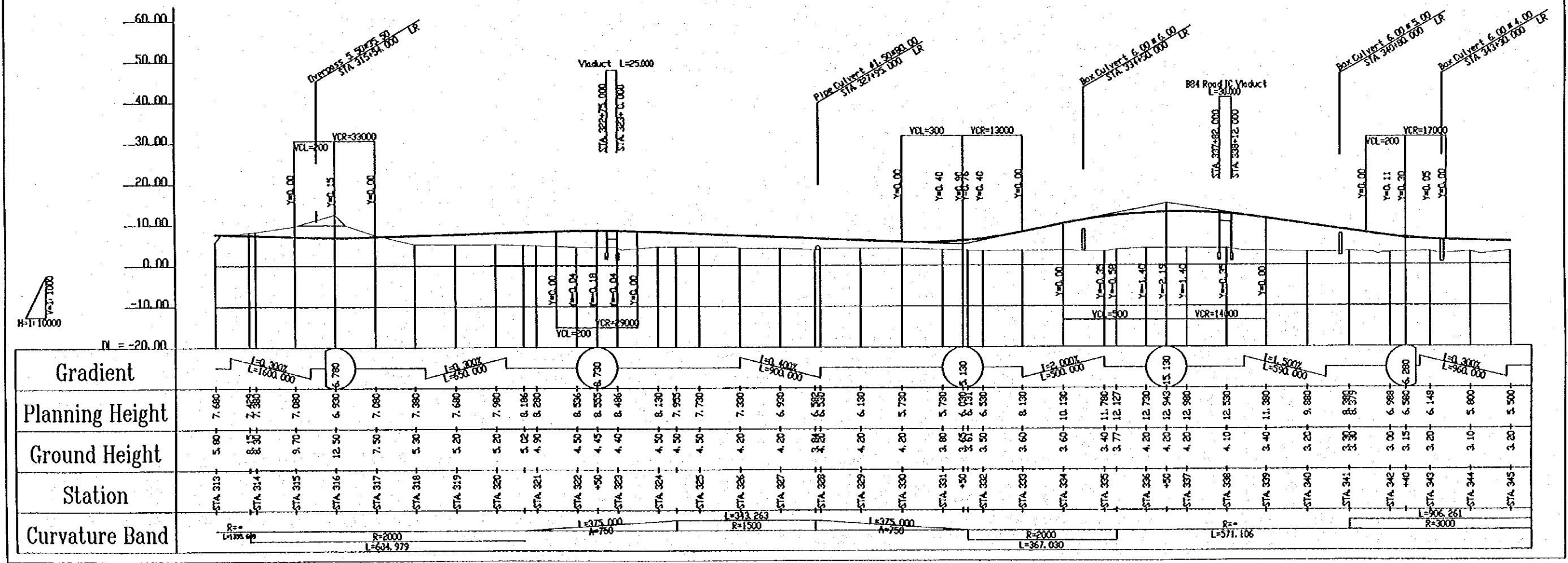
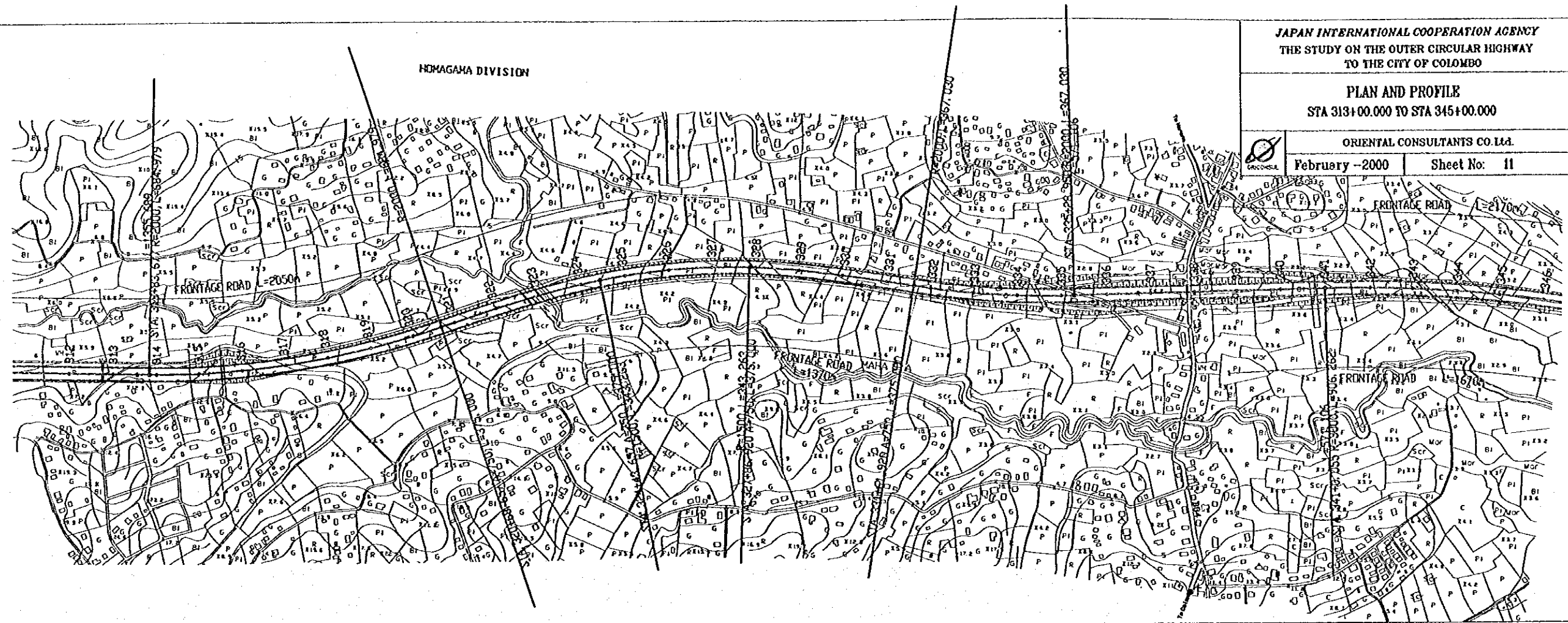


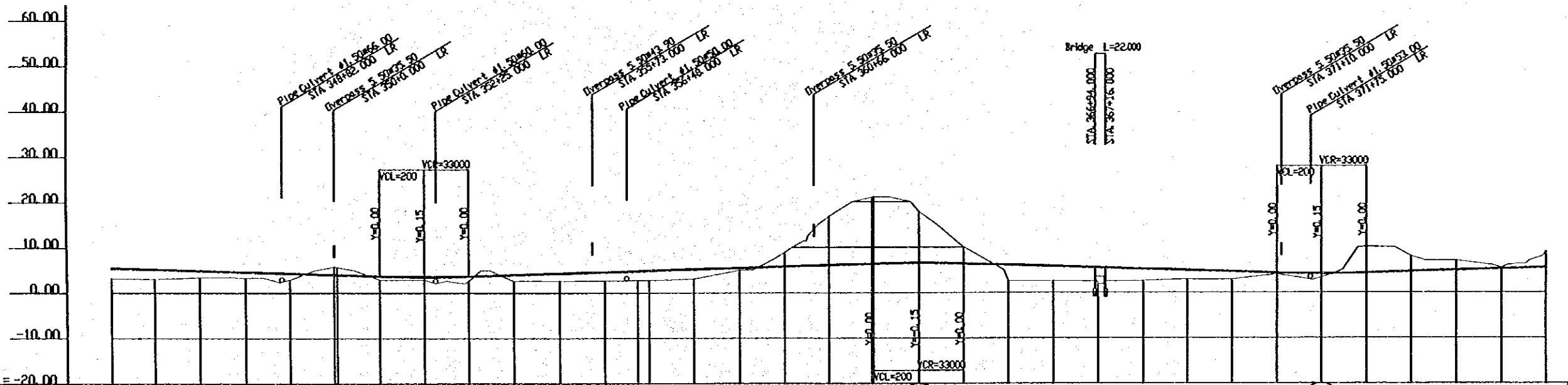
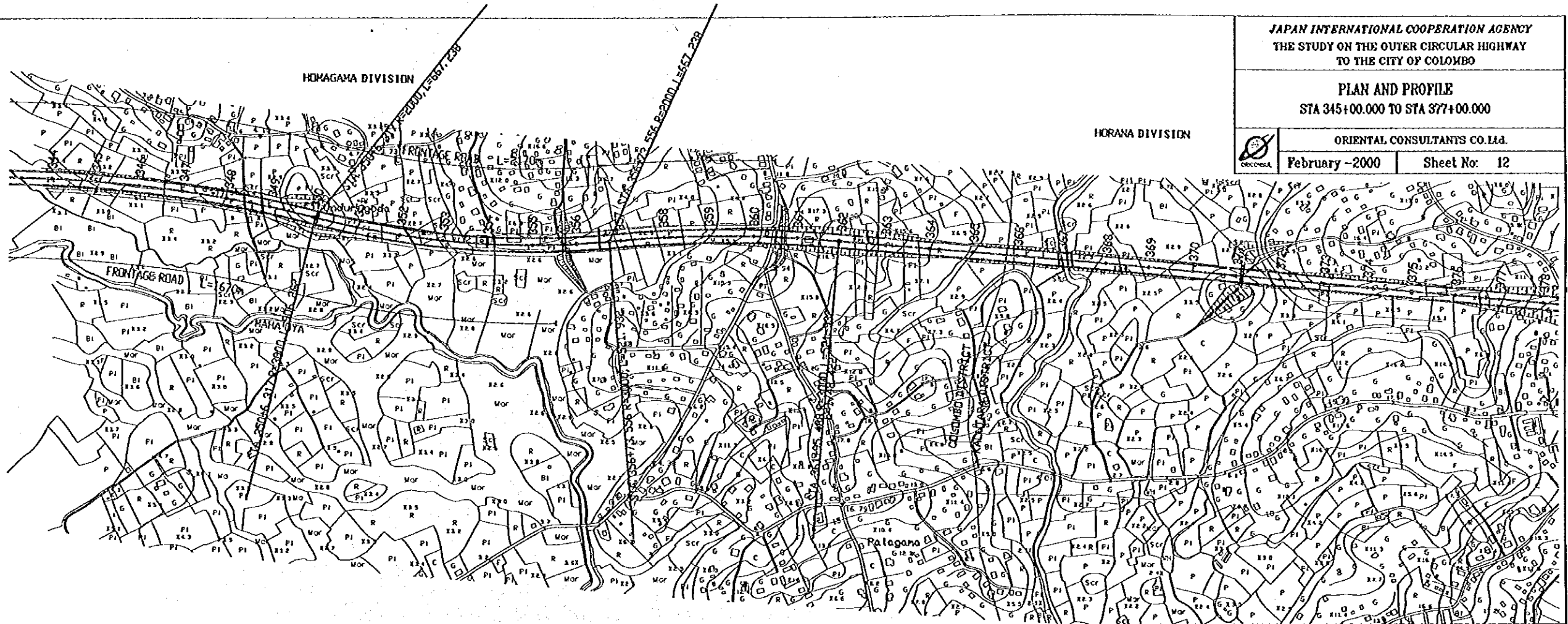
PLAN AND PROFILE
STA 313+00.000 TO STA 345+00.000

ORIENTAL CONSULTANTS CO. LTD.

February -2000

Sheet No: 11

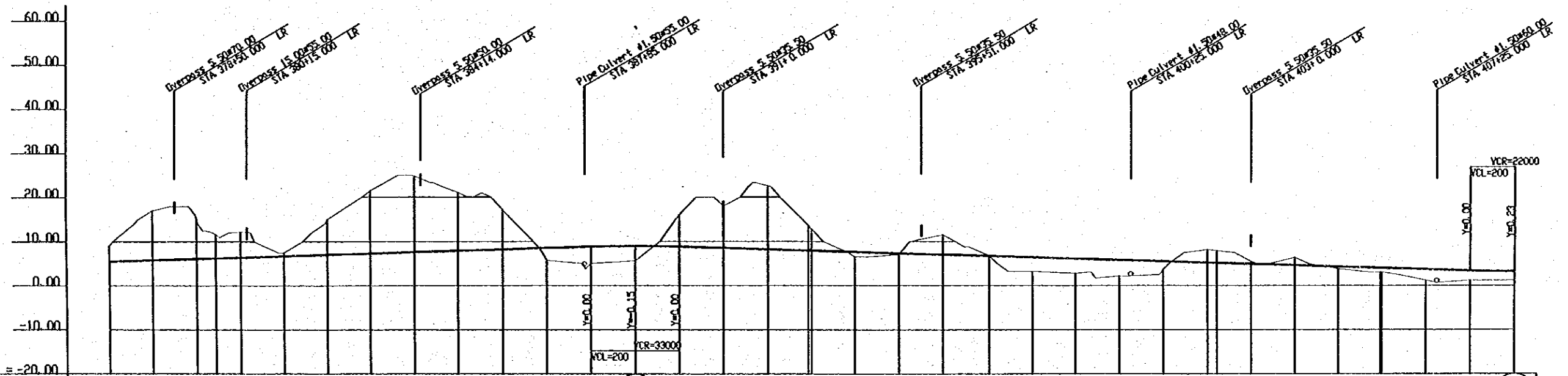
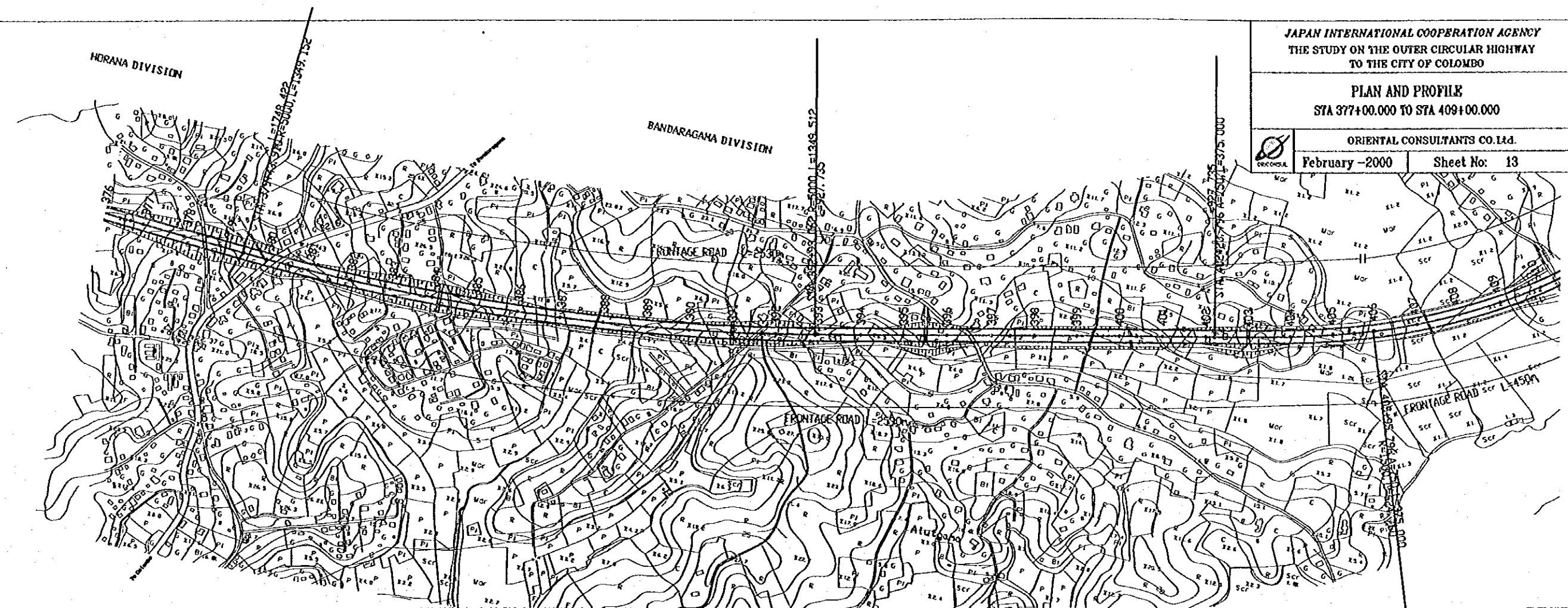




H=V/10000

M = -20.00

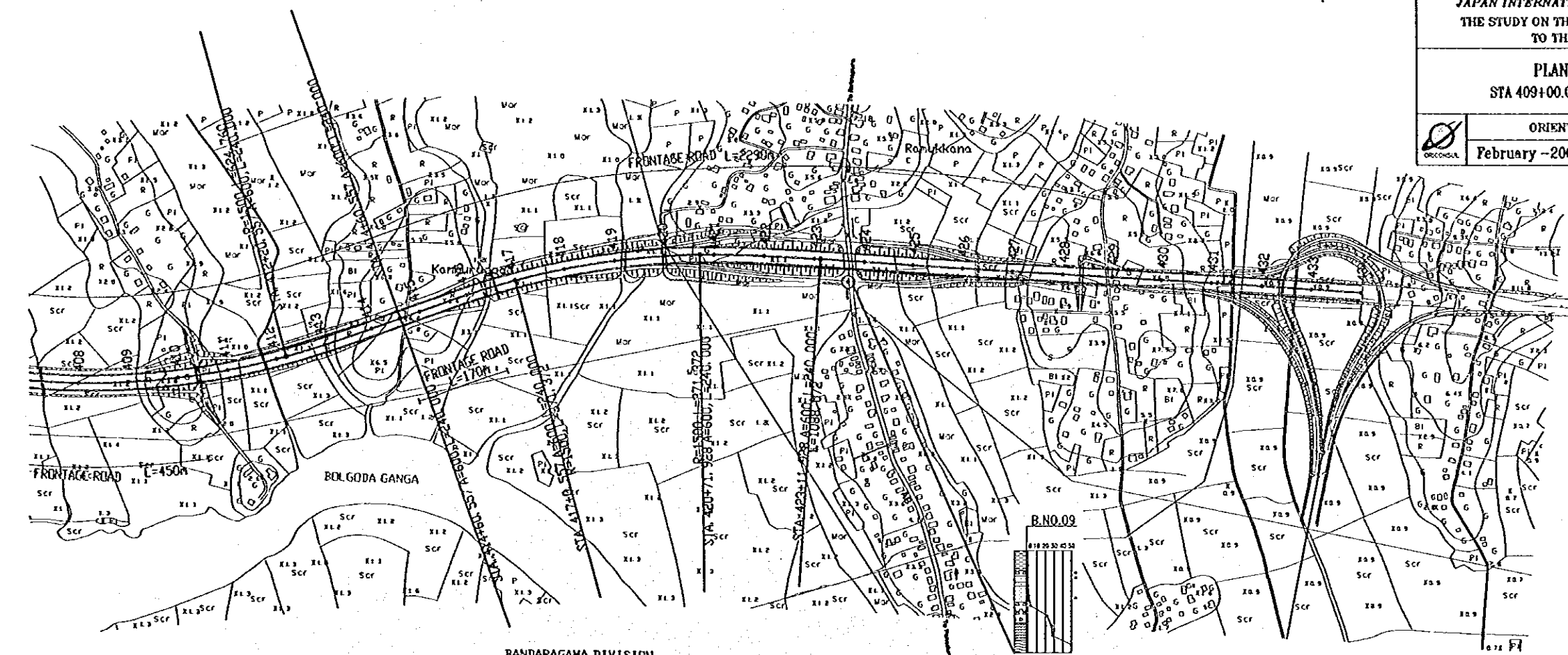
Gradient	-1.0 300% L=360.000																												-1.0 300% L=1100.000																												-1.0 300% L=900.000																												-1.0 300% L=1700.000																											
Planning Height	3.500	3.200	4.900	4.600	4.300	4.981	3.700	3.550	3.400	3.700	4.000	4.300	4.600	4.821	4.900	5.200	5.500	5.800	6.100	6.386	6.550	6.400	6.100	5.800	5.500	5.200	4.900	4.600	4.300	4.150	4.300	4.600	4.900	4.900	5.200	5.500																																																																												
Ground Height	3.20	3.10	3.40	3.30	2.90	5.89	2.90	2.90	2.60	2.60	2.60	2.70	2.77	2.80	3.10	5.00	8.90	16.80	21.00	17.80	10.00	2.60	2.60	1.90	2.60	2.90	2.90	4.00	3.20	10.20	8.00	7.00	5.40	9.00	5.200	5.500																																																																												
Station	STA 345	STA 346	STA 347	STA 348	STA 349	STA 350	STA 351	STA 352	STA 353	STA 354	STA 355	STA 356	STA 357	STA 358	STA 359	STA 360	STA 361	STA 362	STA 363	STA 364	STA 365	STA 366	STA 367	STA 368	STA 369	STA 370	STA 371	STA 372	STA 373	STA 374	STA 375	STA 376	STA 377																																																																															
Curvature Band	R=3000																												R=2000																												R=3000																												R=1748.421																											



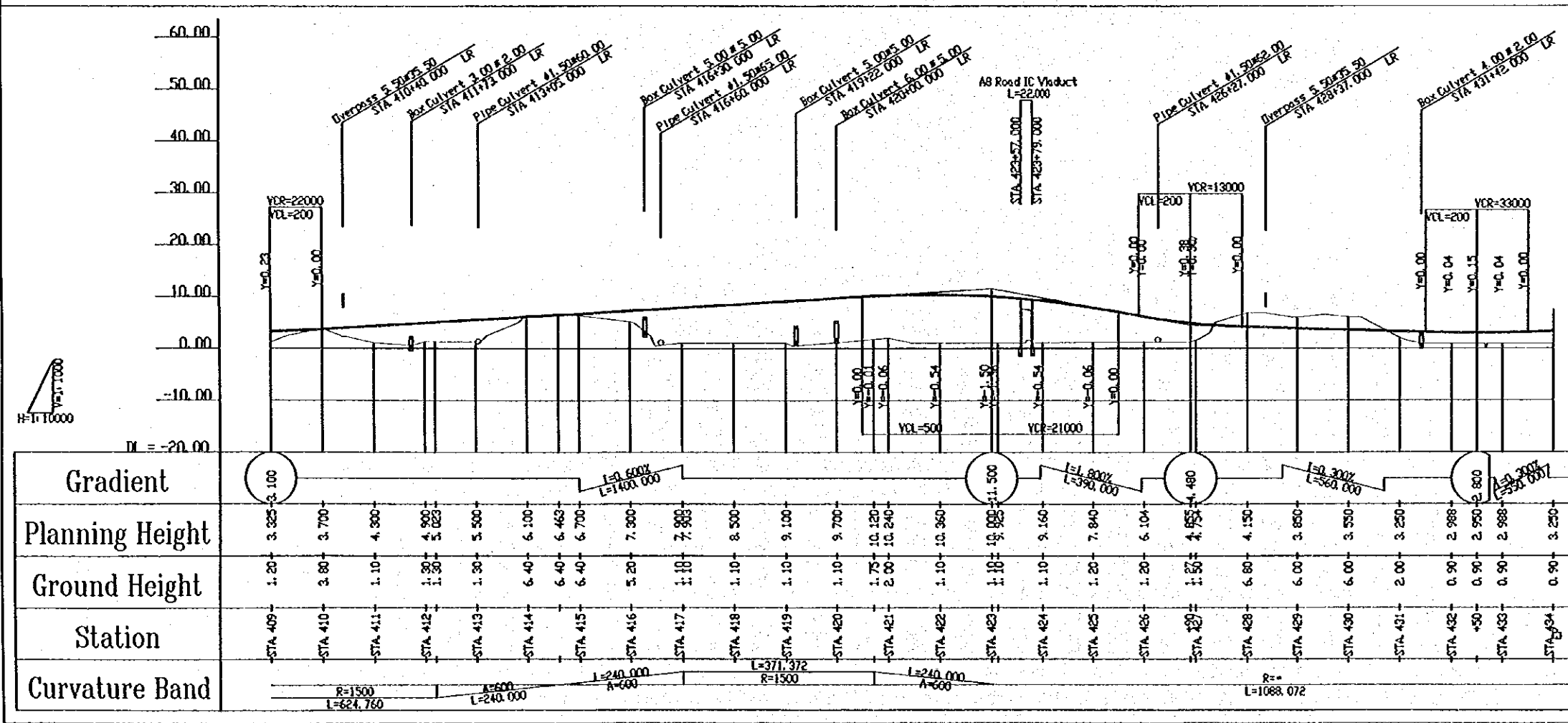
H=1:10000
V=1:1000

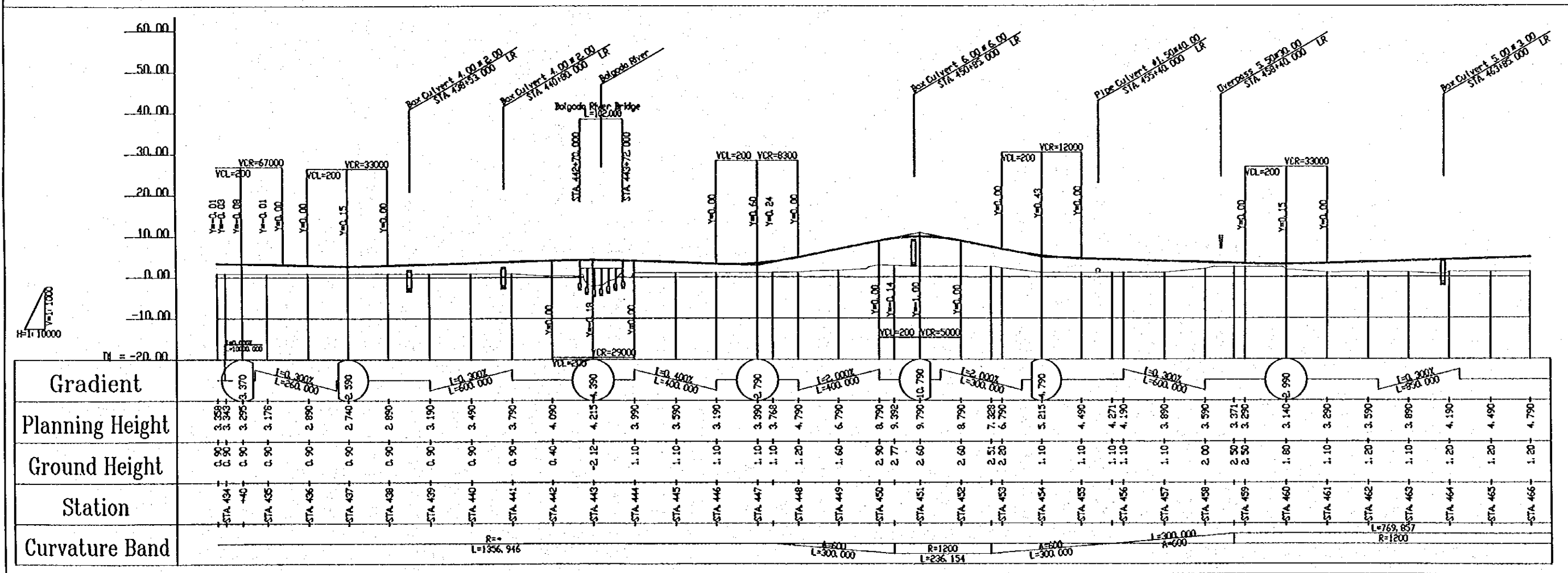
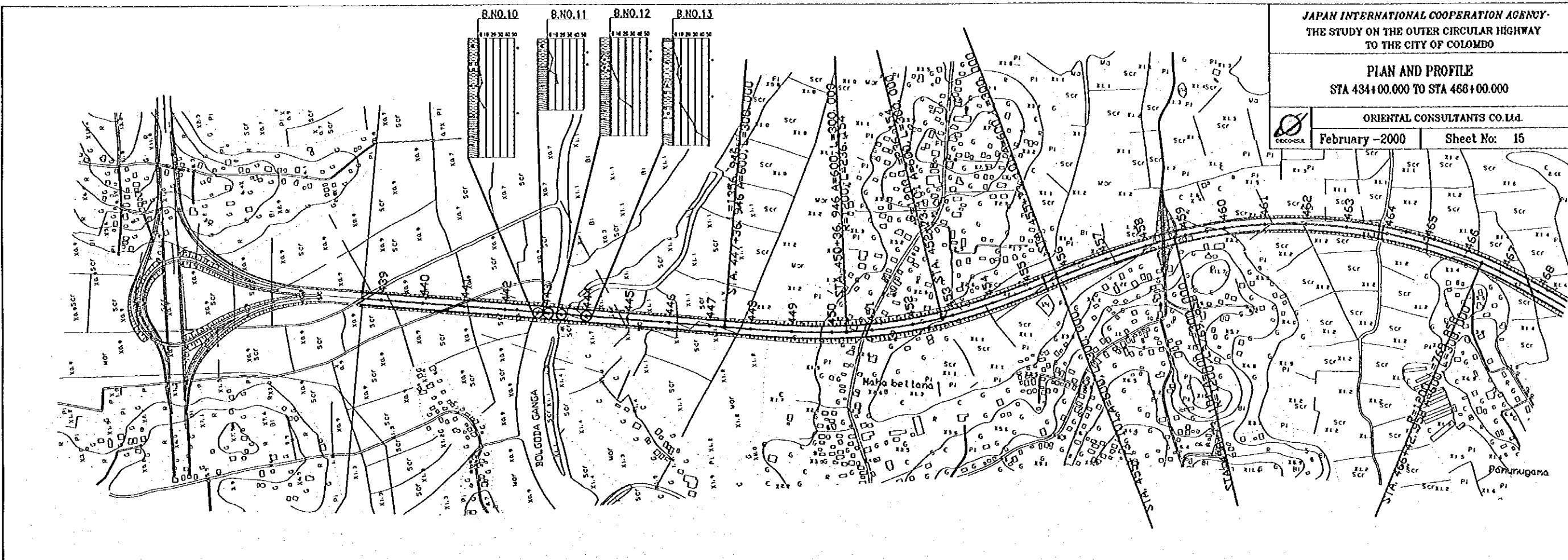
M = -20.00

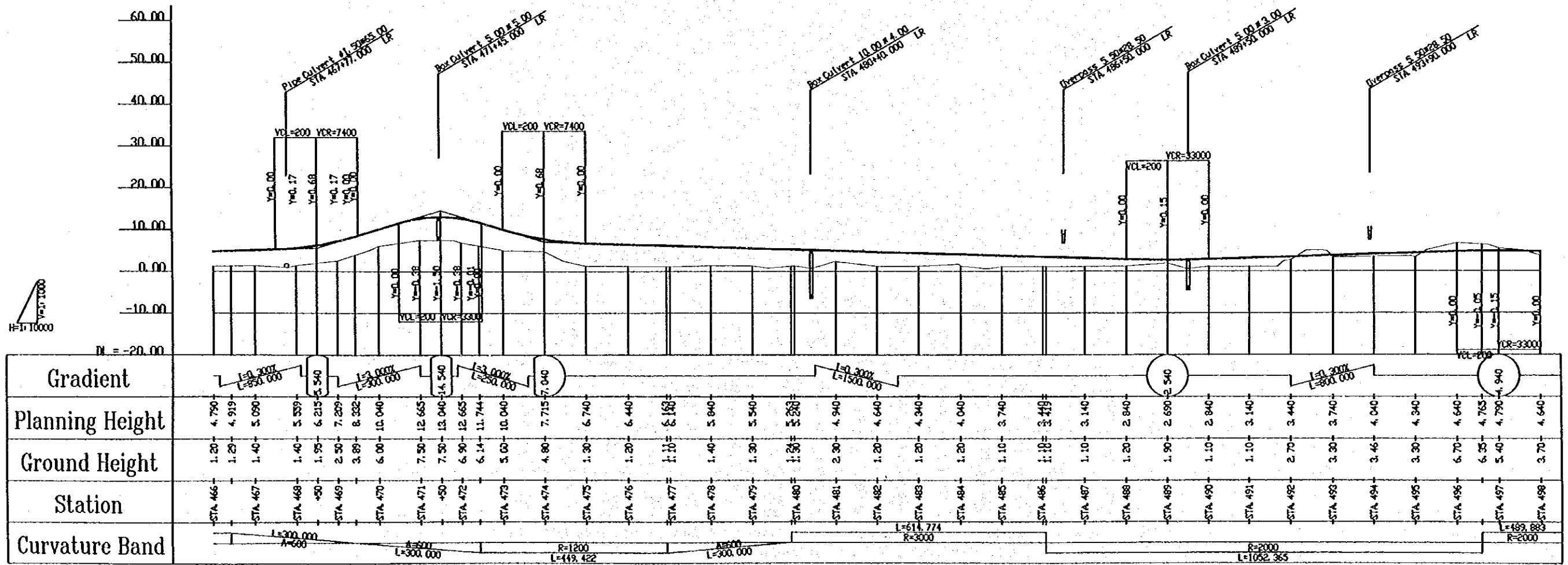
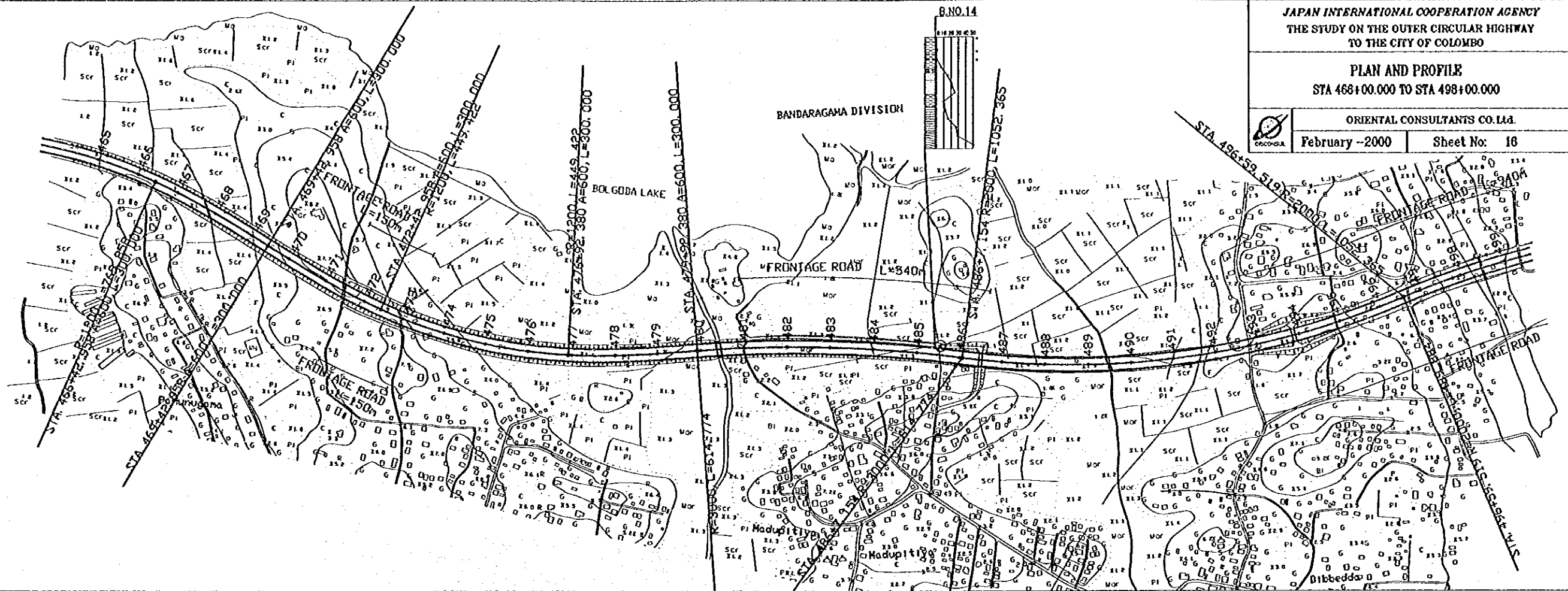
Gradient	$L=0.30\%$ $L=1700.000$																																				
Planning Height	5.500	5.800	6.100	6.282	6.400	6.700	7.000	7.300	7.600	7.900	8.200	8.500	8.800	8.950+0.100	8.800	8.500	8.200	7.900	7.600	7.300	7.000	6.700	6.400	6.100	5.800	5.500	5.200	4.900	4.600	4.300	4.000	3.700	3.400	3.225+0.100			
Ground Height	9.00	17.00	15.00	11.57	12.20	7.50	15.00	21.50	24.80	21.10	17.10	5.70	5.00	5.60	16.00	18.00	22.60	13.80	6.50	7.00	11.50	6.70	3.20	2.80	2.20	3.60	8.10	7.50	5.50	6.40	3.80	3.19	1.20	1.20	1.20	1.20	3.325+0.100
Station	STA 377	STA 378	STA 379	STA 380	STA 381	STA 382	STA 383	STA 384	STA 385	STA 386	STA 387	STA 388	STA 389	STA 390	STA 391	STA 392	STA 393	STA 394	STA 395	STA 396	STA 397	STA 398	STA 399	STA 400	STA 401	STA 402	STA 403	STA 404	STA 405	STA 406	STA 407	STA 408	STA 409				
Curvature Band	$R=1748.421$					$R=5000$ $L=1349.152$										$R=327.735$ $L=277.735$					$R=1500$ $L=624.760$																

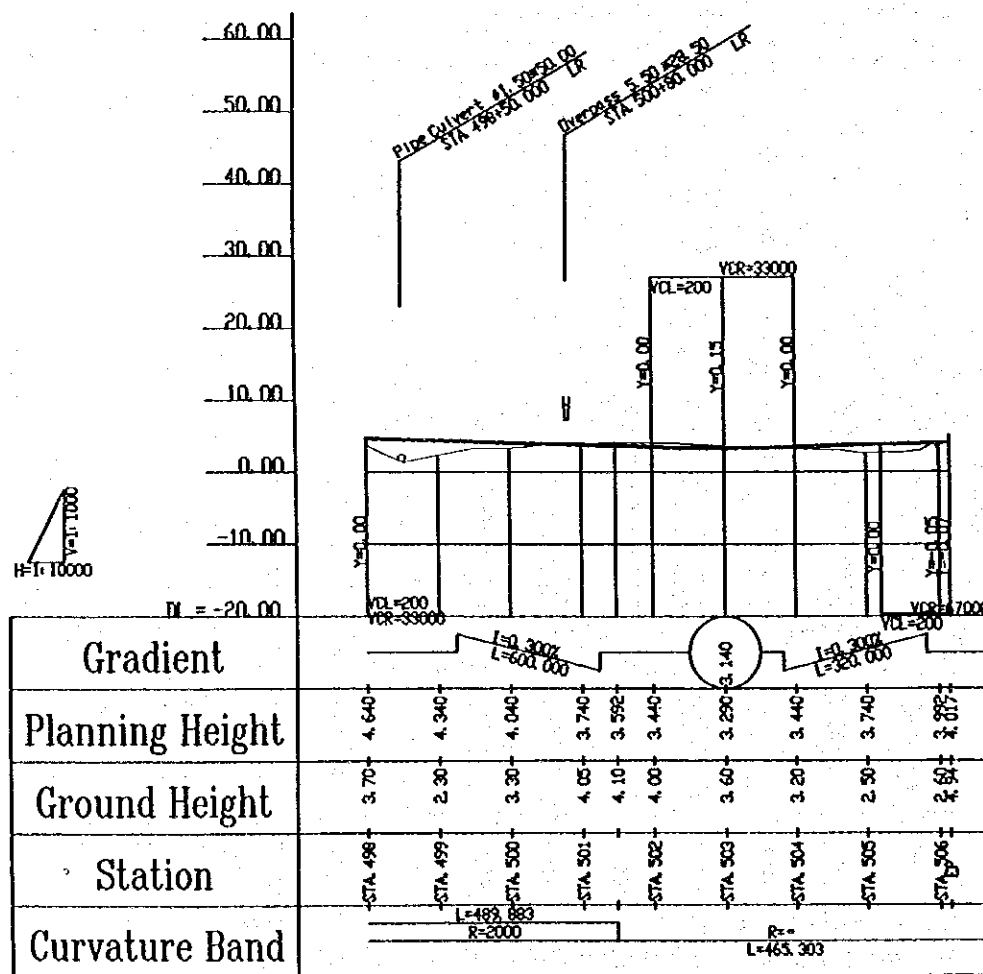
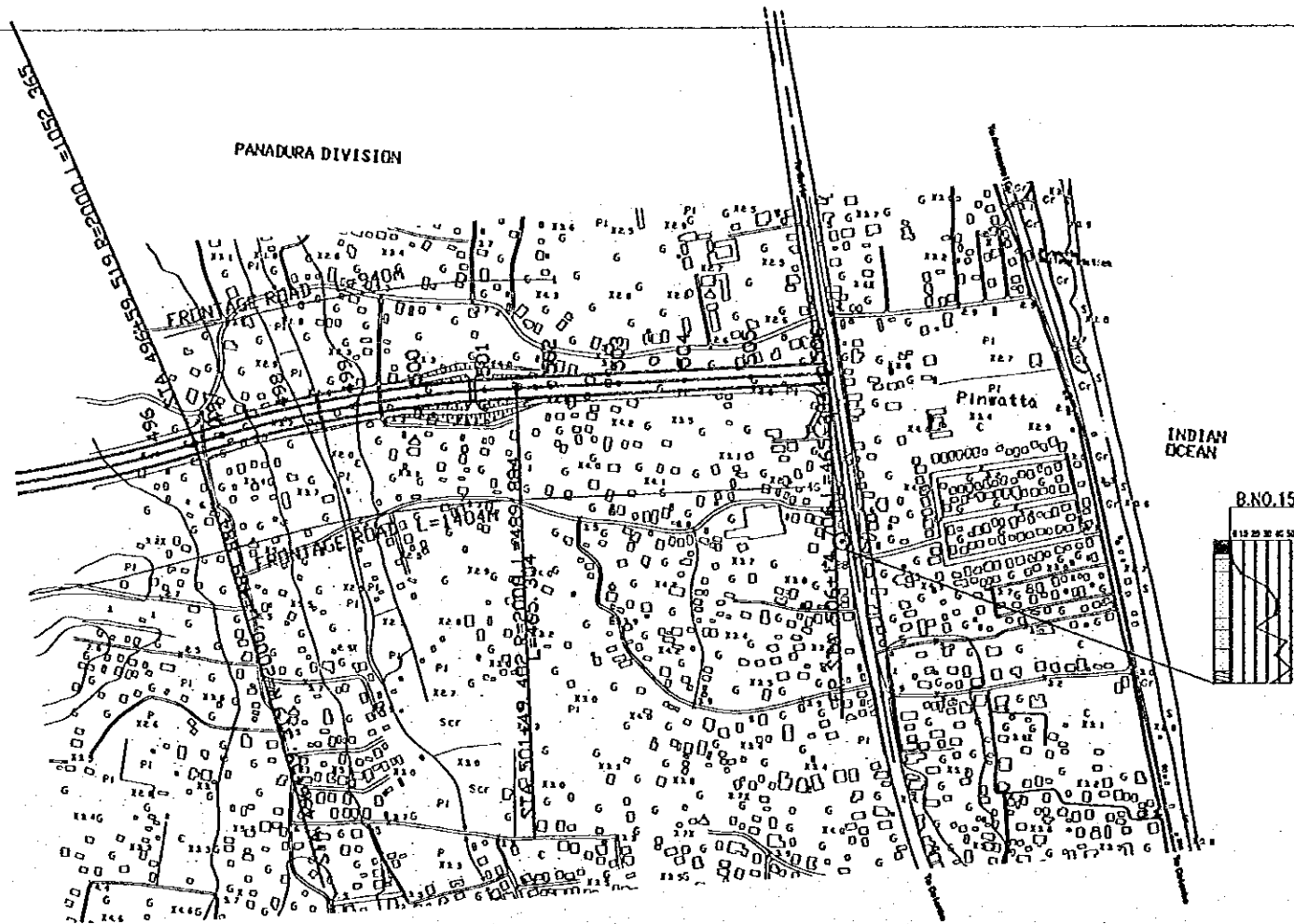


BANDARAGAMA DIVISION









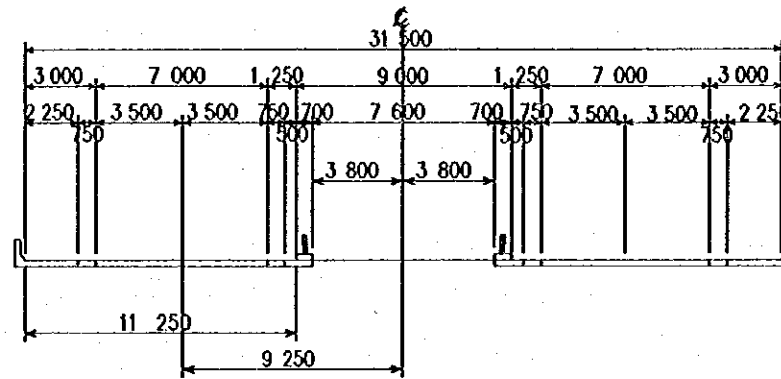
(2) TYPICAL CROSS SECTION

STANDARD CROSS SECTION (1)
4 LANES ⇒ 6 LANES

VIADUCT

(OPERATION WITH 4 TRAFFIC LANES)

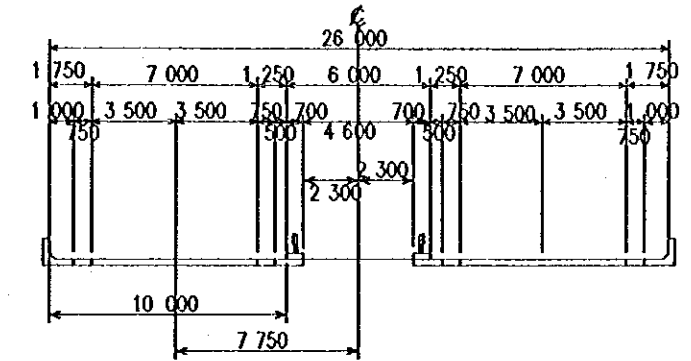
TYPE-VI-4A



BRIDGE

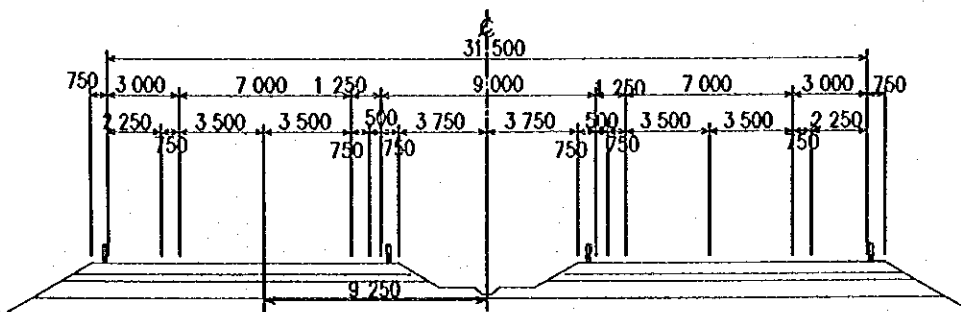
(OPERATION WITH 4 TRAFFIC LANES)

TYPE-Br-4A



(OPERATION WITH 4 TRAFFIC LANES)

TYPE-4L



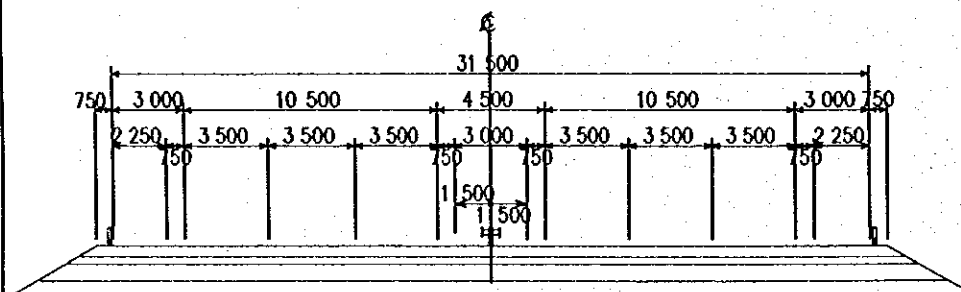
TO BE WIDEN TOWARD THE CENTER

TO BE WIDEN TOWARD THE CENTER

TO BE WIDEN TOWARD THE CENTER

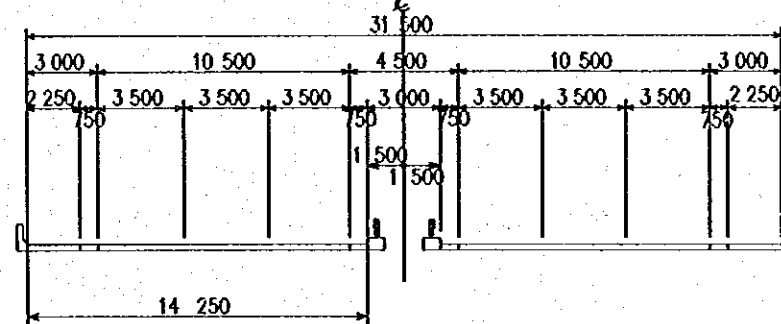
(OPERATION WITH 6 TRAFFIC LANES)

TYPE-6L



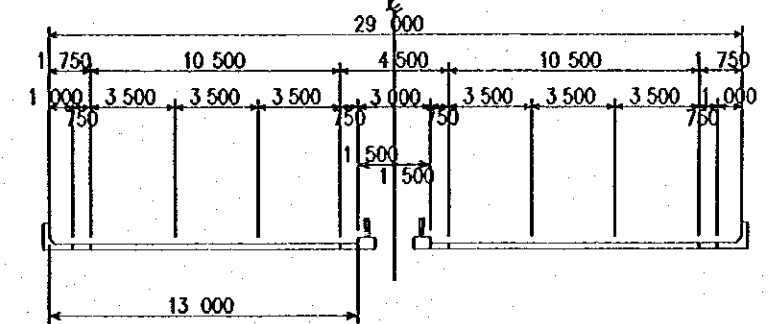
(OPERATION WITH 6 TRAFFIC LANES)

TYPE-VI-6



(OPERATION WITH 6 TRAFFIC LANES)

TYPE-Br-6



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

STANDARD CROSS SECTION (1)
4 LANES ⇒ 6 LANES S=1:300



ORIENTAL CONSULTANTS CO. LTD.

February -2000

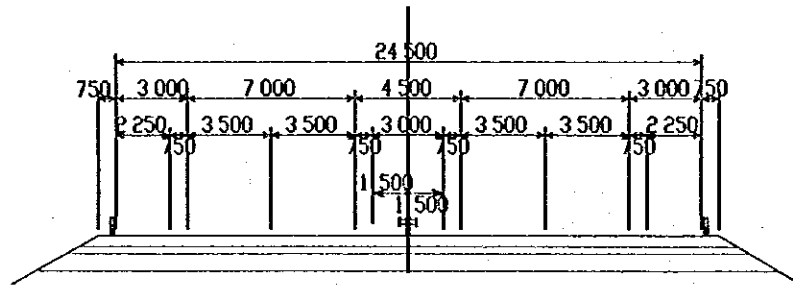
Sheet No: 18

STANDARD CROSS SECTION (2)
4 LANES

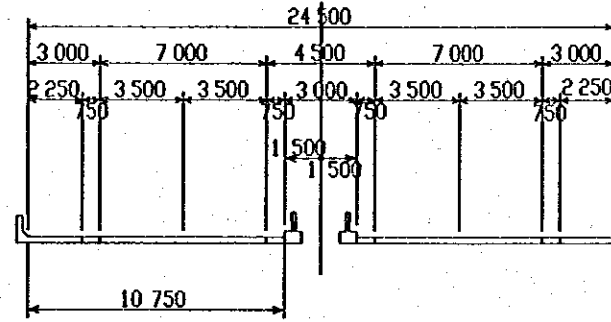
VIADUCT

BRIDGE

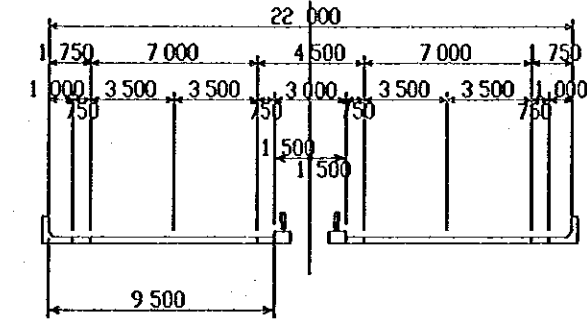
(OPERATION WITH 4 TRAFFIC LANES)
TYPE-4L



(OPERATION WITH 4 TRAFFIC LANES)
TYPE-VI-4



(OPERATION WITH 4 TRAFFIC LANES)
TYPE-Br-4



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

STANDARD CROSS SECTION (2)
4 LANES S=1:300



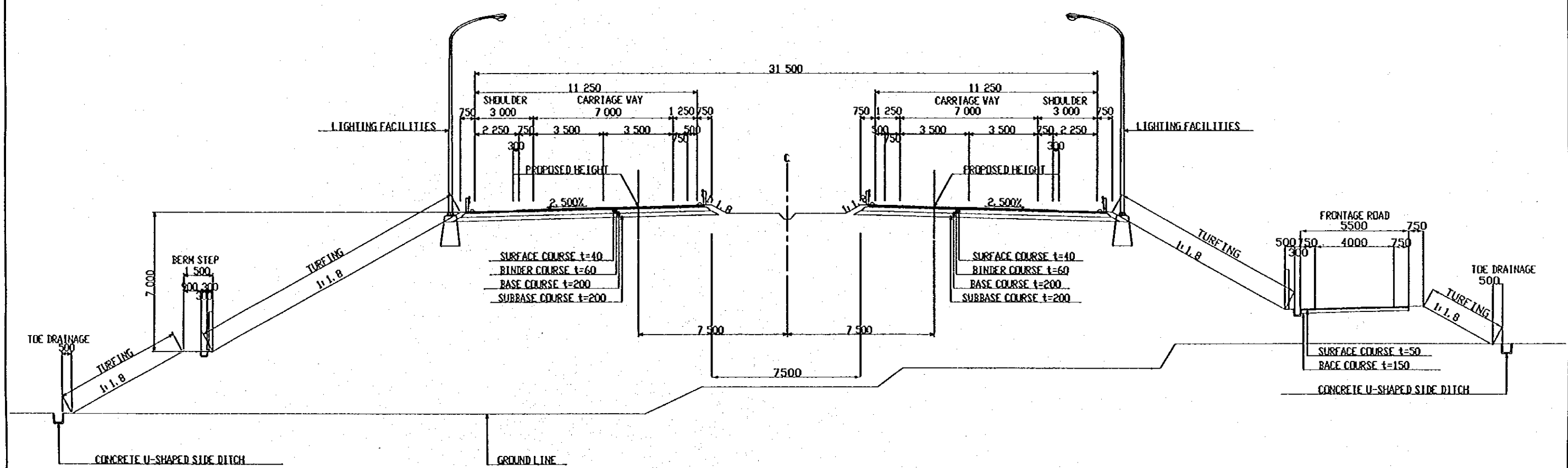
ORIENTAL CONSULTANTS CO. LTD.
February -2000 Sheet No: 19

TYPICAL CROSS SECTION

SCALE 1:200

INITIALLY 4 TRAFFIC LANES

(EMBANKMENT)



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

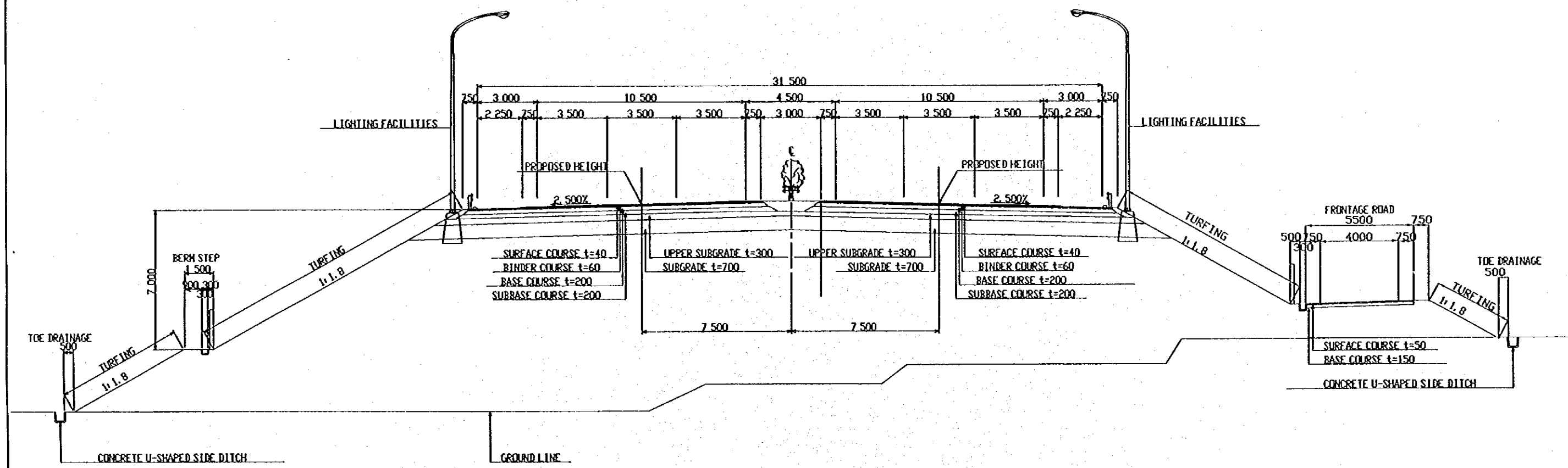
TYPICAL CROSS SECTION
INITIALLY 4 TRAFFIC LANES
EMBANKMENT

ORIENTAL CONSULTANTS CO., LTD.
February -2000 | Sheet No: 20

TYPICAL CROSS SECTION

SCALE 1:200

FINALLY 6 TRAFFIC LANES EMBANKMENT

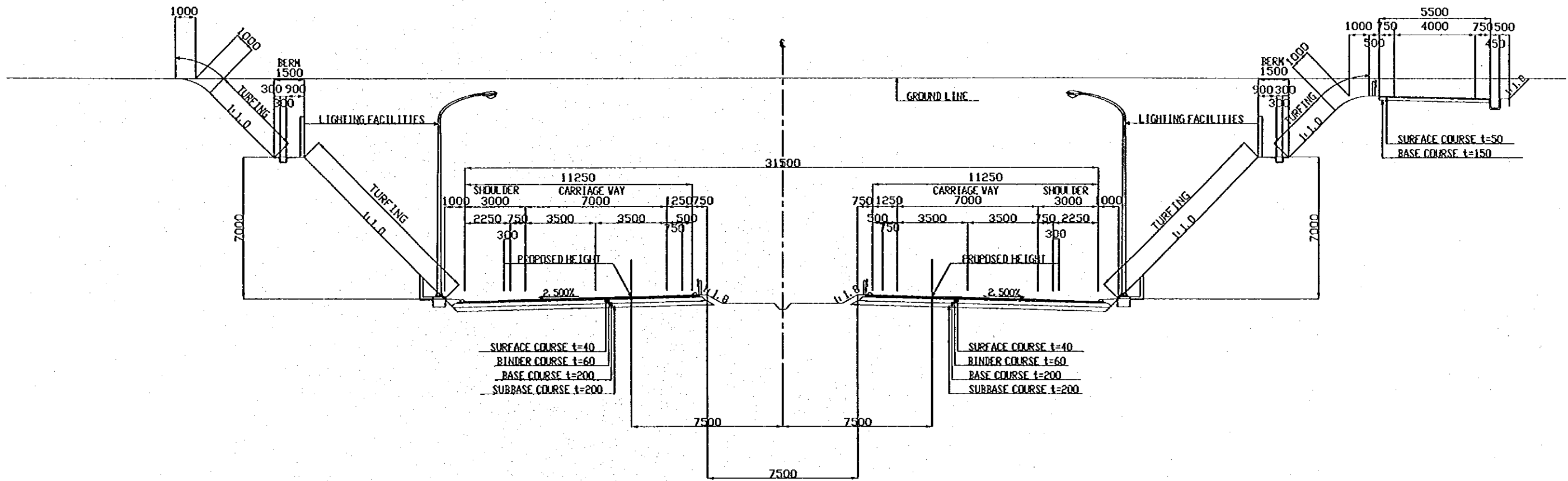


TYPICAL CROSS SECTION

SCALE 1:200

INITIALLY 4 TRAFFIC LANES

(CUT)



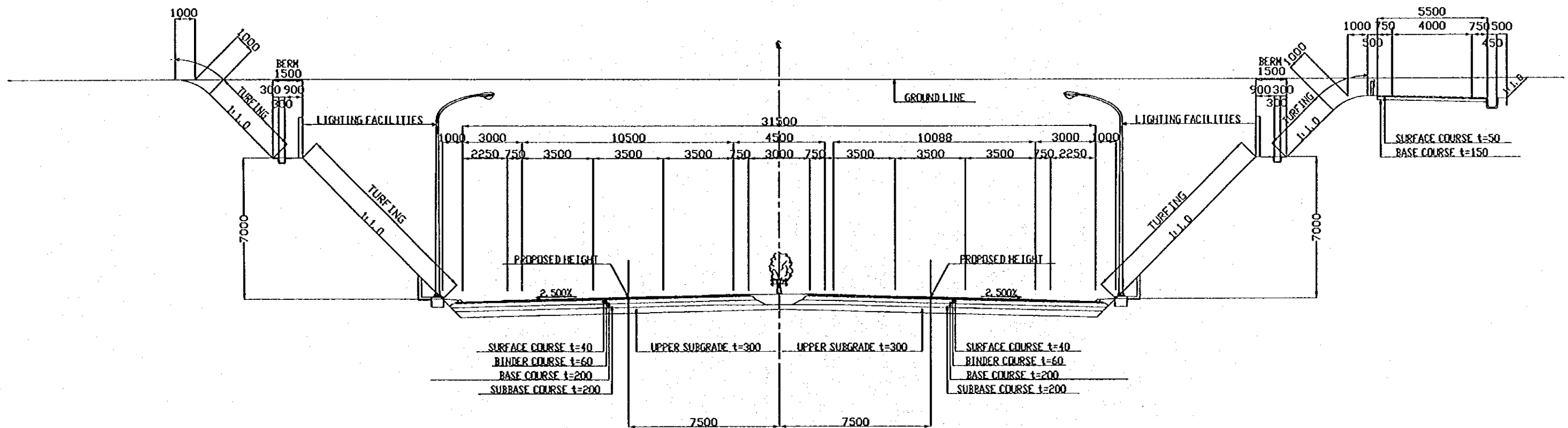
<p>JAPAN INTERNATIONAL COOPERATION AGENCY THE STUDY ON THE OUTER CIRCULAR HIGHWAY TO THE CITY OF COLOMBO</p>	
<p>TYPICAL CROSS SECTION INITIALLY 4 TRAFFIC LANES CUT</p>	
<p>ORIENTAL CONSULTANTS CO. LTD.</p>	
<p>February - 2000</p>	<p>Sheet No: 22</p>

TYPICAL CROSS SECTION

SCALE 1:200

FINALLY 6 TRAFFIC LANES

CUT



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

TYPICAL CROSS SECTION
FINALLY 6 TRAFFIC LANES
CUT



ORIENTAL CONSULTANTS CO. LTD.

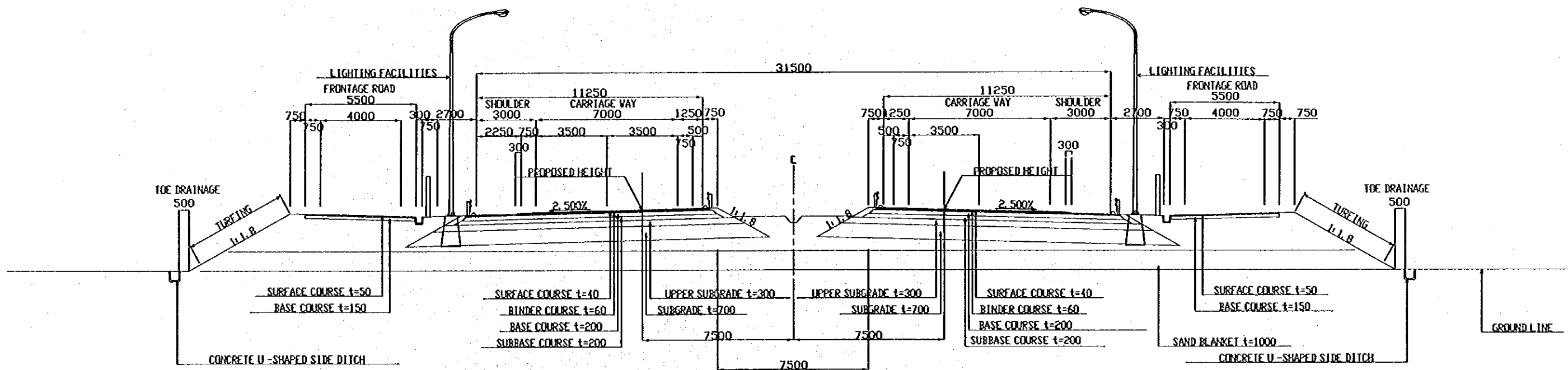
February -2000

Sheet No: 23

TYPICAL CROSS SECTION

SCALE 1:200

INITIALLY 4 TRAFFIC LANES
(LOW EMBANKMENT)



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

TYPICAL CROSS SECTION
INITIALLY 4 TRAFFIC LANES
LOW EMBANKMENT



ORIENTAL CONSULTANTS CO. LTD.

February -2000

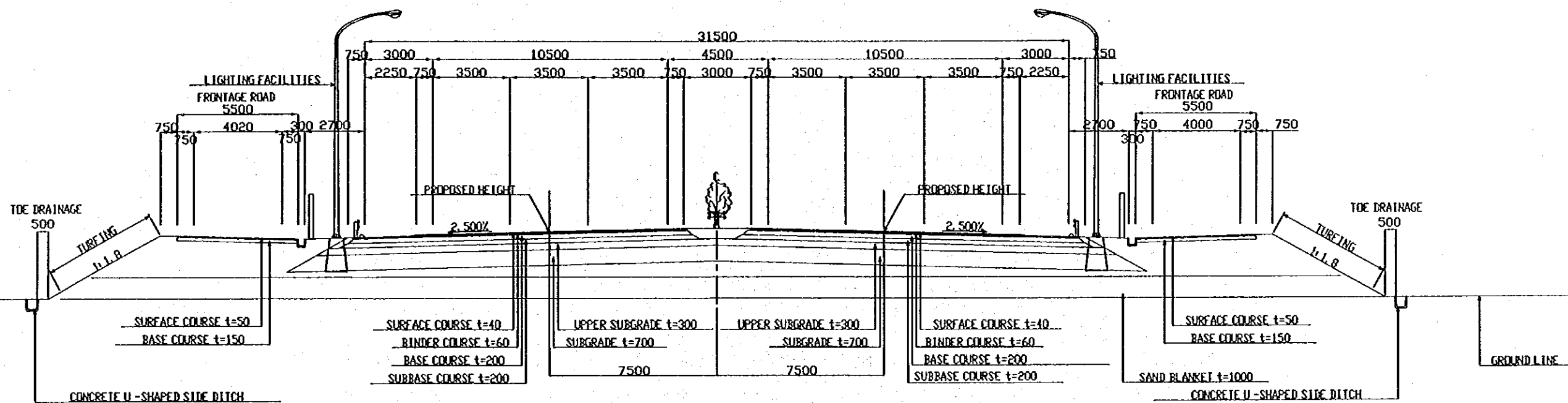
Sheet No. 24

TYPICAL CROSS SECTION

SCALE 1:200

FINALLY 6 TRAFFIC LANES

LOW EMBANKMENT



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

TYPICAL CROSS SECTION
FINALLY 6 TRAFFIC LANES
LOW EMBANKMENT



ORIENTAL CONSULTANTS CO. LTD.

February - 2000

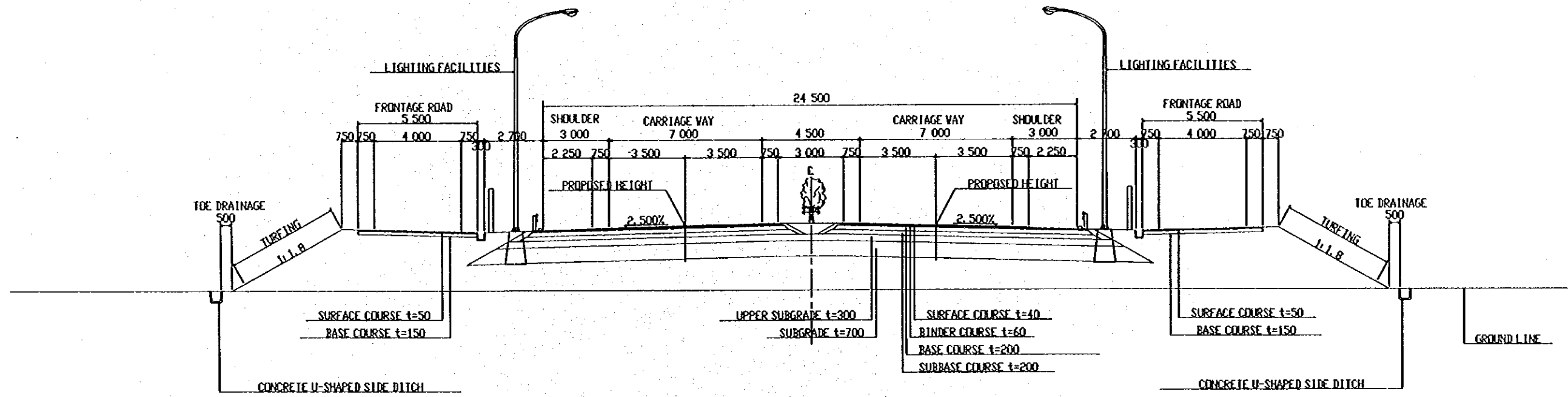
Sheet No: 25

TYPICAL CROSS SECTION

SCALE 1:200

FINALLY 4 TRAFFIC LANES

(LOW EMBANKMENT)



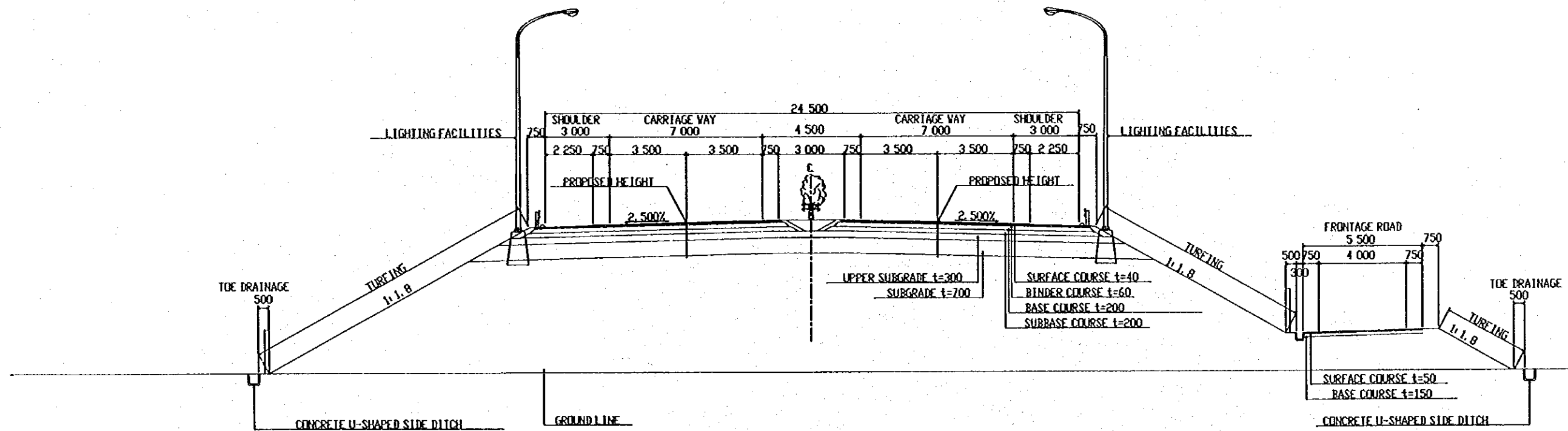
JAPAN INTERNATIONAL COOPERATION AGENCY THE STUDY ON THE OUTER CIRCULAR HIGHWAY TO THE CITY OF COLOMBO	
TYPICAL CROSS SECTION FINALLY 4 TRAFFIC LANES LOW EMBANKMENT	
ORIENTAL CONSULTANTS CO. Ltd.	
February -2000	Sheet No: 26

TYPICAL CROSS SECTION

SCALE 1:200

FINALLY 4 TRAFFIC LANES

(EMBANKMENT)



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

TYPICAL CROSS SECTION
FINALLY 4 TRAFFIC LANES
EMBANKMENT



ORIENTAL CONSULTANTS CO. LTD.

February -2000

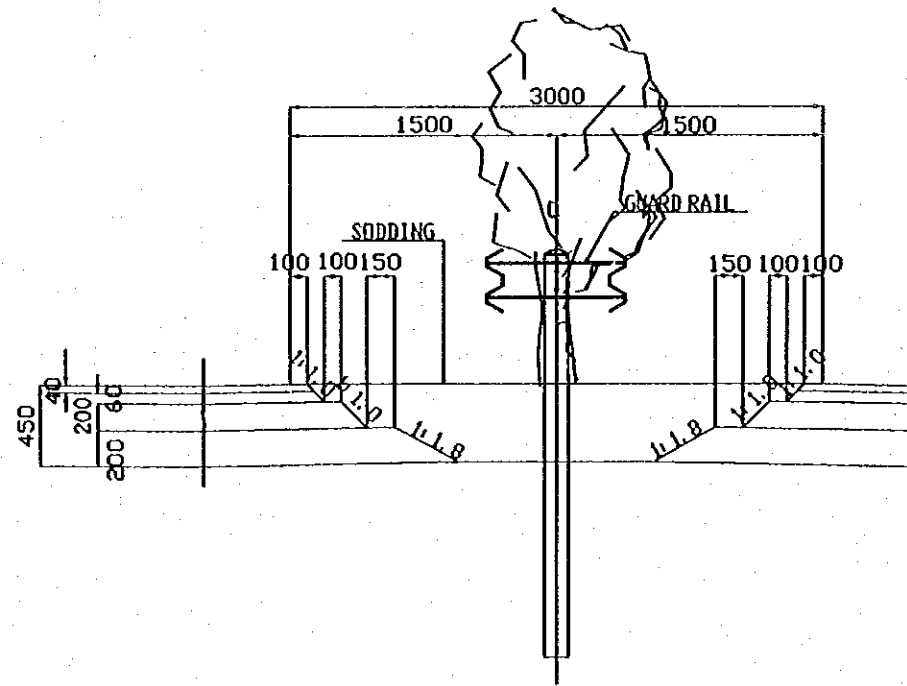
Sheet No. 27

(3) *OTHERS*

DETAIL OF SEPARATOR AND SHOULDER

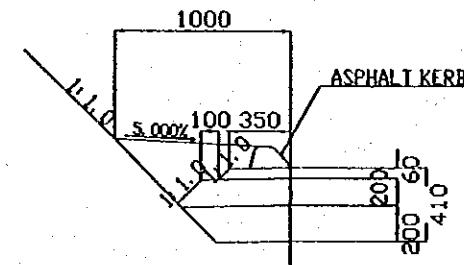
SEPARATOR

SCALE 1:40



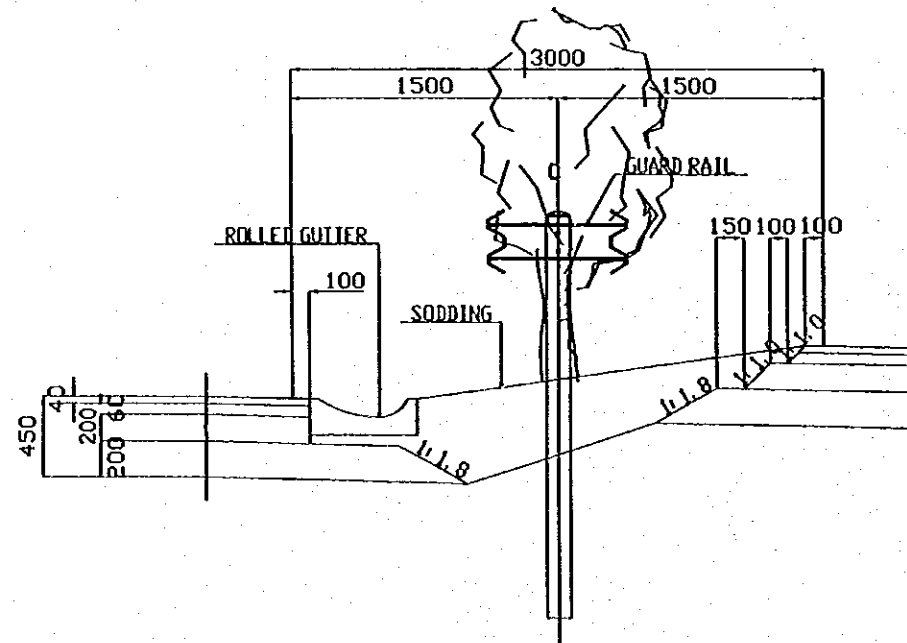
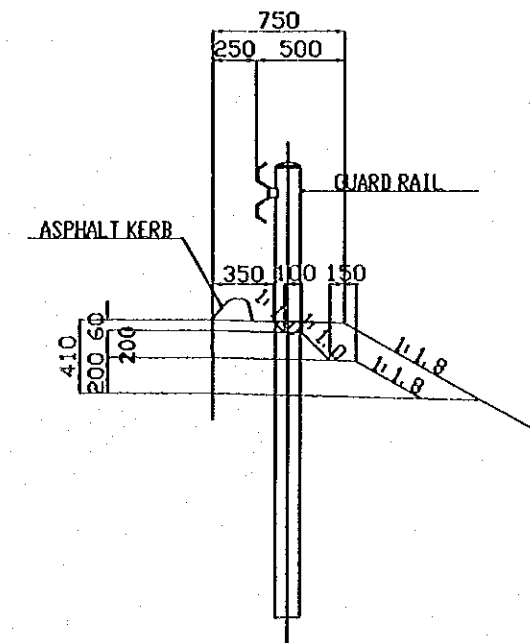
SHOULDER (CUT)

SCALE 1:40



SHOULDER (EMBANKMENT)

SCALE 1:40



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

DETAIL OF SEPARATOR AND SHOULDER

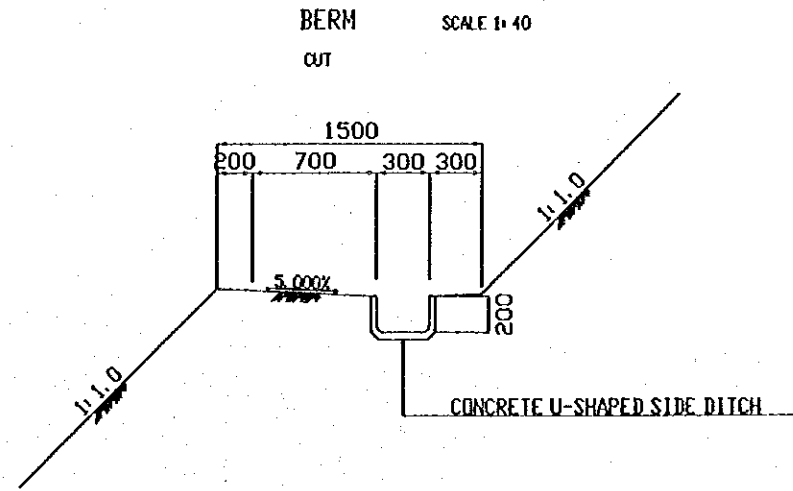
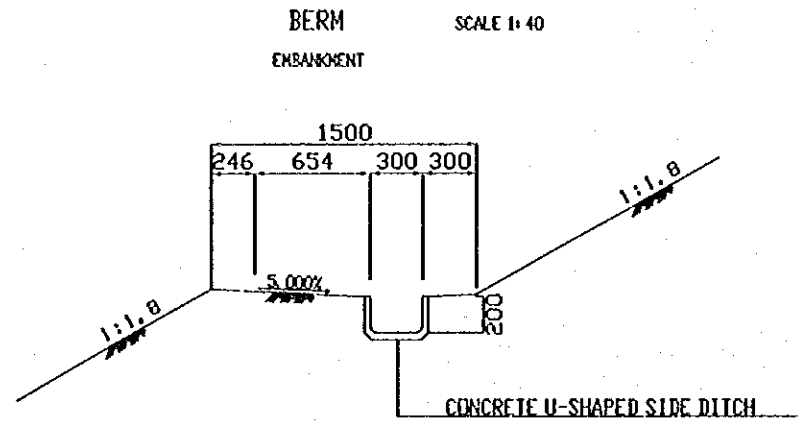


ORIENTAL CONSULTANTS CO. LTD.

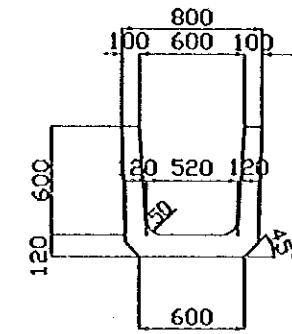
February -2000

Sheet No: 28

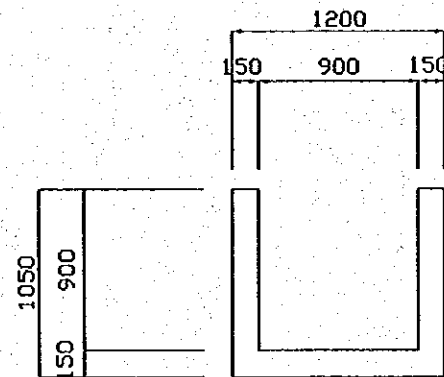
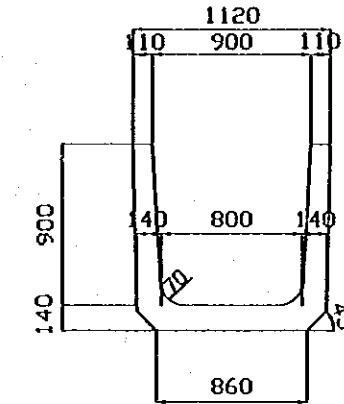
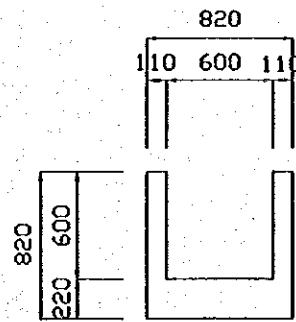
DETAIL OF DRAINAGE FACILITIES



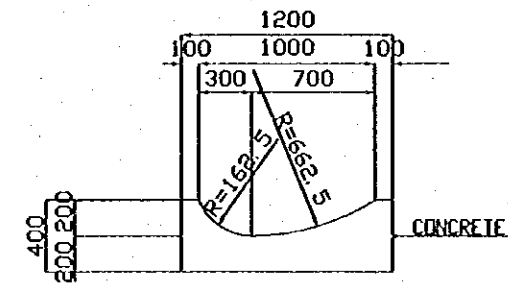
CONCRETE U-SHAPED SIDE DITCH SCALE 1:40



PRECAST CONCRETE U-SHAPED SIDE DITCH SCALE 1:40



ROLLED GUTTER SCALE 1:40



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

DETAIL OF DRAINAGE FACILITIES

ORIENTAL CONSULTANTS CO., Ltd.

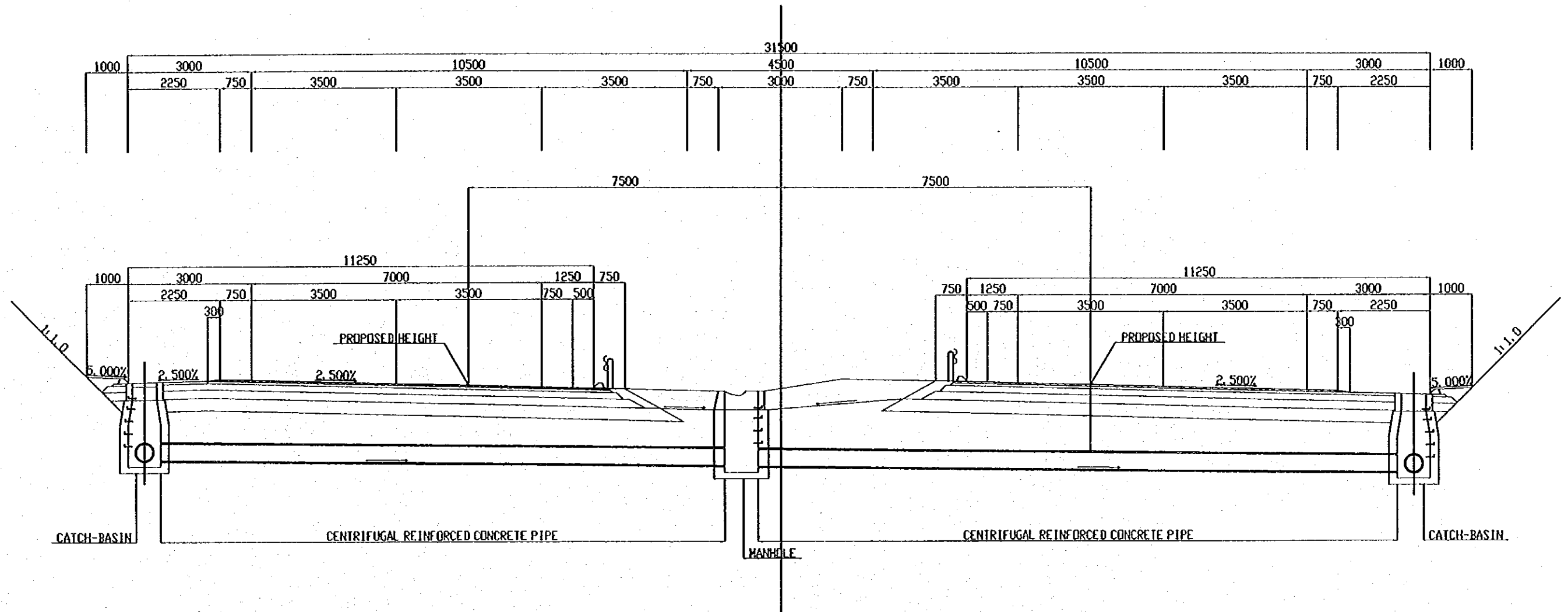


February -2000

Sheet No: 29

DRAINAGE CONNECTION AT INITIALLY 4 TRAFFIC LANES (CUT)

SCALE 1:100



JAPAN INTERNATIONAL COOPERATION AGENCY
 THE STUDY ON THE OUTER CIRCULAR HIGHWAY
 TO THE CITY OF COLOMBO

DRAINAGE CONNECTION AT
 INITIALLY 4 TRAFFIC LANES (CUT)



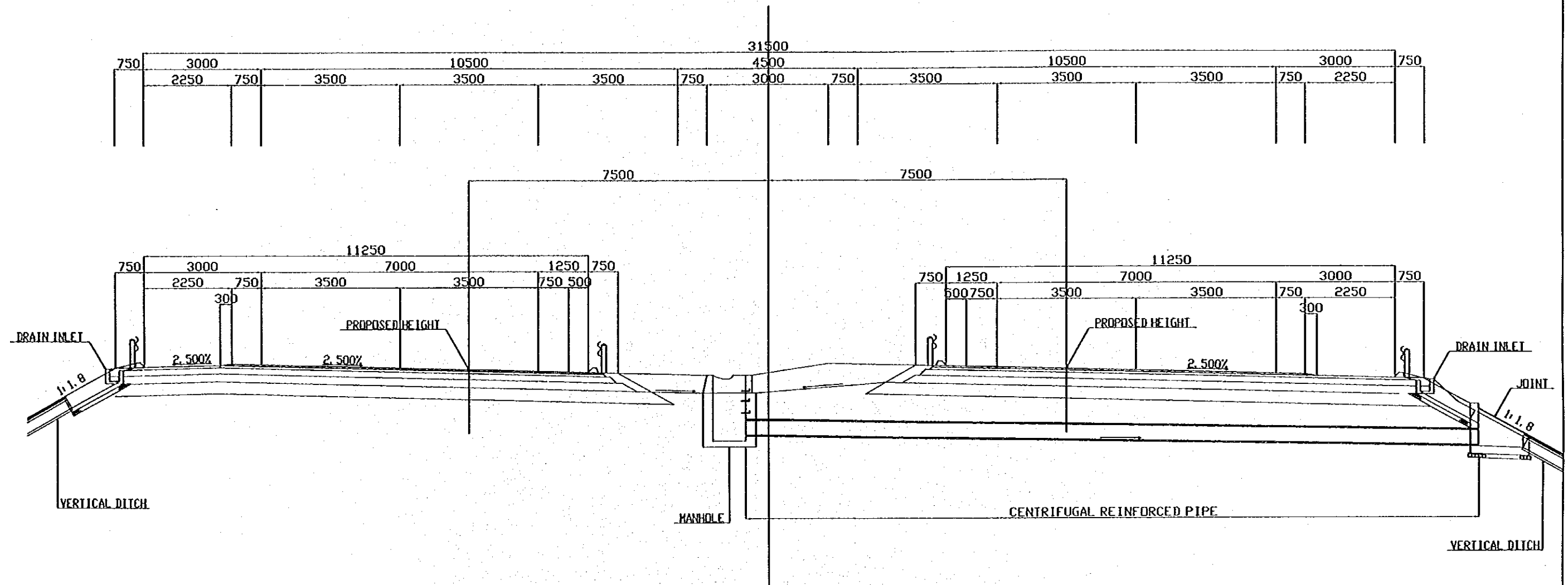
ORIENTAL CONSULTANTS CO. LTD.

February -2000

Sheet No: 30

DRAINAGE CONNECTION AT
INITIALLY 4 TRAFFIC LANES (EMBANKMENT)

SCALE 1:100



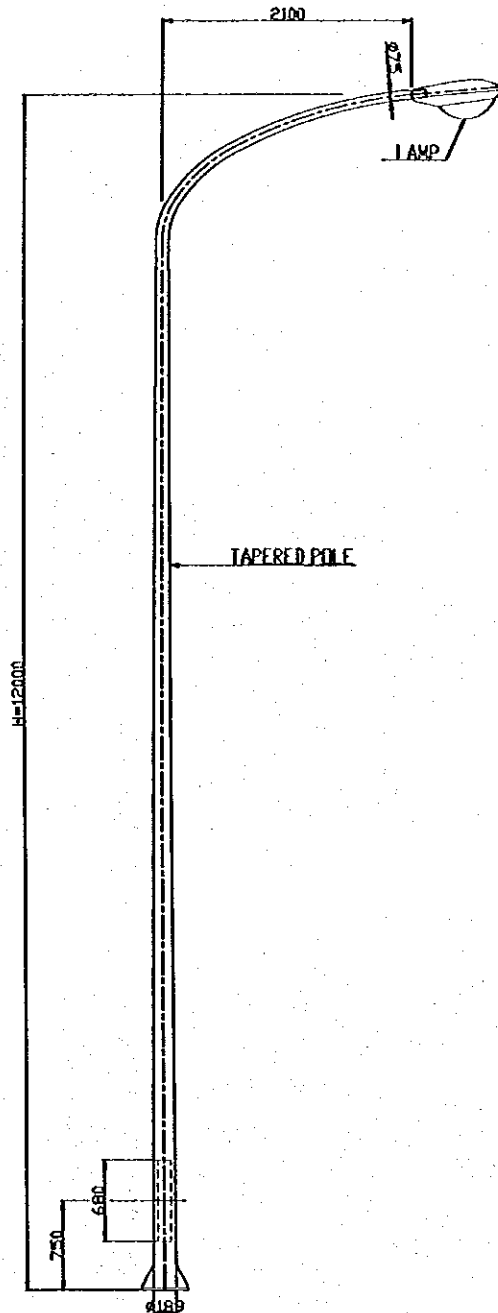
JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

DRAINAGE CONNECTION AT
INITIALLY 4 TRAFFIC LANES (EMBANKMENT)

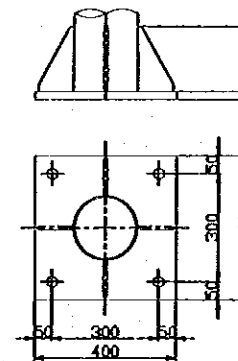
ORIENTAL CONSULTANTS CO. LTD.
February -2000 Sheet No: 31

LIGHTING FACILITIES

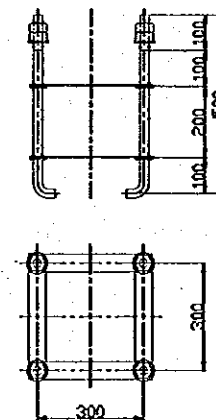
LAYOUT S=1/60



DETAIL OF BASE PLATE S=1/20



DETAIL OF ANCHOR BOLT S=1/20



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

LIGHTING FACILITIES



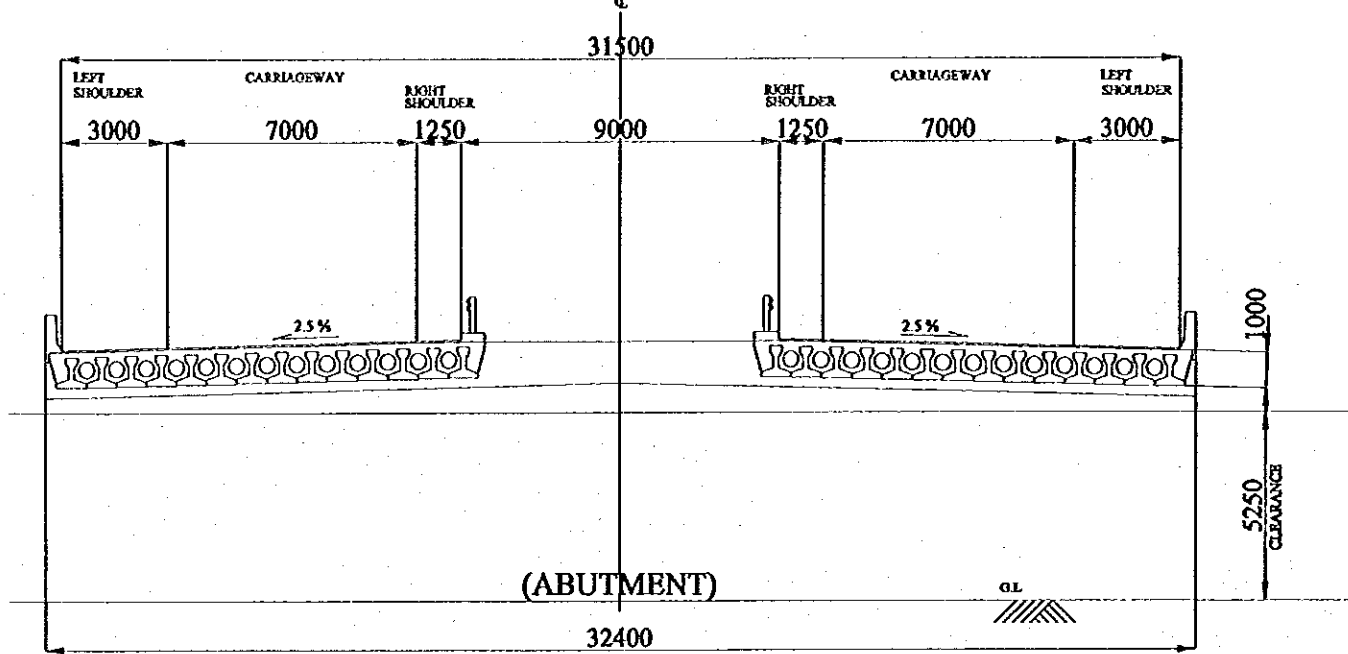
ORIENTAL CONSULTANTS CO. LTD.

February - 2000

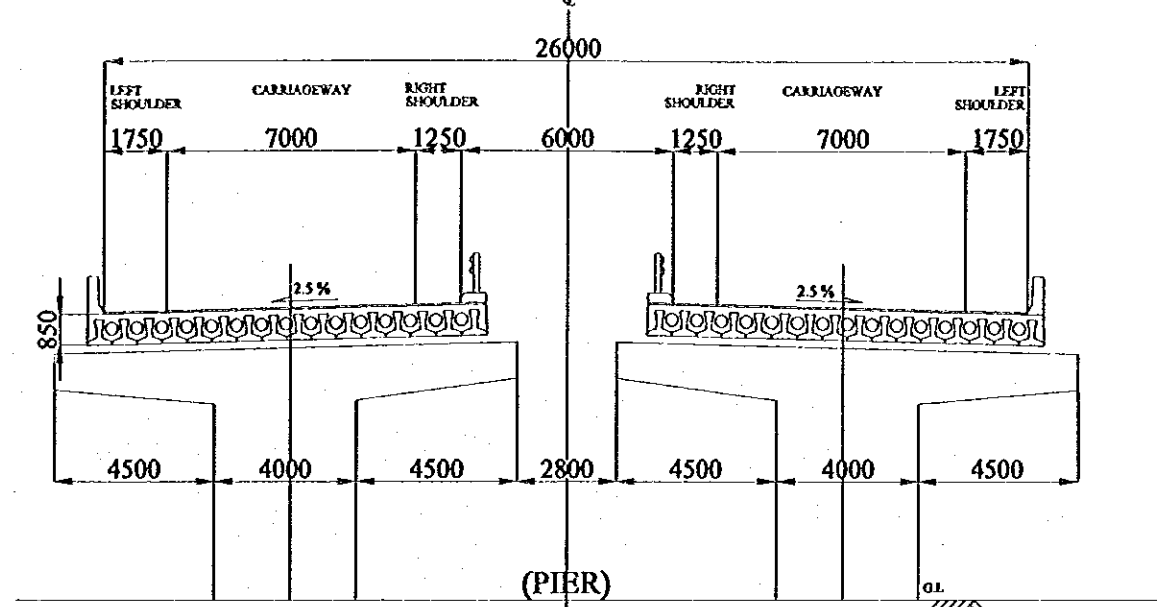
Sheet No: 32

2. Structure (Bridge / Viaduct / Box Culvert)

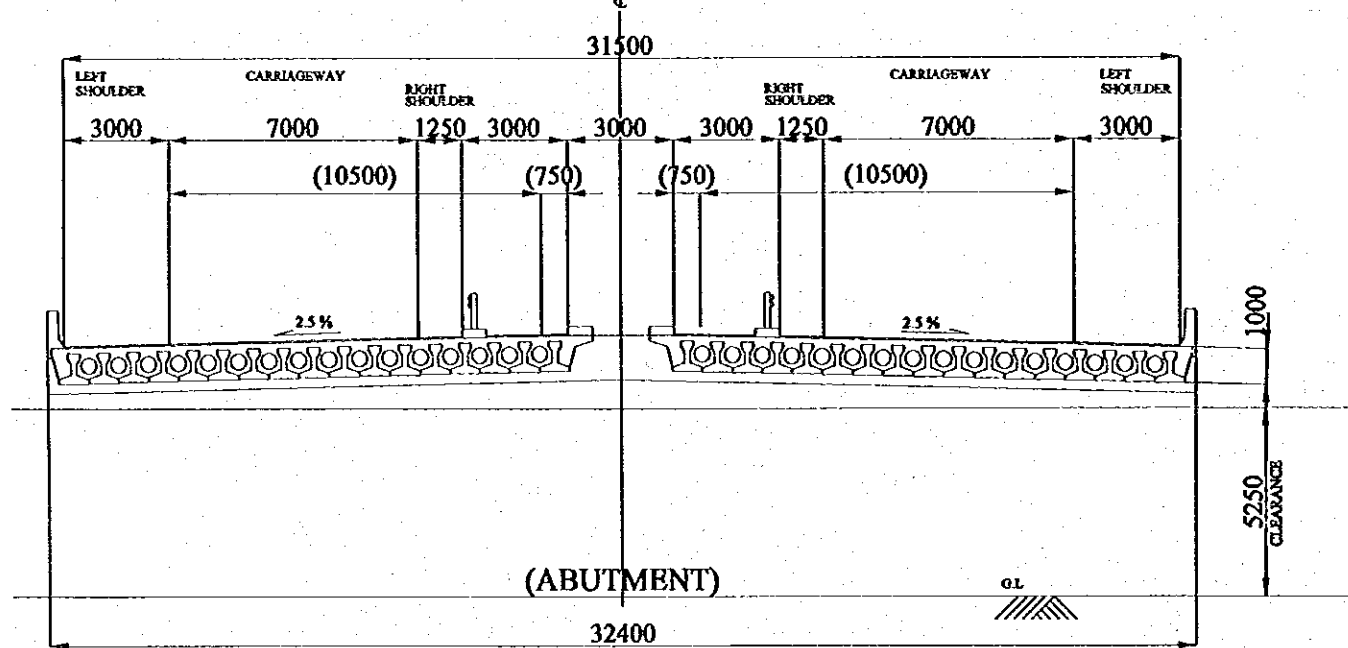
TYPICAL CROSS SECTION : VIADUCT S = 1:200
SPAN LENGTH = 21.0m TYPE-Vi-4A



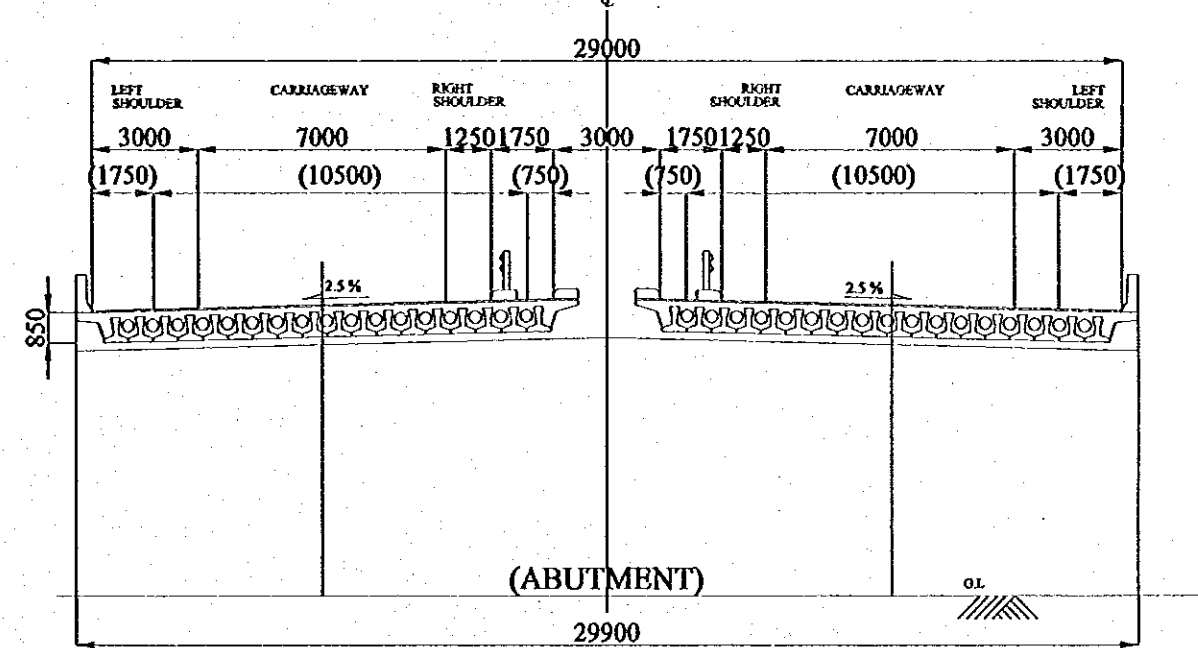
TYPICAL CROSS SECTION : BRIDGE S=1:200
SPAN LENGTH = 17.0m TYPE-Br-4A



SPAN LENGTH = 21.0m TYPE-Vi-4B (TYPE-Vi-6)



SPAN LENGTH = 17.0m TYPE-Br-4B (TYPE-Br-6)



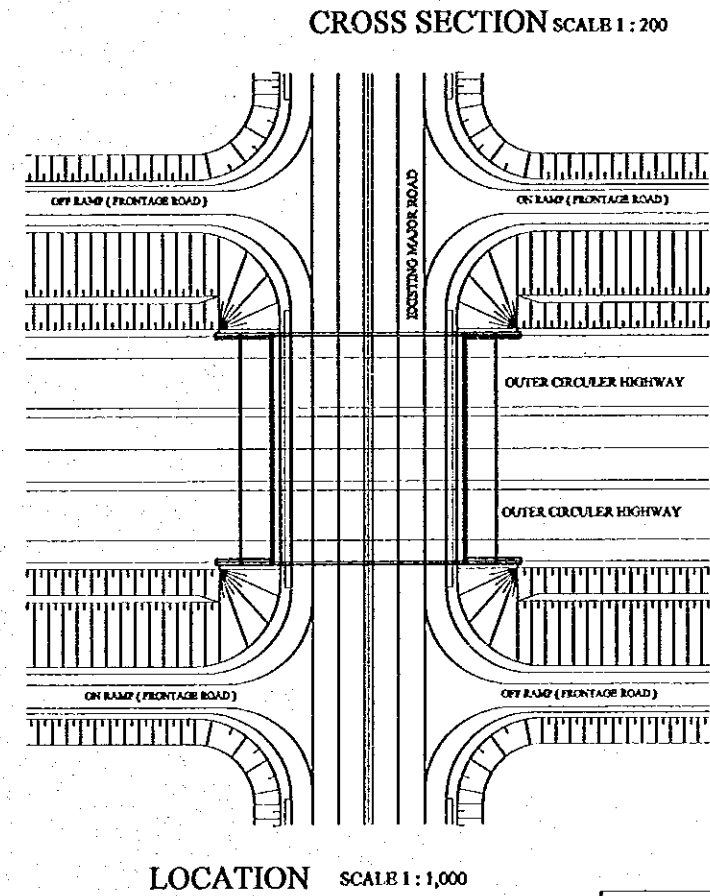
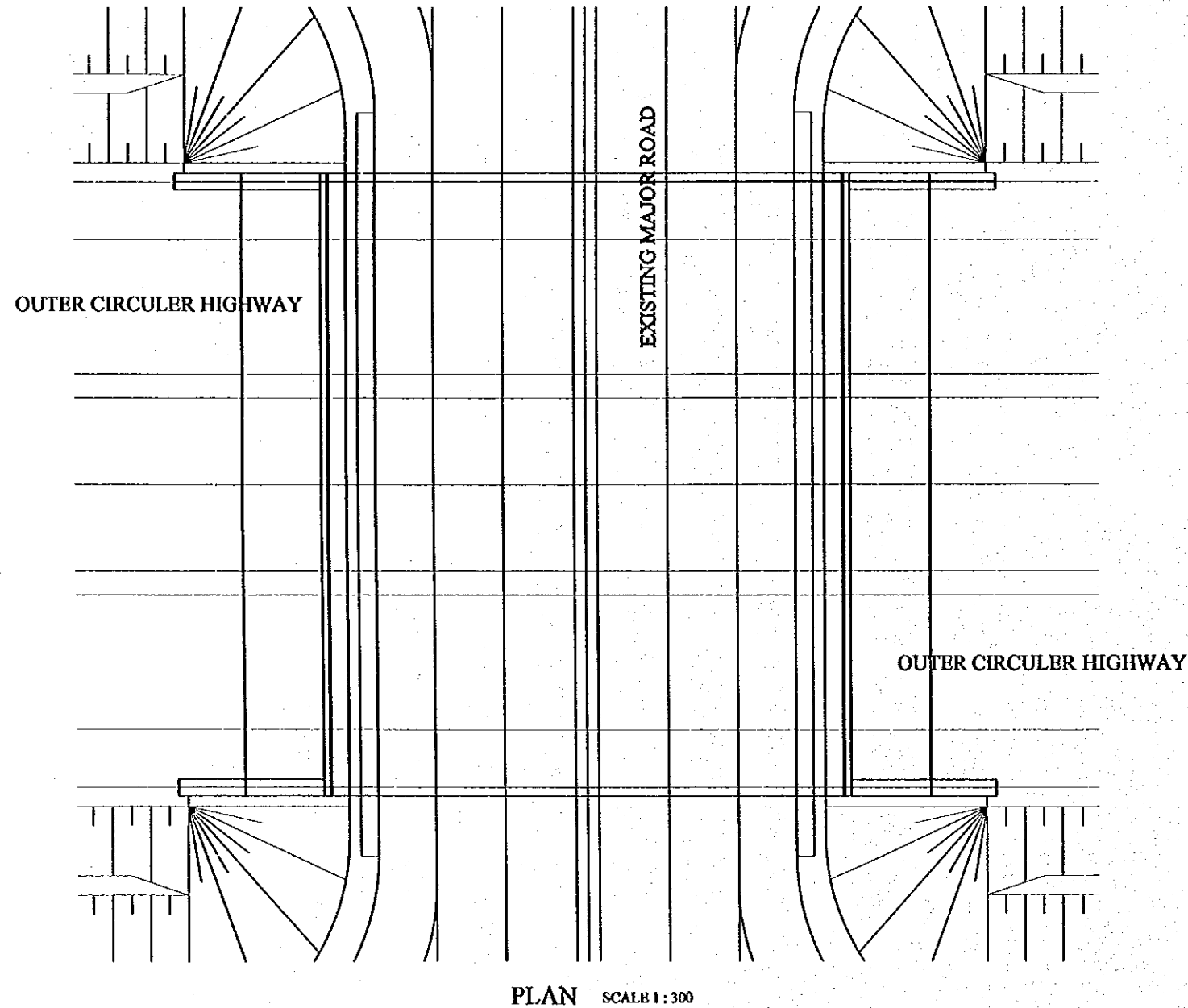
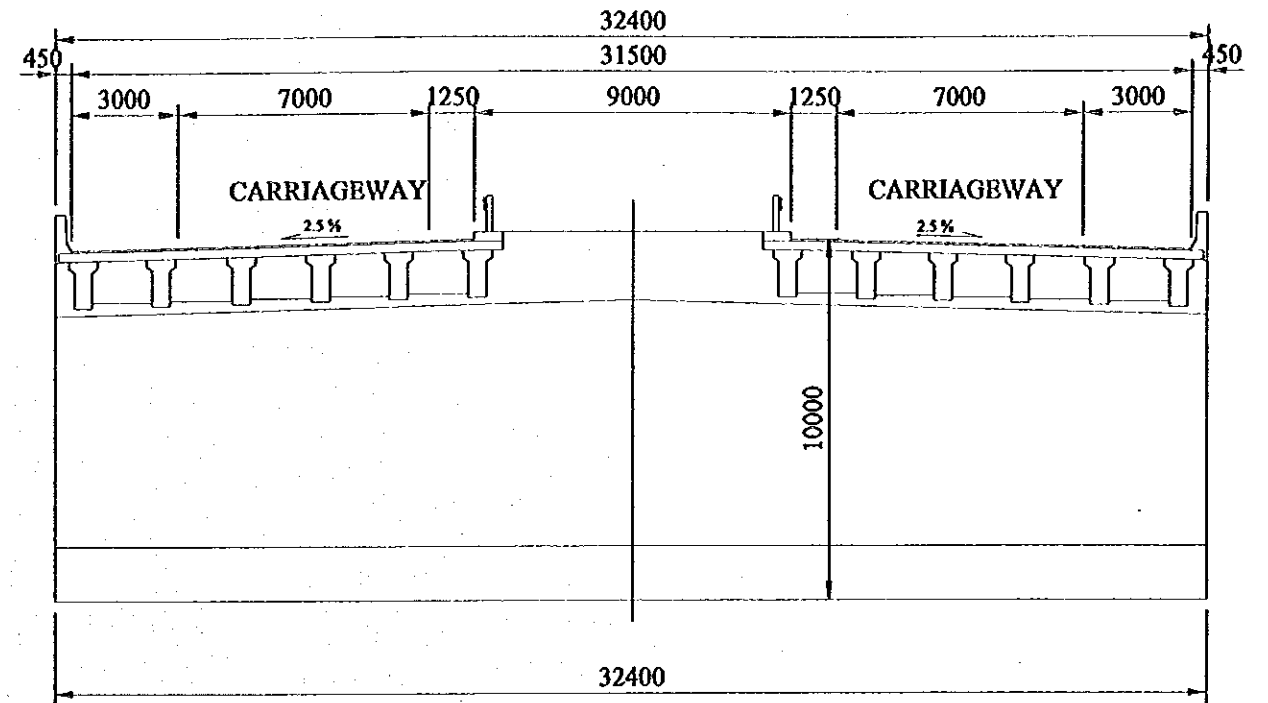
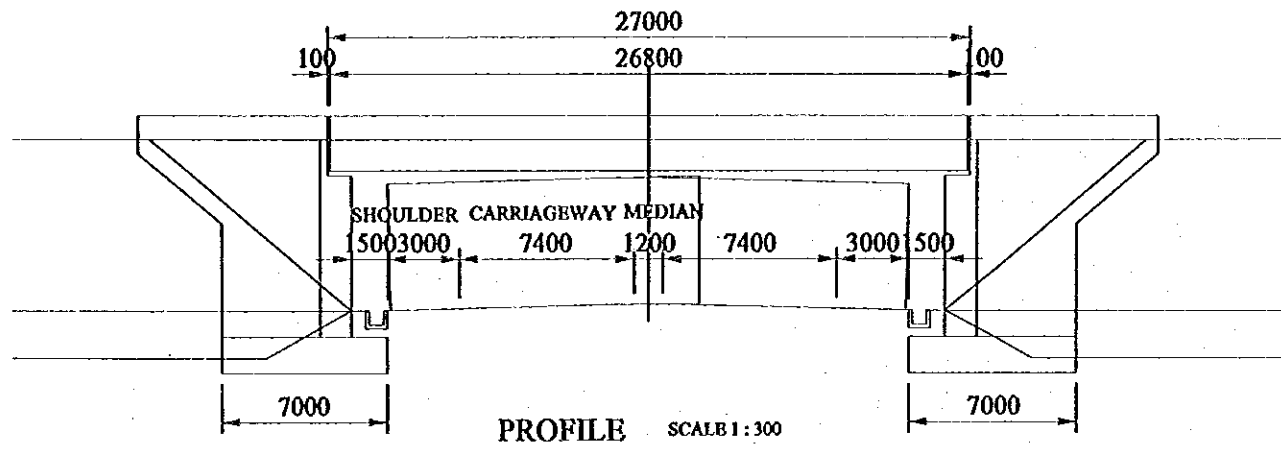
ESTIMATE QUANTITIES PER ONE WAY							
ITEM	UNIT	QUANTITIES	REMARKS	ITEM	UNIT	QUANTITIES	REMARKS
VIADUCT superstructure	SPAN	ONE WAY	21.0m span length	BRIDGE superstructure	SPAN	ONE WAY	17.0m span length
Deck area	m ²	236.25	SLAB 11.25x21.0	Deck area	m ²	170.0	SLAB 10.0x17.0
PRECAST BEAM	nos	14	Pretension 15.8lf	PRECAST BEAM	nos	16	Pretension 8.7lf
Precast Concrete	m ³	6.3	50N/mm ²	Precast Concrete	m ³	3.49	50N/mm ²
PSC Strand	kgf	430	φ15.2	PSC Strand	kgf	230	φ15.2
Re, Bor	kgf	350		Re, Bor	kgf	210	
CAST-IN-SITU-CONC	m ³	129	30N/mm ²	CAST-IN-SITU-CONC	m ³	81	30N/mm ²
Re, Bor	kgf	10300		Re, Bor	kgf	6470	

JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

TYPICAL CROSS SECTION
BRIDGE & VIADUCT
S=1:200

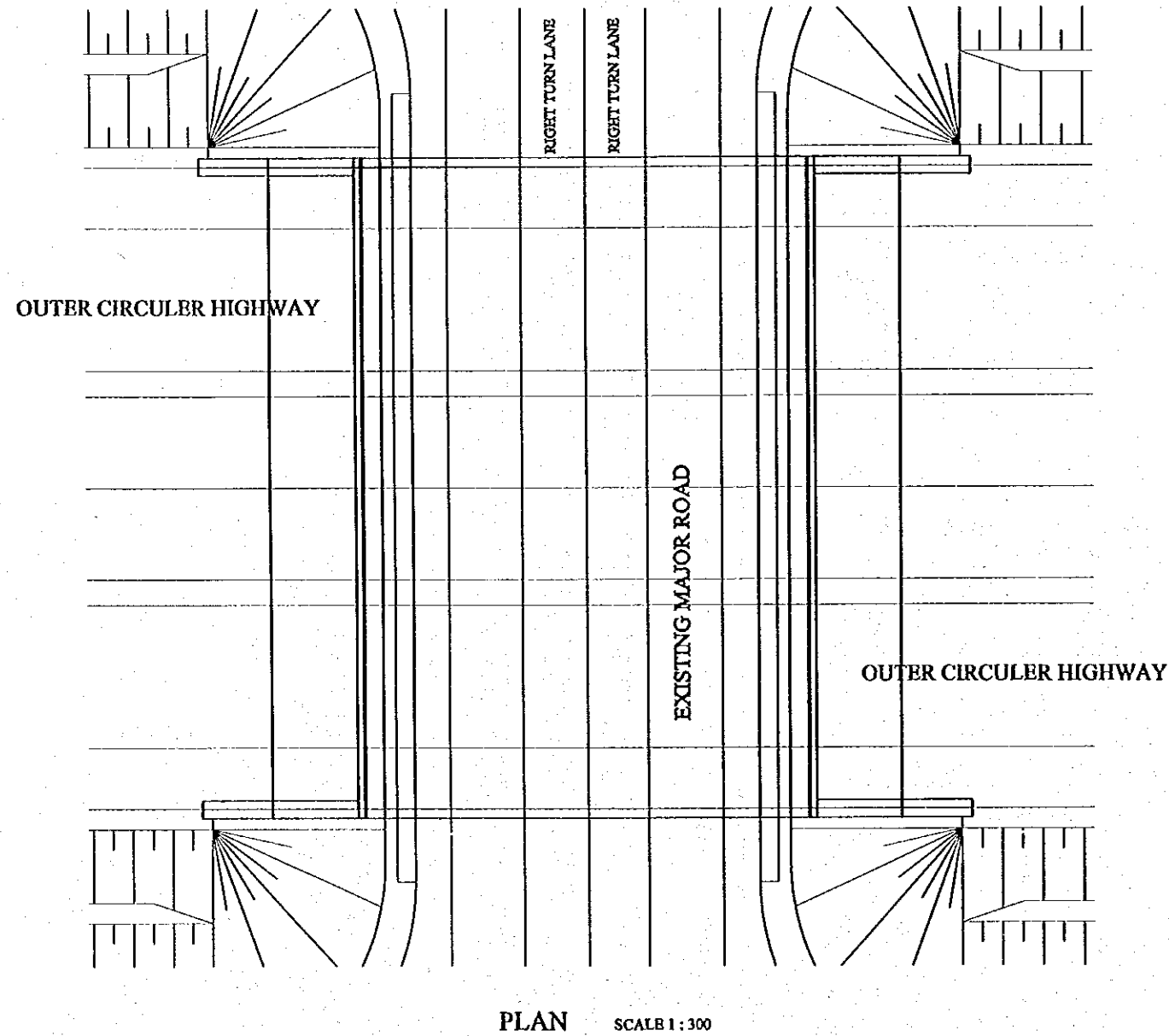
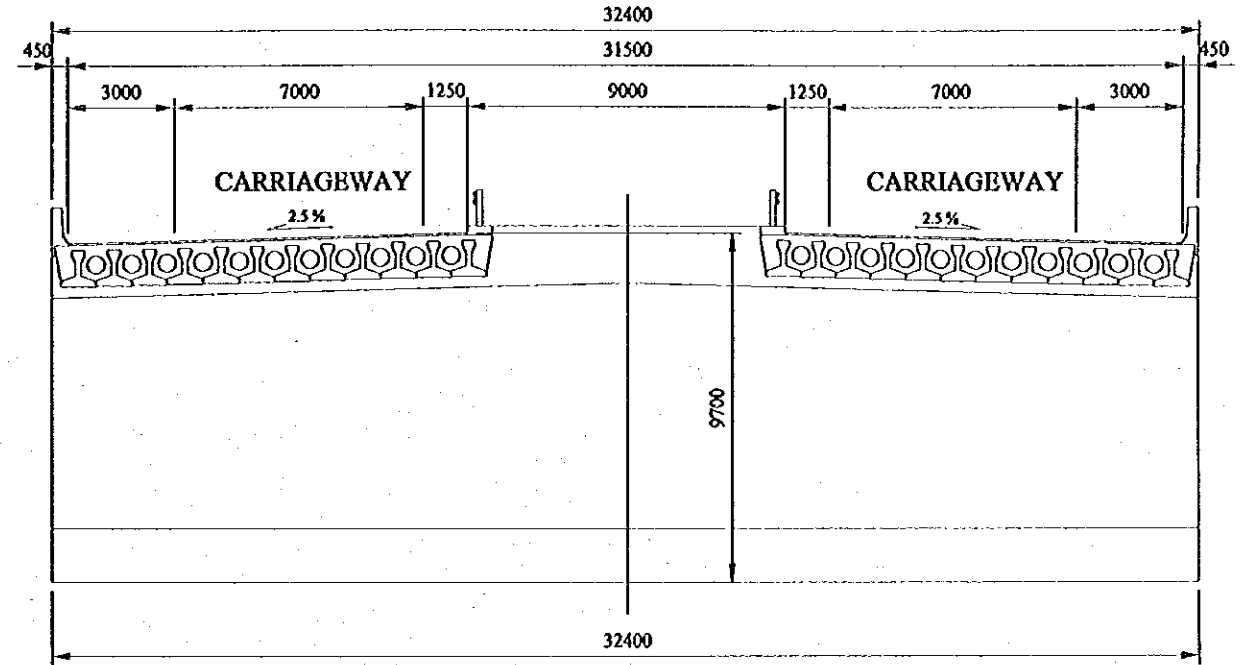
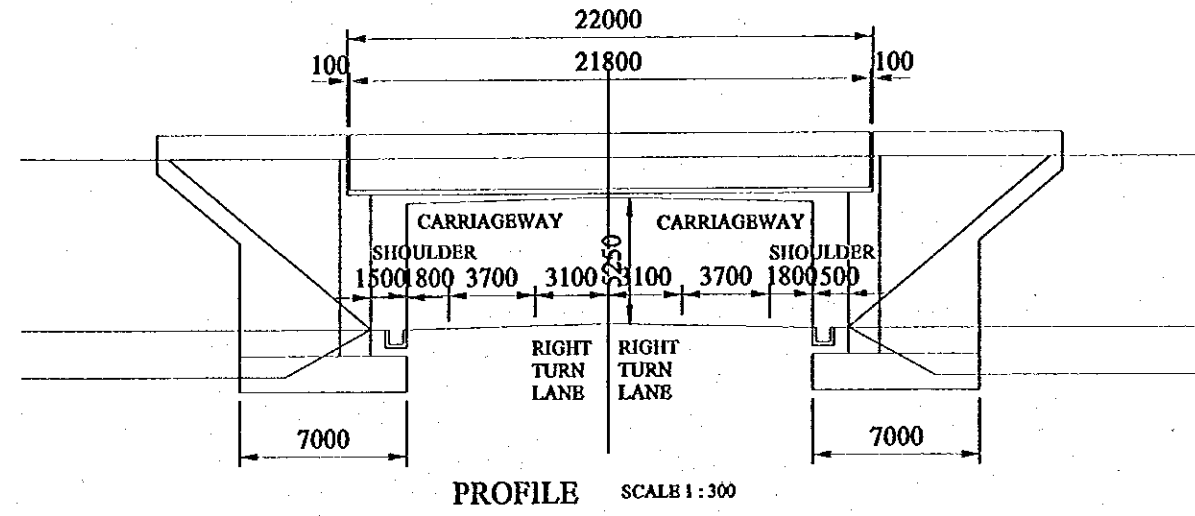
ORIENTAL CONSULTANTS CO.Ltd.
February --2000 Sheet No. 33

VIADUCT AT INTERCHANGE WITH MAJOR ROAD (4LANE)

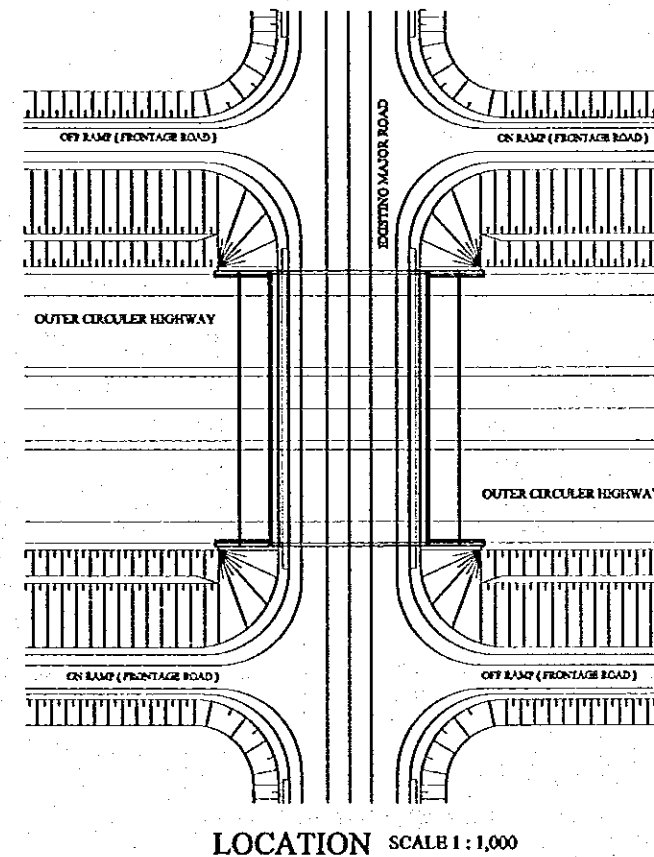


JAPAN INTERNATIONAL COOPERATION AGENCY THE STUDY ON THE OUTER CIRCULAR HIGHWAY TO THE CITY OF COLOMBO	
VIADUCT AT INTERCHANGE WITH MAJOR ROAD (4LANE) S=1:200,500,1000	
ORIENTAL CONSULTANTS CO. Ltd.	February -2000
Sheet No: 34	

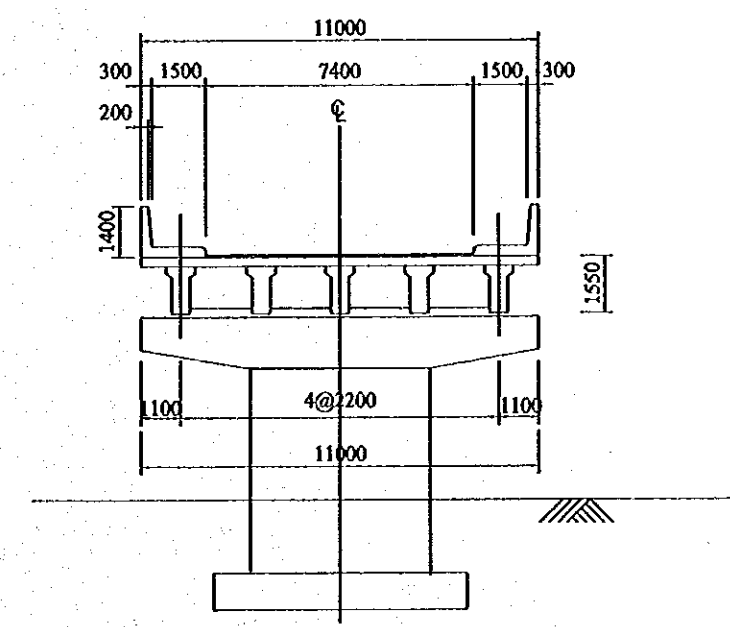
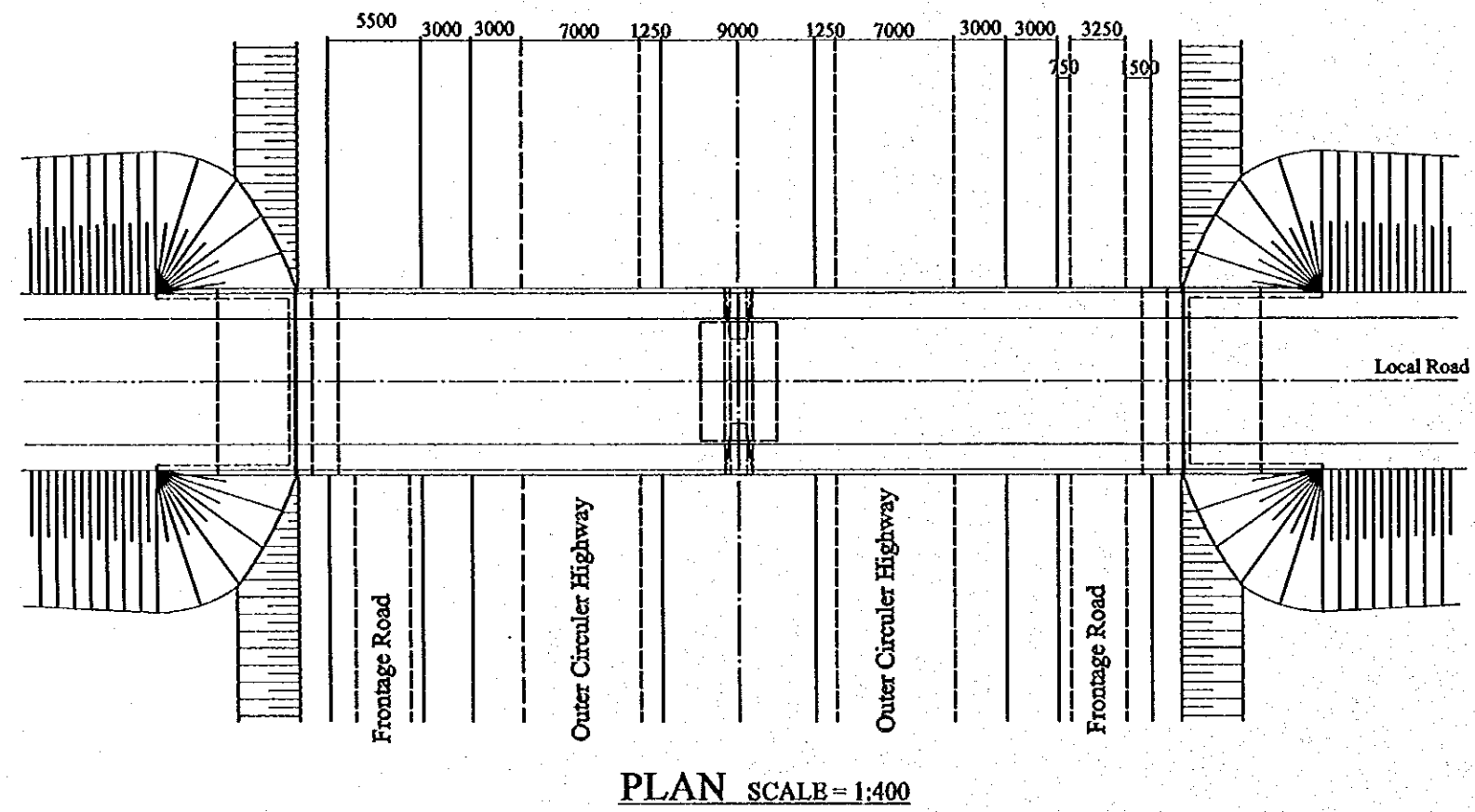
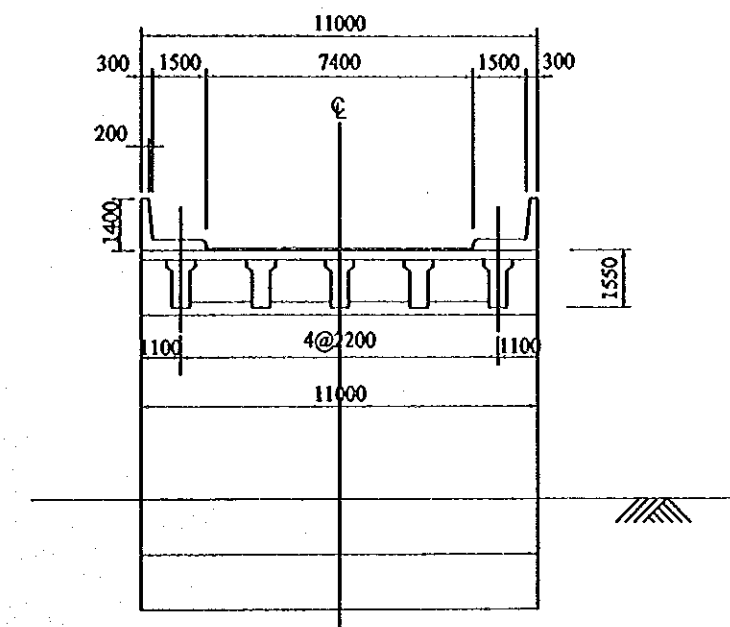
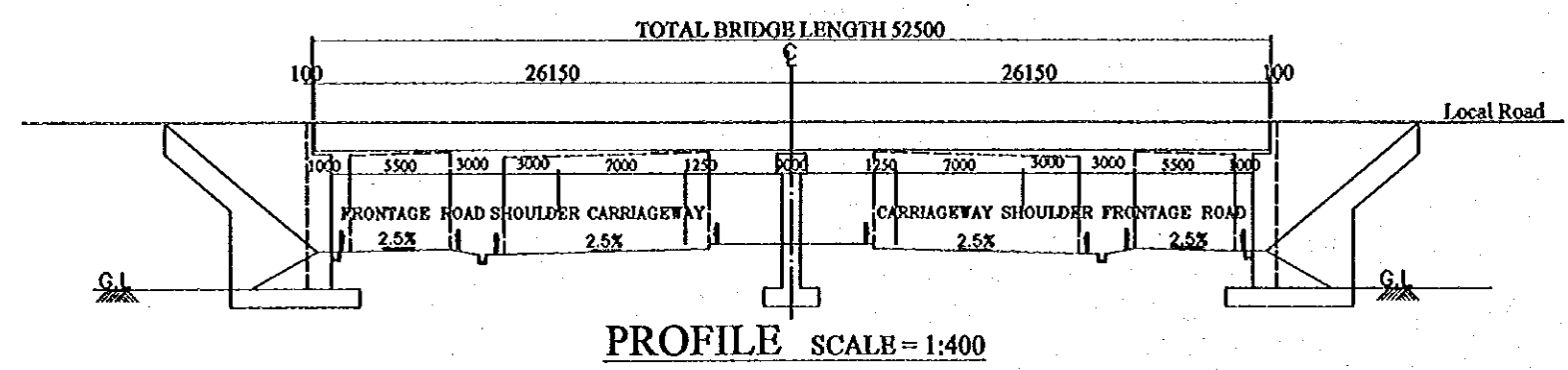
VIADUCT AT INTERCHANGE WITH MAJOR ROAD (2LANE)



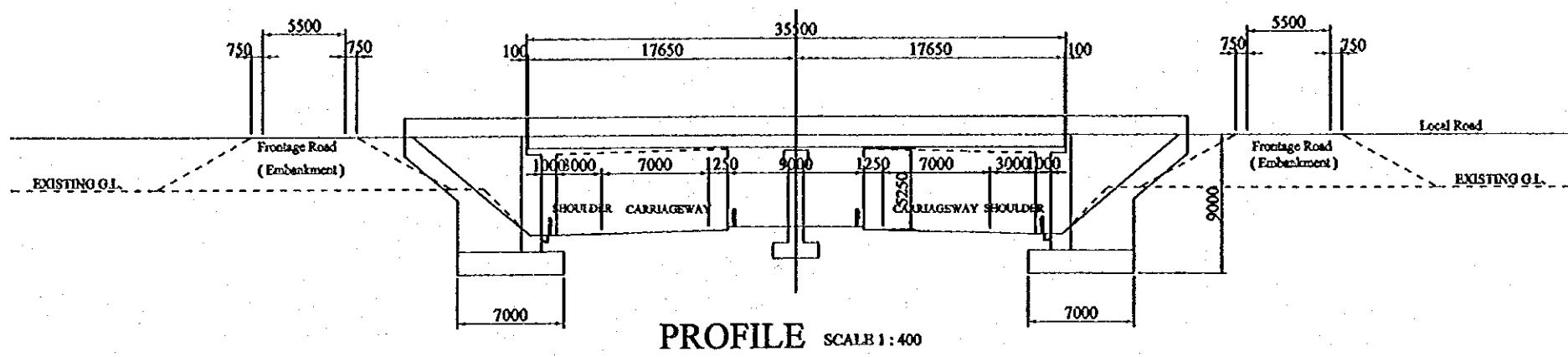
CROSS SECTION SCALE 1:200



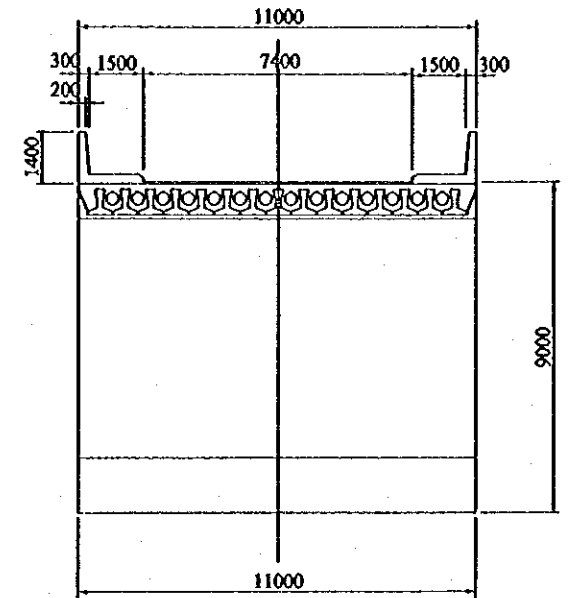
OVERPASS AT LOW EMBANKMENT SECTION



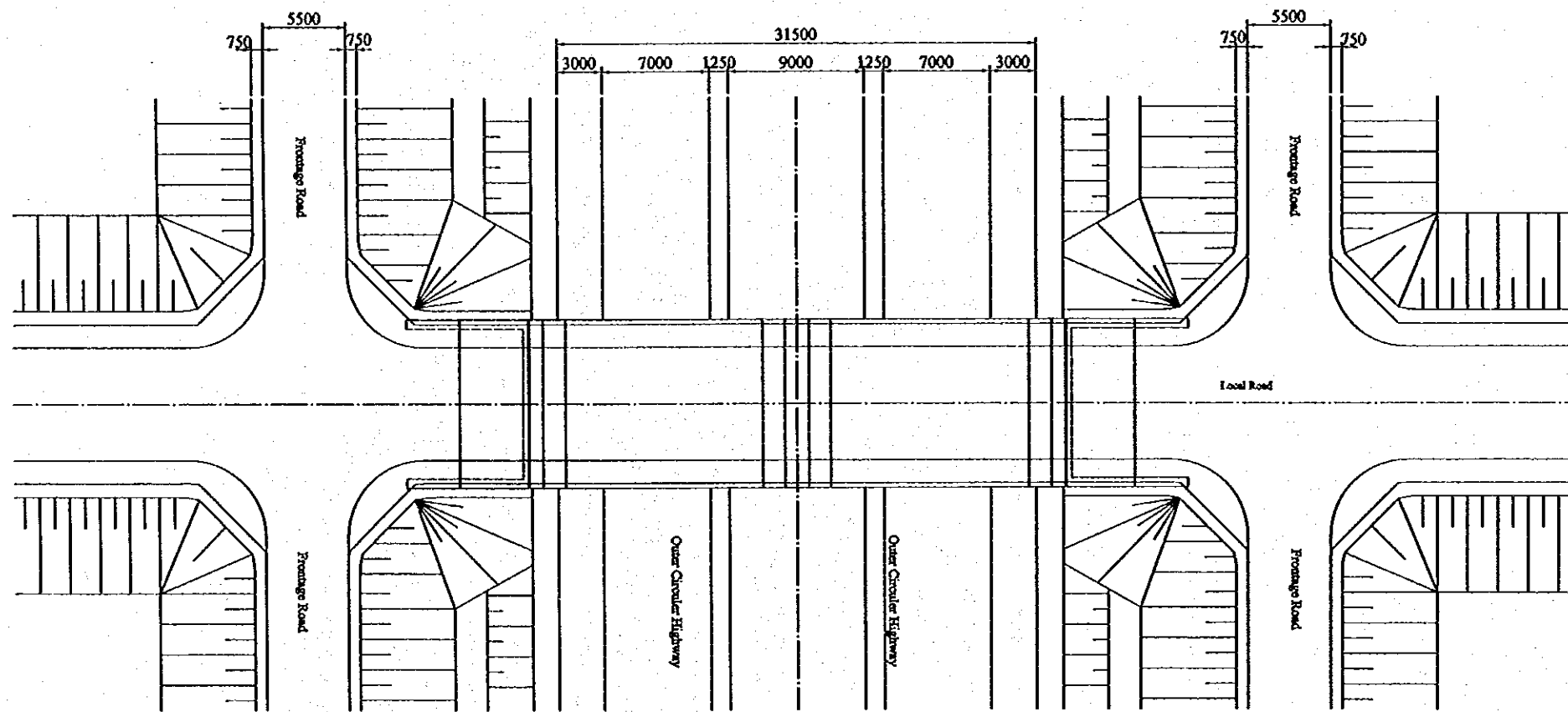
OVER PASS AT CUTTING SECTION



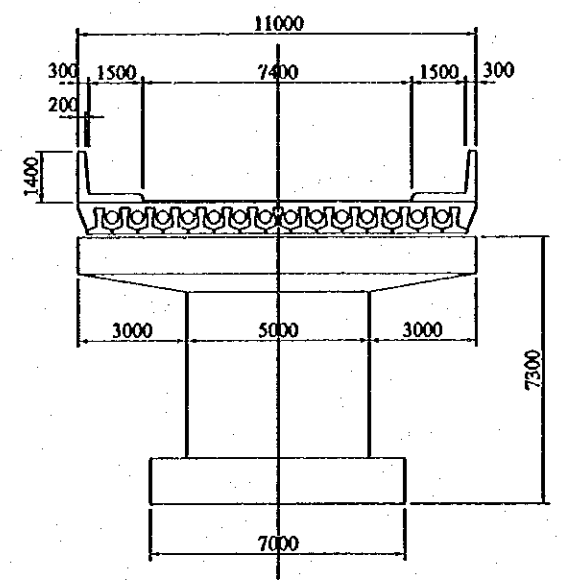
PROFILE SCALE 1:400



CROSS SECTION SCALE 1:200

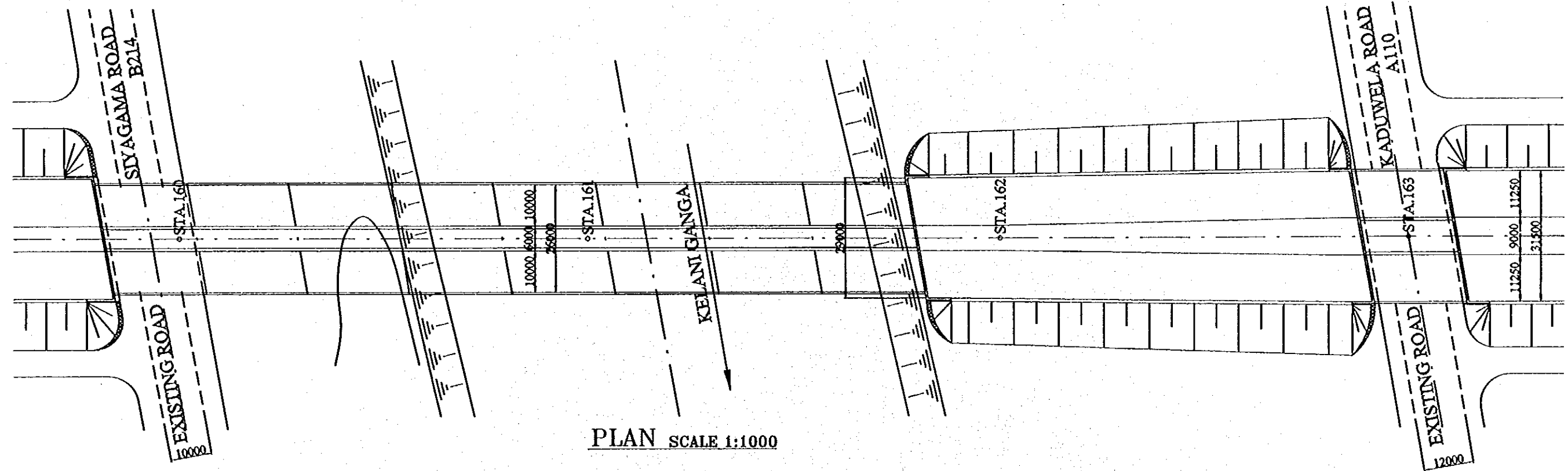
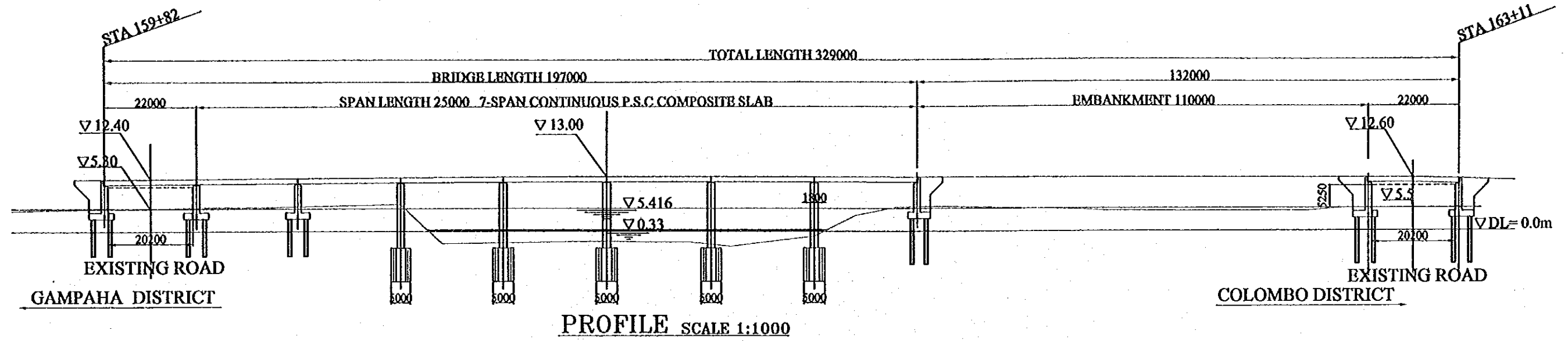


PLAN SCALE 1:400

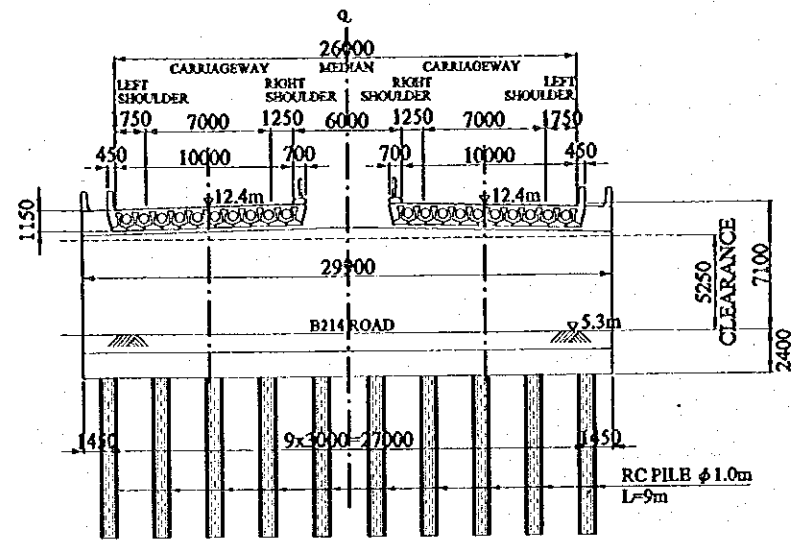


CROSS SECTION SCALE 1:200

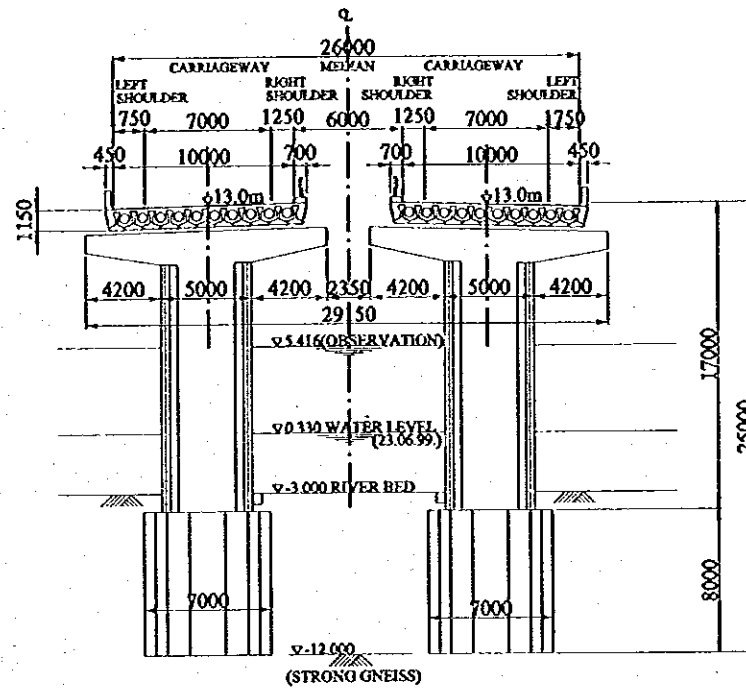
JAPAN INTERNATIONAL COOPERATION AGENCY THE STUDY ON THE OUTER CIRCULAR HIGHWAY TO THE CITY OF COLOMBO	
OVERPASS AT CUTTING SECTION S=1:400,200	
ORIENTAL CONSULTANTS CO. LTD.	
February -2000	Sheet No: 37



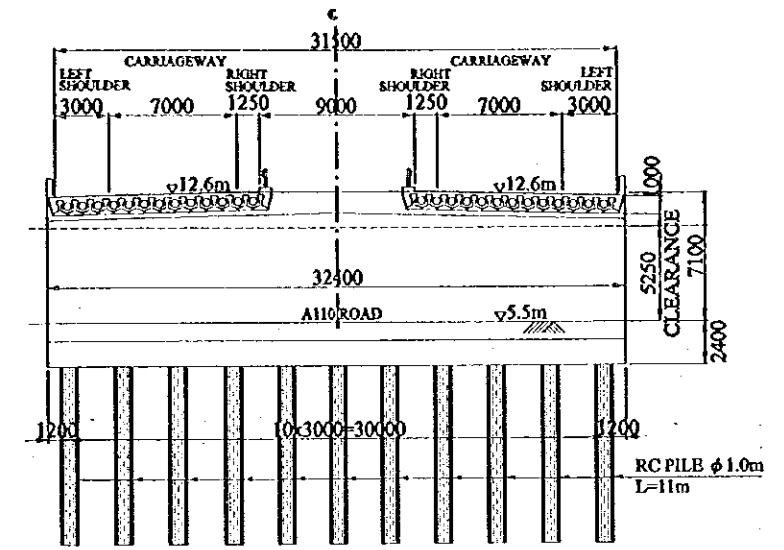
ESTIMATE QUANTITIES (Br Length 197m)							
ITEM	UNIT	QUANTITIES	REMARKS	ITEM	UNIT	QUANTITIES	REMARKS
SUPER STRUCTURE			Both Way	SUB STRUCTURE			Both Way
Deck area	m ²	3940	10.0x197.0x2	ABUTMENT Concrete	m ³	1235	25N/mm ²
PRECAST BEAM	nos	154	11x7x2	Re, Bar	tf	86	
Precast Concrete	m ³	10.25	50N/mm ² , perone beam	RC, Pile	nos	20,22	φ1.0, L=9m, L=11m
PSC Strand	kqf	720	φ15.2	PIER(pile) Concrete	m ³	644	4x161m ³ , 25N/mm ²
Re, Bar	kqf	500		Re, Bar	tf	39	
CAST-INSITU-CONC	m ³	2308	30N/mm ²	RC, Pile	nos	24	φ1.0, 4x6, L=9m
Re, Bar	tf	208		PIER(Coissin) Concrete	m ³	1510	10x151m ³ , Pier, 25N/mm ²
				Re, Bar	tf	120	
				Coissin Concrete	m ³	1950	10x195m ³ , 25N/mm ²
				Re, Bar	tf	78	
				Coissin Excavation	m ³	4000	10x400m ³



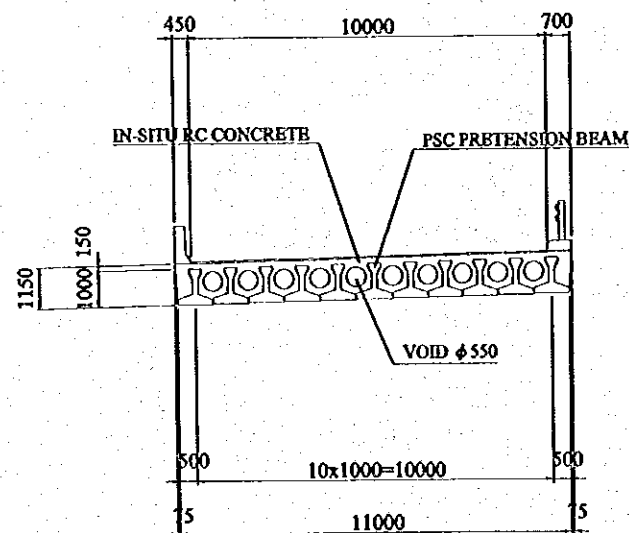
CROSS SECTION AT B214 ROAD SCALE 1:400



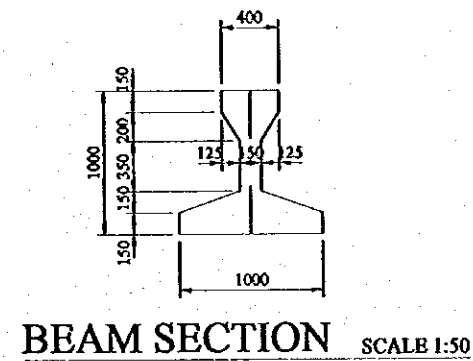
CROSS SECTION AT PIER SCALE 1:400



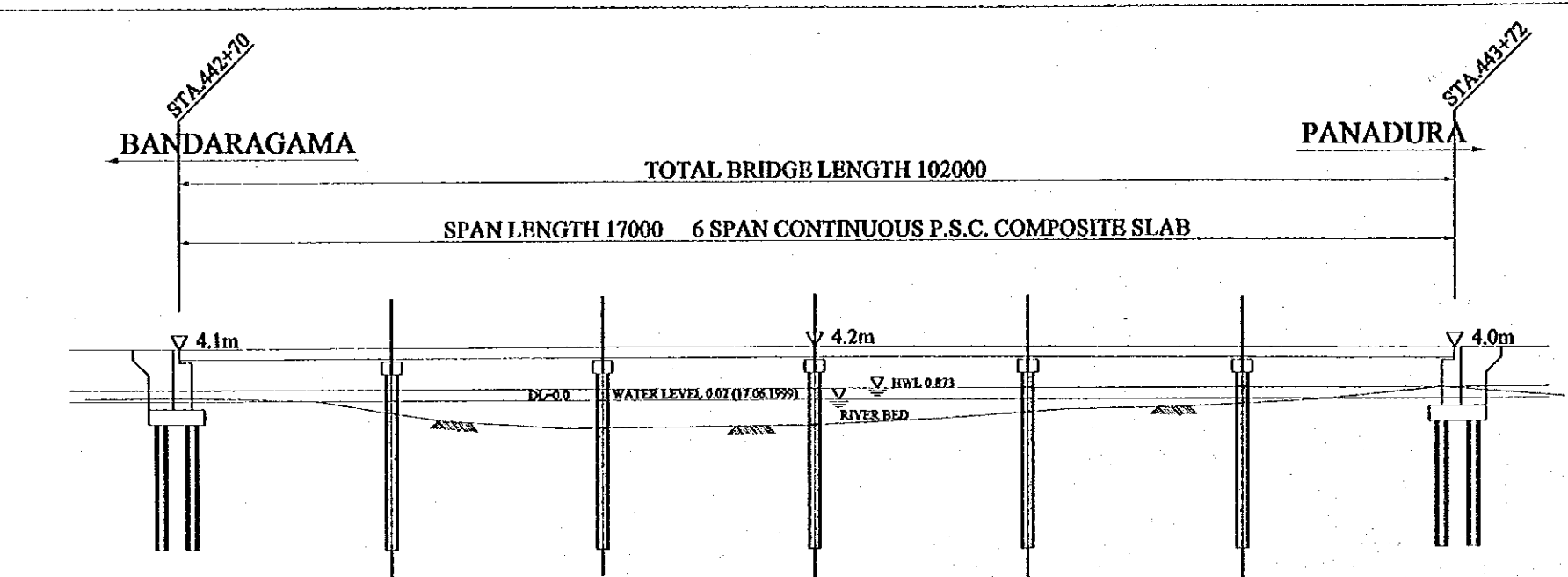
SPAN LENGTH = 21.0m TYPE-Br-4A
CROSS SECTION AT A110 ROAD SCALE 1:400



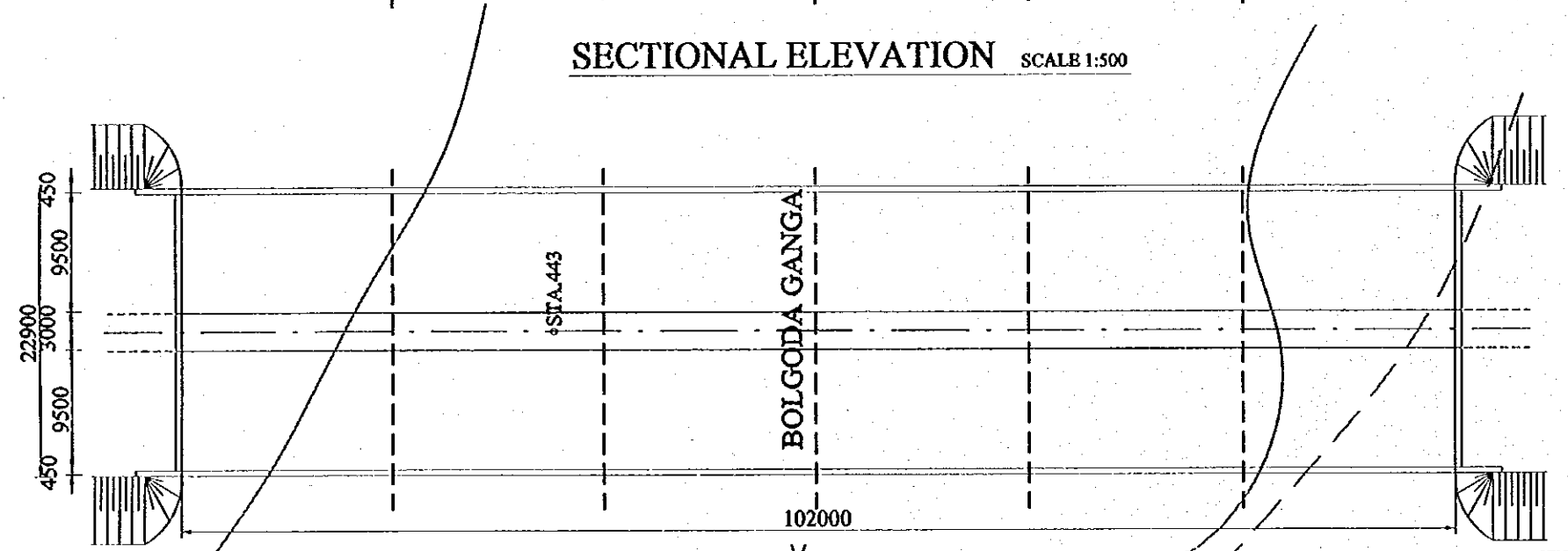
CROSS SECTION OF SUPERSTRUCTURE SCALE 1:200



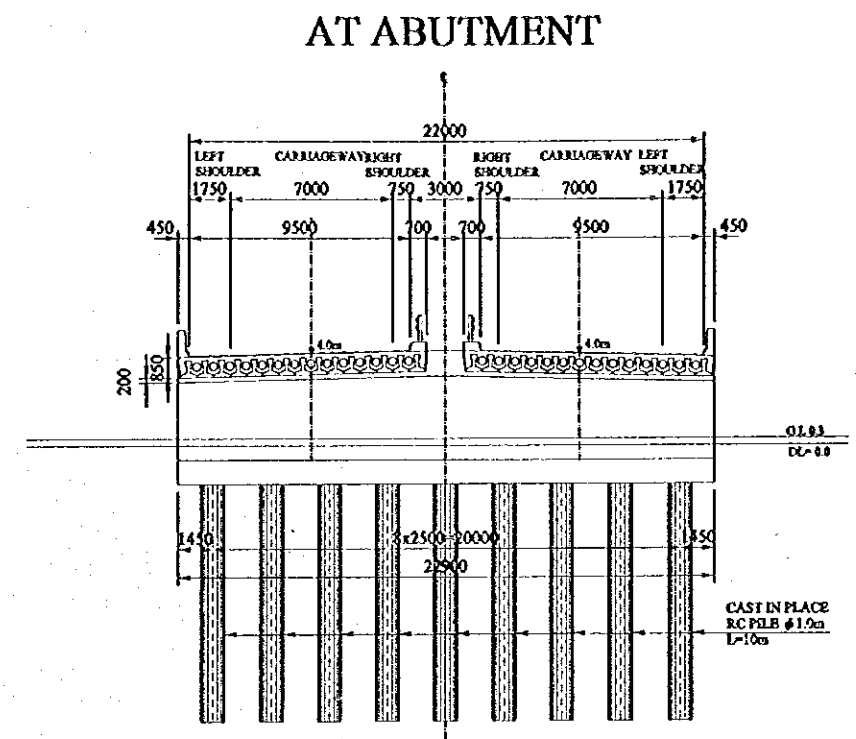
BEAM SECTION SCALE 1:50



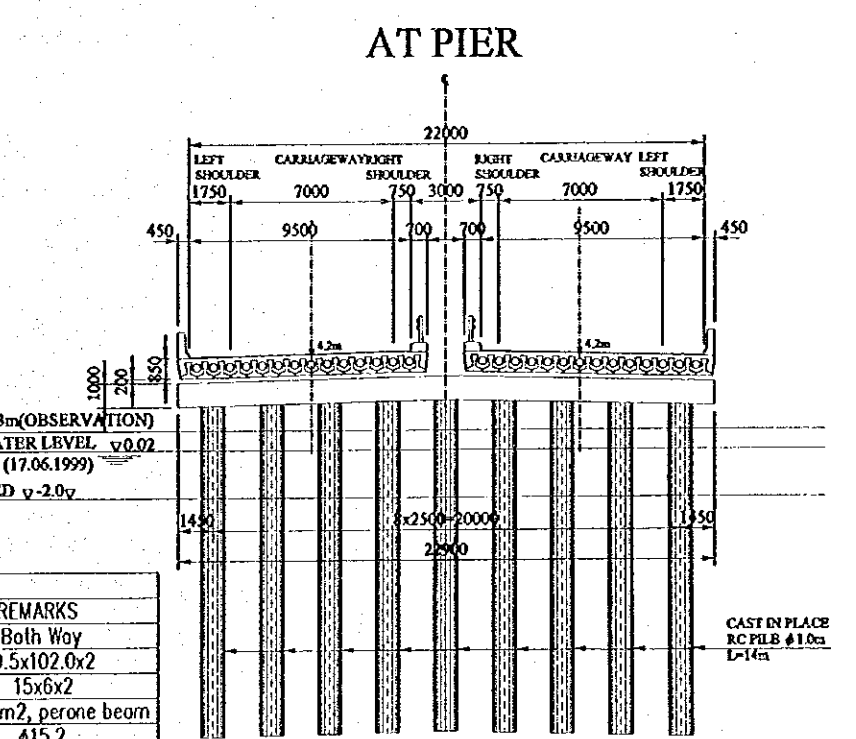
SECTIONAL ELEVATION SCALE 1:500



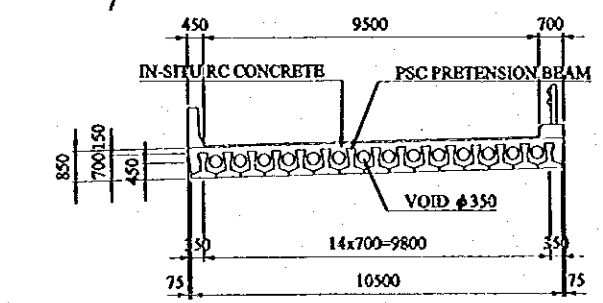
PLAN SCALE 1:500



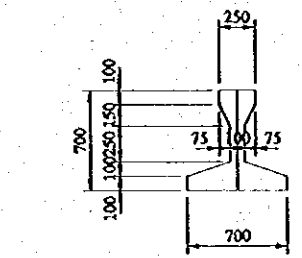
CROSS SECTION SCALE 1:300



AT PIER



CROSS SECTION OF SUPERSTRUCTURE SCALE 1:200

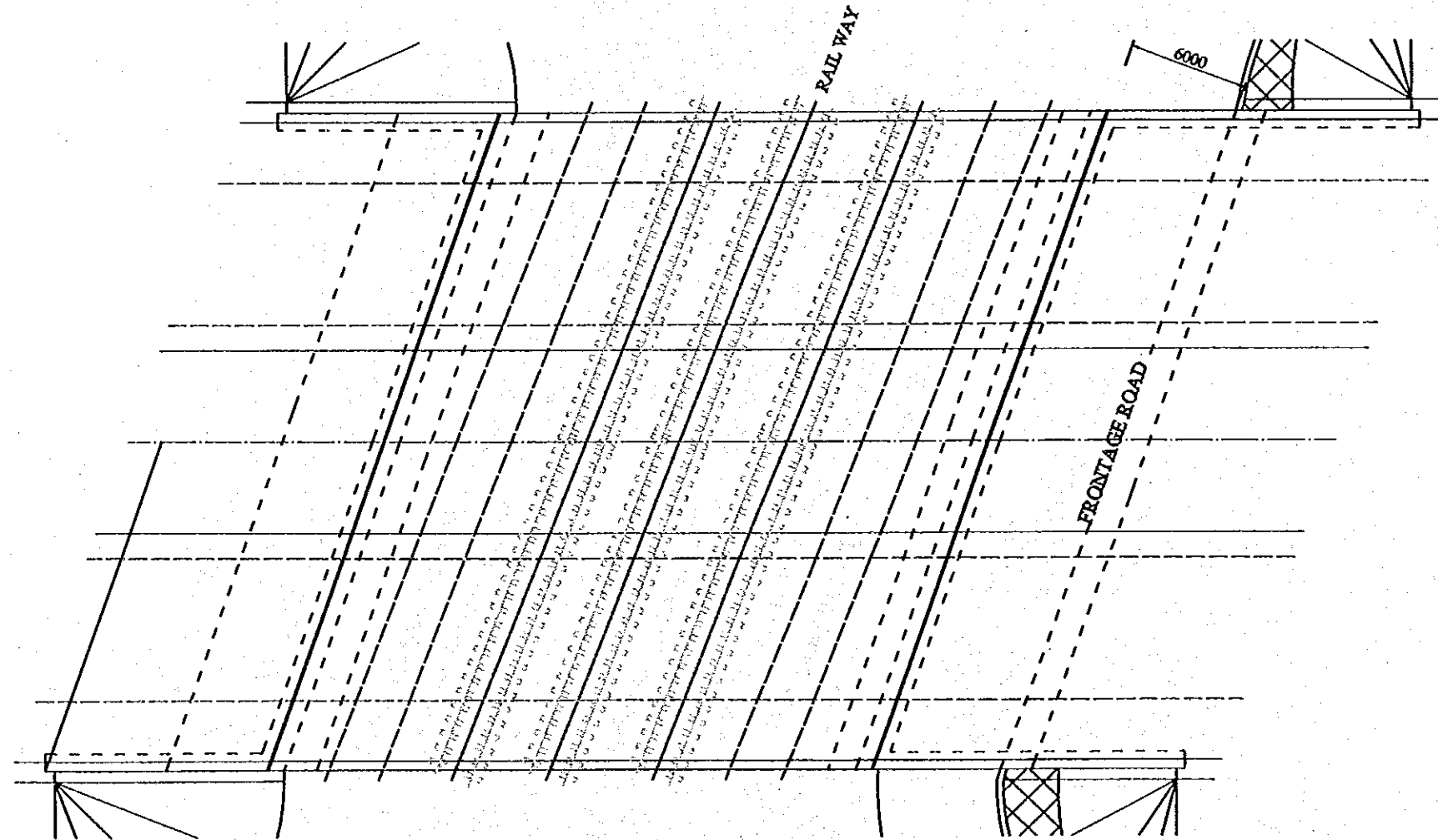
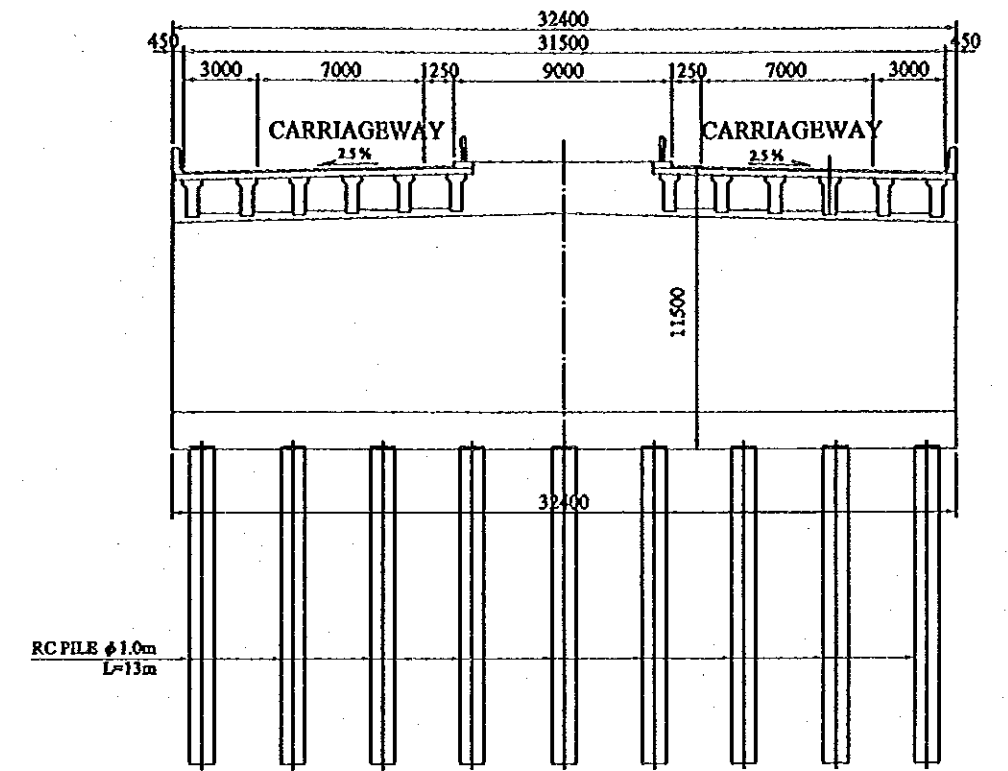
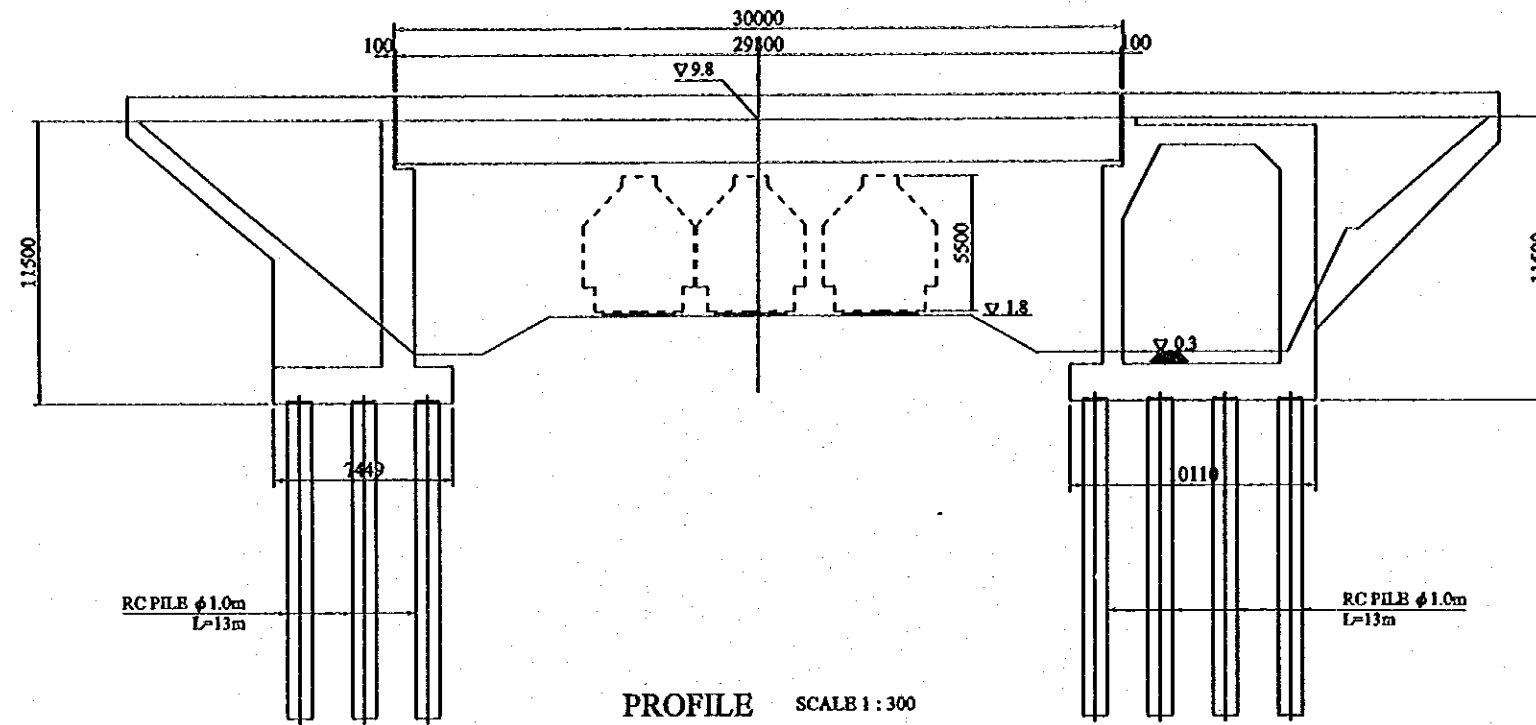


BEAM SECTION SCALE 1:50

ESTIMATE QUANTITIES			
ITEM	UNIT	QUANTITIES	REMARKS
SUPER STRUCTURE			
Deck area	m ²	1938	Both Way 9.5x102.0x2
PRECAST BEAM	nos	180	15x6x2
Precast Concrete	m ³	3.49	50N/mm ² , perone beam
PSC Strand	kgf	230	#15.2
Re, Bar	kgf	210	
CAST-INSTU-CONC	m ³	934	30N/mm ²
Re, Bar	tf	94	
SUB STRUCTURE			
ABUTMENT Concrete	m ³	580	2x290m ³ , 25N/mm ²
Re, Bar	tf	29	
RC, Pile	nos	36	#1.0, L=10m
PIER Cap Concrete	m ³	344	5x68.8m ³ , 25N/mm ²
Re, Bar	tf	31	
RC, Pile	nos	45	#1.0, L=14m, 12x025, Re, Bar

JAPAN INTERNATIONAL COOPERATION AGENCY
 THE STUDY ON THE OUTER CIRCULAR HIGHWAY
 TO THE CITY OF COLOMBO
GENERAL VIEW OF BOLGODA GANGA BRIDGE
 S=1:50,200,300,500
 ORIENTAL CONSULTANTS CO.Ltd.
 February -2000 Sheet No. 40

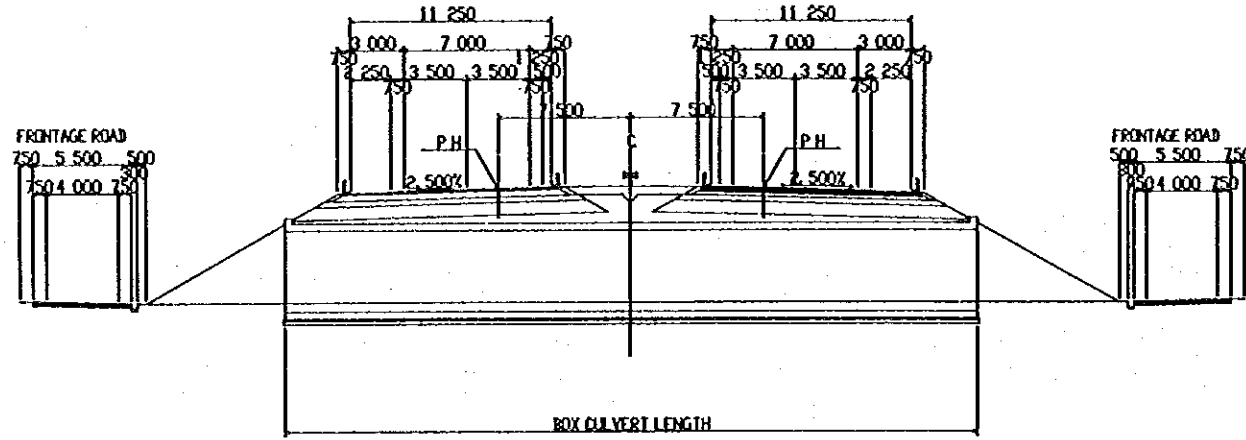
RAILWAY CROSSING BRIDGE AT HORAPE



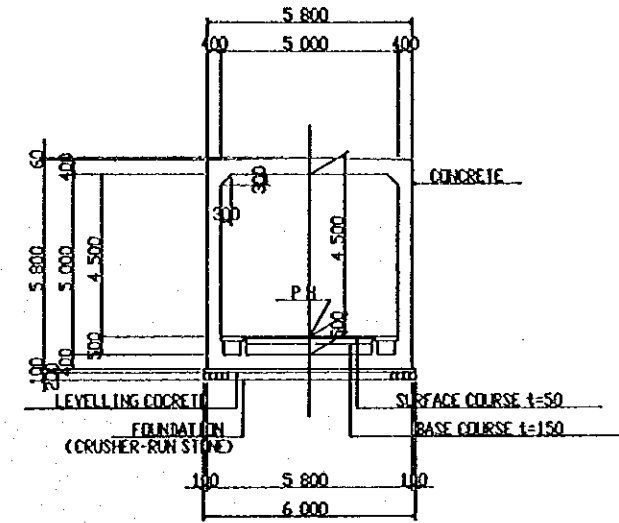
JAPAN INTERNATIONAL COOPERATION AGENCY
 THE STUDY ON THE OUTER CIRCULAR HIGHWAY
 TO THE CITY OF COLOMBO
 GENERAL VIEW OF RAILWAY CROSSING BRIDGE
 AT HORAPE
 S=1:300
 ORIENTAL CONSULTANTS CO. LTD.
 February -2000 Sheet No: 41

BOX CULVERT

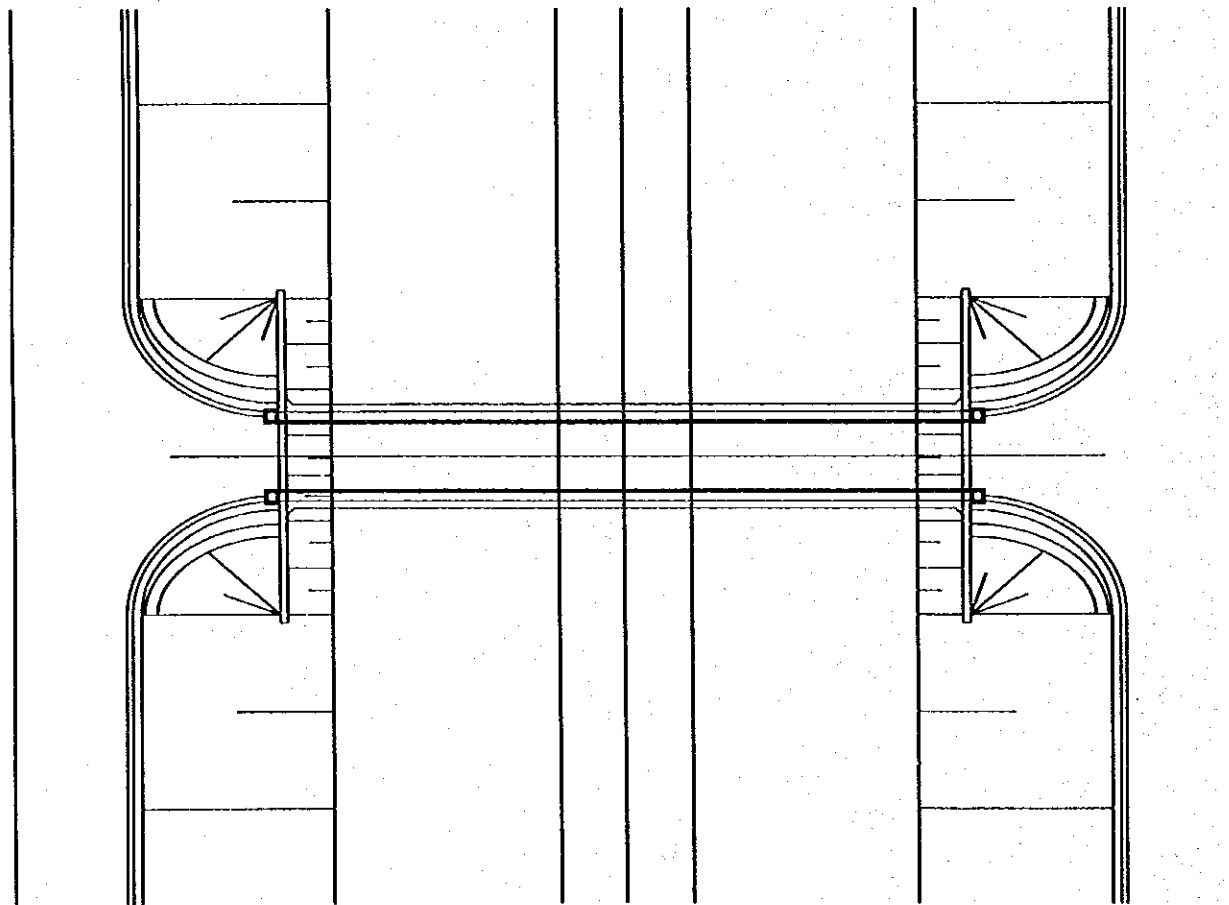
PROFILE SCALE 1:400



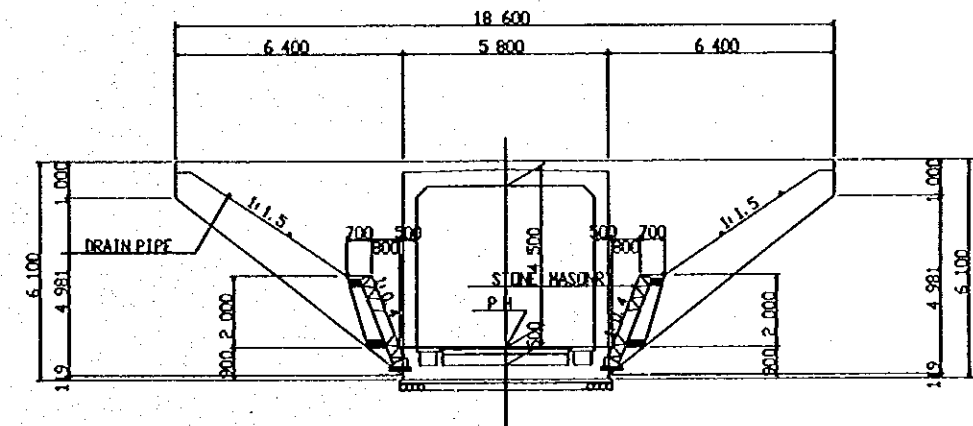
TYPICAL CROSS SECTION SCALE 1:200



PLAN SCALE 1:400



WING SCALE 1:200



JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

BOX CULVERT

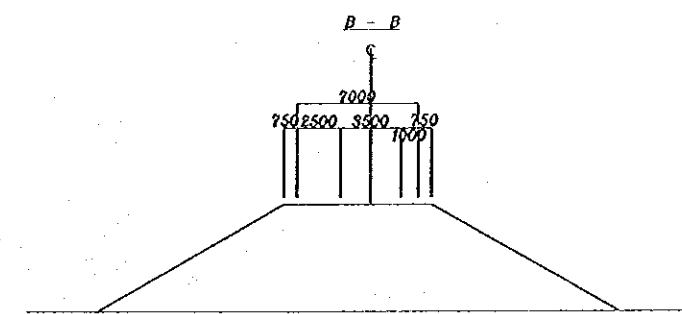
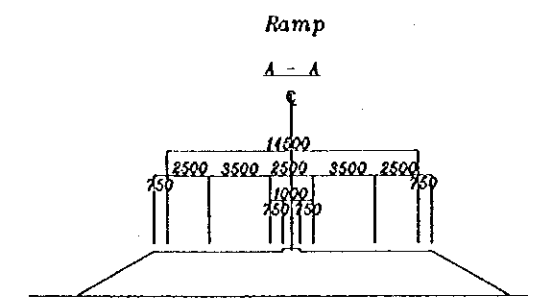
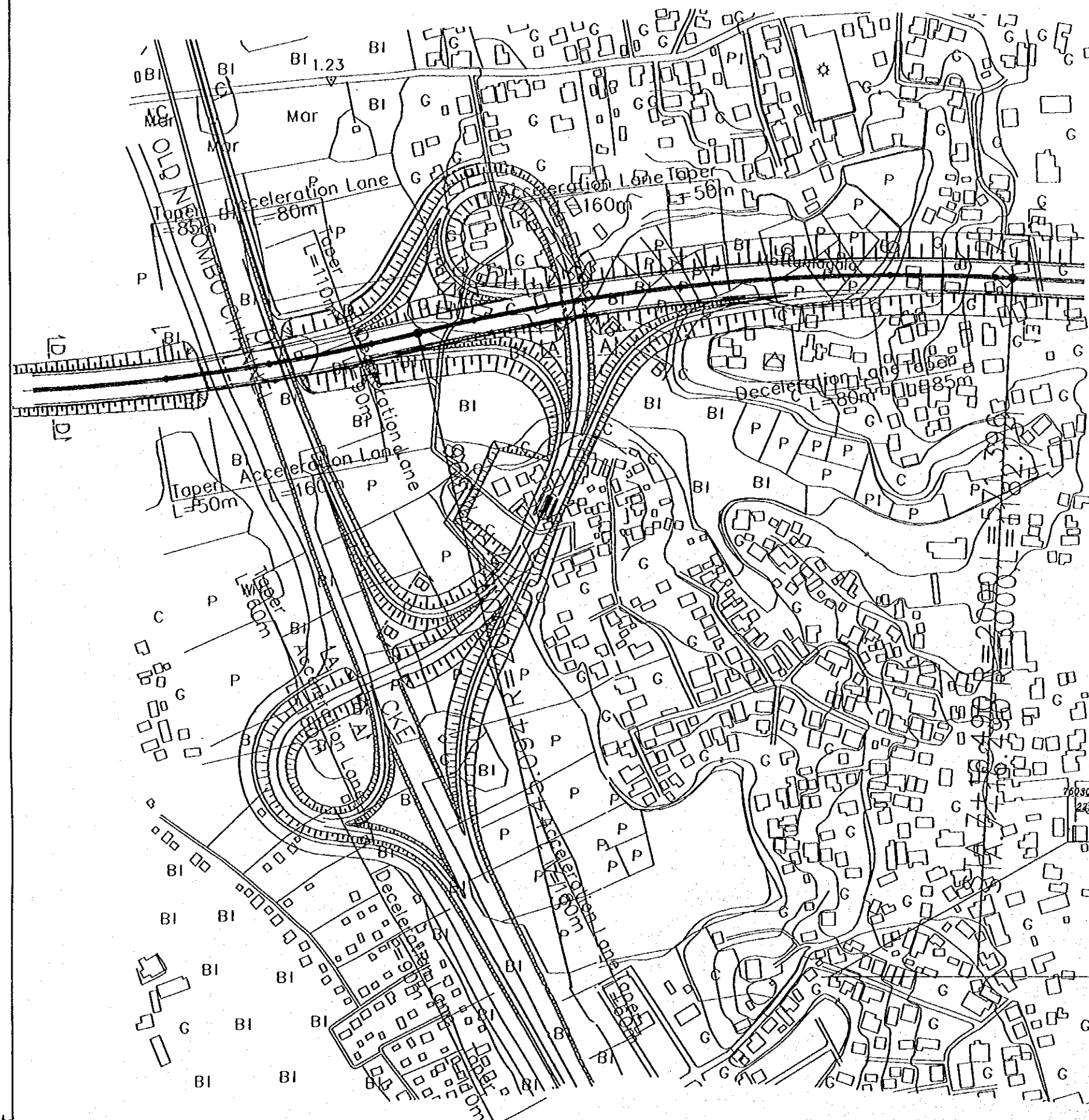


ORIENTAL CONSULTANTS CO. LTD.

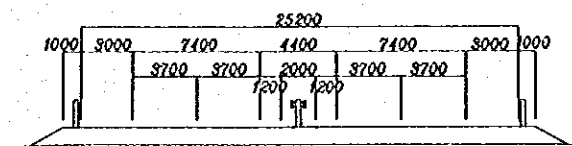
February -2000

Sheet No: 42

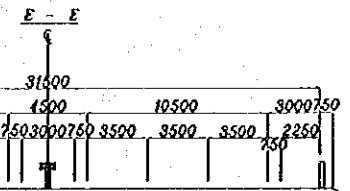
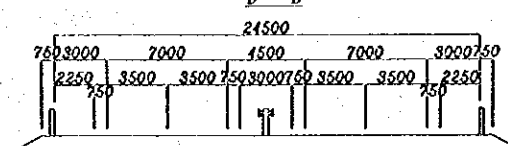
3. IC and JCT



Colombo Katunayake Expressway
C - C



Outer Circular Highway
D - D

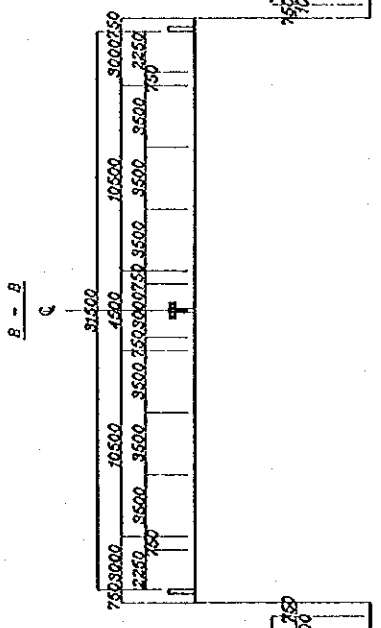
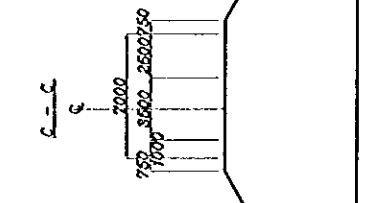
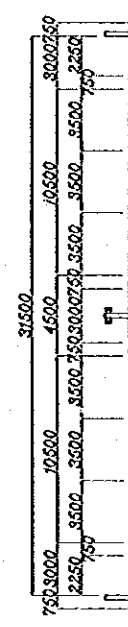


JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON THE OUTER CIRCULAR HIGHWAY
TO THE CITY OF COLOMBO

Junction At Colombo-Katunayake Expressway

ORIENTAL CONSULTANTS CO. LTD.

February -2000 | Sheet No: 43



JAPAN INTERNATIONAL COOPERATION AGENCY
 THE STUDY ON THE OUTER CIRCULAR HIGHWAY
 TO THE CITY OF COLOMBO

Interchange At Road A3

ORIENTAL CONSULTANTS CO. LTD.
 February - 2000 Sheet No. 44

