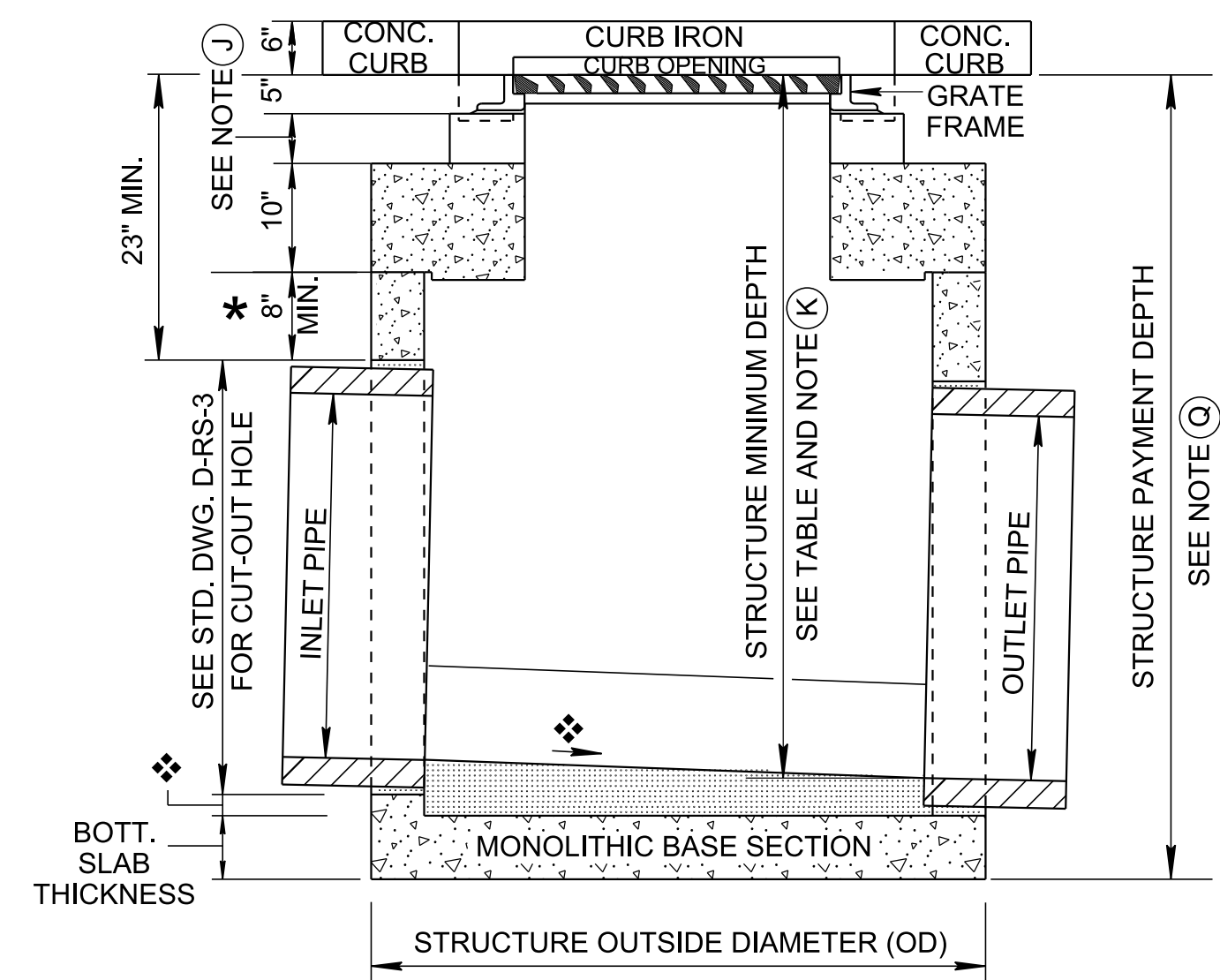
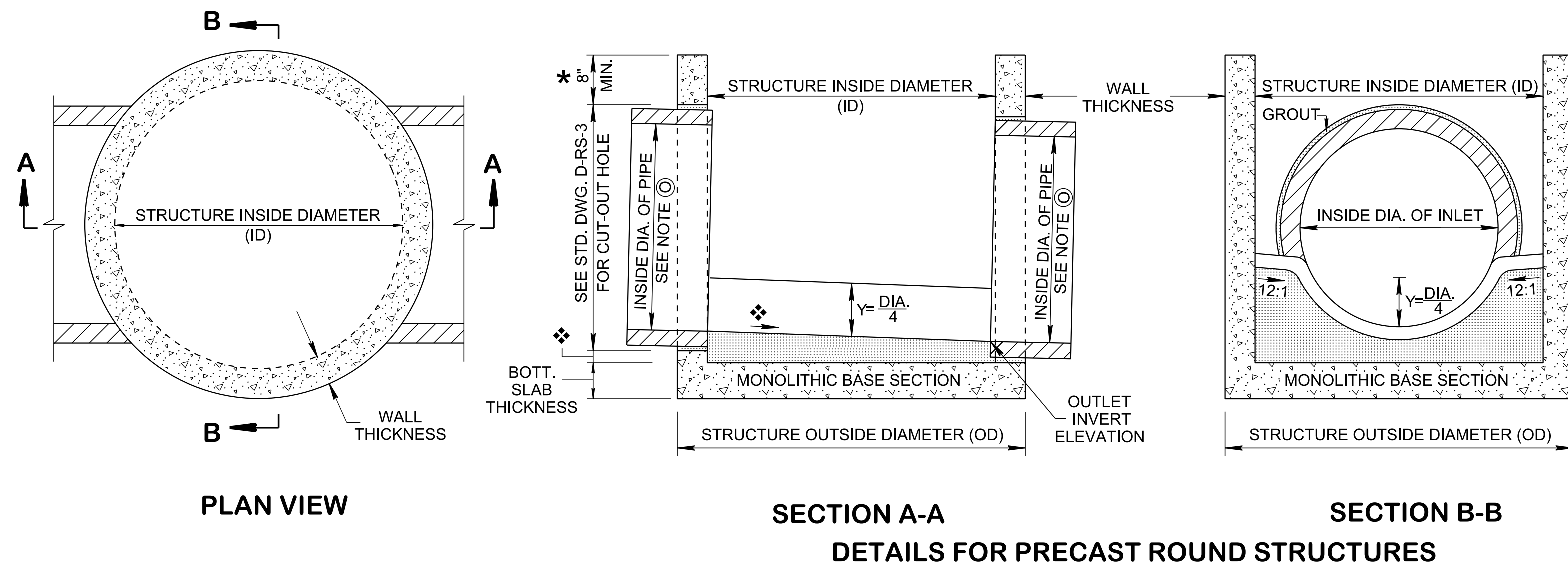


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- LEGEND**
- NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 921 REQUIRED AROUND PIPE OPENINGS ONLY
 - *** 8" FOR ID 48", 60", AND 72"
12" FOR ID 84", 96", 108" AND 120"
 - ◆** SEE ROADWAY PLANS FOR INVERT ELEVATIONS. RECOMMENDED SLOPE IS HALF ID (IN INCHES) DIVIDED BY 12, OR 24:1 MIN.

MIN. DESIGN AND PAYMENT DEPTHS DETAIL

ROUND STRUCTURES DIMENSION TABLE																									
ROUND STRUCTURES INSIDE DIAMETER (ID)	WALL THK.	BOT. SLAB THK.	MAX. DEPTH OF STRUC.	INLET TYPE	LID STD. DWG. NUMBER	STRUCTURE NUMBER	MAX. INLET OR OUTLET CONC. PIPE SIZE STRAIGHT	MAX. INLET OR OUTLET CONC. PIPE SIZE AT 90°	ROUND STRUCTURES MINIMUM DESIGN DEPTH (FEET) ^(K)																
									INLET OR OUTLET PIPE INSIDE DIAMETER																
									18"	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"						
48"	5"	6"	20'	SINGLE CURB INLET	D-RL-1	10RA, 12RA, 13RA, 25RA	30"	18"	3.89	4.43															
60"	6"	8"	40'	SINGLE CURB INLET	D-RL-1	12RB, 13RB, 25RB	36"	24"	3.94	4.48	5.02	5.56													
				SINGLE WALL INLET																					
				SINGLE AREA DRAIN	D-RL-3	38RB, 42RB			3.88	4.42	4.97	5.51													
72"	7"	8"	40'	SINGLE CURB INLET	D-RL-1	12RB, 13RB, 25RB	48"	30"	3.98	4.53	5.07	5.61	6.15	6.69											
				SINGLE WALL INLET																					
				SINGLE AREA DRAIN	D-RL-3	38RB, 42RB			4.26	4.80	5.34	5.88	6.42	6.97											
84"	8"	8"	40'	SINGLE CURB INLET	D-RL-1	12RC, 13RC, 25RB	60"	36"	4.36	4.90	5.45	5.99	6.53	7.07	7.61	8.15									
				SINGLE WALL INLET																					
				DOUBLE WALL INLET	D-RL-2	31R			4.27	4.83	5.38	5.92	6.46	7.00	7.54	8.08									
				SINGLE AREA DRAIN	D-RL-3	38RB, 42RB, 39RB			4.29	4.83	5.38	5.92	6.46	7.00	7.54	8.08									
96"	9"	8"	40'	SINGLE CURB INLET	D-RL-1	12RC, 13RC, 25RB	66"	42"	4.41	4.95	5.49	6.03	6.57	7.12	7.66	8.20	8.74								
				SINGLE WALL INLET																					
				DOUBLE CURB INLET	D-RL-2	14RB			4.29	4.83	5.38	5.92	6.46	7.00	7.54	8.08	8.63								
				DOUBLE WALL INLET																					
				SINGLE AREA DRAIN	D-RL-3	38RB, 42RB, 39RB			4.42	4.96	5.50	6.04	6.58	7.13	7.67	8.21	8.75								
108"	10"	12"	40'	DOUBLE AREA DRAIN	D-RL-4	43R			4.29	4.83	5.38	5.92	6.46	7.00	7.54	8.08	8.63								
				SINGLE CURB INLET	D-RL-1	12RC, 13RC, 25RB	72"	48"	4.45	4.99	5.54	6.08	6.62	7.16	7.70	8.25	8.79	9.33	9.87						
				SINGLE WALL INLET																					
				DOUBLE CURB INLET	D-RL-2	14RB																			
DOUBLE WALL INLET																									
120"	11"	12"	40'	SINGLE AREA DRAIN	D-RL-3	38RB, 39RB, 42RB			4.50	5.04	5.58	6.12	6.66	7.21	7.75	8.29	8.83	9.37	9.92						
				DOUBLE CURB INLET	D-RL-2	14RB																			
				DOUBLE WALL INLET																					
				SINGLE CURB INLET	D-RL-1	12RC, 13RC, 25RB																			
				DOUBLE AREA DRAIN	D-RL-4	43R																			

- ① MINIMUM DESIGN DEPTH CALCULATED AS TOP OF GRATE ELEVATION MINUS THE OUTLET INVERT ELEVATION.
- ② IF ROUND STRUCTURES HAS NO INLET PIPE, MINIMUM DESIGN DEPTH MAY BE REDUCED BY THE DROP ACROSS THE BOTTOM OF THE STRUCTURE.
- ③ ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.
- ④ ROUND STRUCTURES PAYMENT DEPTH MEASUREMENT WILL BE DIFFERENT FROM MIN. DESIGN DEPTH SHOWN ON THE TABLE.

ROUND STRUCTURES PAY ITEM NO. (PER EACH) ^(Q)							
ROUND STRUC. INSIDE DIA (ID)	> 4'-8" Depth	> 8'-12" Depth	> 12'-16" Depth	> 16'-20" Depth	> 20'-24" Depth	> 24'-28" Depth	> ()' Depth
48"	611-60.01	611-60.02	611-60.03	611-60.04	N/A	N/A	N/A
60"	611-60.10	611-60.11	611-60.12	611-60.13	611-60.14	611-60.15	611-60.16
72"	611-60.20	611-60.21	611-60.22	611-60.23	611-60.24	611-60.25	611-60.26
84"	611-60.30	611-60.31	611-60.32	611-60.33	611-60.34	611-60.35	611-60.36
96"	611-60.40	611-60.41	611-60.42	611-60.43	611-60.44	611-60.45	611-60.46
108"	611-60.50	611-60.51	611-60.52	611-60.53	611-60.54	611-60.55	611-60.56
120"	611-60.60	611-60.61	611-60.62	611-60.63	611-60.64	611-60.65	611-60.66

- GENERAL NOTES**
- (A) THIS DRAWING TO BE USED FOR ALL PRECAST CONCRETE ROUND STRUCTURES. SEE STANDARD DRAWINGS D-RM-1 FOR PRECAST MANHOLE STRUCTURES, D-RJB-1 FOR PRECAST ROUND JUNCTION BOX STRUCTURES AND D-RSB-1 FOR PRECAST PRECAST SPRING DRAIN BOX STRUCTURES.
 - (B) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) AND AASHTO LRFD UNLESS SUPERSEDED BY THE STANDARD DRAWINGS.
 - (C) STRUCTURE OUTSIDE DIAMETER (OD) = ID + 2 x PIPE WALL THICKNESS. SEE D-RS-3 FOR MORE INFORMATION.
 - (D) REFER TO STANDARD DRAWINGS D-RS-2 FOR ADDITIONAL CONSTRUCTION NOTES, AND REINFORCEMENT DETAILS FOR WALLS AND BOTTOM SLABS.
 - (E) REFER TO STANDARD DRAWING D-RS-3 FOR PIPE CUT-OUT DIMENSIONS, NON-MONOLITHIC STRUCTURE COLD JOINT DETAILS, MULTIPLE PIPE CONNECTION DETAILS AND ALTERNATIVE JOINT DETAILS.
 - (F) REFER TO STANDARD DRAWINGS D-RL-1 THRU D-RL-4 FOR PRECAST ROUND STRUCTURES LID SECTIONS AND CURB INLET DETAILS.
 - (G) PRECAST STRUCTURE UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED ROUND STRUCTURES UNITS AT THEIR OWN EXPENSE.
 - (H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.
 - (I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.
 - (J) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING STANDARD PRECAST CONCRETE RISER FRAMES. PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.
 - (K) MINIMUM DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION.
 - (L) SEE T.D.O.T. DRAINAGE MANUAL FOR ADDITIONAL INFORMATION.
 - (M) MANUFACTURING TOLERANCES WILL BE AS SHOWN ON STANDARD OPERATING PROCEDURE (SOP) 5-3.
 - (N) MINIMUM DEPTH SHOWN ASSUMES ALL ALLOWABLE MATERIAL TYPES AND MINIMUM BACKFILL REQUIREMENTS PER STANDARD DRAWINGS D-PB-1, 2, AND 3. MINIMUM DEPTH MAY BE DECREASED IF NEEDED, BY SPECIFYING CONCRETE PIPE AT THAT LOCATION. HOWEVER, WHERE NECESSARY, PAVEMENT THICKNESS MUST BE CONSIDERED AND ADEQUATE DEPTH MUST BE PROVIDED.
 - (O) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.
 - (P) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.
 - (Q) ROUND STRUCTURES PAYMENT DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO THE BOTTOM SLAB, SEE DETAIL ABOVE. PAYMENT INCLUDES LID, RISER, FRAME, GRATE AND CURB IRON. SEE TABLE FOR ITEM NUMBERS.

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

PRECAST ROUND STRUCTURES (48" THRU 120")