



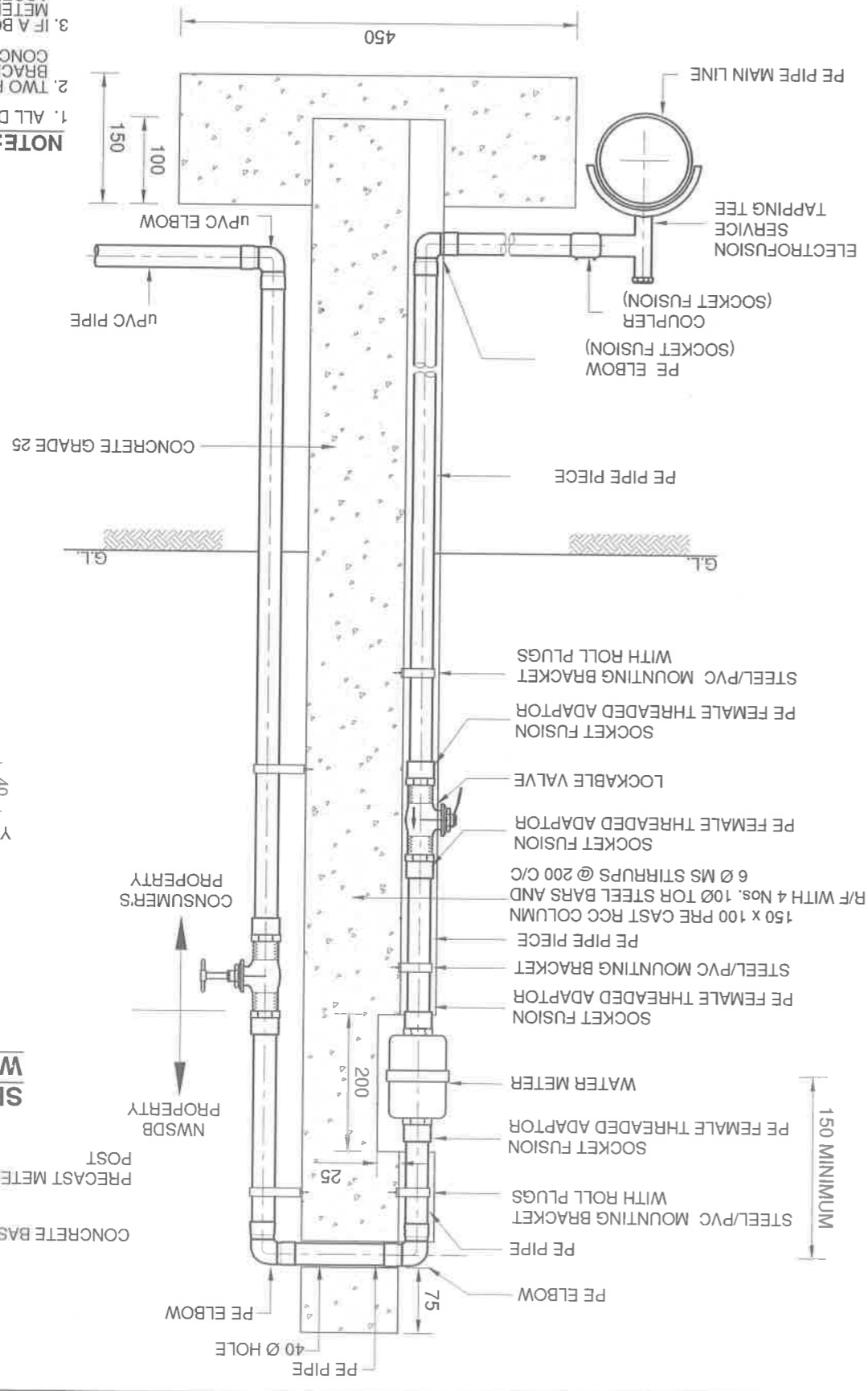
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 தேசிய நீர் வழங்கல் வரகாலாண்மைப் சபை  
 NATIONAL WATER SUPPLY AND DRAINAGE BOARD

TYPE DRAWING  
 SERVICE CONNECTION - 200 AND 250  
 uPVC OR OTHER MAIN LINE & PE MAIN LINE

REV.	DESCRIPTION	DATE	SIGN.	Samera	D.O.A.	WT410/SC/01A
				ENGINEER (D)	C.E. (D)	05-12-2019
				A.G.M. (P&D) / SPECIALIST		D.G.M. (P&D)

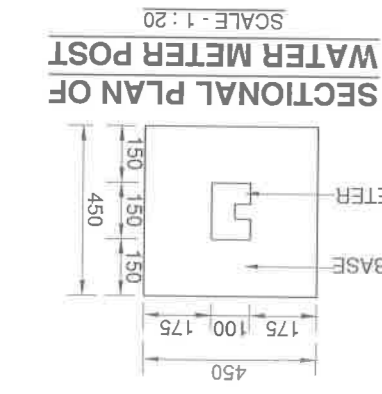
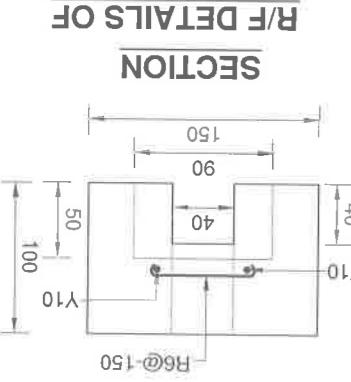
THIS DRAWING SUPERSEDES DRG. No. WT410/SC/01

NOT TO SCALE  
**PE MAIN LINE**

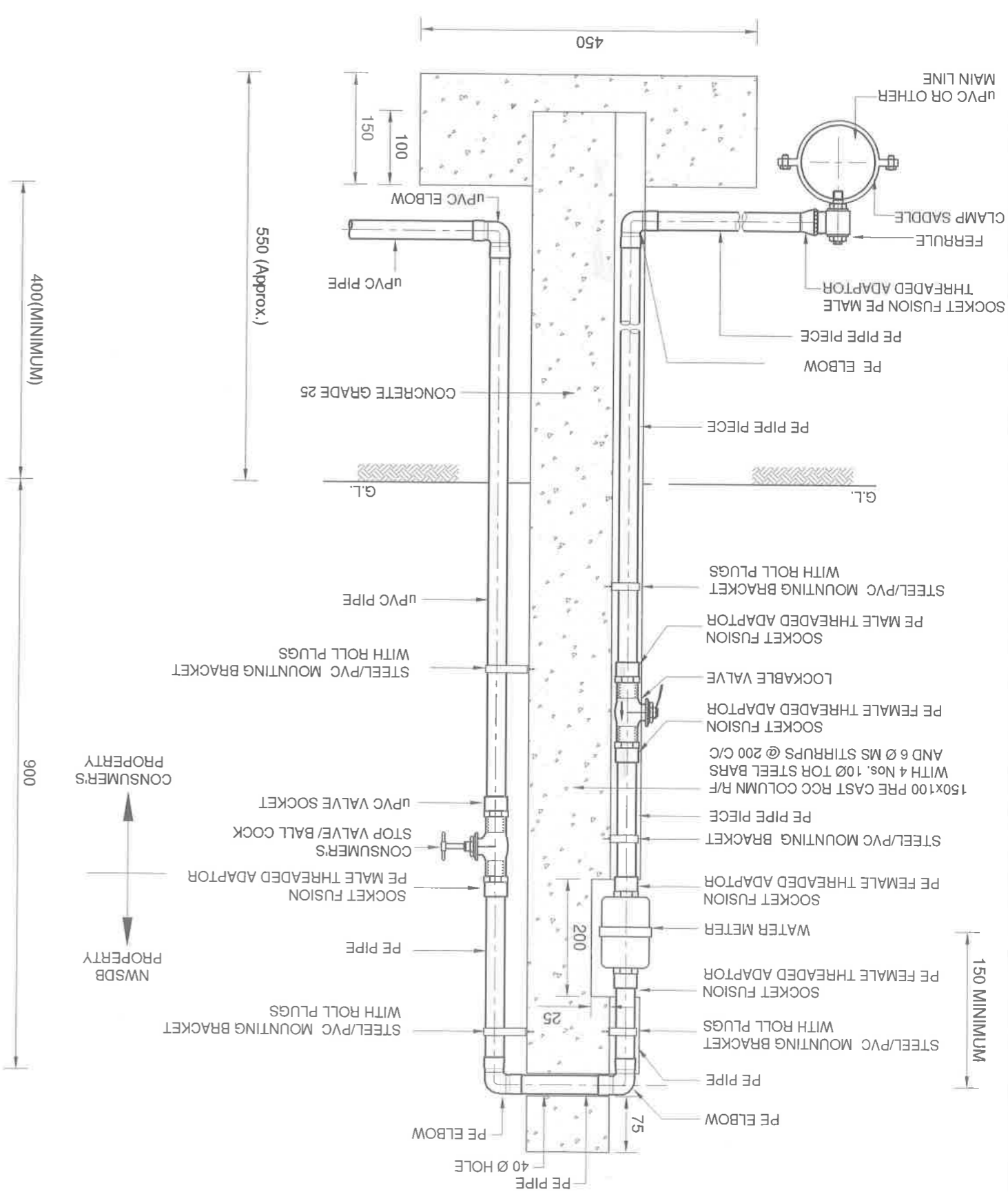


**NOTE:-**  
 1. ALL DIMENSIONS ARE IN MILLIMETRES.  
 2. TWO ROLL PLUGS FOR EACH MOUNTING BRACKET SHALL BE KEPT IN THE CONCRETE POST.  
 3. IF A BOUNDARY WALL EXISTS, FIXING METER ON THE BOUNDARY WALL IS ACCEPTABLE.

SCALE - 1 : 5  
**WATER METER POST**



NOT TO SCALE  
**uPVC OR OTHER MAIN LINE**



CONSUMERS PROPERTY  
 NWSDB PROPERTY  
 CONSUMERS PROPERTY



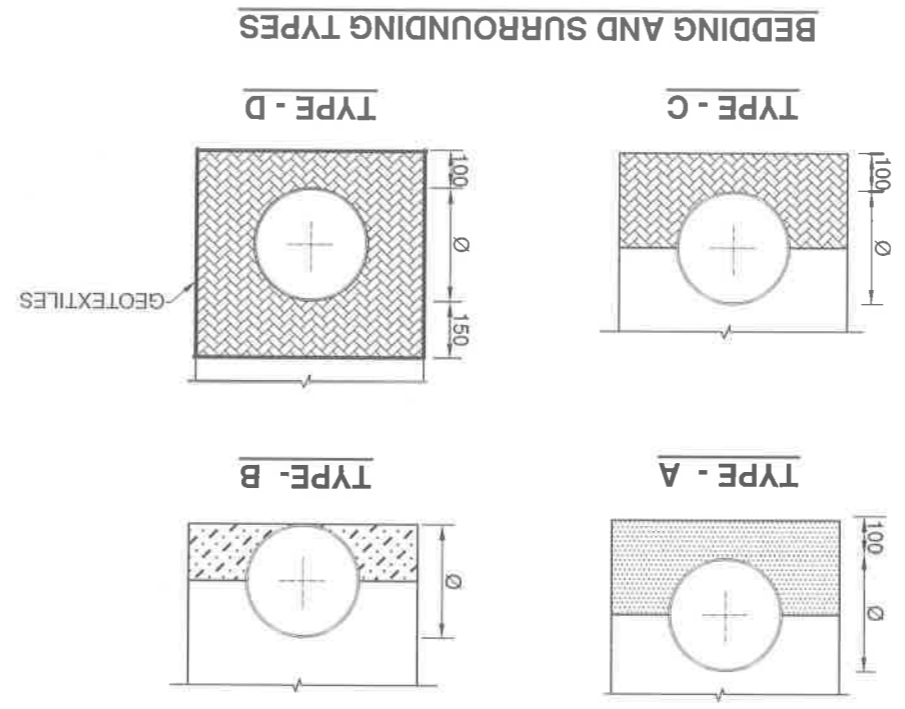
**ජාතික ජල සපයාය හා පිරිසිදු ජල මණ්ඩලය**  
**NATIONAL WATER SUPPLY AND DRAINAGE BOARD**

**TYPE DRAWING**  
**BEDDING, SURROUNDING, BACK FILLING AND ROAD REINSTATEMENT**  
 FOR DI PIPES

REV.	DESCRIPTION	DATE	SIGN.	K.A.V. Srinivasan	D.O.A.(D)	Drg.No.	WT403/BT/01A

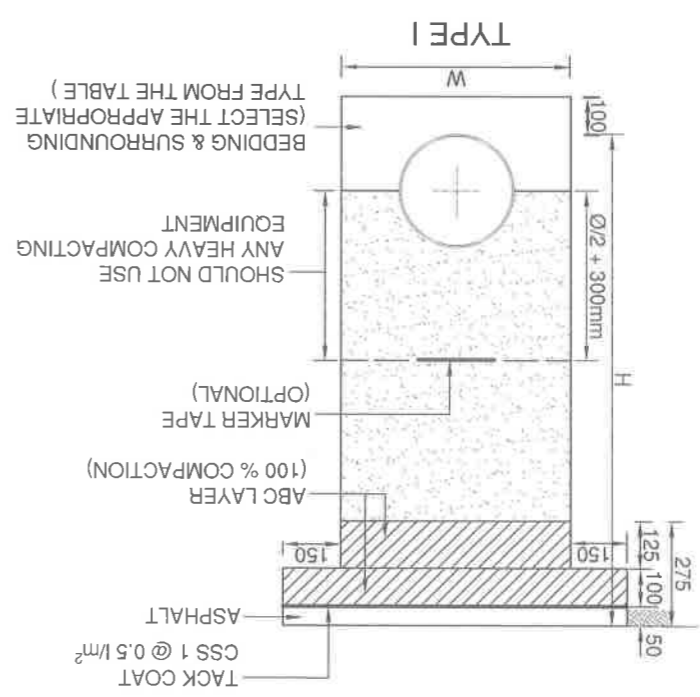
NOT TO SCALE

TABLE TO SELECT APPROPRIATE BEDDING AND SURROUNDING TYPE		
EXISTING SOIL CONDITION	APPROXIMATE BEARING CAPACITY KN/m <sup>2</sup>	TYPE
HARD SOIL/ROCK	>200	A
NORMAL SOIL	100-200	B
LOOSE SOIL	<200	C
CLAY	>75	C
CLAY	<75	D
PEATMASHY AREAS	<75	D

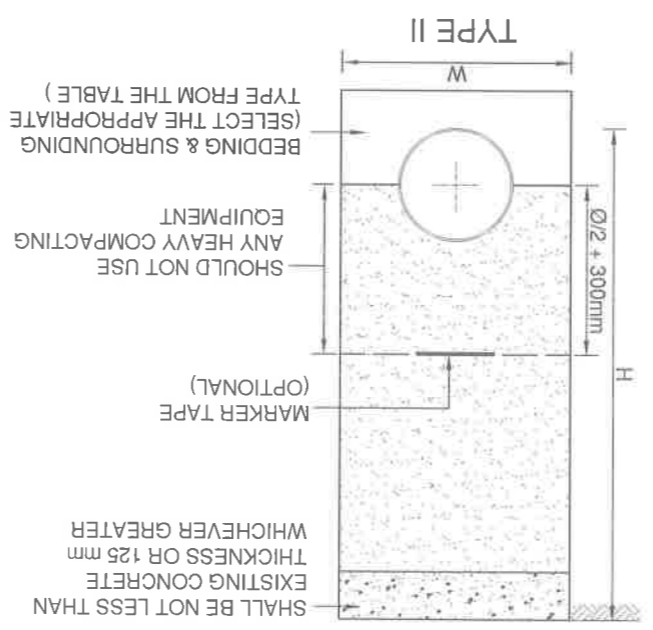


**BACK FILLING AND PERMANENT REINSTATEMENT**

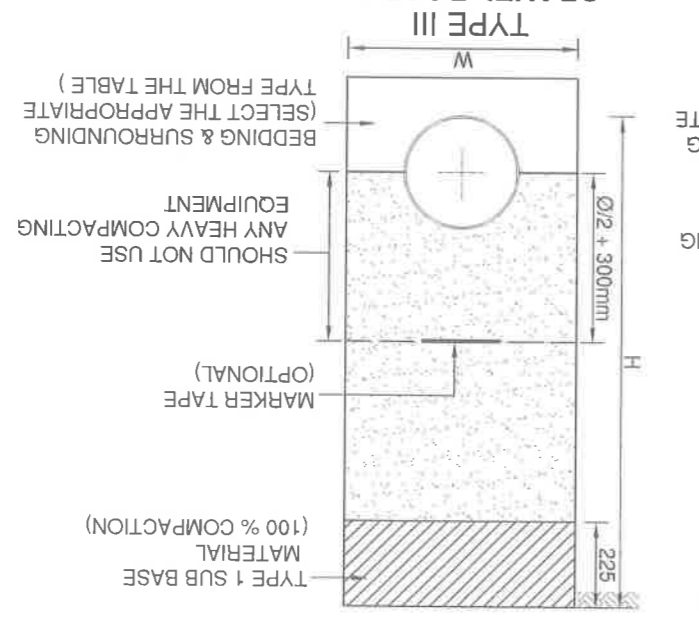
**HARD SHOULDER & CARRIAGEWAY ASPHALT CONCRETE / TARRED ROADS**



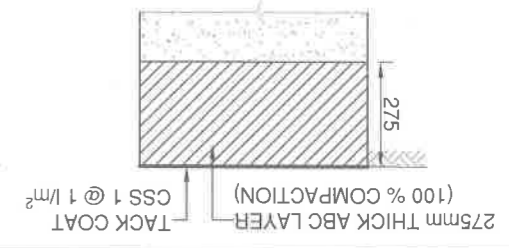
**CONCRETE ROAD**



**GRAVEL ROAD / ROAD SHOULDER (GRAVEL)**



**TEMPORARY REINSTATEMENT OF ASPHALT/TARRED SURFACES**



IMPORTED OR EXCAVATED SELECTED BACK FILL MATERIAL TO BE COMPACTED TO A DRY DENSITY NOT LESS THAN 98% OF MAXIMUM DRY DENSITY OF THE MATERIAL, HAVING MAX. PLASTIC LIMIT OF 15% AND LIQUID LIMIT OF 40% AND FREE FROM STONES GREATER THAN 25mm

- LEGEND**
- IMPORTED OR EXCAVATED SELECTED BACK FILL MATERIAL TO BE COMPACTED TO A DRY DENSITY NOT LESS THAN 98% OF MAXIMUM DRY DENSITY OF THE MATERIAL, HAVING MAX. PLASTIC LIMIT OF 15% AND LIQUID LIMIT OF 40% AND FREE FROM STONES GREATER THAN 25mm
  - QUARRY DUST / MINED SAND COMPACTED.
  - EXCAVATED / IMPORTED SOIL FILL COMPACTED OF PARTICLE SIZES NOT GREATER THAN 25 mm WITH THE PROPERTIES PL<15, LL<40, CBR>20
  - CRUSHED STONE (<6 mm) COMPACTED

NOTE:-

- ALL DIMENSIONS ARE IN MILLIMETRES.
- EXCAVATED SOIL CAN BE USED AS BACK FILLING MATERIAL IF THEY CONFORM TO THE REQUIRED SPECIFICATION.
- IN CASE OF TYPE 'D' BEDDING AND SURROUNDING, CRUSHED STONE SHALL BE COMPLETELY SURROUNDED BY A GEOTEXTILE AS SHOWN AND AS DIRECTED BY THE ENGINEER. THE GEOTEXTILE FABRIC SHALL BE WOVEN POLYPROPYLENE THERMALLY BONDED HAVING FOLLOWING PROPERTIES: WEIGHT 150 G/M (MINIMUM) (ASTM D5261) TENSILE STRENGTH 9KN/m (MINIMUM) (ASTM D4595) @ 5% ELONGATION PERMEABILITY 30L/m<sup>2</sup>/S (MINIMUM) (BS 6906/3)(100mm WATER HEAD) PORE SIZE (0<sub>60</sub>) <300 MICRONS (BS 6906/2).
- THE UPPER LAYER OF 150 mm THICK ABC HAS TO BE REMOVED PRIOR TO PERMANENT REINSTATEMENT.

THIS DRAWING SUPERSEDES DRG. NO. WT403/BT/01.

DETAIL OF TRENCH FOR DI PIPES			
DIA(Ø)	WIDTH(W)	DEPTH(H)	(m)
80	0.60	0.95	0.95
100	0.60	1.00	0.95
150	0.60	1.00	1.00
200	0.60	1.20	1.20
250	0.60	1.25	1.25
300	0.60	1.30	1.30
350	0.75	1.35	1.35
400	0.90	1.40	1.40
450	0.90	1.45	1.45
500	0.90	1.50	1.50
600	1.10	1.60	1.60
700	1.20	1.70	1.70
800	1.30	1.90	1.90
900	1.50	2.00	2.00
1000	1.60	2.10	2.10
1100	1.70	2.25	2.25
1200	1.80	2.40	2.40
1400	2.00	2.60	2.60



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 தேசிய நீர் வழங்கல் வரகாலமைப்புச் சபை  
 NATIONAL WATER SUPPLY AND DRAINAGE BOARD

TYPE DRAWING  
 BEDDING AND SURROUNDING, BACK FILLING AND  
 ROAD REINSTATEMENT  
 FOR PVC & PE PIPES

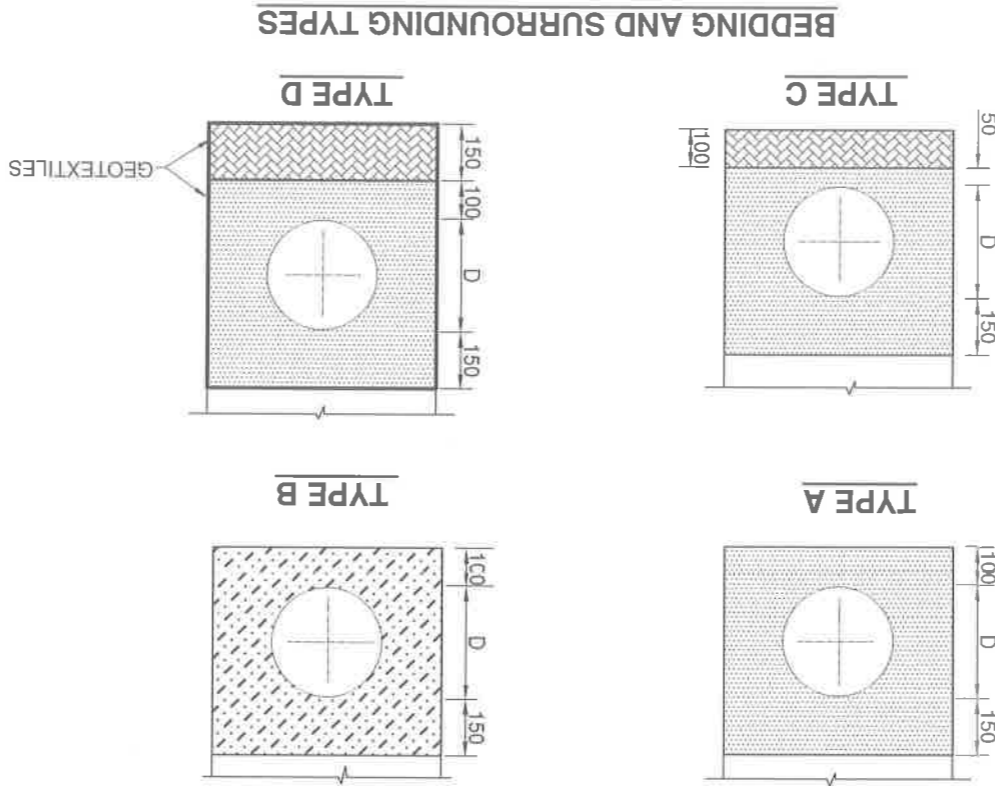
REV.	DESCRIPTION	DATE	SIGN.	DRAWN	D.O.A.(D)	Dig.No.
				K.A.V.S./Rangamudi		WT403/BT/02A
				ENGINEER (D)	C.E. (D)	DATE
						11.07.2018
				A.G.M. (P&D)/SPECIALIST		D.G.M. (P&D)

NOT TO SCALE

THIS DRAWING SUPERSEDES DRG. No. WT403/BT/02.

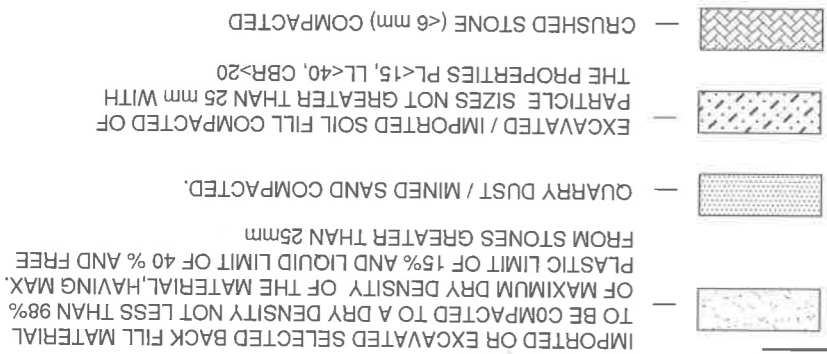
TABLE TO SELECT APPROPRIATE BEDDING AND SURROUNDING TYPE

EXISTING SOIL CONDITION	APPROXIMATE BEARING CAPACITY KN/m <sup>2</sup>	TYPE
HARD SOIL/ROCK	>200	A
NORMAL SOIL	100-200	B
LOOSE SOIL	<100	C
CLAY	>75	C
PEAT/MASHY AREAS	<75	D

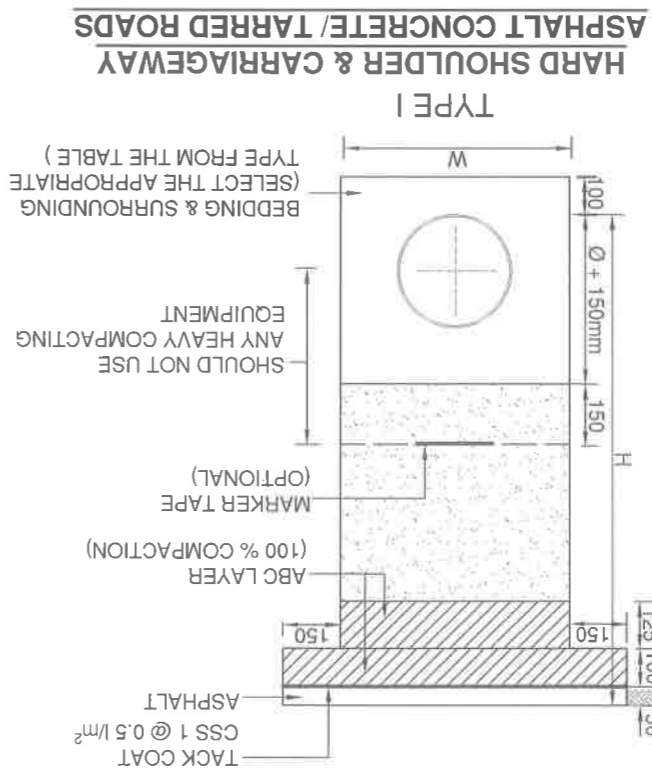
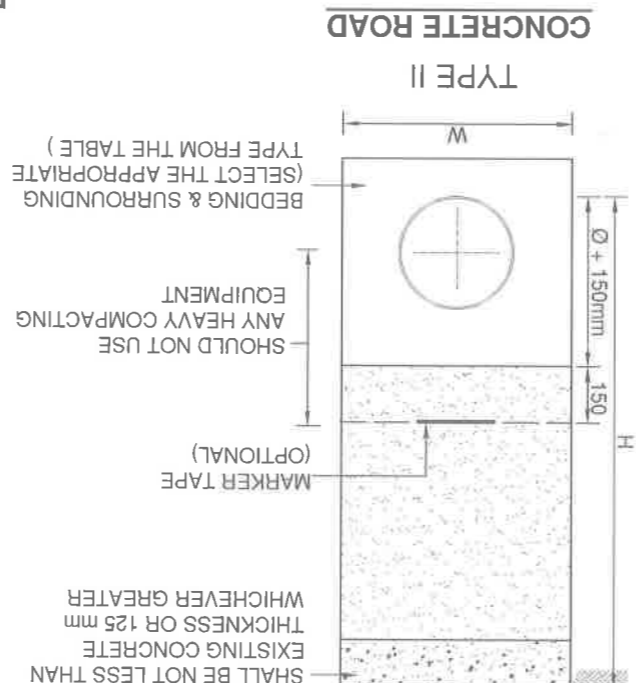


- ALL DIMENSIONS ARE IN MILLIMETRES.
- EXCAVATED SOIL CAN BE USED AS BACK FILLING MATERIAL IF THEY CONFORM TO THE REQUIRED SPECIFICATION.
- IN CASE OF TYPE 'D' THE BEDDING AND SURROUNDING MATERIAL SHALL BE COMPLETELY SURROUNDED BY A GEOTEXTILE AS SHOWN AND AS DIRECTED BY THE ENGINEER.
- THE GEOTEXTILE FABRIC SHALL BE WOVEN POLYPROPYLENE THERMALLY BONDED HAVING FOLLOWING PROPERTIES:  
 WEIGHT 150 G/M (MINIMUM) (ASTM D5261)  
 TENSILE STRENGTH 9KN/m (MINIMUM) (ASTM D4595) @ 5% ELONGATION  
 PERMEABILITY 30L/m<sup>2</sup>/S (MINIMUM) (BS 6906/3)(100mm WATER HEAD)  
 PORE SIZE (φ<sub>90</sub>) <300 MICRONS (BS 6906/2).
- THE UPPER LAYER OF 150 mm THICK ABC HAS TO BE REMOVED PRIOR TO PERMANENT REINSTATEMENT.

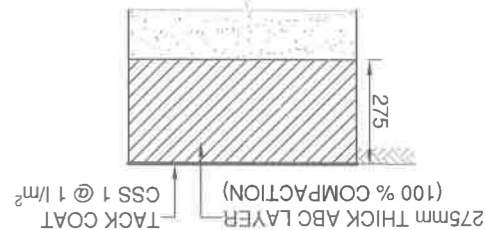
NOTE:-



BACK FILLING & PERMANENT REINSTATEMENT



TEMPORARY REINSTATEMENT OF ASPHALT/TARRED SURFACES



DETAIL OF TRENCH FOR PVC PIPE	
DIA(φ) WIDTH(W) DEPTH(H) (m)	FOR PE PIPES
225	1.30
160	1.20
110	1.20
90	1.10
63	0.90
DIA(φ) WIDTH(W) DEPTH(H) (m)	FOR PVC PIPE
225	1.30
160	1.20
110	1.20
90	1.10
63	0.90

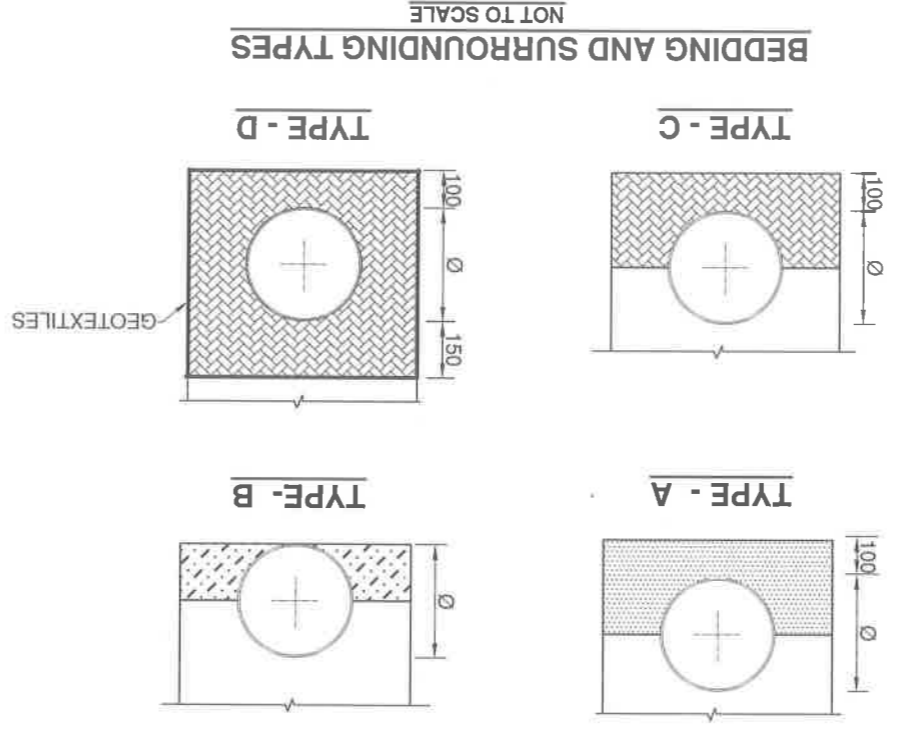


NATIONAL WATER SUPPLY AND DRAINAGE BOARD  
 ROAD REINSTATEMENT  
 FOR DI, uPVC & PE PIPES

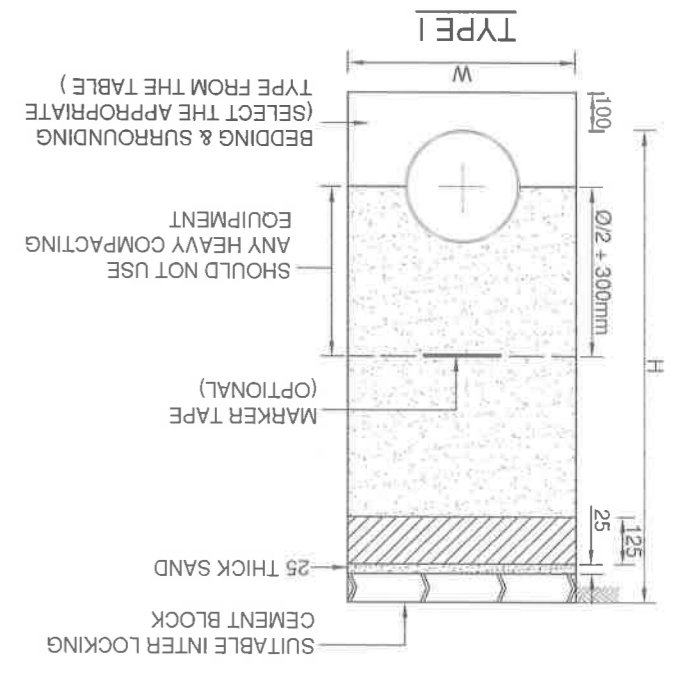
WT403/BT/03	D.O.A.(D)	DRAWN	ENGINEER (D)	C.E. (D)	DATE
					26.08.2019

TABLE TO SELECT APPROPRIATE BEDDING AND SURROUNDING TYPE

EXISTING SOIL CONDITION	APPROXIMATE BEARING CAPACITY KN/m <sup>2</sup>	HARD SOIL/ROCK
A	>200	
B	100-200	
C	<200	
CLAY	>75	
PEAT/MASHY AREAS	<75	



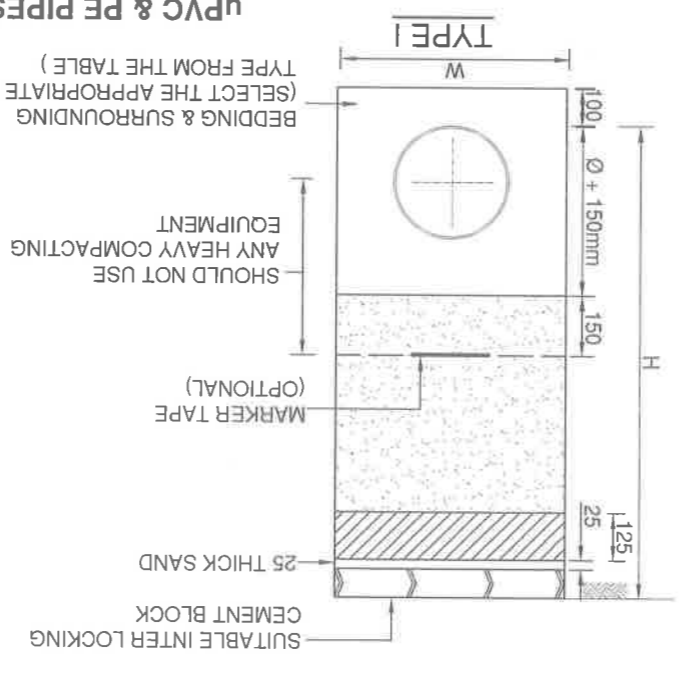
**DI PIPES IN HARD SHOULDER**



DETAIL OF TRENCH FOR DI PIPES

DIA(Ø) (m)	WIDTH(W) (m)	DEPTH(H) (m)
500	0.90	1.50
450	0.90	1.45
400	0.90	1.40
350	0.75	1.35
300	0.60	1.30
250	0.60	1.25
200	0.60	1.20
150	0.60	1.00
100	0.60	0.95
80	0.60	0.95

**uPVC & PE PIPES IN HARD SHOULDER**



DETAIL OF TRENCH FOR PVC PIPE

DIA(Ø) (m)	WIDTH(W) (m)	DEPTH(H) (m)
225	0.60	1.30
160	0.60	1.20
110	0.45	1.20
90	0.45	1.10
63	0.40	0.90

DETAIL OF TRENCH FOR PE PIPES

DIA(Ø) (m)	WIDTH(W) (m)	DEPTH(H) (m)
500	0.75	1.51
450	0.70	1.46
400	0.70	1.41
355	0.70	1.37
315	0.60	1.33
280	0.60	1.29
250	0.50	1.26
225	0.50	1.24
200	0.45	1.21
180	0.45	1.19
160	0.45	1.17
140	0.40	1.15
125	0.40	1.14
110	0.40	1.12
90	0.40	1.00

**LEGEND**

- IMPORTED OR EXCAVATED SELECTED BACK FILL MATERIAL TO BE COMPACTED TO A DRY DENSITY NOT LESS THAN 98% OF MAXIMUM DRY DENSITY OF THE MATERIAL HAVING MAX. PLASTIC LIMIT OF 15% AND LIQUID LIMIT OF 40% AND FREE FROM STONES GREATER THAN 25mm
- QUARRY DUST / MINED SAND COMPACTED.
- EXCAVATED / IMPORTED SOIL FILL COMPACTED OF PARTICLE SIZES NOT GREATER THAN 25 mm WITH THE PROPERTIES PL<15, LL<40, CBR>20
- CRUSHED STONE (<6 mm) COMPACTED
- ABC LAYER (100 % COMPACTION)

**NOTE:-**

- ALL DIMENSIONS ARE IN MILLIMETRES.
- EXCAVATED SOIL CAN BE USED AS BACK FILLING MATERIAL IF THEY CONFORM TO THE REQUIRED SPECIFICATION.
- IN CASE OF TYPE 'D' BEDDING AND SURROUNDING, CRUSHED STONE SHALL BE COMPLETELY SURROUNDED BY A GEOTEXTILE AS SHOWN AND AS DIRECTED BY THE ENGINEER.

THE GEOTEXTILE FABRIC SHALL BE WOVEN POLYPROPYLENE THERMALLY BONDED HAVING FOLLOWING PROPERTIES:  
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 TENSILE STRENGTH 9KN/m (MINIMUM) (ASTM D4595) @ 5% ELONGATION PERMEABILITY 30L/m<sup>2</sup>/S (MINIMUM) (BS 6906/3)(100mm WATER HEAD) PORE SIZE (Ø<sub>90</sub>) > 300 MICRONS (BS 6906/2).