



CLIMATE PROOFED ARID AND SEMI ARID RURAL ROADS,

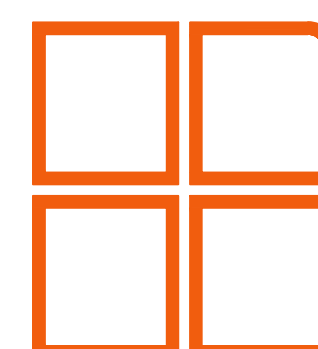
**FINAL DESIGN OF MATIRA KAMARANDI KAMANYEKIROAD
BATCH 2**

MARCH 2025

EMPLOYER

**DIRECTOR GENERAL
KERRA
P.O BOX 48151-00100,
NAIROBI, Kenya**

CONSULTANT



Runji Consulting Group Ltd


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MATIRI KAMARANDI KAMANYEKI ROAD BATCH 2 DRAWINGS	
	COVER PAGE
	DRAWING LIST
GENERAL DRAWINGS	
CE1045/GD/MKM/01	LOCATION MAP
CE1045/GD/MKM/01	MATIRI KAMARANDI KAMANYEKI SKETCH MAP
CE1045/GD/MKM/01	GENERAL LAYOUT (SHEET 1 OF 4) CHAINAGE 10+960 - 15+800
CE1045/GD/MKM/02	GENERAL LAYOUT (SHEET 2 OF 4) CHAINAGE 15+800 - 20+400
CE1045/GD/MKM/03	GENERAL LAYOUT (SHEET 3 OF 4) CHAINAGE 20+400 - 24+600
CE1045/GD/MKM/04	GENERAL LAYOUT (SHEET 4 OF 4) CHAINAGE 24+600 - 27+624
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CE1045/CDS/MKM/03	HEADWALL TYPE 4 (FOR ACCESS CULVERT)
CE1045/CDS/MKM/04	BEDDING AND HAUNCH PROFILES TYPE III& IV
CE1045/CDS/MKM/05	CULVERT ROAD SIGNS
STANDARD DRAWINGS	
CE1045/SD/MKM/01	STANDARD DRAWING - STANDARD - ROAD SIGNS
CE1045/SD/MKM/02	STANDARD DRAWING - STANDARD - ROAD SIGNS INSTALLATION
CE1045/SD/MKM/03	STANDARD DRAWING - STANDARD - TRAFFIC MANAGEMENT
CE1045/SD/MKM/04	STANDARD DRAWING - PUBLICITY SIGN BOARD

No.	DATE	DESCRIPTION



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DIRECTOR GENERAL	
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PROJECT TITLE:

DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMARANDI KAMANYEKI(ROAD)
 BATCH 2

DRAWING TITLE:

DRAWING LIST

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N

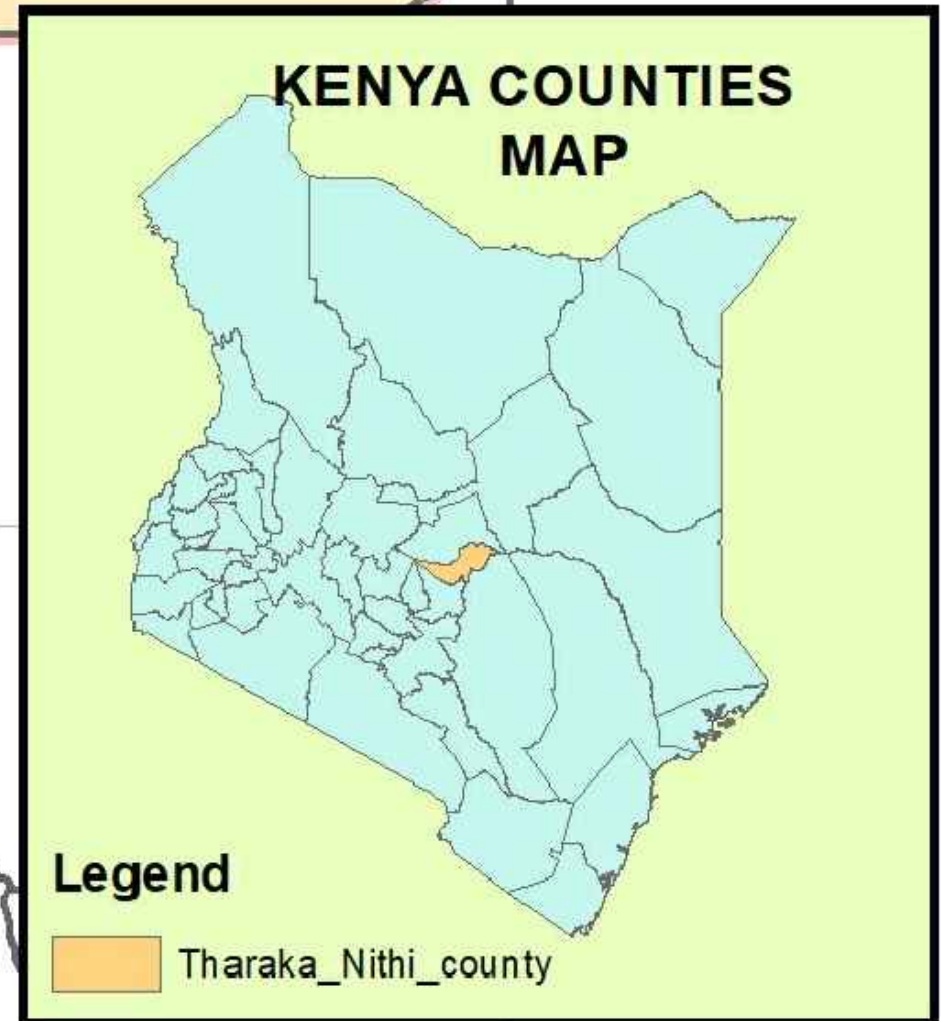
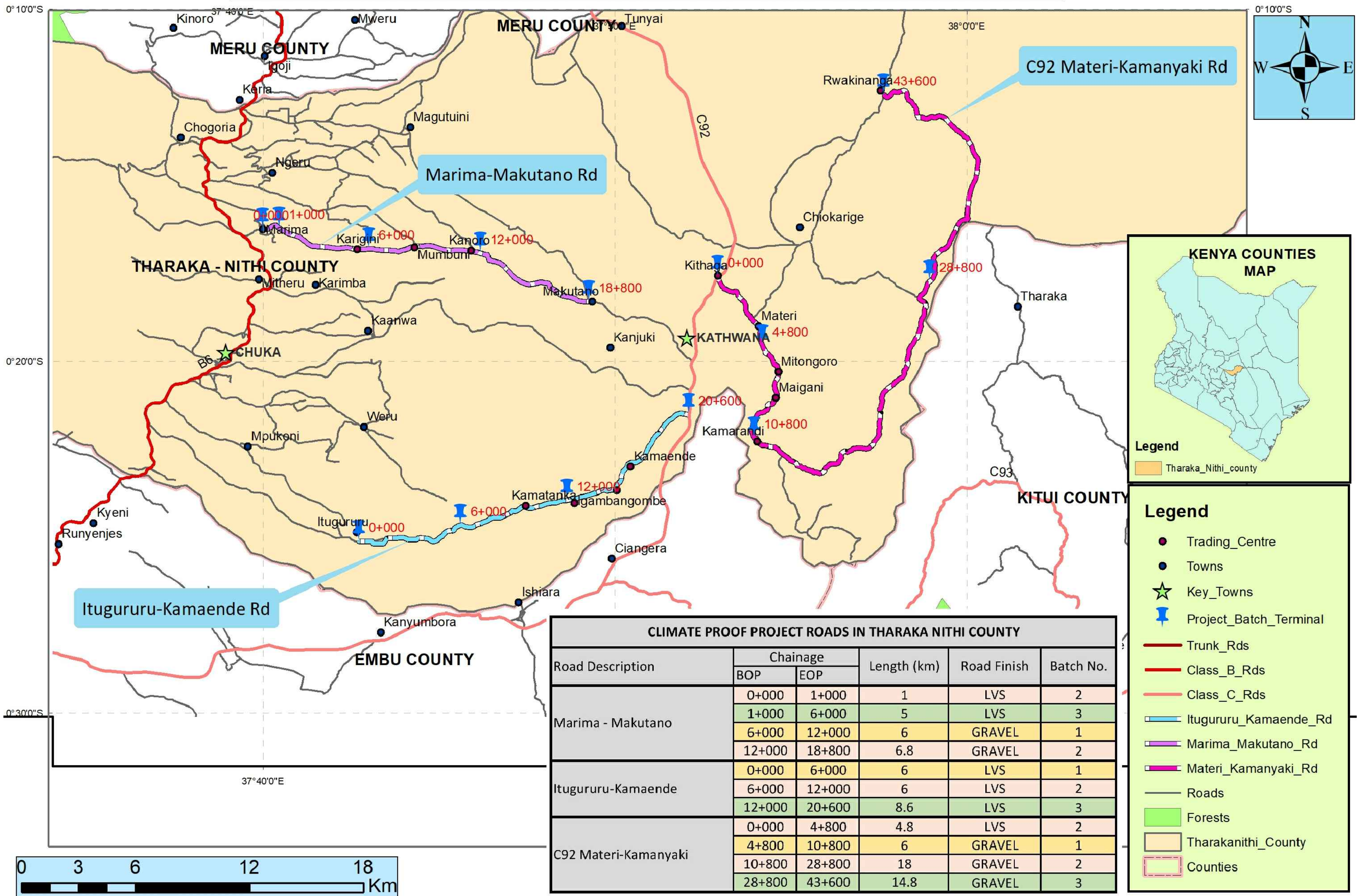
Scale: NTS

Drg No.
 CE1045/GD/MK/00

Date DECEMBER 2024

GENERAL DRAWINGS

CLIMATE PROOFED PROJECT ROADS IN THARAKA NITHI COUNTY

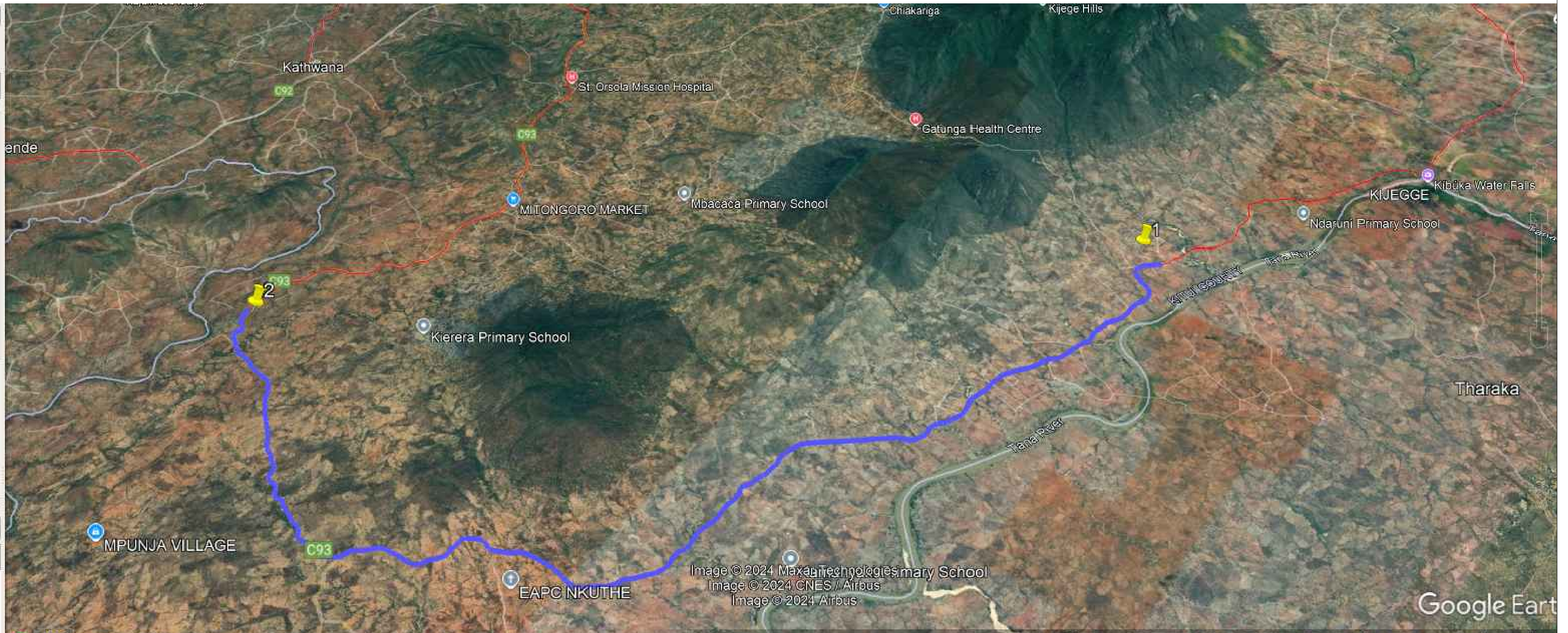


Legend

- Trading_Centre
- Towns
- ★ Key_Towns
- 📍 Project_Batch_Terminal
- Trunk_Rds
- Class_B_Rds
- Class_C_Rds
- ▬ Itugururu_Kamaende_Rd
- ▬ Marima_Makutano_Rd
- ▬ Materi_Kamanyaki_Rd
- Roads
- Forests
- Tharakanithi_County
- ▭ Counties

CLIMATE PROOF PROJECT ROADS IN THARAKA NITHI COUNTY					
Road Description	Chainage		Length (km)	Road Finish	Batch No.
	BOP	EOP			
Marima - Makutano	0+000	1+000	1	LVS	2
	1+000	6+000	5	LVS	3
	6+000	12+000	6	GRAVEL	1
	12+000	18+800	6.8	GRAVEL	2
Itugururu-Kamaende	0+000	6+000	6	LVS	1
	6+000	12+000	6	LVS	2
	12+000	20+600	8.6	LVS	3
C92 Materi-Kamanyaki	0+000	4+800	4.8	LVS	2
	4+800	10+800	6	GRAVEL	1
	10+800	28+800	18	GRAVEL	2
	28+800	43+600	14.8	GRAVEL	3





1985 Imagery Date: 2/1/2023 37 M 378214.36 m E 9963080.47 m S elev 720 m eye alt 12.63 km



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PROJECT TITLE
**DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMAR MANYEKI BATCH 2**

DRAWING TITLE
**MATIRI KAMAR MANYEKI
 SKETCH MAP**

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: 1:5000

Drg No.
 CE1045/GD/MKM/01
 Date :DECEMBER 2024



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PROJECT TITLE:
**DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMAR MANYEKI BATCH 2**


DRAWING TITLE:
**GENERAL LAYOUT
 SHEET 1 OF 4
 CHAINAGE 10+960 - 15+800**

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: 1:5000

Drg No.
CE1045/GD/MKM/01
 Date :DECEMBER 2024



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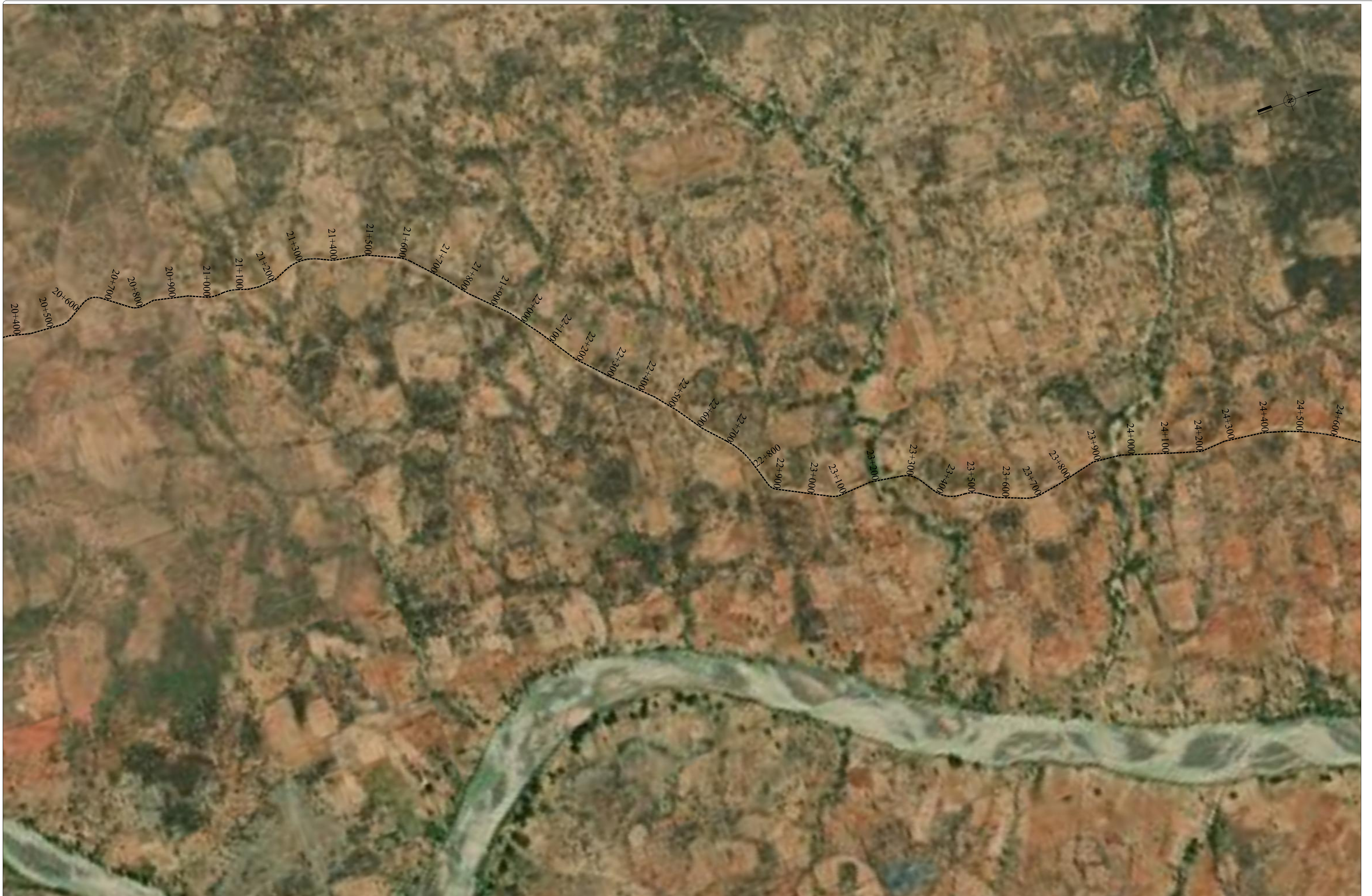
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 P. O. Box 68053-00200 Nairobi
 Tel. (020) 2717213/4

PROJECT TITLE:
**DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMAR MANYEKI BATCH 2**

DRAWING TITLE:
**GENERAL LAYOUT
 SHEET 2 OF 4
 CHAINAGE 15+800 - 20+400**

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: 1:5000

Drg No.
CE1045/GD/MKM/02
 Date :DECEMBER 2024



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PROJECT TITLE:
**DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMAR MANYEKI BATCH 2**

DRAWING TITLE:
**GENERAL LAYOUT
 SHEET 3 OF 4
 CHAINAGE 20+400- 24+600**

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: 1:5000

Drg No.
CE1045/GD/MKM/03
 Date : DECEMBER 2024



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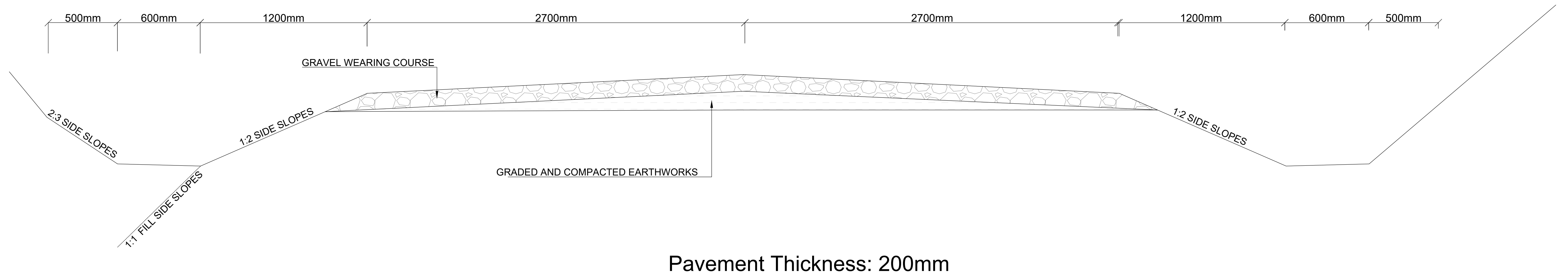
PROJECT TITLE:
**DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMAR MANYEKI BATCH 2**

DRAWING TITLE:
**GENERAL LAYOUT
 SHEET 4 OF 4
 CHAINAGE 24+600 - 27+624**

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: 1:5000

Drg No.
CE1045/GD/MKM/04
 Date :DECEMBER 2024

TYPICAL CROSS-SECTION



Slope benching details

GENERAL NOTES:

1. Final fill slopes 1:1
2. Cutting backslopes may be steepened as instructed at culvert locations to minimise pipe extensions.
3. Cutting Backslopes 2:3
4. Width of side ditches 600Mm or wider as instruted by the Engineer.

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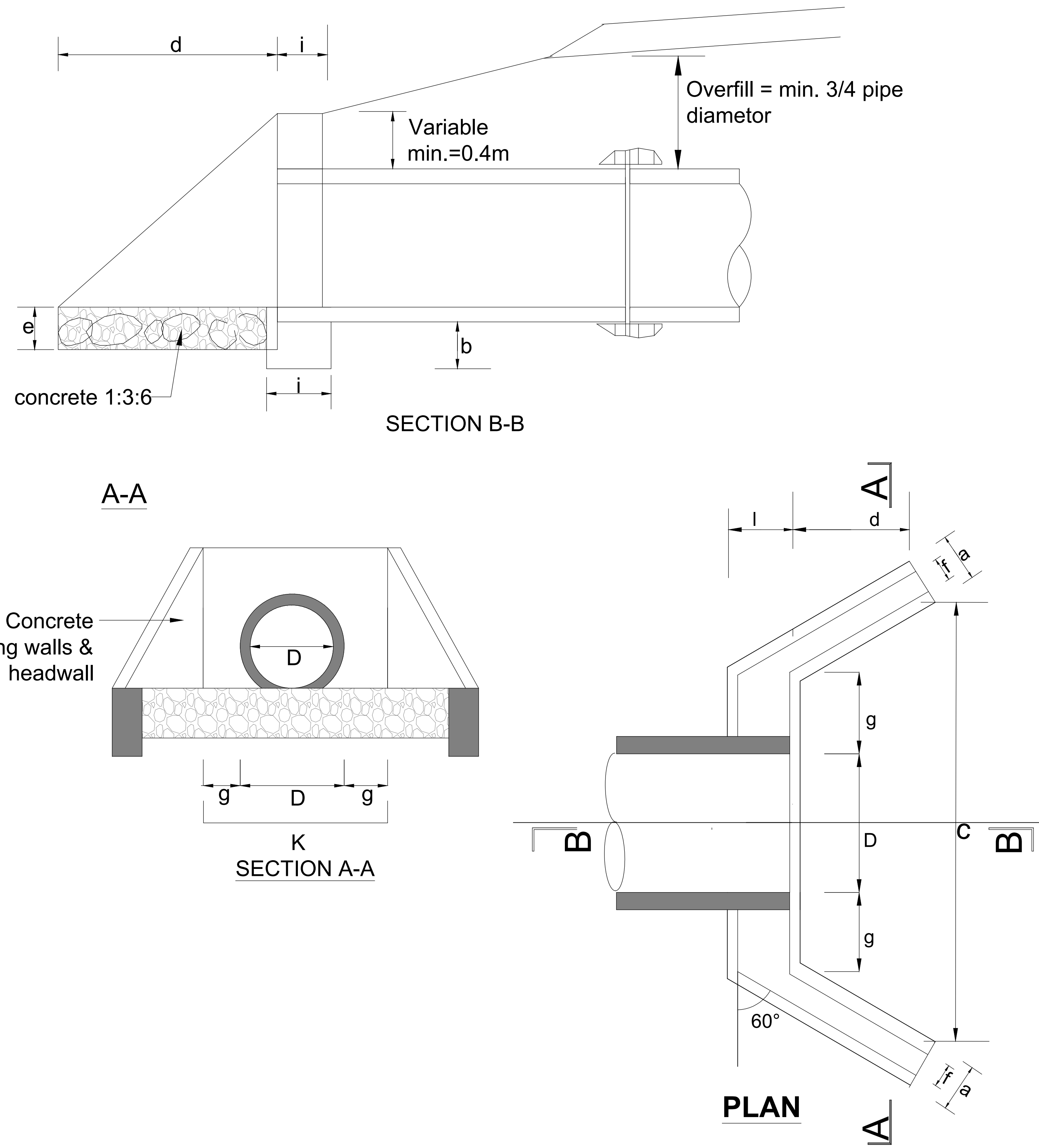
PROJECT TITLE:
**DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMARANDI KAMANYEKI ROAD
 BATCH 2**

DRAWING TITLE:
TYPICAL CROSS-SECTION

DRAWN BY: M.M DESIGNED BY: C.N.M CHECKED BY: M.J.N	Drg No. CE1045/CDS/MKK/O5
Scale: NTS	Date :DECEMBER 2024

TYPICAL CULVERT DRAWINGS

FIGURE H.8 - HEADWALL TYPE 1 (HEAD AND WINGWALLS)



DIMENSIONS AND MATERIAL REQUIREMENTS

PIPE DIAMETER IN (M)			TYPE A			TYPE B		
			(CONCRETE BLOCKS)			(STONE MASONRY)		
			450	600	900	450	600	900
DIMENSION	UNIT							
a	FOUNDATION	m	0.30	0.30	0.30	0.40	0.40	0.60
b	FOUNDATION	m	0.30	0.30	0.40	0.30	0.30	0.40
c	FOUNDATION		2.20	2.35	2.89	2.20	2.35	2.89
d	APRON	m	1.00	1.00	1.20	1.00	1.00	1.20
e	APRON	m	0.20	0.20	0.20	0.20	0.20	0.20
f	WALL	m	0.20	0.20	0.20	0.40	0.40	0.40
g	WALL	m	0.30	0.30	0.30	0.30	0.30	0.30
h	WALL	m	1.15	1.15	1.39	1.15	1.15	1.39
i	WALL	m	0.20	0.20	0.20	0.40	0.40	0.40
k	APRON	m	1.05	1.20	1.50	1.05	1.20	1.50
MATERIAL REQUIREMENT								
FOUNDATION								
	(Concrete)	m ³	0.3	0.32	0.51	0.4	0.42	1.03
HEAD/WINGWALLS								
	(Concrete/)	m ³	0.4	0.47	0.67	0.8	0.93	1.35
APRON								
	(Concrete)	m ³	0.33	0.36	0.53	0.33	0.36	0.53

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PROJECT TITLE
**DRAFT DETAILED ENGINEERING DESIGN OF
MATIRI KAMARANDI KAMANYEKI ROAD
BATCH 2**

DRAWING TITLE
**HEADWALL TYPE 1 (HEADWALL
AND WINGWALLS)**

DRAWN BY: M.M
DESIGNED BY: C.N.M
CHECKED BY: M.J.N

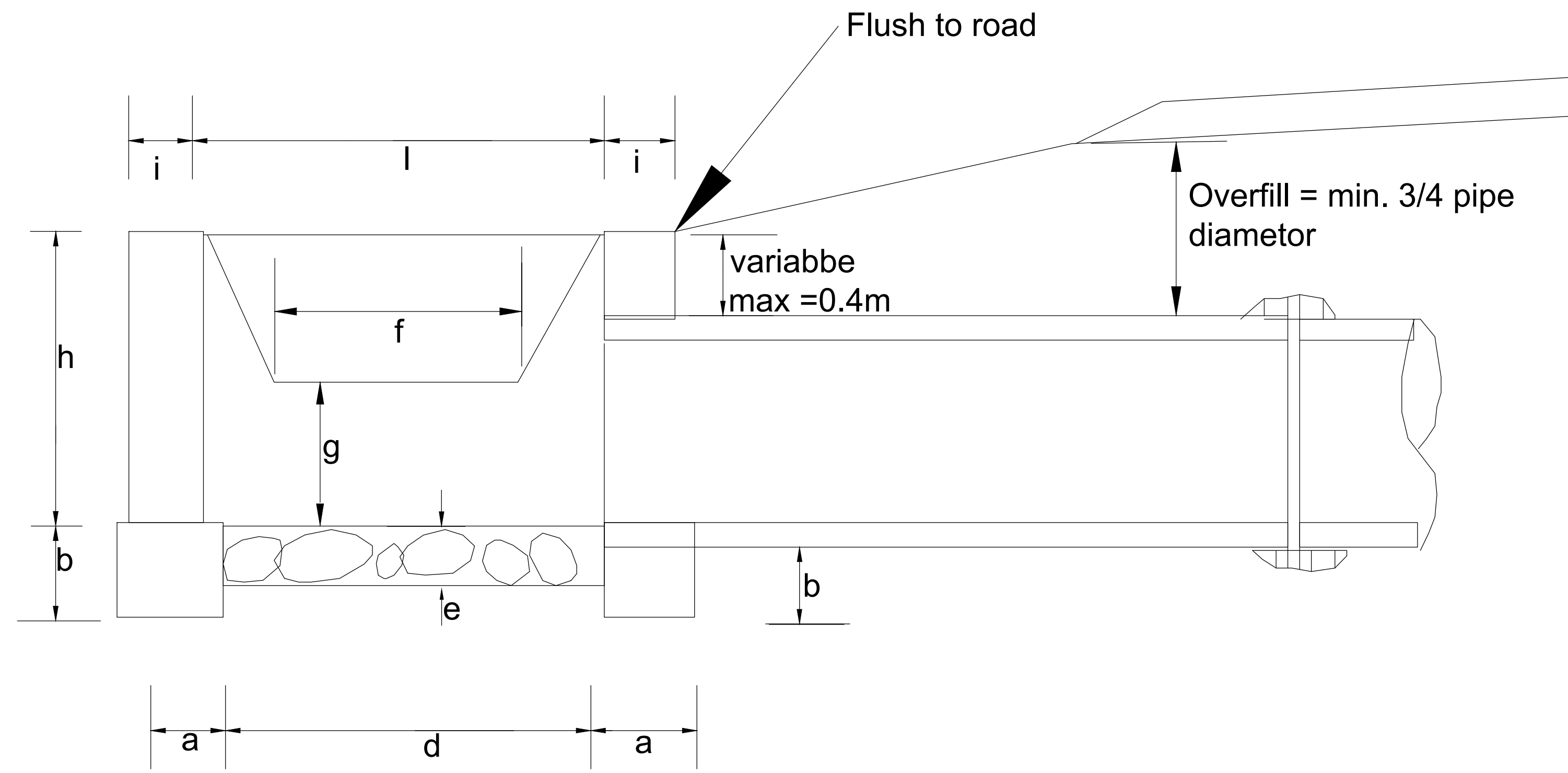
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CE1045/CDS/MKK/O1

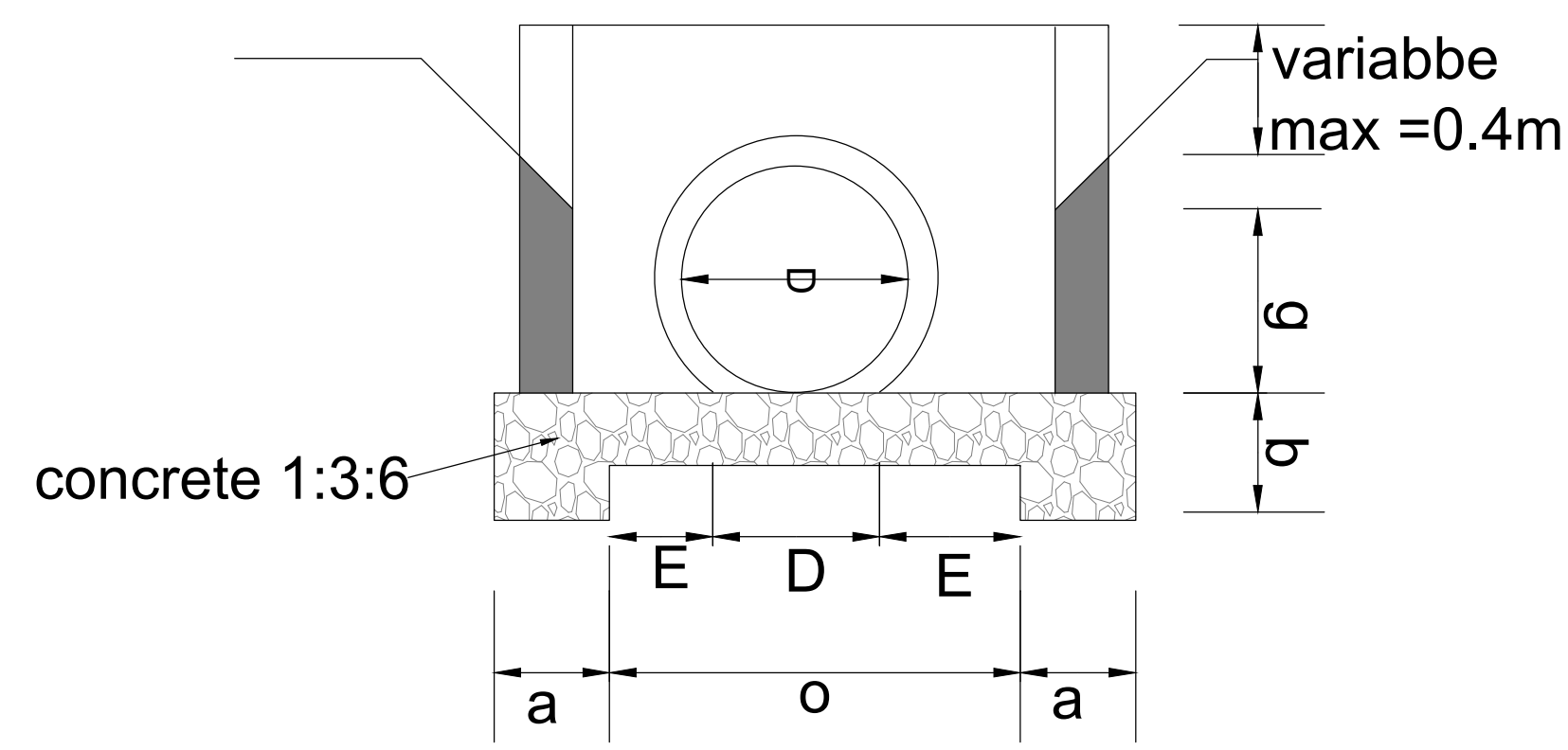
Date : DECEMBER 2024

FIGURE H.9 - HEADWALL TYPE 2 (DROP INLETS)

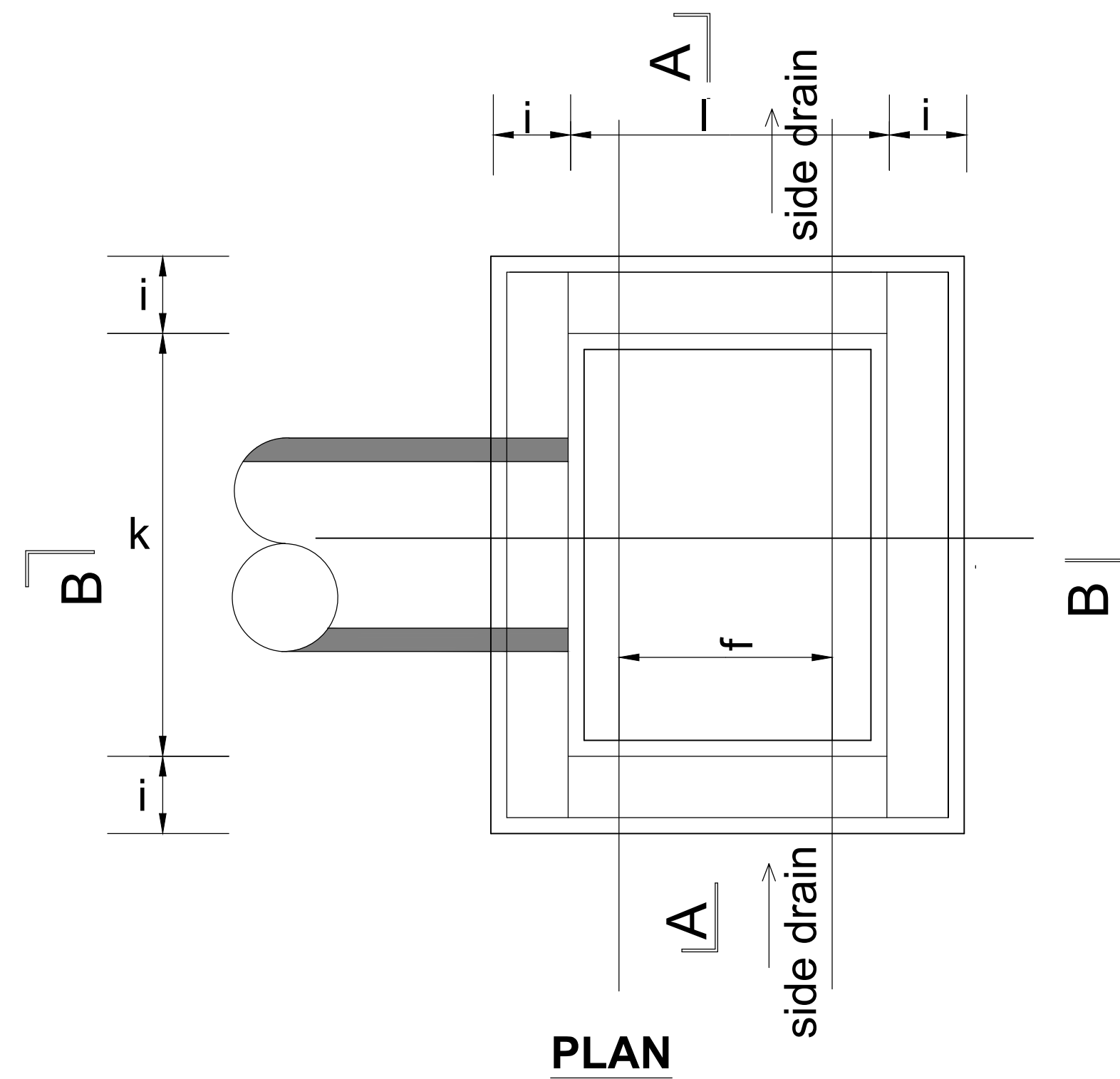
DIMENSIONS AND MATERIAL REQUIREMENTS



SECTION B-B



SECTION A-A



PLAN

PIPE DIAMETER IN (M)	TYPE A (CONCRETE BLOCKS)			TYPE B (STONE MASONRY)					
	450	600	900	450	600	900			
DIMENSION	UNIT								
a	FOUNDATION	m	0.30	0.30	0.30	0.40	0.40	0.40	
b	FOUNDATION	m	0.30	0.30	0.30	0.30	0.30	0.30	
c	FOUNDATION	m	1.10	1.10	1.40	1.20	1.20	1.50	
d	APRON	m	0.90	0.90	0.90	1.00	1.00	1.00	
e	APRON	m	0.20	0.20	0.20	0.20	0.20	0.20	
f	DROP INLET	m	0.60	0.60	0.60	0.60	0.60	0.60	
g	DROP INLET	m	0.30	0.40	0.60	0.30	0.40	0.60	
h	DROP INLET	m	0.60	0.80	1.20	0.60	0.80	1.20	
l	DROP INLET	m	0.20	0.20	0.20	0.40	0.40	0.40	
k	DROP INLET	m	1.20	1.20	1.50	1.20	1.20	1.50	
l	DROP INLET	m	1.00	1.00	1.00	1.00	1.00	1.00	
m	DROP INLET	m	0.38	0.30	0.30	0.38	0.30	0.30	
MATERIAL REQUIREMENT									
FOUNDATION (Concrete)			m3	0.47	0.47	0.52	0.72	0.72	0.79
HEAD/WINGWALLS (Concrete/Masonry)			m3	0.53	0.69	1.11	1.24	1.63	2.61
APRON (Concrete)			m3	0.24	0.24	0.30	0.24	0.24	0.30

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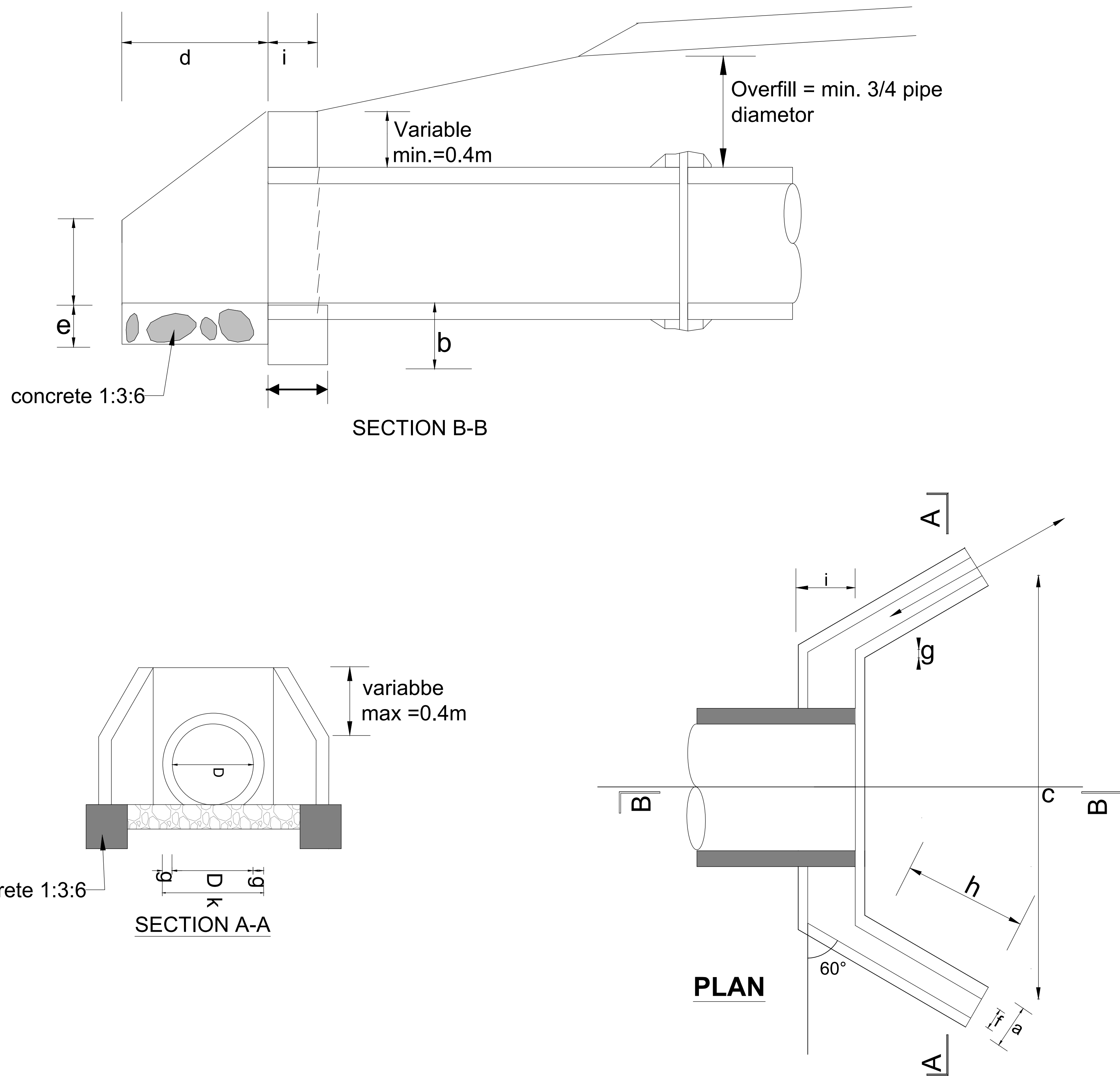
PROJECT TITLE:
**DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMARANDI KAMANYEKI ROAD
 BATCH 2**

DRAWING TITLE:
HEADWALL TYPE 2 (DROP INLETS)

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: NTS

Drg No.
 CE1045/CDS/MKK/O2
 Date : DECEMBER 2024

FIGURE H.12 - HEADWALL TYPE 4 (FOR ACCESS CULVERT)



DIMENSIONS AND MATERIAL REQUIREMENTS

PIPE DIAMETER IN (M)	TYPE A (CONCRETE BLOCKS)			TYPE B (STONE MASONRY)			
	450	600	900	450	600	900	
DIMENSION	UNIT						
a	FOUNDATION	m	0.30	0.30	0.40	0.40	
b	FOUNDATION	m	0.30	0.30	0.30	0.30	
c	APRON		1.34	1.49	1.34	1.49	
d	APRON	m	0.60	0.60	0.60	0.60	
e	APRON	m		0.20	0.20	0.20	
f	WINGWALLS	m	0.20	0.20	0.40	0.40	
g	WINGWALLS	m	0.10	0.10	0.10	0.10	
h	HEADWALLS	m	0.69	0.69	0.69	0.69	
l	HEADWALLS	m	0.20	0.20	0.40	0.40	
k	HEADWALLS	m	0.65	0.80	0.65	0.80	
l	HEADWALLS	m	0.40	0.40	0.40	0.40	
MATERIAL REQUIREMENT							
FOUNDATION (Concrete 1:2:4, 1:3:6)			m3	0.18	0.2	0.24	0.26
HEAD/WINGWALLS (Concrete/Masonry)			m3	0.25	0.29	0.50	0.58
APRON			m3	0.12	0.14	0.12	0.14

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PROJECT TITLE:
DRAFT DETAILED ENGINEERING DESIGN OF
MATIRI KAMARANDI KAMANYEKI ROAD
BATCH 2

DRAWING TITLE:
HEADWALL TYPE 4 (FOR ACCESS
CULVERT)

DRAWN BY: M.M
DESIGNED BY: C.N.M
CHECKED BY: M.J.N

Scale: NTS

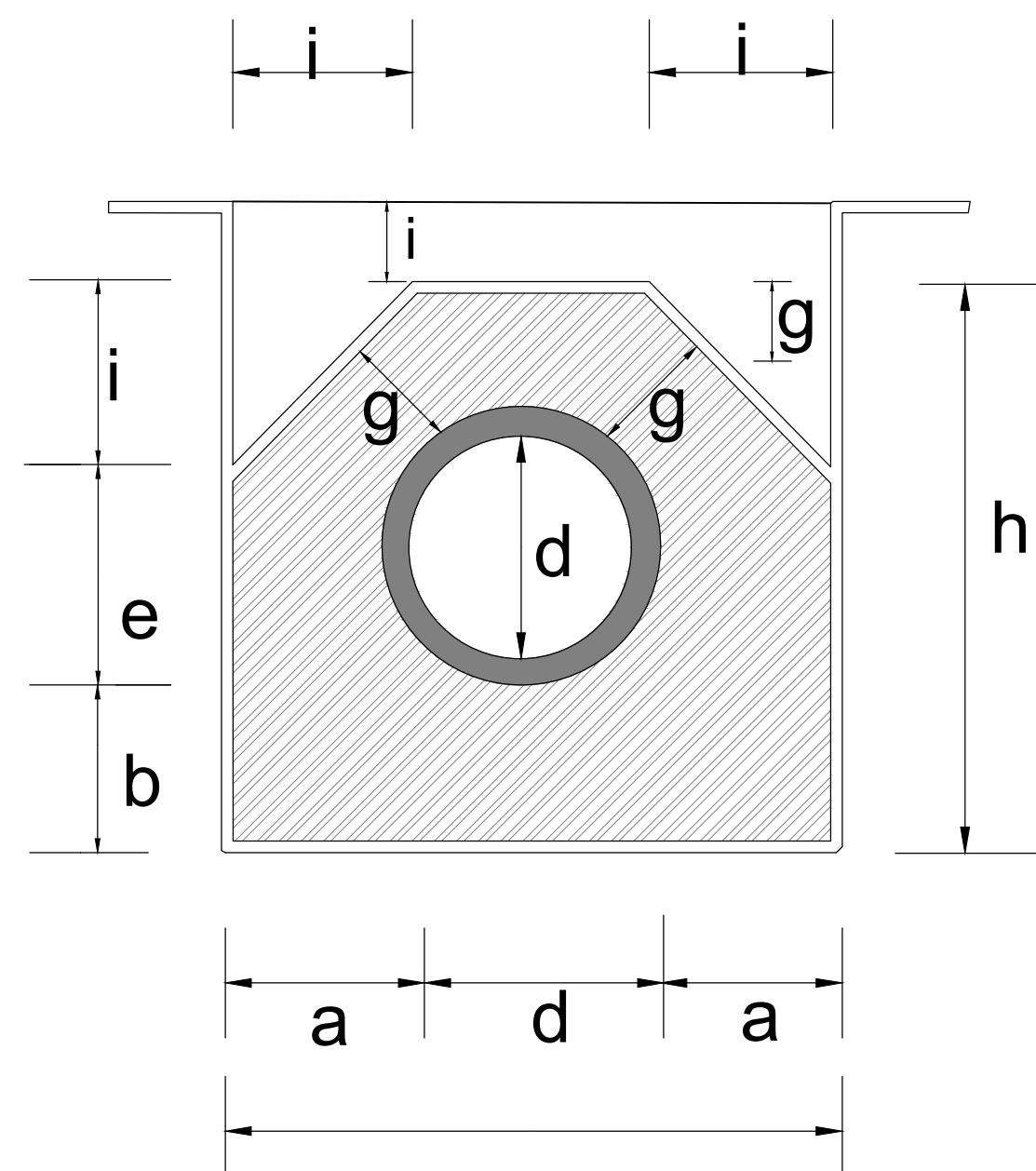
Drg No.
CE1045/CDS/MKK/O3

Date : DECEMBER 2024

FIGURE H.14-BEDDING AND HAUNCH PROFILES TYPE III& IV


PROFILE IV

(CONCRETE)



	450 (mm)	600 (mm)	900 (mm)
Dimensions in (m)			
	0.15	0.2	0.2
	0.15	0.15	0.15
	0.86	0.15	1.48
	0.56	0.72	1.08
	0.46	0.15	0.78
	0.15	0.15	0.15
	0.15	0.15	0.15
	0.81	1.02	1.38
	0.28	0.35	0.45
volume in (m3/m)			
	0.37	0.61	0.92
-fair to poor subgrade condition -overfill $>\frac{3}{4}$ Dia; -Seasonal waterflow only. -Use gravel material for backfill/overfill.			

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Consultant:

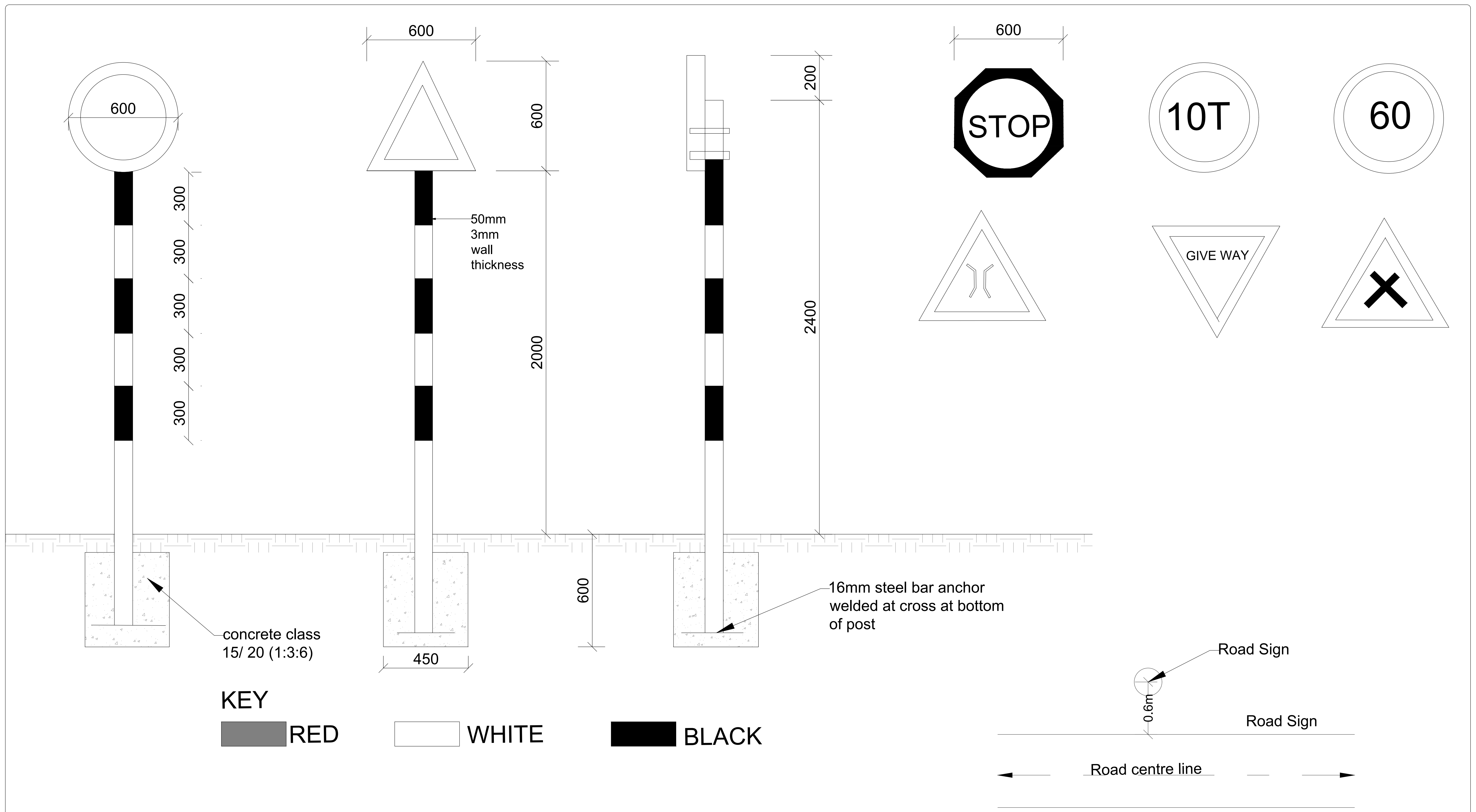
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 Engineering & Project Management.
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PROJECT TITLE:
**DRAFT DETAILED
 ENGINEERING DESIGN OF
 MATIRI KAMARANDI KAMANYEKI ROAD
 BATCH 2**

DRAWING TITLE:
**BEDDING AND HAUNCH PROFILES
 TYPE III& IV**

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: NTS

Drg No.
CE1045/CDS/MKK/O4
 Date : DECEMBER 2024



concrete class 15/ 20 (1:3:6)

50mm 3mm wall thickness

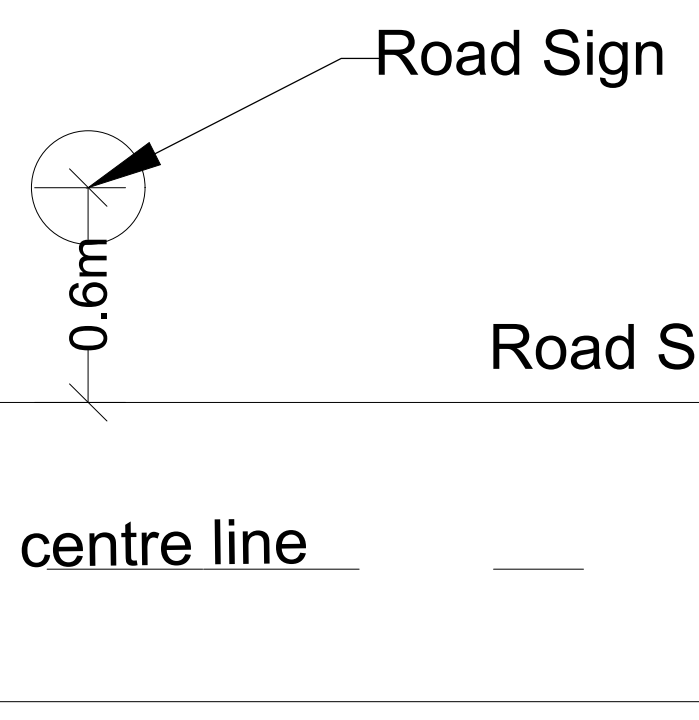
16mm steel bar anchor welded at cross at bottom of post

KEY

■ RED

□ WHITE

■ BLACK



- 1.The type of sign required and their location shall de shown as road plan or as directed by engineer
- 2.signs plate to be 2mm thick mild steel plate
- 3.sign post to be 50mm fixing clamp/brackets
- 4.Sign plate to be fixed to steel tube by \$Nos M10 bolts and 50mm fixing clamp/brackets
- 5,Sign paints shall be reflective
- 6.The sign plate and post shall be treated by applying two coats of lead red oxide paint before applying a priming and two finish coats of approved paints. Paints used shall have a hard,durable and glossy finish.

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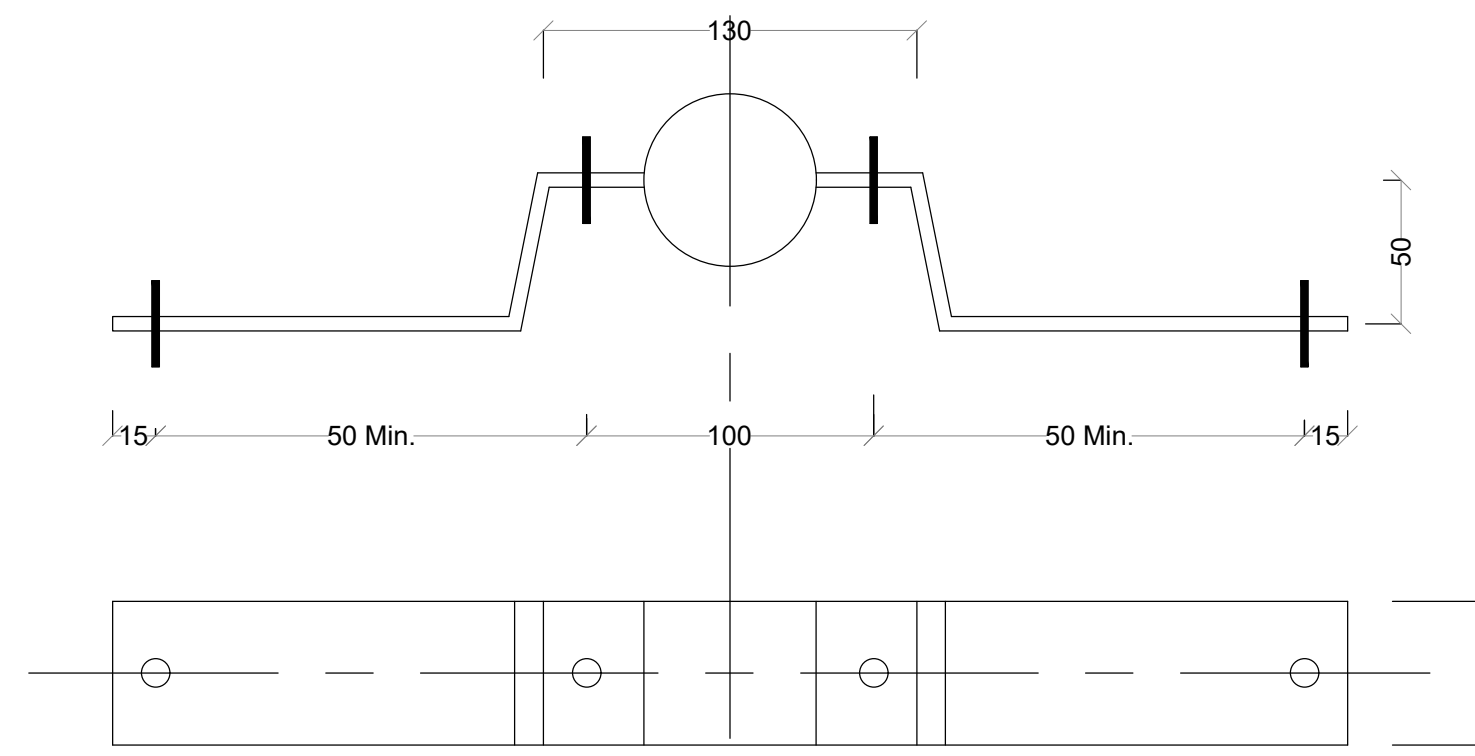
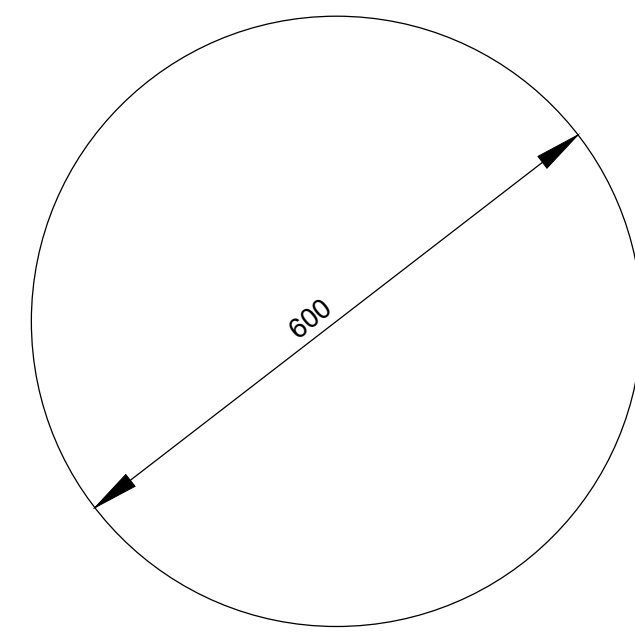
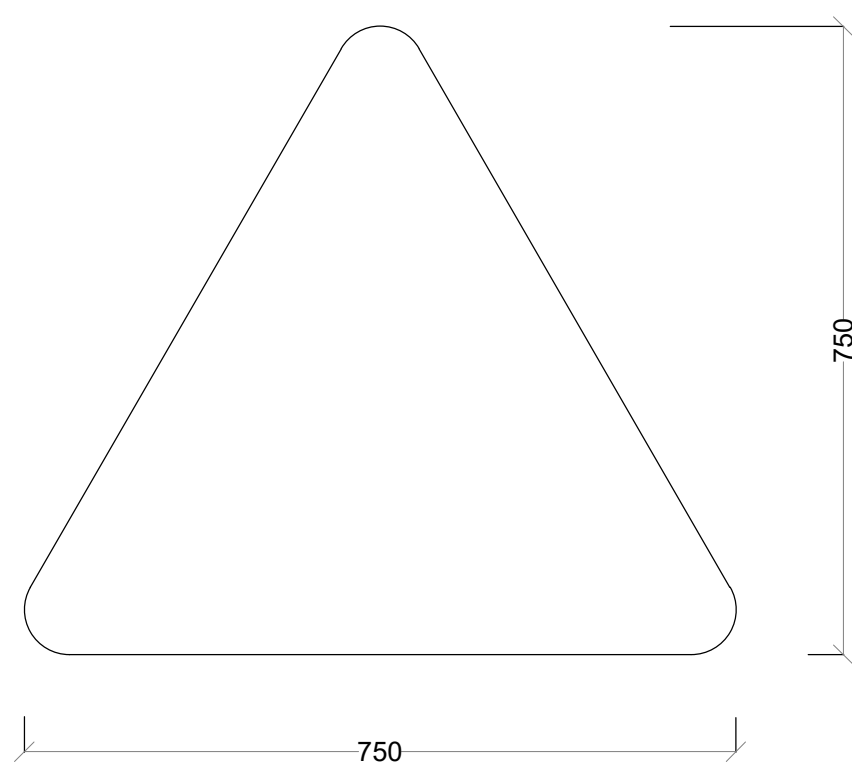
PROJECT TITLE:
**DRAFT DETAILED ENGINEERING DESIGN OF
 MATIRI KAMARANDI KAMANYEKI ROAD
 BATCH 2**

DRAWING TITLE:
CULVERT ROAD SIGNS

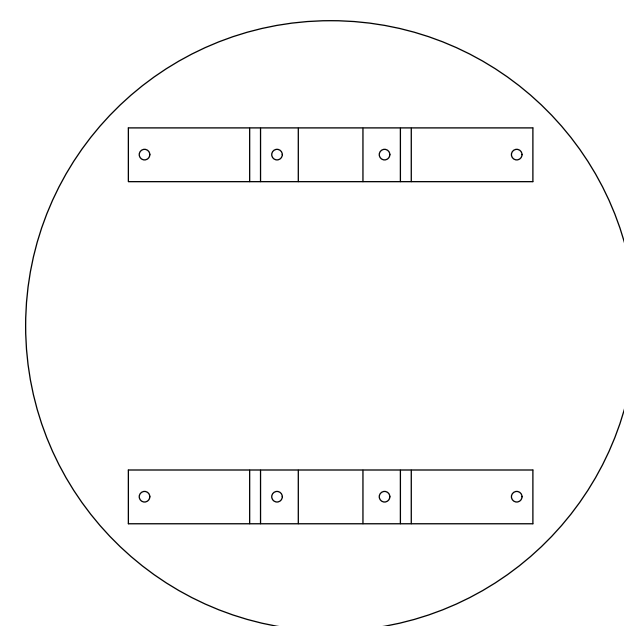
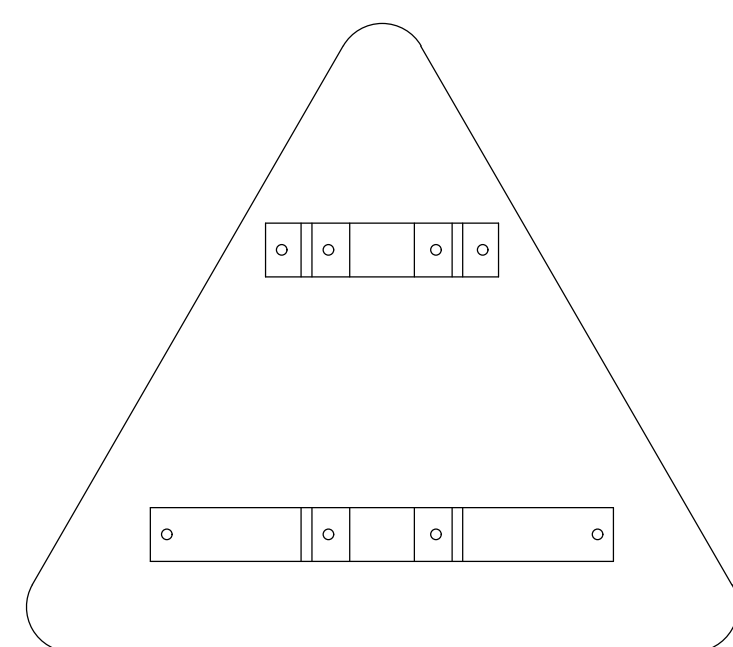
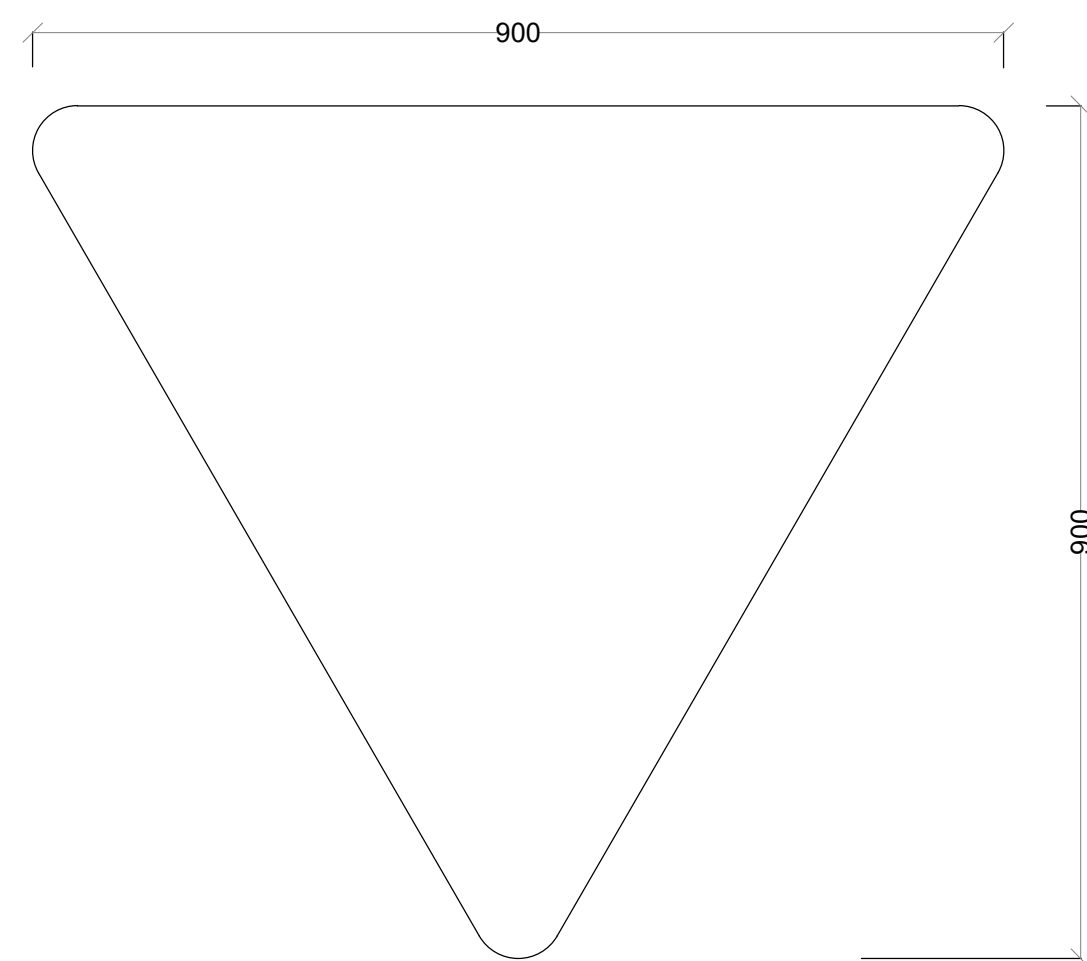
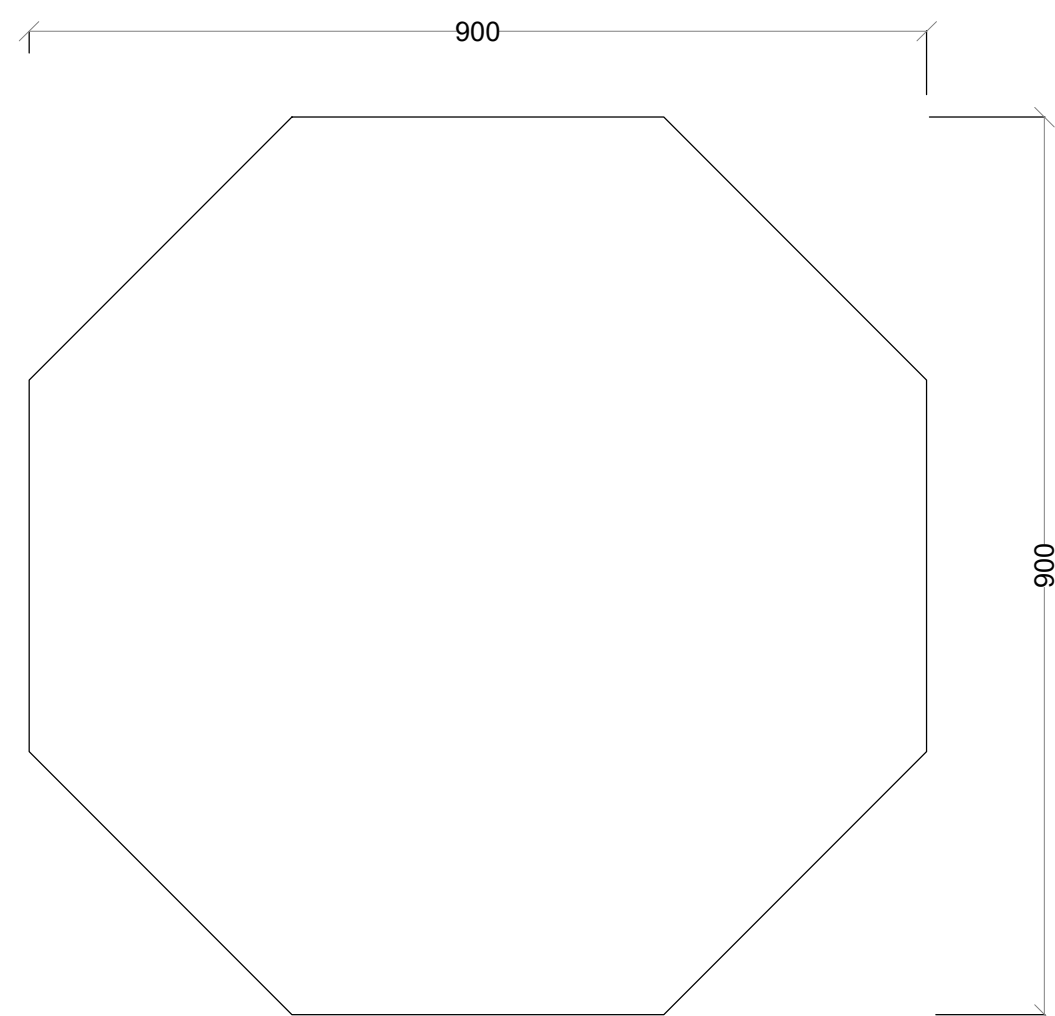
DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: NTS

Drg No.
CE1045/CDS/MKK/O5
 Date : DECEMBER 2024

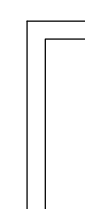
STANDARD DRAWINGS



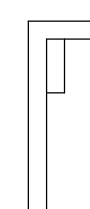
FIXING BRACKET DETAIL
SCALE 1:2.5



TYPICAL FIXING DETAILS
SCALE 1:25



PREFORMED FLANGE

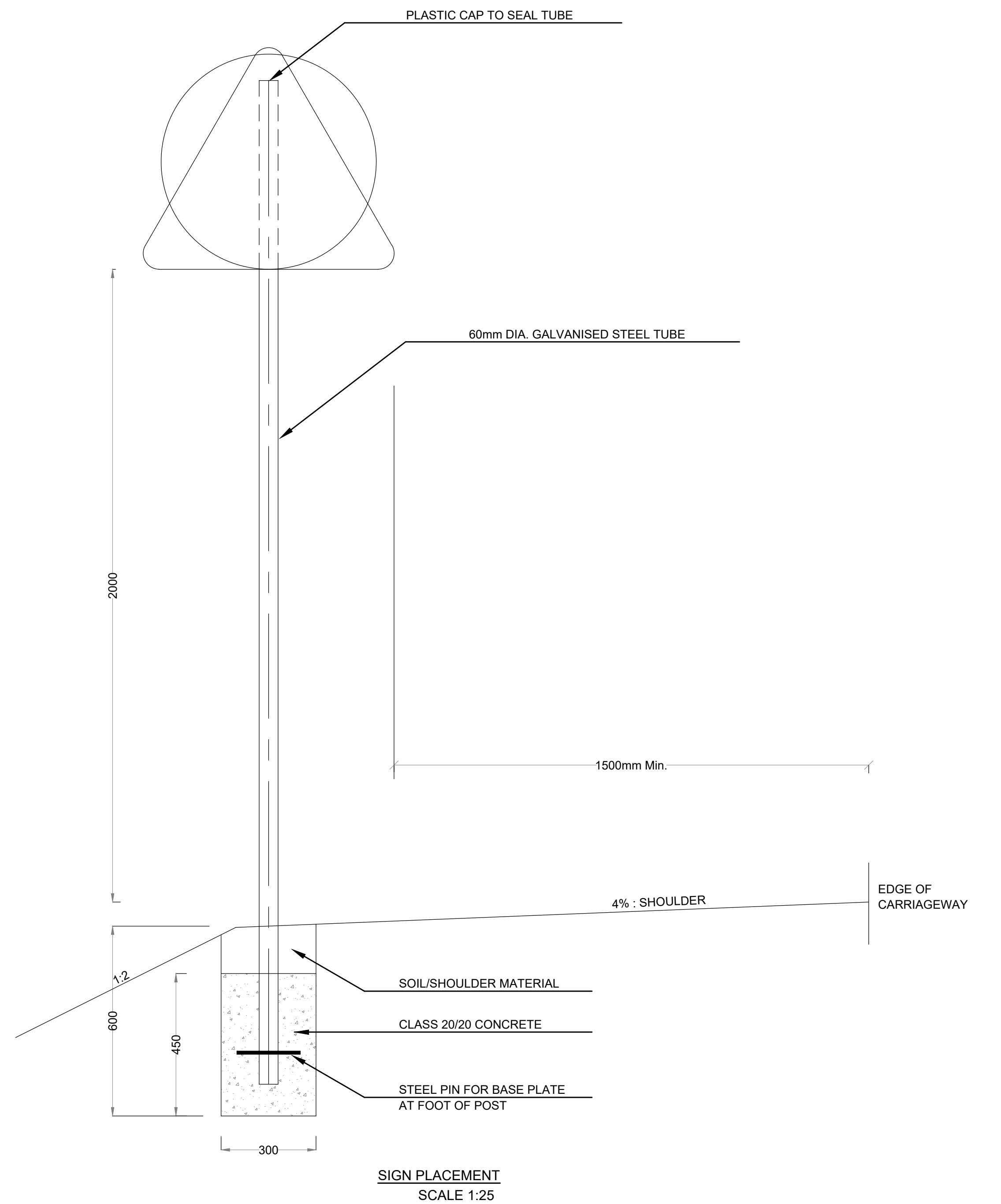


ANGLE STIFFENING

STIFFENING TO SIGNS
SCALE 1:20

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL ROAD SIGNS ARE 3mm ALUMINIUM PLATES WITH REFLECTIVE MATERIALS.
3. PLASTIC WASHERS TO BE PLACED BETWEEN ALUMINIUM SIGNS AND STEEL BRACKETS.
4. ALL SIGN SUPPORTS AND FITTINGS TO BE GALVANISED MILD STEEL.
5. THE ENDS OF BOLTS TO BE HAMMERED OR SPOT WELDED.
6. ALL WHITE, RED, BLUE AND YELLOW PARTS ON SIGNS TO BE MADE OF RETRO-REFLECTIVE MATERIAL.
7. THE WIDTHS OF SIGN MARKINGS TO BE AS FOLLOWS:
 RED BORDERS TO STANDARD SIGNS - 75mm
 RED STRIPES ON COUNT DOWN SIGNS - 75mm
 RED BORDER TO PRIORITY TRIANGLE SIGNS - 100mm
 RED BORDER TO PROHIBITORY SIGNS - 50mm
 RED BORDERS TO CRUCIFORM LEVEL "X" - 60mm
 WHITE BORDER TO PRIORITY (OCTAGON) - 50mm
 YELLOW STRIPES ON HAZARD SIGNS - 100mm.
 BLACK STRIPES ON HAZARD SIGNS - 200mm.



SIGN PLACEMENT
SCALE 1:25

No.	DATE	DESCRIPTION



Kenya Rural Roads Authority
Bara Bara Plaza,
P.O. Box 48151- 00100, Nairobi. Kenya

DIRECTOR GENERAL
DIRECTOR (PLANNING , DESIGN &ENVIRONMENT)

Consultant:
Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

PROJECT TITLE:
DRAFT DETAILED ENGINEERING DESIGN OF MATIRI KAMARANDI KAMANYEKI (ROAD) BATCH 2

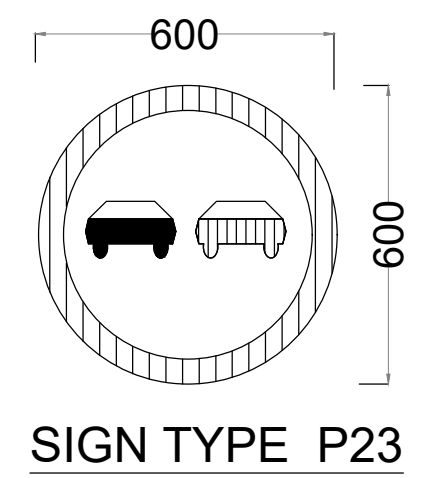
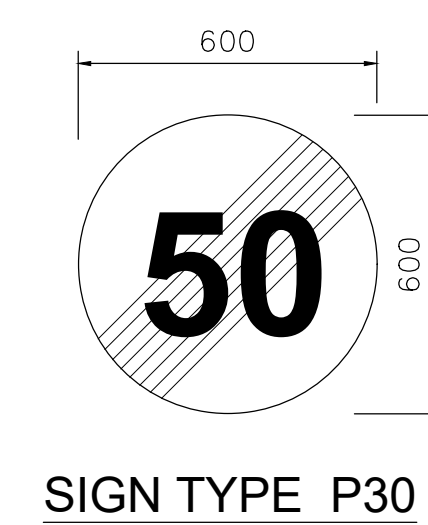
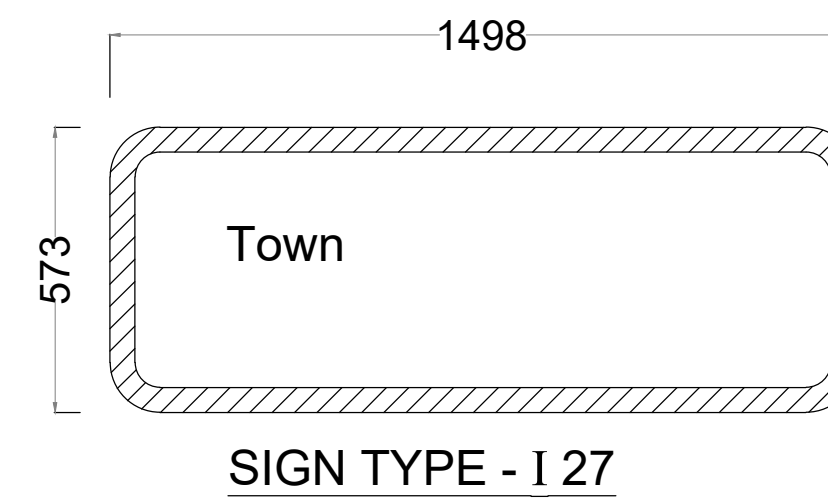
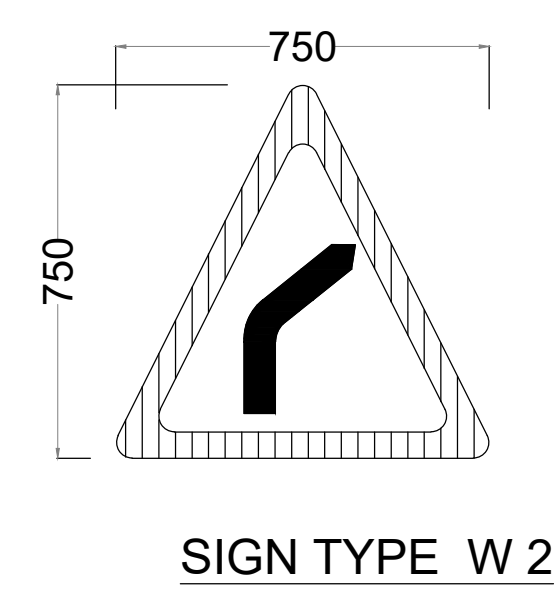
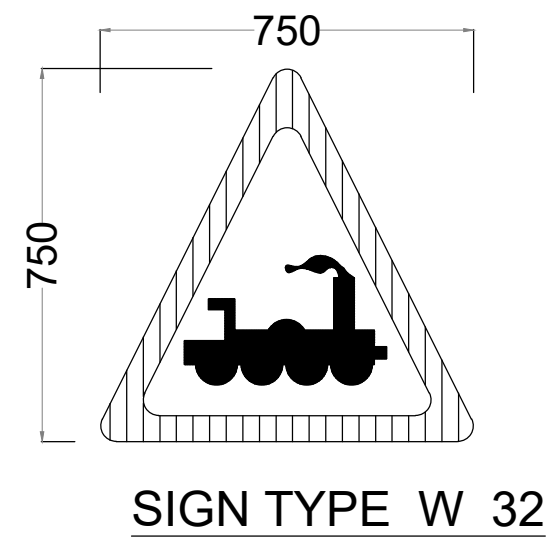
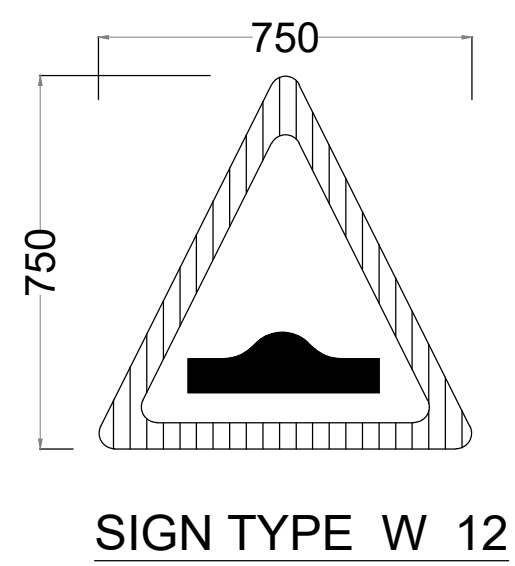
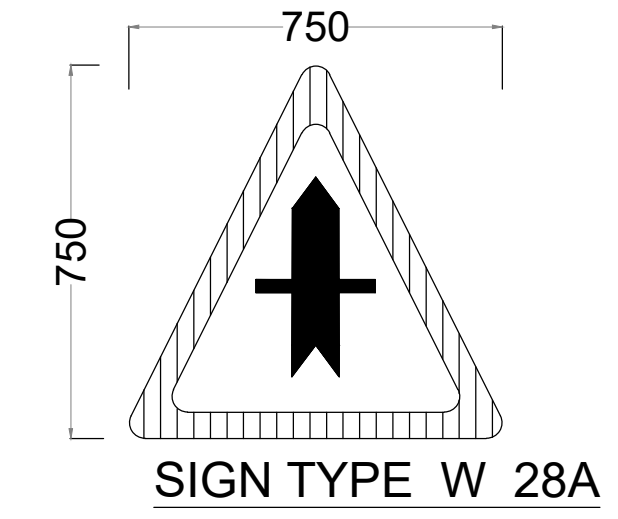
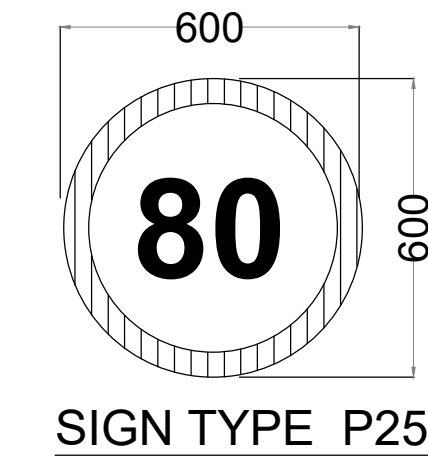
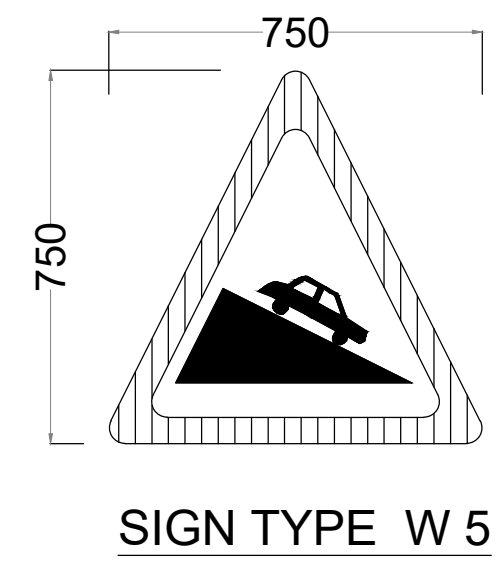
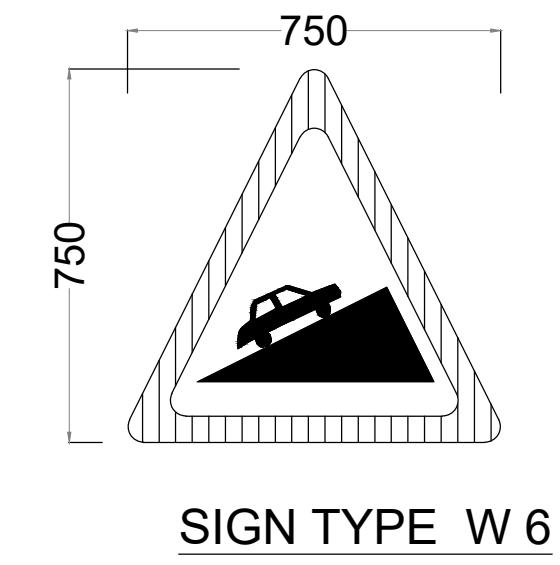
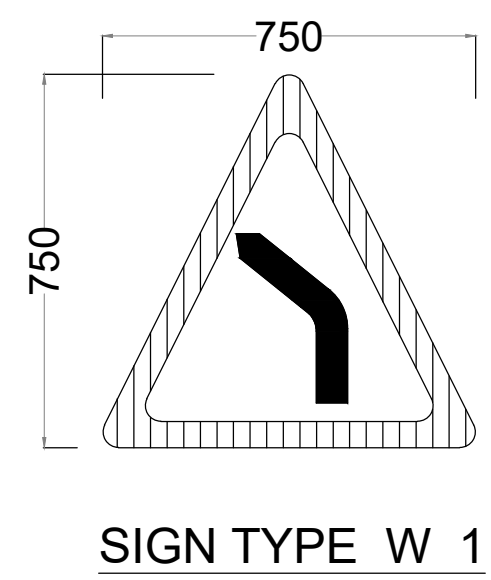
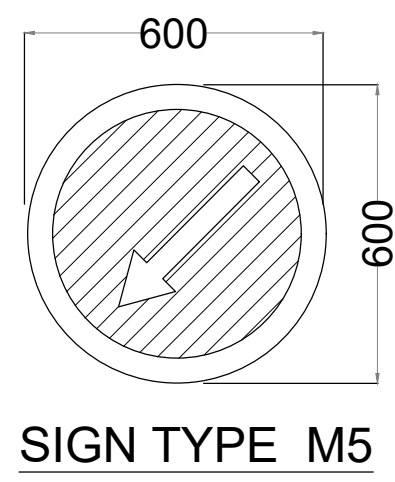
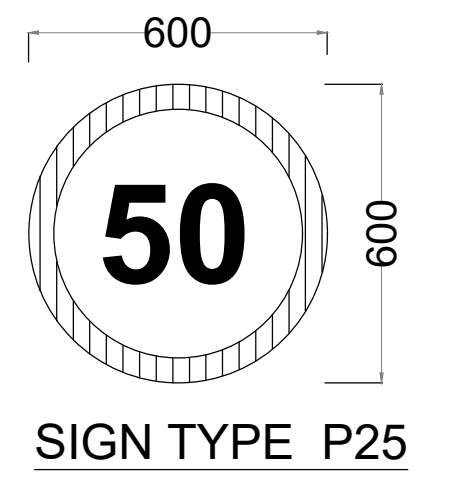
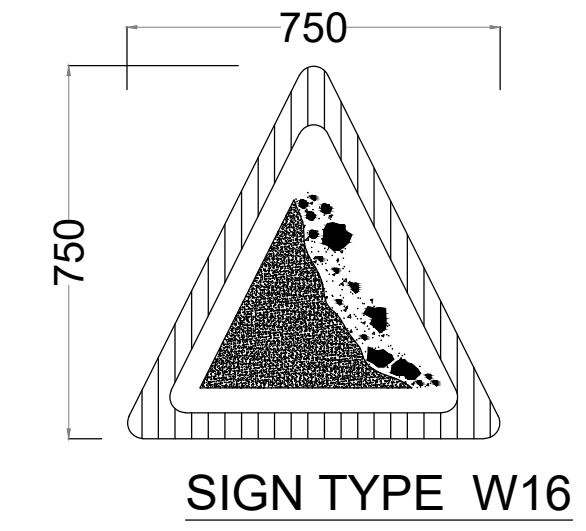
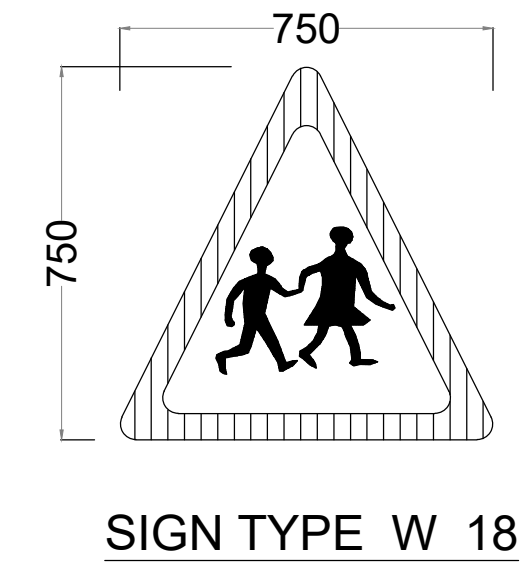
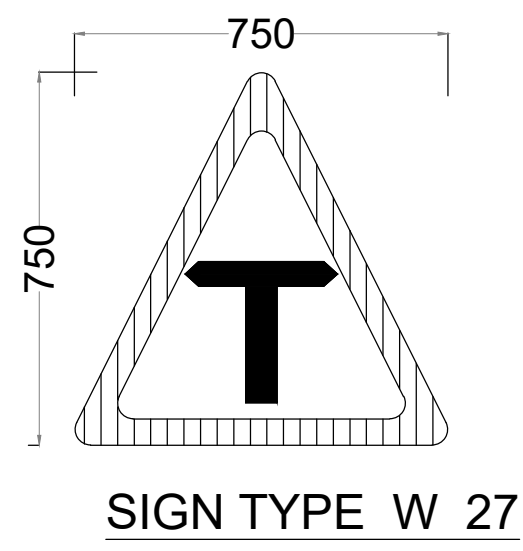
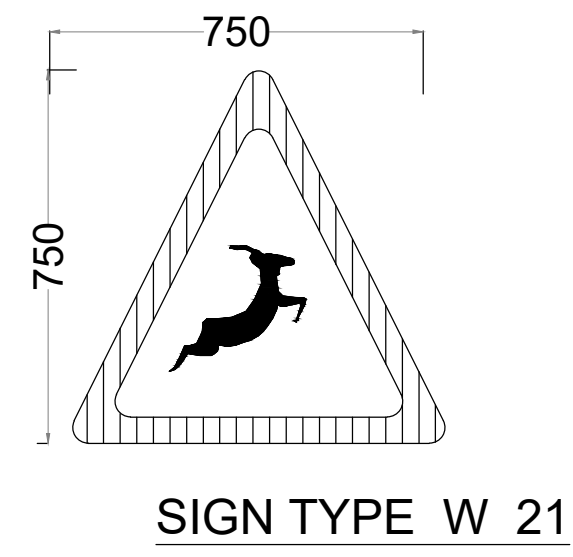
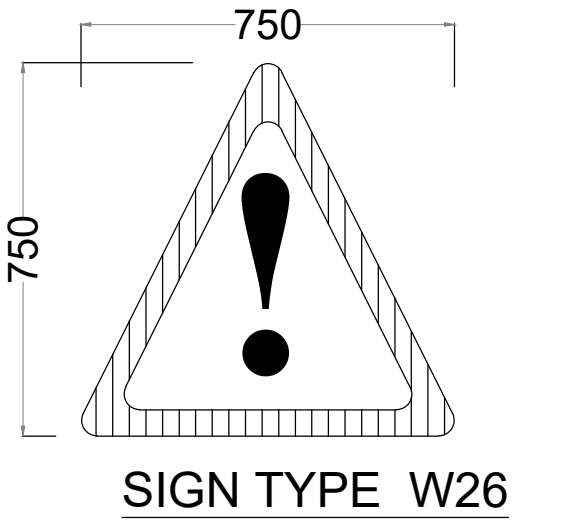
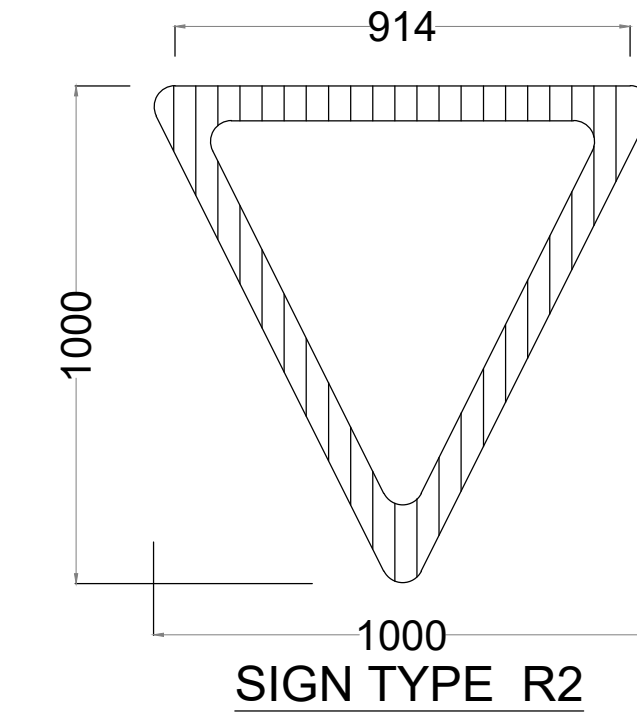
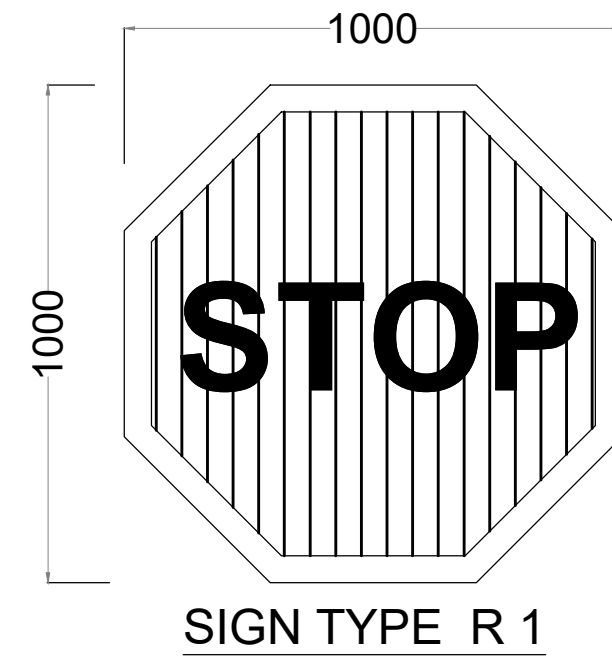
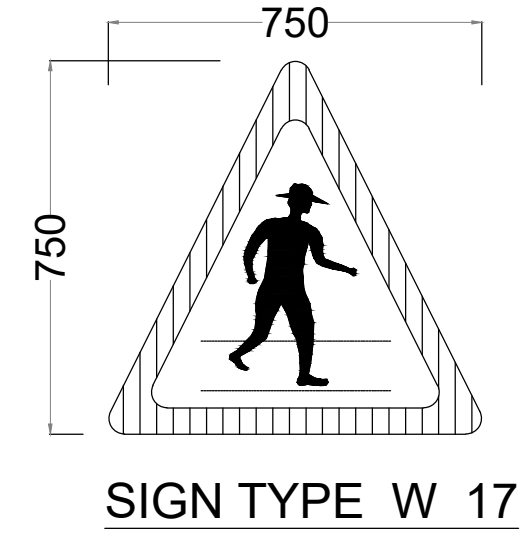
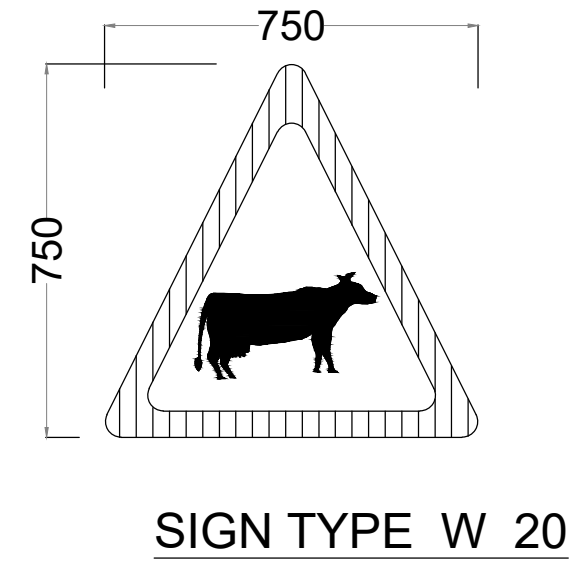
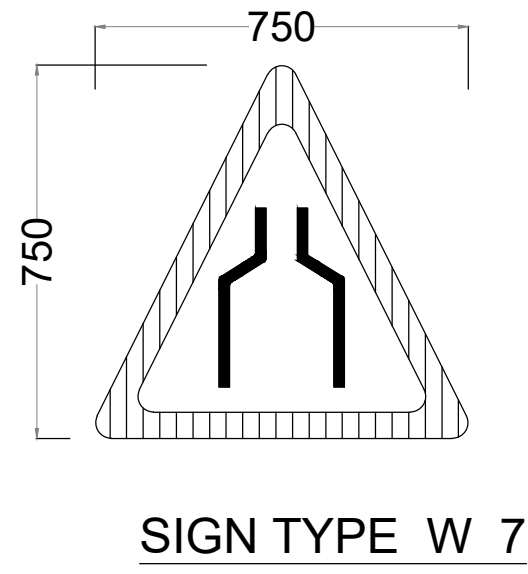
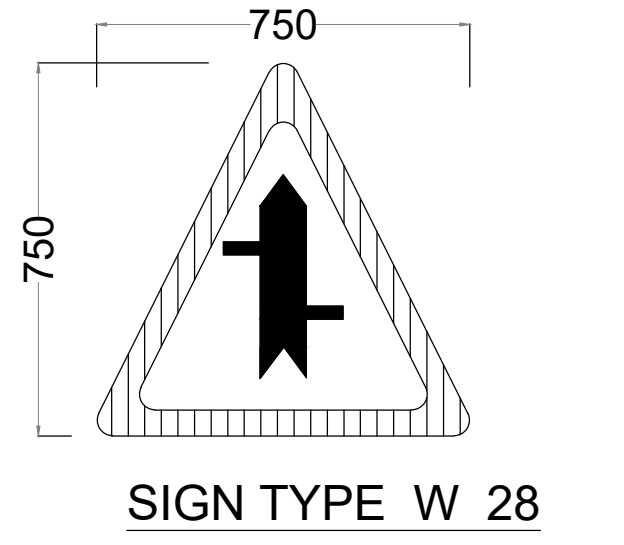
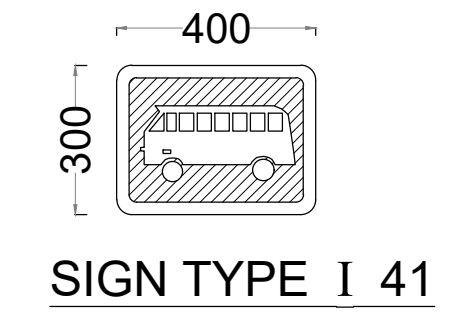
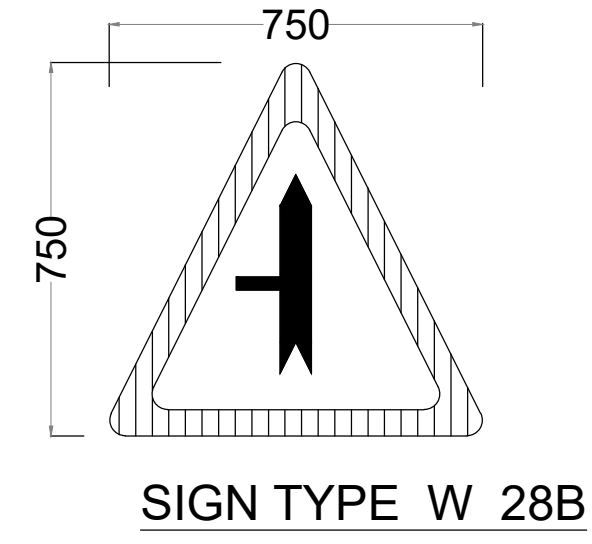
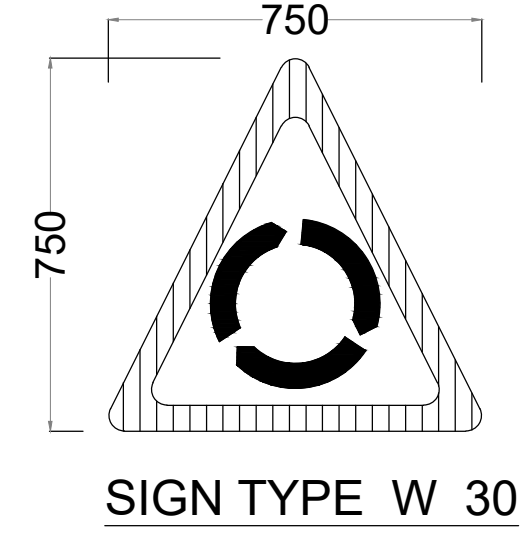
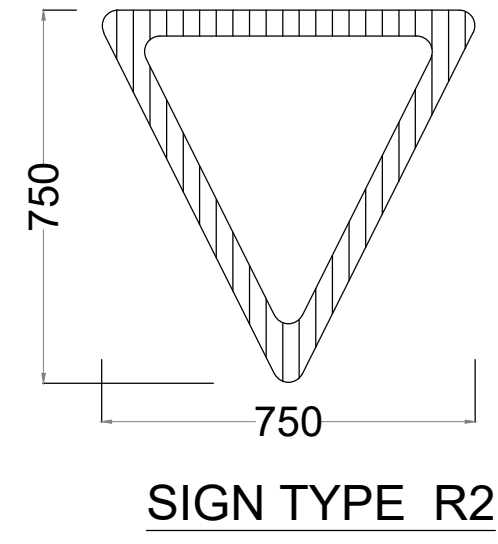
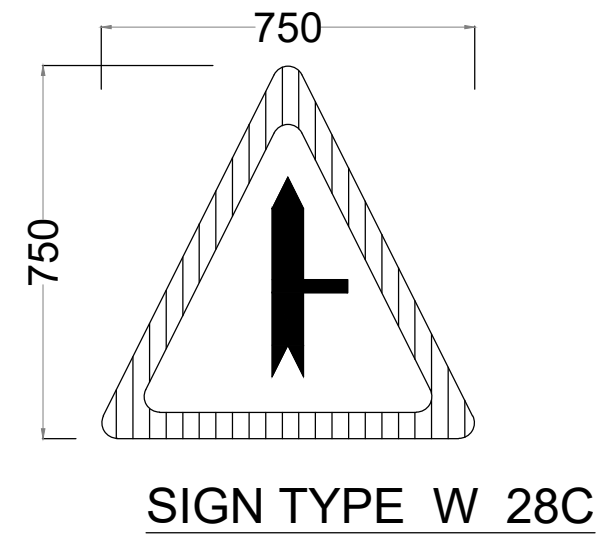
DRAWING TITLE:
STANDARD DRAWING - STANDARD - ROAD SIGNS

DRAWN BY: M.M
DESIGNED BY: C.N.M
CHECKED BY: M.J.N

Scale: AS SHOWN

Drg No.
CE1045/SD/MKK/01

Date :DECEMBER 2024



No.	DATE	DESCRIPTION

Kenya Rural Roads Authority
 Bara Bara Plaza,
 P.O. Box 48151- 00100, Nairobi, Kenya

DIRECTOR GENERAL	
DIRECTOR (PLANNING , DESIGN &ENVIRONMENT)	

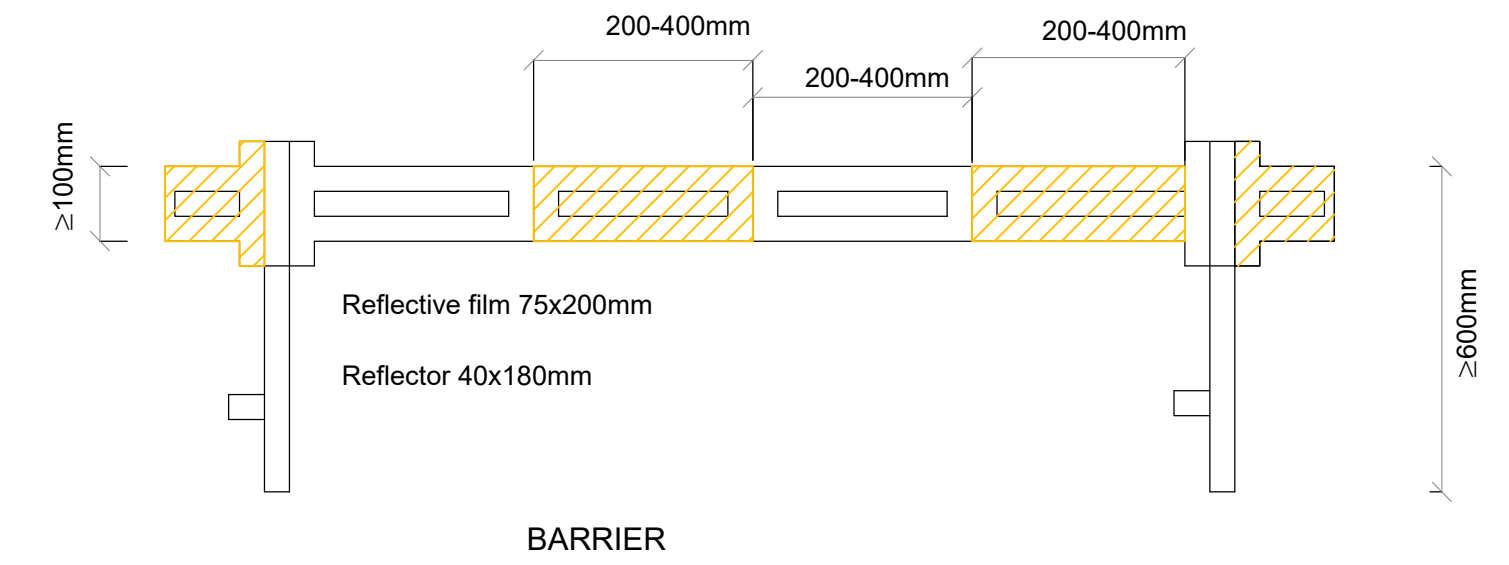
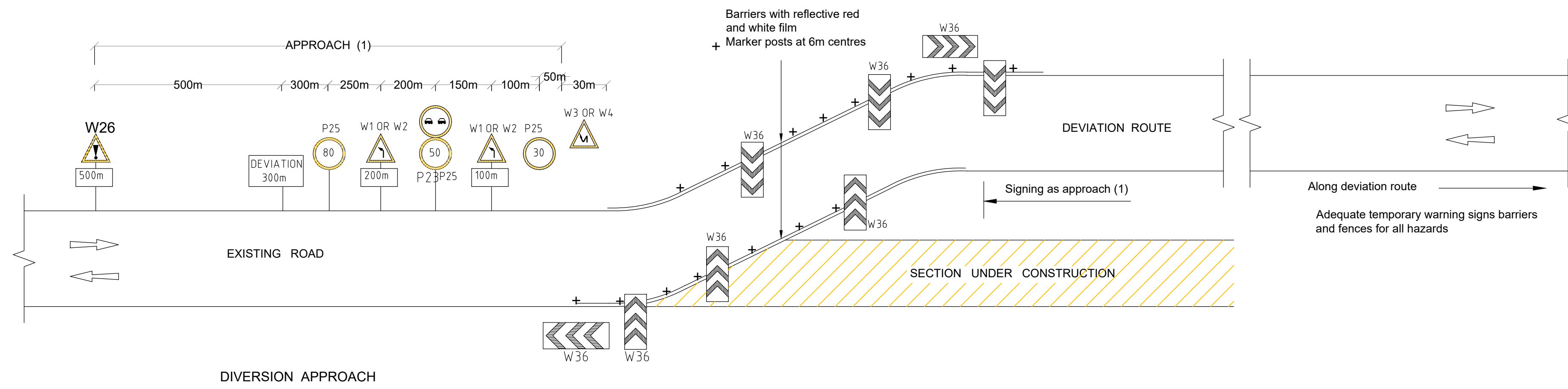
Consultant:
Runji Consulting Group Ltd
 Engineering & Project Management.
 3, Kindaruma Road (Off Ngong Road)
 P. O. Box 68053-00200 Nairobi
 Tel. (020) 2717213/4

PROJECT TITLE:
 DRAFT DETAILED
 ENGINEERING DESIGN OF
 MATIRI KAMARANDI KAMANYEKI (ROAD)
 BATCH 2

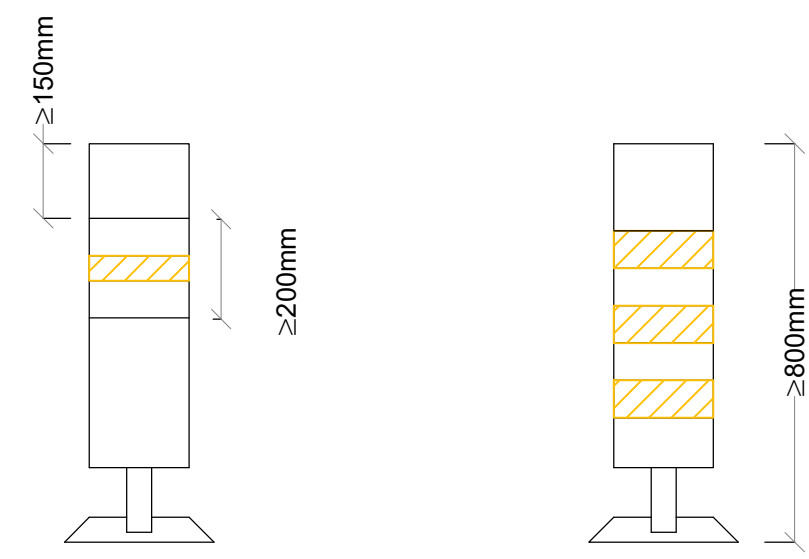
DRAWING TITLE:
 STANDARD DRAWING -
 STANDARD - ROAD SIGNS
 INSTALLATION

DRAWN BY: M.M
 DESIGNED BY: C.N.M
 CHECKED BY: M.J.N
 Scale: AS SHOWN

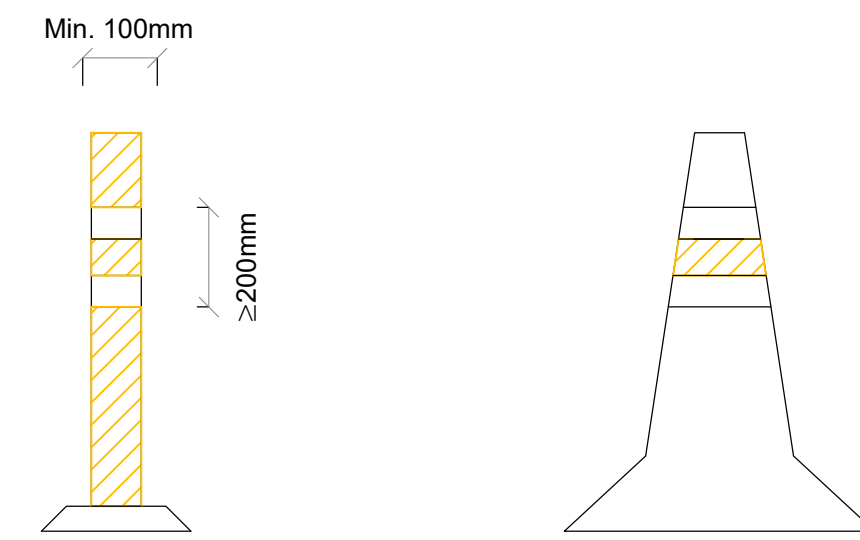
Drg No.
 CE1045/SD/MKK/02
 Date :DECEMBER 2024



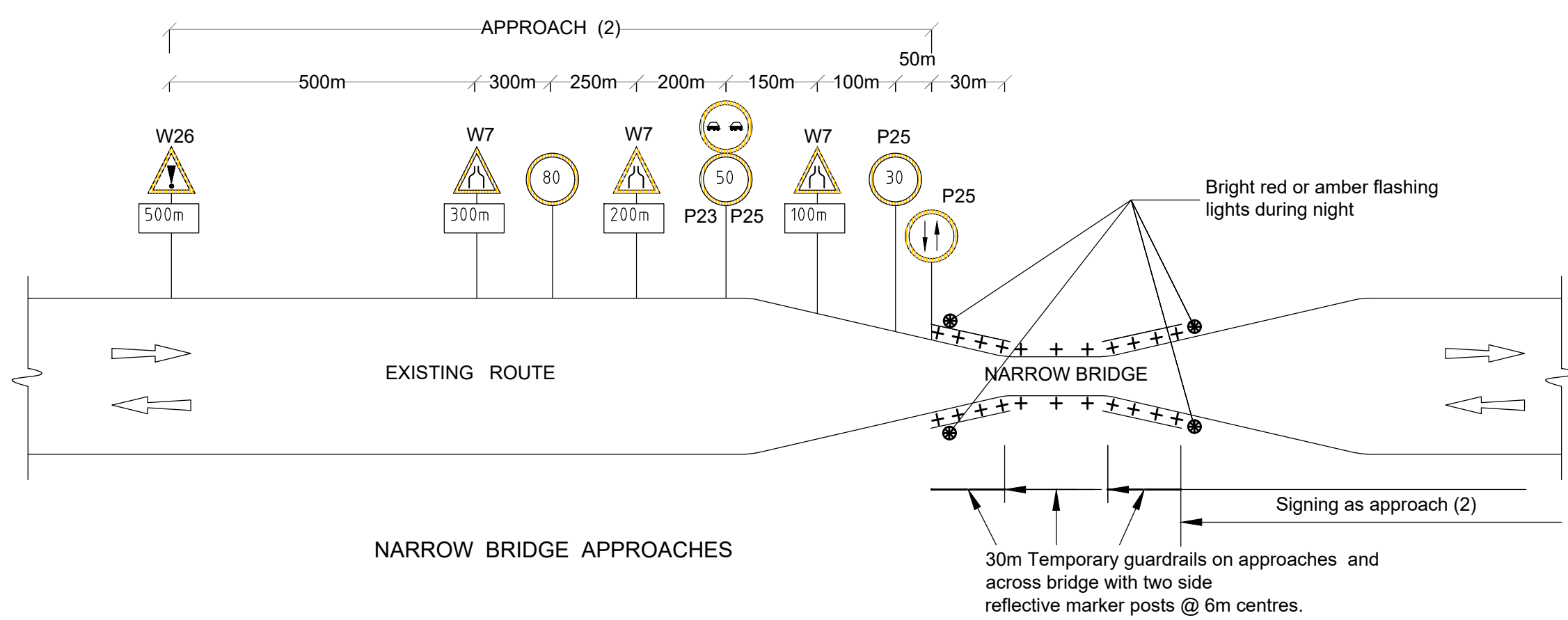
DIVERSION APPROACH



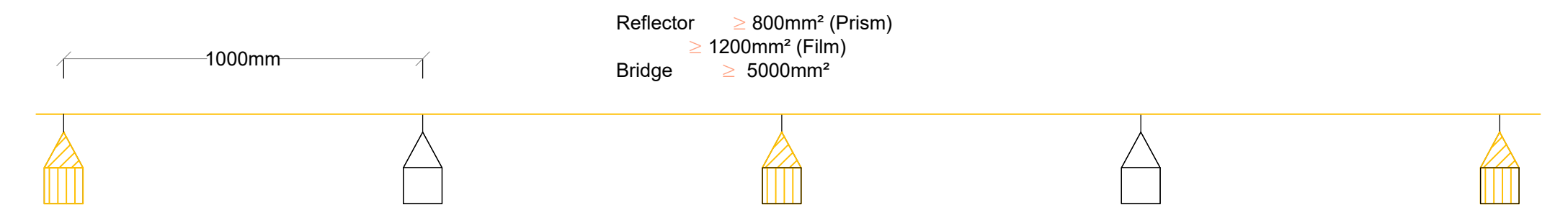
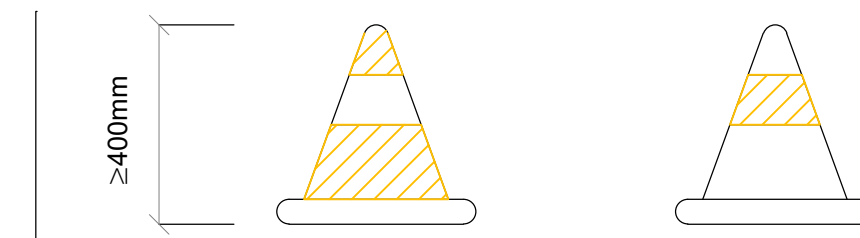
SAFETY POST



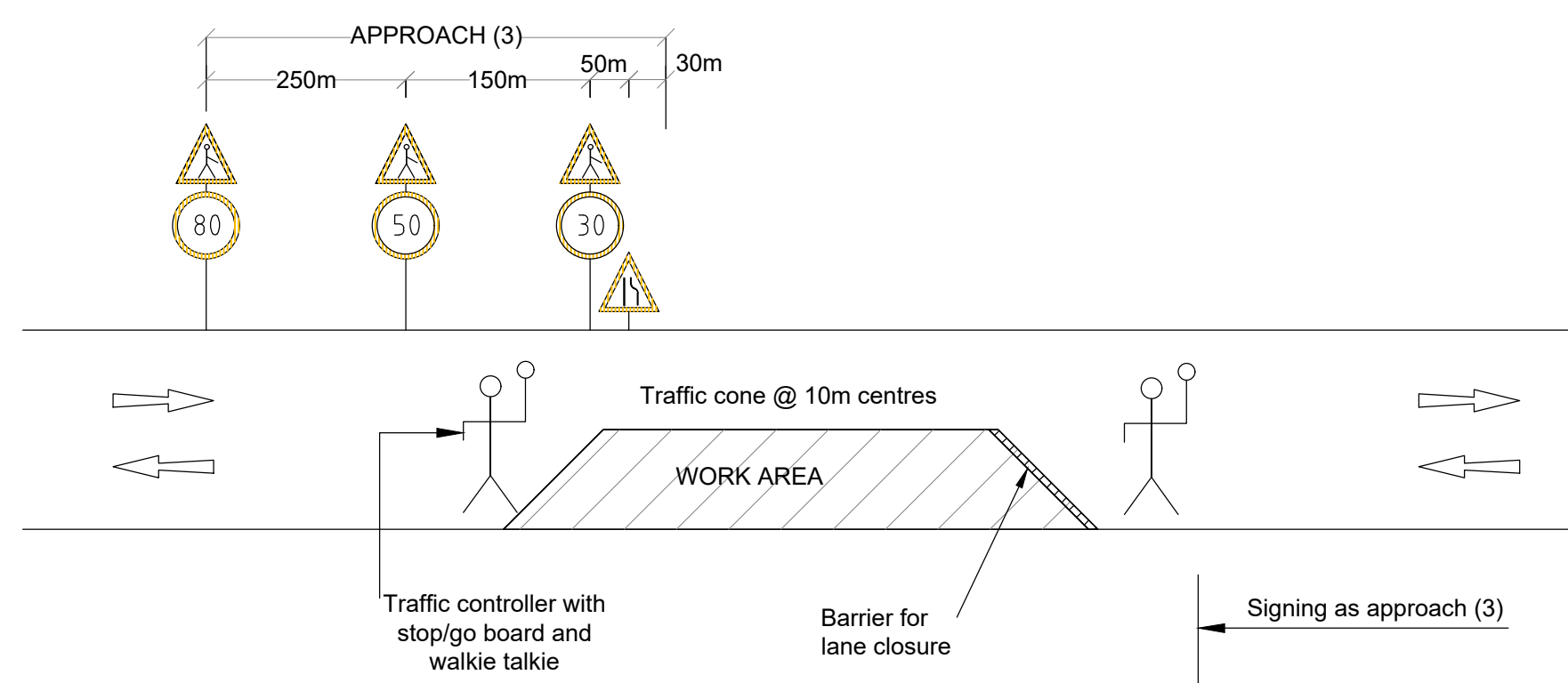
TRAFFIC CONE



NARROW BRIDGE APPROACHES



WARNING ROPE
(BETWEEN SAFETY POSTS)



TEMPORARY LANE CLOSURES

NOTES:

1. All temporary signs must be retro-reflective
2. Numbers, lettering and colours to be in accordance with the Manual of Traffic Signs in Kenya Part II (JUNE 1975)
3. Marker posts to be unbreakable plastic or glass fibre vergemaster or similar
4. All signs must be kept clean and visible at all times.
5. Sketches shown on this drawing are the minimum requirements, signs may be varied or adjusted as directed by the Resident Engineer to suit each particular site
6. Fences and barriers shall be provided as directed by the Resident Engineer to separate pedestrians and traffic where they will need to use road or deviation for access
7. All works and temporary signs are to comply with the requirements of Section 9 of the Standard Specification

No.	DATE	DESCRIPTION



Kenya Rural Roads Authority
Bara Bara Plaza,
P.O. Box 48151- 00100, Nairobi. Kenya

DIRECTOR GENERAL
DIRECTOR (PLANNING , DESIGN &ENVIRONMENT)

Consultant:
Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

PROJECT TITLE:
DRAFT DETAILED
ENGINEERING DESIGN OF
MATIRI KAMARANDI KAMANYEKI (ROAD)
BATCH 2

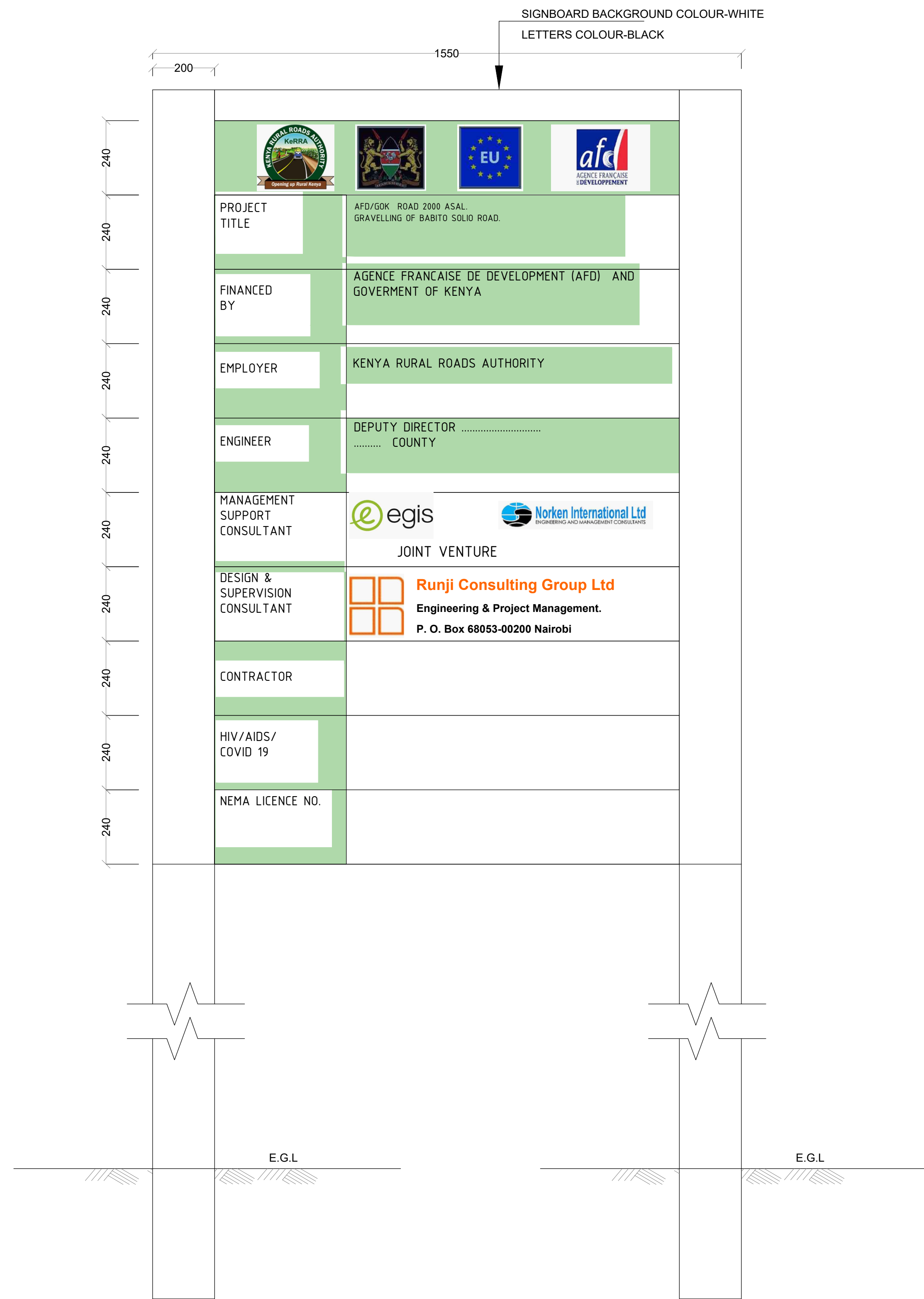
DRAWING TITLE:
STANDARD DRAWING -
TRAFFIC MANAGEMENT

DRAWN BY: M.M
DESIGNED BY: C.N.M
CHECKED BY: M.J.N

Scale: AS SHOWN

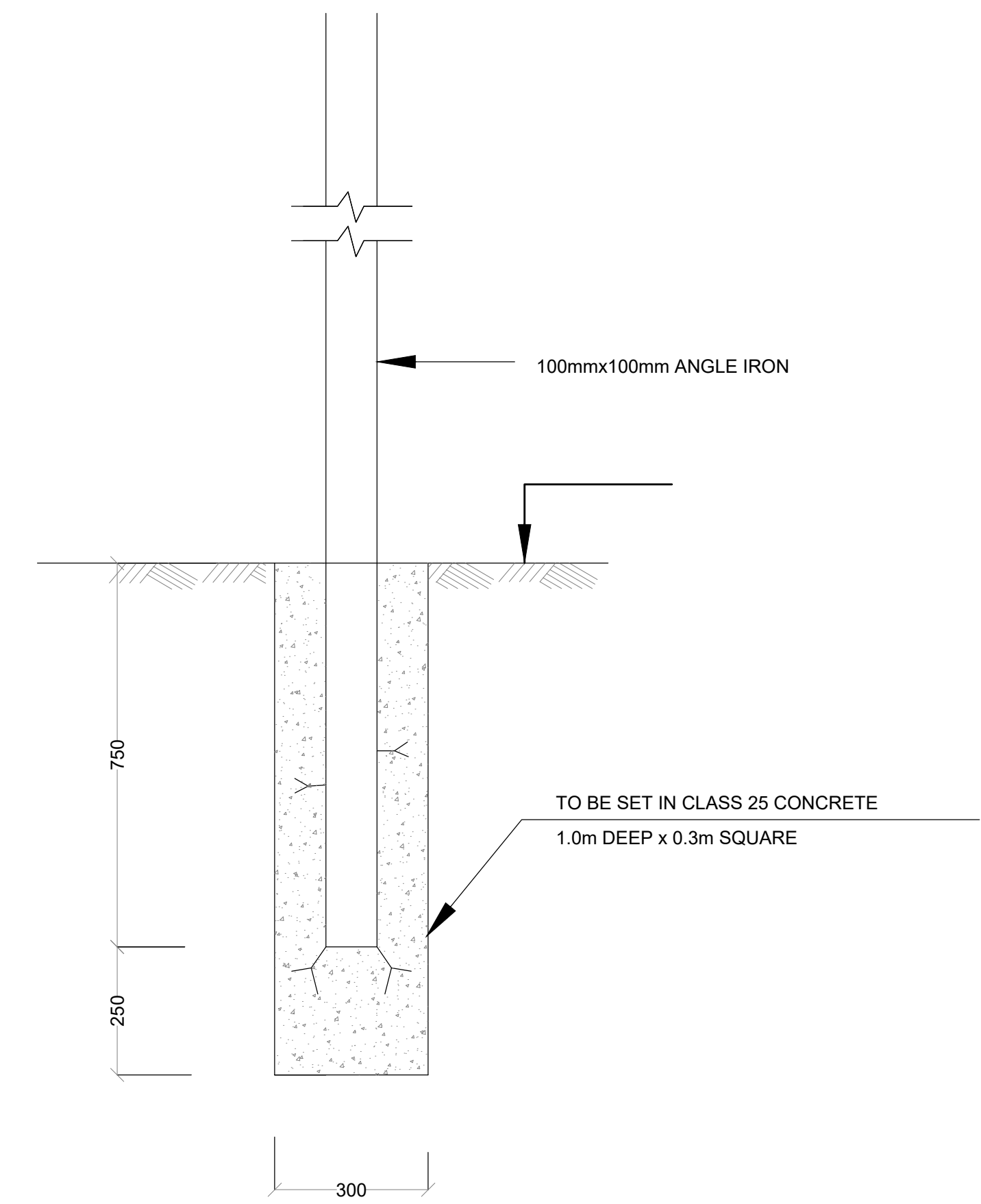
Drg No.
CE1045/SD/MKK/03

Date :DECEMBER 2024



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
2. SPACING BETWEEN LINES TO BE 50mm.
3. SPACING BETWEEN EDGE AND LINE TO BE 50mm.
4. ALL STEEL POSTS TO BE TO BS 3049 CLASS 'A' (HOT ROLLED).
5. THE FINISH TO BE HOT DIP GALVANIZED TO BS 729.
6. ALL BOLTS SHALL BE BUTTON-HEADED AND GALVANISED.



No.	DATE	DESCRIPTION

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 Bara Bara Plaza,
 P.O. Box 48151- 00100, Nairobi. Kenya

DIRECTOR GENERAL	
DIRECTOR (PLANNING , DESIGN &ENVIRONMENT)	

Runji Consulting Group Ltd
 Engineering & Project Management.
 3, Kindaruma Road (Off Ngong Road)
 P. O. Box 68053-00200 Nairobi
 Tel. (020) 2717213/4

PROJECT TITLE: DRAFT DETAILED ENGINEERING DESIGN OF MATIRI KAMARANDI KAMANYEKI (ROAD) BATCH 2	
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DRAWING TITLE: STANDARD DRAWING - PUBLICITY SIGN BOARD	
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DRAWN BY: M.M DESIGNED BY: C.N.M CHECKED BY: M.J.N Scale: AS SHOWN	Drg No. CE1045/SD/MKK/04 Date :DECEMBER 2024
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