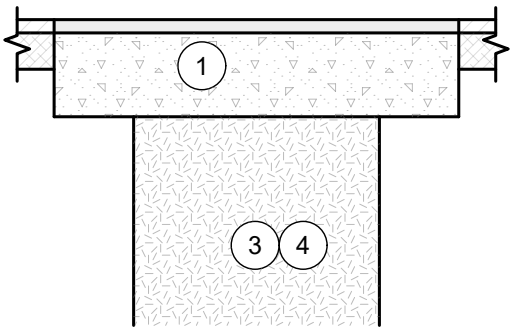
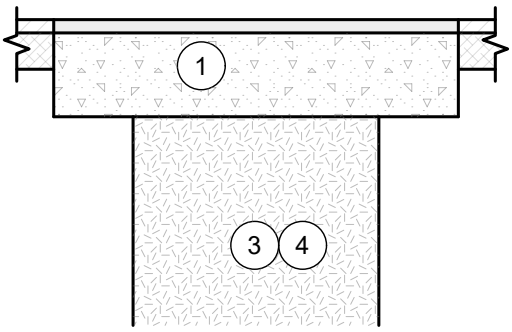
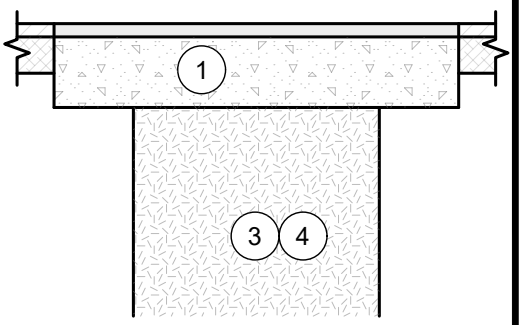


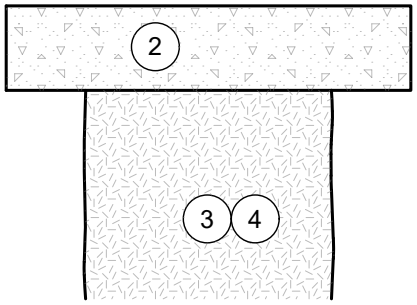
CLASS A
H.M.A.C.
INDUSTRIAL COLLECTOR &
ARTERIAL STREETS



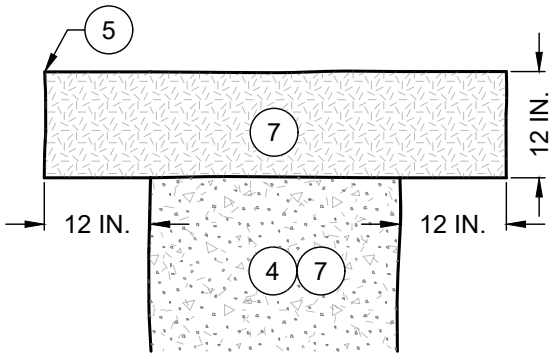
CLASS B
H.M.A.C.
RESIDENTIAL COLLECTOR &
COMMERCIAL COLLECTOR STREETS



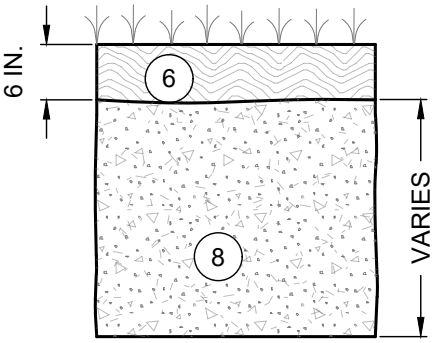
CLASS C
H.M.A.C.
LOCAL STREETS



CLASS D
CONCRETE



CLASS E
FOR EXISTING NON-BONDED
AGGREGATE SURFACES ONLY



CLASS F
SEED OR SOD

PAVEMENT / SURFACE REPLACEMENT DETAILS

(1) SEE ST-30 FOR CONCRETE OR ST-31 FOR CONTROLLED LOW STRENGTH MATERIAL AND APPLICABLE ST-33 AND/OR ST-34 FOR SAW CUT AND PAVEMENT REPLACEMENT DETAILS.

(2) SEE ST-37 AND APPLICABLE ST-35 AND/OR ST-36 FOR SAW CUT AND PAVEMENT REPLACEMENT DETAILS.

(3) TYPE "A" MATERIAL PER STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 4.2 EXCAVATION AND BACKFILL, PART 2: PRODUCT, A. MATERIALS, 3. TRENCH BACKFILL, A. TYPE "A." MATERIAL MECHANICALLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (TEX-113-E) OR CONTROLLED LOW STRENGTH MATERIAL.

(4) USE CONTROLLED LOW STRENGTH MATERIAL TO BACKFILL ALL TRENCHES 22 IN. OR NARROWER, IN THE RIGHT-OF-WAY AND PUBLIC EASEMENTS.

(5) EDGE TO BE STRAIGHT, SQUARE AND PARALLEL TO SIDES OF TRENCH.

(6) 6 IN. MIN. TOPSOIL AND SEED OR SOD - SUBSIDIARY.

(7) TXDOT ITEM 247 FLEXIBLE BASE TYPE A GRADE 1-2 MINIMUM PLASTICITY INDEX 5.

(8) SEE G-10 FOR BACKFILL MATERIAL REQUIREMENTS AND FOR INSTALLATION.

CITY OF WACO

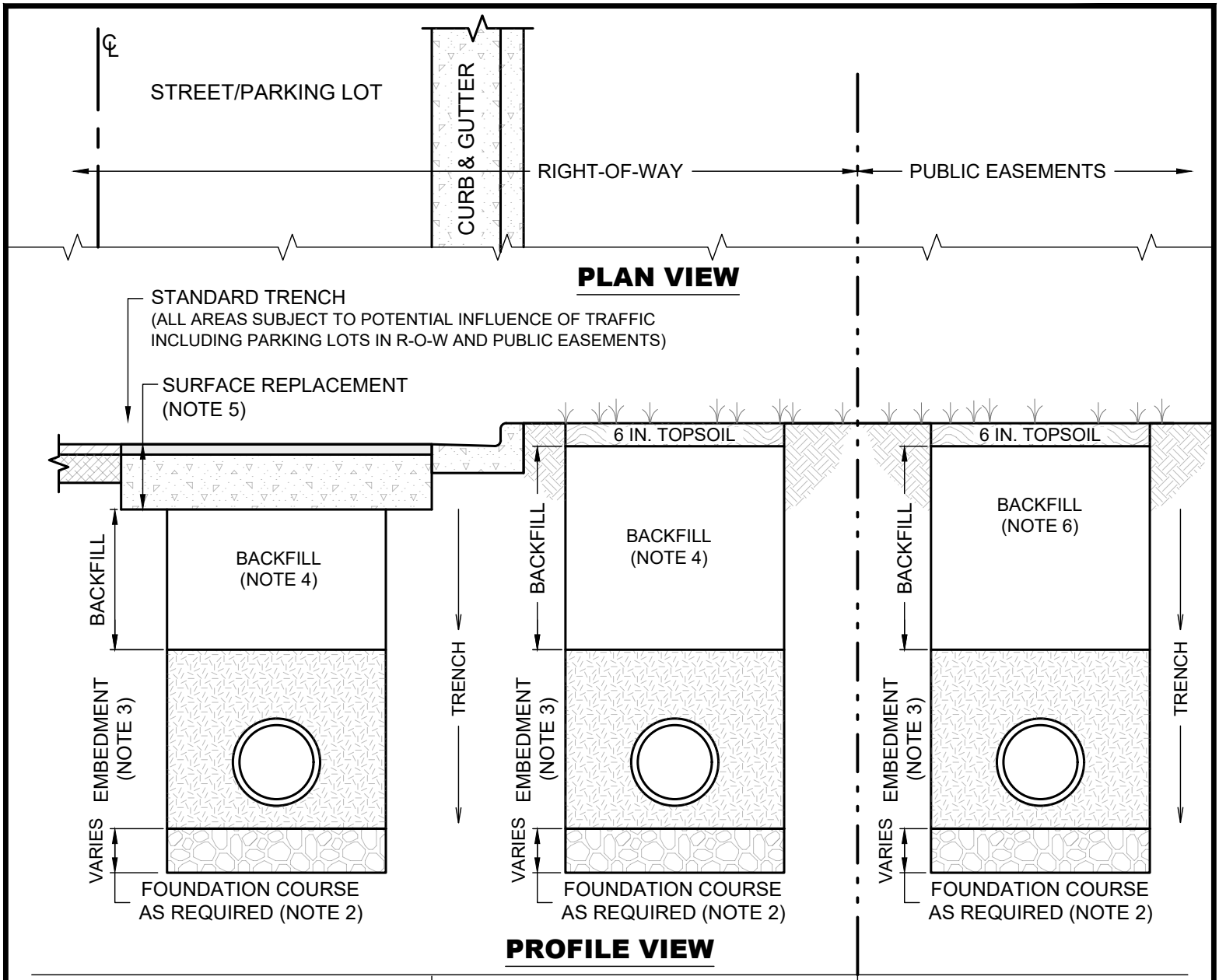
ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
2	NOTE 4: CHANGE WIDTH OF TRENCH FROM 18"	MZ	09/06/2024
1	MODIFY NOTE 1	MZ	04/19/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE
01/01/2024

G-9



PAY ITEMS:
- PIPING = L.F.
- SURFACE REPLACEMENT = L.F.

PAY ITEMS:
- PIPING = L.F.

(TOPSOIL AND VEGETATION SUBSIDIARY)

PAY ITEMS:
- PIPING = L.F.

(TOPSOIL AND VEGETATION SUBSIDIARY)

NOTES:

1. TRAFFIC AREAS SHALL INCLUDE ALL AREAS UNDER THE INFLUENCE OF TRAFFIC, INCLUDING ALL TRENCHES IN THE RIGHT-OF-WAY, BACK OF CURB, ALL ALLEYS, PUBLIC EASEMENTS, AND PARKING LOTS.
2. REFER TO STANDARD DETAIL G-8 FOR FOUNDATION COURSE (AS REQUIRED).
3. REFER TO STANDARD DETAIL G-8 FOR EMBEDMENT REQUIREMENTS.
4. TYPE "A" MATERIAL PER STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 4.2 EXCAVATION AND BACKFILL, PART 2: PRODUCT, A. MATERIALS, 3. TRENCH BACKFILL, A. TYPE "A." MATERIAL MECHANICALLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (TEX-113-E) OR CONTROLLED LOW STRENGTH MATERIAL. USE CONTROLLED LOW STRENGTH MATERIAL TO BACKFILL ALL TRENCHES 18 IN. OR NARROWER IN THE RIGHT-OF-WAY.
5. REFER TO STANDARD DETAILS G-9, ST-30 OR ST-31 AND APPLICABLE ST-33, ST-34, ST-35, ST-36 AND ST-37 FOR SURFACE REPLACEMENT REQUIREMENTS.
6. SHALL BE STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 4.2 EXCAVATION AND BACKFILL 3. TRENCH BACKFILL. USE CONTROLLED LOW STRENGTH MATERIAL TO BACKFILL ALL TRENCHES 22 IN. OR NARROWER IN PUBLIC EASEMENTS.

TRENCH BACKFILL GUIDELINES

(NO SCALE)

CITY OF WACO

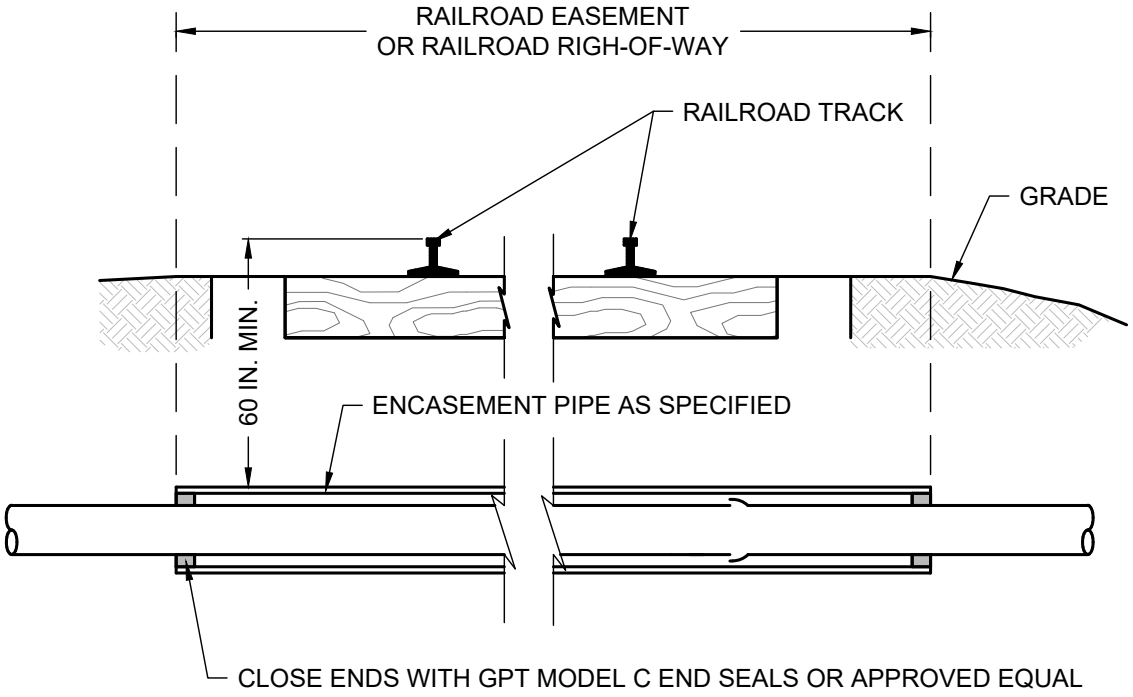
ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
1	NOTE 6: CHANGE WIDTH OF TRENCH FROM 18"	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE
01/01/2024

G-10



NOTES:

1. MINIMUM INSIDE DIAMETER OF THE CASING SHALL BE AT LEAST 10% LARGER THAN THE OUTSIDE DIAMETER OF THE CARRIER PIPE, BUT NO LESS THAN 2 IN. GREATER THAN LARGEST OUTSIDE DIAMETER OF CARRIER PIPE, JOINTS, OR COUPLINGS.

2. CASING SHALL BE STEEL WITH A MINIMUM WALL THICKNESS OF:

INSIDE DIAMETER OF STEEL CASING PIPE		MINIMUM CASING WALL THICKNESS
GREATER THAN	UP TO AND INCLUDING	
~	12 IN.	1/4 IN.
12 IN.	18 IN.	5/16 IN.
18 IN.	22 IN.	3/8 IN.
22 IN.	28 IN.	7/16 IN.
28 IN.	34 IN.	1/2 IN.
34 IN.	42 IN.	9/16 IN.
42 IN.	48 IN.	5/8 IN.

3. THE MINIMUM THICKNESS FOR ALL CASINGS GREATER THAN 48 IN. DIA. SHALL BE DETERMINED BY THE ENGINEER OF RECORD, AND SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY OF WACO PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION.

4. ALL PIPE IN CASING SHALL BE JOINT RESTRAINED.

5. ALL CASINGS WITH LESS THAN 24 IN. OF COVER SHALL BE PAINTED PER STANDARD SPECIFICATIONS AND AS REQUIRED BY RAILROAD AND SHALL BE COATED WITH TNEMEC PERMA-SHIELD SERIES 46H-413 COAL TAR EPOXY.

6. ALL CARRIER PIPE SHALL BE INSTALLED USING PRE-APPROVED CASING SPACERS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

RAILROAD CROSSING BORE DETAILS

(NO SCALE)

CITY OF WACO

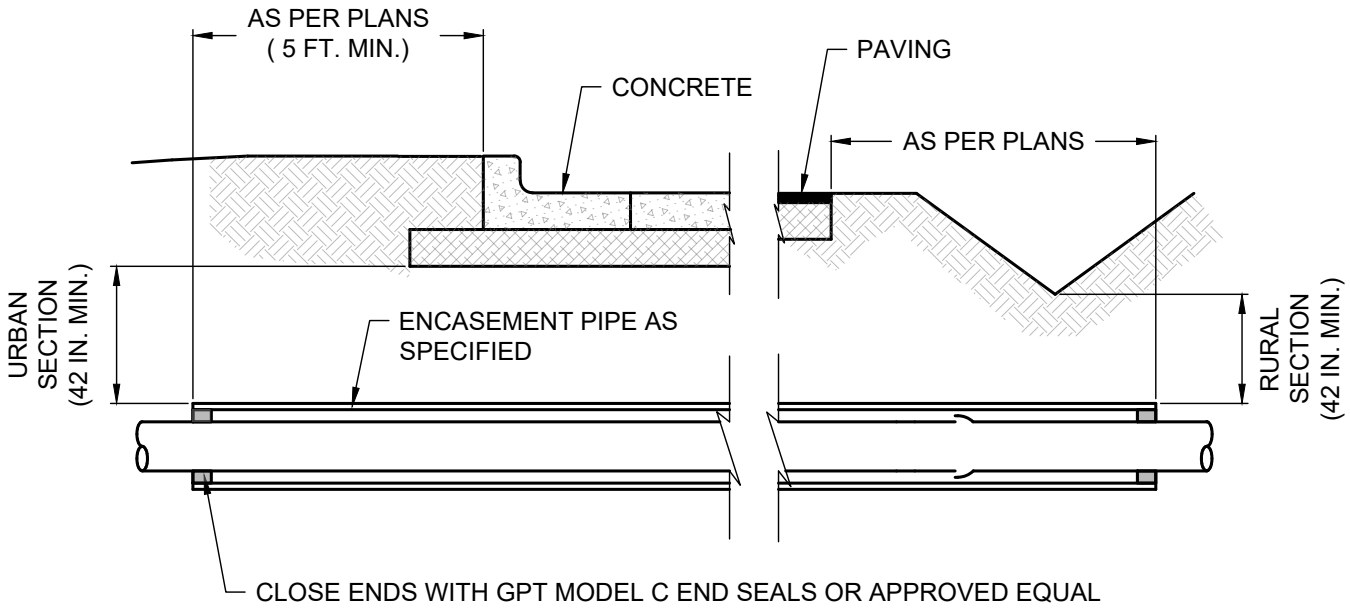
ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 09/06/2024

G-18



NOTES:

1. MINIMUM INSIDE DIAMETER OF THE CASING SHALL BE AT LEAST 10% LARGER THAN THE OUTSIDE DIAMETER OF THE CARRIER PIPE, BUT NO LESS THAN 2 IN. GREATER THAN LARGEST OUTSIDE DIAMETER OF CARRIER PIPE, JOINTS, OR COUPLINGS.

2. CASING SHALL BE STEEL WITH A MINIMUM WALL THICKNESS OF:

INSIDE DIAMETER OF STEEL CASING PIPE		MINIMUM CASING WALL THICKNESS
GREATER THAN	UP TO AND INCLUDING	
~	12 IN.	1/4 IN.
12 IN.	18 IN.	5/16 IN.
18 IN.	22 IN.	3/8 IN.
22 IN.	28 IN.	7/16 IN.
28 IN.	34 IN.	1/2 IN.
34 IN.	42 IN.	9/16 IN.
42 IN.	48 IN.	5/8 IN.

3. THE MINIMUM THICKNESS FOR ALL CASINGS GREATER THAN 48 IN. DIA. SHALL BE DETERMINED BY THE ENGINEER OF RECORD, AND SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY OF WACO PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION.

4. ALL PIPE IN CASING SHALL BE JOINT RESTRAINED.

5. ALL CASINGS WITH LESS THAN 24 IN. OF COVER SHALL BE PAINTED PER STANDARD SPECIFICATIONS AND SHALL BE COATED WITH TNEMEC PERMA-SHIELD SERIES 46H-413 COAL TAR EPOXY.

6. ALL CARRIER PIPE SHALL BE INSTALLED USING PRE-APPROVED CASING SPACERS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BORE DETAIL

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

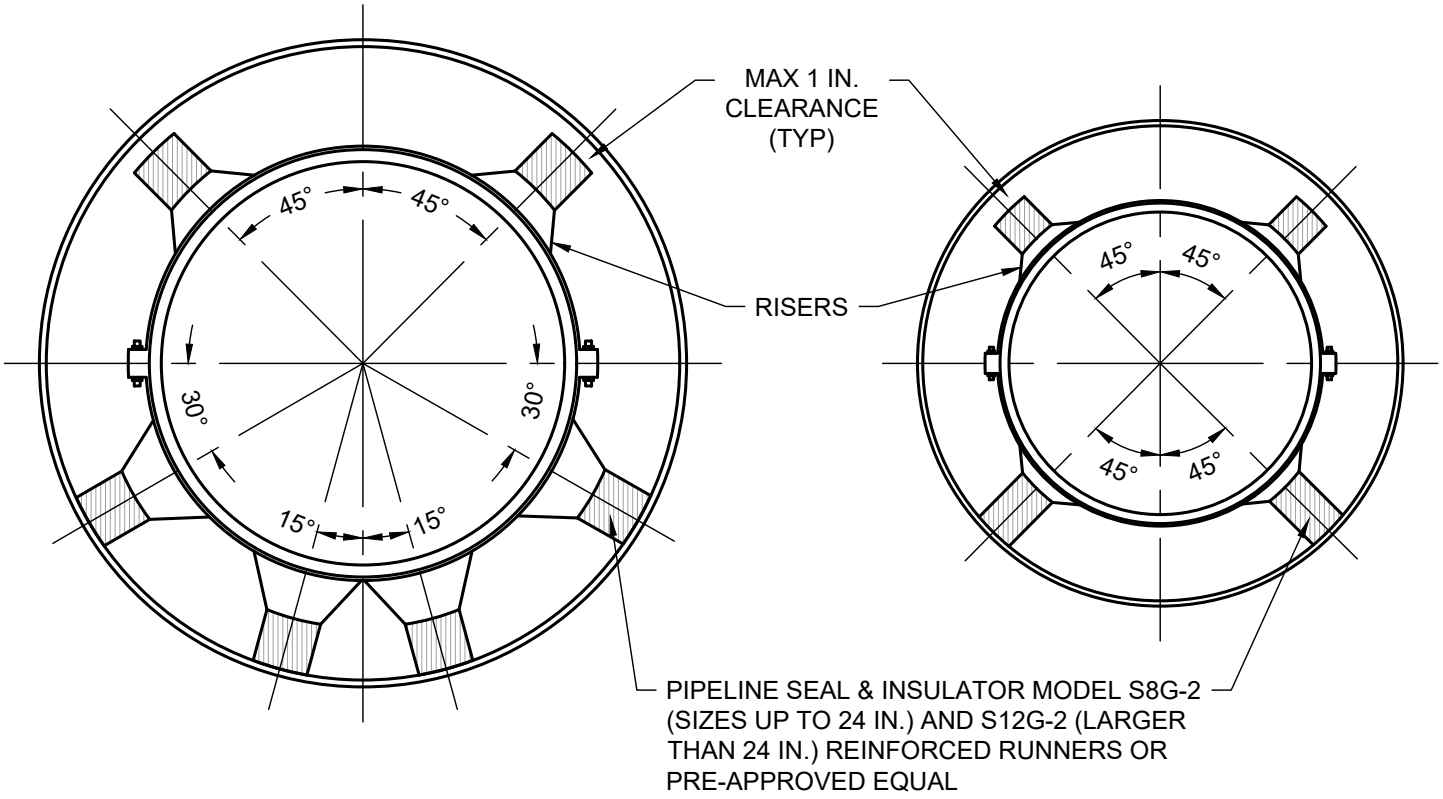
REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		

##	DESCRIPTION	FL	MM/DD/YYYY

DATE 09/06/2024

G-19



CARRIER PIPE NOMINAL DIAMETER 14 IN. THRU 36 IN.
(NO SCALE)

CARRIER PIPE NOMINAL DIAMETER 4 IN. THRU 12 IN.
(NO SCALE)

REQUIRED INSTALLATION PRACTICES FOR PIPE IN CASINGS ARE:

1. MINIMUM INSIDE DIAMETER OF THE CASING SHALL BE AT LEAST 10% LARGER THAN THE OUTSIDE DIAMETER OF THE CARRIER PIPE, BUT NO LESS THAN 2 IN. GREATER THAN LARGEST OUTSIDE DIAMETER OF CARRIER PIPE, JOINTS, OR COUPLINGS.
2. BELL MUST MAINTAIN A MINIMUM OF 1 IN. CLEARANCE FROM CASING WALL.
3. THE PIPE MUST BE BRACED AND ANCHORED IN A MANNER THAT PREVENTS MOVEMENT IN ANY DIRECTION.
4. THE PIPE MUST BE INSTALLED IN A MANNER THAT WILL PERMIT ITS REMOVAL WITH REASONABLE EASE, SHOULD THIS BE NECESSARY AT A LATER DATE.
5. PLACE SPACERS AT NO MORE THAN 2 FT. FROM EACH JOINT AND A MAXIMUM SPACING OF 5 FT. OR LESS AS PER MANUFACTURER'S RECOMMENDATION.
6. SPACERS MUST BE A MAXIMUM OF 1 IN. FROM CASING WALL.
7. CASING SHALL BE STEEL WITH A MINIMUM WALL THICKNESS PER RELEVANT G-18 OR G-19.
8. CASING SPACERS SHALL BE UTILIZED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

PIPE THROUGH CASING DETAIL

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
##	DESCRIPTION	FL	MM/DD/YYYY

DATE
09/06/2024

G-20

SANITARY SEWER GENERAL NOTES AND SERVICE TAP NOTES

1. PVC SEWER MAIN PIPE COLOR SHALL BE GREEN.
2. ALL PVC SANITARY SEWER PIPE AND FITTINGS SHALL BE SDR26 OR PS115.
3. ALL PVC SANITARY SEWER SERVICES SHALL BE SCHEDULE 40 OR SDR26.
4. A STAMPED "S" OF 4 IN. IN HEIGHT AND 3/8 IN. IN DEPTH SHALL BE PLACED IN THE CENTER OF THE FACE OF CURB, AT EACH NEW TAP LOCATION AND IN ANY NEW CURB AT EXISTING SERVICES.
5. PLEASE REFER TO STANDARD DETAIL S-2 FOR SEWER CLEANOUTS SITUATED IN A TRAFFIC AREA INCLUDING SIDEWALKS.
6. FOR BEDDING EMBEDMENT AND BACK FILL ABOVE EMBEDMENT REFER TO STANDARD DETAILS G-8, G-9 AND G-10 .
7. BID ITEM FOR SEWER SERVICE INCLUDES EXCAVATION, WYE, SERVICE LINE, CLEANOUT, BOX, ALL FITTINGS, BACKFILL AND SURFACE REPLACEMENT.
8. ALL WYES SHALL BE SAME MATERIAL SPECIFICATION AS THE MAIN IN REGARDS TO MATERIAL, SDR AND ASTM DESIGNATIONS.
9. ALL SERVICE CONNECTIONS TO EXISTING SEWER PIPE SHALL BE MADE BY USING NON-SHEAR COUPLINGS AND RIGID FITTINGS.
10. ALL ADAPTERS, BENDS, AND TEES ON SERVICE LINES SHALL BE FULLY ENCASED IN 6 IN. OF CONCRETE.
11. WHERE NEW SANITARY SEWER SERVICES ARE INSTALLED UNDER EXISTING CURB AND GUTTER, THE CONTRACTOR WILL HAVE THE FOLLOWING OPTIONS:

    A. REMOVE AND REPLACE ADEQUATE AMOUNT OF CURB AND GUTTER.
    B. PLACE CONTROLLED LOW STRENGTH MATERIAL BENEATH THE EXISTING CURB AND GUTTER.
    C. INSTALL SERVICE THROUGH A HOLE AT THE SAME LOCATION AS THE EXISTING PIPE, AND APPROXIMATELY THE SAME DIAMETER.

12. ALL WATER AND SEWER CROSSINGS SHALL MEET TCEQ SEPARATION REQUIREMENTS. MINIMUM SEPARATION SHALL BE 6 INCHES. SEE STANDARD DETAIL S-19 AND S-20 .
13. ANY UNDERGROUND DUCTILE IRON PIPE SHALL BE LINED WITH TNEMEC PERMA-SHIELD 431 OR A PRE-APPROVED EQUAL. USE OF DUCTILE IRON SANITARY SEWER PIPE SHALL BE PREAPPROVED BY THE CITY ENGINEER.
14. STEEL PIPE CASING USED FOR AERIAL CROSSING SHALL BE PAINTED WITH TNEMEC SERIES 46H-413 COAL TAR EPOXY AT 60.0 DRY MILS. PAINTING IS SUBSIDIARY TO THE CASING.
15. SEWER MAINS AND/OR SERVICES ENTERING INTO A MANHOLE MORE THAN 24 IN. ABOVE AN INVERT MUST HAVE A DROP FIXTURE.
16. ALL SERVICE TAPS MUST BE APPROVED IN ADVANCE BY THE CITY OF WACO AND MUST BE PERFORMED UNDER THE DIRECT SUPERVISION OF A DESIGNATED CITY OF WACO UTILITY INSPECTOR. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN.
17. PLEASE REFER TO CITY OF WACO STANDARD DETAILS FOR AIR RELEASE VALVES ON FORCE MAINS.
18. FILL ALL ABANDONED CONDUITS GREATER THAN 6 IN. DIAMETER WITH CONTROLLED LOW STRENGTH MATERIAL.
19. IDENTIFICATION NON-DETECTABLE UNDERGROUND WARNING TAPE SHALL BE PLACED 24 IN. ABOVE TOP OF THE PIPE FOR ENTIRE LENGTH OF ALL SANITARY SEWER MAINS. TAPE SHALL BE A MINIMUM 4 MIL OVERALL THICKNESS AND BE 6 IN. WIDE, APWA GREEN IN COLOR, COLORFAST, CHEMICALLY INERT, AND WITH BLACK LETTERING IMPRINTED LEGEND "PRESSURIZED WASTEWATER" FOR FORCE MAINS AND “CAUTION BURIED SEWER LINE BELOW” FOR GRAVITY FLOW LINES, SEE G-8 NOTE 7.
20. IN ACCORDANCE WITH G-7 NOTE 6, PRIOR TO PLACEMENT OF CONCRETE FOR A DIAMOND IN PAVEMENT FOR A FORCE MAIN VALVE OR A SANITARY SEWER MANHOLE, MATERIAL BELOW SHALL BE COMPACTED / RE-COMPACTED TO 95% STANDARD PROCTOR DENSITY AT ±2% OPTIMAL MOISTURE CONTENT.

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
2	MODIFY NOTE 19	MZ	09/06/2024
1	ADD NOTE 19	MZ	04/19/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

SIDEWALK GENERAL NOTES

GENERAL

1. ALL CONCRETE AND REINFORCEMENT MATERIALS AND PLACEMENT MUST COMPLY WITH SECTION 5.1 OF THE CITY OF WACO STANDARD SPECIFICATIONS FOR CONSTRUCTION AND WITH ALL NOTES ON SHEET G-7 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. PEDESTRIAN ACCESS ROUTES, SHARED USE PATHS, AND ELEMENTS OF THESE WITHIN THE CITY RIGHT-OF-WAY AND PUBLIC EASEMENTS SHALL COMPLY WITH THE CURRENT UNITED STATES ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD (ACCESS BOARD) ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY (PROWAG).
4. RETAINING WALLS IN THE RIGHT-OF-WAY AND PUBLIC EASEMENT SHALL BE CAST-IN-PLACE CONCRETE.
5. TRUNCATED DOME BRICK PAVERS ARE REQUIRED FOR DETECTABLE WARNING STRIPS. SAKRETE® PAVER SET POLYMERIC SAND™ OR PRE-APPROVED EQUAL SHALL BE USED.
6. SW-5, SW-6, SW-7, SW-8 SHOW SOME TYPICAL RAMPS, ILLUSTRATING REQUIRED SLOPES AND DIMENSIONS AS THEY MIGHT BE APPLIED IN SEVERAL 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

7. SIDEWALKS AND LANDINGS SHALL BE FORMED AT A MAXIMUM CROSS-SLOPE OF 1.5%. FINISHED CROSS-SLOPES EXCEEDING 2% WILL NOT BE ACCEPTED.
8. NEW SIDEWALK SHALL BE CONNECTED TO ALL EXISTING ADJACENT WALKS AND STEPS.
9. LANDINGS SHALL BE 5 FT. X 5 FT. MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION, GRADED FOR POSITIVE DRAINAGE TO STREET.
10. 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 AND THE EXISTING STREET ON THE OTHER. THE SLOPE OF THE NEW GUTTER TOWARD THE STREET MAY NOT EXCEED 1:12.
11. SLOPE OF RAMPS SHALL NOT EXCEED 1:12 UNLESS OTHERWISE NOTED.
12. MINIMUM RAMP WIDTH IS 5 FEET EXCLUSIVE OF FLARED SIDES, HOWEVER, FOR A SHARED USE PATH THE WIDTH OF THE RAMP SHALL EQUAL THE WIDTH OF THE SHARED USE PATH.
13. NO SKEWED ANGLES ARE ALLOWED WHERE SIDEWALK MEETS LANDING, WHERE LANDING MEETS RAMP, AND WHERE PERPENDICULAR CURB RAMP MEETS CURB.

CONSTRUCTION

14. PLACE CONSTRUCTION JOINTS WITH EXPANSION MATERIAL AT MINIMUM 50 FT. INTERVALS. EXPANSION JOINTS SHALL EXTEND THROUGH ANY ADJACENT RETAINING WALL OR TRANSITION CURB.
15. REBAR CHAIRS SHALL BE PLACED ON 4 FT. MAX SPACING EACH WAY.
16. PLACE TOOLED, CRACK CONTROL JOINTS AT A SPACING EQUAL TO THE WIDTH OF THE WALK.
17. VERTICAL CHANGES IN LEVEL GREATER THAN 1/4 INCH ARE NOT PERMITTED ALONG SIDEWALKS.
18. WHERE SIDEWALK OR CURB RAMP IS ADJACENT TO BACK OF CURB, DRIVEWAY RADIUS, INLET, OR ANY CONCRETE STRUCTURE, INSTALL CONSTRUCTION JOINT. SEE DETAIL SW-3 .
19. WHERE SIDEWALK OR CURB RAMP CONTACTS A POLE OR POLE FOUNDATION, PLACE ½ IN.EXPANSION JOINT MATERIAL BETWEEN POLE OR POLE FOUNDATION AND SIDEWALK/RAMP.
20. CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH SECTION 5.1 OF THE CITY OF WACO STANDARD SPECIFICATIONS FOR CONSTRUCTION.
21. POOR WORKMANSHIP OR APPEARANCE SHALL BE GROUNDS FOR REMOVAL OR REJECTION.

LOCATIONS WITHIN THE CODE OF ORDINANCES OF MINIMUM REQUIRED WIDTHS OF SIDEWALK AND RELATED BUFFER PRESENTLY INCLUDE THE FOLLOWING

- SEC. 22-37. - CHANGING OF GRADE OF STREETS, ETC.
- SEC. 22-63. - SAME-LOCATION AND WIDTH OF SIDEWALKS.
- SEC. 28-880.11. - PUBLIC SPACES.
- SEC. 28-839. - SIDEWALKS.
- SUBDIVISION ORDINANCE SEC. 5.2. - PERMANENT IMPROVEMENTS.5.207. SIDEWALKS

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
2	MODIFY NOTE 12, ADD NOTE 13; RENUMBER 14-21	MZ	09/06/2024
1	MODIFY NOTE 3	MZ	04/19/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

SW-1

CURB RAMPS GENERAL NOTES - 1 OF 2

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% OR LESS (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 FT.. WHERE THE SIDEWALK IS ADJACENT TO THE BACK OF CURB, A 6 FT. SIDEWALK WIDTH IS DESIRABLE. WHERE A 5 FT. SIDEWALK CANNOT BE PROVIDED DUE TO SITE CONSTRAINTS, SIDEWALK WIDTH MAY BE REDUCED TO 4 FT. FOR SHORT DISTANCES. 5 FT.X 5 FT. PASSING AREAS AT INTERVALS NOT TO EXCEED 200 FT. ARE REQUIRED.

5. TURNING SPACES SHALL BE 5 FT.X 5 FT. MINIMUM. CROSS SLOPE SHALL BE MAXIMUM 2%.

6. CLEAR SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4 FT.X 4 FT. 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 CURRENT UNITED STATES ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD (ACCESS BOARD) ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY (PROWAG).

9. TO SERVE AS A PEDESTRIAN REFUGE AREA, THE MEDIAN SHOULD BE A MINIMUM OF 6 FT. 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 FT.X 5 FT. 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. SIDEWALKS WILL BE MEASURED BY THE SQUARE YARD OF SURFACE AREA. CURB RAMPS WILL BE MEASURED BY THE SQUARE YARD OF SURFACE AREA OR BY EACH. A CURB RAMP CONSISTS OF THE RAMP, LANDING(S), ADJACENT FLARES OR SIDE CURB, AND DETECTABLE WARNING SURFACE AS SHOWN ON THE PLANS. THE WORK PERFORMED AND MATERIALS FURNISHED IN ACCORDANCE WITH THIS ITEM AND MEASURED AS PROVIDED ABOVE WILL BE PAID FOR AT THE UNIT PRICE BID FOR “CONCRETE SIDEWALKS” AND “CURB RAMPS” OF THE TYPE SPECIFIED. THIS PRICE IS FULL COMPENSATION FOR SURFACE PREPARATION OF SIDEWALK FOUNDATION; MATERIALS; REMOVAL AND DISPOSAL OF EXISTING CONCRETE; EXCAVATION, HAULING AND DISPOSAL OF EXCAVATED MATERIAL; DRILLING AND DOWELING INTO EXISTING CONCRETE CURB, SIDEWALK, AND PAVEMENT; REPAIR OF ADJACENT STREET OR PAVEMENT STRUCTURE DAMAGED BY THESE OPERATIONS; AND EQUIPMENT, LABOR, MATERIALS, TOOLS, AND INCIDENTALS.

14. PLACE CONCRETE AT A MINIMUM DEPTH OF 5 IN. FOR RAMPS, FLARES AND LANDINGS, UNLESS OTHERWISE DIRECTED.

15. FURNISH AND INSTALL #4 REINFORCING STEEL BARS AT 18 IN. O.C. BOTH WAYS, UNLESS OTHERWISE DIRECTED.

16. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.

17. CURBS SHOWN ON SHEETS SW-7 AND SW-8 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.

LEGEND	
PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.	
DETECTABLE WARNING SURFACE	
PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.	⊠
GUTTER LINE	— · —
GRADE BREAK	·····
RAMP LIMITS OF PAYMENT	– – – –
SHOWS DOWNWARD SLOPE.	→

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

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	DRAFT		
2	MODIFY NOTE 17	MZ	09/06/2024
1	MODIFY NOTE 8	MZ	04/19/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

SW-5

CURB RAMPS GENERAL NOTES - 2 OF 2

DETECTABLE WARNING MATERIAL

1. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH THE CURRENT UNITED STATES ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD (ACCESS BOARD) ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY (PROWAG). THE SURFACE SHALL PROVIDE STARK VISUAL CONTRAST WITH ADJOINING SURFACES, INCLUDING SIDE FLARES AND SHALL BE BRICK RED FEDERAL STANDARD COLOR NO. 595 C 22144 OR APPROVED NEAR IDENTICAL.

2. DETECTABLE WARNING MATERIALS MUST MEET TXDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS 4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST AND SHALL BE UNIT PAVER DETECTABLE WARNING SYSTEMS. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

3. DETECTABLE WARNING SURFACES MUST BE FIRM, STABLE AND SLIP RESISTANT AND SHALL BE TRUNCATED DOME BRICK PAVERS PER SW-1 , NOTE 5.

4. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24 IN. 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.

5. 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.

6. SHADED AREAS ON SHEETS SW-7 AND SW-8 INDICATE THE APPROXIMATE LOCATION FOR THE DETECTABLE WARNING SURFACE FOR EACH CURB RAMP TYPE.

DETECTABLE WARNING PAVERS

7. 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.

8. 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

9. 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.

10. 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.

11. STREET GRADES AND CROSS SLOPES SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.

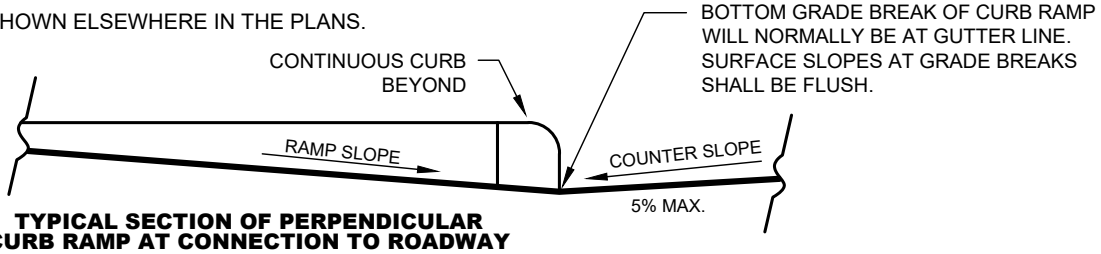
12. CHANGES IN LEVEL GREATER THAN 1/4 IN. ARE NOT PERMITTED.

13. 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.

14. HANDRAIL EXTENSIONS SHALL NOT PROTRUDE INTO THE USABLE LANDING AREA OR INTO INTERSECTING PEDESTRIAN ROUTES.

15. 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".

16. SIDEWALK DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

CITY OF WACO

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2	MODIFY NOTE 6	MZ	09/06/2024
1	MODIFY NOTE 1	MZ	04/19/2024
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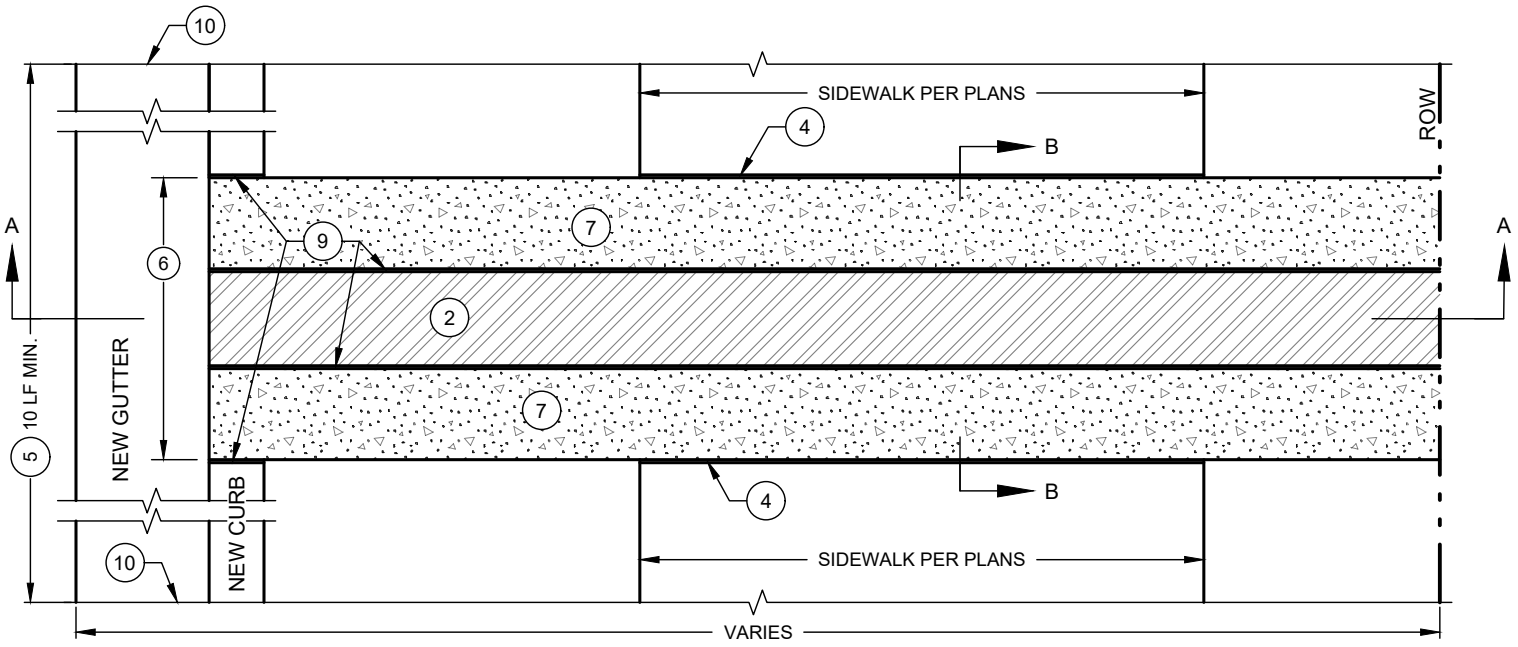
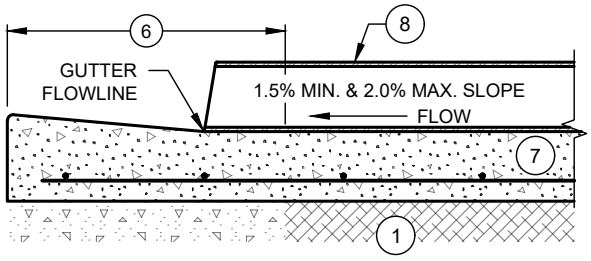
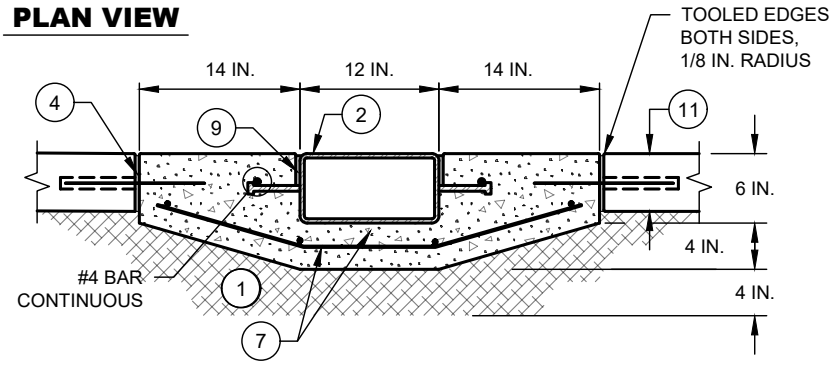
SW-6



PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:

1. MATERIAL PER SW-2 SIDEWALK DETAILS LEGEND NOTE 2.
2. 12 IN. X 6 IN. X 3/8 IN. GALVANIZED STEEL TUBE (A36) WITH 4 IN. X 1/2 IN. Ø STUDS PLACED 4 IN. FROM EACH END AND AT MAXIMUM SPACING OF 12 IN. THE TOP SURFACE OF THE TUBE SHALL RECEIVE A SLIPNOT STEEL GRIP PLATE® (GRADE 3 COARSE) COATING AS MANUFACTURED BY TRACTION TECHNOLOGIES HOLDINGS, LLC (1-800-SLIPNOT) OR EQUIVALENT AND THEN THE ENTIRE TUBE WITH STUDS ATTACHED SHALL BE HOT DIP GALVANIZED (GRADE 3 COARSE). TOP OF STEEL TUBE TO BE FLUSH WITH TOP OF ADJOINING CONCRETE "SADDLE."
3. ENGINEER SHALL PERFORM AND PROVIDE HYDRAULIC CALCULATIONS AND ESTABLISH ADEQUACY OF DRAINAGE TUBE.
4. CONCRETE EXPANSION JOINT. THE SIDEWALK SCUPPER WITH ADJOINING CONCRETE “SADDLE” SHALL BE PLACED PER THIS STANDARD DETAIL TO REQUIRED GRADES PRIOR TO PLACEMENT OF ADJACENT SIDEWALK SECTIONS AND SHALL INCLUDE CONCRETE EXPANSION JOINTS PER ST-9 AND AS SHOWN ON THIS STANDARD DETAIL WITH NON-SLEEVED PORTION OF 3/4 IN. Ø 24 IN. LONG SMOOTH DOWELS PLACED IN THE CONCRETE “SADDLE” AT MAXIMUM SPACING OF 12 IN. WITH MINIMUM DISTANCE OF 3 IN. BETWEEN DOWELS AND 4 IN. X 1/2 IN Ø STUDS.
5. SIDEWALK SCUPPER SHALL INCLUDE 10 LF OF NEW CURB AND GUTTER CENTERED ABOUT THE SCUPPER. WHEN CONSTRUCTING THE NEW CURB AND GUTTER EXISTING CURB AND GUTTER SHALL BE SAWED. IF THE SAWCUT WILL BE WITHIN 3 FT. OF AN EXISTING JOINT, THE EXISTING CURB AND GUTTER SHALL BE REMOVED AND REPLACED TO THE NEXT EXISTING JOINT. CONCRETE FOR SIDEWALK SCUPPER AND NEW CURB AND GUTTER SHALL BE PLACED MONOLITHICALLY.
6. WITHIN THESE LIMITS SCUPPER AND CONCRETE "SADDLE" SHALL CONFORM TO STANDARD CURB AND GUTTER SECTION REF ST-15 & ST-20. (SEE NOTE 5)
7. CONCRETE "SADDLE."CLASS A CONCRETE W/ #4 @ 12 IN. OCEW EXTEND FULLY INTO GUTTER PORTION OF NEW CURB AND GUTTER MAINTAINING MIN. 2 IN. CLEARANCE FROM SURFACES.
8. TOP OF STEEL TUBE SHALL BE FLUSH WITH TOP OF ADJOINING CONCRETE "SADDLE"
9. 1/2 IN. PREFORMED BITUMINOUS JOINT FILLER
10. EXPANSION JOINT WITH 2 3/4 IN. DIAM. X 24 IN. LONG SMOOTH DOWEL BARS WITH 3/4 IN DIAM. PVC PIPE SLEEVE WITH CAPPED END. REF. ST-9 FOR ADDITIONAL REQUIREMENTS.
11. 5 IN. MIN. MATCH DEPTH OF CONCRETE SIDEWALK OR TRAIL

SIDEWALK SCUPPER TYPE 1

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

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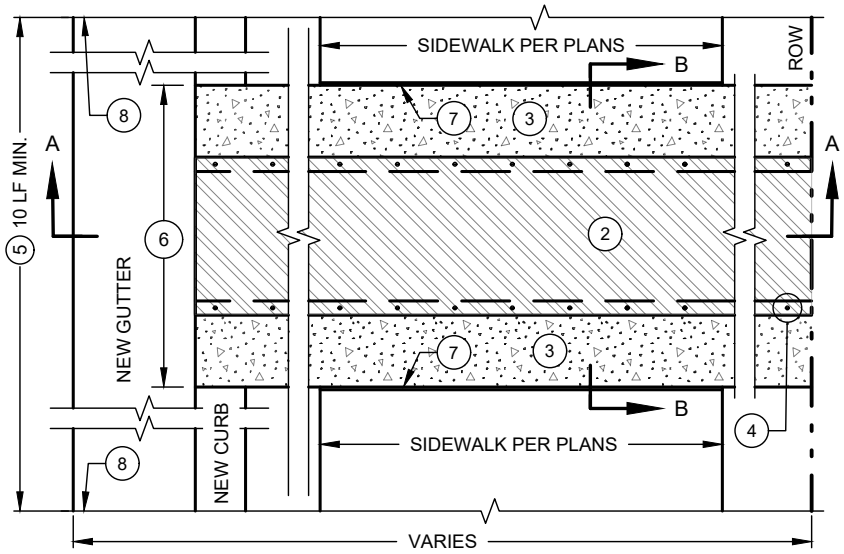
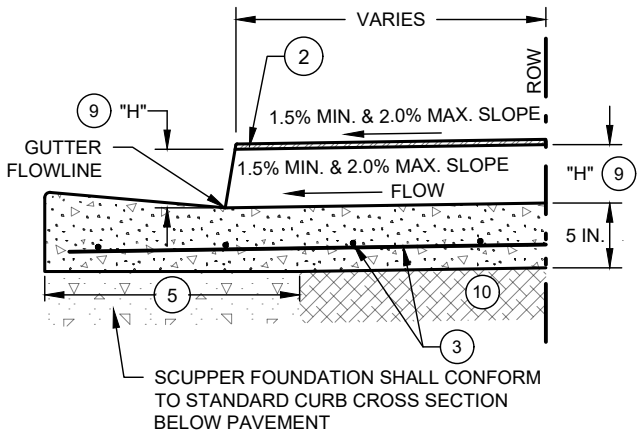
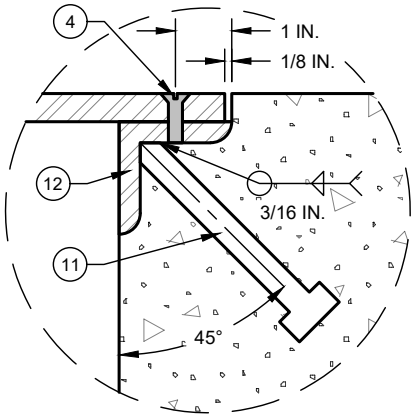
SW-22



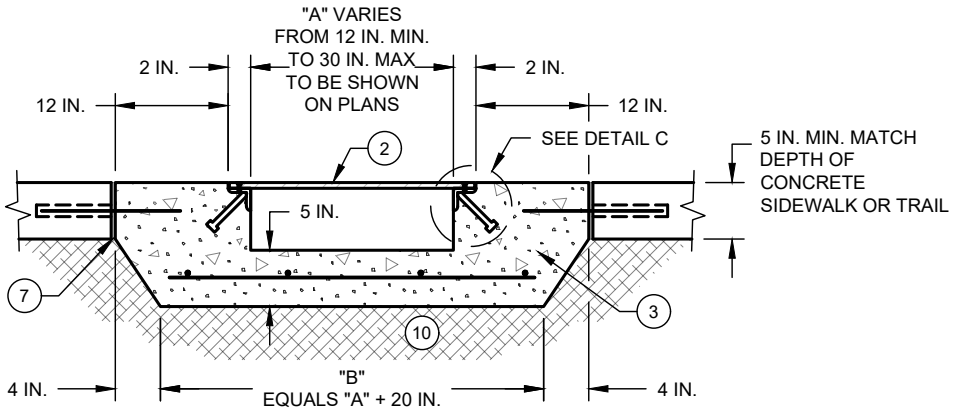
PLAN VIEW



SECTION A-A



DETAIL C



SECTION B-B

NOTES:

1. ENGINEER SHALL PREPARE AND PROVIDE HYDRAULIC CALCULATIONS AND ESTABLISH ADEQUACY OF DRAINAGE WAY.
2. 1/2 IN. THICK GALVANIZED STEEL PLATE ASTM A-36. GALVANIZED STEEL PLATE SHALL BE DELIVERED AS ONE PIECE, CONFORMING TO THE REQUIRED SCUPPER DIMENSIONS. PLATES SHALL NOT BE SPLICED. TOP SURFACE OF STEEL PLATE SHALL RECEIVE A SLIPNOT STEEL GRIP PLATE® (GRADE 3 COARSE) COATING AS MANUFACTURED BY TRACTION TECHNOLOGIES HOLDINGS, LLC (1-800-SLIPNOT) OR EQUIVALENT, COUNTERSUNK HOLES SHALL BE DRILLED, AND THEN THE ENTIRE STEEL PLATE SHALL BE HOT DIP GALVANIZED (GRADE 3 COARSE).
3. CONCRETE "SADDLE": CLASS A CONCRETE W/ #4 @ 12 IN. OCEW. FULLY EXTEND REINF INTO GUTTER PORTION OF NEW CURB AND GUTTER MAINTAINING MIN. 2 IN. CLEARANCE FROM SURFACES.
4. 3/8 IN. FLATHEAD STAINLESS STEEL CAP SCREW. COUNTER SINK PLACED 2 IN. FROM EACH END AND AT MAXIMUM SPACING OF 8 IN.
5. SIDEWALK SCUPPER SHALL INCLUDE 10 LF OF NEW CURB AND GUTTER CENTERED ABOUT THE SCUPPER. WHEN CONSTRUCTING THE NEW CURB AND GUTTER EXISTING CURB AND GUTTER SHALL BE SAWED. IF THE SAWCUT WILL BE WITHIN 3 FT. OF AN EXISTING JOINT, THE EXISTING CURB AND GUTTER SHALL BE REMOVED AND REPLACED TO THE NEXT EXISTING JOINT. CONCRETE FOR SIDEWALK SCUPPER AND NEW CURB AND GUTTER SHALL BE PLACED MONOLITHICALLY.
6. WITHIN THESE LIMITS SCUPPER AND CONCRETE "SADDLE" SHALL CONFORM TO STANDARD CURB AND GUTTER SECTION REF ST-15 & ST-20. (SEE NOTE 5)
7. CONCRETE EXPANSION JOINT. THE SIDEWALK SCUPPER WITH ADJOINING CONCRETE “SADDLE” SHALL BE PLACED PER THIS STANDARD DETAIL TO REQUIRED GRADES PRIOR TO PLACEMENT OF ADJACENT SIDEWALK SECTIONS AND SHALL INCLUDE CONCRETE EXPANSION JOINTS PER ST-9 AND AS SHOWN ON THIS STANDARD DETAIL WITH NON-SLEEVED PORTION OF ¾ IN. DIAMETER 24 IN. LONG SMOOTH DOWELS PLACED IN THE CONCRETE “SADDLE” AT MAXIMUM SPACING OF 12 IN. WITH MINIMUM DISTANCE OF 3 IN. BETWEEN DOWEL AND 4 IN. X 1/2 IN. DIAMETER STUDS (SEE NOTE 11) .
8. EXPANSION JOINT WITH 2 3/4 IN. DIAM. X 24 IN. LONG SMOOTH DOWEL BARS WITH 3/4 IN DIAM. PVC PIPE SLEEVE WITH CAPPED END. REF. ST-9 FOR ADDITIONAL REQUIREMENTS.
9. "H" EQUALS CURB FACE HEIGHT MINIMUM 6 IN. DIMENSION TO BE NOTED ON PLANS.
10. 4 IN. DEPTH OF TYPE MATERIAL PER SW-2 SIDEWALK DETAILS LEGEND NOTE 2.
11. 4 IN. X 1/2 IN. Ø STUDS PLACED 4 IN. FROM EACH END AND AT MAX SPACING OF 12 IN.
12. GALVANIZED STEEL L 2 IN. X 2 IN. X 3/8 IN. BOTH SIDES. FOR THE FABRICATION, THE HOLES SHALL BE DRILLED, THEN THE STUDS SHALL BE WELDED, FOLLOWED BY HOT DIP GALVANIZING OF THE FINISHED UNITS.

SIDEWALK SCUPPER TYPE 2

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

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1	NOTE 5: ADD CONCRETE NOTE	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

SW-23

STORMWATER DRAINAGE - GENERAL NOTES

1. STORMWATER DRAINAGE PIPE IN THE RIGHT-OF-WAY AND PUBLIC EASEMENTS SHALL BE REINFORCED CONCRETE PIPE; SIZED PER DESIGN REQUIREMENTS, HOWEVER NO LESS THAN 18 IN. DIAMETER; AND SHALL BE ASTM DESIGNATION C76 CLASS III OR HIGHER DEPENDING ON APPLICATION REQUIREMENTS. IDENTIFICATION NON-DETECTABLE UNDERGROUND WARNING TAPE SHALL BE PLACED 24 IN. ABOVE TOP OF THE PIPE FOR ENTIRE LENGTH OF PIPE OF ALL CLOSED CONDUIT STORMWATER DRAINAGE SYSTEMS. TAPE SHALL BE A MINIMUM 4 MIL OVERALL THICKNESS AND BE 6 IN. WIDE, APWA GREEN IN COLOR, COLORFAST, CHEMICALLY INERT, AND WITH BLACK LETTERING IMPRINTED LEGEND “CAUTION BURIED STORMWATER DRAIN BELOW.” SEE G-8 NOTE 7.
2. PRE-CAST INLETS AND MANHOLES SHALL BE PER TXDOT GUIDE TO THE STANDARD INLET AND MANHOLE PROGRAM STANDARDS. CAST-IN-PLACE INLETS AND MANHOLES SHALL BE PER COW STANDARDS.
3. SEE PLAN-PROFILE SHEETS FOR INLET SIZE, LOCATION AND ELEVATIONS.
4. WHERE GROUNDWATER IS ENCOUNTERED, ALL LOOSE AND SPONGY MATERIAL WILL BE REMOVED AND 6 IN. MINIMUM DEPTH OF AGGREGATE MEETING ASTM NO. 57 SPECIFICATIONS SHALL BE INSTALLED FOR BASE.
5. AGGREGATE MEETING ASTM 57 SPECIFICATIONS INCLUDING GRADATION AS SHOWN IN THE TABLE BELOW SHALL BE COMPACTED BY MECHANICAL/VIBRATORY COMPACTION METHODS.

ASTM NO. 57 GRADATION SPECIFICATIONS	
SIEVE SIZE	PERCENTAGE PASSING
1 1/2 IN.	100
1 IN.	95-100
1/2 IN.	25-60
#4	0-10
#8	0-5

6. THE SIZE AND SPACING OF INLETS MUST COMPLY WITH CURRENT CITY DRAINAGE POLICIES.
7. MANHOLE INLET RING AND COVER FOR PRE-CAST AND CAST-IN-PLACE STRUCTURES SHALL BE IN ACCORDANCE WITH STANDARD DETAIL SD-9 .
8. TOP OF INLET SLOPE SHALL CONFORM TO ADJACENT PARKWAY GRADES AND NOT EXCEED 1/2 IN. PER FOOT SLOPE.
9. CONCRETE FOR INVERTS ON ALL MANHOLES AND INLETS SHALL BE PLACED AND SHAPED WITH THE CONCRETE THICKNESS RANGING FROM THE THICKNESS OF THE RCP TO 8 IN.
10. IN ACCORDANCE WITH G-7 NOTE 6, PRIOR TO PLACEMENT OF CONCRETE FOR A DIAMOND IN PAVEMENT FOR A STORMWATER DRAINAGE MANHOLE, MATERIAL BELOW SHALL BE COMPACTED / RE-COMPACTED TO 95% STANDARD PROCTOR DENSITY AT ±2% OPTIMAL MOISTURE CONTENT.

CAST-IN-PLACE GENERAL NOTES:

11. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 POUNDS PER SQUARE INCH AT 28 DAYS UNLESS OTHERWISE NOTED. DESIGN MIX FOR 3000 POUND CONCRETE SHALL CONTAIN A MINIMUM OF 5 SACKS OF CEMENT PER CUBIC YARD.
12. REINFORCING STEEL COVER SHALL BE MINIMUM 2 IN. FORMED AND 3 IN. AGAINST EARTH IF UNFORMED FROM OUTSIDE LAYER OF STEEL TO FACE OF CONCRETE.
13. REINFORCED STEEL SHALL BE NEW BILLETED CONFORMING TO ASTM SPECS A615 GRADE 60 OR LATEST REVISIONS.
14. CONSTRUCTION JOINTS WILL BE PERMITTED AS SHOWN ON PLANS.
15. DIMENSIONS RELATING TO REINFORCING STEEL SHALL BE TO OUTSIDE OF BAR NEAREST TO FACE OF CONCRETE.
16. CITY OF WACO INLET SIZES NOTED ON PLAN & PROFILE SHEETS REFER TO DIMENSION "A". DIMENSION "A" MINIMUM IS 10 FEET.
17. PLACE MANHOLE RING & COVER ADJACENT TO OUTLET PIPE SOFFIT AT BACK WALL.
18. BARS SHALL BE SUPPORTED, SPACED AND ACCURATELY SECURED IN PLACE IN ACCORDANCE WITH SPECIFICATIONS FOR PLACING REINFORCEMENT AND FOR PLACING ACCESSORIES MEETING THE REQUIREMENTS OF THE CURRENT ACI MANUAL OF STANDARD PRACTICE FOR DETAILS AND DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315) WITH LATEST REVISIONS.
19. ALL INTERSECTING WALLS, TOPS, FLOORS, SHALL HAVE "L" BARS IN CORNERS LAPPED 40 BAR DIAMETERS.
20. ALL EXPOSED CORNERS SHALL BE TOOLED OR CHAMFERED TO A 1/2 IN. RADIUS.

PRE-CAST GENERAL NOTES:

21. PRE-CAST INLET SIZES NOTED ON PLAN & PROFILE SHEETS REFER TO DIMENSION "A". DIMENSION "A" MINIMUM IS 10 FEET.
22. PRECAST INLETS, MANHOLES, AND JUNCTION BOXES SHALL BE BEDDED WITH MIN. 6 IN. DEPTH OF AGGREGATE MEETING ASTM 57 SPECIFICATIONS TO A MINIMUM DISTANCE OF 12 IN. OUTSIDE PERIMETER.
23. FOR PRE-CAST AREA ZONE DRAIN (PAZD) AND PRECAST AREA ZONE DRAIN WITHIN CLEAR ZONE (PAZD-CZ) CAST-IN-PLACE REINFORCED CONCRETE APRON IS REQUIRED, SEE SD-17 FOR ADDITIONAL DETAILS.

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
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2	MODIFY NOTE 23	MZ	09/06/2024
1	MODIFY NOTES 7 & 9; ADD NOTES 10 & 22; RENUMBER NOTES	MZ	04/19/2024
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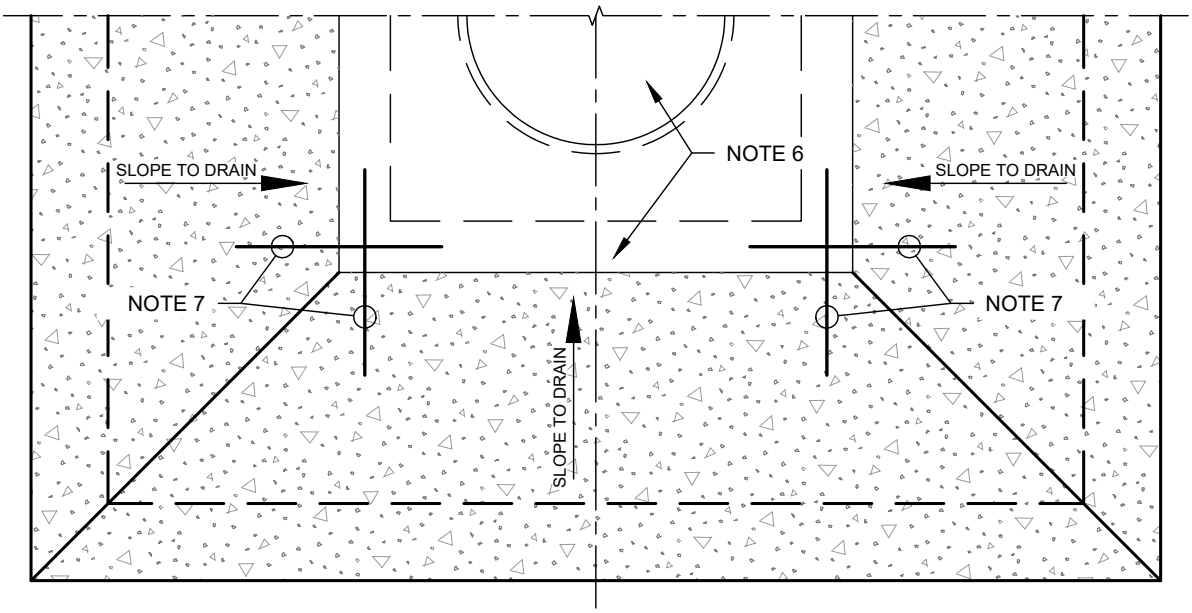
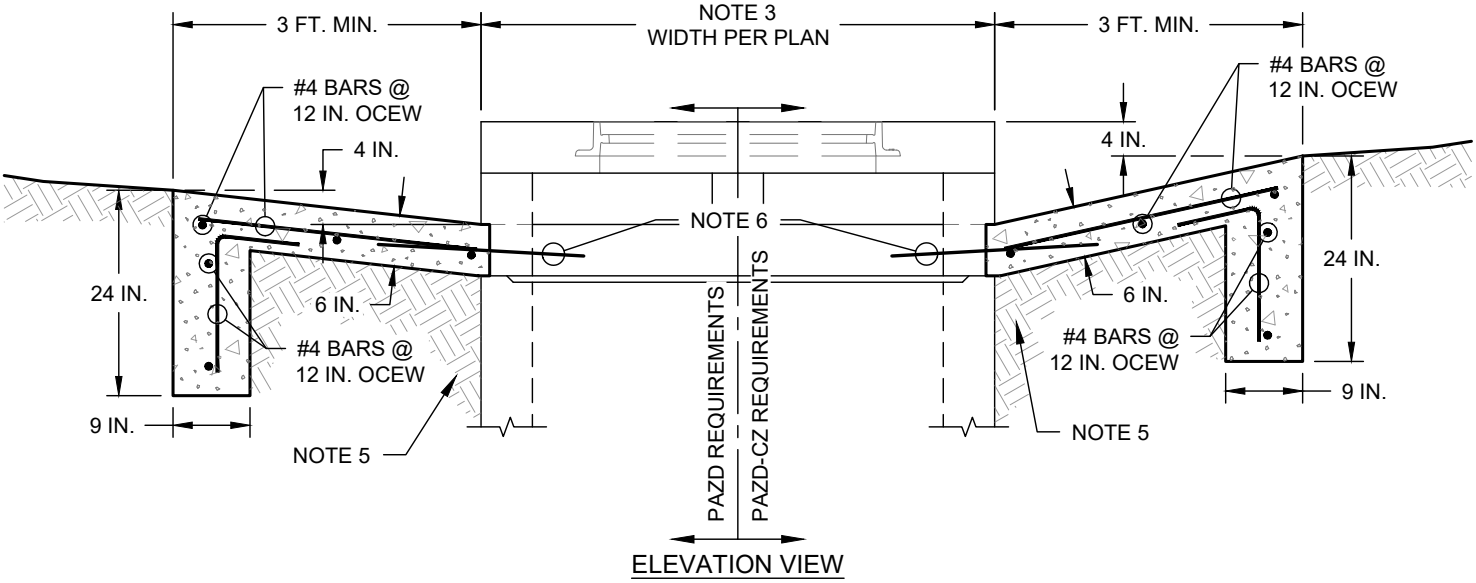
SD-1



PARTIAL PLAN VIEW



ELEVATION VIEW

NOTES:

1. FOR USE WITH PRECAST AREA ZONE DRAIN (PAZD) AND PRECAST AREA ZONE DRAIN WITHIN CLEAR ZONE (PAZD-CZ).
2. PLEASE SEE SD-1 NOTE 23 FOR REFERENCE.
3. AREA ZONE DRAIN PER PLANS. STORMDWATER DRAIN MANHOLE COVER AND FRAME AS REQUIRED PER PLANS. REF. STANDARD DETAIL SD-9 FOR DETAILS.
4. PLEASE REFER TO DETAIL G-7 FOR GENERAL CONCRETE NOTES.
5. IN ACCORDANCE WITH G-7 NOTE 6, SUBGRADE SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY AT ± 2% OPTIMAL MOISTURE CONTENT.
6. 2-#4 DEFORMED TIE BARS 24 IN. LONG AT EACH CORNER PERPENDICULAR TO ONE ANOTHER AND PENETRATING WALLS 12 IN.
7. CONCRETE SHALL BE PLACED MONOLITHICALLY THROUGHOUT ALL 4-SIDES AND ALL COMPONENTS OF THE REINFORCED CONCRETE APRON.

PRECAST AREA ZONE DRAIN CAST-IN-PLACE REINFORCED CONCRETE APRON

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

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DATE 09/06/2024

SD-17

STREET - GENERAL NOTES

GENERAL

1. ALL CONCRETE, REINFORCEMENT, AND PLACEMENT MUST COMPLY WITH SECTION 5.1 OF THE CITY OF WACO STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. PLEASE REFER TO CITY OF WACO MANUAL OF STANDARD DETAILS, GENERAL DETAILS, GENERAL CONCRETE AND REINFORCEMENT NOTES - G-7 .

STREETS

3. SAW JOINTS AS SOON AS IT IS POSSIBLE TO DO SO WITHOUT DAMAGING THE PAVEMENT AND LESS THAN 24 HOURS AFTER CONCRETE PLACEMENT. THE EXACT TIME IS SUBJECT TO APPROVAL BY THE CITY ENGINEER.

CURB AND GUTTER

4. NOTES UNDER THIS HEADING SHALL APPLY TO ALL THE TYPES OF CURBS AND GUTTERS.
5. ALL EXISTING CURBS AND GUTTERS SHALL BE REMOVED BY FULL DEPTH SAWCUT PERPENDICULAR AND PARALLEL TO THE STREET.
6. 2 INCH MINIMUM CLEAR DISTANCE SHALL BE USED FOR ALL REBAR.
7. EXPANSION JOINTS, PER STANDARD DETAILS, SHALL BE CONSTRUCTED AT EACH SIDE OF STRUCTURES, AT EACH SIDE OF DRIVEWAYS, CURB RETURNS, AND AT LOCATIONS NECESSARY TO LIMIT SPACING TO 50 FT. EXPANSION JOINTS SHALL BE CONSTRUCTED TO MATCH EXISTING EXPANSION JOINTS IN PAVEMENT OR CURB AND GUTTER ADJACENT TO JOINTED CONCRETE PAVEMENT
8. AT ALL EXPANSION JOINTS FOR CURBS AND GUTTERS, THE FOLLOWING SHALL APPLY:
   - 8.1. JOINTS SHALL BE 1/2 IN. WIDE
   - 8.2. MATERIALS USED SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS FOR EXPANSION JOINTS
   - 8.3. USE TWO 24 IN. LONG 3/4 IN. DIAMETER SMOOTH BARS FOR DOWELS
   - 8.4. USE 3/4 IN. P.V.C PIPE SLEEVE WITH CAPPED END PLACED LEVEL AND PERPENDICULAR TO THE FACE
9. CONTRACTION JOINTS SHALL BE PLACED ON 10' SPACING. JOINTS SHALL BE CUT OR TOOLED AT LEAST 2 INCHES THROUGH THE FACE, TOP, AND GUTTER.
10. 1/2 IN. EXPANSION JOINTS ARE REQUIRED WHERE BACK OF CURBS OR CURB CUTS ARE ADJACENT TO CONCRETE FLATWORK (I.E. SIDEWALKS OR RIPRAP).
11. THE LIP OF GUTTER SHALL BE THE SAME ELEVATION AS TOP OF SURFACE COURSE.
12. CONCRETE FOR CURB AND GUTTER SHALL BE PLACED AND FINISHED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 5.3 CONCRETE CURB AND GUTTER.
13. FOR CONVENTIONALLY FORMED CONCRETE CURB AND GUTTER, FORMS SHALL BE "TAPPED" TO MINIMIZE VOIDS. WITHIN 24 HOURS OF REMOVAL OF THE FORMS, ANY VOIDS SHALL BE PATCHED WITH PORTLAND CEMENT MORTAR.
14. CURB AND GUTTER SHALL CURE A MINIMUM OF 7 DAYS PRIOR TO INSTALLATION OF STREET BASE COURSE. IF CYLINDER BREAK SHOW A COMPRESSIVE STRENGTH OF 3000 PSI, THE CITY ENGINEER MAY APPROVE INSTALLATION OF BASE COURSE PRIOR TO 7 DAYS.
15. STANDARD CURB AND GUTTER, RIBBON CURB, AND MOUNTABLE CURB AND GUTTER (ROLLED-OVER CURB) SHALL BE PLACED AND/OR REPLACED IN ACCORDANCE WITH APPLICABLE PLACEMENT AND REPLACEMENT DETAILS STANDARD DETAILS ST-20A, ST-20B, AND ST-20C RESPECTIVELY UNLESS OTHER DETAILS ARE SHOWN IN THE PLANS AND APPROVED BY THE CITY.
16. PER S-1 NOTE 4, A STAMPED "S" OF 4 IN. IN HEIGHT AND 3/8 IN. IN DEPTH SHALL BE PLACED IN THE CENTER OF THE FACE OF CURB, AT EACH NEW SANITARY SEWER SERVICE TAP LOCATION AND IN ANY NEW CURB AT EXISTING SERVICES. PER W-1 NOTE 7W-1 STAMPED "W" OF 4 IN. IN HEIGHT AND 3/8 IN. IN DEPTH SHALL BE PLACED IN THE CENTER OF FACE OF CURB AT EACH NEW WATER SERVICE LOCATION AND IN ANY NEW CURB AT EXISTING SERVICES.

PARKWAY

17. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CODE OF ORDINANCES SEC. 22-73. - DIMENSIONS—PARKWAY.
    - A. THE PARKWAY SHALL BE THAT SPACE BETWEEN THE FACE OF THE STREET CURB AND THE PROPERTY LINE. THIS PARKWAY SHALL HAVE A MINIMUM SLOPE OF ONE-QUARTER OF AN INCH PER ONE FOOT AND A MAXIMUM SLOPE OF ONE-HALF OF AN INCH PER ONE FOOT TOWARD THE STREET.
    - B. IF THIS SLOPE HAS BEEN ESTABLISHED BY PRIOR WORK, THE CEMENT CONTRACTOR SHALL ADHERE TO THAT SLOPE, EXCEPT THAT SUCH SLOPE SHALL NEVER EXCEED THAT ALLOWED IN SUBSECTION (A) OF THIS SECTION.

    THIS EXCLUDES COMPONENTS OF ADA PEDESTRIAN ACCESS ROUTES & SHARED USE PATHS, DRIVE APPROACHES, AND OTHER APPROVED IDENTIFIED INFRASTRUCTURE WITHIN THE PARKWAY.

METAL BEAM GUARD FENCE

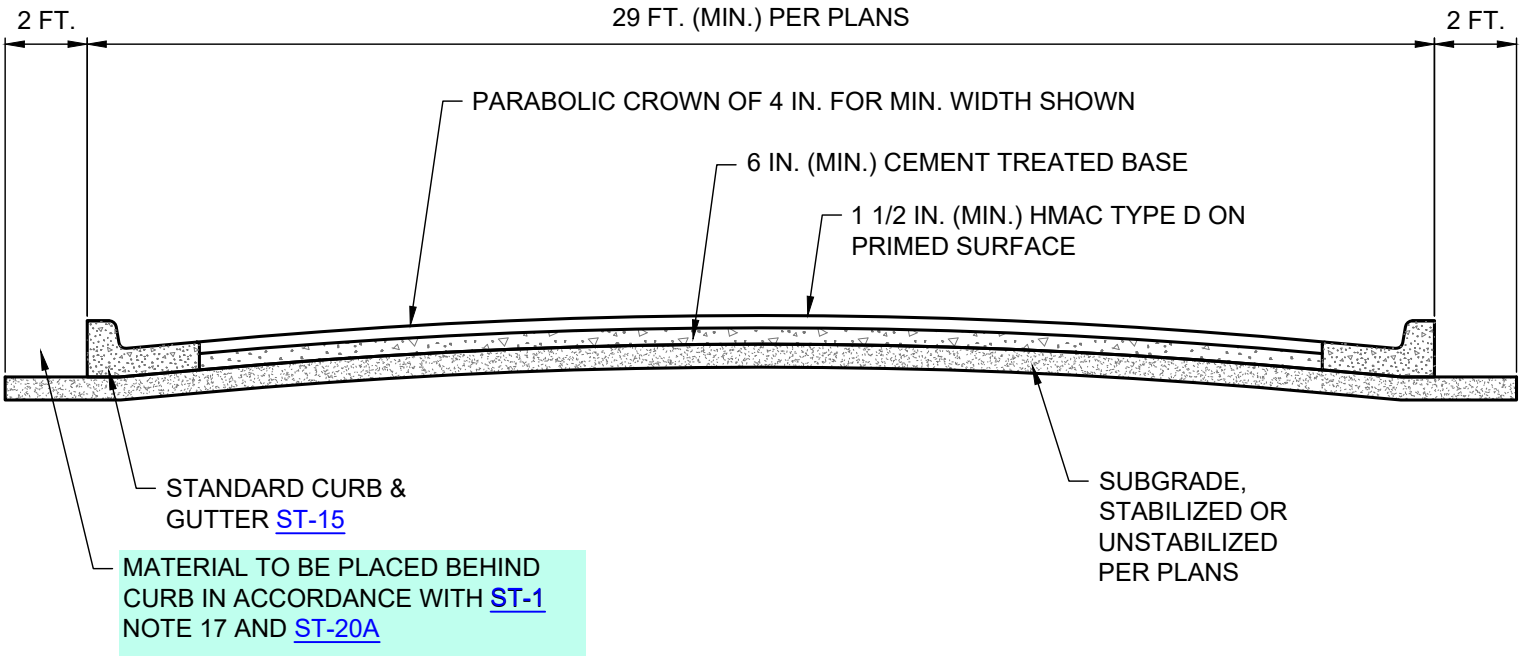
18. METAL BEAM GUARD FENCE SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST TEXAS DEPARTMENT OF TRANSPORTATION ROADWAY STANDARDS AND STANDARD SPECIFICATIONS. MOW STRIP IS REQUIRED.

VARIOUS CIVIL INFRASTRUCTURE APPURTENANCES IN/UNDER PAVEMENT

19. IN ACCORDANCE WITH G-7 NOTE 6, PRIOR TO PLACEMENT OF CONCRETE FOR A DIAMOND IN PAVEMENT FOR A FORCEMAIN VALVE, A SANITARY SEWER MANHOLE, A STORMWATER DRAINAGE MANHOLE, OR A WATER VALVE MATERIAL BELOW SHALL BE COMPACTED / RE-COMPACTED TO 95% STANDARD PROCTOR DENSITY AT ±2% OPTIMAL MOISTURE CONTENT.

LIP OF GUTTER SHALL BE SAME ELEVATION AS TOP OF SURFACE COURSE. IF BOTTOM OF CURB DOES NOT EXTEND TO TOP OF SUBGRADE FILL MUST BE ONE OF THE FOLLOWING FROM UNDER LIP OF CURB TO 2 FT. BEHIND BACK OF CURB:

- 4 IN. RECYCLED CRUSHED CONCRETE ST-4 FOOTNOTE 1
- 4 IN. MINIMUM COMPACTED ROAD GRAVEL
- 4 IN. MINIMUM COMPACTED STABILIZED SUBGRADE MATERIAL



NOTES:

1. THICKNESS OF SURFACE COURSE AND CEMENT TREATED BASE ARE AS PER PLANS AND SHALL MEET OR EXCEED MINIMUMS SHOWN.
2. IF PI OF SUBGRADE IS MORE THAN 15,THE SUBGRADE MUST BE STABILIZED. STABILIZATION AGENT AND AMOUNT SHALL BE DETERMINED BY GEOTECHNICAL TESTING AND SHALL BE SPECIFIED ON PLANS.

LOCAL STREET SECTION

(NO SCALE)

PER SUBDIVISION ORDINANCE SEC. 5.2. - PERMANENT IMPROVEMENTS. AND STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 2.2 SUBGRADE COURSES 2.2.A SUBGRADE PREPARATION PART 1: GENERAL A. DESCRIPTION

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
1	ADD NOTE REF. ST-20A; ADD "A" TO DETAIL NUMBER	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

ST-2A

CITY OF WACO

ENGINEERING DIVISION

#	DESCRIPTION	FL	MM/DD/YYYY

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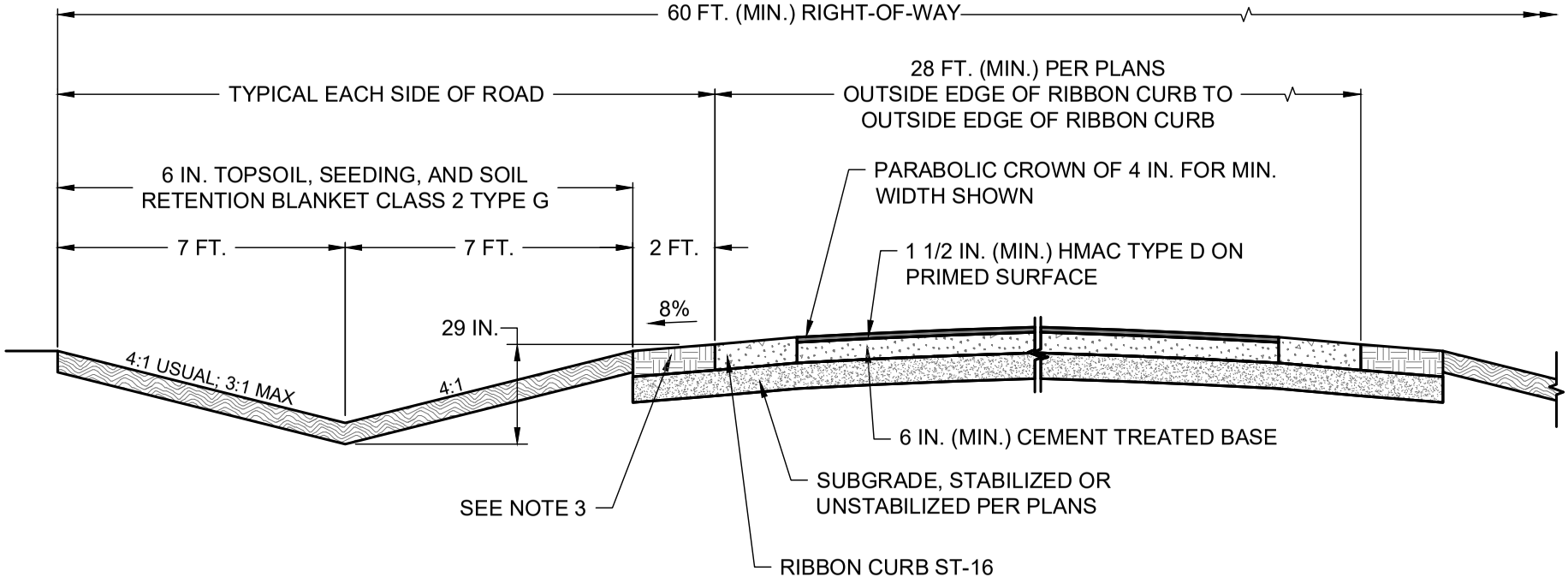
DRAFT

ST-2B

DATE 09/06/2024

INSIDE EDGE OF RIBBON CURB SHALL BE SAME ELEVATION AS TOP OF SURFACE COURSE. IF BOTTOM OF CURB DOES NOT EXTEND TO TOP OF SUBGRADE FILL MUST BE ONE OF THE FOLLOWING FROM UNDER LIP OF CURB TO 2 FT. BEHIND OUTSIDE EDGE OF RIBBON CURB:

- 4 IN. RECYCLED CRUSHED CONCRETE ST-4 FOOTNOTE 1
- 4 IN. MINIMUM COMPACTED ROAD GRAVEL, SEE NOTE 3 FOR MATERIAL REQUIREMENTS AND DENSITY REQUIREMENTS
- 4 IN. MINIMUM COMPACTED STABILIZED SUBGRADE MATERIAL



NOTES:

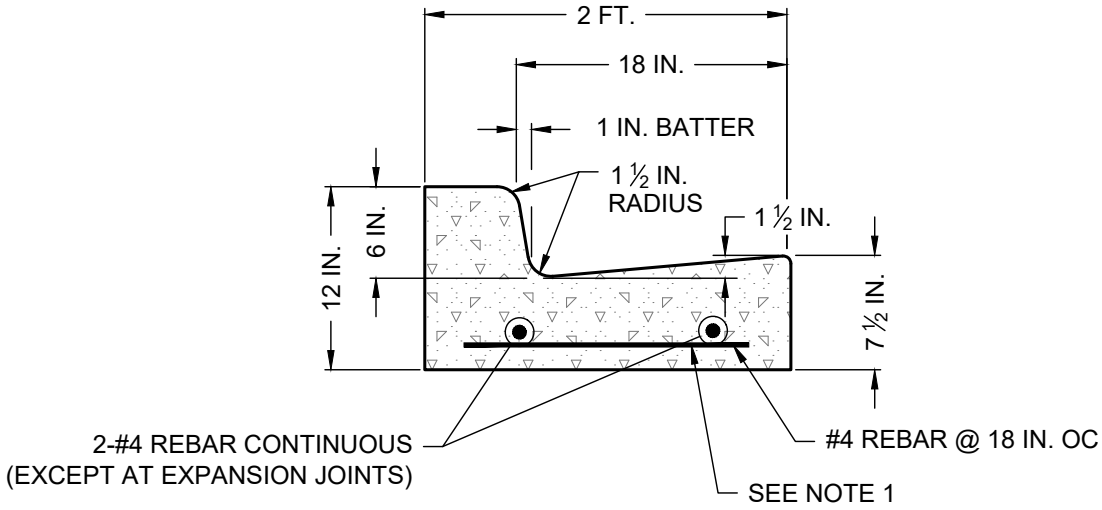
1. THICKNESS OF SURFACE COURSE AND CEMENT TREATED BASE ARE AS PER PLANS AND SHALL MEET OR EXCEED MINIMUMS SHOWN.
2. IF PI OF SUBGRADE IS MORE THAN 15,THE SUBGRADE MUST BE STABILIZED. STABILIZATION AGENT AND AMOUNT SHALL BE DETERMINED BY GEOTECHNICAL TESTING AND SHALL BE SPECIFIED ON PLANS.
3. 7 1/2 IN. DEPTH OF TYPE "A" MATERIAL PER STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 4.2 EXCAVATION AND BACKFILL PART 2: PRODUCT A. MATERIALS 3. TRENCH BACKFILL A. TYPE "A" MATERIAL MECHANICALLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (TEX-113-E).

SUBDIVISION ORDINANCE SEC. 5.206. LOCAL STREET SECTION

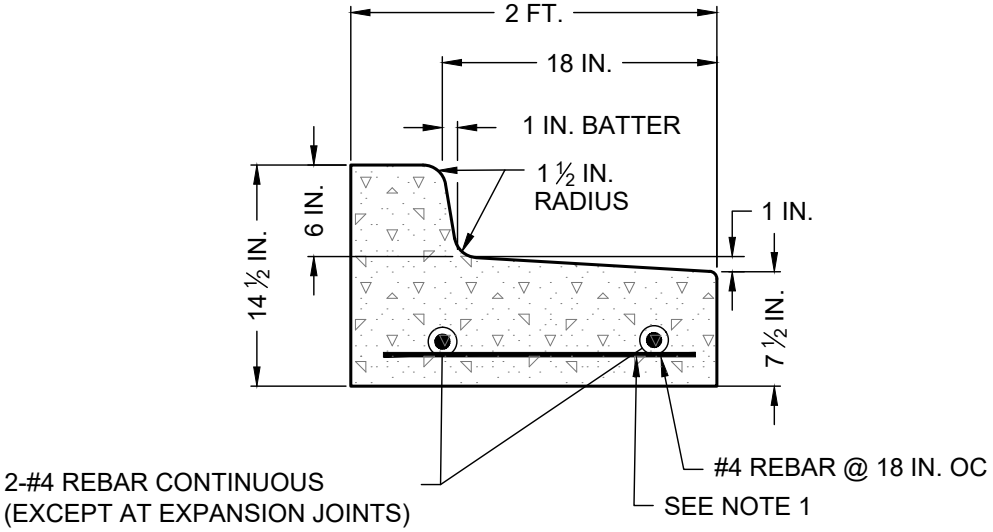
(NO SCALE)

PER SUBDIVISION ORDINANCE SEC. 5.2. – PERMANENT IMPROVEMENTS. 5.206. CURB AND GUTTER: THIS SECTION MAY ONLY BE USED FOR STREETS IN SUBDIVISIONS WHERE ALL LOTS ARE AT LEAST ONE ACRE IN AREA, HAVE AT LEAST 150 FT. OF STREET FRONTAGE, AND ARE INTENDED FOR SINGLE-FAMILY RESIDENTIAL USE ONLY.

PER SUBDIVISION ORDINANCE SEC. 5.2. - PERMANENT IMPROVEMENTS. AND STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 2.2 SUBGRADE COURSES 2.2.A SUBGRADE PREPARATION PART 1: GENERAL A. DESCRIPTION



DIRECT FLOW



INDIRECT FLOW

NOTE:

1. TRANSVERSE BARS MAY BE OMITTED WHEN CONCRETE FOR CURB AND GUTTER IS PLACED WITH A SELF-PROPELLED CURB MACHINE THAT PROVIDES CORRECT PLACEMENT OF THE LONGITUDINAL BARS.
2. STANDARD CURB AND GUTTER SHALL BE PLACED AND/OR REPLACED IN ACCORDANCE WITH ST-20A UNLESS OTHER DETAILS ARE SHOWN IN THE PLANS AND APPROVED BY THE CITY.

STANDARD CURB AND GUTTER DETAILS

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

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1	ADD NOTE 2	MZ	09/06/2024
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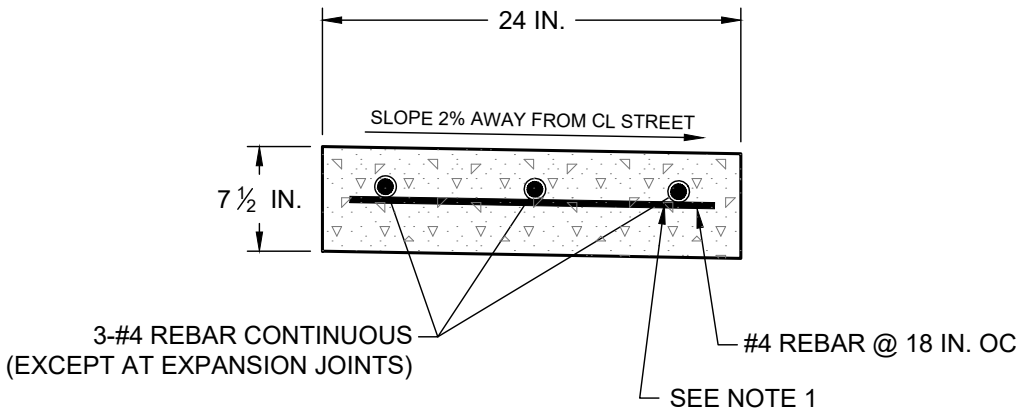
DATE 01/01/2024

ST-15



NOTE:

1. TRANSVERSE BARS MAY BE OMITTED WHEN CONCRETE FOR RIBBON CURB IS PLACED WITH A SELF-PROPELLED CURB MACHINE THAT PROVIDES CORRECT PLACEMENT OF THE LONGITUDINAL BARS.
2. RIBBON CURB SHALL BE PLACED AND/OR REPLACED IN ACCORDANCE WITH ST-20B UNLESS OTHER DETAILS ARE SHOWN IN THE PLANS AND APPROVED BY THE CITY.

RIBBON CURB DETAIL

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

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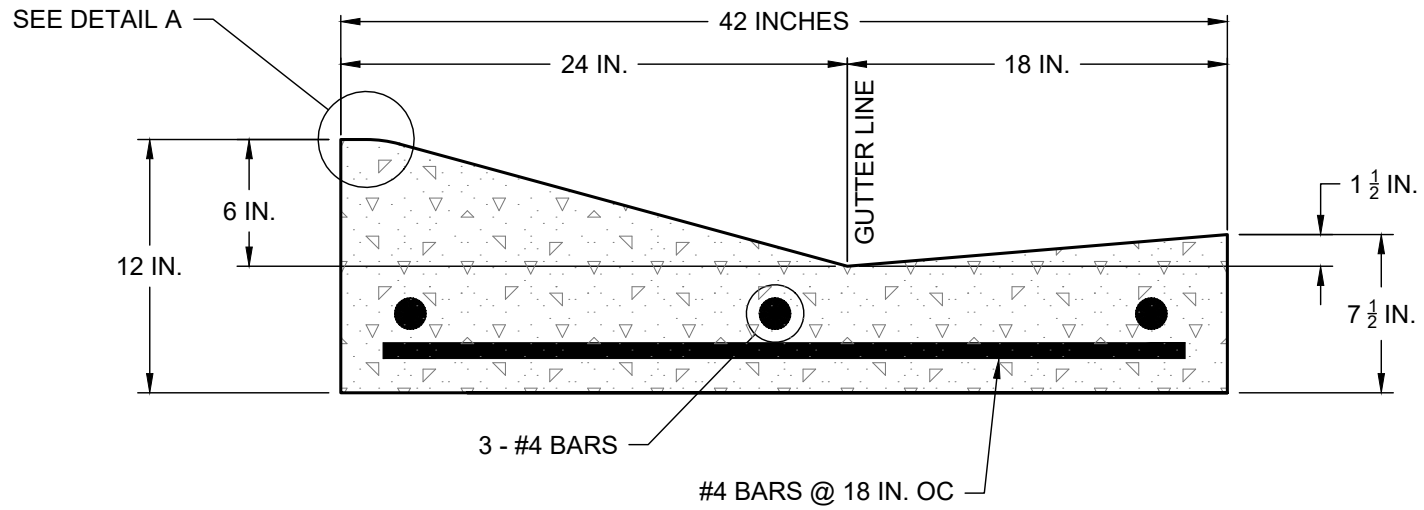
1	ADD NOTE 2	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

ST-16



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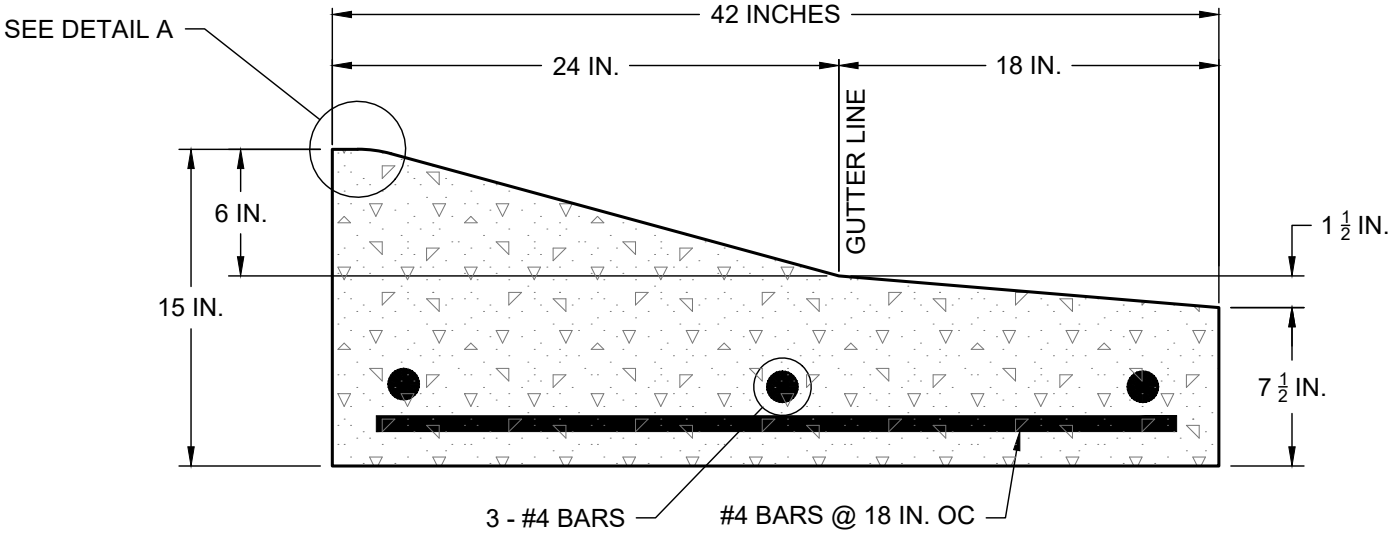
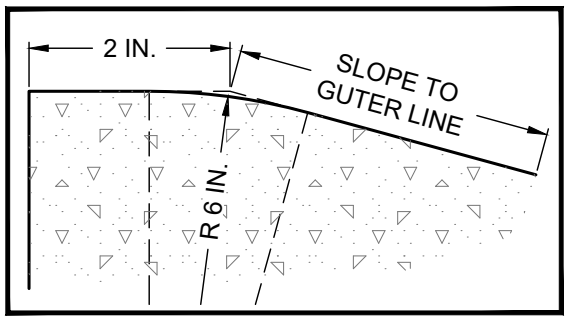


INDIRECT FLOW

NOTES:

1. MOUNTABLE CURB AND GUTTER CAN ONLY BE USED UNDER THE FOLLOWING CIRCUMSTANCES:
   A. STREET CLASSIFICATION IS LOCAL STREET ONLY (NOT A COLLECTOR OR ARTERIAL)
   B. NEW DEVELOPEMENT ONLY OR MUST MATCH EXISTING CURB AND GUTTER
2. WHEN CONNECTING TO AN EXISTING LOCAL STREET WITH STANDARD CURB AND GUTTER, A COLLECTOR OR AN ARTERIAL STREET, STANDARD CURB AND GUTTER SECTION SHALL BE CARRIED AROUND THE CURB RETURNS AND TRANSITIONED IN 10 FEET TO MOUNTABLE CURB AND GUTTER.
3. MOUNTABLE CURB AND GUTTER SHALL BE PLACED AND/OR REPLACED IN ACCORDANCE WITH ST-20C UNLESS OTHER DETAILS ARE SHOWN IN THE PLANS AND APPROVED BY THE CITY.



DETAIL A

MOUNTABLE CURB AND GUTTER DETAILS

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
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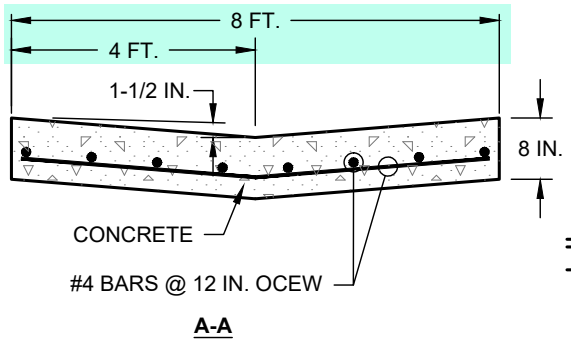
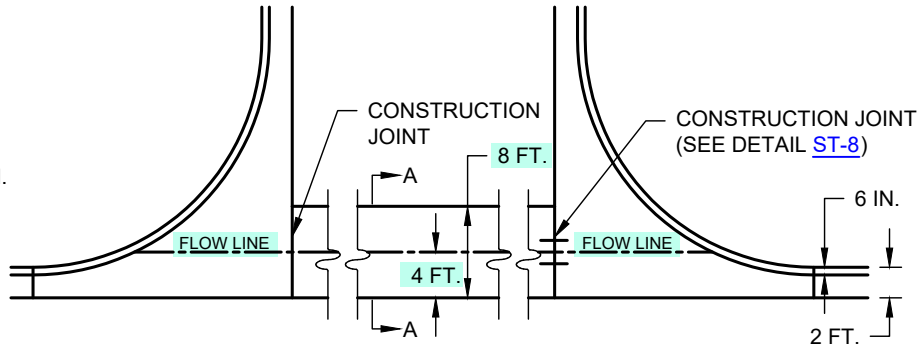
1	ADD NOTE 3	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

ST-17





NOTES:

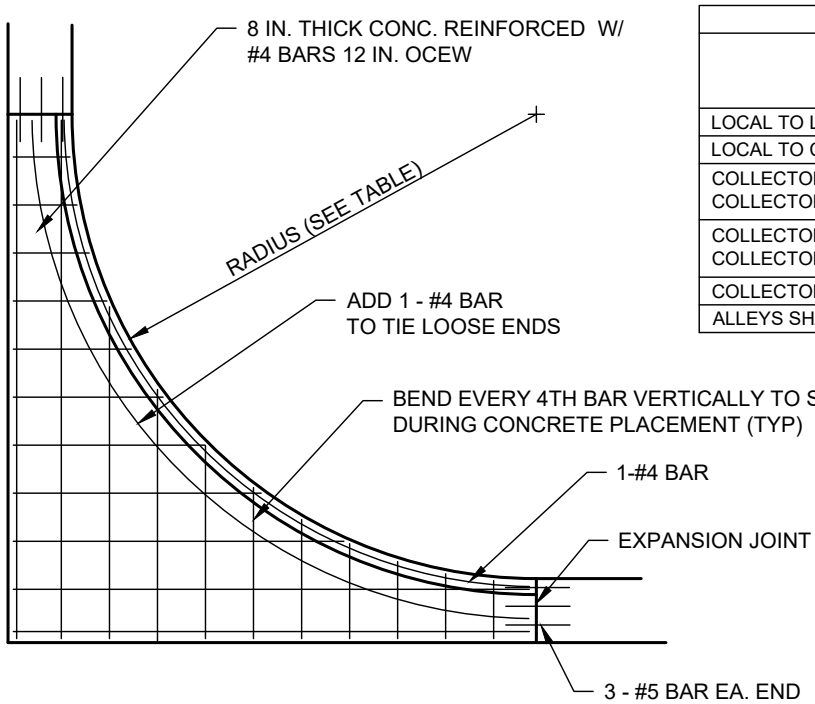
1. IF FILLETS ARE NOT EXISTING, VALLEY AND FILLETS SHALL EACH BE MONOLITHIC WHEN CURB AND GUTTER IS CALLED FOR.
2. UPSTREAM RETURN IN VALLEY SHALL BE CONSTRUCTED SO WATER WILL NOT POND.
3. IF RUNOFF IS BEING CONVEYED ACROSS THE STREET AT AN INTERSECTION, A STANDARD VALLEY SHALL BE REQUIRED.
4. FOR NEW OR RECONSTRUCTION OF PAVEMENT, SUBSTITUTE TOP 8 IN. OF PAVEMENT STRUCTURE PER PLANS WITH 8 IN. 3,000 PSI CONCRETE

	FOR PLACEMENT OF STANDARD CONCRETE VALLEY AND FILLET IN EXISTING PAVEMENT		
P.I. OF SUBGRADE	PORTLAND CEMENT CONCRETE	BASE	SUBGRADE
P.I. ≤ 20	8 IN.	4 IN. CTB[a,b]	COMPACTED[b]
20< P.I. < 40	8 IN.	-	6 IN. LSS
P.I. ≥ 40	8 IN.	-	8 IN. LSS

a. SUBSTITUTE: 4 IN. RECYCLED CRUSHED CONCRETE (TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION ITEM 247 FLEXIBLE BASE TYPE D, GRADE 1-2, EXCLUDING TYPE A MATERIALS, WITH A MINIMUM P.I. OF FOUR).
b. COMPACTED TO 95% DENSITY OF MAXIMUM DENSITY PER TEST PROCEDURE TEX-114-E.

STANDARD CONCRETE VALLEY

(NO SCALE)



CURB RETURN RADII CRITERIA	
INTERSECTION TYPE	MINIMUM CURB RETURN RADIUS (FEET)
LOCAL TO LOCAL	20
LOCAL TO COLLECTOR	20
COLLECTOR (RESIDENTIAL) TO COLLECTOR (RESIDENTIAL)	25
COLLECTOR (COMMERCIAL/INDUSTRIAL) TO COLLECTOR (COMMERCIAL/INDUSTRIAL)	30
COLLECTOR TO ARTERIAL	30
ALLEYS SHALL BE TREATED AS LOCAL STREETS	

NOTES:

1. CURB AND FILLET SHALL BE MONOLITHIC.
2. CONCRETE FILLETS SHALL BE REQUIRED AT INTERSECTION CORNER OF ALL STREET CLASSIFICATIONS.

CONCRETE CURB & GUTTER FILLET

(NO SCALE)

CITY OF WACO

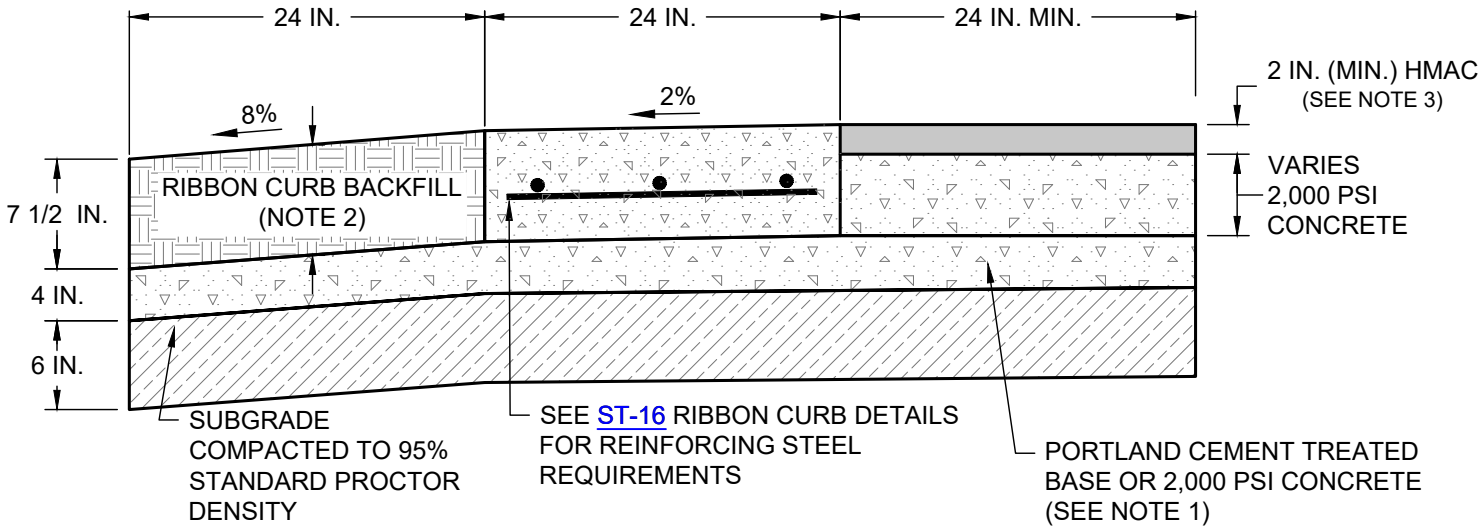
ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
1	REVISE WIDTH OF VALLEY AND CORRESPONDING LOCATION OF FLOW LINE	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

ST-19



NOTES:

1. RIBBON CURB SHALL BE PLACED SEPARATELY AFTER BASE OR 2,000 PSI CONCRETE HAS CURED.
2. TYPE “A” MATERIAL PER STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 4.2 EXCAVATION AND BACKFILL PART 2: PRODUCT A. MATERIALS 3. TRENCH BACKFILL A. TYPE “A” MATERIAL MECHANICALLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (TEX-113-E).
3. HMAC SHALL BE TYPE D FOR STREET CLASSIFICATION LOCAL.
4. ORIGINAL PLACEMENT OF RIBBON CURB AND REPLACEMENT OF RIBBON CURB SHALL BE IN ACCORDANCE WITH THIS STANDARD DETAIL UNLESS OTHERWISE SHOWN IN PLANS APPROVED BY THE CITY.

RIBBON CURB PLACEMENT AND REPLACEMENT DETAILS

(USE FOR EXISTING STREETS ONLY)
(NO SCALE)

CITY OF WACO

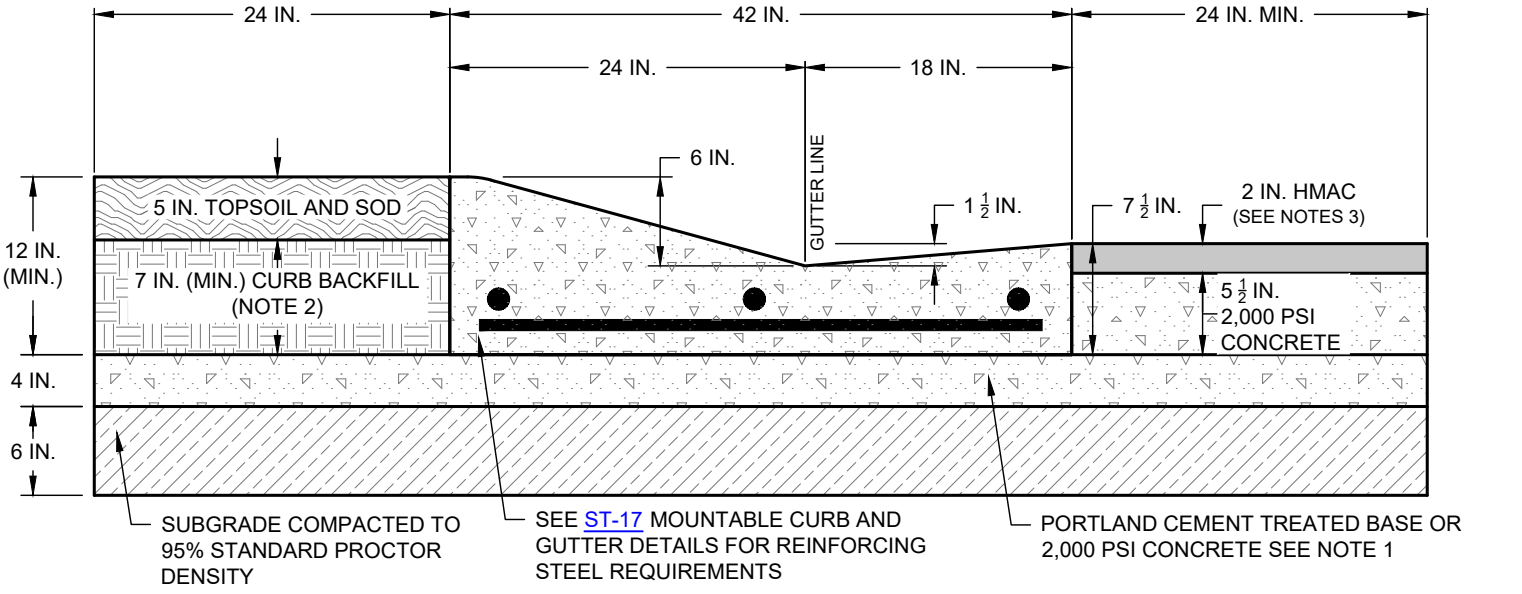
ENGINEERING DIVISION

REVISIONS

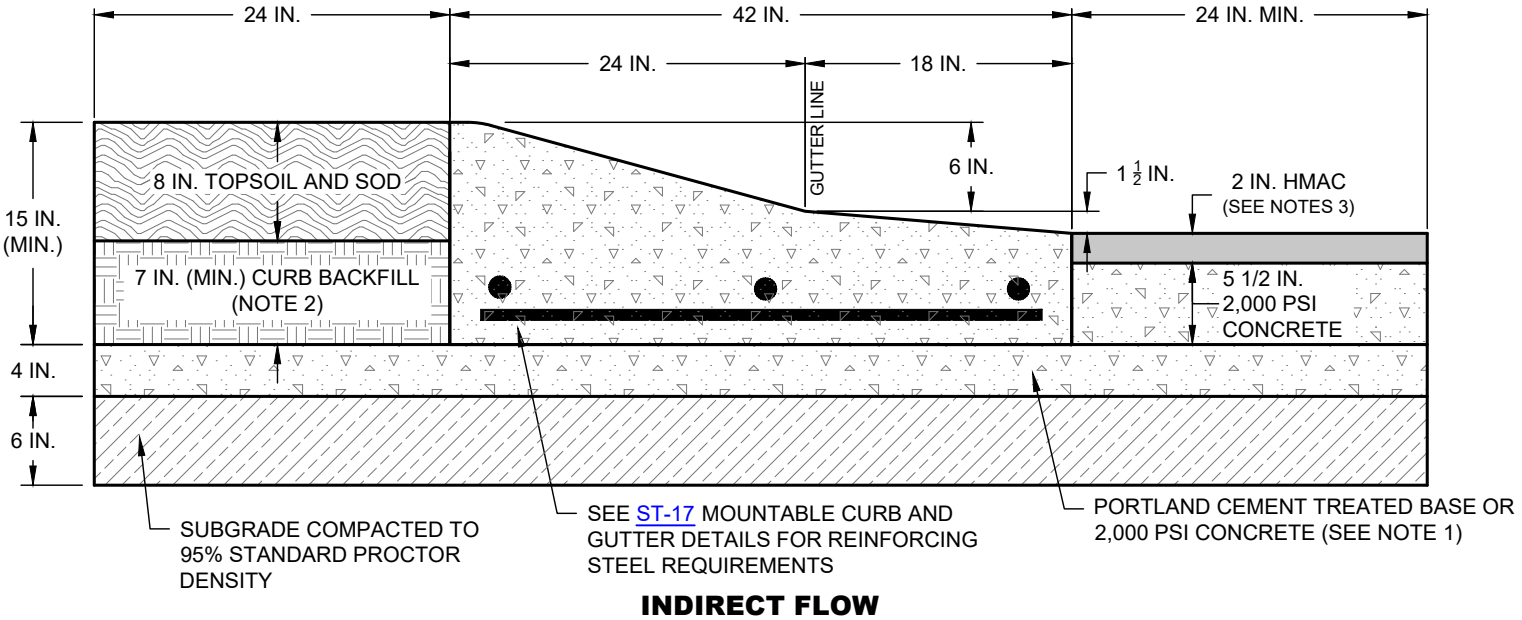
NO.	COMMENTS	BY	DATE
	DRAFT		
##	DESCRIPTION	FL	MM/DD/YYYY

DATE
09/06/2024

ST-20B



DIRECT FLOW



INDIRECT FLOW

NOTES:

1. CURB AND GUTTER SHALL BE PLACED SEPARATELY AFTER BASE OR 2,000 PSI CONCRETE HAS CURED.
2. TYPE "A" MATERIAL PER STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 4.2 EXCAVATION AND BACKFILL PART 2: PRODUCT A. MATERIALS 3. TRENCH BACKFILL A. TYPE "A" MATERIAL MECHANICALLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (TEX-113-E).
3. HMAC SHALL BE TYPE D FOR STREET CLASSIFICATION LOCAL.
4. ORIGINAL PLACEMENT OF MOUNTABLE CURB & GUTTER AND REPLACEMENT OF MOUNTABLE CURB & GUTTER SHALL BE IN ACCORDANCE WITH THIS STANDARD DETAIL UNLESS SHOWN OTHERWISE IN PLANS APPROVED BY THE CITY.

MOUNTABLE CURB & GUTTER PLACEMENT AND REPLACEMENT DETAILS

(USE FOR EXISTING STREETS ONLY)
(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
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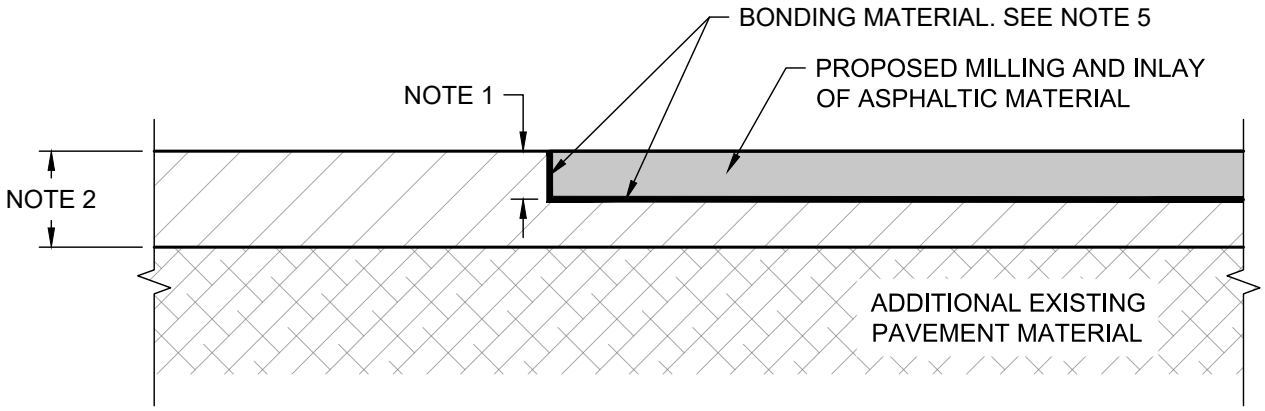
##	DESCRIPTION	FL	MM/DD/YYYY

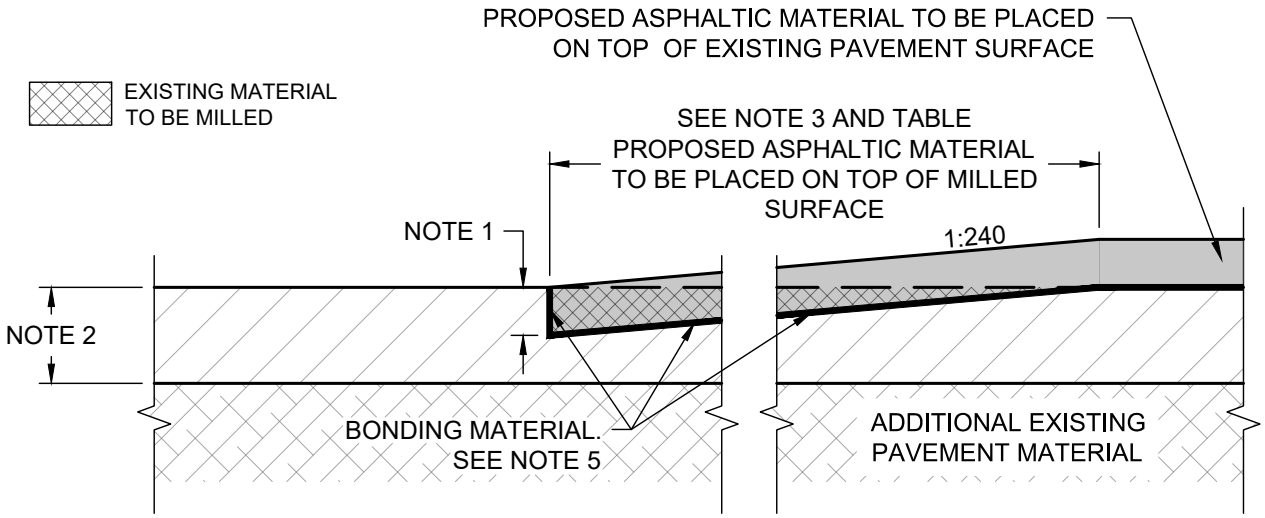
DATE
09/06/2024

ST-20C



FULL INLAY JOINT

DEPTH OF SAWCUT (NOTES 1 & 2)	DISTANCE PROPOSED ASPHALTIC MATERIAL TO BE PLACED ON TOP OF MILLED SURFACE (NOTE 3)
1.0 IN.	20 FT.
1.5 IN.	30 FT.
2.0 IN.	40 FT.
3.0 IN.	60 FT



TRANSITION TO AND FROM PLACEMENT OF ASPHALTIC MATERIAL ON EXISTING PAVEMENT SURFACE

NOTES:

1. DEPTH OF SAWCUT TO MATCH DEPTH OF PROPOSED ASPHALTIC MATERIAL.
2. DEPTH OF EXISTING ASPHALTIC MATERIAL MAY VARY AND BE LESS THAN PROPOSED DEPTH OF SAWCUT AND/OR MILLING. SEE PLANS FOR ADDITIONAL INFORMATION.
3. DEPTH OF MILLING SHALL VARY LINEARLY FROM DEPTH OF SAWCUT MATCHING DEPTH OF PROPOSED ASPHALTIC MATERIAL TO ZERO AT THE RATE SHOWN ON THIS STANDARD DETAIL.
4. SAWCUT IS INCLUDED IN THE MILLING OF MATERIAL AND SHALL NOT BE PAID FOR SEPARATELY.
5. ALL SURFACES SHALL RECEIVE BONDING MATERIAL, INCLUDING PRIME FOR EXPOSED BASE MATERIAL, IN ADVANCE OF PLACEMENT OF ASPHALTIC MATERIAL. SEE PROJECT SPECIAL PROVISIONS FOR DETAILS.
6. ANY OTHER MILLING OF EDGES SHALL BE AS DESCRIBED/SHOWN ELSEWHERE IN PLANS.

JOINT AND TRANSITION DETAILS FOR ASPHALT PAVEMENT

(NO SCALE)

CITY OF WACO

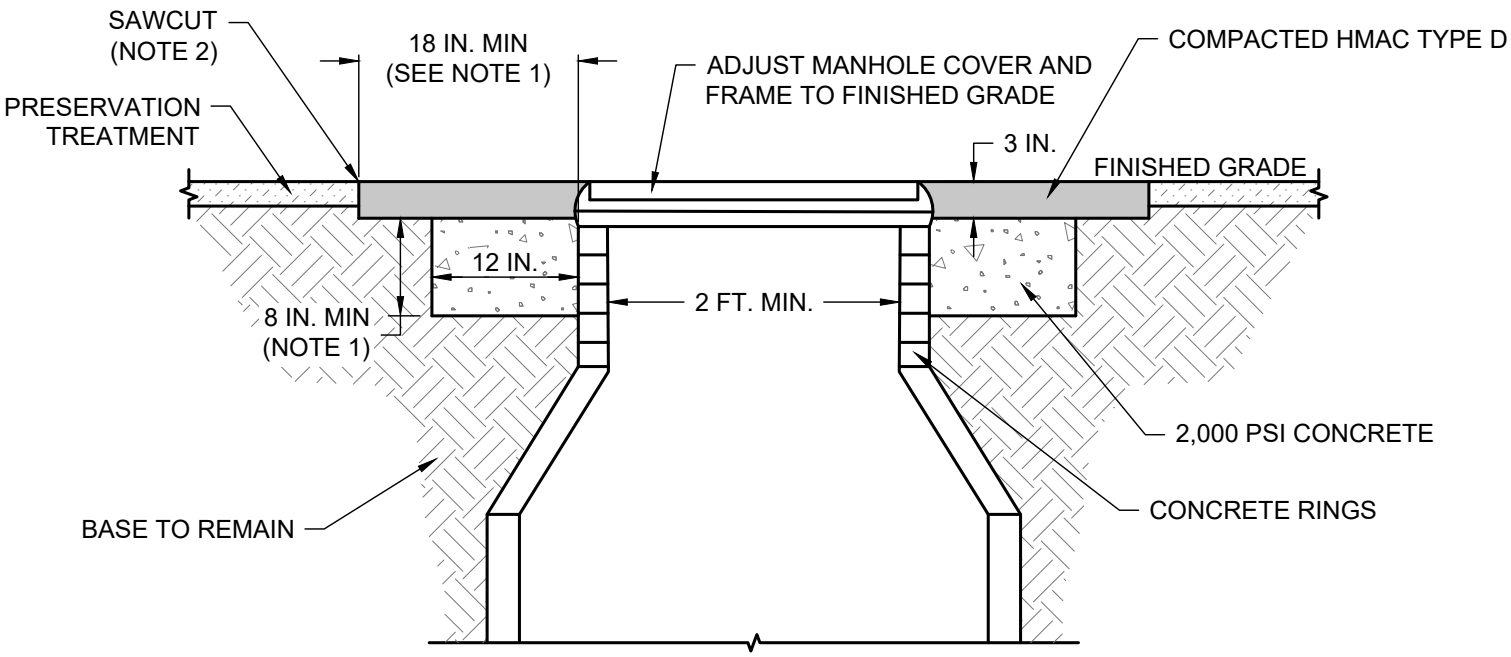
ENGINEERING DIVISION

REVISIONS

NO.	COMMENTS	BY	DATE
	DRAFT		
1	ADD TABLE AND NOTE 6	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 04/19/2024

ST-44



NOTES:

1. MINIMUM DIMENSIONS PROVIDED. CONTRACTOR SHALL INCREASE AS NEEDED TO ADJUST OR REPLACE MANHOLE COVER, FRAME, OR CONCRETE RINGS.
2. SAWCUT EDGE OF EXISTING PAVEMENT THE SAME DISTANCE AROUND EXISTING MANHOLE RING AND COVER TO PRODUCE A SMOOTH AND EVEN EDGE FOR SURFACE REPLACEMENT.
3. CONTRACTOR SHALL PROTECT SEWER FROM CONSTRUCTION DEBRIS.
4. ANY DEBRIS WHICH ENTERS THE MANHOLE OR THE SEWER MAIN SHALL BE IMMEDIATELY REMOVED BY CONTRACTOR.
5. REUSE MANHOLE RING AND COVER EXCEPT PER NOTE 6.
6. EXISTING MANHOLE RING AND COVER OR CONCRETE RINGS DAMAGED BY CONSTRUCTION SHALL BE REPLACED AT CONTRACTOR'S EXPENSE AS PER CITY OF WACO DETAILS. REFER TO S-6, S-7, S-8, S-9, S-10, SD-9 FOR APPLICABLE REQUIREMENTS.
7. EXISTING MANHOLE RING AND COVER OR CONCRETE RINGS DESIGNATED FOR REPLACEMENT SHALL BE DONE SO BY THE CONTRACTOR PER NOTE 6.
8. SEE CITY OF WACO DETAIL S-5 FOR ADDITIONAL REQUIREMENTS.
9. MANHOLE LID SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MAX TOLERNCE +/- 1/8 INCH.

MANHOLE LID HEIGHT ADJUSTMENT OR REPLACEMENT (PRESERVATION WORK ONLY)

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

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NO.	COMMENTS	BY	DATE
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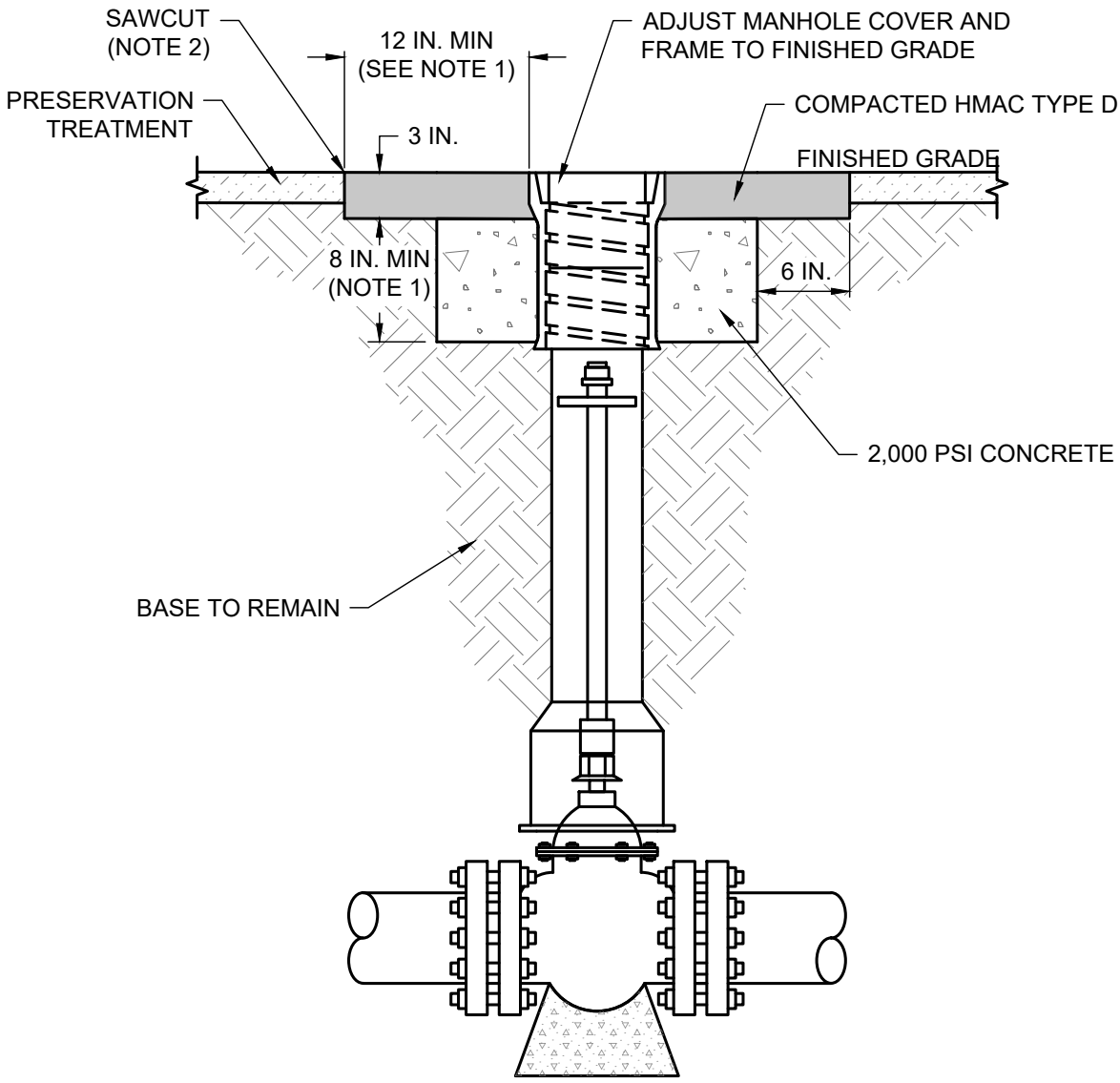
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 09/06/2024

ST-45



NOTES:

1. MINIMUM DIMENSIONS PROVIDED. CONTRACTOR SHALL INCREASE AS NEEDED TO ADJUST OR REPLACE VALVE BOX.
2. SAWCUT EDGE OF EXISTING PAVEMENT ON ALL SIDES OF VALVE BOX TO PRODUCE A SMOOTH AND EVEN EDGE FOR SURFACE REPLACEMENT.
3. ANY OLD STYLE VALVE BOXES SHALL BE REPLACE WITH A NEW VALVE BOX AND LID PER CITY OF WACO DETAIL DETAILS W-6, W-7, AND W-8.
4. ANY EXISTING VALVE BOXES DAMAGED BY CONSTRUCTION SHALL BE REPLACED AT CONTRACTOR'S EXPENSE WITH A BOX THAT MEETS THE CITY OF WACO DETAILS W-6, W-7, AND W-8.
5. VALVE BOX LID SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MAX TOLERANCES +/- 1/8 INCH.

GATE VALVE BOX ADJUSTMENT OR REPLACEMENT (PRESERVATION WORK ONLY)

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

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##	DESCRIPTION	FL	MM/DD/YYYY

DATE
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ST-46

ASPHALT SURFACE AREAS AND RATES FOR TRAVEL LANES

DESCRIPTION	RATE	BASIS	QUANTITIES
SEAL COAT			
FIRST COURSE			
ASPH (AC-20-XP)	0.40 GAL / SY[#]	___,_____ SY	__,_____ GAL
AGGR (TY-PB GR-3)	1 CY / 90 SY	___,_____ SY	_____ CY
SECOND COURSE			
ASPH (AC-20-XP)	0.28 GAL / SY[#]	___,_____ SY	__,_____ GAL
AGGR (TY-PB GR-4 SAC-B)	1 CY / 120 SY	___,_____ SY	_____ CY

[#] RATE MAY BE VARIED BY ENGINEER OF RECORD DEPENDING ON FIELD CONDITIONS AND OTHER FACTORS IN ADVANCE OF MANDATORY PRE-SURFACING MEETING WITH APPROVAL OF THE CITY.

NOTES:

1. ASPHALT SHALL ONLY BE PLACED JUNE 1 THROUGH AUGUST 31 UNLESS OTHERWISE APPROVED BY THE CITY.

2. PLACE FIRST COURSE SEAL COAT USING AC-20-XP ASPHALT ON PRIMED SURFACE (OR EXISTING ASPHALTIC SURFACE) AT A RATE OF 0.40 GAL / SY (UNDERSTANDING RATE MAY REQUIRE MODIFYING BASED ON FIELD CONDITIONS AND OTHER FACTORS)[#] AND IMMEDIATELY COVER WITH AGGR (TY-PB GR-3) AT RATE OF 1 CY / 90 SY, ROLL, CURE, AND SWEEP.

3. PLACE SECOND COURSE SEAL COAT ON FIRST COURSE SEAL COAT USING AC-20-XP ASPHALT AT A RATE 0.28 GAL / SY (UNDERSTANDING RATE MAY REQUIRE MODIFYING BASED ON FIELD CONDITIONS AND OTHER FACTORS)[#] AND IMMEDIATELY COVER WITH AGGR (TY-PB GR-4 SAC-B) AT RATE OF 1 CY / 120 SY, ROLL, CURE, AND SWEEP.

4. MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH CURRENT TXDOT SPECIFICATIONS.

SEAL COAT SURFACING FOR DEVELOPER PROJECTS

(USE REQUIRES MODIFICATION BY ENGINEER OF RECORD FOR BASIS & QUANTITIES AND APPROVAL BY THE CITY)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

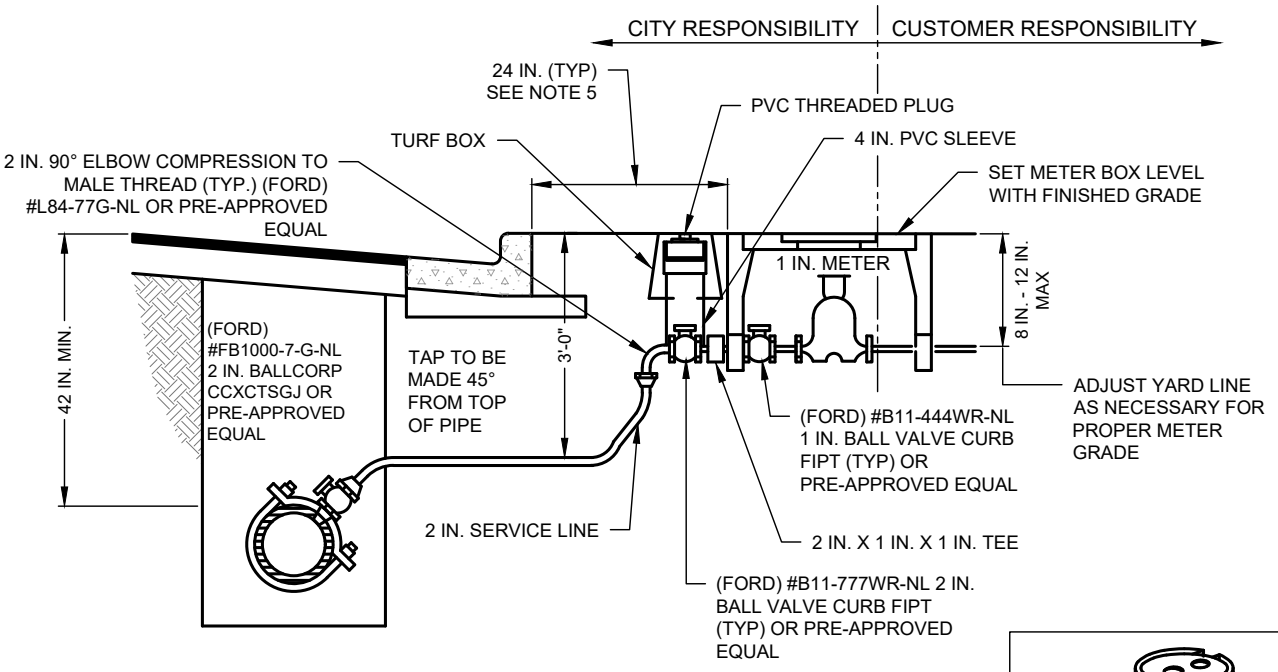
NO.	COMMENTS	BY	DATE
	DRAFT		
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 09/06/2024

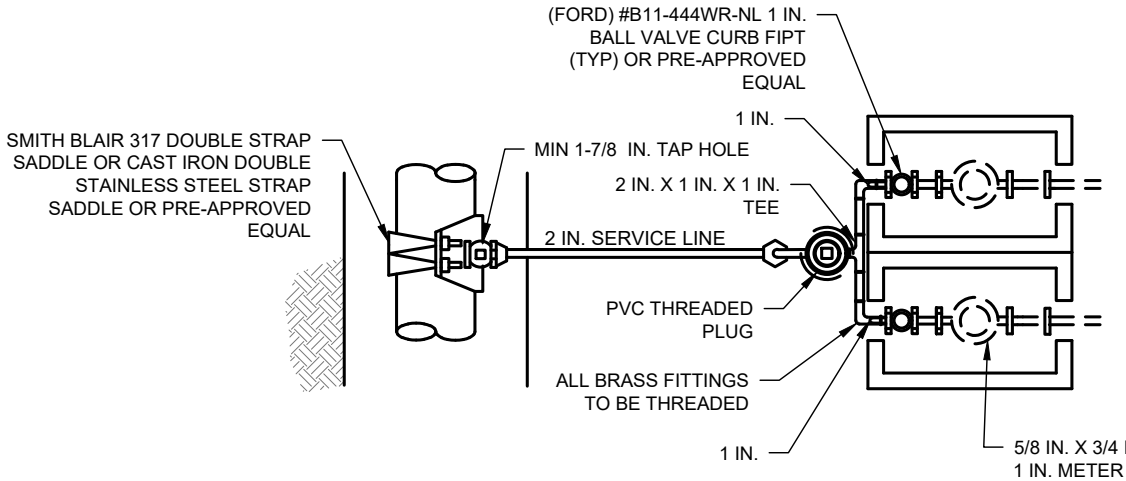
ST-47

NOTES:

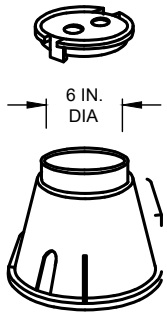
1. STANDARD METER BOX FOR 3/4 IN. AND 1 IN. METERS IS A CARSON 1017 12 IN. BOX WITH SOLID POLYMER LID OR RE-APPROVED EQUAL.
2. SERVICE LINES SHALL BE ONE CONTINUOUS PIECE OF PIPE. JOINTS ARE ONLY ALLOWED AT THE CORPORATION STOP AND THE CURB STOP.
3. SWEATED, GALVANIZED, OR PVC JOINTS SHALL NOT BE ACCEPTED. NON-LEADED BRASS, COPPER TUBING WITH THREADED OR COMPRESSION COUPLINGS, OR POLY PIPE WITH STAINLESS STEEL INSERTS WILL BE ACCEPTED.
4. THE METER IS TO BE LOCATED IN A NON-TRAFFIC GREEN SPACE IN THE RIGHT OF WAY. ALL OTHER LOCATIONS MUST BE APPROVED BY THE CITY ENGINEER. WITH PRIOR APPROVAL FROM THE CITY, A METER MAY BE LOCATED IN AN AREA EXPOSED TO TRAFFIC. IN THIS CASE THE STANDARD BOX FOR METERS OF THESE SIZES IS AN OLDCASTLE CHRISTY N30 SERIES METER BOX WITH DFW1324C POLYMER LID WITH AMI HOLE OR PRE-APPROVED EQUAL.
5. ALL 1-1/2 IN. AND LARGER METERS SHALL BE SENSUS OMNI METERS WITH ITRON CONNECTORS.
6. CITY'S RESPONSIBILITY FOR LEAK REPAIR ENDS AT CONNECTION ON DOWNSTREAM SIDE OF THE METER UP TO AND INCLUDING THE METER BRASS.
7. BULLHEAD WATER METER CONNECTIONS ARE ONLY ALLOWED FOR A DOMESTIC AND IRRIGATION COMBINATION SERVICE SERVING A SINGLE LOT.



SECTION VIEW



PLAN VIEW



6 IN. DIA TURF BOX

PLEASE REFER TO W-6 WHEN 4 IN. PVC SLEEVE IS EXPOSED TO TRAFFIC OR IS IN THE SIDEWALK.

BULLHEAD WATER METER CONNECTION

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

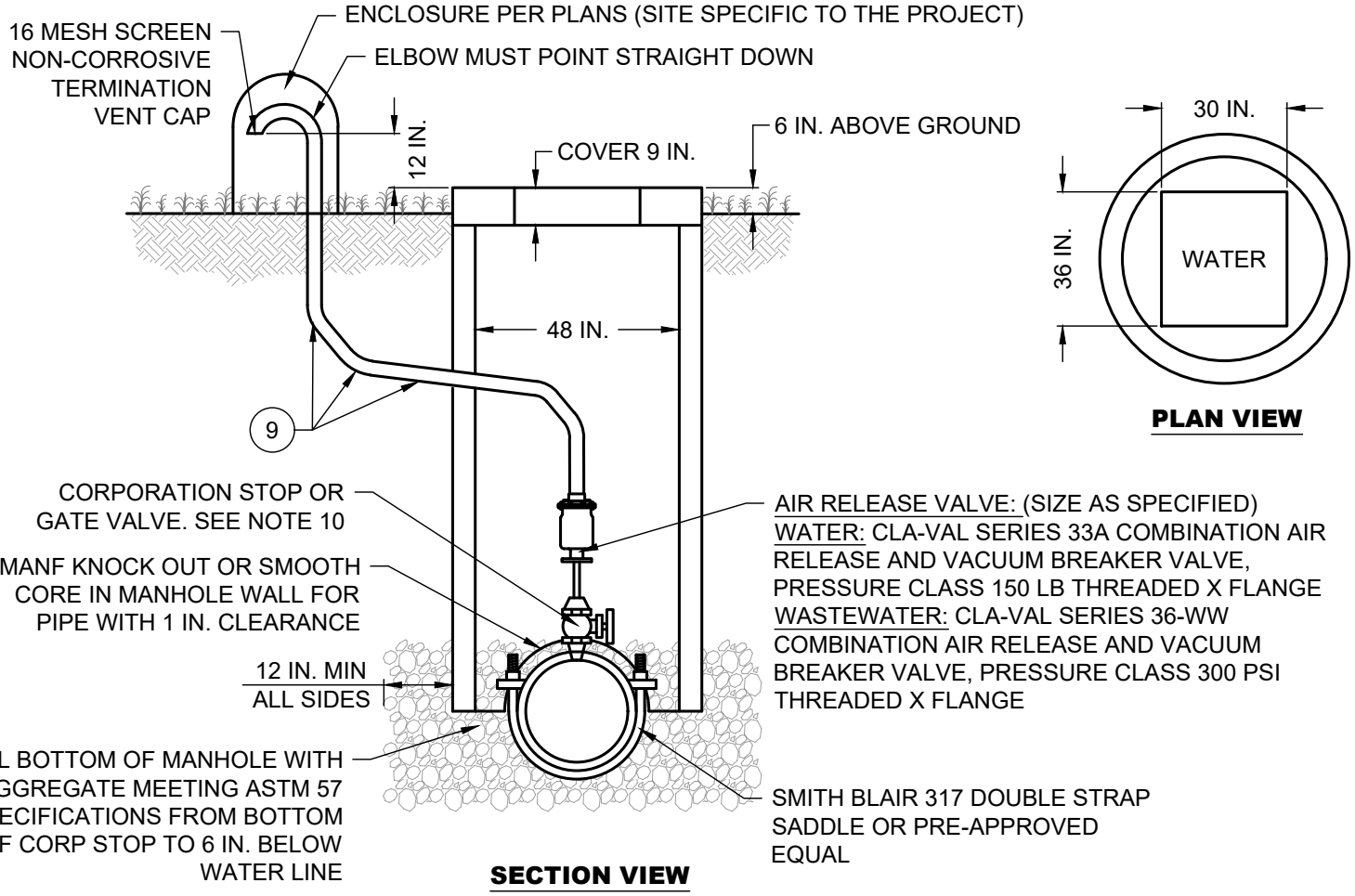
NO.	COMMENTS	BY	DATE
	DRAFT		
1	ADD NOTE 7	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

W-10

NOTES:

1. FRAME AND COVER SHALL BE 30 IN. X 36 IN. 1/4 IN. HINGED CHECKER PLATE.
2. WATER: NO SWEATED JOINTS, GALVANIZED OR PVC PIPE WILL BE ACCEPTED. USE BRASS FITTINGS WITH COPPER TUBING, THREADED OR COMPRESSION COUPLINGS.
3. WASTEWATER: NO SWEATED JOINTS, GALVANIZED, BRASS, OR COPPER PIPE OR TUBING SHALL BE USED FOR AIRE RELEASE VALVE (ARV) VENT. PRESSURE RATED PVC ONLY.
4. PIPE VENT OPENING SHALL BE 12 IN. ABOVE TOP OF CONCRETE VAULT.
5. CONCRETE VAULT SHALL BE CONCRETE PRODUCTS, INC. MODEL "M.V.-8-H.L." OR PRE-APPROVED EQUAL.
6. AIR RELEASE VALVES SHALL BE PLACED IN AREAS NOT SUBJECT TO SUBMERGENCE AND OUTSIDE OF PAVEMENT AREAS.
7. THE PLACEMENT OF VAULT SHALL BE ON CITY RIGHT-OF-WAY OR WITHIN APPROPRIATE EASEMENTS AND SHALL BE LOCATED IN SUCH A WAY AS TO CAUSE THE LEAST AMOUNT OF SITE DISTURBANCE TO RESIDENTS AND TO NOT CREATE A SIGHT OBSTRUCTION FOR TRAFFIC.
8. AIR VENT DISCHARGE SHALL NOT BE LOCATED IN EXISTING /PROPOSED SIDEWALK OR SHARED USE PATH. AIR VENT DISCHARGE SHALL BE LOCATED AND PROTECTED TO ACCOMMODATE SITE CONDITIONS. BOLLARDS OR ENCLOSURE DESIGN SHALL BE SUBMITTED TO CITY OF WACO FOR APPROVAL. VAULT SHALL BE LOCATED AS CLOSE AS POSSIBLE TO PROPERTY LINES.
9. MINIMIZE ANGLES IN VENT PIPE/TUBING, HORIZONTAL LENGTHS TO BE SLOPED RISING (NOMINAL 2%) TOWARDS ARV.
10. 12 IN. AND BELOW WATER LINES REQUIRE A 2 IN. BALLCORP CORPORATION STOP WITH 2 IN. BALL FIPT (FORD) #FB1000-7-G OR PRE-APPROVED EQUAL; 16 IN. AND ABOVE WATERLINES REQUIRE A RESILIENT SEAT GATE VALVE SIZED TO MATCH ARV SIZE.



SECTION VIEW

PLAN VIEW

AIR RELEASE VALVE AND MANHOLE VAULT (OFF STREET)

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

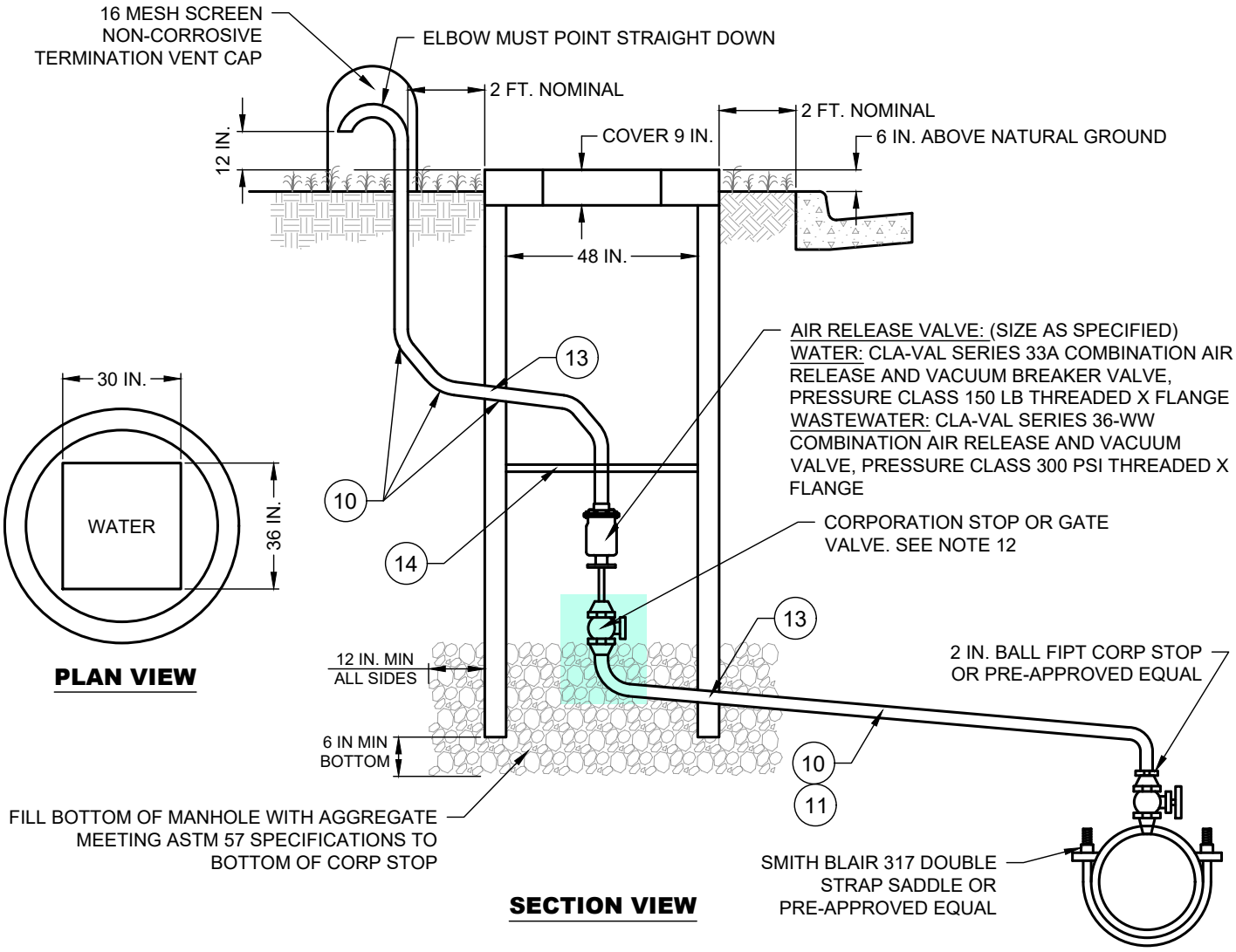
NO.	COMMENTS	BY	DATE
	DRAFT		
1	MODIFY NOTES 3, 8 & 9	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE 01/01/2024

W-22

NOTES:

1. FRAME AND COVER SHALL BE 30 IN. X 36 IN. 1/4 IN. HINGED CHECKER PLATE.
2. WATER: NO SWEATED JOINTS, GALVANIZED OR PVC PIPE WILL BE ACCEPTED. USE BRASS FITTINGS WITH COPPER TUBING, THREADED OR COMPRESSION COUPLINGS.
3. WASTEWATER: NO SWEATED JOINTS, GALVANIZED, BRASS, OR COPPER PIPE OR TUBING SHALL BE USED FOR AIR RELEASE VALVE (ARV) VENT. PRESSURE RATED PVC ONLY.
4. PIPE VENT OPENING SHALL BE 12 IN. ABOVE TOP OF CONCRETE VAULT.
5. CONCRETE VAULT SHALL BE CONCRETE PRODUCTS, INC. MODEL "M.V.-8-H.L." OR PRE-APPROVED EQUAL.
6. AIR RELEASE VALVES SHALL BE PLACED IN AREAS NOT SUBJECT TO SUBMERGENCE AND OUTSIDE OF PAVEMENT AREAS.
7. THE PLACEMENT OF VAULT SHALL BE ON CITY RIGHT-OF-WAY OR WITHIN APPROPRIATE EASEMENTS AND SHALL BE LOCATED IN SUCH A WAY AS TO CAUSE THE LEAST AMOUNT OF SITE DISTURBANCE TO RESIDENTS AND TO NOT CREATE A SIGHT OBSTRUCTION FOR TRAFFIC.
8. IF WATER MAIN IS IN STREET, VAULT SHAILL BE SET 2 FT. BEHIND CURB AND CORPORATION STOP ADDED AT MAIN. CURB STOP SHALL REMAIN IN VAULT.
9. AIR VENT DISCHARGE SHALL NOT BE LOCATED IN EXISTING /PROPOSED SIDEWALK OR SHARED USE PATH. AIR VENT DISCHARGE SHALL BE LOCATED AND PROTECTED TO ACCOMMODATE SITE CONDITIONS. BOLLARDS OR ENCLOSURE DESIGN SHALL BE SUBMITTED TO CITY OF WACO FOR APPROVAL. VAULT SHALL BE LOCATED AS CLOSE AS POSSIBLE TO PROPERTY LINES.
10. MINIMIZE ANGLES IN VENT PIPE/TUBING, HORIZONTAL LENGTHS TO BE SLOPED RISING (NOMINAL 2%) TOWARDS ARV.
11. MINIMIZE HORIZONTAL DISTANCE BETWEEN MAIN AND ARV.
12. 12 IN. AND BELOW WATER LINES REQUIRE A 2 IN. BALLCORP CORPORATION STOP WITH 2 IN. BALL FIPT (FORD) #FB1000-7-G OR PRE-APPROVED EQUAL; 16 IN. AND ABOVE WATERLINES REQUIRE A RESILIENT GATE VALVE SIZED TO MATCH WATERLINE SIZE.
13. SEAL ALL MANHOLE PENETRATIONS WITH LINK-SEAL PER MANUFACTURES RECOMMENDATIONS.
14. 2 IN. X 2 IN. GALVANIZED SUPPORT ANCHORED TO WALL ON BOTH SIDES.



AIR RELEASE VALVE AND MANHOLE VAULT (IN STREET)

(NO SCALE)

CITY OF WACO

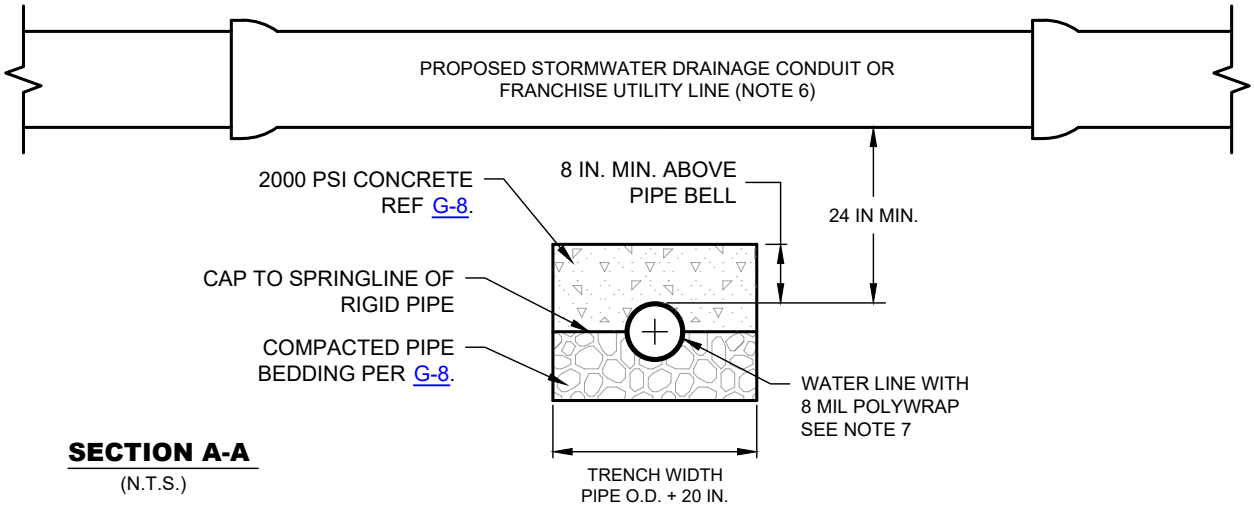
ENGINEERING DIVISION

REVISIONS

NO.	DESCRIPTION	BY	DATE
	DRAFT		
1	MODIFY NOTES 3, 9 & 10; REMOVE MESH SCREEN OVER VENT NOTE; MODIFY DRAWING TO TUBING TO EXIT BOTTOM OF GATE VALVE	MZ	09/06/2024
##	DESCRIPTION	FL	MM/DD/YYYY

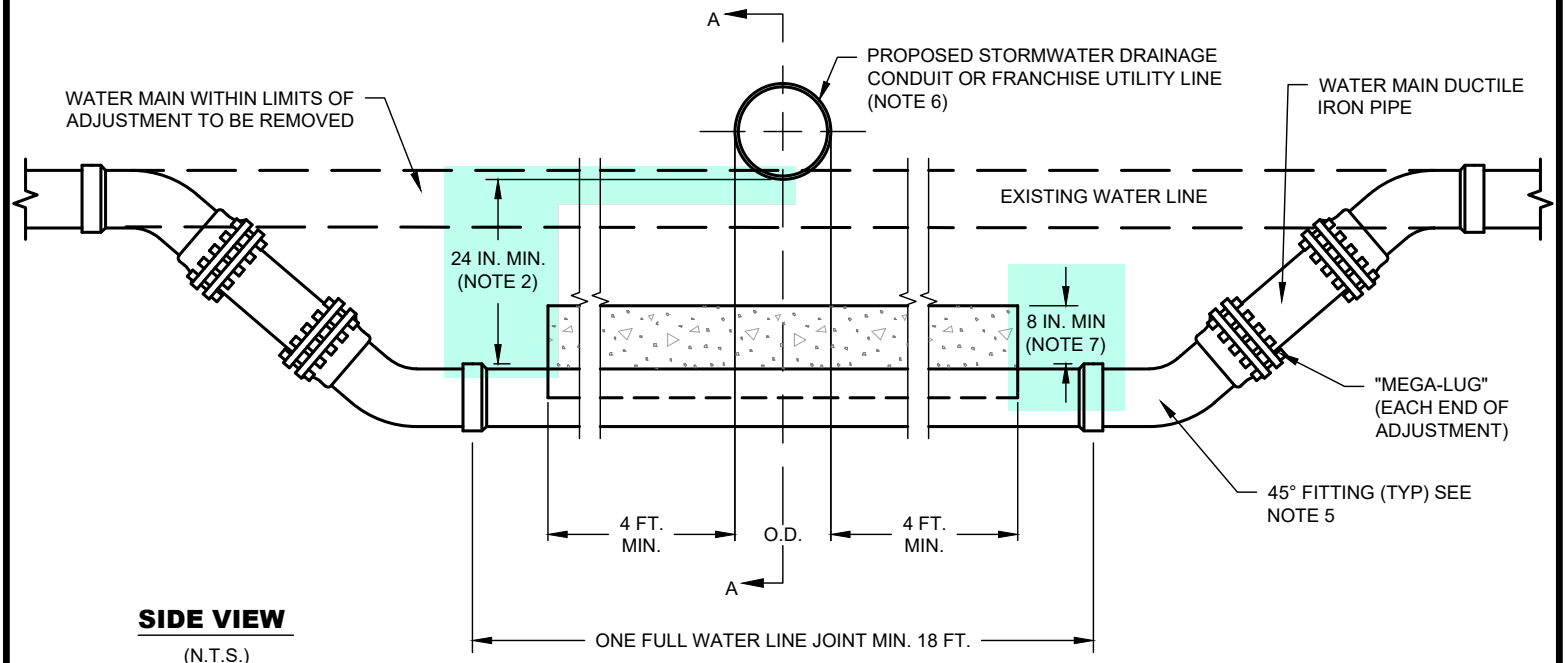
DATE 01/01/2024

W-23



SECTION A-A

(N.T.S.)



SIDE VIEW

(N.T.S.)

NOTES:

1. EVERY EFFORT SHALL BE MADE TO PLACE THE STORMWATER DRAINAGE CONDUIT OR FRANCHISE UTILITY LINE BELOW THE WATER LINE. WHEN NO OTHER OPTIONS ARE AVAILABLE AND ONLY WITH PRIOR APPROVAL BY DIRECTOR OF PUBLIC WORKS OR HER/HIS DESIGNEE WILL THIS DETAIL BE UTILIZED.
2. NEW STORMWATER DRAINAGE CONDUIT OR FRANCHISE UTILITY LINE SHALL BE LAID TO PROVIDE A MIN. VERTICAL DISTANCE OF 24 IN. BETWEEN THE BOTTOM OF THE UPPER PIPE AND THE PIPE BELL OF THE LOWER PIPE.
3. ARRANGE CROSSING SO THAT THE STORMWATER DRAINAGE CONDUIT OR FRANCHISE UTILITY PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING).
4. NO WATER SERVICE WILL BE PERMITTED IN THE CONFINES OF THE WATER LINE AS DETAILED ABOVE.
5. DUCTILE IRON MECHANICAL JOINT 45° FITTINGS WITH "MEGA-LUG" RETAINER GLANDS OR PRE-APPROVED EQUAL. REQUIRES BLOCKING. SEE DETAILS W-3A, W-3E AND W-4 .
6. CENTER 18 FT. MIN. SECTION OF STORMWATER DRAINAGE CONDUIT OR FRANCHISE UTILITY PIPE OVER WATER PIPE.
7. FROM THE SPRING LINE OF THE WATER LINE TO 8 IN. ABOVE THE PIPE BELL OF THE WATERLINE PROVIDE 2,000 PSI CONCRETE CAP WHICH EXTENDS 4 FT. BEYOND THE OUTERMOST EDGES OF THE STORMWATER DRAINAGE CONDUIT OR FRANCHISE UTILITY LINE. PRIOR TO PLACING CONCRETE, THE WATER LINE SHALL BE WRAPPED IN 8 MIL POLYWRAP EXTENDING 1 FT. PAST THE LIMITS OF CONCRETE.

EMBEDMENT FOR NEW STORMWATER DRAINAGE CONDUIT OR FRANCHISE UTILITY LINE CROSSING OVER NEW OR EXISTING WATER LINE

(NO SCALE)

CITY OF WACO

ENGINEERING DIVISION

REVISIONS

DRAFT

NO.		BY	DATE
2	MODIFY NOTE 5; REVISE GRAPHIC TO MATCH NOTES 2 AND 7	MZ	09/06/2024
1	MODIFY DETAIL TO SHOW CHANGE CLSM ENCASEMENT TO CONCRETE CAP; MODIFY NOTES	MZ	04/19/2024
##	DESCRIPTION	FL	MM/DD/YYYY

DATE
01/01/2024

W-37