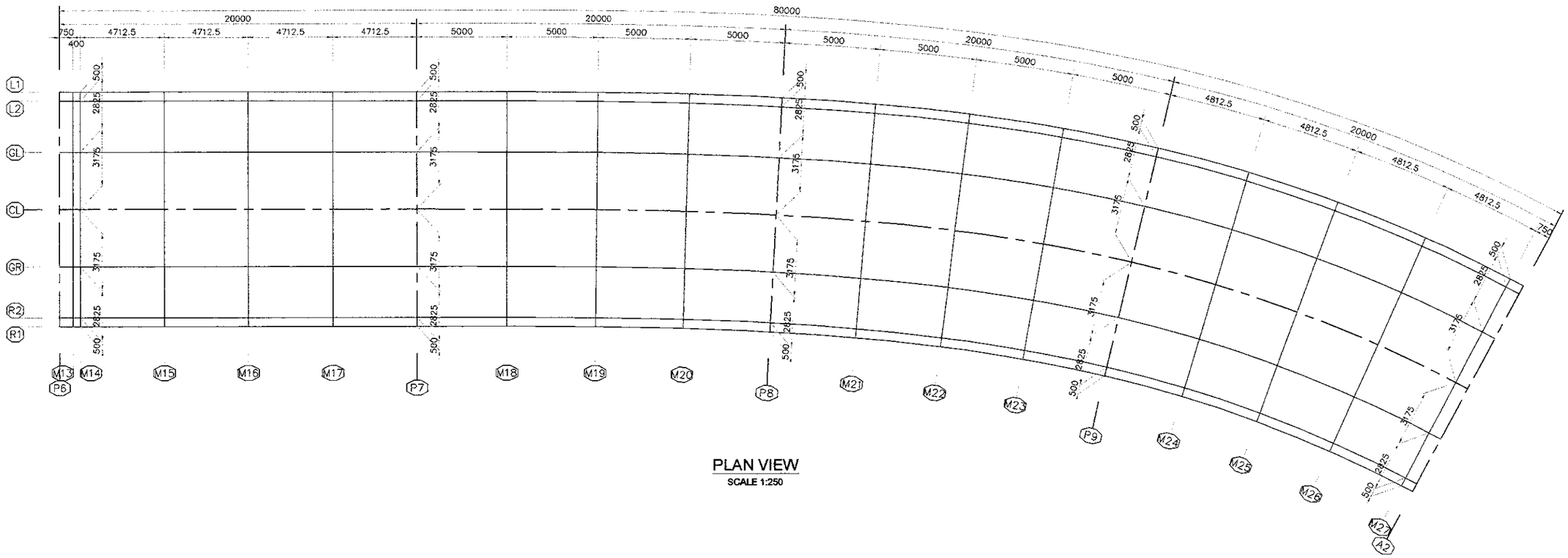
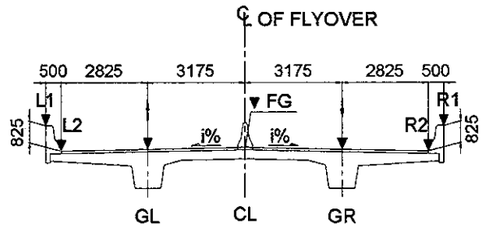
JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY: Name H. HONDA; Sign; Date	CHECKED BY: Name T. OKUMURA; Sign; Date	SUBMITTED BY: Name M. KIUCHI; Sign; Date	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS APPROVED BY: Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400; Sign; Date	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : 1 : 250 1 : 200 FULL SIZE A3	DRAWING TITLE : COORDINATES AND ELEVATION FOR PC GIRDER	DRAWING NO : BCR-001 SHEET NO : 01 / 22



PLAN VIEW
SCALE 1:250

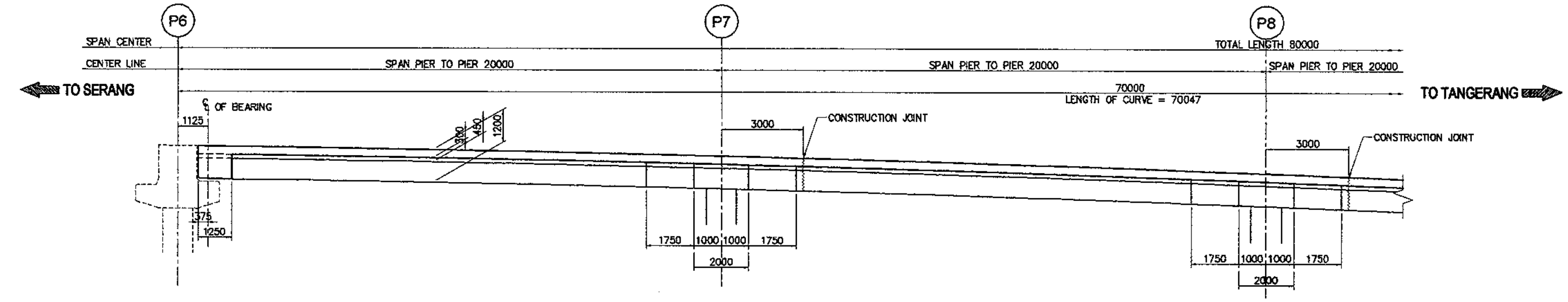


SECTION VIEW
SCALE 1:200

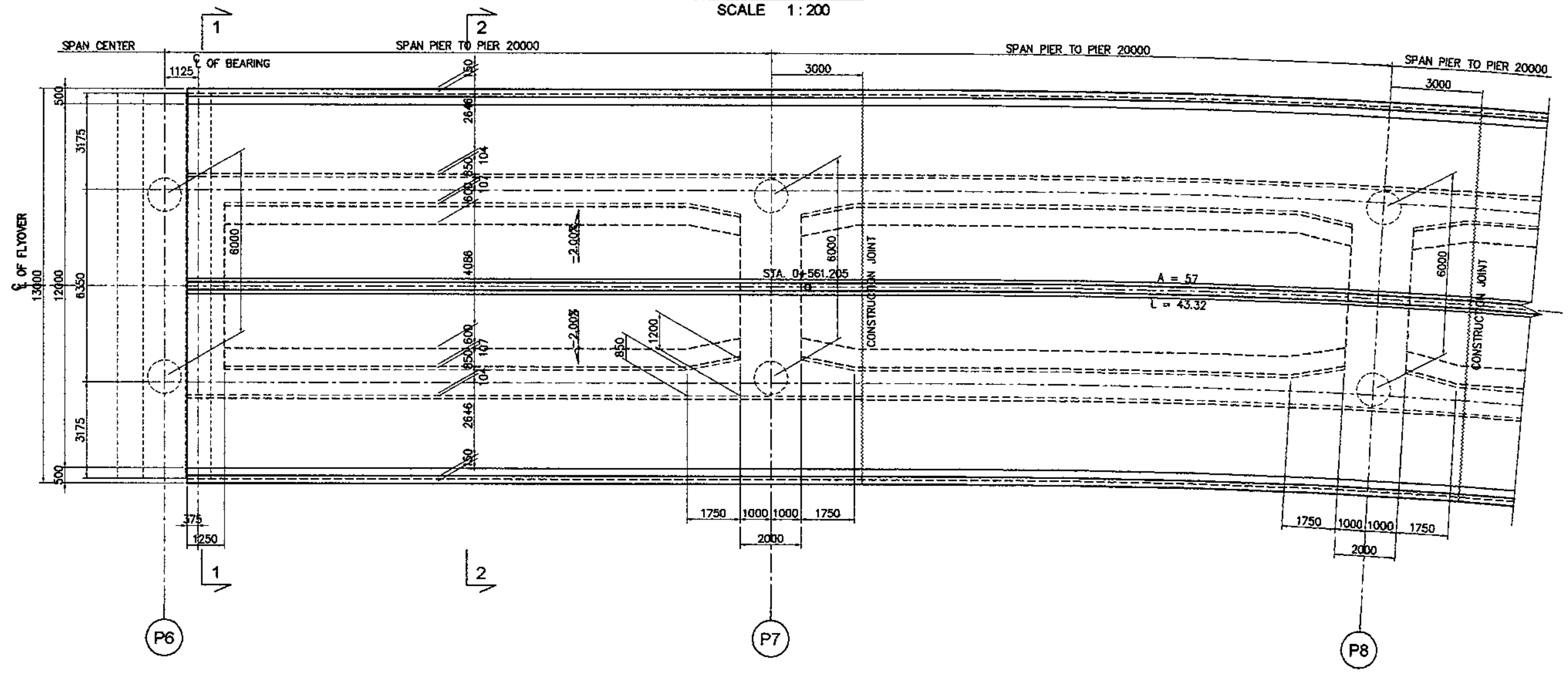
LIST OF COORDINATES

STA		P6	M13	M14	M15	M16	M17	P7	M18	M19	M20	P8	M21	M22	M23	P9	M24	M25	M26	M27	A2
LABEL		0+540.0000	0+540.7500	0+541.1500	0+545.8625	0+550.5750	0+555.2875	0+560.0000	0+565.0000	0+570.0000	0+575.0000	0+580.0000	0+585.0000	0+590.0000	0+595.0000	0+600.0000	0+604.8125	0+609.6250	0+814.4375	0+619.2500	0+620.0000
L1	E	661801.9247	661802.4719	661802.7638	661806.2023	661809.6409	661813.0794	661816.5179	661820.1787	661823.8951	661827.6949	661831.6042	661835.6482	661839.8498	661844.2287	661848.8006	661853.3927	661858.1492	661863.0351	661868.0304	661868.8174
	N	9315396.6634	9315397.1762	9315397.4498	9315400.6722	9315403.8946	9315407.1171	9315410.3395	9315413.7664	9315417.2046	9315420.6257	9315423.9979	9315427.2872	9315430.4562	9315433.4642	9315436.2664	9315438.724	9315440.8954	9315442.7573	9315444.3021	9315444.5138
	Z	28.7726	28.764	28.7592	28.6952	28.6165	28.5832	28.5354	28.465	28.3782	28.2466	28.0986	27.9342	27.7534	27.5562	27.3424	27.1161	26.8554	26.5797	26.304	26.261
L2	E	661802.2666	661802.8139	661803.1057	661806.5443	661809.9828	661813.4213	661816.8598	661820.5198	661824.2326	661828.0259	661831.9258	661835.9571	661840.1425	661844.5016	661849.0497	661853.6148	661858.3421	661863.1981	661868.1627	661868.9449
	N	9315396.2985	9315396.8114	9315397.0849	9315400.3074	9315403.5298	9315406.7523	9315409.9747	9315413.4008	9315416.8358	9315420.251	9315423.6151	9315426.894	9315430.0508	9315433.0452	9315435.8329	9315438.276	9315440.4341	9315442.2846	9315443.8199	9315444.0304
	Z	27.9476	27.939	27.9342	27.8702	27.7915	27.7582	27.7104	27.64	27.5532	27.4216	27.2736	27.1092	26.9284	26.7312	26.5174	26.2911	26.0304	25.7547	25.479	25.436
GL	E	661804.1984	661804.7456	661805.0375	661808.476	661811.9145	661815.3531	661818.7916	661822.447	661826.1397	661829.8965	661833.7427	661837.7022	661841.7963	661846.0432	661850.4567	661854.8698	661859.4322	661864.1188	661868.9103	661869.6652
	N	9315394.2372	9315394.7501	9315395.0236	9315398.2461	9315401.4685	9315404.691	9315407.9134	9315411.3362	9315414.7516	9315418.134	9315421.4519	9315424.6724	9315427.7604	9315430.6778	9315433.3832	9315435.7451	9315437.8279	9315439.6139	9315441.0956	9315441.2987
	Z	28.0041	27.9955	27.9907	27.9267	27.848	27.7865	27.7104	27.6118	27.4967	27.3502	27.1873	27.0079	26.8121	26.6	26.3713	26.133	25.8694	25.5937	25.318	25.275
CL	E	661806.3695	661806.9167	661807.2086	661810.6471	661814.0856	661817.5242	661820.9627	661824.6129	661828.2831	661831.9988	661835.7847	661839.6634	661843.6549	661847.7757	661852.038	661856.2803	661860.6574	661865.1537	661869.7506	661870.4748
	N	9315391.9206	9315392.4334	9315392.7069	9315395.9294	9315399.1518	9315402.3743	9315405.5967	9315409.0137	9315412.4093	9315415.7548	9315419.0206	9315422.1756	9315425.1863	9315428.0172	9315430.63	9315432.9006	9315434.8988	9315436.6122	9315438.0338	9315438.2287
	Z	28.0676	28.059	28.0542	27.9902	27.9115	27.8182	27.7104	27.58	27.4332	27.2699	27.0902	26.8941	26.6815	26.4526	26.2071	25.9554	25.6884	25.4127	25.137	25.094
GR	E	661808.5405	661809.0878	661809.3797	661812.8182	661816.2567	661819.6953	661823.1338	661826.7789	661830.4264	661834.1012	661837.8267	661841.6246	661845.5135	661849.5083	661853.6193	661857.8908	661861.8826	661866.1886	661870.5908	661871.2844
	N	9315389.6039	9315390.1167	9315390.3903	9315393.6127	9315396.8352	9315400.0576	9315403.28	9315406.6922	9315410.0669	9315413.3755	9315416.5894	9315419.6787	9315422.6122	9315425.3566	9315427.8768	9315430.0561	9315431.9697	9315433.6106	9315434.972	9315435.1586
	Z	28.0041	27.9955	27.9907	27.9267	27.848	27.7547	27.6469	27.5165	27.3697	27.1896	26.9931	26.7803	26.5509	26.3052	26.0429	25.7778	25.5074	25.2317	24.956	24.913
R2	E	661810.4723	661811.0195	661811.3114	661814.7499	661818.1885	661821.627	661825.0655	661828.7061	661832.3335	661835.9717	661839.6436	661843.3697	661847.1673	661851.0498	661855.0263	661858.9458	661862.9728	661867.1093	661871.3385	661872.0048
	N	9315387.5426	9315388.0555	9315388.329	9315391.5514	9315394.7739	9315397.9963	9315401.2188	9315404.6267	9315407.9828	9315411.2586	9315414.4262	9315417.4572	9315420.3218	9315422.9893	9315425.4271	9315427.5252	9315429.3635	9315430.9399	9315432.2478	9315432.427
	Z	27.9476	27.939	27.9342	27.8702	27.7915	27.6982	27.5904	27.46	27.3132	27.1182	26.9068	26.679	26.4346	26.174	25.8968	25.6197	25.3464	25.0707	24.795	24.752
R1	E	661810.8142	661811.3615	661811.6533	661815.0918	661818.5304	661821.9689	661825.4074	661829.0472	661832.6711	661836.3028	661839.9652	661843.6786	661847.46	661851.3227	661855.2753	661859.1679	661863.1657	661867.2723	661871.4708	661872.1323
	N	9315387.1778	9315387.6906	9315387.9641	9315391.1866	9315394.409	9315397.6315	9315400.8539	9315404.2611	9315407.6139	9315410.8839	9315414.0433	9315417.064	9315419.9165	9315422.5703	9315424.9935	9315427.0772	9315428.9023	9315430.4672	9315431.7656	9315431.9436
	Z	28.7726	28.764	28.7592	28.6952	28.6165	28.5232	28.4154	28.285	28.1382	27.9432	27.7318	27.504	27.2596	26.999	26.7218	26.4447	26.1714	25.8957	25.62	25.577

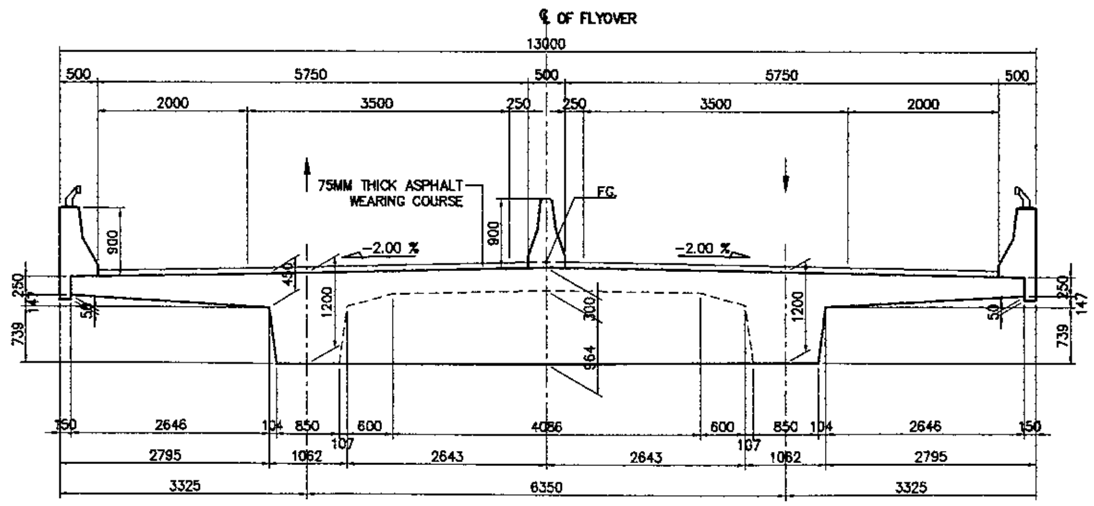
JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY Name H. HONDA Sign Date	CHECKED BY Name T. OKUMURA Sign Date	SUBMITTED BY Name M. KIUCHI Sign Date	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS APPROVED BY Ir. HERRY VAZA M.Eng.Sc NIP. : 110038400 Sign Date	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : 1 : 200 1 : 100 FULL SIZE A3	DRAWING TITLE : DIMENSION PLAN OF PC SUPERSTRUCTURE P6-P8	DRAWING NO : BCR-002 SHEET NO : 02 / 22



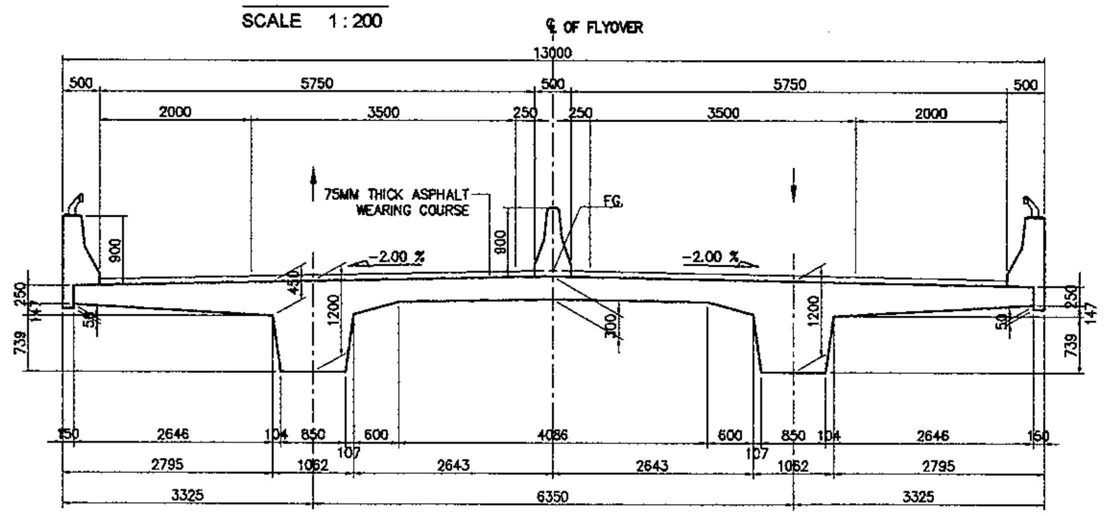
SIDE ELEVATION
SCALE 1 : 200



PLAN
SCALE 1 : 200



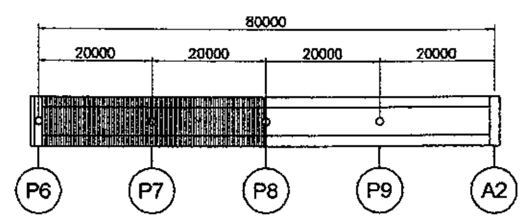
SECTION 1-1
SCALE 1 : 100



SECTION 2-2
SCALE 1 : 100

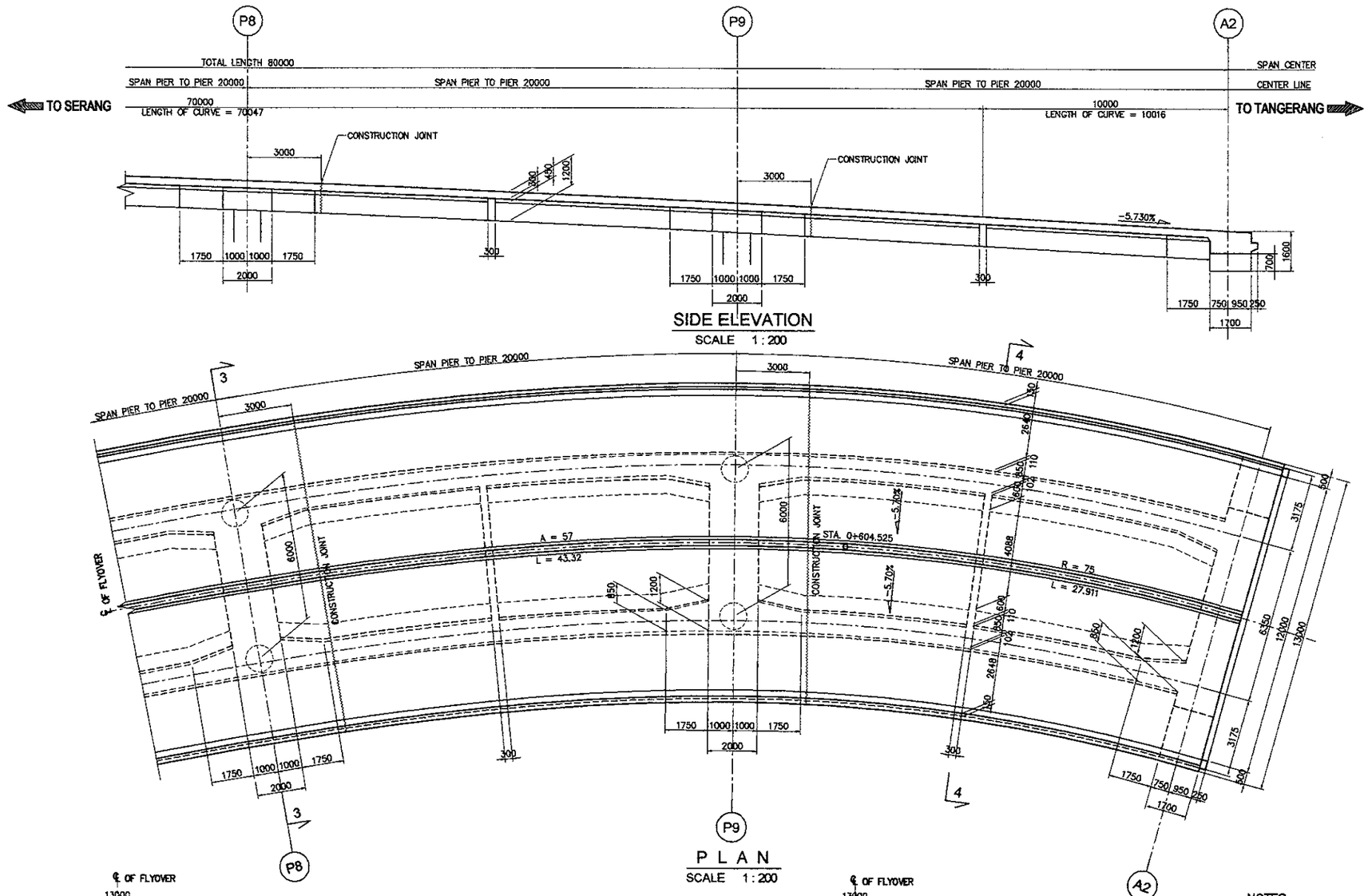
NOTES :

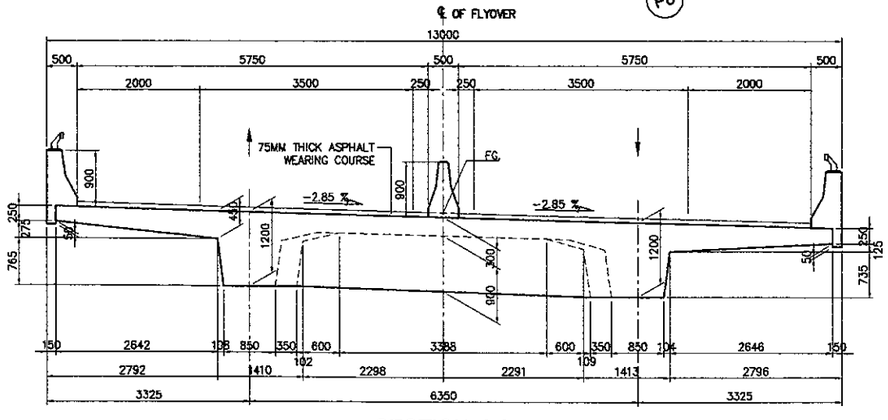
1. All dimension are in mm unless noted otherwise.
2. Concrete Girder and Slab fc'= 35 MPa.
3. All Reinforcing steel shall be BJTD 40 or ASTM A615 Grade 60 deformed bars.
4. The Contractor shall be responsible to carry out the following before Construction :
   a) Verification of all elevations and dimensions, using actual field survey.
   b) Preparation and submission of shop drawings for all bridge components for the Engineer's approval.

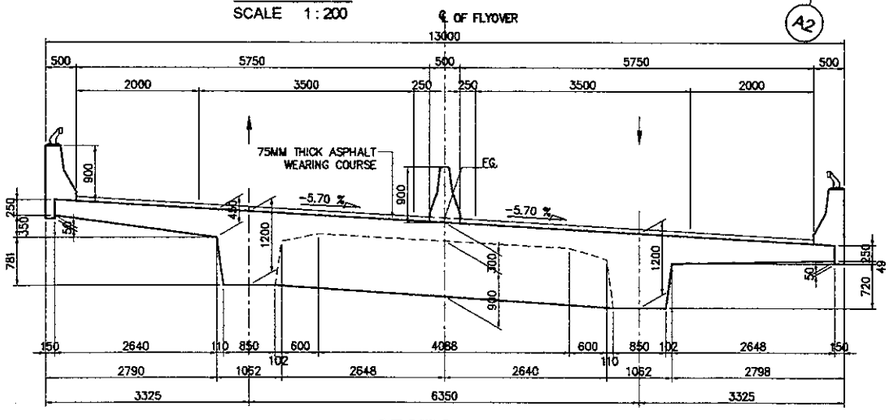


KEY PLAN

JICA JAPAN INTERNATIONAL COOPERATION AGENCY KEI KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS		PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
	Name	H. HONDA	Name	T. OKUMURA	Name	M. KIUCHI			DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 200 1 : 100 FULL SIZE A3	DIMENSION PLAN OF PC SUPERSTRUCTURE P8-A2	BCR-003 SHEET NO : 03 / 22
	Sign		Sign		Sign		APPROVED BY	Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400	Sign Date			
	Date		Date		Date							

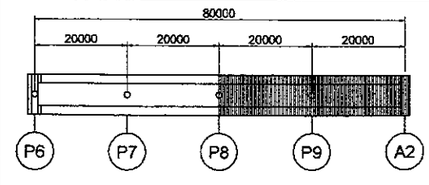






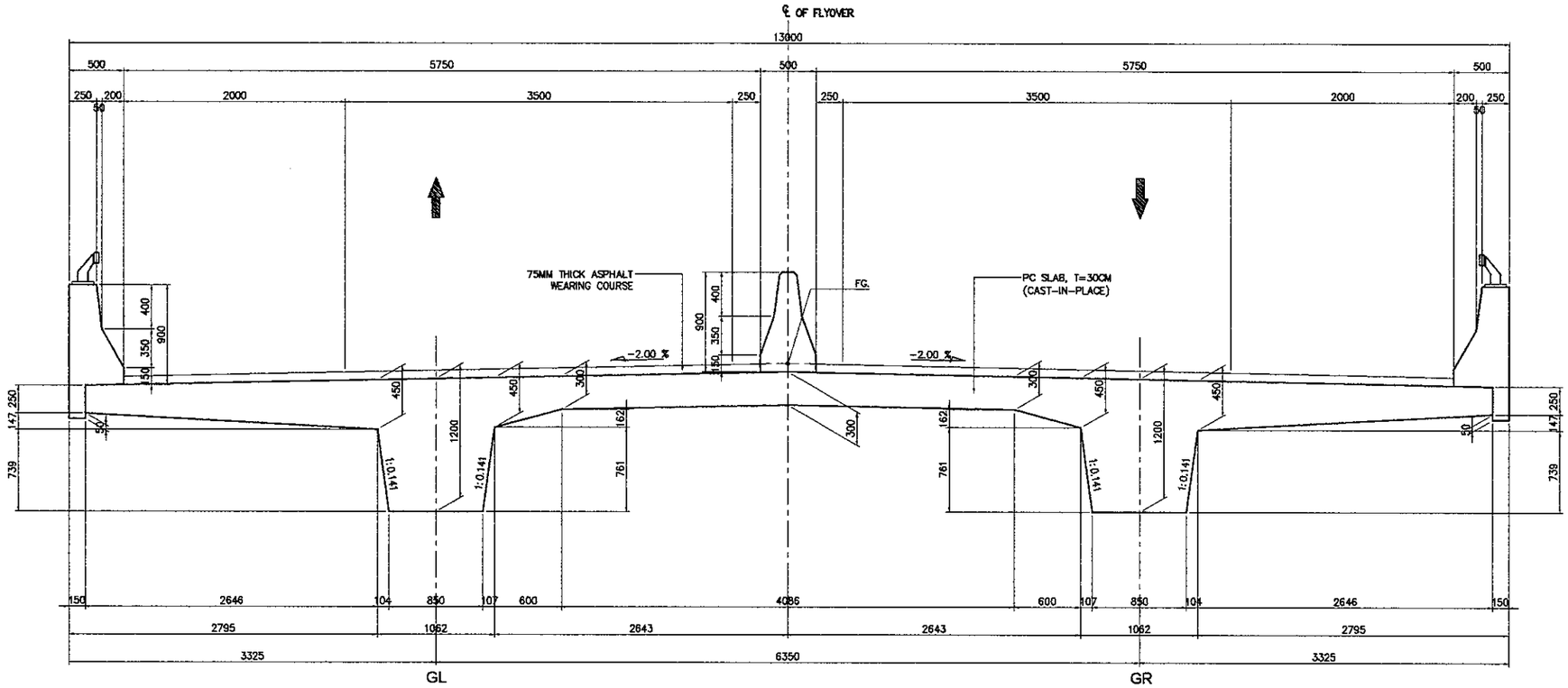
NOTES :

1. All dimension are in mm unless noted otherwise.
2. Concrete Girder and Slab fc'= 35 MPa.
3. All Reinforcing steel shall be BJTD 40 or ASTM A615 Grade 60 deformed bars.
4. The Contractor shall be responsible to carry out the following before Construction :
   a) Verification of all elevations and dimensions, using actual field survey.
   b) Preparation and submission of shop drawings for all bridge components for the Engineer's approval.



KEY PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS		PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : 1 : 50 FULL SIZE A3	DRAWING TITLE : TYPICAL CROSS SECTION P6-A2 (1 OF 2)	DRAWING NO : BCR-004 SHEET NO : 04 / 22
	Name	H. HONDA	Name	T. OKUMURA	Name	M. KIUCHI					
	Sign		Sign		Sign						
	Date		Date		Date		APPROVED BY	Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400	Sign Date		



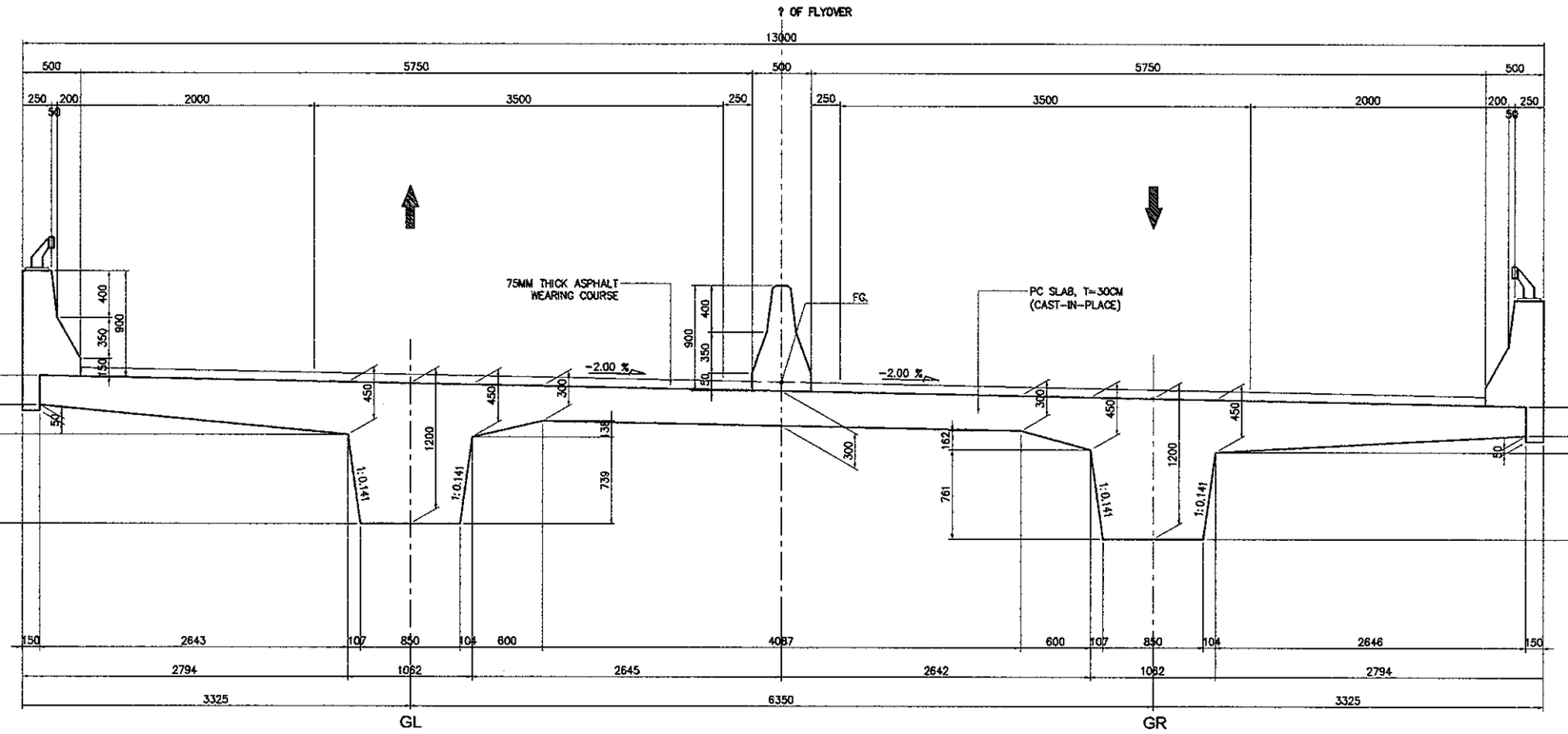
INFORMATION OF PC SUPERSTUCTURE

	A1	P1	P2	P3	P4'
FG.	28.055	27.710	27.090	26.207	25.094
Super Elev. GL	-2.000%	0.000%	3.057%	5.171%	5.700%
Super Elev. GR	-2.000%	-2.000%	-3.057%	-5.171%	-5.700%
Top Slab Girder GL	27.916	27.635	27.112	26.296	25.200
Top Slab Girder GR	27.916	27.572	26.918	25.968	24.838
Bottom GL	26.241	26.360	25.837	25.021	23.925
Bottom GR	26.241	26.297	25.643	24.693	23.563
Station	0+541.125	0+560.000	0+580.000	0+600.000	0+620.000

TYPICAL CROSS SECTION
(Span Length = 20 M)

SCALE : 1 : 50

JAPAN INTERNATIONAL COOPERATION AGENCY / KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY	CHECKED BY	SUBMITTED BY	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
	Name: H. HONDA	Name: T. OKUMURA	Name: M. KIUCHI	APPROVED BY: Ir. HERRY VAZA M,Eng.Sc	DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 50 FULL SIZE A3	TYPICAL CROSS SECTION P6-A2 (2 OF 2)	BCR-005 SHEET NO : 05 / 22
	Sign:	Sign:	Sign:	NIP. : 110038400				
	Date:	Date:	Date:	Sign / Date				



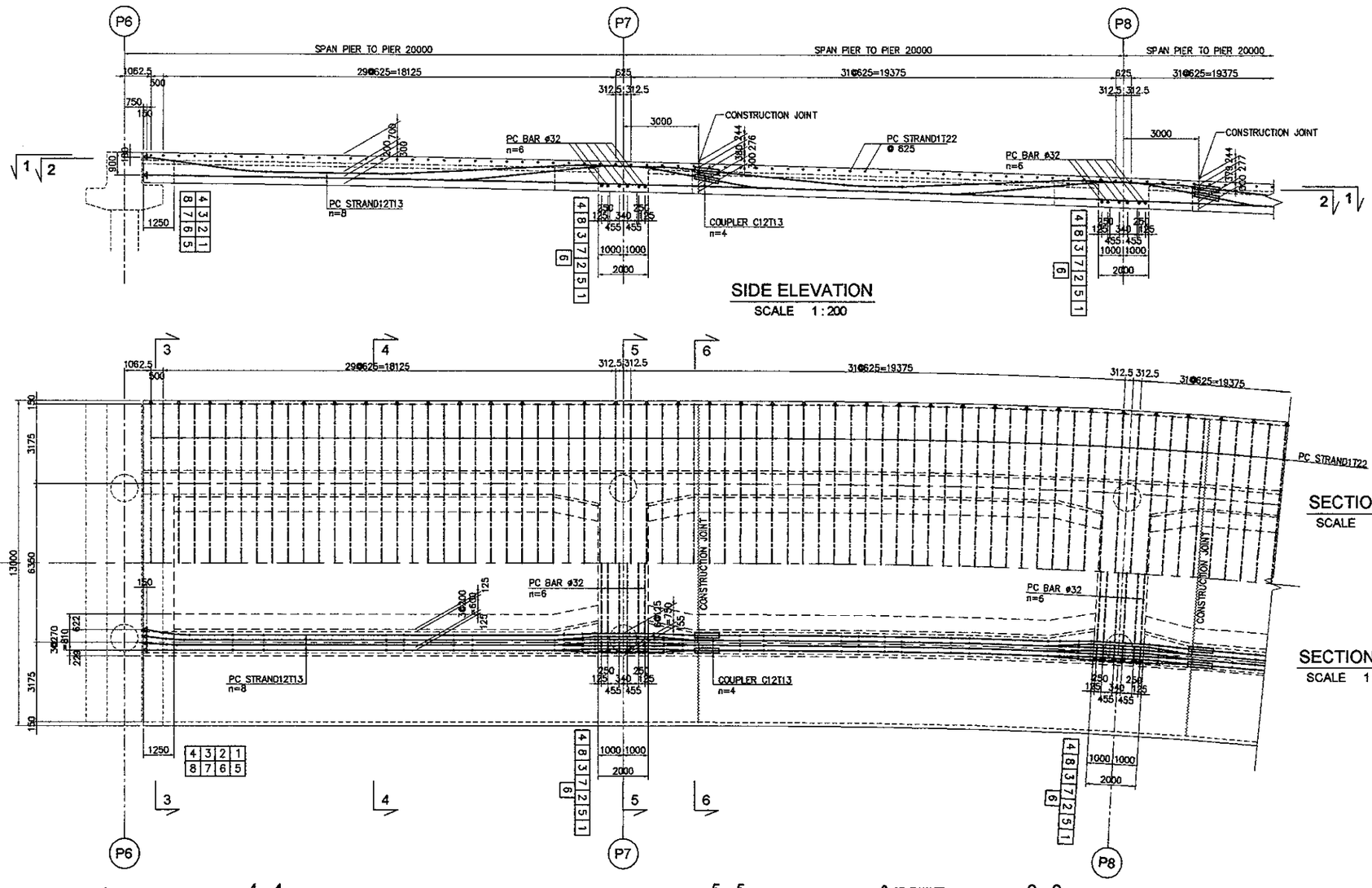
INFORMATION OF PC SUPERSTUCTURE

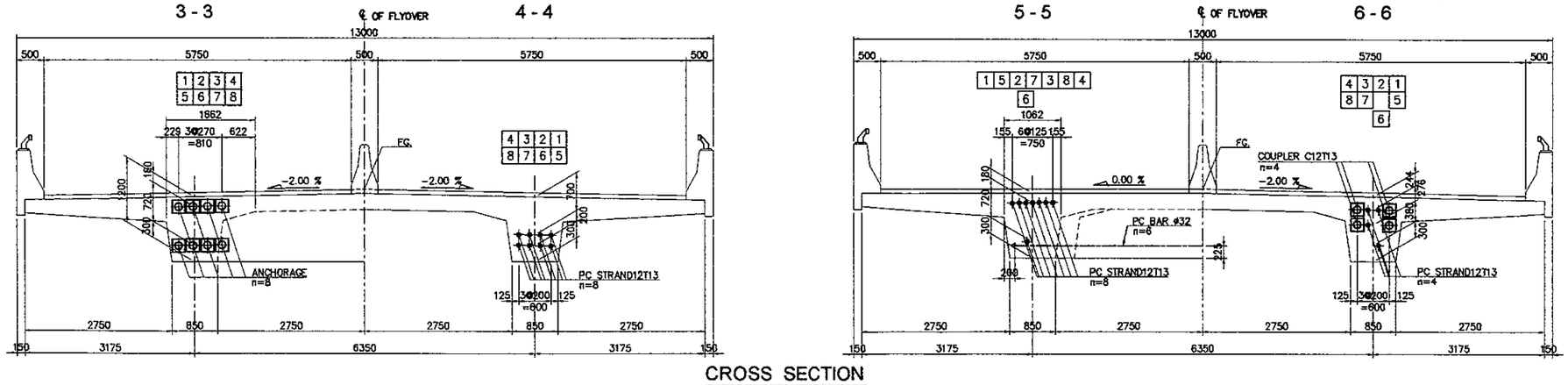
	A1	P1	P2	P3	P4'
FG.	28.055	27.710	27.090	26.207	25.094
Super Elev. GL	−2.000%	0.000%	3.057%	5.171%	5.700%
Super Elev. GR	−2.000%	−2.000%	−3.057%	−5.171%	−5.700%
Top Slab Girder GL	27.916	27.635	27.112	26.296	25.200
Top Slab Girder GR	27.916	27.572	26.918	25.968	24.838
Bottom GL	26.241	26.360	25.837	25.021	23.925
Bottom GR	26.241	26.297	25.643	24.693	23.563
Station	0+541.125	0+560.000	0+580.000	0+600.000	0+620.000

TYPICAL CROSS SECTION
(Span Length = 20 M)

SCALE : 1 : 50

JICA JAPAN INTERNATIONAL COOPERATION AGENCY KEI KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS		PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
	Name	H. HONDA	Name	T. OKUMURA	Name	M. KIUCHI			DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 200 1 : 100 FULL SIZE A3	ARRANGEMENT OF PC CABLES P6-P8	BCR-006 SHEET NO : 06 / 22
	Sign		Sign		Sign		APPROVED BY : Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400	Sign / Date				
	Date		Date		Date							

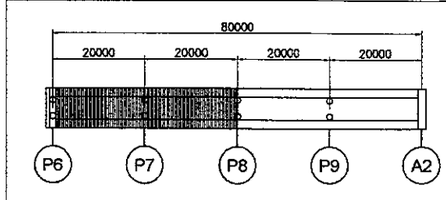




NOTES :

1. All dimension are in mm unless noted otherwise
2. Prestressing Tendon Shall be 12T13 (7 WIRE STRAND) Nominal Diameter 12.7mm.
3. Shows Bending Point Of Prestressing Cable.

Stressing Anchorage
Dead End Anchorage

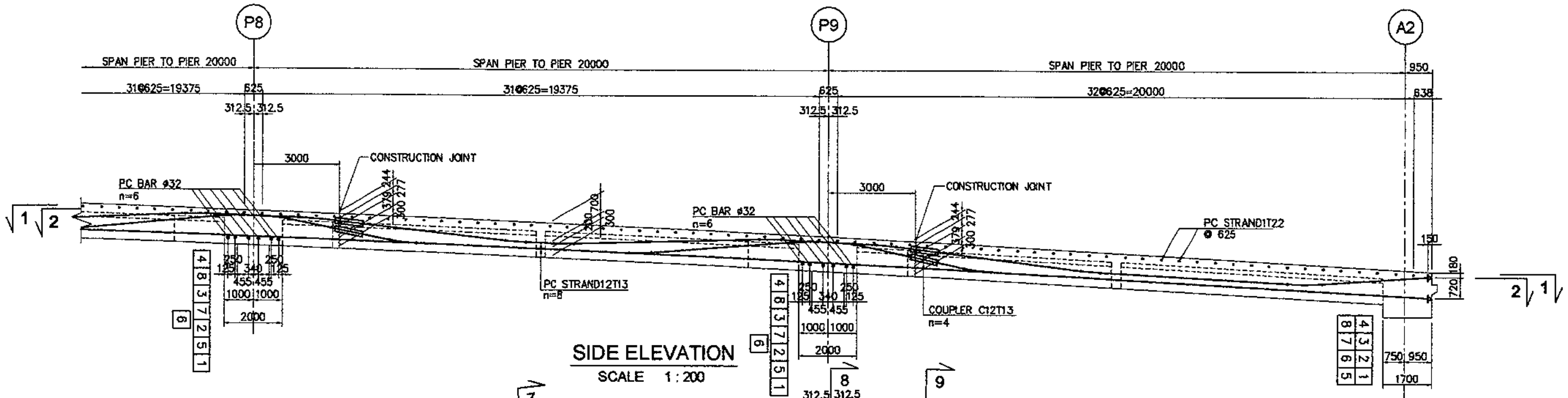


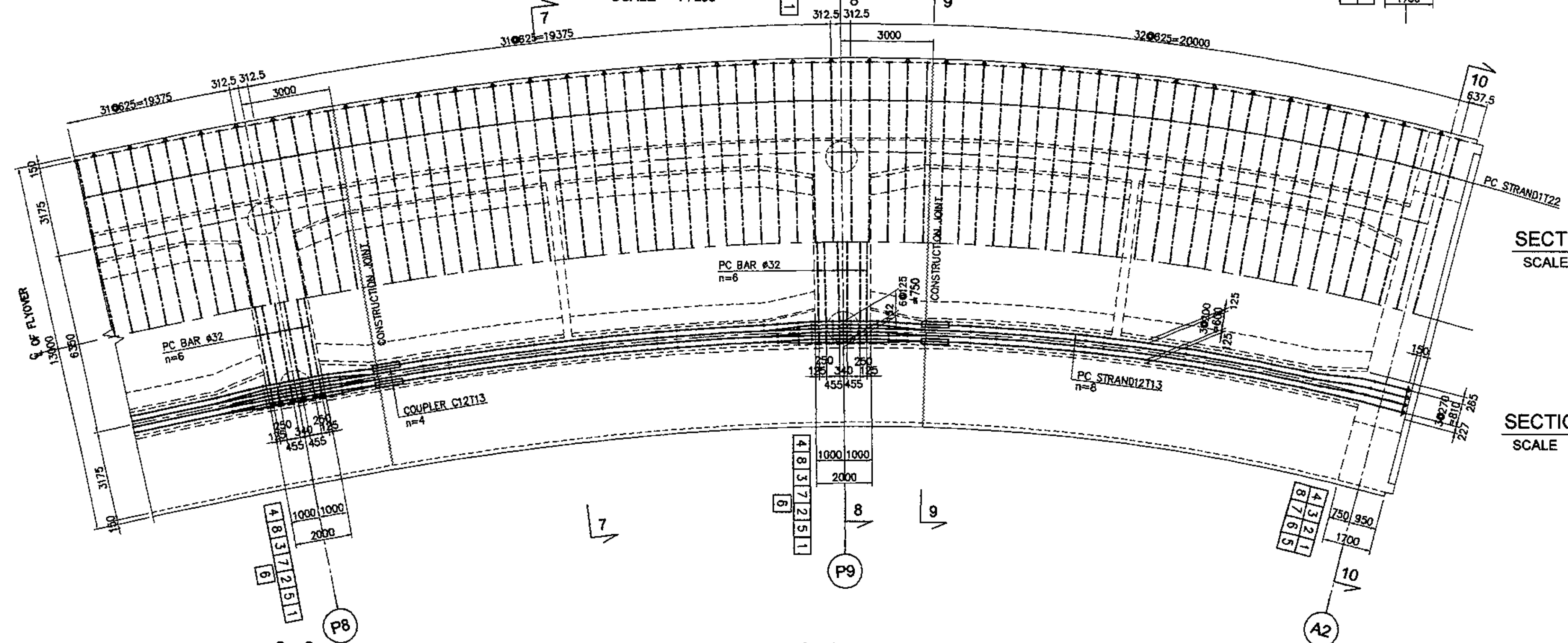
KEY PLAN

JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY: Name H. HONDA; Sign; Date	CHECKED BY: Name T. OKUMURA; Sign; Date	SUBMITTED BY: Name M. KIUCHI; Sign; Date	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS APPROVED BY: Ir. HERRY VAZA M.Eng.Sc; NIP. : 110036400; Sign; Date	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE
SCALE : 1 : 200, 1 : 100 FULL SIZE A3	DRAWING TITLE : ARRANGEMENT OF PC CABLES P8-A2	DRAWING NO : BCR-007	SHEET NO : 07 / 22		

SIDE ELEVATION

SCALE 1 : 200



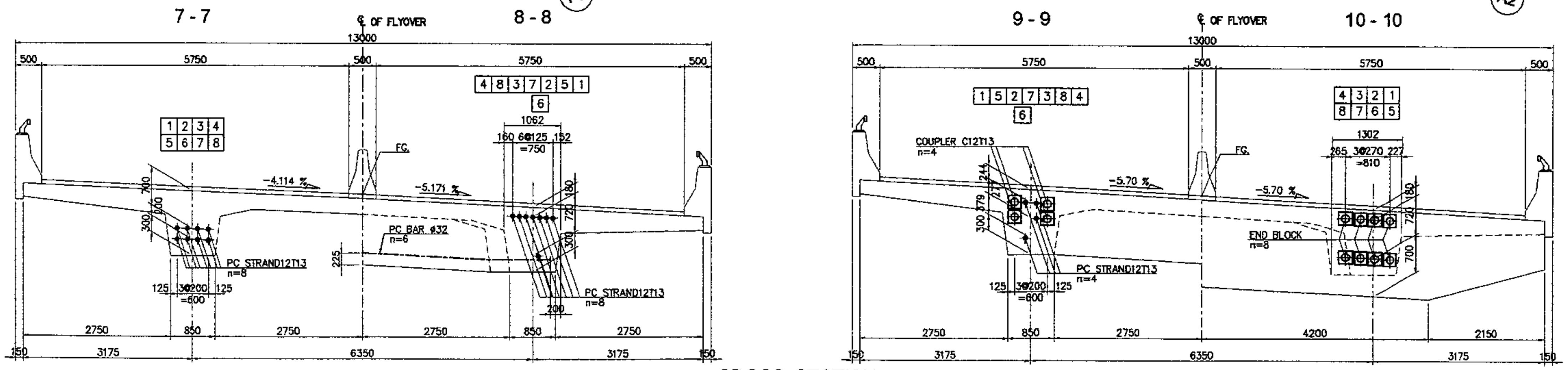


SECTION 1-1

SCALE 1 : 200

SECTION 2-2

SCALE 1 : 200



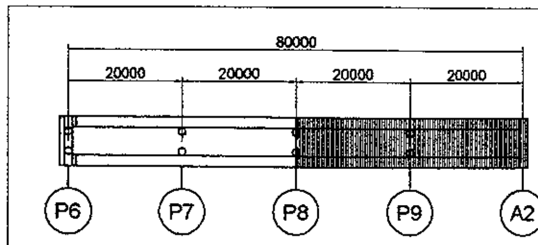
CROSS SECTION

SCALE : 1 : 100

NOTES :

1. All dimension are in mm unless noted otherwise
2. Prestressing Tendon Shall be 12T13 (7 WIRE STRAND)
   . Nominal Diameter 12.7mm.
3. Shows Bending Point Of Prestressing Cable.

- Stressing Anchorage
- Dead End Anchorage



KEY PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY / KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY	CHECKED BY	SUBMITTED BY
	Name: H. HONDA	Name: T. OKUMURA	Name: M. KIUCHI
	Sign:	Sign:	Sign:
	Date:	Date:	Date:

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

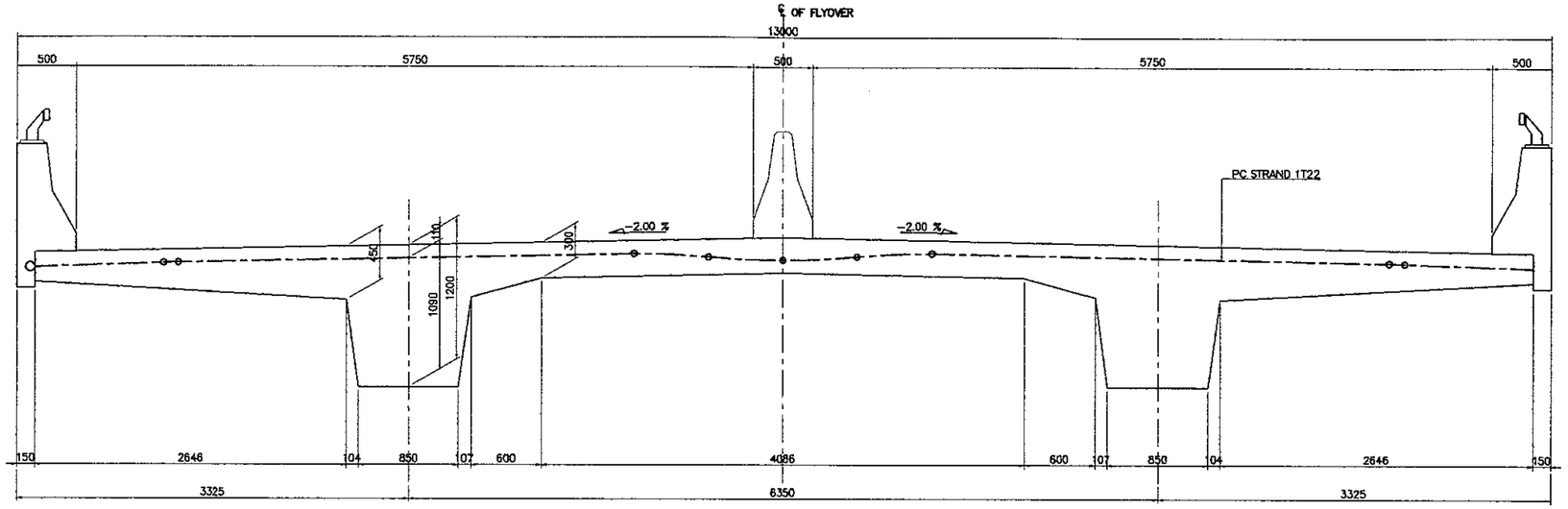
APPROVED BY: Ir. HERRY VAZA M,Eng.Sc (NIP. : 110038400) — Sign: — Date:

PROJECT AND LOCATION :
DETAILED DESIGN STUDY OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

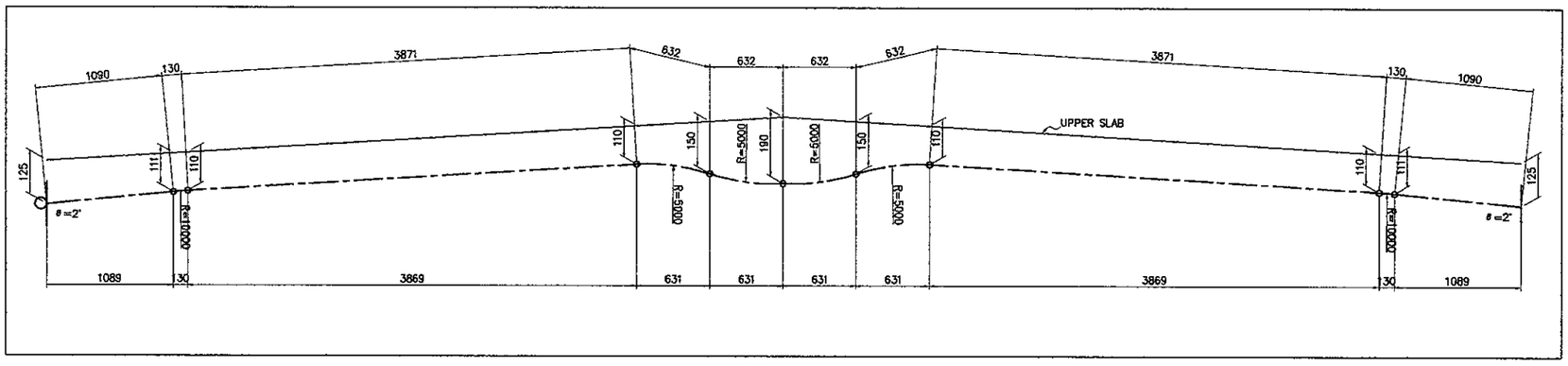
SCALE : 1 : 50, 1 : 300 — FULL SIZE A3

DRAWING TITLE :
ARRANGEMENT OF PC CABLES
P6 - A2

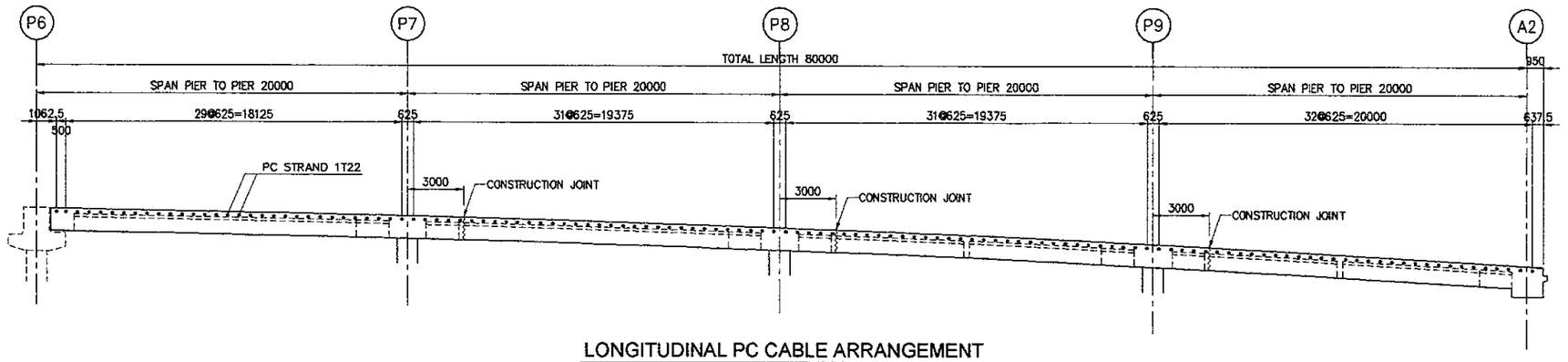
DRAWING NO : BCR-008
SHEET NO : 08 / 22



TRANVERSAL PC CABLE
SCALE 1 : 50



PC CABLE PROFILE



LONGITUDINAL PC CABLE ARRANGEMENT
SCALE 1 : 300

TABEL OF PC CABLES

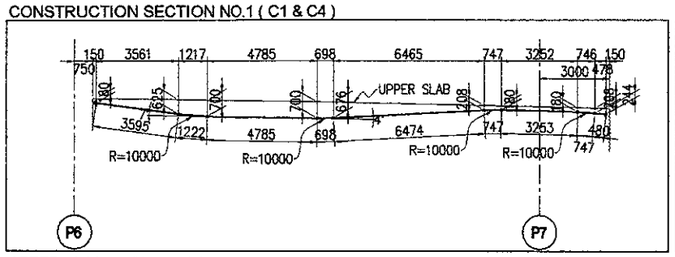
Length (m)	Nos.	Unit Weight (kg/m)	Weight / 1 nos (kg)	Weight (kg)	Remarks
12.710	128	2.482	31.55	4,037.92	Stressing Anchorage One Side Staggered
TOTAL LENGTH (L) =			1,626.88	m	
TOTAL WEIGHT (W) =			4,037.92	kg	

NOTES :
1. All dimension are in mm unless noted otherwise.
2. ⌒ Shows Bending Point Of Prestressing Cable.

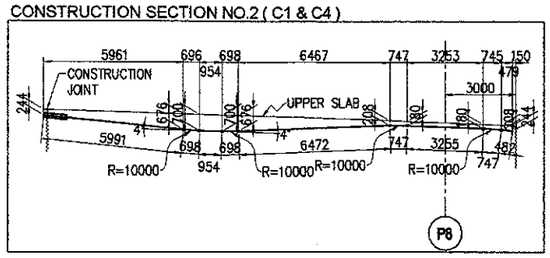
⊣ Stressing Anchorage
⊢ Dead End Anchorage

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY	CHECKED BY	SUBMITTED BY	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
	Name H. HONDA	Name T. OKUMURA	Name M. KIUCHI		DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	-	PC CABLES SCHEDULE P6 - A2	BCR-009
	Sign	Sign	Sign	APPROVED BY Ir. HERRY VAZA M,Eng.Sc Sign NIP. : 110038400 Date		FULL SIZE A3		SHEET NO : 09 / 22
	Date	Date	Date					

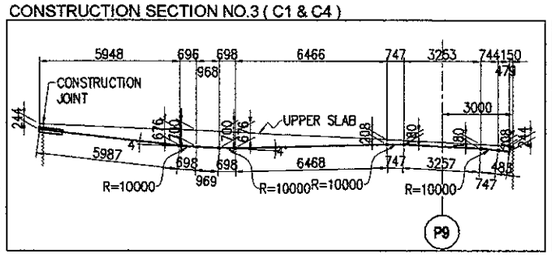
CONSTRUCTION SECTION NO.1 (C1 & C4)



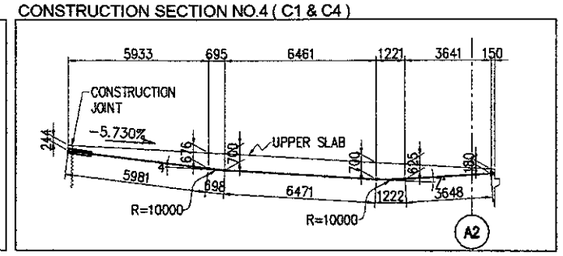
CONSTRUCTION SECTION NO.2 (C1 & C4)



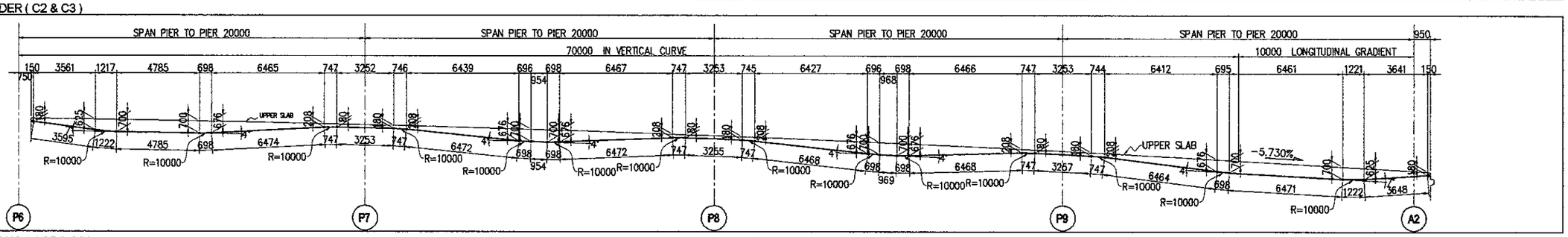
CONSTRUCTION SECTION NO.3 (C1 & C4)



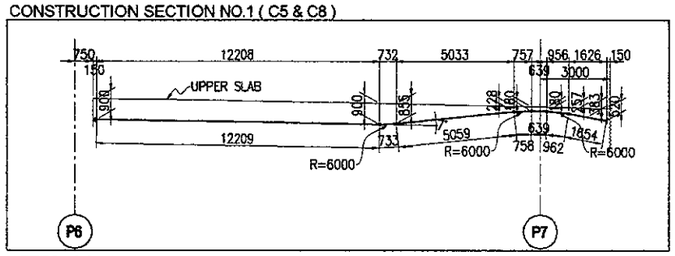
CONSTRUCTION SECTION NO.4 (C1 & C4)



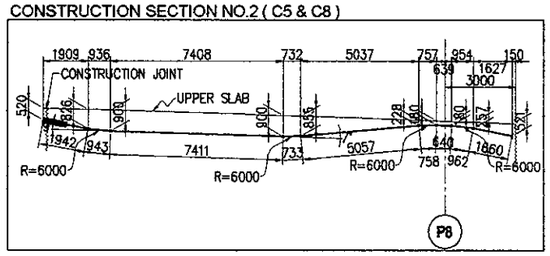
AFTER COMPLETION GIRDER (C2 & C3)



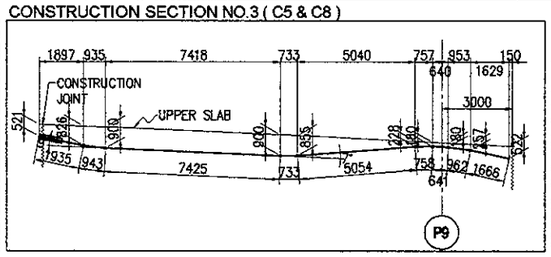
CONSTRUCTION SECTION NO.1 (C5 & C8)



CONSTRUCTION SECTION NO.2 (C5 & C8)



CONSTRUCTION SECTION NO.3 (C5 & C8)



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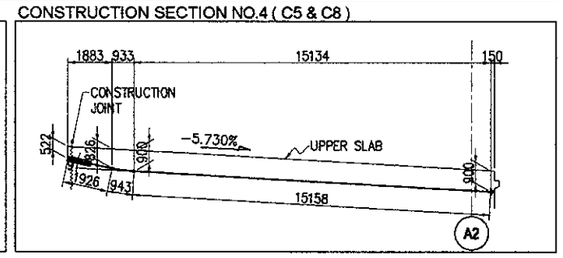
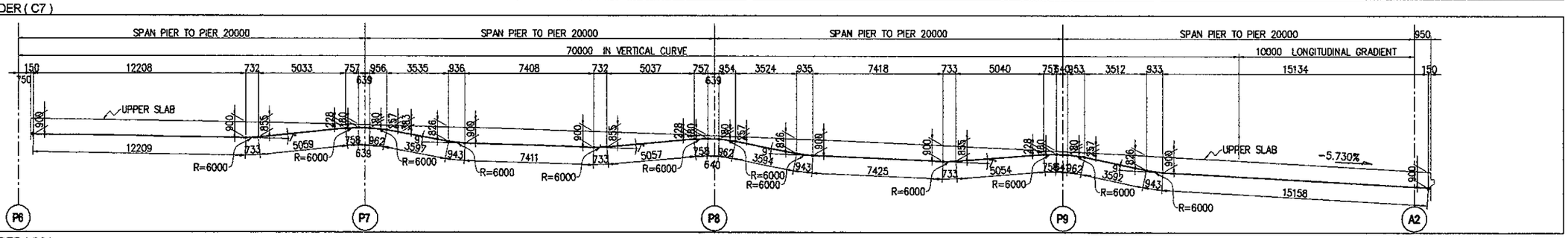
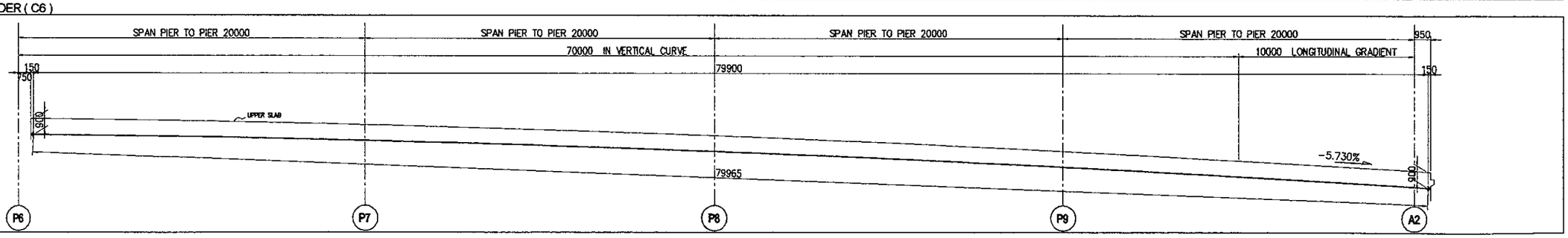


AFTER COMPLETION GIRDER (C7)



AFTER COMPLETION GIRDER (C6)



PC CABLES SCHEDULE P6 - A2

SCALE : NON

NOTES :

1. All dimension are in mm unless noted otherwise
2. Prestressing Tendon Shall be 12T13 (7 WIRE STRAND)
   . Nominal Diameter 12.7mm
3. Shows Bending Point Of Prestressing Cable

Stressing Anchorage
Dead End Anchorage

JICA JAPAN INTERNATIONAL COOPERATION AGENCY KEI KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY: Name H.HONDA / Sign / Date	CHECKED BY: Name T. OKUMURA / Sign / Date	SUBMITTED BY: Name M. KIUCHI / Sign / Date

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

APPROVED BY: Ir. HERRY VAZA M,Eng.Sc — NIP. : 110038400 — Sign — Date

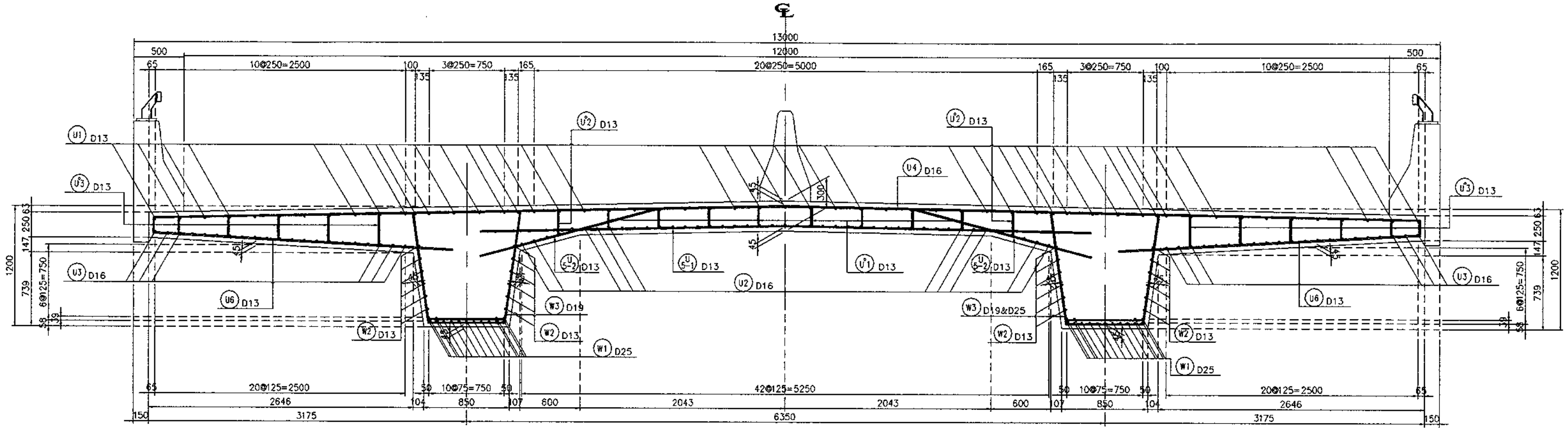
PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

SCALE : 1 : 50 — FULL SIZE A3

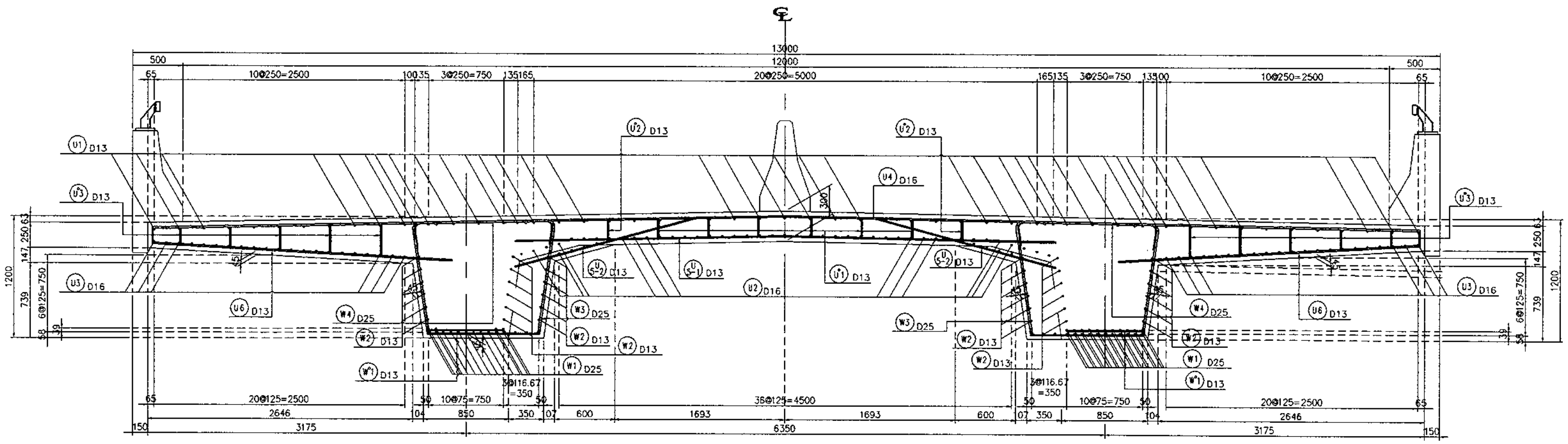
DRAWING TITLE : TYPICAL DETAIL OF CROSS SECTION REINFORCEMENT P6 - A2

DRAWING NO : BCR-010

SHEET NO : 10 / 22



SECTION AT MID SPAN
SCALE 1:50



SECTION AT PIER
SCALE 1:50

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	H.HONDA	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

APPROVED BY	Ir. HERRY VAZA M,Eng.Sc	Sign	
	NIP. : 110038400	Date	

PROJECT AND LOCATION :

DETAILED DESIGN STUDY OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

SCALE : 1 : 150

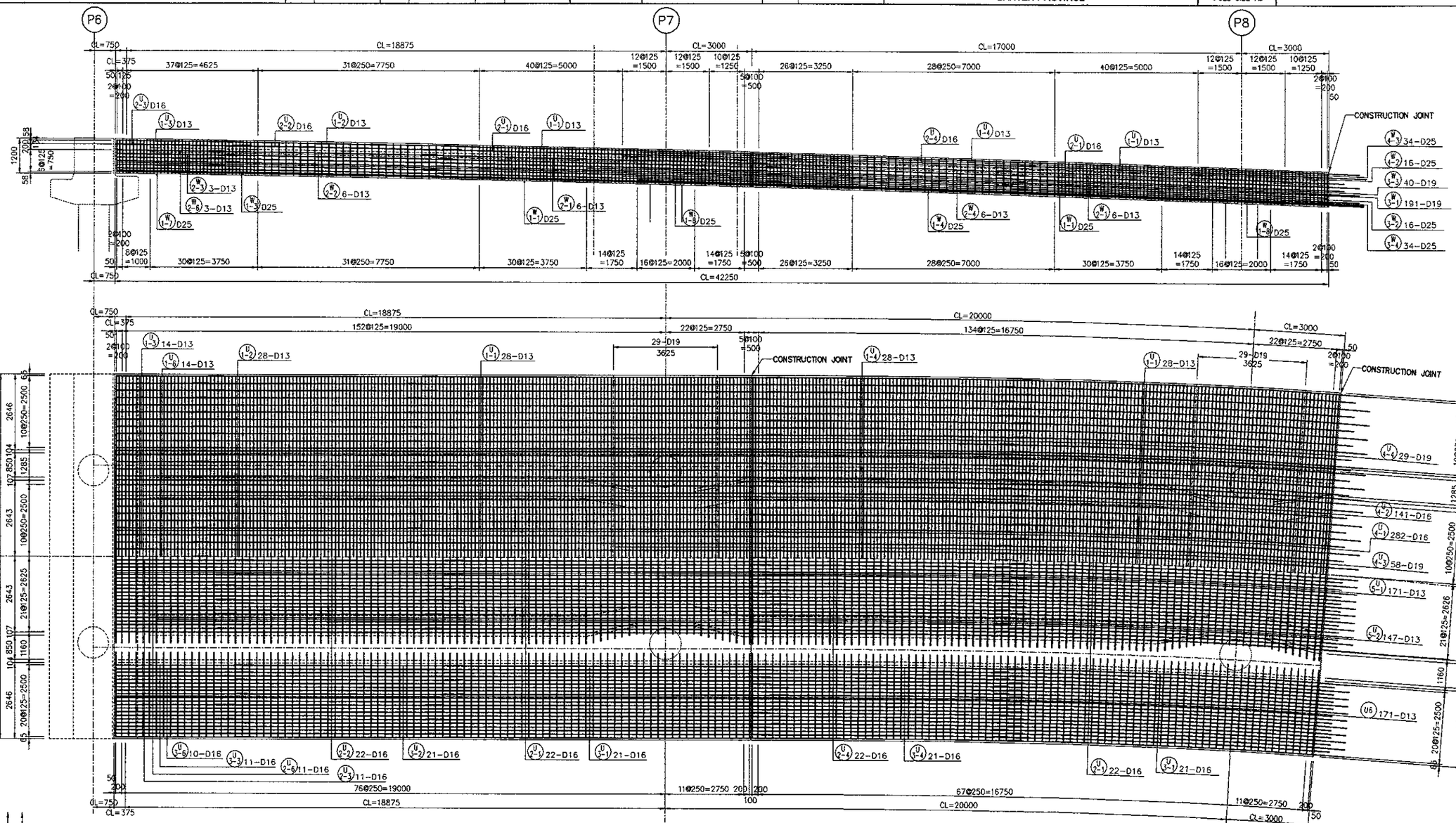
FULL SIZE A3

DRAWING TITLE :

ARRANGEMENT OF REINFORCEMENT FOR PC GIRDER P6 - P8

DRAWING NO : BCR-011

SHEET NO : 11 / 22



SECTION SPAN P6 - P8
SCALE : 1 : 150

SECTION TOP SLAB
SCALE : 1 : 150

SECTION BOTTOM SLAB
SCALE : 1 : 150

SECTION BOTTOM GIRDER
SCALE : 1 : 150

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	H.HONDA	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

APPROVED BY	Ir. HERRY VAZA M,Eng.Sc	Sign	
	NIP. : 110038400	Date	

PROJECT AND LOCATION :

DETAILED DESIGN STUDY OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

SCALE : 1 : 150

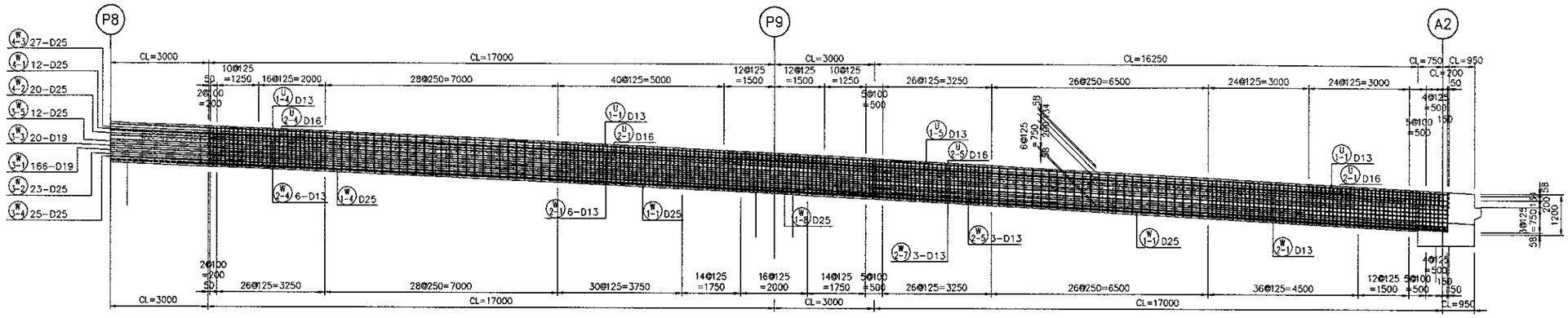
FULL SIZE A3

DRAWING TITLE :

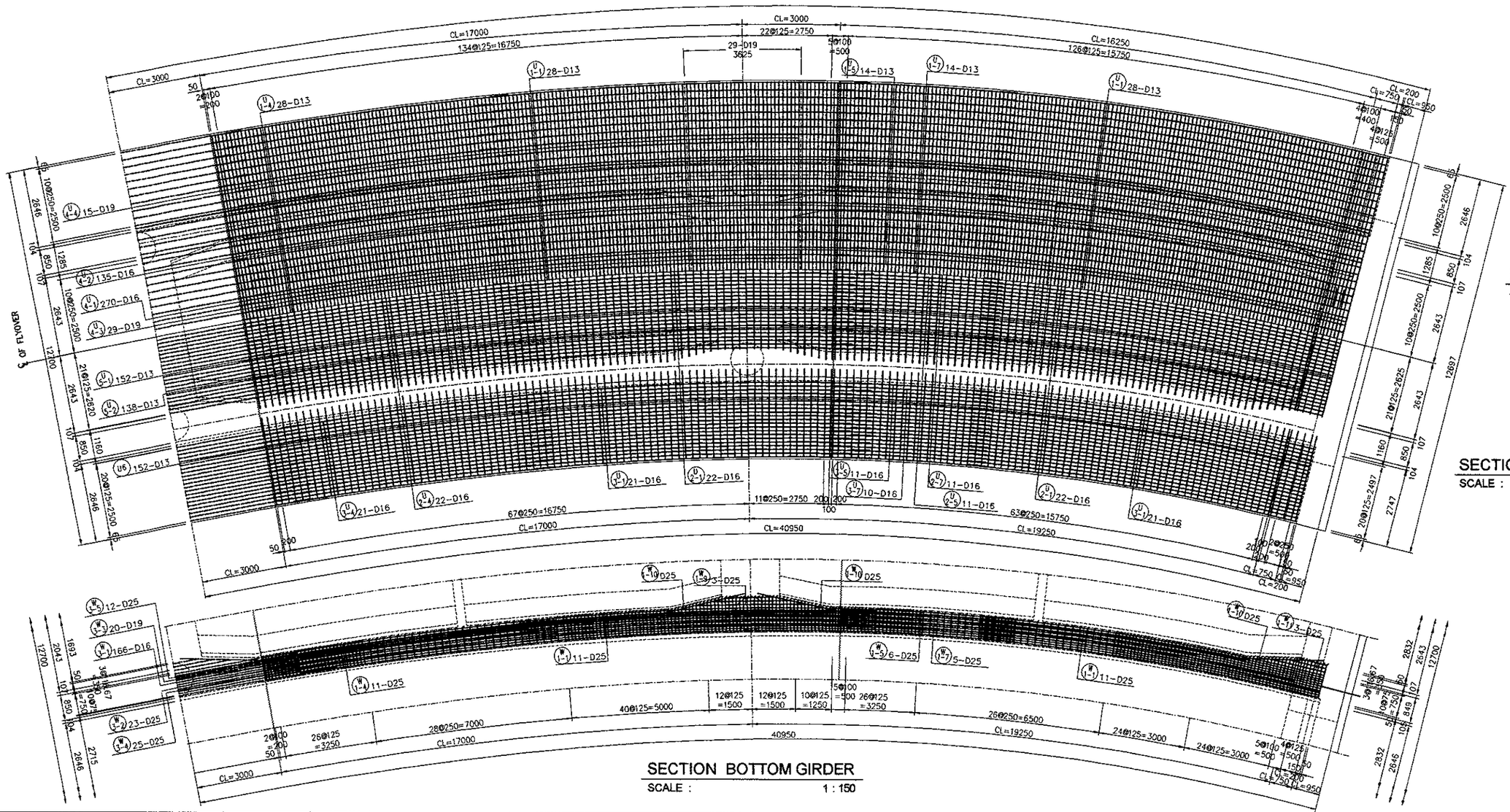
ARRANGEMENT OF REINFORCEMENT FOR PC GIRDER P8 - A2

DRAWING NO : BCR-012

SHEET NO : 12 / 22



SECTION SPAN P8 - A2
SCALE : 1 : 150



SECTION TOP SLAB
SCALE : 1 : 150

SECTION BOTTOM SLAB
SCALE : 1 : 150

SECTION BOTTOM GIRDER
SCALE : 1 : 150

JAPAN INTERNATIONAL COOPERATION AGENCY / KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY	CHECKED BY	SUBMITTED BY
	Name: H.HONDA	Name: T. OKUMURA	Name: M. KIUCHI
	Sign:	Sign:	Sign:
	Date:	Date:	Date:

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

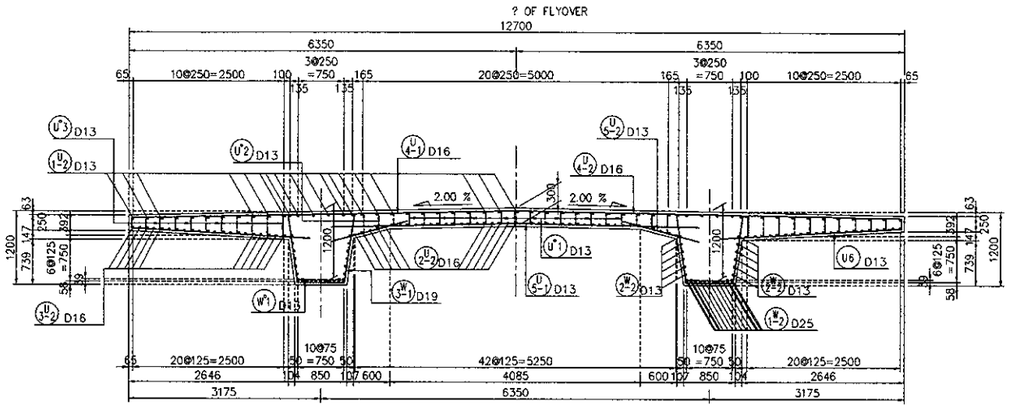
APPROVED BY: Ir. HERRY VAZA M,Eng.Sc (NIP. : 110038400) — Sign: — Date:

PROJECT AND LOCATION :
DETAILED DESIGN STUDY OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

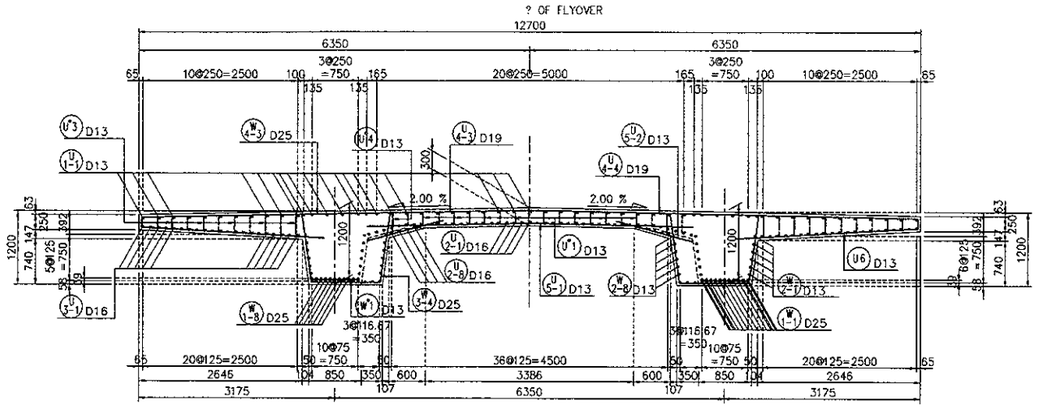
SCALE : 1 : 100 (FULL SIZE A3)

DRAWING TITLE :
ARRANGEMENT OF REINFORCEMENT FOR PC GIRDER P6-A2 (1 OF 2)

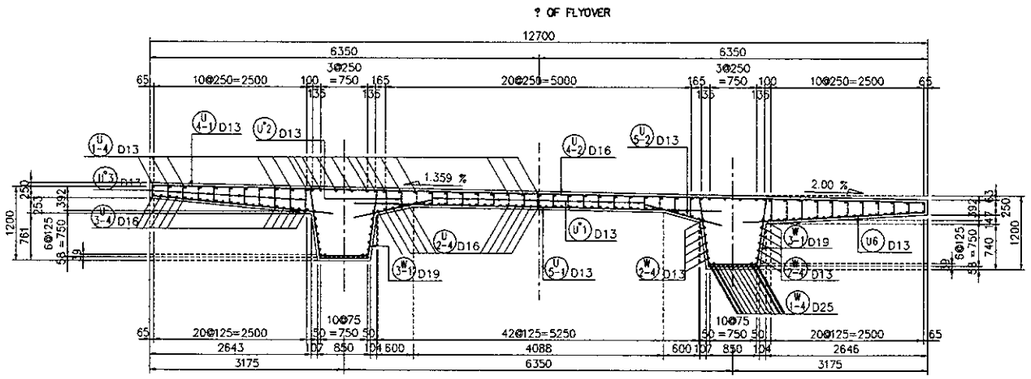
DRAWING NO : BCR-013
SHEET NO : 13 / 22



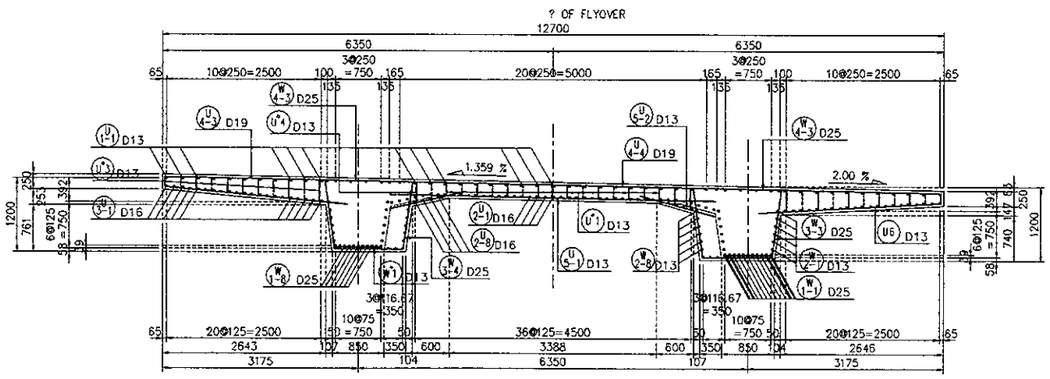
SECTION MID SPAN P6~P7
SCALE : 1 :100



SECTION AT P7
SCALE : 1 : 100

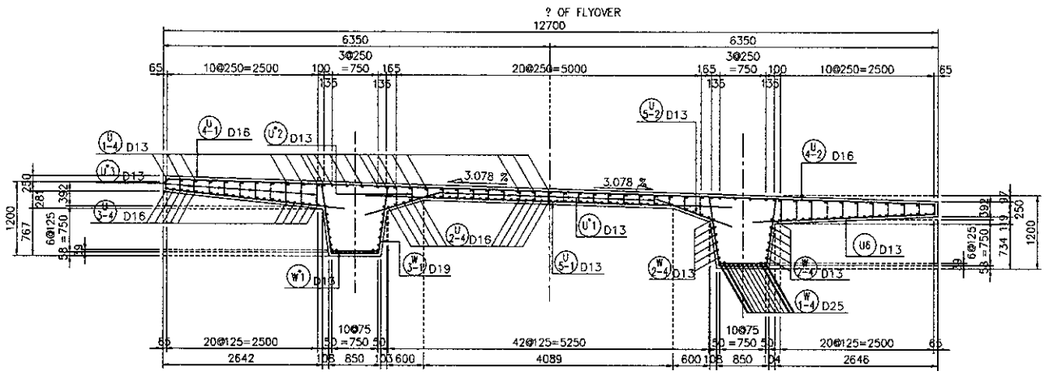


SECTION MID SPAN P7~P8
SCALE : 1 : 100



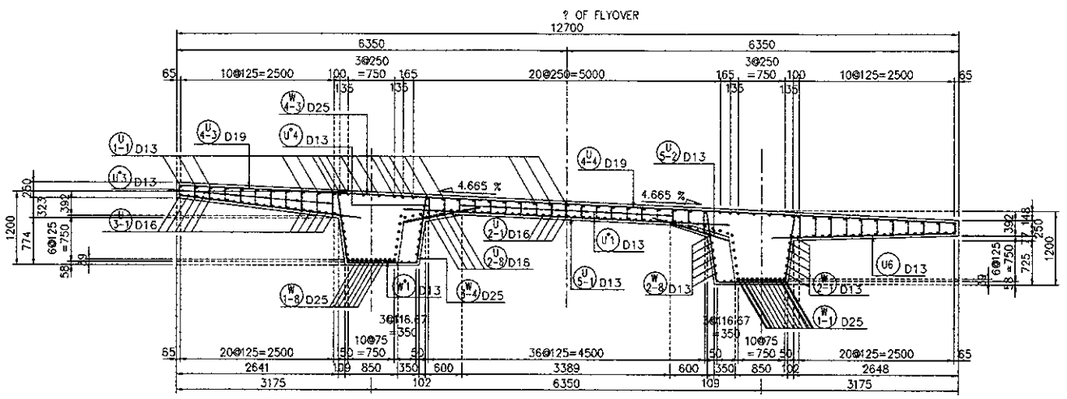
SECTION AT P8
SCALE : 1 : 100

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : 1 : 100 FULL SIZE A3	DRAWING TITLE : ARRANGEMENT OF REINFORCEMENT FOR PC GIRDER P6-A2 (2 OF 2)	DRAWING NO : BCR-014 SHEET NO : 14 / 22
	Name	H.HONDA	Name	T. OKUMURA	Name	M. KIUCHI				
	Sign		Sign		Sign					
	Date		Date		Date		APPROVED BY Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400 Sign Date			



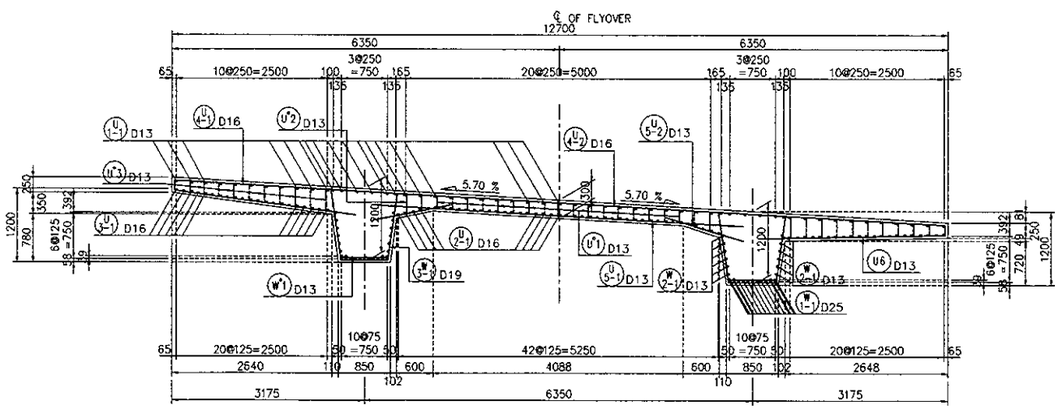
SECTION MID SPAN P8~P9

SCALE : 1 : 100



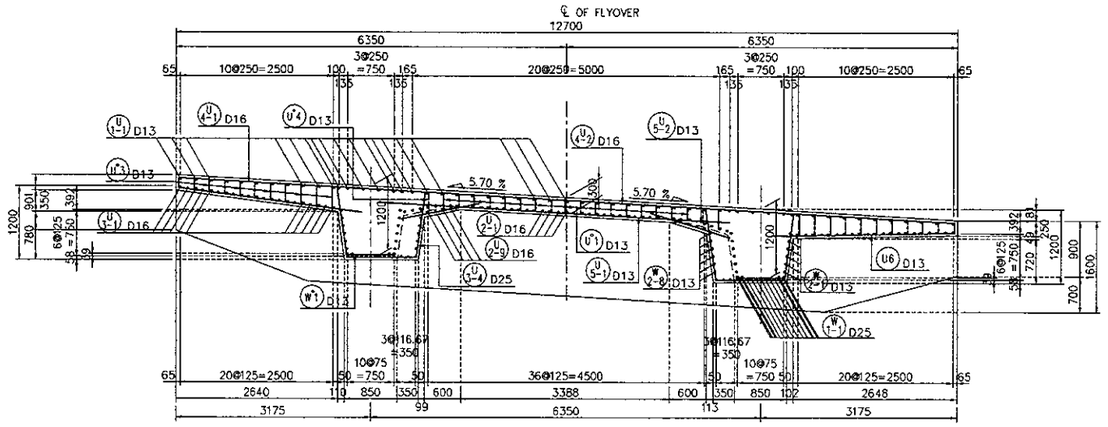
SECTION AT P9

SCALE : 1 : 100



SECTION MID SPAN P9~A2

SCALE : 1 : 100



SECTION AT A2

SCALE : 1 : 100

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	H.HONDA	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

APPROVED BY	Ir. HERRY VAZA M,Eng.Sc	Sign	
	NIP. : 110038400	Date	

PROJECT AND LOCATION :

DETAILED DESIGN STUDY OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

SCALE : 1 : 300

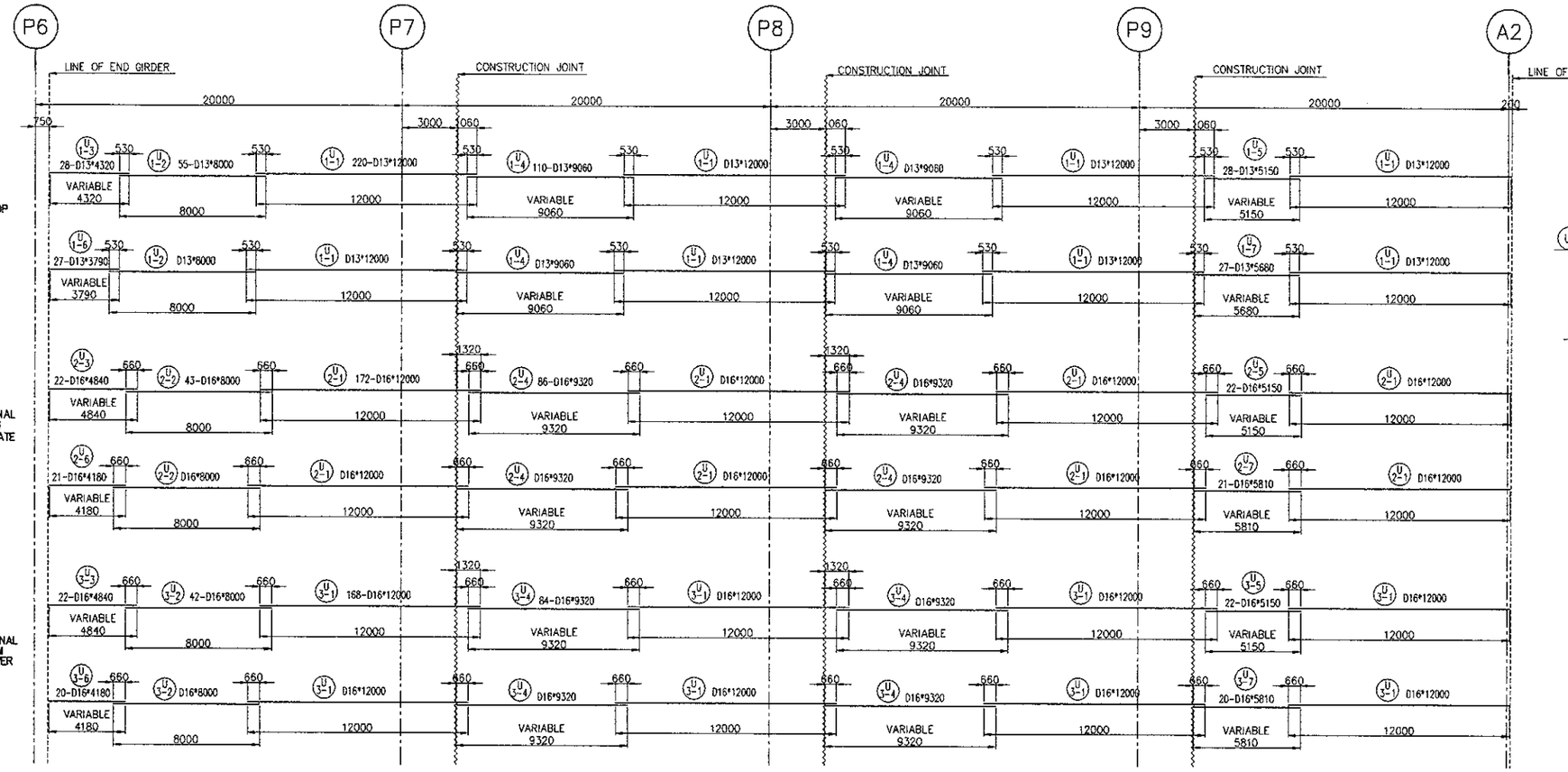
FULL SIZE A3

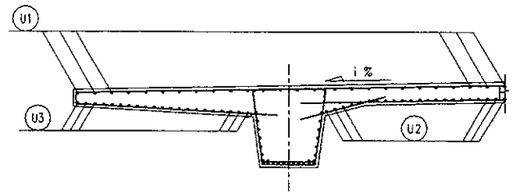
DRAWING TITLE :

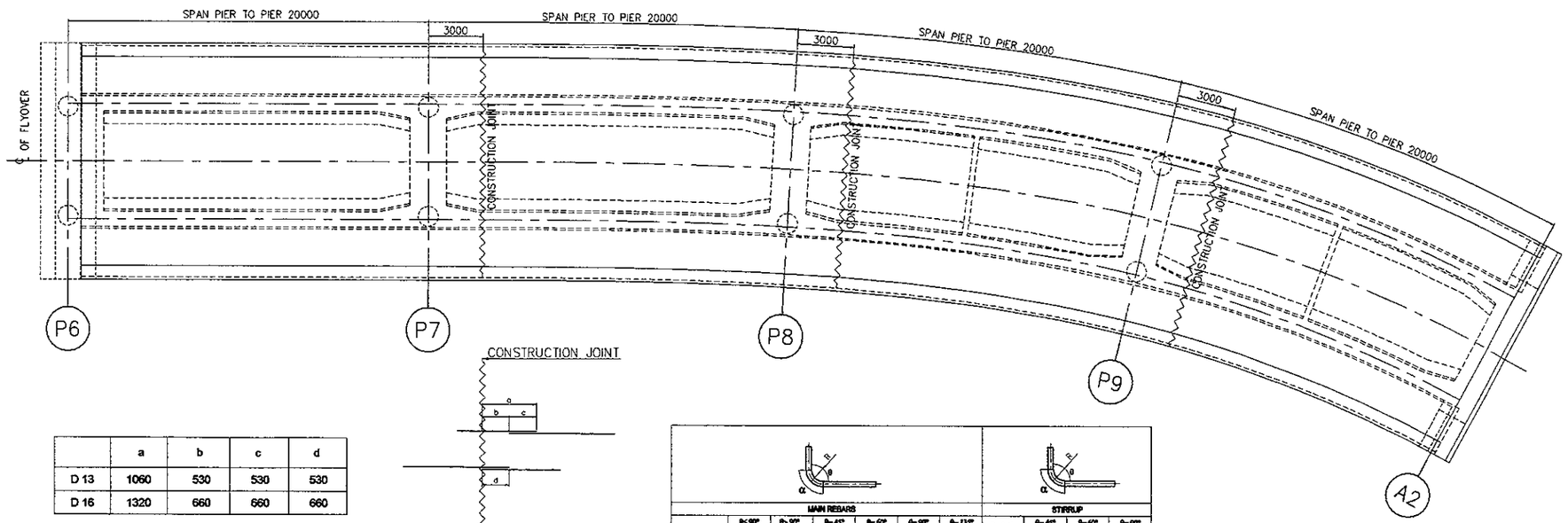
REINFORCEMENT SCHEDULE FOR PC GIRDER P6 - A2 (1 OF 3)

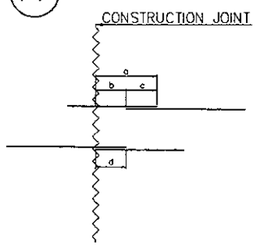
DRAWING NO : BCR-015

SHEET NO : 15 / 22









	a	b	c	d
D 13	1060	530	530	530
D 16	1320	660	660	660

	MAIN REBARS										STIRRUP							
	θ≤90° R=3d	θ>90° R=5.5d	θ=45°		θ=60°		θ=90°		θ=135°		R=2.5d	θ=45°		θ=60°		θ=90°	
			α	Δl	α	Δl	α	Δl	α	Δl		α	Δl	α	Δl	α	Δl
D 13	39	71.5	82	96	82	83	61	17	55	3	32.5	77	80	65	45	61	14
D 16	48	88	113	119	100	85	75	21	69	4	40	94	99	84	55	63	17

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	H.HONDA	Name	T. OKUNURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

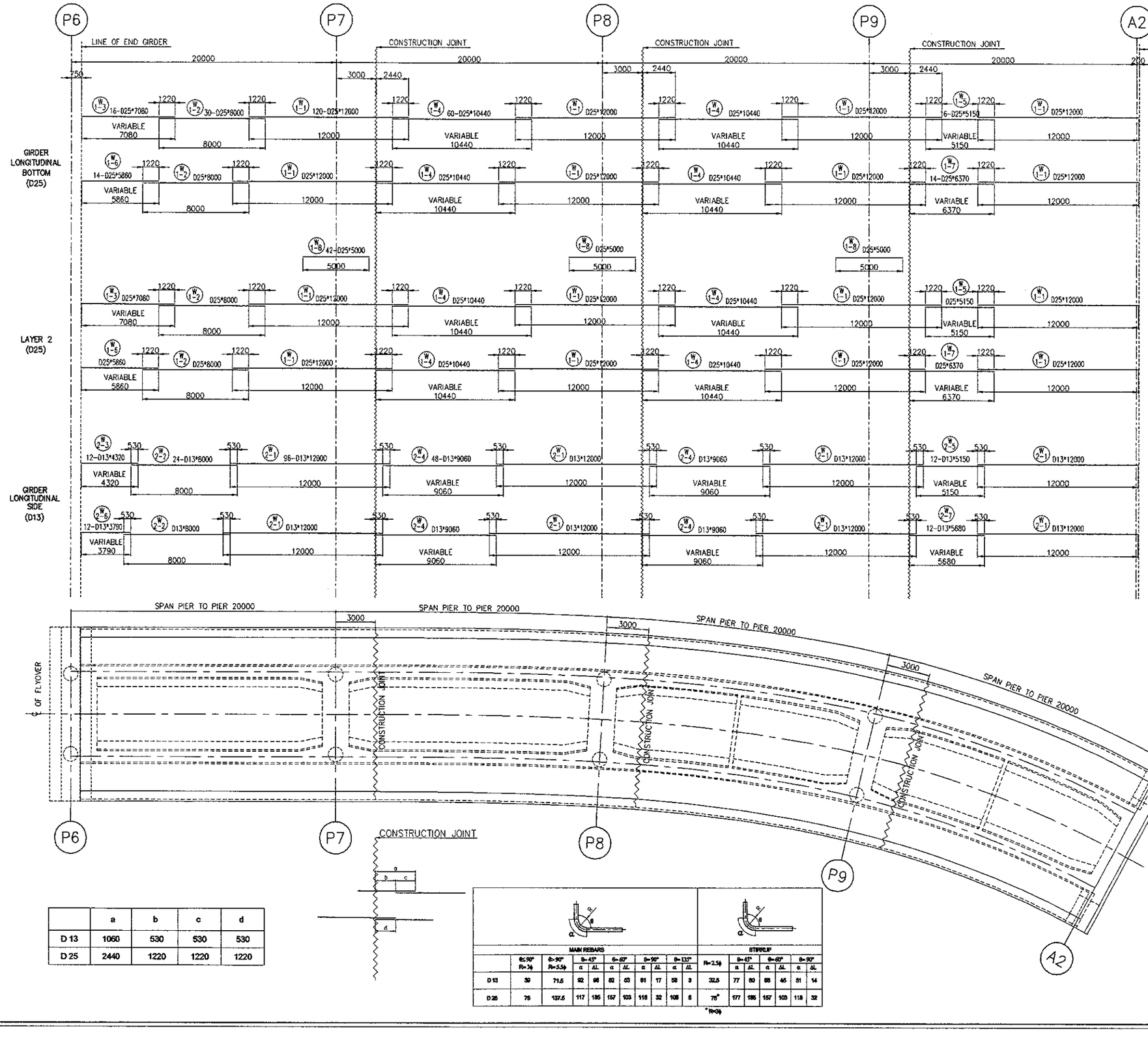
APPROVED BY | Ir. HERRY VAZA M,Eng.Sc | Sign |
NIP. : 110038400 | Date |

PROJECT AND LOCATION :
DETAILED DESIGN STUDY OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

SCALE : 1 : 300
FULL SIZE A3

DRAWING TITLE :
REINFORCEMENT SCHEDULE FOR PC GIRDER P6 - A2 (2 OF 3)

DRAWING NO : BCR-016
SHEET NO : 16 / 22

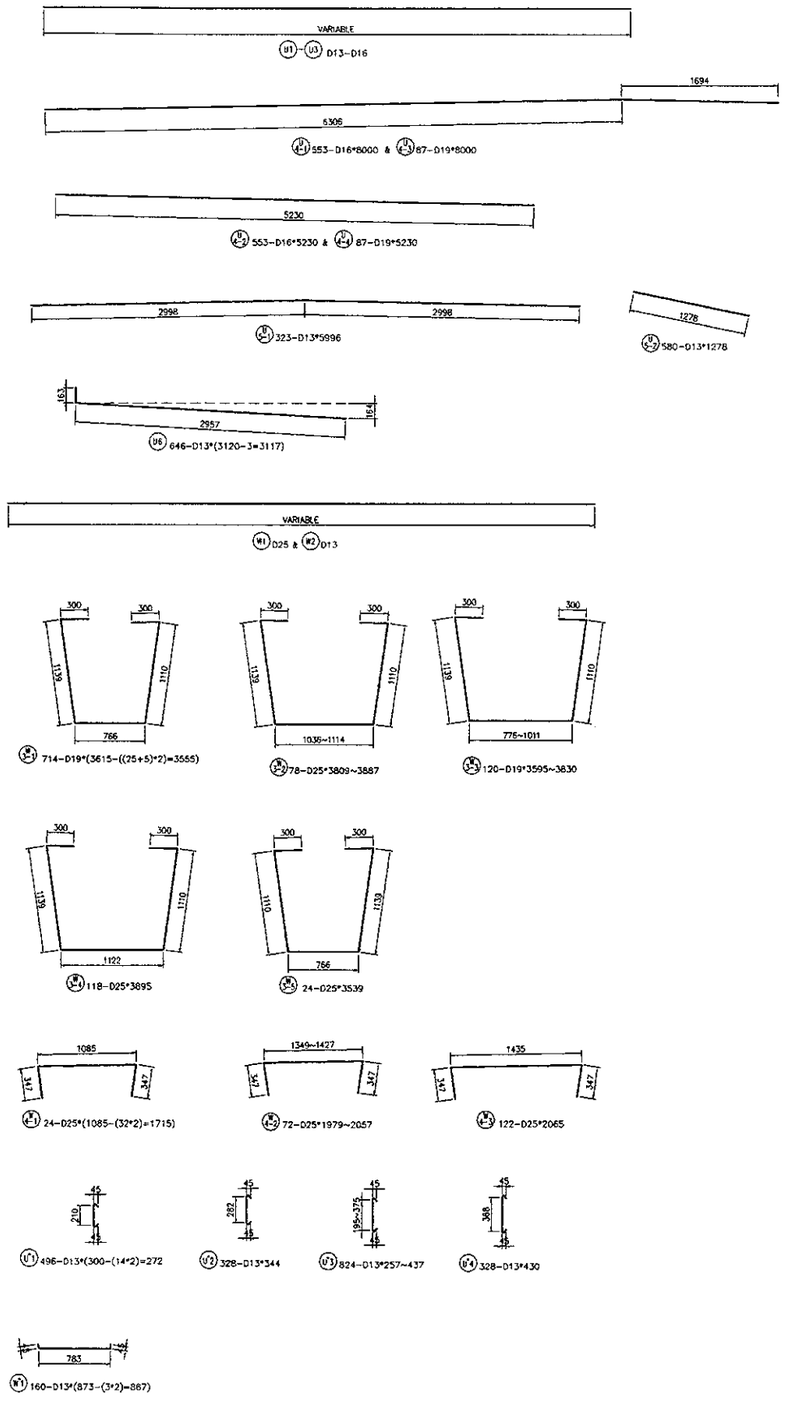


	a	b	c	d
D 13	1060	530	530	530
D 25	2440	1220	1220	1220

	MAIN REBARS										STIRRUP						
	θ≤90° R=3d	θ>90° R=5.5d	θ=45° α	θ=45° Δl	θ=60° α	θ=60° Δl	θ=90° α	θ=90° Δl	θ=135° α	θ=135° Δl	R=2.5d	θ=45° α	θ=45° Δl	θ=60° α	θ=60° Δl	θ=90° α	θ=90° Δl
D 13	39	71.5	92	98	82	63	61	17	58	3	32.5	77	80	68	45	51	14
D 25	75	137.5	117	185	157	103	118	32	108	6	75*	177	185	157	103	118	32

*R=3d

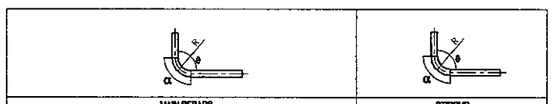
JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : NTS FULL SIZE A3	DRAWING TITLE : REINFORCEMENT SCHEDULE FOR PC GIRDER P6-A2 (3 0F 3)	DRAWING NO : BCR-017 SHEET NO : 17 / 22
	Name	H.HONDA	Name	T. OKUNURA	Name	M. KIUCHI					
	Sign		Sign		Sign						
	Date		Date		Date		APPROVED BY : Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400 Sign Date				



BAR BENDING SCHEDULE

REBAR NAME	DIA. (mm)	LENGTH (mm)	NOS.	UNIT WEIGHT (kg/m')	WEIGHT (kg)	TOTAL WEIGHT (kg)	DIAGRAM	REMARKS
U 1 - 1	13	12000	220	1.04	12.48	2746		
U 1 - 2	13	8000	55	1.04	8.32	458		
U 1 - 3	13	4320	28	1.04	4.49	126		varies length
U 1 - 4	13	9060	110	1.04	9.42	1036		varies length
U 1 - 5	13	5150	28	1.04	5.36	150		varies length
U 1 - 6	13	3790	27	1.04	3.94	106		varies length
U 1 - 7	13	5680	27	1.04	5.91	159		varies length
U 2 - 1	16	12000	172	1.58	18.96	3261		
U 2 - 2	16	8000	43	1.58	12.64	544		
U 2 - 3	16	4840	22	1.58	7.65	168		varies length
U 2 - 4	16	8320	86	1.58	14.73	1266		varies length
U 2 - 5	16	5150	22	1.58	8.14	179		varies length
U 2 - 6	16	4190	21	1.58	6.80	139		varies length
U 2 - 7	16	5810	21	1.58	9.18	193		varies length
U 2 - 8	16	3164	24	1.58	5.00	120		varies length
U 2 - 9	16	1582	8	1.58	2.50	20		varies length
U 3 - 1	16	12000	168	1.58	18.96	3185		
U 3 - 2	16	8000	42	1.58	12.64	531		
U 3 - 3	16	4840	22	1.58	7.65	168		varies length
U 3 - 4	16	8320	84	1.58	14.73	1237		varies length
U 3 - 5	16	5150	22	1.58	8.14	179		varies length
U 3 - 6	16	4180	20	1.58	6.60	132		varies length
U 3 - 7	16	5810	20	1.58	9.18	184		varies length
U 4 - 1	16	8000	553	1.58	12.64	6990		
U 4 - 2	16	5230	553	1.58	8.26	4570		
U 4 - 3	19	8000	87	2.23	17.84	1552		
U 4 - 4	19	5230	87	2.23	11.66	1015		
U 5 - 1	13	5896	323	1.04	6.24	2014		
U 5 - 2	13	1278	580	1.04	1.33	771		
U 6	13	3117	648	1.04	3.24	2094		
U' 1	13	272	496	1.04	0.28	140		
U' 2	13	344	328	1.04	0.36	117		varies length
U' 3	13	347	824	1.04	0.36	297		varies length
U' 4	13	430	328	1.04	0.45	147		varies length
SUB TOTAL - 1						35994		

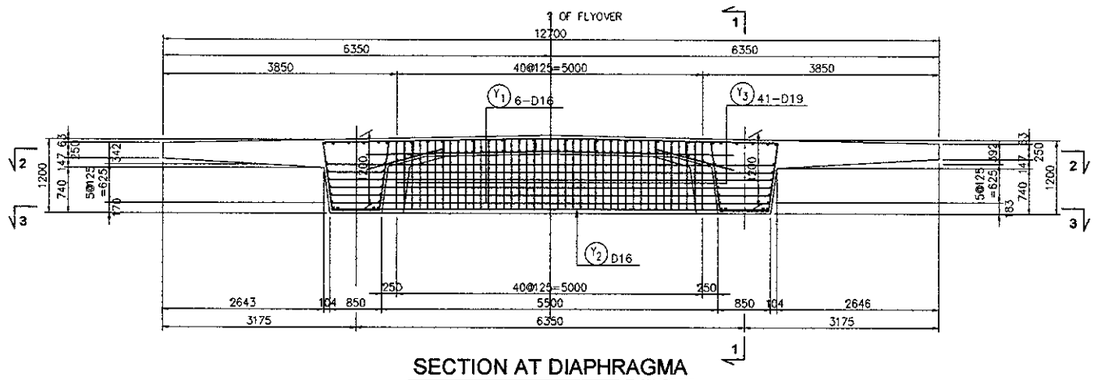
REBAR NAME	DIA. (mm)	LENGTH (mm)	NOS.	UNIT WEIGHT (kg/m')	WEIGHT (kg)	TOTAL WEIGHT (kg)	DIAGRAM	REMARKS
W 1 - 1	25	12000	120	3.85	46.20	5544		
W 1 - 2	25	8000	30	3.85	30.80	924		
W 1 - 3	25	7080	16	3.85	27.26	436		varies length
W 1 - 4	25	10440	60	3.85	40.19	2412		varies length
W 1 - 5	25	5150	16	3.85	19.83	317		varies length
W 1 - 6	25	5860	14	3.85	22.56	316		varies length
W 1 - 7	25	6370	14	3.85	24.52	343		varies length
W 1 - 8	25	5000	42	3.85	19.25	809		
W 1 - 9	25	2630	18	3.85	10.90	196		varies length
W 1 - 10	25	3275	14	3.85	12.61	177		varies length
W 1 - 11	25	1315	6	3.85	5.06	30		varies length
W 2 - 1	13	12000	96	1.04	12.48	1198		
W 2 - 2	13	8000	24	1.04	8.32	200		
W 2 - 3	13	4320	12	1.04	4.49	54		varies length
W 2 - 4	13	9060	48	1.04	9.42	452		varies length
W 2 - 5	13	5150	12	1.04	5.36	64		varies length
W 2 - 6	13	3790	12	1.04	3.94	47		varies length
W 2 - 7	13	5680	12	1.04	5.91	71		varies length
W 2 - 8	13	3185	30	1.04	3.31	99		varies length
W 2 - 9	13	1593	10	1.04	1.66	17		varies length
W 3 - 1	19	3555	714	2.23	7.93	5660		
W 3 - 2	25	3846	78	3.85	14.81	1155		varies length
W 3 - 3	19	3693	120	2.23	8.21	986		varies length
W 3 - 4	25	3895	118	3.85	15.00	1769		
W 3 - 5	25	3539	24	3.85	13.63	327		
W 4 - 1	25	1715	24	3.85	6.60	158		
W 4 - 2	25	2018	72	3.85	7.77	559		varies length
W 4 - 3	25	2065	122	3.85	7.95	970		
WP 1	13	867	160	1.04	0.90	144		
SUB TOTAL - 2						25435		
TOTAL REBAR WEIGHT P6-A2						61429		



	MAIN REBARS										STIRRUP						
	θ≤90° R=3ϕ	θ>90° R=5.5ϕ	θ=45° α	θ=45° Δl	θ=60° α	θ=60° Δl	θ=90° α	θ=90° Δl	θ=135° α	θ=135° Δl	R=2.5ϕ	θ=45° α	θ=45° Δl	θ=60° α	θ=60° Δl	θ=90° α	θ=90° Δl
D 13	39	71.5	92	66	82	53	61	17	56	3	32.5	77	80	68	45	51	14
D 16	48	88	113	119	100	66	75	21	69	4	40	94	99	84	55	63	17
D 19	57	104.5	134	141	119	78	89	25	82	5	47.5	112	117	99	65	76	20
D 25	75	137.5	177	186	157	103	118	32	108	6	75*	177	185	157	103	118	32

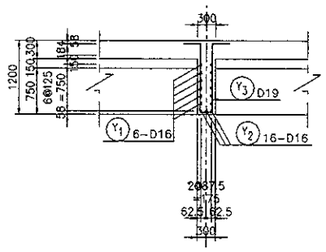
* R=3ϕ

JICA JAPAN INTERNATIONAL COOPERATION AGENCY / KEI KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY: Name H.HONDA, Sign, Date	CHECKED BY: Name T. OKUMURA, Sign, Date	SUBMITTED BY: Name M. KIUCHI, Sign, Date	REPUBLIC OF INDONESIA / MINISTRY OF PUBLIC WORKS / DIRECTORATE GENERAL OF HIGHWAYS. APPROVED BY: ir. HERRY VAZA M,Eng.Sc, NIP. : 110038400, Sign, Date	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT / BALARAJA FLYOVER - CONTRACT PACKAGE 1 / (MERAK - BALARAJA) / BANTEN PROVINCE	SCALE : 1 : 100, FULL SIZE A3	DRAWING TITLE : ARRANGEMENT OF REINFORCEMENT FOR CROSS BEAMS DIAPHRAGMA P6-A2	DRAWING NO : BCR-018, SHEET NO : 18 / 22



SECTION AT DIAPHRAGMA

SCALE : 1 :100



SECTION 1 - 1

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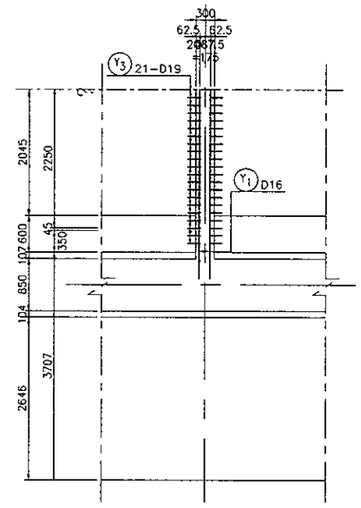
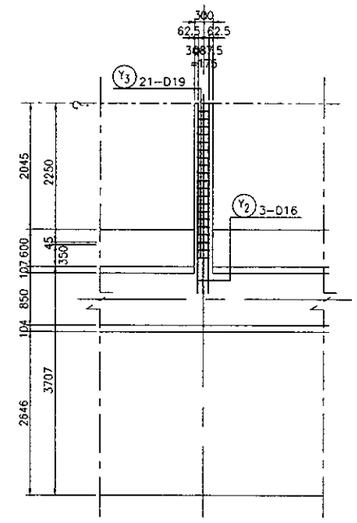


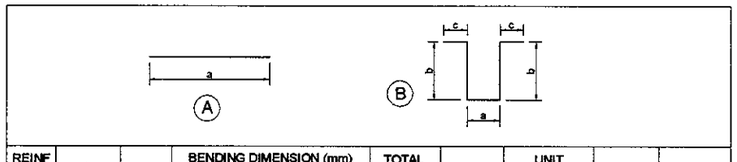
SECTION 2 - 2

1 : 100



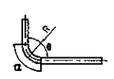
SECTION 3 - 3

SCALE : 1 : 100

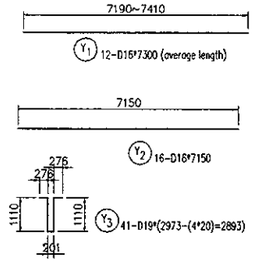


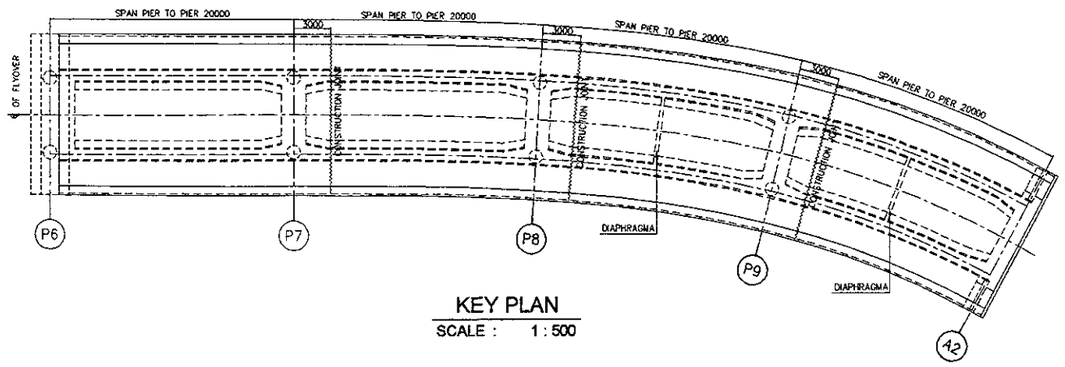
REINF NO.	ϕ (mm)	TYPE	BENDING DIMENSION (mm) a	b	c	d	TOTAL LENGTH (m)	NUMBER	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REMARK
DIAPHRAGMA											
Y 1	D16	A	7300				7.3	12	1.58	138	—
2	D16	A	7150				7.15	16	1.58	181	—
3	D19	B	201	1110	276		2.893	41	2.23	265	⊔
									D19	265	
									D16	319	
									TOTAL (per 1 diaphragma)	584	
DIAPHRAGMA LOCATION			P6 - A2 (P8~P9, P9~A2)								
REBAR WEIGHT TOTAL			584 x 2 = 1168 kg								

STIRRUP



	R= 2.5ϕ	θ= 45° α	θ= 45° ΔL	θ= 60° α	θ= 60° ΔL	θ= 90° α	θ= 90° ΔL
D16	40	84	99	84	55	63	17
D19	47.5	112	117	99	66	75	20

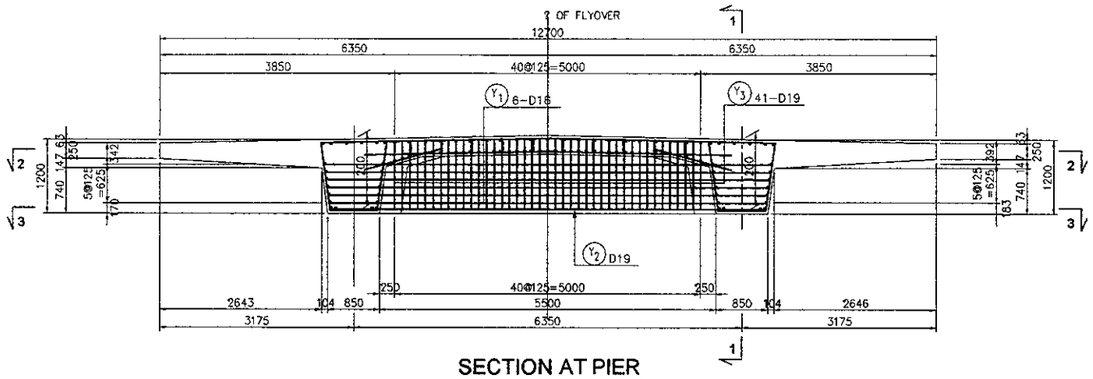




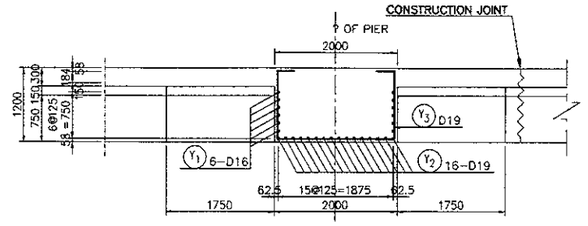
KEY PLAN

SCALE : 1 : 500

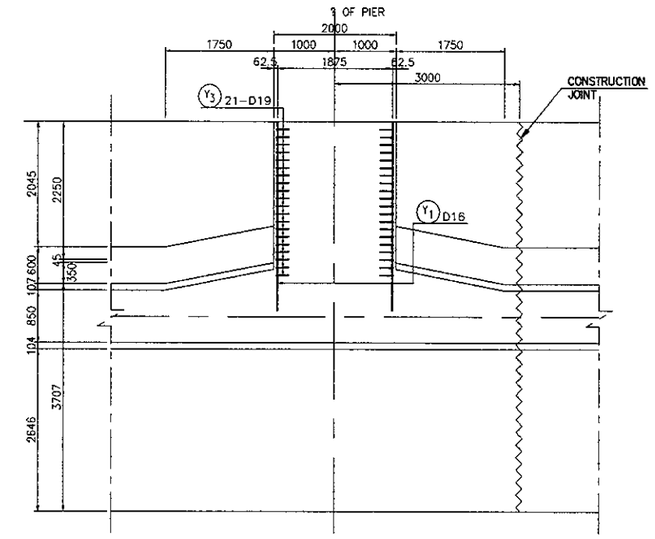
JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY: Name H.HONDA, Sign, Date	CHECKED BY: Name T. OKUMURA, Sign, Date	SUBMITTED BY: Name M. KIUCHI, Sign, Date	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS APPROVED BY: Ir. HERRY VAZA M,Eng.Sc, NIP. : 110038400, Sign, Date	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : 1 : 100 FULL SIZE A3	DRAWING TITLE : ARRANGEMENT OF REINFORCEMENT FOR CROSS BEAMS P7, P8, P9	DRAWING NO : BCR-019 SHEET NO : 19 / 22



SECTION AT PIER
SCALE : 1 :100



SECTION 1 - 1
SCALE : 1 : 100

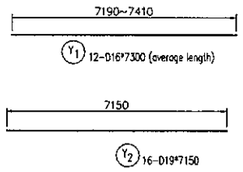


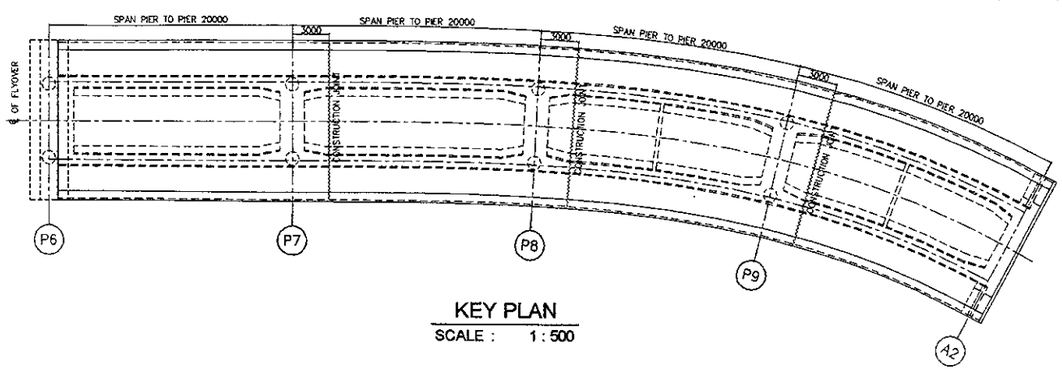
SECTION 2 - 2
SCALE : 1 : 100

REINF NO.	ϕ (mm)	TYPE	BENDING DIMENSION (mm) a	b	c	d	TOTAL LENGTH (m)	NUMBER	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REMARK
PIER											
Y 1	D16	A	7300				7.3	12	1.58	138	—
2	D19	A	7150				7.15	16	2.23	255	—
3	D19	B	1901	1043	276		4.46	41	2.23	408	[ ]
									D19	663	
									D16	138	
									TOTAL (per 1 pier)	801	
PIER LOCATION			P6 - A2 (P7, P8, P9)								
REBAR WEIGHT TOTAL			801 x 3 = 2403 kg								

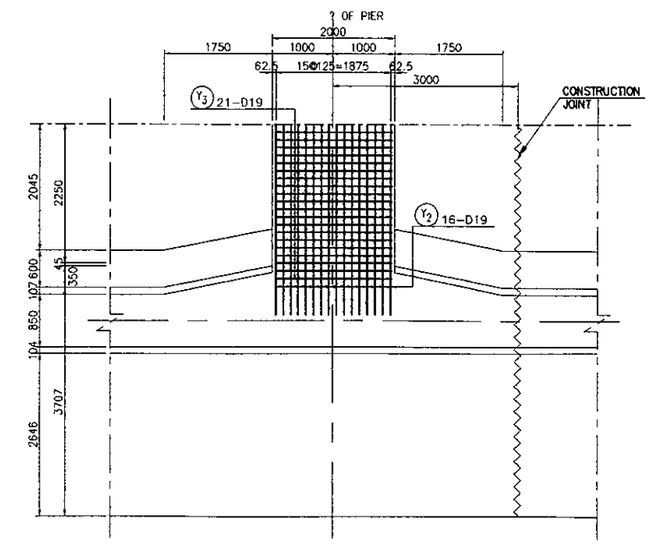
STIRRUP

	R= 2.5ϕ	θ= 45°		θ= 60°		θ= 90°	
		α	ΔL	α	ΔL	α	ΔL
D16	40	94	99	84	55	63	17
D19	47.5	112	117	99	66	75	20





KEY PLAN
SCALE : 1 : 500



SECTION 3 - 3
SCALE : 1 : 100

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	H.HONDA	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

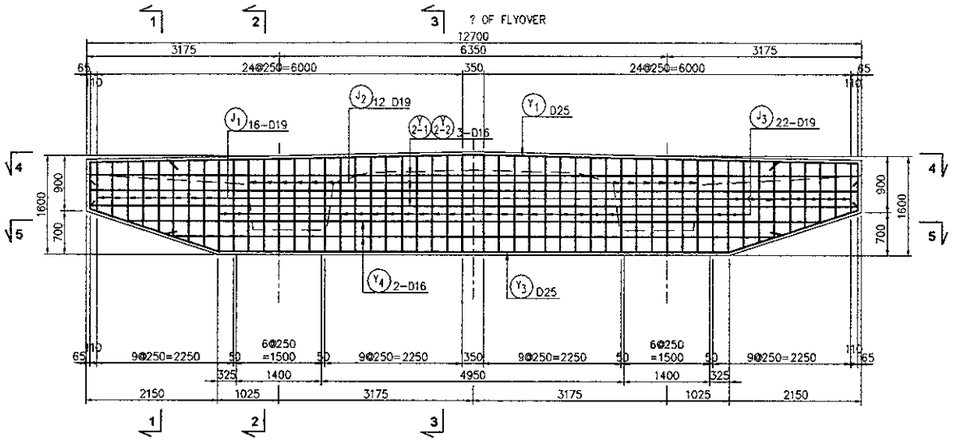
APPROVED BY | Ir. HERRY VAZA M,Eng.Sc | Sign
NIP. : 110038400 | Date

PROJECT AND LOCATION :
DETAILED DESIGN STUDY OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

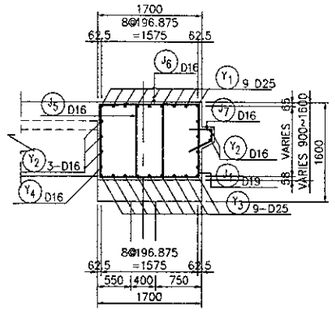
SCALE : 1 : 100
FULL SIZE A3

DRAWING TITLE :
ARRANGEMENT OF REINFORCEMENT FOR CROSS BEAMS A2

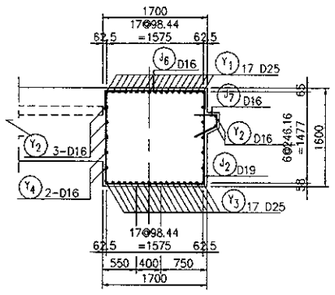
DRAWING NO : BCR-020
SHEET NO : 20 / 22



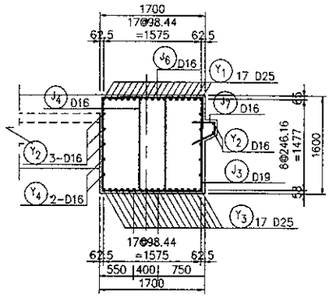
SECTION AT ABUTMENT
SCALE : 1 :100



SECTION 1 - 1
SCALE : 1 : 100

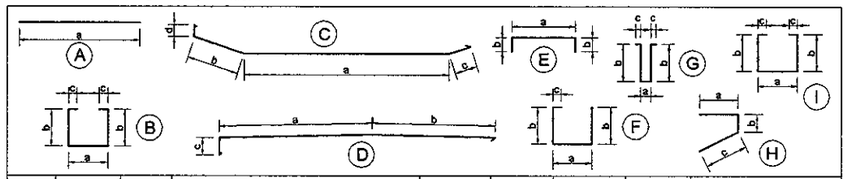


SECTION 2 - 2
SCALE : 1 : 100

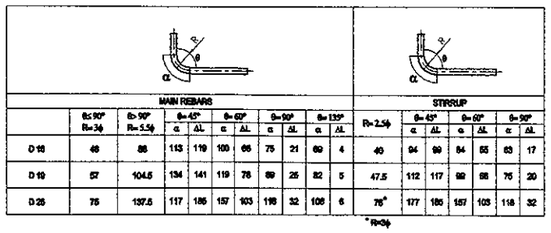


SECTION 3 - 3
SCALE : 1 : 100

BAR BENDING ABUTMENT

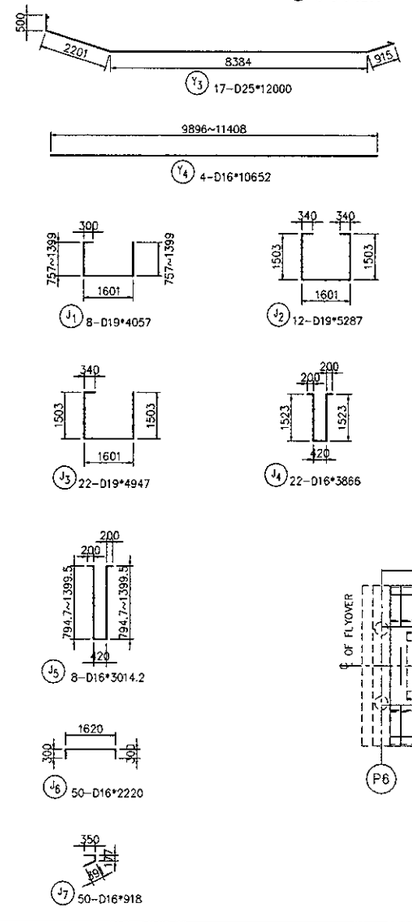


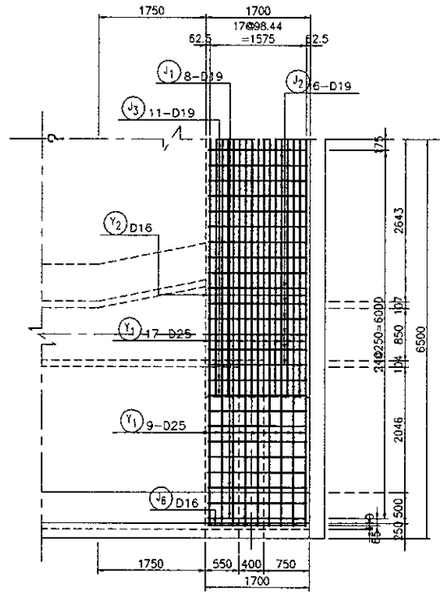
REINF NO.	ϕ (mm)	TYPE	BENDING DIMENSION (mm) a	b	c	d	e	TOTAL LENGTH (m)	NUMBER	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REMARK
A2												
J 1	D19	F	1601	1078	300			4.57	8	2.23	82	
2	D19	I	1601	1503	340			5.287	12	2.23	141	
3	D19	F	1601	1503	340			4.947	22	2.23	243	
4	D16	G	420	1523	200			3.866	22	1.58	134	
5	D16	G	420	1097.1	200			3.0142	8	1.58	38	
6	D16	E	1620	300				2.22	50	1.58	175	
7	D16	H	350	177	391			0.918	50	1.58	73	
Y 1	D25	D	6286	5014	700			12	17	3.85	785	
2-1	D16	A	8000					8	3	1.58	38	
2-2	D16	A	5230					5.23	3	1.58	25	
3	D25	C	8384	2201	915	500		12	17	3.85	785	
4	D16	A	10652					10.652	4	1.58	67	
										D25	1570	
										D19	466	
										D16	550	
										REBAR WEIGHT TOTAL	2586 kg	



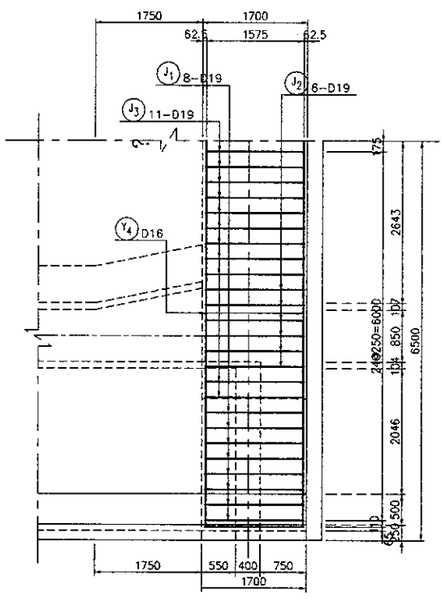
	MAIN REBARS									STIRRUP						
	θ≤90° R=3ϕ	θ>90° R=5.5ϕ	θ=45° a	θ=45° ΔL	θ=60° a	θ=60° ΔL	θ=90° a	θ=90° ΔL	θ=135° a	θ=135° ΔL	R=2.5ϕ	θ=45° a	θ=45° ΔL	θ=60° a	θ=60° ΔL	θ=90° a	θ=90° ΔL
D 16	48	88	113	119	109	66	75	21	69	4	40	94	99	84	55	63	17
D 19	57	104.5	134	141	119	78	89	25	82	5	47.5	112	117	99	66	75	20
D 25	75	137.5	117	186	157	103	118	32	108	6	75*	177	186	157	103	118	32

* R=4ϕ

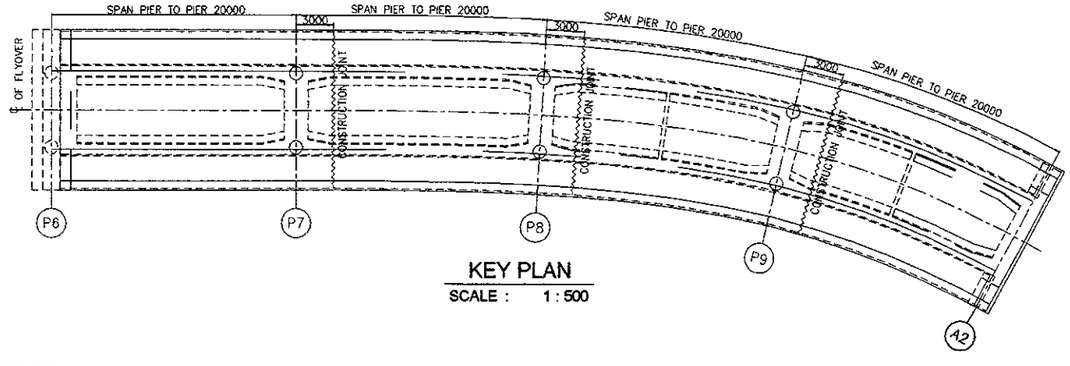




SECTION 4 - 4
SCALE : 1 : 100



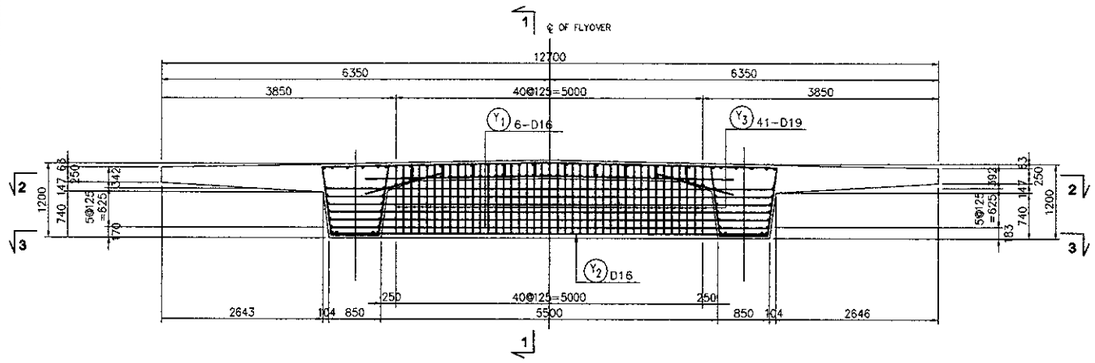
SECTION 5 - 5
SCALE : 1 : 100



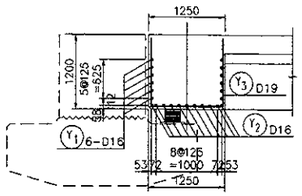
KEY PLAN
SCALE : 1 : 500

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY	H.HONDA	CHECKED BY	T. OKUMURA	SUBMITTED BY	M. KIUCHI	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS
	Sign		Sign		Sign		APPROVED BY: Ir. HERRY VAZA M,Eng.Sc (NIP. : 110038400) Sign / Date
	Date		Date		Date		

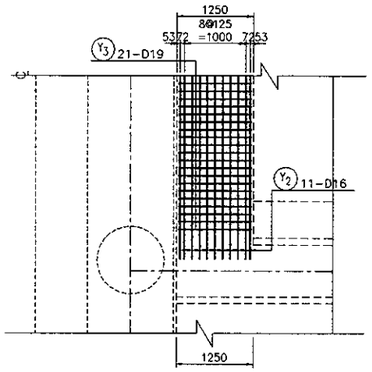
PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 100 1 : 500 FULL SIZE A3	ARRANGEMENT OF REINFORCEMENT FOR CROSS BEAMS P6	BCR-021 SHEET NO : 21 / 22



SECTION AT COPING PIER
SCALE : 1 :100



SECTION 1 - 1
SCALE : 1 : 100



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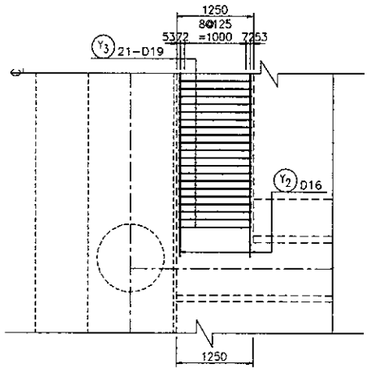
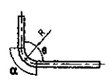


SECTION 3 - 3
SCALE : 1 : 100

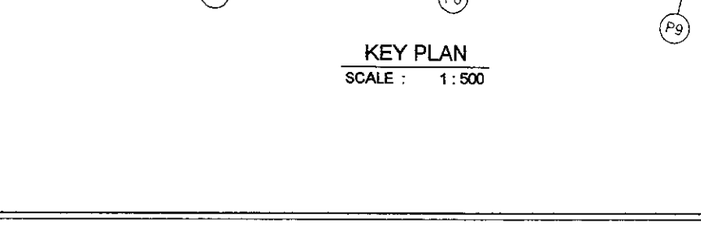
BAR BENDING

REINF NO.	ϕ (mm)	TYPE	BENDING DIMENSION (mm) a	b	c	d	TOTAL LENGTH (cm)	NUMBER	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REMARK
PIER											
Y 1	D16	A	7300				7.3	12	1.58	138	—
2	D16	A	7150				7.15	11	1.58	124	—
3	D19	B	1165	1110			3.345	41	2.23	306	⌊
									D19	306	
									D16	262	
								REBAR WEIGHT TOTAL		568 kg	

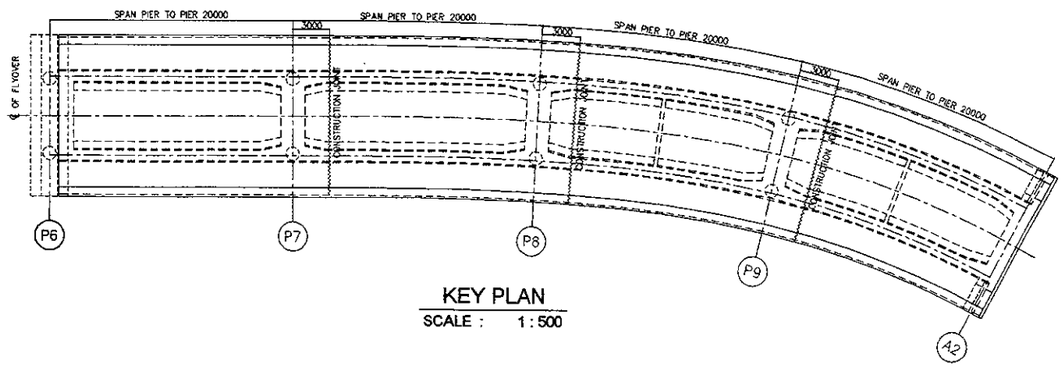
STIRRUP



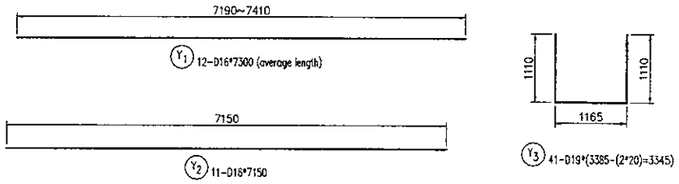
	R= 2.5ϕ	θ= 45° α	θ= 45° ΔL	θ= 60° α	θ= 60° ΔL	θ= 90° α	θ= 90° ΔL
D16	40	94	99	84	55	83	17
D19	47.5	112	117	99	66	75	20



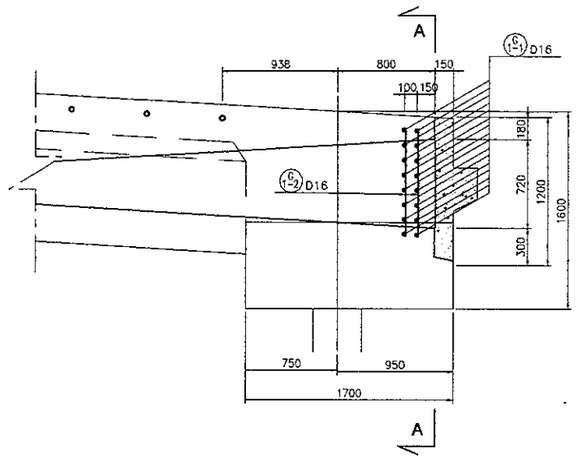
SECTION
SCALE : 1 :100



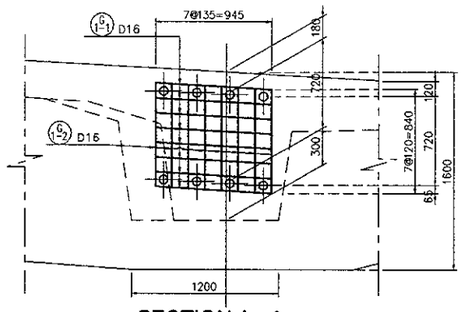
KEY PLAN
SCALE : 1 : 500



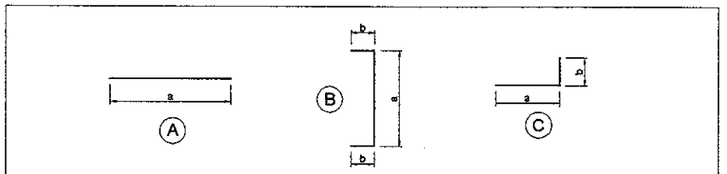
JICA JAPAN INTERNATIONAL COOPERATION AGENCY KEI KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY: Name H.HONDA, Sign, Date	CHECKED BY: Name T. OKUNURA, Sign, Date	SUBMITTED BY: Name M. KIUCHI, Sign, Date	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS APPROVED BY: Ir. HERRY VAZA M,Eng.Sc, NIP. : 110038400, Sign, Date	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : 1 : 50 FULL SIZE A3	DRAWING TITLE : ARRANGEMENT OF REINFORCEMENT FOR ANCHORAGE P6 - A2	DRAWING NO : BCR-022 SHEET NO : 22 / 22



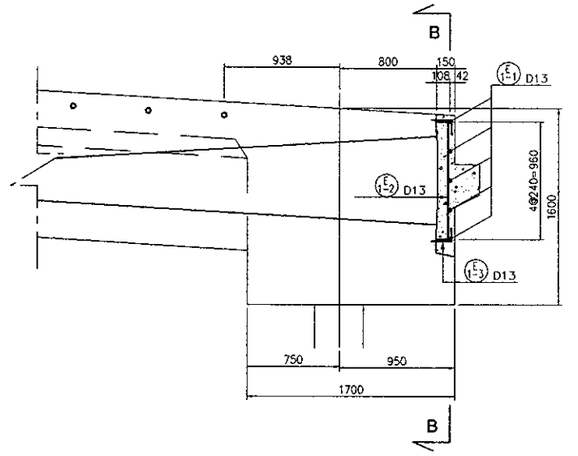
SECTION END ANCHORAGE
SCALE : 1 : 50



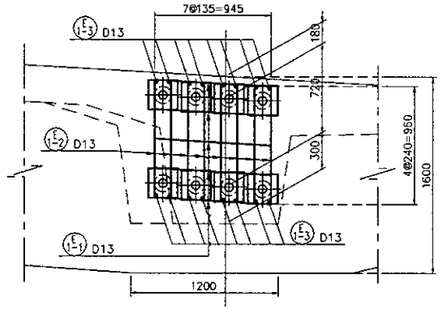
SECTION A - A
SCALE : 1 : 50



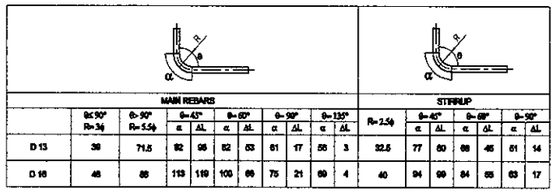
REINF NO.	ϕ (mm)	TYPE	BENDING DIMENSION (mm) a	b	c	d	TOTAL LENGTH (m)	NUMBER	UNIT WEIGHT (kg/m')	WEIGHT (kg)	REMARK
E 1-1	D13	A	945				0.945	16	1.04	16	—
E 1-2	D13	B	960	100			1.132	10	1.04	12	⌊⌋
E 1-3	D13	C	150	50			0.186	32	1.04	6	⌊
G 1-1	D16	A	945				0.945	32	1.58	48	—
G 1-2	D16	A	840				0.84	32	1.58	43	—
									D16	91	
									D13	34	
								REBAR WEIGHT TOTAL		125 kg	

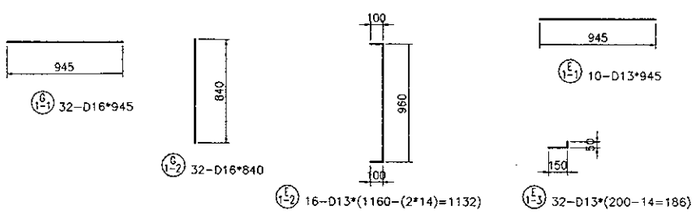


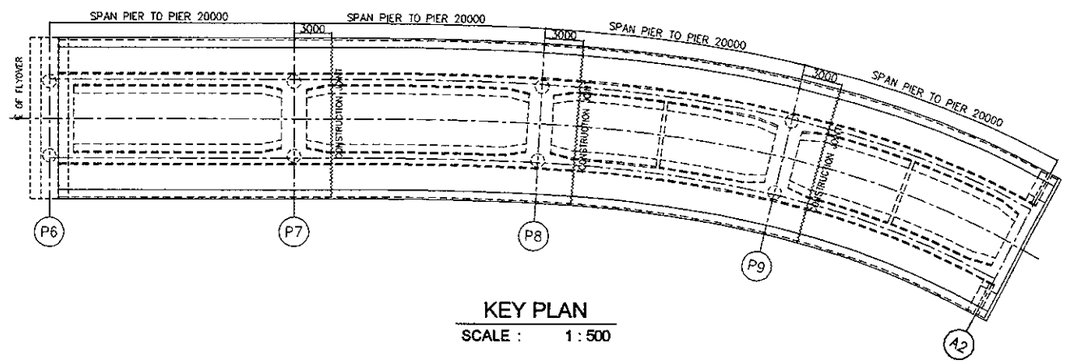
SECTION END ANCHORAGE
SCALE : 1 : 50



SECTION B - B
SCALE : 1 : 50







KEY PLAN
SCALE : 1 : 500

JAPAN INTERNATIONAL
COOPERATION AGENCY

DIRECTORATE GENERAL OF HIGHWAY
MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

MISCELLANEOUS

KATAHIRA & ENGINEERS INTERNATIONAL

JAPAN INTERNATIONAL COOPERATION AGENCY / KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY	CHECKED BY	SUBMITTED BY	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
	Name S. MATSUI	Name T. OKUMURA	Name M. KIUCHI	APPROVED BY ir. HERRY VAZA M,Eng.Sc	DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	NOT TO SCALE FULL SIZE A3	QUANTITIES SUMMARY FOR SUPERSTRUCTURE MISCELLANEOUS	BSM-01 SHEET NO : 01 / 10
	Sign	Sign	Sign	NIP. : 110038400				
	Date	Date	Date	Sign / Date				

SUPPLEMENTARIES FOR STEEL SUPERSTRUCTURE

NO.	I T E M	UNIT	QUANTITY	NOTES
1	BEARING : – MOVEABLE TYPE B1 (ø485x69.5mm)	pcs	4	
2	STOPPER (ø300x143mm)	pcs	4	
3	EXPANSION JOINT : – PIER P3 – PIER P6	m' m'	2 2	
4	RESTRAINER : – PIER P3 TYPE 3 (TP–200) – PIER P6 TYPE 3 (TP–200)	pcs pcs	2 2	
5	PARAPET	m'	162	NO OUTER GUTTER
6	MEDIAN	m'	–	HIGHWAY PORTION

SUPPLEMENTARIES FOR PC SUPERSTRUCTURE

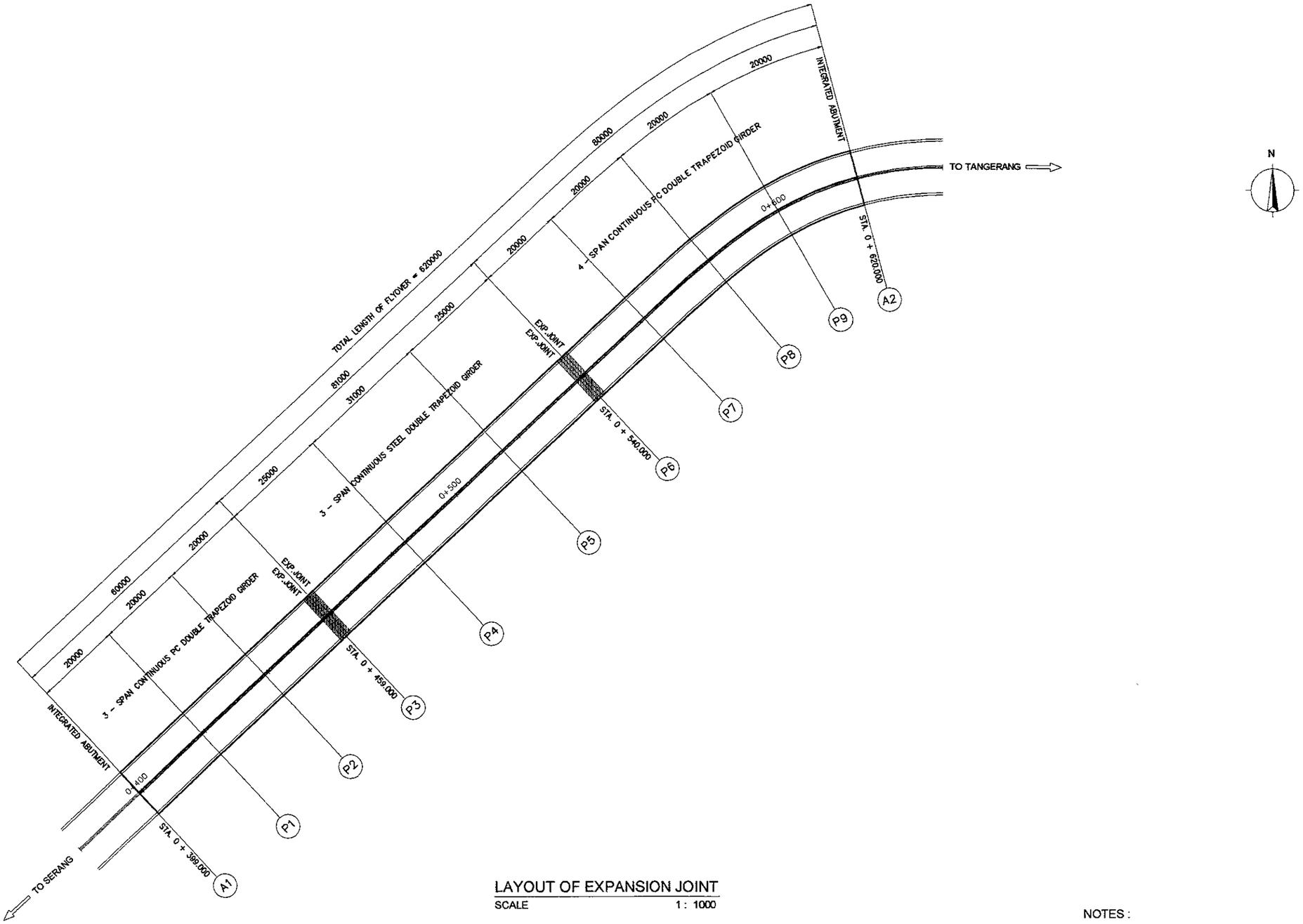
NO.	I T E M	UNIT	QUANTITY	NOTES
1	BEARING : – TYPE A3 (570x570x133mm)	pcs	4	
2	STOPPER (ø55x143mm)	pcs	14	
3	PARAPET	m'	280.0	NO OUTER GUTTER
4	MEDIAN	m'	–	HIGHWAY PORTION
5	EXPANSION JOINT	m'	65.0	

JAPAN INTERNATIONAL COOPERATION AGENCY / KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY	CHECKED BY	SUBMITTED BY
	Name: S. MATSUI	Name: T. OKUMURA	Name: M. KIUCHI
	Sign:	Sign:	Sign:
	Date:	Date:	Date:

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

APPROVED BY: Ir. HERRY VAZA M,Eng.Sc (NIP. : 110038400) — Sign: — Date:

PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 1000 FULL SIZE A3	EXPANSION JOINT LAY OUT PLAN	BSM-002 SHEET NO : 02 / 10

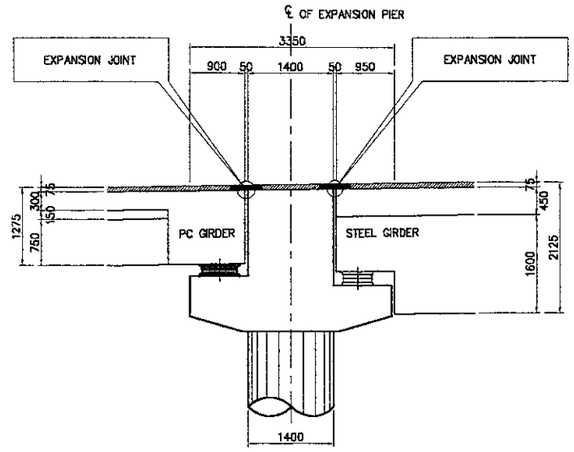


LAYOUT OF EXPANSION JOINT
SCALE 1 : 1000

NOTES :
1. TOTAL MOVEMENT OF EACH TYPE OF EXPANSION JOINTS = 50 mm
2. THE DETAIL OF EXPANSION JOINTS SEE DWG. NO. BSM-03
3. ALL DIMENSIONS ARE IN MILIMETERS

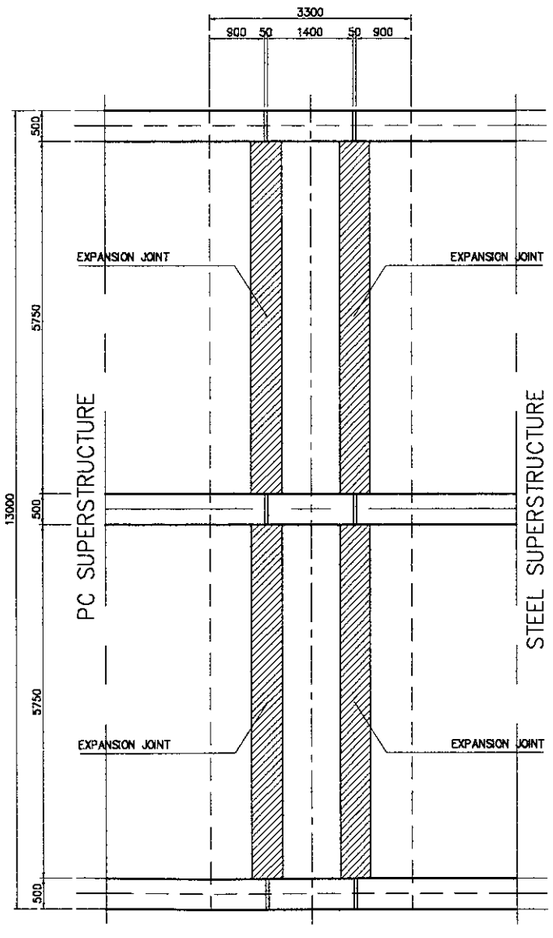
JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS
	Name	S. MATSUI	Name	T. OKUMURA	Name	M. KIUCHI	
	Sign		Sign		Sign		APPROVED BY: Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400
	Date		Date		Date		Sign / Date

PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 5 1 : 100 1 : 1000 FULL SIZE A3	DETAIL OF EXPANSION JOINT	BSM-003 SHEET NO : 03 / 10



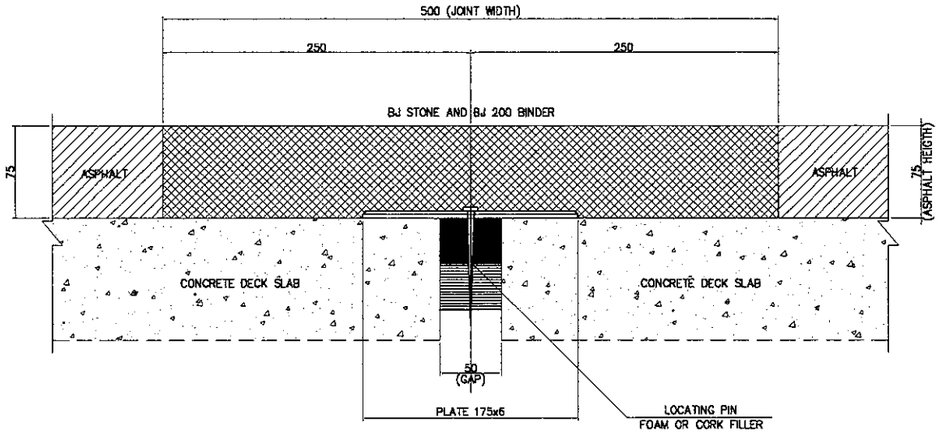
PROFILE OF PIER

SCALE 1 : 100



PLAN SECTION

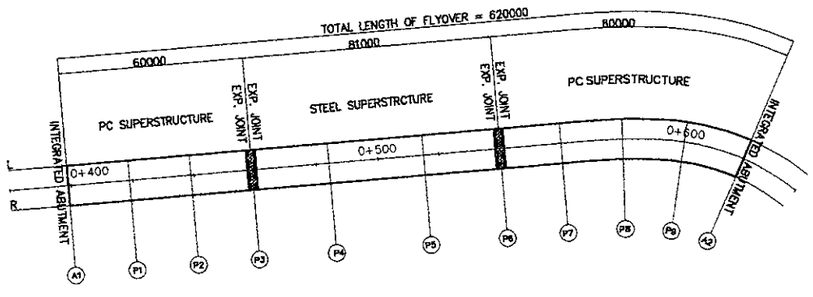
SCALE 1 : 100



* MAXIMUM MOVEMENT HORIZONTAL 50 MM
* MAXIMUM MOVEMENT VERTICAL 2 MM

DETAIL - A

SCALE 1 : 5



KEY PLAN

SCALE 1 : 1000

NOTES :

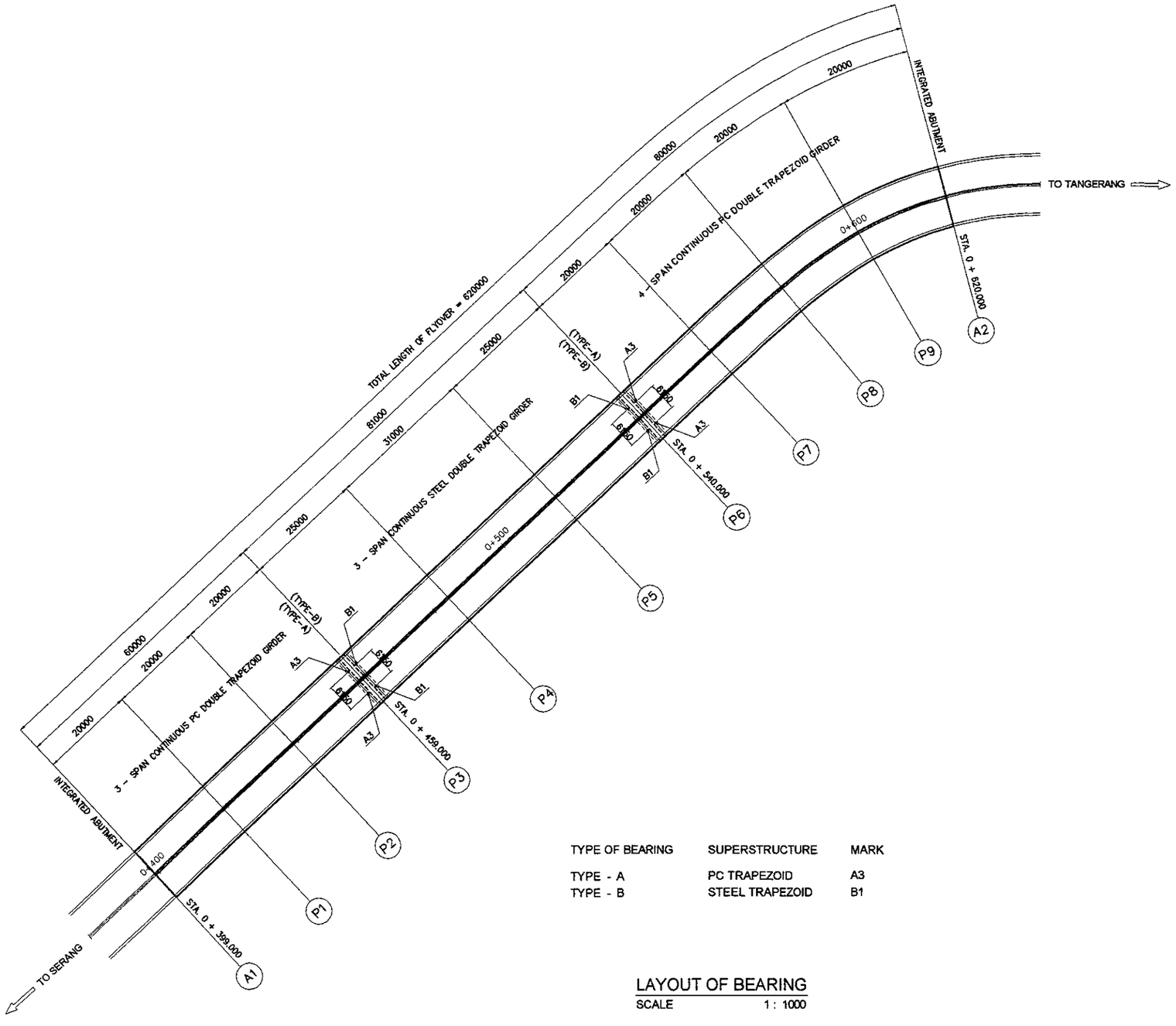
ALL DIMENSIONS ARE IN MILIMETERS

JAPAN INTERNATIONAL COOPERATION AGENCY / KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY	CHECKED BY	SUBMITTED BY
	Name: S. MATSUI	Name: T.OKUMURA	Name: M. KIUCHI
	Sign:	Sign:	Sign:
	Date:	Date:	Date:

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

APPROVED BY: Ir. HERRY VAZA M,Eng.Sc (NIP. : 110038400) — Sign: — Date:

PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 10 1 : 20 1 : 1000 FULL SIZE A3	BEARING LAYOUT PLAN	BSM-004 SHEET NO : 04 / 10



N

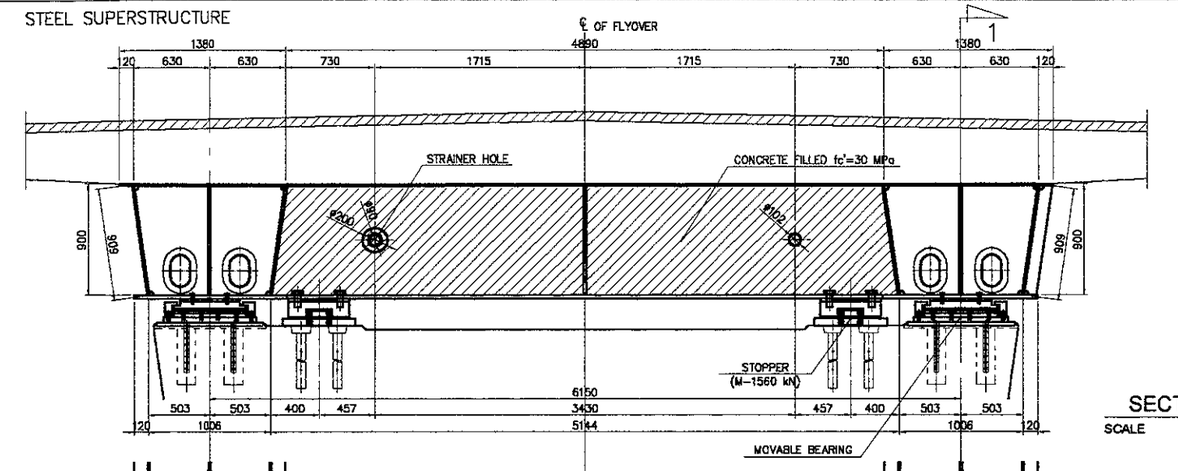
TYPE OF BEARING	SUPERSTRUCTURE	MARK
TYPE - A	PC TRAPEZOID	A3
TYPE - B	STEEL TRAPEZOID	B1

LAYOUT OF BEARING
SCALE 1 : 1000

NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETERS
2. SEE DETAIL OF BEARING TYPE
3. - TYPE A : MOVABLE BEARING FOR PC
   - TYPE B : MOVABLE BEARING FOR STEEL
   - TYPE C : FIXED BEARING FOR STEEL

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : 1 : 50 1 : 1000 FULL SIZE A3	DRAWING TITLE : ARRANGEMENT OF BEARING, STOPPER AND RESTRAINER	DRAWING NO : BSM-005 SHEET NO : 05 / 10
	Name	S. MATSUI	Name	T. OKUMURA	Name	M. KIUCHI				
	Sign		Sign		Sign		APPROVED BY : Ir. HERRY VAZA M,Eng.Sc NIP. : 11003840			
	Date		Date		Date		Sign / Date			

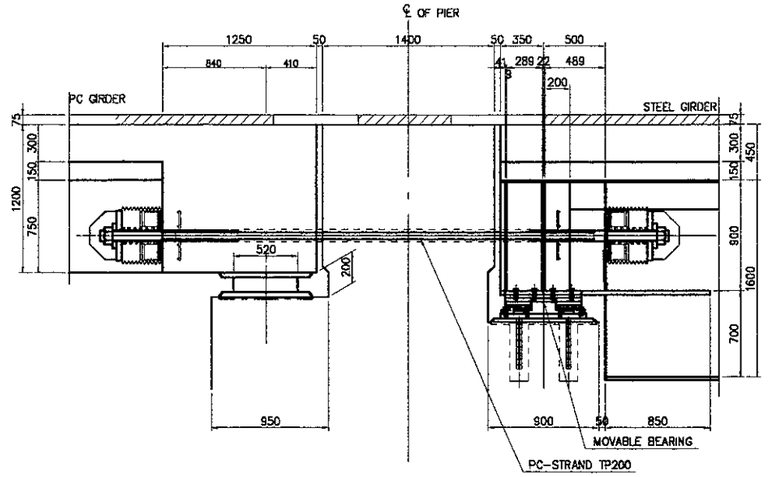
STEEL SUPERSTRUCTURE



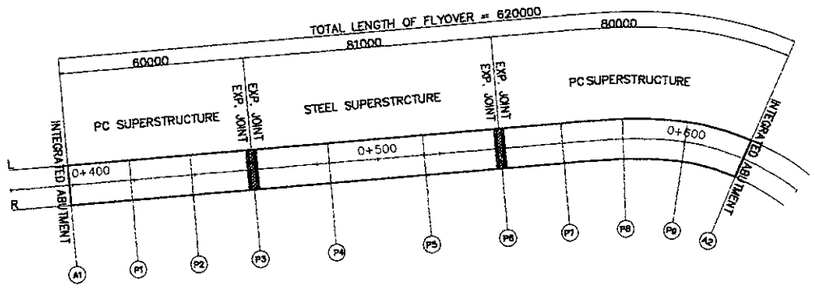
SECTION 2-2
SCALE 1 : 50

PLAN OF SECTION
SCALE 1 : 50

SECTION 3-3
SCALE 1 : 50



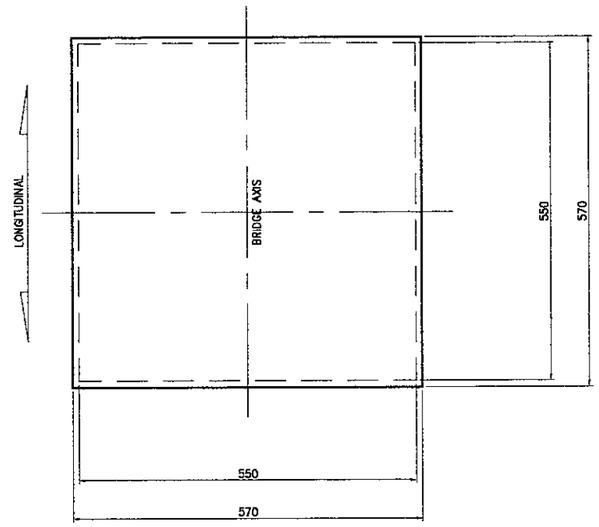
SECTION 1-1
SCALE 1 : 50

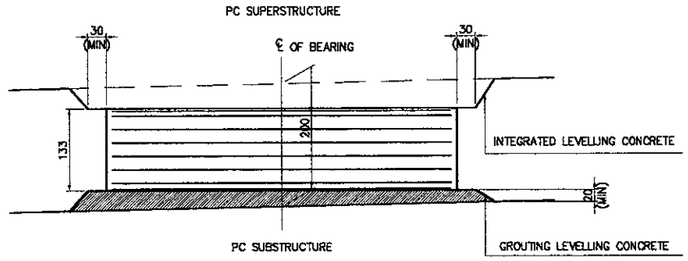


KEY PLAN
SCALE 1 : 1000

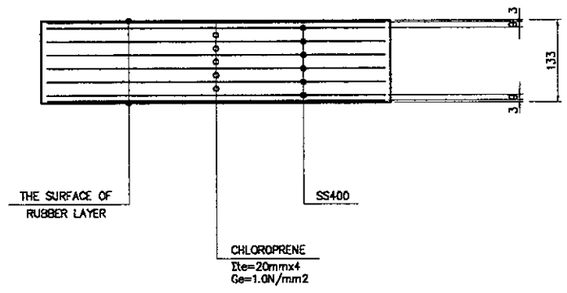
NOTES :
ALL DIMENSIONS ARE IN MILLIMETERS

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
	Name	S. MATSUI	Name	T. OKUMURA	Name	M. KIUCHI		DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 10 1 : 1000 FULL SIZE A3	DETAIL OF BEARING TYPE-A3	BSM-006
	Sign		Sign		Sign		APPROVED BY Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400 Sign Date				SHEET NO : 06 / 10
	Date		Date		Date						



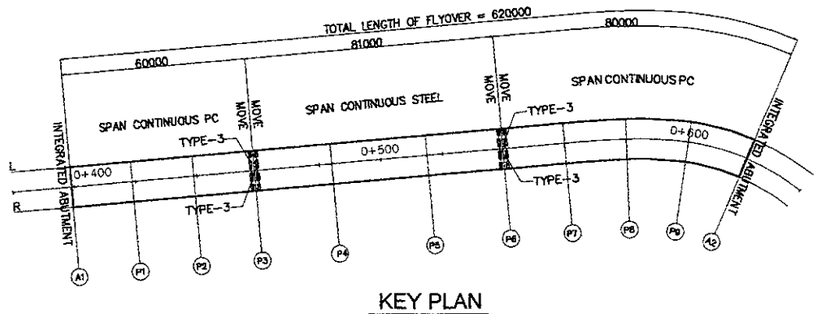


BEARING SEATING DETAIL
SCALE 1 : 10



MOVABLE BEARING
SCALE 1 : 10

NAME	SIZE	MATERIAL	UNIT (NOS.)	
RUBBER BEARING (TYPE-3)	570x570x133	CHLOROPRENE SS400	P3	2 (LEFT-RIGTH)
			P6	2 (LEFT-RIGTH)



KEY PLAN
SCALE 1 : 1000

NOTES :
ALL DIMENSIONS ARE IN MILLIMETERS

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	S. MATSUI	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF HIGHWAYS

APPROVED BY: Ir. HERRY VAZA M.Eng.Sc NIP. : 110038400 | Sign | Date

PROJECT AND LOCATION :
DETAILED DESIGN STUDY OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
BALARAJA FLYOVER - CONTRACT PACKAGE 1
(MERAK - BALARAJA)
BANTEN PROVINCE

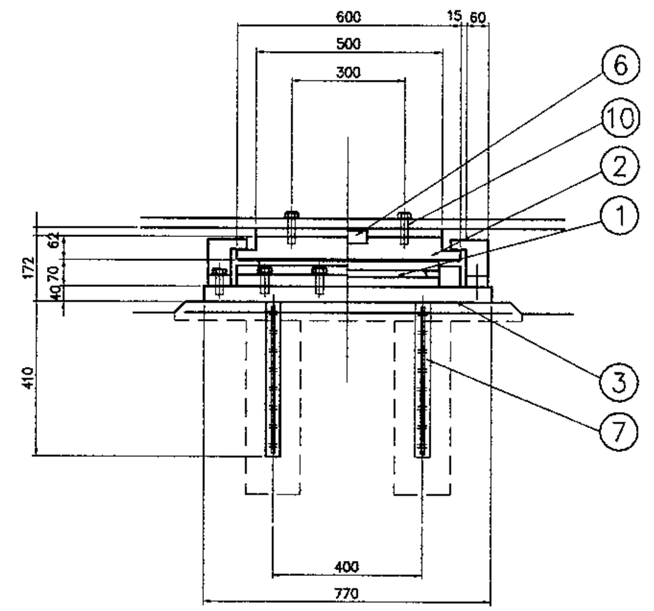
SCALE : 1 : 10, 1 : 20, 1 : 2000 — FULL SIZE A3

DRAWING TITLE :

DETAIL OF BEARING TYPE - B1

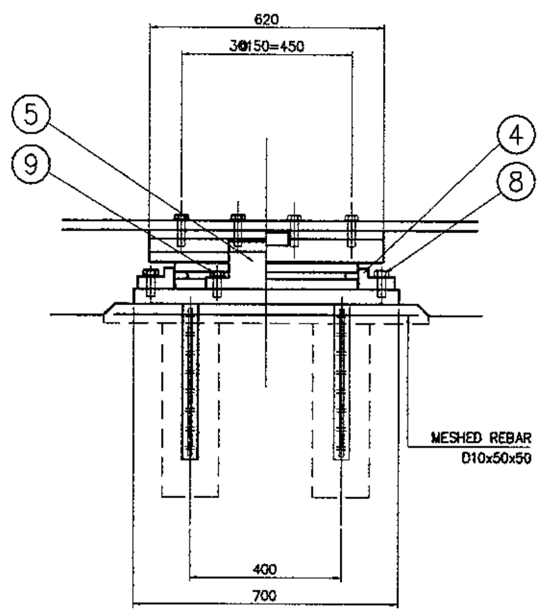
DRAWING NO : BSM-007

SHEET NO : 07 / 10



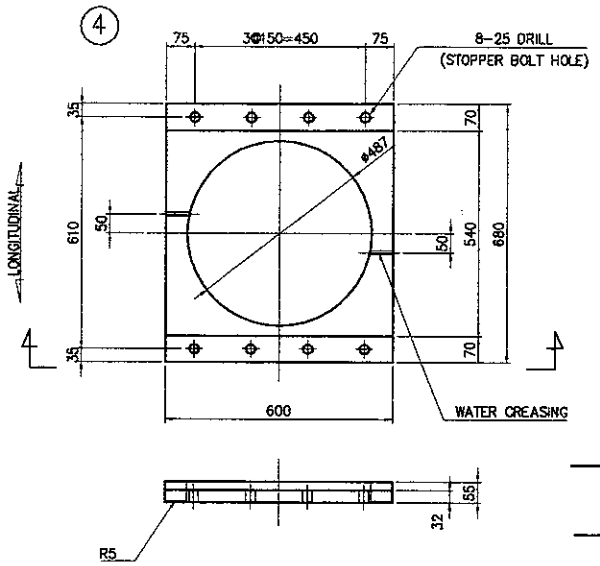
SECTION OF TRANVERSE DIRECTION

SCALE 1 : 20



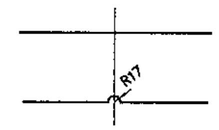
SECTION OF LONGITUDINAL DIRECTION

SCALE 1 : 20



STOPPER

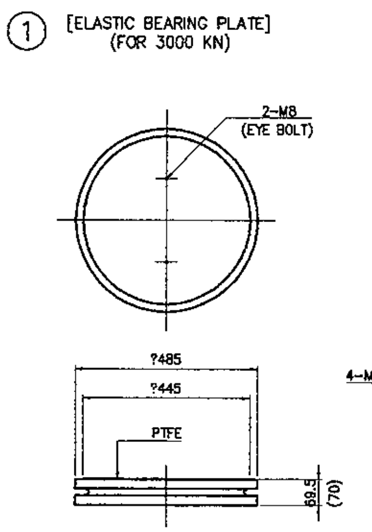
SCALE 1 : 20



DETAIL OF WATER CREASING

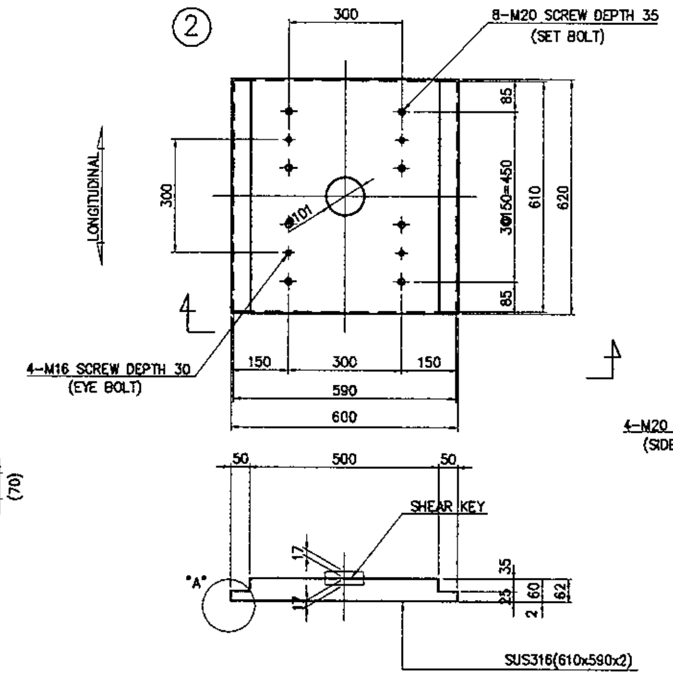
SCALE 1 : 10

※ HOLE OF EYE BOLT SHALL BE FILLED



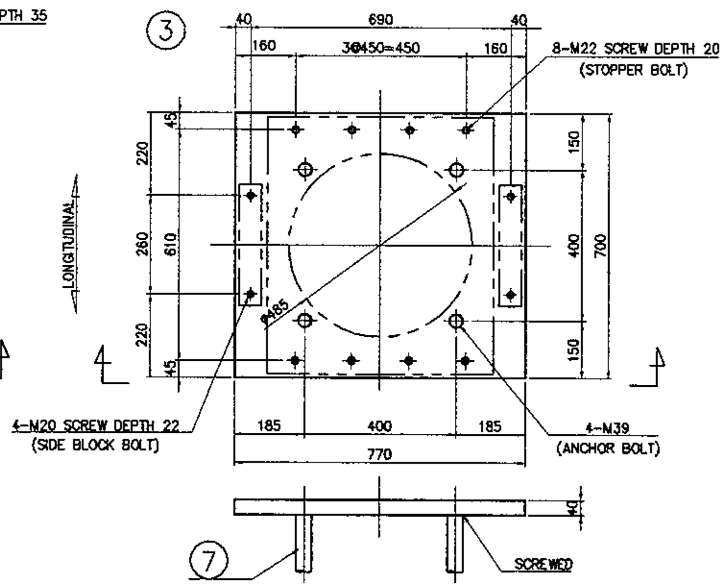
MOVABLE BEARING

SCALE 1 : 20



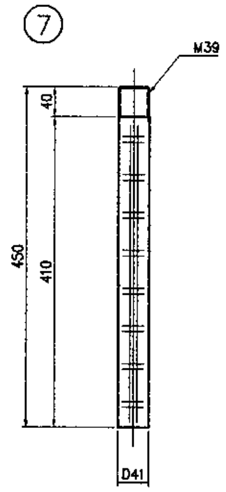
SLIDING PLATE

SCALE 1 : 20



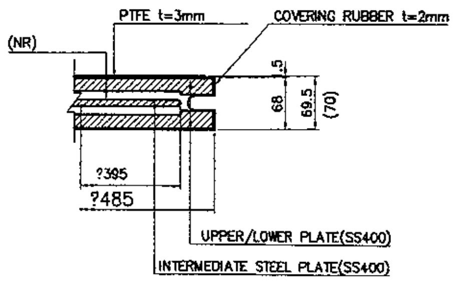
BASE PLATE

SCALE 1 : 20



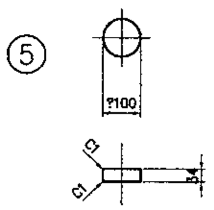
ANCHOR BOLT

SCALE 1 : 10



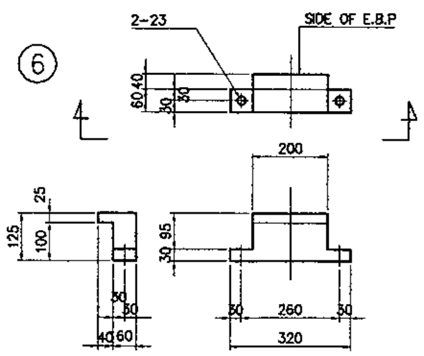
DETAIL OF E.B.P

DETAIL OF "A"



SHEAR KEY

SCALE 1 : 20



SIDE BLOCK

SCALE 1 : 20

DESIGN CONDITION

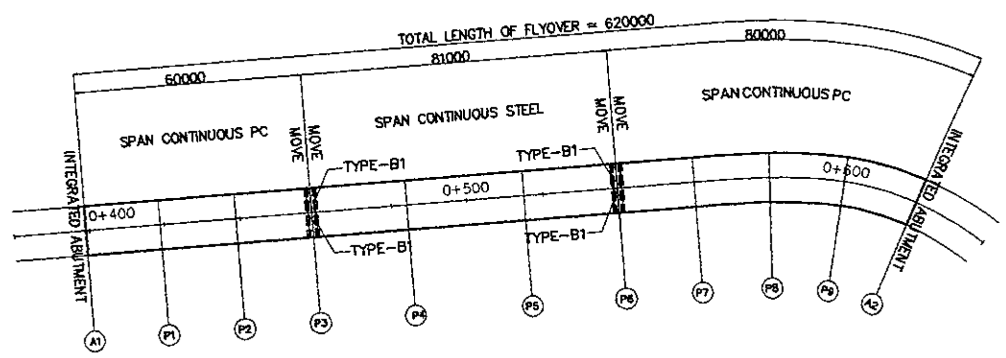
REACTION FORCE				
MAXIMUM REACTION FORCE		kN	R max	2622
MAXIMUM REACTION		kN	R max2	2069
DEAD LOAD REACTION		kN	Rd	1120
LIVE LOAD REACTION		kN	R1 l	751
MAX UP LIFT MOVEMENT		mm	δ c l	0.54
MAX VERTICAL MOVEMENT		mm	δ 1	1.47
VERTICAL SPRING		kN/mm	Kv	1410
HORIZONTAL DISPLACEMENT(RUBBER BEARING DISPLACEMENT)				
LONGITUDINAL DISPLACEMENT	(NORMAL)	mm	Δ l	5.7
	(DYNAMIC ANALYSIS)	mm	Δ l e	50.0
RUBBER BEARING MATERIAL AND CHARACTERISTIC				
TYPE OF RUBBER		——	MATERIAL.G	NR.G10

MATERIAL LIST (1 UNIT)

NO.	DESCRIPTION	MATERIAL	QTY	WEIGHT (kg)	REMARK
1	MOVABLE RUBBER TYPE BEARING (ELASTIC LOAD BEARING PAD)	NR,SS400,P.T.F.E.	1	67.2	Hips-3000
(2)	SLIDING PLATE	SM490A,SUS316	1	162.1	
(3)	BASE PLATE	SM490A	1	167.0	
(4)	STOPPER PLATE	SM490A	1	79.6	
(5)	SIDE BLOCK	SCW480NorM490A	2	29.6	
6	SHEAR KEY	SM490AorS35CN	1	2.1	
7	ANCHOR BOLT	SD345	4	18.9	
(8)	STOPPER BOLT WASHER	STRENGTH 8.8	8	2.1	
(9)	SIDE BLOCK BOLT WASHER	STRENGTH 8.8	4	0.9	
(10)	SET BOLT WASHER	STRENGTH 8.8	8	0.6	
11	EYE BOLT	SS400	—	——	M16
		TOTAL		530.10 (kg)	
BRIDGE SEAT MORTAR		NON SCHRINK MORTAR			(m^3)
GRID REINFORCING BAR					
S1	D10x800	SD295	18	8.1	
S2	D10x850	SD295	17	8.1	
		TOTAL		16.2 (kg)	

1. BASED ON HIGHWAY BRIDGE BEARING MANUAL
2. MEMBER WITH O TO BE MELT ZINC PLATING
   JIS H 8641 HDZ55, HDZ35
3. WEIGHT OF MOVABLE RUBBERS BEARING (ELASTIC LOADING PLATE) IS FOR REFERENCE ONLY
4. WEIGHT OF SET BOLT MUST BE COUNTED FOR ℓ= 100 AS REFERENCE
5. SHEAR KEY AND PARTNES SHALL BE HIGH DENSITY ZINC COAT 80 μ m
6. NUMBER OF EYE BOLT SHALL BE DECIDED BASED ON THE ERECTION REQUIREMENT
7. EYE BOLT HOLE FOR FABRICATION MUST BE LARGES

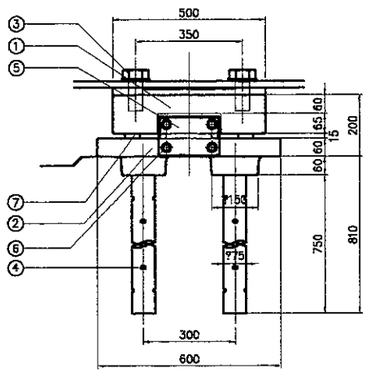
(8) STOPPER BOLT WASHER M22x55 STRENGTH 8.8
(9) SIDE BLOCK BOLT WASHER M20x55 STRENGTH 8.8
(10) SET BOLD WASHER M20xℓ STRENGTH 8.8



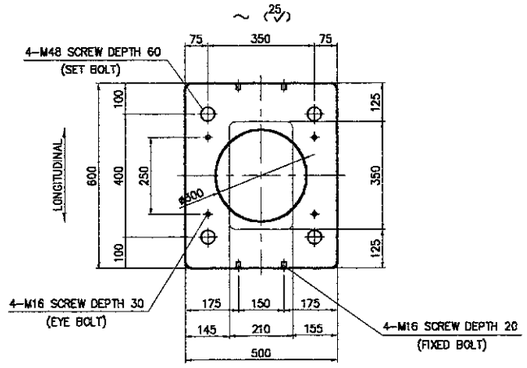
KEY PLAN

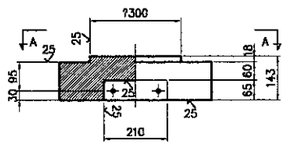
SCALE 1 : 2000

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
	Name	S. MATSUI	Name	T. OKUMURA	Name	M. KIUCHI		DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	1 : 10 1 : 20 FULL SIZE A3	DETAIL OF STOPPER	BSM-008 SHEET NO : 08 / 10
	Sign		Sign		Sign		APPROVED BY : Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400 Sign / Date				
	Date		Date		Date						

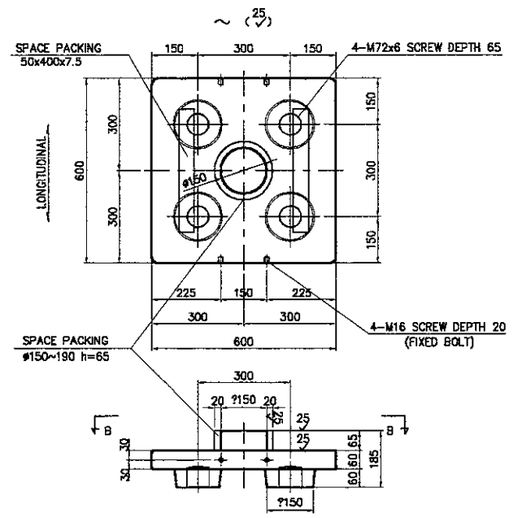


TRANVERSE DIRECTION
SCALE 1 : 20

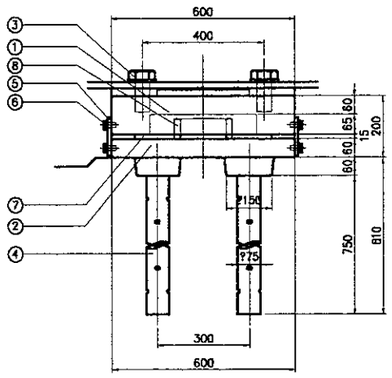




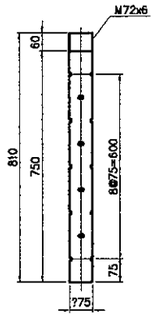
SLIDING PLATE
SCALE 1 : 20



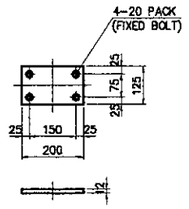
STOPPER PLATE
SCALE 1 : 20



LONGITUDINAL DIRECTION
SCALE 1 : 20



ANCHOR BOLT
SCALE 1 : 10



FIXED PLATE
SCALE 1 : 10

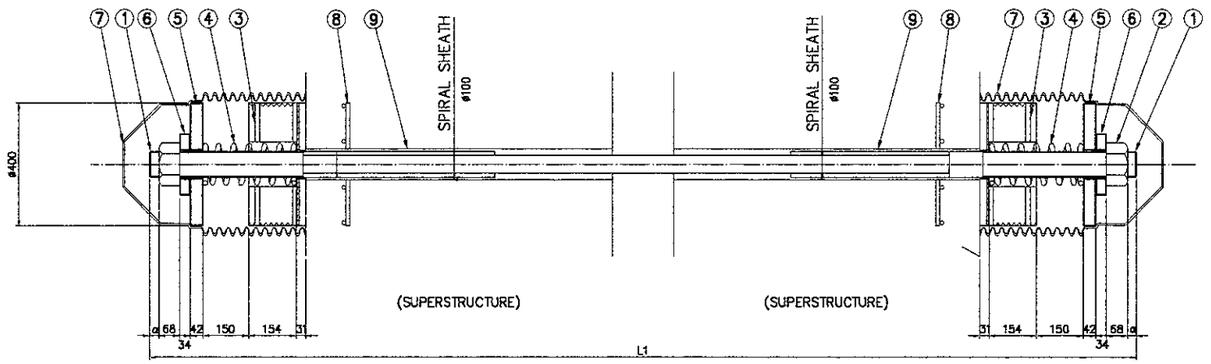
DESCRIPTION

NO.	DESCRIPTION	DIMENSI	MATERIAL	QTY	WEIGHT (kg)	REMARKS
①	SLIDING PLATE	600x500x143	SCW480N	1	263.5	
②	STOPPER PART	600x600x185	SCW480N	1	203.6	
③	SET BOLT WHASER	M48x4	STRENGTH 8.8	4	10.7	
4	ANCHOR BOLT	?75x810	S35CN	4	112.4	M72 SCREW DEPTH 60
5	FIXED PLATE	125x200x12	SS400	2	4.5	
6	FIXED BOLT, WHASER	M16x30	STRENGTH 4.6	8	0.8	
7	SPACE PACKING	50x400x15	NR or CR	2 SET	——	G=8 2
8	CUSHION PACKING	?150~190 h=65	CR	1 SET	——	Hs = 55° ±5
9	EYE BOLT	M16	SS400	--	——	
					595.5	(kg)

1. BASED ON HIGHWAY BRIDGE BEARING MANUAL
2. MEMBER WITH ○ TO BE MELT ZINC PLATING
   JIS H 8641 HDZ55, HDZ35
3. SPACE PACKING CAN NOT BE OMITTED TO KEEP THE SPACE BETWEEN SUPERSTRUCTURE AND SUBSTRUCTURE
4. WEIGHT OF SET BOLT MUST BE COUNTED FOR Ω=100 AS REFERENCE
5. EYE BOLT CAN BE USE FOR HANGING HOOK
6. NUMBER OF EYE BOLT SHALL BE DECICED BASED ON THE ERECTION REQUIREMENT

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY: Name S. MATSUI, Sign, Date	CHECKED BY: Name T. OKUMURA, Sign, Date	SUBMITTED BY: Name M. KIUCHI, Sign, Date	REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS APPROVED BY: Ir. HERRY VAZA M,Eng.Sc, NIP. : 110038400, Sign, Date	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE

SCALE :	DRAWING TITLE :	DRAWING NO :
1 : 20 FULL SIZE A3	DETAIL OF RESTRAINER TYPE-3	BSM-009 SHEET NO : 09 / 10



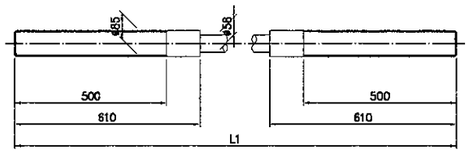
DETAIL OF ATTACHMENT
SCALE 1 : 20

DESIGN CONDITION

DESIGN LOAD	≤ 1649 (kN)
PC WIRE STRAND	TP 200
TYPE	400

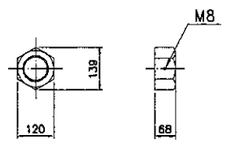
MATERIAL LIST (1-SET BRIDGE FALL PREVENTION SYSTEM)

No	NAME	SPECIFICATION	UNIT	QTY	1 PIER	REMARKS
1	PC WIRE STRAND	SWPR	PCS	1		PE-COAT
2	N U T	S45C	SET	2		ZINC PLATING M8 BOLT
3	STOPPER PLATE	CR,NEO PLUS,SS400	PCS	2		
4	SPRING	SWOSCB	SET	2		PE-COAT
5	BUFFER	NEO PLUS,SS400	SET	2		
6	BUFFER	NEO PLUS,SS400	SET	2		
7	PROTECTION CAP	CR or TPE	SET	2		
8	WIRE MESH	SD295	SET	16		
9	SPIRAL	SPCC	SET	2		



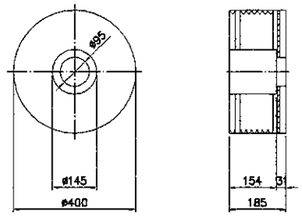
1-PC WIRE STRAND (TP200)
SCALE 1 : 20

① PC鋼より線 (TP200)



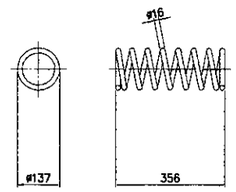
2-N U T
SCALE 1 : 20

② 緩み止め付ナット



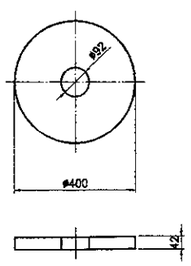
3-STOPPER PLATE
SCALE 1 : 20

③ セーフティストッパー



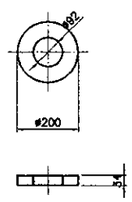
4-SPRING
SCALE 1 : 20

④ コイルスプリング



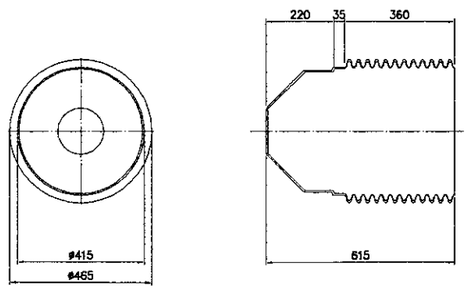
5-BUFFER
SCALE 1 : 20

⑤ 防錆支圧板



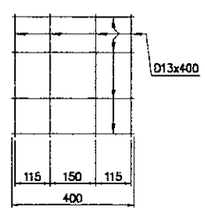
6-BUFFER
SCALE 1 : 20

⑥ 防錆座金



7-PROTECTION CAP
(POLYETHELENE)
SCALE 1 : 20

⑦ 防錆キャップ



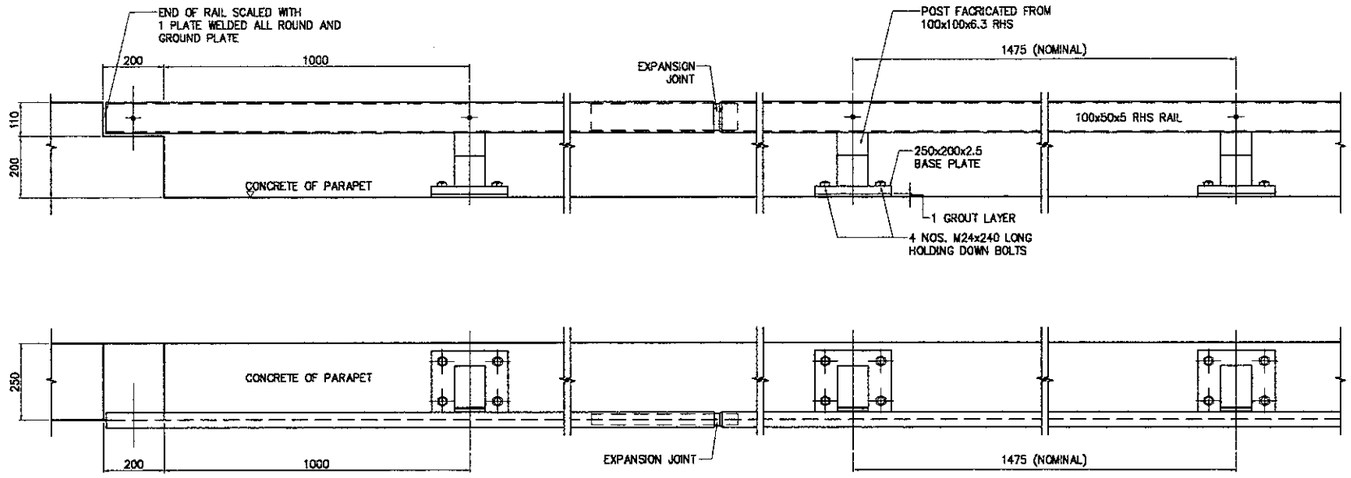
8-WIRE MESH
SCALE 1 : 20

⑧ 用心鉄筋

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	DESIGNED BY		CHECKED BY		SUBMITTED BY		REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HIGHWAYS	PROJECT AND LOCATION : DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT BALARAJA FLYOVER - CONTRACT PACKAGE 1 (MERAK - BALARAJA) BANTEN PROVINCE	SCALE : 1:10, 1:20 FULL SIZE A3	DRAWING TITLE : DETAIL OF PARAPET, MEDIAN AND RAILING	DRAWING NO : BSM-10 SHEET NO : 10 / 10
	Name	S. MATSUI	Name	T. OKUMURA	Name	M. KIUCHI				
	Sign		Sign		Sign					
	Date		Date		Date		APPROVED BY Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400 Sign Date			

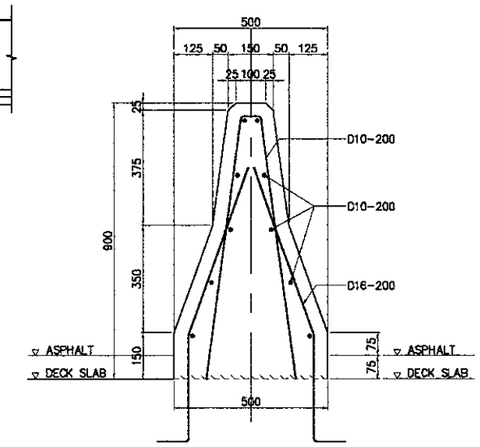
NOTES :

1. DIMENSIONS ARE IN MILLIMETERS
2. STRUCTURAL STEEL SECTIONS ARE TO BE GRADE 400 STEEL TO BE BS 4360
3. BOLTS AND SCREWS ARE TO BE GRADE 6.8 TO BS 3692 ALL BOLTS AND SCREWS ARE TO BE GALVANIZED SHERARDIZED OR OTHERWISE CORROSION PROTECTED
4. ALL STEEL WORK AND WELDING TO BE IN ACCORDANCE WITH CLAUSE 57.07 OF THE SPECIFICATION
5. WELDS ARE 5 MM CONTINOUS FILLET WELDS UNLESS STATED OTHERWISE
6. POSTS ARE TO BE FIXED TRULY VERTICAL
7. RAIL JOINT TO BE LOCATED AT THE QUARTER POINT OF A PANEL
8. RAIL EXPANSION JOINTS ARE TO BE PROVIDED AT ALL BRIDGE DECK AND APPROACH RAMP EXPANSION JOINTS
9. RAILS ARE TO BE CONTINOUS OVER TWO POSTS MAXIMUM RAIL LENGTH IS NOT TO EXCEED 8000
10. ALL FABRICATED STEELWORK IS TO BE HOT DIP GALVANIZED
11. AFTER ERECTION ALL STEELWORK IS TO BE PAINTED TO THE REINFORCEMENTS OF SECTION 57.07 OF THE SPESIFICATION



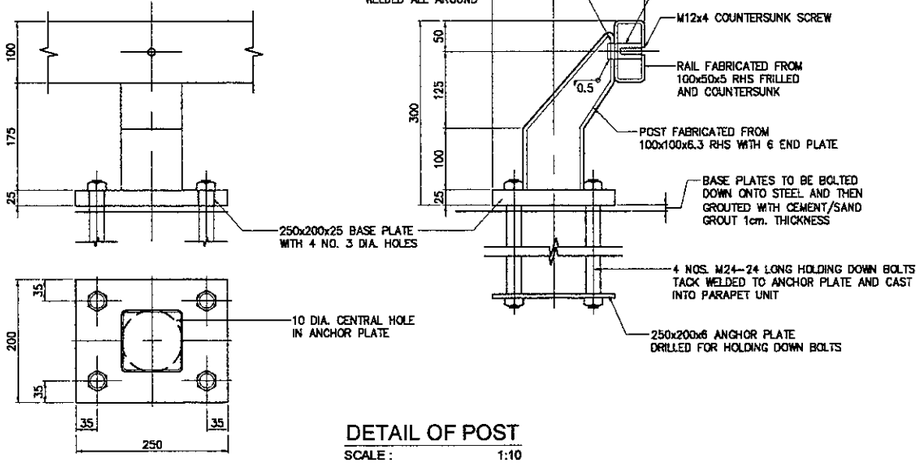
DETAILS FOR PROFILED PLINTH

SCALE : 1:20



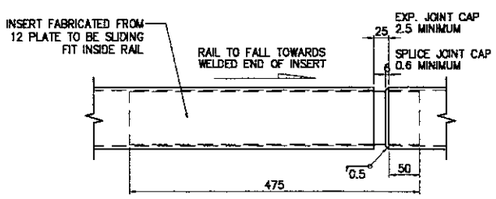
DETAIL OF MEDIAN

SCALE : 1:20



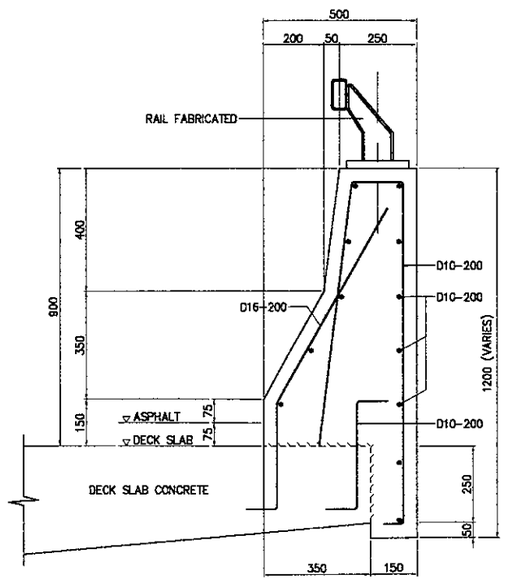
DETAIL OF POST

SCALE : 1:10



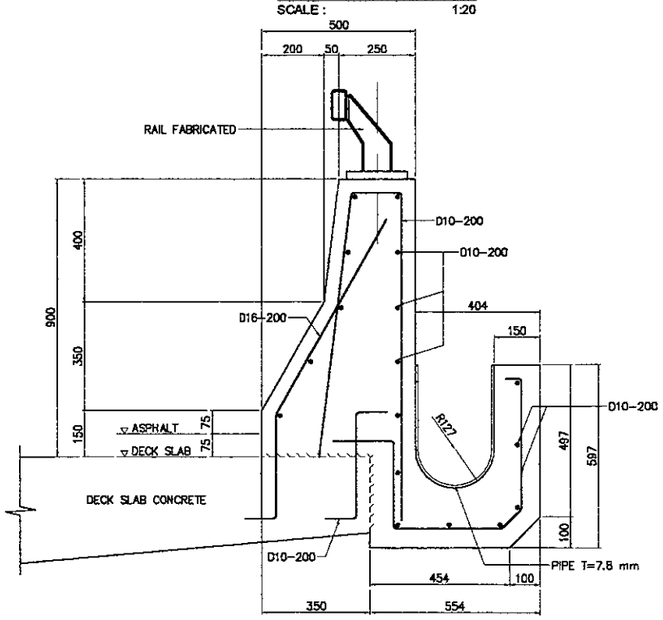
DETAILS OF JOINT

SCALE : 1:10



DETAIL OF PARAPET

SCALE : 1:20



DETAIL OF OUTER GUTTER

SCALE : 1:20