

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 DEEVER

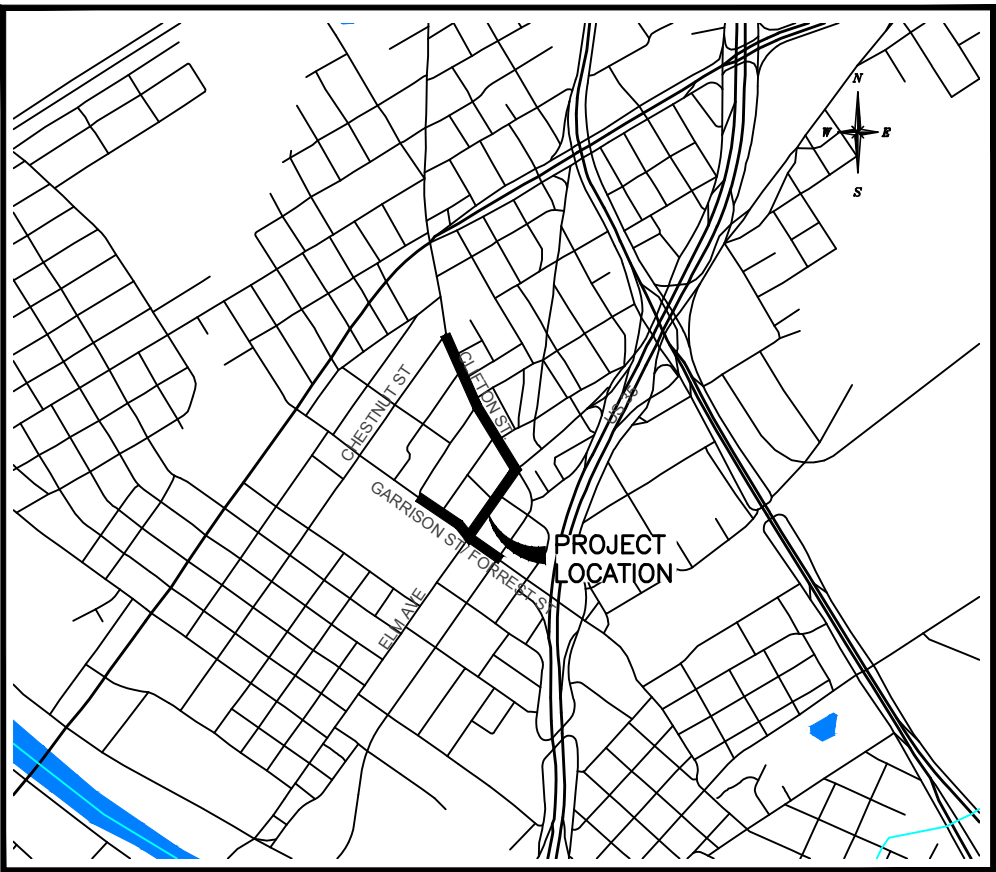
CITY COUNCIL
ANDREA J. BAREFIELD - COUNCIL DIST. 1
HECTOR SABIDO - COUNCIL DIST. 2
JOHN KINNAIRD - COUNCIL DIST. 3
DILLON MEEK - COUNCIL DIST. 4
JIM HOLMES - COUNCIL DIST. 5

CITY MANAGER
WILEY STEM III

PROJECT ENGINEER
(COMPLETE & CORRECT) DATE

CITY ENGINEER
(RECOMMENDED FOR BIDDING) DATE

PUBLIC WORKS DEPARTMENT DIRECTOR
(APPROVED FOR BIDDING) DATE



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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 ½" 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
(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

MCI
FRANK WALKER
(254) 753-3442

PAETEC

TRACY COVINGTON
(512) 934-1469

ONCOR ELECTRIC

MELINDA CARSON
(817) 992-8465

TIME WARNER



(SPECTRUM/CHARTER)

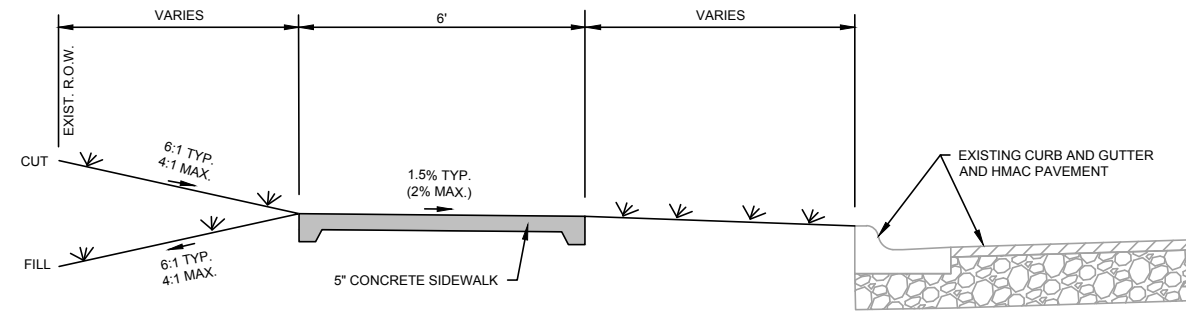
JOHNNY TINDLE
(254) 761-3806
SHANNA BEACH
(254) 761-3885
(254) 217-6954

CONSOLIDATED COMMUNICATIONS

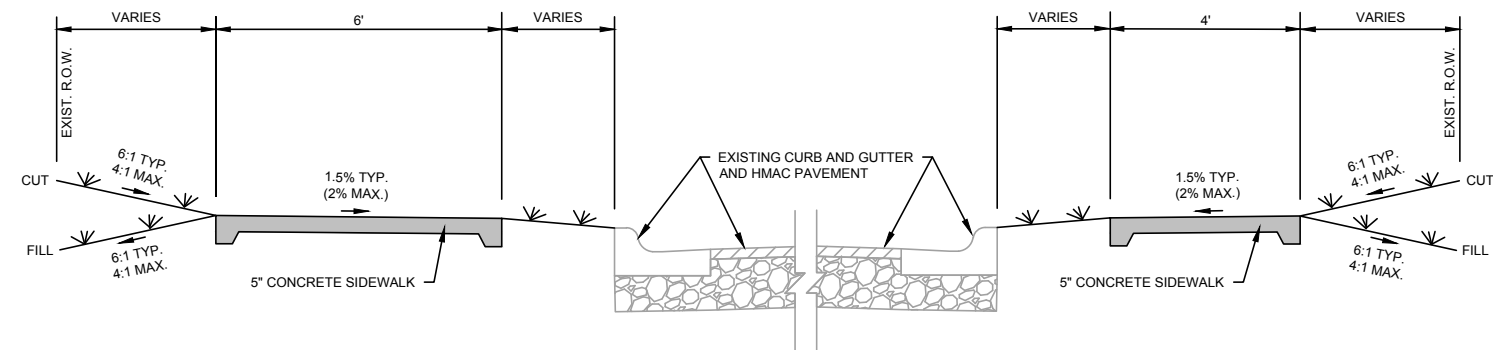
INC.

BRIAN STORY
(214) 232-7119

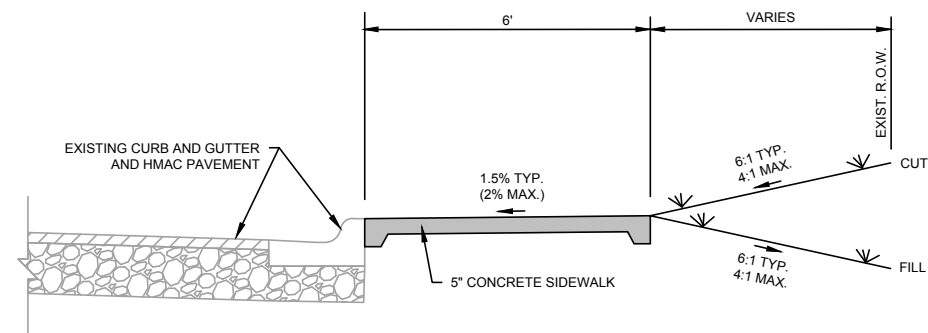
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<div>CITY OF WACO, TEXAS</div>		
J.H. HINES ELEMENTARY SAFE ROUTES TO SCHOOL		
GENERAL NOTES		
SCALE N/A	PROJECT NO.	DRAWING NO.
DATE 08/07/2019	SHEET NO. X of X	1.2



TYPICAL SECTION - GARRISON ST. / FORREST ST.

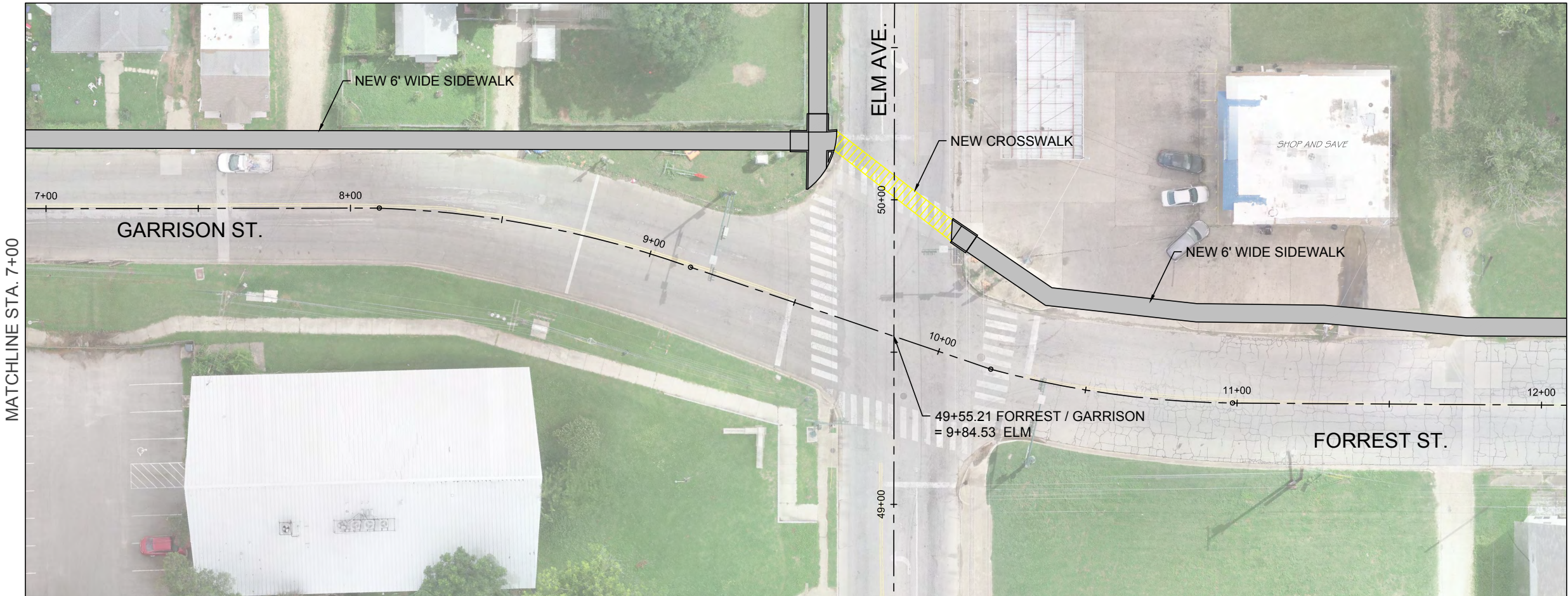
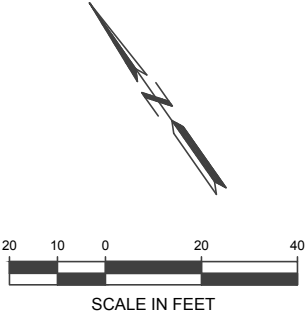


TYPICAL SECTION - ELM AVE.

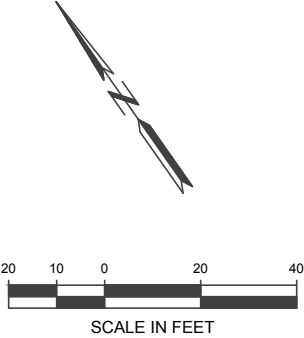
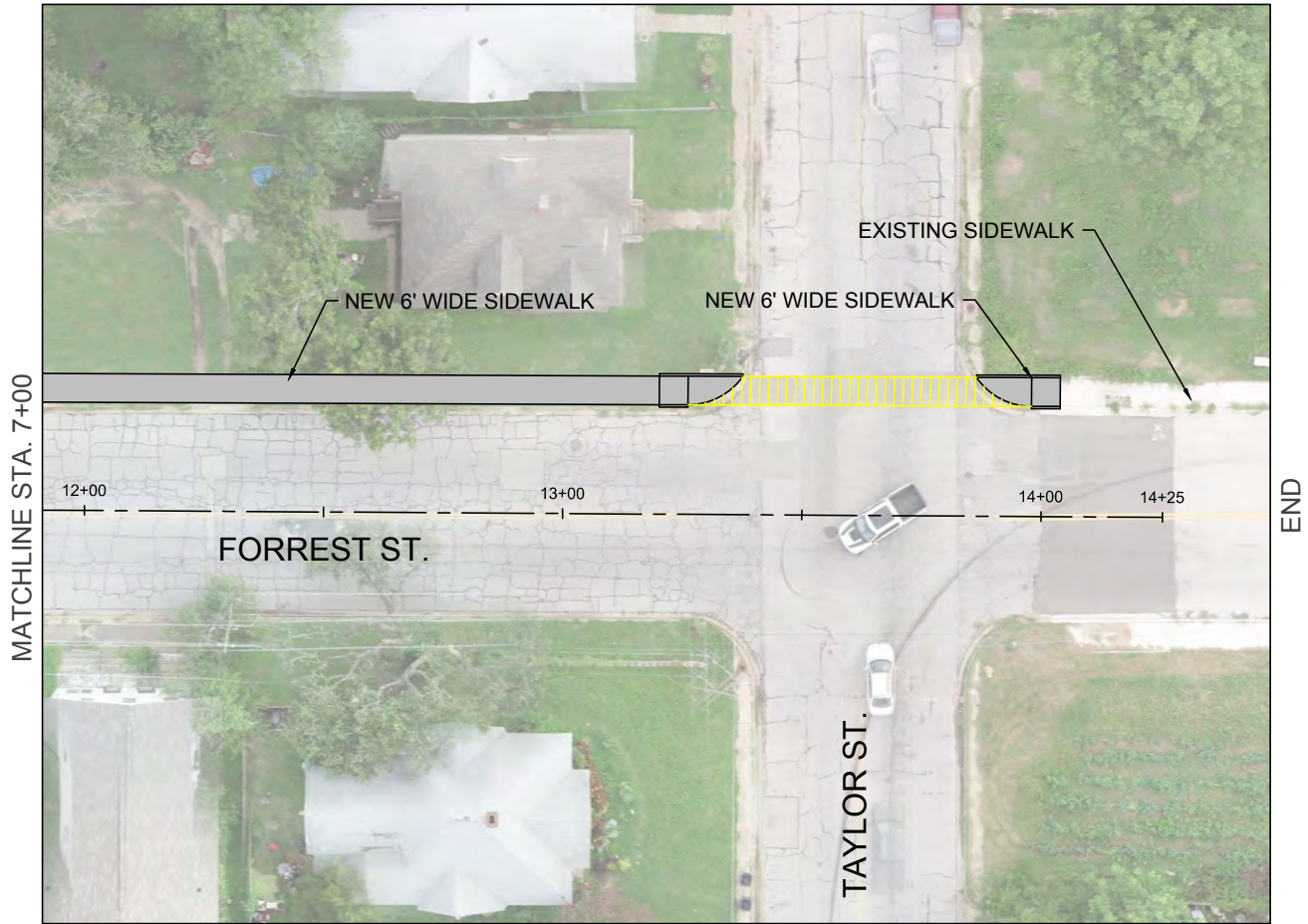


TYPICAL SECTION - CLIFTON ST.

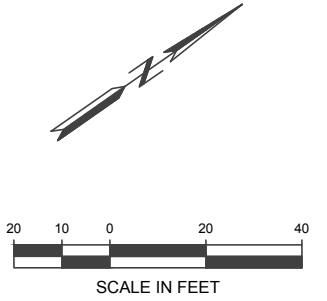
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<p>CITY OF WACO, TEXAS</p>		
<p>J.H. HINES ELEMENTARY</p> <p>SAFE ROUTES TO SCHOOL</p>		
<p>TYPICAL SECTIONS</p>		
SCALE	PROJECT NO.	DRAWING NO.
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DATE	SHEET NO.	
08/07/2019	X of X	



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<p>BSP engineers F-7587 TBPE REGISTRATION F-7587</p>		
<p>CITY OF WACO, TEXAS</p>		
<p>J.H. HINES ELEMENTARY SAFE ROUTES TO SCHOOL</p>		
<p>FOREST ST. / GARRISON ST. SIDEWALK PLAN SHEET 1 OF 2</p>		
SCALE N/A	PROJECT NO.	DRAWING NO.
DATE 08/07/2019	SHEET NO. X of X	1.4



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<div>J.H. HINES ELEMENTARY SAFE ROUTES TO SCHOOL</div>		
<div>FORREST ST. / GARRISON ST. SIDEWALK PLAN SHEET 2 OF 2</div>		
SCALE N/A	PROJECT NO.	DRAWING NO.
DATE 08/07/2019	SHEET NO. X of X	1.5




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Anthony D. Beach
08/07/2019



BSP
engineers

TBPE REGISTRATION F-7587

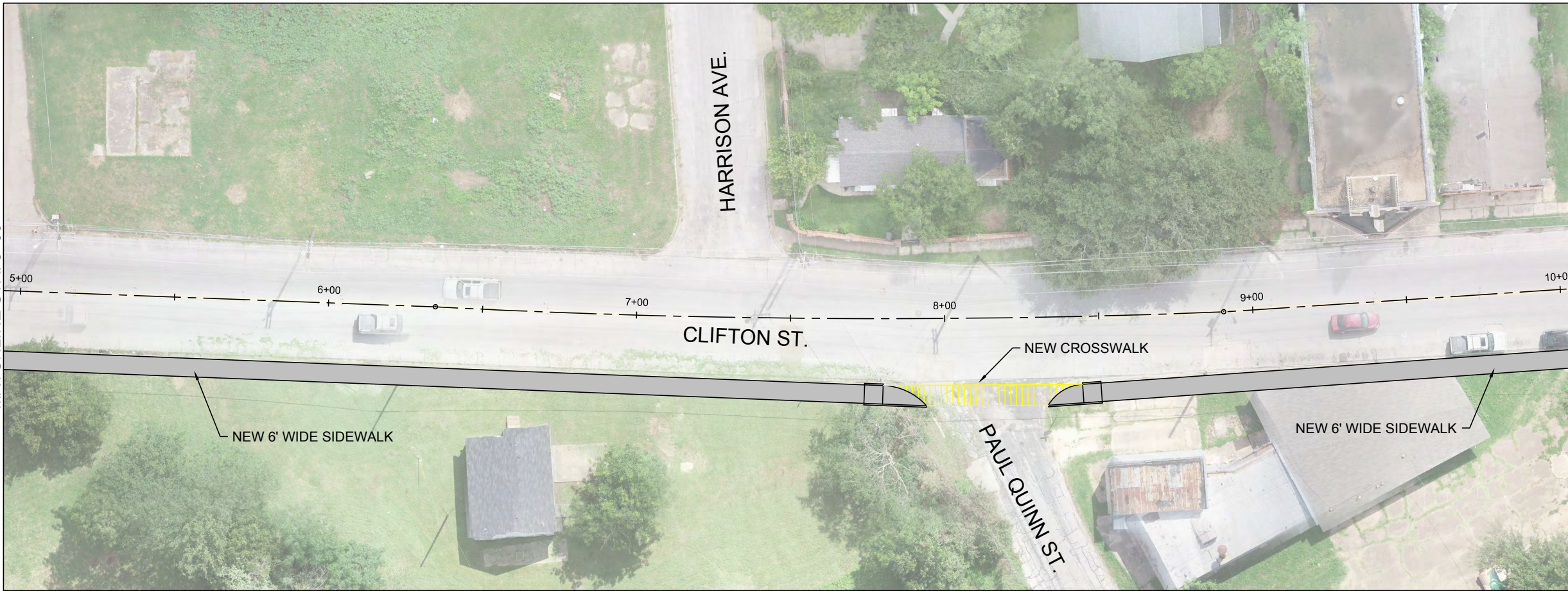
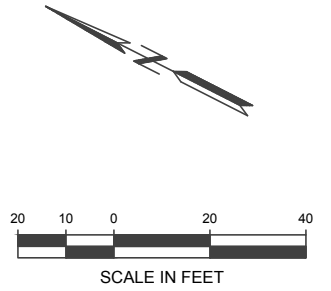
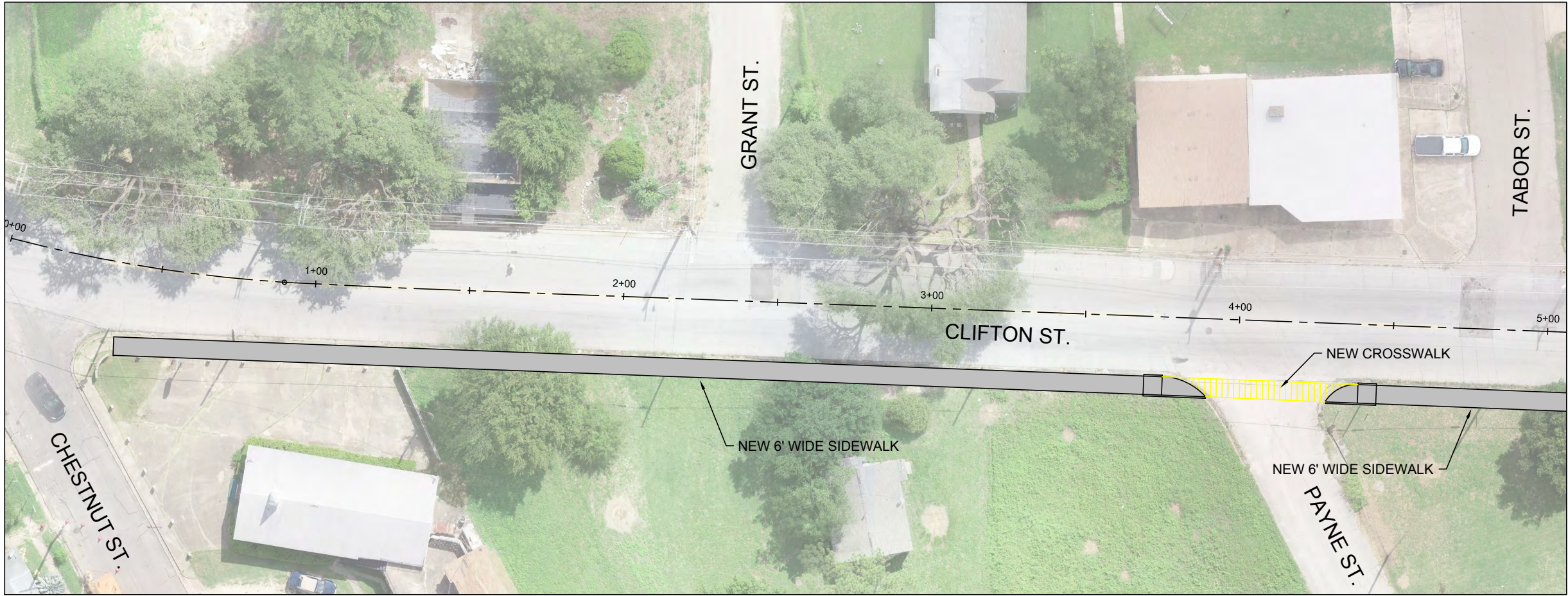


CITY OF WACO, TEXAS

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

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

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DATE 08/07/2019	SHEET NO. X of X	1.6



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08/07/2019

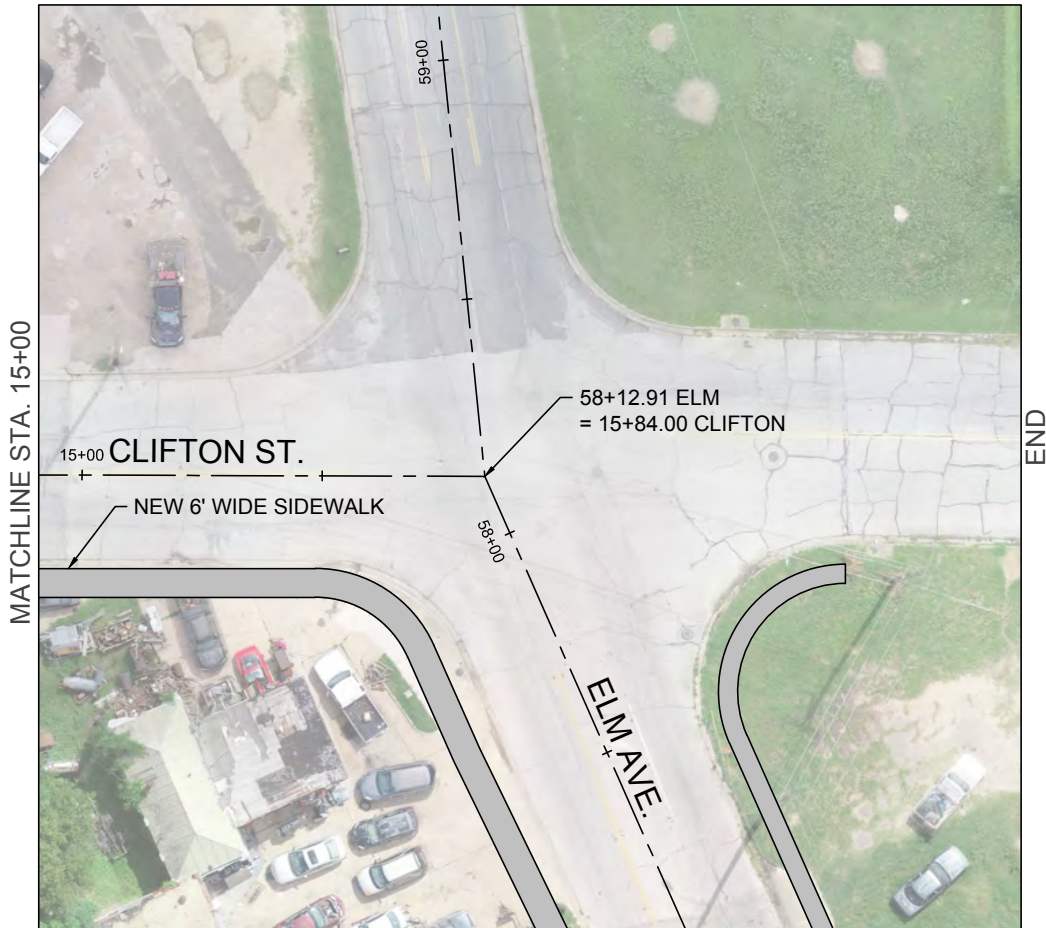
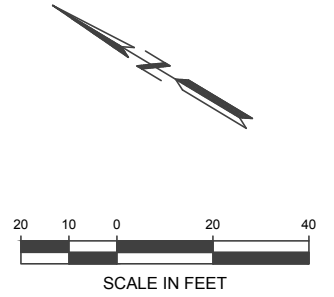
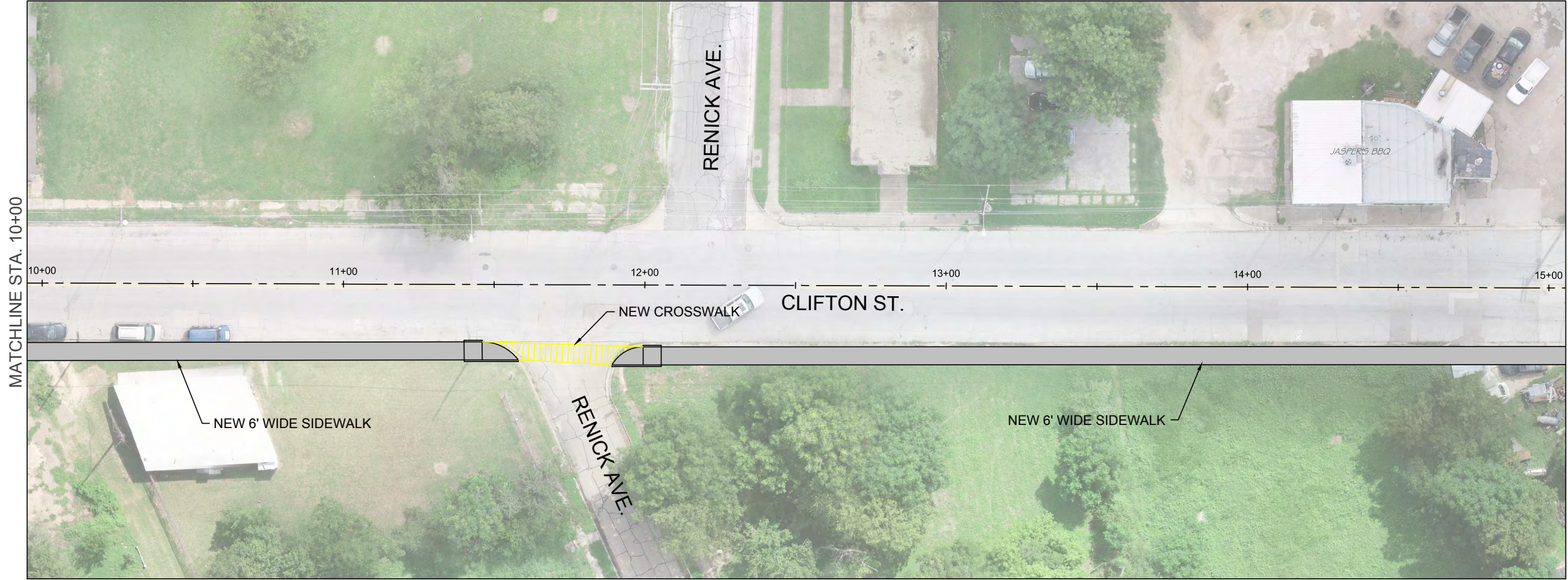
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**J.H. HINES ELEMENTARY
SAFE ROUTES TO SCHOOL**

**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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<div>CLIFTON ST. SIDEWALK PLAN SHEET 2 OF 2</div>		
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

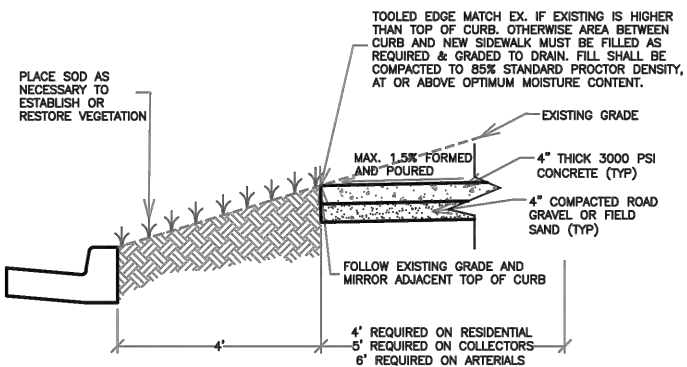
- 12. PLACE CONSTRUCTION JOINTS WITH EXPANSION MATERIAL AT MINIMUM 50' INTERVALS. EXPANSION JOINTS SHALL EXTEND THROUGH ANY ADJACENT RETAINING WALL OR TRANSITION CURB.
- 13. PLACE TOOLED, CRACK CONTROL (DUMMY) JOINTS AT A SPACING EQUAL TO THE WIDTH OF THE WALK.
- 14. CHANGES IN LEVEL GREATER THAN 1/4 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.



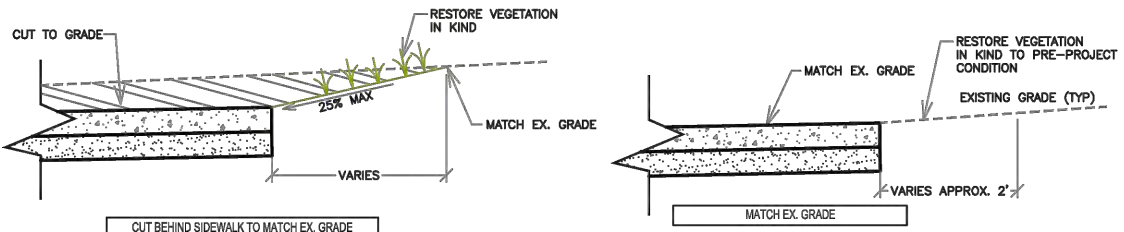
ENGINEERING
SERVICES



REVISIONS				BOOK PAGE NUMBER 0000
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	



TYPICAL DETAIL OF FRONT OF SIDEWALKS



TYPICAL DETAILS OF BACK OF SIDEWALKS



ENGINEERING
SERVICES



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

SW-2

REV.

DESCRIPTION

DATE

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BSP engineers
P-7587
TBPE REGISTRATION F-7587

CITY OF WACO, TEXAS

J.H. HINES ELEMENTARY
SAFE ROUTES TO SCHOOL

CITY OF WACO STANDARD
SIDEWALK DETAILS 1

SCALE
N/A

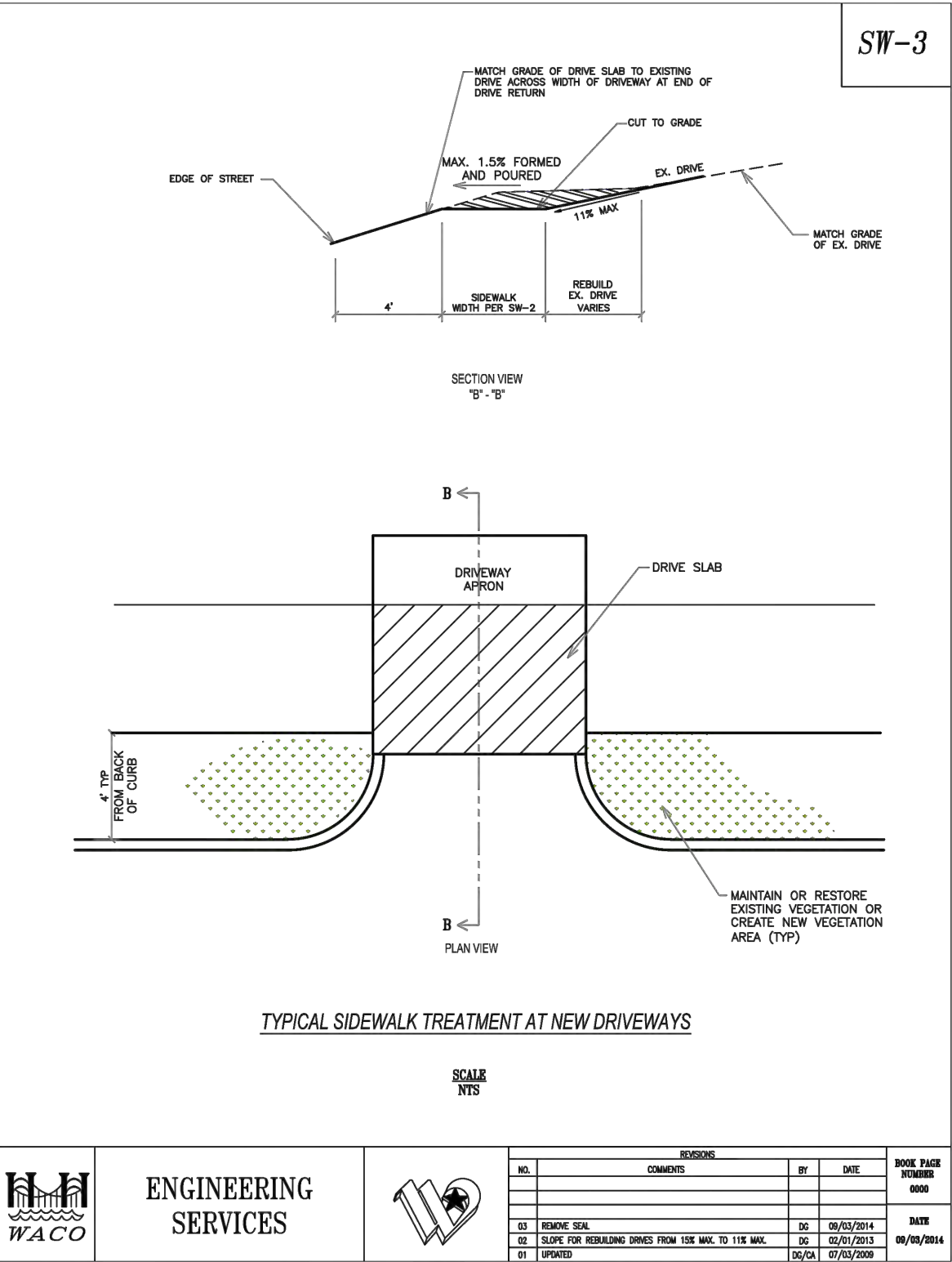
PROJECT NO.



DRAWING NO.

DATE
08/07/2019

SHEET NO.
X of X

1.9

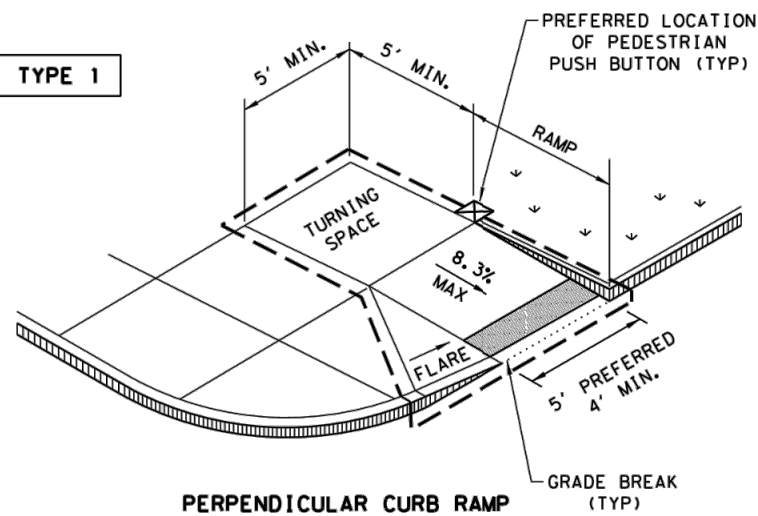


REV.	DESCRIPTION	DATE
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF ANTHONY D. BEACH 64801 NAME LICENSE NO. AS PER DATE ON DRAWING. IT IS NOT TO BE USED FOR BIDDING OR CONSTRUCTION. <i>Anthony D. Beach</i> 08/07/2019		
 TBPE REGISTRATION F-7587		
 CITY OF WACO, TEXAS		
J.H. HINES ELEMENTARY SAFE ROUTES TO SCHOOL		
CITY OF WACO STANDARD SIDEWALK DETAILS 2		
SCALE N/A	PROJECT NO.	DRAWING NO.
DATE 08/07/2019	SHEET NO. X of X	1.10

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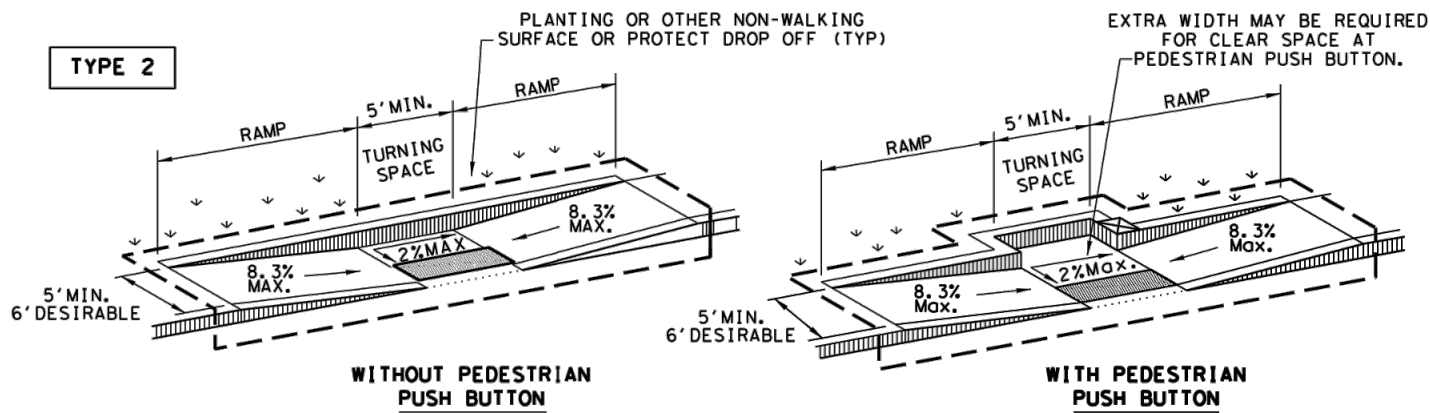
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TYPE 1



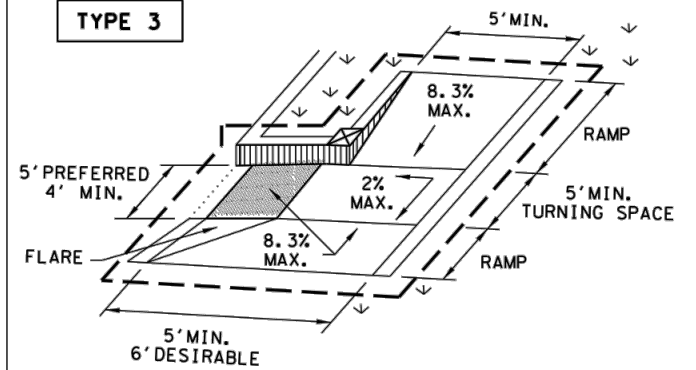
PERPENDICULAR CURB RAMP

TYPE 2

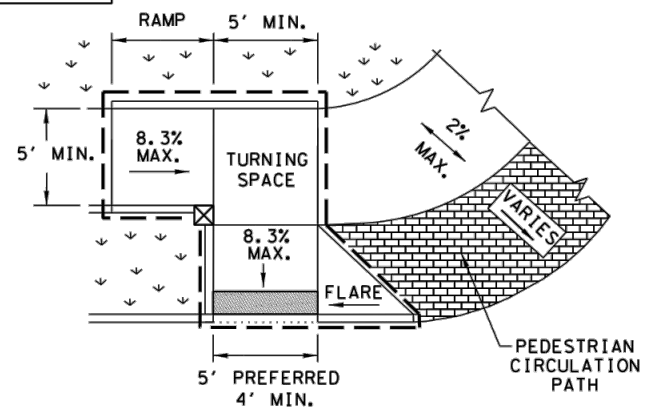


PARALLEL CURB RAMP

TYPE 3

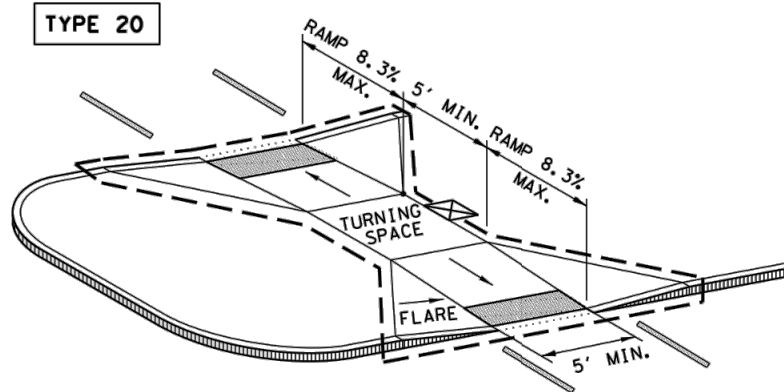


TYPE 6



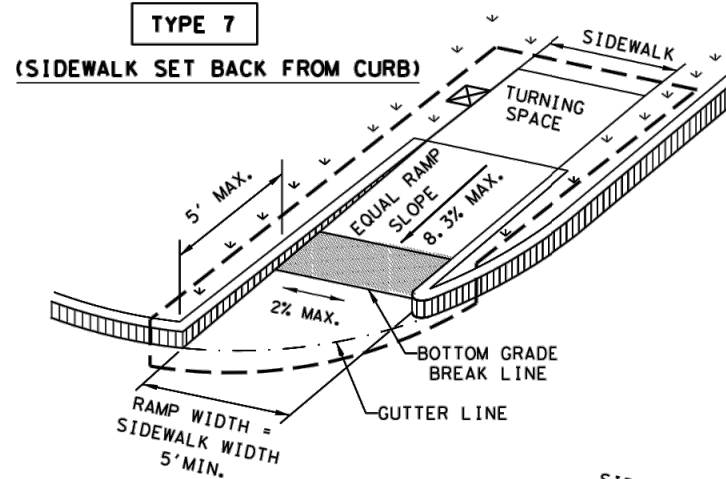
COMBINATION CURB RAMPS

TYPE 20

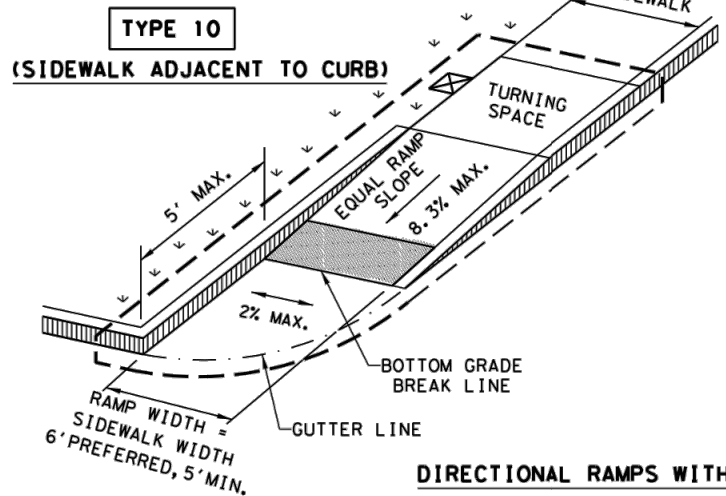


CURB RAMPS AT MEDIAN ISLANDS

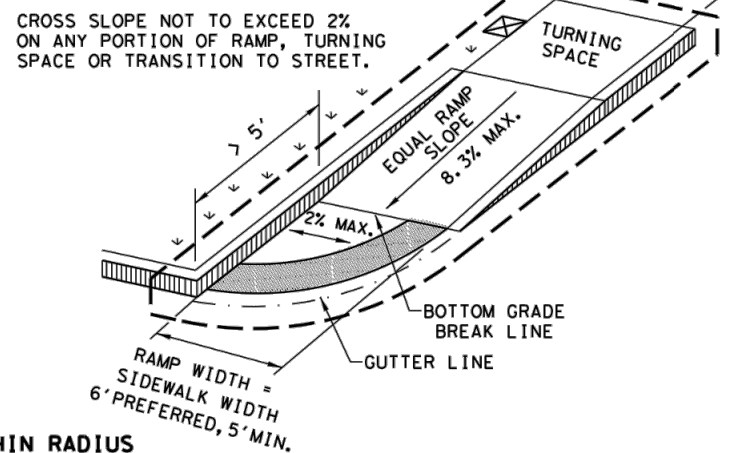
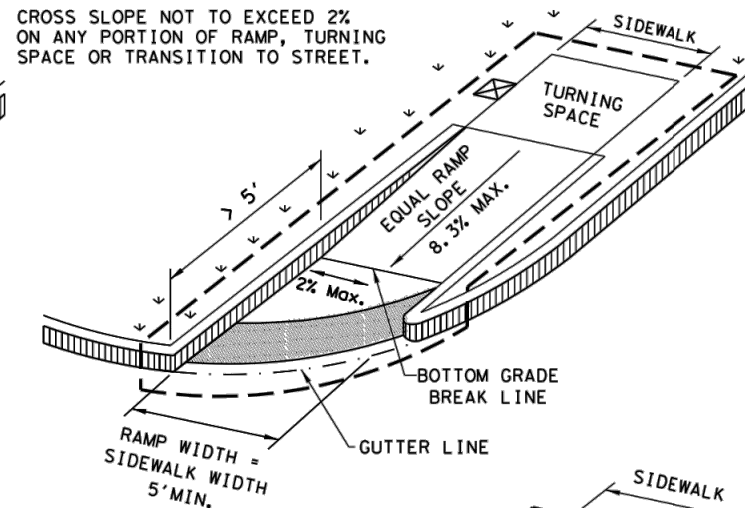
TYPE 7



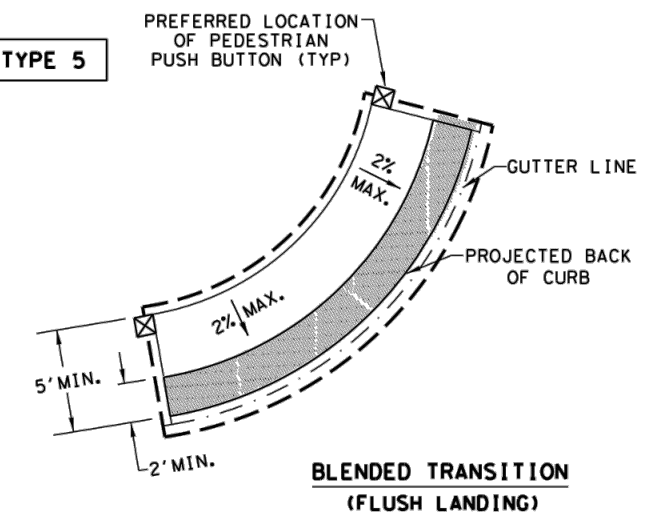
TYPE 10



DIRECTIONAL RAMPS WITHIN RADIUS



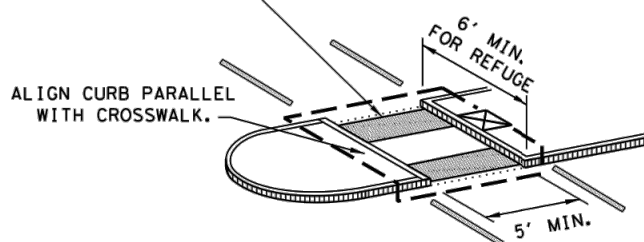
TYPE 5



BLENDED TRANSITION (FLUSH LANDING)

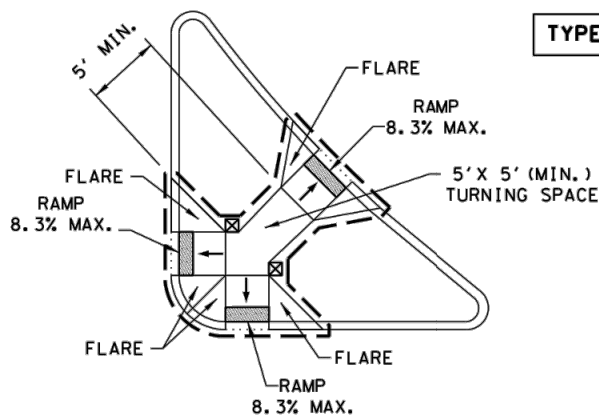
INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.

TYPE 21



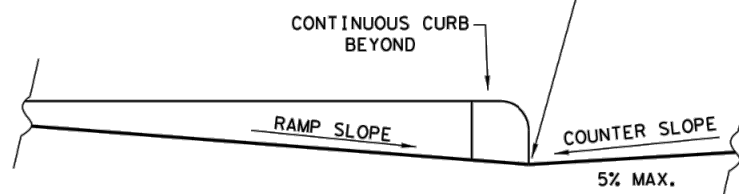
NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS

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



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

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

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

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.



GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4



PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DW: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISED 08, 2005	REVISIONS			
REVISED 06, 2012				
REVISED 01, 2018				
DIST	COUNTY			SHEET NO.
				1.11

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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

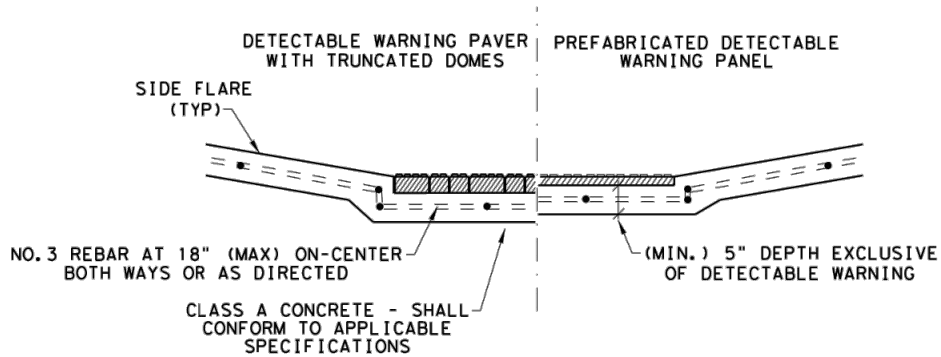
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material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

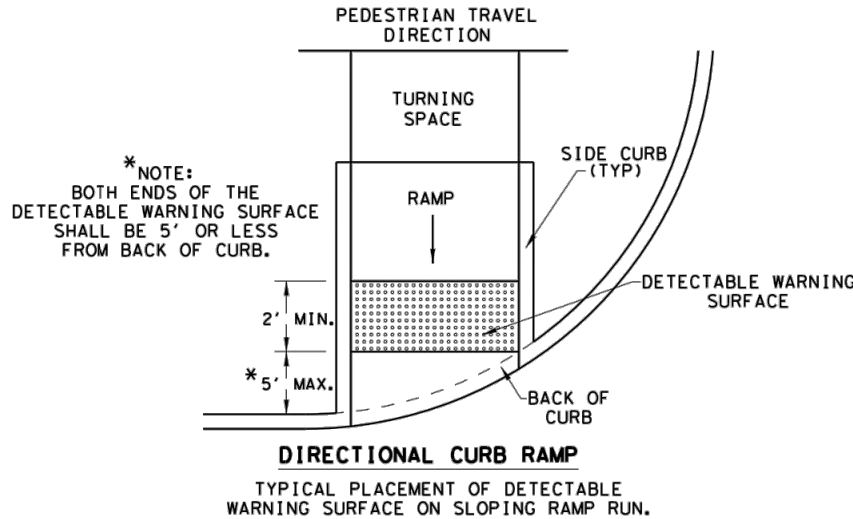
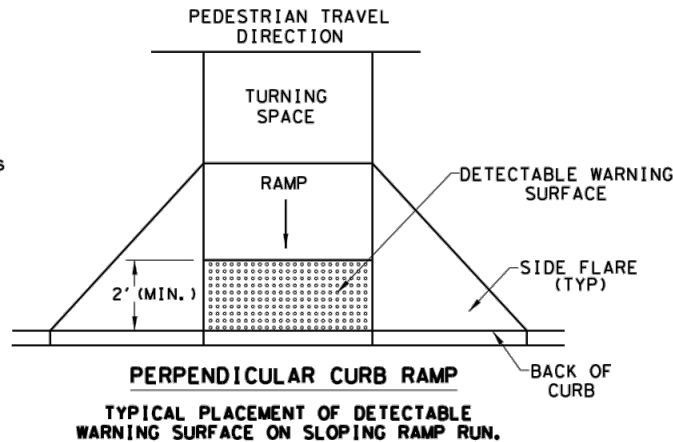
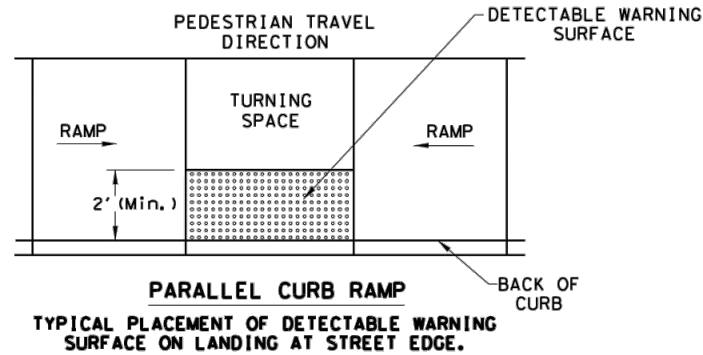
SIDEWALKS

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



SHEET 2 OF 4



PEDESTRIAN FACILITIES CURB RAMPS

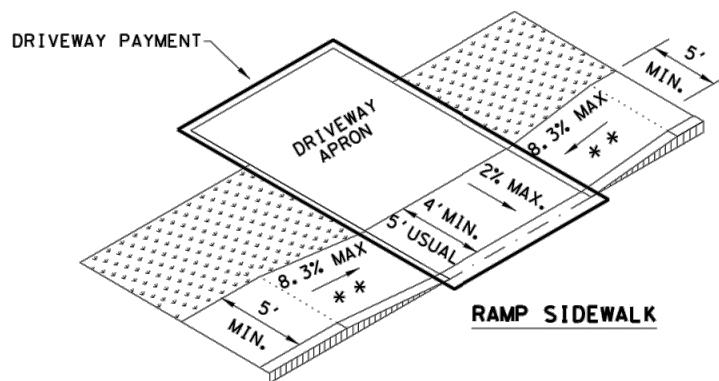
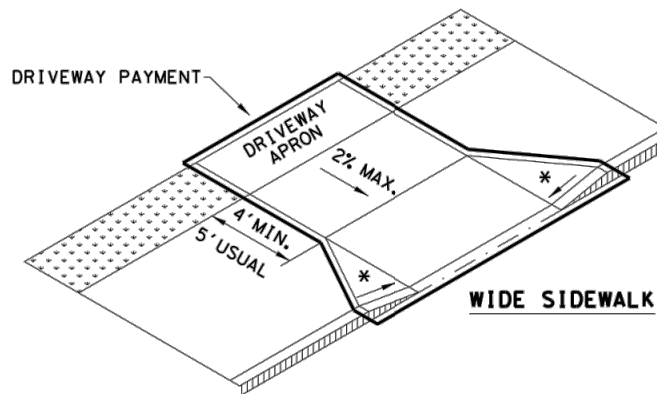
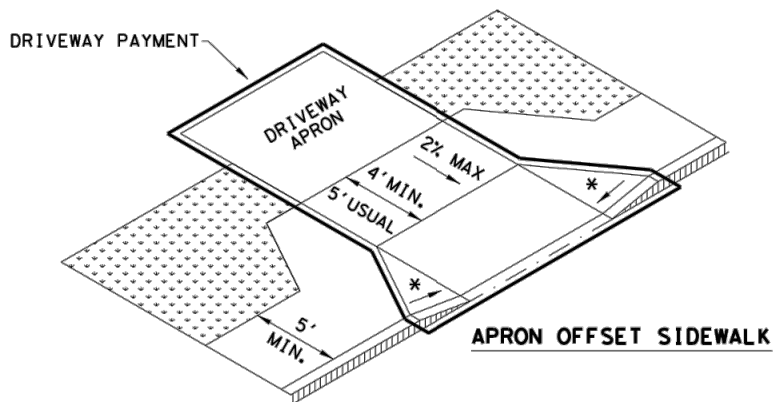
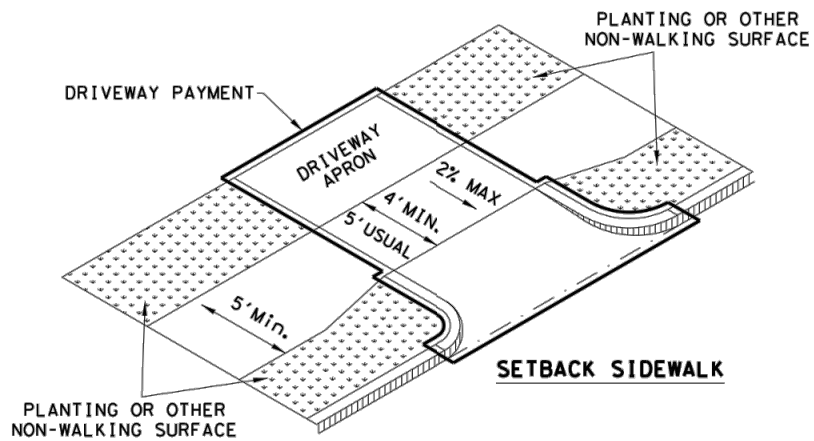
PED-18

FILE: ped18	DW: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08, 2005				
REVISED 06, 2012				
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	DIST	COUNTY		SHEET NO.
				1.12

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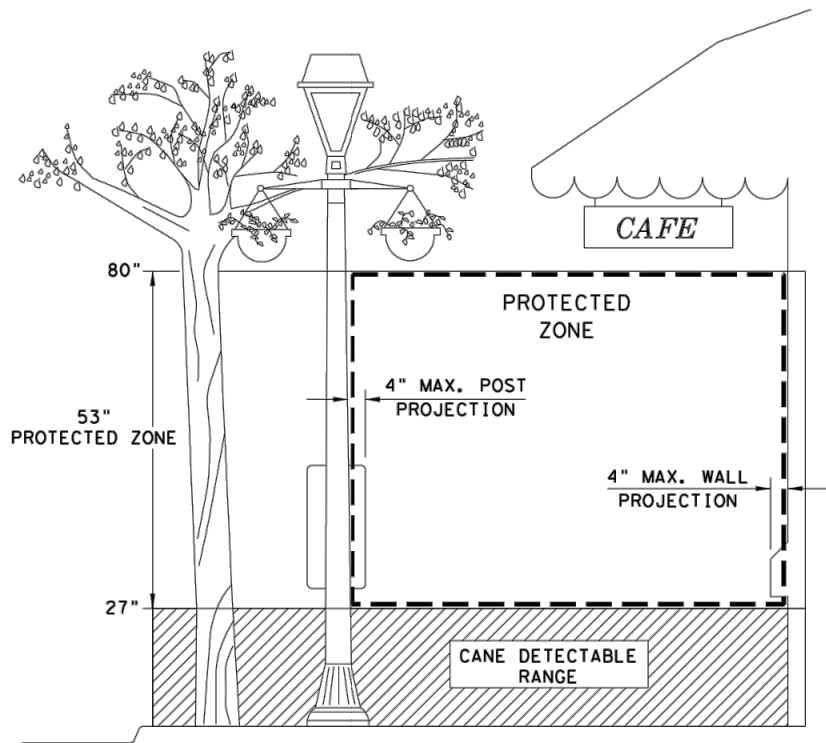
SIDEWALK TREATMENT AT DRIVEWAYS



NOTES:

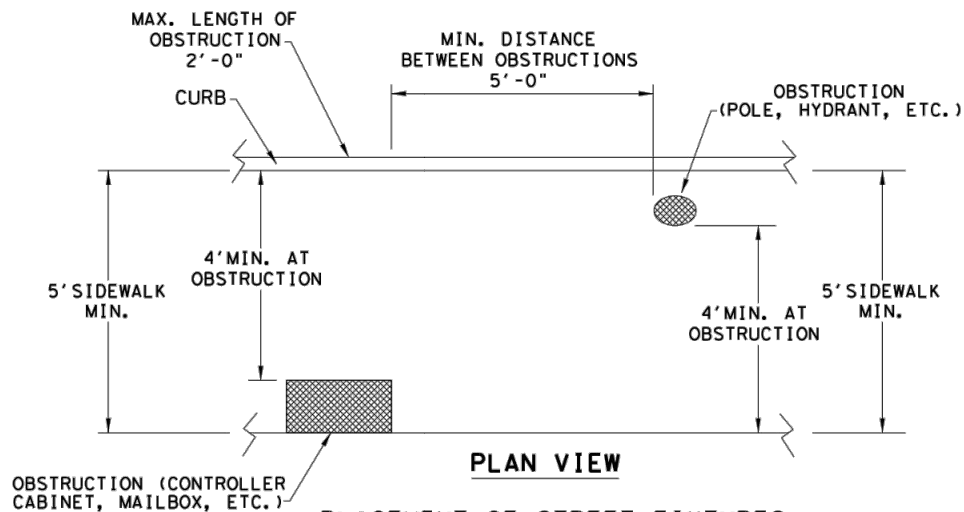
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * 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

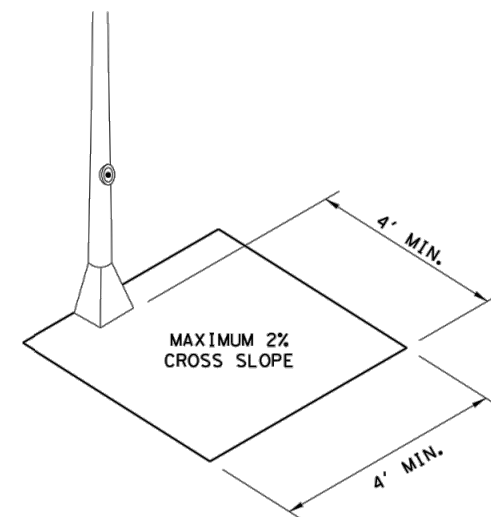
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



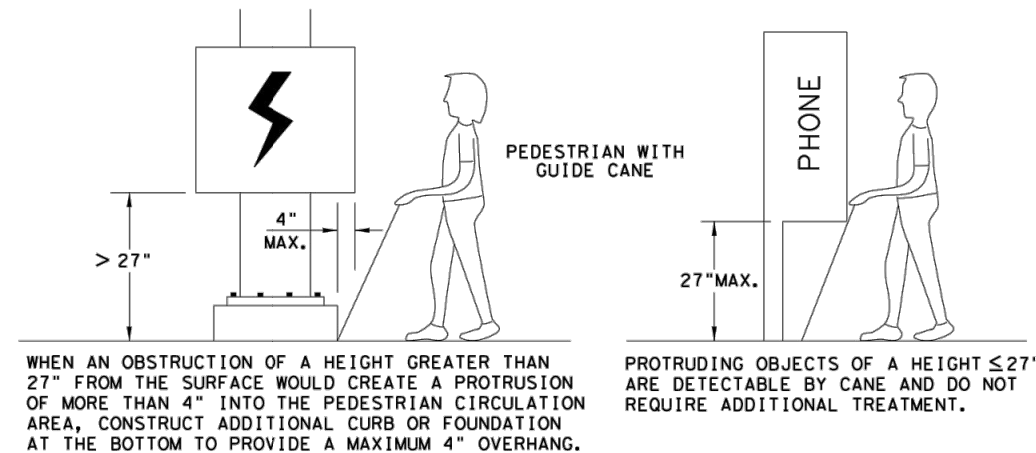
PLAN VIEW

PLACEMENT OF STREET FIXTURES

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



CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4



PEDESTRIAN FACILITIES

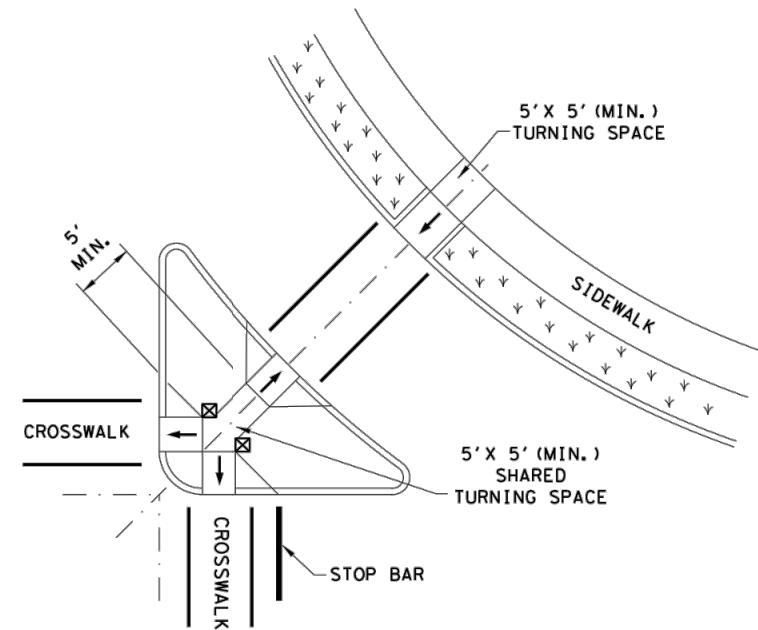
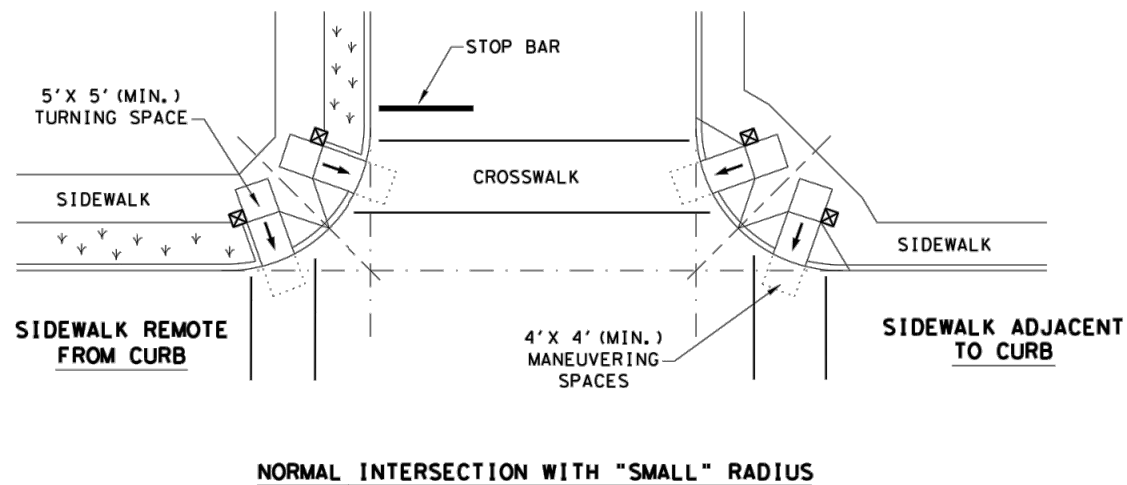
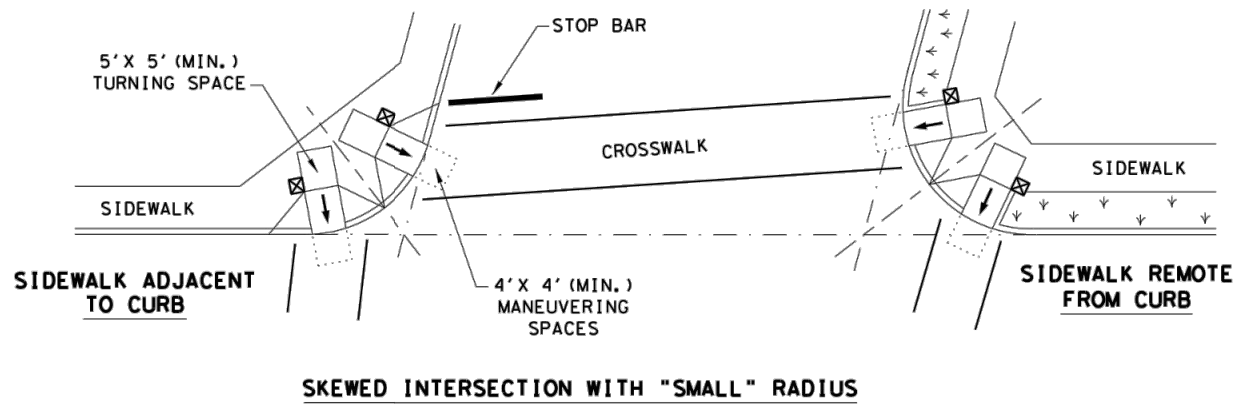
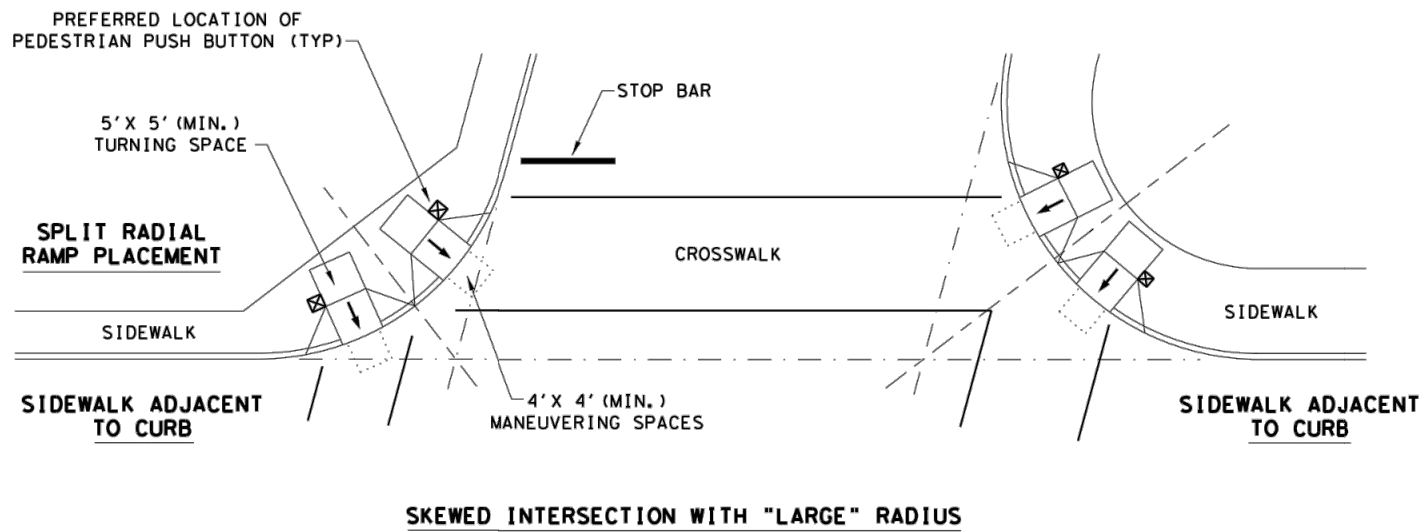
CURB RAMPS

PED-18

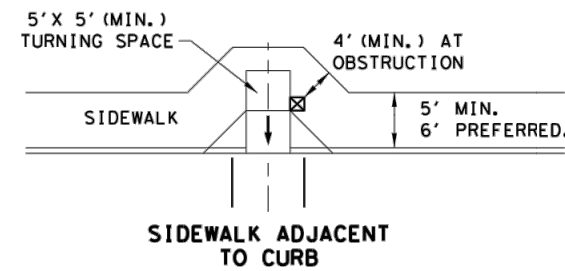
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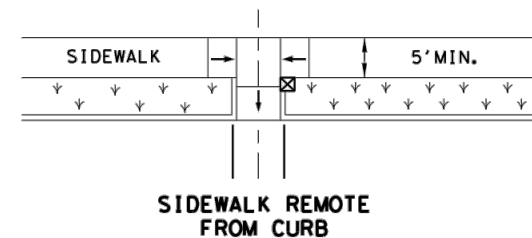
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT
PERPENDICULAR RAMP



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



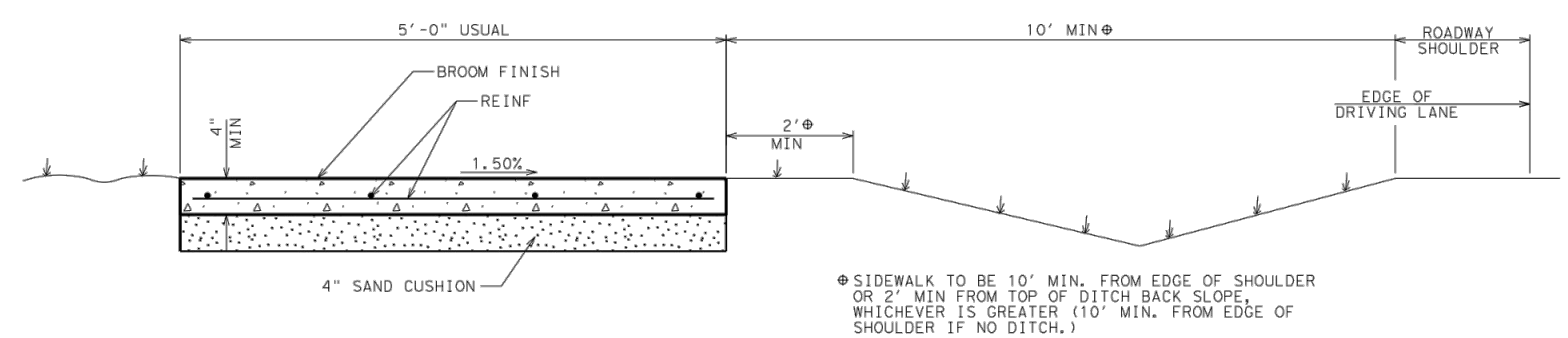
Design
Division
Standard

PEDESTRIAN FACILITIES
CURB RAMPS

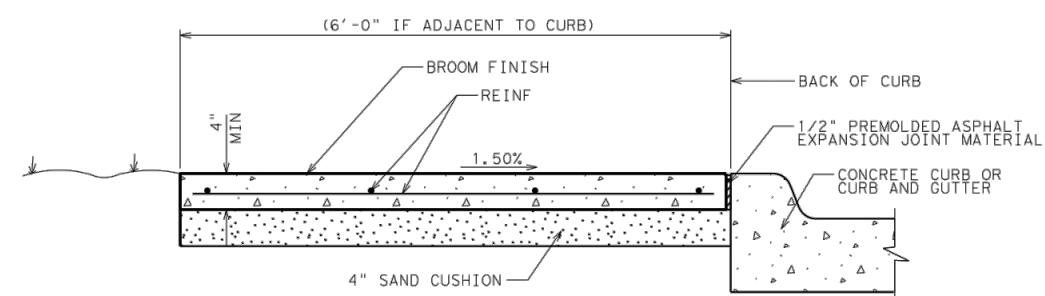
PED-18

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REVISED 06, 2012	DIST	COUNTY		SHEET NO.
REVISED 01, 2018				1.14

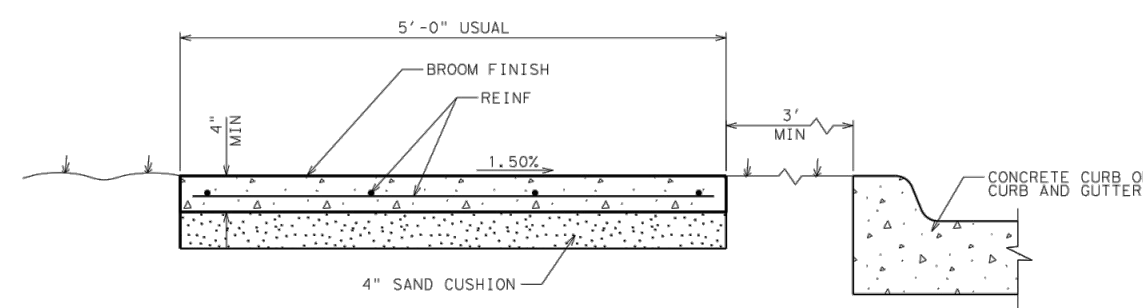
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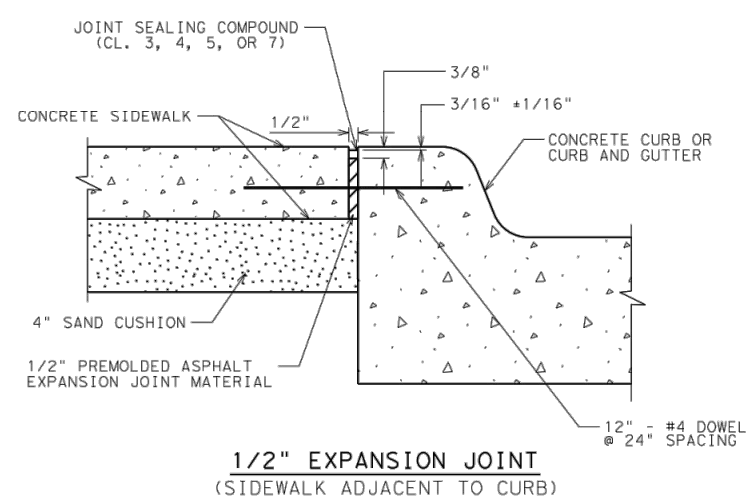
CONCRETE SIDEWALK
(ROADWAY W/O CURB)



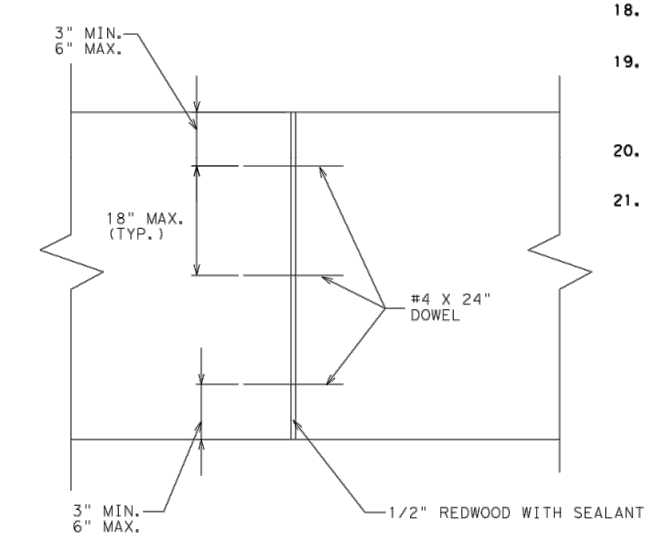
CONCRETE SIDEWALK
(ADJACENT TO CURB)



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.

CONCRETE SIDEWALK DETAILS

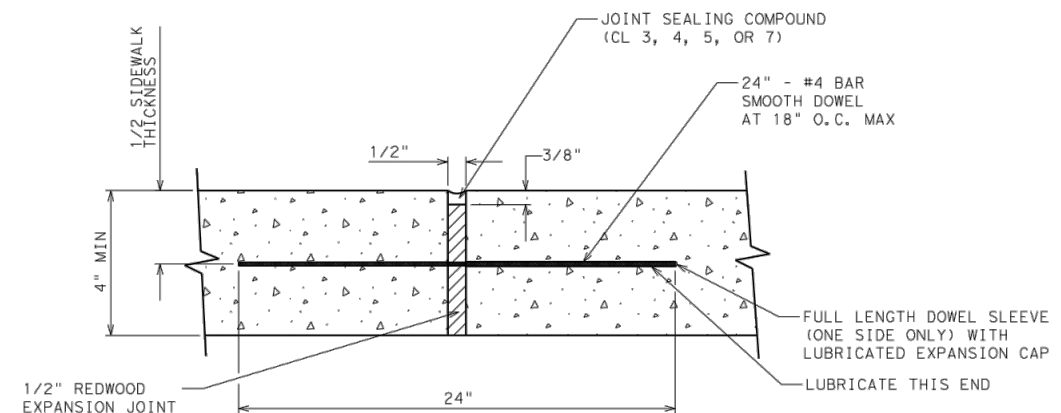
Texas Department of Transportation
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WACO DISTRICT STANDARD

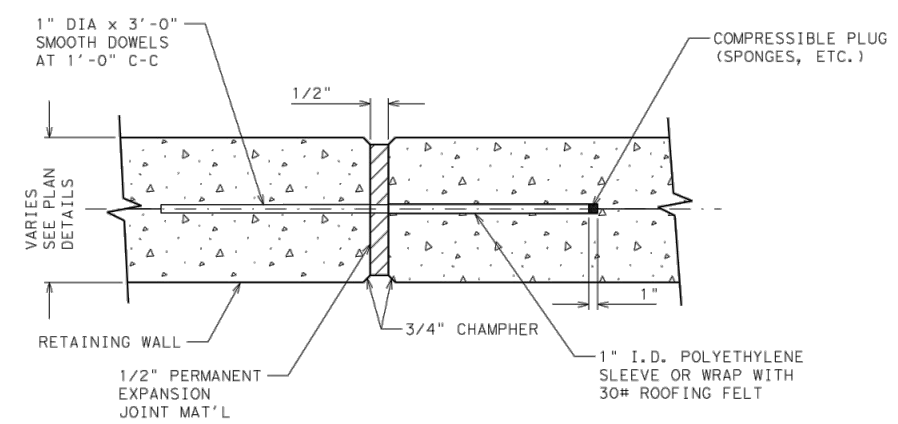
CONCRETE SIDEWALK DETAILS

SHEET 1 OF 3

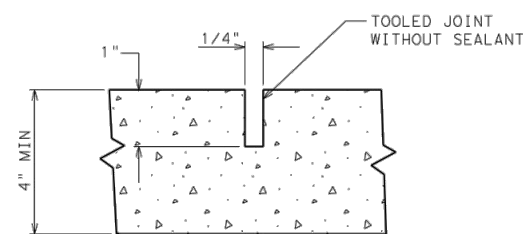
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
6	X	1.15
STATE	DIST.	COUNTY
TEXAS	WACO	MCLENNAN
CONT.	SECT.	JOB
		HIGHWAY NO.
		X



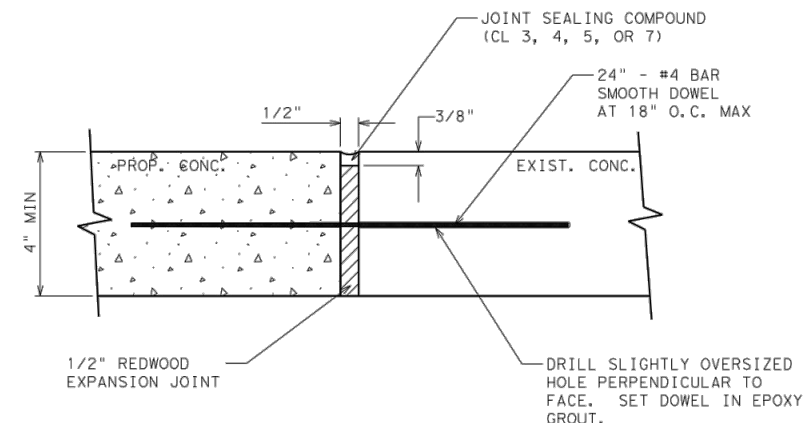
EXPANSION JOINT
(SIDEWALK)



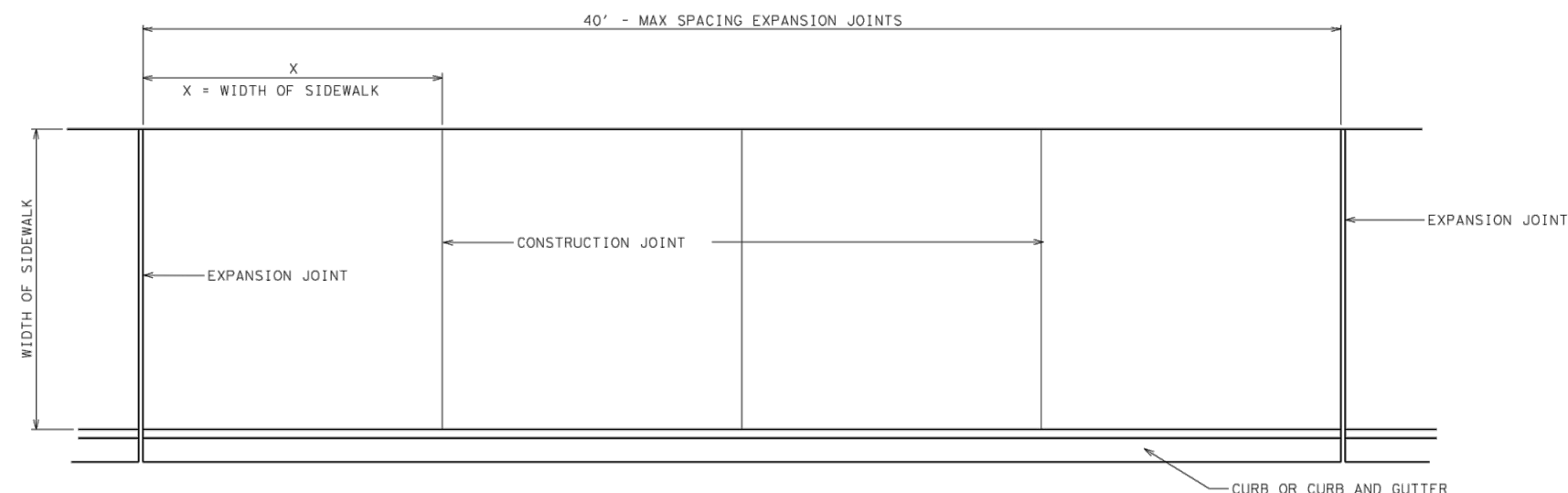
EXPANSION JOINT
(RETAINING WALL)



CONTRACTION JOINT



DOWEL TO EXISTING DETAIL



CONCRETE POUR DETAIL

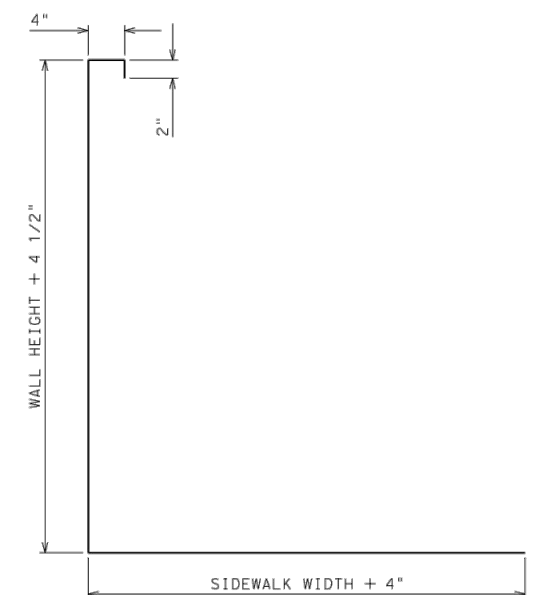
Texas Department of Transportation
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WACO DISTRICT STANDARD

CONCRETE SIDEWALK DETAILS

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	X		1.16
STATE	DIST.	COUNTY	
TEXAS	WACO	MCLENNAN	
CONT.	SECT.	JOB	HIGHWAY NO.
			X



REINFORCING STEEL DETAIL



CONCRETE SIDEWALK DETAILS

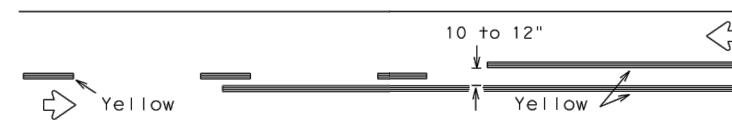
SHEET 3 OF 3

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	

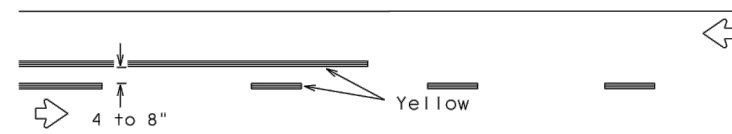
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DATE: FILE:

PAVEMENT MARKING PATTERNS



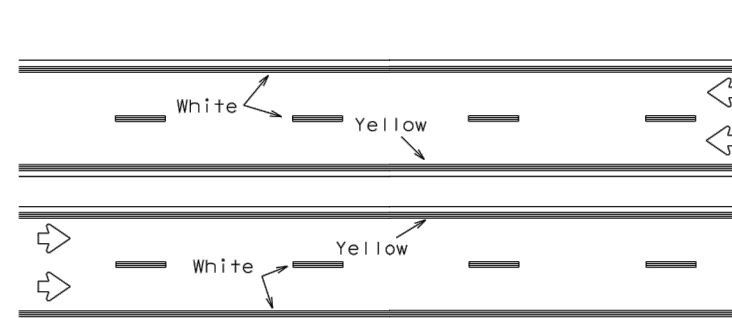
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

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

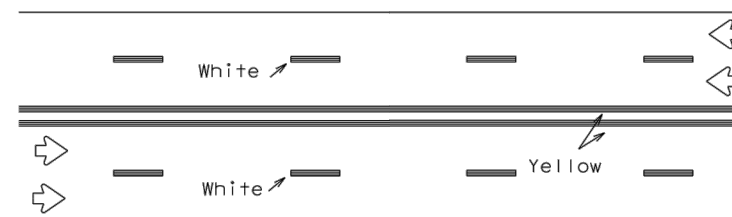
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

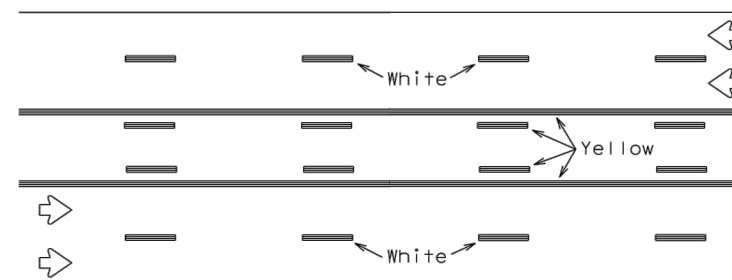
EDGE & LANE LINES FOR DIVIDED HIGHWAY



REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

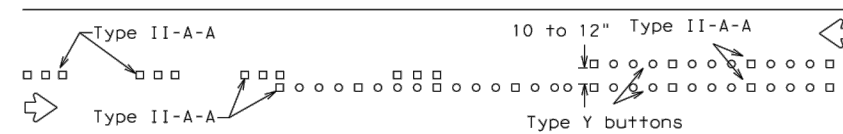
LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



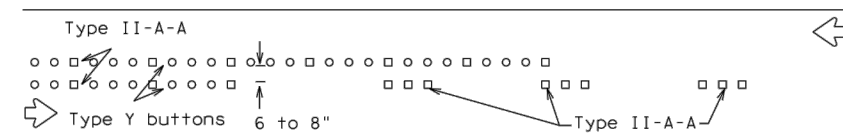
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

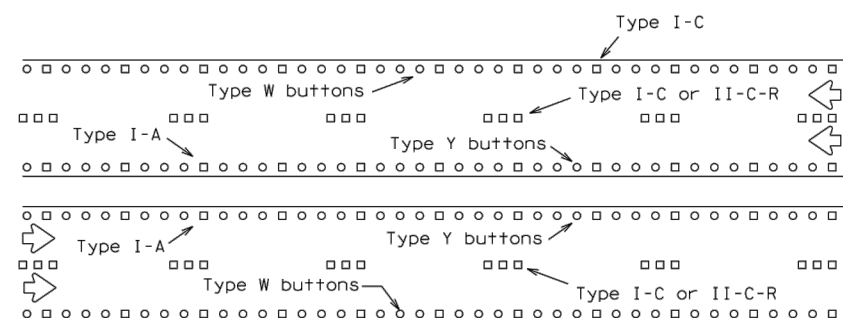
TWO-WAY LEFT TURN LANE



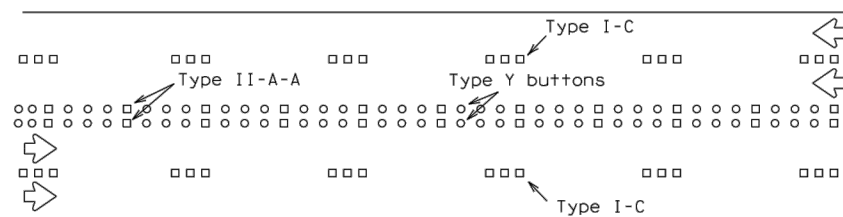
RAISED PAVEMENT MARKERS - PATTERN A



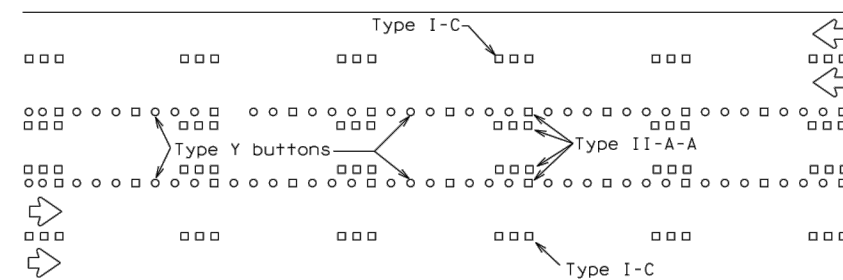
RAISED PAVEMENT MARKERS - PATTERN B



RAISED PAVEMENT MARKERS

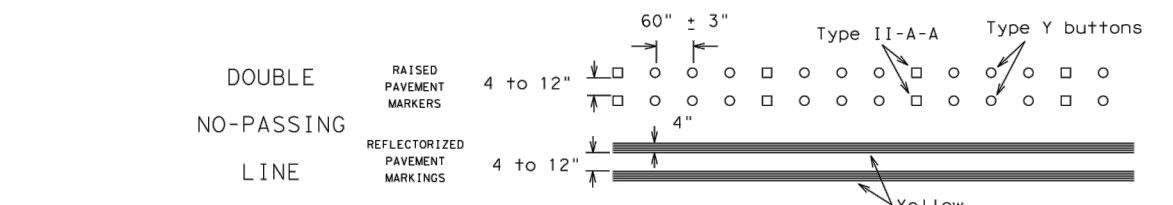


RAISED PAVEMENT MARKERS

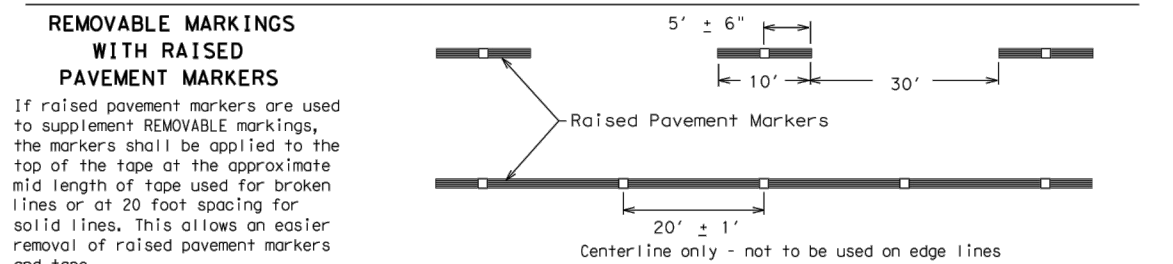
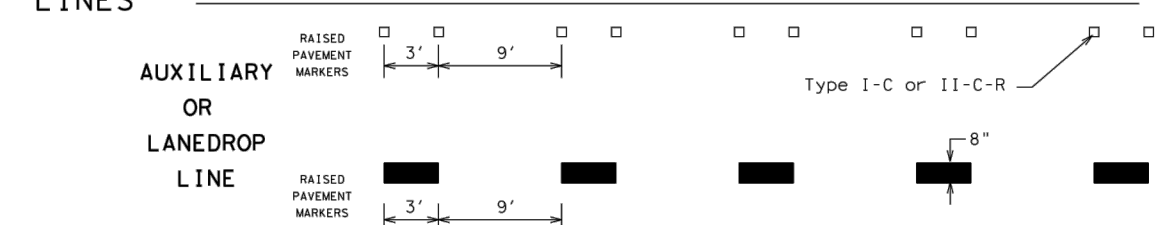
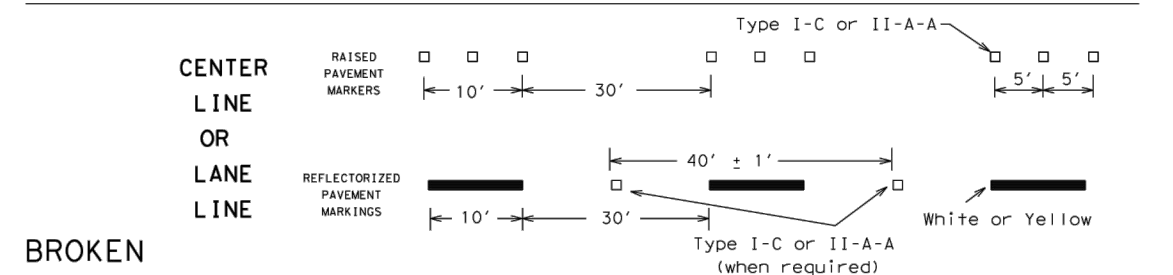
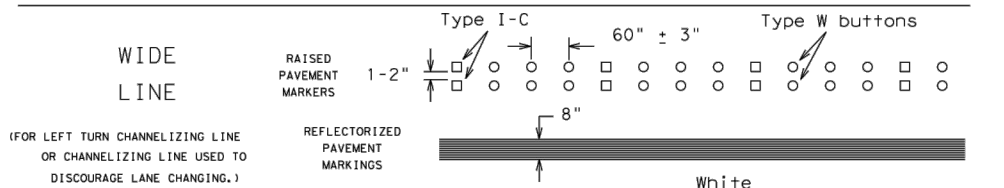
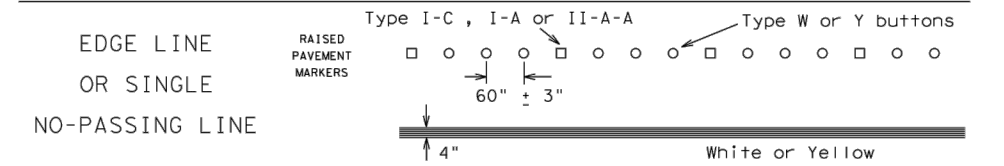


RAISED PAVEMENT MARKERS

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



SOLID LINES



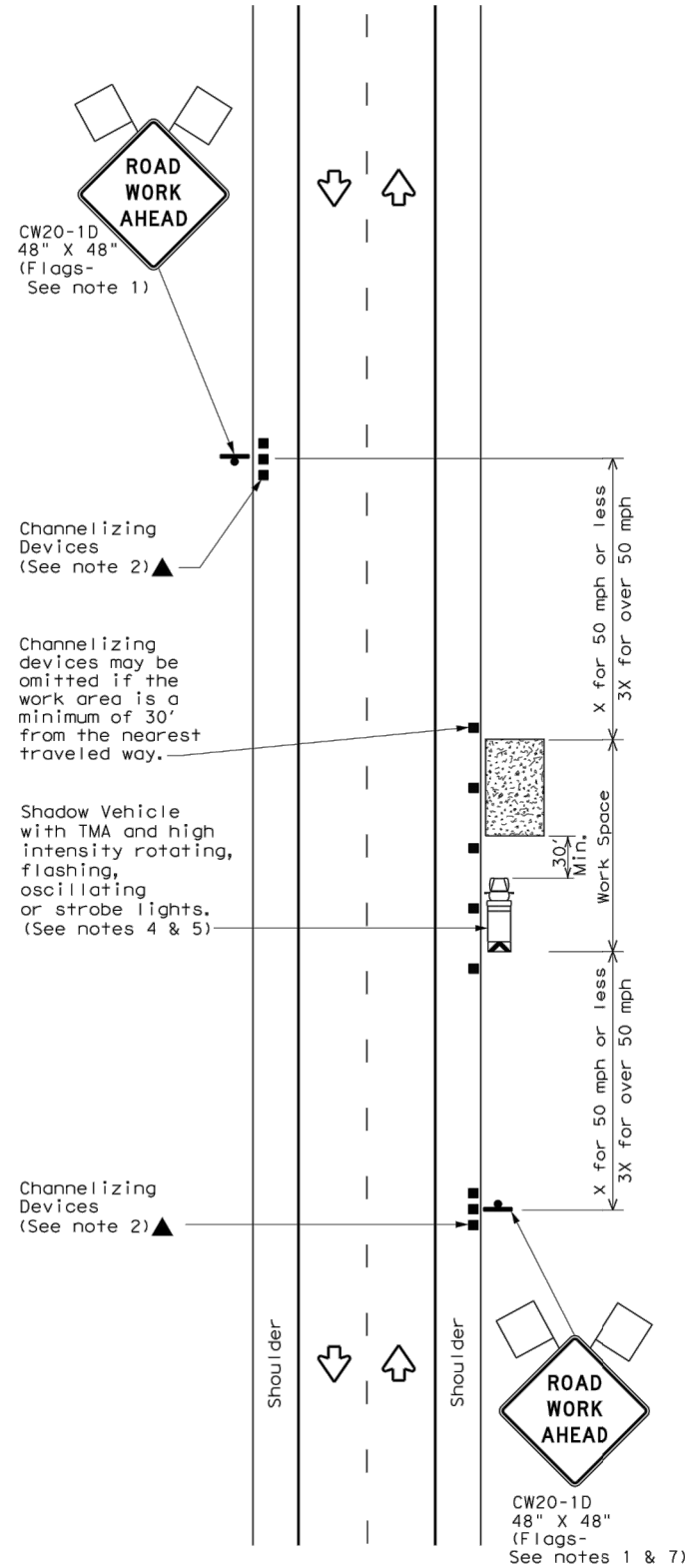
SHEET 12 OF 12

		Traffic Operations Division Standard	
BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS			
BC (12) - 14			
FILE: bc-14.dgn	DWG: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT February 1998	CONT	SECT	JOB
1-97 9-07	DIST	COUNTY	SHEET NO.
2-98 7-13			1.18
11-02 8-14			

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."

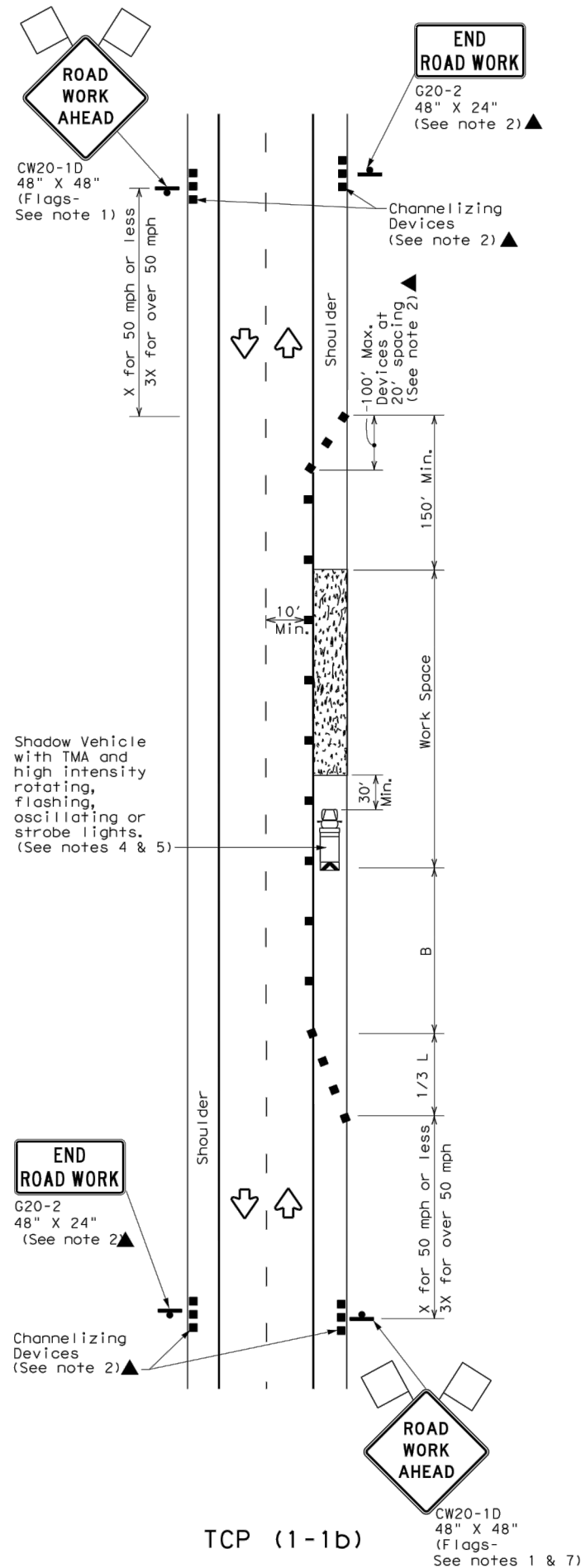
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DATE:
FILE:



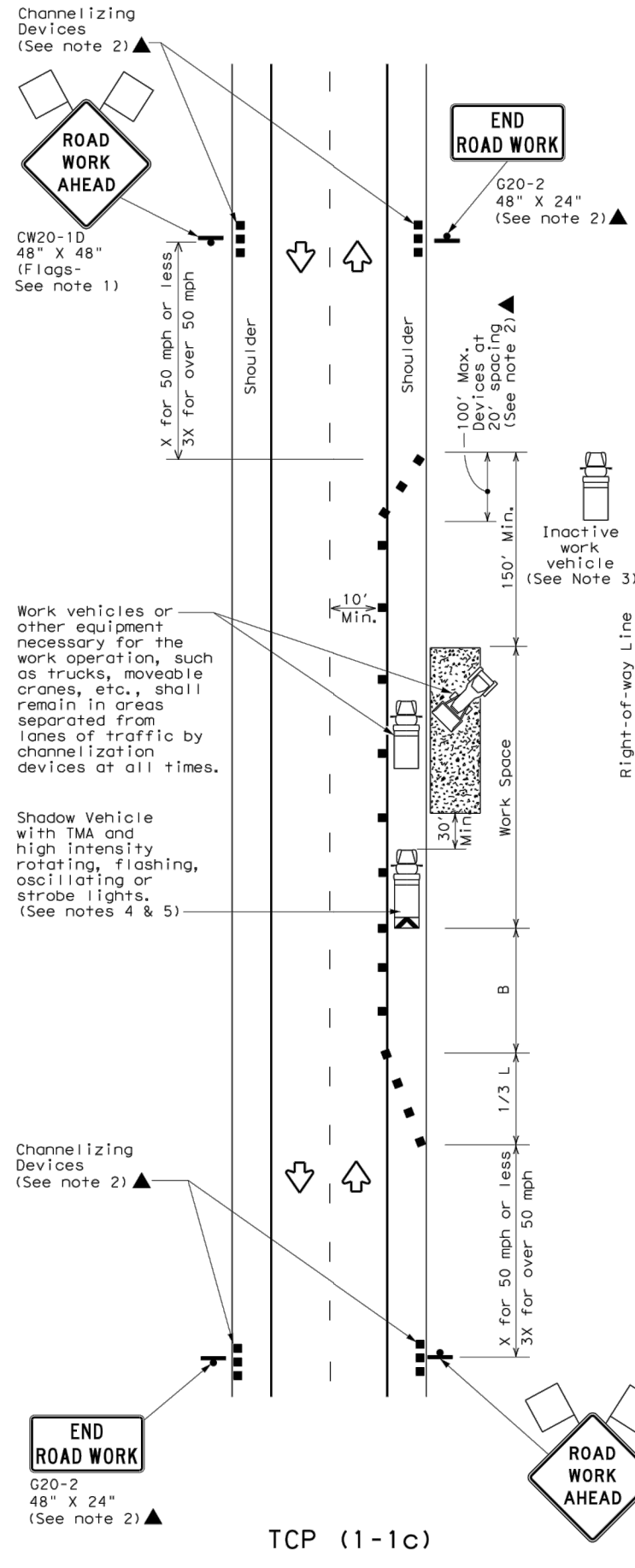
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		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.

Texas Department of Transportation

Traffic Operations Division Standard

**TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD
SHOULDER WORK**

TCP (1-1) - 18

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

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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)

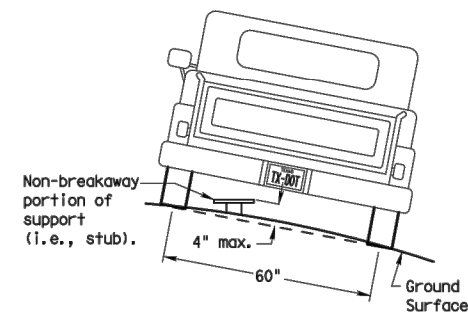
Anchor Type

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))

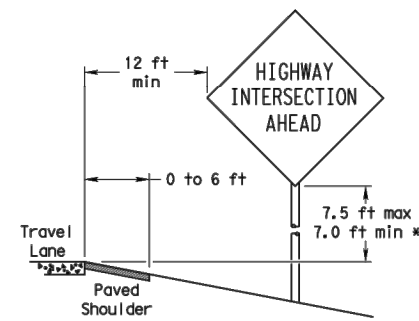
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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).

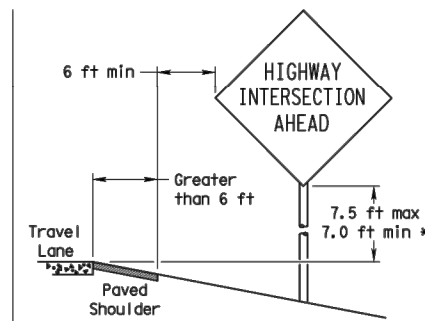
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

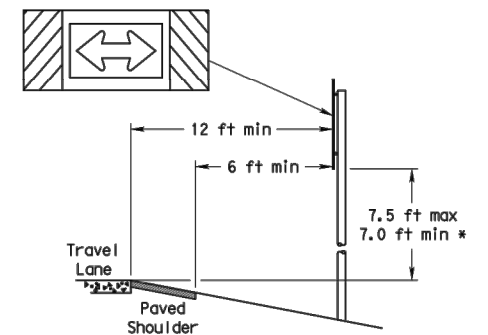
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



GREATER THAN 6 FT. WIDE

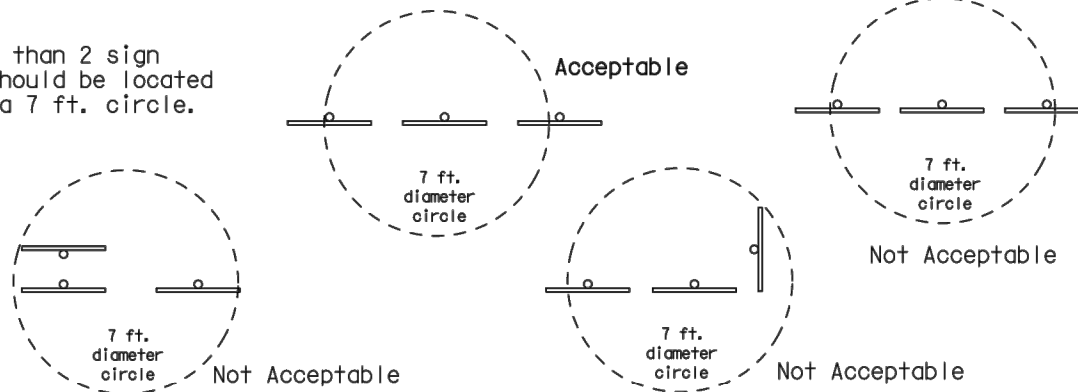
When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

T-INTERSECTION

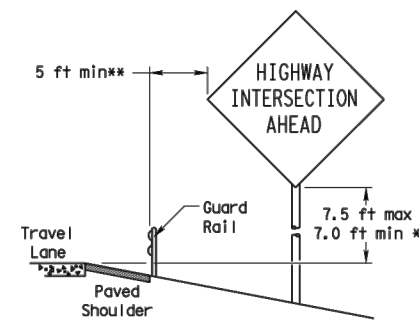


When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.

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

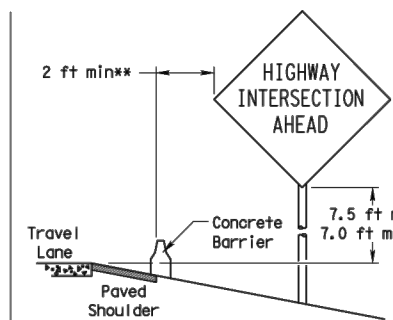


BEHIND BARRIER



BEHIND GUARDRAIL

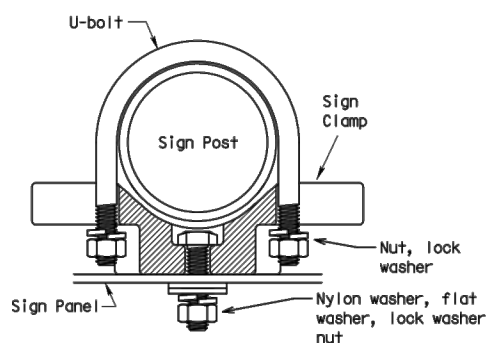
**Sign clearance based on distance required for proper guard rail or concrete barrier performance.



BEHIND CONCRETE BARRIER

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

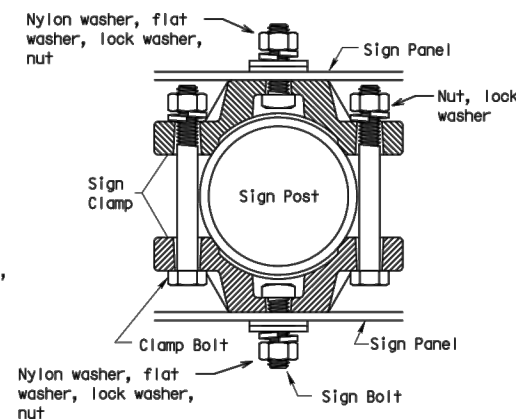


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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

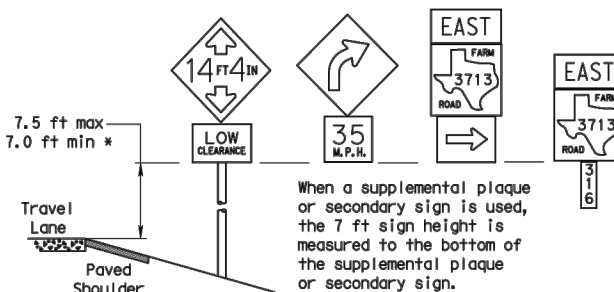
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



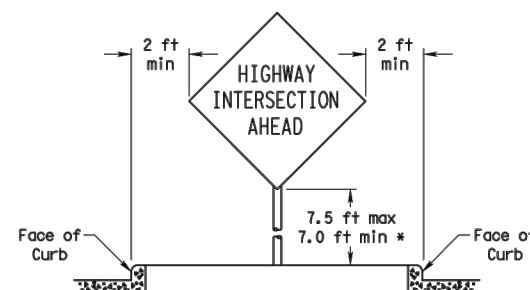
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

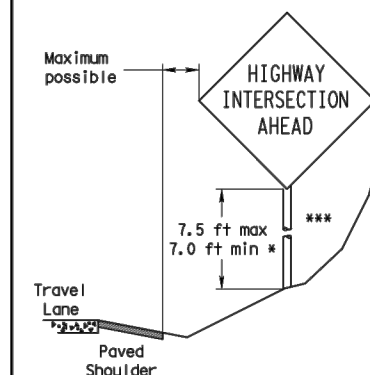


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)



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

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

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

* 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>



SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

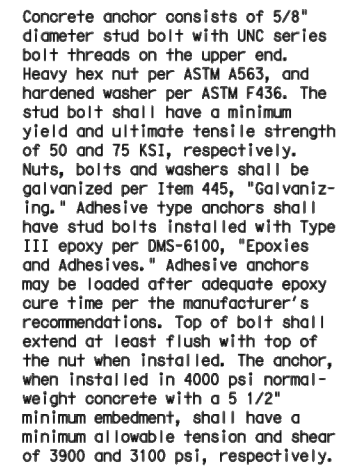
SMD (GEN) -08

© TxDOT July 2002	Rev	TxDOT	Rev	TxDOT	Rev	TxDOT	Rev	TxDOT
9-08	REVISED	DATE	SECT	JUL	HIGHWAY	POST	COUNTY	SHEET NO.
						WACO	MCLENNAN	1.20

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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.



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 HSLA 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.

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.

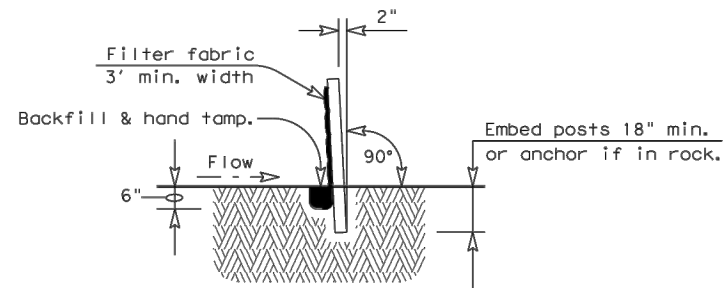
Support

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.

26B

DATE:
FILE:

DATE: _____
FILE: _____



SECTION A-A

GENERAL NOTES

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

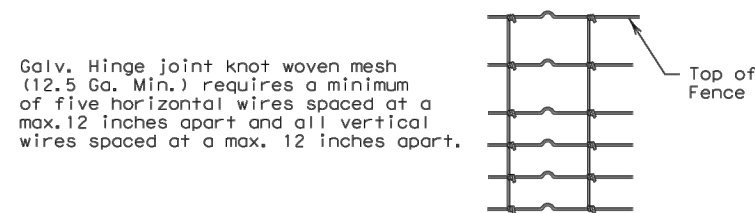
PLAN SHEET LEGEND

Sediment Control Fence — SCF —

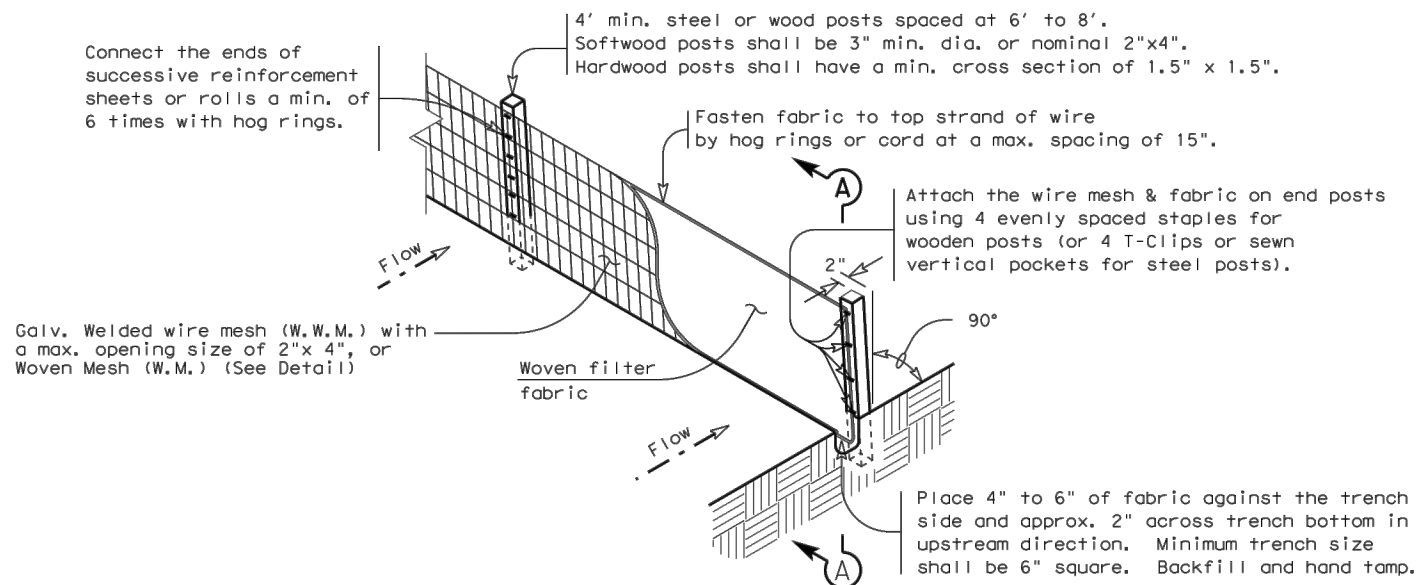
SEDIMENT CONTROL FENCE USAGE GUIDELINES

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.

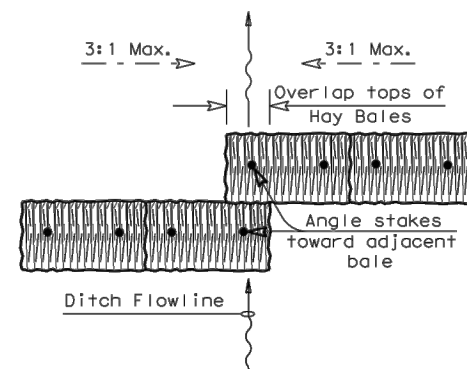


Hinge Joint Knot Woven Mesh (Option)

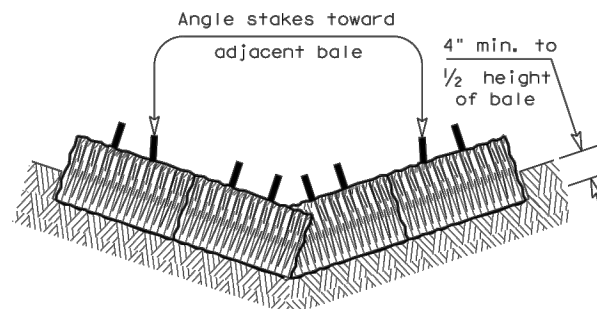


TEMPORARY SEDIMENT CONTROL FENCE

SCE



PLAN VIEW



PROFILE VIEW

PLANS SHEET LEGEND

Baled Hay — **BH** —

BALED HAY USAGE GUIDELINES

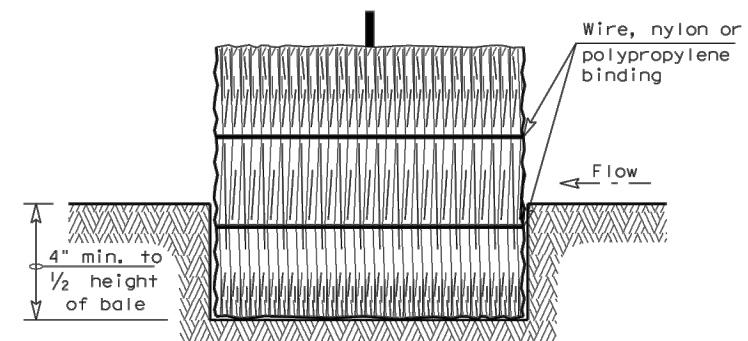
A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate 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.

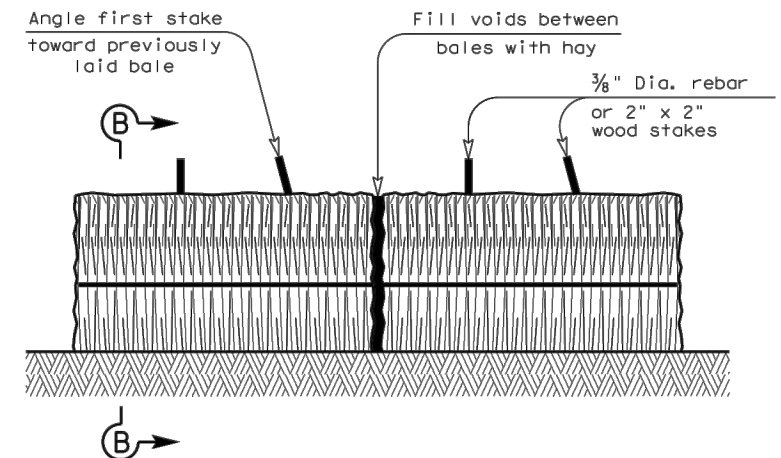
For Baled Hay installations in small ditches, the additional following considerations apply:

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 $\frac{1}{2}$ 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 $\frac{3}{8}$ " 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 herein are suggestions only and may be modified by the Engineer.



Texas Department of Transportation

**Design
Division
Standard**

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & BALED HAY

EC (1) - 09

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