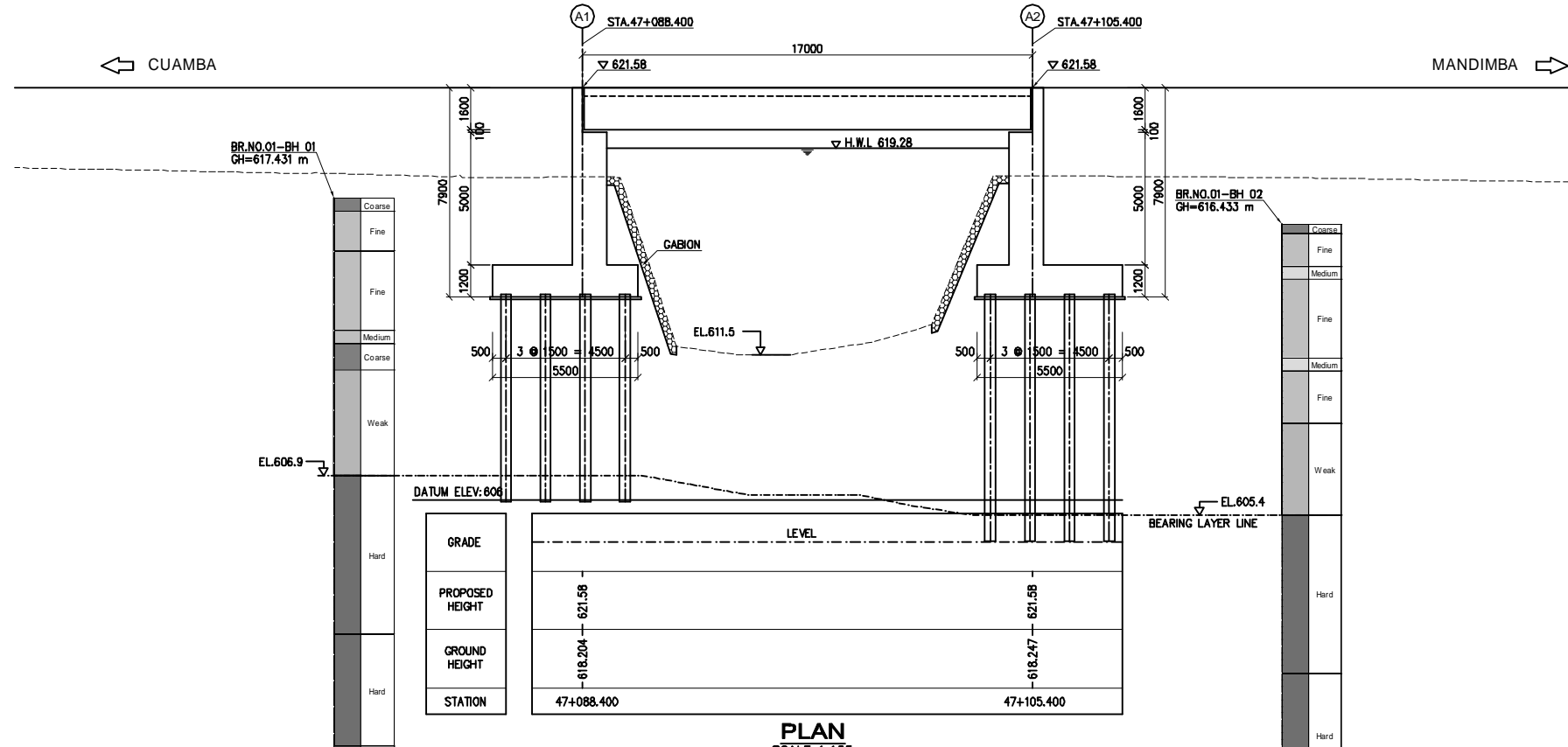
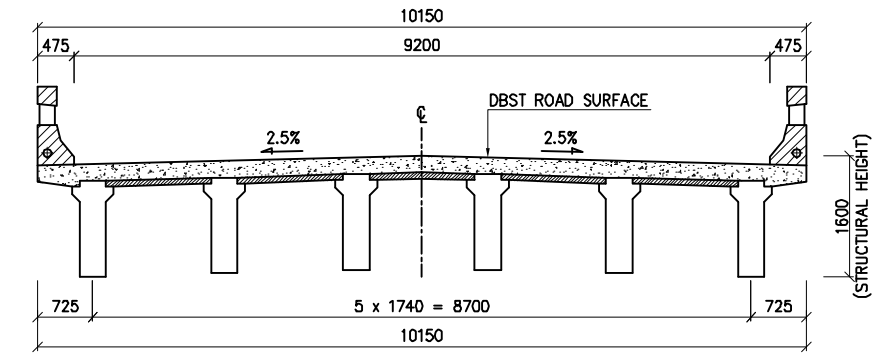


BR NO.1 MUAMBESSI BRIDGE GENERAL VIEW OF THE BRIDGE

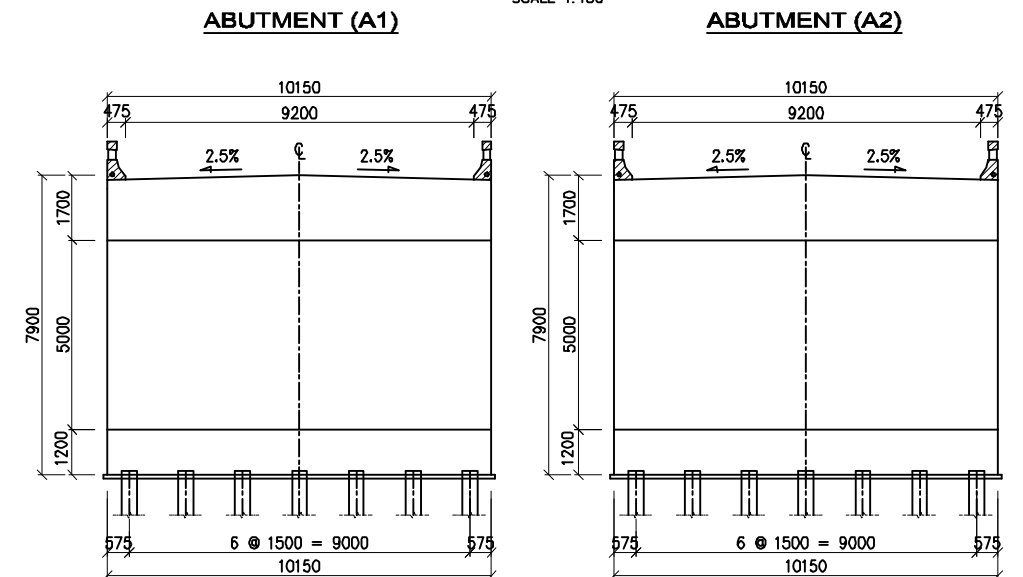
PROFILE
SCALE 1:125



CROSS SECTION
SCALE 1:50



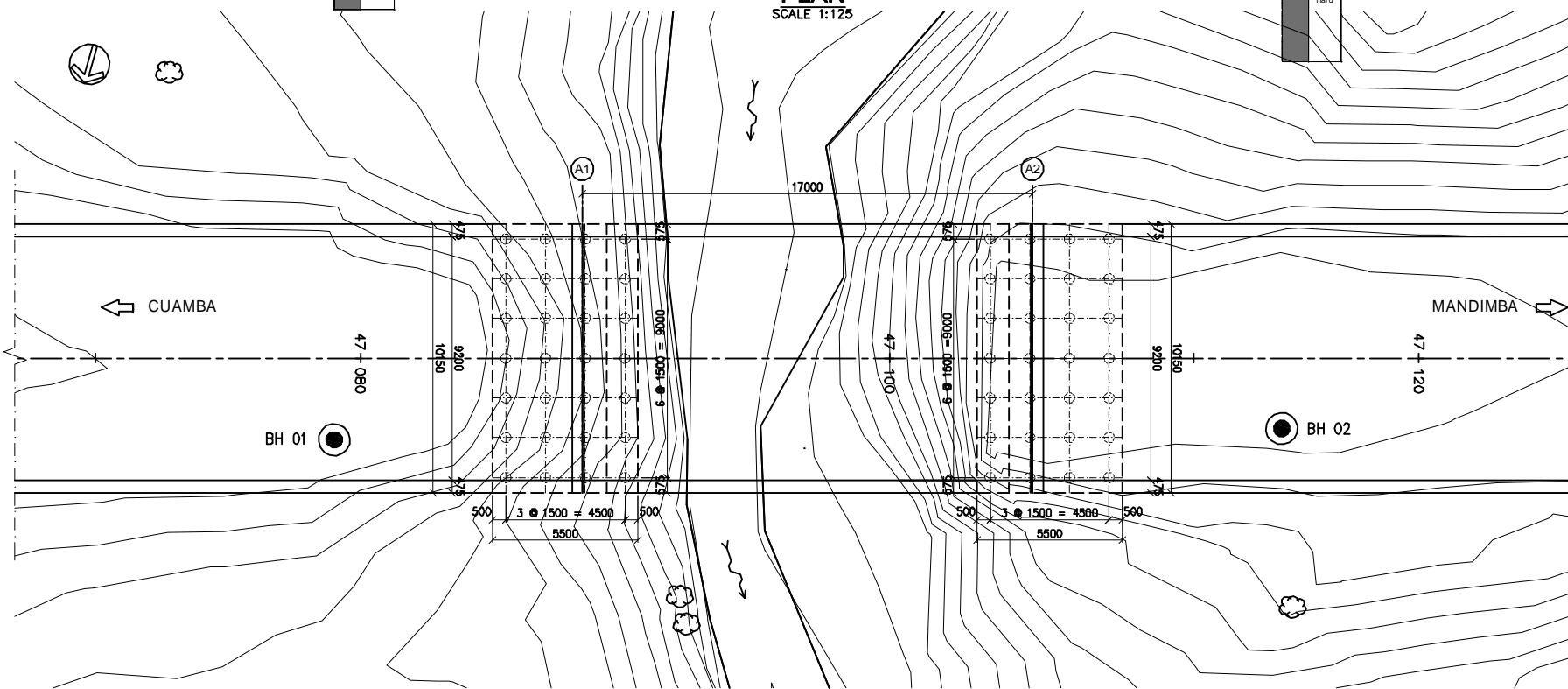
FRONT VIEW
SCALE 1:100



GRADE	LEVEL
PROPOSED HEIGHT	- 621.58
GROUND HEIGHT	- 618.204 - 621.58
STATION	47+088.400

GRADE	LEVEL
PROPOSED HEIGHT	- 621.58
GROUND HEIGHT	- 618.247 - 621.58
STATION	47+105.400

PLAN
SCALE 1:125



DESIGN CRITERIA

GENERAL CONDITION	
DESIGN LIVE LOAD	NA, NB, NC, LOADING
DESIGN SPEED	100 km/h
BRIDGE LENGTH (SPAN LENGTH)	17.0 m
FREEBOARD	0.7 m
DESIGN DISCHARGE	390.9 m ³ /sec
LONGITUDINAL GRADIENT	LEVEL
CROSS-FALL OF CARRIAGE WAY	2.5 %
SUPER STRUCTURE TYPE	RC GIRDER
SUB STRUCTURE TYPE	ABUTMENT
FOUNDATION TYPE	ABUTMENT

JAPAN INTERNATIONAL COOPERATION AGENCY

NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
 Oriental Consultants Co., Ltd

DRAWING TITLE

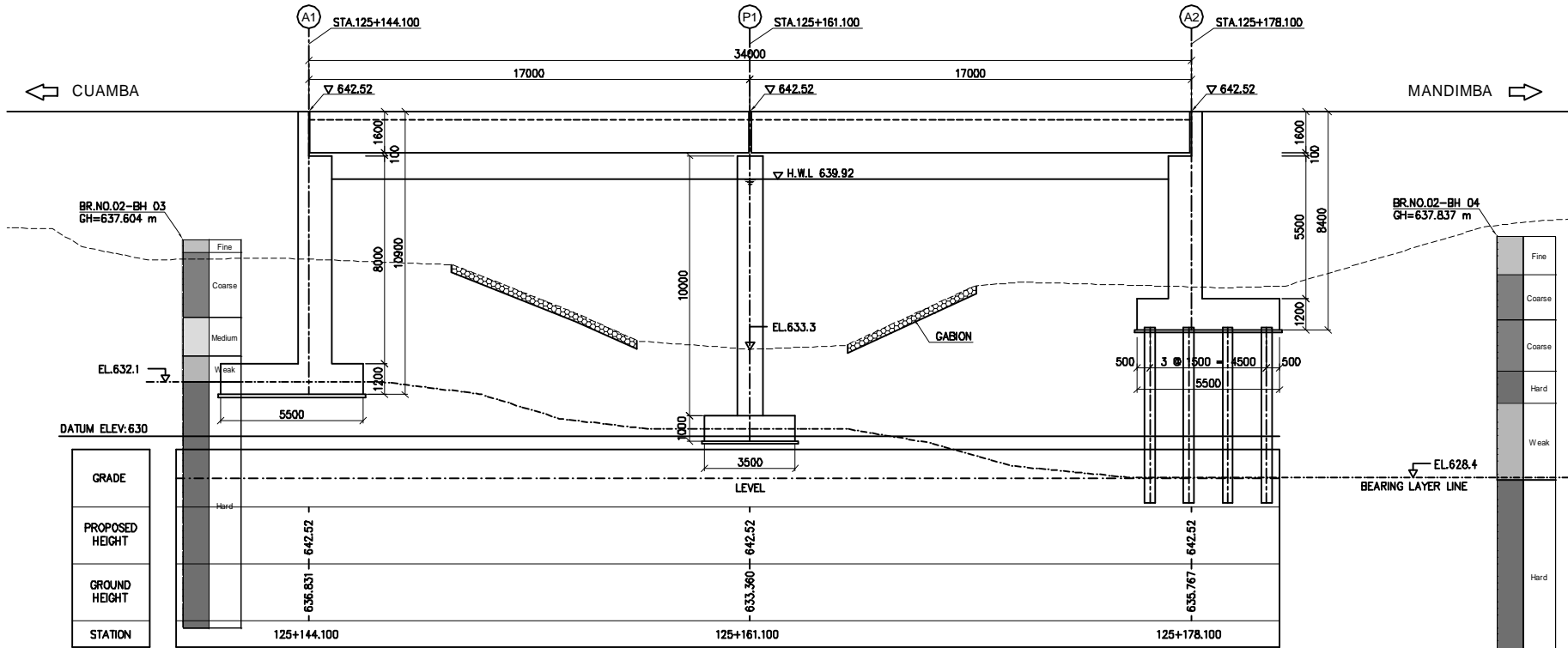
BR NO.1 MUAMBESSI BRIDGE
GENERAL VIEW OF THE BRIDGE

NAME	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		29	-

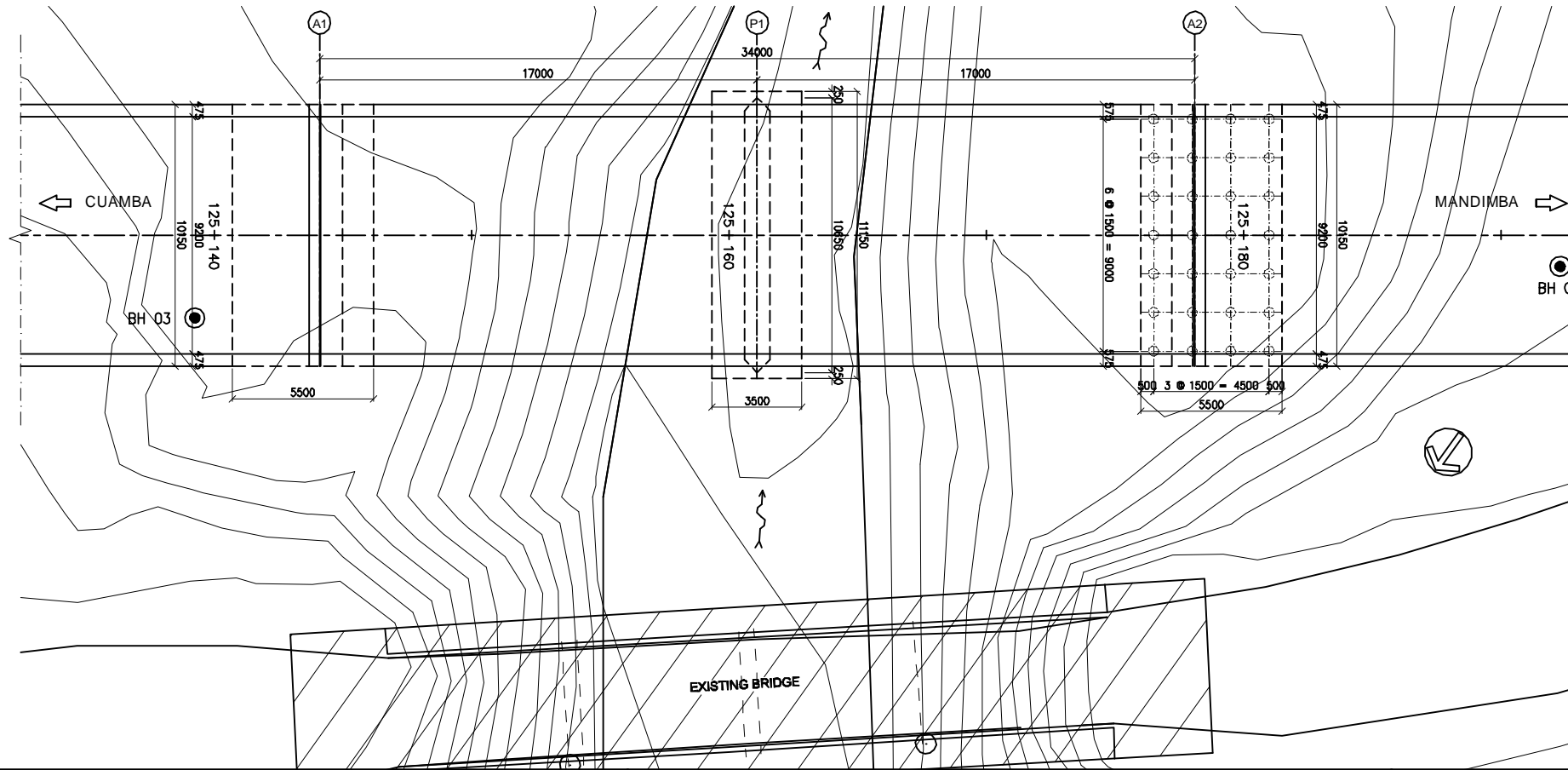
BR NO.2 LUSSANGASSI BRIDGE GENERAL VIEW OF THE BRIDGE

PROFILE
SCALE 1:125

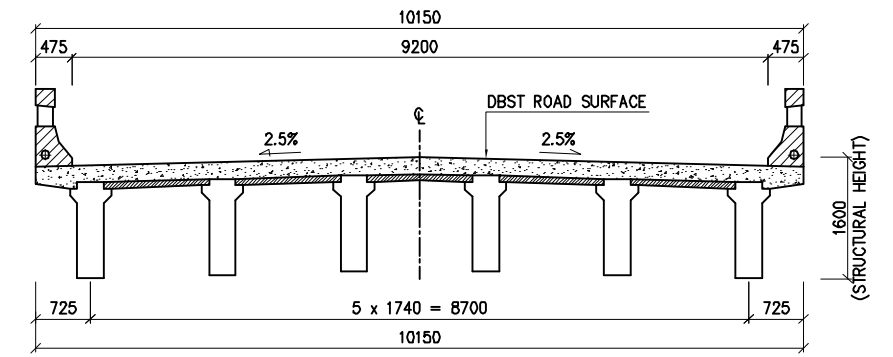


GRADE	
PROPOSED HEIGHT	642.52
GROUND HEIGHT	633.360
STATION	125+144.100

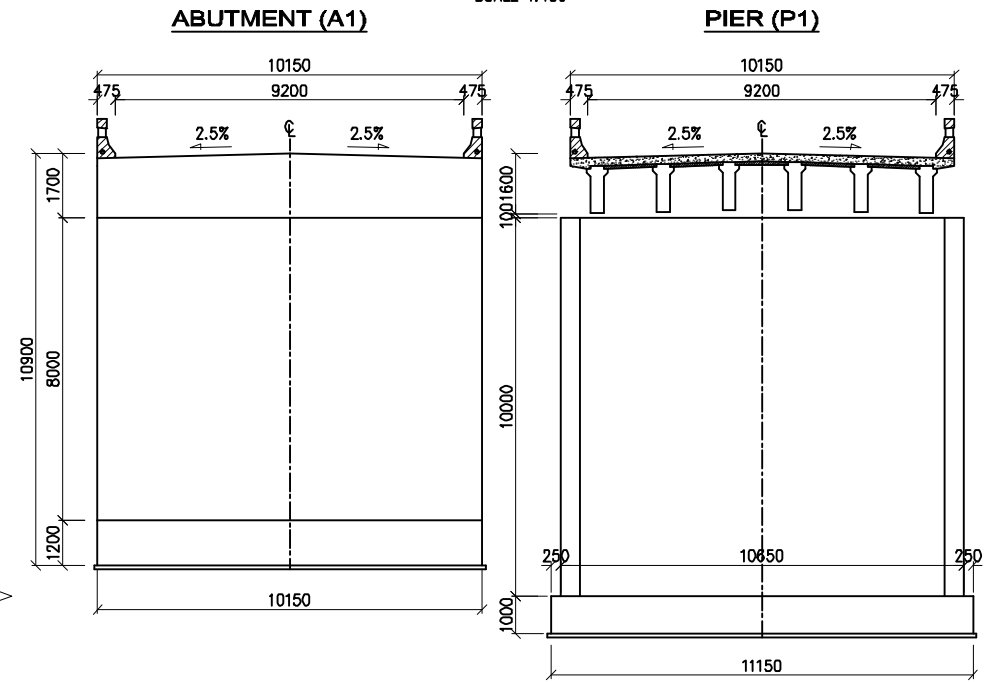
PLAN
SCALE 1:125



CROSS SECTION
SCALE 1:50



FRONT VIEW
SCALE 1:100



DESIGN CRITERIA

GENERAL CONDITION		
DESIGN LIVE LOAD	NA, NB, NC, LOADING	
DESIGN SPEED	100 km/h	
BRIDGE LENGTH (SPAN LENGTH)	34.0 m (17.0 m + 17.0 m)	
FREEBOARD	1.0 m	
DESIGN DISCHARGE	731.4 m ³ /sec	
LONGITUDINAL GRADIENT	LEVEL	
CROSS-FALL OF CARRIAGE WAY	2.5 %	
SUPER STRUCTURE TYPE	RC GIRDER	
SUB STRUCTURE TYPE	ABUTMENT	RC REVERED-T
	PIER	RC WALL
FOUNDATION TYPE	ABUTMENT	A1, SPREAD FOUNDATION A2, PILES FOUNDATION
	PIER	P1, SPREAD FOUNDATION

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

ANE NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

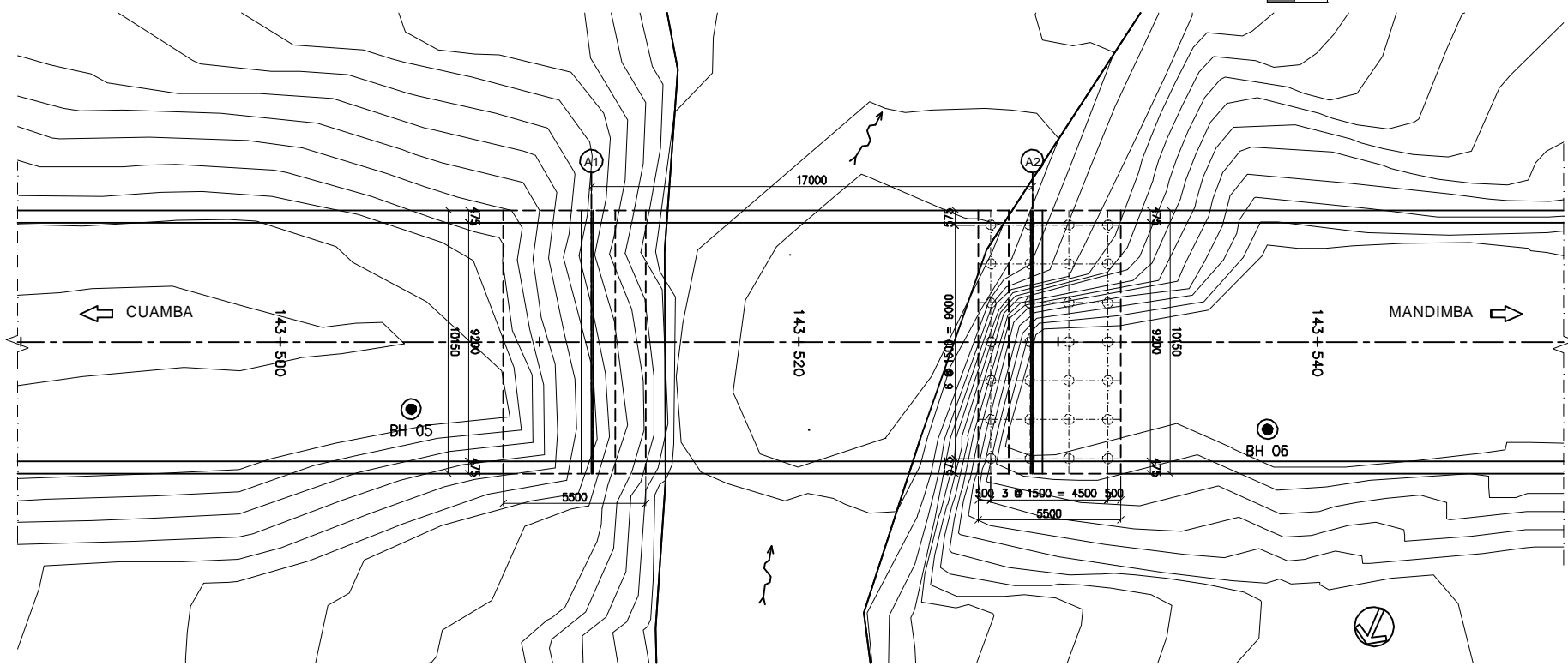
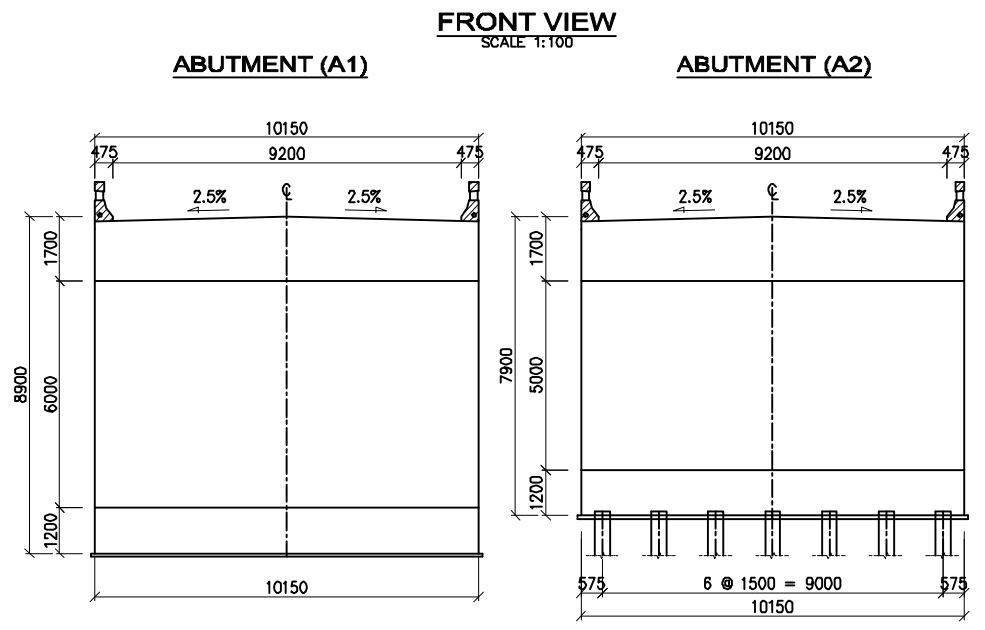
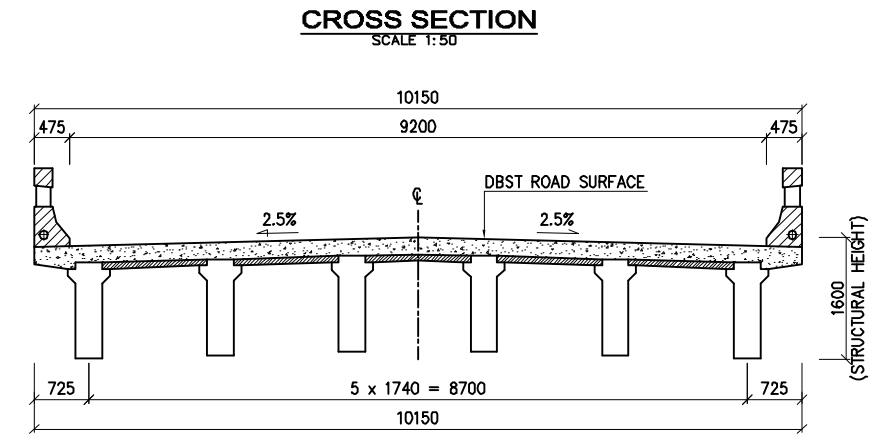
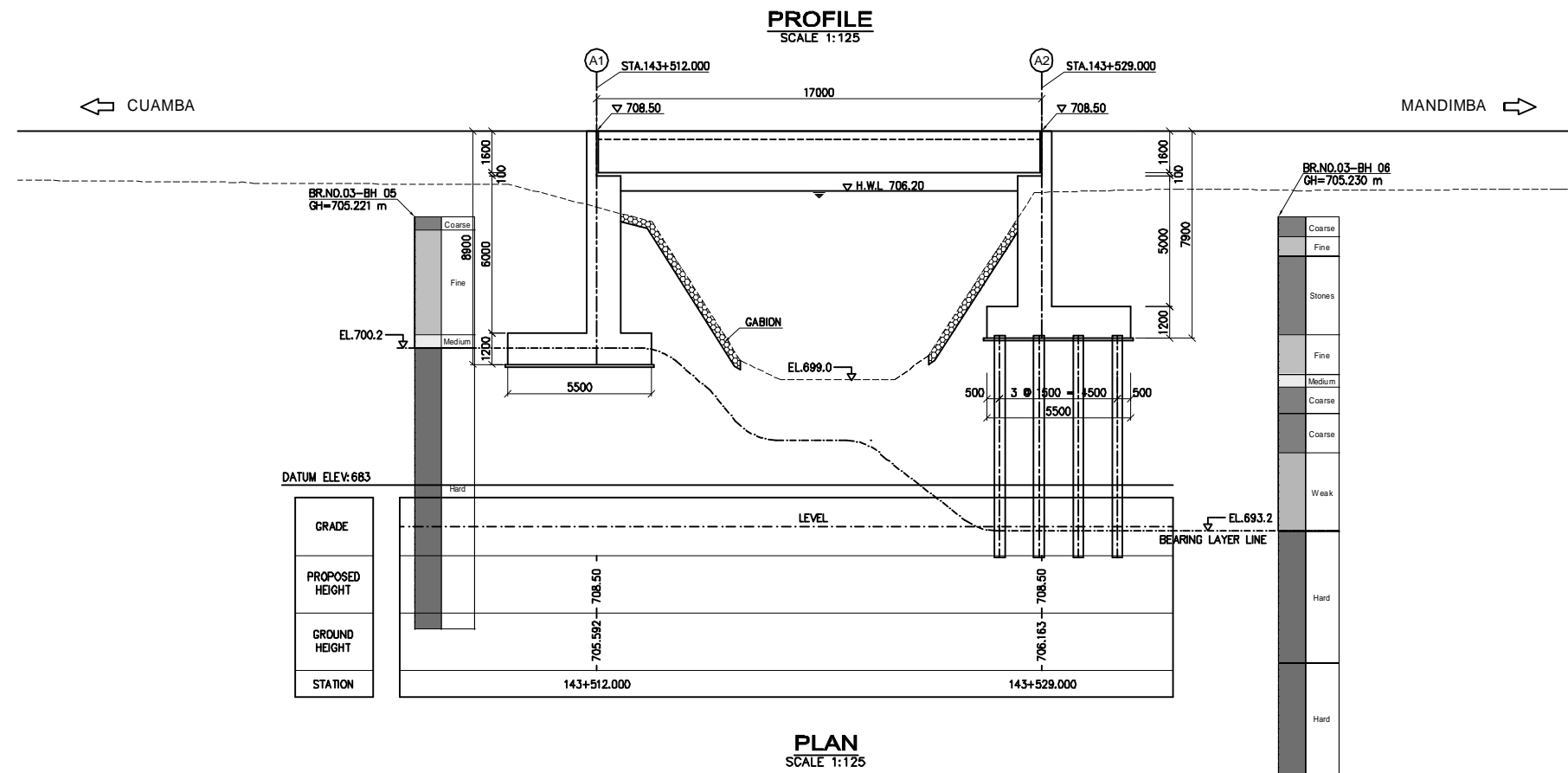
Eight-Japan Engineering Consultants Inc.
Oriental Consultants Co., Ltd

DRAWING TITLE
BR NO.2 LUSSANGASSI BRIDGE
GENERAL VIEW OF THE BRIDGE

NAME	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		30	-

BR NO.3 NGOLUA BRIDGE GENERAL VIEW OF THE BRIDGE



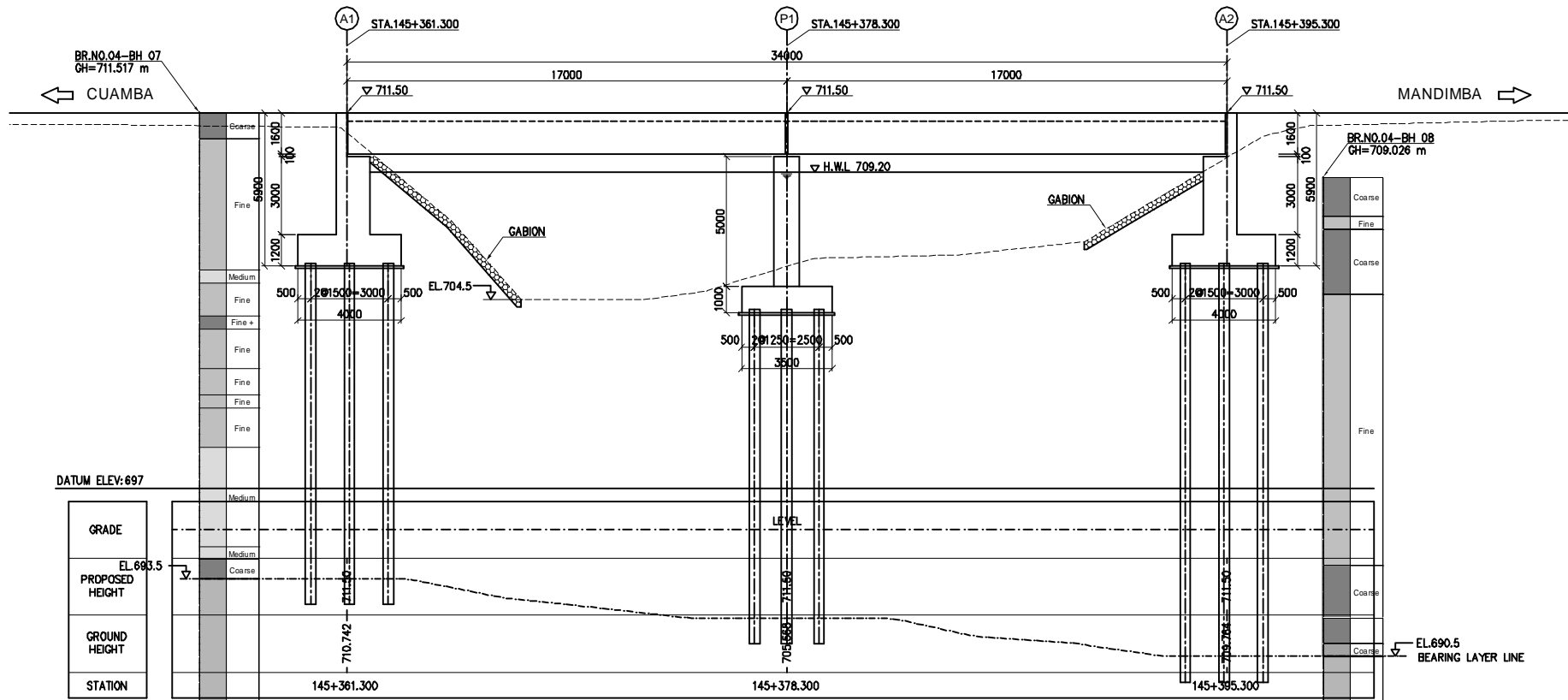
DESIGN CRITERIA

GENERAL CONDITION	
DESIGN LIVE LOAD	NA, NB, NC, LOADING
DESIGN SPEED	100 km/h
BRIDGE LENGTH (SPAN LENGTH)	17.0 m
FREEBOARD	0.7 m
DESIGN DISCHARGE	307.9 m ³ /sec
LONGITUDINAL GRADIENT	LEVEL
CROSS-FALL OF CARRIAGE WAY	2.5 %
SUPER STRUCTURE TYPE	RC GIRDER
SUB STRUCTURE TYPE	ABUTMENT RC REVERED-T
FOUNDATION TYPE	ABUTMENT A1, SPREAD FOUNDATION A2, PILES FOUNDATION

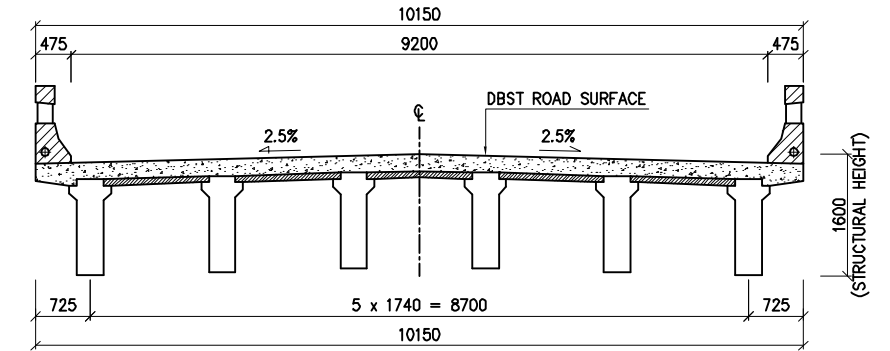
JAPAN INTERNATIONAL COOPERATION AGENCY	REMARKS:	THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)			DRAWING TITLE					
		Eight-Japan Engineering Consultants Inc. Oriental Consultants Co., Ltd			BR NO.3 NGOLUA BRIDGE GENERAL VIEW OF THE BRIDGE					
NATIONAL ROAD ADMINISTRATION				PREPARED BY	CHECKED BY	APPROVED BY	SCALE	SHEET NO.	DRAWING NO.	REV. NO.
				NAME			As Shown		31	-
			SIGNATURE							
			DATE							

BR NO.4 NGAME II BRIDGE GENERAL VIEW OF THE BRIDGE

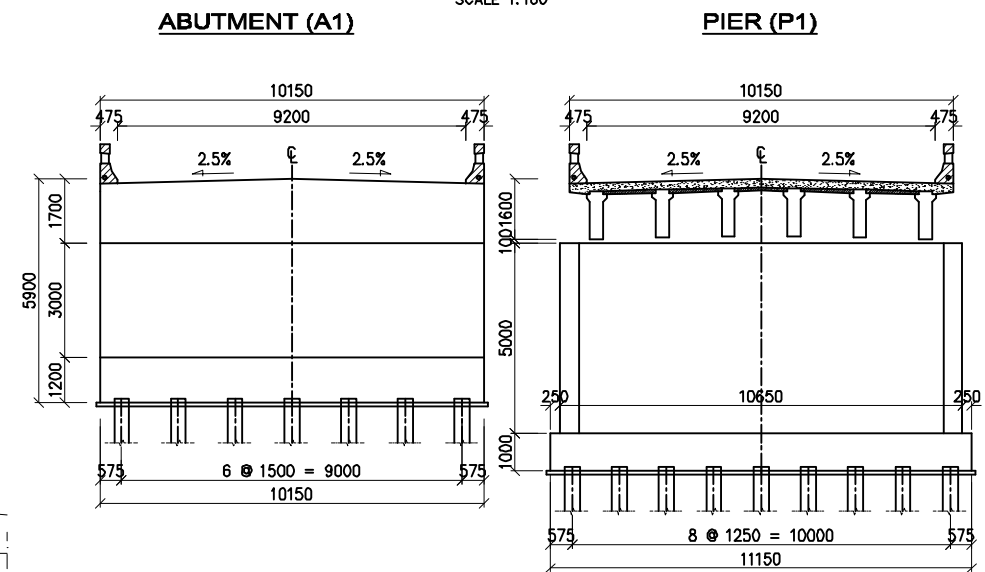
PROFILE
SCALE 1:125



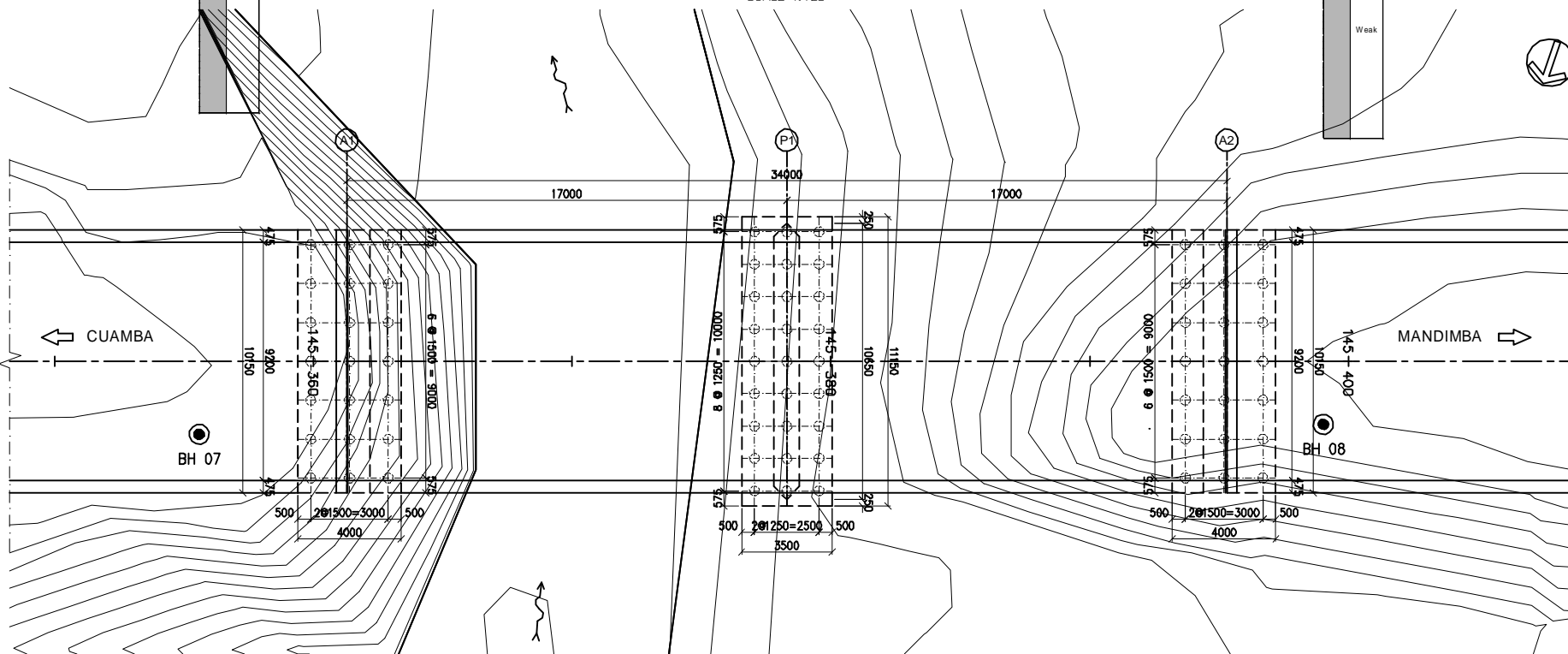
CROSS SECTION
SCALE 1:50



FRONT VIEW
SCALE 1:100



PLAN
SCALE 1:125



DESIGN CRITERIA

GENERAL CONDITION		
DESIGN LIVE LOAD	NA, NB, NC, LOADING	
DESIGN SPEED	100 km/h	
BRIDGE LENGTH (SPAN LENGTH)	34.0 m (17.0 m + 17.0 m)	
FREEBOARD	0.7 m	
DESIGN DISCHARGE	301.7 m ³ /sec	
LONGITUDINAL GRADIENT	LEVEL	
CROSS-FALL OF CARRIAGE WAY	2.5 %	
SUPER STRUCTURE TYPE	RC GIRDER	
SUB STRUCTURE TYPE	ABUTMENT	RC REVERED-T
	PIER	RC WALL
FOUNDATION TYPE	ABUTMENT	A1, PILES FOUNDATION A2, PILES FOUNDATION
	PIER	P1, PILES FOUNDATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
Oriental Consultants Co., Ltd

DRAWING TITLE

BR NO.4 NGAME II BRIDGE
GENERAL VIEW OF THE BRIDGE

JAPAN INTERNATIONAL COOPERATION AGENCY

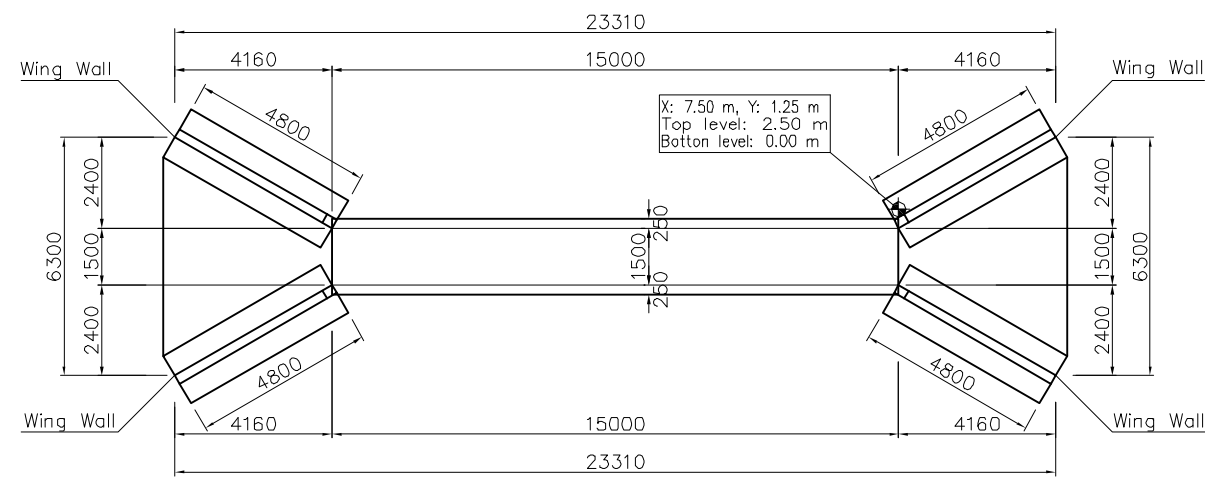
NATIONAL ROAD ADMINISTRATION

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

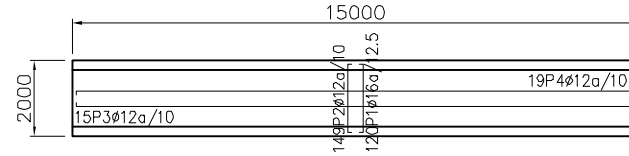
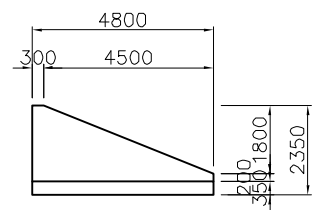
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		32	-

Box Culvert Structural Details (1)

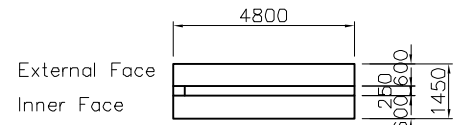
1500x1500 Type A (1 Cell)



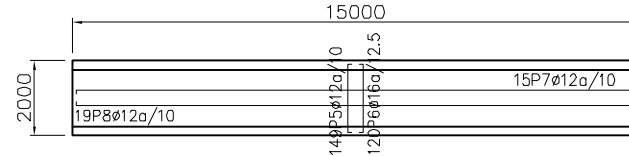
Plan View Scale:1/100



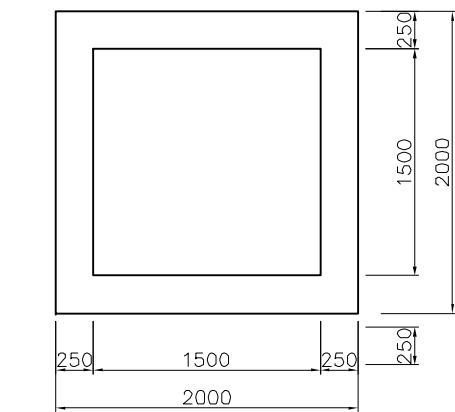
Top Slab Scale:1/100



Wing Walls Scale:1/100

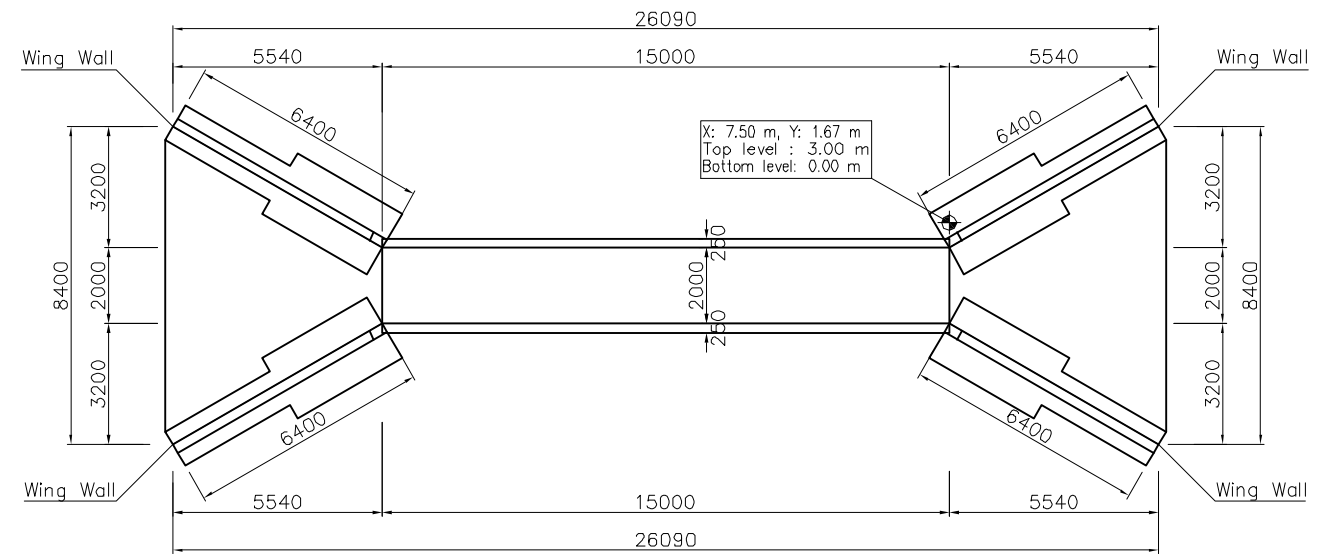


Bottom Slab Scale:1/100

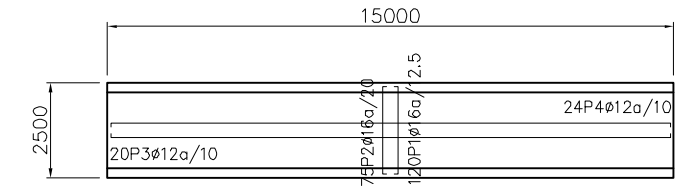
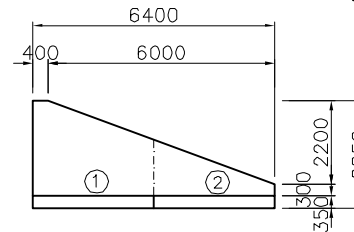


Section View Scale:1/25

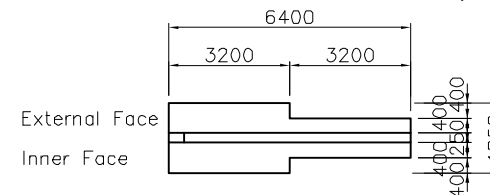
2000x2000 Type A (1 Cell)



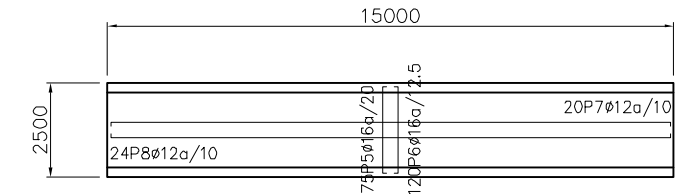
Plan View Scale:1/100



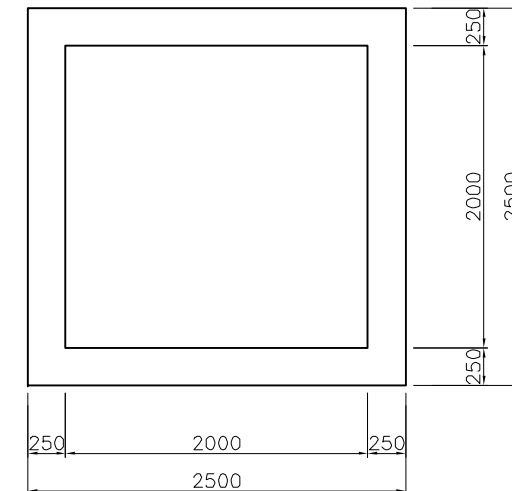
Top Slab Scale:1/100



Wing Walls Scale:1/100



Bottom Slab Scale:1/100



Section View Scale:1/25

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

NRAC NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
Oriental Consultants Co., Ltd

DRAWING TITLE

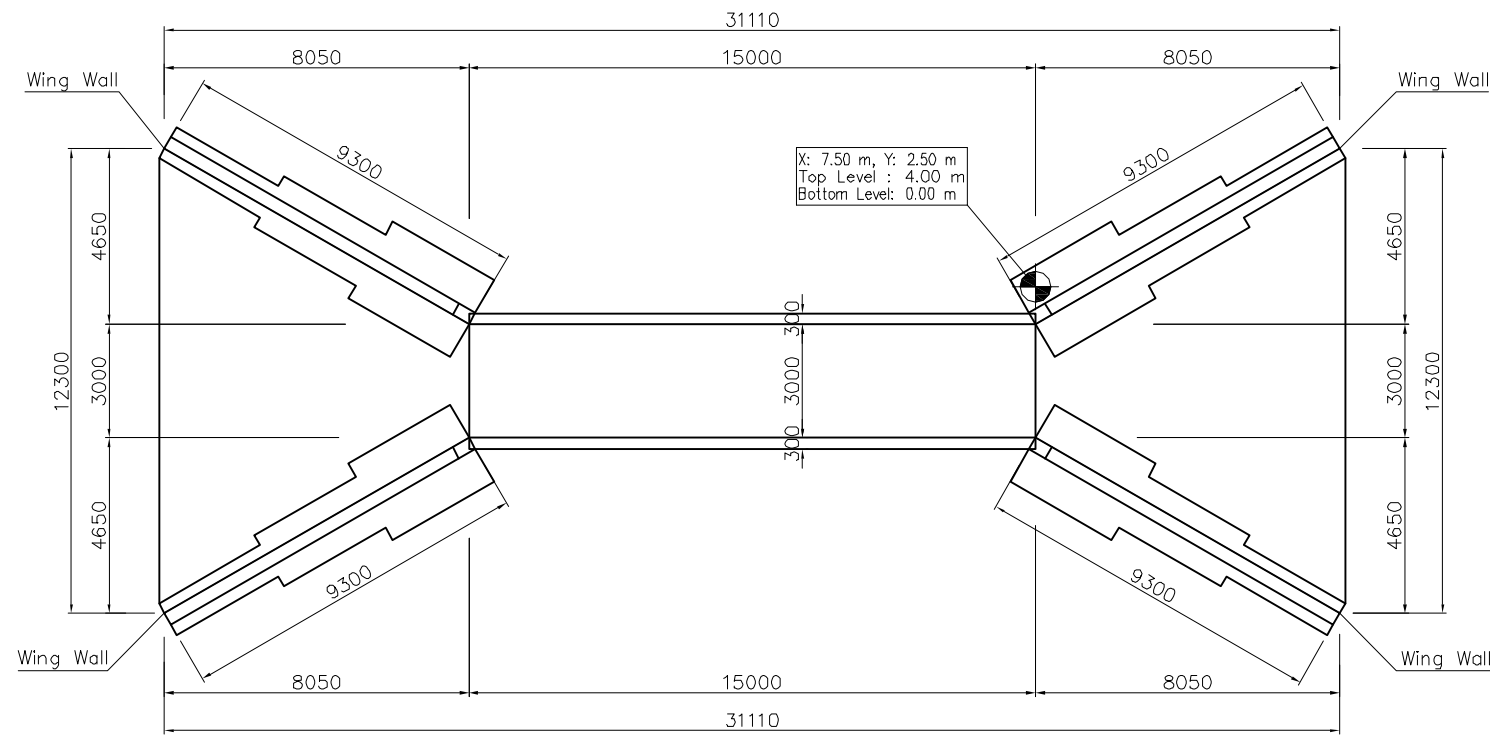
Box Culvert Structural Details (1)

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

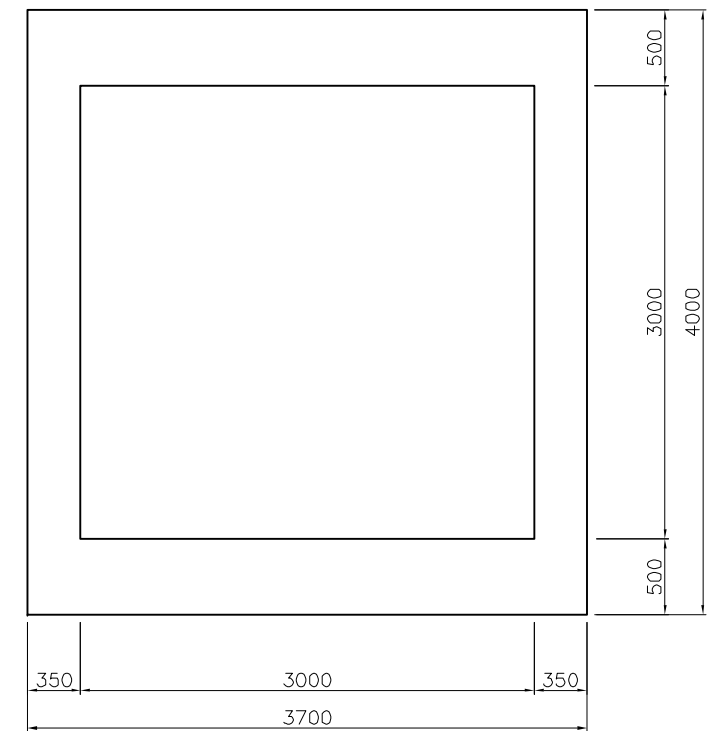
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		33	-

Box Culvert Structural Details (2)

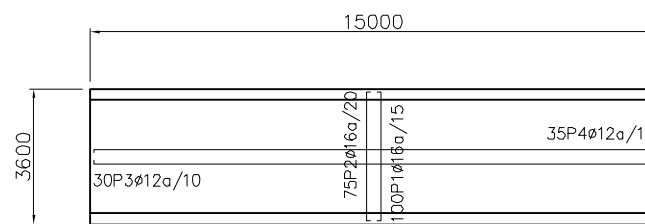
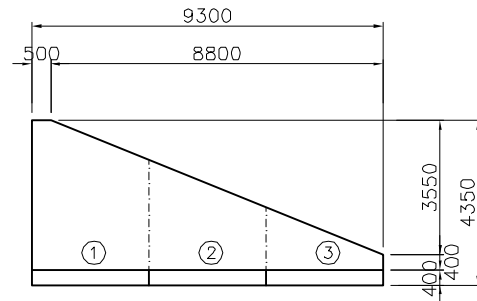
3000x3000 Type A (1 Cell)



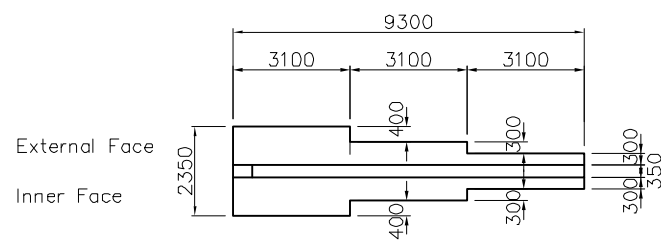
Plan View Scale: 1/100



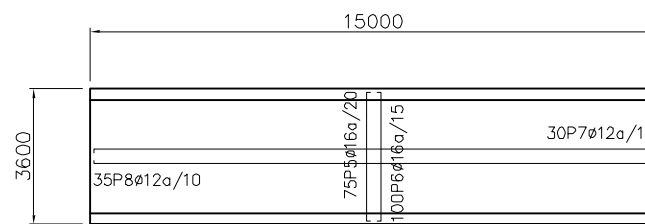
Section View Scale: 1/25



Top Slab Scale: 1/100



Wing Walls Scale: 1/100



Bottom Slab Scale: 1/100

JAPAN INTERNATIONAL COOPERATION AGENCY

NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
 Oriental Consultants Co., Ltd

DRAWING TITLE

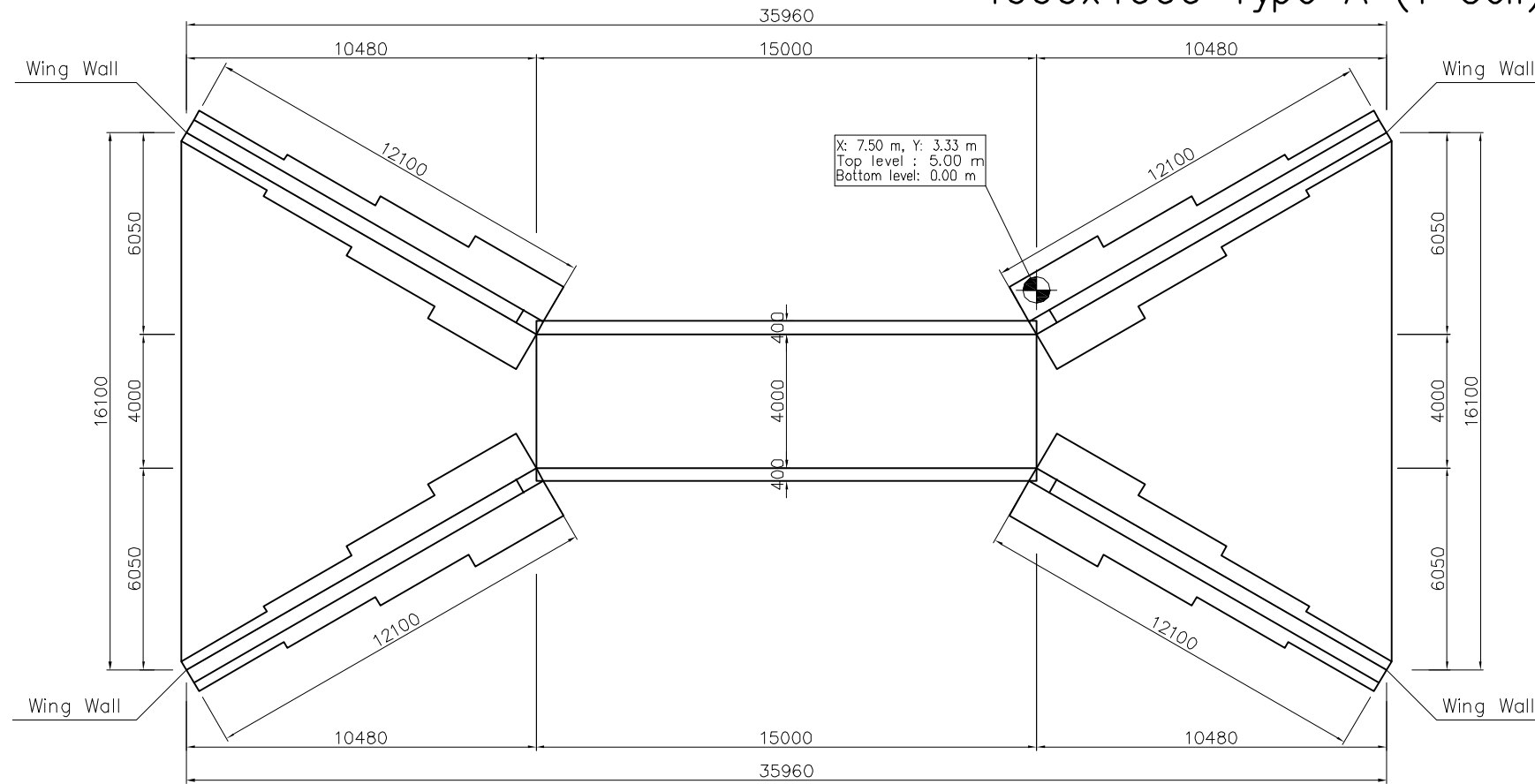
Box Culvert Structural Details (2)

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

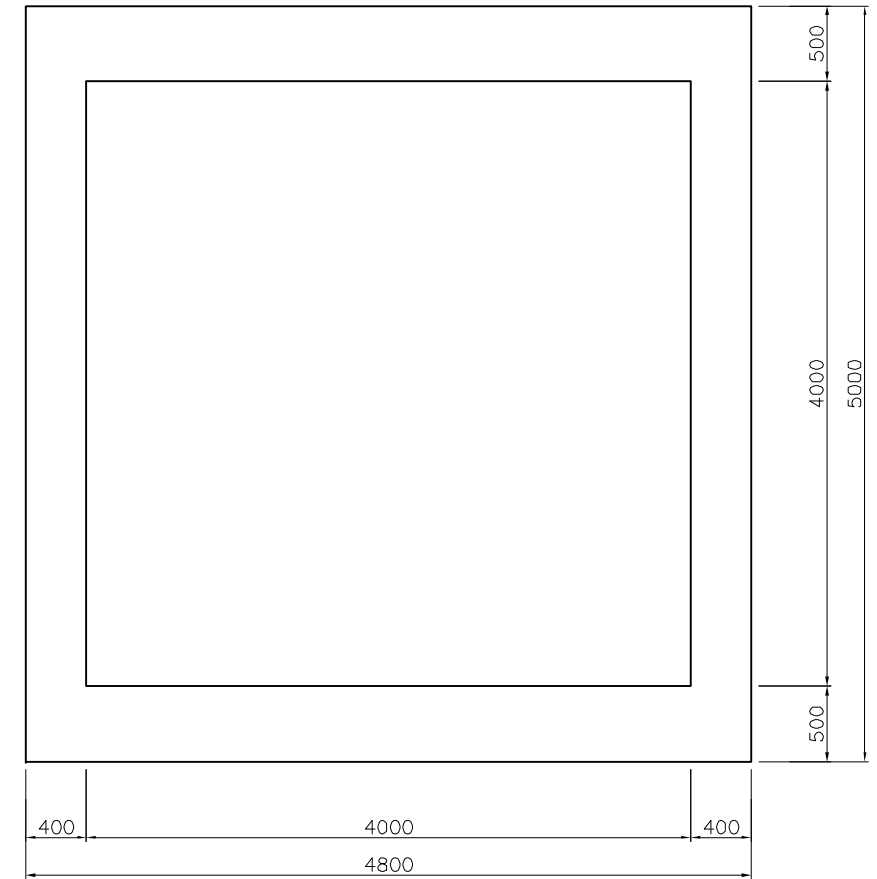
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		34	-

Box Culvert Structural Details (3)

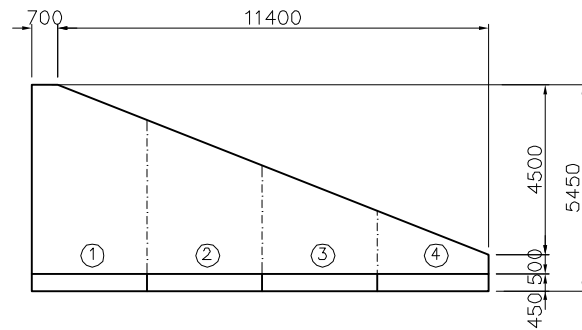
4000x4000 Type A (1 Cell)



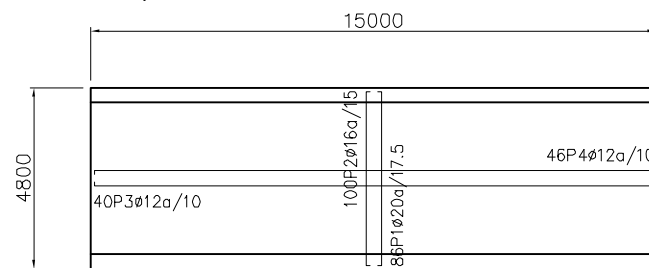
Plan View Scale: 1/100



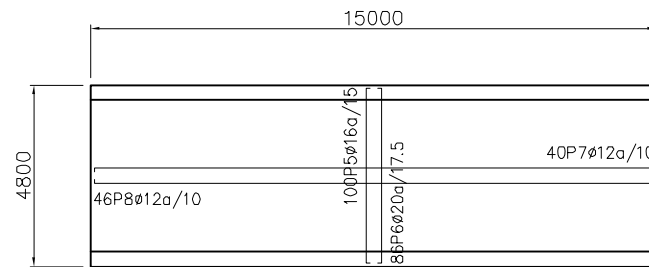
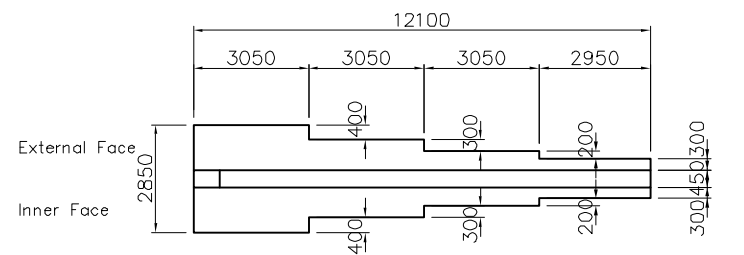
Section View Scale: 1/25



Wing Walls Scale: 1/100



Top Slab Scale: 1/100



Bottom Slab Scale: 1/100

JAPAN INTERNATIONAL COOPERATION AGENCY

NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
 Oriental Consultants Co., Ltd

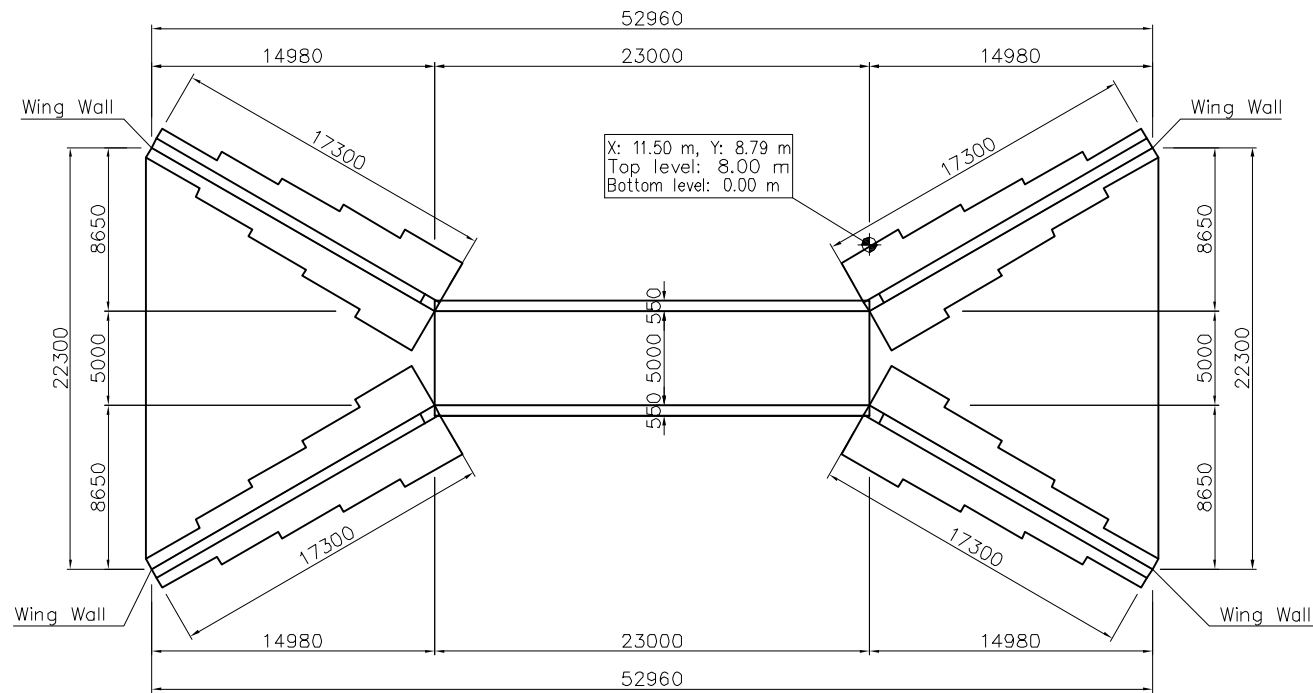
DRAWING TITLE

Box Culvert Structural Details (3)

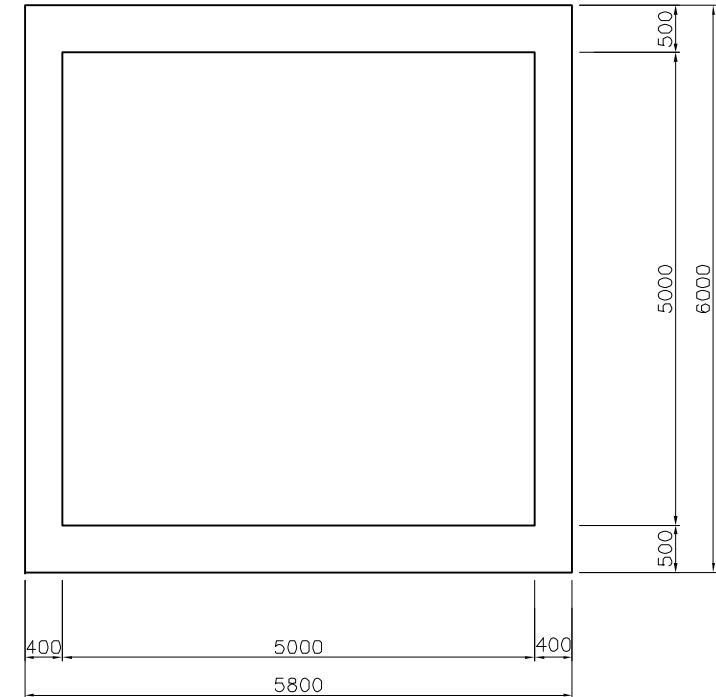
	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		35	-

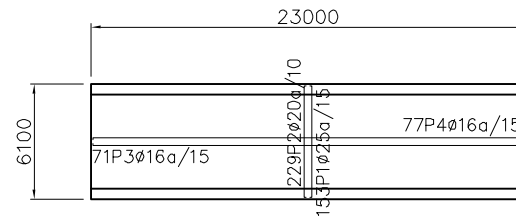
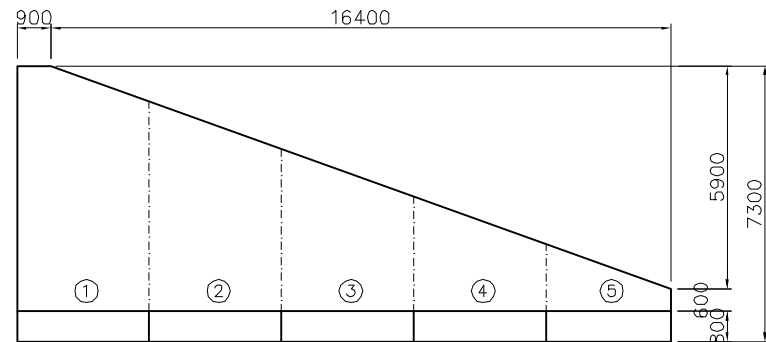
Box Culvert Structural Details (4) 5000x5000 Type A (1 Cell)



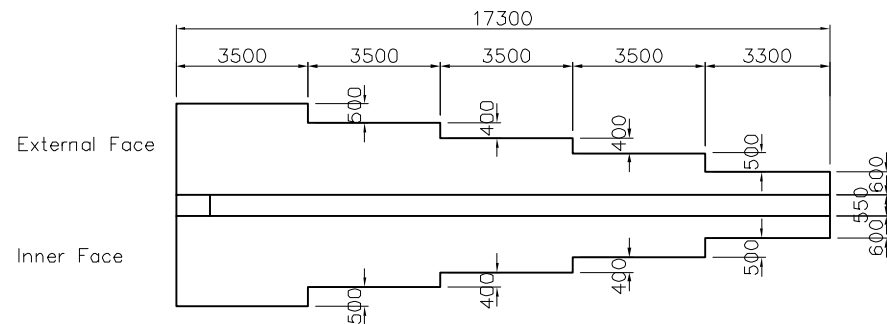
Plan View Scale: 1/200



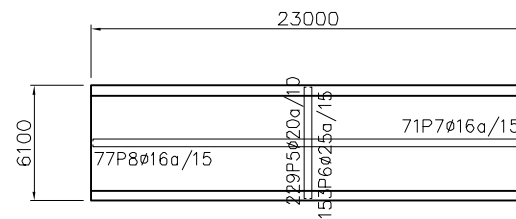
Section View Scale: 1/40



Top Slab Scale: 1/200



Wing Walls Scale: 1/100



Bottom Slab Scale: 1/200

JAPAN INTERNATIONAL COOPERATION AGENCY

NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
 Oriental Consultants Co., Ltd

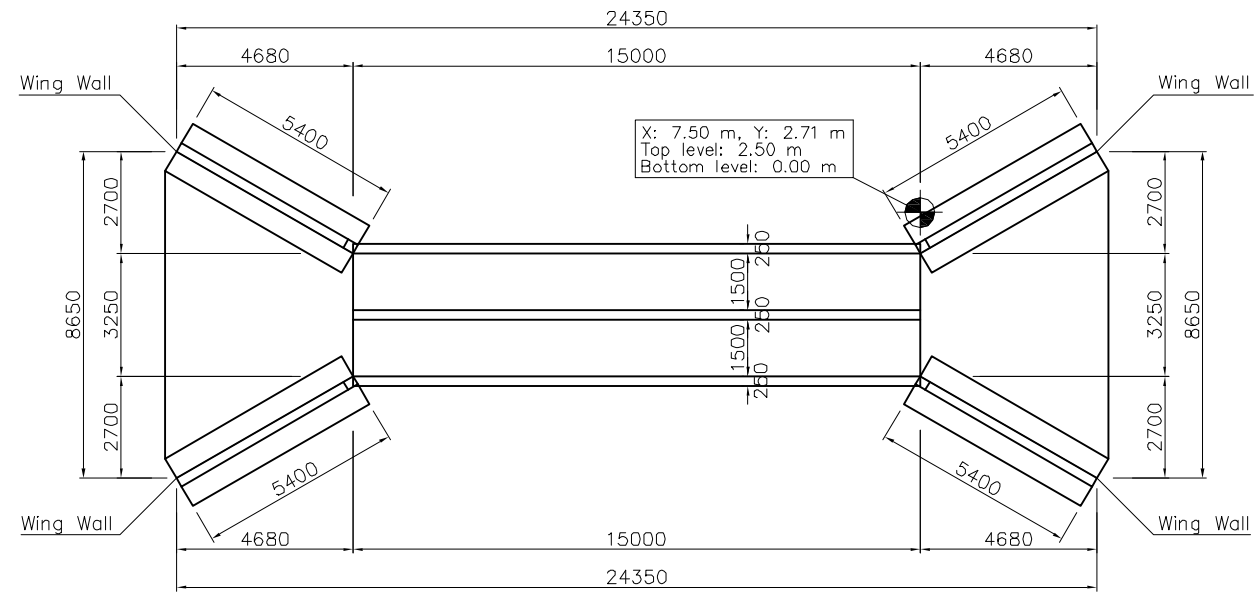
DRAWING TITLE
Box Culvert Structural Details (4)

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

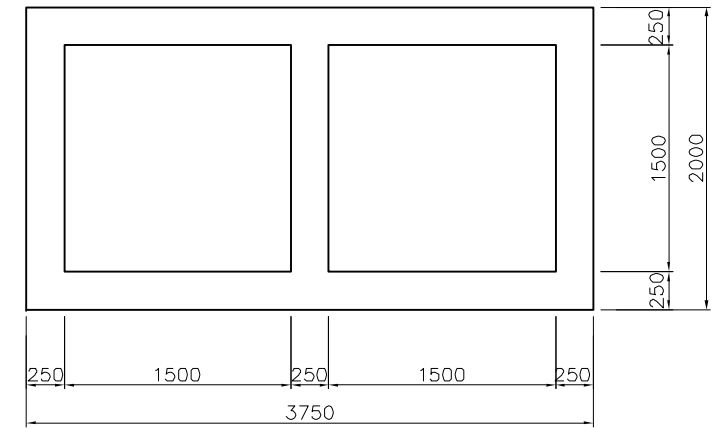
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		36	-

Box Culvert Structural Details (5)

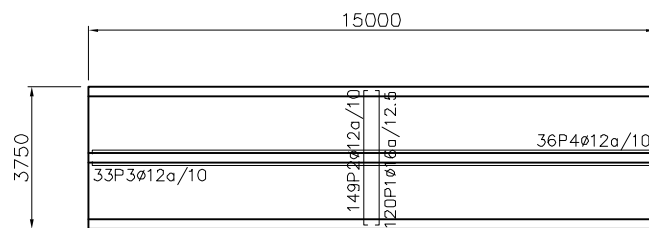
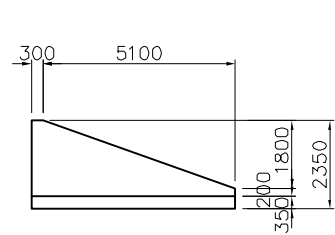
1500x1500 Type A (2 Cells)



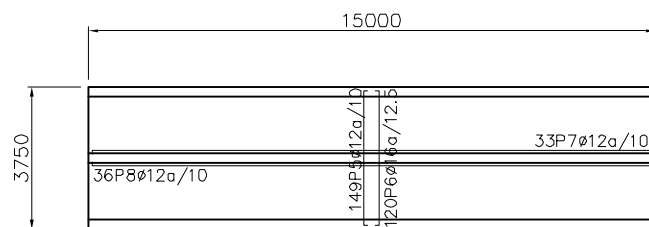
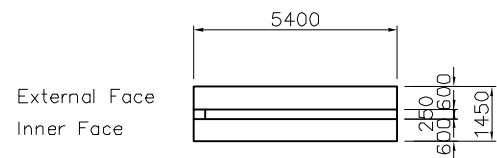
Plan View Scale: 1/100



Section View Scale: 1/25



Top Slab Scale: 1/100



Bottom Slab Scale: 1/100



Wing Walls Scale: 1/100

 JAPAN INTERNATIONAL COOPERATION AGENCY

 NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

 Eight-Japan Engineering Consultants Inc.
 Oriental Consultants Co., Ltd

DRAWING TITLE

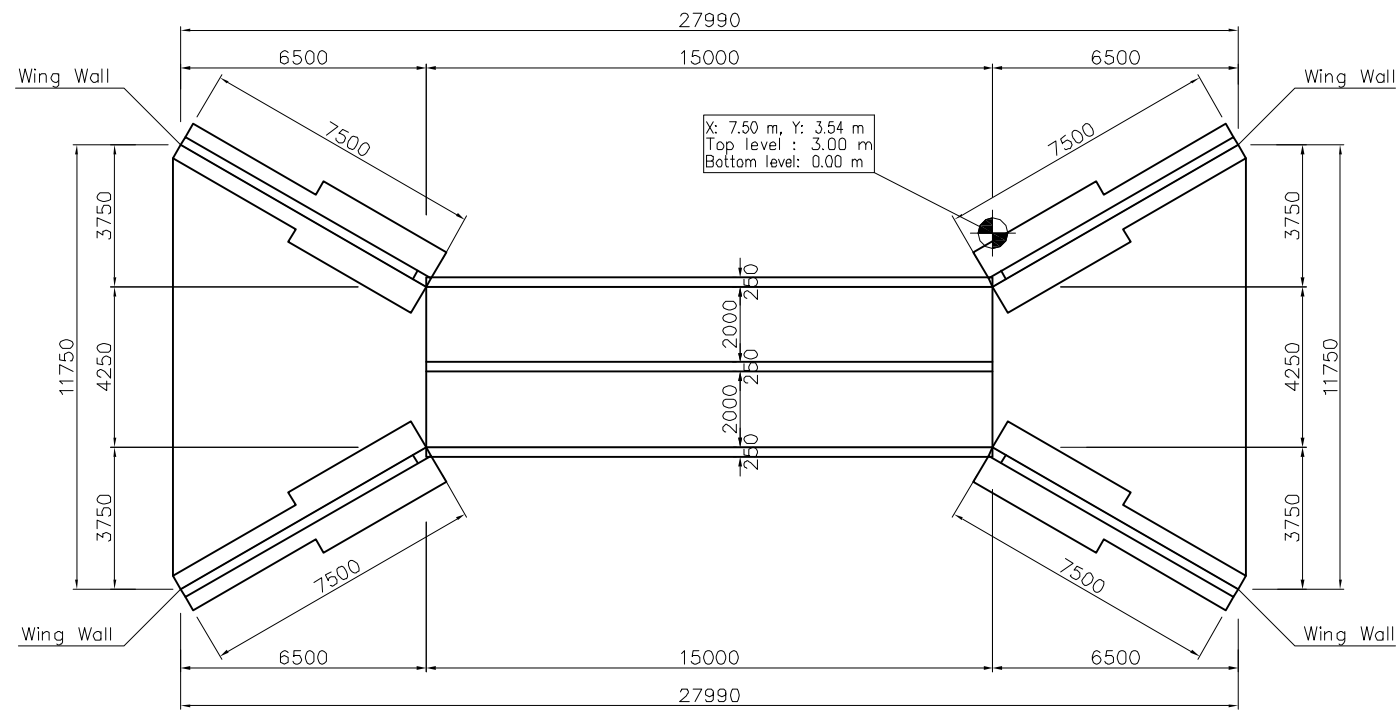
Box Culvert Structural Details (5)

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

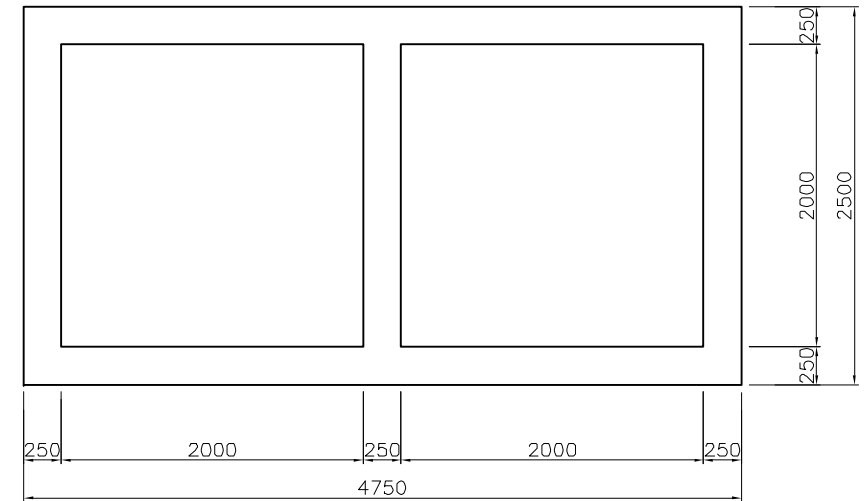
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		37	-

Box Culvert Structural Details (6)

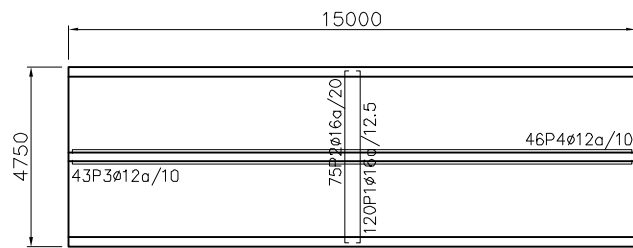
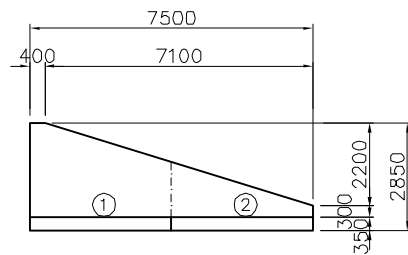
2000x2000 Type A (2 Cells)



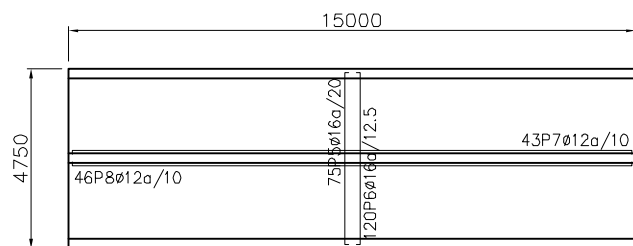
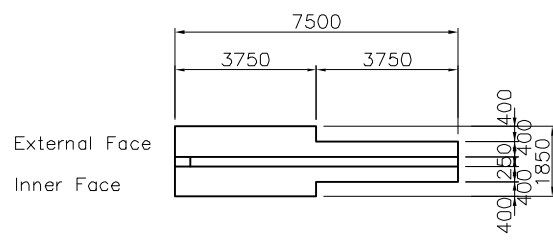
Plan View Scale: 1/100



Section View Scale: 1/25



Top Slab Scale: 1/100



Wing Walls Scale: 1/100

Bottom Slab Scale: 1/100

JAPAN INTERNATIONAL COOPERATION AGENCY

NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
 Oriental Consultants Co., Ltd

DRAWING TITLE

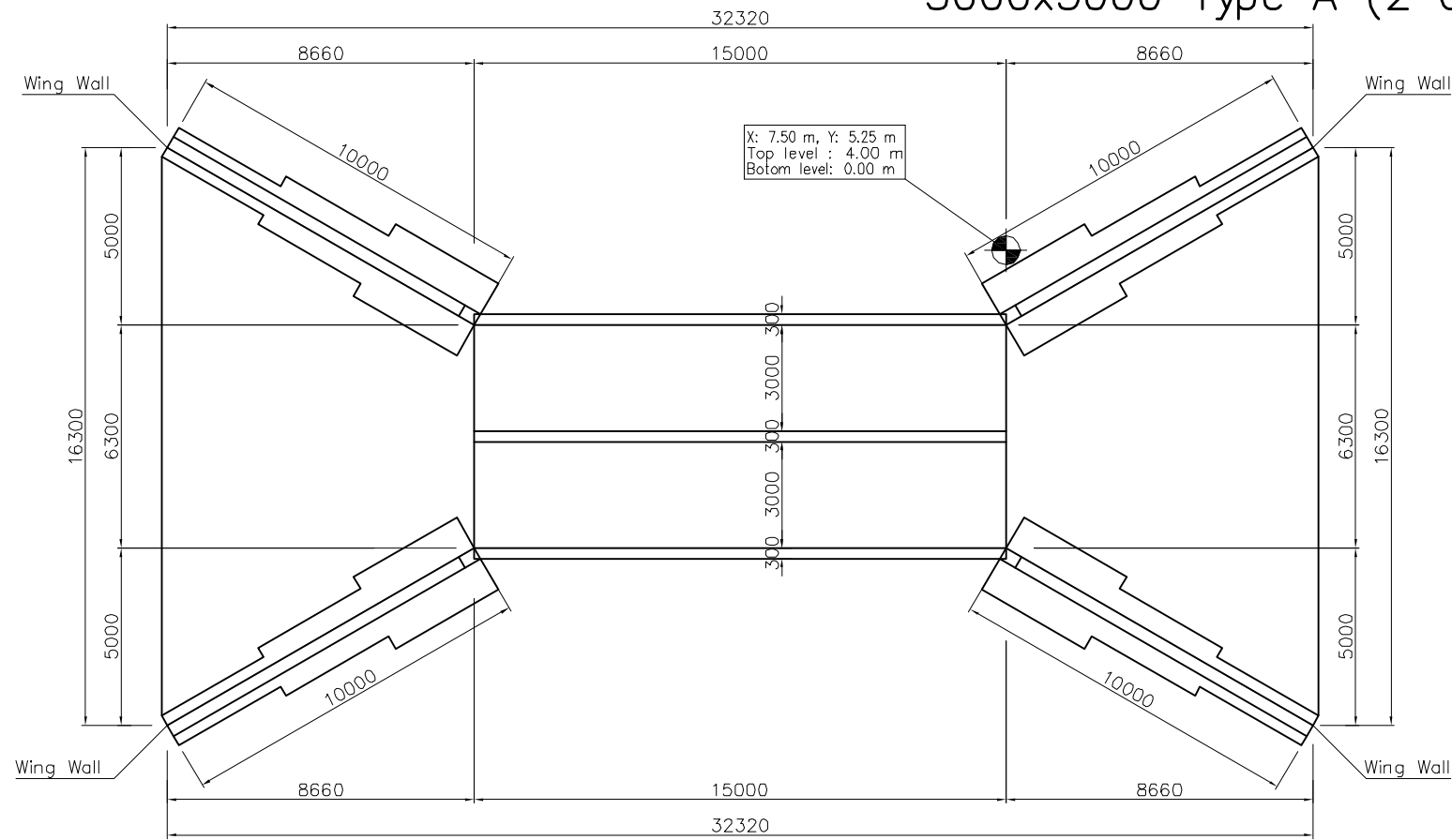
Box Culvert Structural Details (6)

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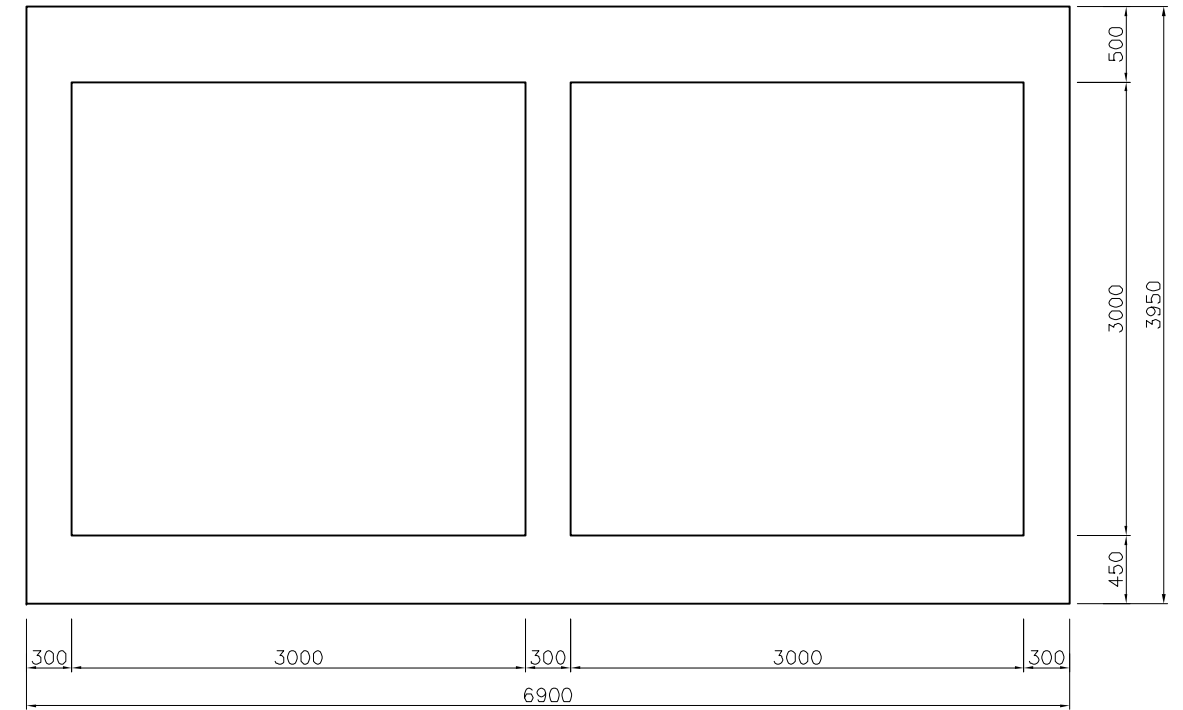
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		38	-

Box Culvert Structural Details (7)

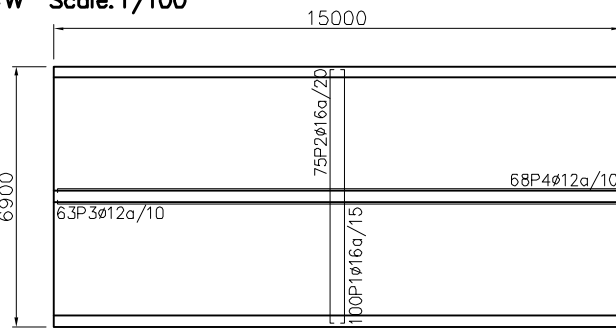
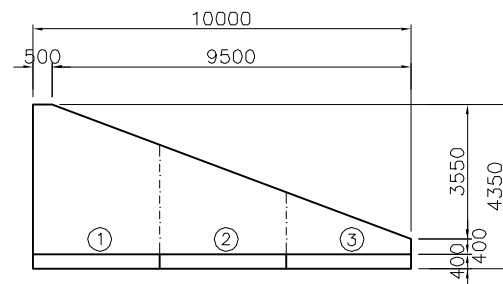
3000x3000 Type A (2 Cells)



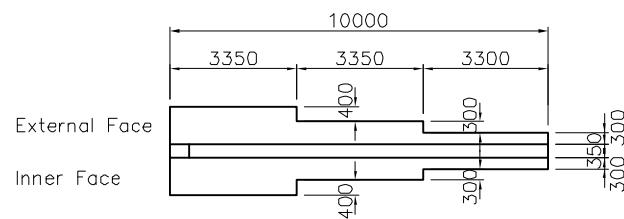
Plan View Scale: 1/100



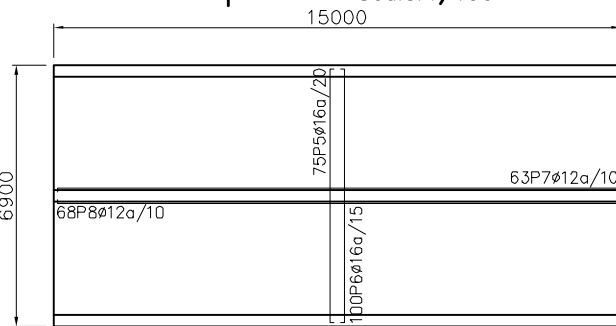
Section View Scale: 1/25



Top Slab Scale: 1/100



Wing Walls Scale: 1/100



Bottom Slab Scale: 1/100

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
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Box Culvert Structural Details (7)

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

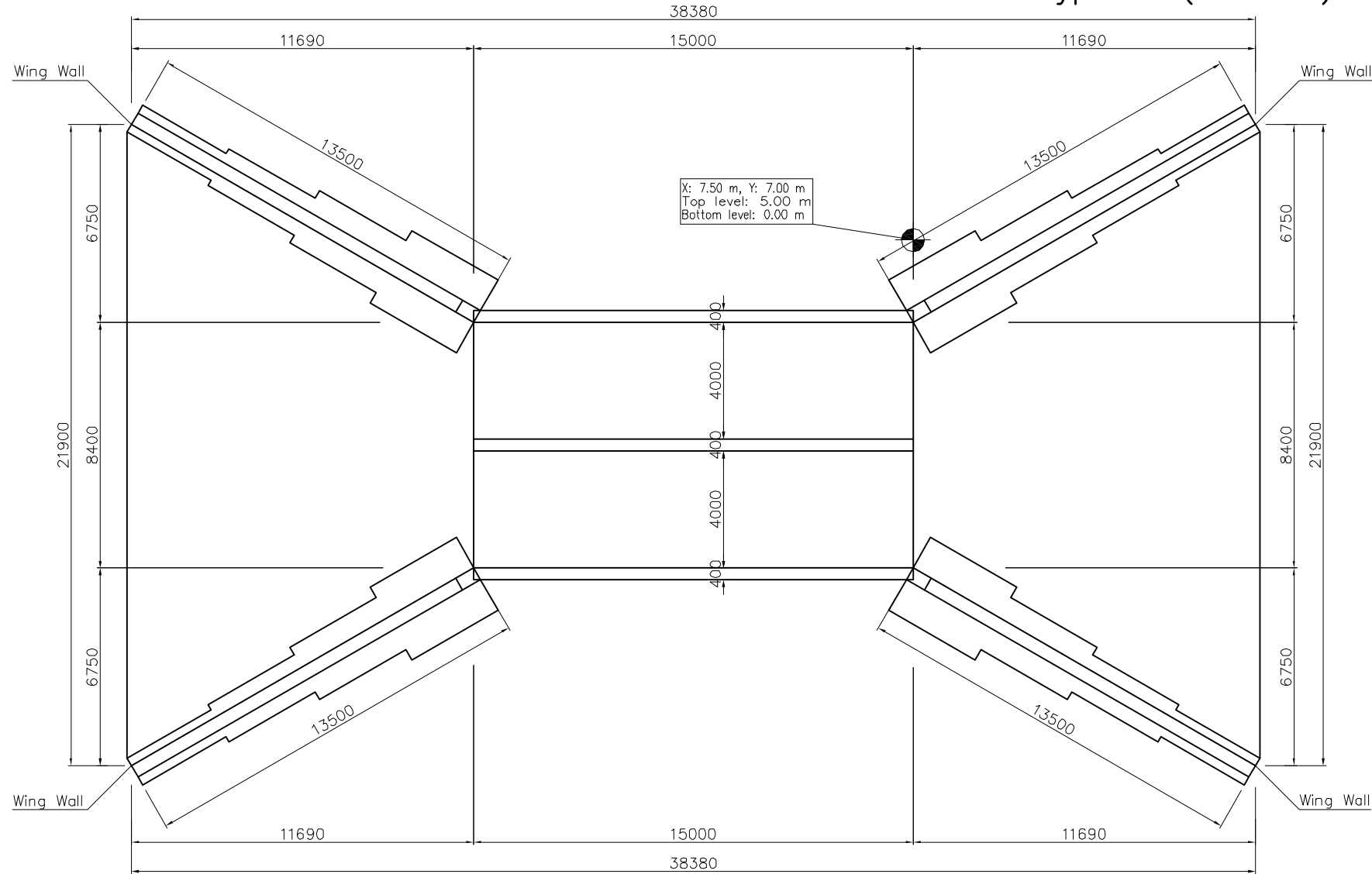
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		39	-

JAPAN INTERNATIONAL COOPERATION AGENCY

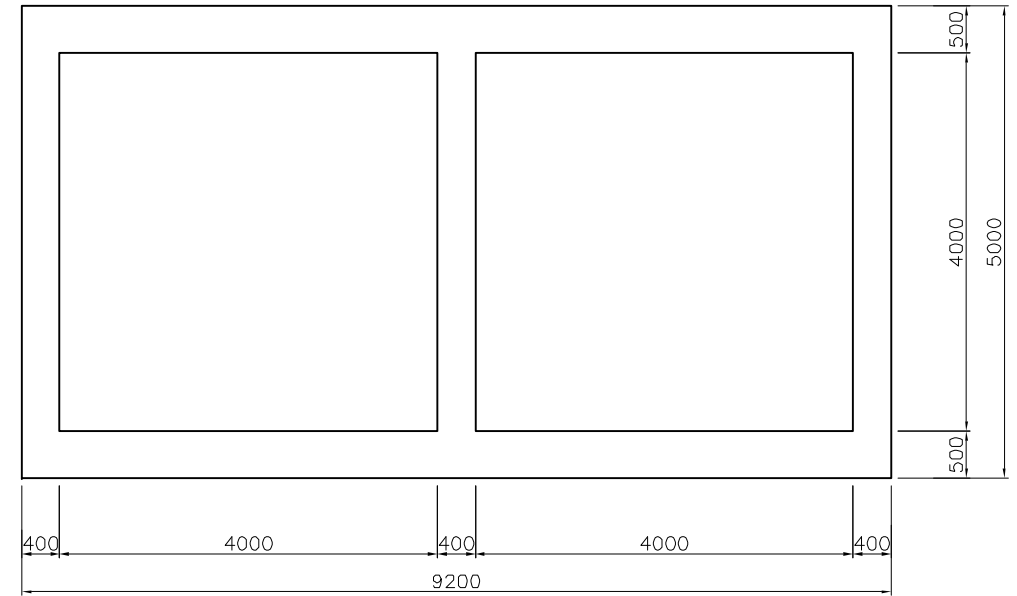
NATIONAL ROAD ADMINISTRATION

Box Culvert Structural Details (8)

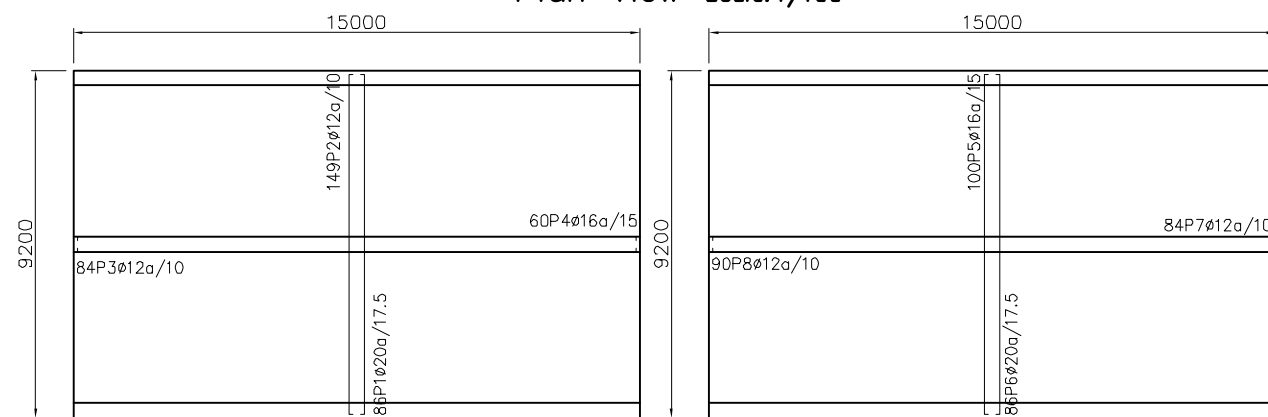
4000x4000 Type A (2 Cells)



Plan View Scale: 1/100

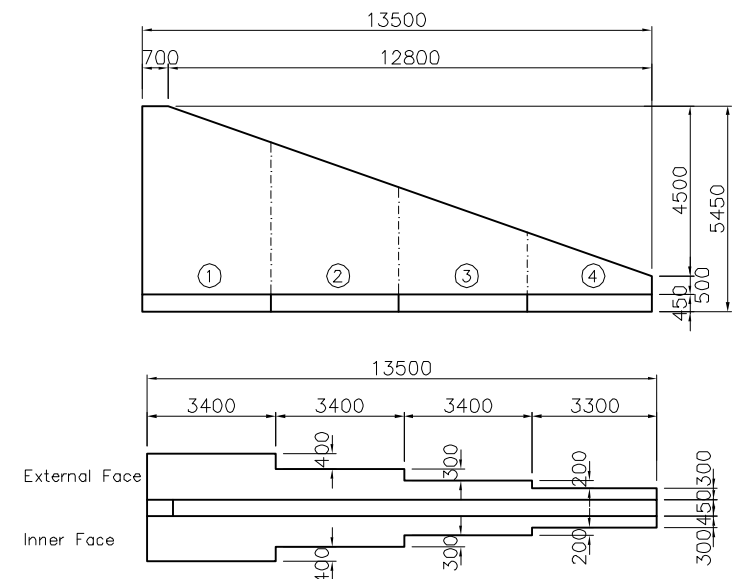


Section View Scale: 1/40



Top Slab Scale: 1/100

Bottom Slab Scale: 1/100



Wing Walls Scale: 1/100

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
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DRAWING TITLE

Box Culvert Structural Details (8)

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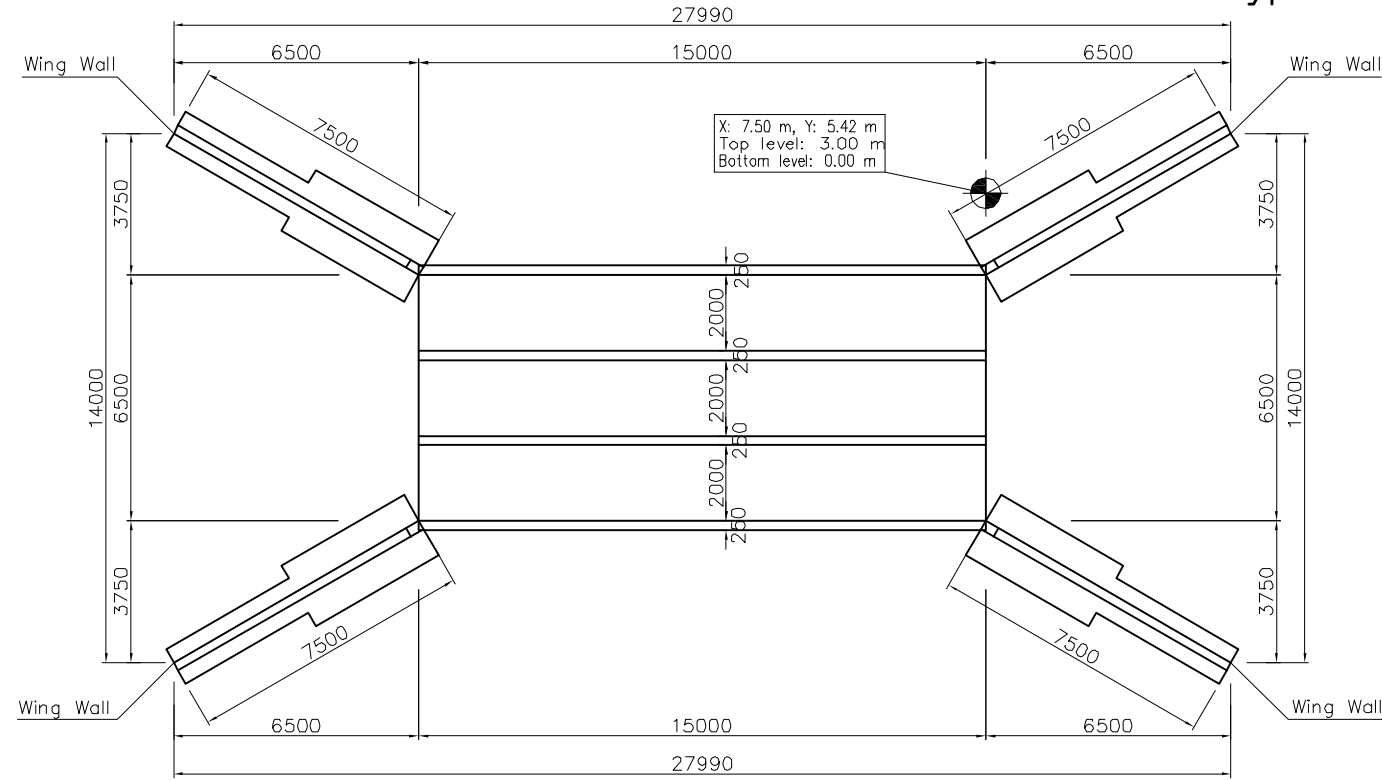
NATIONAL ROAD ADMINISTRATION

NAME	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE			

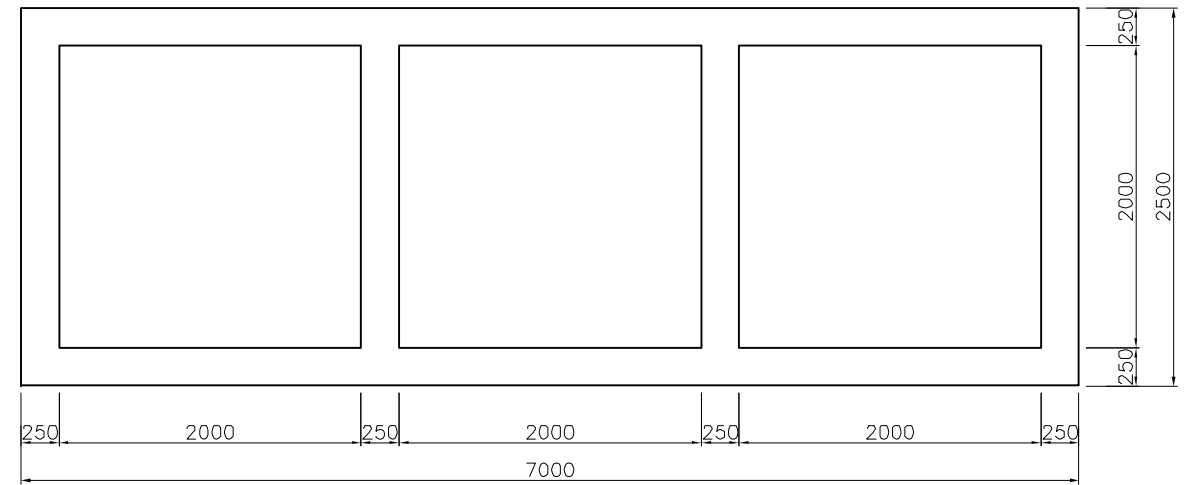
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		40	-

Box Culvert Structural Details (9)

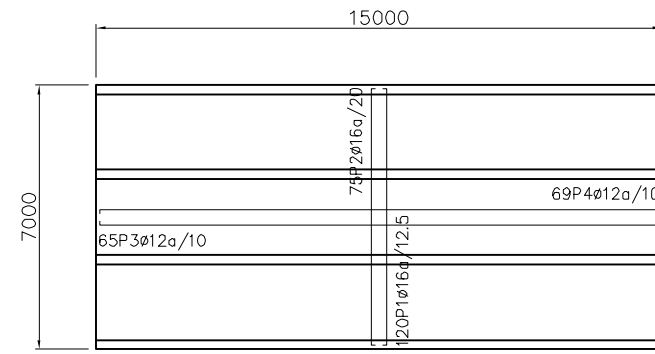
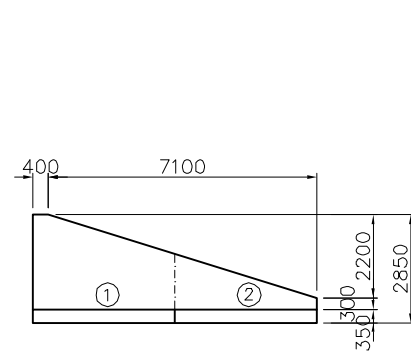
2000x2000 Type A (3 Cells)



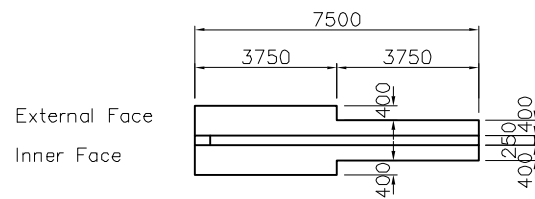
Plan View Scale: 1/100



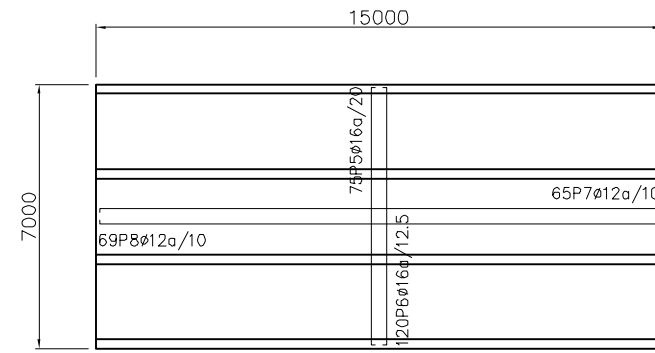
Section View Scale: 1/25



Top Slab Scale: 1/100



Wing Walls Scale: 1/100



Bottom Slab Scale: 1/100

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
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Box Culvert Structural Details (9)

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

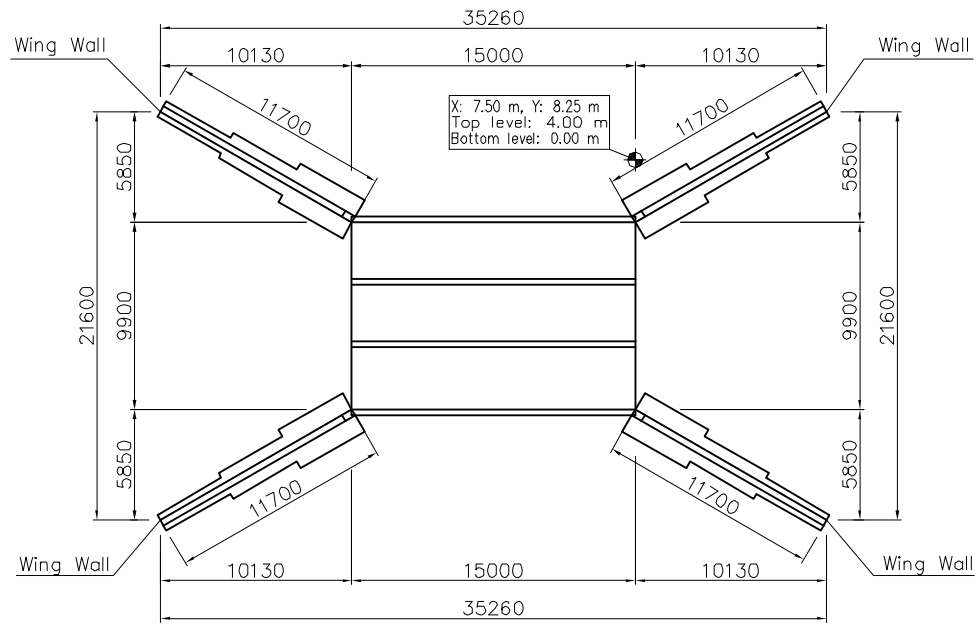
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		41	-

JAPAN INTERNATIONAL COOPERATION AGENCY

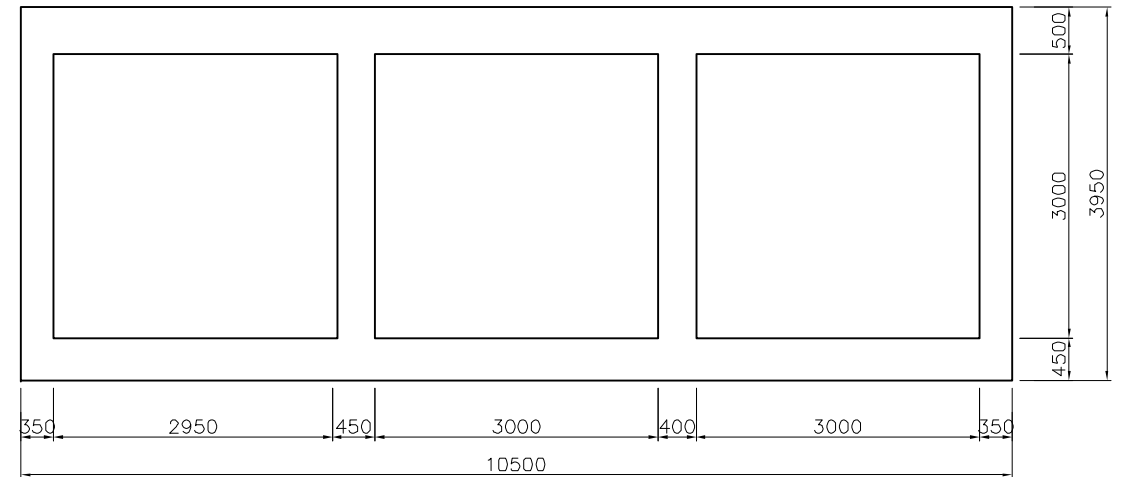
NATIONAL ROAD ADMINISTRATION

Box Culvert Structural Details (10)

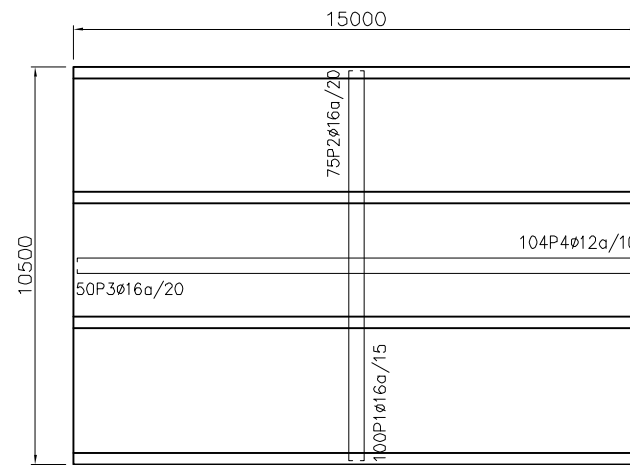
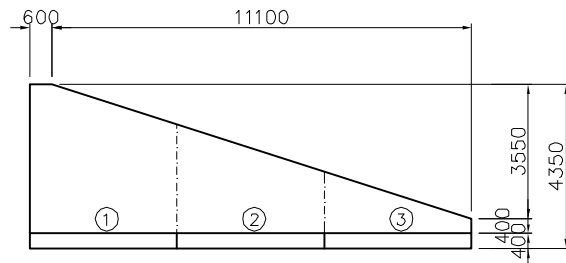
3000x3000 Type A (3 Cells)



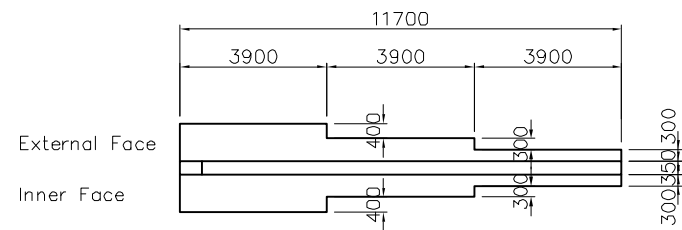
Plan View Scale: 1/200



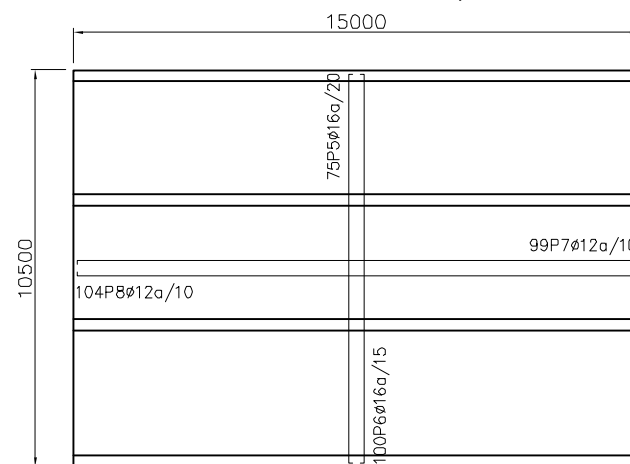
Section View Scale: 1/40



Top Slab Scale: 1/100



Wing Walls Scale: 1/100



Bottom Slab Scale: 1/100

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REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
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DRAWING TITLE

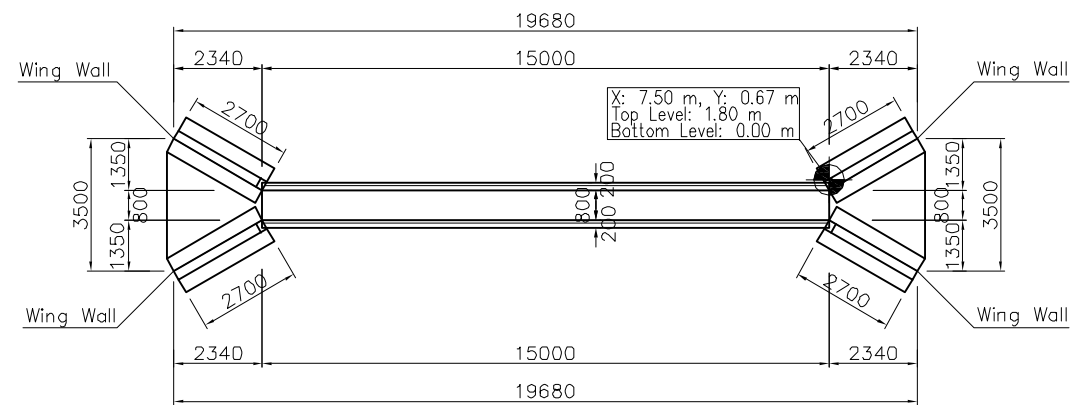
Box Culvert Structural Details (10)

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		42	-

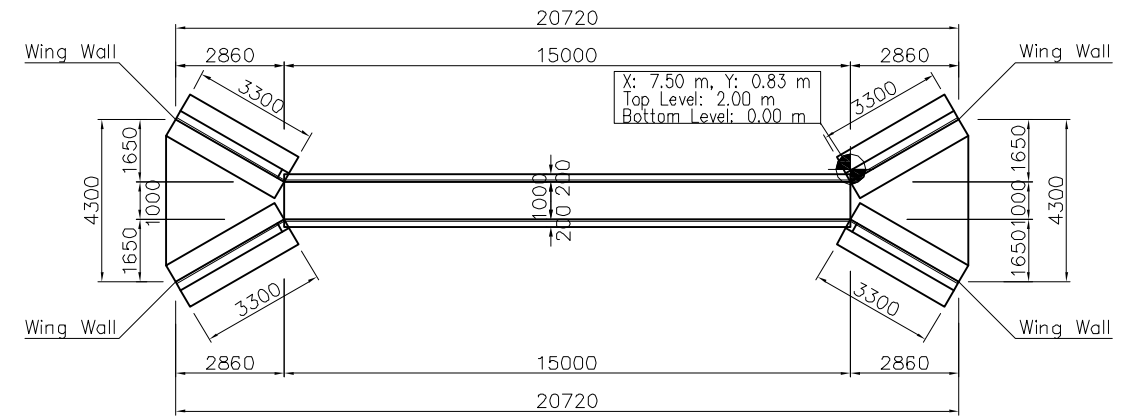
Pipe Culvert Structural Details (1)

ø 800 Type A (1 Cell)

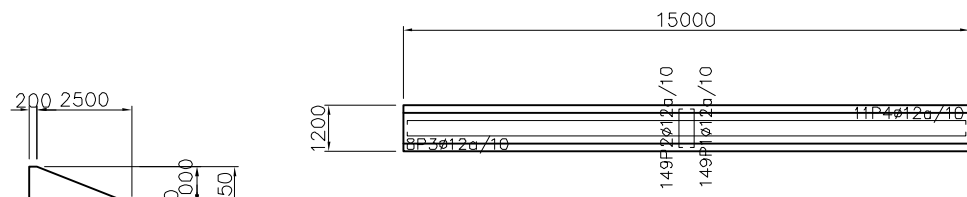


Plan View Scale: 1/100

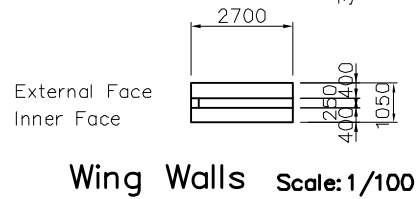
ø 1000 Type A (1 Cell)



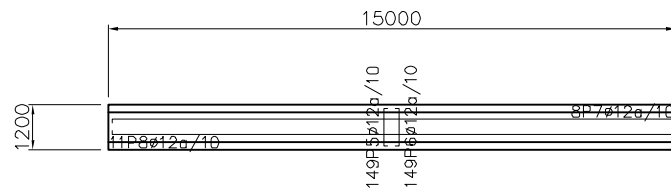
Plan View Scale: 1/100



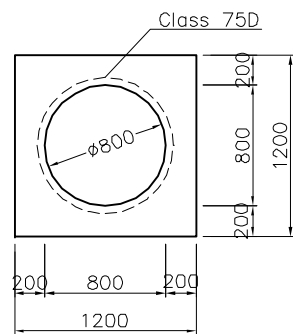
Top Slab Scale: 1/100



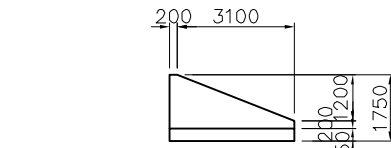
Wing Walls Scale: 1/100



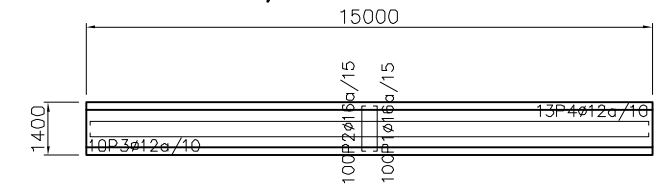
Bottom Slab Scale: 1/100



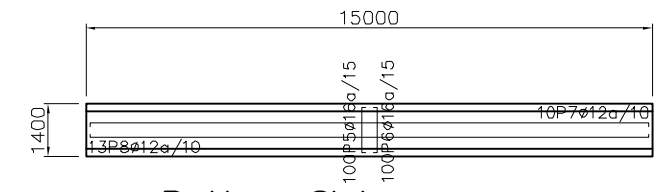
Section View Scale: 1/25



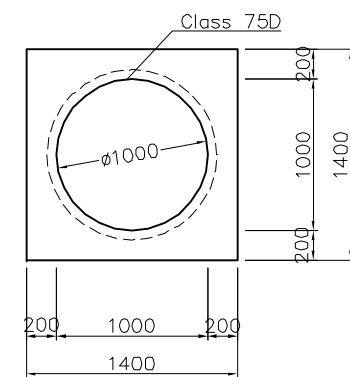
Wing Walls Scale: 1/100



Top Slab Scale: 1/100



Bottom Slab Scale: 1/100



Section View Scale: 1/25

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

NR National Road Administration

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

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Oriental Consultants Co., Ltd

DRAWING TITLE

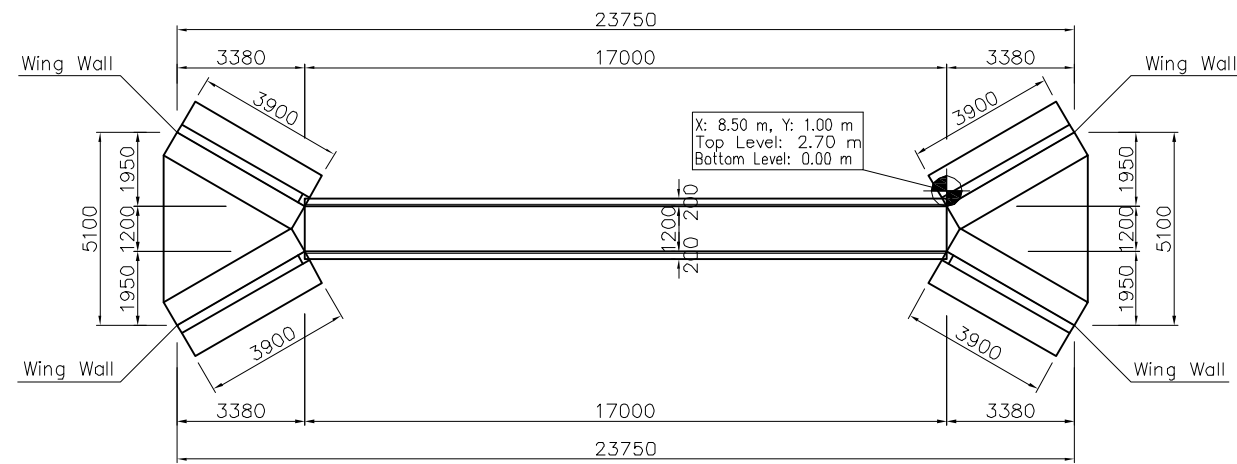
Pipe Culvert Structural Details (1)

NAME	PREPARED BY	CHECKED BY	APPROVED BY
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DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		43	-

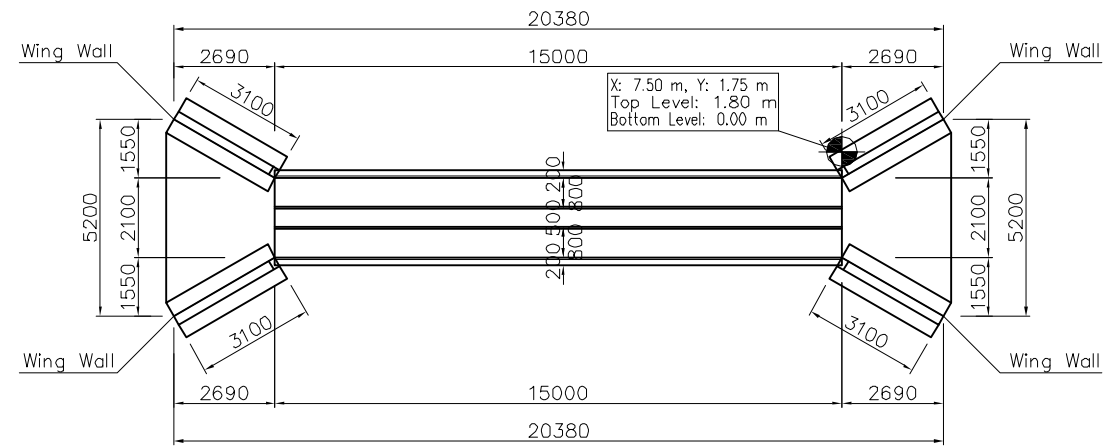
Pipe Culvert Structural Details (2)

ø 1200 Type A (1 Cell)

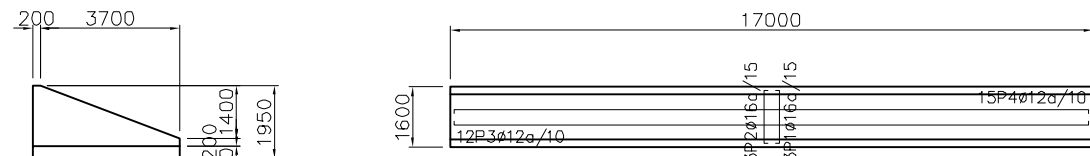


Plan View Scale: 1/100

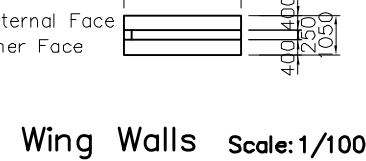
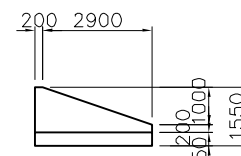
ø 800 Type A (2 Cells)



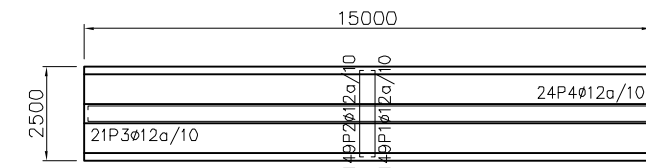
Plan View Scale: 1/100



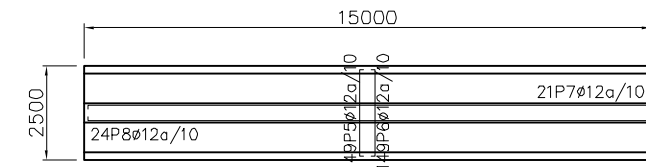
Top Slab Scale: 1/100



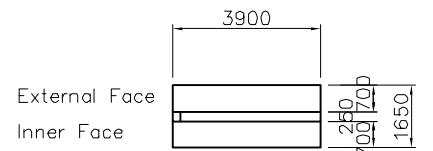
Wing Walls Scale: 1/100



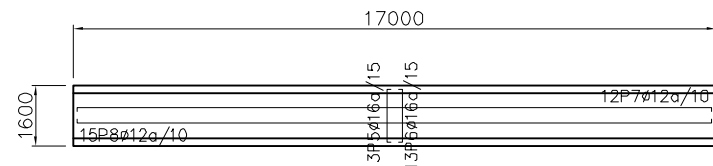
Top Slab Scale: 1/100



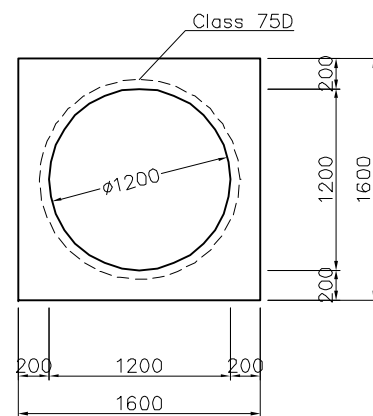
Bottom Slab Scale: 1/100



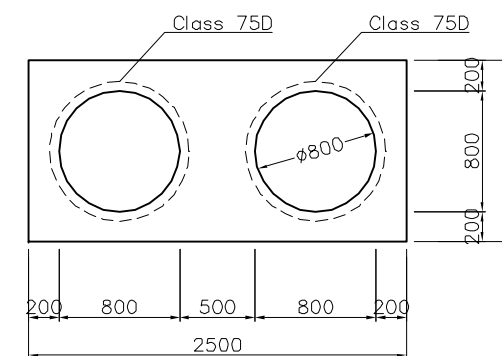
Wing Walls Scale: 1/100



Bottom Slab Scale: 1/100



Section View Scale: 1/25



Section View Scale: 1/25

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

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REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

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Pipe Culvert Structural Details (2)

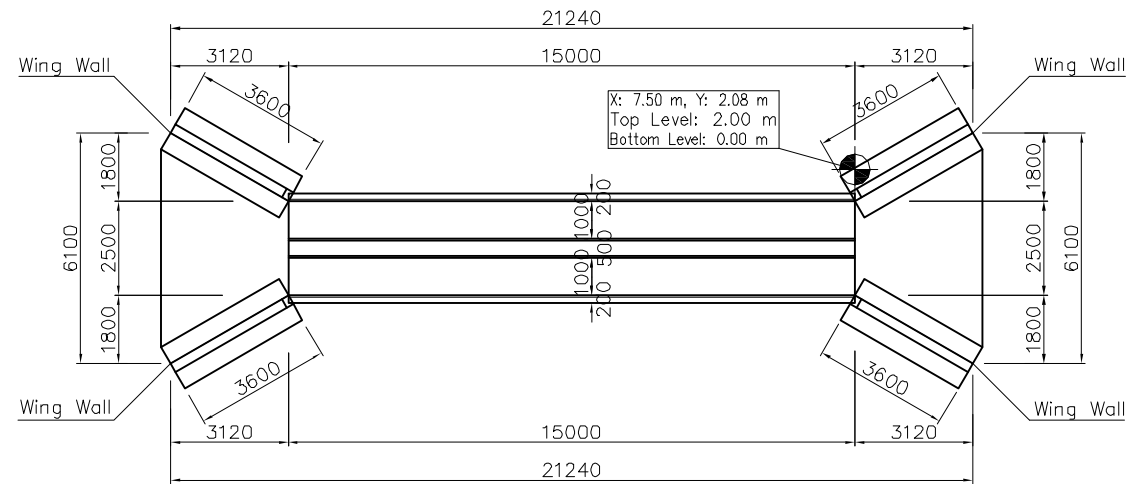
	PREPARED BY	CHECKED BY	APPROVED BY
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SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		44	-

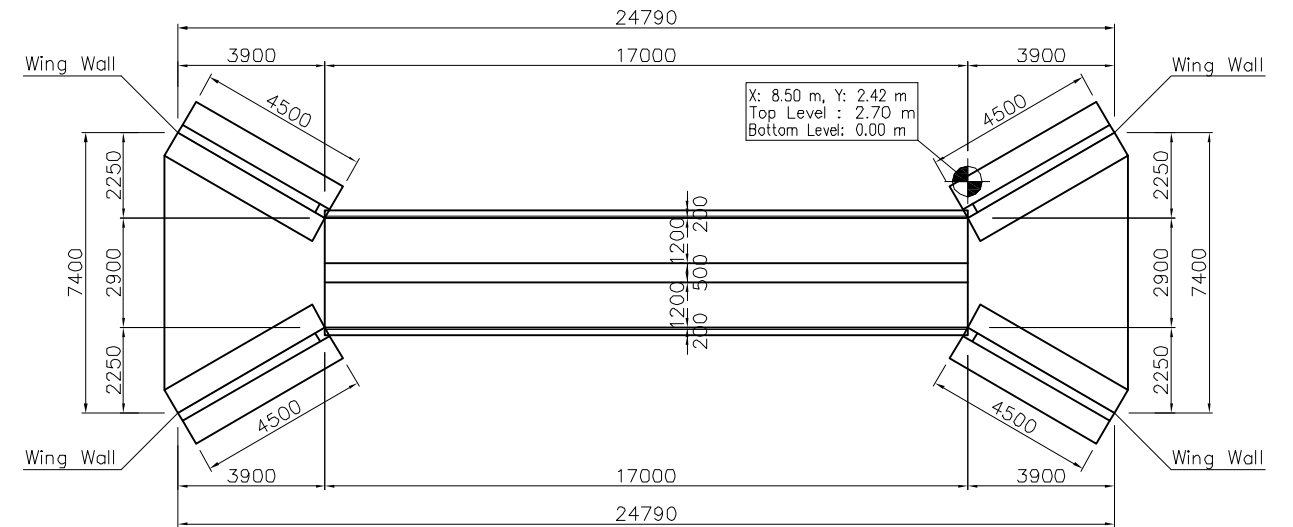
Pipe Culvert Structural Details (3)

ø 1000 Type A (2 Cells)

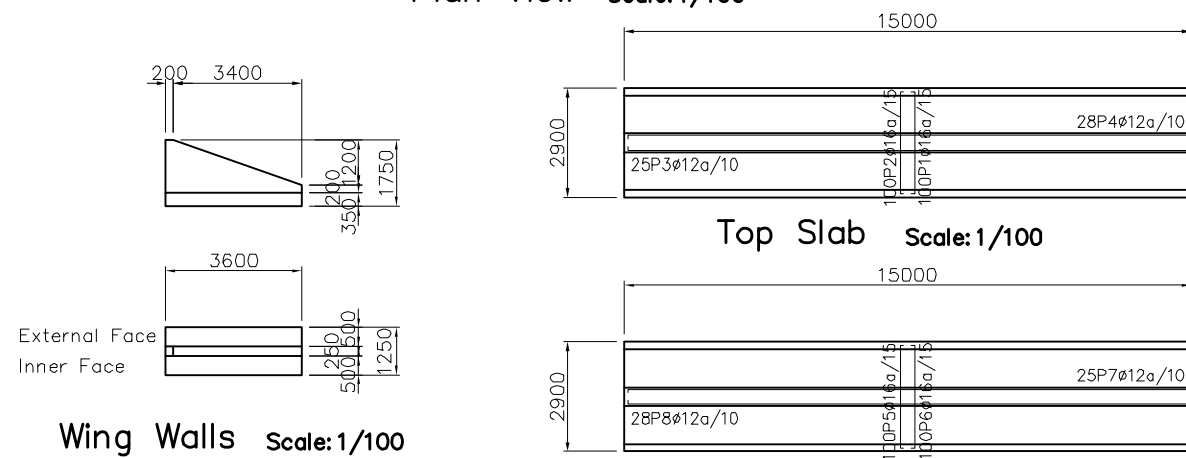
ø 1200 Type A (2 Cells)



Plan View Scale: 1/100



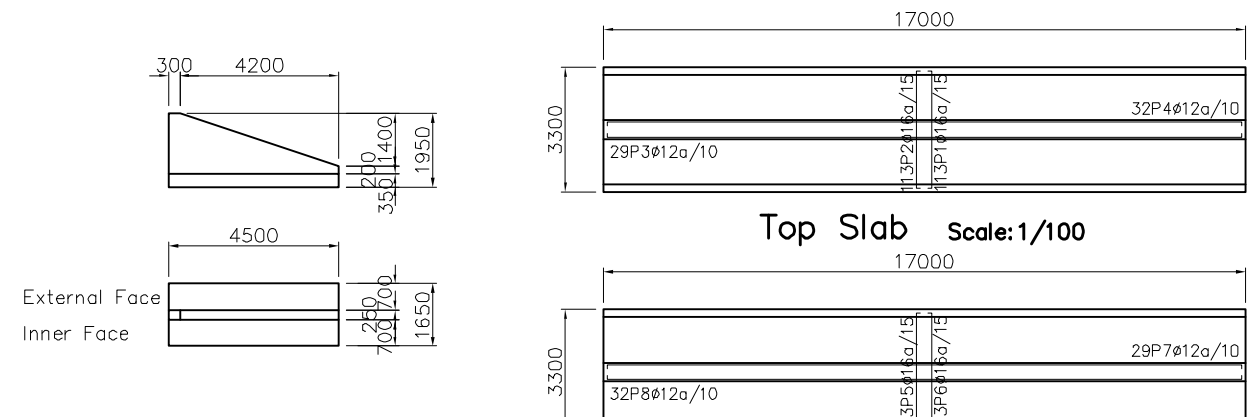
Plan View Scale: 1/100



Top Slab Scale: 1/100

Bottom Slab Scale: 1/100

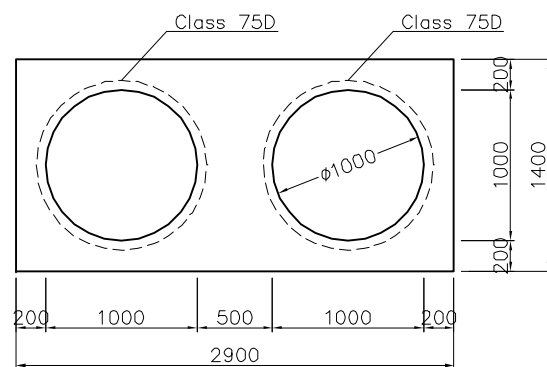
Wing Walls Scale: 1/100



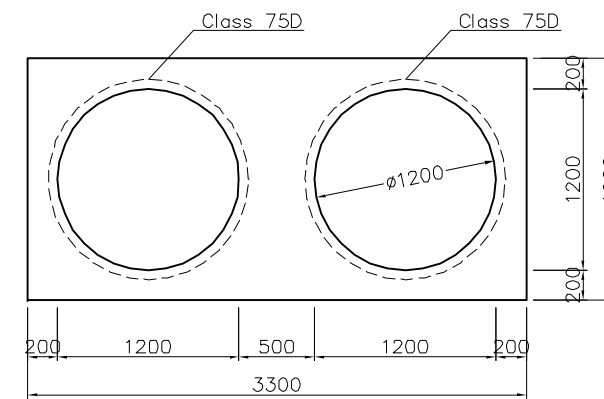
Top Slab Scale: 1/100

Bottom Slab Scale: 1/100

Wing Walls Scale: 1/100



Section View Scale: 1/25



Section View Scale: 1/25

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REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

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Oriental Consultants Co., Ltd

DRAWING TITLE

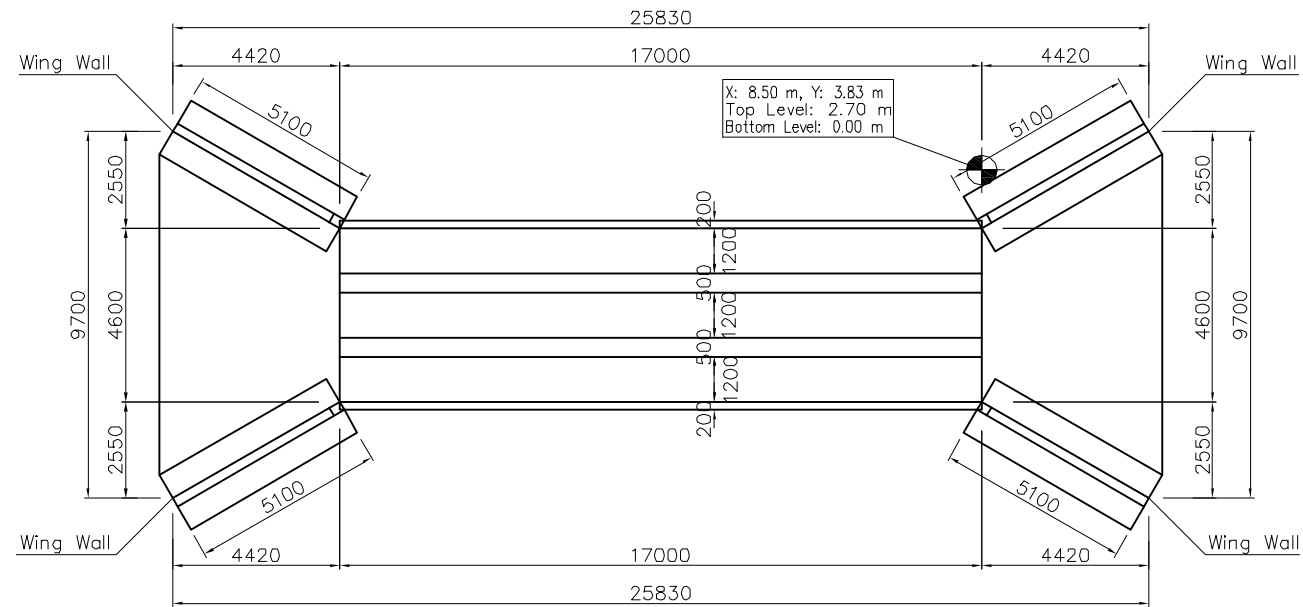
Pipe Culvert Structural Details (3)

NAME	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE			

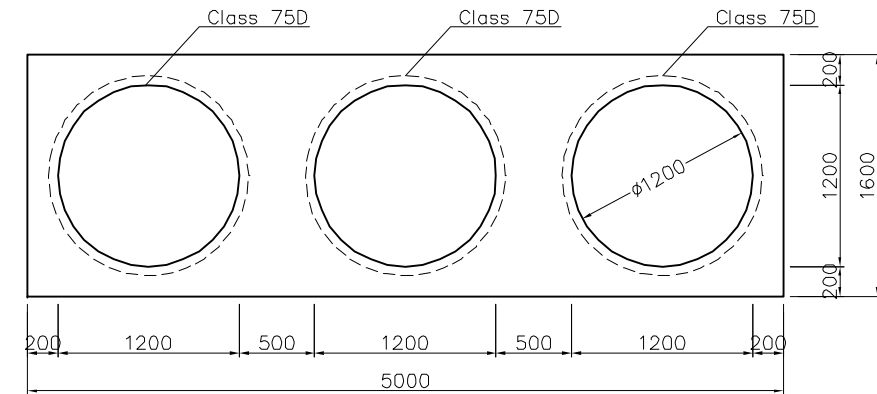
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		45	-

Pipe Culvert Structural Details (4)

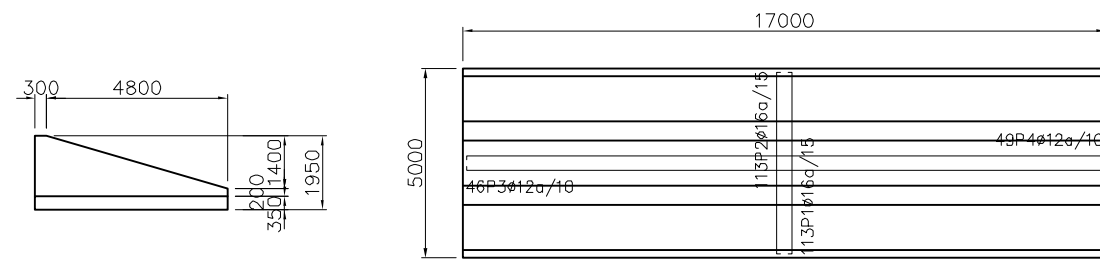
Ø 1200 Type A (3 Cells)



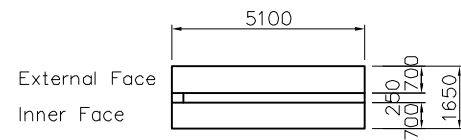
Plan View Scale: 1/100



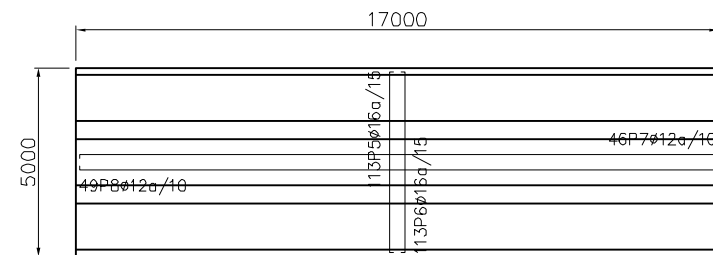
Section View Scale: 1/25



Top Slab Scale: 1/100



Wing Walls Scale: 1/100



Bottom Slab Scale: 1/100

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REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

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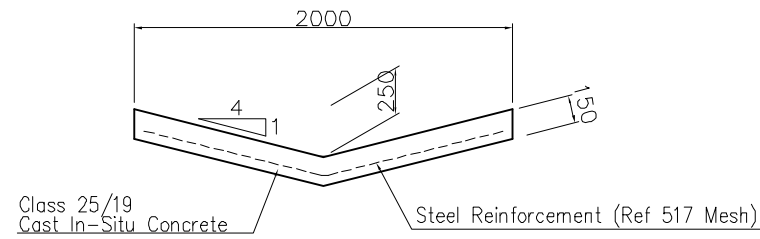
DRAWING TITLE

Pipe Culvert Structural Details (4)

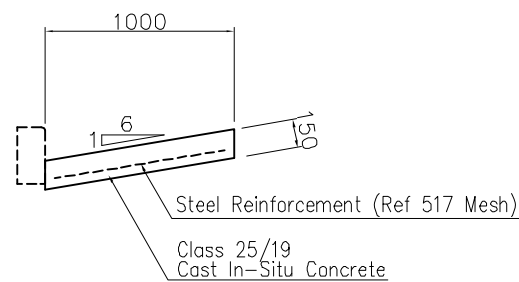
	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		46	-

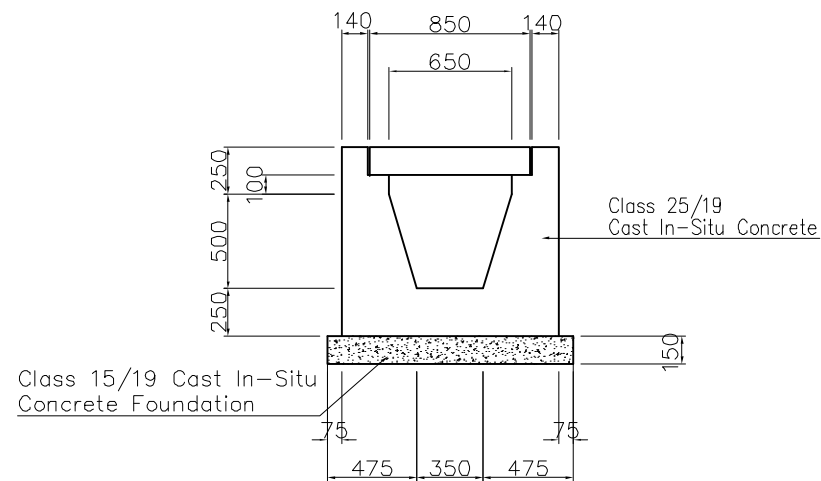
Drainage Details



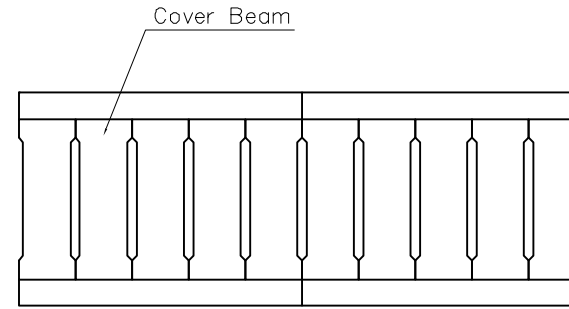
Type 1 Drain Scale: 1/20



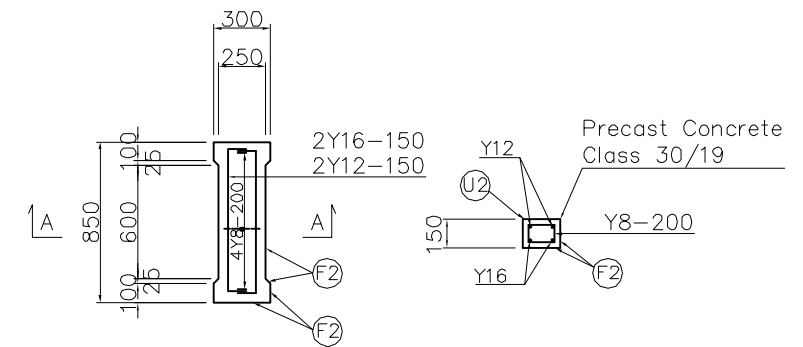
Type 2 Drain Scale: 1/20



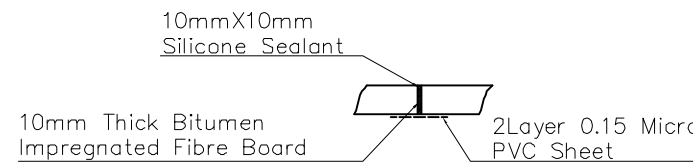
Type 3 Drain Scale: 1/20



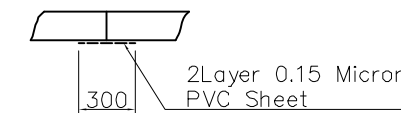
Plan View of Cover Beam



Section A-A



EXPANSION JOINT



CONSTRUCTION JOINT

Joint Details All Drains Not to Scale

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REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

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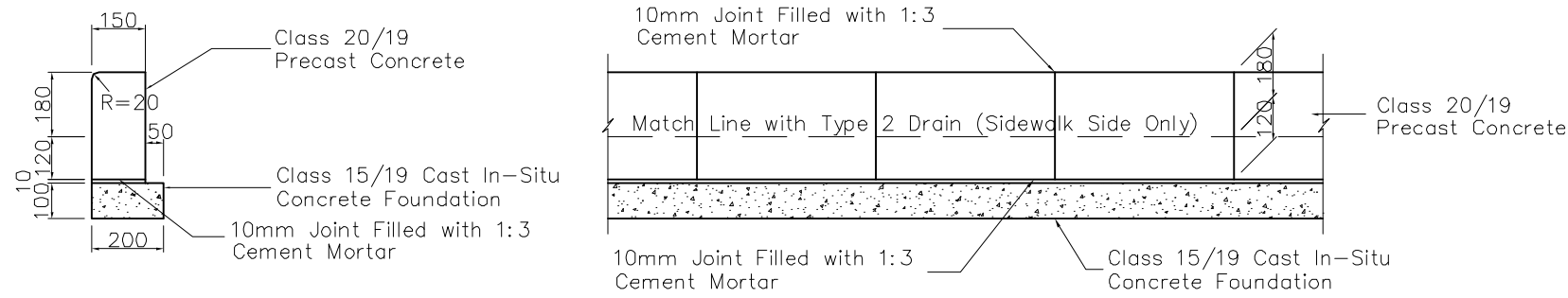
DRAWING TITLE

Drainage Details

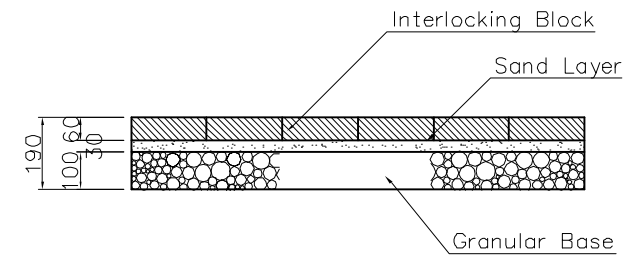
	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		47	-

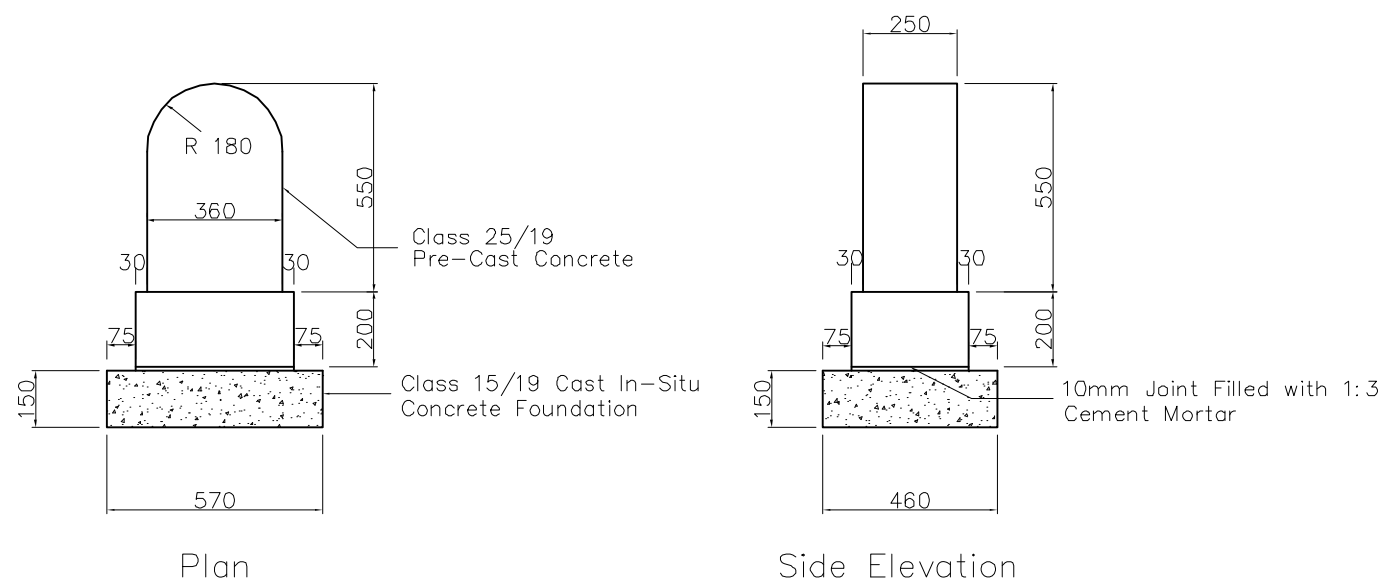
Ancillary Work



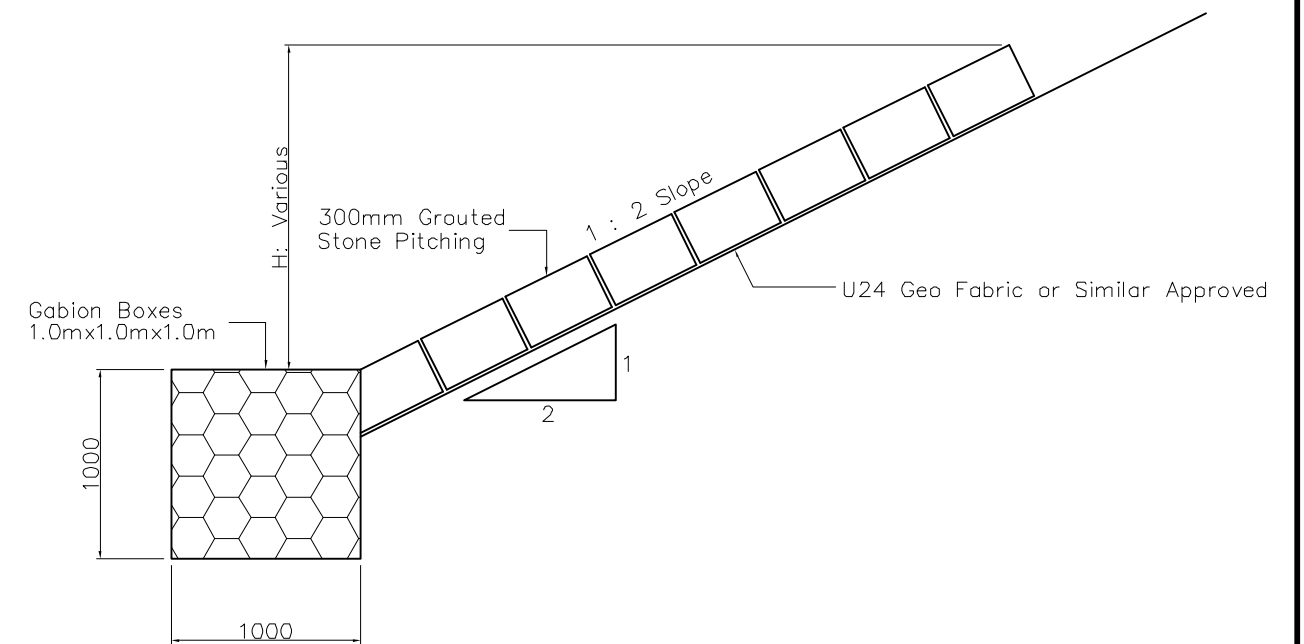
Concrete Kerb Scale: 1/10
SABS 927-1969 TYPE 1



Detail Composition of Sidewalk Scale: 1/10



Typical Detail of A km-Marker Scale: 1/10



Typical Detail of Bank Erosion Protection Scale: 1/20

JAPAN INTERNATIONAL COOPERATION AGENCY

NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR
(N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
 Oriental Consultants Co., Ltd

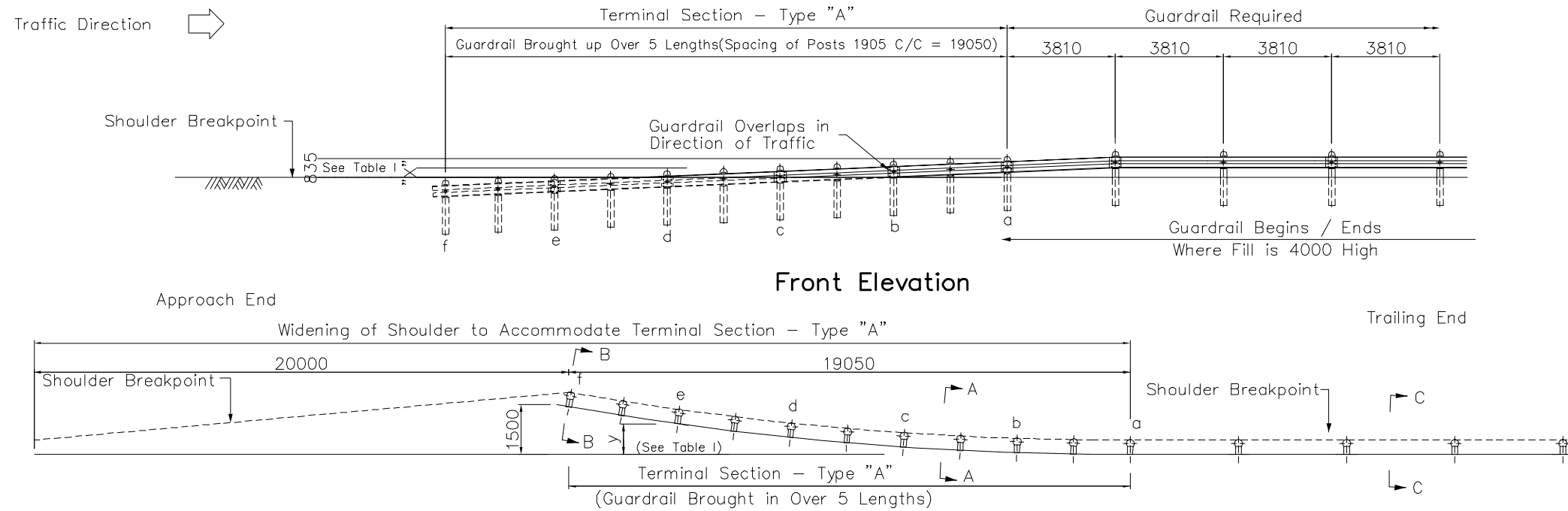
DRAWING TITLE

Ancillary Work

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DATE			

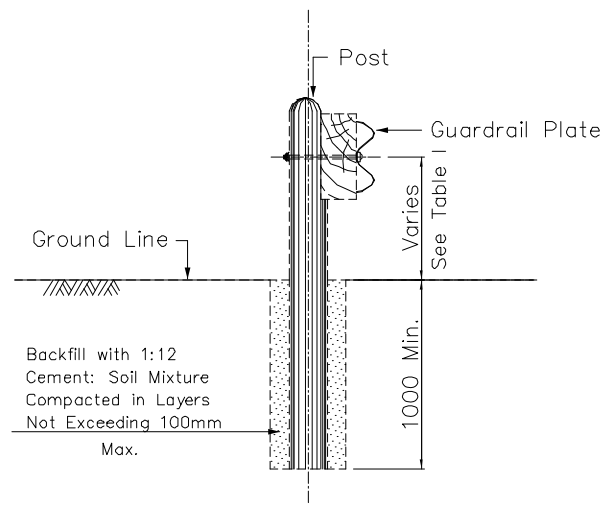
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
		48	-

Guardrail Placing Details

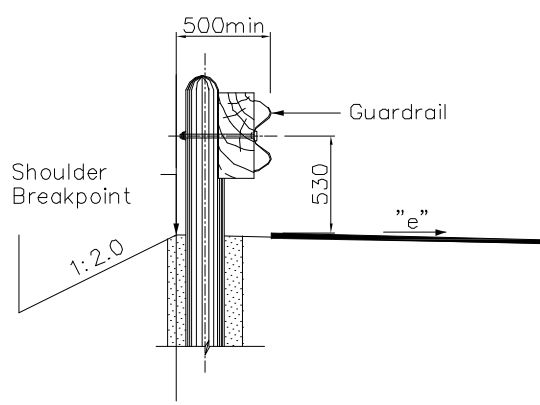


	Horizontal Off - Sets for Parabolic Terminal Sections Y (mm)	Vertical Off-Sets for Parabolic Terminal Section (Measured from Top of Post) X (mm)
a	0	0
b	60	33
c	240	133
d	540	299
e	960	531
f	1500	835

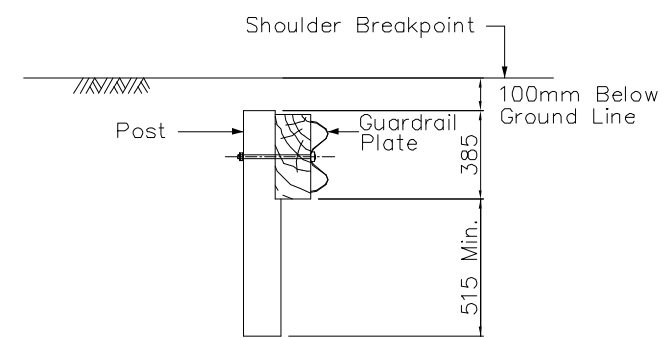
Plan
Typical Details of Terminal Sections
Scale: 1/100



Section A-A
Scale: 1/20



Section C-C
Scale: 1/20



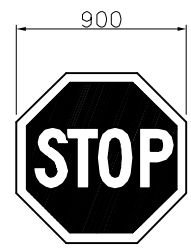
Section B-B
Scale: 1/20

- Notes on Erection Details
1. The Holes for Timber Posts Shall be of Sufficient Size to Permit Proper Setting of the Posts and to Allow Sufficient Room for Backfilling.
 2. At Least 1.0m of Post Shall be Embedded in the Ground.
 3. Holes for Timber Posts Shall be Spaced to Suite the Standard Length of Guardrail Supplied.
 4. Holes Shall be Backfilled with 12:1 Soil : Cement Mixture at Optimum Moisture Content in Compacted Layers not Exceeding 100mm.

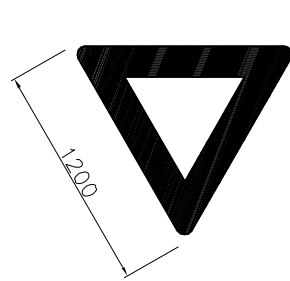
Without Concrete Side Drain

JAPAN INTERNATIONAL COOPERATION AGENCY	REMARKS:	THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)			
		Eight-Japan Engineering Consultants Inc. Oriental Consultants Co., Ltd		DRAWING TITLE	
NATIONAL ROAD ADMINISTRATION		PREPARED BY	CHECKED BY	APPROVED BY	Guardrail Placing Details
		NAME			
		SIGNATURE			SCALE
		DATE			As Shown
					SHEET NO.
					DRAWING NO.
					REV. NO.
					49
					-

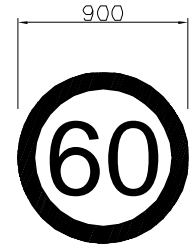
Traffic Signs



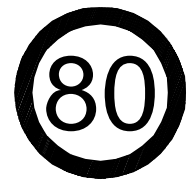
R1



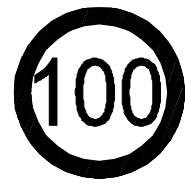
R2



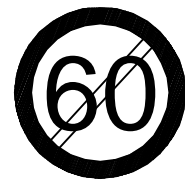
R201-60



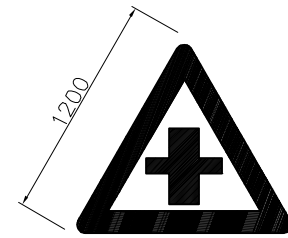
R201-80



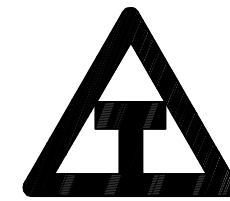
R201-100



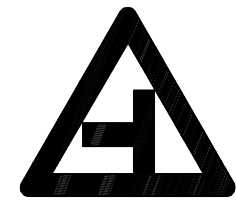
R201-60-600



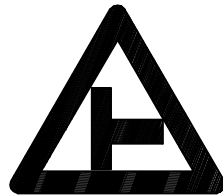
W102



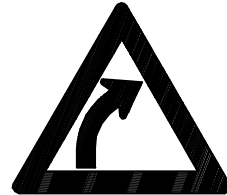
W104



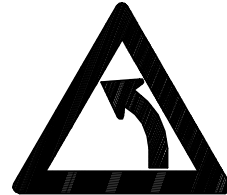
W107



W108



W202



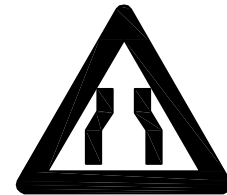
W203



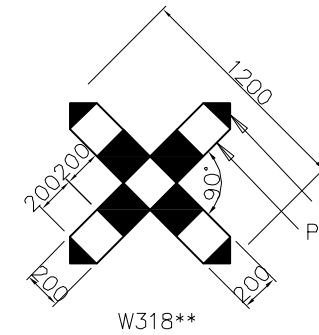
W306



W318*



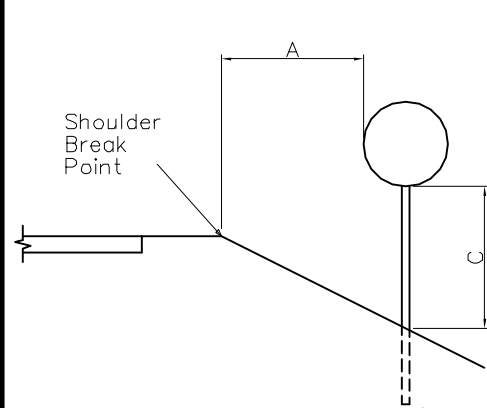
W328



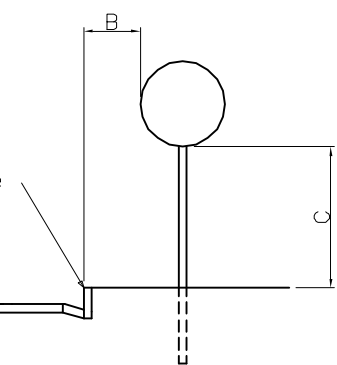
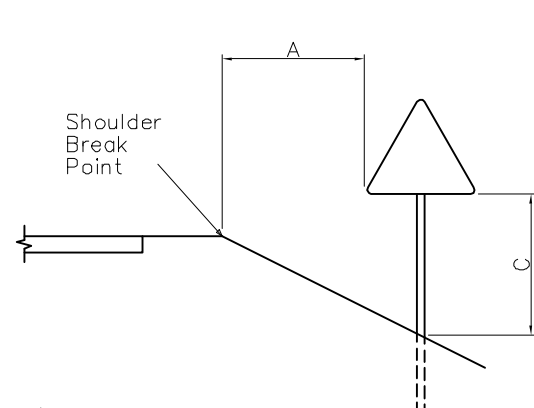
W318**

Paint with red stripe W=200
Paint with white stripe W=200

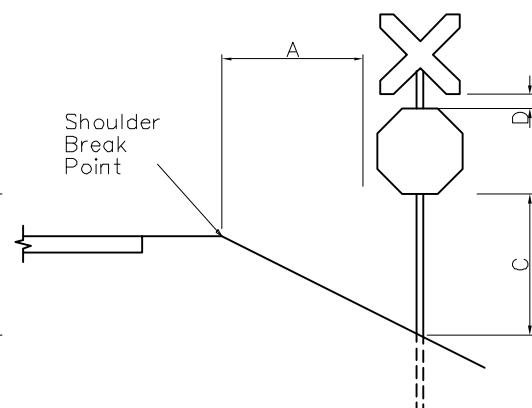
Regulatory And Warning Signs Scale: 1/20



Shoulder(No Kerb) Scale: 1/40

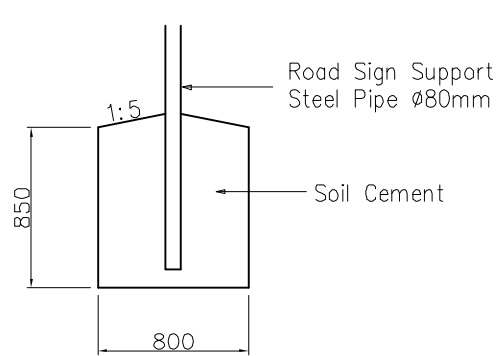


Shoulder(With Kerb) Scale: 1/40

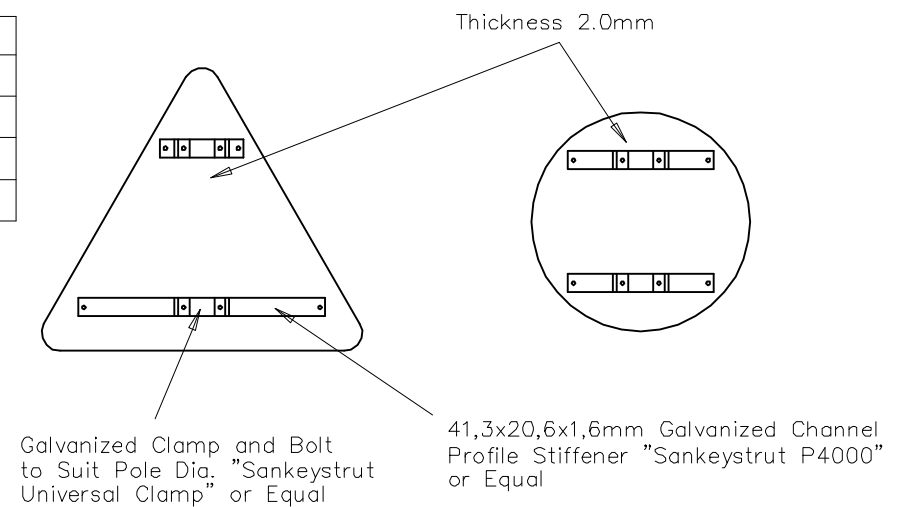


For Level Crossing Scale: 1/40

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



Foundation Detail Scale: 1/20



Typical Fixing Detail

Notes:

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

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

NRAC NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
Oriental Consultants Co., Ltd

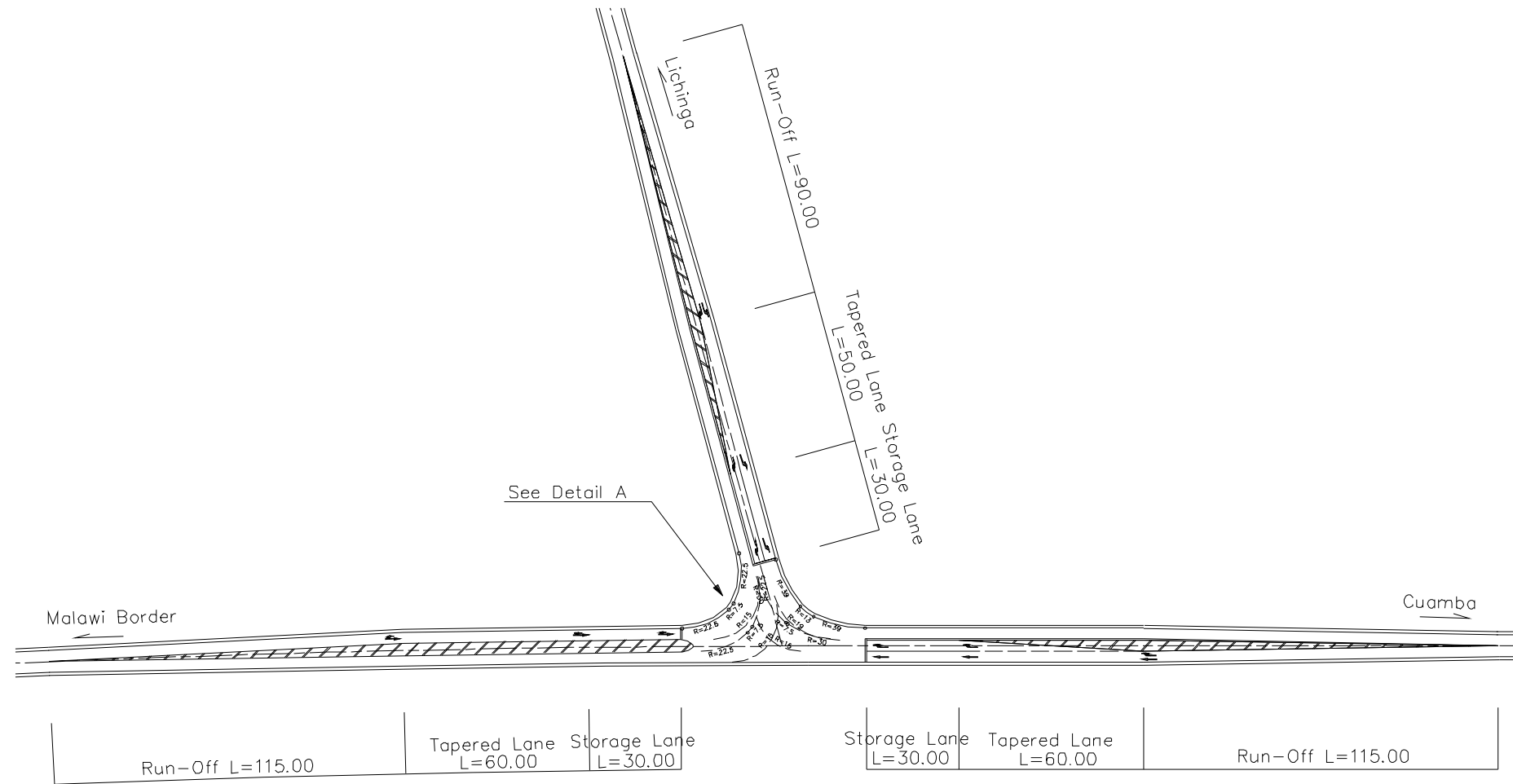
DRAWING TITLE

Traffic Signs

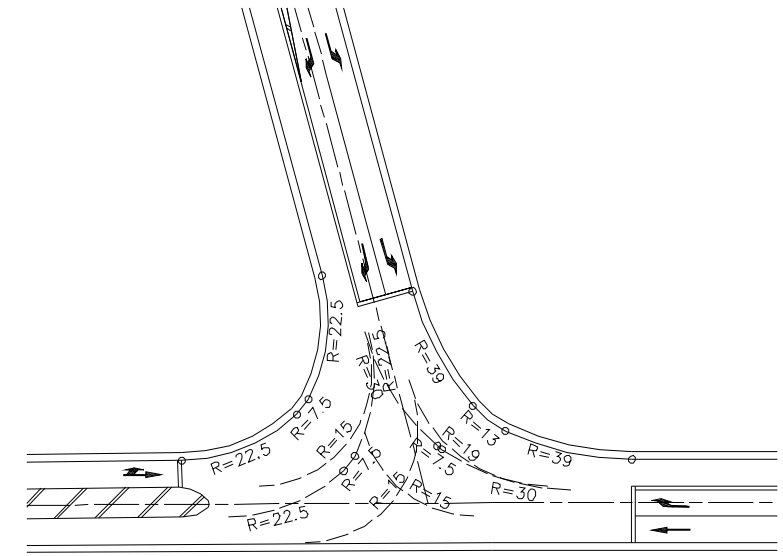
	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		50	-

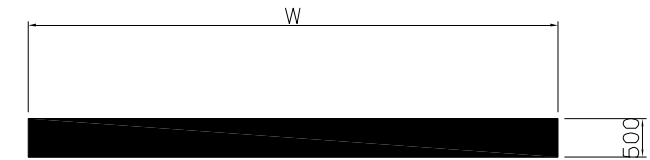
Traffic Marking



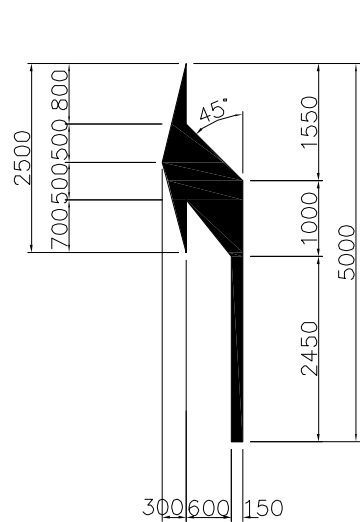
Plan Scale: 1/1000



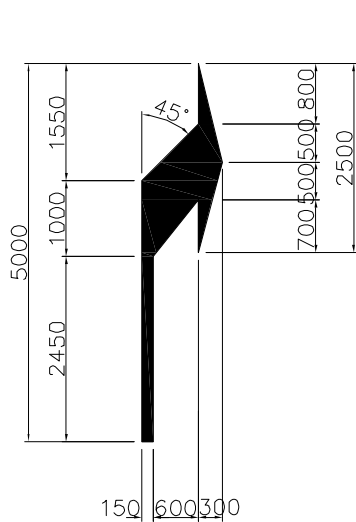
Detail A Scale: 1/500



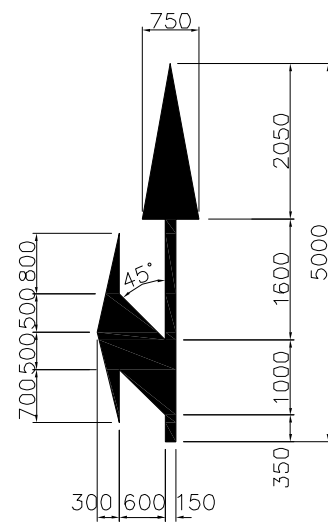
Stop Line Scale: 1/50



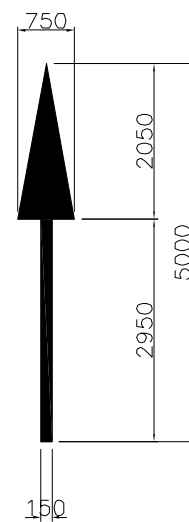
Left-Turn Scale: 1/50



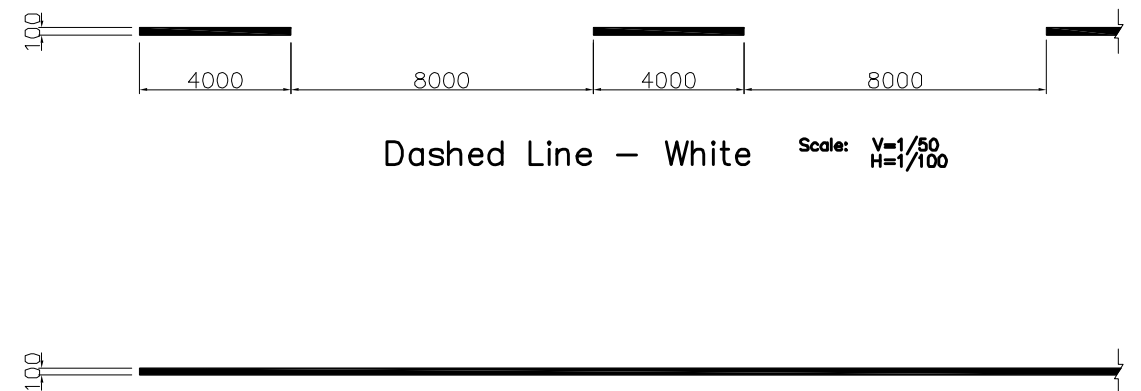
Right-Turn Scale: 1/50



Straight-Left-Turn Scale: 1/50



Straight Scale: 1/50



Dashed Line - White Scale: V=1/50, H=1/100

Continuous Line - Yellow, White Scale: 1/50

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

LANE NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
Oriental Consultants Co., Ltd

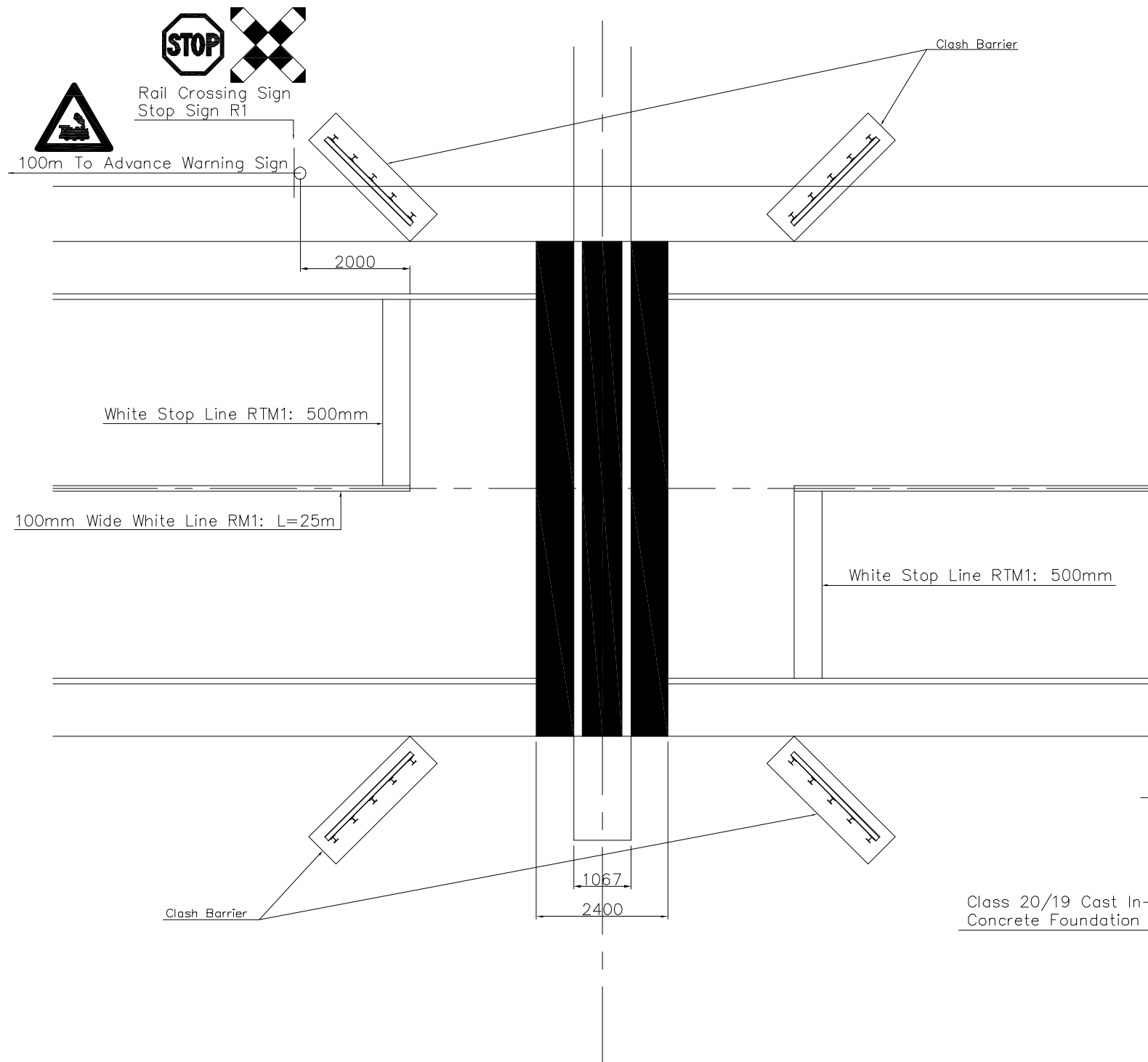
DRAWING TITLE

Traffic Marking

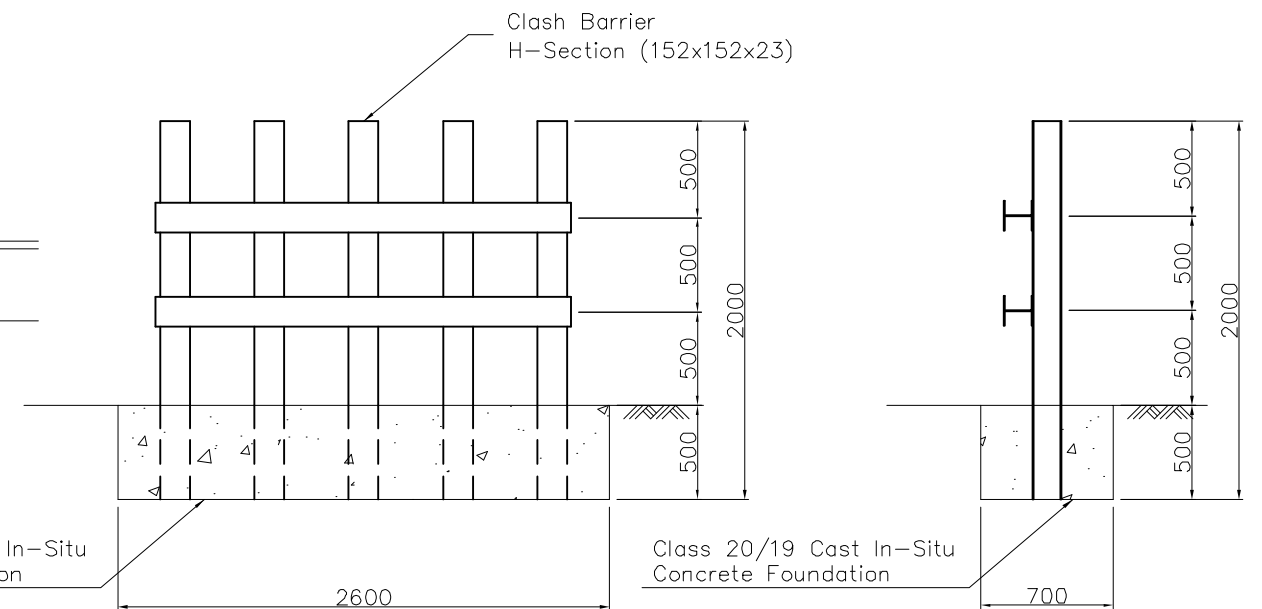
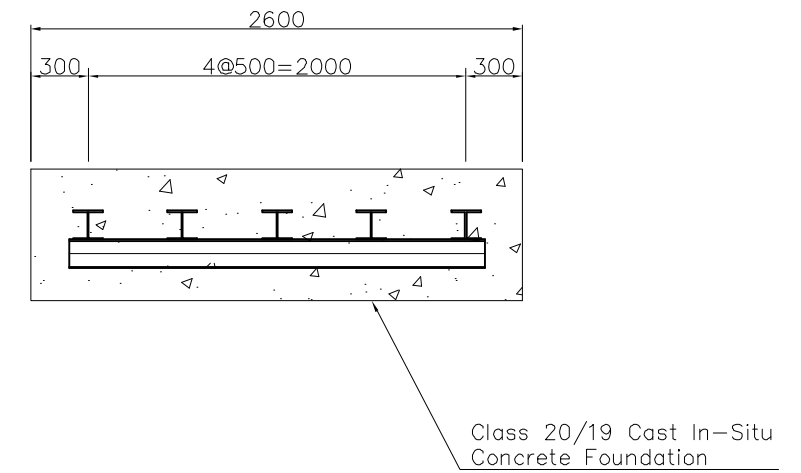
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SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown		51	-

Level Crossing Details



General Layout of Level Crossing Scale: 1/50



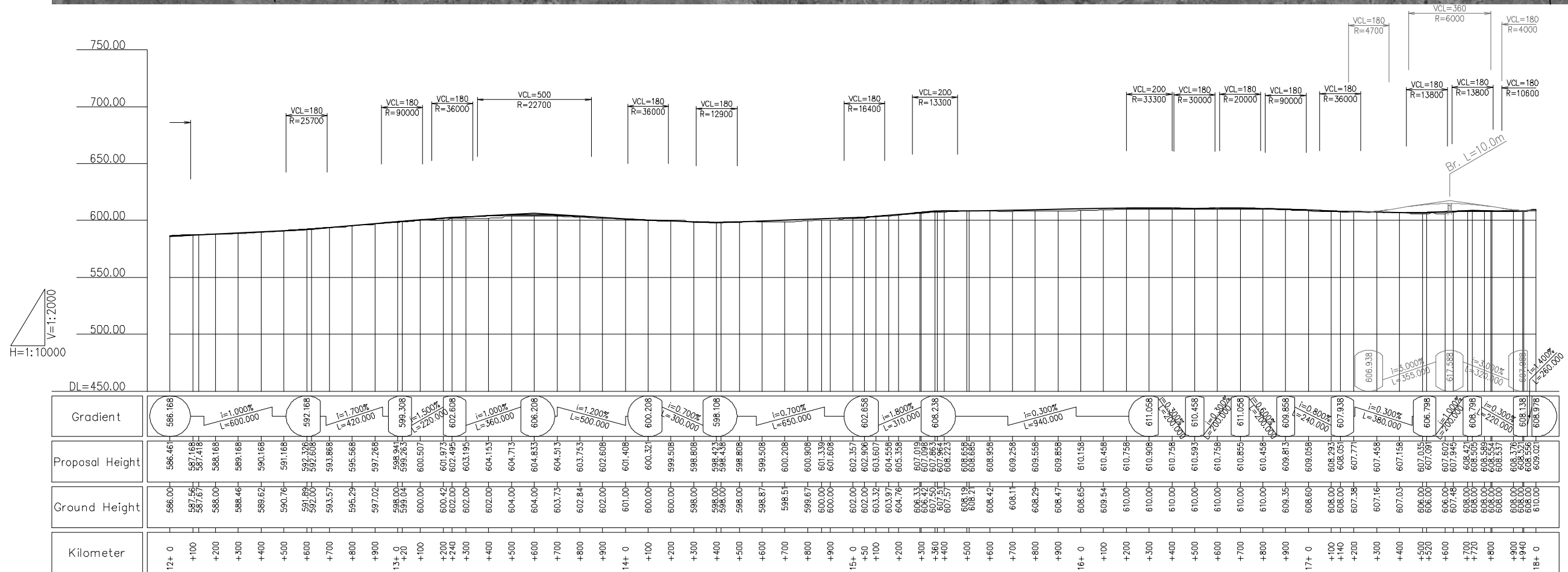
Detail of Clash Barrier Scale: 1/20

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

ANE NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)			
Eight-Japan Engineering Consultants Inc. Oriental Consultants Co., Ltd			DRAWING TITLE
			Level Crossing Details
NAME	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE			
SCALE	SHEET NO.	DRAWING NO.	REV. NO.
As Shown	52	52	-



Kilometer	Ground Height	Proposal Height	Gradient
12+ 0	586.00	586.46	586.168
+100	587.56	587.418	$i=1.000\%$ $L=600.000$
+200	588.00	588.168	592.168
+300	588.46	589.168	$i=1.700\%$ $L=420.000$
+400	589.62	590.168	598.941
+500	590.76	591.168	$i=1.500\%$ $L=220.000$
+600	591.88	592.326	598.308
+700	592.00	592.608	$i=1.000\%$ $L=360.000$
+800	593.57	593.868	600.507
+900	595.29	595.568	601.973
+1000	597.02	597.268	602.495
13+ 0	598.00	599.263	603.195
+100	600.00	600.507	$i=1.000\%$ $L=500.000$
+200	600.42	601.973	604.153
+300	602.00	603.195	604.833
+400	602.00	604.153	604.513
+500	604.00	604.713	603.753
+600	604.00	604.833	602.608
+700	603.73	604.513	601.408
+800	602.84	603.753	600.321
+900	602.00	602.608	599.508
14+ 0	601.00	601.408	600.208
+100	600.00	600.321	$i=0.700\%$ $L=300.000$
+200	600.00	599.508	600.208
+300	598.00	598.808	598.108
+400	598.00	598.423	$i=0.700\%$ $L=650.000$
+500	598.00	598.438	598.108
+600	598.87	599.508	$i=1.800\%$ $L=310.000$
+700	598.51	600.208	602.658
+800	599.67	600.908	604.558
+900	600.00	601.339	605.358
15+ 0	600.00	601.608	606.238
+100	602.00	602.357	$i=0.300\%$ $L=940.000$
+200	603.32	603.906	611.058
+300	603.97	604.558	610.458
+400	604.76	605.358	610.458
+500	606.33	607.019	611.058
+600	606.42	607.098	$i=0.300\%$ $L=240.000$
+700	607.51	607.987	610.458
+800	607.51	607.987	610.458
+900	608.19	608.658	611.058
16+ 0	608.21	608.658	$i=0.800\%$ $L=240.000$
+100	608.42	608.958	609.858
+200	608.11	609.258	609.058
+300	608.29	609.558	608.60
+400	608.47	609.858	608.60
+500	608.65	610.158	608.00
+600	609.54	610.458	608.05
+700	610.00	610.758	607.771
+800	610.00	610.908	607.458
+900	610.00	610.758	607.158
17+ 0	609.35	609.813	606.00
+100	608.60	609.058	606.00
+200	608.00	608.293	606.00
+400	608.00	608.05	606.00
+600	607.38	607.771	606.00
+800	607.16	607.458	606.00
+1000	607.03	607.158	606.00
+1200	606.00	607.081	606.00
+1400	606.00	607.081	606.00
+1600	606.00	607.945	606.00
+1800	608.00	608.421	606.00
+2000	608.00	608.505	606.00
+2200	608.00	608.589	606.00
+2400	608.00	608.554	606.00
+2600	608.00	608.597	606.00
+2800	608.00	608.376	606.00
+3000	608.00	608.356	606.00
+3200	609.02	609.021	606.00

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

ANE NATIONAL ROAD ADMINISTRATION

REMARKS:

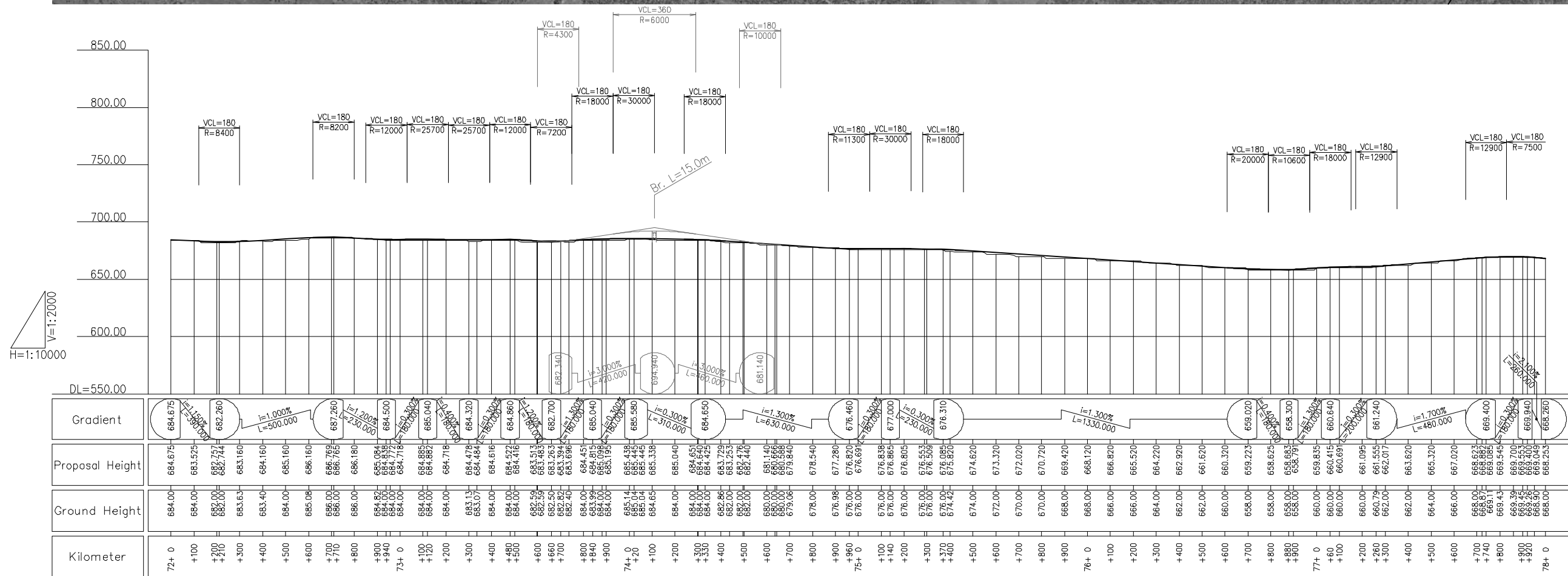
THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
Oriental Consultants Co., Ltd

DRAWING TITLE
Level Crossing with an Overpass (1)
(as a reference)

NAME	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
1/10,000		53	-



JICA JAPAN INTERNATIONAL COOPERATION AGENCY

ANE NATIONAL ROAD ADMINISTRATION

REMARKS:

THE PREPARATORY SURVEY ON ROAD IMPROVEMENT PLAN IN NACALA DEVELOPMENT CORRIDOR (N13: CUAMBA-MANDIMBA-LICHINGA)

Eight-Japan Engineering Consultants Inc.
Oriental Consultants Co., Ltd

DRAWING TITLE
Level Crossing with an Overpass (2)
(as a reference)

	PREPARED BY	CHECKED BY	APPROVED BY
NAME			
SIGNATURE			
DATE			

SCALE	SHEET NO.	DRAWING NO.	REV. NO.
1/10,000		54	-

