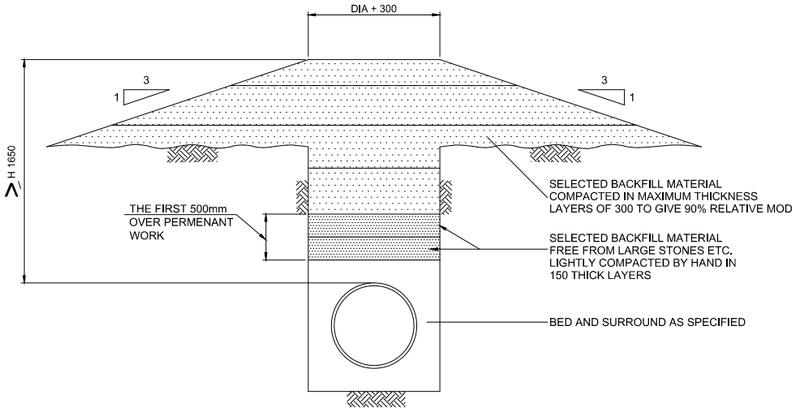
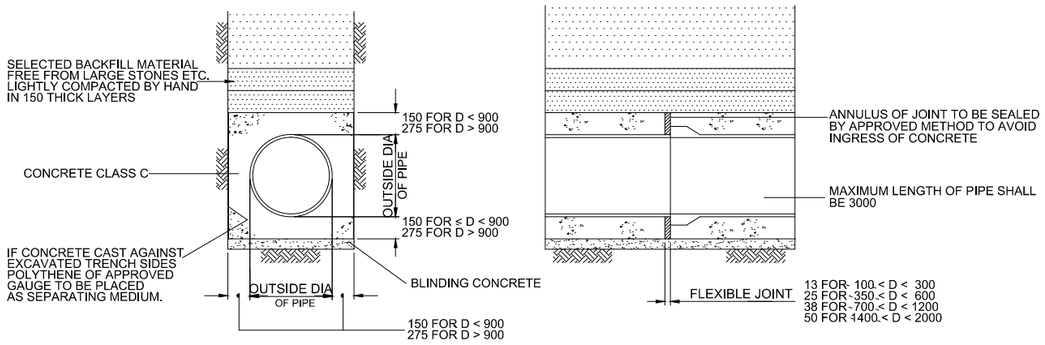


PROTECTIVE BUND TO PIPELINE



CONCRETE BED AND SURROUND PROTECTION DETAILS FOR GRP & PVC-U PIPES

(TO BE USED UNDER BUNDS AND WHERE COVER TO CROWN OF PIPES IS LESS THAN 1.20 METRES AND WHERE SPECIFIED OR INSTRUCTED BY THE ENGINEER)

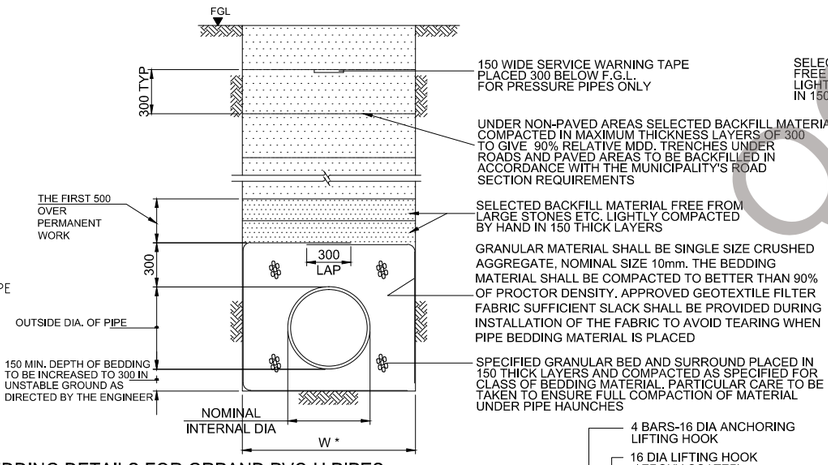
SCALE 1:40

× MINIMUM TRENCH WIDTHS FOR GRP PIPE

NOMINAL EXTERNAL DIAMETER "D"	NATIVE SOIL TYPE FULLY STABLE
D < 400	D + 600
400 < D < 1400	2.5 X D
D > 1400	D + 2000

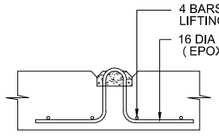
× MINIMUM TRENCH WIDTHS FOR uPVC PIPE

NOMINAL EXTERNAL DIA "D" (mm)	NATIVE SOIL TYPE FULLY STABLE
D < 315	300 + D (450 min)

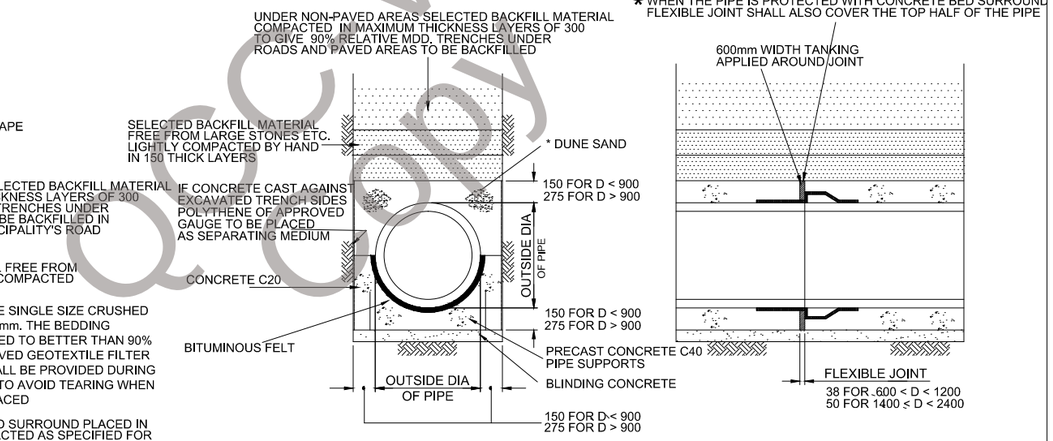


GRANULAR PIPE BEDDING DETAILS FOR GRPand PVC-U PIPES

(SCALE 1:40)



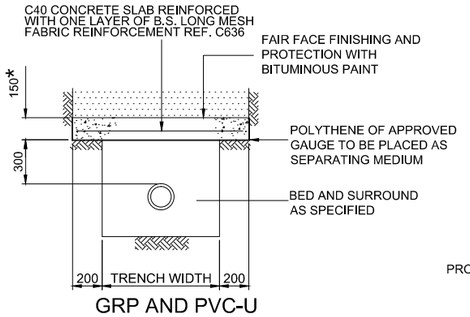
DETAIL '1'



BED AND SURROUND PROTECTION DETAILS FOR R.C. PIPES

SCALE 1:40

* THE ENGINEER MAY DECIDE TO PLACE CLASS C CONCRETE IN LIEU OF DUNE SAND FOR CERTAIN PIPELINES SO THAT THE PIPES RECEIVE A FULL CLASS C CONCRETE BED AND SUROUNED.



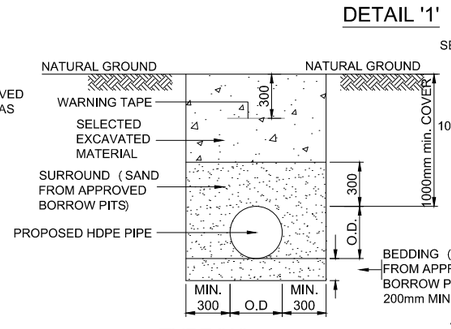
GRP AND PVC-U PIPE PROTECTION DETAILS REINFORCED CONCRETE SLAB

SCALE 1:40

(TO BE USED WHERE THE APPLIED LOADS ON A PIPE DO NOT GIVE THE REQUIRED STRUCTURAL FACTOR OF SAFETY AS REQUIRED BY APPROPRIATE STANDARD)

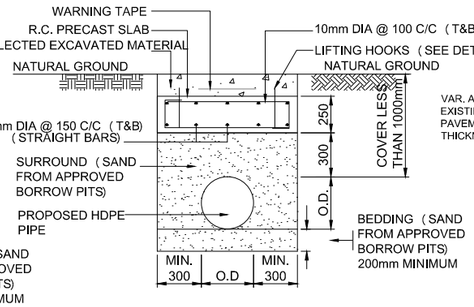
* MINIMUM THICKNESS IS 150mm

POLYSTYRENE LAYER (APPROXIMATELY 50mm THICK) NEED UNDERNEATH THE CONCRETE SLAB TO BE VERIFIED BY DESIGNERS



TYPE "A"

TYPE "A" SHALL BE USED FOR ALL NETWORKS EXCEPT FOR THE CASES WHERE TYPE "B", TYPE "C" AND TYPE "D" SHOULD BE USED.

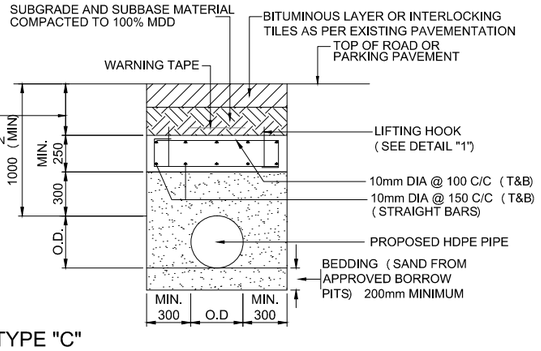


TYPE "B"

1. TYPE "B" SHALL BE USED WHERE THE DEPTH OF COVER IS LESS THAN 1000mm
2. THE WIDTH OF THE PRECAST SLAB IN THE LONGITUDINAL DIRECTION IS 500mm AND THE LENGTH IS (O.D. +MIN. 600) FOR PIPE DIAMETER UP TO 400mm AND (O.D. +MIN. 800) FOR PIPES DIAMETER ABOVE 400mm

HDPE TRENCH CROSS SECTION TYPE A, B, & C

SCALE 1:40



TYPE "C"

1. TYPE "C" SHALL BE USED WHERE PIPES ARE LAID UNDER PARKING AREAS OR ALONG CARRIAGEWAYS
2. THE WIDTH OF THE PRECAST SLAB IN LONGITUDINAL DIRECTION IS 500mm AND THE LENGTH IS (O.D. +MIN. 600) FOR PIPE DIAMETER UP TO 400mm AND (O.D. +MIN. 800) FOR PIPES DIAMETER ABOVE 400mm
3. THE THICKNESS AND THE LENGTH OF THE PRECAST SLAB REPRESENT THE MINIMUM REQUIREMENT WHICH COULD BE INCREASED AS PER THE DESIGN TO BE PERFORMED BY THE CONTRACTOR SUBJECT TO ADSSC/ENGINEER APPROVAL

NOTES:

THESE DETAILS REPRESENT A MINIMUM REQUIREMENT AND MAY BE VARIED, SUBJECT TO APPROVAL, TO SUIT PROJECT REQUIREMENTS. THEY ARE EXPECTED TO BE INCORPORATED AS TYPICAL DETAILS WHICH SHALL BE CHECKED AND APPROVED AS PART OF THE PROJECT DRAWING SET.

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. JOINTING PIPES HOLLOWS LEFT IN THE BEDDING TO ENABLE PIPES TO BE JOINTED SHALL BE AS SHORT AS PRACTICABLE AND SHALL BE LEFT UNFILLED UNTIL THE JOINTS HAVE BEEN INSPECTED AND THE PIPE TESTED TO THE SATISFACTION OF THE ENGINEER.
3. COVER TO PIPES COVER SHALL BE MEASURED FROM THE CROWN OF THE PIPE BARREL TO GROUND LEVEL.
4. PROTECTION AGAINST ACCIDENTAL DAMAGE WHERE A PIPELINE IS LIKELY TO BE DISTURBED IN THE FUTURE BY CONSTRUCTION WORK, INSTALLATION OF OTHER SERVICES ETC. IT MAY ON THE ENGINEERS INSTRUCTION BE GIVEN A CONCRETE BED AND SURROUND.
5. SUBKHA BUNDS WHERE PIPES ARE LAID WITHOUT ADEQUATE COVER IN AREAS WHICH ARE SCHEDULED FOR FILLING, SUBHKA BUNDS SHALL BE CONSTRUCTED OVER THE PIPE COMPACTED IN ACCORDANCE WITH THE SPECIFICATION.
6. TRENCH SHEET TO BE LIFTED BEFORE COMPLETION OF PIPE ZONE MATERIAL BACKFILLING AND COMPACTION.
7. LAYING PIPES PIPES SHALL BE LAID TO THE DETAILS SPECIFIED BY THE MANUFACTURER AS APPROVED BY THE ENGINEER. PIPE SHALL BE LAID IN DRY TRENCH.
8. PIPE BUILT INTO CONCRETE WHERE REQUIRED BY THE SUPPLIER. A BAND OF NEOPRENE RUBBER OF 40 TO 70 DUROMETER, 6mm THICK AND 150mm WIDE SHALL BE WRAPPED AROUND THE PIPE PRIOR TO PLACEMENT OF ANY CONCRETE. THIS BAND SHALL BE POSITIONED AROUND THE BUILT-IN SECTION OF THE PIPE WITH THE EDGE OF THE RUBBER AT THE INTERFACE BETWEEN CONCRETE AND THE BACKFILL.
9. THE TERMS STABLE AND UNSTABLE ARE USED TO DEFINE THE NATIVE SOIL TO THE BEDDING MATERIAL. NATIVE SOILS SUCH AS ROCK AND SOME GRANULAR MATERIALS PROVIDE A HIGH DEGREE OF SIDE SUPPORT AND THE MINIMUM TRENCH WIDTHS GIVEN UNDER THE HEADING FULLY STABLE SHOULD BE ADOPTED.
10. NATIVE SOILS OF A COHESIVE NATURE WOULD NORMALLY BE CONSIDERED UNSTABLE. FOR THE SOILS CONSIDERED AS UNSTABLE THE SAFE WIDTH OF TRENCH SHOULD BE CONSIDERED BASED ON THE REPOSE ANGLE OF THE SOIL MATERIAL AND THE MINIMUM WORKING SPACE INSIDE THE TRENCH, ALTERNATIVELY THE TRENCH WALL SUPPORT SYSTEMS SHOULD BE PROVIDED.
11. WHERE THE SIDE SUPPORT PROVIDED BY THE NATIVE SOIL OFFERS SOME DEGREE OF SUPPORT INTERMEDIATE TRENCH WIDTHS MAY BE ADOPTED AS AGREED WITH THE ENGINEER.THE ENGINEER MAY REQUIRE TESTS TO BE CARRIED OUT TO DETERMINE WHETHER THE NATIVE SOIL IS STABLE OR NOT. WHERE DIRECTED BY THE ENGINEER THE CONTRACTOR SHALL OVER EXCAVATE THE TRENCH AND BACKFILL WITH CONCRETE C20 OR SUITABLE GRANULAR MATERIAL.

REFERENCE DRAWINGS AND DOCUMENTS

STANDARD DRAWING - STORM WATER PIPE PROTECTION DETAILS -302

No.	REVISIONS	APP'D	DATE

CLIENT

TITLE

STANDARD DRAWINGS
STORM WATER WORKS

DRAWING TITLE

STANDARD DRAWING
PIPE BEDDING AND
BACKFILL DETAILS

DRAWN	-	SCALE	AS SHOWN
CHECKED	-	DATE	-
APPROVED	-	SIZE	A1
PROJECT No.	-	DWG. No.	301