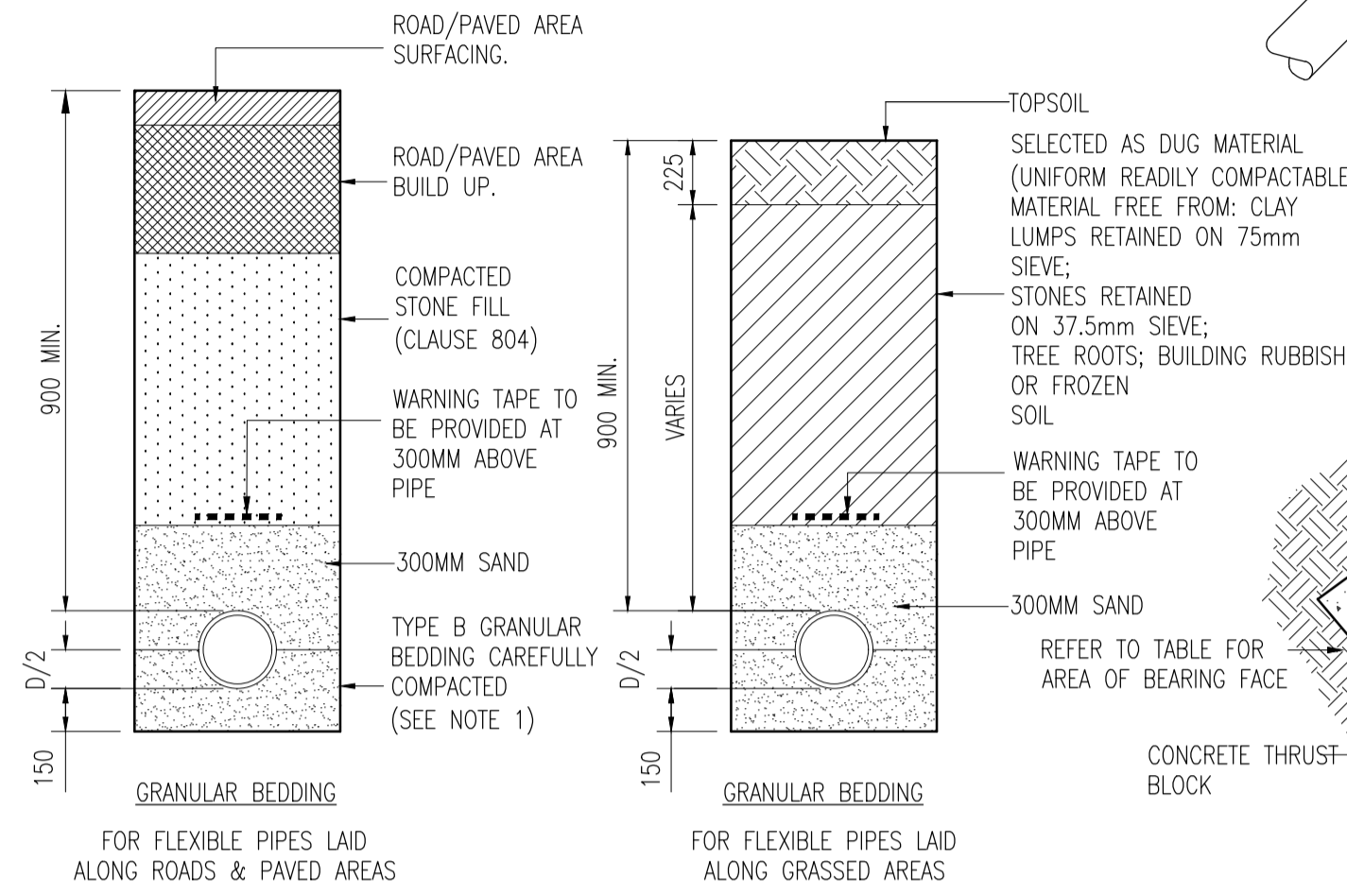
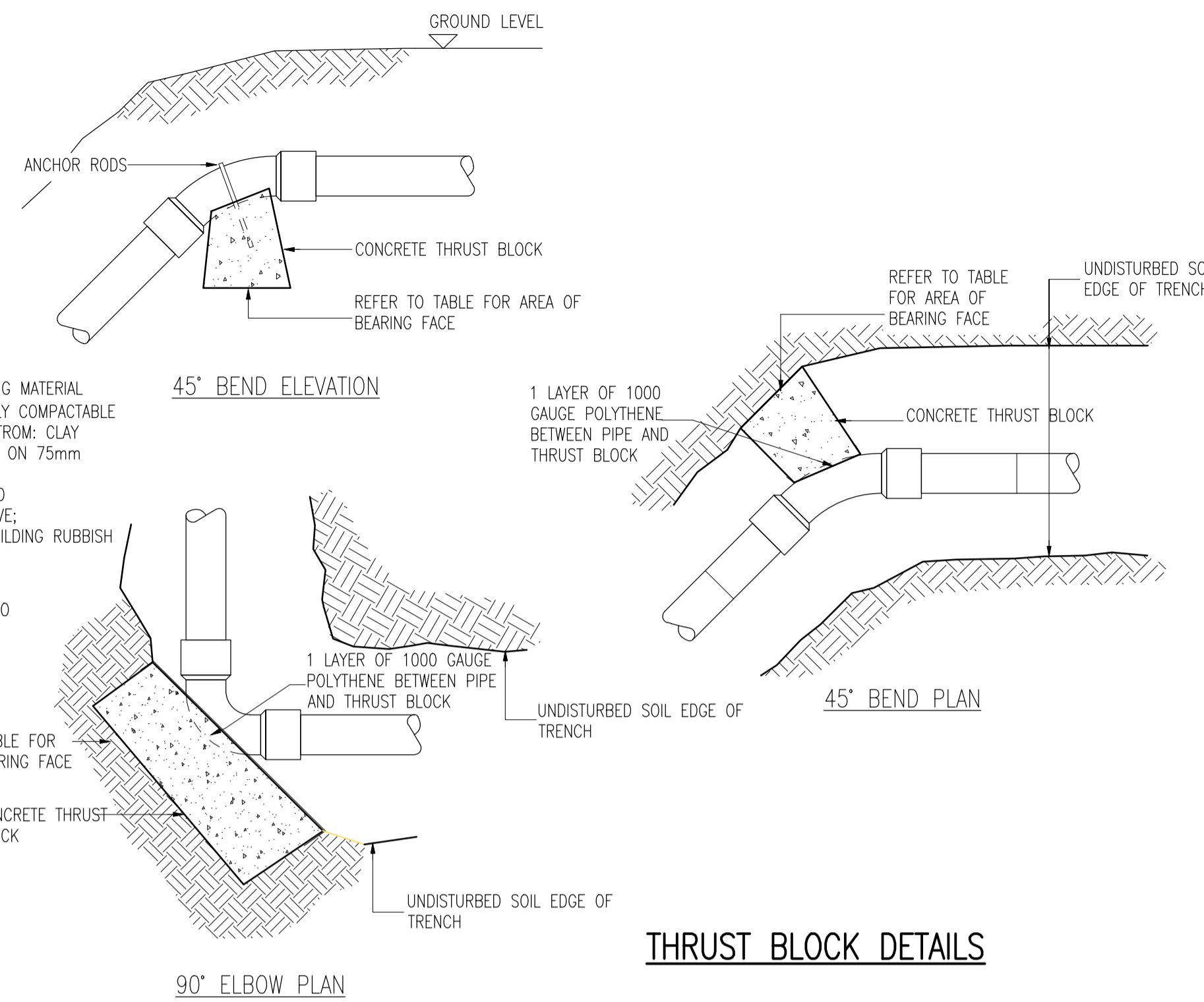


- NOTES: -
 1) GRANULAR BEDDING TYPE B SHALL CONSIST OF GRAVEL GRADED FROM 9.5mm TO 4.75mm. OTHER GRANULAR MATERIALS MAY BE USED SUBJECT TO APPROVAL
 2) ALL PIPES UNDER FOUNDATIONS AND FLOORS SHALL BE HAUNCHED



RISING MAIN BEDDING DETAILS

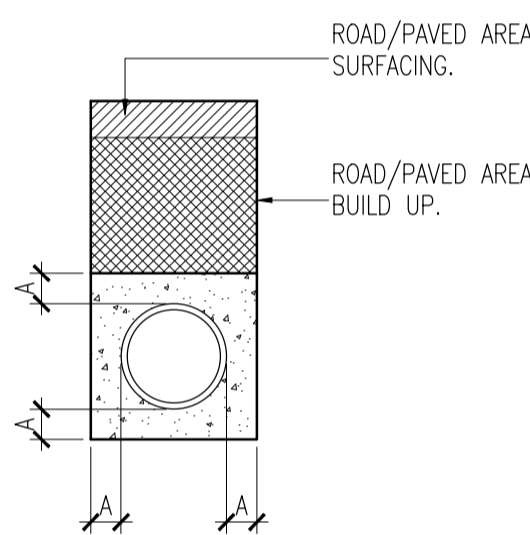
ALL WASTEWATER INFRASTRUCTURE WORKS TO BE IN ACCORDANCE WITH IRISH WATER STANDARD SPECIFICATION AND DETAILS. REFER TO WASTEWATER INFRASTRUCTURE STANDARD DETAILS, DOCUMENT NO IW-CDS-5030-03 FOR FURTHER INFORMATION.



THRUST BLOCK DETAILS

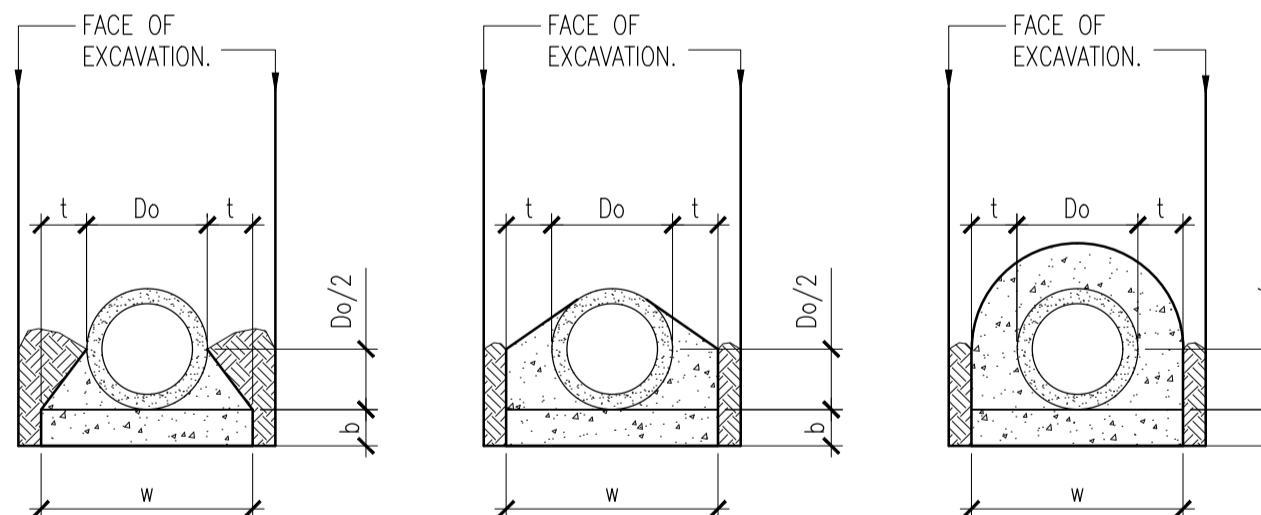
NOTE

- DIM A=100mm
 15N/mm² CONCRETE
 REQUIRED WHERE COVER TO PIPES IS LESS THEN 0.9m & REQUIRED THROUGHOUT FOR PIPES UNDER FLOOR SLABS.
 ALSO REQUIRED WHERE COVER TO SEWER PIPES IN GRASSED/LIGHTLY TRAFFICKED AREAS IS LESS THEN 0.9m FOR PVC PIPES & 0.6m FOR EARTHENWARE PIPES.
 PROVIDE 12mm VERTICAL MOVEMENT AT MAX. INTERVAL OF 5m IN CONCRETE SURROUND.

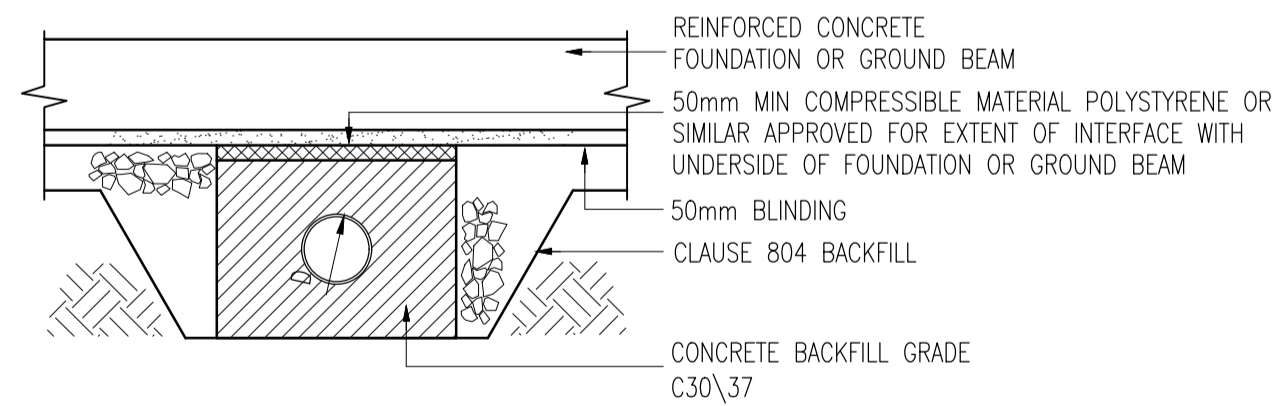


CONCRETE SURROUND

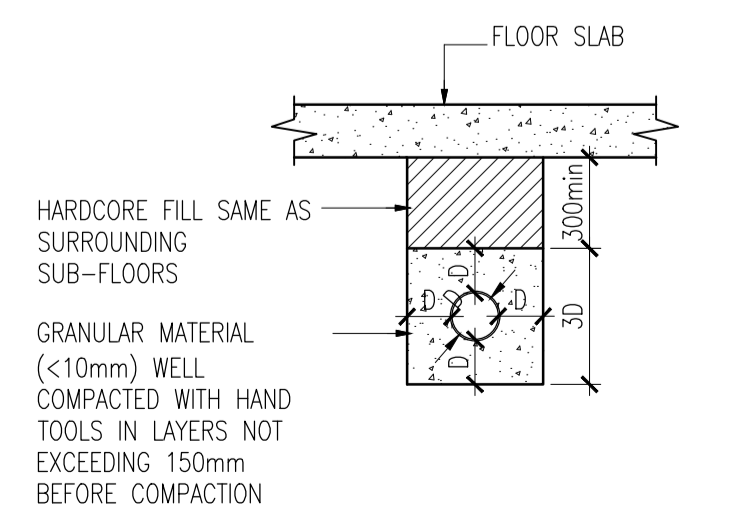
DRAINAGE – TRENCH WIDTHS, PIPE DIMENSIONS, CONCRETE & DISPOSAL QUANTITIES



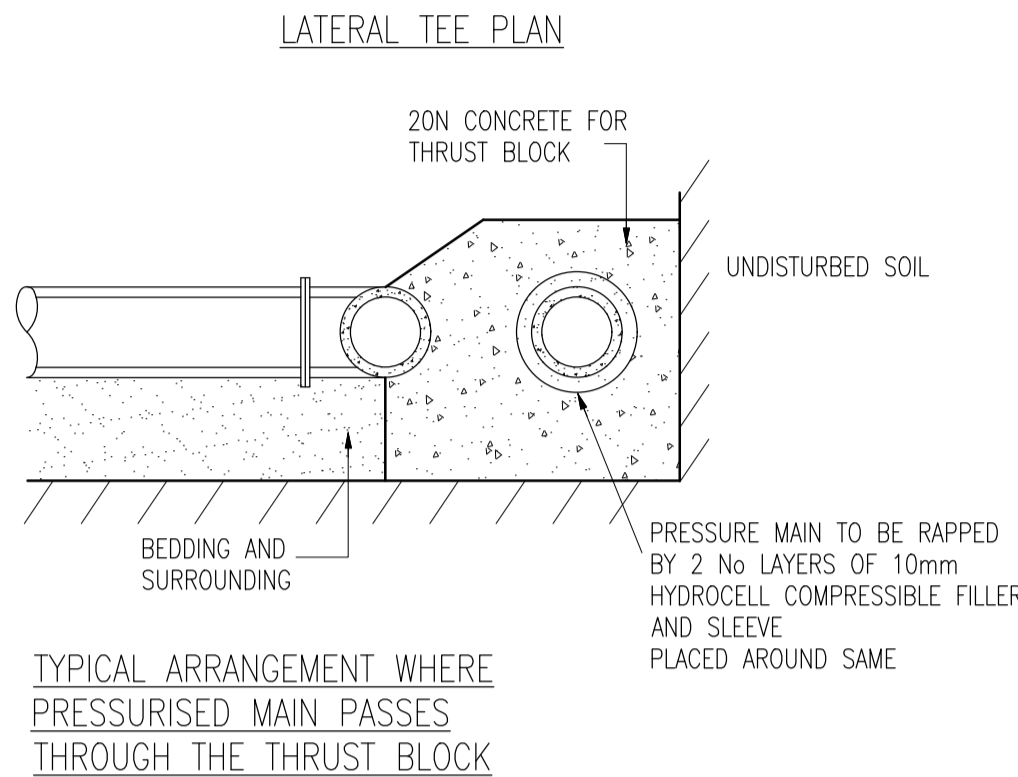
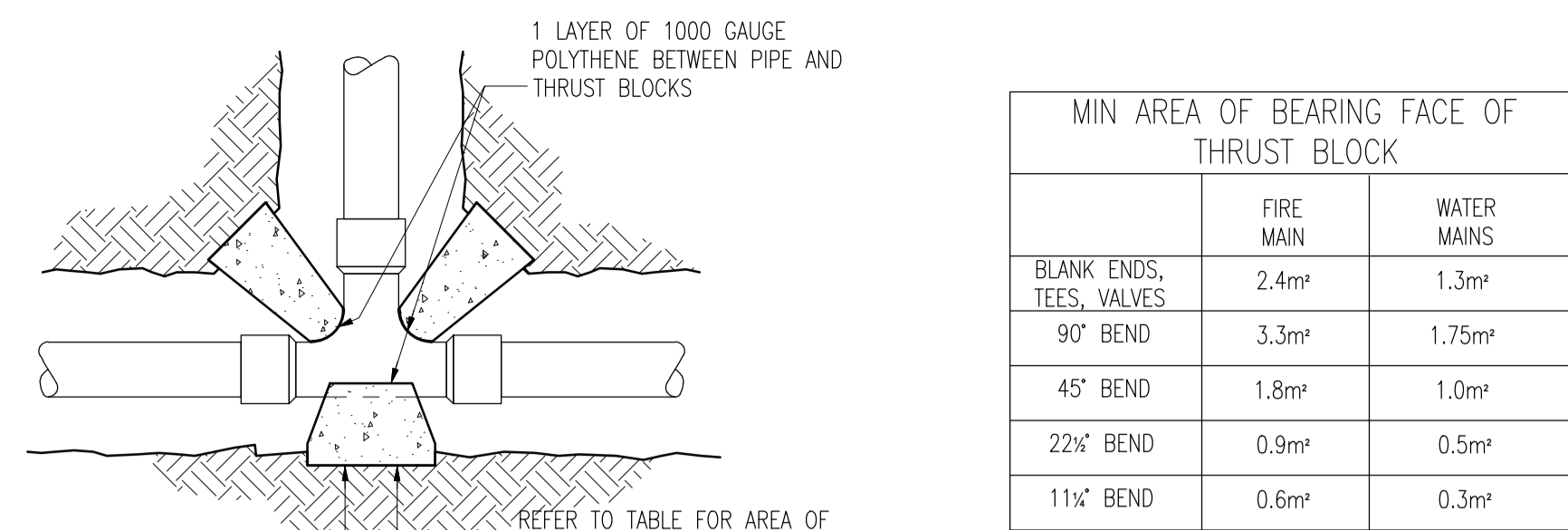
PIPE DIAMETER	INCH	MM	Do	b	t	w	WIDTH OF TRENCH	BED ALL TYPES	CONCRETE cum/m RUN OF SEWER HAUNCH & SURROUND			DISPOSAL cum/m RUN OF SEWER		
									1	2	3	1	2	3
4	100	150	100	100	100	350	600	035	016		058	069		111
6	150	210	100	100	100	410	700	041	022		076	098		152
9	225	300	120	150	150	600	750	072	038	NOT USED	175	175	NOT USED	293
12	300	400	120	150	150	700	850	084	056		198	251		393
15	375	480	150	150	150	780	950	117			260			540
18	450	560	150	150	150	860	1000	129			300			660
21	525	650	150	150	150	950	1100	143			340			810
24	600	735	150	150	150	1035	1200	155			380			950
27	675	870	200	200	200	1150	1350	230	NOT USED		550	NOT USED		1200
30	750	910	200	200	200	1310	1450	262			660	NOT USED		1530
36	900	1080	200	200	200	1480	1650	296			740			1960
42	1050	1260	250	250	250	1760	1900	440			1080			2770
48	1200	1425	250	250	250	1925	2100	481			1230			3310



PIPE UNDER FOUNDATION



PIPE BEDDING DETAIL FOR UNDERFLOOR DRAINAGE



MIN AREA OF BEARING FACE OF THRUST BLOCK

	FIRE MAIN	WATER MAINS
BLANK ENDS, TEES, VALVES	2.4m²	1.3m²
90° BEND	3.3m²	1.75m²
45° BEND	1.8m²	1.0m²
22½° BEND	0.9m²	0.5m²
11½° BEND	0.6m²	0.3m²

NOTE FOR HORIZONTAL BENDS, VERTICAL HEIGHT IS TO BE NO MORE THAN HALF THE TRENCH DEPTH.

MIN VOLUME OF CONCRETE THRUST BLOCK

	FIRE MAIN	WATER MAINS
BLANK ENDS, TEES, VALVES	1.8m³	1.0m³
90° BEND	3.3m³	1.1m³
45° BEND	1.5m³	0.6m³
22½° BEND	1.2m³	0.6m³
11½° BEND	1.2m³	0.6m³

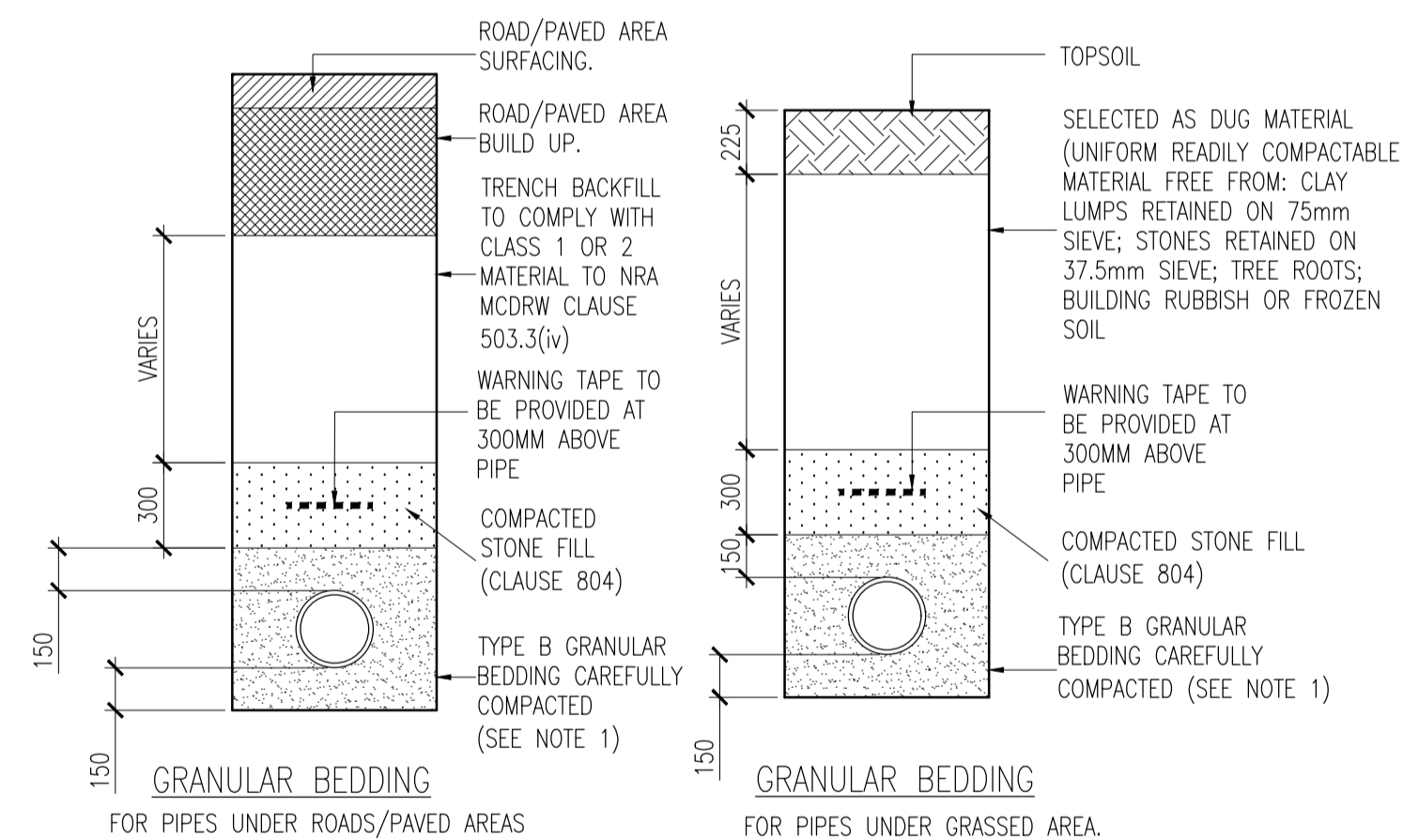
THRUST BLOCK: - FOR SIZE OF THRUST BLOCKS REFER TO TABLE BELOW.

ALL RODS FOR THRUST BLOCKS SHALL BE GALVANISED.
 THRUST BLOCK CONCRETE SHALL BE PLACED BEHIND THE SOCKET OF THE FITTING & NOT ALLOWED AGAINST THE PIPE OR JOINT.

BLOCKS TO BE CAST AGAINST UNDISTURBED EARTH.
 ALL VALVES & HYDRANTS SHALL BE FIRMLY SUPPORTED BEFORE BLOCKS ARE POURED.

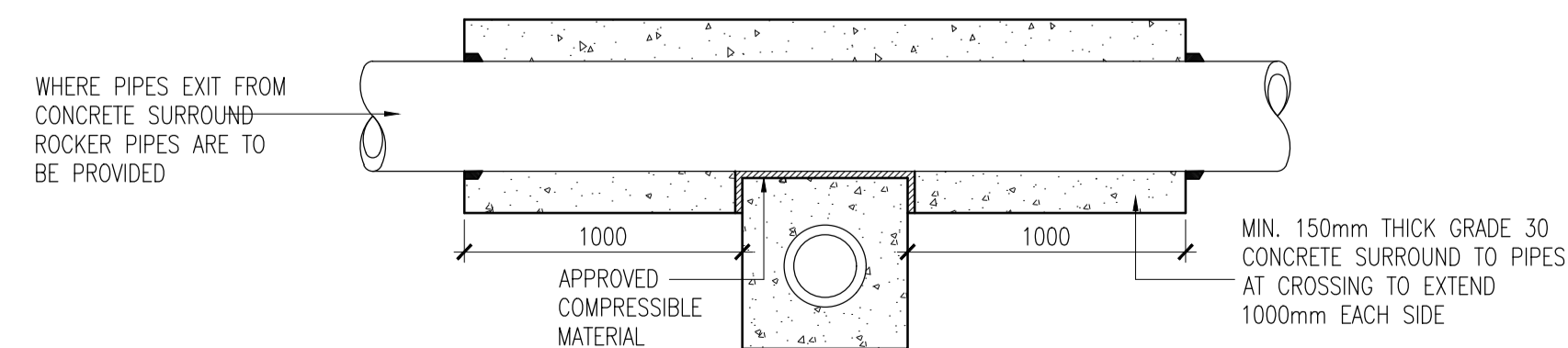
CONCRETE COMPRESSIVE STRENGTH SHALL BE 20N AT 28 DAYS.

1 LAYER OF 1000 GAUGE POLYTHENE TO BE PLACED BETWEEN PIPE AND THRUST BLOCK



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 2) ALL PIPES UNDER FOUNDATIONS AND FLOORS SHALL BE HAUNCHED

TYPICAL FOUL SEWER & SURFACE WATER PIPE BEDDING DETAILS



TYPICAL DETAIL AT PIPE CROSSING
 (FOR GAPS BETWEEN PIPES OF LESS THAN 300mm)

GENERAL NOTES:-

- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & ENGINEERS DRAWINGS & SPECIFICATIONS.
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. ALL DISCREPANCIES TO BE NOTIFIED, IN WRITING TO ENGINEERS & ARCHITECTS FOR RESOLUTION.
- ALL DIMENSIONS ON DRAWINGS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
- FOR DETAILS AND SETTING OUT OF RWP, SVP, WVP & ALL OPENINGS SEE THE RELEVANT ARCHITECTS DRAWINGS.
- FOR RADON BARRIER, D.P.C. & INSULATION DETAILS REFER TO ARCHITECTS DRAWINGS

MANHOLE NOTES:-

225mm THICK CL20/20 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.S10 OF I.S.20 PART 1: 1987 OR CL.30/20 IN-SITU CONCRETE. BLOCKWORK SHALL BE BEDDED AND JOINED USING MORTAR DESIGNATION THREE TO I.S.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.

RELIVING ARCH FORMED BY 215x103x65 BRICK AS PER DRAWING. RELIEVING ARCHES USED IN BRICK OR BLOCKWORK MANHOLES TO EXTEND OVER FULL THICKNESS OF WALL. DOUBLE ARCHES TO BE FORMED FOR PIPE DIAMETERS GREATER THAN 600mm.

BENCHING AND PIPE CHANNEL PIPE SURROUND -CL20/20 CONCRETE.

BENCHING FINISHED IN 2:1 SAND-CEMENT MORTAR WITH SMOOTH TROWEL FINISH, AT 1 IN 30 SLOPE TOWARDS CHANNEL.

STANDARD RUNGS AT 300c/c VERTICALLY AND GALVANISED TO BS729

600mm SQUARE OPE. IN ROOF SLAB.

200thk. PRECAST R.C. ROOF SLAB IN CL.30/20 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 140kg/m², FRAME BEARING AREA SHALL BE 80,000mm² 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.

Issue Register

No.	Date	Revision	Drawn	Checked	Approved
PL1	24/04/18	PLANNING ISSUE	MT	EAQ	MP

PLANNING

Client: KILKENNY COUNTY COUNCIL
Project: LIBRARY AT MAYFAIR BUILDING KILKENNY
Drawing Title: PROPOSED SEWER & PIPE DETAILS
Project No: 171029 **Scale:** 1:25@A1
Drawing No: 171029/C/031 **Rev:** PL1
Drawn: MT **Checked:** EIQ **Date:** 23/08/18

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