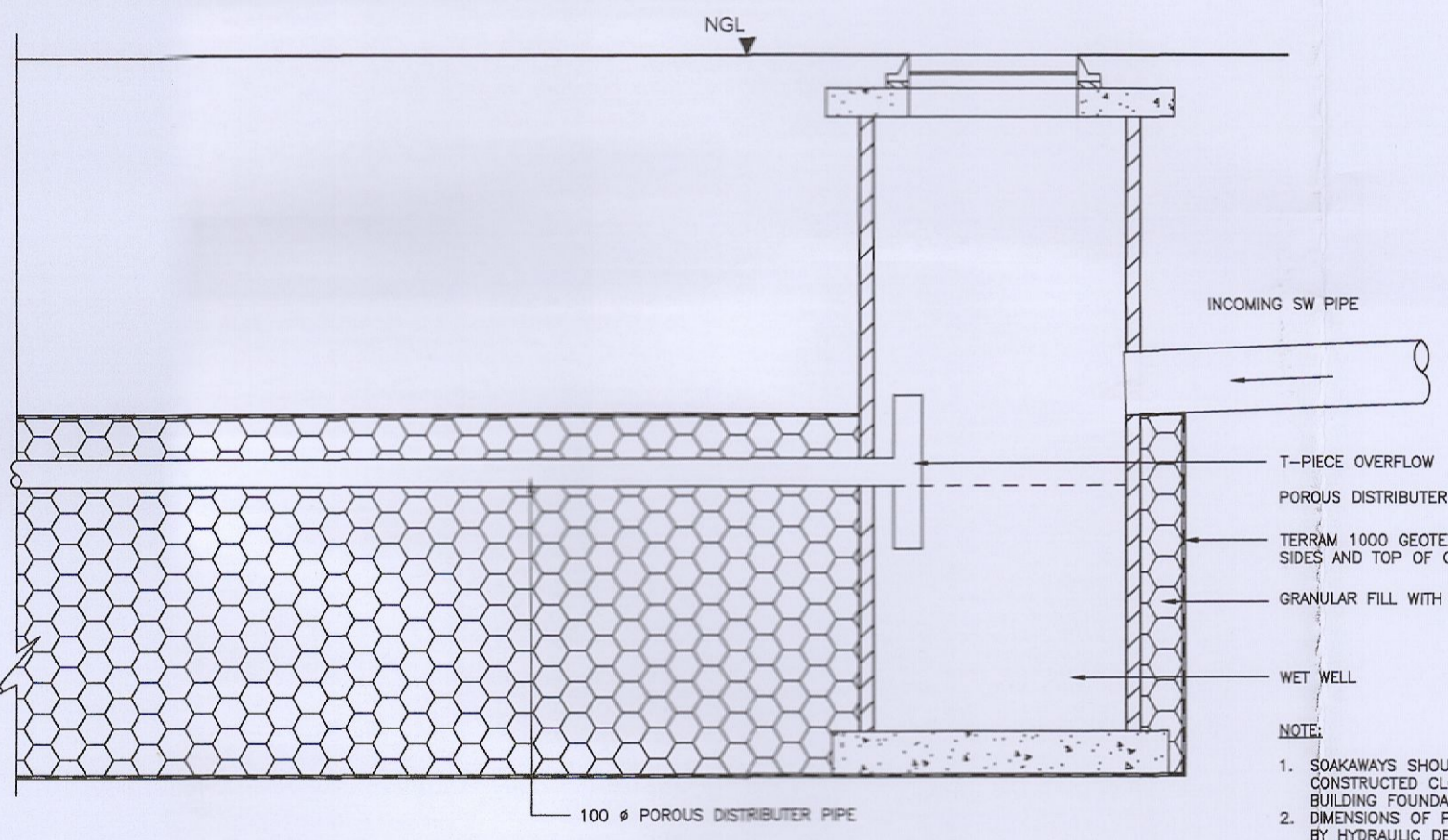


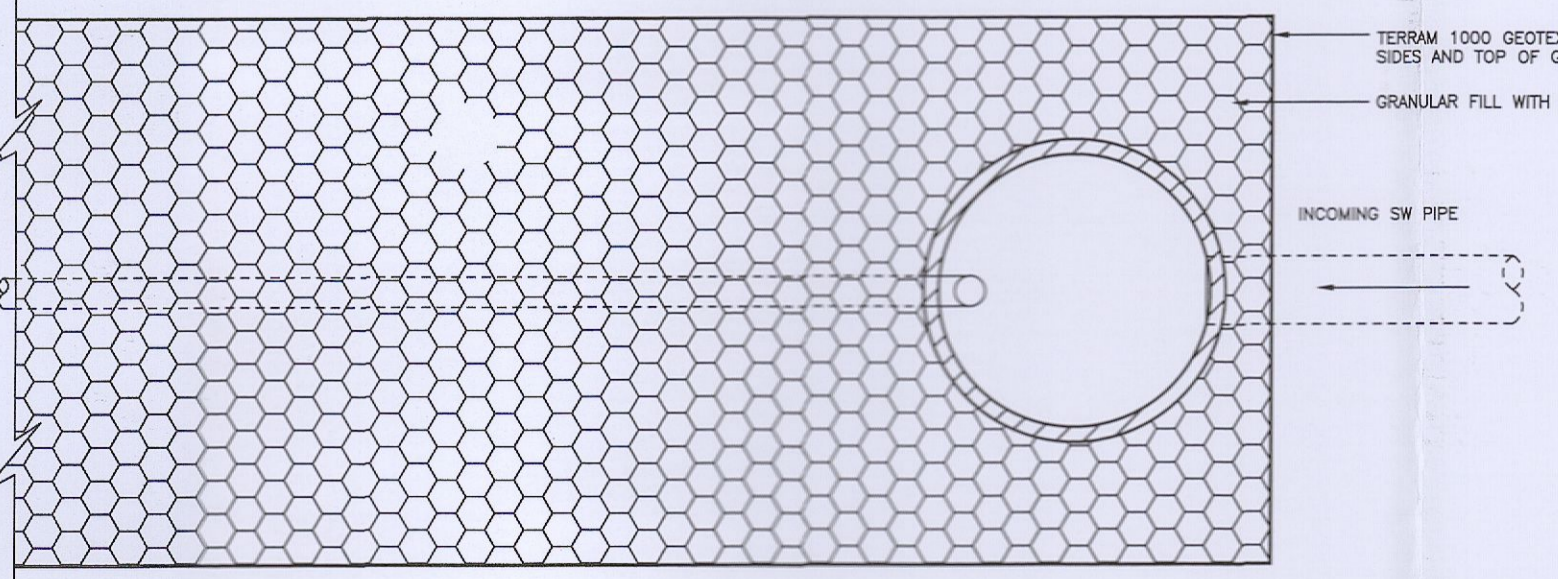
NOTE: SOAKPIT DESIGN IS BASED ON AN SITE INFILTRATION RATE OF 5.14X10E-07, SITE INFILTRATION TEST THAT WAS CARRIED OUT ON 10/11/2022

**DRAINAGE PLAN**  
(SCALE 1:50)

- 225mm THICK C15/20 MASS CONCRETE FOUNDATIONS.
  - PREFORMED HALF CIRCLE CHANNEL PIPES. THE PIPELINE MAY WHERE PRACTICABLE, BE LAID THROUGH THE MANHOLE AND THE CROWN CUT OUT TO HALF DIAMETER, PROVIDED FLEXIBLE JOINTS ARE SITUATED ON EACH SIDE NO FURTHER THAN 600mm FROM THE INNER FACE OF THE MANHOLE WALL.
  - FOR SURFACE WATER MANHOLES HIGH DENSITY BLOCKS TO CL.510 OF I.S.20 PART 1: 1987 OR C25/30 IN-SITU CONCRETE. BLOCKWORK SHALL BE BEDDED AND JOINTED USING MORTAR DESIGNATION THREE TO I.S.408. BEDS AND VERTICAL JOINTS SHALL BE COMPLETELY FILLED WITH MORTAR AS THE BLOCKS ARE LAID. JOINTS SHALL BE FLUSH POINTED AS THE WORK PROCEEDS. ALL FOUL MANHOLES MUST BE FACED IN SOLID ENGINEERING BRICK (MIN CLASS A OR B), OR IN-SITU CONCRETE FOR 1m ABOVE BENCHING LEVEL. BRICK TO BE BONDED TO BLOCKWORK USING ENGLISH GARDEN WALL BOND.
  - RELIVING ARCH FORMED BY 215x103x65 BRICK AS PER DRAWING. RELIEVING ARCHES USED IN BRICK OR BLOCKWORK MANHOLES TO EXTEND OVER FULL THICKNESS OF ALL DOUBLE ARCHES TO BE FORMED FOR PIPE DIAMETRES GREATER THAN 600mm.
  - BENCHING AND PIPE CHANNEL PIPE SURROUND - C15/20 CONCRETE.
  - BENCHING FINISHED IN 2:1 SAND-CEMENT MORTAR WITH SMOOTH TROWEL FINISH, AT 1 IN 30 SLOPE TOWARDS CHANNEL.
  - STANDARD RUNGS AT 300mm VERTICALLY AND GALVANISED TO BS729.
  - 600mm SQUARE OPE. IN ROOF SLAB.
  - 200% PRECAST R.C. ROOF SLAB IN C25/30 CONCRETE WITH 1No. A393 MESH. COVER TO STEEL SHALL BE 40mm.
  - 1 TO 2 No. ENGINEERING BRICKS CLASS B TO I.S.91: 1983 SET IN 1:3 (CEMENT-SAND-MORTAR)
  - CLASS D400 MANHOLE COVER AND FRAME TO IS/EN 124. 150mm DEEP FRAME FOR ROADS. 100mm DEEP FOR FOOTPATHS AND GREEN AREAS. NON-ROCK DESIGN. CLOSED KEYWAYS, MANUFACTURED FROM SPHEROIDAL GRAPHITE CAST IRON (DUCTILE CAST IRON), 600x600 (OR 600 DIAM) CLEAR OPENING. COVER & FRAME COATED IN BITUMEN OR OTHER APPROVED MATERIAL. COVER TO HAVE A MINIMUM MASS OF 140g/m<sup>2</sup>. FRAME BEARING AREA SHALL BE 30,000mm<sup>2</sup> MIN. FRAMES SHALL BE DESIGNED TO PREVENT COVERS FALLING INTO MANHOLE. FRAMES SHALL BE BEDDED ON APPROVED MORTAR TO MANUFACTURER'S CONSTRUCTIONS.
  - SHORT LENGTH PIPE. PIPE JOINT EXTERNAL TO MANHOLE SHALL NOT EXCEED 600mm FROM THE INNER FACE OF MANHOLE WALL.
  - TOE HOLES OF 230mm MIN. DEPTH AND GALVANISED STEEL SAFETY RAILINGS TO BE PROVIDED IN BENCHING OF SEWERS GREATER THAN 525 DIAMETER, AND DEPTH TO INVERT +3m FOR ACCESS TO INVERT.
  - SAFETY CHAIN TO BE PROVIDED IN MANHOLES >450mm. MILD STEEL SAFETY CHAIN SHALL BE 10mm NOMINAL SIZE GRADE M(H) NON CALIBRATED CHAIN TYPE 1, COMPLYING WITH BS: 4942 Part 2.
  - WHEN DEPTH OF MANHOLES TO INVERT IS GREATER THAN 3.0m LADDERS SHALL BE USED, INSTEAD OF RUNGS, TO BS4211 EXCEPT THAT STRINGERS SHOULD BE NOT LESS THAN 65x12mm IN SECTION AND RUNGS 25mm IN DIAMETER. FIXED LADDERS SHOULD MEET THE DIMENSIONAL REQUIREMENTS OF BS 4211.
  - LADDER STRINGERS SHOULD BE ADEQUATELY SUPPORTED FROM THE MANHOLE WALL AT INTERVALS OF NOT MORE THAN 2.0m. STRINGERS SHOULD BE BOLTED TO CLEATS TO FACILITATE RENEWAL.
  - ALL LADDERS, RUNGS, HANDRAILS, SAFETY CHAINS ETC. SHALL BE HOT DIP GALVANISED TO BS729.
  - SOCKET OF PIPE SHOULD BE CUT FLUSH WITH THE INSIDE SURFACE OF THE MANHOLE WALL.
  - POSITION OF 910 SQUARE OPENING IN INTERMEDIATE ROOF SLAB.
- ALL MANHOLES SHALL BE WATERTIGHT.  
-FORMWORK TO REINFORCEMENT CONCRETE AND MASS CONCRETE SHALL COMPLY TO CLASS 2, SECTION 6.2.7, BS8110: PART 1: 1997.  
-FINISH TO THE TOP OF SLABS SHALL COMPLY TO TYPE A, SECTION 6.2.7, BS8110: PART 1: 1997.  
-PLAN DIMENSIONS OF MANHOLES ARE BASED ON BLOCKWORK HAVING A CO-ORDINATING SIZE OF 450x225x100.  
-MANHOLES ARE DESIGNED TO BS8005 AND WALL THICKNESSES TO IS225 BLOCKWORK DESIGN CODE TAKING GRANULAR FILL PRESSURE AND I.B. SURCHARGE.  
-REINFORCEMENT TO SLABS TO ENGINEERS DETAILS.



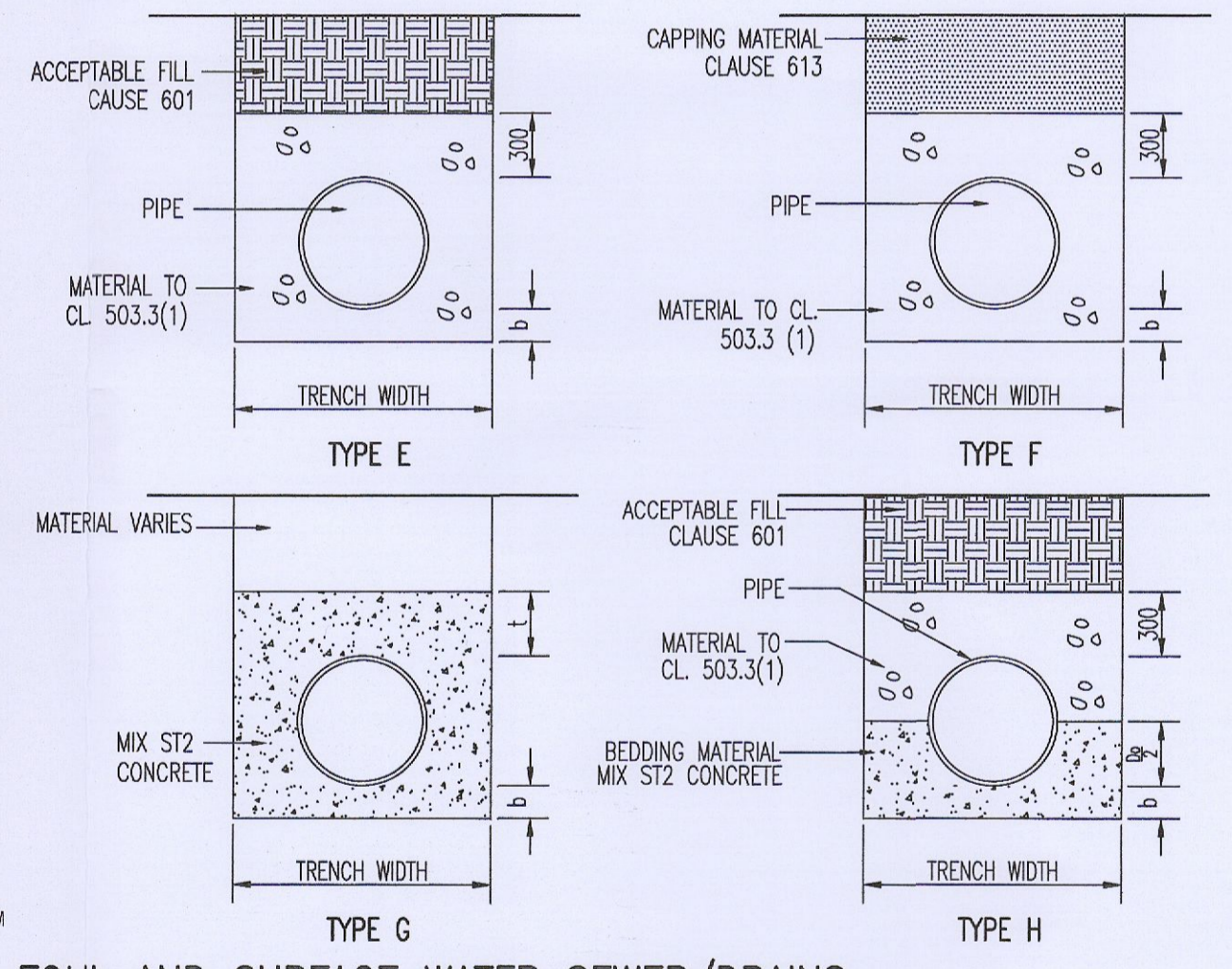
**SOAKAWAY SECTION**  
SCALE 1:25



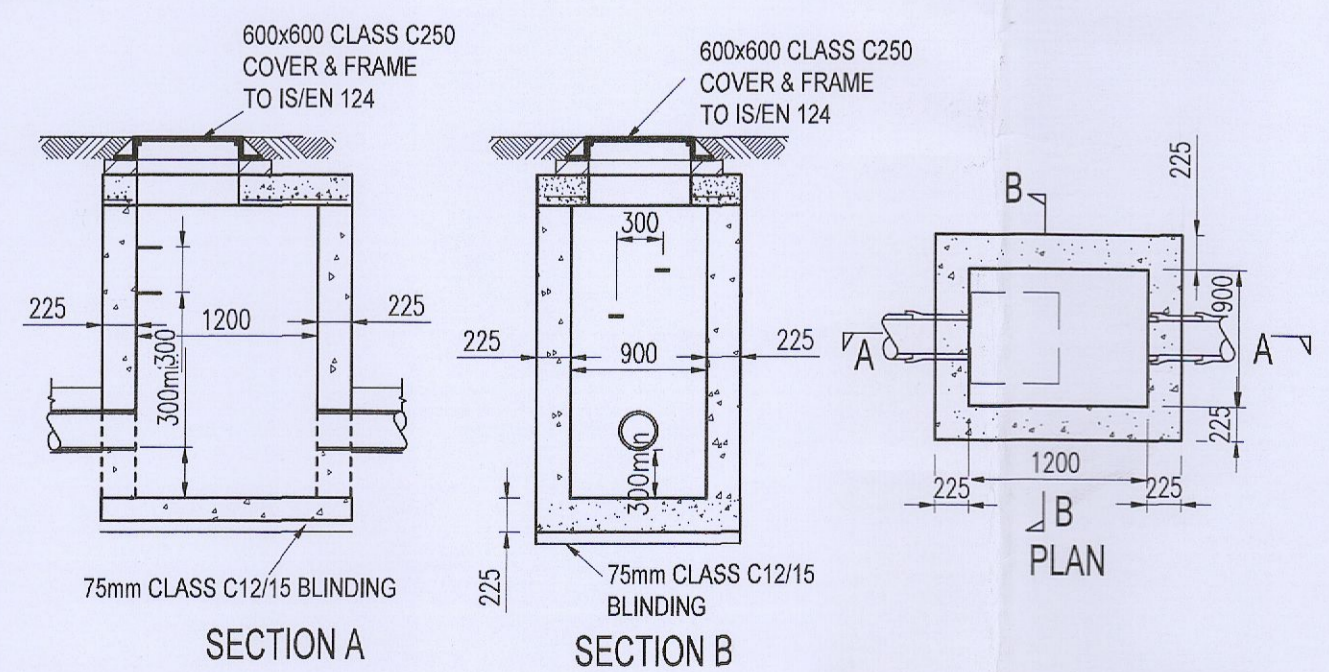
**SOAKAWAY PLAN**  
SCALE 1:25

TRENCH WIDTHS AND DIMENSIONS FOR FOUL AND SURFACE WATER DRAINS					
PIPE Ø mm	Do	b	t	TRENCH WIDTH	
100	150	100	100	600	
150	210	100	100	700	
225	300	150	100	750	
300	400	150	150	850	
375	480	150	150	950	
450	560	150	150	1000	
525	650	150	150	1100	
600	750	150	150	1200	
675	850	200	200	1350	
750	910	200	200	1450	
900	1080	200	200	1650	

- NOTE:
- ALL DIMENSIONS ARE IN MILLIMETERS.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH APPENDIX 9/1 NRA.
  - Do = PIPE OUTER DIMENSION
  - TYPE E TRENCH IS TO BE USED WHERE THE MINIMUM COVER IS 0.3m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO ROADWAYS AND 0.6m IN GARDENS.
  - TYPE F TRENCH IS TO BE USED WHERE THE MINIMUM COVER IS 1.2m IN ROADS AND DRIVEWAYS.
  - TYPE G TRENCH IS TO BE USED WHERE THERE IS LESS THAN THE MINIMUM COVER OF 0.3m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO ROADWAYS AND 0.6m IN GARDENS.
  - TYPE H TRENCH IS TO BE USED WHERE THERE IS LESS THAN THE MINIMUM COVER OF 1.2m IN ROADS AND DRIVEWAYS.



**FOUL AND SURFACE WATER SEWER/DRAINS, TRENCH AND BEDDING DETAILS**  
NTS



**TYPICAL CATCHPIT MANHOLE**  
SCALE 1:50

**LEGEND**

- EXPW- - - - - EXISTING FOUL WATER LINE
- SW- - - - - PROPOSED SURFACE WATER LINE
- SAJ □ PROPOSED ACCESS JUNCTION (SURFACE)
- RWP / GT PROPOSED RAIN WATER PIPE / GULLY

NOTE: COVER LEVELS FOR ALL DRAINAGE TO BE CONFIRMED ON SITE

**NOTES:**

- ALL NEW SURFACE WATER PIPES TO BE 100mm DIAMETER
- ALL PIPES TO BE uPVC PIPES
- MINIMUM PIPE GRADIENT TO BE 1:100
- MAXIMUM PIPE GRADIENT TO BE 1:60

REV.	DATE	DESCRIPTION
P0	15/11/2022	ISSUED FOR ADDITIONAL INFORMATION

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PROJECT:	
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SCALE: 1:50 @ A1	DRAWING STATUS: INFO
DATE: OCTOBER 2022	DRAWN BY: SMS
DRAWING NUMBER: 22-270-006	REVISION: P0