



# GA-SEGONYANA LOCAL MUNICIPALITY

## GA-SEGONYANA LOCAL MUNICIPALITY RURAL ROADS PROGRAMME - CONSTRUCTION OF RURAL ROADS

### TENDER DRAWINGS VOLUME 2

CONTRACT NUMBER: 06/2024-24

APRIL 2024



**EXPANDED PUBLIC WORKS PROGRAMME**  
Creating opportunities towards human fulfilment

VERSION	DRAWING NUMBER	DRAWING DESCRIPTION
1.0	2024-03-G/A/001	PROJECT DRAWING INDEX
1.0	2024-03-G/D/001	PROJECT NAME BOARD
1.0	2024-03-G/P/001	REGIONAL LOCALITY MAP
1.0	2024-03-R/D/001	TYPICAL KERBING DETAILS
1.0	2024-03-R/D/002	TYPICAL PAVEMENT DESIGN DETAIL FOR SURFACED ACCESS STREETS (PAVING BLOCK FINISH)
1.0	2024-03-R/D/003	TYPICAL PAVEMENT DESIGN DETAIL FOR SURFACED ACCESS STREETS (BITUMEN FINISH)
1.0	2024-03-R/D/004	ROAD SIGNAGE SCHEDULE AND DETAILS
1.0	2024-03-R/D/005	ROAD MARKING DETAILS
1.0	2024-03-R/D/006	POSITION OF SUPPORT BRACKETS AND INSTALLATION DETAILS OF ROAD SIGNS
1.0	2024-03-R/D/007	TYPICAL PORTAL CULVERT DETAILS

REVISIONS

No.	DATE	BY	DESCRIPTION

NOTES

REFERENCE DRAWINGS

PLAN No.	DESCRIPTION


APPROVED:

ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_

APPROVED:

CLIENT: \_\_\_\_\_ DATE: \_\_\_\_\_

PRINT ISSUED ON



CLIENT

GA-SEGONYANA  
LOCAL MUNICIPALITY

PROJECT

GA-SEGONYANA LOCAL  
MUNICIPALITY RURAL ROADS  
PROGRAMME - CONSTRUCTION OF  
RURAL ROADS

IMPLEMENTING AGENT:

GA-SEGONYANA LM

DRAWING TITLE

PROJECT DRAWING INDEX

DESIGN	DATE	DRAWN	DATE
-	APRIL 2024		APRIL 2024
SURVEYED	DATE	CHECKED	DATE
-			APRIL 2024

SCALE

NTS

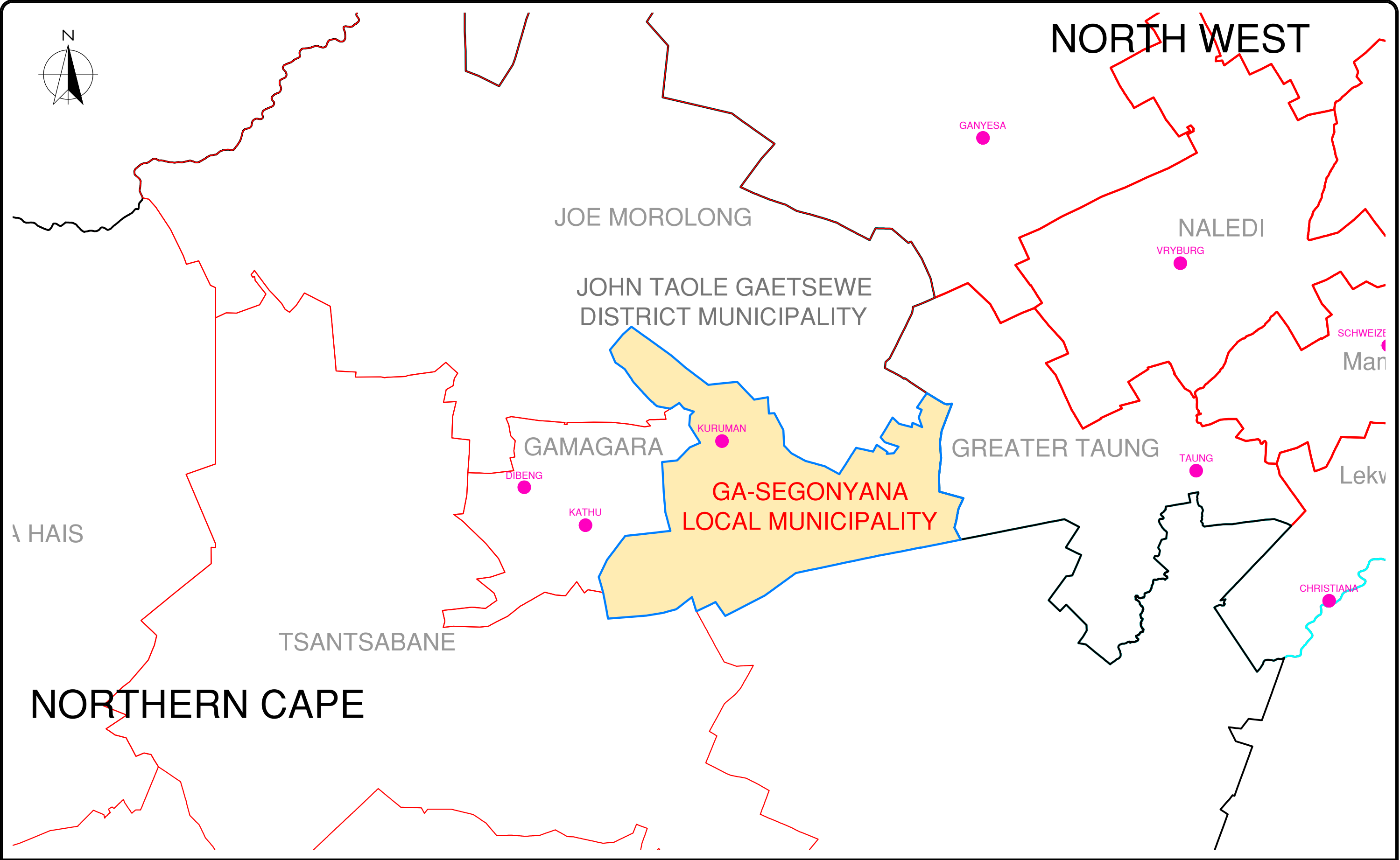
DRAWING No.

2024-03-G/A/001

REVISION No.

1.0								
-----	--	--	--	--	--	--	--	--






NOTES	APPROVED:
ENGINEER:	
DATE:	
CLIENT:	APPROVED:
DATE:	

REFERENCE DRAWINGS	
PLAN Nr.	DESCRIPTION

--



CLIENT  
**GA-SEGONYANA  
LOCAL MUNICIPALITY**

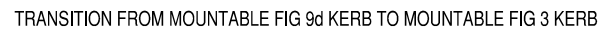
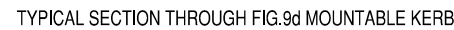
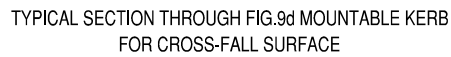
IMPLEMENTING AGENT  
**GA-SEGONYANA  
LOCAL MUNICIPALITY**

PROJECT  
**GA-SEGONYANA LOCAL MUNICIPALITY RURAL  
ROADS PROGRAMME - CONSTRUCTION OF  
RURAL ROADS**

DRAWING TITLE  
**REGIONAL LOCALITY MAP**

PRINT ISSUED ON			
REVISIONS			
No.	DATE	BY	DESCRIPTION
SCALE: NTS			

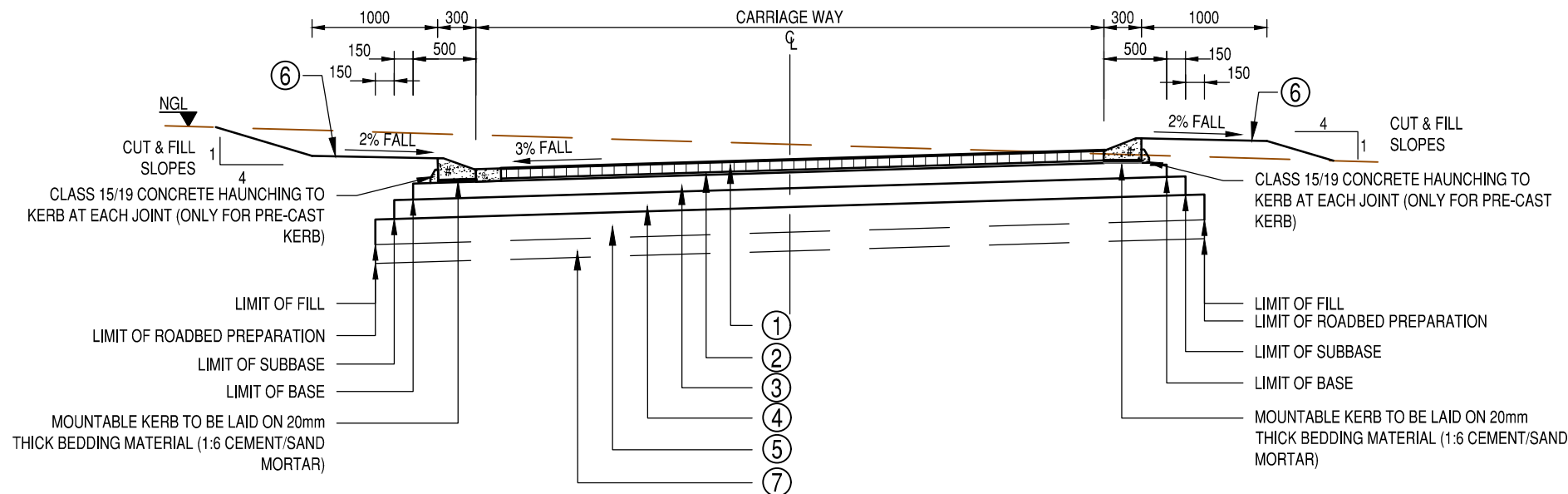
DESIGN	DATE	DRAWN	DATE
-	-	-	-
SURVEYED	DATE	CHECKED	DATE
-	-	-	-
DRAWING No. 2024-03-G/P/001			
REVISION No.			
1.0			



REVISION No.							
1.0							

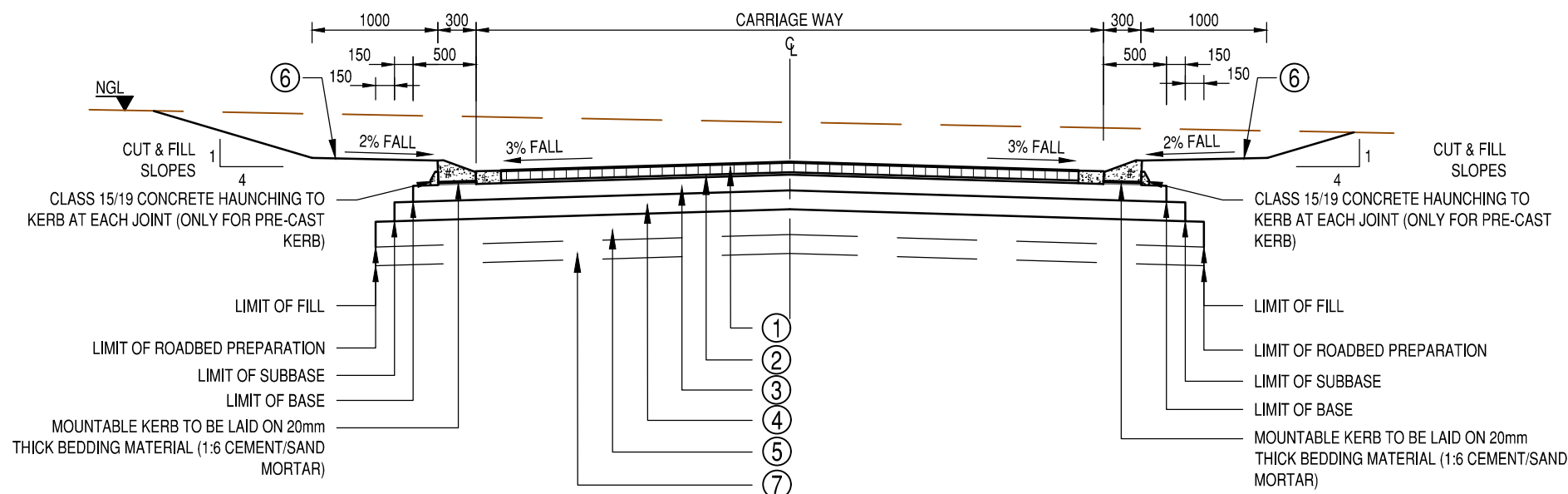
REVISION No.							
1.0							





### TYPICAL PAVEMENT DESIGN DETAIL CROSS-FALL ROAD

SCALE 1:50



### TYPICAL PAVEMENT DESIGN DETAIL CAMBER ROAD

SCALE 1:50

#### NOTE:

1. PRIOR TO THE UNDERTAKING OF ANY VIBRATORY OR PAD FOOT ROLLING WITHIN THE ROAD FOUNDATION, AN ON SITE TRIAL SECTION SHALL BE PREPARED AND CONDUCTED IN ORDER TO ASCERTAIN THE AVERAGE NUMBER OF m.PASSES REQUIRED IN ORDER TO OBTAIN THE SPECIFIED COMPACTION EFFORT FOR THE ROADBED PREPARATION.
2. THE ENGINEER SHALL THEN INSTRUCT THE CONTRACTOR TO REMOVE AND SPOIL THE TOPSOIL AND HILLWASH OVERBURN TO WEARING COURSE DEPTH OR FERRICRETE LEVEL, WHERE REQUIRED WHICHEVER IS THE SHALLOWEST. ALL FERRICRETE MATERIAL SHALL BE CUT TO TEMPORARY STOCKPILE AS DETERMINED BY THE ENGINEER FOR LATER USE IN THE PAVEMENT STRUCTURE AND WEARING COURSE LAYER WORKS.
3. THE CONTRACTOR SHALL THEN APPLY THE NUMBER OF m.PASSES ORDERED BY THE ENGINEER, PERIODICALLY WATERING AND BLADING THE ROADBED FOUNDATION AREA TO ENSURE MAXIMUM WORKABILITY AND COMPACTION EFFICIENCY.
4. AFTER APPLYING THE VIBRATORY OR PAD FOOT ROLLING, CUT TO FILL OR BLADE TO WINDROW THE FERRICRETE PINNACLES, RIP, SCARIFY AND RECOMPACT ROADBED TO ABOVE SPECIFICATION WHERE REQUIRED.


#### LEGEND:

- a) REQUIREMENTS ARE GIVEN IN THE FOLLOWING ORDER:  
LAYER THICKNESS/MATERIAL/CBR AND  
MIN COMPACTION/MIN. GM/MAX. PI
- b) MIN. UNCONFINED COMPRESSIVE STRENGTH (UCS) IS  
SHOWN IN MPa.
- c) MIN. DENSITY IS GIVEN AS % OF MAX MODIFIED  
AASHTO DENSITY.
- d) SG = STABILIZED GRAVEL  
NG = NATURAL GRAVEL  
IS = IN SITU SOIL  
PI = PLASTICITY INDEX  
GM = GRADING MODULES  
SBP = SHOULDER BREAK POINT
- e) # FIGURE 9d MOUNTABLE CONCRETE KERB (CLASS  
25/13) EXTRUDED ON BASE  
\* FIGURE 3 MOUNTABLE CONCRETE KERB (CLASS  
25/13) EXTRUDED ON SUBBASE  
s 250mm WIDE x 100mm THICK EDGE STRIP CAST IN ALTERNATIVE  
SECTIONS. THE EXPOSED END SHALL BE COATED WITH  
BITUMINOUS EMULSION BEFORE THE INTERMEDIATE SECTION  
IS CAST. 6mm JOINT WITH APPROVED JOINT FORMING  
MATERIAL AT 6m INTERVALS MAXIMUM.

①	SEGMENTED PAVING SHAPE S-A (G-BLOCKS), CLASS 25, 60mm THICK
②	RIVER SAND 20 / RIVER SAND IMPORTED FROM COMMERCIAL SOURCE
③	BASE 125mm C4 MATERIAL COMPACTED TO 98% MOD AASHTO DENSITY.
④	SUBBASE 150mm G6 MATERIAL COMPACTED TO 95% MOD AASHTO DENSITY
⑤	ROADBED PREPARATION (REFER TO NOTES) VIBRATORY OR PAD FOOT ROLLING (NUMBER OF PASSES TO BE DETERMINED BY ENGINEER ON SITE) OR RIP SCARIFY AND RE-COMPACT 150MS/@90%
⑥	SHOULDER WEARING COURSE CUT TO FILL FROM ROAD FOR ACCOMMODATION OF TRAFFIC WHERE REQUIRED
⑦	FILL - ONLY WHERE REQUIRED FILL TO BE A MINIMUM OF G9 MATERIAL TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm THICKNESS TO 90% MOD AASHTO DENSITY.

NOTES	APPROVED:
ENGINEER:	
DATE:	
CLIENT:	APPROVED:
DATE:	

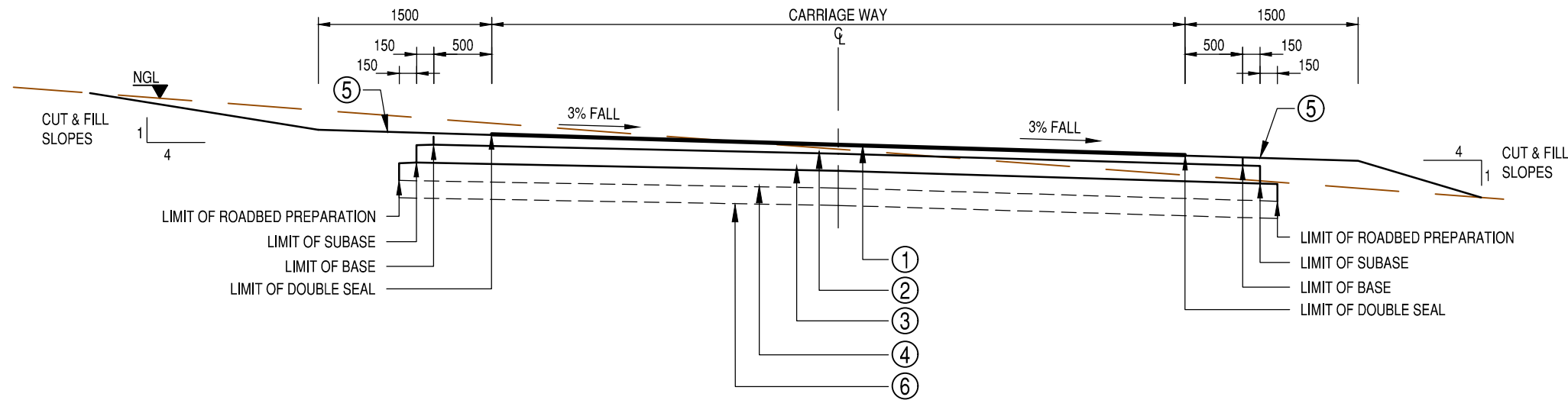
REFERENCE DRAWINGS	
PLAN Nr.	DESCRIPTION


	CLIENT <b>GA-SEGONYANA LOCAL MUNICIPALITY</b>
	IMPLEMENTING AGENT <b>GA-SEGONYANA LOCAL MUNICIPALITY</b>

PROJECT <b>GA-SEGONYANA LOCAL MUNICIPALITY RURAL ROADS PROGRAMME - CONSTRUCTION OF RURAL ROADS</b>
DRAWING TITLE <b>TYPICAL PAVEMENT DESIGN DETAIL FOR SURFACED ACCESS STREETS (PAVING BLOCK FINISH)</b>

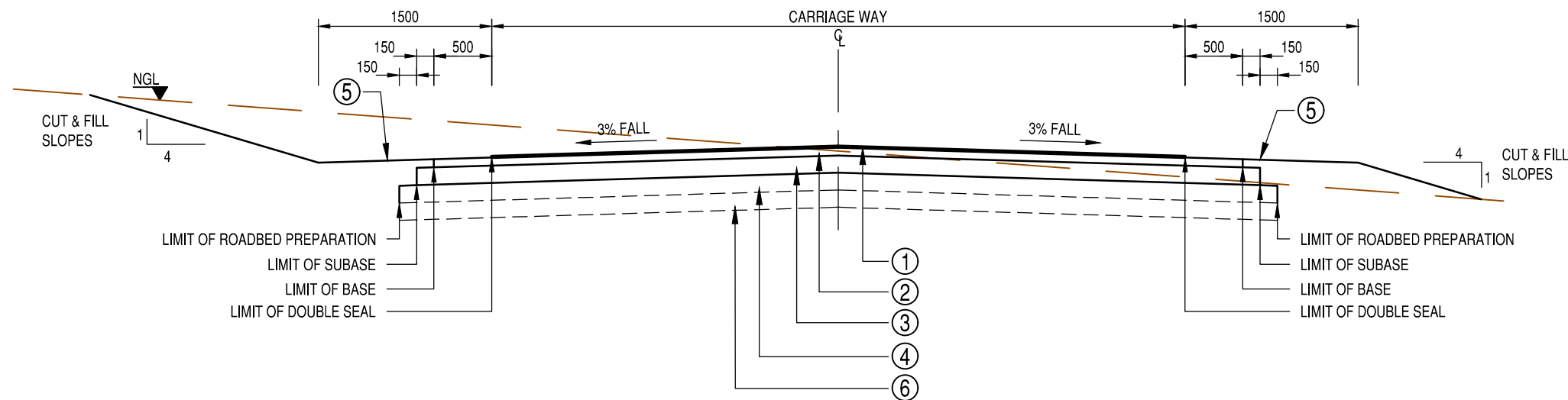
PRINT ISSUED ON			
REVISIONS			
No.	DATE	BY	DESCRIPTION
SCALE: 1:50			

DESIGN	DATE	DRAWN	DATE
-	-	-	-
SURVEYED	DATE	CHECKED	DATE
-	-	-	APR 2024
DRAWING No. 2024-03-R/D/002			
REVISION No.			
1.0			



### TYPICAL PAVEMENT DESIGN DETAIL CROSS-FALL ROAD

SCALE 1:50



### TYPICAL PAVEMENT DESIGN DETAIL CAMBER ROAD

SCALE 1:50

#### NOTE:

1. PRIOR TO THE UNDERTAKING OF ANY VIBRATORY OR PAD FOOT ROLLING WITHIN THE ROAD FOUNDATION, AN ON SITE TRIAL SECTION SHALL BE PREPARED AND CONDUCTED IN ORDER TO ASCERTAIN THE AVERAGE NUMBER OF m.PASSES REQUIRED IN ORDER TO OBTAIN THE SPECIFIED COMPACTION EFFORT FOR THE ROADBED PREPARATION.
2. THE ENGINEER SHALL THEN INSTRUCT THE CONTRACTOR TO REMOVE AND SPOIL THE TOPSOIL AND HILLWASH OVERBURN TO WEARING COURSE DEPTH OR FERRICRETE LEVEL, WHERE REQUIRED WHICHEVER IS THE SHALLOWEST. ALL FERRICRETE MATERIAL SHALL BE CUT TO TEMPORARY STOCKPILE AS DETERMINED BY THE ENGINEER FOR LATER USE IN THE PAVEMENT STRUCTURE AND WEARING COURSE LAYER WORKS.
3. THE CONTRACTOR SHALL THEN APPLY THE NUMBER OF m.PASSES ORDERED BY THE ENGINEER, PERIODICALLY WATERING AND BLADING THE ROADBED FOUNDATION AREA TO ENSURE MAXIMUM WORKABILITY AND COMPACTION EFFICIENCY.
4. AFTER APPLYING THE VIBRATORY OR PAD FOOT ROLLING, CUT TO FILL OR BLADE TO WINDROW THE FERRICRETE PINNACLES, RIP, SCARIFY AND RECOMPACT ROADBED TO ABOVE SPECIFICATION WHERE REQUIRED.



#### LEGEND:

- a) REQUIREMENTS ARE GIVEN IN THE FOLLOWING ORDER:  
LAYER THICKNESS/MATERIAL/CBR AND  
MIN COMPACTION/MIN. GM/MAX. PI
- b) MIN. UNCONFINED COMPRESSIVE STRENGTH (UCS) IS SHOWN IN MPa.
- c) MIN. DENSITY IS GIVEN AS % OF MAX MODIFIED AASHTO DENSITY.
- d) SG = STABILIZED GRAVEL  
NG = NATURAL GRAVEL  
IS = IN SITU SOIL  
PI = PLASTICITY INDEX  
GM = GRADING MODULES  
SBP = SHOULDER BREAK POINT

①	DOUBLE SEAL 13.2/6.7 USING 80/100 PENETRATION GRADE BITUMEN
②	BASE 125mm C4 MATERIAL COMPACTED TO 98% MOD AASHTO DENSITY.
③	SUBBASE 150mm G6 MATERIAL COMPACTED TO 95% MOD AASHTO DENSITY
④	ROADBED PREPARATION (REFER TO NOTES) VIBRATORY OR PAD FOOT ROLLING (NUMBER OF PASSES TO BE DETERMINED BY ENGINEER ON SITE) OR RIP SCARIFY AND RECOMPACT 150/IS@90%
⑤	SHOULDER WEARING COURSE CUT TO FILL FROM ROAD FOR ACCOMMODATION OF TRAFFIC WHERE REQUIRED.
⑥	FILL - ONLY WHERE REQUIRED FILL TO BE A MINIMUM OF G9 MATERIAL TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm THICKNESS TO 90% MOD AASHTO DENSITY.

NOTES	APPROVED:
ENGINEER:	
DATE:	
CLIENT:	APPROVED:
DATE:	

REFERENCE DRAWINGS	
PLAN Nr.	DESCRIPTION


	CLIENT <b>GA-SEGONYANA LOCAL MUNICIPALITY</b>
	IMPLEMENTING AGENT <b>GA-SEGONYANA LOCAL MUNICIPALITY</b>

PROJECT <b>GA-SEGONYANA LOCAL MUNICIPALITY RURAL ROADS PROGRAMME - CONSTRUCTION OF RURAL ROADS</b>
DRAWING TITLE <b>TYPICAL PAVEMENT DESIGN DETAIL FOR SURFACED ACCESS STREETS (BITUMEN FINISH)</b>

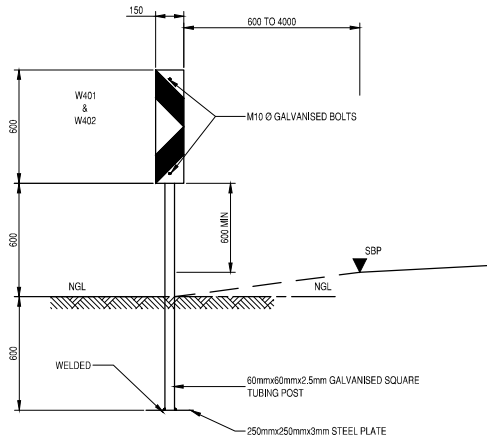
PRINT ISSUED ON			
REVISIONS			
No.	DATE	BY	DESCRIPTION
SCALE: 1:50			

DESIGN	DATE	DRAWN	DATE
-	-	-	-
SURVEYED	DATE	CHECKED	DATE
-	-	-	APR 2024
DRAWING No. 2024-03-R/D/003			
REVISION No.			
1.0			

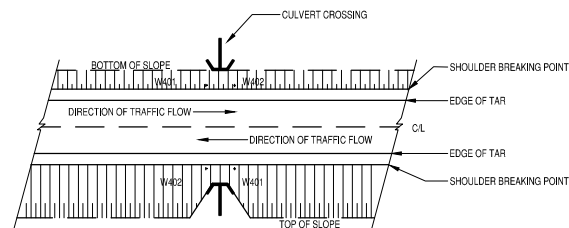




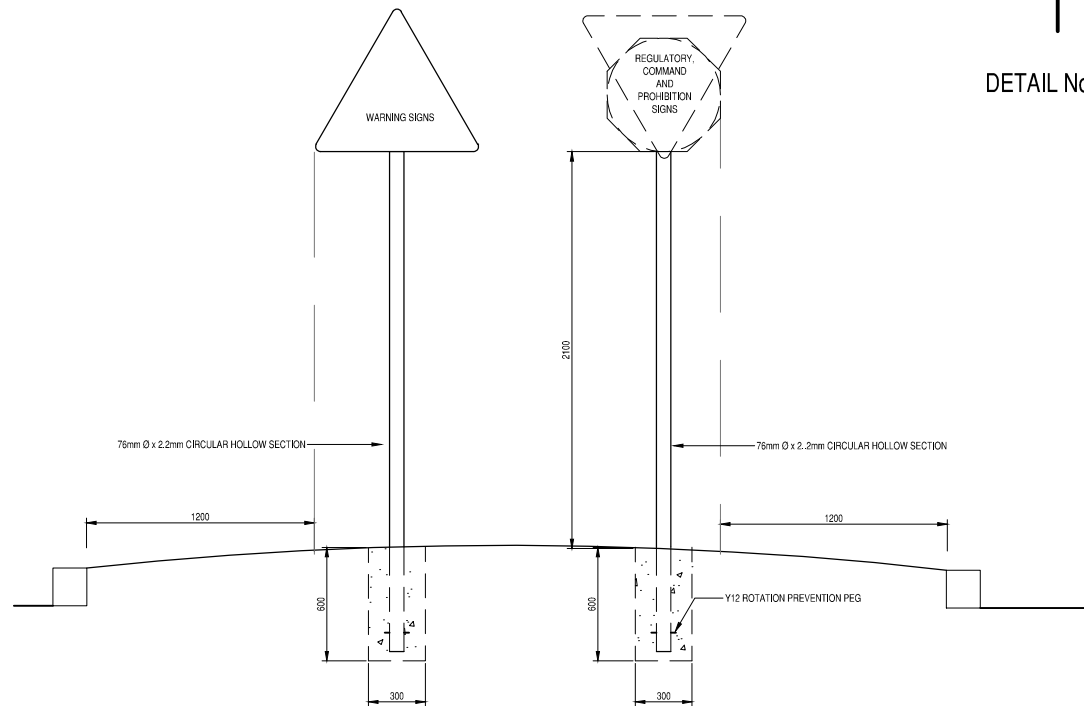




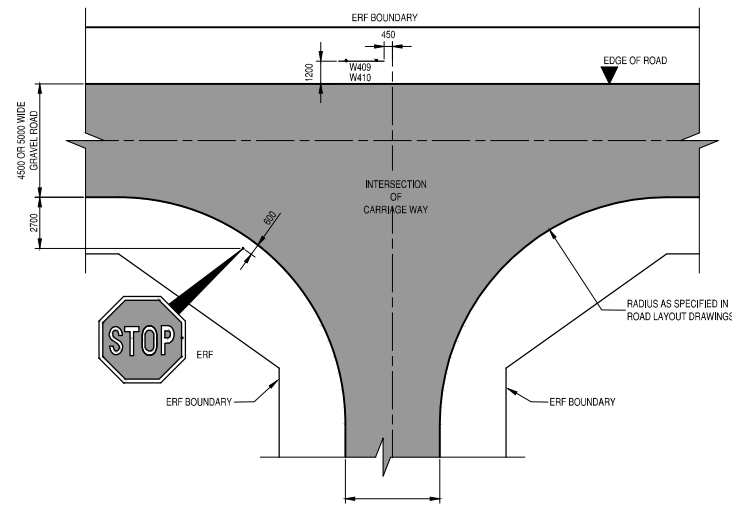
FRONT ELEVATION W401  
SCALE 1:20



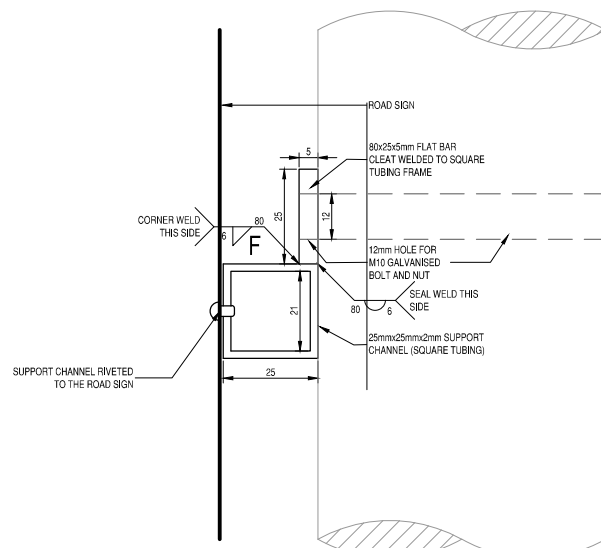
SIGN AT CULVERT  
NTS



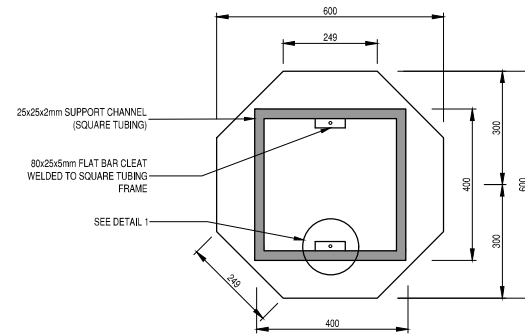
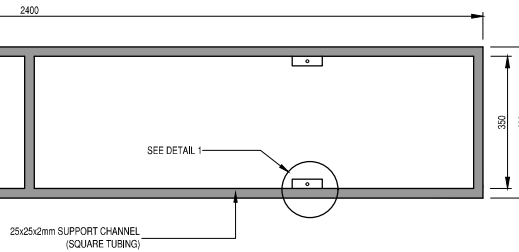
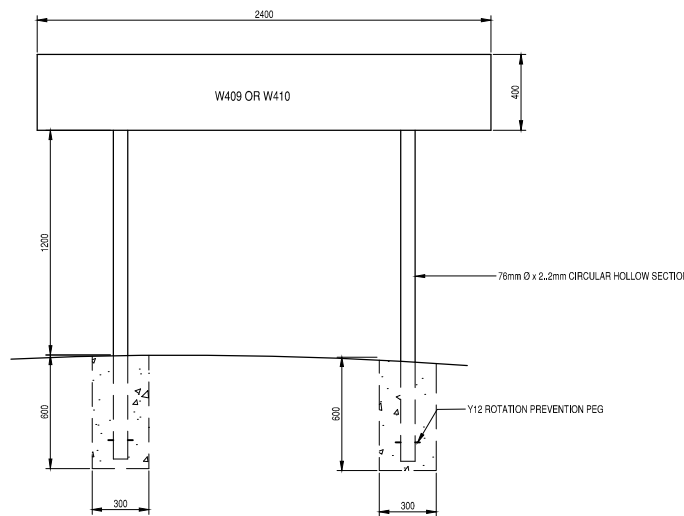
POSITIONING DETAILS  
SCALE 1:20



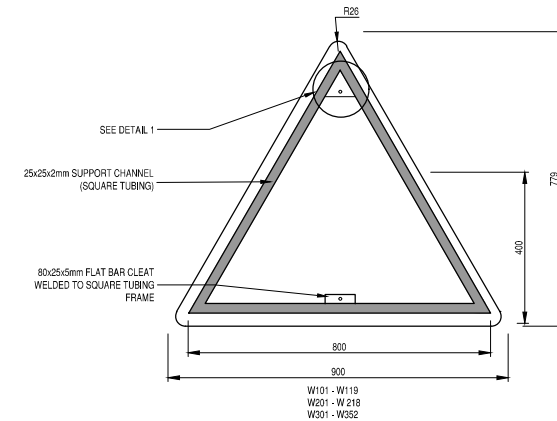
CHEVRON POSITION AT INTERSECTION  
SCALE 1:200



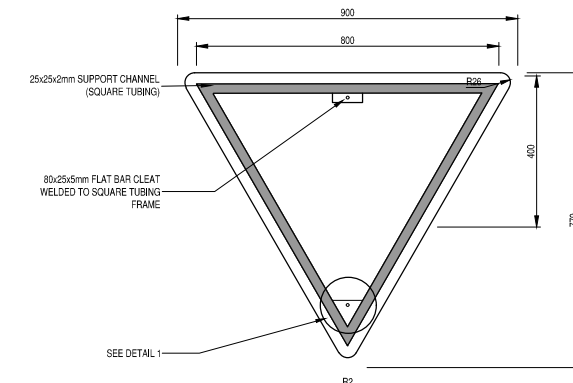
DETAIL No. 1 SECTIONAL ELEVATION  
SCALE 1:1



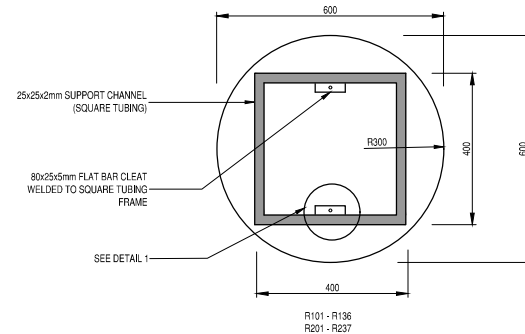
CONTROL SIGNS



ROAD LAYOUT AND SYMBOLIC SIGNS



CONTROL SIGN



COMMAND AND PROHIBITION SIGNS  
FIXING AND SUPPORT DETAILS  
SCALE 1:10

#### REVISIONS

No.	DATE	BY	DESCRIPTION

#### NOTES

- REFER TO DRAWING No. R/P/00# FOR ROAD SIGNAGE POSITION
- REFER TO DRAWING No. R/D/005 FOR ROAD MARKING DETAILS
- ALL ROAD MARKINGS AND ROAD SIGNS TO BE MANUFACTURED AND CONSTRUCTED IN ACCORDANCE WITH THE SOUTH AFRICAN ROAD TRAFFIC SIGNS MANUAL
- ALL ROAD SIGNS TO BE PLACED AT A DEFLECTION ANGLE OF 93° WITH THE CENTER LINE OF THE ROAD
- M10 x 90mm GALVANISED BOLTS AND NUTS FOR FIXING ROAD SIGNS TO GALVANISED STEEL PIPES
- ALL ROAD SIGNS TO BE FIXED TO SQUARE TUBING SUPPORT CHANNEL BY MEANS OF 6mm Ø RIVETS AT A MAXIMUM SPACING OF 125mm c/c

#### REFERENCE DRAWINGS

PLAN No.	DESCRIPTION

APPROVED:	DATE:
ENGINEER:	DATE:
APPROVED:	DATE:
CLIENT:	DATE:

PRINT ISSUED ON



CLIENT  
**GA-SEGONYANA  
LOCAL MUNICIPALITY**

PROJECT  
**GA-SEGONYANA LOCAL  
MUNICIPALITY RURAL ROADS  
PROGRAMME - CONSTRUCTION OF  
RURAL ROADS**

IMPLEMENTING AGENT:  
**GA-SEGONYANA LM**

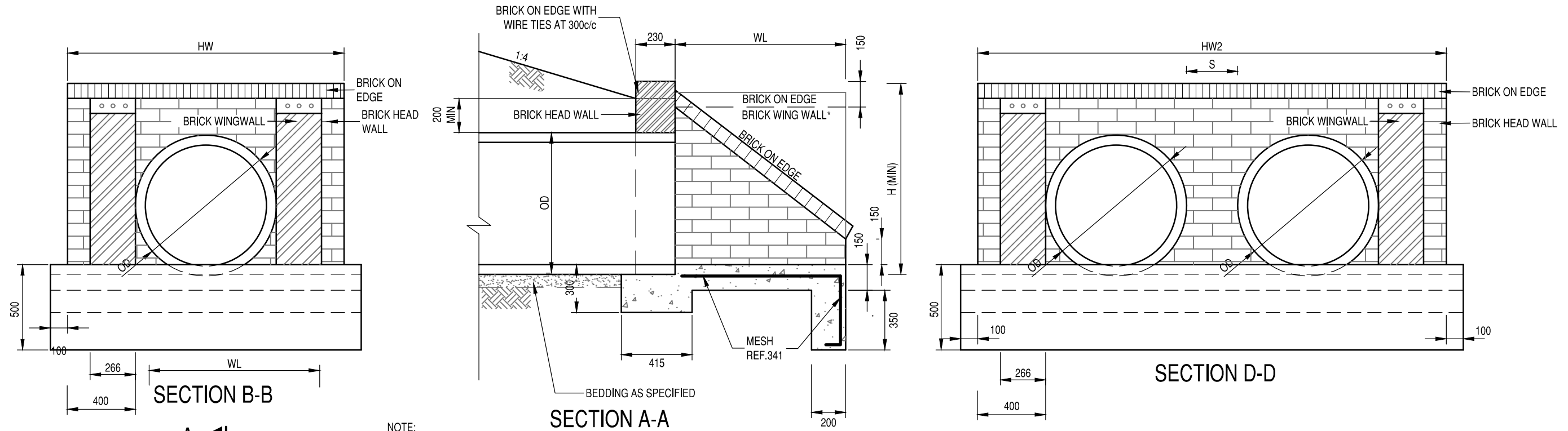
DRAWING TITLE  
**POSITION OF SUPPORT  
BRACKETS AND  
INSTALLATION DETAILS  
OF ROAD SIGNS**

DESIGN	DATE	DRAWN	DATE
	APRIL 2024		APRIL 2024
SURVEYED	DATE	CHECKED	DATE
			APRIL 2024

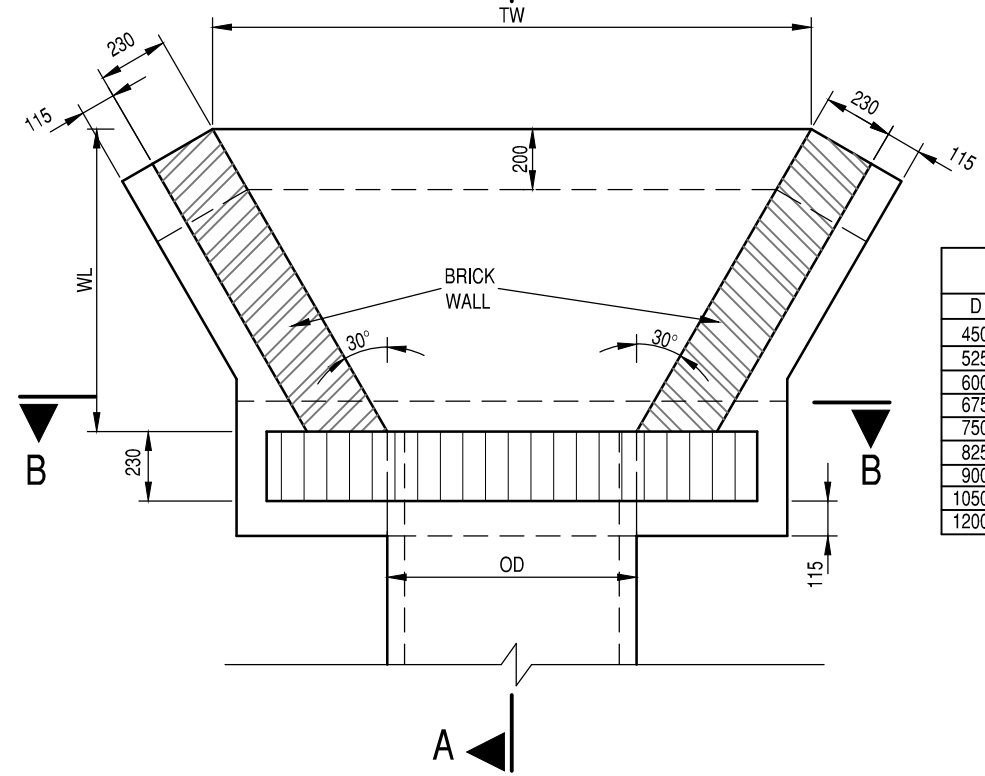
SCALE  
as shown

DRAWING No.  
**2024-03-R/D/006**

REVISION No.							
1.0							

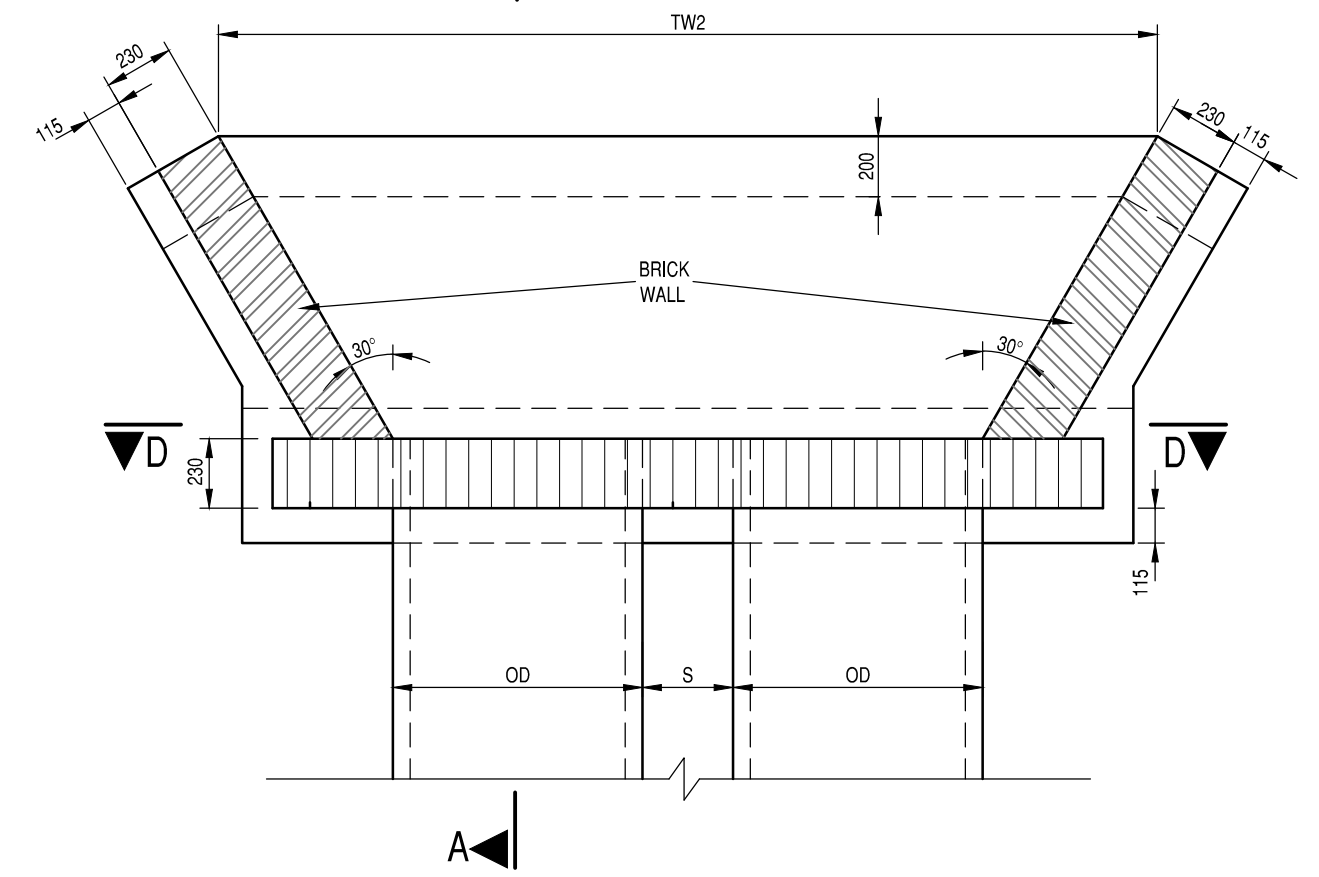


NOTE:  
MESH LAP LENGTH = 2 ROWS.



TYPICAL PIPE CULVERT DETAILS  
\*WING WALL DETAIL IN A CHANNEL OR CUT APPLICATION

PIPE CULVERT STRUCTURE DIMENSIONS									
D	OD	HW	HW2	WL	TW	TW2	S	H	
450Ø	533mm	1333	2166	900	1420	2250	300	890	
525Ø	616mm	1416	2332	1000	1590	2500	300	970	
600Ø	699mm	1499	2498	1100	1750	2750	300	1050	
675Ø	787mm	1587	2774	1200	1930	3110	400	1140	
750Ø	870mm	1670	2940	1300	2100	3360	400	1220	
825Ø	946mm	1746	3092	1400	2250	3590	400	1300	
900Ø	1029mm	1829	3358	1500	2410	3940	500	1400	
1050Ø	1194mm	1994	3688	1700	2740	4440	500	1550	
1200Ø	1359mm	2159	4018	1900	3070	4930	500	1710	



<b>NOTES</b> ENGINEER: _____ DATE: _____ APPROVED: _____ CLIENT: _____ DATE: _____	<b>REFERENCE DRAWINGS</b> <table border="1"> <tr> <th>PLAN Nr.</th> <th>DESCRIPTION</th> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>	PLAN Nr.	DESCRIPTION									 <b>CLIENT</b> <b>GA-SEGONYANA LOCAL MUNICIPALITY</b>  <b>IMPLEMENTING AGENT</b> <b>GA-SEGONYANA LOCAL MUNICIPALITY</b>	<b>PROJECT</b> <b>GA-SEGONYANA LOCAL MUNICIPALITY RURAL ROADS PROGRAMME - CONSTRUCTION OF RURAL ROADS</b> <b>DRAWING TITLE</b> <b>TYPICAL PIPE CULVERT END-STRUCTURE DETAILS</b>	<b>PRINT ISSUED ON</b> <table border="1"> <tr> <th>No.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>	No.	DATE	BY	DESCRIPTION													<table border="1"> <tr> <td>DESIGN</td> <td>DATE</td> <td>DRAWN</td> <td>DATE</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>SURVEYED</td> <td>DATE</td> <td>CHECKED</td> <td>DATE</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </table>	DESIGN	DATE	DRAWN	DATE	-	-	-	-	SURVEYED	DATE	CHECKED	DATE	-	-	-	-
	PLAN Nr.	DESCRIPTION																																													
No.	DATE	BY	DESCRIPTION																																												
DESIGN	DATE	DRAWN	DATE																																												
-	-	-	-																																												
SURVEYED	DATE	CHECKED	DATE																																												
-	-	-	-																																												
SCALE: 1:25	DRAWING No. 2024-03-R/D/007 REVISION No. _____ 1.0 _____																																														