



**NOTES**

**GENERAL**

1. ALL DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH AS4058:2007 AND AS3725:2007.
2. PIPES SHALL BE RUBBER RING JOINTED CONCRETE PIPES WITH SOCKETS FACING UPSTREAM. FRC PIPES SHALL NOT BE USED
3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE

**LOADS**

1. ALL DEAD AND LIVE LOADS SHALL BE ASSESSED BY THE DESIGNER IN ACCORDANCE WITH AS4058:2007 AND AS3725:2007
2. PIPE CLASS SHALL BE DETAILED ON THE DESIGN DRAWINGS
3. DESIGNERS SHALL ASSESS SUPERIMPOSED LIVE LOADS DUE TO CONSTRUCTION VEHICLES AND PROVIDE CONSTRUCTION METHODOLOGY ON THE DESIGN DRAWINGS. DEVIATIONS FROM THE CONSTRUCTION EQUIPMENT SPECIFIED SHALL BE REFERRED TO THE DESIGNER
4. DESIGNERS ARE TO ASSESS SUPERIMPOSED LIVE LOADS DUE TO ROAD VEHICLES FROM AS3725:2007 APPENDIX B, TABLE B2 FOR THE W80, A160, M1600 AND HLP ROAD VEHICLES.
5. ANY CONSTRUCTION WHICH REQUIRES AN INCREASE IN TRENCH WIDTH TO THAT DETAILED IN THE DESIGN DRAWINGS SHALL BE REFERRED TO THE DESIGNER PRIOR TO PIPE INSTALLATION.
6. IF COVER IS LESS THAN 400mm CONDUCT A PIPE CLASS ASSESSMENT OR ADOPT CONCRETE ENCASEMENT IN ACCORDANCE WITH STANDARD DRAWING A2001

**EXCAVATION**

1. EXCAVATION SHALL BE TO THE LINE AND LEVEL SHOWN ON THE DRAWINGS. WHERE THE EXCAVATION TO THE REQUIRED FOUNDATION LEVEL REVEALS MATERIAL, WHICH IN THE OPINION OF THE SUPERINTENDENT IS UNSUITABLE, THE TRENCH SHALL BE OVER EXCAVATED TO A DEPTH REQUIRED TO REMOVE THE UNSUITABLE MATERIAL AND REFILLED WITH COMPACTED MATERIAL CONFORMING TO THE REQUIREMENTS OF THE BED ZONE
2. VERY SOFT OR EXPANSIVE CLAYS, IRREGULAR OR FRAGMENTED ROCK AND SATURATED SOILS, PARTICULARLY THOSE CONTAINING AGGRESSIVE GROUNDWATER, ARE ALL UNSUITABLE FOUNDATIONS AND SHOULD BE AVOIDED.
3. TRENCH FOUNDATION TO BE COMPACTED AS SPECIFIED IN COMPACTION SCHEDULE

**BED ZONE**

1. BED ZONE MATERIAL SHALL BE COMPACTED SELECT FILL WITH THE FOLLOWING GRADING LIMITS:

SEIVE SIZE (mm)	% MASS PASSING
19.0	100
2.36	100 - 50
0.60	90 - 20
0.30	60 - 10
0.15	25 - 0
0.075	10 - 0

WITH THE FRACTION PASSING THE 0.075mm SIEVE HAVING A MAXIMUM LINEAR SHRINKAGE OF 10% DETERMINED IN ACCORDANCE WITH AS 1289.3.4.1.

2. SELECT FILL WITH THE FRACTION PASSING THE 0.6 mm SIEVE NOT CONFORMING TO THE ABOVE LIMITS MAY BE USED IN THE BED AND HAUNCH ZONE AT THE DISCRETION OF COUNCILS SUPERINTENDENT.
3. SELECT FILL MATERIALS MAY INCLUDE COURSE - GRAINED SOILS WITH UNIFIES SOIL CLASSIFICATIONS OF SC, SP, SW, GC, GW AND GP AS DEFINED IN AS 1726.
4. SELECT FILL SHALL BE PLACE AND COMPACTED IN LAYERS NOT EXCEEDING 150mm LOOSE THICKNESS.
5. THE BED ZONE SHALL EXTEND THE FULL WIDTH OF THE TRENCH AND SHALL BE COMPACTED BY TAMPING, ROLLING AND/OR VIBRATION

**HAUNCH ZONE & SIDE ZONES**

1. AS FOR THE BED ZONE, EXCEPT COMPACTION MAY BE BY CONVENTIONAL METHODS OR BY SATURATION AND VIBRATION. NOTE WHERE SATURATION METHOD USED, SUBSOIL DRAINAGE MUST BE PROVIDED IN THE TRENCH

**OVERLAY AND BACKFILL ZONE**

1. OVERLAY AND BACKFILL MATERIAL SHALL BE COMPACTED ORDINARY FILL CONTAINING NOT MORE THAN 20% BY MASS OF STONES WITH A SIZE BETWEEN 75mm AND 150mm AND NONE LARGER THAN 150mm.
2. ORDINARY FILL SHALL BE PLACE AND COMPACTED IN LAYERS NOT EXCEEDING 200mm LOOSE THICKNESS.

COMPACTION SCHEDULE		
LOCATION AND DEPTH OF FILLING	REQUIRED DENSITY (NON-COHESSIVE MATERIAL - DENSITY INDEX)	REQUIRED DENSITY (NON-COHESSIVE MATERIAL - STANDARD COMPACTION)
ORDINARY AND SELECT FILL		
0-0.15m BELOW ROAD SUBGRADE	70	100%
0.15-1m BELOW ROAD SUBGRADE	70	98%
GREATER THAN 1m BELOW ROAD SUBGRADE	70	95%
SELECT FILL		
BED AND HAUNCH ZONE	50	-
FOUNDATION	50	85%

NOTE: ADJUST THE MOISTURE CONTENT AT THE TIME OF COMPACTION WITHIN 85%-115% OF THE OPTIMUM MOISTURE CONTENT

THIS DRAWING REFERS ONLY TO TRENCH INSTALLATION OF PIPES LESS THAN OR EQUAL TO 1500 DIAMETER. IT IS NOT INTENDED AS A COMPLETE SPECIFICATION BUT INCLUDES ESSENTIAL REQUIREMENTS OF AS3725-2007

3 GENERAL REVISION 05.07.16 J.C. 2 GENERAL REVISION 18.08.15 J.C. 1 CONSTRUCTION 11.06.13 J.C. 0 PRELIMINARY - FOR REVIEW AND COMMENT ONLY 14.12.12 J.C. No. AMENDMENT DETAILS DATE INITIALS	SCALE	LIVEABLE CITY INFRASTRUCTURE MANAGEMENT SERVICES	APPROVED  SIGNED: INFRASTRUCTURE MANAGEMENT SERVICES MANAGER DATE: 29.09.2016	<b>THE CITY OF NEWCASTLE</b> <b>STORMWATER PIPE INSTALLATION DETAILS</b>	NCC PLAN No.	SHEET No.
	AS SHOWN				REVIEWED: J.C.	A2000
A3 ORIGINAL THIS SHEET WAS PREPARED IN COLOUR AND WILL BE INCOMPLETE IF COPIED		COORDINATE SYSTEM:	HEIGHT DATUM: AHD	AMENDMENT No.		