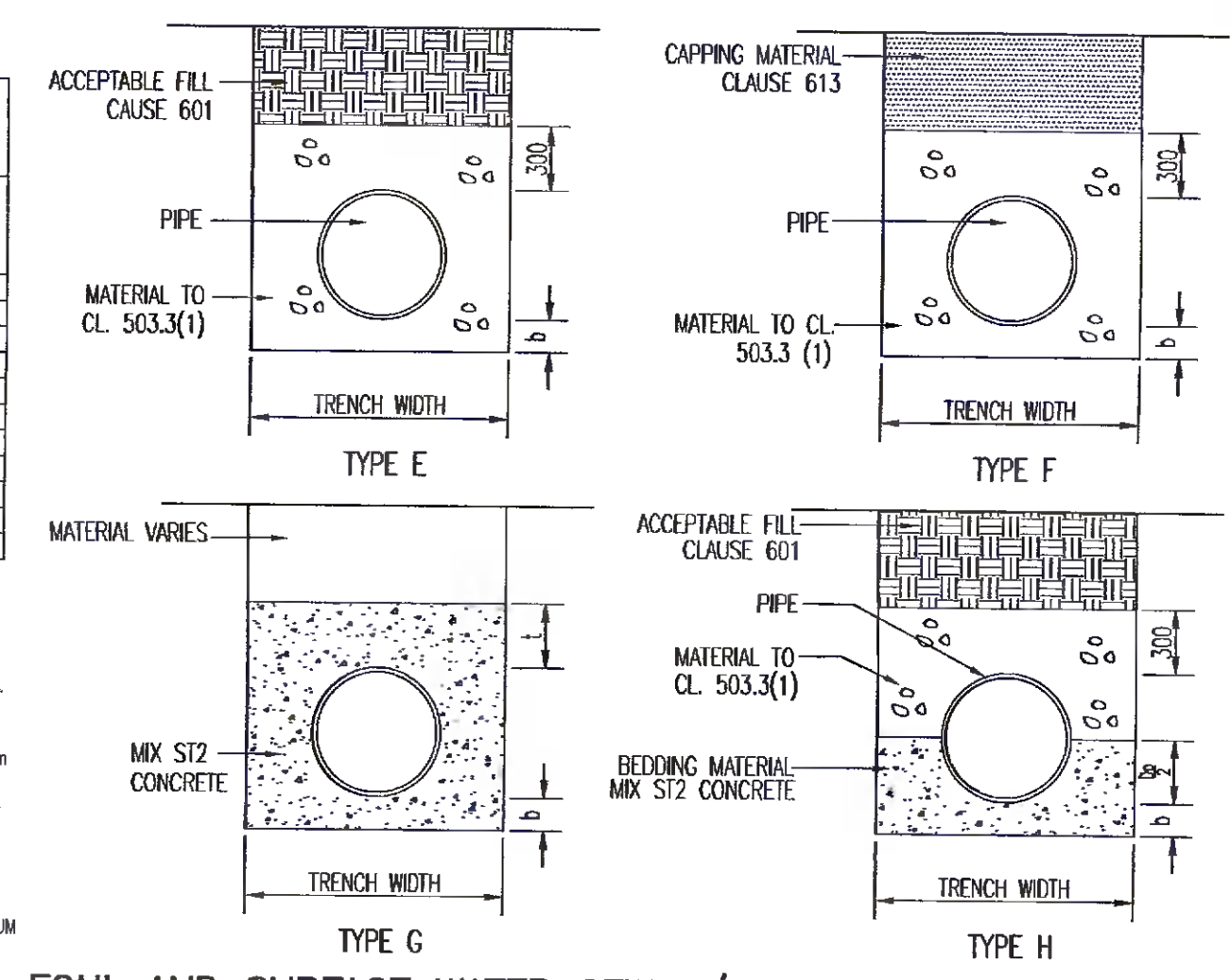


**SURFACE WATER DRAINAGE LAYOUT**  
(SCALE 1:75)

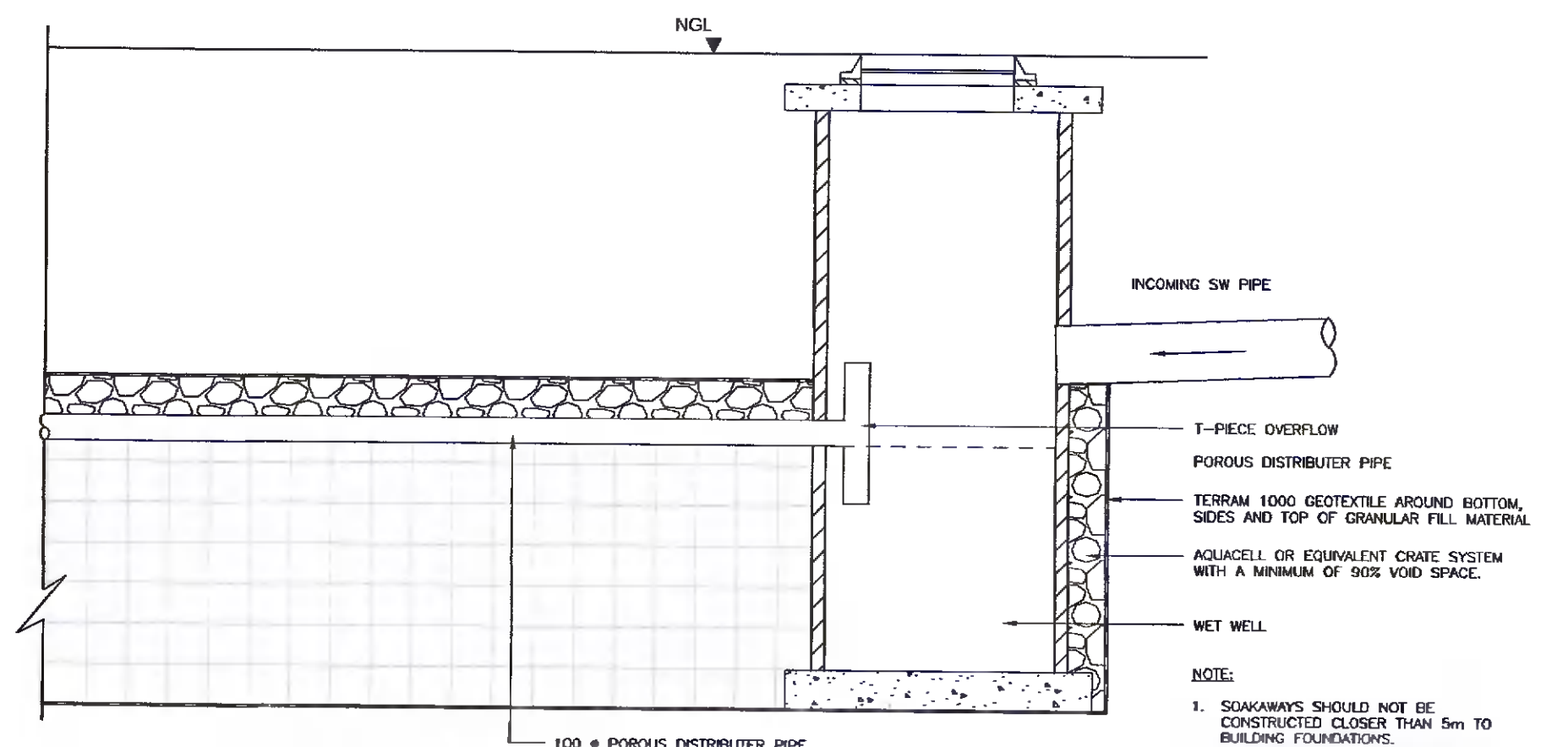
**TRENCH WIDTHS AND DIMENSIONS FOR FOUL AND SURFACE WATER DRAINS**

PIPE Ø mm	Do	b	t	TRENCH WIDTH
100	150	100	100	400
150	210	100	100	700
225	300	125	100	750
300	400	125	150	850
375	480	150	150	950
450	560	150	150	1000
525	650	150	150	1100
600	725	150	150	1200
750	850	200	200	1350
750	850	200	200	1450
900	1025	200	200	1650

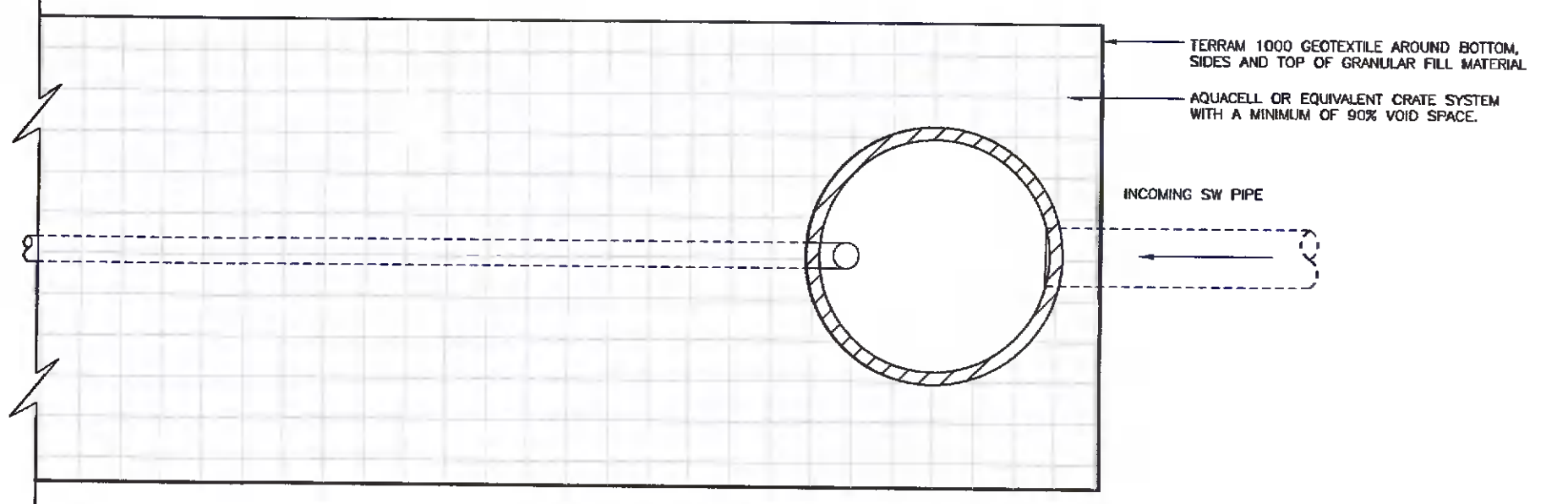
- NOTE:**
- ALL DIMENSIONS ARE IN MILLIMETERS.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH APPENDIX 51 N/A.
  - Do = PIPE OUTER DIMENSION
  - TYPE E TRENCH IS TO BE USED WHERE THE MINIMUM COVER IS 0.8m IN OPEN SPACES AND FOOTPATHS NOT ADJACENT TO ROADWAYS AND 0.6m IN GARDENS.
  - TYPE F TRENCH 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 0.8m 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



**SECTION THRU SOAKAWAY**



**PLAN OF SOAKAWAY**

**LEGEND**

- EXPW- - - - - EXISTING FOUL WATER LINE
- FW- - - - - PROPOSED FOUL WATER LINE
- SW- - - - - PROPOSED SURFACE WATER LINE
- SAJ (diamond) FAJ (square) PROPOSED ACCESS JUNCTION (SURFACE, FOUL)
- RWP / GT (square) PROPOSED RAIN WATER PIPE / GULLY
- MANHOLE (circle) PROPOSED SURFACE WATER MANHOLE
- MANHOLE (circle) PROPOSED FOUL WATER MANHOLE
- BIGT (square) PROPOSED FOUL BACK INLET GULLY TRAP

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

**NOTES:**

- ALL NEW FOUL & 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

- 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 CLS10 OF IS 20 PART 1: 1987 OR C25/30 IN-SITU CONCRETE BLOCKWORK SHALL BE BEDDED AND JOINTED USING MORTAR DESIGNATION THREE TO IS 406. 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.
  - RELIEVING 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.
  - 200mm PRECAST R.C. ROOF SLAB IN C25/30 CONCRETE WITH 1No. A383 MESH. COVER TO STEEL SHALL BE 40mm.
  - 1 TO 2 No. ENGINEERING BRICKS CLASS B TO IS 51: 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 80,000mm<sup>2</sup> MIN. FRAMES SHALL BE DESIGNED TO PREVENT COVERS FALLING INTO MANHOLE. FRAMES SHALL BE BEDDED ON APPROVED MORTAR TO MANUFACTURERS 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 BS726.
  - 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 BS8805 AND WALL THICKNESSES TO BS25 BLOCKWORK DESIGN CODE TAKING GRANULAR FILL PRESSURE AND H.B. SURCHARGE.
- REINFORCEMENT TO SLABS TO ENGINEERS DETAILS.
- ALL BRICK TO BE ENGINEERING BRICK.

PL0	23/03/2022	ISSUED FOR FURTHER INFO
REV.	DATE	DESCRIPTION

**CLIENT:**  
ARANTXA LERA

**PROJECT:**  
WORKS AT 17 RATHFARNHAM PARK, RATHFARNHAM

**DRAWING TITLE:**  
SURFACE WATER DRAINAGE LAYOUT

**SCALE:** 1:50 @ A1  
**DATE:** MAR. 2022  
**DRAWING NUMBER:** 21-251-001

**CLIENT:**  
CONSULTING ENGINEERS

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**DWG STATUS:** PLANNING  
**DRAWN BY:** RS  
**REVISION:** PL0