

# DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS



# STANDARD CONSTRUCTION DETAILS CITY OF DALLAS, TEXAS

**DISCLAIMER:**

THIS DOCUMENT PROVIDES THE MINIMUM REQUIREMENTS FOR CONSTRUCTION WITHIN THE CITY RIGHT-OF-WAY. THE CONTRACTOR IS RESPONSIBLE TO FOLLOW THE ENGINEERING PLAN AS APPROVED BY THE CITY. IF THERE ARE ANY DISCREPANCIES BETWEEN THE APPROVED ENGINEERING PLAN AND THIS DOCUMENT, THE CONTRACTOR SHALL ALSO CONSULT WITH THE CITY PRIOR TO START OF THE CONSTRUCTION AND FOLLOW THE CITY'S DIRECTION.

**REVISED FEBRUARY 2026**

- JRCP STEEL SIZE & SPACING
- ALLOWABLE CROSS SLOPES
- TXDOT CRCP DETAILS
- VALLEY GUTTER
- ALLEY TURNOUTS WIDENING AND DETAILS

**REVISED SEPTEMBER 2022**

**REVISED DECEMBER 2021**

**APPROVED:**

THIS THE 25 DAY OF FEBRUARY, 2026

*Sophia Harvey*

SOPHIA I. HARVEY, P.E.  
CITY ENGINEER OF TRANSPORTATION AND PUBLIC WORKS

**APPROVED:**

THIS THE 25 DAY OF FEBRUARY, 2026

*G. A. Mahan*

GHASSAN KHANKARLI, Ph.D., P.E.  
DIRECTOR OF TRANSPORTATION AND PUBLIC WORKS

**FILE 251D-1**

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SLOTTED DRAINS IN STREETS AND ALLEYS	2005
CONCRETE PIPE INSTALLATION	2006
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## TxDOT DESIGN DIVISION STANDARD

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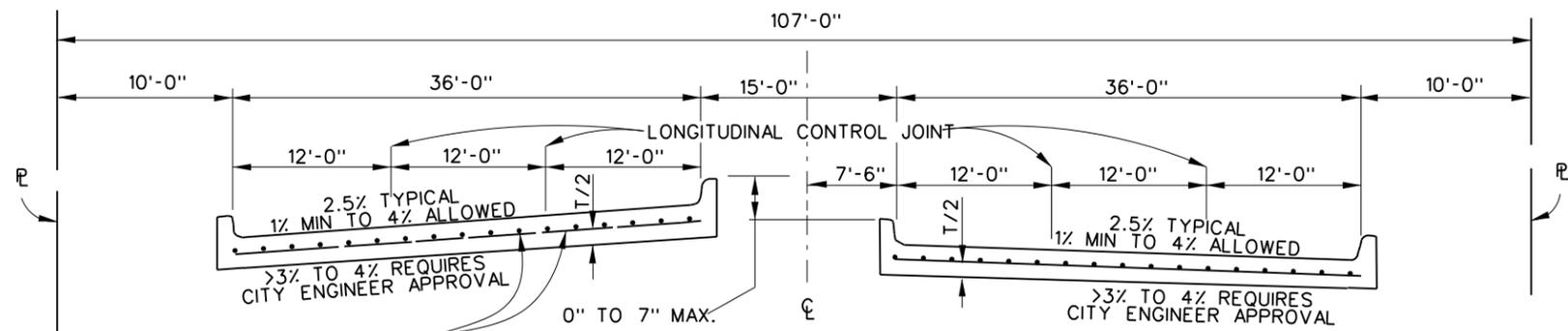
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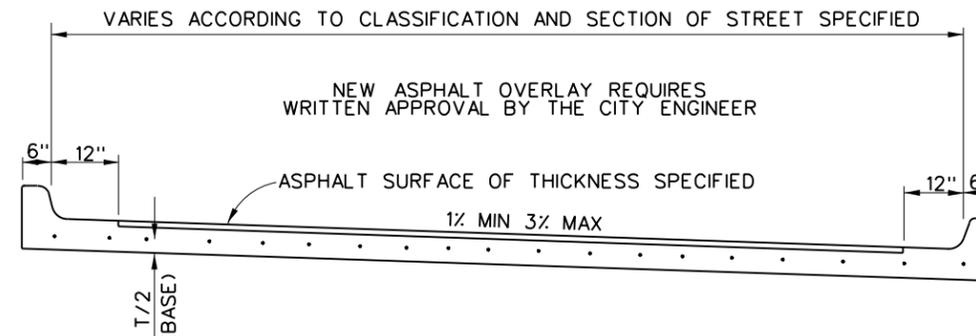
DRAWINGS NOT TO SCALE  
REVISED: FEBRUARY 2026

SHEET No.  
TC01

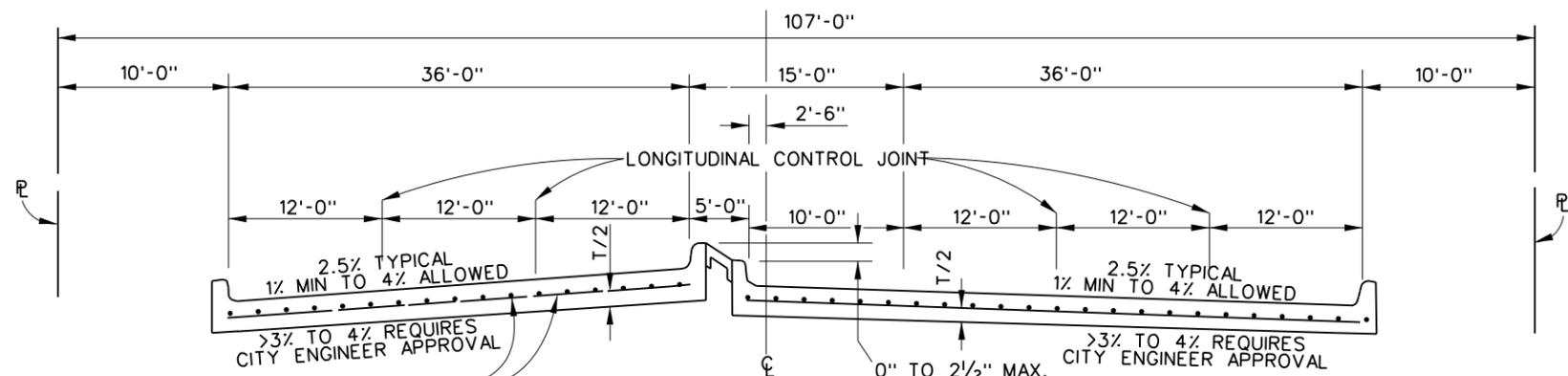


NO. 4 BARS ON 12" CENTERS EACH WAY FOR T < 10"  
 NO. 4 BARS ON 9" CENTERS EACH WAY FOR T > 10"  
 IF T > 12" DESIGN ENGINEER MUST SPECIFY REBAR SIZE

REGULAR SECTION  
 PRINCIPAL ARTERIAL STANDARD (DIVIDED) S-6-D  
 107' ROW



SPECIAL PAVING SECTION  
 SCHEMATIC HALF-SECTION  
 REINFORCED CONCRETE BASE WITH INTEGRAL CURB  
 AND GUTTER AND ASPHALT SURFACE COURSE

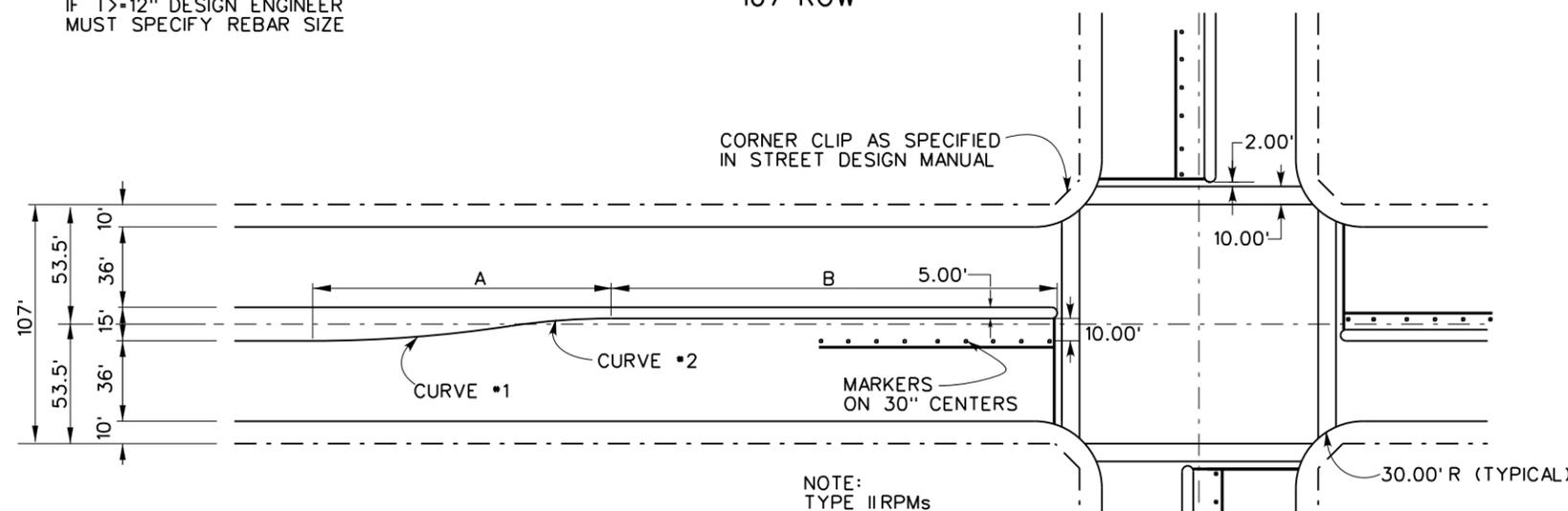


NO. 4 BARS ON 12" CENTERS EACH WAY FOR T < 10"  
 NO. 4 BARS ON 9" CENTERS EACH WAY FOR T > 10"  
 IF T > 12" DESIGN ENGINEER MUST SPECIFY REBAR SIZE

LEFT TURN SECTION  
 PRINCIPAL ARTERIAL STANDARD (DIVIDED) S-6-D  
 107' ROW

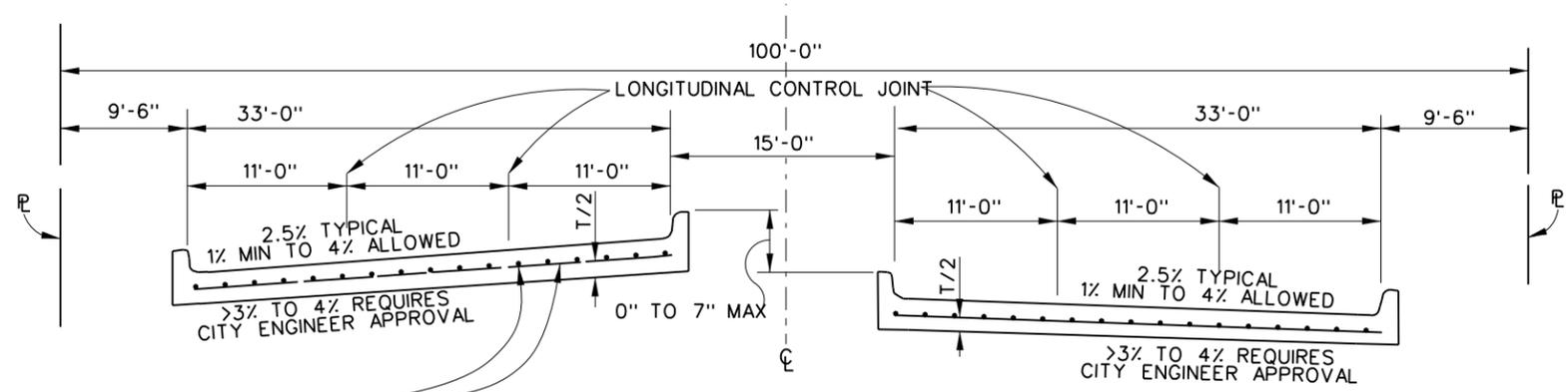
NOTES:

1. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.
2. GENERAL NOTES PROVIDED ON SHEET No. 1006 APPLY.
3. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT OR NEAR THE RADIUS POINTS OF ALL INTERSECTIONS, AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH, OR AT MAX. DISTANCE OF 150 FT. REDWOOD EXPANSION JOINT WILL CONTINUE THROUGH MEDIAN PAVING AND SIDEWALK AND WALL WHEREVER APPLICABLE.
4. FOR ANY THICKNESS MORE THAN 12" THE DESIGN ENGINEER MUST SPECIFY THE REBAR SIZE.
5. CONCRETE SHALL BE 4000 PSI WITH MACHINE FINISH AND 4500 PSI BY HAND FINISH.
6. FOR ADDITIONAL REBAR INFORMATION SEE SHEET 1007B.
7. THE STANDARD CROSSWALK WIDTH IS 10' WITHIN THE CITY, BUT MAY BE SMALLER NO LESS THAN 6' FOR UNSIGNALIZED LOCATIONS IF APPROVED BY THE CITY TRAFFIC ENGINEER. CROSSWALK WIDTHS LARGER THAN 10' MAY BE REQUIRED BASED ON NEED.
8. SWEEP PATH ANALYSIS OF THE DESIGN VEHICLE AND CONTROL VEHICLE SHALL BE USED TO DETERMINE LANE WIDTH(S). SWEEP PATH OF THE DESIGN VEHICLE, POSITIONED AT THE CENTER OF THE LANE, SHALL NOT ENCROACH INTO ADJACENT LANES DURING A LANE SHIFT OR A TURNING MANEUVER.
9. THE TRANSITION LENGTH A, MINIMUM STORAGE B, CURVE 1 AND CURVE 2 RADII MUST BE OBTAINED FROM THE GEOMETRIC DESIGN SECTION OF THE MOST CURRENT STREET DESIGN MANUAL.



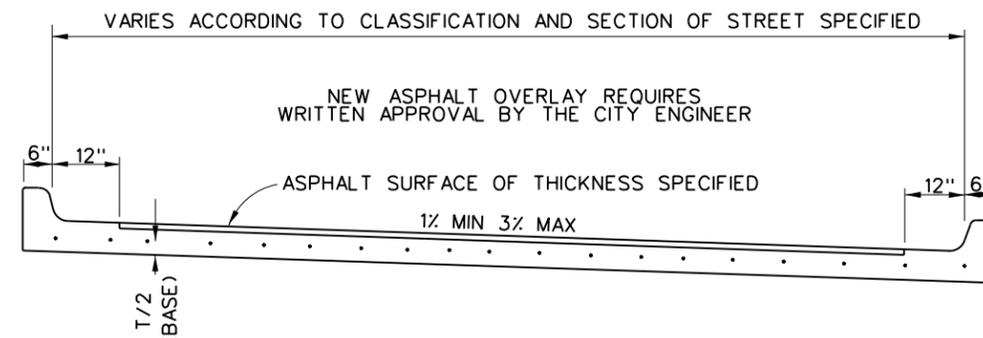
PLAN VIEW  
 S-6-D (A) DIVIDED SECTION ~ 107 ROW  
 PRINCIPAL ARTERIAL STANDARD DIVIDED

<b>PAVING DETAILS</b>	
JRCP PAVING SECTIONS AND STREET LAYOUTS WITH MEDIAN DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1001



REGULAR SECTION  
PRINCIPAL ARTERIAL STANDARD (DIVIDED) M-6-D (A)  
100' ROW

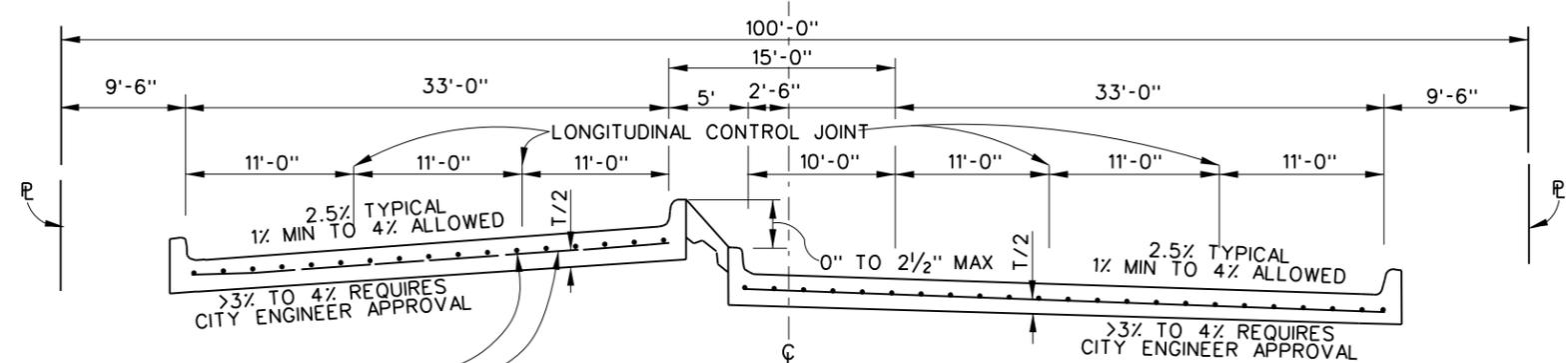
NO. 4 BARS ON 12" CENTERS  
EACH WAY FOR T < 10"  
NO. 4 BARS ON 9" CENTERS  
EACH WAY FOR T > 10"  
IF T > 12" DESIGN ENGINEER  
MUST SPECIFY REBAR SIZE



SPECIAL PAVING SECTION  
SCHEMATIC HALF-SECTION  
REINFORCED CONCRETE BASE WITH INTEGRAL CURB  
AND GUTTER AND ASPHALT SURFACE COURSE

NOTES:

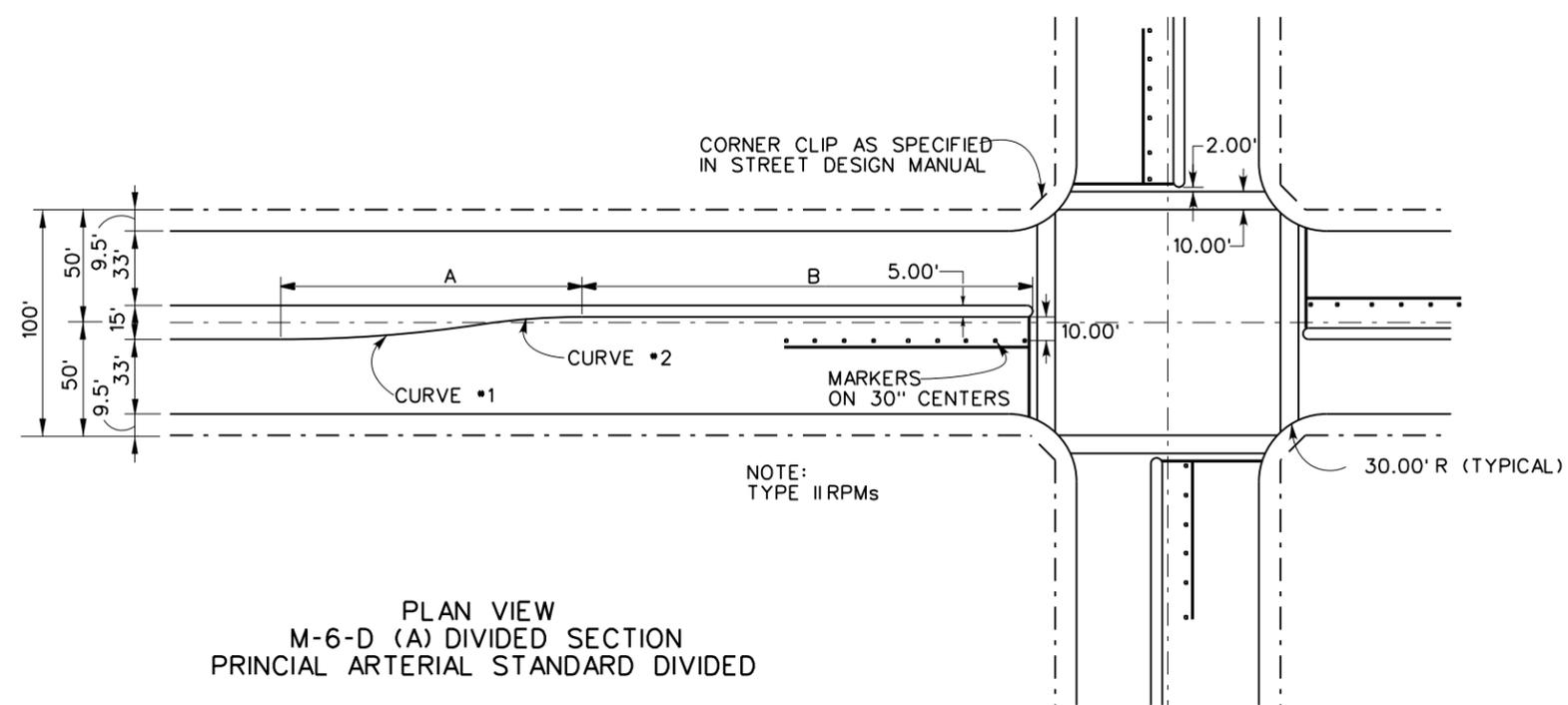
1. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.
2. GENERAL NOTES PROVIDED ON SHEET No. 1006 APPLY.
3. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT OR NEAR THE RADIUS POINTS OF ALL INTERSECTIONS, AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH, OR AT MAX. DISTANCE OF 150 FT. REDWOOD EXPANSION JOINT WILL CONTINUE THROUGH MEDIAN PAVING AND SIDEWALK AND WALL WHEREVER APPLICABLE.
4. FOR ANY THICKNESS MORE THAN 12" THE DESIGN ENGINEER MUST SPECIFY THE REBAR SIZE.
5. CONCRETE SHALL BE 4000 PSI WITH MACHINE FINISH AND 4500 PSI BY HAND FINISH.
6. FOR ADDITIONAL REBAR INFORMATION SEE SHEET 1007B.
7. THE STANDARD CROSSWALK WIDTH IS 10' WITHIN THE CITY, BUT MAY BE SMALLER NO LESS THAN 6' FOR UNSIGNALIZED LOCATIONS IF APPROVED BY THE CITY TRAFFIC ENGINEER. CROSSWALK WIDTHS LARGER THAN 10' MAY BE REQUIRED BASED ON NEED.
8. SWEEP PATH ANALYSIS OF THE DESIGN VEHICLE AND CONTROL VEHICLE SHALL BE USED TO DETERMINE LANE WIDTH(S). SWEEP PATH OF THE DESIGN VEHICLE, POSITIONED AT THE CENTER OF THE LANE, SHALL NOT ENCR OACH INTO ADJACENT LANES DURING A LANE SHIFT OR A TURNING MANEUVER.
9. THE TRANSITION LENGTH A, MINIMUM STORAGE B, CURVE 1 AND CURVE 2 RADII MUST BE OBTAINED FROM THE GEOMETRIC DESIGN SECTION OF THE MOST CURRENT STREET DESIGN MANUAL.



LEFT TURN SECTION  
PRINCIPAL ARTERIAL STANDARD (DIVIDED) M-6-D (A)  
100' ROW

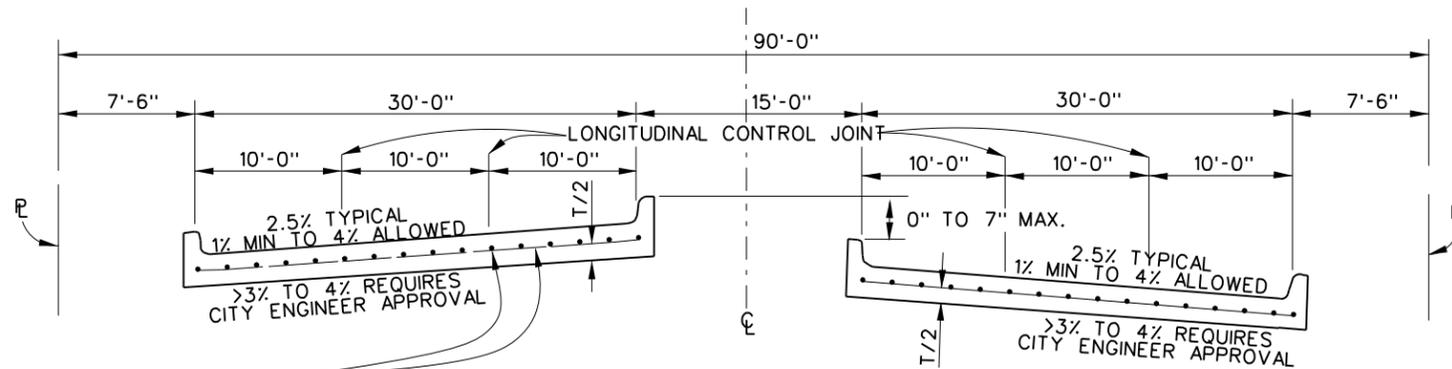
NO. 4 BARS ON 12" CENTERS  
EACH WAY FOR T < 10"  
NO. 4 BARS ON 9" CENTERS  
EACH WAY FOR T > 10"  
IF T > 12" DESIGN ENGINEER  
MUST SPECIFY REBAR SIZE

SEE SHEET No. 1007 FOR  
ALTERNATE DESIGN USING  
PARABOLIC SECTIONS

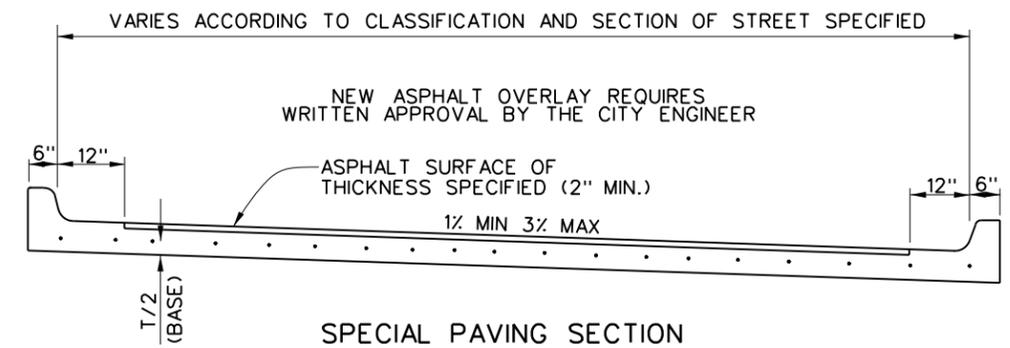


PLAN VIEW  
M-6-D (A) DIVIDED SECTION  
PRINCIPAL ARTERIAL STANDARD DIVIDED

<b>PAVING DETAILS</b>	
JRCP PAVING SECTIONS AND STREET LAYOUTS WITH MEDIAN DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1001A

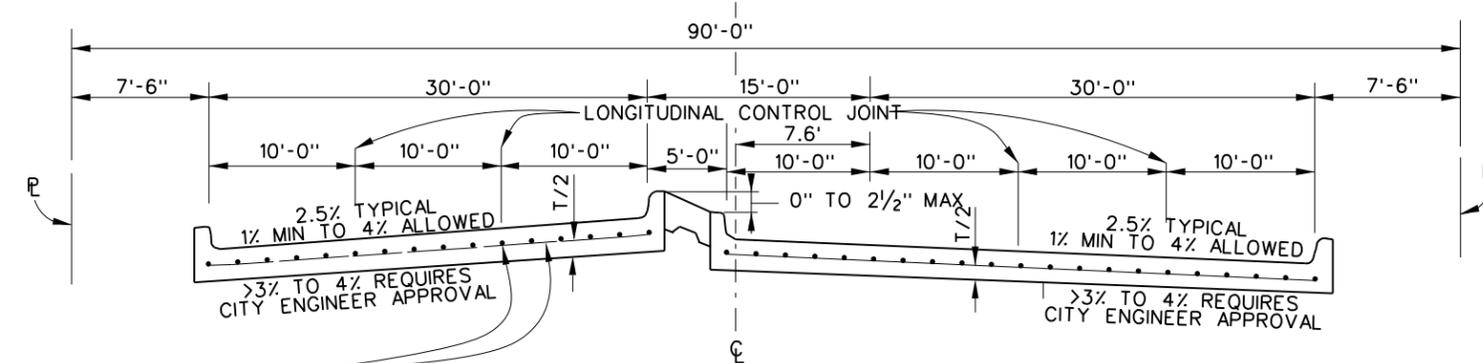


REGULAR SECTION  
PRINCIPAL ARTERIAL STANDARD (DIVIDED) M-6-D (B)  
90' ROW



SPECIAL PAVING SECTION  
SCHEMATIC HALF-SECTION  
REINFORCED CONCRETE BASE WITH INTEGRAL CURB  
AND GUTTER AND ASPHALT SURFACE COURSE

NO. 4 BARS ON 12" CENTERS  
EACH WAY FOR T<10"  
NO. 4 BARS ON 9" CENTERS  
EACH WAY FOR T>=10"  
IF T>12" DESIGN ENGINEER  
MUST SPECIFY REBAR SIZE

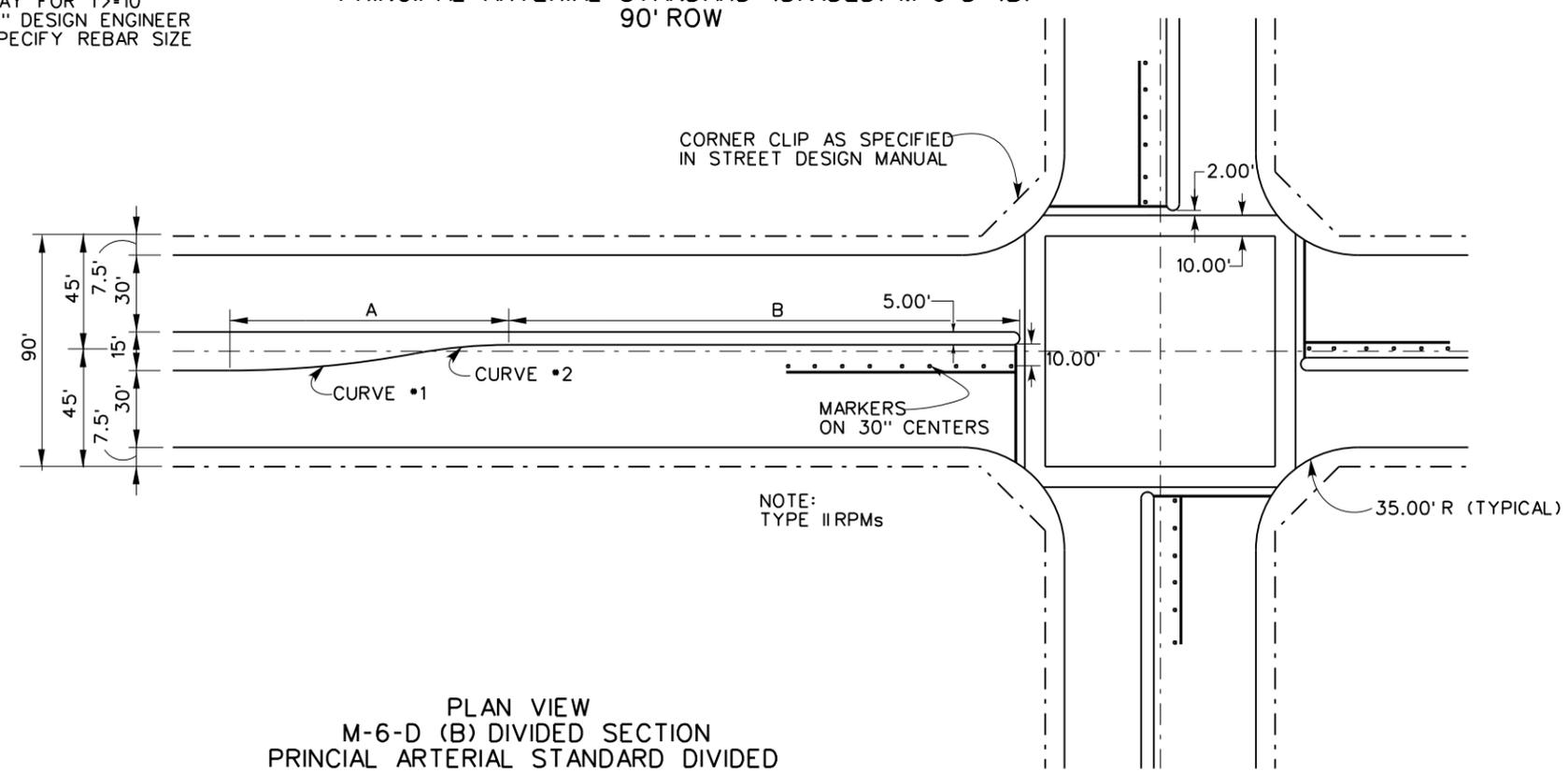


LEFT TURN SECTION  
PRINCIPAL ARTERIAL STANDARD (DIVIDED) M-6-D (B)  
90' ROW

NO. 4 BARS ON 12" CENTERS  
EACH WAY FOR T<10"  
NO. 4 BARS ON 9" CENTERS  
EACH WAY FOR T>=10"  
IF T>12" DESIGN ENGINEER  
MUST SPECIFY REBAR SIZE

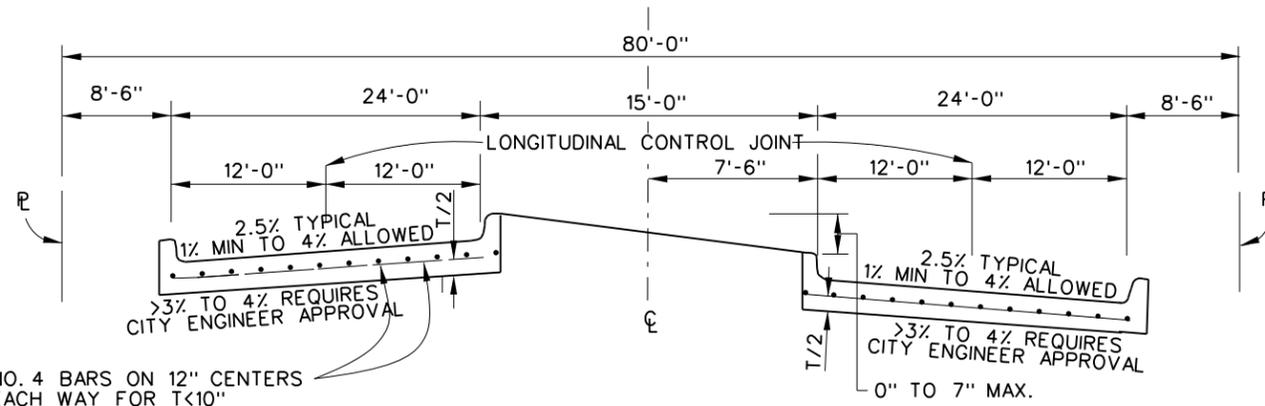
NOTES:

1. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.
2. GENERAL NOTES PROVIDED ON SHEET No. 1006 APPLY.
3. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT OR NEAR THE RADIUS POINTS OF ALL INTERSECTIONS, AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH, OR AT MAX. DISTANCE OF 150 FT. REDWOOD EXPANSION JOINT WILL CONTINUE THROUGH MEDIAN PAVING AND SIDEWALK AND WALL WHEREVER APPLICABLE.
4. FOR ANY THICKNESS MORE THAN 12" THE DESIGN ENGINEER MUST SPECIFY THE REBAR SIZE.
5. CONCRETE SHALL BE 4000 PSI WITH MACHINE FINISH AND 4500 PSI BY HAND FINISH.
6. FOR ADDITIONAL REBAR INFORMATION SEE SHEET 1007B.
7. THE STANDARD CROSSWALK WIDTH IS 10' WITHIN THE CITY, BUT MAY BE SMALLER NO LESS THAN 6' FOR UNSIGNALIZED LOCATIONS IF APPROVED BY THE CITY TRAFFIC ENGINEER. CROSSWALK WIDTHS LARGER THAN 10' MAY BE REQUIRED BASED ON NEED.
8. SWEEP PATH ANALYSIS OF THE DESIGN VEHICLE AND CONTROL VEHICLE SHALL BE USED TO DETERMINE LANE WIDTH(S). SWEEP PATH OF THE DESIGN VEHICLE, POSITIONED AT THE CENTER OF THE LANE, SHALL NOT ENCRUCH INTO ADJACENT LANES DURING A LANE SHIFT OR A TURNING MANEUVER.
9. THE TRANSITION LENGTH A, MINIMUM STORAGE B, CURVE 1 AND CURVE 2 RADII MUST BE OBTAINED FROM THE GEOMETRIC DESIGN SECTION OF THE MOST CURRENT STREET DESIGN MANUAL.

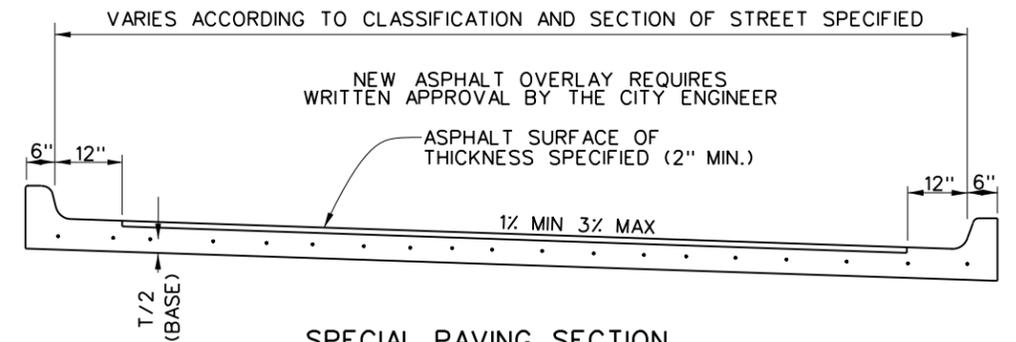


PLAN VIEW  
M-6-D (B) DIVIDED SECTION  
PRINCIPAL ARTERIAL STANDARD DIVIDED

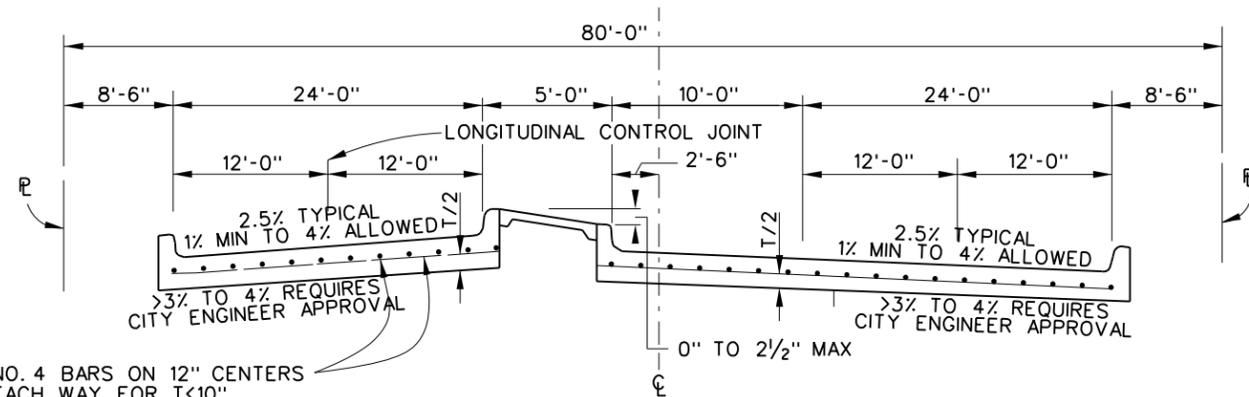
PAVING DETAILS	
JRCP PAVING SECTIONS AND STREET LAYOUTS WITH MEDIAN DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1001B



NO. 4 BARS ON 12" CENTERS  
EACH WAY FOR T < 10"  
NO. 4 BARS ON 9" CENTERS  
EACH WAY FOR T > 10"  
IF T > 12" DESIGN ENGINEER  
MUST SPECIFY REBAR SIZE OR MINOR ARTERIAL STANDARD (DIVIDED) S-4-D  
80' ROW



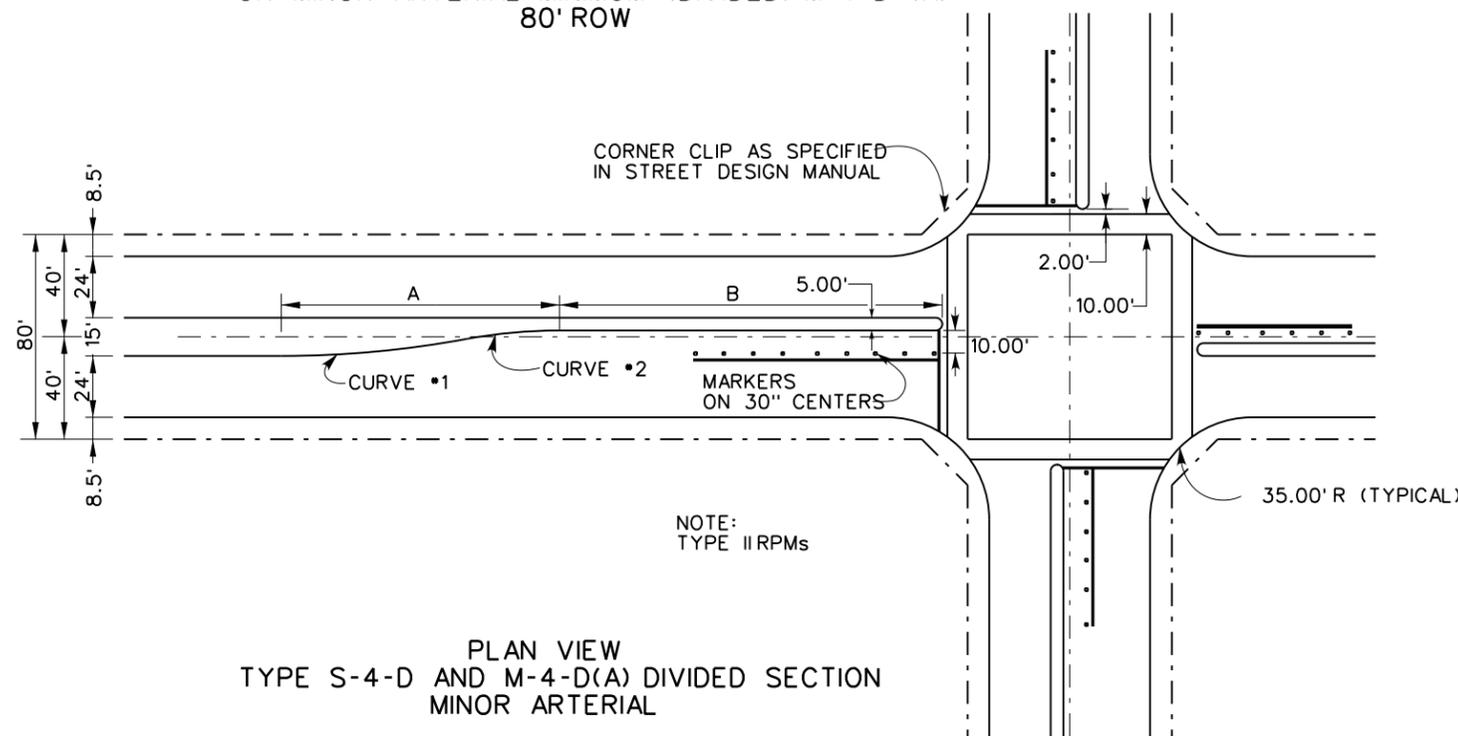
NEW ASPHALT OVERLAY REQUIRES  
WRITTEN APPROVAL BY THE CITY ENGINEER  
ASPHALT SURFACE OF  
THICKNESS SPECIFIED (2" MIN.)  
1% MIN 3% MAX  
T/2 (BASE)  
SPECIAL PAVING SECTION  
SCHEMATIC HALF-SECTION  
REINFORCED CONCRETE BASE WITH INTEGRAL CURB  
AND GUTTER AND ASPHALT SURFACE COURSE



NO. 4 BARS ON 12" CENTERS  
EACH WAY FOR T < 10"  
NO. 4 BARS ON 9" CENTERS  
EACH WAY FOR T > 10"  
IF T > 12" DESIGN ENGINEER  
MUST SPECIFY REBAR SIZE  
LEFT TURN SECTION  
MINOR ARTERIAL STANDARD (DIVIDED) S-4-D  
OR MINOR ARTERIAL MINIMUM (DIVIDED) M-4-D (A)  
80' ROW

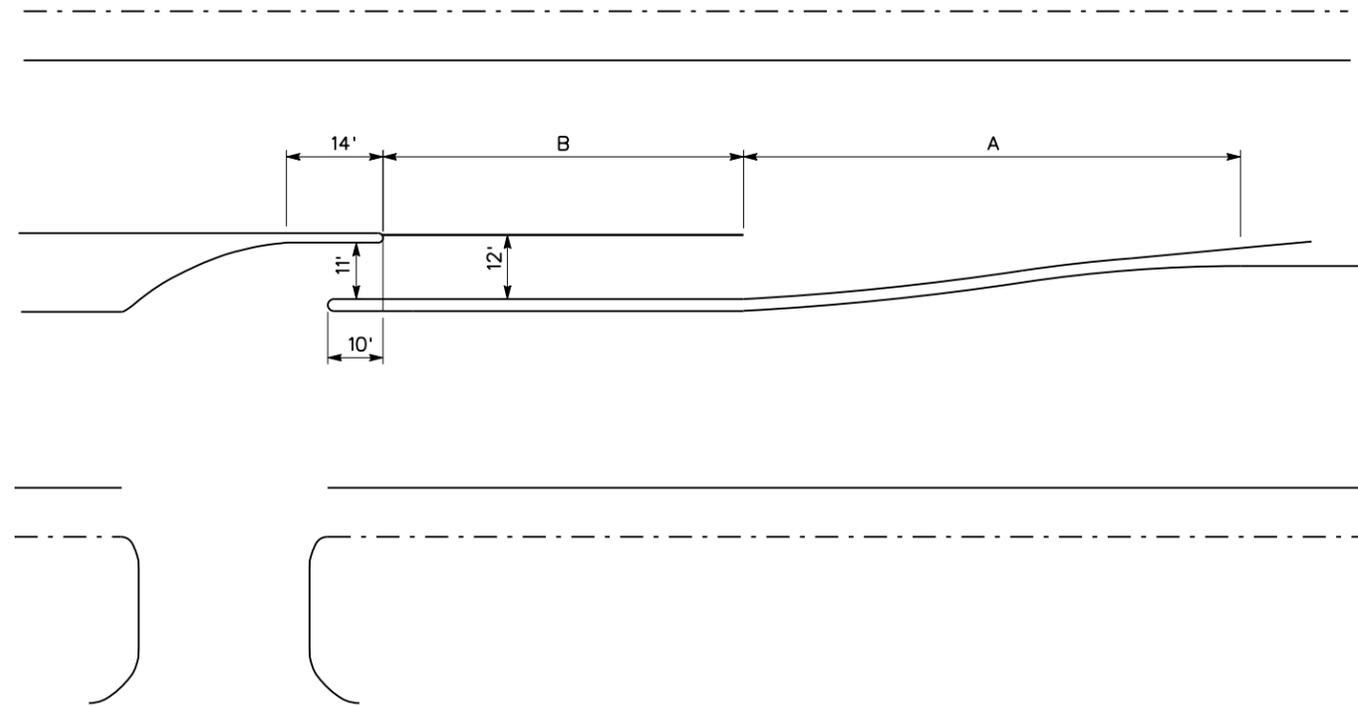
NOTES:

1. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.
2. GENERAL NOTES PROVIDED ON SHEET No. 1006 APPLY.
3. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT OR NEAR THE RADIUS POINTS OF ALL INTERSECTIONS, AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH, OR AT MAX. DISTANCE OF 150 FT. REDWOOD EXPANSION JOINT WILL CONTINUE THROUGH MEDIAN PAVING AND SIDEWALK AND WALL WHEREVER APPLICABLE.
4. FOR ANY THICKNESS MORE THAN 12" THE DESIGN ENGINEER MUST SPECIFY THE REBAR SIZE.
5. CONCRETE SHALL BE 4000 PSI WITH MACHINE FINISH AND 4500 PSI BY HAND FINISH.
6. FOR ADDITIONAL REBAR INFORMATION SEE SHEET 1007B.
7. THE STANDARD CROSSWALK WIDTH IS 10' WITHIN THE CITY, BUT MAY BE SMALLER NO LESS THAN 6' FOR UNSIGNALIZED LOCATIONS IF APPROVED BY THE CITY TRAFFIC ENGINEER. CROSSWALK WIDTHS LARGER THAN 10' MAY BE REQUIRED BASED ON NEED.
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9. THE TRANSITION LENGTH A, MINIMUM STORAGE B, CURVE 1 AND CURVE 2 RADII MUST BE OBTAINED FROM THE GEOMETRIC DESIGN SECTION OF THE MOST CURRENT STREET DESIGN MANUAL.



NOTE:  
TYPE II RPMs  
CORNER CLIP AS SPECIFIED  
IN STREET DESIGN MANUAL  
MARKERS  
ON 30" CENTERS  
35.00' R (TYPICAL)  
PLAN VIEW  
TYPE S-4-D AND M-4-D(A) DIVIDED SECTION  
MINOR ARTERIAL

<b>PAVING DETAILS</b>	
JRCP PAVING SECTIONS AND STREET LAYOUTS WITH MEDIAN DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1001C

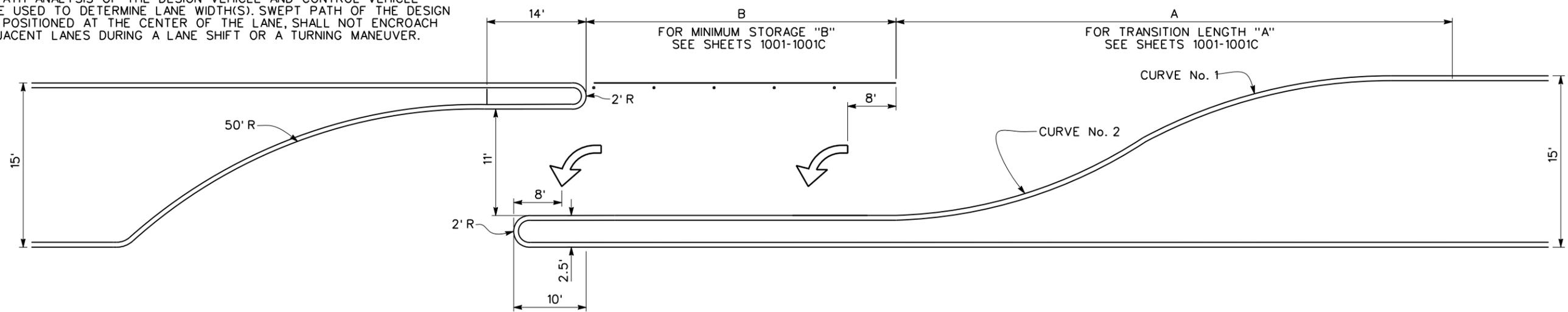


**HOODED LEFT TURN LANE**

SEE DETAIL BELOW

**NOTES:**

1. ALL PAVEMENT MARKINGS SHOULD FOLLOW STANDARD LEFT TURN POCKETS INCLUDING 6" SOLID WHITE LANE LINE STATING APPROX. 15' FROM PC WITH 4" TYPE IIC/R RPM ON 30" C-C.
2. ADDITIONAL TRAFFIC SIGNS MAY BE CONSIDERED TO PREVENT WRONG WAY TRAFFIC.
3. FOR CURVES 1 AND 2 REFER TO SHEET No. 1001-1001C
4. FOR DISTANCING BETWEEN ARROWS CONSULT WITH THE TRANSPORTATION DEPARTMENT.
5. SWEEP PATH ANALYSIS OF THE DESIGN VEHICLE AND CONTROL VEHICLE SHALL BE USED TO DETERMINE LANE WIDTH(S). SWEEP PATH OF THE DESIGN VEHICLE, POSITIONED AT THE CENTER OF THE LANE, SHALL NOT ENCROACH INTO ADJACENT LANES DURING A LANE SHIFT OR A TURNING MANEUVER.



**HOODED LEFT TURN LANE  
DETAIL**

**PAVING DETAILS**

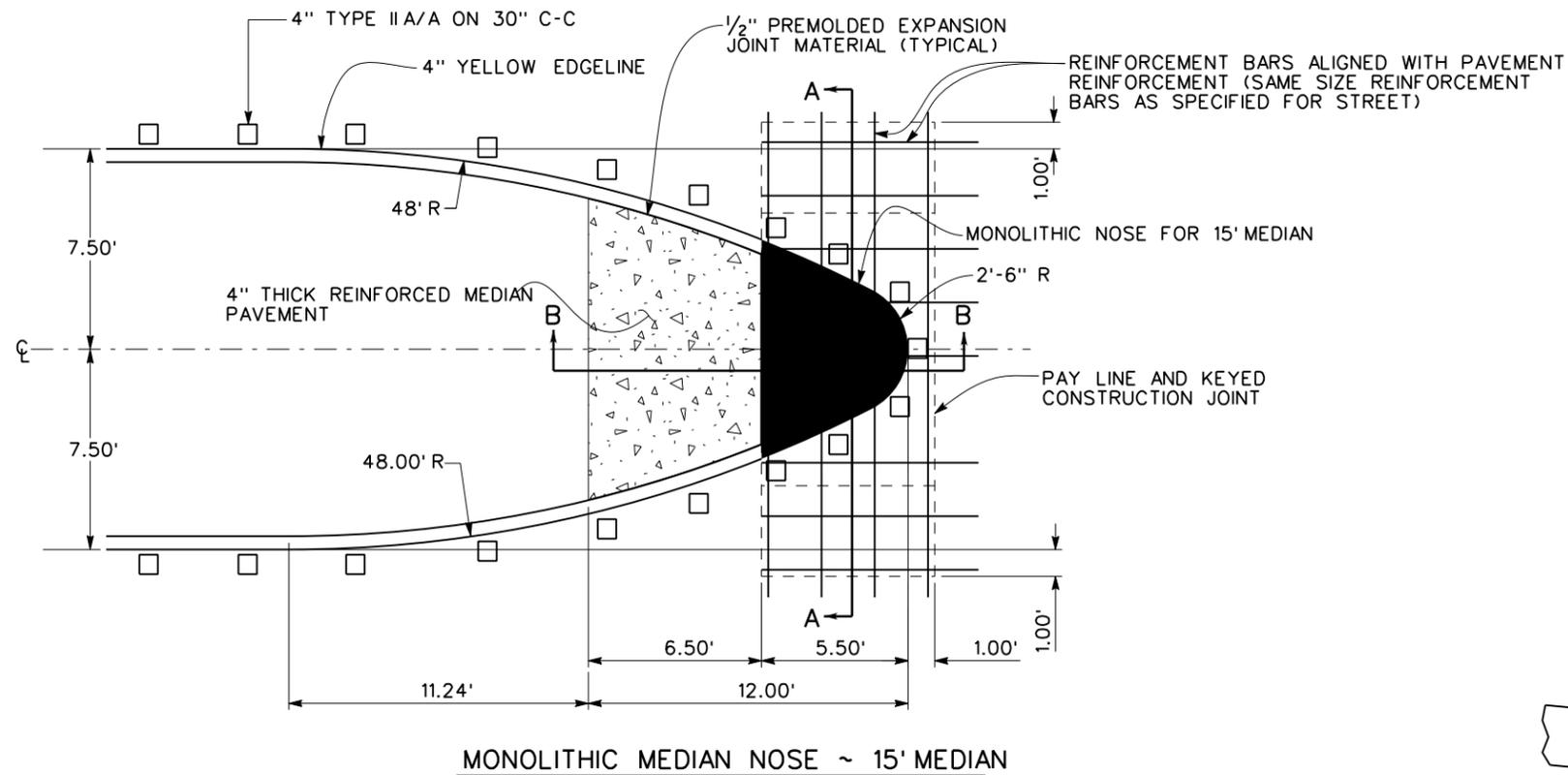
HOODED LEFT TURN LANE



DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

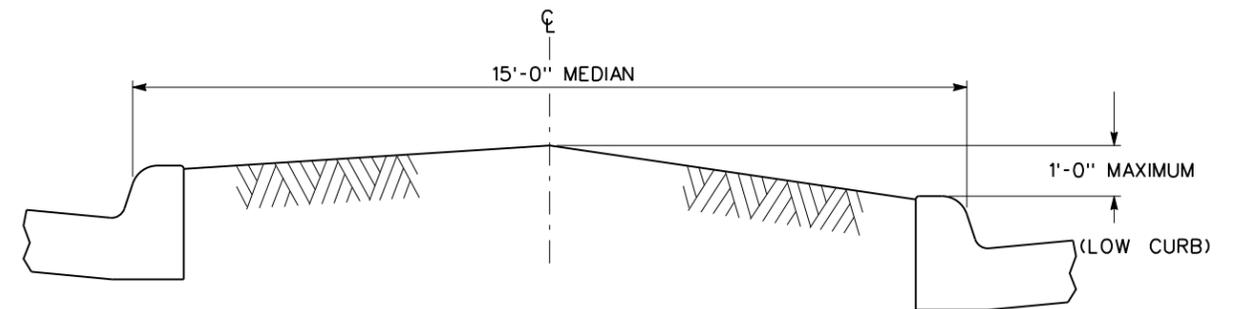
SHEET No.  
1001D



MONOLITHIC MEDIAN NOSE ~ 15' MEDIAN

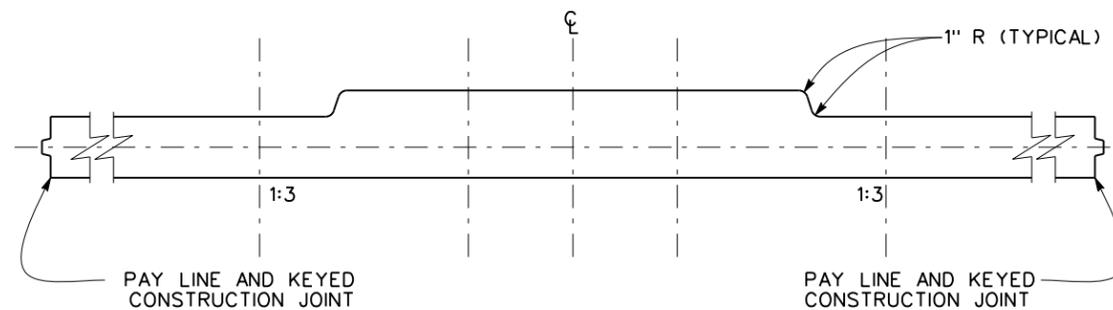
**NOTES:**

1. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.
2. GENERAL NOTES PROVIDED ON SHEET No. 1006 APPLY.
3. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT OR NEAR THE RADIUS POINTS OF ALL INTERSECTIONS, AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH, OR AT MAX. DISTANCE OF 150 FT. REDWOOD EXPANSION JOINT WILL CONTINUE THROUGH MEDIAN PAVING AND SIDEWALK AND WALL WHEREVER APPLICABLE.
4. ALL MARKERS, MEDIAN NOSE BUTTONS AND MEDIAN EDGELINES SHALL BE INSTALLED AND ORIENTED AS SHOWN ON TYPICAL PAVEMENT MARKINGS DETAILS SHEET.



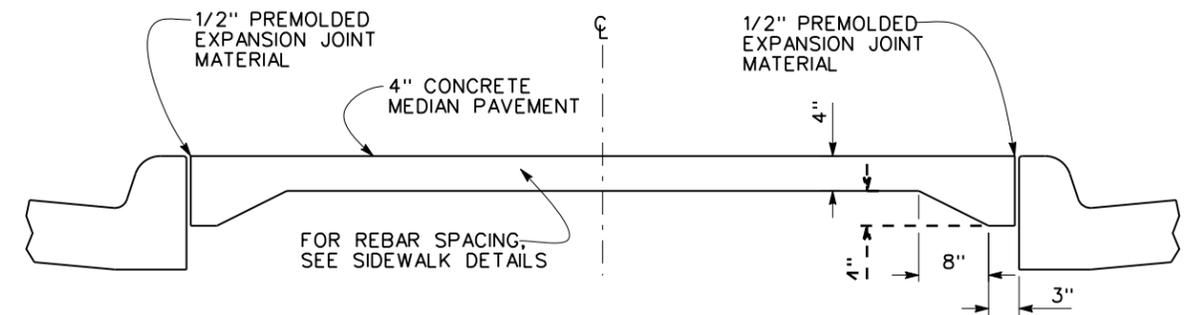
NOTE:  
BACK-FILL FOR MEDIAN SHALL CONSIST OF EXCESS EXCAVATION. THERE SHALL BE NO PAY ITEM FOR ANY FILL MATERIAL PLACED WITHIN THE MEDIAN. MAXIMUM FILL SHALL NOT EXCEED 1'-0" AND SHALL BE CROWNED IN THE MIDDLE FOR PROPER DRAINAGE.

15 FOOT WIDE MEDIAN FILL

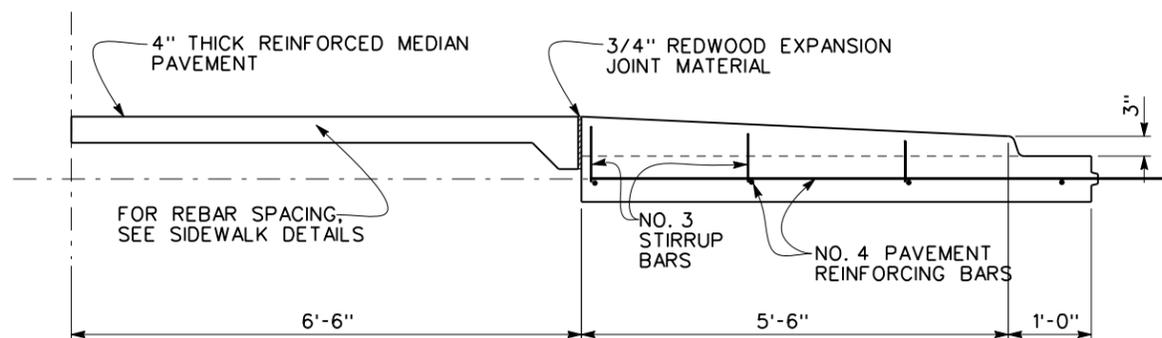


MONOLITHIC MEDIAN NOSE ~ SECTION A-A

NOTE:  
SUBGRADE - COMPACT TO 98% STANDARD PROCTOR DENSITY AS DIRECTED BY CITY



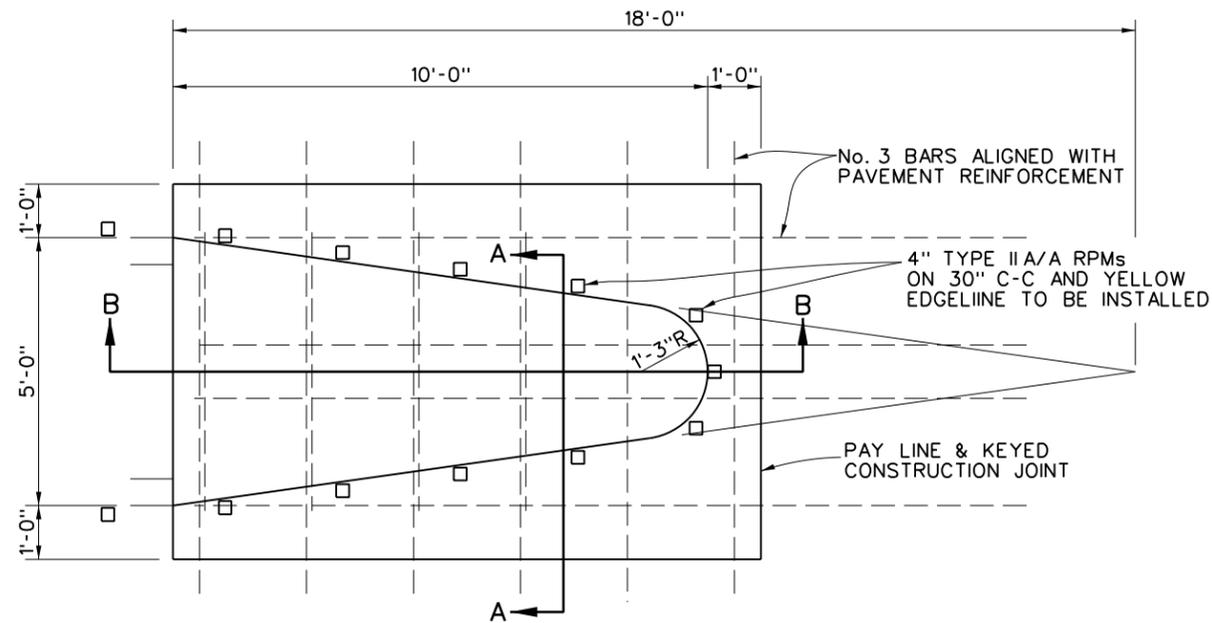
REINFORCED MEDIAN PAVEMENT



MONOLITHIC MEDIAN NOSE ~ SECTION B-B

NOTE:  
MONOLITHIC NOSE AND PAVEMENT WITHIN PAY LINES SHALL BE PAID PER EACH, COMPLETE AND IN PLACE.

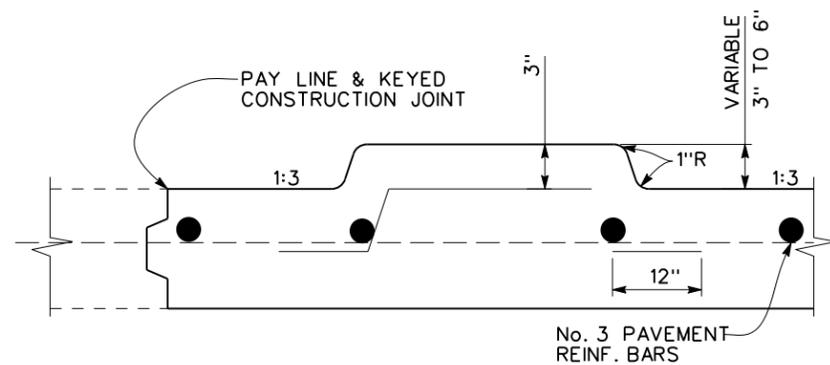
<b>PAVING DETAILS</b>	
MONOLITHIC MEDIAN NOSE	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: SEPTEMBER 2022	SHEET No. 1002



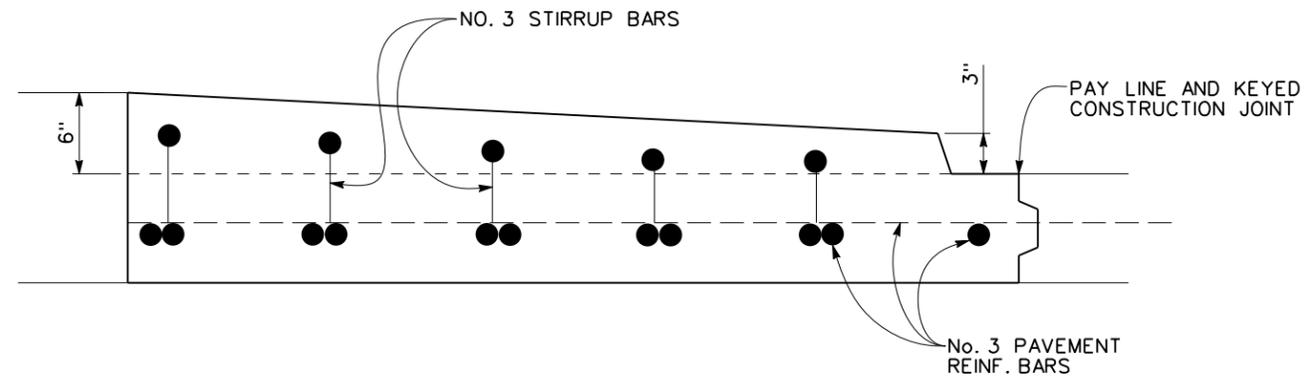
MONOLITHIC MEDIAN NOSE

NOTES:

1. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.
2. GENERAL NOTES PROVIDED ON SHEET No. 1006 APPLY.
3. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT OR NEAR THE RADIUS POINTS OF ALL INTERSECTIONS, AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH, OR AT MAX. DISTANCE OF 150 FT. REDWOOD EXPANSION JOINT WILL CONTINUE THROUGH MEDIAN PAVING AND SIDEWALK AND WALL WHEREVER APPLICABLE.
4. ALL MARKERS, MEDIAN NOSE BUTTONS AND MEDIAN EDGELINES SHALL BE INSTALLED AND ORIENTED AS SHOWN ON TYPICAL PAVEMENT MARKINGS DETAILS SHEET.

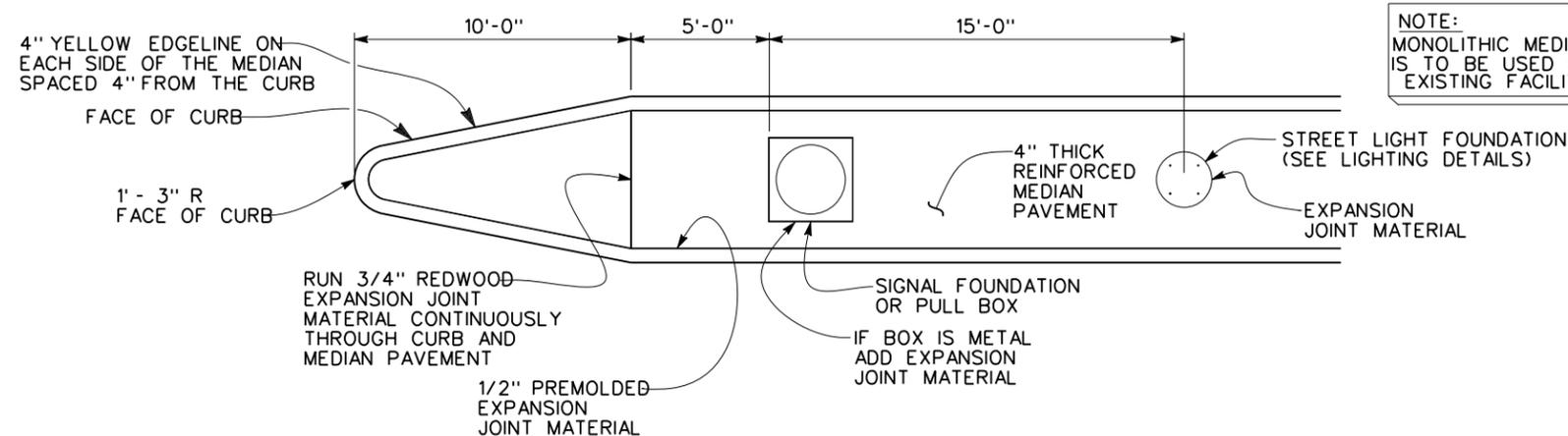


SECTION A-A



NOTE: MONOLITHIC MEDIAN NOSE & PAVEMENT WITHIN PAY LINES SHALL BE PAID FOR PER EACH, COMPLETE IN PLACE.

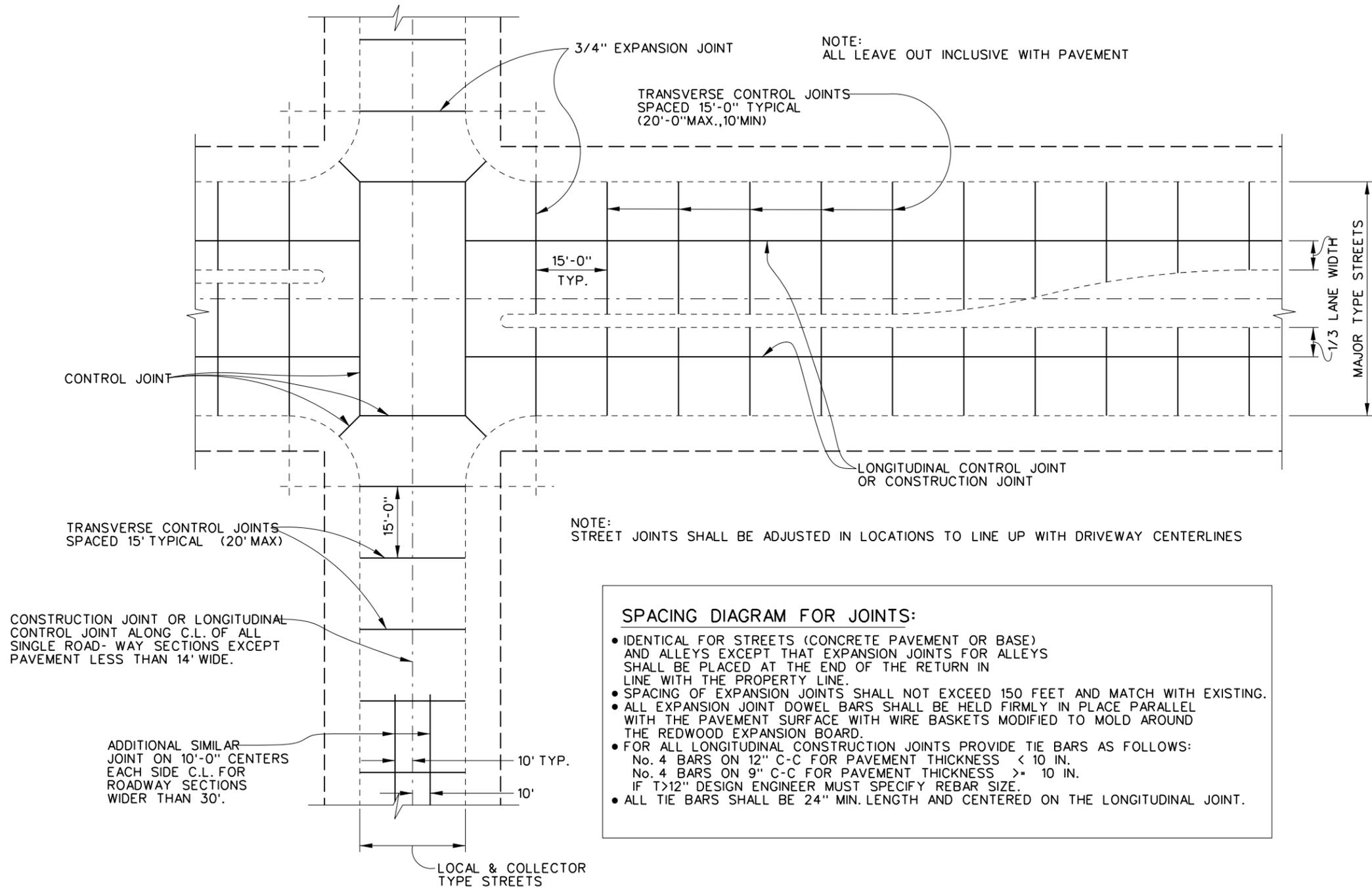
SECTION B-B



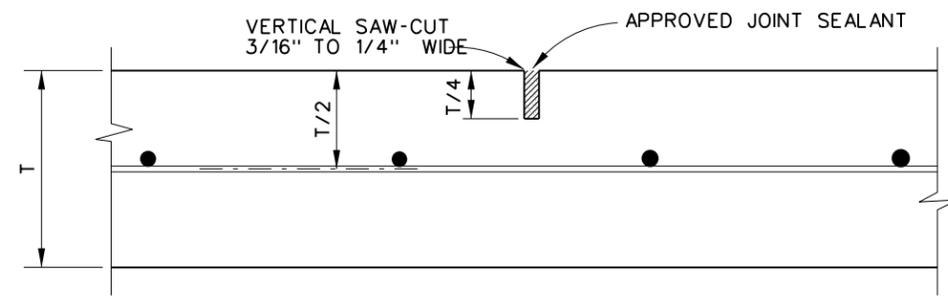
NOTE: MONOLITHIC MEDIAN NOSE IS STANDARD (ROUNDED NOSE IS TO BE USED ONLY AT DIRECTION OF ENGINEER TO MATCH EXISTING FACILITIES).

DETAIL OF 5' MEDIAN PAVEMENT

<b>PAVING DETAILS</b>	
MONOLITHIC MEDIAN NOSE	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1002A

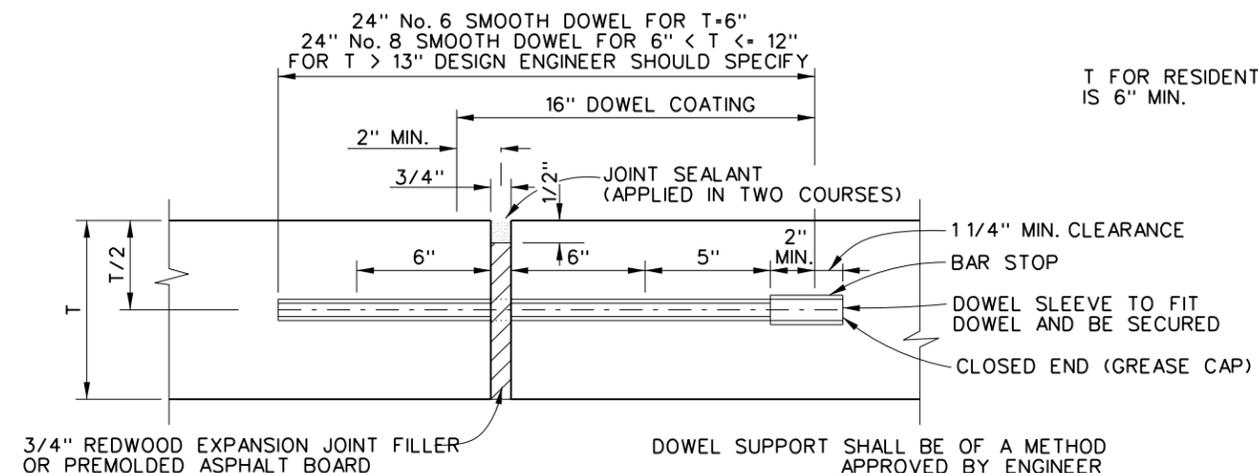


<b>PAVING DETAILS</b>	
JRCP PAVEMENT JOINTS	
SPACING DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1003

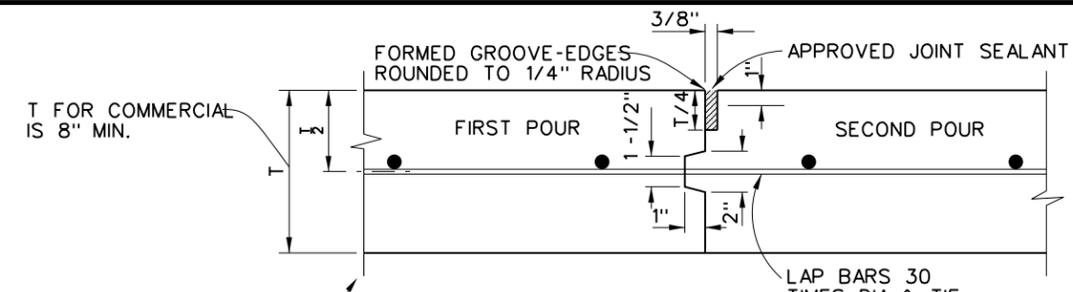


**CONTROL JOINT**

IDENTICAL FOR STREETS AND ALLEYS EXCEPT ALLEY LONGITUDINAL REINFORCEMENT BARS



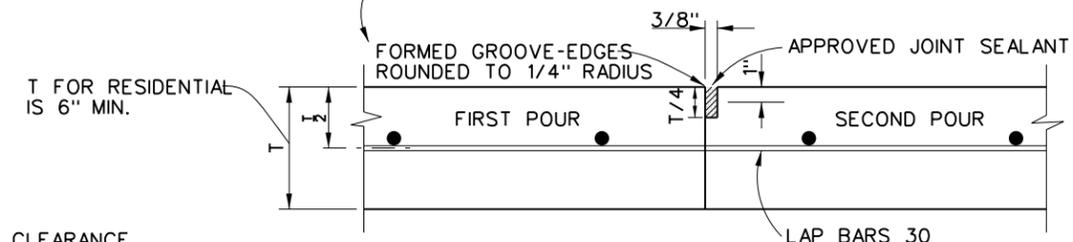
**TRANSVERSE EXPANSION JOINT**  
IDENTICAL FOR STREETS AND ALLEYS



**CONSTRUCTION JOINT**

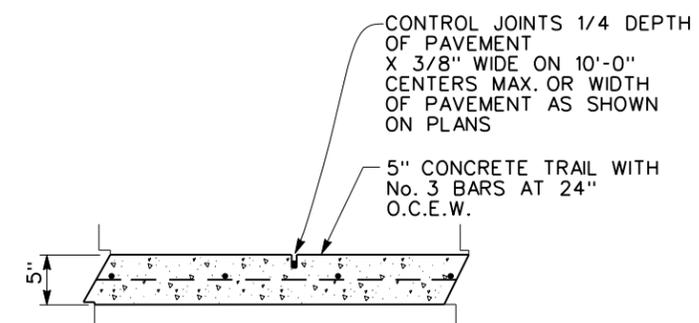
FOR 8" OR ABOVE THICKNESS PAVEMENT OR BASE

CHANGE BAR SPACING ACROSS JOINTS TO 12" CTRS. FOR LONGITUDINAL JOINTS



**CONSTRUCTION JOINT**

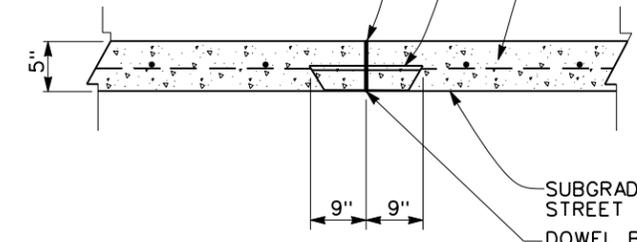
FOR 6" MINIMUM THICKNESS PAVEMENT OR BASE  
IDENTICAL FOR STREETS AND ALLEYS EXCEPT ALLEY LONGITUDINAL REINFORCEMENT BARS



**TRAIL CONTROL JOINT**

FILL EXPANSION JOINTS WITH SONNEBORN SONOLASTIC SELF-LEVELING SEALANT SYSTEMS CONTRACTOR TO SUBMIT COLOR SAMPLES INSTALL 3/4" REDWOOD EXPANSION JOINT TO 1" BELOW TOP OF PAVING WITH RIP STRIP

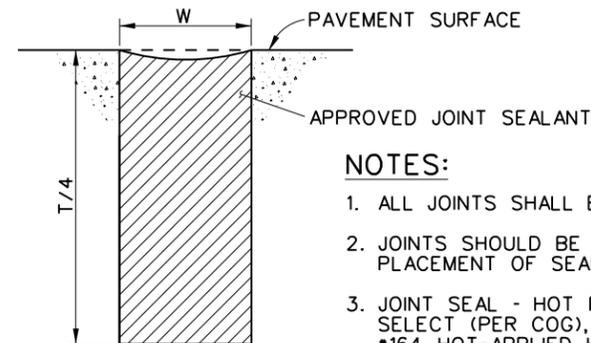
No. 4 SMOOTH DOWEL 18" LONG EACH WITH CAP, LUBRICATED TYPICAL DOWEL SPACING MATCHES STEEL PLACEMENT  
5" CONCRETE TRAIL PAVING WITH No. 3 BARS AT 24" O.C. EACH WAY



**TRAIL DOWELED EXPANSION JOINT**

**SPACING DIAGRAM FOR JOINTS:**

- IDENTICAL FOR STREETS (CONCRETE PAVEMENT OR BASE) AND ALLEYS EXCEPT THAT EXPANSION JOINTS FOR ALLEYS SHALL BE PLACED AT THE END OF THE RETURN IN LINE WITH THE PROPERTY LINE.
- SPACING OF EXPANSION JOINTS SHALL NOT EXCEED 150 FEET AND MATCH WITH EXISTING.
- ALL EXPANSION JOINT DOWEL BARS SHALL BE HELD FIRMLY IN PLACE PARALLEL WITH THE PAVEMENT SURFACE WITH WIRE BASKETS MODIFIED TO MOLD AROUND THE REDWOOD EXPANSION BOARD.
- FOR ALL LONGITUDINAL CONSTRUCTION JOINTS PROVIDE TIE BARS AS FOLLOWS:  
No. 4 BARS ON 12" C-C FOR PAVEMENT THICKNESS < 10 IN.  
No. 4 BARS ON 9" C-C FOR PAVEMENT THICKNESS >= 10 IN.  
IF T>12" DESIGN ENGINEER MUST SPECIFY REBAR SIZE.
- ALL TIE BARS SHALL BE 24" MIN. LENGTH AND CENTERED ON THE LONGITUDINAL JOINT.



**NOTES:**

1. ALL JOINTS SHALL BE SEALED.
2. JOINTS SHOULD BE CLEAN AND DRY PRIOR TO PLACEMENT OF SEALANT.
3. JOINT SEAL - HOT Poured POLYMER SELECT (PER COG), ELASTOMERIC MATERIALS (PER COG), \*164 HOT-APPLIED, HI-SPEC HOT-APPLIED POLYMERIC SEALANT OR EQUAL APPROVED SEALANT

<b>PAVING DETAILS</b>	
JRCP PAVEMENT JOINTS DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1003A

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TABLE NO.1 CRCP STEEL BAR SIZE AND SPACING					
SLAB THICKNESS AND BAR SIZE		LONGITUDINAL*		TRANSVERSE*	
		REGULAR BARS	TIEBARS	BARS	TIEBARS
T (IN.)	BAR SIZE	SPACING (IN.)	SPACING (IN.)	SPACING (IN.)	SPACING (IN.)
6.0	#5	7.5	7.5	24	24
6.5		7.0	7.0		
7.0		6.5	6.5		
7.5		6.0	6.0		
8.0	#6	9.0	9.0	24	24
8.5		8.5	8.5		
9.0		8.0	8.0		
9.5		7.5	7.5		
10.0		7.0	7.0		
10.5		6.75	6.75		
11.0		6.5	6.5		
11.5		6.25	6.25		
>12.0		6.0	6.0		

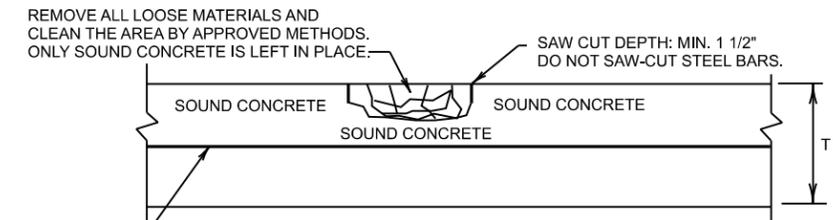
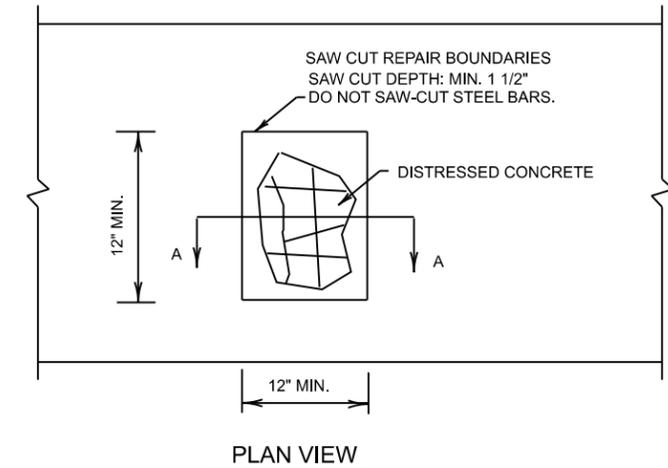
\* USE 12" SPACING AS FIRST AND LAST SPACING AT END OR SIDE FOR ALL BARS.

**GENERAL NOTES**

- ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
- MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.
- FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT.
- AT LEAST ONE LONGITUDINAL FULL DEPTH SAW CUT SHALL BE AT AN EXISTING LONGITUDINAL JOINT.
- ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
- THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
- EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION, AND NEW CONSTRUCTION JOINTS SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
- FOR CRCP SECTIONS GREATER THAN 10" THICK, LOCATE TIE BARS 5" FROM TOP OF PAVEMENT SURFACE.
- PROVIDE REINFORCEMENT SUPPORT CHAIRS AS NECESSARY TO MAINTAIN REINFORCEMENT IN THE PROPER LOCATION.

**GENERAL NOTES**

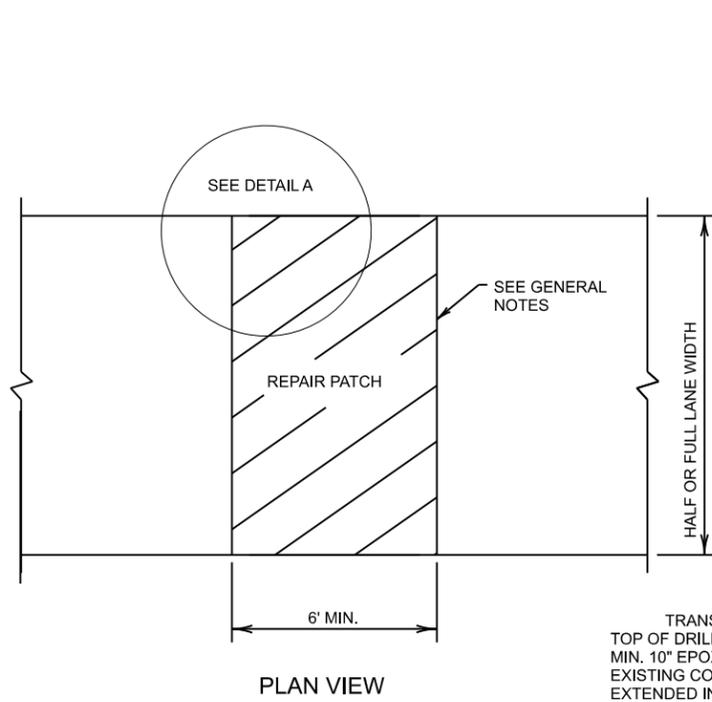
- ITEM 720, "REPAIR OF SPALLING CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
- THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
- EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



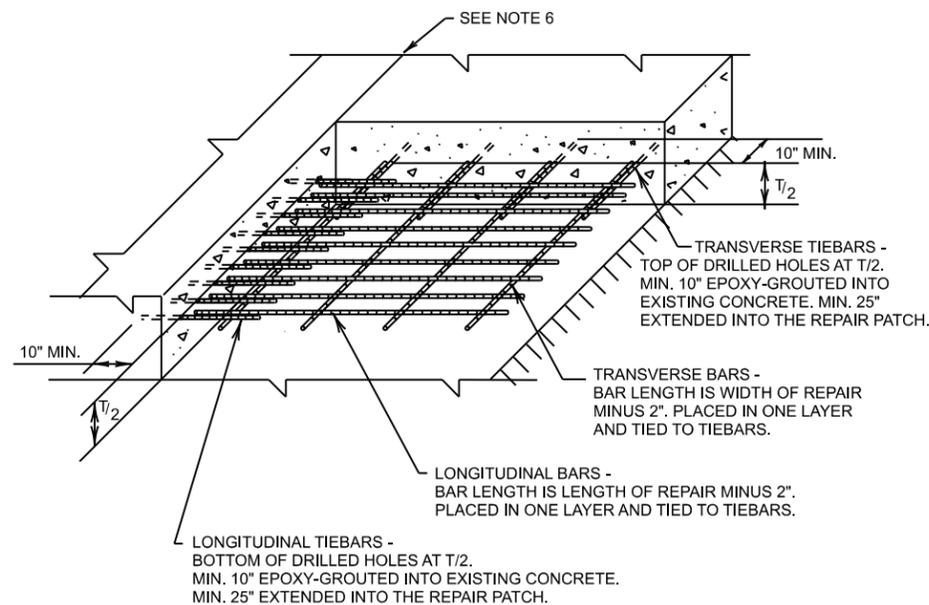
LONGITUDINAL STEEL BARS:  
 \*REPAIR AREAS MAY BE ADJUSTED AFTER REMOVING DISTRESSED CONCRETE. SWITCH THE HALF-DEPTH REPAIR TO FULL-DEPTH REPAIR IF EXPOSED EXISTING LONGITUDINAL BARS ARE DEFICIENT, AS APPROVED. COMPENSATION WILL BE MADE FOR UNEXPECTED VOLUMES OF REPAIR AREAS OR CHANGES IN SCOPE OF WORK.

\*INCREASE THE REPAIR AREA AND PERFORM A FULL-DEPTH REPAIR AS DIRECTED IF LONGITUDINAL STEEL BARS WERE DAMAGED BY THE REMOVAL OPERATIONS. NO ADDITIONAL COMPENSATION WILL BE MADE.

**SECTION A-A  
 HALF-DEPTH REPAIR**



**FULL-DEPTH REPAIR OF CRCP**

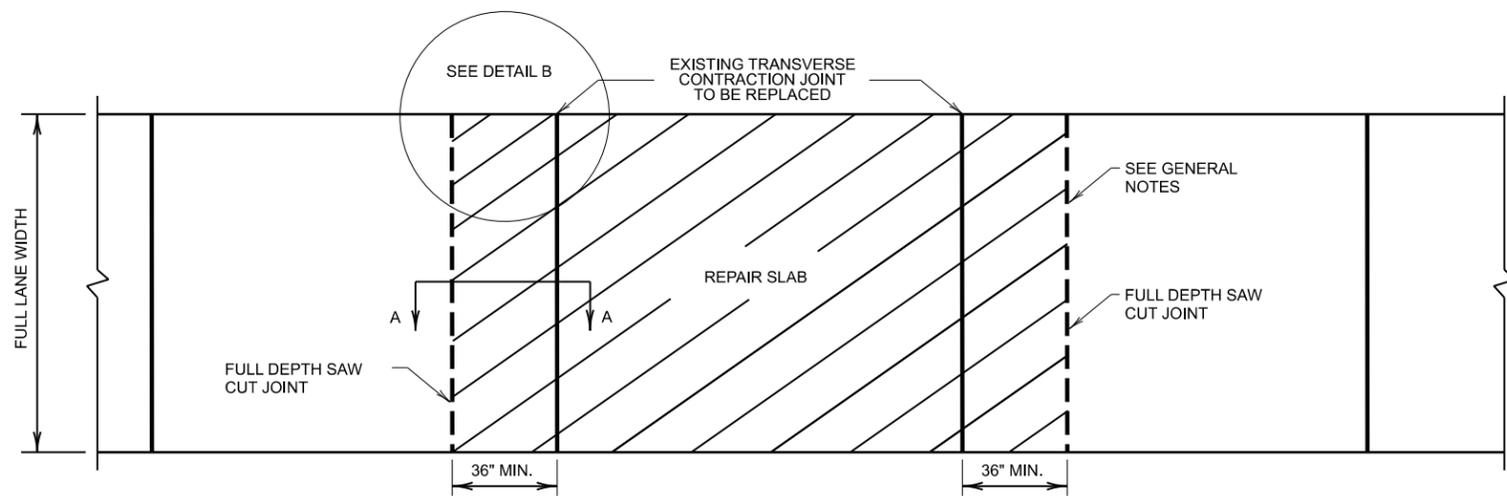


**DETAIL A  
 GROUTED TIEBARS & REINFORCEMENT**

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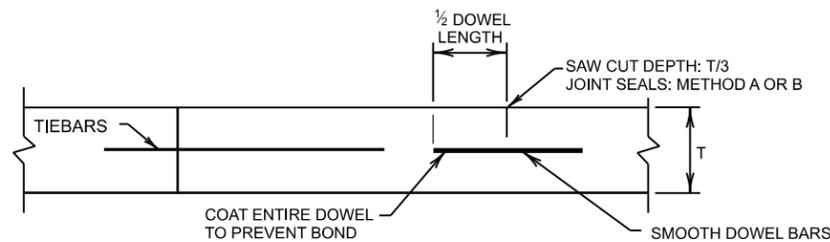
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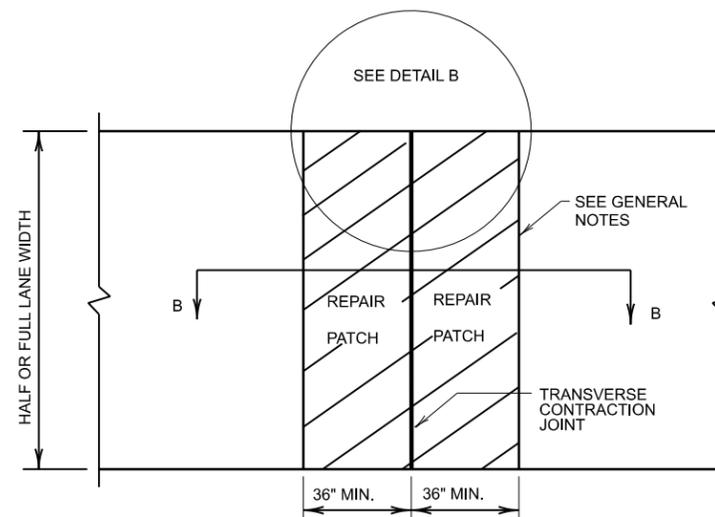


**FULL CPCD SLAB REPLACEMENT**

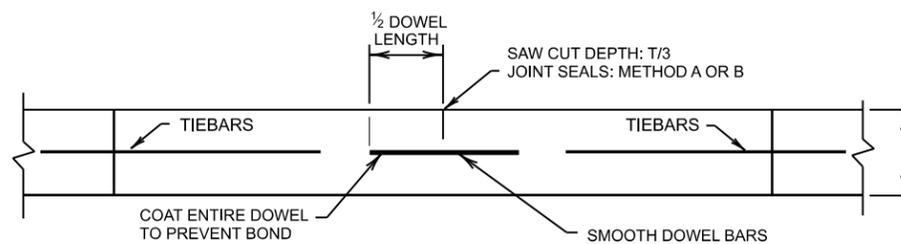
PLAN VIEW



**SECTION A-A**



**PLAN VIEW**



**SECTION B-B**

**REPAIR OF CPCD TRANSVERSE JOINT**

**GENERAL NOTES**

1. ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
2. MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.
3. FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT.
4. AT LEAST ONE LONGITUDINAL FULL DEPTH SAW CUT SHALL BE AT AN EXISTING LONGITUDINAL JOINT.
5. ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
6. THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
7. EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION, AND NEW CONSTRUCTION JOINTS SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
8. DOWEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1/4 IN. HORIZONTALLY AND VERTICALLY UNLESS OTHERWISE SPECIFIED. WHERE DOWEL BAR BASKETS ARE USED, REMOVE THE SHIPPING WIRES.

PAVEMENT THICKNESS (IN.)	BAR SIZE	LONG. SPACING (IN.)	TRANS. SPACING (IN.)
<8	#5	12.0	24.0
≥ 8	#6		

PAVEMENT THICKNESS (IN.)	DIAMETER	LENGTH (IN.)	SPACING (IN.)
<10	1 IN.	18.0	12.0
≥ 10	1 1/4 IN.		

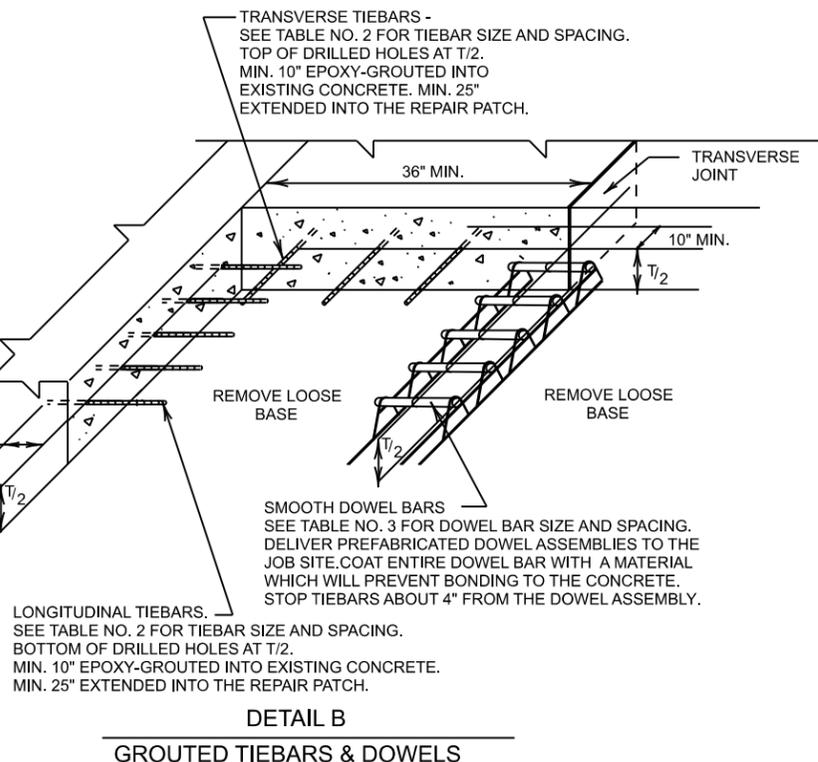
SHEET 2 OF 2



**REPAIR OF CONCRETE PAVEMENT**

**REPCP-25**

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**DETAIL B**

**GROUTED TIEBARS & DOWELS**

GENERAL NOTES

1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. FOR PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT, ADDITIONAL DETAIL MAY BE SHOWN ELSEWHERE IN THE PLANS.
2. USE COARSE AGGREGATES WITH A RATED COEFFICIENT OF THERMAL EXPANSION ( $C_{OTE}$ ) OF NOT MORE THAN  $5.5 \times 10^{-6}$  IN./IN./°F AS LISTED IN THE CONCRETE RATED SOURCE QUALITY CATALOG (CRSQC).
3. ALL THE REINFORCING STEEL AND TIE BARS SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615 (GRADE 60) OR ASTM A 996 (GRADE 60) OR ABOVE. STEEL BAR SIZES AND SPACINGS SHALL CONFORM TO TABLE NO.1 AND TABLE NO.2.
4. STEEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1 IN. HORIZONTALLY AND +/- 0.5 IN. VERTICALLY. CALCULATED AVERAGE BAR SPACING (CONCRETE PLACEMENT WIDTH / NUMBER OF LONGITUDINAL BARS) SHALL CONFORM TO TABLE NO.1.
5. ADJUST REINFORCING STEEL VERTICALLY USING SHIMS OR OTHER METHODS, AS APPROVED, TO MEET VERTICAL TOLERANCES PRIOR TO CONCRETE PLACEMENT.
6. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
7. THE MINIMUM PROJECTION OF TIE BARS INTO THE ADJACENT PLACEMENT IS 22.5 IN. FOR #6 BARS AND 18.5 IN. FOR #5 BARS.
8. SEE STANDARD SHEET "CONCRETE CURB AND CURB AND GUTTER," FOR DETAILS WHEN TYING CONCRETE CURB OR CURB GUTTER AT A LONGITUDINAL JOINT.
9. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN. 10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
10. OMIT TIE BARS LOCATED WITHIN 18-IN. OF THE TRANSVERSE CONSTRUCTION JOINTS (SECTION X-X). USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL FORMED JOINTS.
11. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
12. LONGITUDINAL REINFORCING STEEL SPLICES SHALL BE A MINIMUM OF 25-IN.

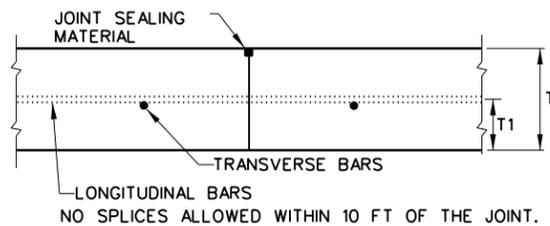
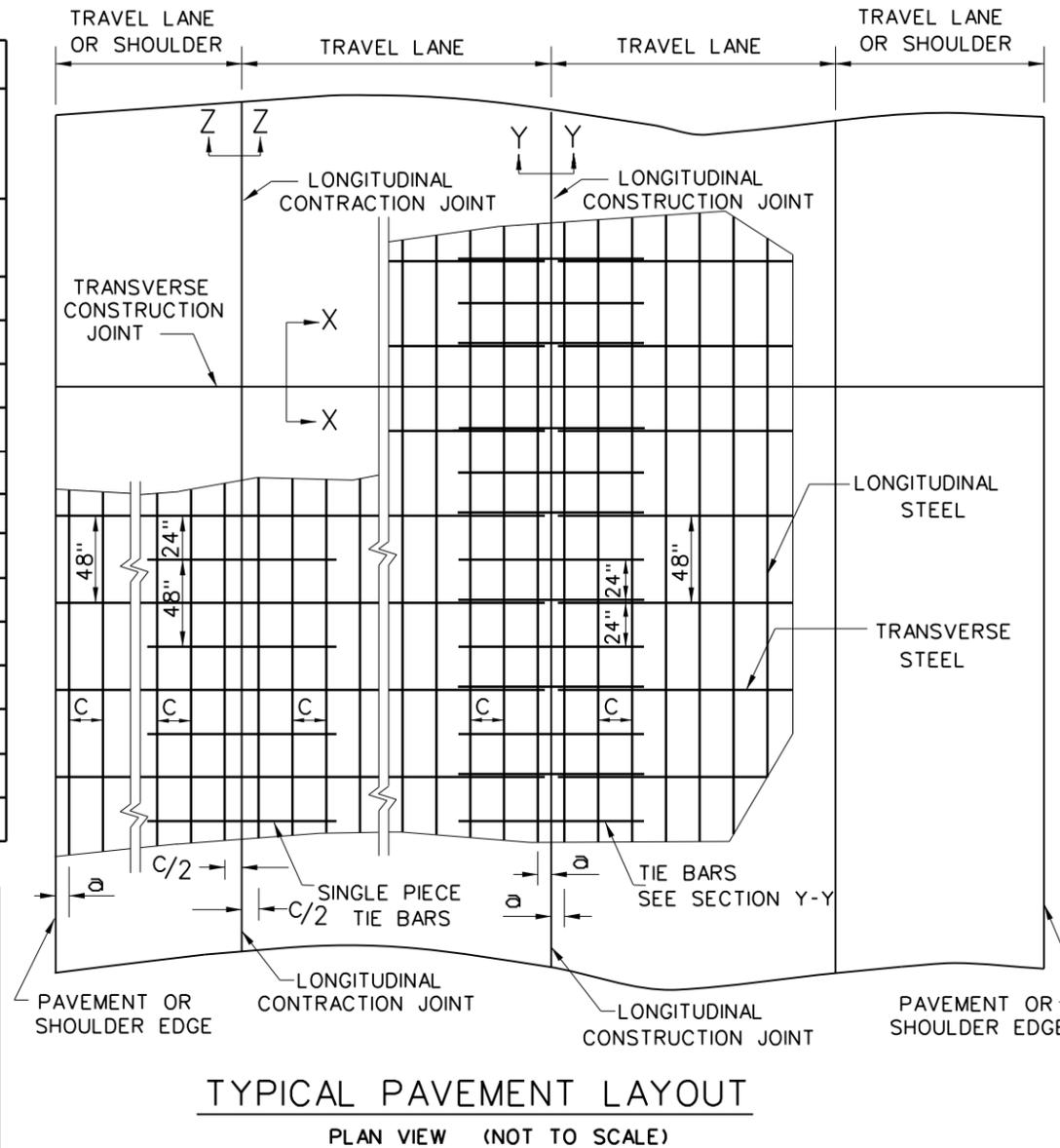
TABLE NO.1 LONGITUDINAL STEEL

SLAB THICKNESS AND BAR SIZE		LONGITUDINAL STEEL BARS	FIRST SPACING AT EDGE OR JOINT	LONG. STEEL VERTICAL POSITION FROM BOTTOM OF PAVEMENT
T (IN.)	BAR SIZE	SPACING C (IN.)	SPACING a (IN.)	T1 (IN.)
7.0	#5	6.5	3 TO 4	3.5
7.5	#5	6.0	3 TO 4	3.75
8.0	#6	9.0	3 TO 4	4.0
8.5	#6	8.5	3 TO 4	4.25
9.0	#6	8.0	3 TO 4	4.5
9.5	#6	7.5	3 TO 4	4.75
10.0	#6	7.0	3 TO 4	5.0
10.5	#6	6.75	3 TO 4	5.5
11.0	#6	6.5	3 TO 4	6.0
11.5	#6	6.25	3 TO 4	6.5
12.0	#6	6.0	3 TO 4	7.0
12.5	#6	5.75	3 TO 4	7.5
13.0	#6	5.5	3 TO 4	8.0

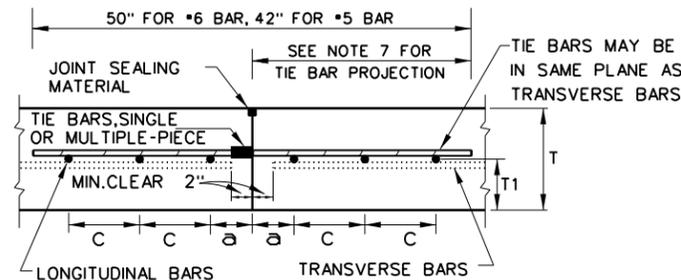
TABLE NO.2 TRANSVERSE STEEL AND TIE BARS

SLAB THICKNESS (IN.)	TRANSVERSE STEEL		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z)		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Y-Y)	
	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)
7.0 - 7.5	#5*	48	#5*	48	#5*	24
8.0 - 13.0	#5*	48	#6	48	#6	24

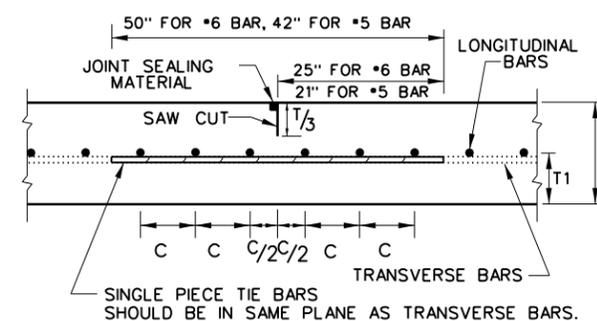
\* CONTRACTOR MAY USE #6 REINFORCING STEEL INSTEAD OF #5 REINFORCING STEEL OR COMBINATION OF EACH SIZE



TRANSVERSE CONSTRUCTION JOINT SECTION X - X



LONGITUDINAL CONSTRUCTION JOINT SECTION Y - Y



LONGITUDINAL CONTRACTION JOINT SECTION Z - Z

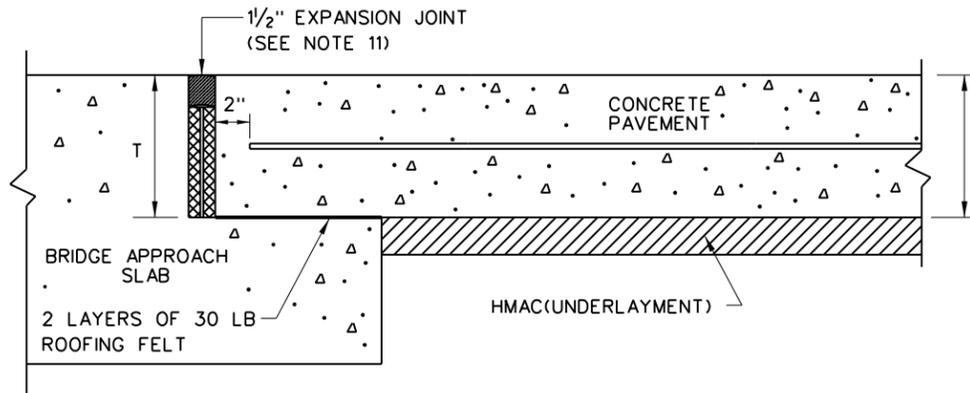
SHEET 1 OF 2

		Design Division Standard	
<b>CONTINUOUSLY REINFORCED CONCRETE PAVEMENT</b> ONE LAYER STEEL BAR PLACEMENT T - 7 TO 13 INCHES <b>CRCP(1)-24</b>			
FILE: crcp124.dgn	DN: CES	CK: KM	DW: CES
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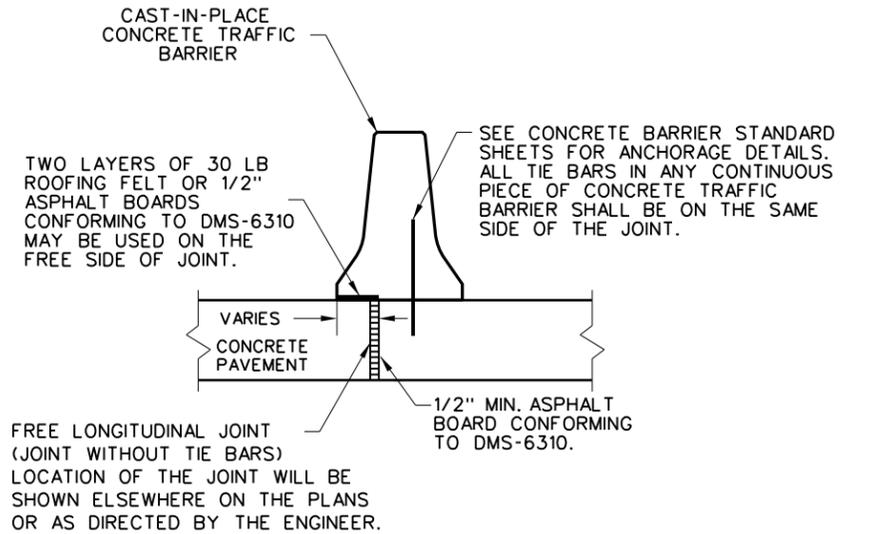
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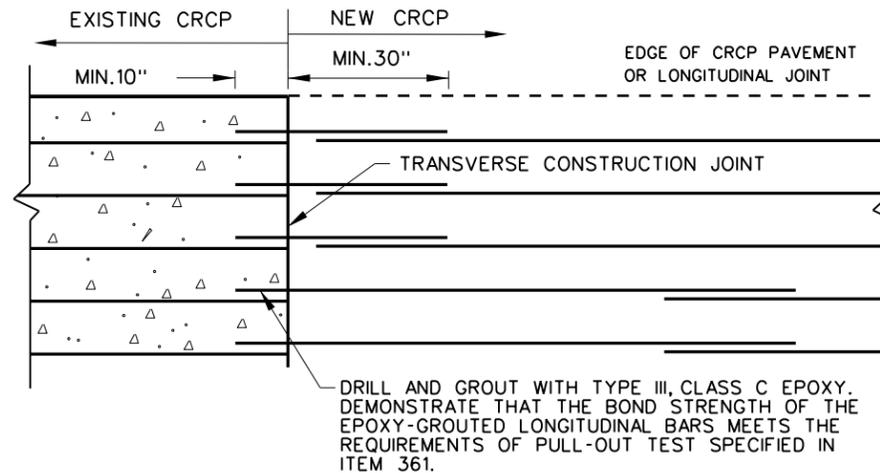
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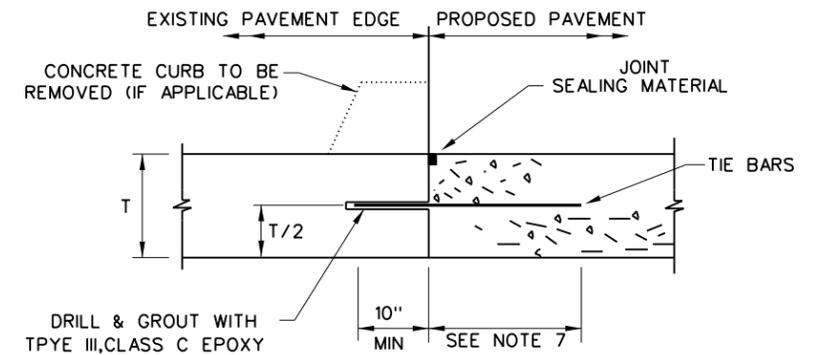
**TRANSVERSE EXPANSION JOINT DETAIL  
AT BRIDGE APPROACH**



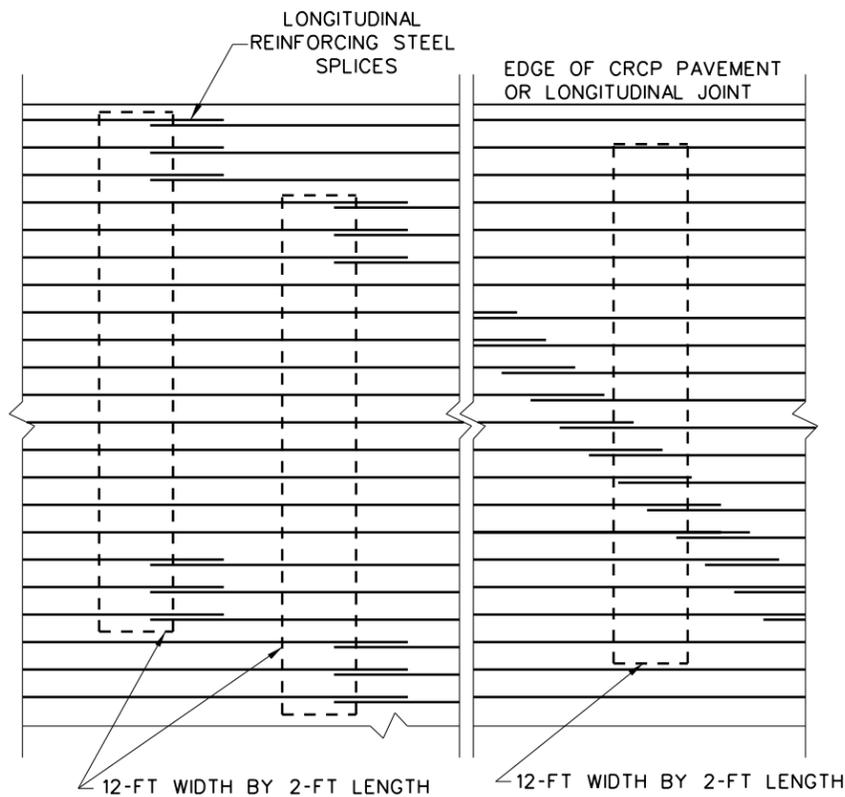
**CENTERLINE FREE LONGITUDINAL JOINT DETAIL**



**OPTION A: DRILL AND EPOXY  
PLAN VIEW (NOT TO SCALE)**

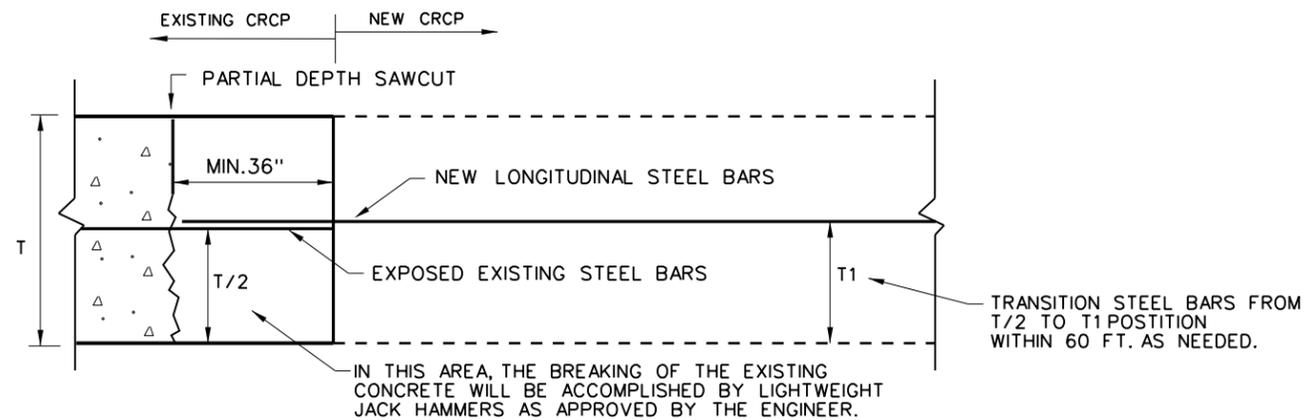


**LONGITUDINAL WIDENING JOINT DETAIL**



STAGGER THE LAP LOCATIONS SO THAT NO MORE THAN 1/3 OF THE LONGITUDINAL STEEL IS SPLICED IN ANY GIVEN 12-FT. WIDTH AND 2-FT. LENGTH OF THE PAVEMENT. ANY OTHER LAP CONFIGURATION MEETING THIS REQUIREMENT WILL BE ALLOWED.

**EXAMPLES OF LAP CONFIGURATION  
PLAN VIEW (NOT TO SCALE)**



**OPTION B: BREAKBACK AND LAP**

**TRANSVERSE TIE JOINT DETAIL  
NEW CRCP TO EXISTING CRCP**

SHEET 2 OF 2



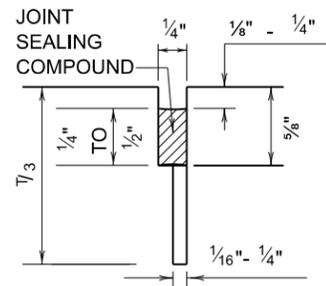
**CONTINUOUSLY REINFORCED  
CONCRETE PAVEMENT  
ONE LAYER STEEL BAR PLACEMENT  
T - 7 TO 13 INCHES  
CRCP(1)-24**

FILE: crcp124.dgn	DN: TxDOT	CK: KM	DW: CES	CK: AN
© TxDOT: Sept 2024	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

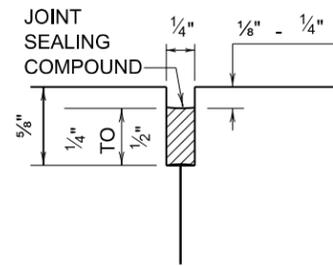
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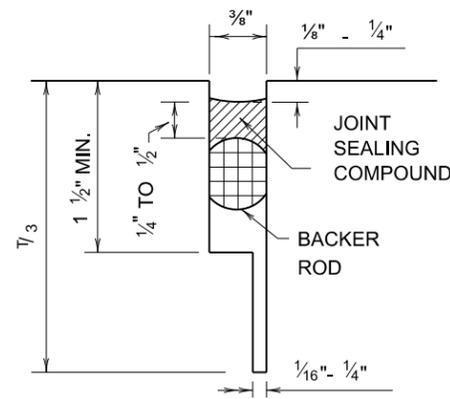
### METHOD B: JOINT SEALING COMPOUND



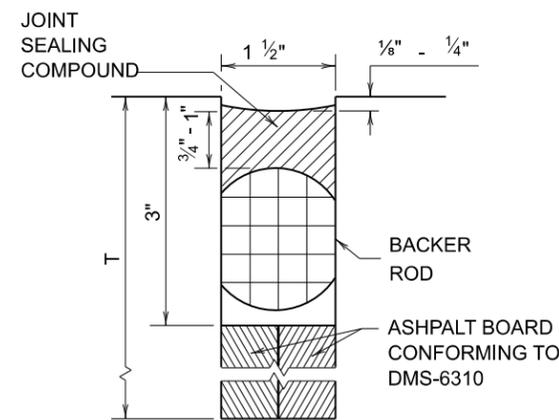
LONGITUDINAL SAWED  
CONTRACTION JOINT



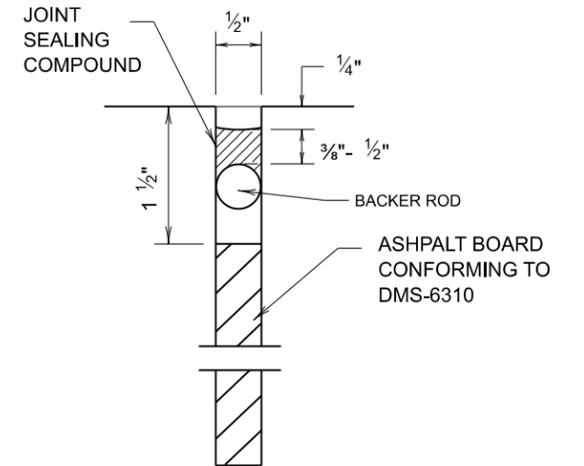
LONGITUDINAL OR TRANSVERSE  
CONSTRUCTION JOINT



TRANSVERSE SAWED  
CONTRACTION JOINT

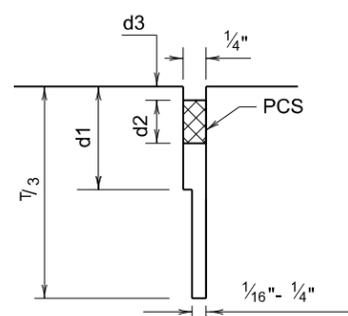


TRANSVERSE FORMED  
EXPANSION JOINT

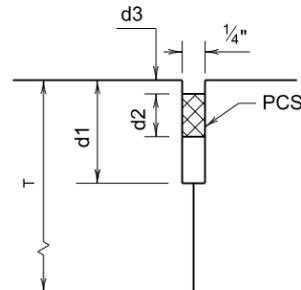


FORMED  
ISOLATION JOINT

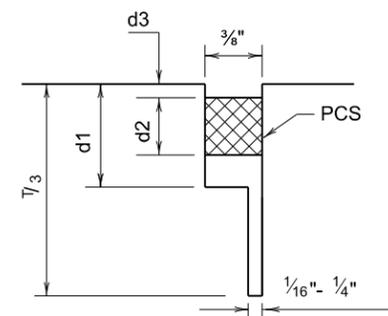
### METHOD A: PREFORMED COMPRESSION SEALS (PCS)(DMS-6310 CLASS 6)



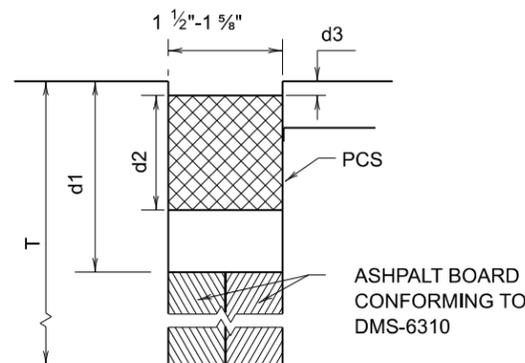
LONGITUDINAL SAWED  
CONTRACTION JOINT



LONGITUDINAL OR TRANSVERSE  
CONSTRUCTION JOINT



TRANSVERSE SAWED  
CONTRACTION JOINT



TRANSVERSE FORMED  
EXPANSION JOINT

### GENERAL NOTES

- UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
- THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
- THE JOINT RESERVOIR FOR SEALANT OR PCS SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS AND THE SAWED JOINTS.
- DIMENSIONS d1, d2, AND d3 SHOWN IN METHOD A SHALL BE IN ACCORDANCE WITH THE PREFORMED COMPRESSION SEAL MANUFACTURER'S RECOMMENDATION.
- REFER TO DMS-6310 "JOINT SEALANTS AND FILLERS" FOR SEALANT CLASSIFICATIONS.
- FOR ALL METHOD "B" JOINTS, USE JOINT SEALANT CLASS 5 OR 8 UNLESS OTHERWISE SHOWN ON THE PLAN OR APPROVED AT NEW JOINTS.
- USE JOINT SEALANT CLASS 5 OR 8 AT NEW JOINTS. USE JOINT SEALANT CLASS 4,5,7,OR 8 FOR MAINTANING EXISTING JOINTS.
- THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 "CLEANING AND SEALING JOINTS" OR ITEM 713 "CLEANING AND SEALING JOINTS AND CRACKS (CONCRETE PAVEMENT)".



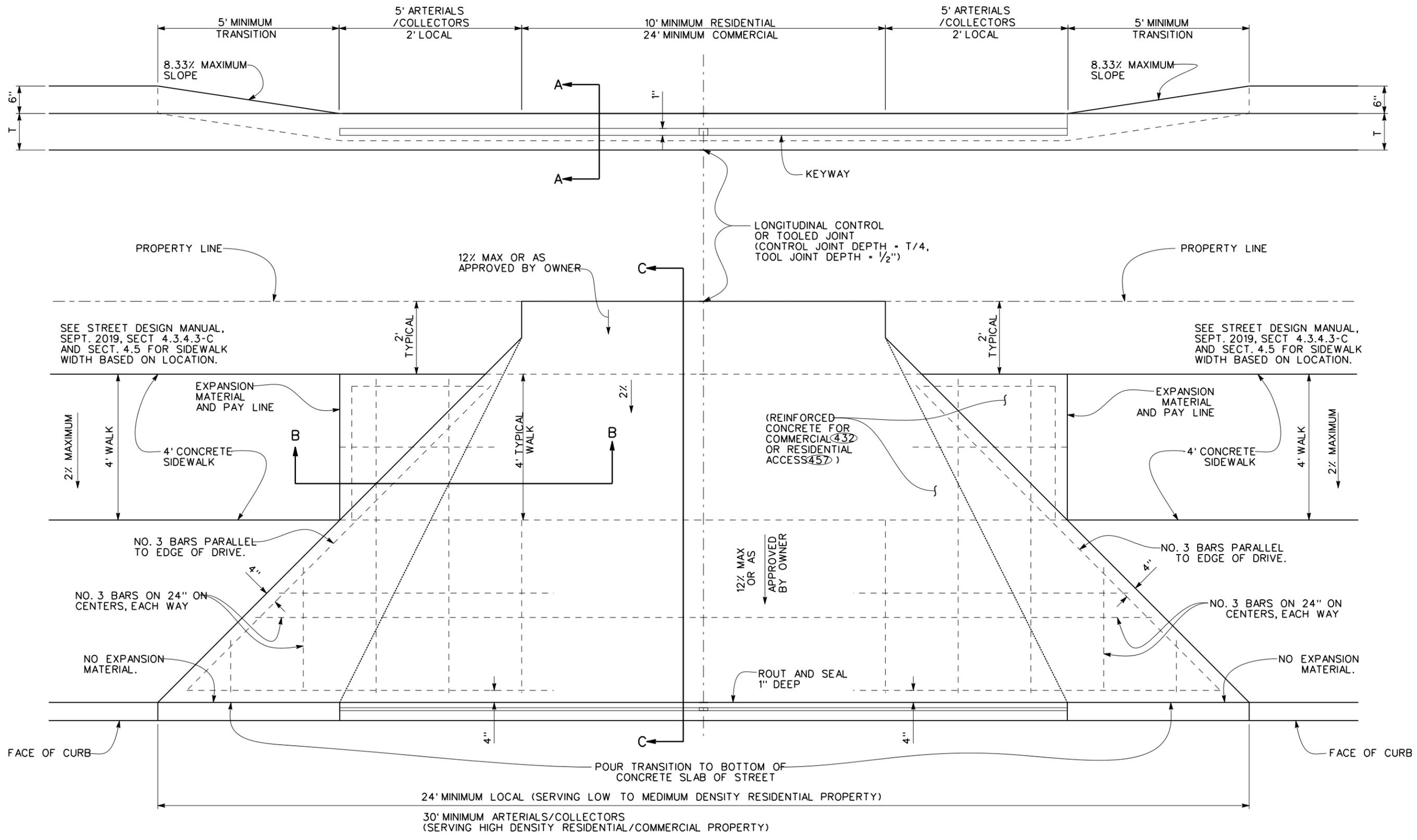
## CONCRETE PAVING DETAILS

### JOINT SEALS

### JS-25

FILE: js25.dgn	DN: TxDOT	DN: AN	DW: AN	CK:
© TxDOT: OCTOBER 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS				
DIST	COUNTY			SHEET NO.

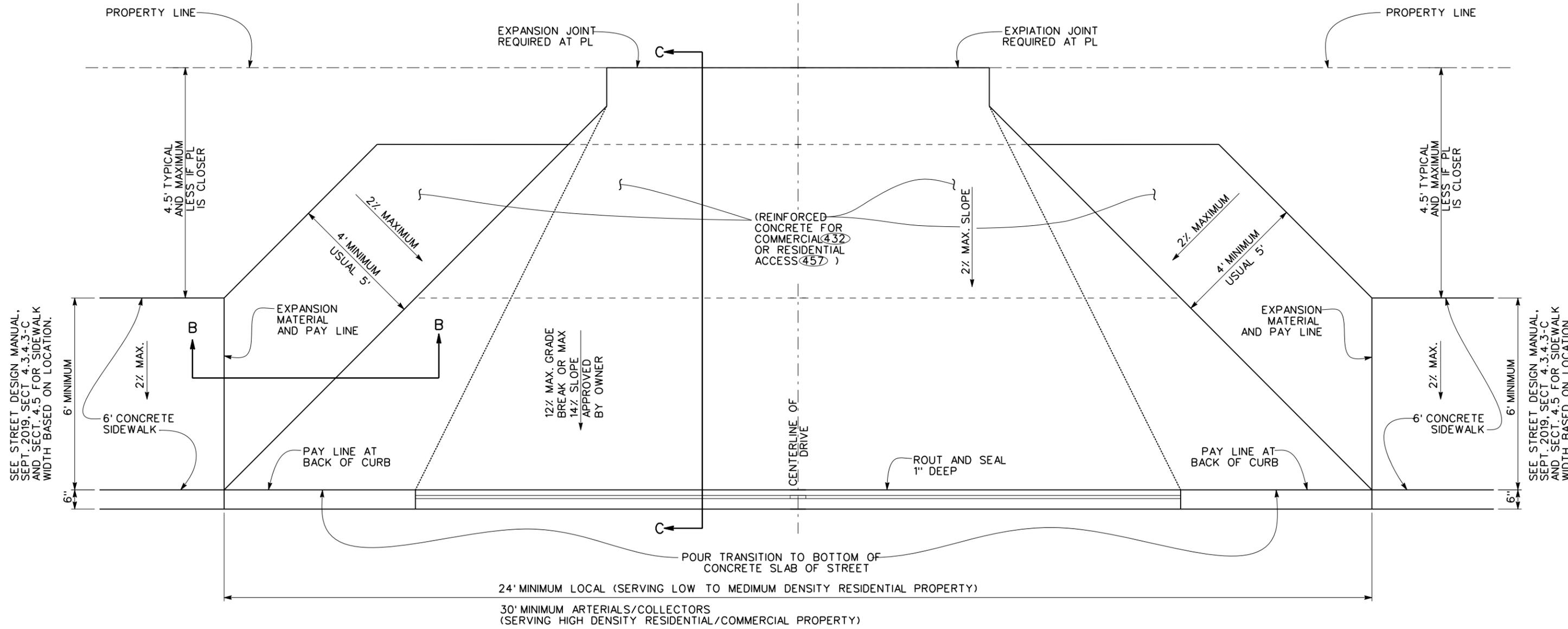
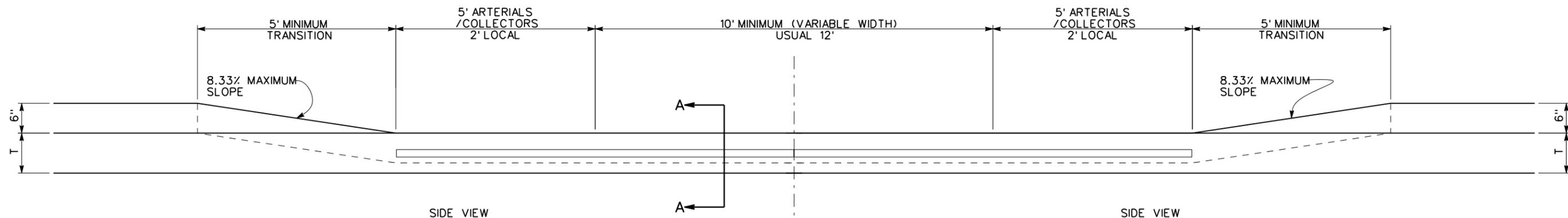
DATE:  
FILE:



DRIVEWAY APPROACH DETAIL  
ALL STREETS

\*SEE SHEET No. 1004C FOR SECTION VIEWS  
SEE SHEET No. 1006 FOR GENERAL NOTES

<b>PAVING DETAILS</b>	
DRIVEWAY TURNOUTS	
WITH 4' SIDEWALK	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: SEPTEMBER 2022	SHEET No. 1004



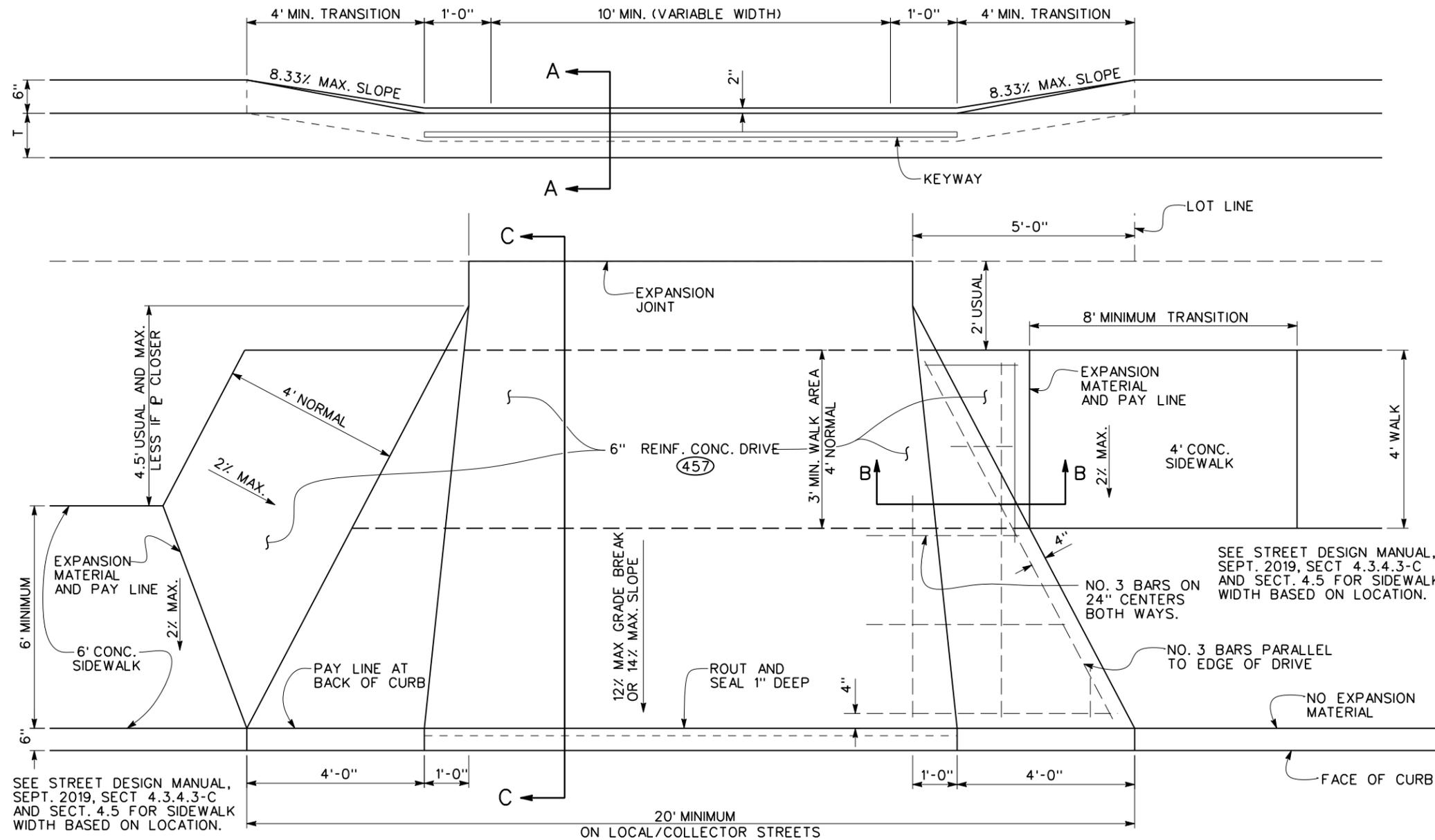
SEE STREET DESIGN MANUAL, SEPT. 2019, SECT 4.3.4.3-C AND SECT. 4.5 FOR SIDEWALK WIDTH BASED ON LOCATION.

SEE STREET DESIGN MANUAL, SEPT. 2019, SECT 4.3.4.3-C AND SECT. 4.5 FOR SIDEWALK WIDTH BASED ON LOCATION.

DRIVEWAY APPROACH DETAIL  
LOCAL STREETS

\*SEE SHEET No. 1004C FOR SECTION VIEWS  
SEE SHEET No. 1006 FOR GENERAL NOTES

<b>PAVING DETAILS</b>	
DRIVEWAY TURNOUTS	
WITH 6' SIDEWALK	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: SEPTEMBER 2022	SHEET No. 1004A



**NOTES:**

1. ALL CONTROL JOINTS SHALL BE SEALED WITH APPROVED JOINT SEALANT. REFER TO TxDOT SPEC. DMS - 6310.
2. TOOLED OR CONTROL JOINTS WILL BE REQUIRED AT CENTERLINE OF ALL DRIVEWAYS LESS THAN 24' WIDE. ADDITIONAL JOINTS WILL BE REQUIRED AT EQUAL SPACINGS FOR DRIVEWAYS WIDER THAN 24'.
3. OFFSETS IN DRIVES TO MATCH PROPOSED WALKS WILL BE BUILT MONOLITHIC WITH THE DRIVE.
4. PAVEMENT JOINTS WILL NOT EXTEND THROUGH DRIVE EXCEPT AS PROVIDED FOR IN NOTES 9 AND 10 BELOW FOR CENTERLINE DRIVEWAY JOINTS.
5. REINFORCING STEEL WILL NOT EXTEND THROUGH PAVEMENT. DRIVE WILL NOT BE TIED TO PAVEMENT.
6. LENGTH OF TRANSITION FOR CURB AT EACH SIDE OF DRIVE MAY VARY DUE TO STREET GRADES AND REQUIREMENT TO HOLD MAXIMUM SLOPE OF 8.33%.
7. AN EXPANSION JOINT WILL BE REPLACED AT THE PROPERTY LINE.
8. TRANVERSE CONTROL JOINTS SHALL BE CONSTRUCTED ON 15' SPACINGS FOR DRIVEWAYS AS MEASURED FROM THE BACK OF CURB.
9. LONGITUDINAL CONTROL OR TOOLED JOINTS SHALL BE CONSTRUCTED FROM THE GUTTER EDGE TO THE PROPERTY LINE FOR ALL DRIVEWAYS WIDER THAN 15'.
10. STREET JOINTS SHALL BE ADJUSTED IN LOCATIONS TO LINE UP WITH DRIVEWAY CENTERLINES.
11. MAXIMUM SLOPE ON DRIVE IN ANY DIRECTION SHOULD BE TO RESPECT PRINCIPLES OF BARRIER FREE RAMP CONSTRUCTION.
12. WHEN SIDEWALKS ARE INVOLVED, BARRIER FREE SIDEWALK CONSTRUCTION REQUIRES THAT DRIVEWAY GRADES NOT EXCEED 8% AS MEASURED FROM THE GUTTER TO THE PROPOSED EDGE OF SIDEWALK OR AS APPROVED BY THE CITY.
13. SEE STREET DESIGN MANUAL, SEPT. 2019, SECT 4.3.4.3-C AND SECT. 4.5 FOR SIDEWALK WIDTH BASED ON LOCATION.

**NOTE:**  
THIS DESIGN IS FOR USE ONLY FOR DRIVES CONSTRUCTED 5' OFF THE LOT LINE WHEN APPROVED BY THE CITY.

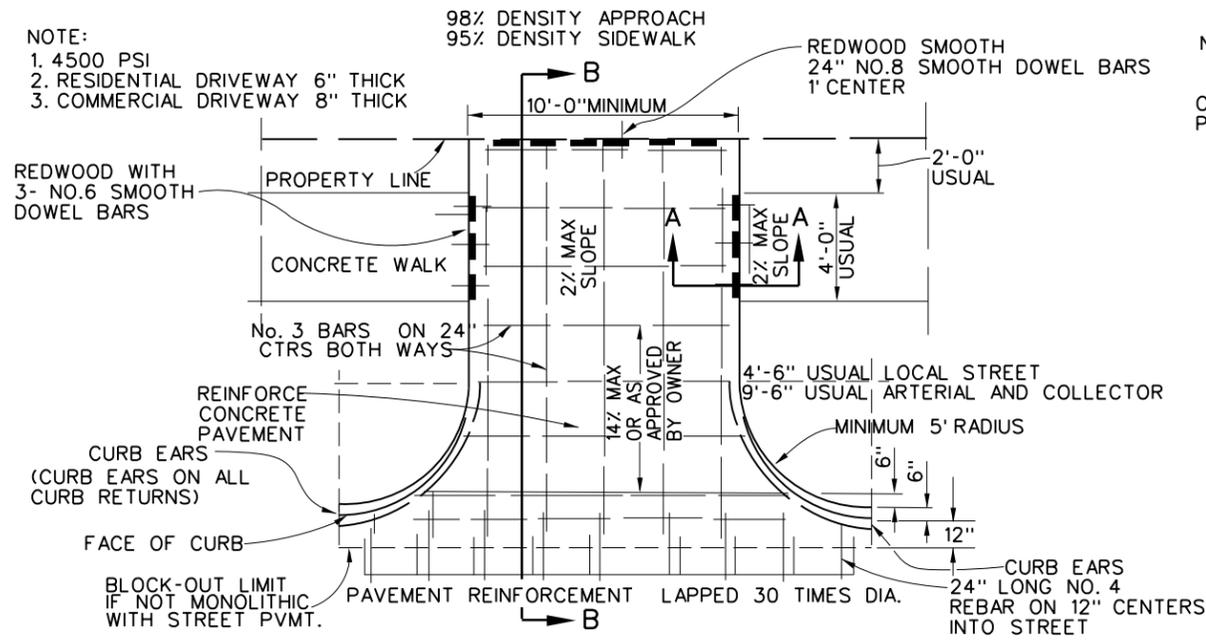
**SPECIAL DRIVEWAY TURNOUT DETAIL**  
LOCAL STREETS

<b>PAVING DETAILS</b>	
SPECIAL DRIVEWAY TURNOUT	
DETAIL	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: SEPTEMBER 2022	SHEET No. 1004B

**NOTES:**

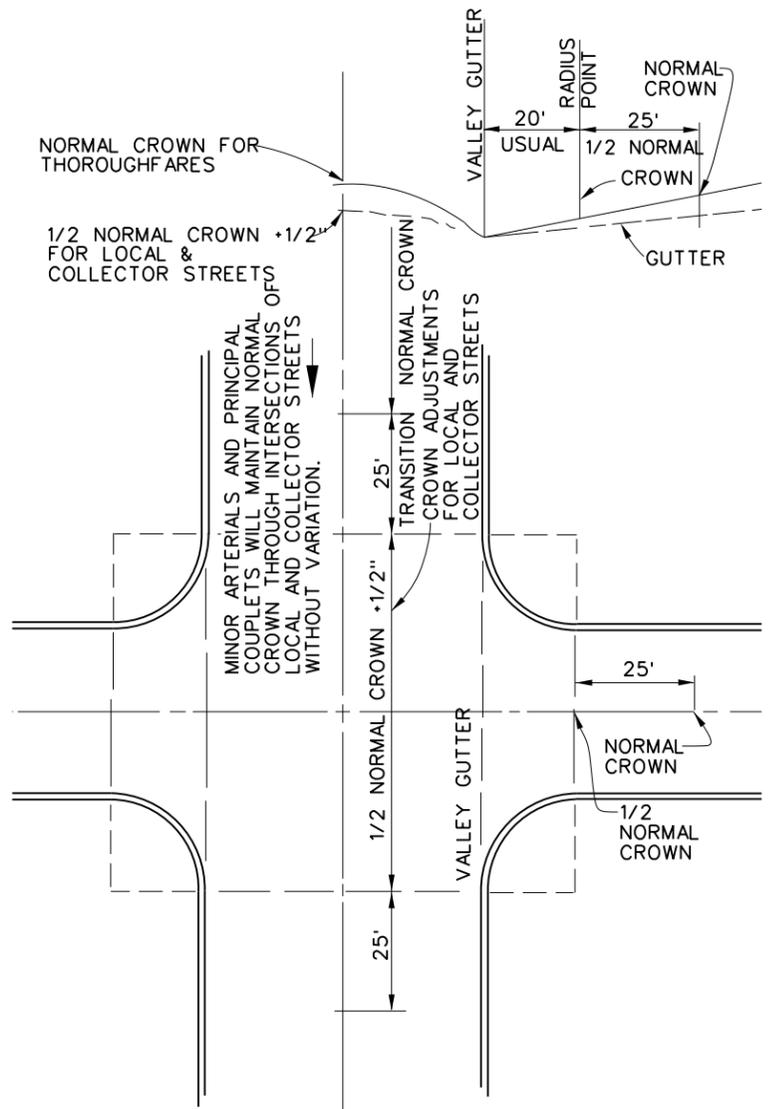
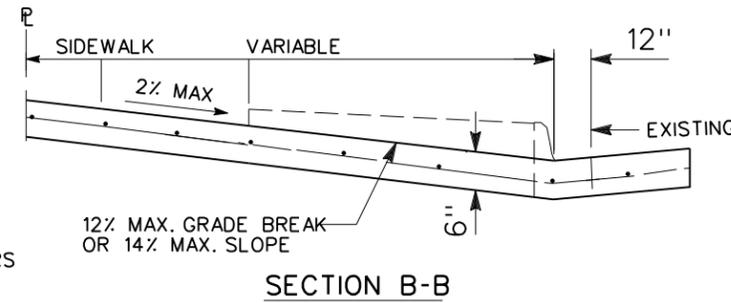
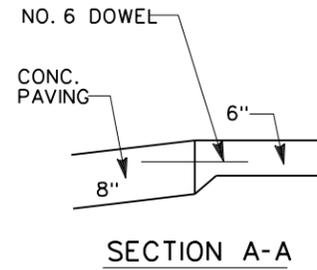
1. REFER TO THE MOST CURRENT EDITION OF THE STREET DESIGN MANUAL FOR MINIMUM AND MAXIMUM DRIVEWAY GRADES AND CURB RADIUS.
2. SEE SHEET No. 1006 FOR GENERAL NOTES.

- NOTE:  
 1. 4500 PSI  
 2. RESIDENTIAL DRIVEWAY 6" THICK  
 3. COMMERCIAL DRIVEWAY 8" THICK

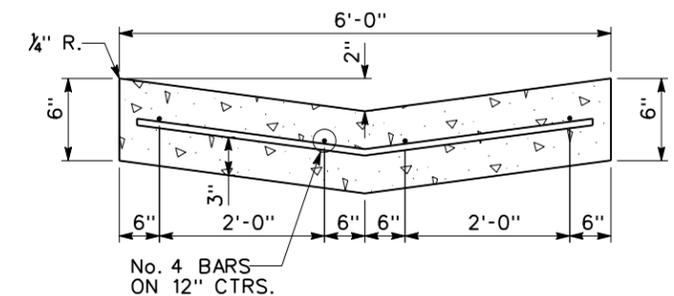


CONTROL JOINT @ CENTERLINE OF ALL DRIVE APPROACHES <24' WIDE ADD JOINTS IF >24'. CONTRACTOR SHOULD MATCH EXPANSION JOINT WHEN POSSIBLE.

**DRIVEWAY PAVING DETAILS**

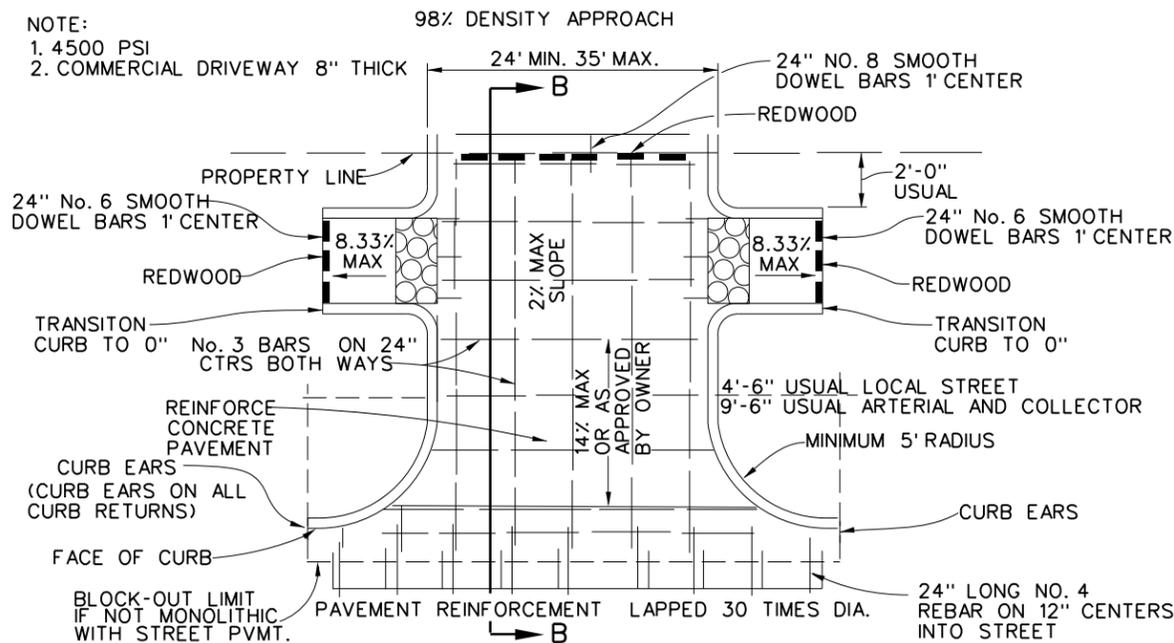


**PARABOLIC CROWN**  
(ADJUSTMENT AT VALLEY GUTTER)



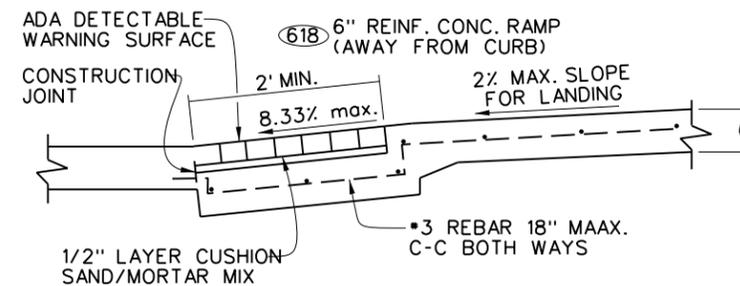
**VALLEY GUTTER**

- NOTE:  
 1. 4500 PSI  
 2. COMMERCIAL DRIVEWAY 8" THICK



CONTROL JOINT @ CENTERLINE OF ALL DRIVE APPROACHES <24' WIDE ADD JOINTS IF >24'. CONTRACTOR SHOULD MATCH EXPANSION JOINT WHEN POSSIBLE.

**COMMERCIAL DRIVEWAY APPROACH WITH MONOLITHIC BFR**



**BARRIER FREE RAMP PAVEMENT DETAIL**  
IF APPROVED BY THE CITY

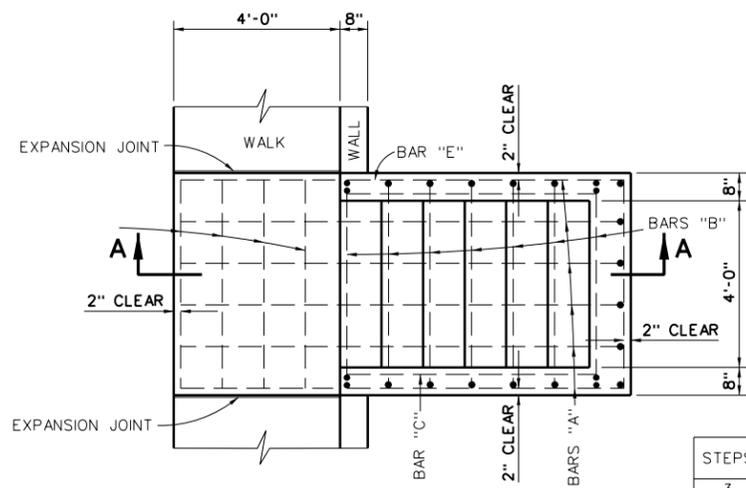
<b>PAVING DETAILS</b>	
ALTERNATIVE DRIVEWAYS AND INTERSECTIONS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1005

GENERAL NOTES FOR DRIVEWAYS:

1. A) ALL JOINTS SHALL BE SEALED  
 B) JOINTS SHOULD BE CLEAN AND DRY PRIOR TO PLACEMENT OF SEALANT  
 C) JOINT SEAL - HOT Poured POLYMER SELECT AS SPECIFIED IN NCTCOG, OR ELASTOMERIC MATERIALS AS SPECIFIED IN NCTCOG, \*164 HOT-APPLIED, HI-SPEC HOT-APPLIED POLYMERIC SEALANT OR EQUAL APPROVED SEALANT.
2. TOOLED OR CONTROL JOINT WILL BE REQUIRED AT CENTERLINE OF ALL DRIVEWAY LESS THAN OR EQUAL TO 24' WIDE. ADDITIONAL JOINTS WILL BE REQUIRED AT EQUAL SPACINGS FOR DRIVEWAY WIDER THAN 24'.
3. PAVEMENT JOINTS WILL NOT EXTEND THROUGH DRIVE EXCEPT AS PROVIDED IN NOTE 9 BELOW FOR CENTERLINE DRIVEWAY JOINTS.
4. DRIVEWAY WILL BE TIED TO PAVEMENT. DOWELS TO EXISTING PAVEMENT SHALL CONSIST OF No. 4 (1/2") DEFORMED REBAR 24" LONG ON 12" CENTER DRILLED AND EPOXIED.
5. A 3/4" REDWOOD EXPANSION JOINT WILL BE PLACED AT THE PROPERTY LINE WITH No. 6 DOWELS AT 12" CENTER, REDWOOD MUST BE THE FULL DEPTH OF CONCRETE.
6. LENGTH OF TRANSITION FOR CURB AT SIDE OF DRIVE MAY VARY DUE TO STREET GRADES AND REQUIREMENT TO HOLD MAXIMUM SLOPE OF 8.33%.
7. TRANSVERSE CONTROL JOINTS SHALL BE CONSTRUCTED ON 15' SPACINGS FOR DRIVEWAYS AS MEASURED FROM THE BACK OF CURB.
8. LONGITUDINAL CONTROL OR TOOLED JOINTS SHALL BE CONSTRUCTED FROM THE GUTTER TO THE PROPERTY LINE FOR ALL DRIVEWAYS WIDER THAN 15'.
9. VERIFY ANY JOINTS IN STREET ALONG DRIVE APPROACH, DRIVE APPROACH JOINT LAYOUT MUST ACCOMMODATE STREET JOINTS.
10. LOCATIONS SHOWING EVIDENCE OF ELEVATION DIFFERENCES AFTER ADDITION OF NEW CONSTRUCTION WILL REQUIRE CORRECTIVE ACTION. STREET AND GUTTER GRADES ADJACENT TO DRIVE APPROACH MAY REQUIRE ADDITIONAL REMOVAL AND REPLACEMENT TO PROVIDE A PROPER DRAINAGE AND VEHICLE RIDE.
11. SUBGRADE COMPACTION UNDER DRIVE APPROACHES SHALL BE 98% STANDARD PROCTOR DENSITY AT -2 TO +4 OF OPTIMUM MOISTURE CONTENT. CERTIFIED DENSITY RESULTS MUST BE SUBMITTED TO CITY PRIOR TO CONCRETE PLACEMENT.
12. COMMERCIAL DRIVE APPROACHES SHALL BE 8" THICK CONCRETE WITH No. 3 (3/8") DEFORMED REBAR ON 24" CENTERS.
13. 8" OF LIME OR CEMENT TREATED SUBGRADE REQUIRED WHEN THE SOIL P.I. IS GREATER THAN 15: IN LIEU OF SUBGRADE MODIFICATION AN ADDITIONAL 2" CONCRETE CAN BE ADDED TO TOTAL THICKNESS IF APPROVED BY THE OWNER.
14. CONCRETE FOR DRIVE APPROACHES SHALL BE BATCHED CLASS HAND FINISH CONCRETE (4500 PSI). REFER TO COD ADDENDUM FOR AMBIENT TEMPERATUE REQUIREMENTS PRIOR TO CONCRETE PLACEMENT.
15. OFFSET IN DRIVES TO MATCH PROPOSED WALKS WILL BUILD MONOLITHICALLY WITH THE DRIVE.
16. KEYWAY LIMITS WILL COINCIDE WITH LIMITS OF 1" CURB LIP.
17. LENGTH OF TRANSITION FOR CURB AT EACH SIDE OF DRIVE MAY VARY DUE TO STREET GRADES AND REQUIREMENT TO HOLD MAXIMUM SLOPE OF 8.33%.
18. IN THE TIME WHEN THE DRIVEWAY REPLACEMENT IS REQUIRED. THE DRIVEWAY SHOULD BE REPLACED FULL WIDTH.

<b>PAVING DETAILS</b>	
GENERAL NOTES FOR DRIVEWAYS	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1006

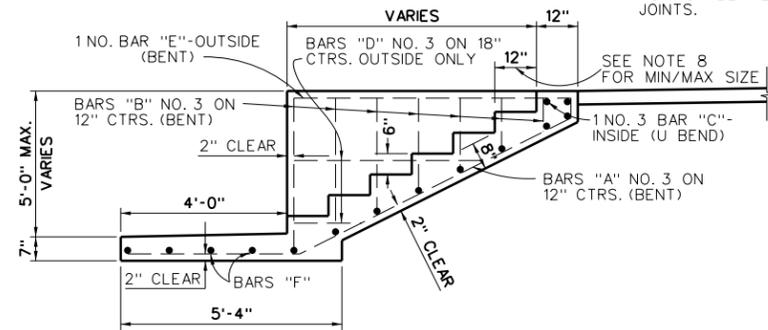




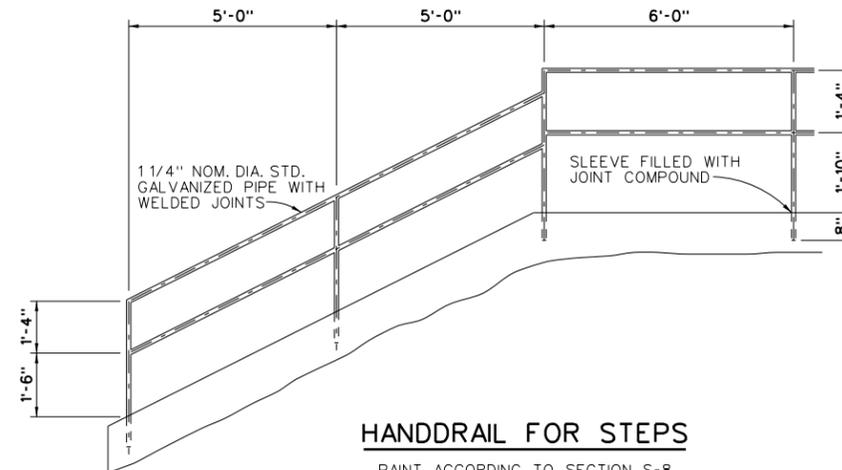
**PLAN  
TYPE 2 STEPS**

STEPS	CONCRETE C.Y.*	STEEL LBS.*
3	1.19	41.45
4	1.42	50.01
5	1.67	59.00
6	1.93	68.18
7	2.20	78.87
8	2.48	89.74
9	2.79	100.80
10	3.09	112.42

\* QUANTITIES INCLUDE WALK PORTION BETWEEN EXPANSION JOINTS.



**SECTION A-A  
TYPE 2 STEPS**



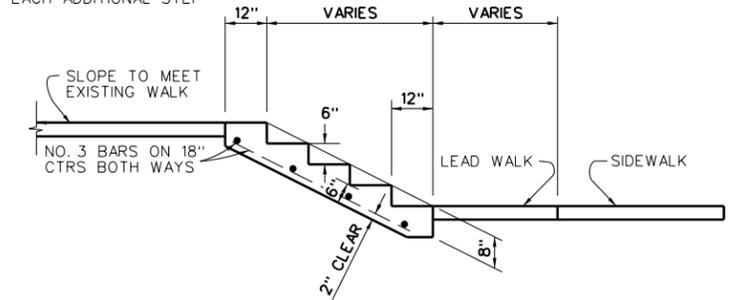
**HANDRAIL FOR STEPS**

PAINT ACCORDING TO SECTION S-8 OF GENERAL SPECIFICATIONS

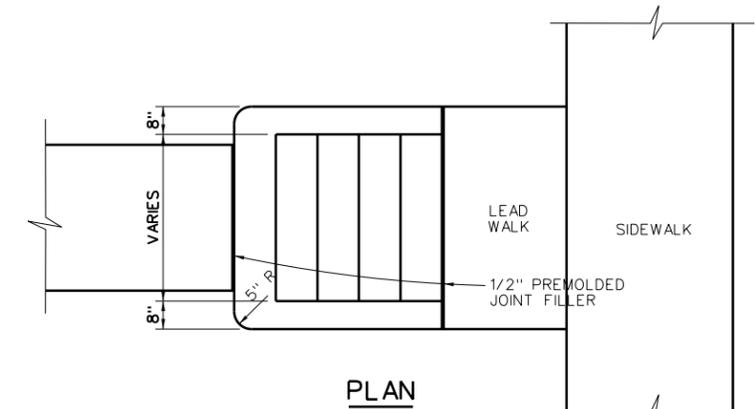
QUANTITIES FOR CONC. STEPS-4 FEET WIDE.

STEPS	CONCRETE C.Y.
1	0.30
2	0.47
3	0.64

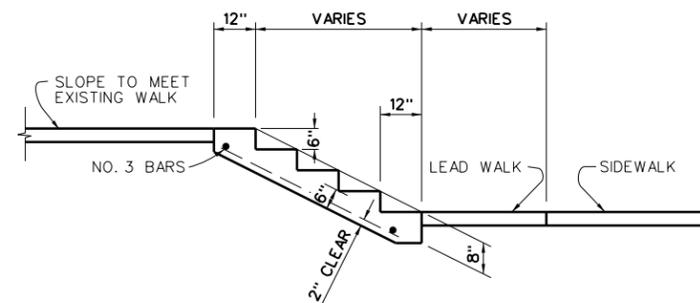
QUANTITIES OF CONCRETE INCREASE BY 0.17 CU. YDS. FOR EACH ADDITIONAL STEP



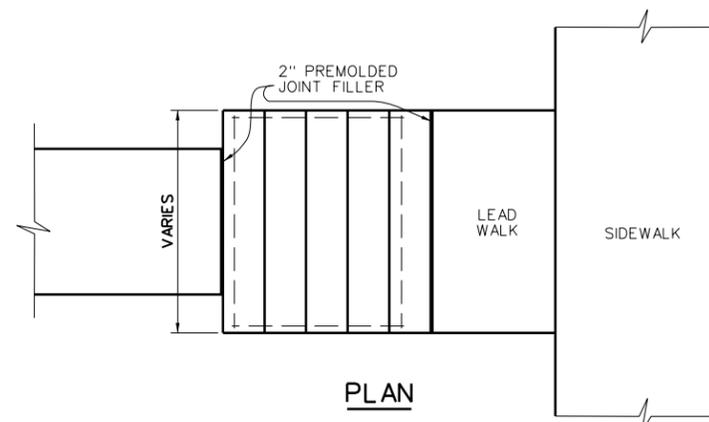
**SECTION  
TYPE 3 STEPS**



**PLAN  
TYPE 3 STEPS  
WITH BUTTRESS WALLS**



**SECTION  
TYPE 4 STEPS**



**PLAN  
TYPE 4 STEPS  
WITHOUT BUTTRESS WALLS**

**GENERAL NOTES:**

1. CONCRETE FOR STEPS TO BE CLASS A CONCRETE.
2. BARS SHALL CONFORM TO SECTION 303.2.9 - STEEL REINFORCEMENT OF THE NCTCOG SPECIFICATIONS (5TH EDITION, 2017)
3. BAR LAPS TO BE 30 TIMES DIAMETER.
4. ALL EXPOSED SURFACES EXCEPT STEP TREADS AND WALK SHALL RECEIVE A RUBBED FINISH.
5. STEPS TREADS AND WALK SHALL RECEIVE A NON-SKID WOOD FLOAT FINISH.
6. STEP EDGES (NOSING) SHALL BE ROUNDED TO 3/8" DIAMETER AND 1/2" MAX.
7. ALL STEPS ON A FLIGHT OF STAIRS SHALL HAVE UNIFORM RISER HEIGHT AND TREAD DEPTH.
8. WIDTH OF TREAD AND / OR DEPTH OF RISER OF ALL STEPS MAY BE MODIFIED IF SO INDICATED IN THE PLANS. RISER HEIGHT SHALL BE 4" MIN AND 7" MAX, TREAD DEPTH SHALL BE 12" MIN. (SEE THE MOST RECENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS)
9. EXPANSION JOINTS SHALL BE COMPOSED OF 1/2" PREMOLDED JOINT FILLER.
10. QUANTITIES ARE BASED ON STEPS HAVING 6" RISERS AND 12" TREADS AND LEAD WALKS 4' WIDE.

**PAVING DETAILS**

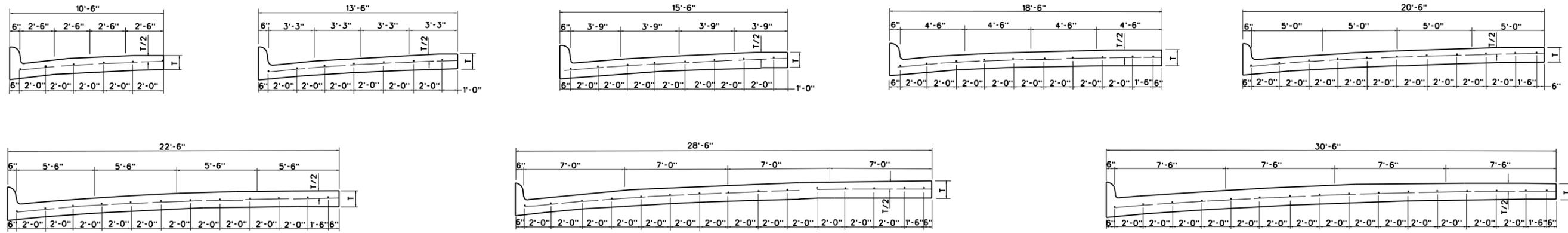
**MISCELLANEOUS DETAILS**

**CONCRETE STEPS AND HANDRAIL FOR STEPS**

DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: SEPTEMBER 2022

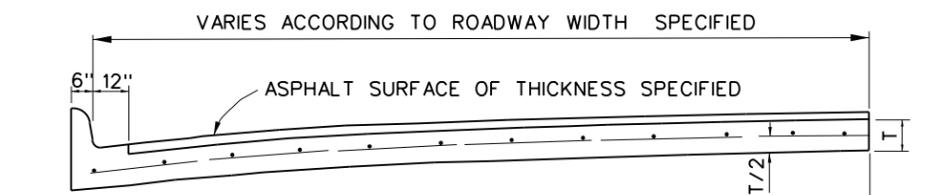
SHEET No.  
1006B



**HALF SECTIONS- REINFORCED CONCRETE PAVEMENT AND CURBS**

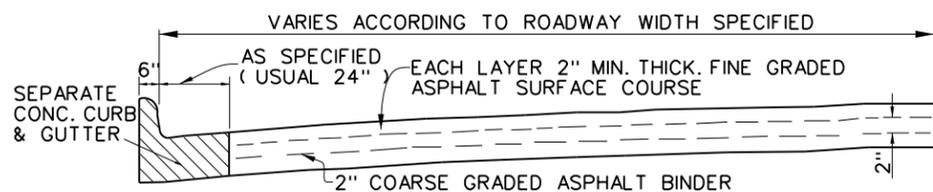
\*SEE NOTE 15  
ALTERNATE DESIGN USING PARABOLIC SECTIONS

\*SEE GENERAL NOTES ON SHEET No. 1007A



**SCHEMATIC HALF SECTION OF REINFORCED CONCRETE BASE WITH INTEGRAL CURB & GUTTER AND ASPHALT SURFACE**

EXCEPT AS INDICATED ABOVE, ALL SECTION DETAILS SHALL BE IDENTICAL TO THOSE SHOWN ELSEWHERE ON THIS SHEET FOR COLLECTOR AND LOCAL TYPE STREETS.

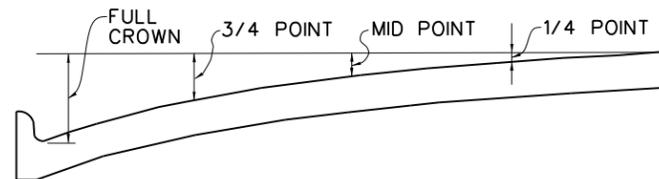


**SCHEMATIC HALF SECTION OF ASPHALT PAVEMENT WITH SEPARATE CONCRETE CURB & GUTTER**

ALL DETAILS RELATING TO CROWN HEIGHTS AND CONTOUR SHALL BE IDENTICAL TO THOSE SHOWN FOR " REINFORCED CONCRETE BASE WITH ASPHALT SURFACE." ASPHALT SHALL BE PLACED IN LIFTS OF NO MORE THAN 3 INCHES.

**TABLE OF CROWN HEIGHTS AND ORDINATES FOR VARIOUS PARABOLIC/CROWN SECTIONS**

\* SEE NOTE 12.



ROADWAY WIDTH	TYPE SURFACE	TOTAL CROWN	3/4 POINT	MID POINT	1/4 POINT
20'	CONCRETE	3"	1-11/16"	3/4"	3/16"
20'	ASPHALT	4"	2-1/4"	1"	1/4"
26'	CONCRETE	4"	2-1/4"	1"	1/4"
26'	ASPHALT	5"	2-13/16"	1-1/4"	5/16"
33'	CONCRETE	6"	3-3/8"	1-1/2"	3/8"
33'	ASPHALT	7"	3-15/16"	1-3/4"	7/16"
36'	CONCRETE	6"	3-3/8"	1-1/2"	3/8"
36'	ASPHALT	7"	3-15/16"	1-3/4"	7/16"
40'	CONCRETE	6"	3-3/8"	1-1/2"	3/8"
40'	ASPHALT	7"	3-15/16"	1-3/4"	7/16"
44'	CONCRETE	6"	3-3/8"	1-1/2"	3/8"
44'	ASPHALT	7"	3-15/16"	1-3/4"	7/16"
56'	CONCRETE	8"	4-1/2"	2"	1/2"
56'	ASPHALT	9"	5-1/16"	2-1/4"	9/16"
60'	CONCRETE	8"	4-1/2"	2"	1/2"
60'	ASPHALT	9"	5-1/16"	2-1/4"	9/16"

CLASSIFICATION	T
-LOCAL STREET, NOT ON BUS ROUTE.	6"
-LOCAL STREET, ON BUS ROUTE.	8"
-RESIDENTIAL COLLECTOR	8"
-COMMUNITY COLLECTOR NORMAL TRAFFIC DESIGN LOADING.	9"
-COMMUNITY COLLECTOR HEAVY TRAFFIC DESIGN LOADING.	10"
-PRINCIPAL AND MINOR ARTERIALS, NORMAL TRAFFIC DESIGN LOADING.	9"
-PRINCIPAL AND MINOR ARTERIALS, HEAVY TRAFFIC DESIGN LOADING.	11"
-CBD STREETS	10" ON 4" CTB
-CBD STREETS (ALTERNATE DESIGN)	10" ON 8" CEMENT STABILIZED SUBGRADE (10%)

SEE STREET DESIGN MANUAL, TABLE 5.4 FOR DESIGN DETAILS

<b>PAVING DETAILS</b>	
PAVEMENT HALF SECTIONS	
ALTERNATE DESIGN	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1007

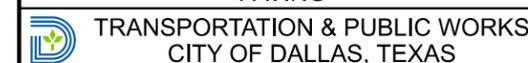
GENERAL NOTES FOR ALL TYPES OF REINFORCED CONCRETE PAVEMENT OR BASE -- ARTERIAL, COLLECTOR AND LOCAL:

1. ALL SUBGRADE COMPACTION UNDER STREET PAVEMENT SHALL BE 98% STANDARD PROCTOR DENSITY AT -2% TO +4% OF OPTIMUM MOISTURE.
2. THE MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE AS INDICATED ON THE PLANS AND ON THE SPECIFICATIONS.
3. BARS SHALL CONFORM TO CITY OF DALLAS STANDARD SPECIFICATIONS AND BE GRADE 60 KSIDEFORMED REINFORCING BARS. SIZES AND SPACING SHALL BE AS INDICATED HEREIN EXCEPT SUCH ALTERNATES THAT MAY BE ALLOWED IN THE SPECIFICATIONS.
4. ALL CURB & GUTTER SHALL BE INTEGRAL WITH PAVEMENT OR BASE.
5. AS REFLECTED IN "TABLE OF CROWN HEIGHTS AND ORDINATES FOR VARIOUS PARABOLIC SECTIONS", TOTAL CROWN HEIGHTS FOR ASPHALT PAVEMENT AND CONCRETE BASE WITH ASPHALT SURFACE SHALL BE UNIFORMLY ONE INCH GREATER THAN THOSE INDICATED FOR CONCRETE SURFACES, WIDTH FOR WIDTH OF ROADWAY.
6. CROWNS FOR ALL DIVIDED ARTERIAL STREET TYPE SHALL BE STRAIGHT-LINE SLOPES.
7. CROWNS FOR ALL UNDIVIDED ARTERIAL, LOCAL OR COLLECTOR STREET TYPES MAY BE PARABOLIC OR STRAIGHT IN SECTION.
8. DETAIL AND ARRANGEMENT OF JOINTS, ALL TYPES, SHALL BE AS SHOWN ON SHEETS No. 1003 AND 1003A.
9. INTEGRAL CONCRETE CURB AND CURB & GUTTER SHALL BE OF THE SAME COMPRESSIVE STRENGTH AS THE PAVEMENT OR BASE.
10. SEPARATE CONCRETE CURB & GUTTER SHALL BE MINIMUM 4500 PSIBY HAND AND 4000 PSI WITH MACHINE.
11. SEPARATE CONCRETE CURB & GUTTER SHALL BE TOOLED 1 INCH DEEP WITH AN APPROVED TOOL IN 10 FOOT SECTIONS. EACH FOURTH JOINT SHALL BE A 3/4" REDWOOD EXPANSION JOINT THE FILLER SHALL BE OF 1/2 INCH PREMOLDED BITUMINOUS JOINT MATERIAL SHAPED SIMILAR TO THE CROSS SECTION OF CURB & GUTTER. THREE DOWELS SHALL BE EMPLOYED FOR EACH EXPANSION JOINT.
12. BAR LAPS SHALL BE 30 TIMES DIAMETER OF THE SIZE OF THE BAR.
13. FOR SUBGRADE STABILIZATION REFER TO NCTCOG, GEOTECHNICAL REPORT, OR ENGINEERING PLANS, WHICHEVER IS MORE CONSERVATIVE.
14. ALL BARS FOR CONCRETE STREET THICKNESSES < 10" SHALL BE NO. 4 REINFORCING BARS SPACED 12" ON CENTERS EACH WAY. ALL BARS FOR CONCRETE STREET THICKNESS >= 10" SHALL BE NO. 4 REINFORCING BARS SPACED 9" ON CENTERS EACH WAY. FOR THICKNESS >= 12" DESIGN ENGINEER MUST SPECIFY REBAR SIZE.
15. ALL CROWNS ARE TO BE PARABOLIC OR ROOFTOP IN SECTION AND SYMMETRICAL IN CENTERLINE OF PAVEMENT.
16. JRCP AND CRCP PAVEMENT DETAILS APPLIES TO THE FOLLOWING TYPE OF STREET:  
JRCP PAVEMENT AND DETAILS APPLIES TO RESIDENTIAL STREETS AND JRCP STREET REPAIRS  
CRCP PAVEMENT AND DETAILS APPLIES TO MINOR AND MAJOR ARTERIAL THOROUGHFARES

**PAVING DETAILS**

GENERAL NOTES

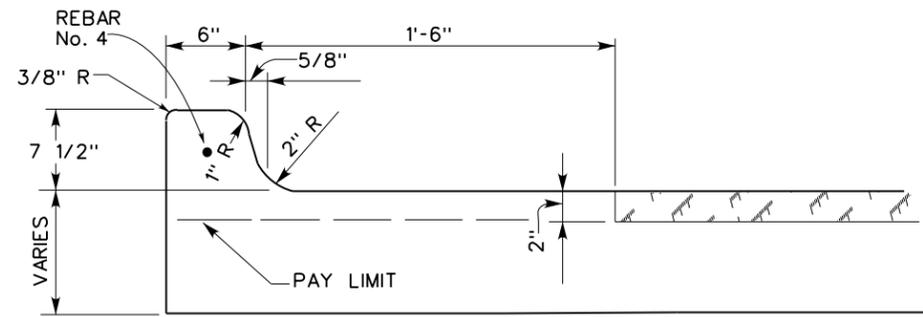
PAVING



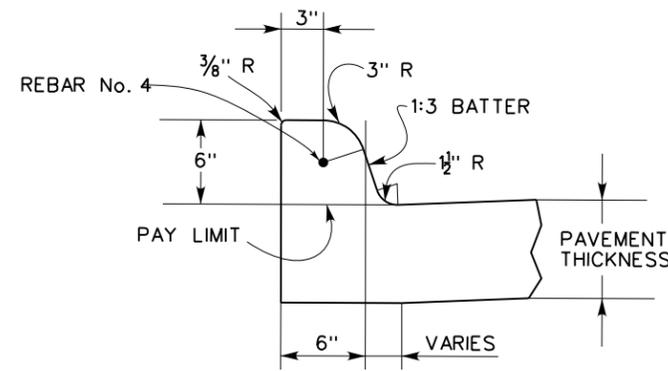
TRANSPORTATION & PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: FEBRUARY 2026

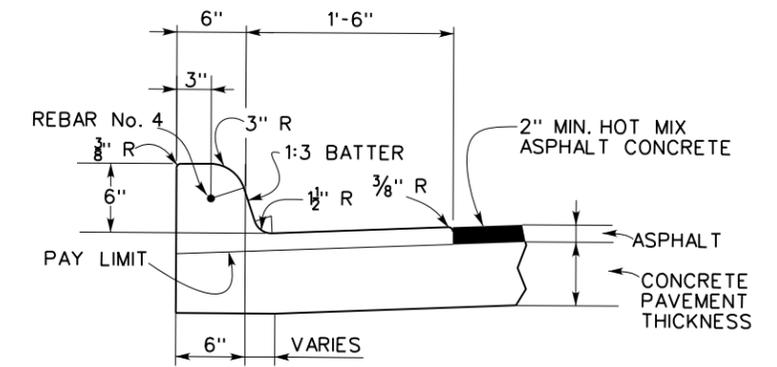
SHEET No.  
1007A



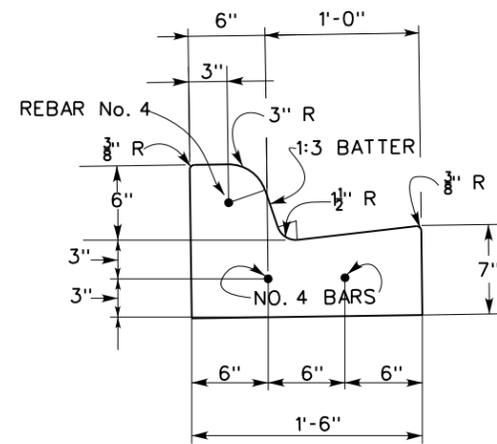
SPECIAL CURB & GUTTER



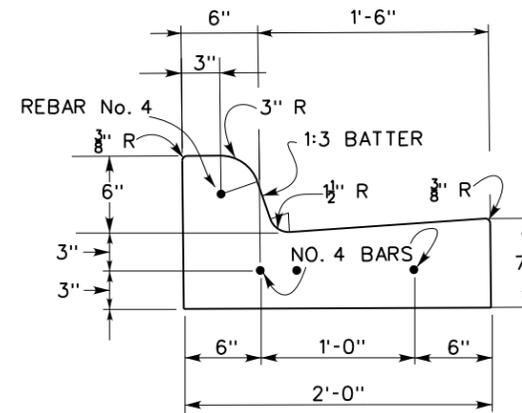
INTEGRAL CURB



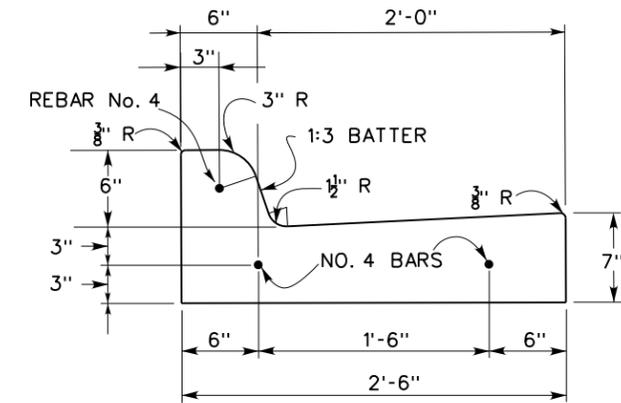
INTEGRAL CURB & GUTTER



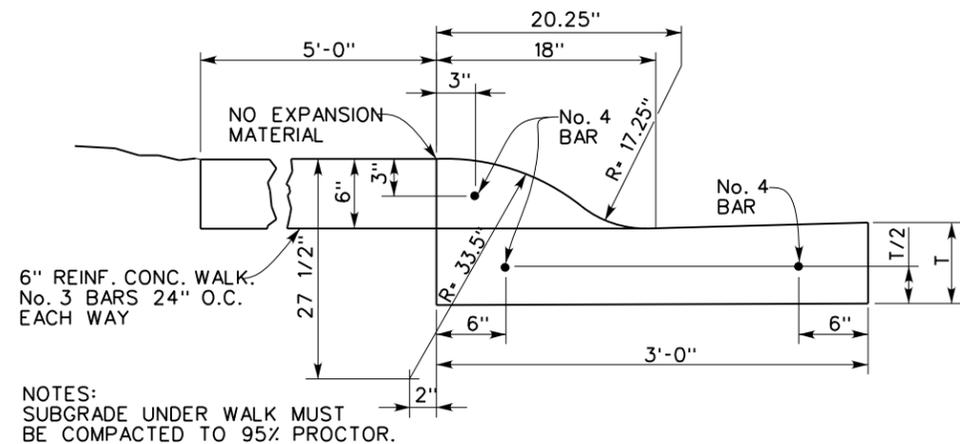
1'-6" SEPARATE CURB AND GUTTER



2'-0" SEPARATE CURB AND GUTTER



2'-6" SEPARATE CURB AND GUTTER



6" REINF. CONC. WALK.  
No. 3 BARS 24" O.C.  
EACH WAY

NOTES:  
SUBGRADE UNDER WALK MUST  
BE COMPACTED TO 95% PROCTOR.

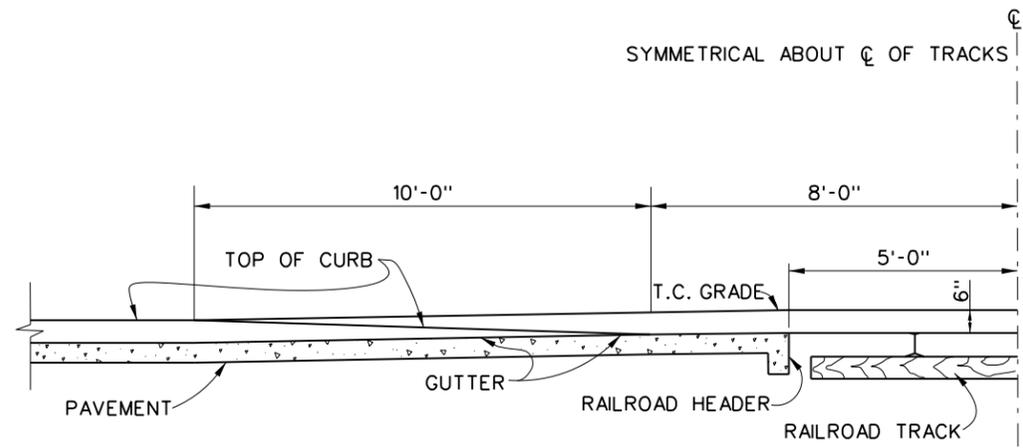
MOUNTABLE CURB AND GUTTER DETAILS  
REINF. CONC. WALK DETAILS

NOTES:

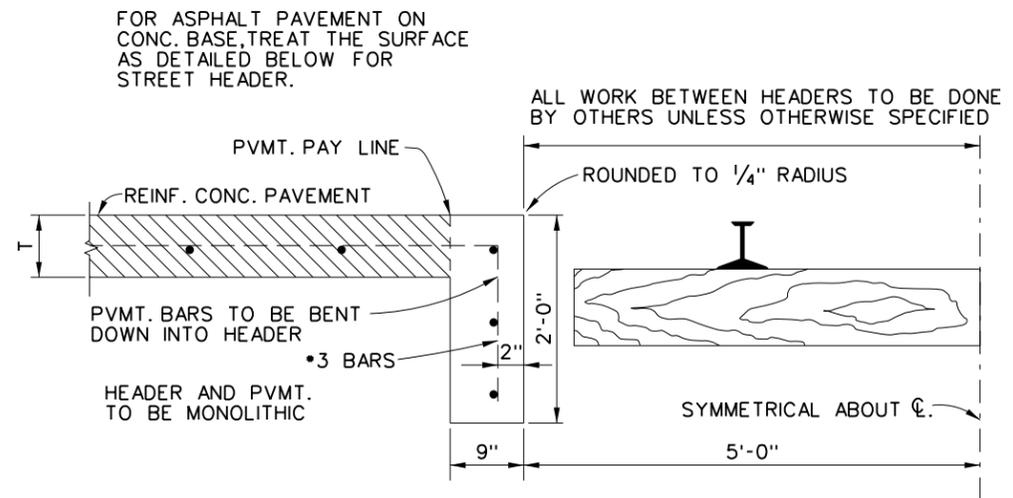
1. ALL REINFORCEMENT STEEL SHALL BE MINIMUM No. 4 BARS. EXCEPT FOR CBD AS SHOWN ON SHEET No. 1008A.
2. SEPARATE CURB WITH 12" OR 18" GUTTER SHALL BE USED ONLY AS REPLACEMENT TO MATCH EXISTING CONDITIONS
3. FOR CONNECTING SEPARATE CURB AND GUTTER TO AN EXISTING CONCRETE STREET, No. 4 BARS MUST BE PLACED EVERY 24" WITH NO SEPARATE PAY ITEM.

\*SEE GENERAL NOTES ON SHEET No. 1007A FOR FURTHER INFORMATION.

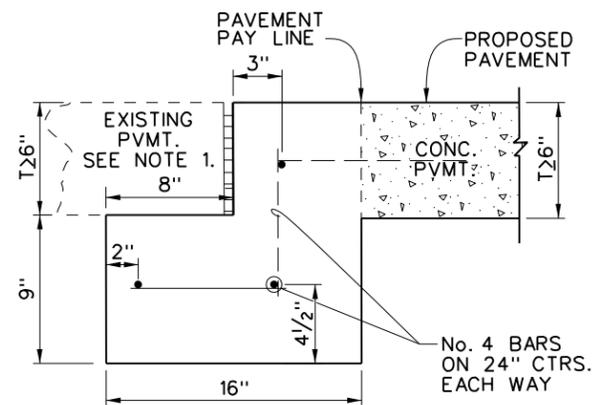
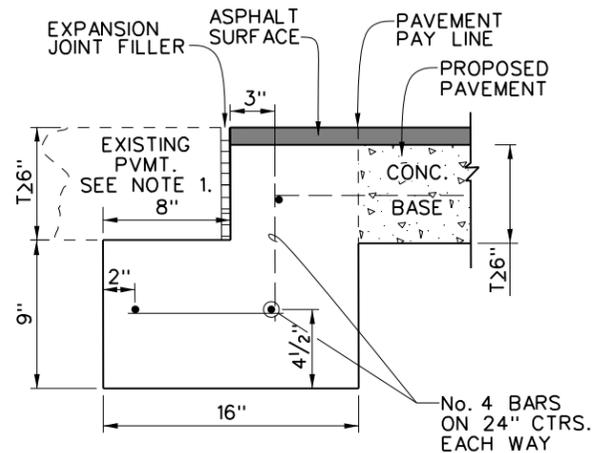
<b>PAVING DETAILS</b>	
CURB AND GUTTER	
DETAILS	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1007B



CURB DETAIL AT RAILROAD



RAILROAD HEADER

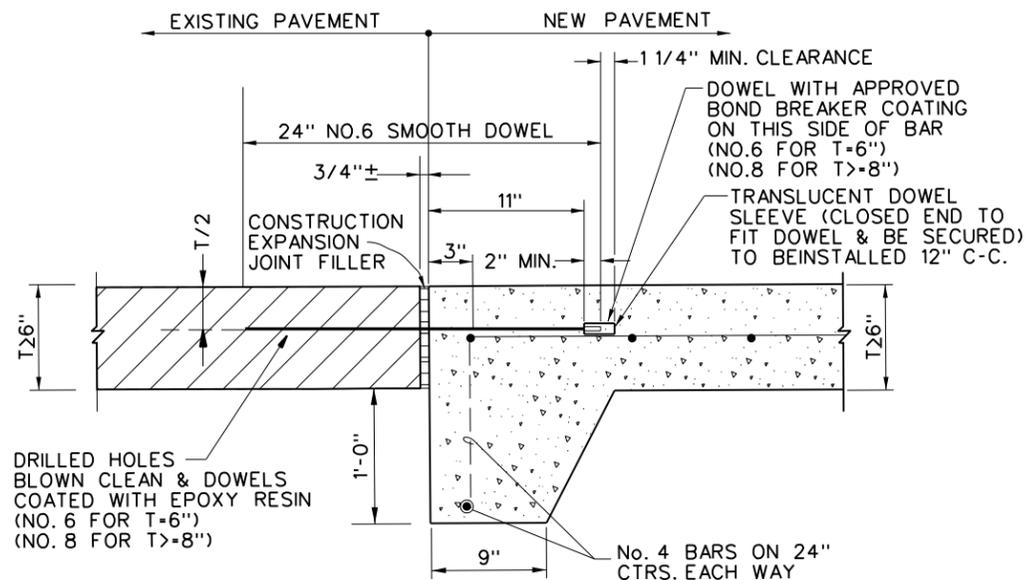


PAVEMENT BARS TO BE BENT DOWN INTO HEADER.  
HEADER AND PAVEMENT TO BE MONOLITHIC

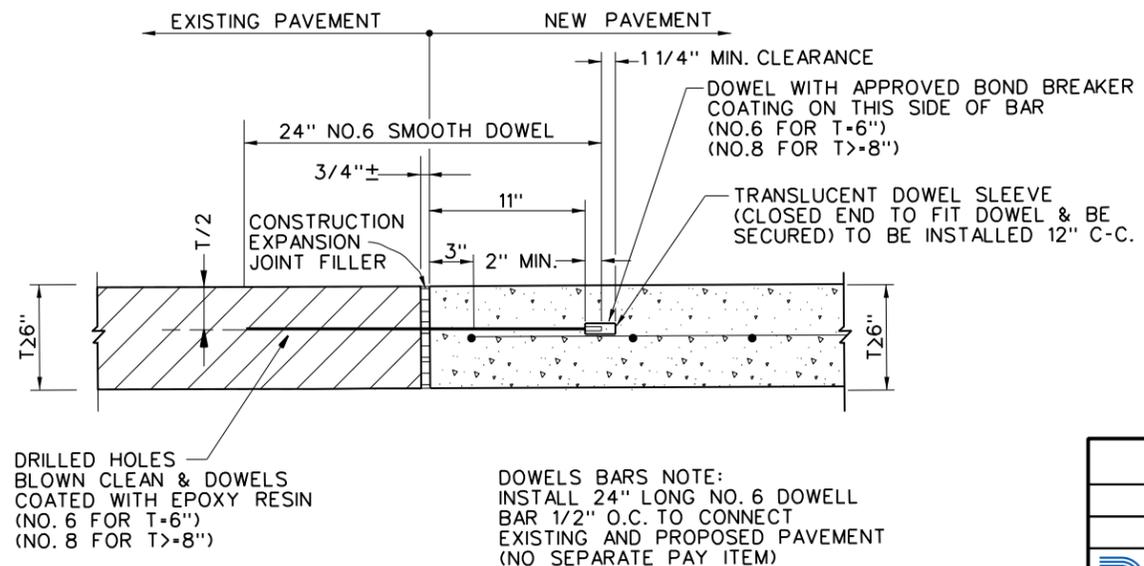
STREET HEADER

NOTE:

- 1) STREET HEADER TO BE USED TO CONNECT NEW PAVEMENT WITH EXISTING ASPHALT PAVEMENT, CONCRETE PAVEMENT WITH ASPHALT OVERLAY OR WITH EXISTING CONCRETE PAVEMENT IF THE CONCRETE IS DAMAGED AND CANNOT DRILL HOLES FOR DOWELS.



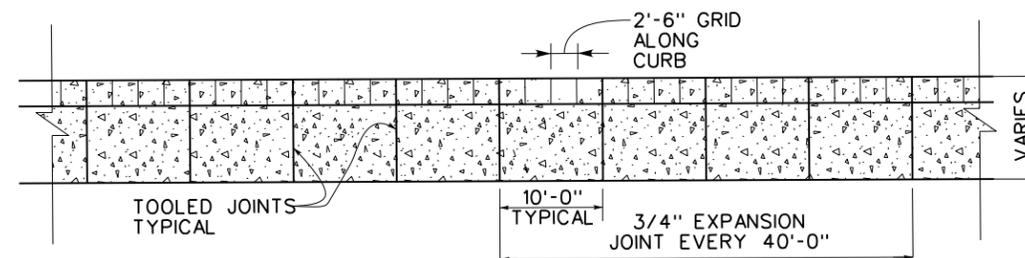
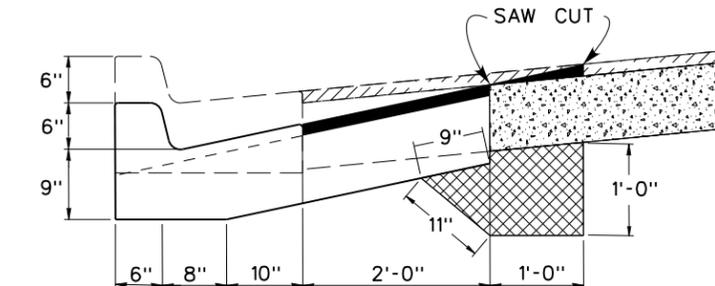
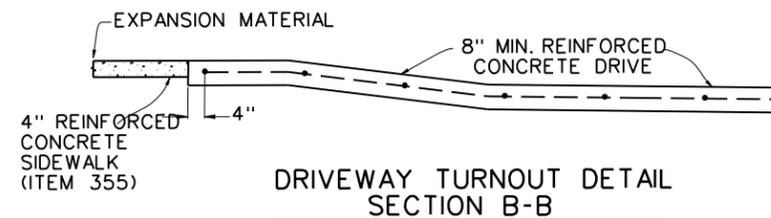
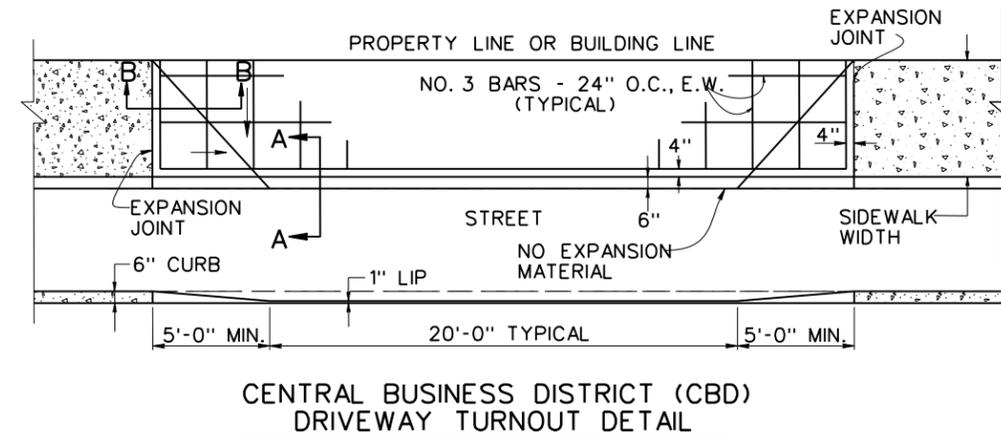
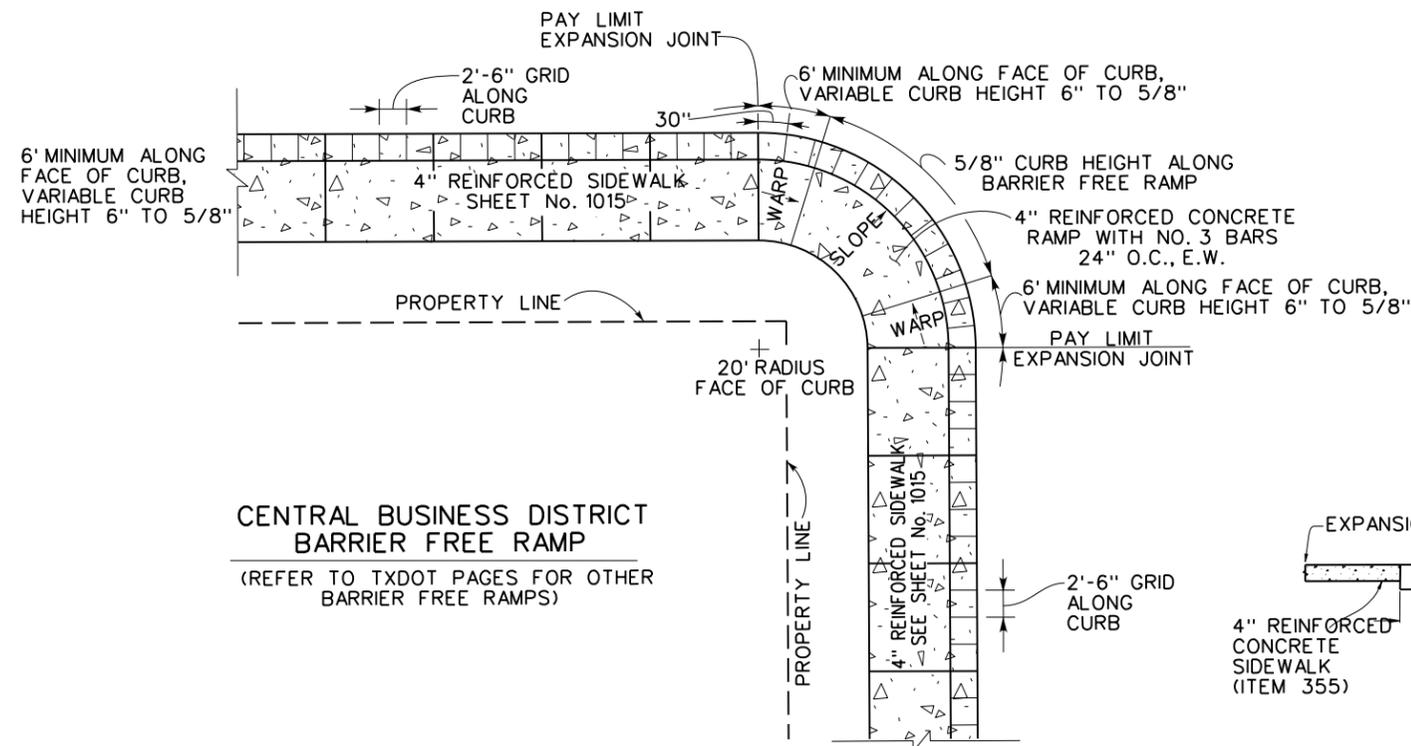
STREET HEADER AT EXISTING PAVEMENT



NEW TO EXISTING PAVEMENT CONNECTION

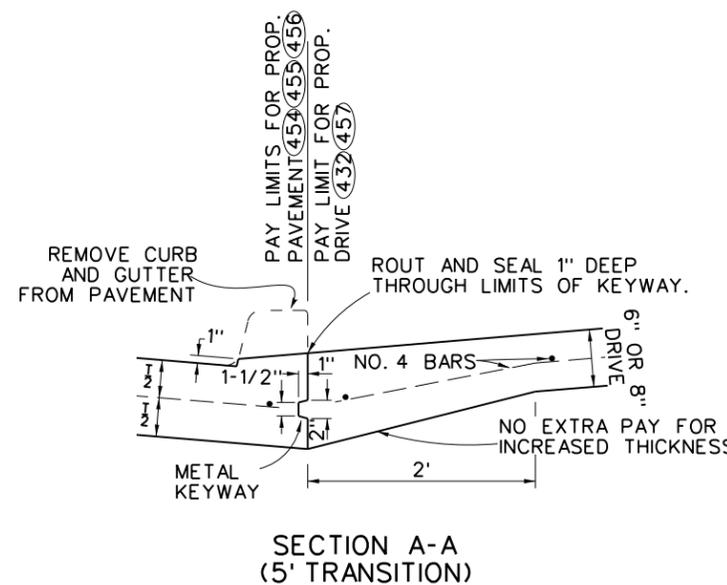
DOWELS BARS NOTE:  
INSTALL 24" LONG NO. 6 DOWELL  
BAR 1/2" O.C. TO CONNECT  
EXISTING AND PROPOSED PAVEMENT  
(NO SEPARATE PAY ITEM)

<b>PAVING DETAILS</b>	
PAVEMENT HEADER SECTION	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: SEPTEMBER 2022	SHEET No. 1007C

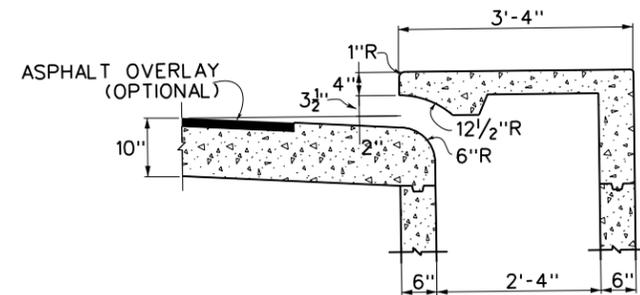
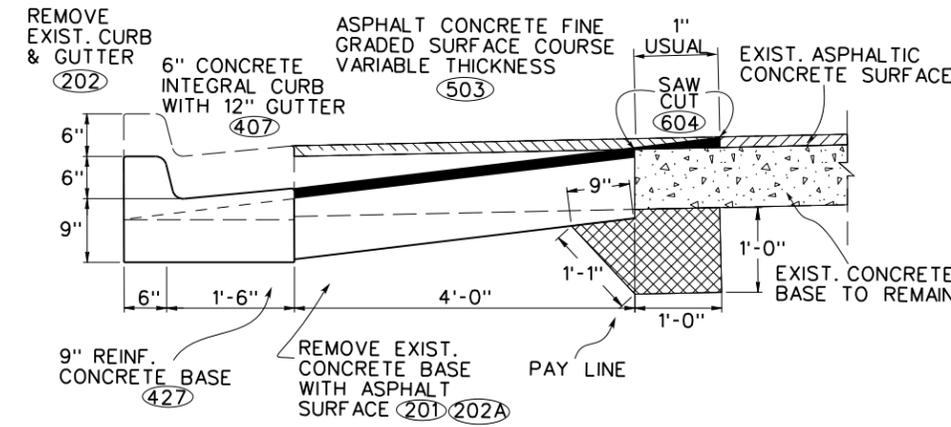


NOTE:

- TOOLED JOINTS FOR SIDEWALKS AGAINST CURB MUST MATCH STREET PAVING JOINTS.  
EXPANSION JOINTS FOR SIDEWALKS AGAINST CURB MUST ALIGN WITH THE EXPANSION JOINTS IN THE STREET PAVEMENT.  
- TYPICAL EXPANSION JOINT IN THE STREET HAS A MAXIMUM OF 150'  
- TYPICAL EXPANSION JOINT IS S.W. 40'



**SECTION A-A (5' TRANSITION)**

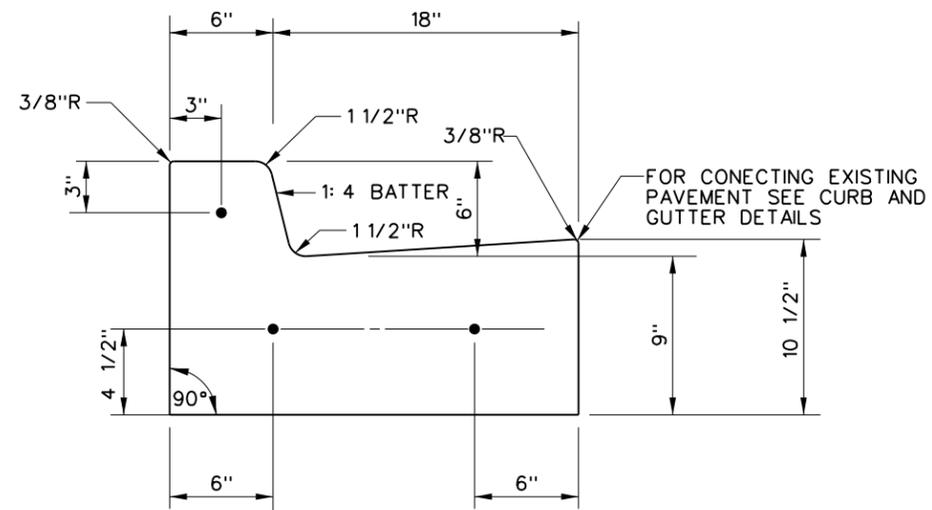


**CENTRAL BUSINESS DISTRICT (CBD) SHALLOW DEPRESSION INLETS**  
(SEE SHEET No. 2004 FOR REINFORCEMENT DETAILS)

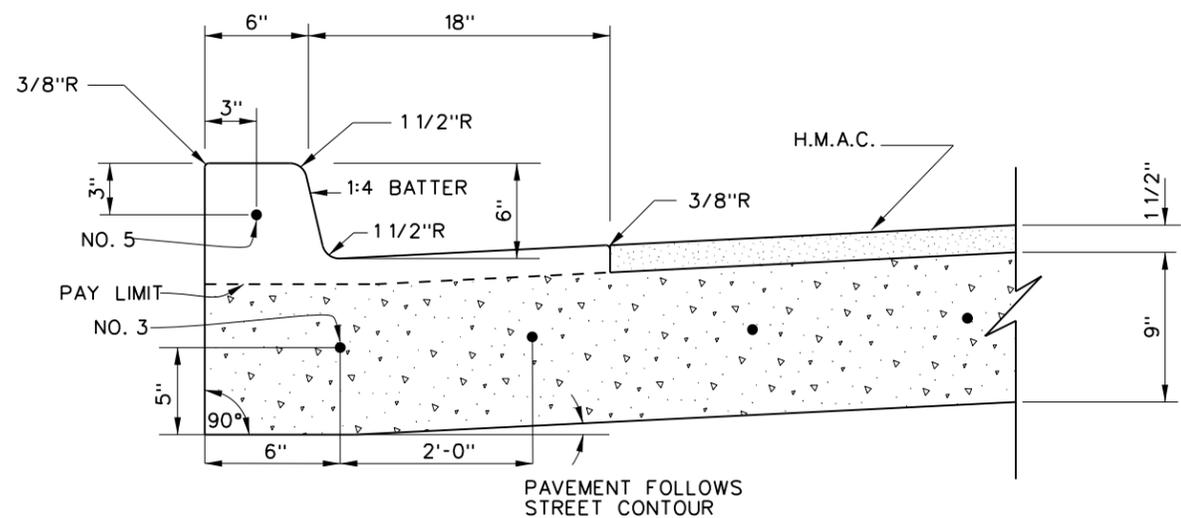
NOTE:

- STANDARD PAVEMENT FOR CBD STREETS IS INTEGRAL CURB WITH 10" THICK REINFORCED CONCRETE PAVEMENT ON 4" CTB 4500 PSI. ANY EXCEPTIONS MUST BE PROVIDED FOR IN THE PLANS APPROVAL FOR THE PROJECT.
- 9" BASE USED WITH STANDARD 4" CTB 650 PSIDESIGN: 9" BASE USED ON ALTERNATIVE 8" CEMENT STABILIZED SUBGRADE (@10X) DESIGN
- KEYWAY LIMITS WILL CONCLUDE WITH 1" LIMITS OF 1" CURB
- REINFORCING STEEL WILL EXTEND THROUGH KEYWAY. DRIVE WILL BE TIED TO PAVEMENT
- MAXIMUM SLOPE ON DRIVE IN ANY DIRECTION SHOULD BE 1" PER 1" TO RESPECT PRINCIPLES OF BARRIER FREE CONSTRUCTION
- LENGTH OF TRANSITION FOR CURB AT EACH SIDE OF DRIVE MAY VARY DUE TO STREET GRADES AND REQUIREMENT TO HOLD MAXIMUM SLOPE OF 8.33%.

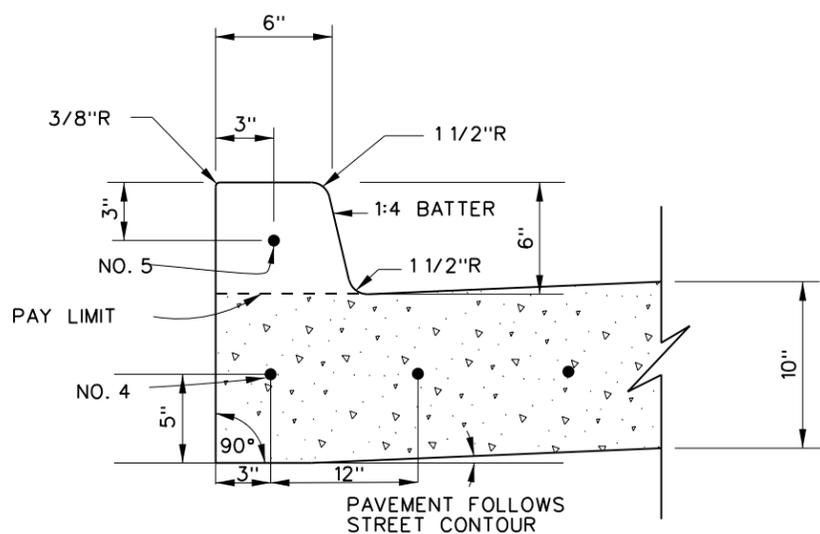
PAVING DETAILS	
CBD	
SPECIAL DETAILS	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1008



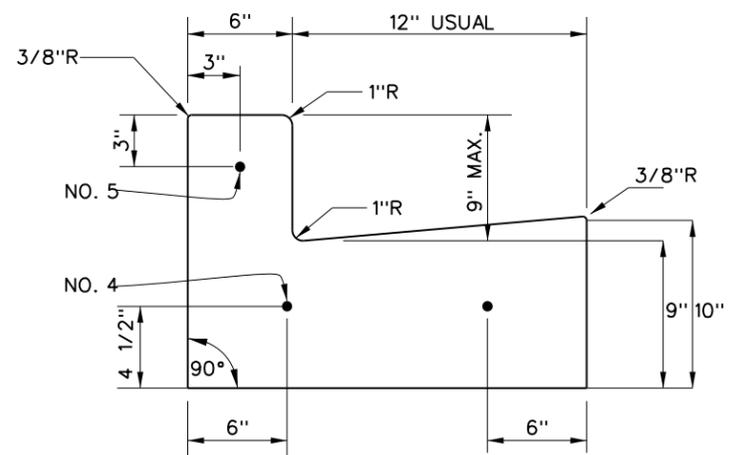
REINFORCEMENT SHALL BE NO. 5 BARS  
CBD SEPARATE CURB & GUTTER



REINFORCEMENT SHALL BE AS NOTED  
CBD INTEGRAL CURB & GUTTER



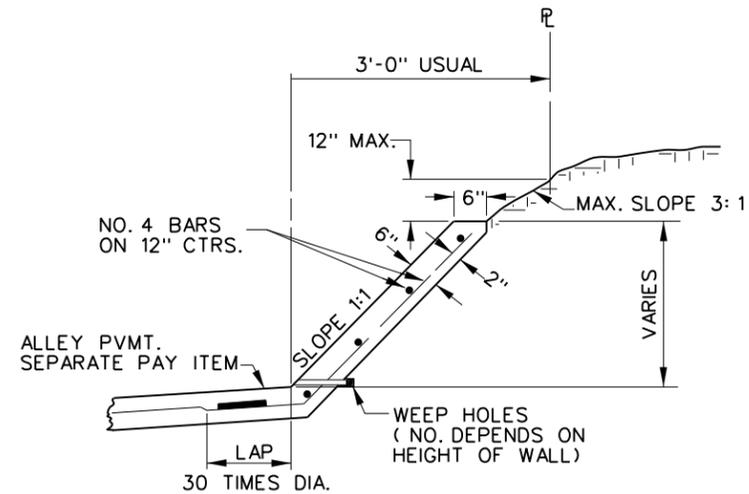
REINFORCEMENT SHALL BE AS NOTED  
CBD INTEGRAL CURB



CBD SEPARATE CURB & GUTTER  
 FOR REPLACEMENT OF MID-BLOCK SECTIONS TO MATCH EXISTING

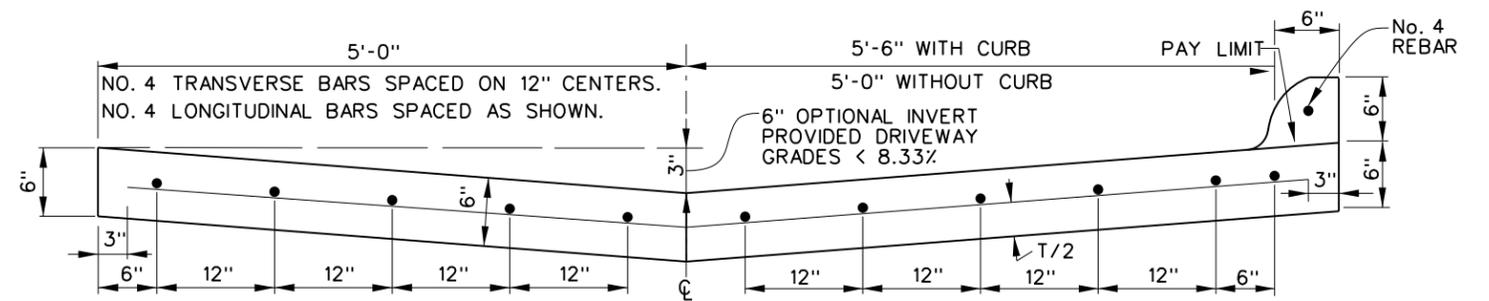
\*REMOVAL OF THE ASPHALT OVER THE CONCRETE IS SUBSIDIARY TO CONCRETE REMOVAL

<b>PAVING DETAILS</b>	
CBD	
CURB AND GUTTER DETAILS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1008A

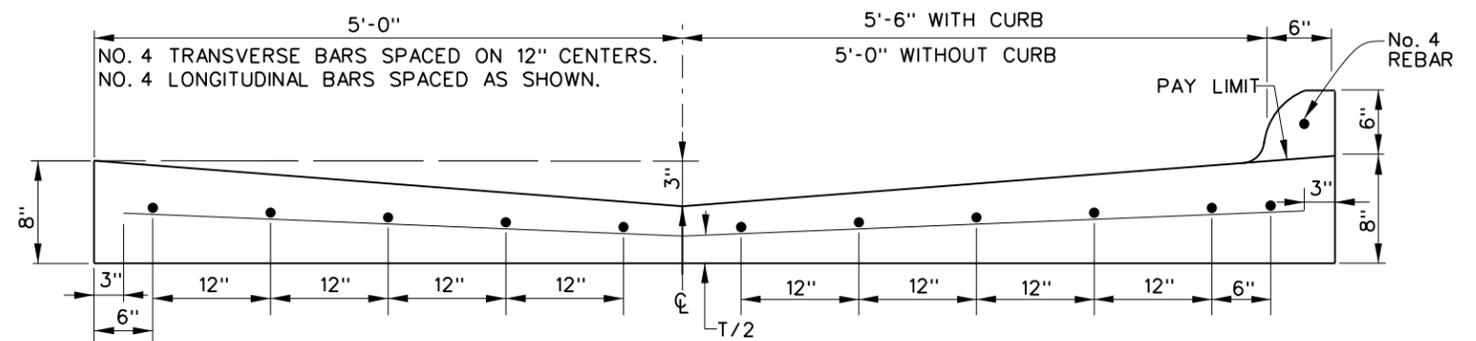


**NOTE:**  
SLOPE PROTECTION SHALL BE BUILT WITH PERFORATED DRAIN SYSTEM INSTEAD OF WEEP HOLES WHENEVER FEASIBLE.

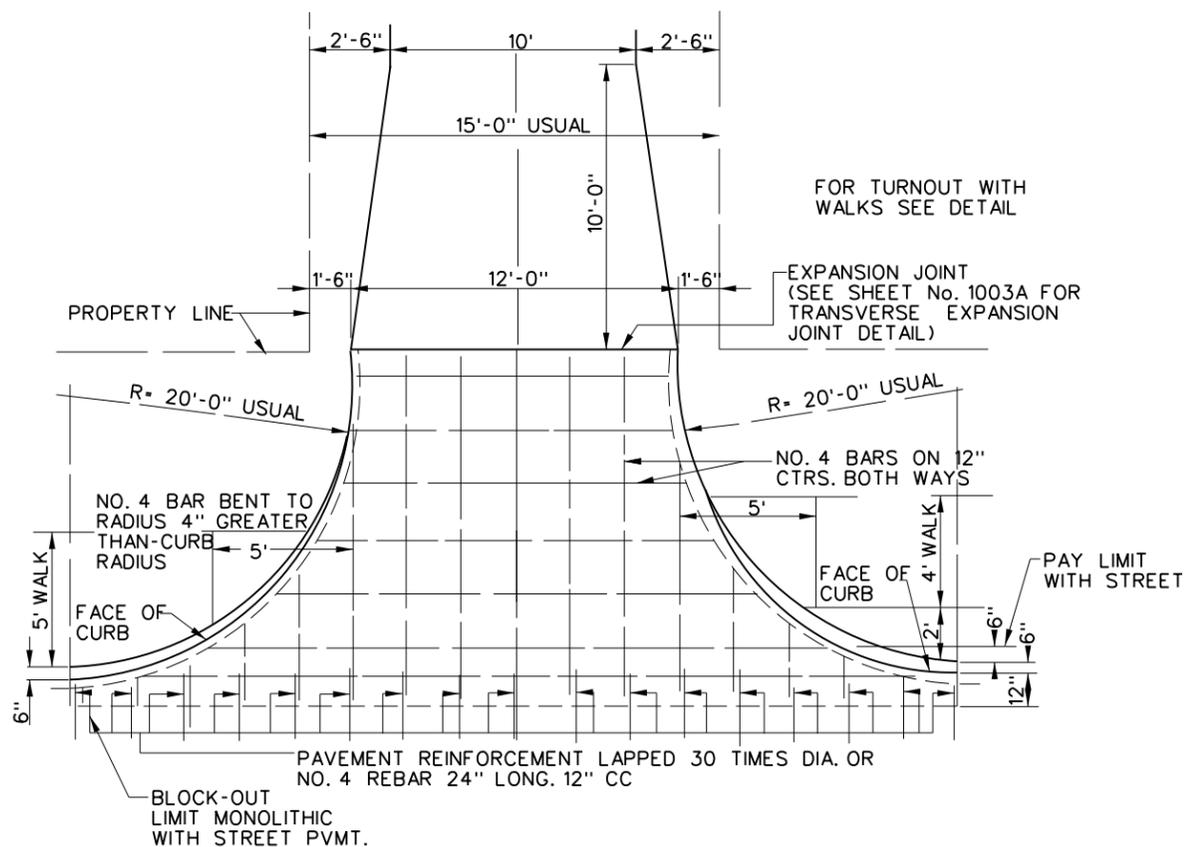
**ALLEY SLOPE PROTECTION**



**TYPICAL SECTION TYPE A**  
CURB OR CURBS NOT INCLUDED UNLESS SPECIFIED

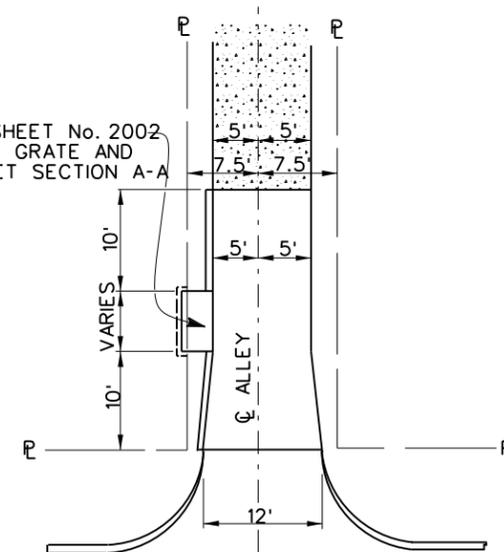


**TYPICAL SECTION TYPE B**  
CURB OR CURBS NOT INCLUDED UNLESS SPECIFIED

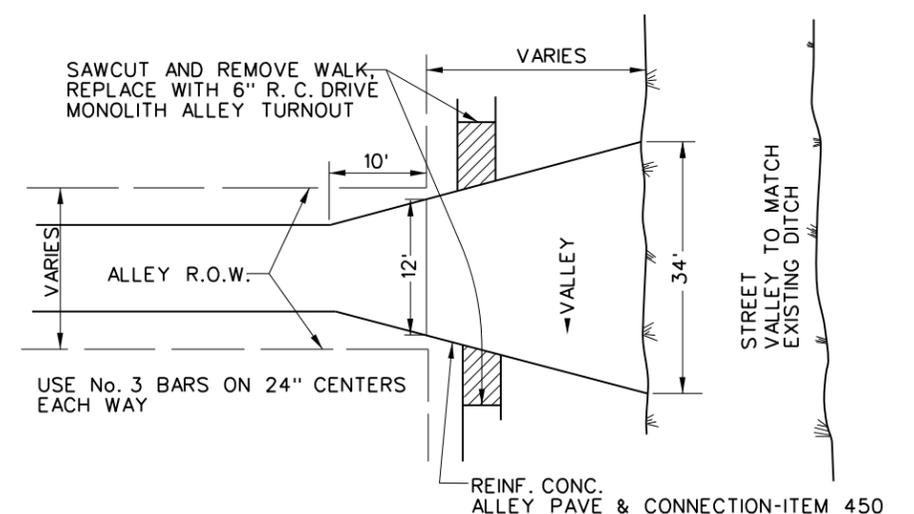


**ALTERNATE ALLEY PAVING TURNOUT DETAIL**

REFER TO SHEET No. 2002 COMBINATION GRATE AND THROAT INLET SECTION A-A



**PLAN**  
**INLETS IN ALLEYS**

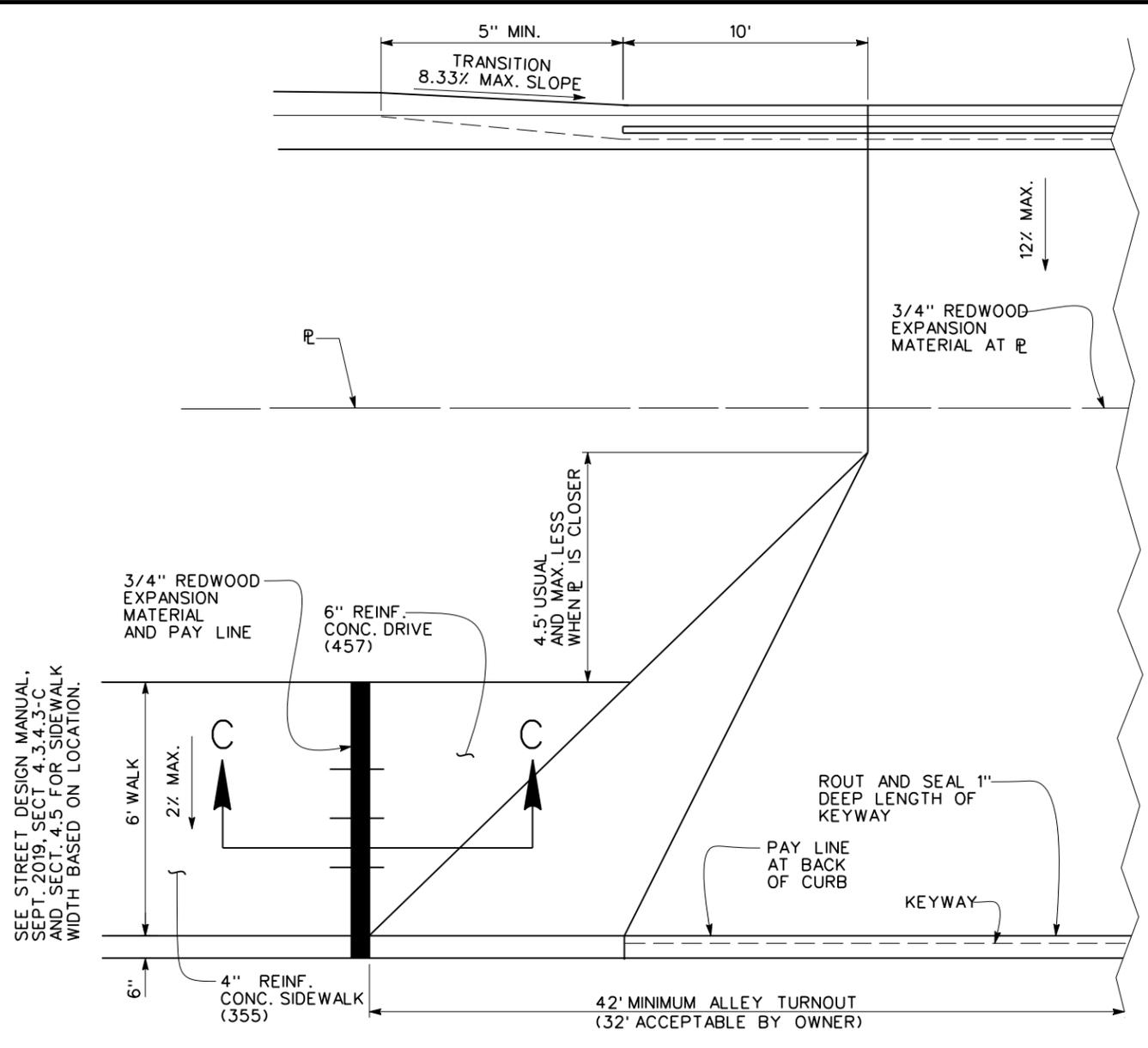


**DETAIL OF CONCRETE CONNECTION TO STREETS WITHOUT CURBS**

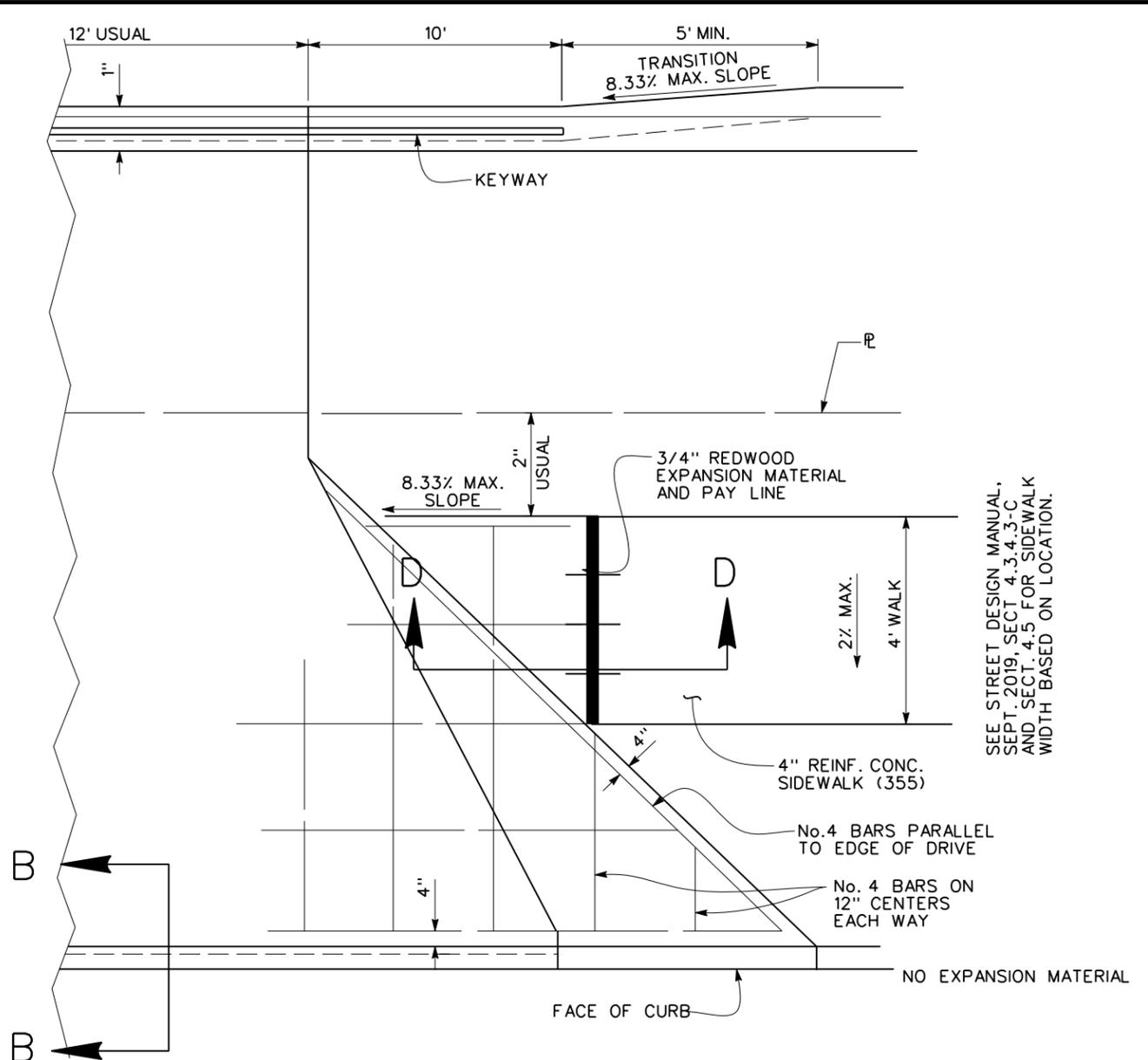
**NOTE:**

1. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH OR AT A MAXIMUM DISTANCE OF 150 FEET.
2. SUBGRADE PREPARATION SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND SPECIAL PROVISIONS BEFORE PAVEMENT IS PLACED. SUBGRADE SHALL BE CUT TO DESIGN BOTTOM OF PAVEMENT ELEVATION, SCARIFIED TO A DEPTH OF 8" TO A WIDTH ONE FOOT OUTSIDE OF THE PAVEMENT LIMITS AND COMPACTED TO A DENSITY OF 98% STANDARD PROCTOR DENSITY AT A MOISTURE CONTENT BETWEEN -2% TO +4% OF OPTIMUM MOISTURE.
3. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.

<b>PAVING DETAILS</b>	
ALLEY TURNOUTS AND SLOPE PROTECTION DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1009



SEE STREET DESIGN MANUAL, SEPT. 2019, SECT 4.3.4.3-C AND SECT. 4.5 FOR SIDEWALK WIDTH BASED ON LOCATION.

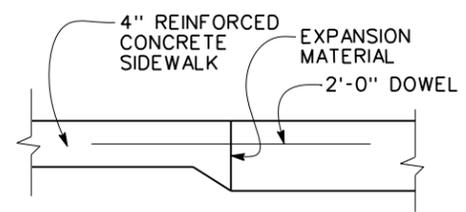


SEE STREET DESIGN MANUAL, SEPT. 2019, SECT 4.3.4.3-C AND SECT. 4.5 FOR SIDEWALK WIDTH BASED ON LOCATION.

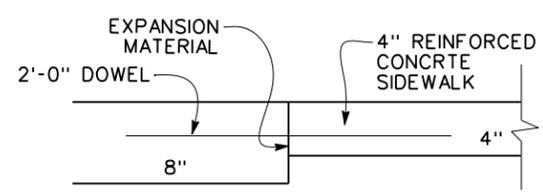
**ALLEY TURNOUT DETAILS**

**NOTE:**

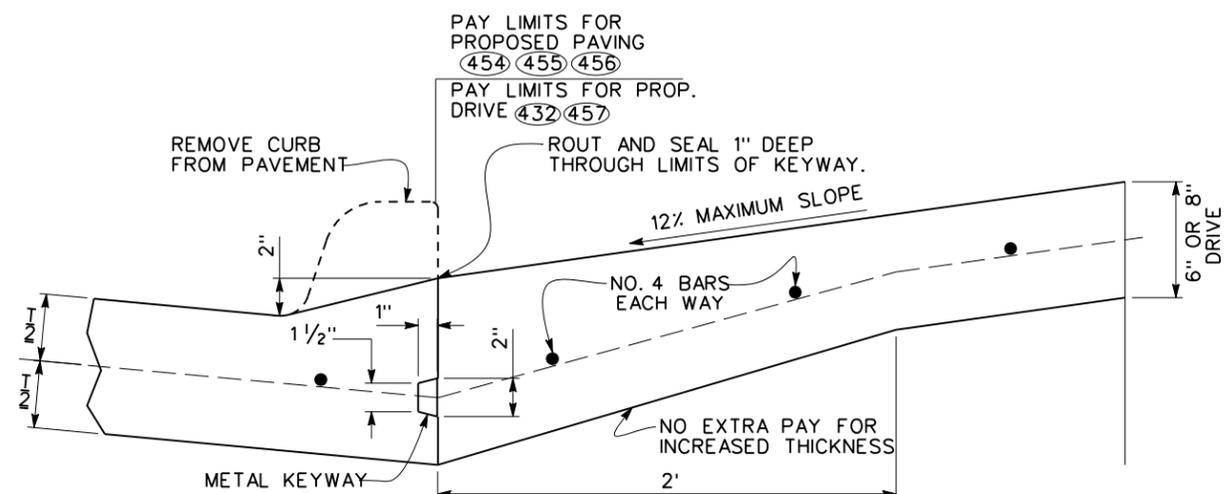
1. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH OR AT A MAXIMUM DISTANCE OF 150 FEET.
2. SUBGRADE PREPARATION SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND SPECIAL PROVISIONS BEFORE PAVEMENT IS PLACED. SUBGRADE SHALL BE CUT TO DESIGN BOTTOM OF PAVEMENT ELEVATION, SCARIFIED TO A DEPTH OF 8" TO A WIDTH ONE FOOT OUTSIDE OF THE PAVEMENT LIMITS AND COMPACTED TO A DENSITY OF 98% STANDARD PROCTOR DENSITY AT A MOISTURE CONTENT BETWEEN -2% TO +4% OF OPTIMUM MOISTURE.
3. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.



**EXPANSION DETAIL SECTION C-C**

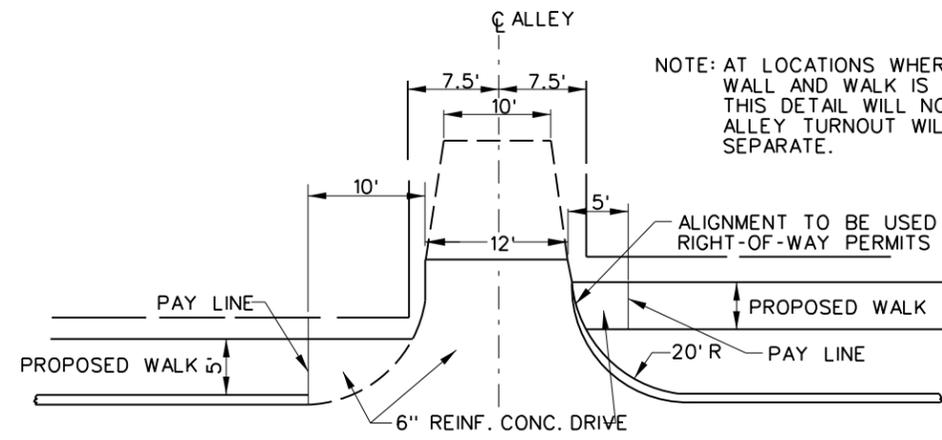


**EXPANSION DETAIL SECTION D-D**



**SECTION B-B**

<b>PAVING DETAILS</b>	
ALLEY TURNOUT DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1010



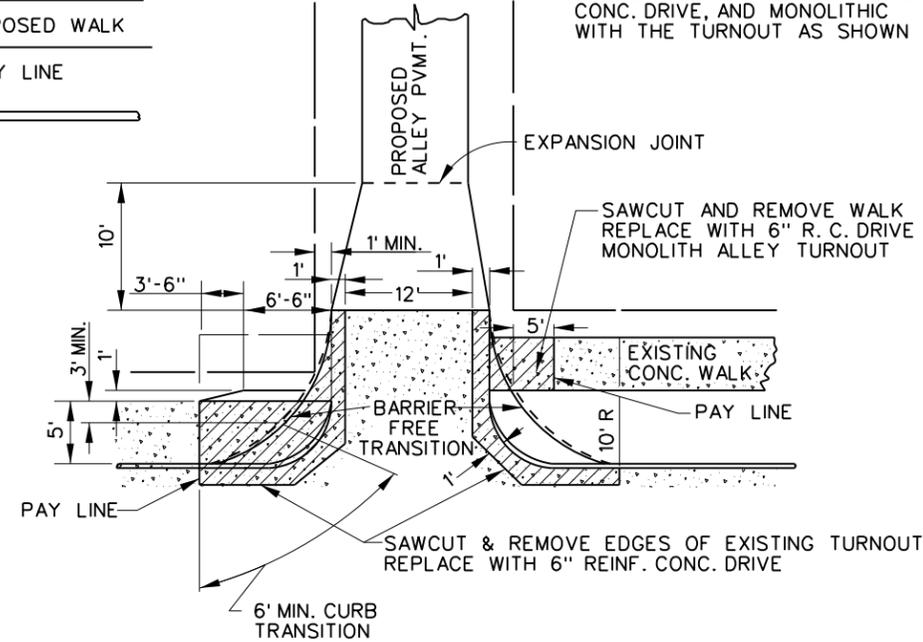
WALK ADJACENT TO ALLEY TURNOUTS IS TO BE BUILT MONOLITHIC WITH THE TURNOUT AND TO THE SAME STANDARDS.

TYPICAL PLAN - ALLEY TURNOUTS

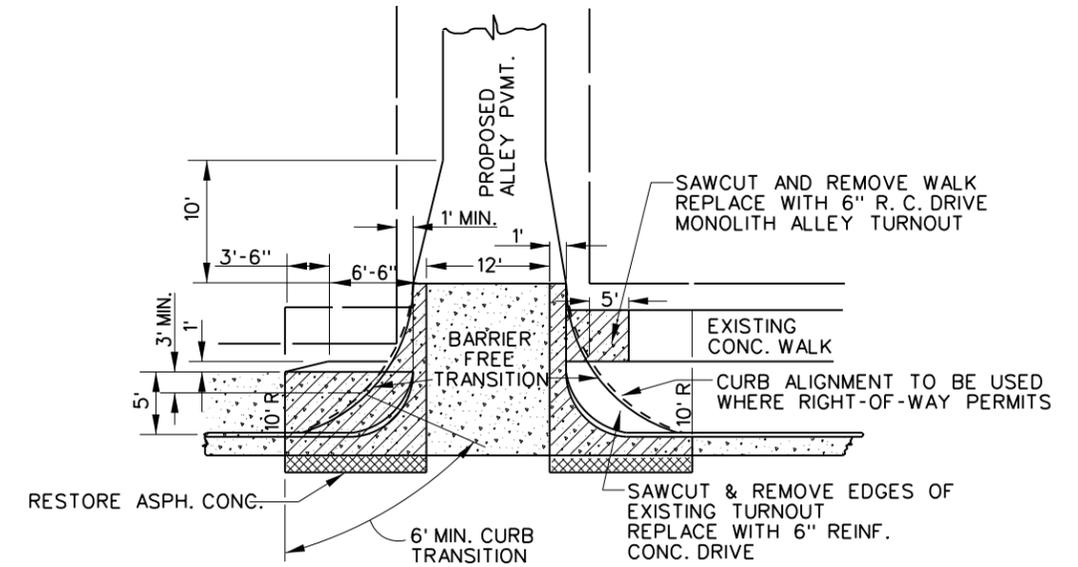
NOTE: AT LOCATIONS WHERE COMBINATION WALL AND WALK IS BEING BUILT, THIS DETAIL WILL NOT APPLY. THE ALLEY TURNOUT WILL BE BUILT SEPARATE.

ALIGNMENT TO BE USED WHERE RIGHT-OF-WAY PERMITS

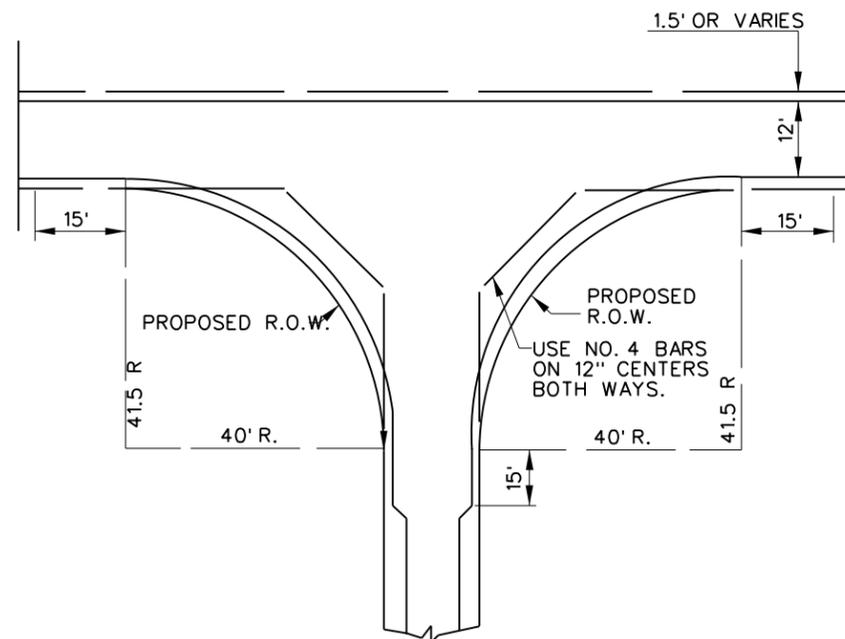
NOTE: WHERE WALKS EXIST AT ALLEY TURNOUTS TO BE MODIFIED, THE WALKS WILL BE REBUILT AS REINF. CONC. DRIVE, AND MONOLITHIC WITH THE TURNOUT AS SHOWN



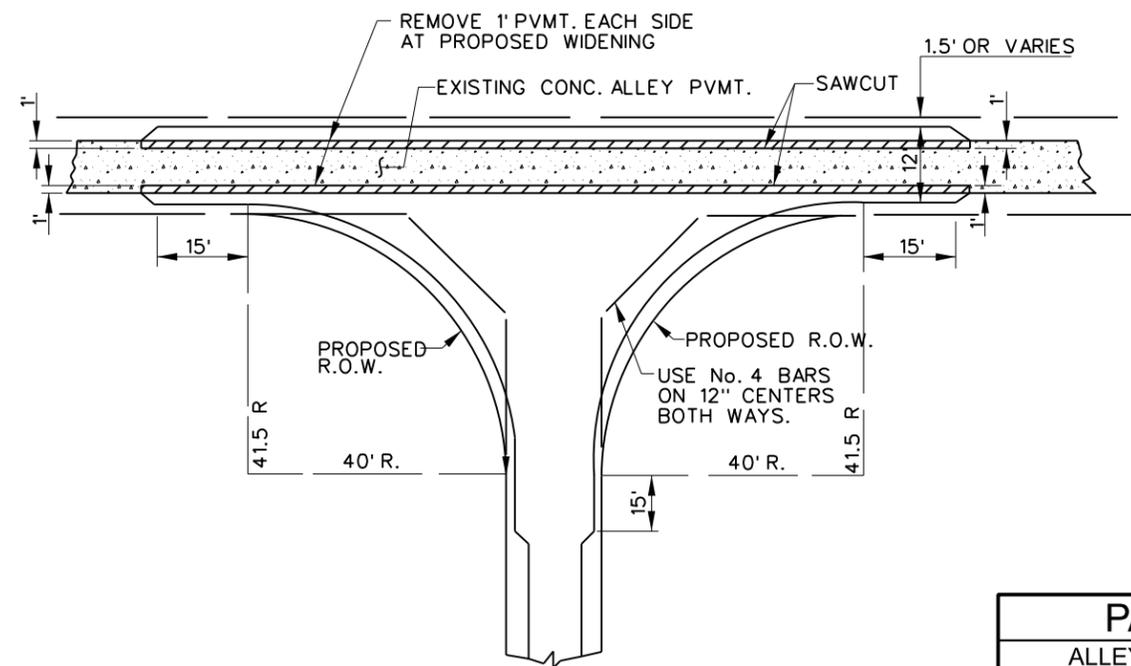
DETAIL FOR WIDENING INTERSECTION OF PROPOSED ALLEY WITH EXISTING ALLEY PAVEMENT



DETAIL SHOWING MODIFICATION OF EXISTING TURNOUT AT ASPHALT STREET WITH CONCRETE CURB & GUTTER

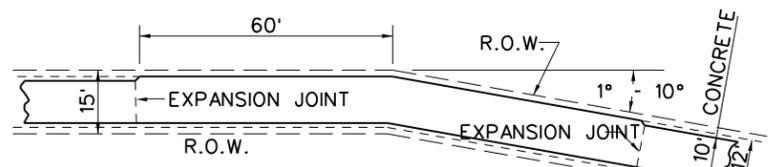


DETAIL FOR WIDENING INTERSECTION OF PROPOSED ALLEY PAVEMENT

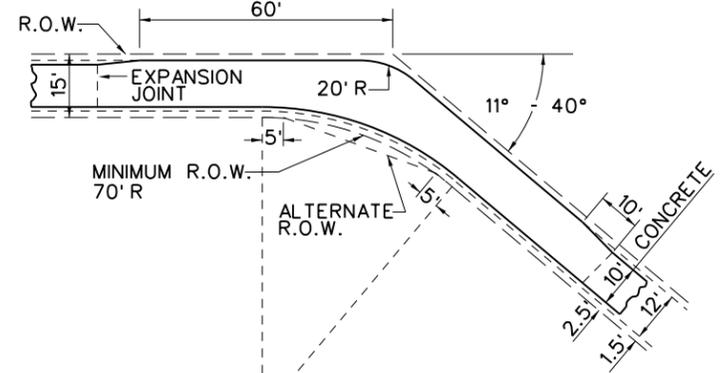


DETAIL FOR WIDENING INTERSECTION OF PROPOSED ALLEY WITH EXISTING ALLEY PAVEMENT

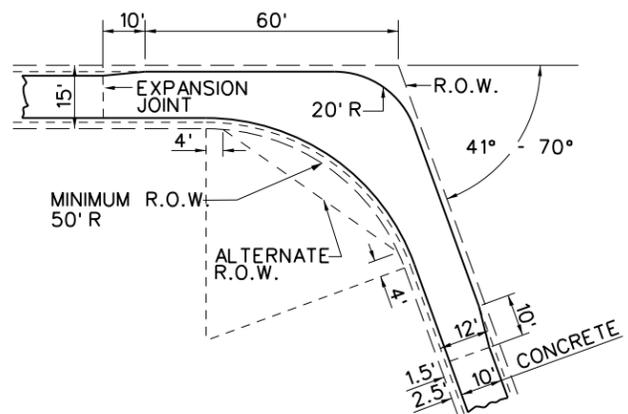
<b>PAVING DETAILS</b>	
ALLEY TURNOUT AND WIDENING	
INTERSECTION DETAILS	
TRANSPORTATION & PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: FEBRUARY 2026	SHEET No. 1011



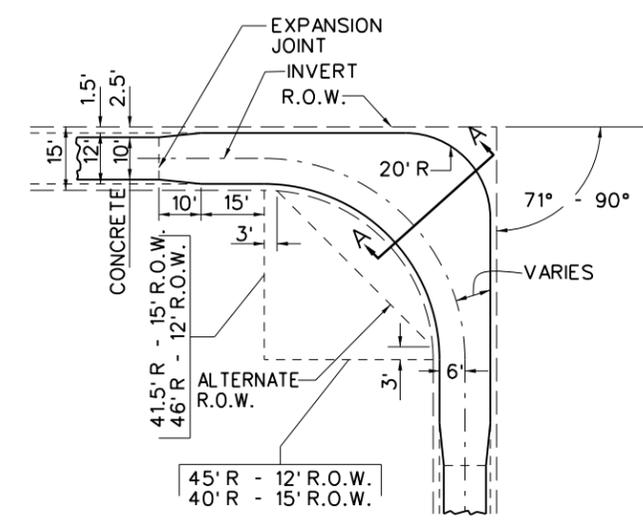
DETAIL "A"



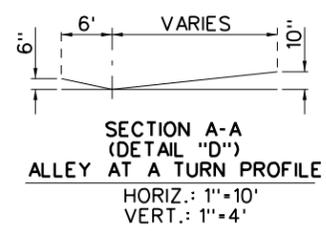
DETAIL "B"



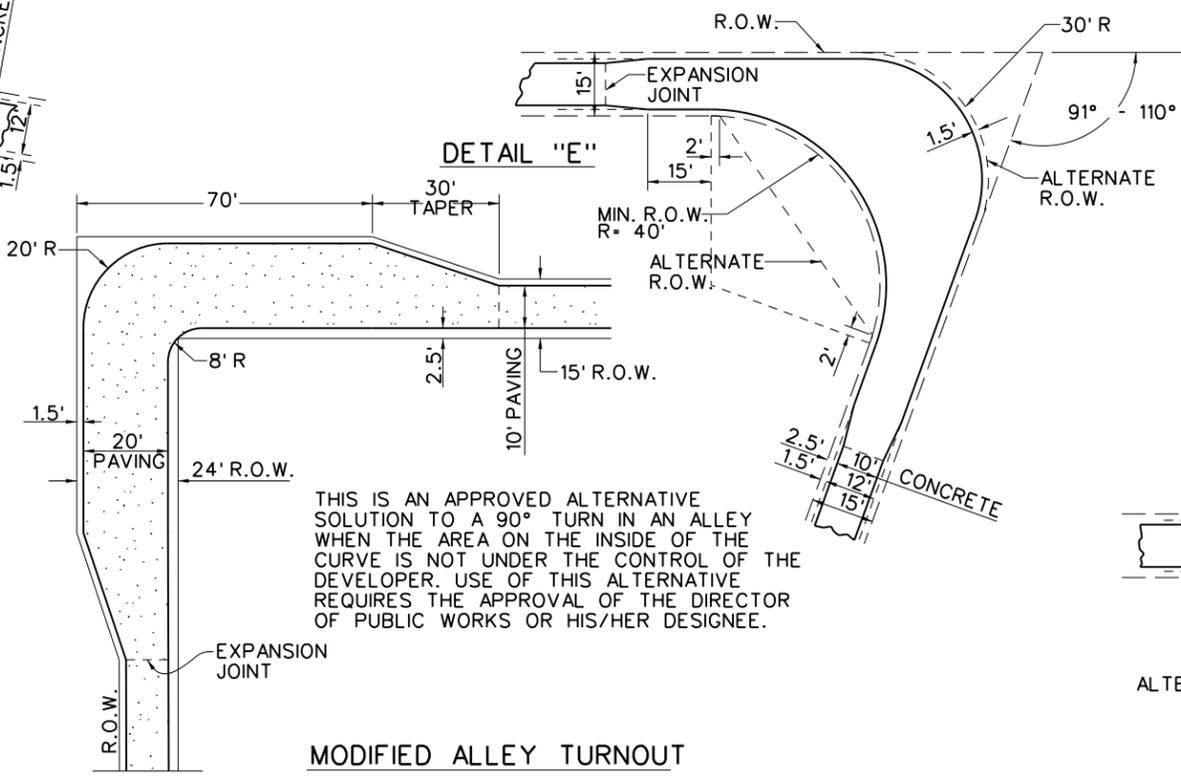
DETAIL "C"



DETAIL "D"

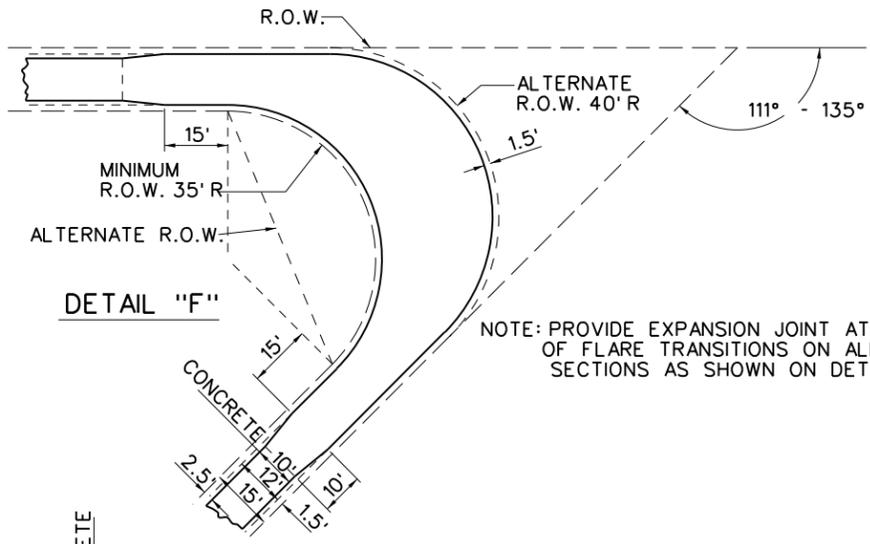


SECTION A-A  
(DETAIL "D")  
ALLEY AT A TURN PROFILE  
HORIZ.: 1"=10'  
VERT.: 1"=4'



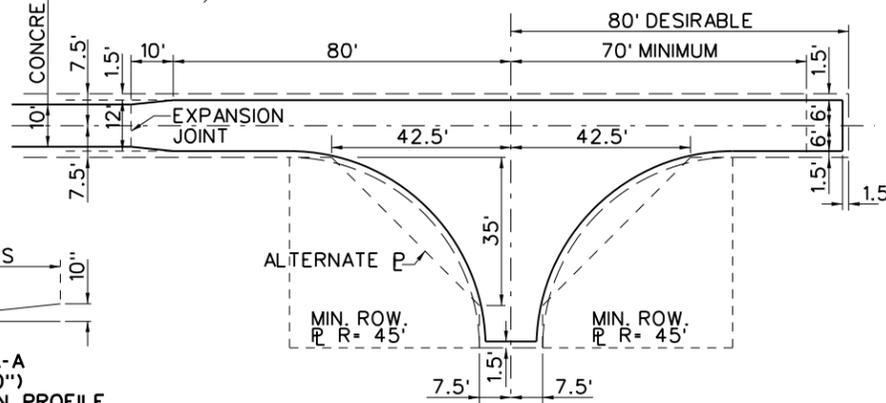
MODIFIED ALLEY TURNOUT

THIS IS AN APPROVED ALTERNATIVE SOLUTION TO A 90° TURN IN AN ALLEY WHEN THE AREA ON THE INSIDE OF THE CURVE IS NOT UNDER THE CONTROL OF THE DEVELOPER. USE OF THIS ALTERNATIVE REQUIRES THE APPROVAL OF THE DIRECTOR OF PUBLIC WORKS OR HIS/HER DESIGNEE.

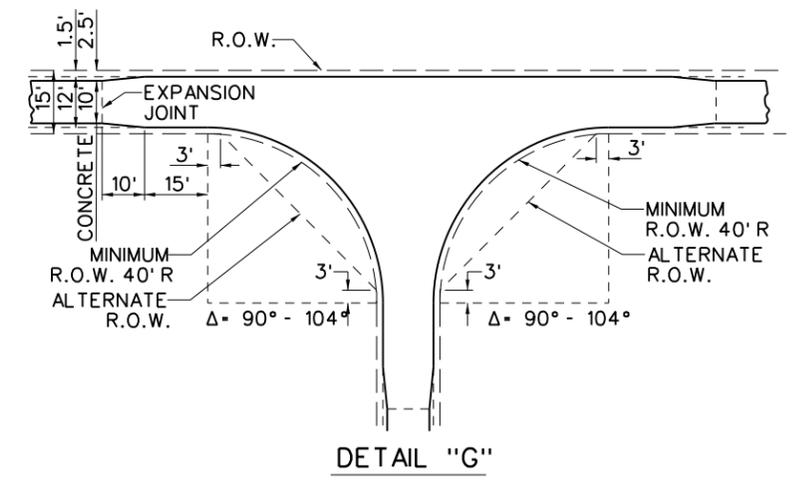


DETAIL "F"

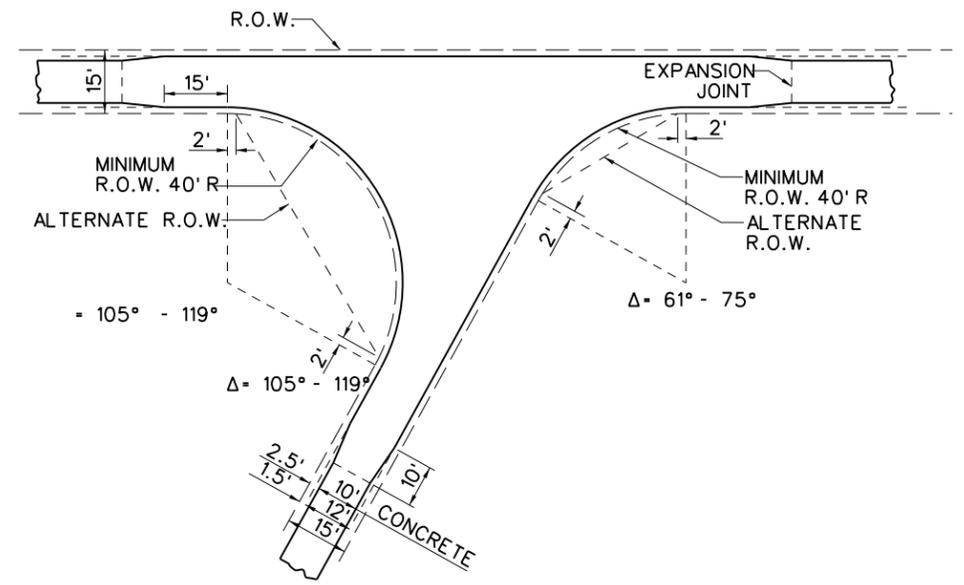
NOTE: PROVIDE EXPANSION JOINT AT BEGINNING OF FLARE TRANSITIONS ON ALL ALLEY SECTIONS AS SHOWN ON DETAILS



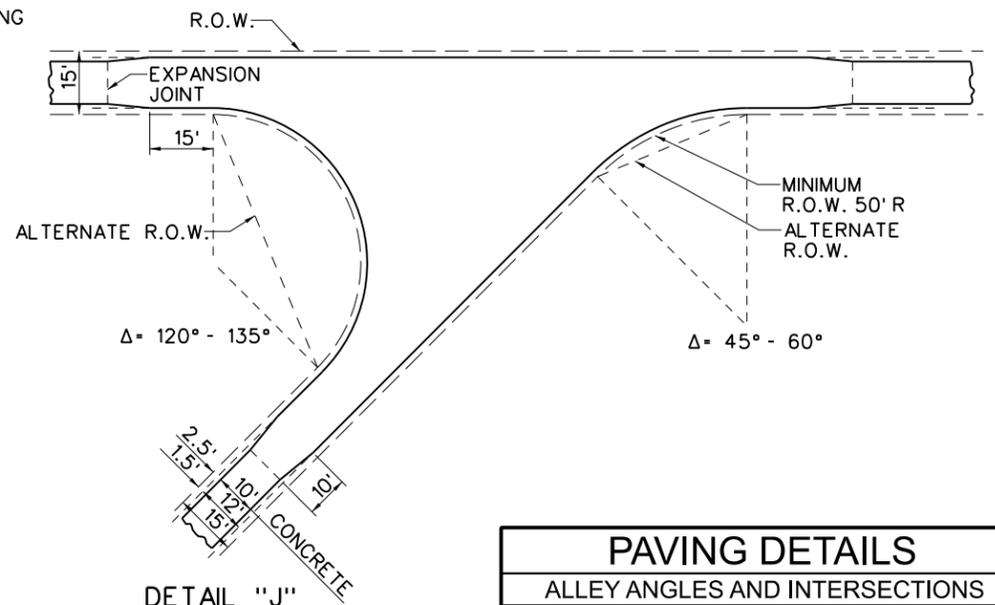
DETAIL "K"  
STANDARD ALLEY TURNAROUND FOR GARBAGE TRUCKS



DETAIL "G"

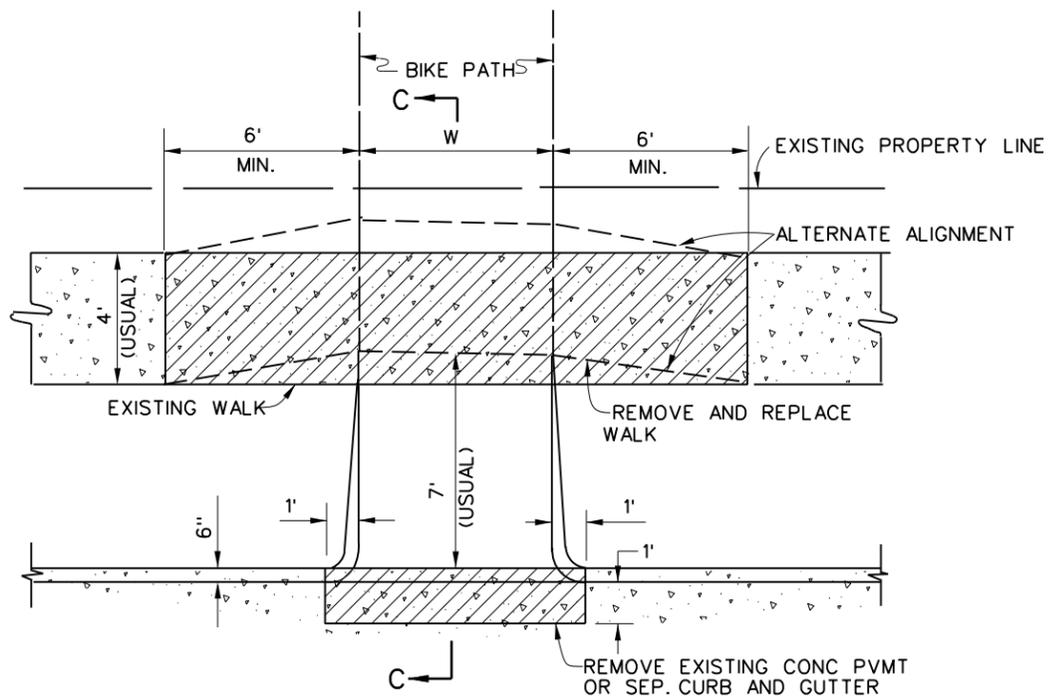


DETAIL "H"

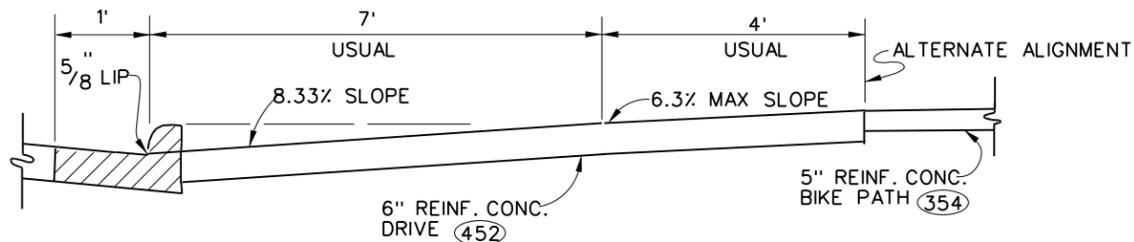


DETAIL "J"

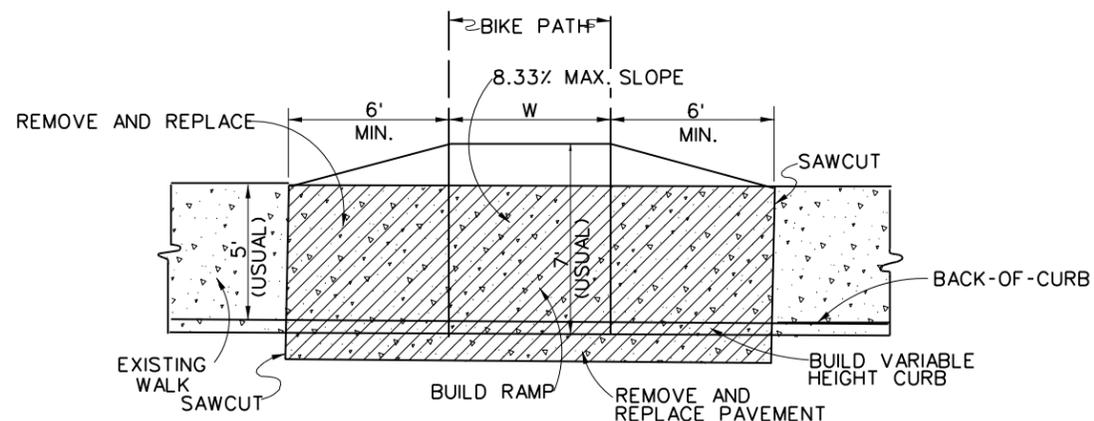
PAVING DETAILS	
ALLEY ANGLES AND INTERSECTIONS	
PAVING AND RIGHT-OF-WAY DETAILS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1012



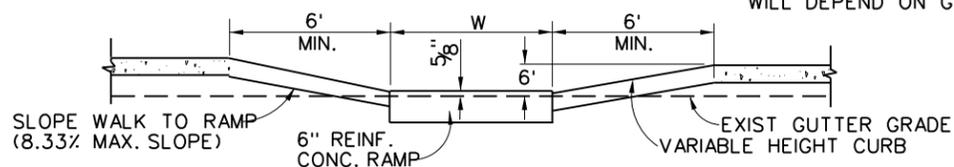
**BIKE PATH RAMP AT PAVED STREET**  
(NO WALK ABUTTING CURB)



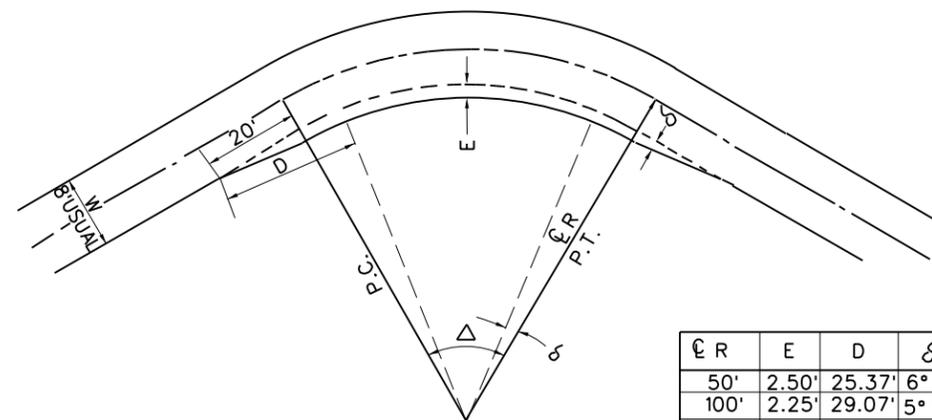
**SECTION C-C**



**BIKE PATH RAMP AT PAVED STREET**  
(WALK ABUTTING CURB)



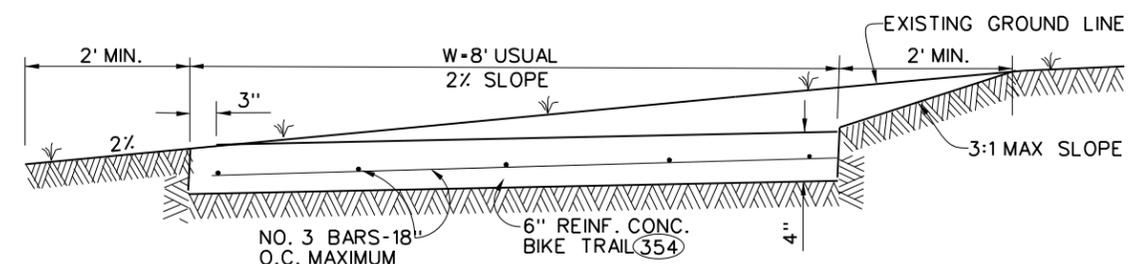
**SECTION AT BACK OF CURB**



**TRAIL WIDENING DETAIL**

FOR  $\Delta > 10^\circ$   
NO WIDENING NECESSARY  
WHERE :  $\Delta < 10^\circ$   
 $R > 700'$

$\Delta$	R	E	D	$\delta$
50'	2.50'	25.37'	6° 18'	
100'	2.25'	29.07'	5° 20'	
200'	2.00'	34.58'	4° 03'	
300'	1.75'	38.04'	3° 27'	
400'	150'	39.97'	2° 52'	
500'	125'	40.60'	2° 22'	
600'	1.00'	39.99'	1° 55'	
700'	1.00'	42.42'	1° 50'	



**BICYCLE TRAIL**  
**TYPICAL CONCRETE SECTION**

**CONSTRUCTION PROCEDURES: \*\***

1. PREPARE LIME STABILIZED BASE ACCORDING TO NCTCOG
  2. SHOOT PRIME COAT 0.10 GAL./S.Y. RC-70. ALLOW TO CURE.
  3. APPLY 0.25 GAL./S.Y. AC-10 BINDER.
  4. IMMEDIATELY SPREAD FABRIC AND BROOM OR ROLL INTO ASPHALT
  5. LAY 2" LIFT OF ASPH. CONC. IN ONE APPLICATION IMMEDIATELY IF POSSIBLE. (SEE SPECIAL PROVISION)
  6. QUANTITIES OF ASPHALT AND LIME MAY BE VARIED AS DIRECTED BY THE ENGINEER AT TIME OF CONSTRUCTION.
- \*CATONIC EMULSION CRS-2 MAY BE USED, BUT FABRIC CAN NOT BE LAID UNTIL EMULSION CURES. QUANTITY MUST BE ADJUSTED TO PROVIDE SUFFICIENT RESIDUAL ASPHALT TO SATURATE THE REINFORCING FABRIC.
- \*\* ASPHALT MAY VARY ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

**PAVING DETAILS**

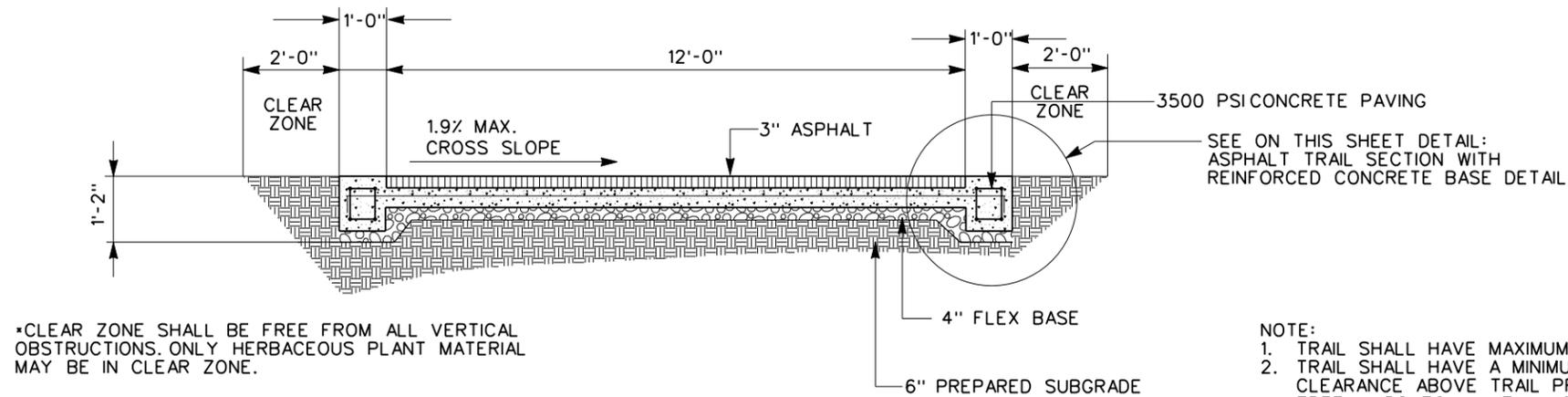
**BICYCLE PATHS**



DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
1013



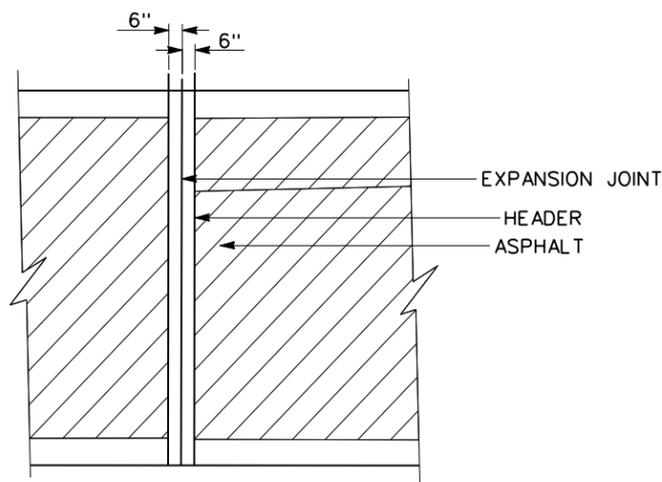
\*CLEAR ZONE SHALL BE FREE FROM ALL VERTICAL OBSTRUCTIONS. ONLY HERBACEOUS PLANT MATERIAL MAY BE IN CLEAR ZONE.

- NOTE:
1. TRAIL SHALL HAVE MAXIMUM 1.9% CROSS SLOPE AS SHOWN.
  2. TRAIL SHALL HAVE A MINIMUM 10'-0" MINIMUM VERTICAL CLEARANCE ABOVE TRAIL PRUNE ALL OVERHANGING TREE LIMBS TO MAINTAIN 10'-0" CLEARANCE.
  3. TRAIL PAVING SHALL HAVE A MAXIMUM 4.9% LONGITUDINAL SLOPE.
  4. ALL REINFORCEMENT SHALL BE No. 3 REBAR AT 24" O.C. EACH WAY (TYPICAL)

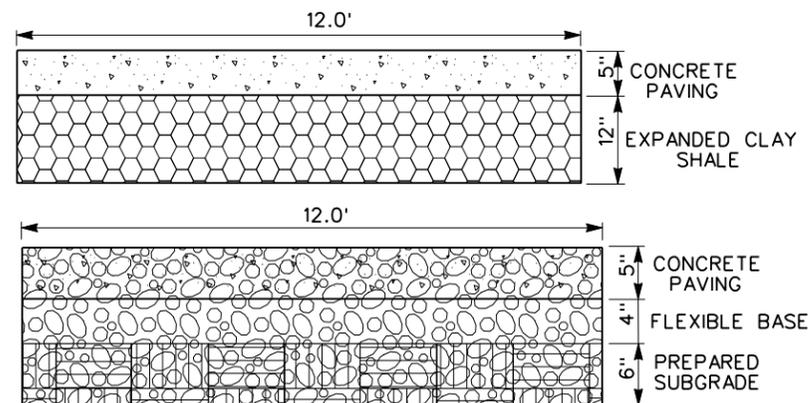
**ASPHALT TRAIL SECTION WITH REINFORCED CONCRETE BASE**

**NOTES FOR CONCRETE PAVING:**

1. CONTROL JOINT SHALL BE SPACED AT 14' CENTERS LONGITUDINALLY
2. EXPANSION JOINTS SHALL BE SPACED AT 56' CENTERS, IN LIEU OF EVERY FOURTH CONTROL JOINT.
3. FOR 10' WIDE TRAILS THE MAXIMUM SPACING FOR EXPANSION JOINT IS 100' CENTERS WITH CONTROL JOINTS EVERY 10' AND FOR 12' WIDE TRAILS THE MAXIMUM SPACING FOR EXPANSION JOINT IS 96' CENTERS WITH CONTROL JOINTS EVERY 12' OR AS SHOWN ON THE PLANS."

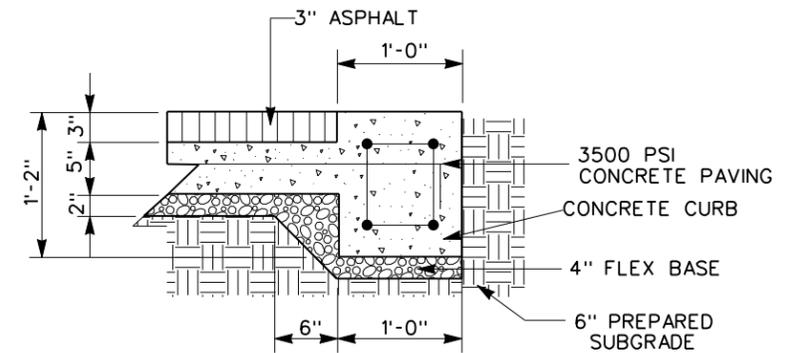


**ASPHALT TRAIL SECTION**



NOTE:  
ALL REINFORCED SHALL BE No. 3 REBAR AT 24" O.C. EACH WAY (TYPICAL)

**REINFORCED CONCRETE TRAIL SUBGRADE DETAILS**



NOTE:  
POWER WASH TRAIL PRIOR TO APPLYING STRIPING PAINT.

**ASPHALT TRAIL SECTION WITH REINFORCED CONCRETE BASE DETAIL**

**PAVING DETAILS**

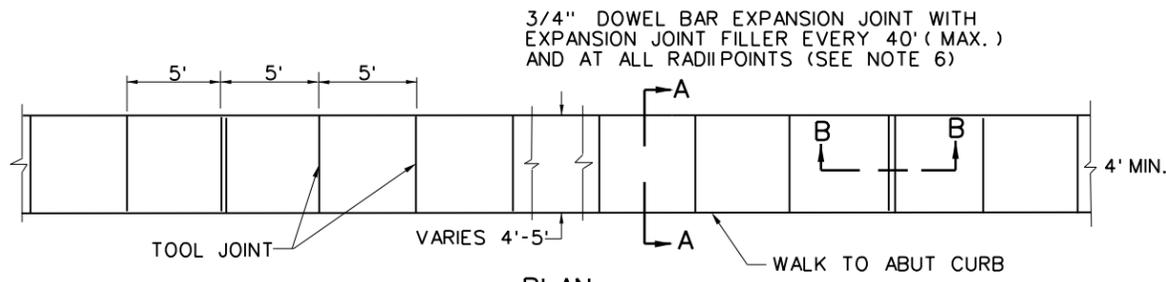
**BICYCLE TRAILS**



DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

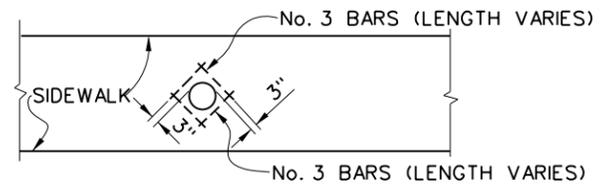
DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
1014

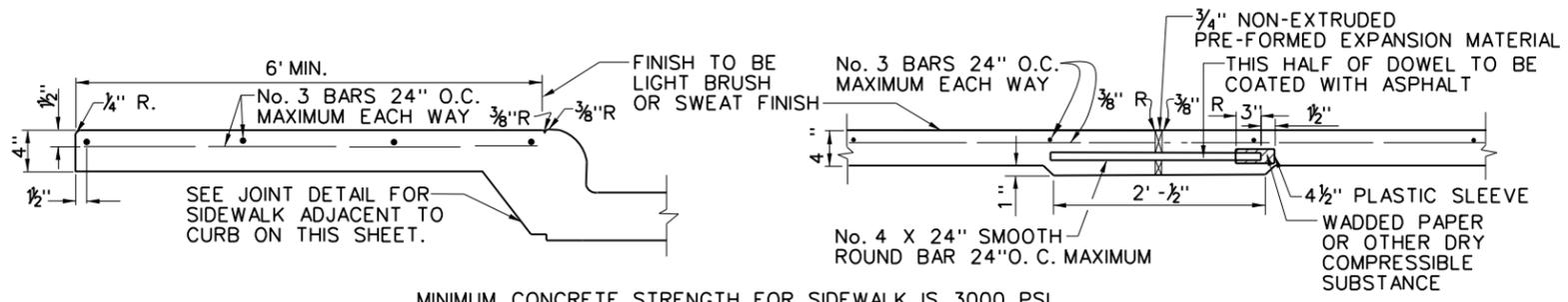


PLAN  
REINFORCED CONCRETE SIDEWALK

NOTE:  
No. 3 BARS @ 24" O.C. (E. W.) & 4 No. 3 BARS DIAGONAL @ METER  
(IN ACCORDANCE WITH CURRENT DWU STANDARDS)

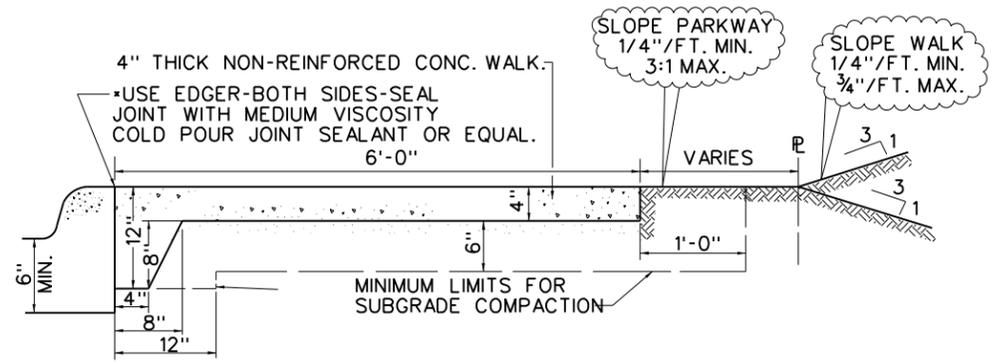


REINFORCING DETAIL AT WATER METERS IN SIDEWALK



A - A  
TYPICAL SECTION

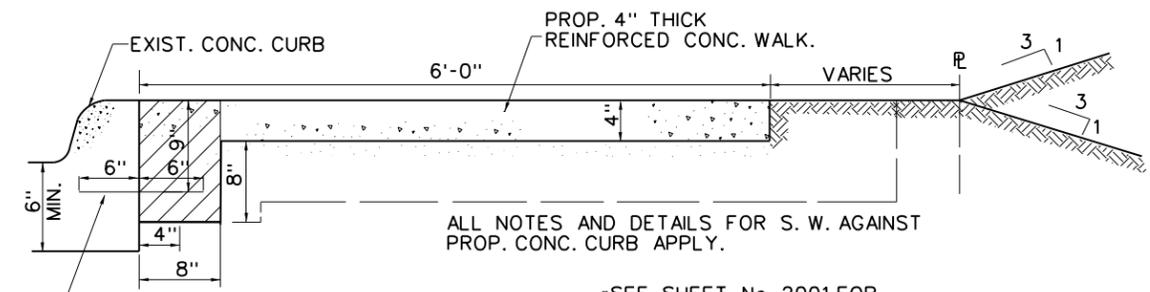
B - B  
EXPANSION JOINT DETAIL



JOINT DETAIL FOR SIDEWALK ADJACENT TO CURB

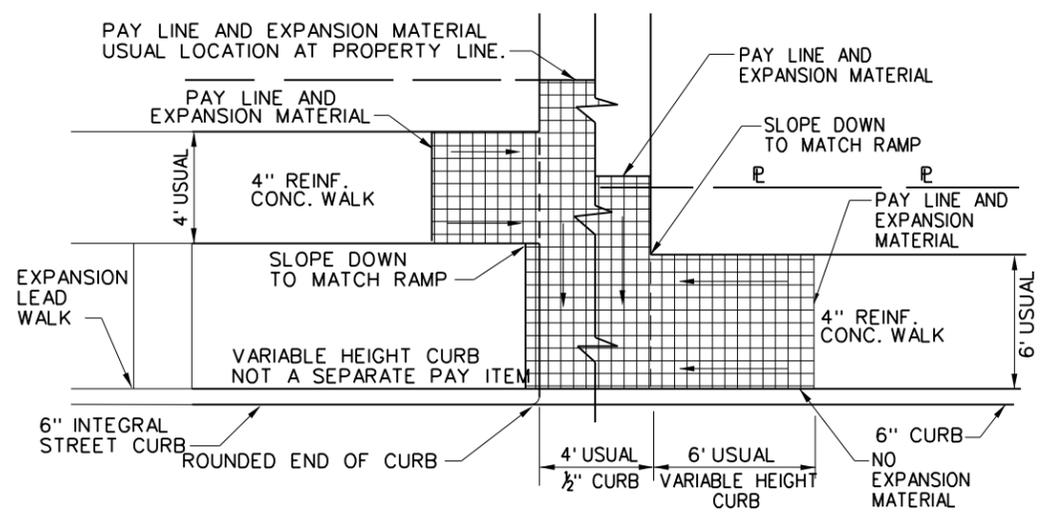
SAME DETAIL FOR MEDIAN PAVEMENT- USE PREMOLDED EXPANSION JOINT

- NOTES:
1. ALL HONEYCOMB IN BACK OF CURB TO BE TROWEL- PLASTERED BEFORE POURING SIDEWALK.
  2. FOR SIDEWALKS AGAINST EXISTING CURB, KEYWAY SHALL BE REPLACED WITH 12" LONG No. 3 DEFORMED BARS DRILLED 4" INTO EXISTING BACK CURB AND EPOXY GROUTED ON 24" CENTERS.
  3. PAYMENT FOR KEYWAY SUBSIDIARY TO SIDEWALK LUG PAY ITEM.
  4. PAYMENT FOR EXCAVATION, BORROW AND COMPACTION IS SUBSIDIARY TO CONCRETE SIDEWALK PAY ITEM.
  5. ALL BACKFILL SHALL BE COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES TO 95% DENSITY WITH A MOISTURE WITHIN -2% TO -4% OF OPTIMUM MOISTURE.
  6. 3/4" EXPANSION JOINTS SHALL BE PROVIDED AT STREET EXPANSION JOINTS AND AT A MAXIMUM 40 FOOT SPACING IN LINE WITH STREET SAW JOINTS; A TOOL MARKED GROOVE SHALL BE PROVIDED IN LINE WITH INTERMEDIATE STREET SAW JOINTS.
  7. ALL PROPOSED SIDEWALKS MUST BE DOWELED INTO EXISTING SIDEWALK USING No. 3 DEFORMED BARS.
  8. FOR SIDEWALK WIDTH, REFER TO CITY OF DALLAS STREET DESIGN MANUAL.
  9. MINIMUM CONCRETE STRENGTH FOR SIDEWALK IS 3000 PSI.



SIDEWALKS AGAINST EXIST. CONC. CURB

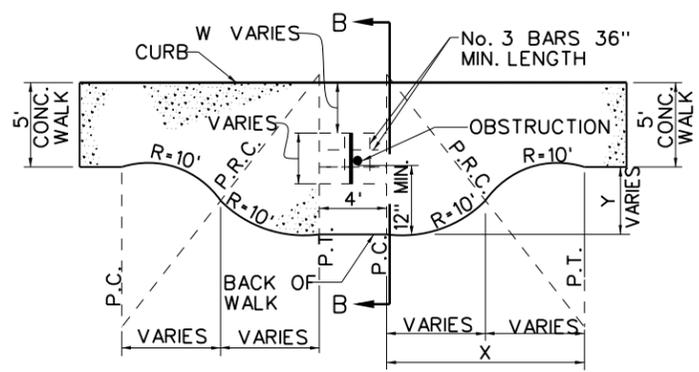
BARRIER FREE RAMPS AT LEAD WALKS



SIDEWALK WITH PARKWAY

SIDEWALK ABUTTING CURB

- NOTES:
1. NO SLOPE TO EXCEED 1" PER 1'.
  2. ACTUAL LOCATIONS OF RAMP LIMITS WILL BE DETERMINED BY SLOPE OF RAMP AND GRADE OF STREET.
  3. WALK REINFORCEMENT WILL BE No. 3 BARS SPACED 24" O.C. MAX. EACH WAY.
  4. BROOM FINISH NEEDED.

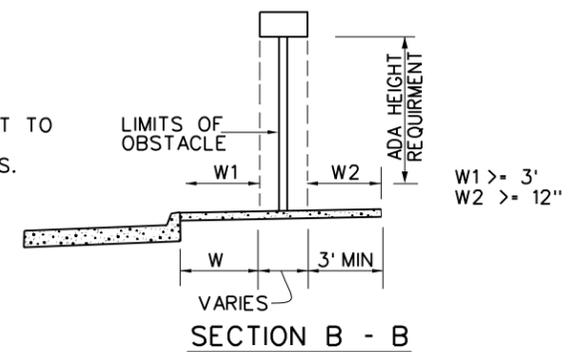


\* EXPANSION MATERIAL MUST BE PLACED ADJACENT TO THE BUILDING, STRUCTURE, WALL OR POLE WHEN SIDEWALK IS POURED ADJACENT TO THESE ITEMS.

- NOTES:
1. IF "W" > MEETS ADA NO WIDENING NECESSARY EXCEPT POSSIBLY TO OBTAIN MINIMUM DISTANCE OF 1' TO EDGE OF SIDEWALK.
  2. SAME WIDENING PLAN WILL BE USED FOR WALK NOT ABUTTING CURB.

SIDEWALK WIDENING REQUIRED AROUND OBSTACLES IN SIDEWALK

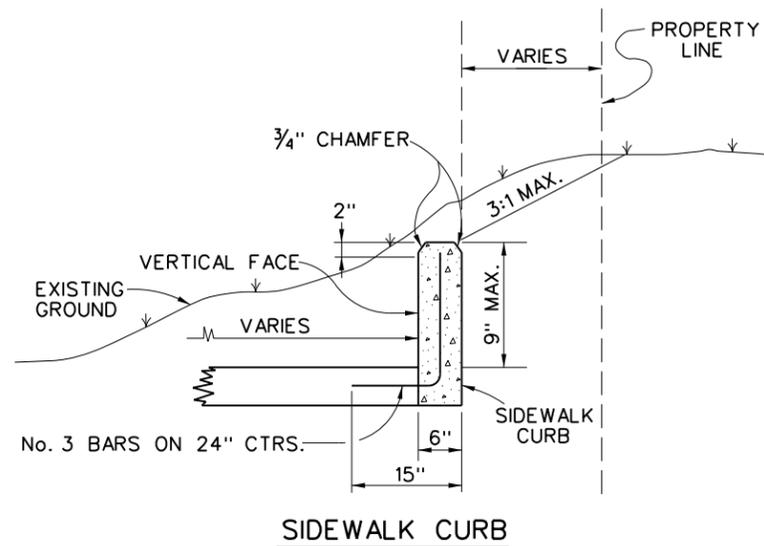
Y=1'	X= 6.24'
Y=2'	X= 8.72'
Y=3'	X= 10.54'
Y=4'	X= 12.00'
Y=5'	X= 13.23'



SECTION B - B

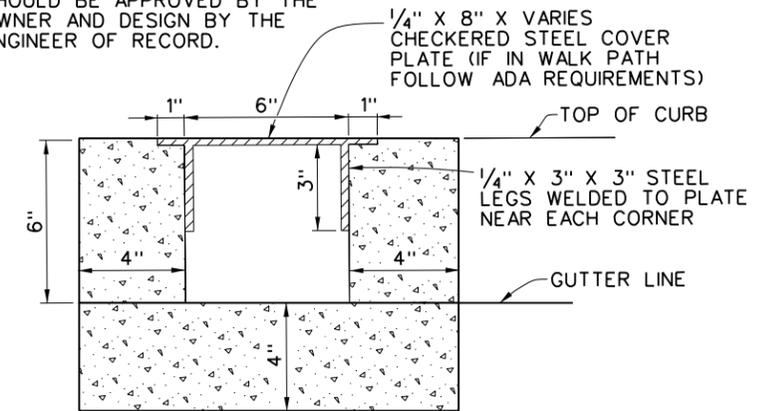
NOTE:  
FOR ANY SPECIAL RAMP FOR EXISTING CONDITION DESIGN ENGINEER MUST INCLUDE DESIGN OF RAMP

<b>PAVING DETAILS</b>	
REINFORCED SIDEWALKS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: SEPTEMBER 2022	SHEET No. 1015

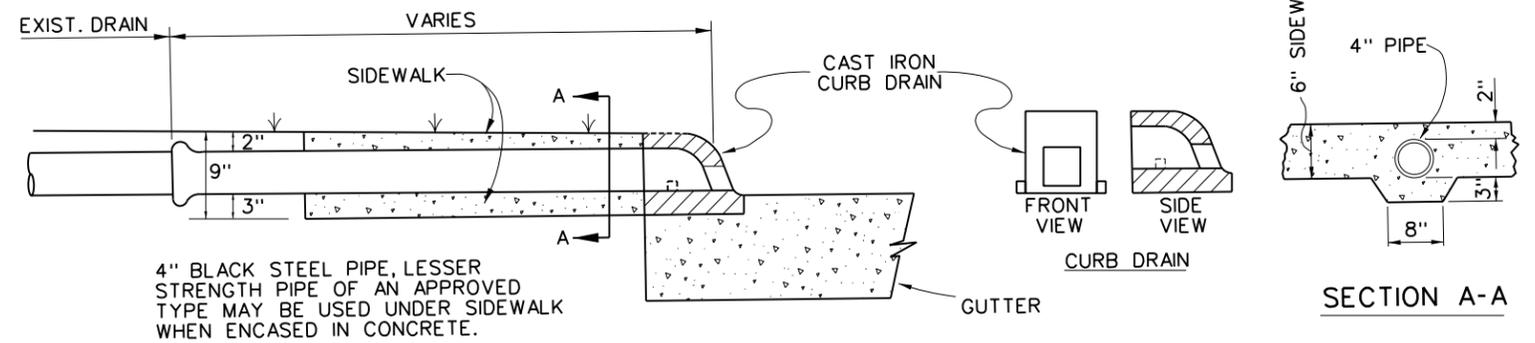


SIDEWALK CURB

NOTE:  
ANY CURB DRAIN WIDER THAN 6" SHOULD BE APPROVED BY THE OWNER AND DESIGN BY THE ENGINEER OF RECORD.



FRONT ELEVATION AT CURB FACE  
CURB DRAIN-TYPE 1



4" BLACK STEEL PIPE, LESSER STRENGTH PIPE OF AN APPROVED TYPE MAY BE USED UNDER SIDEWALK WHEN ENCASED IN CONCRETE.

CURB DRAIN-TYPE 2

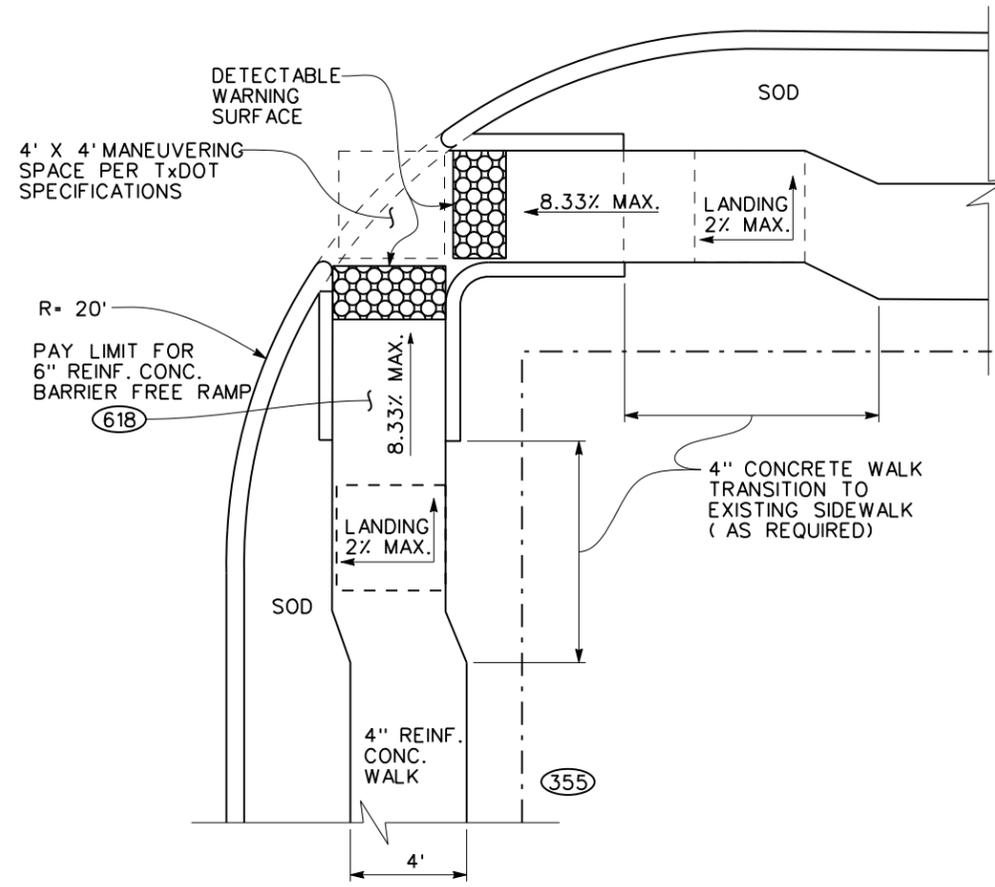
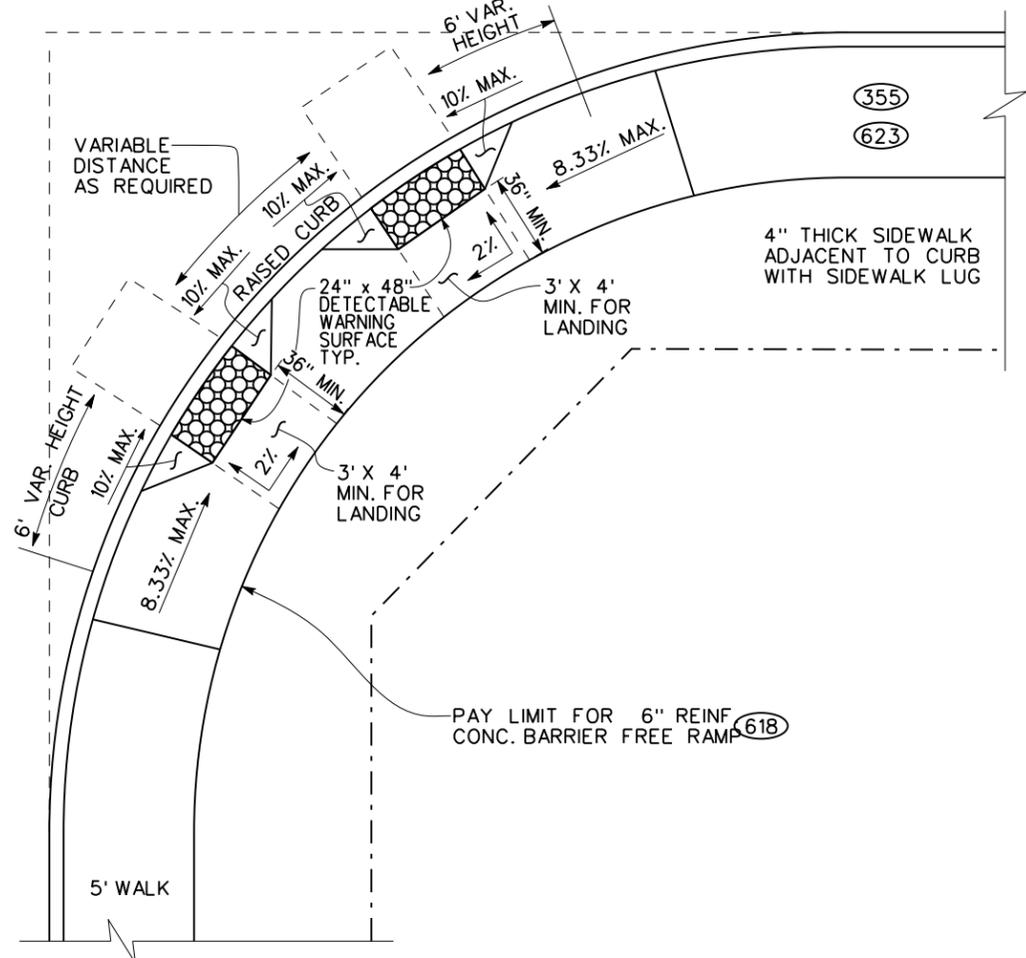
PAVING DETAILS

CURB DRAIN AND  
SIDEWALK CURB

DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

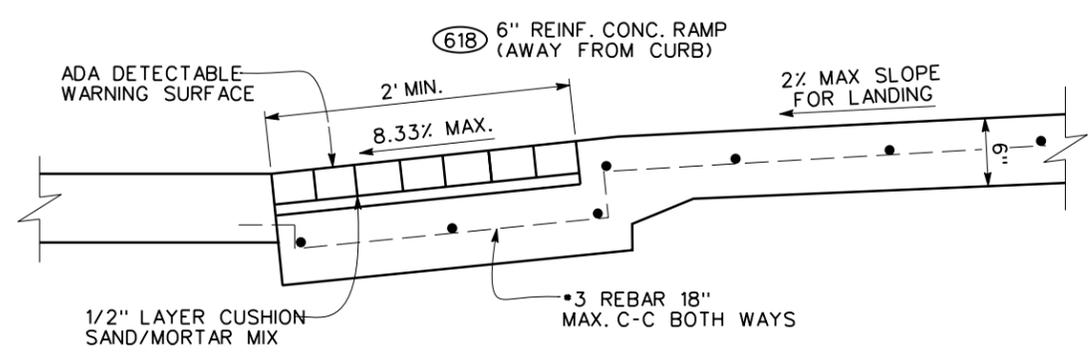
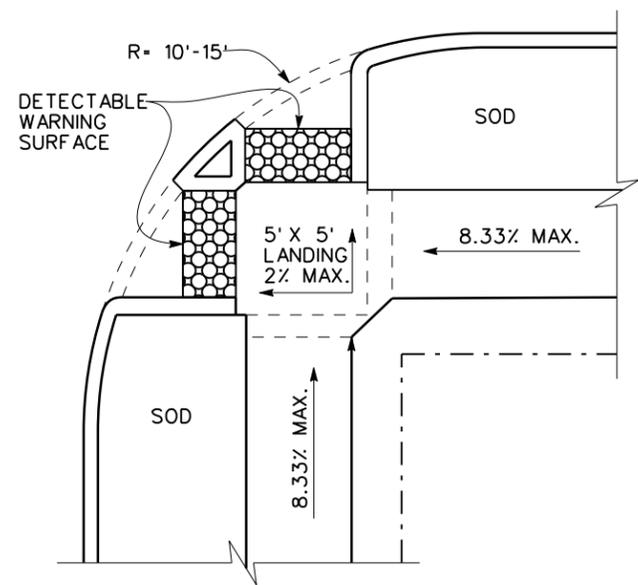
DRAWINGS NOT TO SCALE  
REVISED: SEPTEMBER 2022

SHEET No.  
1015A



**NOTES:**

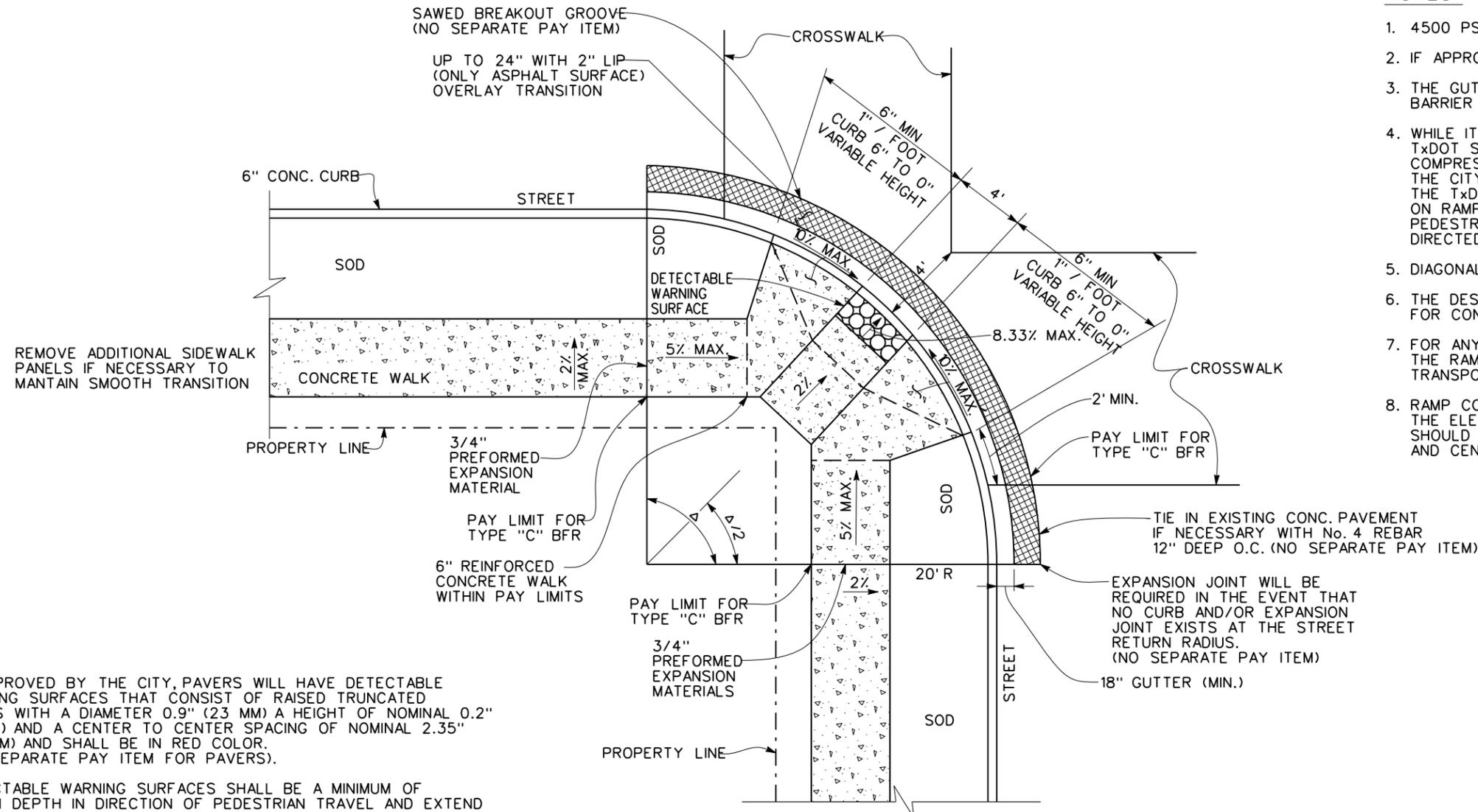
1. DETECTABLE WARNING SURFACE IS REQUIRED ON ALL RAMPS AND MUST MEET THE REQUIREMENTS OF SECTION 705 OF T&AS
2. THE MAXIMUM CROSS SLOPE ON ALL SIDEWALKS AND LANDINGS IS 2%
3. SIDEWALK LUG IS NOT INCLUDED WITH 6" BFR CONSTRUCTION
4. THE 6" BFR SHALL BE DOWELED TO THE ADJACENT PAVEMENT IN ACCORDANCE WITH CONSTRUCTION STANDARDS MANUAL (251D-1 SHEET 1020)
5. WHILE IT IS ACCEPTABLE TO USE BARRIER FREE RAMPS FROM T&AS SPECIFICATION, THE CONCRETE DETAIL (I.E. THICKNESS, COMPRESSIVE STRENGTH, AND REINFORCEMENT) SHALL FOLLOW THE CITY OF DALLAS SPECIFICATION. THE T&AS RAMPS DETAILS SHOULD PROVIDE GENERAL GUIDANCE ON RAMPS CONFIGURATIONS ONLY. HOWEVER, INSTALLATION OF PEDESTRIAN PUSH BUTTONS MAY NEED TO BE MODIFIED AS DIRECTED BY TRANSPORTATION DEPARTMENT
6. THE DESIRABLE MAX. SLOPE FOR THE RAMP IS 7.1% TO ALLOW FOR CONSTRUCTION TOLERANCE
7. FOR ANY SIGNALIZED INTERSECTION THE CONFIGURATION OF THE RAMP SHOULD BE VERIFIED AND APPROVED BY THE TRANSPORTATION DEPARTMENT
8. RAMP CONFIGURATIONS SHOULD AT A MINIMUM CONSIDER THE ELEVATION OF EXISTING SIGNAL INFRASTRUCTURE AND SHOULD ALLOW FOR A LEVEL LANDING AREA ADJACENT TO AND CENTERED BY TRAFFIC SIGNAL POLE INFRASTRUCTURE



**BARRIER FREE RAMP PAVER DETAIL**  
IF APPROVED BY THE CITY

**BARRIER FREE RAMPS**

<b>PAVING DETAILS</b>	
BARRIER FREE RAMPS	
DETAILS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1016



**NOTES:**

1. 4500 PSI AT 28 DAYS INSIDE THE PAY LIMIT.
2. IF APPROVED BY THE CITY, NO SEPARATE ITEM FOR PAVERS.
3. THE GUTTER GRADE SHALL BE RESTORED THRU A NEW BARRIER FREE RAMP APPROACH TO INSURE THE PROPER DRAINAGE.
4. WHILE IT IS ACCEPTABLE TO USE BARRIER FREE RAMPS FROM TxDOT SPECIFICATION, THE CONCRETE DETAIL (I.E. THICKNESS, COMPRESSIVE STRENGTH, AND REINFORCEMENT) SHALL FOLLOW THE CITY OF DALLAS SPECIFICATION. THE TxDOT RAMPS DETAILS SHOULD PROVIDE GENERAL GUIDANCE ON RAMPS CONFIGURATIONS ONLY. HOWEVER, INSTALLATION OF PEDESTRIAN PUSH BUTTONS MAY NEED TO BE MODIFIED AS DIRECTED BY TRANSPORTATION DEPARTMENT
5. DIAGONAL RAMPS ARE SUBJECT TO APPROVAL BY THE CITY.
6. THE DESIRABLE MAX. SLOPE FOR THE RAMP IS 7.1% TO ALLOW FOR CONSTRUCTION TOLERANCE
7. FOR ANY SIGNALIZED INTERSECTION THE CONFIGURATION OF THE RAMP SHOULD BE VERIFIED AND APPROVED BY THE TRANSPORTATION DEPARTMENT
8. RAMP CONFIGURATIONS SHOULD AT A MINIMUM CONSIDER THE ELEVATION OF EXISTING SIGNAL INFRASTRUCTURE AND SHOULD ALLOW FOR A LEVEL LANDING AREA ADJACENT TO AND CENTERED BY TRAFFIC SIGNAL POLE INFRASTRUCTURE

**NOTES:**

1. IF APPROVED BY THE CITY, PAVERS WILL HAVE DETECTABLE WARNING SURFACES THAT CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER 0.9" (23 MM) A HEIGHT OF NOMINAL 0.2" (5 MM) AND A CENTER TO CENTER SPACING OF NOMINAL 2.35" (60 MM) AND SHALL BE IN RED COLOR. (NO SEPARATE PAY ITEM FOR PAVERS).
2. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN DIRECTION OF PEDESTRIAN TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.

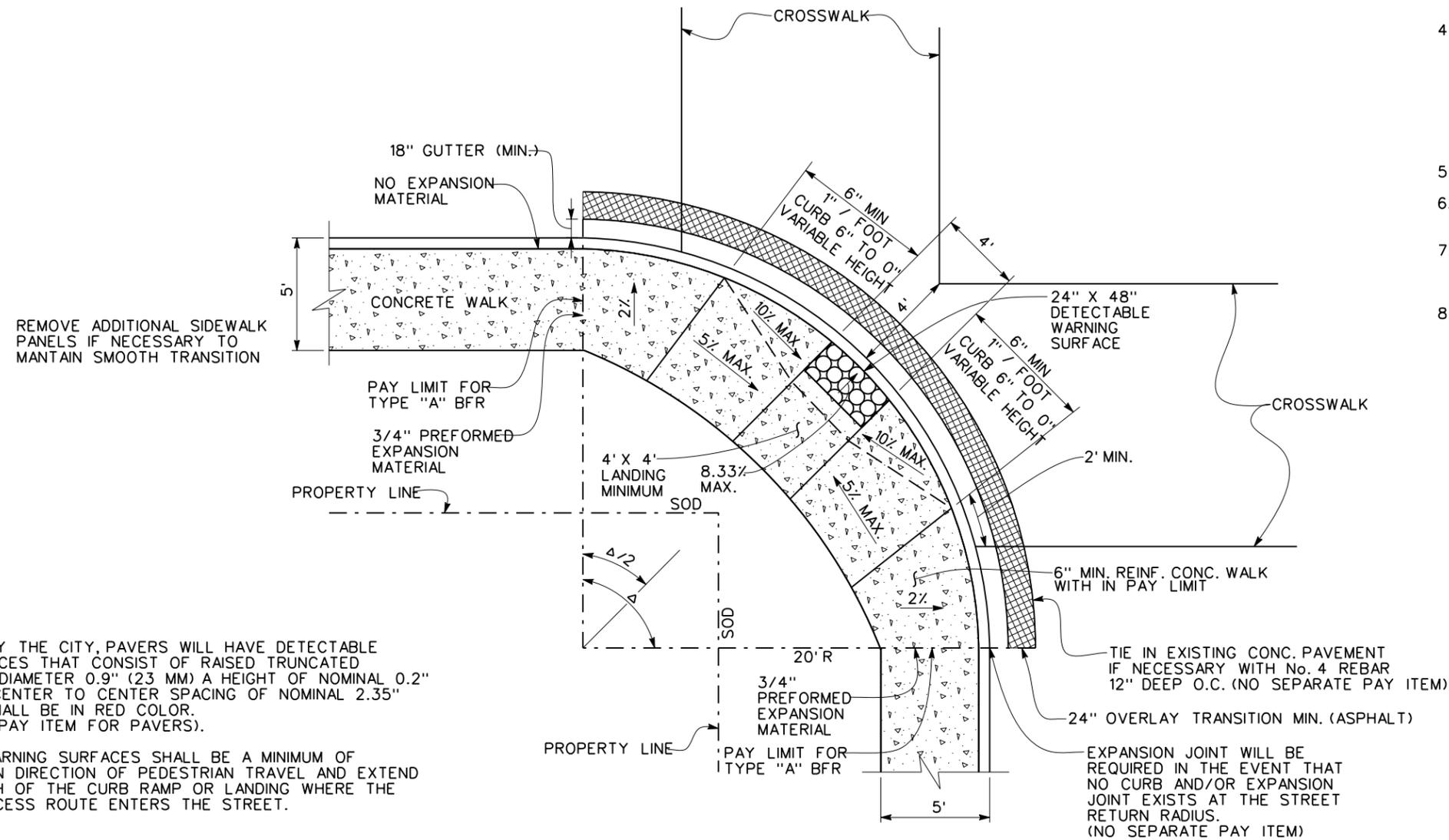
**REMOVE AND REPLACE BARRIER FREE RAMP**

**DETAIL AT INTERSECTING STREET**  
(WALK AWAY FROM CURB)  
**TYPE "C" BFR**

<b>PAVING DETAILS</b>	
BARRIER FREE RAMPS	
TYPE "C" BFR	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1017

**NOTES:**

1. 4500 PSI AT 28 DAYS INSIDE THE PAY LIMIT.
2. IF APPROVED BY THE CITY, NO SEPARATE ITEM FOR PAVERS.
3. THE GUTTER GRADE SHALL BE RESTORED THRU A NEW BARRIER FREE RAMP APPROACH TO INSURE THE PROPER DRAINAGE.
4. WHILE IT IS ACCEPTABLE TO USE BARRIER FREE RAMPS FROM TxDOT SPECIFICATION, THE CONCRETE DETAIL (I.E. THICKNESS, COMPRESSIVE STRENGTH, AND REINFORCEMENT) SHALL FOLLOW THE CITY OF DALLAS SPECIFICATION. THE TxDOT RAMPS DETAILS SHOULD PROVIDE GENERAL GUIDANCE ON RAMPS CONFIGURATIONS ONLY. HOWEVER, INSTALLATION OF PEDESTRIAN PUSH BUTTONS MAY NEED TO BE MODIFIED AS DIRECTED BY TRANSPORTATION DEPARTMENT
5. DIAGONAL RAMPS ARE SUBJECT TO APPROVAL BY THE CITY.
6. THE DESIRABLE MAX. SLOPE FOR THE RAMP IS 7.1% TO ALLOW FOR CONSTRUCTION TOLERANCE
7. FOR ANY SIGNALIZED INTERSECTION THE CONFIGURATION OF THE RAMP SHOULD BE VERIFIED AND APPROVED BY THE TRANSPORTATION DEPARTMENT
8. RAMP CONFIGURATIONS SHOULD AT A MINIMUM CONSIDER THE ELEVATION OF EXISTING SIGNAL INFRASTRUCTURE AND SHOULD ALLOW FOR A LEVEL LANDING AREA ADJACENT TO AND CENTERED BY TRAFFIC SIGNAL POLE INFRASTRUCTURE



**NOTES:**

1. IF APPROVED BY THE CITY, PAVERS WILL HAVE DETECTABLE WARNING SURFACES THAT CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER 0.9" (23 MM) A HEIGHT OF NOMINAL 0.2" (5 MM) AND A CENTER TO CENTER SPACING OF NOMINAL 2.35" (60 MM) AND SHALL BE IN RED COLOR. (NO SEPARATE PAY ITEM FOR PAVERS).
2. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN DIRECTION OF PEDESTRIAN TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.

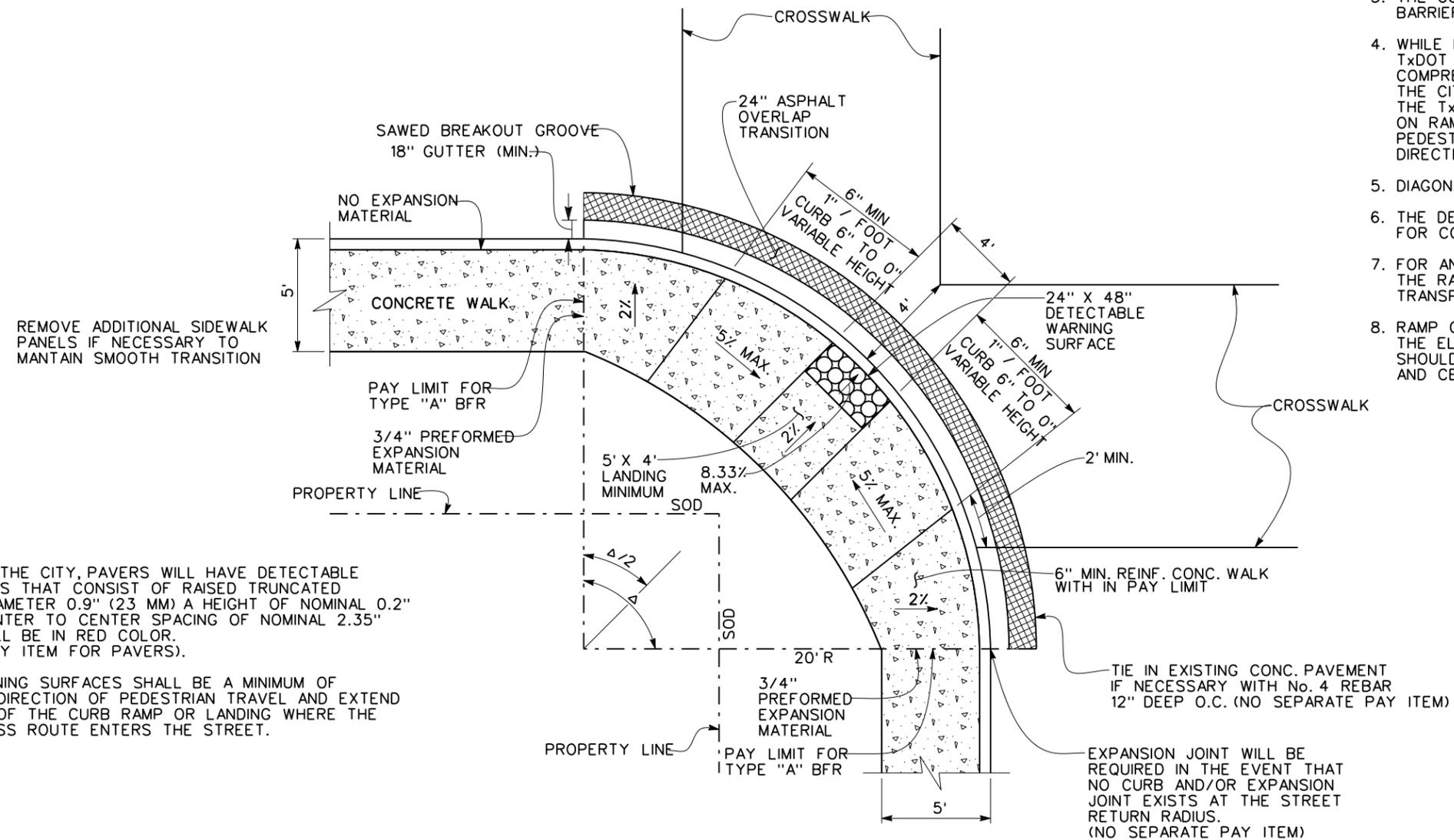
**REMOVE AND REPLACE BARRIER FREE RAMP**

**DETAIL AT INTERSECTING STREET  
(WALK ABUTTING CURB)  
TYPE "A" BFR**

<b>PAVING DETAILS</b>	
BARRIER FREE RAMPS	
TYPE "A" BFR	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1018

**NOTES:**

1. 4500 PSI AT 28 DAYS INSIDE THE PAY LIMIT.
2. IF APPROVED BY THE CITY, NO SEPARATE ITEM FOR PAVERS.
3. THE GUTTER GRADE SHALL BE RESTORED THRU A NEW BARRIER FREE RAMP APPROACH TO INSURE THE PROPER DRAINAGE.
4. WHILE IT IS ACCEPTABLE TO USE BARRIER FREE RAMPS FROM TxDOT SPECIFICATION, THE CONCRETE DETAIL (I.E. THICKNESS, COMPRESSIVE STRENGTH, AND REINFORCEMENT) SHALL FOLLOW THE CITY OF DALLAS SPECIFICATION. THE TxDOT RAMPS DETAILS SHOULD PROVIDE GENERAL GUIDANCE ON RAMPS CONFIGURATIONS ONLY. HOWEVER, INSTALLATION OF PEDESTRIAN PUSH BUTTONS MAY NEED TO BE MODIFIED AS DIRECTED BY TRANSPORTATION DEPARTMENT
5. DIAGONAL RAMPS ARE SUBJECT TO APPROVAL BY THE CITY.
6. THE DESIRABLE MAX. SLOPE FOR THE RAMP IS 7.1% TO ALLOW FOR CONSTRUCTION TOLERANCE
7. FOR ANY SIGNALIZED INTERSECTION THE CONFIGURATION OF THE RAMP SHOULD BE VERIFIED AND APPROVED BY THE TRANSPORTATION DEPARTMENT
8. RAMP CONFIGURATIONS SHOULD AT A MINIMUM CONSIDER THE ELEVATION OF EXISTING SIGNAL INFRASTRUCTURE AND SHOULD ALLOW FOR A LEVEL LANDING AREA ADJACENT TO AND CENTERED BY TRAFFIC SIGNAL POLE INFRASTRUCTURE



**NOTES:**

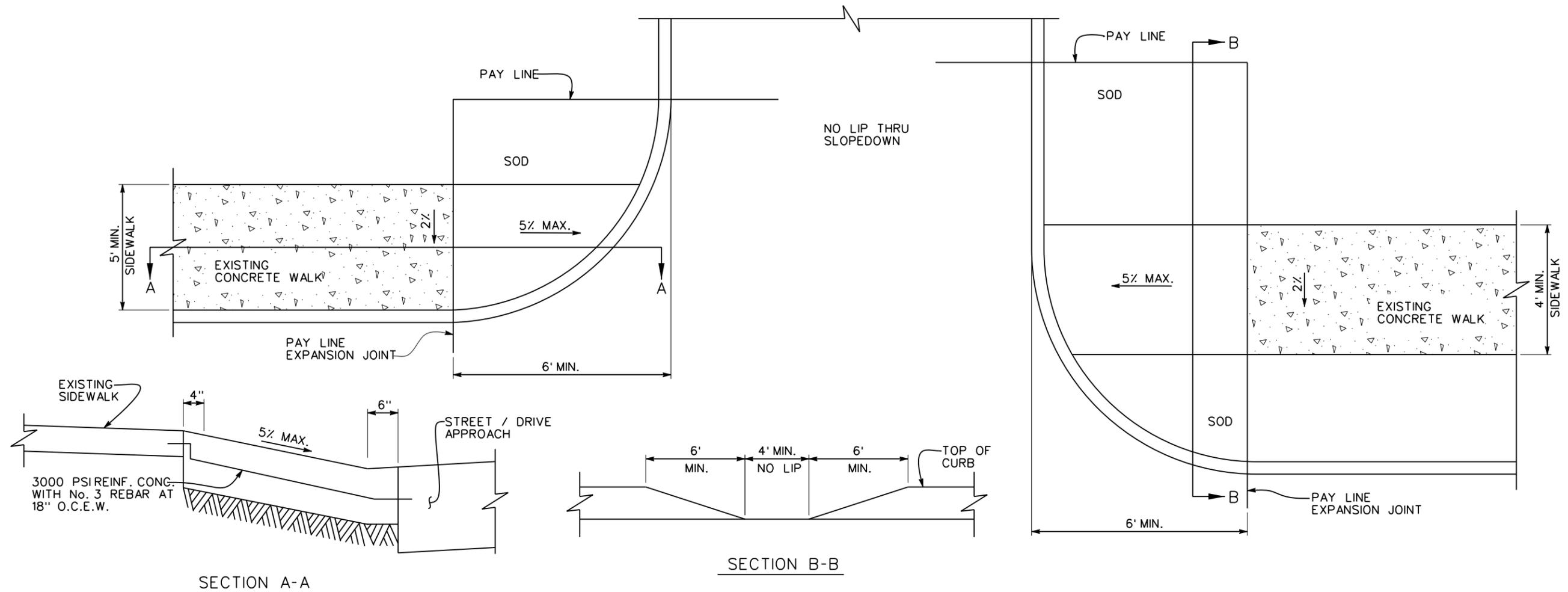
1. IF APPROVED BY THE CITY, PAVERS WILL HAVE DETECTABLE WARNING SURFACES THAT CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER 0.9" (23 MM) A HEIGHT OF NOMINAL 0.2" (5 MM) AND A CENTER TO CENTER SPACING OF NOMINAL 2.35" (60 MM) AND SHALL BE IN RED COLOR. (NO SEPARATE PAY ITEM FOR PAVERS).
2. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN DIRECTION OF PEDESTRIAN TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.

**REMOVE AND REPLACE BARRIER FREE RAMP**

**DETAIL AT INTERSECTING STREET  
(WALK ABUTTING CURB)**

**TYPE "A" BFR WITH LIMITED RIGHT OF WAY**

<b>PAVING DETAILS</b>	
BARRIER FREE RAMPS	
TYPE "A" BFR WITH LIMITED RIGHT OF WAY	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1019



**NOTES:**

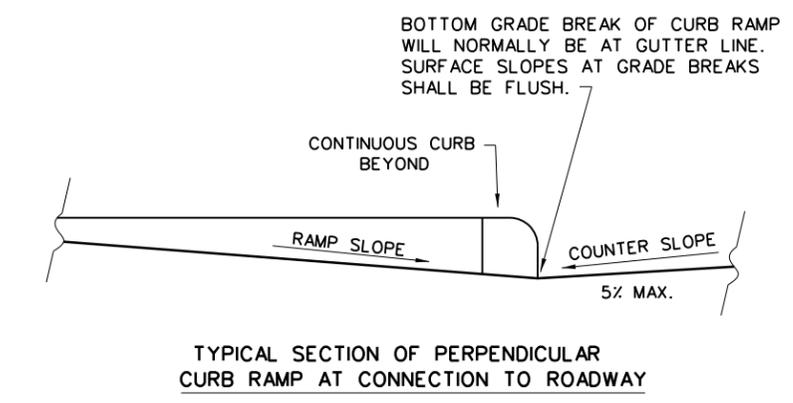
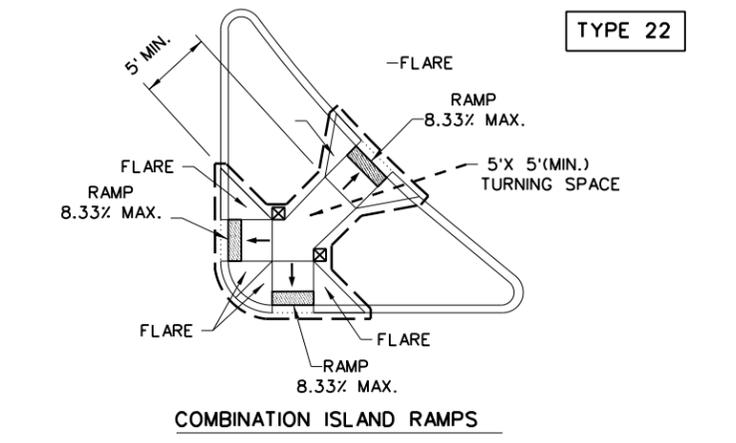
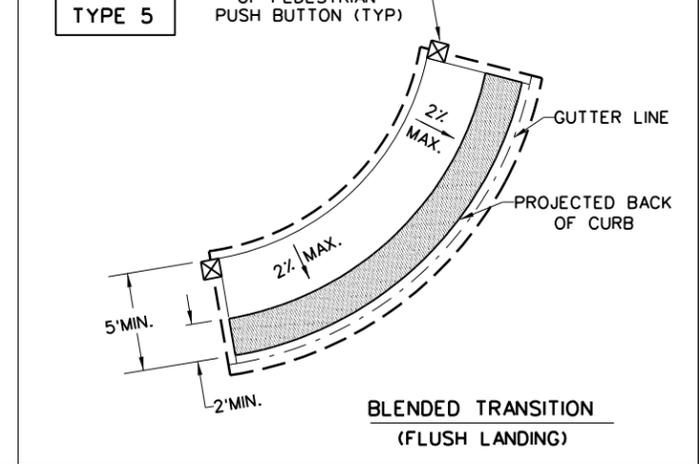
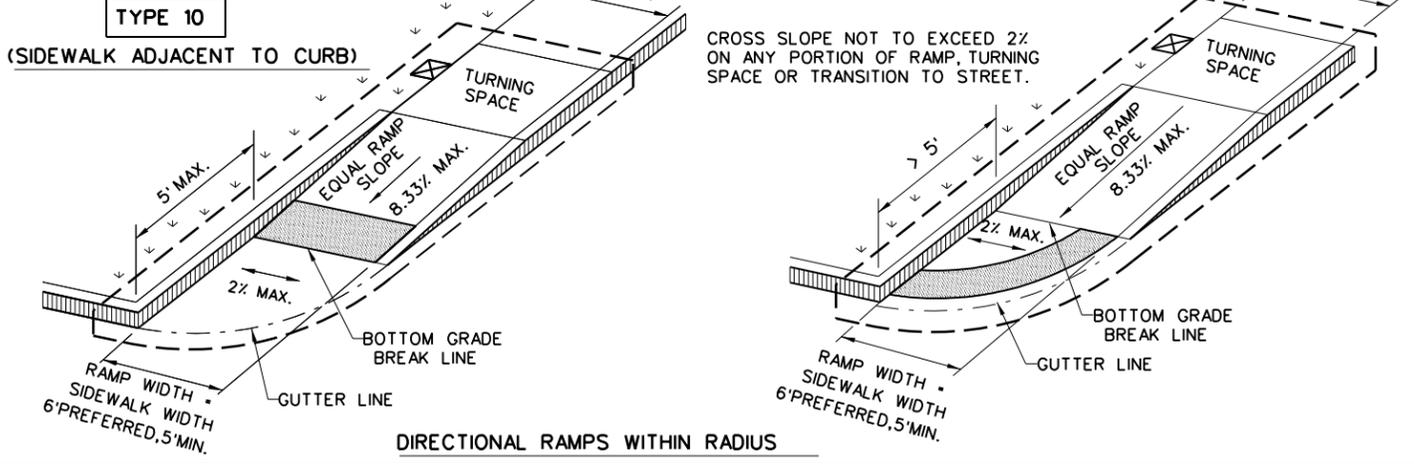
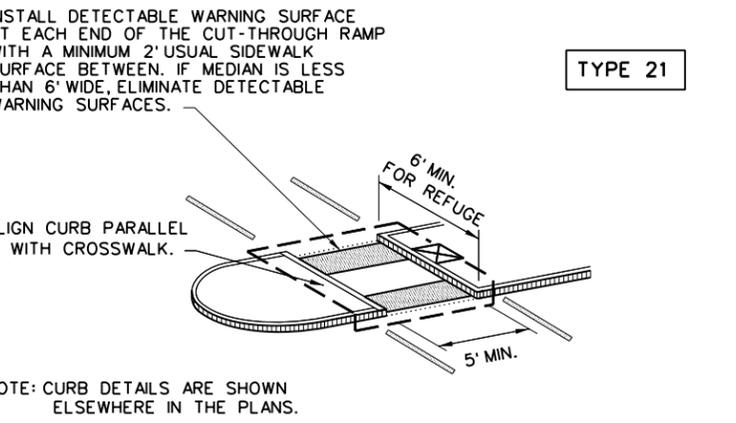
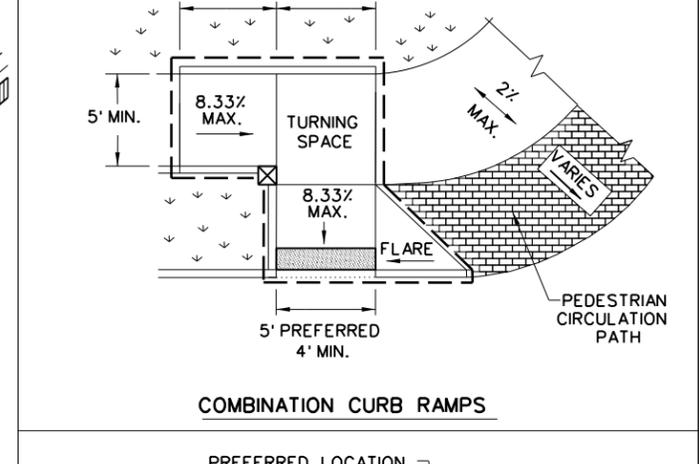
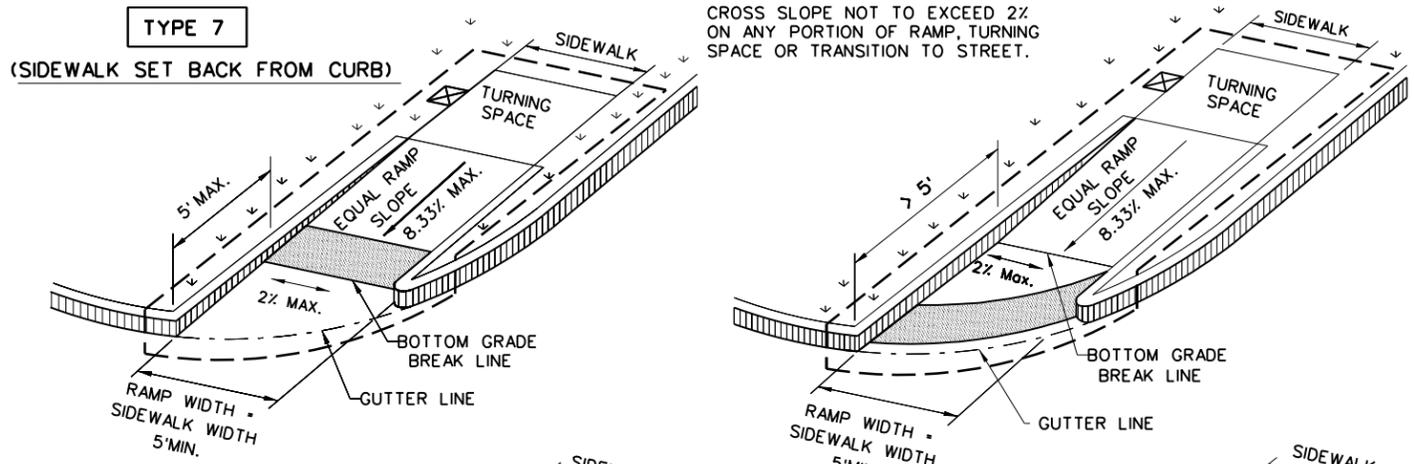
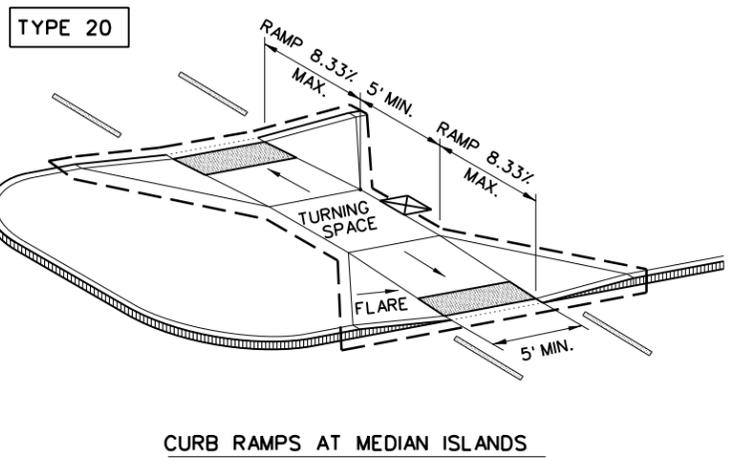
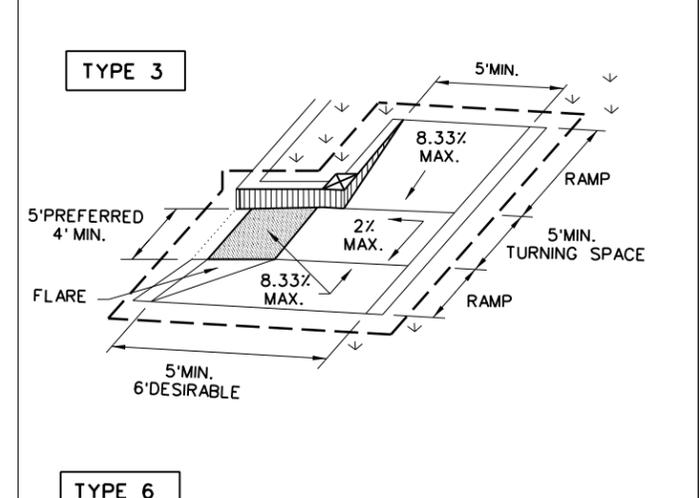
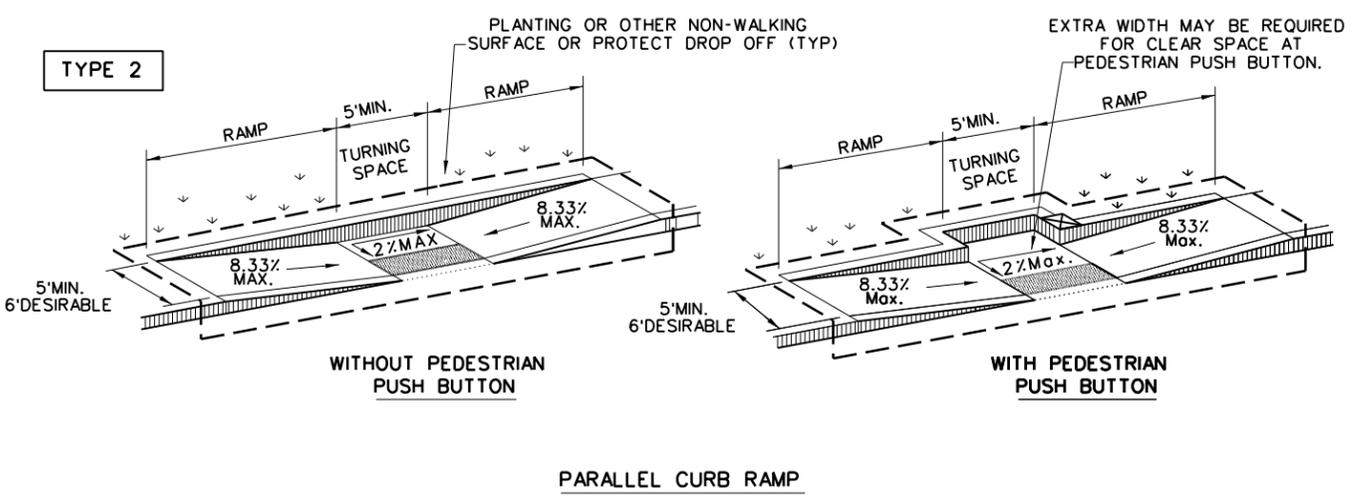
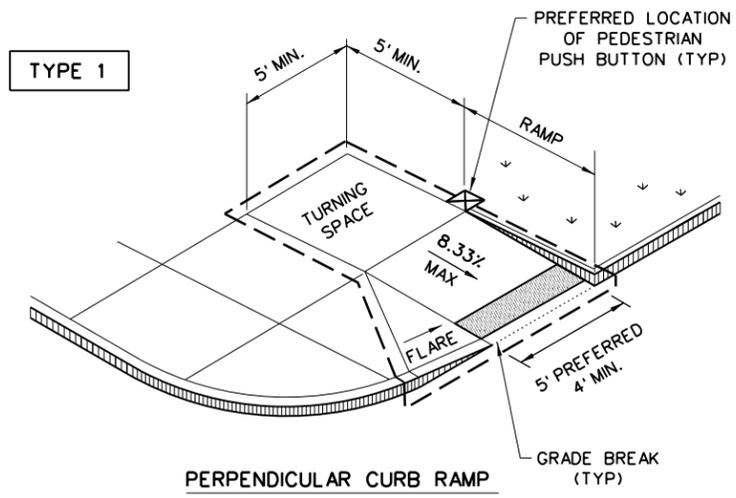
1. THIS PAY ITEM INCLUDES ALL WORK REQUIRE, WITHIN THE PAY LIMITS AS SHOWN, INCLUDING BUT NOT LIMITED TO EXCAVATION, SAWED BREAKOUT GROOVE, LUGS, DOWEL BARS, REMOVAL / REPLACEMENT OF REINFORCE CONCRETE, ASPHALT CONCRETE, EXPANSION JOINT MATERIAL PLACEMENT OF SODDING, CURB & GUTTER, PAVERS OR OTHER INCIDENTAL WORK. THE LIMIT OF WORK INCLUDED IN THIS ITEM IS FROM CURB RETURN TO CURB RETURN. SLOPEDOWNS SHALL ONLY BE INSTALLED AT DRIVEWAYS OR AT NON-PUBLIC INTERSECTING STREETS.
2. DESIGNS SHOWN ARE FOR 6' CURBS. DIMENSIONS MUST BE INCREASED PROPORTIONATELY FOR CURBS WITH HEIGHT GREATER THAN 6'.
3. THE GUTTER GRADE SHALL BE RESTORED THROUGH THE RAMP APPROACH TO ENSURE PROPER STORM WATER DRAINAGE.
4. NEW CURB & GUTTER WORK OUTSIDE THE PAY LIMITS WILL BE PAID FOR AS ITEM 407 REGARDLESS OF THE TYPE OF CURB & GUTTER. THIS PAY ITEM INCLUDES ALL WORK REQUIRED, INCLUDING BUT NOT LIMITED TO EXCAVATION, SAWED BREAKOUT GROOVE, LUGS, DOWEL BARS, REMOVAL / REPLACEMENT OF REINFORCE CONCRETE, ANY ASPHALT WORK AND ANY INCIDENTAL WORK REQUIRED. THE CURB & GUTTER SHALL BE CONSTRUCTED TO THE SIZE, SHAPE, LINES AND GRADE AS CALLED FOR IN FILE 251D-1. VARIATIONS IN SIZE AND SHAPE MAY BE MADE TO FIT INDIVIDUAL FIELD CONDITIONS. NO EXTRA PAYMENT WILL BE MADE FOR ANY VARIATIONS IN WIDTH AND HEIGHT OF THE CURB & GUTTER.
5. ANY RETAINING WALLS INSIDE THE SLOPEDOWN PAY LIMITS SHALL ONLY BE PAID FOR THE VERTICAL PORTION OF THE WALL AND WILL NOT INCLUDE THE TOE OR FOOTING, WHICH SHALL BE SUBSIDIARY TO THE SLOPEDOWN. RETAINING WALLS OUTSIDE THE SLOPEDOWN PAY LIMITS SHALL BE PAID FOR AS DESCRIBED IN THE FILE 251D-1.
6. ALL WORK NECESSARY TO INSTALL ADDITIONAL SIDEWALK PANELS PAST SLOPEDOWN PAY LIMITS IN ORDER TO MEET TEXAS ACCESSIBILITY STANDARDS (T.A.S.) REQUIREMENTS WILL BE PAID FOR PER SQUARE FOOT OF SIDEWALK. THIS PAY ITEM INCLUDES BUT IS NOT LIMITED TO REINFORCE CONCRETE SIDEWALK REMOVAL / REPLACEMENT, LUGS, DOWEL BARS, PLACEMENT OF GRASS BLOCK/SPOT SOD, SAWED BREAKOUT GROOVE, EXCAVATION OR OTHER INCIDENTAL WORK.
7. CONCRETE SHALL BE POURED SEPARATELY, FIRST FOR THE CURB AND GUTTER, THEN FOR THE BARRIER- FREE RAMP AND/OR SIDEWALK. THIS SEPARATION IS NECESSARY TO SATISFY THE REQUIREMENTS FOR KEYWAY OR KEYWAY REPLACEMENT AND THE DIFFERENT STRENGTHS OF CONCRETE REQUIRED FOR EACH AS SHOWN IN SHEETS 1015-1019. IN HIGH-TRAFFIC SITUATIONS, CURING TIME BETWEEN PLACEMENT OF CURB AND GUTTER AND PLACEMENT OF SLOPEDOWN AND/OR SIDEWALK CAN BE REDUCED TO ONE HOUR, BUT ONLY WITH THE EXPRESS WRITTEN APPROVAL OF THE ENGINEER, AND MUST BE PLACED USING 4,500 PSI CONCRETE (28-DAY STRENGTH).

AT DRIVEWAY OR INTERSECTING PRIVATE STREET  
(WALK MAY/MAY NOT DIRECTLY ABUT CURB)

<b>PAVING DETAILS</b>	
SLOPEDOWN AT DRIVEWAY OR INTERSECTING PRIVATE STREET	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1020

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DATE: FILE:



**NOTES / LEGEND:**  
SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

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

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

Detectable Warning Surface: [Symbol]

Grade Break: [Symbol]

Ramp Limits of Payment: [Symbol]

Gutter Line: [Symbol]

SHEET 1 OF 4

Texas Department of Transportation  
Design Division Standard

**PEDESTRIAN FACILITIES CURB RAMPS**  
**PED-18**

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

**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**

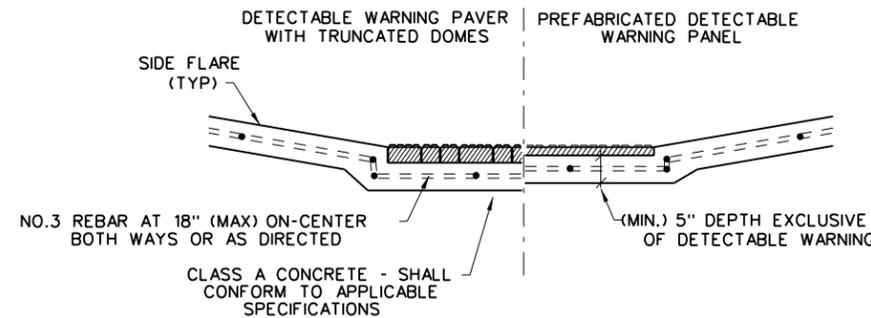
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material 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 curbs and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

**DETECTABLE WARNING PAVERS (IF USED)**

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

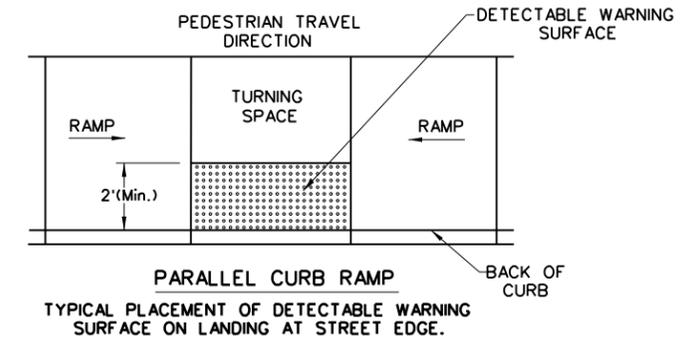
**SIDEWALKS**

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.

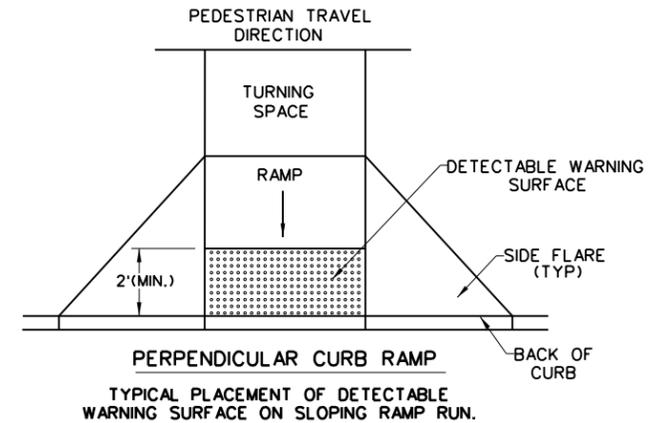


**SECTION VIEW DETAIL  
CURB RAMP AT DETECTIBLE WARNINGS**

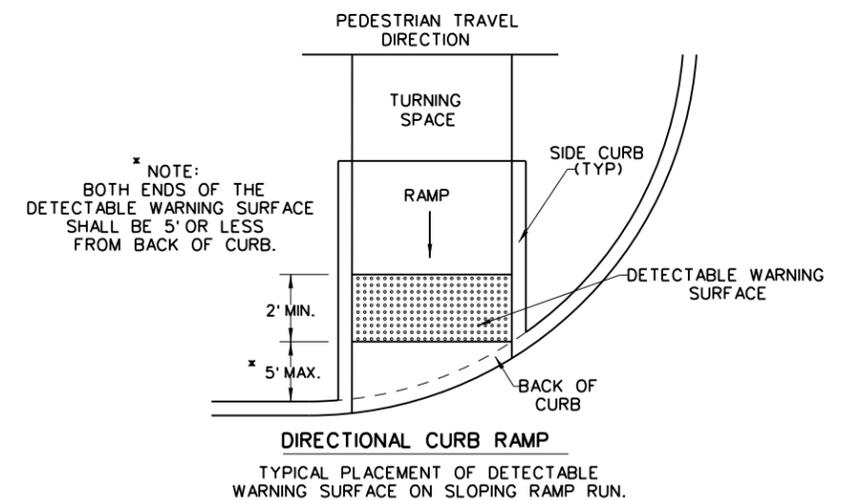
**DETECTABLE WARNING SURFACE DETAILS**



**PARALLEL CURB RAMP  
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.**



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



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

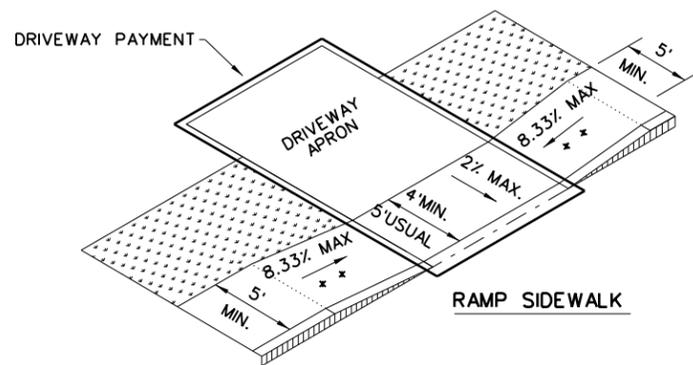
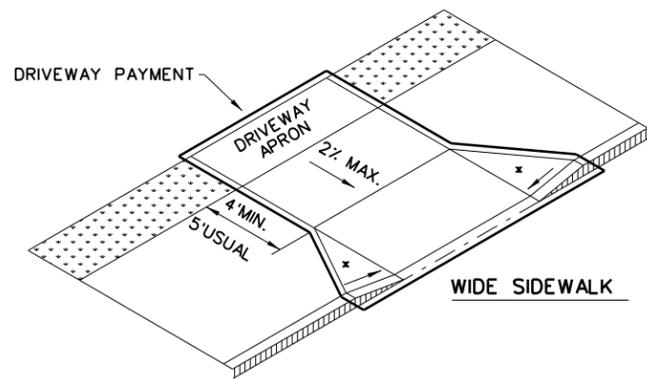
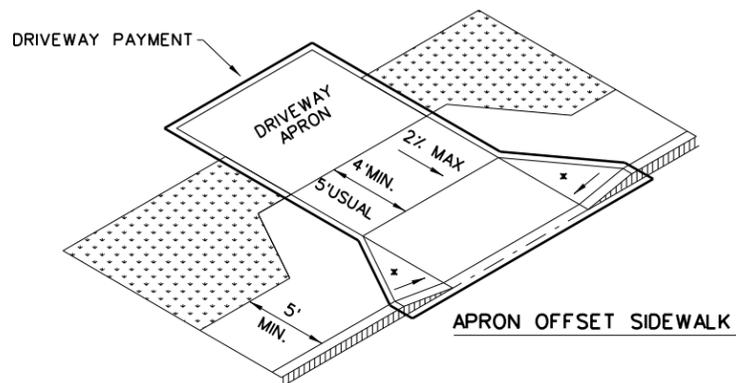
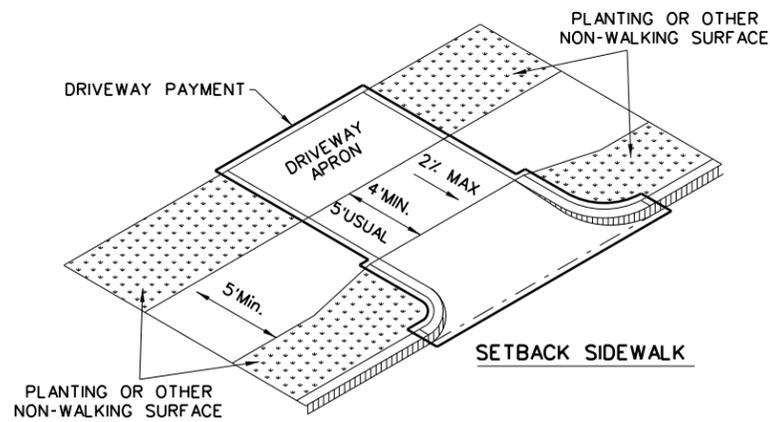
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DATE:  
FILE:

		<b>Design Division Standard</b>	
<h2>PEDESTRIAN FACILITIES CURB RAMPS</h2> <h3>PED-18</h3>			
FILE: ped18	DN: TxDOT	DW: VP	CK: KM
© TxDOT: MARCH, 2002	CON: SECT	JOB	HIGHWAY
REVISIONS REVISOR DATE REVISOR DATE REVISOR DATE		DIST	COUNTY
			SHEET NO.

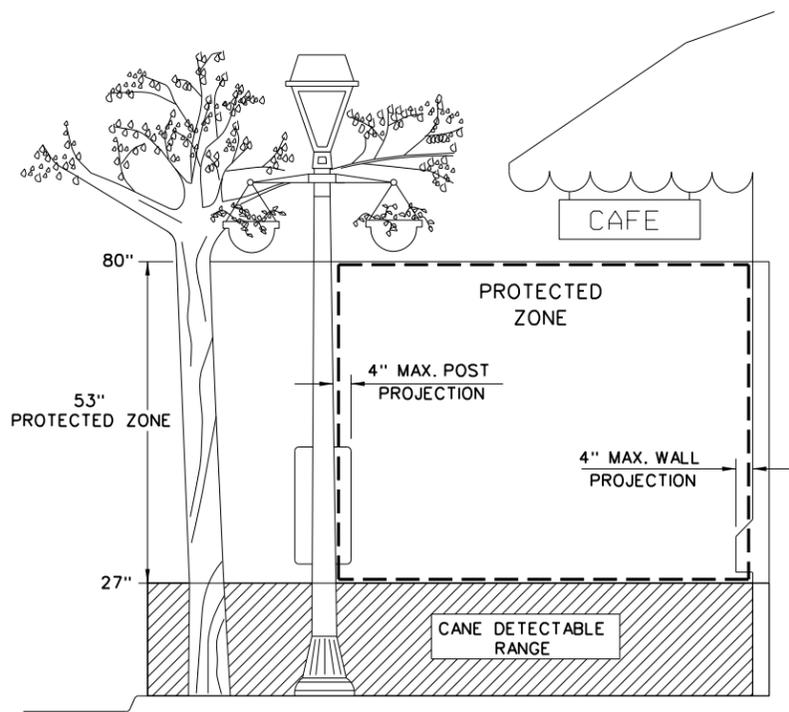
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**SIDEWALK TREATMENT AT DRIVEWAYS**



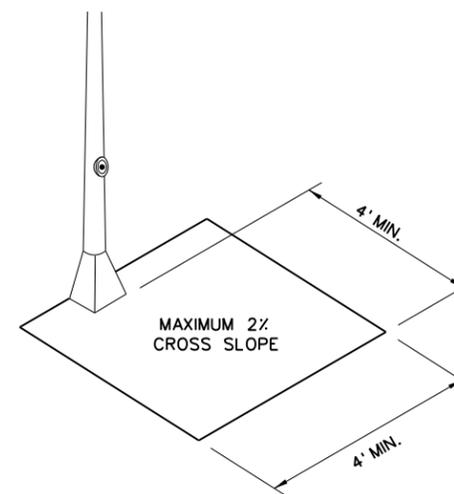
**NOTES:**

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

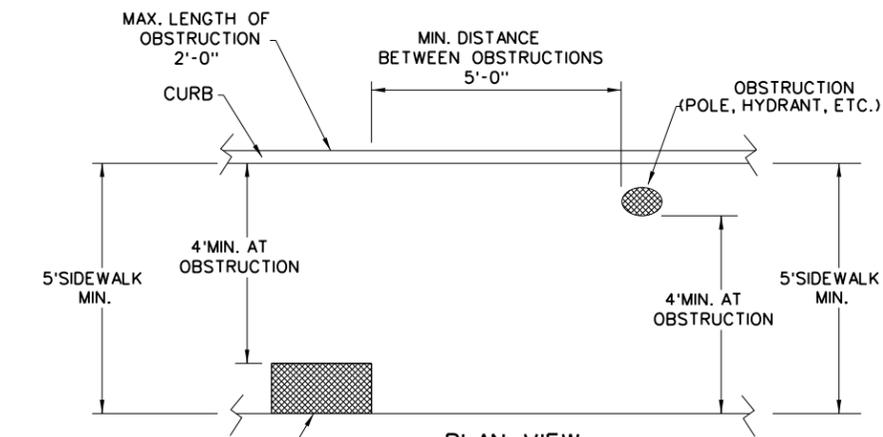


**PROTECTED ZONE**

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

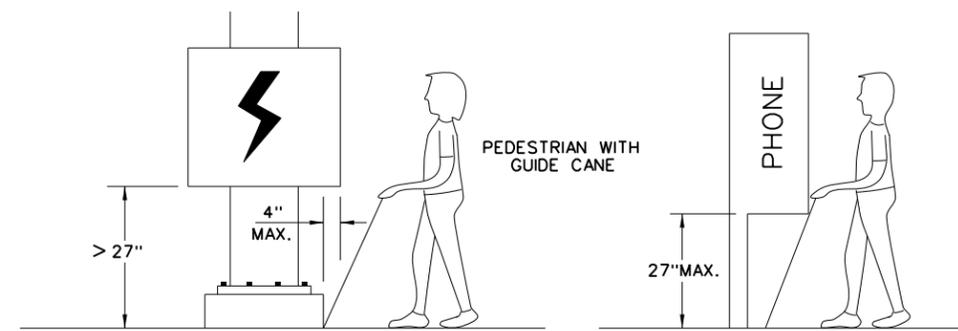


**CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON**



**PLAN VIEW  
PLACEMENT OF STREET FIXTURES**

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



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT  $\geq 27"$  ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

**DETECTION BARRIER FOR VERTICAL CLEARANCE  $\leq 80"$**

SHEET 3 OF 4



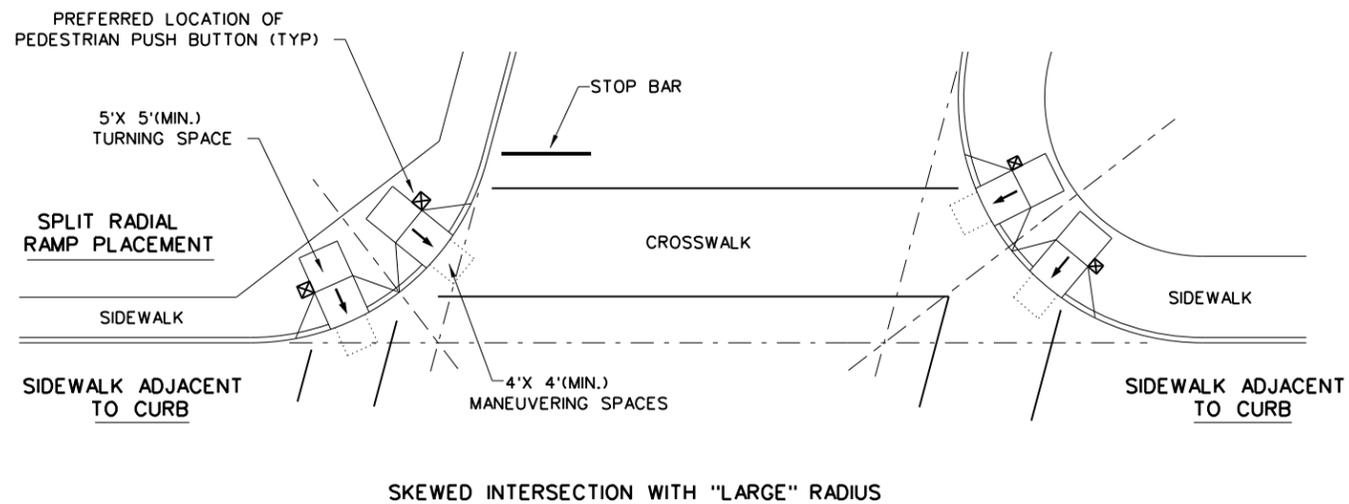
**PEDESTRIAN FACILITIES  
CURB RAMPS**

**PED-18**

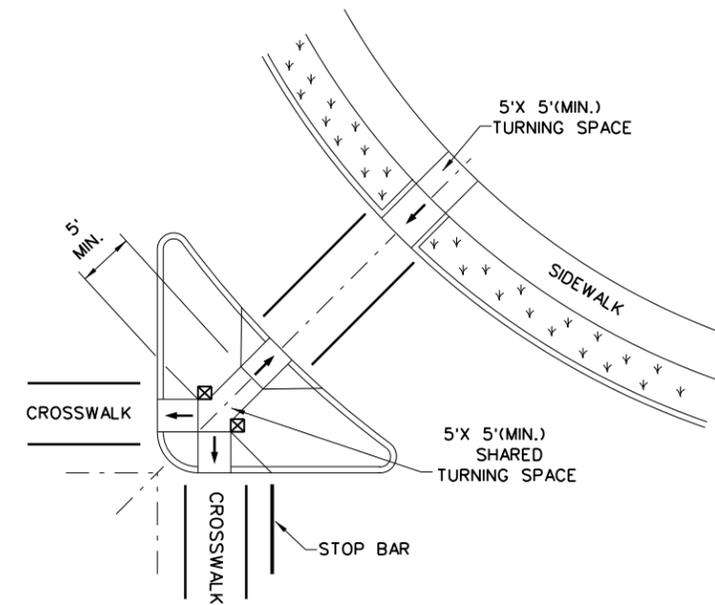
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REVISED 06, 2012	DIST	COUNTY	SHEET NO.	
REVISED 01, 2018				

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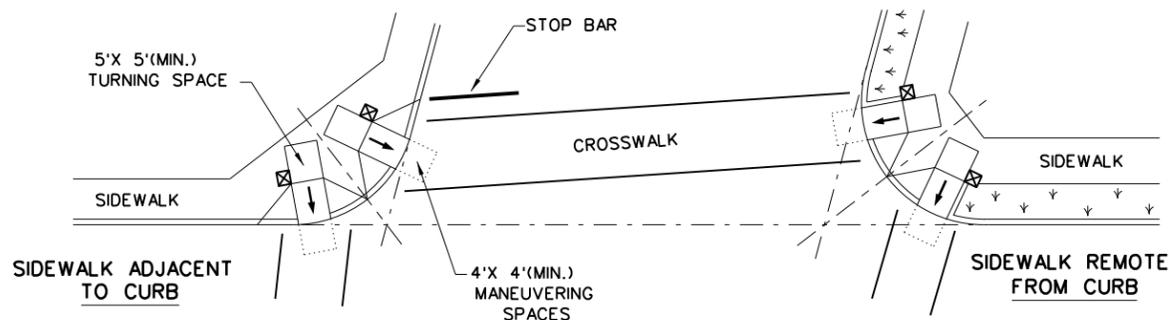
TYPICAL CROSSING LAYOUTS  
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



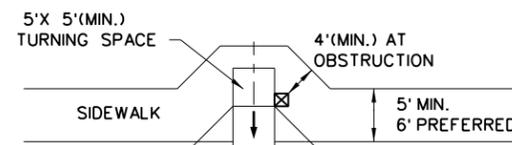
SKewed INTERSECTION WITH "LARGE" RADIUS



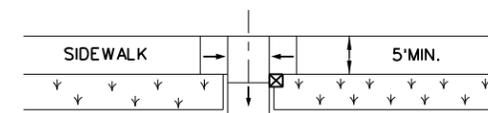
AT INTERSECTION  
W/FREE RIGHT TURN & ISLAND



SKewed INTERSECTION WITH "SMALL" RADIUS

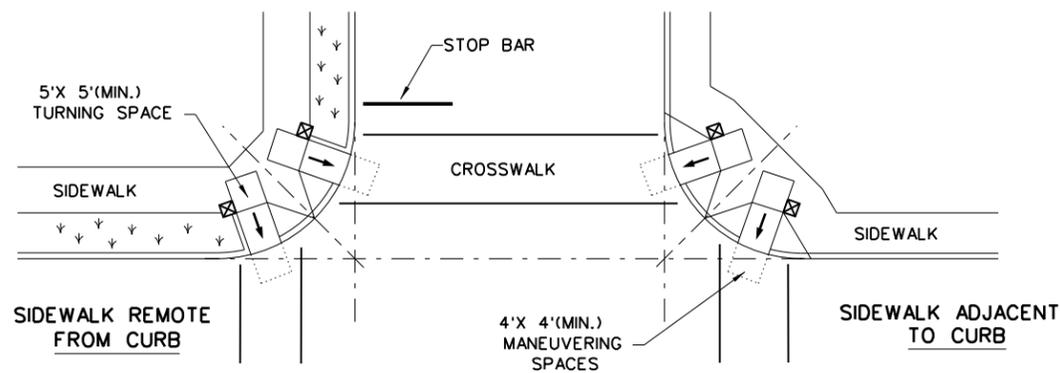


SIDEWALK ADJACENT TO CURB



SIDEWALK REMOTE FROM CURB

MID-BLOCK PLACEMENT  
PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

LEGEND:

SHOWS DOWNWARD SLOPE. →

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ☒

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

PEDESTRIAN FACILITIES  
CURB RAMPS

PED-18

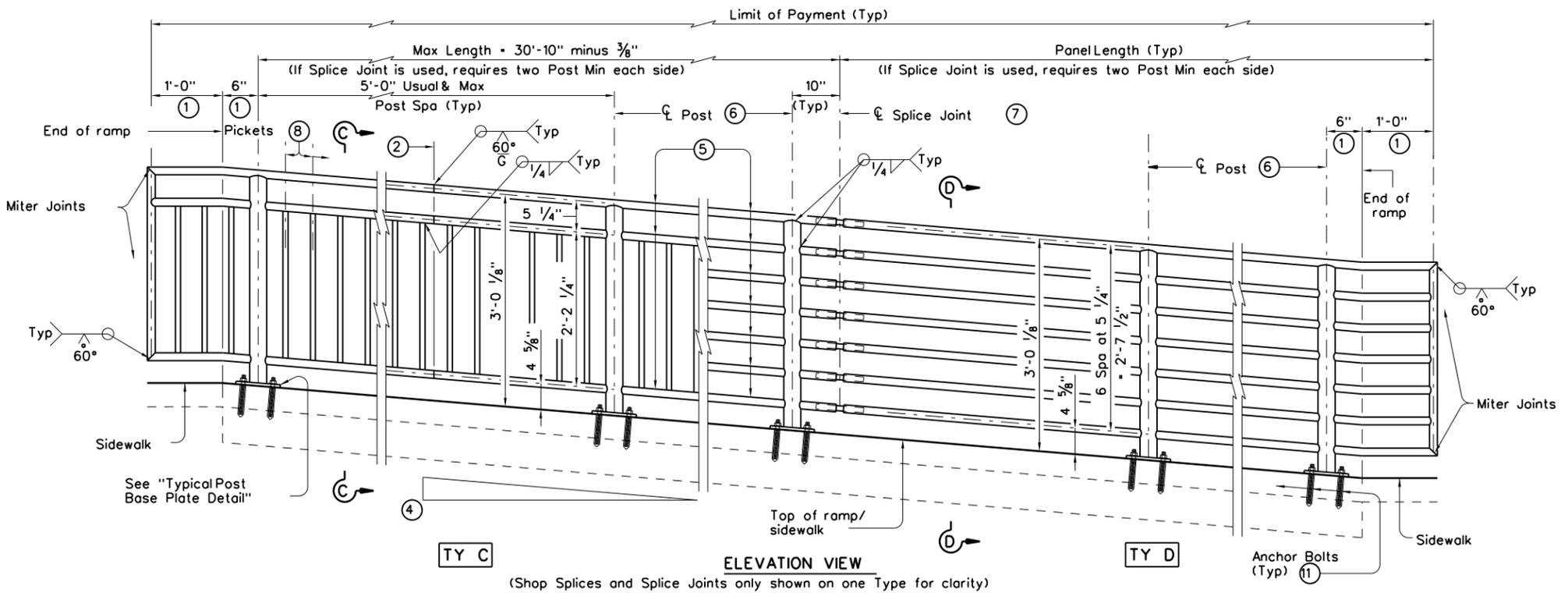
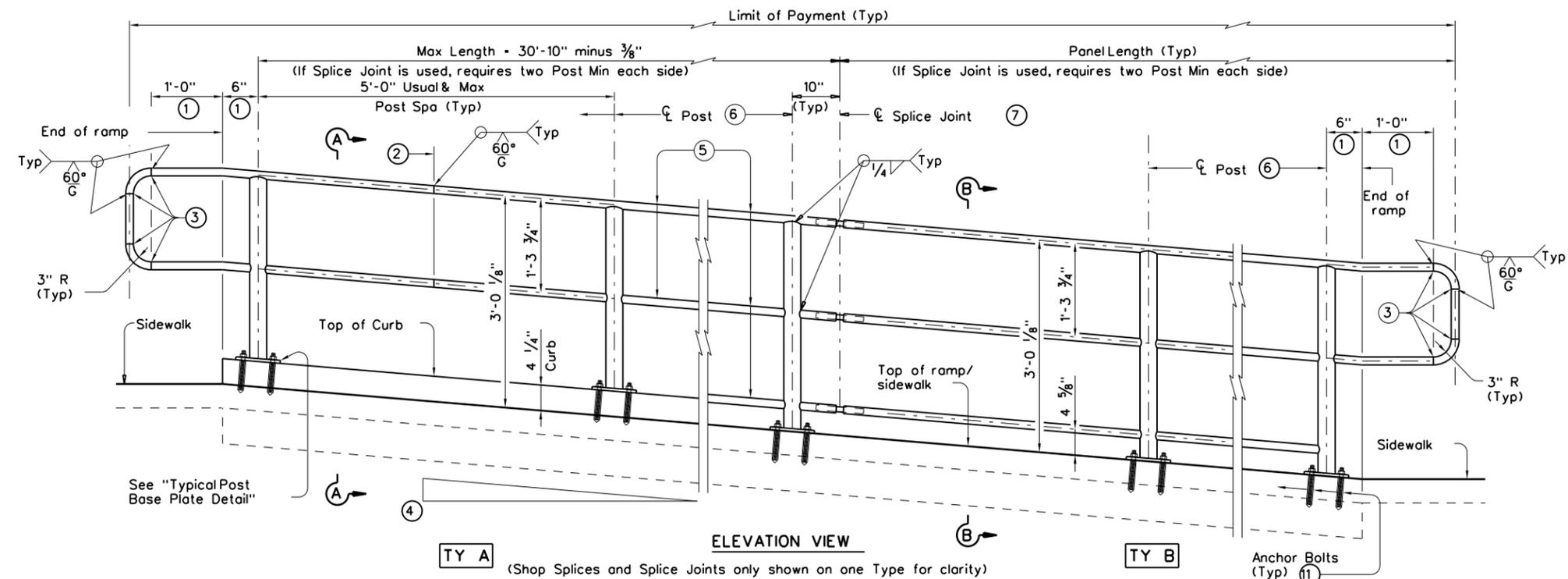
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REVISED 01, 2018				

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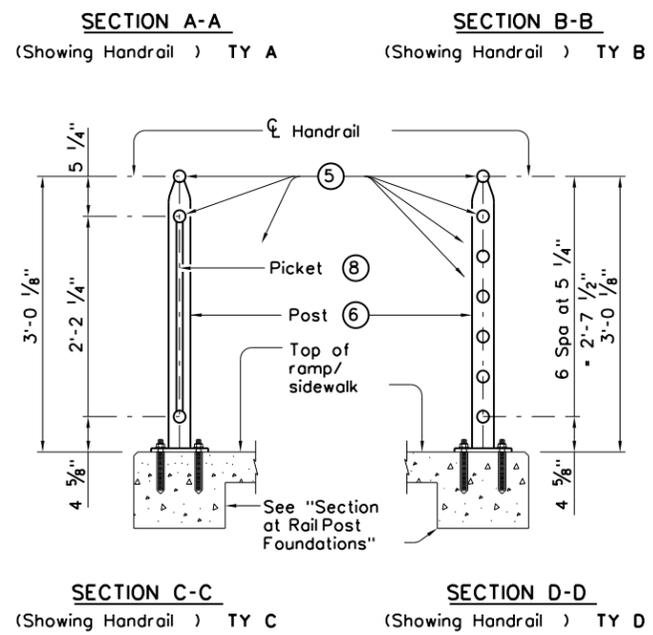
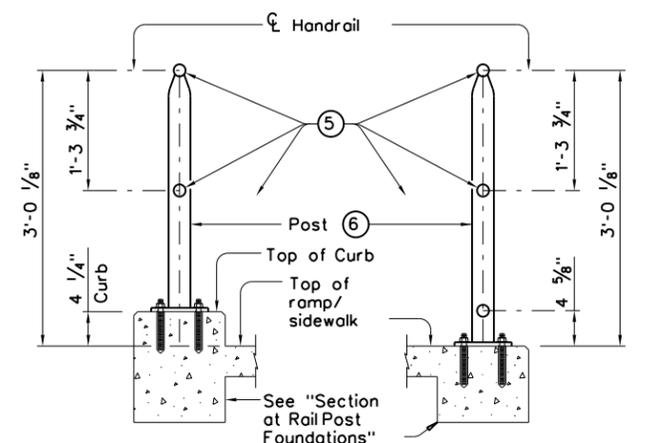
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DATE: FILE:



RECOMMENDED USAGE ⑨ ⑩	
Dropoff Height/Condition	Recommended Rail Options
<30" dropoff	TY A, TY B, TY C, or TY D
≥ 30" dropoff, or along Bike Path	TY E or TY F



- ① Parallel to ground.
- ② One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- ③ Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- ④ See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.
- ⑤ 1 1/2" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 1/2" Dia. pipe for galvanizing drainage and venting.
- ⑥ 2 1/2" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
- ⑦ See "Handrail Fabrication Details" for Splice Joints.
- ⑧ 5/8" Dia. Round Bar equal spacing at 4 1/2" Max. Plumb all pickets.
- ⑨ When needed for accessibility (grade 5 percent) or as needed for pedestrian safety.
- ⑩ Not to be used on bridges.
- ⑪ See "General Notes" for anchor bolt information.

SHEET 1 OF 3

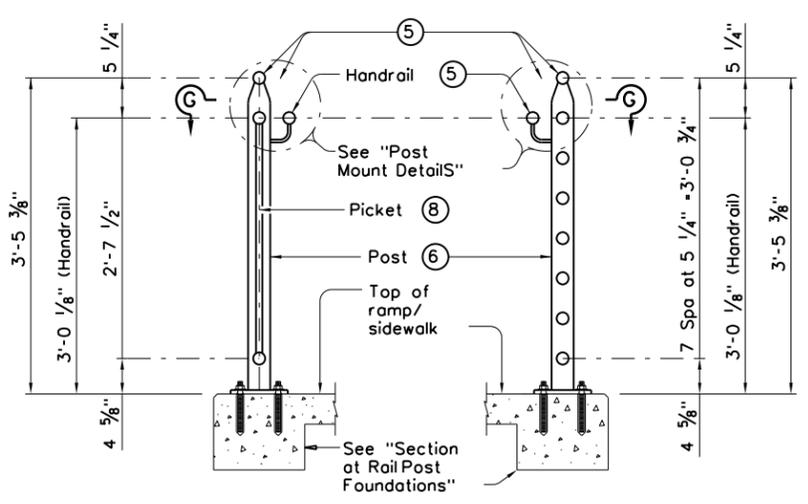
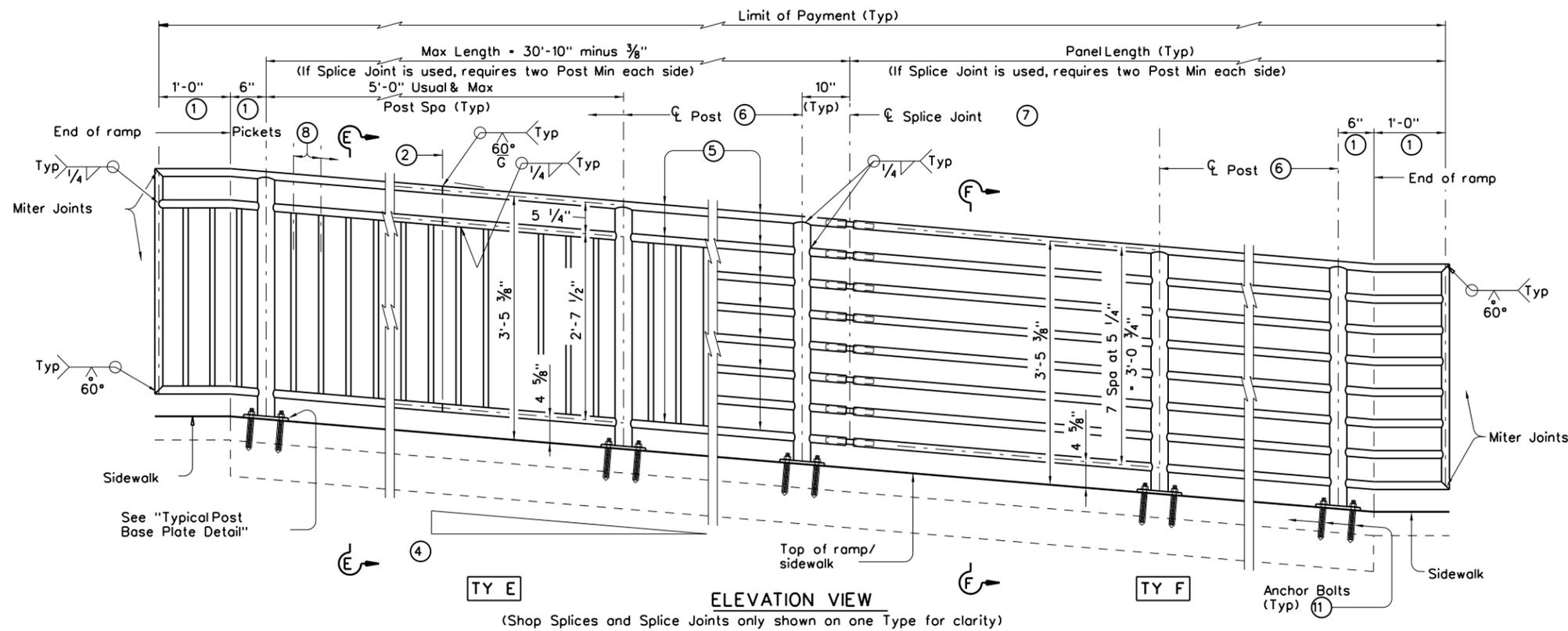
**Texas Department of Transportation** Design Division Standard

## PEDESTRIAN HANDRAIL DETAILS

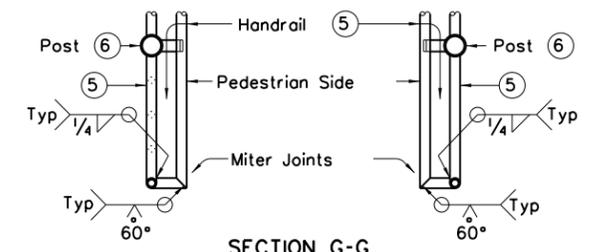
### PRD-13

FILE: prd13.dgn	DN: TxDOT	CK: AM	DW: JTR	CK: CGL
© TxDOT December 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED MAY, 2013 (VP)	DIST	COUNTY	SHEET NO.	

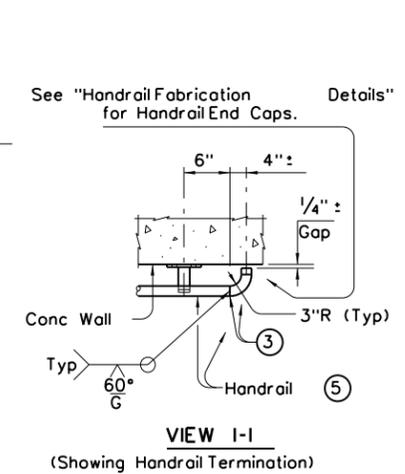
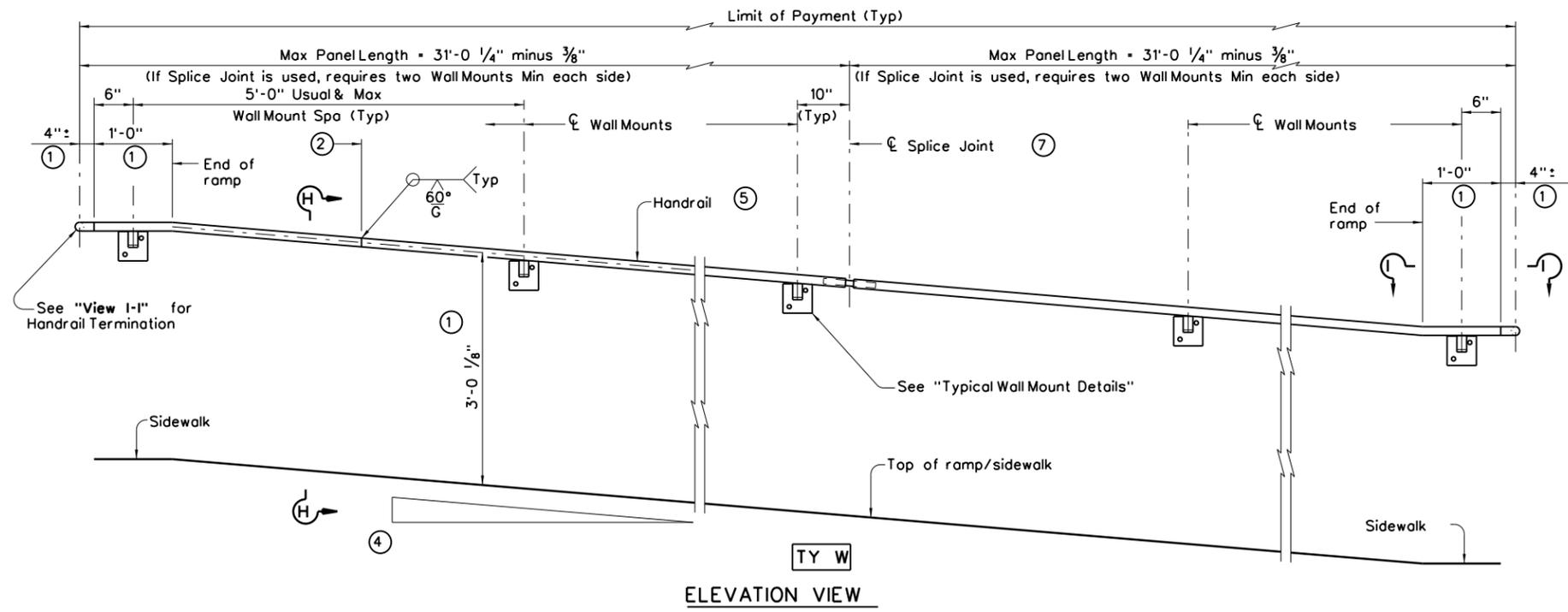
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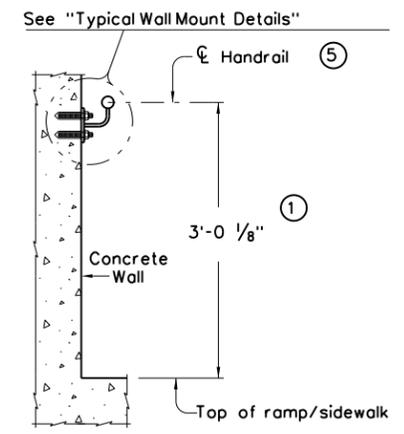
SECTION E-E (Showing Handrail) TY E  
SECTION F-F (Showing Handrail) TY F



SECTION G-G (Showing Handrail Termination)



VIEW I-I (Showing Handrail Termination)



SECTION H-H (Showing Handrail) TY W

SHEET 2 OF 3

- ① Parallel to ground.
- ② One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- ③ Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- ④ See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Leveling required for each 30" rise if grade exceeds 5 percent.
- ⑤ 1 1/2" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 1/2" Dia. pipe for galvanizing drainage and venting.
- ⑥ 2 1/2" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
- ⑦ See "Handrail Fabrication Details" for Splice Joints.
- ⑧ 5/8" Dia. Round Bar equal spacing at 4 1/2" Max. Plumb all pickets.
- ⑩ See "General Notes" for anchor bolt information.

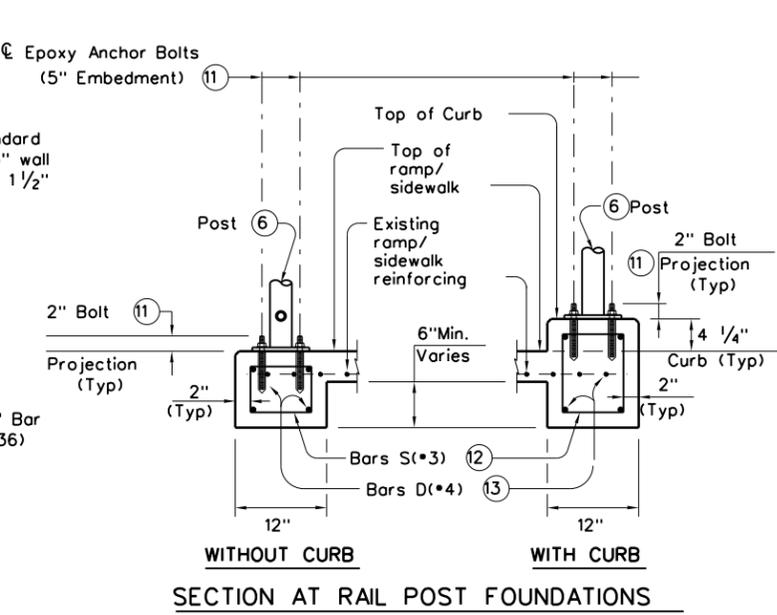
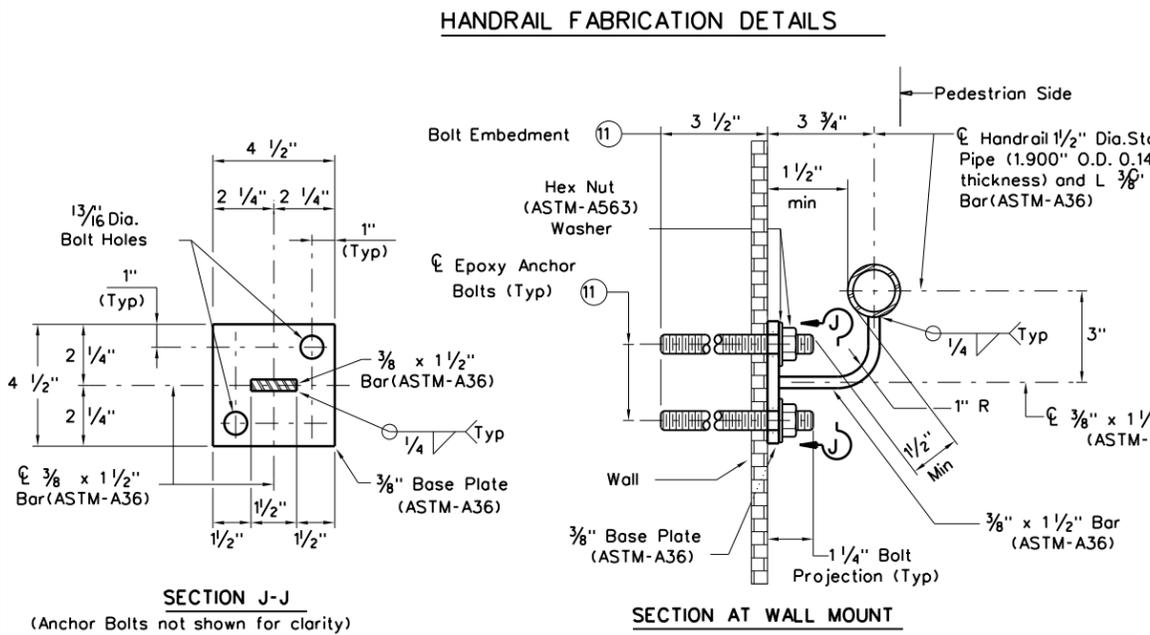
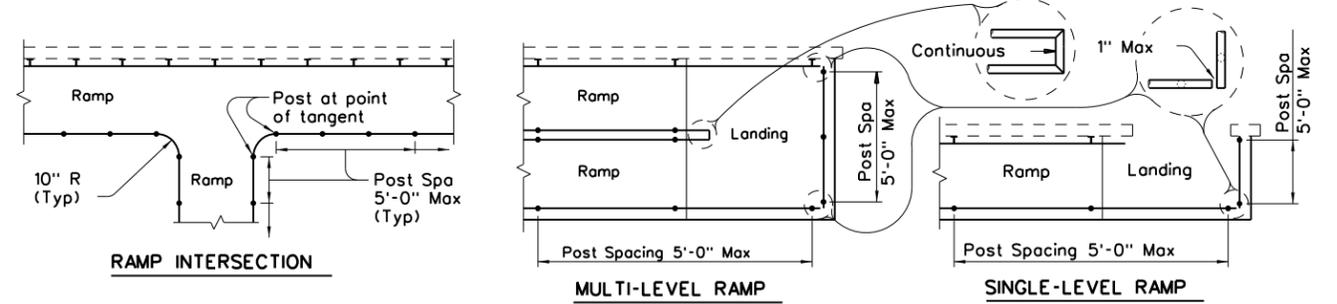
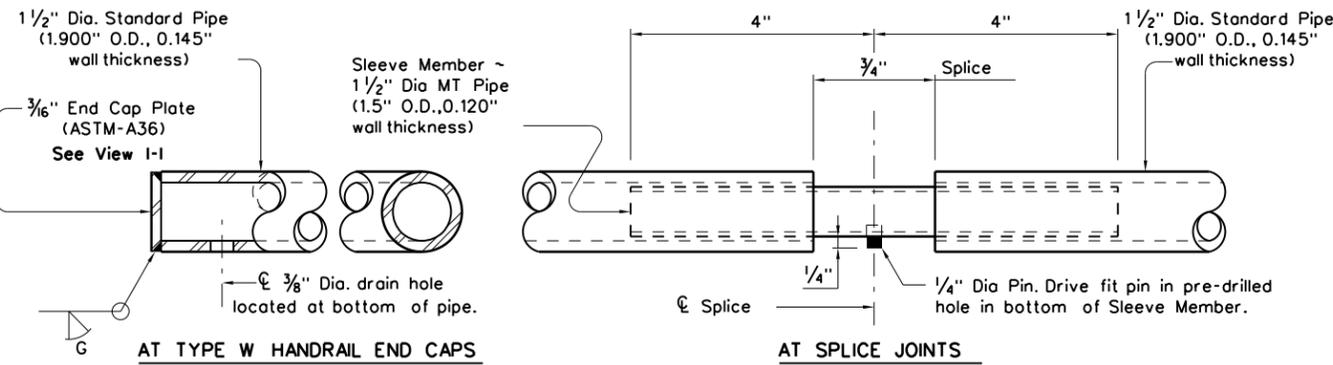
**PEDESTRIAN HANDRAIL DETAILS**  
**PRD-13**

FILE: prd13.dgn	DN: TxDOT	CK: AM	DW: JTR	CK: CGL
© TxDOT December 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED MAY, 2013 (VP)	DIST	COUNTY	SHEET NO.	

Texas Department of Transportation  
Design Division Standard

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**GENERAL NOTES**

Designed according to ADAAG, Texas Accessibility Standards, Uniform Building Code, and AASHTO LRFD Specifications.

Handrail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Pipe will conform to ASTM-A53 Grade B or A500 Grade B. Steel plates and steel bars will conform to ASTM-A36. Mechanical tubing (MT) will conform to ASTM A513 Grade 1015 or higher. Galvanize all steel components except reinforcing steel unless noted otherwise.

Concrete for foundations will be in accordance with Item 531 "Sidewalks". All reinforcing steel must be Grade 60. Bar laps, where required, will be as follows: Uncoated ~ #4 - 1'-5" Epoxy coated ~ #4 - 2'-1"

When the plans require painted steel, follow the requirements for painting galvanized steel in Item 446, "Cleaning and Painting Steel". Sleeve Members will receive galvanization and only get field painted after installation unless directed otherwise by Engineer.

Epoxy Anchor bolts for wall mount and post base plate will be 5/8" Dia. ASTM A36 threaded rods with one hex nut and one hardened steel washer at each bolt. 3/8" Dia. threaded rod embedment depth for wall mounts is 3 1/2" and embedment depth for post base plate is 5".

Embed threaded rods into concrete with a Type III (Class C) epoxy meeting the requirements of DMS-6100, "Epoxy and Adhesives". Mix and dispense adhesive with the manufacturer's static mixing nozzle/dual cartridge system. Core drill holes (percussion drilling not permitted).

At the contractor's option the post base plate anchor bolts may be cast with the Ramp/Sidewalk (See Cast-in-Place Anchor Bolt Options).

Optional cast-in-place anchor bolts will be 5/8" Dia ASTM A307 Grade A bolts (or A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt. Embedment depth of cast-in-place bolt will be 8" for post base plate.

Handrails and any wall or other surface adjacent to them will be free of any sharp or abrasive elements.

Submit shop drawings to the Engineer unless otherwise noted. For curved handrail applications, fabricate the handrail to the curve if radius is less than 600 ft. Shop drawings are required when rails are fabricated to the curve.

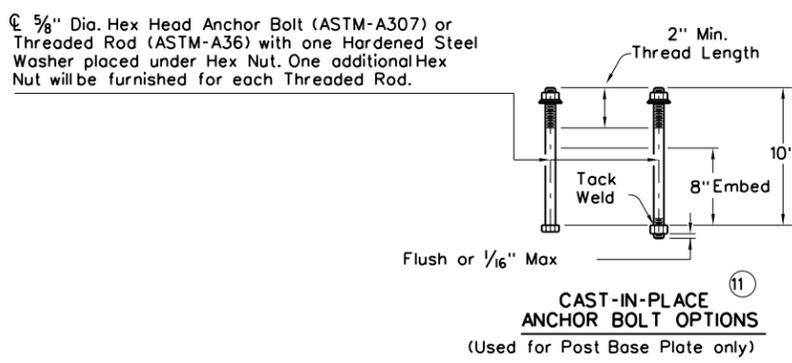
For all handrails, erection drawings will be submitted to the Engineer for approval to ensure proper installation.

Drawings will show handrail mount locations with bolts setting, spacing, ramp slope, and/or splice joint locations, and handrail lengths with identification showing where each handrail goes on the layout.

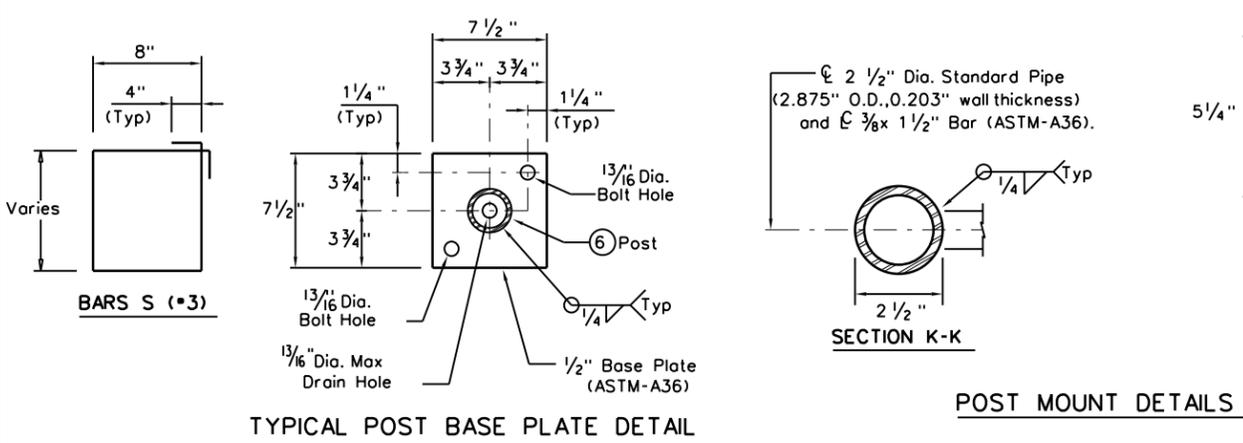
Payment for concrete sidewalks or curb ramps will be paid for in accordance with Item 531 "Sidewalks".

Payment for all items shown is to be included in unit price bid in accordance with Item 450 "Railing" of the type specified.

All exposed edges will be rounded or chamfered to approximately 1/8" by grinding.



- (5) 1 1/2" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp/sidewalk. Provide holes as needed in 1 1/2" Dia. pipe for galvanizing drainage and venting.
- (6) 2 1/2" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). Plumb all posts. See "Post Mount Detail" for crimping and trimming post to fit the diameter of top rail. Provide holes as needed in post for galvanizing drainage and venting.
- (11) See "General Notes" for anchor bolt information.
- (12) Bars S(\*3) spaced at 12" Max (Spaced 3" from outside edge of overall length of Ramp/Sidewalk).
- (13) Provide 1 1/2" end cover to Bars D(\*4) from outside edge of overall length of Ramp/Sidewalk.



SHEET 3 OF 3

Design Division Standard

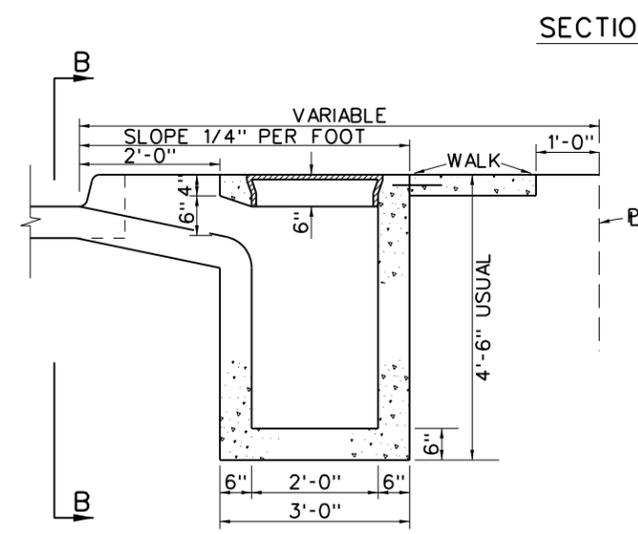
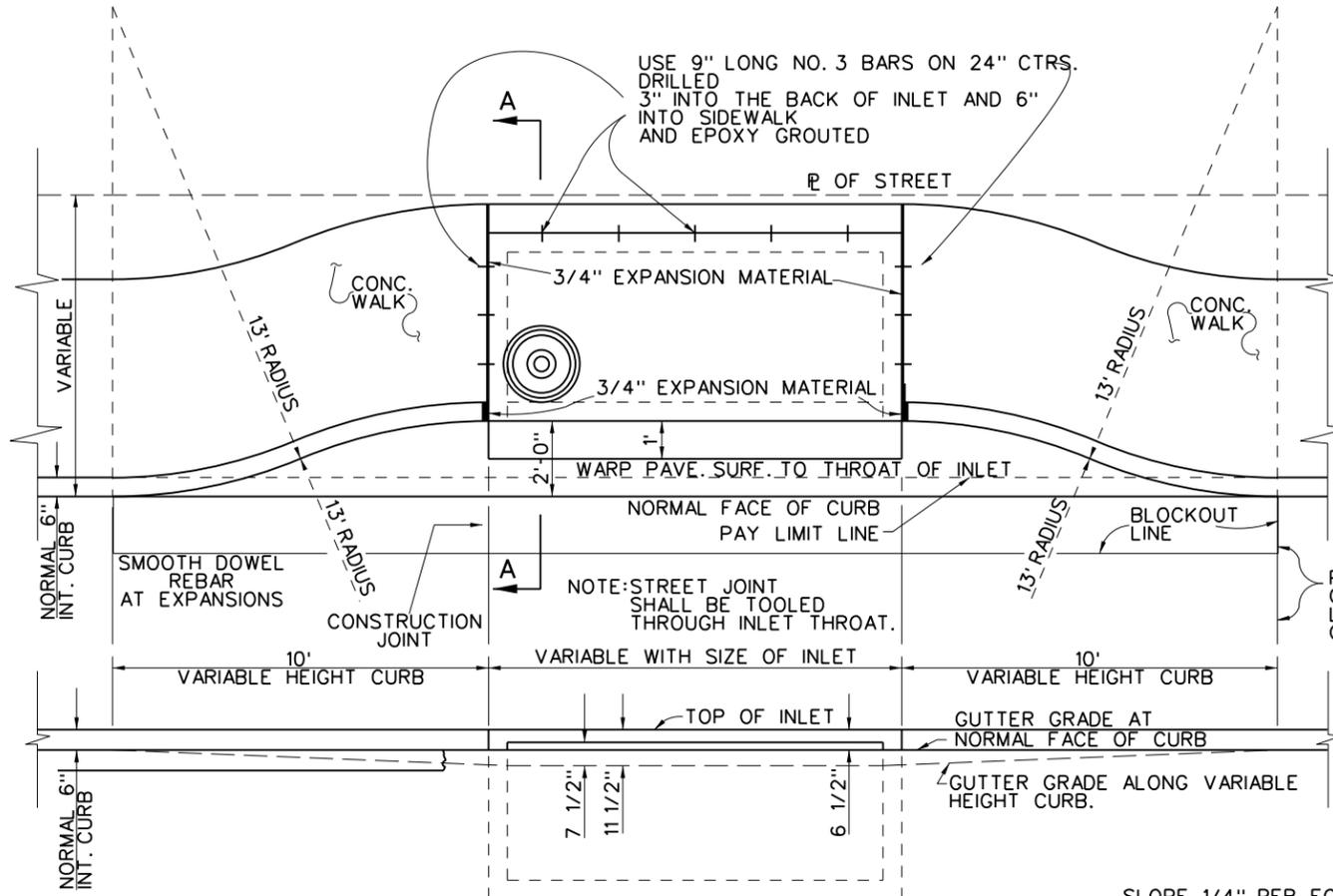
PEDESTRIAN HANDRAIL  
 DETAILS  
 PRD-13

FILE: prd13.dgn	DN: TxDOT	CK: AM	DW: JRT	CK: CGL
© TxDOT December 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED MAY, 2013 (VP)	DIST	COUNTY		SHEET NO.

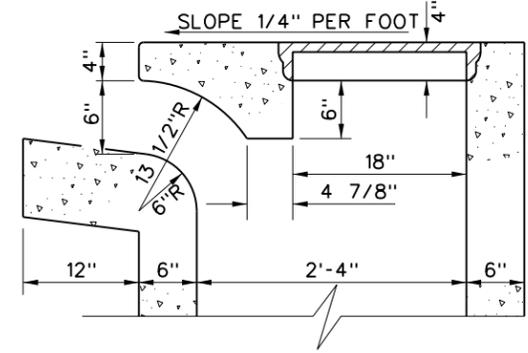
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FILE:



**STANDARD RECESSED STORM DRAINAGE INLETS & CURBS**



**SECTION A-A FOR 36", 48" & 60" INLETS**

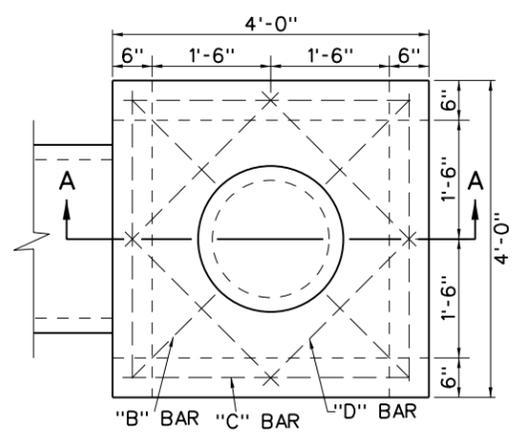


**SECTION A-A FOR 6', 8' & 10' INLETS**

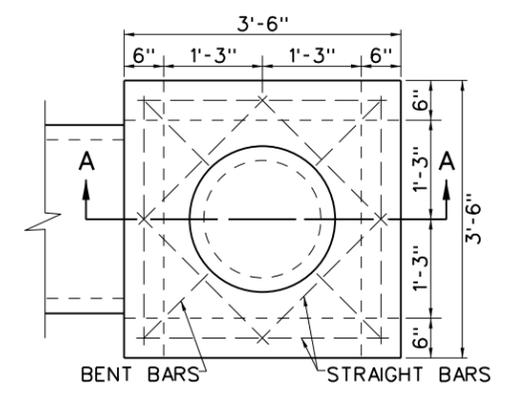
- NOTES:**
1. SEE SHEET No. 2004 FOR REINFORCING & BEAM DESIGN.
  2. SEE DETAIL ABOVE FOR PROPER INLET TIE-IN TO ADJACENT SIDEWALK FOR ALL SIZE INLETS THAT ARE ADJACENT TO SIDEWALKS.
  3. GENERAL NOTES 1-10 ON SHEET No. 2003 ALSO APPLY TO THIS SHEET.
  4. CONCRETE FOR INLETS TOPS SHALL BE CLASS HAND FINISH CONCRETE (4500 psi) WHEN USED IN STREETS AND ALLEYS.

ALL REINFORCING SHALL BE NO. 4 BARS.

**SPECIAL "Y" INLET**



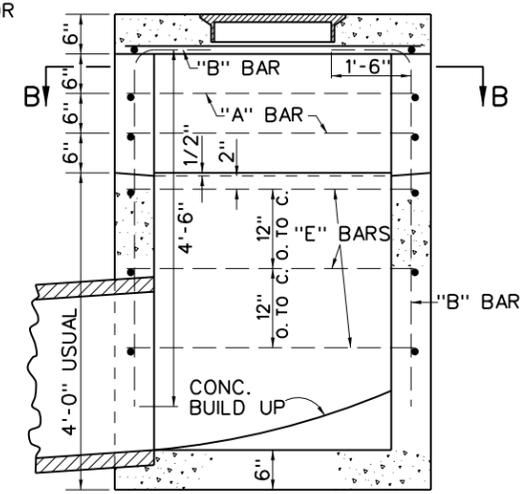
**STANDARD TYPE "Y" INLET**



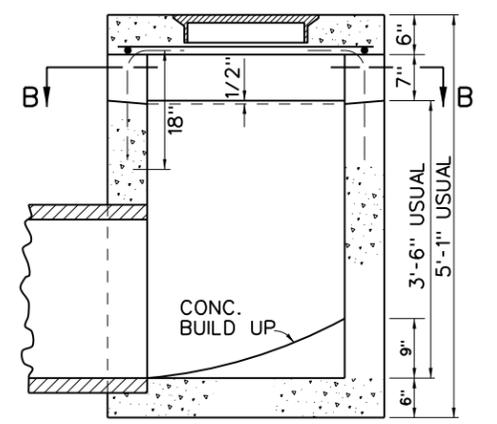
NOTES: DEPTH OF INLETS MAY VARY TO SUIT CONDITIONS IN THE FIELD OR AS SPECIFIED ON PLANS.

USE CITY OF DALLAS STANDARD INLET FRAME & COVER SHEET No. 2004-2004A (24" FRAME)

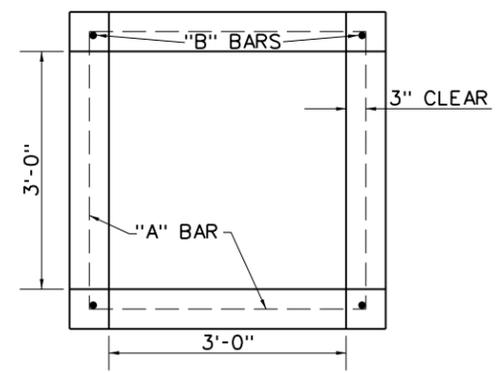
MINIMUM 2' APRON AROUND "Y" INLETS



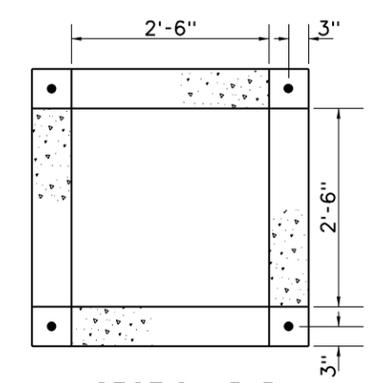
**SECTION A-A**



**SECTION A-A**

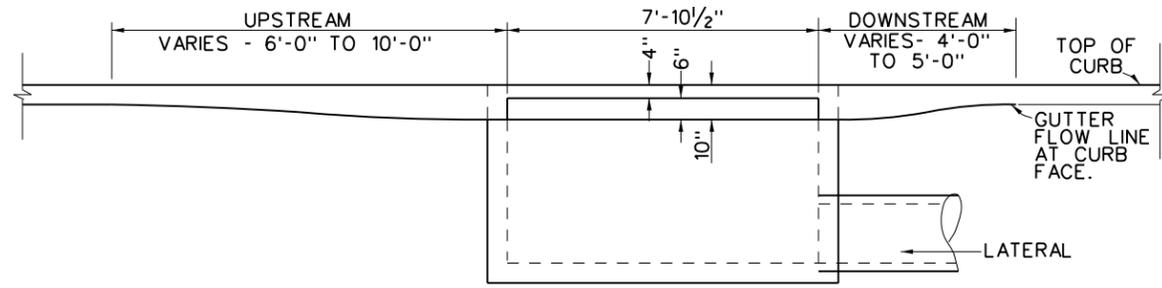


**SECTION B-B**

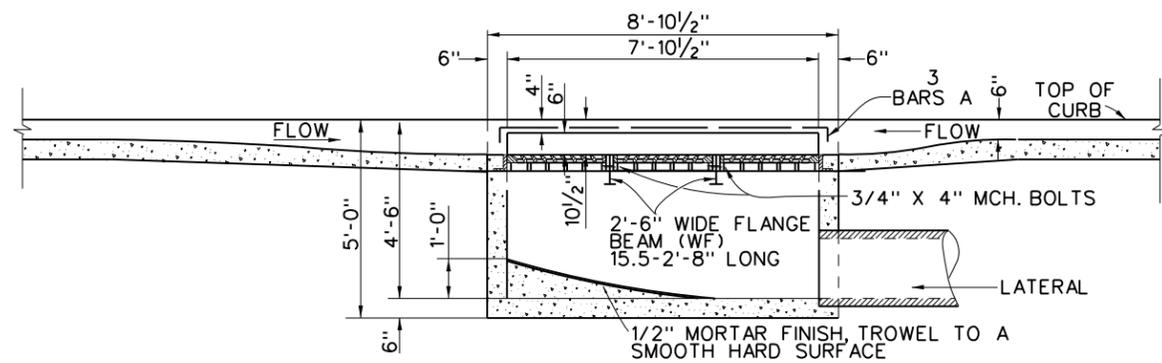


**SECTION B-B**

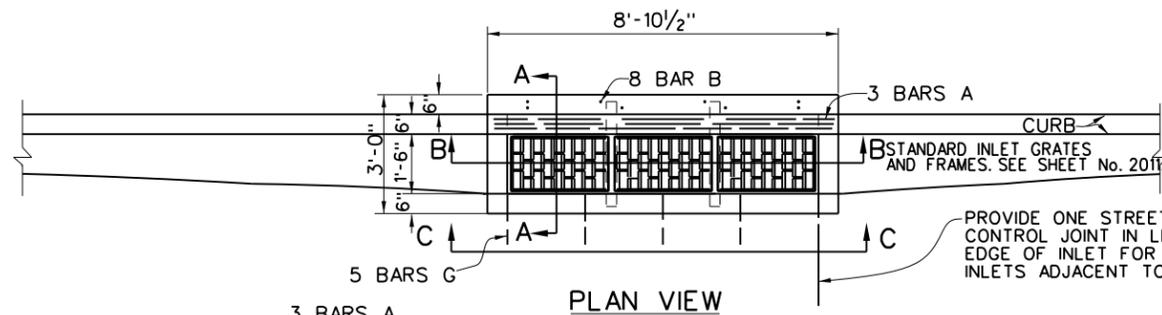
<b>DRAINAGE DETAILS</b>	
STANDARD INLETS & CURBS	
RECESSED / "Y" TYPE INLETS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 2001



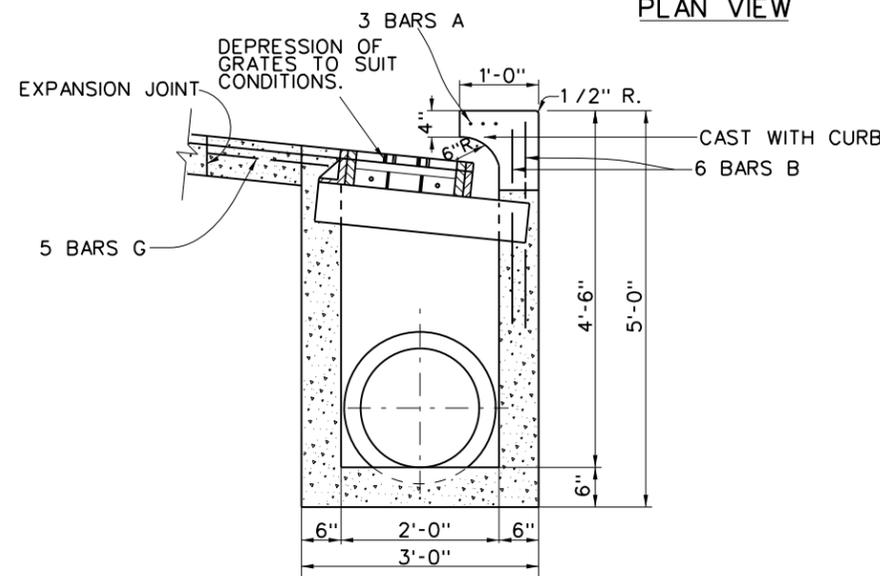
SECTION C-C



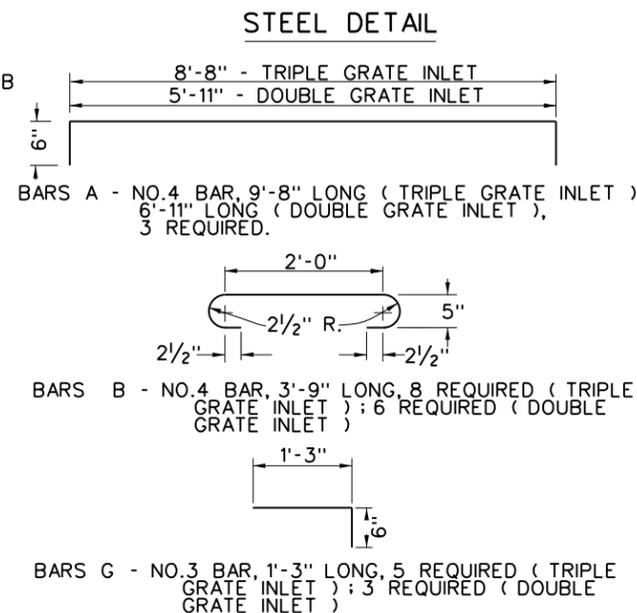
SECTION B-B



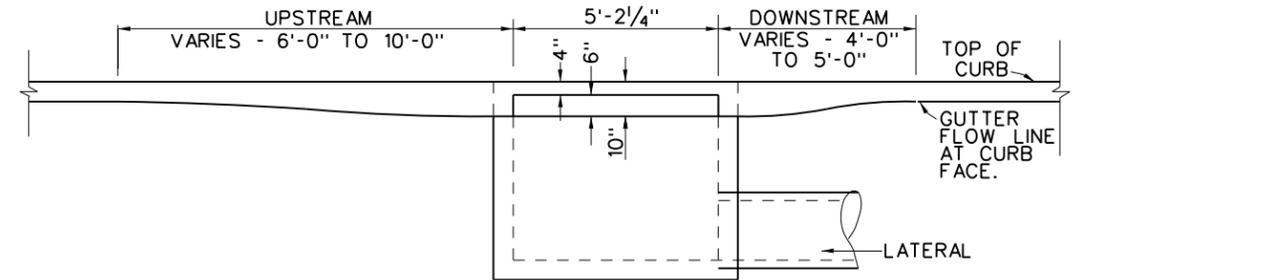
PLAN VIEW



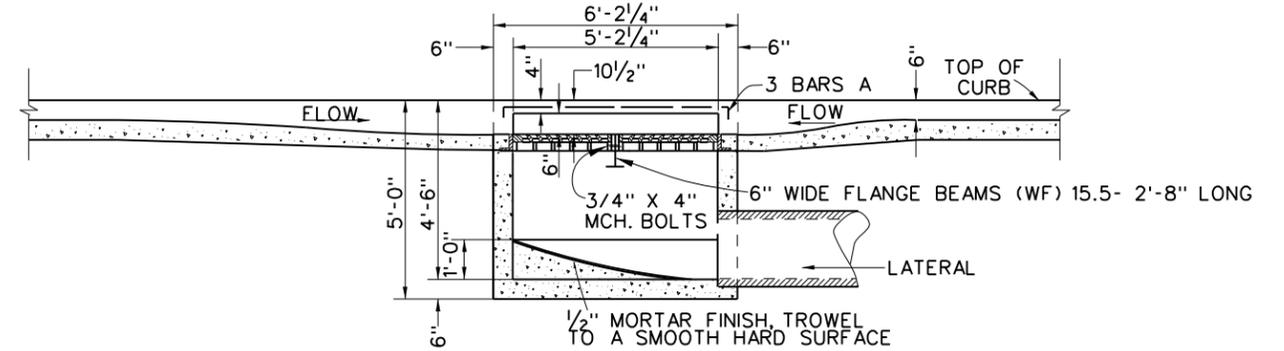
SECTION A-A



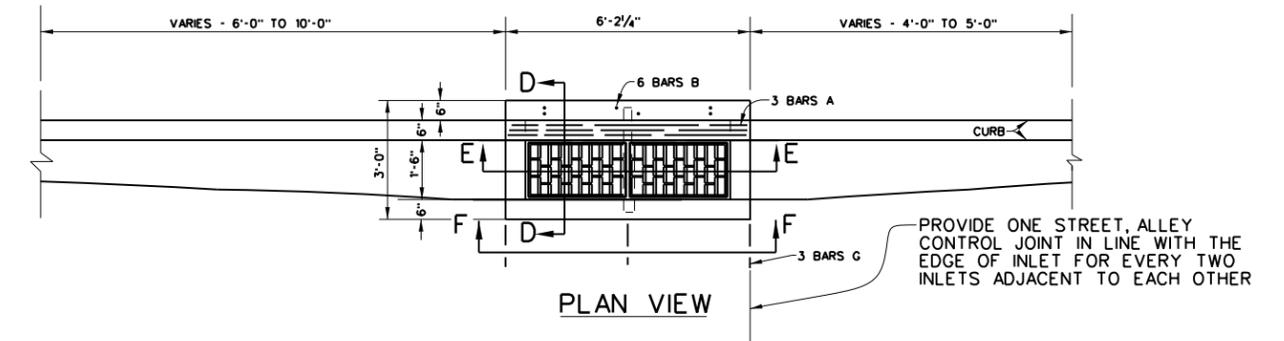
STEEL DETAIL



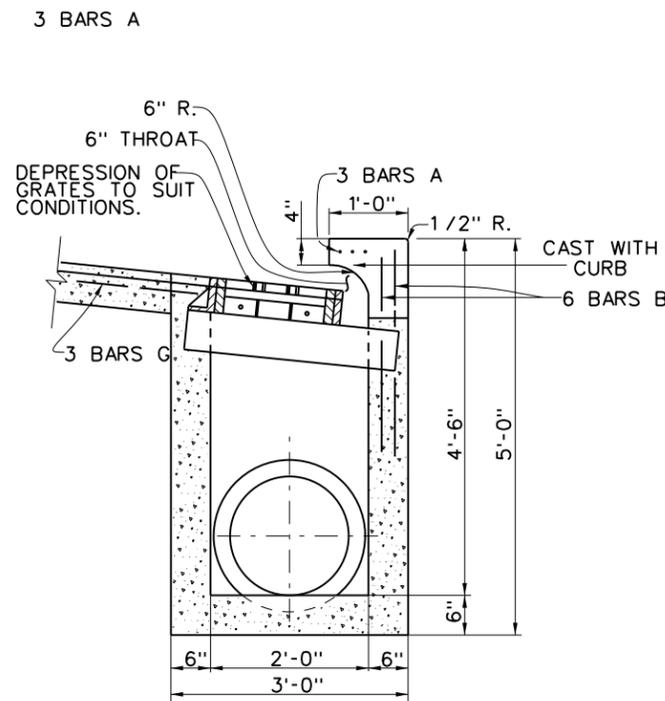
SECTION F-F



SECTION E-E



PLAN VIEW



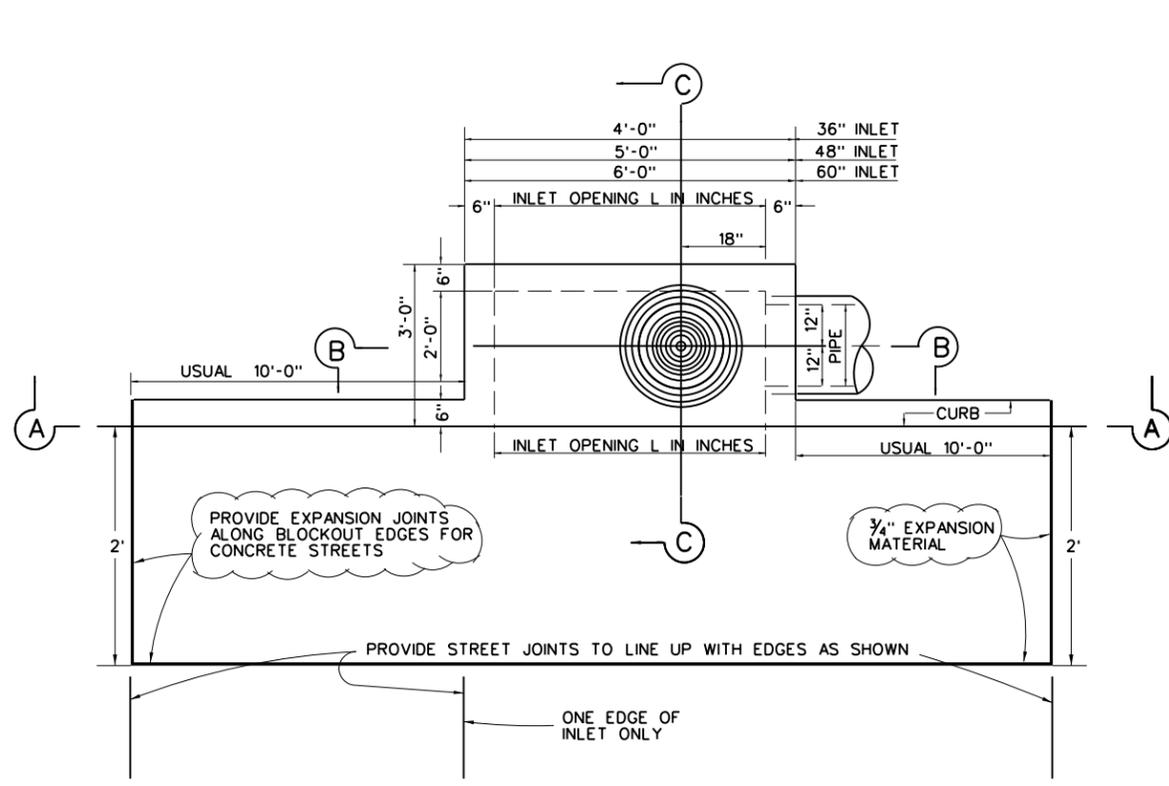
SECTION D-D

GENERAL NOTES:

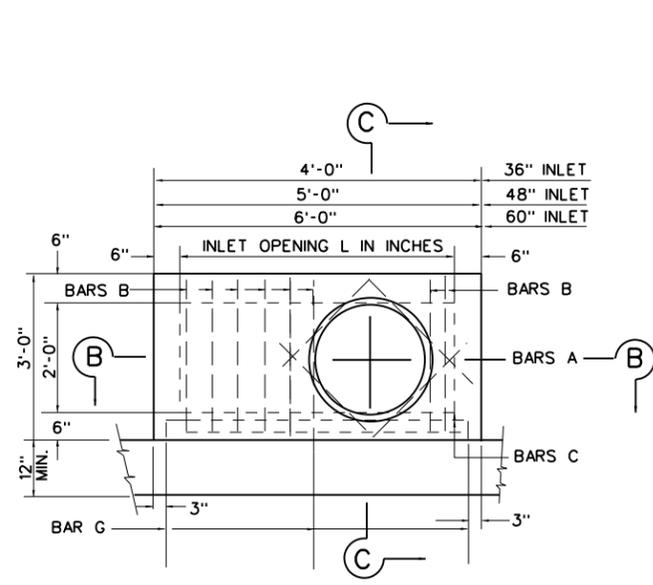
1. PROVIDE EXPANSION JOINTS ALONG EDGES OF ALL STREET PAVEMENT BLOCKOUTS.
2. CONCRETE FOR INLET TOPS SHALL BE HAND FINISH CONCRETE (4500 psi) WHEN USED IN STREETS AND ALLEYS.
3. TYPE " L " GRATES SHALL BE USED AS SHOWN ON SHEET No. 2012.
4. PIPE LATERALS MAY ENTER INLET AT SIDES OR ENDS.
5. REINFORCING STEEL AND CASTING SHALL CONFORM TO THE SPECIFICATIONS.
6. EXTRA DEPTH OF INLETS WILL BE DIMENSIONED ON PLANS. A SEPARATE BID ITEM PER FOOT OF EXTRA DEPTH WILL BE PROVIDED.
7. PROVIDE STREET AND ALLEY JOINTS AS SHOWN FOR INTEGRAL CONCRETE PAVEMENT.

<b>DRAINAGE DETAILS</b>	
DOUBLE AND TRIPLE GRATE INLET COMBINATION INLET	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 2002

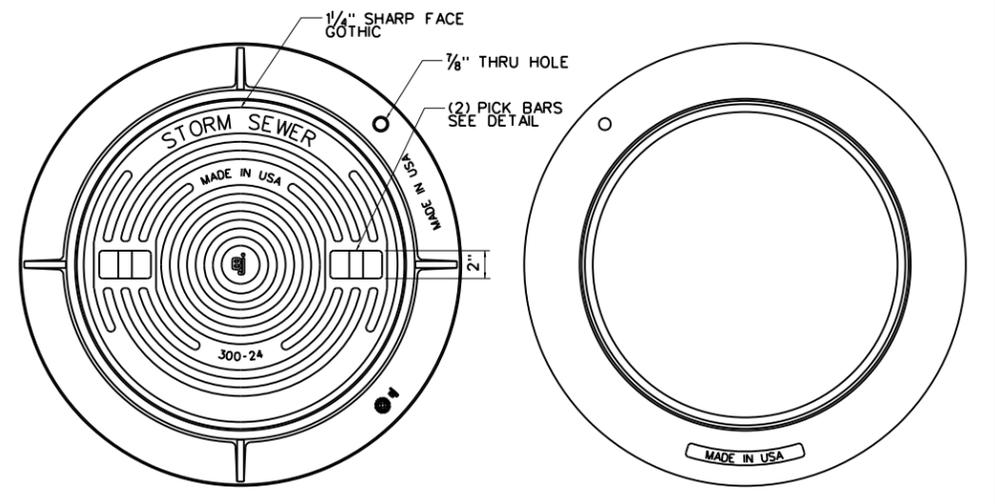




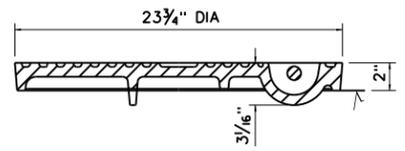
PLAN



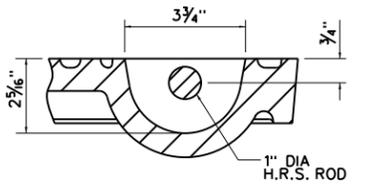
REINFORCING PLAN



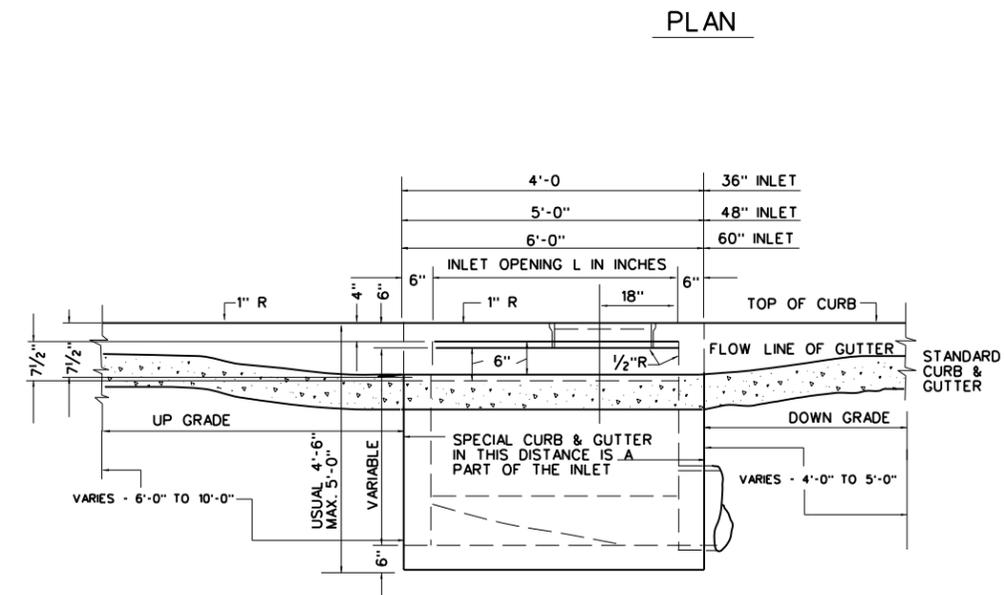
BOTTOM VIEW OF COVER



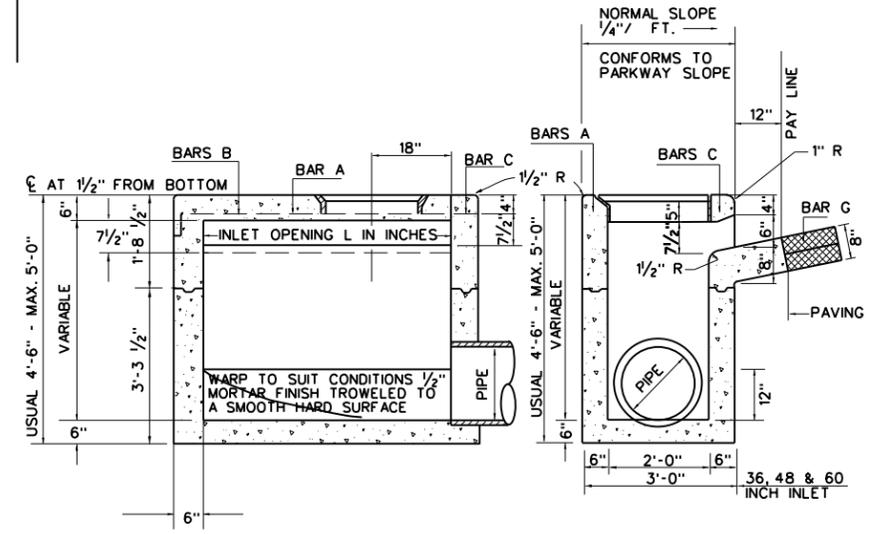
COVER SECTION



PICK BAR DETAIL

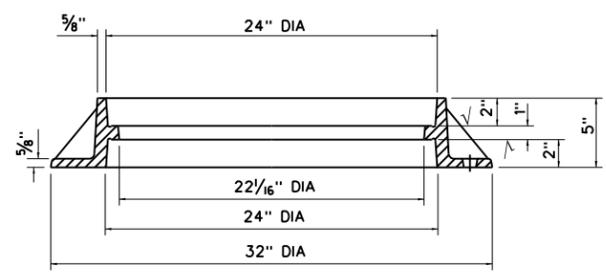


SECTION A-A



SECTION B-B

SECTION C-C

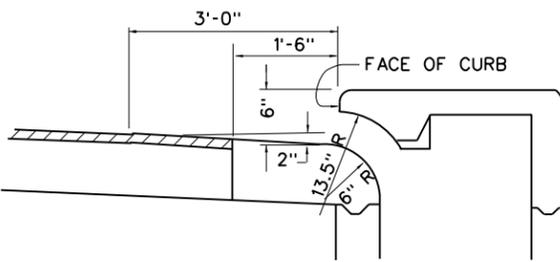


SECTION

NOTE:  
FRAME IS REVERSIBLE  
AND CAN BE INSTALLED  
AS A TOP FLANGE UNIT.

NOTES APPLICABLE TO ALL INLETS:

1. GENERAL NOTES 1-10 ON SHEET No. 2003 ALSO APPLY
2. TOP OF INLET SLOPE SHALL CONFORM TO ADJACENT PARKWAY NORMAL 1/4" / FT. SLOPE.
3. CONCRETE FOR INLET TOPS SHALL BE CLASS HAND FINISH CONCRETE (4500 psi) WHEN USED IN STREETS AND ALLEYS.
4. THE INLET FRAME & COVER SHALL BE AT THE SAME END OF INLET AS PIPE LATERAL.
5. PROVIDE SHEET JOINTS IN INTEGRAL CONCRETE STREET PAVEMENT AS SHOWN.



DETAIL FOR SHALLOW DEPRESSION INLETS

2'-6"	36" INLET - 4 REOD.
2'-6"	48" INLET - 4 REOD.
2'-6"	60" INLET - 4 REOD.

NO. 4 BARS A

2'-9"	36" INLET - 4 REOD.
2'-9"	48" INLET - 6 REOD.
2'-9"	60" INLET - 8 REOD.

NO. 4 BARS B

3'-9"	36" INLET - 2 REOD. 4'-9" LONG
4'-9"	48" INLET - 2 REOD. 5'-9" LONG
5'-9"	60" INLET - 2 REOD. 6'-9" LONG

NO. 4 BARS C

3'-0"	36", 48" & 60" 3/8" Ø 3 REOD.
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NO. 3 BARS G

REINFORCING STEEL DETAILS

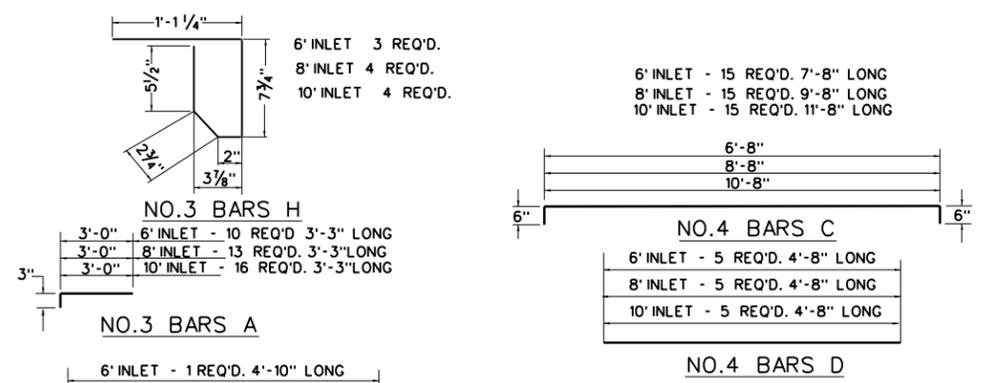
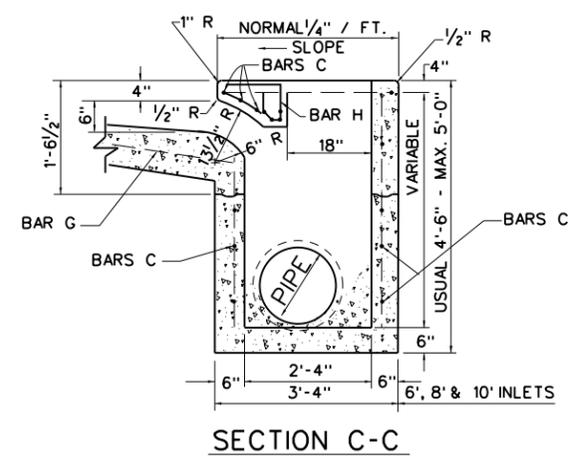
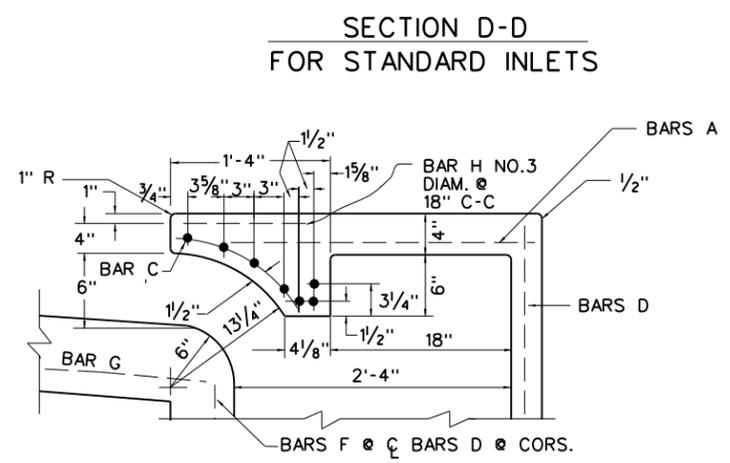
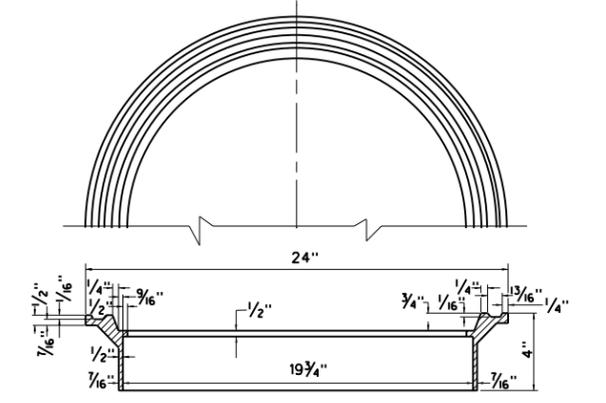
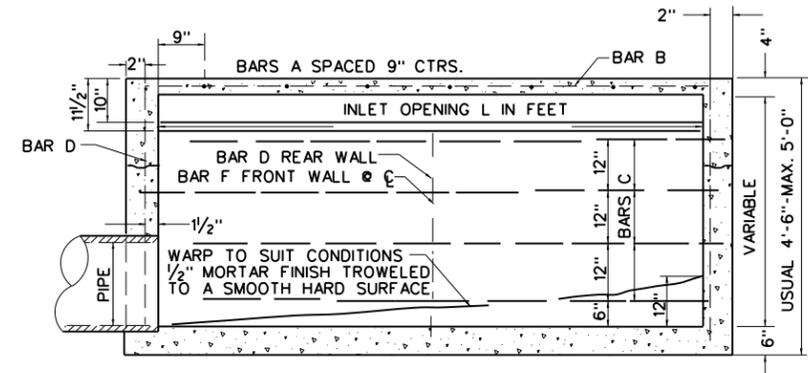
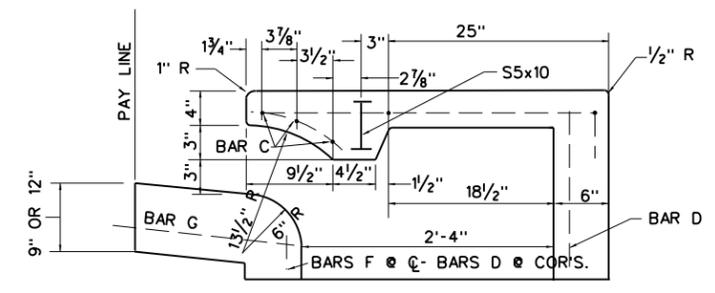
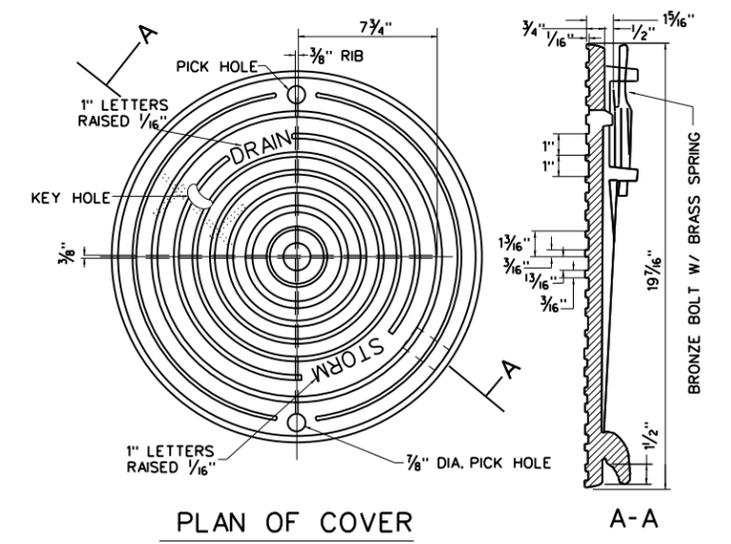
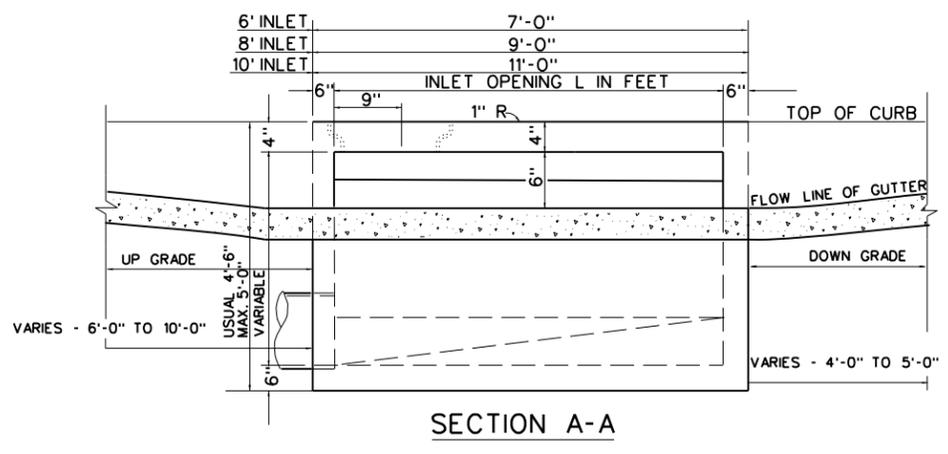
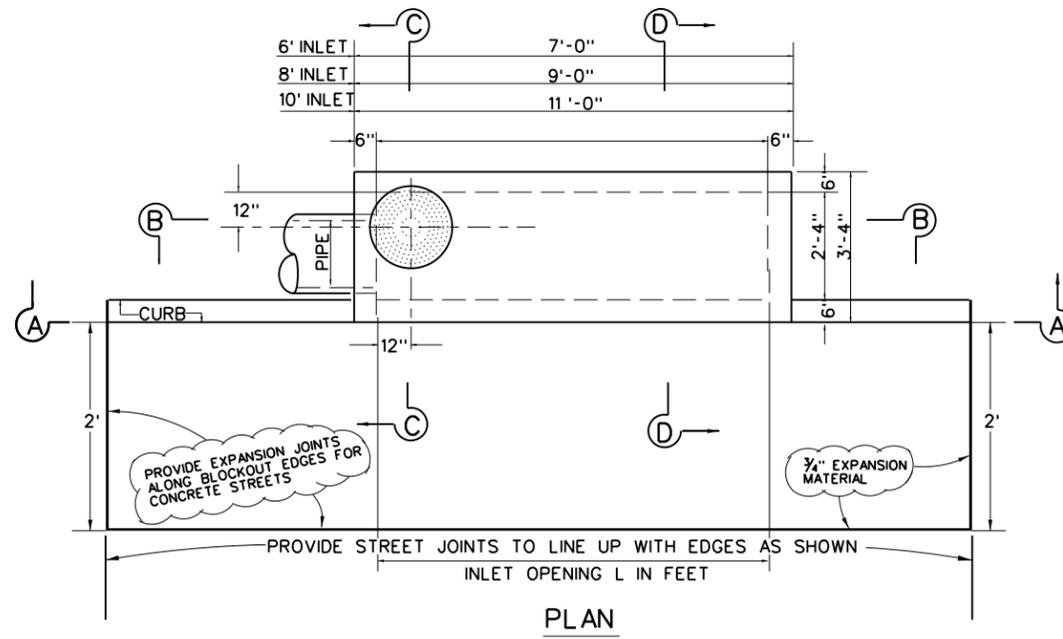
DRAINAGE DETAILS

36, 48, AND 60 INCH INLETS

DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
2004



- NOTES APPLICABLE TO ALL INLETS:
1. GENERAL NOTES 1-10 ON SHEET No. 2003 ALSO APPLY
  2. TOP OF INLET SLOPE SHALL CONFORM TO ADJACENT PARKWAY NORMAL 1/4" / FT. SLOPE.
  3. CONCRETE FOR INLET TOPS SHALL BE CLASS HAND FINISH CONCRETE (4500 psi) WHEN USED IN STREETS AND ALLEYS.
  4. THE INLET FRAME & COVER SHALL BE AT THE SAME END OF INLET AS PIPE LATERAL.
  5. PROVIDE SHEET JOINTS IN INTEGRAL CONCRETE STREET PAVEMENT AS SHOWN.

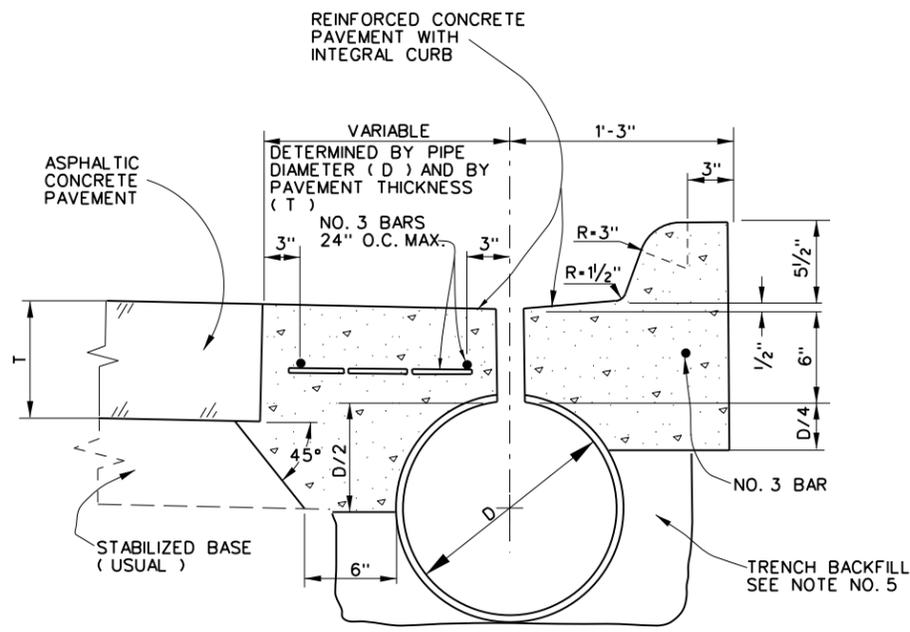
**DRAINAGE DETAILS**

6, 8 AND 10 FOOT INLETS

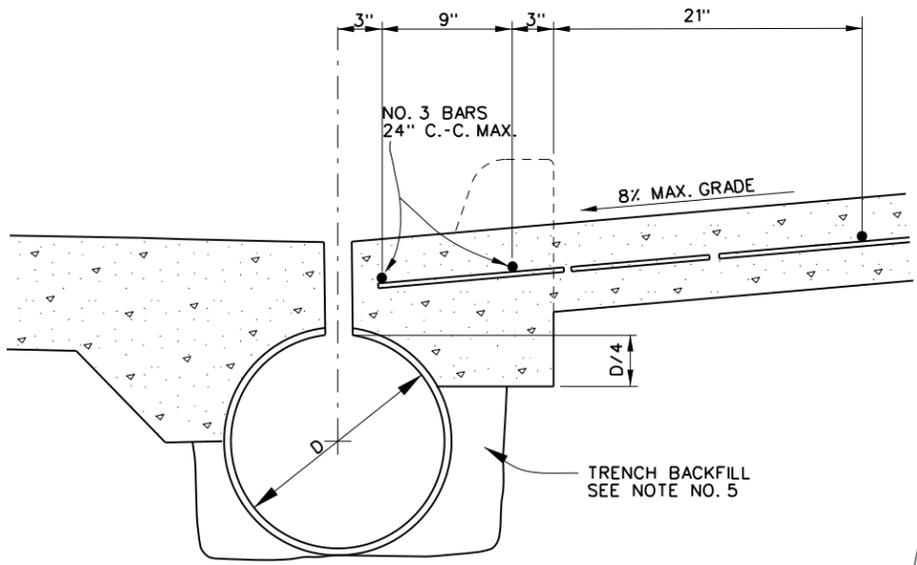
DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

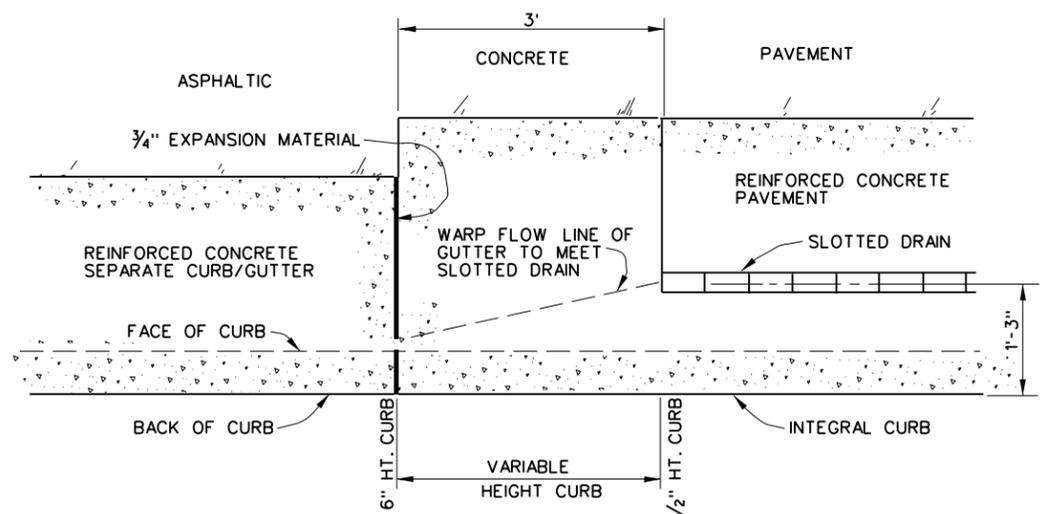
SHEET No.  
2004A



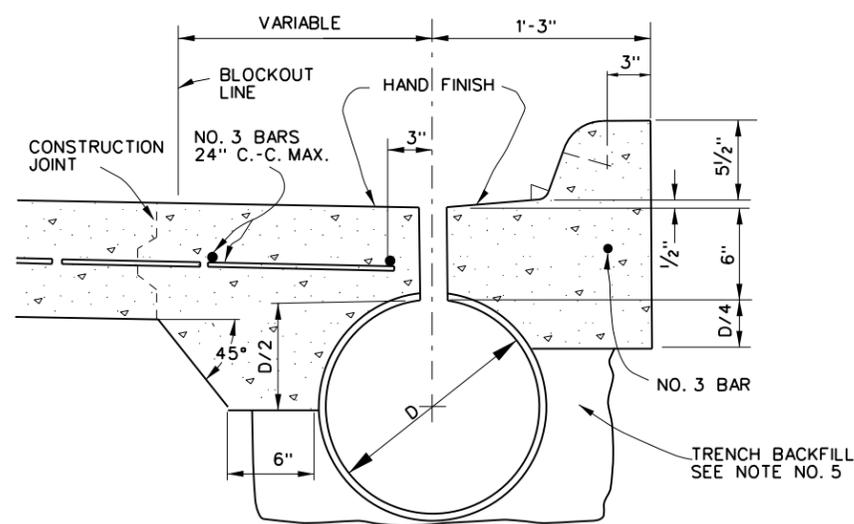
SECTION WITH ASPHALTIC CONCRETE PAVEMENT



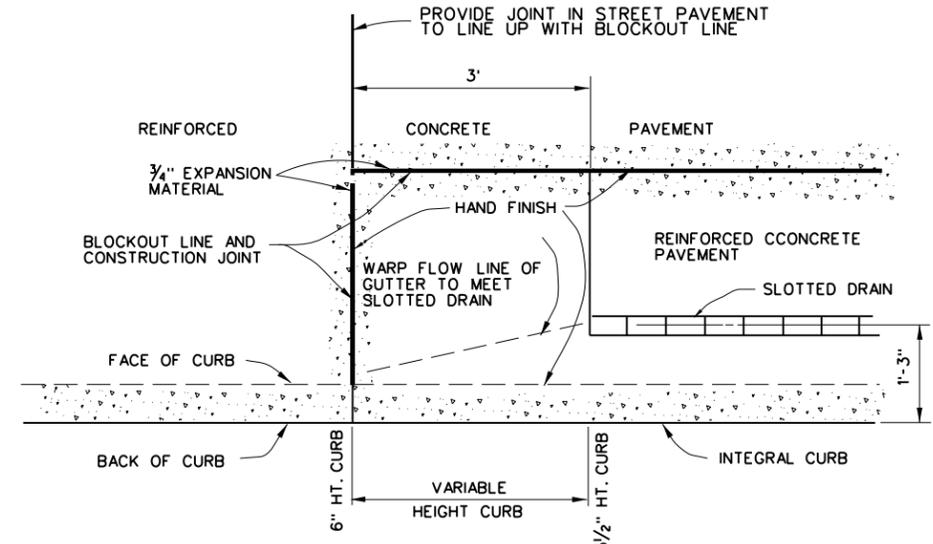
SECTION THROUGH DRIVE



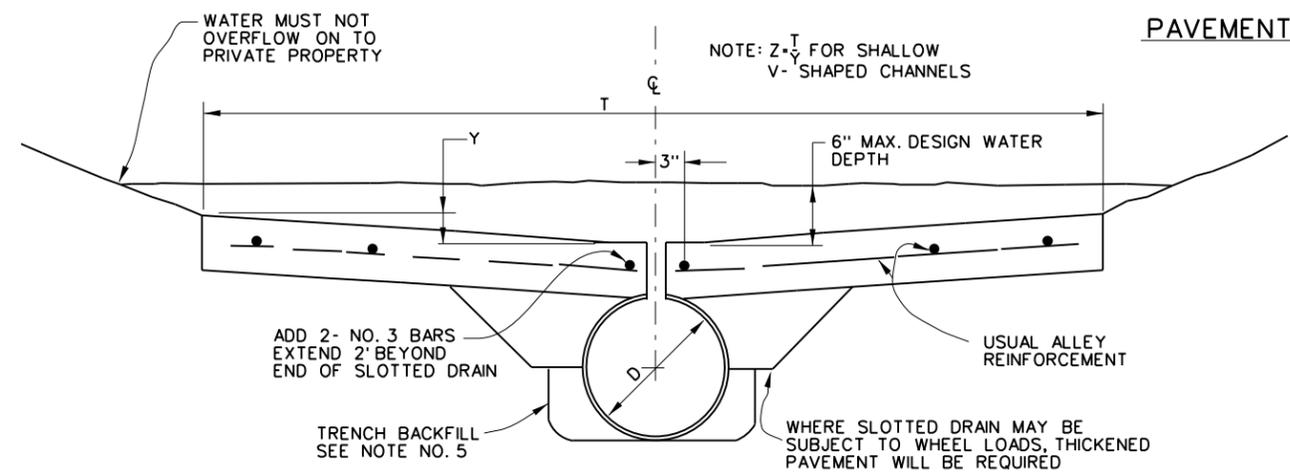
ASPHALTIC CONCRETE PAVEMENT PAVEMENT TRANSITION AT END OF SLOTTED DRAIN



SECTION WITH REINFORCED CONCRETE PAVEMENT



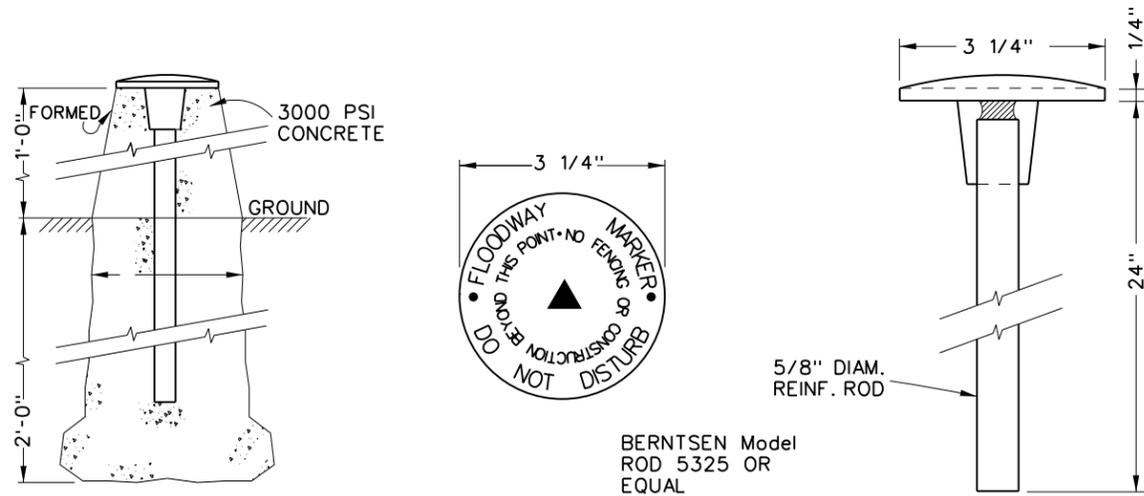
REINFORCED CONCRETE PAVEMENT PAVEMENT TRANSITION AT END OF SLOTTED DRAIN



SECTION THROUGH VALLEY

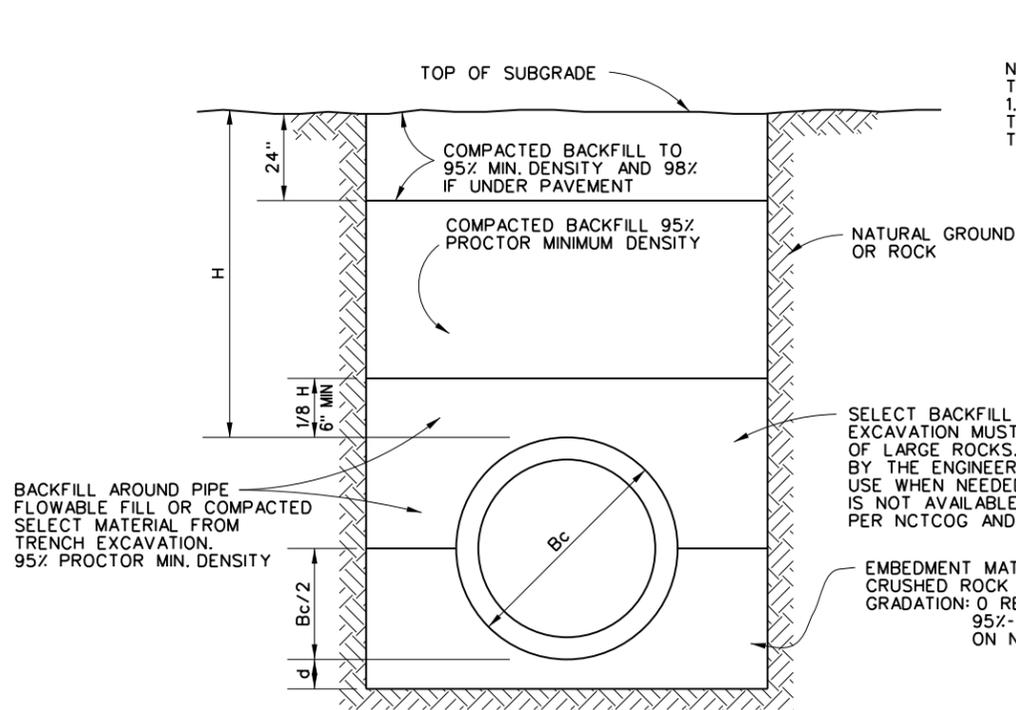
- GENERAL NOTES :
1. ECONOMICAL INSTALLATION ON GRADE SHOULD BE DESIGNED TO PICK UP ORIFICE FLOW ONLY AND BYPASS WEIR FLOW. FOR Y=6", USE Q = 0.90.
  2. SLOTTED DRAIN IS MANUFACTURED IN 20' LENGTHS. INSTALLATIONS SHOULD BE MULTIPLES OF 20' OR HALF-LENGTH SECTIONS OF 10'.
  3. SPECIAL PERMISSION IS REQUIRED FOR SLOTTED DRAIN INSTALLATION IN SAGS.
  4. SLOTTED DRAINS WILL BE CONNECTED TO MAIN STORM DRAIN BY STANDARD BENDS, CONNECTING BANDS AND THE REQUIRED LENGTH AND SIZE OF CORRUGATED METAL PIPE.
  5. TRENCH BACKFILL MUST BE TAMPED TO 98% OF MAXIMUM DENSITY, OR A CEMENT FLOWABLE FILL.
  6. THE EXTRA CONCRETE FOR THE THICKENED PAVEMENT WILL BE INCLUDED IN THE COST OF THE DRAIN.
  7. SLOTTED DRAIN PIPE WILL HAVE A MINIMUM DIAMETER OF 15" AND A MAXIMUM OF 24".
  8. PAVING DETAILS SHOWN ARE FOR USE WITH 6" DEEP GRATE ON SLOTTED DRAIN. SPECIAL DESIGN MUST BE APPROVED FOR USE OF 2 1/2" DEEP GRATE.
  9. HEEL PLATE WILL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS IN PEDESTRIAN AREAS. DESIGN LENGTH MUST BE ADJUSTED ACCORDINGLY.
  10. ADD CLEAR OUT AT UPSTREAM END FOR MAINTENANCE.

<b>DRAINAGE DETAILS</b>	
SLOTTED DRAINS IN STREETS AND ALLEYS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 2005



**FLOOD MANAGEMENT MONUMENT  
IN NATURAL GROUND**

NOTE:  
FOR H>10' DESIGN MUST BE CHECKED. UNLIMITED TRENCH  
WIDTH WILL NOT BE PERMITTED FOR CLASS III PIPE AND  
HIGHER TYPE PIPE EMBEDMENT MAY BE REQUIRED.



NOTE:  
TRENCH WIDTHS BASED ON  
1.25 Bc+1.0 WHERE Bc IS  
THE OUTSIDE DIAMETER OF  
THE PIPE IN FEET.

PIPE DIAMETER (INCHES)	TRENCH WIDTH (FEET)
15	3.0
18	3.4
21	3.8
24	4.1
27	4.5
33	5.2
36	5.6
42	6.3
48	7.0
54	7.8
60	8.5
66	9.2
72	10.0
78	10.7
84	11.4
90	12.1
96	12.9

DEPTH OF BEDDING MATERIAL BELOW PIPE	
D (Inside Diameter)	d (Min)
27" OR SMALLER	3"
30" TO 60"	4"
66" & LARGER	6"

d=DEPTH OF BEDDING MATERIAL BELOW PIPE.  
H=BACKFILL COVER ABOVE TOP OF PIPE.

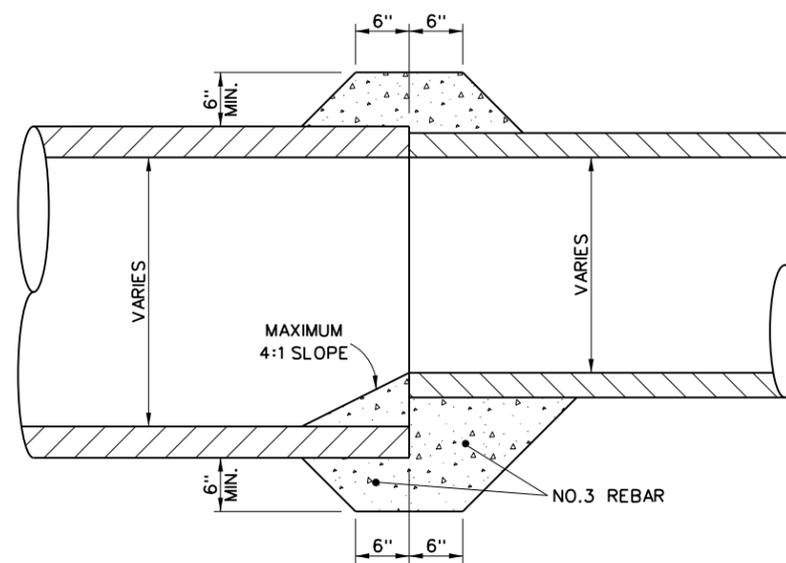
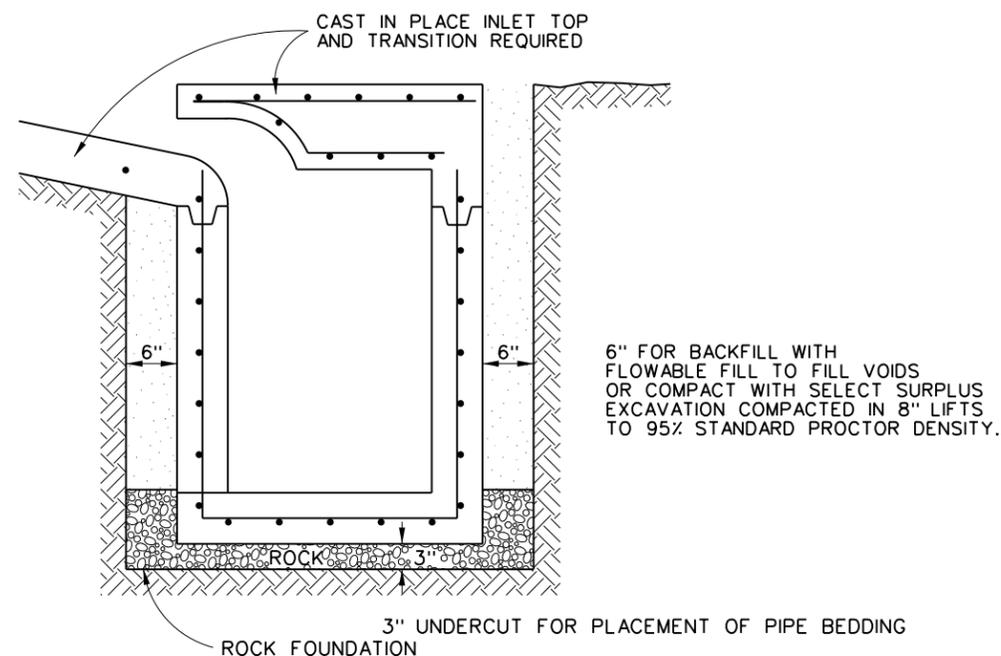
TRENCH WIDTHS SHOWN ARE MINIMUM FOR PROPER  
PLACEMENT AND COMPACTION OF EMBEDMENT AND  
BACKFILL.

TRENCH WIDTHS SHOWN WILL BE USED FOR CALCULATION OF ROCK EXCAVATION WHEN DESIGNATED AS A PAY ITEM.

**REINFORCED CONCRETE CLASS III  
PIPE INSTALLATION**

INSTALLATION WILL BE AS SHOWN OR AS DESCRIBED  
IN THE GENERAL SPECIFICATIONS FOR CONSTRUCTION

**PREFAB. INLET BOX INSTALLATION**



**DETAIL OF CONCRETE COLLAR  
FOR END TO END EXTENSIONS**

**DRAINAGE DETAILS**

**CONCRETE PIPE INSTALLATION**

DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

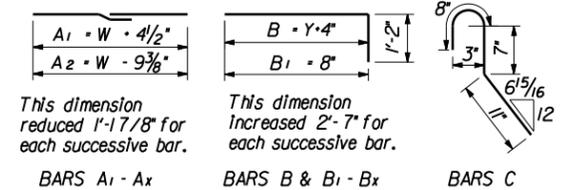
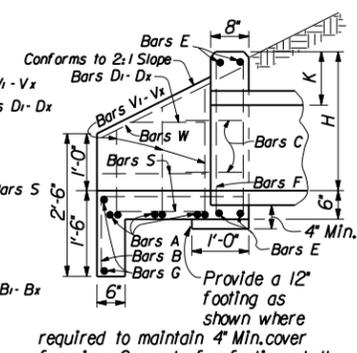
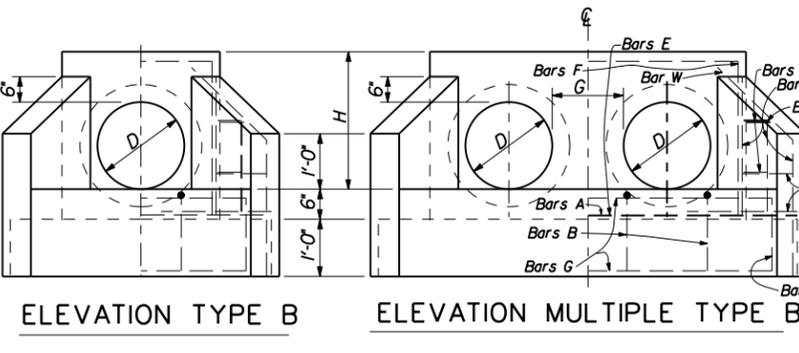
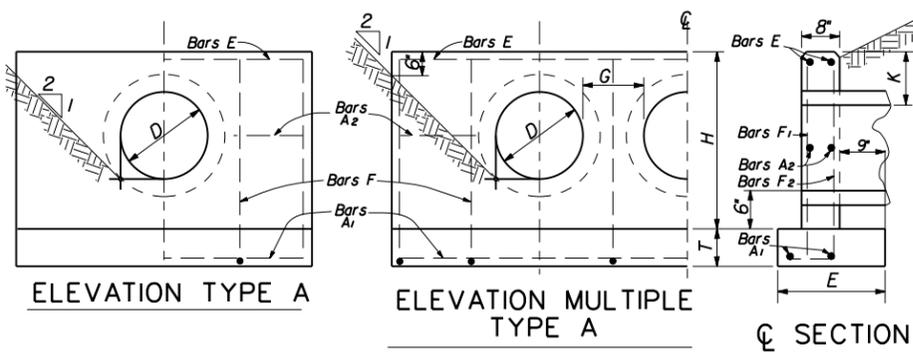
SHEET No.  
2006

TABLE OF DIMENSIONS AND QUANTITIES FOR TWO TYPE A HEADWALLS

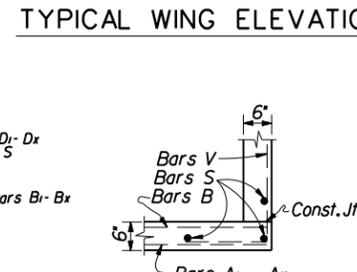
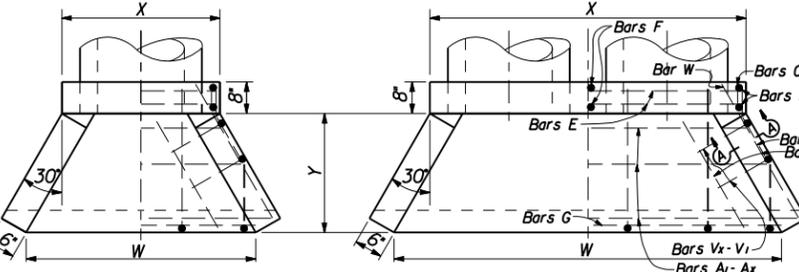
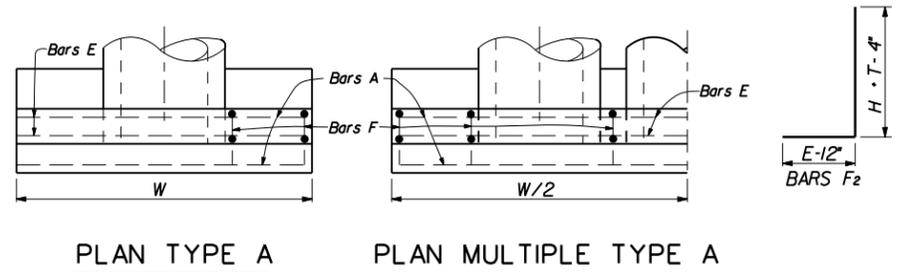
NO. OF PIPES DIAM. OF PIPES	TABLE OF DIMENSIONS										REINFORCING STEEL AND QUANTITIES FOR TWO HEADWALLS										TOTAL QUANTITIES	
	G	K	T	E	H	W	BARS A <sub>1</sub> - A <sub>2</sub>		BARS B		BARS C		BARS D		BARS E		BARS F		LBS.	CY.		
							No.	Av. Lgth.	No.	Av. Lgth.	No.	Av. Lgth.	No.	Av. Lgth.	No.	Av. Lgth.	No.	Av. Lgth.			No.	Av. Lgth.
1	12	10	12	9	1-9	2-6	6-8	10	8	2-6	8	2-6	8	2-6	8	2-6	8	2-6	29	98	1.48	
2	15	12	15	12	1-9	2-9	7-10	12	8	3-0	9	7-11	33	12	4	3-2	25	12	23	12	1.48	
3	18	15	18	15	1-9	2-9	8-10	15	8	3-0	9	8-6	35	14	4	3-8	29	107	1.81	1.81		
4	21	18	21	18	1-9	2-9	10-4	16	8	3-0	9	10-4	43	16	4	3-8	34	117	2.15	2.15		
1	15	12	15	12	1-9	2-9	8-10	15	8	3-0	9	8-6	35	14	4	3-8	29	107	1.81	1.81		
2	18	15	18	15	1-9	2-9	10-4	16	8	3-0	9	10-4	43	16	4	3-8	34	117	2.15	2.15		
3	21	18	21	18	1-9	2-9	12-2	18	8	3-0	9	12-2	51	18	4	3-8	44	156	2.48	2.48		

TABLE OF DIMENSIONS AND QUANTITIES FOR TWO TYPE B HEADWALLS

NO. OF PIPES DIAM. OF PIPES	TABLE OF DIMENSIONS										REINFORCING STEEL AND QUANTITIES FOR TWO HEADWALLS										TOTAL QUANTITIES	
	G	K	T	E	H	W	BARS A <sub>1</sub> - A <sub>2</sub>		BARS B		BARS C		BARS D		BARS E		BARS F		LBS.	CY.		
							No.	Av. Lgth.	No.	Av. Lgth.	No.	Av. Lgth.	No.	Av. Lgth.	No.	Av. Lgth.	No.	Av. Lgth.			No.	Av. Lgth.
1	12	10	12	9	1-9	2-6	6-8	10	8	2-6	8	2-6	8	2-6	8	2-6	8	2-6	29	98	1.48	
2	15	12	15	12	1-9	2-9	7-10	12	8	3-0	9	7-11	33	12	4	3-2	25	12	23	12	1.48	
3	18	15	18	15	1-9	2-9	8-10	15	8	3-0	9	8-6	35	14	4	3-8	29	107	1.81	1.81		
4	21	18	21	18	1-9	2-9	10-4	16	8	3-0	9	10-4	43	16	4	3-8	34	117	2.15	2.15		

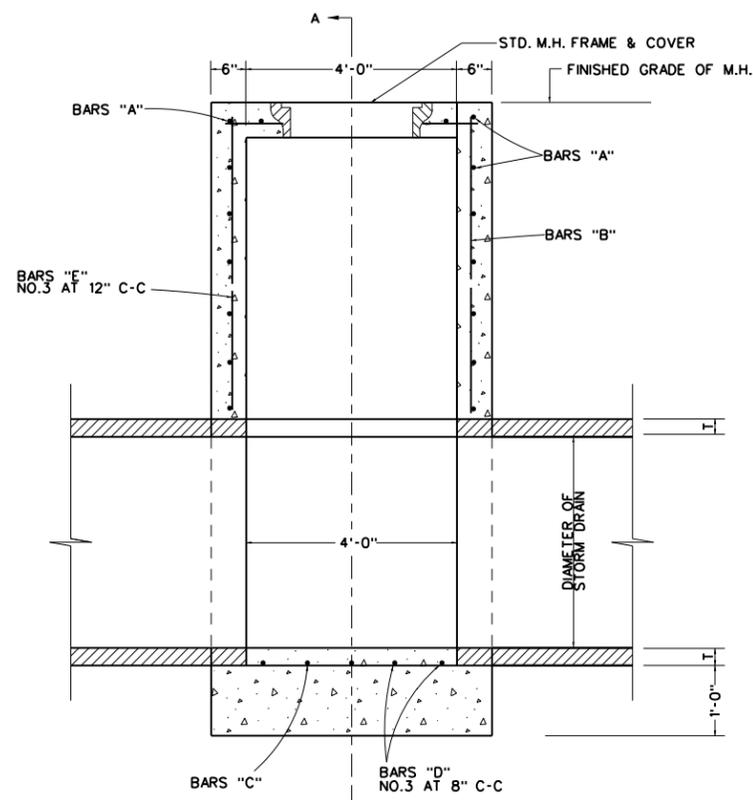


GENERAL NOTES:  
All exposed corners shall be chamfered 3/4".  
Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete. Total Quantities include one 30 diameter lap for all bars over 60'-0" in length.



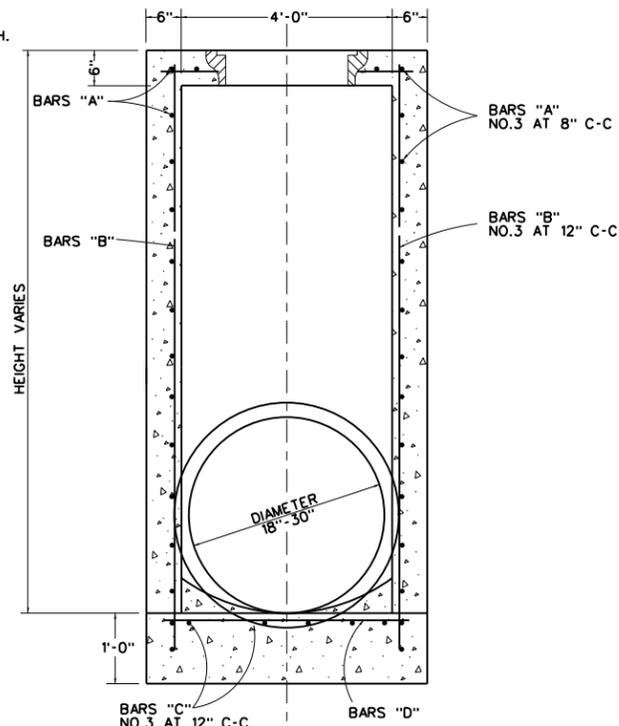
**DRAINAGE DETAILS**  
CONCRETE HEADWALLS  
FOR PIPE CULVERTS  
DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS  
DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021  
SHEET No. 2007

\* Concrete quantities increase slightly for metal pipe installations

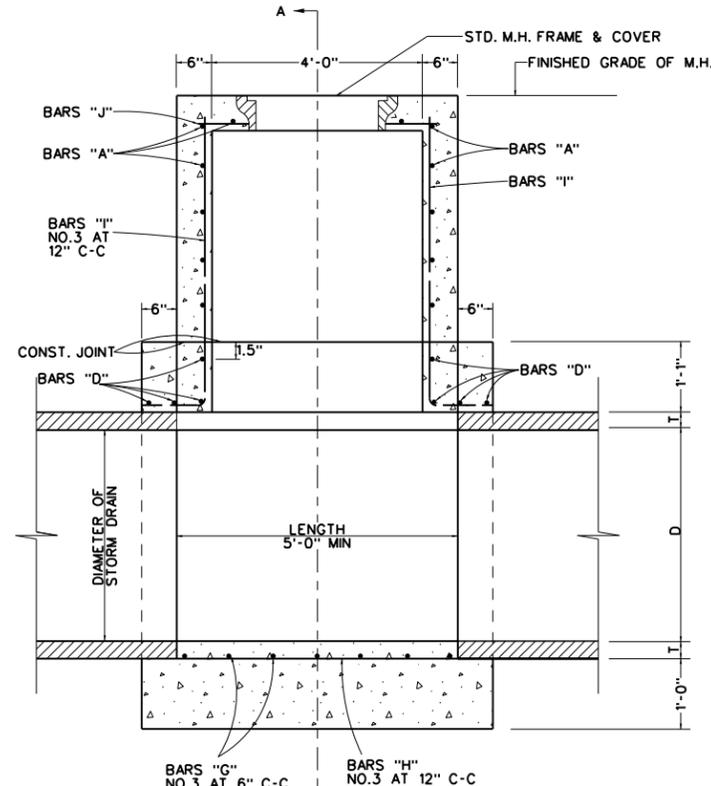


ELEVATION

TYPE A STORM SEWER ACCESS  
( FOR PIPE 18" TO 30" IN DIAMETER )

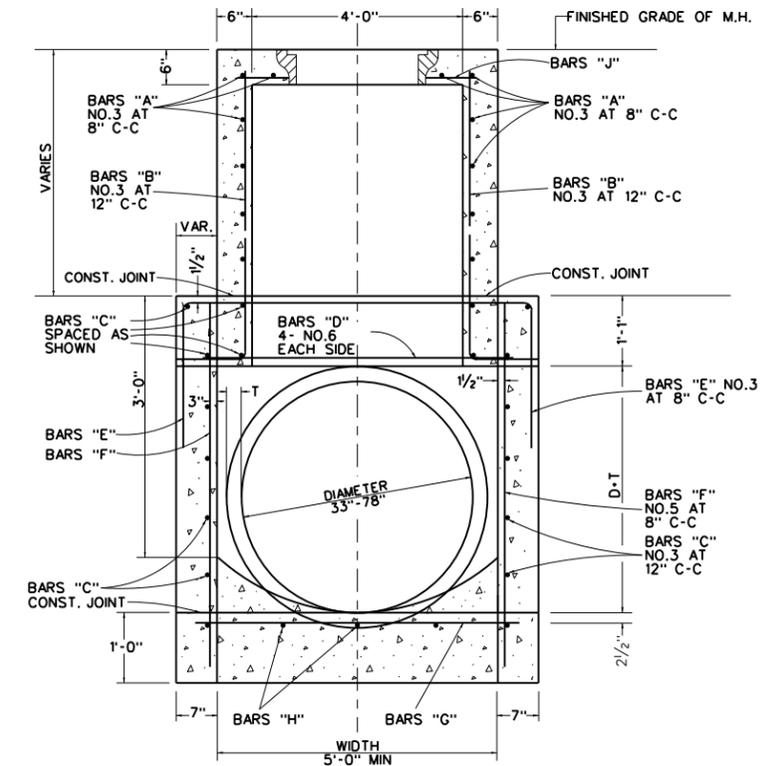


SECTION A-A

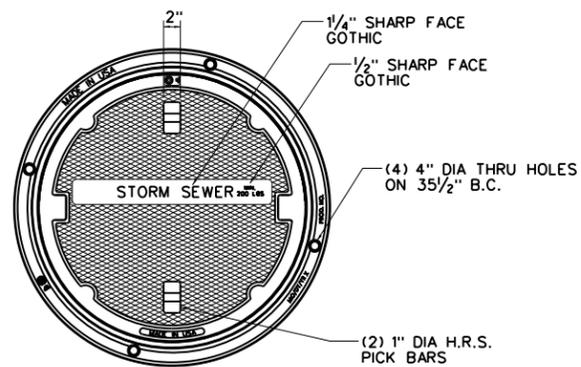


ELEVATION

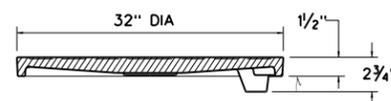
TYPE B STORM SEWER ACCESS  
( FOR PIPE 33" TO 78" IN DIAMETER )



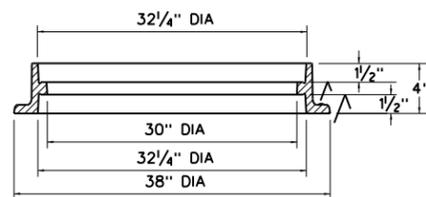
SECTION A-A



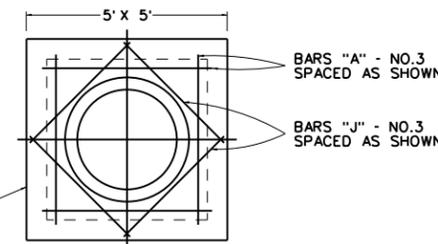
PLAN VIEW



COVER SECTION



FRAME SECTION



TOP PLAN  
TYPE A & TYPE B  
STORM SEWER ACCESS  
NOTE: MAX. PIPE SIZE 78"

PROVIDE 3/4" PREMOLDED EXPANSION JOINT BETWEEN ACCESS AND CONCRETE PAVEMENT AND SEAL WITH HOT POURED RUBBER.

NOTES APPLICABLE TO ALL ACCESSES:

1. PREFABRICATED MANHOLES OF EQUIVALENT STRENGTH AND DESIGN MAY BE SUBSTITUTED WITH THE APPROVAL OF AN ENGINEER.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4500 LBS. PER SQUARE INCH AT 28 DAYS.
3. ACCESS SHALL BE BUILT ON THE MAIN SEWER LINE, LATERAL PIPES MAY ENTER ACCESS AT ANY LOCATION.
4. ACCESS WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER EACH REGARDLESS OF ACCESS DEPTH.
5. CYLINDRICAL SHAPED ACCESS MAY BE USED AS DIRECTED BY ENGINEER IN LIEU OF ACCESS DESIGN SHOWN ON THIS SHEET.
6. CONCRETE FOR PAVEMENT BLOCKOUTS SHALL BE CLASS HAND FINISH CONCRETE (4500 P.S.I.).

DRAINAGE DETAILS

ACCESSES AND FITTINGS



DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
2008

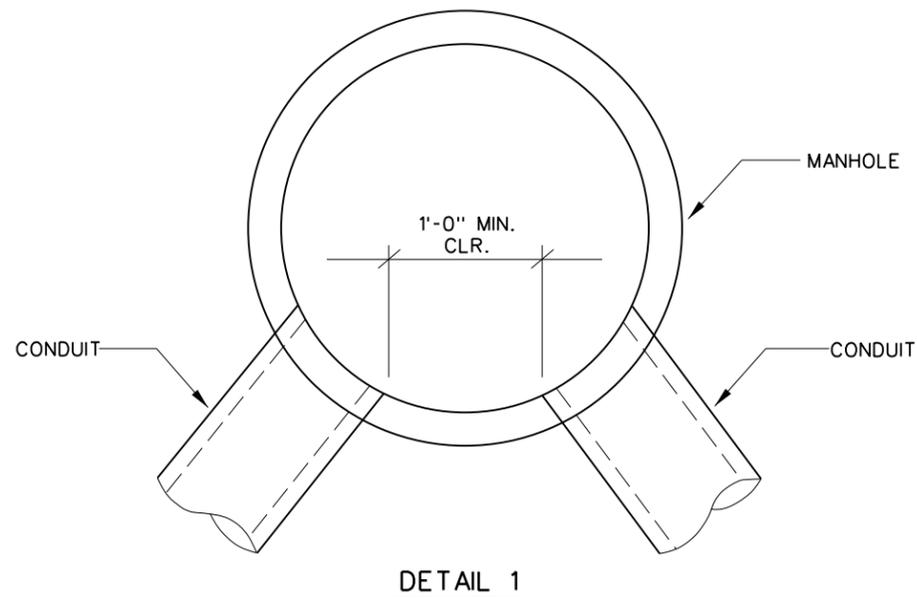
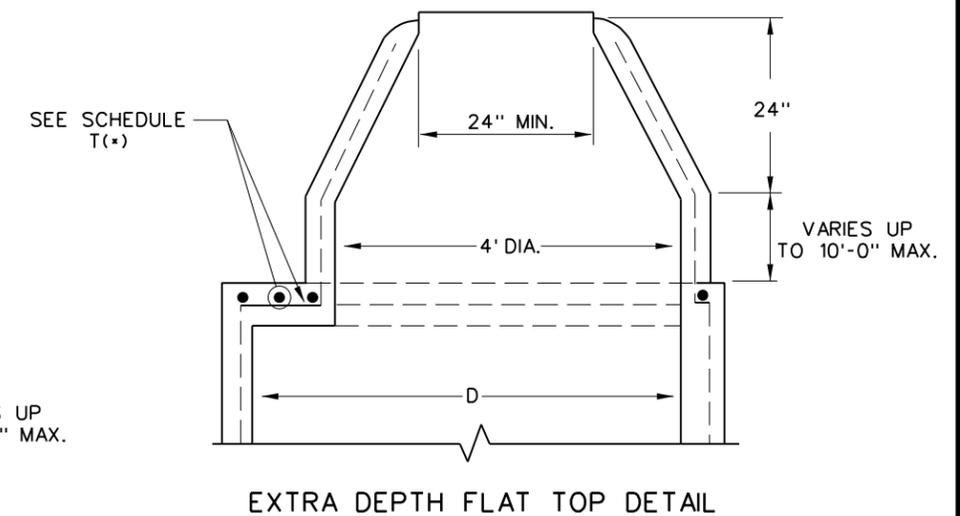
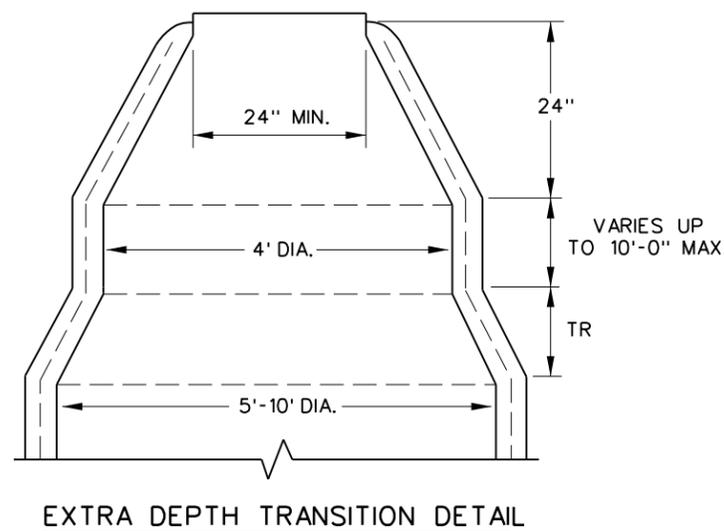
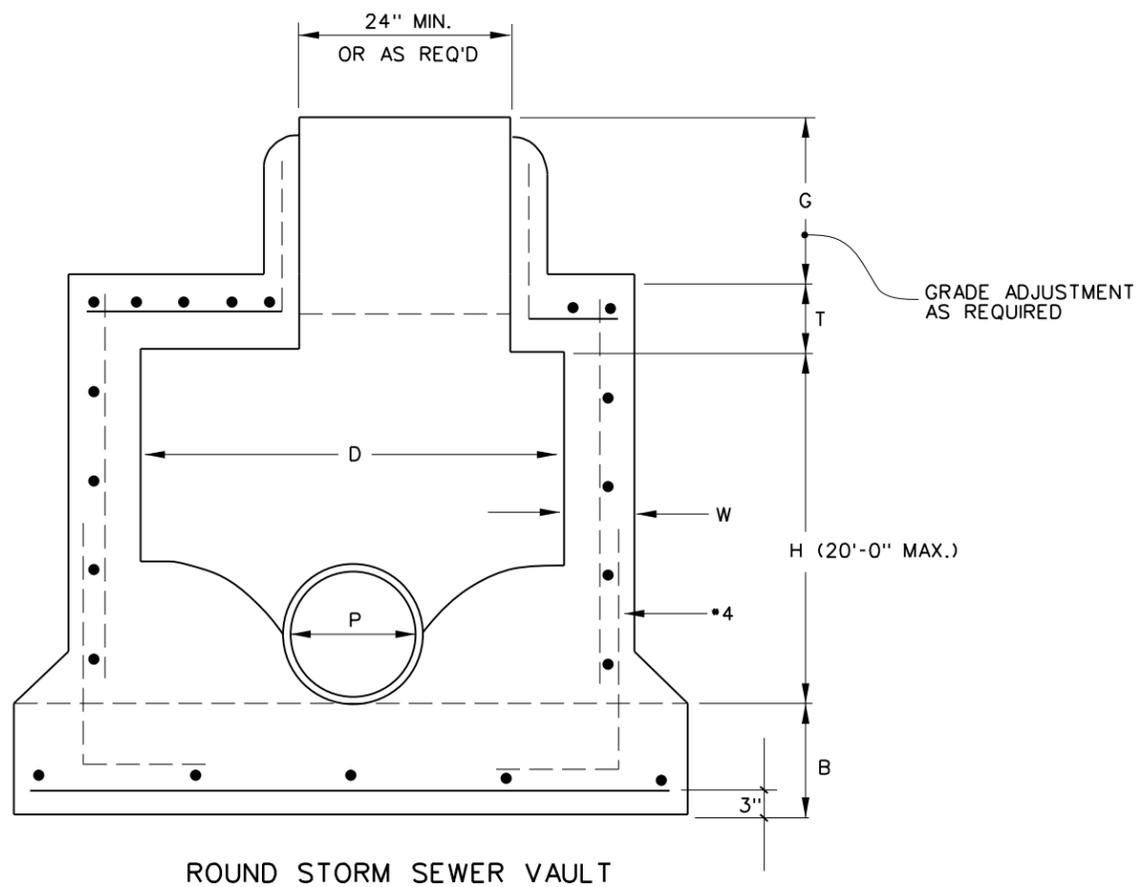


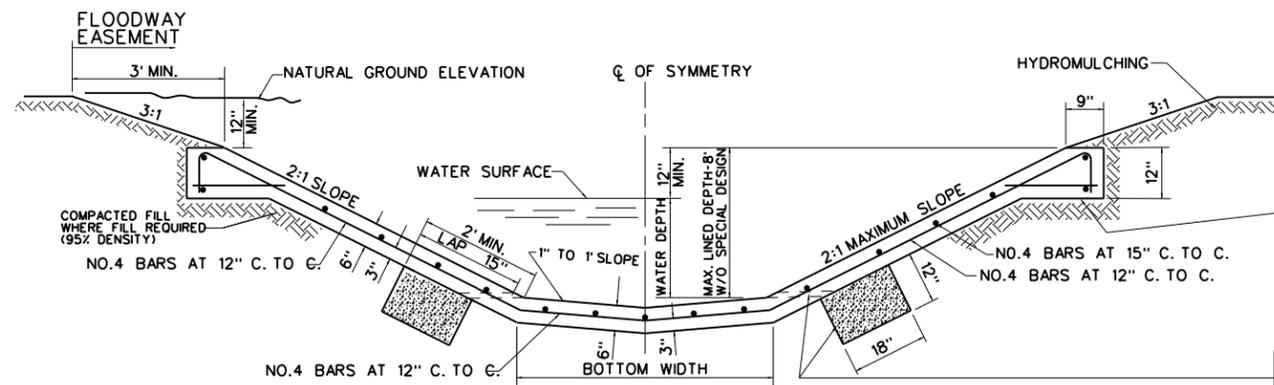
TABLE OF DIMENSIONS FOR ACCESS						
P	12"-24"	27"-36"	39"-48"	54"-60"	60"-66"	72"-78"
D	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	10'-0"
W	6"	8"	8"	8"	9"	10"
T(*)	9" (12")	9" (12")	9" (12")	9" (12")	9" (12")	9" (12")
B	12"	12"	12"	12"	12"	12"
H	20'-0" MAX.					
G	0-21"	0-21"	0-21"	0-21"	0-21"	0-21"
TR	0"	15"	30"	45"	60"	N.A.
BASE	*45@ 10" O.C.					
WALL VERT	*45@ 12" O.C.					
WALL TIES (HOOPS)	*45@ 12" O.C.					
FLAT TOP	*45@ 12" O.C.					

1. ADD A MIN. OUTSIDE CLEARANCE OF ONE FOOT BETWEEN PIPES CONNECTING INTO MANHOLE.
2. (\*)-12" REQUIRED AT EXTRA DEPTH FLAT TOP DETAIL. REQUIRES TWO (2) LAYERS OF STEEL, \*45@ 12" O.C.

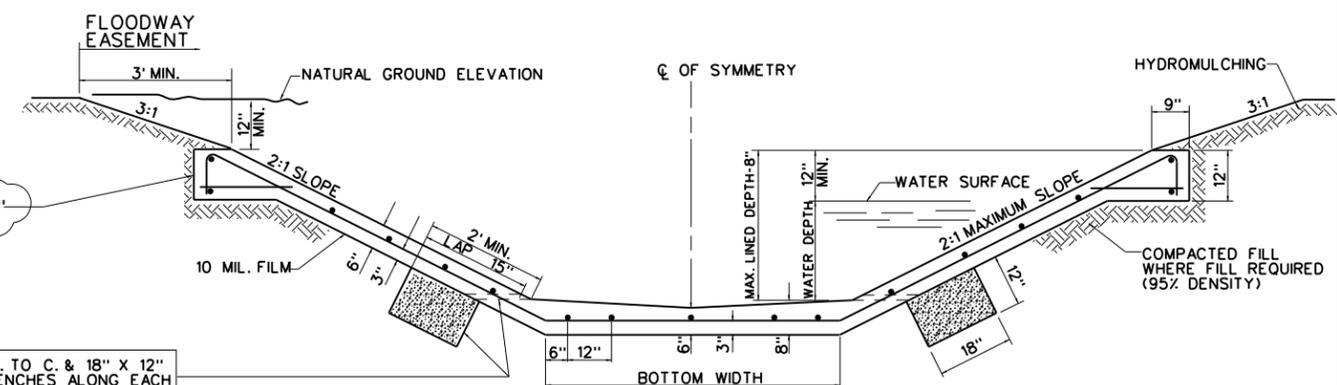
3. CONCRETE: 4,500 PSI, WITH 3-5" SLUMP.
4. MANHOLES WITH A TOTAL DEPTH GREATER THAN 20'-0" WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS.
5. THESE MANHOLES DETAILS MAY BE USED AS CITY OF DALLAS STANDARDS.



<b>DRAINAGE DETAILS</b>	
CIRCULAR MANHOLE	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 2009



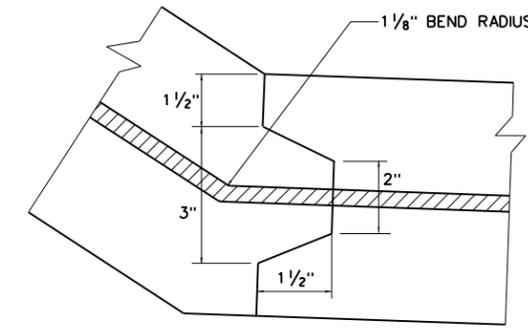
NORMAL CHANNEL SECTION



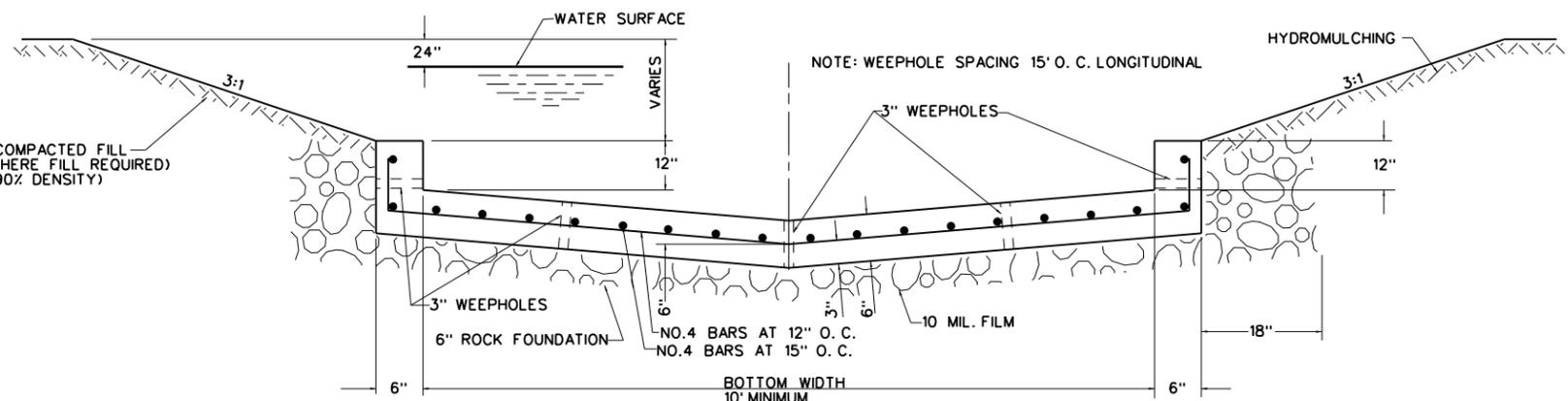
PAVED CHANNEL SECTION  
NORMAL CHANNEL SECTION MAY BE USED IN ROCK

SEE DETAIL "A"

3" WEEPHOLES AT 15' C. TO C. & 18" X 12" CONTINUOUS GRAVEL TRENCHES ALONG EACH SIDE OF THE CHANNEL.

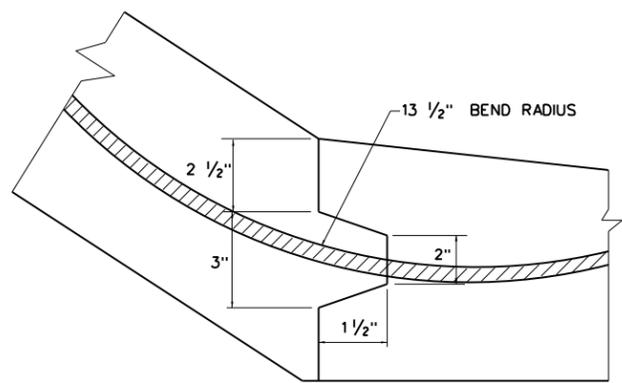


CONSTRUCTION JOINT FOR NORMAL CHANNEL

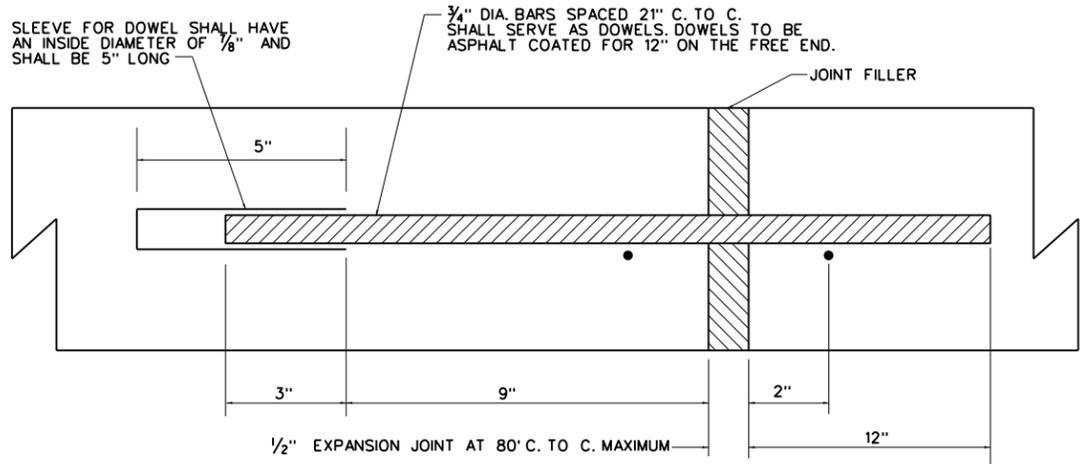


PARTIAL CHANNEL LINING SECTION

NOTE: WEEPHOLE SPACING 15' O. C. LONGITUDINAL



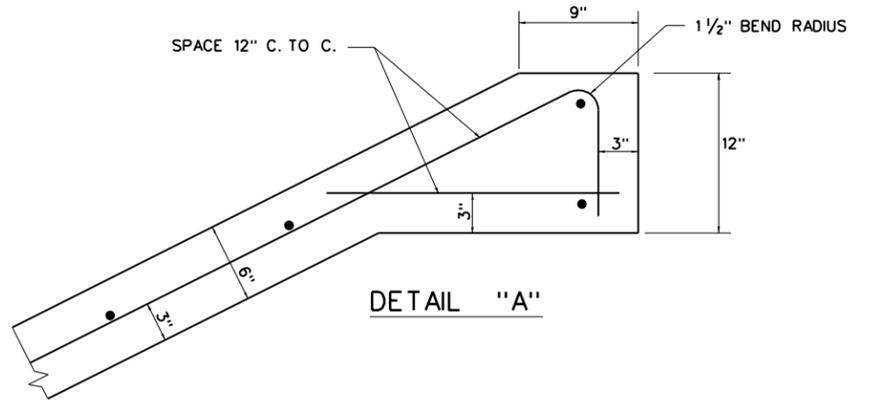
CONSTRUCTION JOINT FOR PAVED ALLEY SECTION



TRANSVERSE EXPANSION JOINT

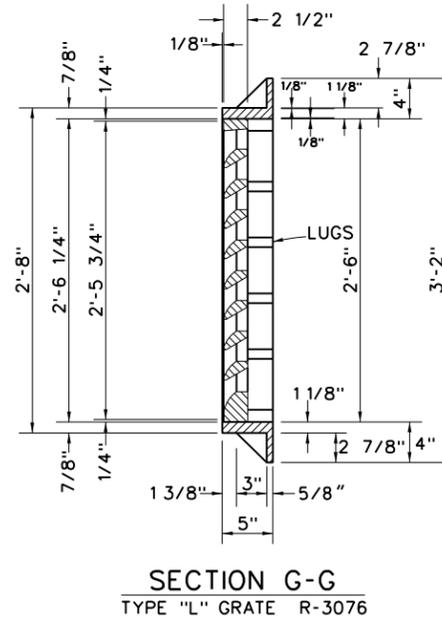
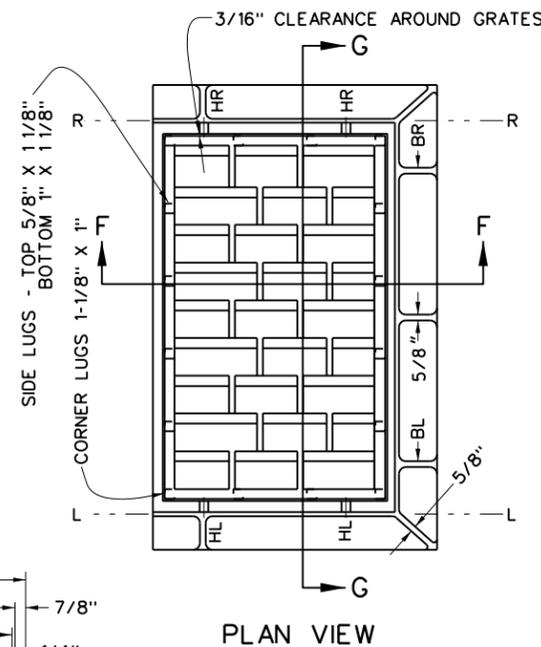
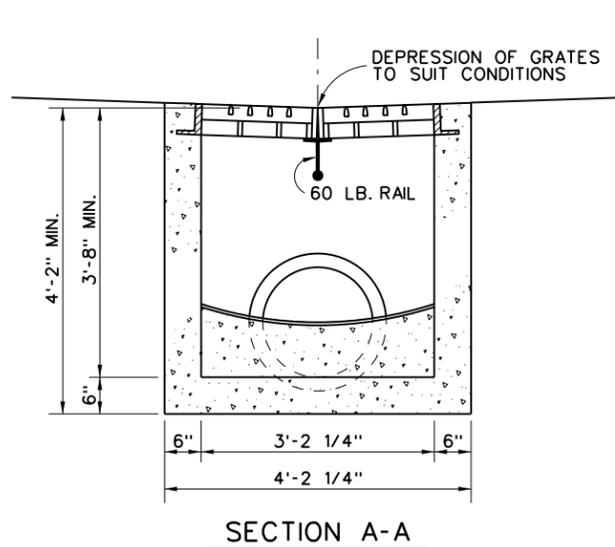
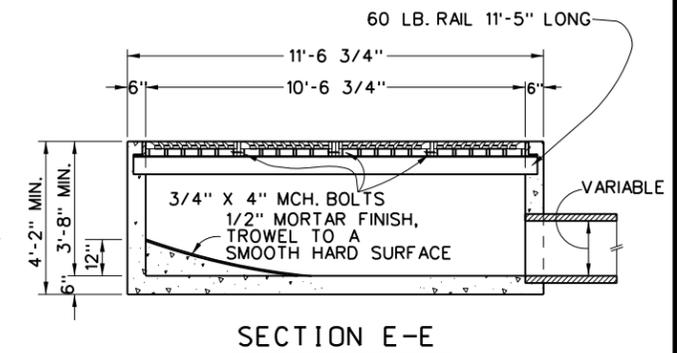
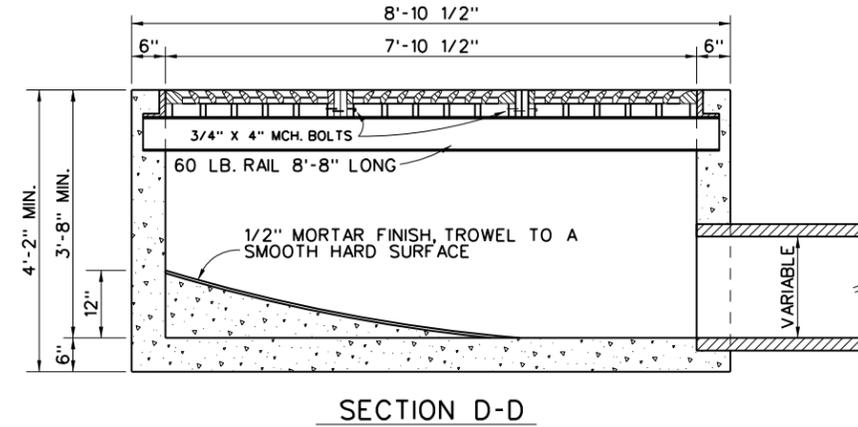
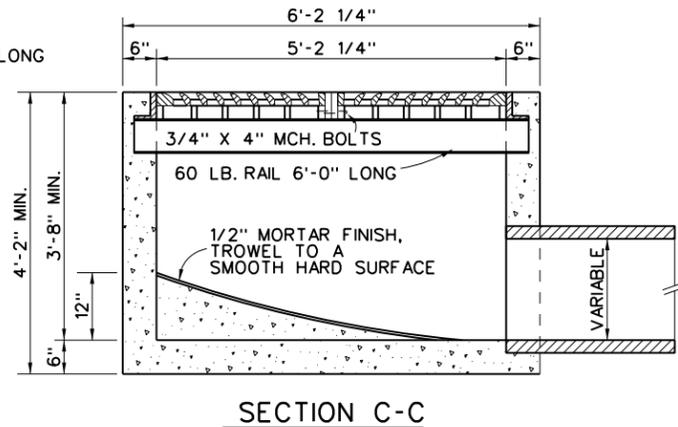
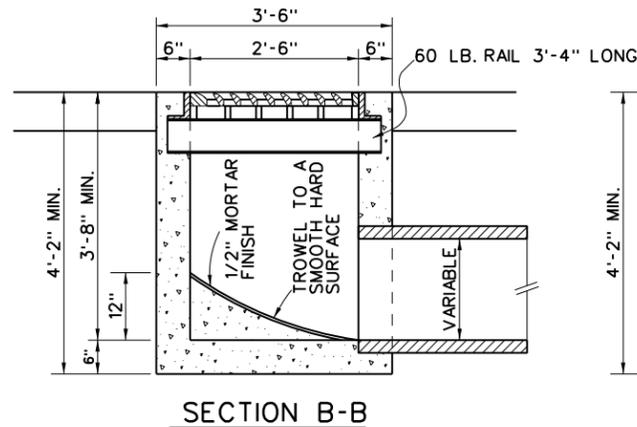
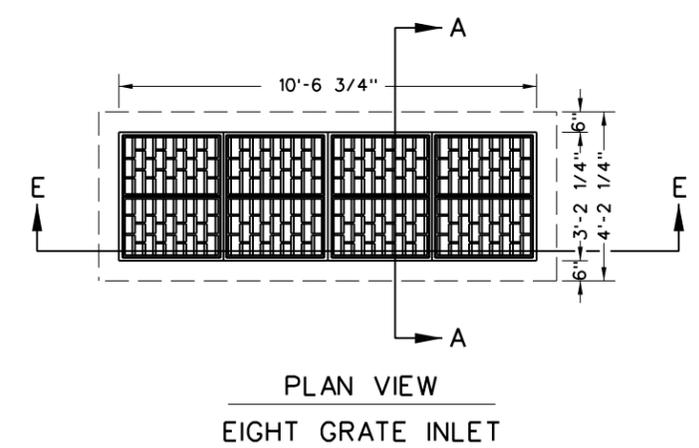
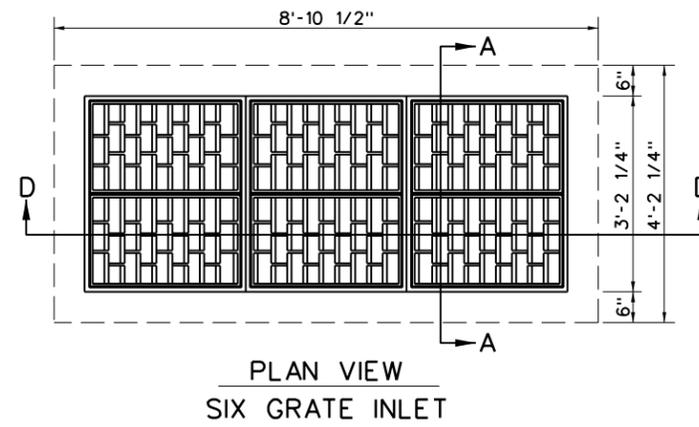
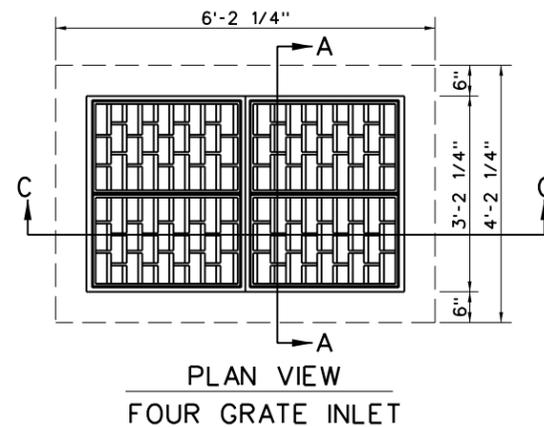
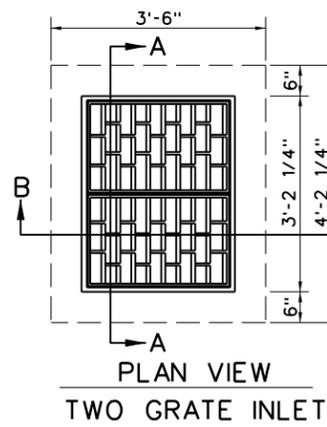
NOTES:

1. ALL CONSTRUCTION SHALL BE IN CONFORMITY WITH CURRENT CITY OF DALLAS GENERAL SPECIFICATIONS.
2. CONSTRUCTION JOINT SHOWN FOR CONVENIENCE ONLY - MONOLITHIC CONSTRUCTION MAY BE USED
3. ALL REINFORCING STEEL SHALL BE NO.4 AND SPACED 12" C. TO C. BOTH WAYS UNLESS OTHERWISE SPECIFIED.
4. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
5. SIDE SLOPES SHALL BE NO STEEPER THAN 2:1.
6. TOP OF CURB OF ADJACENT ALLEY OR STREET IS MINIMUM OF 2' ABOVE 100 YEAR W. S.
7. USE A SMOOTH TROWEL FINISH ON BOTTOM AND SLOPED SURFACES. USE ORDINARY SURFACE FINISH ON VERTICAL SURFACES.
8. WHEN SOLID ROCK IS ENCOUNTERED BY NORMAL CHANNEL SECTION, REMOVE 6" DEPTH OF SOLID ROCK AND REPLACE WITH 6" DEPTH OF CRUSHED ROCK FOUNDATION BELOW PROPOSED CHANNEL STRUCTURE.



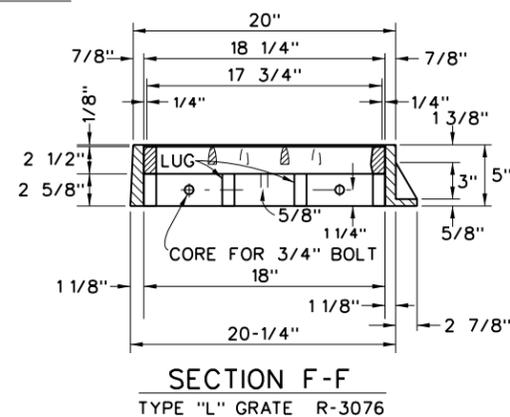
DETAIL "A"

<b>DRAINAGE DETAILS</b>	
LINED CHANNELS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 2010



SEE SHEET No. 2012 FOR GRATE DETAIL

SEE SHEET No. 2004 AND 2004A FOR STEEL DETAILS FOR WALLS AND BOTTOM



MODIFICATIONS FOR DOUBLE AND TRIPLE GRATE INLETS (SHEET No. 2002)

FOR STANDARD DOUBLE GRATE INLETS: ON RIGHT FRAME OMIT FLANGE ON LINE "L/L" AND ADD BRACKET "BL" AND CORE HOLES "HL", ON LEFT FRAME OMIT FLANGE ON LINE "R/R" AND ADD BRACKET "BR" AND CORE HOLES "HR". FOR STANDARD TRIPLE GRATE INLETS: USE ONE RIGHT FRAME AND ONE LEFT FRAME AND ONE FRAME OMITTING BOTH END FLANGES, ADD BRACKETS "BR" AND "BL" AND CORE HOLES "HR" AND "HL".

THE AVERAGE WEIGHT OF ALL GRATE INLETS SHALL NOT BE LESS THAN 153 LBS. THE AVERAGE WEIGHT OF SINGLE GRATE INLET FRAME SHALL NOT BE LESS THAN 185 LBS., THE DOUBLE GRATE INLET FRAMES SHALL NOT BE LESS THAN 177 LBS. EACH, AND THE CENTER FRAMES SHALL NOT BE LESS THAN 170 LBS. EACH.

FRAME DETAIL

1. LATERAL MAY ENTER INLET AT ANY GRADE, ANGLE OR LOCATION.
2. EXCAVATION, FRAMES, GRATES AND COVERS SHALL BE INCLUDED IN UNIT PRICE.
3. EXTRA DEPTH INLETS WILL BE DIMENSIONED ON PLANS. A SEPARATE BID ITEM PER FOOT OF EXTRA DEPTH MAY BE PROVIDED.
4. TYPE "L" GRATES SHALL BE USED AS SHOWN ON SHEET No. 2012.
5. PROVIDE EXPANSION JOINTS AT EDGE OF ALL BLOCKOUTS FOR STREETS AND ALLEYS

## DRAINAGE DETAILS

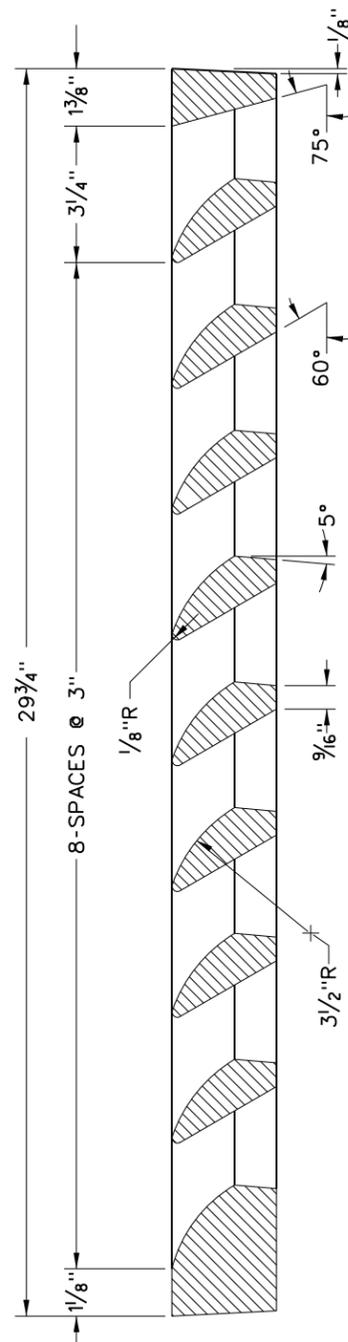
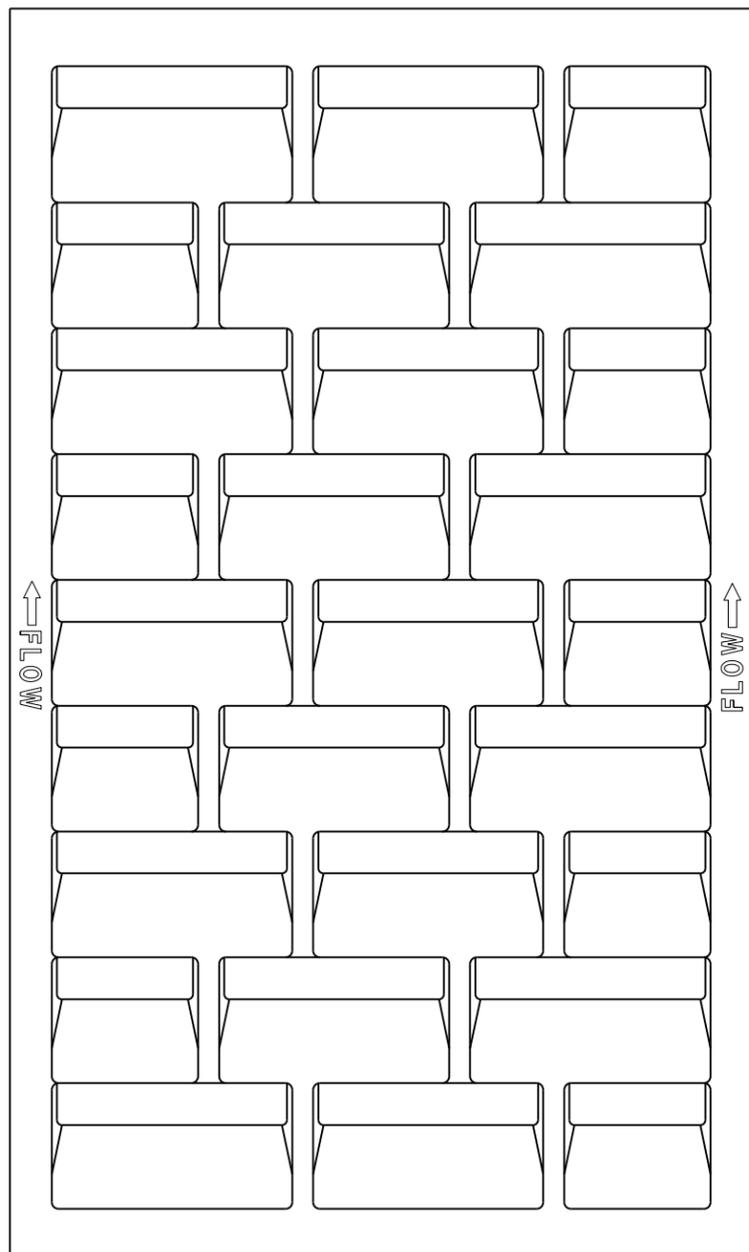
TWO, FOUR, SIX AND EIGHT  
GRATE INLETS, GRATE DETAILS

DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

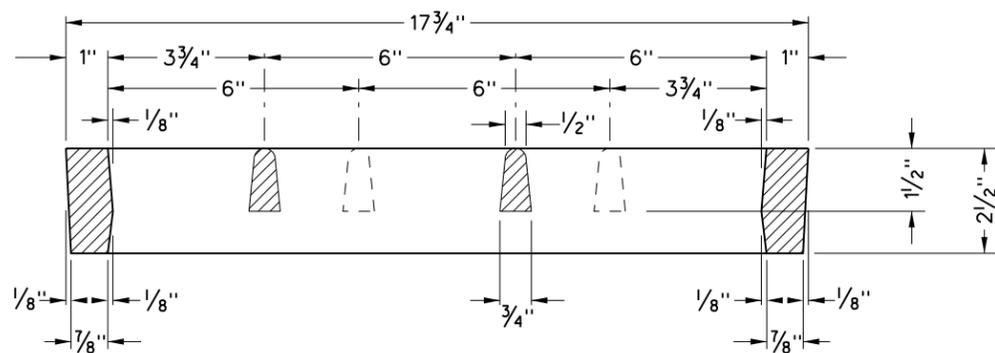
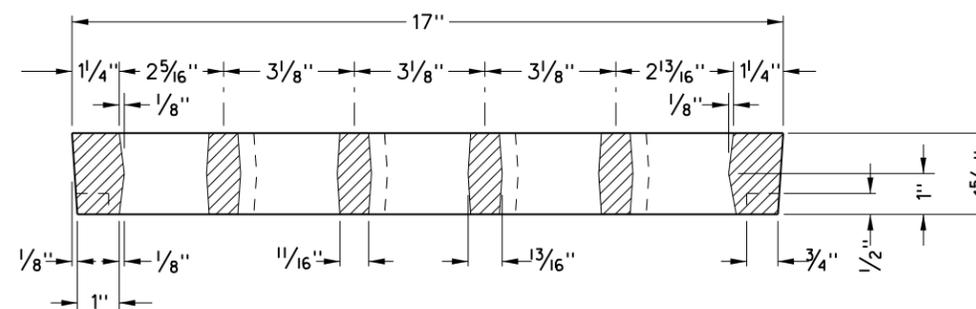
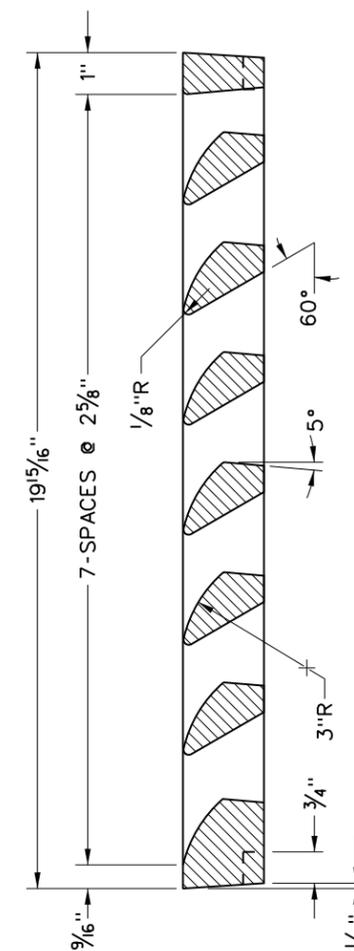
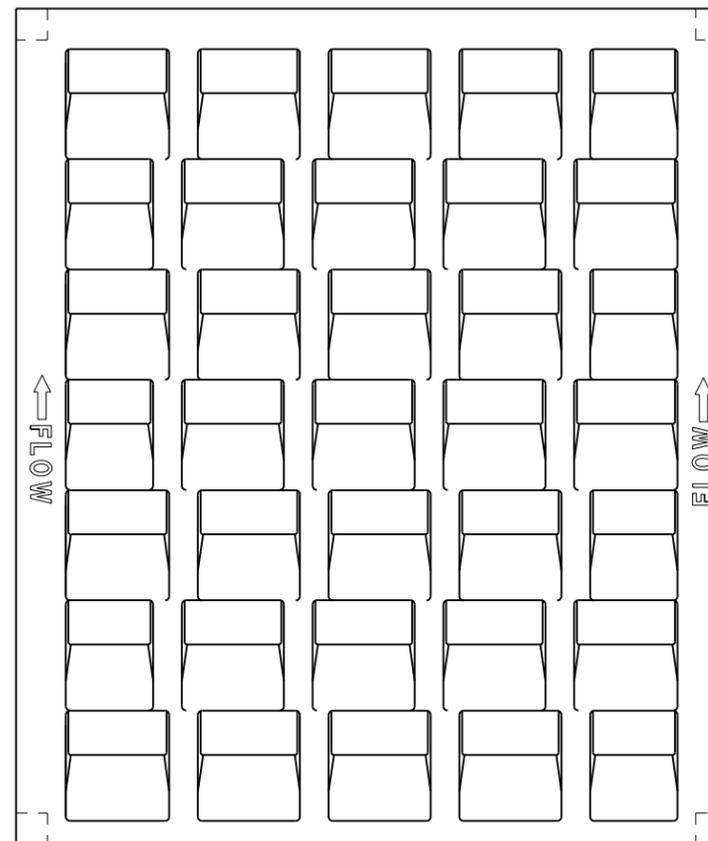
DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
2011

R - 3076



R - 3065



MATERIAL - CAST GRAY IRON  
ASTM A-48-83 CLASS 35B  
NO PAINT

SEE SHEET No. 2011  
FOR FRAME DETAIL

R-3076 & R-3065  
TYPE "L" GRATES

**DRAINAGE DETAILS**

VANE TYPE  
CAST IRON GRATE

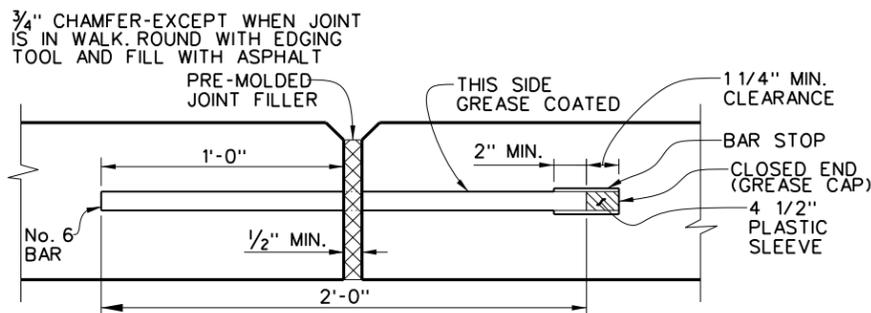
DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
2012

**GENERAL NOTES FOR RETAINING WALLS, ALL TYPES (U.N.O.)**

1. RETAINING WALLS SHALL BE BUILT WITH PERFORATED DRAIN SYSTEM INSTEAD OF WEEP HOLES WHENEVER FEASIBLE.
2. ALL CONCRETE SHALL BE CLASS "C". ALL REINFORCING SHALL BE GRADE 60.
3. BAR LAPS SHALL BE 30 TIMES THE DIAMETER OF THE BAR.
4. ALL EXPOSED SURFACES EXCEPT DRIVEWAY AND WALK SHALL RECEIVE A CARBORUNDUM OR APPROVED PAINTED FINISH.
5. DRIVEWAY AND WALK SHALL RECEIVE A HORSE HAIR OR FINE BROOM FINISH.
6. EXPOSED EDGES AND CORNERS TO BE ROUNDED OR CHAMFERED AS INDICATED HEREIN. (CHAMFER ON BACK OF WALL MAY BE ELIMINATED TO PERMIT MOWING)
7. WEEP HOLES SHALL BE FORMED BY PVC 3" O.D.
8. FOR WALL TYPES 6 & 7, THE WALKWAY WIDTH MAY BE INCREASED WHEN SPECIFIED ON THE PLANS, BUT SHALL NOT BE DECREASED UNLESS A SPECIAL DETAILED DESIGN IS PROVIDED IN THE PLANS AND SPECIFICATIONS.
9. WEEP HOLES OR PERFORATED DRAIN SYSTEM MAY BE DELETED FOR RETAINING WALLS NOT EXCEEDING 3' IN HEIGHT WHEN APPROVED BY THE ENGINEER.
10. EXPANSION JOINTS SHALL BE CONSTRUCTED BETWEEN STREET CURB AND RETAINING WALL FOOTINGS, ABUTTING BACK OF CURBS WHEN RETAINING WALL HEIGHT EXCEEDS 5' FOR WALLS LESS THAN OR EQUAL TO 5' IN HEIGHT, SIDEWALK LUGS SHALL BE CONSTRUCTED AT BACK OF CURB INTEGRAL WITH THE RETAINING WALL FOOTING (NO EXPANSION MATERIAL).
11. ADD FABRIC INSIDE OF WALL TO PREVENT CLUGGING.

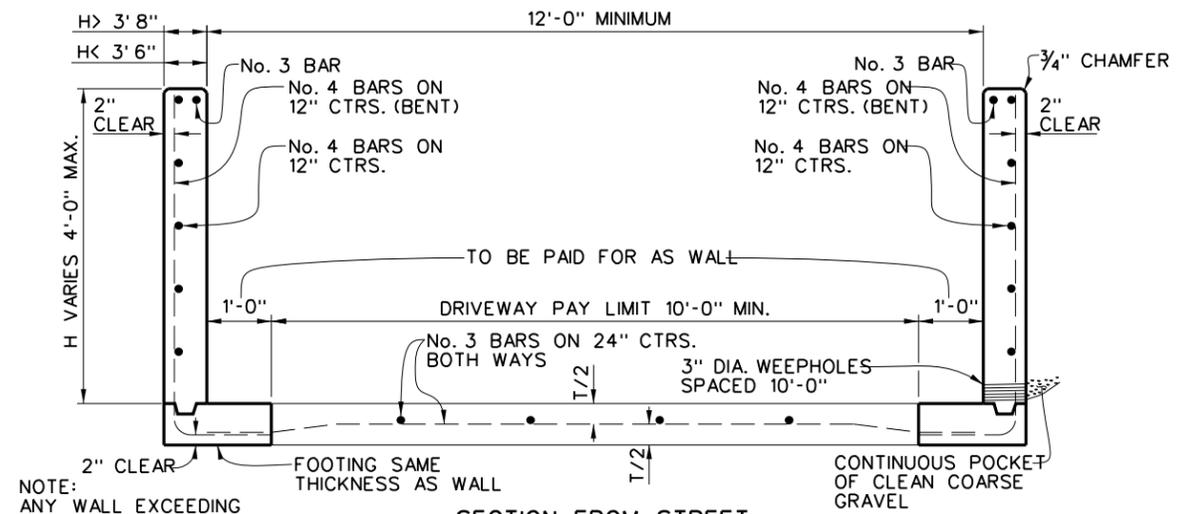


THE DOWELS SHALL BE SPACED 1'-0" MAXIMUM BEGINNING 1'-0" ABOVE FOOTING. A MINIMUM OF 2 DOWELS TO BE USED IN EACH JOINT, THE SLEEVE FOR DOWEL SHALL HAVE AN INSIDE DIAMETER OF 7/8" AND BE OF A QUALITY AND DESIGN TO PROVIDE FREE MOVEMENT OF THE DOWEL. THE ENTIRE DOWEL AND SLEEVE ASSEMBLY SHALL BE SECURED IN POSITION PRIOR TO POURING OPERATIONS.

THE EXPANSION JOINT SHALL EXTEND THROUGHOUT THE STEM AND WALK SECTION IN CONTINUOUS VERTICAL PLANE. ALL OTHER DETAILS TO BE AS ABOVE.

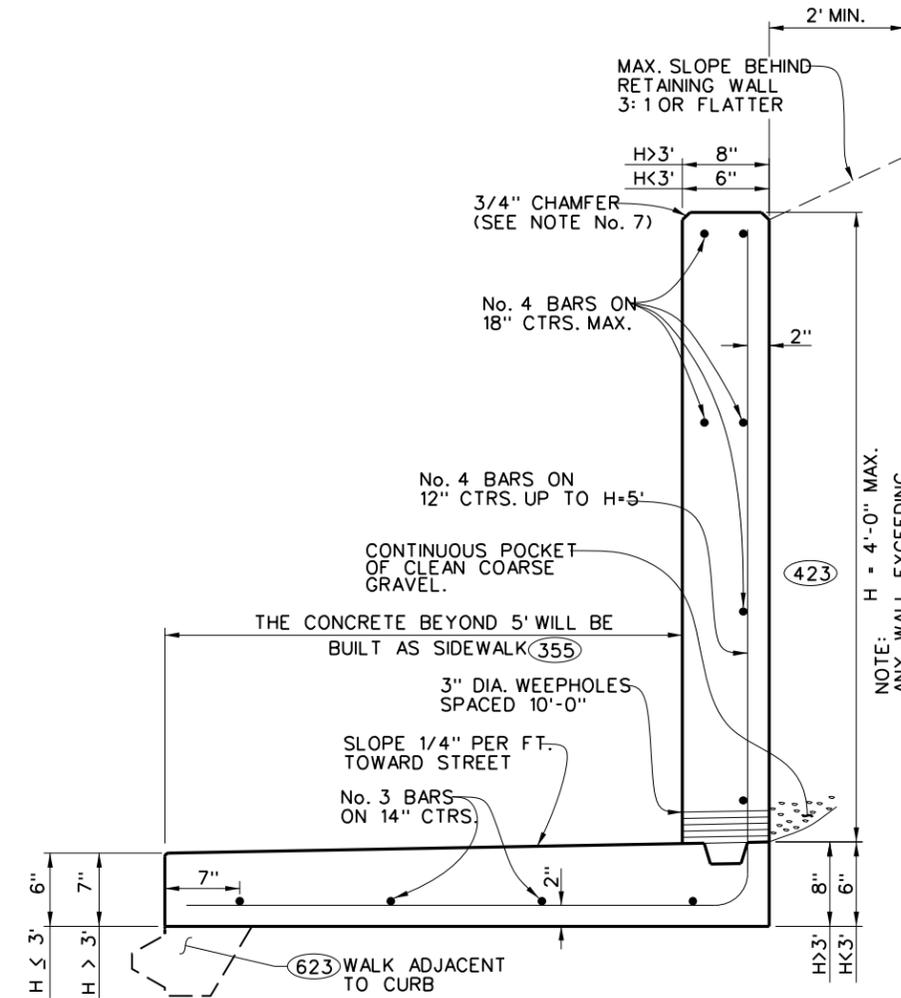
SPACING OF JOINTS SHALL BE 45' MAXIMUM FOR TYPES 6 THRU 8.

**EXPANSION JOINT DETAIL IN WALL**

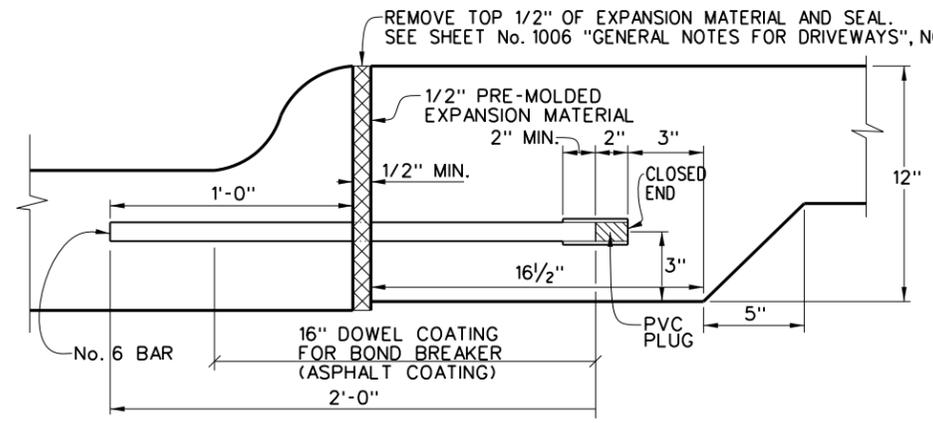


**SECTION FROM STREET**

NOTE: ANY WALL EXCEEDING 4'-0" IN HEIGHT MUST BE DESIGNED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER



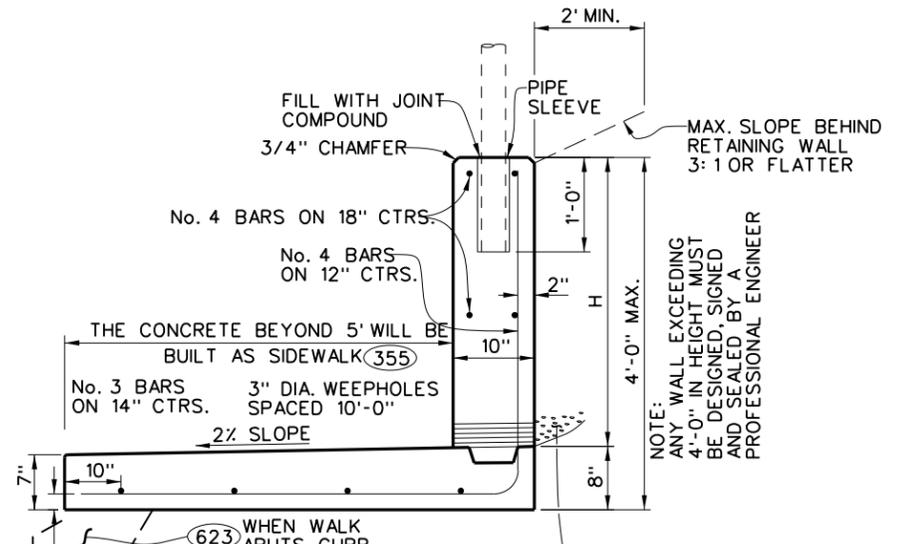
**TYPE 6 RETAINING WALL**  
COMBINATION CANTILEVER & WALK  
WALL GREATER THAN H=5'-0" REQUIRES SPECIAL ENGINEERING ANALYSIS



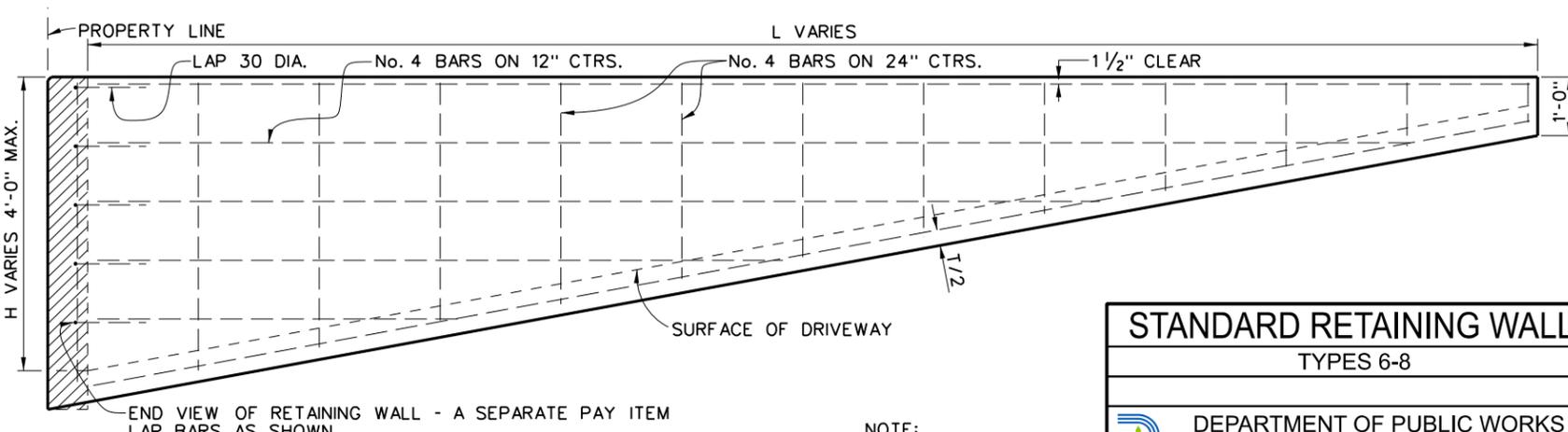
1. DOWELS SHALL BE COATED WITH BOND BREAKER ON WALL FOOTING SIDE AS SHOWN.
2. SPACING SHALL BE 12" ON CENTER, No. 6 DOWEL BARS.
3. THE SLEEVE FOR DOWEL SHALL HAVE AN INSIDE DIAMETER OF 7/8" AND BE OF A QUALITY AND DESIGN TO PROVIDE FREE MOVEMENT OF THE DOWEL.
4. ENTIRE DOWEL AND SLEEVE ASSEMBLY WITH JOINT FILLER MATERIAL SHALL BE SECURED IN POSITION PARALLEL WITH THE FOOTING SURFACE BY A METHOD APPROVED BY THE ENGINEER PRIOR TO POURING OPERATION.

**EXPANSION JOINT DETAIL AGAINST CURB**

(FOR WALLS OVER 5 FEET IN HEIGHT WITH FOOTING ABUTTING BACK OF CURB.)



**TYPE 7 RETAINING WALL**  
COMBINATION CANTILEVER & WALK WITH FENCE  
FENCE TO BE A SEPARATE PAY ITEM

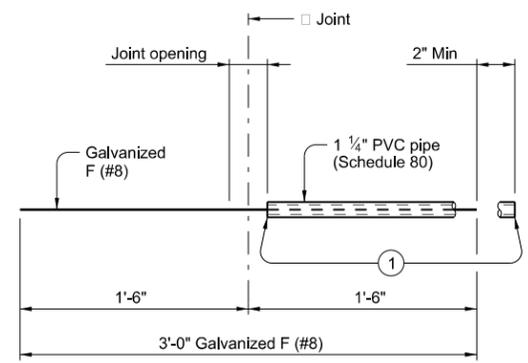


**TYPE 8 RETAINING WALL**  
FOR DRIVEWAY THROUGH PROPERTY LINE RETAINING WALL

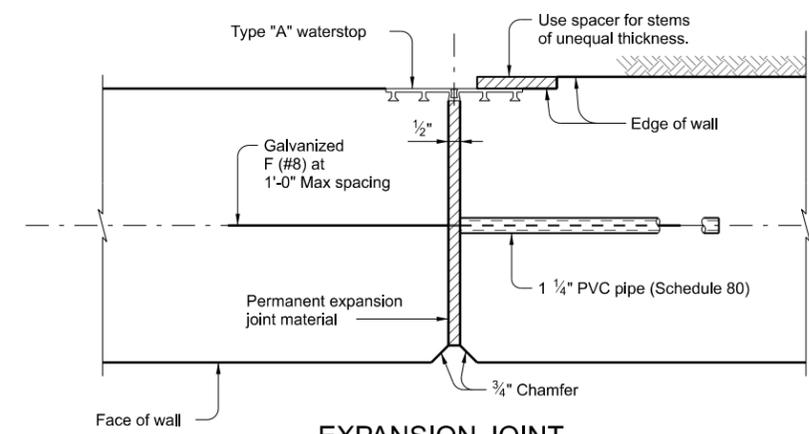
NOTE: ANY WALL EXCEEDING 4'-0" IN HEIGHT MUST BE DESIGNED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER

<b>STANDARD RETAINING WALL</b>	
TYPES 6-8	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: SEPTEMBER 2022	SHEET No. 3001

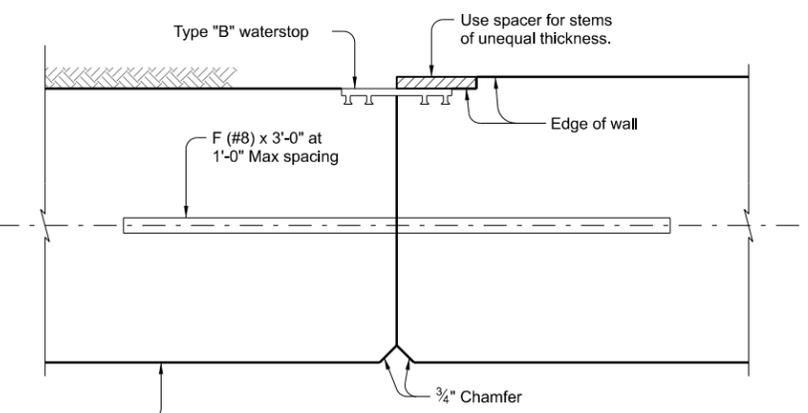
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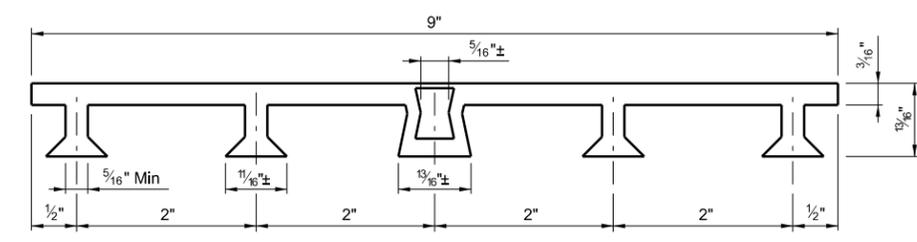
**BAR F (#8) ASSEMBLY DETAIL**



**EXPANSION JOINT**

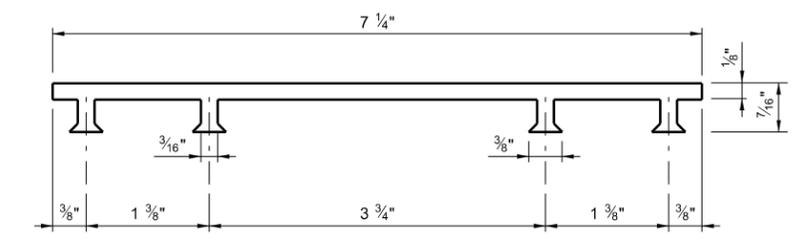


**CONSTRUCTION JOINT**

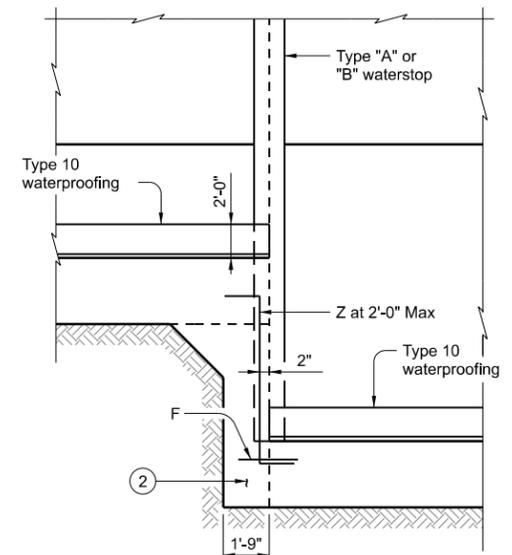


**PVC WATERSTOP TYPE "A"**

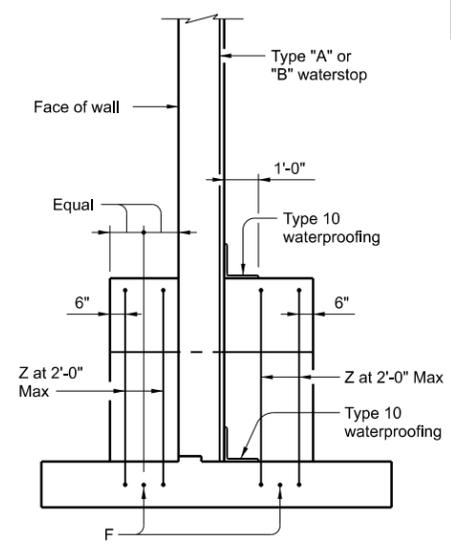
Note: Dimensions and shapes may vary slightly depending on manufacturer.



**PVC WATERSTOP TYPE "B"**



**PARTIAL ELEVATION**

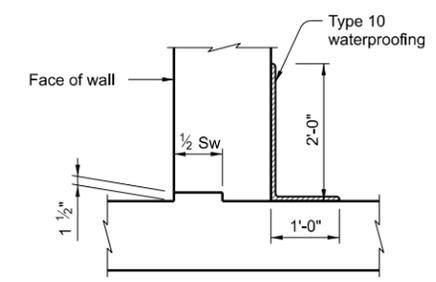


**PARTIAL SECTION**

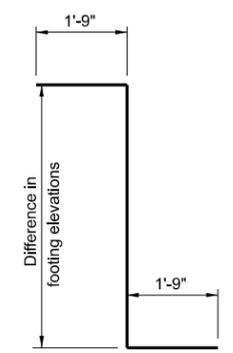
**SHOWING WATERSTOP AT FOOTING ELEVATION TRANSITION**

- ① Tape ends of 1 1/4" PVC Schedule 80 to prevent concrete or mortar from seeping in.
- ② Class C unreinforced concrete when difference in top of footing elevations is less than 2 feet. Omit when Dowel Bars F can be placed between adjacent footings with 4-inch cover top and bottom. Footing elevation difference not to exceed 4 feet.

- ③ Underdrain pipe to be in accordance with Item 556, "Pipe Underdrains."
- ④ Stop course aggregate at this level when weep holes are used.
- ⑤ Use course aggregate to here when underdrains are used.

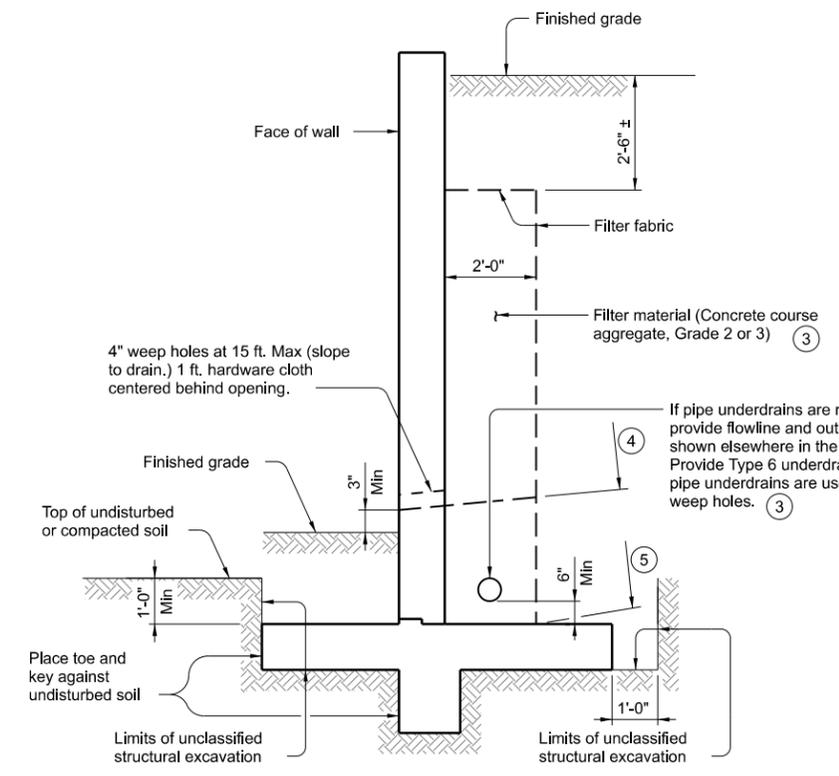


**JOINT AND WATERSTOP DETAILS**



**BARS Z (#5)**

Omit Bars Z when difference in top of footing elevations is less than 2 ft.



**DRAINAGE DETAILS AND EXCAVATION DIAGRAM**

**MATERIAL NOTES:**

Provide Class C concrete (f<sub>c</sub>=3,600 psi.)  
Provide Grade 60 reinforcing steel.

**GENERAL NOTES:**

Designed according to AASHTO LRFD Bridge Design Specifications.  
Walls are designed assuming unit weight of soil = 120 pcf and a friction angle = 30 degrees for foundation and retained soil.  
The undisturbed or compacted soil depth in front of walls must not measure less than K<sub>d</sub> + Ft + 1 foot as measured upwards from bottom of key.  
Retaining walls are detailed to be placed on grades up to 10% with level footing, with no changes in reinforcing steel. Steeper grades can be accommodated by shortening Bars A and Bars B and increasing the length of legs of Bars U by the same amount. No change in quantities will be required.  
Retaining walls may be placed on horizontal curves by adjusting lengths of Bars T and Bars H in the footing. Minor revisions to concrete quantities may be required as a result.

Cover dimensions are clear dimensions, unless noted otherwise.  
Reinforcing bar dimensions shown are out-to-out of bar.

		<b>Bridge Division Standard</b>	
<b>SPREAD FOOTING RETAINING WALL MISCELLANEOUS DETAILS</b>			
<b>RW(SF)</b>			
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT
©TxDOT	October 2025	CON: TxDOT	SECT: TxDOT
REVISIONS		JOB	HIGHWAY
DIST	COUNTY	SHEET NO.	

DATE: FILE:

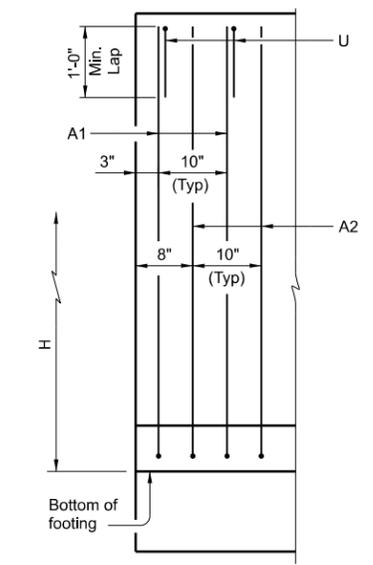
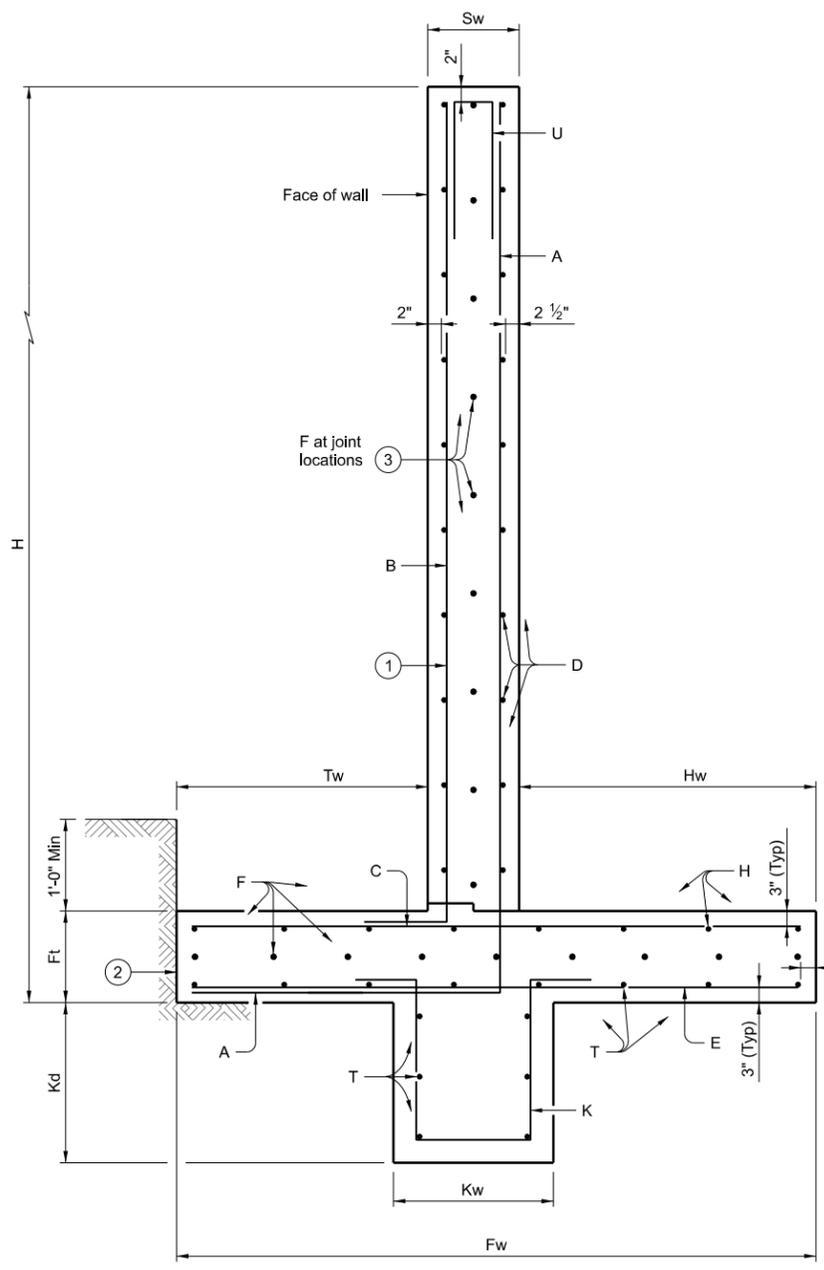




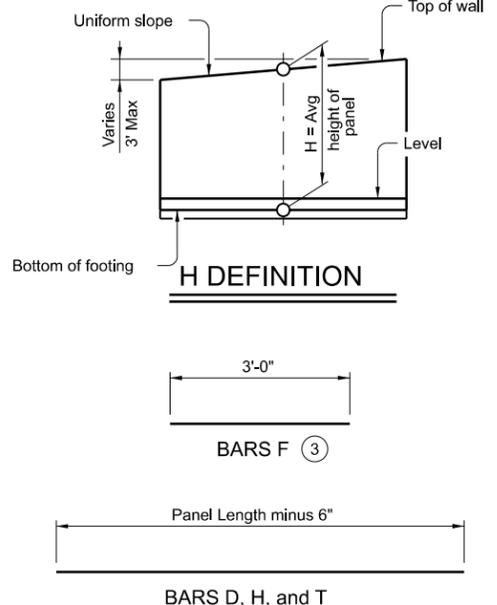
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## REINFORCING STEEL FOR ONE 32' PANEL (DESIGN C)

Wall Height "H" (Ft)	PROPERTIES								REINFORCING STEEL FOR ONE 32' PANEL (DESIGN C)																				QUANTITY FOR ONE 32' PANEL		Wall Height "H" (Ft)																				
	WALL DIMENSIONS							MAX SOIL PRESS T/SF	Bars A1		Bars A2		Bars B		Bars C		Bars E		Bars K		D (#5) at 12" Max.		Dowel F at 12" Max.		H (#5) at 12" Max.		T (#5) at 12" Max.		U ~ 39 #5 at 10" Max.			Conc (CY)	REINF (LB)																		
	Fw	Tw	Sw	Hw	Ft	Kw	Kd		No.	Size	Spa.	Length	Weight	No.	Size	Spa.	Length	Weight	No.	Size	Spa.	Length	Weight	No.	Size	Spa.	Length	Weight	No.	Size				Spa.	Length	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight	Length	Weight					
2	5'-0"	1'-0"	1'-0"	3'-0"	1'-0"	1'-0"	1'-0"	0.218	39	#4	10"	3'-2"	83	39	#4	10"	3'-2"	83	39	#4	10"	1'-11"	50	39	#4	10"	4'-6"	118	39	#4	10"	4'-6"	118	39	#4	10"	4'-4"	113	4	132	8	65	6	198	6	198	2'-0"	82	8.3	1240	2
4	5'-0"	1'-0"	1'-0"	3'-0"	1'-0"	1'-0"	1'-0"	0.321	39	#4	10"	5'-2"	135	39	#4	10"	5'-2"	135	39	#4	10"	3'-11"	103	39	#4	10"	4'-6"	118	39	#4	10"	4'-6"	118	39	#4	10"	4'-4"	113	8	263	10	81	6	198	6	198	6'-0"	245	10.7	1707	4
6	5'-6"	1'-6"	1'-0"	3'-0"	1'-0"	1'-0"	1'-0"	0.395	39	#4	10"	7'-8"	200	39	#4	10"	7'-8"	200	39	#4	10"	5'-11"	155	39	#4	10"	5'-0"	131	39	#4	10"	5'-0"	131	39	#4	10"	4'-4"	113	12	395	12	97	6	198	6	198	8'-5"	343	13.7	2161	6
8	7'-4"	1'-9"	1'-1"	4'-6"	1'-0"	1'-0"	1'-0"	0.500	39	#4	10"	10'-0"	261	39	#4	10"	10'-0"	261	39	#4	10"	7'-11"	207	39	#4	10"	6'-10"	179	39	#4	10"	6'-10"	179	39	#4	10"	4'-4"	113	16	526	16	129	8	263	8	263	8'-6"	346	18.9	2727	8
10	8'-8"	2'-4"	1'-1"	5'-3"	1'-2"	1'-0"	1'-0"	0.590	39	#5	10"	12'-7"	512	39	#4	10"	12'-7"	328	39	#4	10"	9'-9"	255	39	#5	10"	8'-2"	213	39	#4	10"	5'-10"	152	20	658	20	161	10	329	10	329	8'-6"	346	26.0	3616	10					
12	10'-4"	2'-11"	1'-2"	6'-3"	1'-4"	1'-9"	1'-9"	0.684	39	#5	10"	15'-3"	621	39	#4	10"	15'-3"	398	39	#4	10"	11'-7"	302	39	#5	10"	9'-10"	400	39	#4	10"	9'-10"	257	39	#4	10"	6'-7"	172	24	789	23	185	11	362	11	362	8'-7"	350	34.8	4198	12
14	11'-8"	3'-6"	1'-4"	6'-10"	1'-7"	2'-0"	2'-0"	0.769	39	#5	10"	18'-0"	733	39	#4	10"	18'-0"	469	39	#4	10"	13'-4"	348	39	#5	10"	11'-2"	455	39	#4	10"	11'-2"	291	39	#4	10"	7'-4"	192	28	920	27	217	13	428	13	428	8'-9"	356	46.3	4837	14
16	13'-1"	4'-0"	1'-6"	7'-7"	1'-9"	2'-0"	2'-0"	0.853	39	#5	10"	20'-8"	841	39	#5	10"	20'-8"	841	39	#4	10"	15'-2"	396	39	#6	10"	12'-7"	738	39	#4	10"	12'-7"	329	39	#4	10"	7'-4"	192	32	1052	30	241	14	460	14	460	8'-11"	363	57.3	5912	16
18	14'-7"	4'-6"	1'-8"	8'-5"	1'-9"	2'-0"	2'-0"	0.937	39	#6	10"	23'-4"	1367	39	#5	10"	23'-4"	950	39	#4	10"	17'-2"	448	39	#7	10"	14'-1"	1124	39	#4	10"	14'-1"	192	36	1183	34	273	16	526	16	526	9'-1"	370	67.1	7325	18					
20	16'-5"	5'-0"	1'-10"	9'-7"	2'-0"	2'-0"	2'-0"	1.039	39	#6	10"	26'-0"	1524	39	#6	10"	26'-0"	1524	39	#4	10"	18'-11"	493	39	#7	10"	17'-11"	1429	39	#4	10"	17'-11"	467	39	#4	10"	7'-4"	192	38	1249	36	289	17	559	17	559	9'-3"	377	82.8	8662	20



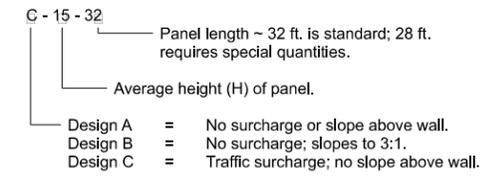
**PARTIAL WALL ELEVATION**  
(Showing vertical reinforcing pattern in back face.)



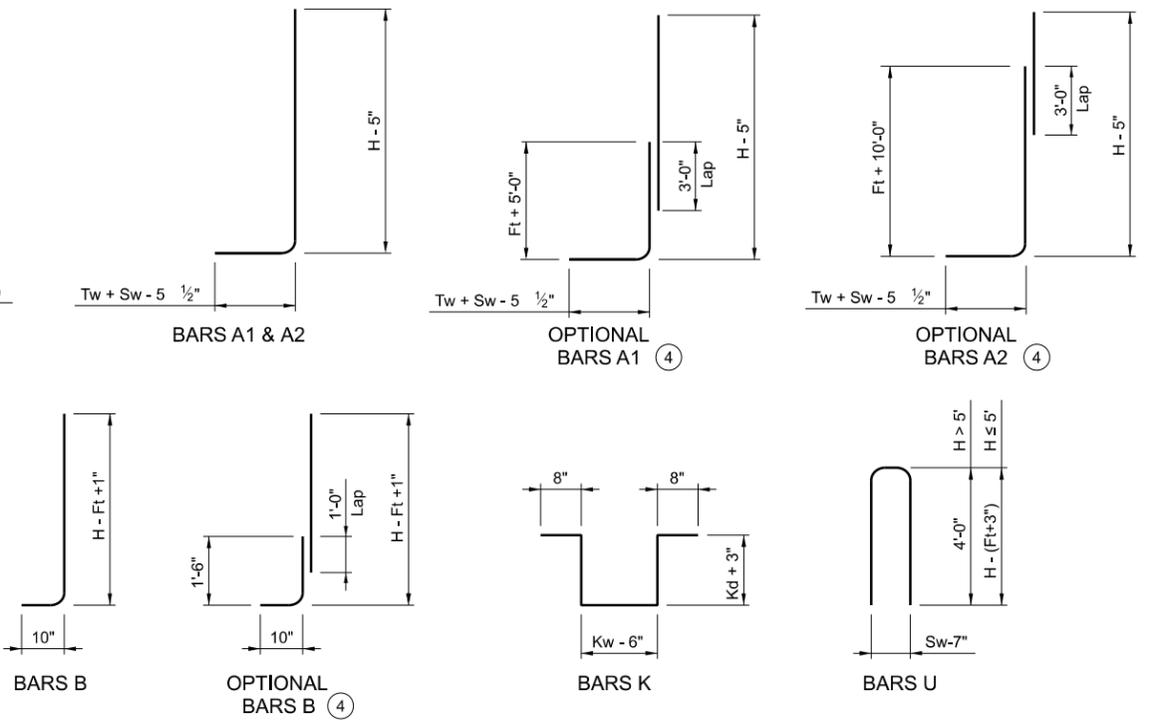
- ① Place vertical bars inside of horizontal bars (Typical both faces).
- ② Place footing toe against undisturbed soil.
- ③ See Retaining Wall Miscellaneous Details (RW(SF)) standard for size.
- ④ Optional bars splices not included in above table.

**MATERIAL NOTES:**  
Provide Class C concrete ( $f'_c=3,600$  psi.)  
Provide Grade 60 reinforcing steel.

**GENERAL NOTES:**  
Designed according to AASHTO LRFD Bridge Design Specifications.  
Walls are designed assuming unit weight of soil = 120 pcf and a friction angle = 30 degrees for foundation and retained soil.  
See Retaining Wall Miscellaneous Details (RW(SF)) standard for details and notes not shown.  
These details provide designs for wall heights of 2 to 20 feet. For heights not shown, round up "H" to determine wall dimensions and reinforcing. (For example, a 9-foot high wall would use the 10-foot high dimensions and reinforcing.)  
Quantities are based on "H" being average height of panel.  
Retaining walls are designed to be coded as follows on Retaining Wall Layout Sheets:



Cover dimensions are clear dimensions, unless noted otherwise.  
Reinforcing bar dimensions shown are out-to-out of bar.



**Texas Department of Transportation** **Bridge Division Standard**

## SPREAD FOOTING RETAINING WALL

### RW(SFC)

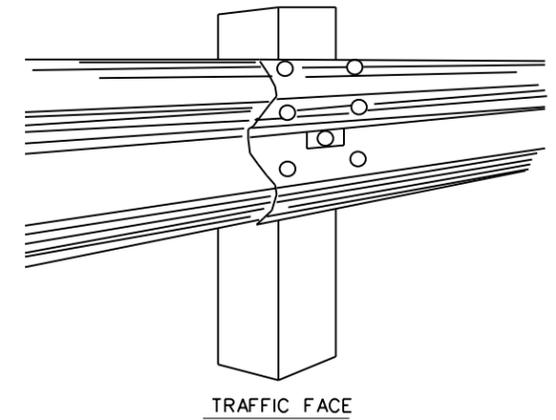
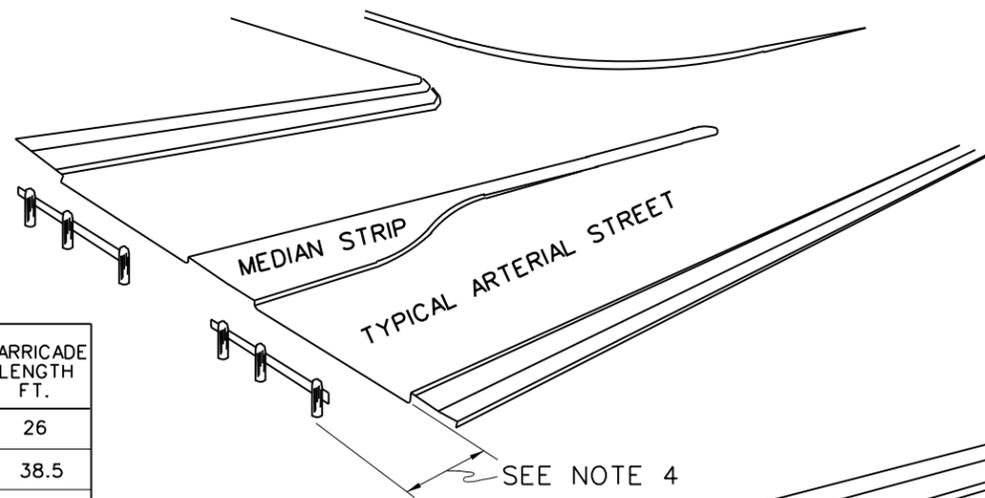
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS				
DIST	COUNTY			SHEET NO.

DATE:  
FILE:

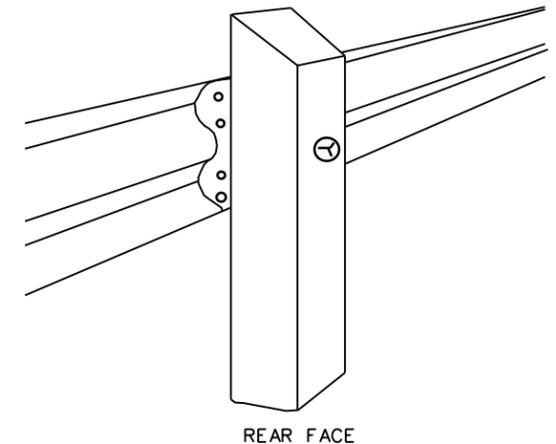
**GENERAL NOTES:**

- METAL FLEX-BEAM GUARD RAIL SHALL BE 10 GAGE, GALVANIZED AS PER ASTM A93.
- AT THE OPTION OF THE CONTRACTOR THE RAIL ELEMENT OF THE GUARD FENCE MAY BE FURNISHED IN EITHER 12' OR 25 FEET NOMINAL LENGTHS. RAIL SHALL BE FURNISHED WITH POST BOLT SLOTS FOR 5/8" DIAMETER BOLT CONNECTION TO POSTS.
- BOLTS USED IN ATTACHING RAIL TO POST SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT.
- LOCATION OF BARRICADES SHALL BE DETERMINED BY THE ENGINEER.
- WHERE ROCK IS ENCOUNTERED OR WHERE SHOWN ON THE PLANS, THE DIAMETER OF HOLES AND THE MATERIAL FOR BACKFILLING SHALL BE AS DIRECTED BY THE ENGINEER.
- TIMBER POSTS MAY BE BEVELED AT APPROX. 10° ON THE TOP OR BOTH ENDS WITH HIGH SIDE PLACED TOWARD THE ROADWAY OR THEY MAY BE DOMED.
- THE CONTRACTOR HAS THE OPTION OF USING 7" DIA ROUND POST INSTEAD OF SQUARE POST
- UPON INSTALLATION OF BARRICADE, THE CONTRACTOR SHALL NOTIFY THE TRAFFIC CONTROL DEPARTMENT THAT THE BARRICADE IS READY FOR THE SIGN TO BE INSTALLED
- DEAD END STREETS MUST BE BASED ON TMUTCD SECTION 2C.66 - TYPICALLY THREE, TYPE 4 OBJECT MARKERS (OM4-2) PLACED AT MINIMUM 4' HEIGHT, IN FRONT OF GUARDRAIL OR TYPE 3 BARRICADE WITH RETROREFLECTIVE WHITE AND RED STRIPES.

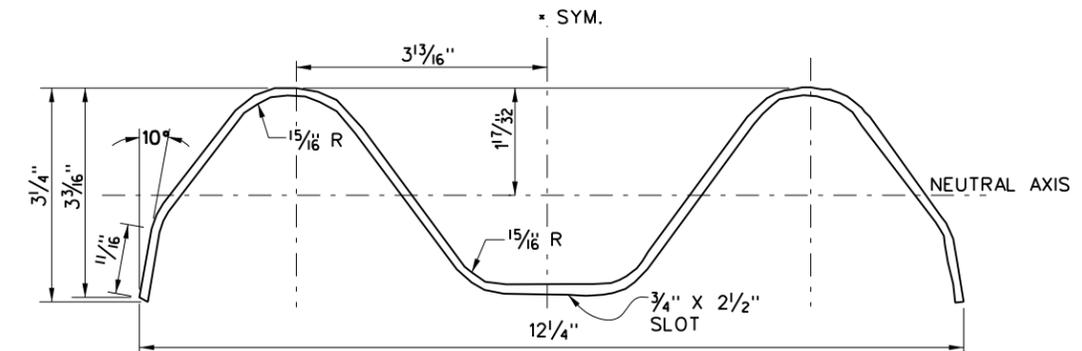
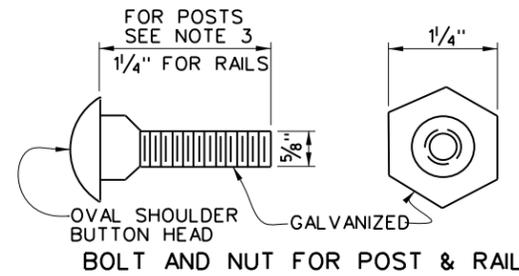
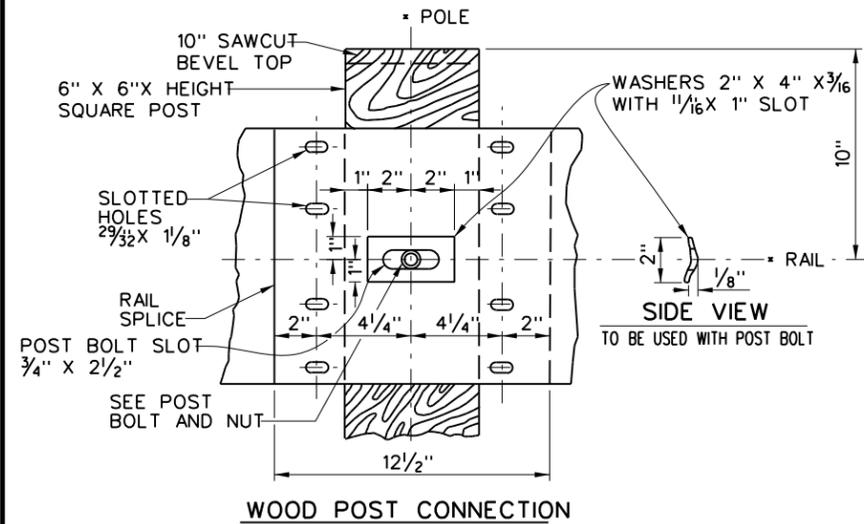
STREET TYPE	LANE WIDTH FT.	BARRICADE LENGTH FT.
ARTERIAL	2-33	26
COLLECTOR	1-44	38.5
APARTMENT	1-36	26
RESIDENTIAL	1-26	26



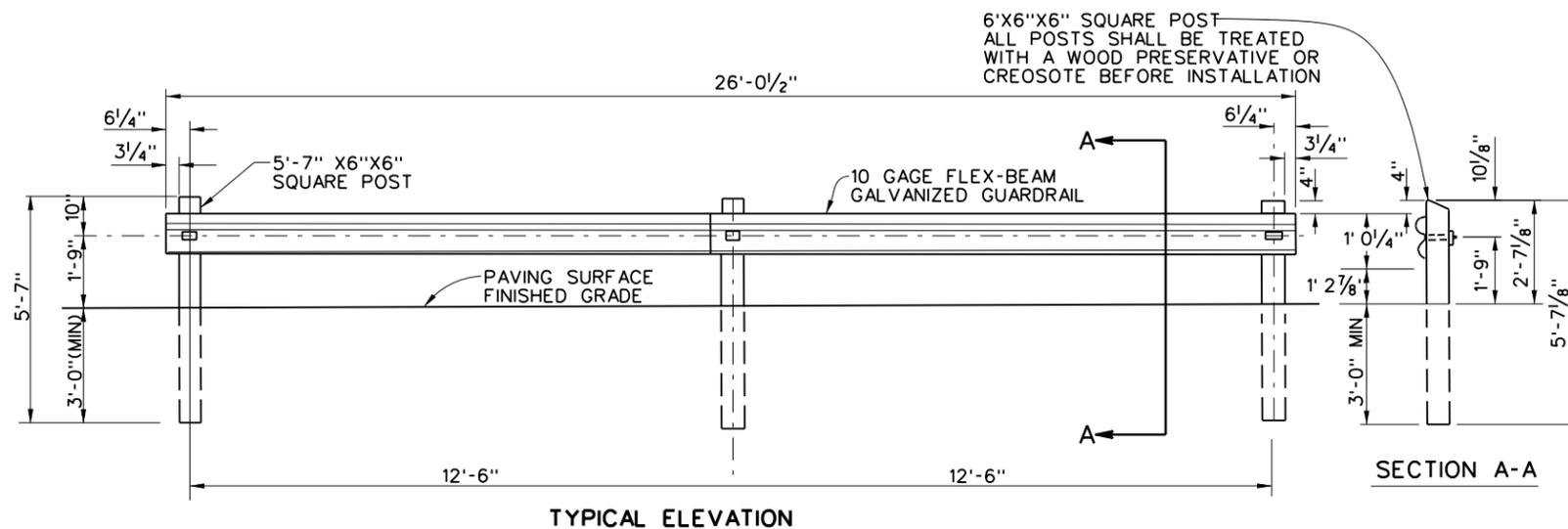
TRAFFIC FACE  
GUARD RAIL CONNECTION AT POST



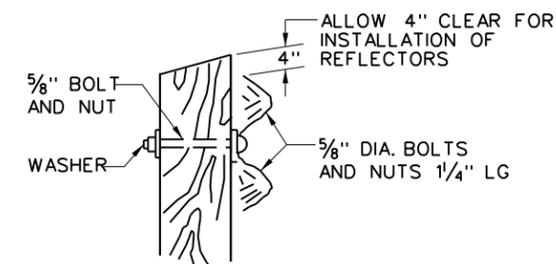
REAR FACE  
GUARD RAIL CONNECTION AT POST



GUARD RAIL SECTION



SECTION A-A



ARRANGEMENT AT POST

<b>TRAFFIC</b>	
DEAD END BARRICADE	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 4001

DESCRIPTION AND APPLICATION OF PAVEMENT MARKING LINES

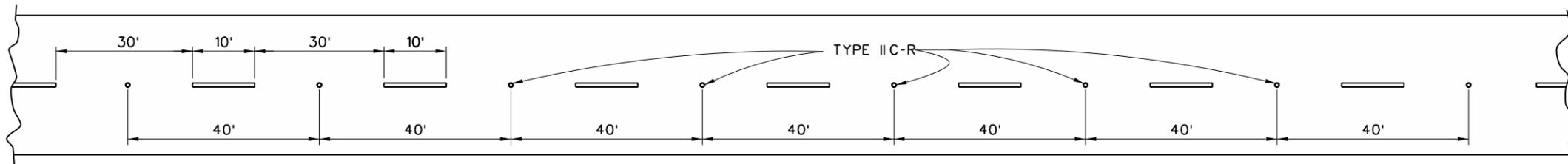
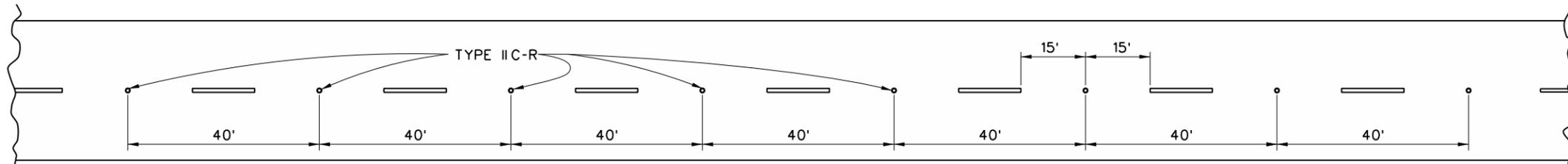
LINE SERIES	COLOR	DESCRIPTION	WIDTH INCHES	TYPICAL APPLICATIONS
	WHITE	BROKEN (10' STRIPE WITH 30' GAP)	4"	LANE LINES BETWEEN TRAVEL LANES IN THE SAME DIRECTION WHEN CHANGING OF LANES IS PERMITTED.
	WHITE	SOLID	4"	EDGE LINES TO DELINEATE THE RIGHT EDGE OF THE ROADWAY.
	WHITE	SOLID	6"	LEFT EDGE OF BICYCLE LANE AND LANE LINES BETWEEN TRAVEL LANES IN THE SAME DIRECTION WHERE CHANGING OF LANES IS DISCOURAGED.
	WHITE	SOLID	6", 24"	PERPENDICULAR CROSSWALK LINES.
	WHITE	SOLID	18"	STOP BARS AT INTERSECTIONS (SIGNALIZED AND UNSIGNALIZED).
	WHITE	SOLID	12", 24"	6" DIAGONAL HATCHING USED IN GORES BETWEEN SAME DIRECTION OF TRAVEL LANES.
	WHITE	GUIDE (2' STRIPE WITH 6' GAP)	6"	GUIDE LINES THROUGH INTERSECTIONS. TAPER LINES FOR TURN LANES. GUIDE LINES FOR BICYCLE LANES.
	YELLOW	SOLID	4"	EDGE LINES TO DELINEATE THE LEFT EDGE OF A DIVIDE ROADWAY OR A ONE-WAY ROAD.
	YELLOW	SOLID	12", 24"	6" DIAGONAL HATCHING USED IN GORES BETWEEN OPPOSING DIRECTION OF TRAVEL LANES.
	YELLOW	DOUBLE SOLID	4" - (4") - 4" (GAP)	CENTERLINE THAT SEPARATES OPPOSING TRAVEL LANES AND DELINEATION OF MEDIAN ISLANDS.
	YELLOW	DOUBLE BROKEN	4" - (4") - 4" (GAP)	DEFINES THE EDGES OF CENTER REVERSIBLE LANES THAT ARE USE AS TWLTLs DURING INTERMITTENT PERIODS.
	YELLOW	BROKEN (10' STRIPE WITH 30' GAP)	4"	SEPARATES TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN BOTH DIRECTIONS OF TRAVEL.
YIELD LINE	WHITE	TRIANGLE	12" X 18" 24" X 36"	IN DESIGNATED AREAS

NOTES:

- ALL LINES ARE 125 MIL THICK THERMOPLASTIC OR 3M 380 TAPE.
- ALL THERMOPLASTIC LINES AND PAVEMENT LEGENDS ARE 125 MIL THICK UNLESS OTHERWISE SHOWN.
- ALL HOT APPLIED THERMOPLASTIC MUST MEET TxDOT SPECIFICATION DMS-8220
- CROSSWALKS WITHIN TxDOT ROW SHALL FOLLOW TxDOT STANDARDS. COORDINATE WITH THE CITY OF DALLAS TRANSPORTATION FIELD OPERATIONS DEPARTMENT.

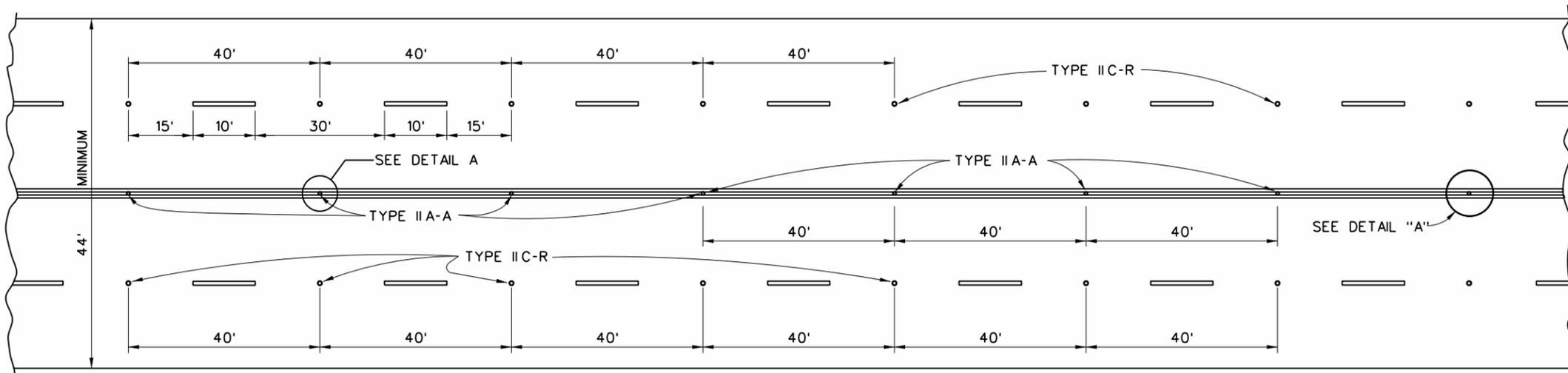
GENERAL NOTES:

- ALL MATERIAL AND WORK SHALL CONFORM TO THE LATEST EDITION OF CITY OF DALLAS STANDARDS 251D-1 AS AMENDED, CITY OF DALLAS DEPARTMENT OF TRANSPORTATION (DDOT) TRAFFIC SIGNS STANDARDS AND TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) STANDARD PLANS; UNLESS OTHERWISE APPROVED BY THE CITY.
- ALL TRAFFIC STRIPES, PAVEMENT MARKINGS, AND SIGNS SHALL BE REFLECTORIZED AND IN STANDARD SIZE AS ACCORDING TO TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
- THE CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPES, PAVEMENT MARKINGS, AND RAISED PAVEMENT MARKERS IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER. WORD OR SYMBOL PAVEMENT MARKINGS SHALL BE REMOVED BY SANDBLASTING OR GRINDING A RECTANGULAR AREA COVERING THE WHOLE MARKING.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRAFFIC STRIPES, RAISED PAVEMENT MARKERS (RPMS), CERAMIC BUTTONS, PAVEMENT MARKINGS, TRAFFIC CALMING DEVICES AND SIGNS IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.
- ALL PAVEMENT MARKINGS INCLUDING CROSSWALKS, LIMIT LINES, AND STOP BARS SHALL BE APPLIED WITH THERMOPLASTIC MATERIAL.
- ALL RPMS AND CERAMIC BUTTONS SHALL BE INSTALLED WITHIN SEVEN WORKING DAYS OF ROADWAY STRIPING. ALL EXISTING RPMS AND CERAMIC BUTTONS WITHIN THE PROJECT AREA SHALL BE REPLACED IN KIND OR REMOVED IN ACCORDANCE WITH THE PLANS, OR AS DIRECTED BY THE ENGINEER. ALL EXISTING CAST IRON BUTTONS SHALL BE REMOVED AND NOT REPLACED.
- THE CONTRACTOR SHALL REPLACE ALL SIGNING WITHIN PROJECT LIMITS DAMAGED OR ALTERED BY THE PROJECT, AS DETERMINED BY THE DDOT PAVEMENT MARKING SECTION REPRESENTATIVE.



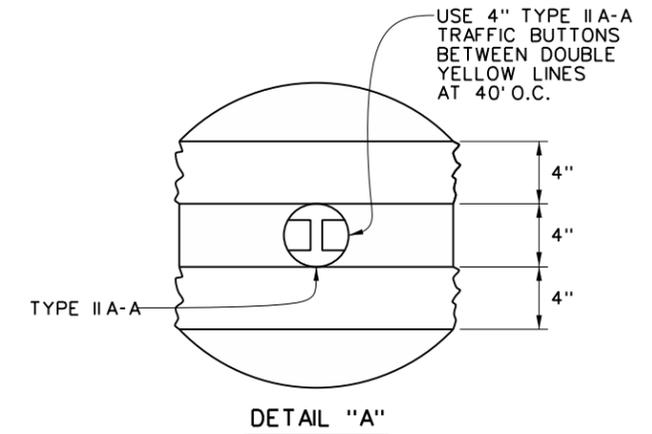
INDIVIDUAL UNIT TRAFFIC BUTTON TYPE II-C-R RED FACE TOWARD WRONG WAY TRAFFIC SHALL BE SPACED ON 40' CENTERS.

LANE LINES FOR DIVIDED THOROUGHFARE

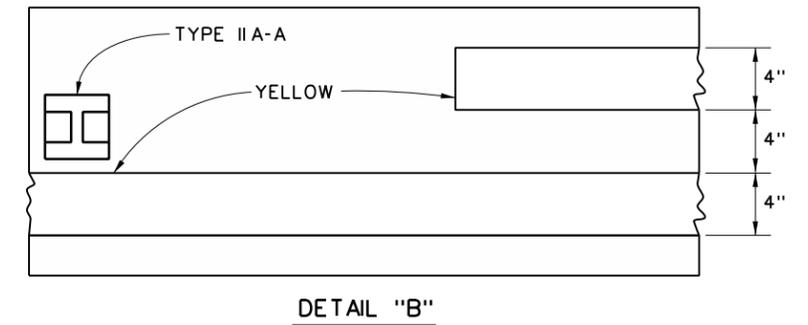
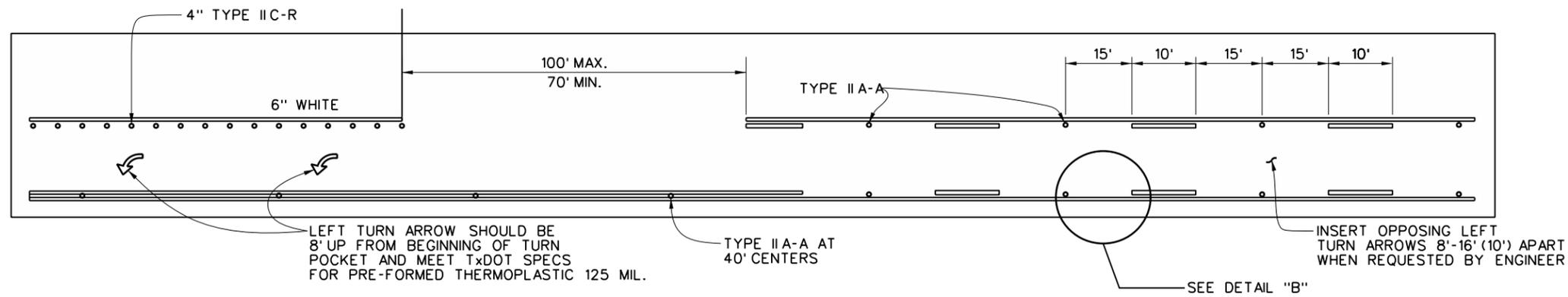


INDIVIDUAL UNIT TRAFFIC BUTTON 4" TYPE II-C-R TOWARD NORMAL TRAFFIC SHALL BE PLACED ON 40' CENTERS.

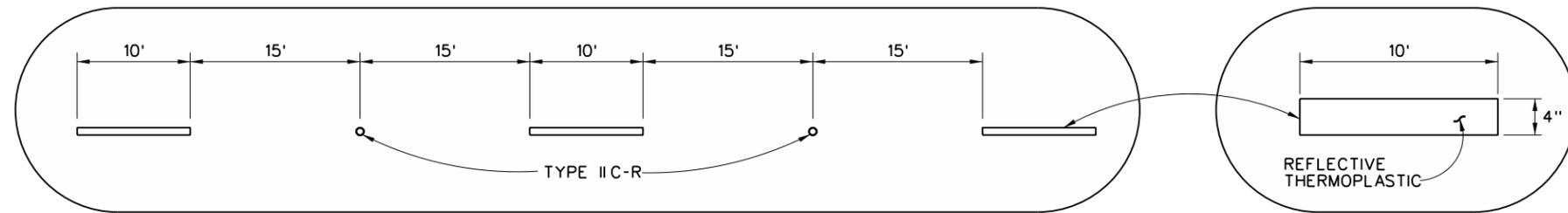
LANE LINES AND CENTER LINES FOR UNDIVIDED MINOR ARTERIALS (44' OR MORE IN WIDTH)



<b>TYPICAL PAVEMENT MARKINGS</b>	
LANE LINES AND CENTER LINES	
FOR CITY STREETS	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 5001

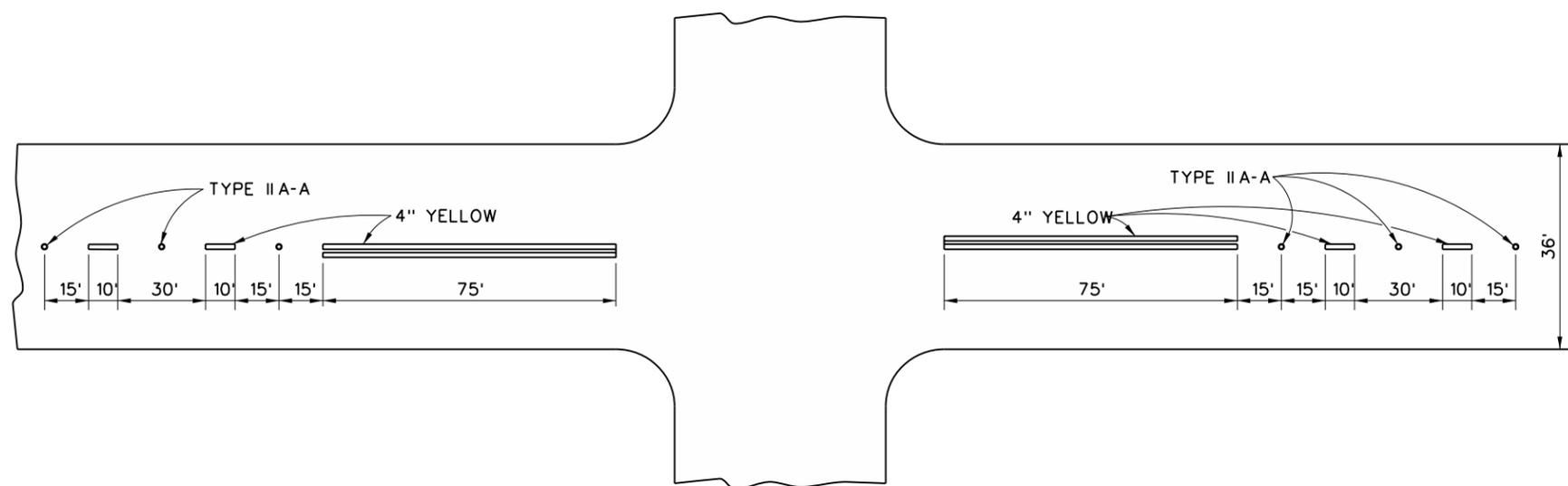


CONTINUOUS LEFT TURN LANE MARKINGS



NOTE:  
TRAFFIC BUTTONS 4" TYPE II C-R SHALL BE SPACED ON 40' CENTERS WITH A CLEAR FACE TOWARD NORMAL TRAFFIC AND THE RED FACE TOWARD WRONG WAY TRAFFIC.

TRAFFIC LANE LINE MARKINGS (TYPICAL)

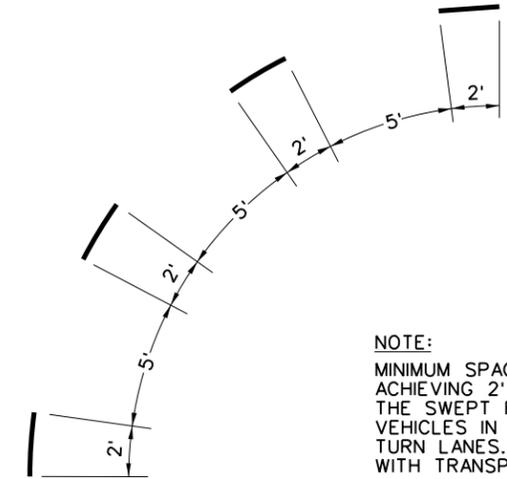
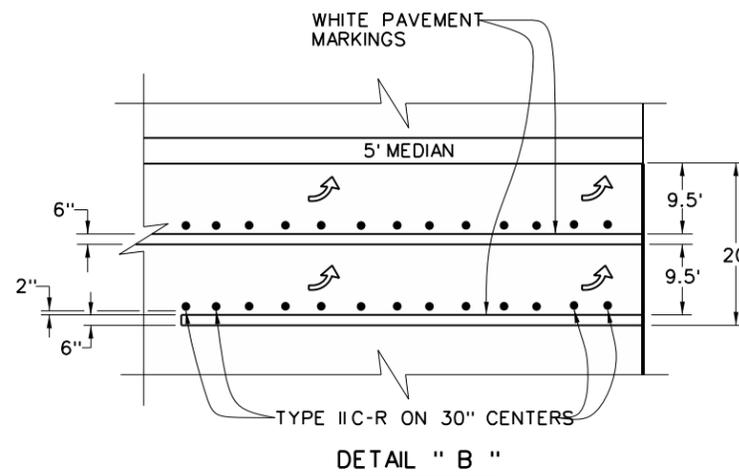
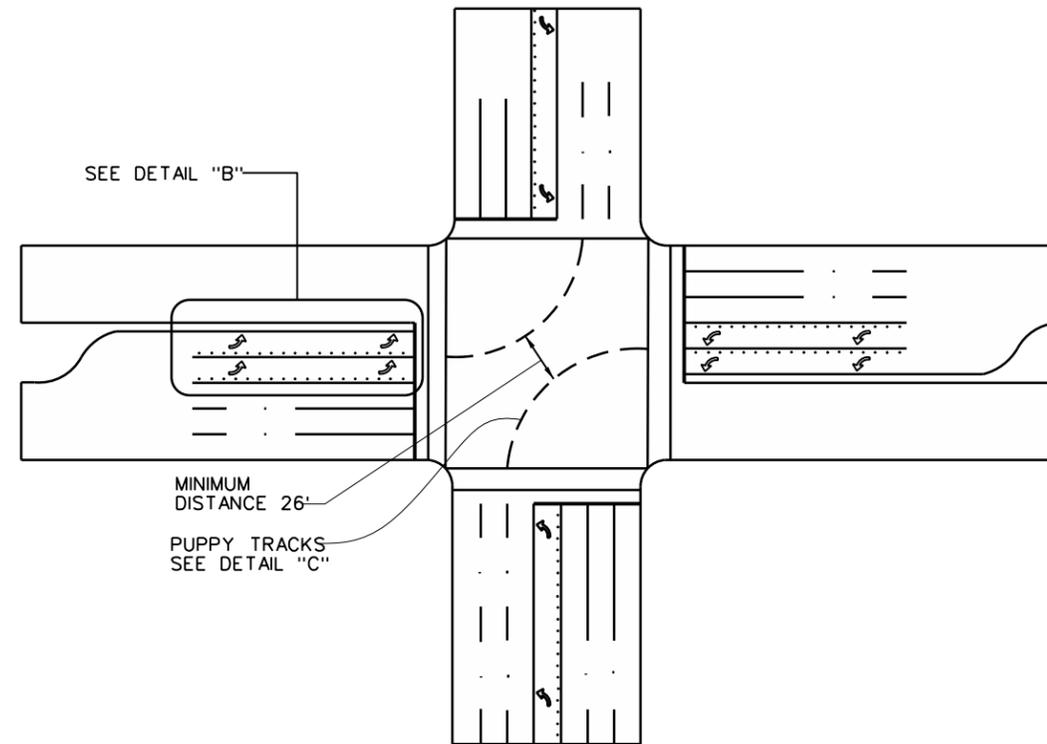


PAVEMENT MARKINGS 36' LOCAL AND COLLECTOR STREETS

<b>TYPICAL PAVEMENT MARKINGS</b>	
LANE LINES AND CENTER LINES	
FOR CITY STREETS	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 5001A

**NOTES:**

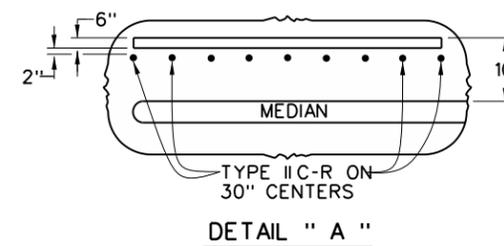
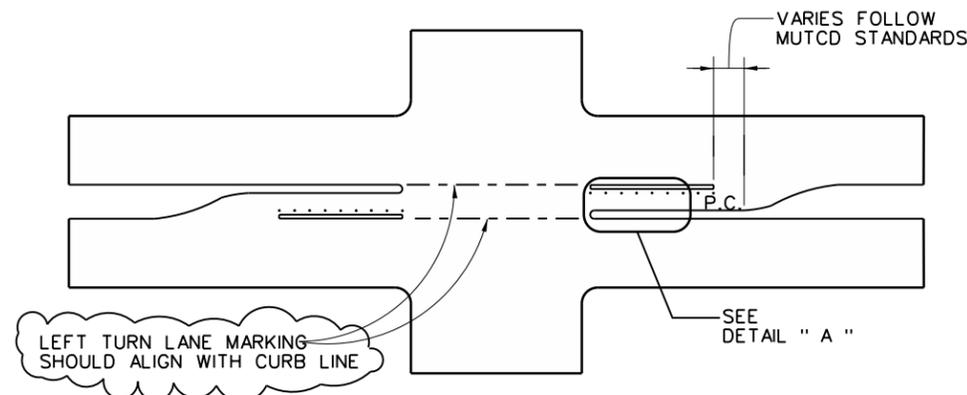
1. ALL ARROWS IN A TURN POCKET ARE 8' UP FROM BEGINNING OF A TURN POCKET. WHEN THERE ARE TWO ARROWS IN A TURN POCKET THEN ONE IS 8' FROM BEGINNING OF TURN POCKET AND THE SECOND IS 8' BACK FROM THE END OF THE TURN POCKET. A TURN POCKET WITH 80' OR LESS ONE LEFT ARROW. A TURN POCKET WITH 100' PLUS TWO ARROWS AND ADD ONE ARROW EVERY 100'.
2. LEFT TURN ARROW PLACEMENTS ARE SUBJECT TO DISCRETION OF THE ENGINEER.



**NOTE:**  
MINIMUM SPACING SHOULD BE BASED ON ACHIEVING 2' CLEARANCE BETWEEN THE SWEEP PATH FOR THE DESIGN VEHICLES IN THE OUTSIDE (2ND) LEFT TURN LANES. PLEASE COORDINATE WITH TRANSPORTATION DEPARTMENT.

**DETAIL " C "**

**TYPICAL "PUPPY TRACK" PAVEMENT MARKING LAYOUT**



**DETAIL " A "**

**STANDARD LEFT TURN LANE MARKINGS**

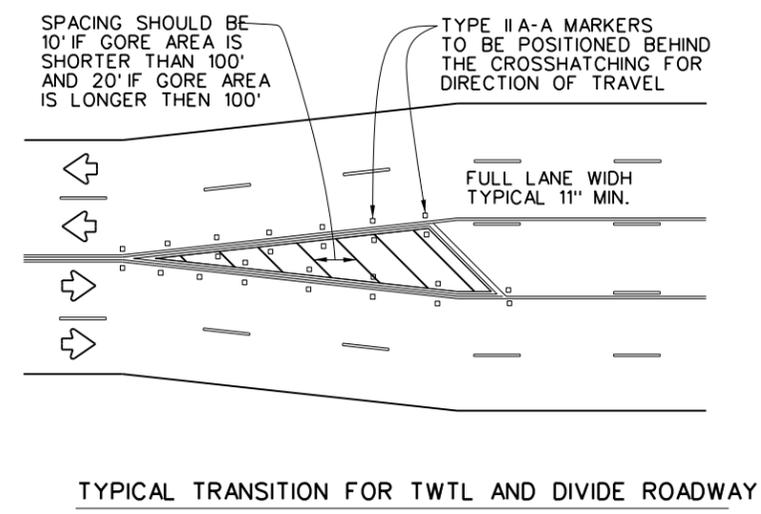
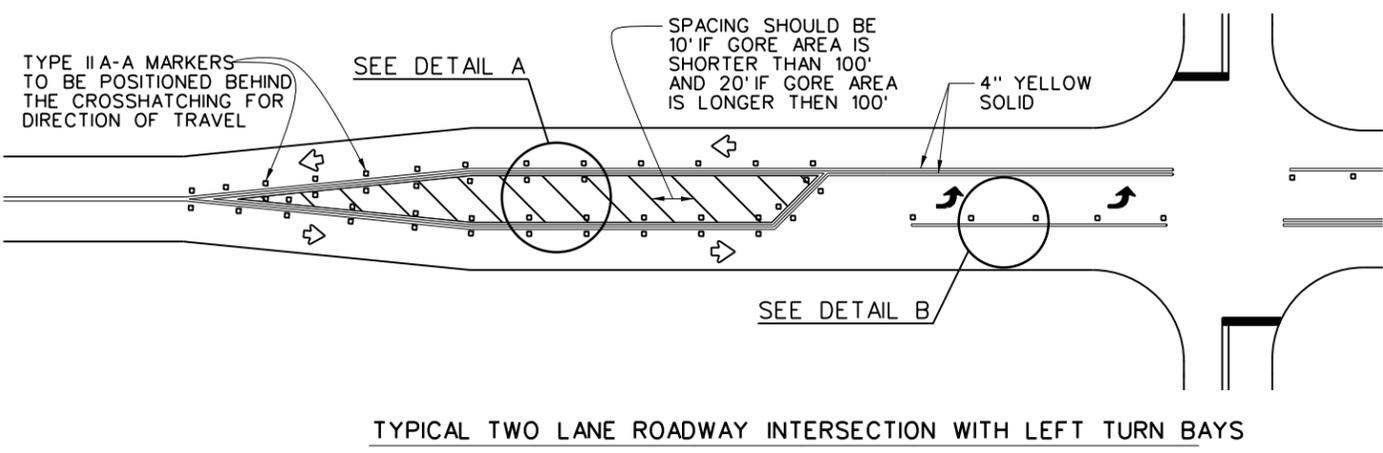
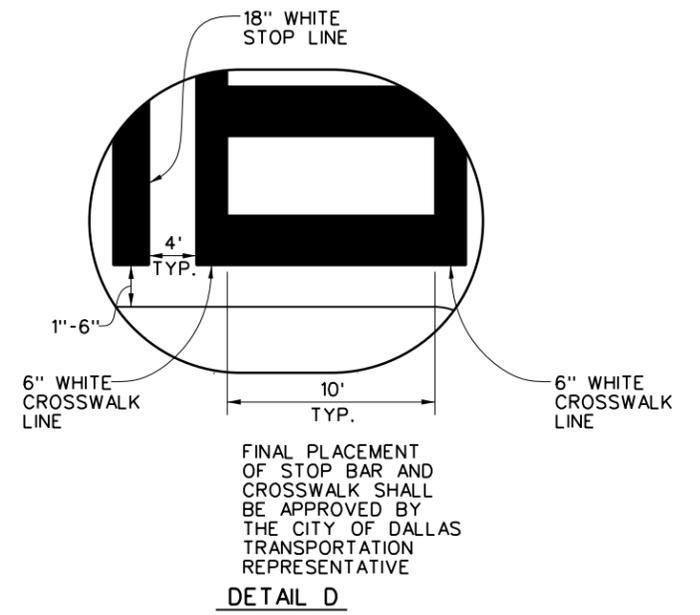
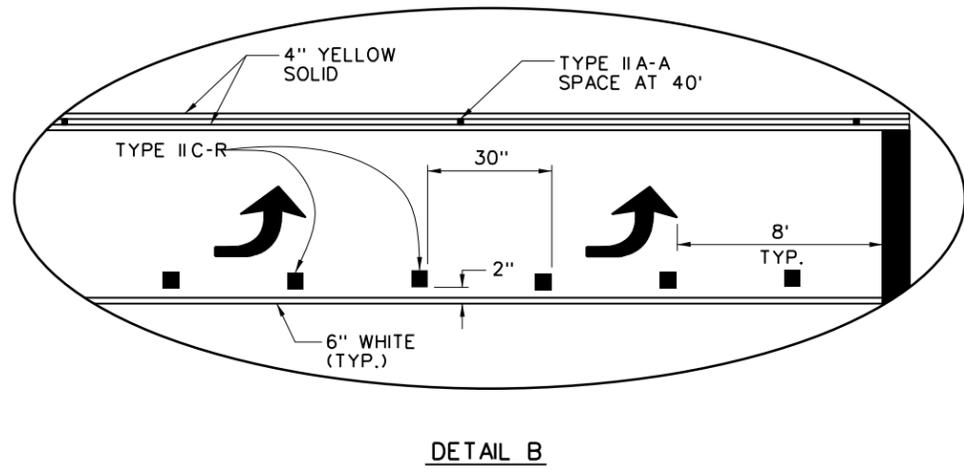
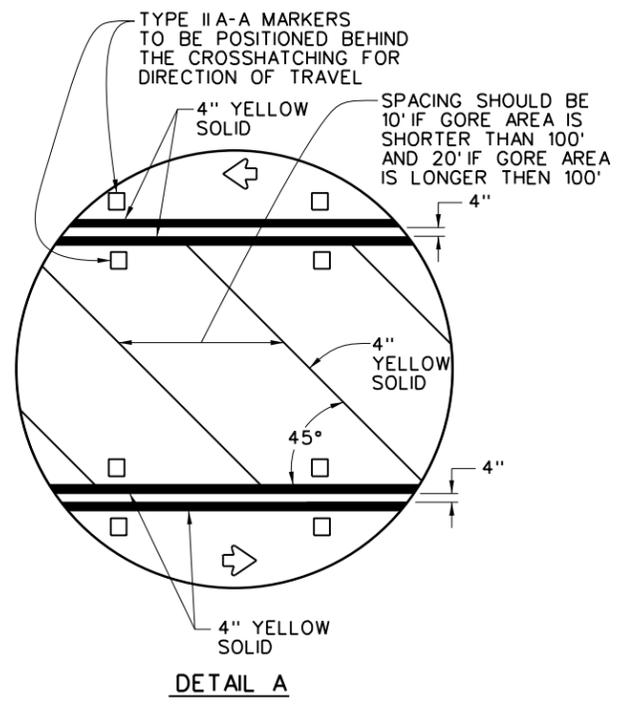
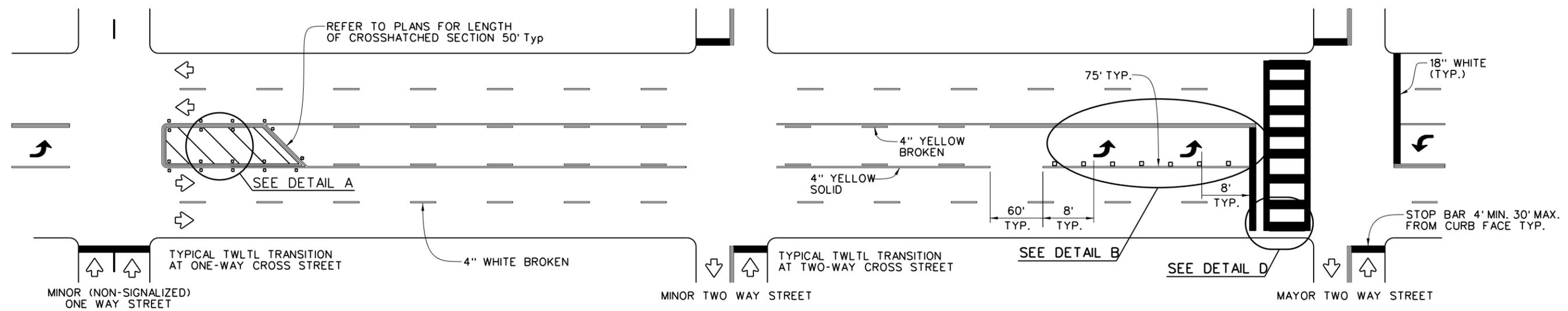
**TYPICAL PAVEMENT MARKINGS**

LEFT TURN LANES

DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

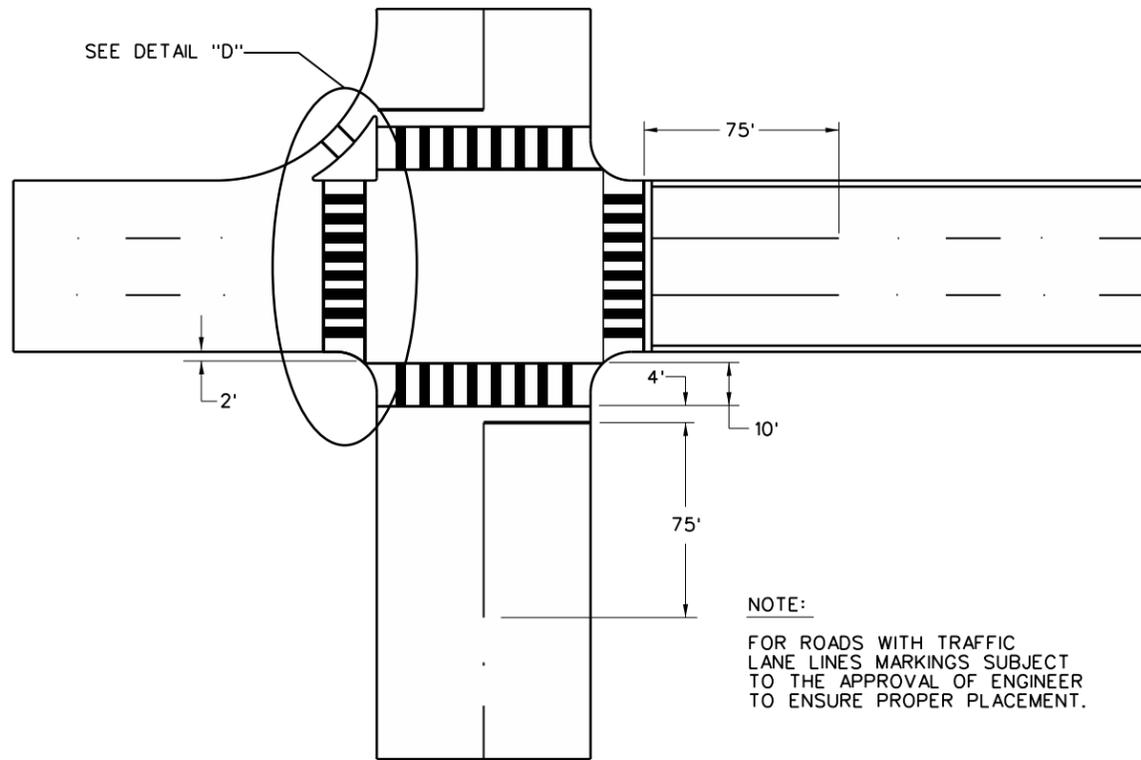
DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
5002



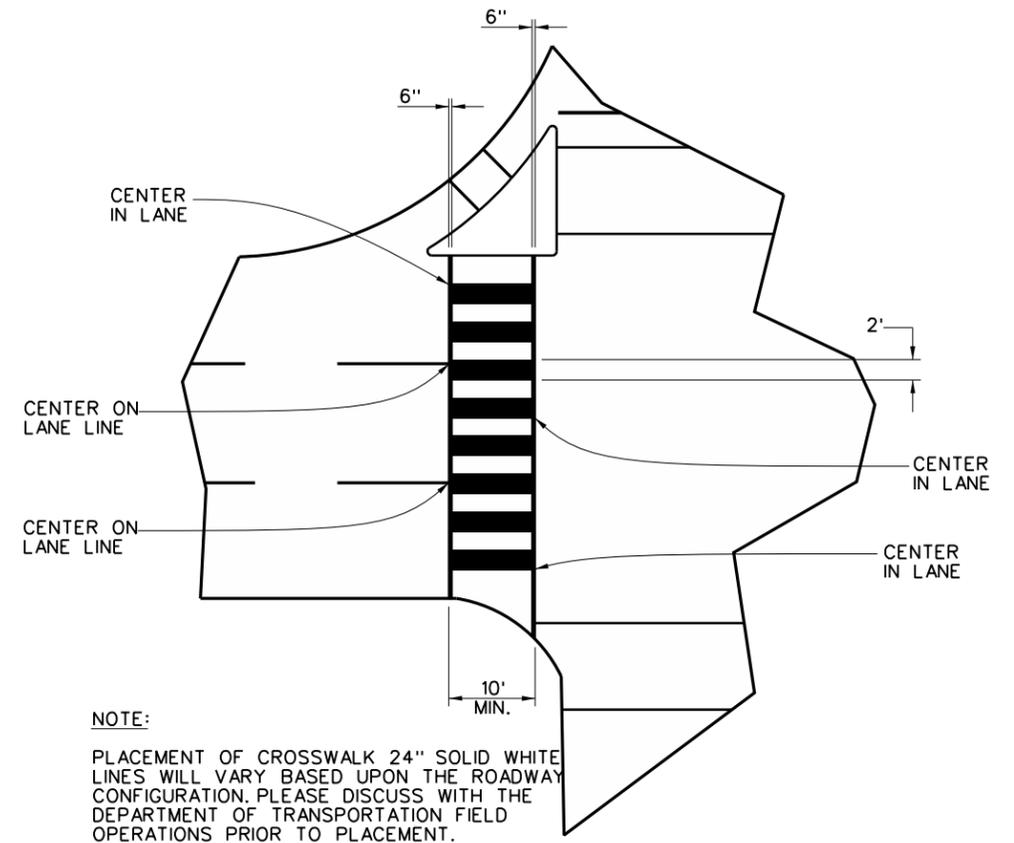
- GENERAL NOTES:**
1. REFER ELSEWHERE IN PLANS FOR ADDITIONAL RPM PLACEMENT AND DETAILS.
  2. DETAILS FOR WORDS AND ARROWS AS SHOWN ON OTHER SHEETS.
  3. ALL PAVEMENT MARKING MATERIALS SHALL MEET THE REQUIRED DEPARTMENTAL MATERIAL SPECIFICATIONS AND TxDOT STANDARDS SPECIFICATIONS.
  4. OTHER CROSSWALK PATTERNS AS SHOWN IN THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" MAY BE USE.
- SPECIFICATION REFERENCE TABLE  
MATERIAL ESPECIFICATIONS**
- |                                    |                                  |
|------------------------------------|----------------------------------|
| PAVEMENT MARKERS (REFLECT.)        | DMS-4200 MODEL C80 OR EQUIVALENT |
| EPOXY                              | DMS-6100                         |
| BITUMINOUS ADHESIVE FOR PAVE. MKS. | DMS-6130                         |

TYPICAL PAVEMENT MARKINGS	
TWO-WAY LEFT TURN LANE (TWLTL) AND GORE AREAS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 5003



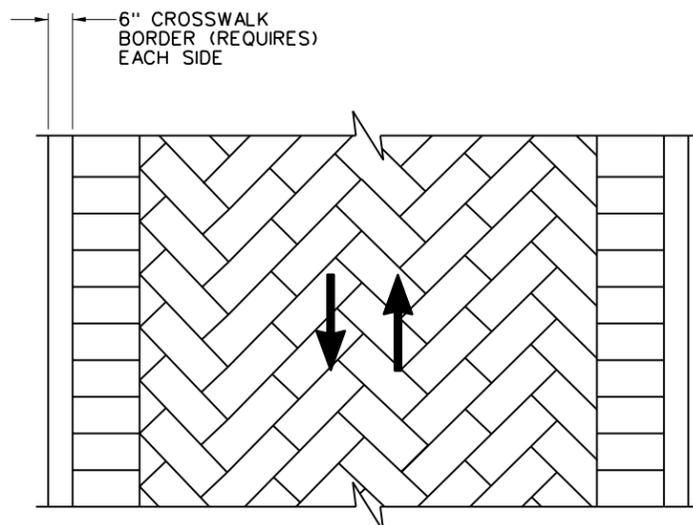
NOTE:  
FOR ROADS WITH TRAFFIC  
LANE LINES MARKINGS SUBJECT  
TO THE APPROVAL OF ENGINEER  
TO ENSURE PROPER PLACEMENT.

TYPICAL CROSSWALK LAYOUT



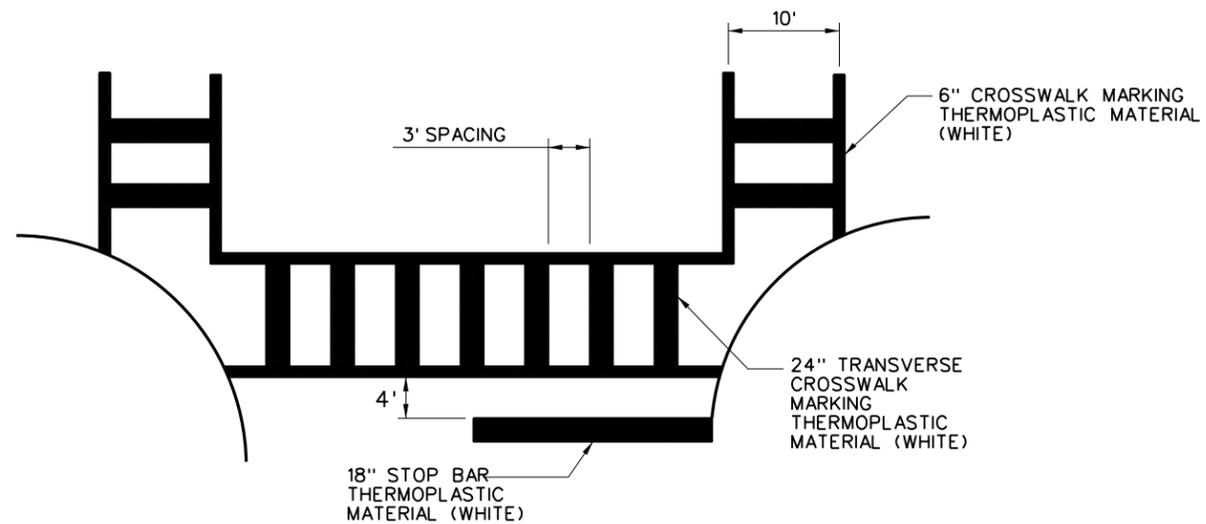
NOTE:  
PLACEMENT OF CROSSWALK 24" SOLID WHITE  
LINES WILL VARY BASED UPON THE ROADWAY  
CONFIGURATION. PLEASE DISCUSS WITH THE  
DEPARTMENT OF TRANSPORTATION FIELD  
OPERATIONS PRIOR TO PLACEMENT.

DETAIL D



NOTE:  
DECORATIVE CROSSWALK COLOR AND PATTERNS  
SHALL BE APPROVED BY THE DEPARTMENT OF  
TRANSPORTATION PRIOR TO INSTALLATION.

DECORATIVE CROSSWALK



NOTE:  
FOR ROADS WITHOUT TRAFFIC  
LANE LINES MARKINGS.

CROSSWALK DETAIL

TYPICAL PAVEMENT MARKINGS

CROSSWALK DETAILS

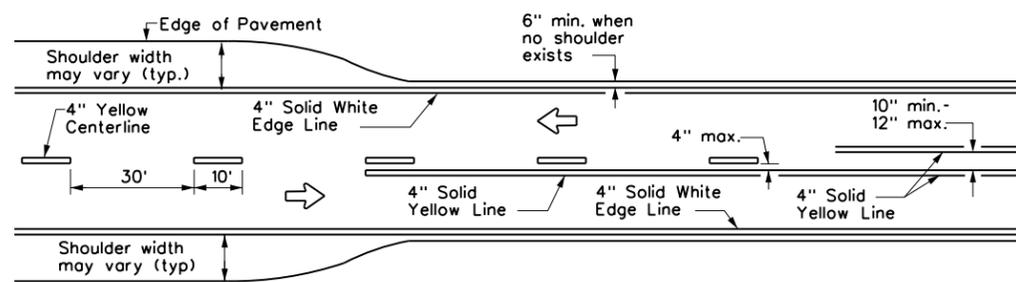
DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

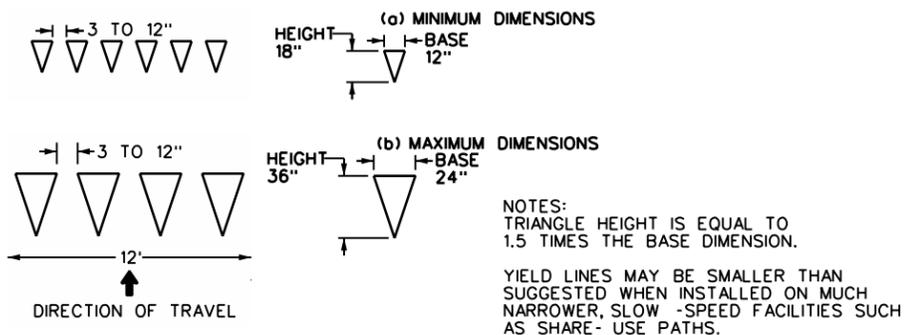
SHEET No.  
5004

**GENERAL NOTES**

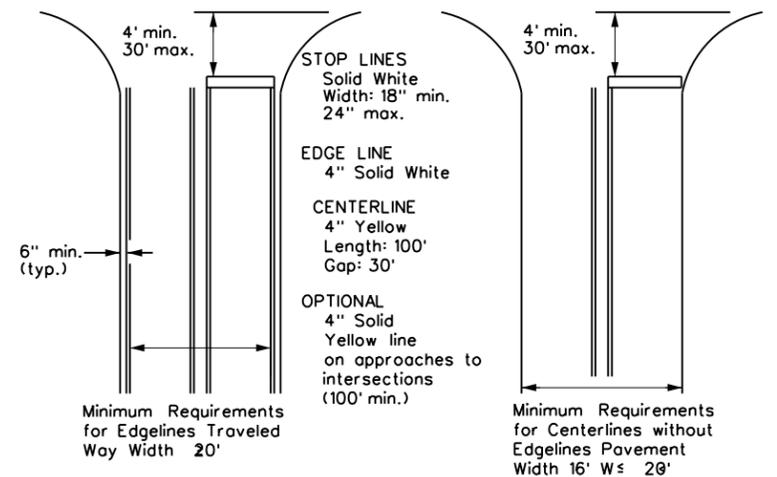
1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the inside of edgeline of a two lane roadway.
3. All pavement marking materials shall follow the latest TxDOT materials specifications and/or guidance from the engineer.



**TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS**

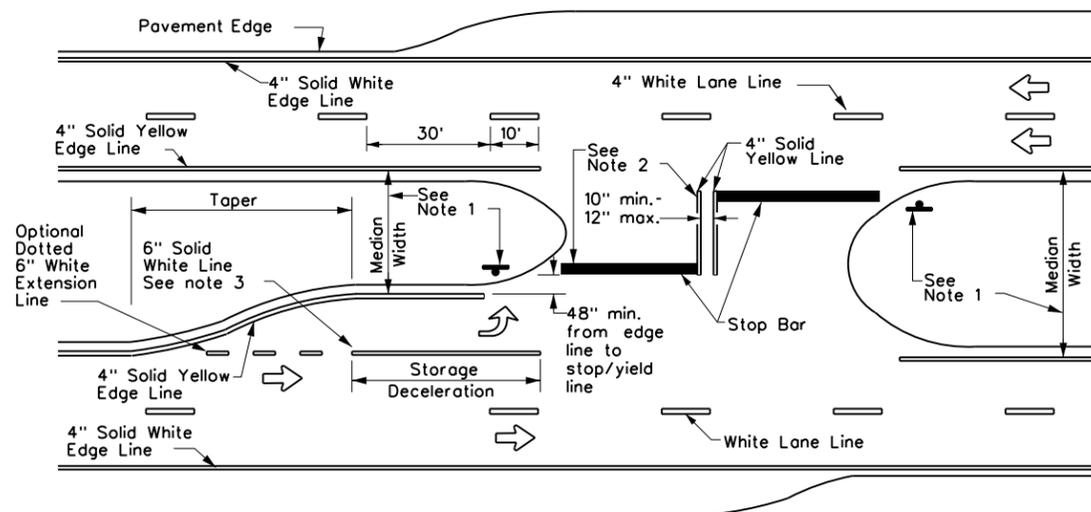


**YIELD LINES**



**GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE**

Based on Traveled Way and Pavement Widths for Undivided Highways



**FOUR LANE DIVIDED ROADWAY CROSSOVERS**

**NOTES**

1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. stop sign are the typical intersection control.
2. Install median striping (double yellow centerlines and stop bars when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

**TYPICAL PAVEMENT MARKINGS**

EDGE LINES, CENTER LINES AND LANE LINES FOR TWO-LANE & MULTI-LANE ROADWAYS

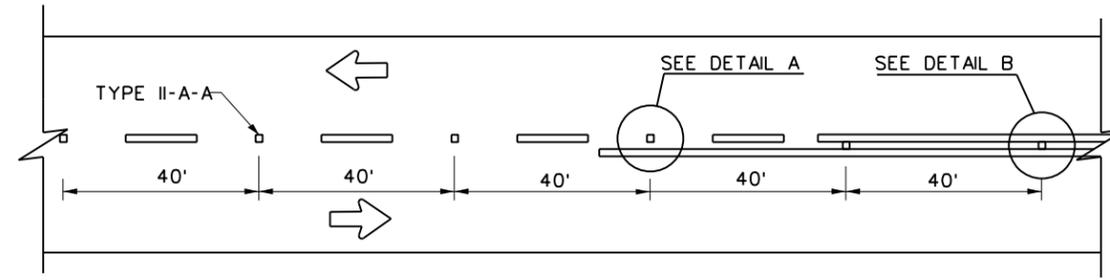


DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

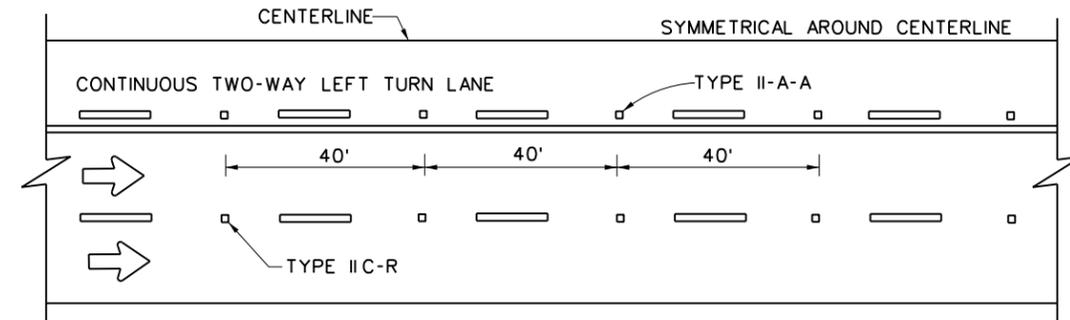
SHEET No.  
5005

**GENERAL NOTES:**

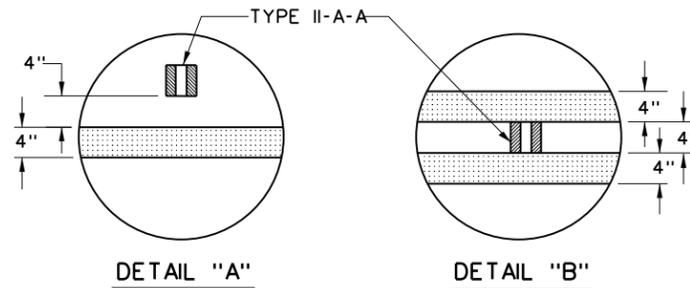
1. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
2. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
3. ALL PAVEMENT MARKING MATERIALS SHALL MEET THE REQUIRED DEPARTMENTAL MATERIAL SPECIFICATIONS AS SPECIFIED BY THE PLANS.
4. RPM SHOULD NOT BE PLACED OVER LONGITUDINAL OR TRANSVERSE JOINTS OF THE PAVEMENT SURFACE.



**CENTERLINE FOR ALL TWO LANE ROADWAYS**

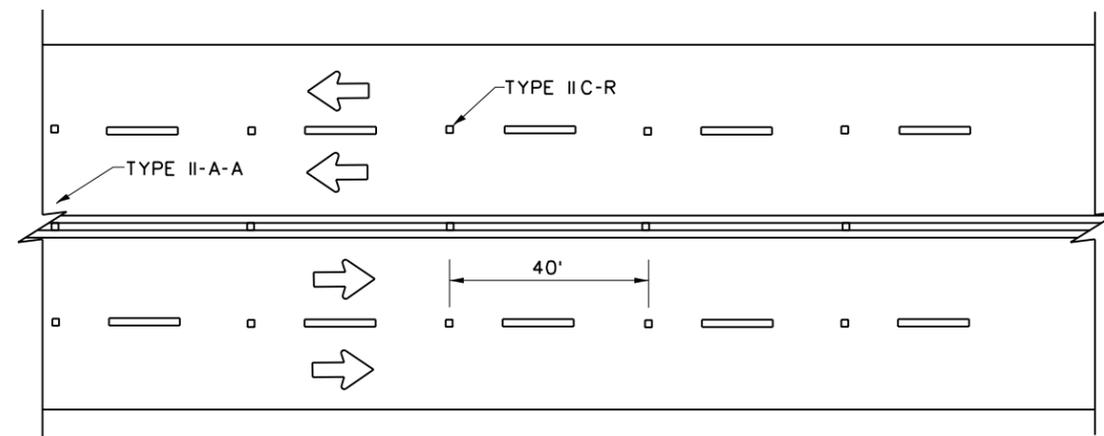


**CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE**



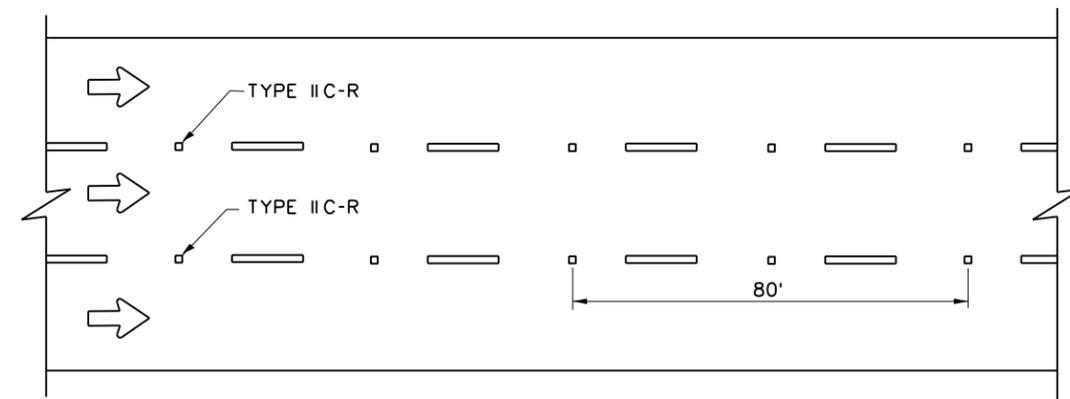
**DETAIL "A"**

**DETAIL "B"**



**CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS**

RAISED PAVEMENT MARKERS TYPE II-C-R, CLEAR FACE TOWARD NORMAL TRAFFIC, SHALL BE PLACED ON 40-FOOT CENTERS.



**LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)**

RAISED PAVEMENT MARKERS TYPE II-C-R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG-WAY TRAFFIC.

**REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE**

**TYPICAL PAVEMENT MARKINGS**

**POSITION GUIDANCE USING RAISED MARKERS**

DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

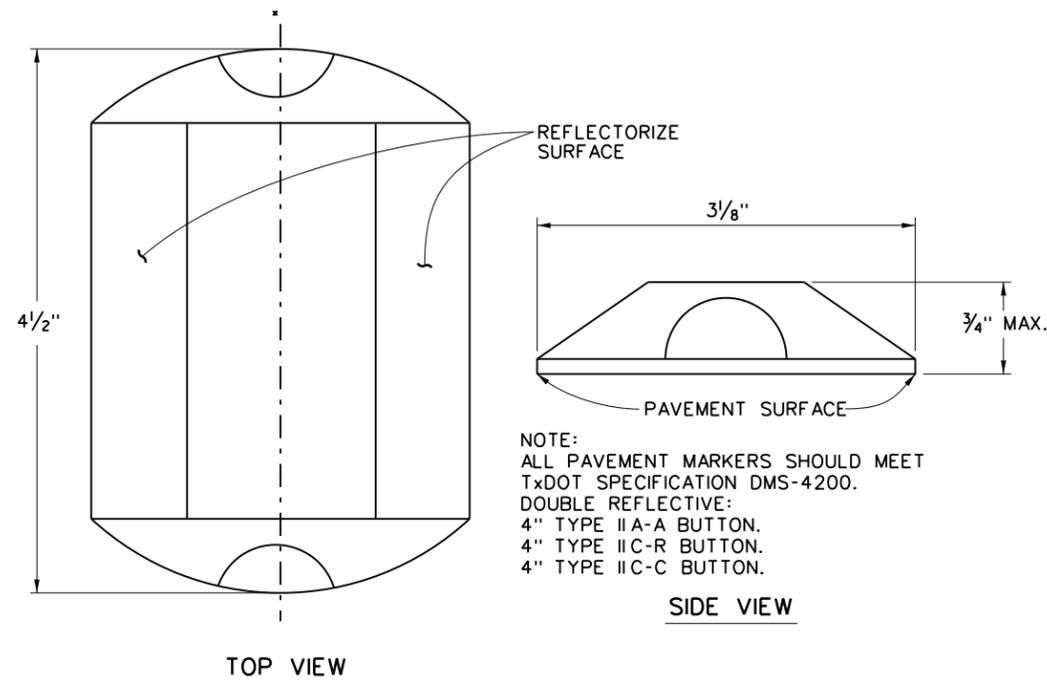
SHEET No.  
5006

**GENERAL NOTES:**

1. THE PAVEMENT UPON WHICH THE LANE AND CHANNEL MARKERS. TILE ARE TO BE PLACED SHALL BE PREPARED SUBJECT TO THE APPROVAL OF THE ENGINEER TO INSURE PROPER CLEANING OF THE PAVEMENT SURFACE.
2. RPM'S SHALL BE BONDED TO THE ROADWAY SURFACE WITH TWO PART EPOXY OR FLEXIBLE BITUMEN. BITUMEN SHOULD MEET TxDOT SPECIFICATIONS DMS-6100.
3. MARKERS SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY. THEY ARE NOT INTENDED TO SPECIFY ANY PARTICULAR PRODUCT.
4. THE CITY OF DALLAS REQUIRES MARKERS TO BE MODEL C80 OR 3M SERIES 290.
5. DETAILS FOR MARKERS PLACEMENT FOR MEDIAN NOSES CAN BE FOUND ON SHEET No. 1002 AND No. 1002A

**DESCRIPTION AND APPLICATION OF REFLECTIVE RAISED PAVEMENT MARKERS (RPM-4")**

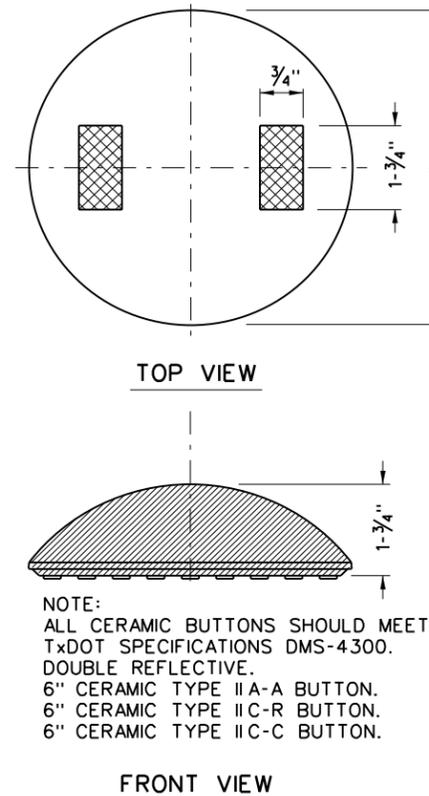
RRPM TYPES	COLOR	TYPE	DESCRIPTION
C-C	CLEAR & CLEAR	TYPE IIC-C	APPROACH FACE THAT REFLECTS WHITE LIGHT, AND THE OTHER SIDE DOES NOT REFLECT.
C-R	CLEAR & RED	TYPE IIC-R	APPROACH FACE THAT REFLECTS WHITE LIGHT, AND THE OTHER SIDE REFLECTS RED LIGHT.
A-A	AMBER & AMBER	TYPE IIA-A	APPROACH FACE AND THE OTHER SIDE BOTH REFLECT AMBER LIGHT.



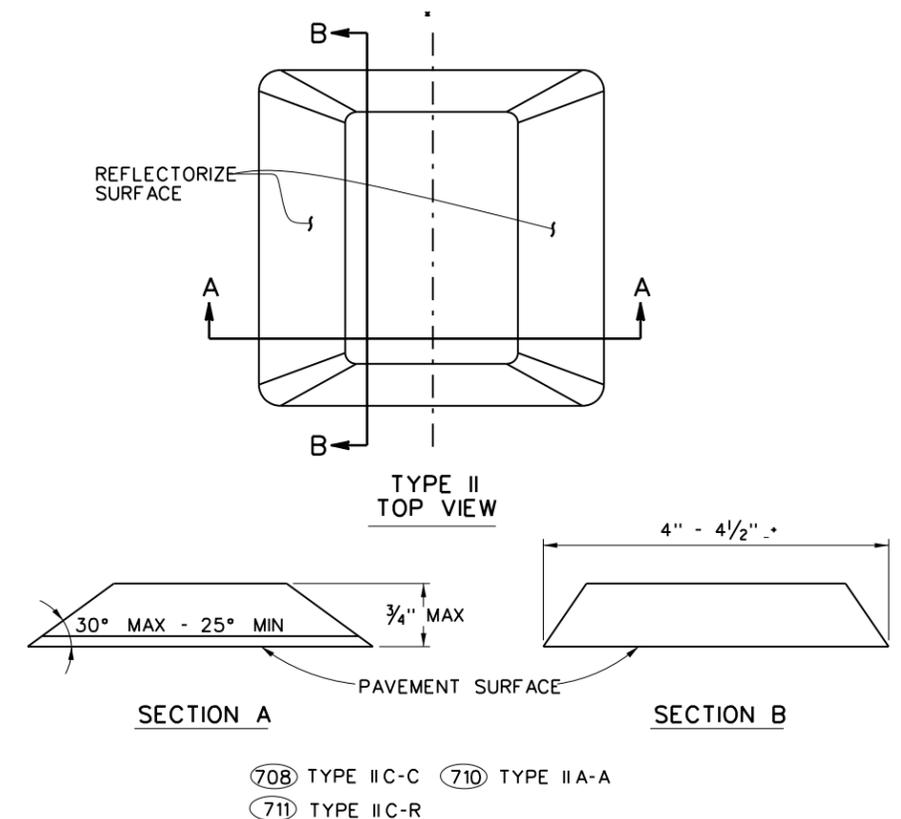
**DESCRIPTION OF MARKERS:**

- DOUBLE REFLECTIVE:  
 4" TYPE IIA-A BUTTON - YELLOW / YELLOW REFLECTORS.  
 4" TYPE IIC-R BUTTON - WHITE / RED REFLECTORS.  
 4" TYPE IIC-C BUTTON - WHITE / WHITE REFLECTORS.

**PAVEMENT LANE MARKERS**  
(REFLECTORIZED)



**6" CERAMIC CHANNEL MARKERS**



**PAVEMENT LANE MARKERS**  
(REFLECTORIZED)

**TYPICAL PAVEMENT MARKINGS**

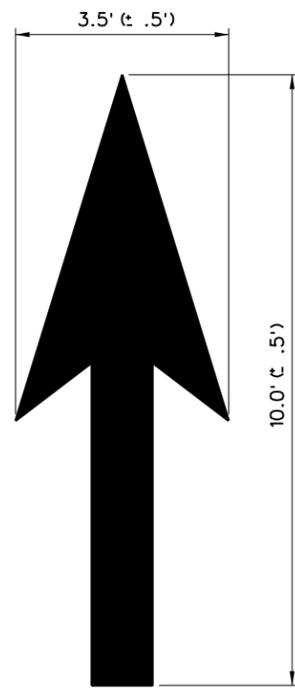
INDIVIDUAL UNIT PAVEMENT MARKINGS  
REFLECTIVE PAVEMENT MARKERS,  
CERAMIC TRAFFIC BUTTONS



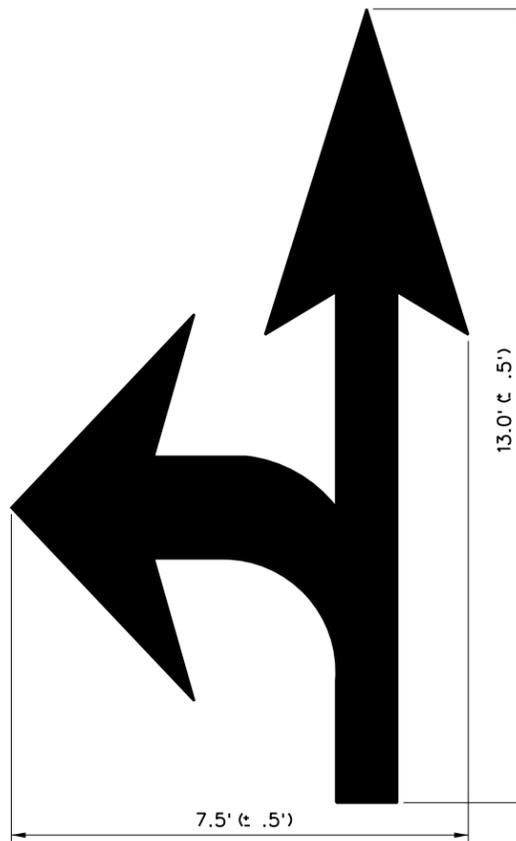
DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

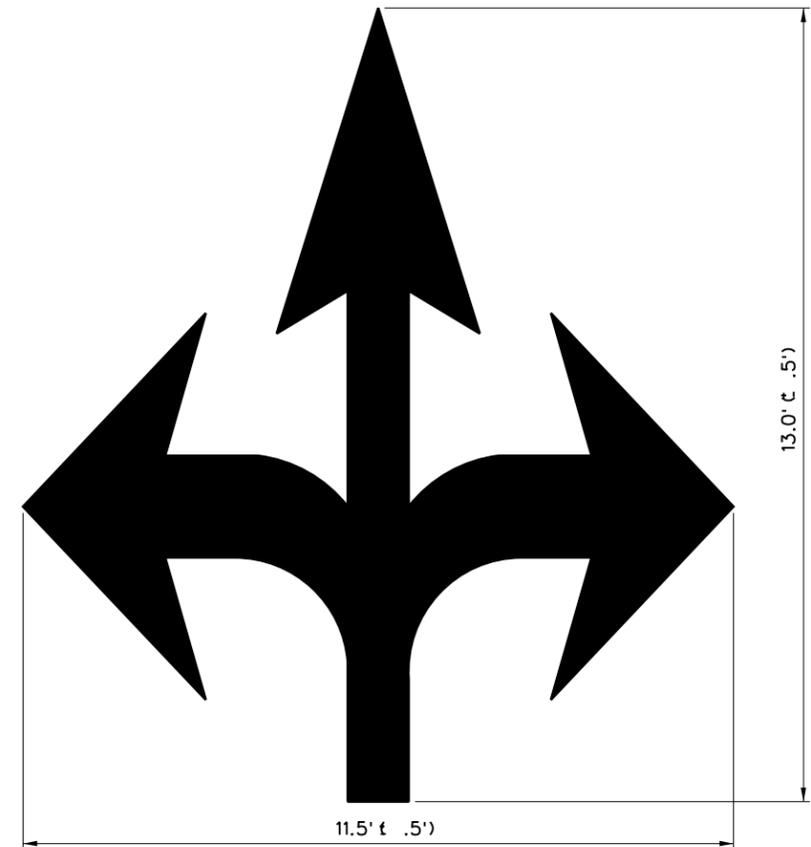
SHEET No.  
5007



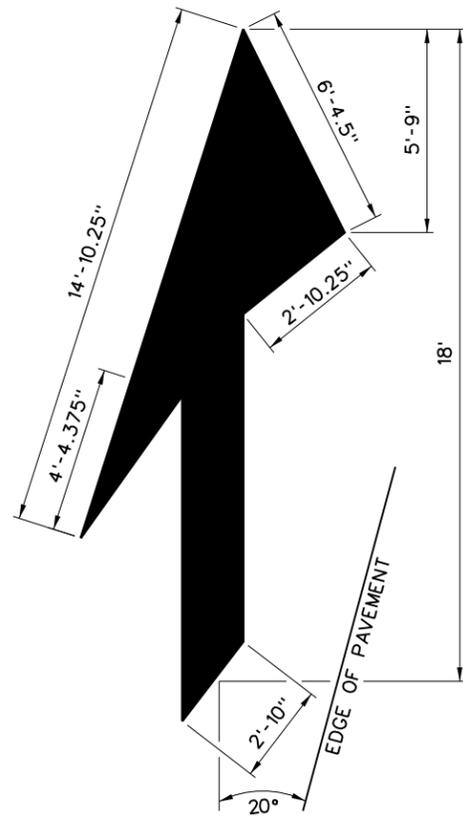
THROUGH LANE ARROW



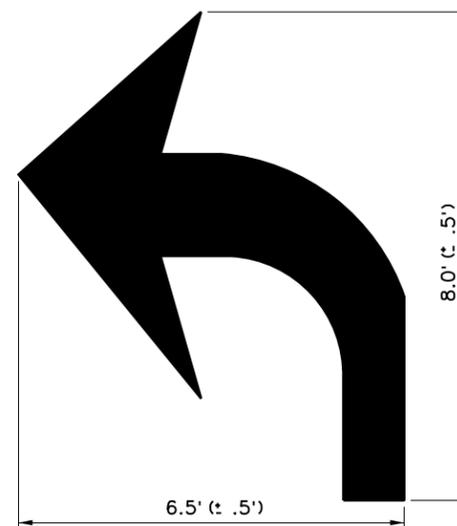
TURN AND THROUGH LANE ARROW



LEFT- RIGHT TURN AND THROUGH LANE ARROW



18' LANE DROP ARROW (RIGHT)  
FOR LEFT LANE, USE MIRROR IMAGE



TURN LANE ARROW

ELONGATED ARROWS FOR PAVEMENT MARKINGS

ALL ARROWS OR LEGENDS ARE TO BE  
125 MIL PRE-FORMEND THERMOPLASTIC.

TYPICAL PAVEMENT MARKINGS

INDIVIDUAL UNIT PAVEMENT MARKINGS

LANE DESIGNATION ARROWS



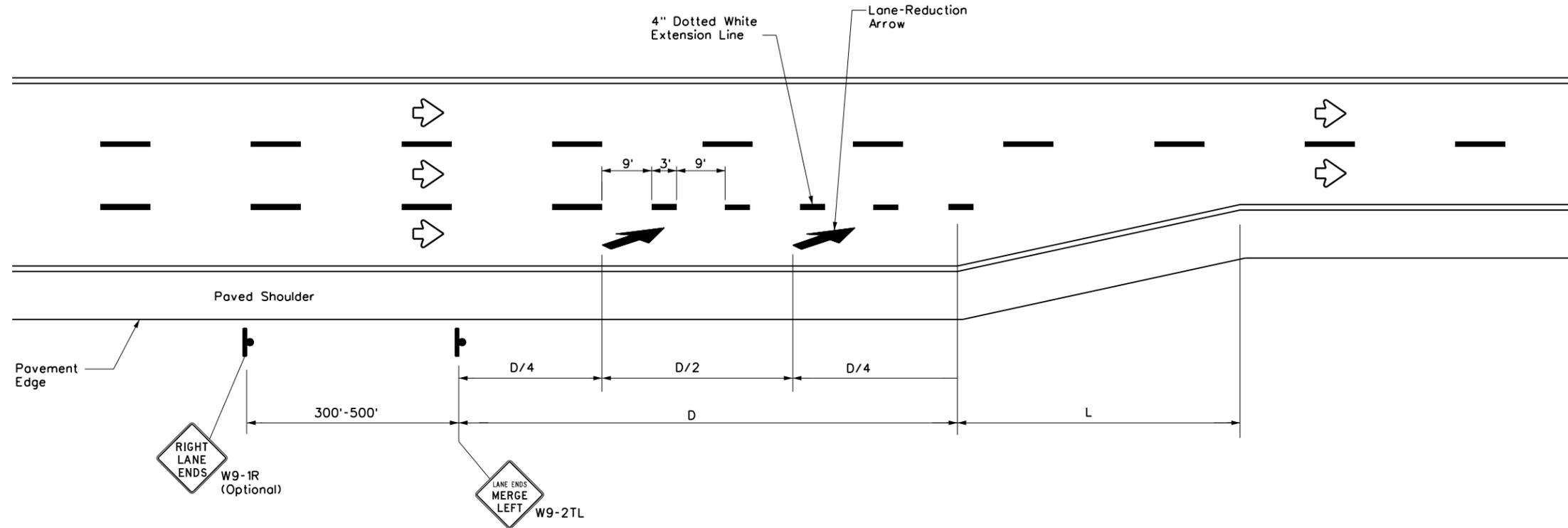
DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
5008

**GENERAL NOTES**

1. Lane and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas and TMUTCD.
2. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.



**NOTES:**

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional W9-1R "RIGHT LANE ENDS" sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

Posted Speed	D (ft)	L (ft)
30 MPH	460	$\frac{L \cdot WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L = WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

LANE REDUCTION

**TYPICAL PAVEMENT MARKINGS**

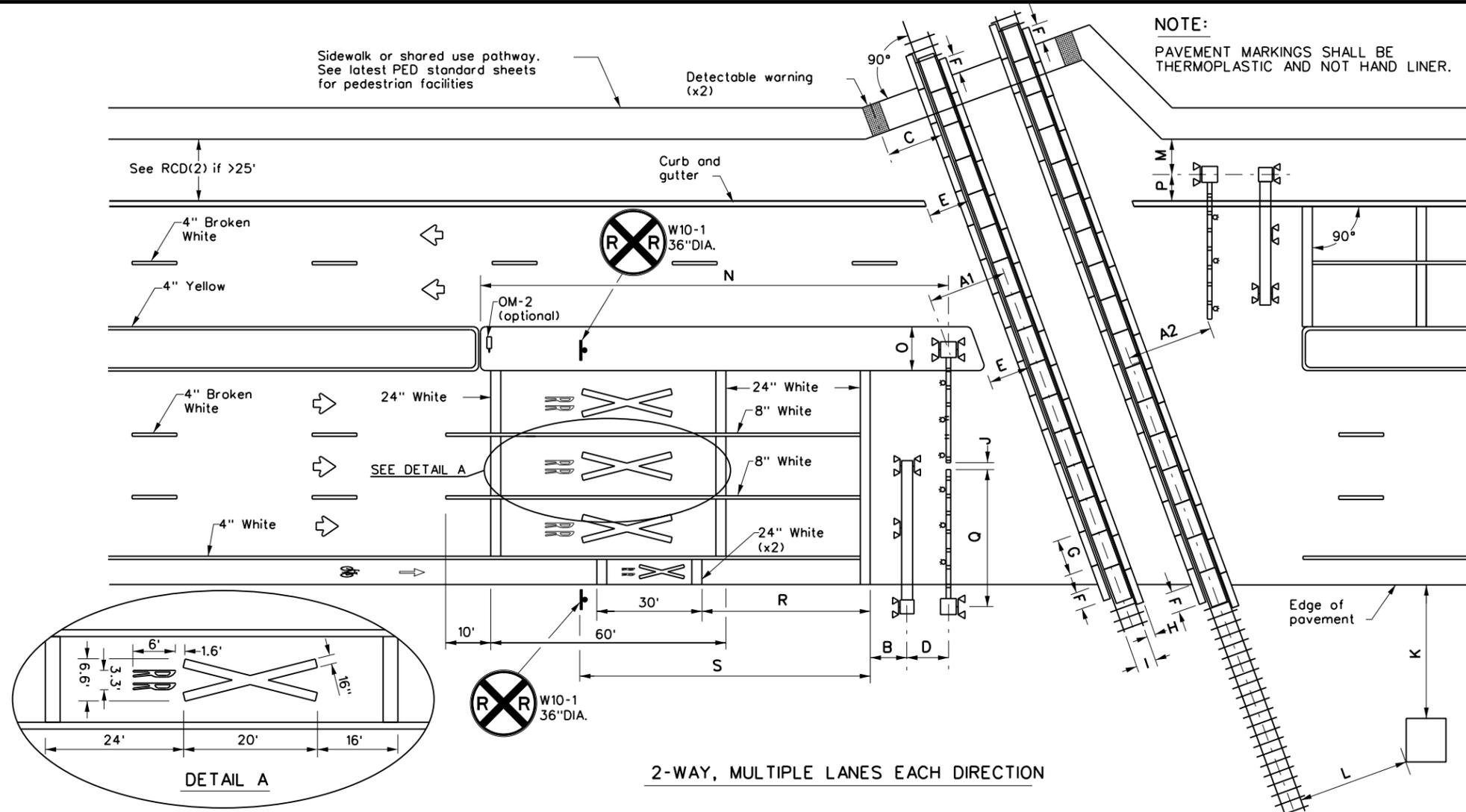
LANE REDUCTION TRANSITION



DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

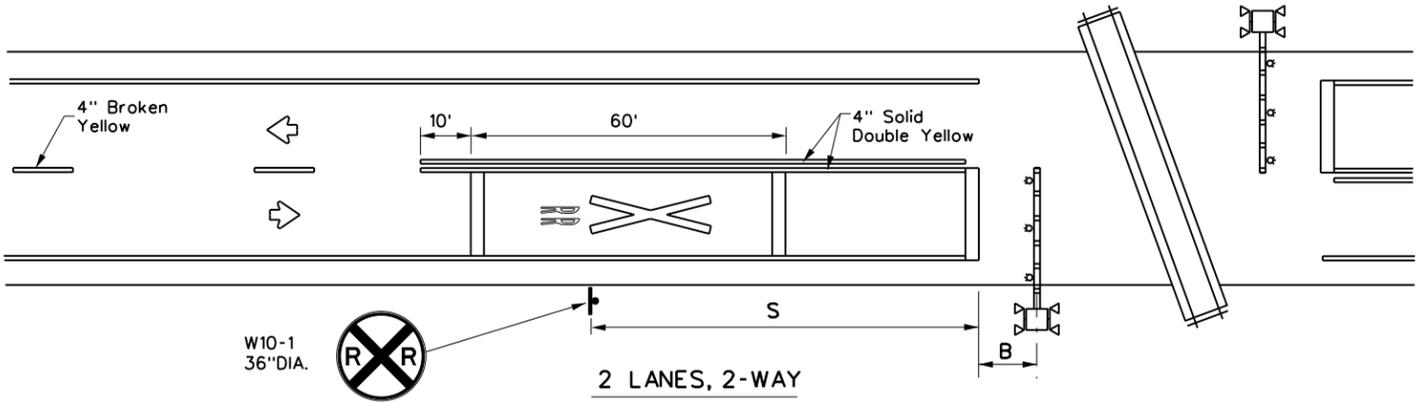
DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

SHEET No.  
5009



- NOTES:**
- A1: Center of RR mast to center of rail: 12' minimum, 15' typical.
  - A2: Tip of gate to center of rail: 12' minimum, 15' typical.
  - B: Center of mast (cantilever, gate, or mast flasher) of nearest active traffic control device to stop line: 8' (NOTE: Stop line may be moved as needed, but should be at least 8' back from gates, if present).
  - C: Center of detectable warning device to nearest rail: 6' minimum
  - D: Center of gate mast to center of cantilever mast: 6' typical. NOTE: Cantilever may be located in front or behind gates.
  - E: Edge of median or curb to nearest rail: 10' typical. NOTE: Design median edge to be parallel with rail.
  - F: Edge of planking panel from edge of pavement or sidewalk: 3' minimum. NOTE: Field panels need not be in line with gauge panels.
  - G: Length of panels along rail: 8' typical.
  - H: Width of field panel: 2' typical (check with railroad company).
  - I: Distance between rails: 4'-8.5".
  - J: Tip of gate to tip of gate: 2' maximum for Quiet Zone SSM or 90% of traveled way covered by gates for all other locations.
  - K: Nearest edge of RR cabin from edge of pavement: 30' typical. NOTE: Cabinet not required to be parallel to edge of pavement.
  - L: Nearest edge of RR cabin from nearest rail: 25' typical.
  - M: Center of RR mast to edge of sidewalk: 6' minimum.
  - N: Center of gate mast to leading edge of non-traversable median: 100' minimum to qualify as a Quiet Zone SSM. NOTE: 60' will suffice if there is a street intersection within the 100' and all street intersections within 60' are closed.
  - O: Width of median: 8'-6" minimum, 10' typical when using median gates. NOTE: Center of gate mast minimum 4'-3" from face of curb.
  - P: Center of RR mast to face of curb: 4'-3" minimum. Center of RR mast to edge of pavement (with shoulder): 6' minimum. Center of RR mast to edge of pavement (no shoulder): 8'-3" minimum. NOTE: BNSF prefers 5'-3", 7', and 9'-3" minimums, respectively.
  - Q: Gate length: 28' or less typical, but railroad company may allow up to 32' under special circumstances.
  - R: Stop line to first RR Crossing transverse line (bike lane): 50' typical.
  - S: Stop line to GRADE CROSSING ADVANCE WARNING (W10-1) sign and adjacent RR Crossing pavement markings. See Table 1. See RCD(2) for other signs.

2-WAY, MULTIPLE LANES EACH DIRECTION



2 LANES, 2-WAY

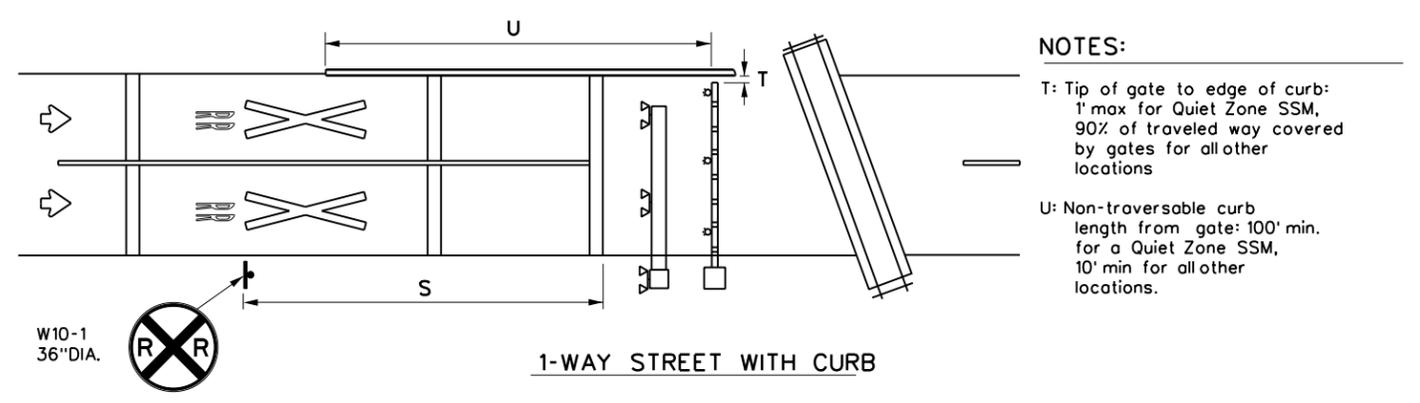
**TABLE 1**

Approach Speed(mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

**LEGEND**

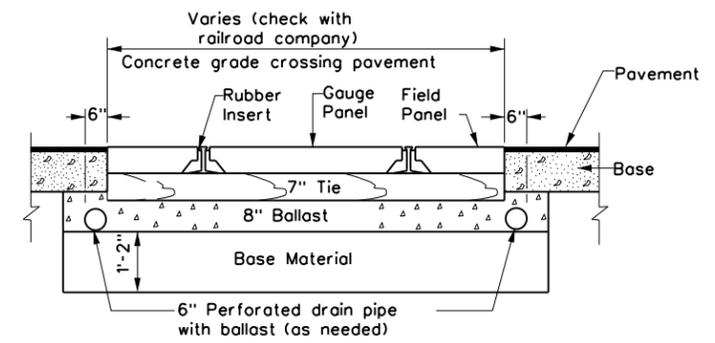
	Sign
	Object Marker
	Traffic Flow
	Cantilever
	Gate Assembly
	Mast Flasher Pair

- GENERAL NOTES:**
1. Medians and curbs must be non-traversable to qualify as a Quiet Zone Supplementary Safety Measure (SSM). Non-traversable curbs in Quiet Zones are 6" tall minimum and used on roadways where speed does not exceed 40 mph.
  2. All Railroad legends are to be in 125 mil Pre-Formed Thermoplastic. Which includes the X, RR and the three 24" stop bars.
  3. Medians preferred whenever possible to prevent vehicles from driving around gates.
  4. Longitudinal edge striping may be continued thru crossing as needed. Illumination may also be considered for nighttime visibility.
  5. See City of Dallas Traffic Sign Standards for sign mounting details.
  6. See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.



1-WAY STREET WITH CURB

- NOTES:**
- T: Tip of gate to edge of curb: 1' max for Quiet Zone SSM, 90% of traveled way covered by gates for all other locations
  - U: Non-traversable curb length from gate: 100' min. for a Quiet Zone SSM, 10' min for all other locations.



CROSSING SURFACE CROSS SECTION

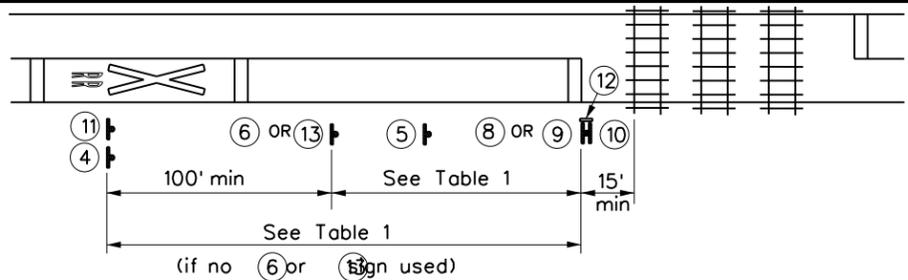
**TYPICAL PAVEMENT MARKINGS**

RAILROAD CROSSING  
TYPICAL DETAILS

DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

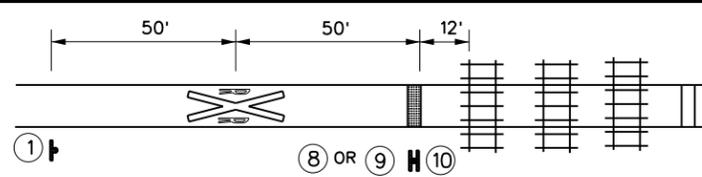
SHEET No.  
5010



**PASSIVE CROSSING**

**NOTES:**

1. Stop or yield sign may also be installed to the left of the crossbuck sign, rather than below it.
2. A 2" white retroreflective strip shall be installed on front and back of crossbuck sign post.



**NOTES:**

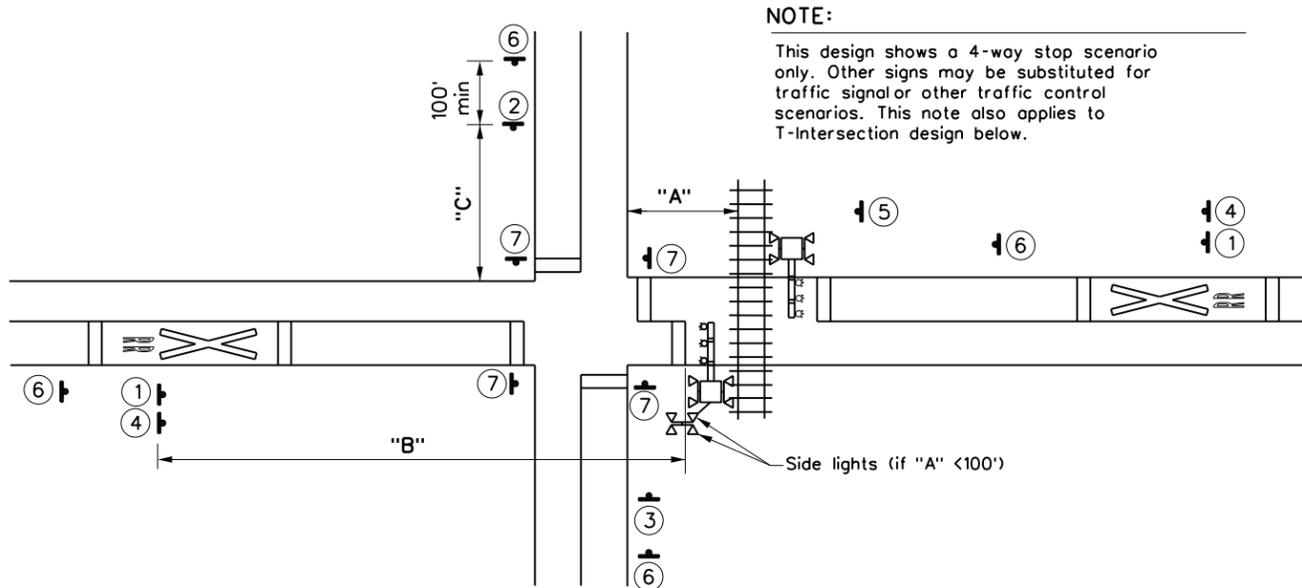
1. A shared use pathway is considered a separate pathway crossing when more than 25' from traveled way of adjacent roadway.
2. Detectable warning used at stop bar.
3. Smaller sign sizes preferred than shown to the right on this sheet.

**PATHWAY CROSSING**

TABLE 1	
Approach Speed (mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

**GENERAL NOTES:**

1. Railroad company to provide active traffic control devices, CROSSBUCK (R15-1), NUMBER OF TRACKS Plaque (R15-2P) (if more than 1 track), and EMERGENCY NOTIFICATION (I-13) signs.
2. LOW GROUND CLEARANCE (W10-5) signs may be relocated further upstream of crossing to provide advance warning of alternate route.
3. GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-2) signs may be modified as needed to fit roadway geometry.
4. Table 1 placement distances may vary per Sect. 2C.05 of the TMUTCD.
5. See Table 1 to determine placement of STOP AHEAD (W3-1) and YIELD AHEAD (W3-2) signs unless shown otherwise.
6. DO NOT STOP ON TRACKS (R8-8) signs installed when potential for vehicles stopping on tracks is significant as determined by sealing engineer. Install so sign does not block view of RR mast.
7. See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.
8. See City of Dallas 2510-1 Standards for sign and pavement marking details.

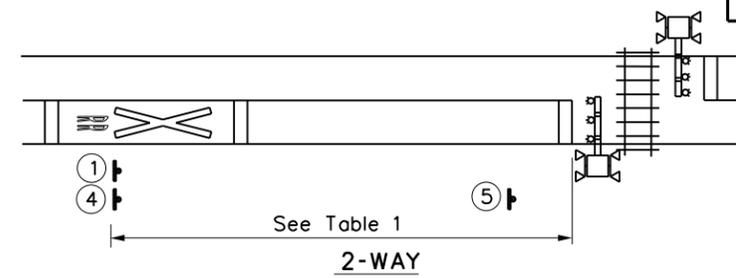


**NOTE:**

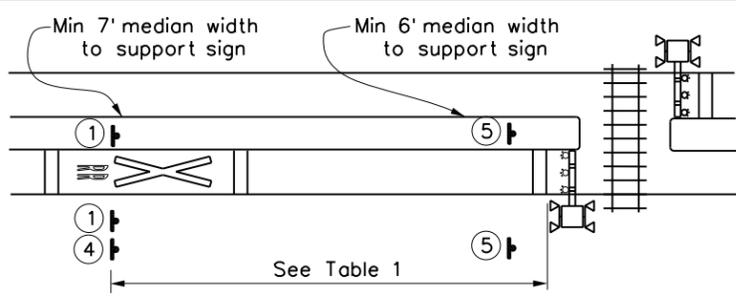
This design shows a 4-way stop scenario only. Other signs may be substituted for traffic signal or other traffic control scenarios. This note also applies to T-Intersection design below.

	"A" <100'	"A" ≥100'
"B"	See Table 1. Place pavement markings and signs on opposite side of intersection from rail if spacing from Table 1 would put markings within intersection.	See Table 1. Place pavement markings and signs between rail and intersection if spacing from Table 1 would put markings within intersection.
"C"	See Table 1.	GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-2, W10-3, W10-4) signs should only be installed if W10-1 sign is not between intersection and railroad crossing. If needed, see Table 1.

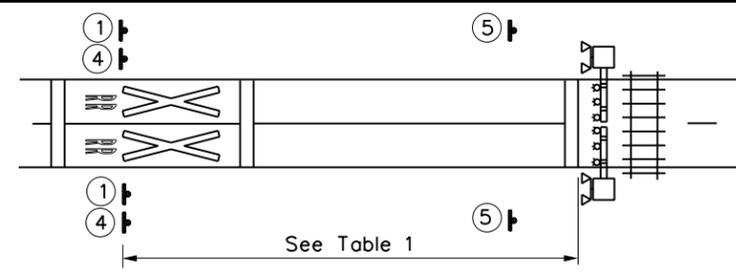
**GRADE CROSSING NEAR A PARALLEL STREET**



**2-WAY**



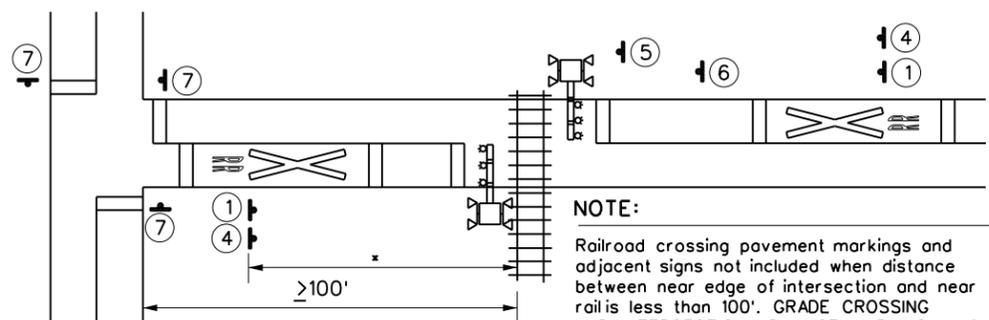
**2-WAY WITH MEDIAN**



**1-WAY**

**SIGNS**

<b>**</b> R15-1 48"X9" ① W10-1 36"X36"	<b>**</b> R15-2P 27"X18" ② W10-2L 36"X36"	<b>**</b> R15-2R 27"X18" ③ W10-2R 36"X36"	<b>IF NEEDED</b> W10-5 36"X36" W10-5P 30"X24" ④ LOW GROUND CLEARANCE
<b>IF NEEDED</b> R8-8 24"X30" ⑤ DO NOT STOP ON TRACKS	<b>IF NEEDED</b> W3-1 30"X30" ⑥	<b>STOP</b> R1-1 36"X36" R1-3P 18"X6" ⑦ ALL WAY	R15-1 48"X9" R15-2P 27"X18" R1-1 36"X36" ⑧ STOP
R15-1 48"X9" R15-2P 27"X18" ⑨ R1-2 48"X48"X48"	R15-1 48"X9" R15-2P 27"X18" ⑩	W10-1 36"X36" NO GATES OR LIGHTS W10-13P 30"X24" ⑪ **	REPORT EMERGENCY OR PROBLEM 1-800-555-5555 CROSSING 836 597 H Sign may be placed perpend. to travel lanes. ⑫ I-13 15"X9"
<b>IF NEEDED</b> W3-2 30"X30" ⑬	<b>IF NEEDED</b> W10-9P 30"X24" NO TRAIN HORN	<b>**</b> Includes a NO TRAIN HORN Plaque (W10-9P) if crossing is in a Quiet Zone. LOW GROUND CLEARANCE Plaque (W10-5P) if needed is mounted below W10-2/W10-3/W10-4 signs.	
		LOW GROUND CLEARANCE W10-5P 30"X24"	

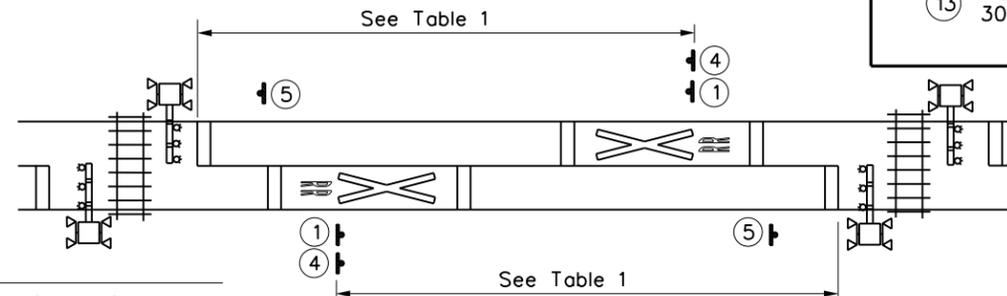


**NOTE:**

Railroad crossing pavement markings and adjacent signs not included when distance between near edge of intersection and near rail is less than 100'. GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-3) signs installed on roadway parallel with rail in this case.

\* Use Table 1 if sufficient space exists.

**T-INTERSECTION**



**NOTE:**

Separate active traffic control devices, railroad crossing pavement markings, and adjacent signs required when tracks are more than 100' apart.

**2 ADJACENT CROSSINGS**

**TYPICAL PAVEMENT MARKINGS**

RAILROAD CROSSING  
TYPICAL DETAILS

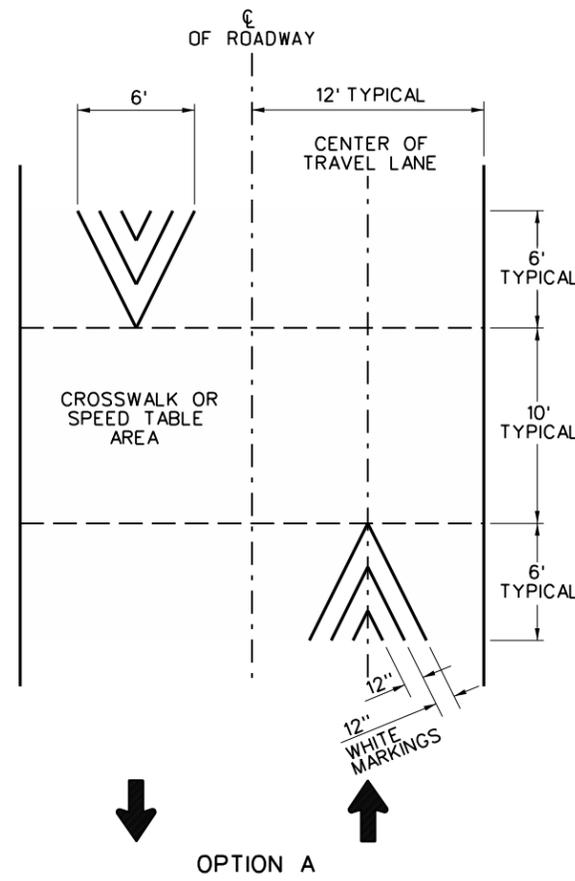
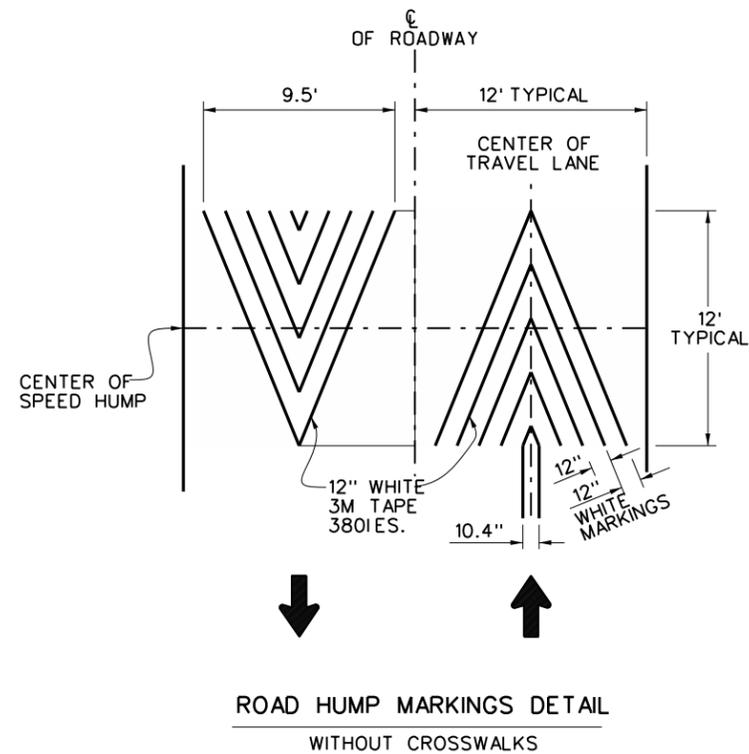
DEPARTMENT OF PUBLIC WORKS  
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE  
REVISED: DECEMBER 2021

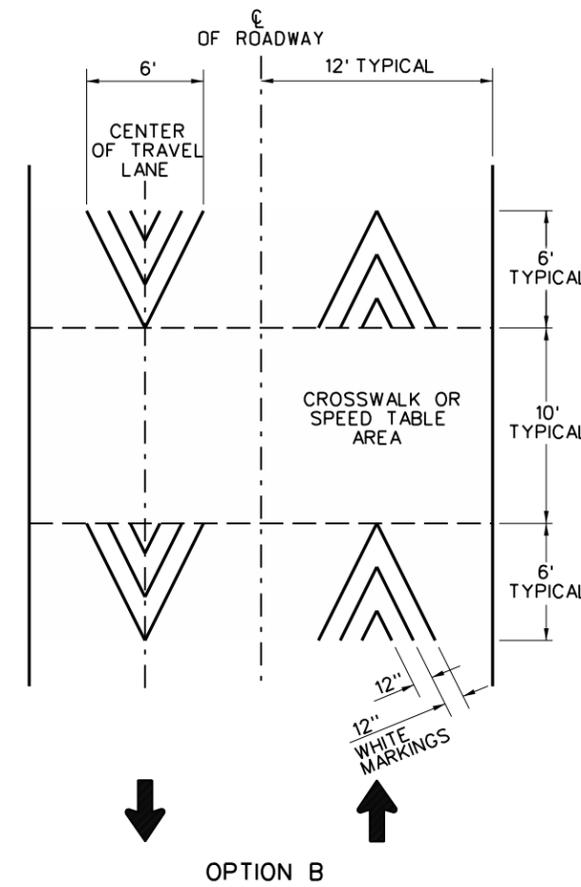
SHEET No.  
5010A

**LEGEND:**

➔ DIRECTION OF TRAVEL WAY

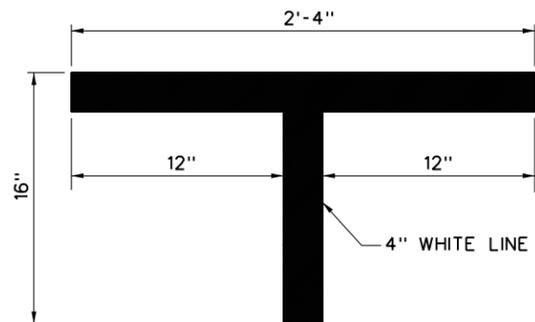


ROAD HUMP MARKINGS DETAIL  
WITH CROSSWALKS

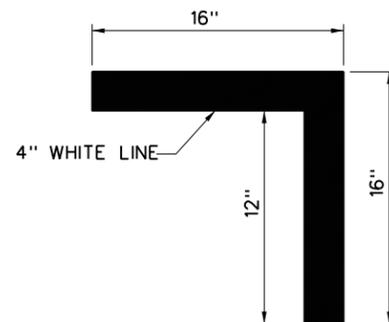


**NOTE:**

REFERENCE CITY OF DALLAS STREET DESIGN MANUAL  
SECTION 4.3.7.3 ON-STREET PARKING AND TMUTCD  
PART 3, SECTION 3B.19 PARKING SPACE MARKINGS.



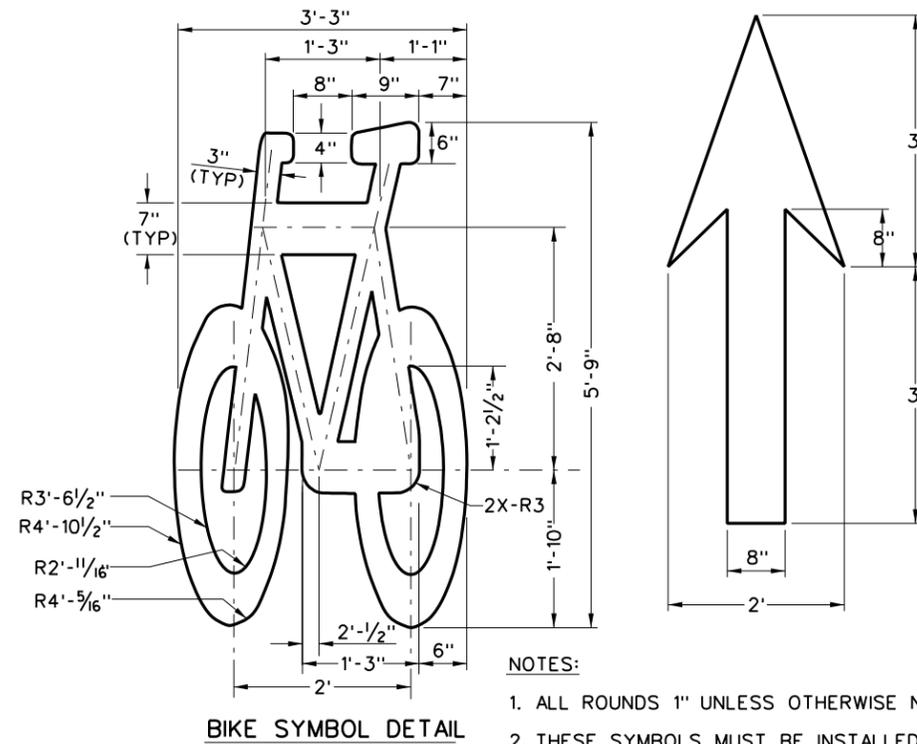
ON STREET PARKING DETAIL  
(WHITE)



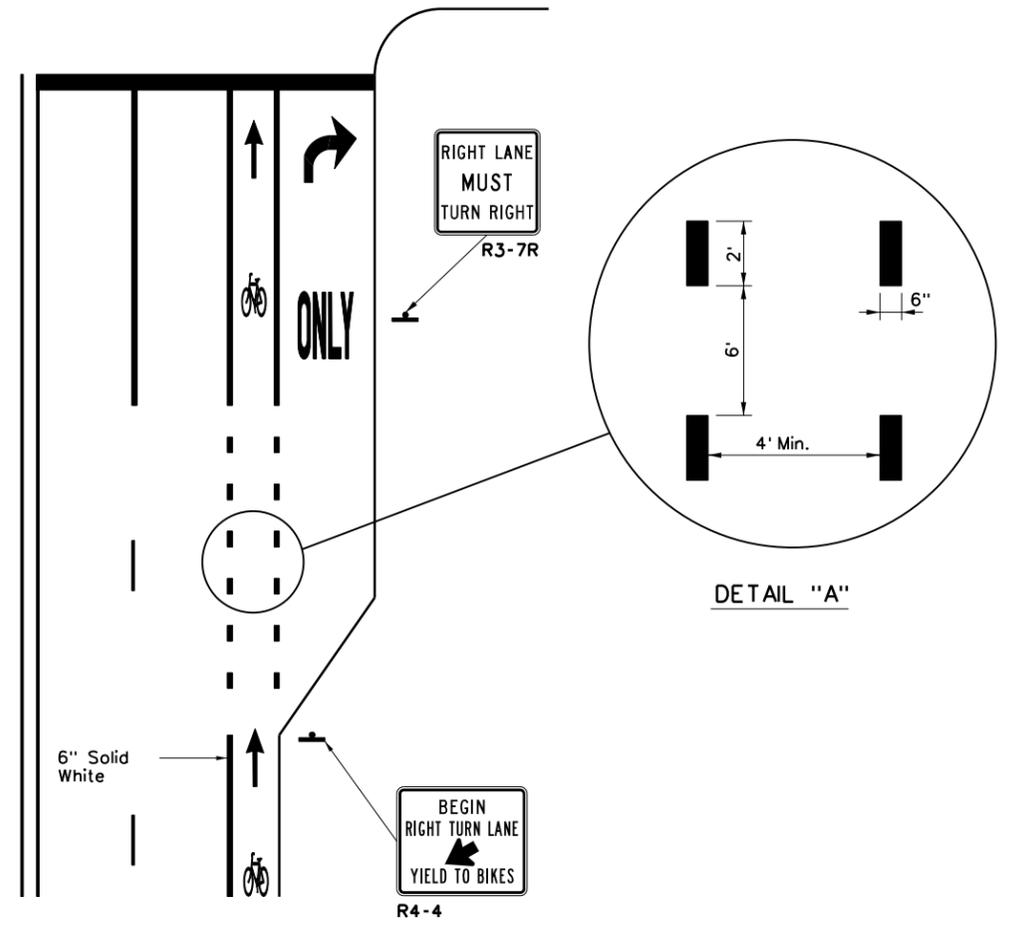
<b>TYPICAL PAVEMENT MARKINGS</b>	
SPEED HUMPS AND ON-STREET PARKING	
DETAILS	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 5011

**NOTES:**

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF DALLAS STANDARD CONSTRUCTION DETAILS 251-D.
2. TO THE EXTENT POSSIBLE, LONGITUDINAL CROSSWALK MARKINGS SHALL BE POSITIONED PARALLEL TO VEHICLE WHEEL PATHS, AND CENTERED IN TRAVEL LANES AND ALONG THE LANE LINES TO AVOID VEHICLE WHEEL PATHS.
3. ALL SIGNAGE SHALL BE FABRICATED AND FIELD LOCATED BY CITY OF DALLAS STREETS DEPARTMENT PERSONNEL.
4. UNLESS OTHERWISE INDICATED, SHARED LANE MARKING LOCATION DIMENSIONS ARE GIVEN TO THE VERTEX OF EACH MARKING'S LEADING CHEVRON.
5. ALL ARROWS IN A TURN POCKET ARE 8' UP FROM BEGINNING OF A TURN POCKET. WHEN THERE ARE TWO ARROWS IN A TURN POCKET THEN ONE IS 8' FROM BEGINNING OF TURN POCKET AND THE SECOND IS 8' BACK FROM THE END OF THE TURN POCKET. A TURN POCKET WITH 80' OR LESS ONE LEFT ARROW. A TURN POCKET WITH 100' PLUS TWO ARROWS AND ADD ONE ARROW EVERY 100'.
6. LEFT TURN ARROW PLACEMENTS ARE SUBJECT TO DISCRETION OF THE ENGINEER.

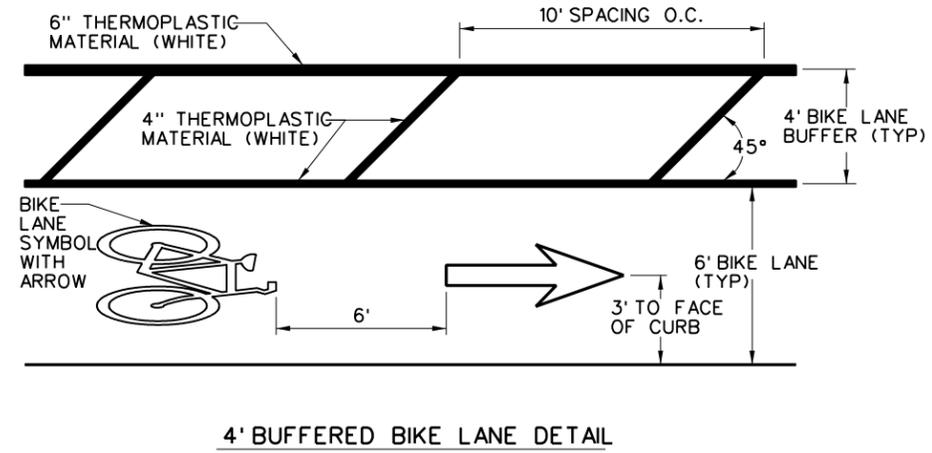


- NOTES:**
1. ALL ROUNDS 1" UNLESS OTHERWISE NOTED.
  2. THESE SYMBOLS MUST BE INSTALLED IN CONJUNCTION WITH EACH OTHER.

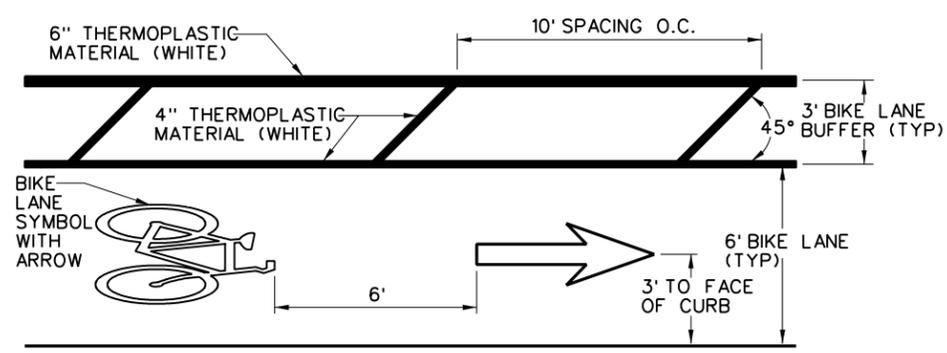


**RIGHT TURN ONLY LANE**

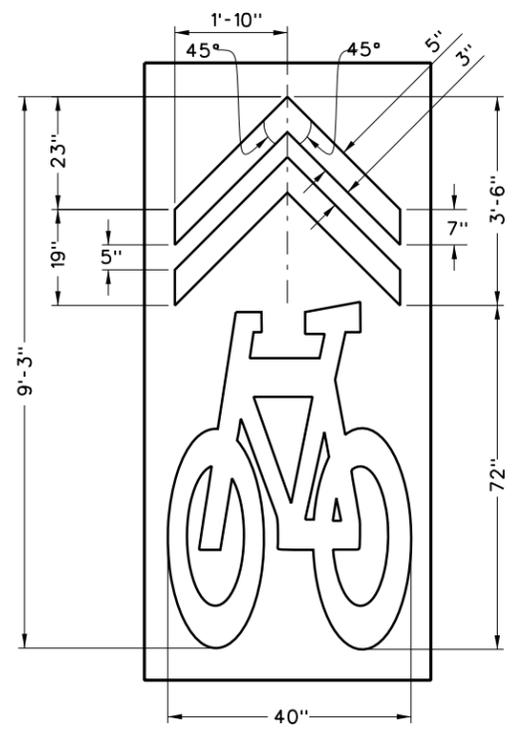
**6" WHITE DASHED PAVEMENT MARKING DETAIL**



**4' BUFFERED BIKE LANE DETAIL**



**3' BUFFERED BIKE LANE DETAIL**



- NOTE:**
- TWO CHEVRON STRIPES ARE 5" WIDE WITH A 3" SPACE IN BETWEEN.

**SHARE LANE MARKING DETAIL**

TYPICAL PAVEMENT MARKINGS	
BIKE LANE DETAILS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 5012

THE FOLLOWING TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) STANDARD DRAWINGS AND ASSOCIATED REVISED VERSIONS SHALL BE THE GOVERNING STANDARDS. ADDITIONAL REQUIREMENTS, IF ANY, WILL BE INCLUDED IN CITY OF DALLAS GENERAL TRAFFIC SIGNAL CONSTRUCTION SPECIFICATIONS AND NOTES LISTED.

- SMA(1-2)-12 (DAL) SINGLE MAST ARM ASSEMBLY
- DMA(1-3)-12 (DAL) DUAL MAST ARM ASSEMBLY
- LMA(1-5)-12 (DAL) LONG MAST ARM ASSEMBLY
- MA-C-12 MAST ARM CONNECTIONS
- MA-D-12 (DAL) MAST ARM POLE DETAILS
- LUM-A-12 LUMINAIRE SUPPORT STRUCTURES
- CFA-12 CLAMP-ON FITTING ASSEMBLY FOR LUMINAIRE ARM
- TS-FD-12 TRAFFIC SIGNAL POLE FOUNDATION
- TS-BP-20 TRAFFIC SIGNAL HEAD WITH BACKPLATE
- PEDESTRIAN SIGNAL HEAD DETAILS (DAL)
- SP-80(1,2)-12 (DAL) STRAIN POLE ASSEMBLIES
- SMD(SLIP -1)-08 (DAL) SIGN MOUNTING DETAILS, SMALL ROADSIDE SIGNS
- ED(1)-14 ELECTRICAL DETAILS - CONDUIT
- ED(3)-14 ELECTRICAL DETAILS - CONDUCTORS
- ED(4)-14 ELECTRICAL DETAILS - GROUND BOXES
- ED(5)-14 ELECTRICAL DETAILS - SERVICE SCHEMATICS
- ED(6)-14 ELECTRICAL DETAILS - SERVICE ENCLOSURE & NOTES
- ED(7)-14 ELECTRICAL DETAILS - SERVICE SUPPORT TYPES SF & SP
- ED(8)-14 ELECTRICAL DETAILS - TYPICAL TRAFFIC SIGNAL SYSTEM DETAILS
- ED(9)-14 ELECTRICAL DETAILS - ELECTRICAL SERVICE TYPE PS
- ED(10)-14 ELECTRICAL DETAILS - ELECTRICAL SERVICE TYPE GC, OC & TP
- ED(11)-14 ELECTRICAL DETAILS - DUCT CABLE / HDPE CONDUIT
- ED(12)-14 ELECTRICAL DETAILS - GROUND BOX (BATTERY BOX)
- ITS (6)-15 ITS POLE EQUIPMENT MOUNTING DETAILS
- ITS (41)-16 ITS GROUND BOX POLYMER CONCRETE
- RVDS-18 RADAR VEHICLE DETECTION SYSTEM
- DALLAS DISTRICT STANDARD CONSTRUCTION DETAILS FOR SPAN WIRE MOUNTED TRAFFIC SIGNALS
- CCCG-12 CONCRETE CURB & GUTTER
- SS6007 INTELLIGENT TRANSPORTATION SYSTEM (ITS) FIBER OPTIC CABLE

GENERAL NOTES FOR SIGNALS:

- REFER TO THE CURRENT VERSIONS OF TxDOT AND TxDOT DALLAS DISTRICT STANDARD SPECIFICATIONS.
- REFER TO CURRENT VERSION OF CITY OF DALLAS GENERAL TRAFFIC SIGNAL CONSTRUCTION SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- EXISTING TRAFFIC SIGNAL INFRASTRUCTURE IMPACTED BY CONSTRUCTION SHALL NEED TO BE REPLACED TO CURRENT STANDARDS.
- ALL TRAFFIC SIGNAL MODIFICATIONS SHALL INCLUDE THE INSTALLATION OF ACCESSIBLE PEDESTRIAN SIGNALS AND COUNTDOWN TYPE PEDESTRIAN SIGNALS.
- ELEVATION CHANGES AT TRAFFIC SIGNAL FOUNDATIONS AND GROUND BOXES SHALL REQUIRE REPLACEMENT OF IMPACTED TRAFFIC SIGNAL INFRASTRUCTURE TO CURRENT STANDARDS.
- SIGNAL POLES IN DOWNTOWN AND UPTOWN SHOULD BE POWDER COATED BLACK.
- CONDUIT MARKERS SHALL BE INSTALLED ON THE TOP OF THE CURB FOR CONDUIT INSTALLATIONS.
- ALL NEW TRAFFIC SIGNAL POLE FOUNDATIONS SHALL INCLUDE A SPARE 2" CONDUIT TO A GROUND BOX.
- CLAMSHELL MOUNTING HARDWARE SHALL BE USED FOR PEDESTRIAN SIGNALS.
- CONCRETE APRON FOR GROUND BOXES SHOULD BE 12" WIDE. ALSO, 2 \* 3 REINFORCING STEEL SHOULD BE INSTALLED ON ALL SIDES OF THE APRON AT 3" CENTER TO CENTER SPACING.
- ELECTRICAL SERVICE TO TRAFFIC SIGNALS SHOULD UTILIZE TxDOT TYPE D PEDESTALS. A SPARE 2" CONDUIT STUB OUT WITH PIPE CAP, SHALL BE INSTALLED FOR FUTURE STREET LIGHTING. THE 2" CONDUIT SHALL ORIGINATE AT PEDESTAL 'SERVICE, THROUGH THE FOUNDATION AND STUB OUT BELOW GRADE.

<b>TRAFFIC SIGNALS</b>	
TRAFFIC SIGNAL STANDARDS AND NOTES	
 DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 6001