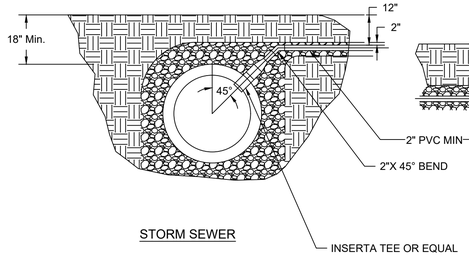
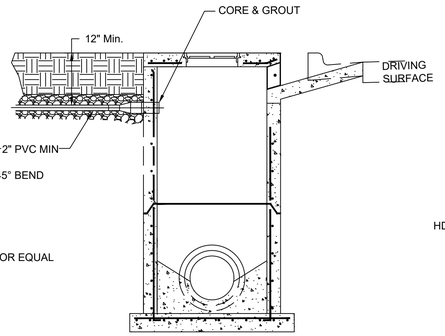


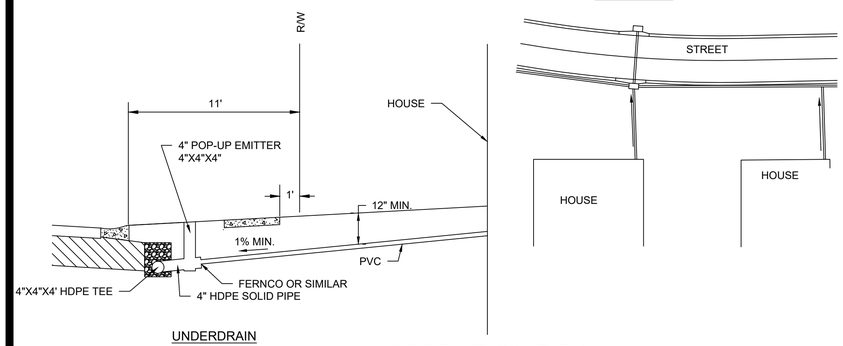
STORM SEWER



STRUCTURE

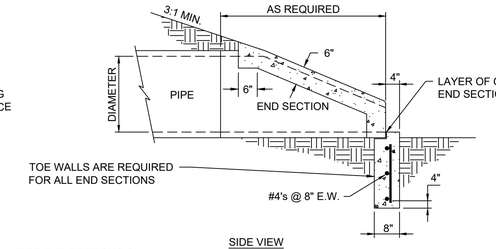
NOTES:

1. ALL SUMP PUMP CONNECTIONS REQUIRE A RIGHT OF WAY PERMIT.

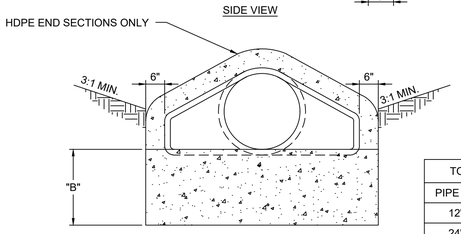


UNDERDRAIN

SUMP PUMP CONNECTION



SIDE VIEW



FRONT VIEW

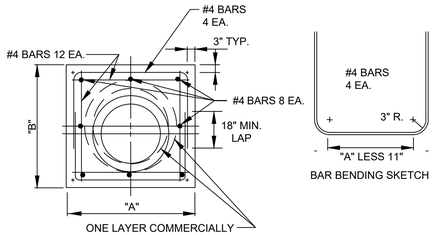
NOTES:

1. THE DEPTH OF THE TOE WALL SHALL BE PER TABLE. IF BEDROCK IS ENCOUNTERED A MINIMUM OF 12" INTO BEDROCK IS REQUIRED.
2. ALL CONCRETE SHALL BE KCMMB-4K.
3. HDPE END SECTIONS SHALL HAVE CONCRETE PLACED AROUND ALL SIDES. CONCRETE SHALL BE FORMED AND SHALL HAVE A BROOM FINISH.

TABLE

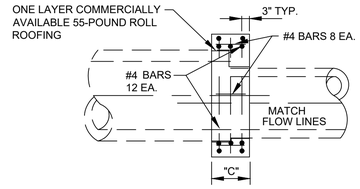
TOE WALL DEPTH	
PIPE DIAMETER	"B"
12" - 21"	18"
24" - 48"	24"
54" - 66"	36"

END SECTION WITH TOE WALL



END VIEW

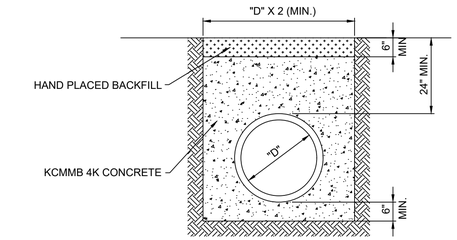
BAR BENDING SKETCH



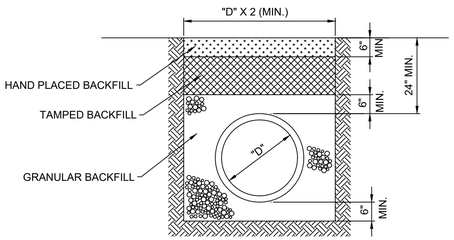
SIDE VIEW

CONCRETE COLLAR

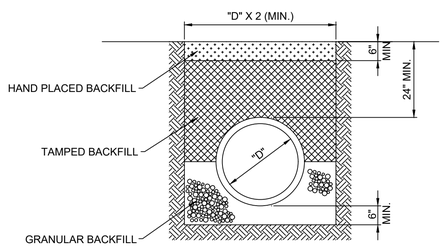
TABLE 2		
PIPE SIZE	DIMENSIONS	
(INCHES)	"A" & "B" (FT.-IN.)	"C" (FT.-IN.)
12	2-8	1-0
15	3-0	1-0
	3-0	1-0
18	3-3	1-0
	3-3	1-0
	3-3	1-0
21	3-6	1-0
	3-6	1-0
	3-6	1-0
24	3-10	1-0
	3-10	1-0
	3-10	1-0
30	4-5	1-4
	4-5	1-4
	4-5	1-4
36	5-0	1-4
	5-0	1-4
	5-0	1-4
42	5-7	1-4
	5-7	1-4
	5-7	1-4
48	6-2	1-4
	6-2	1-4
	6-2	1-4
54	7-1	1-8
	7-1	1-8
	7-1	1-8
60	7-8	1-8
	7-8	1-8
	7-8	1-8
66	8-3	2-0
	8-3	2-0
	8-3	2-0
72	8-10	2-0
	8-10	2-0
	8-10	2-0



CONCRETE ENCASEMENT



HDPE/PVC PIPE BEDDING



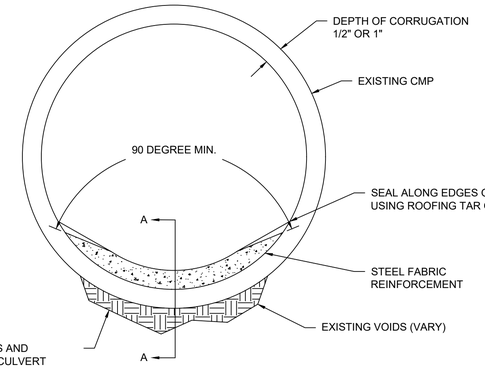
FIRST CLASS BEDDING (RCP)

TABLE 1						
	% RETAINED-SQUARE MESH SIEVES					
	1"	3/4"	1/2"	3/8"	No. 4	No. 8
BEDDING MATERIAL	0	0-20	-	40-70	75-100	95-100

PIPE BEDDING

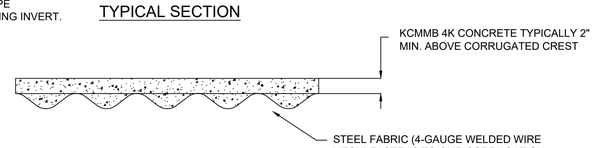
NOTES:

1. GRANULAR FILL SHALL BE PER TABLE 1, AND SHALL BE PLACED IN 6" LIFTS AND COMPACTED BY SLICING WITH A SHOVEL.
2. TAMPED FILL SHALL BE FINELY DIVIDED, JOB EXCAVATED MATERIAL FREE OF DEBRIS, ORGANIC MATERIAL, AND STONES, COMPACTED TO TYPE AA MR-3-3 COMPACTION.
3. HAND PLACED FILL SHALL BE FINELY DIVIDED MATERIAL, FREE OF DEBRIS AND STONES, COMPACTED TO TYPE AA MR-3-3 COMPACTION.
4. ALL PIPE SHALL BE INSPECTED PRIOR TO BACKFILL. ALL PIPE COVERED PRIOR TO INSPECTION SHALL BE UNCOVERED AT THE CONTRACTORS EXPENSE.
5. CONC. COLLAR DIMENSIONS "A" & "B" MAY BE REDUCED UPON APPROVAL OF THE CITY ENGINEER IF THERE ARE CONFLICTS WITH EXISTING OR PROPOSED CONDITIONS.
6. FLOW FILL SHALL BE USED TO FORM A STEEP-SLOPE STABILIZATION COLLAR AT EACH JOINT FOR PIPE RUNS OVER 10% PER THE DIMENSION TABLE THIS SHEET.
7. WHENEVER AN INLET OR JUNCTION BOX IS PRESENT WITHIN THE PROPERTY, THE SUMP PUMP LINE SHALL CONNECT TO THE STRUCTURE.
8. MINIMUM COVER OVER THE SUMP PUMP LINE WITHIN PUBLIC RIGHT OF WAY SHALL BE 12".
9. GRANULAR BACKFILL SHALL BE USED FOR SUMP PUMP LINE WITHIN THE RIGHT OF WAY AND SHALL BE INSTALLED TO THE DIMENSIONS ON THIS DETAIL. GRANULAR FILL SHALL BE PER TABLE 1.
10. MAXIMUM TRENCH WIDTH ON THE SUMP PUMP LINE SHALL BE12" EXCEPT AT THE STORM SEWER CONNECTION.
11. DEFLECTOR CHANNELS ARE TO BE USED IN CONJUNCTION WITH CURB INLETS WHEN LONGITUDINAL GRADE EQUALS OR EXCEEDS 5%.
12. IN LIEU OF CAST-IN-PLACE DEFLECTORS, THE SHAWNEE STEEL & WELDING, INC. DEFLECTORS FOR IN-GRADE INLETS, OR EQUAL, MAY BE USED.
13. IF BEDROCK IS ENCOUNTERED A MINIMUM OF 12" INTO BEDROCK IS REQUIRED.
14. ALL CONCRETE SHALL BE KCMMB-4K.



CLEAN OUT LOOSE DEBRIS AND FILL VOIDS UNDERNEATH CULVERT WITH GROUT TO EXISTING PIPE FLOWLINE PRIOR TO INSTALLING INVERT.

TYPICAL SECTION



SECTION A-A

1. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS FROM PIPES PRIOR TO INVERT REPAIR IN A MANNER APPROVED BY THE ENGINEER. THE ENTIRE INTERIOR SURFACE TO BE REPAIRED SHALL BE CLEANED WITH PRESSURE JET, WATER JET OR WET SANDBLASTING AND RUST REMOVED FROM SURFACE TO THE SATISFACTION OF THE ENGINEER.
2. CONTRACTOR SHALL GROUT ALL VOIDS BELOW AND AROUND PIPE AFTER SEDIMENT REMOVAL AND PIPE CLEANING ARE COMPLETE.
3. THE CONCRETE SHALL CURE FOR A MINIMUM OF 48 HOURS BEFORE ANY WATER IS PERMITTED TO FLOW IN THE PIPE AND INVERT.
4. LOW FLOW CHANNEL FLOW SHALL BE DIVERTED FROM ONE PIPE AT A TIME ALLOWING CHANNEL FLOW TO CONTINUE IN THE SECOND PIPE. PIPE RECEIVING INVERT REPAIR SHALL BE KEPT DRY FROM SURFACE FLOW AND GROUNDWATER DURING REPAIRS. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN FOR APPROVAL BY ENGINEER PRIOR TO STARTING WORK.

PIPE INVERT DETAIL

www.lenexa.com 2020

REVISED DATE:	02/20
DETAILED:	BKC
APPROVED:	---

Lenexa KANSAS

STORM SEWER 1

SHEET D-302