

*SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
NO TRAFFIC LOAD.

CLASS A BEDDING (UNREINFORCED)

PIPE Dia. (mm)	DEPTH OF COVER (m)										
	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50
450	CLASS 250										
525	CLASS 250										
600	CLASS 250										
675	CLASS 500										
750	CLASS 500										
825	CLASS 750										
900	CLASS 750										
1050	CLASS 500										
1200	CLASS 500										
1350	CLASS 750										
1500	CLASS 750										
1650	CLASS 500										
1800	CLASS 500										

LEGEND

	CLASS 250
	CLASS 500
	CLASS 750

*SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB24 (MUNICIPAL ROADS AND STREETS, DISTRICT ROADS)

CLASS A BEDDING (UNREINFORCED)

PIPE Dia. (mm)	DEPTH OF COVER (m)										
	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50
450	CLASS 250										
525	CLASS 250										
600	CLASS 250										
675	CLASS 500										
750	CLASS 500										
825	CLASS 750										
900	CLASS 750										
1050	CLASS 500										
1200	CLASS 500										
1350	CLASS 750										
1500	CLASS 750										
1650	CLASS 500										
1800	CLASS 500										

LEGEND

	CLASS 250
	CLASS 500
	CLASS 750

*SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB36 (NATIONAL HIGHWAYS AND ROADS, REGIONAL ROADS)

CLASS A BEDDING (UNREINFORCED)

PIPE Dia. (mm)	DEPTH OF COVER (m)										
	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50
450	CLASS 500										
525	CLASS 500										
600	CLASS 500										
675	CLASS 500										
750	CLASS 500										
825	CLASS 750										
900	CLASS 750										
1050	CLASS 500										
1200	CLASS 500										
1350	CLASS 750										
1500	CLASS 750										
1650	CLASS 500										
1800	CLASS 500										

LEGEND

	CLASS 500
	CLASS 750

*SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
NO TRAFFIC LOAD.

CLASS B BEDDING

PIPE Dia. (mm)	DEPTH OF COVER (m)										
	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50
450	CLASS 500										
525	CLASS 500										
600	CLASS 500										
675	CLASS 750										
750	CLASS 750										
825	CLASS 1000										
900	CLASS 1000										
1050	CLASS 750										
1200	CLASS 750										
1350	CLASS 1000										
1500	CLASS 1000										
1650	CLASS 750										
1800	CLASS 750										

LEGEND

	CLASS 500
	CLASS 750
	CLASS 1000

*SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB24 (MUNICIPAL ROADS AND STREETS, DISTRICT ROADS)

CLASS B BEDDING

PIPE Dia. (mm)	DEPTH OF COVER (m)										
	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50
450	CLASS 500										
525	CLASS 500										
600	CLASS 500										
675	CLASS 750										
750	CLASS 750										
825	CLASS 1000										
900	CLASS 1000										
1050	CLASS 750										
1200	CLASS 750										
1350	CLASS 1000										
1500	CLASS 1000										
1650	CLASS 750										
1800	CLASS 750										

LEGEND

	CLASS 500
	CLASS 750
	CLASS 1000

*SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB36 (NATIONAL HIGHWAYS AND ROADS, REGIONAL ROADS)

CLASS B BEDDING

PIPE Dia. (mm)	DEPTH OF COVER (m)										
	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50
450	CLASS 500										
525	CLASS 500										
600	CLASS 500										
675	CLASS 750										
750	CLASS 750										
825	CLASS 1000										
900	CLASS 1000										
1050	CLASS 750										
1200	CLASS 750										
1350	CLASS 1000										
1500	CLASS 1000										
1650	CLASS 750										
1800	CLASS 750										

LEGEND

	CLASS 500
	CLASS 750
	CLASS 1000

AMENDMENTS			
NR	DATE	APPROVED	DESCRIPTION

DESIGNED P.A. ODENDAAL Pt.Eng.	DRAWN S. AUDIE
DESIGN CHECKED BY P.A. ODENDAAL Pt.Eng.	INFRASTRUCTURE TECHNICAL INFORMATION MANAGEMENT D.J. CHALMERS

CITY OF TSHWANE
ROADS AND TRANSPORT DEPARTMENT

GROUP HEAD: Mr. Lebeke P. (Pheko) | ACTING DIVISIONAL HEAD: Mr. Lebepe M.T. (Thabo)

P.O. BOX 1409 PRETORIA 0001 | P.O. BOX 1409 PRETORIA 0001

DRAWING APPROVED BY ACTING EXECUTIVE DIRECTOR
Mr. Lebepe M.T. (Thabo)

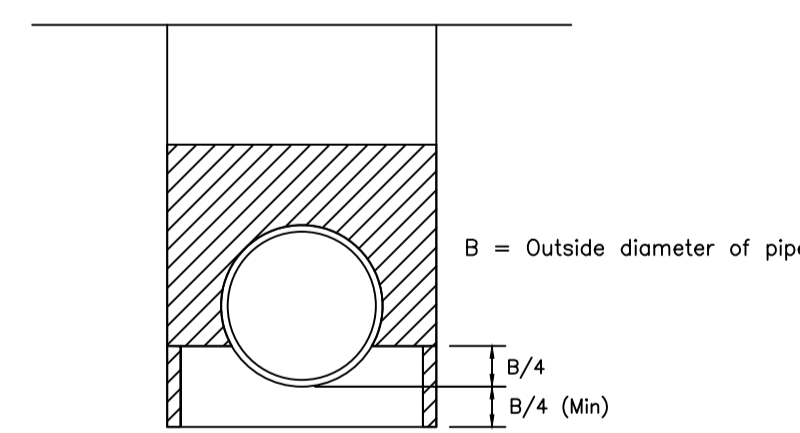
TYPICAL STANDARD DETAILS

**PIPE DESIGN TABLE:
CLASS SELECTION FOR RIGID BURIED PIPES
IN TRENCH CONDITIONS**

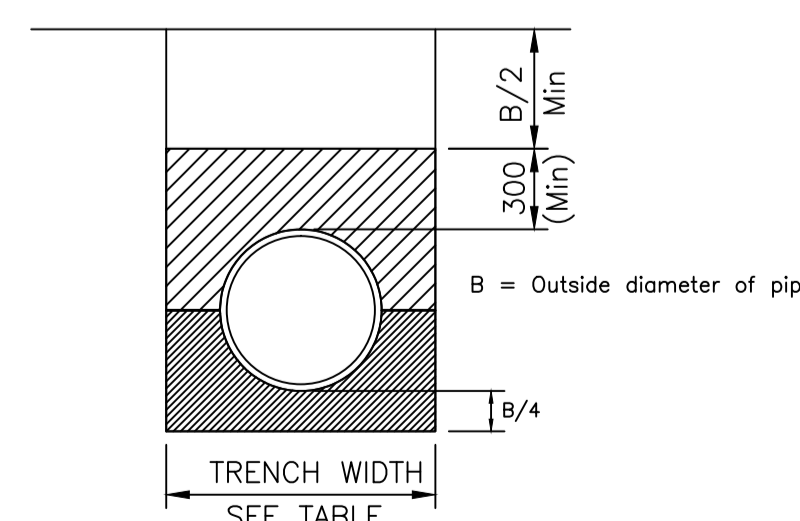
CONTRACT No.	PROJECT No.
DATE: FEBRUARY 2017	SCALE: AS SHOWN
DRAWING NO. PLN003	SHEET NO. 1 OF 1

AUTHORISED TRENCH WIDTHS

PIPE Dia.	TRENCH WIDTH
450	850
525	925
600	1000
675	1575
750	1650
825	1725
900	1800
1050	1950
1200	2100
1350	2250
1500	2400
1650	2550
1800	2700



CLASS A BEDDING



CLASS B BEDDING

* For cohesive materials, the earth loading can be determined from the following:

DESIGN CRITERIA

- BEDDING FACTORS
 - CLASS A: 2,6 (UNREINFORCED)
 - CLASS B: 2,0
 - CLASS C: 1,5
 - CLASS D: 1,1
- LOAD COEFFICIENT Cd FOR SOIL GROUP 3: COHESIVE MATERIAL

H/Bd	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00
Cd	0,46	0,83	1,14	1,40	1,62	1,79	1,94	2,06	2,16	2,24	2,31	2,37
- PIPE LOADING DUE TO FILL

$W = Cd \cdot GM \cdot Bd^2$, where
 W = Load/metre (kN/m)
 Cd = Load coefficient
 GM = Soil density (kN/m³)
 Bd = Trench width
- PIPE CLASS REQUIRED

= Load/(Pipe Dia * Bedding factor)

1. GENERAL

- THE DESIGN CHARTS ARE BASED ON THE REQUIREMENTS OF SABS 0102-1987: PART I AND PART II.
- A UNIT WEIGHT OF FILL MATERIAL OF 20 kN/m³ WAS USED.
- THE SOIL TYPE AND PROPERTIES REFER TO TABLE 2 IN SABS 0102:PART I-1987.
- THE TRENCH WIDTHS USED ARE IN ACCORDANCE WITH THE REQUIREMENTS IN PARAGRAPH 04.01 OF SECTION 201:GENERAL OF THE 'STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005.

