

## 7-6 設計図面

PREPARATORY SURVEY  
ON  
THE PROJECT FOR WIDENING  
OF  
NEW BAGAMOYO ROAD  
IN  
THE UNITED REPUBLIC OF TANZANIA

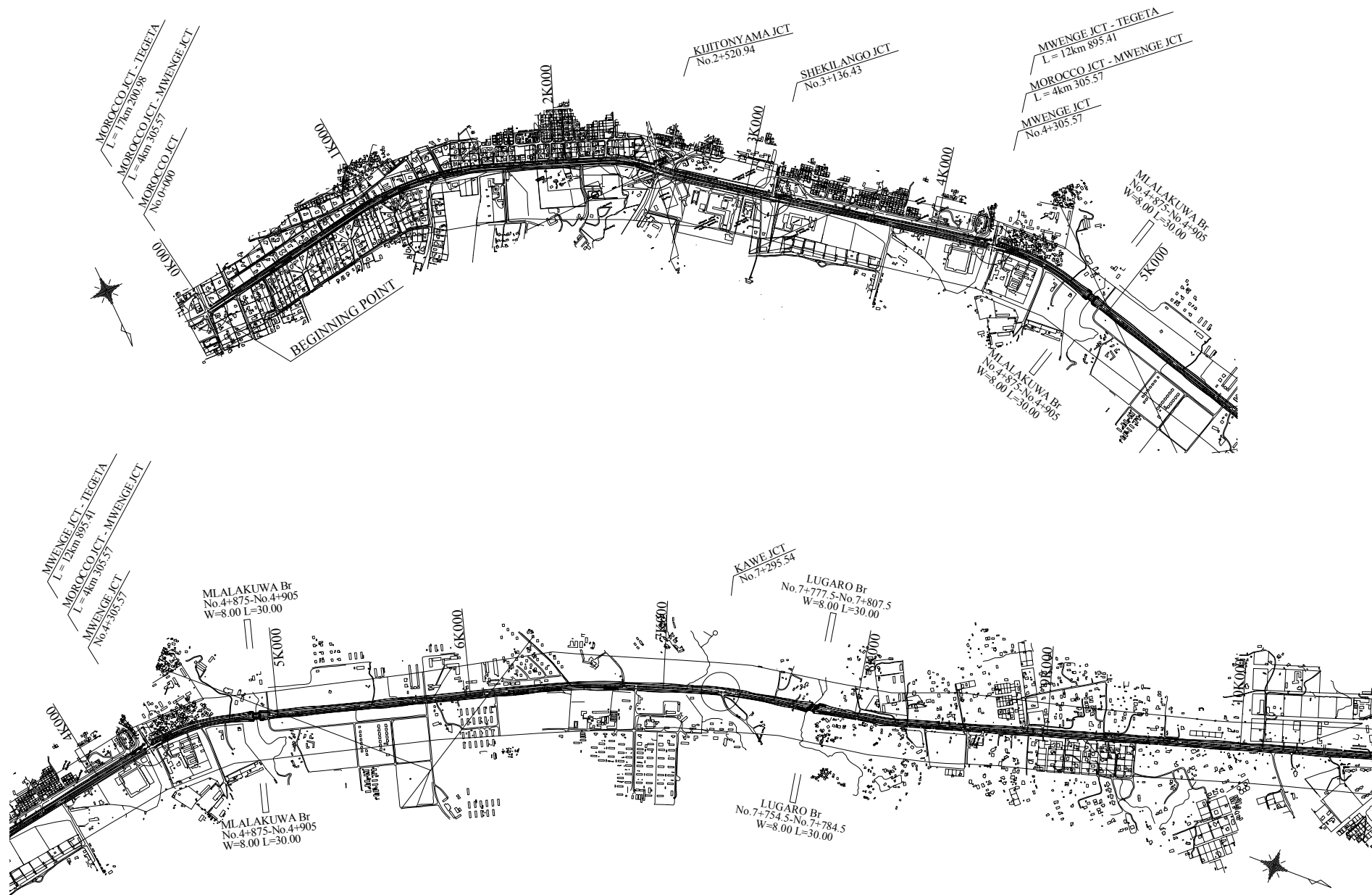
DRAWINGS

SEPTEMBER 2009

JAPAN INTERNATIONAL COOPERATION AGENCY  
INGEROSEC CORPORATION

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MINISTRY OF INFRASTRUCTURE DEVELOPMENT  
 THE UNITED REPUBLIC OF TANZANIA  
 JAPAN INTERNATIONAL COOPERATION AGENCY

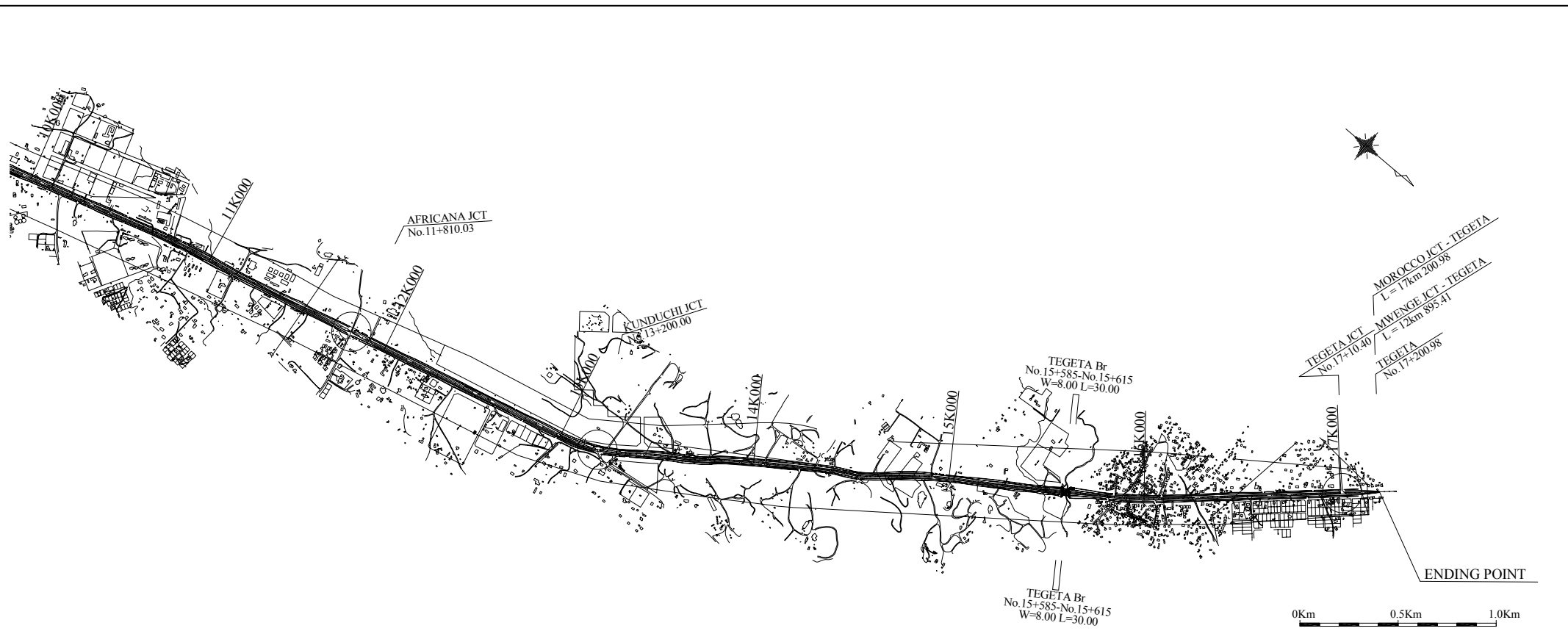
CONSULTANTS:  
 INGEROSEC CORPORATION

PROJECT NAME:  
 PREPARATORY SURVEY ON THE PROJECT FOR  
 WIDENING OF NEW BAGAMOYO ROAD

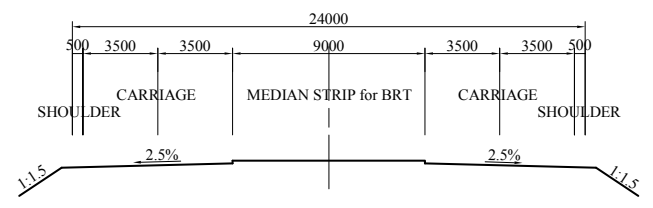
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 PLAN ( 1 )

DATE:  
 PREPARED BY:  
 CHECKED BY:

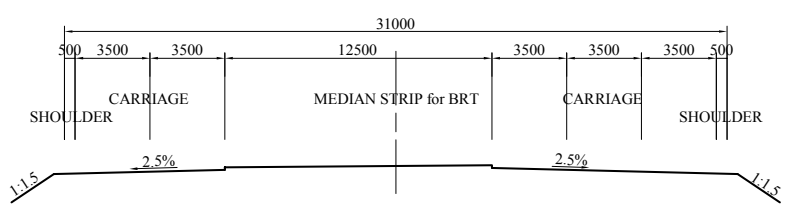
DRAWING No. :  
 BD-1



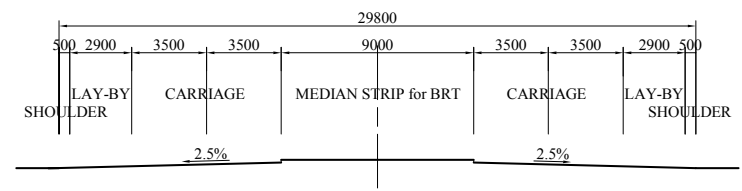
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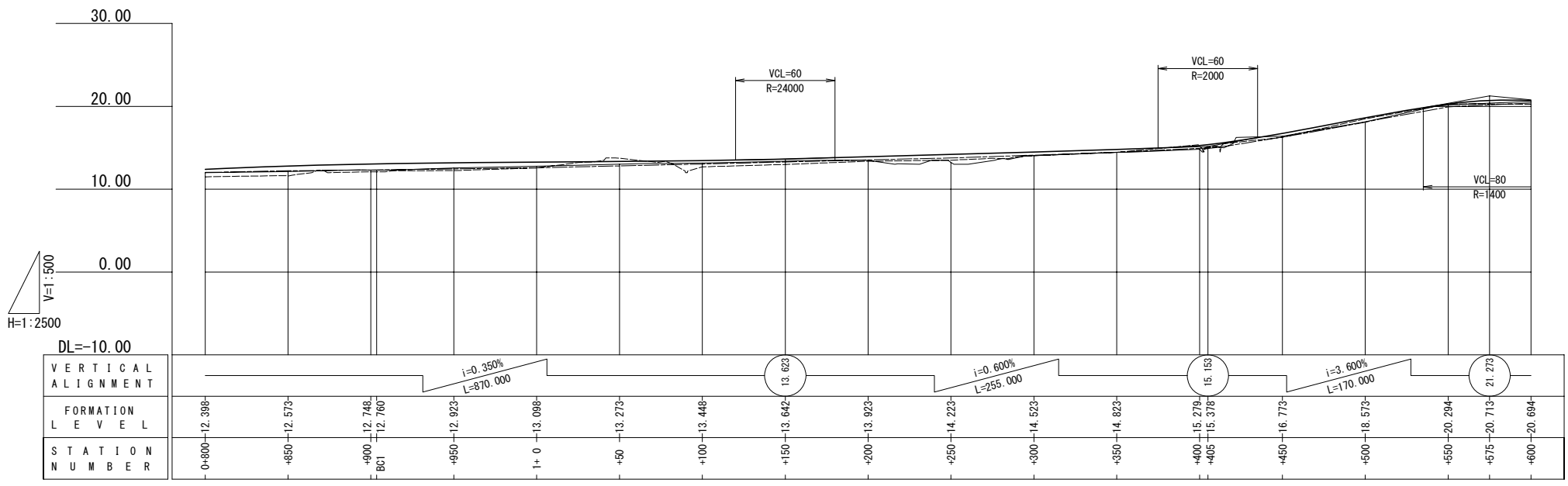
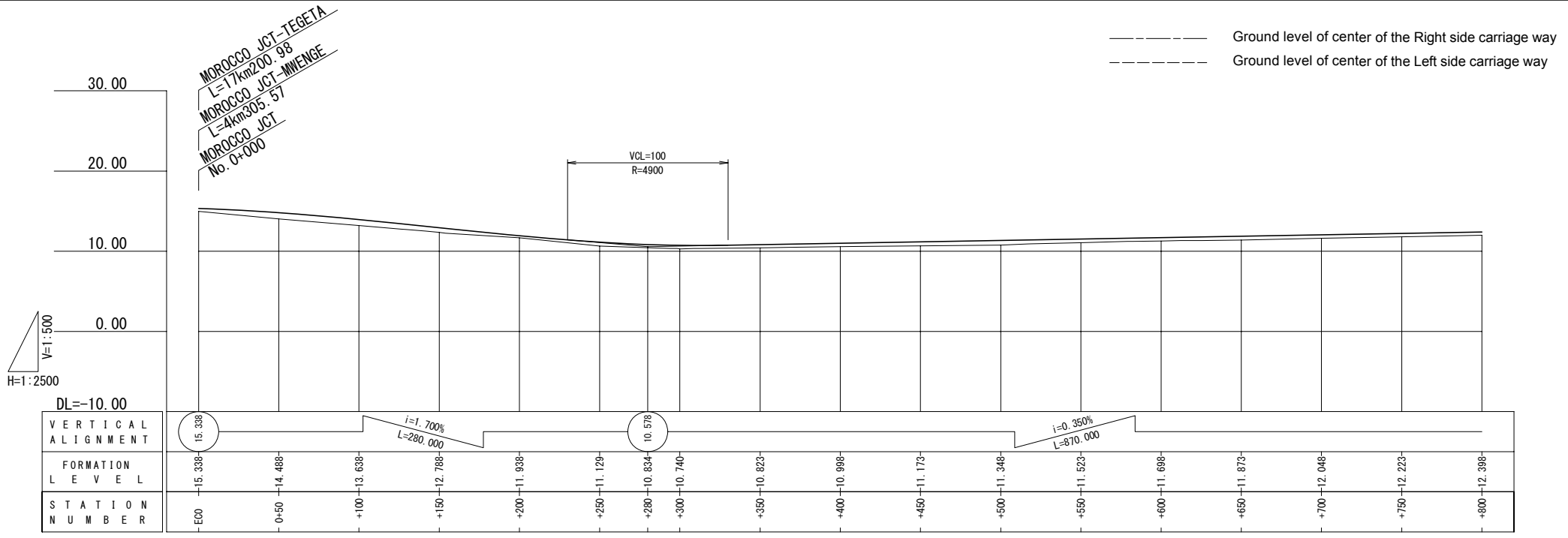
INTER SECTION

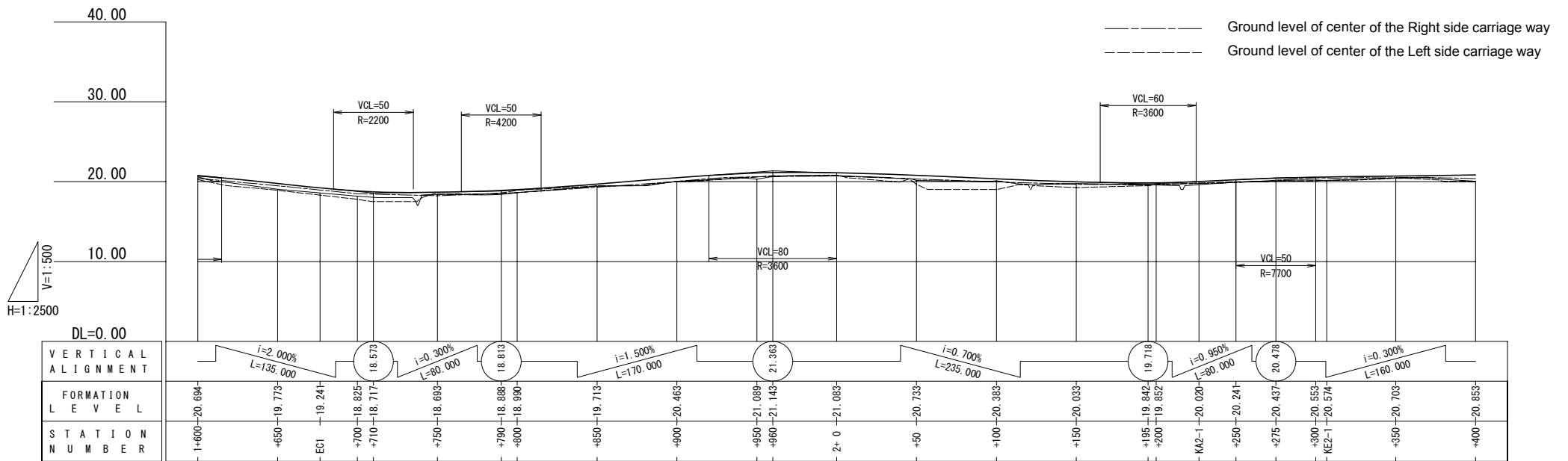


LAY-BY SECTION



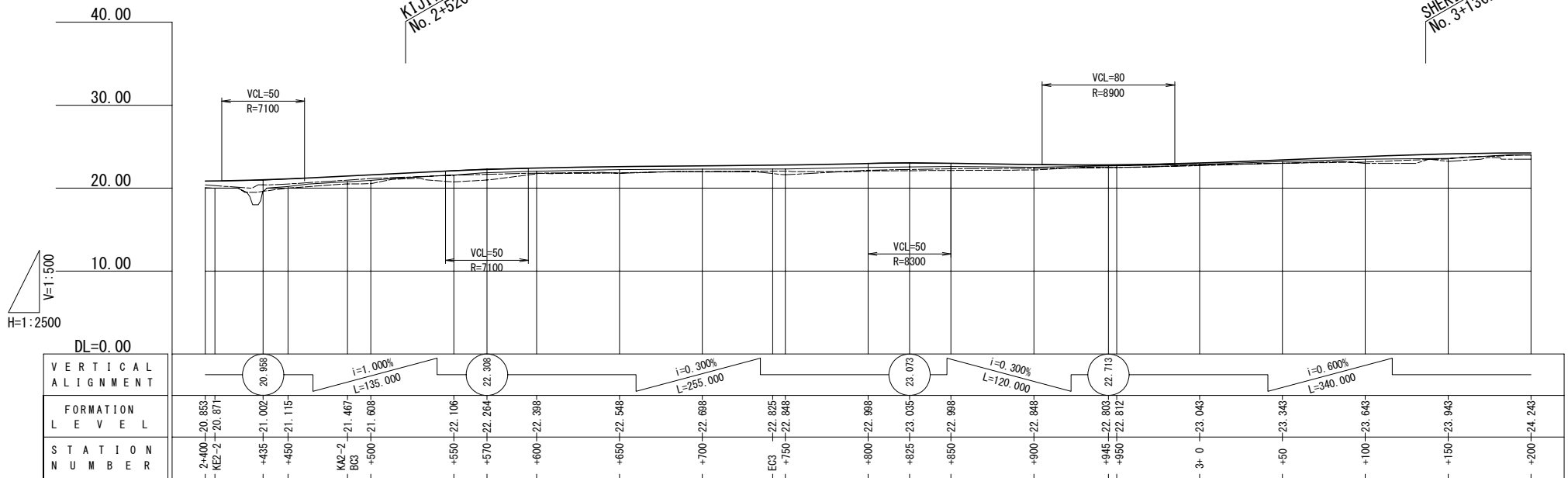
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	PLAN ( 2 )	PREPARED BY: CHECKED BY:	BD-2

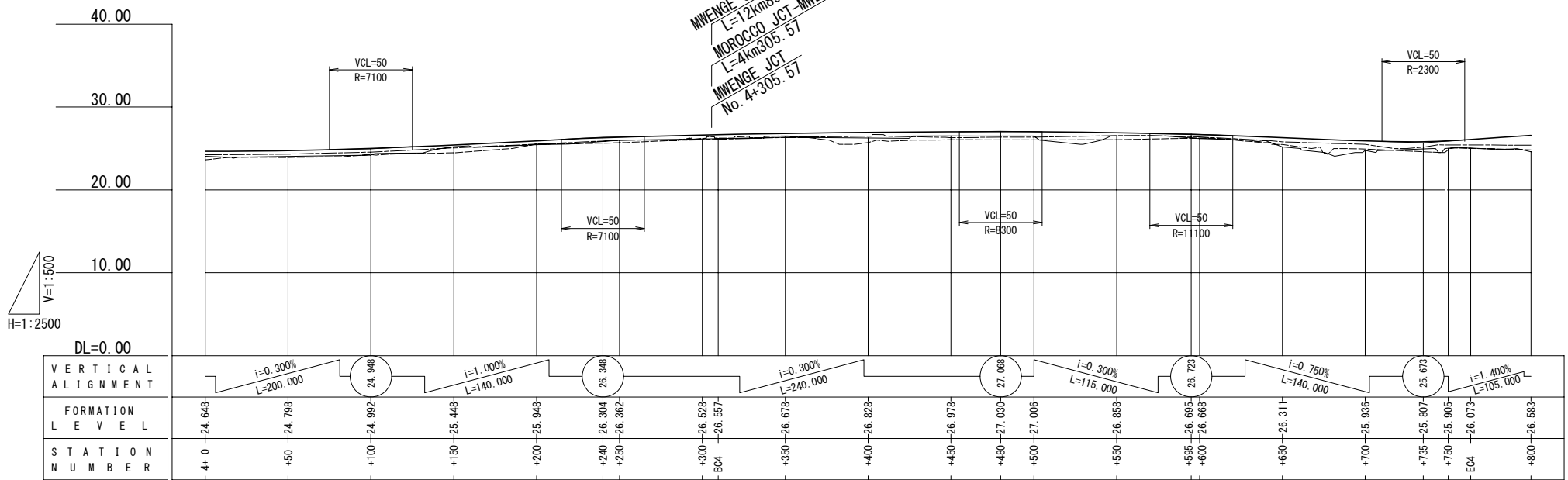
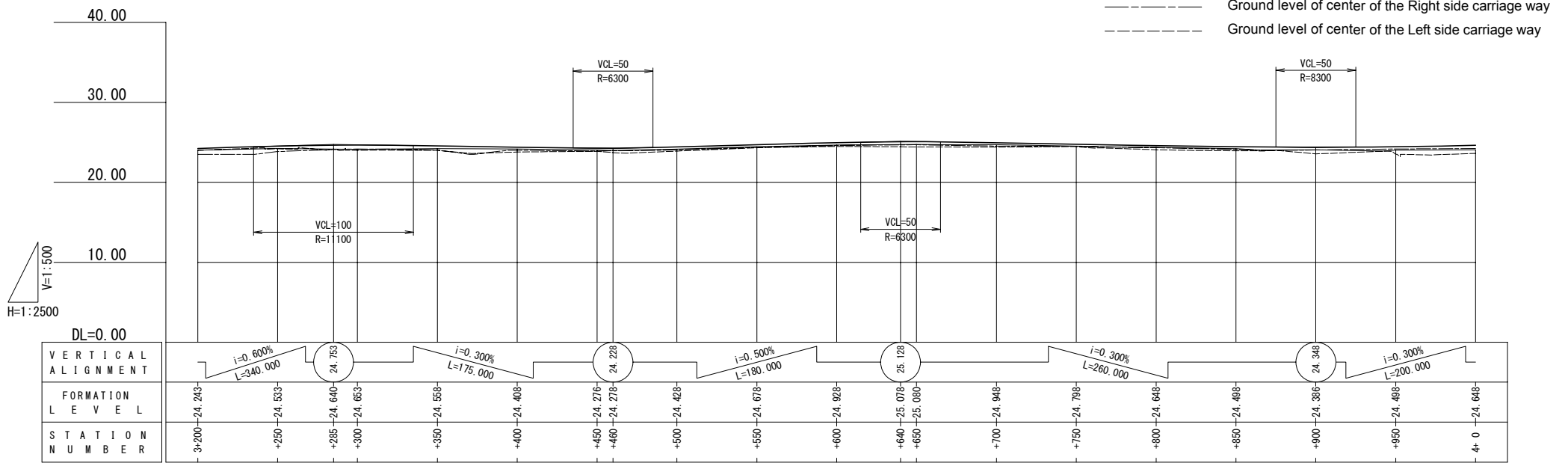




KIUTONYAMA JCT  
No. 2+520.94

SHEKTI ANGO JCT  
No. 3+136.43



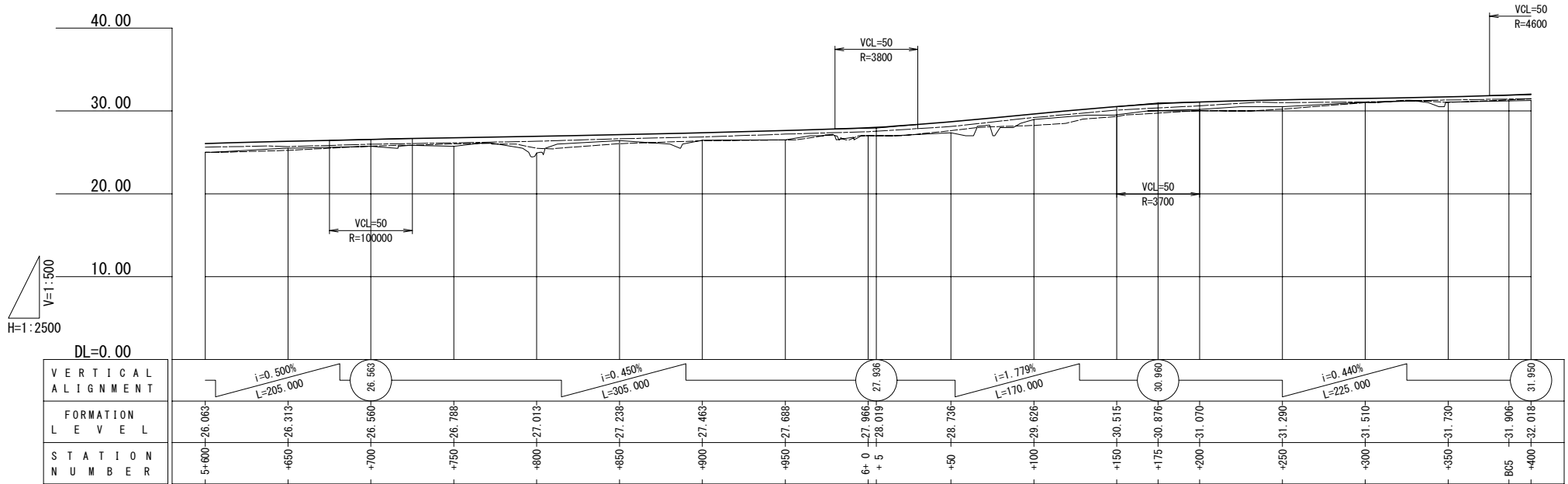
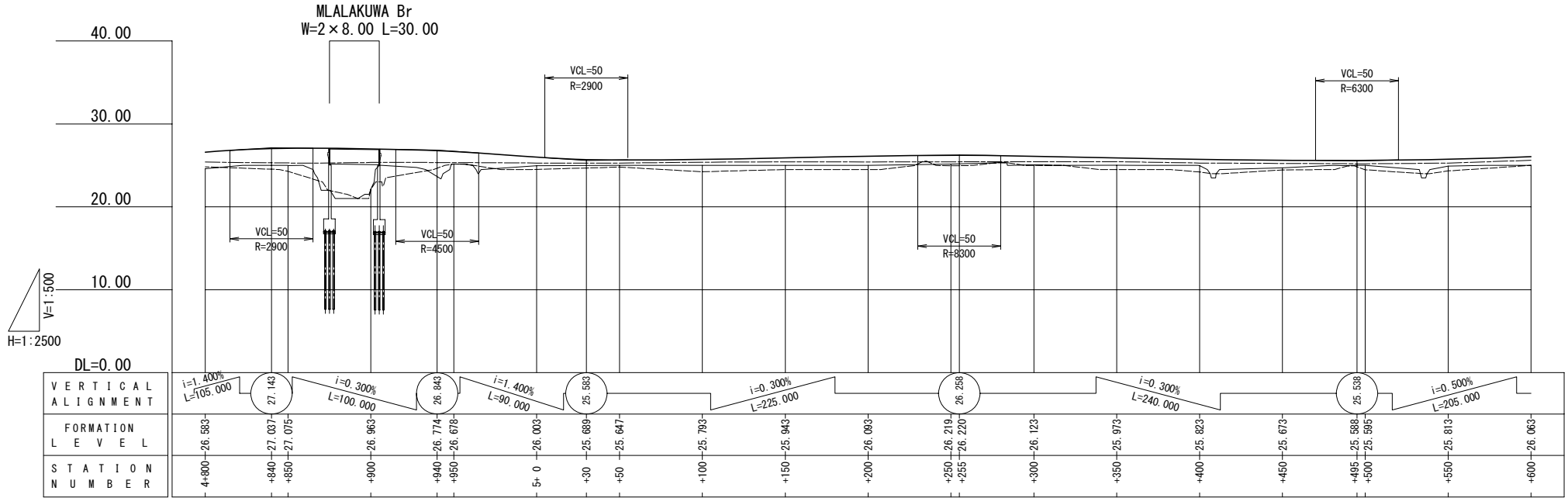


MWENGE JCT-TEGETA  
 L=12km895.41  
 MOROCCO JCT-MWENGE  
 L=4km303.57  
 MWENGE JCT  
 No. 4+303.57

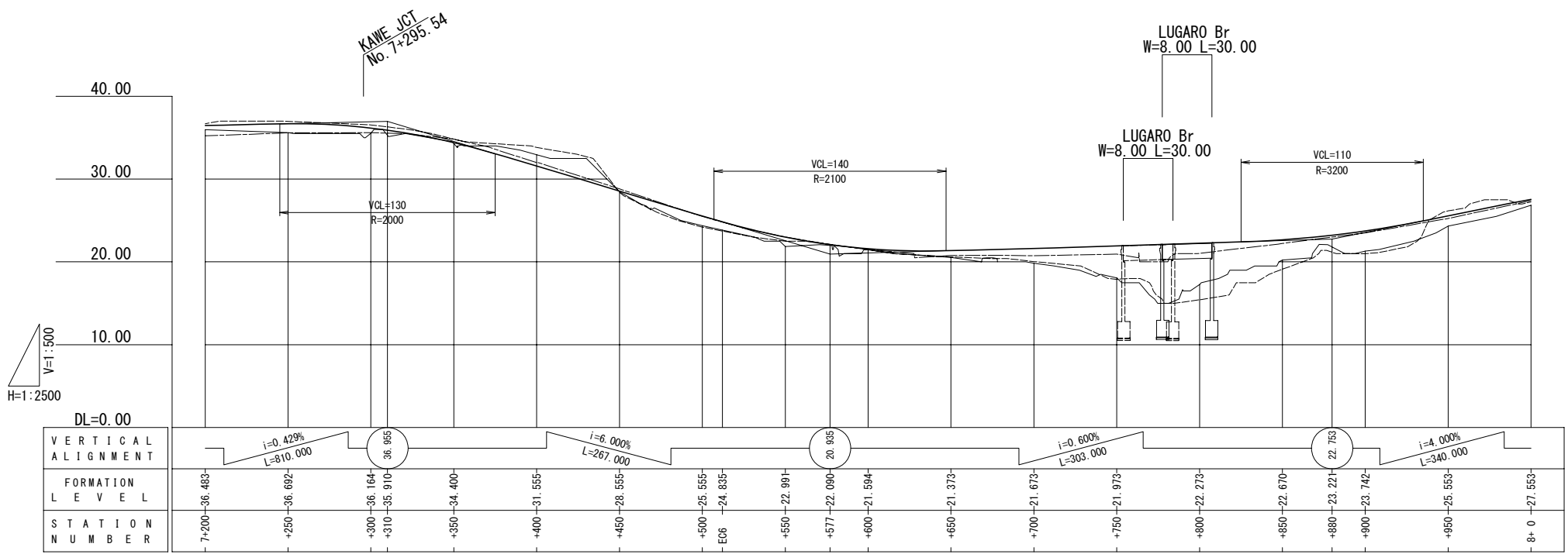
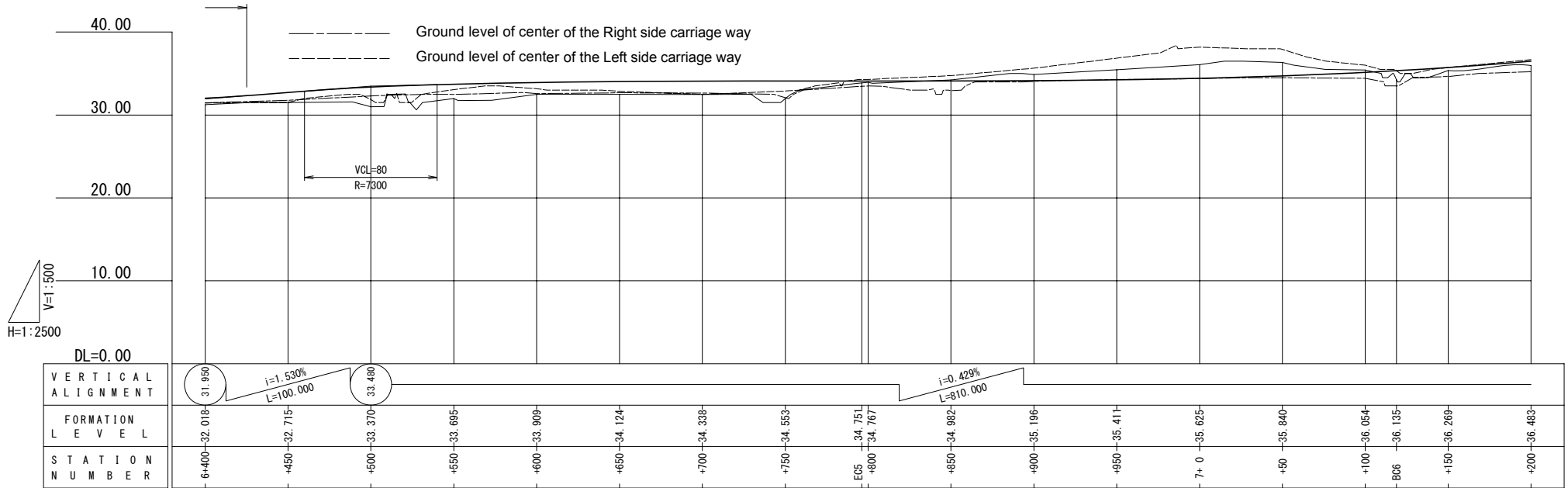
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	PROFILE (3)	PREPARED BY: CHECKED BY:	BD-5



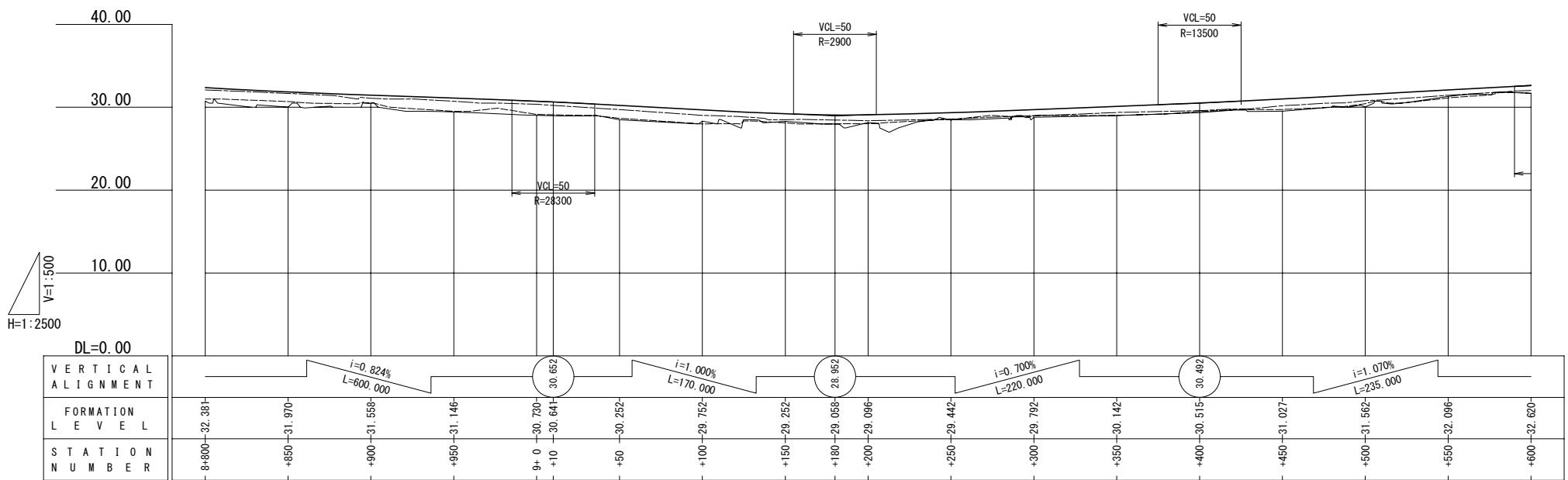
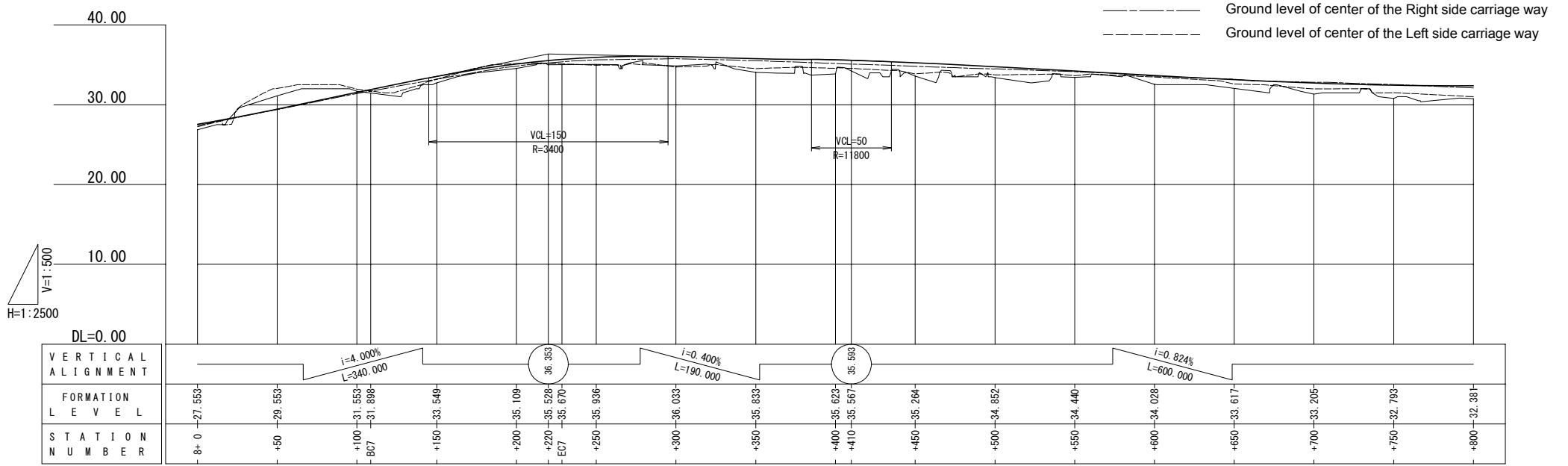
----- Ground level of center of the Right side carriage way  
 ----- Ground level of center of the Left side carriage way



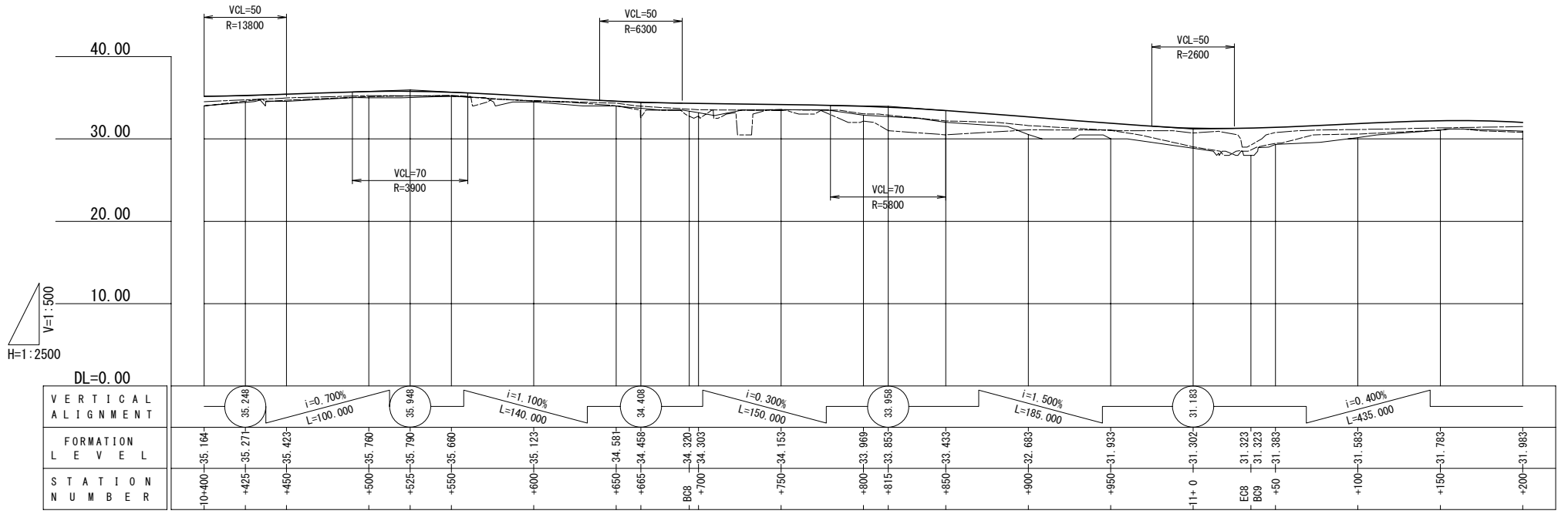
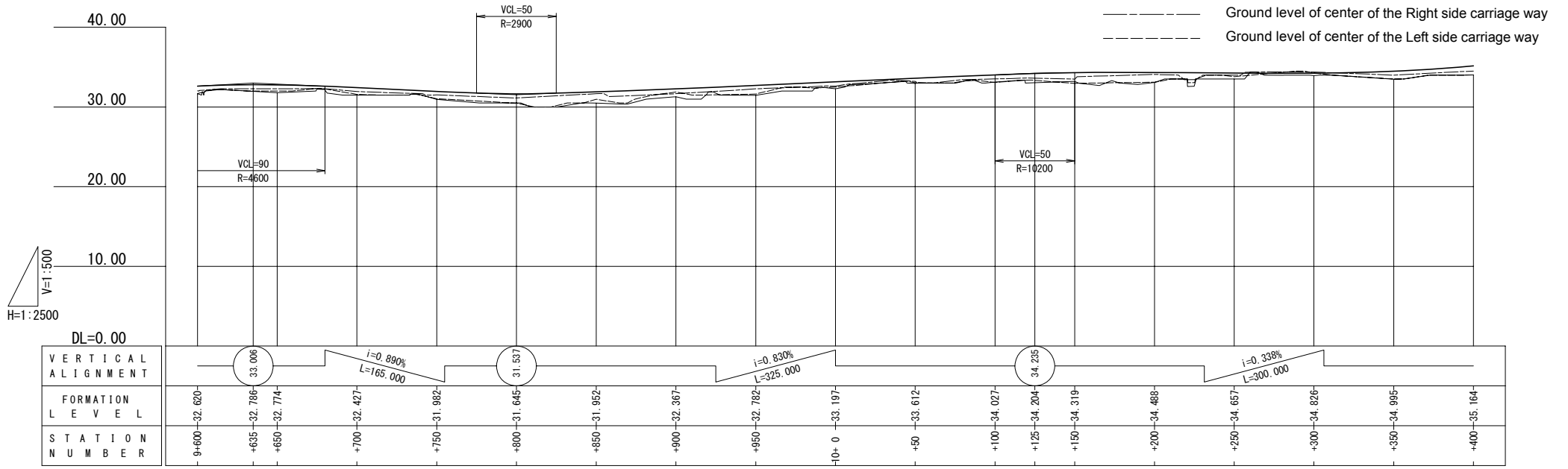
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	PROFILE ( 4 )	PREPARED BY: CHECKED BY:	BD-6



MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	PROFILE (5)	PREPARED BY:	BD-7
				CHECKED BY:	



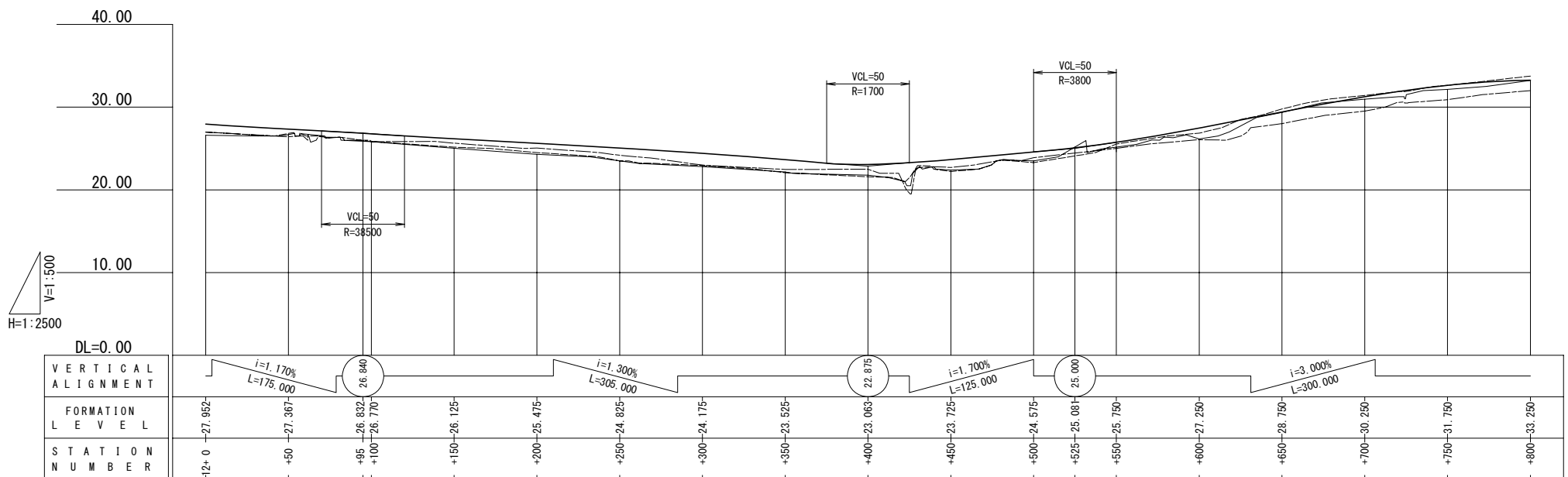
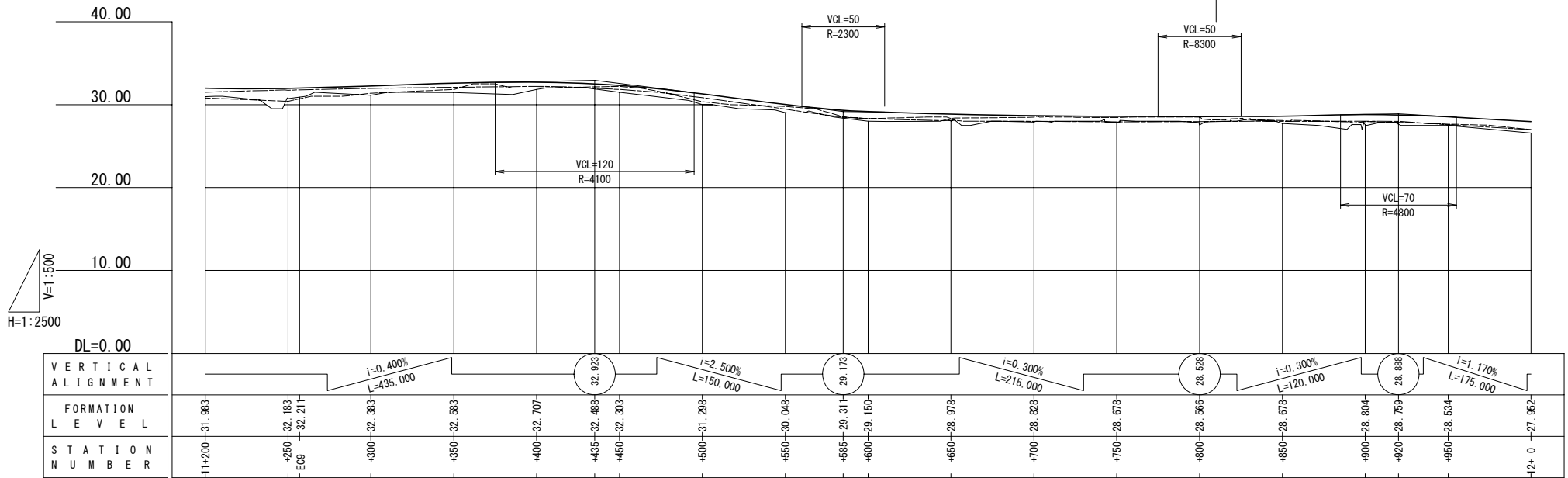
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	PROFILE (6)	PREPARED BY:	BD-8
				CHECKED BY:	

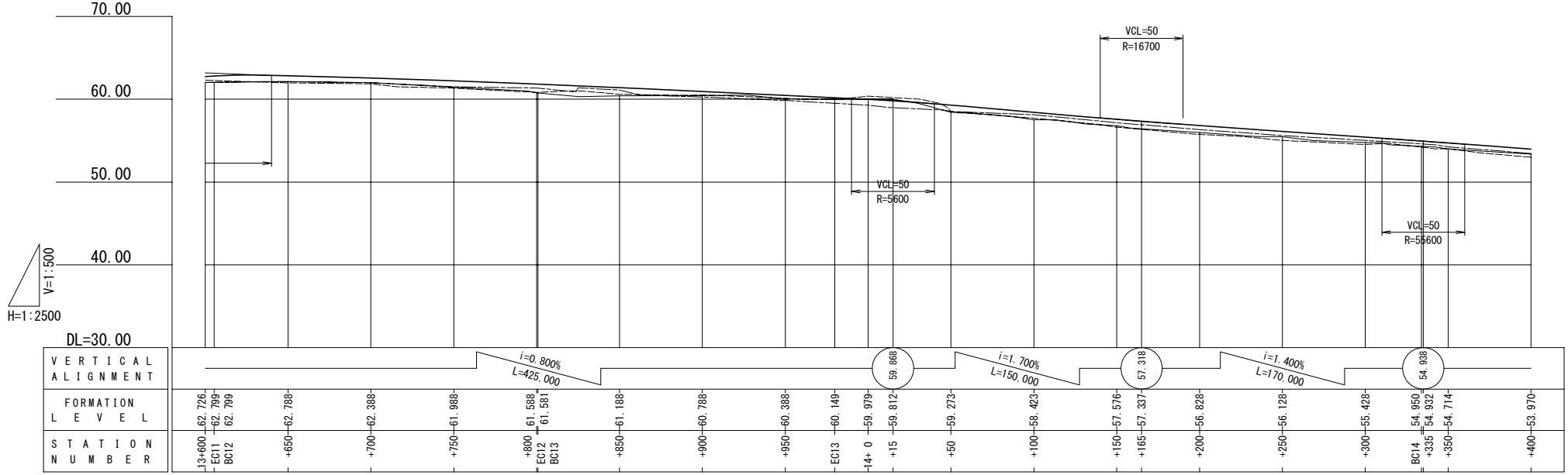
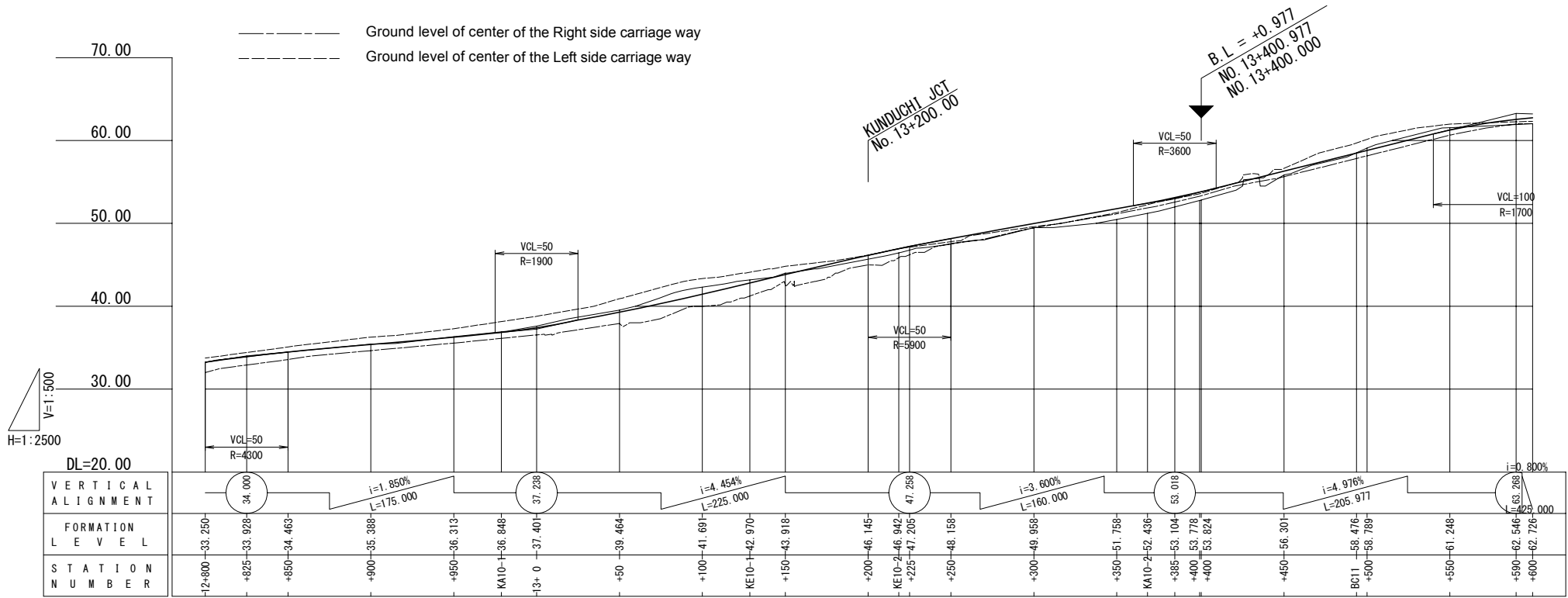


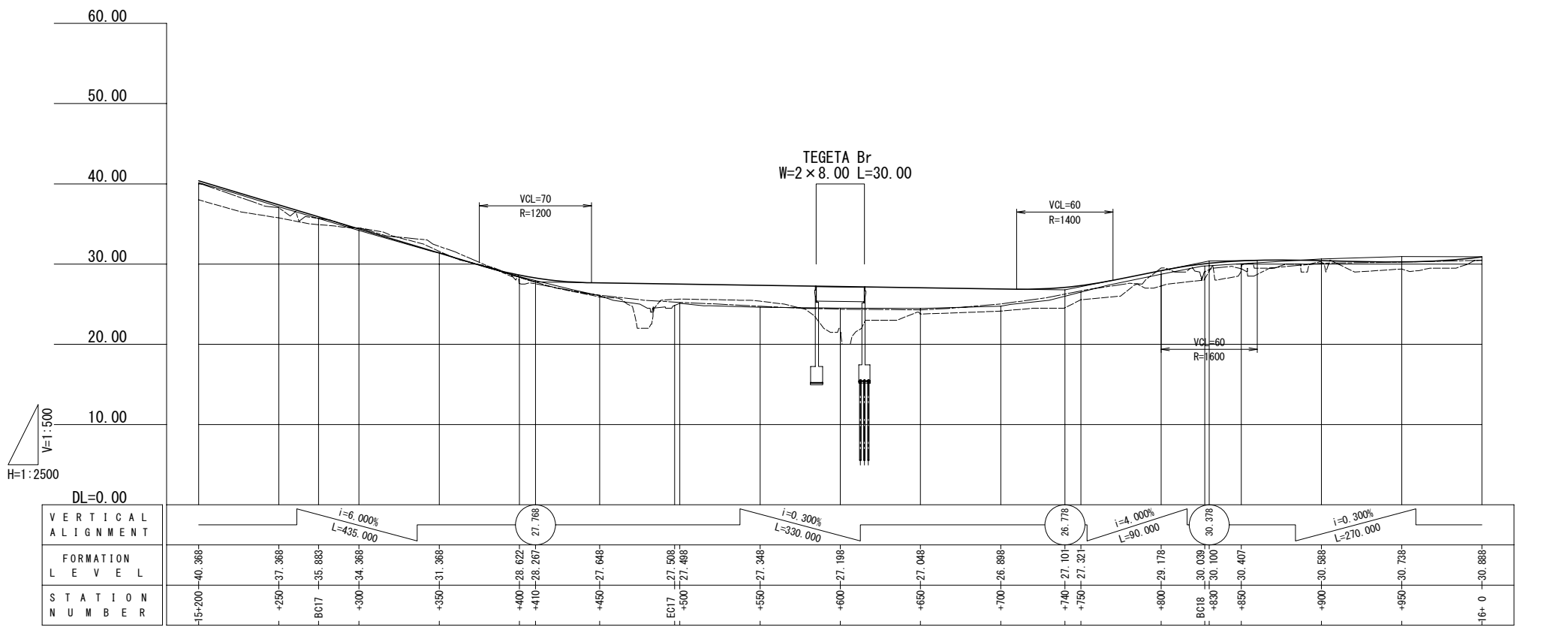
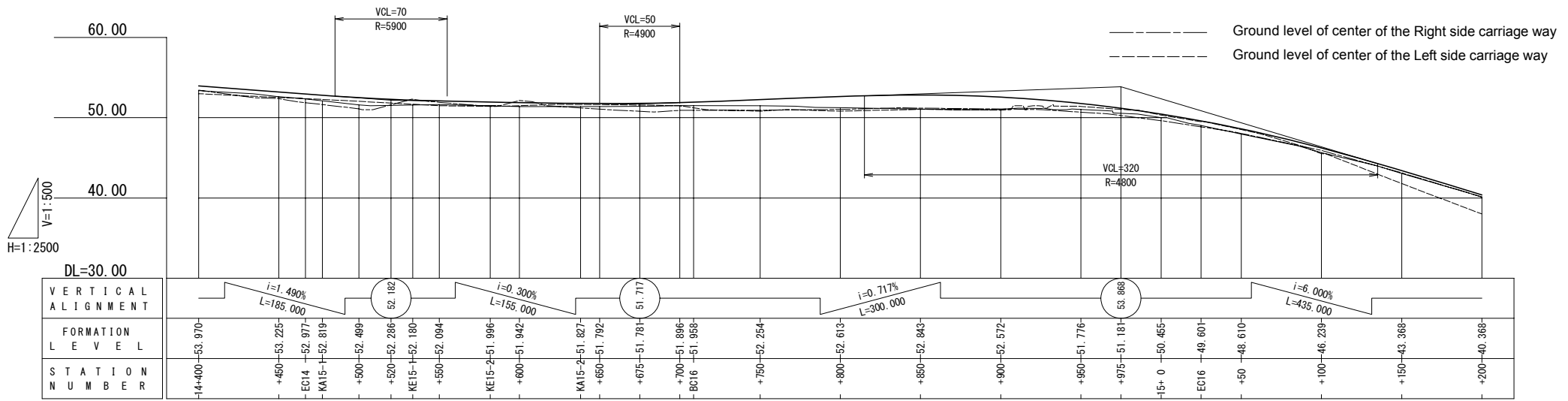
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	PROFILE (7)	PREPARED BY: CHECKED BY:	BD-9

AFRICAMA JCT  
No. 1+810.03

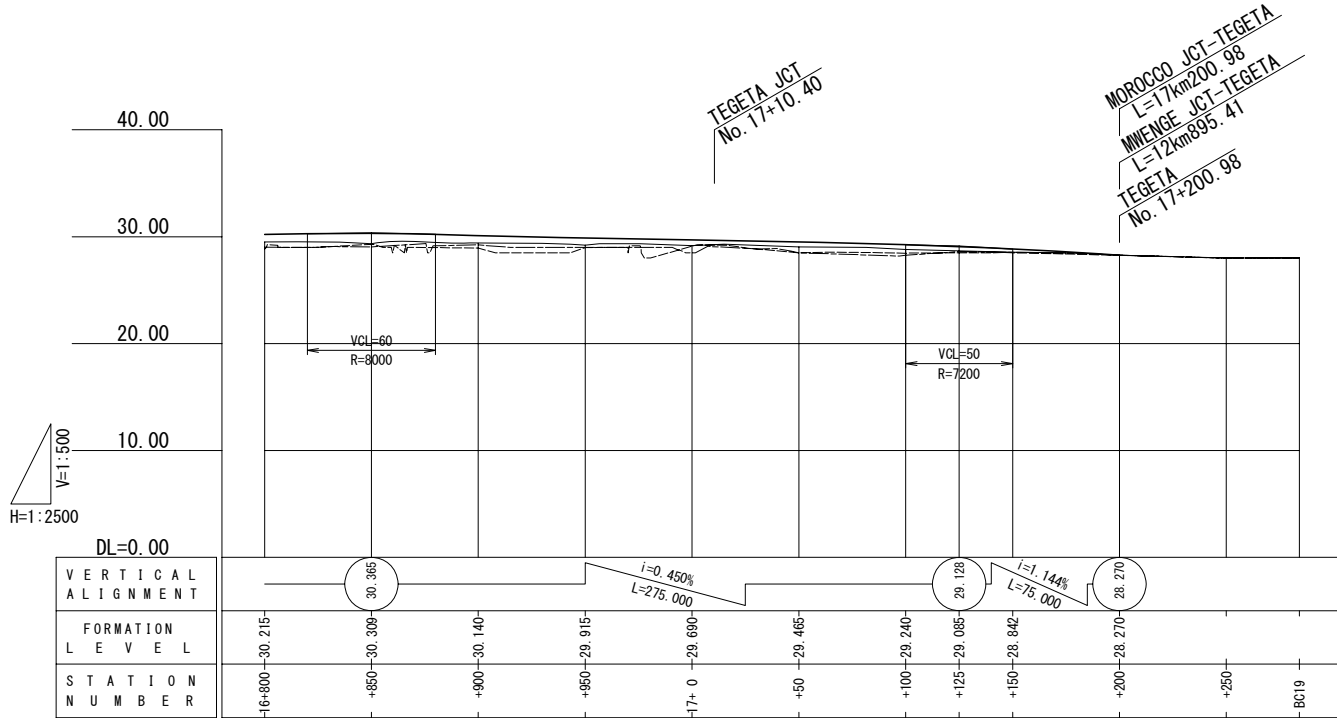
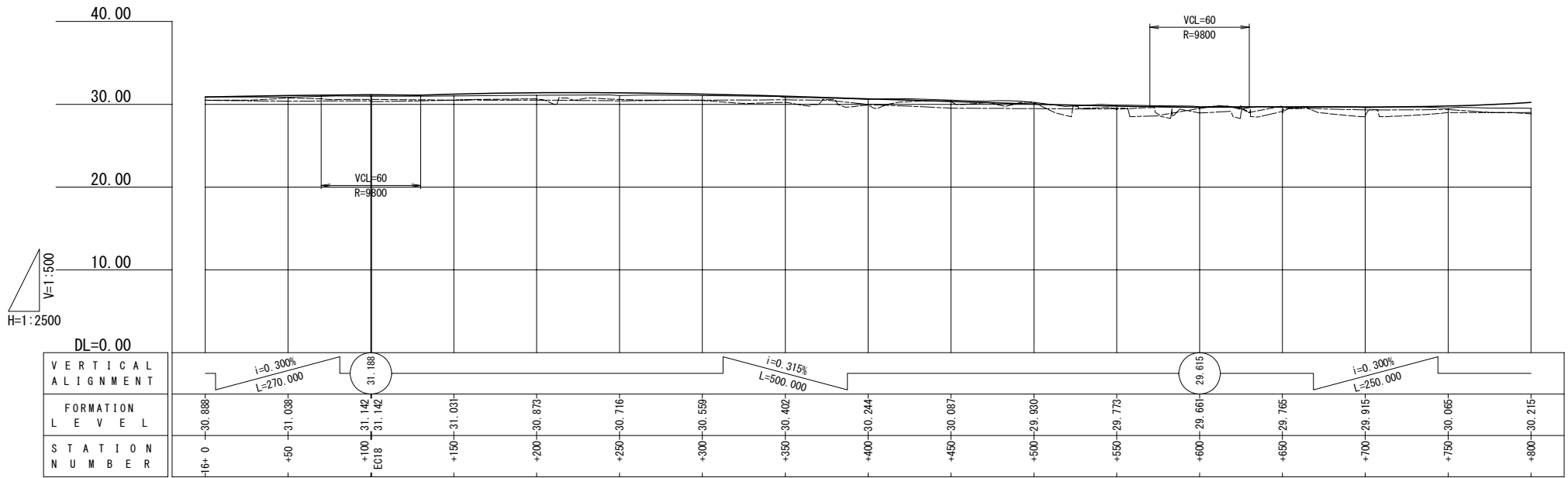
----- Ground level of center of the Right side carriage way  
 ----- Ground level of center of the Left side carriage way







MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	PROFILE ( 10 )	PREPARED BY: CHECKED BY:	BD-12



----- Ground level of center of the Right side carriage way  
 ----- Ground level of center of the Left side carriage way

TEGETA JCT  
No. 17+10.40

MOROCCO JCT-TEGETA  
L=17km200.98

MWENGE JCT-TEGETA  
L=12km895.41

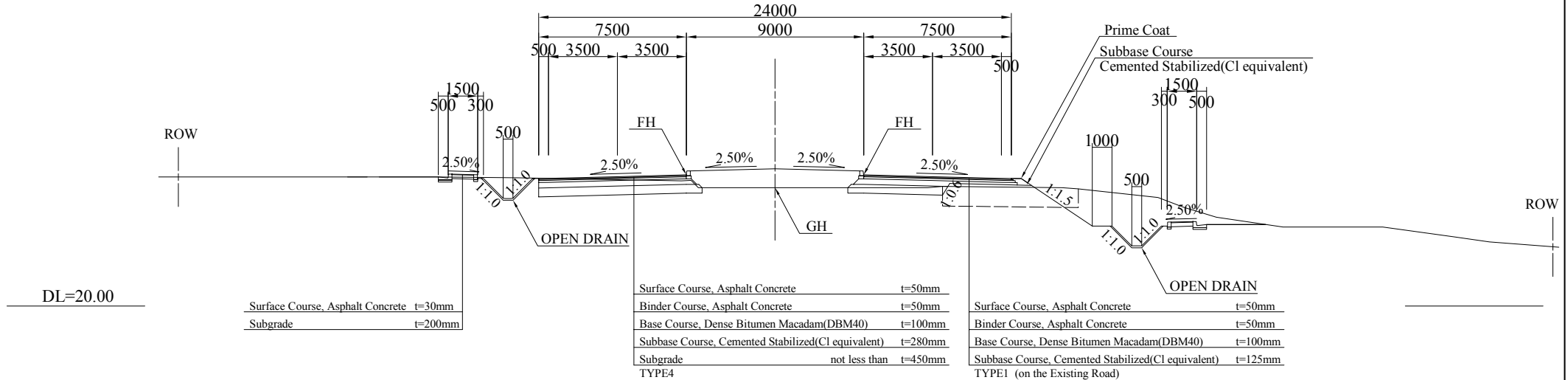
TEGETA  
No. 17+200.98

MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	PROFILE ( 11 )	PREPARED BY: CHECKED BY:	BD-13

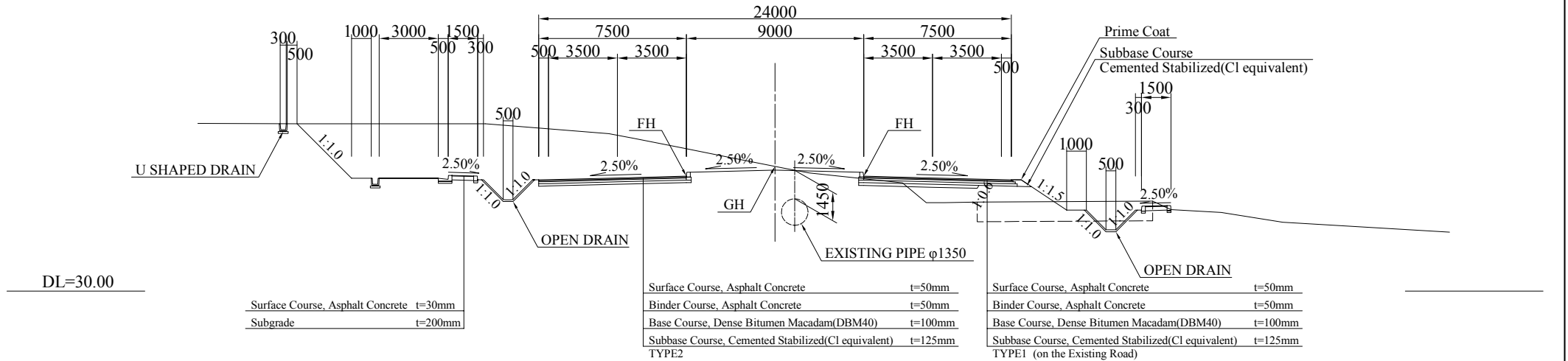


# TYPICAL CROSS SECTION(1) SCALE A3 1:200

## GENERAL SECTION



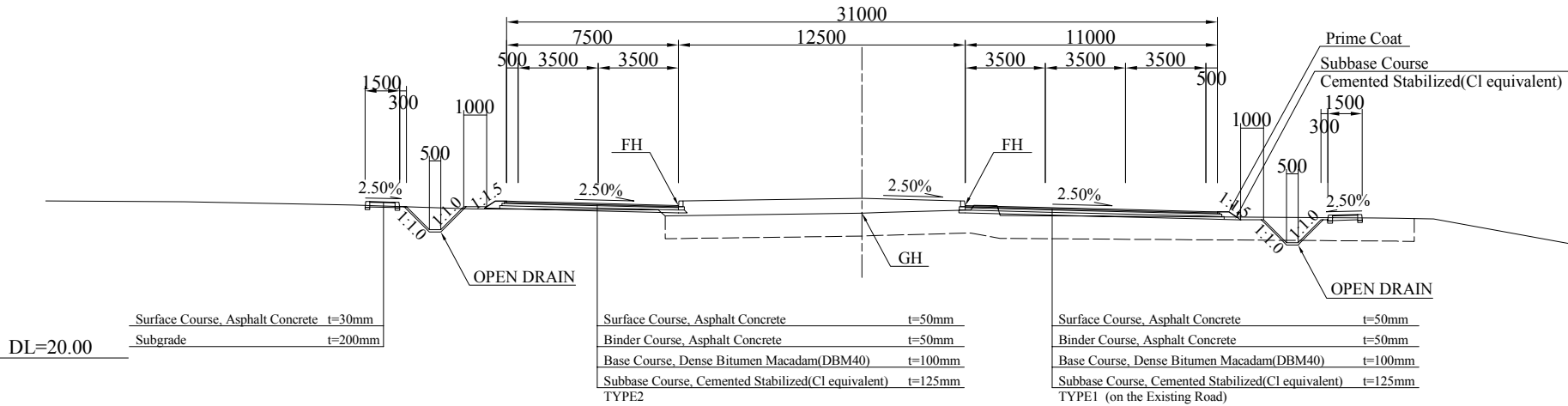
## CUT SECTION



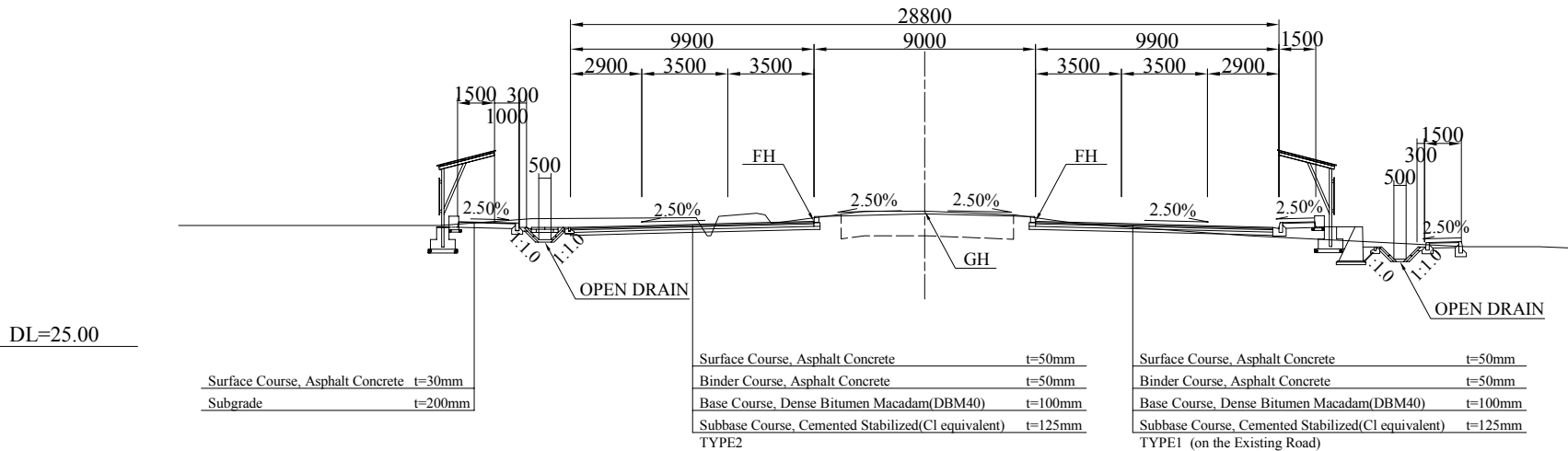
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	TYPICAL CROSS SECTION ( 1 )	PREPARED BY: CHECKED BY:	BD-14

# TYPICAL CROSS SECTION(2)      SCALE    A3 1:200

## INTER SECTION



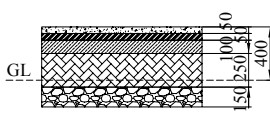
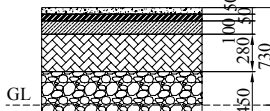
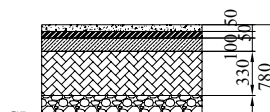
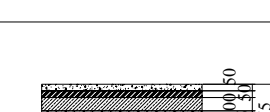
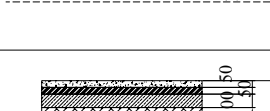


## LAY-BY SECTION



MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	TYPICAL CROSS SECTION ( 2 )	PREPARED BY: CHECKED BY:	BD-15

# PAVEMENT STRUCTURE(1)

Type	Section		Pavement Structure
	Total Thickness		
Type-1	on the Existing Road		
	t=325mm		Surface Course, Asphalt Concrete t=50mm Binder Course, Asphalt Concrete t=50mm Base Course, Dense Bitumen Macadam(DBM40) t=100mm Subbase Course, Cemented Stabilized(CI equivalent) t=125mm
Type-2	t=325mm		Surface Course, Asphalt Concrete t=50mm Binder Course, Asphalt Concrete t=50mm Base Course, Dense Bitumen Macadam(DBM40) t=100mm Subbase Course, Cemented Stabilized(CI equivalent) t=125mm
	t=600mm		Surface Course, Asphalt Concrete t=50mm Binder Course, Asphalt Concrete t=50mm Base Course, Dense Bitumen Macadam(DBM40) t=100mm Subbase Course, Cemented Stabilized(CI equivalent) t=250mm Subgrade not less than t=150mm
Type-4	t=930mm		Surface Course, Asphalt Concrete t=50mm Binder Course, Asphalt Concrete t=50mm Base Course, Dense Bitumen Macadam(DBM40) t=100mm Subbase Course, Cemented Stabilized(CI equivalent) t=280mm Subgrade not less than t=450mm
	t=980mm		Surface Course, Asphalt Concrete t=50mm Binder Course, Asphalt Concrete t=50mm Base Course, Dense Bitumen Macadam(DBM40) t=100mm Subbase Course, Cemented Stabilized(CI equivalent) t=330mm Subgrade not less than t=450mm
Type-6	t=475mm		Surface Course, Asphalt Concrete t=50mm Binder Course, Asphalt Concrete t=50mm Base Course, Dense Bitumen Macadam(DBM40) t=100mm Subbase Course, Cemented Stabilized(CI equivalent) t=125mm Subgrade not less than t=150mm
	t=980mm		Surface Course, Asphalt Concrete t=50mm Binder Course, Asphalt Concrete t=50mm Base Course, Dense Bitumen Macadam(DBM40) t=100mm Subbase Course, Cemented Stabilized(CI equivalent) t=330mm Subgrade not less than t=450mm

Sta.	Sta.	Dis(m)	Control minimum depth b/w #FHH and GL.		Remarks
			LHS	RHS(On existing road)	
4 + 300	4 + 500	200	325	275	
4 + 500	4 + 750	250	325	275	
4 + 750	5 + 0	250	780	275	
5 + 0	5 + 250	250	780	275	Br-1 km4+875~km4+905
5 + 250	5 + 500	250	780	275	
5 + 500	5 + 750	250	730	275	
5 + 750	6 + 0	250	780	275	
6 + 0	6 + 250	250	780	275	
6 + 250	6 + 500	250	780	275	
6 + 500	6 + 750	250	475	475	Embankment
6 + 750	7 + 0	250	475	475	Embankment
7 + 0	7 + 250	250	475	275	Excavation
7 + 250	7 + 500	250	325	275	Moderate longitudinal slope
7 + 500	7 + 750	250	780	275	Moderate longitudinal slope
7 + 750	8 + 0	250	780	275	Br-2 km7+777.5~km7+807.5(F) km7+754.5~km7+784.5(L)
8 + 0	8 + 250	250	780	275	Moderate longitudinal slope
8 + 250	8 + 500	250	980	275	
8 + 500	8 + 750	250	980	275	
8 + 750	9 + 0	250	980	275	
9 + 0	9 + 250	250	980	275	
9 + 250	9 + 500	250	980	275	
9 + 500	9 + 750	250	780	275	Possible further 20cm thickness removal
9 + 750	10 + 0	250	400	275	
10 + 0	10 + 250	250	780	275	Possible further 20cm thickness removal
10 + 250	10 + 500	250	780	275	Possible further 20cm thickness removal
10 + 500	10 + 750	250	780	275	Possible further 20cm thickness removal
10 + 750	11 + 0	250	780	275	Possible further 20cm thickness removal
11 + 0	11 + 250	250	780	275	Possible further 20cm thickness removal
11 + 250	11 + 500	250	780	275	Possible further 20cm thickness removal
11 + 500	11 + 750	250	325	275	
11 + 750	12 + 0	250	400	275	
12 + 0	12 + 250	250	780	275	Possible further 20cm thickness removal
12 + 250	12 + 500	250	780	275	Moderate longitudinal slope
12 + 500	12 + 750	250	730	275	Moderate longitudinal slope
12 + 750	13 + 0	250	400	275	Moderate longitudinal slope
13 + 0	13 + 250	250	400	275	
13 + 250	13 + 500	250	325	275	
13 + 500	13 + 750	250	325	275	
13 + 750	14 + 0	250	325	275	
14 + 0	14 + 250	250	400	275	
14 + 250	14 + 500	250	400	275	
14 + 500	14 + 750	250	325	275	
14 + 750	15 + 0	250	400	275	
15 + 0	15 + 250	250	400	275	
15 + 250	15 + 500	250	325	275	
15 + 500	15 + 750	250	325	275	Br-3 km15-585~km15+615
15 + 750	16 + 0	250	325	275	
16 + 0	16 + 250	250	325	275	
16 + 250	16 + 500	250	325	275	
16 + 500	16 + 750	250	325	275	
16 + 750	17 + 0	250	400	400	Both planned carriage way are not on the existing road.
17 + 0	17 + 200	200	400	400	Both planned carriage way are not on the existing road.
			12,900 m		

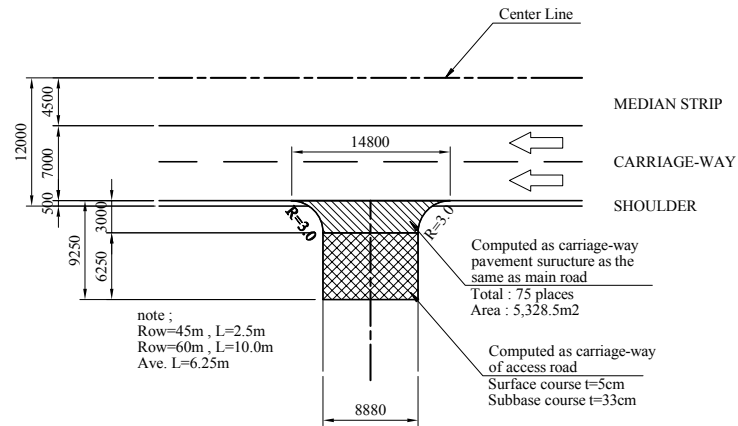
\* FHH is formation height of the center of the planning lane.  
 \* GL is ground level.

# PAVEMENT STRUCTURE (2)

SCALE A3 1:200

## ACCESS ROAD

TYPICAL TYPE OF ACCESS ROAD

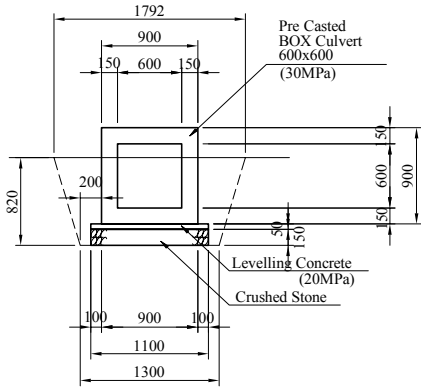


No.	t=5cm Surface	t=33cm Subbase
1	69.5	71.3
2	100.8	102.6
3	37.3	39.2
4	43	44.9
5	81.3	83.5
6	39.9	41.6
7	96.3	98.4
8	101.8	104
9	72.8	74.5
10	24.8	26.4
11	38.7	40.5
12	128.1	130.3
13	60.5	62.7
14	31.8	33.2
15	75.8	77.4
16	69	71
17	47.3	48.9
18	76.5	79.3
19	82.5	84.2
20	83	84.8
21	85.7	87.5
22	79.2	81
23	78.1	79.8
24	61.4	63.2
25	87	88.7
26	88.8	90.7
27	84.1	85.9
28	84.9	86.7
29	77	78.6
30	91.4	93
31	94	95.8
32	81.6	83.4
33	69.6	71.2
34	80.1	81.8
35	72.5	73.9
36	79.1	80.8
37	37.5	39.2
38	85.3	87.2
39	71.2	73.1
40	92.6	94.6

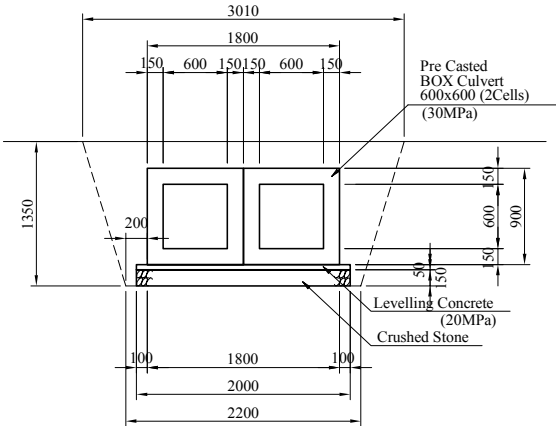
No.	t=5cm Surface	t=33cm Subbase
41	41.8	43.4
42	110.1	111.7
43	99.2	101.3
44	169.0	165
45	76.6	78.4
46	27.8	29.3
47	41.4	43.2
48	31.2	32.3
49	30.2	32.2
50	53.9	55.8
51	84.2	87.8
52	67.7	69.7
53	98.3	100.4
54	46	47.8
55	113.2	115.6
56	174.5	176.1
57	20.2	22.1
58	52.6	54.2
59	87.1	88.7
60	84	85.7
61	56.4	60.1
62	66.3	67.9
63	53.4	54.7
64	60.6	71.1
65	32.9	34.2
66	26.2	28
67	26.0	26.2
68	67	68.8
69	71	72.2
70	83.1	85
71	70	71.2
72	66.6	68.2
73	67.6	69.2
74	84.1	86.1
75	79.5	73.4
Total	5328.5	5465.4

# DRAINAGE STRUCTURE(1) SCALE A3 1:50

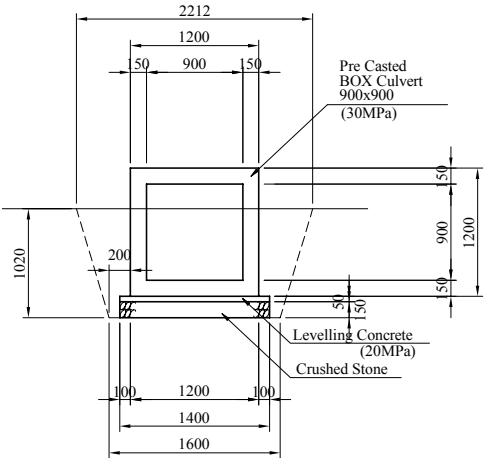
**PRE CASTED BOX CULVERT  
600×600**



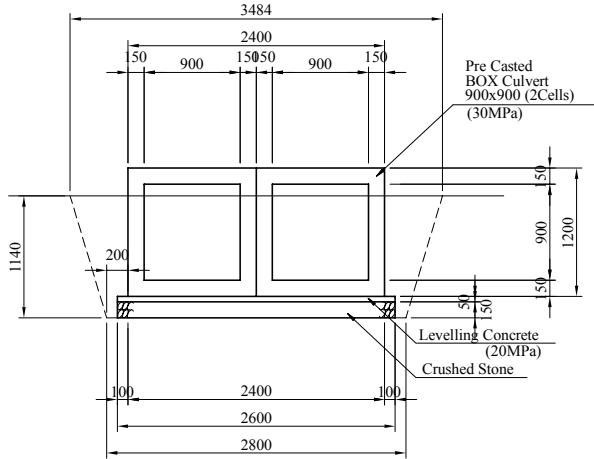
**PRE CASTED BOX CULVERT  
600×600 (2CELLS)**



**PRE CASTED BOX CULVERT  
900×900**



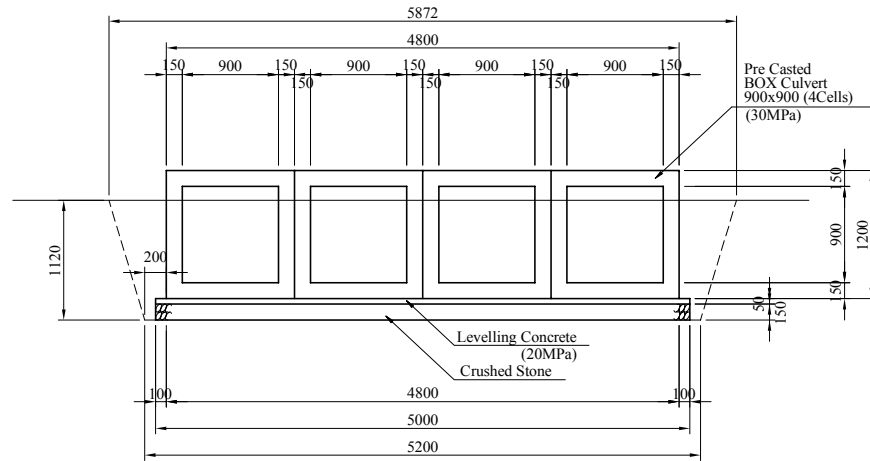
**PRE CASTED BOX CULVERT  
900×900 (2CELLS)**



MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	DRAINAGE STRUCTURE(1)	PREPARED BY: CHECKED BY:	BD-18

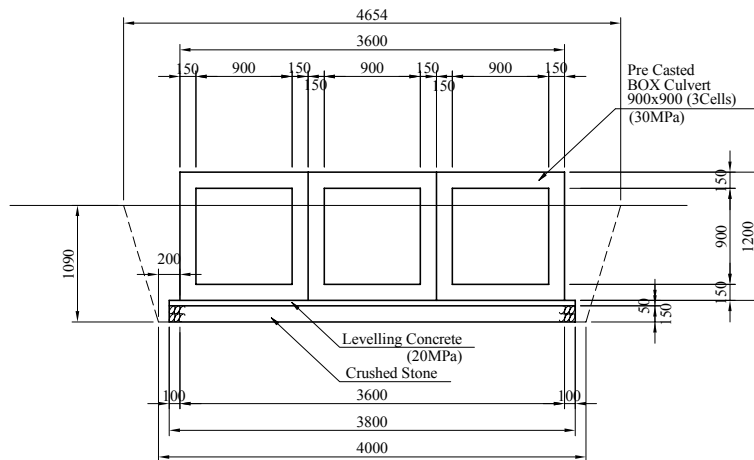
# DRAINAGE STRUCTURE (2)

**PRE CASTED BOX CULVERT  
900×900 (4CELLS)**



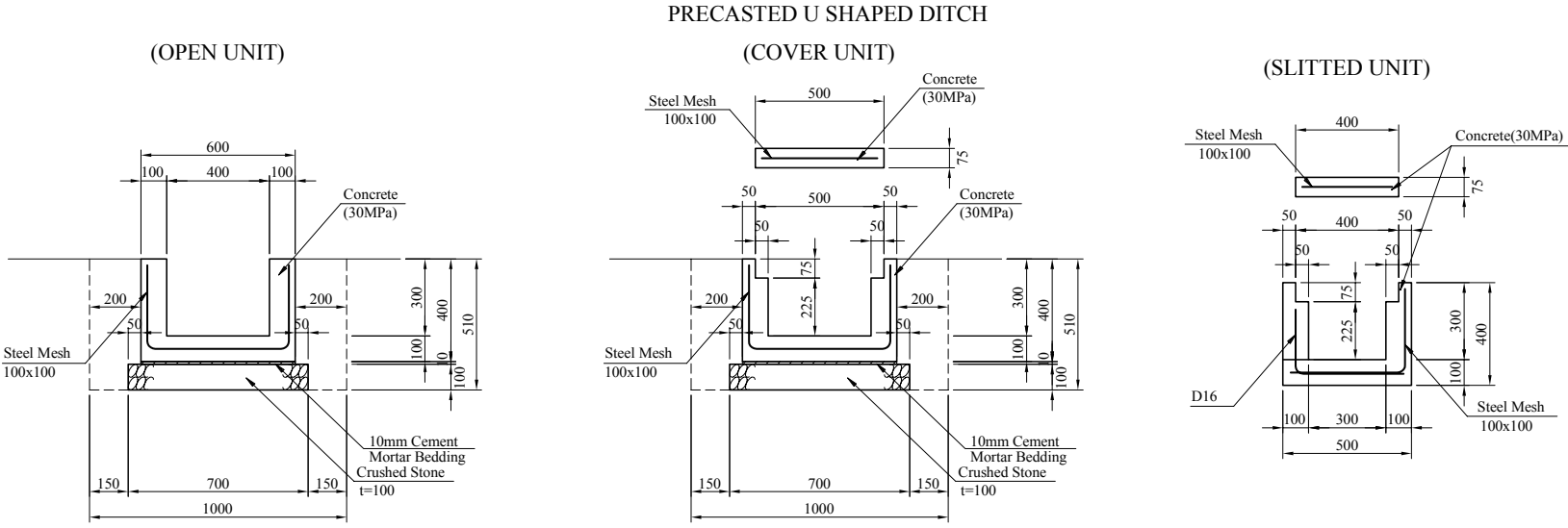
PRE CASTED BOX CULVERT (PERPENDICULAR)									
Type of Inlet /Outlet		Box 900×900				Pipe φ 900	Box 2000×3000	Box 2500×4000	Remarks
Out of Pit	Pit	1 Cell (Nos.)	2 Cells (Nos.)	3 Cells (Nos.)	4 Cells (Nos.)	1 Cell (m)	(Nos.)	(Nos.)	
	○	-	1	-	-	1	-	-	
	○	8	8	6	2	-	1	1	
Total(Nos.)		8	9	6	2	1	1	1	
Total (m)		241	281	190	65	18			

**PRE CASTED BOX CULVERT  
900×900 (3CELLS)**

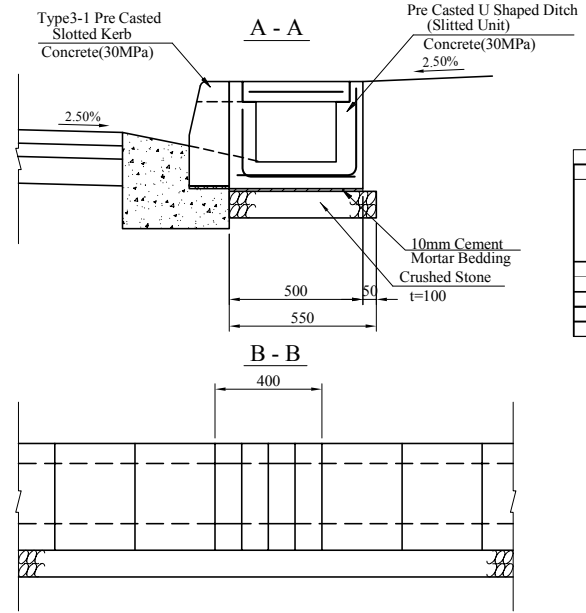
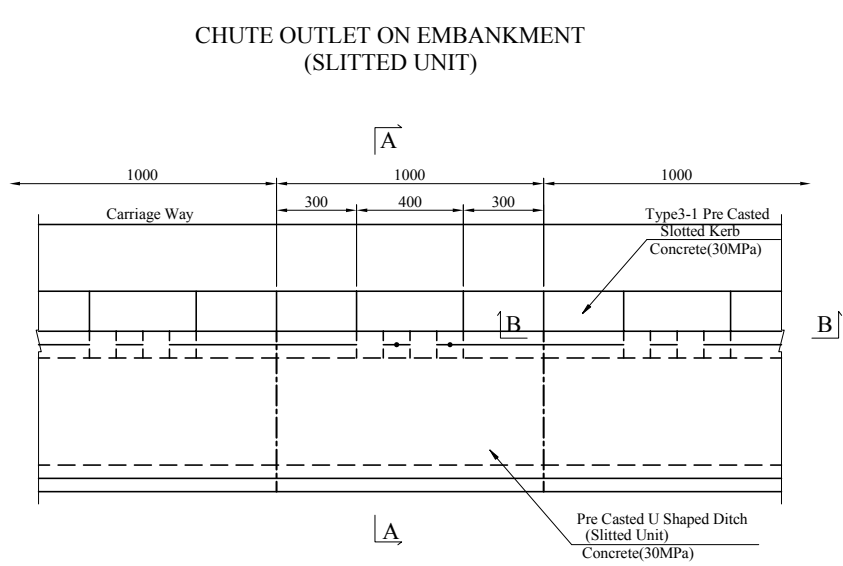


PRE CASTED BOX CULVERT (LONGITUDINAL)						
Dimension		Box 600×600		Box 900×900		
Right	Left	1 Cell (Nos.)	2 Cells (Nos.)	1 Cell (Nos.)	2 Cells (Nos.)	3 Cells (Nos.)
	○	25	1	5	4	1
	○	33	-	-	1	-
Total(Nos.)		58	1	5	5	1
Total (m)		961	13	117	75	10

# DRAINAGE STRUCTURE (3) SCALE A3 1:20



## CHUTE OUTLET ON EMBANKMENT (SLITTED UNIT)

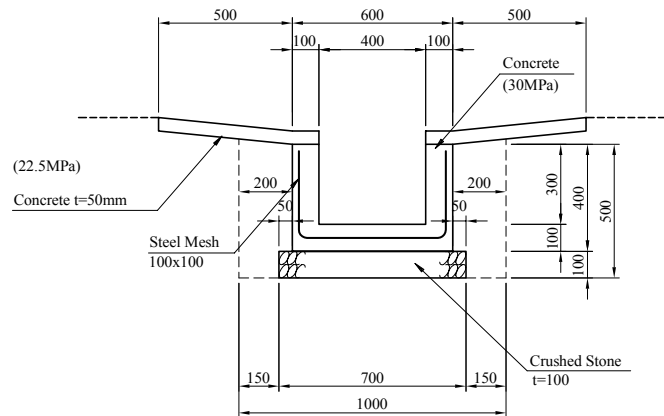


PRE CASTED BOX U SHAPED DITCH						Remarks
Direction		Pre Casted U Shaped Ditch				
Right	Left	Open	With Cover			Slitted 300x225
		400x300	400x225	Slitted 300x225		
		(Locations)	(Locations)	Under Foot path (Locations)	(Locations)	
○	○	7	5	6	6	
		-	-	6	6	
Total (Locations)		7	5	12	12	
Sub total (m)		1,900.80	204	879.6	586.4	
Total (m)		1,900.80		1,083.60	586.4	

# DRAINAGE STRUCTURE (4) SCALE A3 SHOWN

## CHUTE OUTLET ON EMBANKMENT

(OPEN UNIT) SCALE A3 1:20

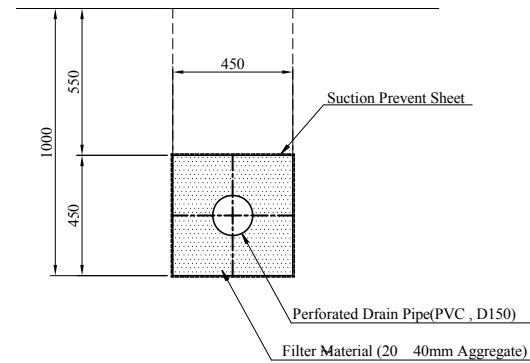


CHUTE OUTLET ON EMBANKMENT			
Direction		Chute Outlet on Embankment	Remarks
Right	Left	Chute Outlet on Embankment 400x300 (Nos.)	
○	○	12	
○		12	
Total(Nos.)		24	Average Height H=2.45m

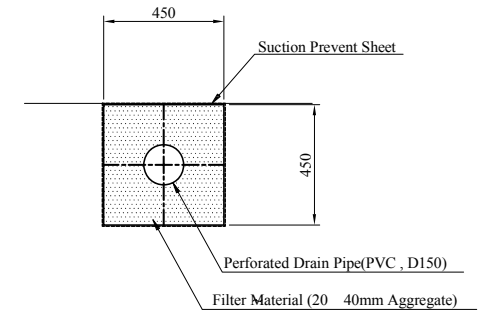
## SUBSOIL DRAIN (D150)

SCALE A3 1:20

(PERPENDICULAR)



(LONGITUDINAL)



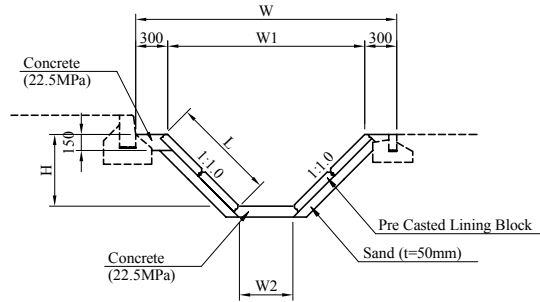
SUBSOIL DRAIN					
Direction		Pre Casted U Shaped Ditch			Remarks
Right	Left	Longitudinal (Locations)	Perpendicular (Locations)	T-Joint (Nos.)	
○	○	3	3	66	Length of perpendicular
○		-	-	-	L=16 m nos.
Total(Locations/Nos.)		3	3	66	
Total (m)		1,300.00	1,072.50	-	



# DRAINAGE STRUCTURE (5)

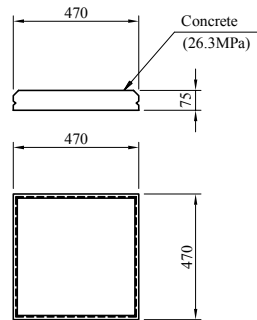
## PRE CASTED LINING BLOCK DRAINAGE

SCALE A3 1:50



## PRE CASTED LINING BLOCK

SCALE A3 1:20



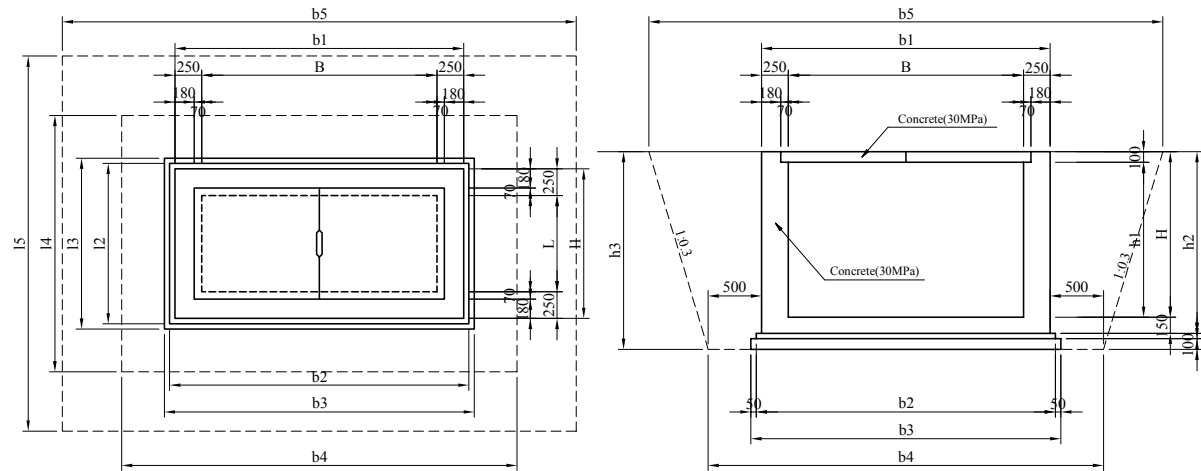
### DIMENSION LIST

	W	W1	W2	H	L
500 x 495	2090	1490	500	495	720
500 x 672	2444	1844	500	672	970
500 x 834	2768	2168	500	834	1199
500 x 1000	3100	2500	500	1000	1434
500 x 1500	4100	3500	500	1500	2141
4500 x 1500	8100	7500	4500	1500	2141

PRE CASTED LINING BLOCK DRAINAGE							
Direction		Side Drain					
Right	Left	W500×H495 (Locations)	W500×H672 (Locations)	W500×H834 (Locations)	W500×H1000 (Locations)	W500×H1500 (Locations)	W4500×H1500 (Locations)
	○	34	5	13	10	2	1
○		50	0	1	3	0	0
Total(Locations)		84	5	14	13	2	1
Total (m)		17,958	588	2,702	1,990	365	200

# DRAINAGE STRUCTURE (6) SCALE A3 1:50

## CHAMBER



CHAMBER					
Dimension		1.5 x 0.90 x 1.15	1.5 x 2.10 x 1.15	2.5 x 2.10 x 1.65	Remarks
Right	Left	(Nos.)	(Nos.)	(Nos.)	
○	○	1	-	1	
		1	1	-	
Sub total(Nos.)		2	1	1	
Total(Nos.)		4			

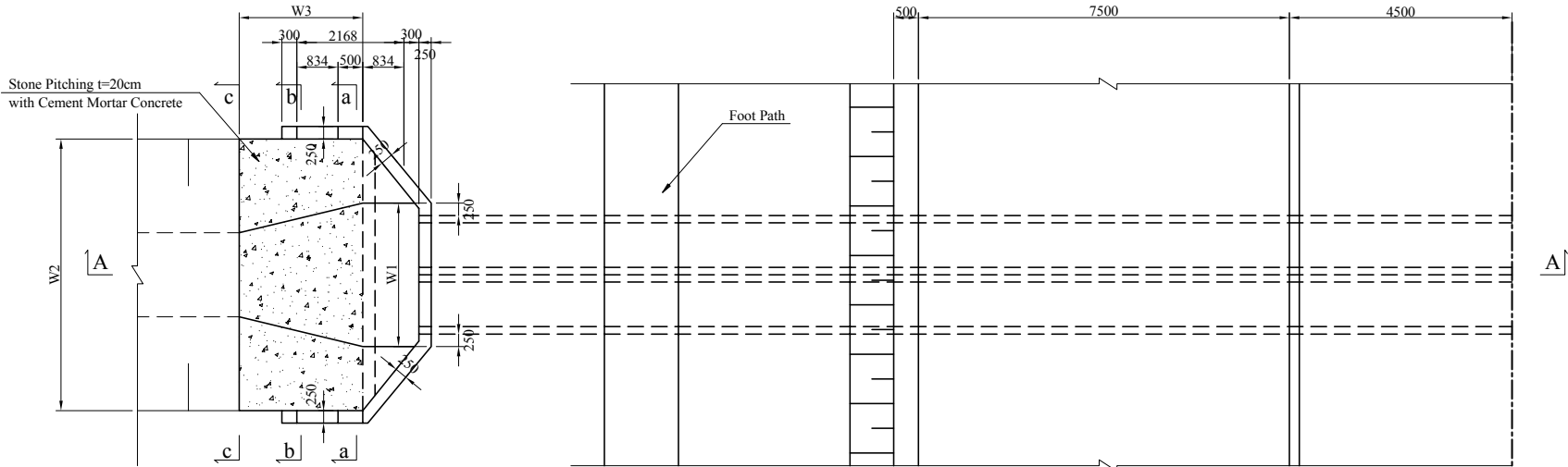
DIMENSION LIST

	B	L	H	b1	b2	b3	b4	b5	h1	h2	h3	h4	h5	h6	h7	
<b>1500 x 900 x 1150</b>	1500	900	1150	2000	2100	2200	3000	3870	1400	1500	1600	2400	3270	1050	1300	1450
<b>1500 x 2100 x 1150</b>	1500	2100	1150	2000	2100	2200	3000	3870	2600	2700	2800	3600	4470	1050	1300	1450
<b>2500 x 2100 x 1650</b>	2500	2100	1650	3000	3100	3200	4000	5170	2600	2700	2800	3600	4770	1550	1800	1950
<b>2500 x 2500 x 1000</b>	2500	2500	1000	3000	3100	3200	4000	4780	3000	3100	3200	4000	4780	900	1150	1300

CHAMBER			
Dimension		2.50 x 2.50 x 1.00	Remarks
Right	Left	(Nos.)	
	○	19	
○		20	
Total(Nos.)		39	

# DRAINAGE STRUCTURE (7) SCALE A3 1:100

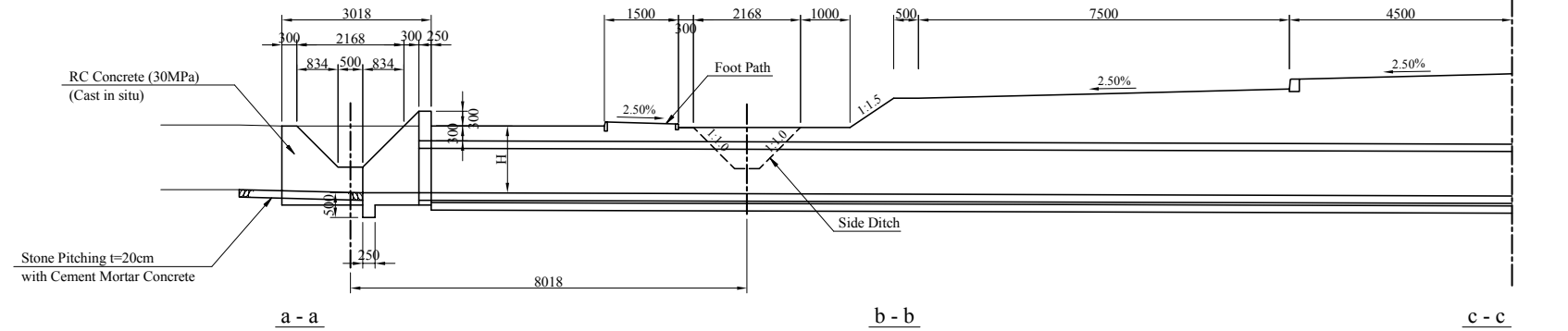
INLET



DIMENSION LIST

	W1	W2	W3	H
TYPE 1-2	4100	6400	2500	1350
TYPE 1-3	4100	6700	2500	1350
TYPE 1-4	2900	5500	2500	1350
TYPE 1-5	2900	5200	2500	1350
TYPE 1-6	2900	5200	2500	1350
TYPE 1-7	4100	6400	2500	1350
TYPE 1-8	2900	5200	2500	1350
TYPE 1-9	4100	6100	2500	1350
TYPE 1-10	1700	3700	2500	1350
TYPE 1-11	1700	3300	2500	1350
TYPE 1-12	1700	3300	2500	1350
TYPE 1-13	4100	6700	2500	1350
TYPE 1-14	4100	6400	2500	1350
TYPE 1-15	1700	4000	2500	1350
TYPE 1-17	5300	6900	2500	1350
TYPE 1-18	2900	5500	2500	1350
TYPE 1-19	2900	5500	2500	1350
TYPE 1-21	5300	8900	2500	1350
TYPE 1-22	2900	5500	2500	1350
TYPE 1-23	2900	5500	2500	1350
TYPE 1-25	2900	4500	2500	1350
TYPE 1-26	1700	3300	2500	1350
TYPE 1-27	1700	3300	2500	1350
TYPE 1-28	1700	3300	2500	1350

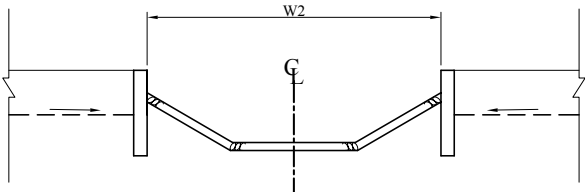
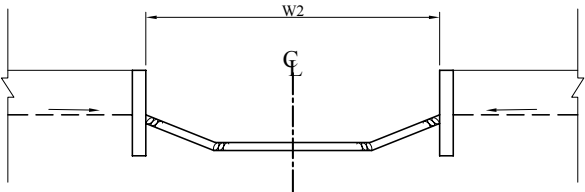
A - A



a - a

b - b

c - c

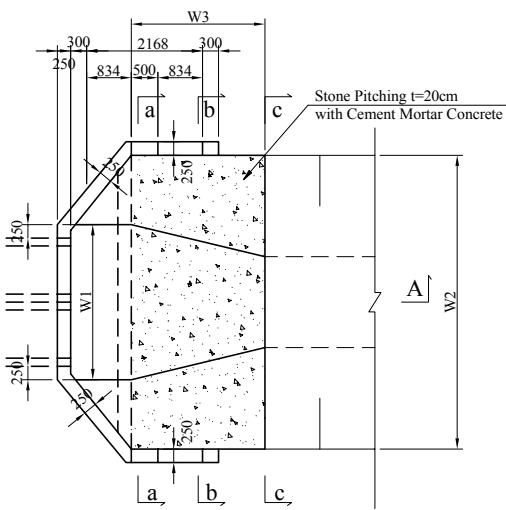
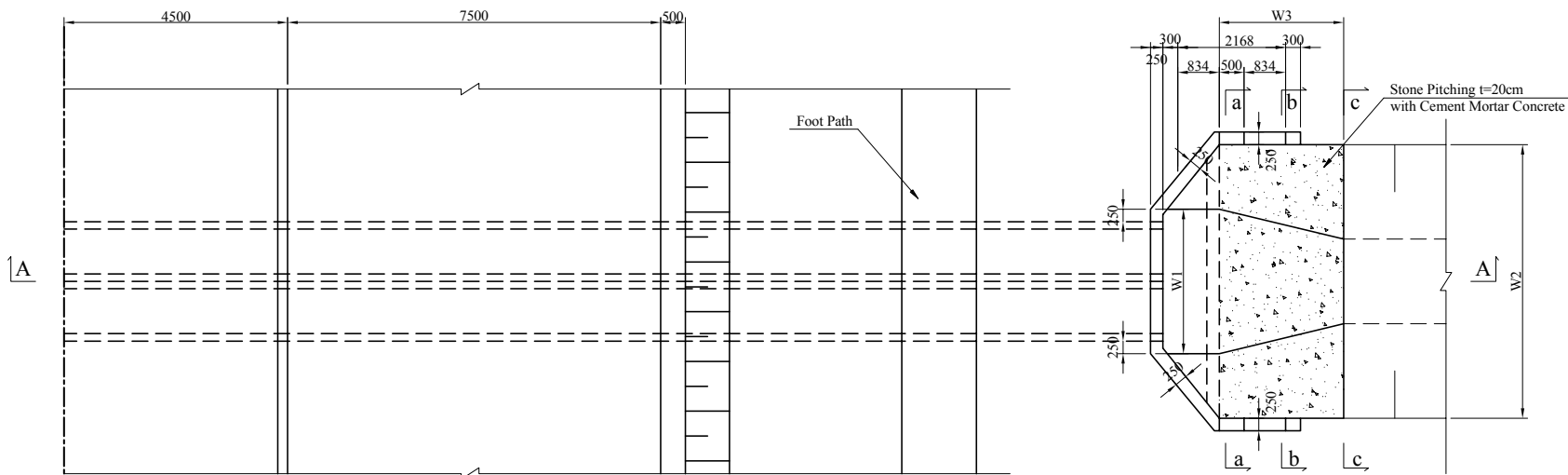


Stone Pitching t=20cm  
with Cement Mortar Concrete

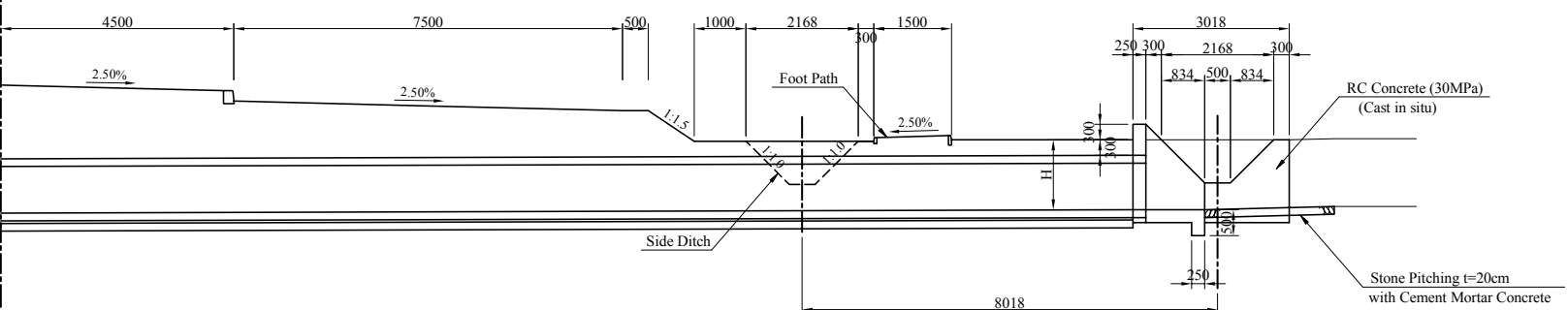
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	DRAINAGE STRUCTURE (7)	PREPARED BY: CHECKED BY:	BD-24

# DRAINAGE STRUCTURE (8) SCALE A3 1:100

OUTLET



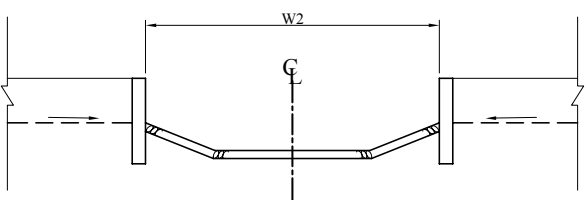
A - A



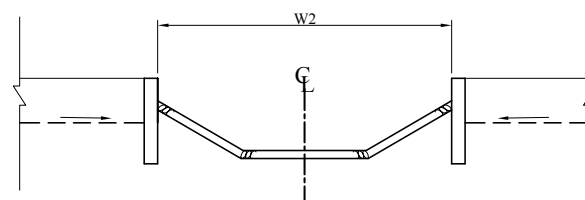
DIMENSION LIST

	W1	W2	W3	H
TYPE 1-2	4100	5700	2500	1500
TYPE 1-3	4100	5700	2500	950
TYPE 1-4	2900	4500	2500	950
TYPE 1-5	2900	4500	2500	950
TYPE 1-6	2900	4900	2500	950
TYPE 1-7	4100	5700	2500	950
TYPE 1-8	2900	4500	2500	950
TYPE 1-9	4100	5700	2500	950
TYPE 1-10	1700	3300	2500	950
TYPE 1-11	1700	3300	2500	950
TYPE 1-12	1700	3300	2500	950
TYPE 1-13	4100	6700	2500	1450
TYPE 1-14	4100	5700	2500	950
TYPE 1-15	1700	4000	2500	1350
TYPE 1-17	5300	6900	2500	950
TYPE 1-19	4100	5700	2500	950
TYPE 1-20	2900	4500	2500	950
TYPE 1-21	5300	7900	2500	1450
TYPE 1-22	2900	5500	2500	1450
TYPE 1-23	1700	3300	2500	950
TYPE 1-25	200	1800	2500	450
TYPE 1-26	1700	3300	2500	950
TYPE 1-27	1700	3300	2500	950
TYPE 1-28	2900	4500	2500	950

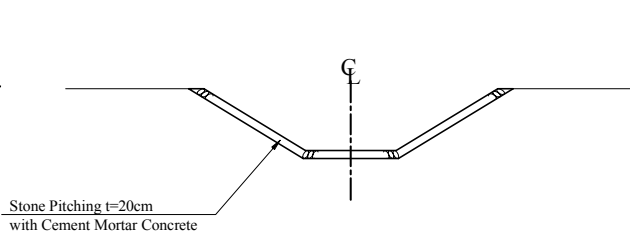
a - a



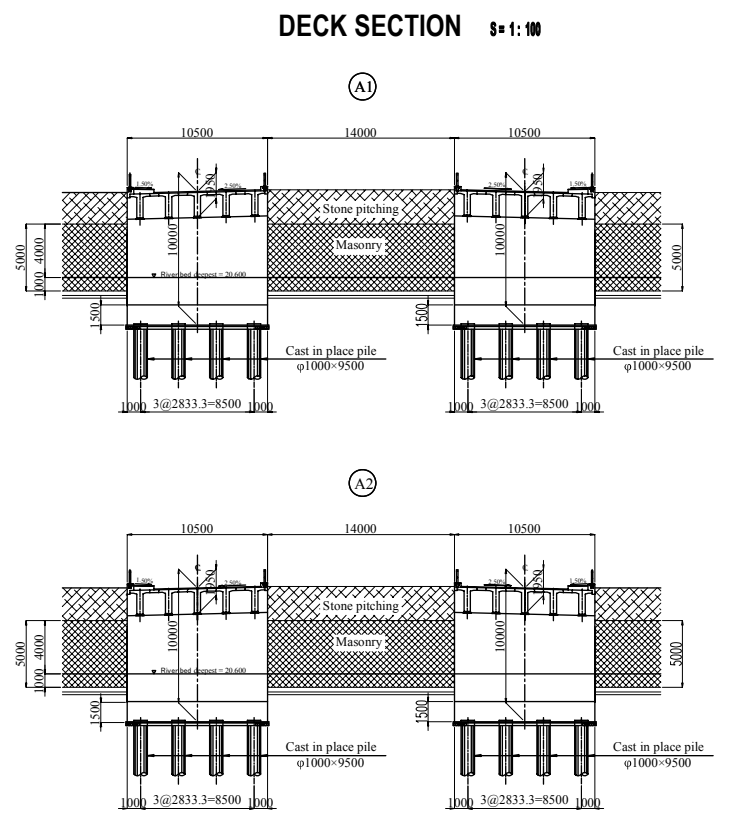
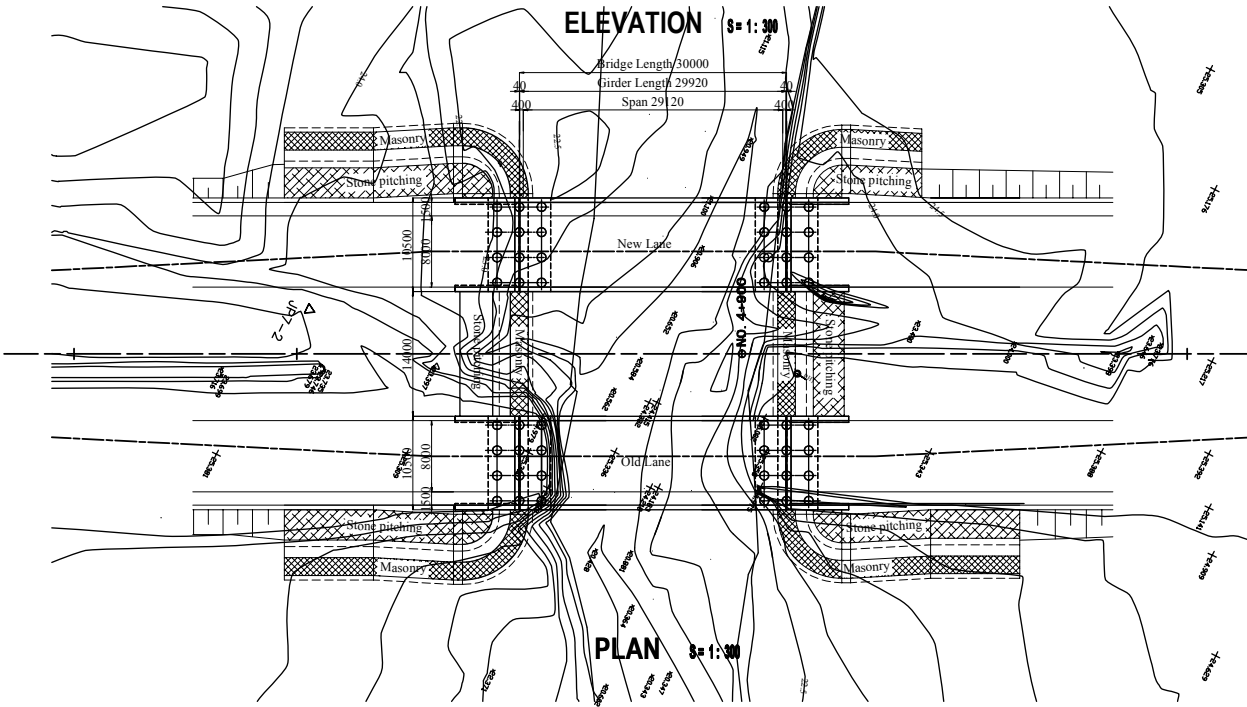
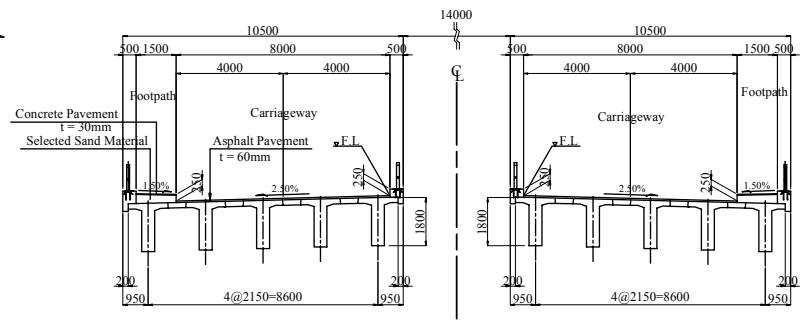
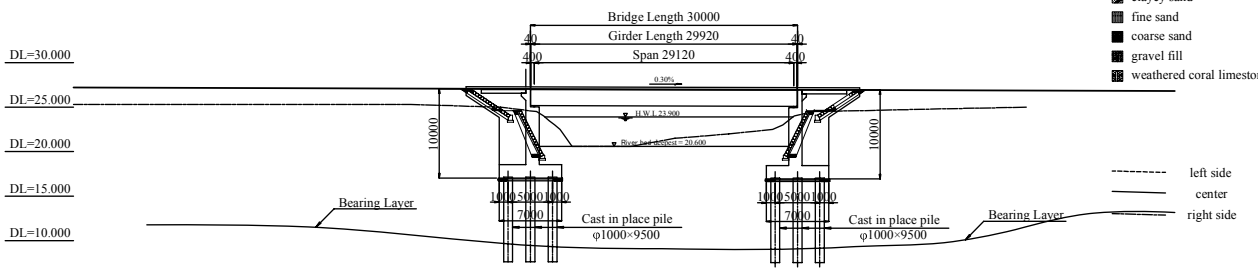
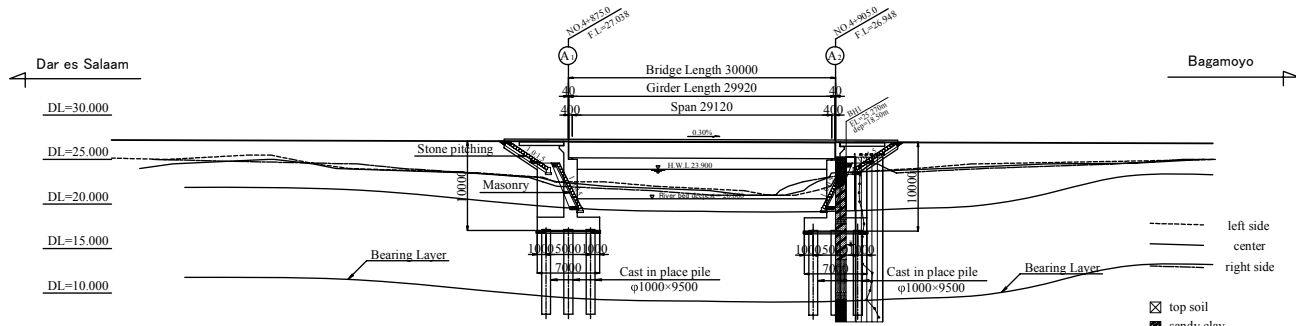
b - b



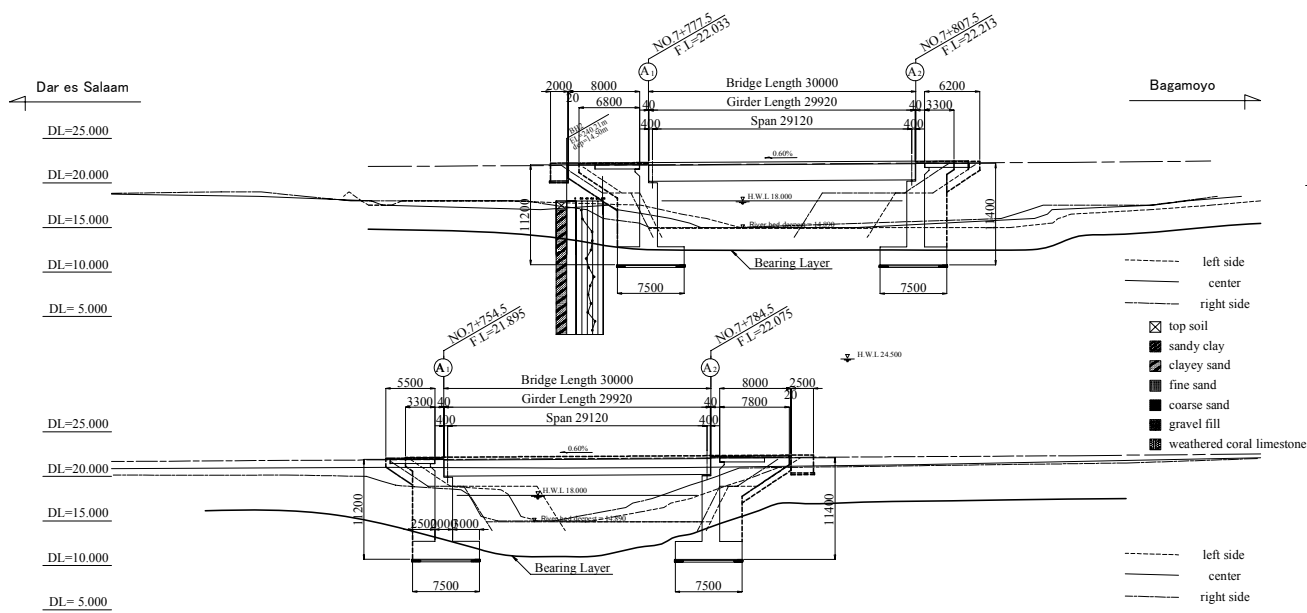
c - c



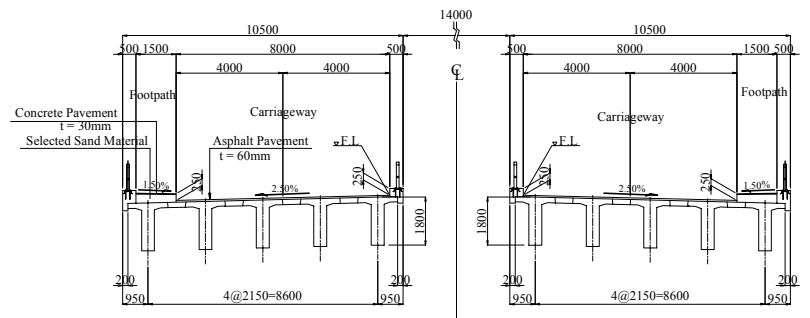
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: INGEROSEC CORPORATION	PROJECT NAME: PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	DRAWING TITLE: DRAINAGE STRUCTURE (8)	DATE: PREPARED BY: CHECKED BY:	DRAWING No. : BD-25
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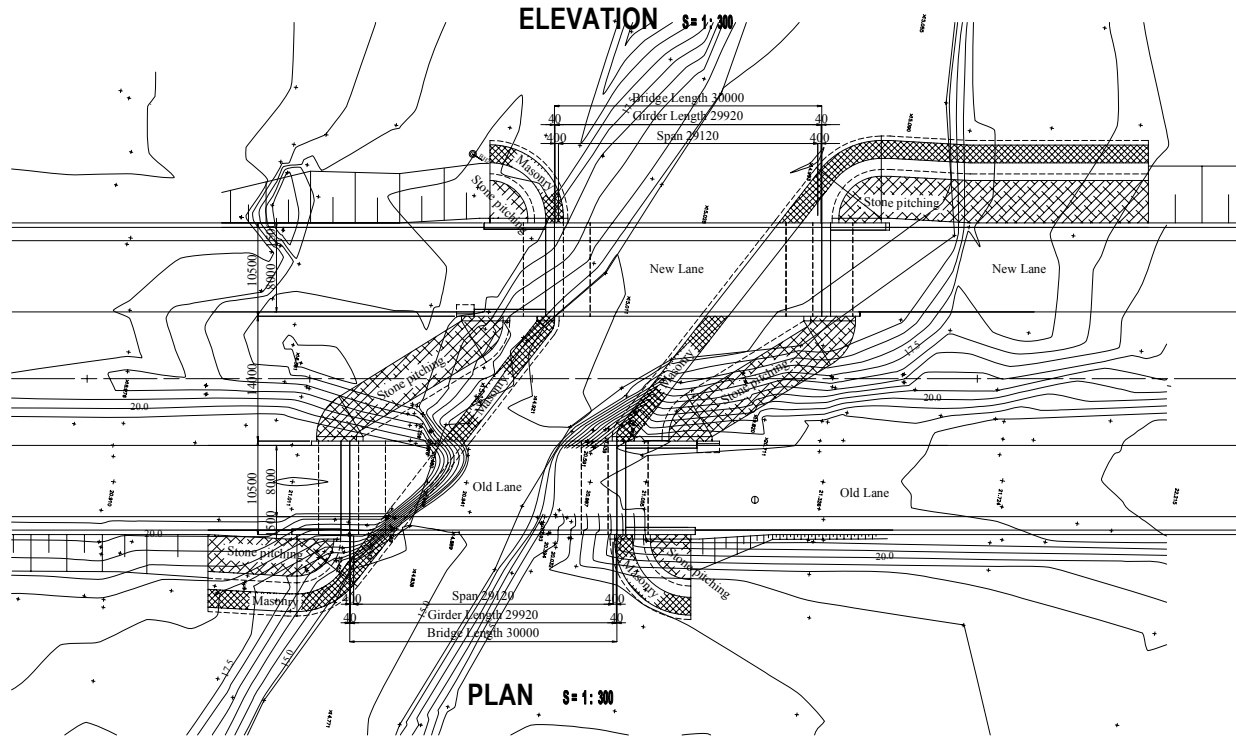
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No.:
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	NEW BRIDGE GENERAL DRAWING	PREPARED BY: CHECKED BY:	BD-26



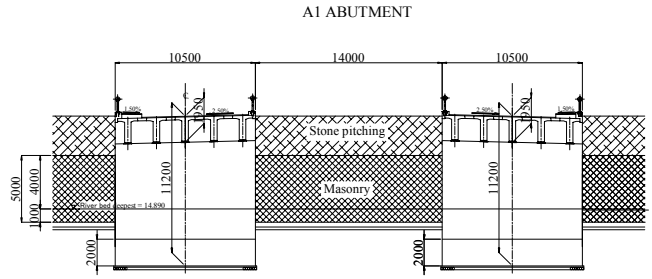
**ELEVATION S=1:300**



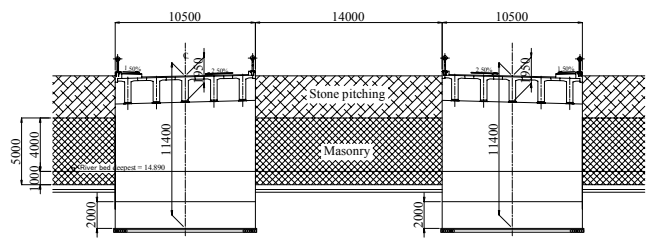
**DECK SECTION S=1:100**



**PLAN S=1:300**



**A1 ABUTMENT**



**A2 ABUTMENT**

MINISTRY OF INFRASTRUCTURE DEVELOPMENT  
THE UNITED REPUBLIC OF TANZANIA  
JAPAN INTERNATIONAL COOPERATION AGENCY

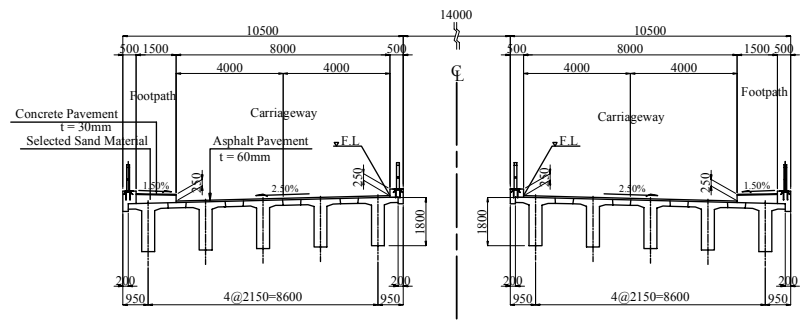
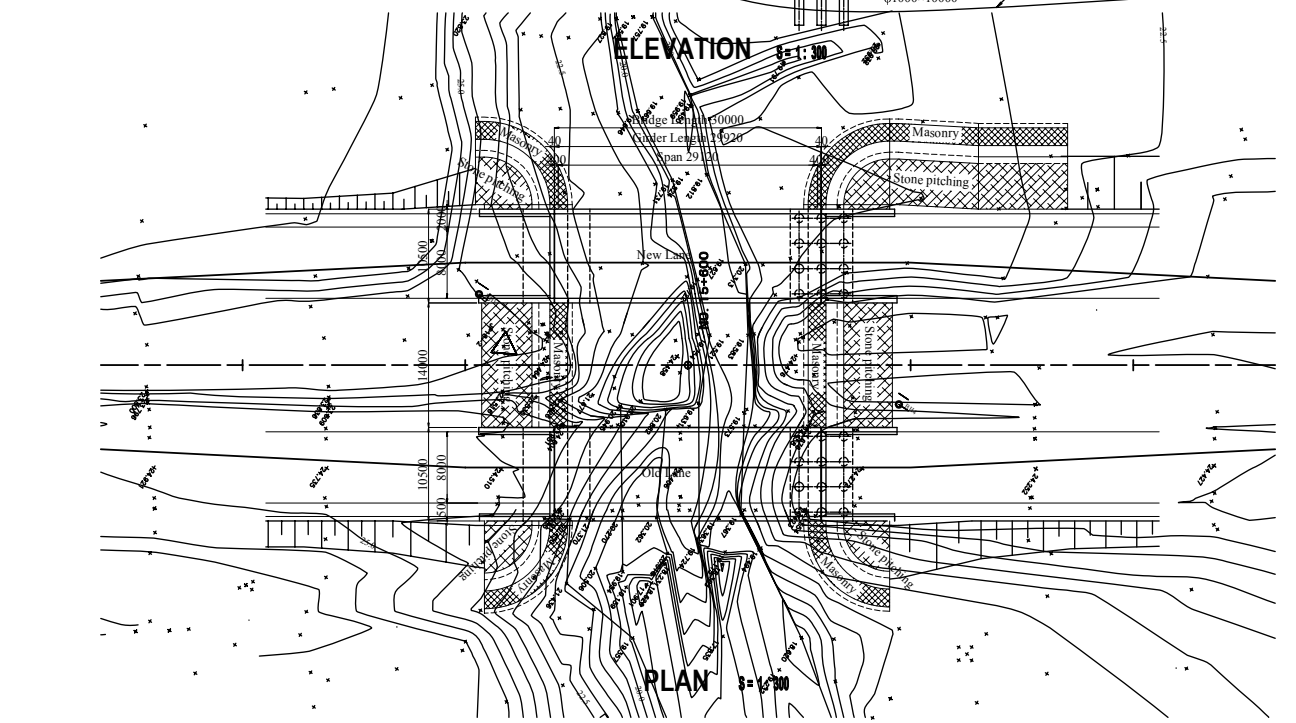
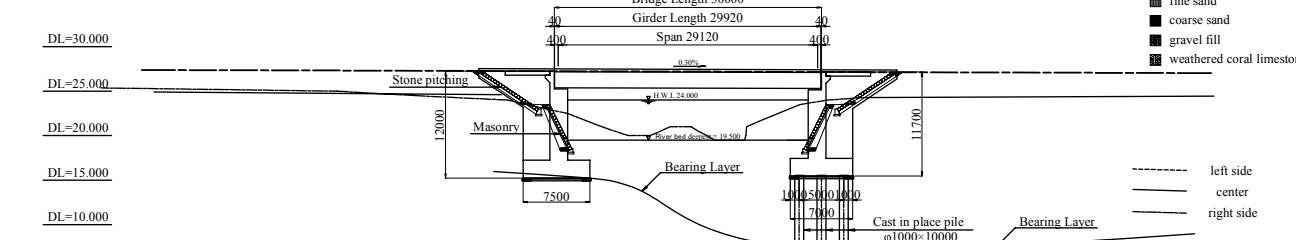
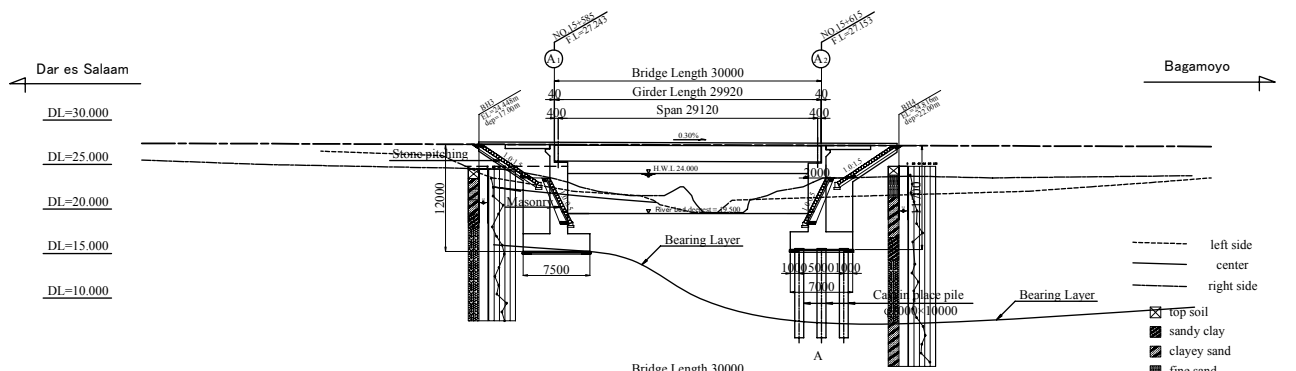
CONSULTANTS:  
INGEROSEC CORPORATION

PROJECT NAME:  
PREPARATORY SURVEY ON THE PROJECT FOR  
WIDENING OF NEW BAGAMOYO ROAD

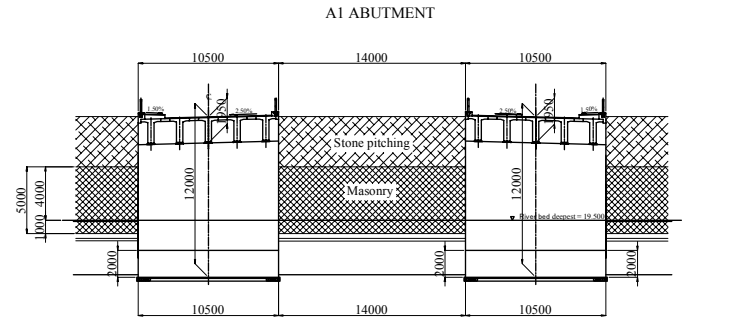
DRAWING TITLE:  
NEW BRIDGE GENERAL DRAWING

DATE:  
PREPARED BY:  
CHECKED BY:

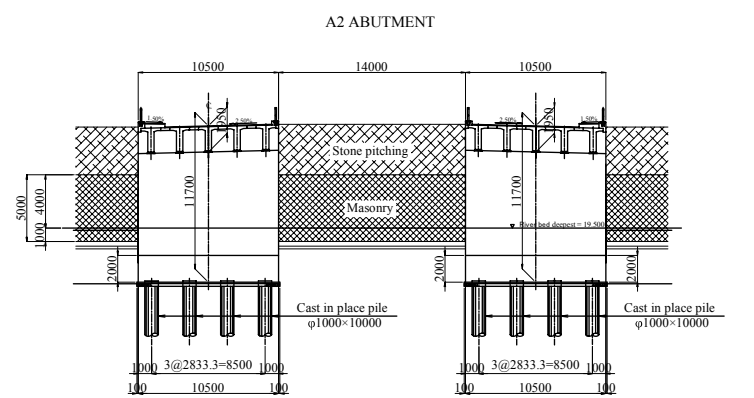
DRAWING No. :  
BD-27



DECK SECTION  $\frac{1}{100}$



A1 ABUTMENT

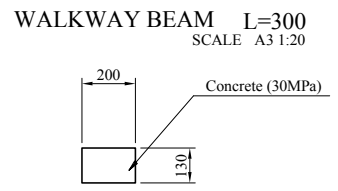
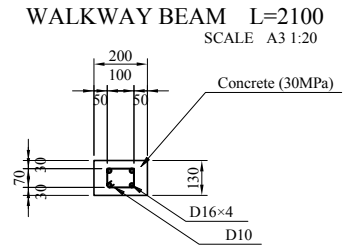
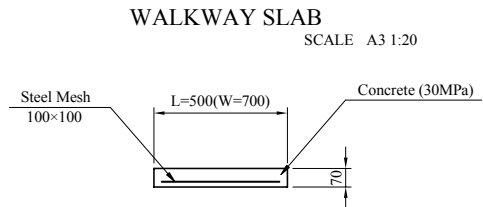
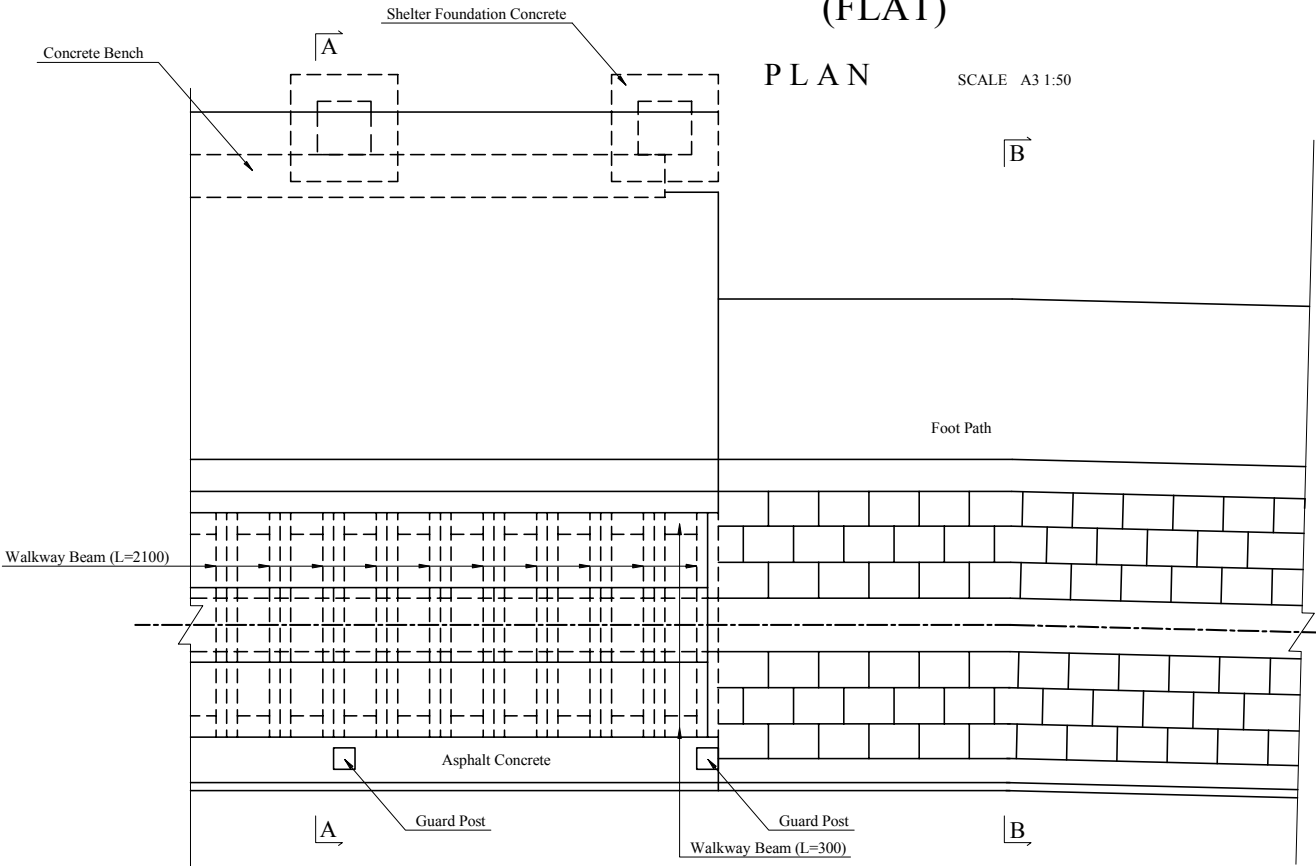


A2 ABUTMENT

ABUTMENT SECTION  $\frac{1}{200}$

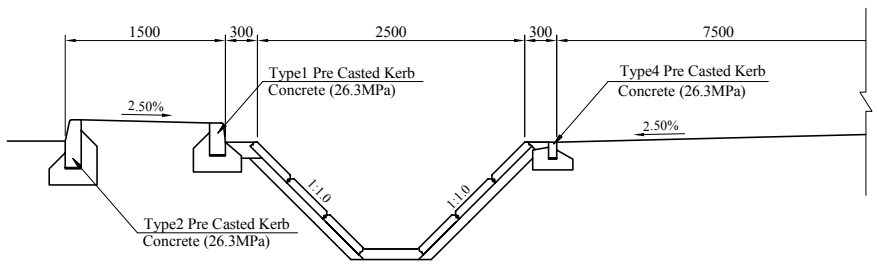
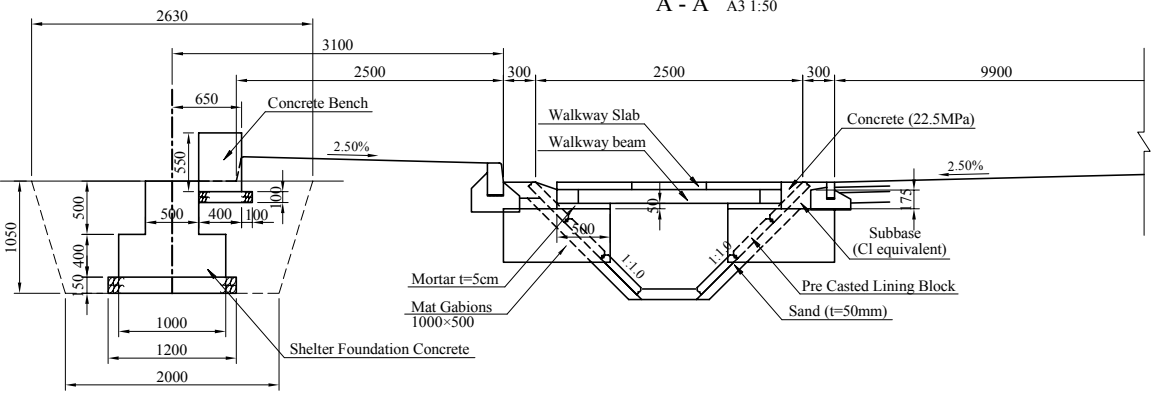
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	NEW BRIDGE GENERAL DRAWING	PREPARED BY: CHECKED BY:	BD-28

# LAY - BY(1) SCALE AS SHOWN (FLAT)



**A - A** A3 1:50

**B - B** A3 1:50



MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No.:
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	LAY-BY(1)	PREPARED BY: CHECKED BY:	BD-29



# LAY - BY (2) (EMBANKMENT)

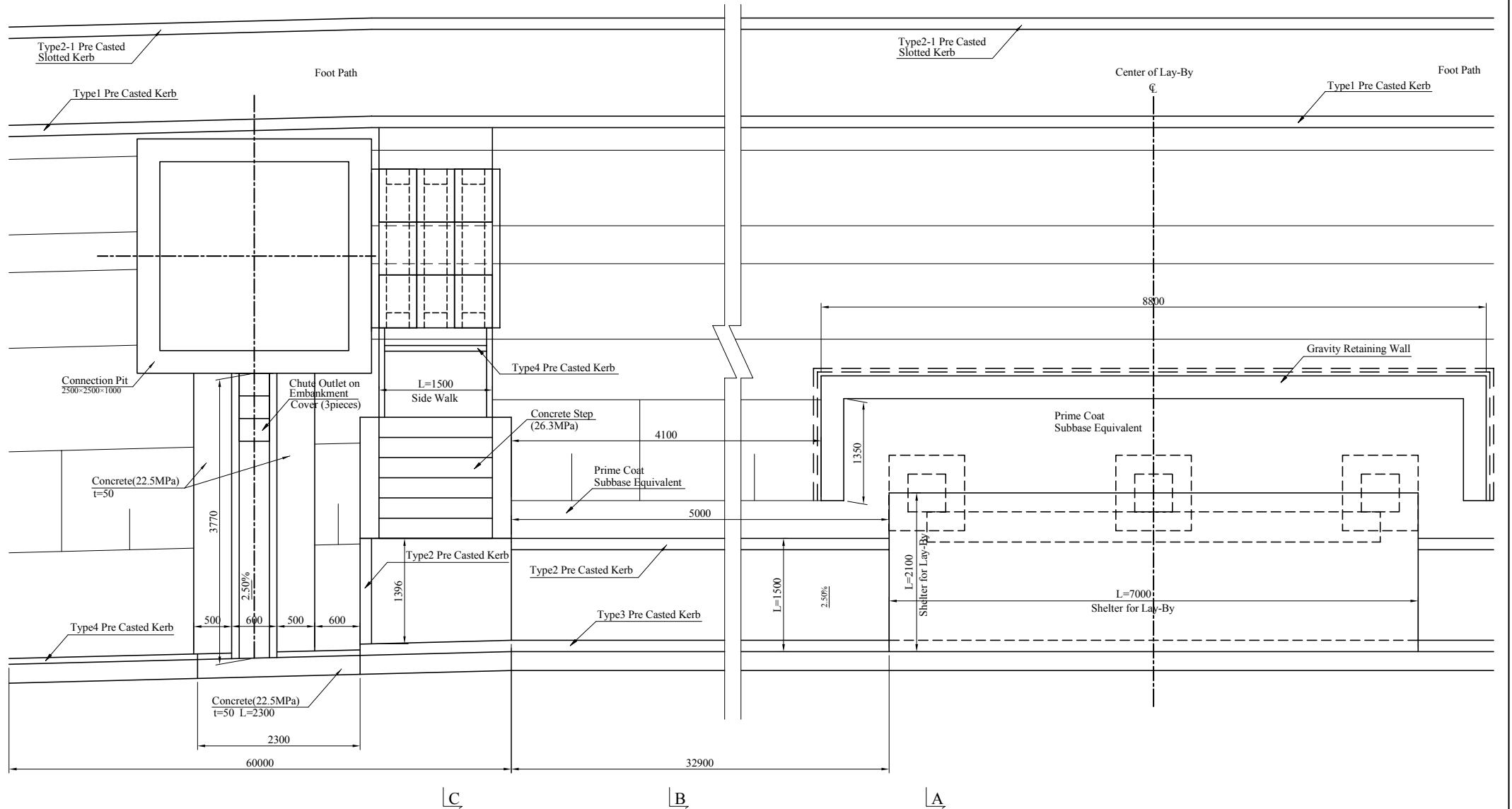
SCALE A3 1:50

P L A N

| C |

| B |

| A |



| C |

| B |

| A |

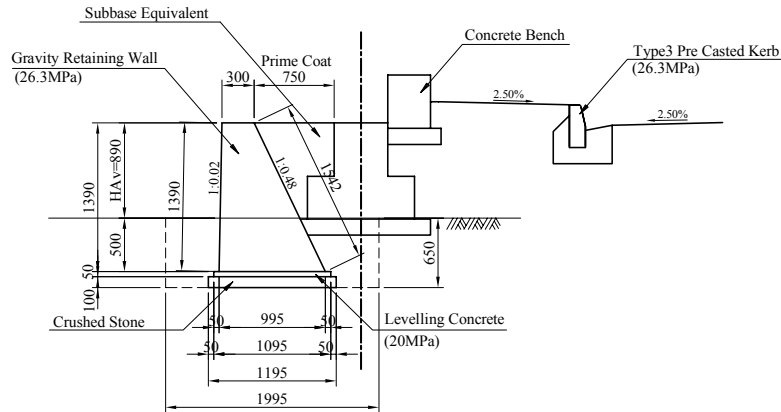
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	LAY-BY (2)	PREPARED BY: CHECKED BY:	BD-30

# LAY - BY (3) (EMBANKMENT)

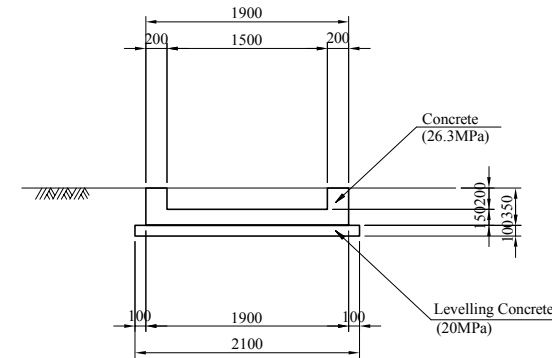
SCALE A3 1:50

## SECTION

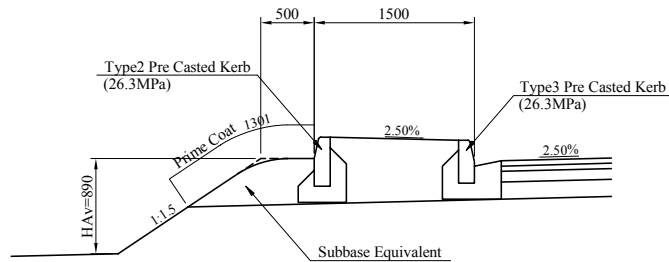
A - A



D - D

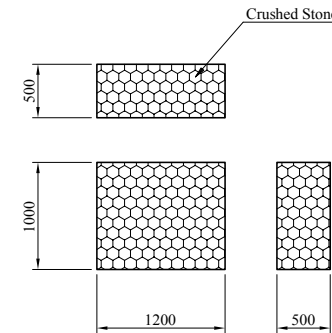


B - B

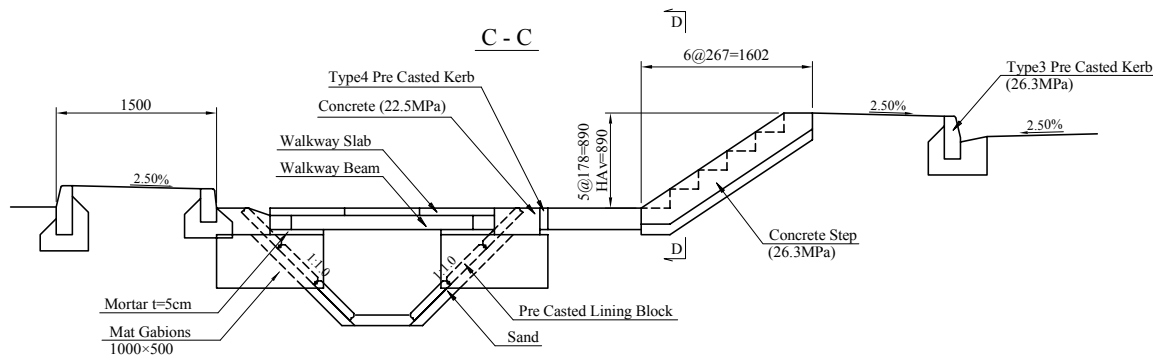


MAT GABIONS

SCALE A3 1:50



C - C

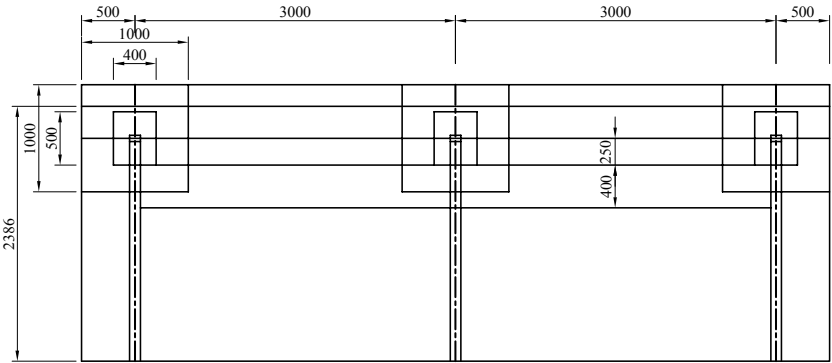


LAY-BY			
Direction		SINGLE BUS STOP (LEVEL)	SINGLE BUS STOP (FILL)
Left	Right	(Nos.)	(Nos.)
○		10	11
	○	11	10
Total		21	21

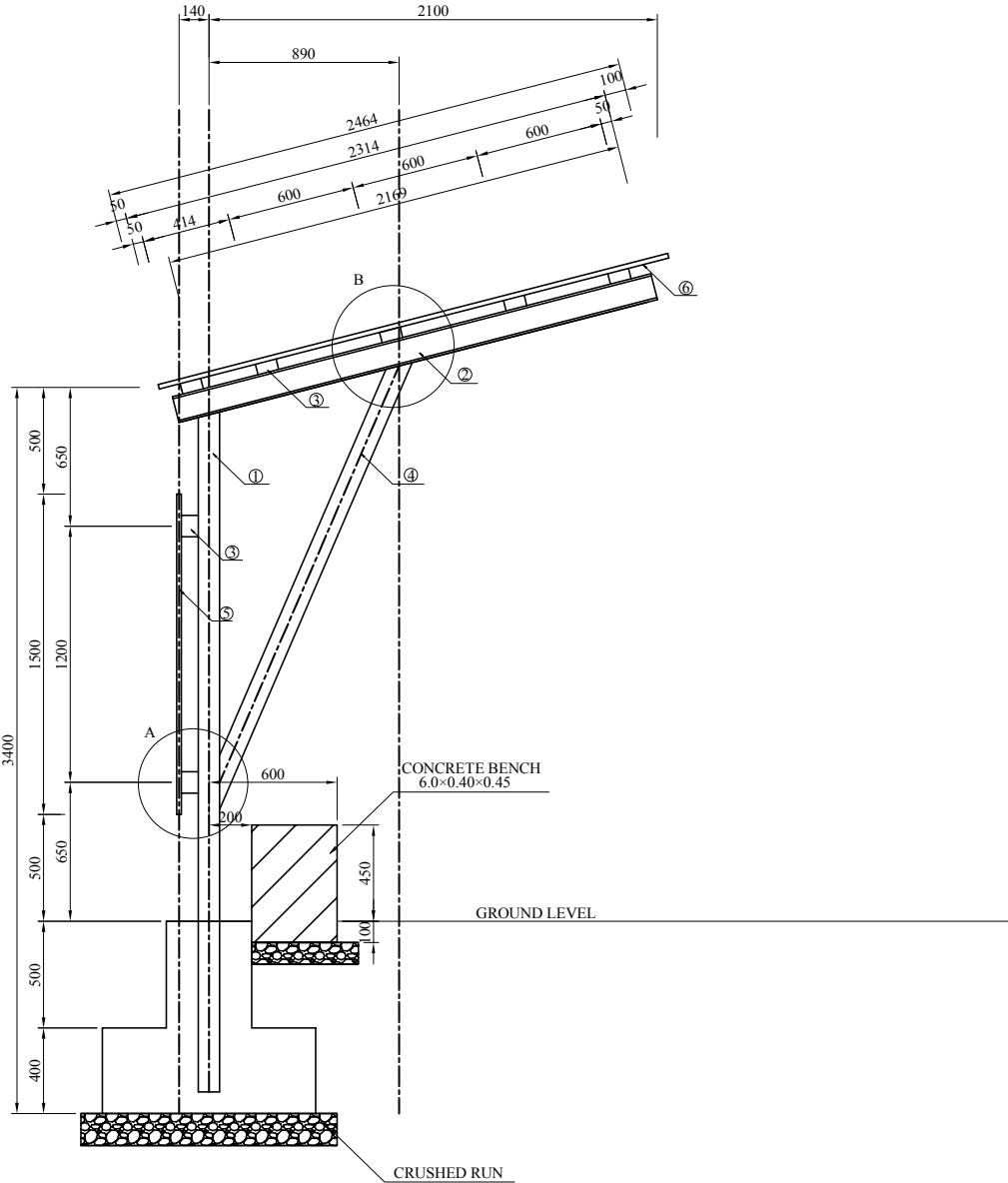
# LAY - BY (4) SCALE AS SHOWN

## ROOF DETAILS

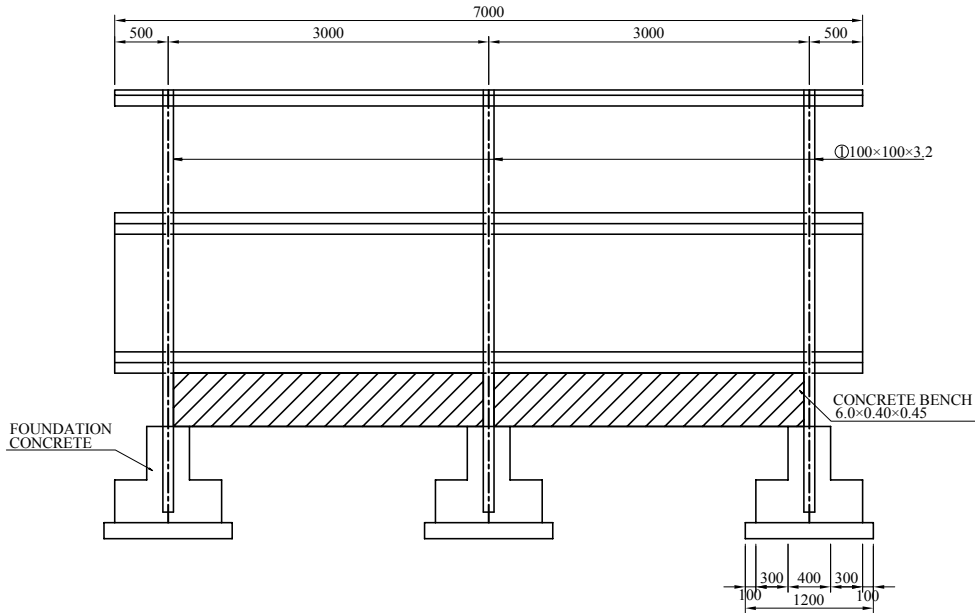
PLAN SCALE A3 1:50



CROSS SECTION SCALE A3 1:25



PROFILE SCALE A3 1:50



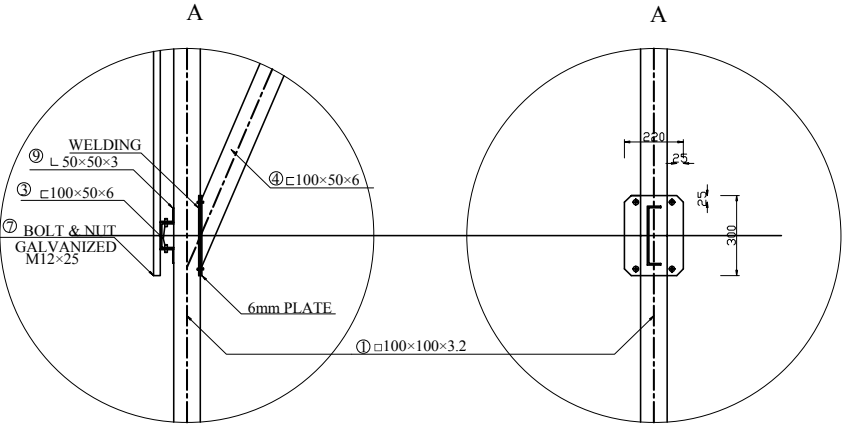
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	LAY-BY (4)	PREPARED BY:	BD-32
				CHECKED BY:	

# LAY - BY(5)

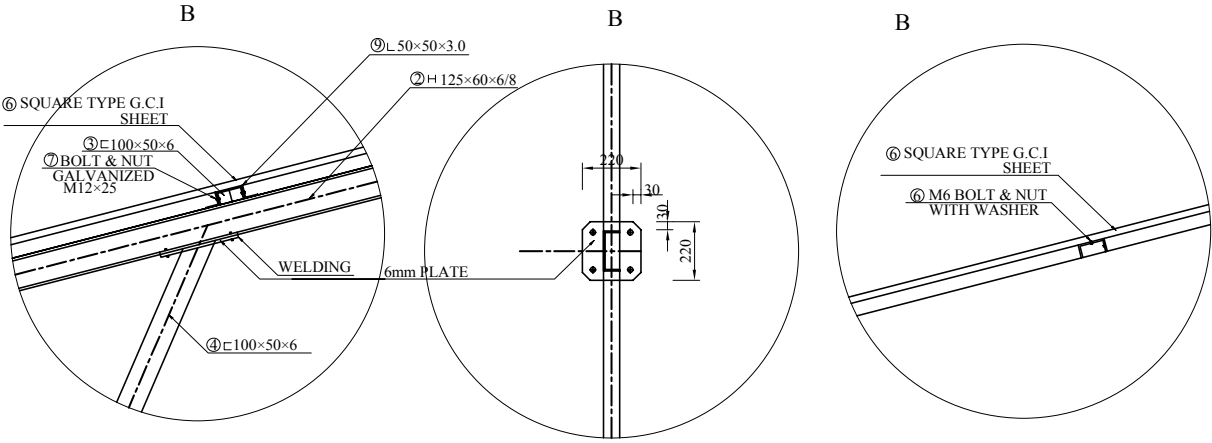
SCALE A3 1:10

## ROOF DETAILS

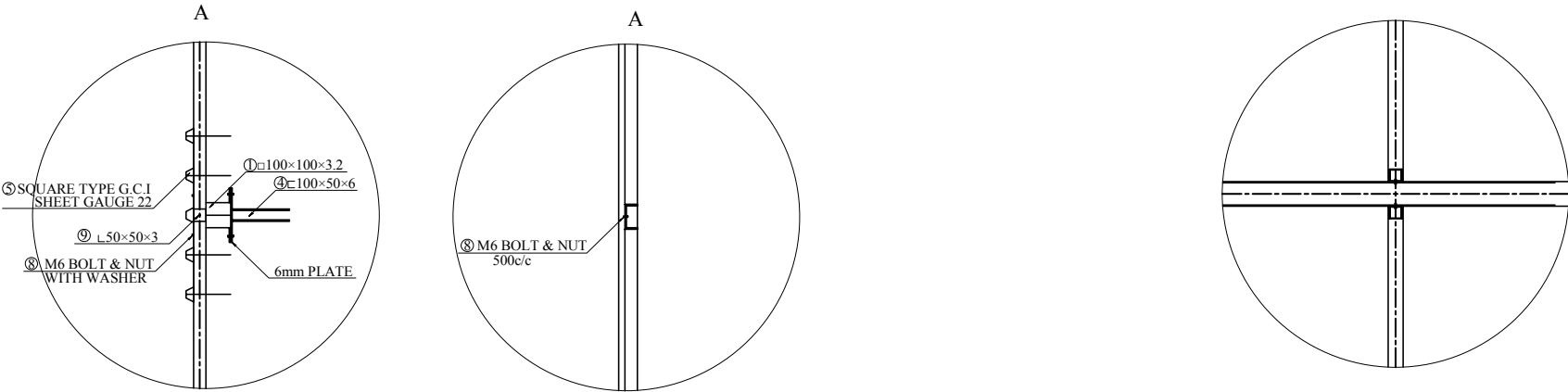
DETAIL "A"



DETAIL "B"



DETAIL "C"

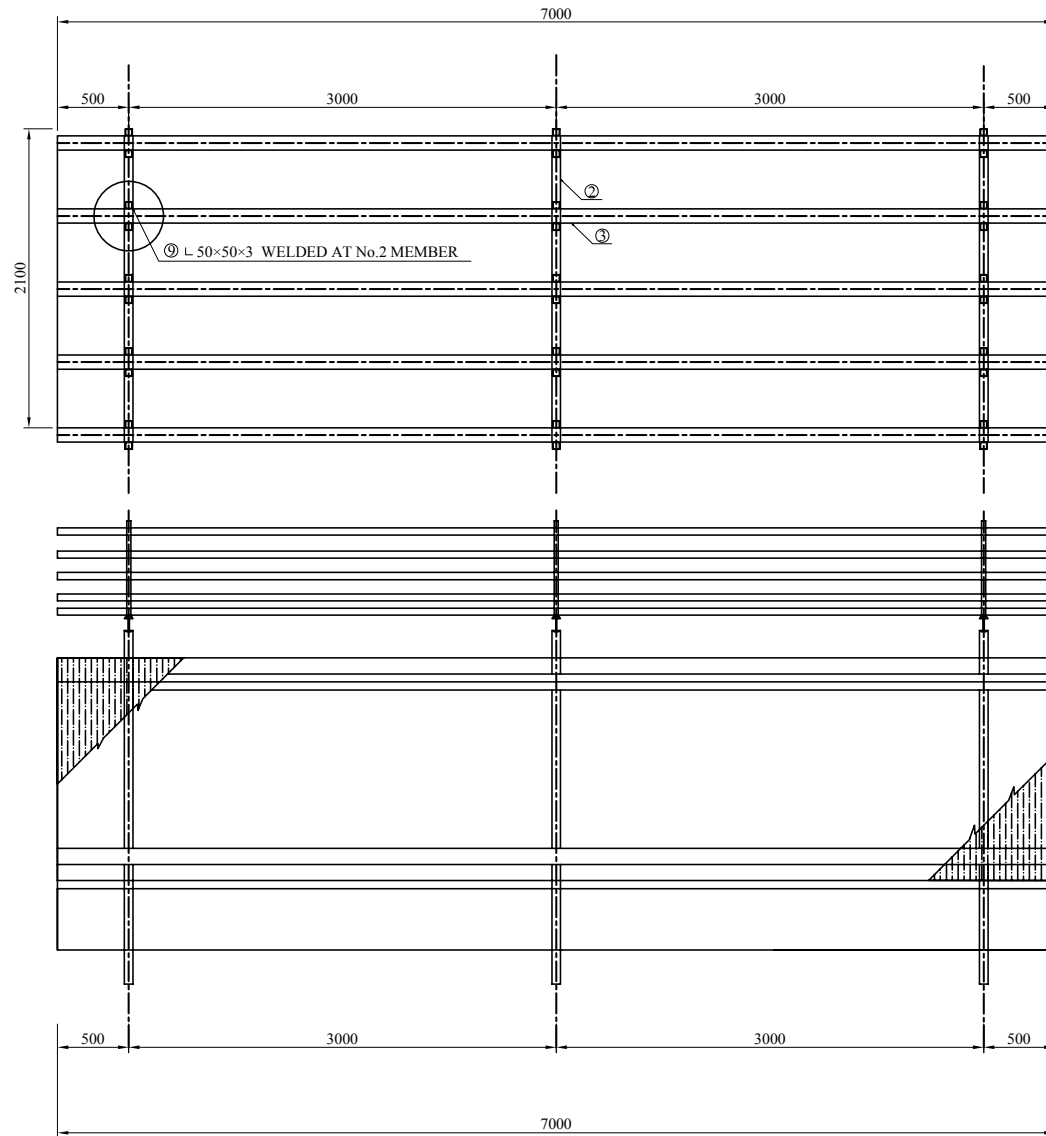


MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	LAY-BY(5)	PREPARED BY: CHECKED BY:	BD-33

# LAY - BY (6)

SCALE A3 1:75

## ROOF DETAILS



ITEM	DESCRIPTION	LENGTH	QTY
①	□ 100×100×3.2	3183.8	3
②	H 125×60×6/8	2314	3
③	□ 100×50×6	7000	7
④	□ 100×50×6		3
⑤	SQUARE TYPE G.C.I SHEET GAUGE 22 (0.7)	1500	9
⑥	SQUARE TYPE G.C.I SHEET GAUGE 22 (0.7)	2464	9
⑦	BOLT & NUT GALVANIZED	M12×25	84
⑧	BOLT & NUT GALVANIZED WITH WASHER	M6	105
⑨	L ANGLE IRON 50×50×3.0	60	42

MINISTRY OF INFRASTRUCTURE DEVELOPMENT  
THE UNITED REPUBLIC OF TANZANIA  
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS:  
INGEROSEC CORPORATION

PROJECT NAME:  
PREPARATORY SURVEY ON THE PROJECT FOR  
WIDENING OF NEW BAGAMOYO ROAD

DRAWING TITLE:  
LAY-BY (6)

DATE:  
PREPARED BY:  
CHECKED BY:

DRAWING No. :  
BD-34

# TRAFFIC SAFETY STRUCTURE (1)

SCALE AS SHOWN

## GUARD RAIL

## GUARD POST

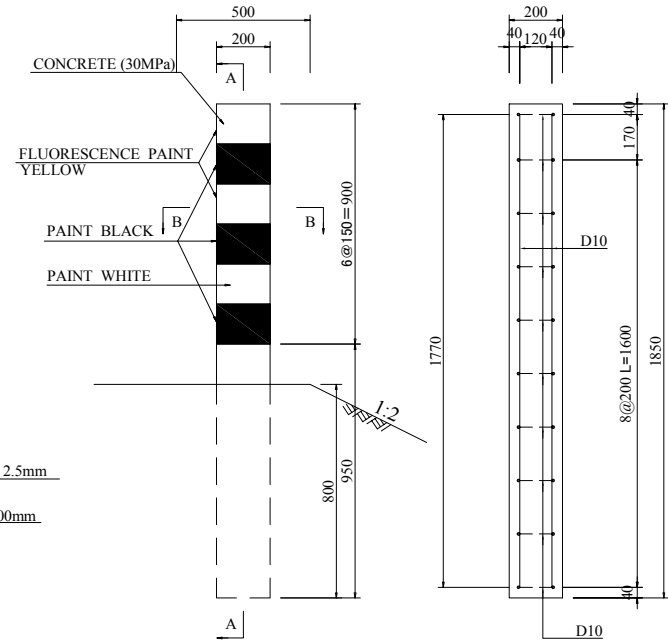
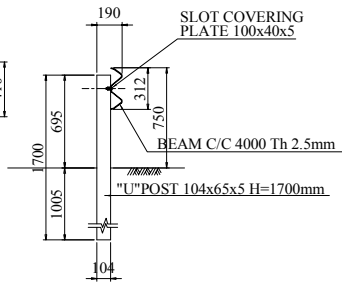
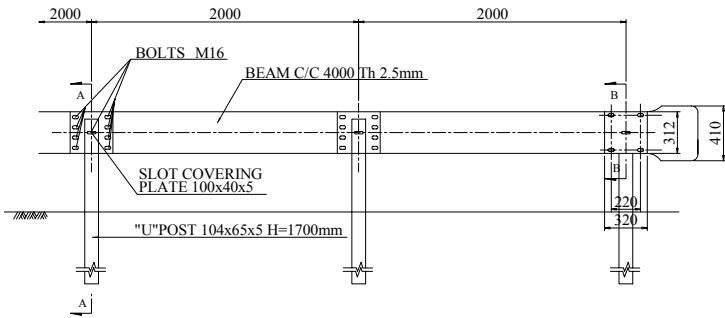
### VIEW

### SECTION A - A

### GENERAL VIEW

SCALE A3 1:20

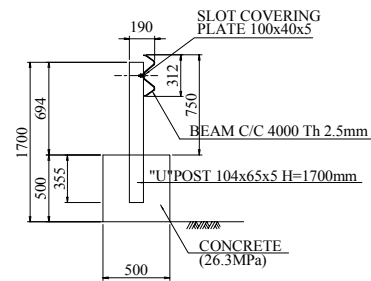
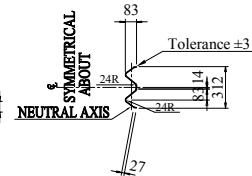
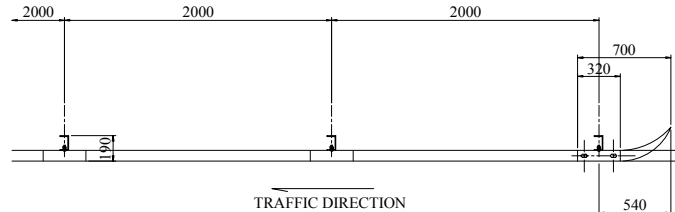
A-A SCALE A3 1:20



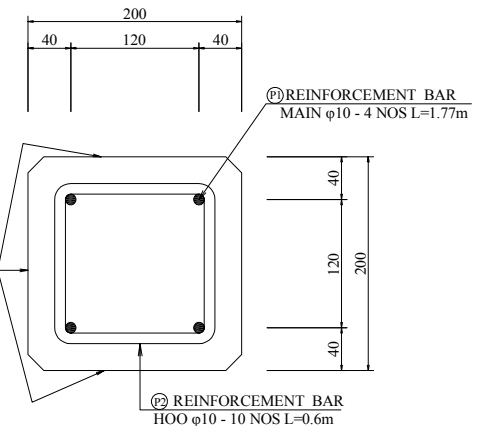
### PLAN

### SECTION B - B

### FOR DETOUR



### B-B SCALE A3 1:5



GUARD RAIL			Remarks
Direction	Guard Rail (Locations)		
Right	○	6	
Left	○	9	
Total (Locations)		15	
Total (m)		680	

GUARD POST ON EMBANKMENT LAY-BY			Remarks
Direction	Guard Post on Embankment Lay-by (Nos.)		
Right	○	33	
Left	○	30	
Total (Nos.)		63	

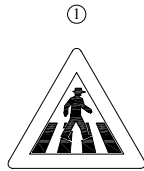
GUARD RAIL FOR DETOUR			Remarks
Direction	Guard Rail for Detour (Locations)		
Right	○	7	Including the numbers for
Left	○	3	
Total (Locations)		10	
Total (m)		120	

GUARD POST ON CROSSING CULVERT			Remarks
Direction	Guard Post on Crossing Culvert (Nos.)		
Right	○	28	
Left	○	28	
Total (Nos.)		56	

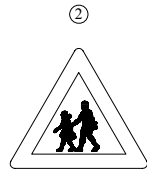
# TRAFFIC SAFETY STRUCTURE (2)

SCALE AS SHOWN

## WARNING SIGNS



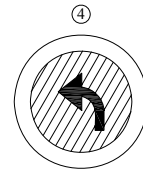
PEDESTRIAN CROSSING AHEAD



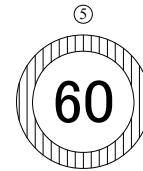
CHILDREN AHEAD



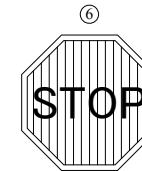
BUS STOP



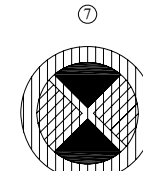
DIRECTION TO BE FOLLOWED



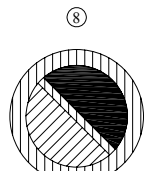
SPEED LIMIT 60 km/h



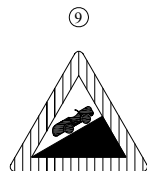
STOP



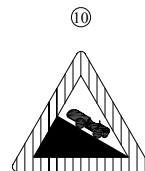
STANDING AND PARKING PROHIBITED (NO STOPPING)



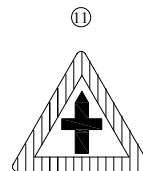
PARKING PROHIBITED (NO PARKING)



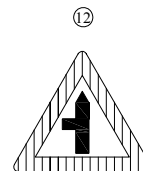
STEEP ASCENT



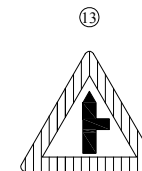
STEEP DESCENT



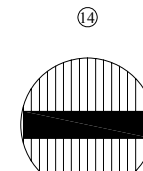
CAUTION CROSS READ AHEAD



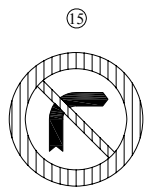
SIDE ROAD ON THE LEFT



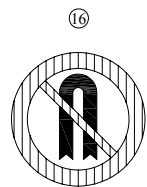
SIDE ROAD ON THE RIGHT



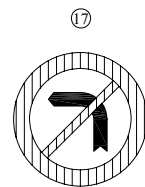
NO ENTRY



NO RIGHT TURN



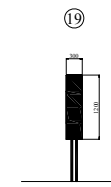
NO U TURN



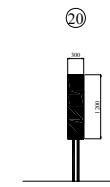
NO LEFT TURN



NO ENTRY



DANGER PLATE



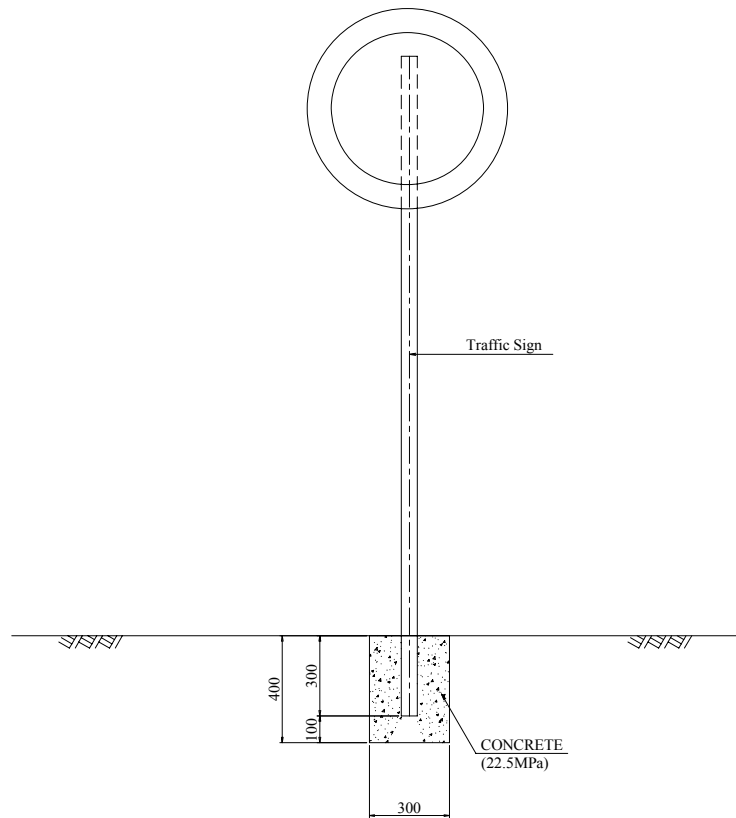
DANGER PLATE

# TRAFFIC SAFETY STRUCTURE (3)

A3 1:20

SIGN POST DETAILS

SCALE



Direction		Traffic Safety Sign																			
Right	Left	① (Nos.)	② (Nos.)	③ (Nos.)	④ (Nos.)	⑤ (Nos.)	⑥ (Nos.)	⑦ (Nos.)	⑧ (Nos.)	⑨ (Nos.)	⑩ (Nos.)	⑪ (Nos.)	⑫ (Nos.)	⑬ (Nos.)	⑭ (Nos.)	⑮ (Nos.)	⑯ (Nos.)	⑰ (Nos.)	⑱ (Nos.)	⑳ (Nos.)	
	○	21	25	21	30	14	30	0	4	3	2	1	30	2	14	0	13	0	30	3	2
○		22	24	21	28	15	28	0	5	2	3	2	28	1	6	0	15	0	28	3	4
Total(Nos.)		43	49	42	58	27	58	0	9	5	5	3	58	3	20	0	28	0	58	6	6

MINISTRY OF INFRASTRUCTURE DEVELOPMENT  
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CONSULTANTS:  
INGEROSEC CORPORATION

PROJECT NAME:  
PREPARATORY SURVEY ON THE PROJECT FOR  
WIDENING OF NEW BAGAMOYO ROAD

DRAWING TITLE:  
TRAFFIC SAFETY STRUCTURE (3)

DATE:  
PREPARED BY:  
CHECKED BY:

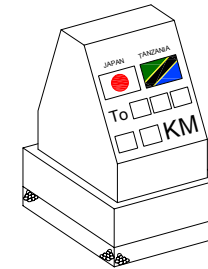
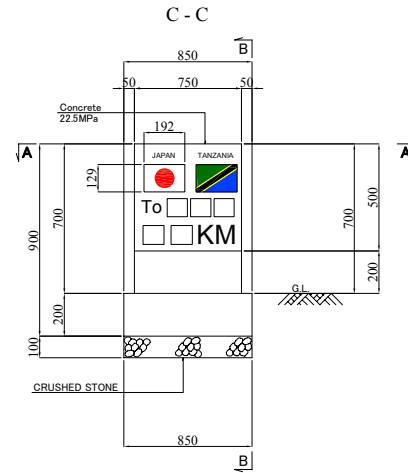
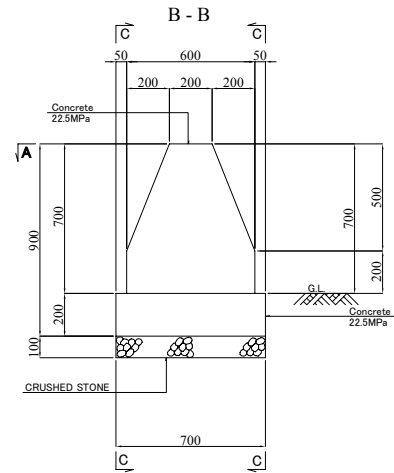
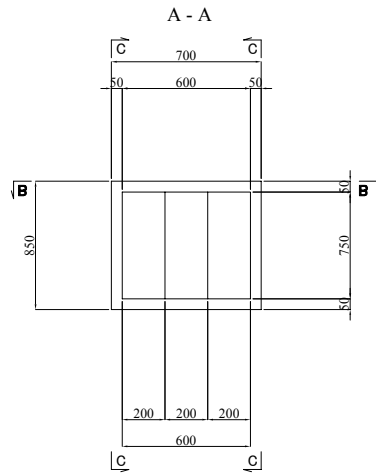
DRAWING No. :  
BD-37



# TRAFFIC SAFETY STRUCTURE (4)

PROJECT POST

SCALE A3 1:25

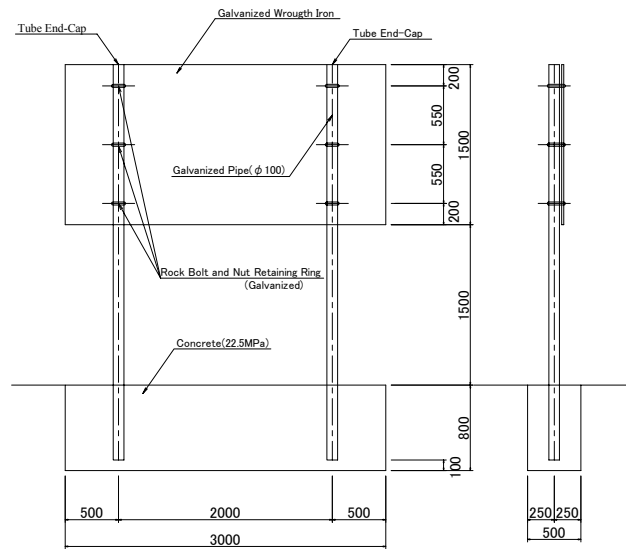


Note: Installation of kilopost shall be set alternately in each 1km

PROJECT POST				
LOCATION	STATION	LR	QUANTITY	REMARKS
MWENGE JCT	4 + 350	L or R	1	It shall be installed at proper place
TEGETA JCT	17 + 0	L or R	1	It shall be installed at proper place
TOTAL			2	

# TRAFFIC SAFETY STRUCTURE (5) SCALE AS SHOWN

PROJECT PUBLIC BOARD SCALE A3 1:50



PROJECT PUBLIC BOARD				
LOCATION	STATION	LR	QUANTITY	REMARKS
MWANGI JCT	4 + 230	L or R	2	It shall be installed at proper place.
TEGETA JCT	17 + 0	L or R	1	It shall be installed at proper place.
TOTAL			2	

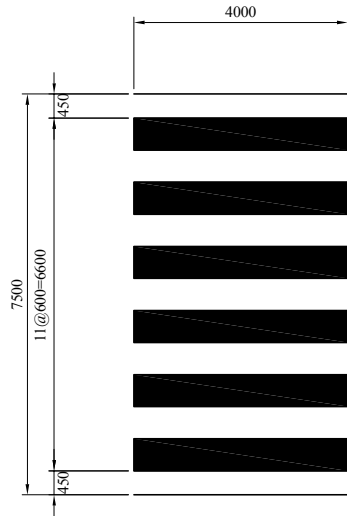
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	TRAFFIC SAFETY STRUCTURE (5)	PREPARED BY: CHECKED BY:	BD-39

# TRAFFIC MARKING

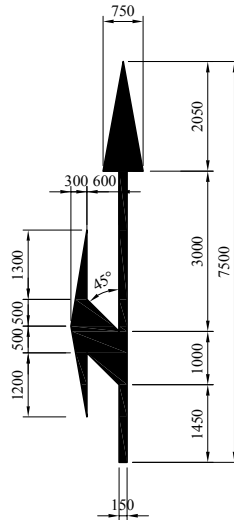
SCALE AS SHOWN

ARROW MARK SCALE A3 1:100

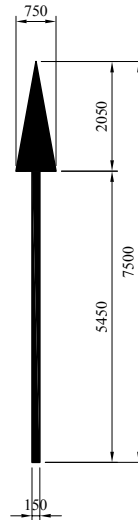
PEDESTRIAN-CROSSING



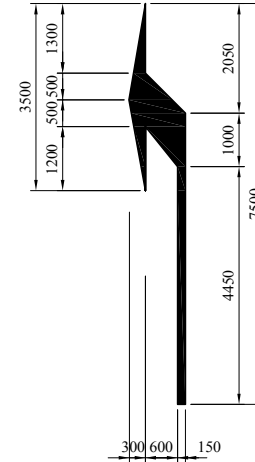
STRAIGHT-LEFT-TURN



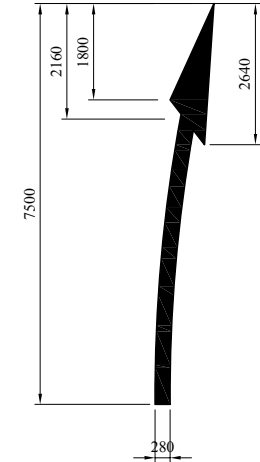
STRAIGHT



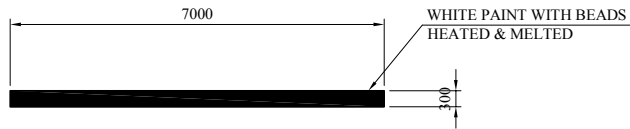
TURN



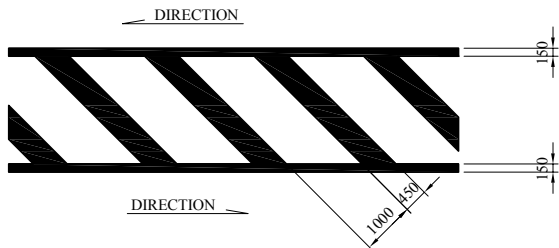
DEFLECTING-ARROWS



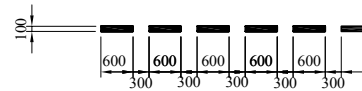
STOP LINE SCALE A3 1:100



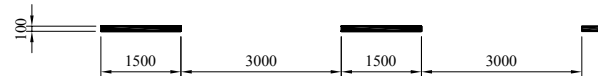
ZEBRA MARKING SCALE A3 1:200



OPEN MEDIAN STRIP SCALE A3 1:100



LANE LINE



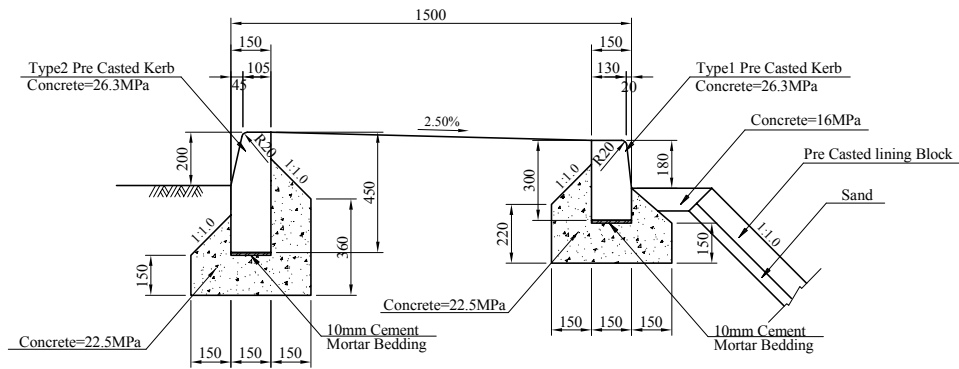
BUS STOP



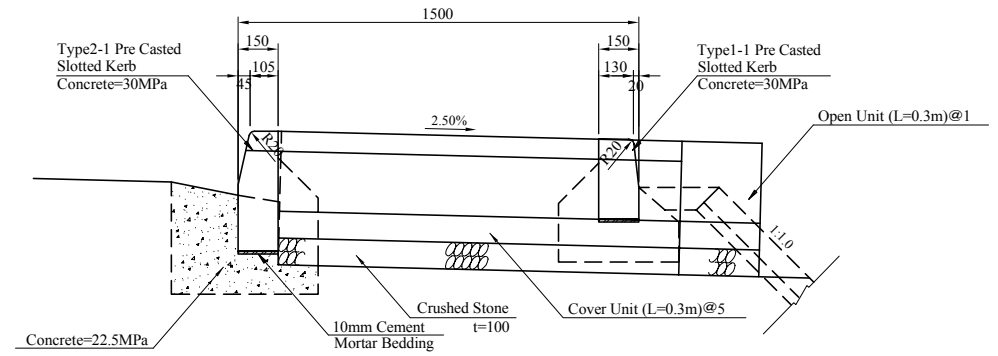
# KERB STONE(1)

SCALE A3 1:20

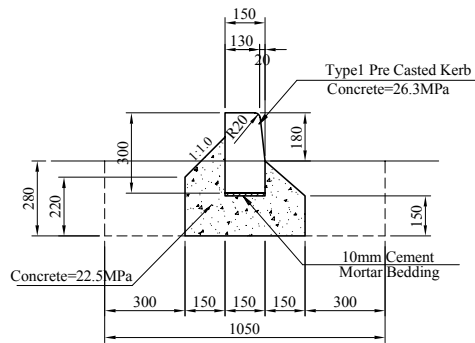
## FOOTPATH



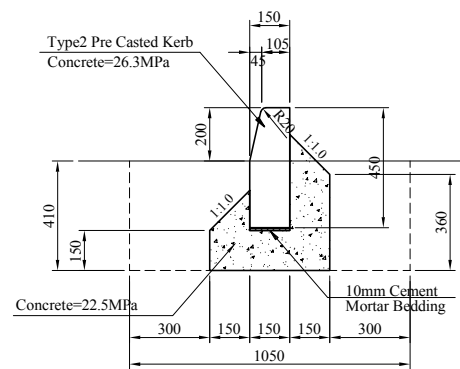
## CHUTE OUTLET UNDER FOOTPATH



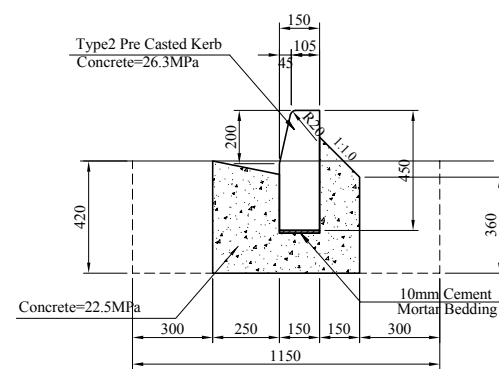
## KERB STONE TYPE1



## KERB STONE TYPE2 HIGH SIDE



## KERB STONE TYPE2 LOW SIDE



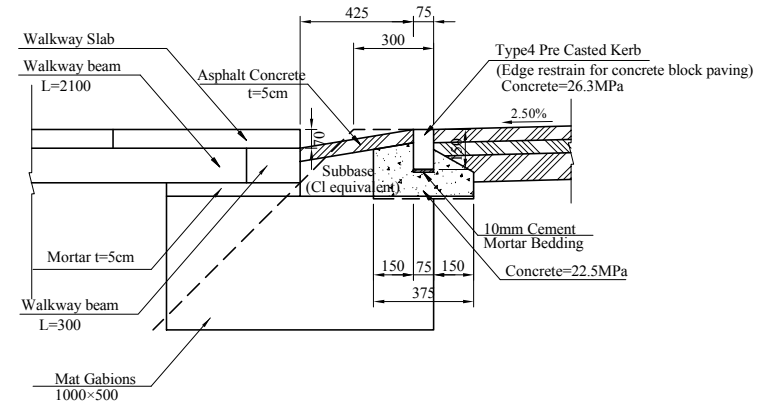
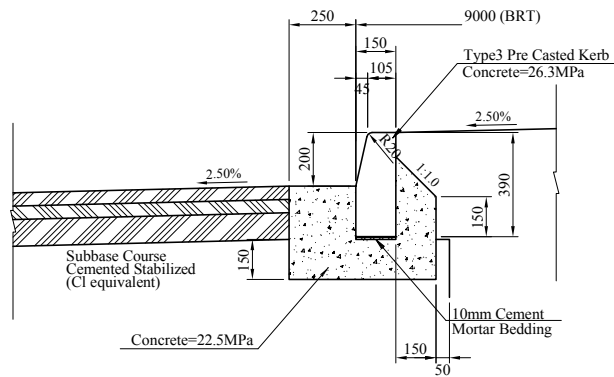
# KERB STONE (2)

SCALE A3 1:20

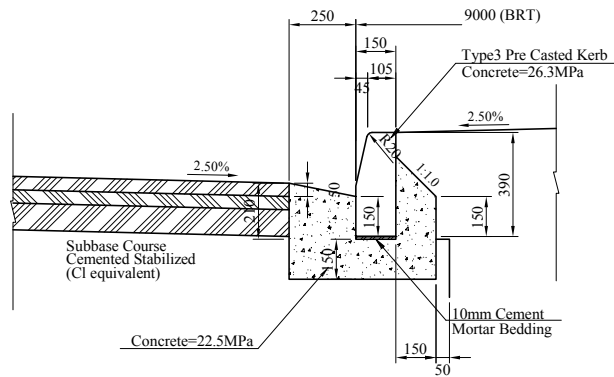
CONCRETE KERBING /  
CHANNELLING COMBINATIONS IN MEDIAN STRIP FOR BRT

BARRIER KERB IN LAY-BY

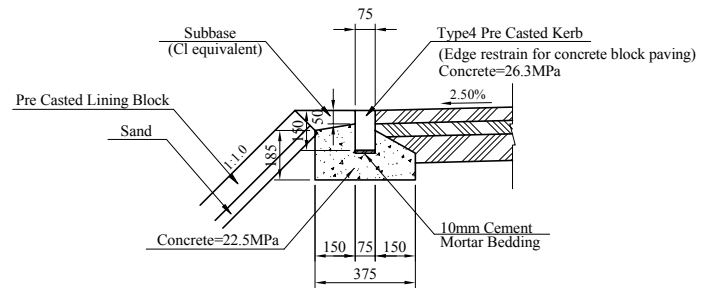
KERB STONE TYPE3  
HIGH SIDE



KERB STONE TYPE3  
LOW SIDE



KERB STONE TYPE4



MINISTRY OF INFRASTRUCTURE DEVELOPMENT  
THE UNITED REPUBLIC OF TANZANIA  
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CONSULTANTS:  
INGEROSEC CORPORATION

PROJECT NAME:  
PREPARATORY SURVEY ON THE PROJECT FOR  
WIDENING OF NEW BAGAMOYO ROAD

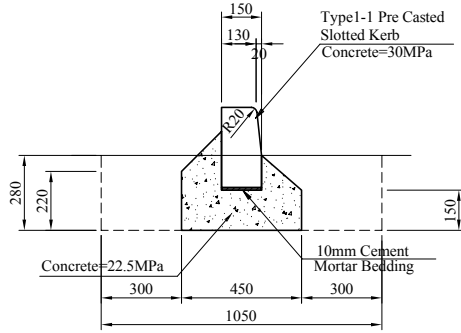
DRAWING TITLE:  
KERB STONE (2)

DATE:  
PREPARED BY:  
CHECKED BY:

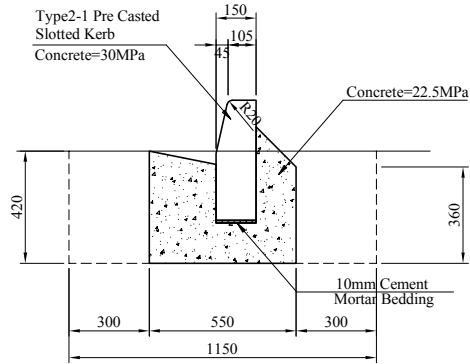
DRAWING No. :  
BD-42

# KERB STONE (3)

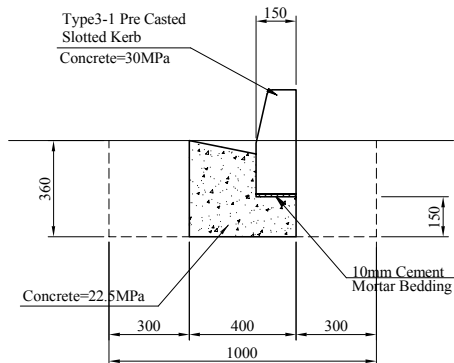
**KERB STONE TYPE1-1**



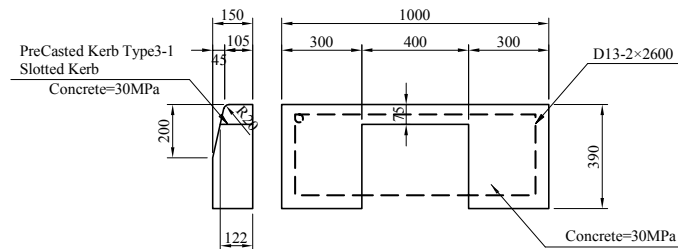
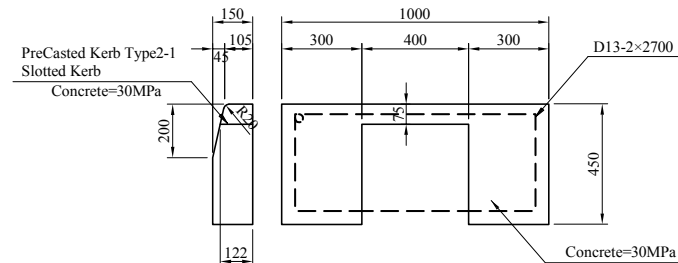
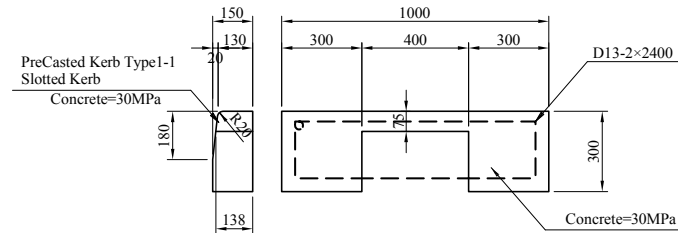
**KERB STONE TYPE2-1**



**KERB STONE TYPE3-1**



**SLOTTED KERB**



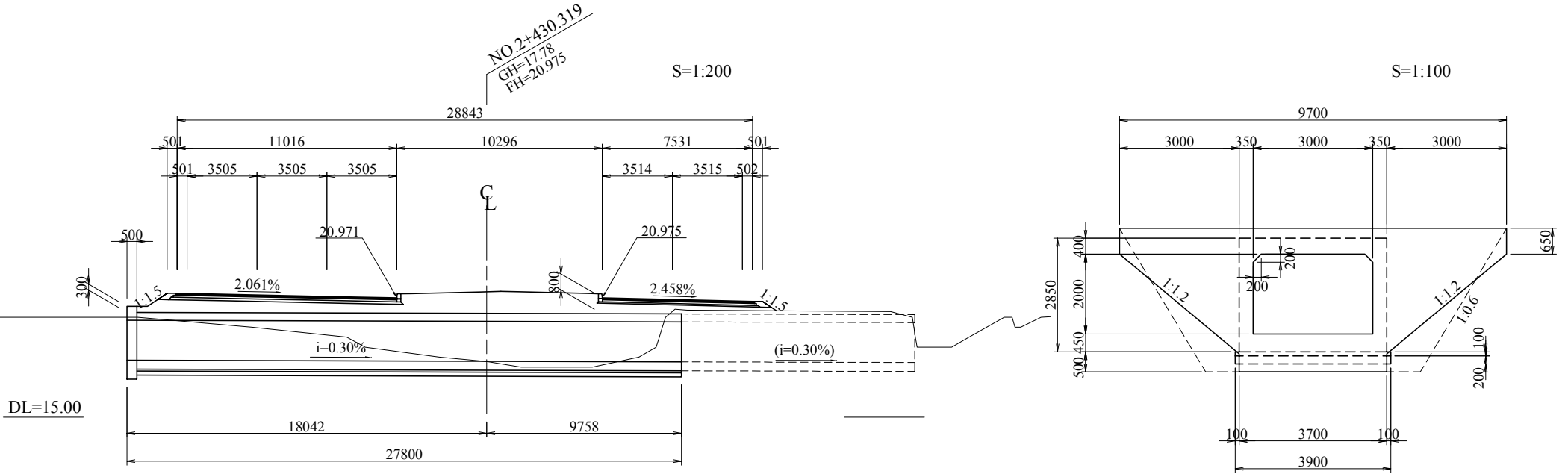
KERB STONE					
Direction		Inside of Footpath			Remarks
Right	Left	Pre Casted Kerb			
		Type 1 (Locations)	Type 1-1 (Locations)	Type 3-1 (Locations)	
	○	17	5	6	
○		8	0	6	
Total(Locations)		25	5	12	
Total (m)		23,447	136	1,466	

KERB STONE					
Direction		Inside of Footpath			Remarks
Right	Left	Pre Casted Kerb			
		Type 2 High Side (Locations)	Type 2-1 Low Side (Locations)	Type 4 (Locations)	
	○	5	12	5	6
○		0	8	0	6
Total(Locations)		5	20	5	12
Total (m)		6,564	16,999	136	1,466

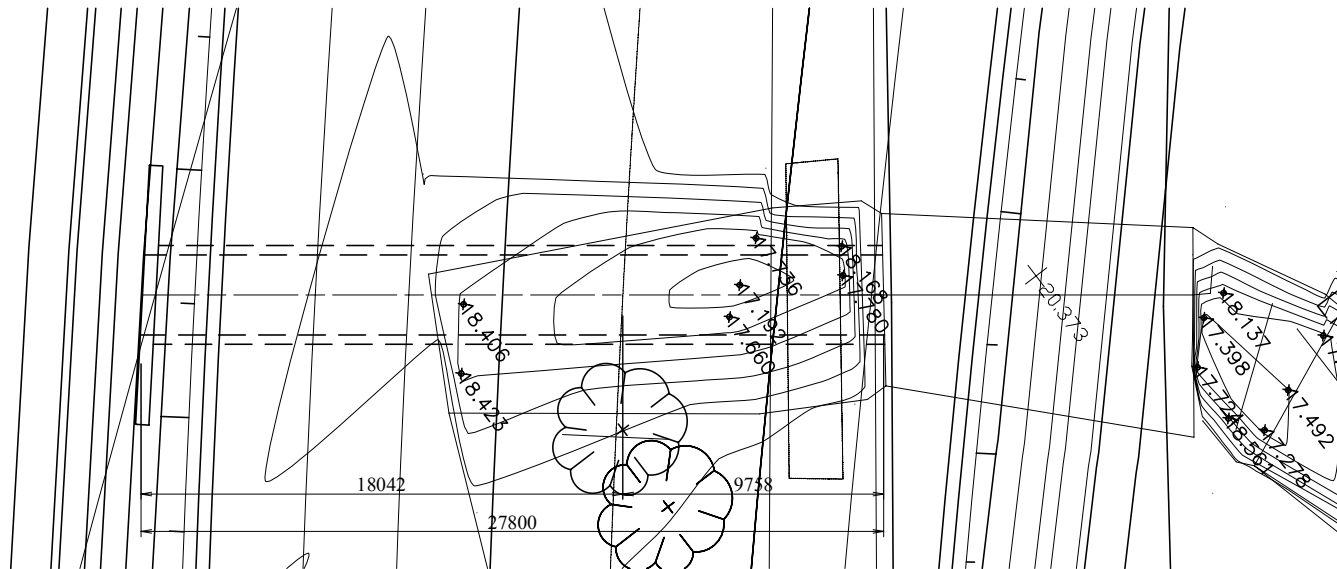
KERB STONE					
Direction		Side of Median Strip			Remarks
Right	Left	Pre Casted Kerb			
		Type 3			
		High Side (Locations)	Low Side (Locations)		
	○	5	18		
○		6	18		
Total(Locations)		11	36		
Total (m)		2,683	23,419		

# No.2+430 BOX CULVERT

NO 2+430.319  
 GH=17.78  
 FH=20.975



PLAN S=1:200



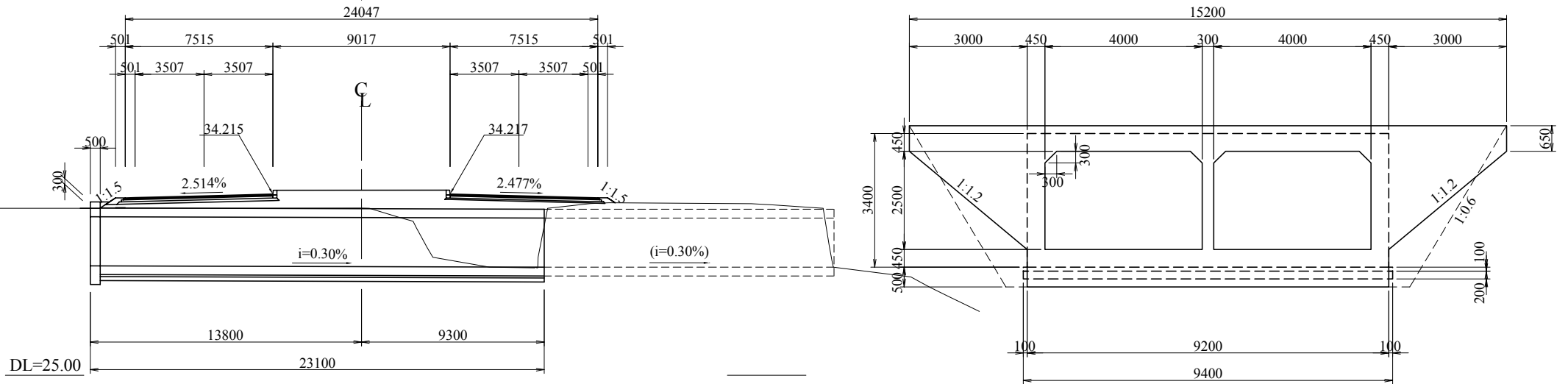
MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	No.2+430 BOX CULVERT	PREPARED BY: CHECKED BY:	BD-44

# No.10+729 BOX CULVERT

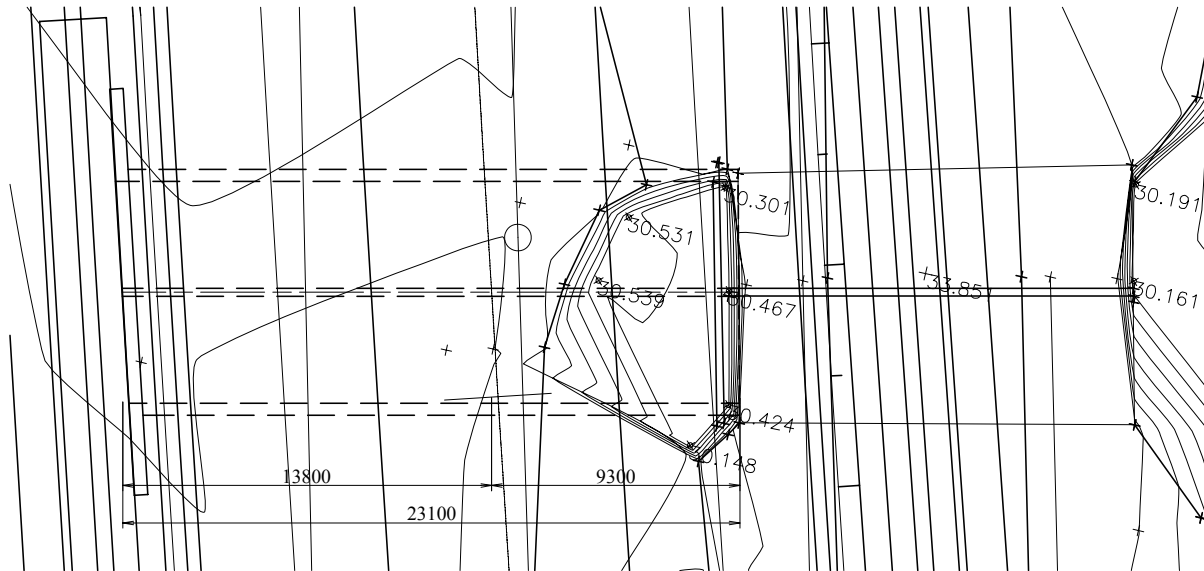
NO.10+728.916  
GH=33.50  
FH=34.217

S=1:200

S=1:100



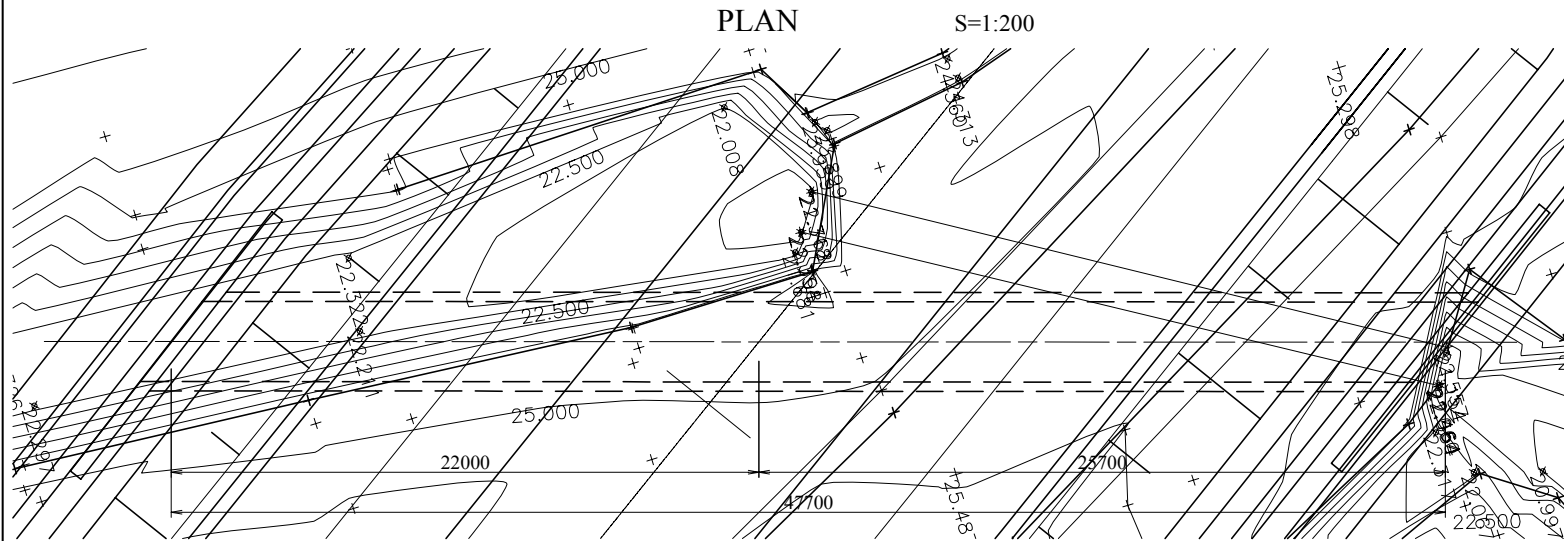
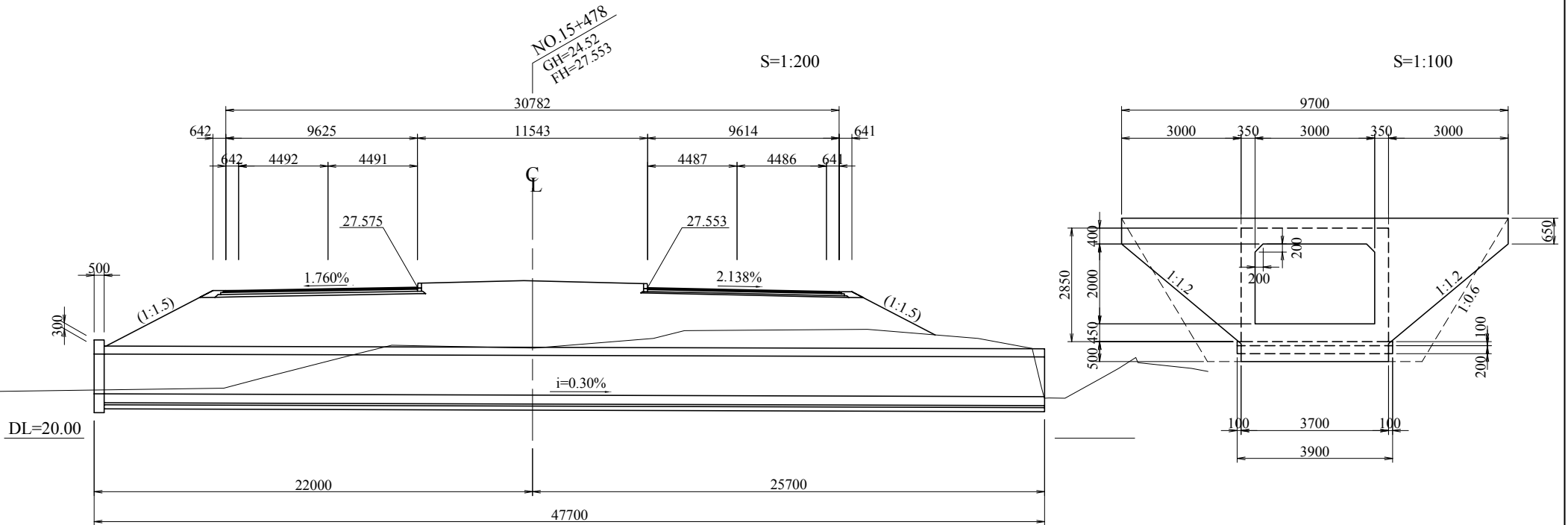
PLAN S=1:200



MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	No.10+729 BOX CULVERT	PREPARED BY: CHECKED BY:	BD-45



# No.15+478 BOX CULVERT



MINISTRY OF INFRASTRUCTURE DEVELOPMENT THE UNITED REPUBLIC OF TANZANIA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:	PROJECT NAME:	DRAWING TITLE:	DATE:	DRAWING No. :
	INGEROSEC CORPORATION	PREPARATORY SURVEY ON THE PROJECT FOR WIDENING OF NEW BAGAMOYO ROAD	No.15+478 BOX CULVERT	PREPARED BY: CHECKED BY:	BD-46