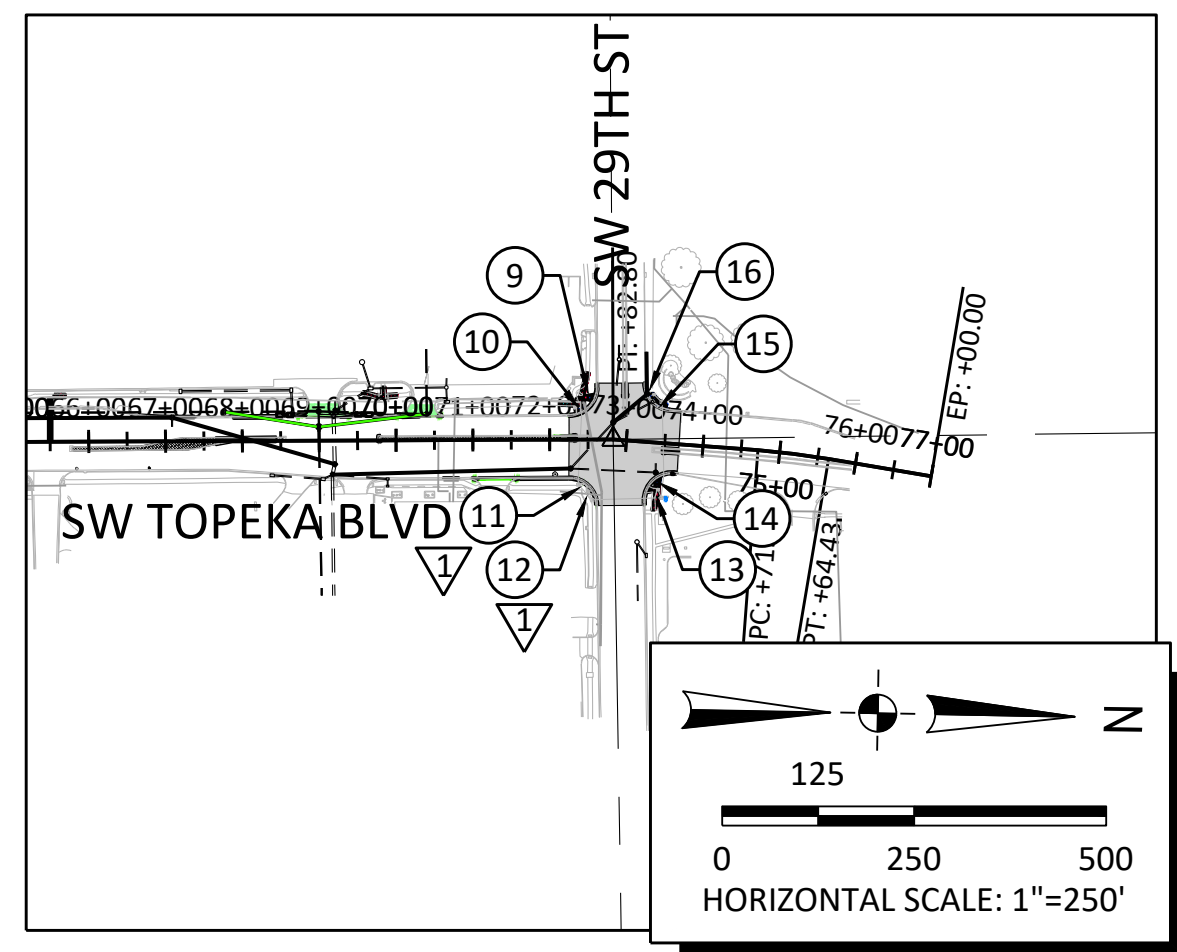


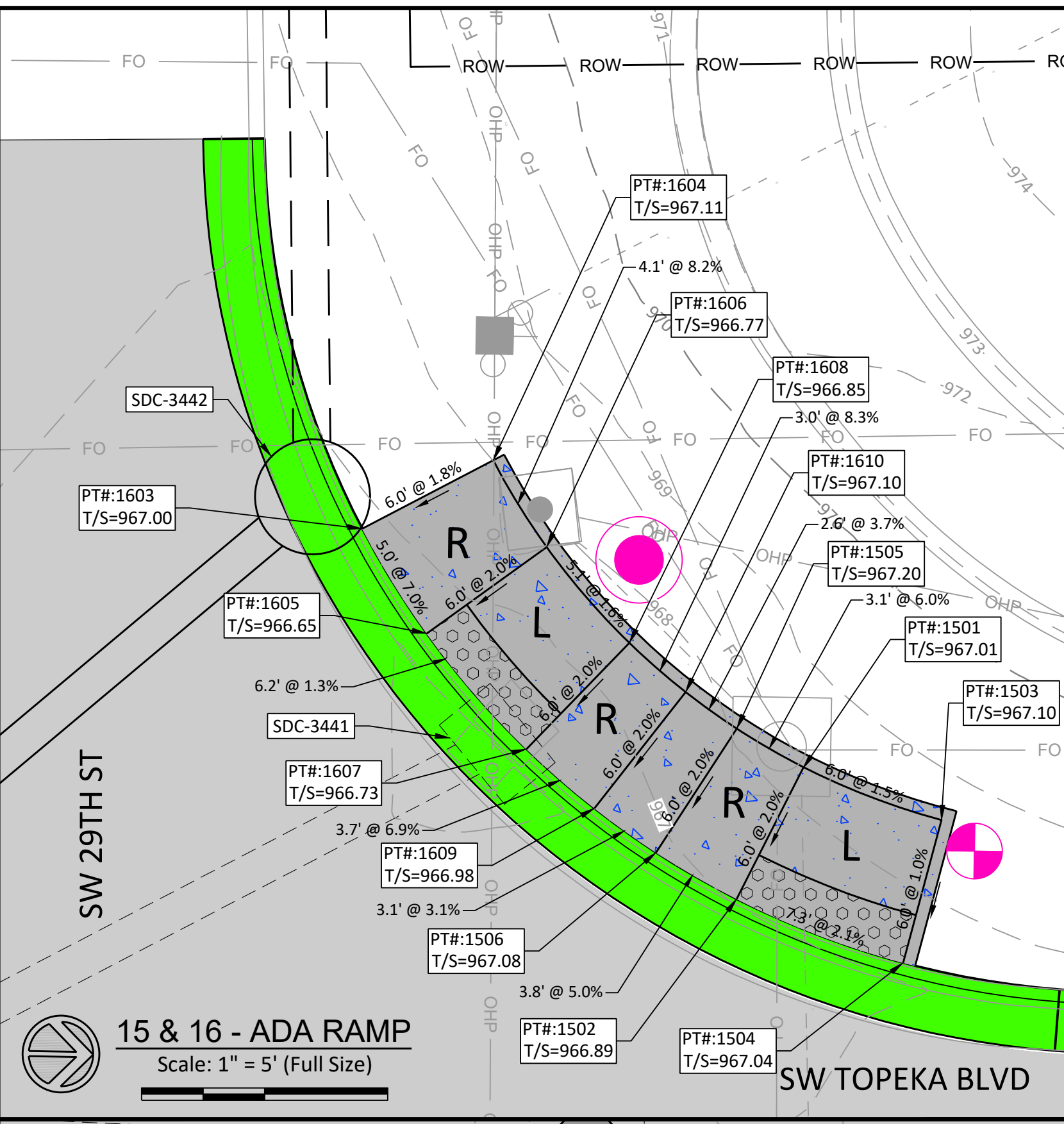
ADA RAMP #9			ADA RAMP #10		
POINT #	NORTHING	EASTING	POINT #	NORTHING	EASTING
901	256669.63	1969209.23	1001	256643.97	1969247.24
902	256664.69	1969208.40	1002	256643.93	1969252.24
903	256668.64	1969213.62	1003	256648.97	1969247.28
904	256663.76	1969212.52	1004	256648.93	1969252.28
905	256667.54	1969218.49	1005	256653.97	1969247.32
906	256662.66	1969217.39	1006	256653.93	1969252.32
907	256666.44	1969223.37	1007	256655.01	1969247.33
908	256661.56	1969222.27	1008	256661.03	1969247.37
909	256665.34	1969228.25	1009	256659.93	1969252.24
910	256660.46	1969227.15	1010	256660.03	1969259.55
911	256664.24	1969233.13	1011	256654.06	1969262.04
912	256659.36	1969232.03			
913	256677.34	1969238.00			
914	256675.06	1969244.00			
915	256668.29	1969238.00			
916	256668.22	1969244.00			
917	256663.14	1969238.00			
918	256658.26	1969236.90			
919	256661.79	1969244.00			
920	256656.91	1969242.90			

**GENERAL NOTES:**  
 USE EXISTING RAMP IN PLACE

**TRAFFIC SIGNAL LEGEND:**  
 PROP SIGNAL POLE  
 PROP ADA ACCESSIBLE PEDESTAL SIGNAL (APS) POLE



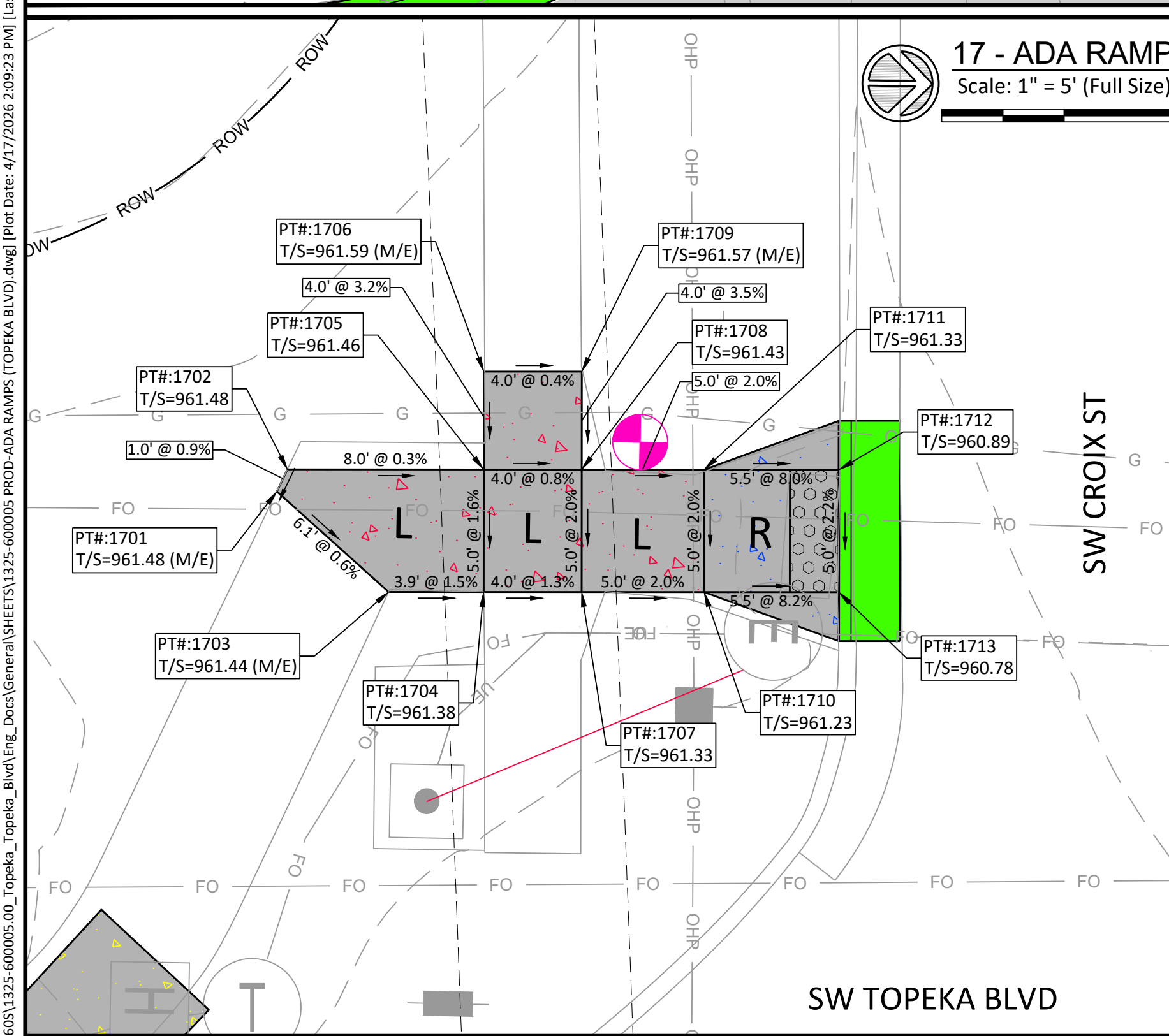
ADA RAMP #15			ADA RAMP #16		
POINT #	NORTHING	EASTING	POINT #	NORTHING	EASTING
1501	256765.11	1969245.96	1603	256747.02	1969236.59
1502	256762.49	1969251.36	1604	256752.29	1969233.72
1503	256770.75	1969248.01	1605	256749.71	1969240.80
1504	256769.29	1969253.83	1606	256754.52	1969237.21
1505	256762.37	1969244.44	1607	256753.84	1969245.42
1506	256759.18	1969249.53	1608	256757.95	1969241.04
			1609	256756.64	1969247.78
			1610	256760.26	1969243.00



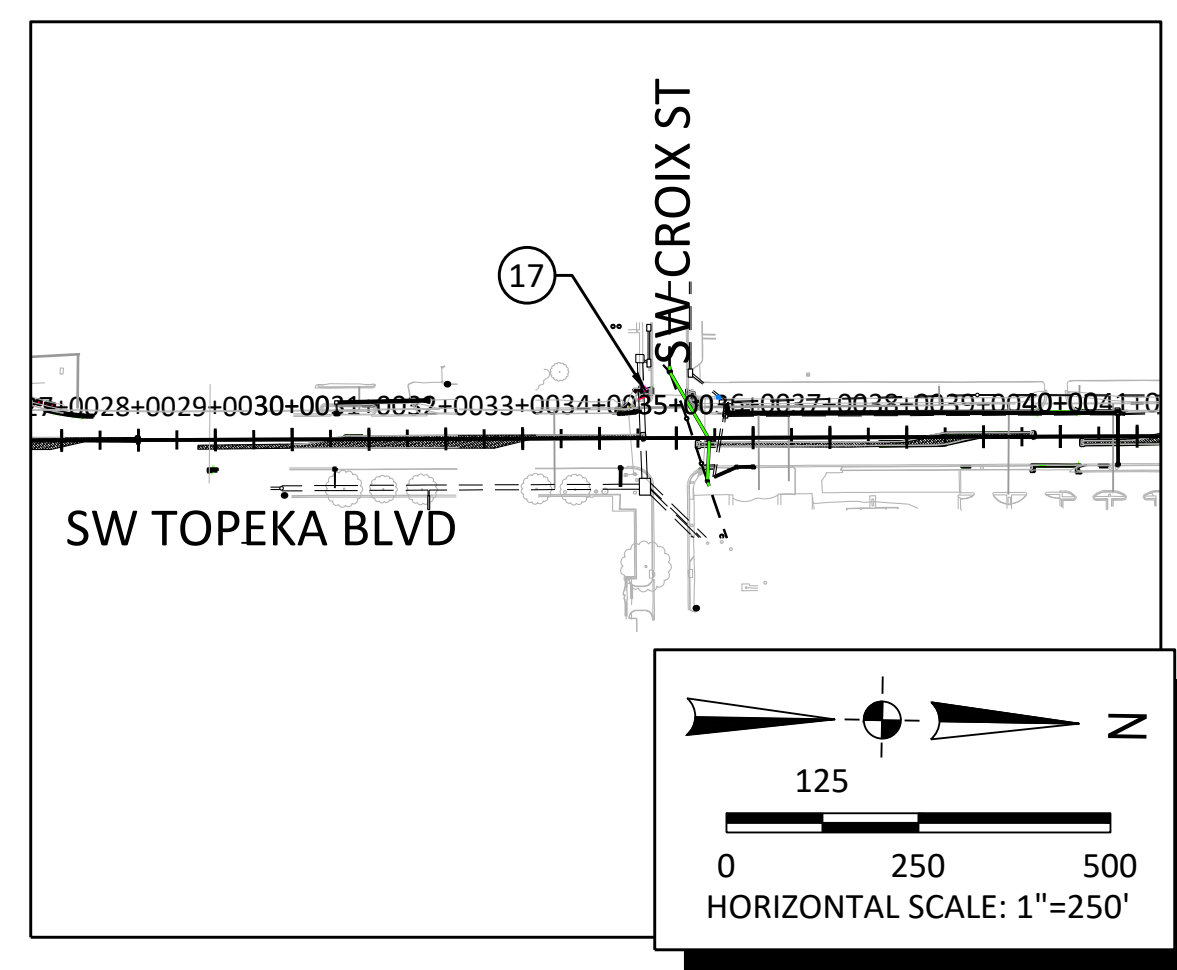
**15 & 16 - ADA RAMP**  
 Scale: 1" = 5' (Full Size)

**13 & 14 - ADA RAMP**  
 Scale: 1" = 5' (Full Size)

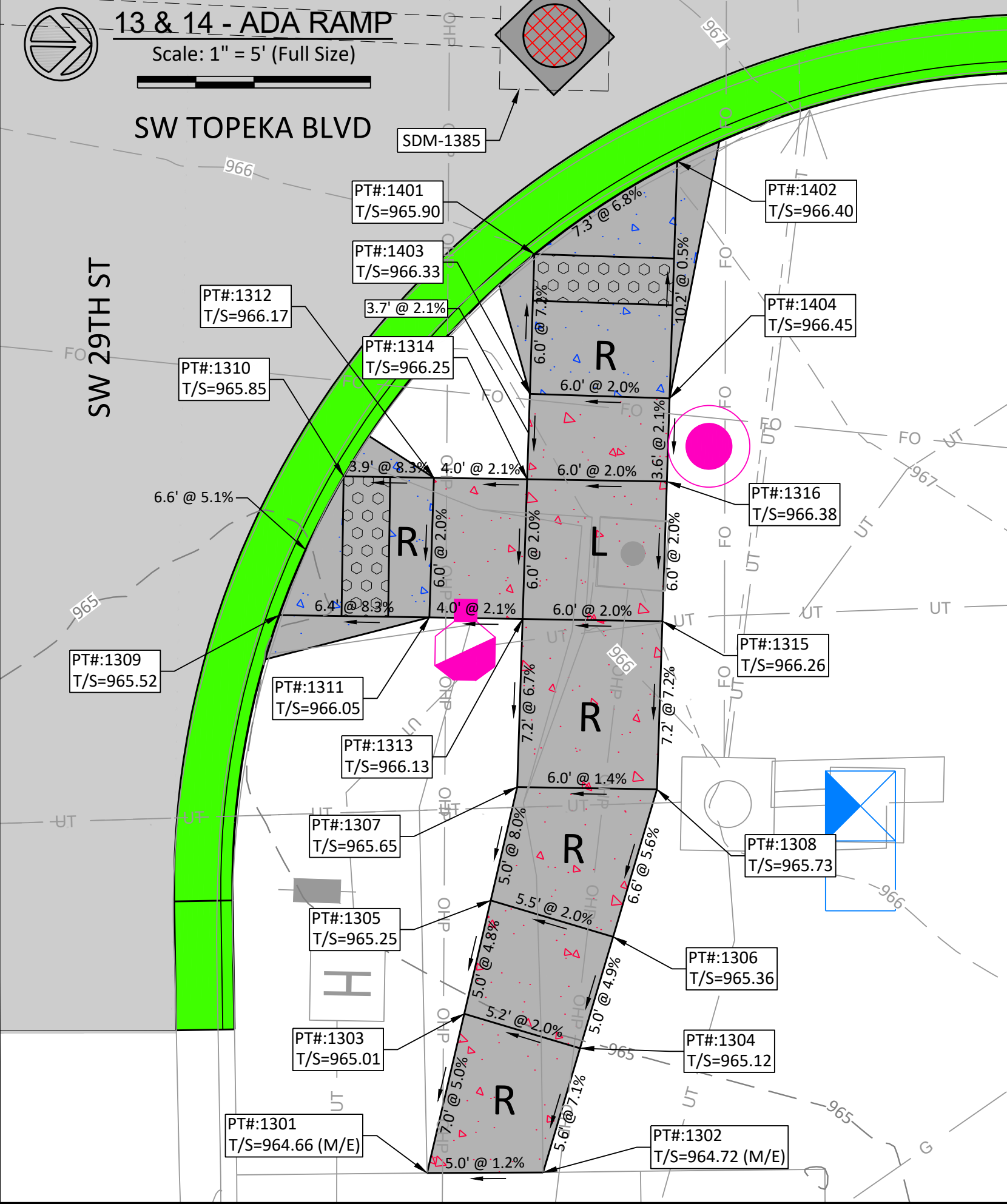
**LEGEND**  
 PROPOSED CONCRETE PAVEMENT/CURB  
 PROPOSED ADA SIDEWALK RAMP  
 PROPOSED SIDEWALK  
 PROPOSED DETECTABLE WARNING  
 T/S TOP OF SIDEWALK  
 BC BACK OF CURB  
 EOP EDGE OF PAVEMENT



ADA RAMP #17		
POINT #	NORTHING	EASTING
1701	252863.06	1969314.40
1702	252863.48	1969313.49
1703	252867.70	1969318.42
1704	252871.57	1969318.35
1705	252871.49	1969313.35
1706	252871.42	1969309.35
1707	252875.57	1969318.29
1708	252875.49	1969313.29
1709	252875.42	1969309.29
1710	252880.57	1969318.20
1711	252880.49	1969313.20
1712	252885.99	1969313.11
1713	252886.08	1969318.11



ADA RAMP #13			ADA RAMP #14		
POINT #	NORTHING	EASTING	POINT #	NORTHING	EASTING
1301	256753.39	1969386.07	1401	256757.30	1969346.55
1302	256758.36	1969385.96	1402	256763.37	1969342.45
1303	256754.87	1969379.21	1403	256757.22	1969352.55
1304	256759.86	1969380.60	1404	256763.22	1969352.64
1305	256755.92	1969374.32			
1306	256761.20	1969375.79			
1307	256756.97	1969369.43			
1308	256762.97	1969369.43			
1309	256746.63	1969362.23			
1310	256749.29	1969356.23			
1311	256753.07	1969362.22			
1312	256753.16	1969356.22			
1313	256757.07	1969362.22			
1314	256757.16	1969356.22			
1315	256763.07	1969362.21			
1316	256763.16	1969356.21			



NO.	DATE:	REVISION	BY:	APPD

DRAWN BY: \_\_\_\_\_  
 APPD BY: \_\_\_\_\_

**benesch**  
 Alfred Benesch & Company  
 123 SE 6th, Suite 200  
 Topeka, Kansas 66603  
 Ph 785.409.6507      Job No. - 1325-600005.00

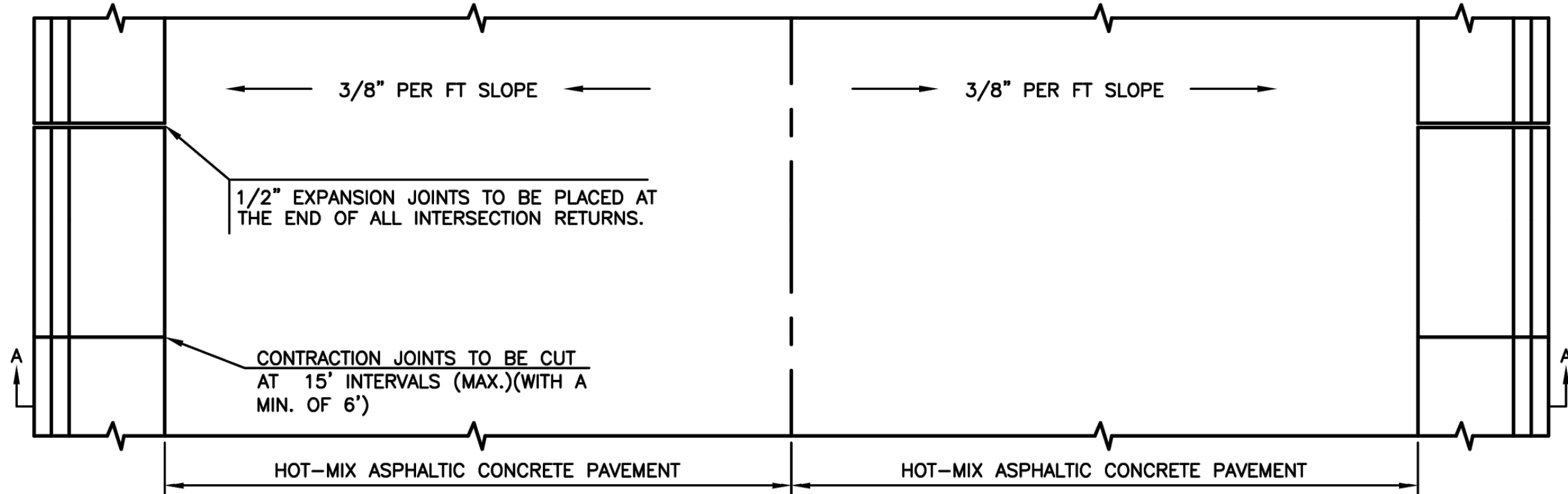
**TOPEKA**  
 Public Works  
 ENGINEERING  
 620 SE MADISON ST. • 2nd Floor • TOPEKA, KS 66607  
 Phone: (785) 368-3842 • Fax: (785) 368-3881

TOPEKA BLVD  
 IMPROVEMENTS:  
 PROJECT #701038.00

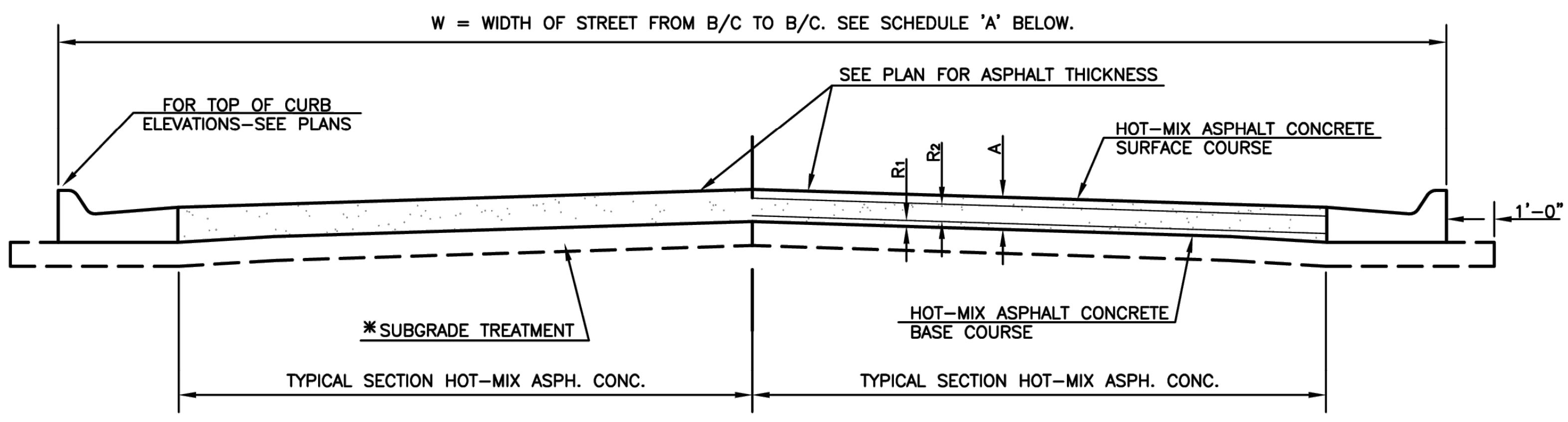
ADA RAMP DETAILS

DATE: APR 2026  
 SHEET: 42 OF 122  
 PROJ.: 701038.00

File Location: Y:\Kansas\1325-600005\1325-600005-PROD-ADA RAMP (TOPEKA BLVD).dwg [Plot Date: 4/17/2026 2:09:23 PM] [Last Saved: 4/13/2026 5:44:15 PM; Reason: ]



**PLAN**

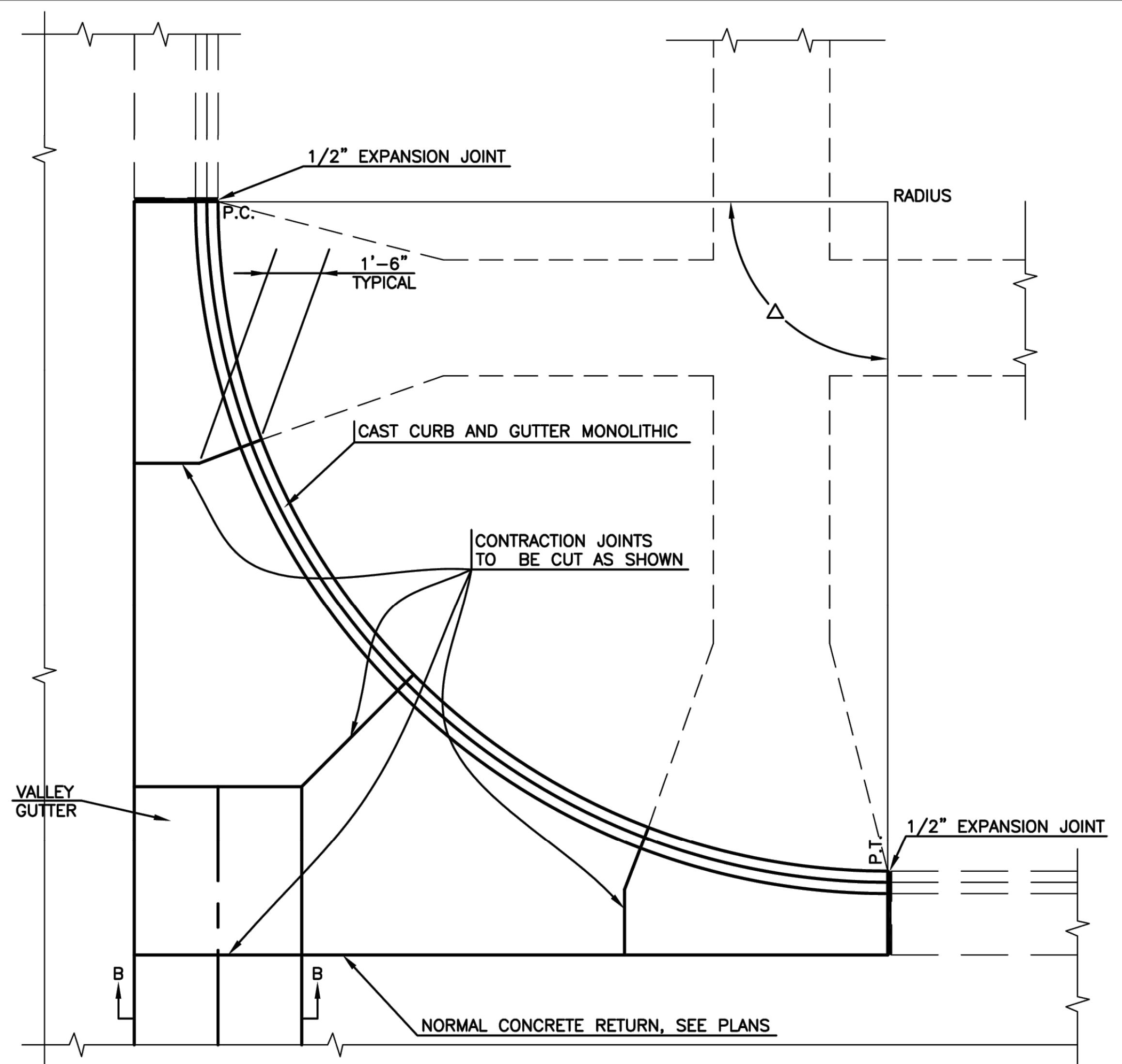


TYPICAL SECTION HOT-MIX ASPH. CONC. PAVE SECTION A-A

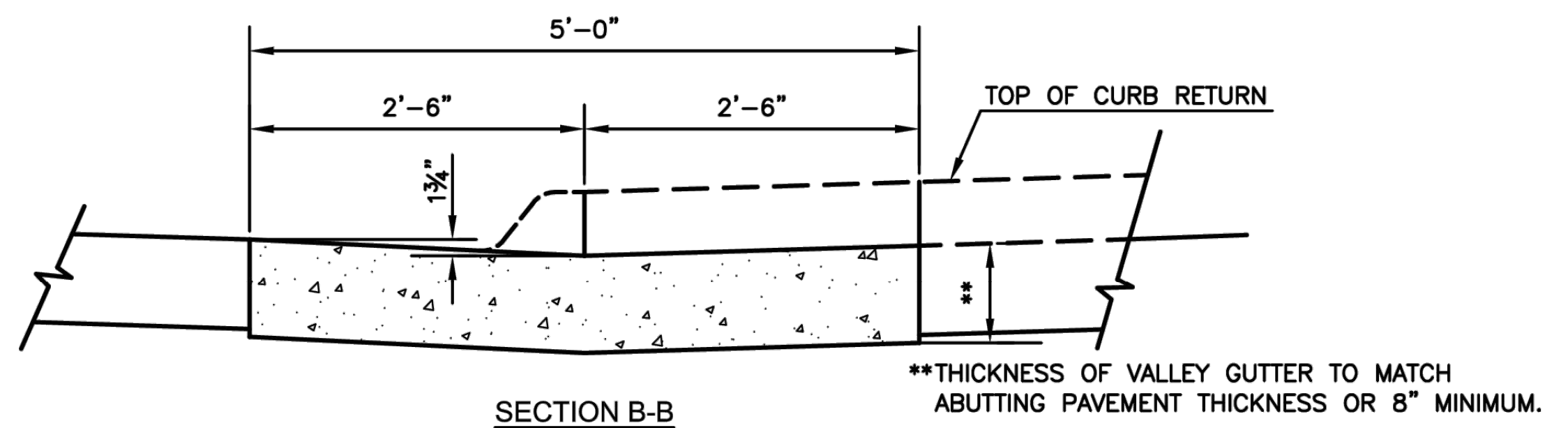
**PAVEMENT DETAILS**

\*SUBGRADE TREATMENT PER GEOTECHNICAL REPORT

SCHEDULE 'A'							
STREET	FROM	TO	W	R <sub>1</sub>	R <sub>2</sub>	A	



**TYPICAL JOINTING PLAN**



**VALLEY GUTTER DETAILS**

- NOTES:
1. PAY LENGTH OF VALLEY GUTTER IS FROM P.C. TO P.C. ACROSS STREET INTERSECTION.
  2. PAY WIDTH OF VALLEY GUTTER IS 5'.
  3. PAY AREA OF VALLEY GUTTER IS PAY LENGTH X PAY WIDTH (SQ. YD.)
  4. PAY CURB AND GUTTER FROM P.C. TO P.T. AROUND RADIAL.
  5. NO ADDITIONAL PAYMENT FOR OTHER WORK AND MATERIALS REQUIRED TO COMPLETE RETURN AS DETAILED. SEE PLANS FOR TYPE OF RETURN TO BE CONSTRUCTED.
  6. SAND IS NOT AN APPROVED FILL OR SUBGRADE MATERIAL.
  7. WHERE VALLEY GUTTER ABUTS CONCRETE PAVEMENT, THE VALLEY GUTTER SECTION SHALL BE TIED TO THE CONCRETE PAVEMENT WITH 1/2" x 3'-0" DEFORMED TIE BARS AT 5'-0" CENTERS.
  8. WHERE VALLEY GUTTER IS CONSTRUCTED ADJACENT TO NEW ASPHALT PAVEMENT, THE CONTRACTOR MAY, AT THEIR OPTION, CONSTRUCT A CONTINUOUS ASPHALT PAVEMENT SECTION THROUGH THE VALLEY GUTTER AREA, FOLLOWED BY SAWCUTTING AND REMOVING THE ASPHALT STRIP FOR CONSTRUCTION OF THE VALLEY GUTTER SECTION. NO PAY ADJUSTMENT SHALL BE MADE FROM PLAN QUANTITIES FOR THE ADDITIONAL ASPHALT PAVEMENT THAT IS REMOVED. SAWCUTS SHALL BE FULL DEPTH. THE SUBGRADE MUST MEET COMPACTION REQUIREMENTS IN THE REMOVAL AREA PRIOR TO PLACEMENT OF THE VALLEY GUTTER.

NO.	DATE	REVISION	BY	APP'D
3	March 2013	Added min jt. spacing & made bar size*	DHS	SB
2	Dec. 2009	Added to Valley Gutter Details	DHS	SB
1	Feb. 2008	Mod. Typ. Jt. Plan & Pvrmt. Det.	DHS	SB

DRAWN BY: *rm/mc*

APP'D BY: *R. Cloutier*



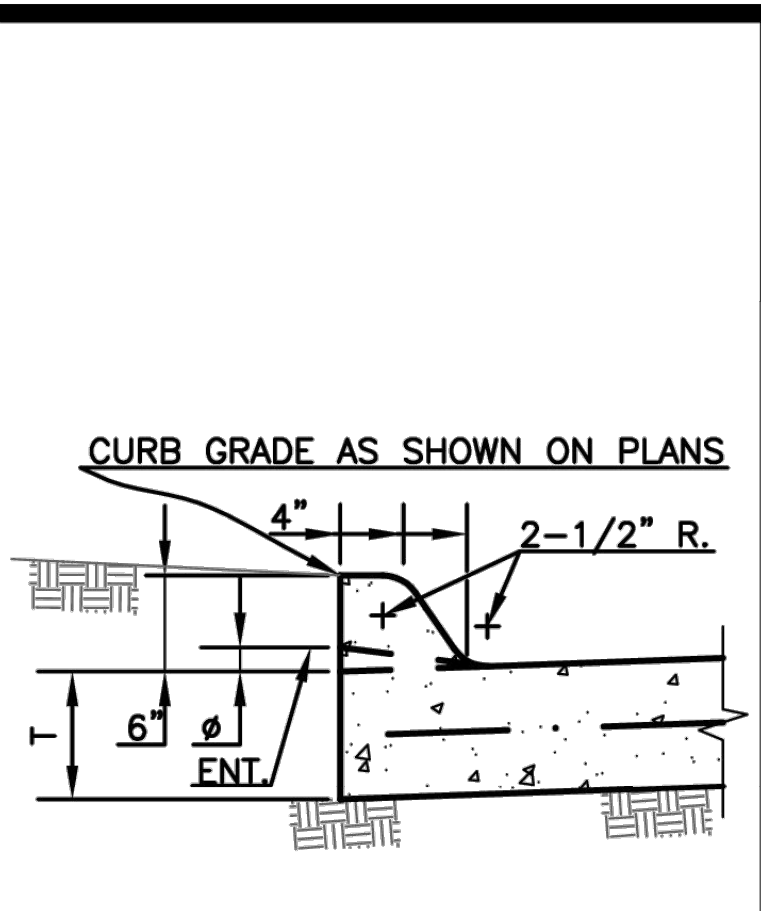
**SHAWNEE COUNTY, KANSAS**  
**PUBLIC WORKS DEPARTMENT**  
 1515 NW SALINE  
 TOPEKA, KS 66618  
 (785) 233-7702



**STANDARD DETAILS**

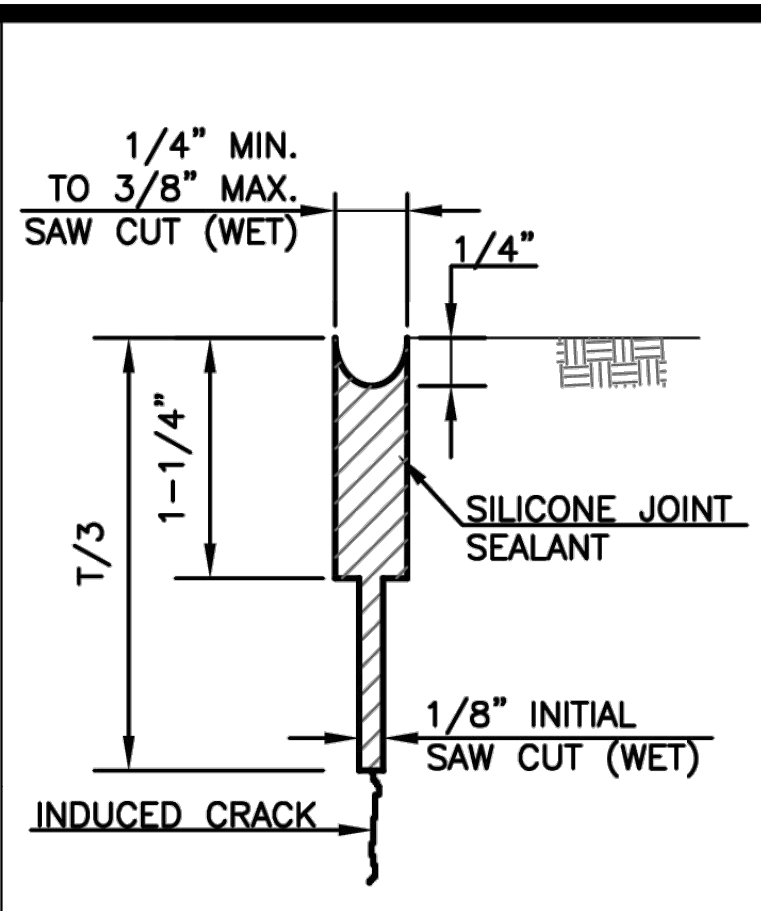
**ASPHALT CONCRETE PAVEMENT DETAILS**  
 (DT-001)

DATE: APR 2026  
 SHEET: 43 OF 122  
 PROJ.: 701038.00

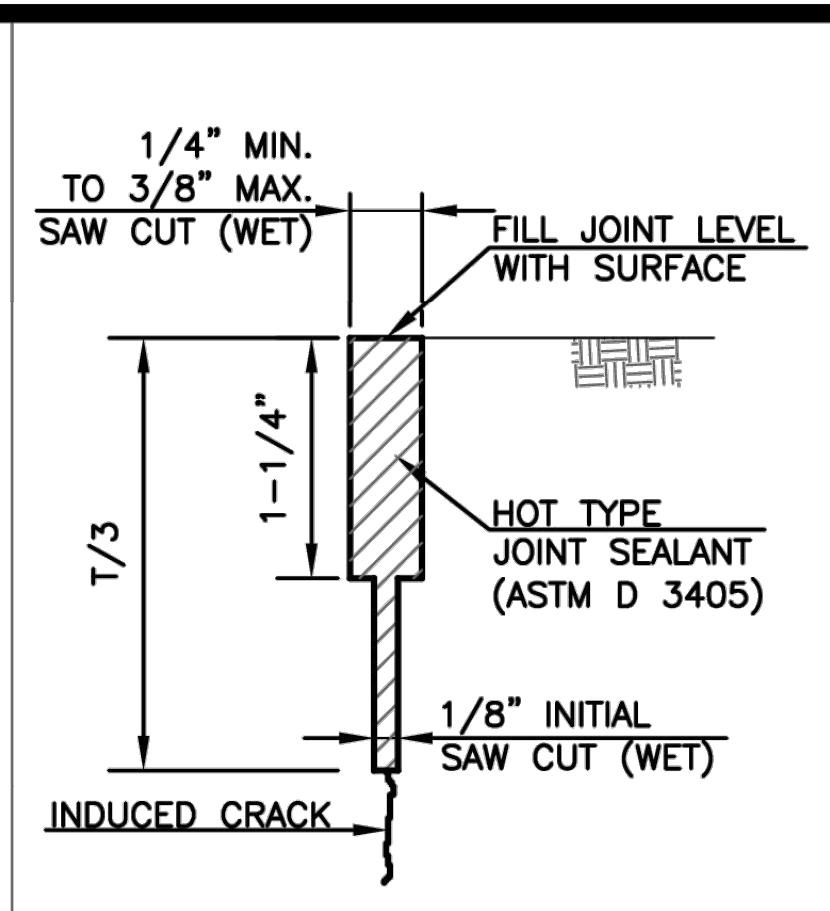


**DETAIL A**

6" INTEGRAL CURB  
 Ø 1-1/2" FOR DRIVE ENTRANCES  
 AND 3/4" FOR SIDEWALK RAMP.

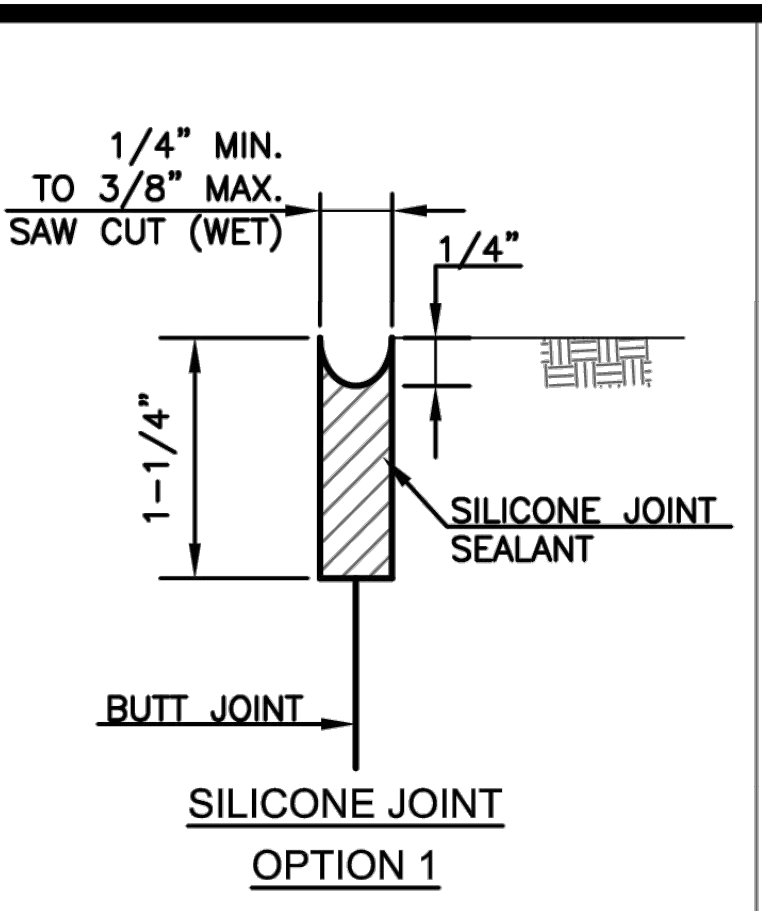
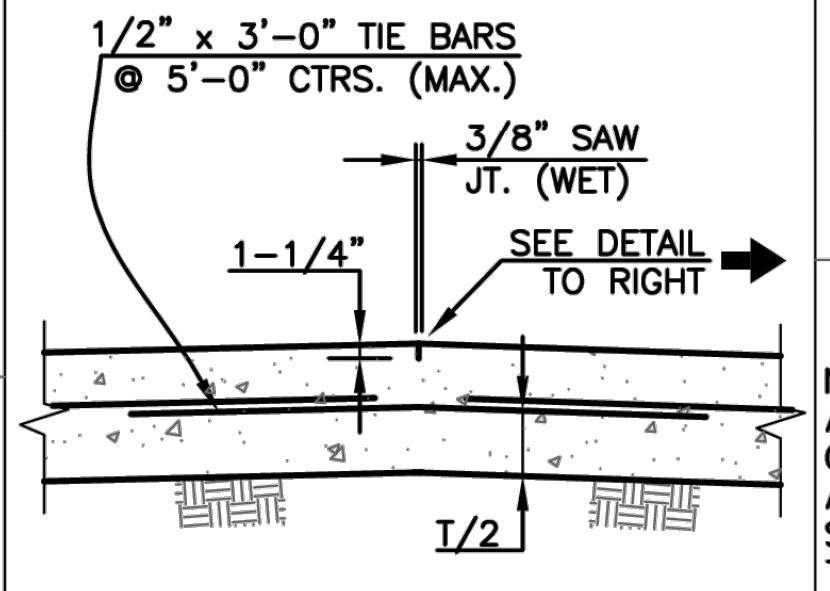
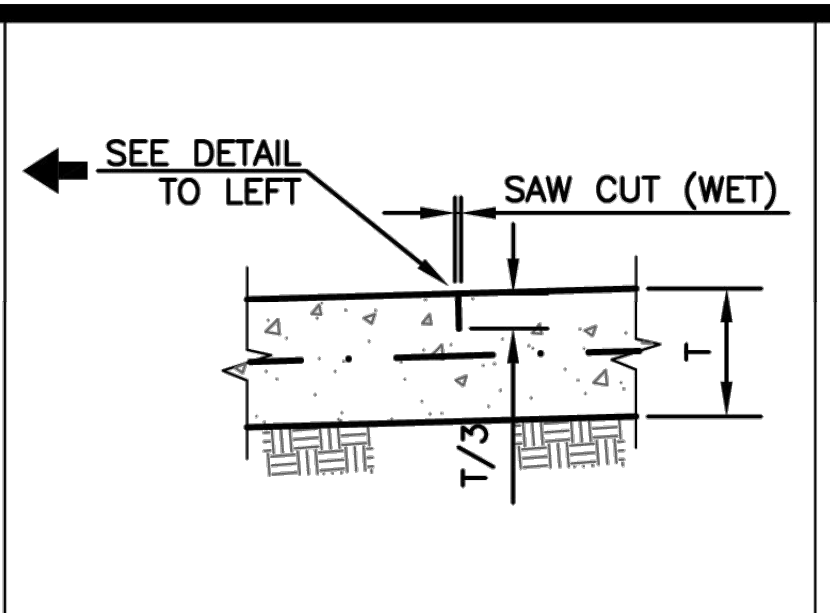


**SILICONE JOINT  
 OPTION 1**

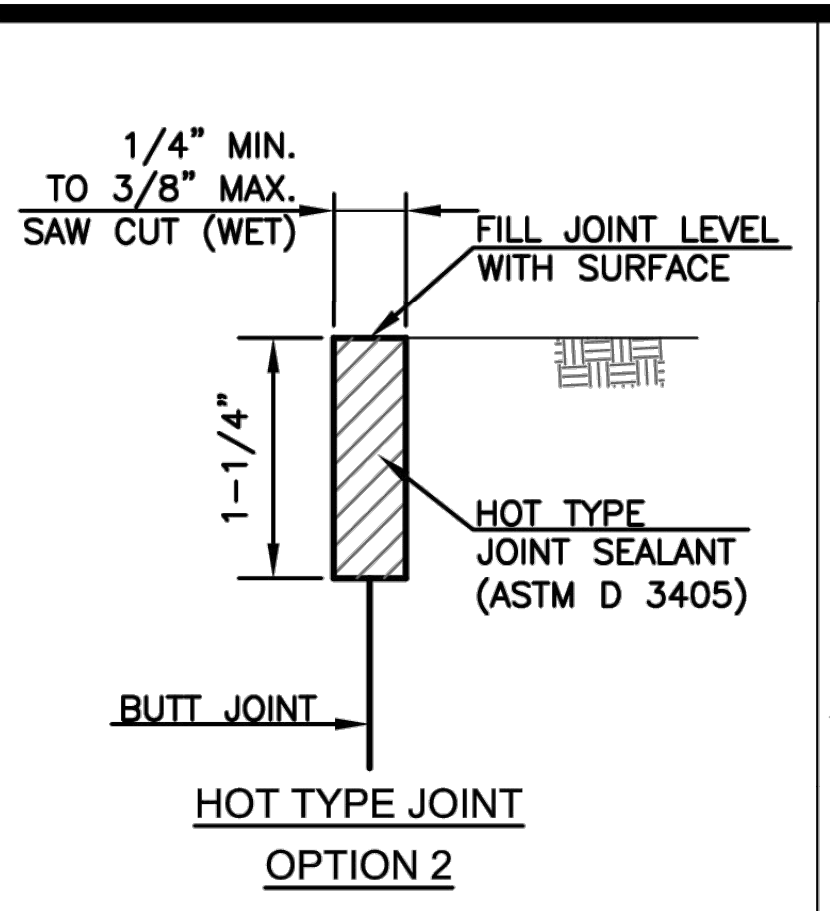


**HOT TYPE JOINT  
 OPTION 2**

**DETAIL B**  
 TRANSVERSE AND LONGITUDINAL CONTRACTION JOINTS



**SILICONE JOINT  
 OPTION 1**

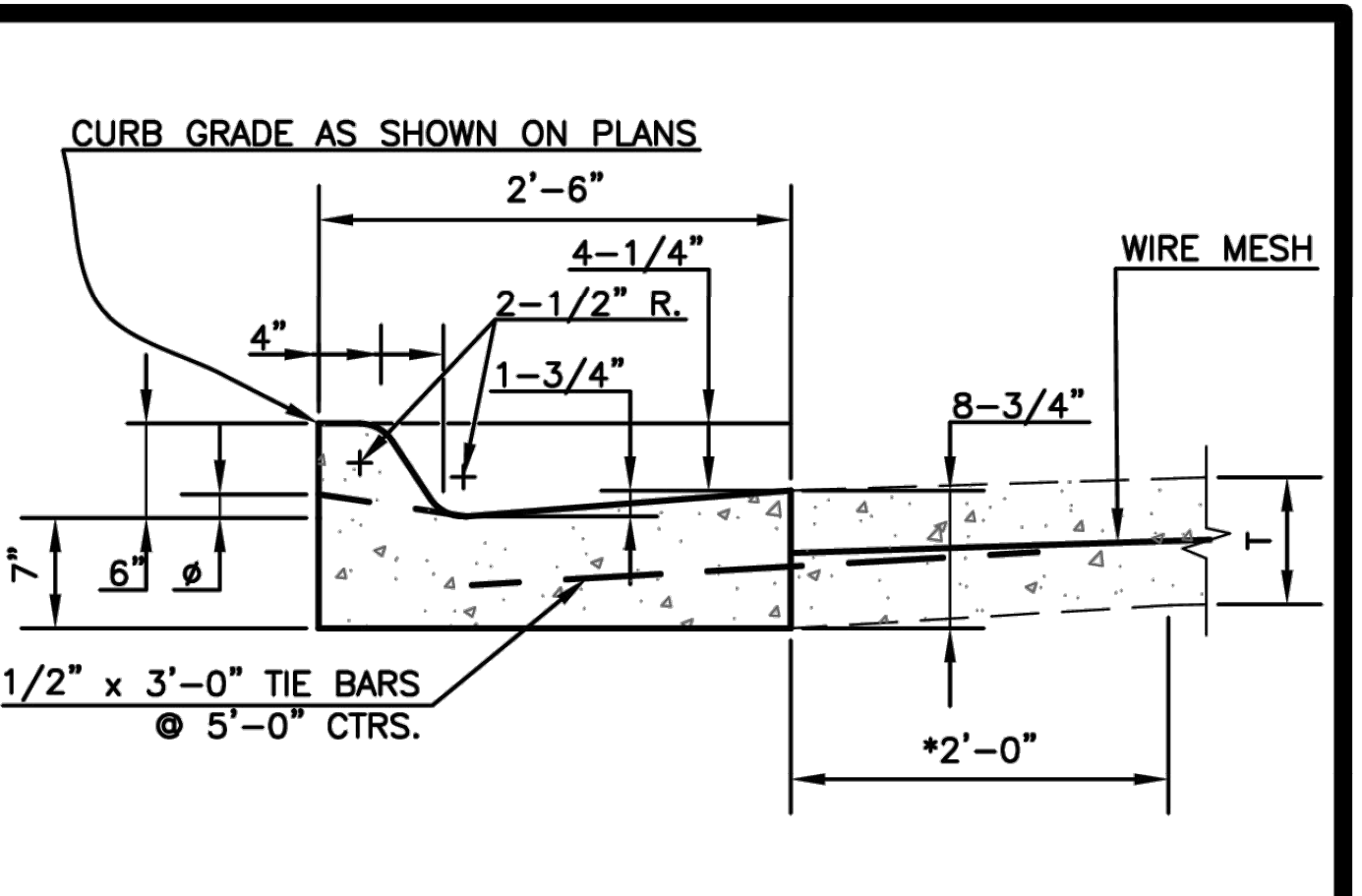


**HOT TYPE JOINT  
 OPTION 2**

**DETAIL C**

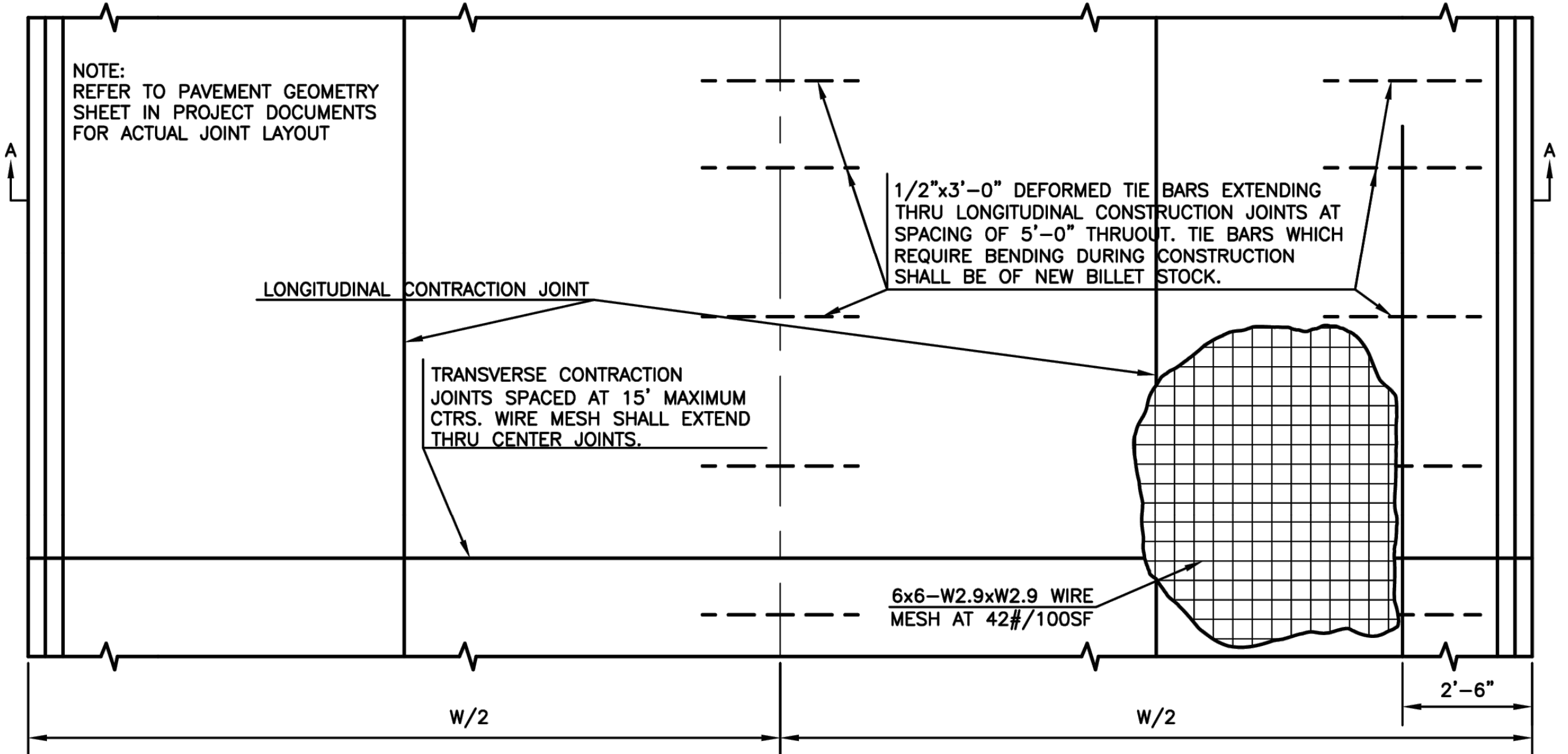
TRANSVERSE AND LONGITUDINAL BUTT JOINTS

NOTE:  
 AT THE BEGINNING AND END OF THE PAVEMENT ON ANY GIVEN PROJECT A CONSTRUCTION JOINT AS OUTLINED IN THE STANDARD SPECIFICATIONS AND SHOWN ABOVE SHALL BE USED UNLESS THE PAVEMENT ABUTS A RIGID SURFACE. THE HEADER SHALL BE REMOVED AND THE TIE BARS BENT INTO THE GROOVE AT RIGHT ANGLES TO THE CENTERLINE OF THE PAVEMENT.



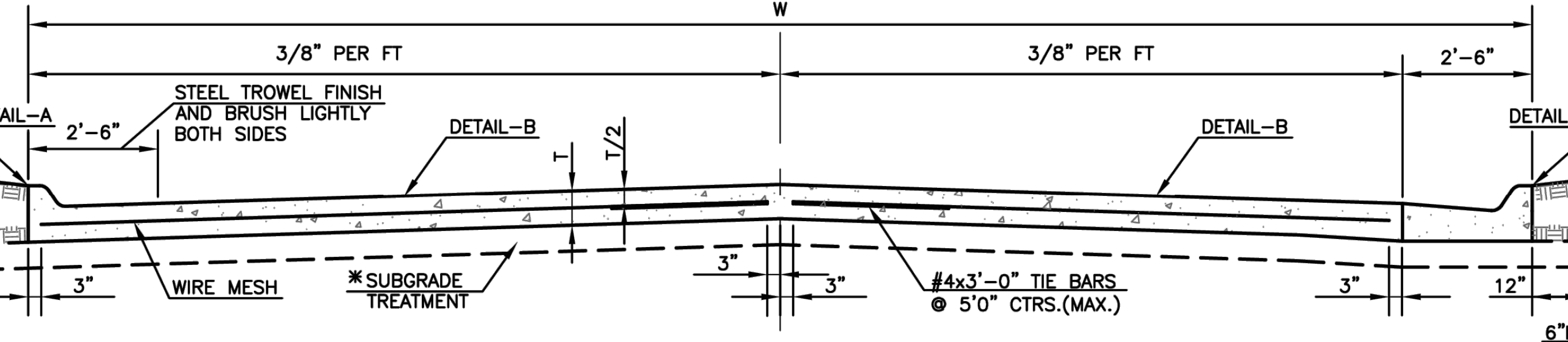
**DETAIL D**

\* THE CONTRACTOR HAS THE OPTION OF MAINTAINING T OR TRANSITIONING AS SHOWN AT NO ADDITIONAL COST TO OWNER.  
 Ø 1-1/2" FOR DRIVE ENTRANCES AND 3/4" FOR SIDEWALK RAMP.



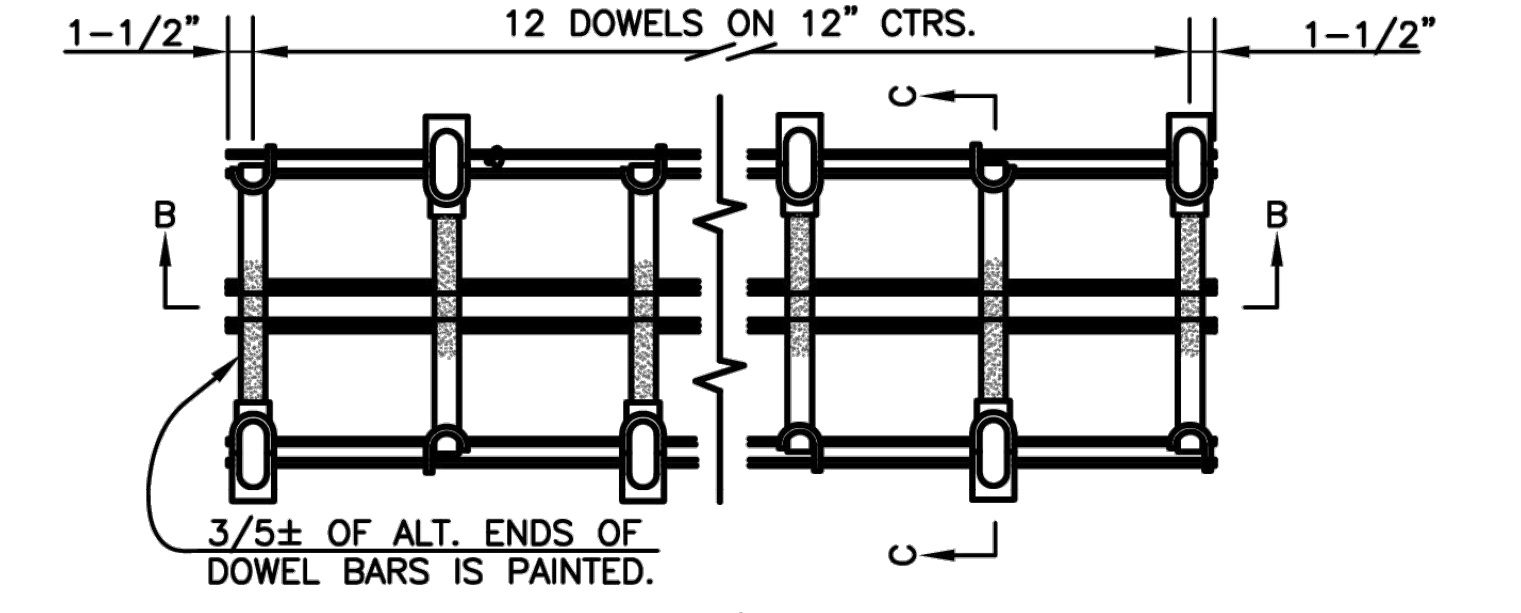
**PLAN VIEW**

NOTE: STANDARD LANE WIDTH = 11'-0"



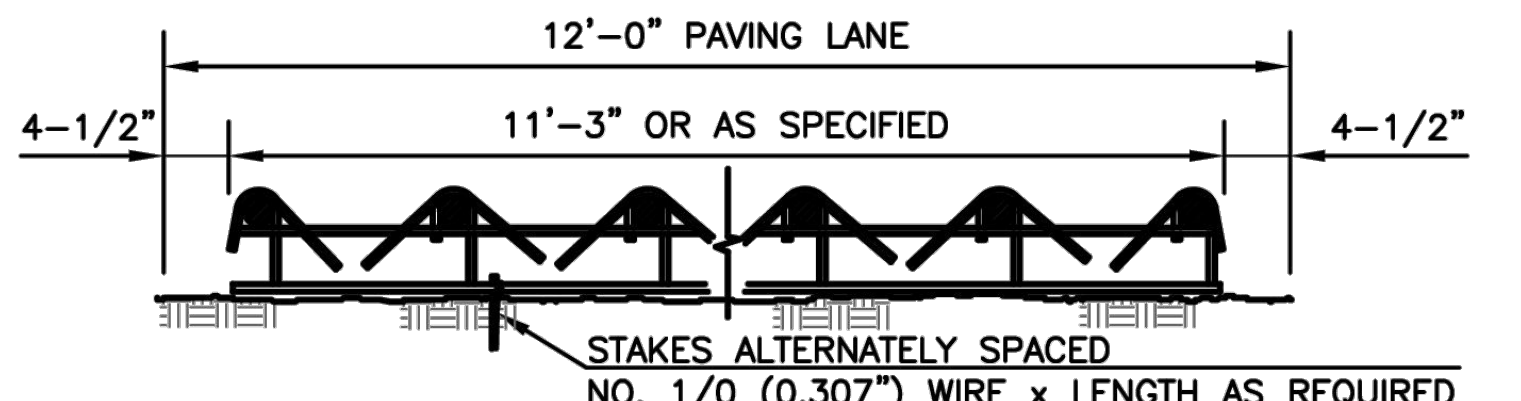
**TYPICAL PAVEMENT  
 SECTION A-A**

\*SUBGRADE TREATMENT PER GEOTECHNICAL REPORT.  
 NOTE: COMBINED CURB AND GUTTER OR INTEGRAL CURB MAY BE USED WITH CONCRETE PAVEMENT CONSTRUCTION AS DETERMINED BY THE CITY/COUNTY ENGINEER. SEE TYPICAL PAVEMENT SECTION ABOVE.

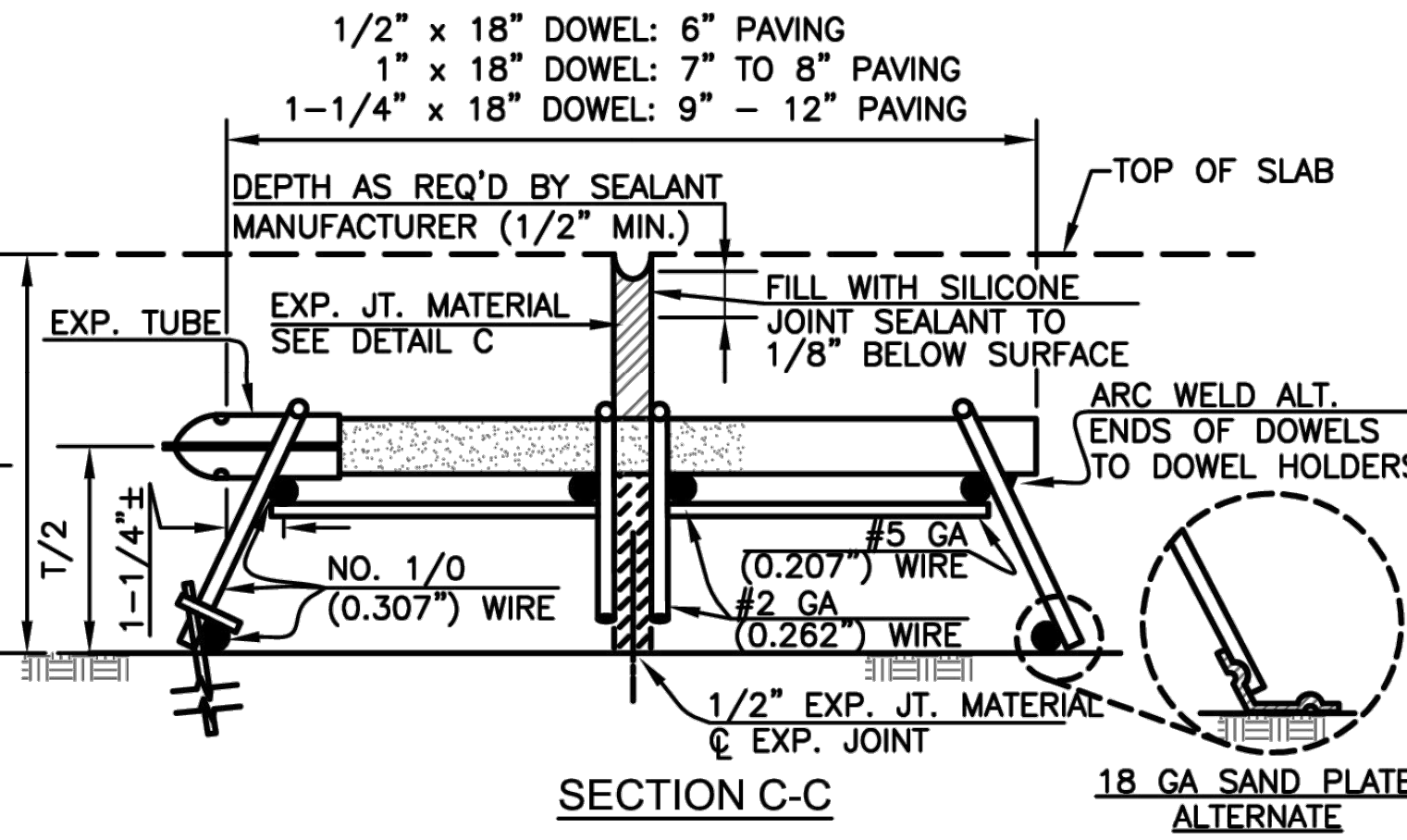


**PLAN VIEW OF WELDED  
 EXPANSION JOINT ASSEMBLY**

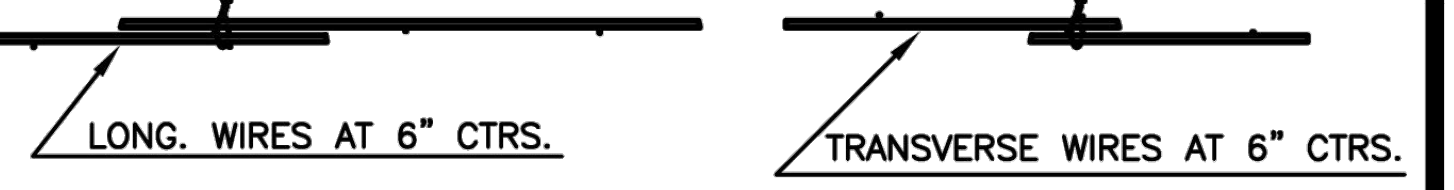
NOTES:  
 1. DOWELS, PLAIN ROUND PER A.S.T.M. A-615, GRADE 40 OR AS SPECIFIED.  
 2. UNIT-WIRED TOGETHER FOR QUICK DISASSEMBLE AND PLACEMENT OF EXPANSION AND FILLER IN FIELD.  
 3. ALL WIRE SIZES SHOWN ARE MINIMUM. DOWELS, PLAIN ROUND PER A.S.T.M. A-615, GRADE



**SECTION B-B**

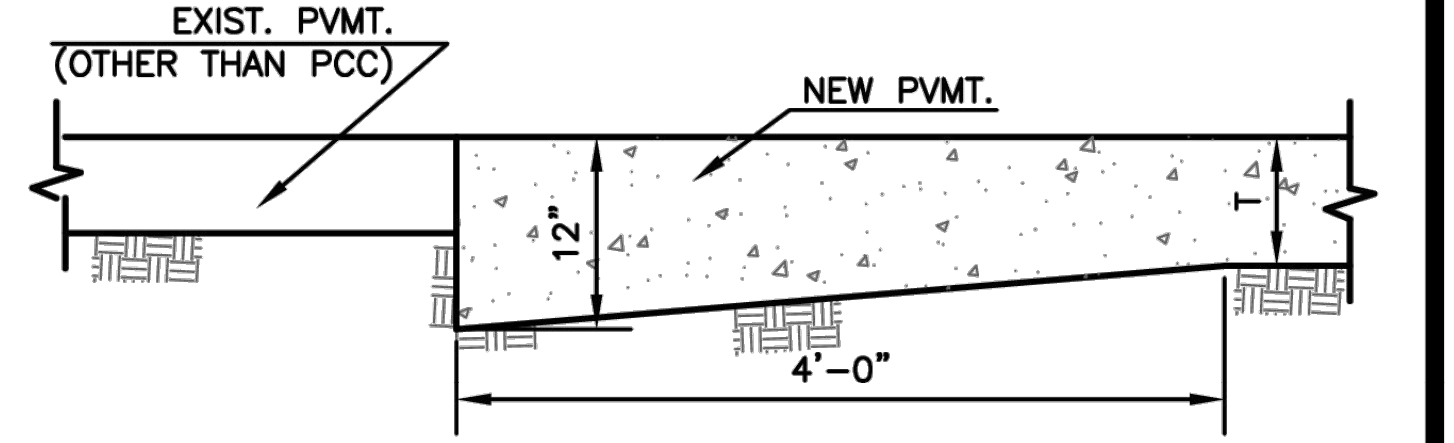


**SECTION C-C**



**DETAIL OF LAP  
 WIRE MESH**

NOTE:  
 THE LAP WIRE SHALL EXTEND BEYOND THE FIRST TRANSVERSE WIRE OF EACH SHEET. THE SHEET SHALL BE WIRED SECURELY AT THE EDGES AND AT INTERVALS NOT TO EXCEED 2'-6" FOR THE FULL WIDTH OF THE SHEET. APPROXIMATE WEIGHT OF WIRE MESH = 42 LBS./100 SQ. FT. OTHER METHODS FOR FASTENING THE SHEETS OF WIRE MESH AT THE LAPS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.



**DETAIL OF JOINT AT  
 EXISTING PAVEMENT**

NOTES:  
 1. SAND IS NOT AN APPROVED FILL OR SUBGRADE MATERIAL.  
 2. WHERE NEW PAVEMENT ABUTS EXISTING PCC PAVEMENT, THICKENED SECTION SHALL BE ELIMINATED AND 1" DIA. SMOOTH DOWELS SHALL BE PLACED @ 12" CENTERS. THE DOWELS SHALL BE ARRANGED SIMILAR TO THE DETAIL FOR "FULL PANEL REPAIR & UTILITY CUTS" SHOWN ON MISCELLANEOUS DETAILS I (DT-017).

6	June 2018	Eliminated sealing butt joint at curb toe	DHS	JVH
5	March 2013	Made bar size " & added ref. to DT-017	DHS	SB
4	Dec. 2012	Changed to tie bars at Detail D	DHS	SB
3	March 2010	Eliminated keyed joint at Typical Section	DHS	SB
2	Dec. 2009	Eliminated keyed joints	DHS	SB
1	Feb. 2008	Mod. Det.'s B,C&D and Sect.'s A-A&D-D	DHS	SB
NO.	DATE:	REVISION	BY:	APP'D

DRAWN BY: *rm/mc*  
 APP'D BY: *R. Clumley*



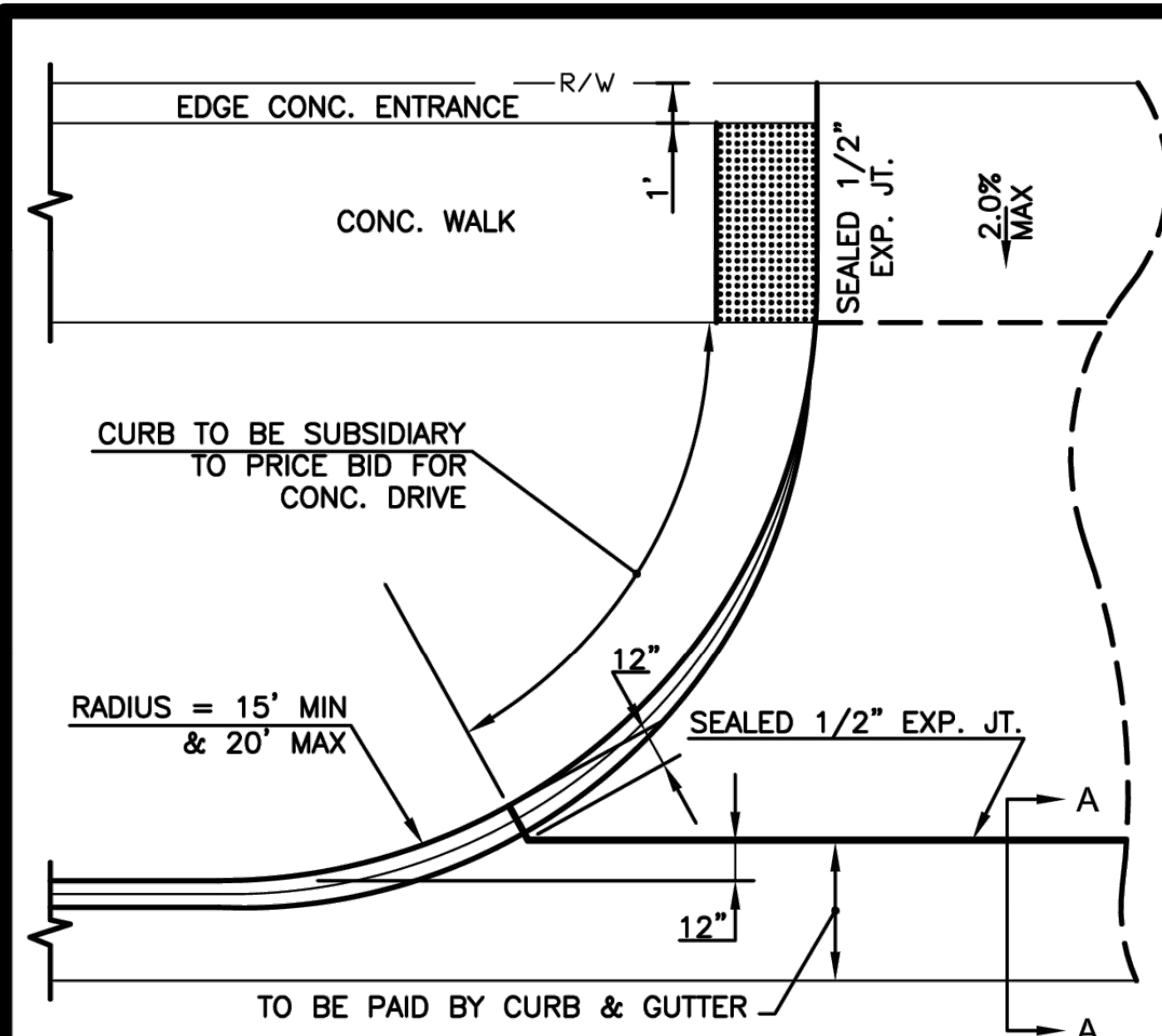
**SHAWNEE COUNTY, KANSAS  
 PUBLIC WORKS DEPARTMENT**  
 1515 NW SALINE  
 TOPEKA, KS 66618  
 (785) 233-7702



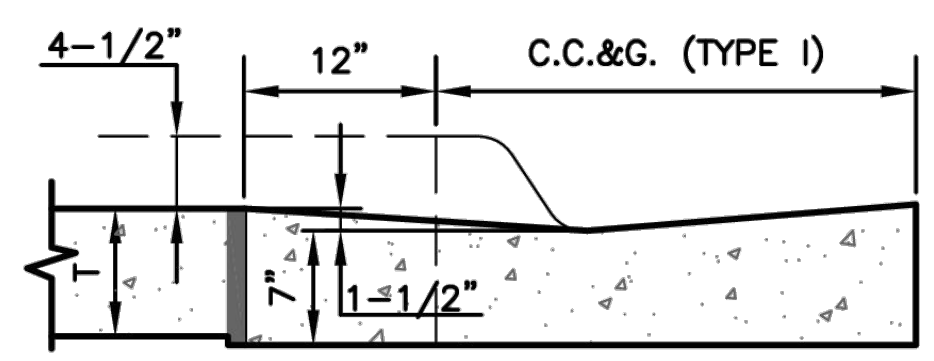
**STANDARD DETAILS**

**CONCRETE PAVEMENT  
 DETAILS  
 (DT-002)**

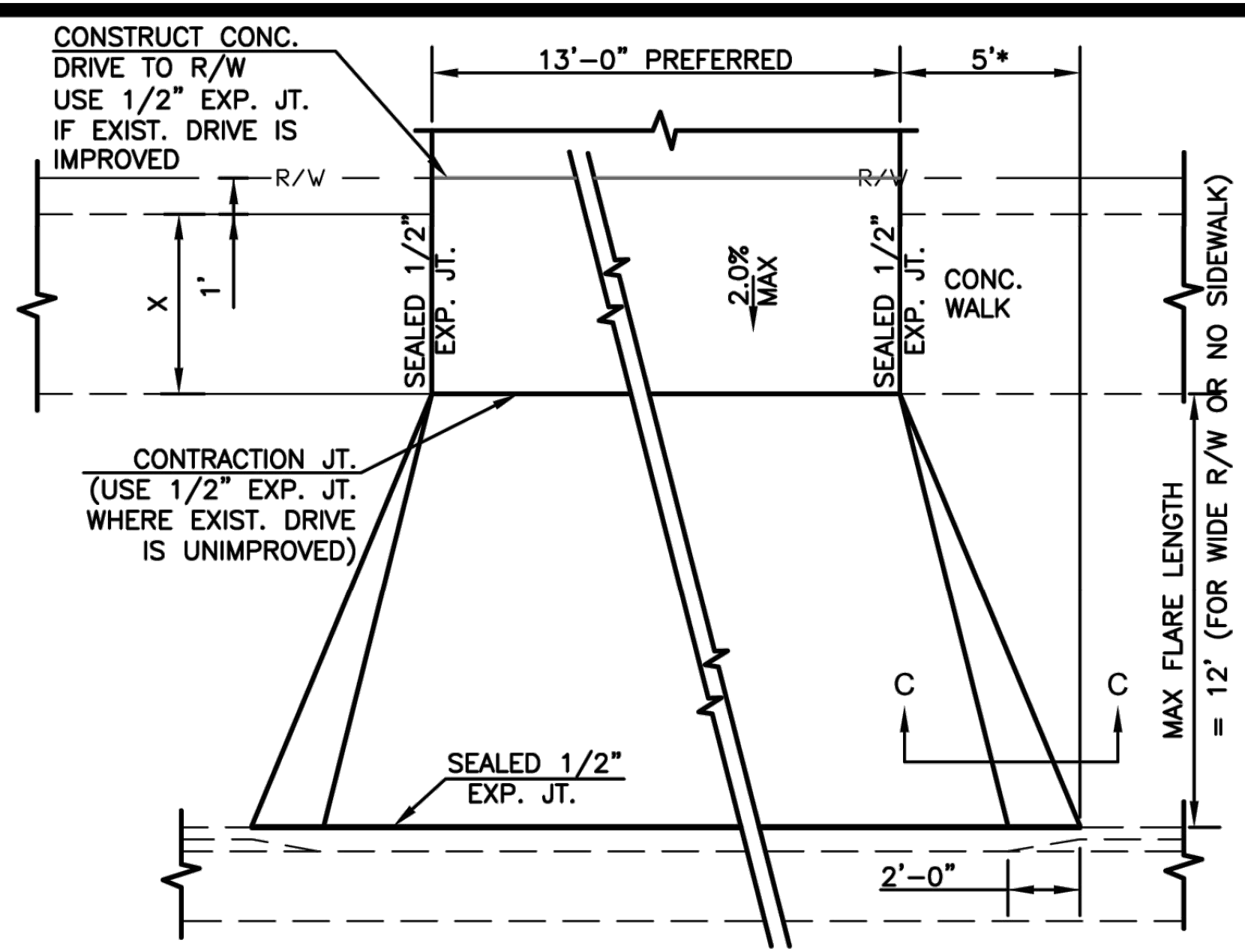
DATE: APR 2026  
 SHEET: 44 OF 122  
 PROJ.: 701038.00



**COMMERCIAL DRIVE APPROACH**



SECTION A - A  
T=8" NON-REINFORCED FOR COMMERCIAL DRIVE, ALLEY APPROACH, AND SIDEWALK IN DRIVE ENTRANCE.



**TYPICAL PRIVATE DRIVE APPROACH**

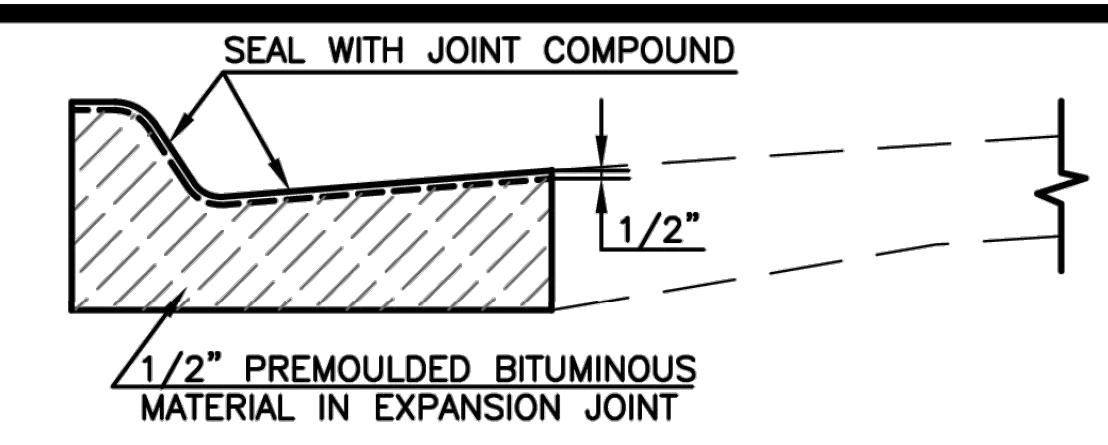
CONSTRUCT CONC. DRIVE TO R/W USE 1/2" EXP. JT. IF EXIST. DRIVE IS IMPROVED

CONTRACTION JT. (USE 1/2" EXP. JT. WHERE EXIST. DRIVE IS UNIMPROVED)

NOTES:  
1. A SPECIAL DETAIL WILL BE PROVIDED WHEN SIDEWALK IS CLOSER THAN 6'-0" FROM BACK OF CURB.  
2. THEORETICAL CURB HEIGHT OF 6" ABOVE E SHALL BE OBTAINED IN ENTRANCE PAVEMENT.  
\* FLARE SHALL BE 5 FEET WIDE IN NEW CONSTRUCTION. VARIANCES MAY BE MADE WITH APPROVAL OF THE CITY ENGINEER IN SPECIAL CIRCUMSTANCES FOR THE REPLACEMENT OF EXISTING DRIVEWAYS.

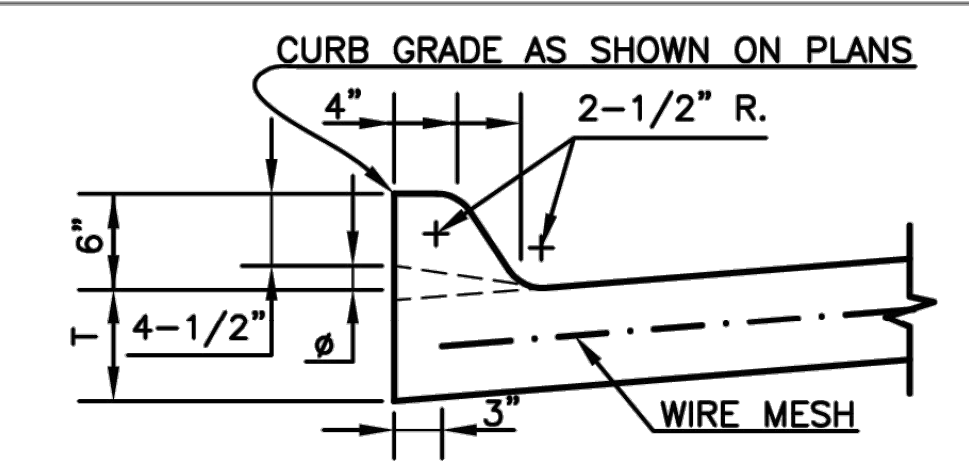


SECTION C - C  
T1=6" FOR RESIDENTIAL DRIVE APPROACH AND SIDEWALK IN DRIVE ENTRANCE

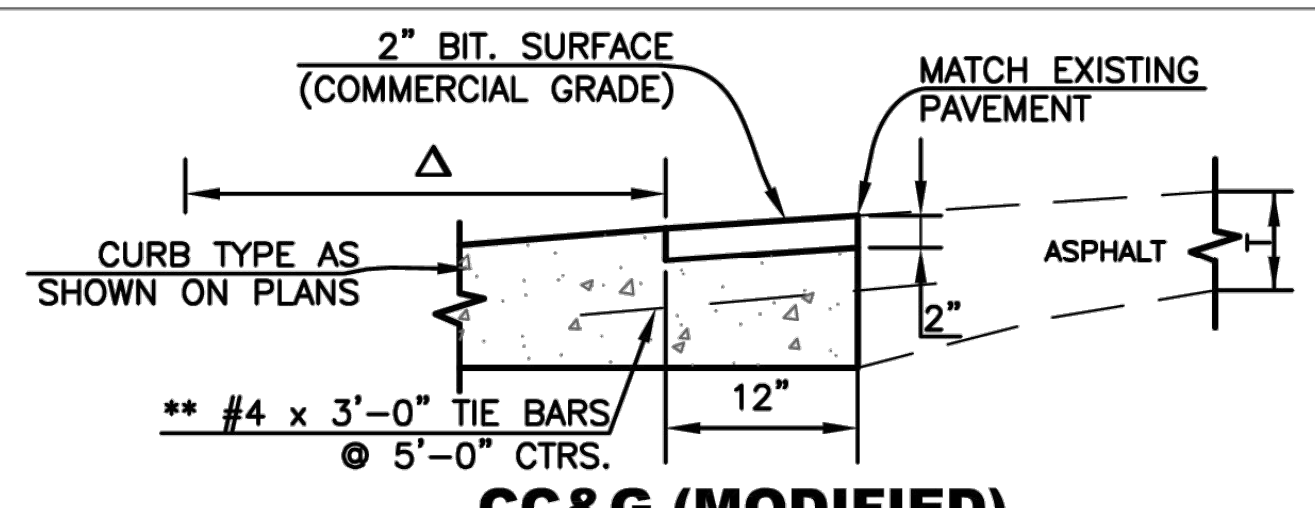


**CURB AND GUTTER EXPANSION JOINT DETAILS**

NOTES:  
1. 1/2" EXPANSION JOINTS TO BE PLACED AT THE END OF ALL INTERSECTION RETURNS.  
2. SAND IS NOT AN APPROVED FILL OR SUBGRADE MATERIAL.  
3. ALL EXPANSION JOINTS SHALL BE SEALED WITH APPROVED MATERIAL.



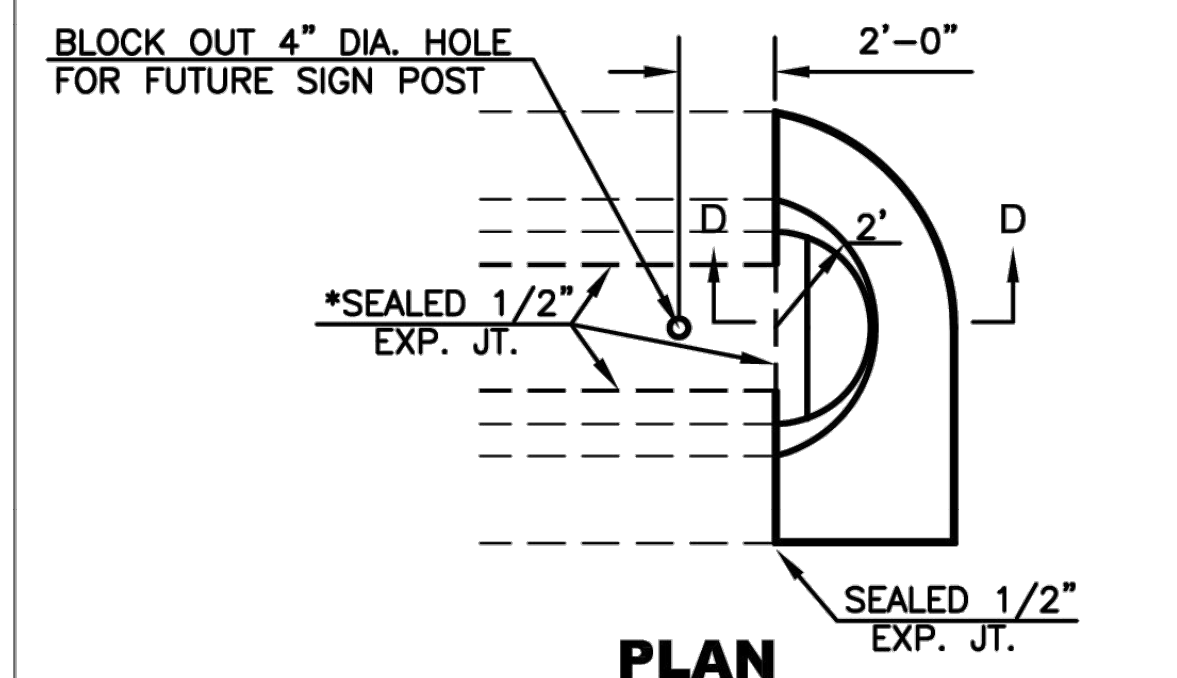
**6" INTEGRAL CURB**



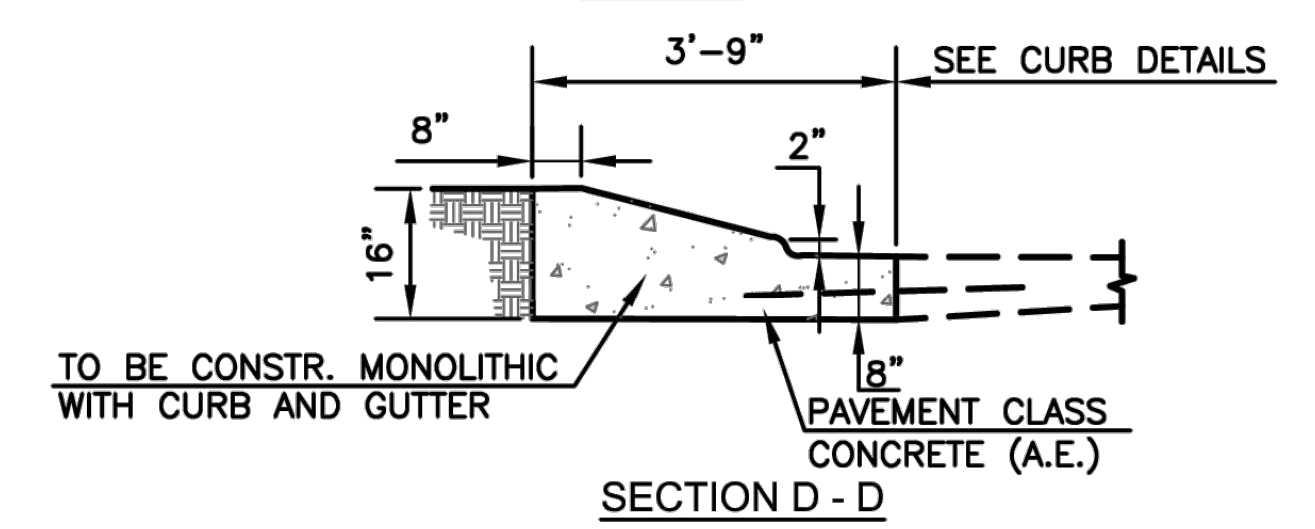
**CC&G (MODIFIED)**

NOTE:  
CURB AND GUTTER ABUTTING EXISTING ASPHALT

Δ DIMENSION IS FROM BACK OF CURB TO TOE, SEE APPROPRIATE DETAIL FOR CURB TYPE AS SHOWN ON PLANS



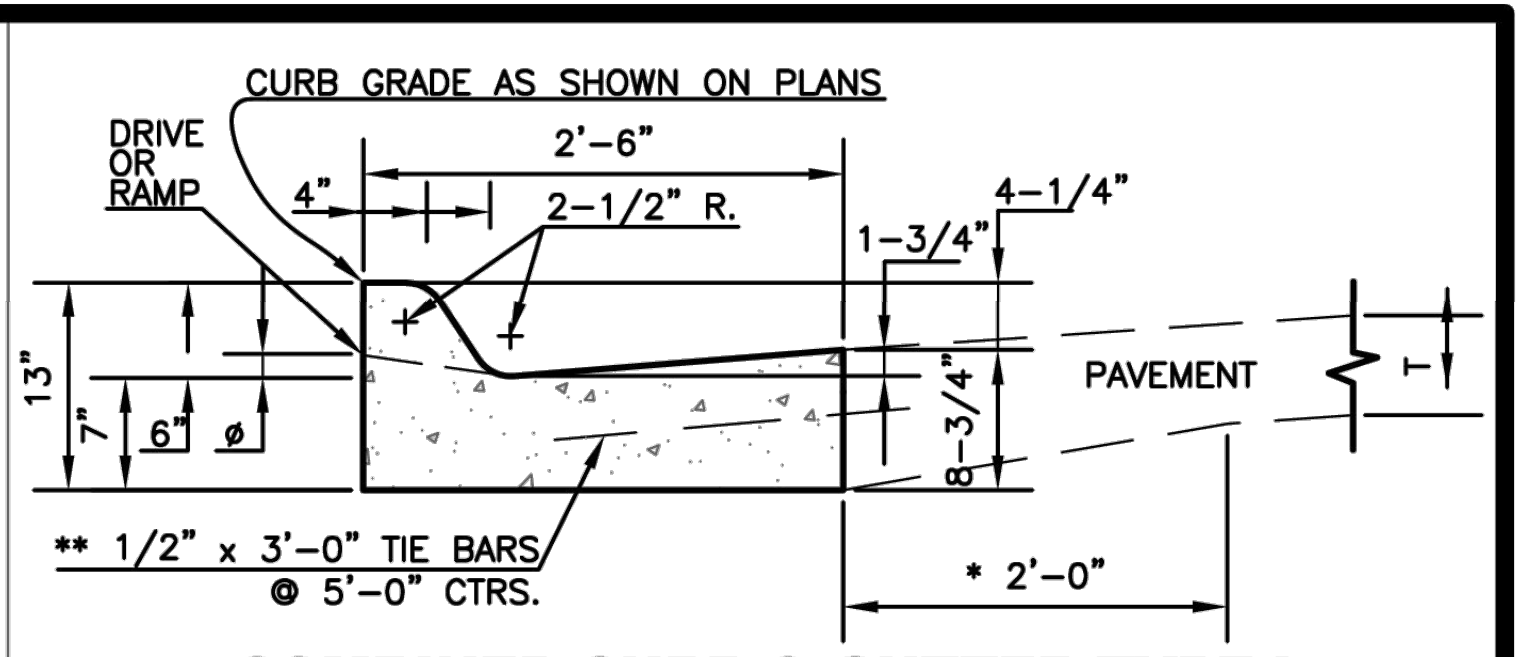
**PLAN**



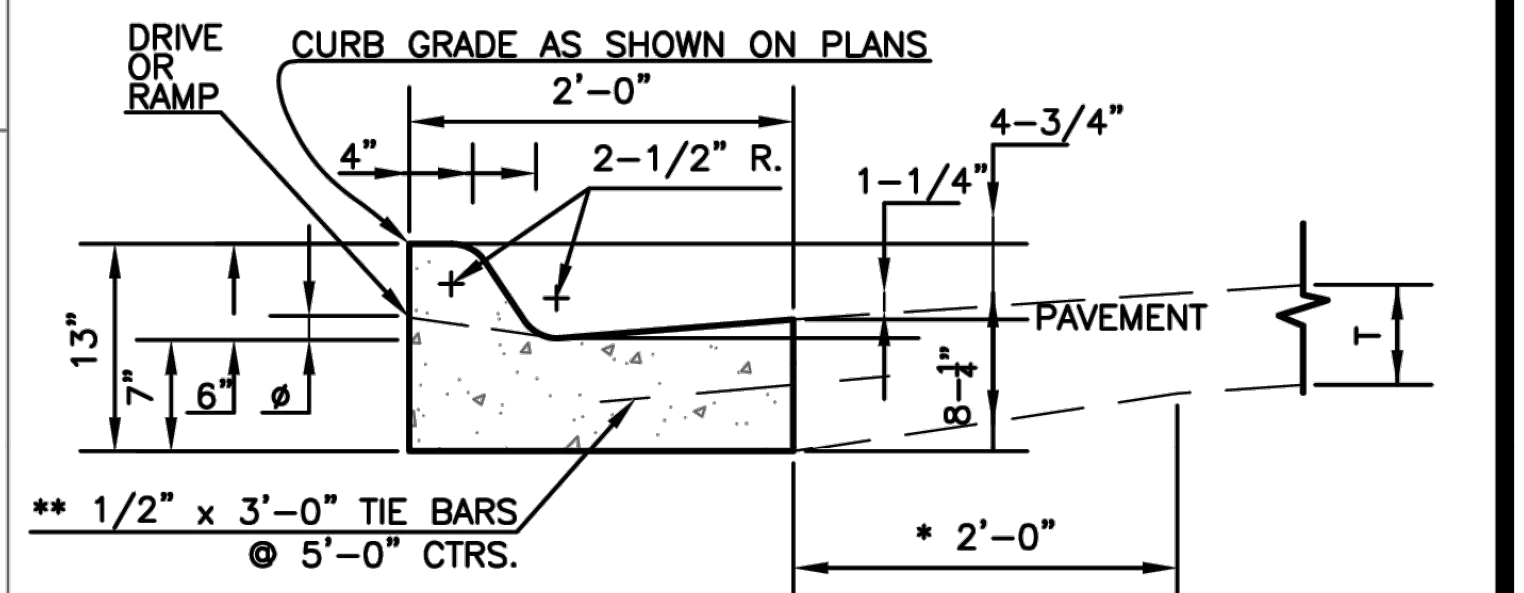
**SOLID NOSE DETAILS**

NOTE:  
PAVEMENT CLASS CONCRETE (AE) NEEDED TO COMPLETE THE MEDIAN NOSE SHALL BE SUBSIDIARY TO THE BID ITEM FOR COMBINED CURB AND GUTTER TYPE III.

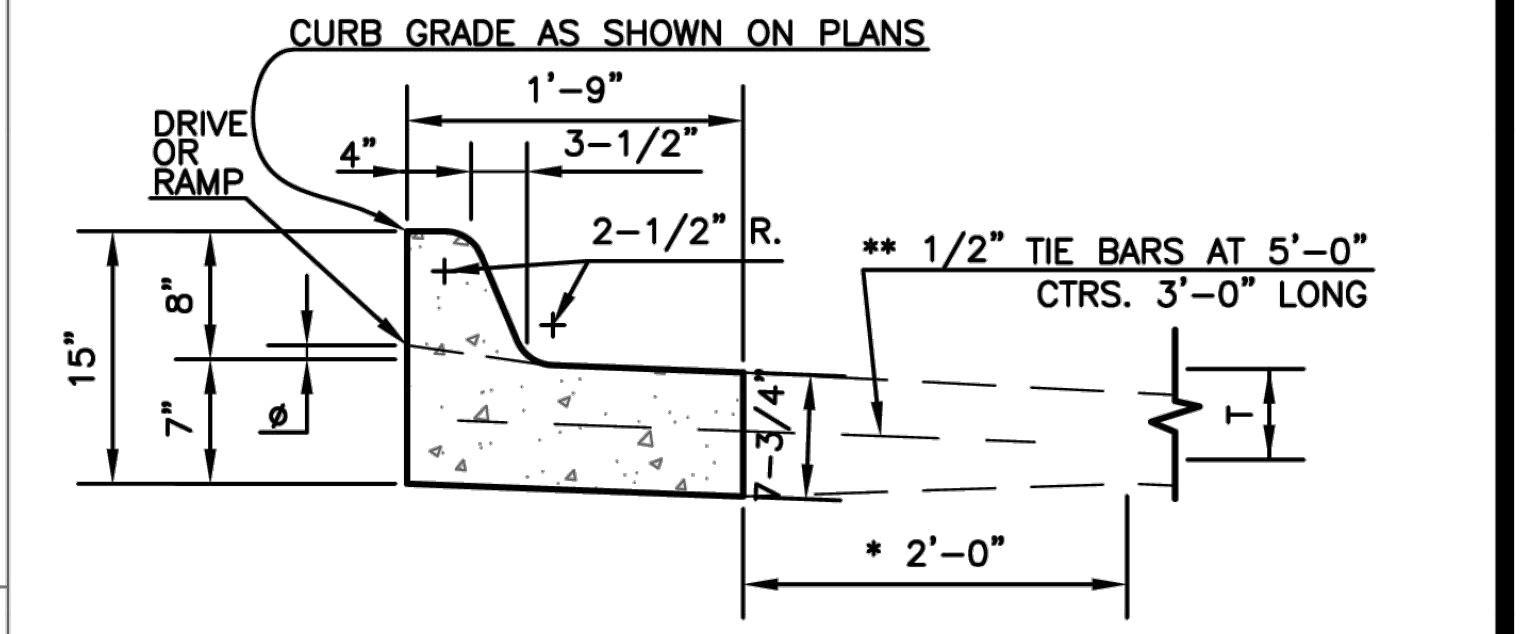
\* OMIT SEALED 1/2" EXPANSION JOINT WHEN SURFACE MATERIAL USED IN MEDIAN IS OTHER THAN CONCRETE.



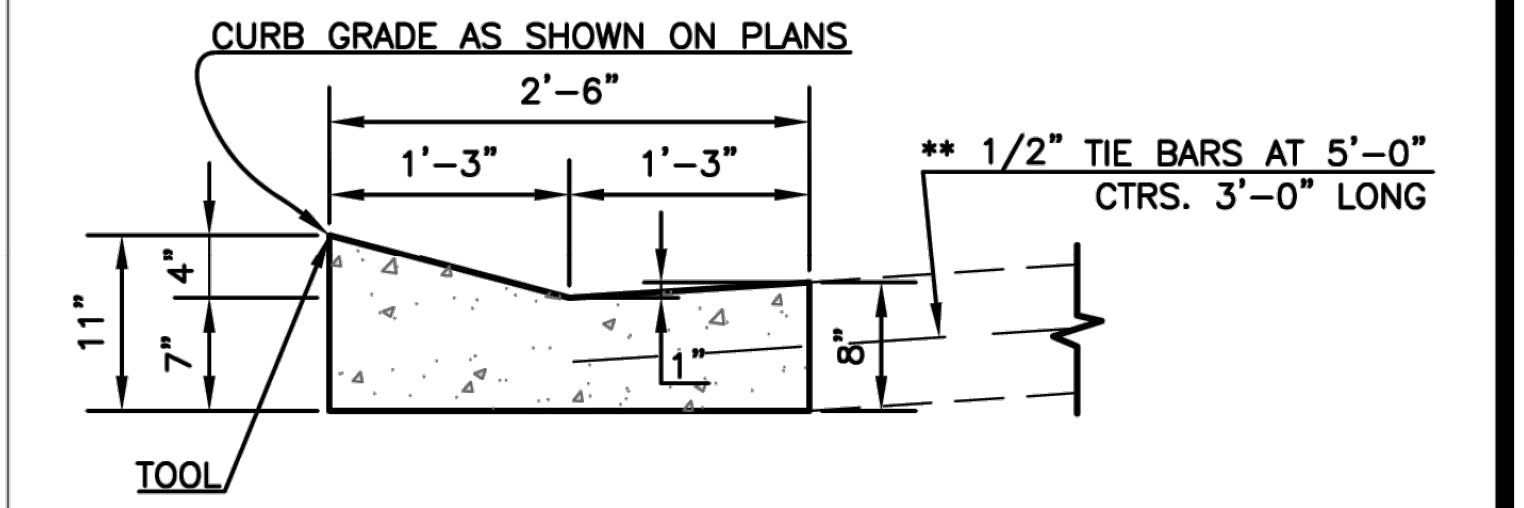
**COMBINED CURB & GUTTER-TYPE I**



**COMBINED CURB & GUTTER-TYPE II**



**COMBINED CURB & GUTTER-TYPE III**



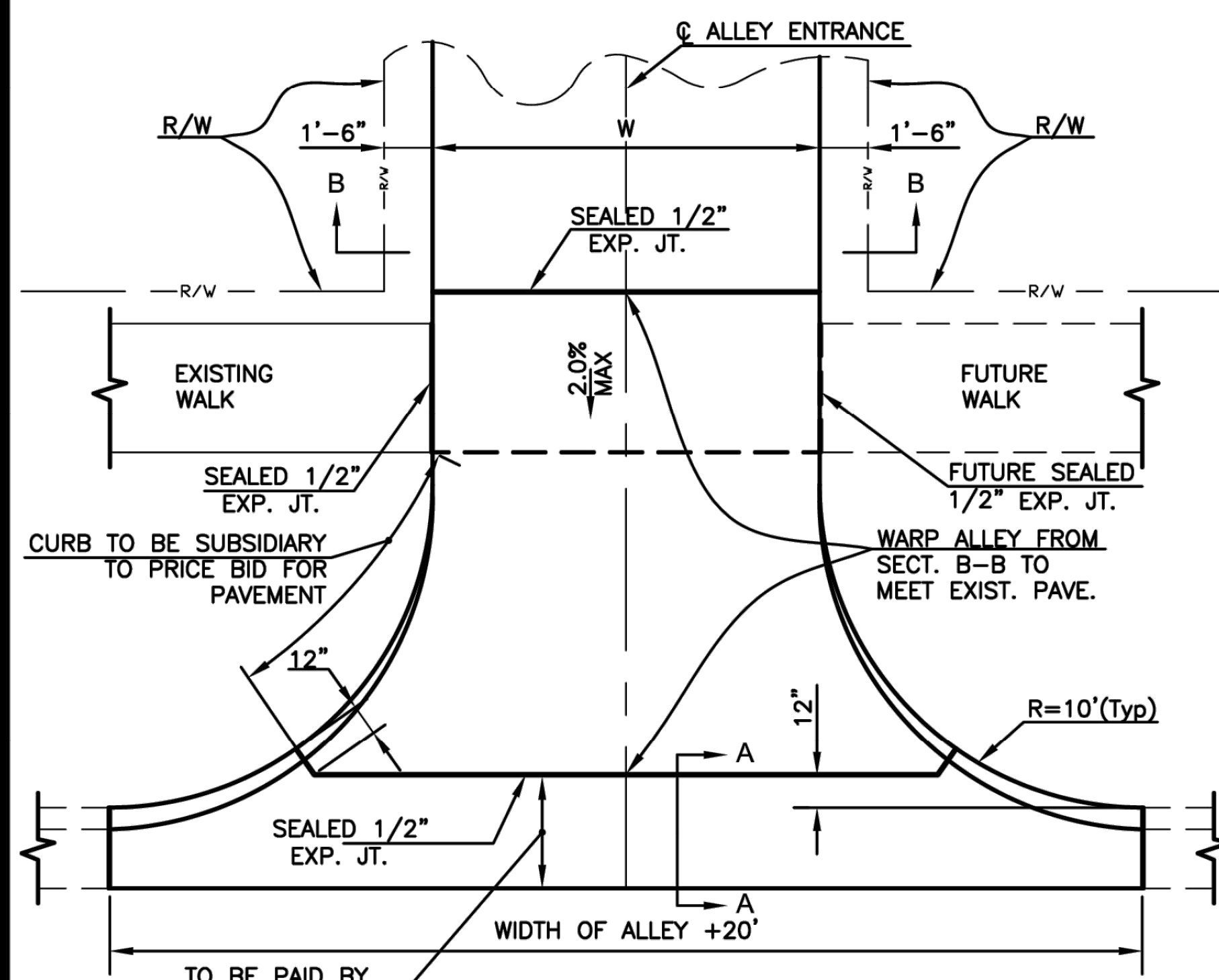
**LAYBACK CURB & GUTTER-TYPE IV**

NOTES:  
1. USE OF LAYBACK CURB AND GUTTER IS RESTRICTED TO STREET CLASSIFICATION OF SUB-COLLECTOR AND LOCAL. LAYBACK CURB AND GUTTER SHALL NOT BE USED IN INTERSECTION CURB RETURNS.  
2. FOR CURB AND GUTTER ABUTTING EXISTING ASPHALT, REFER TO CC&G MODIFIED DETAIL

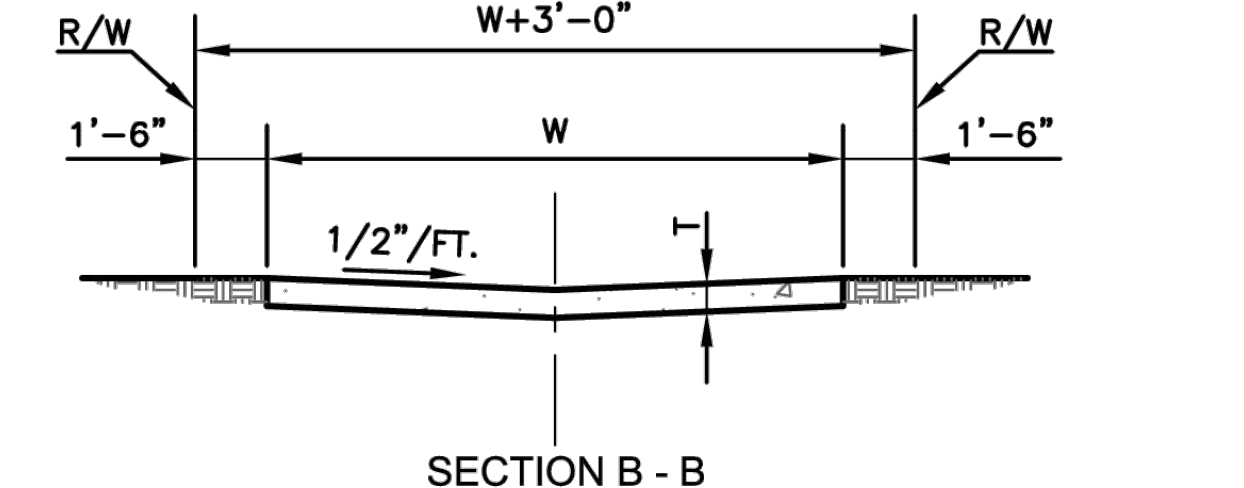
\* THE CONTRACTOR HAS THE OPTION OF MAINTAINING OR TRANSITIONING AS SHOWN AT NO ADDITIONAL COST.

\*\*THE TIE BARS MAY BE ELIMINATED WITH ASPHALTIC CONCRETE PAVEMENT CONSTRUCTION.

Ø 1-1/2" FOR DRIVE ENTRANCES AND 3/4" FOR SIDEWALK RAMP

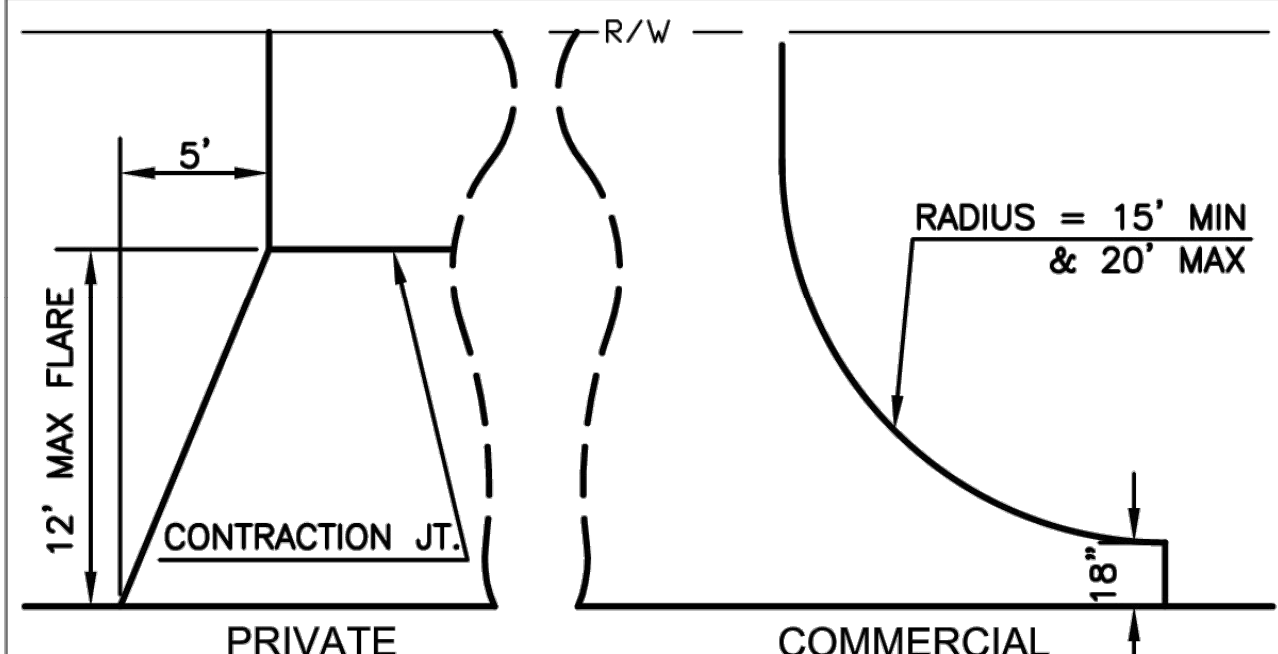


**ALLEY APPROACH**



SECTION B - B

NOTES:  
1. T=7" REINFORCED CONCRETE  
2. WIDTH OF W WILL BE USED THROUGHOUT ON ALL ALLEY PAVING PROJECTS.  
3. ALLEY RETURNS SHALL BE THE SAME THICKNESS AS THE ADJACENT STREET THICKNESS.  
4. 1/2" EXP. JOINT AT EACH END OF ALLEY RETURN.



**PRIVATE DRIVE APPROACHES ON AN UNIMPROVED ROADWAY**

5	March 2013	C&G payment @ alley appr. & bars to	DHS	SB
4	Dec. 2012	Changed to tie bar from rebar	DHS	SB
3	March 2010	Eliminated keyed jt. at Com. Drive Appr.	DHS	SB
2	Dec. 2009	Added Dr. Appr. on Unimpr. Rdwy., added flare verbage, mod. S/W x-slope & remv. keyed joints from C & G.	DHS	SB
1	Feb. 2008	Mod. Com. Dr. & Alley Appr.	DHS	SB
NO.	DATE:	REVISION	BY:	APP'D

DRAWN BY: *rm/mc*

APP'D BY: *FL*



**SHAWNEE COUNTY, KANSAS PUBLIC WORKS DEPARTMENT**  
1515 NW SALINE TOPEKA, KS 66618 (785) 233-7702



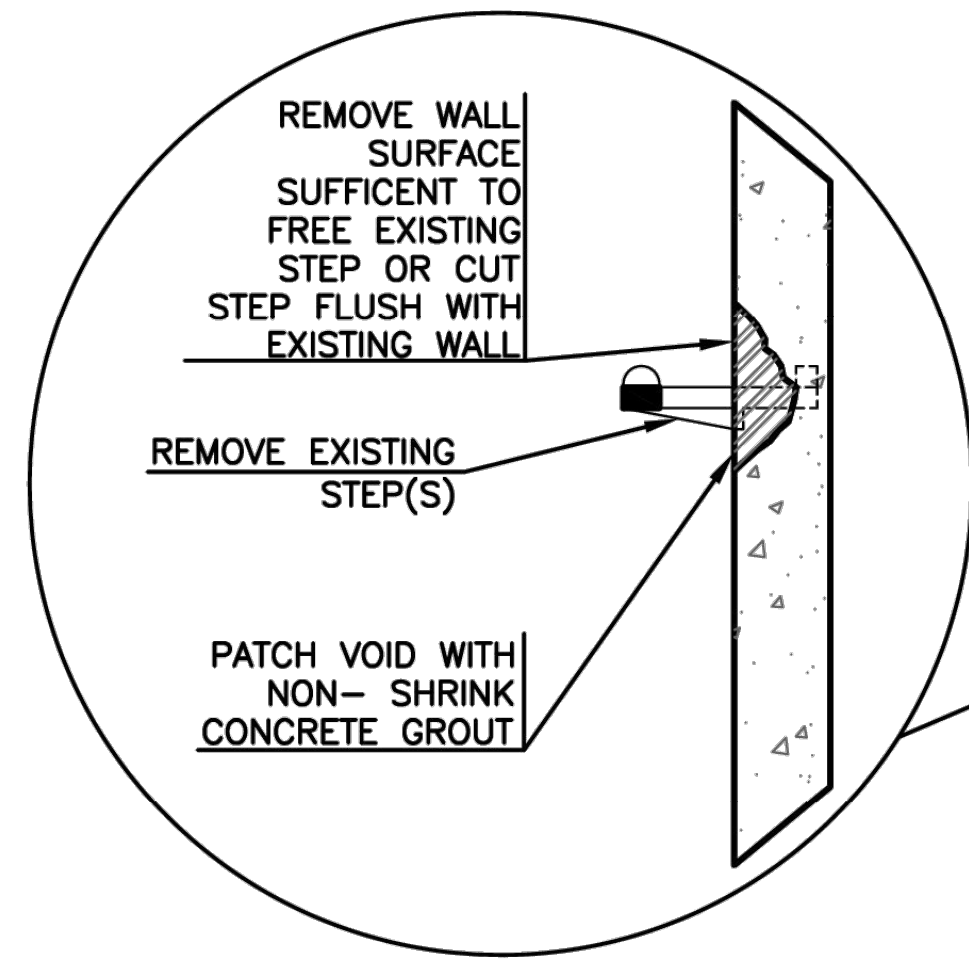
**STANDARD DETAILS**

**CURB & GUTTER AND APPROACH DETAILS**  
(DT-003)

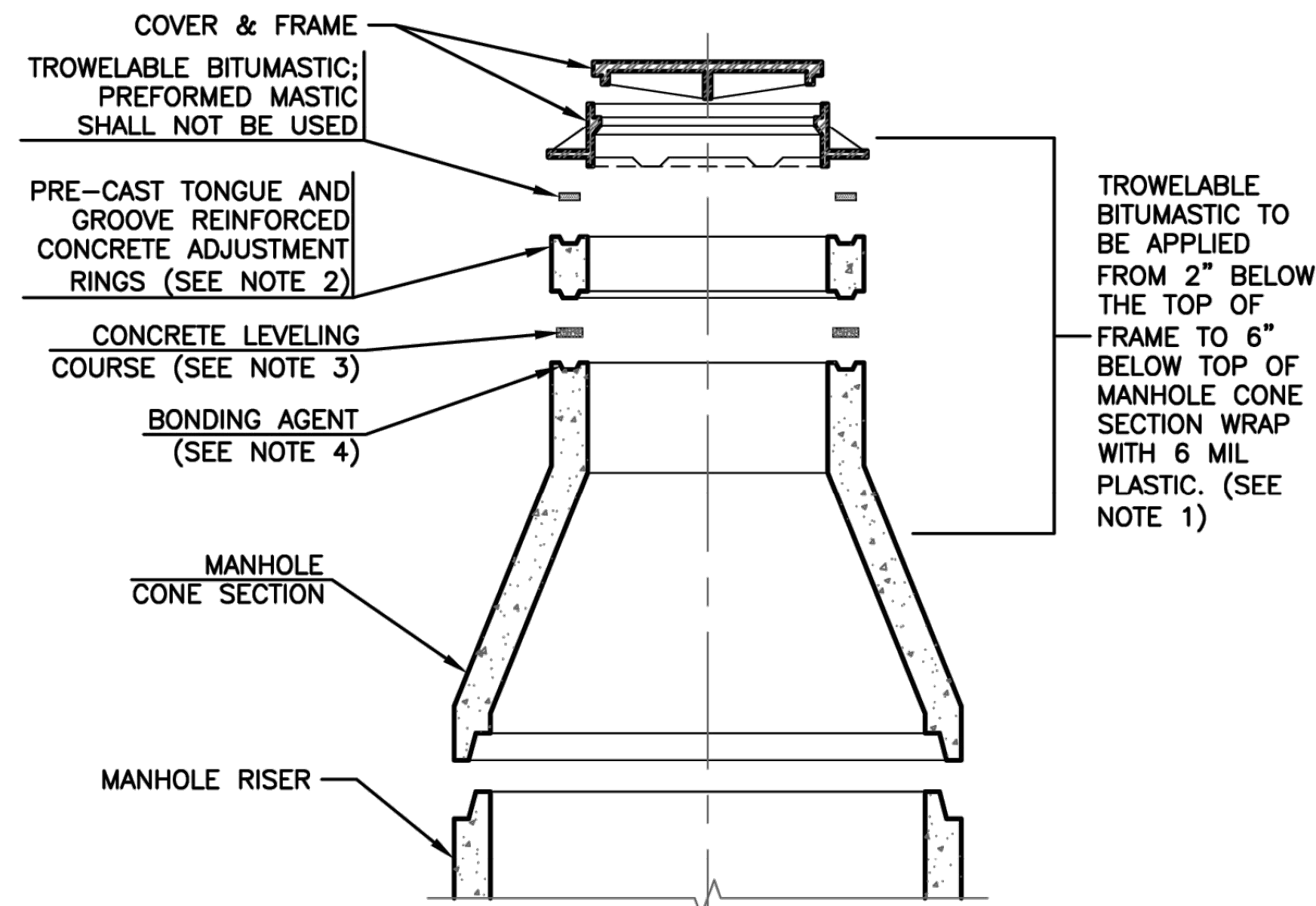
DATE: APR 2026  
SHEET: 45 OF 122  
PROJ.: 701038.00







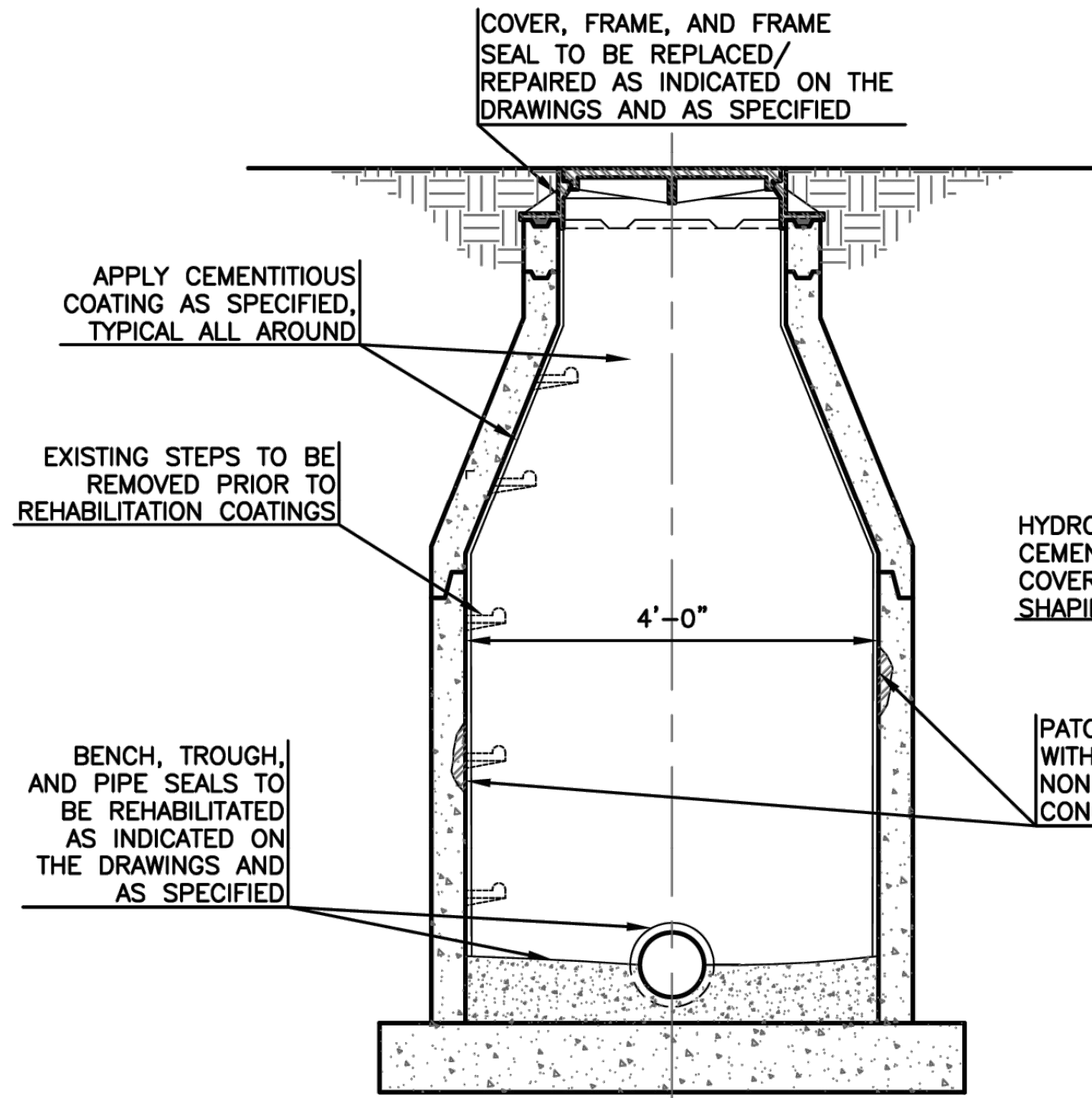
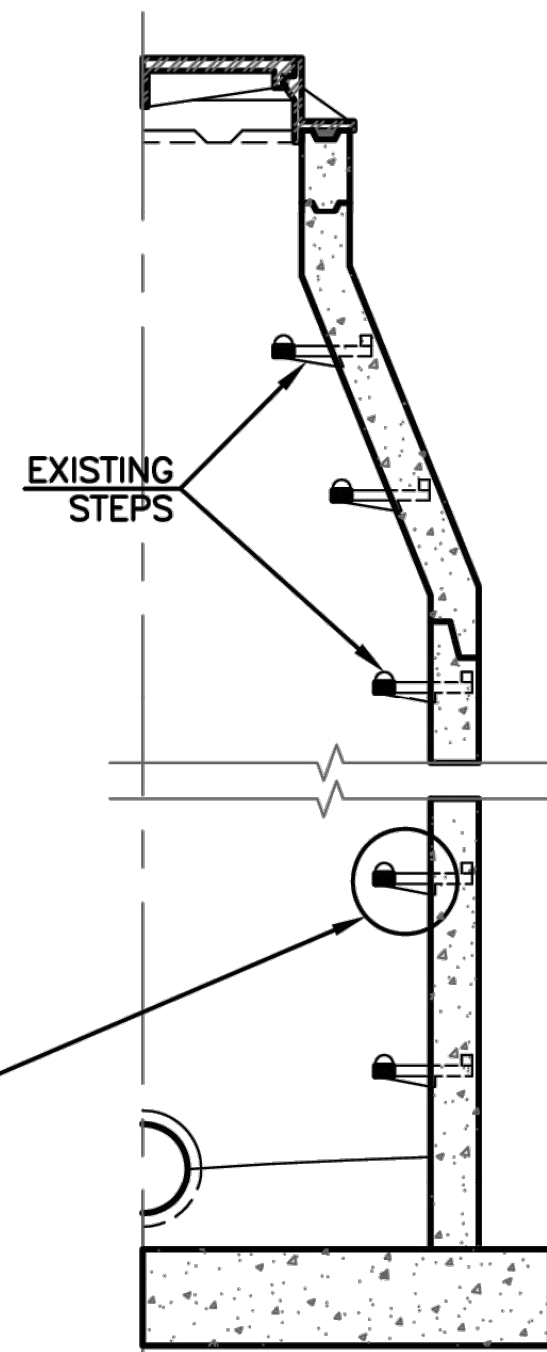
**STEP REMOVAL DETAILS**



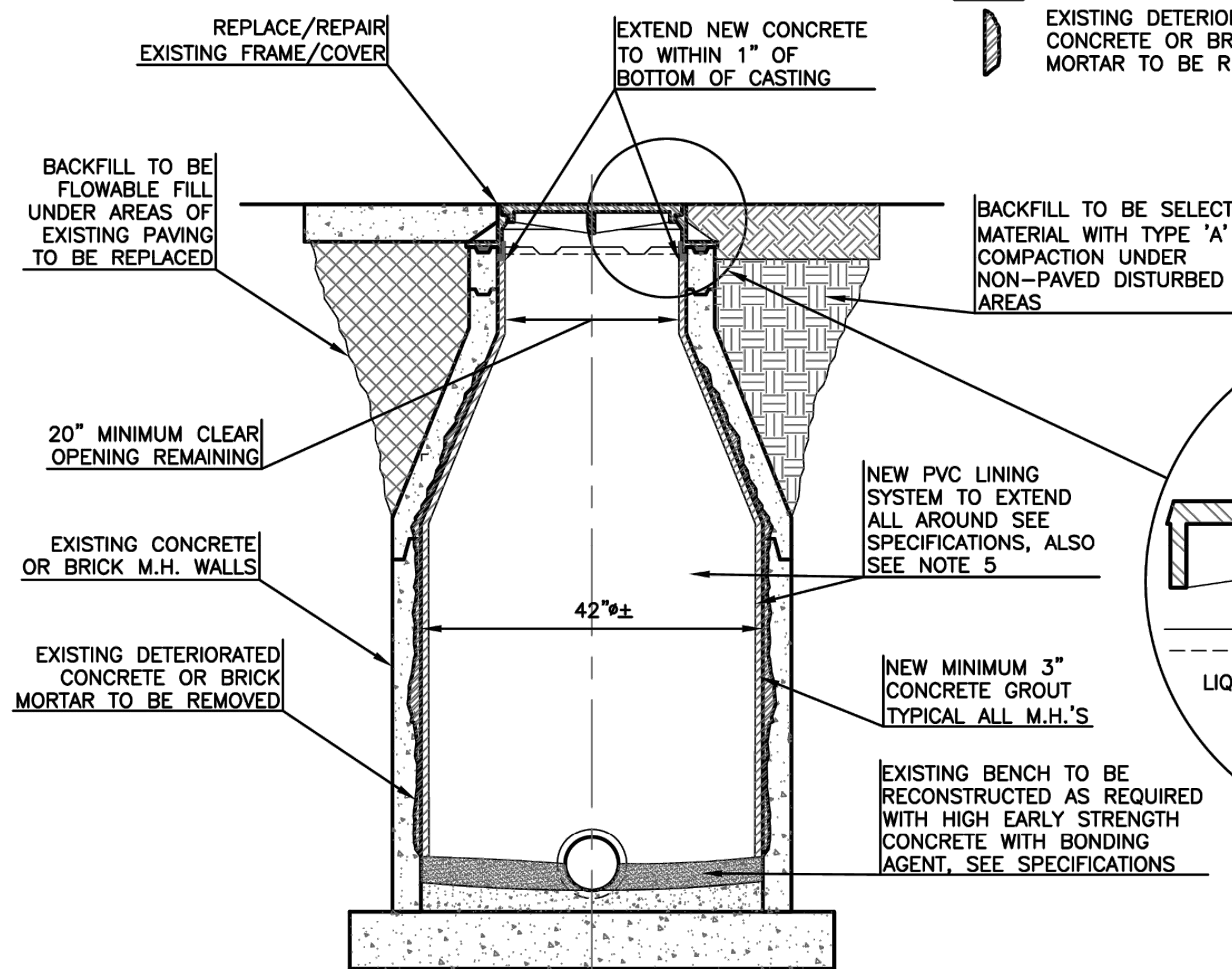
**COVER, FRAME, FRAME SEAL, GRADE ADJUSTMENT DETAILS**

**NOTES:**

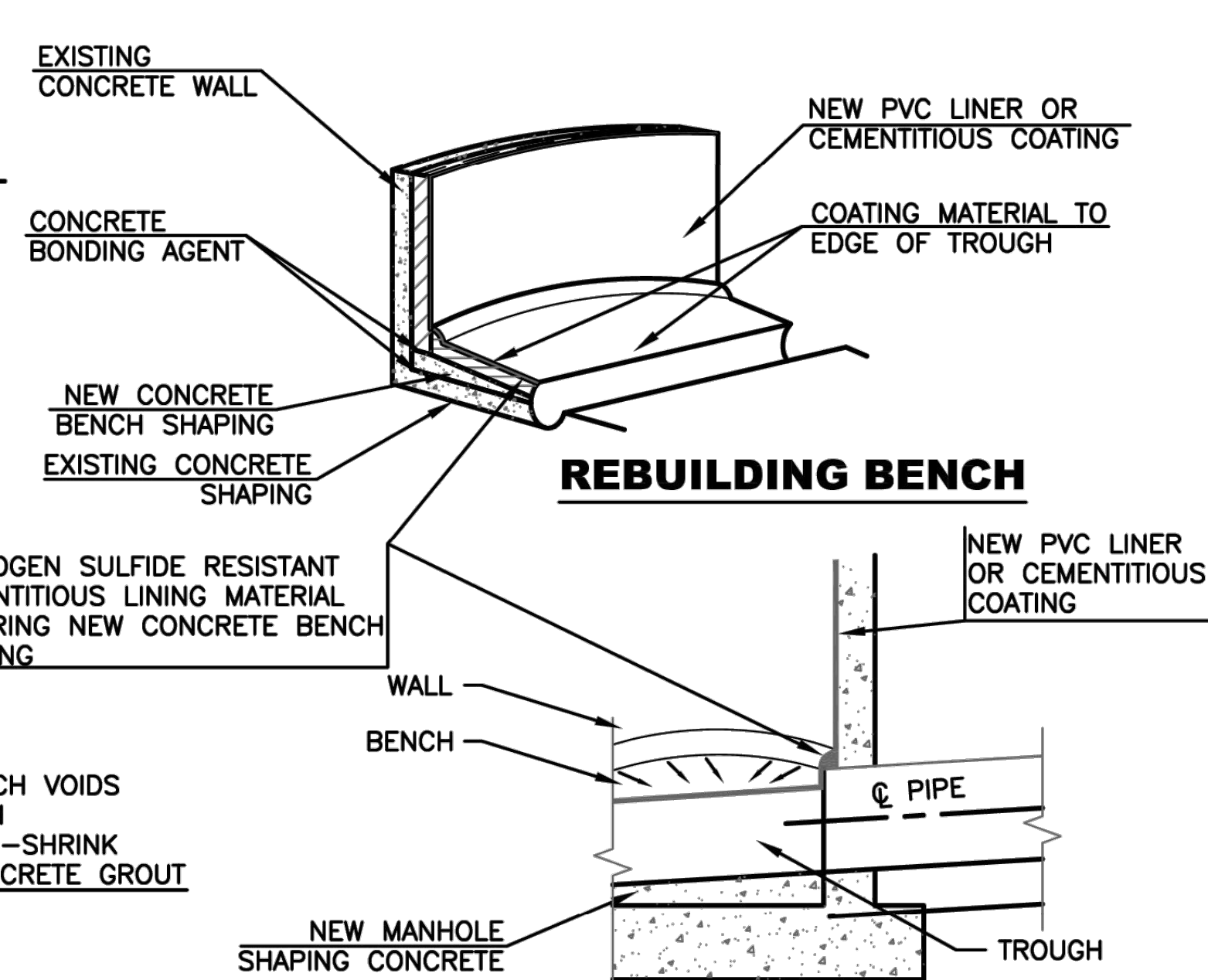
1. FOR COLD OR WET WEATHER CONDITIONS, USE TNEMEC 465 BLACK, SERIES 46, H.B. TNEMECOL.
2. IF MULTIPLE RINGS ARE USED, BITUMASTIC SEALER SHALL BE USED BETWEEN RINGS.
3. ALL LEVELING FOR SLOPED STREETS OR GRADES SHALL BE ACCOMPLISHED WITH THE CONCRETE LEVELING COURSE. BITUMASTIC SHALL NOT BE USED TO ACCOMPLISH LEVELING.
4. CONCRETE BONDING AGENT SHALL BE 'WELD-CRETE' (R) BY LARSEN PRODUCTS CORP. OF JESSUP, MD., OR EQUAL.
5. OVERLAPPING OR OPEN JOINTS WHERE 2 SHEETS OF PVC MEET, OR WHERE PVC HAS BEEN CUT, SHALL HAVE HEAT FUSION WELD STRIPS APPLIED.



**DETAIL OF REHABILITATION WITH CEMENTITIOUS COATING ON 4' DIAMETER EXISTING MANHOLES**



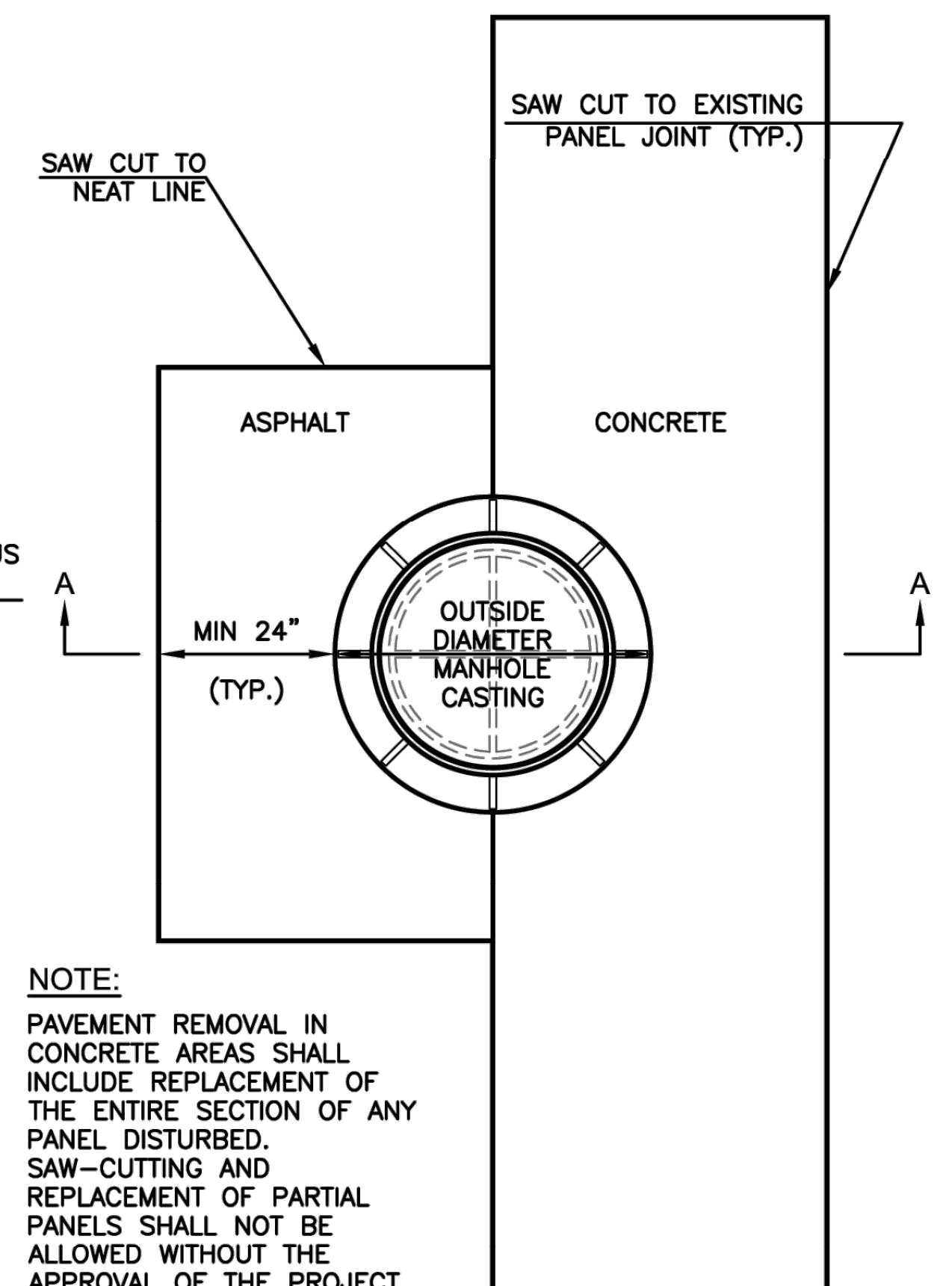
**DETAIL OF MANHOLE REHABILITATION WITH CAST-IN-PLACE CONCRETE AND PVC LINER ON 4' DIAMETER EXISTING MANHOLES**



**REPAIR BENCH / TROUGH / PIPE SEAL DETAILS**

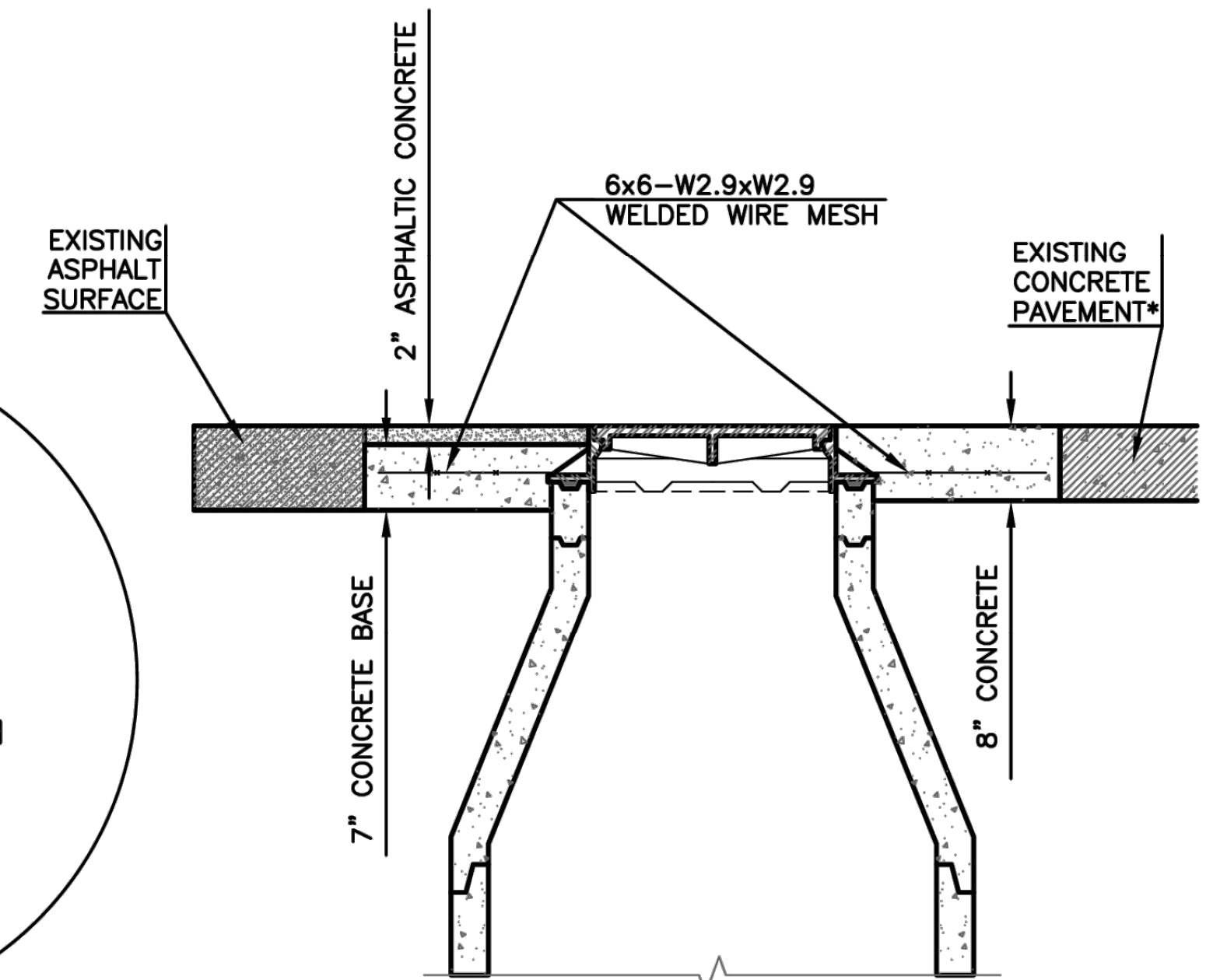
**LEGEND**

- LIQUID EPOXY
- CAST-IN-PLACE CONCRETE
- EXISTING DETERIORATED CONCRETE OR BRICK MORTAR TO BE REMOVED
- SELECT MATERIAL WITH TYPE 'A' COMPACTION
- COMPACTED TOPSOIL
- FLOWABLE FILL



**NOTE:**  
PAVEMENT REMOVAL IN CONCRETE AREAS SHALL INCLUDE REPLACEMENT OF THE ENTIRE SECTION OF ANY PANEL DISTURBED. SAW-CUTTING AND REPLACEMENT OF PARTIAL PANELS SHALL NOT BE ALLOWED WITHOUT THE APPROVAL OF THE PROJECT REPRESENTATIVE.

**PLAN VIEW**



**SECTION A-A**  
**PAVEMENT REMOVAL AND REPLACEMENT DETAILS**

\* ANY EXISTING PANEL OF CONCRETE PAVEMENT PARTIALLY REMOVED OR DISTURBED DURING CONSTRUCTION ACTIVITIES SHALL BE COMPLETELY REMOVED AND REPLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND/OR TYPICAL CITY/COUNTY STANDARD SPECIFICATIONS.

NO.	DATE:	Update REVISION	DHS BY:	SB APP'D
1	Feb. 2008			

DRAWN BY: *rm/mc*  
APP'D BY: *R. Clendinning*



**SHAWNEE COUNTY, KANSAS**  
**PUBLIC WORKS DEPARTMENT**  
1515 NW SALINE  
TOPEKA, KS 66618  
(785) 233-7702



**STANDARD DETAILS**

**MANHOLE REHABILITATION DETAILS**  
(DT-006)

DATE: APR 2026  
SHEET: 48 OF 122  
PROJ.: 701038.00

**PAVEMENT PLACEMENT SCHEDULE**

SCHEDULE TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

ORIGINAL SURFACE	NEW PAVEMENT
CONCRETE	8" REINFORCED CONCRETE 4,000psi
BRICK OVER CONCRETE	7" REINFORCED CONC.BASE 4,000psi PLUS ONE-COURSE RELAID BRICK.
ASPHALT	MATCH EXISTING PAVEMENT THICKNESS WITH A MINIMUM OF 6" HOT-MIX ASPHALTIC CONCRETE.
ASPHALT OVER CONCRETE	7" REINFORCED CONCRETE BASE 4000 psi PLUS 2" HOT MIX ASPHALTIC CONCRETE. 7" REINFORCED CONCRETE BASE SHALL BE JOINED TO ADJACENT PAVEMENT. SEE "FULL PANEL REPAIR & UTILITY CUTS FOR CONCRETE PAVEMENT" DETAIL AS SHOWN ON MISCELLANEOUS DETAILS I (DT-017). THE WEARING SURFACE WILL CONFORM TO CITY/COUNTY STANDARD SPECIFICATIONS.
BRICK OVER BRICK/SUBGRADE	7" HOT-MIX ASPHALTIC CONCRETE PLUS ONE-COURSE RE-LAID BRICK.

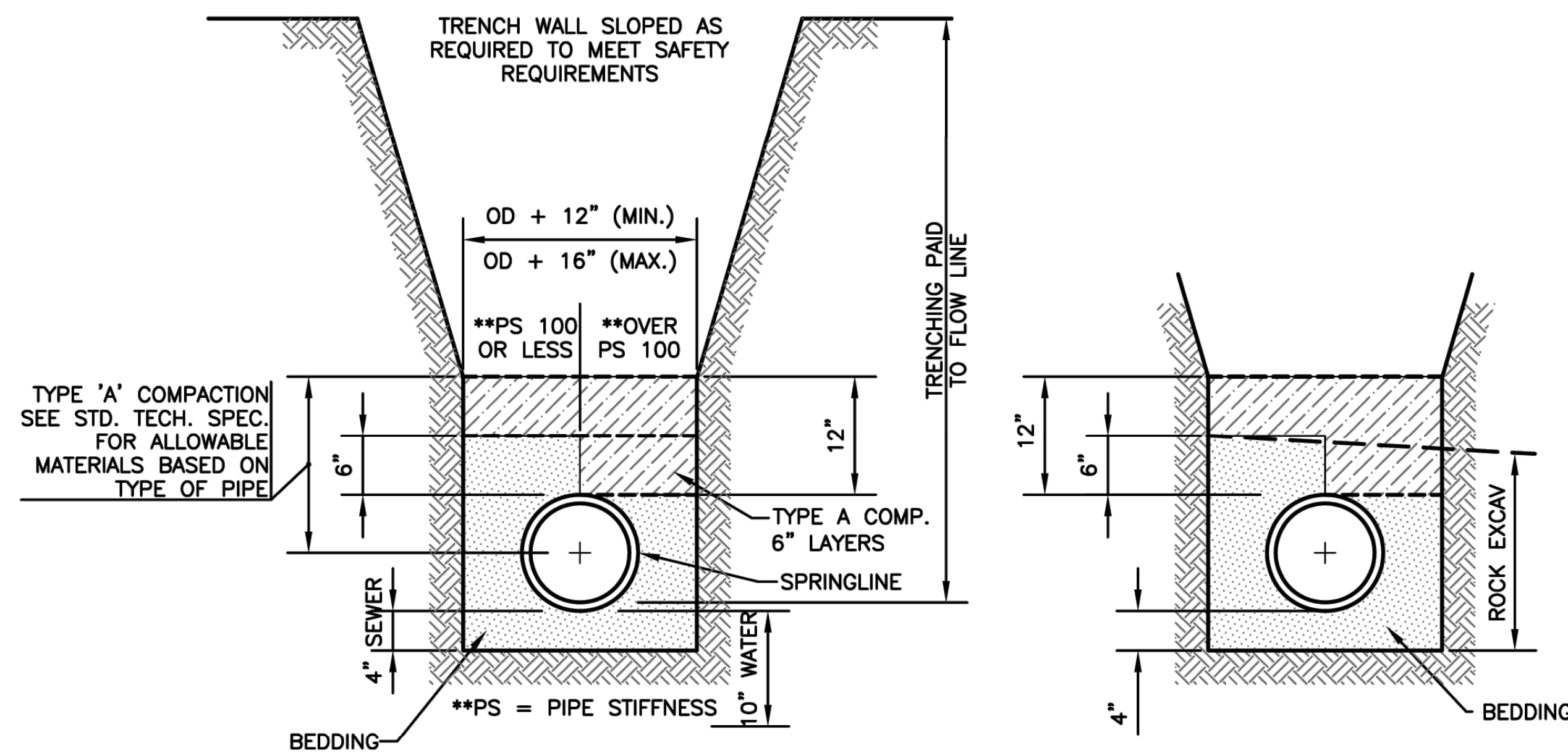
PAVEMENT SHALL BE SAWED AND REMOVED WITHOUT DAMAGE TO ADJACENT PAVEMENT.

\* SECOND PAVEMENT CUT TO BE MADE AND PAVEMENT REMOVED AFTER TRENCH IS PROPERLY BACKFILLED.

\*\* CONCRETE PAVEMENT SHALL BE JOINED TO ADJACENT CONCRETE PAVEMENT AS PER "FULL PANEL REPAIR AND UTILITY CUTS FOR CONCRETE PAVEMENT" AS SHOWN ON MISCELLANEOUS DETAILS I (DT-017).

**NOTES:**

1. THE TRENCH SHALL BE EXCAVATED TO 4" BELOW BOTTOM OF THE PIPE BARREL & BACKFILLED AS SHOWN ABOVE WITH AN APPROVED BEDDING MATERIAL.
2. WHEN THE SEWER IS TO BE INSTALLED IN ROCK, THE TRENCH IS TO BE EXCAVATED TO A MINIMUM DEPTH OF 4" BELOW THE BOTTOM OF THE PIPE AND BACKFILLED IN 6" COMPACTED LAYERS WITH AN APPROVED BEDDING MATERIAL AS SHOWN. THE ROCK EXCAVATED TO BE PAID AS A SEPARATE BID ITEM. THE EMBEDMENT, IN ALL CASES, TO BE INCLUDED IN THE PRICE BID PER TRENCH, EXCAVATION, AND BACKFILL.



**TRENCHING DETAILS**

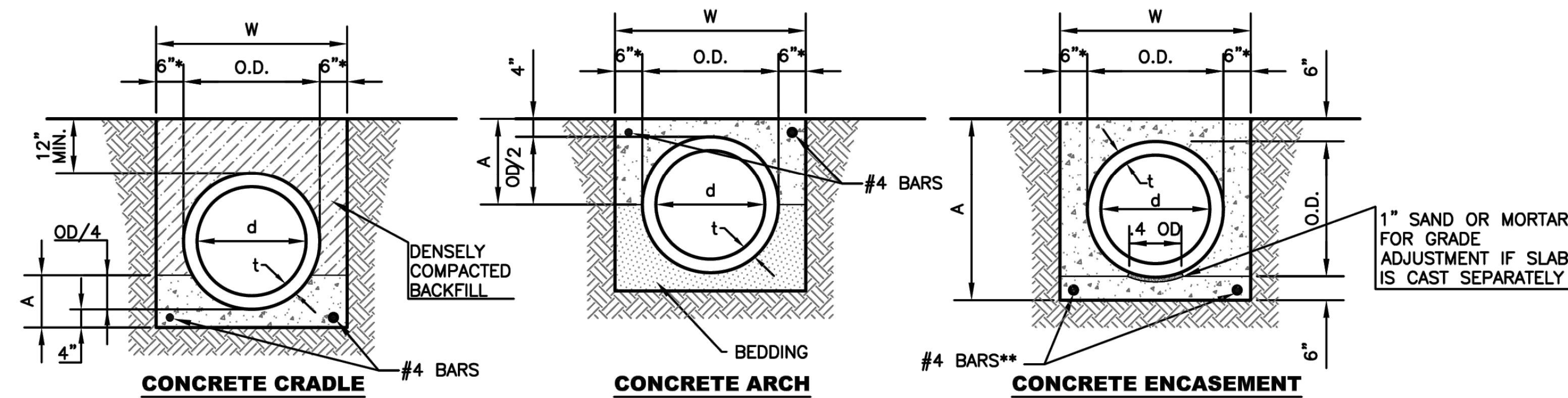
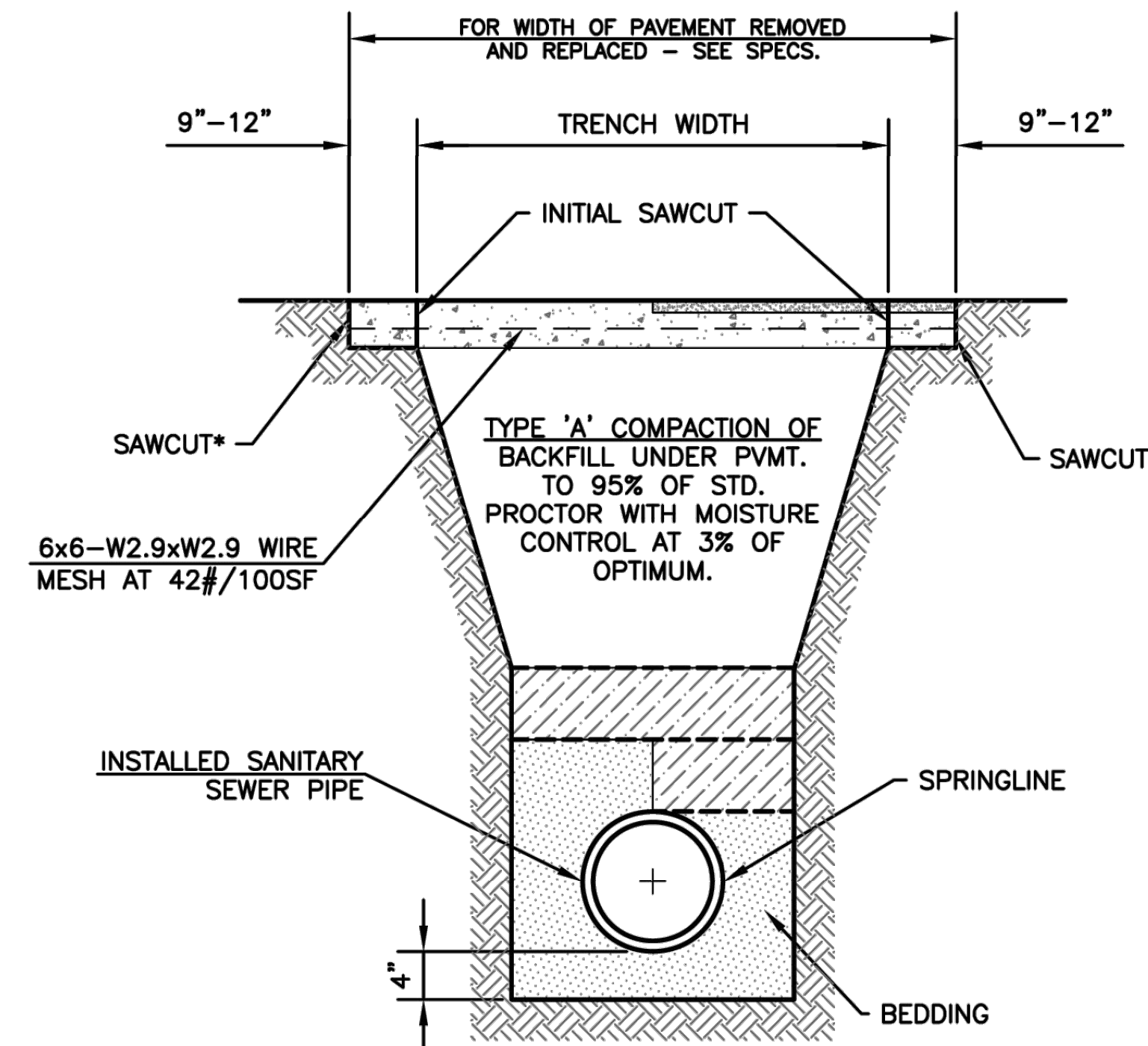
**STANDARDS FOR SETTING LINE AND GRADE FOR SEWER & WATER CONSTRUCTION:**

1. STAKES, SPIKES, SHINERS, OR CROSSES SET BY TRANSIT AT THE SURFACE ON AN OFFSET FROM THE SEWER CENTER LINE.
2. STAKES ARE TO BE SET IN THE TRENCH BOTTOM ON THE SEWER LINE AS THE ROUGH GRADE FOR SEWER IS COMPLETED.
3. ELEVATIONS GIVEN FOR THE FINISHED TRENCH GRADE AND SEWER INVERT, WHILE SEWER LAYING PROGRESSES.

**INSTALLATION OF SEWER UNDER EXISTING PAVEMENT**

**STANDARD METHODS FOR TRANSFERRING LINE AND GRADE TO SEWER TRENCH BOTTOM:**

1. ELECTRONIC LASER EQUIPMENT-STAKING SHALL BE AT 25' INTERVALS FOR THE FIRST 100' AND EVERY 100' THEREAFTER UNTIL THE NEXT MANHOLE IS REACHED.
2. BATTER BOARDS AND BATTER BOARD SUPPORTS-STAKING SHALL BE EVERY 25'.



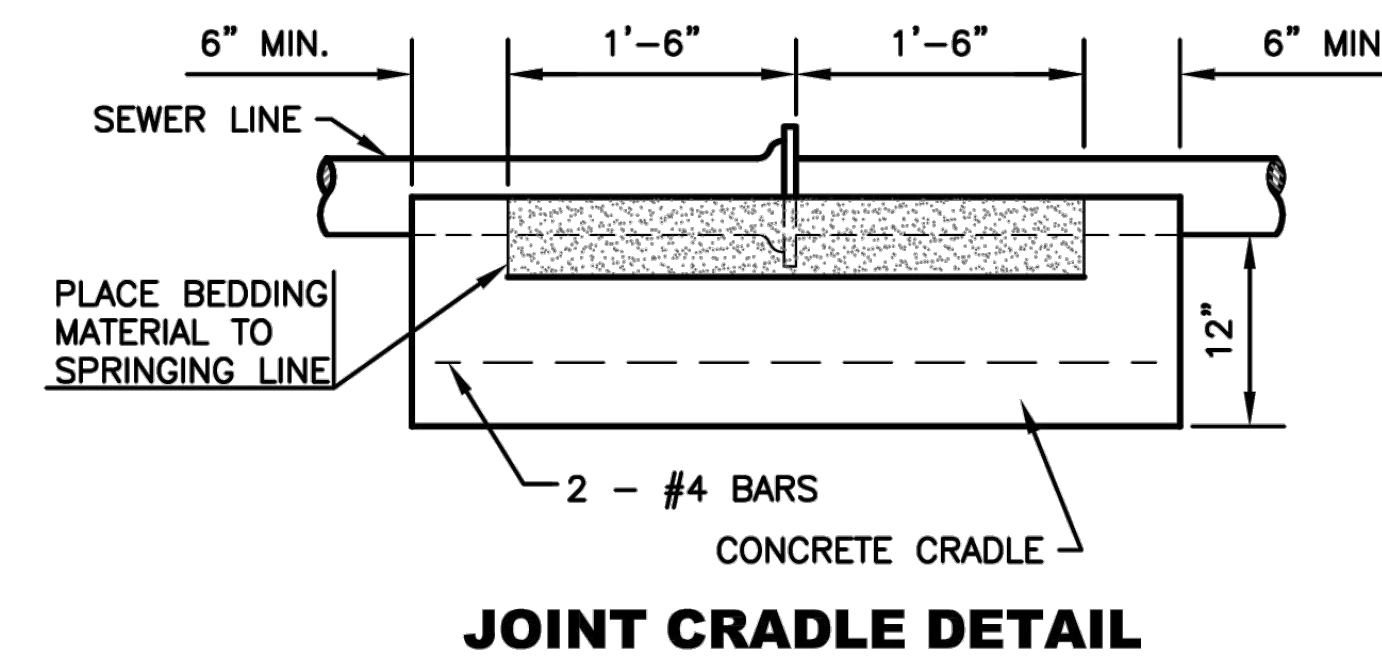
d	O.D.	t	W	CRADLE		ARCH		ENCASE.	
				A	A	A	A		
IN.	IN.	IN.	IN.	IN.	CY/FT	IN.	CY/FT	IN.	CY/FT
8	9.50	.750	24	6.4	.036	8.8	.039	21.5	.102
10	11.75	.875	24	6.9	.038	9.9	.047	23.8	.117
12	14	1.00	26	7.5	.043	11.0	.054	26.0	.134
15	17.5	1.25	29.5	8.4	.051	12.8	.066	29.5	.162
18	21	1.50	33	9.3	.061	14.5	.078	33.0	.191
21	24.5	1.75	36.5	10.1	.071	16.3	.093	36.5	.222
24	28	2.00	40	11.0	.085	18.0	.106	40.0	.256
27	31.5	2.25	43.5	11.9	.095	19.8	.121	43.5	.286
30	35	2.50	47	12.8	.106	21.5	.136	47.0	.321
36	41.5	2.75	53.5	14.4	.129	24.8	.167	53.5	.388

**SCHEDULE FOR CONCRETE CRADLE, CONCRETE ARCH AND CONCRETE ENCASEMENT FOR SANITARY SEWERS**  
NOTE: MIN. 2500 PSI CONCRETE USED FOR CRADLING.

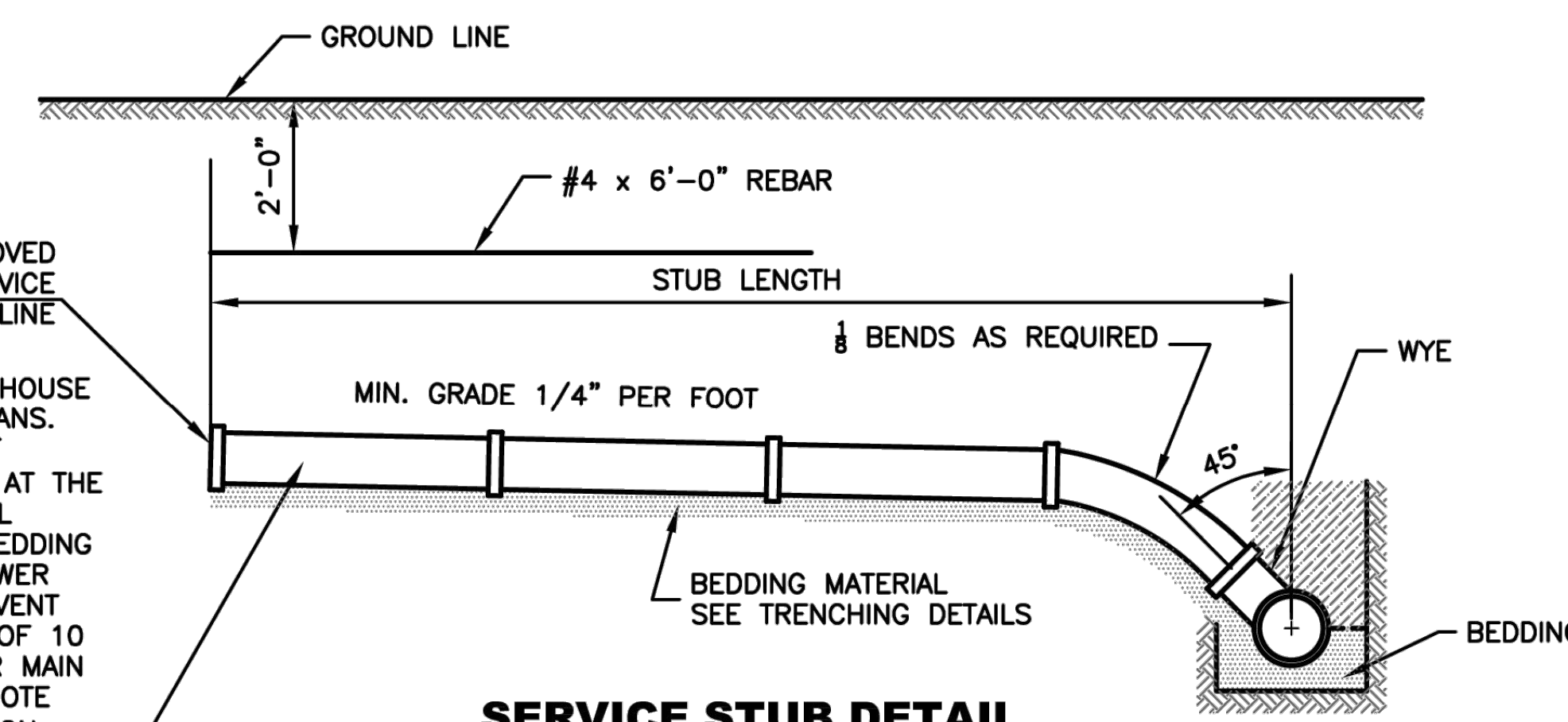
\*\*REINFORCING SHALL BE TWO #4 BARS FOR PIPE UP TO 8" DIA; FOUR #4 BARS FOR 10" THROUGH 24" DIA; AND AS APPROVED BY THE ENGINEER FOR LARGER THAN 24" DIA.

NOTE: MAXIMUM PIPE INTRUSION INTO STRUCTURE IS 4". UNIQUE STRUCTURES MIGHT REQUIRE ADDITIONAL ANALYSIS. ENGINEER APPROVAL REQUIRED.

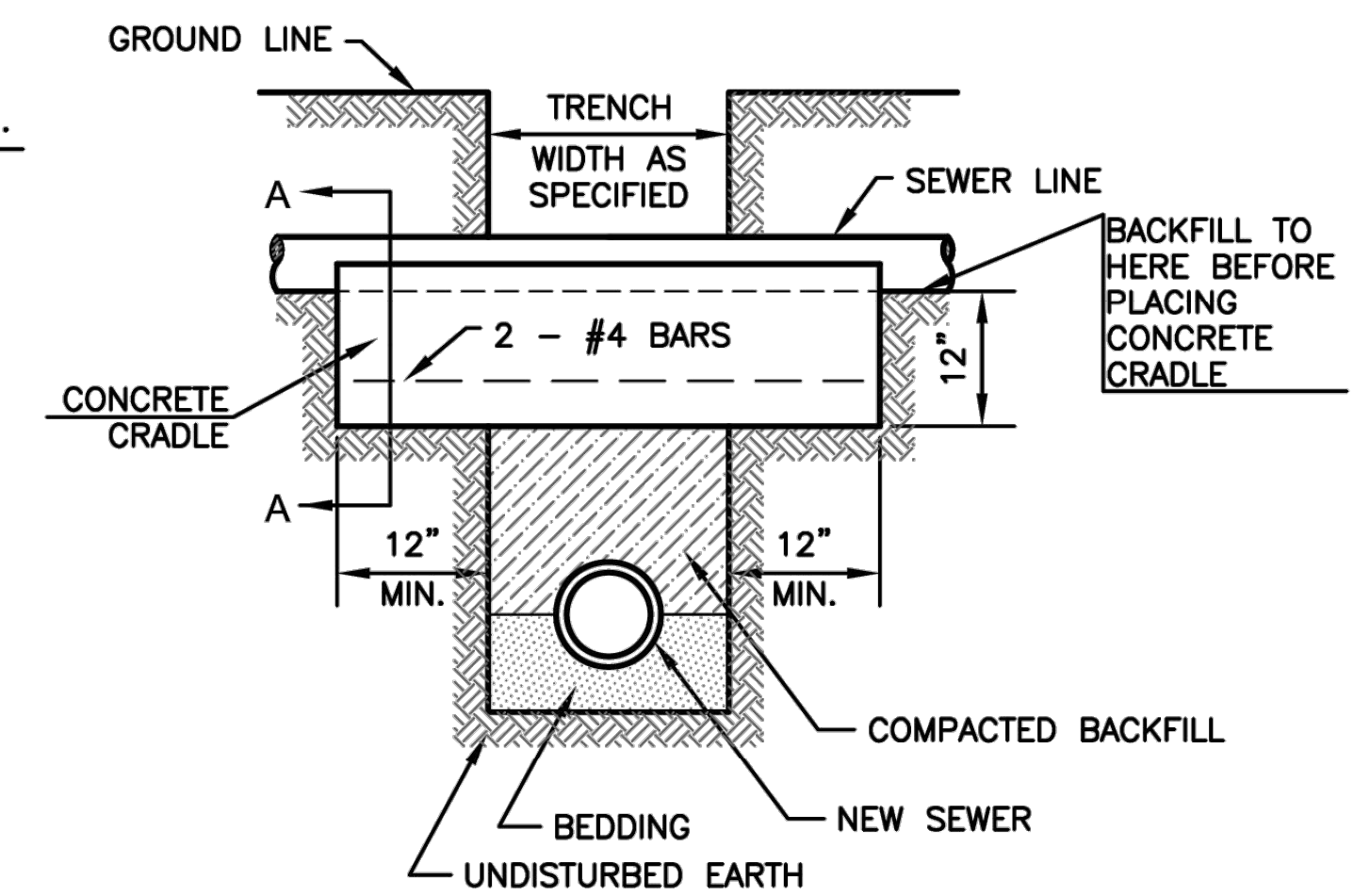
MAXIMUM DEPTH AT PLUG LOCATION SHALL BE 14' BELOW TOP OF HOUSE FOUNDATION. LENGTH AND ELEVATION SHALL BE AS SHOWN ON PLANS. LINES SHALL BE PLACED AT RIGHT ANGLES FROM MAIN. ALIGNMENT CHANGES MUST BE MADE BY THE USE OF 1/8 BENDS CONNECTED AT THE WYE. UNIT PRICE BID PER LINEAL FOOT FOR SERVICE STUBS SHALL INCLUDE - TRENCHING, LAYING, BACKFILLING, PIPE, FITTINGS AND BEDDING MATERIAL. AT POINTS WHERE SEWERS CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON, PLASTIC PIPE WITH SOLVENT WELDED JOINTS, OR PIPE ENCASED IN CONCRETE FOR A DISTANCE OF 10 FEET IN EACH DIRECTION FROM THE CROSSING UNLESS THE WATER MAIN IS AT LEAST 2 FEET ABOVE THE SEWER. FOR SIZING DATA SEE NOTE ELSEWHERE, THIS SHEET. ALSO SEE "SANITARY SEWER CAP" DETAIL ON MISCELLANEOUS DETAILS II (DT-018).



**JOINT CRADLE DETAIL**



**SERVICE STUB DETAIL**



**CRADLE DETAILS**

NO.	DATE:	REVISION	DHS	JH
4	June 2018	Added maximum pipe intrusion note	DHS	JVH
3	March 2013	Mod. Pvmt. Place. Sch. & Bedding Amt.	DHS	SB
2	Feb. 2008	Mod. Cradle & Arch and Pvmt. Place Sch.	DHS	SB
1	Dec. 2004	Mod. Serv. Note	DHS	JH

DRAWN BY: *rm/mc*  
APP'D BY: *FL Clumley*



**SHAWNEE COUNTY, KANSAS  
PUBLIC WORKS DEPARTMENT**  
1515 NW SALINE  
TOPEKA, KS 66618  
(785) 233-7702



**STANDARD DETAILS**

**SANITARY SEWER  
DETAILS  
(DT-007)**

DATE: APR 2026  
SHEET: 49 OF 122  
PROJ.: 701038.00

**MAXIMUM ALLOWABLE DEPTH OF TRENCH (IN FEET)**

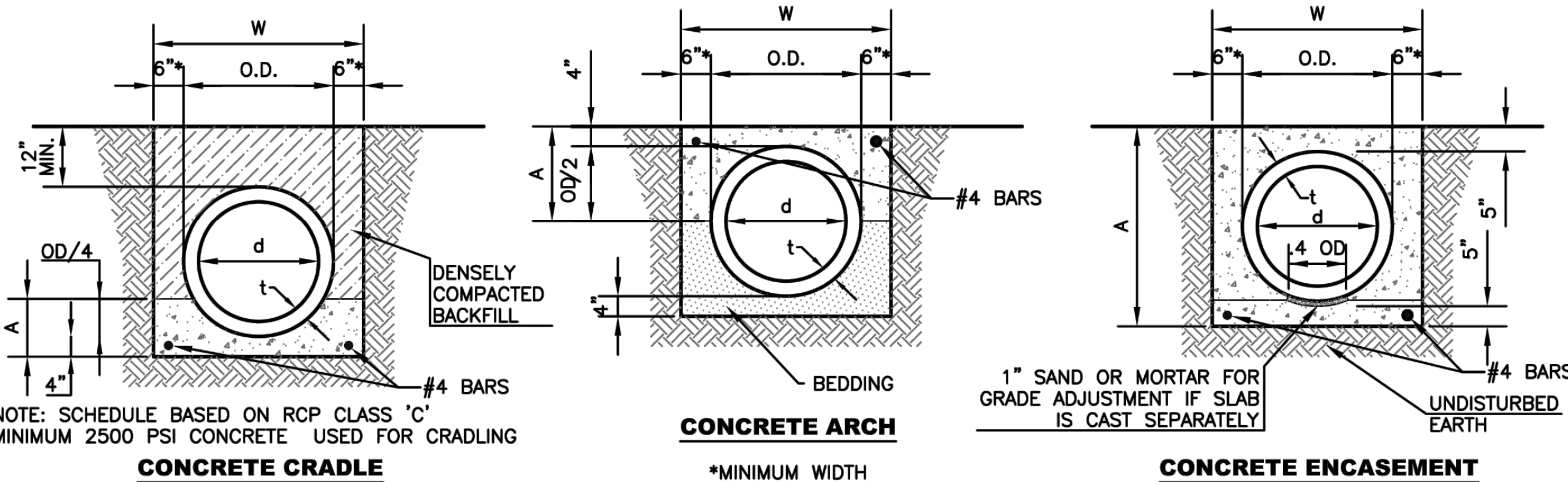
**REINFORCED CONCRETE PIPE (RCP)**

ASTM PIPE CLASS	PIPE DIAMETER (INCHES)				
	12, 15, 18, 21	24, 27, 30, 36	42, 48, 54	60, 66, 72	78, 84
II	8	11	12	15	17
III	11	14	16	18	21
IV	20	22	23	25	27

**CORRUGATED STEEL PIPE (CSP), ALUMINIZED STEEL TYPE 2**

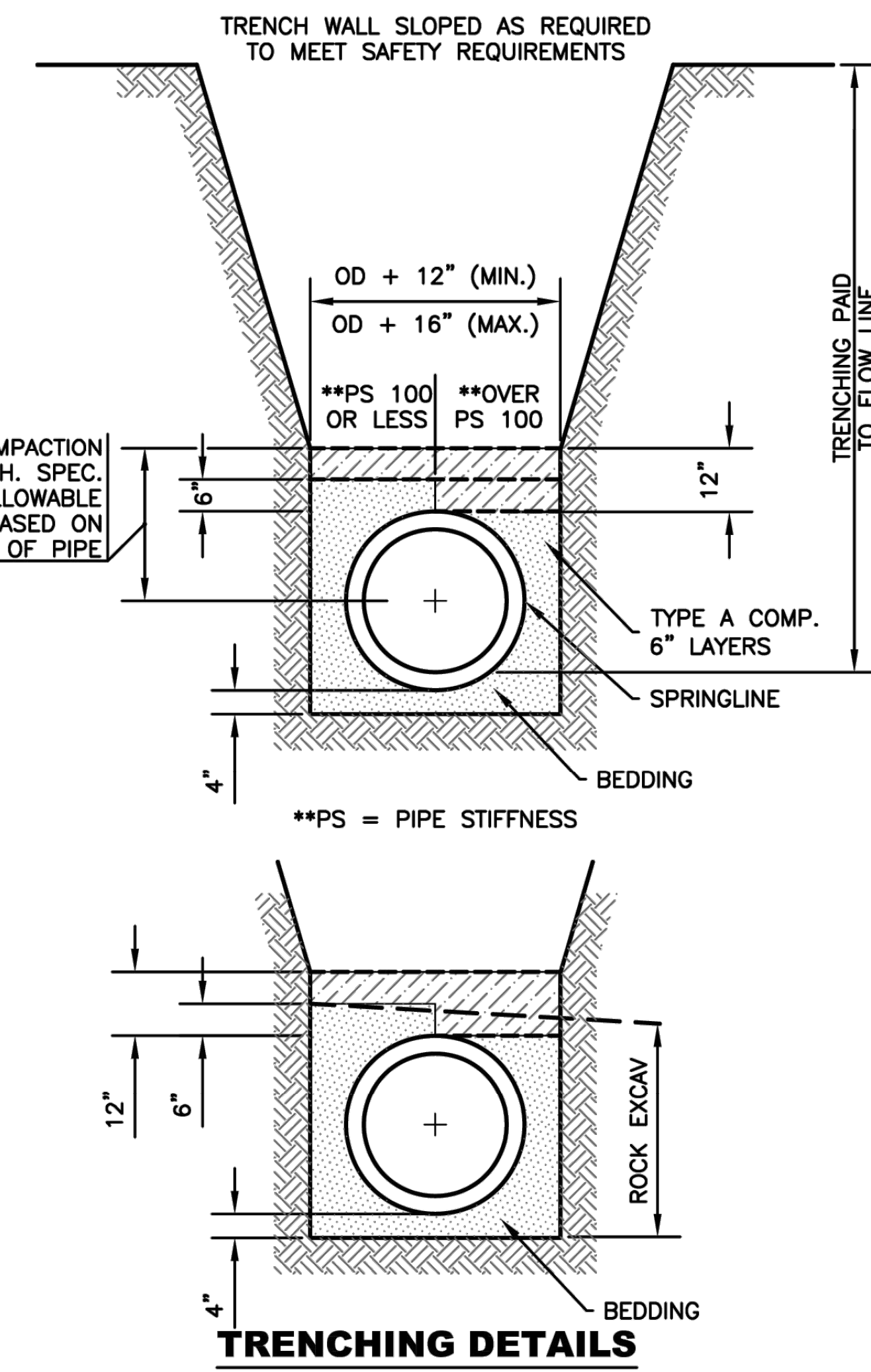
PIPE DIAMETER (INCHES)	HEIGHT OF COVER ABOVE TOP OF PIPE (FEET) (H-20 LOADING)									
	CSP					CSPA				
	1 - 10		11 - 15		16 - 20	1 - 2		2 - 9		
	2.66x.5	3x1	2.66x.5	3x1	2.66x.5	3x1	2.66x.5	3x1	2.66x.5	3x1
12	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
15	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
18	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
21	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
24	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
27	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
30	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
33	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
36	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1	16 ga.	3x1
42	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1
48	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1
54	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1
60	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1
66	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1
72	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1	10 ga.	3x1
78	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1	14 ga.	3x1
84	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1
90	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1
96	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1	12 ga.	3x1

NOTE: MAXIMUM PIPE INTRUSION INTO STRUCTURE IS 6". UNIQUE STRUCTURES MIGHT REQUIRE ADDITIONAL ANALYSIS. ENGINEER APPROVAL REQUIRED.



d	t	O.D.	W	CRADLE		ARCH		ENCASE.	
				IN.	CY/FT	IN.	CY/FT	IN.	CY/FT
15	2.25	19.5	31.5	8.9	.057	13.8	.073	29.5	.162
18	2.50	23.0	34.0	9.8	.067	15.5	.086	33.0	.190
21	2.75	26.5	38.5	10.6	.077	17.3	.100	36.5	.220
24	3.00	30.0	42.0	11.5	.089	19.0	.114	40.0	.250
27	3.25	33.5	45.5	12.4	.100	20.8	.129	43.5	.282
30	3.50	37.0	49.0	13.3	.113	22.5	.145	47.0	.316
33	3.75	40.5	52.5	14.1	.126	24.3	.162	50.5	.351
36	4.00	44.0	56.0	15.0	.140	26.0	.179	54.0	.387
42	4.50	51.0	63.0	16.8	.169	29.5	.215	61.0	.463
48	5.00	58.0	70.0	18.5	.200	33.0	.254	68.0	.545
54	5.50	65.0	77.0	20.3	.234	36.5	.296	75.0	.632
60	6.00	72.0	84.0	22.0	.270	40.0	.341	82.0	.724

**SCHEDULE FOR CONCRETE CRADLE, CONCRETE ARCH, AND CONCRETE ENCASEMENT FOR STORM SEWERS**



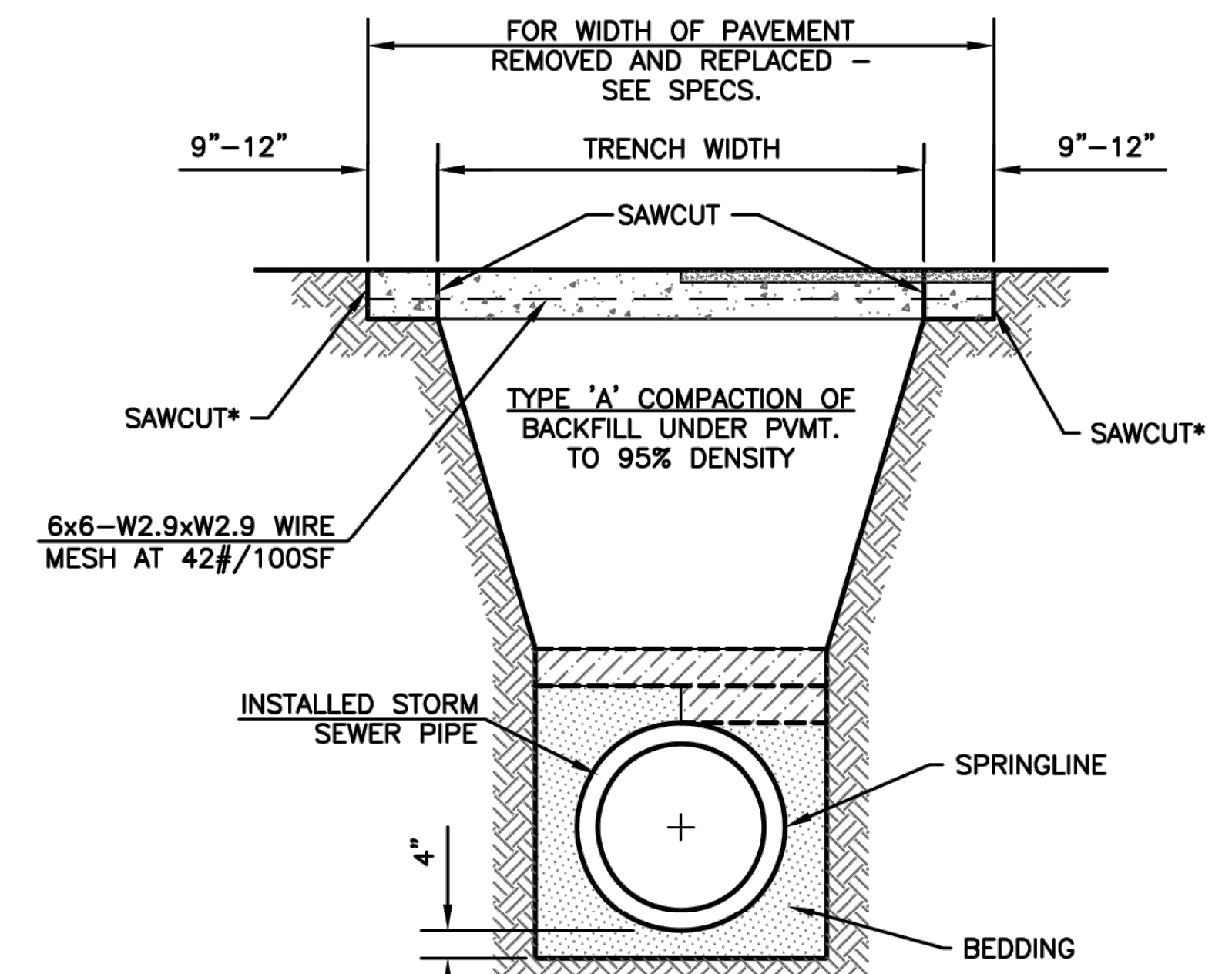
- NOTES:
1. THE TRENCH SHALL BE EXCAVATED TO 4" BELOW BOTTOM OF THE PIPE BARREL & BACKFILLED AS SHOWN ABOVE WITH AN APPROVED BEDDING MATERIAL.
  2. WHEN THE SEWER IS TO BE INSTALLED IN ROCK, THE TRENCH IS TO BE EXCAVATED TO A MINIMUM DEPTH OF 4" BELOW THE BOTTOM OF THE PIPE AND BACKFILLED IN 6" COMPACTED LAYERS WITH AN APPROVED BEDDING MATERIAL AS SHOWN ABOVE. THE ROCK EXCAVATED TO BE PAID AS A SEPARATE BID ITEM. THE EMBEDMENT, IN ALL CASES, TO BE INCLUDED IN THE PRICE BID PER TRENCH, EXCAVATION, AND BACKFILL.

**STANDARDS FOR SETTING LINE AND GRADE FOR SEWER CONSTRUCTION:**

1. STAKES, SPIKES, SHINERS, OR CROSSES SET BY TRANSIT AT THE SURFACE ON AN OFFSET FROM THE SEWER CENTER LINE.
2. STAKES ARE TO BE SET IN THE TRENCH BOTTOM ON THE SEWER LINE AS THE ROUGH GRADE FOR SEWER IS COMPLETED.
3. ELEVATIONS GIVEN TO THE FINISHED TRENCH GRADE AND SEWER INVERT, WHILE SEWER LAYING PROGRESSES.

**STANDARD METHODS FOR TRANSFERRING LINE AND GRADE TO SEWER TRENCH BOTTOM:**

1. ELECTRONIC LASER EQUIPMENT-STAKING SHALL BE AT 25' INTERVALS FOR THE FIRST 100' AND EVERY 100' THEREAFTER UNTIL THE NEXT MANHOLE IS REACHED.
2. BATTER BOARDS AND BATTER BOARD SUPPORTS-STAKING SHALL BE EVERY 25'.



**INSTALLATION OF SEWER UNDER EXISTING PAVEMENT**  
PAVEMENT SHALL BE SAWED AND REMOVED WITHOUT DAMAGE TO ADJACENT PAVEMENT.

**PAVEMENT PLACEMENT SCHEDULE**

SCHEDULE TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

ORIGINAL SURFACE	NEW PAVEMENT
CONCRETE	8" REINFORCED CONCRETE 4,000psi
BRICK OVER CONCRETE	7" REINFORCED CONC.BASE 4,000psi PLUS ONE-COURSE RELAID BRICK.
ASPHALT	MATCH EXISTING PAVEMENT THICKNESS WITH A MINIMUM OF 6" HOT-MIX ASPHALTIC CONCRETE.
ASPHALT OVER CONCRETE	7" REINFORCED CONCRETE BASE 4000 psi PLUS 2" HOT MIX ASPHALTIC CONCRETE. 7" REINFORCED CONCRETE BASE SHALL BE JOINED TO ADJACENT PAVEMENT. SEE "FULL PANEL REPAIR & UTILITY CUTS FOR CONCRETE PAVEMENT" DETAIL AS SHOWN ON MISCELLANEOUS DETAILS I (DT-017). THE WEARING SURFACE WILL CONFORM TO CITY/COUNTY STANDARD SPECIFICATIONS.
BRICK OVER BRICK/SUBGRADE	7" HOT-MIX ASPHALTIC CONCRETE PLUS ONE-COURSE RE-LAID BRICK.

PAVEMENT SHALL BE SAWED AND REMOVED WITHOUT DAMAGE TO ADJACENT PAVEMENT.

\* SECOND PAVEMENT CUT TO BE MADE AND PAVEMENT REMOVED AFTER TRENCH IS PROPERLY BACKFILLED.

\*\* CONCRETE PAVEMENT SHALL BE JOINED TO ADJACENT CONCRETE PAVEMENT AS PER "FULL PANEL REPAIR AND UTILITY CUTS FOR CONCRETE PAVEMENT" AS SHOWN ON MISCELLANEOUS DETAILS I (DT-017).

- NOTES:
1. THE TRENCH SHALL BE EXCAVATED TO 4" BELOW BOTTOM OF THE PIPE BARREL & BACKFILLED AS SHOWN ABOVE WITH AN APPROVED BEDDING MATERIAL.
  2. WHEN THE SEWER IS TO BE INSTALLED IN ROCK, THE TRENCH IS TO BE EXCAVATED TO A MINIMUM DEPTH OF 4" BELOW THE BOTTOM OF THE PIPE AND BACKFILLED IN 6" COMPACTED LAYERS WITH AN APPROVED BEDDING MATERIAL AS SHOWN. THE ROCK EXCAVATED TO BE PAID AS A SEPARATE BID ITEM. THE EMBEDMENT, IN ALL CASES, TO BE INCLUDED IN THE PRICE BID PER TRENCH, EXCAVATION, AND BACKFILL.

NO.	DATE	REVISION	BY	APP'D
3	June 2018	Added maximum pipe intrusion note	DHS	JVH
2	March 2013	Mod. Pvmt. Place. Sch. & Bedding Amt.	DHS	SB
1	Feb. 2008	Mod.Pvmt.Sch. and Cradle, Arch. & Encase.	DHS	SB

DRAWN BY: *rm/mc*  
APP'D BY: *FL Clumley, KS*



**SHAWNEE COUNTY, KANSAS**  
**PUBLIC WORKS DEPARTMENT**  
1515 NW SALINE  
TOPEKA, KS 66618  
(785) 233-7702

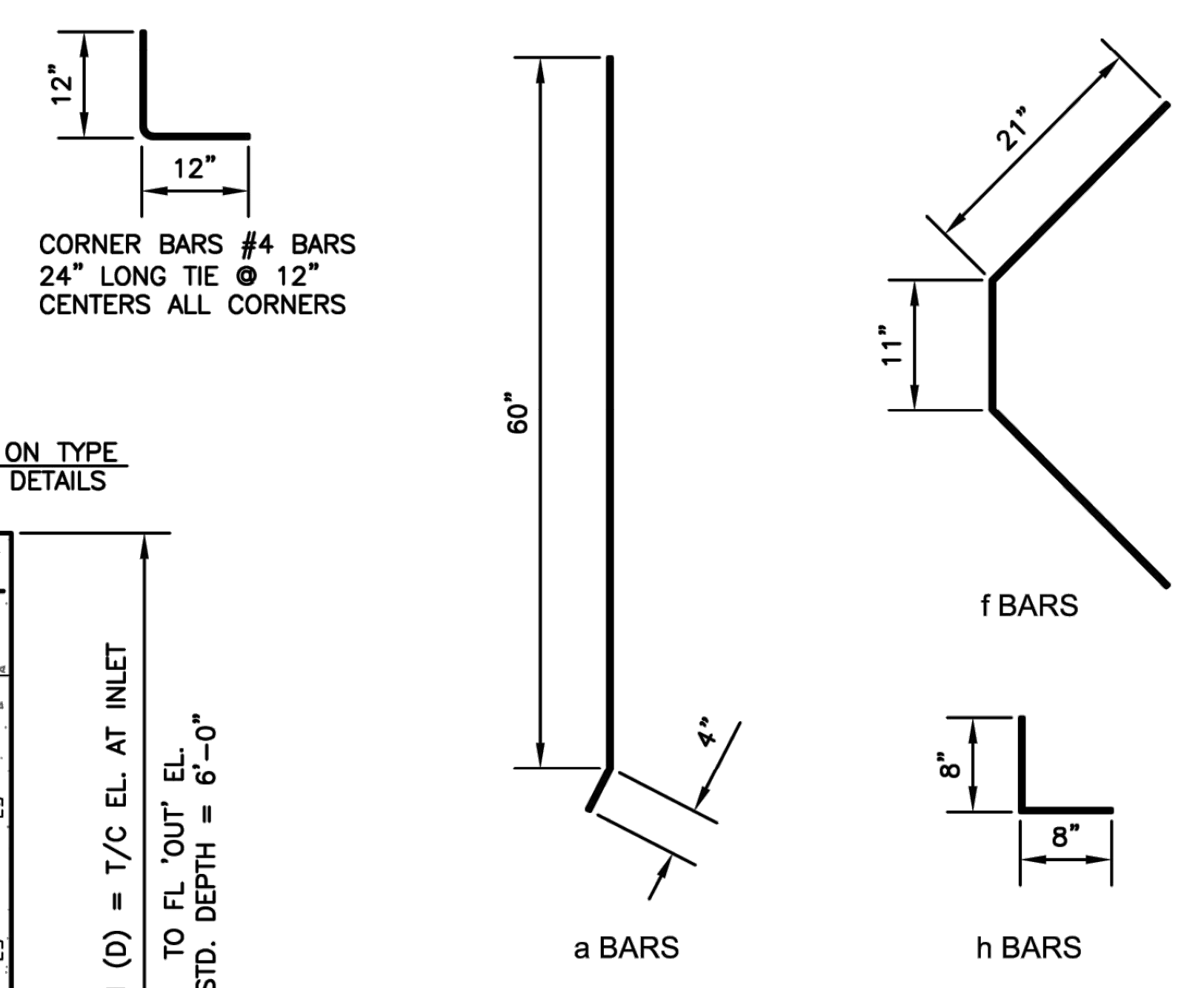
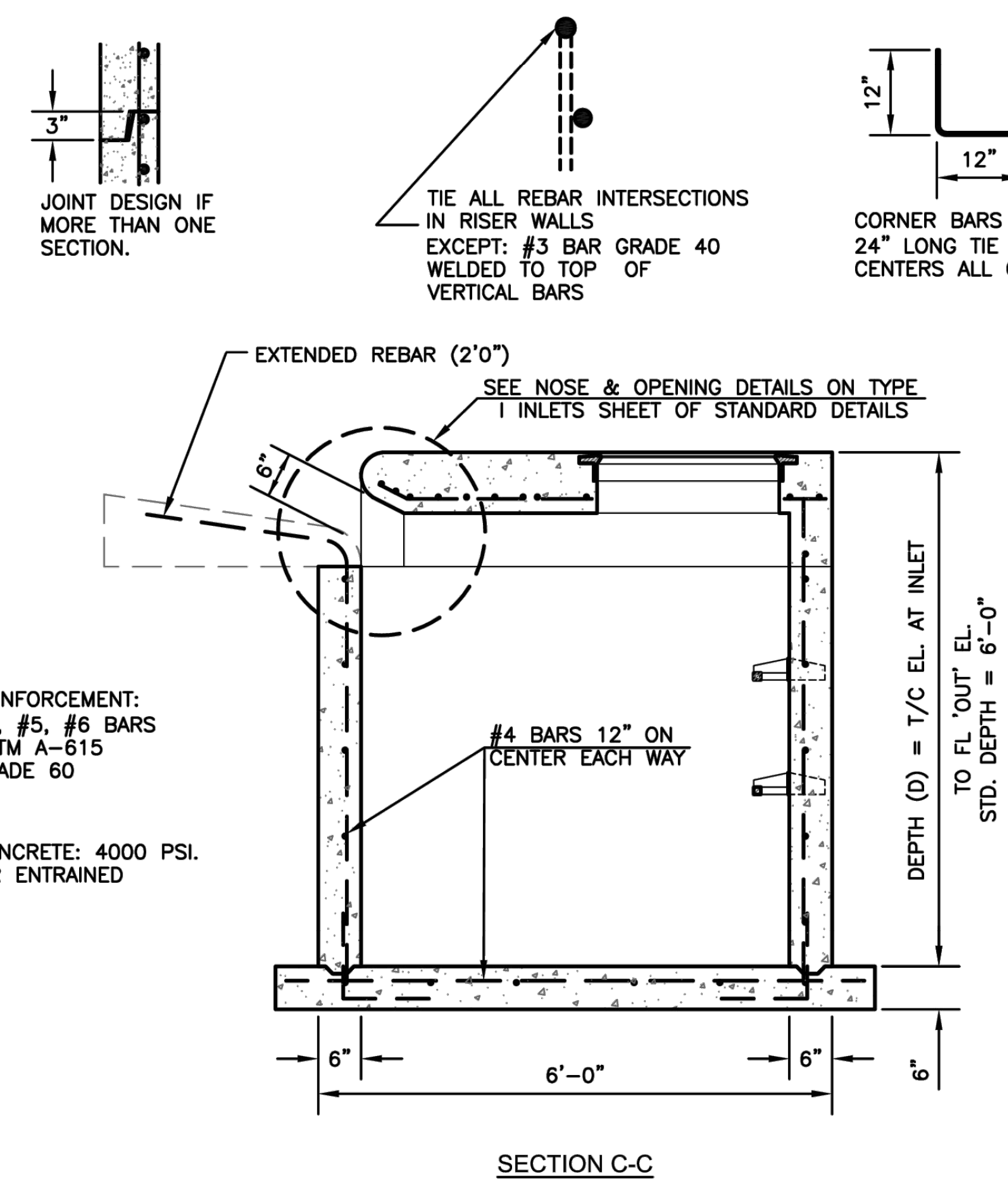
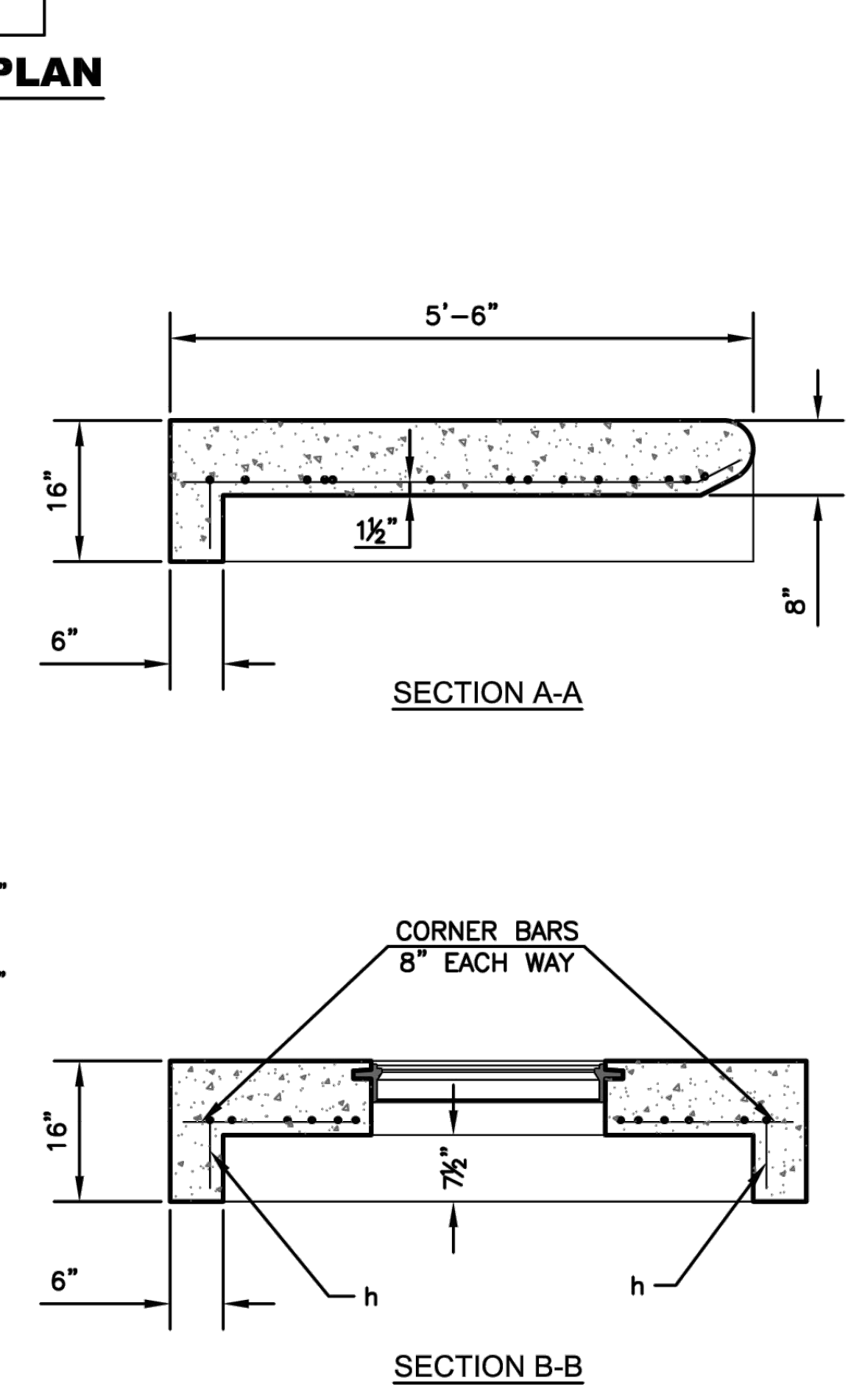
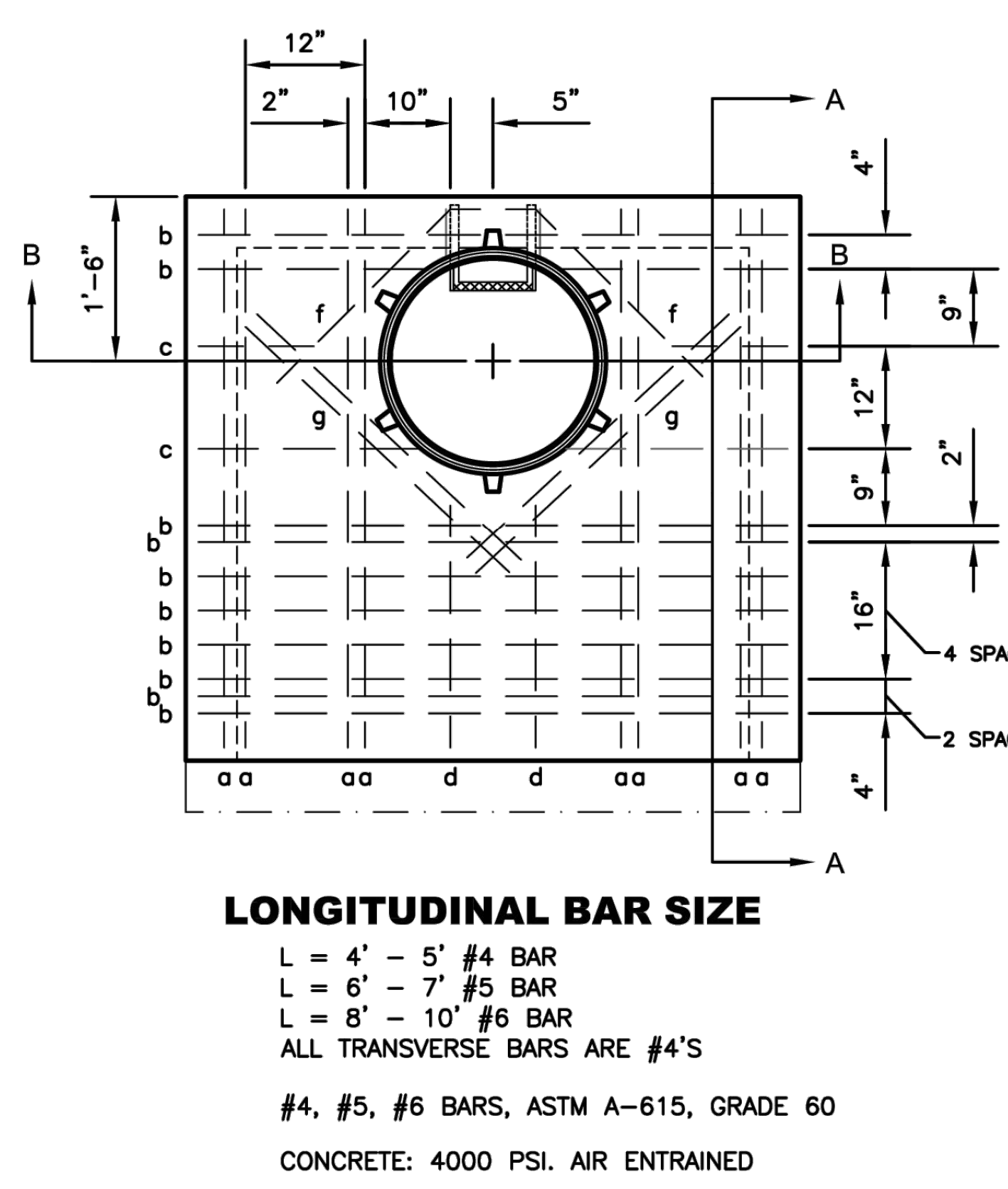
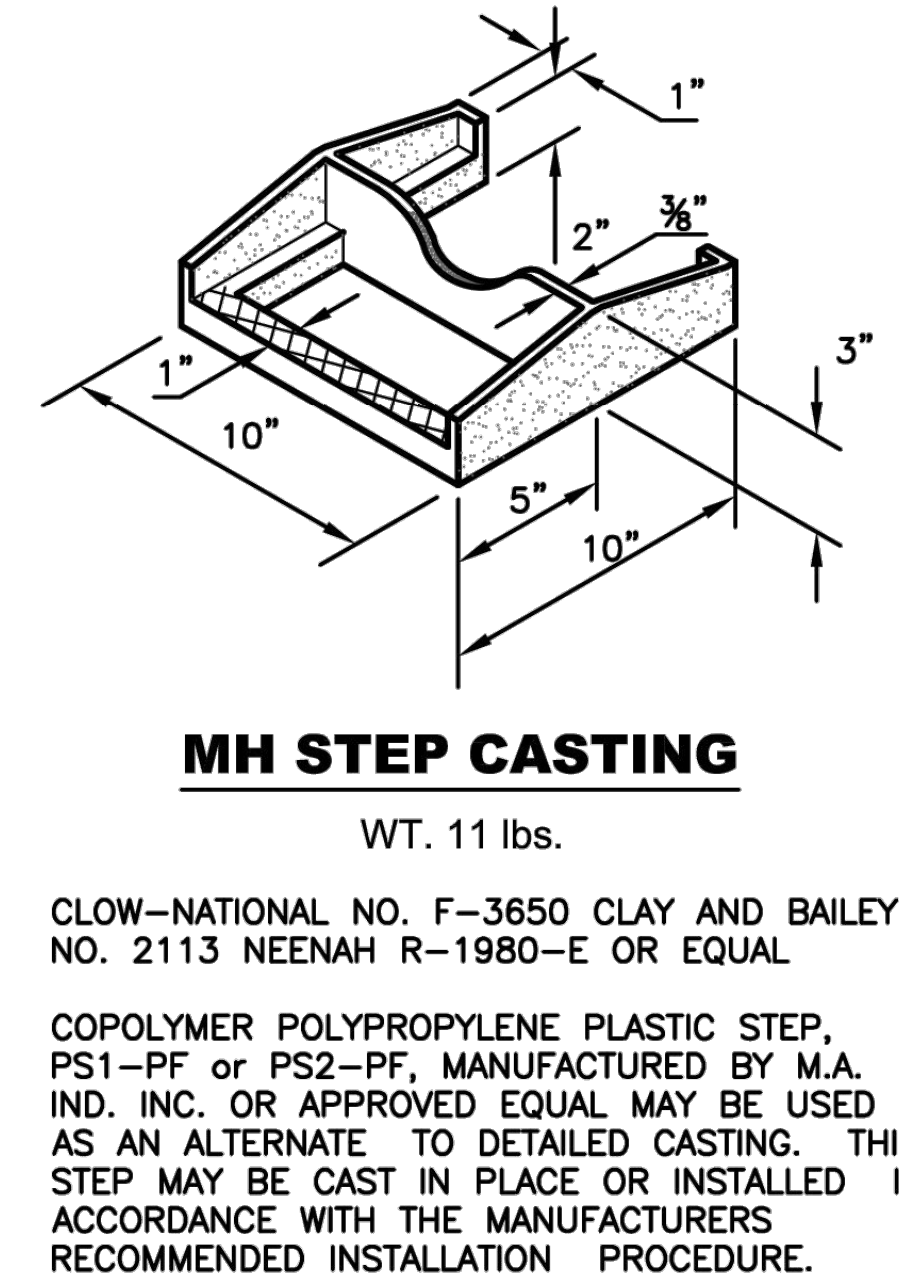
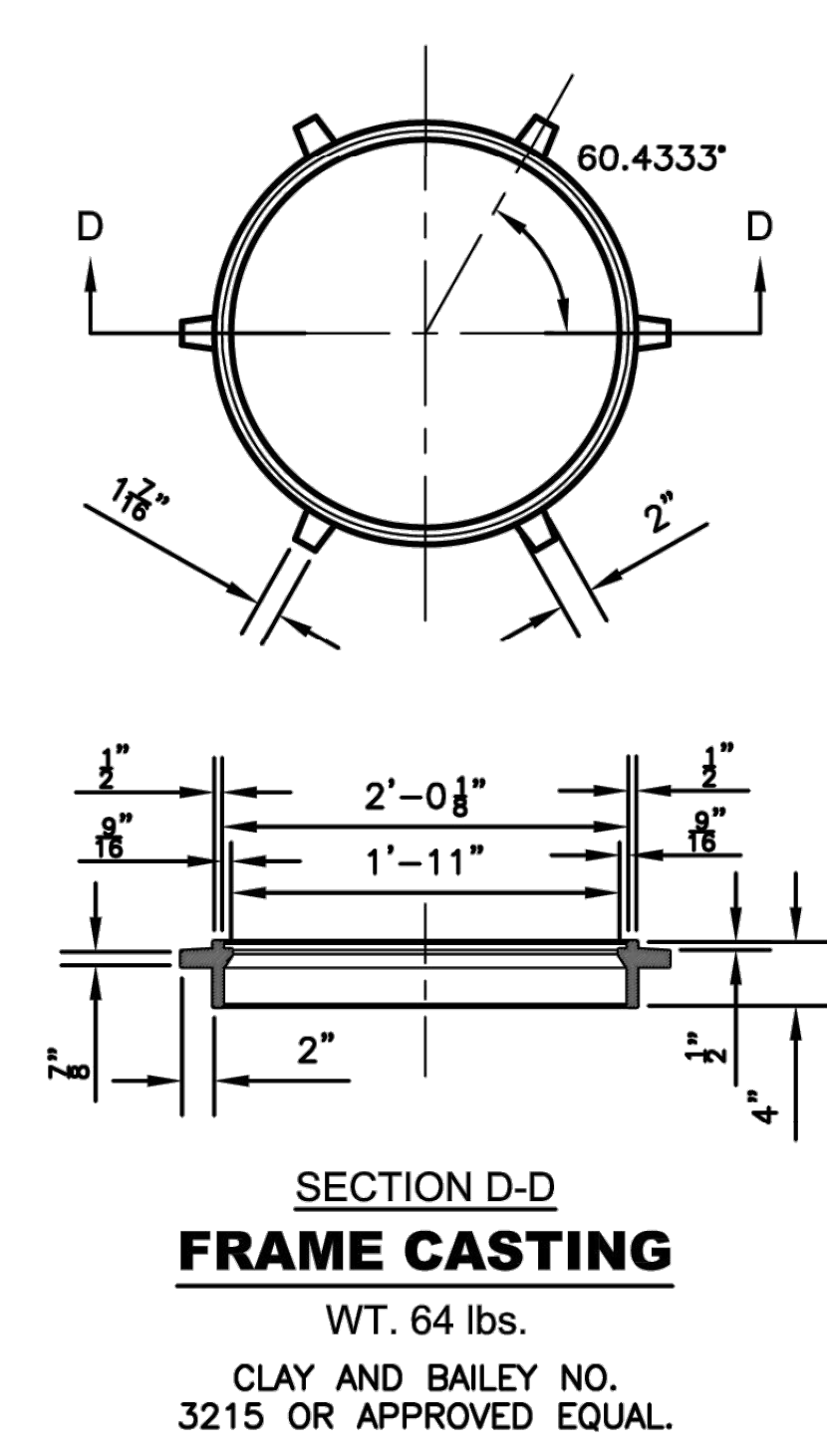
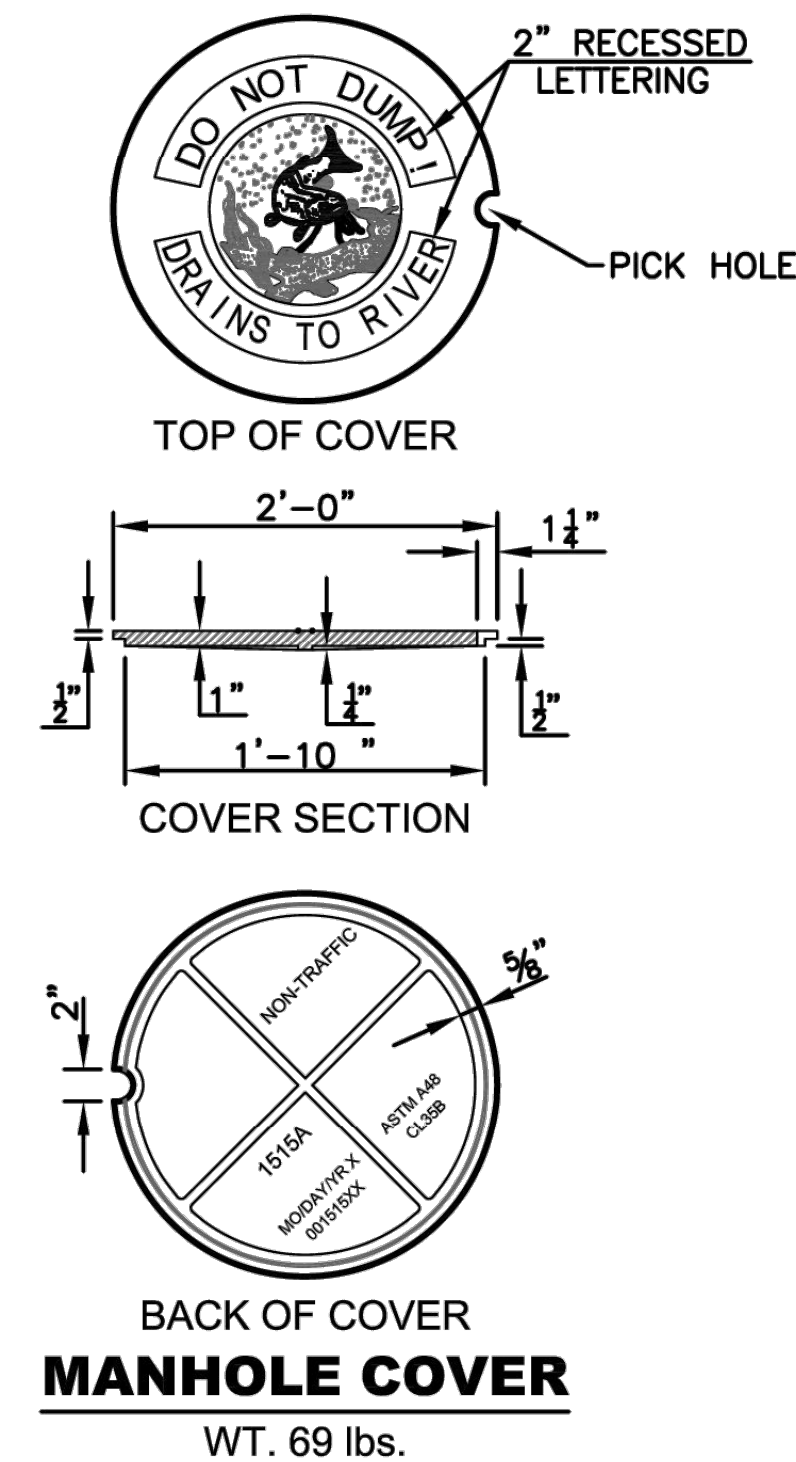
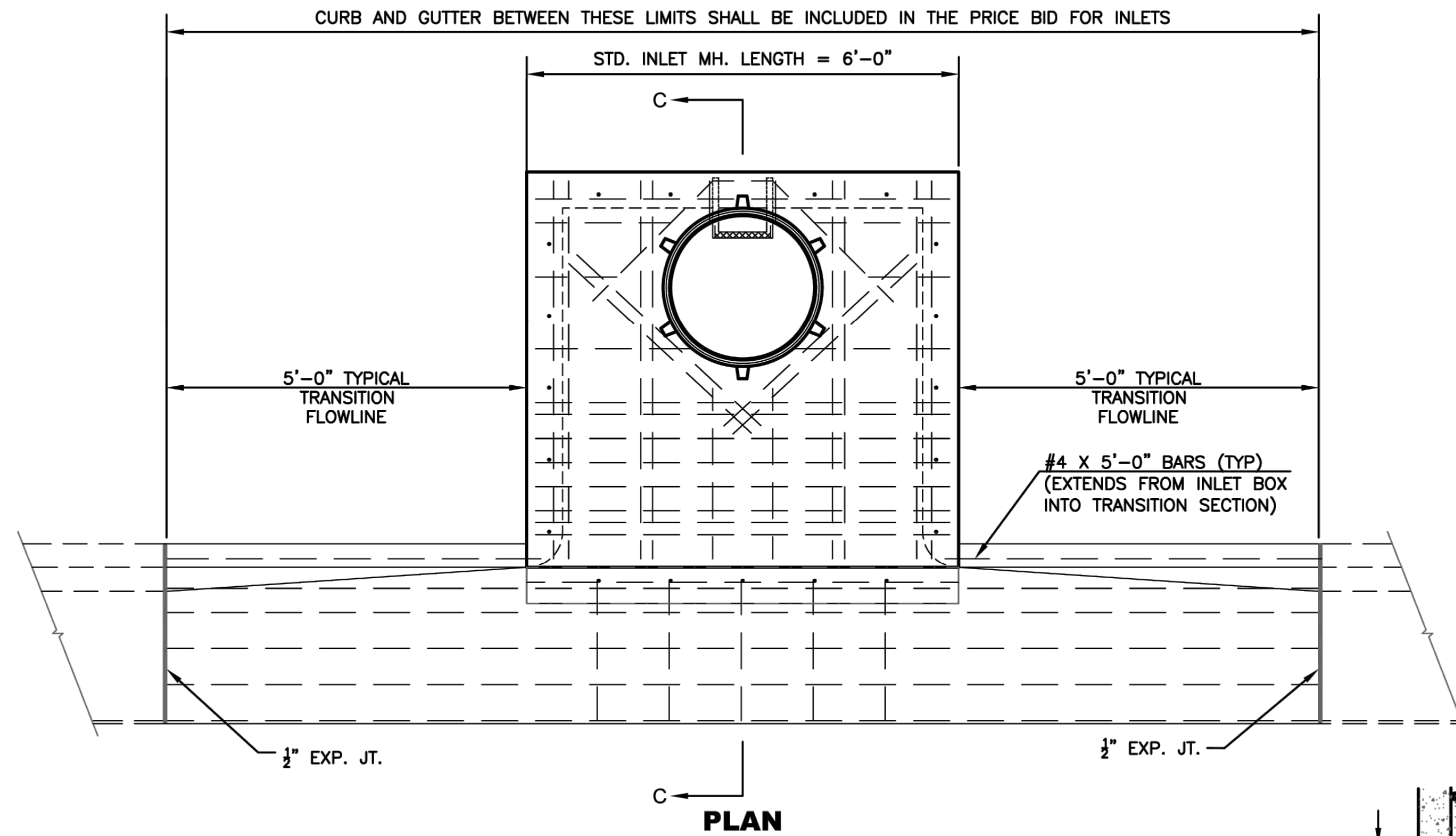


**STANDARD DETAILS**

**STORM SEWER DETAILS**  
(DT-008)

DATE: APR 2026  
SHEET: 50 OF 122  
PROJ.: 701038.00





- NOTES:
1. STEPS SHALL BE INSTALLED IN ALL INLETS OVER 4' DEEP AND LOCATED UNDER MANHOLE RING AND COVER.
  2. SUPPLIERS SHALL GRIND ALL BURRS SMOOTH ON CASTINGS.
  3. THE INLET TOP SHALL SIT SQUARELY ON TOP OF THE INLET BOTTOM SECTION. THE INLET WALLS SHALL NOT BE OFFSET MORE THAN ONE INCH BETWEEN TOP AND BOTTOM SECTIONS.
  4. MAXIMUM PIPE INTRUSION INTO STRUCTURE IS 6". UNIQUE STRUCTURES MIGHT REQUIRE ADDITIONAL ANALYSIS. ENGINEER APPROVAL REQUIRED.

NO.	DATE:	REVISION	BY:	APP'D
4	June 2018	Added maximum pipe intrusion note	DHS J/VH	
3	March 2013	Changed inlet top thickness to 8"	DHS SB	
2	Dec. 2009	Added #4 bar to PLAN & 3. to NOTES	DHS SB	
1	Feb. 2008	Mod. MH Cover	DHS SB	

DRAWN BY: *rm/mc*

APP'D BY: *FL*

**SHAWNEE COUNTY, KANSAS**  
**PUBLIC WORKS DEPARTMENT**

1515 NW SALINE  
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**STANDARD DETAILS**

**TYPE I-P INLETS**  
(PRECAST)  
(DT-010)

DATE: APR 2026

SHEET: 52 OF 122

PROJ.: 701038.00