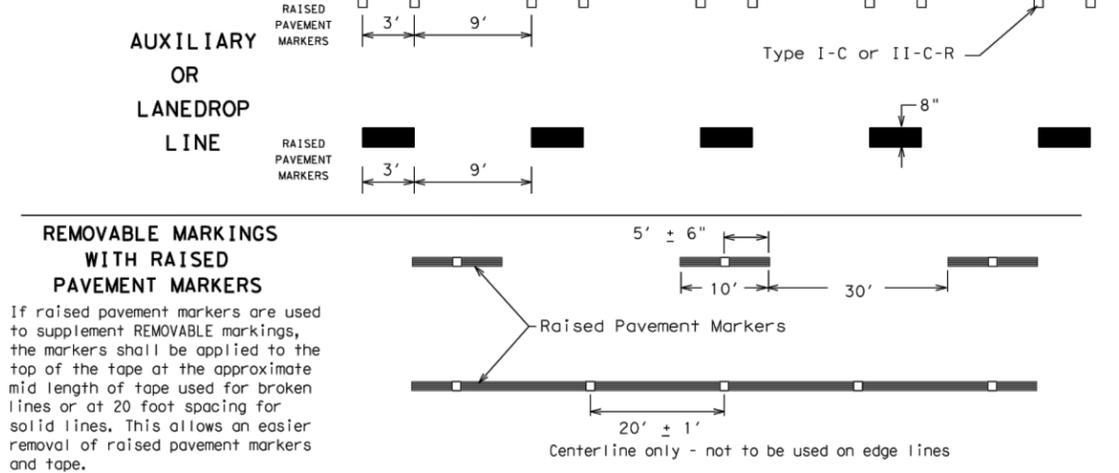
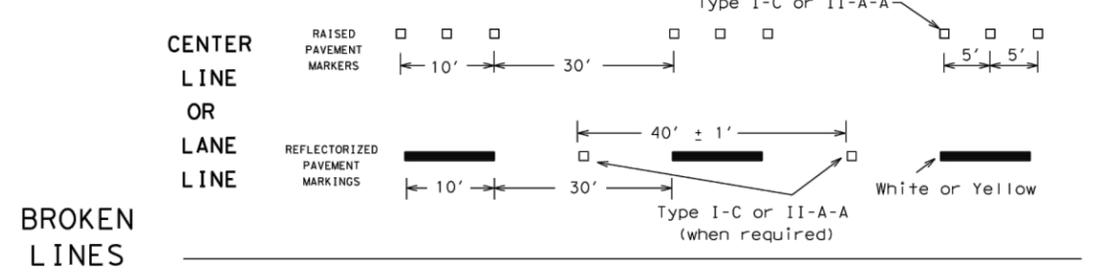
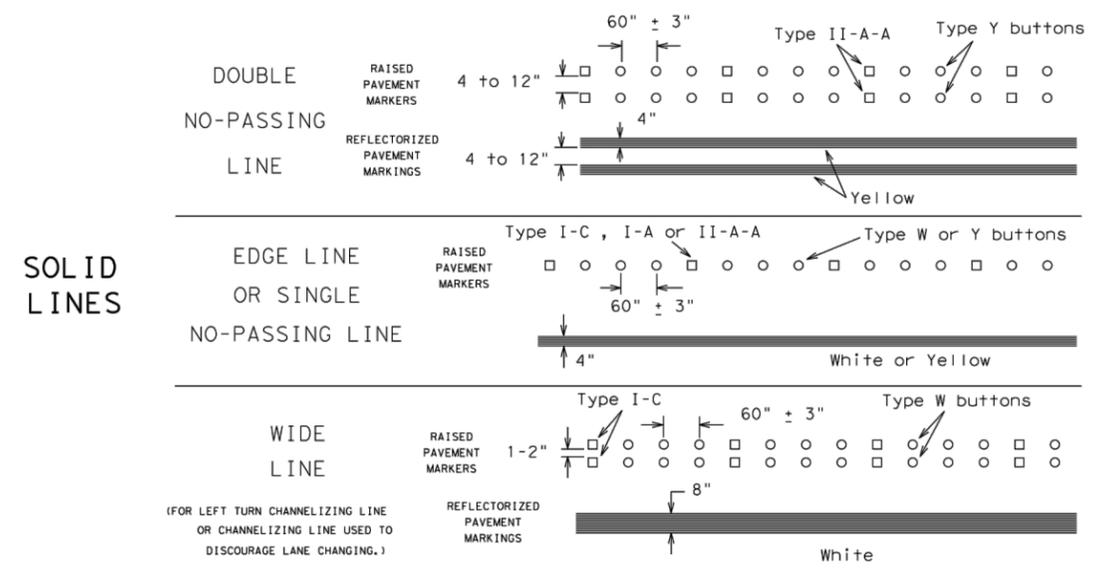
LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



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



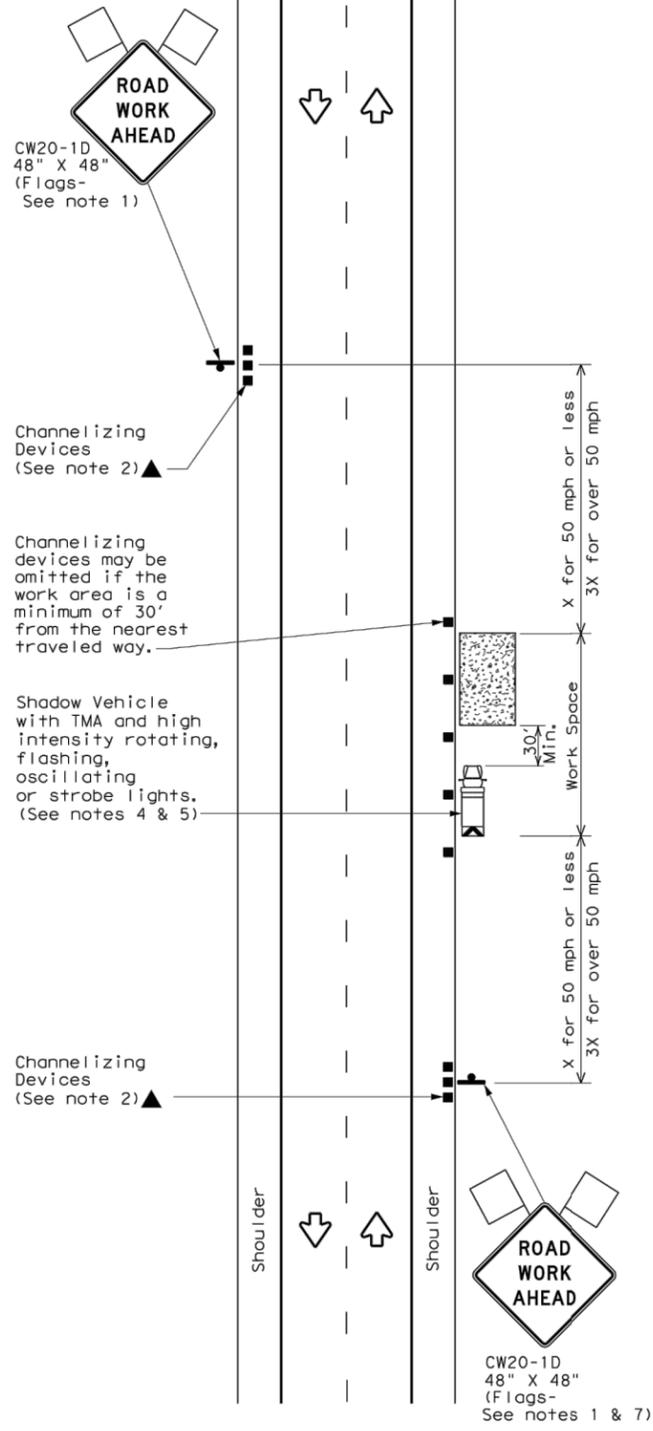
BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC (12) - 14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS				
1-97 9-07				
2-98 7-13				
11-02 8-14				
	DIST	COUNTY	SHEET NO.	
			1.18	

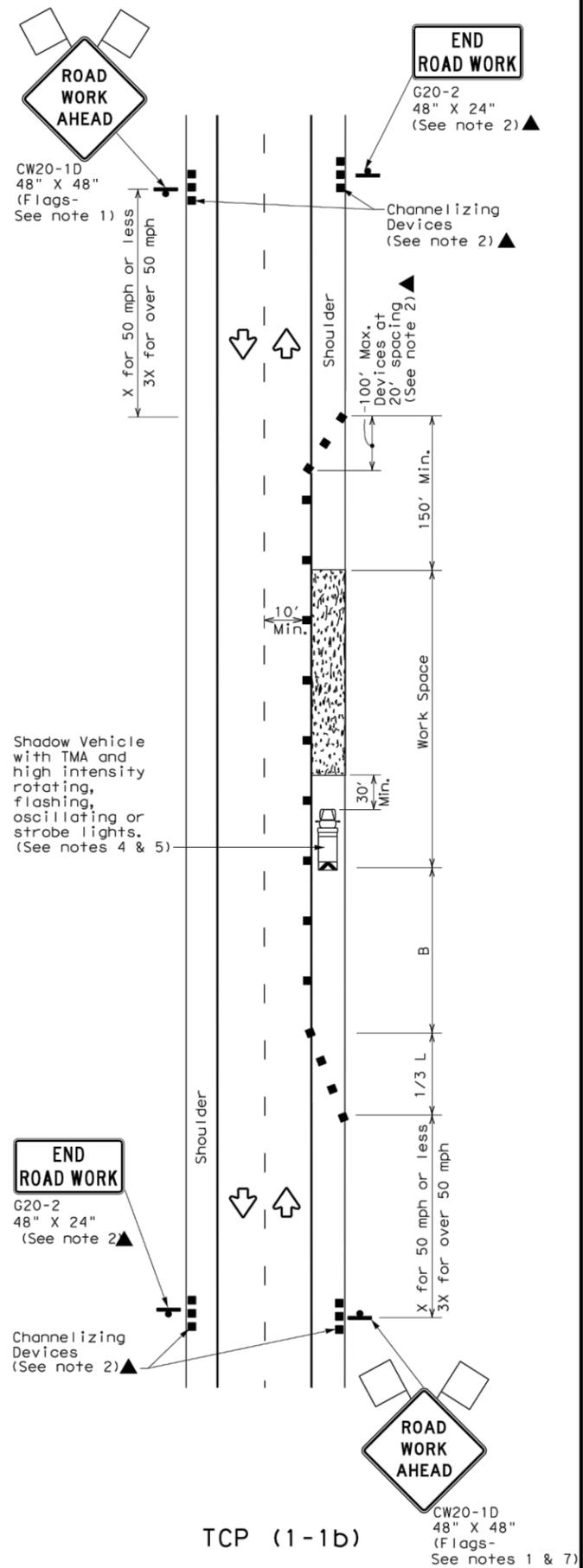
DATE:
FILE:

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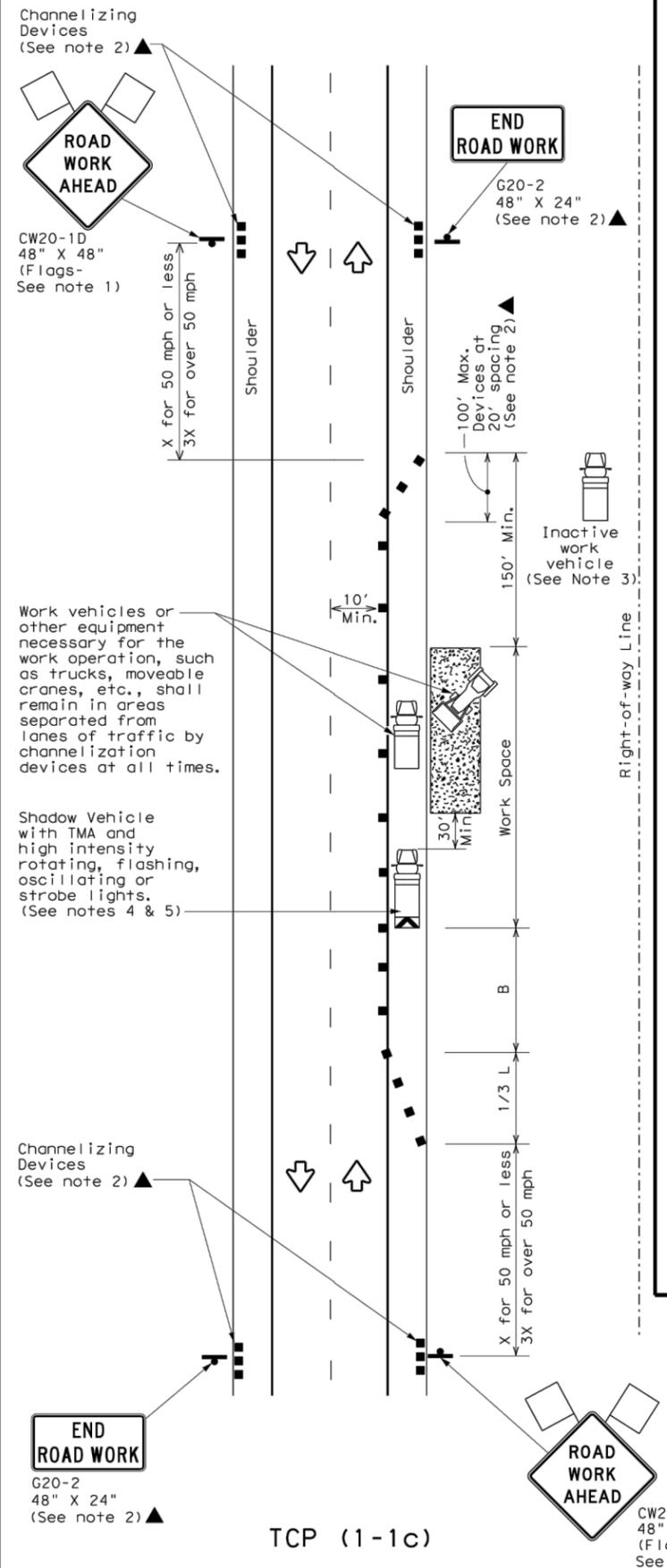
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
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**
- Flags attached to signs where shown are REQUIRED.
 - 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.
 - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
 - 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.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
 - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
 - CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.



TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD
SHOULDER WORK

TCP (1-1) - 18

FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
2-94 4-98				
8-95 2-12				
1-97 2-18				
	DIST	COUNTY	SHEET NO.	
			1.19	

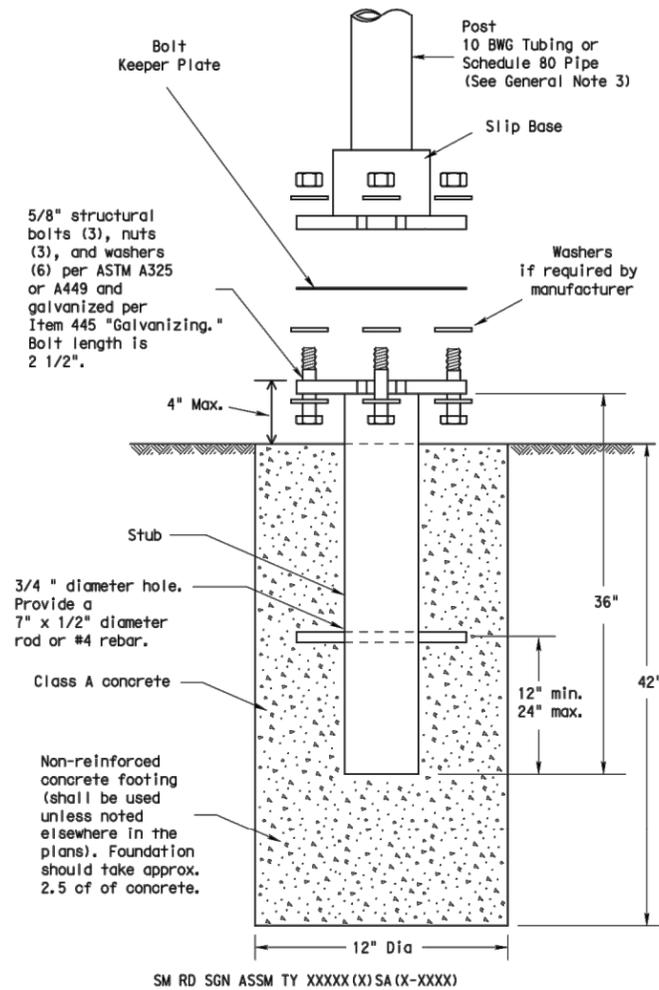
DATE:
FILE:

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DISCLAIMER:

DATE:
 FILE:

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



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:

- 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.
- 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 pre-coated 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
- 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>
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

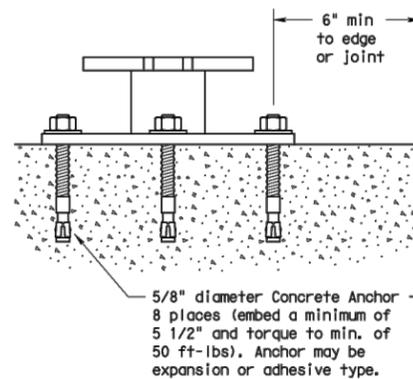
Foundation

- 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.
- 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.
- 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.
- Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
- The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support

- 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.
- 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



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, "Epoxyes 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.

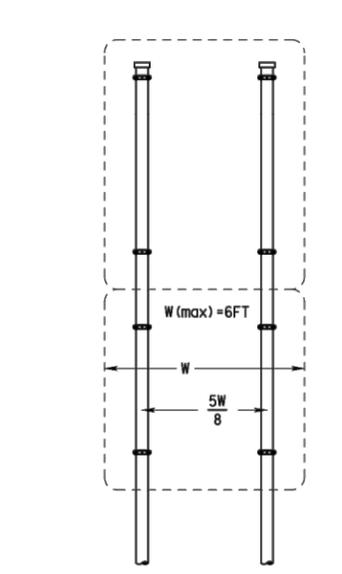
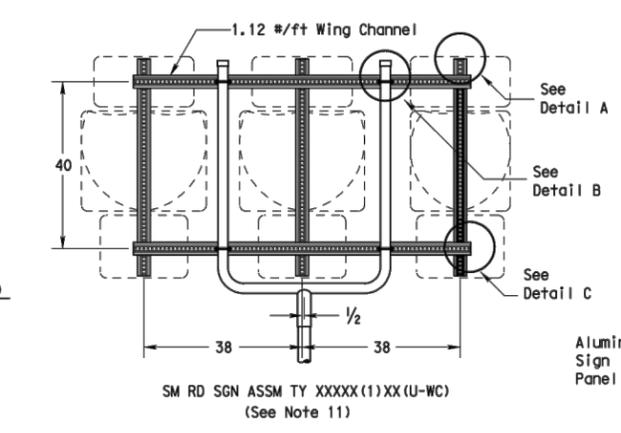
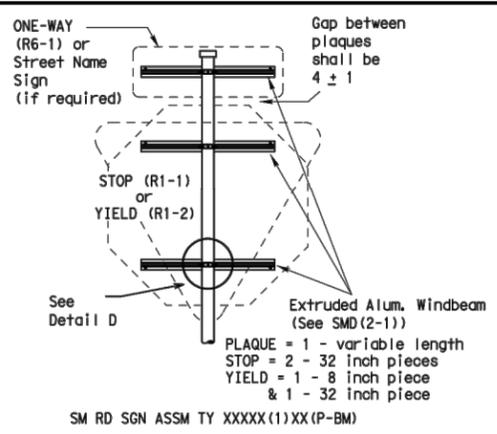
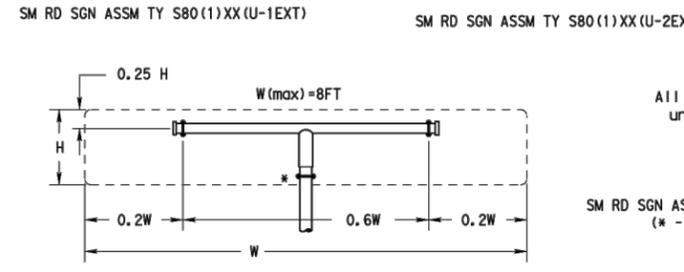
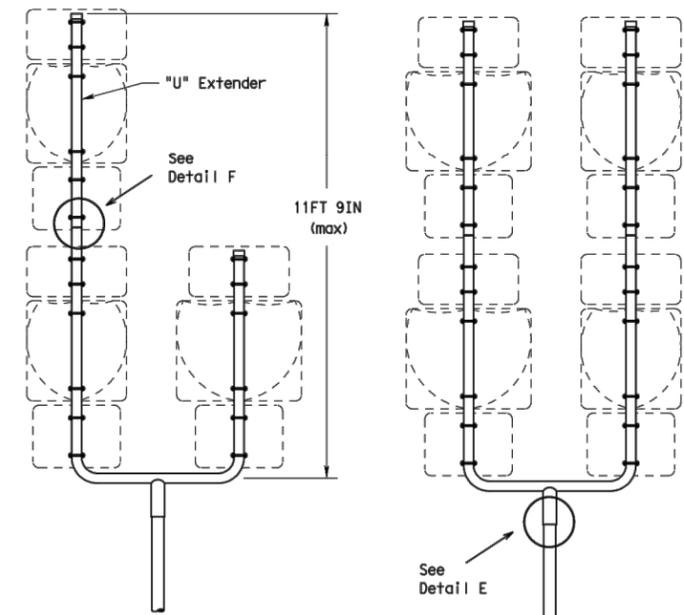
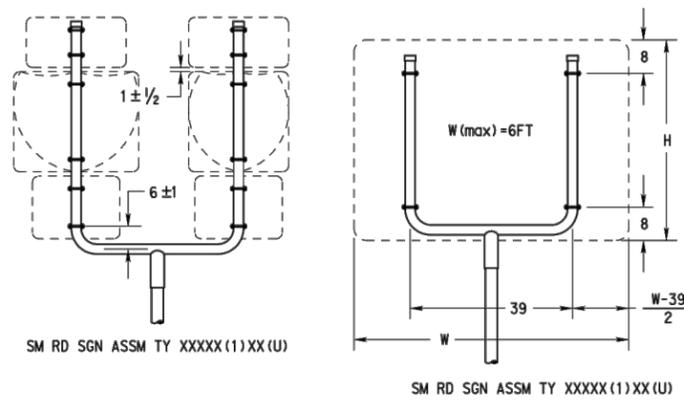
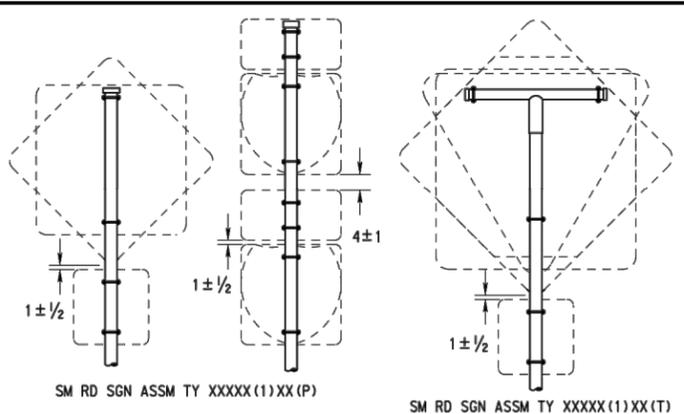
SM RD SGN ASSM TY XXXXX (X) SB (X-XXXX)



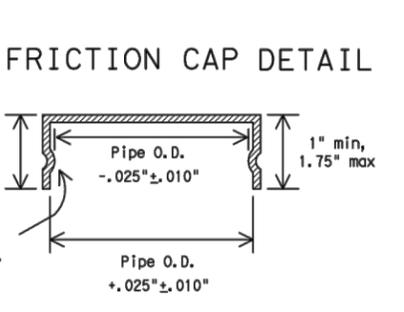
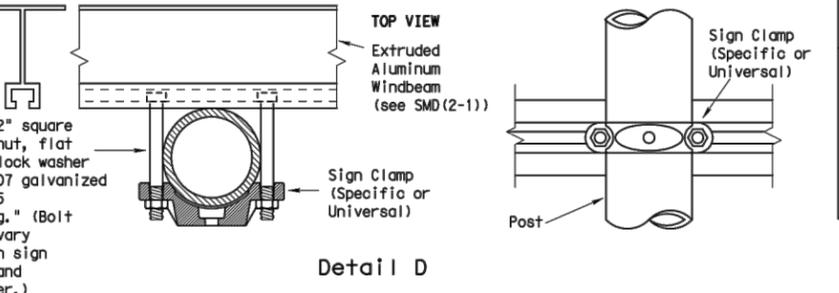
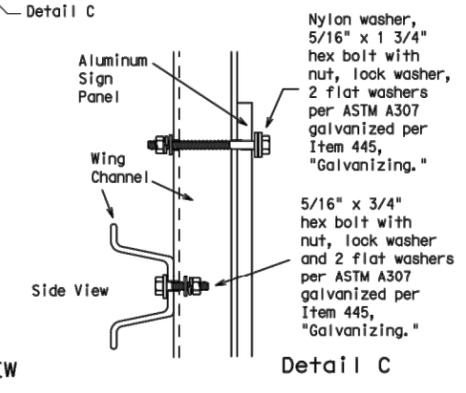
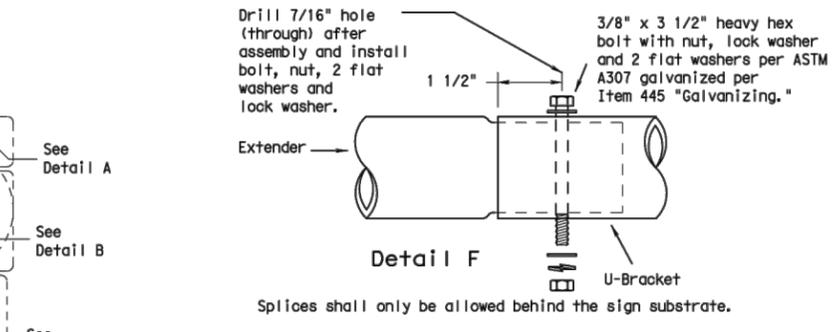
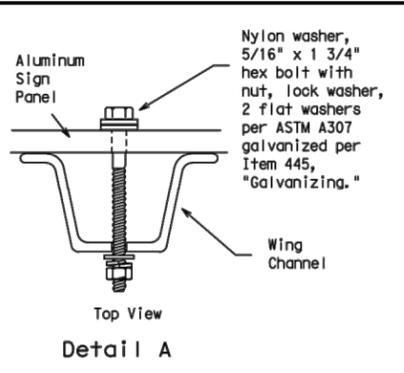
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM SMD (SLIP-1) -08

© TxDOT July 2002		REV. 1	REV. 2	REV. 3	REV. 4
9-08	REVISIONS	DATE	BY	CHECKED	APPROVED
LIST	QUANTITY	SHEET NO.			
WACO	MCLENNAN	1.21			

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All dimensions are in english unless detailed otherwise.



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:
- | 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 |
 - 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.
 - Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
 - 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.
 - Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
 - 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.
 - 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.
 - Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
 - 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."
 - Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
 - 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.
 - Post open ends shall be fitted with Friction Caps.
 - 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)
Warning	48x60-inch signs	TY S80(1)XX(T)
	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)

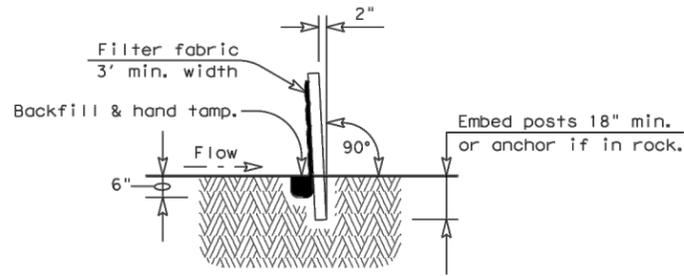
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD (SLIP-2) -08

© TxDOT July 2002	REVISED	DATE	BY	CHKD	BY	CHKD	BY
9-08							
PROJECT	COUNTY	SHEET NO.					
WACO	MCLENNAN	1.22					

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DATE: FILE:



SECTION A-A

GENERAL NOTES

1. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

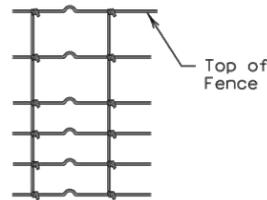
Sediment Control Fence — (SCF)

SEDIMENT CONTROL FENCE USAGE GUIDELINES

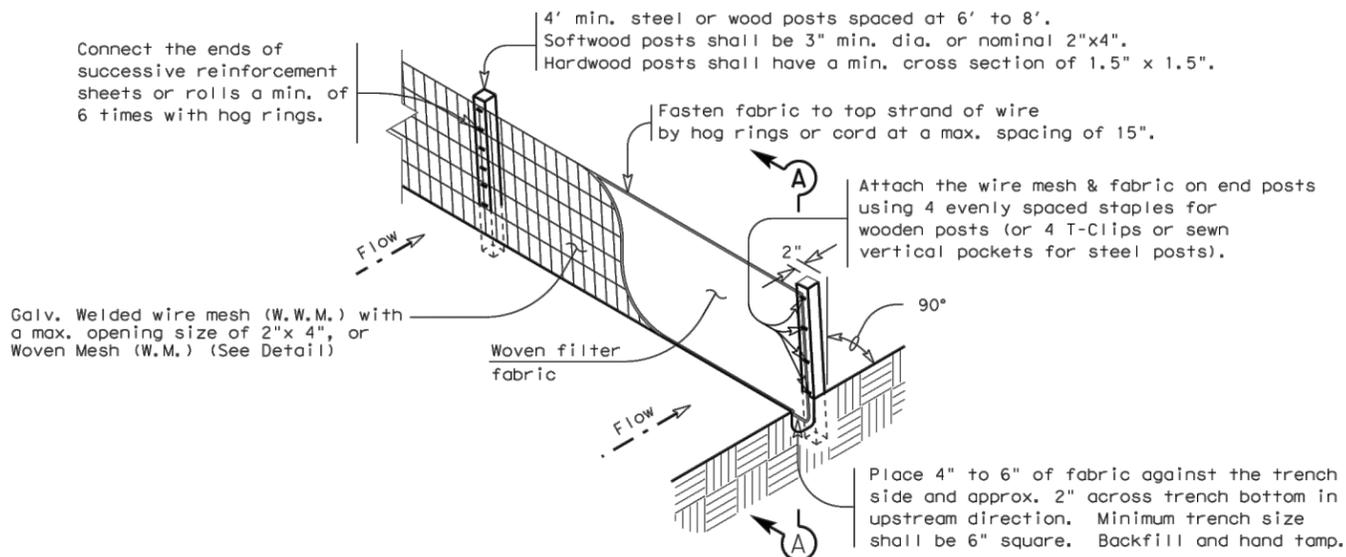
A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

Galv. Hinge joint knot woven mesh (12.5 Ga. Min.) requires a minimum of five horizontal wires spaced at a max. 12 inches apart and all vertical wires spaced at a max. 12 inches apart.

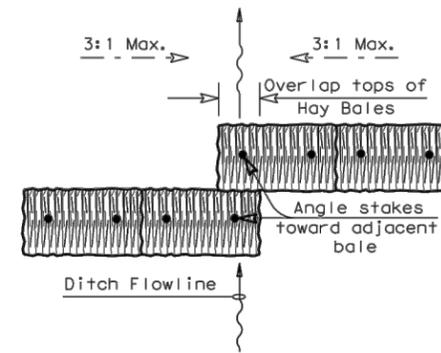


Hinge Joint Knot Woven Mesh (Option)

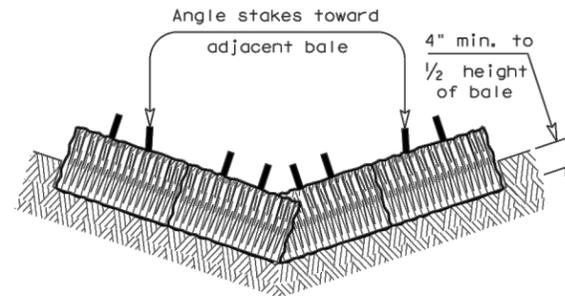


TEMPORARY SEDIMENT CONTROL FENCE

(SCF)



PLAN VIEW



PROFILE VIEW

PLANS SHEET LEGEND

Baled Hay — (BH)

BALED HAY USAGE GUIDELINES

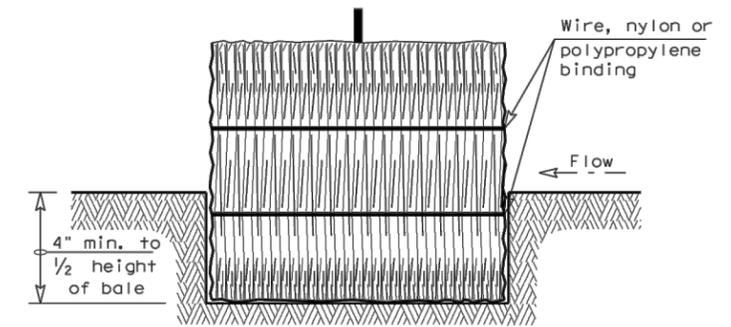
A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT² of cross sectional area. Baled hay may be used at the following locations:

1. Where the runoff approaching the baled hay flows over disturbed soil for less than 100'. If the slope of the disturbed soil exceeds 10%, the length of slope upstream the baled hay should be less than 50'.
2. Where the installation will be required for less than 3 months.
3. Where the contributing drainage area is less than 1/2 acre.

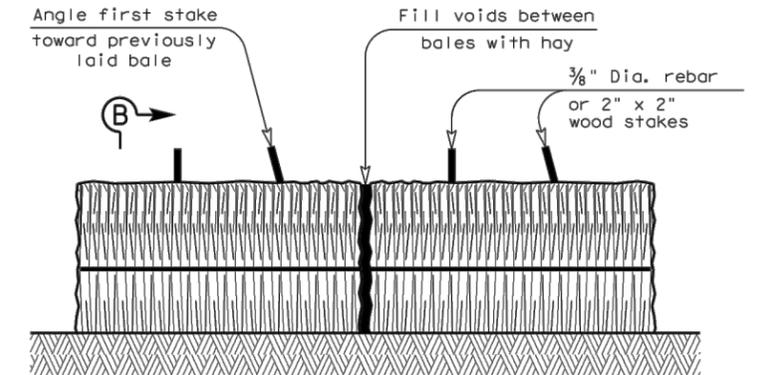
For Baled Hay installations in small ditches, the additional following considerations apply:

1. The ditch sideslopes should be graded as flat as possible to maximize the drainage flowrate thru the hay.
2. The ditch should be graded large enough to contain the overtopping drainage when sediment has filled to the top of the baled hay.

Bales should be replaced usually every 2 months or more often during wet weather when loss of structural integrity is accelerated.



SECTION B-B



BALED HAY FOR EROSION CONTROL

(BH)

GENERAL NOTES

1. Hay bales shall be a minimum of 30" in length and weigh a minimum of 50 Lbs.
2. Hay bales shall be bound by either wire or nylon or polypropylene string. The bales shall be composed entirely of vegetative matter.
3. Hay bales shall be embedded in the soil a minimum of 4" and where possible 1/2 the height of the bale.
4. Hay bales shall be placed in a row with ends tightly abutting the adjacent bales. The bales shall be placed with bindings parallel to the ground.
5. Hay bales shall be securely anchored in place with 3/8" Dia. rebar or 2" x 2" wood stakes, driven through the bales. The first stake shall be angled towards the previously laid bale to force the bales together.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & BALED HAY			
EC(1)-09			
FILE: ec109.dgn	DN: TxDOT	CK: AM	DW: TV
© TxDOT June 1993	CONT SECT	JOB	HIGHWAY
REVISIONS			
DIST	COUNTY	SHEET NO.	
WACO	MCLENNAN	1.23	