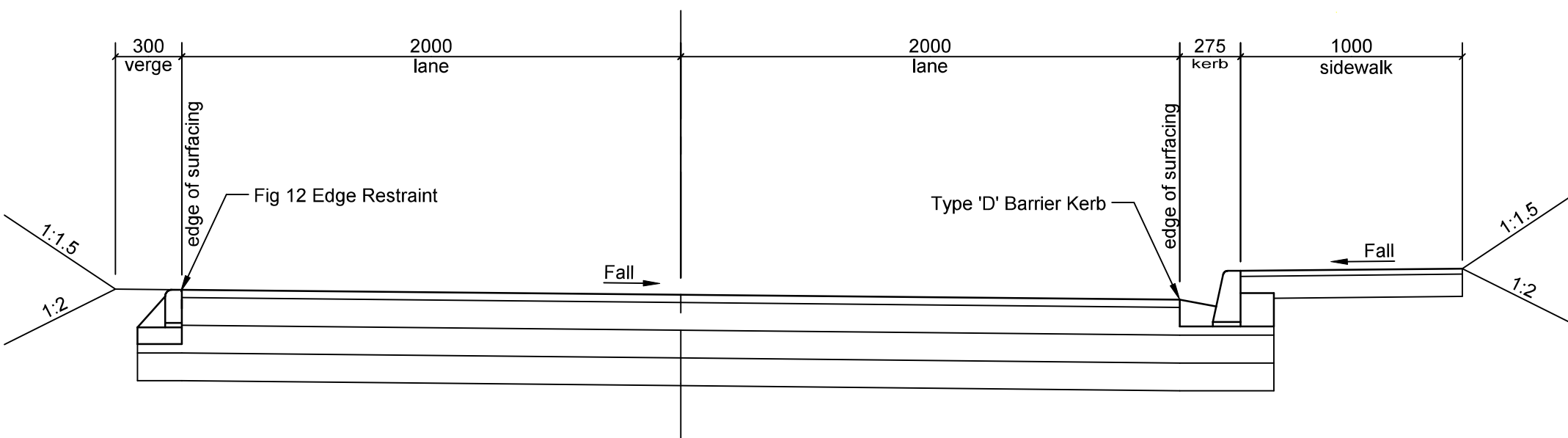
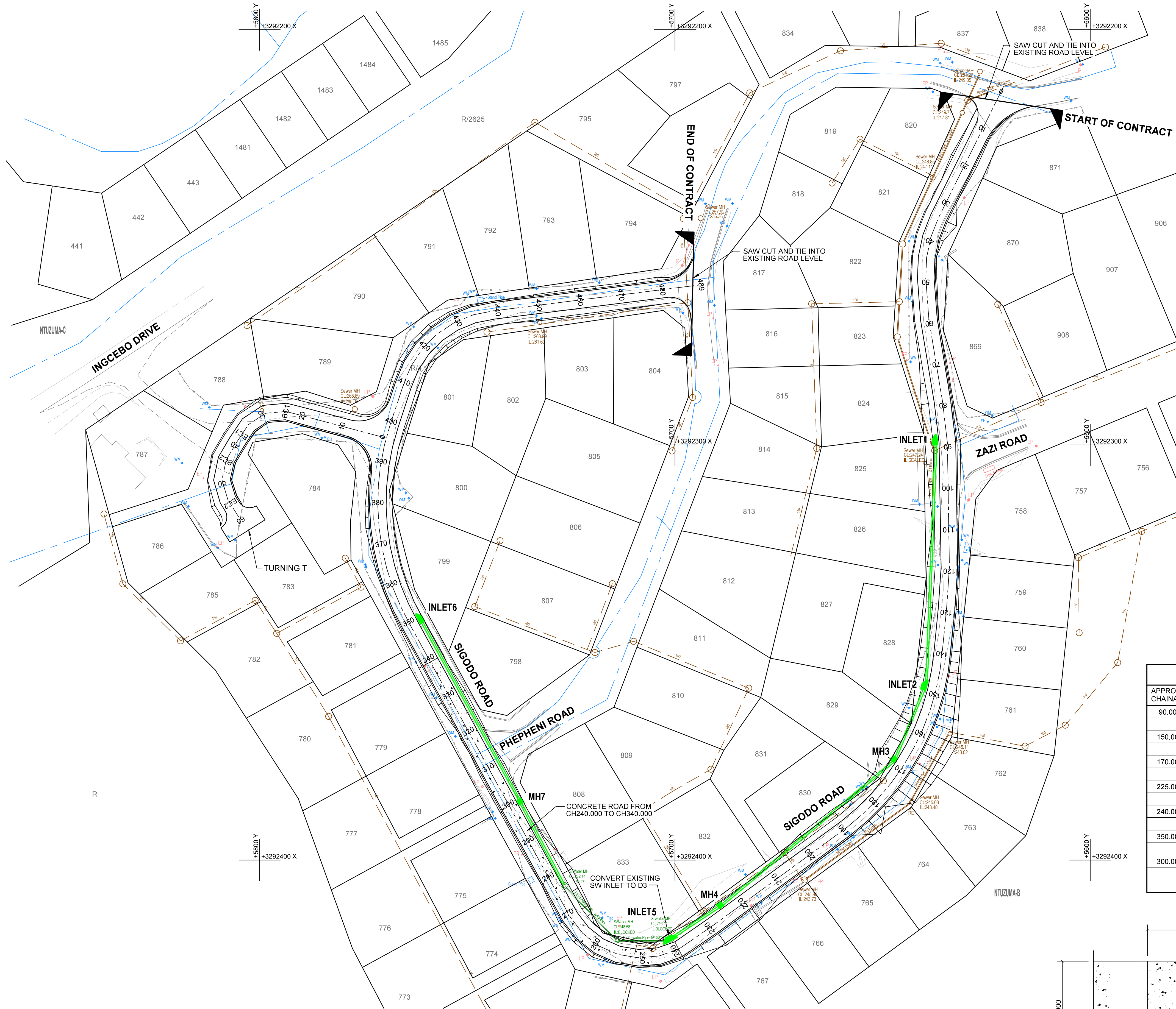
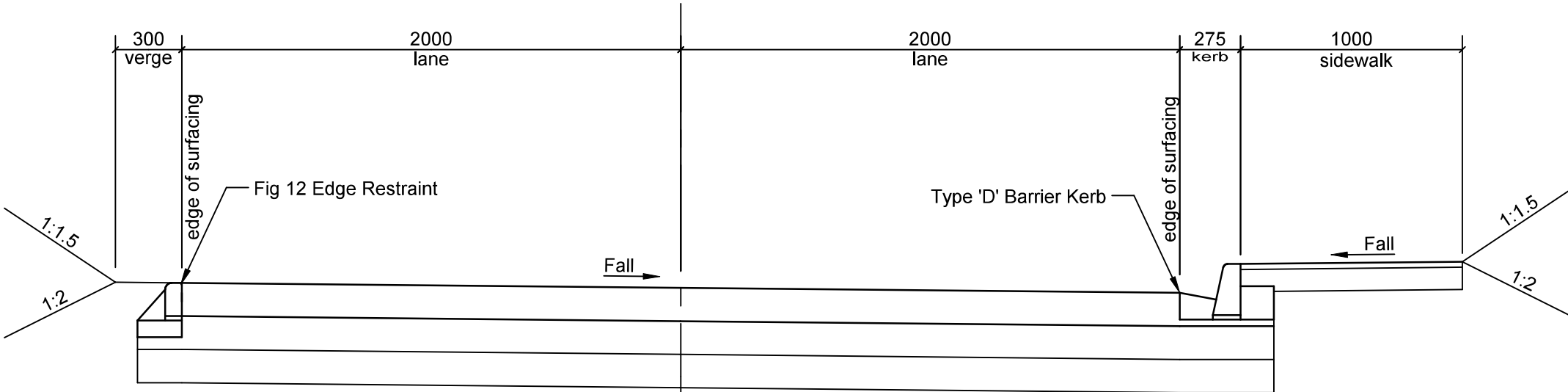
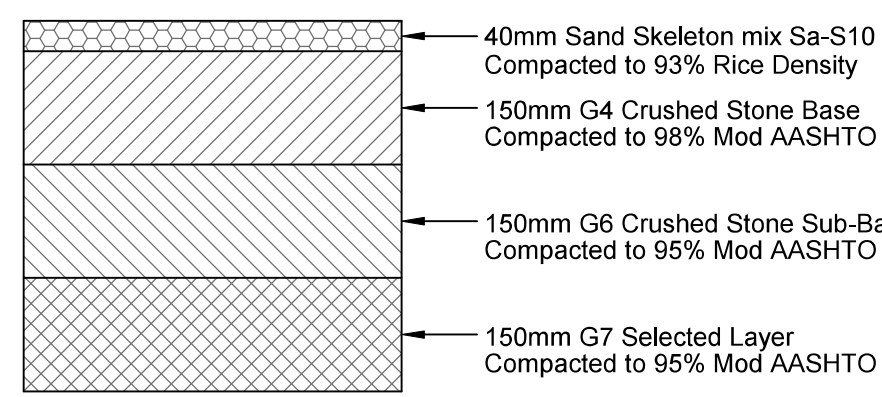




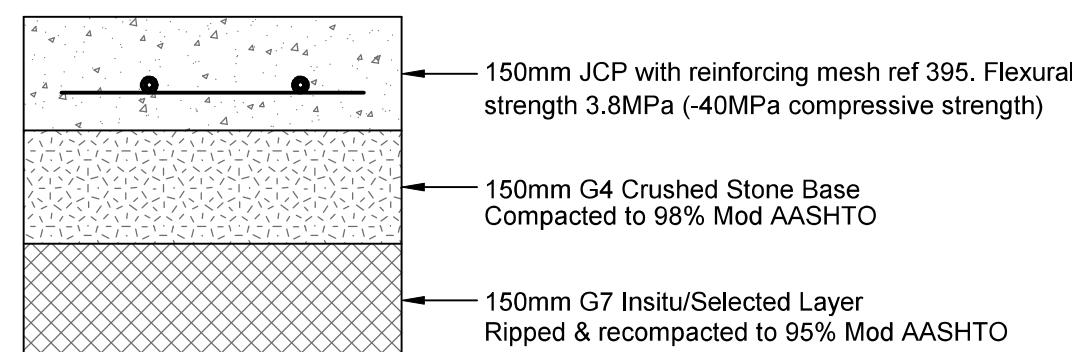
TYPICAL CROSS SECTION (ASPHALT)
Scale 1 : 25



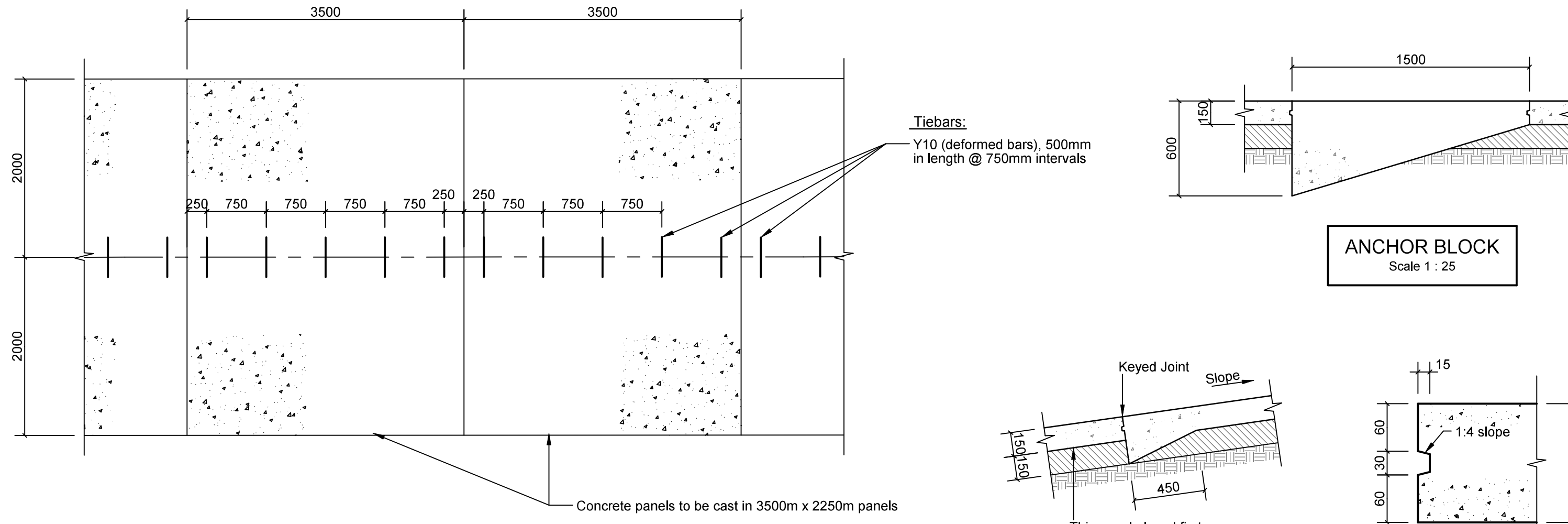
TYPICAL CROSS SECTION (CONCRETE - CH240.000 TO CH340.000)
Scale 1 : 25



PAVEMENT DESIGN LAYERS (ASPHALT)
Scale 1 : 10



PAVEMENT DESIGN LAYERS (CONCRETE - CH240.000 TO CH340.000)
Scale 1 : 25



CONCRETE PANEL LAYOUT
Scale 1 : 50

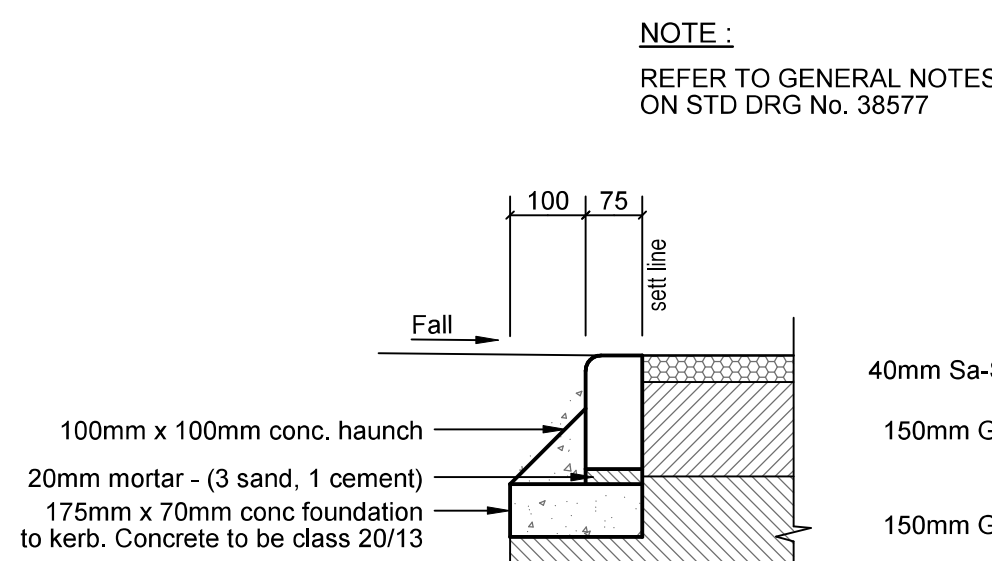
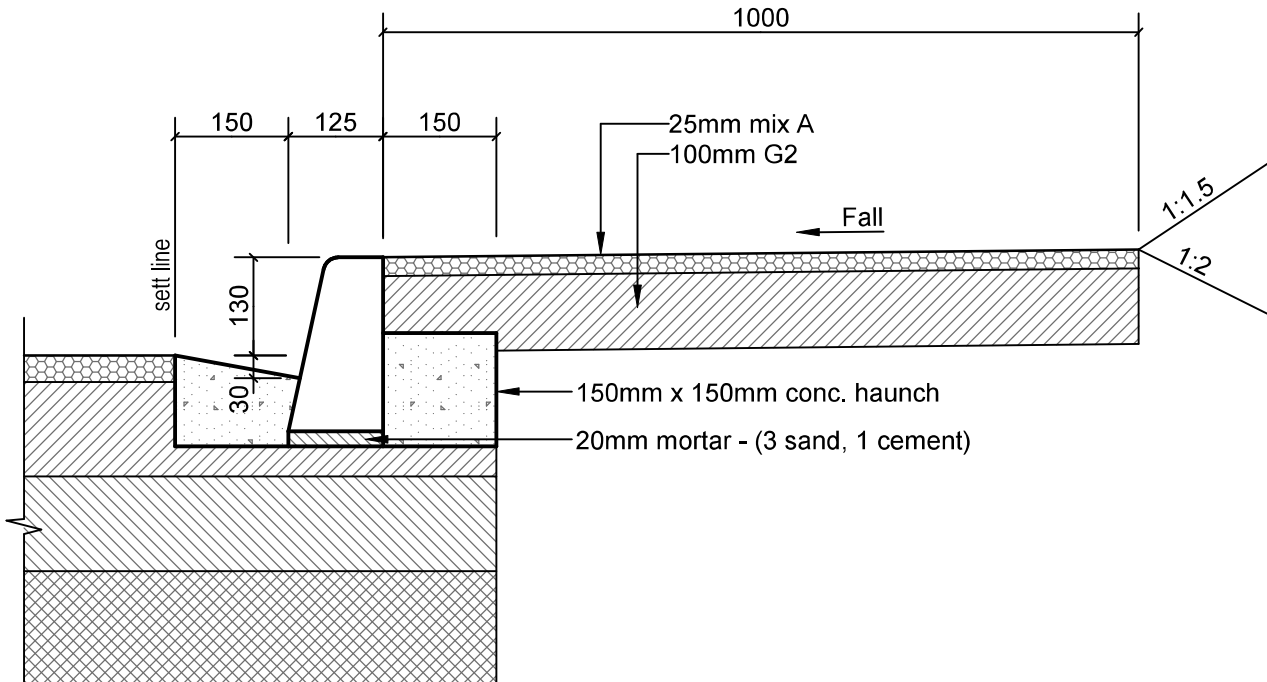
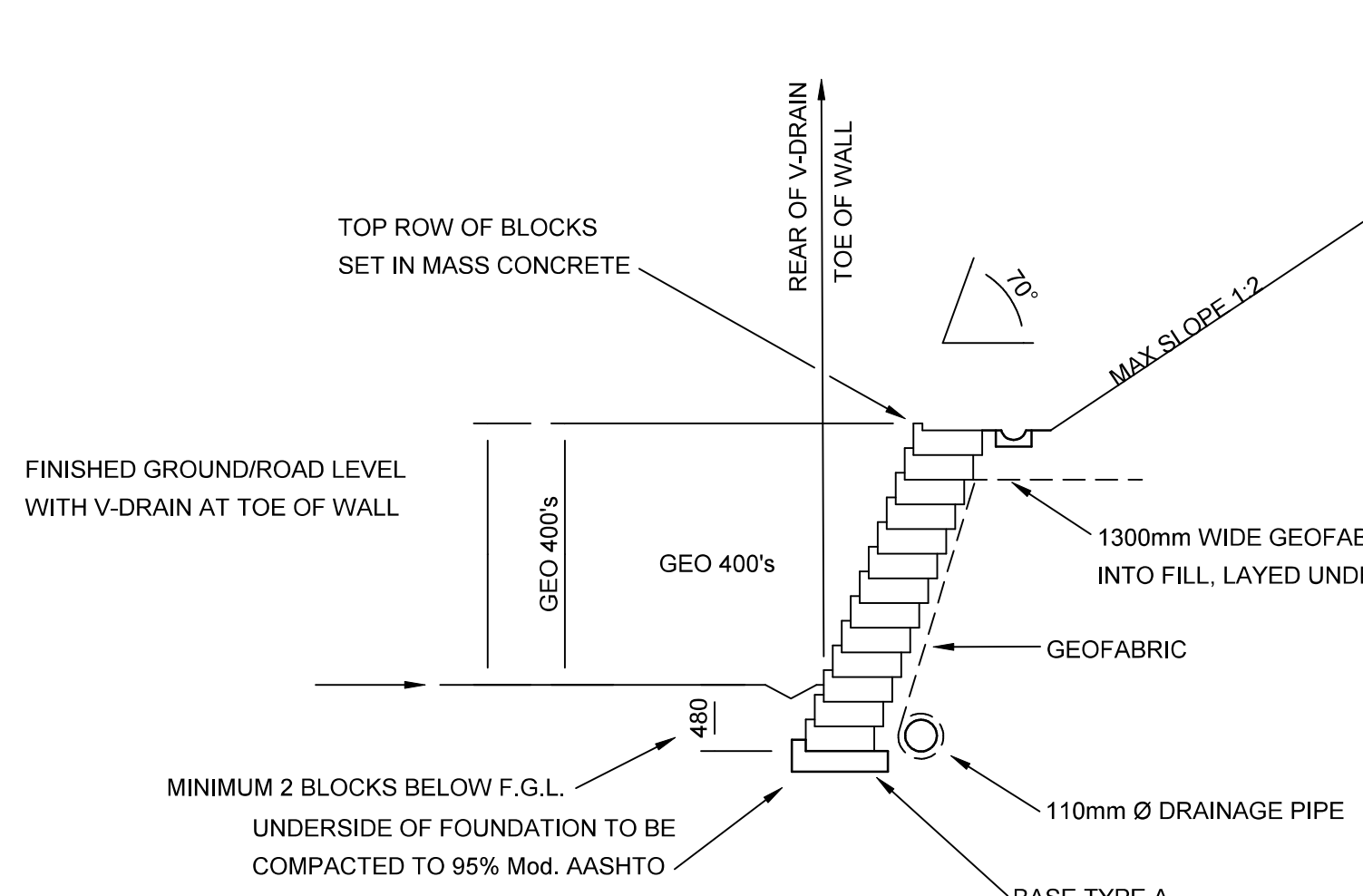


FIG. 12 KERB - EDGE RESTRAINT
Scale 1 : 10

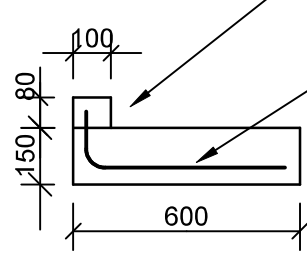


TYPE D BARRIER KERB WITH CAST INSITU 150mm CHANNEL
Scale 1 : 10

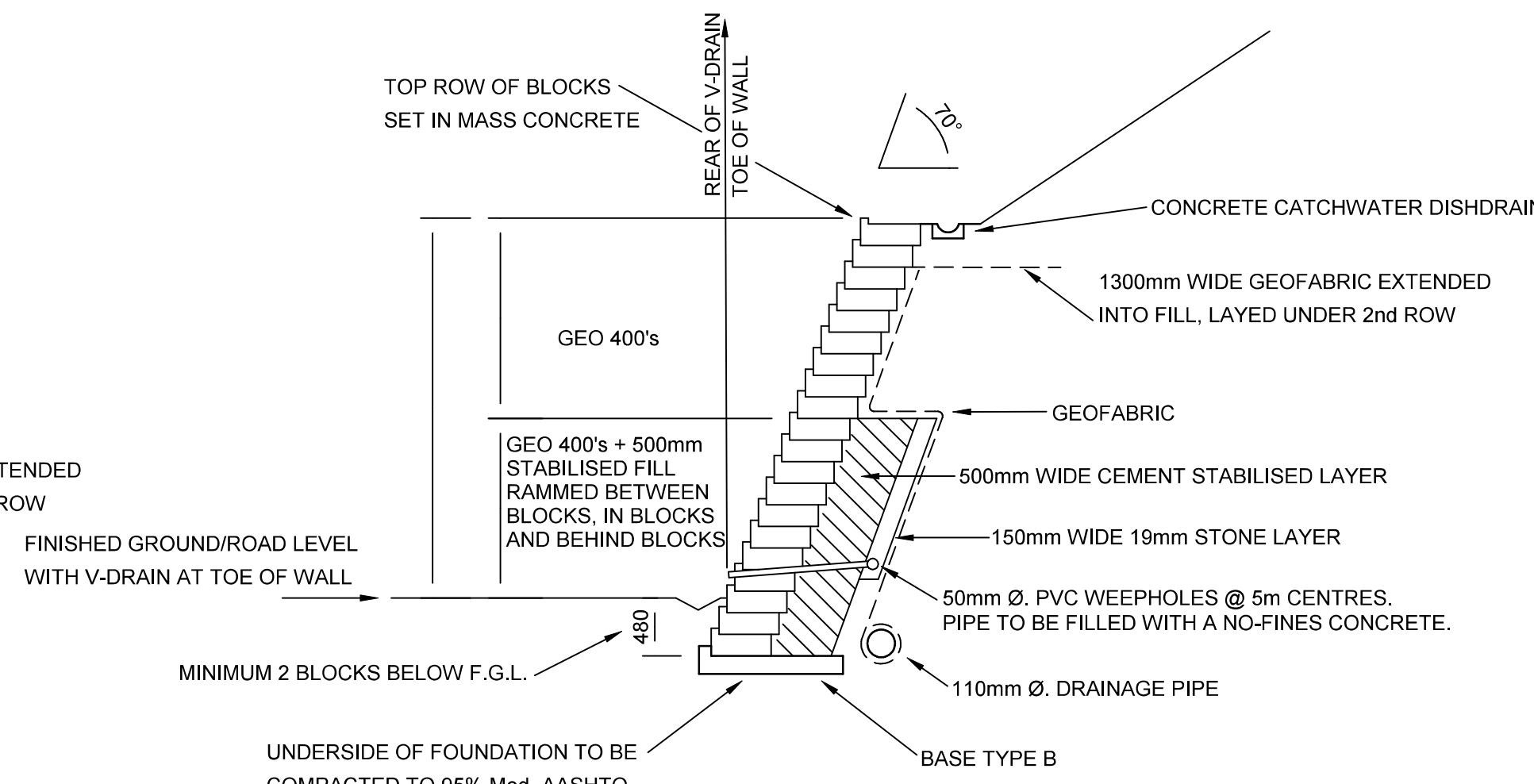
- GENERAL NOTES:**
- CONTRACTOR TO EXERCISE EXTREME CARE AND CAUTION WHILST WORKING IN THE VICINITY OF ALL SERVICES.
 - CONTRACTOR TO ENSURE EXISTING SERVICES ARE TO BE PROVED PRIOR TO ANY CONSTRUCTION COMMENCING.
 - CONTRACTOR TO ENSURE THAT ANY BOUNDARY BEACONS DISLODGED ARE TO BE REPLACED IN ITS EXACT POSITION AFTER CONSTRUCTION AT CONTRACTORS OWN COST.
 - CONTRACTOR TO ENSURE EXISTING GRAVES ARE PROTECTED AND NOT DISTURBED.
 - THE COST OF ANY DEVIATIONS (TRAFFIC) NOT PROVIDED OR SHOWN ON THE PLAN AND IN THE SCHEDULE AND REQUIRED BY THE CONTRACTOR TO ENABLE HIM TO COMPLY WITH THE NECESSARY TRAFFIC REQUIREMENTS ETC. SHALL BE AT THE CONTRACTORS OWN EXPENSE.
 - FINAL POSITION AND EXTENT OF BELLMOUTHS TO BE CONFIRMED ON SITE BY ENGINEER.
 - DRIVEWAY ACCESS TO BE MAINTAINED/REGRADED TO SUIT NEW ROAD LEVELS WHERE REQUIRED, EXTENT OF WORK TO BE DETERMINED ON SITE BY ENGINEER.
 - REMOVAL OF AFFECTED TREES AND FENCES TO BE CONFIRMED ON SITE BY ENGINEER.



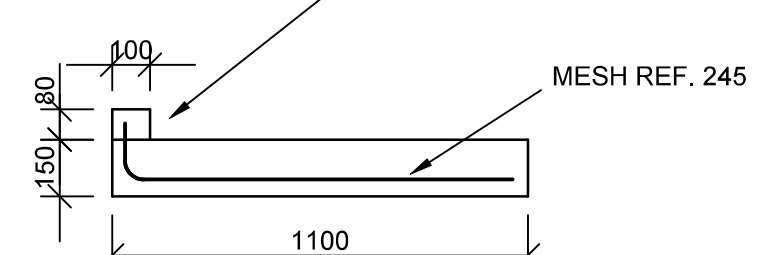
TYPICAL WALL (0m to 2m)
Scale 1:50



BASE TYPE A
Scale 1:20



TYPICAL WALL (2m to 3.0m)
Scale 1:50



BASE TYPE B
Scale 1:20

APPROX CHAINAGE	INLET/OUTLET NUMBER	INLET/OUTLET TYPE	COVER LEVEL	INVERT LEVEL	DEPTH	DISTANCE	PIPE GRADE	BEDDING DETAILS	PIPE SIZE & CLASS SPIGOT & SOCKET	REMARKS
90.000	INLET1	S2	-	-	-	60.000m	-	C	450mm Ø 100SD	
150.000	INLET2	S2	-	-	-	20.000m	-	C	450mm Ø 100D	
170.000	MH3	S1	-	-	-	55.000m	-	C	450mm Ø 100D	
225.000	MH4	S1	-	-	-	15.000m	-	C	450mm Ø 100D	
240.000	INLET5	D3	-	-	-	-	-	-	-	CONVERT EXISTING STORMWATER MANHOLE TO D3 INLET
350.000	INLET1	S2	-	-	-	50.000m	-	C	450mm Ø 100SD	
300.000	INLET2	S2	-	-	-	25.000m	-	C	450mm Ø 100D	TIE INTO EXISTING STORMWATER MANHOLE
EXISTING STORMWATER INLET										

- RETAINING WALL NOTES:**
- BLOCK TYPE: GEOLOK BLOCKS OR SIMILAR APPROVED BLOCKS TO BE SANS 508:2012 CERTIFIED.
 - ALL FOUNDATION TRENCHES TO BE APPROVED BY THE ENGINEER ON SITE PRIOR TO CASTING OF CONCRETE.
 - BOTTOM ROW OF BLOCKS TO BE PLACED WHILE THE BASE CONCRETE IS STILL WORKABLE.
 - FILL BEHIND WALL TO BE COMPACTED TO 95% Mod. AASHTO AND AS PER PART D3 OF SITHWIN'S STANDARD ENGINEERING SPECIFICATIONS (YELLOW PAGES). BENCHING OF EXISTING AND/OR CUT SLOPES MAY BE REQUIRED WHERE NECESSARY.
 - CONCRETE IN WALL BASE - GR. 25/26 OR AS SPECIFIED.
 - CEMENT STABILISED FILL: 12:1 CLEAN COARSE SAND : CEMENT. WELL RAMMED BETWEEN BLOCKS, IN BLOCKS AND 500mm BEHIND BLOCKS AS DETAILED.
 - MINIMUM OF 8 BLOCKS TO BE LAID PER SQ M. (OR AS PER THE MANUFACTURERS SPECIFICATION).
 - CONTRACTOR TO MAKE ALLOWANCE FOR +/- 73mm "STEP BACK" WITH EACH 200mm STEP UP WHEN SETTING OUT THE BASE. (OR AS PER THE MANUFACTURERS SPECIFICATION).
 - CONTRACTOR TO REFER TO DETAILED SURVEY DRAWINGS FOR THE LOCATION OF SERVICES, PROPERTY BOUNDARIES ETC.
 - LEVELS AND DIMENSIONS INDICATED ON THIS DRAWING ARE ONLY A GUIDE AND THESE NEED TO BE CONFIRMED BY THE ENGINEER ON SITE.
 - POSITION OF RETAINING WALLS TO BE CONFIRMED BY ENGINEER ON SITE.
 - ALL RETAINING WALLS AS PER STRUCTURES DEPARTMENT DETAILS (ISSUED SEPARATELY IF REQUIRED).

DRAUGHTING SYMBOLS

DETAIL	Proposed	Existing
CENTERLINE		
WATERMAIN DUCT		
TELKOM CABLE DUCT		
ELECTRIC CABLE DUCT		
ELECTRIC CABLES		
ELECTRIC LIGHT POLE		
TRAFFIC SIGNAL		
CONSUMER DISTRIB. UNIT		
TELKOM CABLES		
TELEPHONE POLE		
SEWER		
STORMWATER DRAIN		
STORMWATER INLET		
SCOOP		
KERB AND CHANNEL		
EARTH EMBANKMENT		
WATERMAIN		
VALVE		
FIRE PLUG		
STANDARD HYDRANT		
EXISTING M.H. TO BE CONVERTED TO CATCHPIT		
EXISTING CATCHPIT TO BE CONVERTED TO M.H.		

FOR TENDER PURPOSES ONLY

New Road Area m²

Unsurfaced to Surfaced km²

AS BUILT

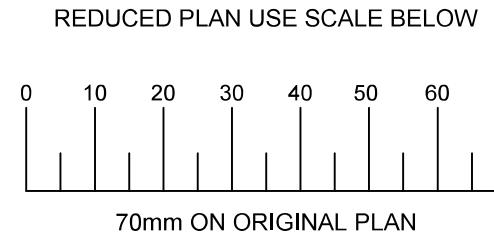
Date Sign



ENGINEERING UNIT
ROADS PROVISION DEPARTMENT



PLAN DESCRIPTION	DWG. NO.
CONTINUED FROM	
CONTINUED ON	
CROSS SECTIONS	
TYPICAL CROSS SECTION	
SURVEY LAYOUT	



DRAWN IN ALLYWINDOWS



Revision	Date	Description
1		

NOTE: No construction work to commence until land and servitude acquisitions have been completed.	
Acquisitions completed	NORTH POINT

Date	Engineer
SURVEY LAYOUT	
S.DRAWINGS	
SEWERS	
WATER MAINS	
G.P.O. CABLES	
ELECTRIC CABLES	
S.A.R. CABLES	
E.S.C. CABLES	
CO. PIPE LINE	

NOTE:
Only underground services affected by new construction work are shown. Care must be taken during excavations for road foundations, trenches etc. to avoid damage to underground services such as sewers, drains, cables, water mains and corrections. Whenever possible these must be located before work proceeds.

Contract No. 1R-26725

Project Title
UPGRADE OF GRAVEL TO ASPHALT ROADS IN NTUZUMA A&B WARD 38 (MLOMO AND SIGODO ROADS)

Drawing Title
DIMENSIONS, SETTING OUT AND PROPOSED SERVICES PLAN (SIGODO ROAD)

Scales Reference
AS SHOWN

Designed L.KHUMALO Date 13 OCTOBER 2023

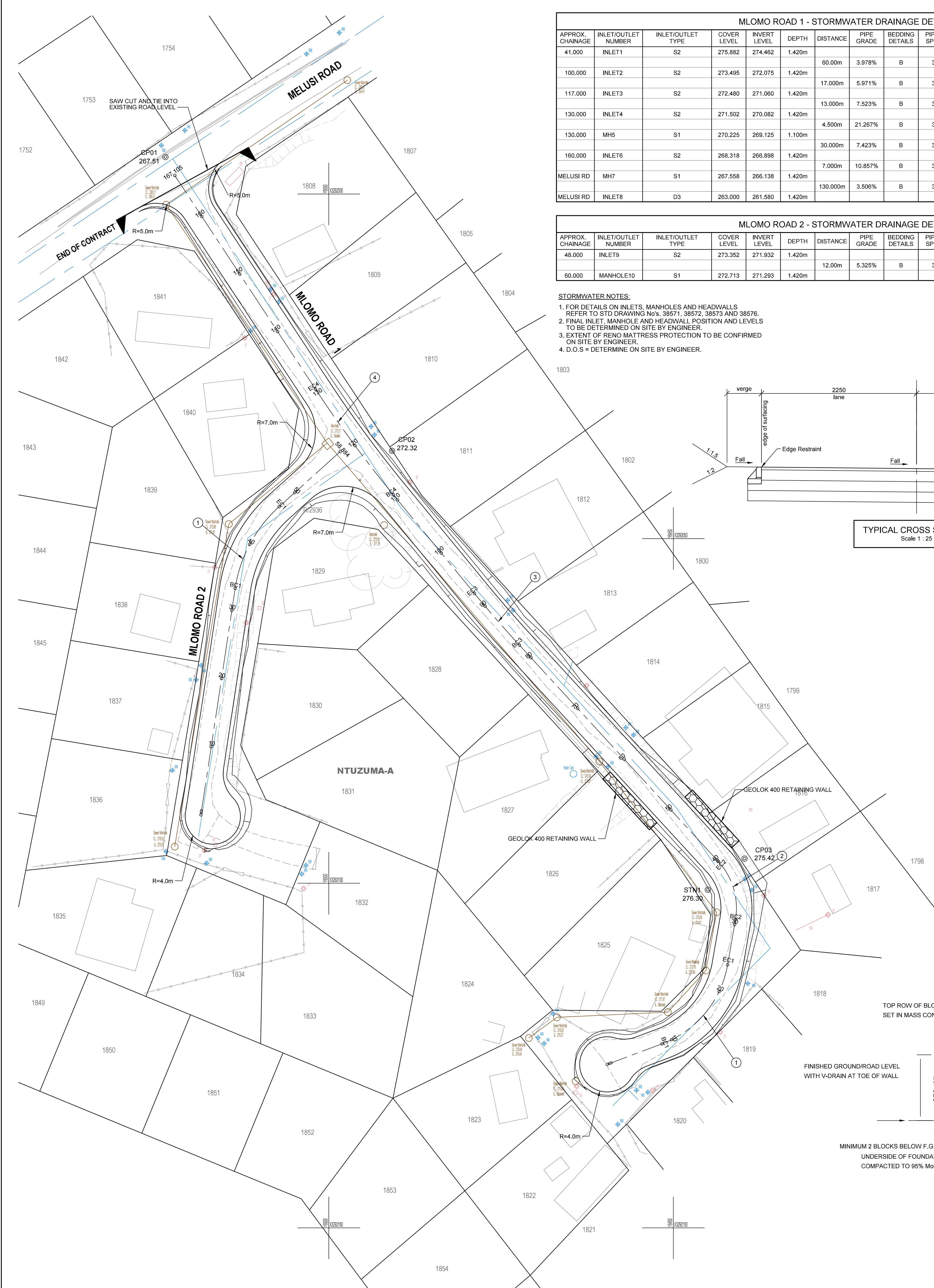
Checked A.DELLAR Drawn in AllyWindows by D.NAIDOO

Manager RD: (N)

DH: BP

T. Zulu Head Engineering

Drawing No. Sheet 01 of 01 Sheets

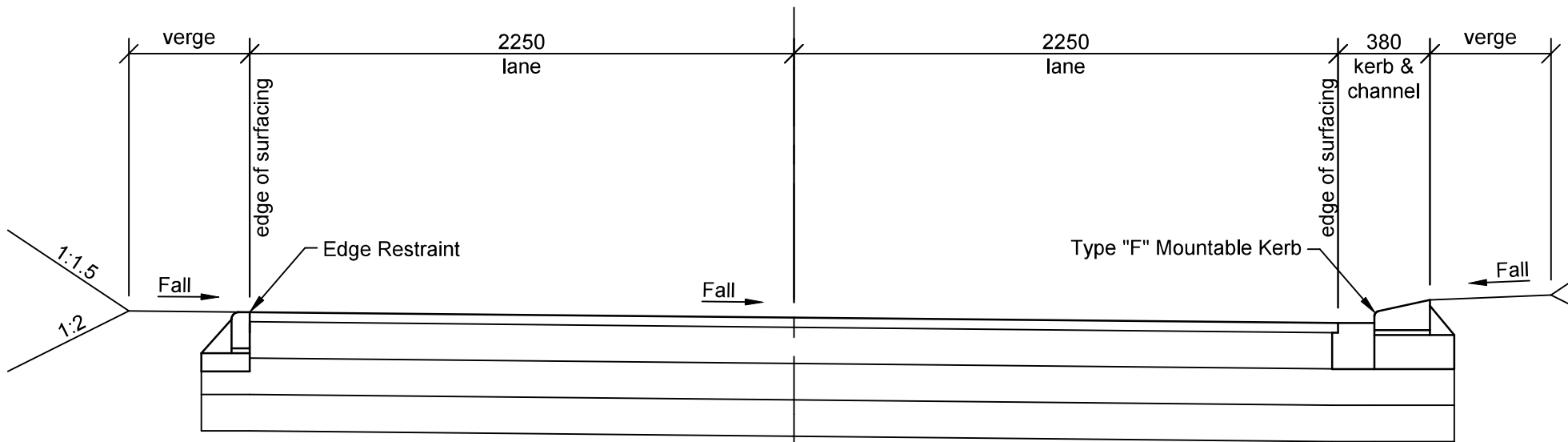


DESIGN PLAN
Scale 1 : 250

MLOMO ROAD 1 - STORMWATER DRAINAGE DETAILS									
APPROX. CHAINAGE	INLET/OUTLET NUMBER	INLET/OUTLET TYPE	COVER LEVEL	INVERT LEVEL	DEPTH	DISTANCE	PIPE GRADE	BEDDING DETAILS	PIPE SIZE & CLASS SPIGOT & SOCKET
41.000	INLET1	S2	275.882	274.462	1.420m	60.00m	3.978%	B	375mm Ø 100D
100.000	INLET2	S2	273.495	272.075	1.420m	17.000m	5.971%	B	375mm Ø 100D
117.000	INLET3	S2	272.480	271.060	1.420m	13.000m	7.523%	B	375mm Ø 100D
130.000	INLET4	S2	271.502	270.082	1.420m	4.500m	21.267%	B	375mm Ø 100D
130.000	MH5	S1	270.225	269.125	1.100m	30.000m	7.423%	B	375mm Ø 100D
160.000	INLET6	S2	268.318	266.898	1.420m	7.000m	10.857%	B	375mm Ø 100D
MELUSI RD	MH7	S1	267.558	266.138	1.420m	130.000m	3.506%	B	375mm Ø 100D
MELUSI RD	INLET8	D3	263.000	261.580	1.420m				

MLOMO ROAD 2 - STORMWATER DRAINAGE DETAILS									
APPROX. CHAINAGE	INLET/OUTLET NUMBER	INLET/OUTLET TYPE	COVER LEVEL	INVERT LEVEL	DEPTH	DISTANCE	PIPE GRADE	BEDDING DETAILS	PIPE SIZE & CLASS SPIGOT & SOCKET
48.000	INLET9	S2	273.352	271.932	1.420m	12.00m	5.325%	B	375mm Ø 100D
60.000	MANHOLE10	S1	272.713	271.293	1.420m				

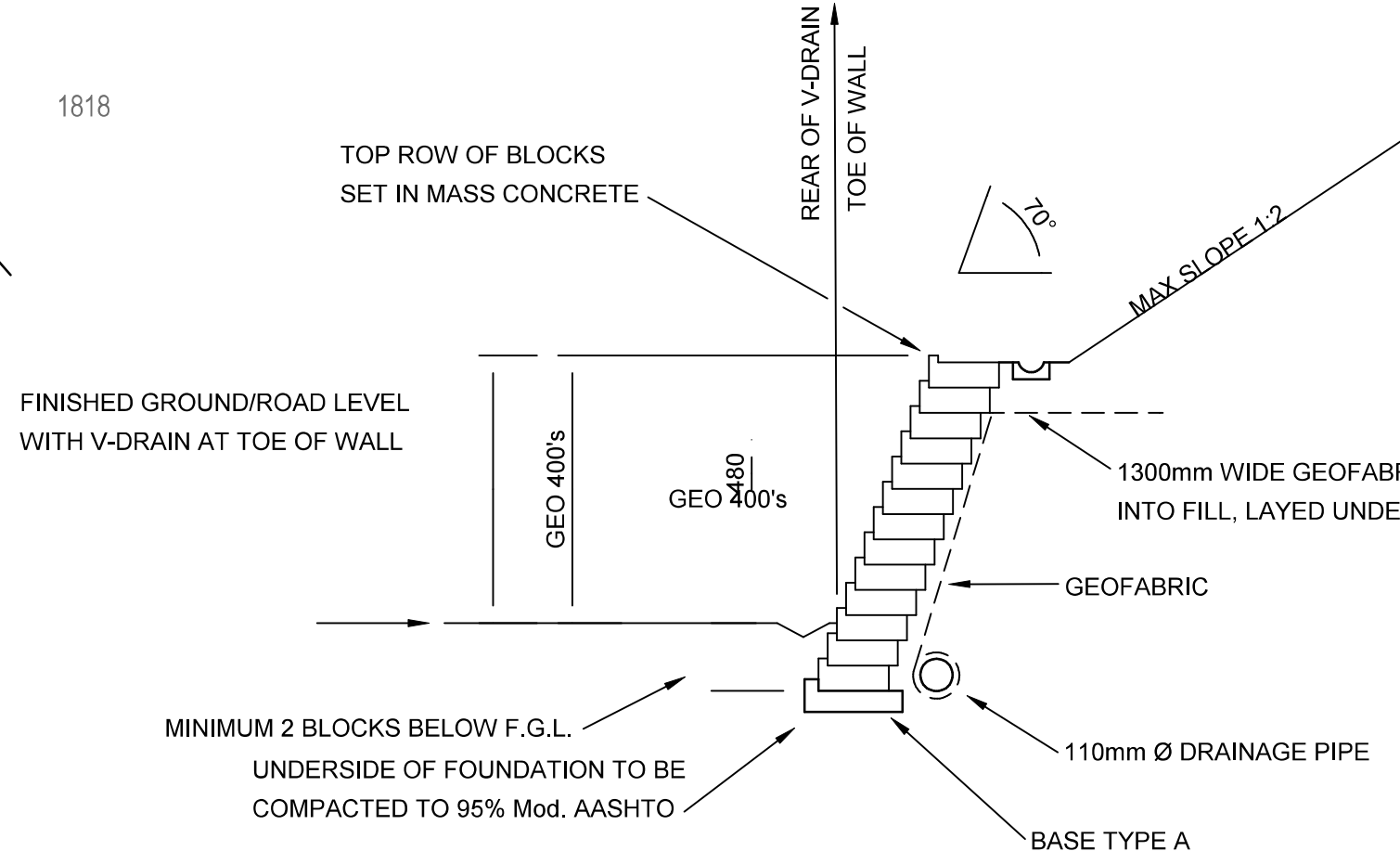
STORMWATER NOTES:
1. FOR DETAILS ON INLETS, MANHOLES AND HEADWALLS REFER TO STD DRAWING No's 38571, 38572, 38573 AND 38576.
2. FINAL INLET, MANHOLE AND HEADWALL POSITION AND LEVELS TO BE DETERMINED ON SITE BY ENGINEER.
3. EXTENT OF RENO MATTRESS PROTECTION TO BE CONFIRMED ON SITE BY ENGINEER.
4. D.O.S = DETERMINE ON SITE BY ENGINEER.



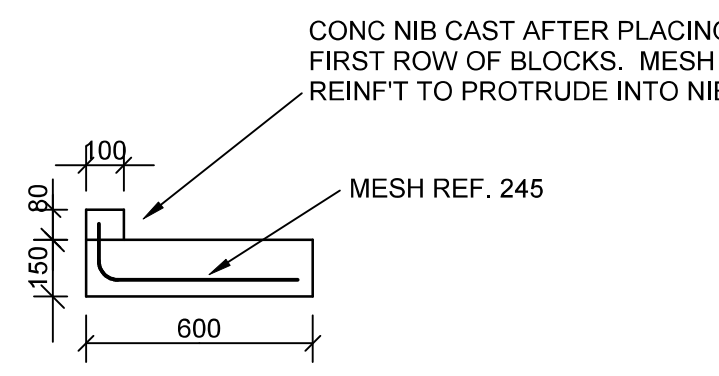
TYPICAL CROSS SECTION
Scale 1 : 25

MLOMO ROAD - RETAINING WALL SCHEDULE					
LEFT HAND SIDE			RIGHT HAND SIDE		
FROM CH	TO CH	LENGTH	FROM CH	TO CH	LENGTH
-	-	-	40.000	50.000	10.0m
50.000	60.000	10.0m	-	-	-

RETAINING WALL NOTES:
1. BLOCK TYPE - GEOLOK BLOCKS OR SIMILAR APPROVED BLOCKS TO BE SANS 508:2012 CERTIFIED.
2. ALL FOUNDATION TRENCHES TO BE APPROVED BY THE ENGINEER ON SITE PRIOR TO CASTING OF CONCRETE.
3. BOTTOM ROW OF BLOCKS TO BE PLACED WHILE THE BASE CONCRETE IS STILL WORKABLE.
4. FILL BEHIND WALL TO BE COMPACTED TO 95% Mod. AASHTO AND AS PER PART D3 OF ETHERKWINI'S STANDARD ENGINEERING SPECIFICATIONS (YELLOW PAGES). BENCHING OF EXISTING AND/OR OUT SLOPES MAY BE REQUIRED WHERE NECESSARY.
5. CONCRETE IN WALL BASE - GR. 25/25 OR AS SPECIFIED.
6. CEMENT STABILISED FILL- 12:1 CLEAN COARSE SAND : CEMENT, WELL RAMMED BETWEEN BLOCKS, IN BLOCKS AND 500mm BEHIND BLOCKS AS DETAILED.
7. MINIMUM OF 8 BLOCKS TO BE LAID PER SQ. M. (OR AS PER THE MANUFACTURERS SPECIFICATION).
8. CONTRACTOR TO MAKE ALLOWANCE FOR +/- 75mm "STEP BACK" WITH EACH 200mm STEP UP WHEN SETTING OUT THE BASE. (OR AS PER THE MANUFACTURERS SPECIFICATION).
9. CONTRACTOR TO REFER TO DETAILED SURVEY DRAWINGS FOR THE LOCATION OF SERVICES, PROPERTY BOUNDARIES ETC.
10. LEVELS AND DIMENSIONS INDICATED ON THIS DRAWING ARE ONLY A GUIDE AND THESE NEED TO BE CONFIRMED BY THE ENGINEER ON SITE.
11. POSITION OF RETAINING WALLS TO BE CONFIRMED BY ENGINEER ON SITE.
12. ALL RETAINING WALLS AS PER STRUCTURES DEPARTMENT DETAILS (ISSUED SEPARATELY IF REQUIRED).

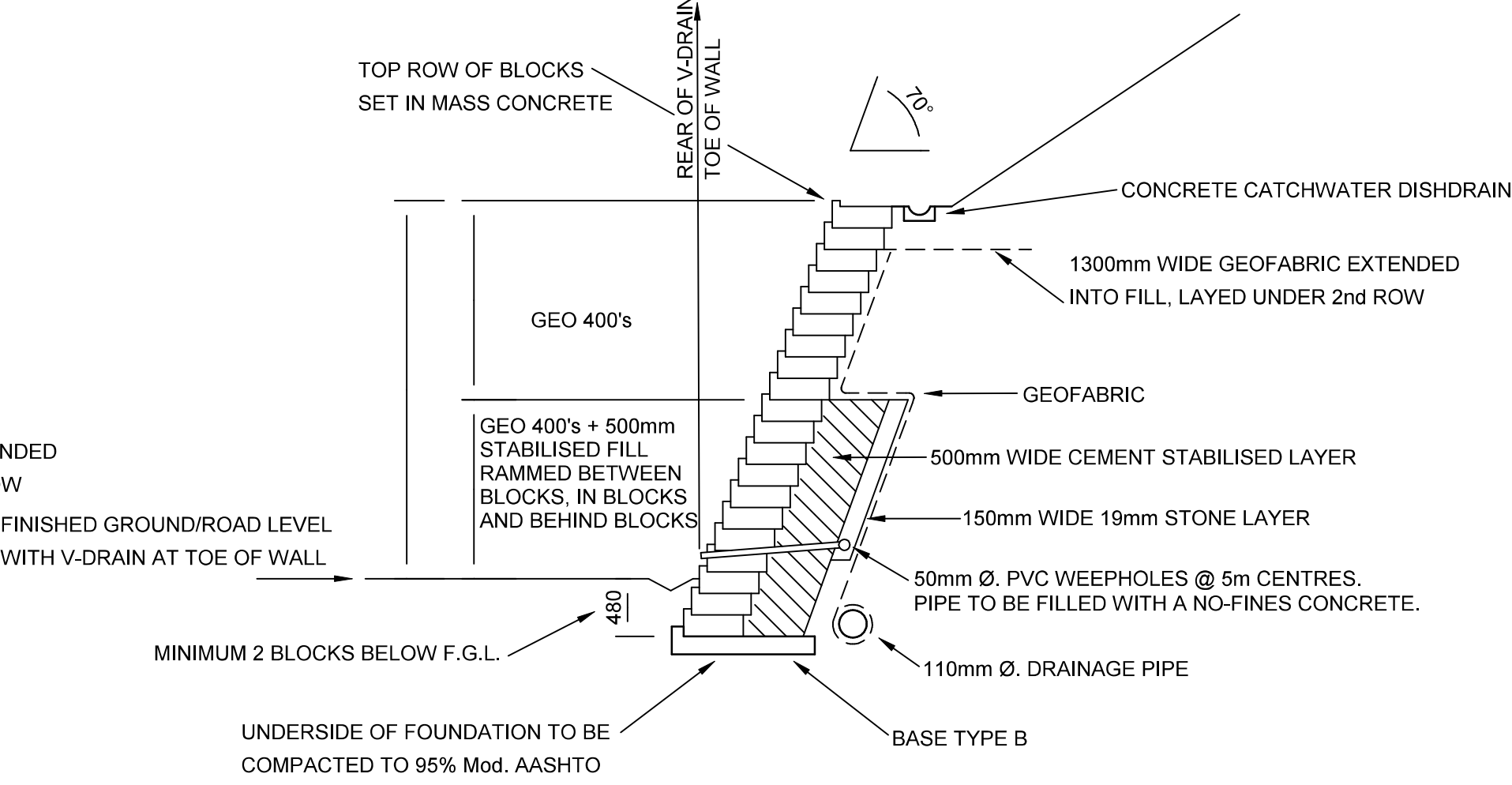


TYPICAL WALL (0m to 2m)
SCALE 1:50

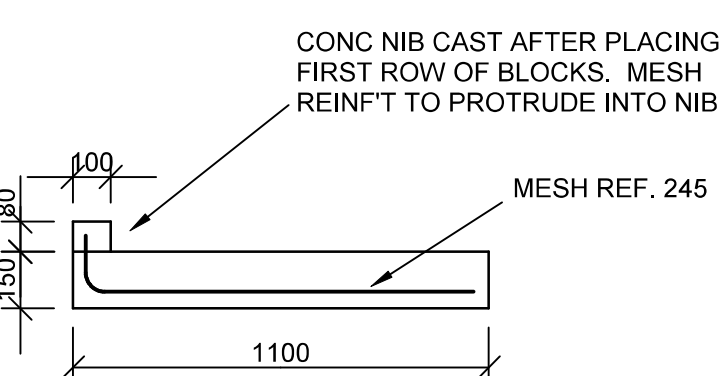


BASE TYPE A
SCALE 1:20

GEOLOK 400 RETAINING WALL



TYPICAL WALL (2m to 3.0m)
SCALE 1:50

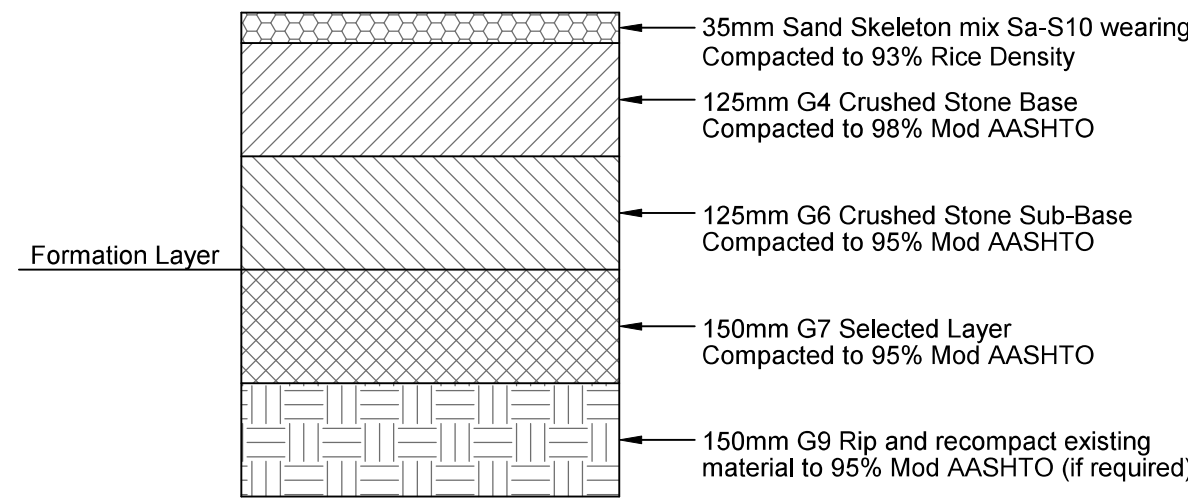


BASE TYPE B
SCALE 1:20

FOR TENDER PURPOSES ONLY

MLOMO ROAD 1 - EDGE DETAILS					
LEFT HAND SIDE			RIGHT HAND SIDE		
FROM CH	TO CH	DETAIL	FROM CH	TO CH	DETAIL
0.000	50.000	TYPE 'F' MOUNTABLE KERB	0.000	50.000	FIGURE 12 EDGE RESTRAINT
50.000	167.000	FIGURE 12 EDGE RESTRAINT	0.000	167.000	TYPE 'F' MOUNTABLE KERB

MLOMO ROAD 2 - EDGE DETAILS					
LEFT HAND SIDE			RIGHT HAND SIDE		
FROM CH	TO CH	DETAIL	FROM CH	TO CH	DETAIL
0.000	50.000	TYPE 'F' MOUNTABLE KERB	0.000	50.000	FIGURE 12 EDGE RESTRAINT



PAVEMENT DESIGN LAYERS
Scale 1 : 10

NOTE:
REFER TO GENERAL NOTES ON STD DRG No. 38577

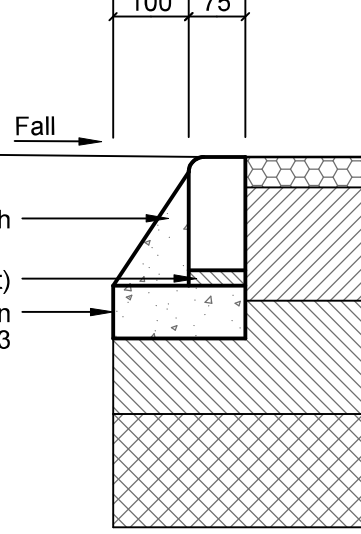
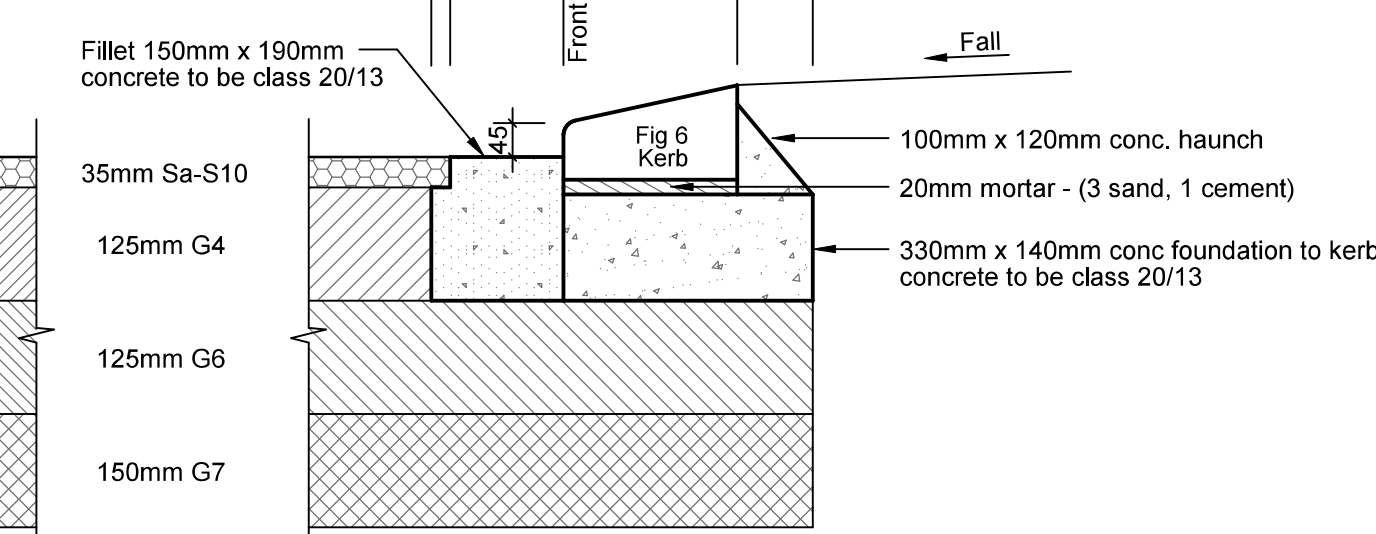


FIG. 12 KERB - EDGE RESTRAINT
Scale 1 : 10



TYPE F MOUNTABLE KERB WITH FILLET/CHANNEL
Scale 1 : 10

MLOMO ROAD 1 - HORIZONTAL CURVE DATA									
Start	0.000	6459.594	3292126.278						
Elements of curve No. 1 (PI 1) Radius 15.000									
Back straight	249.27	17	Transitions	0.000	0.000				
Front straight	189.53	06	Tangents	4.923	4.928				
Intersect angle	59.34	11	Trans. Shift	0.000	0.000				
Curve direction	LEFT		Arc length	15.995					
PI 1	6443.604	3292120.285							
CC 1	6456.908	3292109.252							
BCC1	8.491	6451.644	3292123.298						
ECC1	24.086	6442.131	3292111.827						
Elements of curve No. 2 (PI 2) Radius 10.000									
Back straight	189.53	06	Transitions	0.000	0.000				
Front straight	137.24	46	Tangents	4.923	4.928				
Intersect angle	52.28	20	Trans. Shift	0.000	0.000				
Curve direction	LEFT		Arc length	9.158					
PI 2	6440.151	3292100.467							
CC 2	6450.849	3292103.606							
BCC2	30.689	6440.997	3292105.322						
ECC2	39.847	6443.486	3292096.838						
Elements of curve No. 3 (PI 3) Radius 180.000									
Back straight	137.24	46	Transitions	0.000	0.000				
Front straight	140.34	39	Tangents	4.973	4.973				
Intersect angle	5.09	53	Trans. Shift	0.000	0.000				
Curve direction	RIGHT		Arc length	9.942					
PI 3	6475.696	3292061.795							
CC 3	6339.807	3291943.648							
BCC3	82.472	6472.331	3292065.456						
ECC3	92.414	6478.854	3292057.954						
Elements of curve No. 4 (PI 4) Radius 180.000									
Back straight	140.34	39	Transitions	0.000	0.000				
Front straight	146.38	14	Tangents	9.527	9.527				
Intersect angle	6.03	25	Trans. Shift	0.000	0.000				
Curve direction	RIGHT		Arc length	19.037					
PI 4	6496.686	3292036.262							
CC 4	6351.588	3291929.316							
BCC4	110.967	6490.635	3292043.622						
ECC4	130.004	6501.525	3292028.305						
End	167.105	6522.329	3291997.318						

MOLOMO ROAD 2 - HORIZONTAL CURVE DATA									
Start	0.000	6518.545	3292090.072						
Elements of curve No. 1 (PI 1) Radius 20.000									
Back straight	188.36	22	Transitions	0.000	0.000				
Front straight	227.56	47	Tangents	7.140	7.140				
Intersect angle	39.20	25	Trans. Shift	0.000	0.000				
Curve direction	RIGHT		Arc length	13.732					
PI 1	6512.503	3292050.153							
CC 1	6493.798	3292060.214							
BCC1	33.225	6513.573	3292057.222						
ECC1	46.957	6507.195	3292045.364						
End	58.884	6498.339	3292037.375						

SETTING OUT DETAILS

GENERAL NOTES:
1. CONTRACTOR TO EXERCISE EXTREME CARE AND CAUTION WHILST WORKING IN THE VICINITY OF ALL SERVICES.
2. CONTRACTOR TO ENSURE EXISTING SERVICES ARE TO BE EXPOSED PRIOR TO ANY CONSTRUCTION COMMENCING.
3. CONTRACTOR TO ENSURE THAT ANY BOUNDARY BEACONS DISCLOSED ARE TO BE REPLACED IN ITS EXACT POSITION AFTER CONSTRUCTION AT CONTRACTORS OWN COST.
4. THE COST OF ANY DEVIATIONS (TRAFFIC) NOT PROVIDED OR SHOWN ON THE PLAN AND IN THE SCHEDULE AND REQUIRED BY THE CONTRACTOR TO ENABLE HIM TO COMPLY WITH THE NECESSARY TRAFFIC REQUIREMENTS ETC. SHALL BE AT THE CONTRACTORS OWN EXPENSE.
5. FINAL POSITION AND EXTENT OF BELLMOUTH TO BE CONFIRMED ON SITE BY ENGINEER.
6. ALL DRIVEWAY ACCESSSES TO BE MAINTAINED AND UPGRADED TO SUITE NEW ROAD LEVELS WHERE REQUIRED FOR ENTIRE CONTRACT DURATION.
7. CONTRACTOR TO ENSURE EXISTING GRAVES, IF PRESENT, ARE PROTECTED AND NOT DISTURBED.
8. REMOVAL OF EXISTING TREES AND FENCES TO BE CONFIRMED WITH ENGINEER ON SITE PRIOR TO ANY CONSTRUCTION COMMENCING.
9. CONTRACTOR IS NOT ALLOWED TO UTILISE WATER FROM ANY RIVER OR STREAM FOR CONSTRUCTION.
10. VERGES AND EMBANKMENTS ARE TO BE TRIMMED AND SHAPED TO SPECIFICATION PRIOR TO ROAD ASPHALT BEING LAID.

DRAUGHTING SYMBOLS

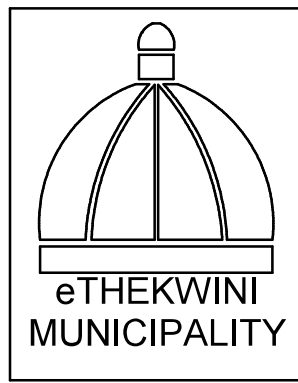
DETAIL	Proposed	Existing
CENTERLINE		
WATERMAIN DUCT		
TELKOM CABLE DUCT		
ELECTRIC CABLE DUCT		
ELECTRIC CABLES		
ELECTRIC LIGHT POLE		
TRAFFIC SIGNAL		
CONSUMER DISTRIB. UNIT		
TELKOM CABLES		
TELEPHONE POLE		
SEWER		
STORMWATER DRAIN		
STORMWATER INLET		
SCOP		
KERB AND CHANNEL		
EARTH EMBANKMENT		
WATERMAIN		
VALVE		
Air Valve		
FIRE PLUG		
STANDARD HYDRANT		
EXISTING M.H. TO BE CONVERTED TO CATCHPIT		
EXISTING CATCHPIT TO BE CONVERTED TO M.H.		

New Road Area m²

Unsurfaced to Surfaced km²

AS BUILT

Date Sign

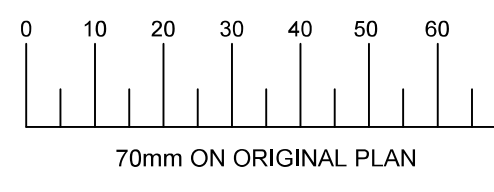


ENGINEERING UNIT
ROADS PROVISION DEPARTMENT



PLAN DESCRIPTION	DWG. NO.
CONTINUED FROM	
CONTINUED ON	
CROSS SECTIONS	
TYPICAL CROSS SECTION	
SURVEY LAYOUT	

REDUCED PLAN USE SCALE BELOW



70mm ON ORIGINAL PLAN

DRAWN IN ALLYWINDOWS



Revision	Date	Description
NOTE: No construction work to commence until land and servitude acquisitions have been completed		
Acquisitions completed		

Date	Engineer	NORTH POINT
UNDERGROUND SERVICES CHECKED		
SERVICE	DATE	SIGNATURE
WATER MAINS		
SEWERS		
G.P.O. CABLES		
ELECTRIC CABLES		
S.A.R. CABLES		
E.S.C. CABLES		
CO. PIPELINE		

NOTE:
Only underground services affected by new construction work are shown. Care must be taken during excavations for road foundations, trenches etc. to avoid damage to underground services such as sewers, drains, cables, water mains and corrections. Whenever possible these must be located before work proceeds.

Contract No. 1R-26725

Project Title
UPGRADE OF GRAVEL TO ASPHALT ROADS IN NTUZUMA A&B WARD 38 (MLOMO AND SIGODO ROADS)

Drawing Title
DIMENSIONS, SETTING OUT AND PROPOSED SERVICES PLAN (MLOMO ROAD)

Scales Reference
AS SHOWN

Designed M.NKOSILKHUMALO Date 28 AUGUST 2023

Checked A.DELLAR Drawn in AllyWindows by D.NAIDOO

Manager RD (N)

DH: BP

T. Zulu Head Engineering

Drawing No. Sheet 01 of 01 Sheets