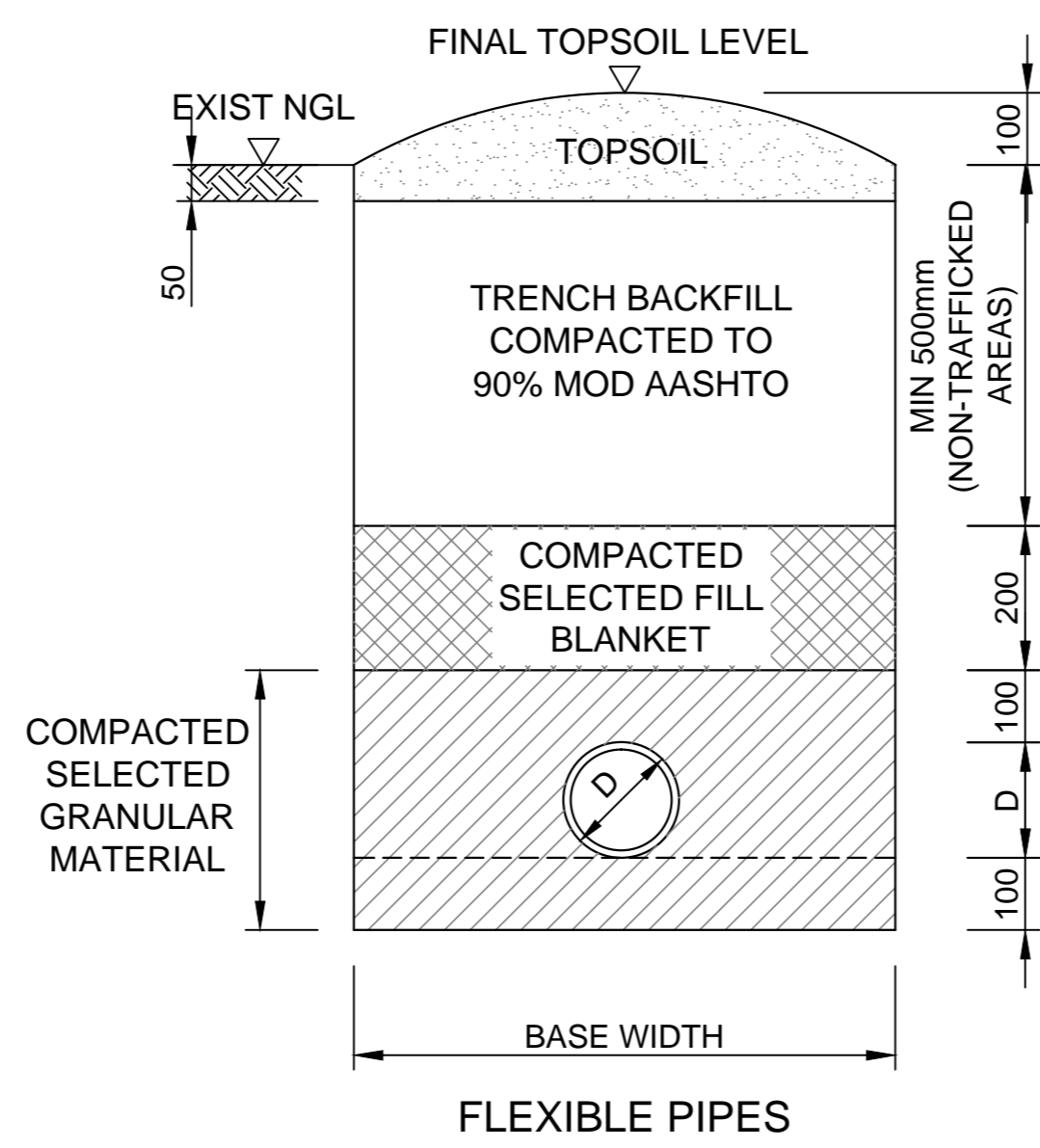
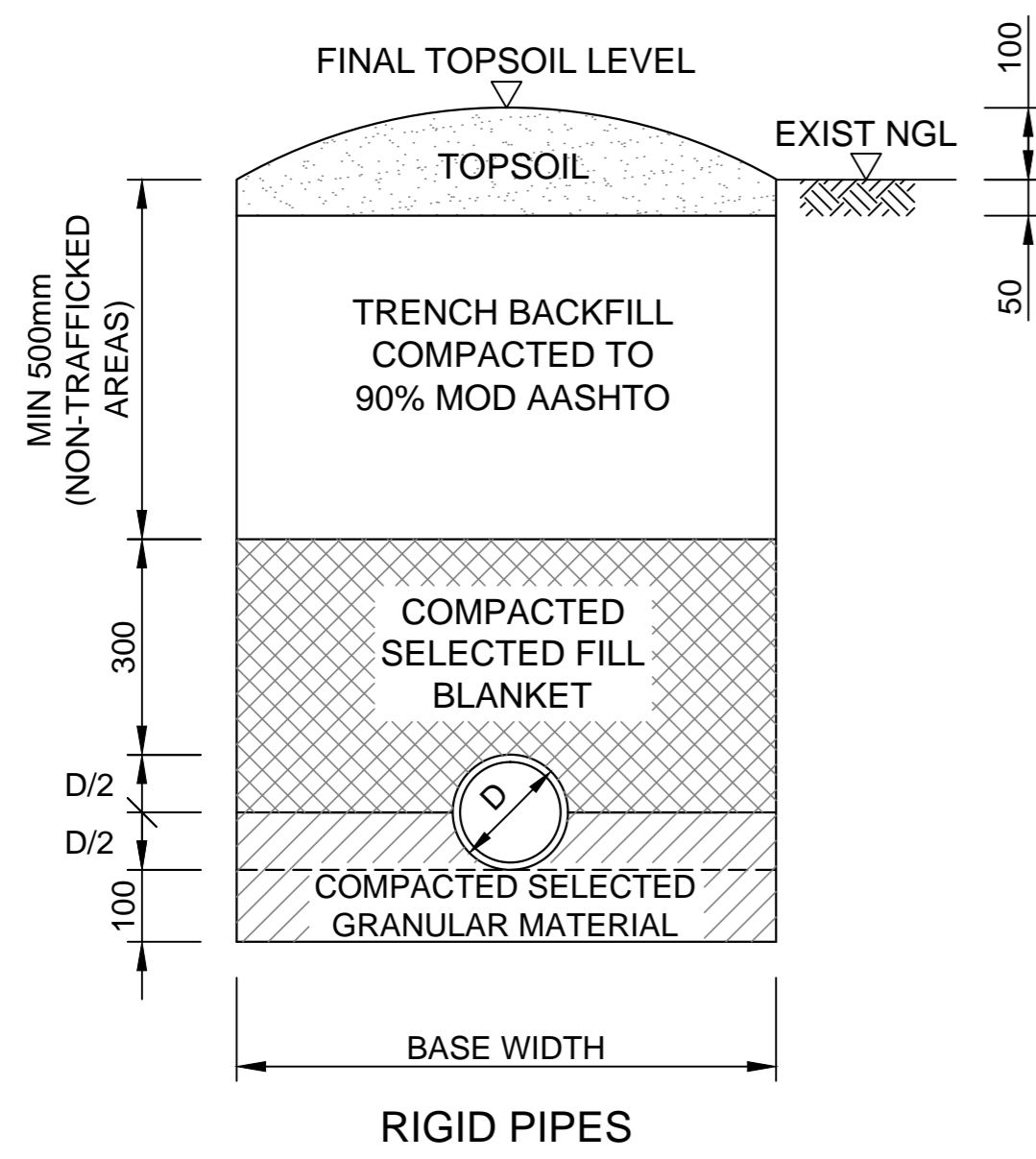


ALL EXISTING PIPE POSITIONS AND DIAMETERS TO BE CONFIRMED ON SITE PRIOR TO ORDERING OF FITTINGS.

- NOTES : GENERAL**
- ALL DIMENSIONS IN MILLIMETRES.
 - PIPES GREATER AND EQUAL TO 75mm Ø ARE TO BE TYPE UPVC, CLASS 12, TO SANS 986 PART 1.
 - PIPES LESS THAN AN EQUAL TO 50mm Ø ARE TO BE TYPE HDPE PE100 PN16, TO ISO 4427.
 - STEEL PIPE UP TO AND INCLUDING 150mm TO BE GALVANISED TO ISO 1461:2000.
 - ALL VALVES TO BE CLOCKWISE CLOSING FLANGED CAST STEEL CLASS 16 RESILIENT SEAL GATE VALVES TO SANS 664.
 - ALL FITTINGS TO HDPE PIPE ARE TO BE COMPRESSION TYPE FITTINGS, MINIMUM CLASS 16, AND ALL FITTINGS TO HAVE STAINLESS STEEL REINFORCING RINGS TO FEMALE THREADS.
 - ALL PRESSURE REDUCING, PRESSURE SUSTAINING AND FLOW CONTROL VALVES ARE TO BE BERMAD TYPE AS PER THE SPECIFICATIONS ON THE PIPEWORK AND CHAMBER DETAIL DRAWINGS.
 - ALL FLANGES TO BE DRILLED TO SABS 1123/77 FOR THE FOLLOWING PRESSURE CLASSES :
WORKING PRESSURE 1600 kPa - TABLE 1600
WORKING PRESSURE 2500 kPa - TABLE 2500
WORKING PRESSURE 4000 kPa - TABLE 4000
NO FITTINGS WITH A PRESSURE RATING OF 1000kPa ARE PERMITTED.
 - CONCRETE CLASS 25/19 UNLESS SPECIFIED OTHERWISE.
 - MINIMUM COVER TO REINFORCING TO BE 40mm.
 - GALVANISED BOLTS TO BE TO ISO 1461:2000
 - ALL THREADS TO BSP STANDARDS.
 - BOLTS TO BE PROTECTED USING DENSO BITUMEN.
 - ALL GALVANISED FITTINGS INCLUDING BURIED FLANGES AND BOLTED CONNECTIONS TO BE DENSO WRAPPED.
 - ALL STEEL COMPONENTS TO BE GALVANISED TO SABS 763:1977.
 - THREADS OF BOLTS TO BE LUBRICATED BEFORE NUTS ARE TIGHTENED.
 - GABIONS AND ROCK PACK TO BE IN ACCORDANCE WITH SANS 1200 DK AND WRAPPED WITH "BIDIM A" OR SIMILAR APPROVED MATERIAL.
 - ALL BRICKS TO BE STANDARD BURNT CLAY FACE BRICKS TO SABS 227

NOTES: BEDDING

- SELECTED GRANULAR MATERIAL:**
 - ALL SELECTED GRANULAR BEDDING TO UPVC PIPES TO BE FROM AN APPROVED COMMERCIAL SOURCE.
 - SELECTED GRANULAR MATERIAL TO HDPE PIPES MAY BE SELECTED, SIEVED AND MEETS THE REQUIREMENTS OF SANS 1200 LB AND IS APPROVED BY THE ENGINEER.
- SELECTED FILL MATERIAL:**
 - ALL SELECTED FILL MATERIAL MAY BE SELECTED EX-TRENCH MATERIAL AS LONG AS IT SELECTED AND SIEVED AND MEETS THE REQUIREMENTS OF SANS 1200LB AND IS APPROVED BY THE ENGINEER
- BEDDING COMPACTION :** SELECTED GRANULAR MATERIAL AND SELECTED FILL MATERIAL TO BE COMPACTED TO 90% MOD AASHTO MINIMUM DENSITY.
- TRENCH BACKFILL :** TO BE COMPACTED TO 90% MOD AASHTO MINIMUM DENSITY IN LAYERS OF 200mm. AT ROAD CROSSINGS, TRENCH BACKFILL TO BE COMPACTED AS DETAILED AND TO BE STABILISED WITH LIME OR CEMENT.
- MATERIALS FOR TRENCH BACKFILL ARE TO COMPLY WITH THE REQUIREMENTS OF SABS 1200 DB AND MATERIALS FOR BEDDING ARE TO COMPLY WITH THE REQUIREMENTS OF SABS 1200 LB.**
- REFER TO PSDB 5.4 : EXCAVATION, FOR MINIMUM TRENCH DEPTHS FOR NON-TRAFFICKED AREAS, UNREGISTERED ROAD RESERVES AND REGISTERED ROAD RESERVES INCLUDING SLEEVE PIPE REQUIREMENTS.**



DOUBLE AND TRIPLE PIPE TRENCH WIDTHS	
PIPE DIA	BASE WIDTH
PIPE 1: 250mm Ø AND PIPE 2 : 160mm Ø	1100mm
PIPE 1: 250mm Ø AND PIPE 2 : 110mm Ø	1100 mm
PIPE 1: 250mm Ø AND PIPE 2 : 75mm Ø	1000mm
PIPE 1: 250mm Ø AND PIPE 2: 50mm Ø	1000 mm

NOTE: MINIMUM SPACING BETWEEN PIPES AND BETWEEN PIPES AND TRENCH WALL TO BE 225mm

**PIPE BEDDING DETAILS:
RIDGID PIPE**
SCALE 1 : 10

SINGLE PIPE TRENCH WIDTHS	
PIPE DIA	BASE WIDTH
UP TO AND INCLUDING 32mmØ	400 mm
OVER 32mmØ UP TO AND INCL. 110mmØ	500 mm
OVER 110mmØ UP TO AND INCL. 160mmØ	600 mm
OVER 160mmØ UP TO AND INCL. 200mmØ	650 mm
OVER 200mmØ UP TO AND INCL. 250mmØ	700mm

**PIPE BEDDING DETAILS:
FLEXIBLE PIPE**
SCALE 1 : 10

LEGEND

SUKUMA
CONSULTING ENGINEERS (PTY) LTD
19 Coronation Road P O Box 100704
Pietermaritzburg Scottsville
3201 3209
Tel:033-3453294 Fax:033-3423085 E-mail:pmb@sukuma.co.za

Engineer _____ Date _____

Client & Project Title

uMgungundlovu
U M G U N G U N D L O V U
DISTRICT MUNICIPALITY
D I S T R I K M U N I S I P A L I T E T I

TRUST FEEDS
DEVELOPMENT - PHASE 1:
COMMUNITY WATER SUPPLY

Client (Approved) _____ Date _____

**PIPE BEDDING DETAILS
FOR DUAL PIPELINES**

Draw No. 25177PA/1/DET-1