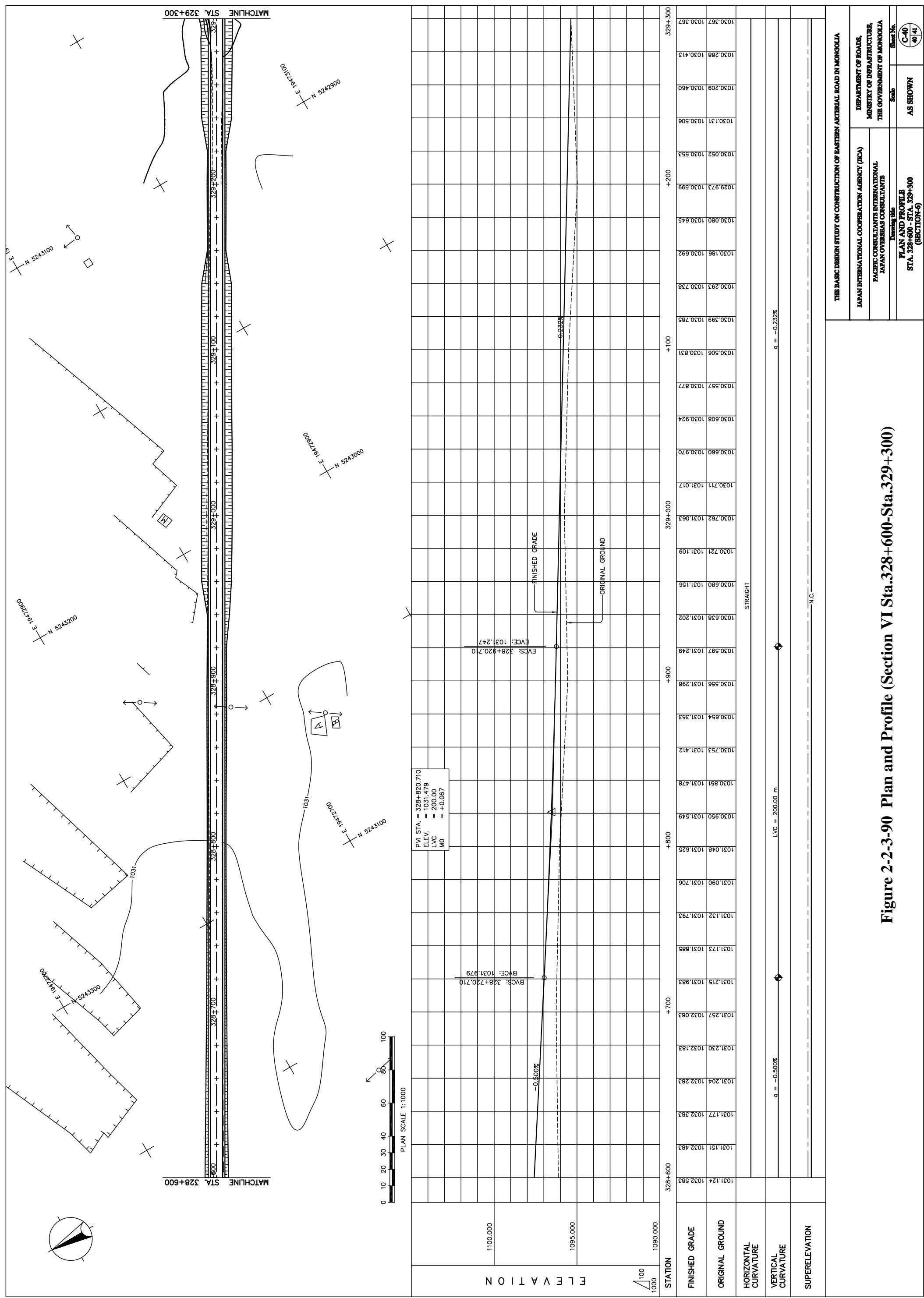


Figure 2-2-3-89 Plan and Profile (Section VI Sta.327+900-Sta.328+600)



2-151

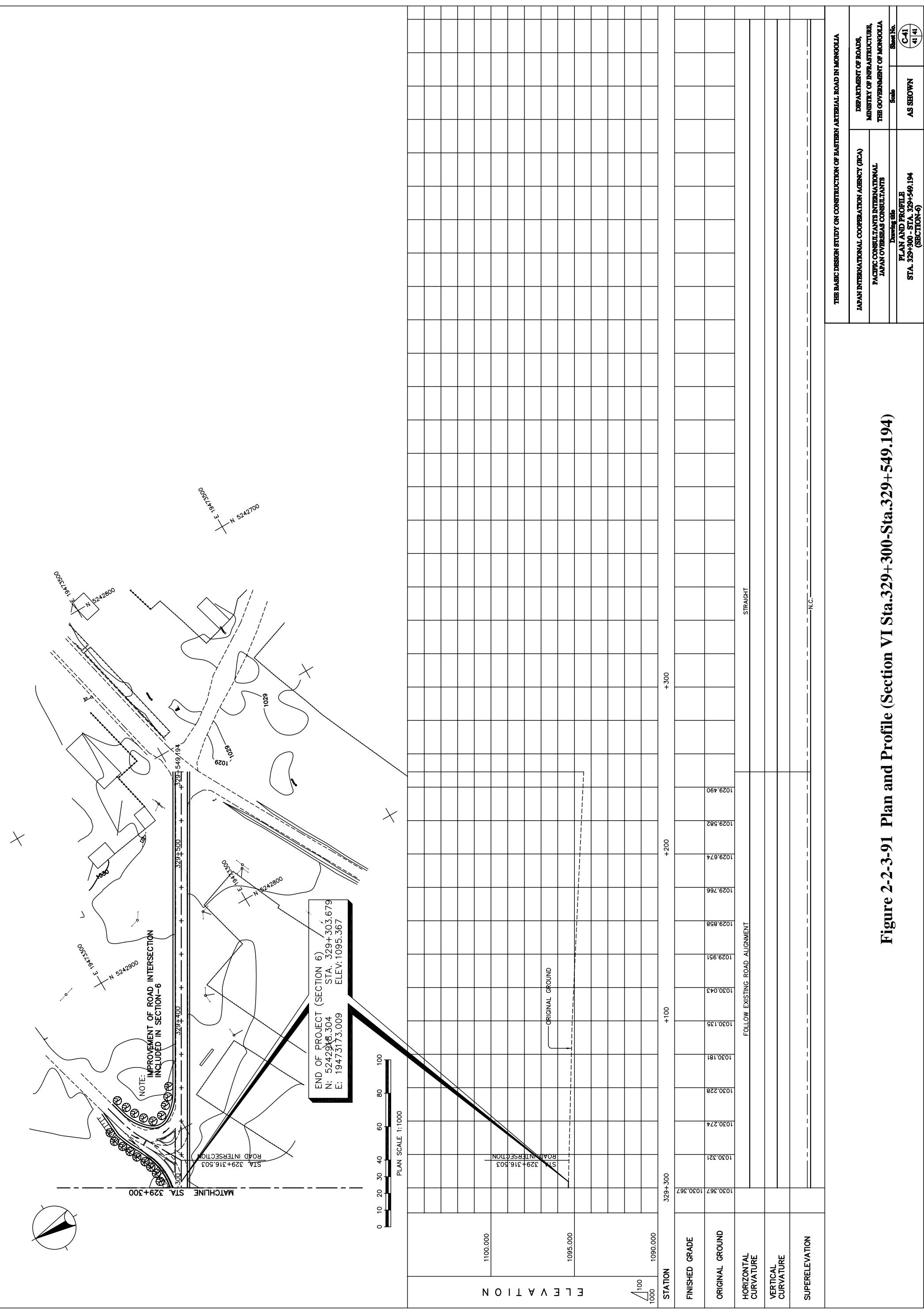


Figure 2-2-3-91 Plan and Profile (Section VI Sta.329+300-Sta.329+549.194)

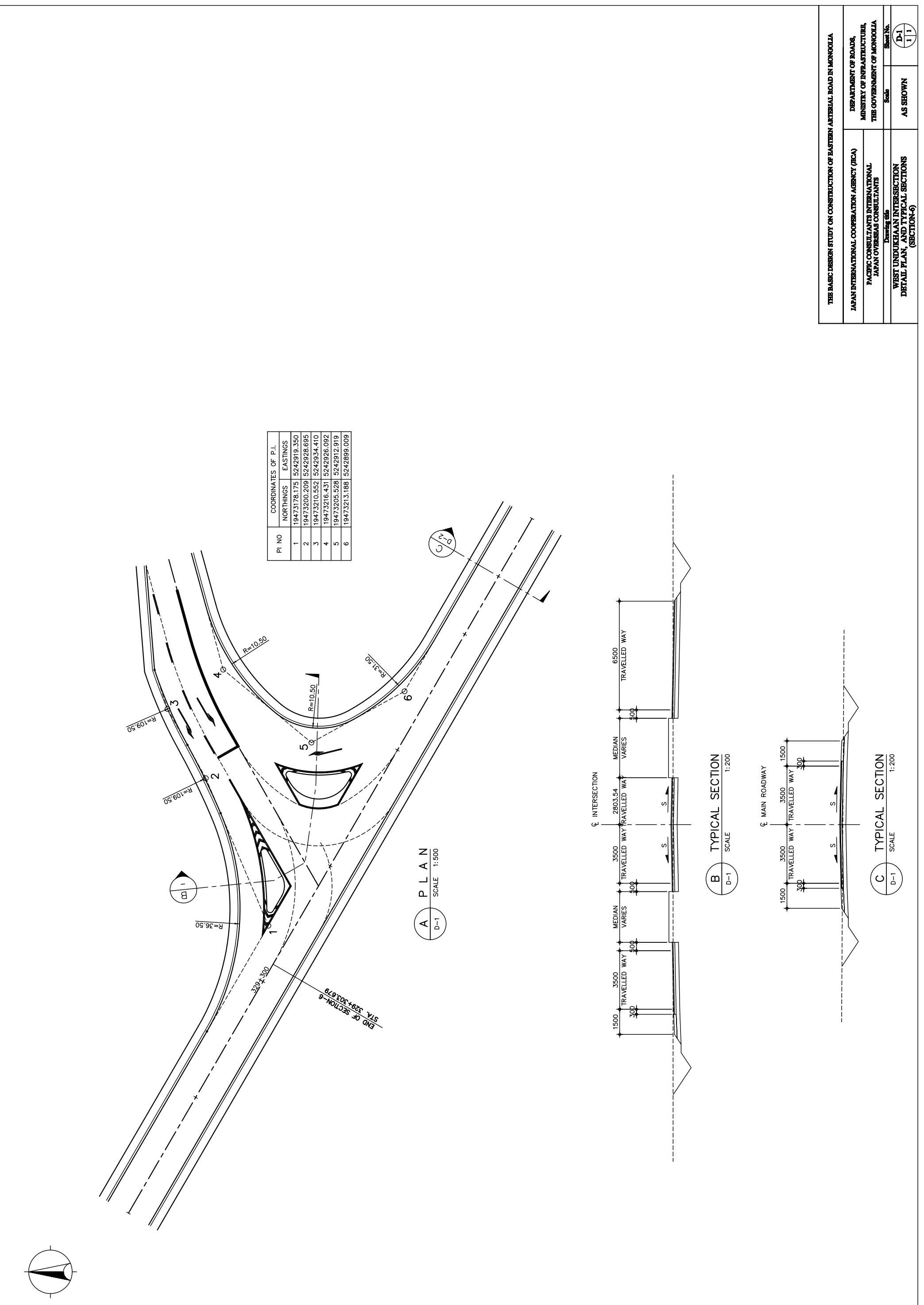
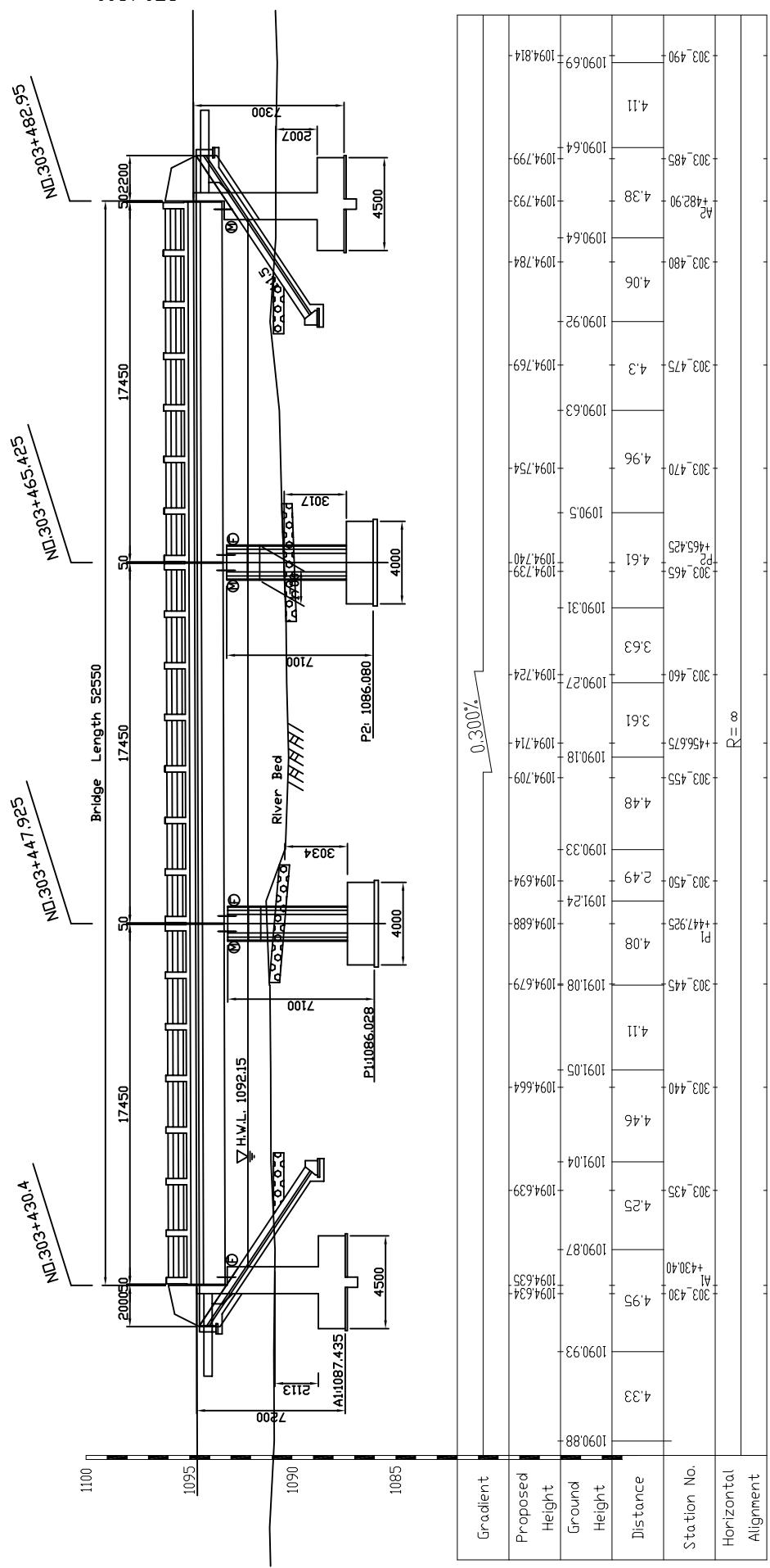


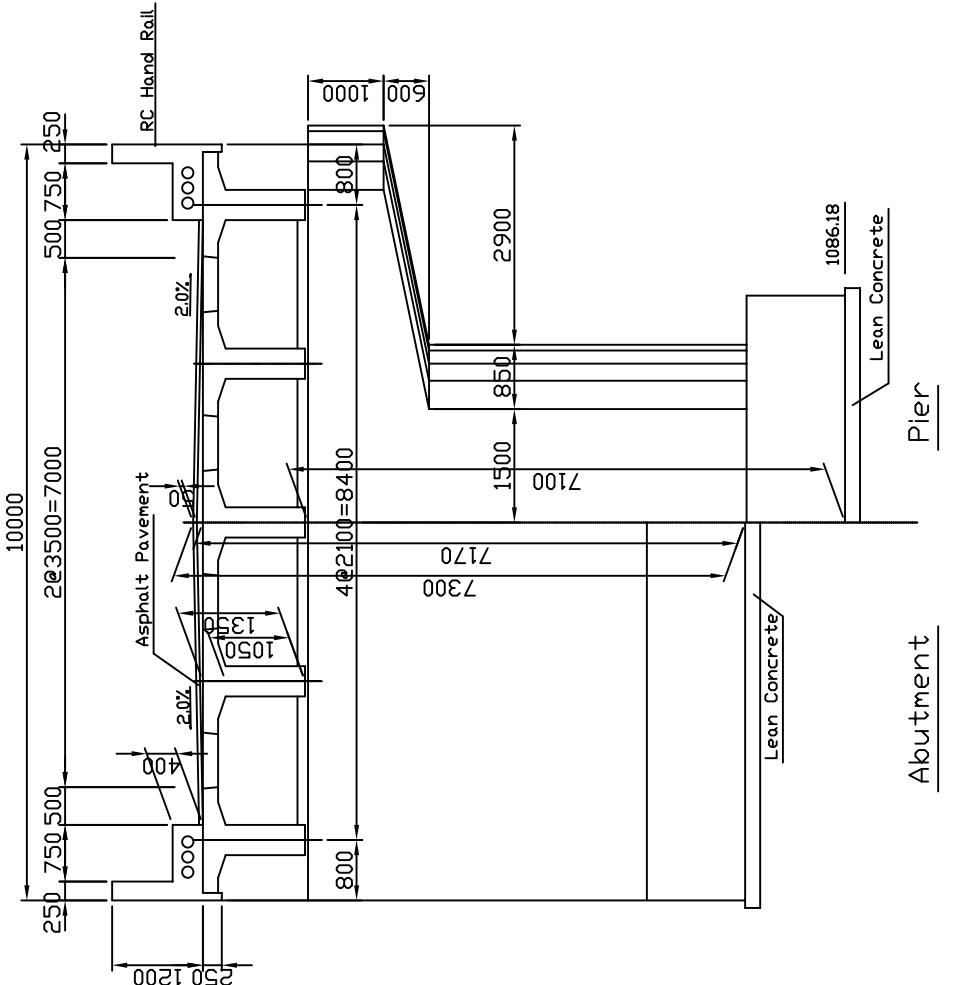
Figure 2-2-3-92 West Undurkhaan Intersection (Section VI)

GENERAL VIEW (MURUN BRIDGE)

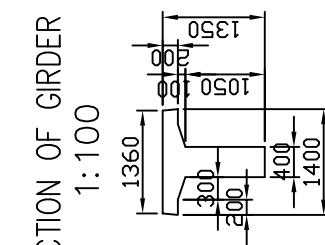
PROFILE 1: 300



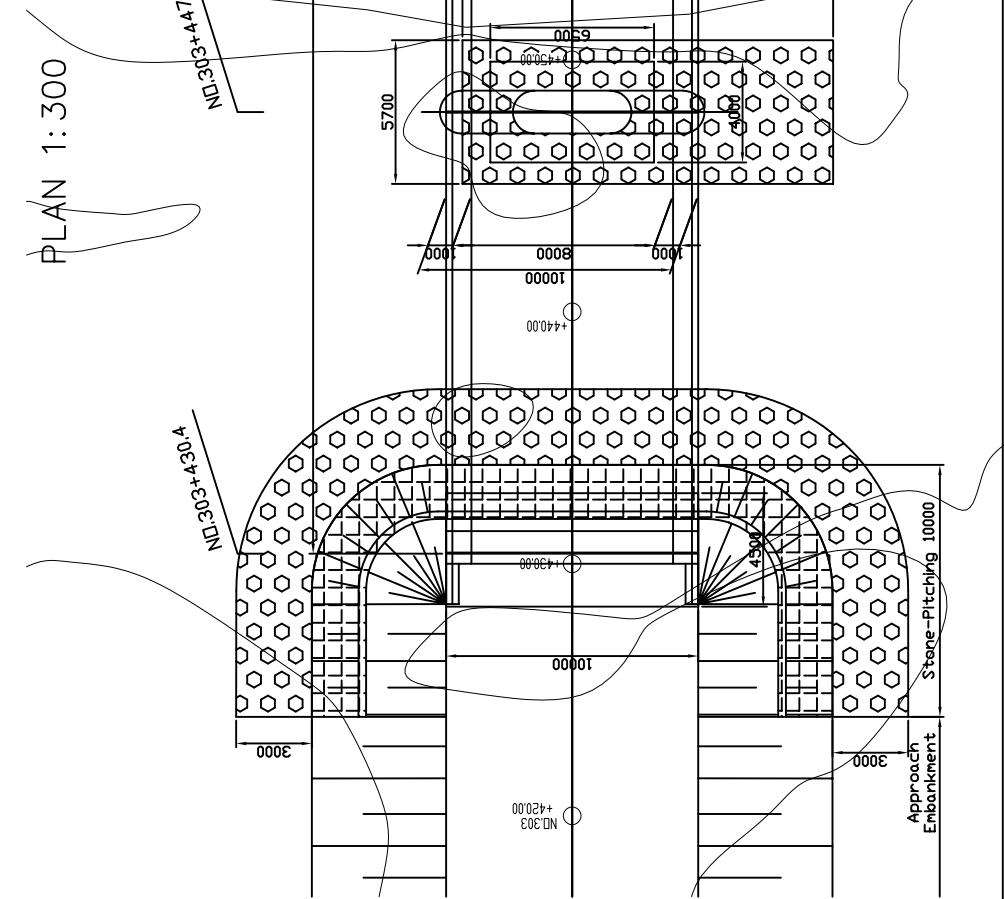
SECTION 1: 100



SECTION OF GIRDER
1: 100



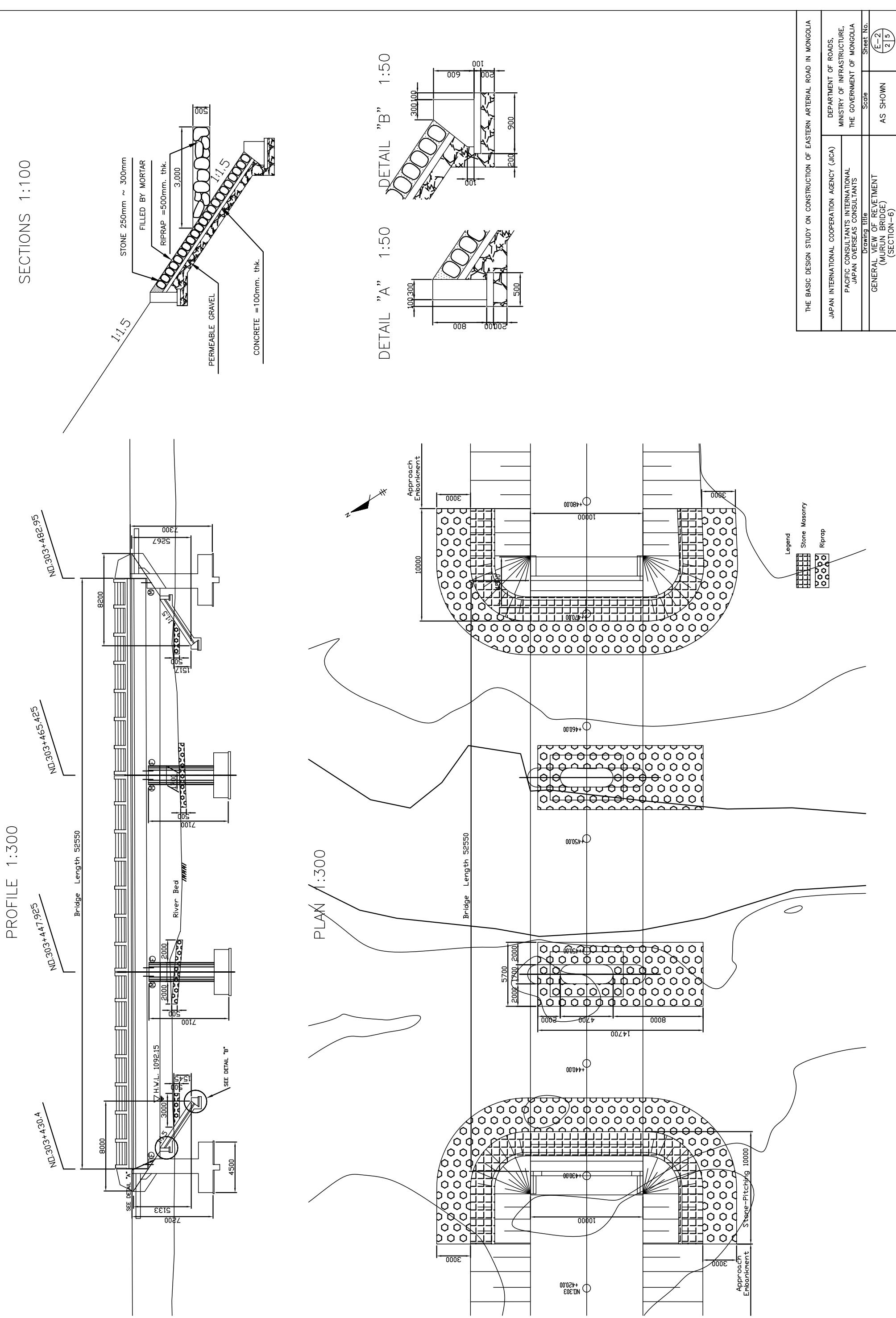
PLAN 1: 300



THE BASIC DESIGN STUDY ON CONSTRUCTION OF EASTERN ARTERIAL ROAD IN MONGOLIA			
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	DEPARTMENT OF ROADS, MINISTRY OF INFRASTRUCTURE, THE GOVERNMENT OF MONGOLIA	Sheet No.	E-1 (1/5)
PACIFIC CONSULTANTS INTERNATIONAL JAPAN OVERSEAS CONSULTANTS	Drawing title	Scale	
	GENERAL VIEW (MURUN BRIDGE) (SECTION -6)	AS SHOWN	

Figure 2-2-3-93 General View of Murun Bridge

General View of Revetment (Murun Bridge)



CONSTRUCTION PLAN (1/3) OF MURUN BRIDGE

PLAN 1;500

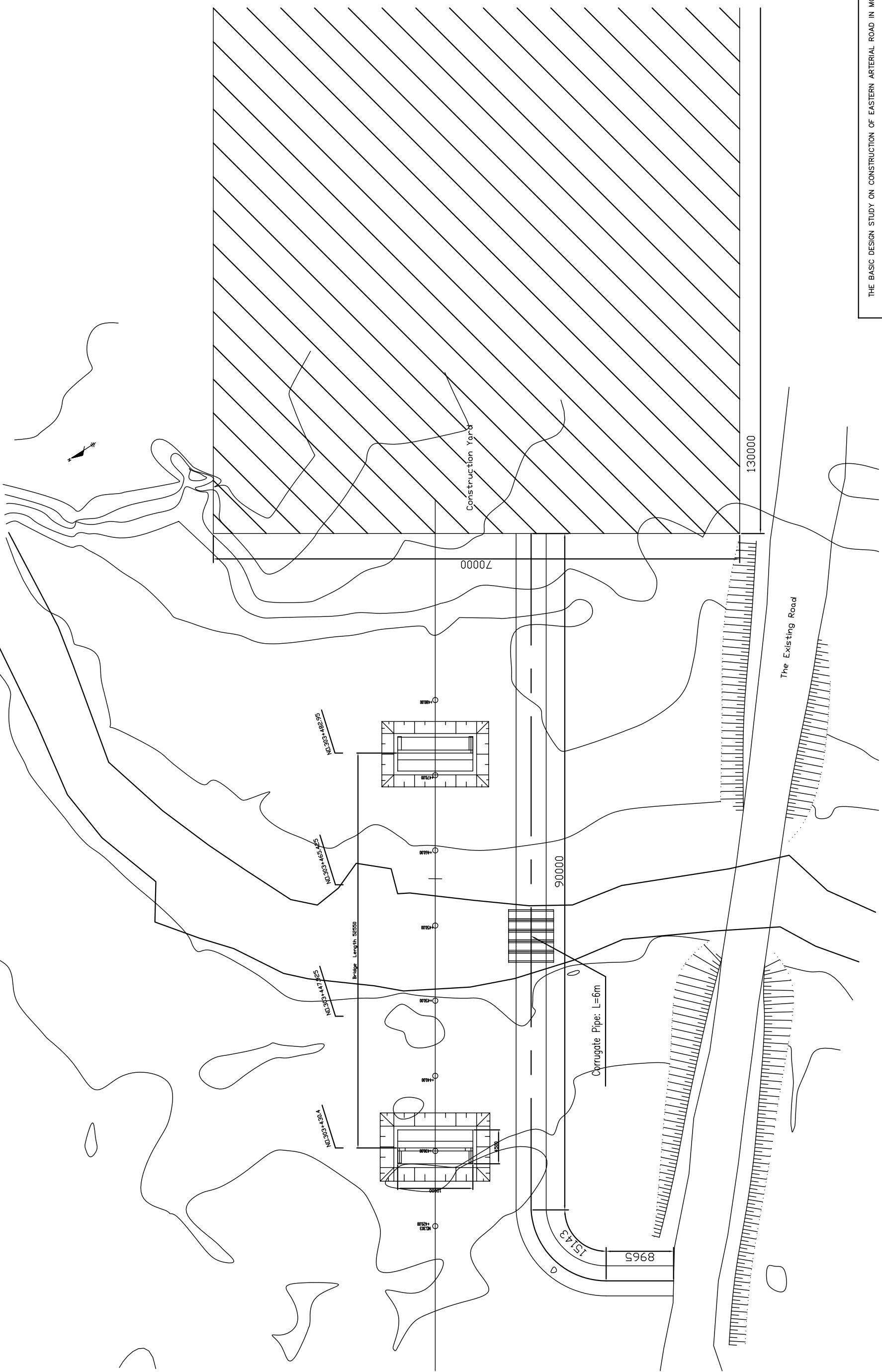
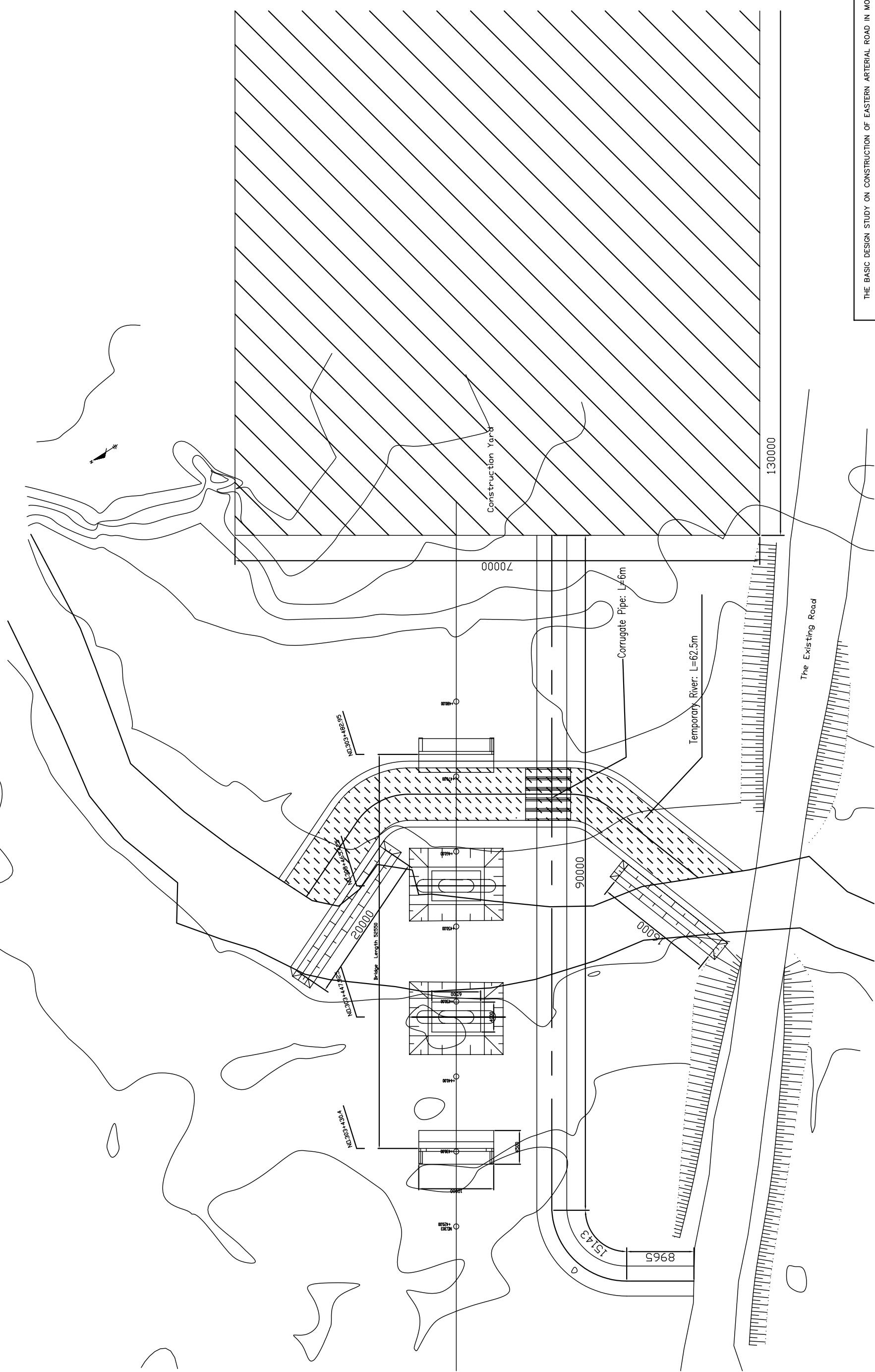


Figure 2-2-3-95 Construction Plan of Murun Bridge(1)

THE BASIC DESIGN STUDY ON CONSTRUCTION OF EASTERN ARTERIAL ROAD IN MONGOLIA			
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		DEPARTMENT OF ROADS, MINISTRY OF INFRASTRUCTURE, THE GOVERNMENT OF MONGOLIA	
PACIFIC CONSULTANTS INTERNATIONAL JAPAN OVERSEAS CONSULTANTS			Sheet No. 
Drawing title	CONSTRUCTION PLAN (1) (MURUN BRIDGE) (SECTION-6)	Scale	AS SHOWN

CONSTRUCTION PLAN (2/3) OF MURUN BRIDGE

PLAN 1:500

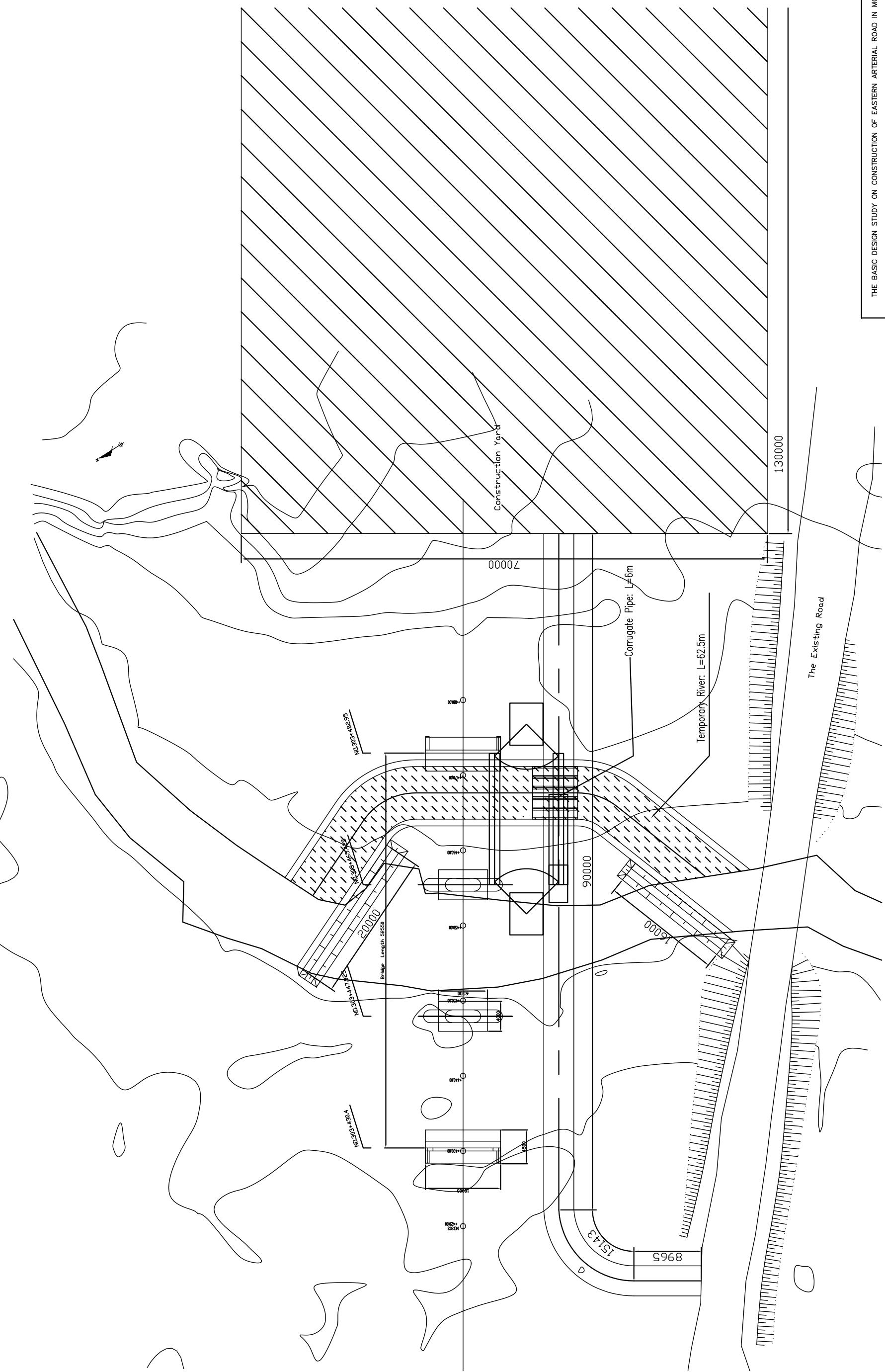


THE BASIC DESIGN STUDY ON CONSTRUCTION OF EASTERN ARTERIAL ROAD IN MONGOLIA		DEPARTMENT OF ROADS,
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		MINISTRY OF INFRASTRUCTURE,
PACIFIC CONSULTANTS INTERNATIONAL		THE GOVERNMENT OF MONGOLIA
Drawing title	CONSTRUCTION PLAN (2)	Sheet No.
(MURUN BRIDGE)	(SECTION-6)	E-4 4 5
AS SHOWN	Scale	

Figure 2-2-3-96 Construction Plan of Murun Bridge(2)

CONSTRUCTION PLAN (3/3) OF MURUN BRIDGE

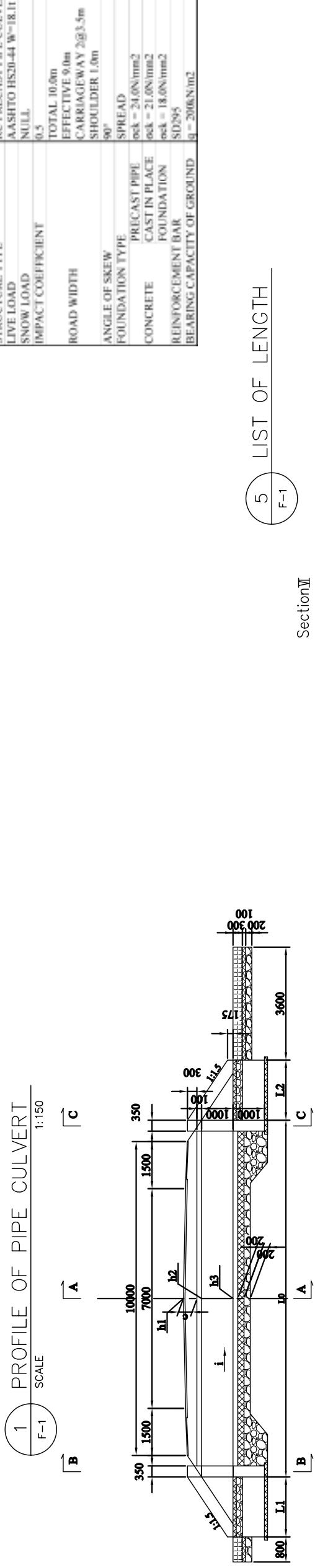
PLAN 1:500



THE BASIC DESIGN STUDY ON CONSTRUCTION OF EASTERN ARTERIAL ROAD IN MONGOLIA		DEPARTMENT OF ROADS,
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	PACIFIC CONSULTANTS INTERNATIONAL JAPAN OVERSEAS CONSULTANTS	MINISTRY OF INFRASTRUCTURE, THE GOVERNMENT OF MONGOLIA
Drawing title		Sheet No.
CONSTRUCTION PLAN (3) (MURUN BRIDGE) (SECTION-6)	E-3 AS SHOWN	5 5

Figure 2-2-3-97 Construction Plan of Murun Bridge(3)

GENERAL VIEW OF PIPE CULVERT



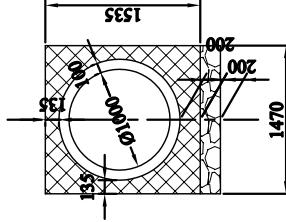
4 DESIGN CRITERIA

STRUCTURE TYPE	RC PRECAST PIPE CULVERT
LIVE LOAD	AASHTO HS20-44 W=18.11
SNOW LOAD	NULL
IMPACT COEFFICIENT	0.5
ROAD WIDTH	TOTAL 10.000
ANGLE OF SKEW	EFFECTIVE 9.000
FOUNDATION TYPE	CARRIAGeway 2@3.5m
CONCRETE	SHOULDER 1.00m
REINFORCEMENT BAR	90°
BEARING CAPACITY OF GROUND	SPREAD
	osk = 24.00/N/mm ²
	CAST IN PLACE
	osk = 21.00/N/mm ²
	FOUNDATION
	osk = 18.00/N/mm ²
	SDS95
	q = 20000/N/m ²

LIST OF LENGTH

Point	Type	I	h1	h2	h3	c	L0	L1	L2	W1	W2
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304	+	600	B	1.0	1102.38440	1101.50000	1100.00000	74.4	12265	2608	2688
306	+	509	B	1.0	1117.8150	1116.9286	1115.4286	74.6	12272	2608	2688
307	+	23	C	1.0	1118.1810	1117.2922	1115.7922	74.9	12279	2608	2688
308	+	335	C	1.0	1127.0115	1126.0993	1124.5993	77.2	12349	2608	2688
310	+	318	B	1.0	1129.8730	1128.6984	1127.1984	103.5	13137	2608	2688
311	+	200	C	2.0	1127.8730	1126.9850	1125.4850	74.8	12285	2750	2729
311	+	422	C	2.5	1126.5880	1125.6861	1124.1861	76.3	12336	2552	2751
314	+	0	B	1.0	1155.0530	1154.0970	1152.5970	81.6	12481	2608	2688
315	+	181	B	2.0	1141.1575	1140.2690	1138.7690	74.9	12287	2570	2729
315	+	700	C	1.0	1136.9033	1135.9969	1134.1690	109.4	13316	2608	2688
316	+	857	B	1.5	1124.2030	1123.2974	1121.7974	76.6	12333	2589	2708
317	+	763	A	1.0	1116.4571	1115.5866	1114.5866	77.0	12224	1810	1865
318	+	458	B	1.0	1108.1038	1106.5246	1105.0246	143.9	14351	2608	2688
319	+	529	B	1.0	1095.8010	1094.8992	1093.3992	76.2	12318	2608	2688
320	+	600	C	1.0	1087.8840	1086.6980	1085.1980	104.6	13171	2608	2688
321	+	300	B	1.0	1086.3718	1085.4620	1083.9620	77.0	12342	2608	2688
322	+	0	C	2.5	1079.5919	1078.5820	1077.0820	87.0	12657	2552	2751
322	+	700	B	1.0	1083.9900	1083.0940	1081.5940	75.6	12301	2608	2688
323	+	552	A	1.0	1081.8445	1080.7188	1079.7188	102.6	12990	1810	1865
324	+	68	A	1.0	1075.5474	1073.5021	1072.5021	194.5	15749	1810	1865
326	+	0	B	1.0	1045.9650	1045.0260	1043.5260	79.9	12430	2608	2688

PIPE JOINT DETAIL 1:75

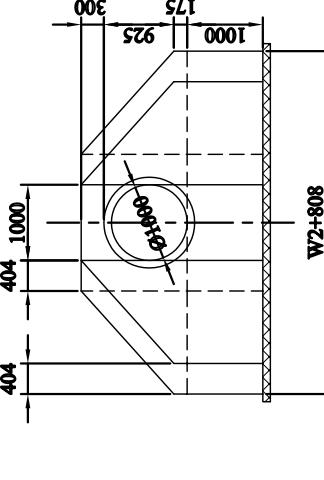


C-C

3 CROSS SECTION OF PIPE CULVERT

F-1 SCALE 1:100

B-B



A-A B-B

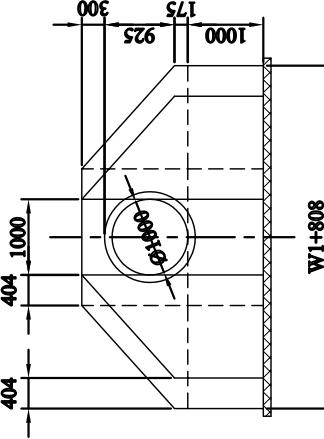
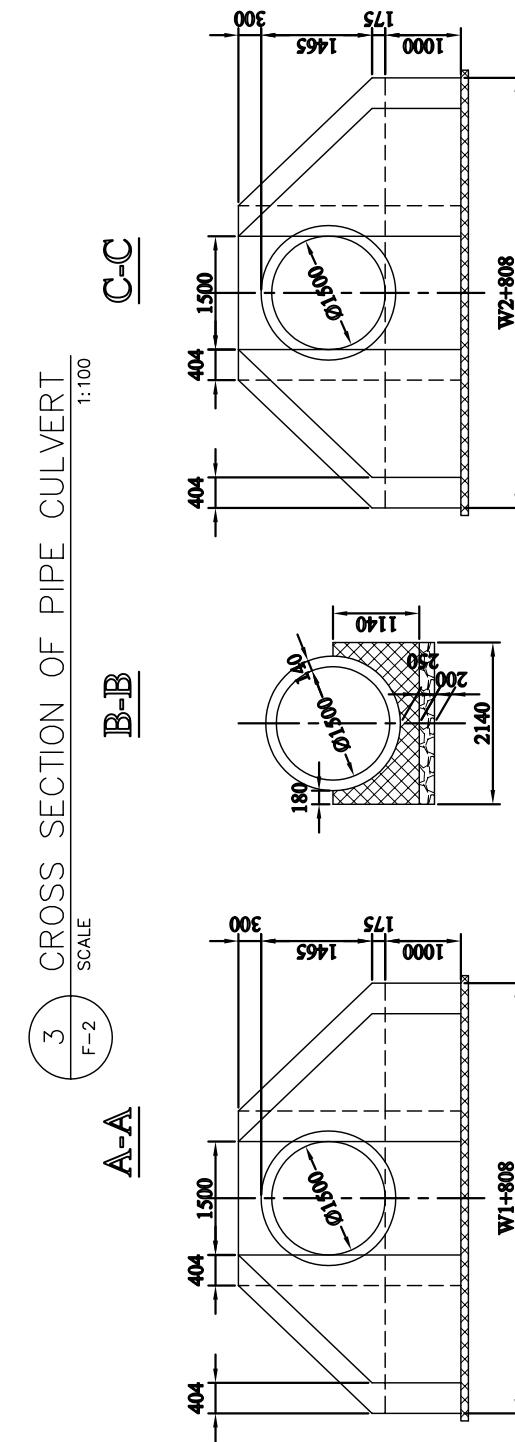
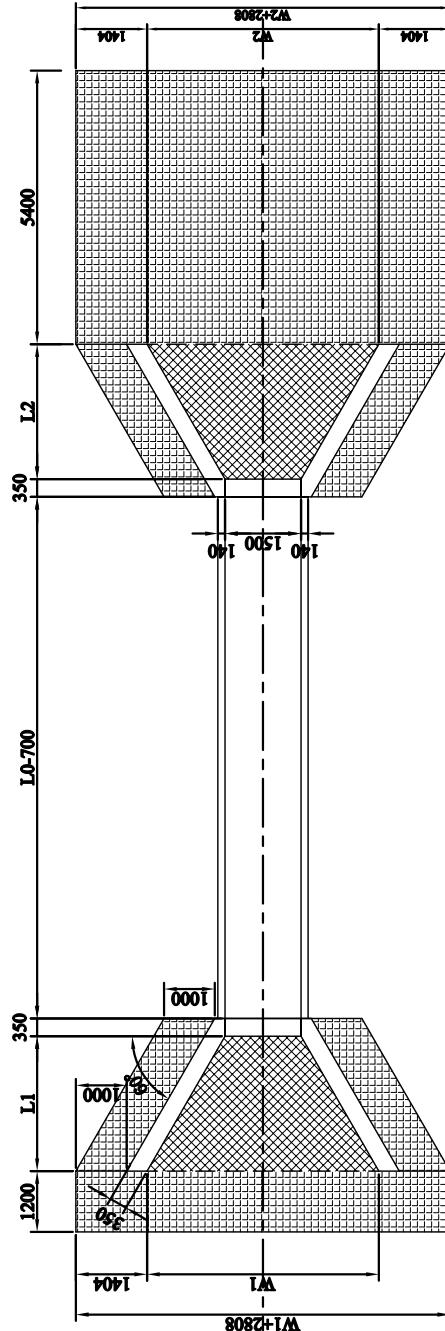
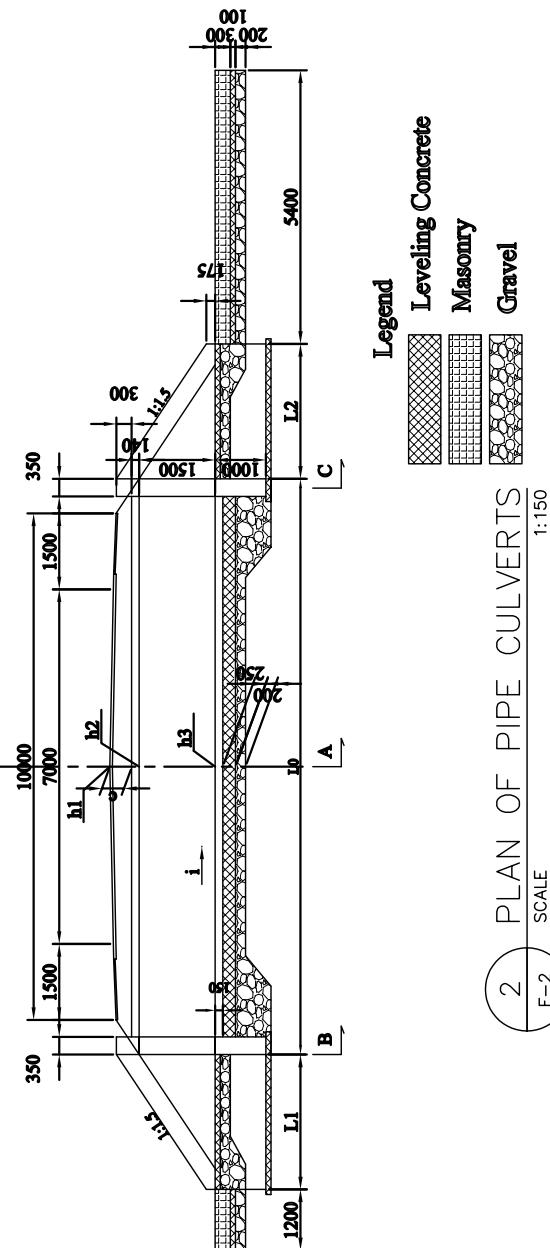
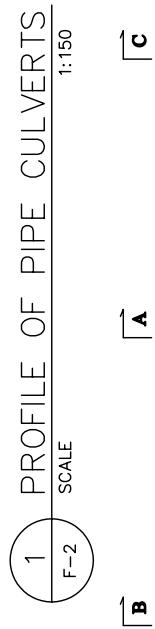


Figure 2-2-3-98 General View of Pipe Culvert (Type "A" =1000)

THE BASIC DESIGN STUDY ON CONSTRUCTION OF EASTERN ARTERIAL ROAD IN MONGOLIA			
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) PACIFIC CONSULTANTS INTERNATIONAL JAPAN OVERSEAS CONSULTANTS		DEPARTMENT OF ROADS, MINISTRY OF INFRASTRUCTURE, THE GOVERNMENT OF MONGOLIA	
Drawing title	Scdte	AS SHOWN	Street No.
GENERAL VIEW OF PIPE CULVERT TYPE A ($\phi 1000$) (SECTION-6)			F-1 1 5

GENERAL VIEW OF PIPE CULVERT
TypeB $\phi=1500$



4 DESIGN CRITERIA
F-2

STRUCTURE TYPE	RC PRECAST PIPE CULVERT
LIVE LOAD	AASHTO HS30-44 W=18.11
SNOW LOAD	NUL.
IMPACT COEFFICIENT	0.5
ROAD WIDTH	TOTAL 10.0m
ANGLE OF SKEW	EFFECTIVE 9.0m
CARRIAGEWAY	2@3.5m
SHOULDER	1.0m
FOUNDATION TYPE	SPREAD
PRECAST PIPE	osk = 24.0N/mm²
CONCRETE	CAST IN PLACE
FOUNDATION	osk = 21.0N/mm²
REINFORCEMENT BAR	osk = 18.0N/mm²
BEARING CAPACITY OF GROUND	SD295
	q = 200KN/m²

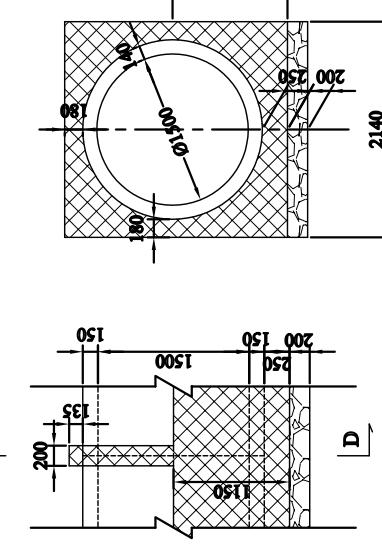
5 LIST OF LENGTH
F-2

Point	Type	i	h1	h2	c	l0	l1	l2	w1	w2	
304 +	206	A	1.0	1102.6300	1101.7983	1100.7983	732	12108	1810	1865	3090 3.54
304 +	600	B	1.0	1102.3840	1101.5000	1100.0000	744	12265	26018	2688	4511 4614
306 +	509	B	1.0	1117.8150	1116.9286	1115.4286	746	12272	26018	2688	4511 4614
307 +	23	C	1.0	1118.1810	1117.2922	1115.7922	749	12279	26018	2688	6711 6804
308 +	335	C	1.0	1127.0115	1126.0993	1124.5993	772	12349	26018	2688	6711 6804
310 +	318	B	1.0	1129.8730	1128.6984	1127.1984	1035	13137	26018	2688	4511 4614
311 +	200	C	2.0	1127.8730	1126.9850	1125.4850	748	12285	2570	2729	6668 6851
311 +	422	C	2.5	1126.5890	1125.6861	1124.1861	763	12336	2552	2751	6647 6877
314 +	0	B	1.0	1115.0530	1114.0970	1112.5970	816	12481	26018	2688	4511 4614
315 +	181	B	2.0	1141.1575	1140.1575	1138.6790	749	12287	2570	2729	4468 4651
315 +	700	C	1.0	1136.9033	1135.6690	1134.1690	1094	13116	26018	2688	6711 6804
316 +	857	B	1.5	1124.2030	1123.2974	1121.7974	766	12333	2589	2708	4490 4627
317 +	763	A	1.0	1116.4571	1115.5866	1114.5866	770	12224	1810	1865	3090 3.54
318 +	458	B	1.0	1108.1038	1106.5246	1105.0246	1439	14351	26018	2688	4511 4614
319 +	529	B	1.0	1095.8010	1094.8992	1093.3992	762	12318	26018	2688	4511 4614
320 +	600	C	1.0	1087.8840	1086.6980	1085.1980	1046	13171	26018	2688	6711 6804
321 +	300	B	1.0	1086.3718	1085.4620	1083.9620	770	12342	26018	2688	4511 4614
322 +	0	C	2.5	1079.5919	1078.5820	1077.0820	870	12657	2552	2751	6647 6877
322 +	700	B	1.0	1083.9900	1083.0940	1081.5940	756	12301	26018	2688	4511 4614
323 +	552	A	1.0	1081.8445	1080.7188	1079.7188	1026	12990	1810	1865	3090 3.54
324 +	68	A	1.0	1075.5474	1073.5021	1072.5021	1945	15749	1810	1865	3090 3.54
326 +	0	B	1.0	1045.9650	1045.0260	1043.5260	799	12430	26018	2688	4511 4614

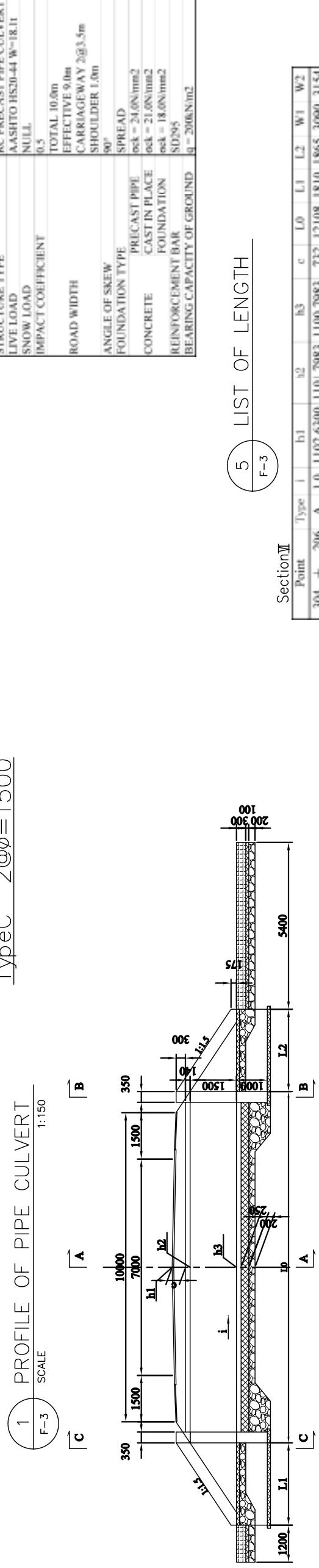
5 LIST OF LENGTH
F-2

Point	Type	i	h1	h2	c	l0	l1	l2	w1	w2	
304 +	206	A	1.0	1102.6300	1101.7983	1100.7983	732	12108	1810	1865	3090 3.54
304 +	600	B	1.0	1102.3840	1101.5000	1100.0000	744	12265	26018	2688	4511 4614
306 +	509	B	1.0	1117.8150	1116.9286	1115.4286	746	12272	26018	2688	4511 4614
307 +	23	C	1.0	1118.1810	1117.2922	1115.7922	749	12279	26018	2688	6711 6804
308 +	335	C	1.0	1127.0115	1126.0993	1124.5993	772	12349	26018	2688	6711 6804
310 +	318	B	1.0	1129.8730	1128.6984	1127.1984	1035	13137	26018	2688	4511 4614
311 +	200	C	2.0	1127.8730	1126.9850	1125.4850	748	12285	2570	2729	6668 6851
311 +	422	C	2.5	1126.5890	1125.6861	1124.1861	763	12336	2552	2751	6647 6877
314 +	0	B	1.0	1115.0530	1114.0970	1112.5970	816	12481	26018	2688	4511 4614
315 +	181	B	2.0	1141.1575	1140.1575	1138.6790	749	12287	2570	2729	4468 4651
315 +	700	C	1.0	1136.9033	1135.6690	1134.1690	1094	13116	26018	2688	6711 6804
316 +	857	B	1.5	1124.2030	1123.2974	1121.7974	766	12333	2589	2708	4490 4627
317 +	763	A	1.0	1116.4571	1115.5866	1114.5866	770	12224	1810	1865	3090 3.54
318 +	458	B	1.0	1108.1038	1106.5246	1105.0246	1439	14351	26018	2688	4511 4614
319 +	529	B	1.0	1095.8010	1094.8992	1093.3992	762	12318	26018	2688	4511 4614
320 +	600	C	1.0	1087.8840	1086.6980	1085.1980	1046	13171	26018	2688	6711 6804
321 +	300	B	1.0	1086.3718	1085.4620	1083.9620	770	12342	26018	2688	4511 4614
322 +	0	C	2.5	1079.5919	1078.5820	1077.0820	870	12657	2552	2751	6647 6877
322 +	700	B	1.0	1083.9900	1083.0940	1081.5940	756	12301	26018	2688	4511 4614
323 +	552	A	1.0	1081.8445	1080.7188	1079.7188	1026	12990	1810	1865	3090 3.54
324 +	68	A	1.0	1075.5474	1073.5021	1072.5021	1945	15749	1810	1865	3090 3.54
326 +	0	B	1.0	1045.9650	1045.0260	1043.5260	799	12430	26018	2688	4511 4614

6 PIPE JOINT DETAIL
F-2 SCALE 1:75



GENERAL VIEW OF PIPE CULVERT



4 DESIGN CRITERIA

F-3

STRUCTURE TYPE	RC PRECAST PIPE CULVERT
LIVE LOAD	AASHTO HS20-44 W=18.1t
SNOW LOAD	NULL
IMPACT COEFFICIENT	0.5
ROAD WIDTH	TOTAL 10.00m
ANGLE OF SKEW	EFFECTIVE 9.0m CARRIAGeway 2x 4.5m SHOULDER 1.0m 90°
FOUNDATION TYPE	SPREAD
CONCRETE	PRECAST PIPES
REINFORCEMENT BAR	CAST IN PLACE FOUNDATION
BEARING CAPACITY OF GROUND	SDS95 $q = 205 \text{ kN/m}^2$

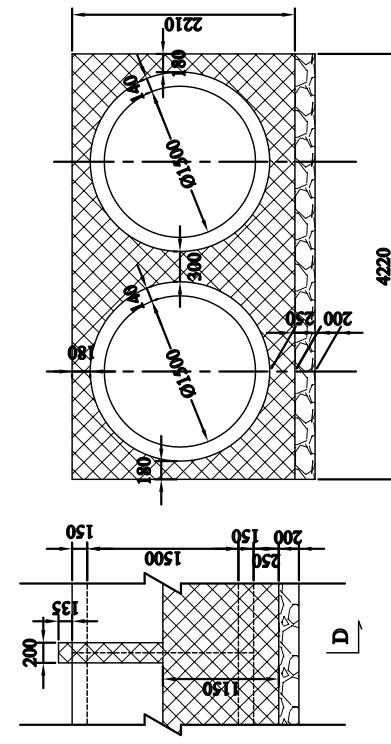
LIST OF LENGTH

10

Point	Type	i	h_1	h_2	h_3	c	L_0	L_1	L_2	W_1	W_2	
304	+	206	A	1.0	1102.63400	1101.79833	1100.79833	732	12108	1810	1865	30960
304	+	600	B	1.0	1102.3840	1101.50000	1100.00000	744	12265	2608	2688	4511
306	+	509	B	1.0	1117.8150	1116.9286	1115.4286	746	12272	2608	2688	4511
307	+	23	C	1.0	1118.1810	1117.2922	1115.7922	749	12279	2608	2688	6711
308	+	335	C	1.0	1127.0115	1126.0993	1124.5993	772	12349	2608	2688	6711
310	+	318	B	1.0	1129.8730	1128.6984	1127.1984	1035	13137	2608	2688	4511
311	+	200	C	2.0	1127.8730	1126.9850	1125.4850	748	12285	2570	2729	6668
311	+	422	C	2.5	1126.5890	1125.6861	1124.1861	763	12336	2552	2751	6647
314	+	0	B	1.0	1155.0530	1154.0970	1152.5970	816	12481	2608	2688	4511
315	+	181	B	2.0	1141.1575	1140.2690	1138.7690	749	12287	2570	2729	4468
315	+	700	C	1.0	1136.9033	1135.6690	1134.1690	1094	13316	2608	2688	6711
316	+	857	B	1.5	1124.2030	1123.2974	1121.7974	766	12333	2589	2708	4490
317	+	763	A	1.0	1116.4571	1115.5866	1114.5866	770	12224	1810	1865	30960
318	+	458	B	1.0	1108.1038	1106.5246	1105.0246	1439	14351	2608	2688	4511
319	+	529	B	1.0	1095.8010	1094.8992	1093.3992	762	12318	2608	2688	4511
320	+	600	C	1.0	1087.8840	1086.6980	1085.1980	1046	13171	2608	2688	6711
321	+	300	B	1.0	1086.3718	1085.4620	1083.9620	770	12342	2608	2688	4511
322	+	0	C	2.5	1079.5919	1078.5820	1077.0820	870	12657	2552	2751	6647
322	+	700	B	1.0	1083.9900	1083.0940	1081.5940	756	12301	2608	2688	4511
323	+	552	A	1.0	1081.8445	1080.7188	1079.7188	1026	12990	1810	1865	30960
324	+	68	A	1.0	1075.5474	1073.5021	1072.5021	1945	15749	1810	1865	30960
326	+	0	B	1.0	1045.9650	1045.0260	1043.5260	799	12430	2608	2688	4511

PIPE JOINT DETAIL

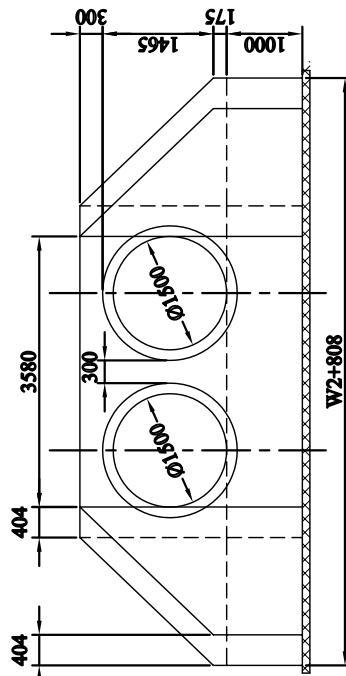
1:75



THE BASIC DESIGN STUDY ON CONSTRUCTION OF EASTERN ARTERIAL ROAD IN MONGOLIA			
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		DEPARTMENT OF ROADS, MINISTRY OF INFRASTRUCTURE, THE GOVERNMENT OF MONGOLIA	
PACIFIC CONSULTANTS INTERNATIONAL JAPAN OVERSEAS CONSULTANTS	Drawing title	Scale	Sheet No.
	GENERAL VIEW OF PIPE CULVERT TYPE C (2@ø1500) (SECTION-6)	AS SHOWN	F-3 3 5

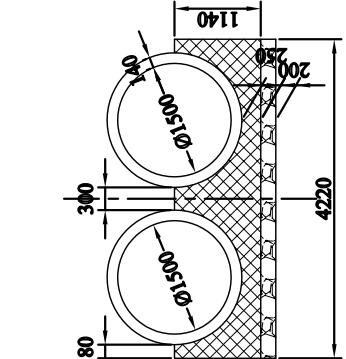
CROSS SECTION OF PIPE CULVERT

1



3 CROSS SECTION OF PIPE CULVERT
F-3 SCALE 1:20 B-B

D
D



A-A

4

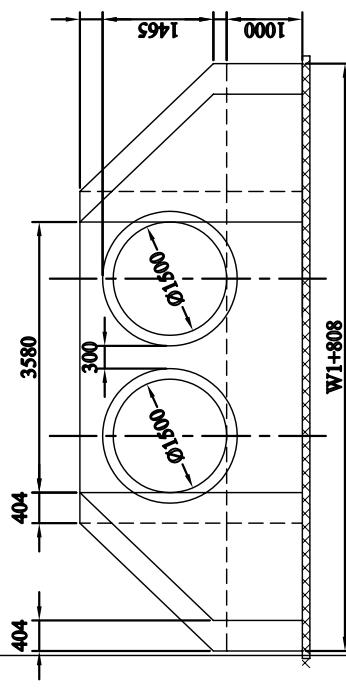
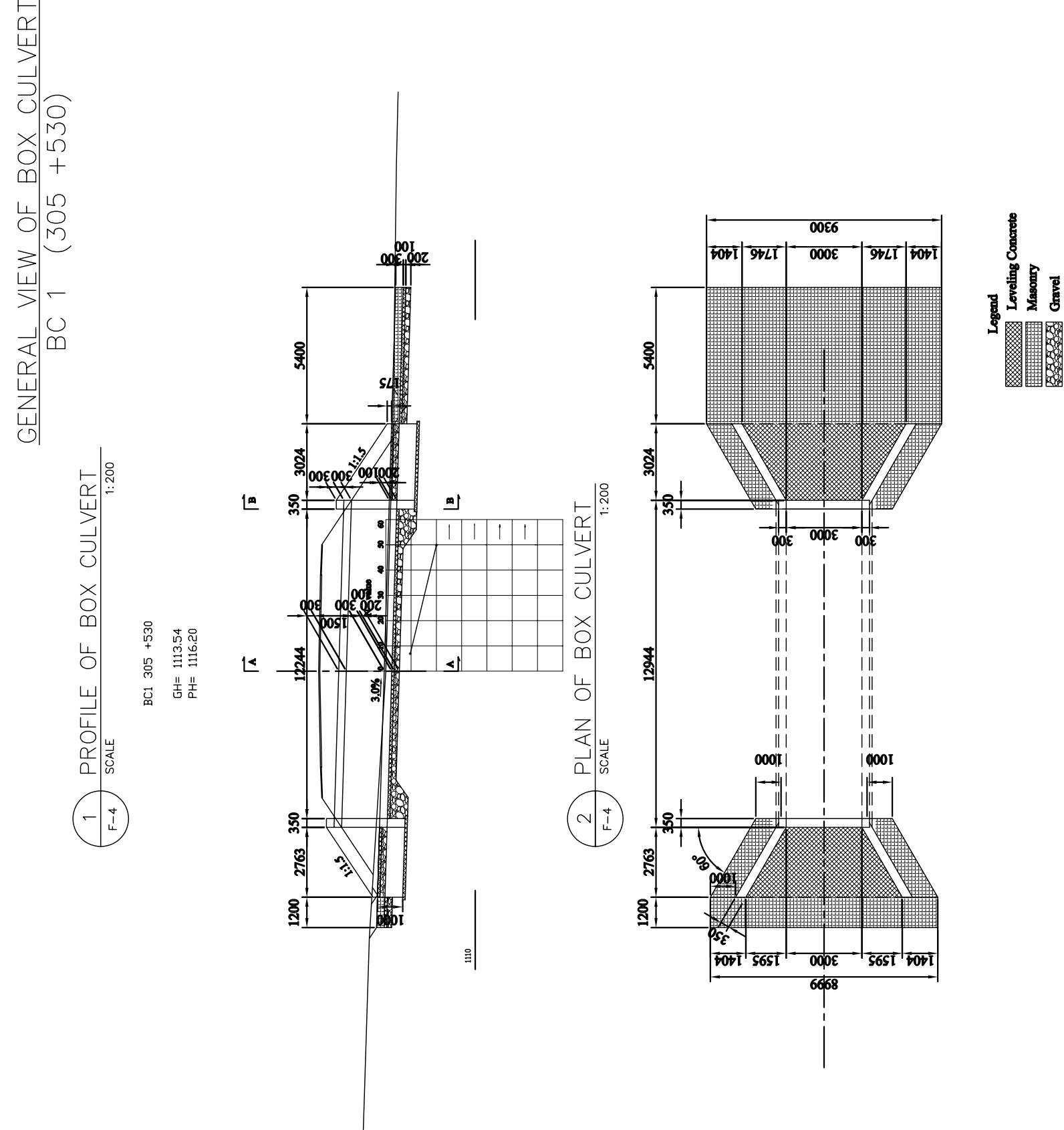


Figure 2-2-3-100 General View of Pipe Culvert(Type "C" 2@ =1500)



THE BASIC DESIGN STUDY ON CONSTRUCTION OF EASTERN ARTERIAL ROAD IN MONGOLIA		DEPARTMENT OF ROADS,	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	PACIFIC CONSULTANTS INTERNATIONAL JAPAN OVERSEAS CONSULTANTS	MINISTRY OF INFRASTRUCTURE, THE GOVERNMENT OF MONGOLIA	Drawing title GENERAL VIEW OF BOX CULVERT BC1 (305 +530) (SECTION-6)
			Sheet No. F-4 4 5
		Scale	AS SHOWN

Figure 2-2-3-101 General View of Box Culvert(BC1 Sta.305+530)

GENERAL VIEW OF BOX CULVERT
BC 2 (309 +058)

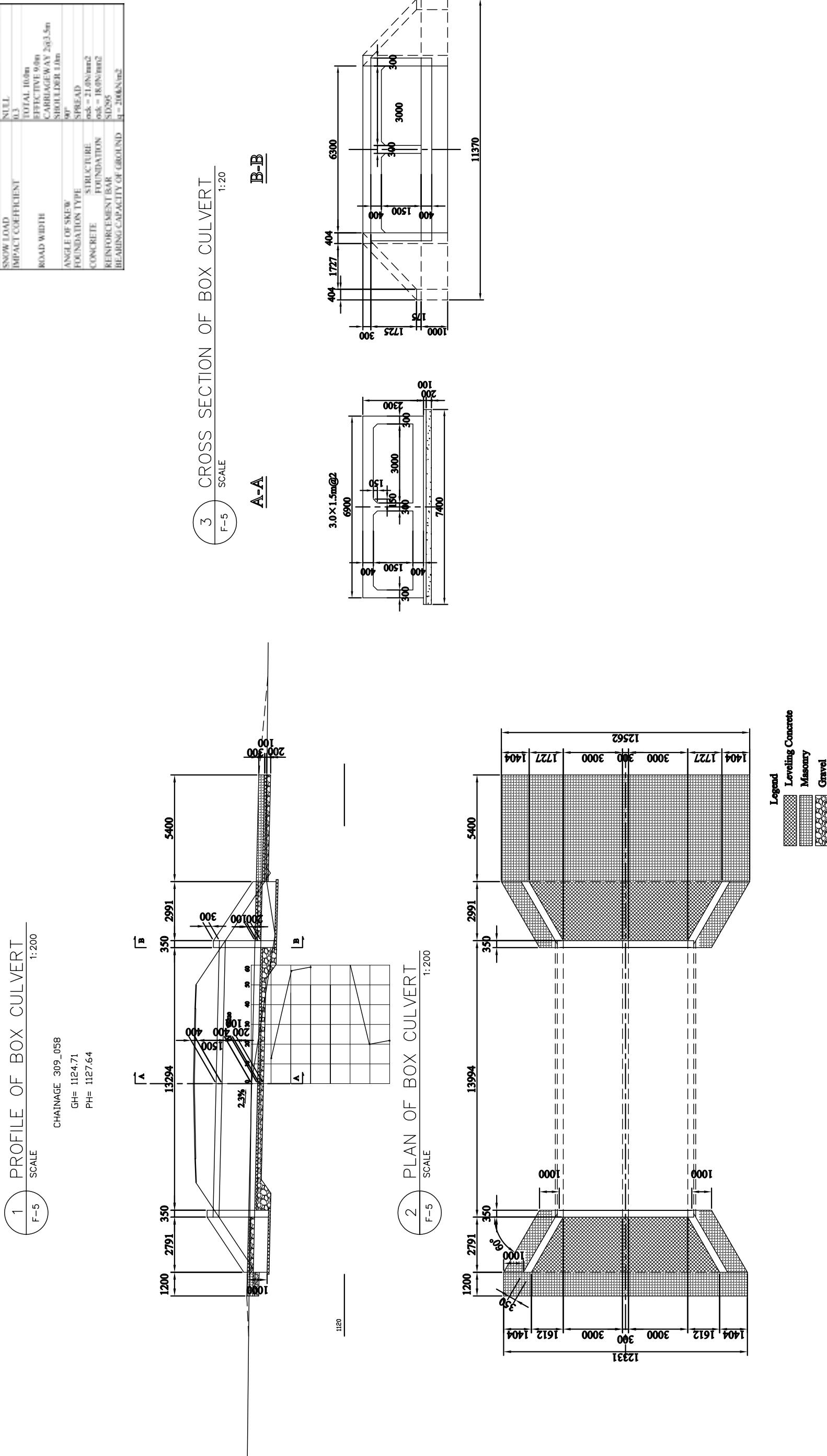


Figure 2-2-3-102 General View of Box Culvert(BC2 Sta.309+058)

THE BASIC DESIGN STUDY ON CONSTRUCTION OF EASTERN ARTERIAL ROAD IN MONGOLIA			
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		DEPARTMENT OF ROADS, MINISTRY OF INFRASTRUCTURE, THE GOVERNMENT OF MONGOLIA	
Drawing title	Scale	Sheet No.	
GENERAL VIEW OF BOX CULVERT BC2 (309 +05B) (Section-6)	AS SHOWN	F-5 5 5	