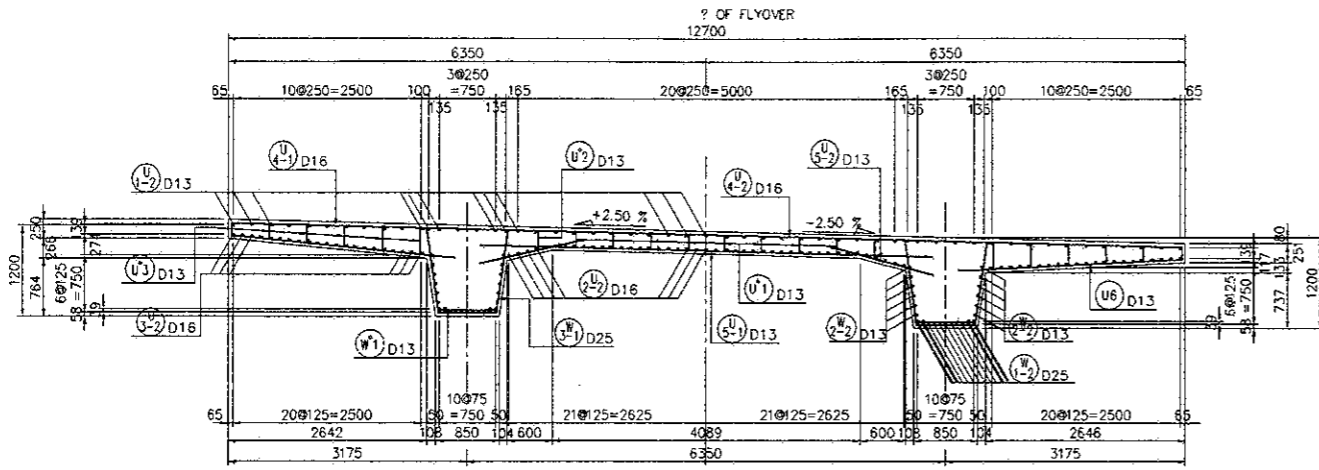


DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	H. HONDA	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

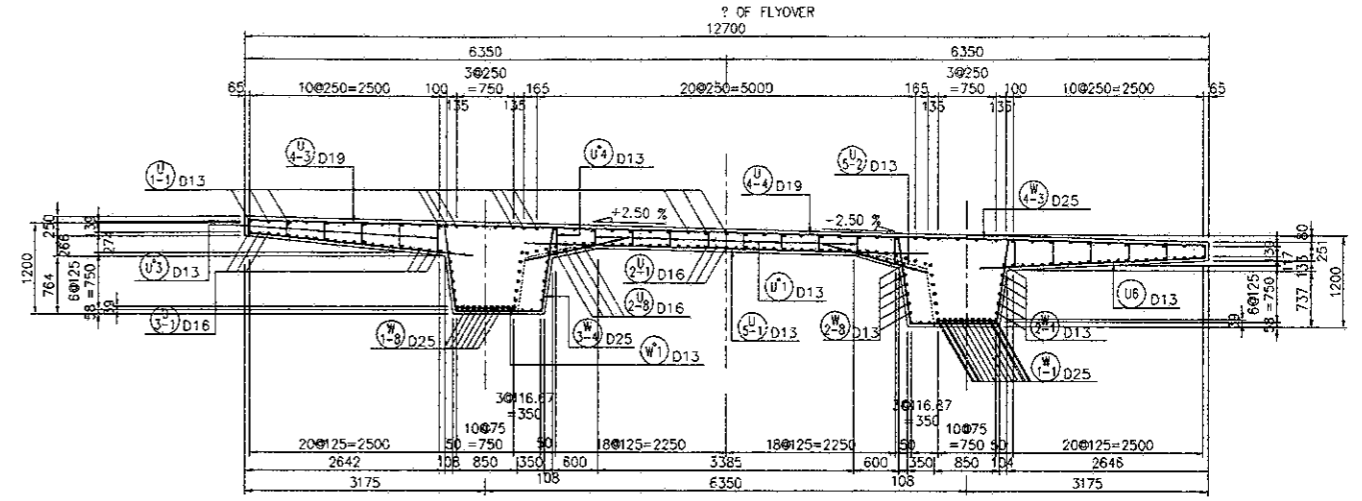


APPROVED BY	
Name	Ir. HERRY VAZA M.Eng.Sc
Sign	
Date	

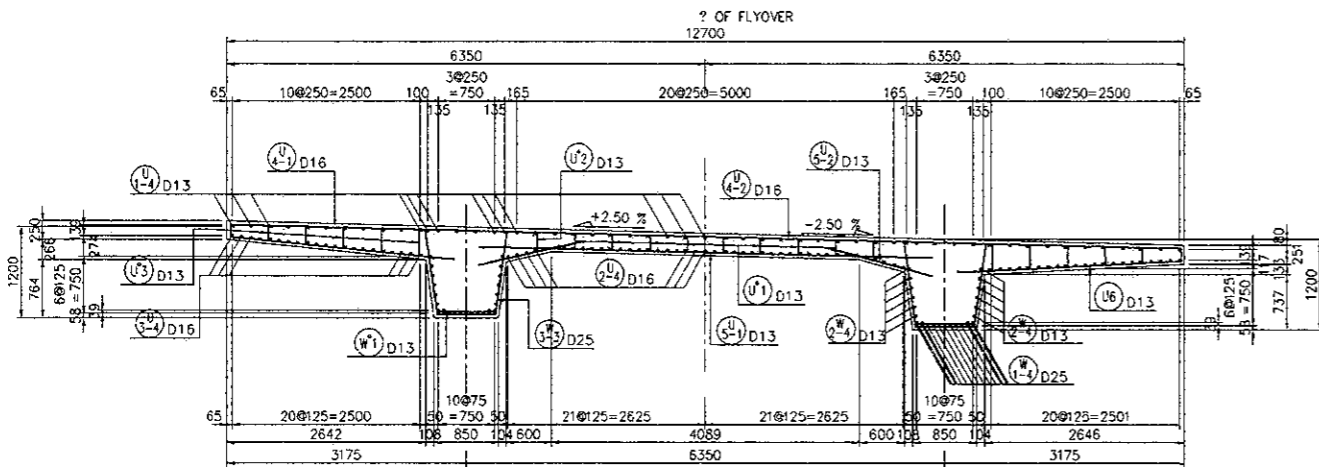
PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO. :
DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT PETERONGAN FLYOVER - CONTRACT PACKAGE 3 (PETERONGAN - TANGGULANGIN) EAST JAVA PROVINCE	1 : 100 FULL SIZE A3	ARRANGEMENT OF REINFORCEMENT FOR PC GIRDER P7-A2 (1 OF 2)	PCR-012
			SHEET NO. : 12 / 20



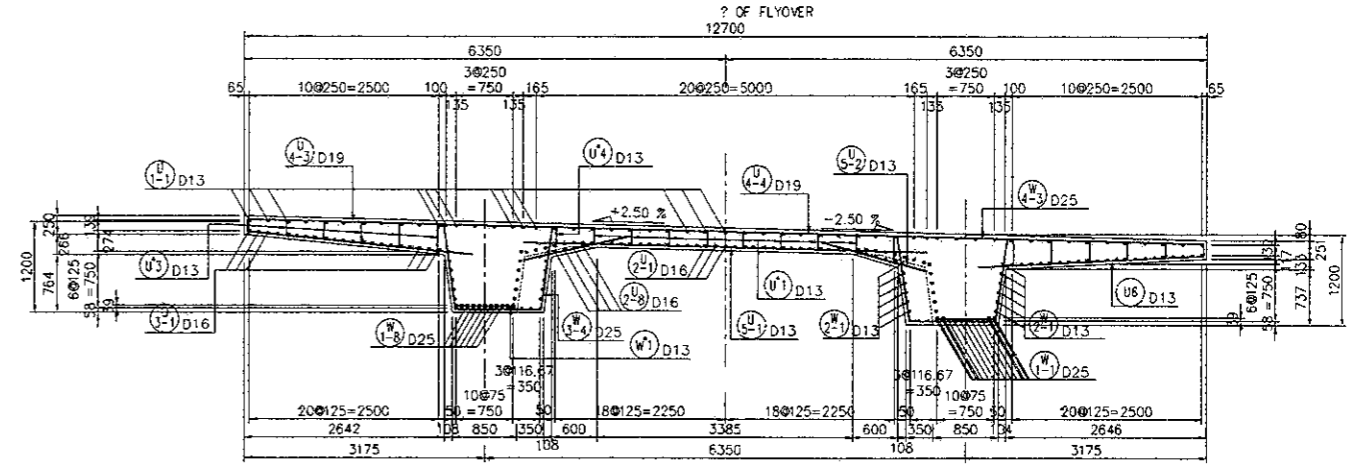
SECTION MID SPAN P7~P8
 SCALE : 1 : 100



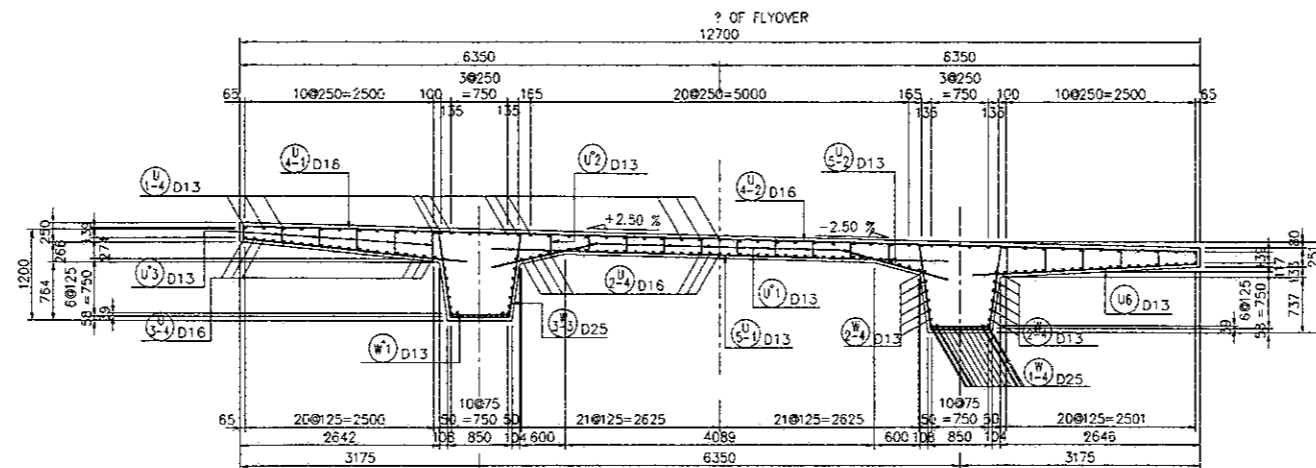
SECTION AT P8
 SCALE : 1 : 100



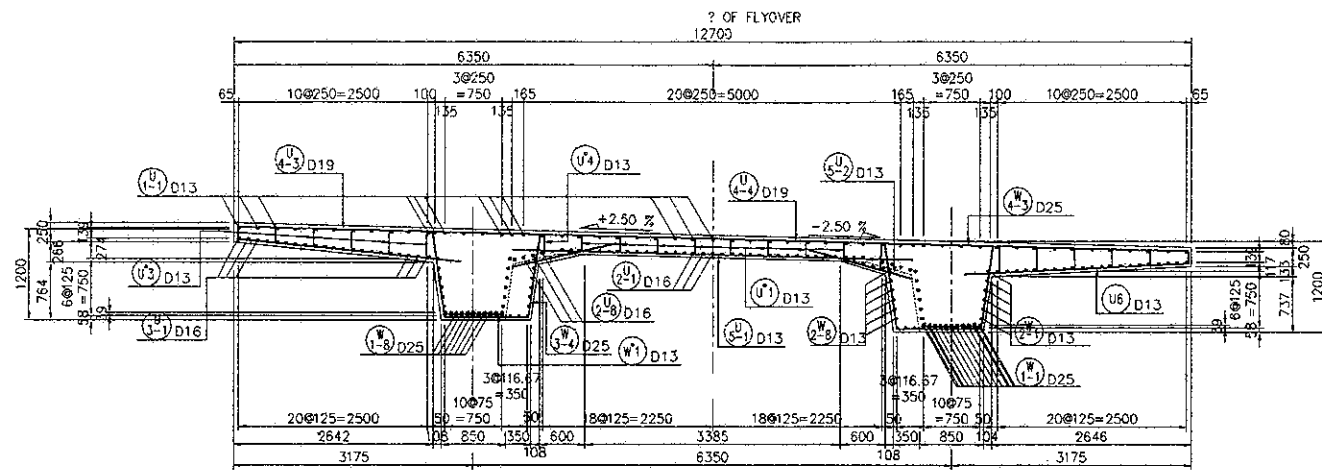
SECTION MID SPAN P8~P9
 SCALE : 1 : 100



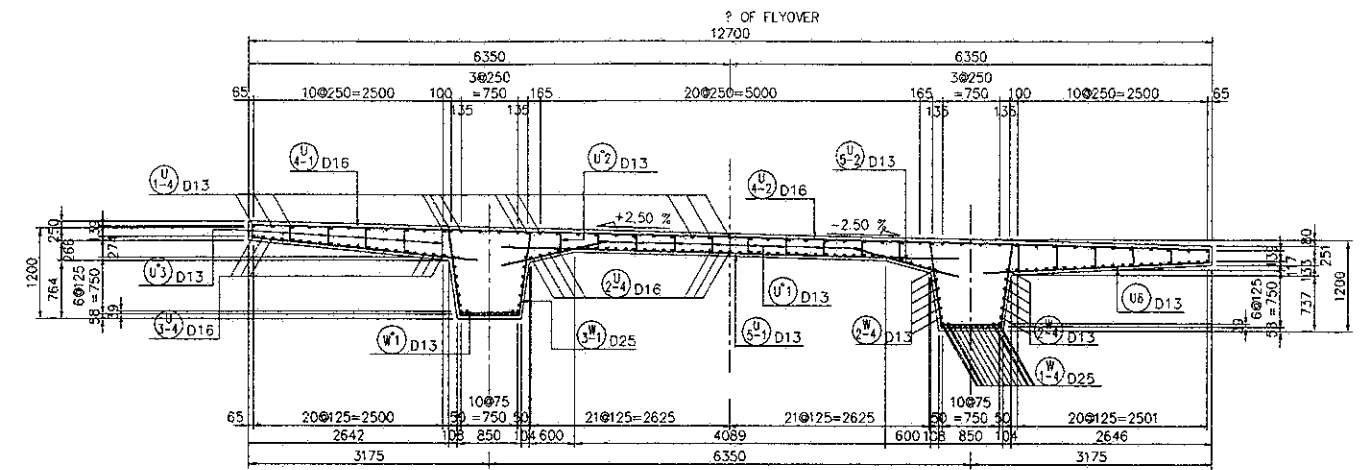
SECTION AT P9
 SCALE : 1 : 100



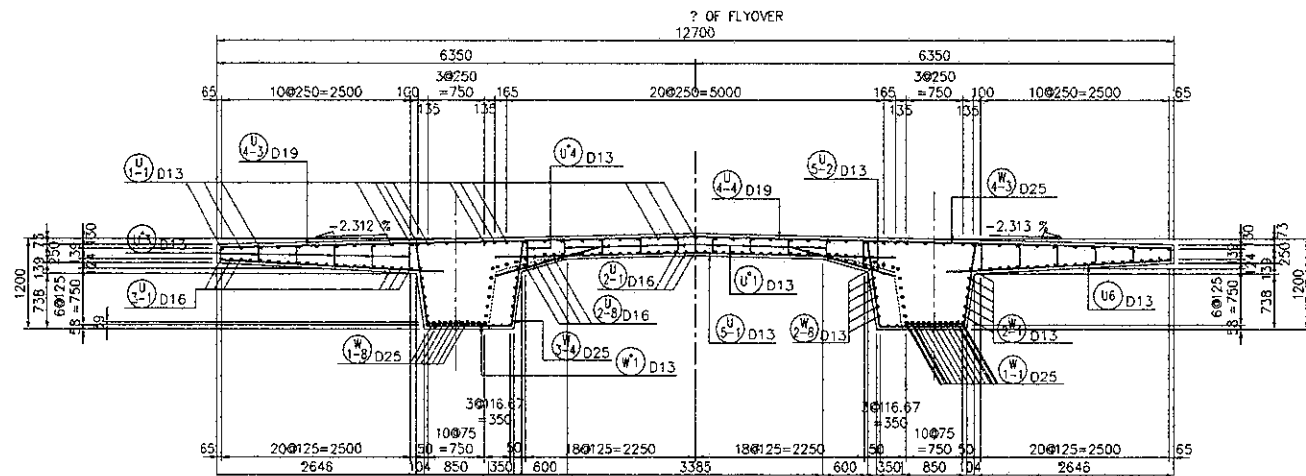
SECTION MID SPAN P9~P10
 SCALE : 1 : 100



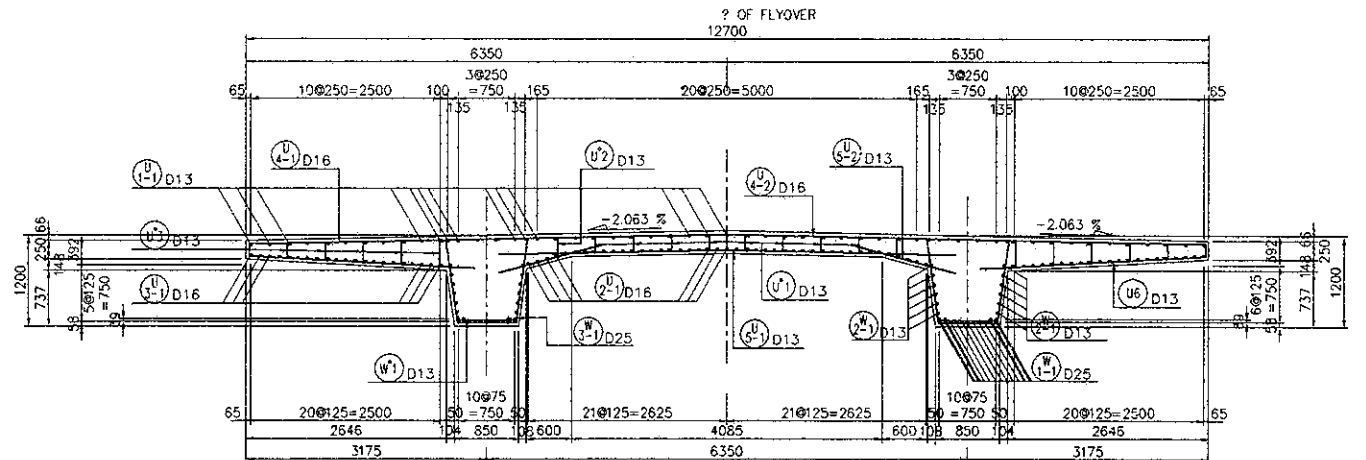
SECTION AT P10
 SCALE : 1 : 100



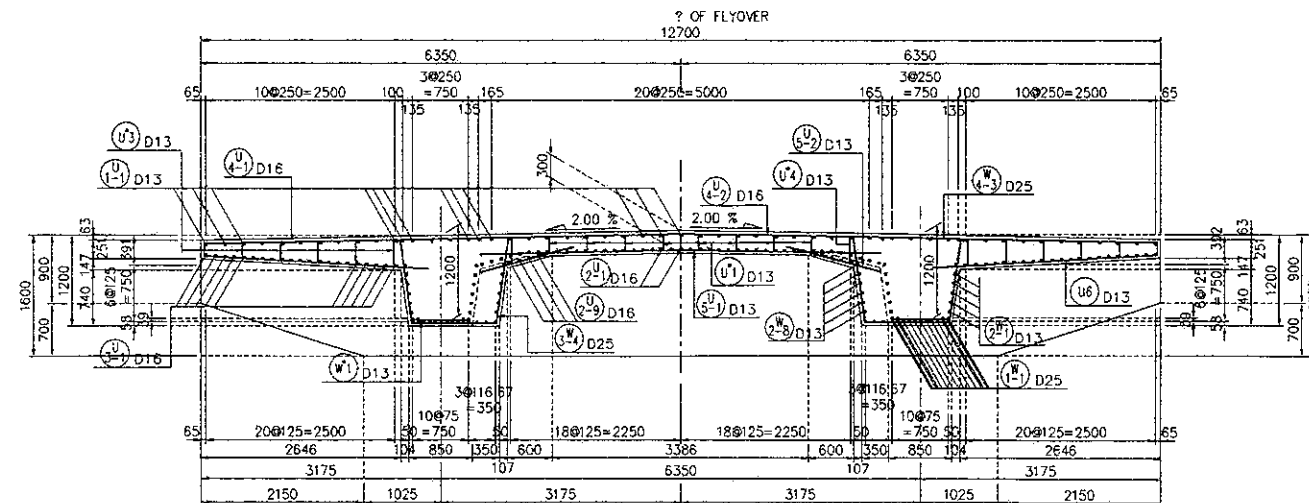
SECTION MID SPAN P10-P11
 SCALE : 1 : 100



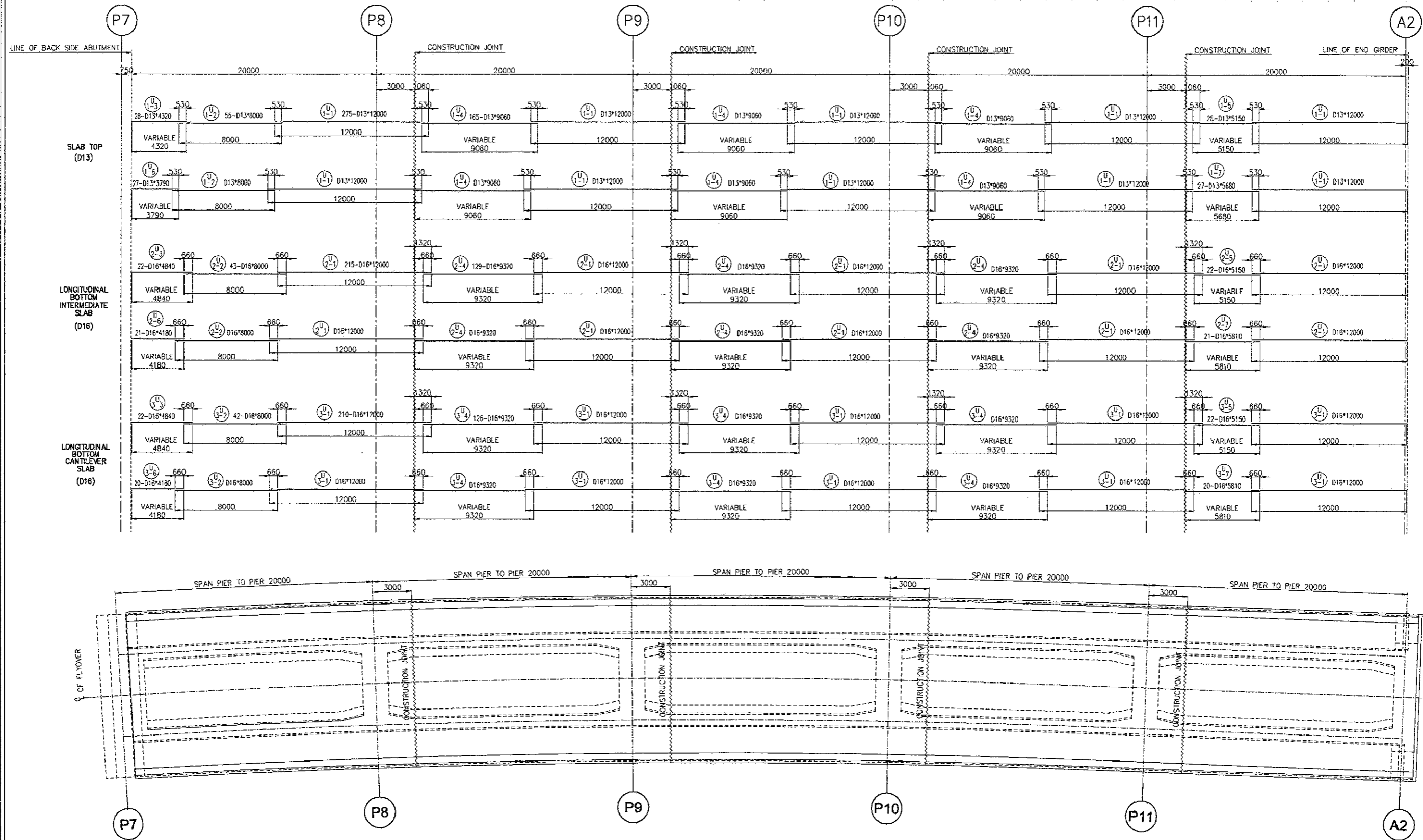
SECTION AT P11
 SCALE : 1 : 100



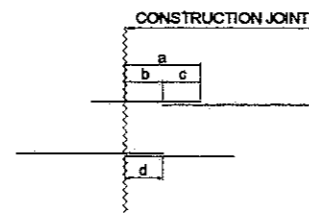
SECTION MID SPAN P11-A2
 SCALE : 1 : 100



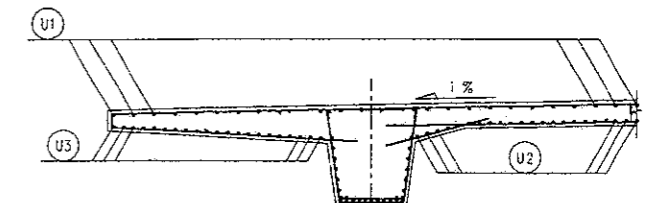
SECTION AT A2
 SCALE : 1 : 100

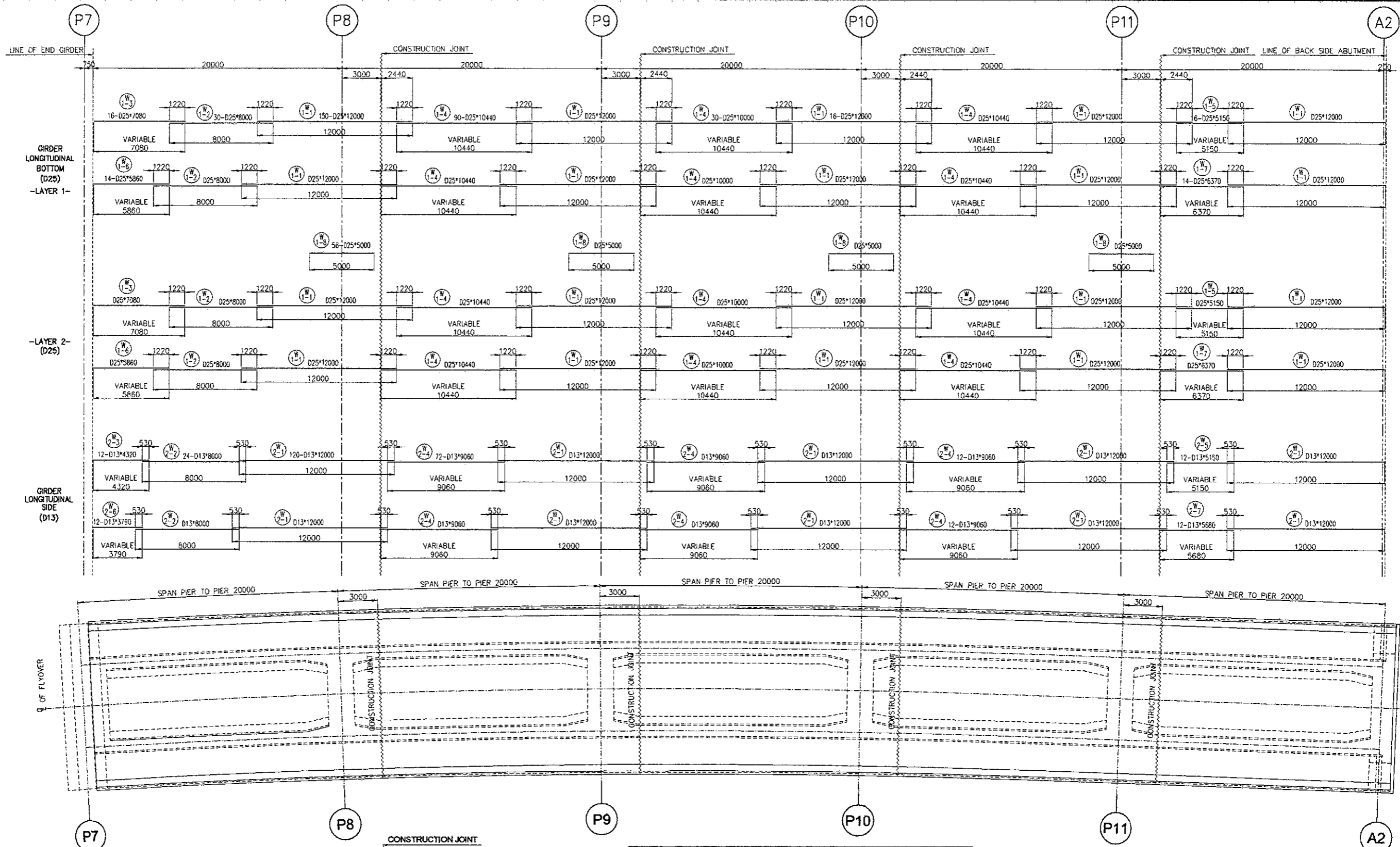


BAR SIZE	a	b	c	d
D 13	1060	530	530	530
D 16	1320	660	660	660

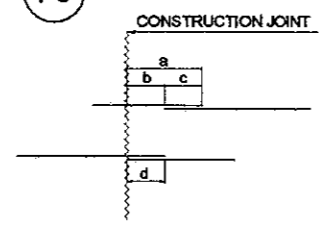


BAR SIZE	MAIN REBAR										STIRRUP					
	R=24	R=24	R=24	R=24	R=24	R=24	R=24	R=24	R=24	R=24	R=24	R=24	R=24	R=24	R=24	
D 13	30	71.5	82	88	82	83	81	17	58	3	32.5	77	83	88	81	14
D 16	48	88	113	119	100	88	78	21	89	4	40	84	89	84	83	17



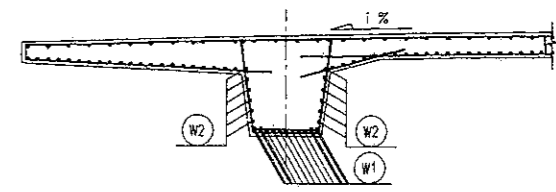


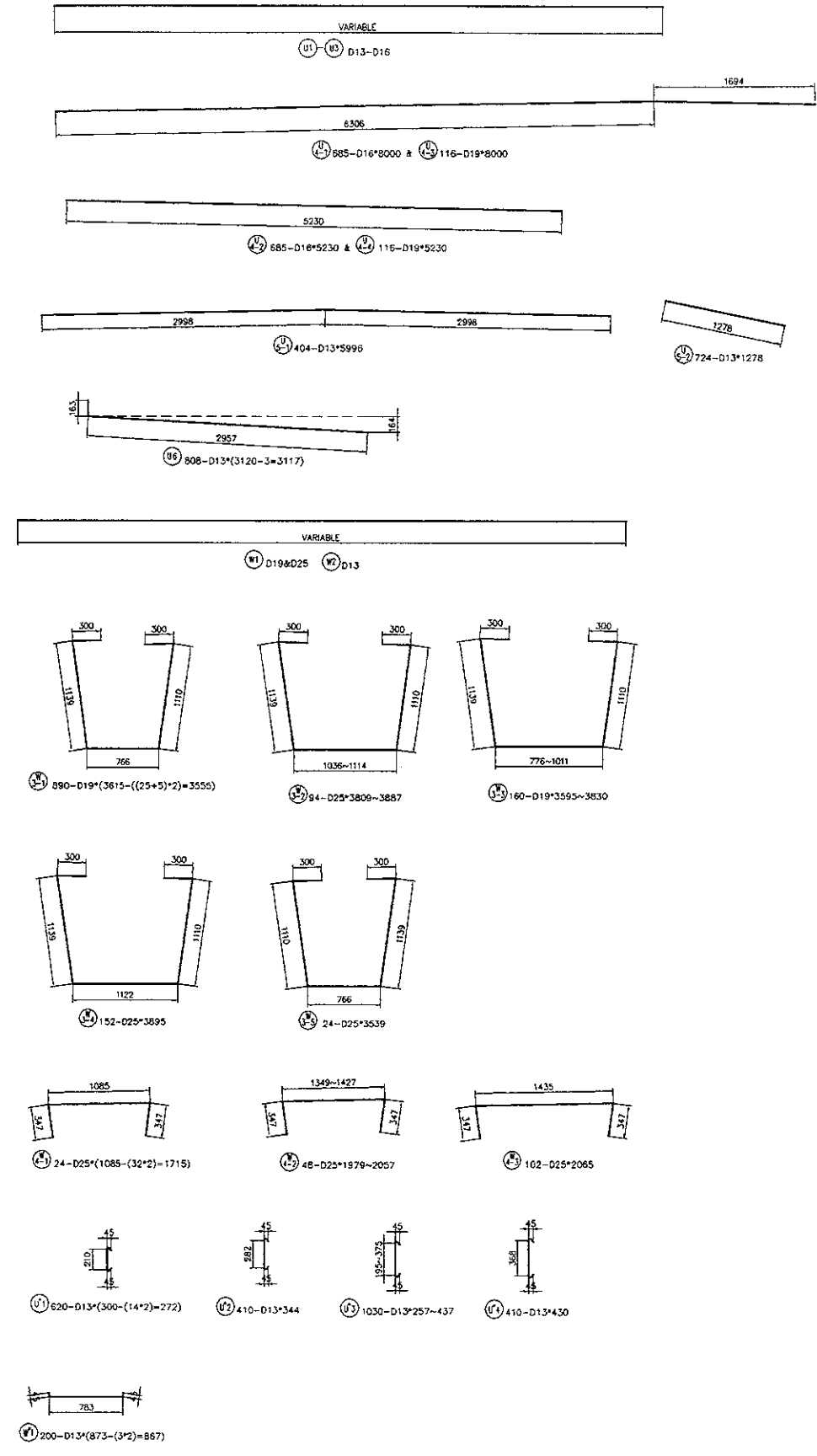
	a	b	c	d
D 13	1060	530	530	530
D 19	1560	780	780	780
D 25	2440	1220	1220	1220



	MAIN REINBAR						STIRRUP										
	θ=90° R=34	θ=90° R=5.54	θ=45° α AL	θ=60° α AL	θ=90° α AL	θ=135° α AL	R=2.54	θ=45° α AL	θ=60° α AL	θ=90° α AL	θ=90° α AL						
D 13	39	71.5	82	98	82	65	61	17	88	3	22.5	77	80	88	45	81	14
D 19	57	104.5	134	161	119	78	88	25	82	5	47.5	112	117	99	88	75	20
D 25	75	137.5	177	205	157	103	118	32	108	8	62.5	177	185	157	103	118	32

* R=0.4

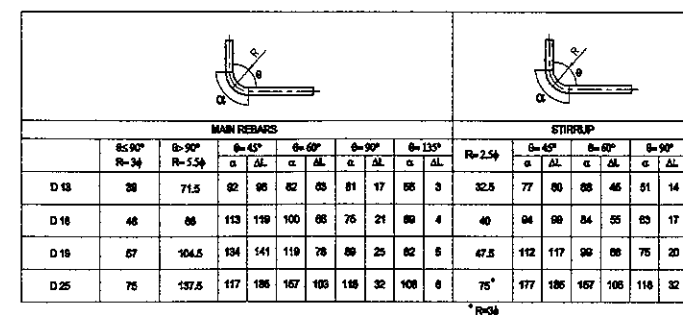


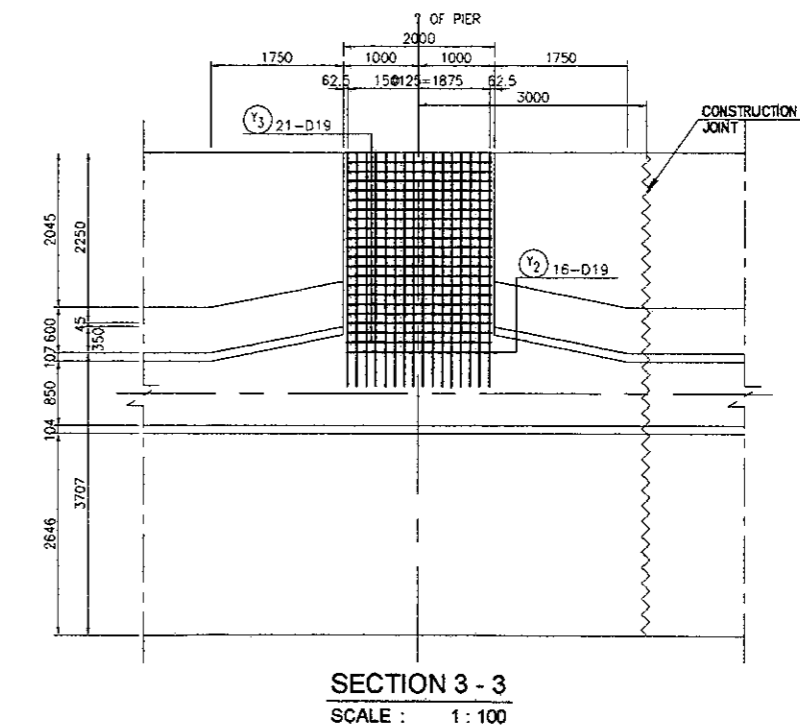
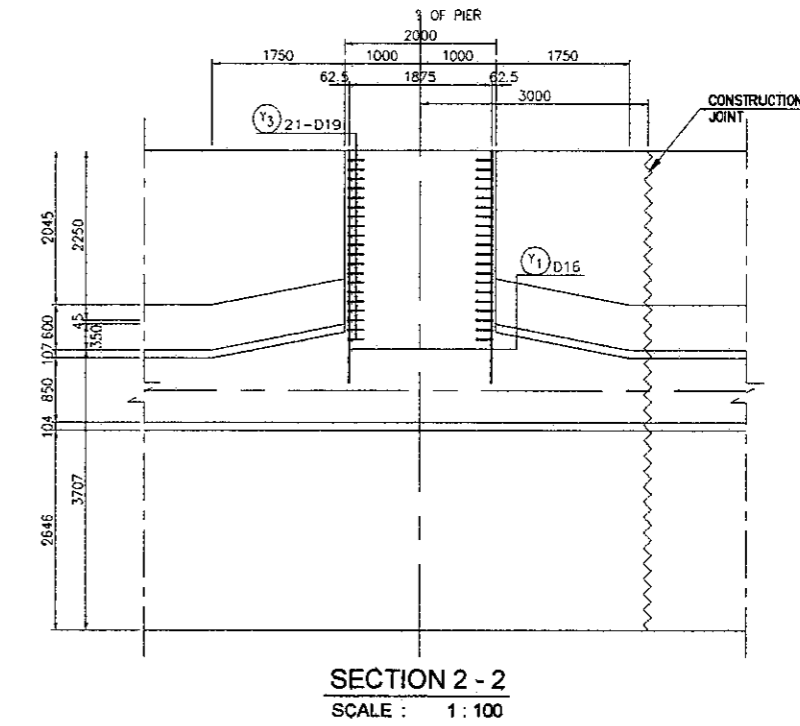
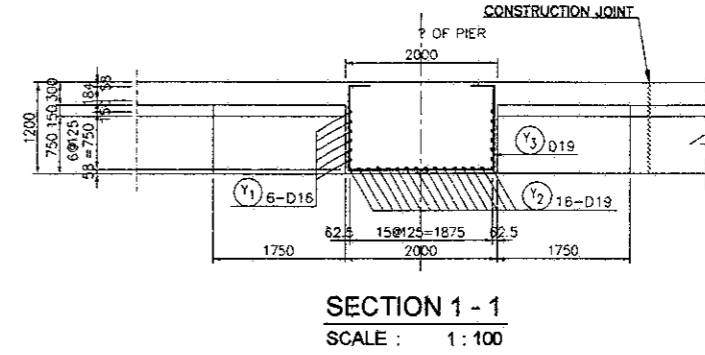
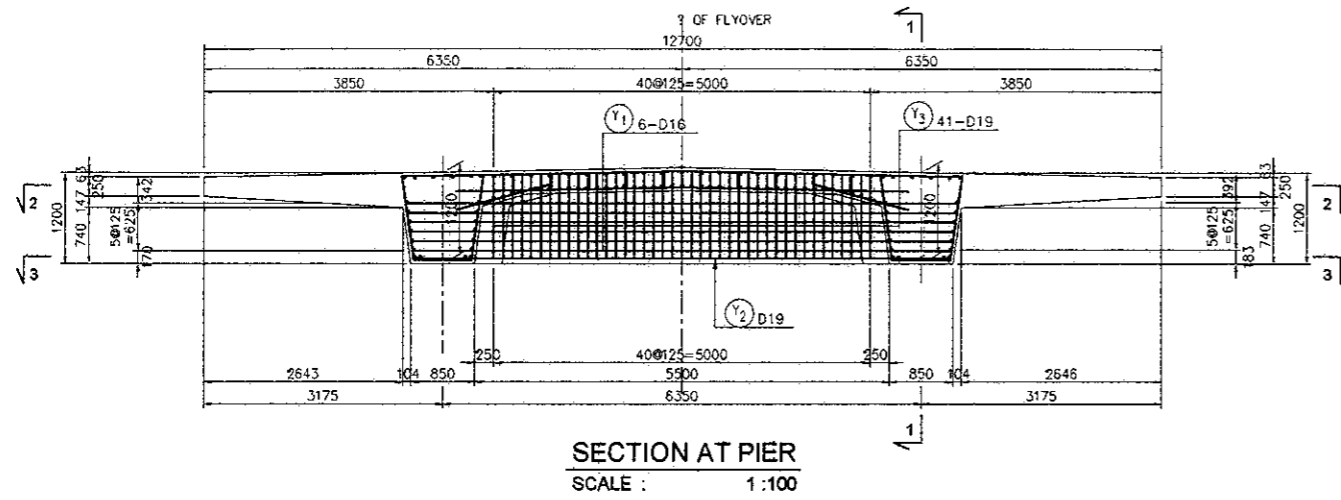


BAR BENDING SCHEDULE

REBAR NAME	DIA (mm)	LENGTH (mm)	NO.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	TOTAL WEIGHT (kg)	DIAGRAM	REMARKS
U 1 - 1	13	12000	276	1.04	1248	3432		
U 1 - 2	13	8000	66	1.04	832	468		
U 1 - 3	13	4320	28	1.04	448	128		varies length
U 1 - 4	13	9080	166	1.04	942	1556		varies length
U 1 - 5	13	5160	28	1.04	538	180		varies length
U 1 - 6	13	3790	27	1.04	394	106		varies length
U 1 - 7	13	5890	27	1.04	591	168		varies length
U 2 - 1	16	12000	215	1.58	1898	4078		
U 2 - 2	16	8000	43	1.58	1264	544		
U 2 - 3	16	4840	22	1.58	765	188		varies length
U 2 - 4	16	8320	129	1.58	1473	1900		varies length
U 2 - 5	16	5160	22	1.58	814	178		varies length
U 2 - 6	16	4180	21	1.58	660	158		varies length
U 2 - 7	16	5810	21	1.58	918	183		varies length
U 2 - 8	16	3164	32	1.58	500	180		varies length
U 2 - 9	16	1582	8	1.58	250	20		varies length
U 3 - 1	16	12000	210	1.58	1896	3982		
U 3 - 2	16	8000	42	1.58	1264	531		
U 3 - 3	16	4840	22	1.58	765	188		varies length
U 3 - 4	16	8320	128	1.58	1473	1966		varies length
U 3 - 5	16	5160	22	1.58	814	178		varies length
U 3 - 6	16	4180	20	1.58	680	132		varies length
U 3 - 7	16	5810	20	1.58	918	184		varies length
U 4 - 1	16	8000	686	1.58	1264	8668		
U 4 - 2	16	5230	686	1.58	826	6880		
U 4 - 3	19	8000	118	2.23	1784	2088		
U 4 - 4	19	5230	118	2.23	1168	1303		
U 5 - 1	13	5998	404	1.04	824	2518		
U 5 - 2	13	1278	734	1.04	133	982		
U 6	13	3117	808	1.04	324	2818		
U ^P 1	13	272	820	1.04	0.28	175		
U ^P 2	13	344	410	1.04	0.36	147		varies length
U ^P 3	13	347	1030	1.04	0.36	372		varies length
U ^P 4	13	430	410	1.04	0.46	183		varies length
SUB TOTAL - 1						44237		

REBAR NAME	DIA (mm)	LENGTH (mm)	NO.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	TOTAL WEIGHT (kg)	DIAGRAM	REMARKS
W 1 - 1	25	12000	150	3.85	4620	6930		
W 1 - 2	25	8000	30	3.85	3080	824		
W 1 - 3	25	7080	16	3.85	2728	436		varies length
W 1 - 4	25	10440	90	3.85	4019	3817		varies length
W 1 - 5	25	5150	18	3.85	1985	317		varies length
W 1 - 6	25	5880	14	3.85	2256	316		varies length
W 1 - 7	25	6370	14	3.85	2652	343		varies length
W 1 - 8	25	5000	66	3.85	1926	1078		varies length
W 1 - 9	25	2830	24	3.85	1090	281		varies length
W 1 - 10	25	3275	18	3.85	1261	227		varies length
W 1 - 11	25	1315	6	3.85	506	30		varies length
W 2 - 1	13	12000	120	1.04	1248	1488		
W 2 - 2	13	8000	24	1.04	832	200		
W 2 - 3	13	4320	12	1.04	448	54		varies length
W 2 - 4	13	8080	72	1.04	942	678		varies length
W 2 - 5	13	5160	12	1.04	538	84		varies length
W 2 - 6	13	3780	12	1.04	384	47		varies length
W 2 - 7	13	5890	12	1.04	591	71		varies length
W 2 - 8	13	3185	40	1.04	331	132		varies length
W 2 - 9	13	1583	10	1.04	166	17		varies length
W 3 - 1	19	3535	860	2.23	783	7056		
W 3 - 2	25	3848	94	3.85	1491	1383		varies length
W 3 - 3	19	3713	180	2.23	828	1325		varies length
W 3 - 4	25	3885	152	3.85	1500	2278		
W 3 - 5	25	5630	24	3.85	1363	327		
W 4 - 1	25	1715	24	3.85	680	166		
W 4 - 2	25	2018	88	3.85	777	884		varies length
W 4 - 3	25	2095	188	3.85	795	1320		
W ^P 1	13	887	200	1.04	0.90	180		
SUB TOTAL - 2						31984		
TOTAL REBAR WEIGHT P7-A2						78291		

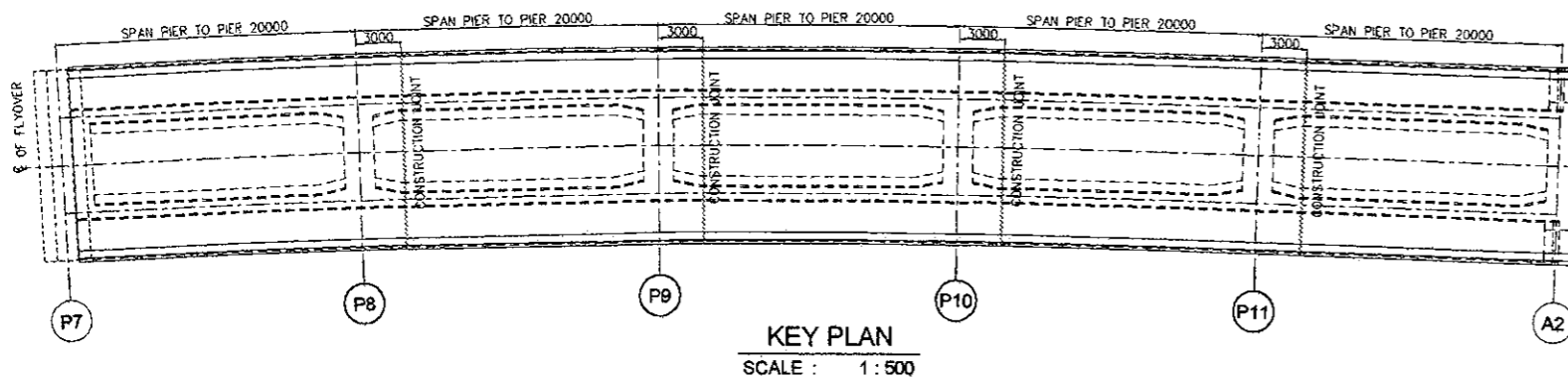
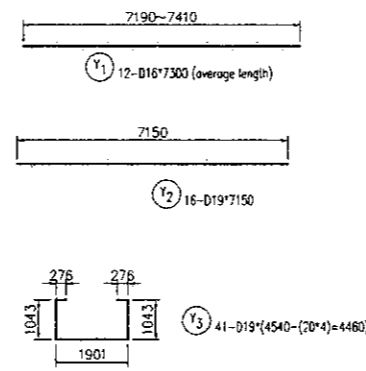


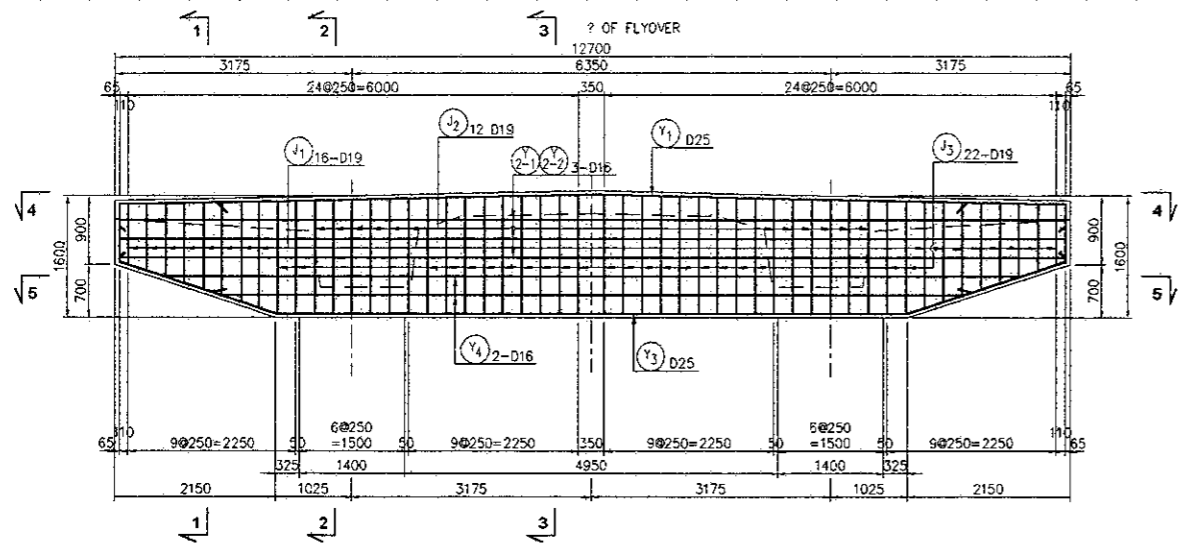


REINF NO.	φ (mm)	TYPE	BENDING DIMENSION (mm)				TOTAL LENGTH (m)	NUMBER	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REMARK
			a	b	c	d					
PIER											
Y 1	D16	A	7300				7.30	12	1.58	138	—
2	D19	A	7150				7.15	16	2.23	255	—
3	D19	B	1901	1043	276		4.46	41	2.23	408	□
										D19	663
										D16	138
										TOTAL (per 1 pier)	801
PIER LOCATION							P7 - A2 (P8, P9, P10, P11)				
REBAR WEIGHT TOTAL							801 x 4 = 3204 kg				

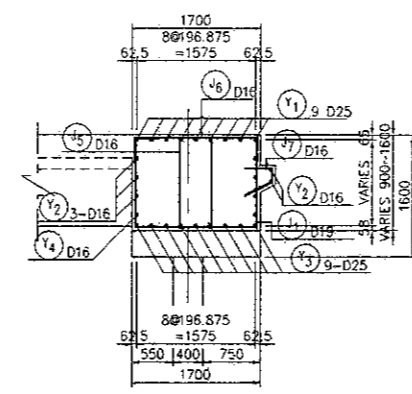
STIRRUP

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

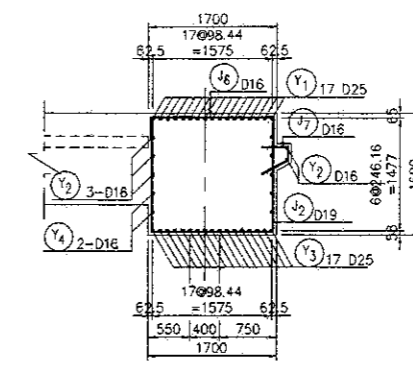




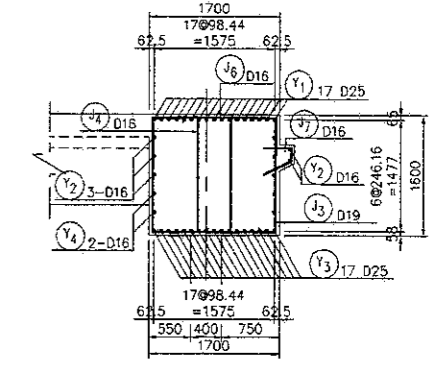
SECTION AT ABUTMENT
SCALE : 1 : 100



SECTION 1 - 1
SCALE : 1 : 100

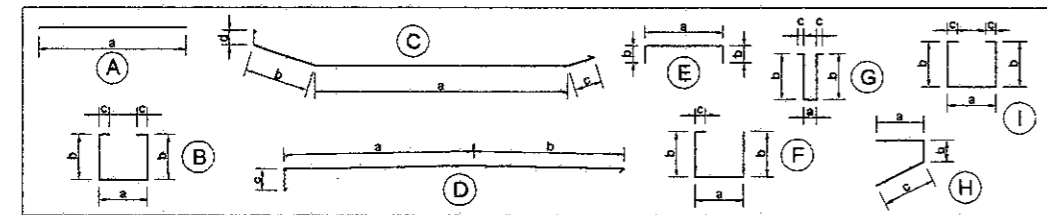


SECTION 2 - 2
SCALE : 1 : 100

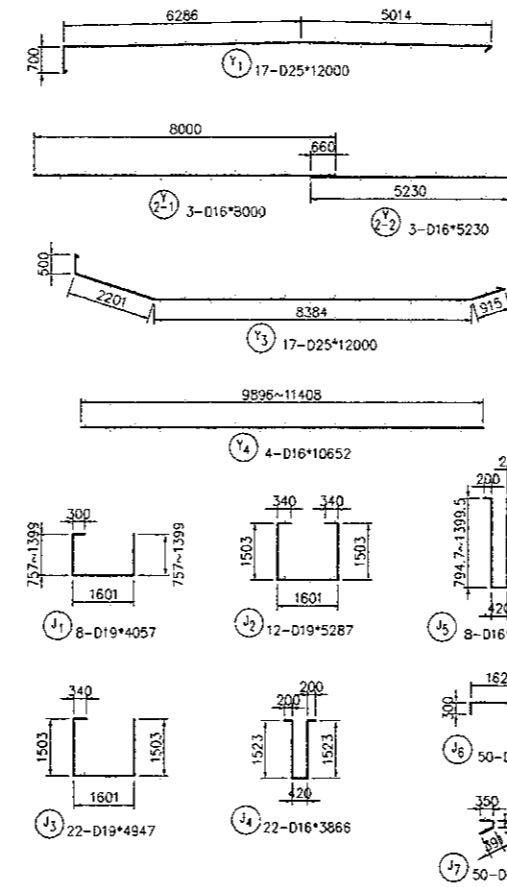


SECTION 3 - 3
SCALE : 1 : 100

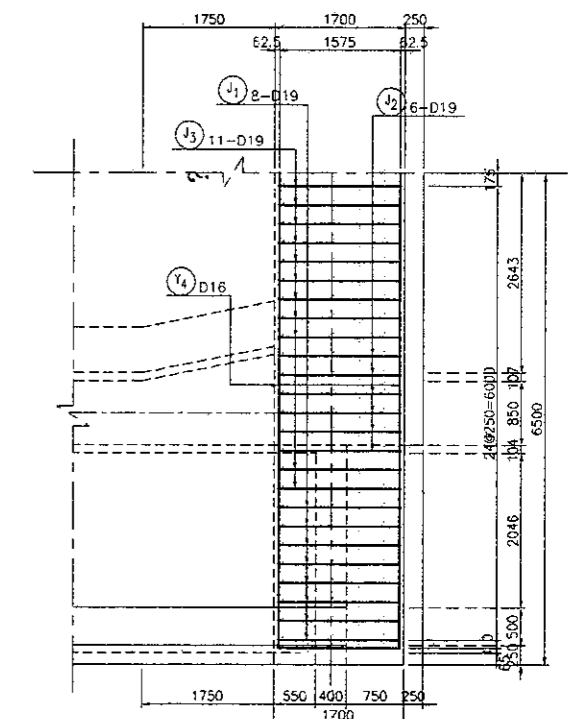
BAR BENDING ABUTMENT



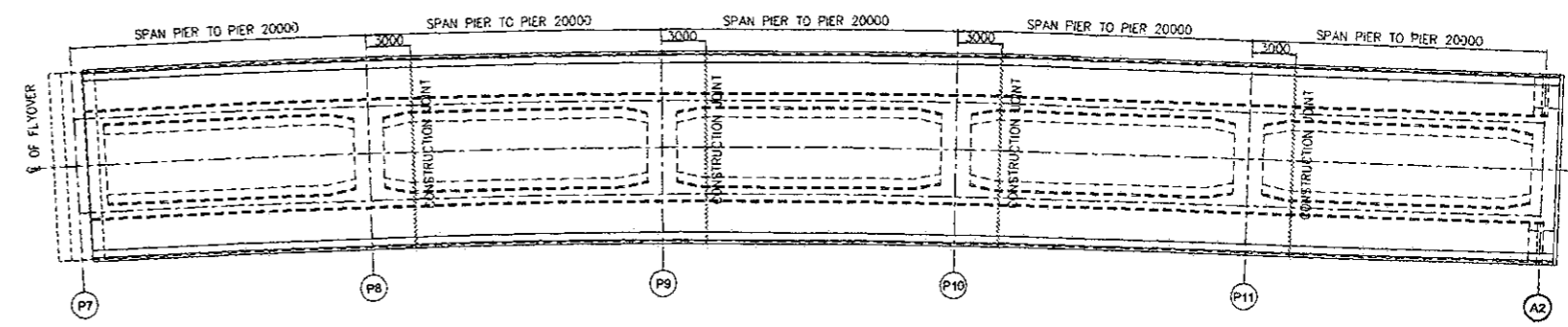
REINF NO.	φ (mm)	TYPE	BENDING DIMENSION (mm)					TOTAL LENGTH (m)	NUMBER	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REMARK
			a	b	c	d	e					
A 2												
J 1	D19	F	1601	1078	300		4.57	8	2.23	82		
2	D19	I	1601	1503	340		5.287	12	2.23	141		
3	D19	F	1601	1503	340		4.947	22	2.23	243		
4	D16	G	420	1523	200		3.866	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												
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		



SECTION 4 - 4
SCALE : 1 : 100

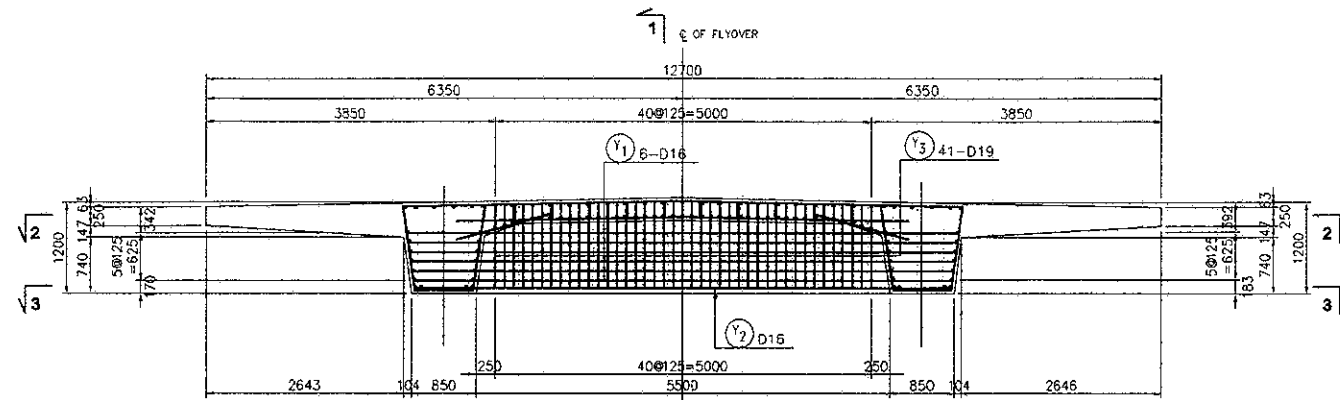


SECTION 5 - 5
SCALE : 1 : 100

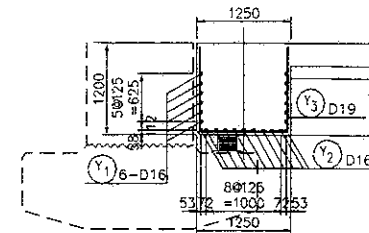


KEY PLAN
SCALE : 1 : 500

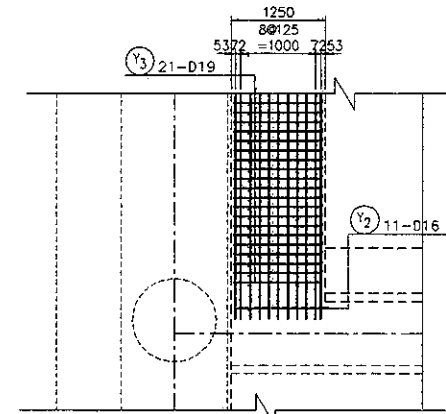
MAIN REBAR	90°						STIRRUP										
	φ	α	β	γ	δ	ε	φ	α	β	γ	δ	ε					
D16	40	88	113	119	100	88	75	21	89	4	40	94	96	94	58	83	17
D19	57	104.5	134	141	118	78	88	25	82	5	47.5	112	117	98	66	75	20
D25	75	137.5	177	185	157	103	118	32	108	6	70	177	180	157	103	118	32



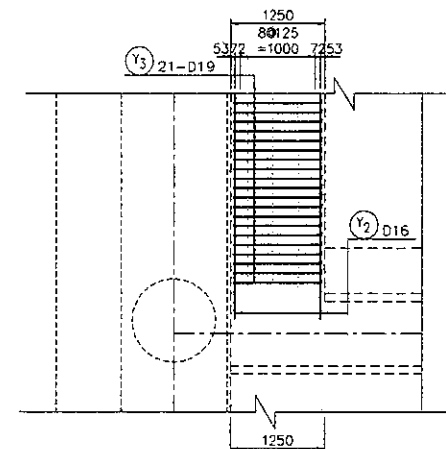
SECTION AT COPING PIER
 SCALE : 1 : 100



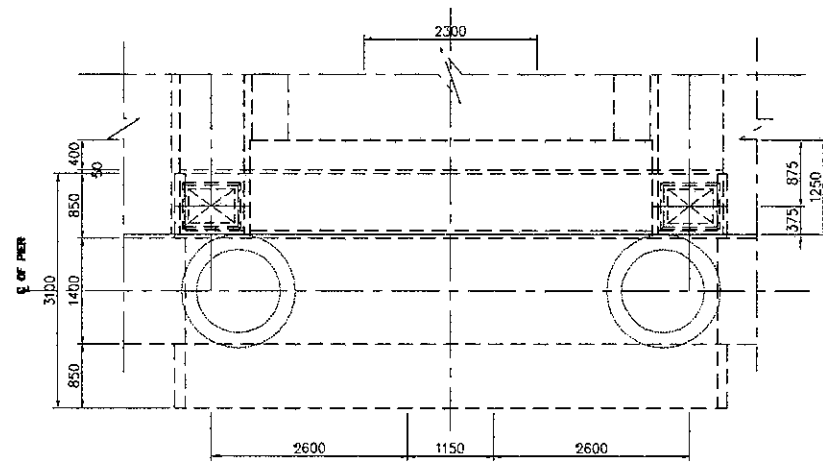
SECTION 1 - 1
 SCALE : 1 : 100



SECTION 2 - 2
 SCALE : 1 : 100



SECTION 3 - 3
 SCALE : 1 : 100



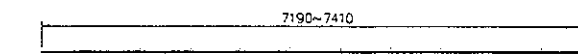
SECTION
 SCALE : 1 : 100

BAR BENDING

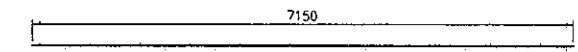
REINF. NO.	φ (mm)	TYPE	BENDING DIMENSION (mm)				TOTAL LENGTH (m)	NUMBER	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REMARK
			a	b	c	d					
PIER											
Y 1	D16	A	7300				7.3	12	1.58	138	—
2	D16	A	7150				7.15	11	1.58	124	—
3	D19	B	1165	1110			3.345	41	2.23	306	┌
										D19	306
										D16	262
										REBAR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

STIRRUP

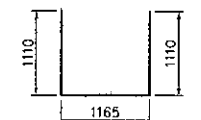
R=2.5φ	θ=45°		θ=60°		θ=90°	
	α	ΔL	α	ΔL	α	ΔL
D16	40	94	98	84	55	63
D19	47.5	112	117	99	66	75



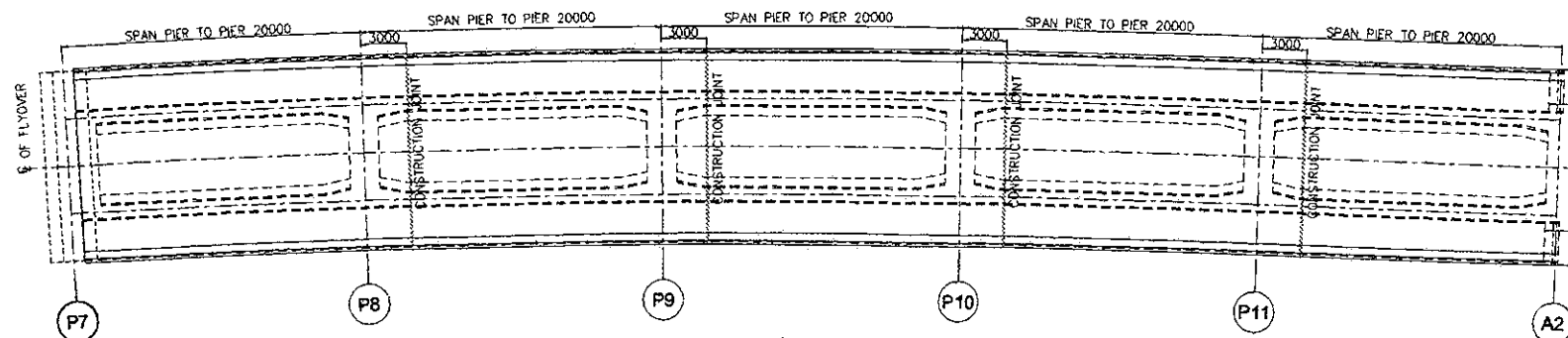
Y1 12-D16*7300 (average length)



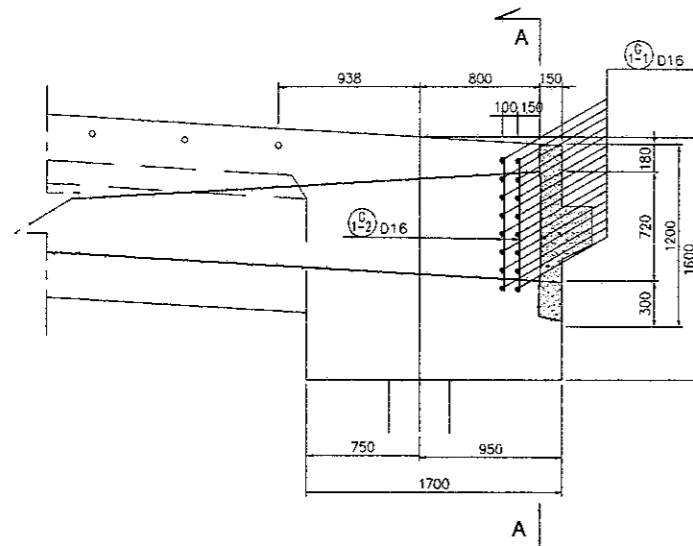
Y2 16-D16*7150



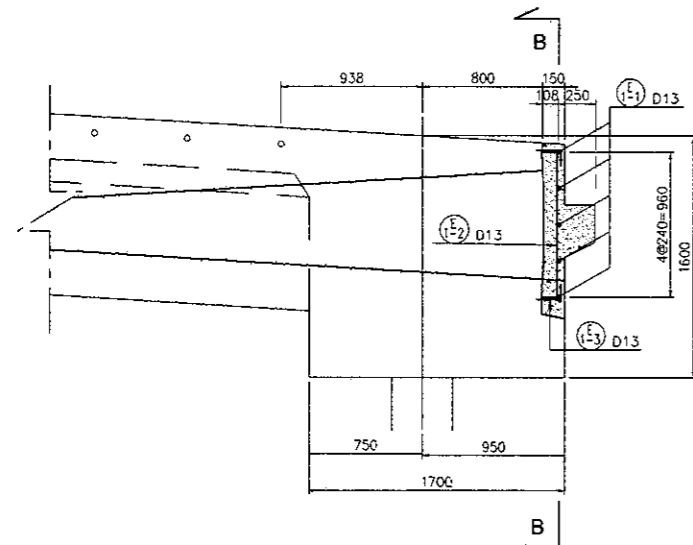
Y3 41-D19*(1385-(2*20)=3345)



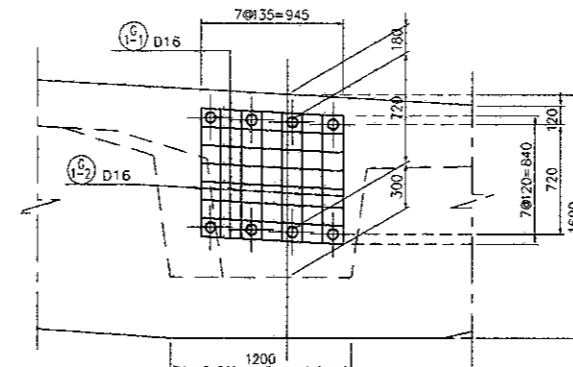
KEY PLAN
 SCALE : 1 : 500



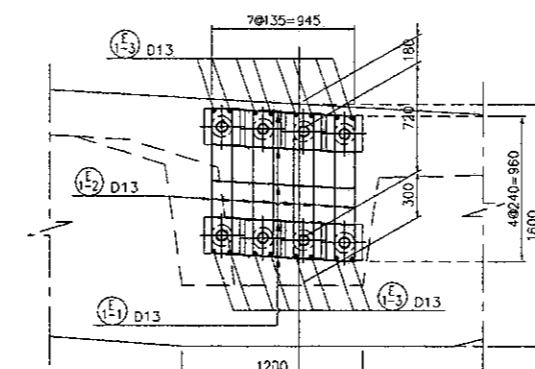
SECTION END ANCHORAGE
 SCALE : 1 : 50



SECTION END ANCHORAGE
 SCALE : 1 : 50



SECTION A - A
 SCALE : 1 : 50

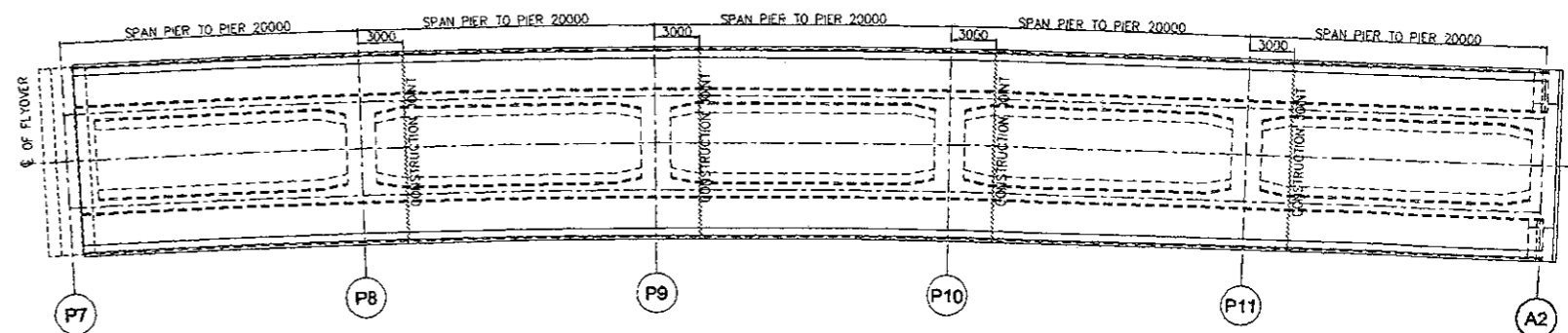
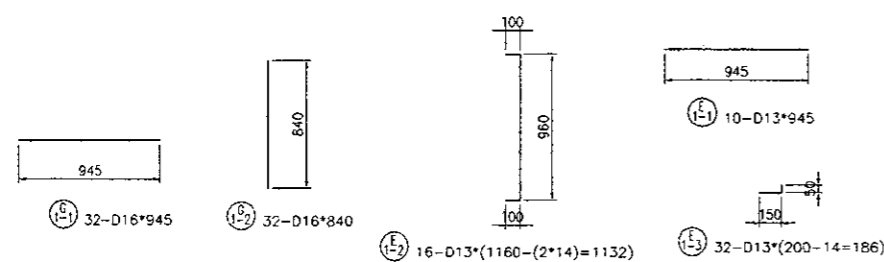


SECTION B - B
 SCALE : 1 : 50

REINF NO.	φ (mm)	TYPE	BENDING DIMENSION (mm)				TOTAL LENGTH (m)	NUMBER	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REMARK
			a	b	c	d					
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

STIRRUP

	R=2.5φ	θ=45°		θ=60°		θ=90°	
		o	ΔL	o	ΔL	o	ΔL
D16	40	94	99	84	55	63	17
D19	47.5	112	117	99	68	75	20



KEY PLAN
 SCALE : 1 : 50



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		DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT PETERONGAN FLYOVER - CONTRACT PACKAGE 3 (PETERONGAN - TANGGULANGIN) EAST JAVA PROVINCE		NOT TO SCALE	QUANTITIES SUMMARY FOR SUPERSTRUCTURE MISCELLANEOUS	PSM-01
	Sign		Sign		Sign			APPROVED BY	Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400	Sign		

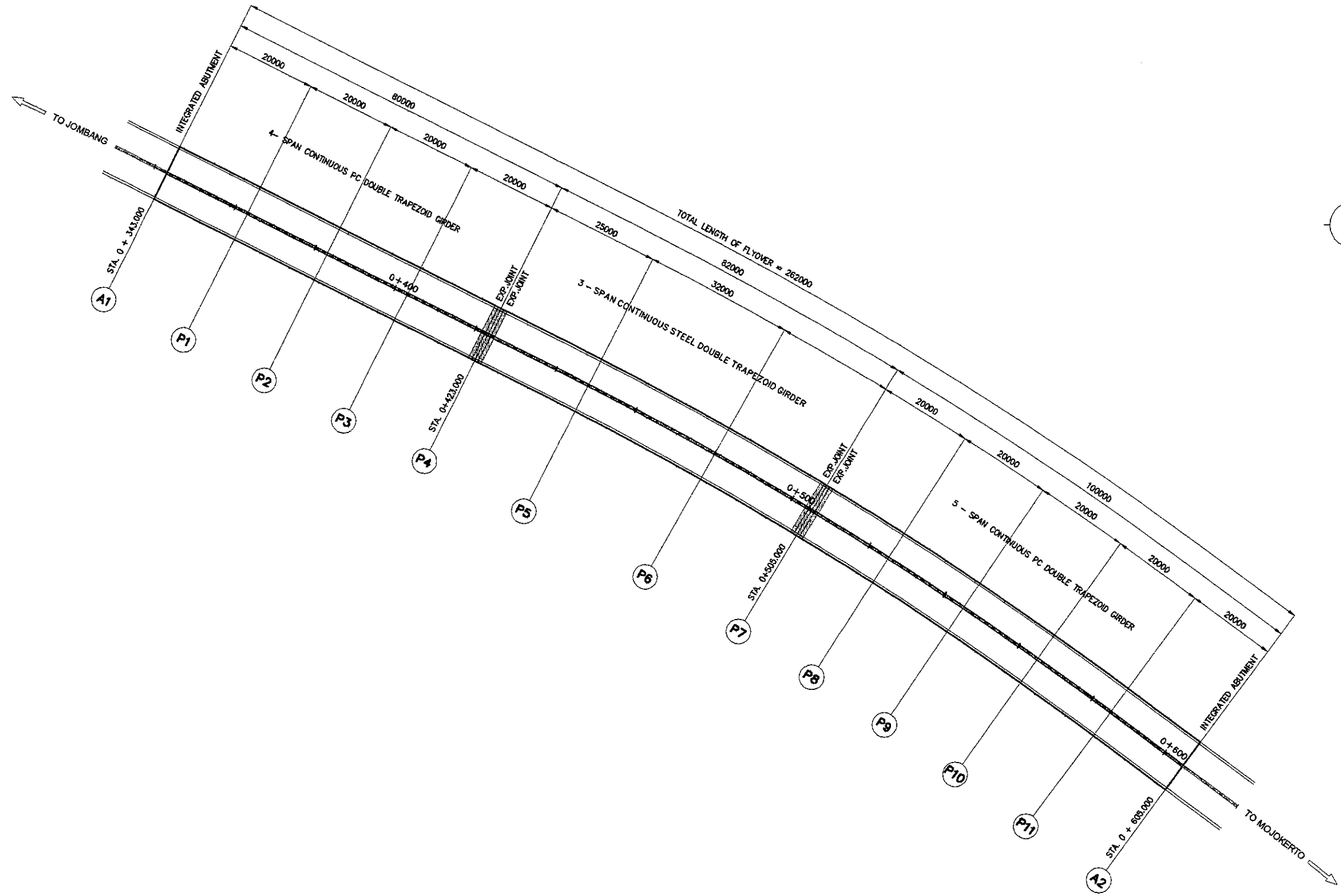
SUPPLEMENTARIES FOR STEEL SUPERSTRUCTURE

NO.	ITEM	UNIT	QUANTITY	NOTES
1	BEARING : - MOVEABLE TYPE B1 (ø485x69.5mm)	pcs	4	
2	STOPPER (ø300x143mm)	pcs	4	
3	EXPANSION JOINT : - PIER P4 - PIER P7	m' m'	2 2	
4	RESTRAINER : - PIER P4 3 (TP-200) - PIER P7 3 (TP-200)	pcs pcs	2 2	
5	PARAPET	m'	164	NO OUTER GUTTER HIGHWAY PORTION
6	MEDIAN	m'	-	
7	SAFETY FENCE	m'	86	

SUPPLEMENTARIES FOR PC SUPERSTRUCTURE

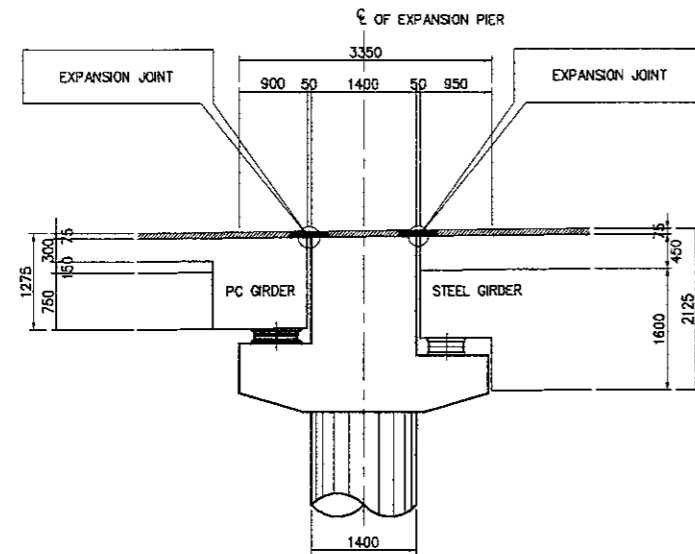
NO.	ITEM	UNIT	QUANTITY	NOTES
1	BEARING : - TYPE A3 (570x570x133mm)	pcs	4	
2	STOPPER (ø55x143mm)	pcs	14	
3	PARAPET	m'	360.0	NO OUTER GUTTER
4	MEDIAN	m'	-	HIGHWAY PORTION
5	EXPANSION JOINT	m'	91.0	

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

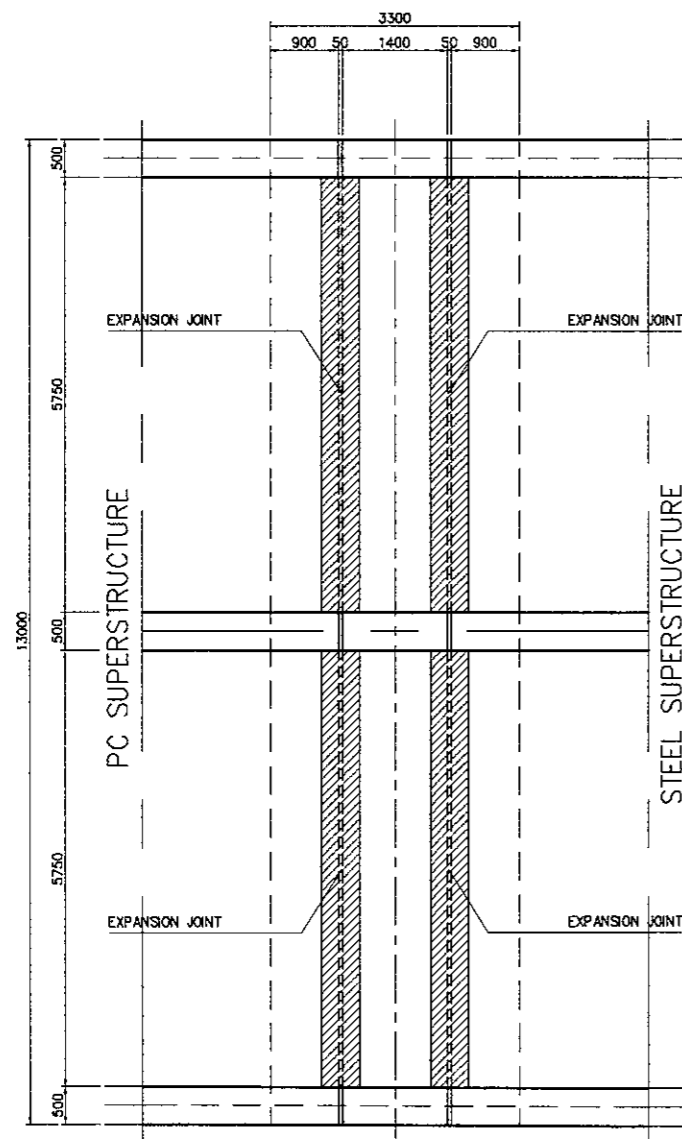


LAYOUT OF EXPANSION JOINT
 SCALE 1 : 1000

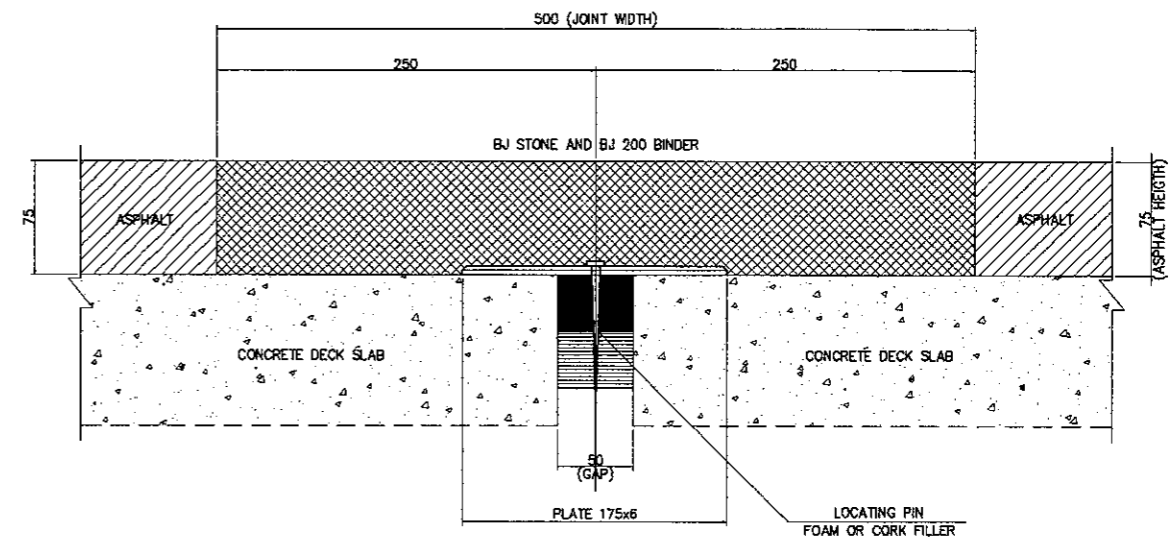
- NOTES :
1. TOTAL MOVEMENT OF EACH TYPE OF EXPANSION JOINTS = 50 mm
 2. THE DETAIL OF EXPANSION JOINTS SEE DWG. NO. PSM-03
 3. ALL DIMENSIONS ARE IN MILIMETERS



PROFILE OF PIER
 SCALE 1 : 100

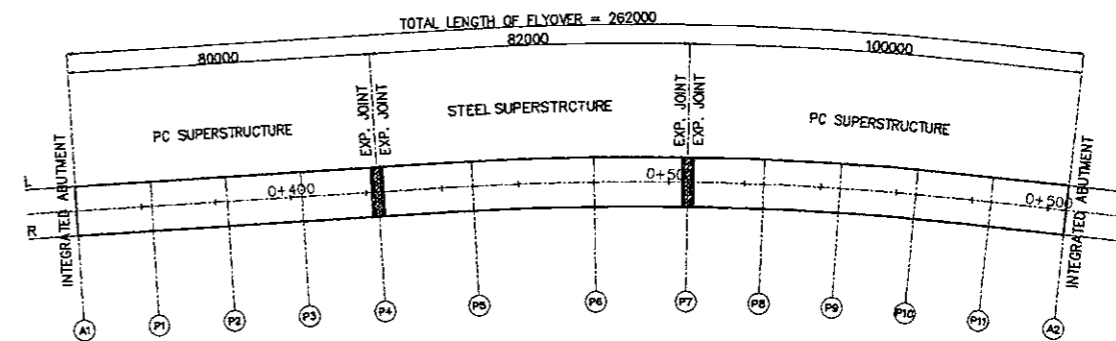


PLAN SECTION
 SCALE 1 : 100



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

DETAIL - A
 SCALE 1 : 5



KEY PLAN
 SCALE 1 : 2000

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

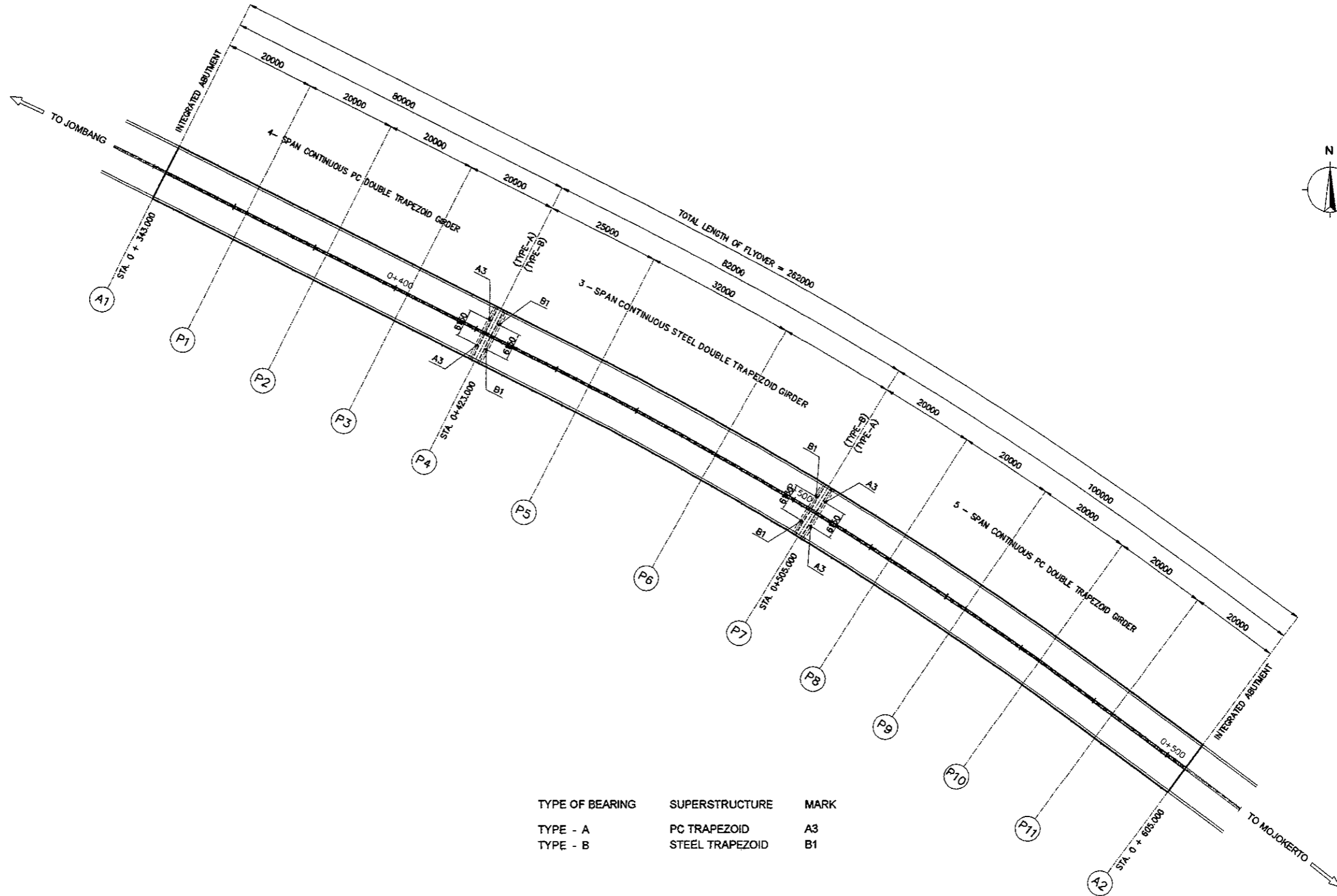
APPROVED BY	
Name	Ir. HERRY VAZA M,Eng.Sc NIP. : 110038400
Sign	
Date	

PROJECT AND LOCATION :
 DETAILED DESIGN STUDY OF
 NORTH JAVA CORRIDOR FLYOVER PROJECT
 PETERONGAN FLYOVER - CONTRACT PACKAGE 3
 (PETERONGAN - TANGGULANGIN)
 EAST JAVA PROVINCE

SCALE :
1 : 10
1 : 20
1 : 1000
FULL SIZE A3

DRAWING TITLE :
BEARING LAYOUT PLAN

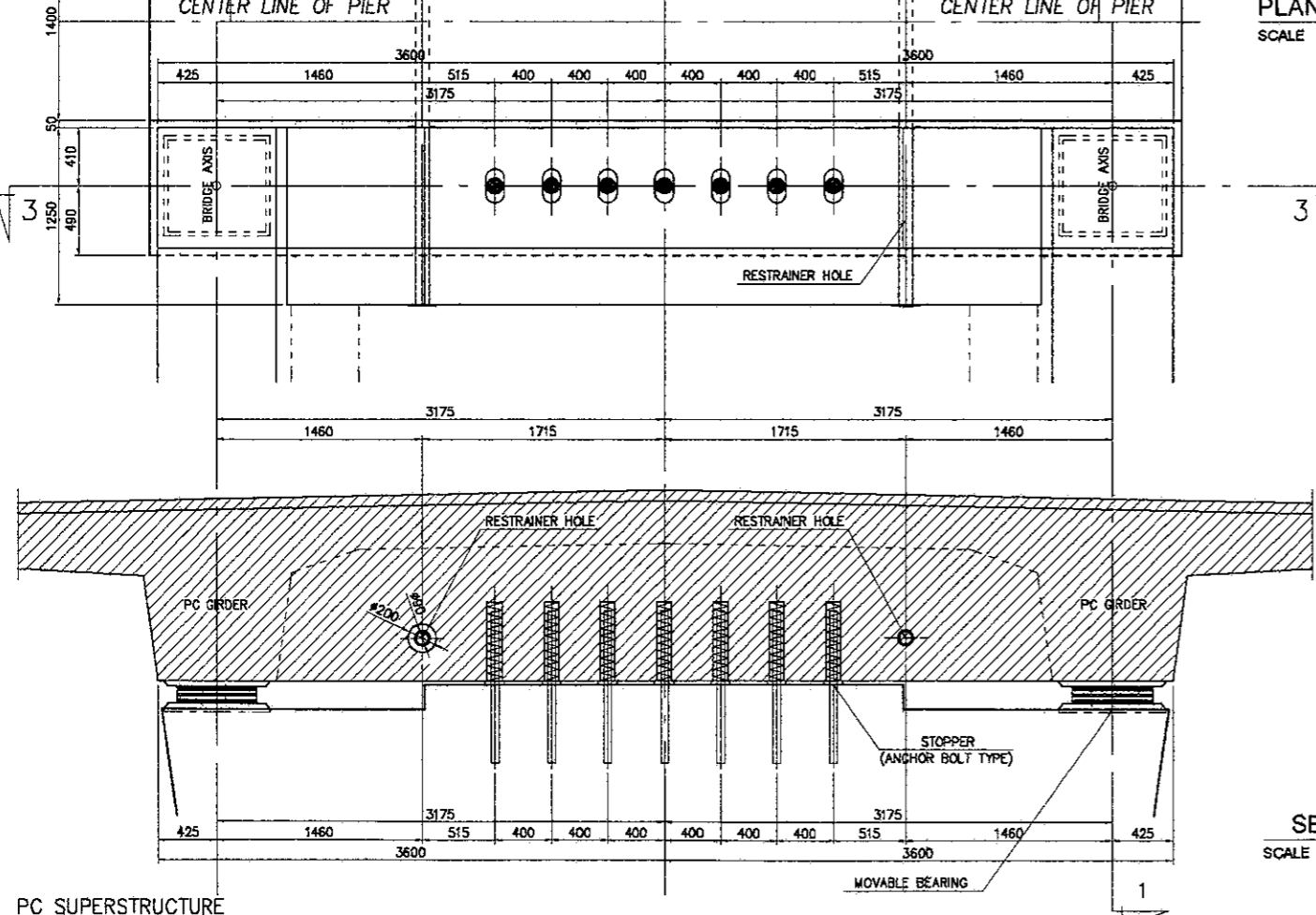
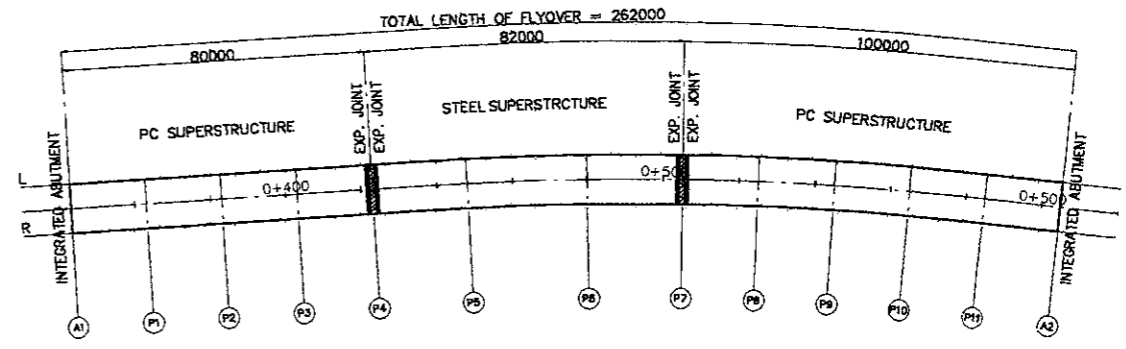
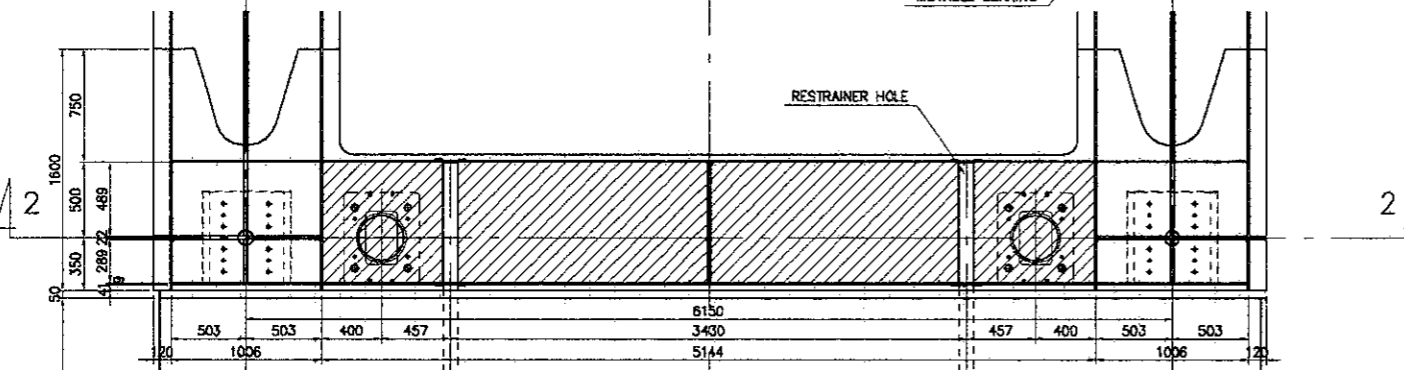
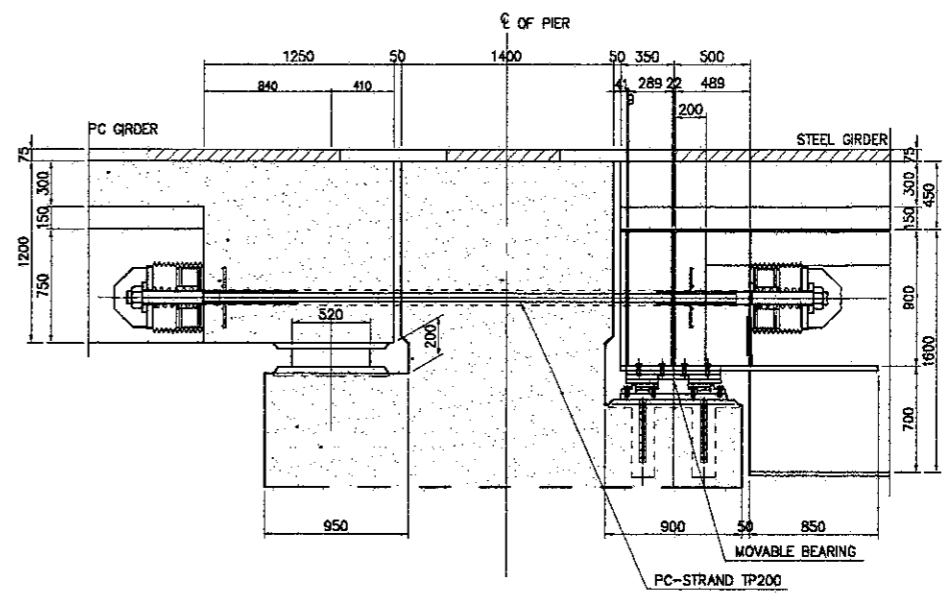
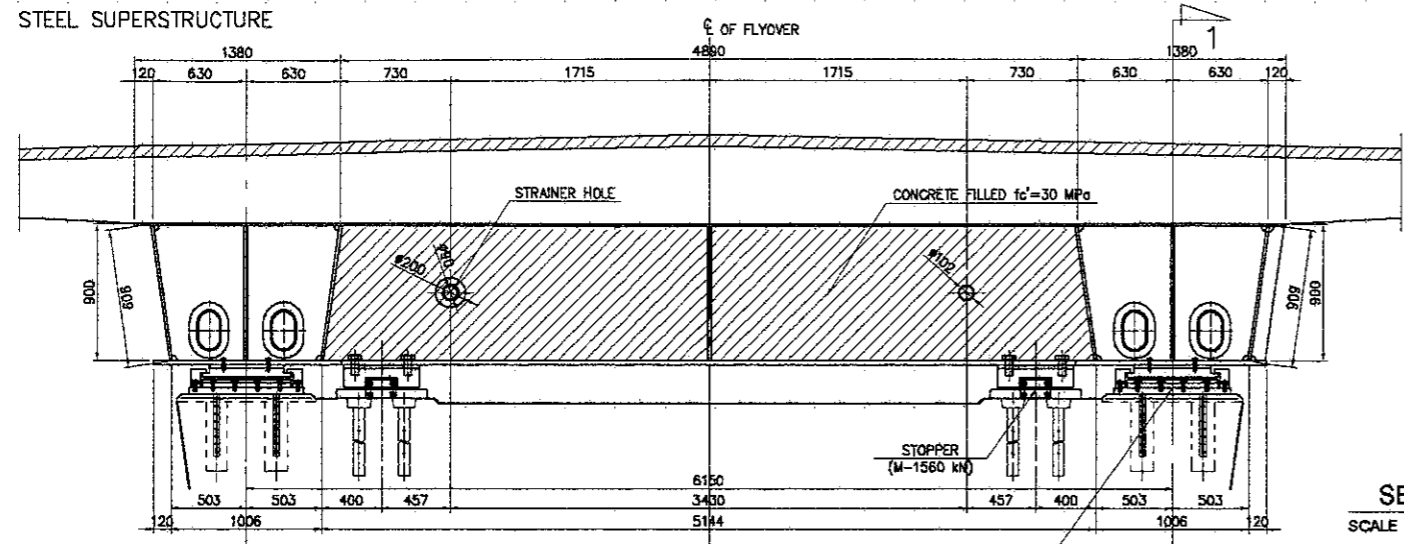
DRAWING NO. :
PSM-004
SHEET NO. :
04 / 11



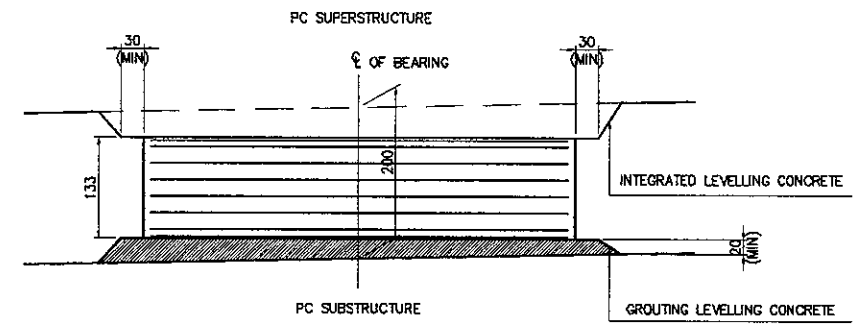
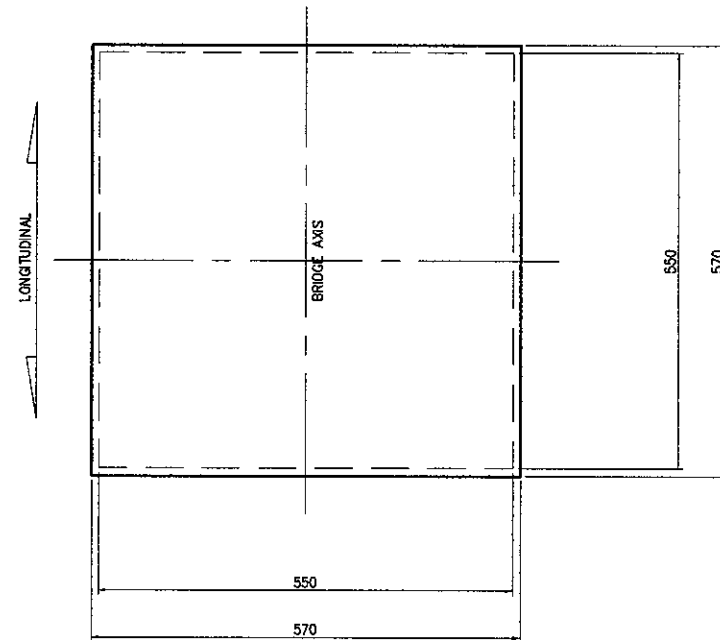
TYPE OF BEARING	SUPERSTRUCTURE	MARK
TYPE - A	PC TRAPEZOID	A3
TYPE - B	STEEL TRAPEZOID	B1

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

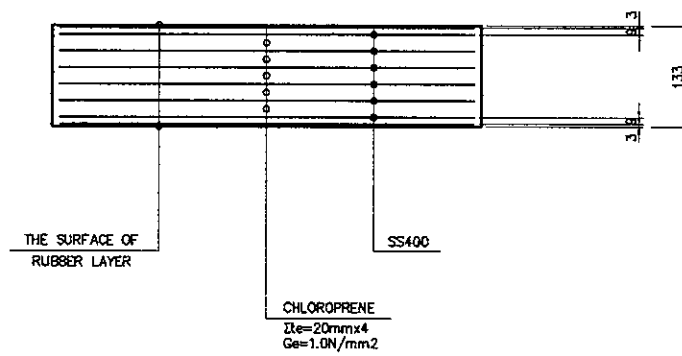


NOTES :
 ALL DIMENSIONS ARE IN MILLIMETERS

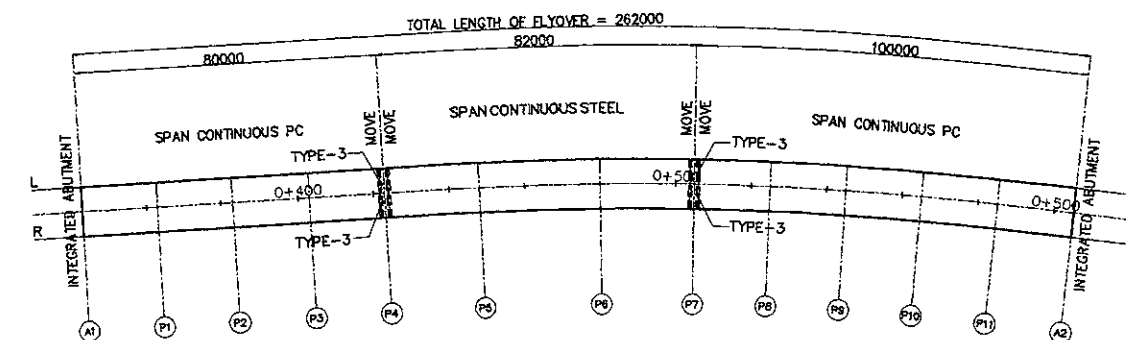


BEARING SEATING DETAIL
 SCALE 1 : 10

NAME	SIZE	MATERIAL	UNIT (NOS.)
RUBBER BEARING (TYPE-3)	570x570x133	CHLOROPRENE SS400	P4 2 (LEFT-RIGHT) P7 2 (LEFT-RIGHT)



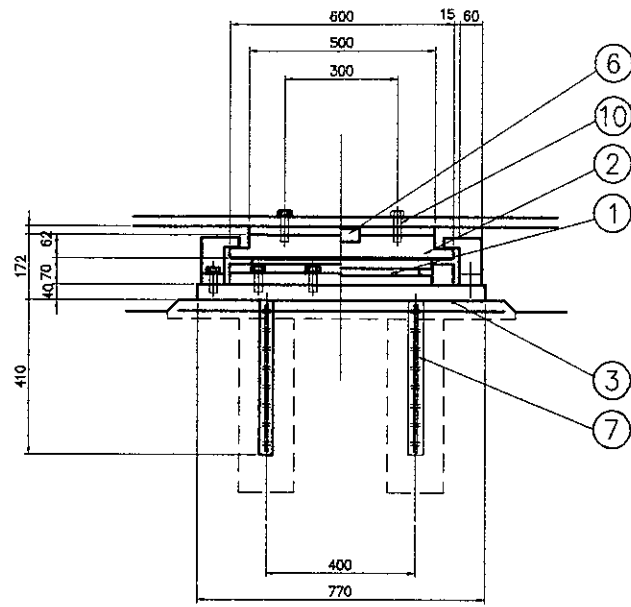
MOVABLE BEARING
 SCALE 1 : 10



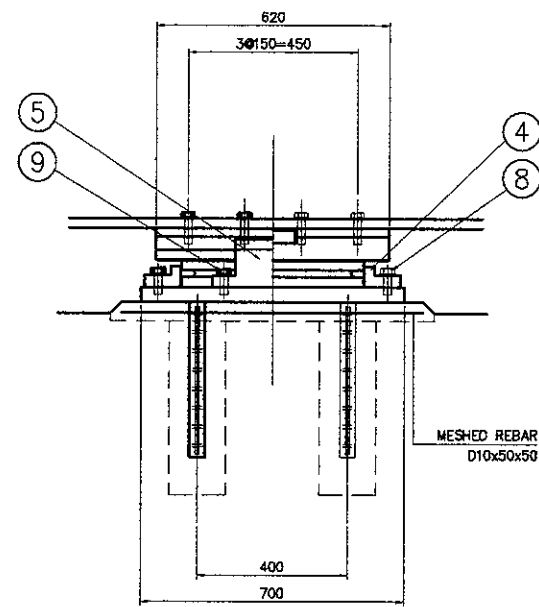
KEY PLAN
 SCALE 1 : 2000

NOTES :
 ALL DIMENSIONS ARE IN MILLIMETERS

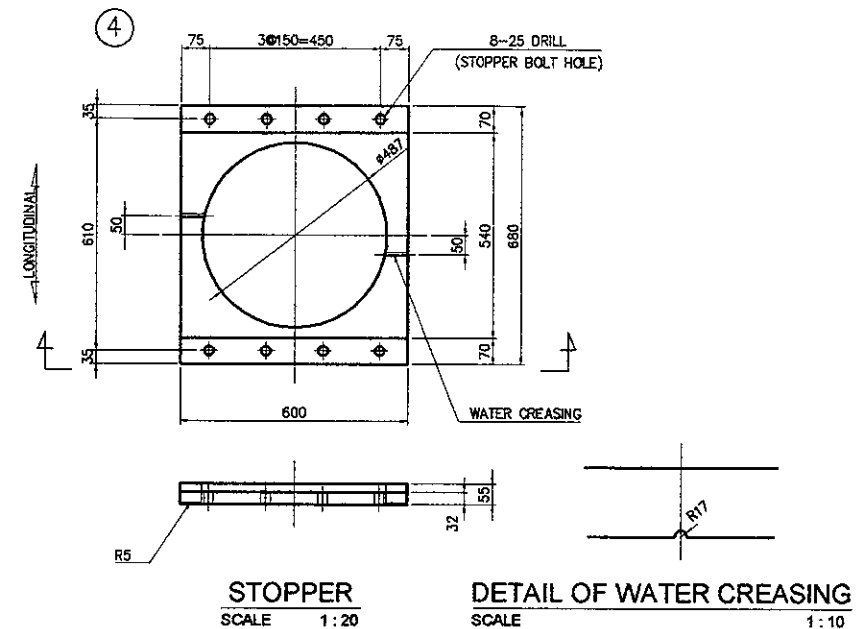
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name S. MATSUI	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



SECTION OF TRANSVERSE DIRECTION
SCALE 1 : 20



SECTION OF LONGITUDINAL DIRECTION
SCALE 1 : 20



STOPPER
SCALE 1 : 20

DETAIL OF WATER CRESSING
SCALE 1 : 10

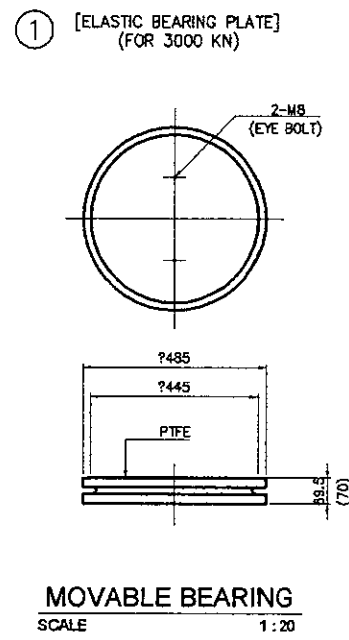
DESIGN CONDITION

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

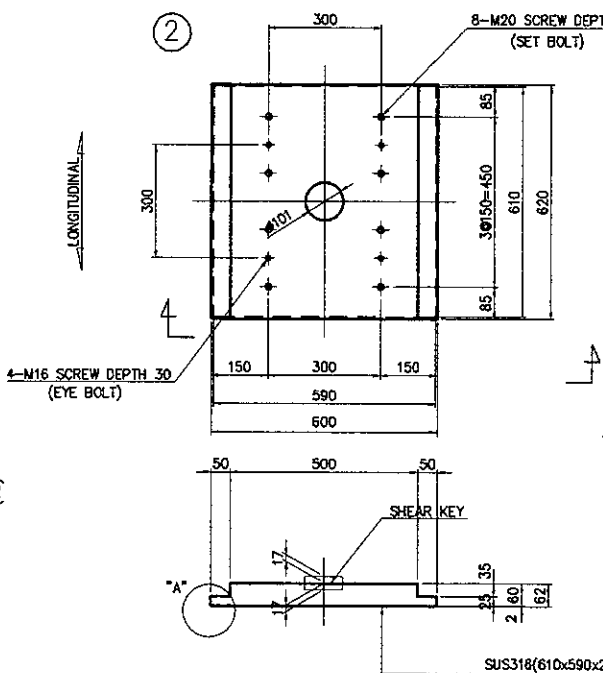
MATERIAL LIST (1 UNIT)

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	SCHW480orM490A	2	29.6	
6	SHEAR KEY	SM490AorS355CN	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				530.1 (kg)	
BRIDGE SEAT MORTAR		NON SHRINK MORTAR			(m ³)
GRID REINFORCING BAR					
S1	D10x800	SD295	18	8.1	
S2	D10x850	SD295	17	8.1	
TOTAL				16.2 (kg)	

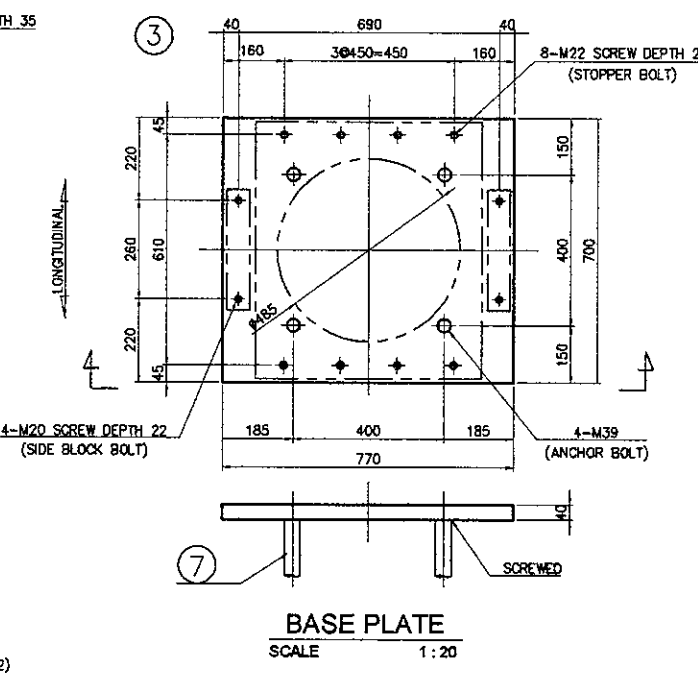
- BASED ON HIGHWAY BRIDGE BEARING MANUAL
- MEMBER WITH O TO BE MELT ZINC PLATING
JS H 8641 HDZ55, HDZ35
- WEIGHT OF MOVABLE RUBBERS BEARING (ELASTIC LOADING PLATE) IS FOR REFERENCE ONLY
- WEIGHT OF SET BOLT MUST BE COUNTED FOR $\phi = 100$ AS REFERENCE
- SHEAR KEY AND PARTNES SHALL BE HIGH DENSITY ZINC COAT $80 \mu m$
- NUMBER OF EYE BOLT SHALL BE DECDED BASED ON THE ERECTION REQUIREMENT
- EYE BOLT HOLE FOR FABRICATION MUST BE LARGES
- STOPPER BOLT WASHER M22x55 STRENGTH 8.8
- SIDE BLOCK BOLT WASHER M20x55 STRENGTH 8.8
- SET BOLT WASHER M20x ϕ STRENGTH 8.8



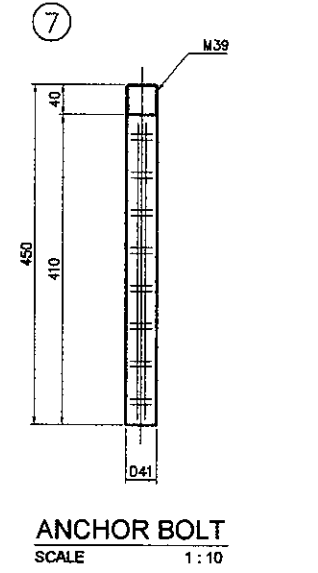
MOVABLE BEARING
SCALE 1 : 20



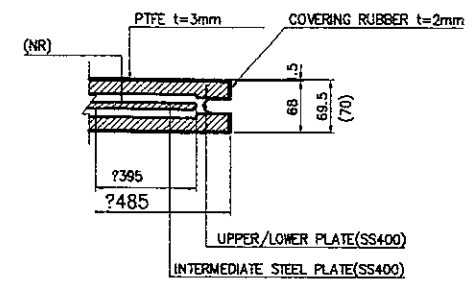
SLIDING PLATE
SCALE 1 : 20



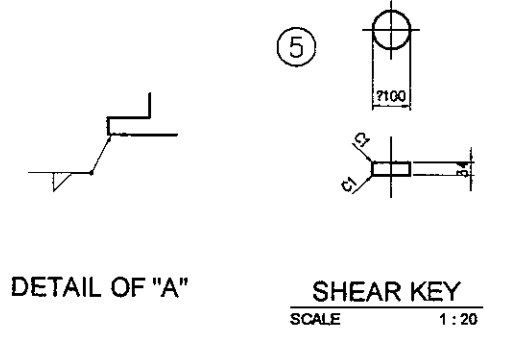
BASE PLATE
SCALE 1 : 20



ANCHOR BOLT
SCALE 1 : 10

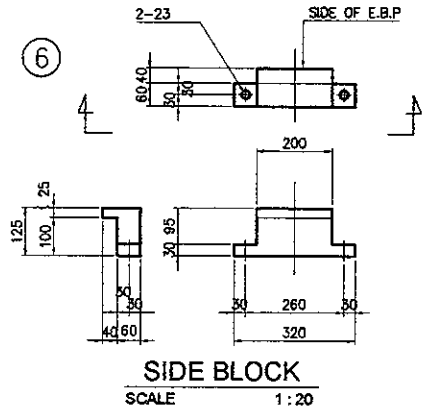


DETAIL OF E.B.P

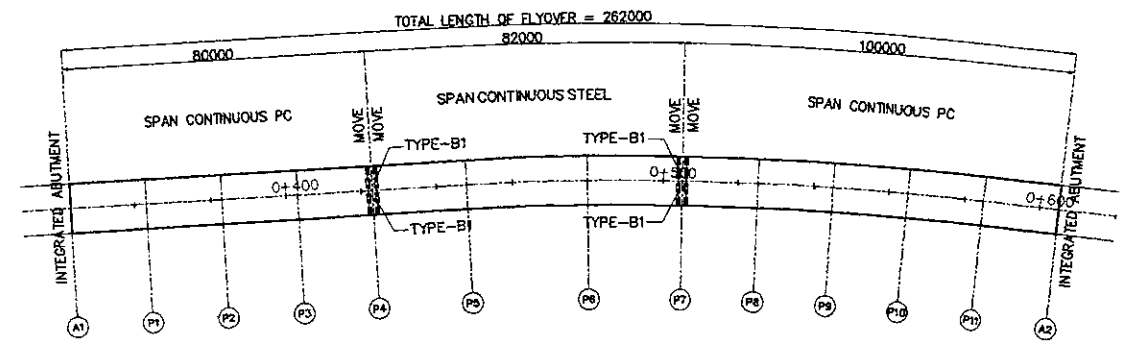


DETAIL OF "A"

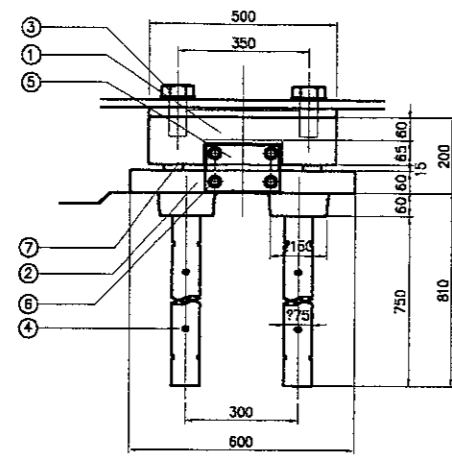
SHEAR KEY
SCALE 1 : 20



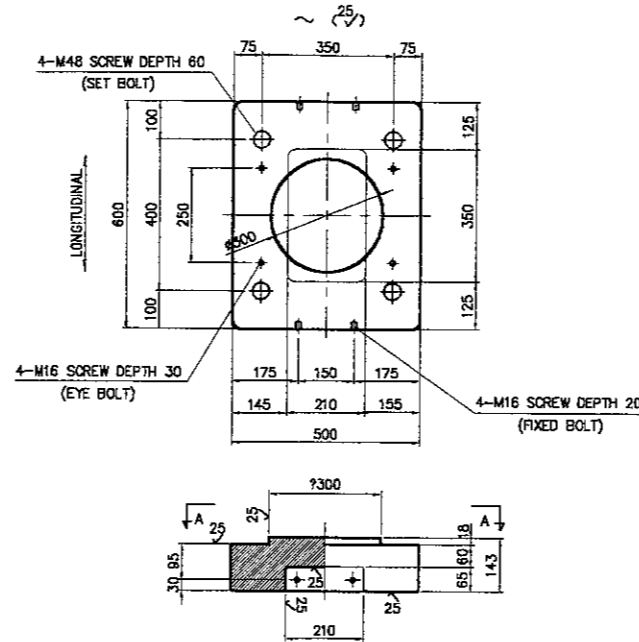
SIDE BLOCK
SCALE 1 : 20



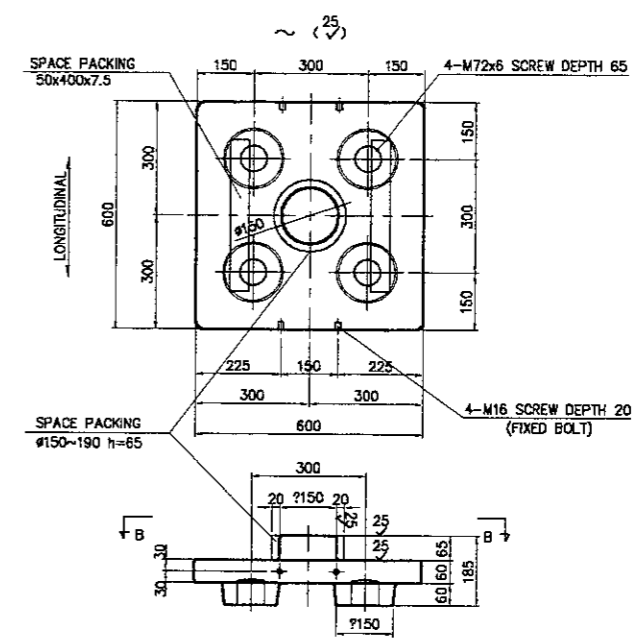
KEY PLAN
SCALE 1 : 2000



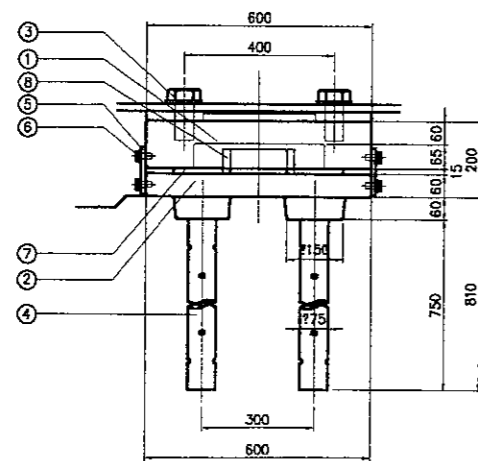
TRANVERSE DIRECTION
 SCALE 1 : 20



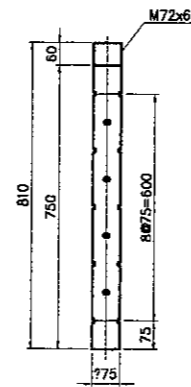
SLIDING PLATE
 SCALE 1 : 20



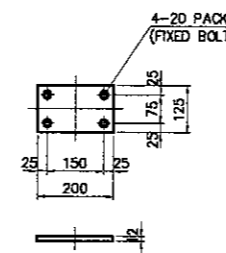
STOPPER PLATE
 SCALE 1 : 20



LONGITUDINAL DIRECTION
 SCALE 1 : 20



ANCHOR BOLT
 SCALE 1 : 10

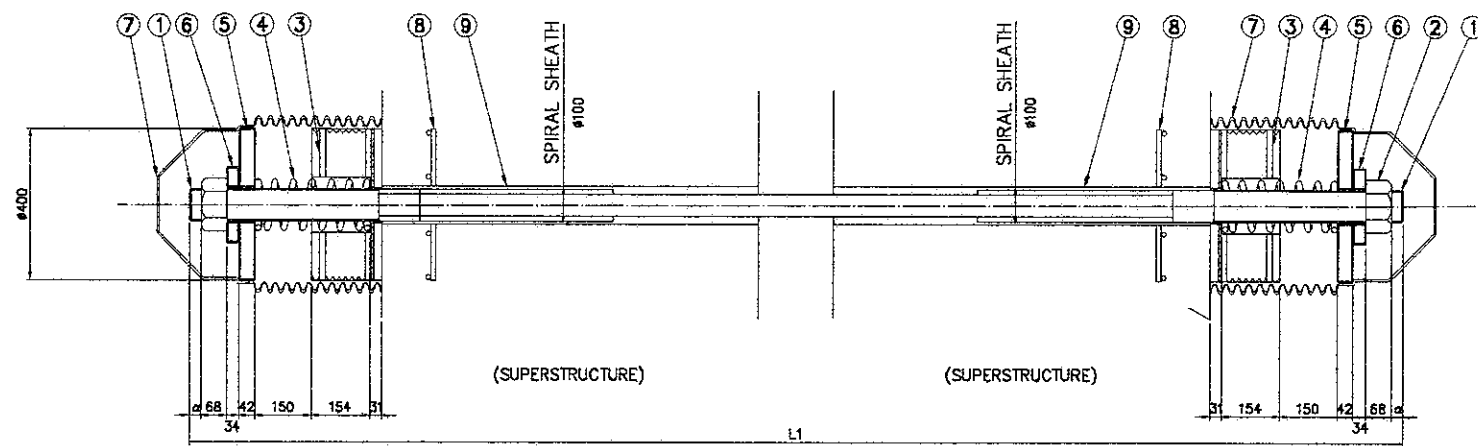


FIXED PLATE
 SCALE 1 : 10

DESCRIPTION

NO.	DESCRIPTION	DIMENS	MATERIAL	QTY	WEIGHT (kg)	REMARKS
①	SLIDING PLATE	600x500x143	SCW48CN	1	263.5	
②	STOPPER PART	600x600x185	SCW48CN	1	203.6	
③	SET BOLT WHASER	M48x#	STRENGTH 8.8	4	10.7	
4	ANCHOR BOLT	φ75x810	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	φ150~180 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 O 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 d=100 AS REFERENCE
5. EYE BOLT CAN BE USE FOR HANGING HOOK
6. NUMBER OF EYE BOLT SHALL BE DECIED BASED ON THE ERECTION REQUIREMENT



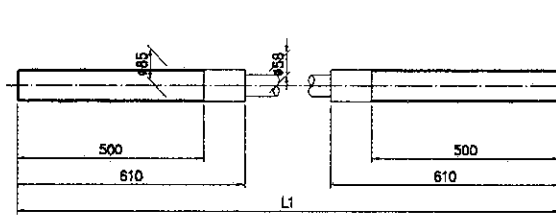
DESIGN CONDITION

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

MATERIAL LIST (1-SET BRIDGE FALL PREVENTION SYSTEM)

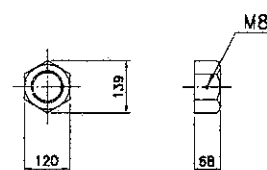
No	NAME	SPECIFICATION	UNIT	QTY	1 PIER	REMARKS
1	PC WIRE STRAND	SWPR	PCS	1		PE-COAT
2	N U T	S45C	SET	2		ZINC PLATING M8 BOLT
3	STOPPER PLATE	CR,NEO PLUS,SS400	PCS	2		
4	SPRING	SWOSC	SET	2		PE-COAT
5	BUFFER	NEO PLUS,SS400	SET	2		
6	BUFFER	NEO PLUS,SS400	SET	2		
7	PROTECTION CAP	CR or TPE	SET	2		
8	WIRE MESH	S0295	SET	16		
9	SPIRAL	SPCC	SET	2		

DETAIL OF ATTACHMENT
SCALE 1 : 20



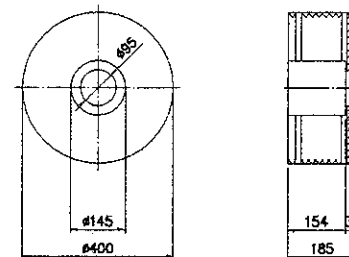
1-PC WIRE STRAND (TP200)
SCALE 1 : 20

① PC鋼より線 (TP200)



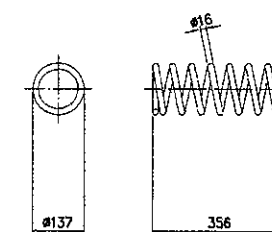
2-N U T
SCALE 1 : 20

② 緩み止め付ナット



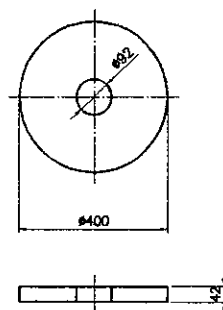
3-STOPPER PLATE
SCALE 1 : 20

③ セーフティストッパー



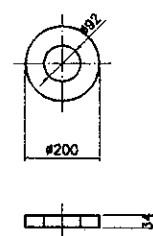
4-SPRING
SCALE 1 : 20

④ コイルスプリング



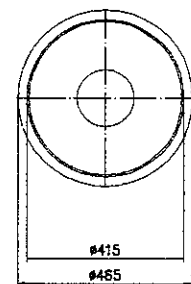
5-BUFFER
SCALE 1 : 20

⑤ 防錆支圧板



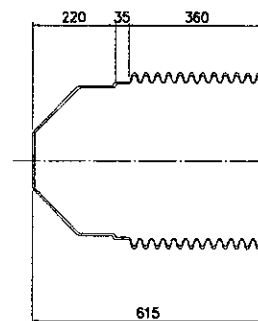
6-BUFFER
SCALE 1 : 20

⑥ 防錆座金



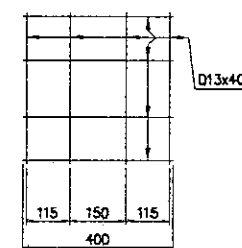
7-PROTECTION CAP
(POLYETHYLENE)
SCALE 1 : 20

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
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
PETERONGAN FLYOVER - CONTRACT PACKAGE 3
(PETERONGAN - TANGGULANGIN)
EAST JAVA PROVINCE

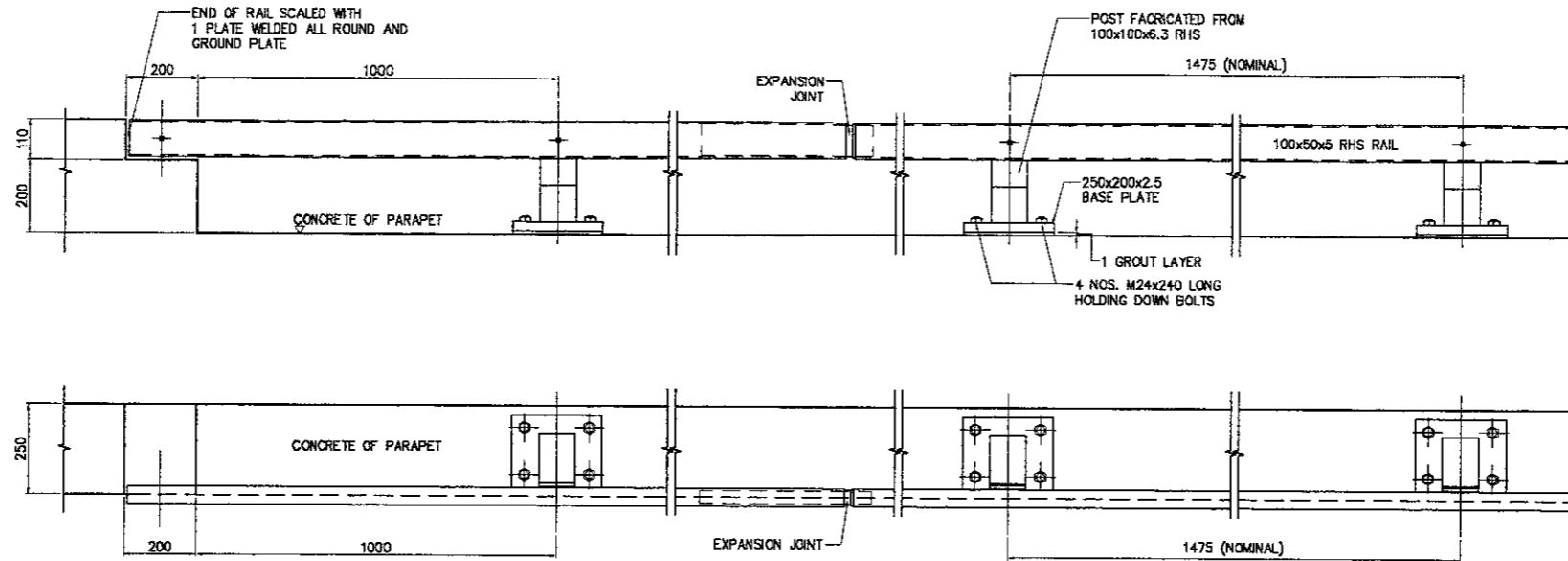
SCALE :
1:10, 1:20
FULL SIZE A3

DRAWING TITLE :
DETAIL OF PARAPET, MEDIAN
AND RAILING

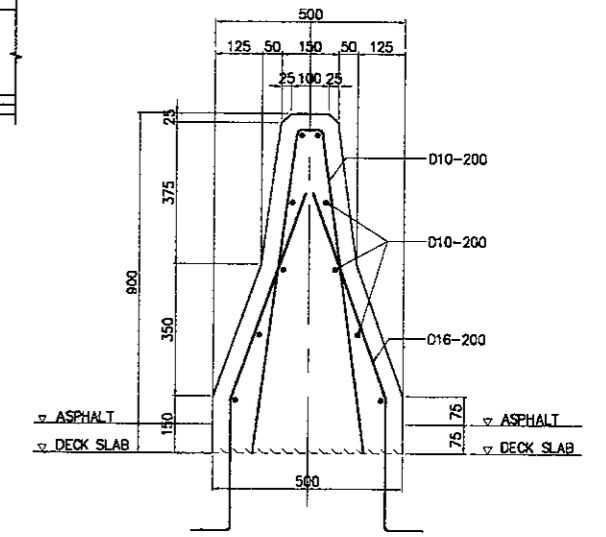
DRAWING NO :
PSM-10
SHEET NO :
10/11

NOTES :

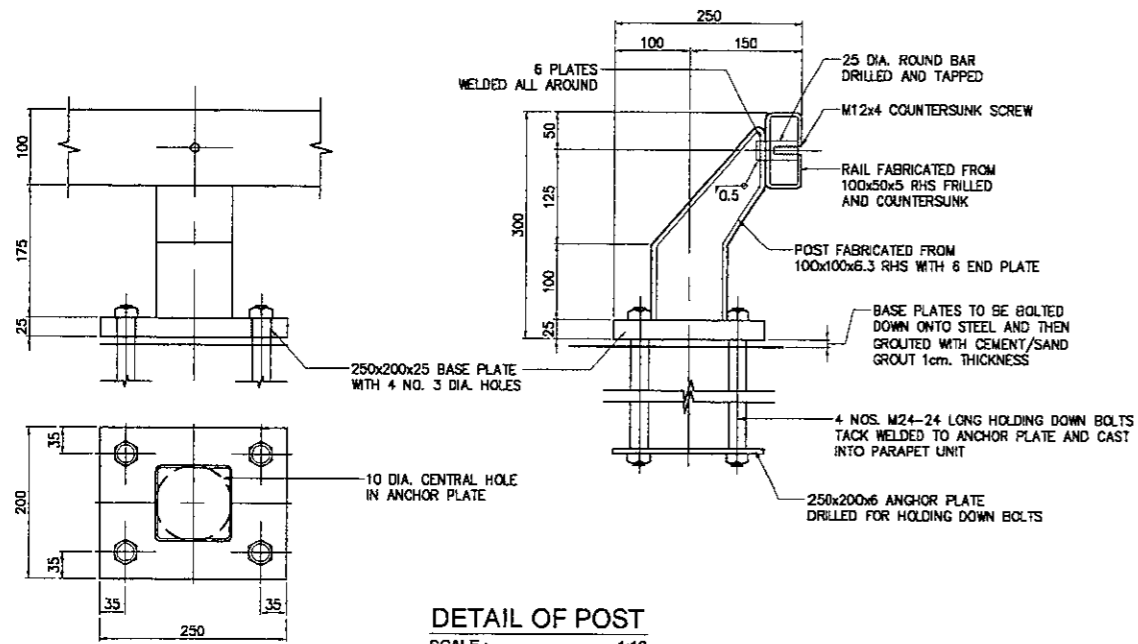
1. DIMENSIONS ARE IN MILLIMETERS
2. STRUCTURAL STEEL SECTIONS ARE TO BE GRADE 400 STEEL TO BE BS 4360
3. BOLTS AND SCREWS ARE TO BE GRADE 6.8 TO BS 3692 ALL BOLTS AND SCREWS ARE TO BE GALVANIZED SHERARDIZED OR OTHERWISE CORROSION PROTECTED
4. ALL STEEL WORK AND WELDING TO BE IN ACCORDANCE WITH CLAUSE 57.07 OF THE SPECIFICATION
5. WELDS ARE 5 MM CONTINUOUS 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 CONTINUOUS OVER TWO POSTS MAXIMUM RAIL LENGTH IS NOT TO EXCEED 6000
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 SPECIFICATION



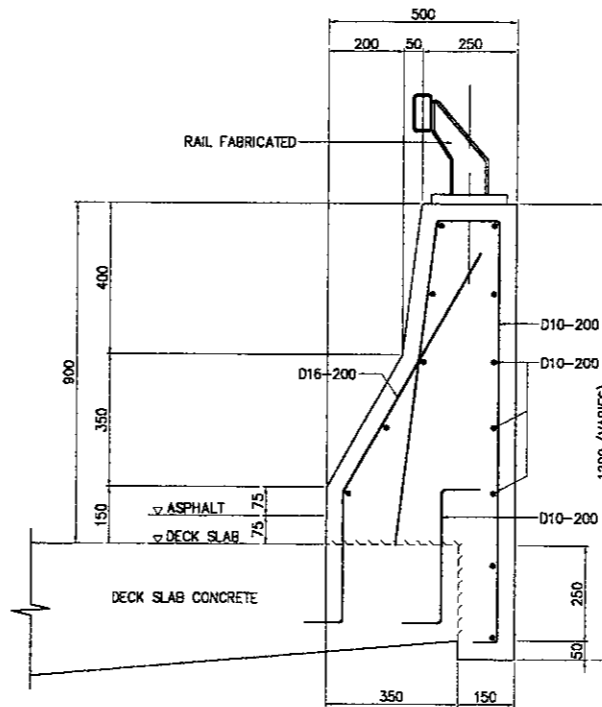
DETAILS FOR PROFILED PLINTH
SCALE : 1:20



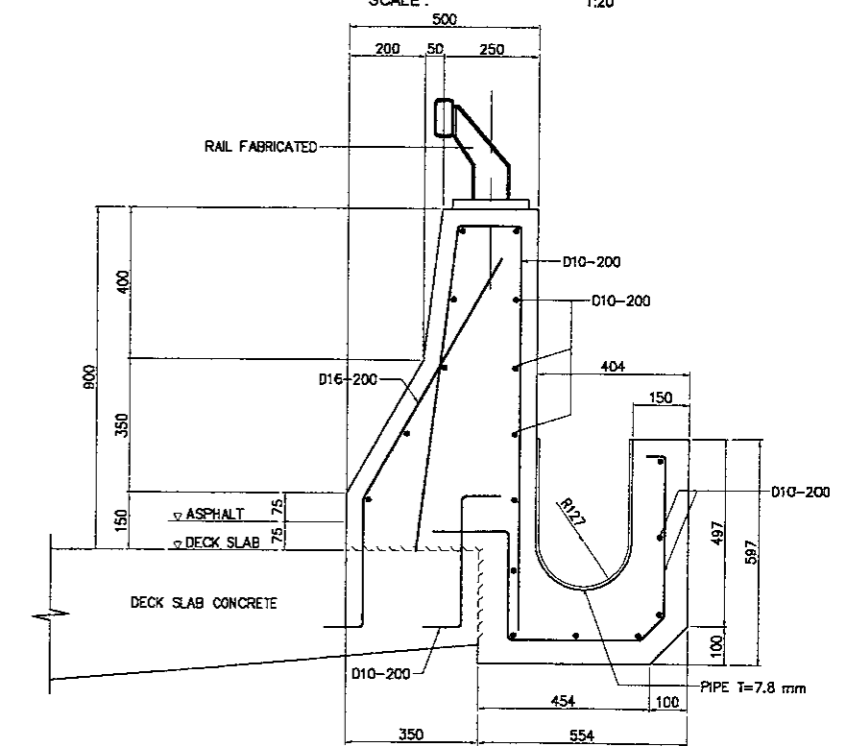
DETAIL OF MEDIAN
SCALE : 1:20



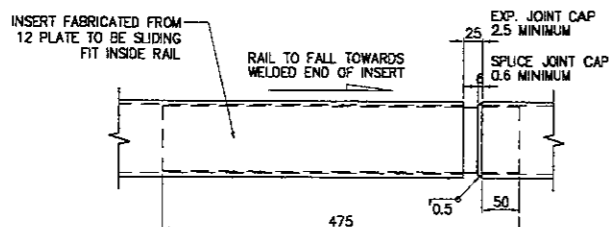
DETAIL OF POST
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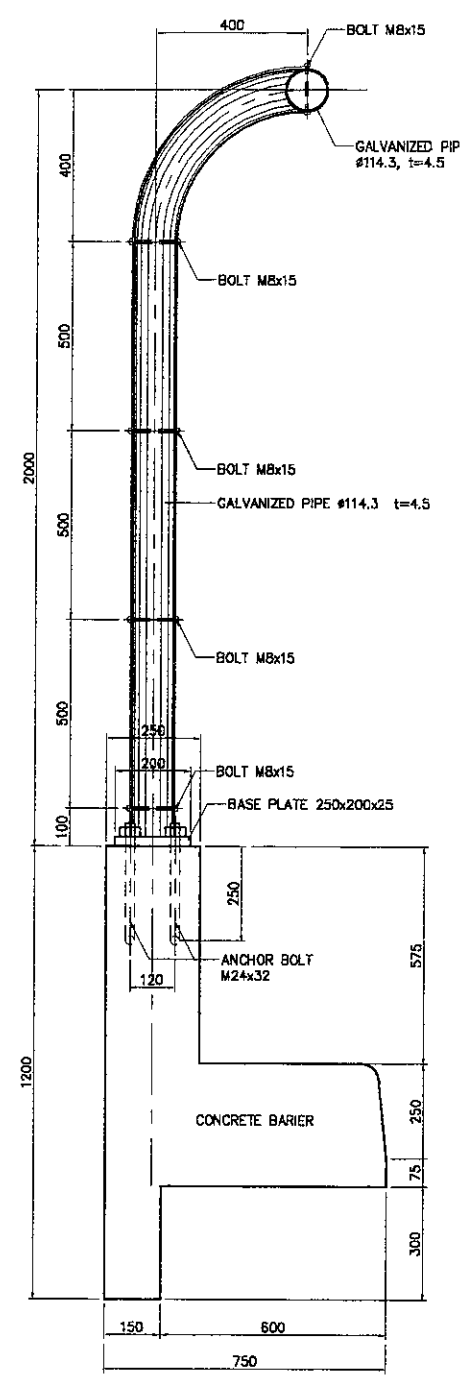
DETAIL OF PARAPET
SCALE : 1:20



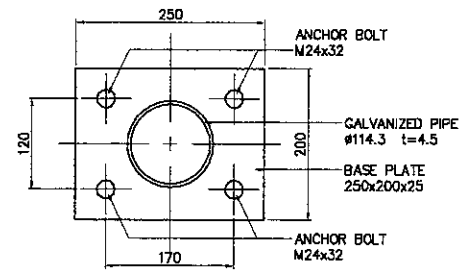
DETAIL OF OUTER GUTTER
SCALE : 1:20



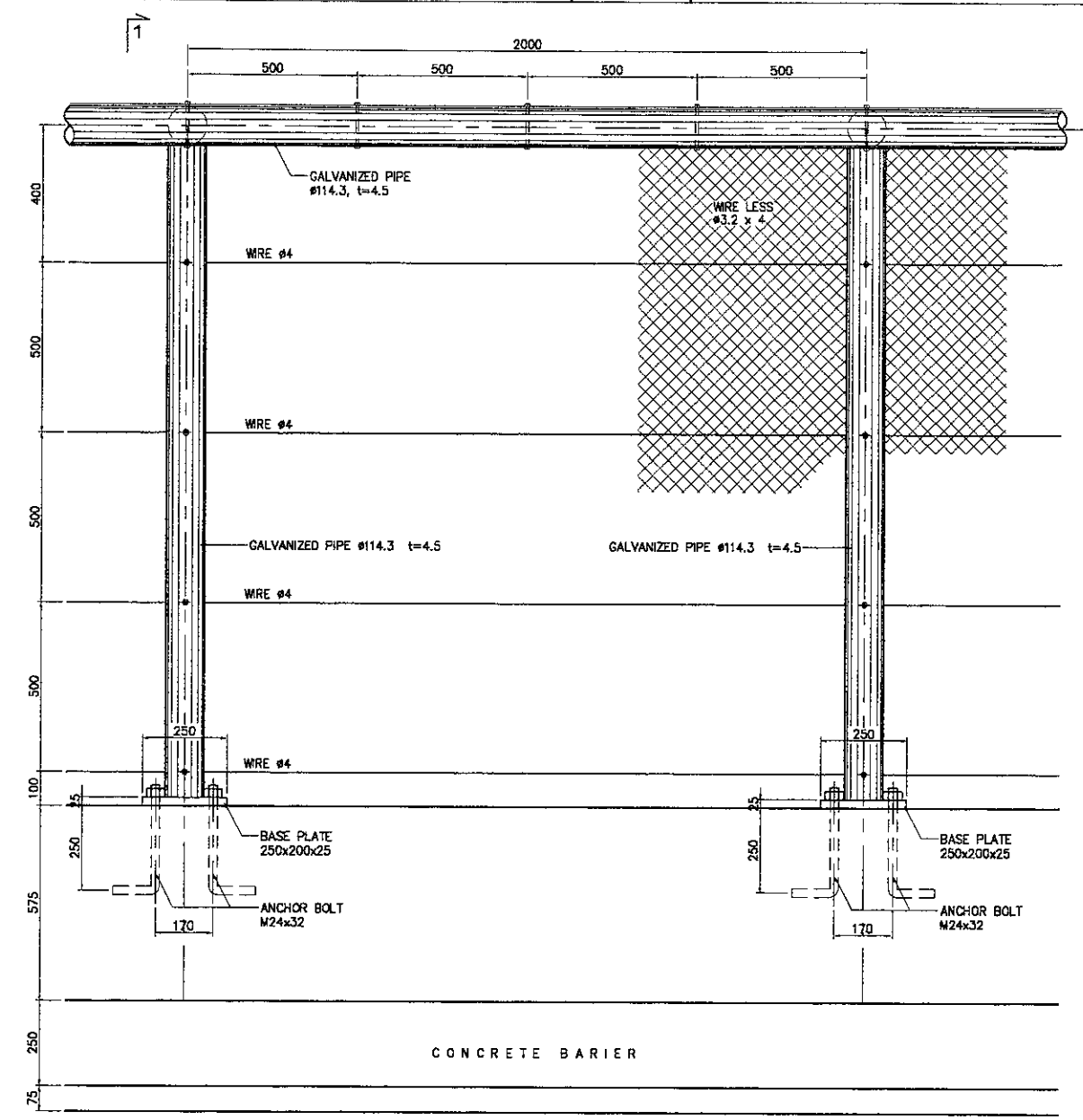
DETAILS OF JOINT
SCALE : 1:10



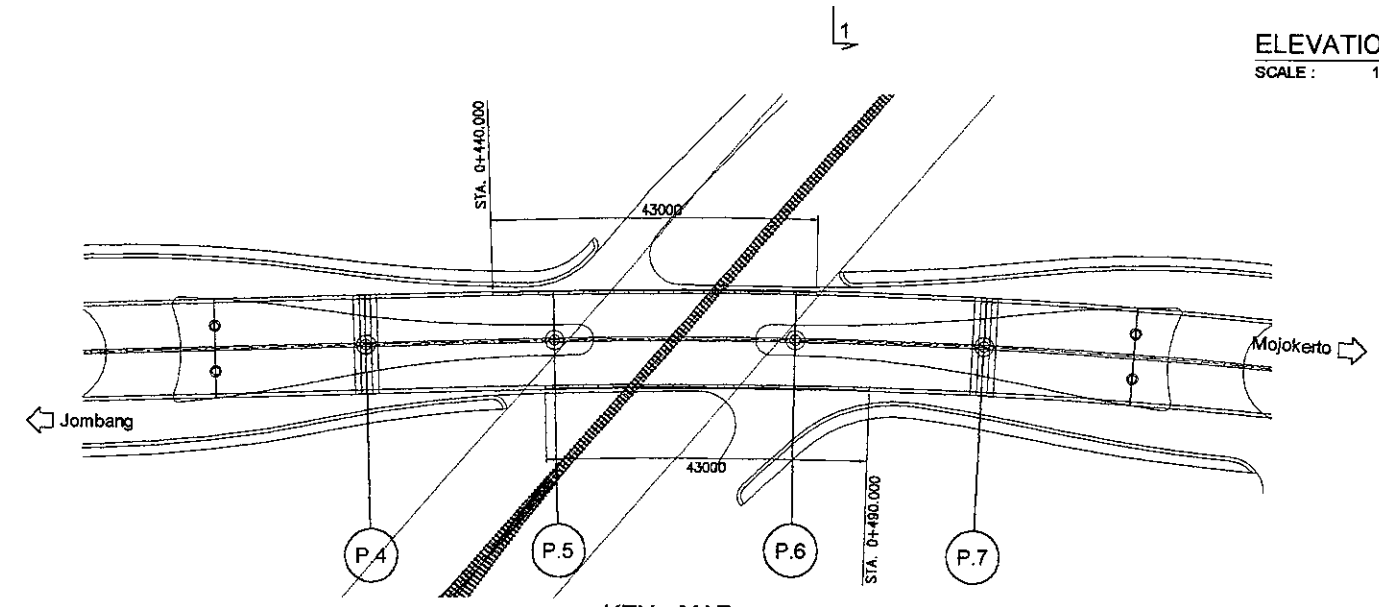
SECTION 1-1
 SCALE : 1:20



DETAIL OF BASE PLATE
 SCALE : 1:10



ELEVATION
 SCALE : 1:20



KEY MAP
 SCALE : 1:1000



JAPAN INTERNATIONAL
COOPERATION AGENCY

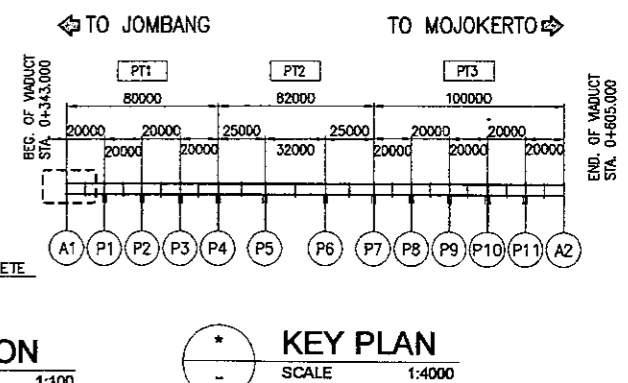
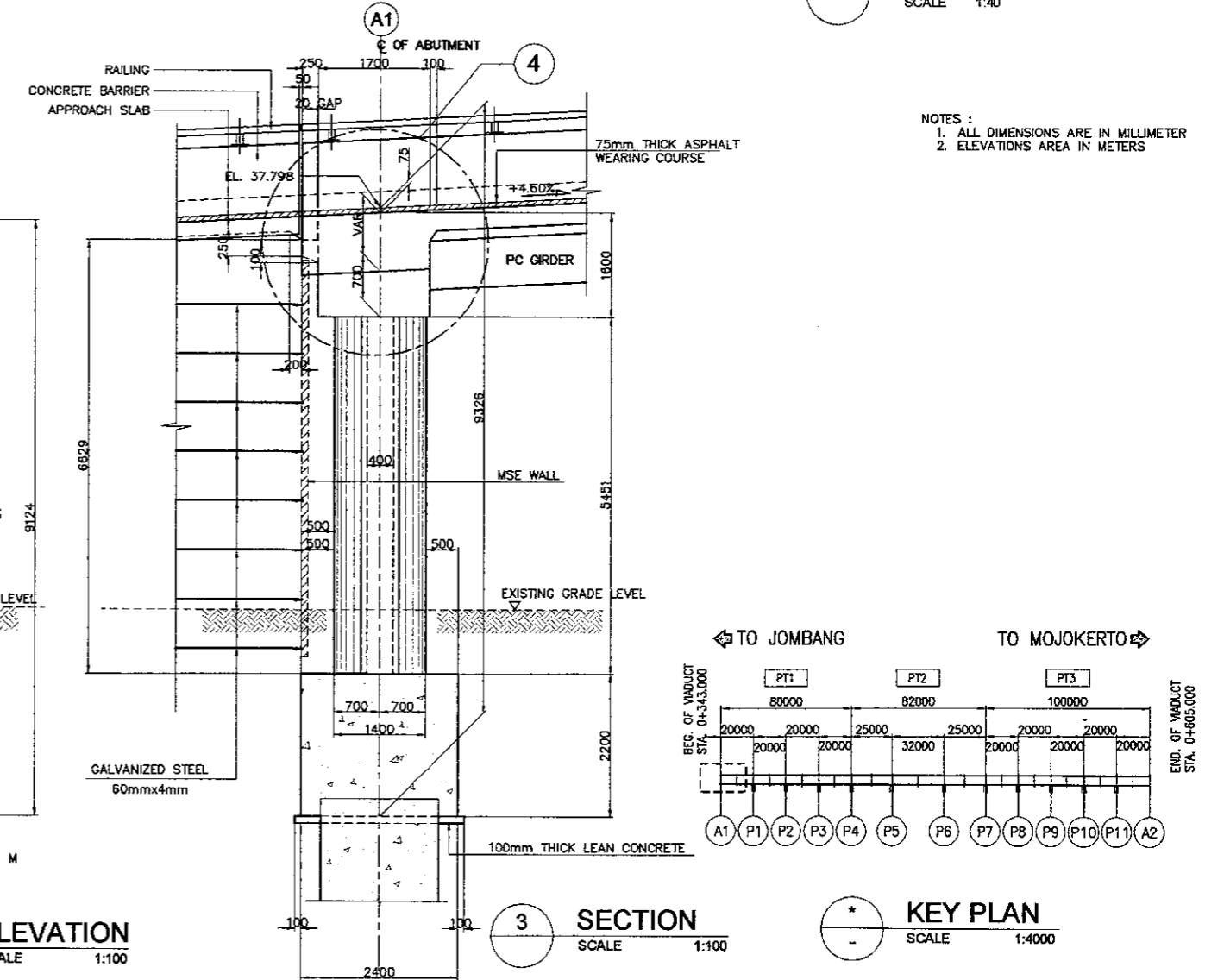
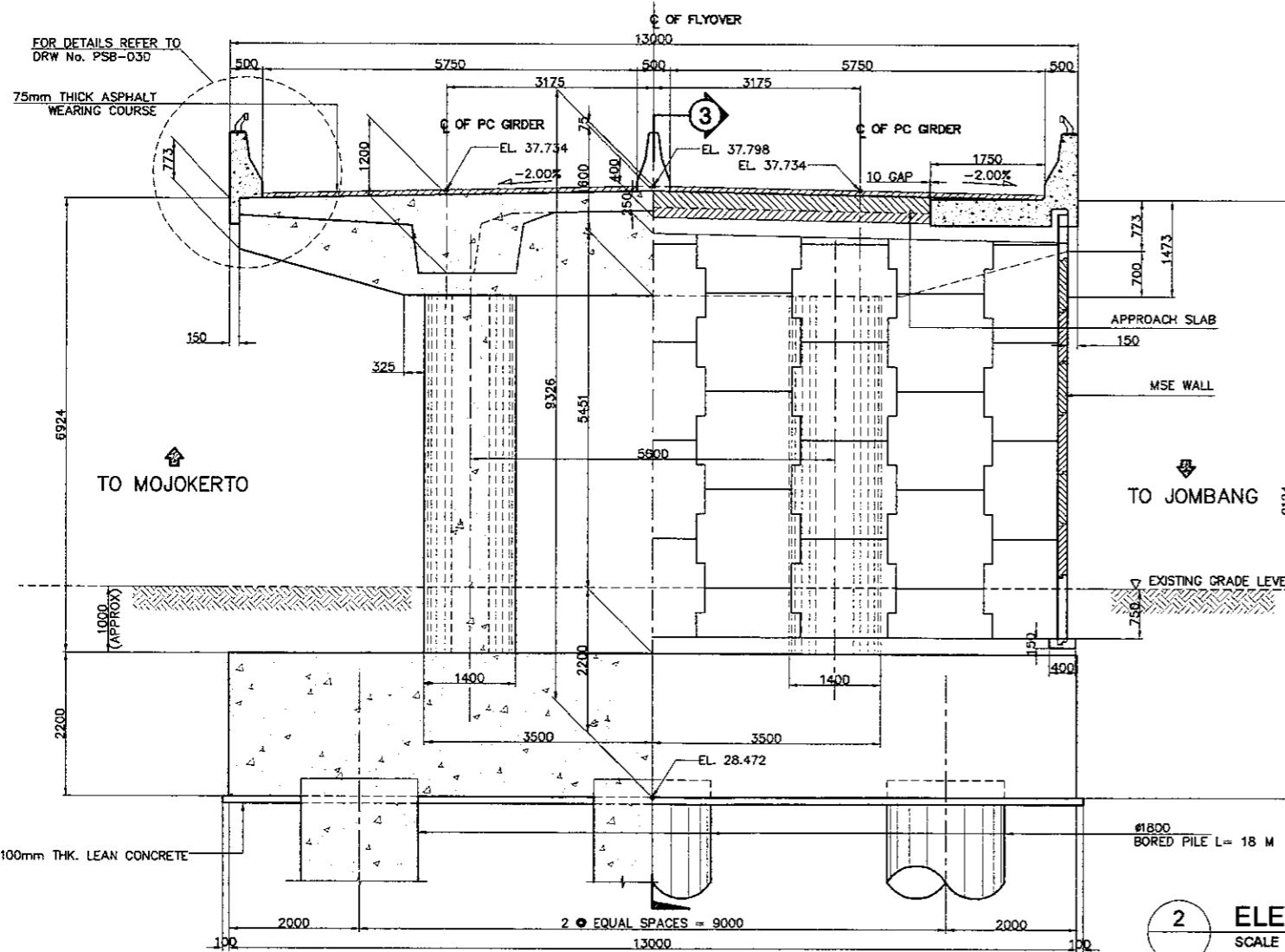
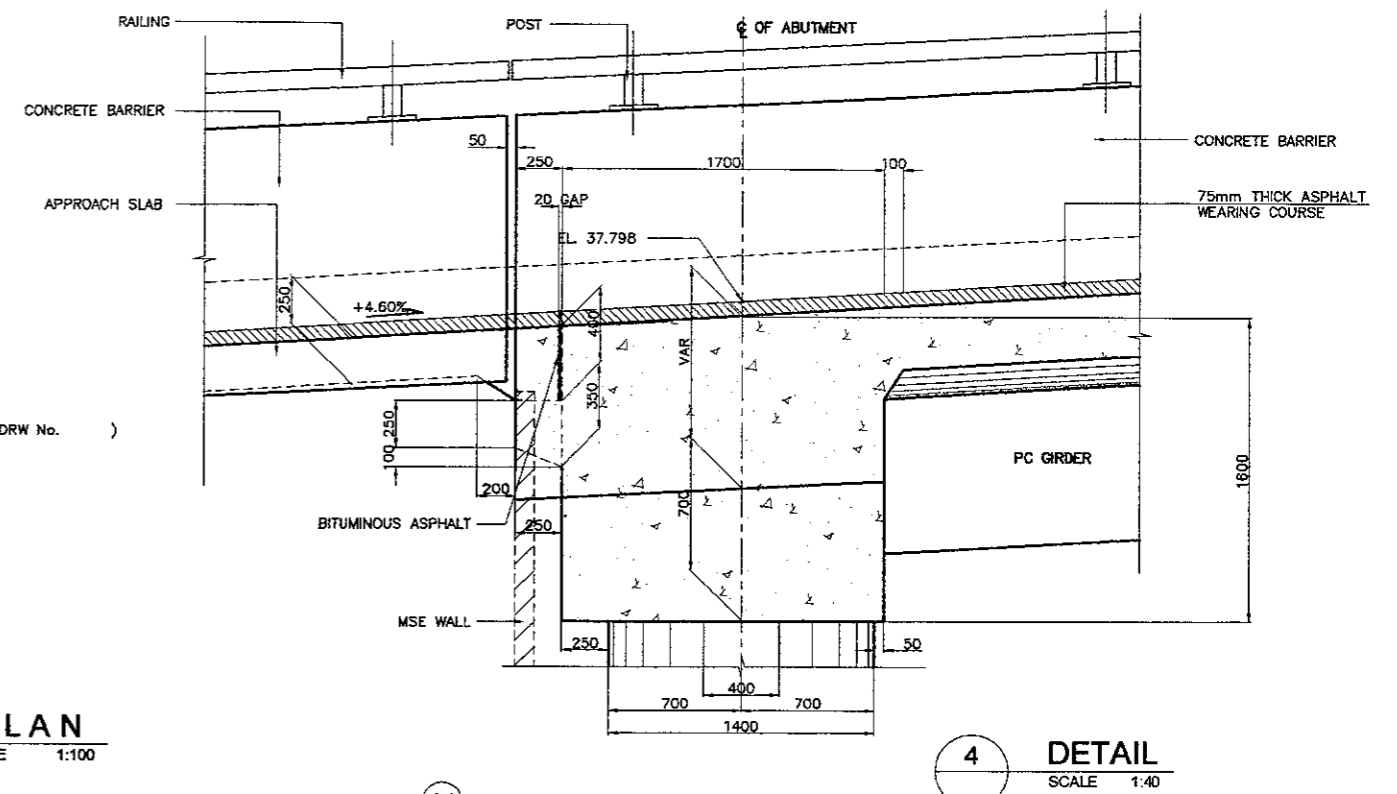
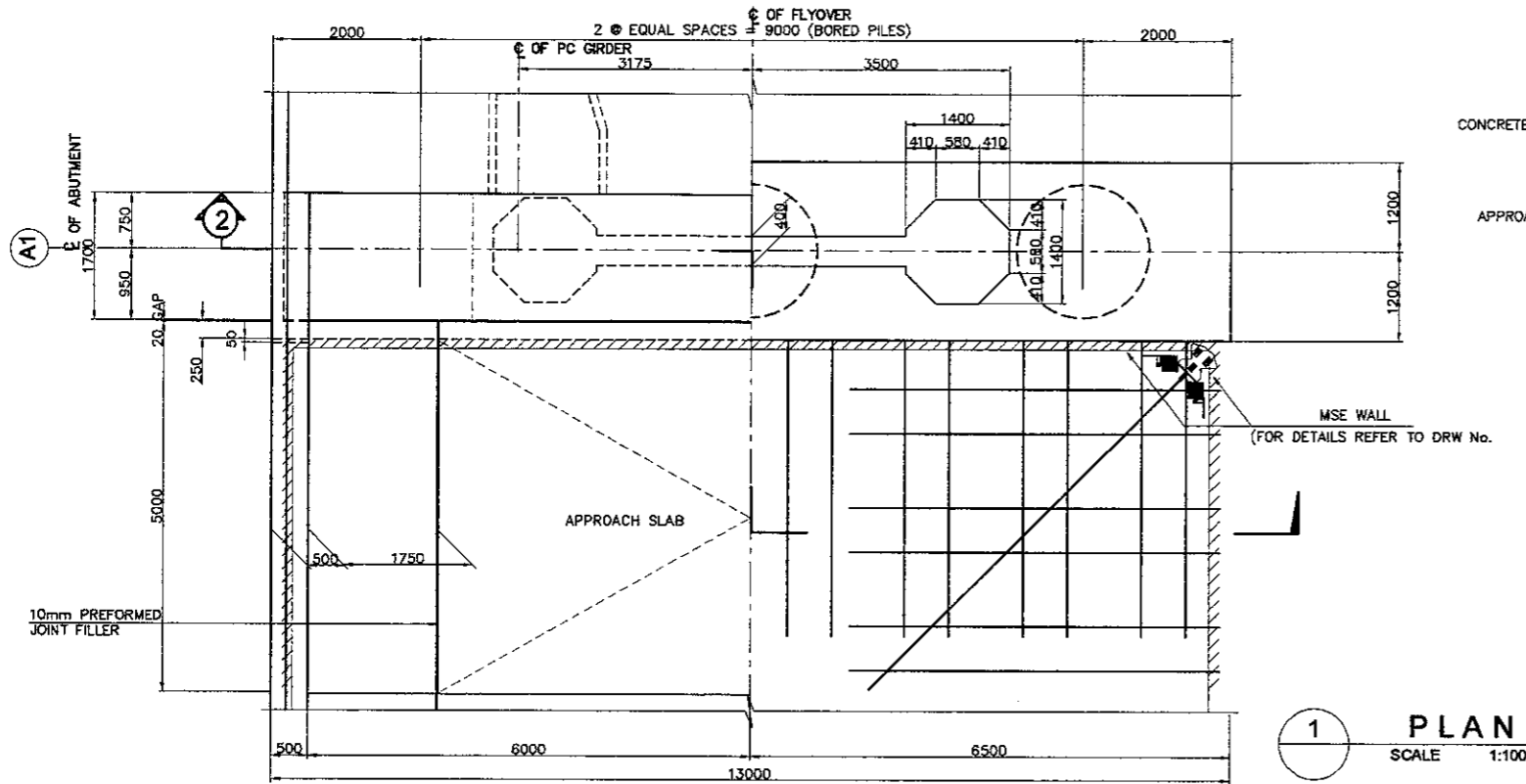


DIRECTORATE GENERAL OF HIGHWAY
MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

SUBSTRUCTURES

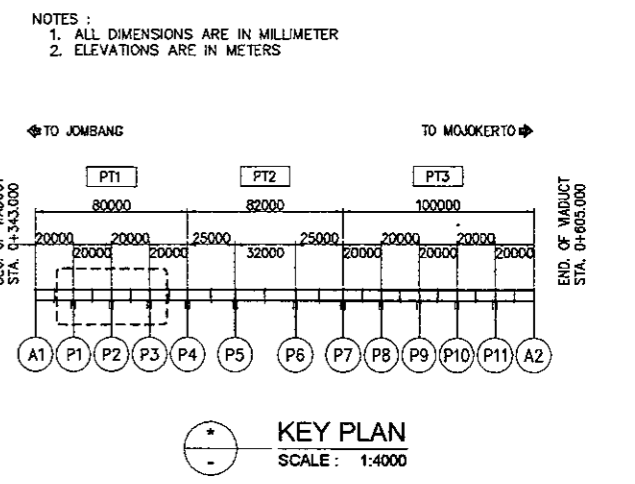
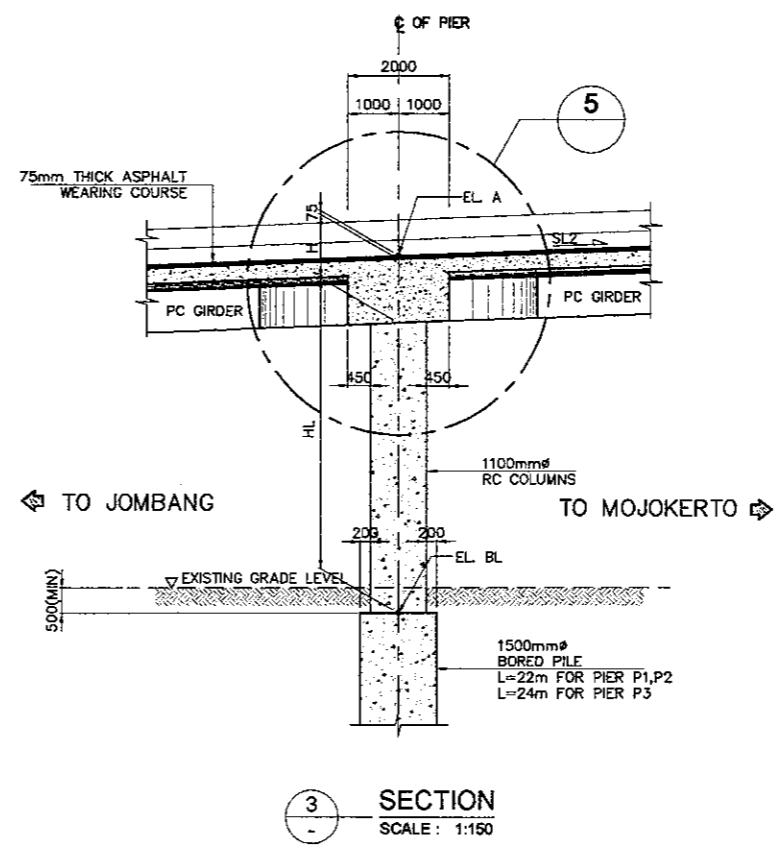
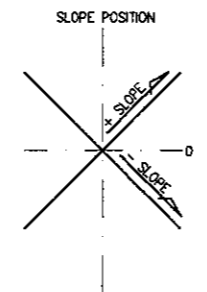
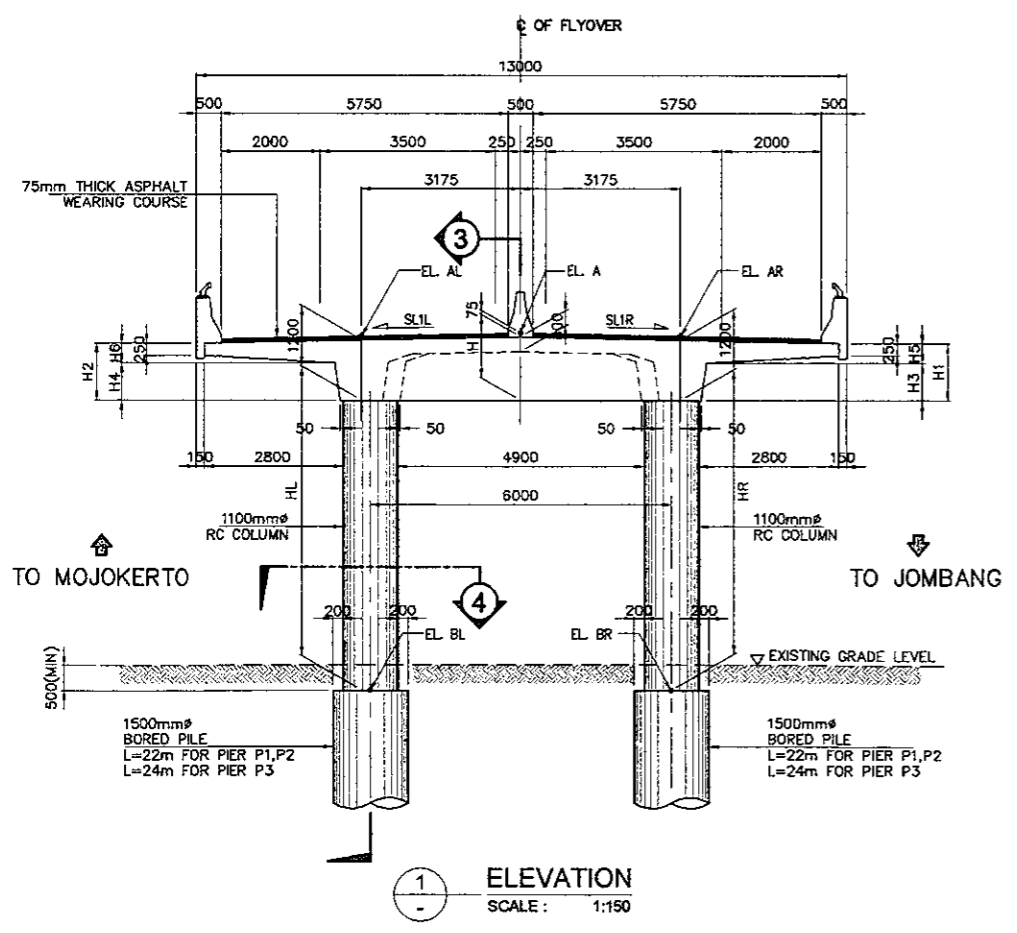
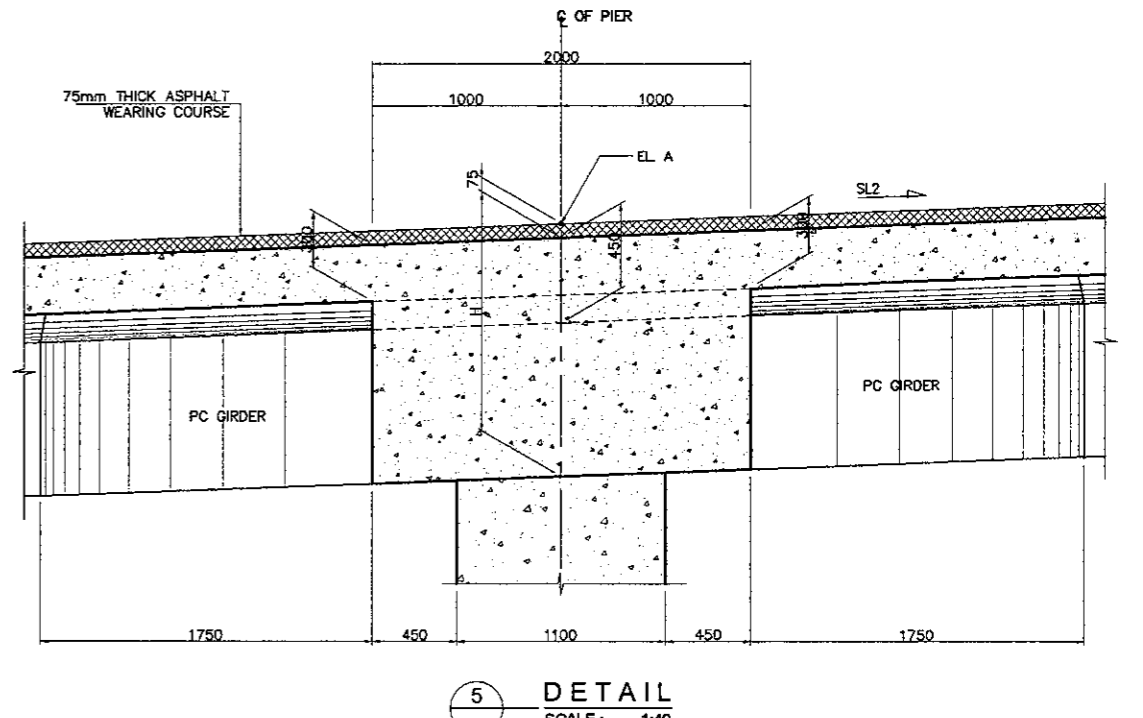
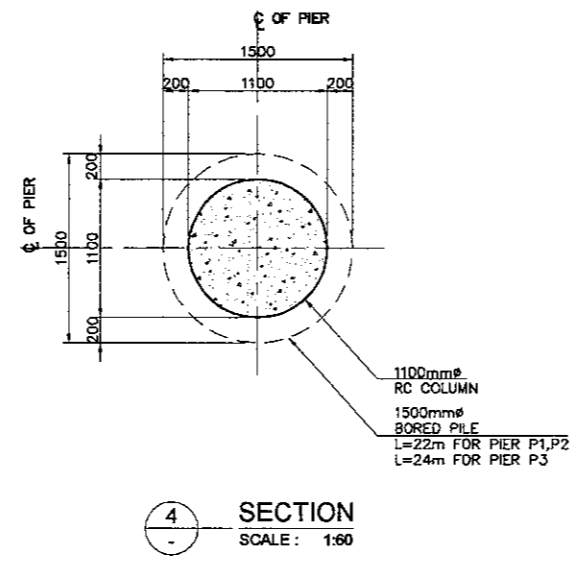
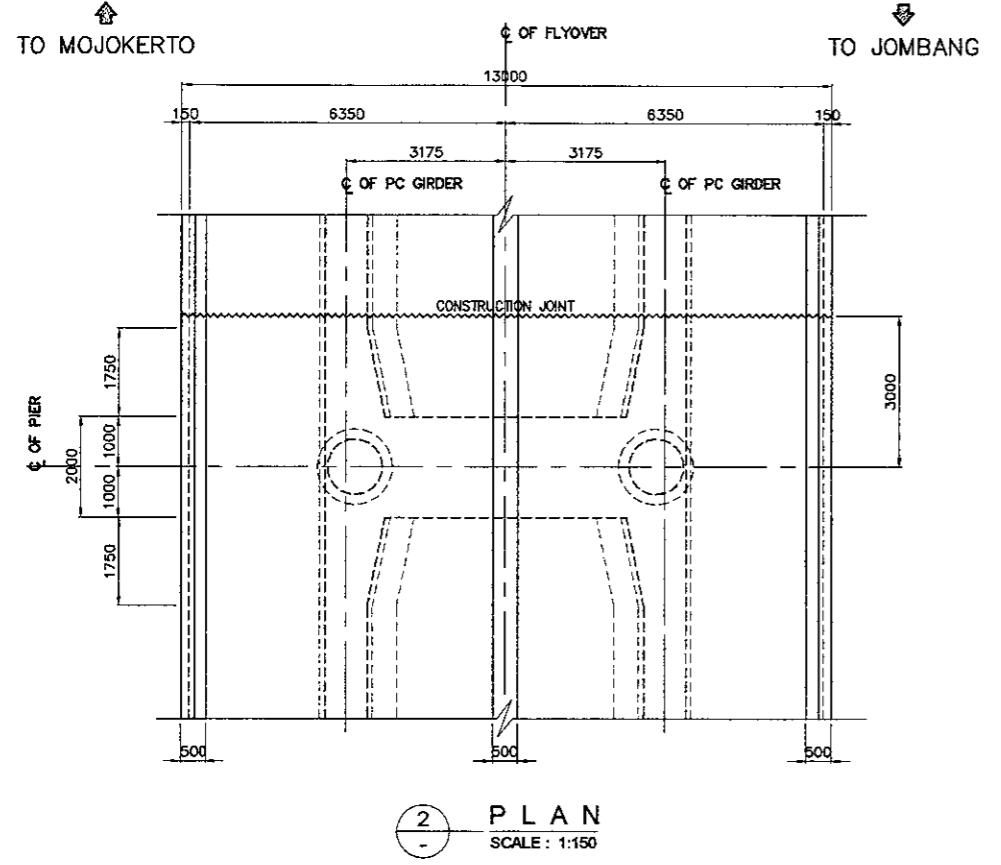
 **KEI** KATAHIRA & ENGINEERS INTERNATIONAL

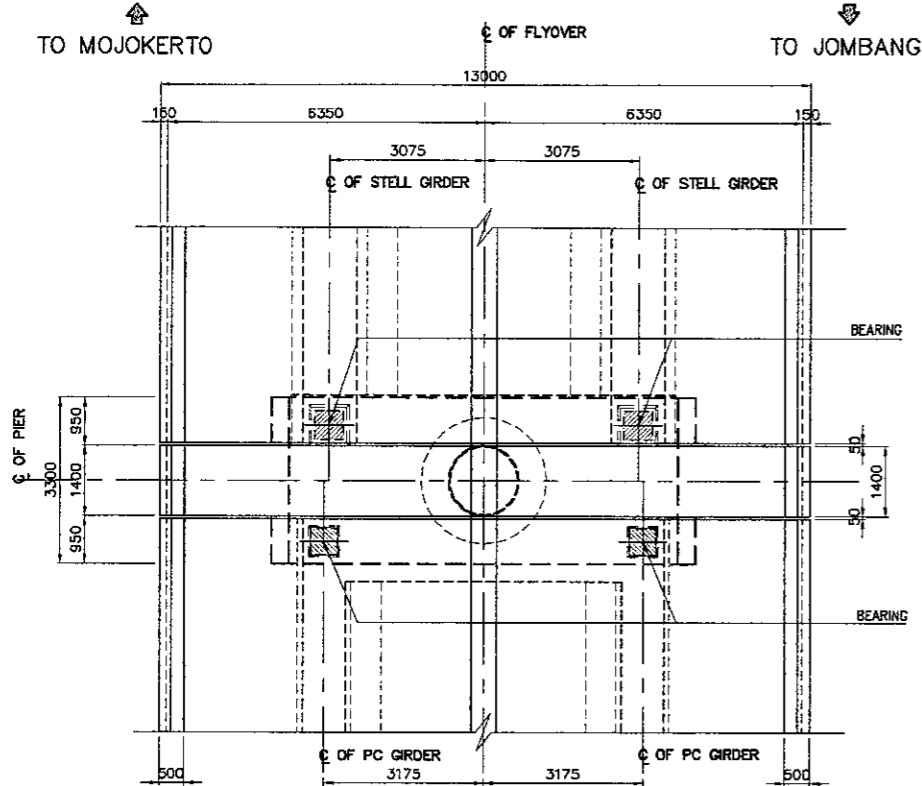
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name A. GOURLEY	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



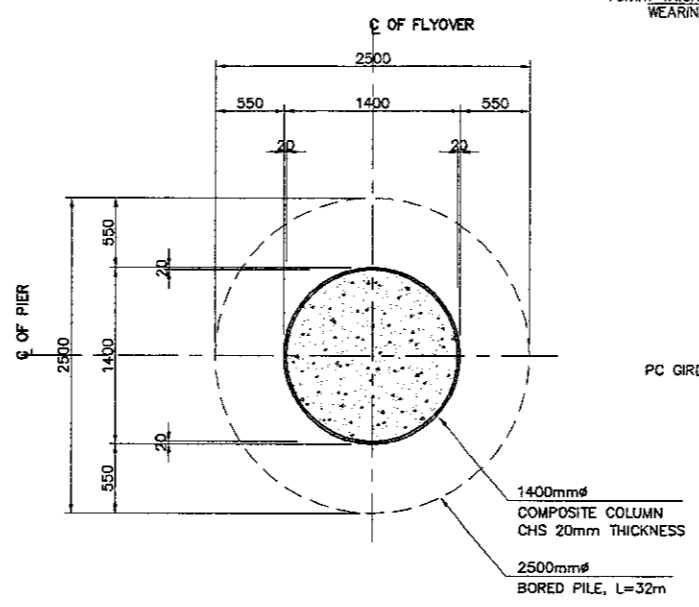
NOTES :
 1. ALL DIMENSIONS ARE IN MILLIMETER
 2. ELEVATIONS ARE IN METERS

PIER	EL. A	EL. AL	EL. AR	EL. BL	EL. BR	SL. 1L	SL. 1R	SL. 2	H	HL	HR	H1	H2	H3	H4	H5	H6
P1	38.718	38.655	38.655	30.234	30.234	-2.000%	-2.000%	+4.600%	1264	7145	7145	1136	1136	739	739	397	397
P2	39.638	39.575	39.575	30.355	30.355	-2.000%	-2.000%	+4.600%	1264	7945	7945	1136	1136	739	739	397	397
P3	40.468	40.405	40.405	31.185	31.185	-2.000%	-2.000%		1264	7944	7944	1136	1136	739	739	397	397

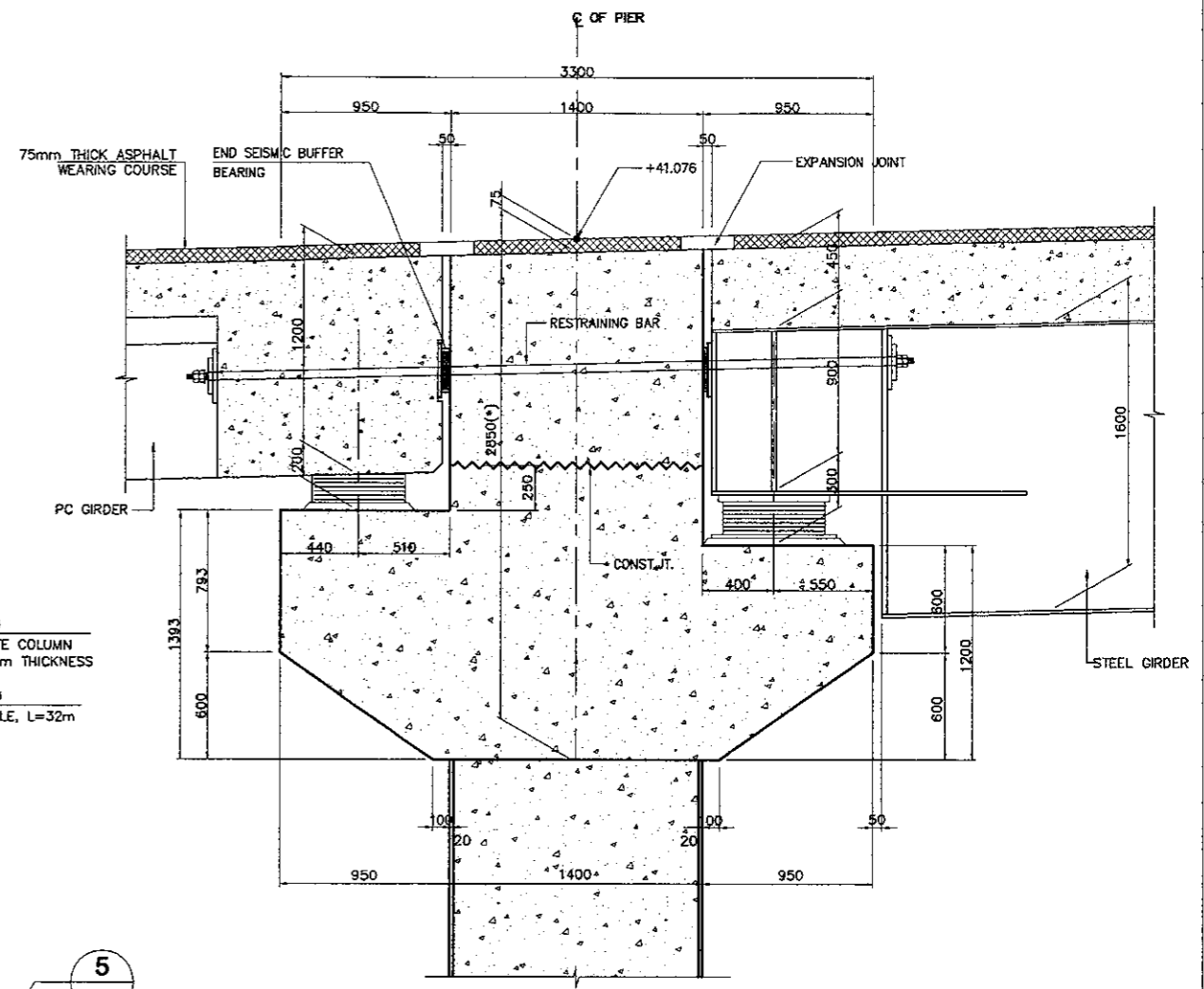




2 PLAN
 SCALE : 1:150

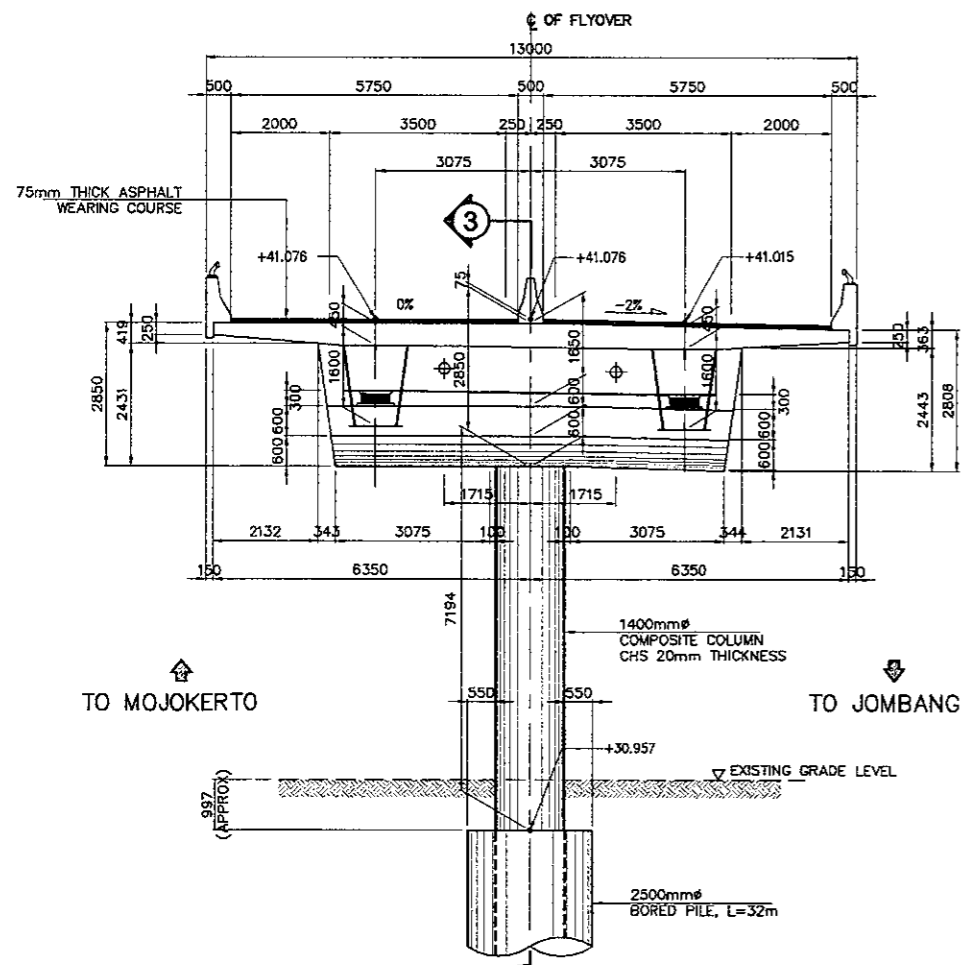


4 SECTION
 SCALE : 1:60

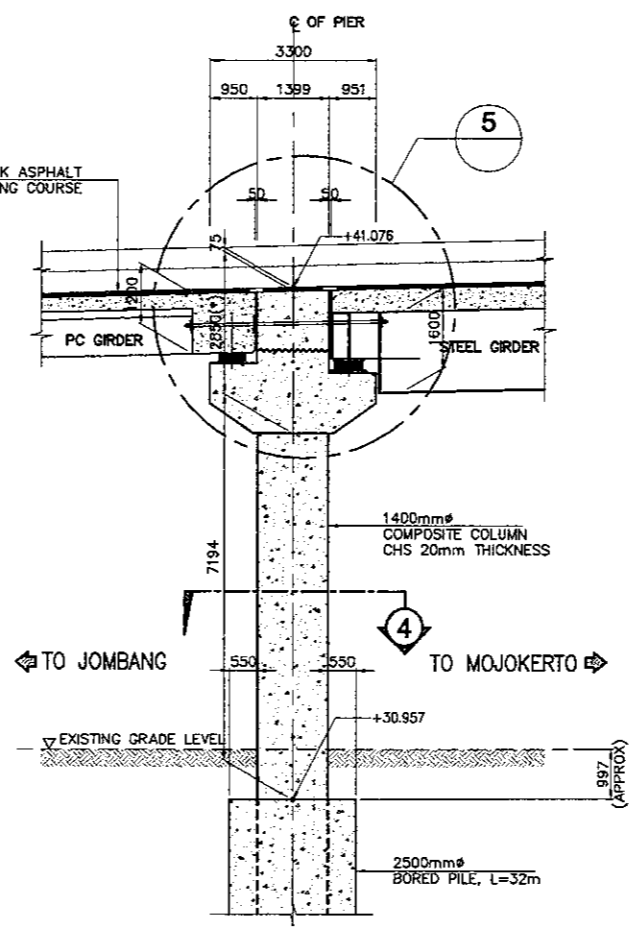


5 DETAIL
 SCALE : 1:40

(*) NOTES :
 1. DIMENSION GIVEN AT ? ALIGNMENT OF FLYOVER
 2. DIMENSION VARIES AT CROSS DECK

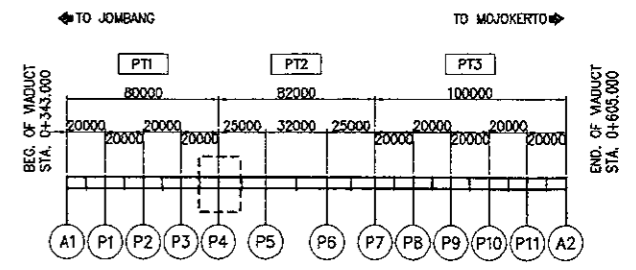


1 ELEVATION
 SCALE : 1:150



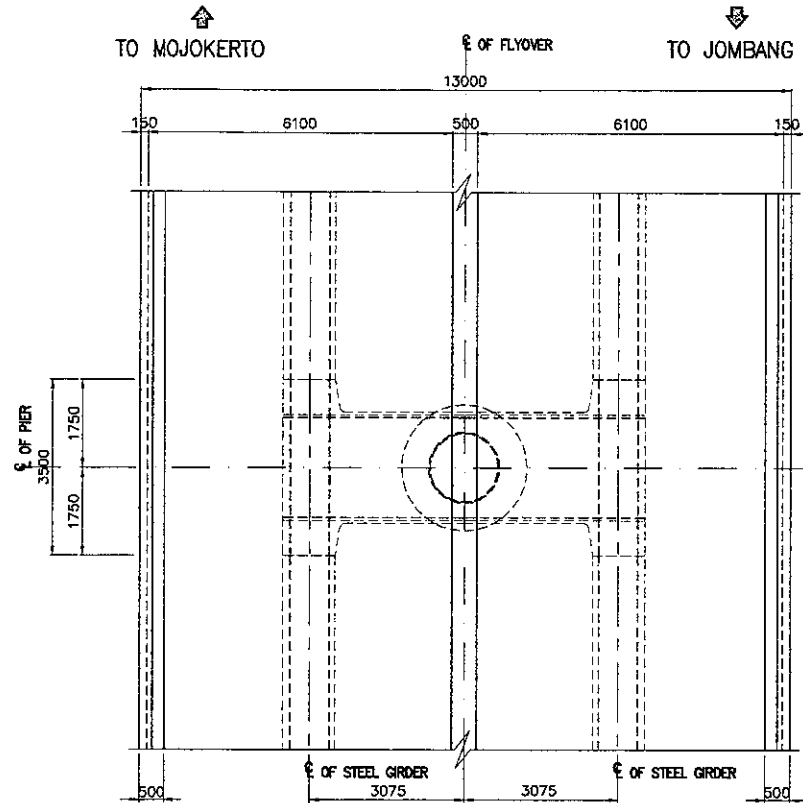
3 SECTION
 SCALE : 1:150

NOTES :
 1. ALL DIMENSIONS ARE IN MILLIMETER
 2. ELEVATIONS ARE IN METERS

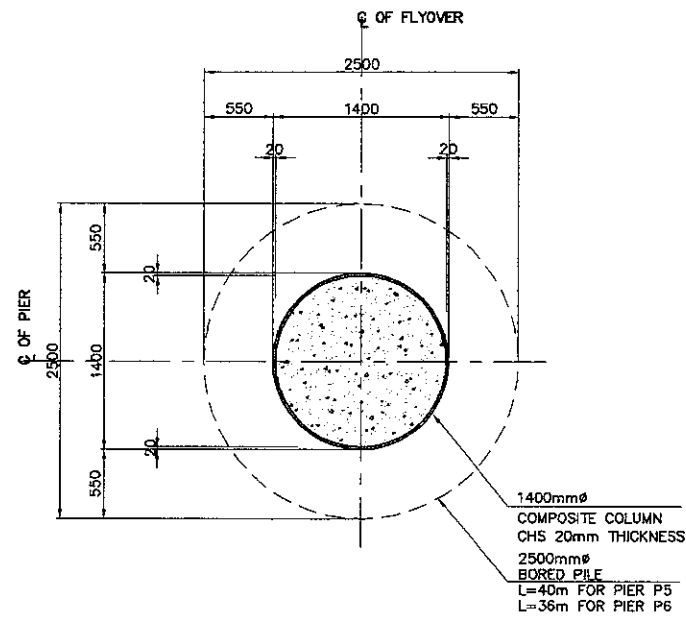


KEY PLAN
 SCALE : 1:4000

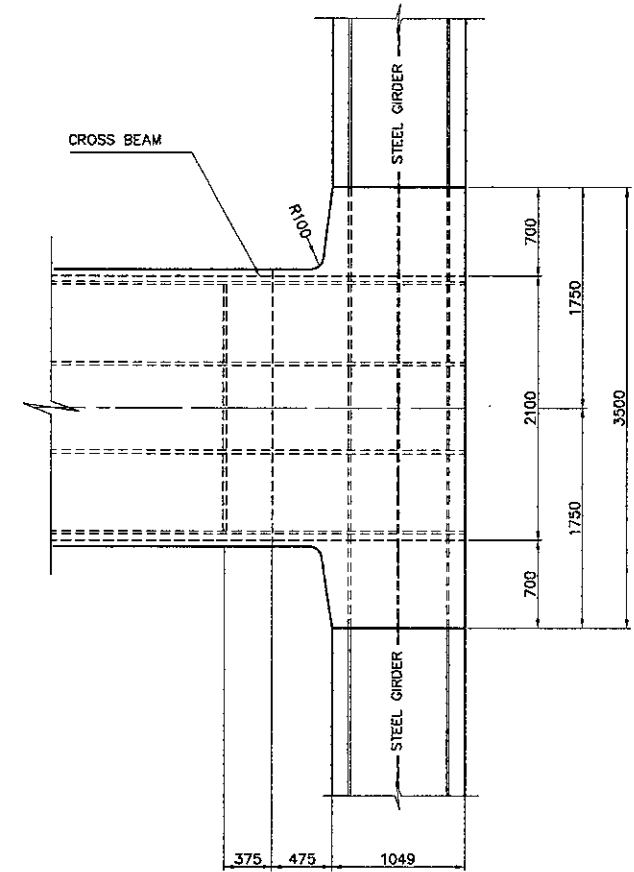
PIER	EL. A	EL. AL	EL. AR	EL. B	SL. 1L	SL. 1R	SL. 2	H	H1	H2	H3	H4	H5	H6
P5	41.523	41.600	41.446	30.876	-2.500%	-2.500%		8222	2012	2176	1644	1644	368	532
P6	41.588	41.665	41.511	30.931	-2.500%	-2.500%		8232	2012	2176	1644	1644	368	532



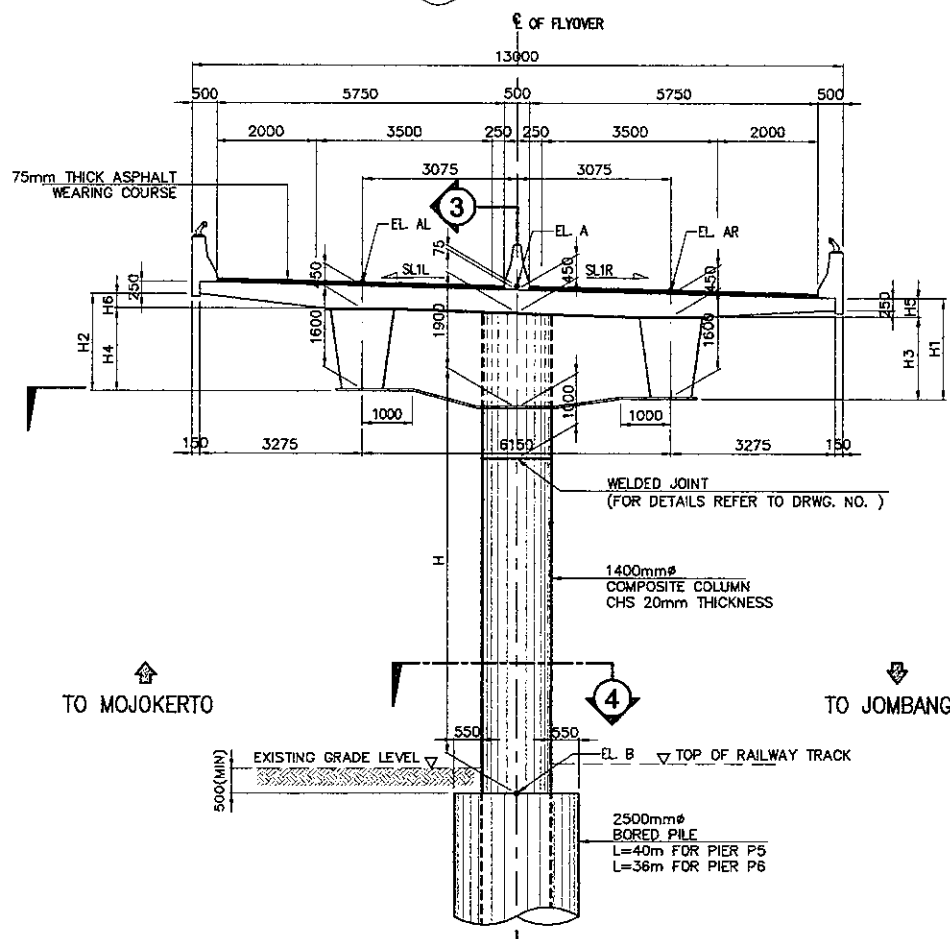
2 PLAN
 SCALE : 1:150



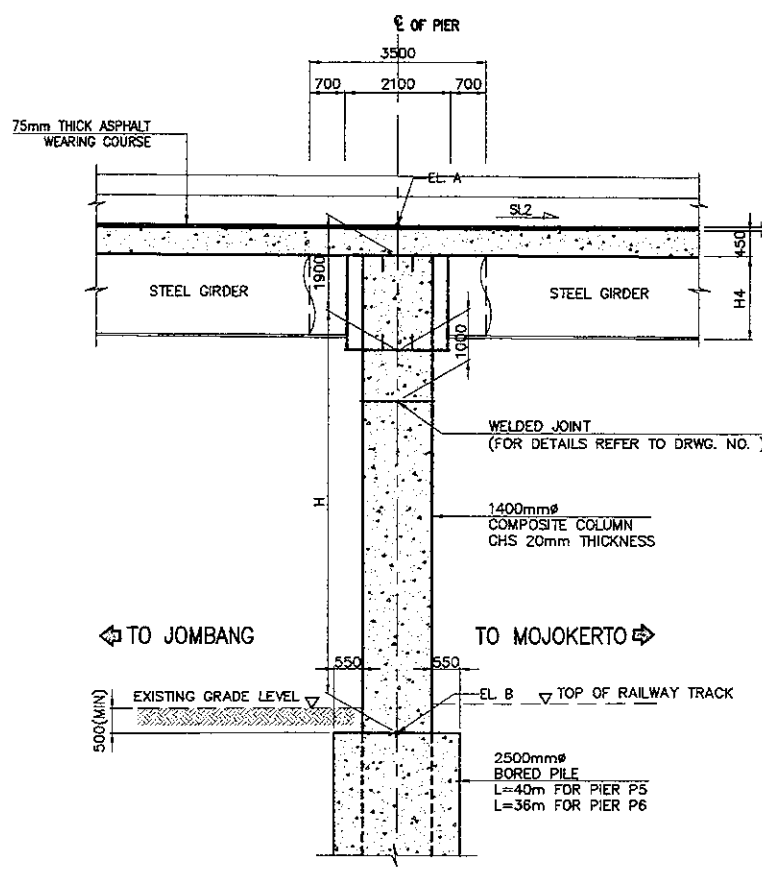
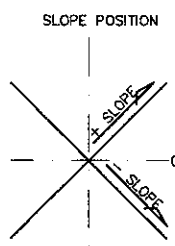
4 SECTION
 SCALE : 1:60



5 SECTION
 SCALE : 1:60

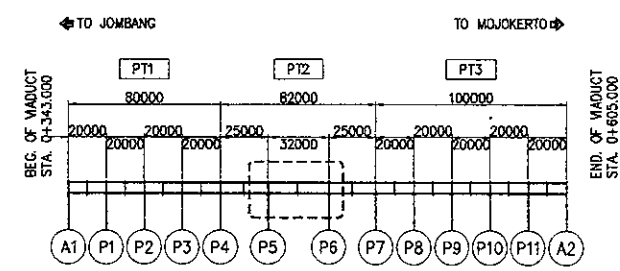


1 ELEVATION
 SCALE : 1:150

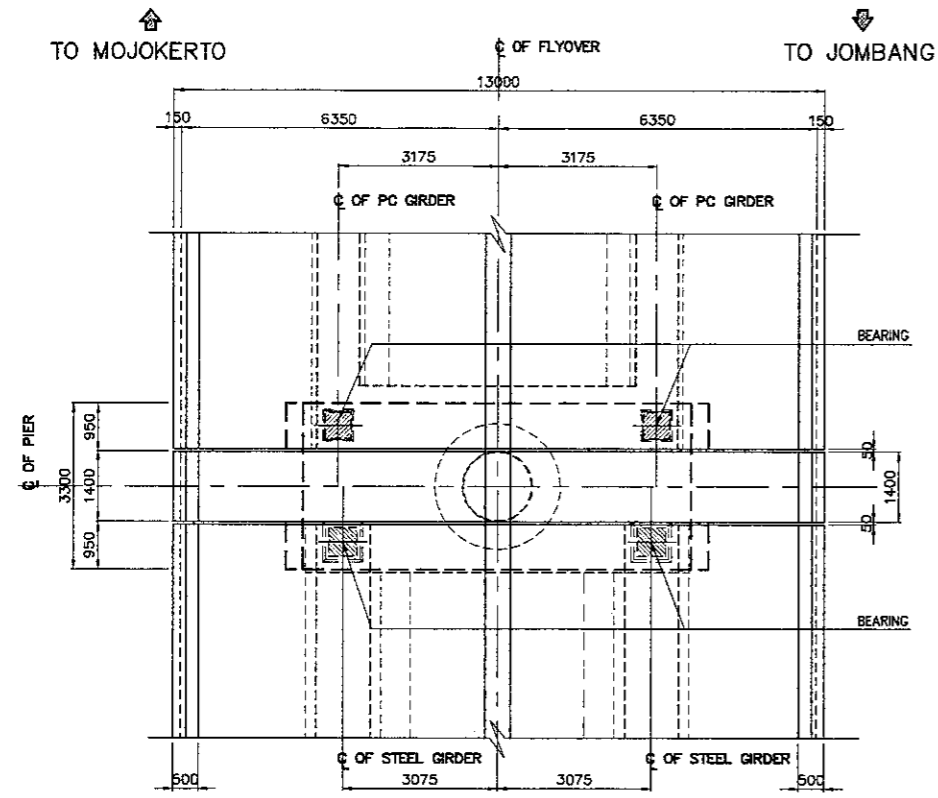


3 SECTION
 SCALE : 1:150

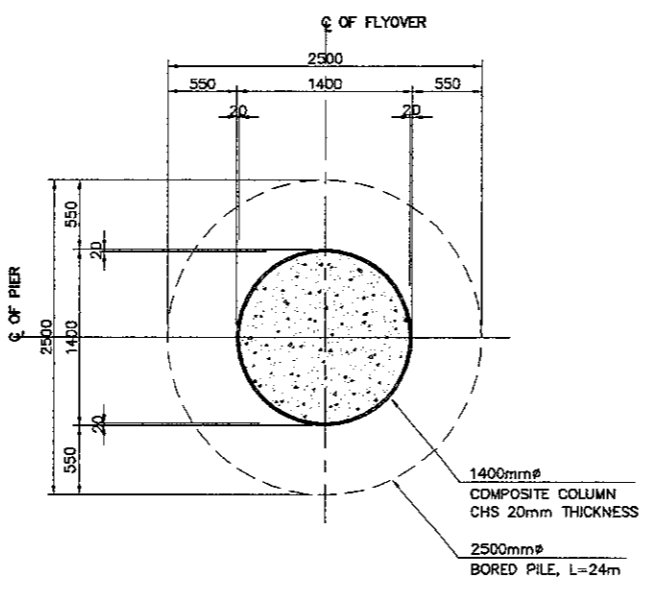
NOTES :
 1. ALL DIMENSIONS ARE IN MILLIMETER
 2. ELEVATIONS ARE IN METERS



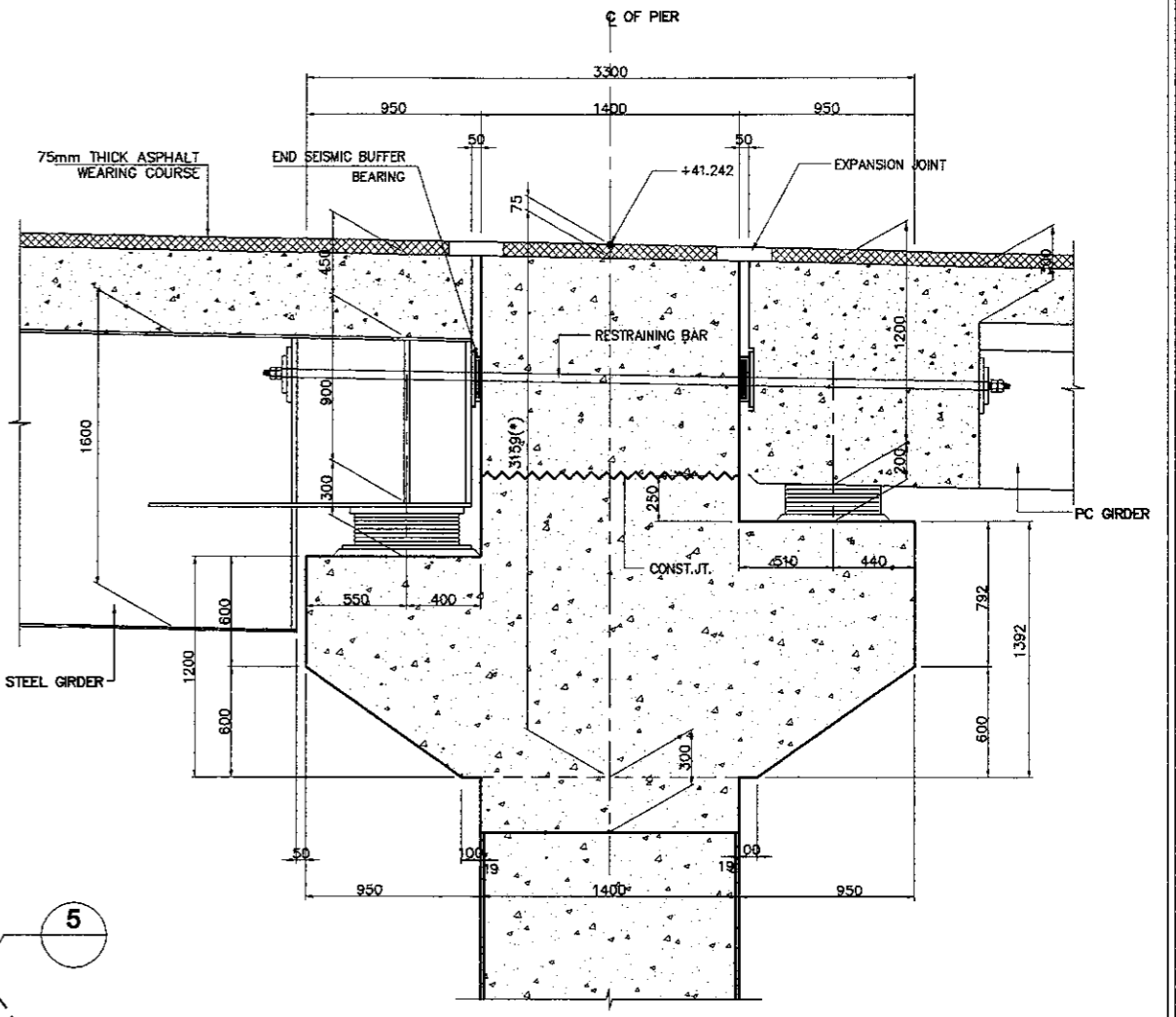
KEY PLAN
 SCALE : 1:4000



2 PLAN
 SCALE: 1:150

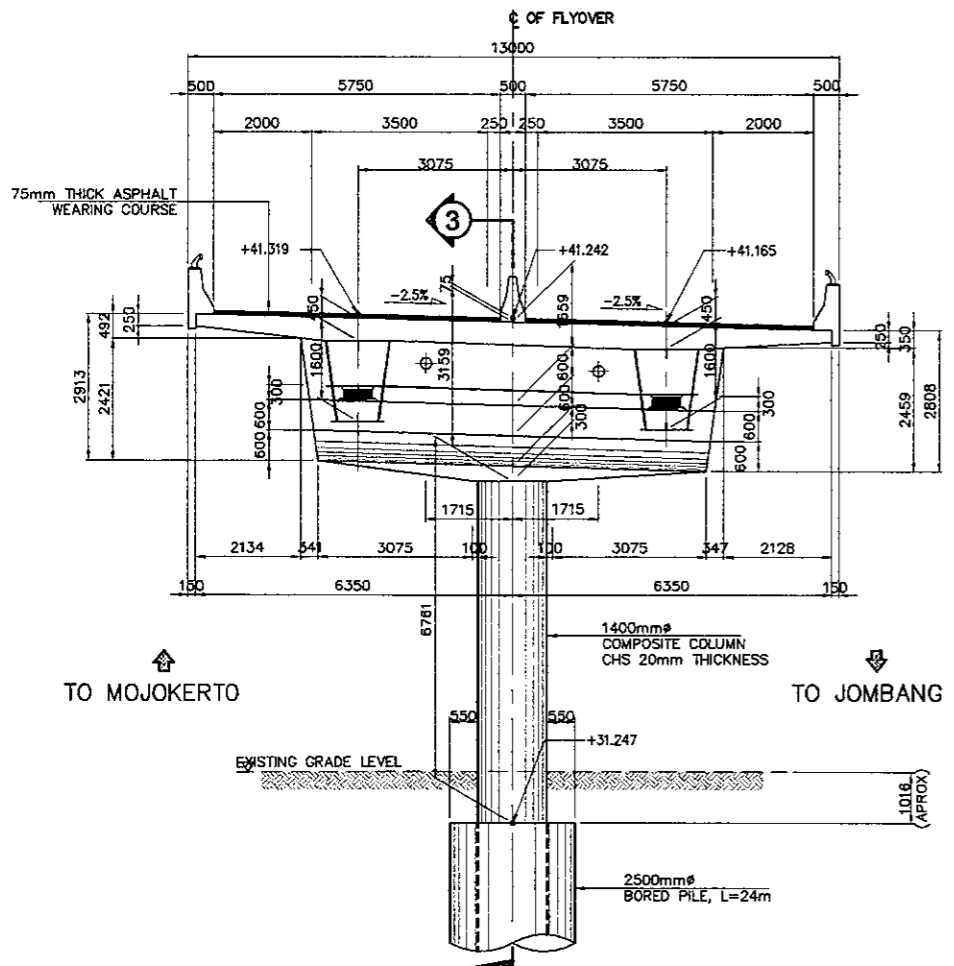


4 SECTION
 SCALE: 1:60

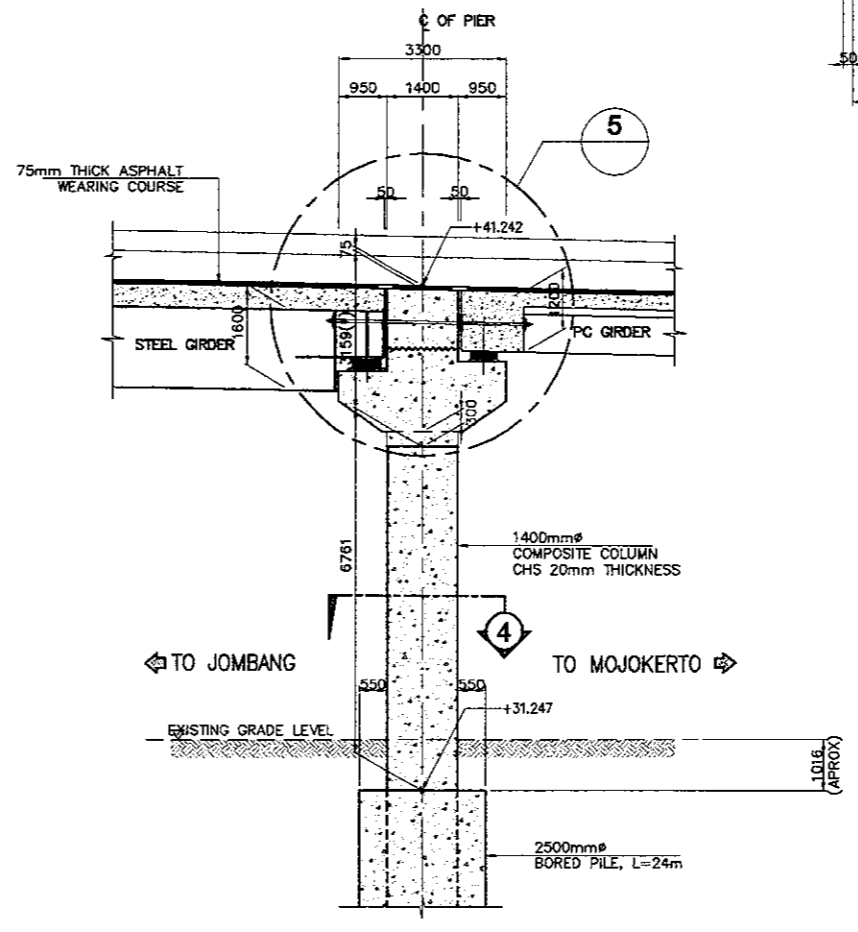


5 DETAIL
 SCALE: 1:40

(*) NOTES :
 1. DIMENSION GIVEN AT ? ALIGNMENT OF FLYOVER
 2. DIMENSION VARIES AT CROSS DECK

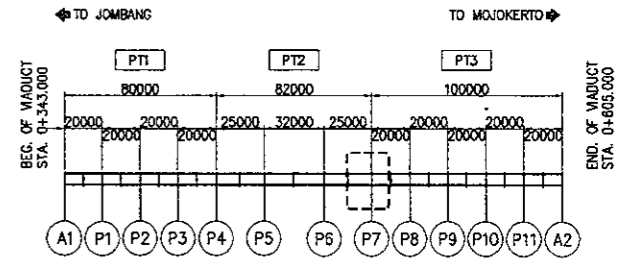


1 ELEVATION
 SCALE: 1:150



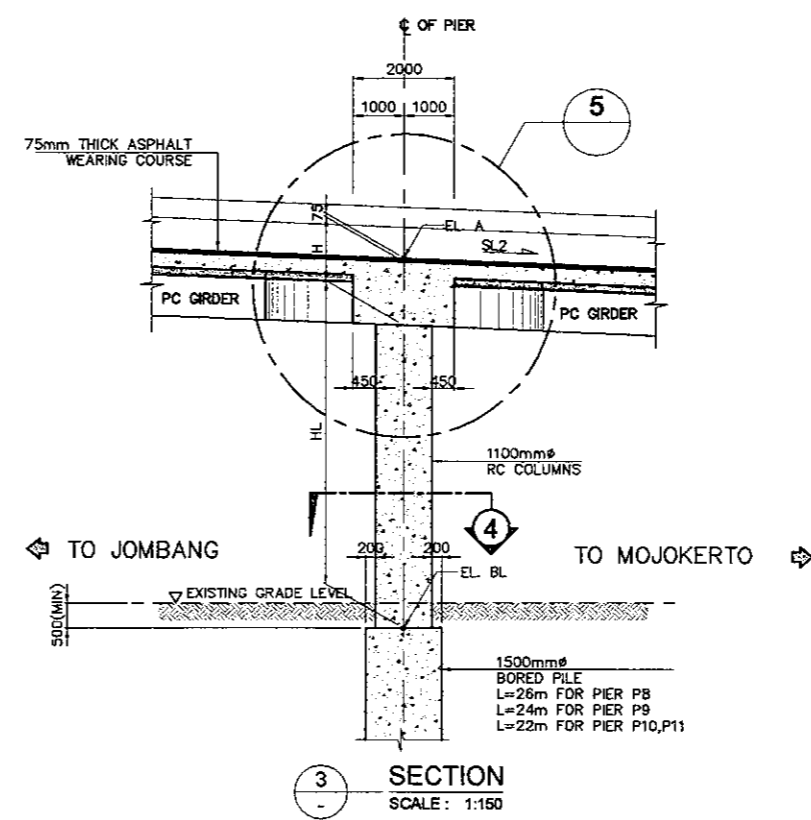
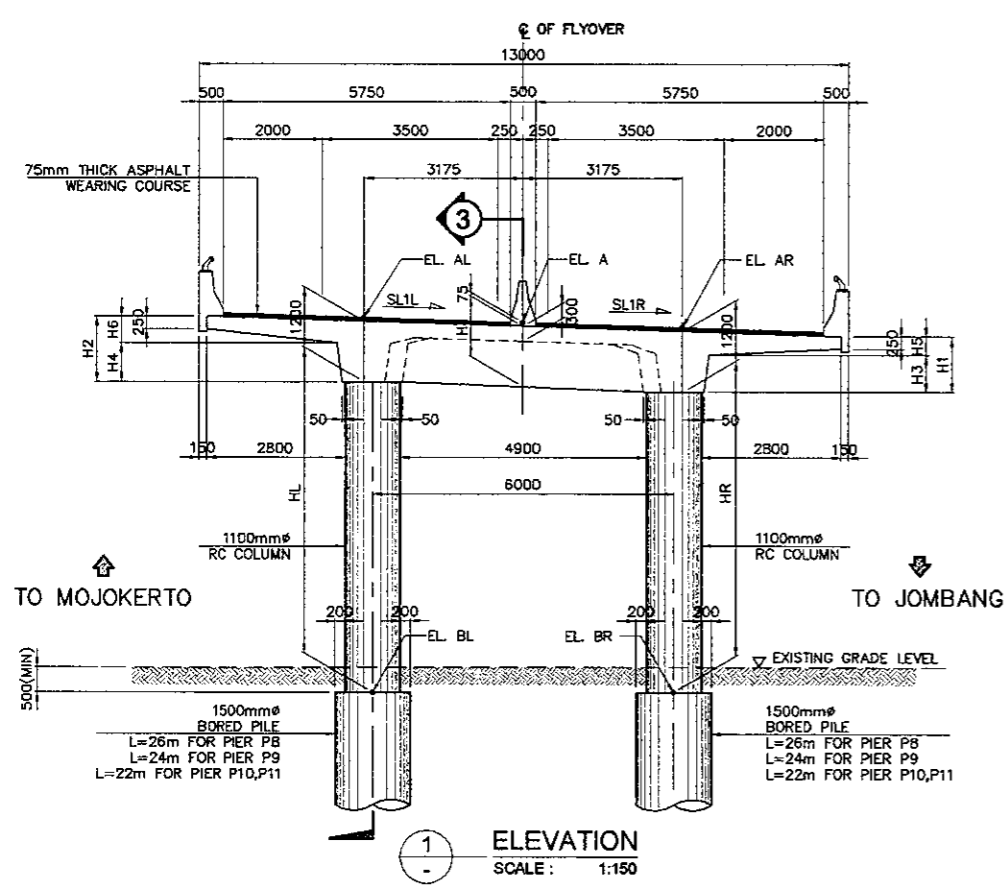
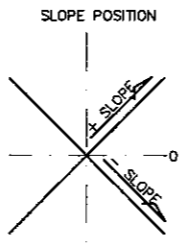
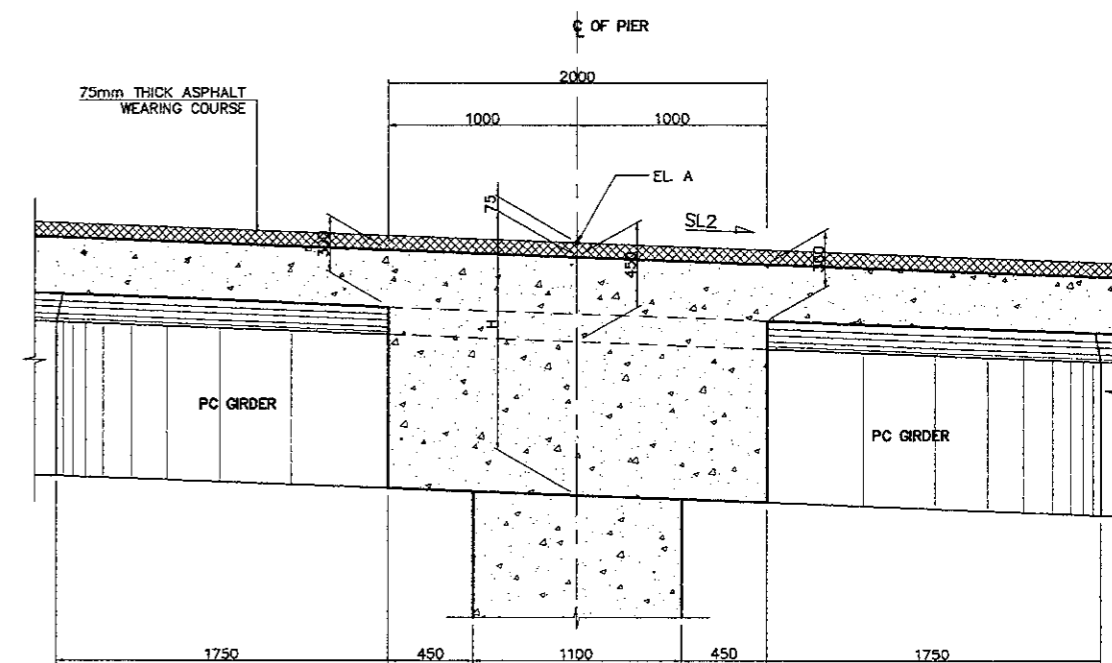
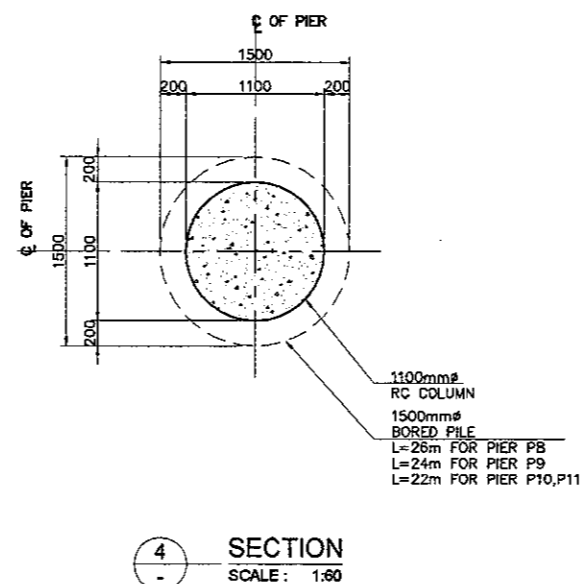
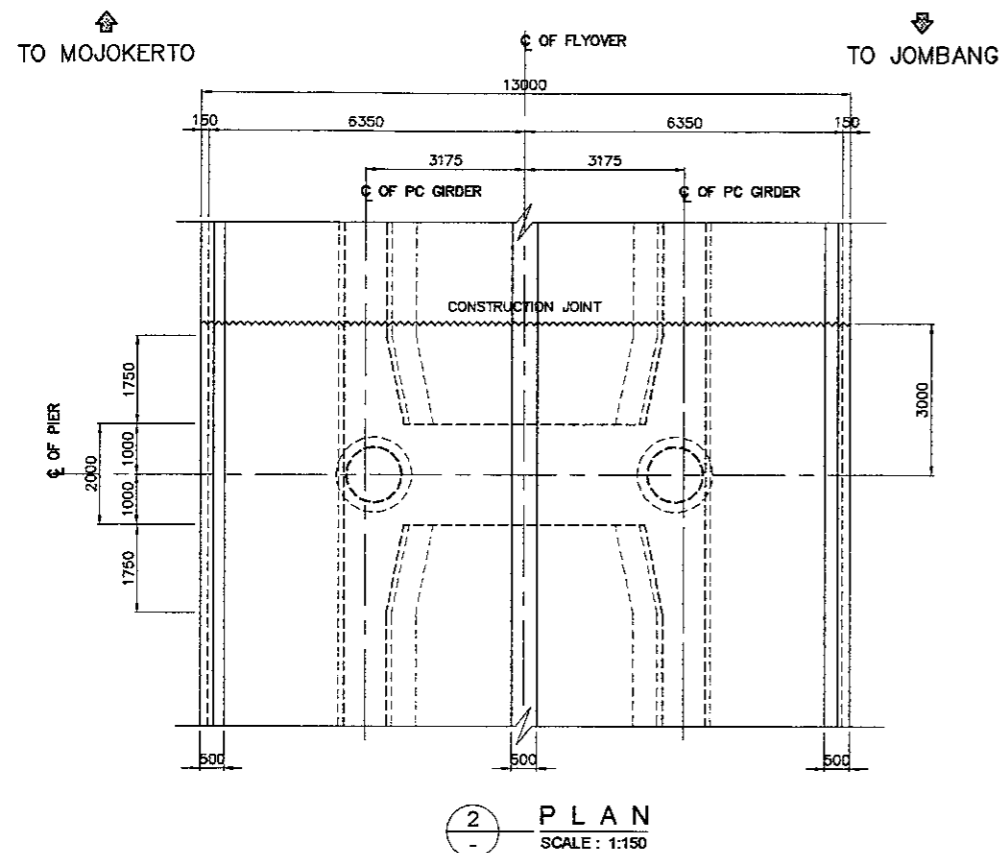
3 SECTION
 SCALE: 1:150

NOTES :
 1. ALL DIMENSIONS ARE IN MILLIMETER
 2. ELEVATIONS ARE IN METERS

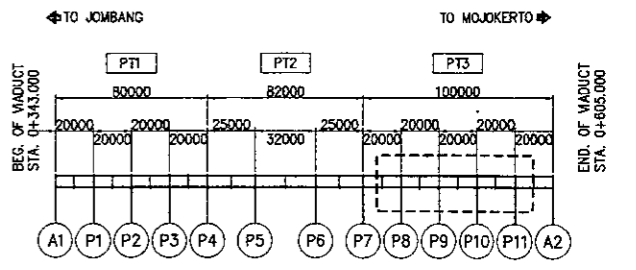


KEY PLAN
 SCALE: 1:4000

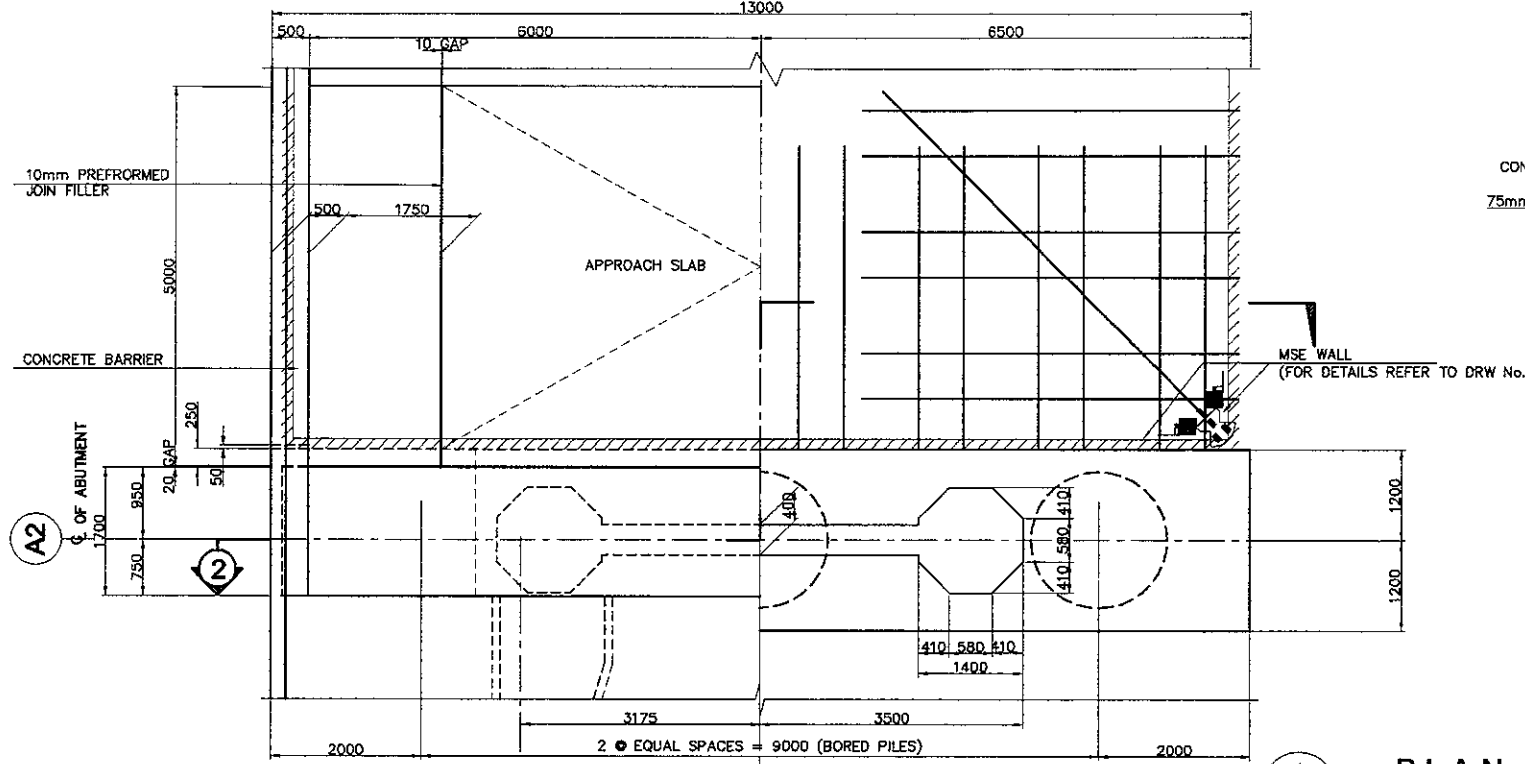
PIER	EL. A	EL. AL	EL. AR	EL. BL	EL. BR	SL. 1L	SL. 1R	SL. 2	H	HL	HR	H1	H2	H3	H4	H5	H6
P8	40.715	40.794	40.636	30.636	30.636	-2.500%		-3.750%	1200	8883	8725	1121	1279	737	763	384	516
P9	39.993	40.072	39.914	31.535	31.535	-2.500%	-2.500%	-3.750%	1200	7262	7104	1121	1279	737	763	384	516
P10	39.243	39.322	38.164	30.899	30.899	-2.500%	-2.500%	-3.750%	1200	7148	6990	1121	1279	737	763	384	516
P11	38.493	38.572	38.414	29.635	29.635	-2.338%	-2.338%	-3.750%	1200	7662	7504	1126	1269	738	757	388	512



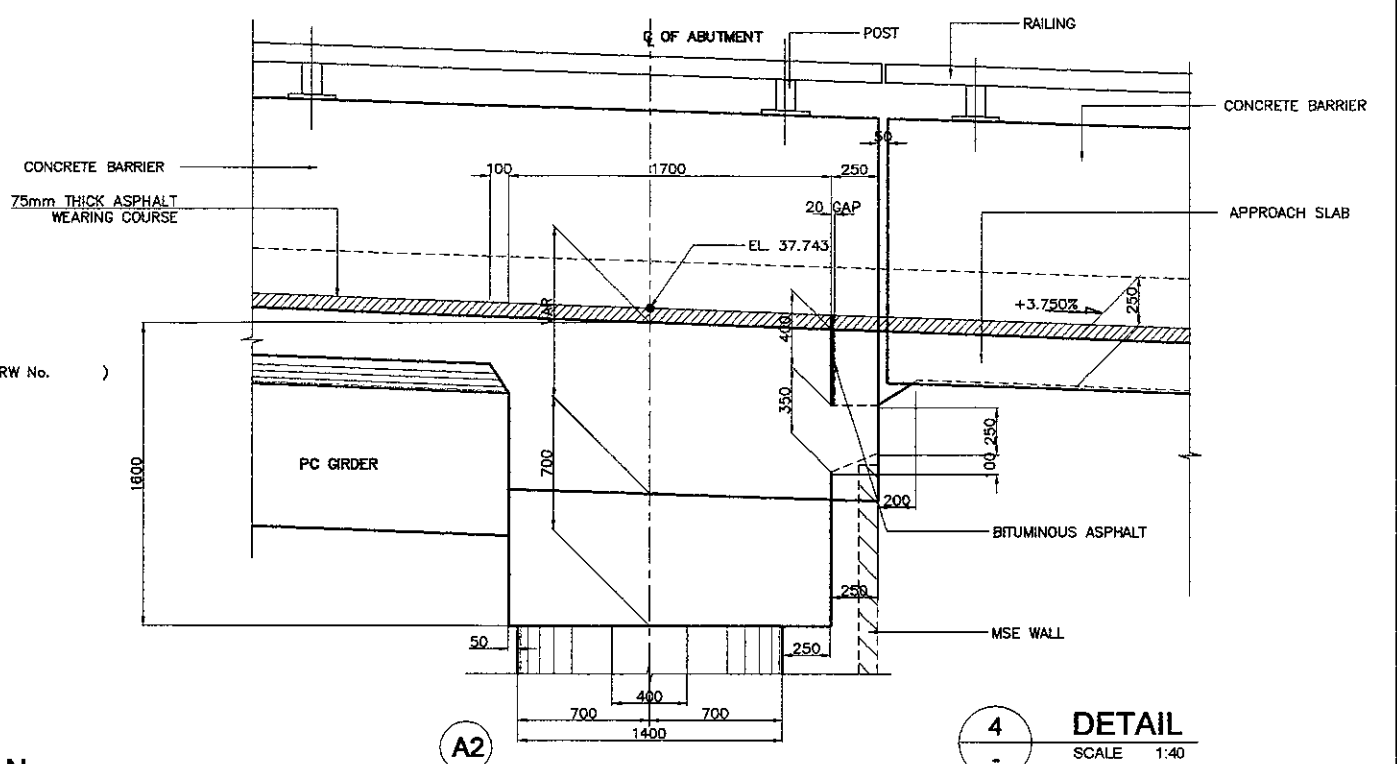
NOTES :
 1. ALL DIMENSIONS ARE IN MILLIMETER
 2. ELEVATIONS ARE IN METERS



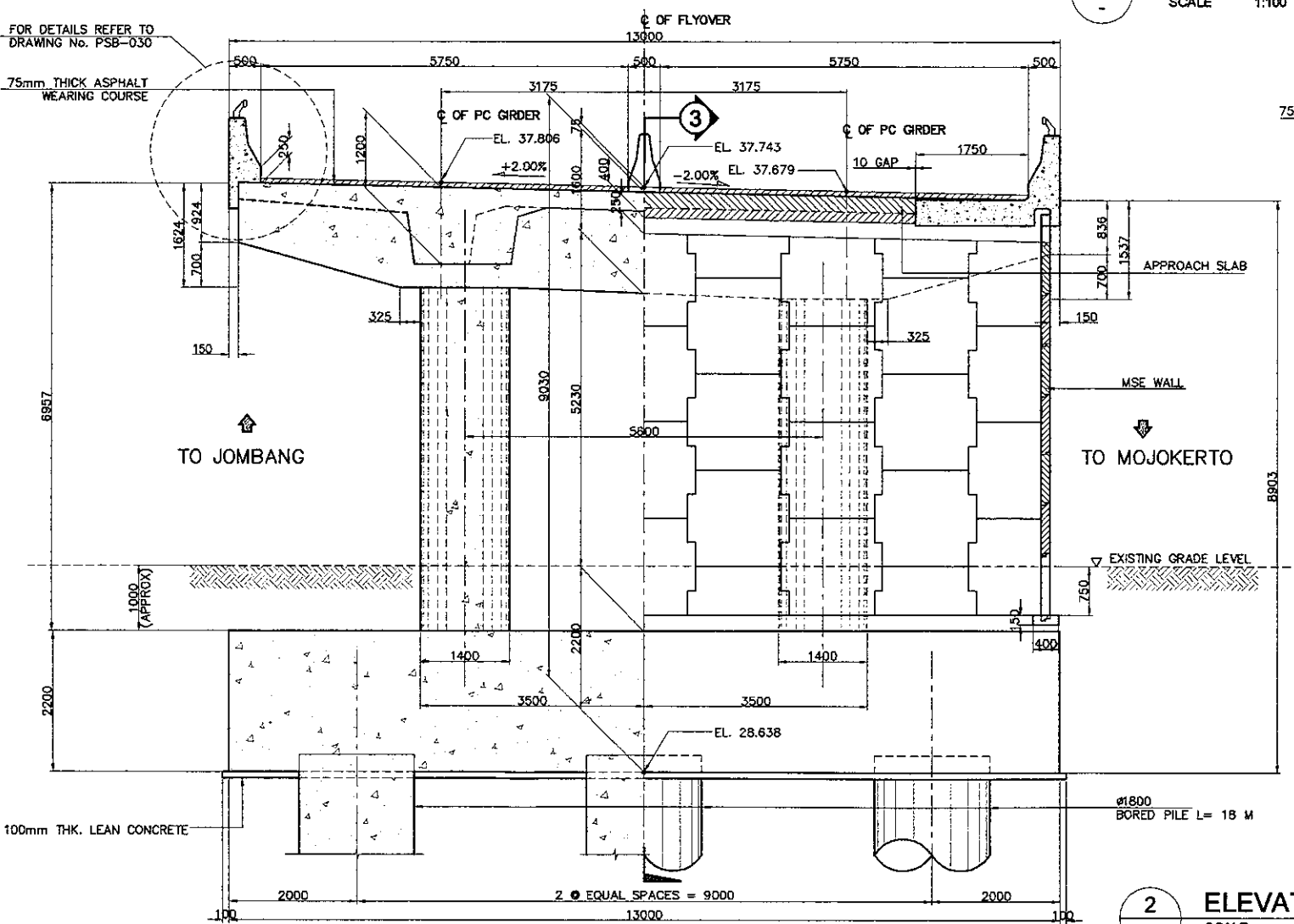
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name: A. GOURLEY	Name: T. OKUMURA	Name: M. KIUCHI
Sign: _____	Sign: _____	Sign: _____
Date: _____	Date: _____	Date: _____



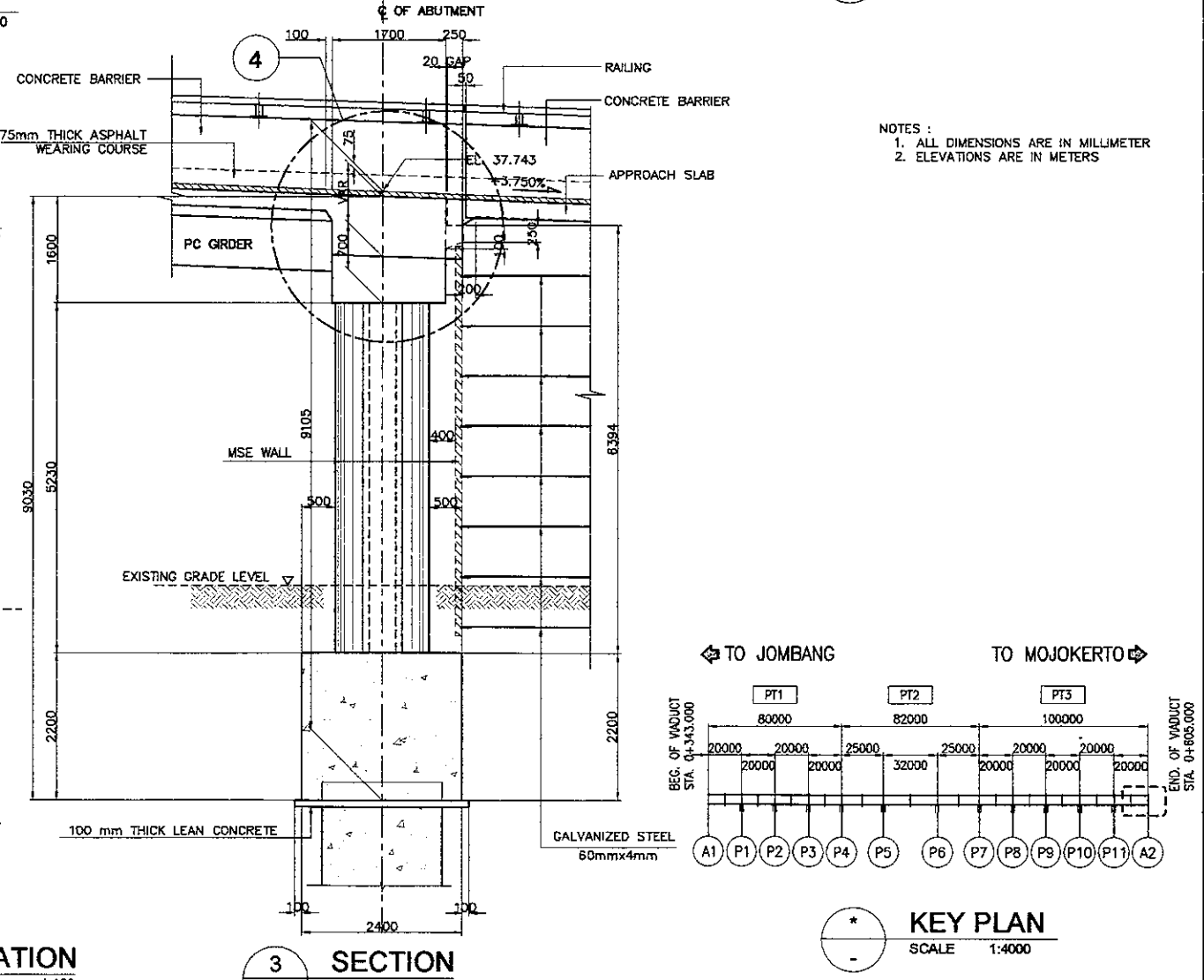
1 PLAN
 SCALE 1:100



4 DETAIL
 SCALE 1:40

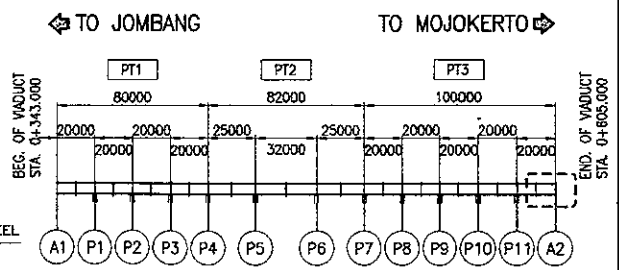


2 ELEVATION
 SCALE 1:100



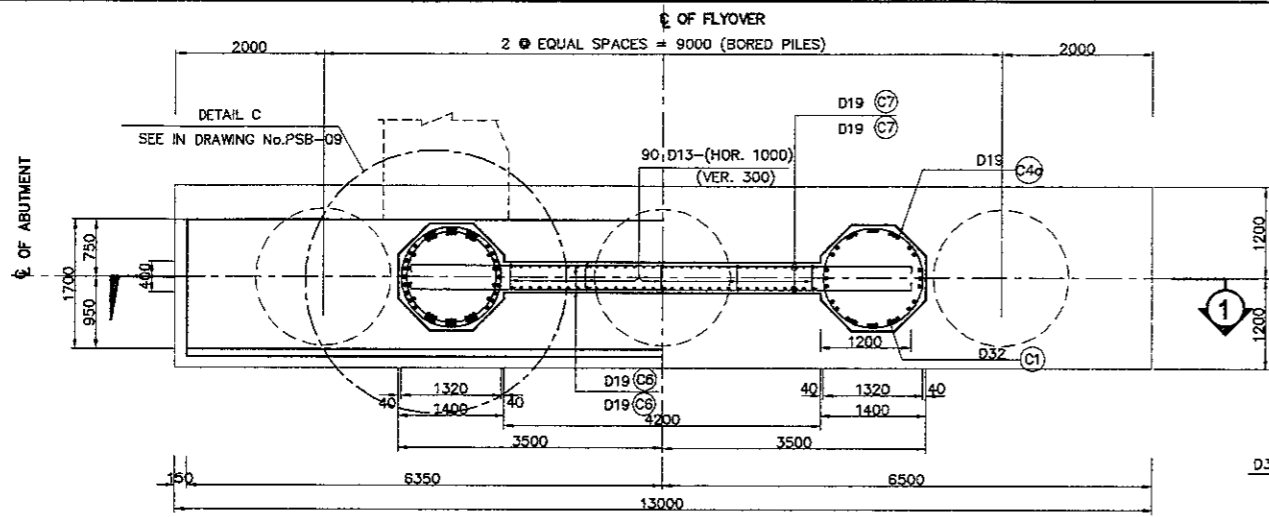
3 SECTION
 SCALE 1:100

NOTES :
 1. ALL DIMENSIONS ARE IN MILLIMETER
 2. ELEVATIONS ARE IN METERS

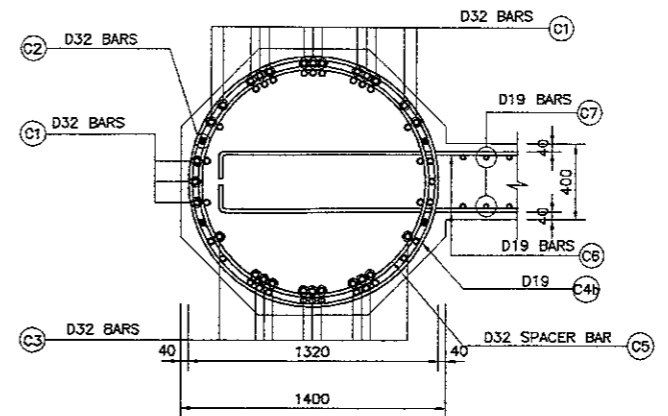


KEY PLAN
 SCALE 1:4000

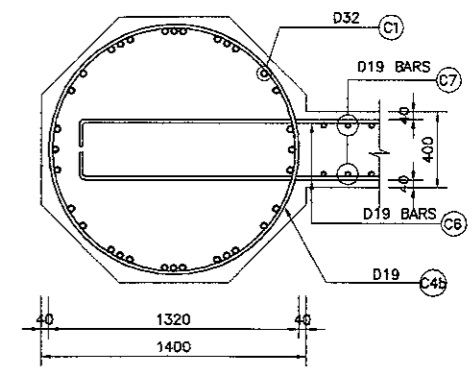
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name: A. GOURLEY	Name: T. OKUMURA	Name: M. KIUCHI
Sign: _____	Sign: _____	Sign: _____
Date: _____	Date: _____	Date: _____



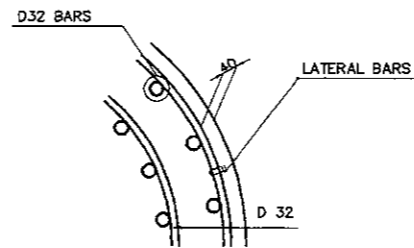
2 PLAN
 SCALE 1:100



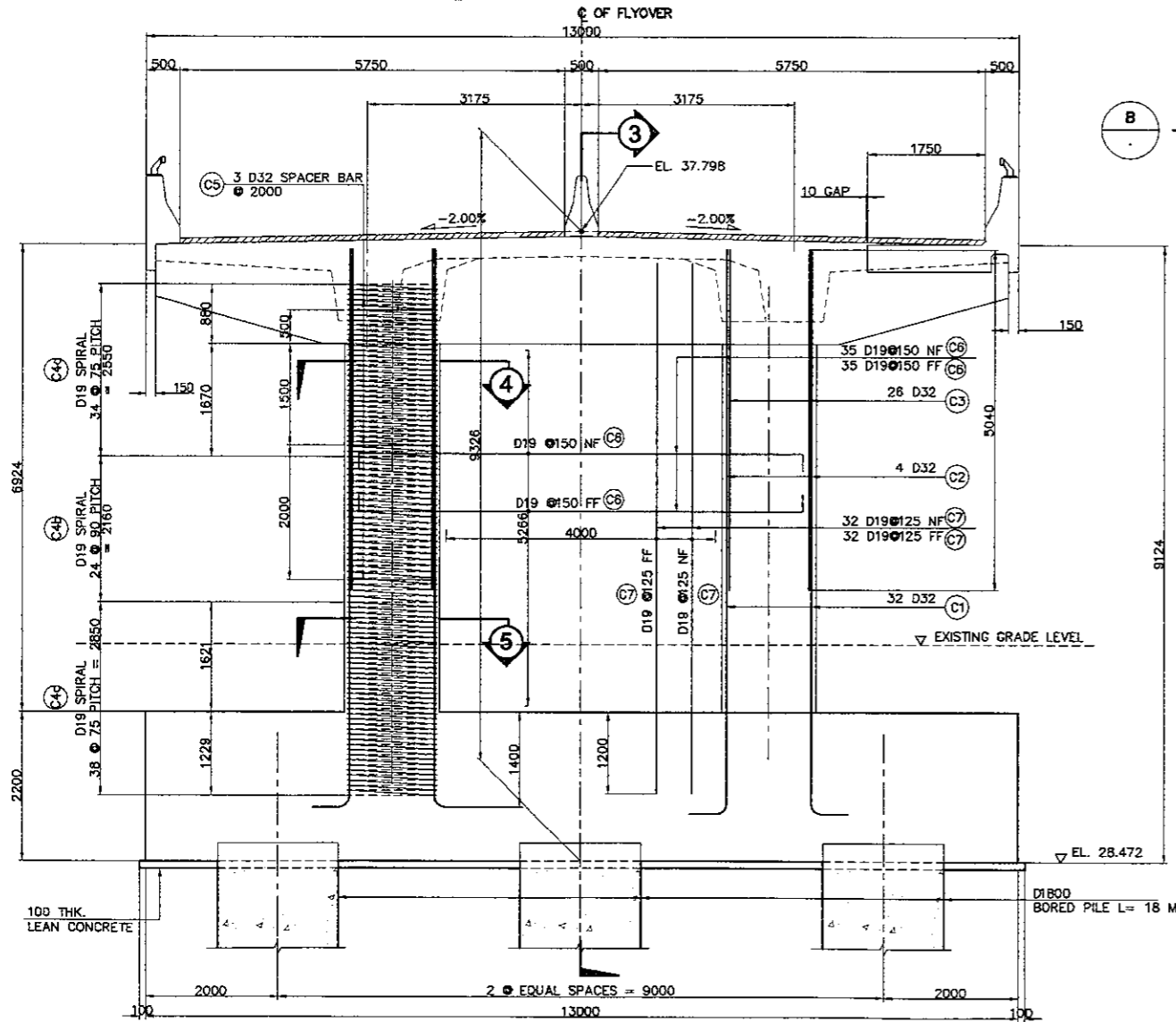
4 SECTION
 SCALE 1:40



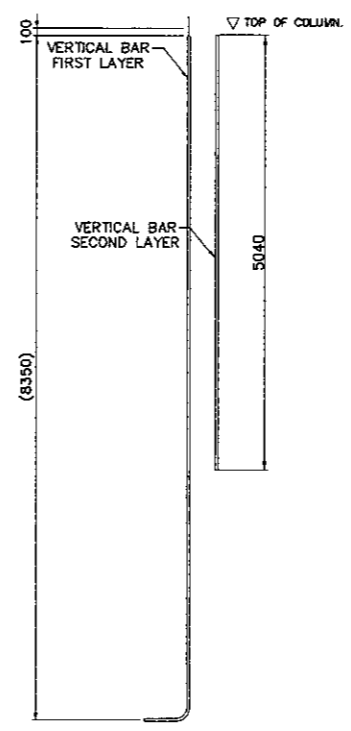
5 SECTION
 SCALE 1:40



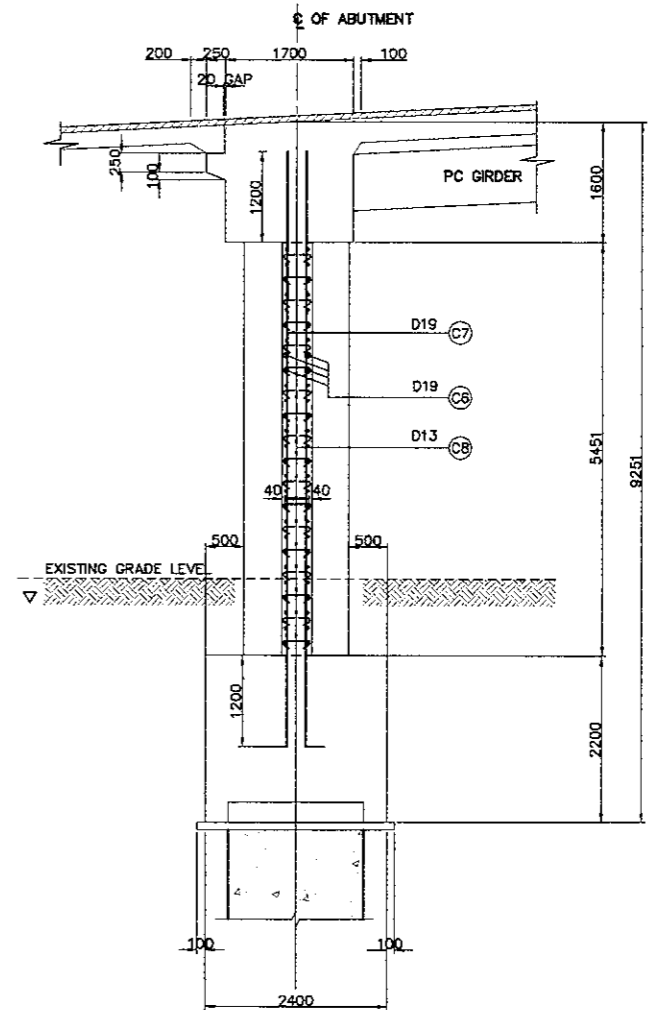
TYPICAL BAR LAYOUT DETAIL
 NOT TO SCALE



1 ELEVATION
 SCALE 1:100

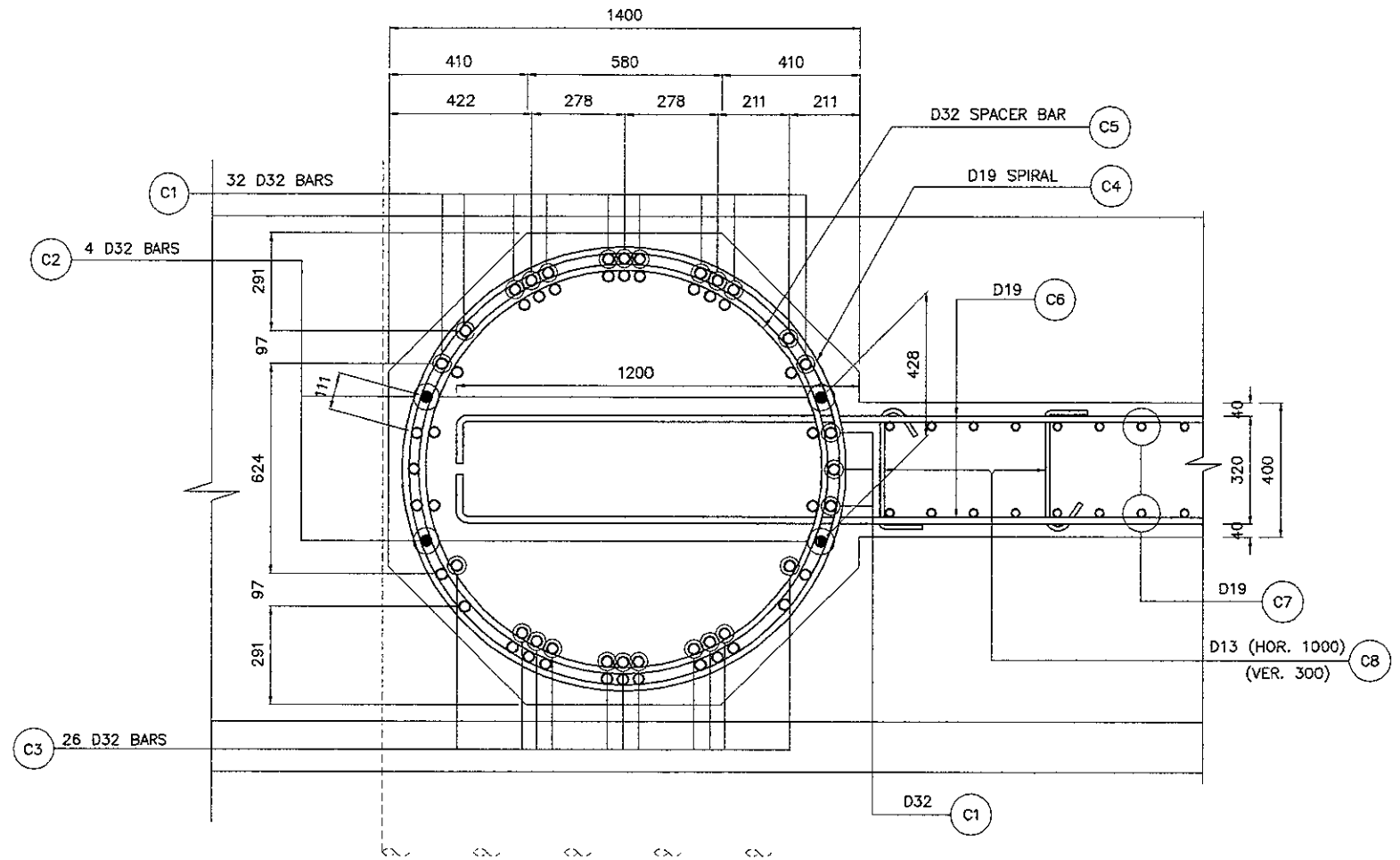


A SCHEMATIC DETAIL
 NOT TO SCALE

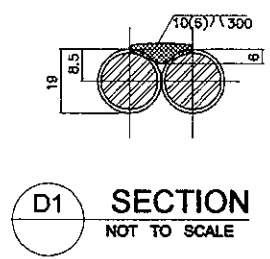


3 ELEVATION
 SCALE 1:100

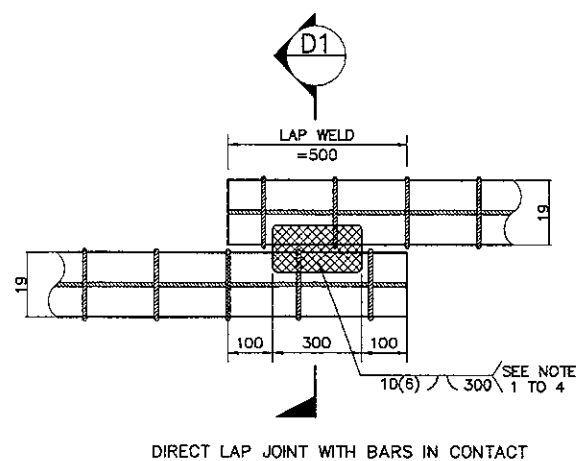
- NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETERS
 2. ELEVATION ARE IN METERS
 3. CONCRETE ABUTMENT AND FOOTING $f_c' = 30 \text{ MPa}$
 4. REINFORCING STEEL : YIELD STRENGTH = 390 N/mm^2



C DETAIL
 SCALE 1:20



D1 SECTION
 NOT TO SCALE

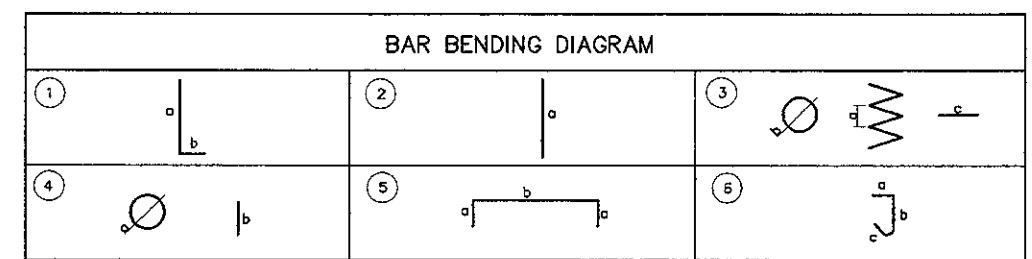


DIRECT LAP JOINT WITH BARS IN CONTACT

D DETAIL OF SPIRAL REINF.
 FULL LAP-WELD CONNECTION
 NOT TO SCALE

- NOTES ON LAP-WELD CONNECTION :
- SPIRAL REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE)
 - WELDING SHOULD CONFORM TO AWS (D1.4)
 STRUCTURAL WELDING CODE REINFORCED STEEL.
 - USE ELECTRODE E90XX.
 - CARE SHOULD BE TAKEN NOT TO DAMAGE THE COLUMN MAIN BARS DURING WELDING.

- NOTES :
- ALL DIMENSIONS ARE IN MILLIMETERS
 - ELEVATION ARE IN METERS
 - CONCRETE ABUTMENT AND FOOTING $f_c' = 30 \text{ MPa}$
 - REINFORCING STEEL : YIELD STRENGTH = 390 N/mm²

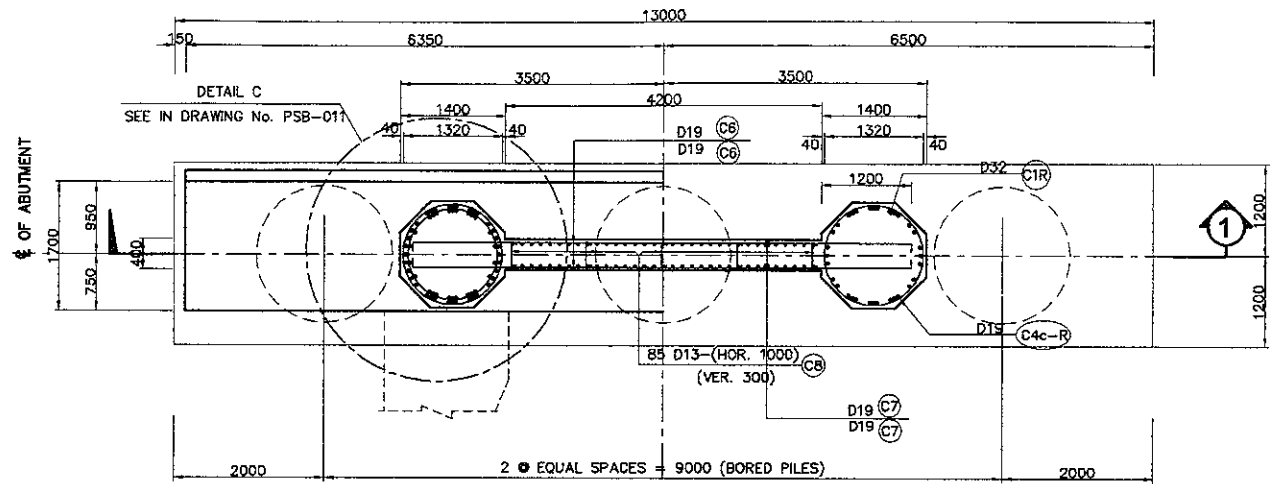


SCHEDULE OF REINFORCEMENT															
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	VOLUME OF CONC. (M ³)	
				a	b	c	d	e	f						
ABUTMENT (A)	COLUMN													17.703	
	C1	32	1	8350	550						8900	32	6.31		1797
	C2	32	2	5040						5040	4	6.31	127		
	C3	32	2	5040						5040	26	6.31	827		
	C4a	19	3	75	1320	500				146929	1	2.23	328		
	C4b	19	3	90	1320	500				103714	1	2.23	231		
	C4c	19	3	75	1320	500				164214	1	2.23	266		
	C5	32	4	1275	500					4506	3	6.31	85		
	TOTAL WEIGHT = 3,762 kg.														
	TOTAL WEIGHT 2 COLUMN (A) = 7,523 kg.														
ABUTMENT (B)	WALL													8.426	
	C6	19	5	300	6600					7200	70	2.23	1124		
	C7	19	1	7851	500					8351	64	2.23	1192		
	C8	13	5	110	320	180				590	70	1.04	43		
TOTAL (B) WALL = 2,359 kg.															
TOTAL WEIGHT (A + B) = 9,882 kg.												26.128			

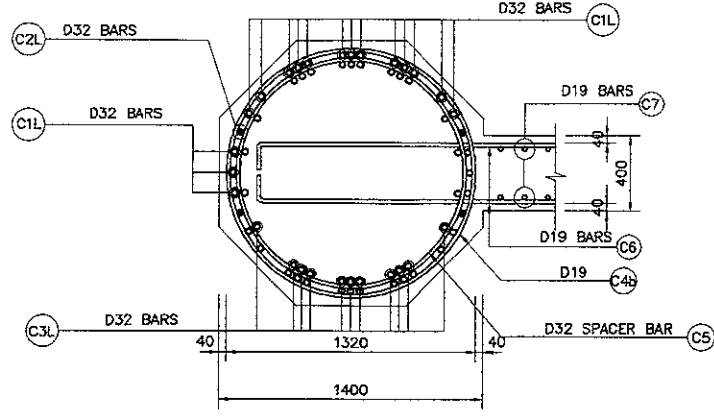
THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY, THE CONTRACTOR SHOULD CHECKED AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.

SCHEDULE OF PIER ABUTMENT							
PIER NO.	HEIGHT H (mm)	A (mm)	B (mm)	C (mm)	n1	n2	n3
A1-L	5451	2550	2160	2850	34	24	38
A1-R	5451	2550	2160	2850	34	24	38

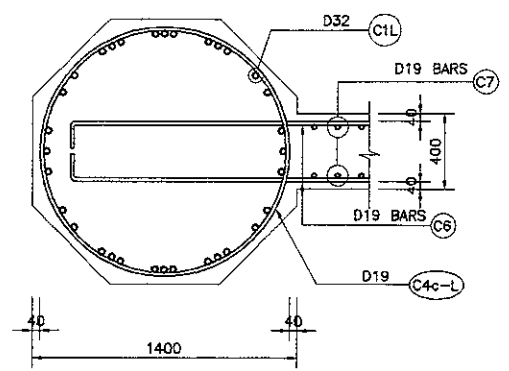
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name: A. GOURLEY	Name: T. OKUMURA	Name: M. KIUCHI
Sign: _____	Sign: _____	Sign: _____
Date: _____	Date: _____	Date: _____



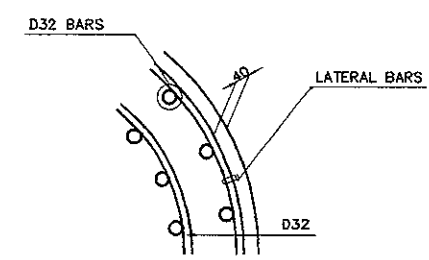
2 PLAN
 SCALE 1:100



4 SECTION
 SCALE 1:40

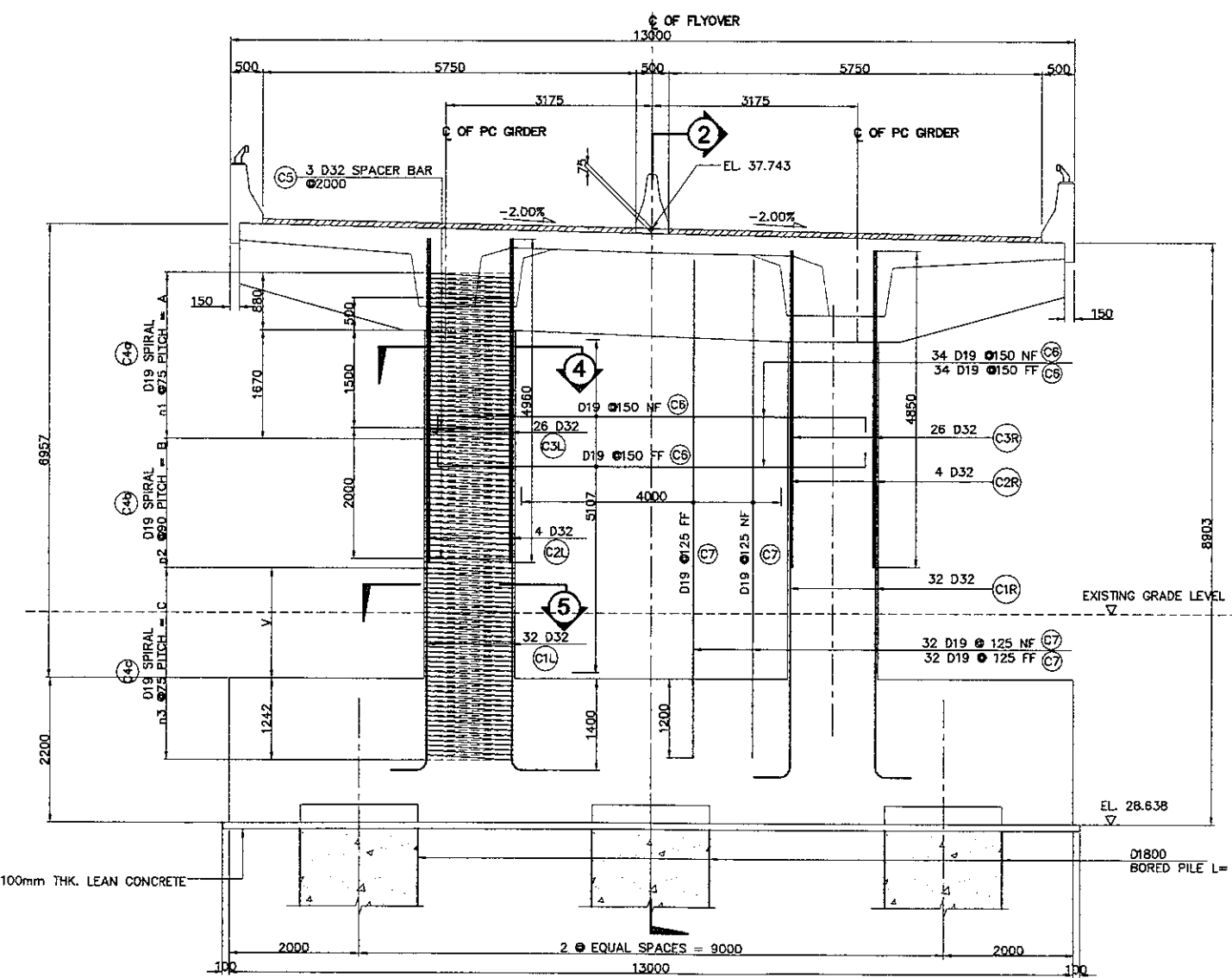


5 SECTION
 SCALE 1:40

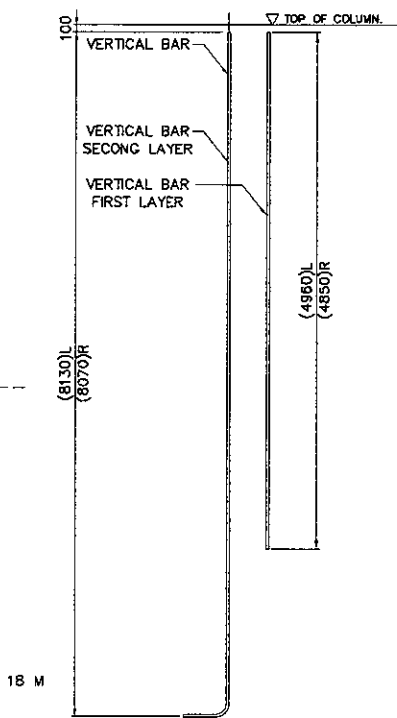


TYPICAL BAR LAYOUT DETAIL
 NOT TO SCALE

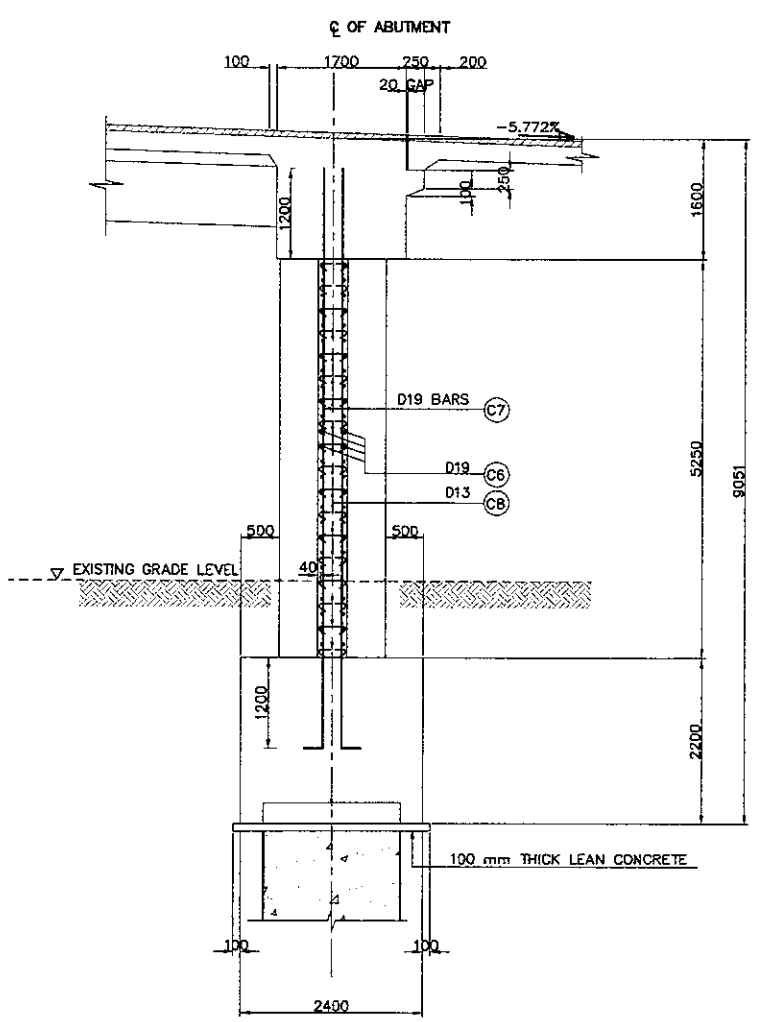
- NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETERS
 2. ELEVATION ARE IN METERS
 3. CONCRETE ABUTMENT AND FOOTING $f_c' = 30 \text{ MPa}$
 4. REINFORCING STEEL : YIELD STRENGTH = 390 N/mm^2



1 ELEVATION
 SCALE 1:100



A SCHEMATIC DETAIL
 NOT TO SCALE



3 SECTION
 SCALE 1:100