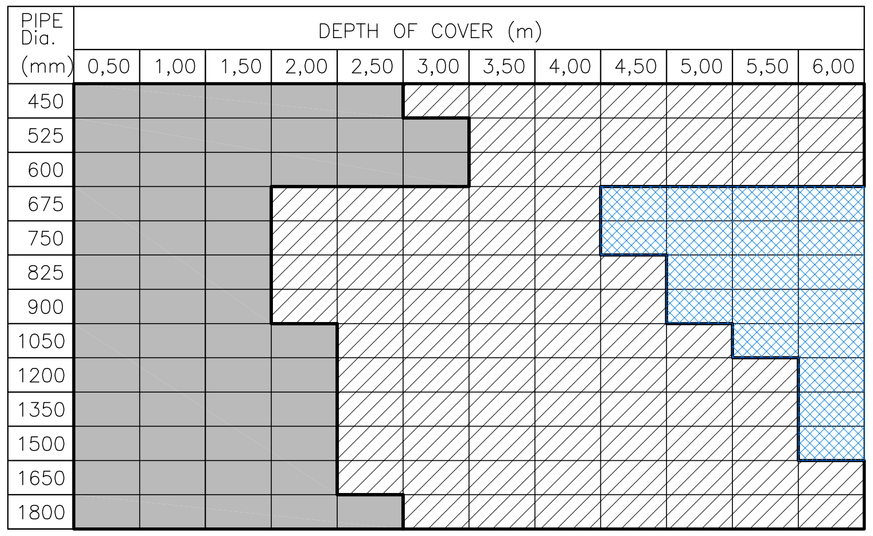
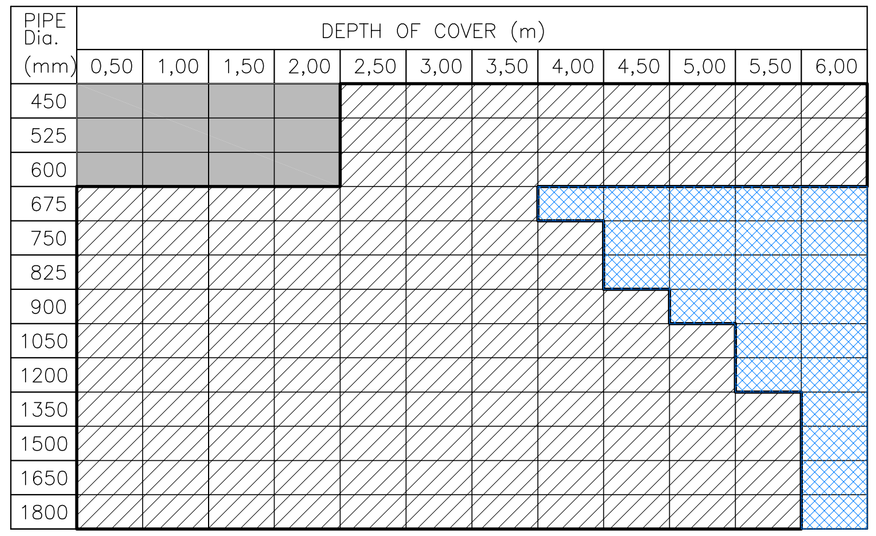
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
NO TRAFFIC LOAD.

CLASS A BEDDING (UNREINFORCED)



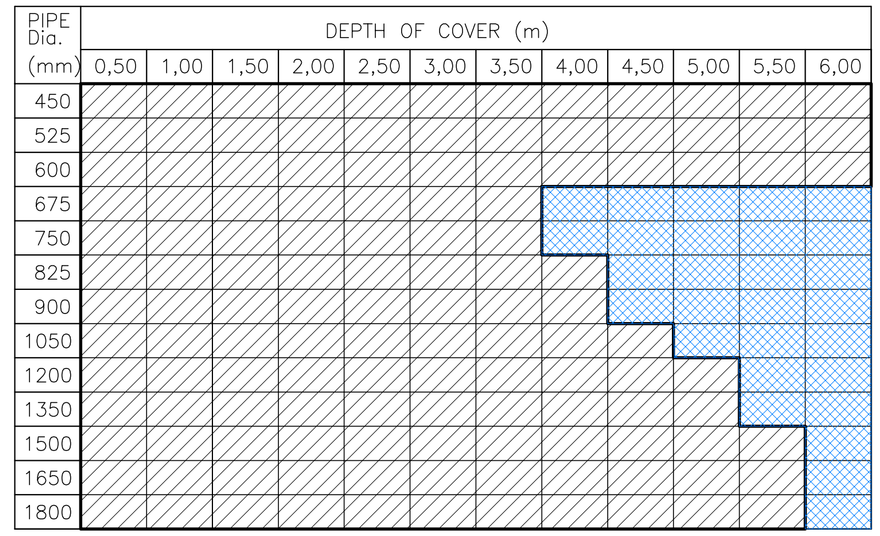
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB24 (MUNICIPAL ROADS AND STREETS, DISTRICT ROADS)

CLASS A BEDDING (UNREINFORCED)



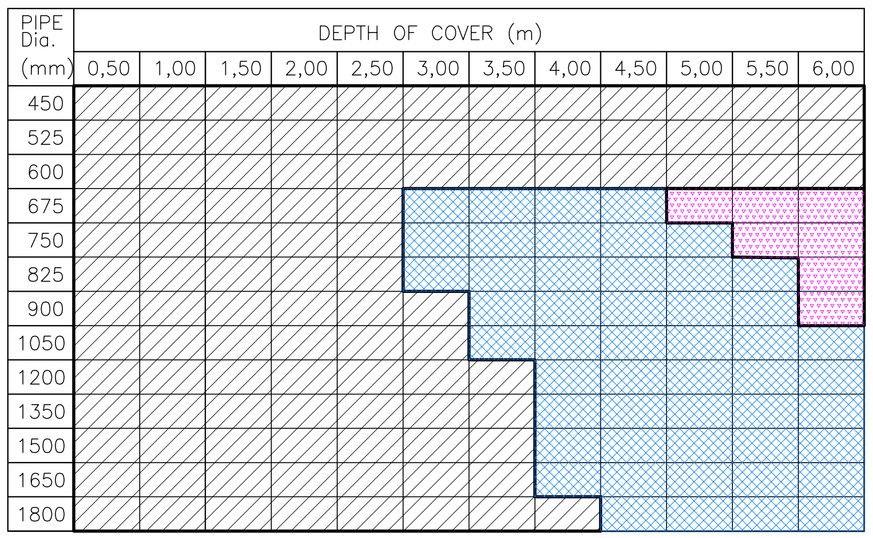
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB36 (NATIONAL HIGHWAYS AND ROADS, REGIONAL ROADS)

CLASS A BEDDING (UNREINFORCED)



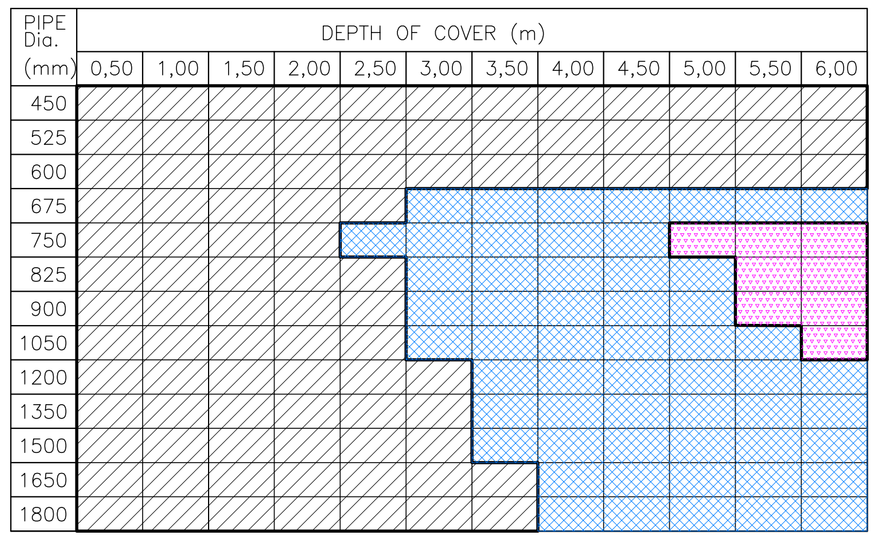
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
NO TRAFFIC LOAD.

CLASS B BEDDING



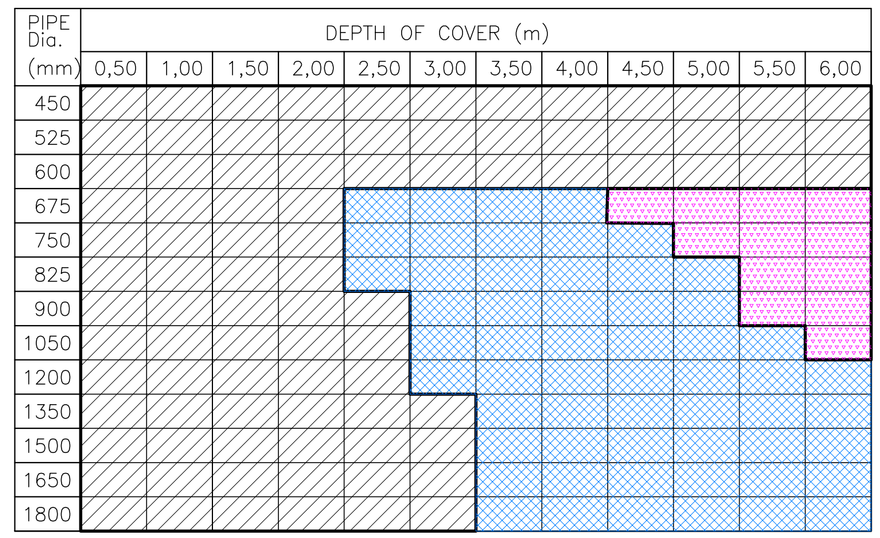
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB24 (MUNICIPAL ROADS AND STREETS, DISTRICT ROADS)

CLASS B BEDDING



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

CLASS B BEDDING



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

DESIGN CRITERIA

1. BEDDING FACTORS

1.1 CLASS A: 2,6 (UNREINFORCED)
1.2 CLASS B: 2,0
1.3 CLASS C: 1.5
1.4 CLASS D: 1,1

2. LOAD COEFFICIENT Cd FOR SOIL GROUP 3: COHESIVE MATERIAL

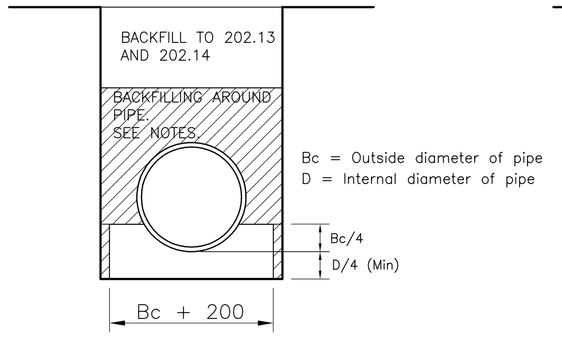
H/Bd	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00
Cd	0,46	0,83	1,14	1,40	1,62	1,79	1,94	2,06	2,16	2,24	2,31	2,37

3. PIPE LOADING DUE TO FILL

W = Cd*GM*Bd², where
W = Load/metre (kN/m)
Cd = Load coefficient
GM = Soil density (kN/m³)
Bd = Trench width

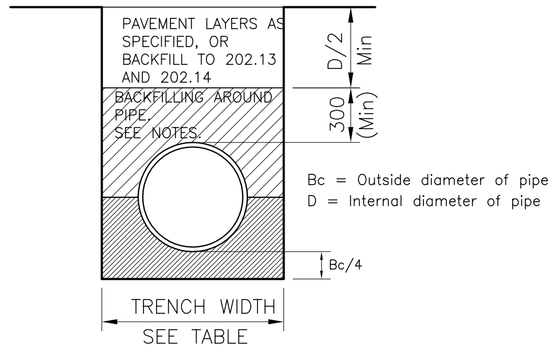
4. PIPE CLASS REQUIRED

= Load/(Pipe Dia * Bedding factor)



CLASS A BEDDING

NOTE:
THE CLASS A IN SITU CONCRETE BEDDING SHALL BE IN ACCORDANCE WITH SABS 0102.



CLASS B BEDDING

NOTE:
BEDDING SHALL BE OF AN APPROVED SELECTED GRAVEL MATERIAL WITH A PI NOT EXCEEDING 6.
BEDDING MATERIAL SHALL BE COMPAC-

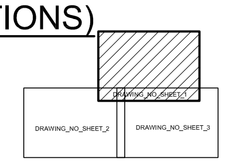
E.F. MIESSNER Pr.Eng

AUTHORISED TRENCH WIDTHS

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

1. GENERAL
1.1 THE DESIGN CHARTS ARE BASED ON THE REQUIREMENTS OF SABS 0102-1987: PART I AND PART II.
1.2 A UNIT WEIGHT OF FILL MATERIAL OF 20 kN/m² WAS USED.
1.3 THE SOIL TYPE AND PROPERTIES REFER TO TABLE 2 IN SABS 0102:PART I-1987.
1.4 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.

PIPE CLASS SELECTION FOR RIGID BURIED PIPES ~~IN TRENCH CONDITIONS~~ (INCLUDING BEDDING AND CONSTRUCTION SPECIFICATIONS)



SHEET LAYOUT

AMENDMENTS

NR.	DATE	APPROVED	DESCRIPTION	PAR

CONSULTANTS DETAIL

ROADS AND STORMWATER
For Internal Approval
RECEIVED
SIGN WHERE APPLICABLE
DIRECTOR: INFRASTRUCTURE PROVISION
DIRECTOR: INFRASTRUCTURE PLANNING & MANAGEMENT
DIRECTOR: INFRASTRUCTURE MAINTENANCE MANAGEMENT
DIRECTOR: TRAFFIC ENGINEERING AND OPERATIONS
DIRECTOR: PROJECT MANAGEMENT
DIRECTOR: ASSET MANAGEMENT

CITY OF TSHWANE
PUBLIC WORKS & INFRASTRUCTURE DEVELOPMENT
ACTING: V KOBUWE
STRATEGIC EXECUTIVE DIRECTOR

ROADS AND STORMWATER
MS. L. MCHUNU
EXECUTIVE DIRECTOR: 0001
P.O. BOX 1409
PRETORIA

WATER AND SANITATION
F.I. SHERRIF
EXECUTIVE DIRECTOR:
P.O. BOX 1409
PRETORIA
0001

WATER AND SANITATION
For Internal Approval
RECEIVED
SIGN WHERE APPLICABLE
DIRECTOR: INFRASTRUCTURE PROVISION
DIRECTOR: WATER DISTRIBUTION
DIRECTOR: BULK WATER SERVICES
DIRECTOR: WATER SERVICES DEV. & REGULATIONS
DIRECTOR: WASTE WATER COLLECTION
DIRECTOR: WASTE WATER TREATMENT

DRAWING COMPILED
E.F. MIESSNER Pr.Eng
SIGNATURE: DATE:
DRAWING CHECKED BY
E.F. MIESSNER Pr.Eng
SIGNATURE: DATE:
DRAWN
S. AUDIE
CIVIL DRAUGHTING SERVICES
D. J. CHALMERS
SIGNATURE: DATE:
DRAWING APPROVED BY EXECUTIVE DIRECTOR
MS. L. MCHUNU
SIGNATURE: DATE:
SCALE: AS SHOWN
DATE: NOV 2009

LOCATION OF PROJECT:

TYPICAL STANDARD DETAILS

DESCRIPTION OF PROJECT

PIPE DESIGN TABLE:

CLASS SELECTION FOR RIGID BURIED PIPES IN TRENCH CONDITIONS

CONTRACT No.:
PROJECT No.:
SHEET NO: 1 OF 1

PROJECT STATUS
○ CONCEPT DRAWING ○ TENDER DRAWING ○ APPROVED FOR CONSTRUCTION DRAWING ○ AS BUILT DRAWING

PROJECT ENGINEER:
SIGNATURE DATE
INSPECTOR OF WORKS:
SIGNATURE DATE
REMARKS:
ORIGINAL PAPER SIZE: A1

DRAWING NO. PLN003
1 REVISION

Q:\Roads & Stormwater\Information Management\DETAILPLANNE\Tshwane P & S Standard Detail Drawings\PLN003