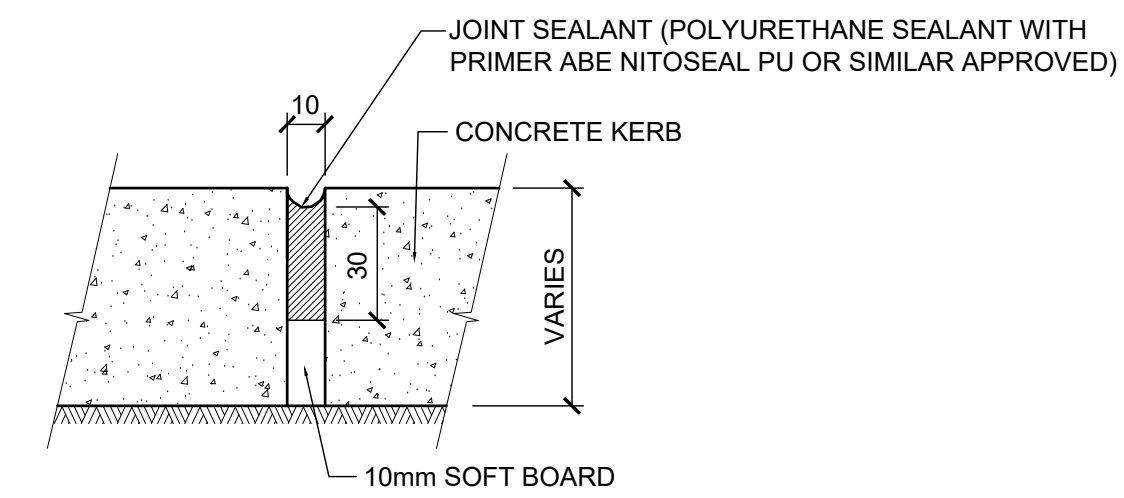
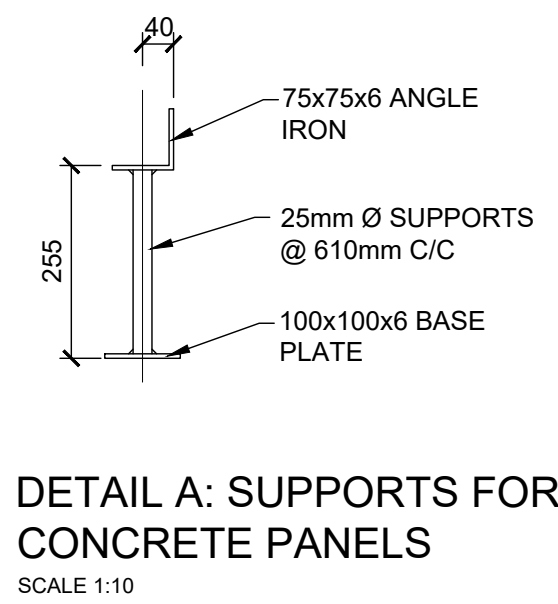
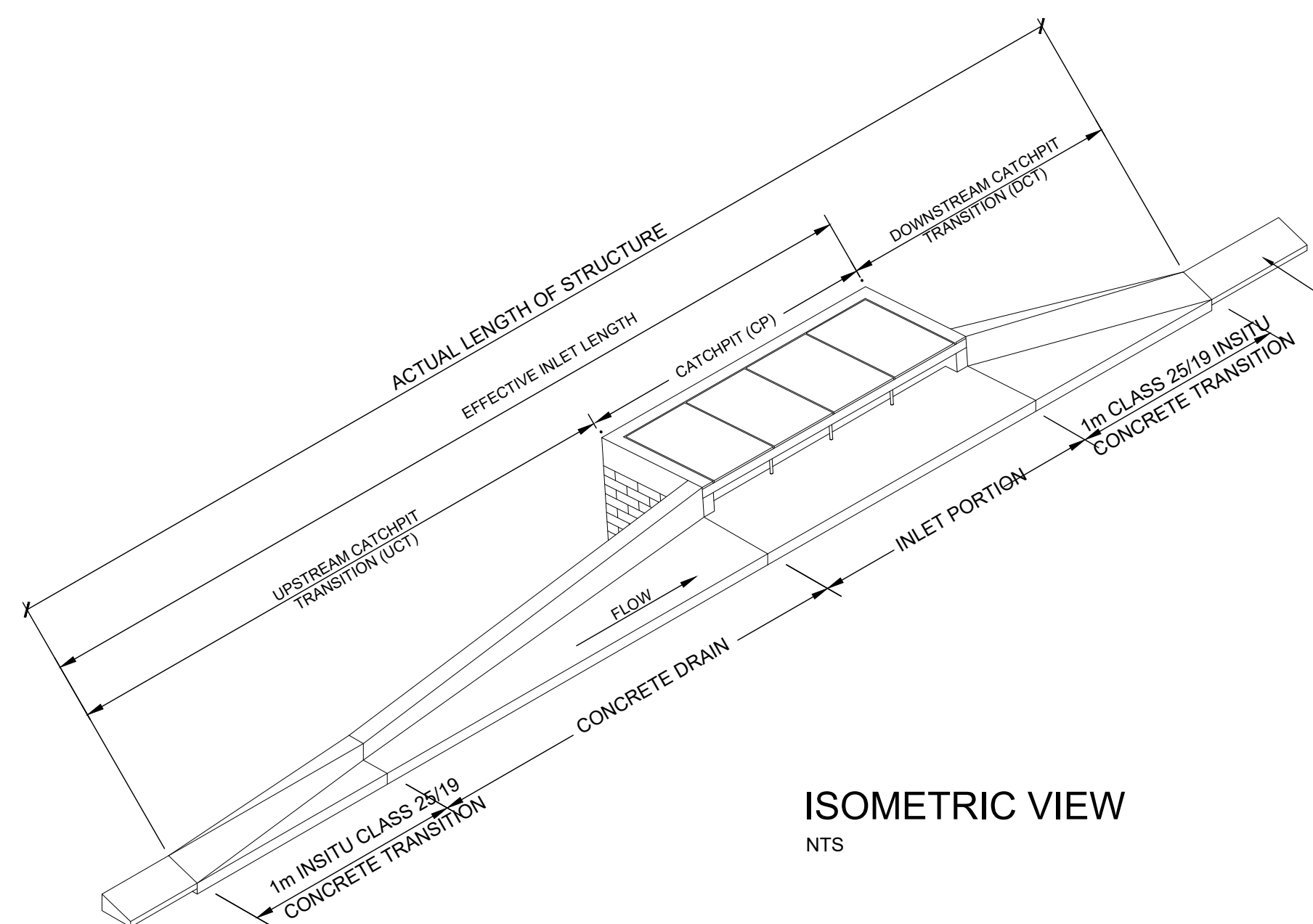
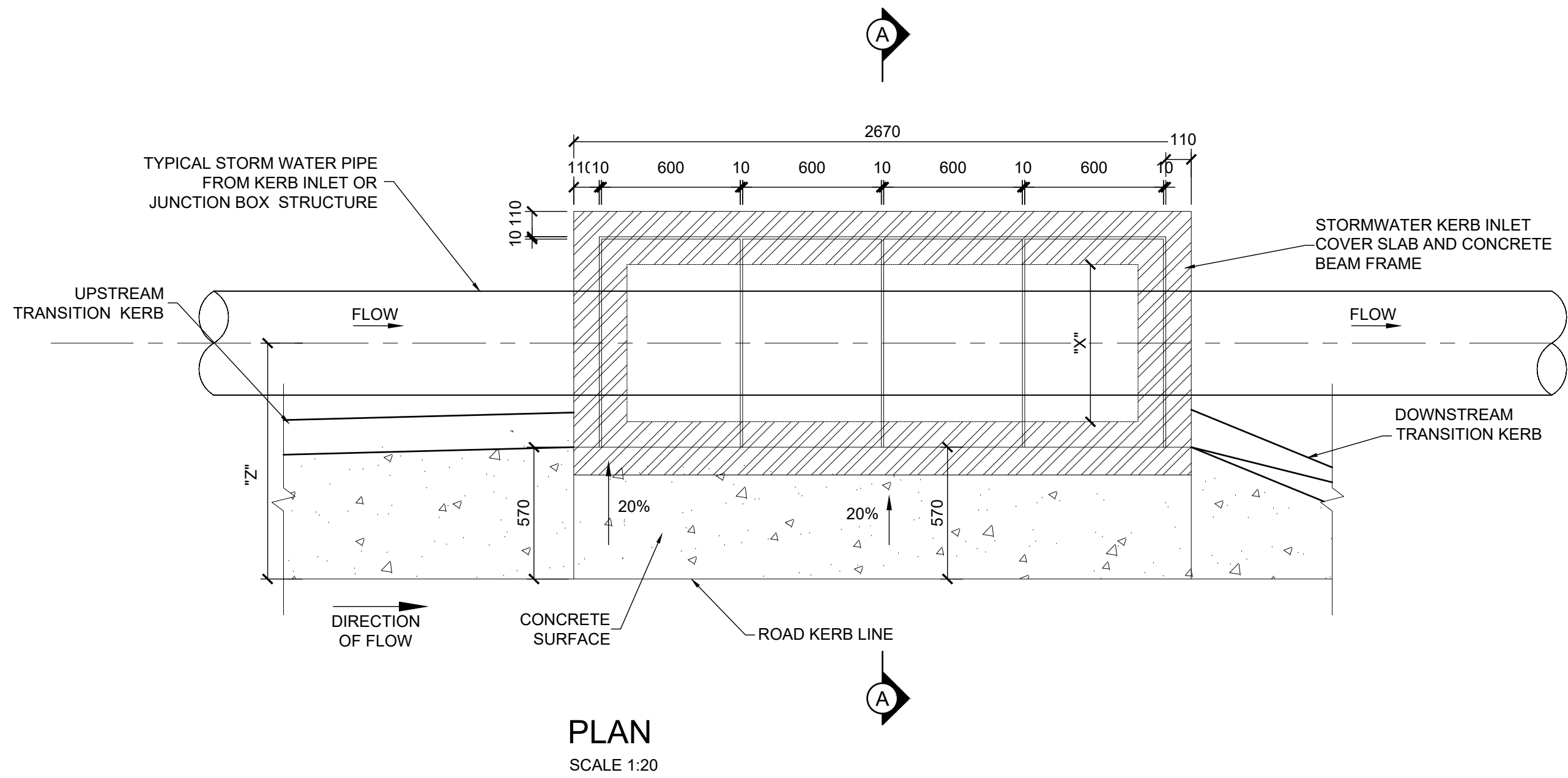
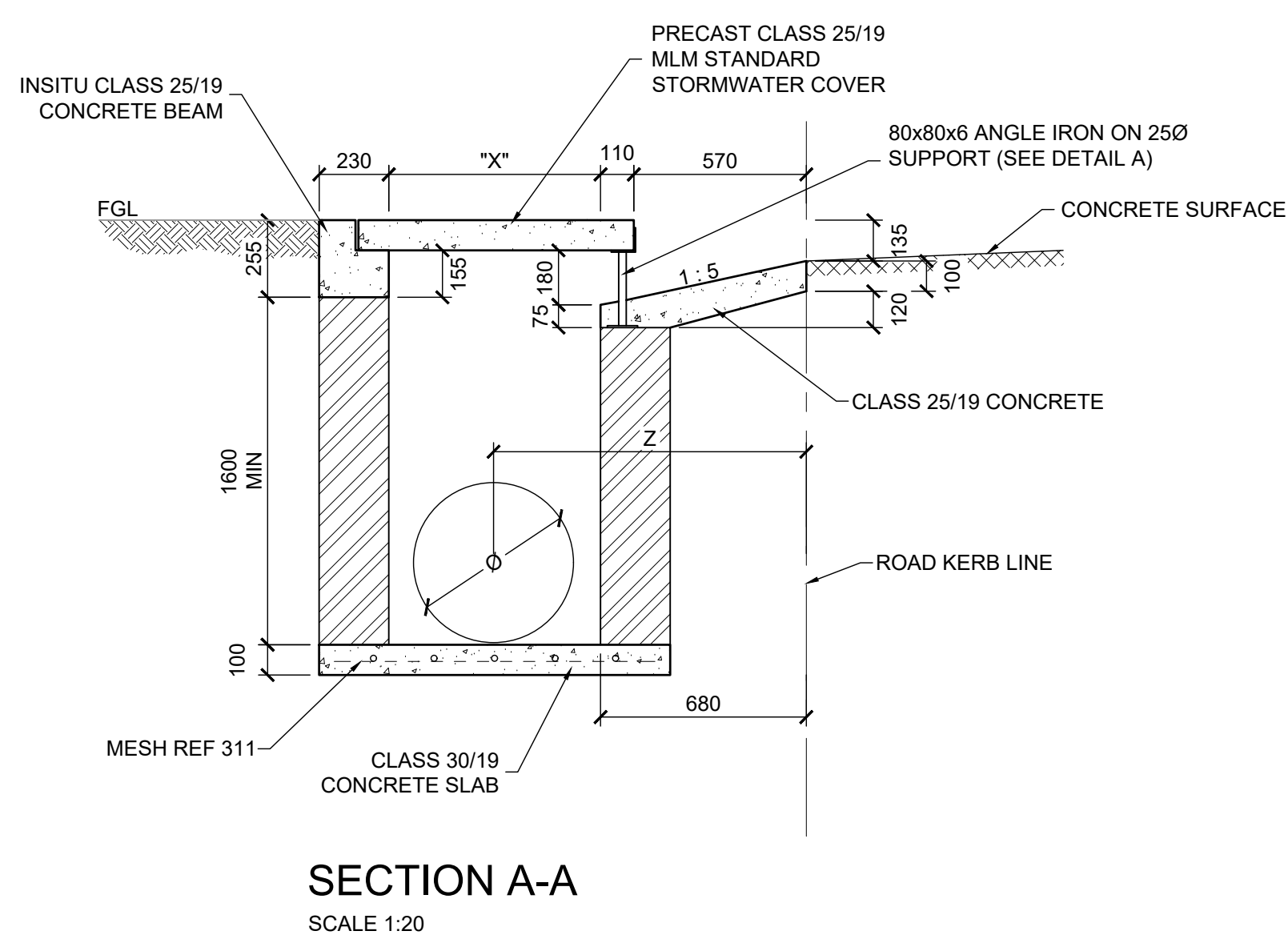


Pipe Class	Nominal Diameter (ND)	Inside Diameter (ID)	Outside Diameter	Wall Thickness (T)	Nominal Length (L)	Approximate Mass per metre	Approximate Mass per pipe	Proof Load
	mm	mm	mm	mm	m	Kg/m	Kg/pipe	kN/m
50D	300	292	362	35	1.83/2.44	93	170/226	15
	375	369	445	38	1.83/2.44	125	229/306	18.8
	450	445	533	44	1.83/2.44	174	319/426	22.5
	525	534	616	41	2.44	191	466	26.3
	600	611	699	44	2.44	234	570	30
	675	685	787	51	2.44	304	742	33.8
	750	762	870	54	2.44	357	871	37.5
	825	830	946	58	2.44	417	1019	41.3
	900	903	1029	63	2.44	493	1204	45
	1050	1034	1194	80	2.44	722	1763	52.5
	1200	1181	1359	89	2.44	916	2235	60
	1350	1328	1524	98	2.44	1133	2784	67.5
	1500	1461	1689	114	2.44	1455	3551	75
	1650	1608	1854	123	2.44	1726	4211	82.5
	1800	1755	2019	132	2.44	2019	4926	90
	1950	1898	2184	143	2.44	2366	5772	97.5
	150	153	157	22	1.83	31	57	15
	225	229	279	25	1.83	31	94	22.5
100D	300	292	362	35	1.83/2.44	93	170/226	30
	375	369	445	38	1.83/2.44	125	229/306	37.5
	450	445	533	44	1.83/2.44	174	319/426	45
	525	514	616	51	2.44	234	570	52.5
	600	584	699	57	2.44	299	729	60
	675	647	787	70	2.44	407	993	67.5
	750	718	870	76	2.44	489	1355	75
	825	788	946	79	2.44	555	1193	82.5
	900	853	1029	88	2.44	671	1638	90
	1050	986	1194	104	2.44	919	2242	105
	1200	1127	1359	116	2.44	1169	2852	120
	1350	1262	1524	131	2.44	1479	3609	135
	1500	1383	1689	153	2.44	1905	4848	150
	1650	1524	1854	165	2.44	2259	5512	165
	1800	1665	2094	177	2.44	2643	6448	180
	1950	1800	2184	192	2.44	3100	7564	195

TABLE 1: CONCRETE INTERLOCKING JOINT PIPE DATA



EXPANSION JOINT (EVERY 30m) AT PRECAST KERBS
SCALE 1:2



KERB INLET DIMENSIONS		
Ø	WIDTH OF KERB INLET STRUCTURE "X"	PIPE CENTRE LINE OFF-SET FROM ROAD/KERB LINE "Z"
300mm Ø	700mm	950mm
450mm Ø	700mm	950mm
600mm Ø	950mm	1075mm
900mm Ø	1150mm	1175mm

NOTE: THE DIMENSIONS FOR X, Y AND Z TO BE CONFIRMED PRIOR TO CONSTRUCTION OF MASONRY KERB INLET STRUCTURE AND PRECAST KERB INLET CONCRETE LID

STANDARD CONSTRUCTION NOTES:

1. THE SOFFITS OF PIPES ARE TO BE LAID EITHER LEVEL OR LOWER IN THE DOWNSTREAM DIRECTION.
2. REFER TO TABLE 2 FOR STRUCTURAL DETAILS ACCORDING TO DEPTH OF STRUCTURE
3. ALL CONCRETE FLOOR AND COVER SLABS TO BE CLASS 25/19 MPa CONCRETE
4. ALL CONCRETE BENCHING TO BE CLASS 20/13
5. ALL BRICKWORK TO BE PLASTERED ON THE INSIDE.
6. REFER TO SECTION 502 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS.
7. ALL STORM WATER PIPES TO BE A MINIMUM NOMINAL DIAMETER OF 300mm.
8. ALL EXPOSED CONCRETE EDGES TO BE ROUNDED WITH A NOSING TOOL
9. BRICK FORCE TO BE PLACED IN EVERY THIRD COURSE
10. BENCHING TO BE A MINIMUM THICKNESS OF 50mm
11. MINIMUM COVER OF REINFORCING TO BE 40mm
12. ALL PRECAST MANHOLE SECTIONS AND LIDS TO COMPLY WITH THE REQUIREMENTS OF SABS 1294
13. POSITION OF MANHOLES SHALL BE DIRECTLY ABOVE THE PI OF ADJOINING STORM WATER PIPES
14. ALL CONCRETE "MANHOLE COVERS SHALL HAVE THE LETTERS "SW" FORMED OR ENGRAVED ON TOP. EACH LETTER SHALL BE 50mm WIDE AND 75mm HIGH.
15. DRAINAGE, BERMS AND GUARDRAILS MUST BE PROVIDED ON THE OUTSIDE SHOULDER OF THE GRAVEL ROAD

AUTHORISED TRENCH WIDTHS

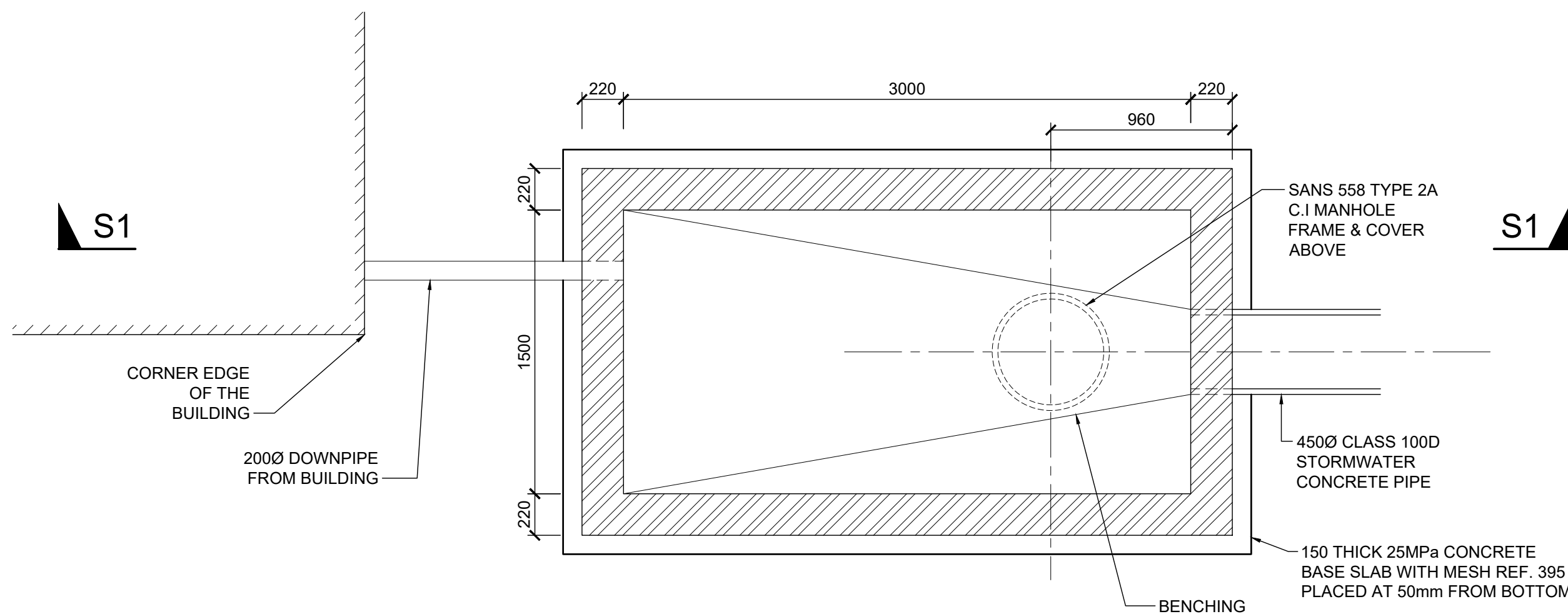
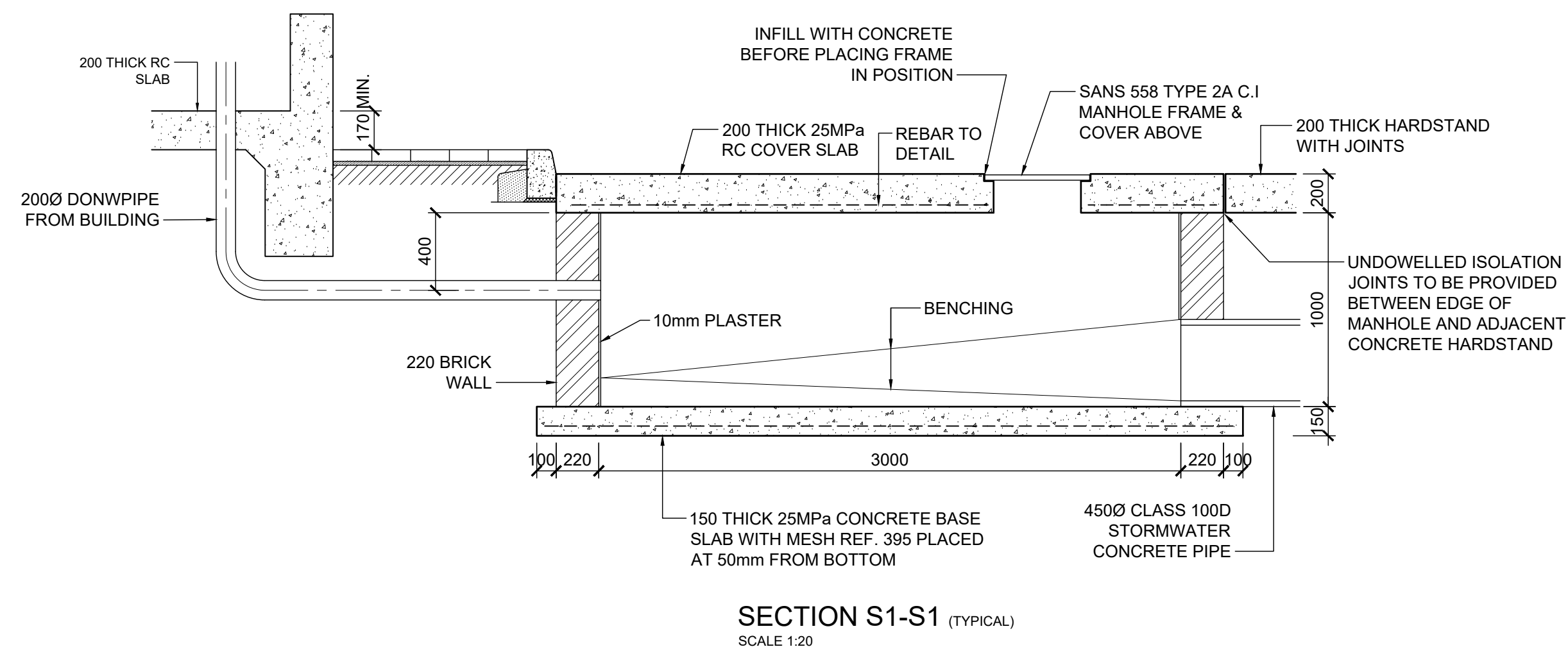
PIPE Dia.	TRENCH WIDTH	PIPE Dia.	TRENCH WIDTH
300	700	1050	1950
450	850	1200	2100
525	925	1350	2250
600	1000	1500	2400
675	1575	1650	2550
750	1650	1800	2700
825	1725		
900	1800		

GENERAL DESIGN NOTES:

1. RATIONAL METHOD USED TO CALCULATE ALL RUNOFF FIGURES FOR CATCHMENT AREAS <15km.
2. USE A MINIMUM CONCENTRATION TIME OF 15 MINUTES.
3. MANNINGS EQUATION USED TO CALCULATE FLOW CAPACITIES. ACTUAL FLOW AND VELOCITIES IN CANALS AND STORMWATER PIPES.
4. CAPACITY OF PIPES CALCULATED ON THE ASSUMPTION THAT OPTIMUM PIPE FLOW IS AT 80%.
5. BERMS AND FIELD INLETS SHOULD BE USED TO CONVEY CONCENTRATED SURFACE - RUNOFF FROM HIGHER LAYING AREAS.
6. PIPE CLASSES ARE ACCORDING TO DESIGN TABLES IN GENERAL PIPES CROSSING THE ROAD SHOULD BE 100D, ALL OTHER PIPES SHOULD BE 50D.
7. THE MINIMUM COVER IN THE ROAD RESERVE AND SERVITUDES MUST BE 1m. OTHERWISE SPECIAL MEASURES SHOULD BE APPLIED.
8. SPIGOT AND SOCKET PIPES SHOULD BE USED IN DOLOMITE AND OTHER PROBLEM AREAS.
9. JUNCTION BOXES MUST BE BUILT UP TO 300mm BELOW THE FINAL GROUND LEVEL.
10. THE DIRECTIONAL CHANGE OF PIPES AT JUNCTION BOXES MUST BE LESS THAN 60°.
11. CATCHPIPS AND MANHOLES MUST NOT OBSTRUCT ERF ACCESSSES.
12. SIDE SLOPE OF GRASSED CHANNELS MUST BE AT LEAST 1:3.
13. STORMWATER/CULVERTS/CHANNELS OVER PRIVATE LAND: A STORMWATER SERVITUDE MUST BE REGISTERED A COPY OF THE TITLE DEED MUST BE PROVIDED.

NOTES:

1. GENERAL
- 1.1 THE DESIGN CHARTS ARE BASED ON THE REQUIREMENTS OF SABS 0102-1987: PART I AND PART II.
- 1.2 A UNIT WEIGHT OF FILL MATERIAL OF 20 kN/m³ WAS USED.
- 1.3 THE SOIL TYPE AND PROPERTIES REFER TO TABLE 2 IN SABS 0102-PART I-1987.
- 1.4 THE TRENCH WIDTHS USED ARE IN ACCORDANCE WITH THE REQUIREMENTS IN PARAGRAPH 04.01 OF SECTION 201-GENERAL OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS.



STORMWATER RELAX TANK PLAN
SCALE 1:25

ISSUED FOR TENDER

ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK.
THE COPYRIGHT IN THIS DRAWING, INCLUDING THE DESIGN AND DETAILS SHOWN HEREON, IS RESERVED BY THE ENGINEER.

Consultant Signature

ECSA REG NO: 201470009
NHBC REG NO: 126308441

A 23/01/18 ISSUED FOR TENDER
No Date Details Drwn Chd

Client

east london idz
business streamlined

ZDM
GENERAL CIVIL & STRUCTURAL ENGINEERS
8A BONZA BAY ROAD
BEACON BAY
EAST LONDON
TEL: 086 608 3511
FAX: 086 608 3511
EMAIL: info@zdmeng.co.za

Discipline
STRUCTURES

Consultant Signature
Drawn LM
Designed LM
Checked MM
SIZE A0

Project
D-FENCE FACTORY

Description
STORMWATER MISCELLANEOUS DETAILS

Scale
AS INDICATED
Date
AUG 2018
Drawing No.
E032/100/002A
Revision
A