

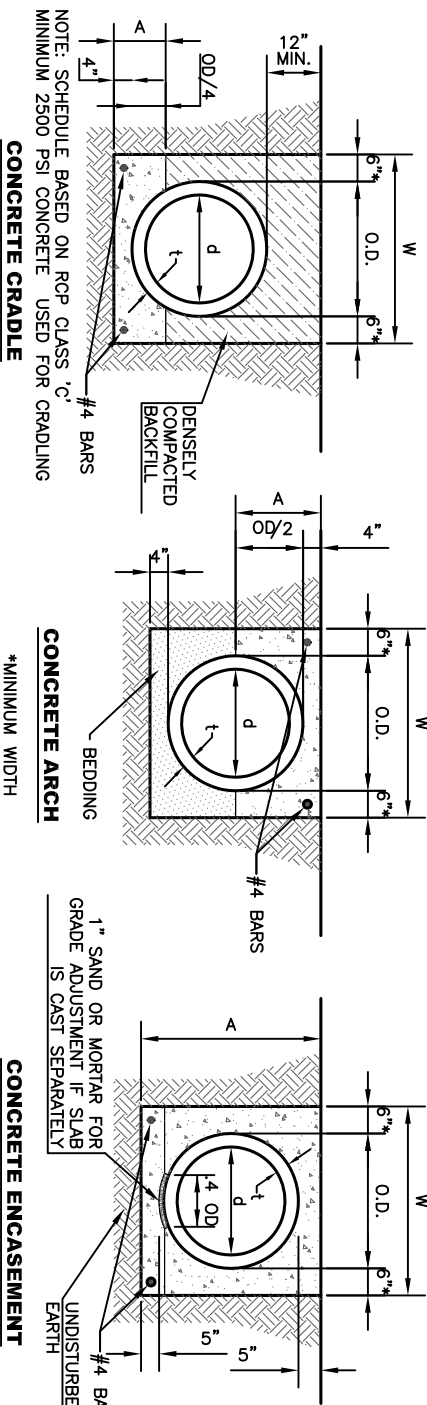
MAXIMUM ALLOWABLE DEPTH OF TRENCH (IN FEET)

PIPE DIAMETER (INCHES)	REINFORCED CONCRETE PIPE (RCP)	ALUMINIZED STEEL PIPE (ASP)
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
HEIGHT OF COVER ABOVE TOP OF PIPE (FEET) (H-20 LOADING)

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

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

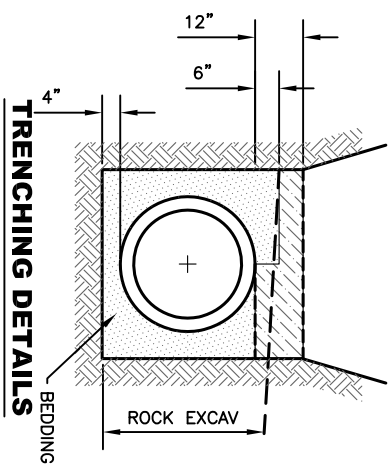
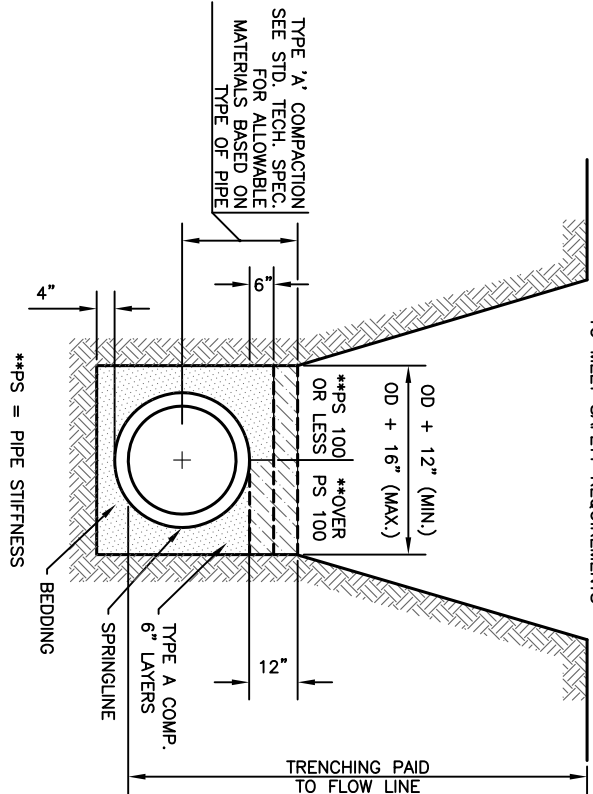


D	t	O.D.	W	CRADLE		ARCH		ENCASE.	
				IN.	IN.	IN.	IN.	IN.	IN.
15	2.25	19.5	31.5	8.9	.057	13.8	.073	29.5	1.62
18	2.50	23.0	34.0	9.8	.067	15.5	.086	33.0	1.90
21	2.75	26.5	36.5	10.6	.077	17.3	.100	36.5	2.20
24	3.00	30.0	42.0	11.5	.089	19.0	.114	40.0	2.50
27	3.25	33.5	45.5	12.4	.100	20.8	.129	43.5	2.82
30	3.50	37.0	49.0	13.3	.113	22.5	.145	47.0	3.16
33	3.75	40.5	52.5	14.1	.126	24.3	.162	50.5	3.51
36	4.00	44.0	56.0	15.0	.140	26.0	.179	54.0	3.87
42	4.50	51.0	63.0	16.8	.169	29.5	.215	61.0	4.63
48	5.00	58.0	70.0	18.5	.200	33.0	.254	68.0	5.45
54	5.50	65.0	77.0	20.3	.234	36.5	.296	75.0	6.32
60	6.00	72.0	84.0	22.0	.270	40.0	.341	82.0	7.24

SCHEDULE FOR CONCRETE CRADLE, CONCRETE ARCH, AND CONCRETE ENCASUREMENT FOR STORM SEWERS

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

TRENCH WALL SLOPED AS REQUIRED TO MEET SAFETY REQUIREMENTS



- NOTES:
- THE TRENCH SHALL BE EXCAVATED TO 4" BELOW BOTTOM OF THE PIPE BARREL & BACKFILLED AS SHOWN ABOVE WITH AN APPROVED BEDDING MATERIAL.
 - 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.

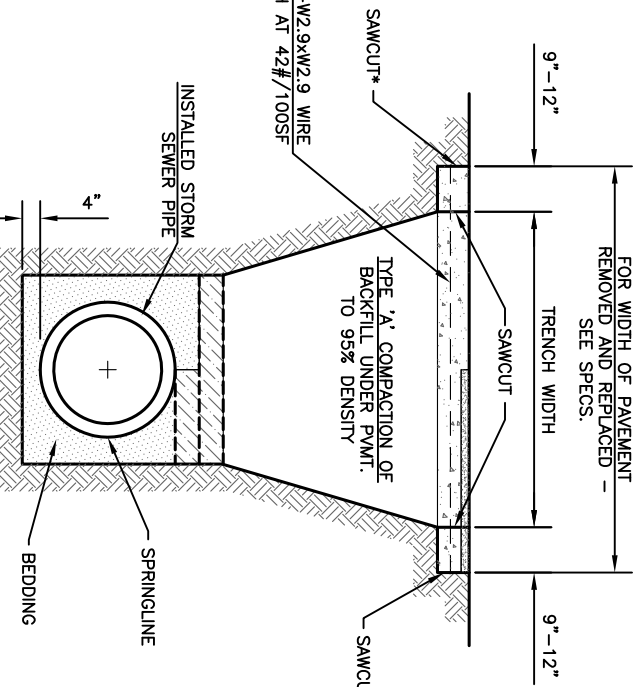
STANDARDS FOR SETTING LINE AND GRADE FOR SEWER CONSTRUCTION:

- STAKES, SPIKES, SHINERS, OR CROSSES SET BY TRANSIT AT THE SURFACE ON AN OFFSET FROM THE SEWER CENTER LINE.
- STAKES ARE TO BE SET IN THE TRENCH BOTTOM ON THE SEWER LINE AS THE ROUGH GRADE FOR SEWER IS COMPLETED.
- 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:

- NOTES:
- THE TRENCH SHALL BE EXCAVATED TO 4" BELOW BOTTOM OF THE PIPE BARREL & BACKFILLED AS SHOWN ABOVE WITH AN APPROVED BEDDING MATERIAL.
 - 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.

INSTALLATION OF SEWER UNDER EXISTING PAVEMENT



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

NO.	DATE	REVISION
3	June 2018	Added maximum pipe intrusion note
2	March 2013	Mod. Pymt. Place, Sch. & Bedding Amt. DHS SB
1	Feb. 2008	Mod/Pymt/Sch. and Grade Arch. & Encase DHS SB

DRAWN BY: *lm/Enc*
APP'D BY: *R. Chandy*

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

TOPEKA
Public Works
ENGINEERING
620 SE MADISON St., 2nd Floor • TOPEKA, KS 66607
Phone: (785) 383-3822 • Fax: (785) 383-3881

STANDARD DETAILS

STORM SEWER DETAILS (DT-008)
DATE: _____
SHEET: _____
PROJ.: _____