

ROLLOVER KERB AT DRIVEWAYS/ CROSS ACCESS ROAD - (DETAIL A)  
SCALE 1 : 25

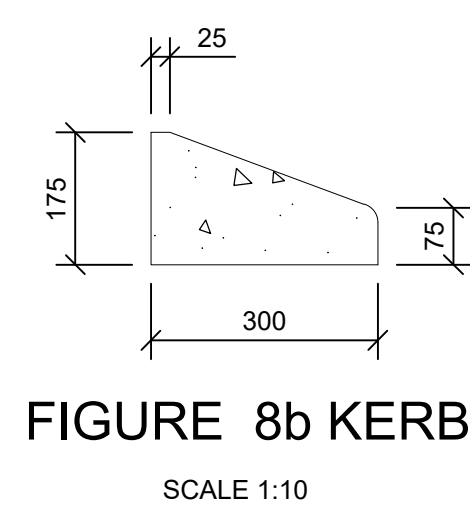
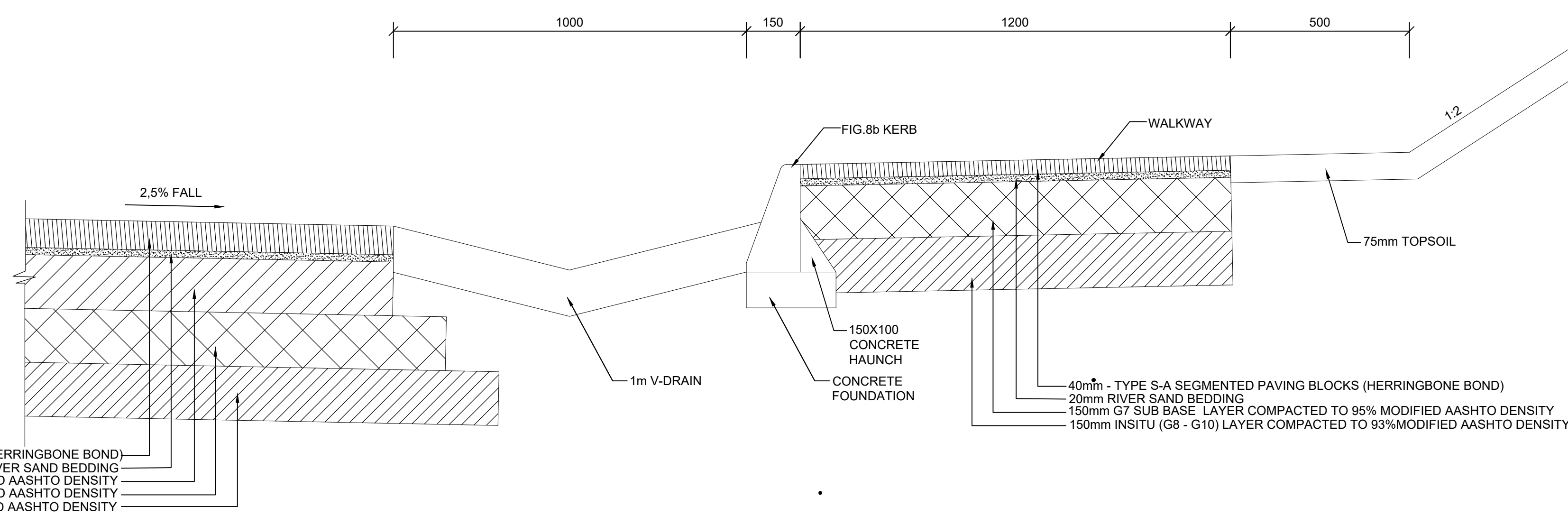


FIGURE 8b KERB  
SCALE 1:10



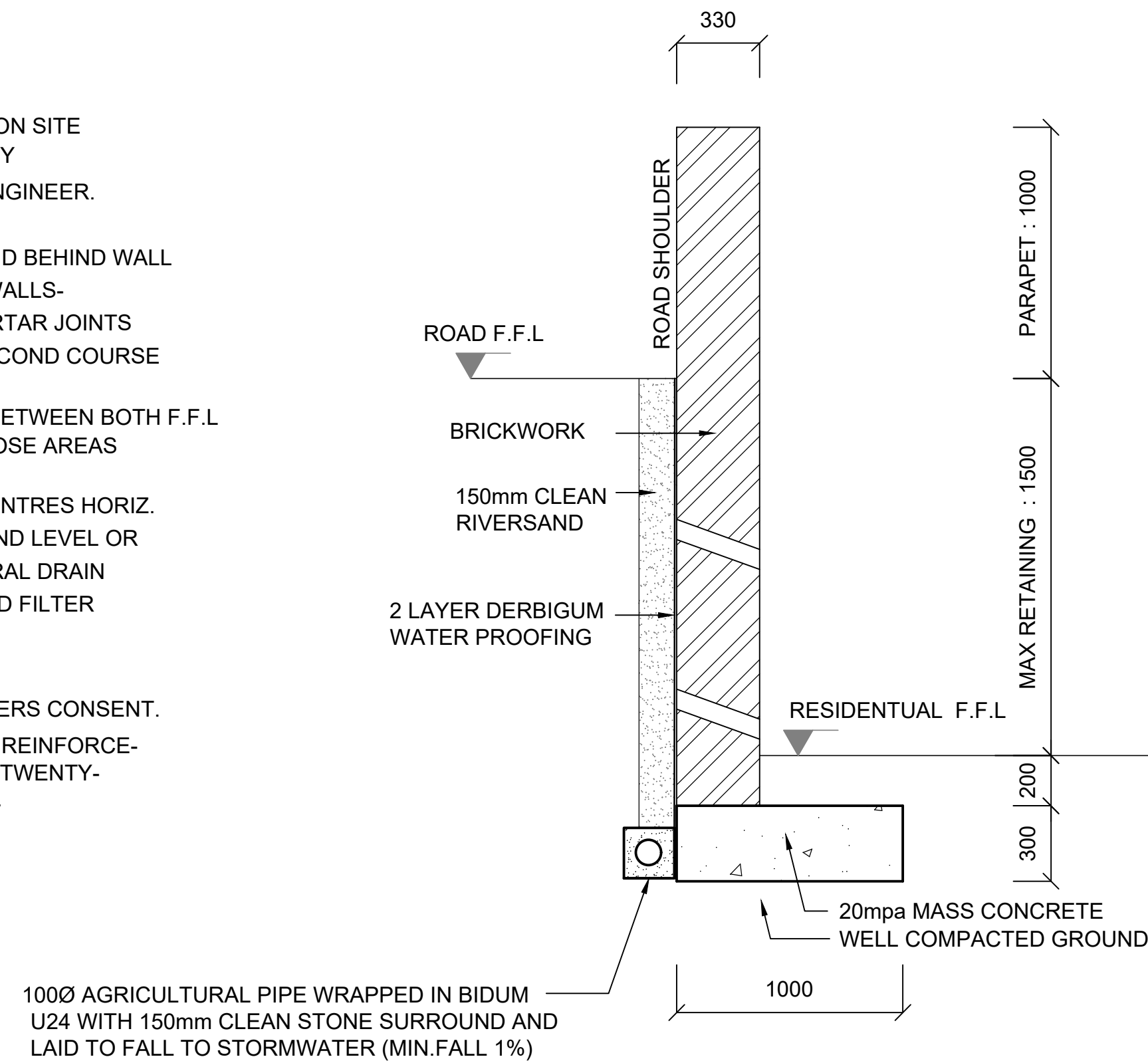
V-DRAIN AND WALKWAY DETAIL  
SCALE 1:10

#### NOTE TO CONTRACTOR:

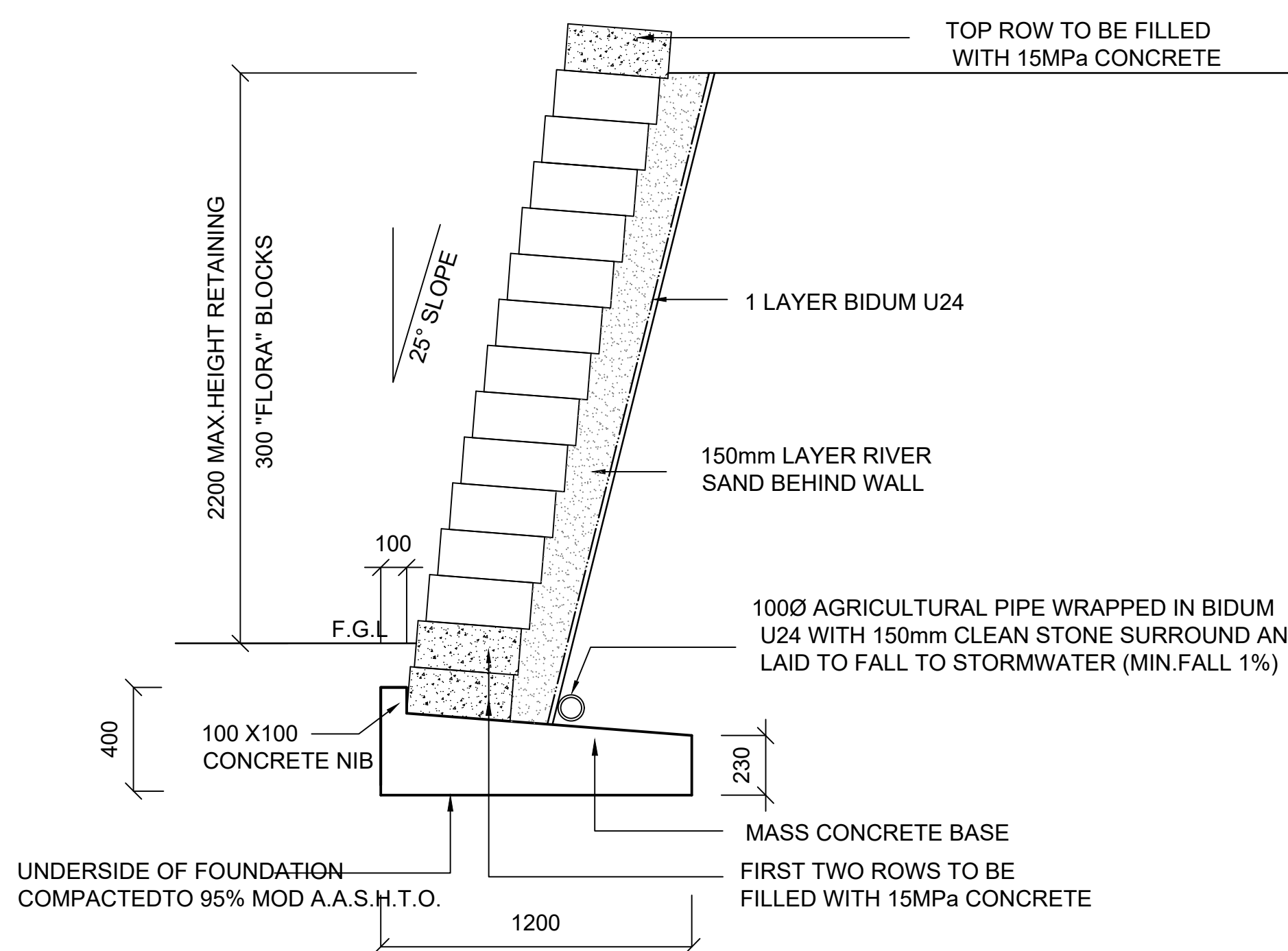
ALL RETAINING WALL HEIGHTS TO CHECKED ON SITE PRIOR TO ANY WORK BEING PUT TO HAND ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER. GENERAL NOTES ON RETAINING WALLS:  
1. PROVIDE A 150mm LAYER CLEAN RIVER SAND BEHIND WALL.  
2. ALL BRICKWORK/BLOCKWORK RETAINING WALLS- WALL TO BE CROSSBONDED WITH SOLID MORTAR JOINTS AND BRICKFORCE EVERY THIRD COURSE (SECOND COURSE IN BLOCKWORK).  
3. SHOULD WALL EXCEED 1.5m HEIGHT DIFF. BETWEEN BOTH F.F.L LEVELS, ENGINEER IS TO BE NOTIFIED AS THOSE AREAS WILL HAVE A DIFFERENT DESIGN.  
4. PROVIDE 75 DIA. WEEPHOLES AT 1200mm CENTRES HORIZ. AND VERTICALLY APPX. 300mm ABOVE GROUND LEVEL OR  
5. PROVIDE V.D.P. C. AND 100 DIA. AGRICULTURAL DRAIN WRAPPED IN BIDUM A4 OR SIMILAR APPROVED FILTER FABRIC.

#### CONCRETE NOTES

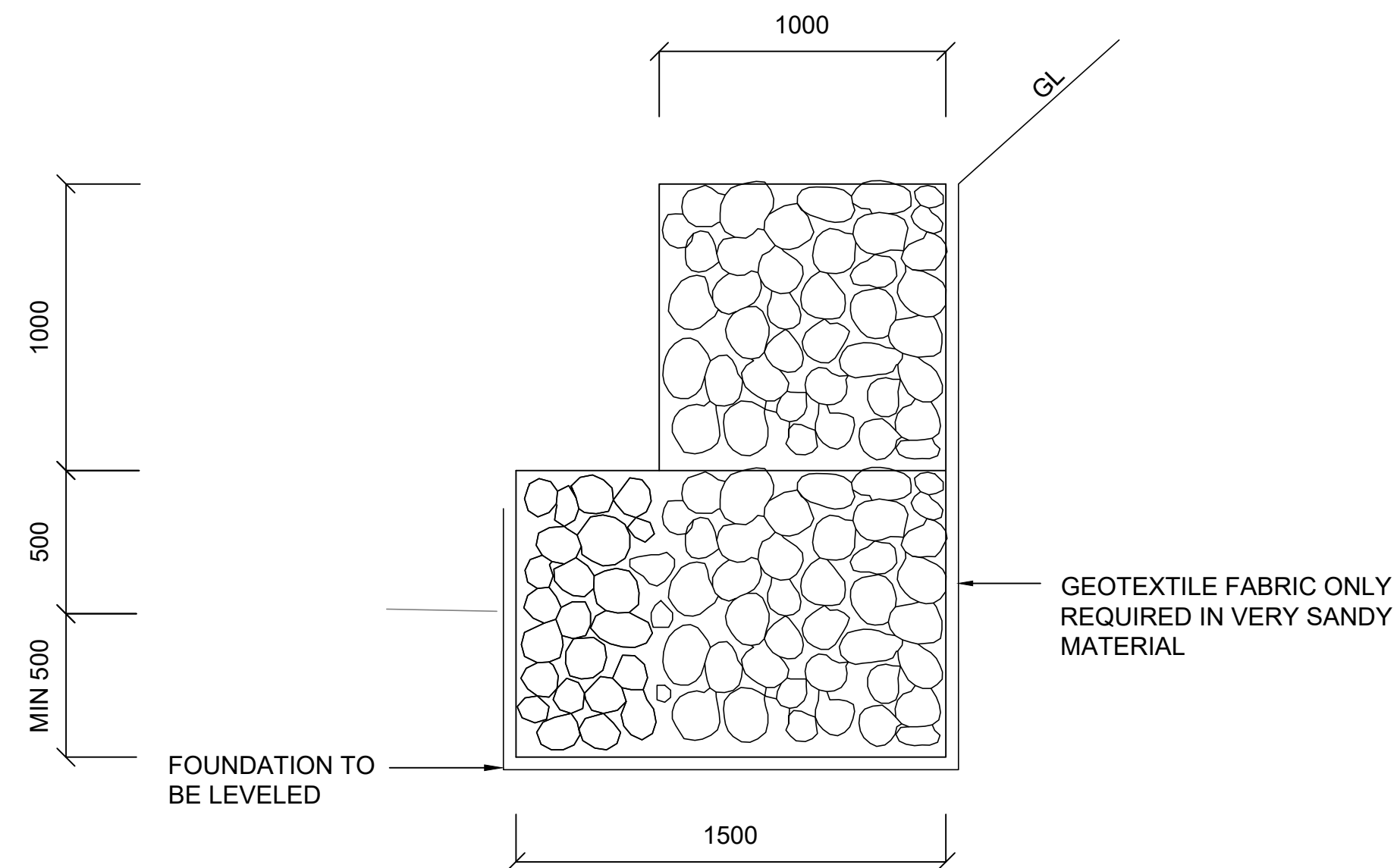
1. NO CONC. TO BE POURED WITHOUT ENGINEERS CONSENT.  
2. NOTICE TO INSPECT FOUNDATIONS AND/OR REINFORCE- MENT TO BE GIVEN TO ENGINEER AT LEAST TWENTY- FOUR HOURS BEFORE POURING CONCRETE.



1.5m VERTICAL RETAINING WALL  
SCALE 1:25



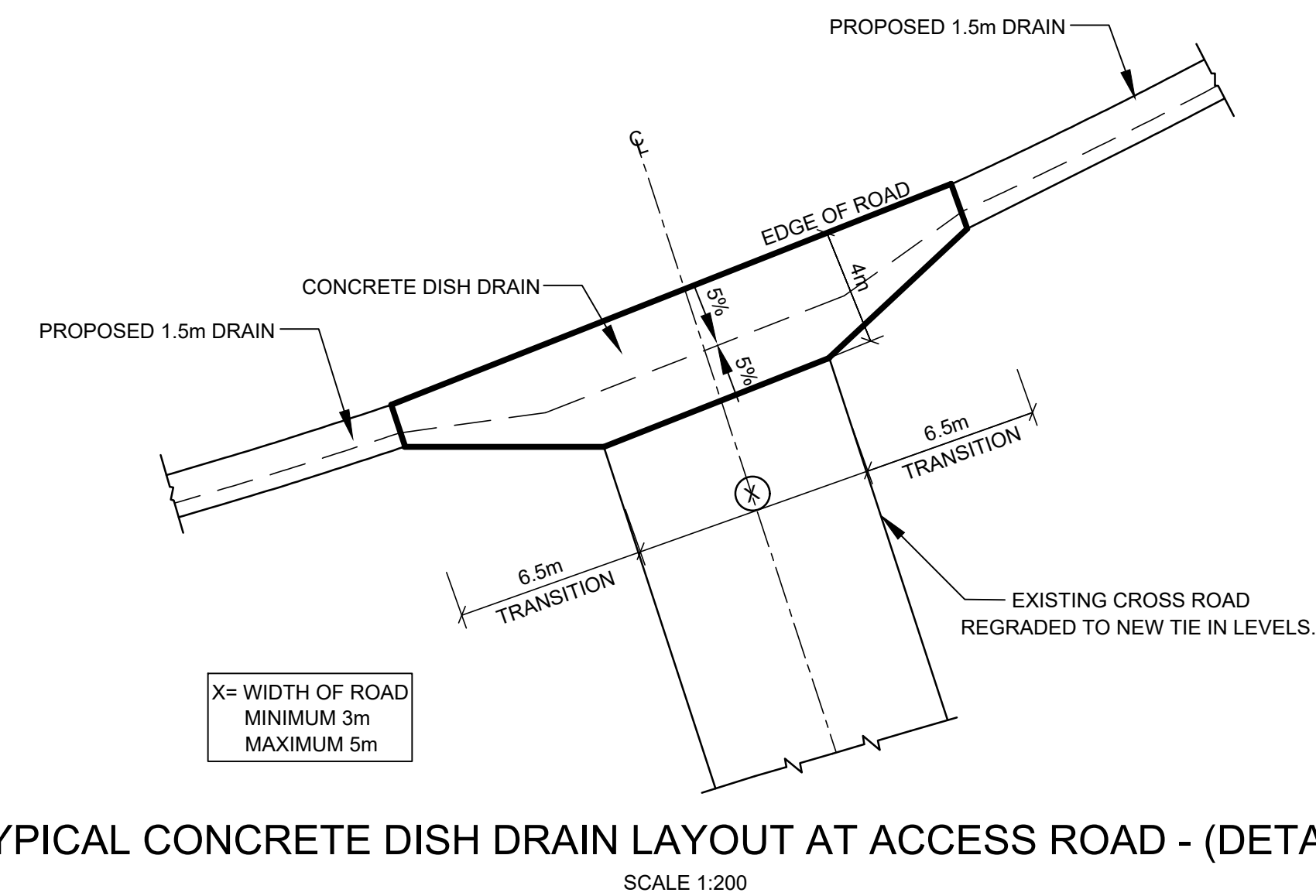
2m GRAVITY BLOCK RETAINING WALL  
SCALE 1:20



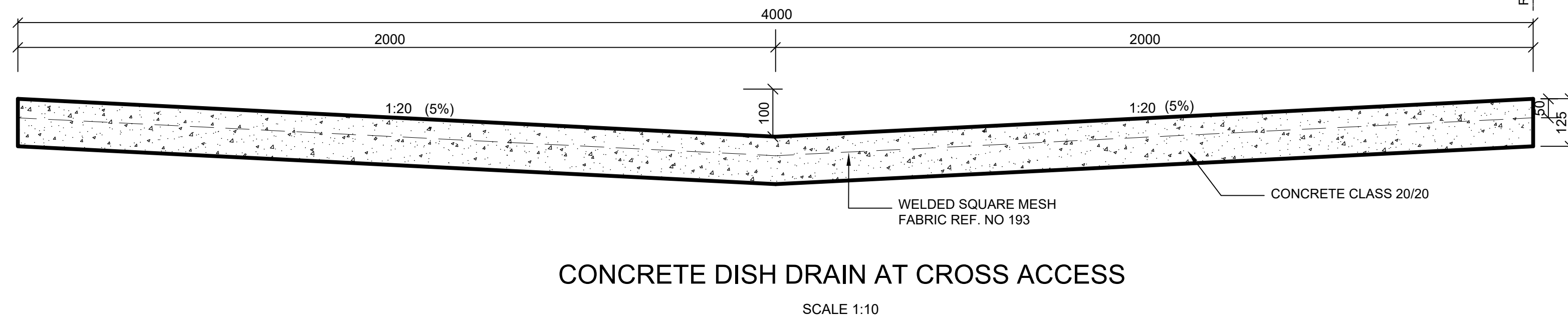
2m GABION RETAINING WALL  
Scale 1 : 50

#### NOTES:

- THE GABION DESIGN SHOWN IS TYPICAL. EACH APPLICATION OF GABION BOXES SHALL BE DESIGNED BY THE PLANNING OR BRIDGE ENGINEER TO SUIT THE SPECIFIC CONDITIONS PREVAILING.
- FOUNDATIONS TO BE STEPPED AND PREPARED AS INSTRUCTED BY THE ENGINEER.
- GEOTEXTILE FABRIC TO BE GRADE C OR SIMILAR AS INSTRUCTED BY THE ENGINEER. ALL WIRE USED IN THE MAKING OF GABIONS SHALL BE GALVANISED IN ACCORDANCE WITH THE PROVISIONS S.A.B.S. 1580:1993 FOR CLASS A HEAVY GALVANISED MILD-STEEL WIRE.
- THE STANDARD SIZES OF GABIONS ARE AS FOLLOWS : LENGTH : 1.0M, 2.0M, 3.0M & 4.0M. WIDTH : 1.0M, 1.5M. DEPTH : 0.5M & 1.0M. DIAPHRAGM SPACING : 1.0M. LACING AND BRACING TO BE DONE IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.

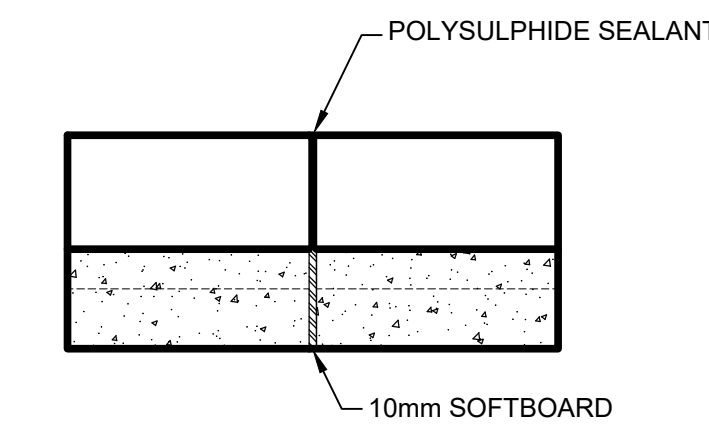


TYPICAL CONCRETE DISH DRAIN LAYOUT AT ACCESS ROAD - (DETAIL B)

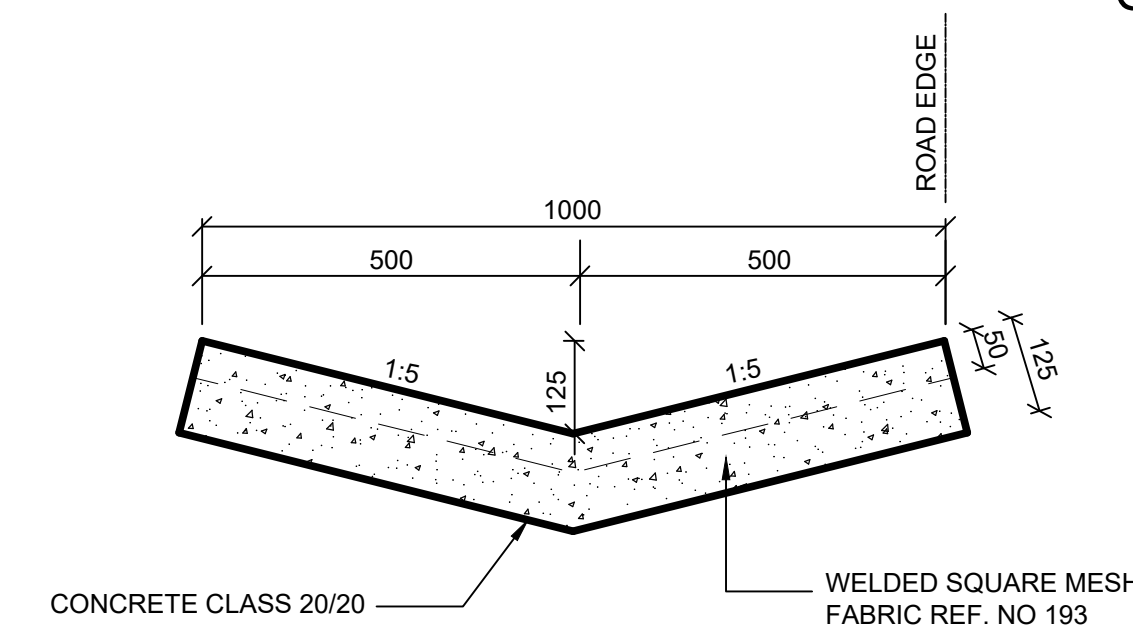


CONCRETE DISH DRAIN AT CROSS ACCESS  
SCALE 1:10

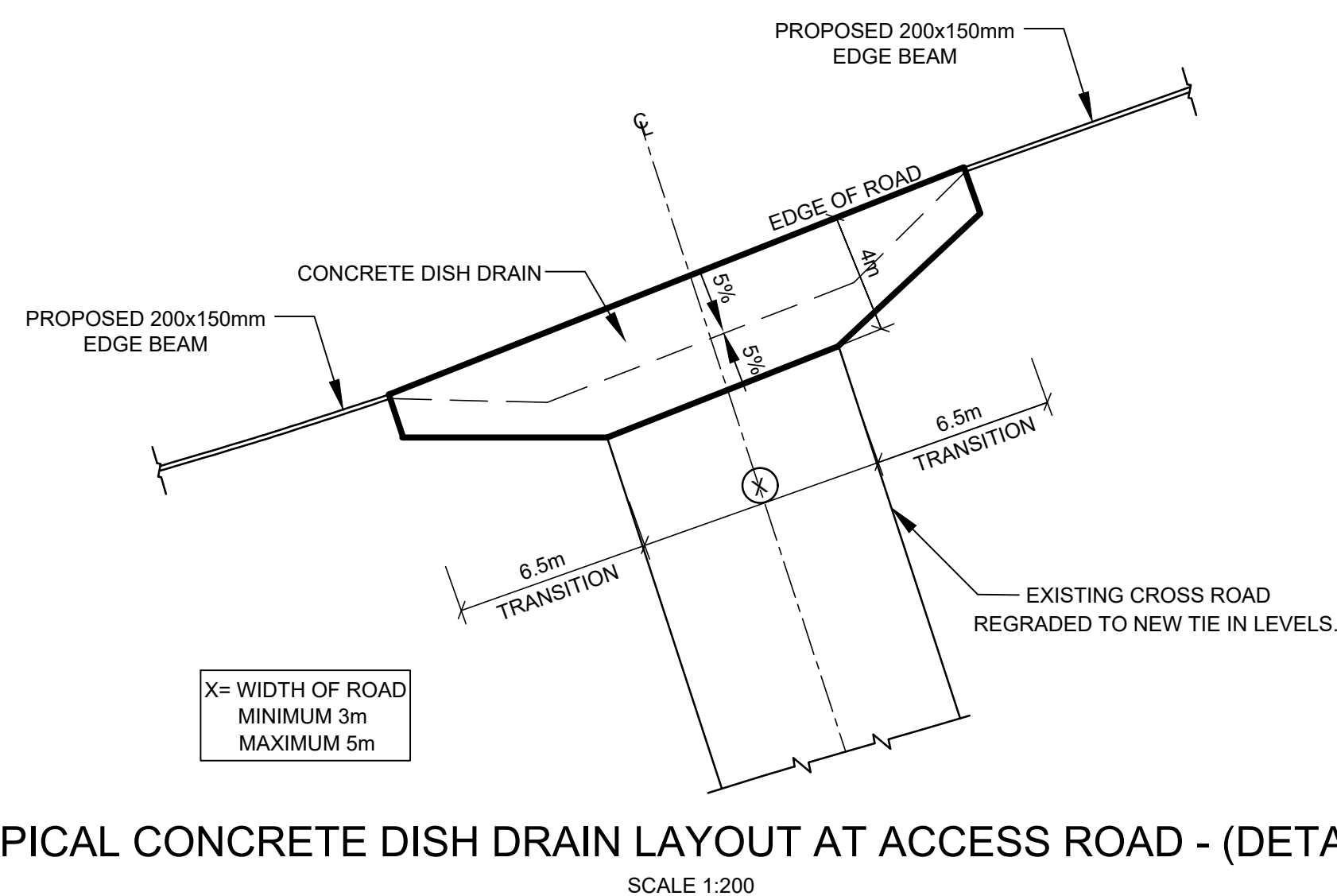
- NOTES :
- CONCRETE CHANNEL CAST IN 2m ALTERNATE PANELS 10mm SOFTBOARD
  - EXPANSION JOINTS TO BE PROVIDED AT EVERY 5th PANEL JOINTS TO BE FILLED WITH POLYSULPHIDE SEALANT
  - SURFACE FINISH TO BE WOOD
  - CONCRETE CLASS 20/20



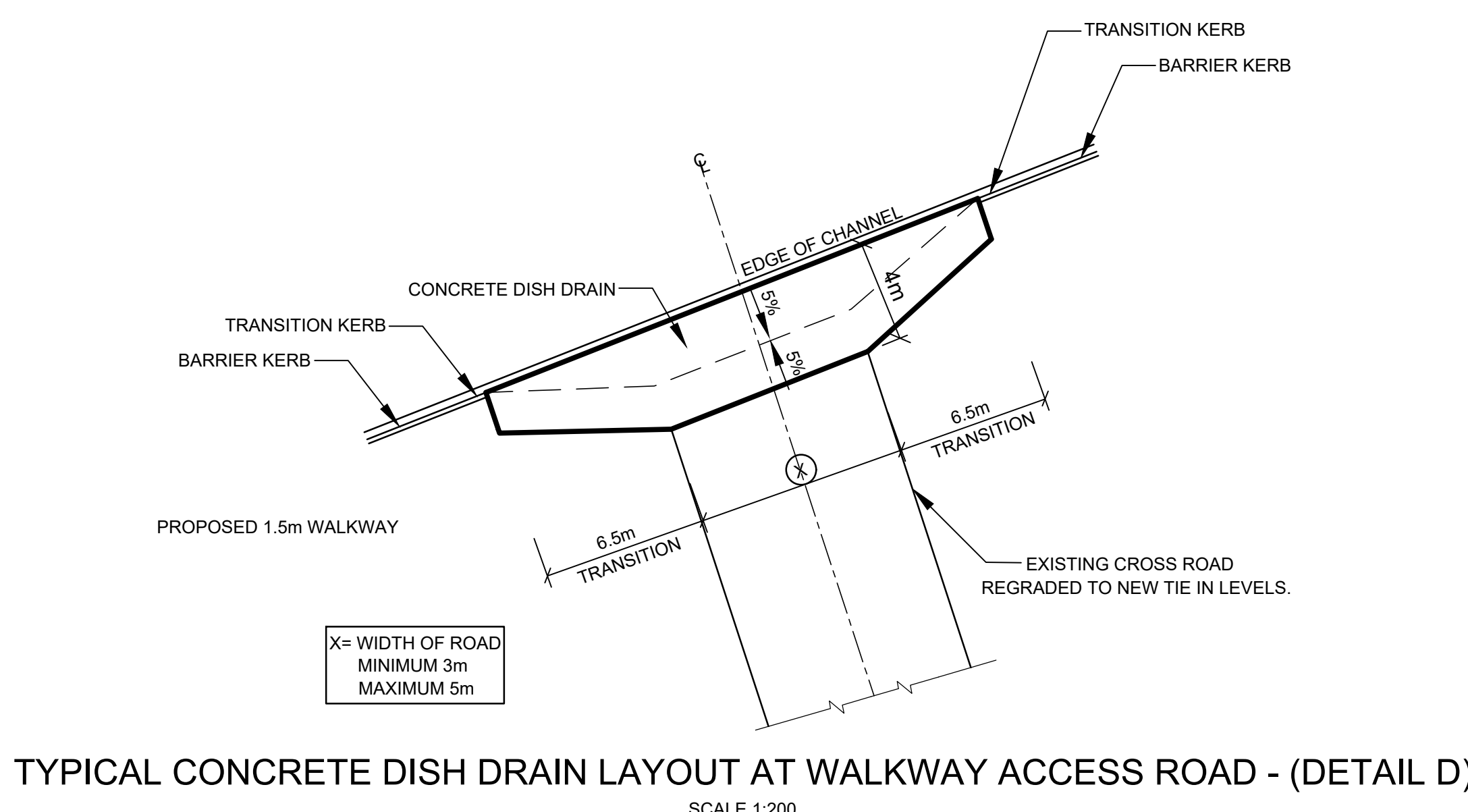
CONCRETE V-DRAIN JOINT DETAIL  
SCALE 1:10



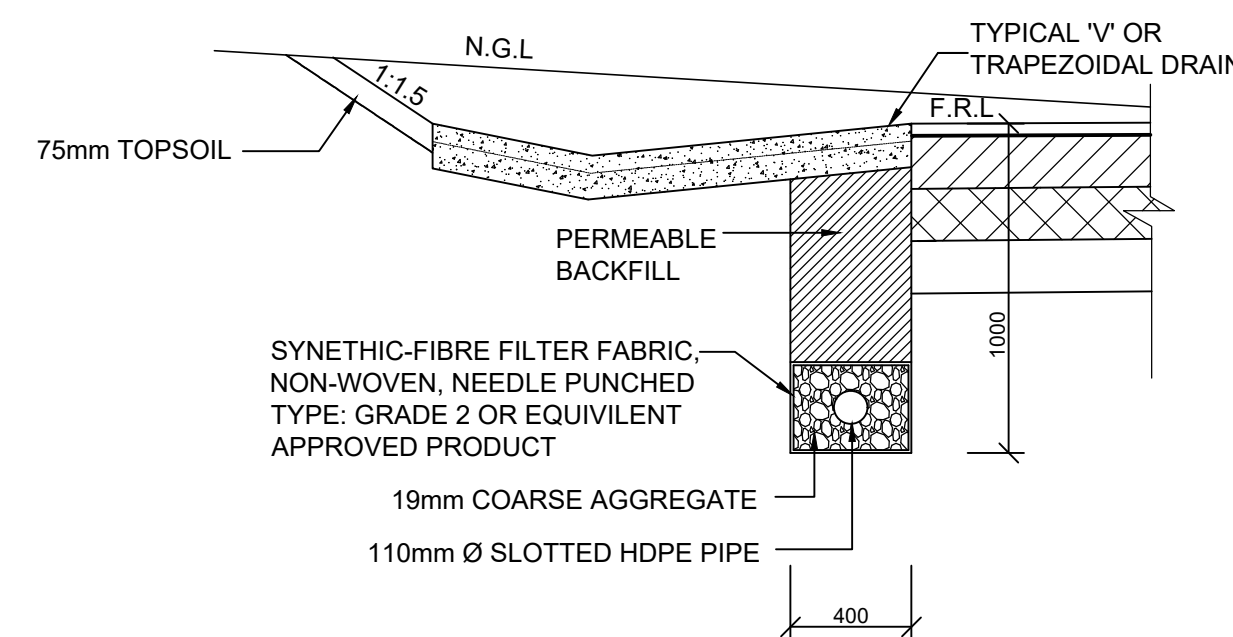
CONCRETE 1.0m V-DRAIN  
SCALE 1:10



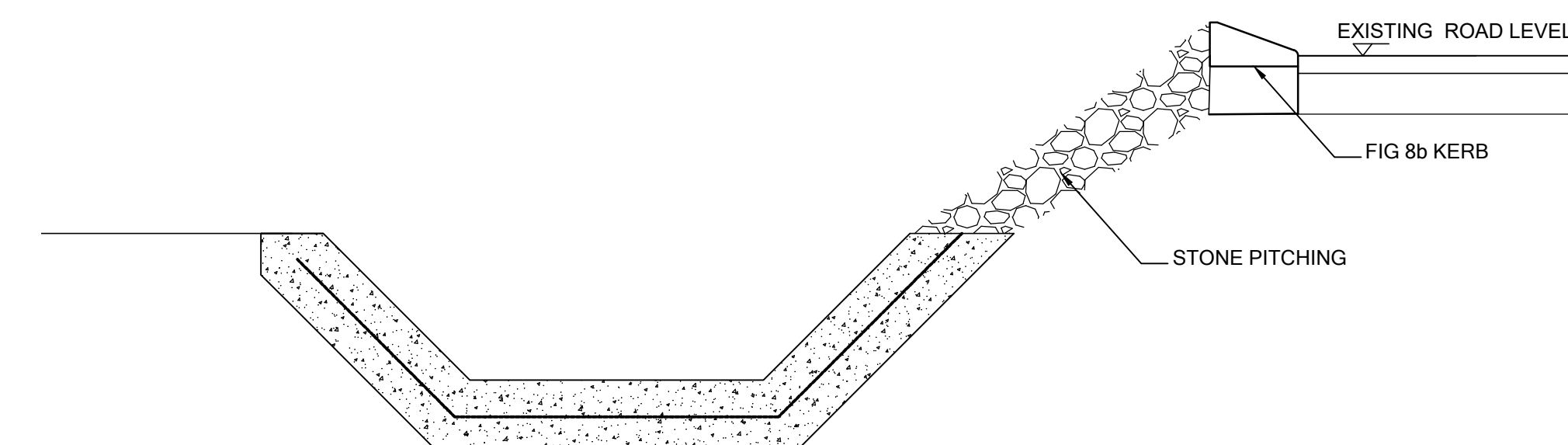
TYPICAL CONCRETE DISH DRAIN LAYOUT AT ACCESS ROAD - (DETAIL C)



TYPICAL CONCRETE DISH DRAIN LAYOUT AT WALKWAY ACCESS ROAD - (DETAIL D)



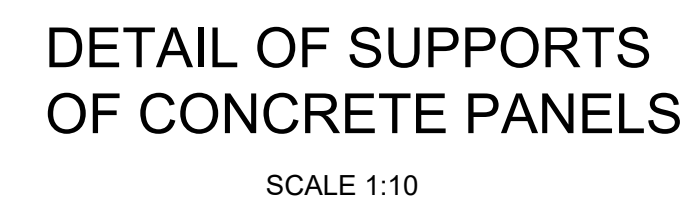
TYPICAL SECTION THROUGH SUBSOIL DRAIN  
SCALE 1:25



SECTION - E  
SCALE 1:10

A	ISSUED FOR TENDER	LC	08/02/2023
REV.	DESCRIPTION.	BY.	DATE.
CLIENT			
 CITY OF MBOMBELA			
PROJECT			
UPGRADE OF MASINGA ROAD			
DRAWING TITLE			
PHASE 2 DETAILS			
nme NATHOO MBENYANE ENGINEERS Office 001 Portion 3 Of 173 R580 Plaston Road The Ranch White River 1240 Tel : 013-750 3122 Fax : 013-750 3155 e-mail : info.mp@nme.co.za			
DESIGNED	REF. DRG.	PROJECT No.	
R.S	C22001-DET-LC-D01	C22001	
CHECKED	SCALE	SHEET	REVISION
K.K.N	AS SHOWN	D01	A
DRAWN	DATE		
LC	06/02/2023		








DIMENSION FOR STRUCTURE WITH DIFFERENT DIA. PIPES (x2 PIPES)				
	≤ 7500	9000	10500	12000
A	920mmx920mm	1270mmx1270mm	1500mmx1500mm	1840mmx1840mm
B	150mm	150mm	175mm	200mm
C	525mm	600mm	750mm	900mm
D	2050mm	2200mm	2350mm	2500mm
E	950mm	1200mm	1500mm	1800mm
F	170mm	340mm	510mm	680mm

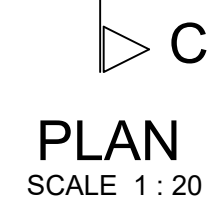
NOTES:

1. SPLITTER BLOCK & PITCHING TO BE PROVIDED AT ALL OUTLETS
2. SPLITTER BLOCK MAY BE OMITTED IF DISCHARGE VELOCITY IS LESS THAN 0.9m/s
3. CUT OFF WALLS MAY BE OMITTED IF STRUCTURE IS FOUNDED ON ROCK
4. FOR MULTIPLE PIPE CULVERTS INCREASE DIMENSIONS 'E' & 'F' BY  $(n-1)(A+450mm)$  WHERE n = NUMBER OF PIPES  
WHERE A = NOMINAL DIAMETER OF PIPES
5. PIPES TO BE CUT FLUSH WITH HEADWALL
6. FOR SKEW PIPE CULVERTS THE HEADWALL SHALL BE PARALLEL TO THE CENTRE OF THE ROAD
7. ALL CONCRETE TO BE 20/10
8. SQUARE MESH FABRIC (REF 193) TO BE PLACED IN ALL APRON SLABS

SETTING OUT DATA						
NOMINAL DIAMETER	DIMENSIONS					
A	B	C	D	E	F	G
300	600	150	710	940	1 460	1 010
450	750	150	940	1 160	2 080	1 160
600	900	150	1 170	1 380	2 775	1 310
750	1 050	150	1 400	1 600	3 395	1 470
900	1 200	230	1 640	1 830	3 910	1 760
1 050	1 350	230	1 870	2 050	4 530	1 920
1 200	1 500	230	2 150	2 310	5 470	2 110

NOTE: THE DIMENSIONS 'F' & 'G' HAVE BEEN CALCULATED USING THE WALL THICKNESS OF A 50D PIPE

REINFORCEMENT SCHEDULE					
ITEM	NUMBER	DIAMETER	CODE	CUT LENGTH	BENDING
A1	varies	Y8	60	varies	
A2	varies	Y12	20	varies	
A3	varies	Y12	32	550	



N.T.S.

### INLET AND OUTLET STRUCTURE DETAILS

A	ISSUED FOR TENDER	L.C	08/02/2023
REV.	DESCRIPTION.	BY.	DATE.

CLIENT	
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CITY OF MBOMBELA

PROJECT	
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UPGRADE OF MASINGA ROAD

DRAWING TITLE

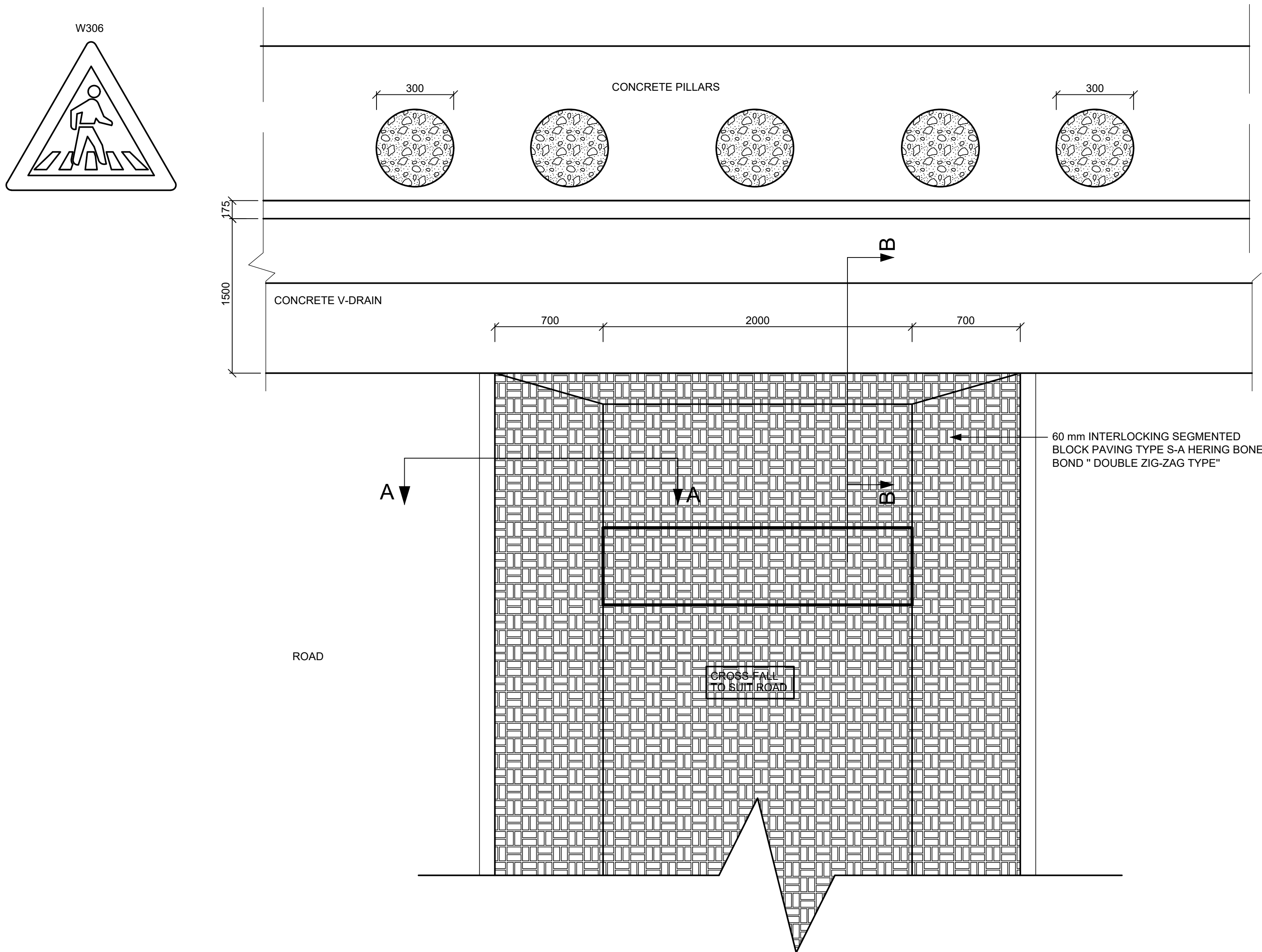
## PHASE 2 STORMWATER DETAILS

**nmo** NATHOO MBENYANE ENGINEERS

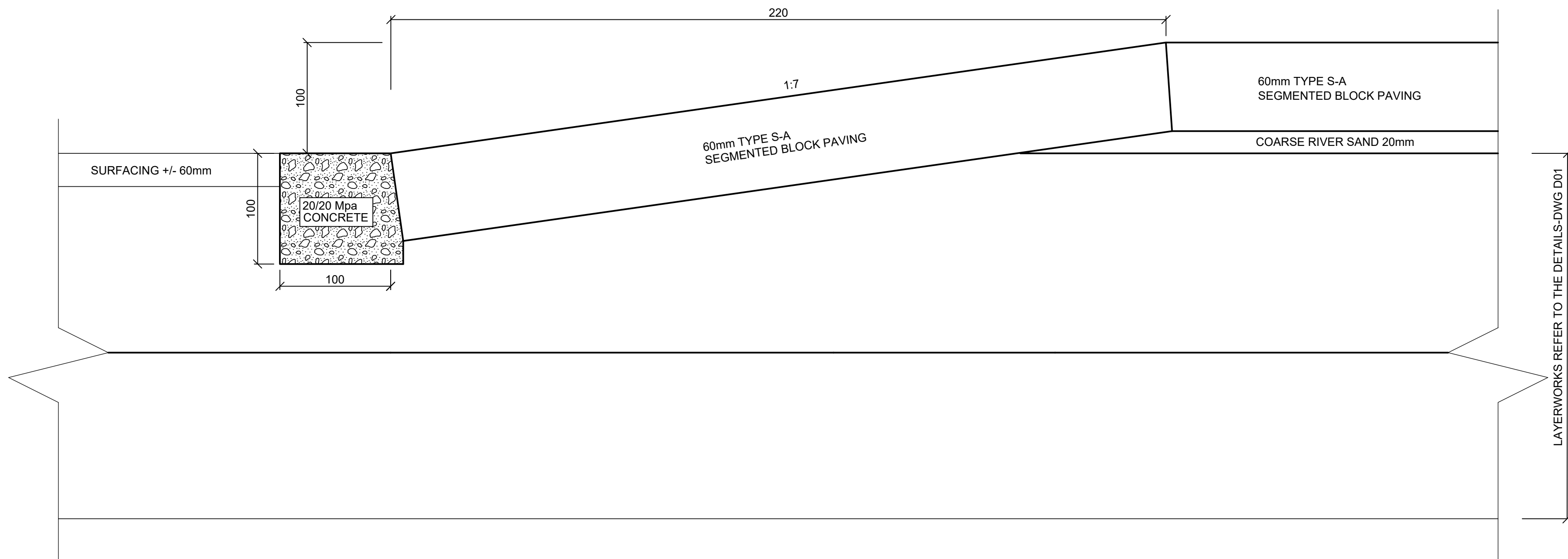
**nme** NATHOO MBENTANE ENGINEERS  
ENGINEERS & PROJECT MANAGERS  
Office 001 Portion 3 Of 173  
R580 Plaston Road The Ranch  
White River  
6010  
Tell : 013-750 3122  
Fax : 013-750 3155  
e-mail : info.mp@nme.co.za

DESIGNED	REF. DRG	PROJECT No.	
R.S	C22001-DET-LC-D02	C22001	
CHECKED	SCALE	SHEET	REVISION
K.K.N	AS SHOWN		
DRAWN	DATE	D02	A
LC	06/02/2023		

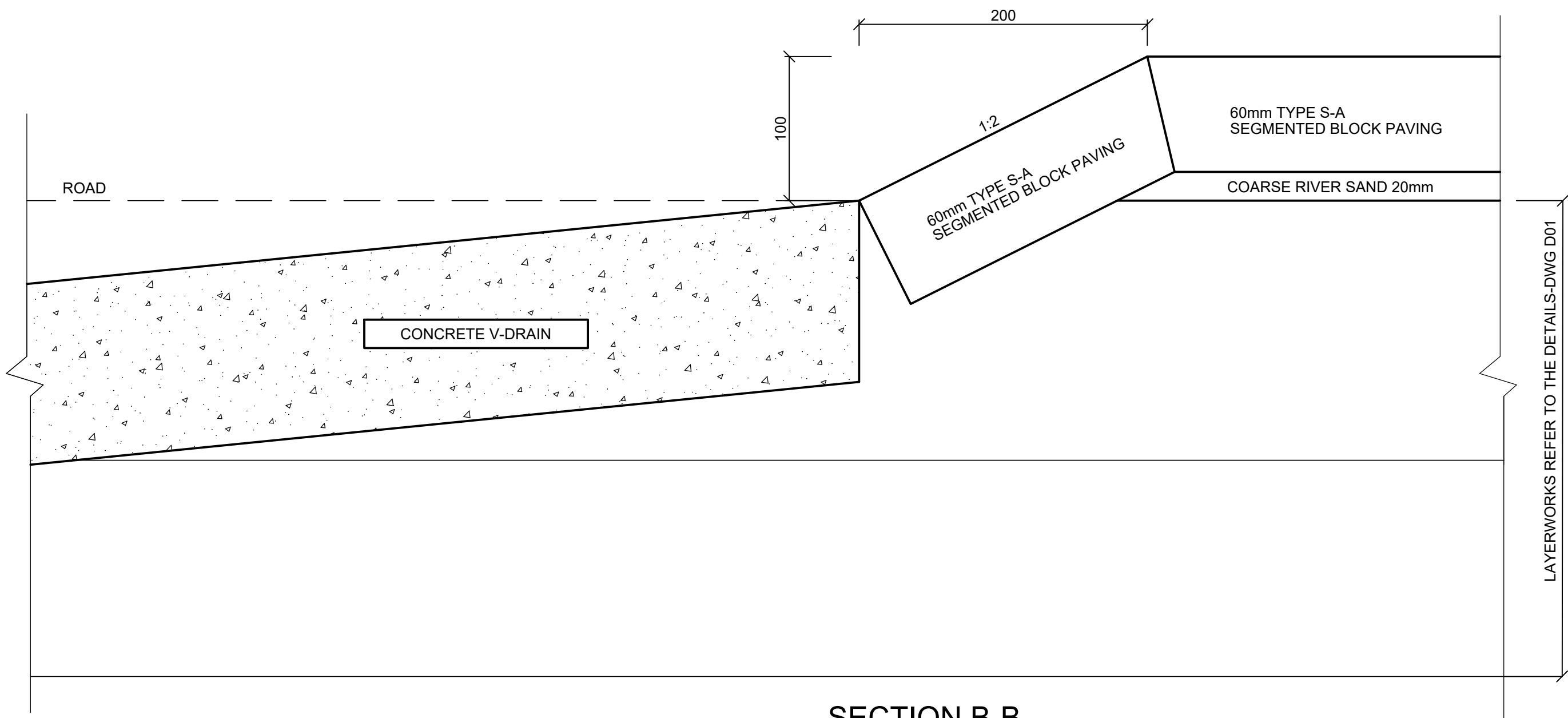




PLAN - FLAT TOP RAISED SPEED HUMP / PEDESTRIAN CROSSING - AT 'V' DRAIN  
SCALE 1:3



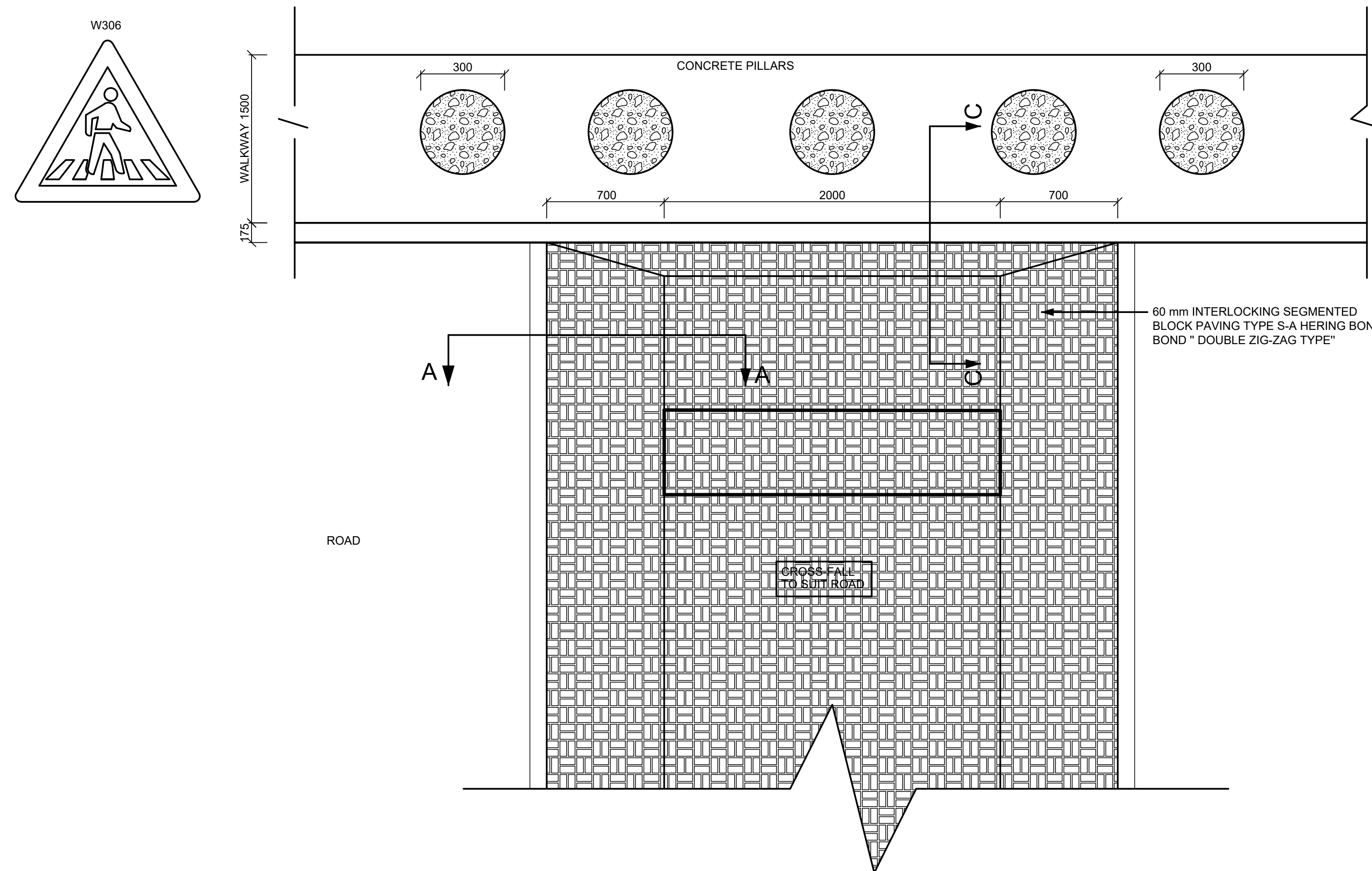
SECTION A-A  
SCALE 1:3



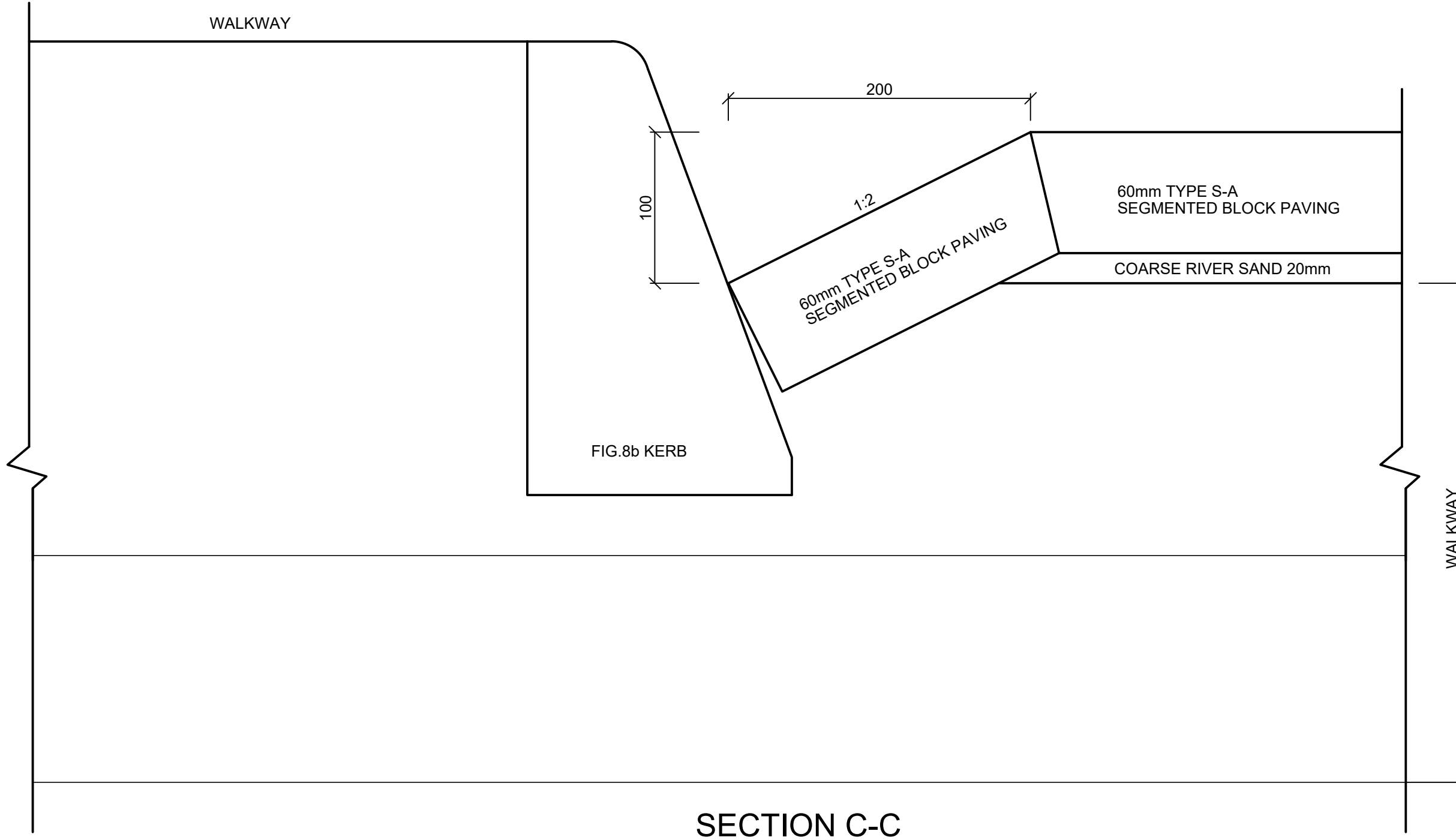
SECTION B-B  
SCALE 1:3

TYPICAL SPEED HUMP / PEDESTRIAN CROSSING FOR A NEW ROAD - AT CONCRETE DRAIN

SCALE: AS SHOWN





PLAN  
FLAT TOP RAISED SPEED HUMP / PEDESTRIAN CROSSING - AT KERB  
SCALE 1:3



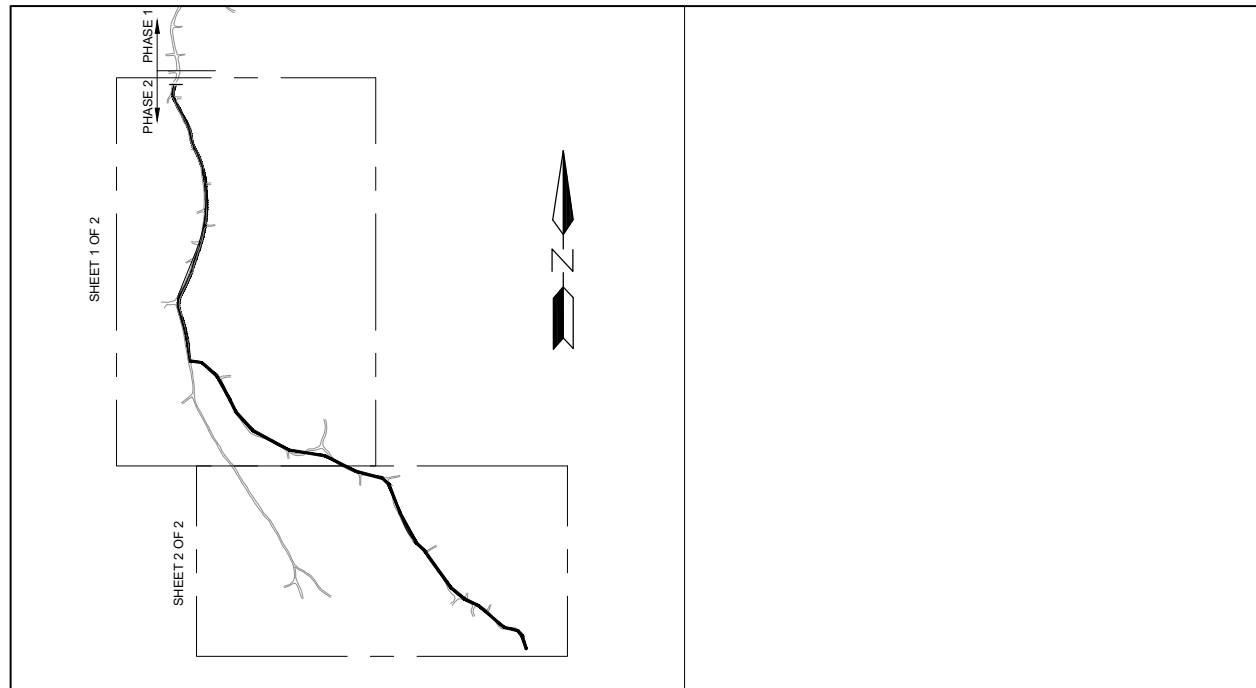
SECTION C-C  
SCALE 1:3

TYPICAL SPEED HUMP / PEDESTRIAN CROSSING FOR A NEW ROAD - AT WALKWAY

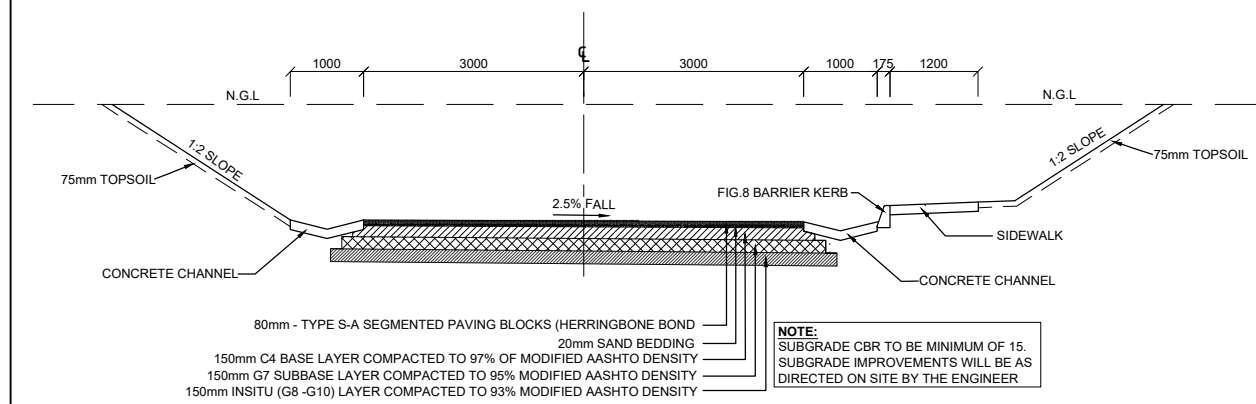
SCALE: AS SHOWN

A	ISSUED FOR TENDER	LC	08/02/2023
REV.	DESCRIPTION.	BY:	DATE.
CLIENT			
 CITY OF MBOMBELA THE ULTIMATE DESTINATION			
PROJECT			
UPGRADE OF MASINGA ROAD			
DRAWING TITLE			
PHASE 2 SSPEED HUMP DETAIL			
 NATHOO MBENYANE ENGINEERS Office 001 Portion 3 Of 173 R580 Plaston Road The Ranch White River 1240 Tel : 013-750 3122 Fax : 013-750 3155 e-mail : info.mp@nme.co.za			
DESIGNED	R.S	REF. DRG.	C22001-DET-LC-D03
CHECKED	K.K.N	SCALE	AS SHOWN
DRAWN	LC	DATE	06/02/2023
PROJECT No.	C22001		
SHEET	D03	REVISION	A

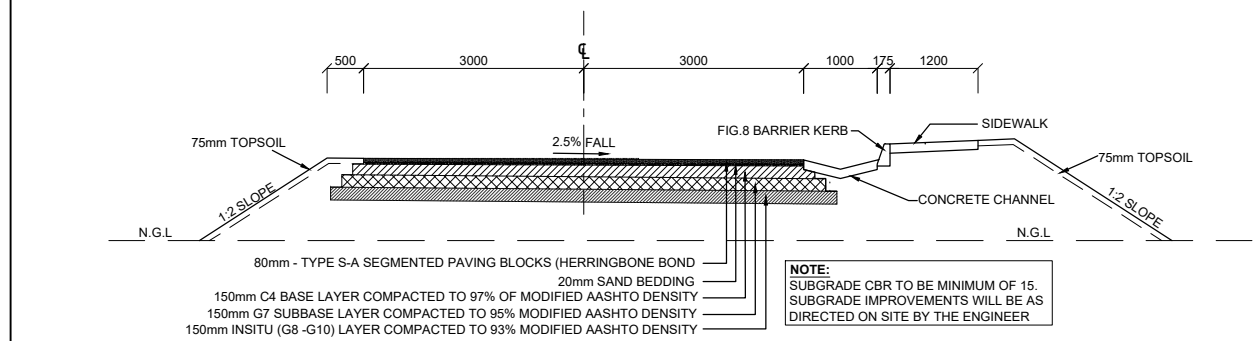




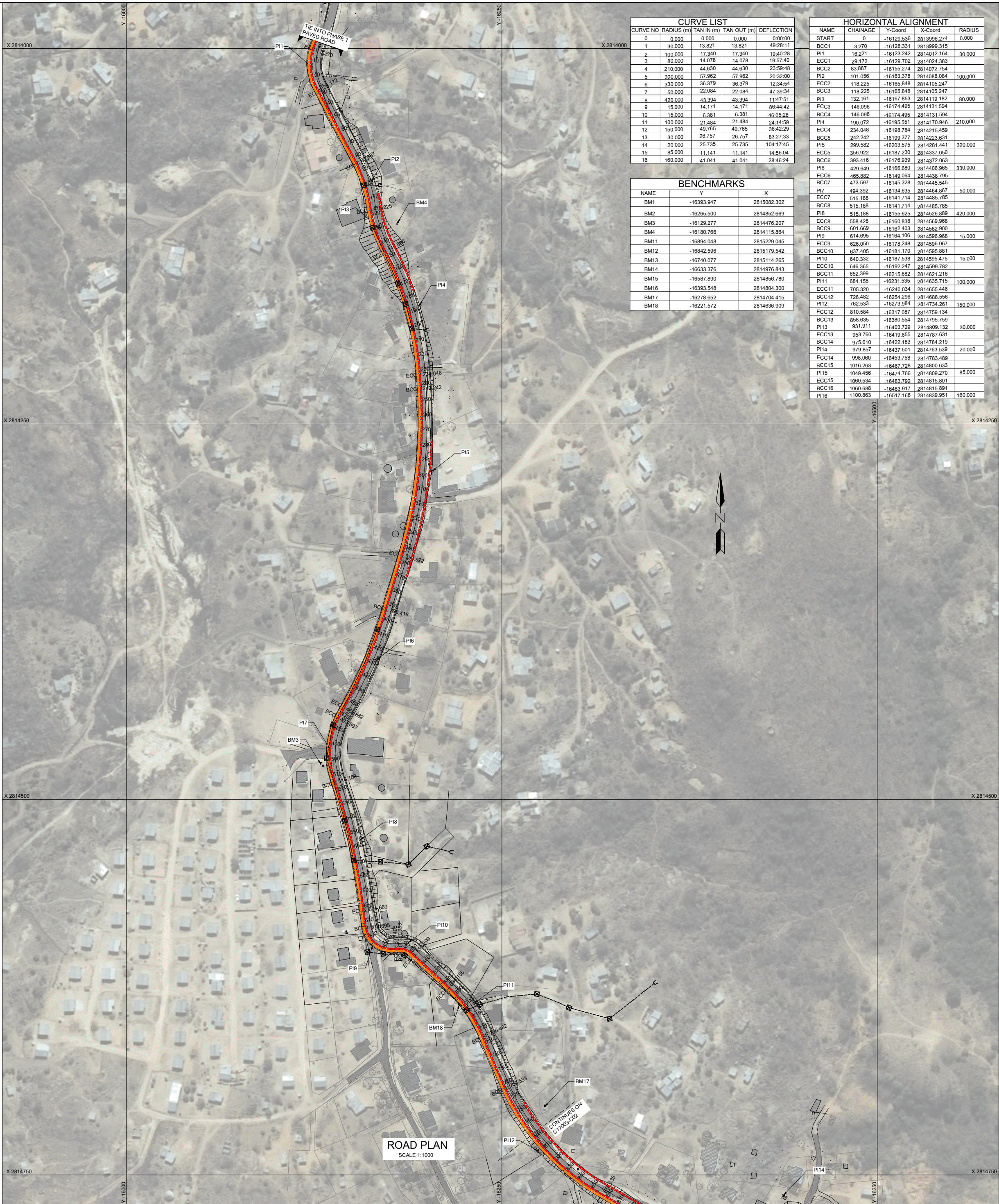
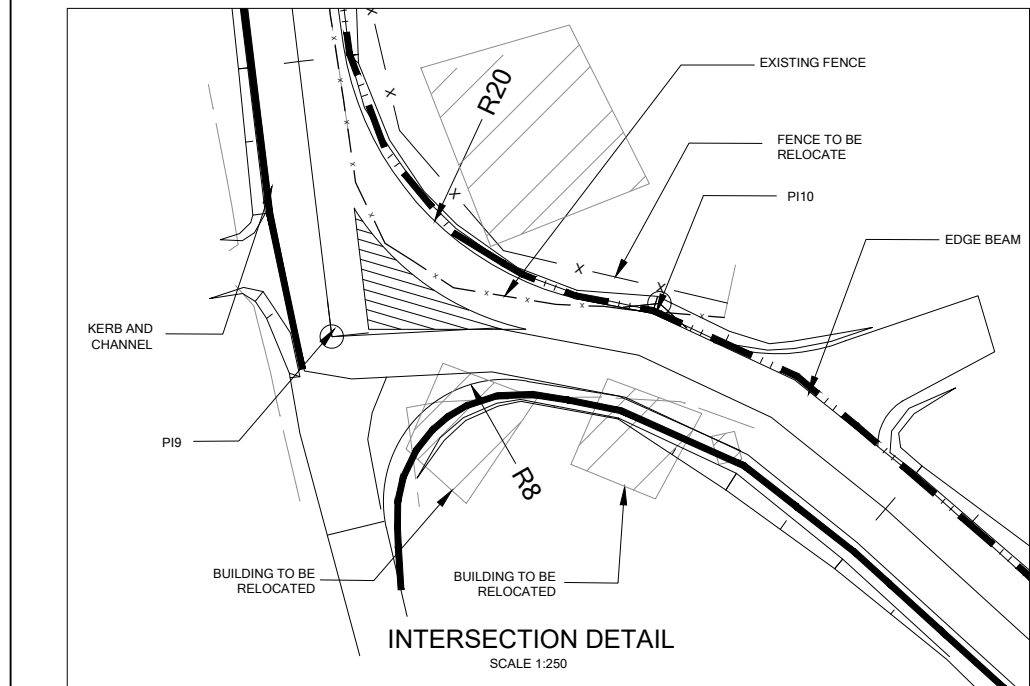
MASINGA ROAD  
KEY PLAN  
SCALE 1:10 000



TYPICAL CROSS-SECTION OF ROAD (CUT CONDITION)  
SCALE 1:50



TYPICAL CROSS-SECTION OF ROAD (FILL CONDITION)  
SCALE 1:50



CURVE LIST				
CURVE NO	RADIUS (m)	TAN IN (m)	TAN OUT (m)	DEFLECTION
0	0.000	0.000	0.000	0.0000
1	30.000	13.821	13.821	49.28.11
2	100.000	17.340	17.340	19.40.28
3	80.000	14.078	14.078	19.57.40
4	210.000	44.830	44.830	23.59.48
5	320.000	57.962	57.962	20.32.00
6	330.000	36.379	36.379	12.34.54
7	50.000	22.084	22.084	47.39.34
8	420.000	43.394	43.394	11.47.51
9	15.000	14.171	14.171	85.44.42
10	15.000	6.381	6.381	46.05.28
11	100.000	21.484	21.484	24.14.59
12	150.000	46.765	46.765	36.42.29
13	30.000	26.757	26.757	83.27.33
14	20.000	25.735	25.735	104.17.45
15	85.000	11.141	11.141	14.96.04
16	160.000	41.041	41.041	28.46.24

BENCHMARKS		
NAME	Y	X
BM1	-16393.947	2815082.302
BM2	-16265.500	2814852.669
BM3	-16129.277	2814476.207
BM4	-16180.766	2814115.864
BM11	-16894.048	2815229.045
BM12	-16842.596	2815179.542
BM13	-16740.077	2815114.265
BM14	-16633.376	2814976.843
BM15	-16587.890	2814856.780
BM16	-16393.548	2814804.300
BM17	-16278.652	2814704.415
BM18	-16221.572	2814636.909

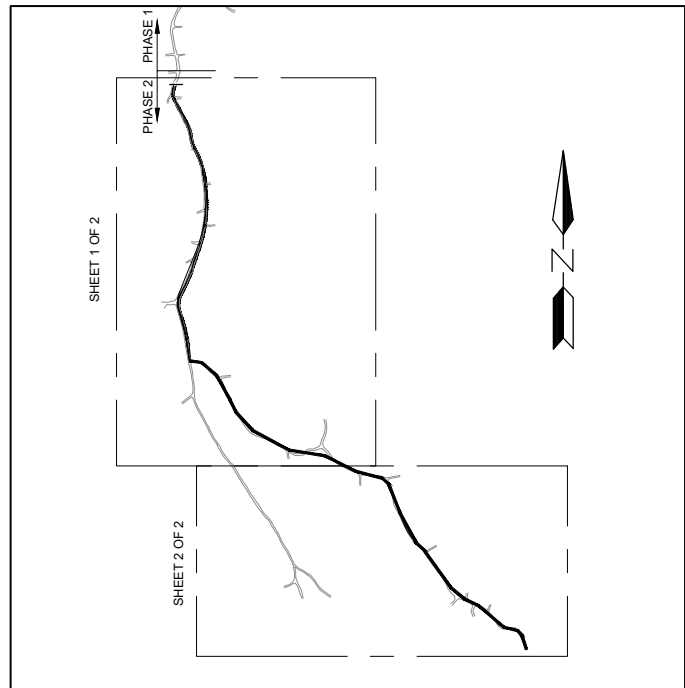
HORIZONTAL ALIGNMENT				
NAME	CHAINAGE	Y-Coord	X-Coord	RADIUS
START	0	-16129.535	2813996.274	0.000
BCC1	3.270	-16128.331	2813999.315	
PI1	16.221	-16123.242	2814012.164	30.000
ECC1	29.172	-16129.702	2814024.383	
BCC2	83.887	-16155.274	2814032.754	
PI2	101.056	-16163.378	2814068.084	100.000
ECC2	118.225	-16165.848	2814105.247	
BCC3	118.225	-16165.848	2814105.247	
PI3	132.161	-16167.853	2814119.162	80.000
ECC3	146.096	-16174.495	2814131.594	
BCC4	146.096	-16174.495	2814131.594	
PI4	190.072	-16195.551	2814170.946	210.000
ECC4	234.048	-16198.784	2814215.459	
BCC5	242.242	-16199.377	2814223.631	
PI5	299.582	-16203.575	2814281.441	320.000
ECC5	356.922	-16187.230	2814337.050	
BCC6	393.416	-16176.939	2814372.063	
PI6	429.649	-16166.659	2814406.955	330.000
ECC6	465.882	-16149.984	2814438.795	
BCC7	473.597	-16145.328	2814445.545	
PI7	494.392	-16134.635	2814464.867	50.000
ECC7	515.188	-16141.714	2814485.785	
BCC8	515.188	-16141.714	2814485.785	
PI8	515.188	-16155.825	2814526.889	420.000
ECC8	558.428	-16160.838	2814569.968	
BCC9	601.669	-16162.403	2814582.900	
PI9	614.695	-16164.106	2814596.968	
ECC9	628.050	-16178.248	2814596.067	15.000
BCC10	637.405	-16181.170	2814595.881	
PI10	640.332	-16187.538	2814595.475	15.000
ECC10	646.365	-16192.247	2814599.782	
BCC11	652.399	-16215.992	2814621.216	
PI11	684.168	-16231.535	2814635.715	100.000
ECC11	705.320	-16240.034	2814655.446	
BCC12	726.482	-16254.296	2814688.556	
PI12	762.533	-16273.984	2814734.261	150.000
ECC12	810.584	-16317.087	2814759.134	
BCC13	858.635	-16380.554	2814795.759	
PI13	931.911	-16403.729	2814809.132	30.000
ECC13	953.760	-16419.855	2814787.631	
BCC14	975.610	-16422.183	2814784.219	
PI14	979.857	-16437.501	2814763.539	20.000
ECC14	998.060	-16453.758	2814783.489	
BCC15	1016.263	-16467.726	2814800.633	
PI15	1049.456	-16474.766	2814809.270	85.000
ECC15	1060.534	-15483.792	2814815.801	
BCC16	1060.688	-16483.917	2814815.891	
PI16	1100.863	-16517.166	2814839.951	160.000

- NOTES
- ALL WORK TO COMPLY WITH SANS 1200 ENGINEERING SPECIFICATIONS, OR AS AMENDED.
  - ALL EXISTING LEVELS BASED ON TOPOGRAPHICAL SURVEY WGS 84 / LO 31.
  - ALL SETTING OUT DETAILS TO BE CONFIRMED BY THE ENGINEER PRIOR TO ANY CONSTRUCTION WORK.
  - ALL EXISTING SERVICES IN THE AREA OF CONSTRUCTION TO BE PROVED PRIOR TO COMMENCEMENT OF ANY EXCAVATION. EXISTING SERVICES TO BE ENCASED IN CONCRETE AT THE ENGINEER'S DISCRETION.
  - WORK TO FIGURED DIMENSIONS. CO-ORDINATES AND LEVELS ONLY. DO NOT SCALE OF DRAWINGS AND ANY DISCREPANCIES IN DIMENSIONS CO-ORDINATES AND LEVELS TO BE REPORTED TO THE ENGINEER.
  - ALL CUT BANKS TO BE 1:2 MIN.
  - ALL FILL BANKS TO BE 1:2 MIN.
  - VERGE SHAPING AS DIRECTED BY ENGINEER.
  - ALL SLOPE EMBANKMENTS TO BE TOPSOILED AND GRASSED.
  - POSITION OF KERBS, DRAINS TO BE CONFIRMED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WORK THEREOF.
  - CARE IS TO BE TAKEN WHEN WORKING IN THE VICINITY OF EXISTING BUILDINGS.
  - JOINTS TO TIE INTO EXISTING ASPHALT SURFACING TO BE SAW CUT, TIE INTO EXISTING SET LEVELS.
  - ALL CURVE RADI TO ACCESSSES TO BE 5m UNLESS OTHERWISE SHOWN.
  - ALL STORMWATER PIPES TO BE CLASS 1000 UNLESS OTHERWISE SHOWN.
  - ALL BELLMOUTH ACCESSSES TO HAVE ROLL OVER KERBS, IE - MOUNTABLE KERBS.
  - ALL TIE-INS TO EXISTING DRIVEWAYS ARE TO BE AGREED ON SITE.
  - ALL GRAVEL TIE-INS TO EXISTING ROAD TO BE AT A MINIMUM 1:15 TAPER.
  - ALL EXISTING SERVICES TO BE PROVED PRIOR TO BULK EARTHWORKS OPERATIONS.

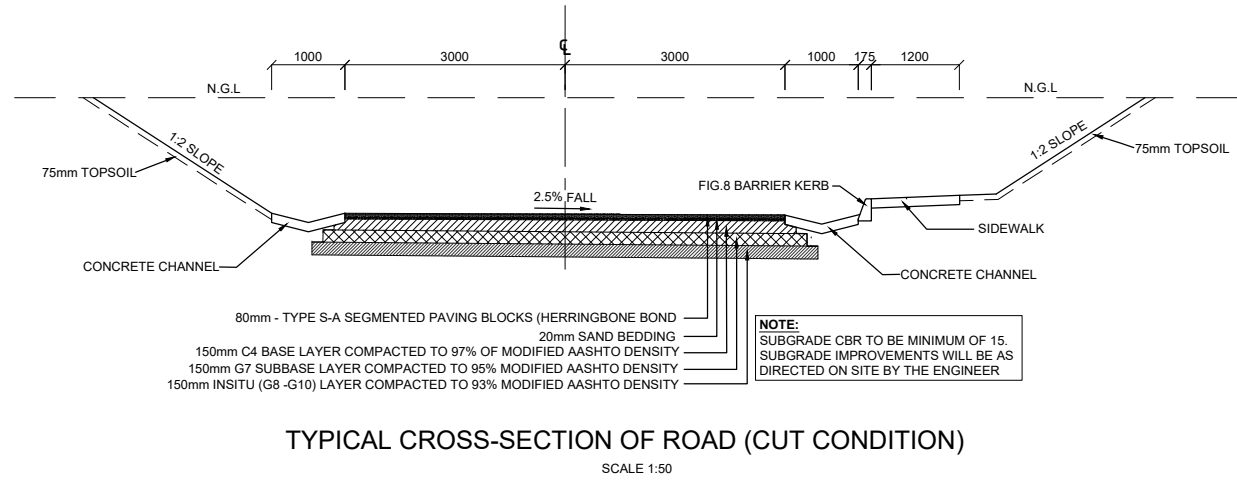
LEGEND	
	LIMIT OF CONSTRUCTION
	ROAD CENTRE LINE
	6000 CONCRETE STORMWATER PIPE CLASS 100 D
	PROPOSED 6000 PC CULVERT
	PROPOSED HEADWALL
	FIGURE 8b KERB AND CHANNEL
	EDGE BEAM
	CONCRETE 1000 V DRAIN
	SIDEWALK
	RETAINING WALL
	MITRE CHUTE
	MANHOLE
	SIDE INLET
	FENCE TO BE RELOCATED
	EX STORMWATER CHANNEL
	EXISTING TREE
	GABION PROTECTION
	SPEED HUMP
	EXISTING FENCELINE
	EXISTING CULVERT
	EXISTING POWER LINE
	EXISTING BUILDING/STRUCTURE
	EXISTING ROAD
	BENCHMARK
	EXISTING TAP
	EXISTING TELEPHONE POLE

0	ISSUED FOR TENDER	L.C	06/02/2023
REV.	DESCRIPTION	BY.	DATE.
CLIENT			
CITY OF MBOMBELA			
PROJECT			
UPGRADE OF MASINGA ROAD			
DRAWING TITLE			
PHASE 2 PLAN LAYOUT CH0 - CH800 (SHEET 1 OF 2)			
NATHOO MBENYANE ENGINEERS ENGINEERS & PROJECT MANAGERS			
Office 001 Portion 3 of 173 R580 Plaston Road The Ranch White River 1240			
Tel : 013-750 3122 Fax : 013-750 3155 e-mail : info.mp@dme.co.za			
DESIGNED	DC/ MN	REF. DRG	PROJECT No.
CHECKED	K.K.N	C22001-PL-LC-001	C22001
DRAWN	L.C	DATE	SHEET
		06/02/2023	0

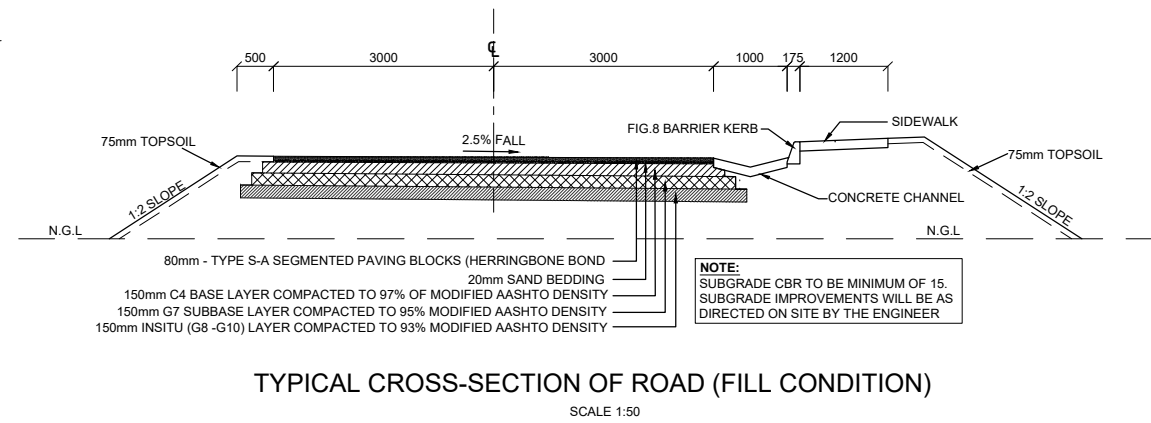




MASINGA ROAD  
KEY PLAN  
SCALE 1:10 000



TYPICAL CROSS-SECTION OF ROAD (CUT CONDITION)  
SCALE 1:50



TYPICAL CROSS-SECTION OF ROAD (FILL CONDITION)  
SCALE 1:50

HORIZONTAL ALIGNMENT				
NAME	CHAINAGE	Y-Coord	X-Coord	RADIUS
BCC15	1038.378	-16467.726	2814800.833	
PI15	1049.456	-16474.766	2814809.270	85.000
ECC15	1060.534	-16483.792	2814815.801	
BCC16	1060.688	-16483.917	2814815.891	
PI16	1100.863	-16517.166	2814839.951	160.000
ECC16	1141.038	-16557.891	2814845.036	
BCC17	1151.850	-16568.820	2814846.375	
PI17	1173.790	-16592.873	2814849.403	40.000
ECC17	1195.730	-16601.245	2814872.366	
BCC18	1274.530	-16628.238	2814946.408	
PI18	1305.322	-16639.000	2814975.928	125.000
ECC18	1336.104	-16662.441	2814996.850	
BCC19	1351.154	-16673.669	2815006.872	
PI19	1351.154	-16673.669	2815006.872	0.000
ECC19	1351.154	-16673.669	2815006.872	
BCC20	1447.739	-16726.127	2815085.949	
PI20	1475.243	-16745.330	2815109.052	100.000
ECC20	1502.746	-16771.220	2815120.277	
BCC21	1518.735	-16785.860	2815129.638	
PI21	1543.564	-16809.150	2815136.723	100.000
ECC21	1568.394	-16824.796	2815156.672	
BCC22	1581.487	-16832.864	2815166.959	
PI22	1596.870	-16843.179	2815180.111	32.000
ECC22	1612.274	-16859.867	2815179.158	
BCC23	1612.274	-16859.867	2815179.158	
PI23	1632.434	-16883.695	2815177.798	30.000
ECC23	1662.595	-16890.377	2815200.710	
BCC24	1680.062	-16898.067	2815227.076	

CURVE LIST				
CURVE NO	RADIUS (m)	TAN IN (m)	TAN OUT (m)	DEFLECTION
15	85.000	11.141	11.141	14.56:04
16	160.000	41.041	41.041	28:46:24
17	40.000	24.442	24.442	62:51:12
18	125.000	31.420	31.420	28:13:10
19	0.000	0.000	0.000	13:12:25
20	100.000	28.219	28.219	31:31:01
21	100.000	25.353	25.353	28:27:09
22	32.000	16.715	16.715	55:09:38
23	30.000	23.867	23.867	77:50:29
24	0.000	0.000	0.000	0:00:00

BENCHMARKS		
NAME	Y	X
BM1	-16393.947	2815082.302
BM2	-16265.500	2814852.669
BM3	-16129.277	2814476.207
BM4	-16180.766	2814115.864
BM11	-16894.048	2815229.045
BM12	-16842.596	2815179.542
BM13	-16740.077	2815114.265
BM14	-16633.376	2814976.843
BM15	-16587.890	2814856.780
BM16	-16393.548	2814804.300
BM17	-16278.652	2814704.415
BM18	-16221.572	2814636.909

- NOTES
1. ALL WORK TO COMPLY WITH SANS 1200 ENGINEERING SPECIFICATIONS, OR AS AMENDED.
  2. ALL EXISTING LEVELS BASED ON TOPOGRAPHICAL SURVEY WGS 84 / LO 31.
  3. ALL SETTING OUT DETAILS TO BE CONFIRMED BY THE ENGINEER PRIOR TO ANY CONSTRUCTION WORK.
  4. ALL EXISTING SERVICES IN THE AREA OF CONSTRUCTION TO BE PROVED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION WORK.
  5. ALL EXISTING SERVICES TO BE ENCASED IN CONCRETE AT THE ENGINEER'S DISCRETION.
  6. WORK TO FIGURED DIMENSIONS, CO-ORDINATES AND LEVELS ONLY. DO NOT SCALE OF DRAWINGS AND ANY DISCREPANCIES IN DIMENSIONS / CO-ORDINATES TO BE REPORTED TO THE ENGINEER.
  7. ALL CUT BANKS TO BE 1:2 MIN.
  8. ALL FILL BANKS TO BE 1:2 MIN.
  9. VERGE SHAPING AS DIRECTED BY ENGINEER.
  10. ALL SLOPE EMBANKMENTS TO BE TOPSOILED AND GRASSED.
  11. POSITION OF KERBS, DRAINS TO BE CONFIRMED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WORK THEREOF.
  12. CARE IS TO BE TAKEN WHEN WORKING IN THE VICINITY OF EXISTING BUILDINGS.
  13. JOINTS TO THE INTO EXISTING ASPHALT SURFACING TO BE SAW CUT, TIE INTO EXISTING SET LEVELS.
  14. ALL CURVE RADI TO ACCESSSES TO BE 5m UNLESS OTHERWISE OTHERWISE SHOWN.
  15. ALL STORMWATER PIPES TO BE CLASS 1000 UNLESS OTHERWISE SHOWN.
  16. ALL BELLMOUTH ACCESSSES TO HAVE ROLL OVER KERBS, IE - MOUNTABLE KERBS.
  17. ALL TIE-INS TO EXISTING DRIVEWAYS ARE TO BE AGREED ON SITE.
  18. ALL GRAVEL TIE-INS TO EXISTING ROAD TO BE AT A MINIMUM 1:15 TAPER.
  19. ALL EXISTING SERVICES TO BE PROVED PRIOR TO BULK EARTHWORKS OPERATIONS.

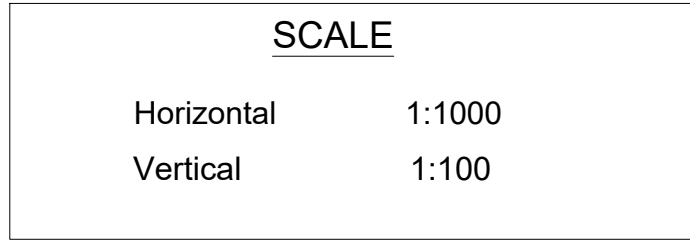
LEGEND	
	LIMIT OF CONSTRUCTION
	ROAD CENTRE LINE
	600mm CONCRETE STORMWATER PIPE CLASS 100 D
	PROPOSED 600mm PC CULVERT
	PROPOSED HEADWALL
	FIGURE 8b KERB AND CHANNEL
	EDGE BEAM
	CONCRETE 1000 V DRAIN
	SIDEWALK
	RETAINING WALL
	MITRE CHUTE
	MANHOLE
	SIDE INLET
	FENCE TO BE RELOCATED
	EX STORMWATER CHANNEL
	EXISTING TREE
	GABION PROTECTION
	SPEED HUMP
	EXISTING FENCELINE
	EXISTING CULVERT
	EXISTING POWER LINE
	EXISTING BUILDING/STRUCTURE
	EXISTING ROAD
	BENCHMARK
	EXISTING TAP
	EXISTING TELEPHONE POLE



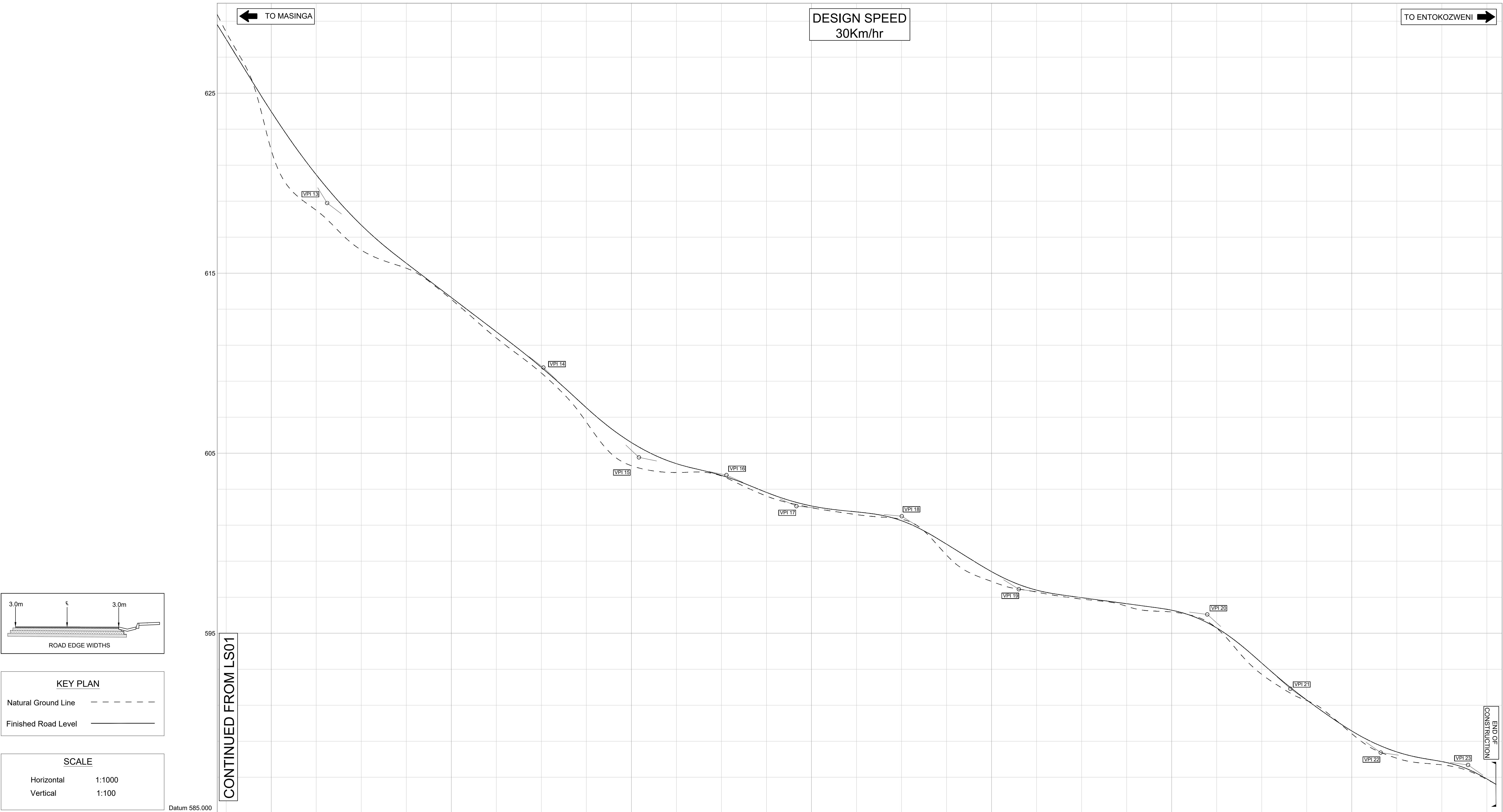
ROAD PLAN  
SCALE 1:1000

0	ISSUED FOR TENDER	L.C	06/02/2023
REV.	DESCRIPTION.	BY.	DATE.
CLIENT			
CITY OF MBOMBELA			
PROJECT			
UPGRADE OF MASINGA ROAD			
DRAWING TITLE			
PHASE 2 PLAN LAYOUT CH0 - CH1680.062 (SHEET 2 OF 2)			
NATHOO MBENYANE ENGINEERS ENGINEERS & PROJECT MANAGERS			
Office 001 Portion 3 of 173 R550 Plaston Road The Ranch White River			
Tel : 013-750 3122 Fax : 013-750 3155 e-mail : info.mp@dme.co.za			
DESIGNED	DC/ MN	REF. DRG	PROJECT No.
CHECKED	K.K.N	SCALE	C22001
DRAWN	L.C	DATE	SHEET
		06/02/2023	REVISION
			C02
			0





DESIGNED M.N / D.C	REF. DRG C22001-PL-LC-LS01	PROJECT No. C22001	
CHECKED K.K.N	SCALE AS SHOWN	SHEET	REVISION
DRAWN L.C	DATE 06/02/2023	LS01	0



Chainage	970	980	990	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200	1210	1220	1230	1240	1250	1260	1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390	1400	1410	1420	1430	1440	1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520	2530	2540	2550	2560	2570	2580	2590	2600	2610	2620	2630	2640	2650	2660	2670	2680	2690	2700	2710	2720	2730	2740	2750	2760	2770	2780	2790	2800	2810	2820	2830	2840	2850	2860	2870	2880	2890	2900	2910	2920	2930	2940	2950	2960	2970	2980	2990	3000	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200	3210	3220	3230	3240	3250	3260	3270	3280	3290	3300	3310	3320	3330	3340	3350	3360	3370	3380	3390	3400	3410	3420	3430	3440	3450	3460	3470	3480	3490	3500	3510	3520	3530	3540	3550	3560	3570	3580	3590	3600	3610	3620	3630	3640	3650	3660	3670	3680	3690	3700	3710	3720	3730	3740	3750	3760	3770	3780	3790	3800	3810	3820	3830	3840	3850	3860	3870	3880	3890	3900	3910	3920	3930	3940	3950	3960	3970	3980	3990	4000	4010	4020	4030	4040	4050	4060	4070	4080	4090	4100	4110	4120	4130	4140	4150	4160	4170	4180	4190	4200	4210	4220	4230	4240	4250	4260	4270	4280	4290	4300	4310	4320	4330	4340	4350	4360	4370	4380	4390	4400	4410	4420	4430	4440	4450	4460	4470	4480	4490	4500	4510	4520	4530	4540	4550	4560	4570	4580	4590	4600	4610	4620	4630	4640	4650	4660	4670	4680	4690	4700	4710	4720	4730	4740	4750	4760	4770	4780	4790	4800	4810	4820	4830	4840	4850	4860	4870	4880	4890	4900	4910	4920	4930	4940	4950	4960	4970	4980	4990	5000	5010	5020	5030	5040	5050	5060	5070	5080	5090	5100	5110	5120	5130	5140	5150	5160	5170	5180	5190	5200	5210	5220	5230	5240	5250	5260	5270	5280	5290	5300	5310	5320	5330	5340	5350	5360	5370	5380	5390	5400	5410	5420	5430	5440	5450	5460	5470	5480	5490	5500	5510	5520	5530	5540	5550	5560	5570	5580	5590	5600	5610	5620	5630	5640	5650	5660	5670	5680	5690	5700	5710	5720	5730	5740	5750	5760	5770	5780	5790	5800	5810	5820	5830	5840	5850	5860	5870	5880	5890	5900	5910	5920	5930	5940	5950	5960	5970	5980	5990	6000	6010	6020	6030	6040	6050	6060	6070	6080	6090	6100	6110	6120	6130	6140	6150	6160	6170	6180	6190	6200	6210	6220	6230	6240	6250	6260	6270	6280	6290	6300	6310	6320	6330	6340	6350	6360	6370	6380	6390	6400	6410	6420	6430	6440	6450	6460	6470	6480	6490	6500	6510	6520	6530	6540	6550	6560	6570	6580	6590	6600	6610	6620	6630	6640	6650	6660	6670	6680	6690	6700	6710	6720	6730	6740	6750	6760	6770	6780	6790	6800	6810	6820	6830	6840	6850	6860	6870	6880	6890	6900	6910	6920	6930	6940	6950	6960	6970	6980	6990	7000	7010	7020	7030	7040	7050	7060	7070	7080	7090	7100	7110	7120	7130	7140	7150	7160	7170	7180	7190	7200	7210	7220	7230	7240	7250	7260	7270	7280	7290	7300	7310	7320	7330	7340	7350	7360	7370	7380	7390	7400	7410	7420	7430	7440	7450	7460	7470	7480	7490	7500	7510	7520	7530	7540	7550	7560	7570	7580	7590	7600	7610	7620	7630	7640	7650	7660	7670	7680	7690	7700	7710	7720	7730	7740	7750	7760	7770	7780	7790	7800	7810	7820	7830	7840	7850	7860	7870	7880	7890	7900	7910	7920	7930	7940	7950	7960	7970	7980	7990	8000	8010	8020	8030	8040	8050	8060	8070	8080	8090	8100	8110	8120	8130	8140	8150	8160	8170	8180	8190	8200	8210	8220	8230	8240	8250	8260	8270	8280	8290	8300	8310	8320	8330	8340	8350	8360	8370	8380	8390	8400	8410	8420	8430	8440	8450	8460	8470	8480	8490	8500	8510	8520	8530	8540	8550	8560	8570	8580	8590	8600	8610	8620	8630	8640	8650	8660	8670	8680	8690	8700	8710	8720	8730	8740	8750	8760	8770	8780	8790	8800	8810	8820	8830	8840	8850	8860	8870	8880	8890	8900	8910	8920	8930	8940	8950	8960	8970	8980	8990	9000	9010	9020	9030	9040	9050	9060	9070	9080	9090	9100	9110	9120	9130	9140	9150	9160	9170	9180	9190	9200	9210	9220	9230	9240	9250	9260	9270	9280	9290	9300	9310	9320	9330	9340	9350	9360	9370	9380	9390	9400	9410	9420	9430	9440	9450	9460	9470	9480	9490	9500	9510	9520	9530	9540	9550	9560	9570	9580	9590	9600	9610	9620	9630	9640	9650	9660	9670	9680	9690	9700	9710	9720	9730	9740	9750	9760	9770	9780	9790	9800	9810	9820	9830	9840	9850	9860	9870	9880	9890	9900	9910	9920	9930	9940	9950	9960	9970	9980	9990	1000
Ground Line	629.37	628.879	627.31	626.35	624.27	622.545	619.58	618.85	618.15	617.03	616.23	615.77	615.45	615.13	614.38	613.55	612.70	611.80	610.99	610.27	609.48	608.55	607.50	606.36	605.15	603.82	602.41	600.96	599.49	597.99	596.47	594.94	593.39	591.83	590.26	588.68	587.09	585.49	583.88	582.26	580.63	578.99	577.34	575.68	574.01	572.33	570.64	568.94	567.23	565.51	563.78	562.04	560.29	558.53	556.76	554.98	553.19	551.39	549.58	547.76	545.93	544.09	542.24	540.38	538.51	536.63	534.74	532.84	530.93	529.01	527.08	525.14	523.19	521.23	519.26	517.28	515.29	513.29	511.28	509.26	507.23	505.19	503.14	501.08	499.01	496.93	494.84	492.74	490.63	488.51	486.38	484.24	482.09	479.93	477.76	475.58	473.39	471.19	468.98	466.76	464.53	462.29	460.04	457.78	455.51	453.23	450.94	448.64	446.33	443.99	441.64	439.28	436.91	434.53	432.14	429.74	427.33	424.91	422.48	420.04	417.59	415.13	412.66	410.18	407.69	405.19	402.68	400.16	397.63	395.09	392.54	390.0	387.44	384.87	382.29	379.7	377.11	374.51	371.9	369.27	366.64	364.0	361.35	358.69	356.02	353.34	350.65	347.95	345.24	342.52	339.79	337.05	334.3	331.56	328.78	326.0	323.21	320.41	317.6	314.75	311.9	309.03	306.16	303.28	300.39	297.49	294.58	291.66	288.73	285.79	282.84	279.88	276.91	273.93	270.94	267.94	264.93	261.9	258.85	255.79	252.72	249.64	246.55	243.45	240.34	237.22	234.09	230.95	227.8	224.62	221.44	218.25	215.05	211.84	208.62	205.39	202.15	198.9	195.63	192.36	189.08	185.79	182.49	179.18	175.86	172.53	169.19	165.84	162.48	159.11	155.73	152.34	148.94	145.53	142.11	138.68	135.24	131.79	128.33	124.86	121.38	117.89	114.39	110.88	107.36	103.83	100.29	96.74	93.18	89.61	86.03	82.44	78.84	75.23	71.61	67.98	64.34	60.69	57.03	53.36	49.68	46.0	42.31	38.61	34.9	31.17	27.44	23.7	20.0	16.27	12.54	8.81	5.08	1.35	-2.38	-6.04	-9.69	-13.24	-16.69	-20.04	-23.29	-26.44	-29.59	-32.74	-35.89	-39.04	-42.19	-45.34	-48.49	-51.64	-54.79	-57.94	-61.09	-64.24	-67.39	-70.54	-73.69	-76.84	-80.0	-83.15	-86.3	-89.45	-92.6	-95.75	-98.9	-102.05	-105.2	-108.35	-111.5	-114.65	-117.75	-120.85	-123.95	-127.05	-130.15	-133.25	-136.35	-139.45	-142.55	-145.65	-148.75	-151.85	-154.95	-158.05	-161.15	-164.25	-167.35	-170.45	-173.55	-176.65	-179.75	-182.85	-185.95	-189.05	-192.15	-195.25	-198.35	-201.45	-204.55	-207.65	-210.75	-213.85	-216.95	-220.05	-223.15	-226.25	-229.35	-232.45	-235.55	-238.65	-241.75	-244.85	-247.95	-251.05	-254.15	-257.25	-260.35	-263.45	-266.55	-269.65	-272.75	-275.85	-278.95	-282.05	-285.15	-288.25	-291.35	-294.45	-297.55	-300.65	-303.75	-306.85	-309.95	-313.05	-316.15	-319.25	-322.35	-325.45	-328.55	-331.65	-334.75	-337.85	-340.95	-344.05	-347.15	-350.25	-353.35	-356.45	-359.55	-362.65	-365.75	-368.85	-371.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			