



NOTES:

1. ALL REFERENCES TO CLASS I OR II MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.

2. ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
3. MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.
4. FILTER FABRIC: A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
5. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
6. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I OR II, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
7. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
8. MINIMUM COVER: MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION, FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" UP TO 36" DIAMETER PIPE AND 24" OF COVER FOR 42" - 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

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NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "S"	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"	H (NON-TRAFFIC)	H (TRAFFIC)
12"	14.5"	11"	25.4"	8"	12"	12"
(300 MM)	(368 MM)	(279 MM)	(645 MM)	(203 MM)	(292 MM)	(292 MM)
15"	18"	12"	28.9"	8"	12"	12"
(375 MM)	(457 MM)	(292 MM)	(734 MM)	(203 MM)	(292 MM)	(292 MM)
18"	21"	17"	33.9"	9"	12"	12"
(450 MM)	(533 MM)	(434 MM)	(862 MM)	(229 MM)	(292 MM)	(292 MM)
24"	28"	13"	40.7"	10"	12"	12"
(600 MM)	(711 MM)	(330 MM)	(1034 MM)	(254 MM)	(292 MM)	(292 MM)
30"	36"	18"	53.1"	18"	12"	12"
(750 MM)	(914 MM)	(457 MM)	(1347 MM)	(457 MM)	(292 MM)	(292 MM)
36"	42"	22"	63"	18"	12"	12"
(900 MM)	(1067 MM)	(559 MM)	(1600 MM)	(457 MM)	(292 MM)	(292 MM)
42"	48"	24"	71.9"	18"	12"	24"
(1050 MM)	(1219 MM)	(610 MM)	(1826 MM)	(457 MM)	(292 MM)	(610 MM)
48"	54"	25"	78.5"	18"	12"	24"
(1200 MM)	(1372 MM)	(635 MM)	(1994 MM)	(457 MM)	(292 MM)	(610 MM)
60"	67"	24"	90"	18"	12"	24"
(1500 MM)	(1702 MM)	(610 MM)	(2286 MM)	(457 MM)	(292 MM)	(610 MM)

* CLASS I BACKFILL REQUIRED AROUND 60" DIAMETER FITTINGS.

3	REVISED 18" SPACING	TJR	01/05/09	CKS	
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D	

TYPICAL RET./DET. CROSS SECTION DETAIL

DRAWING NUMBER: STD-702

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DATE	07.25.06
SCALE	NTS
SHEET	OF