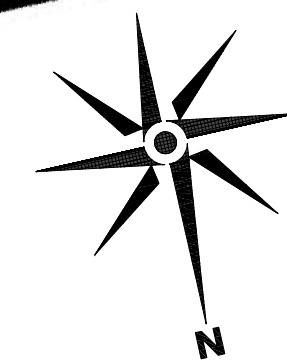
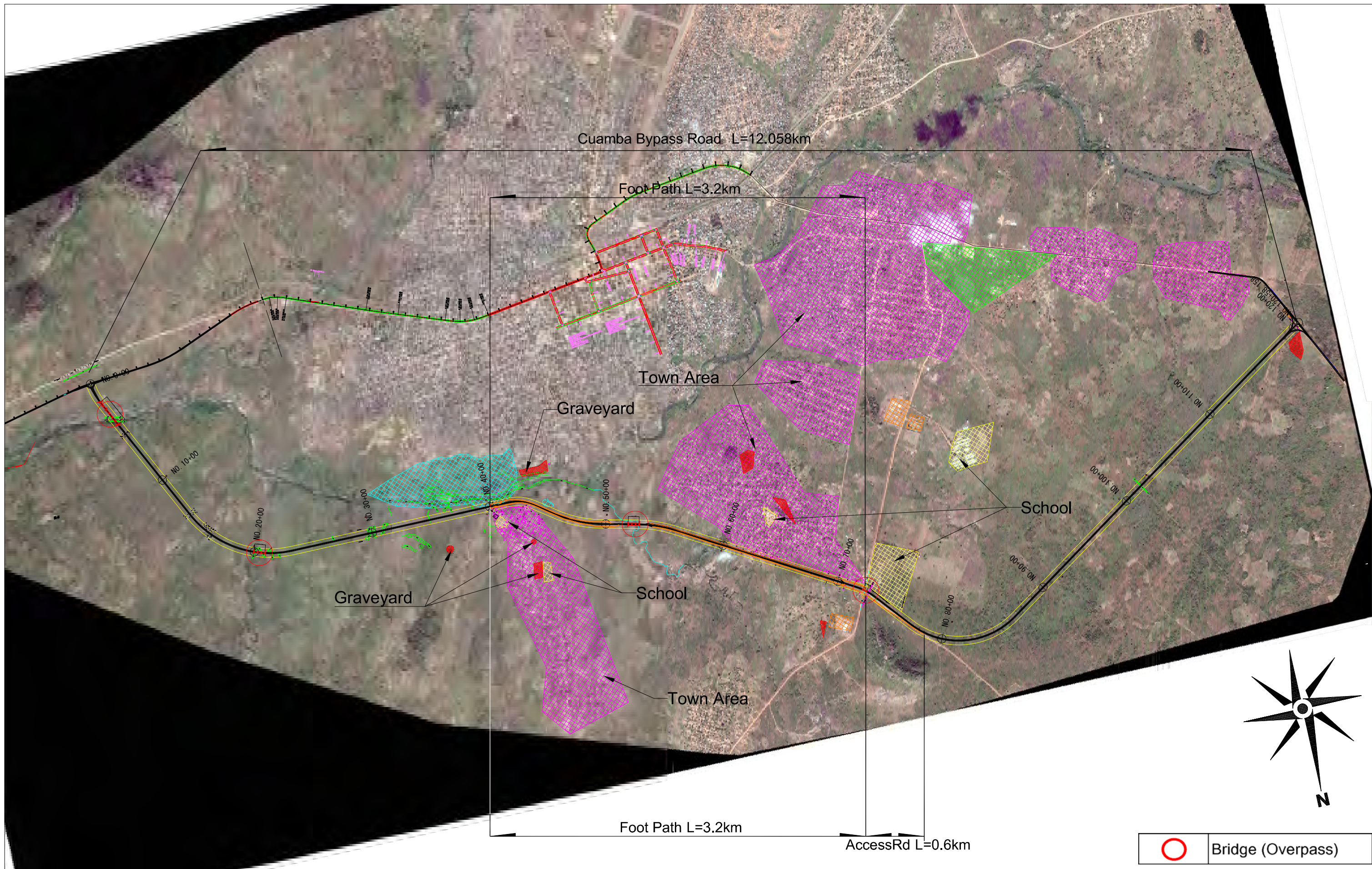
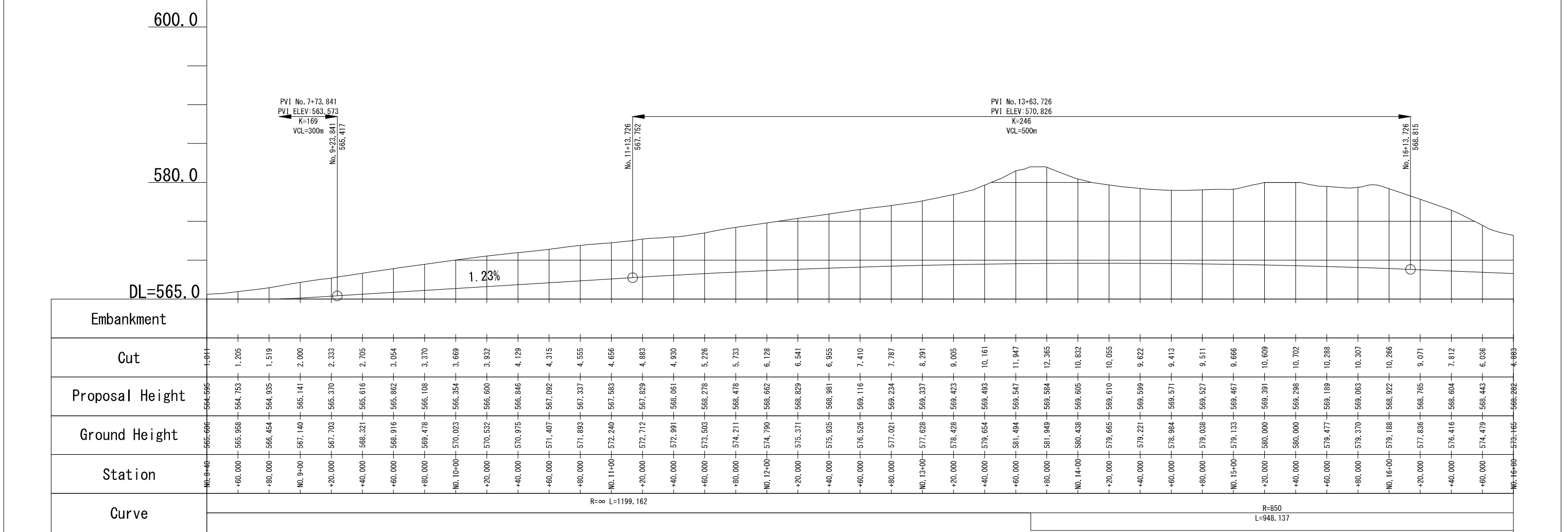


(D) CUAMBA BYPASS ROAD

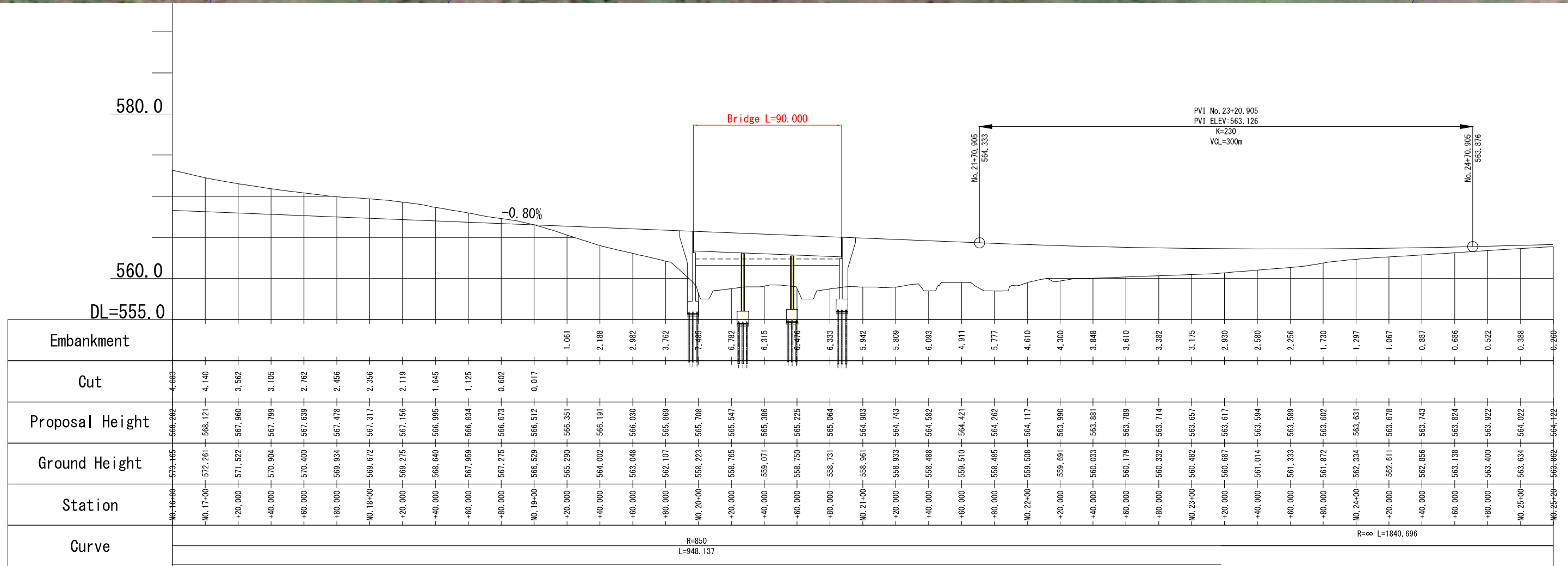
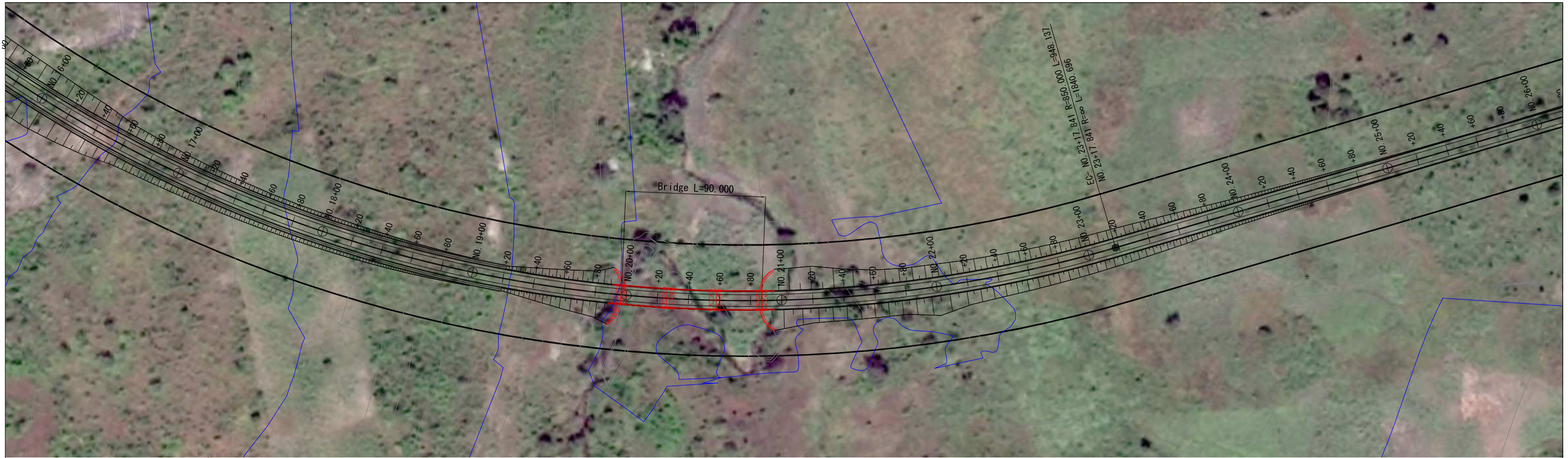


○ Bridge (Overpass)

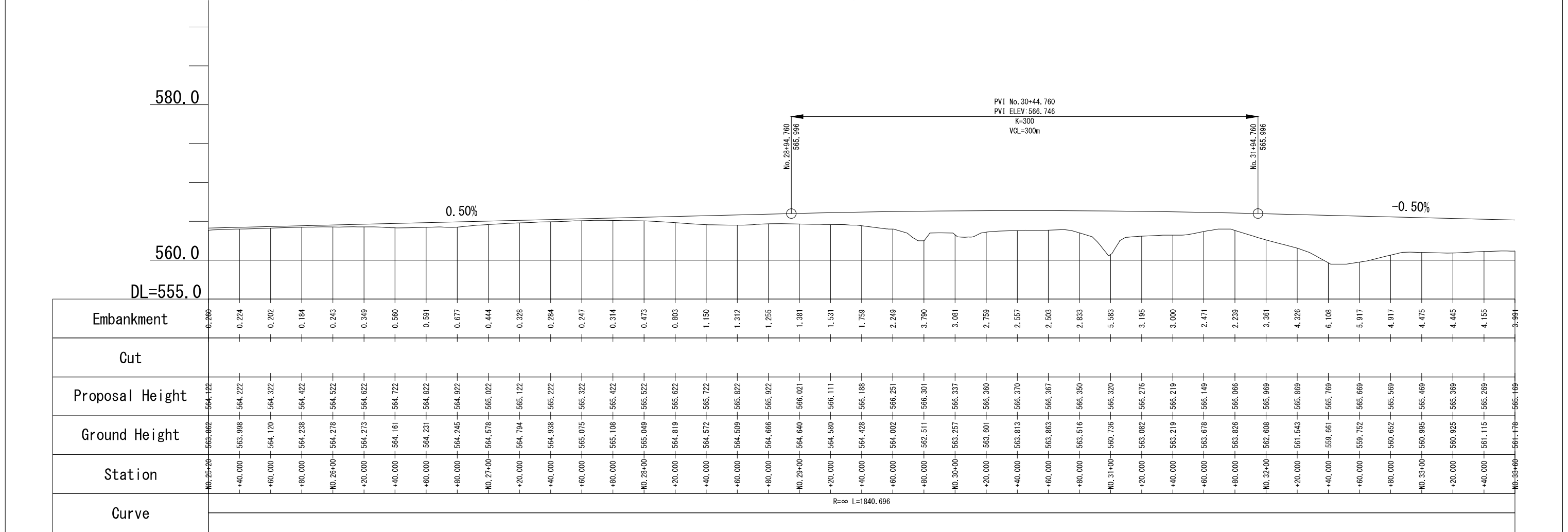
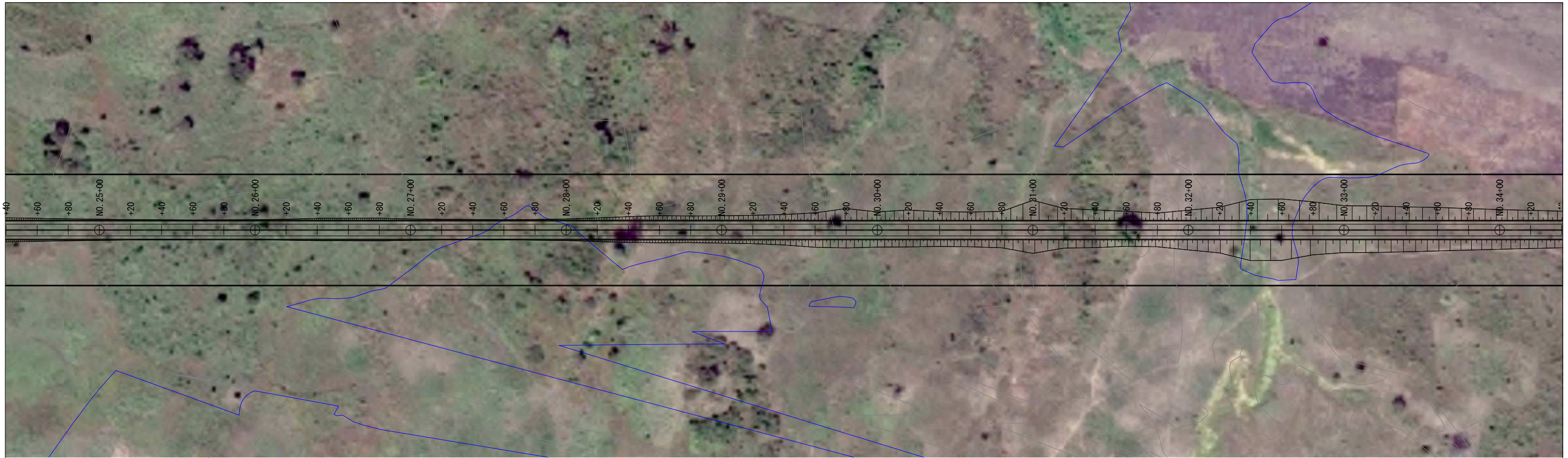
	Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY CHECKED BY APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage ROUTE MAP
	NAME SIGNATURE DATE	SCALE SHEET NO. DRAWING NO. REV. NO.	D-1		



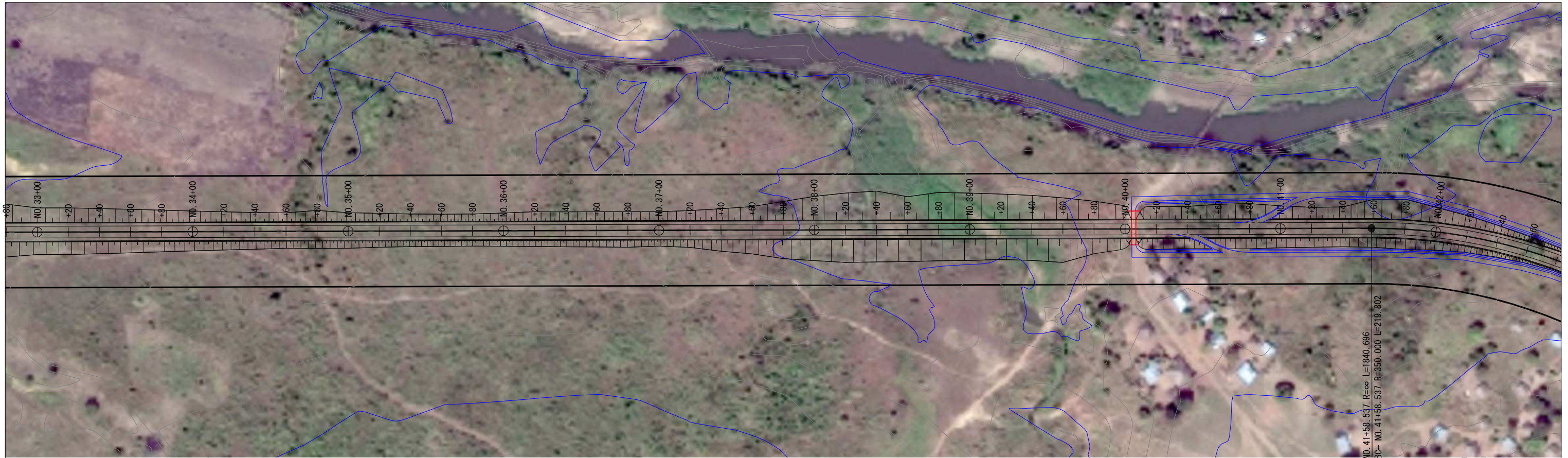
Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		DATE				1/2500		D-3	



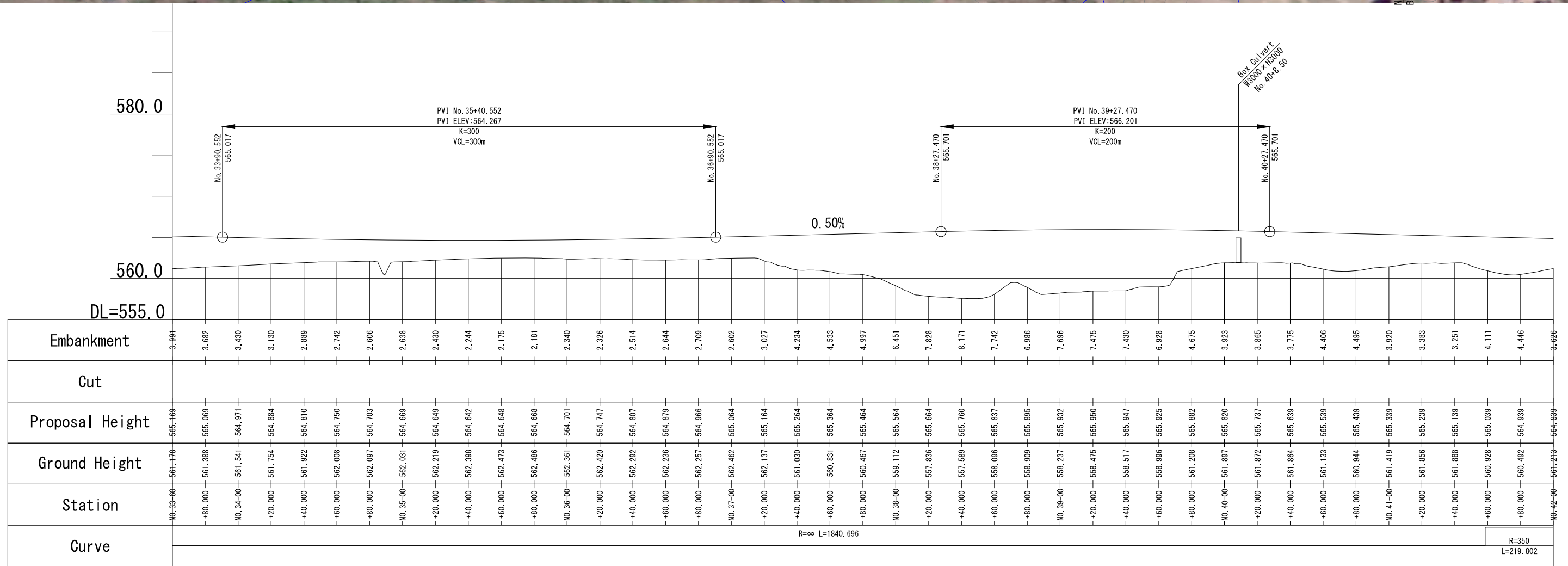
Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		SIGNATURE				1/2500		D-4	
		DATE							



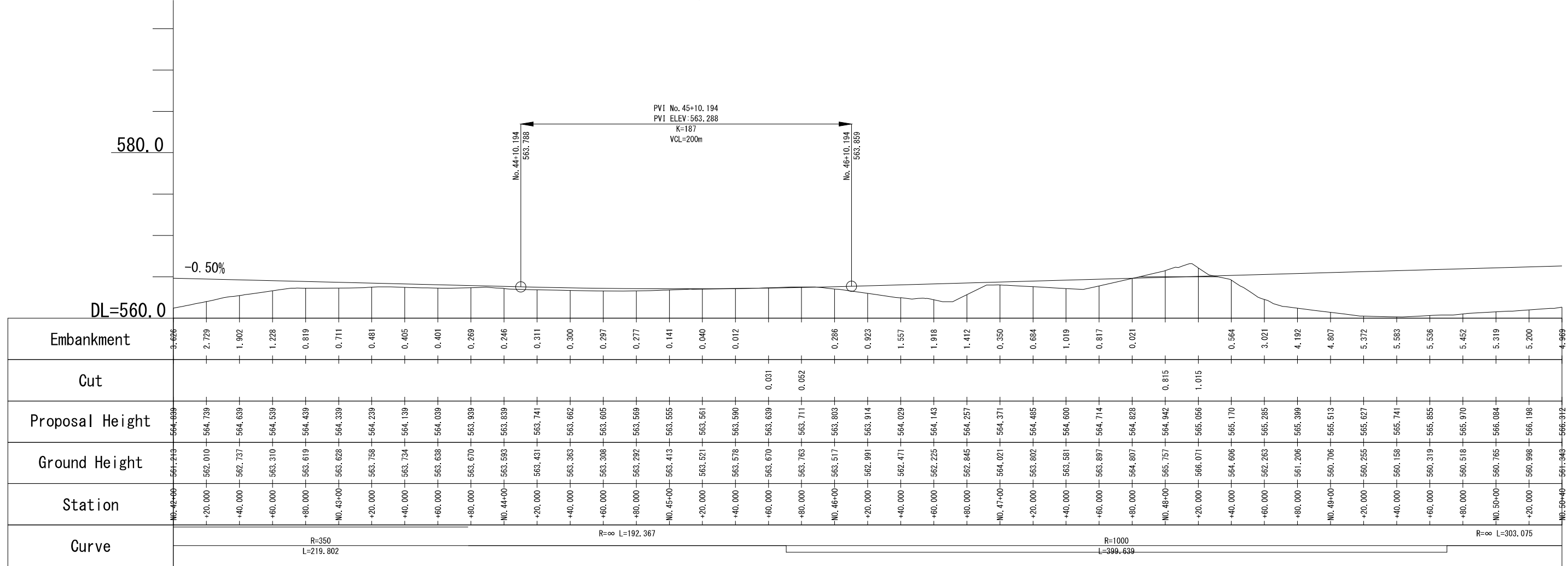
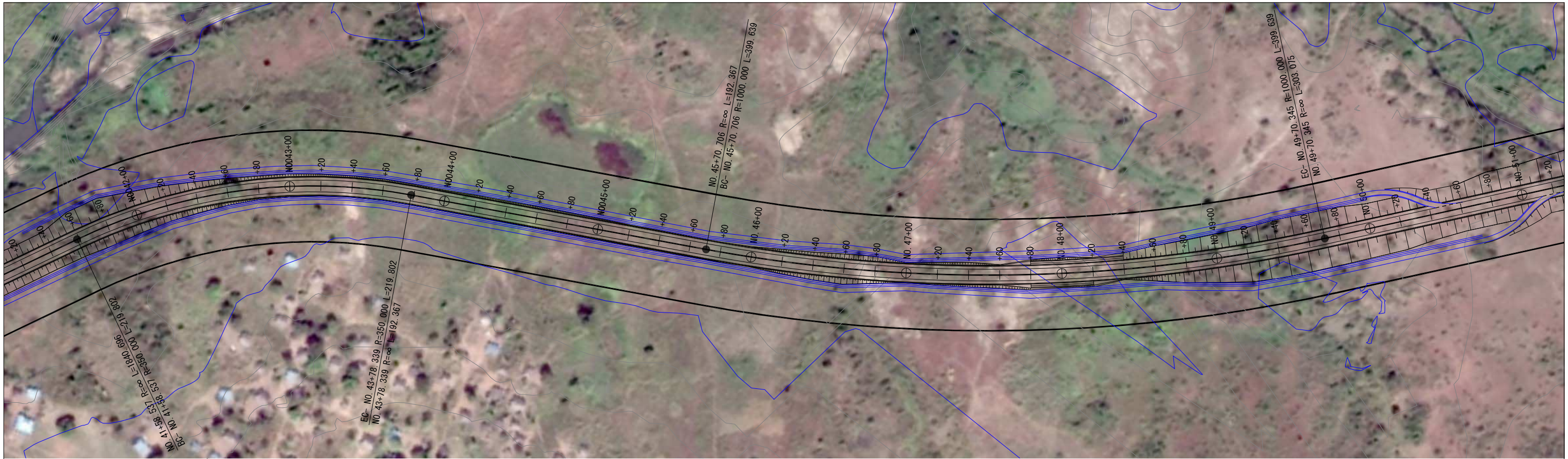
Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		SIGNATURE				1/2500		D-5	
		DATE							



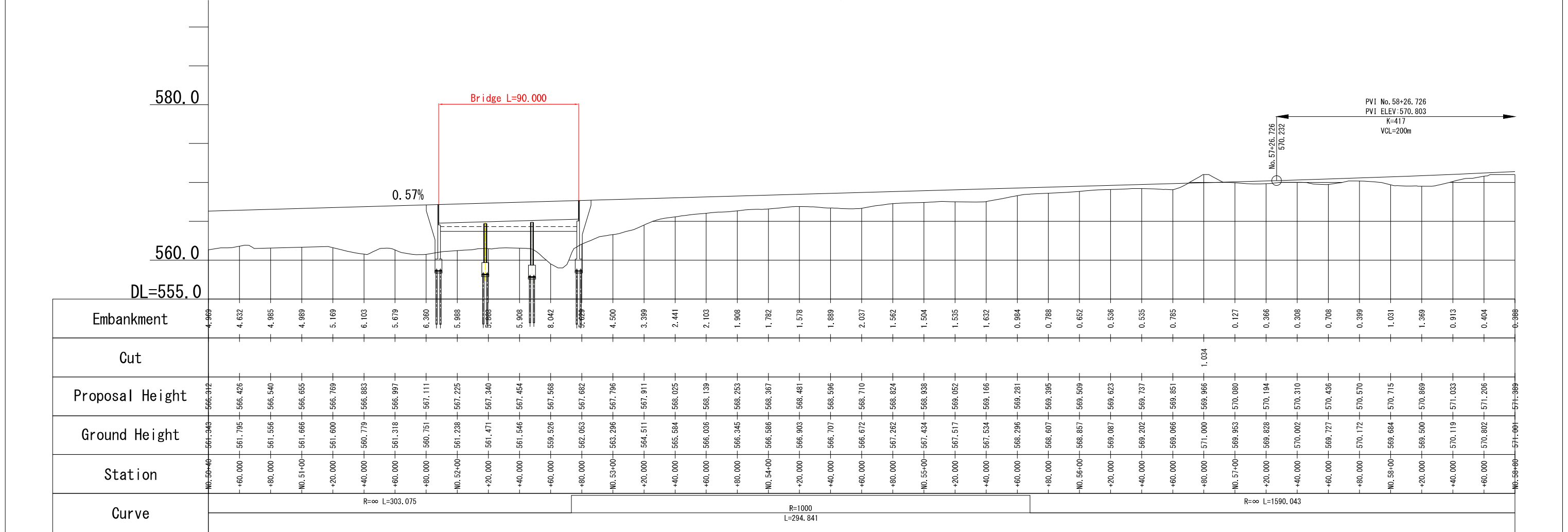
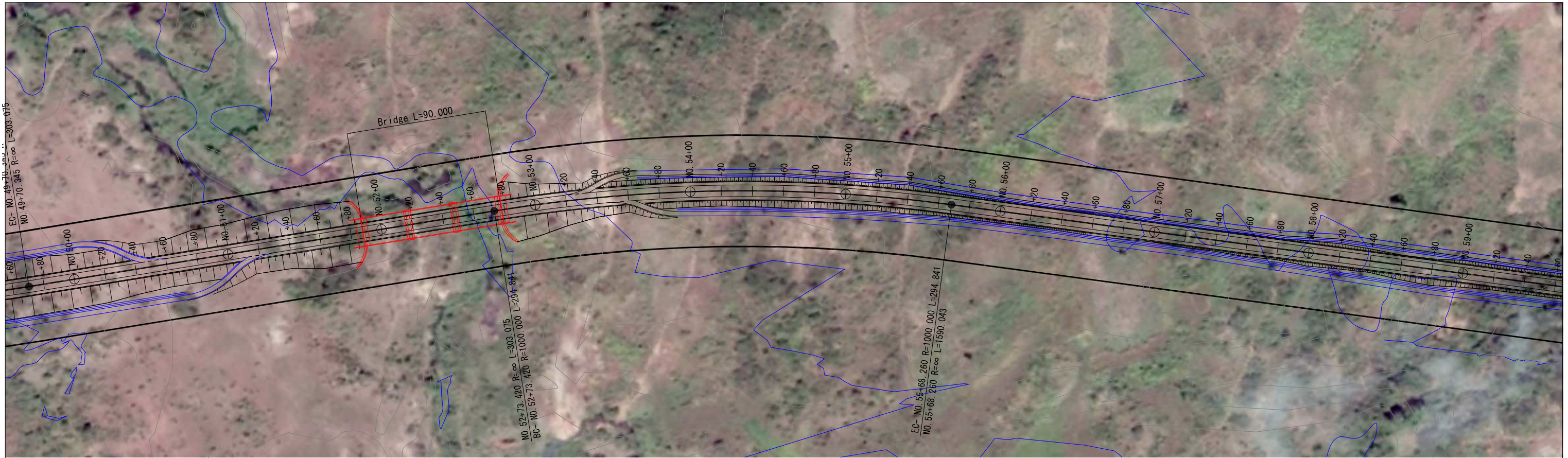
NO. 41+58.537 R=∞ L=1840.696
 BC- NO. 41+58.537 R=350.000 L=219.802



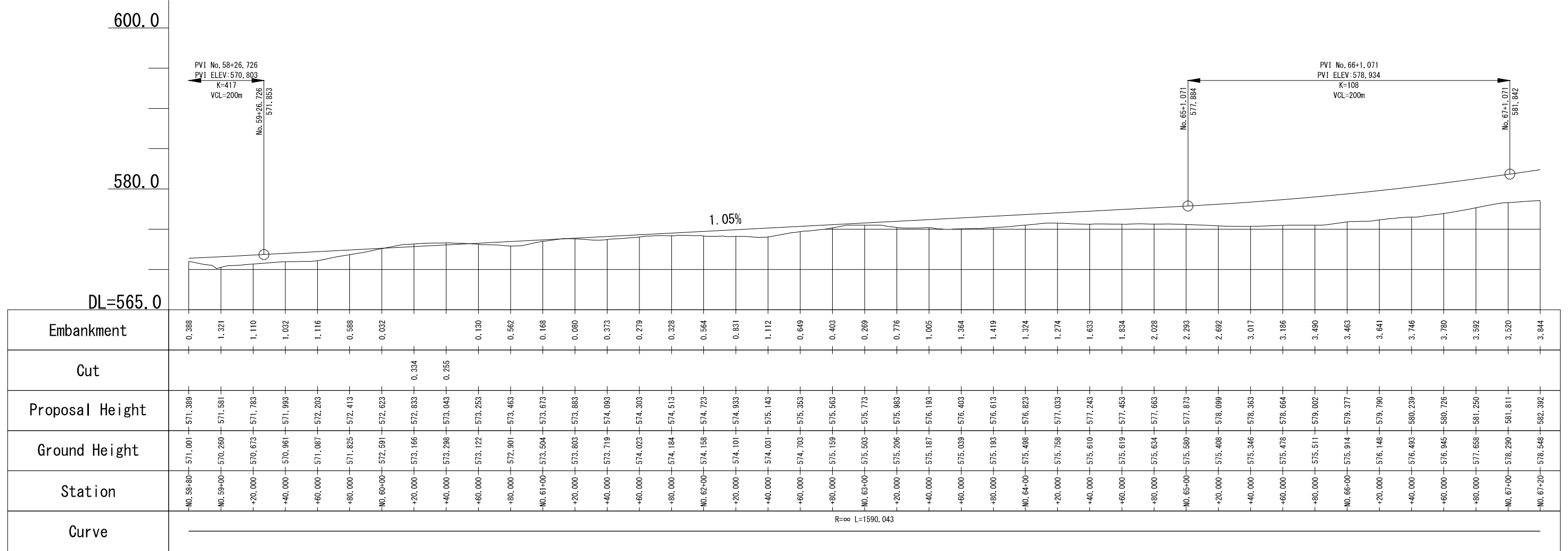
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		DATE							



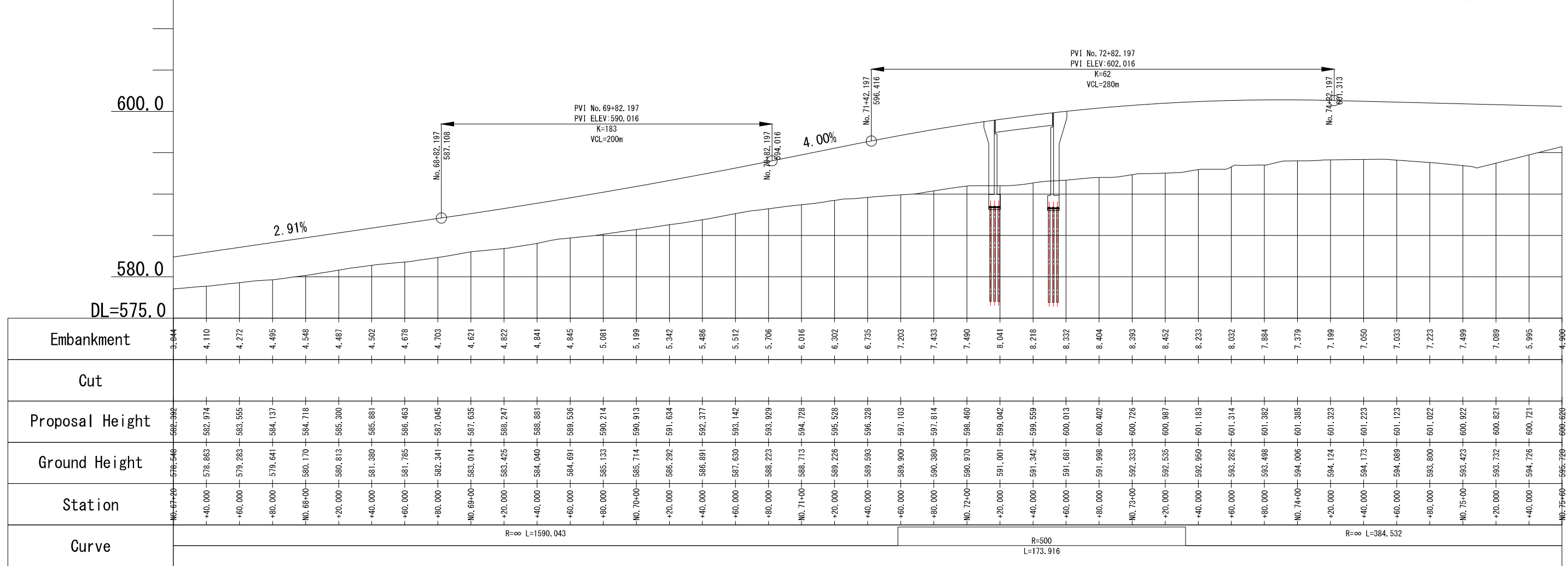
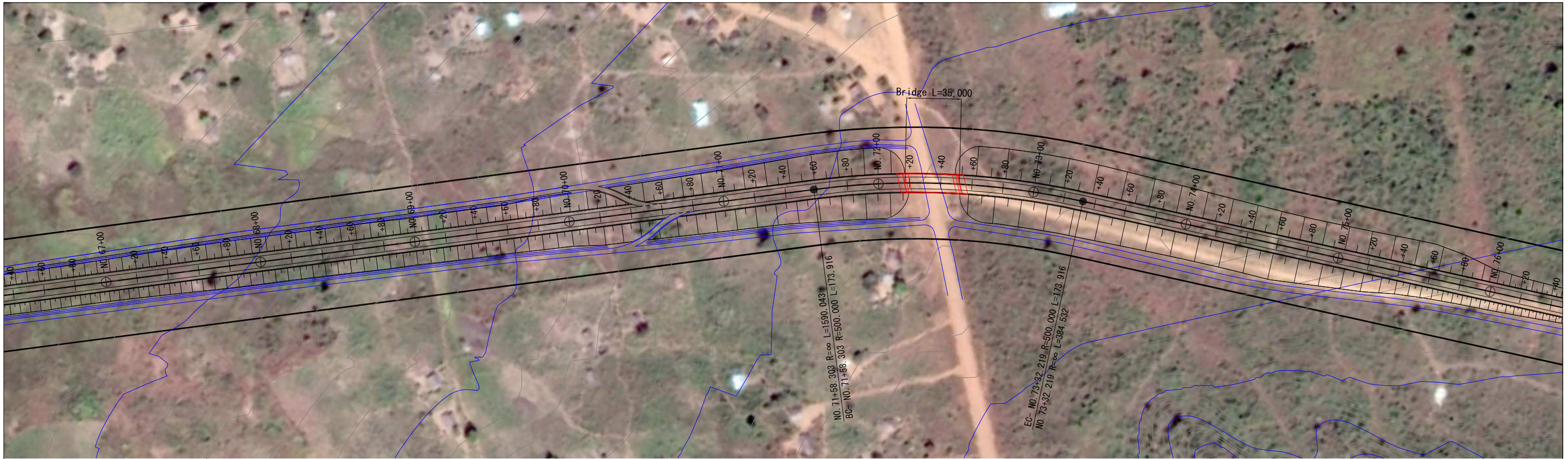
Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
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		DATE							



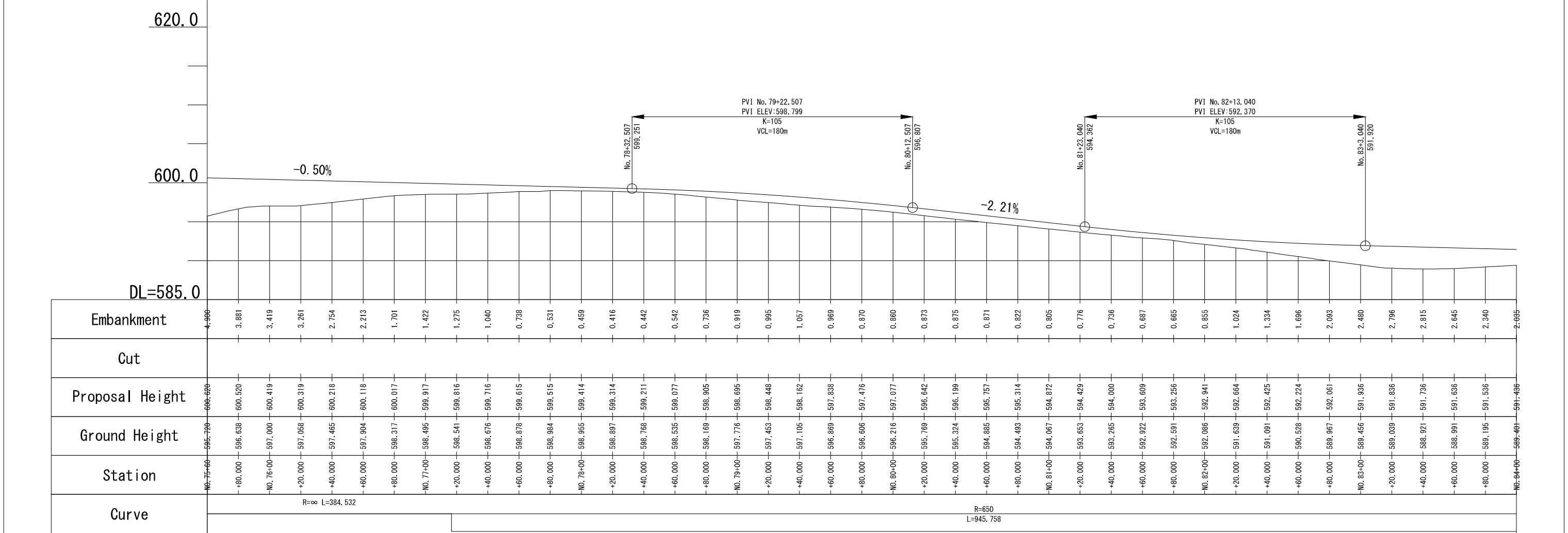
Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
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		SIGNATURE				1/2500		D-8	
		DATE							



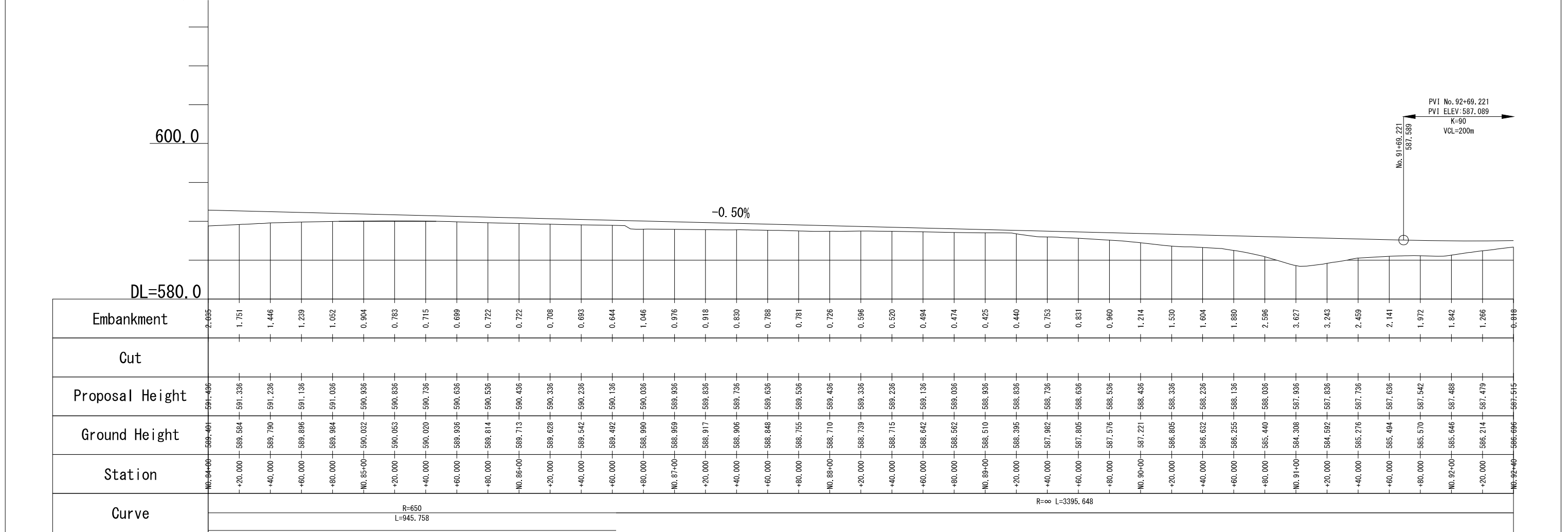
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		SIGNATURE				1/2500		D-9	
		DATE							



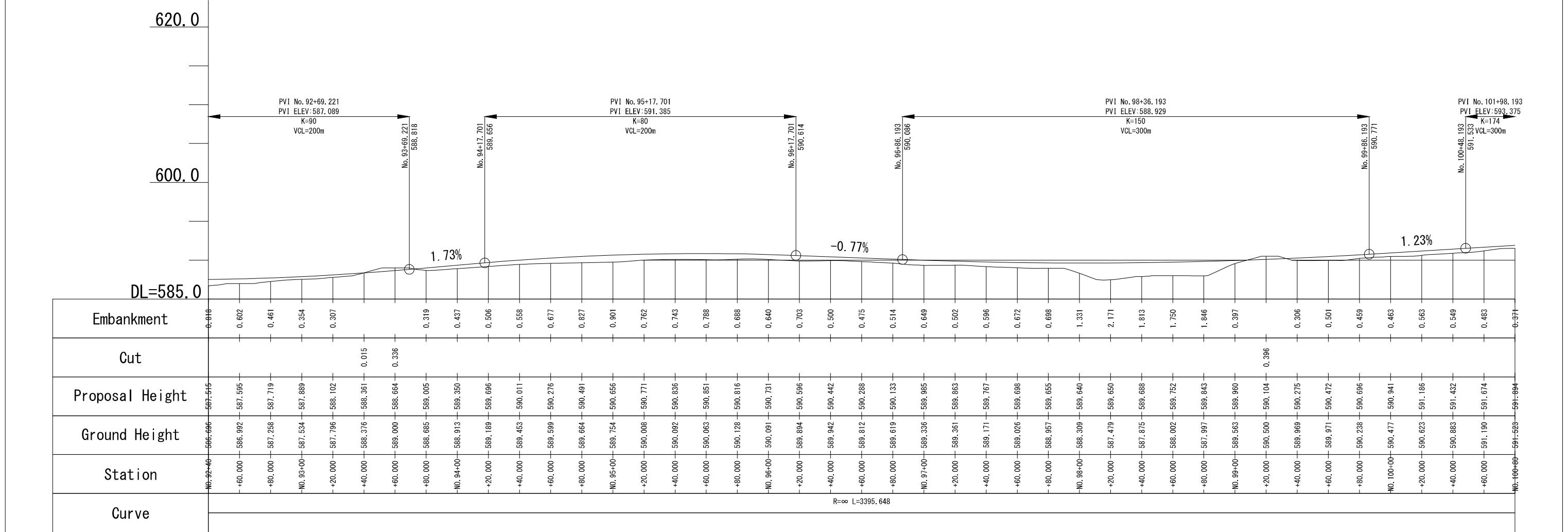
Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
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		SIGNATURE				1/2500		D-10	
		DATE							



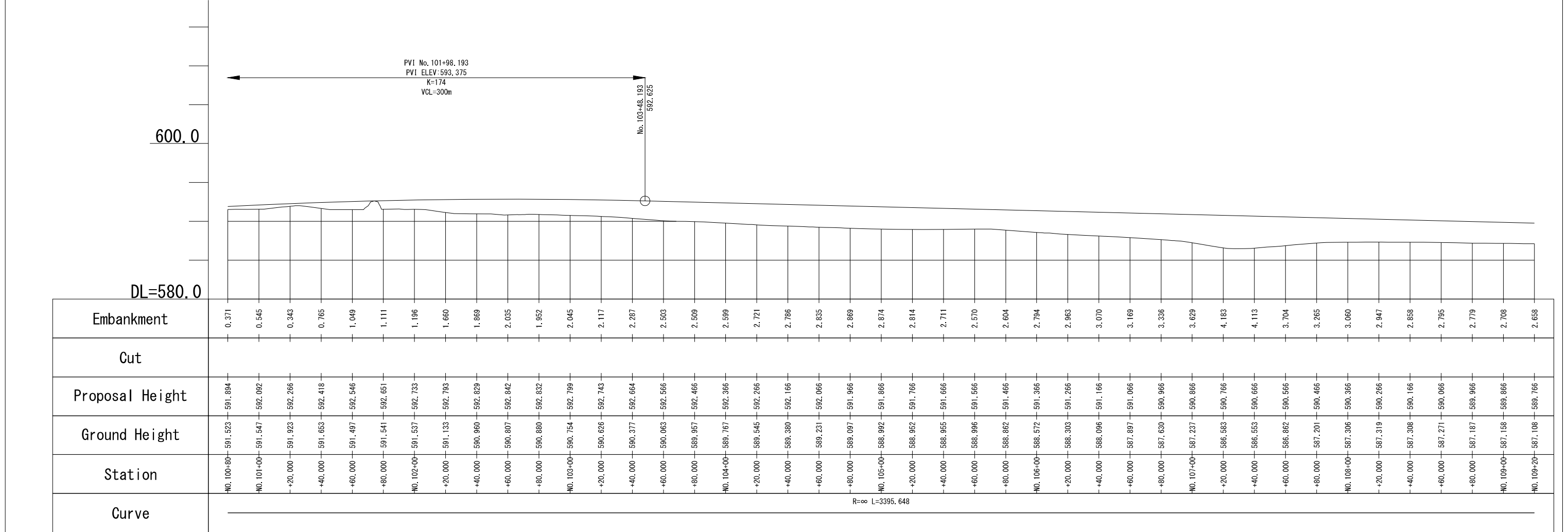
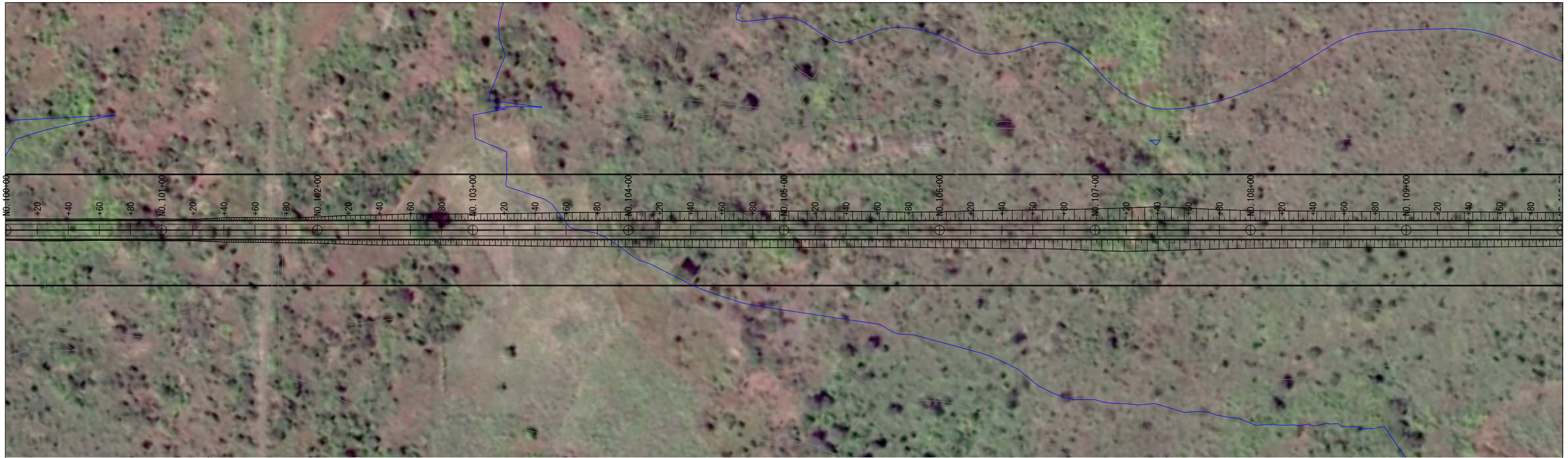
Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
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		DATE							



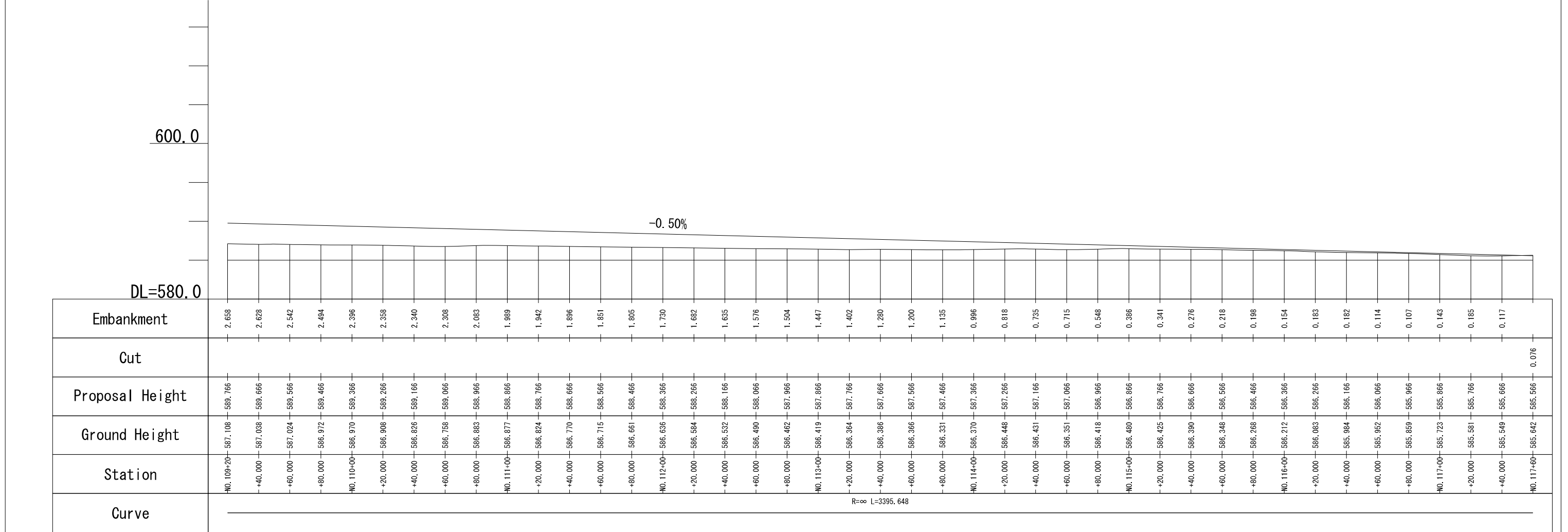
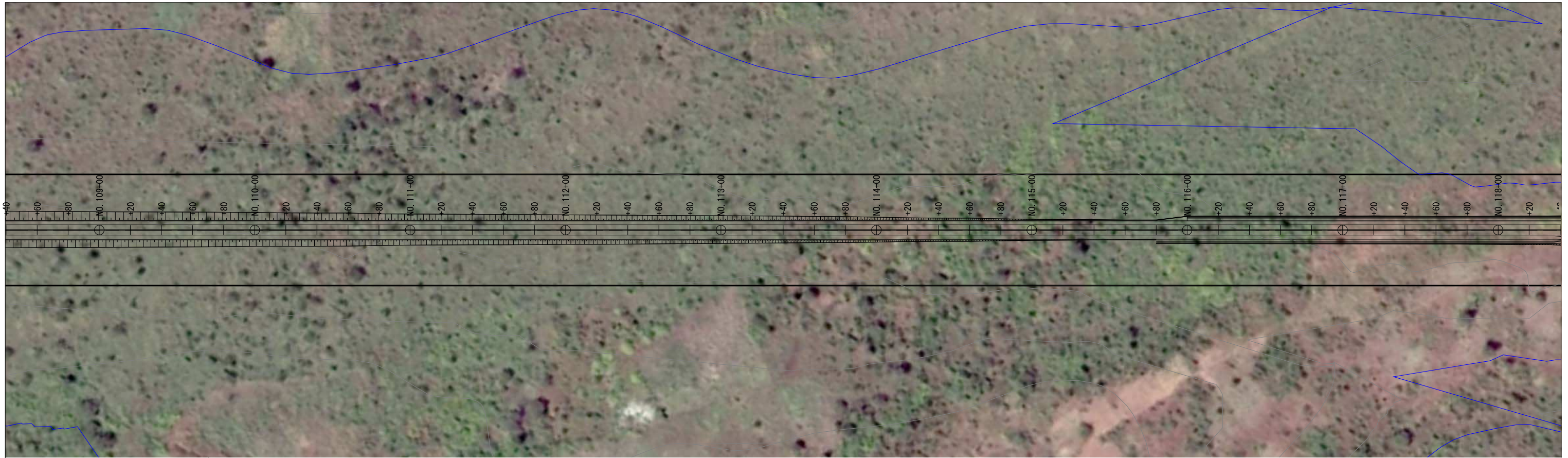
Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
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		SIGNATURE				1/2500		D-12	
		DATE							



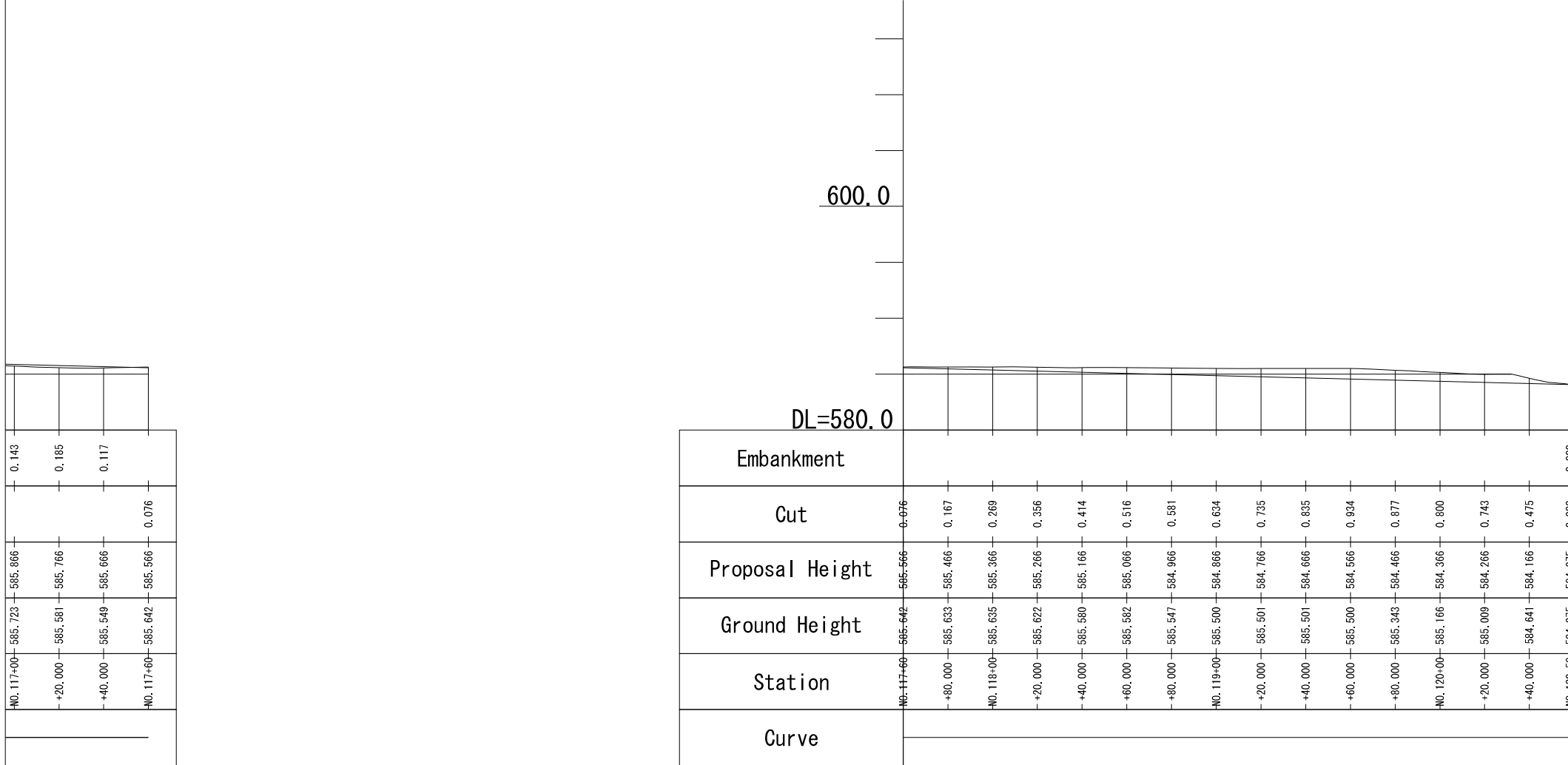
Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
National Road Administration (ANE)	Kokusai Kogyo Co., Ltd.	SIGNATURE				1/2500		D-13	
		DATE							



Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
National Road Administration (ANE)	Kokusai Kogyo Co., Ltd.	SIGNATURE				1/2500		D-14	
		DATE							






Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	NAME	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage Plan and Profile			
		SIGNATURE					SCALE	SHEET NO.	DRAWING NO.	REV. NO.
DATE				1/2500			D-15			



Station	Ground Height	Proposal Height	Cut	Embankment
NO. 117+60	585.642	585.566	0.076	
+20,000	585.633	585.466	0.167	
NO. 118+00	585.635	585.366	0.269	
+20,000	585.622	585.266	0.356	
+40,000	585.580	585.166	0.414	
+60,000	585.562	585.066	0.516	
+80,000	585.547	584.966	0.581	
NO. 119+00	585.500	584.866	0.634	
+20,000	585.501	584.766	0.735	
+40,000	585.501	584.666	0.835	
+60,000	585.500	584.566	0.934	
+80,000	585.343	584.466	0.877	
NO. 120+00	585.166	584.366	0.800	
+20,000	585.009	584.266	0.743	
+40,000	584.641	584.166	0.475	
NO. 120+50	584.075	584.075	0.000	0.000

 Japan International Cooperation Agency
 National Road Administration (ANE)

 Oriental Consultants Global Co., Ltd.
 Eight-Japan Engineering Consultants Inc.
 Kokusai Kogyo Co., Ltd.

NAME	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE			

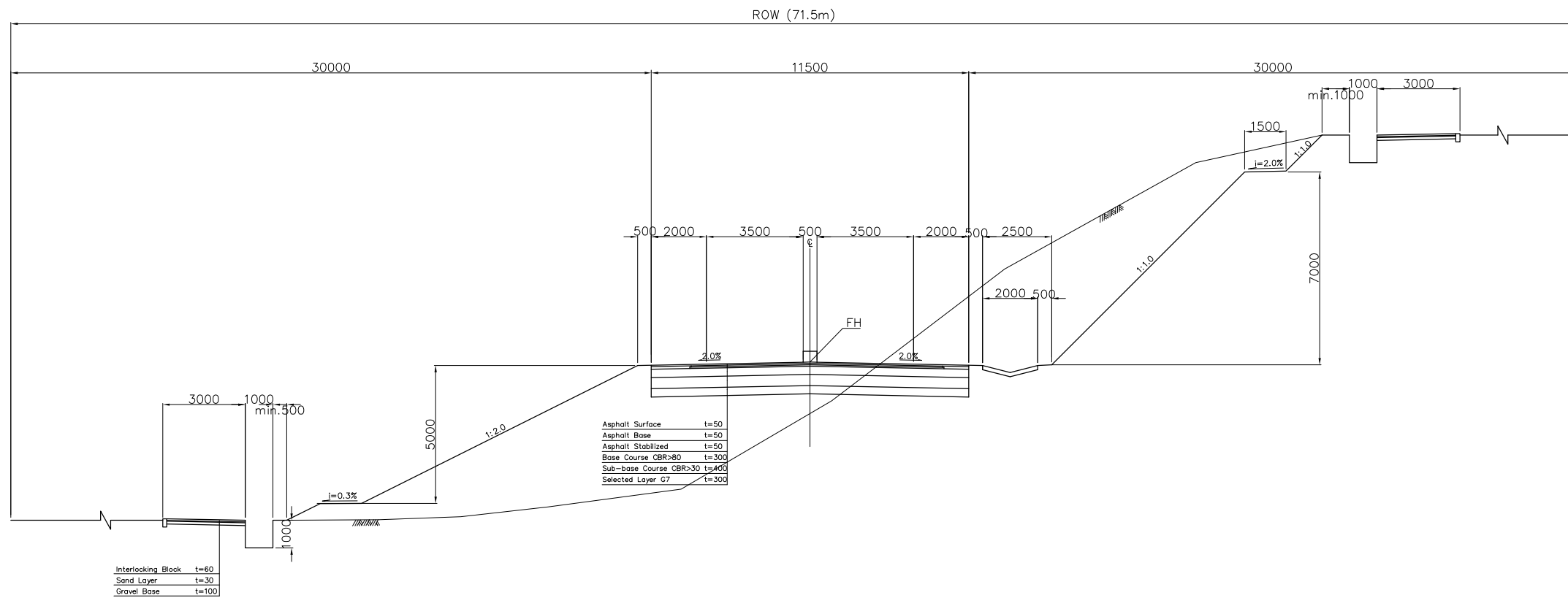
PROJECT TITLE:
**Preparatory Survey for Nacala Corridor
 Road Network Upgrading Project
 (Cuamba Bypass Road)**

DRAWING TITLE: **Completion Stage
 Plan and Profile**

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
1/2500		D-16	

CUAMBA BYPASS ROAD

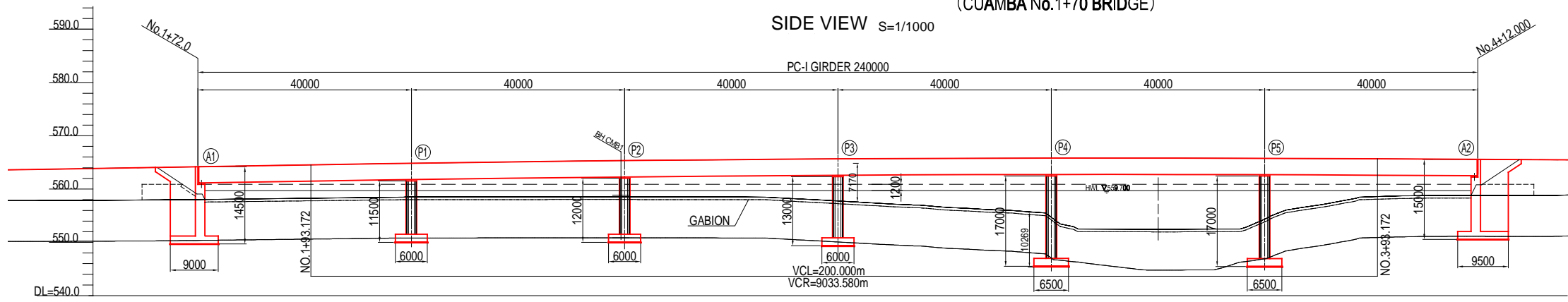
Typical Cross Section



Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd.		PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage			
		NAME					Typical Cross Section			
National Road Administration (ANE)	Kokusai Kogyo Co., Ltd.	SIGNATURE				SCALE	SHEET NO.	DRAWING NO.	REV. NO.	
		DATE				1/200		D-17		

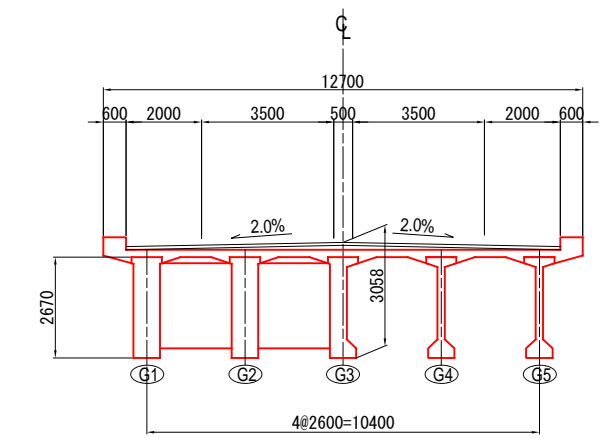
GENERAL VIEW (CUAMBA No.1+70 BRIDGE)

SIDE VIEW S=1/1000



GRADIENT	i=1.665% L=193.172m		R=∞		i=-0.549% L=480.669m																
PROPOSED HEIGHT	563.995	564.195	564.328	564.657	564.839	564.963	565.204	565.334	565.411	565.576	565.652	565.692	565.768	565.791	565.797	565.783	565.763	565.726	565.626	565.560	565.516
GROUND HEIGHT	557.941	558.049	558.144	558.381	558.505	558.511	558.540	558.538	558.530	558.411	557.760	557.320	556.180	224.715	552.496	552.487	554.348	556.697	558.758	558.825	558.803
DISTANCE	20,000	12,000	8,000	20,000	12,000	8,000	20,000	12,000	8,000	20,000	21,000	8,000	20,000	12,000	8,000	20,000	12,000	8,000	20,000	12,000	8,000
STATION	NO.1 +60,000	A1 +72,000	+80,000	NO.2 +0,000	P1 +12,000	+20,000	+40,000	P2 +52,000	+60,000	+80,000	P3 +12,000	NO.3 +0,000	+20,000	P4 +32,000	+40,000	+60,000	P5 +72,000	+80,000	NO.4 +0,000	A2 +12,000	+20,000
CURVE ELEMENT	R=450 CL=151.540		R=∞		CL=1199.162																

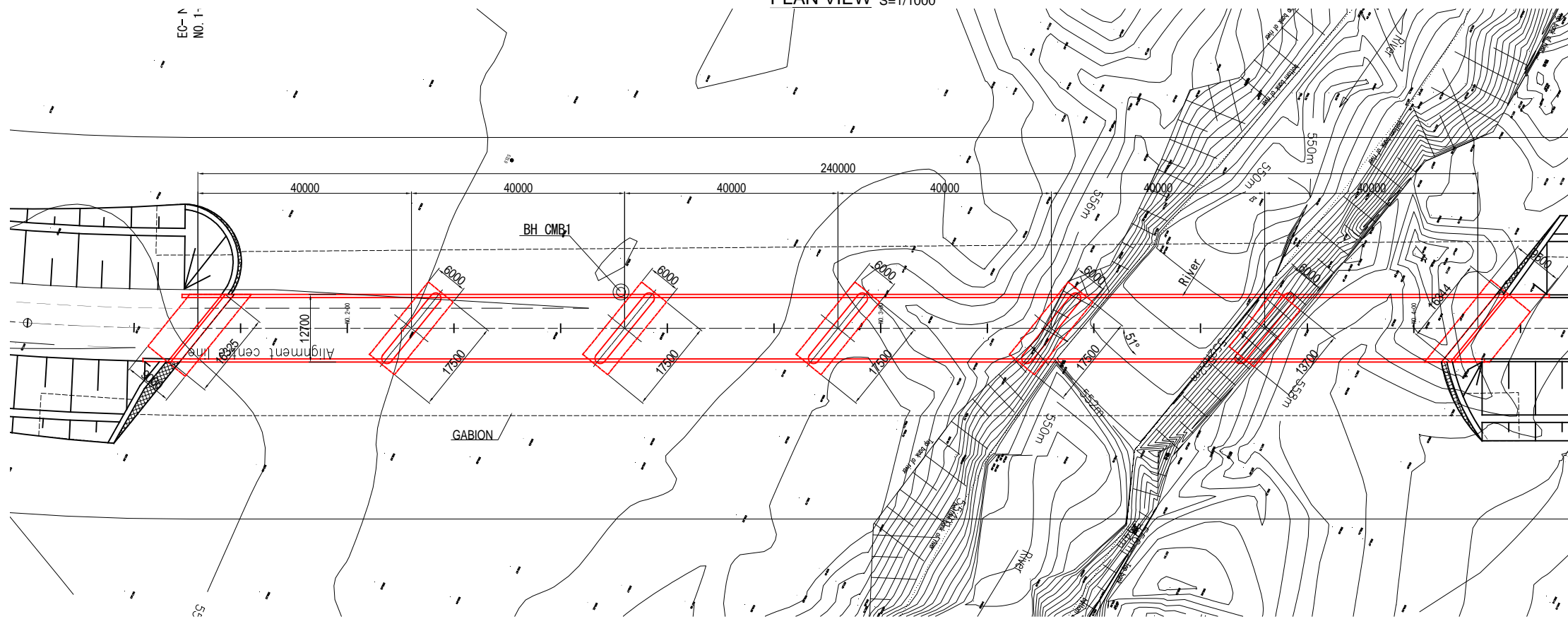
SUPERSTRUCTURE CROSS SECTION S=1/200



DESIGN CONDITION

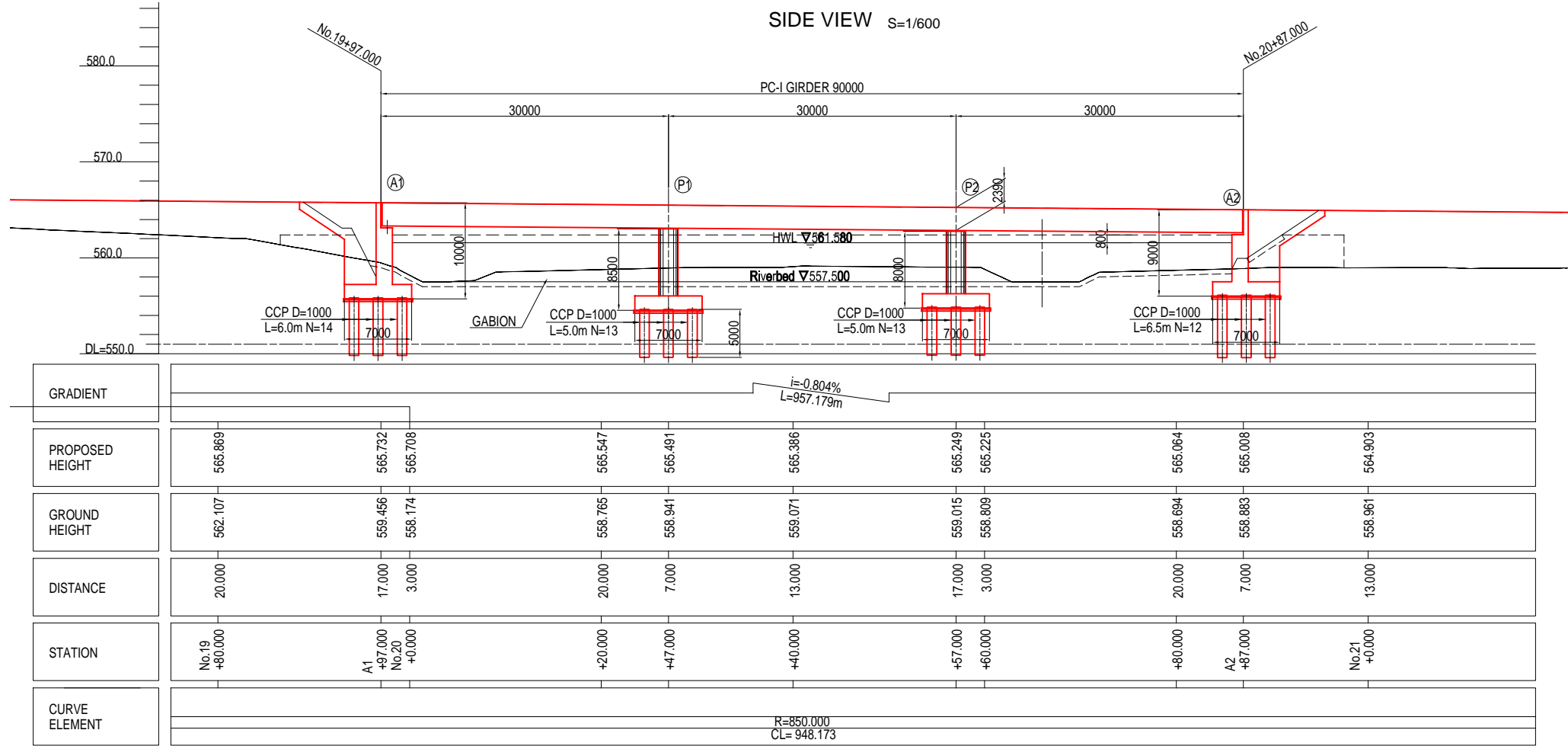
TOTAL BRIDGE LENGTH	240.000m
GIRDER LENGTH	6@39.800m
SPAN	6@39.000m
WIDTH	12.700m
ANGLE OF SKEW	51°00'00"
RADIUS OF CURVATURE	R=∞
LONGITUDINAL SLOPE	1.665% -0.549%
COMPRESSIVE STRENGTH	Main Girder: ock=40N/mm ² Floor Slab: ock=30N/mm ²

PLAN VIEW S=1/1000

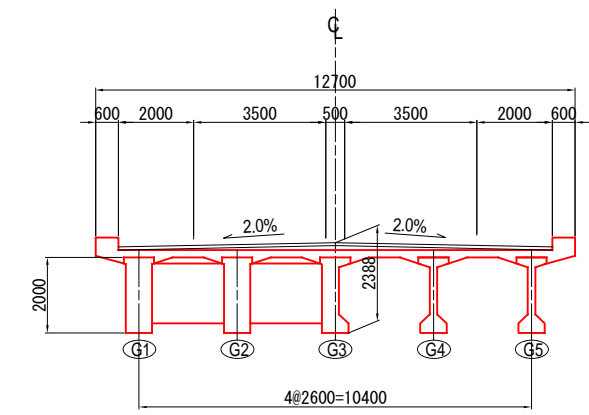


		PREPARED BY CHECKED BY APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage GENERAL VIEW (CUAMBA No.1+70 BRIDGE)			
		NAME SIGNATURE DATE		SCALE SHEET NO. DRAWING NO. REV. NO.	D-18		

GENERAL VIEW (CUAMBA No.20+00 BRIDGE)

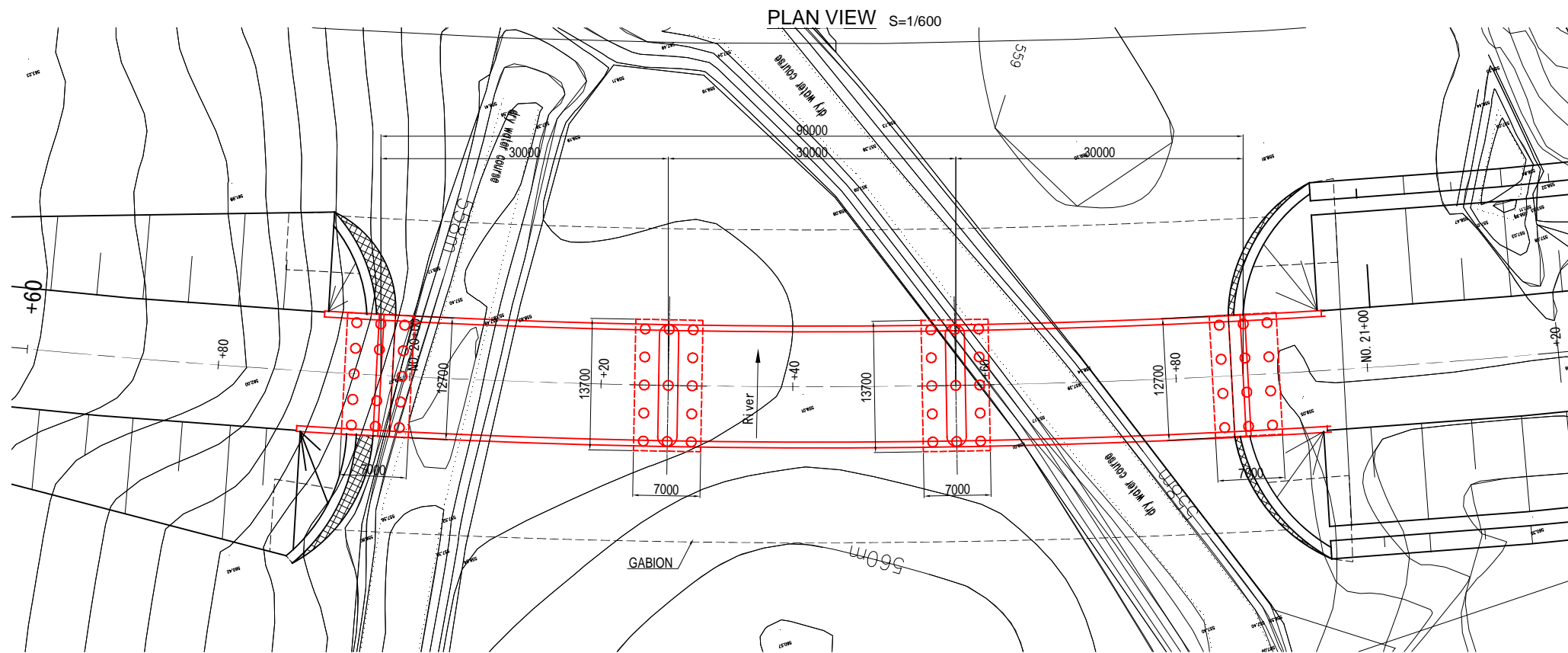


SUPERSTRUCTURE CROSS SECTION S=1/200



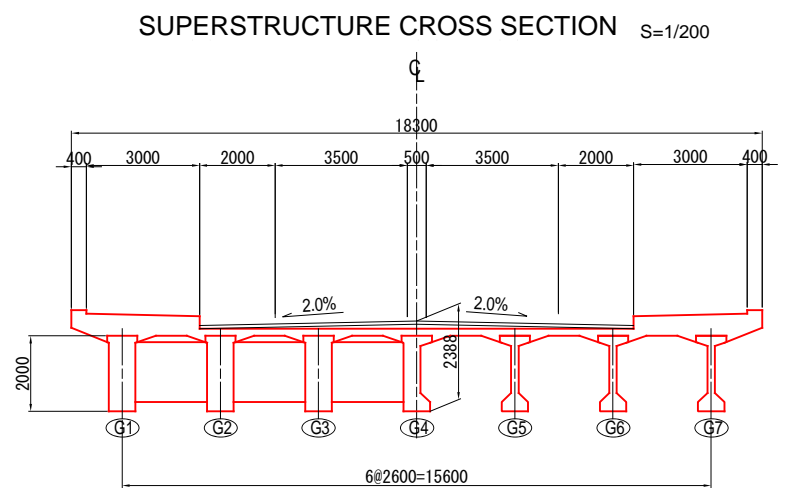
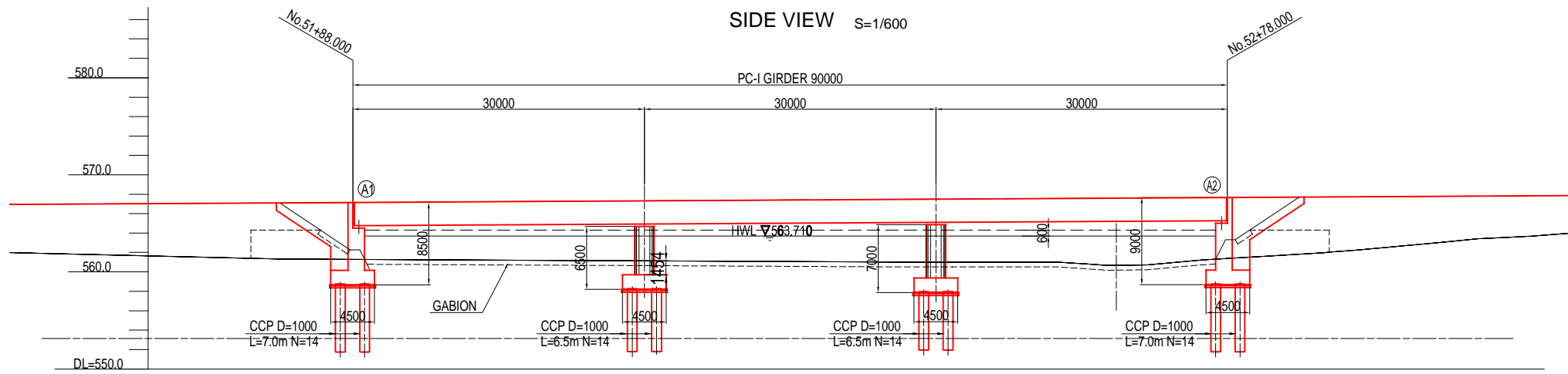
DESIGN CONDITION

TOTAL BRIDGE LENGTH	90.000m
GIRDER LENGTH	29.850m+29.800m+29.850m
SPAN	29.050m+29.000m+29.050m
WIDTH	12.700m
ANGEL OF SKEW	90°00'00"
RADIUS OF CURVATURE	R=∞
LONGITUDINAL SLOPE	1.665% -0.549%
COMPRESSIVE STRENGTH	Main Girder: σ _{ck} =40N/mm ²
	Floor Slab :σ _{ck} =30N/mm ²



	Japan International Cooperation Agency	National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY CHECKED BY APPROVED BY	NAME SIGNATURE DATE	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage GENERAL VIEW (CUAMBA No.20+00 BRIDGE)
	SCALE	SHEET NO.	DRAWING NO.	REV. NO.	D-19		

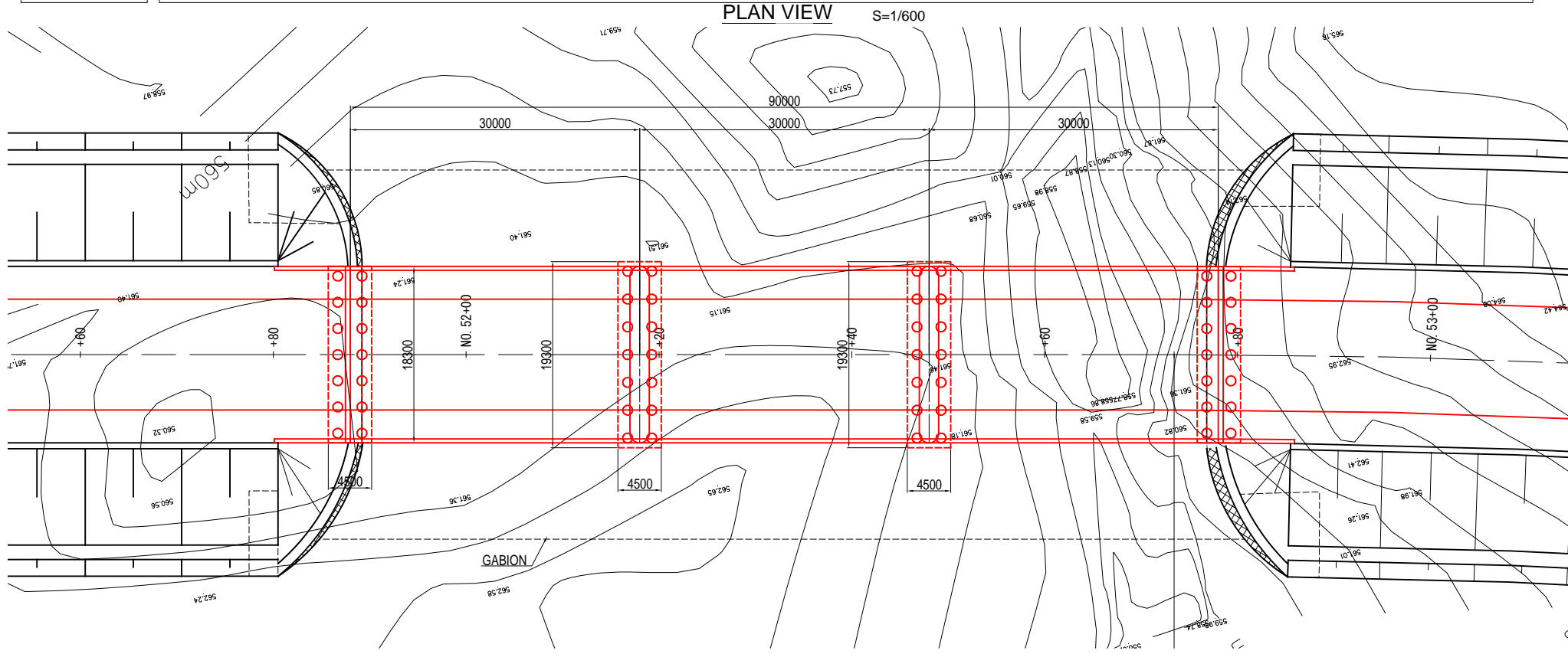
GENERAL VIEW (CUAMBA No.52+00 BRIDGE)



GRADIENT	i=0.571% L=1316.532m											
PROPOSED HEIGHT	567.111	567.157	567.225	567.328	567.340	567.454	567.499	567.588	567.645	567.671	567.682	567.796
GROUND HEIGHT	561.337	561.290	561.230	561.142	561.132	561.034	561.001	561.000	561.050	561.354	561.496	563.056
DISTANCE	20,000	8,000	12,000	18,000	2,000	20,000	8,000	12,000	13,420	4,580	2,000	20,000
STATION	No.51 +80.000	A1 +88.000	No.52 +0.000	P1 +18.000	+20.000	+40.000	P2 +48.000	+60.000	+73.420	A2 +78.000	+80.000	No.53 +0.000
CURVE ELEMENT	R=∞ CL=303.075										R=1000.000 CL=294.841	

DESIGN CONDITION

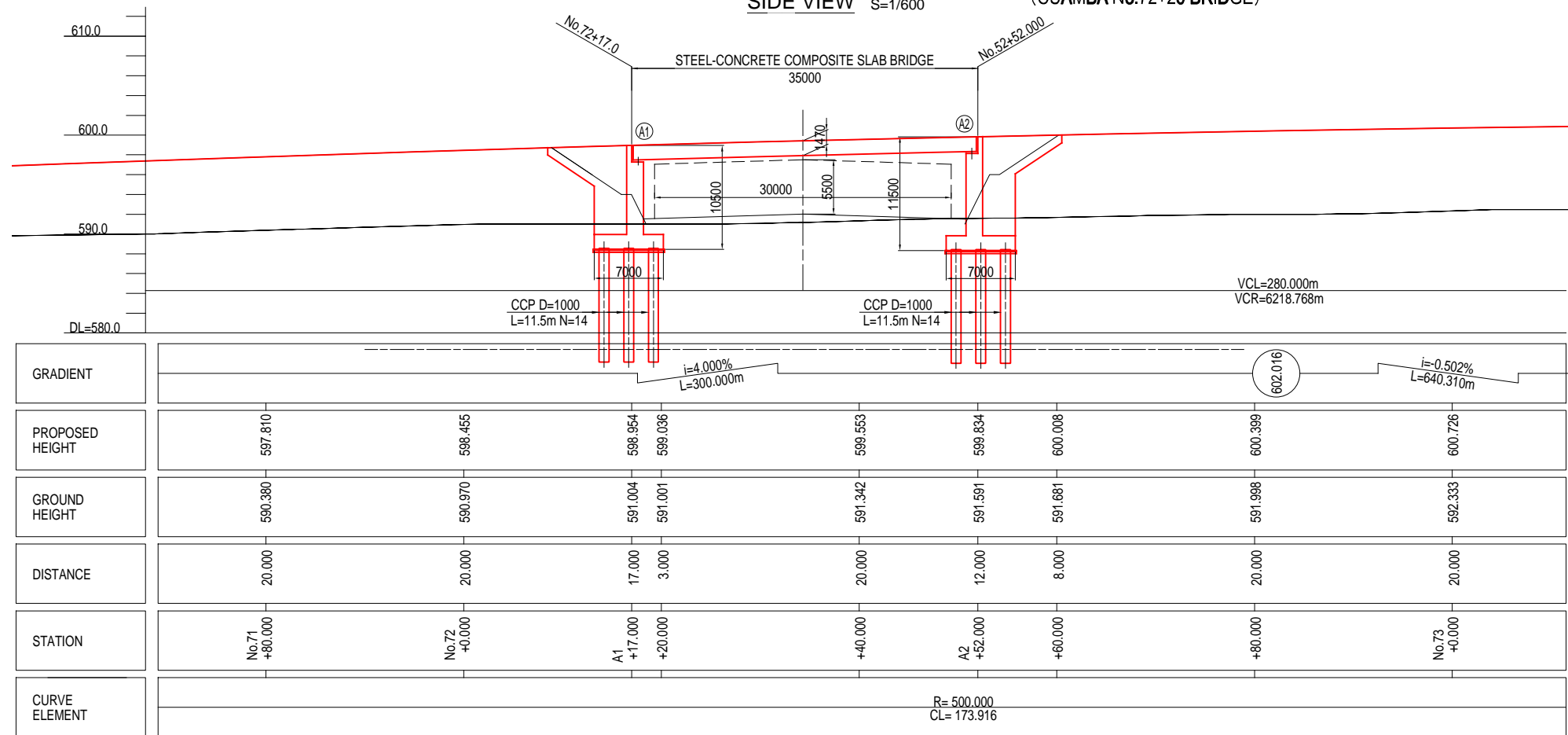
TOTAL BRIDGE LENGTH	90.000m
GIRDER LENGTH	29.850m+29.800m+29.850m
SPAN	29.050m+29.000m+29.050m
WIDTH	12.700m
ANGLE OF SKEW	90°00'00"
RADIUS OF CURVATURE	R=∞
LONGITUDINAL SLOPE	0.571%
COMPRESSIVE STRENGTH	Main Girder: ock=40N/mm ²
	Floor Slab :ock=30N/mm ²



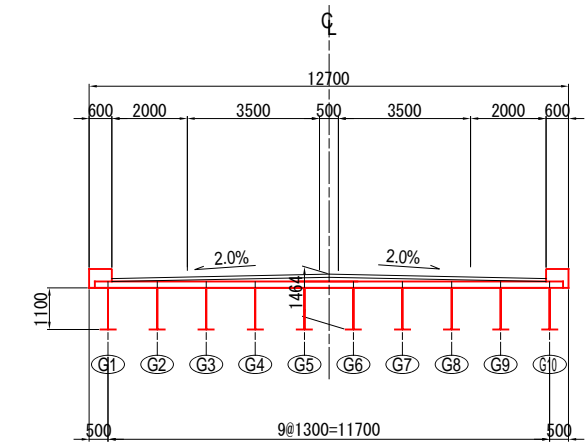
		PREPARED BY CHECKED BY APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project (Cuamba Bypass Road)	DRAWING TITLE: Completion Stage GENERAL VIEW (CUAMBA No.52+20 BRIDGE)
		NAME SIGNATURE DATE	SCALE SHEET NO. DRAWING NO. REV. NO.	SCALE SHEET NO. DRAWING NO. REV. NO.

GENERAL VIEW (CUAMBA No.72+20 BRIDGE)

SIDE VIEW S=1/600



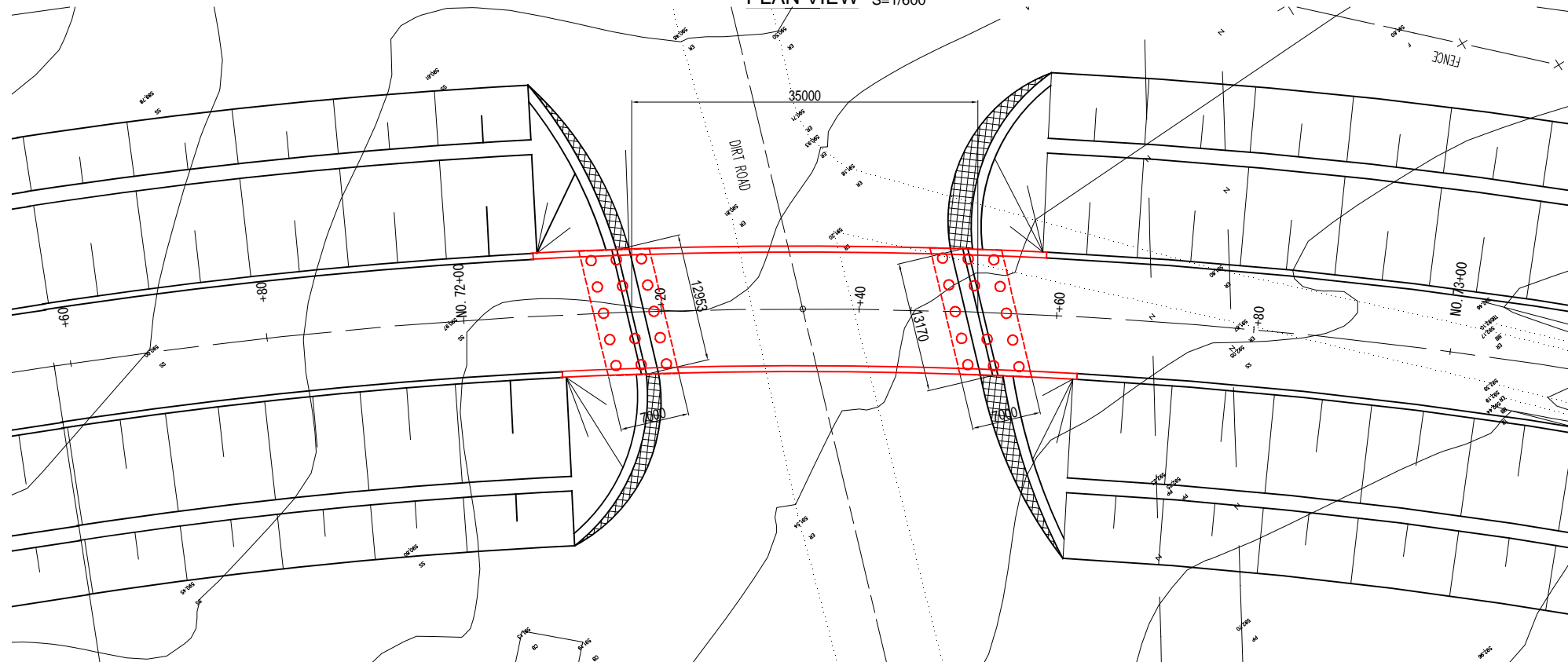
SUPERSTRUCTURE CROSS SECTION S=1/200



DESIGN CONDITION

TOTAL BRIDGE LENGTH	35.000m
GIRDER LENGTH	34.800m
SPAN	34.000m
WIDTH	12.700m
ANGLE OF SKEW	90°00'00"
RADIUS OF CURVATURE	R=500
LONGITUDINAL SLOPE	4.000%
COMPRESSIVE STRENGTH	Floor Slab : $\sigma_{ck}=36\text{N/mm}^2$

PLAN VIEW S=1/600



Japan International Cooperation Agency
 National Road Administration (ANE)

Oriental Consultants Global Co., Ltd.
 Eight-Japan Engineering Consultants Inc.
 Kokusai Kogyo Co., Ltd.

NAME	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE			

PROJECT TITLE:
**Preparatory Survey for Nacala Corridor
Road Network Upgrading Project
(Cuamba Bypass Road)**

DRAWING TITLE: Completion Stage			
GENERAL VIEW (CUAMBA No.72+20 BRIDGE)			
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		D-21	

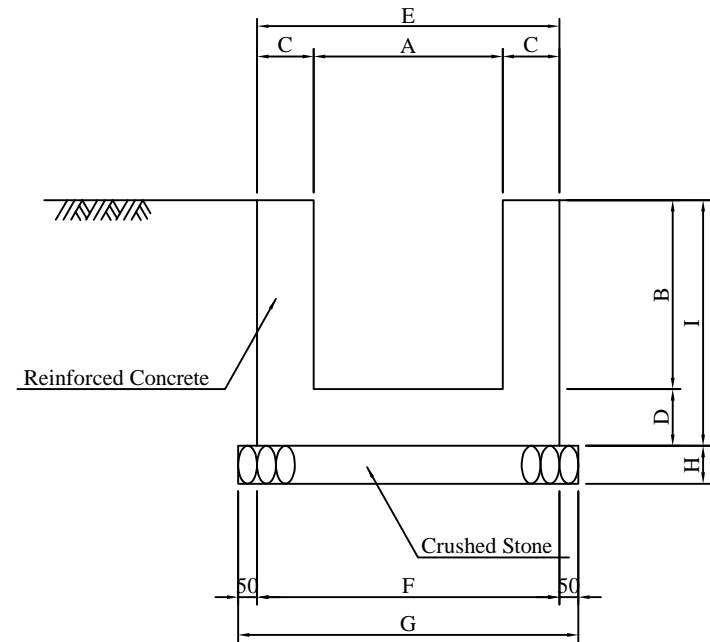
(E) ACCESSORY

DRAINAGE STRUCTURE(1)

SCALE A3 1:20

U Shaped Drain

500 x 500
600 x 600
800 x 800

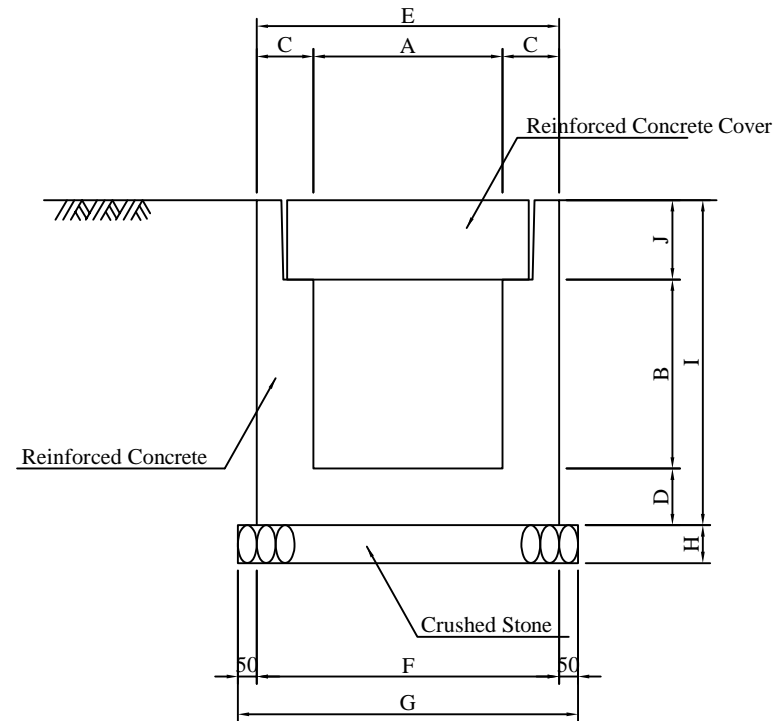


DIMENSION TABLE

TYPE	A	B	C	D	E	F	G	H	I
500 x 500	500	500	150	150	800	800	900	100	650
600 x 600	600	600	150	150	900	900	1000	100	750
800 x 800	800	800	150	150	1100	1100	1200	150	950

U Shaped Drain with Cover

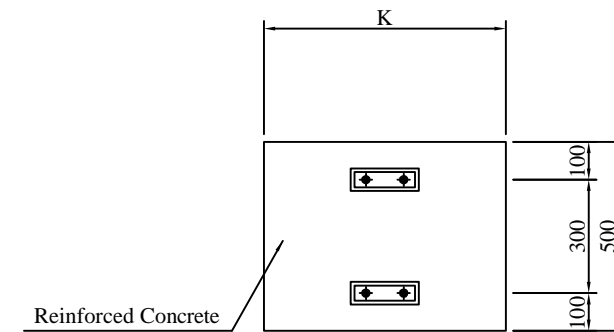
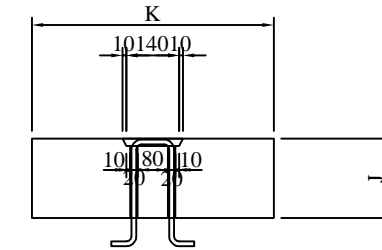
500 x 500
600 x 600
800 x 800



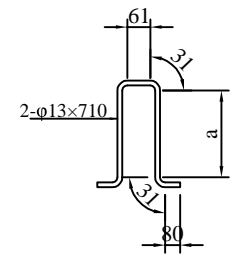
DIMENSION TABLE

TYPE	A	B	C	D	E	F	G	H	I	J	K	a
500 x 500	500	500	150	150	800	800	900	100	860	210	640	230
600 x 600	600	600	150	150	900	900	1000	100	980	230	740	250
800 x 800	800	800	150	150	1100	1100	1200	150	1210	260	940	280

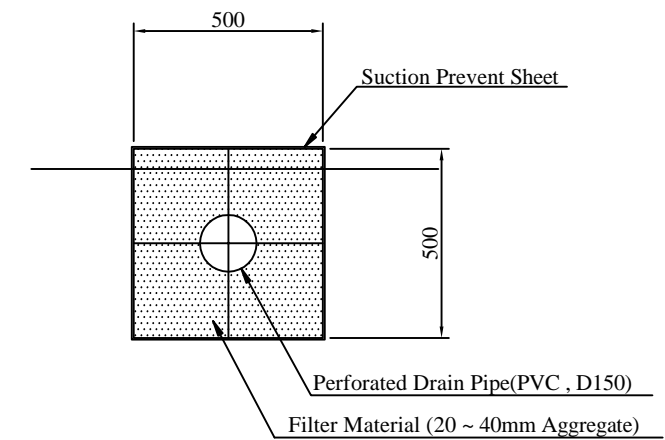
Cover



Handle



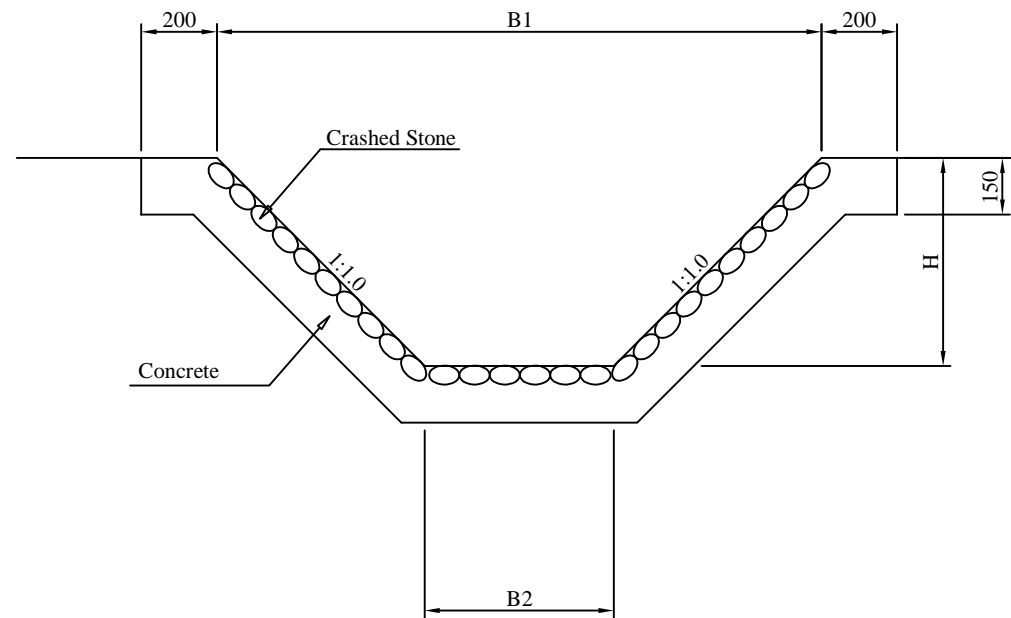
Subsurface Drain



Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY CHECKED BY APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project	DRAWING TITLE: DRAINAGE STRUCTURE(1)
	NAME SIGNATURE DATE	SCALE SHEET NO. DRAWING NO. REV. NO.	E-1	E-1
	DATE	E-1	E-1	

DRAINAGE STRUCTURE (2) SCALE A3 1:20

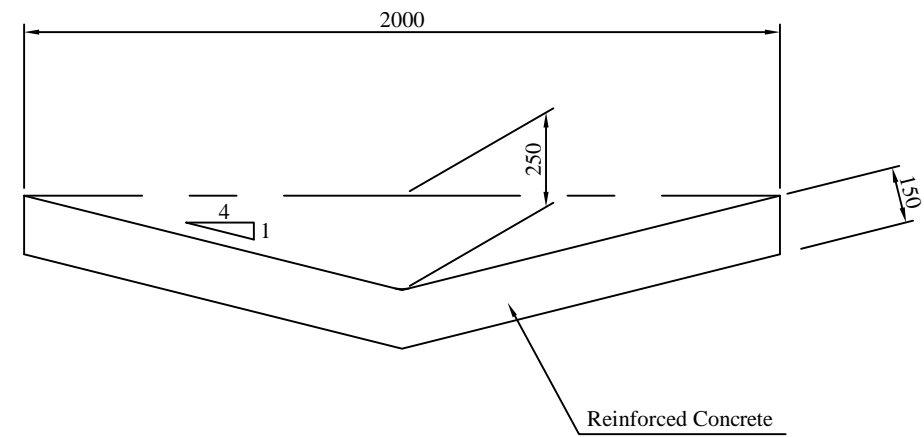
Stone Pitching Drain



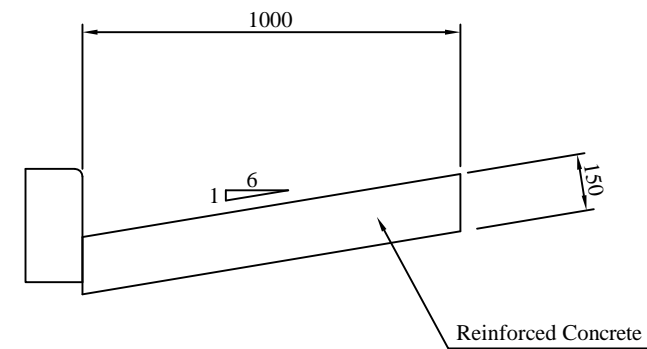
DIMENSION LIST

TYPE	STANDARD	B1	B2	H
TYPE-1	1500 x 500	1500	500	500
TYPE-2	2400 x 800	2400	800	800
TYPE-3	3000 x 1000	3000	1000	1000

Type 1 Drain
V Shaped Drain

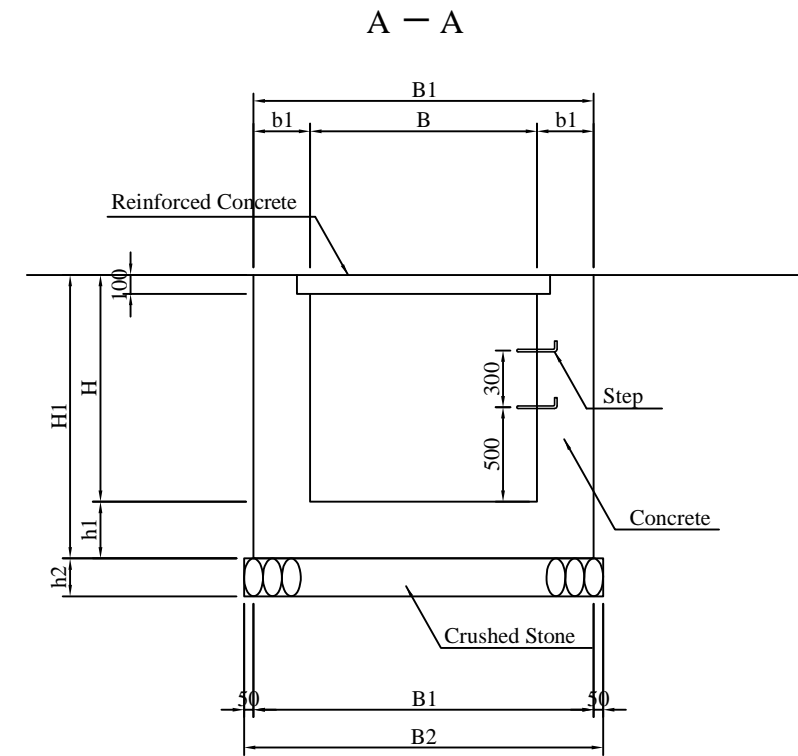
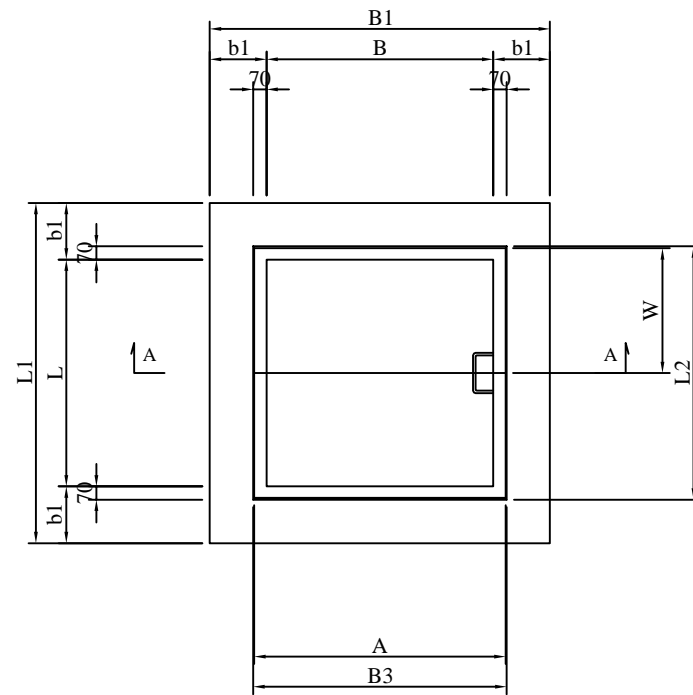


Type 2 Drain



DRAINAGE STRUCTURE (3) SCALE A3 1:40

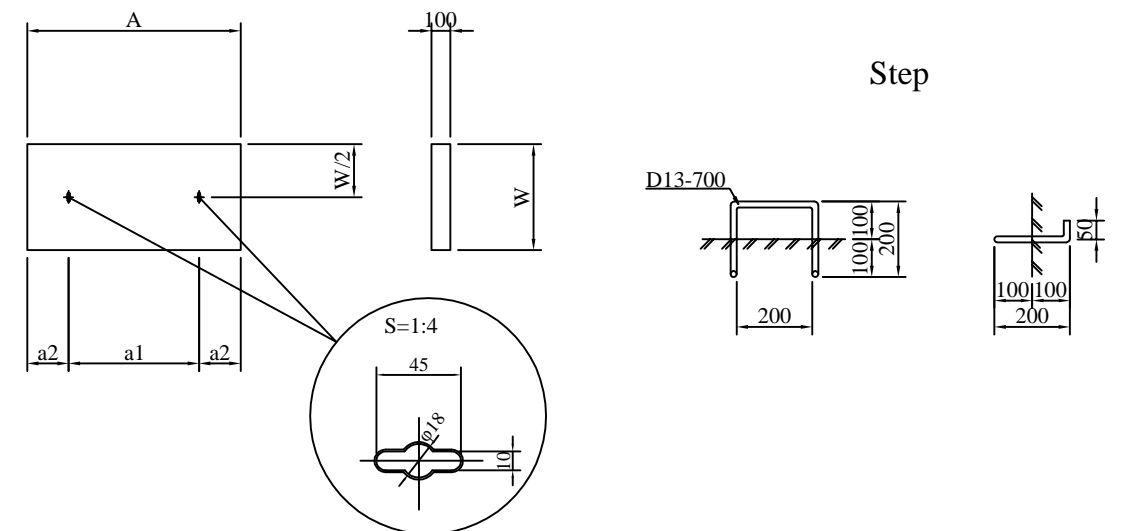
Catch Pit Type-E



DIMENSION TABLE

TYPE	B	L	H	B1	b1	B2	B3	L1	L2	H1	h1	h2	A	W	a1	a2
500 x 500 x 700	500	500	700	800	150	900	640	800	640	850	150	150	630	310	410	110
600 x 600 x 800	600	600	800	900	150	1000	740	900	740	950	150	150	730	360	510	110
700 x 700 x 900	700	700	900	1000	150	1100	840	1000	840	1050	150	150	830	410	390	220
800 x 800 x 1000	800	800	1000	1100	150	1200	940	1100	940	1150	150	150	930	460	490	220
900 x 900 x 1300	900	900	1300	1300	200	1400	1040	1300	1040	1500	200	200	1030	510	590	220

Cover A x W



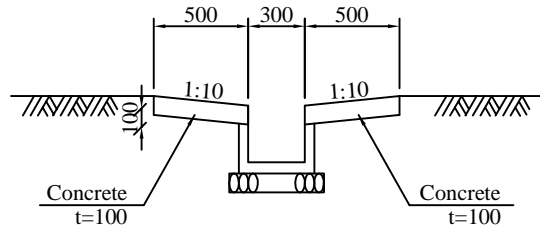
DRAINAGE STRUCTURE (4)

Vertical Drain Inlet SCALE A3 1:25

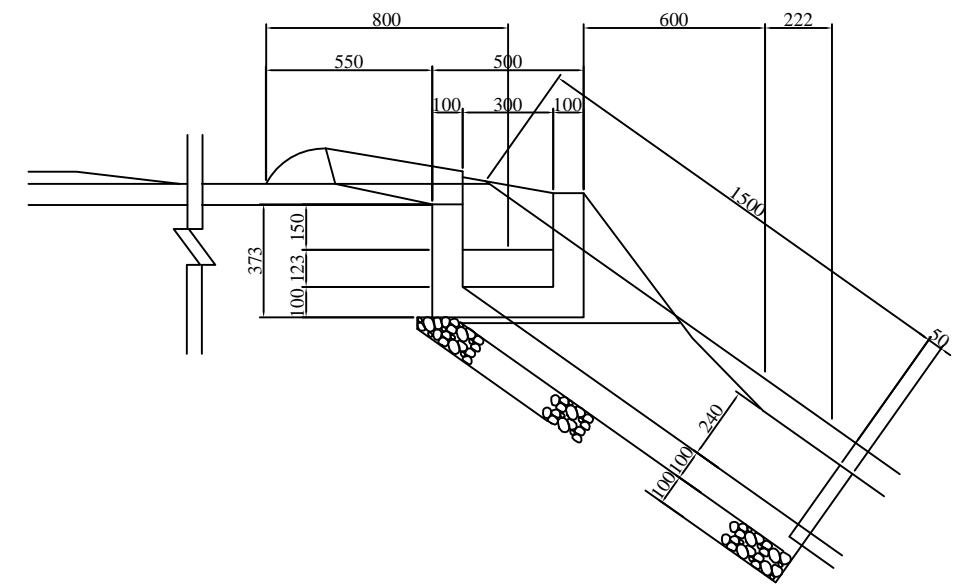
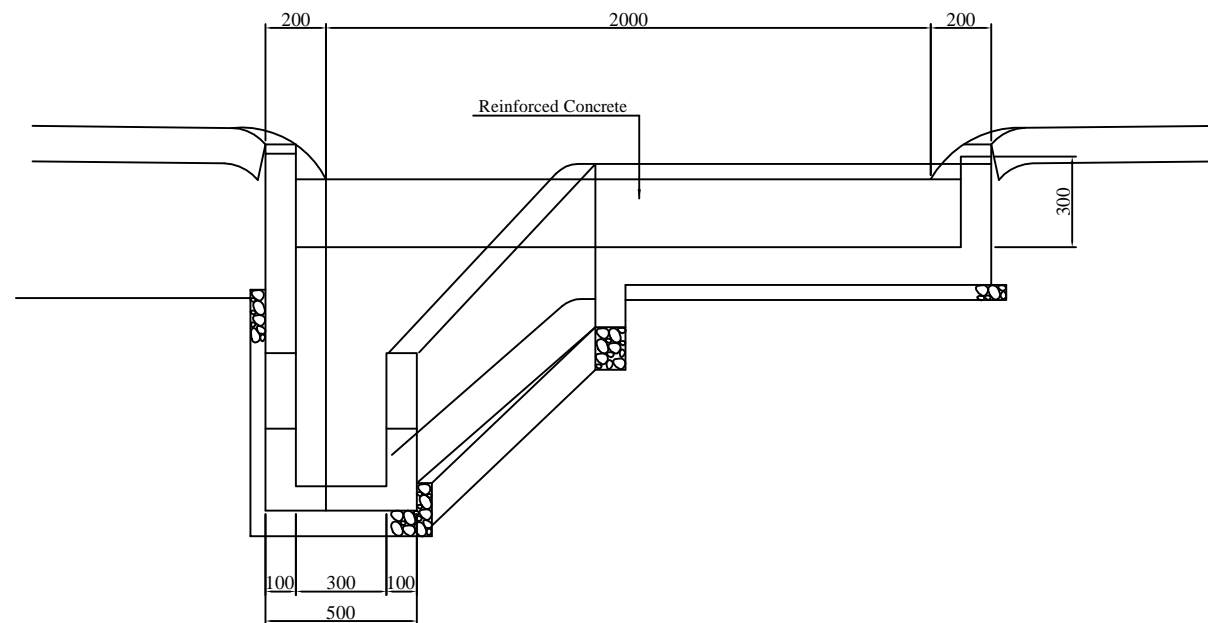
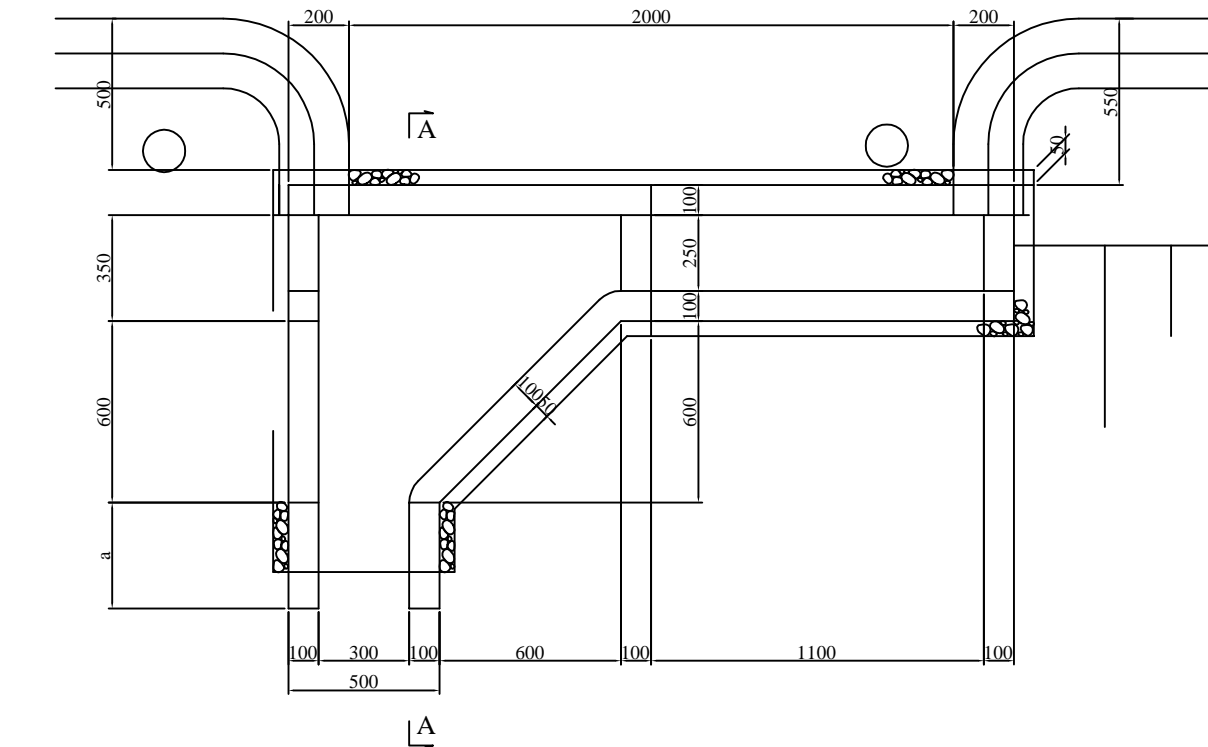
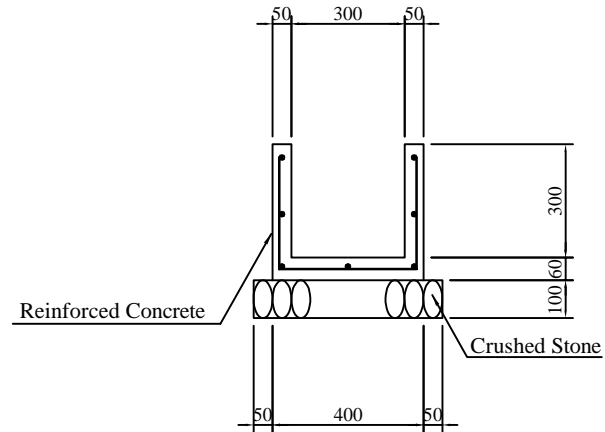
A - A

Vertical Drain

SCALE A3 1:40



SCALE A3 1:20



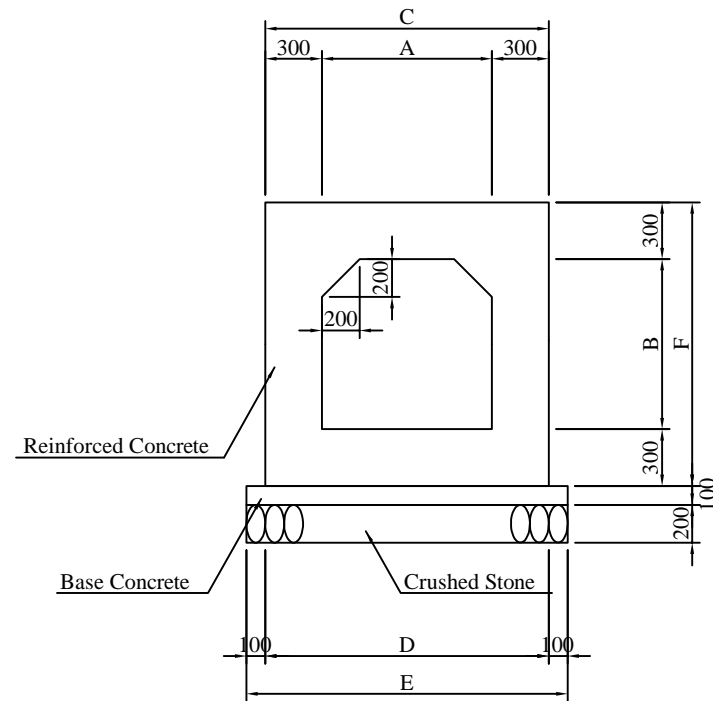
Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd.	PREPARED BY CHECKED BY APPROVED BY	PROJECT TITLE: <b style="text-align: center;">Preparatory Survey for Nacala Corridor Road Network Upgrading Project			DRAWING TITLE: DRAINAGE STRUCTURE (4)				
	Eight-Japan Engineering Consultants Inc.					NAME	SCALE	SHEET NO.	DRAWING NO.	REV. NO.
	Kokusai Kogyo Co., Ltd.					SIGNATURE	DATE	E-4		

DRAINAGE STRUCTURE (5)

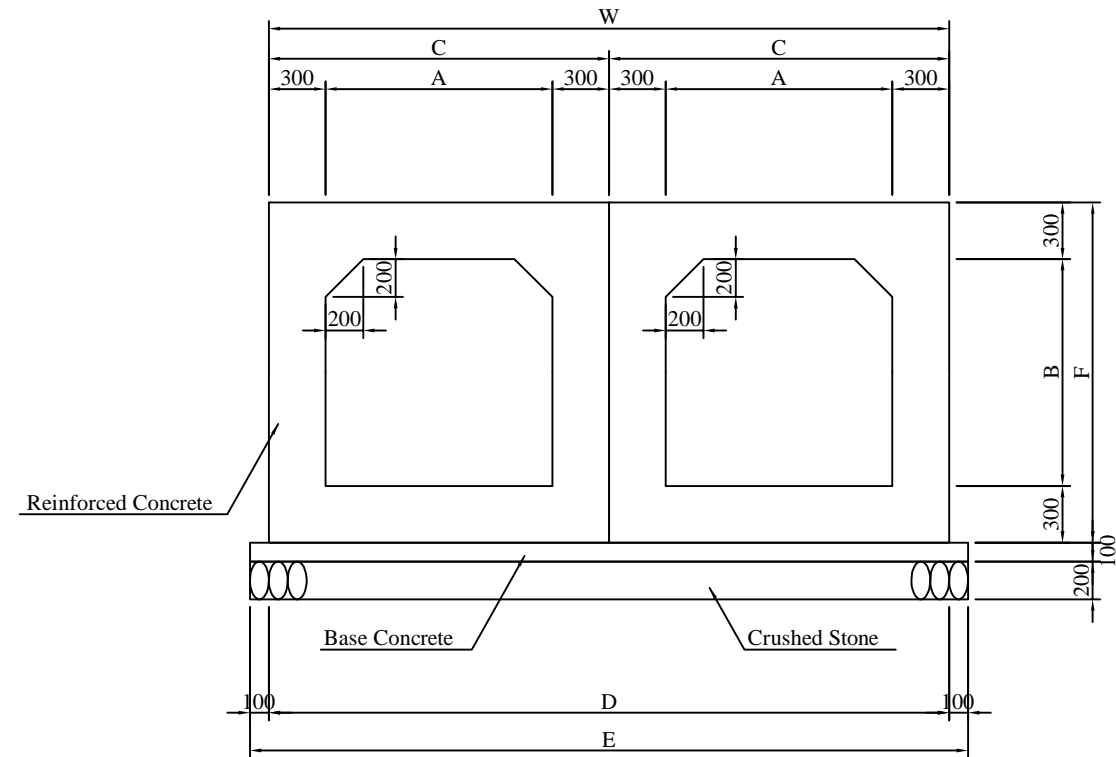
SCALE A3 1:40

Box Culvert

1 Cell Type



2 Cell Type



DIMENSION TABLE, 1 Cell Type

TYPE	A	B	C	D	E	F
900 x 900	900	900	1500	1500	1700	1500
1200 x 1200	1200	1200	1800	1800	2000	1800
1500 x 1500	1500	1500	2100	2100	2300	2100

DIMENSION TABLE, 2 Cell Type

TYPE	A	B	C	W	D	E	F
900 x 900	900	900	1500	3000	3000	3200	1500
1200 x 1200	1200	1200	1800	3600	3600	3800	1800
1500 x 1500	1500	1500	2100	4200	4200	4400	2100



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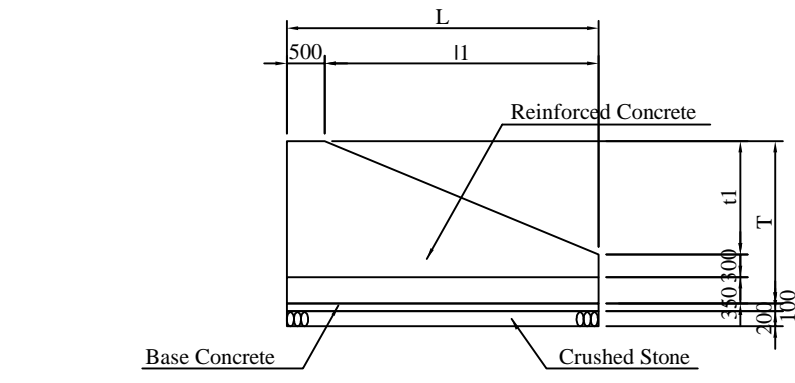
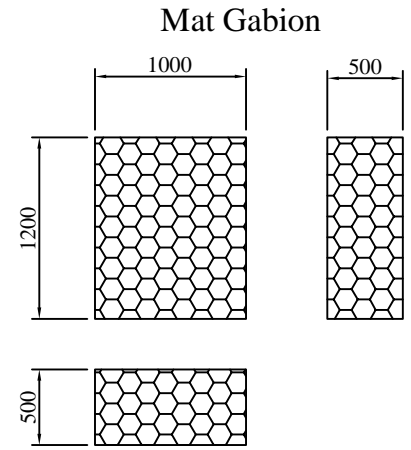
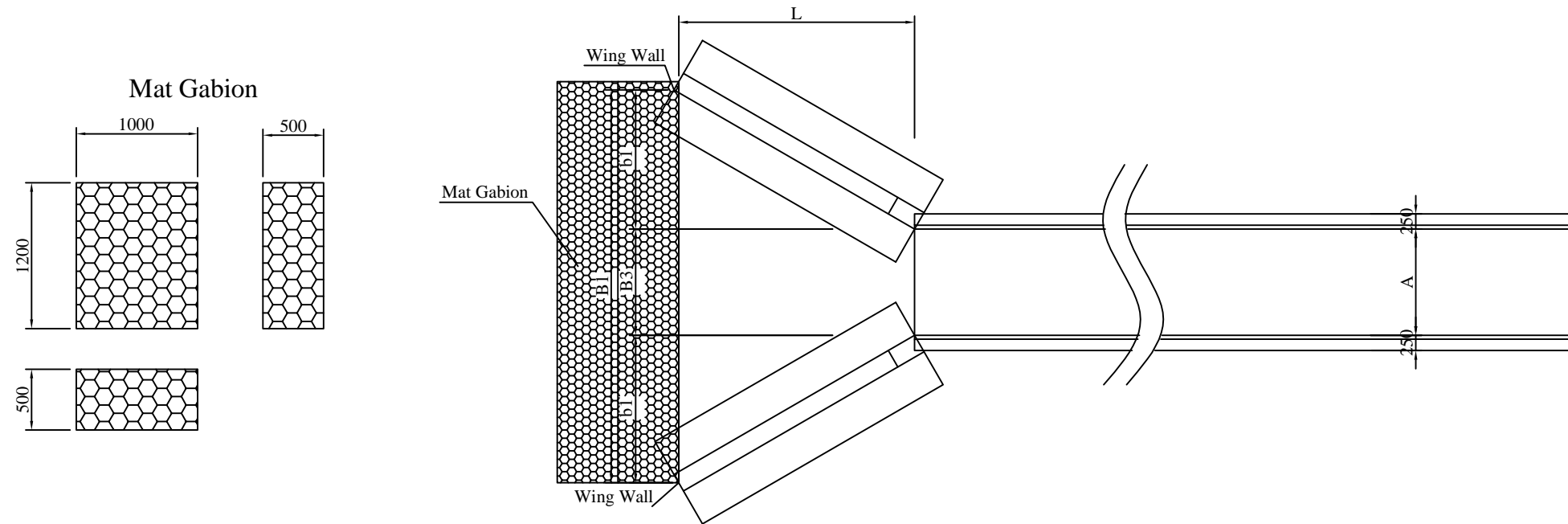
DRAWING TITLE:

DRAINAGE STRUCTURE (5)

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		E-5	

DRAINAGE STRUCTURE (6) SCALE A3 1:100

Box Culvert Inlet / Outlet

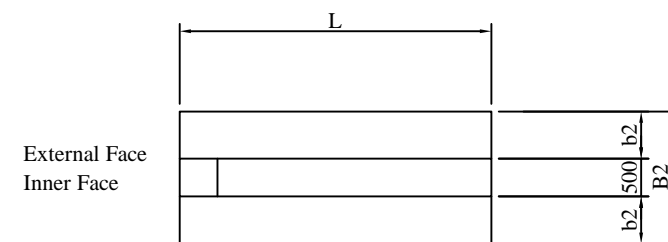


DIMENSION TABLE, 1 Cell Type

TYPE	A	B	T	t1	L	l1	B1	B2	B3	b1	b2
900 x 900	900	900	1850	1200	3500	3000	4400	1500	900	1750	500
1200 x 1200	1200	1200	2150	1500	4250	3750	5450	1900	1200	2125	700
1500 x 1500	1500	1500	2450	1800	5000	4500	6500	2000	1500	2500	750

DIMENSION TABLE, 2 Cell Type

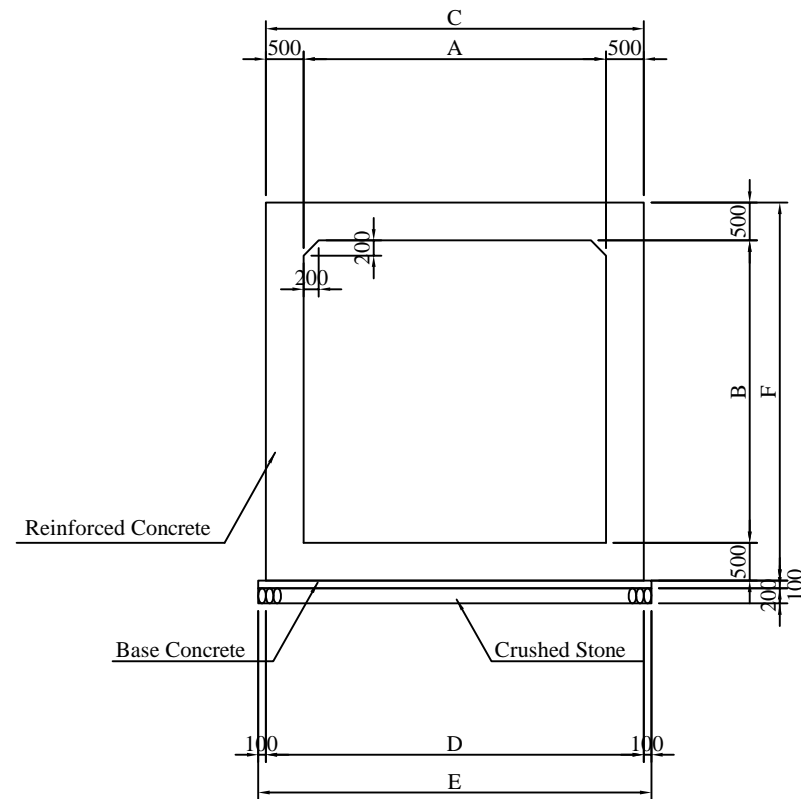
TYPE	A	B	T	t1	L	l1	B1	B2	B3	b1	b2
900 x 900	900	900	1850	1200	3500	3000	5900	1500	2400	1750	500
1200 x 1200	1200	1200	2150	1500	4250	3750	7250	1900	3000	2125	700
1500 x 1500	1500	1500	2450	1800	5000	4500	8600	2000	3300	2500	750



DRAINAGE STRUCTURE (7) SCALE A3 1:100

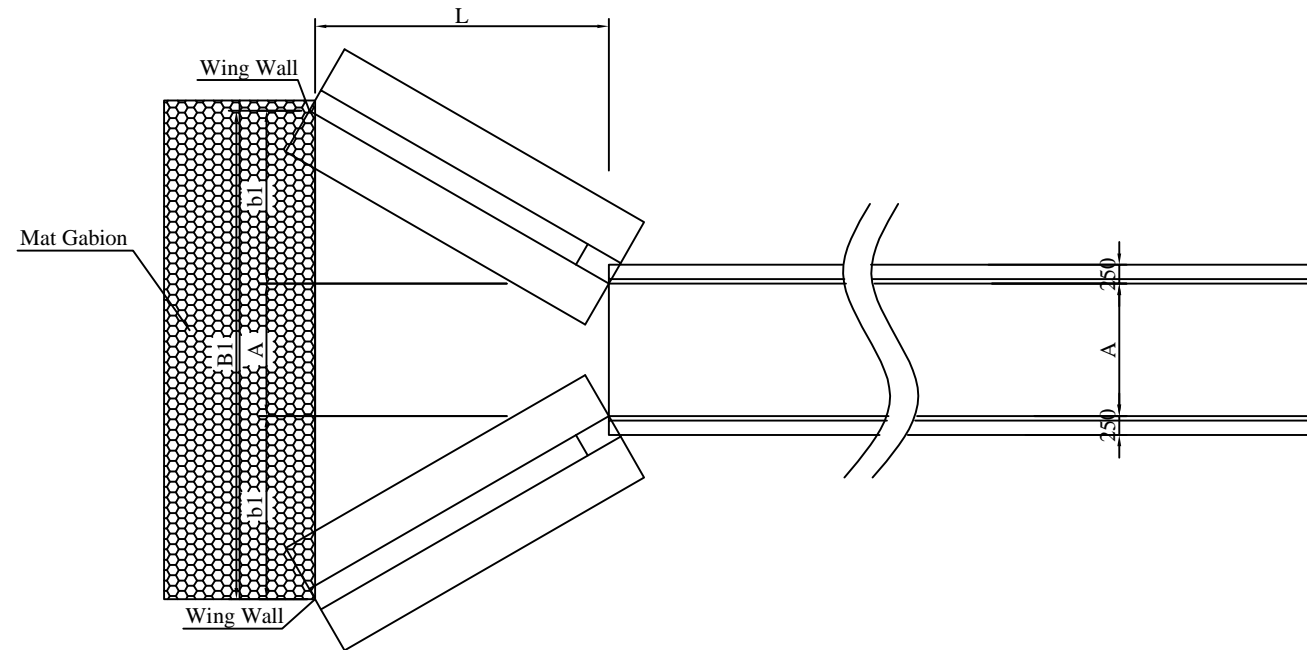
Box Culvert Inlet / Outlet

Box Culvert

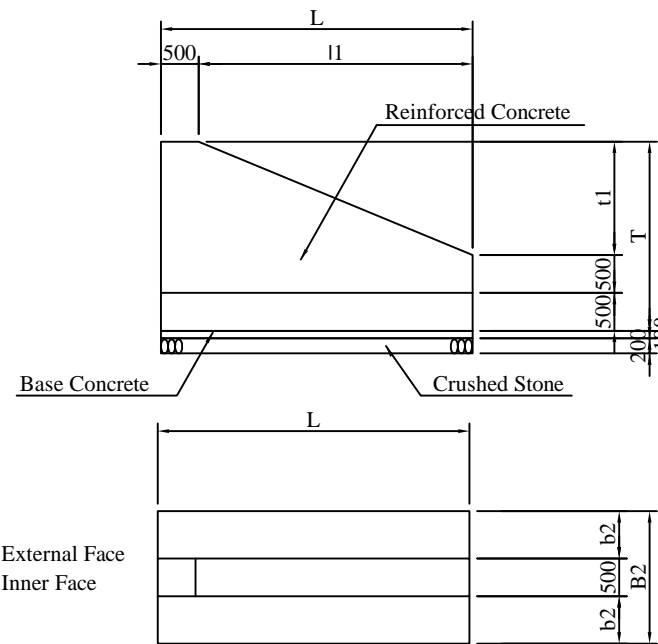
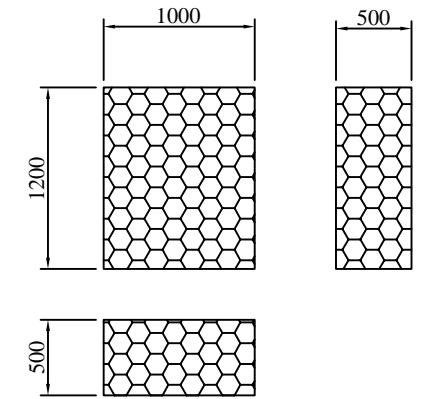


DIMENSION TABLE

TYPE	A	B	C	D	E	F
2000 x 2000	2000	2000	3000	3000	3200	3000
2500 x 2500	2500	2500	3500	3500	3700	3500
3000 x 3000	3000	3000	4000	4000	4200	4000
3500 x 3500	3500	3500	4500	4500	4700	4500
4500 x 4500	4500	4500	5500	5500	5700	5500
6000 x 4500	6000	4500	7000	7000	7200	7000



Mat Gabion



DIMENSION TABLE

TYPE	A	B	T	t1	L	l1	B1	B2	b1	b2
2000 x 2000	2000	2000	3500	2500	6750	6250	8750	2500	3375	1000
2500 x 2500	2500	2500	4000	3000	8000	7500	10500	3000	4000	1250
3000 x 3000	3000	3000	4500	3500	9250	8750	12250	3500	4625	1500
3500 x 3500	3500	3500	5000	4000	10500	10000	14000	4000	5250	1750
4500 x 4500	4500	4500	6000	5000	13000	12500	15000	5000	5250	2250
6000 x 4500	6000	4500	7500	6500	16750	16250	15000	6500	4500	3000



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PROJECT TITLE:

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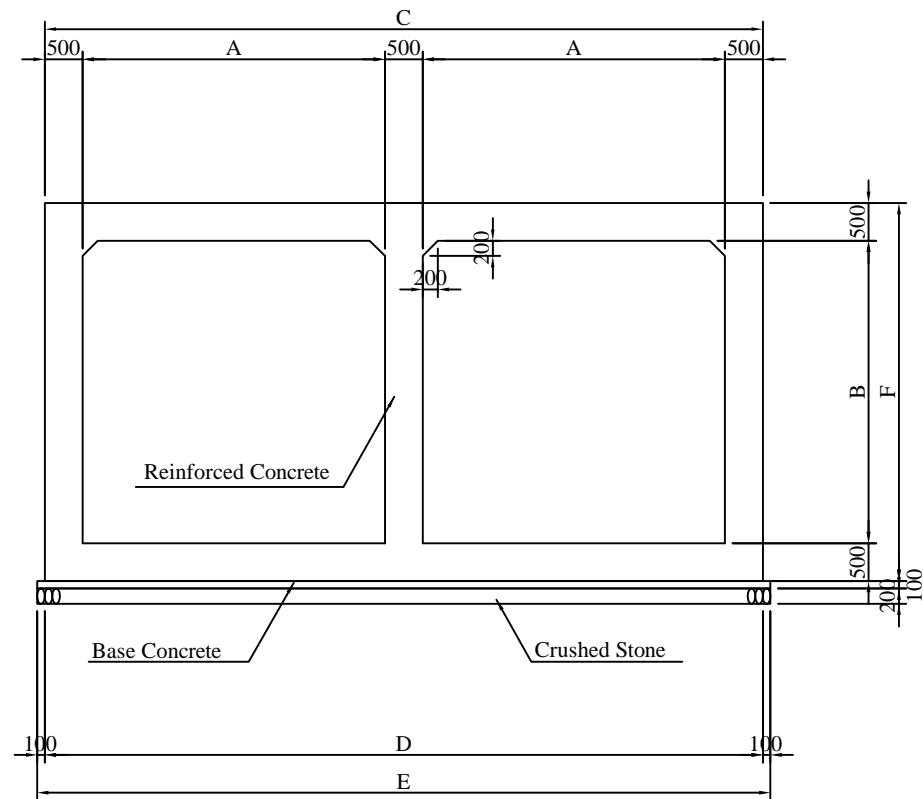
DRAWING TITLE:

DRAINAGE STRUCTURE (7)

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		E-7	

DRAINAGE STRUCTURE (8) SCALE A3 1:100

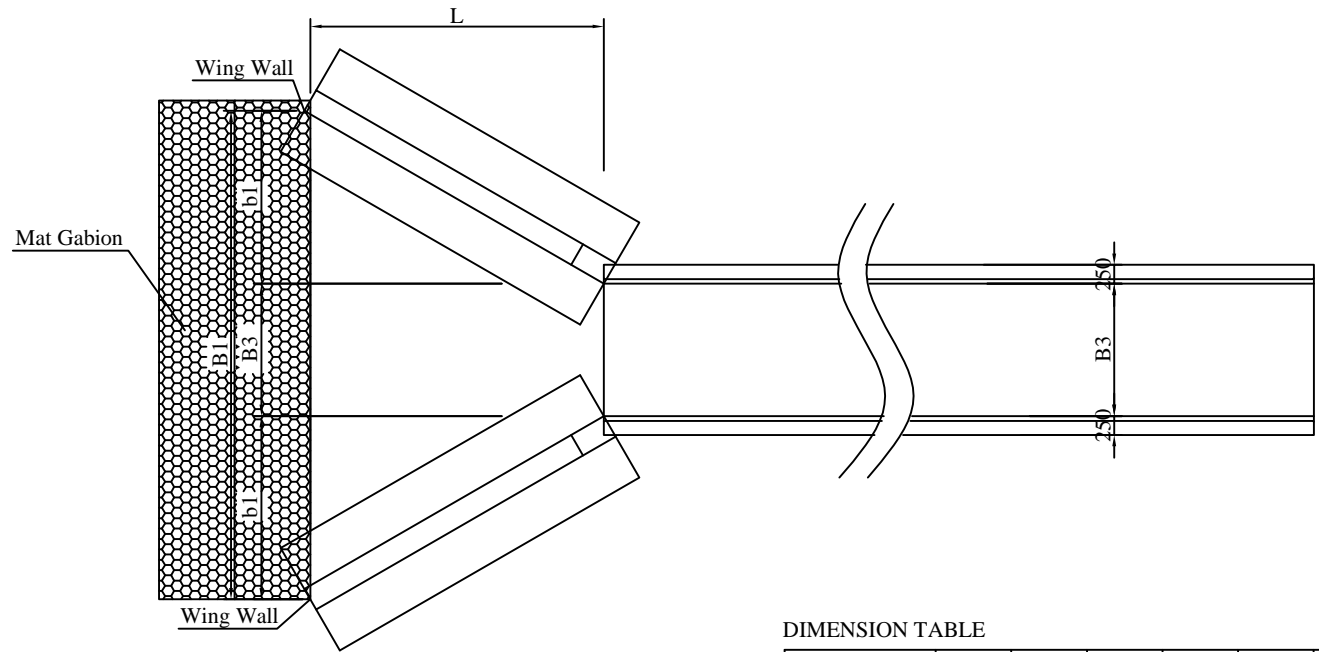
Box Culvert



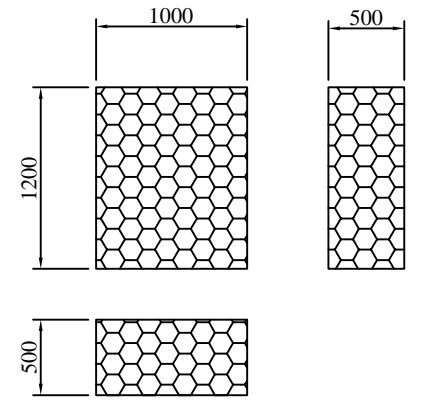
DIMENSION TABLE

TYPE	A	B	C	D	E	F
2000 x 2000	2000	2000	5500	5500	5700	3000
3000 x 3000	3000	3000	7500	7500	7700	4000

Box Culvert Inlet / Outlet

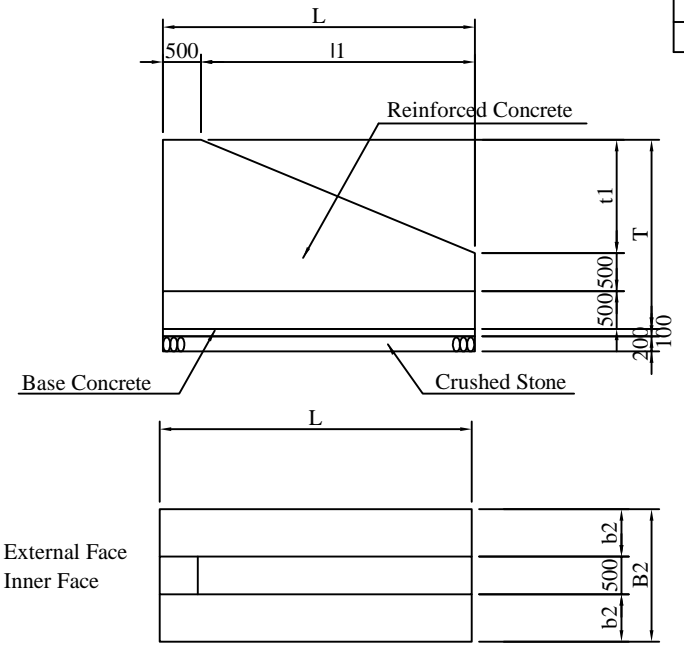


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DIMENSION TABLE

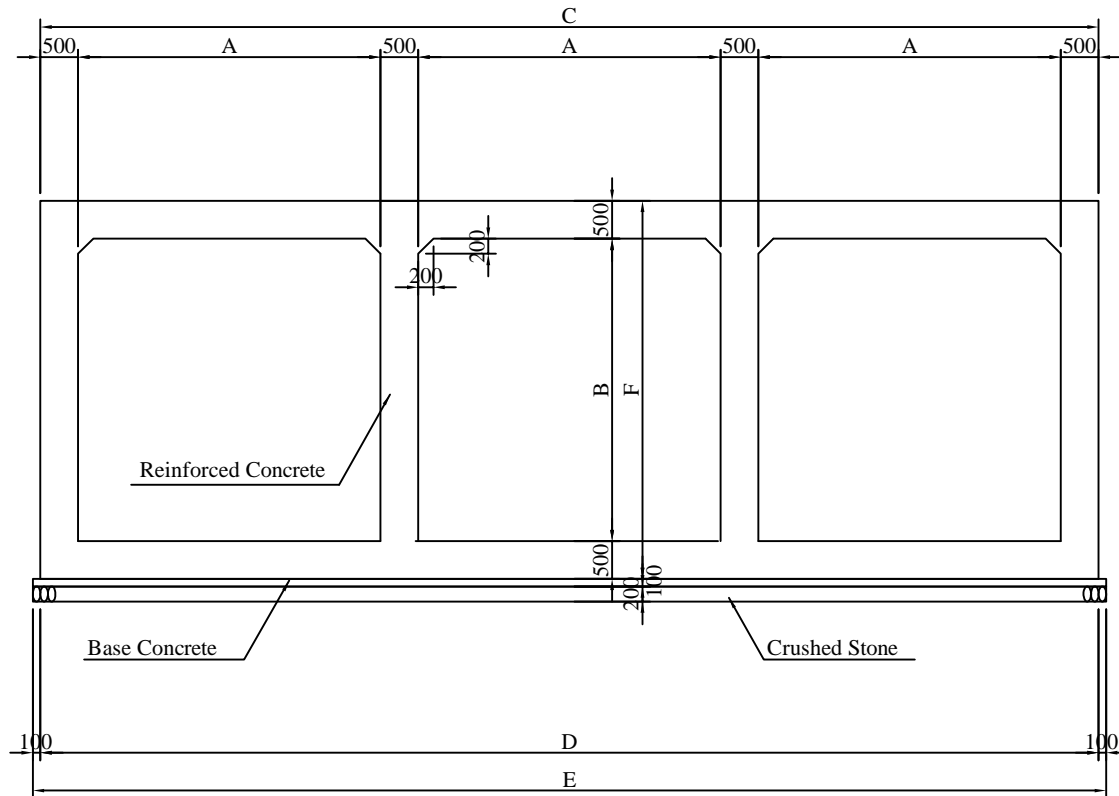
TYPE	A	B	T	t1	L	l1	B1	B2	B3	b1	b2
2000 x 2000	2000	2000	3500	2500	6750	6250	11250	2500	4500	3375	1000
3000 x 3000	3000	3000	4500	3500	9250	8750	15000	3500	6500	5750	1500



External Face
Inner Face

DRAINAGE STRUCTURE (9) SCALE A3 1:100

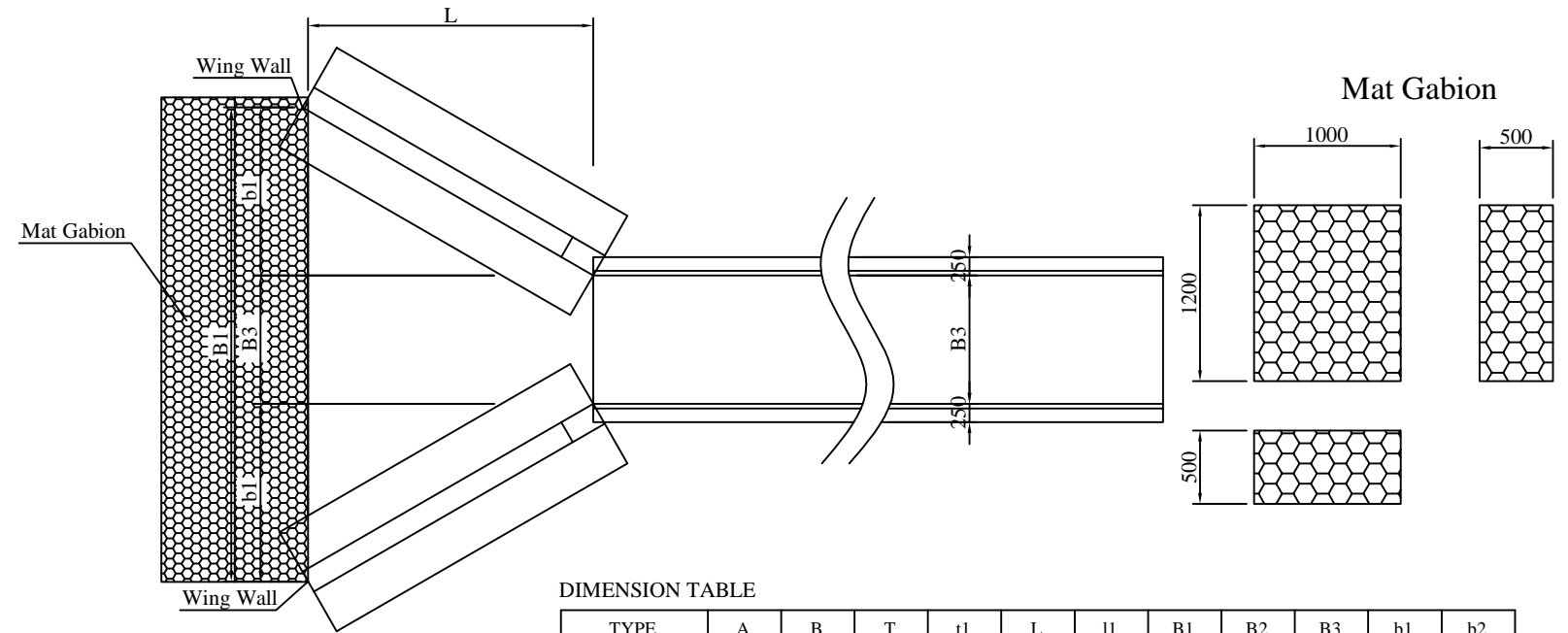
Box Culvert



DIMENSION TABLE

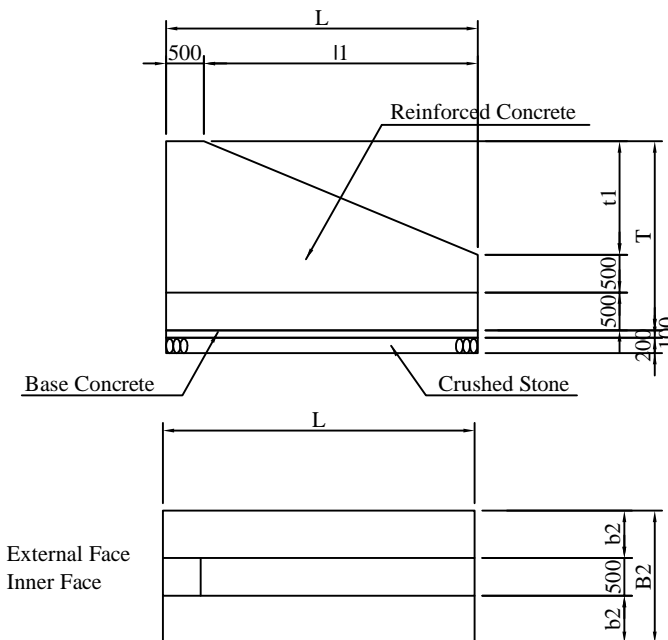
TYPE	A	B	C	D	E	F
2000 x 2000	2000	2000	8000	8000	8200	3000
3000 x 3000	3000	3000	11000	11000	11200	4000

Box Culvert Inlet / Outlet



DIMENSION TABLE

TYPE	A	B	T	t1	L	l1	B1	B2	B3	b1	b2
2000 x 2000	2000	2000	3500	2500	6750	6250	13750	2500	7000	3375	1000
3000 x 3000	3000	3000	4500	3500	9250	8750	15000	3500	10000	5750	1500



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DRAWING TITLE:
DRAINAGE STRUCTURE (9)

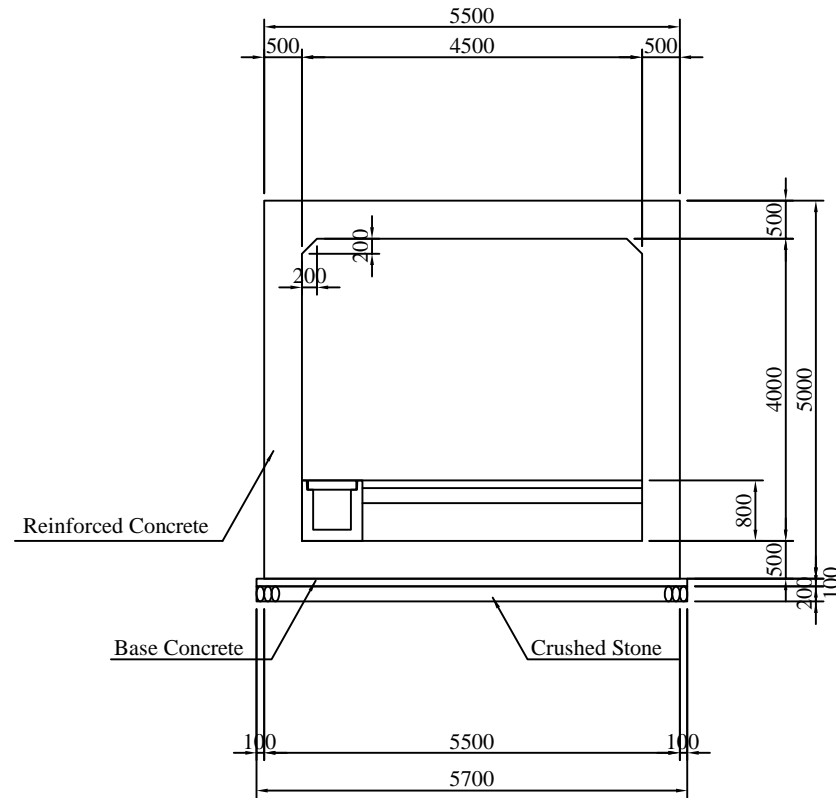
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		E-9	



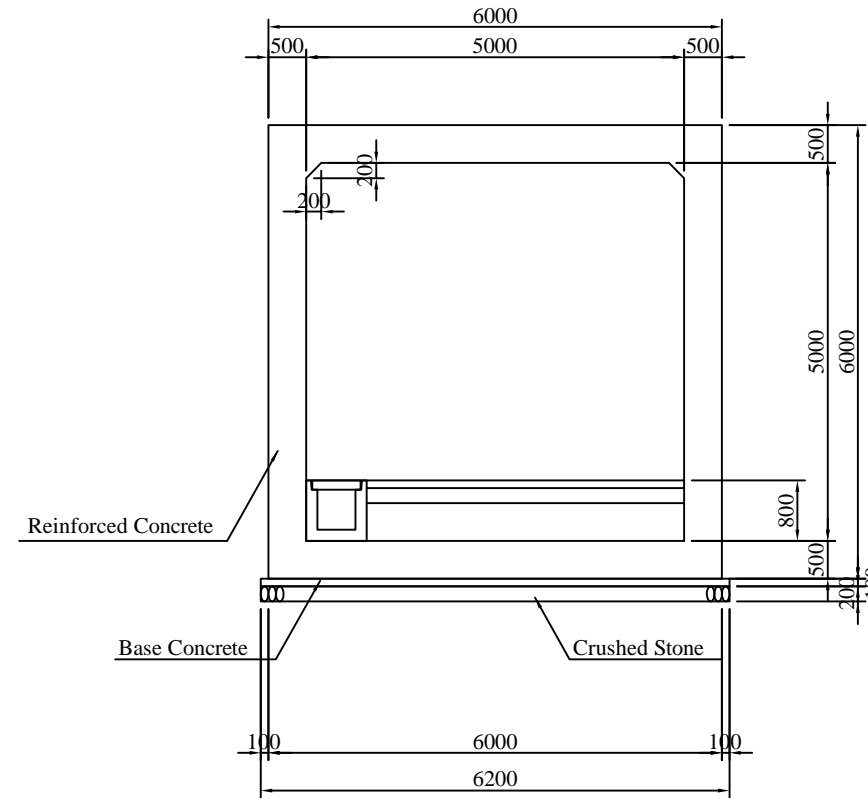
National Road Administration (ANE)

BOX CULVERT SCALE A3 1:100

Type - 1



Type - 2

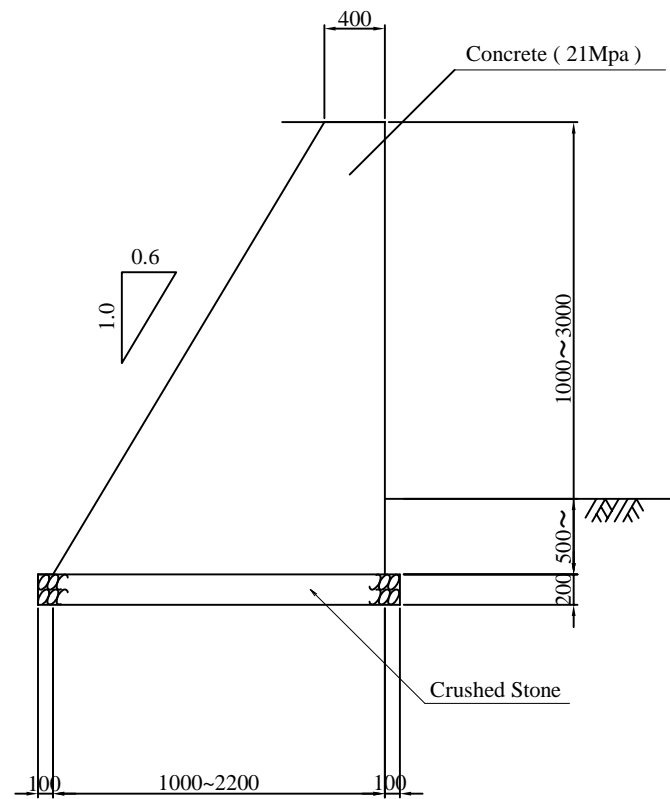


Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd.		PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project	DRAWING TITLE: BOX CULVERT				
	National Road Administration (ANE)	Eight-Japan Engineering Consultants Inc.	NAME					SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		Kokusai Kogyo Co., Ltd.	SIGNATURE							E-10	
		DATE									

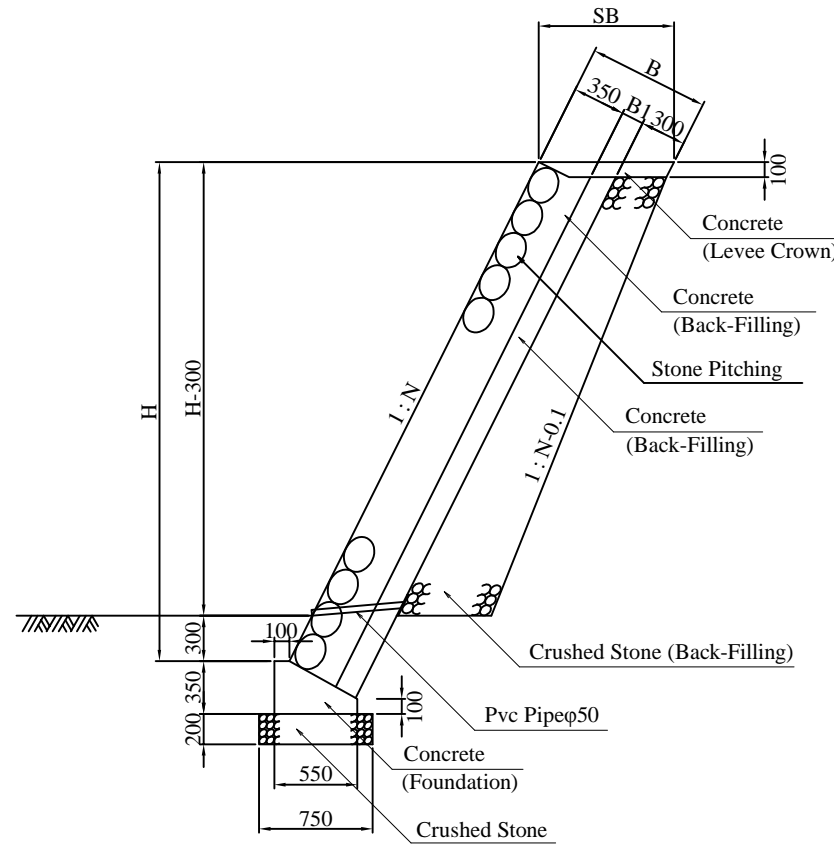
RETAINING WALL DETAILS

SCALE A3 1:50

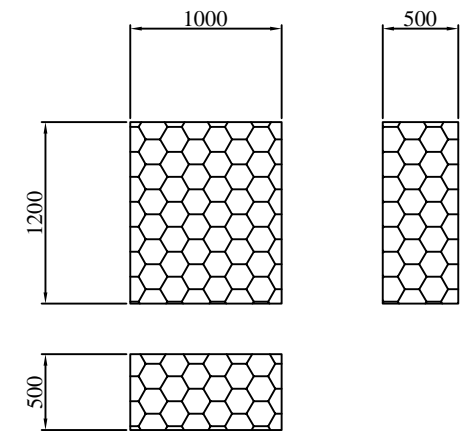
Gravity Type Retaining Wall



Concrete Block Retaining Wall



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DIMENSION LIST

H	B1	B	SB	N
0~1.5	100	750	783	0.3
1.5~3.0	100	750	808	0.4
3.0~5.0	150	800	894	0.5

mm

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		SIGNATURE					SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		DATE							E-11	

Guardrail Placing Details

Front Elevation

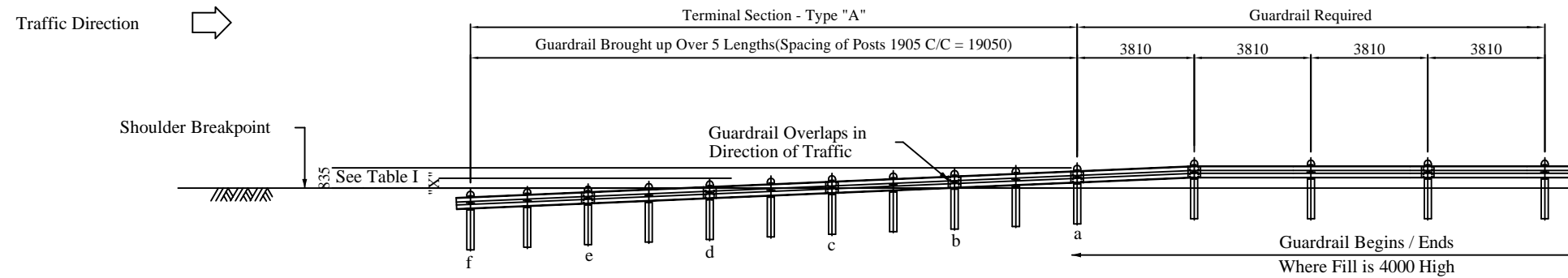
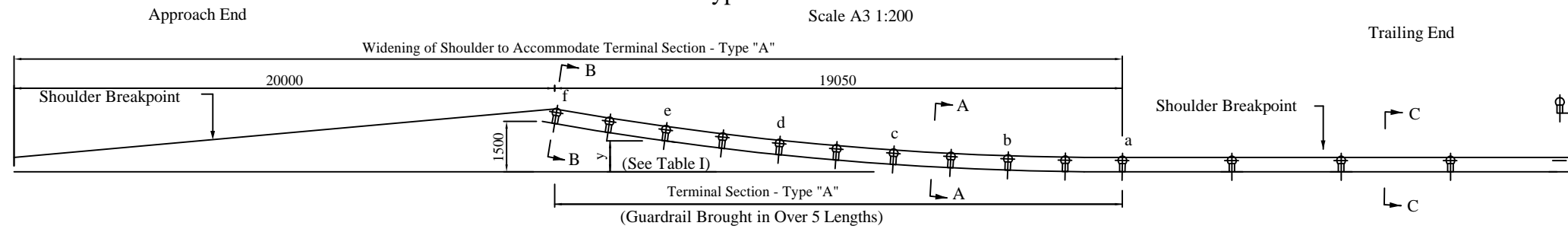


Table I		
Placing of Poles at Parabolic Terminal Sections		
	Horizontal Off - Sets for Parabolic Terminal Sections Y (mm)	Vertical Off-Sets for Parabolic Terminal Section (Measured from Top of Post) X (mm)
a	0	0
b	60	33
c	240	133
d	540	299
e	960	531
f	1500	835

Plan

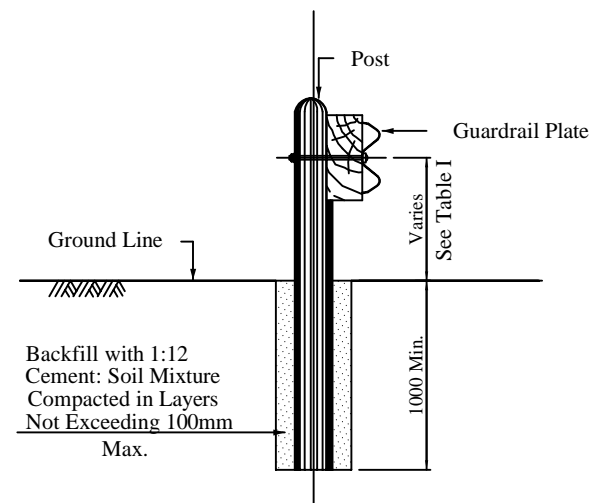
Typical Details of Terminal Sections

Scale A3 1:200

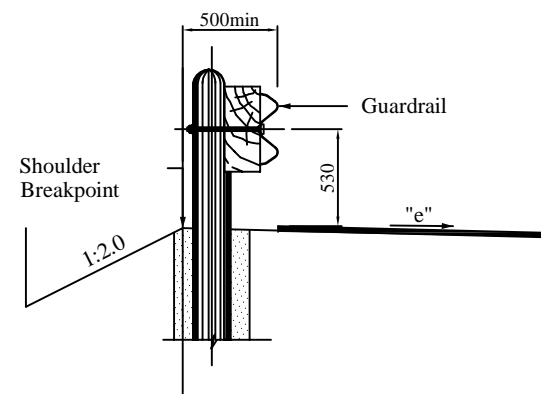


Without Concrete Side Drain

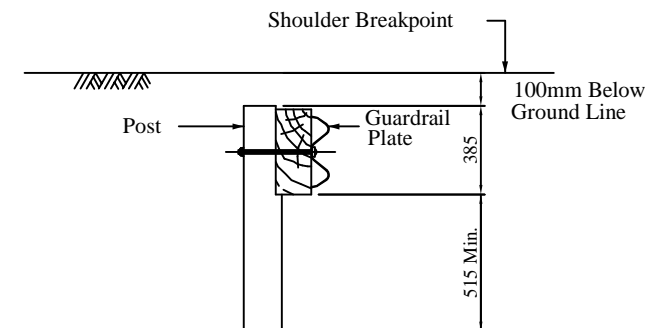
Section A-A
Scale A3 1:40



Section C-C
Scale A3 1:40

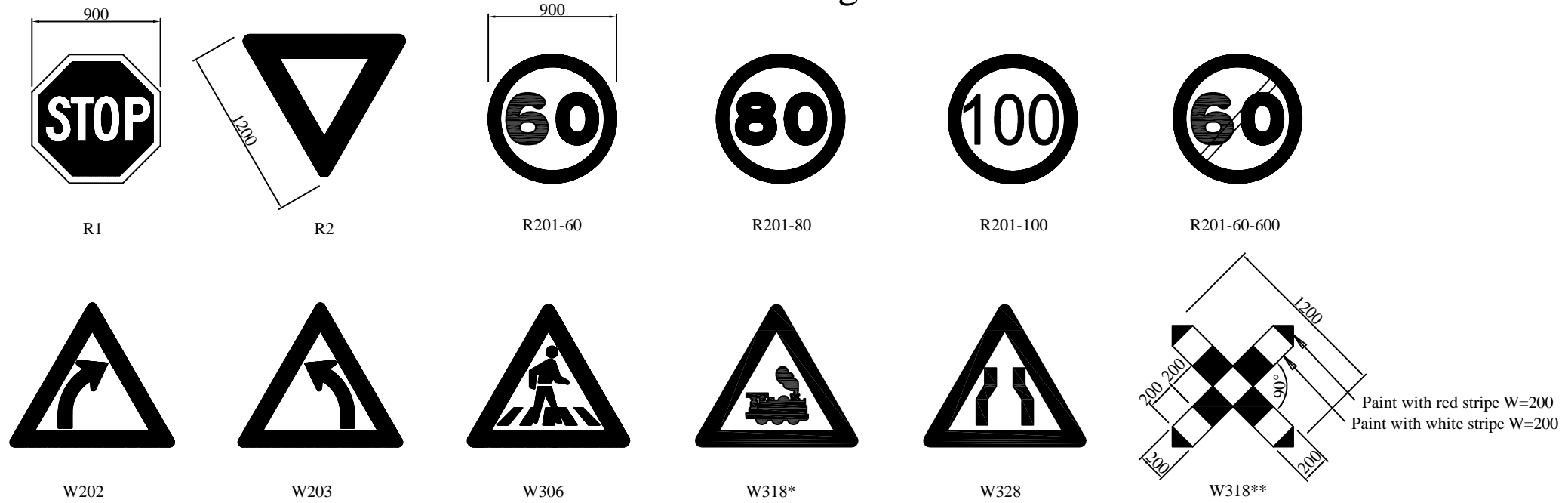


Section B-B
Scale A3 1:40

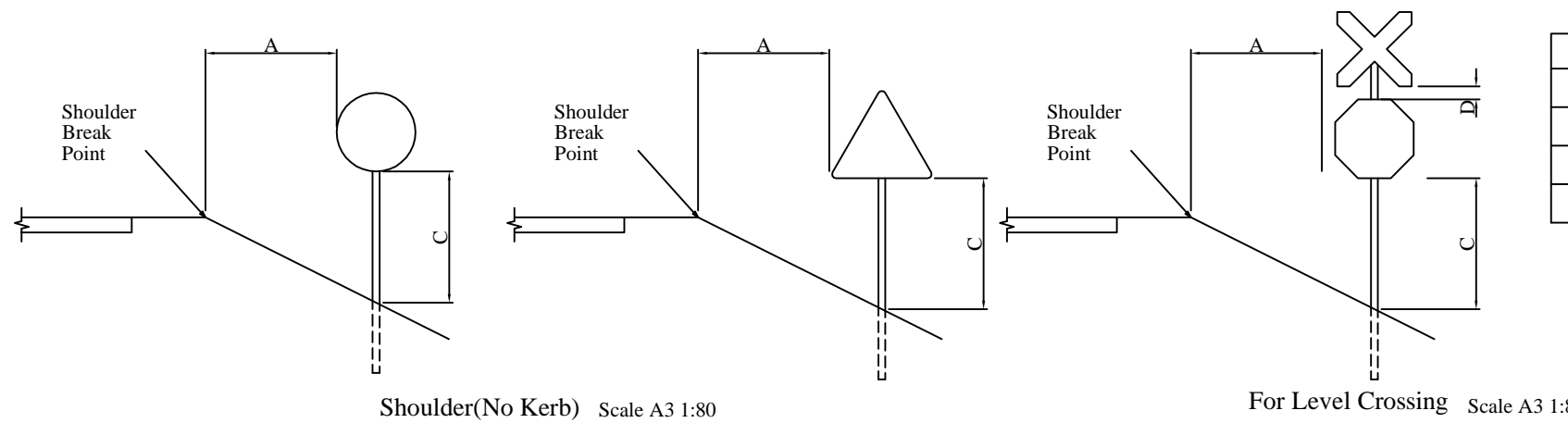


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		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
National Road Administration (ANE)		SIGNATURE						E-12	
		DATE							

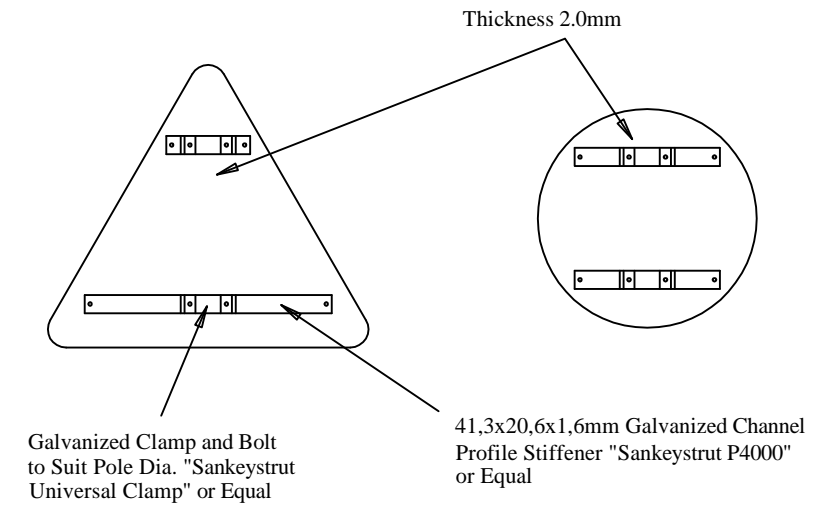
Traffic Signs



Regulatory And Warning Signs Scale A3 1:40

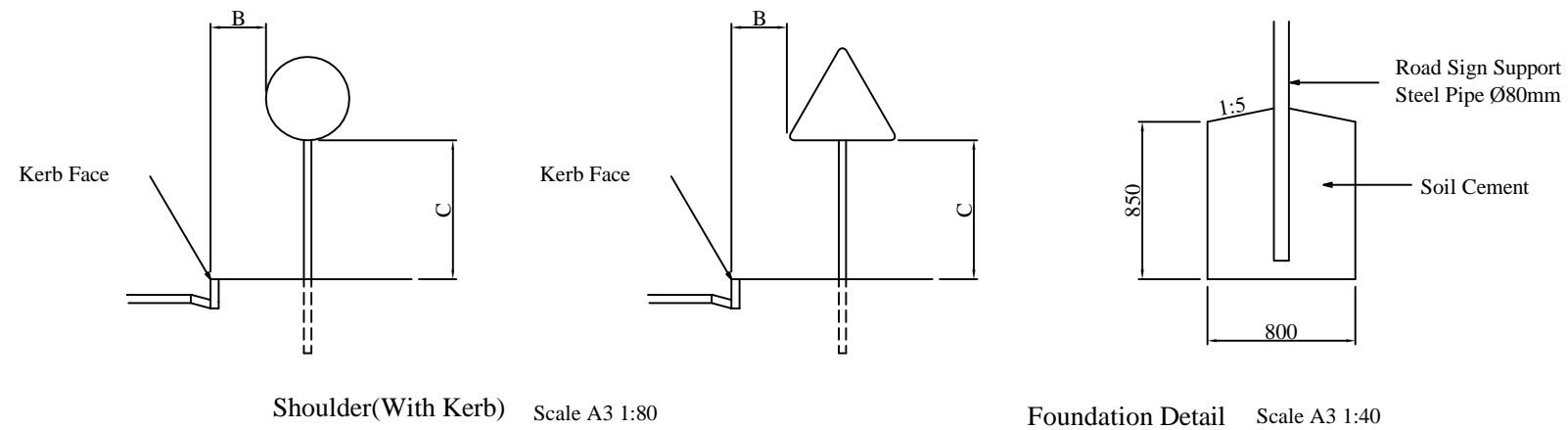


Positioning (mm)	
A	1500
B	600
C	1500
D	150



- Notes:
1. Details on This Drawing are Applicable to Road Signs Smaller than 1.5m Requiring a Single Support.
 2. All Steel Bolts and Nuts Shall Conform to Sabs 135 or Sabs 1143 and all Components Shall Have a Hot-Dip (Galvanized) Zink Coating as Specified in Sabs 763 for C1 Articles.
 3. W318* and W318** are not standardized in SATCC Standard.

Typical Fixing Detail

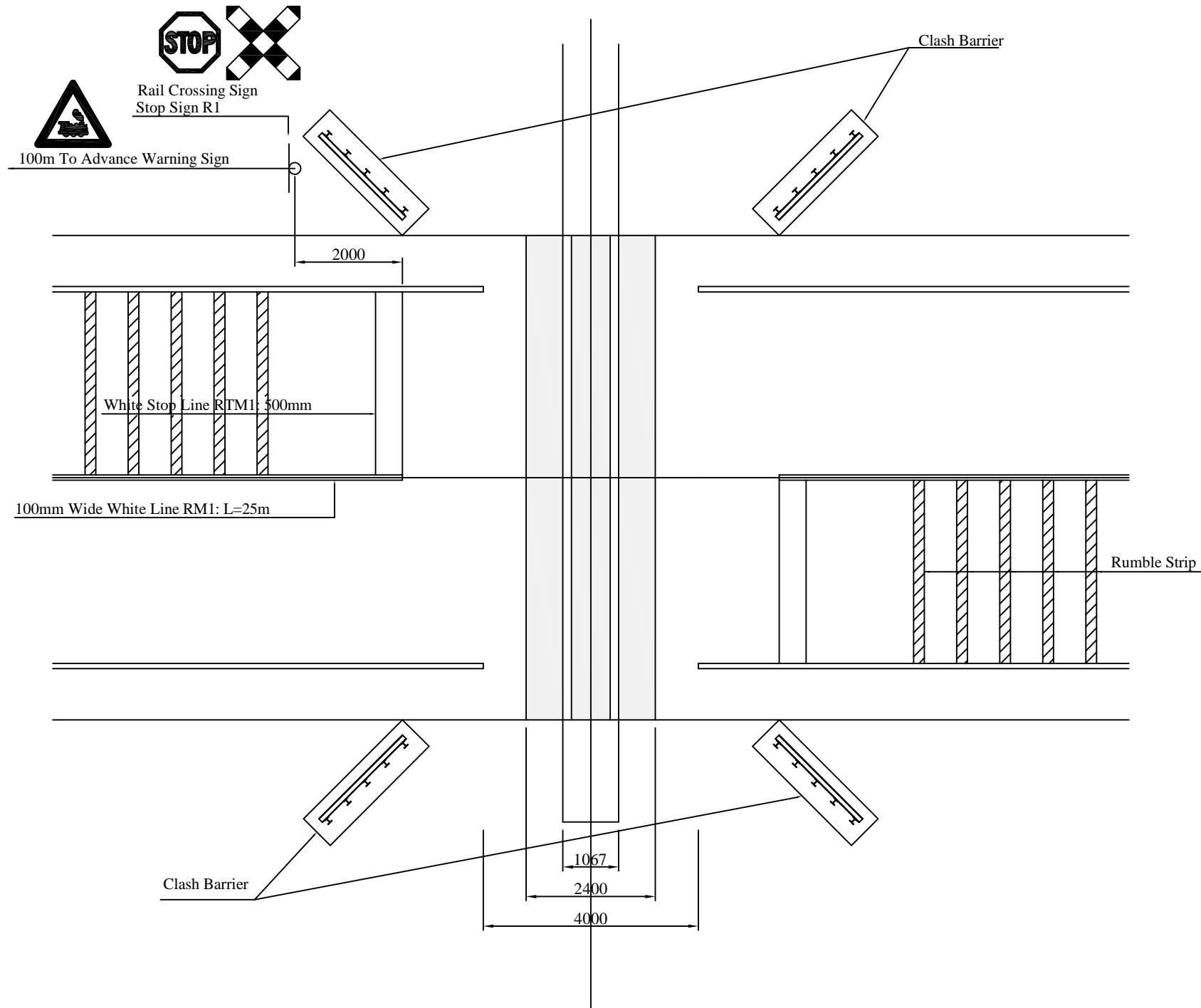


Shoulder(With Kerb) Scale A3 1:80

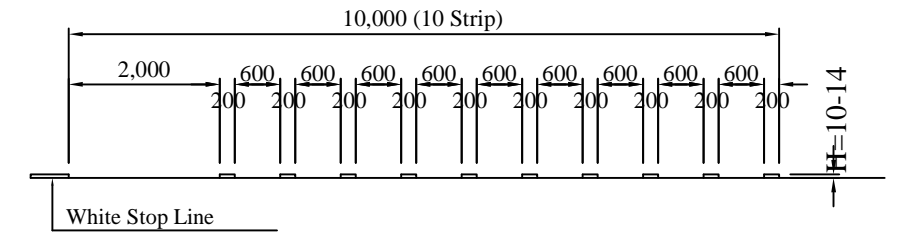
Foundation Detail Scale A3 1:40

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	National Road Administration (ANE) Kokusai Kogyo Co., Ltd.	NAME SIGNATURE DATE				Preparatory Survey for Nacala Corridor Road Network Upgrading Project			Traffic Signs	
						SCALE	SHEET NO.	DRAWING NO.	REV. NO.	

Level Crossing Details



General Layout of Level Crossing



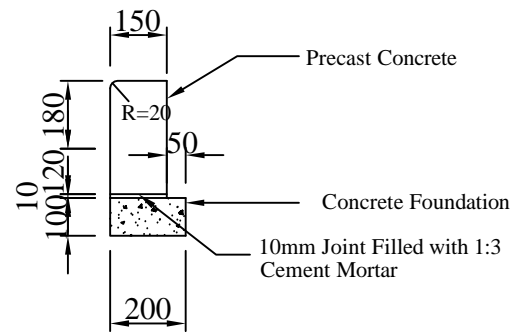
General Layout of Rumble Strip

Japan International Cooperation Agency National Road Administration (ANE)	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY CHECKED BY APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project		DRAWING TITLE: Level Crossing Details			
	NAME SIGNATURE DATE				SCALE SHEET NO. DRAWING NO. REV. NO.			

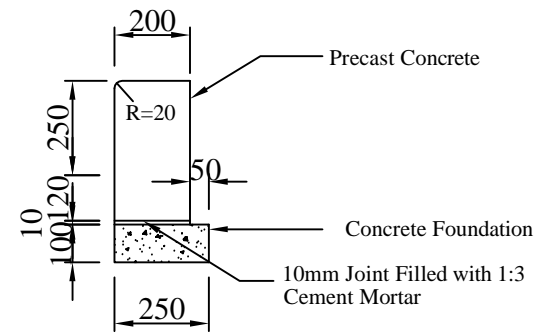
Ancillary Work (1)

Concrete Kerb Scale A3 1:20

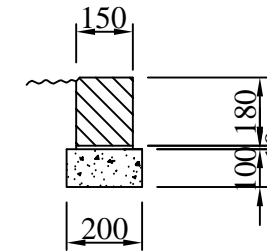
Shoulder Type



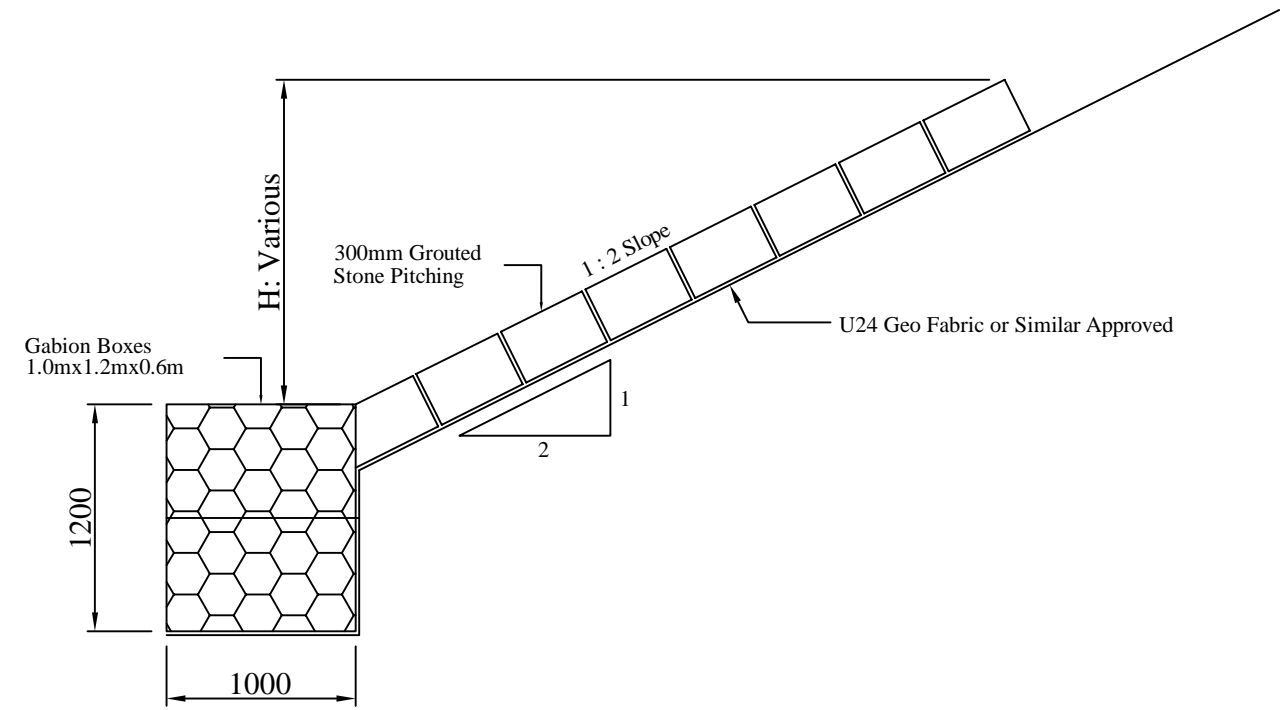
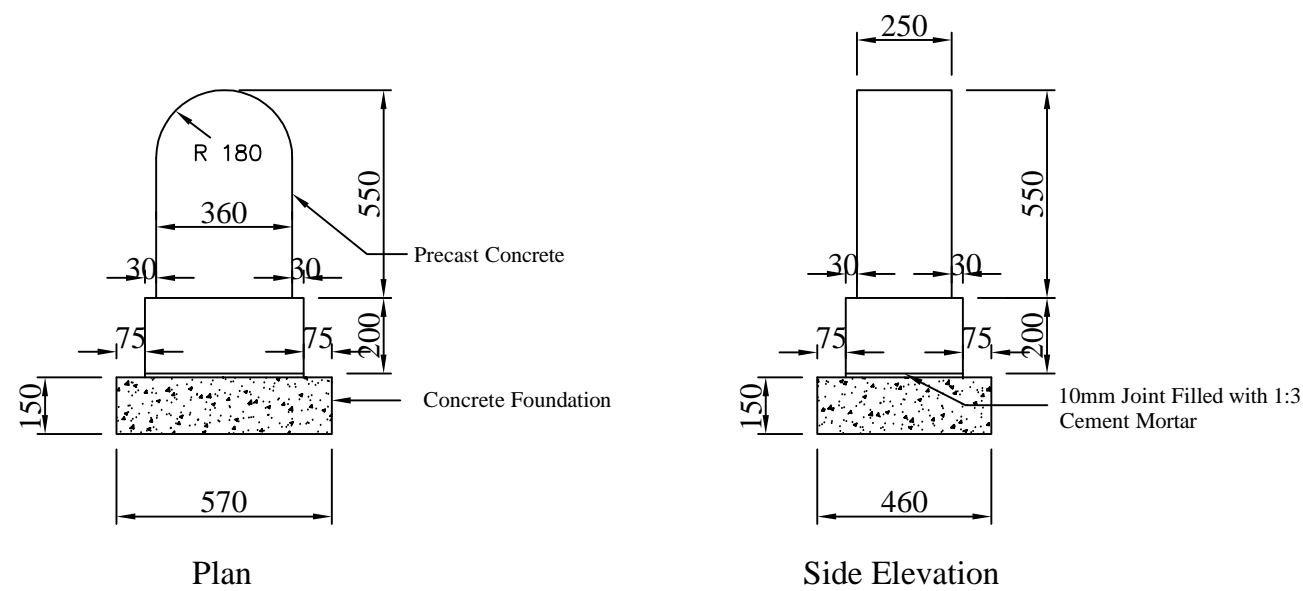
Center Median Type



Planting Strip Type



Typical Detail of A km-Marker Scale A3 1:20

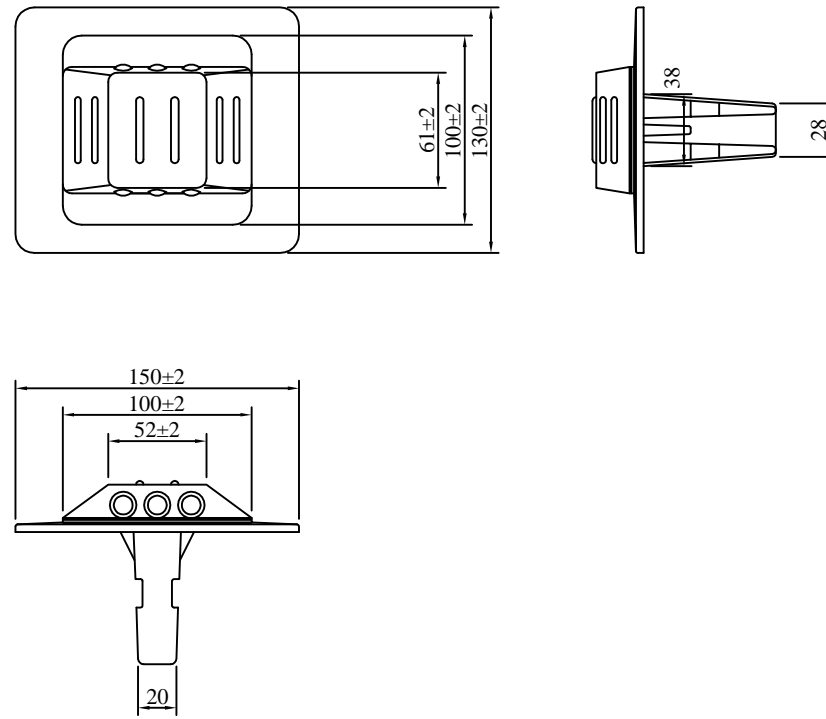


Typical Detail of Bank Erosion Protection Scale A3 1:40

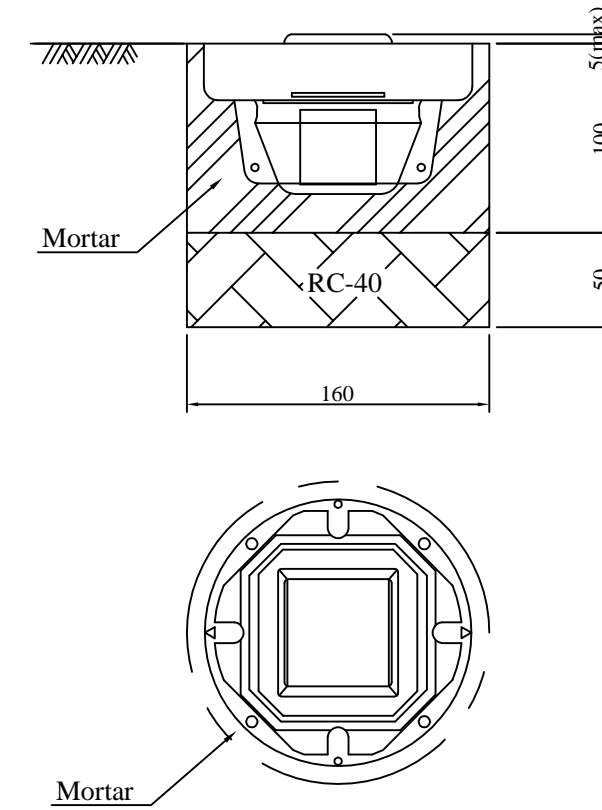
Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project	DRAWING TITLE: Ancillary Work (1)			
		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
National Road Administration (ANE)		SIGNATURE						E-16	
		DATE							

Ancillary Work (2) Scale A3 1:4

Road Stud (Cat's-eye)



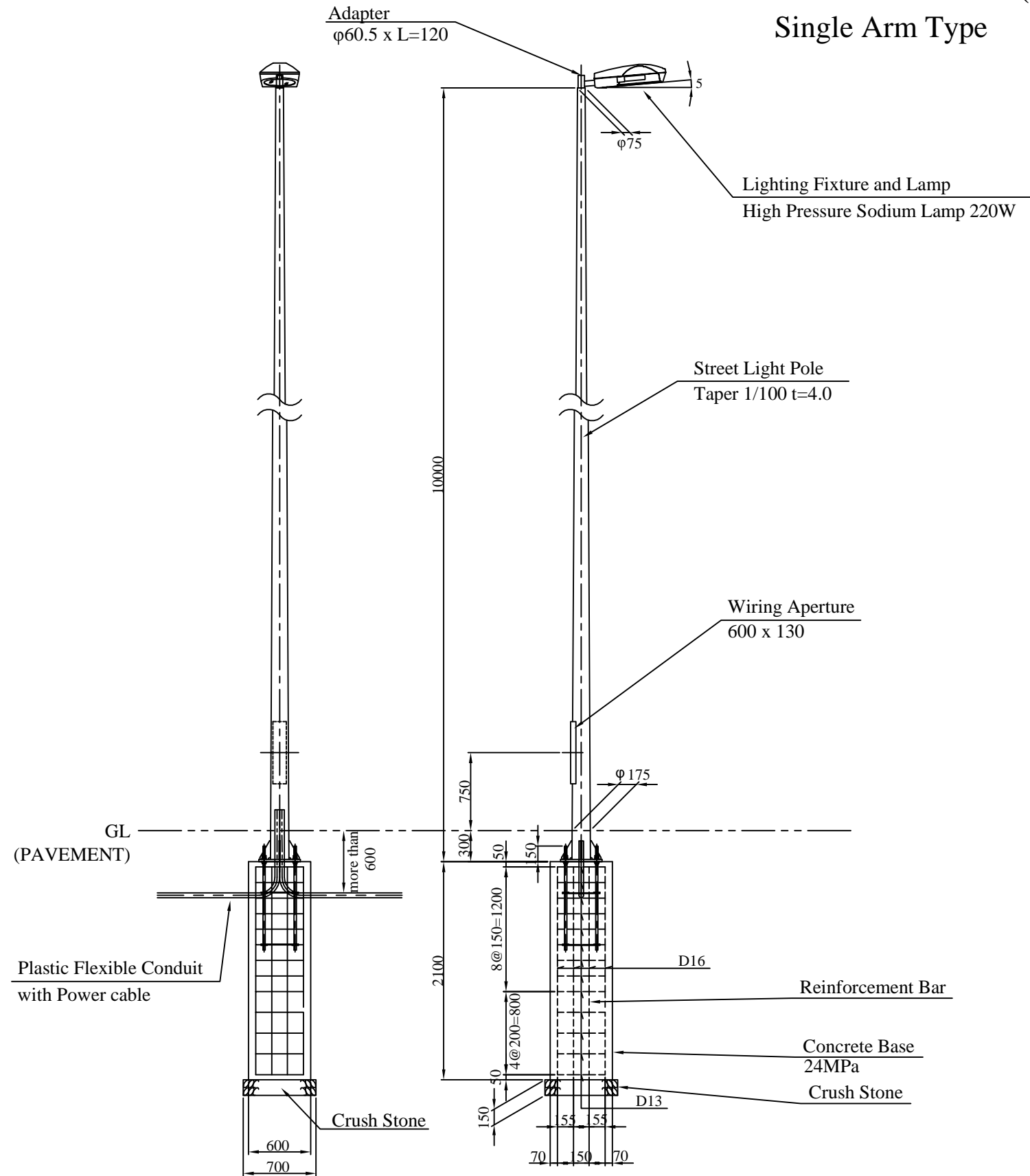
Road Stud (Light Emitting Road Stud)



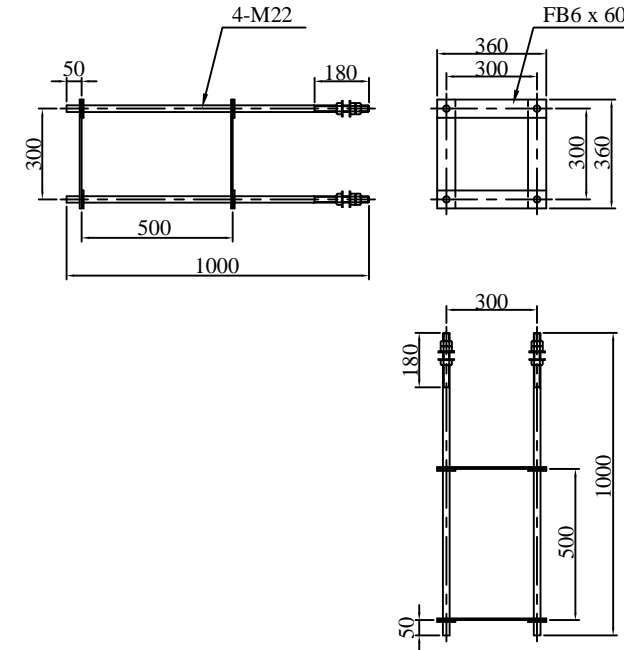
Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd.	PREPARED BY CHECKED BY APPROVED BY	PROJECT TITLE:			DRAWING TITLE:			
	Eight-Japan Engineering Consultants Inc.		NAME	Preparatory Survey for Nacala Corridor Road Network Upgrading Project			Ancillary Work (2)		
National Road Administration (ANE)	Kokusai Kogyo Co., Ltd.	SIGNATURE				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		DATE							

STREET LIGHT (1) SCALE A3 1:50

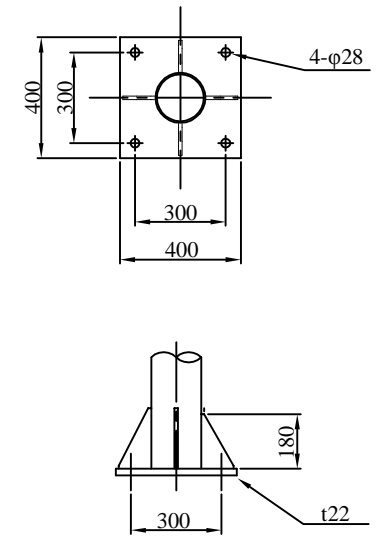
Single Arm Type



Anchor Bolts
SCALE A3 1:25



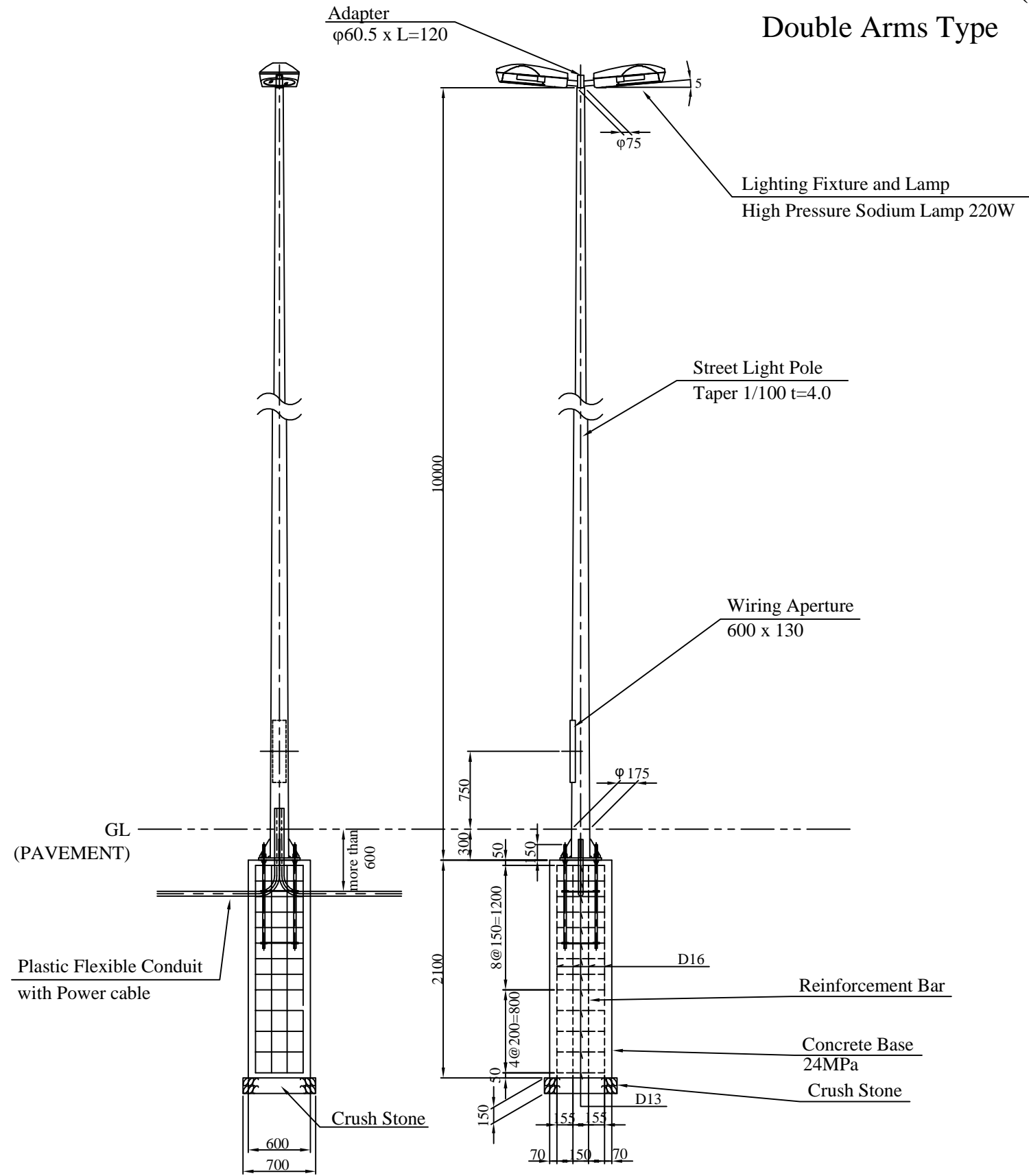
Base Plate
SCALE A3 1:25



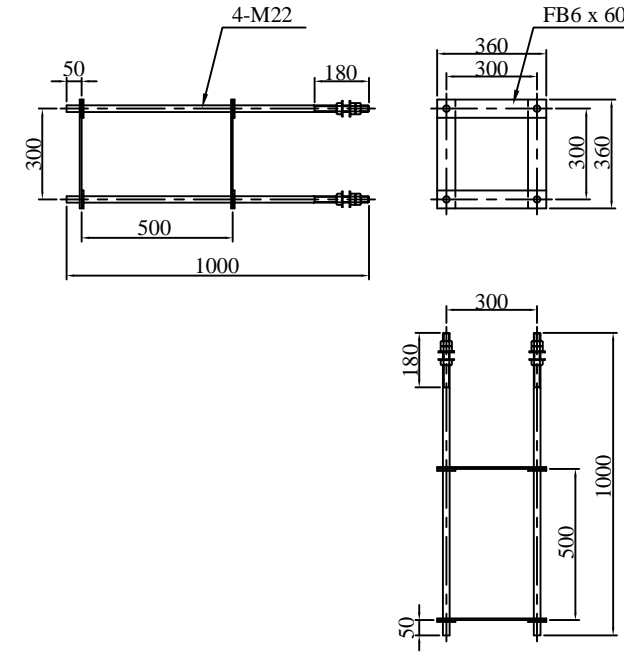
Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd. Eight-Japan Engineering Consultants Inc. Kokusai Kogyo Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project	DRAWING TITLE: STREET LIGHT (1)			
		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		SIGNATURE						E-18	
National Road Administration (ANE)		DATE							

STREET LIGHT (2) SCALE A3 1:50

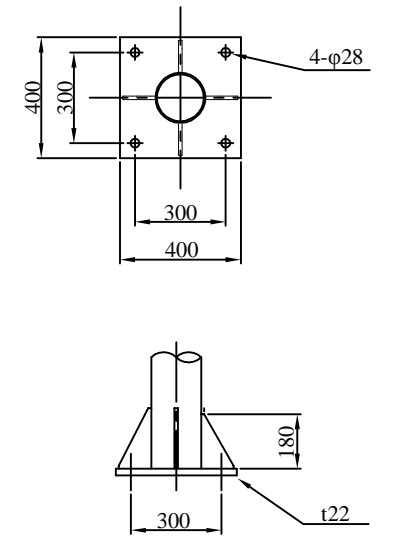
Double Arms Type



Anchor Bolts
SCALE A3 1:25



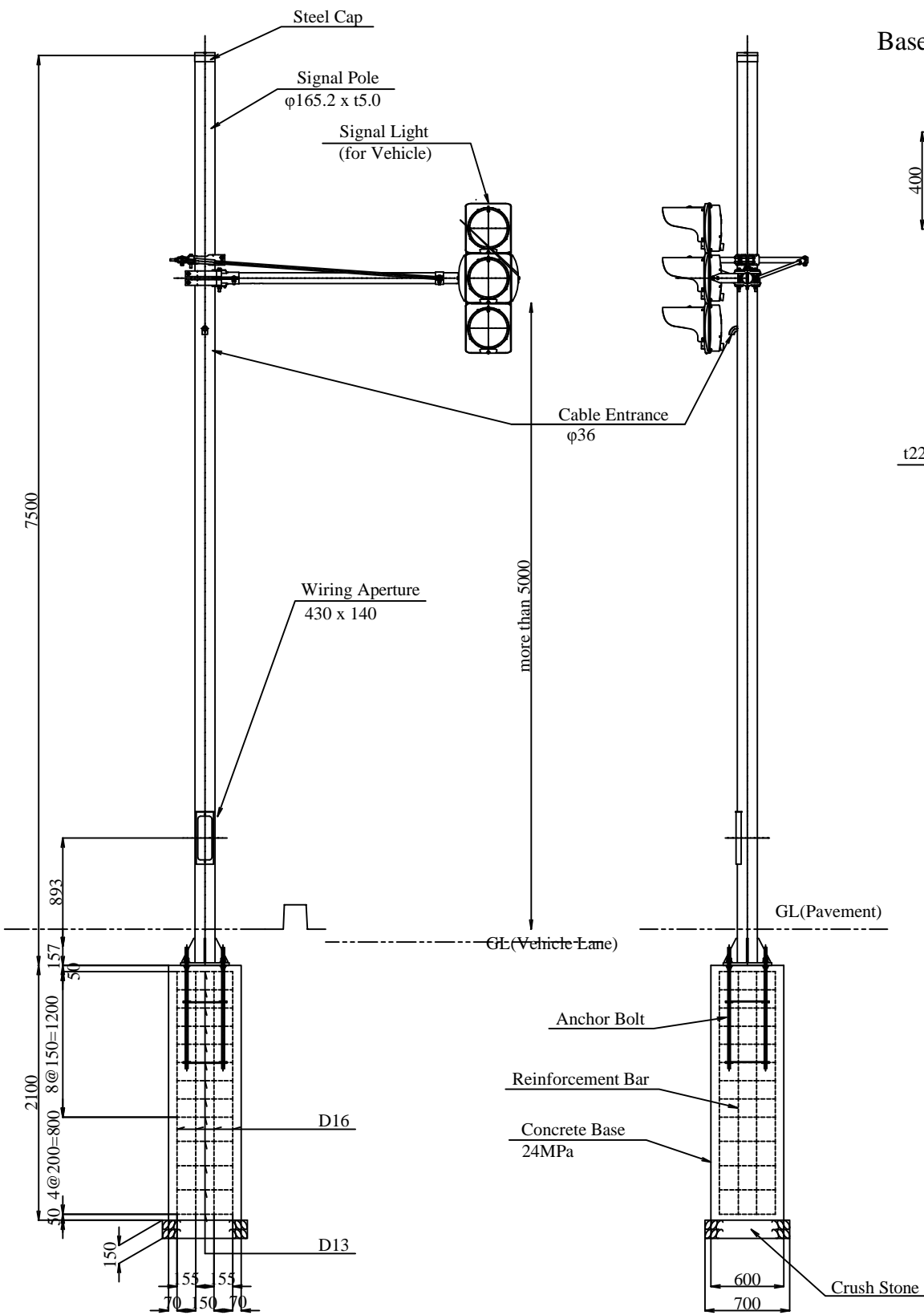
Base Plate
SCALE A3 1:25



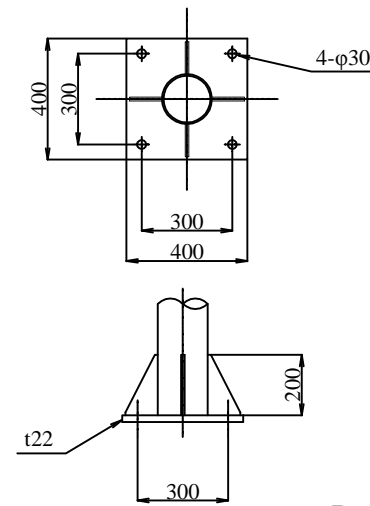
	Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd.	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project	DRAWING TITLE: STREET LIGHT (2)				
		Eight-Japan Engineering Consultants Inc.	NAME					SCALE	SHEET NO.	DRAWING NO.	REV. NO.
	National Road Administration (ANE)	Kokusai Kogyo Co., Ltd.	SIGNATURE							E-19	
		DATE									

TRAFFIC SIGNAL DETAILS SCALE A3 1:50

Vehicle Signal Pole SCALE A3 1:50

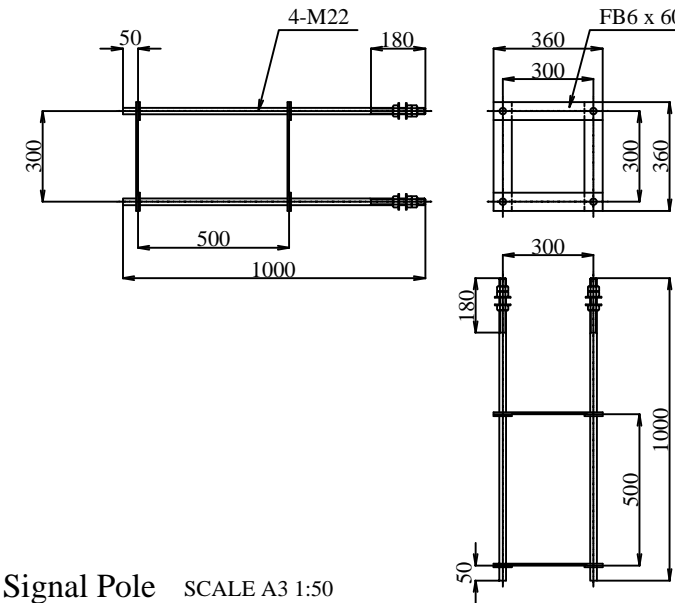


Base Plate SCALE A3 1:25

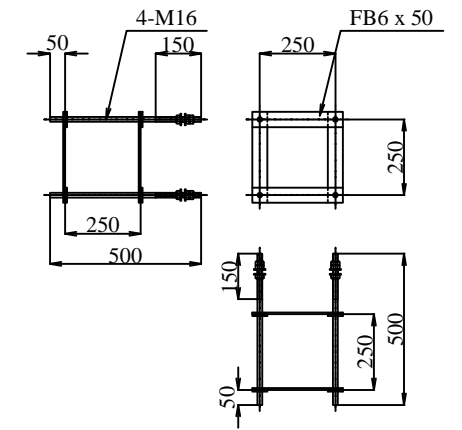


Anchor Bolts SCALE A3 1:25

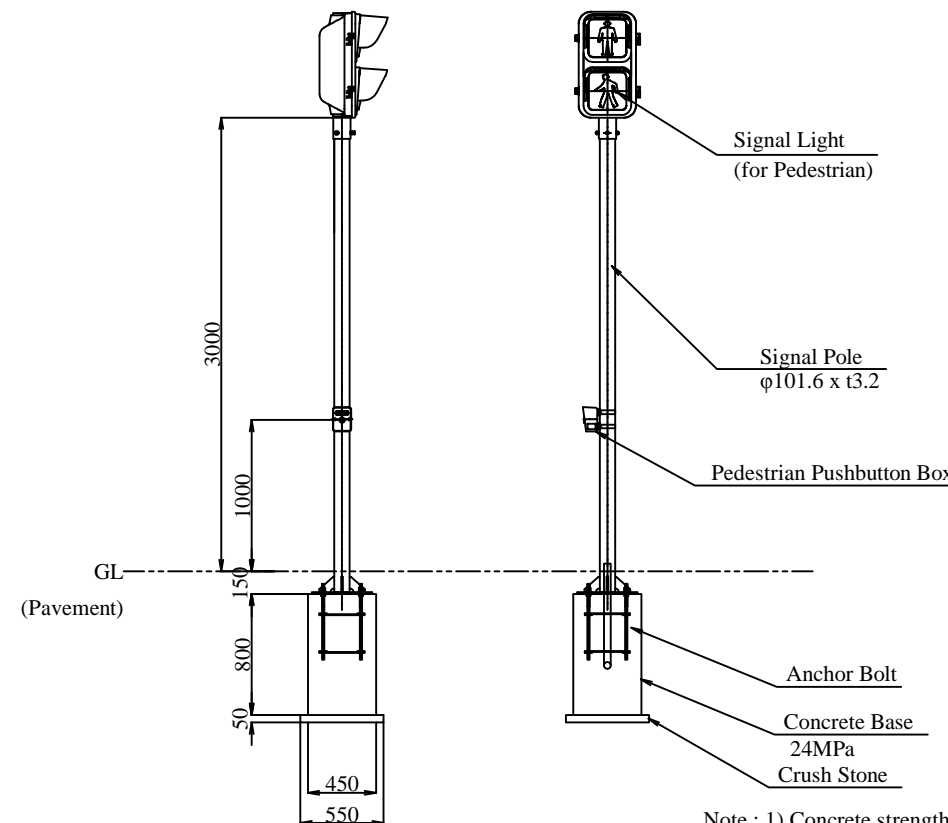
for Vehicle Signal Pole



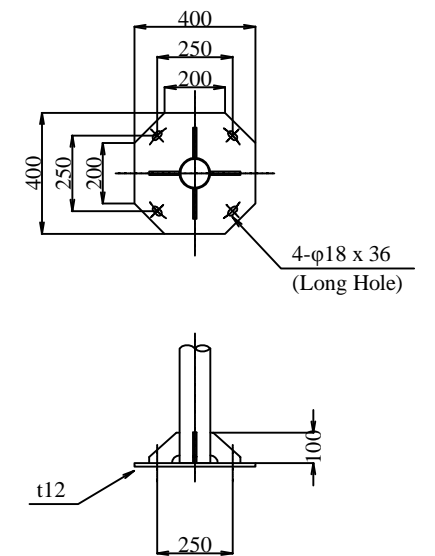
for Pedestrian Signal Pole



Pedestrian Signal Pole SCALE A3 1:50



Base Plate SCALE A3 1:25



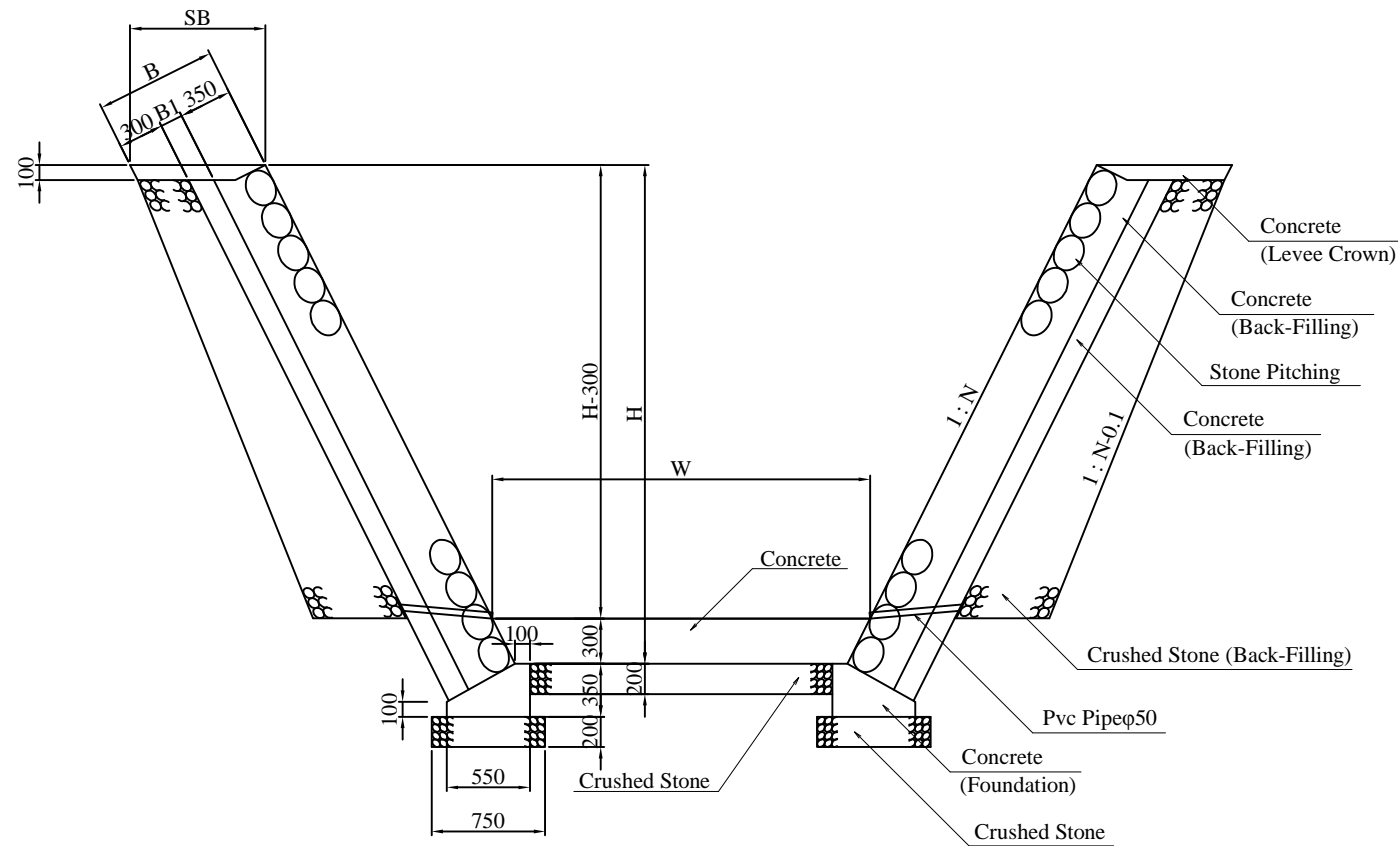
Note : 1) Concrete strength(MPa) indicates the compressive strength test value by the cylinder.

	Japan International Cooperation Agency		PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project	DRAWING TITLE: TRAFFIC SIGNAL DETAILS			
	National Road Administration (ANE)		NAME				SCALE	SHEET NO.	DRAWING NO.	REV. NO.
			SIGNATURE						E-20	
		DATE								

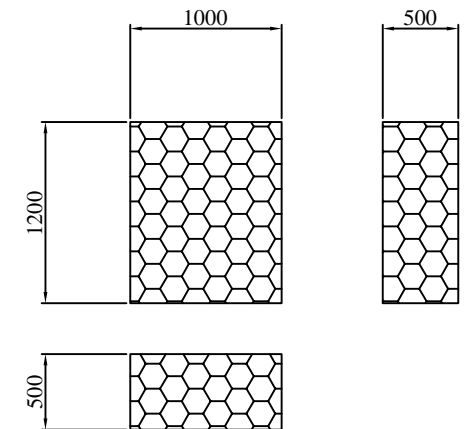
RIVER WALL DETAILS

SCALE A3 1:50

Concrete Block Retaining Wall



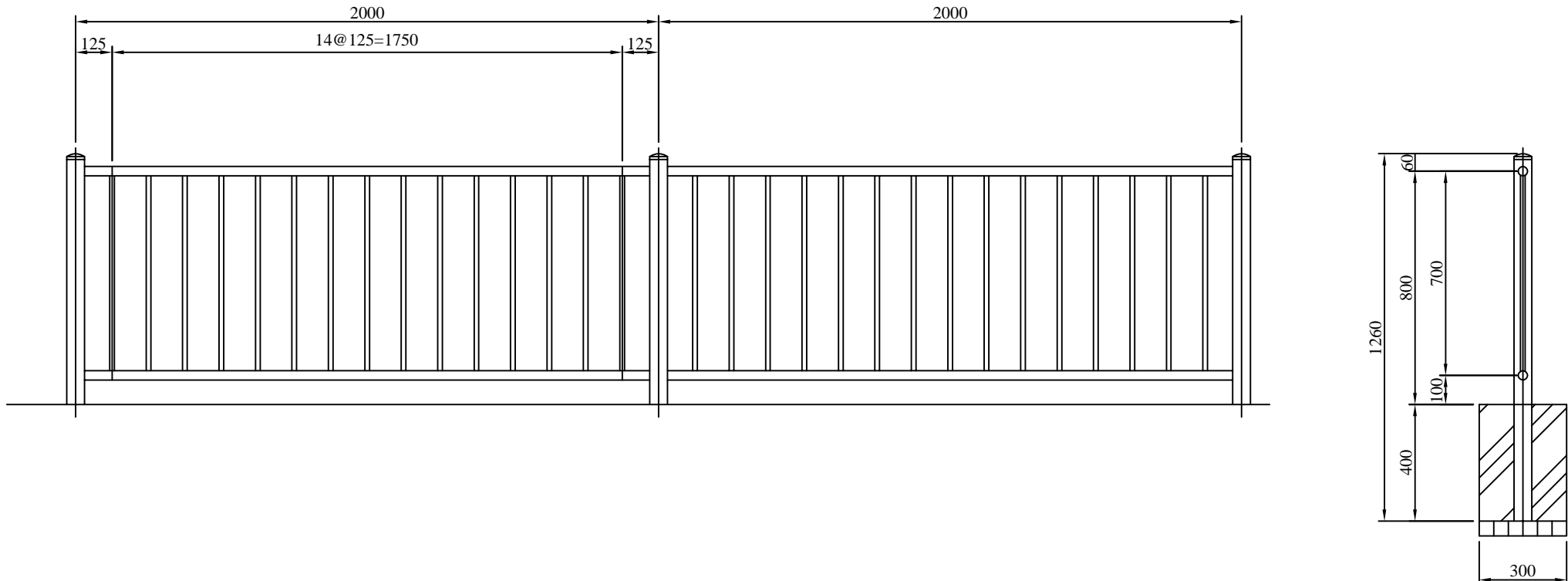
Mat Gabion



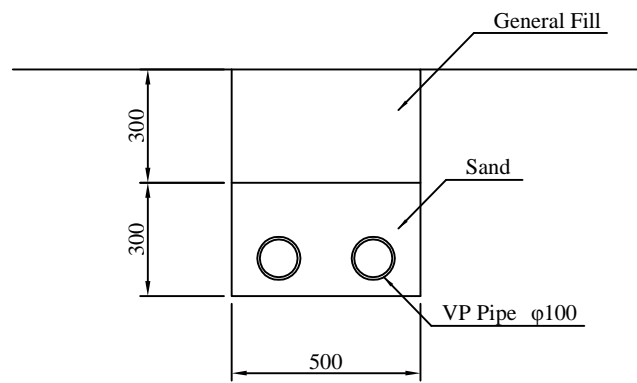
DIMENSION LIST mm

H	B1	B	SB	N
0~1.5	100	750	783	0.3
1.5~3.0	100	750	808	0.4
3.0~5.0	150	800	894	0.5

CROSSING PREVENTION FENCE SCALE A3 1:20



UTILITY PIPE



Japan International Cooperation Agency	Oriental Consultants Global Co., Ltd.		PREPARED BY	CHECKED BY	APPROVED BY	PROJECT TITLE: Preparatory Survey for Nacala Corridor Road Network Upgrading Project	DRAWING TITLE: CROSSING PREVENTION FENCE			
	NAME						SCALE	SHEET NO.	DRAWING NO.	REV. NO.
	SIGNATURE								E-22	
DATE										

National Road Administration (ANE)

Kokusai Kogyo Co., Ltd.