



## PAVEMENT DESIGN MANUAL

CITY OF WICHITA FALLS, TEXAS  
PUBLIC WORKS DEPARTMENT  
1300 SEVENTH STREET  
WICHITA FALLS, TEXAS 76301

Approved by: \_\_\_\_\_  
Russell Schreiber, P.E., Public Works Director

Effective Date: \_\_\_\_\_

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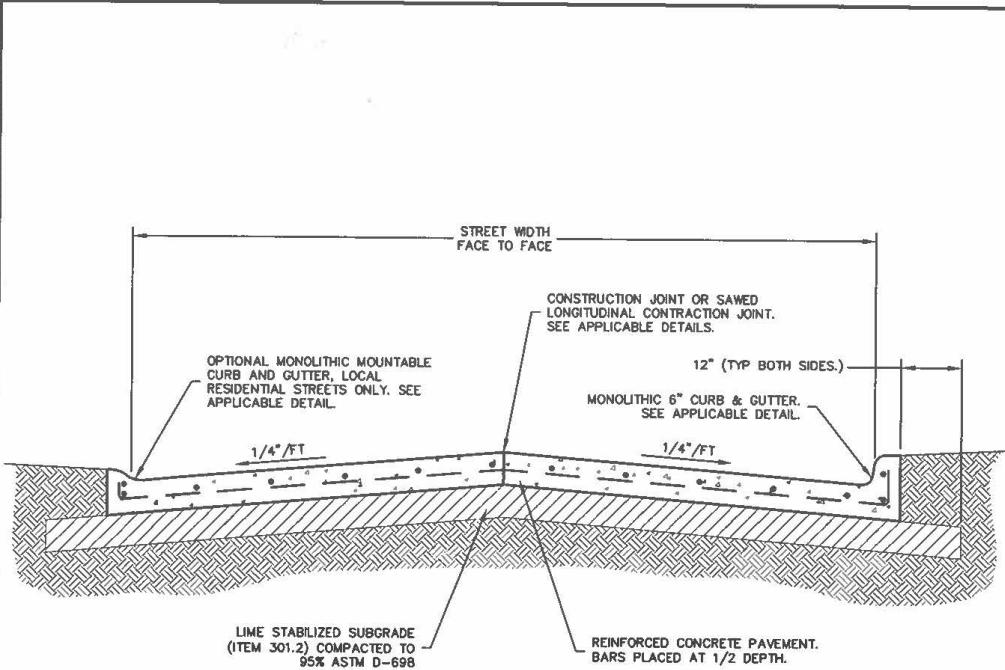
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## **1.0 INTRODUCTION:**

### **1.1 Purpose and Scope**

The development of this design manual is authorized by the City of Wichita Falls' Subdivision and Development Regulations Ordinance to protect and provide for the safety and welfare of the general public and to ensure the proper development of public infrastructure within the City and its extraterritorial jurisdiction. This manual establishes standard design guidance for pavement development and construction processes within the jurisdiction of the City and is intended to encourage a greater uniformity in developing plans for the City's pavement facilities. The design standards described in the following pages are intended to serve as guidelines for the development of pavement structures for local government review and approval purposes; however, the responsibility for the adequacy and effectiveness of the actual design remains with the design engineer and sound engineering judgment must always be applied. Users of this manual should be knowledgeable and experienced in the theory and application of pavement engineering principles. Any deviation from the requirements of this manual must be approved by the Director of Public Works or designee.

## **2.0 DESIGN CRITERIA:**



## GENERAL NOTES:

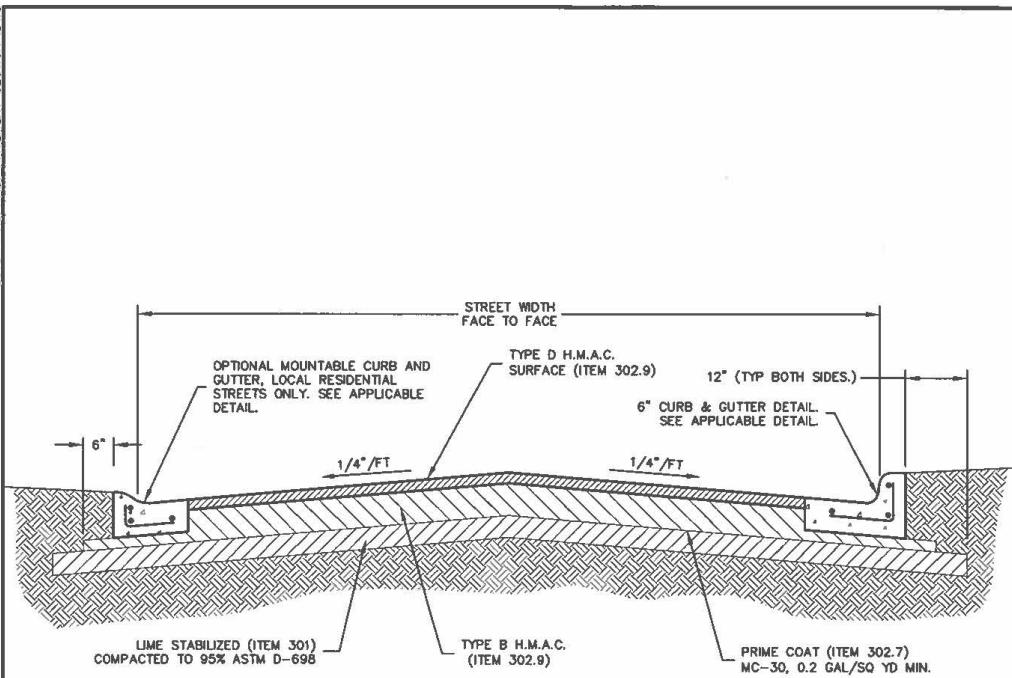
1. CONSTRUCT EXPANSION AND CONTRACTION JOINTS AT INTERVALS SHOWN ON SPACING DIAGRAM FOR JOINTS. SEE APPLICABLE DETAILS.
2. ALL CONCRETE MUST BE CLASS "C" (COMPRESSIVE STRENGTH OF 3600 PSI @ 28 DAYS).
3. SEE PORTLAND CEMENT CONCRETE PAVEMENT, ITEM 303 OF THE STANDARD SPECIFICATIONS.
4. ALL EXPOSED CONCRETE SURFACES MUST BE CURED IN ACCORDANCE WITH ITEM 303.5.7 OF THE STANDARD SPECIFICATIONS.
5. BACKFILL FROM BACK OF CURB TO RIGHT OF WAY LINE MUST BE COMPACTED TO 90% OF ASTM D-698.
6. SUB GRADE PREPARATION MUST CONSIST OF LIME STABILIZATION IN ACCORDANCE WITH ITEM 301.2 OF THE STANDARD SPECIFICATIONS, APPLIED AT A RATE OF 30 LBS./SQ.YD., COMPACTED TO 95% ASTM D-698.
7. FLEXIBLE BASE OF SAME THICKNESS MEETING REQUIREMENTS OF ITEM 301.5 OF THE STANDARD SPECIFICATIONS MAY BE SUBSTITUTED FOR LIME STABILIZED SUBGRADE.

STREET CLASSIFICATION	STREET WIDTH	PAVEMENT THICKNESS	SUBGRADE THICKNESS	STEEL REINFORCING
LOCAL RESIDENTIAL STREET	30' FACE TO FACE	6" CONCRETE	6" TREATED SUBGRADE	#4 BARS @ 18" O.C.E.W.
LOCAL INDUSTRIAL / COMMERCIAL STREET	36' FACE TO FACE	7" CONCRETE	6" TREATED SUBGRADE	#4 BARS @ 18" O.C.E.W.
MINOR & MAJOR COLLECTORS & ARTERIALS	GREATER THAN 36' FACE TO FACE	8" CONCRETE	8" TREATED SUBGRADE	#5 BARS @ 18" O.C.E.W.

**CONCRETE  
PAVEMENT SECTION**  
NOT TO SCALE

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PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	CONCRETE PAVEMENT SECTION
		DETAIL NO. 2000



## GENERAL NOTES:

1. AFTER COMPACTION, THE HMAC MUST BE WITHIN 1/4" TO 1/2" ABOVE TOP OF LIP OF GUTTER.
2. SEE ASPHALT PAVEMENT, ITEM 302 OF THE STANDARD SPECIFICATIONS.
3. BACKFILL FROM BACK OF CURB TO RIGHT OF WAY LINE MUST BE COMPACTED TO 90% OF ASTM D-698.
4. SUB GRADE PREPARATION MUST CONSIST OF LIME STABILIZATION IN ACCORDANCE WITH ITEM 301.2 OF THE STANDARD SPECIFICATIONS, APPLIED AT A RATE OF 30 LBS./SQ.YD., COMPACTED TO 95% ASTM D-698.
5. FLEXIBLE BASE OF SAME THICKNESS, MEETING REQUIREMENTS OF ITEM 301.5 OF THE STANDARD SPECIFICATIONS, MAY BE SUBSTITUTED FOR LIME STABILIZED SUBGRADE.
6. THE TYPE "B" ASPHALT UNDER THE CURB AND GUTTER MAY BE ELIMINATED BY ADDITIONAL THICKNESS OF CONCRETE GUTTER TO MATCH ASPHALT PAVEMENT SECTION.

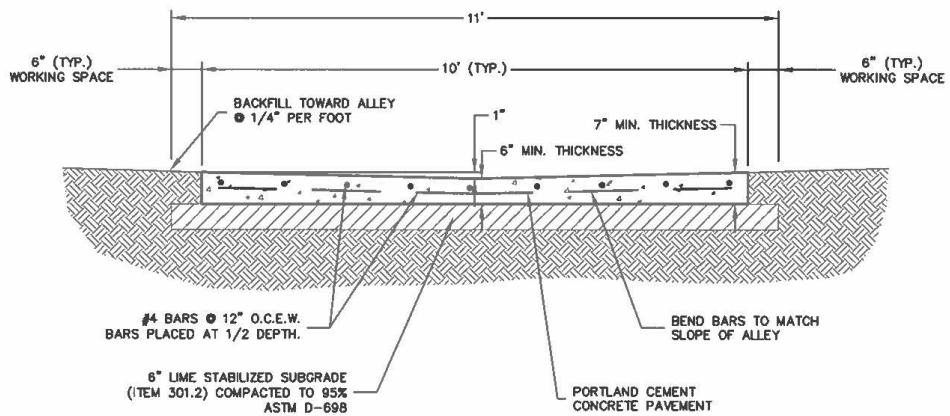
STREET CLASSIFICATION	SURFACE COURSE THICKNESS	BASE COURSE THICKNESS	SUBGRADE THICKNESS
LOCAL RESIDENTIAL STREETS	2" TYPE D H.M.A.C.	4" TYPE B H.M.A.C.	6" TREATED SUBGRADE
LOCAL INDUSTRIAL / COMMERCIAL STREETS	2" TYPE D H.M.A.C.	6" TYPE B H.M.A.C.	6" TREATED SUBGRADE
ARTERIAL STREETS MINOR & MAJOR COLLECTOR STREETS	2" TYPE D H.M.A.C.	8" TYPE B H.M.A.C.	8" TREATED SUBGRADE

ASPHALT  
PAVEMENT SECTION

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PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	ASPHALT PAVEMENT SECTION DETAIL NO. 2010
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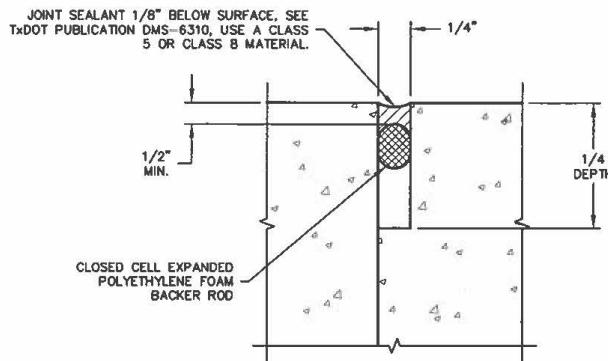
## GENERAL NOTES:

1. SEE ALLEY PAVING ITEM 303.6 OF THE STANDARD SPECIFICATIONS.
2. SUB GRADE PREPARATION MUST CONSIST OF 6" LIME STABILIZATION IN ACCORDANCE WITH ITEM 301.2 OF THE STANDARD SPECIFICATIONS, APPLIED AT A RATE OF 30 LBS./ PER SQ.YD., COMPACTED TO 95% ASTM D-698.
3. 6" INCHES OF FLEXIBLE BASE MEETING THE REQUIREMENTS OF ITEM 301.5 OF THE STANDARD SPECIFICATIONS, MAY BE SUBSTITUTED FOR LIME STABILIZED SUBGRADE.
4. ALL CONCRETE MUST BE CLASS "C" (COMPRESSIVE STRENGTH OF 3600 PSI @ 28 DAYS).
5. ALL EXPOSED CONCRETE SURFACES MUST BE CURED IN ACCORDANCE WITH ITEM 303.5.7 OF THE STANDARD SPECIFICATIONS.
6. EXPANSION JOINTS MUST BE PLACED AT EACH END OF THE ALLEY AND AT MAX. SPACING OF 300'.
7. BACKFILL ADJACENT TO CONCRETE EDGES TO A MINIMUM OF 90% STANDARD PROCTOR (ASTM D-698) IN 6" INCH LIFTS.
8. CONSTRUCT SAWED CONTRACTION JOINTS AT 15' INTERVALS.

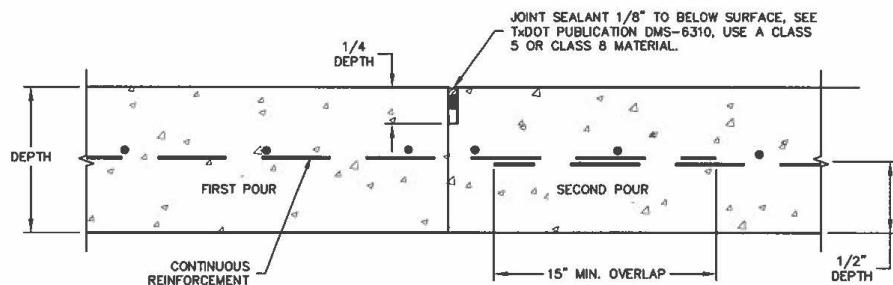
ALLEY  
PAVEMENT SECTION  
NOT TO SCALE

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PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	ALLEY PAVEMENT SECTION DETAIL NO. 2040
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### JOINT SEALANT



### GENERAL NOTES:

1. SEE CONSTRUCTION JOINTS, ITEM 303.5.4.4 OF THE STANDARD SPECIFICATIONS.

### CONSTRUCTION JOINT

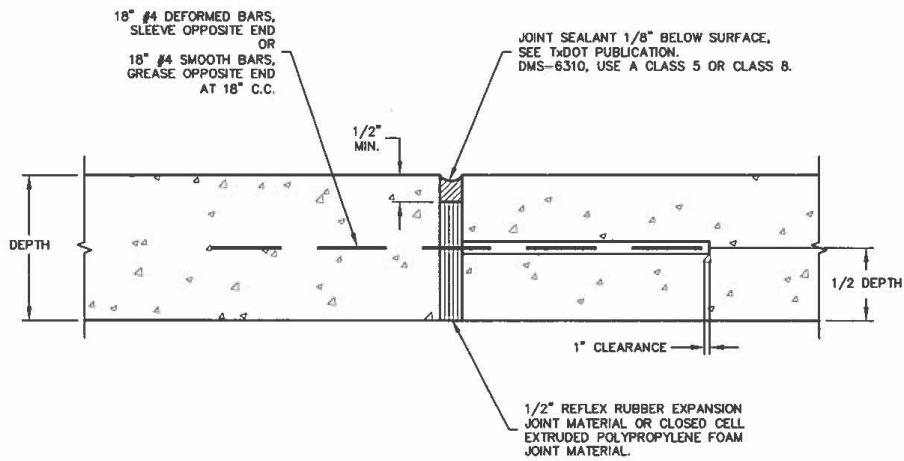
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2051 - EXPANSION JOINT.DWG



GENERAL NOTES:

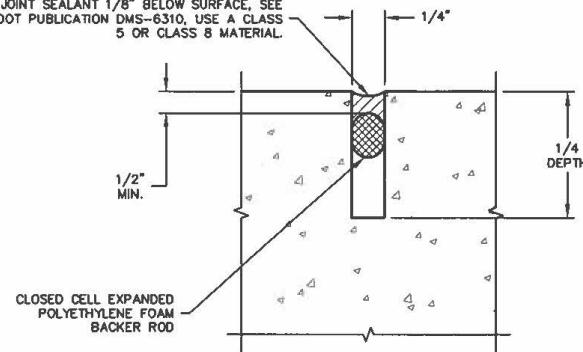
1. SEE EXPANSION JOINTS, ITEM 303.5.4.2 OF THE STANDARD SPECIFICATIONS.
2. DOWEL BARS MUST BE ADEQUATELY BRACED WITH DOWEL BASKETS TO ASSURE THEY WILL BE MAINTAINED PERPENDICULAR AND LEVEL TO JOINT DURING PLACEMENT OF CONCRETE.

EXPANSION JOINT

NOT TO SCALE

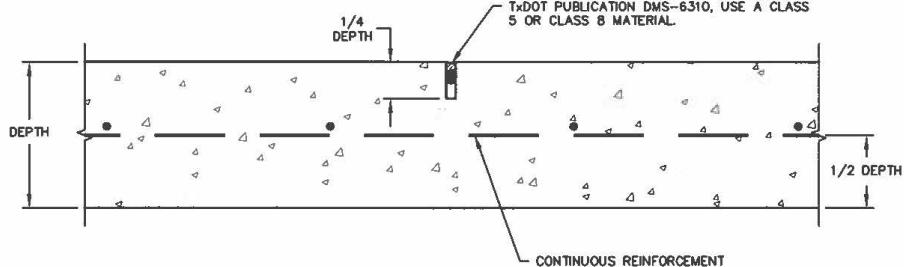
PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	EXPANSION JOINT
		DETAIL NO. 2051

JOINT SEALANT 1/8" BELOW SURFACE, SEE  
TxDOT PUBLICATION DMS-6310, USE A CLASS  
5 OR CLASS 8 MATERIAL.



### JOINT SEALANT

JOINT SEALANT 1/8" BELOW SURFACE, SEE  
TxDOT PUBLICATION DMS-6310, USE A CLASS  
5 OR CLASS 8 MATERIAL.



### GENERAL NOTES:

1. SEE CONTRACTION JOINTS, ITEM 303.5.4.3 OF THE STANDARD SPECIFICATIONS.

### SAWED CONTRACTION JOINT

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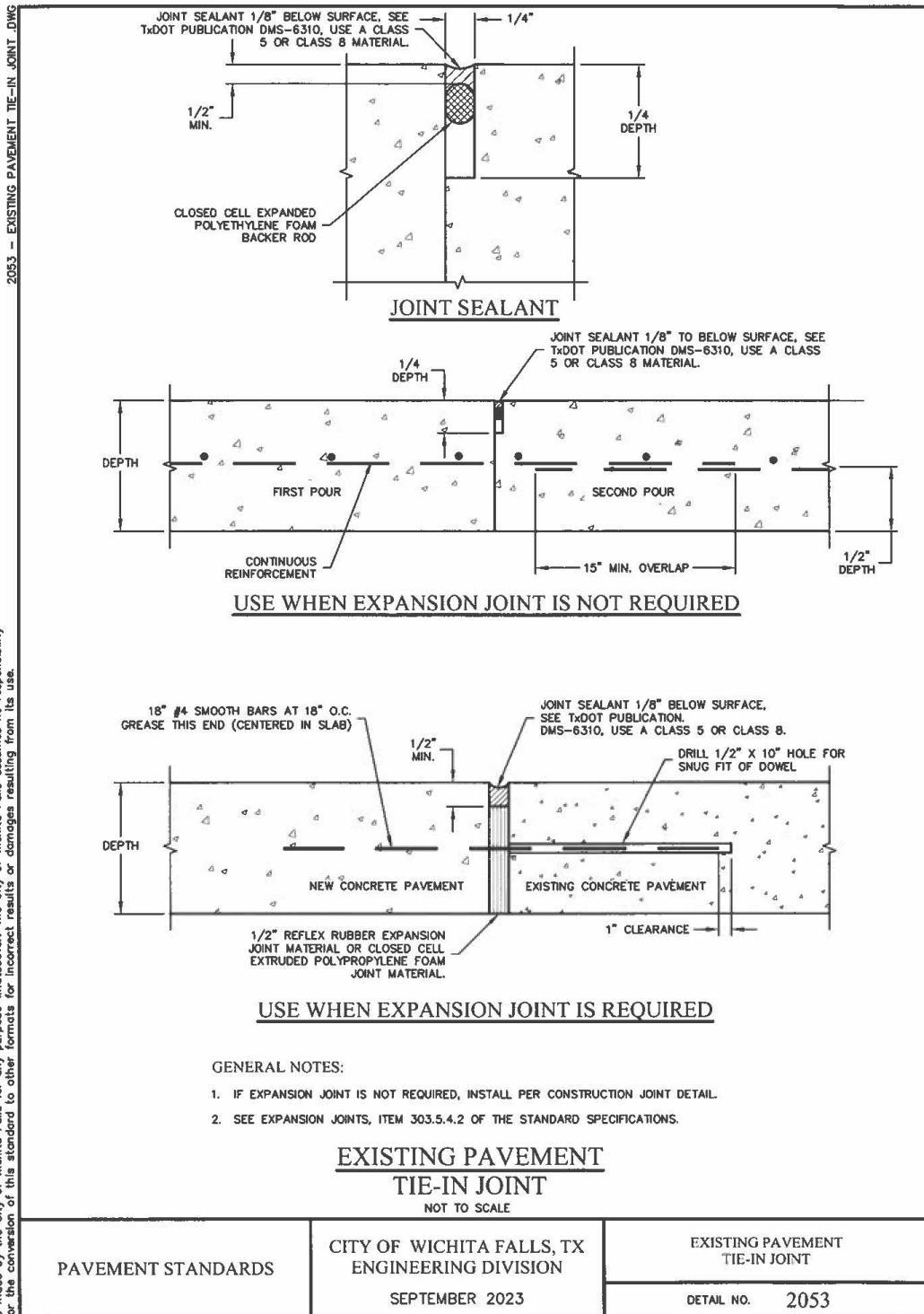
PAVEMENT STANDARDS

CITY OF WICHITA FALLS, TX  
ENGINEERING DIVISION

SEPTEMBER 2023

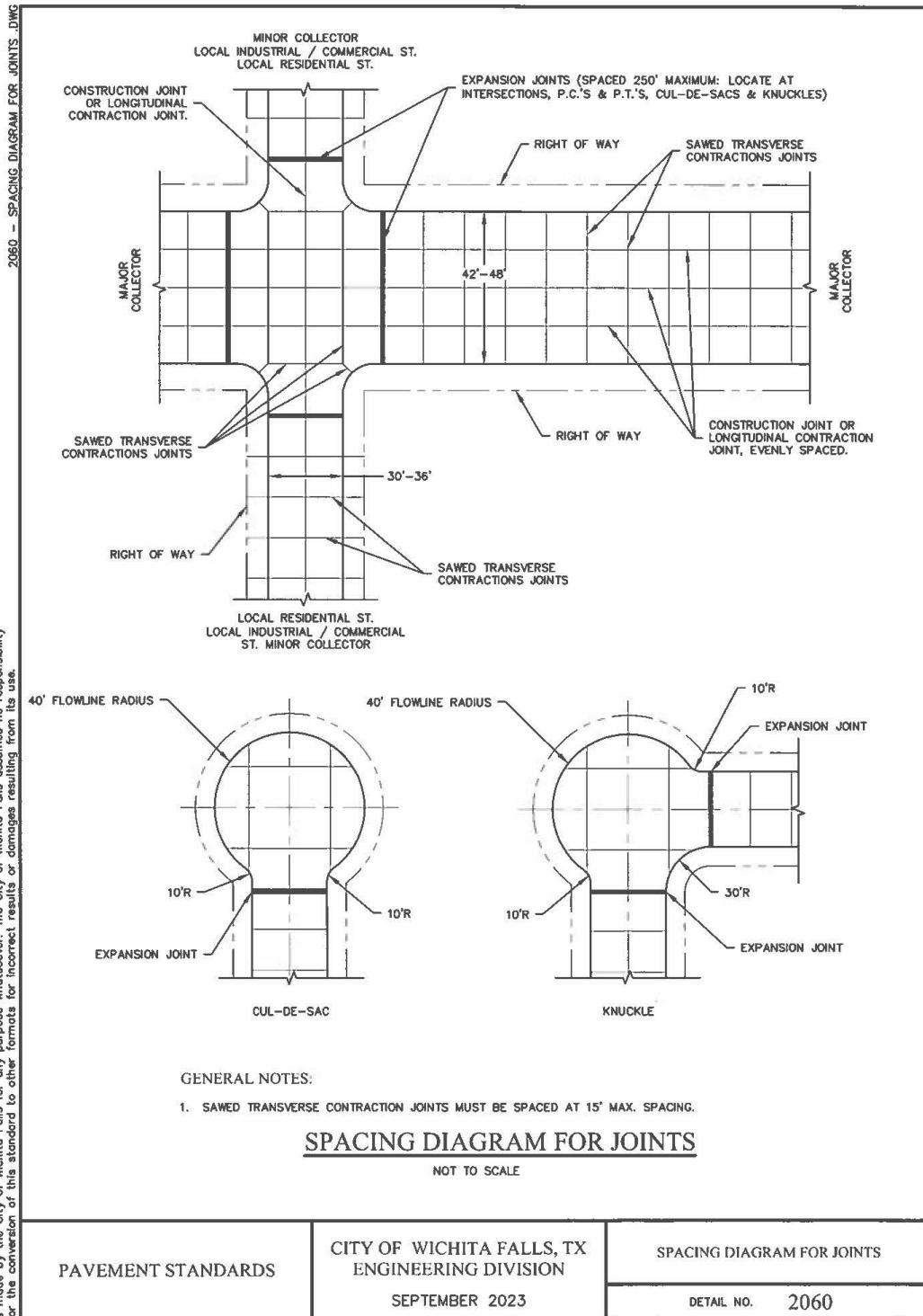
SAWED CONTRACTION  
JOINT

DETAIL NO. 2052

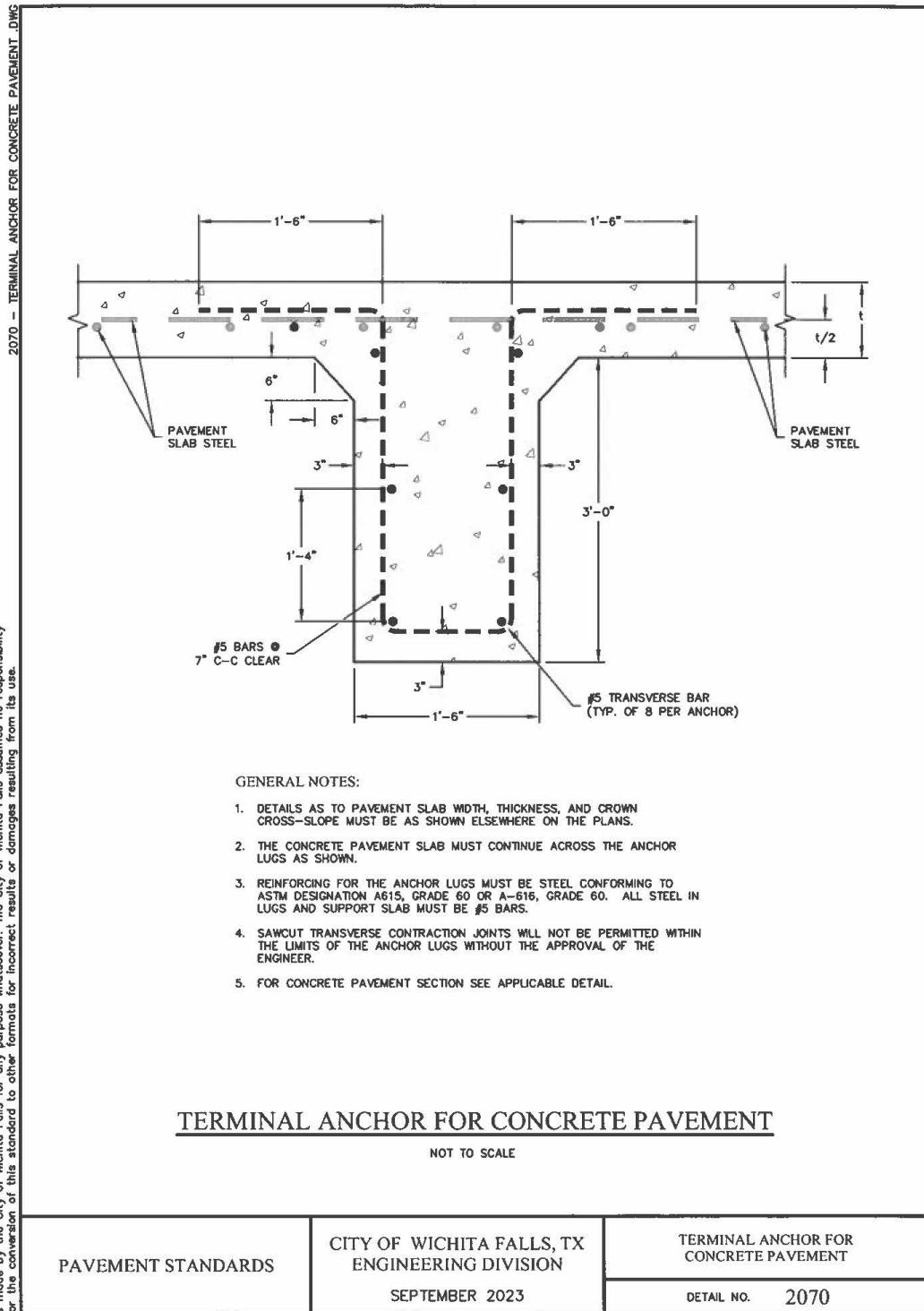


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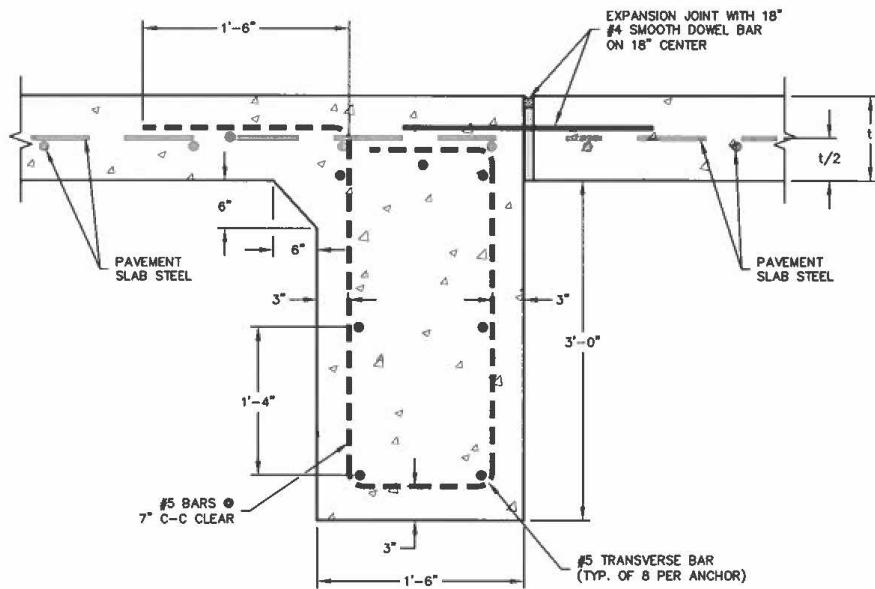


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2071 - TERMINAL ANCHOR WITH EXPANSION JOINT FOR CONCRETE PAVEMENT-DING



GENERAL NOTES:

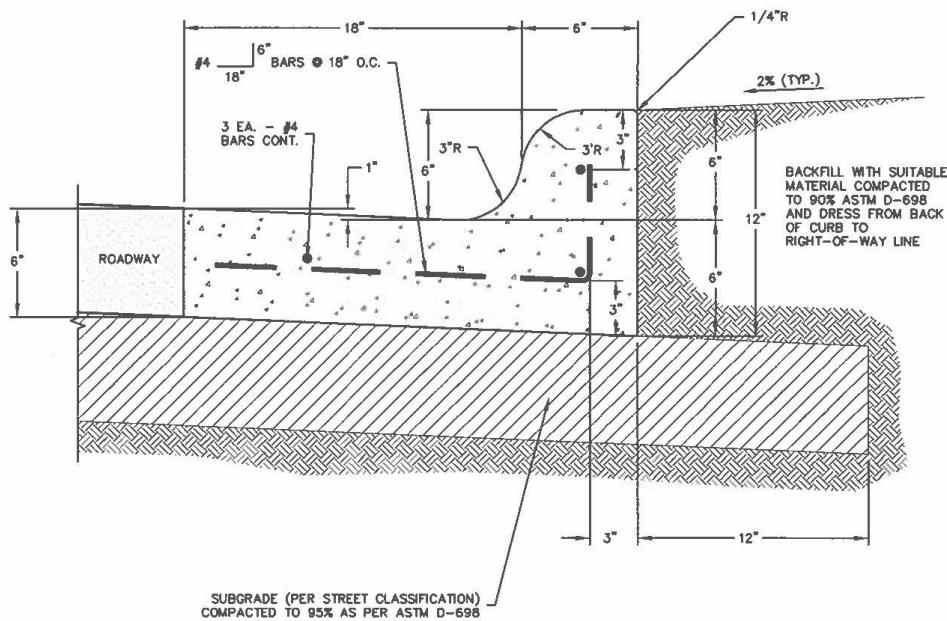
1. DETAILS AS TO PAVEMENT SLAB WIDTH, THICKNESS, AND CROWN CROSS-SLOPE MUST BE AS SHOWN ELSEWHERE ON THE PLANS.
2. REINFORCING FOR THE ANCHOR LUGS MUST BE STEEL CONFORMING TO ASTM DESIGNATION A615, GRADE 60 OR A-616, GRADE 60. ALL STEEL IN LUGS AND SUPPORT SLAB MUST BE #5 BARS.
3. SAWCUT CONTRACTION JOINTS WILL NOT BE PERMITTED WITHIN THE LIMITS OF THE ANCHOR LUGS WITHOUT THE APPROVAL OF THE ENGINEER.
4. SEE CONCRETE PAVEMENT SECTION AND EXPANSION JOINT. SEE APPLICABLE DETAIL.

TERMINAL ANCHOR WITH EXPANSION JOINT  
FOR  
CONCRETE PAVEMENT

NOT TO SCALE

PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	TERMINAL ANCHOR WITH EXPANSION JOINT FOR CONCRETE PAVEMENT
		DETAIL NO. 2071

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#### GENERAL NOTES:

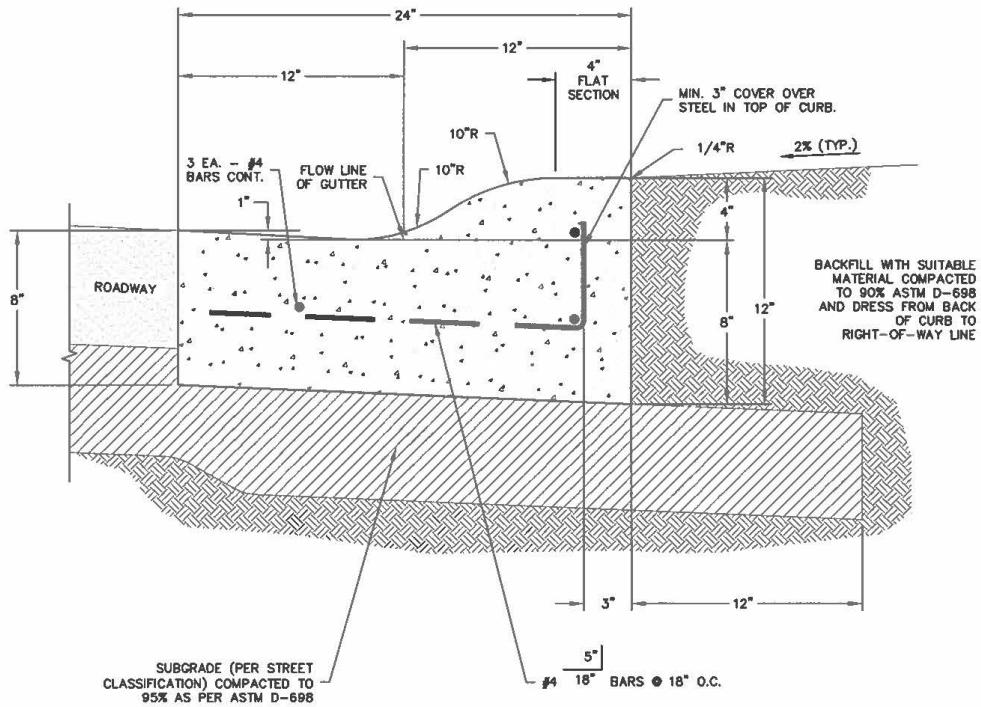
1. DOWEL REINFORCEMENT 6" INTO EXISTING CURB AND GUTTER.
2. CONSTRUCT 1/2" EXPANSION JOINTS AT 250' ON CENTER, INTERSECTIONS, PTS & PCS, AND CONTRACTION JOINTS AT 15' ON CENTER.
3. SEE CONCRETE CURB & GUTTER, ITEM 305.1 OF THE STANDARD SPECIFICATIONS.
4. ALL CONCRETE MUST BE CLASS "C" (COMPRESSIVE STRENGTH OF 3600 PSI @ 28 DAYS).
5. SAND WILL NOT BE ACCEPTED AS COMPACTED SUBGRADE. SAND WILL BE ALLOWED FOR LEVEL-UP ONLY (2" MAX.).
6. MATCH PAVEMENT THICKNESS WHEN PLACED MONOLITHIC WITH CONCRETE PAVEMENT.
7. PROVIDE 1" GUTTER DEPRESSION.

## 6" CURB AND GUTTER

NOT TO SCALE

PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	6" CURB AND GUTTER DETAIL NO. 2120
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#### GENERAL NOTES:

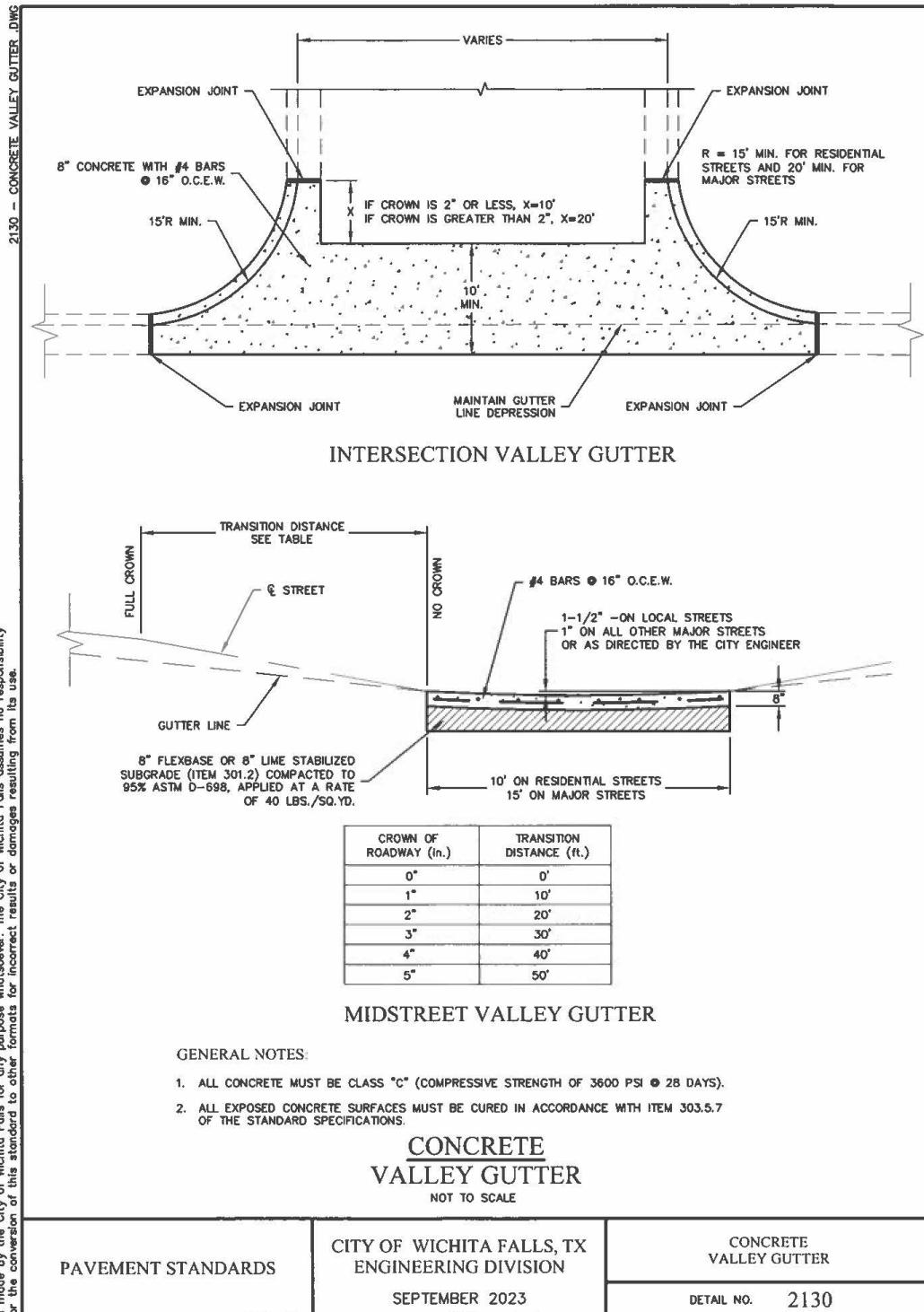
1. DOWEL REINFORCEMENT 6" INTO EXISTING CURB AND GUTTER.
2. CONSTRUCT 1/2" EXPANSION JOINTS AT 250' ON CENTER, INTERSECTIONS, PTS & PCS, AND CONTRACTION JOINTS AT 15' ON CENTER.
3. SEE CONCRETE CURB & GUTTER, ITEM 305.1 OF THE STANDARD SPECIFICATIONS.
4. ALL CONCRETE MUST BE CLASS "C" (COMPRESSIVE STRENGTH OF 3600 PSI @ 28 DAYS).
5. SAND WILL NOT BE ACCEPTED AS COMPAKTED SUBGRADE. SAND WILL BE ALLOWED FOR LEVEL-UP ONLY (2" MAX.).
6. MATCH PAVEMENT THICKNESS WHEN PLACED MONOLITHIC WITH CONCRETE PAVEMENT.
7. PROVIDE 1" GUTTER DEPRESSION.

### CURB AND GUTTER MOUNTABLE

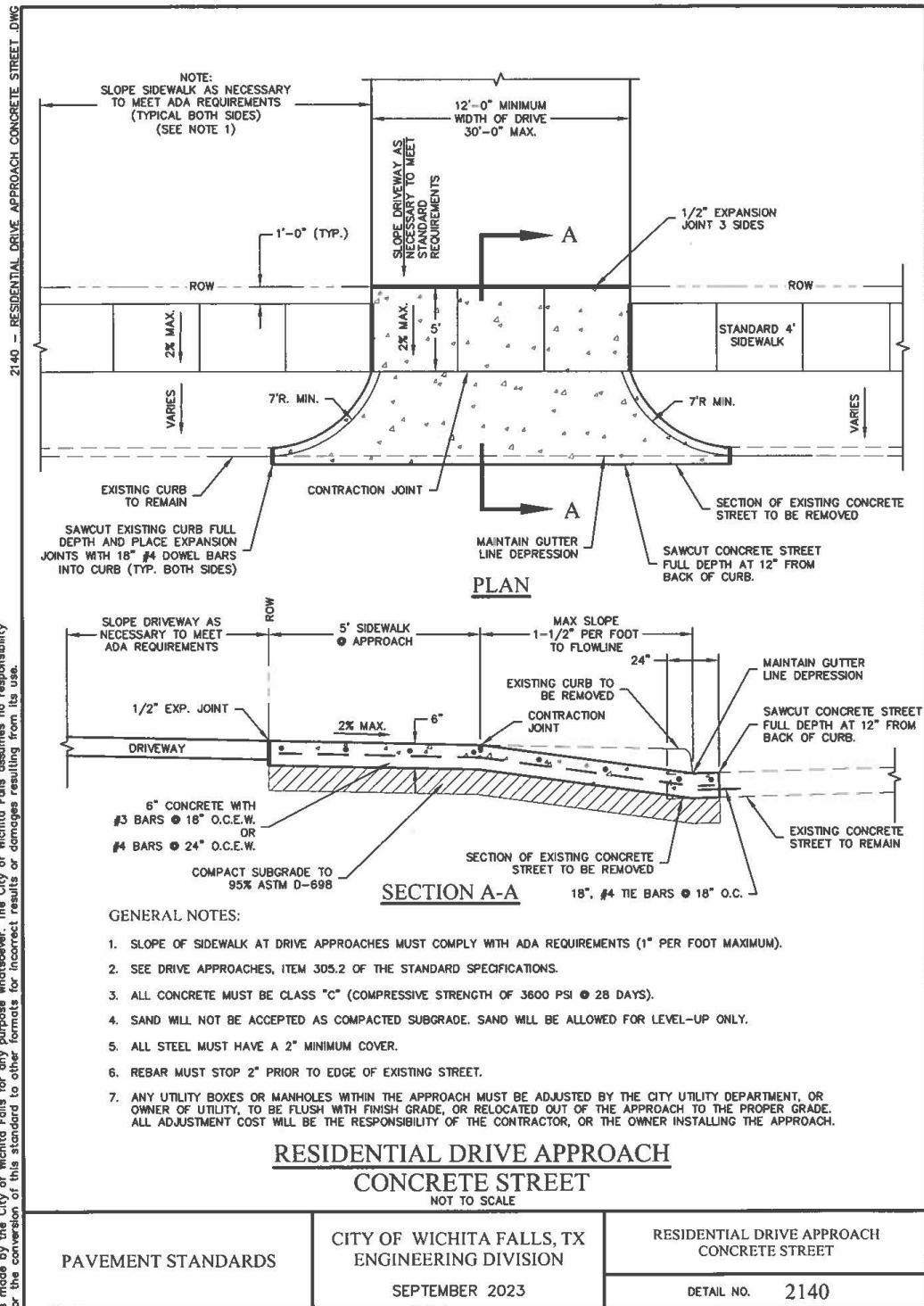
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PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	CURB AND GUTTER MOUNTABLE DETAIL NO. 2121
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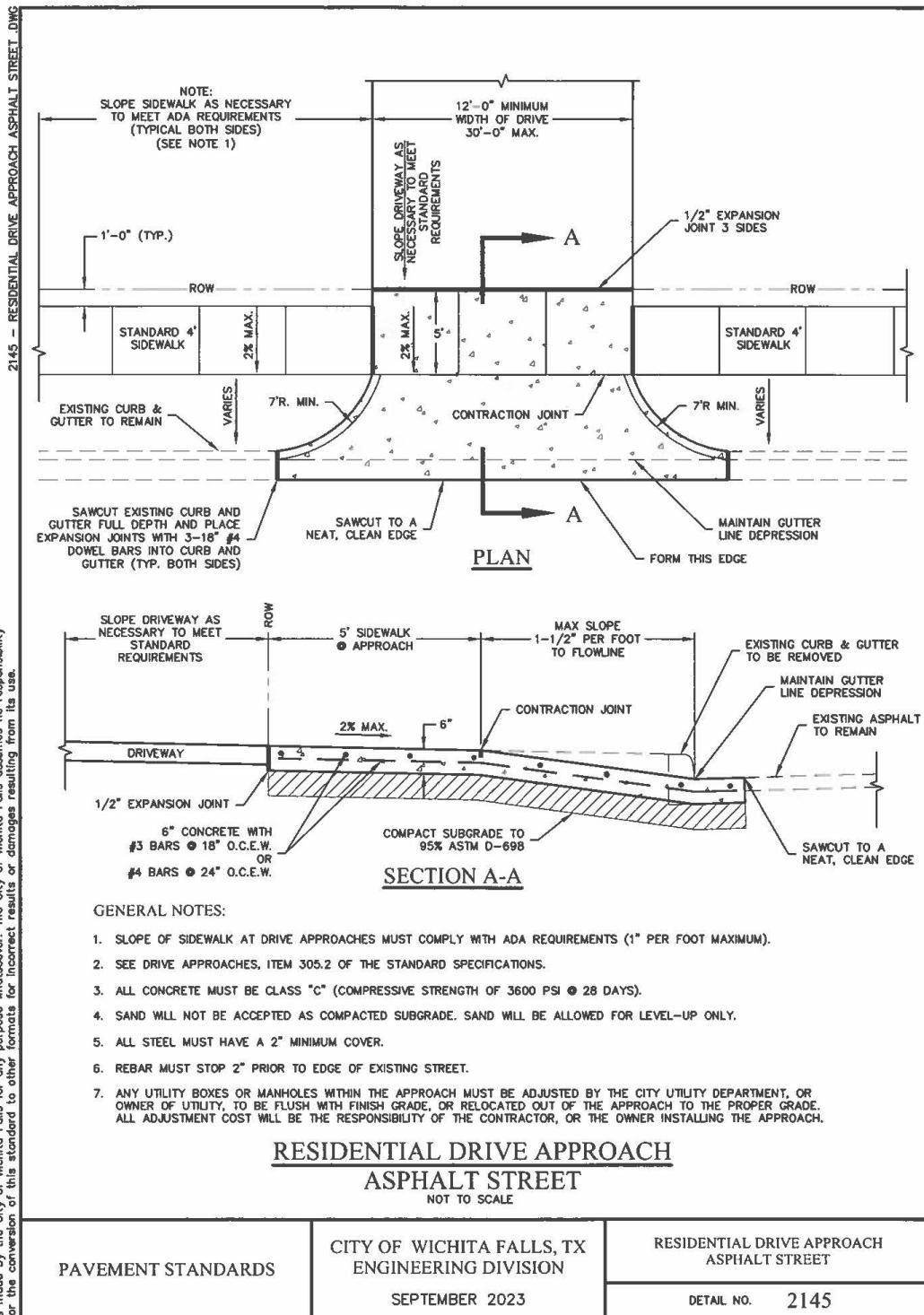
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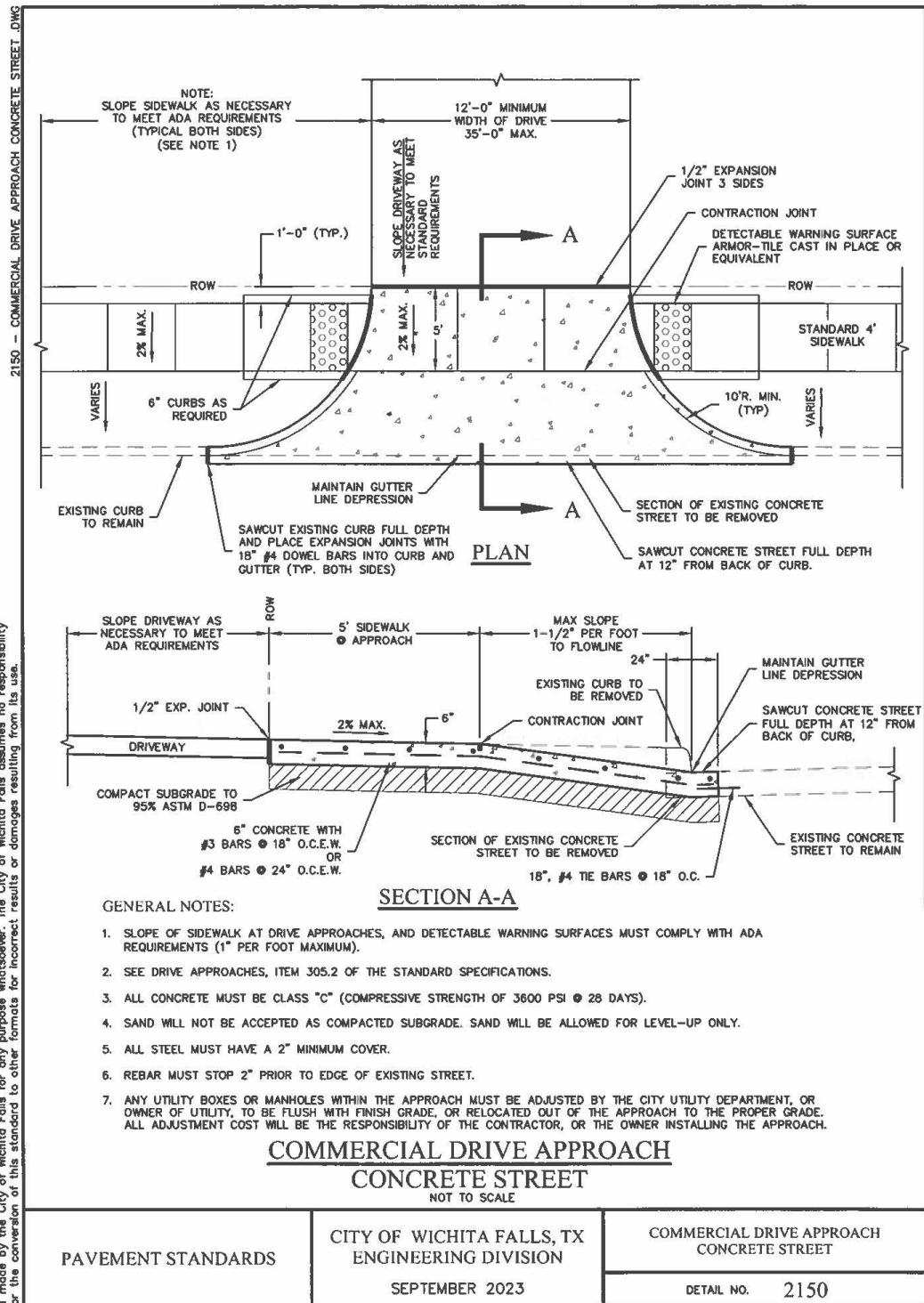
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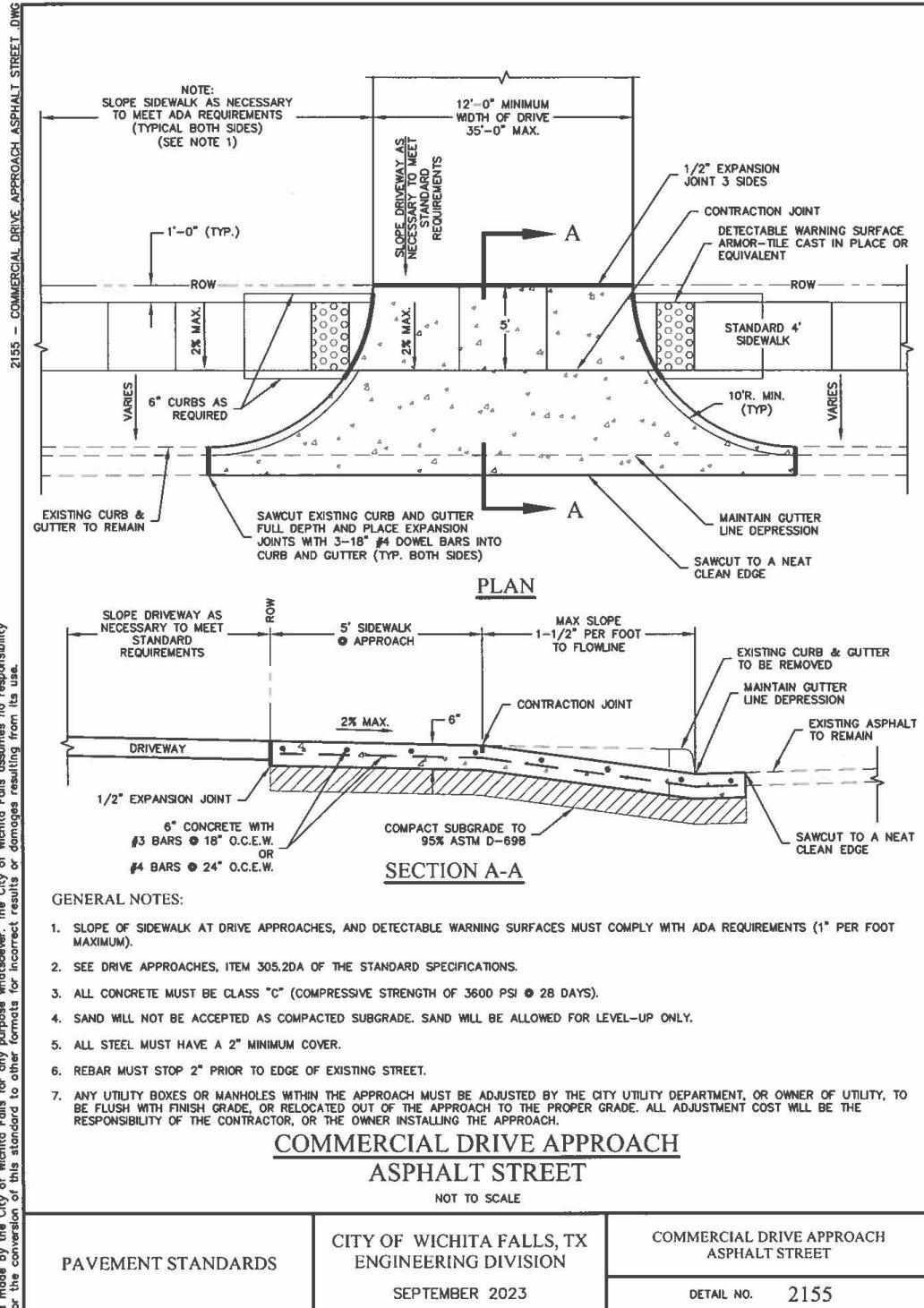
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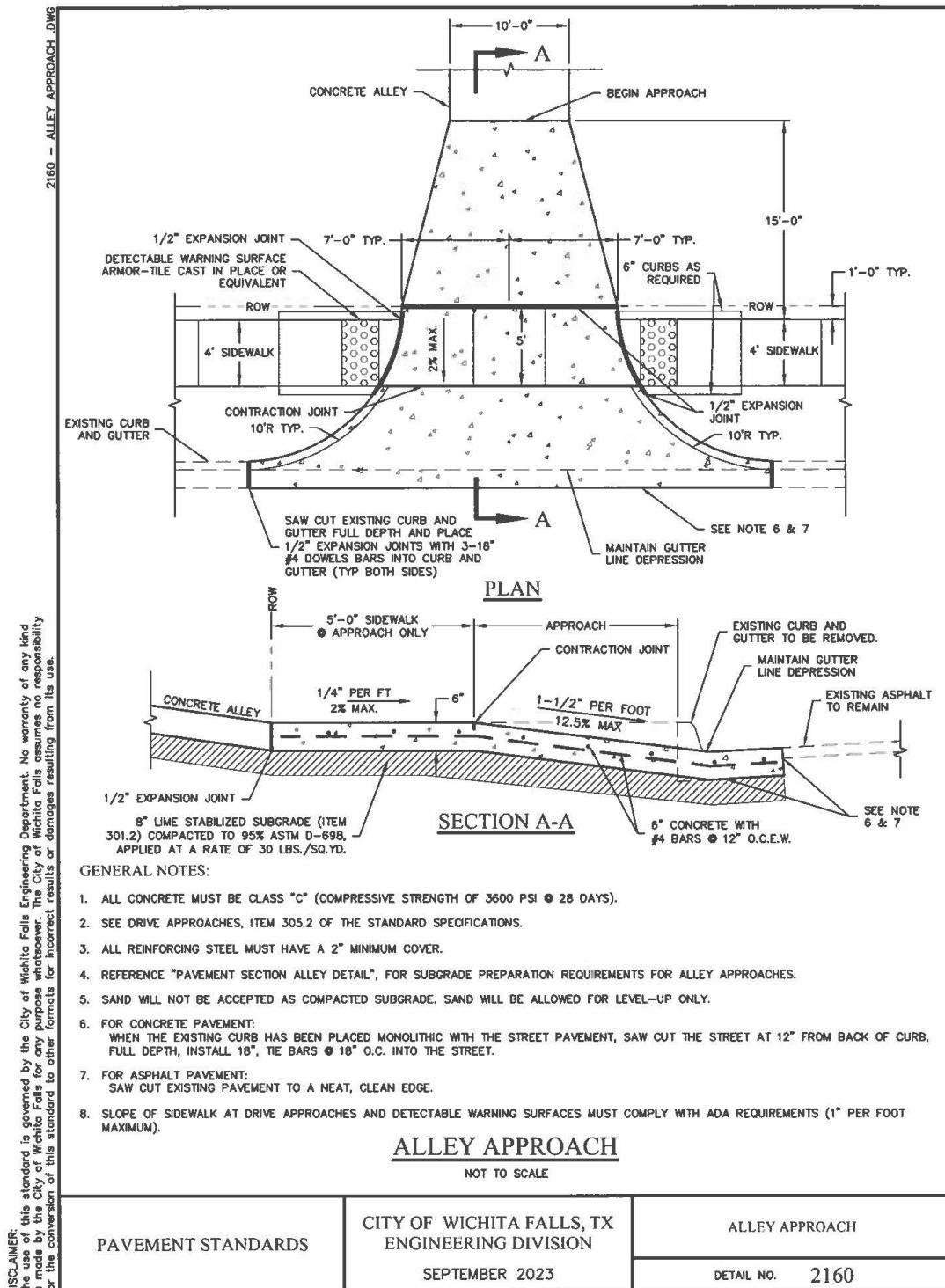


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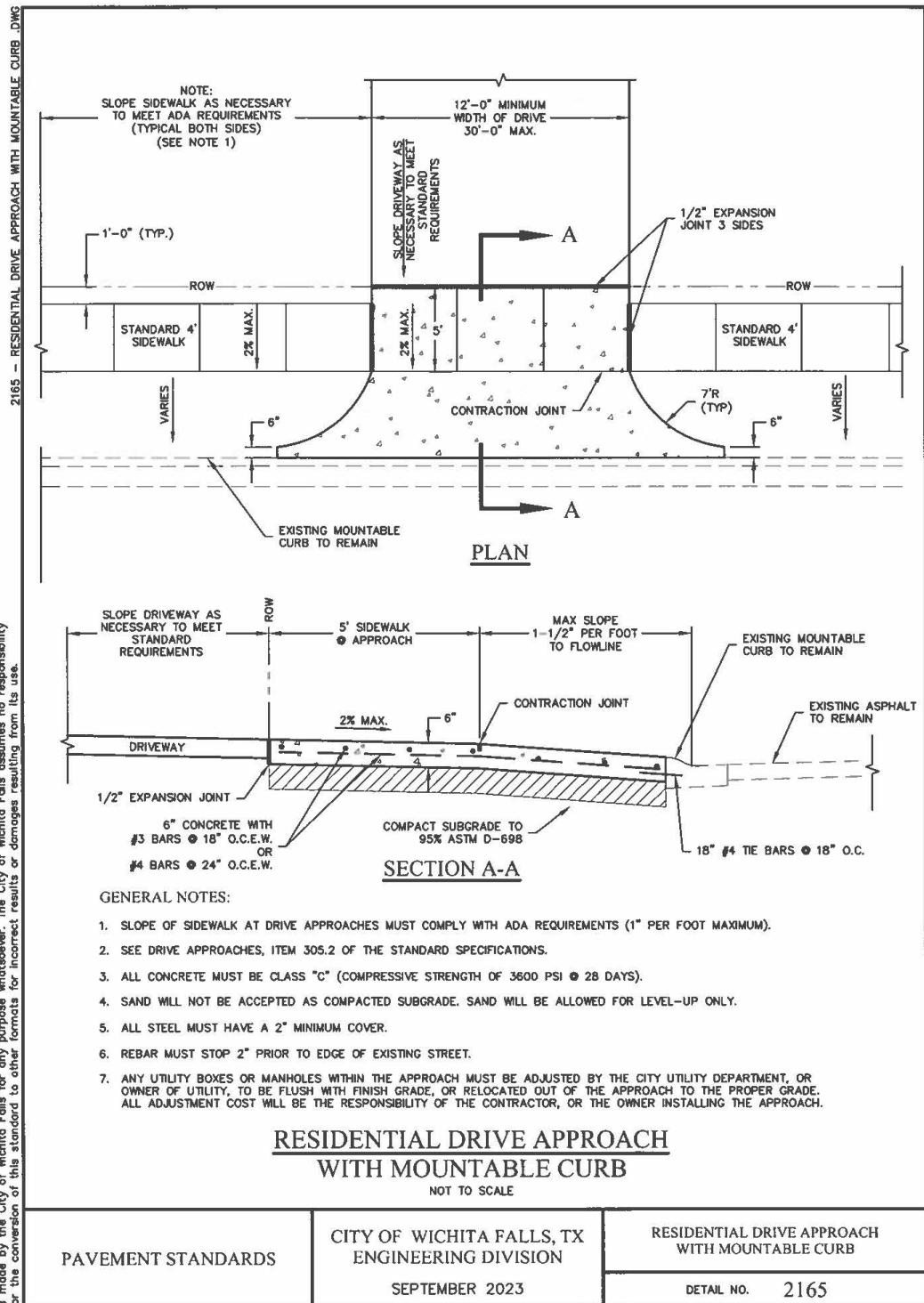


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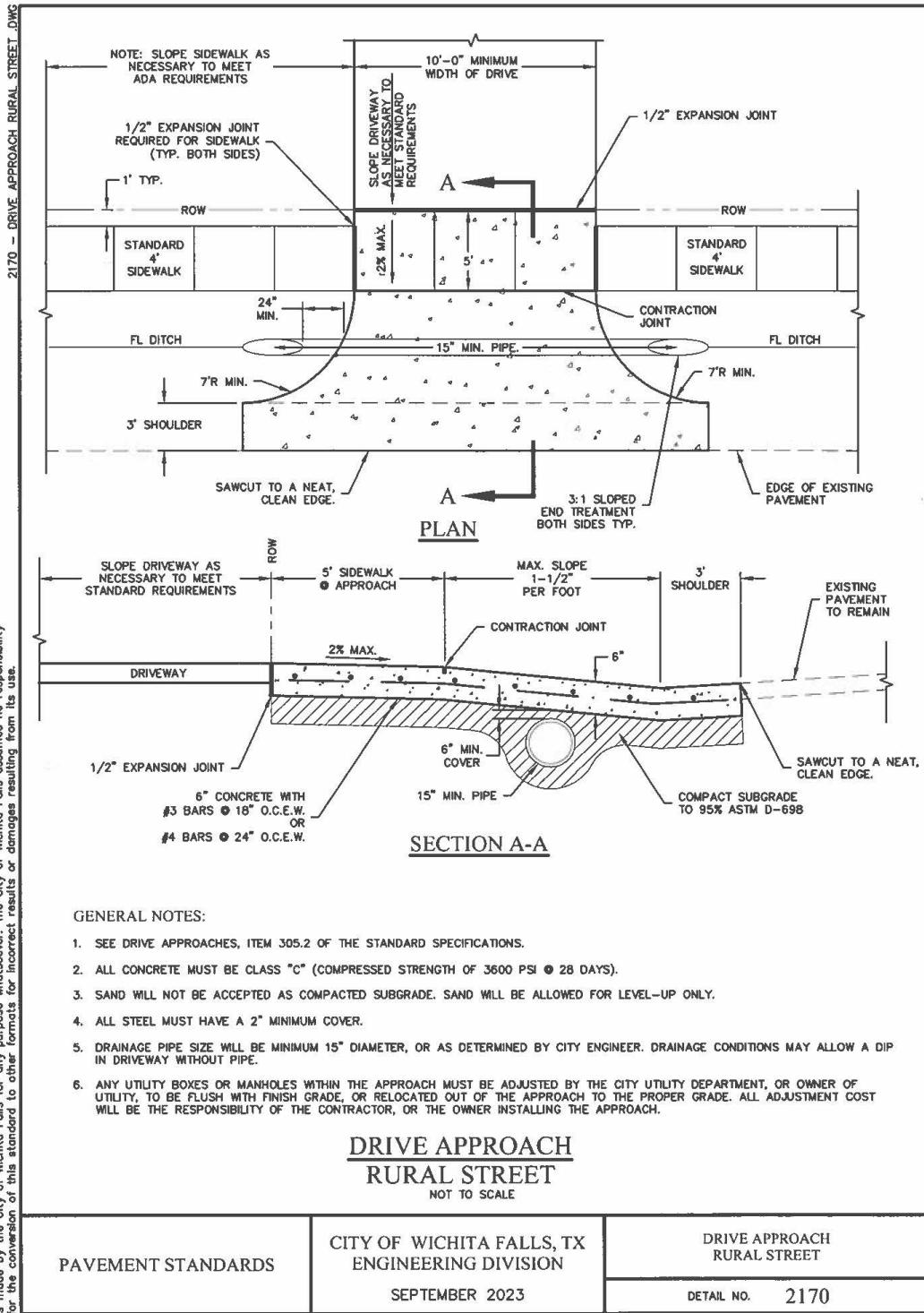




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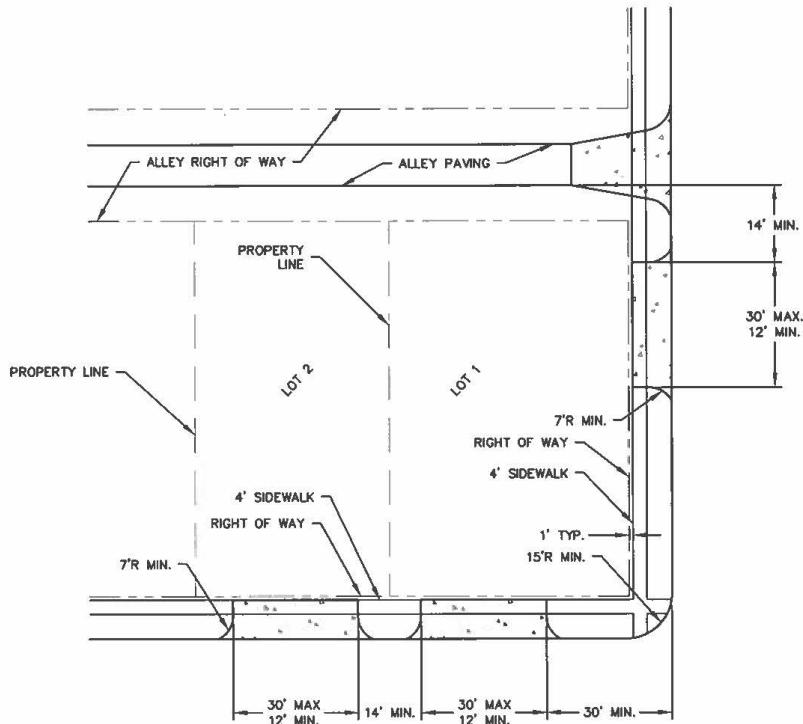


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2180 - RESIDENTIAL APPROACH LOCATIONS.DWG

NUMBER OF DRIVEWAY APPROACHES ALLOWED:

1. NOT MORE THAN TWO DRIVEWAY APPROACHES WILL BE PERMITTED ON ANY TRACT WITH A FRONTAGE OF 100 FEET OR LESS.
2. NOT MORE THAN THREE DRIVEWAY APPROACHES WILL BE PERMITTED ON ANY TRACT WITH FRONTAGE OF MORE THAN 100 FEET BUT LESS THAN 300 FEET.
3. NOT MORE THAN FOUR DRIVEWAY APPROACHES WILL BE PERMITTED ON ANY TRACT WITH A FRONTAGE OF MORE THAN 300 FEET BUT LESS THAN 600 FEET.
4. FOR TRACTS WITH FRONTAGE WITH EXCESS OF 600 FEET, ONE ADDITIONAL APPROACH MAY BE ALLOWED FOR EACH ADDITIONAL 300 FEET OF FRONTAGE IN EXCESS OF 600 FEET.



GENERAL NOTES:

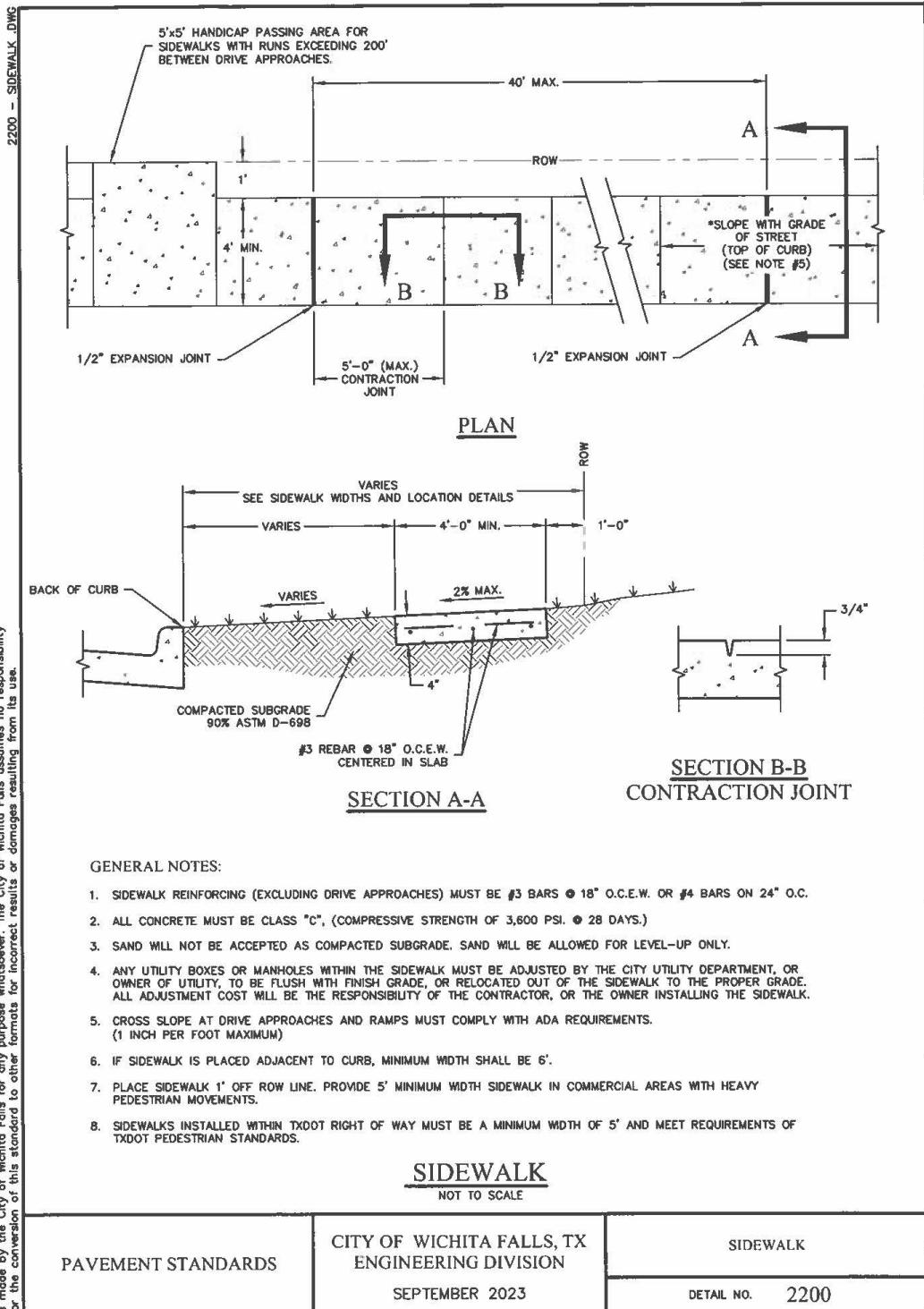
1. AT STREET INTERSECTIONS, NO CURB CUT FOR A DRIVEWAY APPROACH WILL BE PERMITTED WITHIN 30 FEET OF THE EXTENDED CURBLINE.
2. ON INTERIOR LOTS, THE TANGENT POINT OF THE DRIVEWAY CURB AT THE STREET CURBLINE MUST NOT EXTEND BEYOND A PROPERTY LINE.
3. THE WIDTH OR THROAT OF A DRIVEWAY APPROACH MUST NOT BE GREATER THAN 30 FEET FOR RESIDENTIAL USES.

**RESIDENTIAL  
APPROACH LOCATIONS**

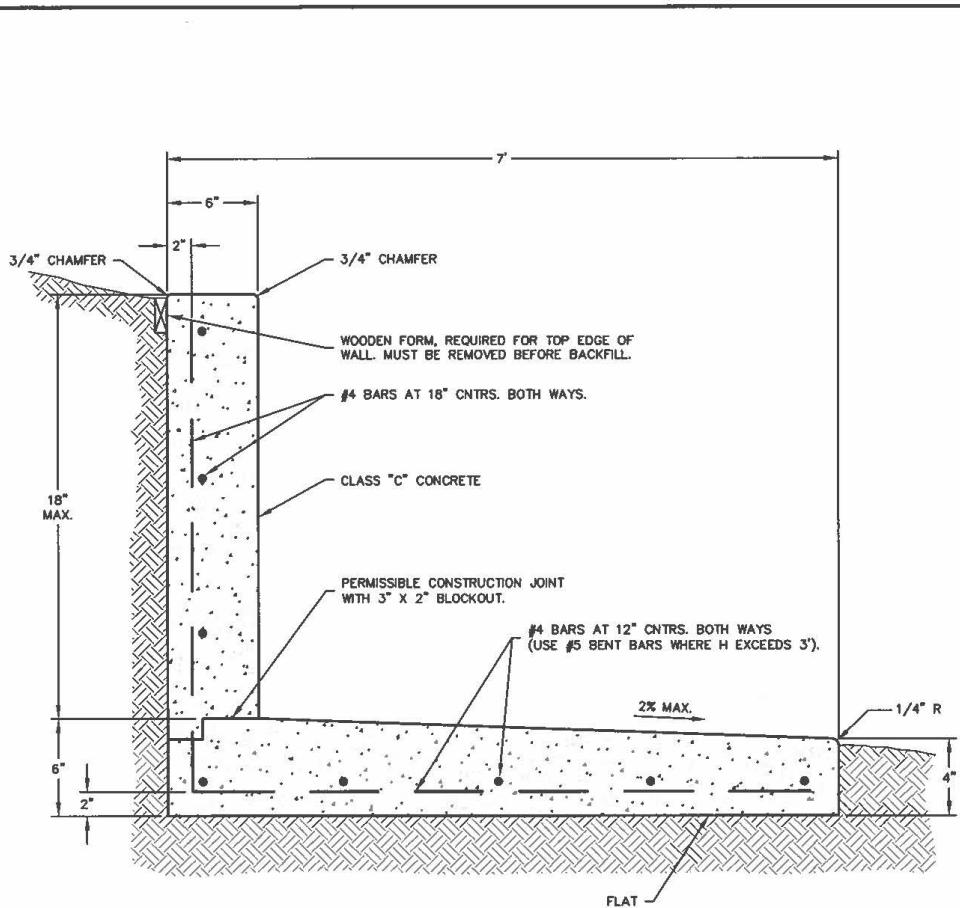
NOT TO SCALE

PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	RESIDENTIAL APPROACH LOCATIONS DETAIL NO. 2180
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GENERAL NOTES:

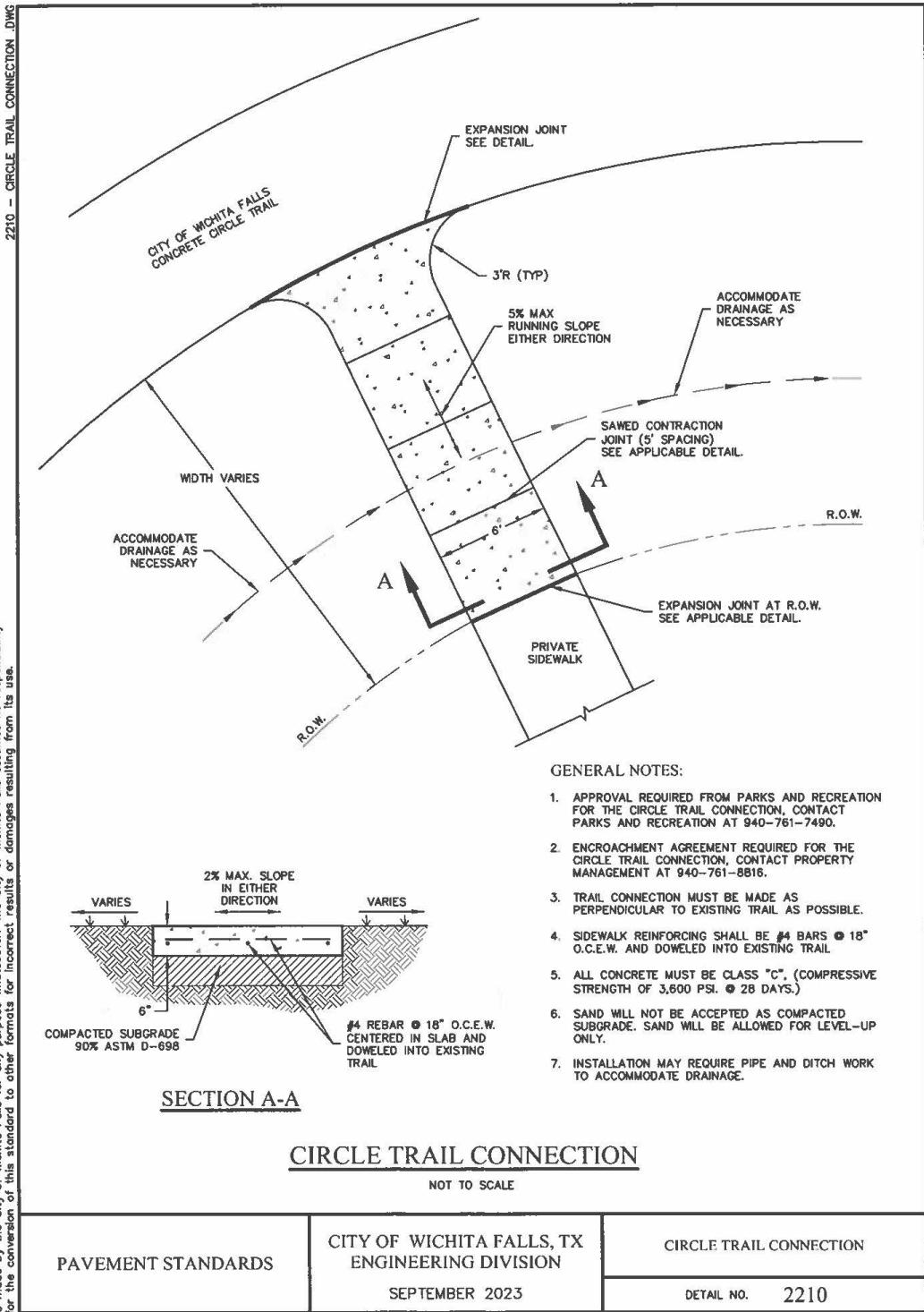
1. PROVIDE VERTICAL EXPANSION IN WALL AT 25' MAX. SPACING (USE EXPANSION JOINT DETAIL NO. 2051 WITH TxDOT TYPE A WATERSTOP AND MODIFY AS REQUIRED.)
2. WALL DESIGN ASSUMES NO SURCHARGE. A SPECIAL ENGINEERING ANALYSIS IS REQUIRED FOR OTHER CONDITIONS.
3. STRAIGHT, CLEAN EXCAVATION WALL MAY BE USED AS FORM ON BACK OF WALL. A WOODEN FORM IS REQUIRED FOR TOP EDGE OF WALL. IF BACK SIDE OF WALL DOES NOT USE EXISTING SOIL AS A FORM, BACKFILL BEHIND WALL IN 8" LIFTS COMPACTING TO 95% PER ASTM D-698.

**SIDEWALK  
WITH 18" RETAINING WALL**

NOT TO SCALE

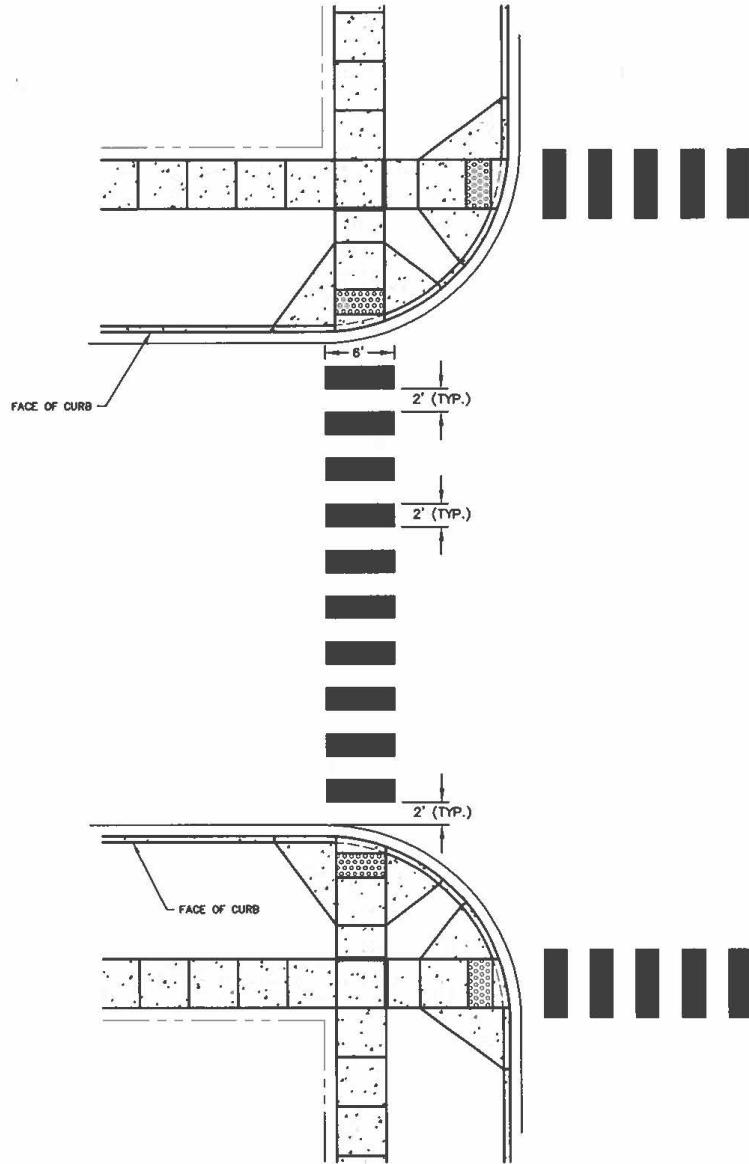
PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	SIDEWALK WITH 18" RETAINING WALL DETAIL NO. 2205
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2400 - CROSSWALK STRIPING PLAN.DWG



### CROSSWALK STRIPING PLAN

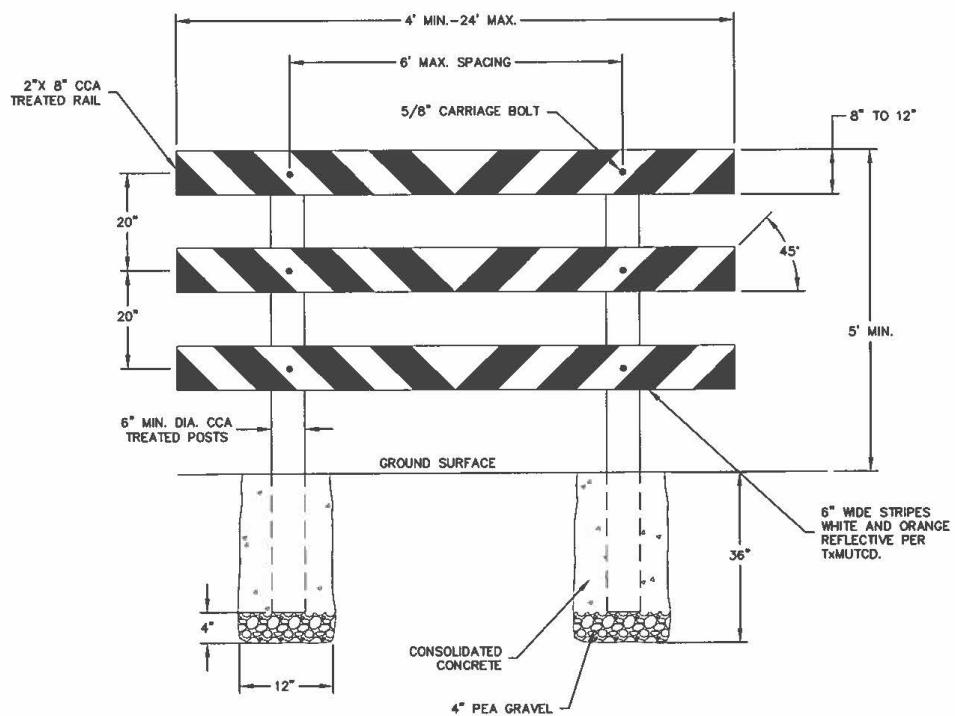
NOTE:

NOT TO SCALE

1. STRIPING MUST BE WHITE, 100 MIL THICK HOT APPLIED THERMOPLASTIC WITH DROP-ON GLASS TRAFFIC BEADS OR TYPE C PREFABRICATED PAVEMENT MARKINGS, MATERIAL, SURFACE PREPARATION, SEALER, AND INSTALLATION OF CROSSWALK PAVEMENT MARKINGS MUST BE IN ACCORDANCE WITH ITEMS 666, 668, AND 678 OF TXDOT STANDARD SPECIFICATION FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES.

PAVEMENT STANDARDS	CITY OF WICHITA FALLS, TX ENGINEERING DIVISION SEPTEMBER 2023	CROSSWALK STRIPING PLAN DETAIL NO. 2400
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**NOTE:**

1. STRIPES ON BARRICADE SHALL BE ALTERNATING WHITE AND ORANGE RETROREFLECTIVE SHEETING WITH STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION ROAD USERS ARE TO PASS. BARRICADE SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE TXMUTCD.

DEAD END STREET  
TYPE III BARRICADE DETAIL

NOT TO SCALE

<b>PAVEMENT STANDARDS</b>	<b>CITY OF WICHITA FALLS, TX ENGINEERING DIVISION</b>	<b>DEAD END STREET TYPE III BARRICADE DETAIL</b>
	<b>SEPTEMBER 2023</b>	<b>DETAIL NO. 2410</b>