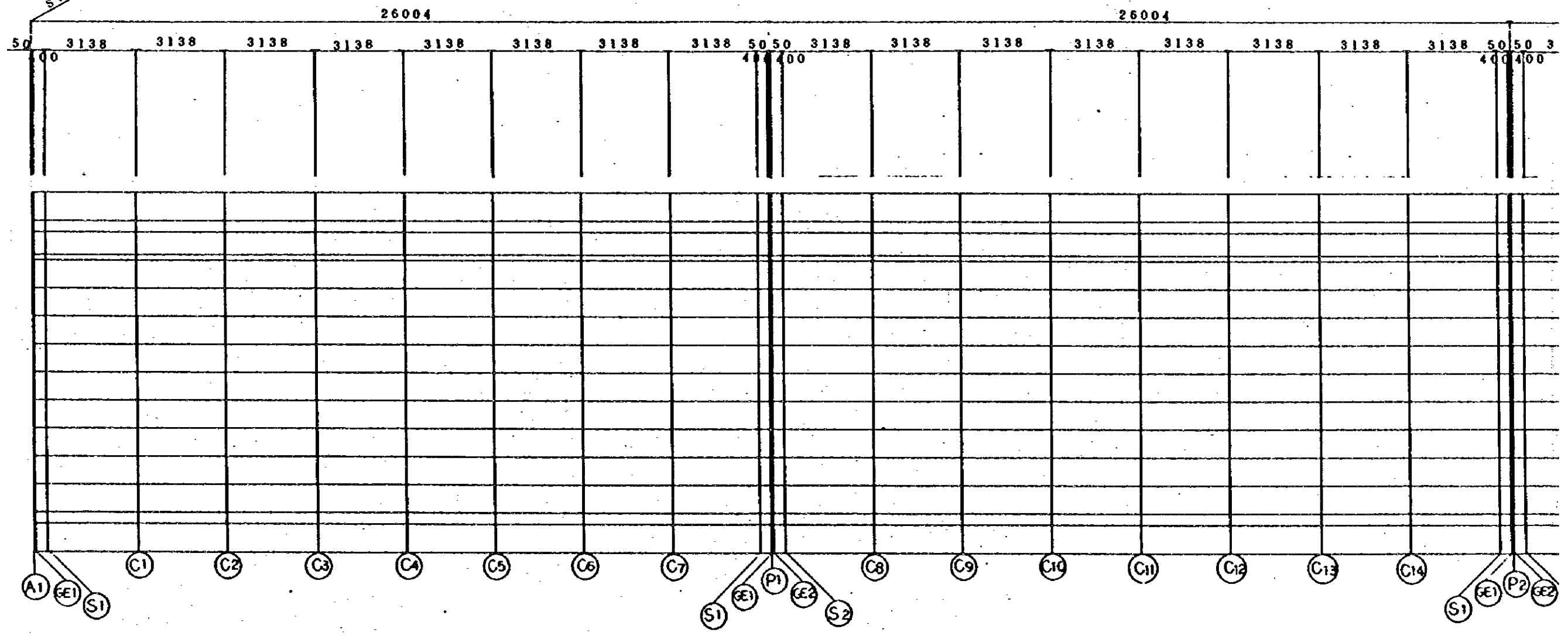


STA NO. 0+925.092



NOTES:

26004

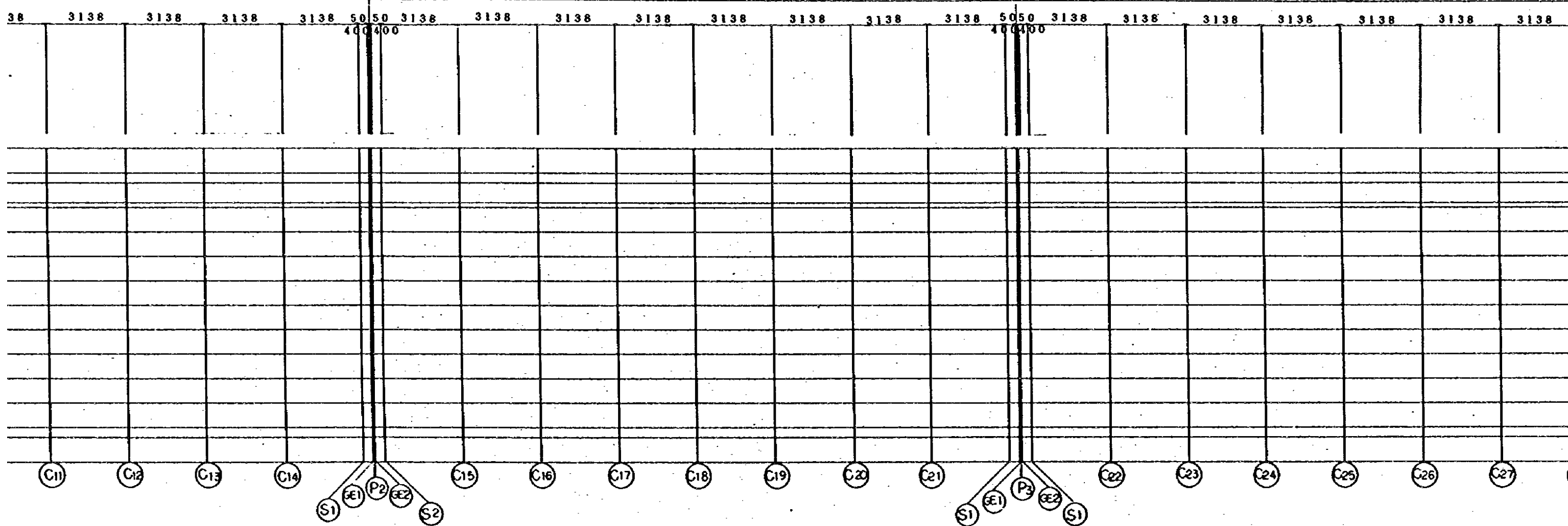
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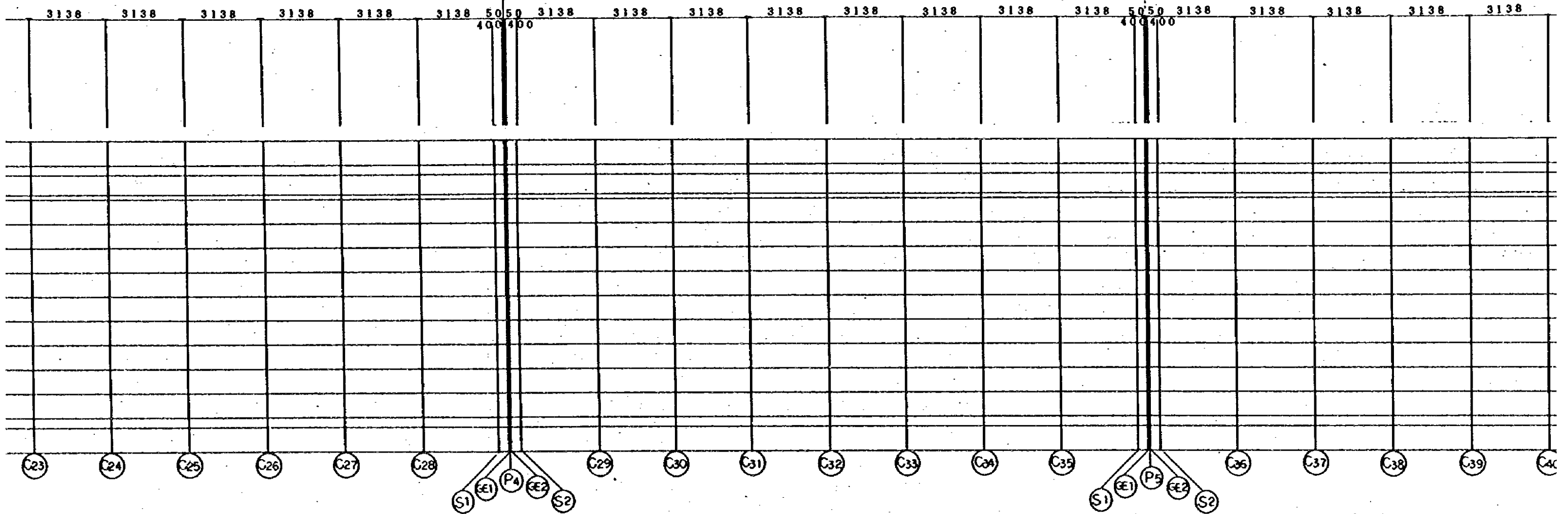


R/A-5ALMU
B-LINE

26004

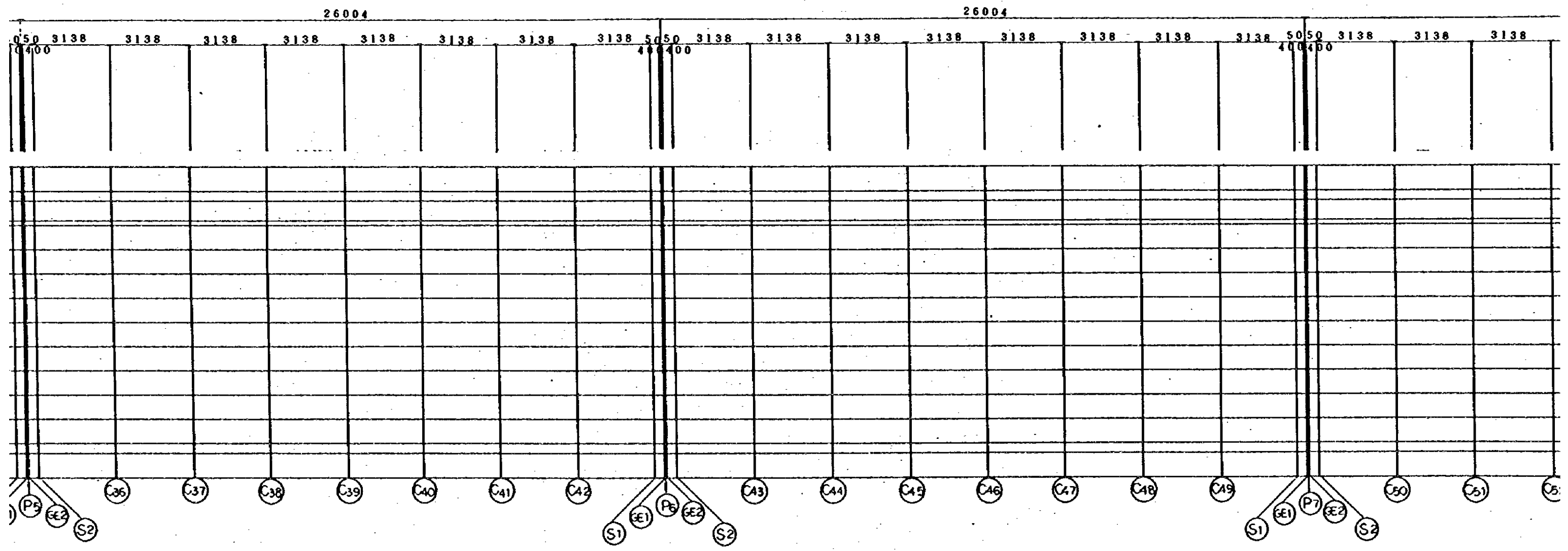
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R/A-5 ALMULADDAH

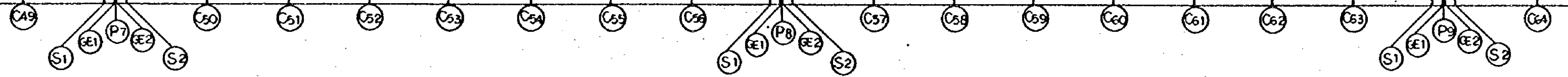
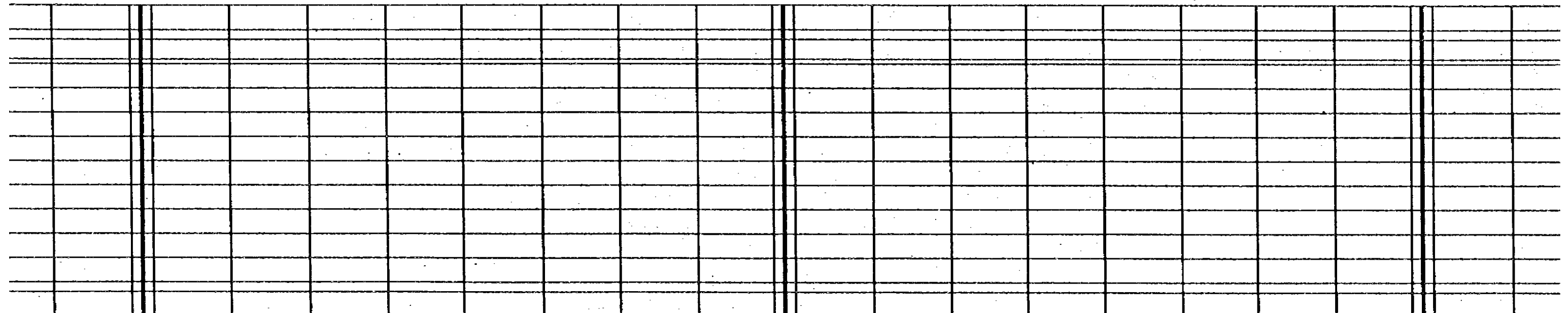
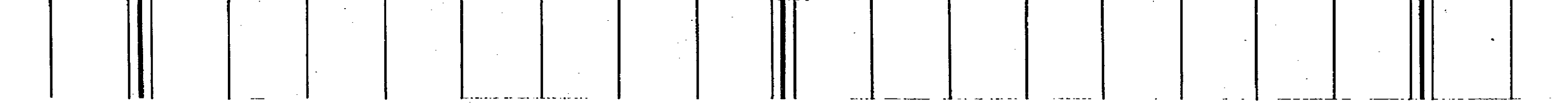
B-LINE

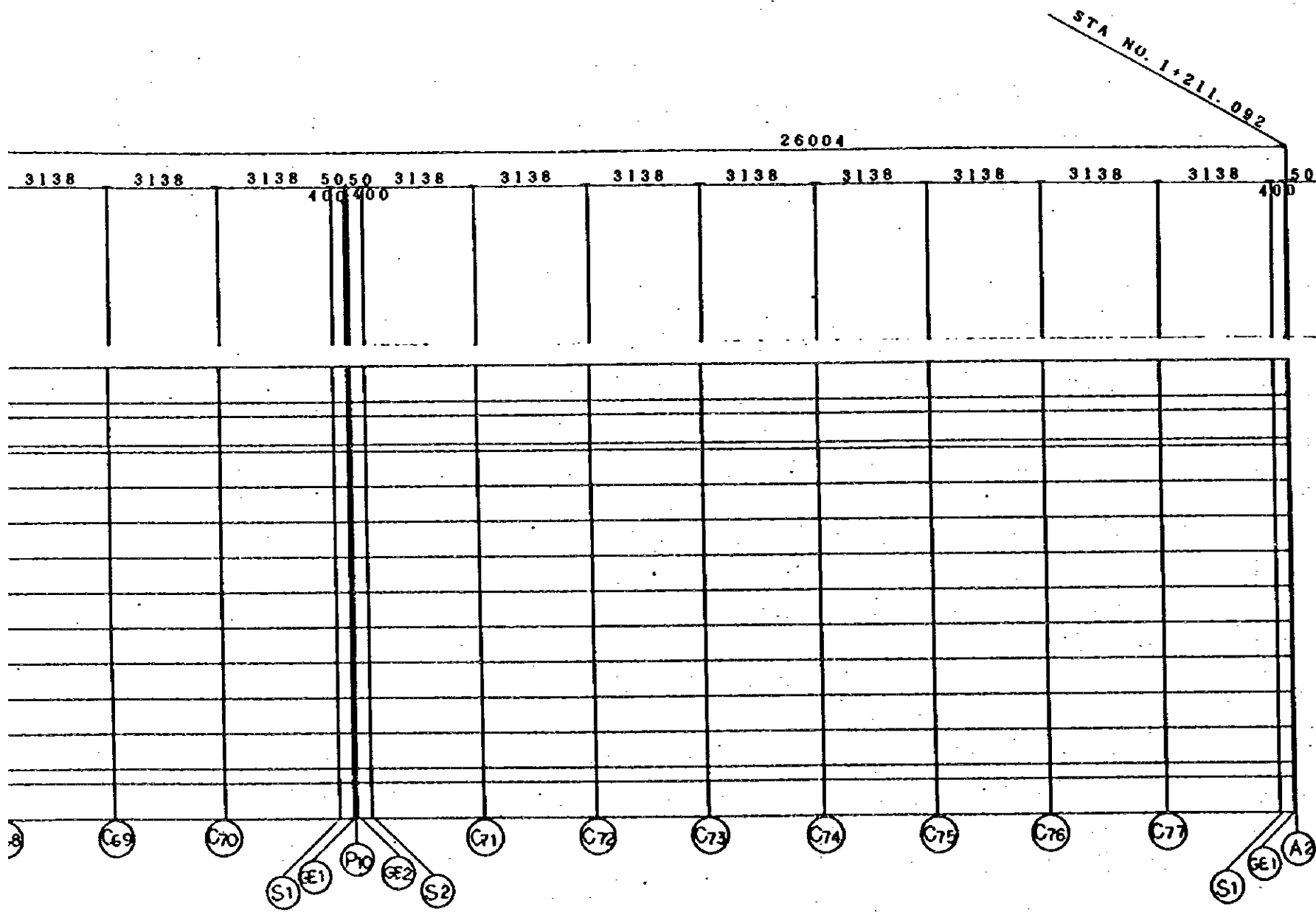


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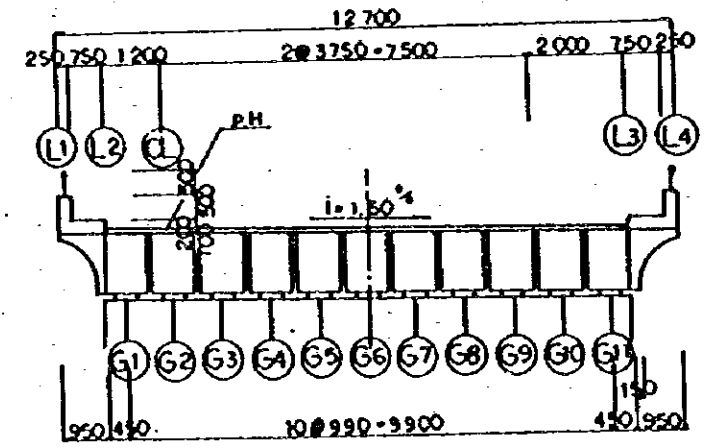
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B-LINE



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY	
	TITLE DATE	FRAMING PLAN RAOS AT B-LINE DWGNO. B-5

AL MULADDAH (B)

SECTION		A1	A1-GE1	A1-S1	C4	P1-S1	P1-GE1	P1	P1-GE2	P1-S2	C11	P2-S1	F
STATION		0 + 930.1650	0 + 930.2150	0 + 930.6150	0 + 943.1650	0 + 955.7150	0 + 956.1150	0 + 956.1650	0 + 956.2150	0 + 956.6150	0 + 989.1650	0 + 981.7150	0 +
L1	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	
	Y	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	
	Z	13.6566	13.6573	13.663	13.834	13.9893	13.994	13.9946	13.9951	13.9998	14.1382	14.2608	
L2	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	
	Y	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	
	Z	13.7416	13.7423	13.748	13.919	14.0743	14.079	14.0796	14.0801	14.0848	14.2232	14.3458	
CL	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	
	Y	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	
	Z	13.7236	13.7243	13.73	13.901	14.0563	14.061	14.0616	14.0621	14.0668	14.2052	14.3278	
G6(PIER CENTER)	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	
	Y	0	0	0	0	0	0	0	0	0	0	0	
	Z	13.6613	13.662	13.6677	13.8387	13.994	13.9987	13.9993	13.9999	14.0046	14.143	14.2656	
L3	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	
	Y	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	
	Z	13.581	13.5818	13.5875	13.7585	13.9138	13.9185	13.919	13.9196	13.9243	14.0627	14.1853	
L4	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	
	Y	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	
	Z	13.4661	13.4668	13.4725	13.6435	13.7988	13.8035	13.8041	13.8046	13.8093	13.9477	14.0703	

NOTES:

P1	P1-GE2	P1-S2	G11	P2-S1	P2-GE1	P2	P2-GE2	P2-S2	G18	P3-S1	P3-GE1	P3	P3-GE2	P3-S2	G25	P4-S1	P4-GE1	P4	P4-GE2
+ 956.1650	+ 956.2150	+ 956.6150	+ 969.1650	+ 981.7150	+ 982.1150	+ 982.1650	+ 982.2150	+ 982.6150	+ 995.1650	1 + 7.7150	1 + 8.1150	1 + 8.1650	1 + 8.2150	1 + 8.6150	1 + 21.1650	1 + 33.7150	1 + 34.1150	1 + 34.1650	1 + 34.2150
26	26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
13.9946	13.9951	13.9998	14.1382	14.2608	14.2645	14.2649	14.2654	14.269	14.3748	14.4648	14.4674	14.4677	14.4681	14.4707	14.5438	14.6012	14.6028	14.6029	14.6031
26	26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05
5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
14.0796	14.0801	14.0848	14.2232	14.3458	14.3495	14.35	14.3504	14.354	14.4598	14.5498	14.5524	14.5528	14.5531	14.5557	14.6288	14.6862	14.6878	14.688	14.6881
26	26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05
4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
14.0616	14.0621	14.0668	14.2052	14.3278	14.3315	14.3319	14.3324	14.336	14.4418	14.5318	14.5344	14.5348	14.5351	14.5377	14.6108	14.6682	14.6698	14.67	14.6701
26	26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13.9993	13.9999	14.0046	14.143	14.2656	14.2692	14.2697	14.2702	14.2738	14.3795	14.4696	14.4722	14.4725	14.4728	14.4754	14.5485	14.6059	14.6075	14.6077	14.6079
26	26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05
-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
13.919	13.9196	13.9243	14.0627	14.1853	14.189	14.1894	14.1899	14.1935	14.2993	14.3893	14.3919	14.3922	14.3926	14.3952	14.4683	14.5257	14.5273	14.5274	14.5276
26	26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05
-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
13.8041	13.8046	13.8093	13.9477	14.0703	14.074	14.0745	14.0749	14.0785	14.1843	14.2743	14.2769	14.2773	14.2776	14.2802	14.3533	14.4107	14.4123	14.4125	14.4126

FRAMING PLAN AT RA/05 AL MULADDAH (B-LINE)

	C25	P4-S1	P4-GE1	P4	P4-GE2	P4-S2	C32	P5-S1	P5-GE1	P5	P5-GE2	P5-S2	C39	P6-S1	P6-GE1	P6	P6-GE2	P6-S2	C46	P7-S1
30	1 + 21.1650	1 + 33.7150	1 + 34.1150	1 + 34.1650	1 + 34.2150	1 + 34.6150	1 + 47.1650	1 + 59.7150	1 + 60.1150	1 + 60.1650	1 + 60.2150	1 + 60.6150	1 + 73.1650	1 + 85.7150	1 + 86.1150	1 + 86.1650	1 + 86.2150	1 + 86.6150	1 + 99.1650	1 + 111.7150
15	91	103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.5
35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
77	14.5438	14.6012	14.6028	14.6029	14.6031	14.6047	14.6452	14.67	14.6705	14.6705	14.6708	14.6711	14.679	14.6711	14.6708	14.6705	14.6705	14.67	14.6452	14.604
45	91	103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.5
35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
57	14.6288	14.6862	14.6878	14.688	14.6881	14.6897	14.7302	14.755	14.7555	14.7556	14.7556	14.7561	14.764	14.7561	14.7556	14.7556	14.7555	14.755	14.7302	14.689
45	91	103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.5
15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
77	14.6108	14.6682	14.6698	14.67	14.6701	14.6717	14.7122	14.737	14.7375	14.7376	14.7376	14.7381	14.748	14.7381	14.7376	14.7376	14.7375	14.737	14.7122	14.671
45	91	103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	14.5485	14.6059	14.6075	14.6077	14.6079	14.6094	14.6499	14.6747	14.6752	14.6753	14.6754	14.6759	14.6838	14.6759	14.6754	14.6753	14.6752	14.6747	14.65	14.609
45	91	103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.5
35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
52	14.4683	14.5257	14.5273	14.5274	14.5276	14.5292	14.5697	14.5945	14.595	14.595	14.5951	14.5956	14.6035	14.5956	14.5951	14.595	14.595	14.5945	14.5697	14.529
45	91	103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.5
35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
302	14.3533	14.4107	14.4123	14.4125	14.4126	14.4142	14.4547	14.4795	14.48	14.4801	14.4801	14.4806	14.4885	14.4806	14.4801	14.4801	14.48	14.4795	14.4547	14.414

P6	P6-GE2	P6-S2	C46	P7-S1	P7-GE1	P7	P7-GE2	P7-S2	C53	P8-S1	P8-GE1	P8	P8-GE2	P8-S2	C60	P9-S1	P9-GE1	P9	P9-GE2
1 + 86.1650	1 + 86.2150	1 + 86.6150	1 + 99.1650	1 + 111.7150	1 + 112.1150	1 + 112.1650	1 + 112.2150	1 + 112.6150	1 + 125.1650	1 + 137.7150	1 + 138.1150	1 + 138.1650	1 + 138.2150	1 + 138.6150	1 + 151.1650	1 + 163.7150	1 + 164.1150	1 + 164.1650	1 + 164.2150
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
14.6705	14.6705	14.67	14.6452	14.6047	14.6031	14.6029	14.6028	14.6012	14.5438	14.4707	14.4681	14.4677	14.4674	14.4648	14.3748	14.269	14.2654	14.2649	14.2645
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05
5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
14.7556	14.7555	14.755	14.7302	14.6897	14.6881	14.688	14.6878	14.6862	14.6288	14.5557	14.5531	14.5528	14.5524	14.5498	14.4598	14.354	14.3504	14.35	14.3495
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05
4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
14.7376	14.7375	14.737	14.7122	14.6717	14.6701	14.6699	14.6698	14.6682	14.6108	14.5377	14.5351	14.5348	14.5344	14.5318	14.4418	14.336	14.3324	14.332	14.3315
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.6753	14.6752	14.6747	14.65	14.6094	14.6079	14.6077	14.6075	14.6059	14.5485	14.4754	14.4728	14.4725	14.4722	14.4696	14.3796	14.2738	14.2702	14.2697	14.2692
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05
-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
14.595	14.595	14.5945	14.5697	14.5292	14.5276	14.5274	14.5273	14.5257	14.4683	14.3952	14.3926	14.3922	14.3919	14.3893	14.2993	14.1935	14.1899	14.1894	14.189
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05
-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
14.4801	14.48	14.4795	14.4547	14.4142	14.4126	14.4125	14.4123	14.4107	14.3533	14.2802	14.2776	14.2773	14.2769	14.2743	14.1843	14.0785	14.0749	14.0745	14.074

	P8-GE2	P8-S2	C60	P9-S1	P9-GE1	P9	P9-GE2	P9-S2	C67	P10-S1	P10-GE1	P10	P10-GE2	P10-S2	C74	A2-S1	A2-GE1	A2
01	+ 138.2150	+ 138.6150	+ 151.1650	+ 163.7150	+ 164.1150	+ 164.1650	+ 164.2150	+ 164.6150	+ 177.1650	+ 189.7150	+ 190.1150	+ 190.1650	+ 190.2150	+ 190.6150	+ 203.1650	+ 215.7150	+ 216.1150	+ 216.1650
8	208.05	208.45	221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
5	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
7	14.4674	14.4648	14.3748	14.269	14.2654	14.2649	14.2645	14.2608	14.1382	13.9998	13.9951	13.9945	13.994	13.9893	13.834	13.663	13.6573	13.6565
8	208.05	208.45	221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
5	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
8	14.5524	14.5498	14.4598	14.354	14.3504	14.35	14.3495	14.3458	14.2232	14.0848	14.0801	14.0796	14.079	14.0743	13.919	13.748	13.7423	13.7416
18	208.05	208.45	221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
18	14.5344	14.5318	14.4418	14.336	14.3324	14.332	14.3315	14.3278	14.2052	14.0668	14.0621	14.0616	14.061	14.0563	13.901	13.73	13.7243	13.7235
18	208.05	208.45	221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	14.4722	14.4696	14.3796	14.2738	14.2702	14.2697	14.2692	14.2656	14.1429	14.0048	13.9999	13.9993	13.9987	13.994	13.8388	13.6677	13.662	13.6613
18	208.05	208.45	221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
22	14.3919	14.3893	14.2993	14.1935	14.1899	14.1894	14.189	14.1853	14.0627	13.9243	13.9196	13.919	13.9185	13.9138	13.7585	13.5875	13.5818	13.581
08	208.05	208.45	221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
73	14.2769	14.2743	14.1843	14.0785	14.0749	14.0745	14.074	14.0703	13.9477	13.8093	13.8046	13.8041	13.8035	13.7988	13.6435	13.4725	13.4668	13.4661

	P10-S1	P10-GE1	P10	P10-GE2	P10-S2	C74	A2-S1	A2-GE1	A2
1650	1 + 189.7150	1 + 190.1150	1 + 190.1650	1 + 190.2150	1 + 190.6150	1 + 203.1650	1 + 215.7150	1 + 216.1150	1 + 216.1650
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
382	13.9998	13.9951	13.9945	13.994	13.9893	13.834	13.663	13.6573	13.6565
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
2232	14.0848	14.0801	14.0796	14.079	14.0743	13.919	13.748	13.7423	13.7416
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
2052	14.0668	14.0621	14.0616	14.061	14.0563	13.901	13.73	13.7243	13.7235
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
0	0	0	0	0	0	0	0	0	0
1429	14.0046	13.9999	13.9993	13.9987	13.994	13.8388	13.6677	13.662	13.6613
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
0627	13.9243	13.9196	13.919	13.9185	13.9138	13.7585	13.5875	13.5818	13.581
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
9477	13.8093	13.8046	13.8041	13.8035	13.7988	13.6435	13.4725	13.4668	13.4661

JAPAN INTERNATIONAL COOPERATION AGENCY
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JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATJAN HIGHWAY

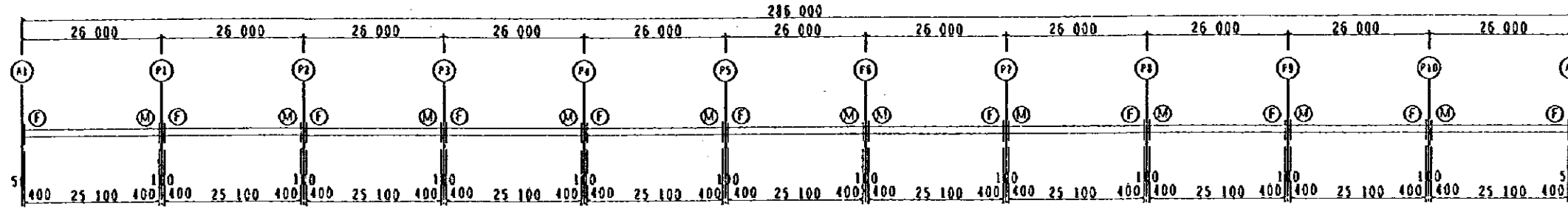
TITLE CO-ORDINATE LIST RA/05 AT B-LINE

DATE

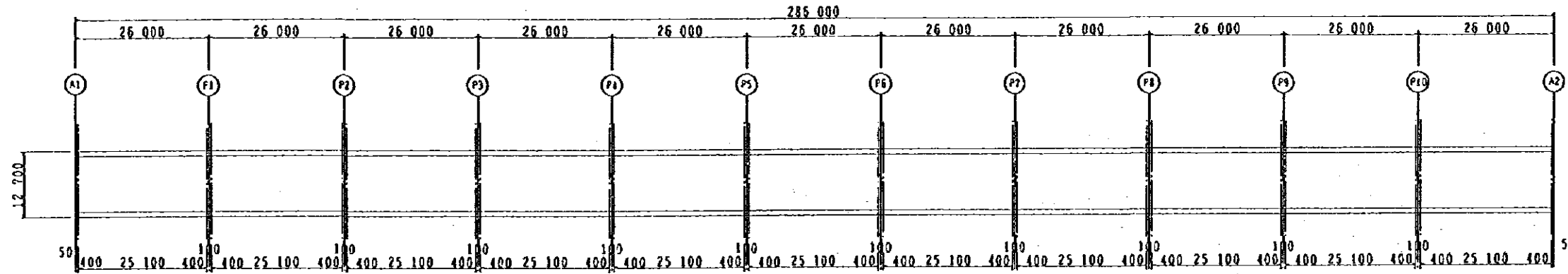
DWGNO.

B-6

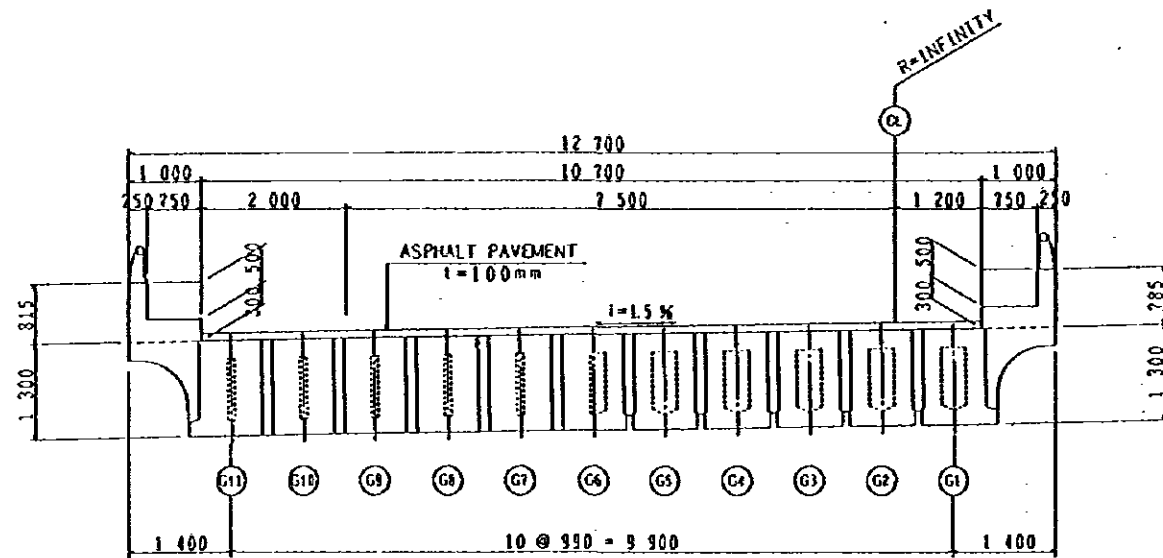
RA/5 AL MULADDAH JG.



PROFILE OF BRIDGE s= 1/1000

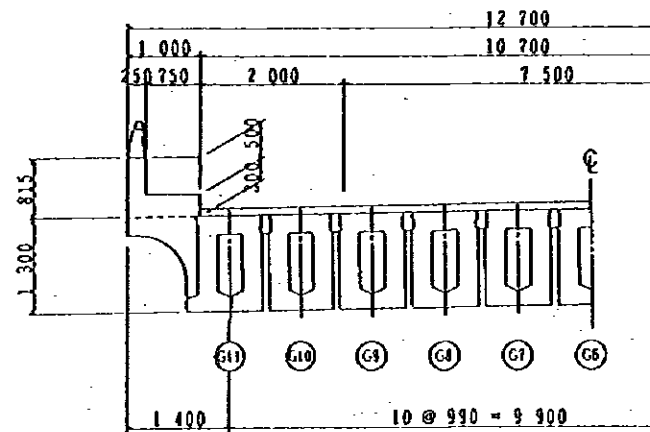


PLAN s= 1/1000



GIRDER END

MIDDLE SPAN



TYPICAL SEC.

	GIRDER LENGTH	SPAN LENGTH	REMARKS
A1 ~ P1	25 902	25 102	INCLINED LENGTH
P10 ~ A2			
P1 ~ P3	25 901	25 101	.
P4 ~ P10	25 900	25 100	.
P3 ~ P8			

GIRDER LENGTH

SECTION s= 1/100

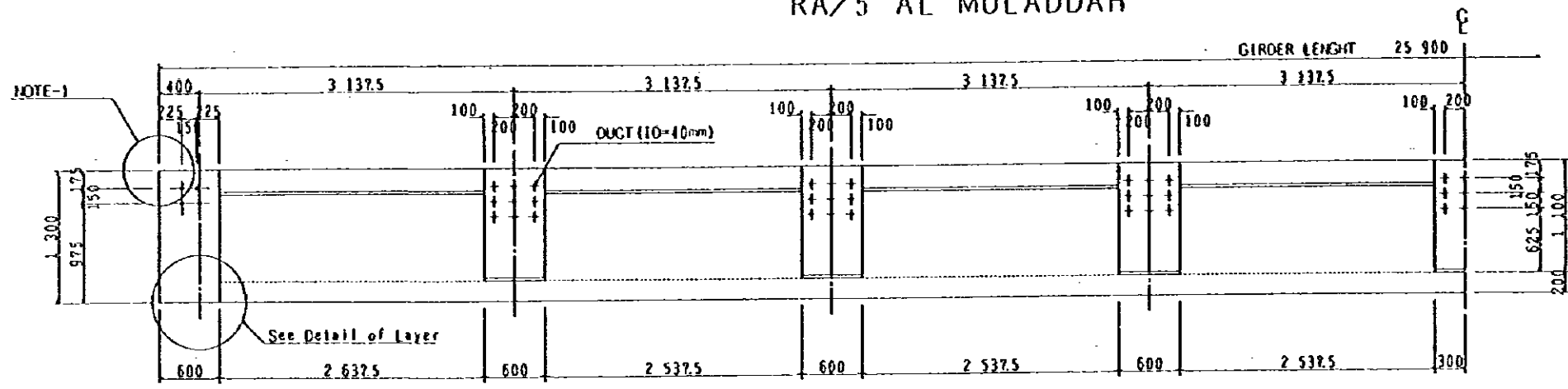
GENERAL VIEW OF BRIDGE AT A-LINE

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 JICA STUDY TEAM
 PACIFIC CONSULTANTS INTERNATIONAL
 FUKUYAMA CONSULTANTS INTERNATIONAL

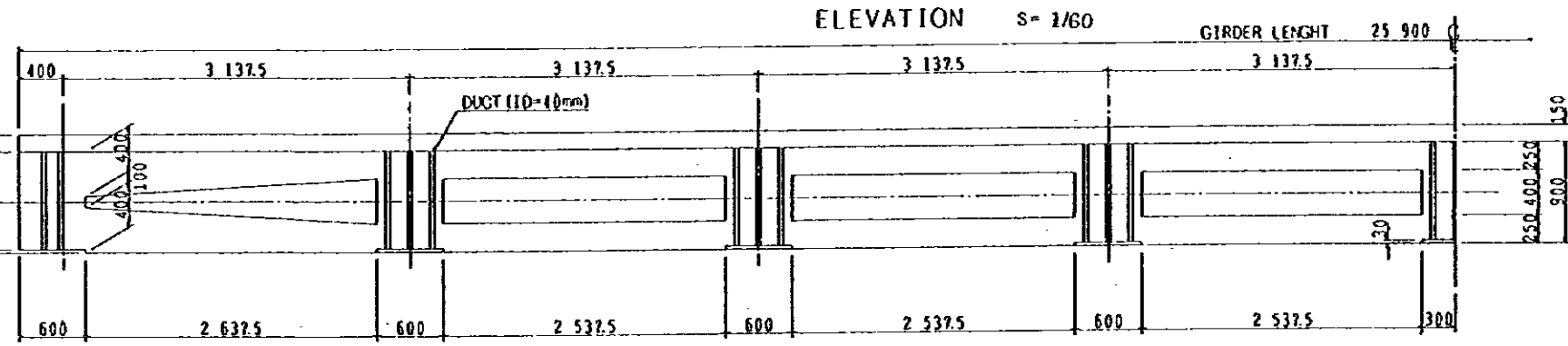
CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
 PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
 TITLE: GENERAL VIEW OF BRIDGE AT A-LINE
 DATE: _____ DWGNO. B-7

RA/5 AL MULADDAH

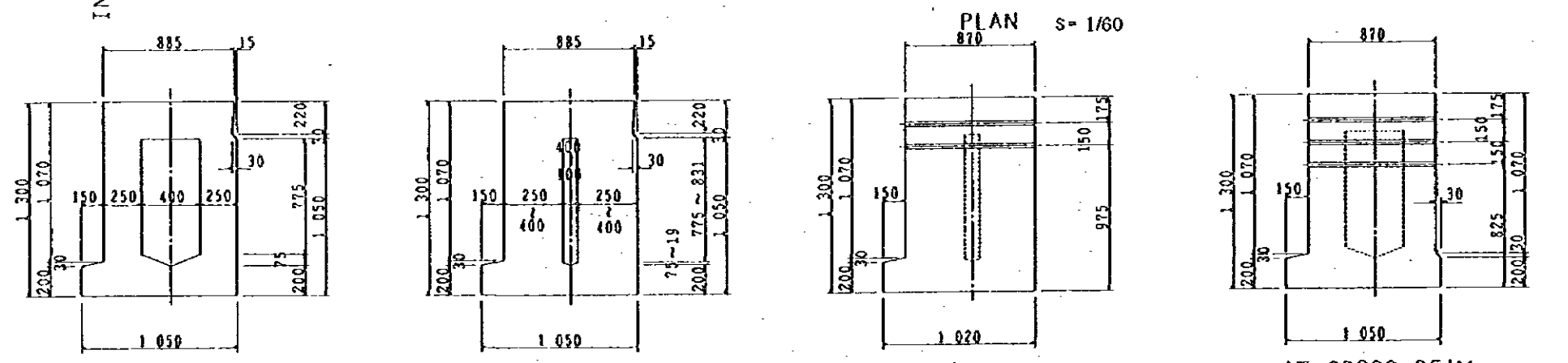


NOTE-1:
CONSIDERING THE EFFECT LONGITUDINAL
SLOPE (1%) TO END GIRDER BOTH ENDS
SHOULD BE FIXED PALLAREL TO Y-AXIS

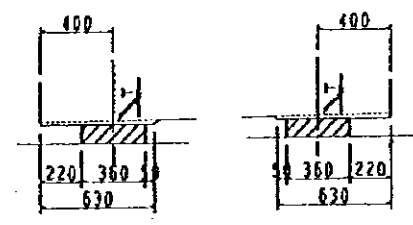
INT.GIRDER EXT.GIRDER



ELEVATION S= 1/60

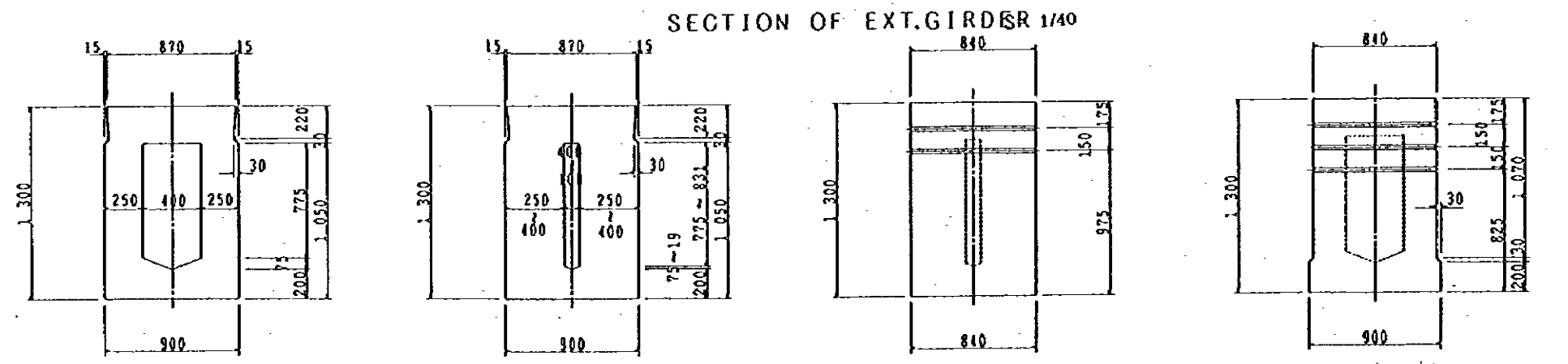


PLAN S= 1/60



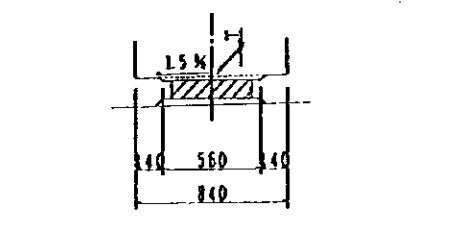
ELEVATION

	T	REMARKS
(A1) ~ (P1)	FIX	16
(P1) ~ (A2)	MOV.	14
(P1) ~ (P2)	FIX	25
(P3) ~ (P10)	MOV.	15
(P2) ~ (P3)	FIX	24
(P4) ~ (P5)	MOV.	16
(P3) ~ (P4)	FIX	22
(P1) ~ (P4)	MOV.	18
(P4) ~ (P5)	FIX	21
(P6) ~ (P7)	MOV.	19
(P5) ~ (P6)	FIX	20
	MOV.	20



SECTION OF EXT.GIRDER 1/40

SECTION OF INT.GIRDER S= 1/40

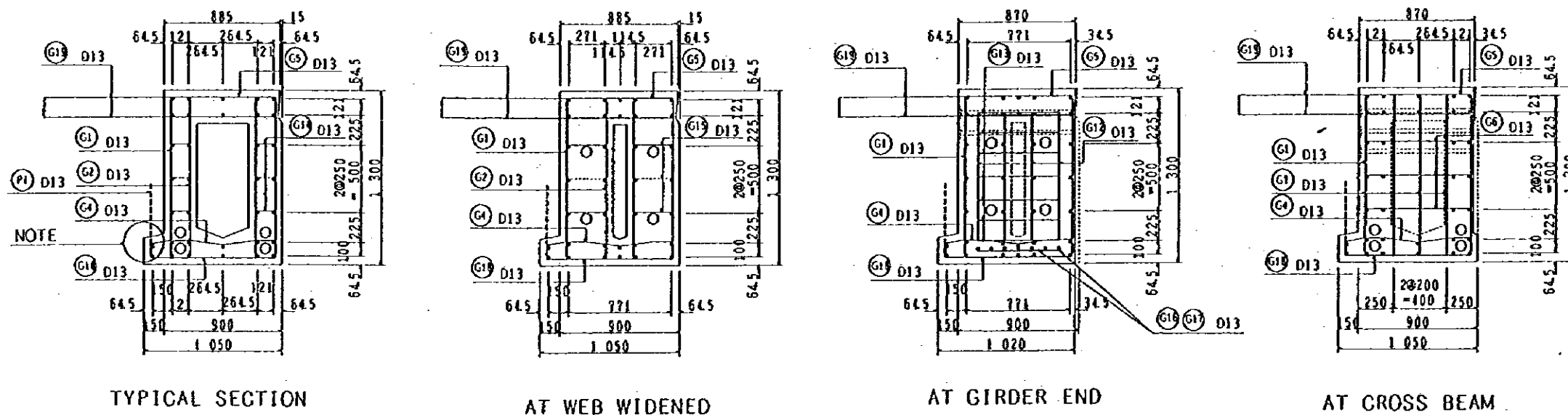
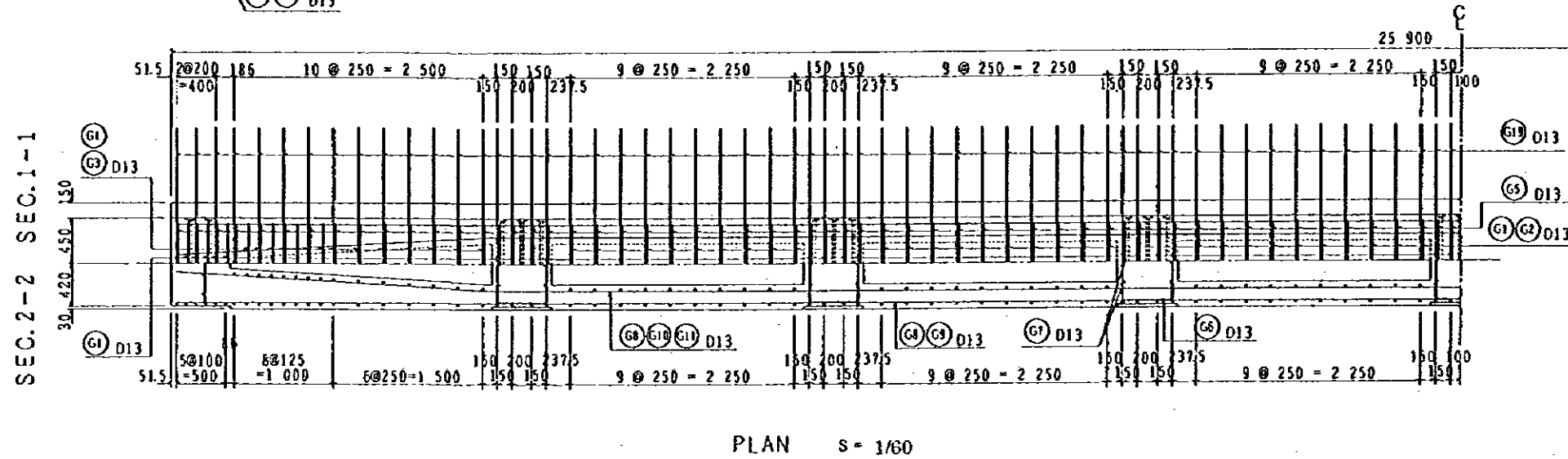
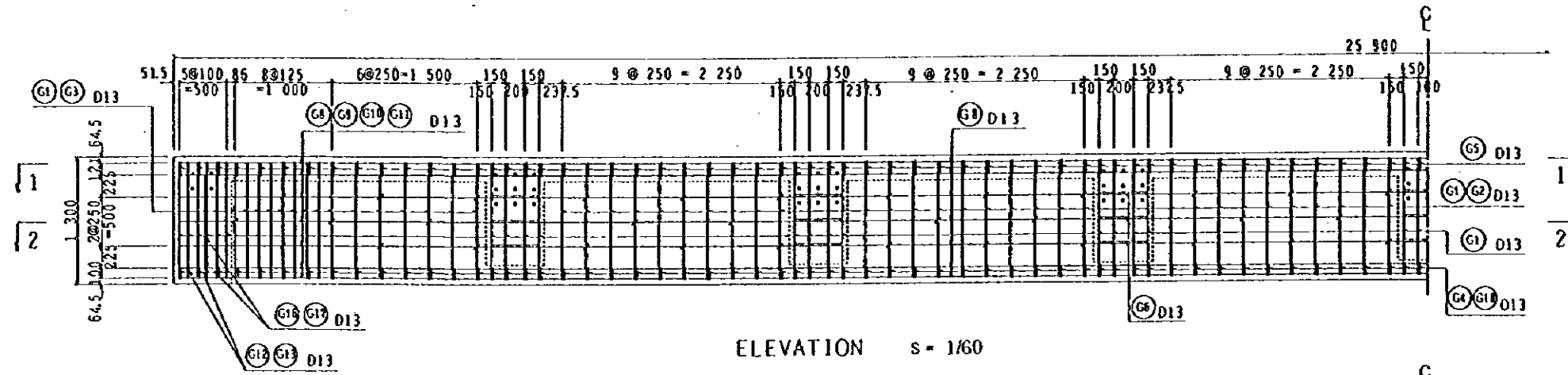


SECTION DETAIL OF LAYER S= 1/40

STRUCTURAL DETAIL OF MAIN GIRDER AT A-LINE

NOTES:	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	JICA STUDY TEAM	PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
	PACIFIC CONSULTANTS INTERNATIONAL	TITLE: STRUCTURAL DETAIL OF MAIN GIRDER AT A-LINE
	FUKUYAMA CONSULTANTS INTERNATIONAL	DATE: _____ DWGNO. B-8

RA/5 AL MULADDAH



NOTE :
FOR ALTERNATIVE CONSTRUCTION
JOINT, INSERT INSIDE
THREADED JOINT TO HANDLE
PLANTED VERTICAL BAR

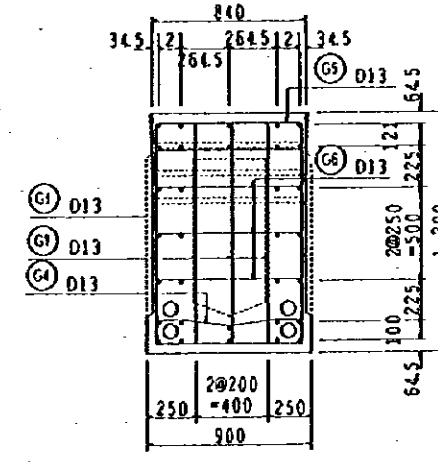
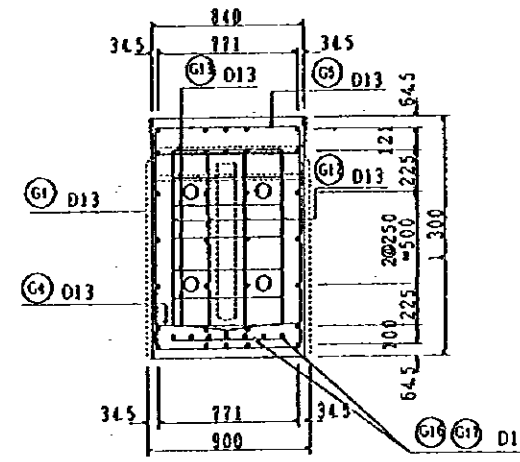
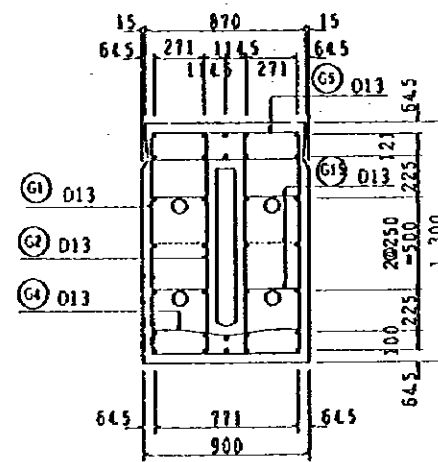
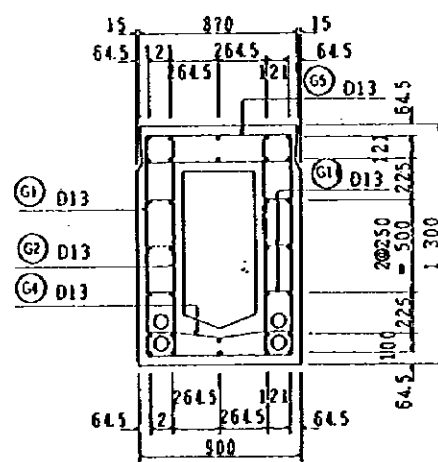
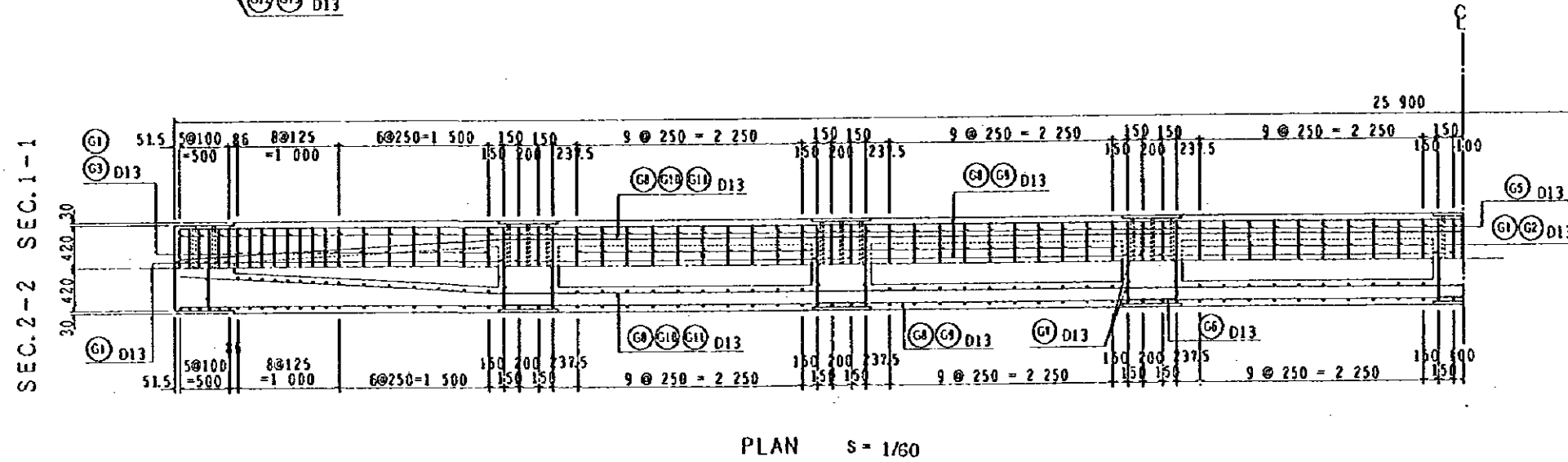
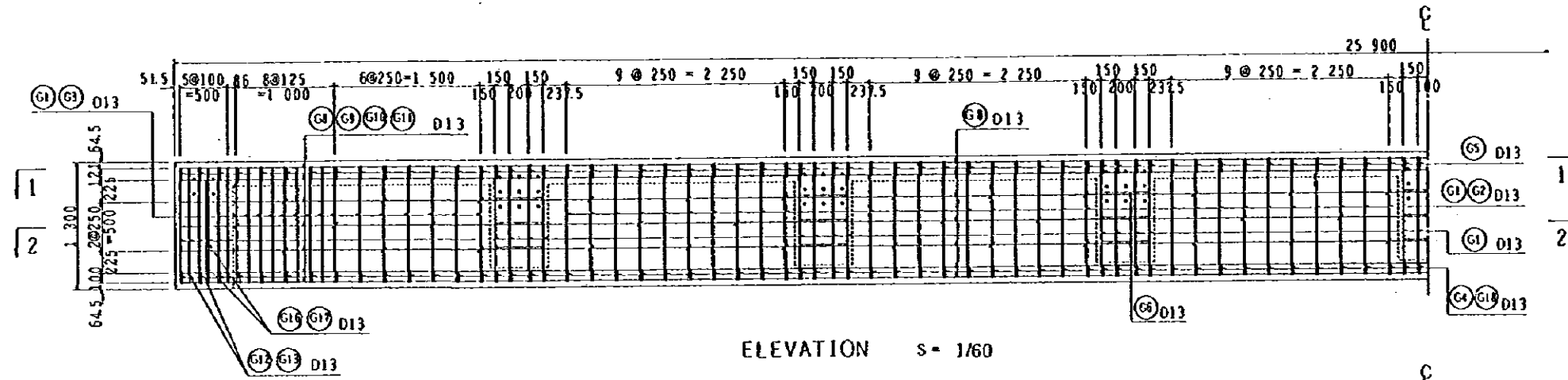
A-LINE RE-BAR ARRANGEMENT-1 (EXT.GIRDER)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
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PACIFIC CONSULTANTS INTERNATIONAL
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CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RE-BAR ARRANGEMENT(1/2) AT A-LINE
DATE: _____ DWGNO. B-10

RA/S AL MULADDAH



SECTION S = 1/40

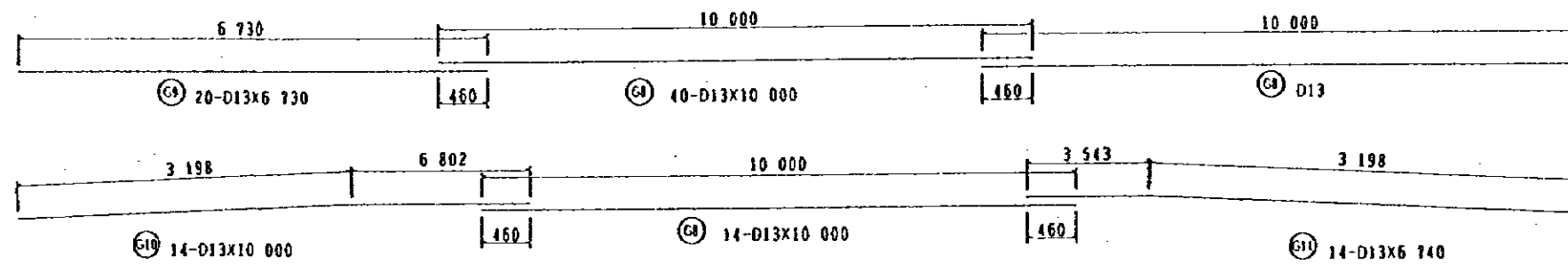
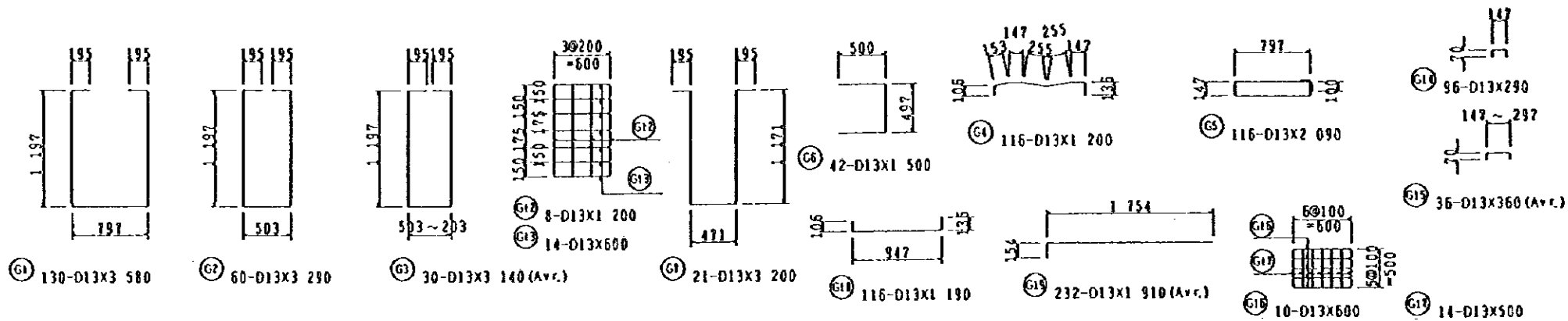
A-LINE RE-BAR ARRANGEMENT-2 (INT.GIRDER)

NOTES:

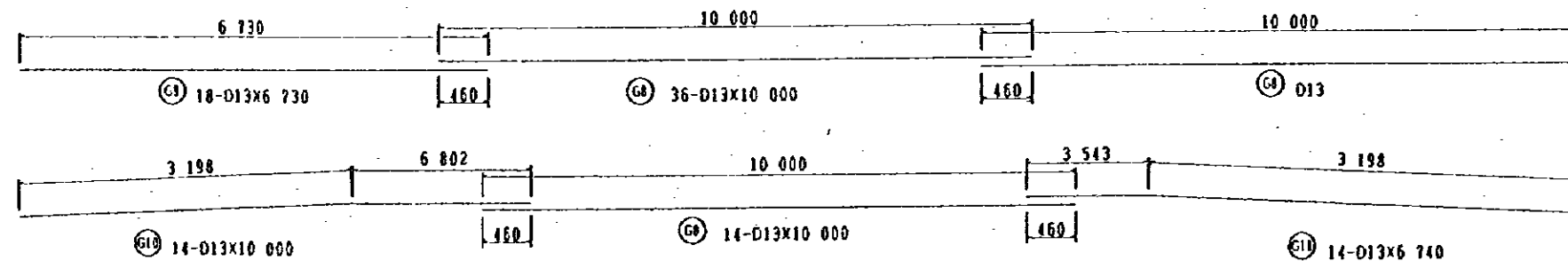
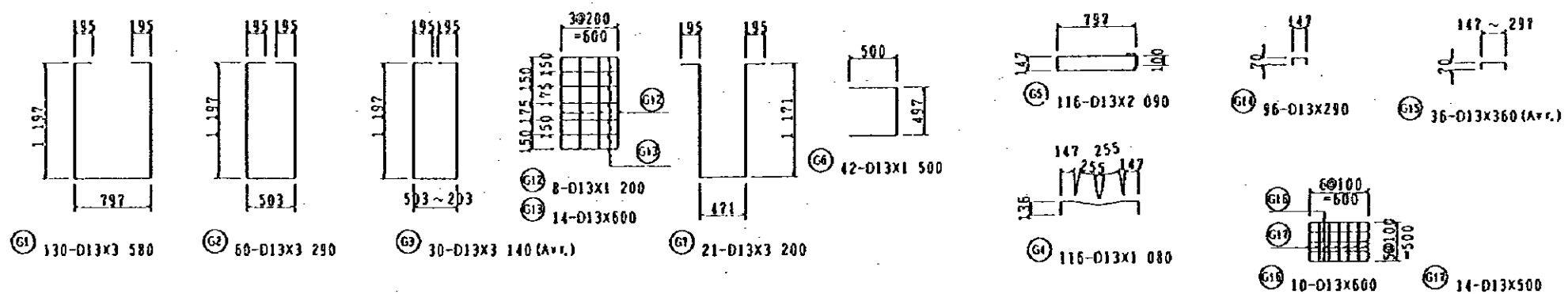
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RE-BAR ARRANGEMENT(2/2) AT A-LINE
DATE: _____ DWGNO. B-11

RA/5 AL MULADDAH



FOR EXT.GIRDER S= 1/60



FOR INT.GIRDER S= 1/60

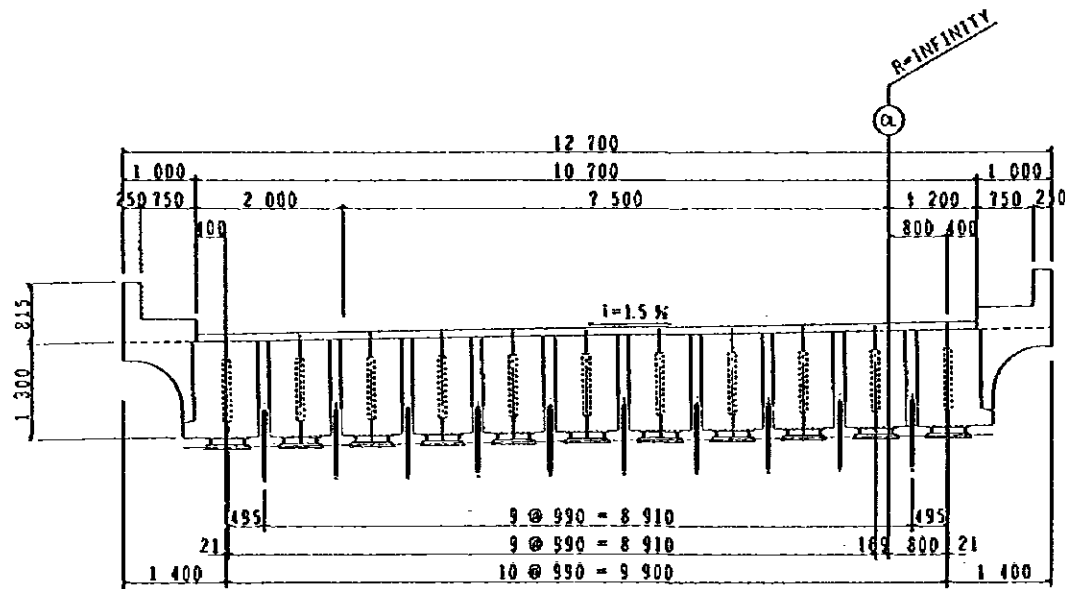
BAR SCHEDULE OF MAIN GIRDER AT A-LINE

NOTES:

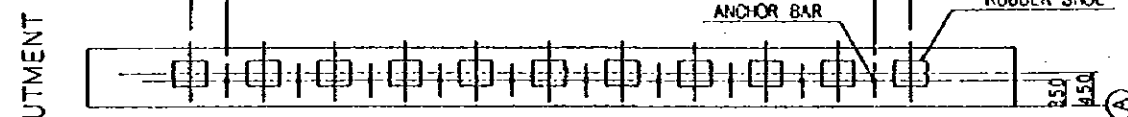
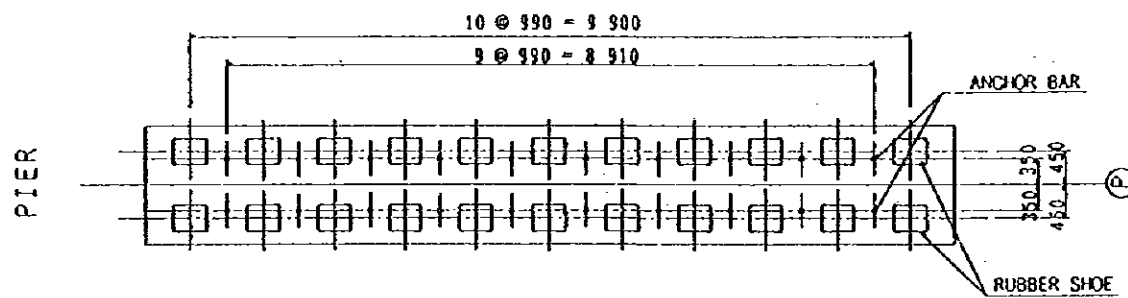
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: BAR SCHEDULE OF MAIN GIRDER AT A-LINE
DATE: _____
DWGNO: B-12

RA/5 AL MULADDAH

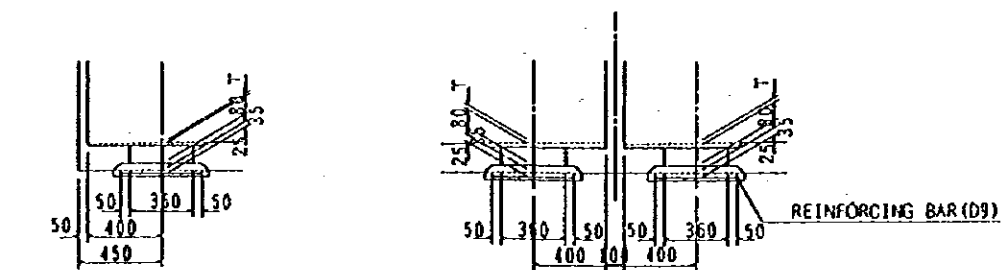


SECTION s= 1/100



PLAN s= 1/100

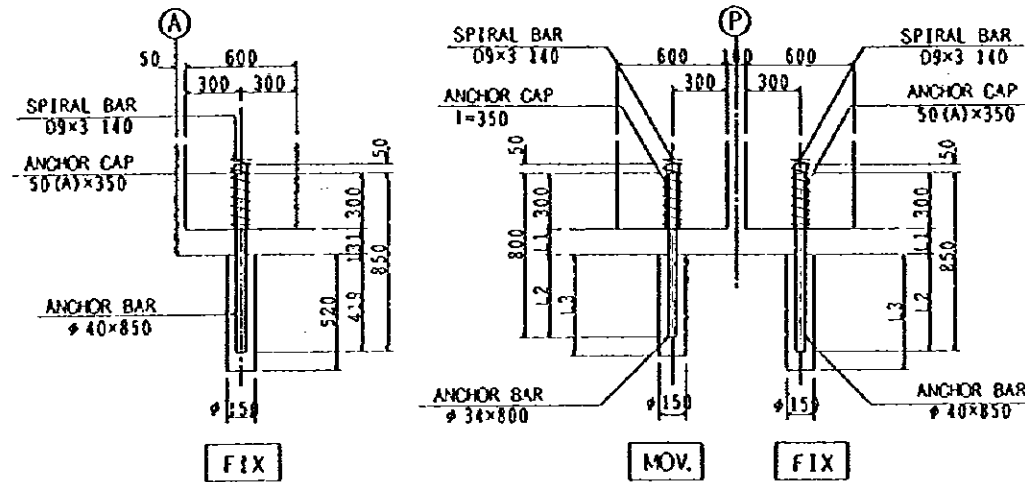
DETAIL OF SHOE AND ANCHOR BAR



FOR ABUTMENT

FOR PIER

DETAIL OF SHOE s= 1/40

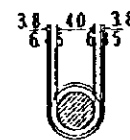


FOR ABUTMENT

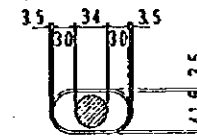
FOR PIER

DETAIL OF ANCHOR BAR s= 1/40

	T	L1	L2	L3	
(A1)~(P1)	FIX	16	131	419	520
(F10)~(A2)	MOV.	14	129	371	475
(P1)~(P2)	FIX	25	140	410	520
(F8)~(F10)	MOV.	15	130	370	475
(P2)~(P3)	FIX	24	139	411	520
(F6)~(F8)	MOV.	16	131	369	475
(P3)~(P4)	FIX	22	137	413	520
(P1)~(P4)	MOV.	18	133	367	475
(P4)~(P5)	FIX	21	136	414	520
(F6)~(P1)	MOV.	19	134	356	475
(P5)~(P6)	FIX	20	135	415	520
(F6)~(P6)	MOV.	20	135	365	475

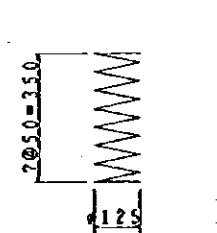


FOR FIX

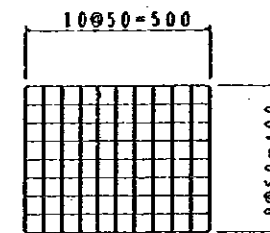


FOR MOV.

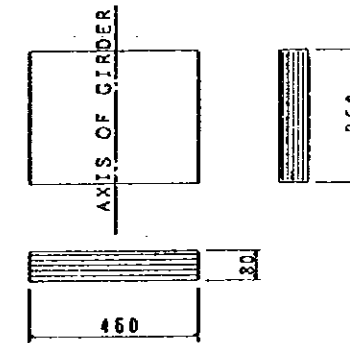
ANCHOR CAP s= 1/10



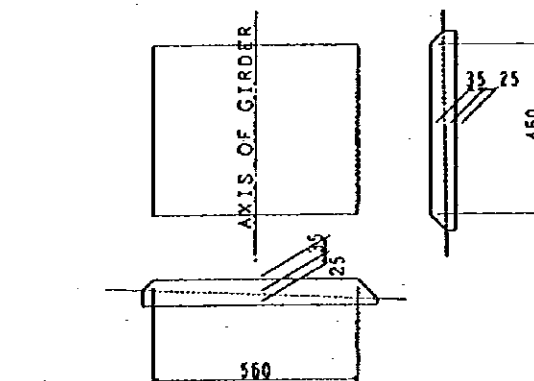
SPIRAL BAR (D9)
s= 1/40



REINFORCING BAR (D9)
s= 1/40



SYNTHETIC RUBBER SHOE s= 1/20



SHOE BASE s= 1/20

DETAIL OF SHOE AND ANCHOR BAR AT A-LINE

	DESCRIPTION	UNIT	QUANTITY	REMARKS
FIX	ANCHOR BAR (GALV.)	kg	839	w= 8.39 kg/pc.
	ANCHOR CAP (GALV.)	kg	18.6	w=1.86 kg/pc.
	FILLER	kg	59	w=0.588 kg/anc.
	SYNTHETIC RUBBER SHOE	Pcs	11	460x360x80
	REINFORCING BAR	kg	54.8	w=4.98 kg/Set
	SPIRAL BAR	kg	17.6	w=1.76 kg/pc.
	NON SHRINKAGE MORTAR	m ³	0.198	0.018m ³ /Shoe
MOV.	ANCHOR BAR (GALV.)	kg	57.0	w=5.70 kg/pc.
	ANCHOR CAP (GALV.)	kg	23.7	w=2.37 kg/pc.
	FILLER	kg	14.5	w=1.45 kg/anc.
	SYNTHETIC RUBBER SHOE	Pcs	11	460x360x80
	REINFORCING BAR	kg	54.8	w=4.98kg/Set
	SPIRAL BAR	kg	17.6	w=1.76 kg/pc.
	NON SHRINKAGE MORTAR	m ³	0.198	0.018m ³ /Shoe

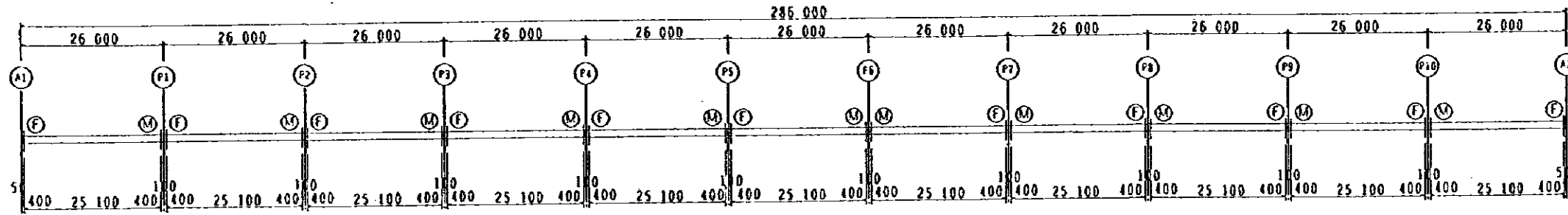
MATERIAL LIST

NOTES:

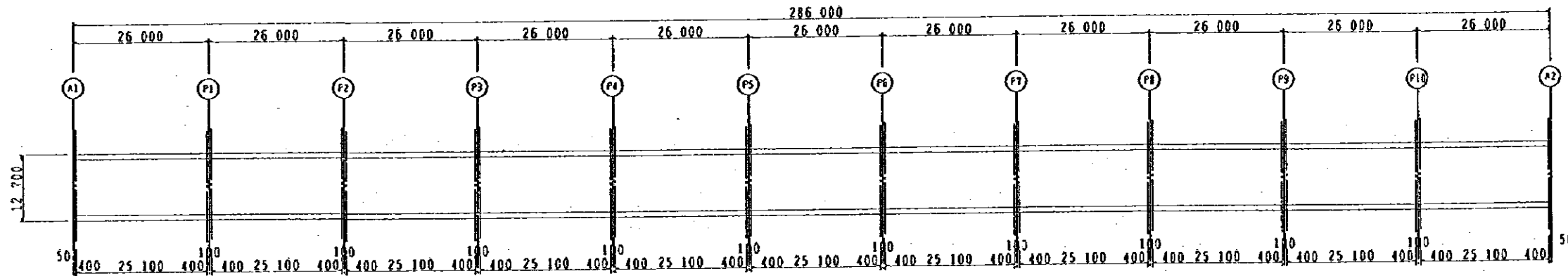
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: DETAIL OF SHOE AND ANCHOR BAR AT A-LINE
DATE: _____ DWGNO. B-14

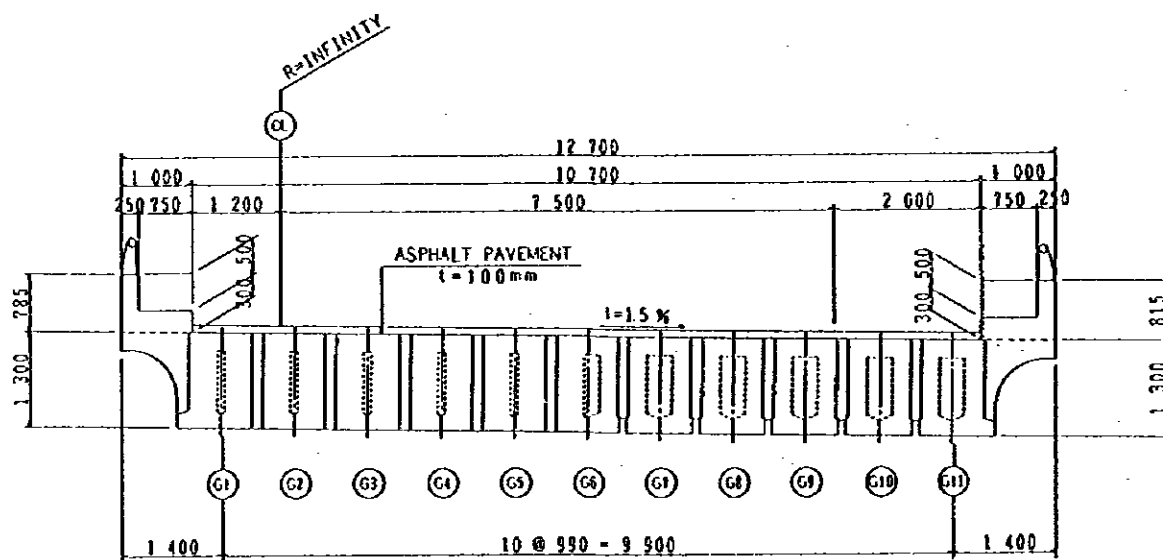
RA/5 AL MULADDAH JC.



PROFILE OF BRIDGE s= 1/1000

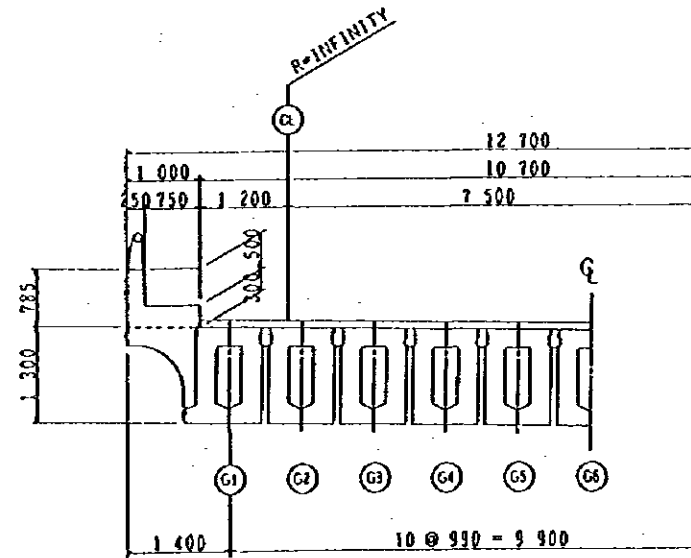


PLAN s= 1/1000



GIRDER END

MIDDLE SPAN



TYPICAL SEC.

	GIRDER LENGTH	SPAN LENGTH	REMARKS
A1 ~ P1 P10 ~ A2	25 902	25 102	INCLINED LENGTH
P1 ~ P3 P4 ~ P10	25 901	25 101	"
P3 ~ P4	25 900	25 100	"

GIRDER LENGTH

SECTION s= 1/100

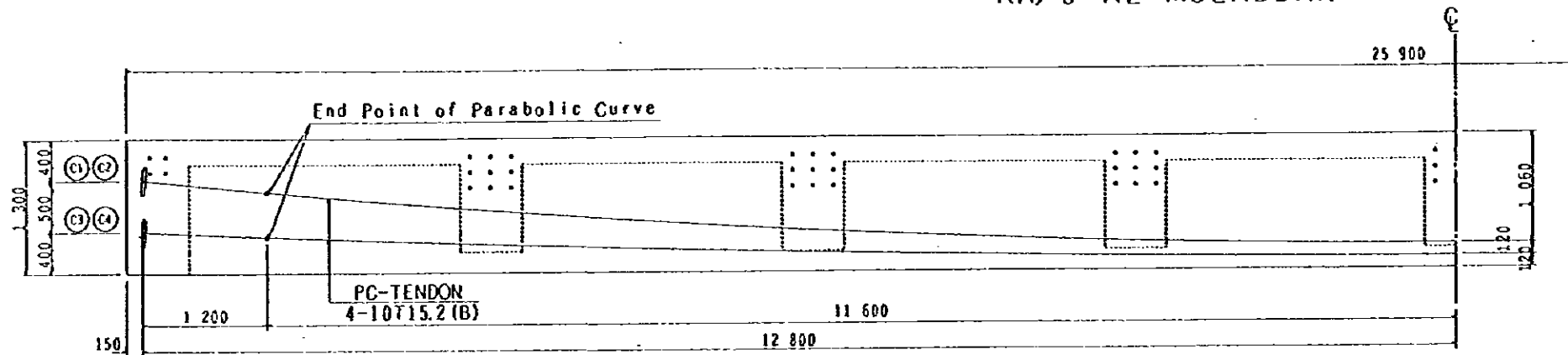
GENERAL VIEW OF BRIDGE AT B-LINE

NOTES:

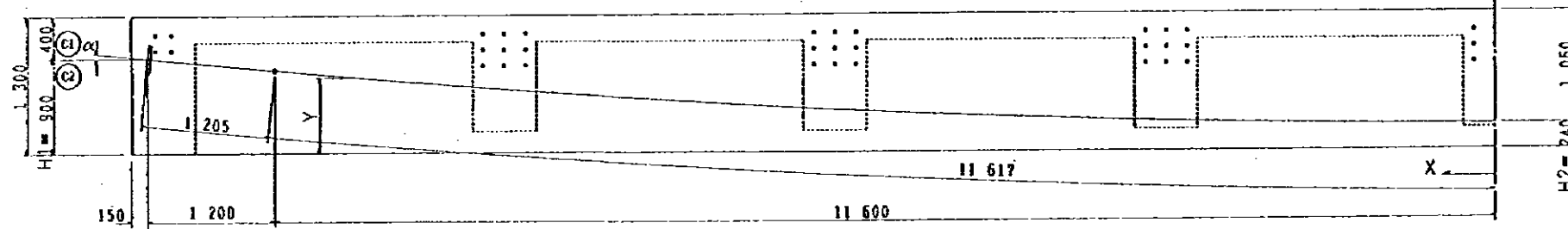
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: GENERAL VIEW OF BRIDGE AT B-LINE
DATE: _____ DWGNO. B-15

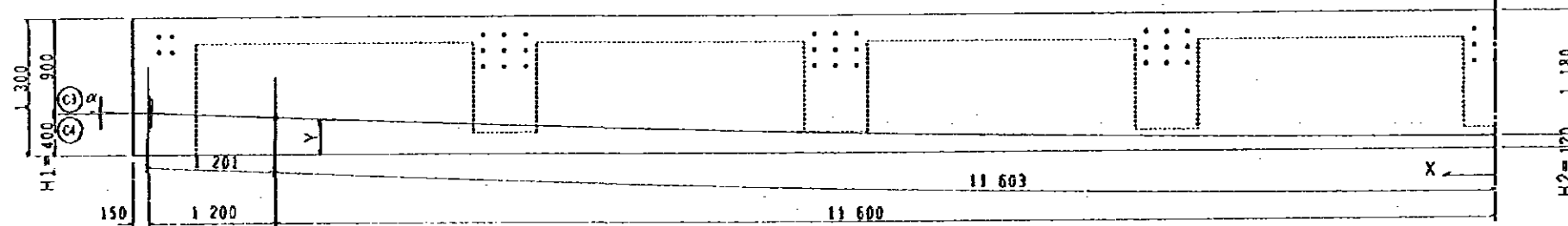
RA/5 AL MULADDAH



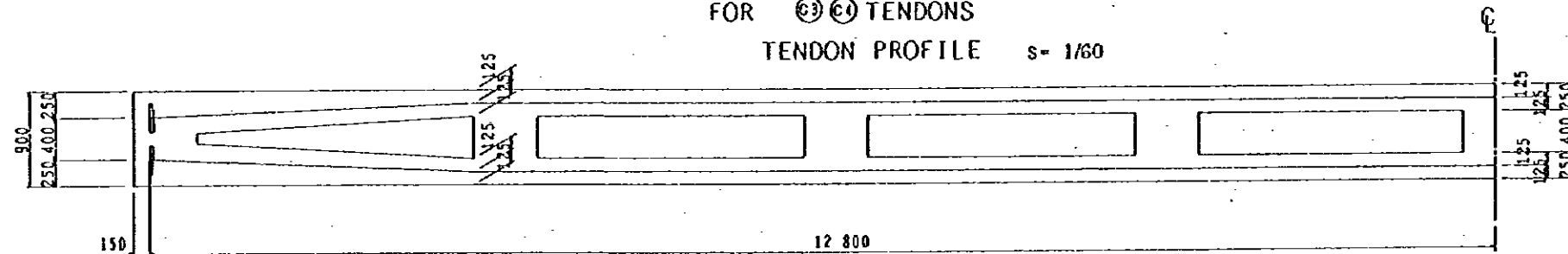
FOR (C1) (C2) (C3) (C4) TENDONS



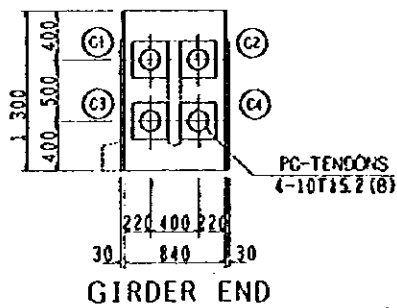
FOR (C1) (C2) TENDONS



FOR (C3) (C4) TENDONS
TENDON PROFILE s=1/60

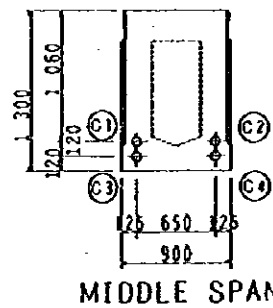


PLAN s=1/60



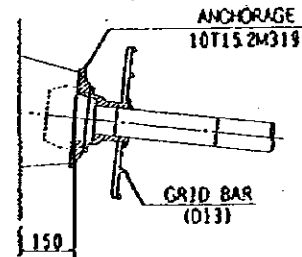
GIRDER END

SECTION s=1/60

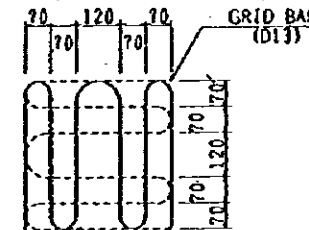


MIDDLE SPAN

FOR MAIN GIRDER



DETAIL OF ANCHORAGE s=1/20



DETAIL OF TENDONS AT B-LINE

	L1	L2	α rad	S1	S2	$2 \times (S1+S2)$	W / Cable	W (kg)
(C1) (C2)	12 800	11 600	5.4022	1 205	11 617	25 644	282.3	564.6
(C3) (C4)	12 800	11 600	2.2918	1 201	11 603	25 608	281.9	563.8
TOTAL								1 128.4

USE GIRDER LENGTH=25.900m EXTRA LENGTH FOR TENSIONING IS NOT INCLUDED

w=11.010kg/m/Cable (10T15.2B)

NOTE :

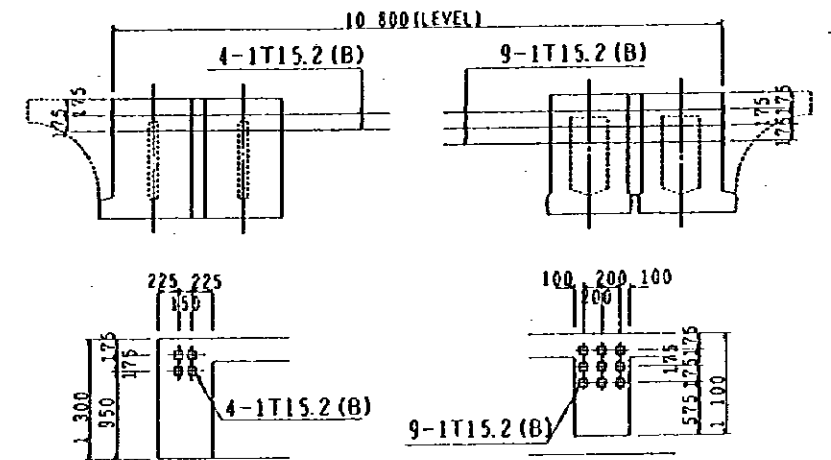
$$Y = (H1 - H2) / (L2 \times (L2 \times L1 - L2)) \times X^2 + H2$$

$$\alpha = 2 \times (H1 - H2) / (2 \times L1 - L2) \text{ rad.}$$

$$S1 = 1\ 200 / \cos \alpha$$

$$S2 = L2 \times (1 + 8/3 \times n^2 - 32/5 \times n^4 + 128/7 \times n^6 - 512/9 \times n^8)$$

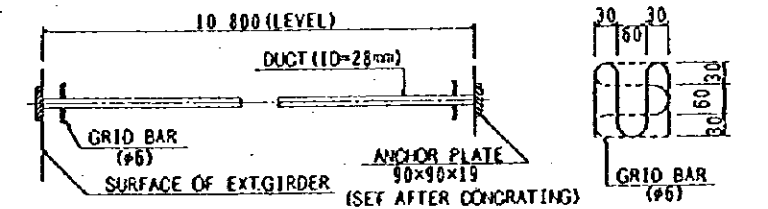
$$n = (H1 - H2 - \tan \alpha \times 1\ 200) / (2 \times L2)$$



GIRDER END

CROSS BEAM

LATERAL TENDON ARRANGEMENT s=1/10



DETAIL OF ANCHORAGE s=1/20, 1/10

FOR CROSS BEAM

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

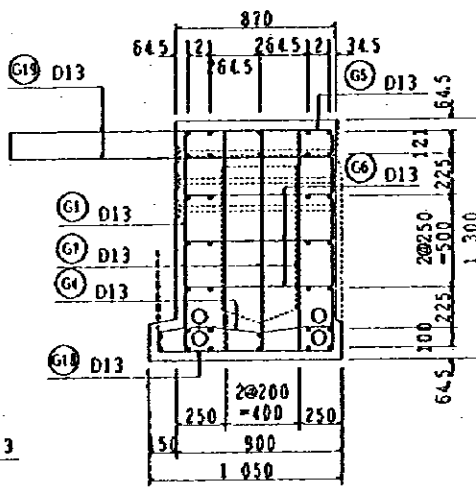
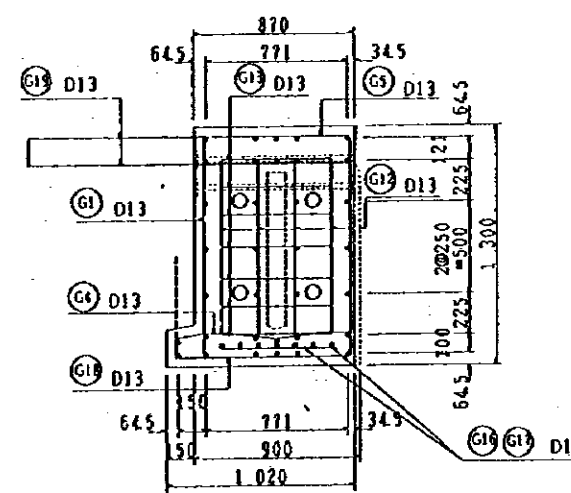
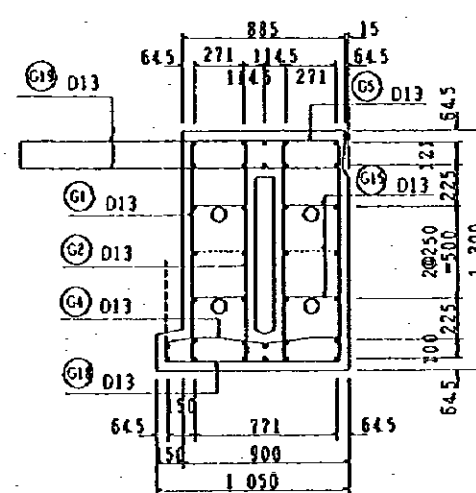
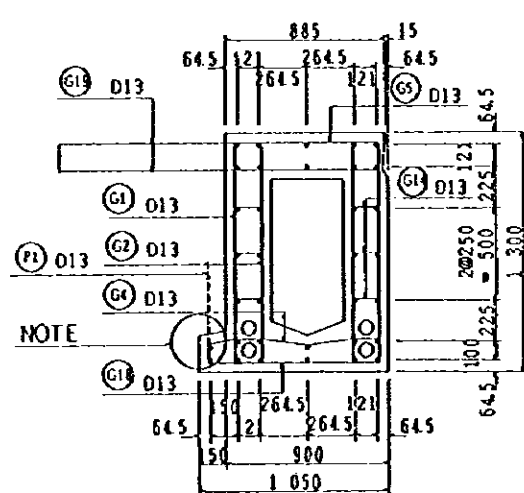
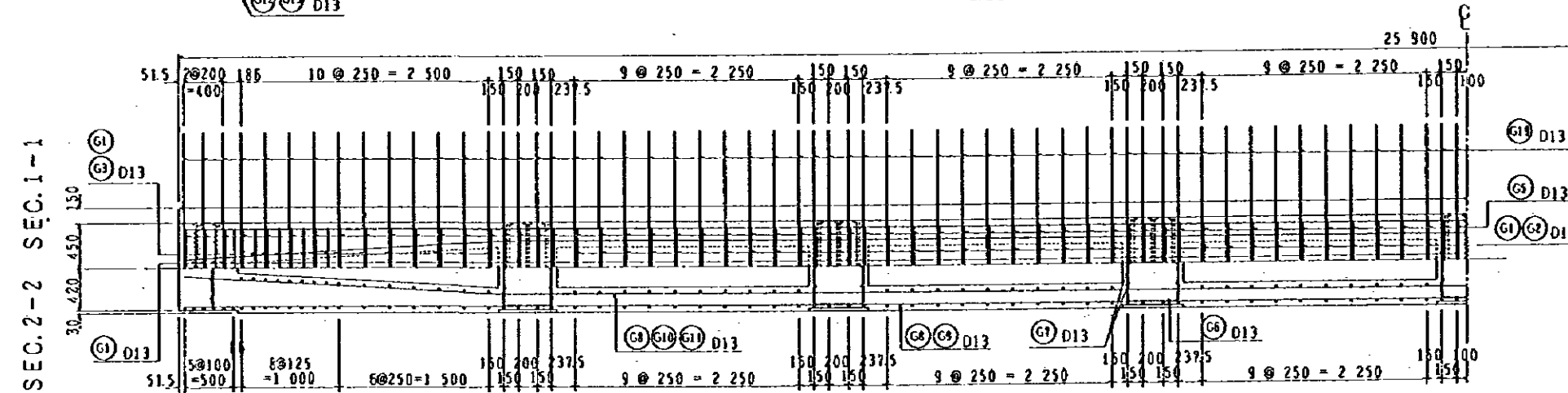
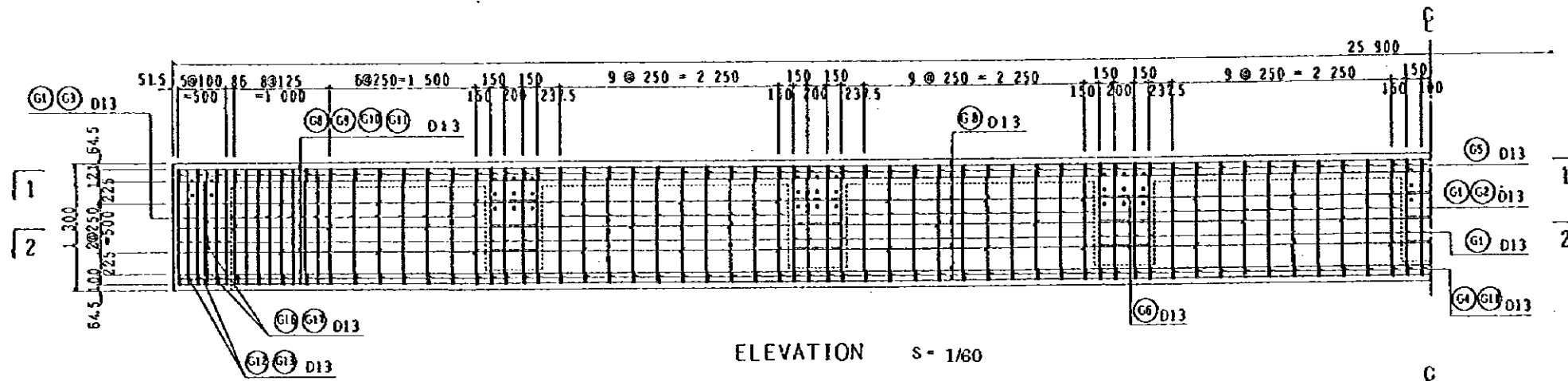
TITLE: DETAIL OF TENDONS AT B-LINE

DATE

DWGNO.

B-17

RA/5 AL MULADDAH

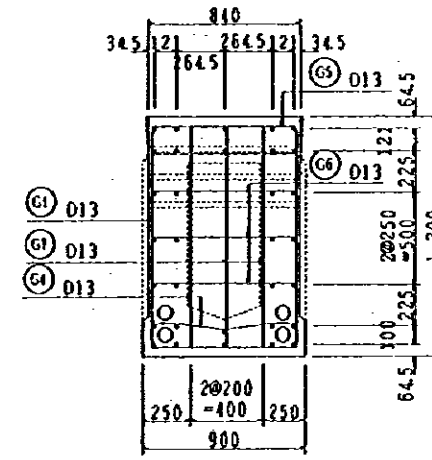
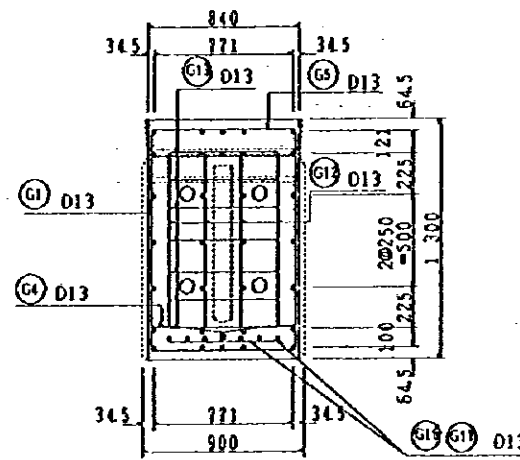
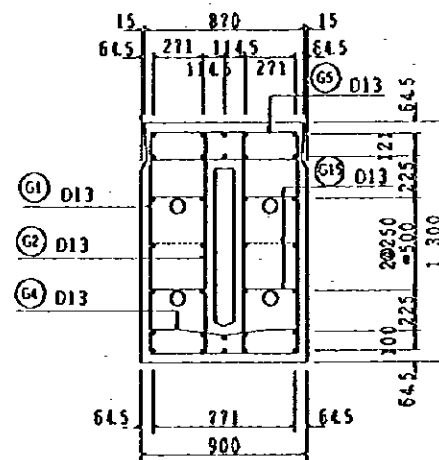
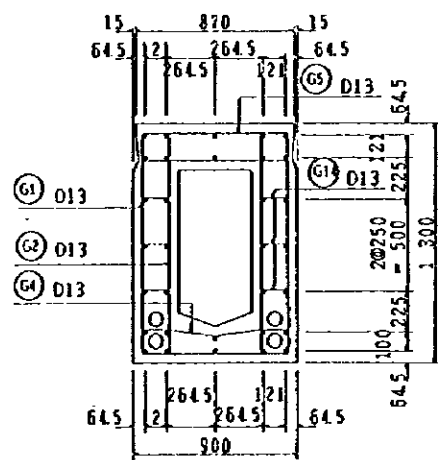
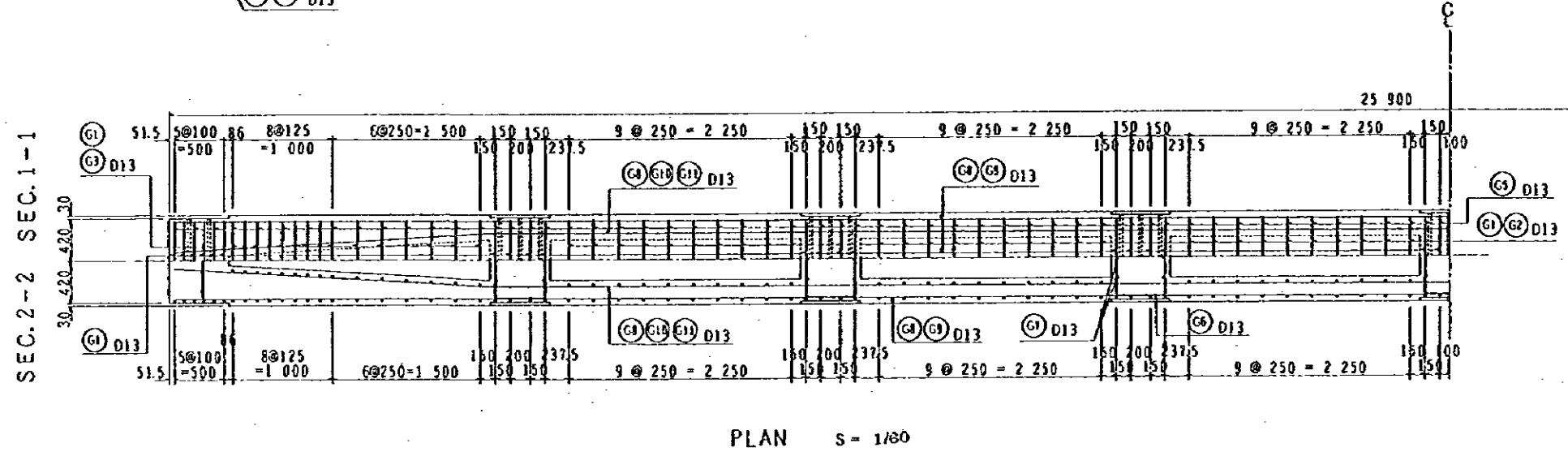
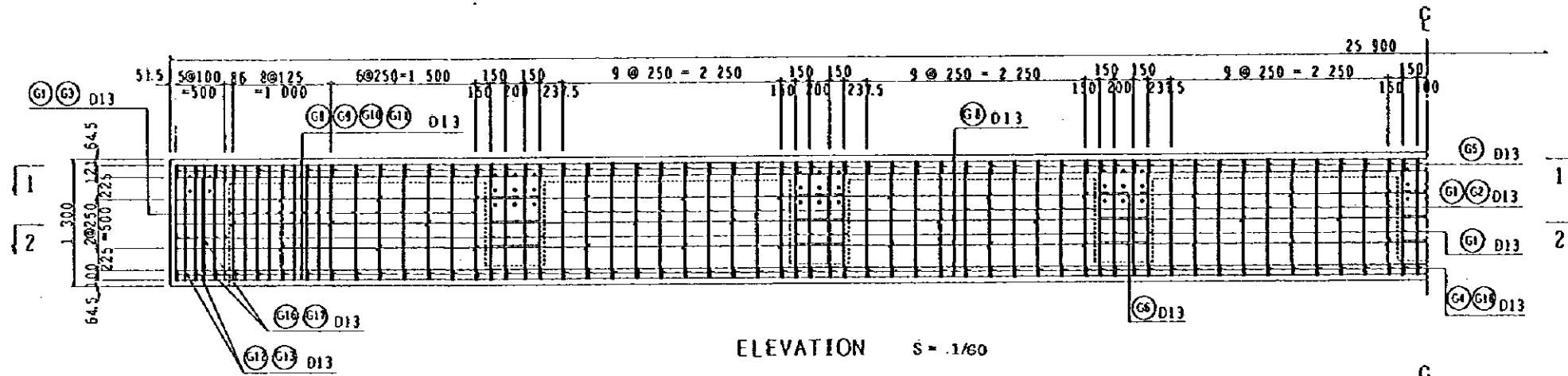


NOTE :
FOR ALTERNATIVE CONSTRUCTION
JOINT, INSERT INSIDE
THREADED JOINT TO HANDLE
PLANTED VERTICAL BAR

SECTION S = 1/40
B-LINE RE-BAR ARRANGEMENT-1 (EXT.GIRDER)

NOTES:	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS	
	JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY	
		TITLE	RE-BAR ARRANGEMENT(1/2) AT B-LINE
		DATE	DWGNO. B-18

RA/5 AL MULADDAH



SECTION S = 1/40

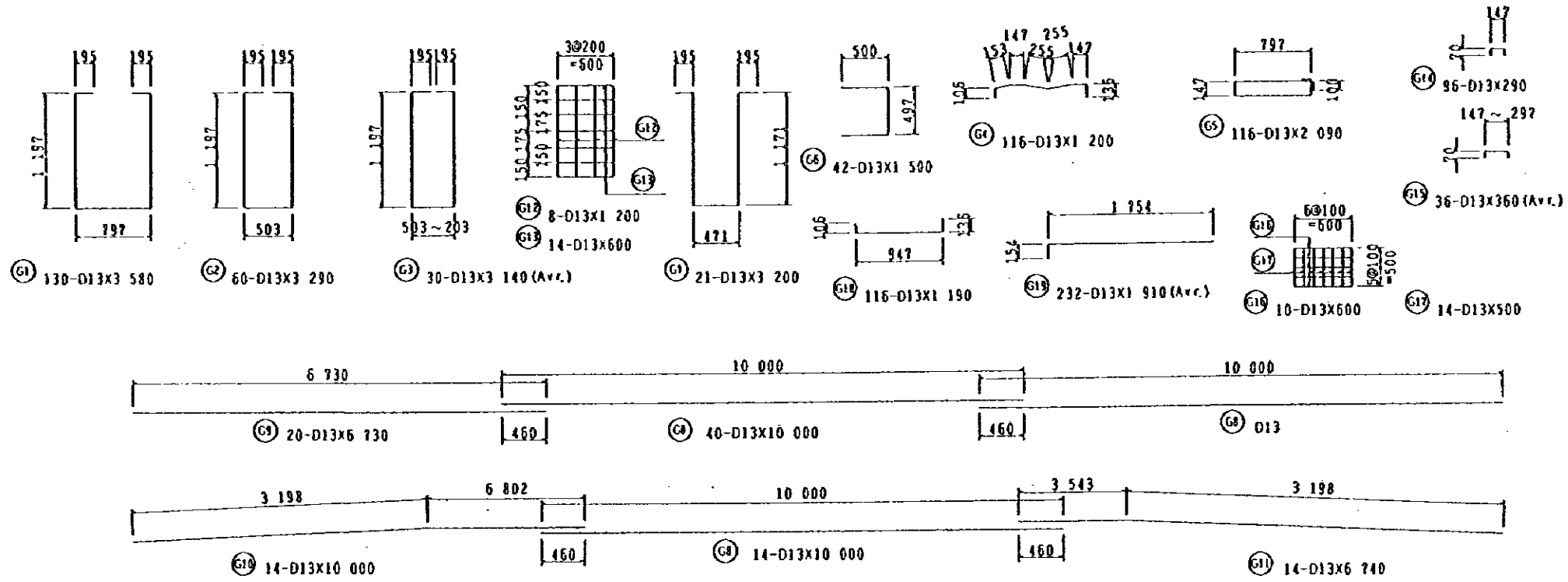
B-LINE RE-BAR ARRANGEMENT-2 (INT.GIRDER)

NOTES:

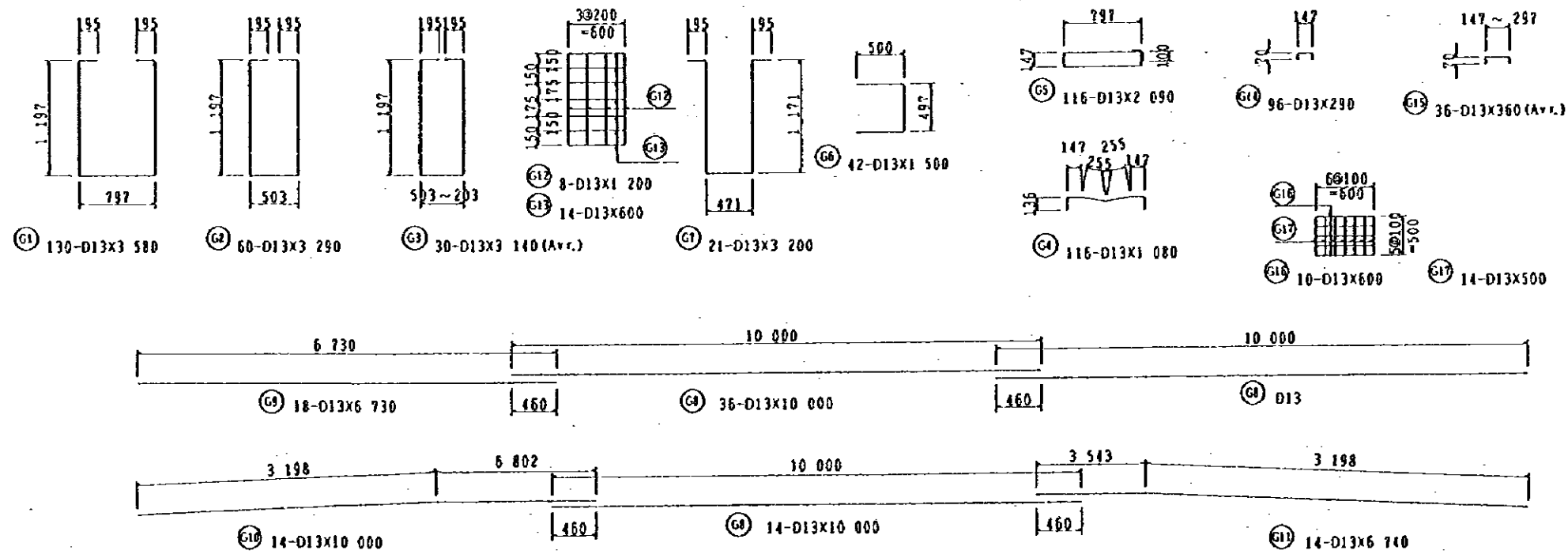
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RE-BAR ARRANGEMENT(2/2) AT B-LINE
DATE: _____ DWGNO. B-19

RA/5 AL MULADDAH



FOR EXT.GIRDER s= 1/60



FOR INT.GIRDER s= 1/60

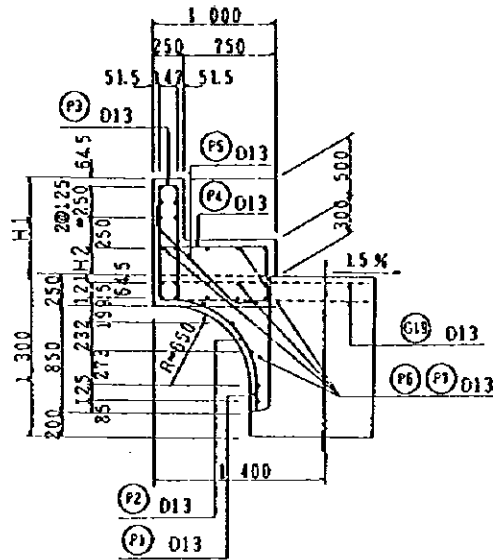
BAR SCHEDULE OF MAIN GIRDER AT B-LINE

NOTES:

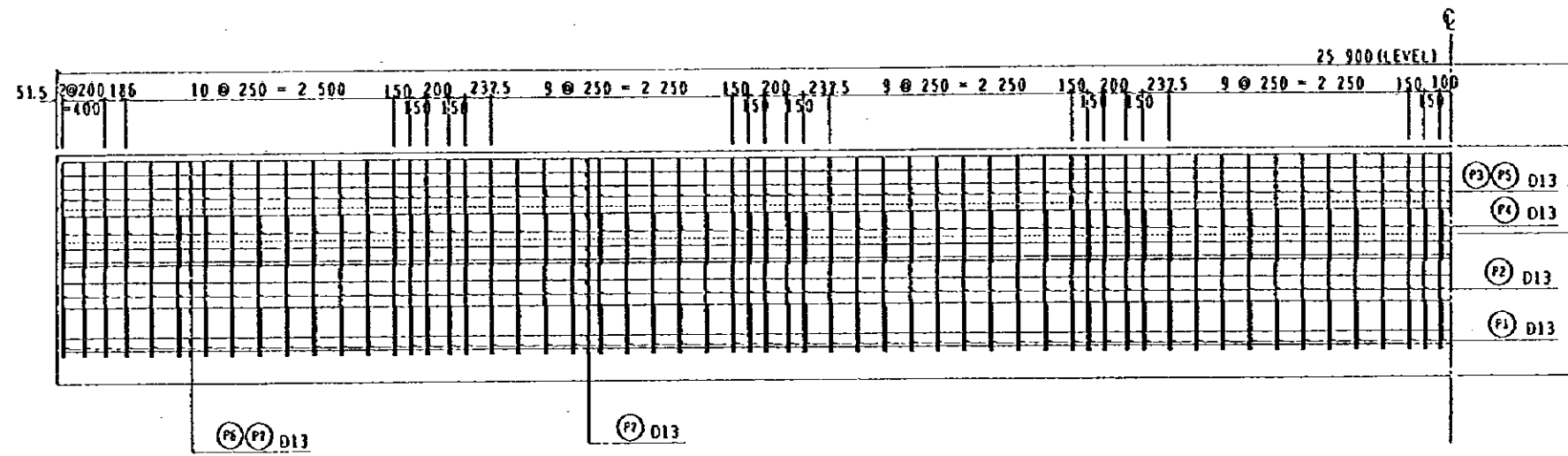
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: BAR SCHEDULE OF MAIN GIRDER AT B-LINE
DATE: _____ DWGNO. B-20

RA/5 AL MULADDAH



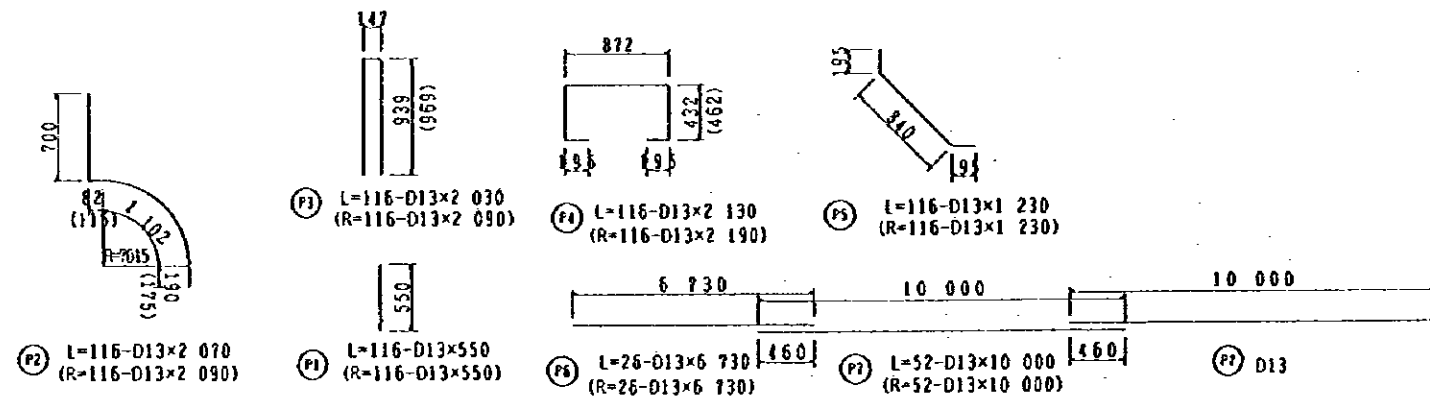
SECTION



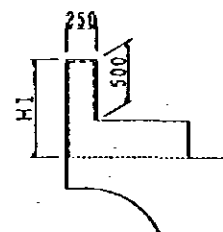
ELEVATION

RE-BAR ARRANGEMENT S- 1/60

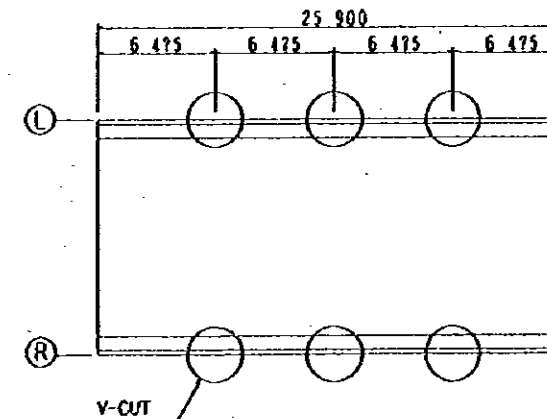
	H1	H2
(L)	785	220.5
(R)	815	250.5



BAR SCHEDULE



DETAIL OF V-CUT



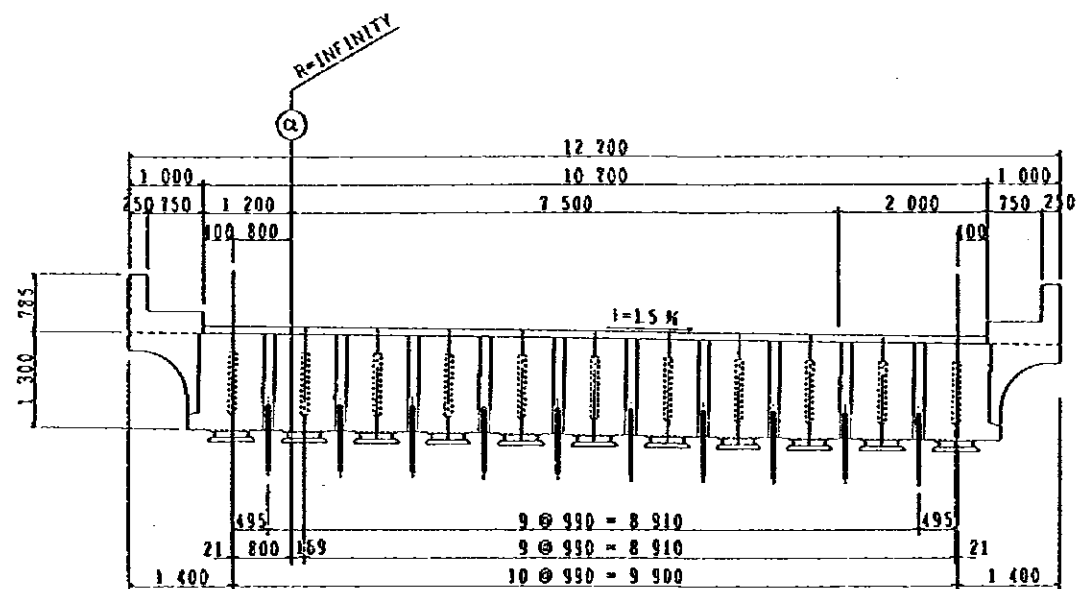
RAILING AND CANTILEVER SLAB AT B-LINE

NOTES:

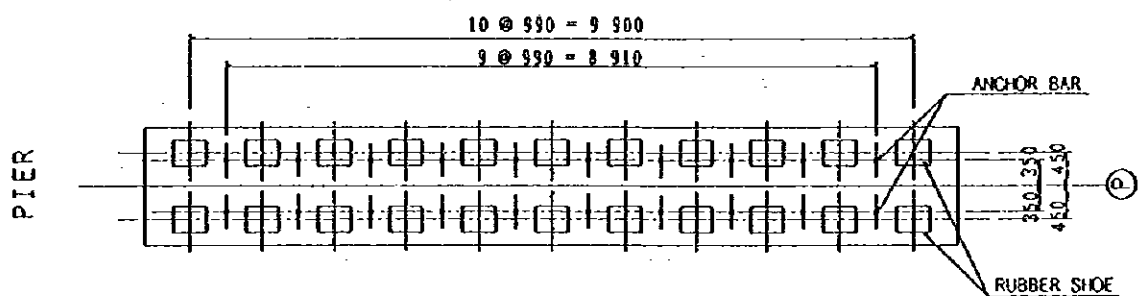
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RAILING AND CANTILEVER SLAB AT B-LINE
DATE: _____ DWGNO. B-21

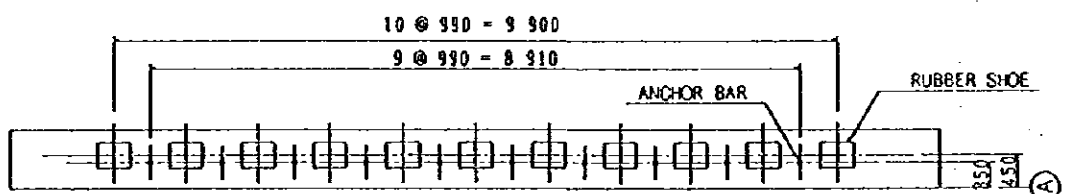
RA/5 AL MULADDAH



SECTION s= 1/100



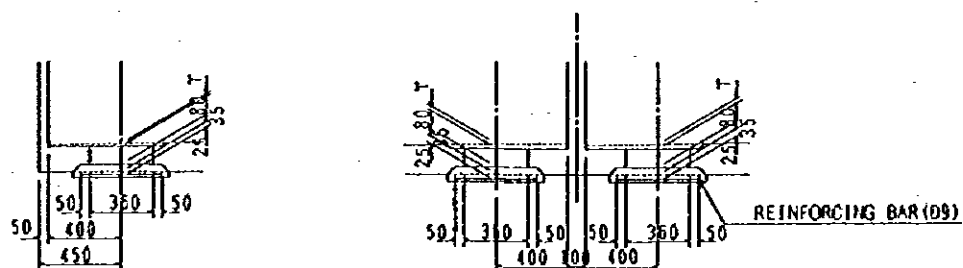
PIER



ABUTMENT

PLAN s= 1/100

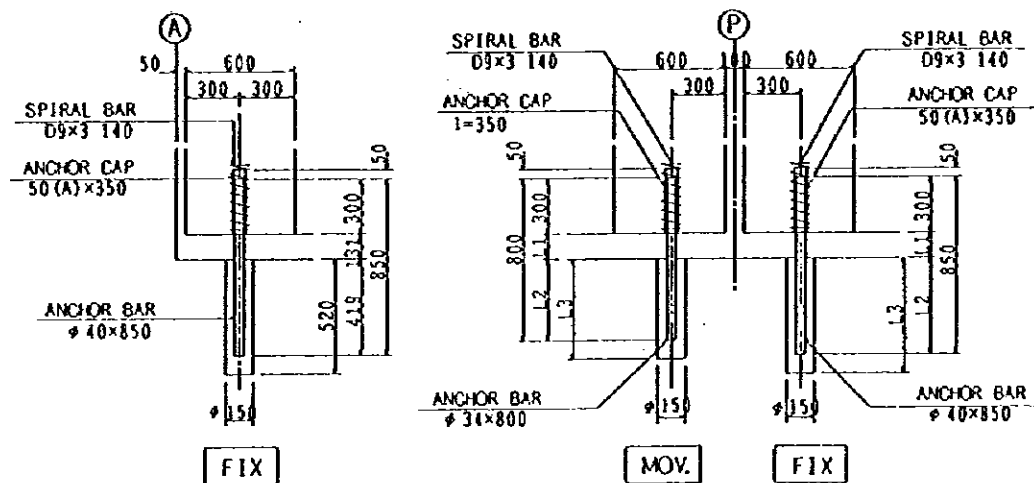
DETAIL OF SHOE AND ANCHOR BAR



FOR ABUTMENT

FOR PIER

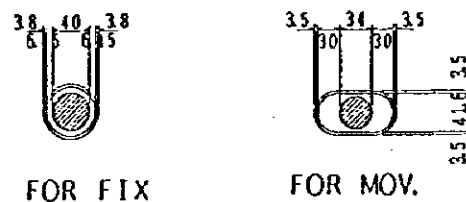
DETAIL OF SHOE s= 1/40



FOR ABUTMENT

FOR PIER

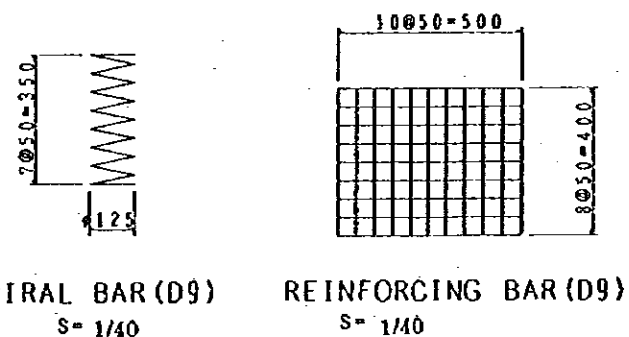
DETAIL OF ANCHOR BAR s= 1/40



FOR FIX

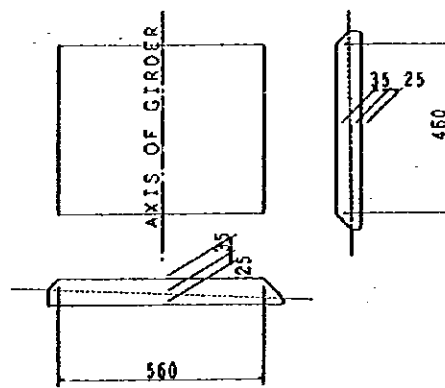
FOR MOV.

ANCHOR CAP s= 1/10



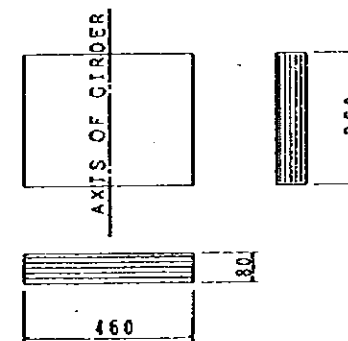
SPIRAL BAR (D9) s= 1/40

REINFORCING BAR (D9) s= 1/40



SHOE BASE s= 1/20

	T	L1	L2	L3	
AI ~ PI	FIX	16	131	419	520
FI ~ AI	MOV.	14	129	371	475
PI ~ P2	FIX	25	140	410	520
PS ~ FI	MOV.	15	130	370	475
P2 ~ P3	FIX	24	139	411	520
PI ~ PS	MOV.	16	131	369	475
P3 ~ P4	FIX	22	137	413	520
P7 ~ P8	MOV.	18	133	367	475
P4 ~ P5	FIX	21	136	414	520
P6 ~ P7	MOV.	19	134	366	475
PS ~ P6	FIX	20	135	415	520
	MOV.	20	135	365	475



SYNTHETIC RUBBER SHOE s= 1/20

(PER SPAN)

	DESCRIPTION	UNIT	QUANTITY	REMARKS
FIX	ANCHOR BAR (GALV.)	kg	839	w= 839 kg/pc.
	ANCHOR CAP (GALV.)	kg	18.6	w=1.86 kg/pc.
	FILLER	kg	5.9	w=0.588 kg/anc.
	SYNTHETIC RUBBER SHOE	Pcs	11	460x360x80
	REINFORCING BAR	kg	54.8	w=4.98 kg/Set
	SPIRAL BAR	kg	17.6	w=1.76 kg/pc.
	NON SHRINKAGE MORTAR	m ³	0.198	0.018m ³ /Shoe
		m ³	0.090	0.009m ³ /Hole (AVE)
MOV.	ANCHOR BAR (GALV.)	kg	57.0	w=5.70 kg/pc.
	ANCHOR CAP (GALV.)	kg	23.7	w=2.37 kg/pc.
	FILLER	kg	14.5	w=1.45 kg/anc.
	SYNTHETIC RUBBER SHOE	Pcs	11	460x360x80
	REINFORCING BAR	kg	54.8	w=4.98kg/Set
	SPIRAL BAR	kg	17.6	w=1.76 kg/pc.
	NON SHRINKAGE MORTAR	m ³	0.198	0.018m ³ /Shoe
		m ³	0.080	0.008m ³ /Hole (AVE)

MATERIAL LIST

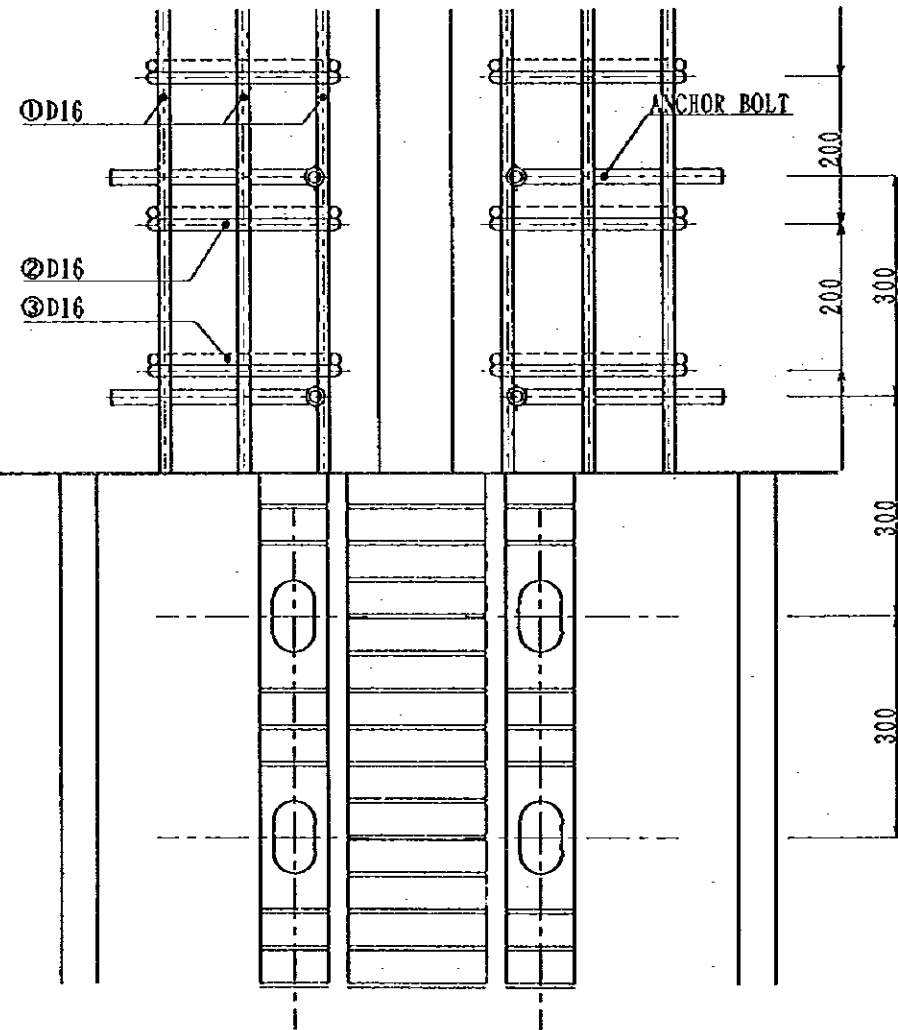
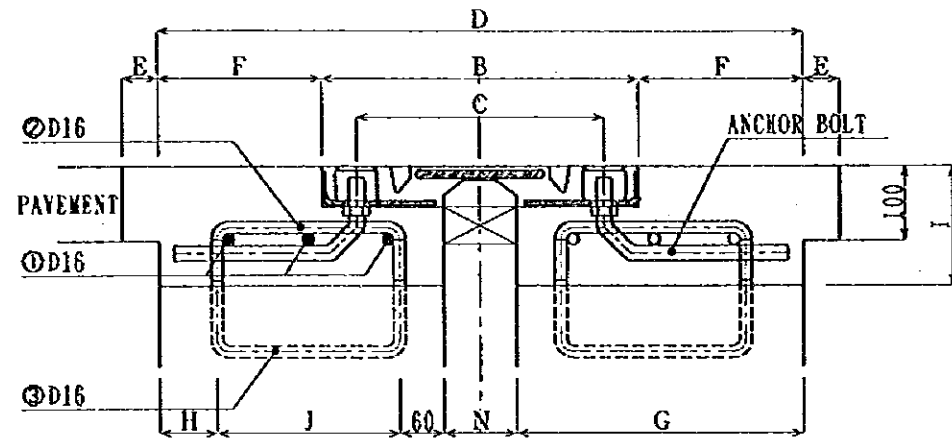
DETAIL OF SHOE AND ANCHOR BAR AT B-LINE

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 JICA STUDY TEAM
 PACIFIC CONSULTANTS INTERNATIONAL
 FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
 PROJECT: DID ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
 TITLE: DETAIL OF SHOE AND ANCHOR BAR AT B-LINE
 DATE: DWGNO. B-22

AL MULADDAH



MEASURE DATA

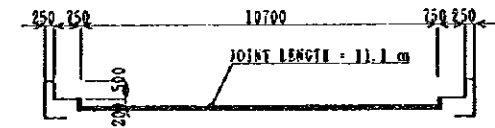
	A	B	C	D	E	F	G	H	I	J	STANDARD SPACE BETWEEN SLABS N	TRAVEL
PIER	54	433	340	879	50	223	390	80	160	250	100	80
ABUT	40	303	235	709	50	203	330	70	150	200	50	50

MATERIAL LIST (PER 10 m)

MATERIAL	CLASSIFICATION	UNIT	PIER	ABUT
TRANSFLEX JOINT	INCLUDING ANCHORBOLT	m	10.0	10.0
SEALANT	FOR JOINT SEALS	kg	22.5	16.0
	FOR PLUG HOLE	kg	8.5	4.0
REINFORCING BAR	ØD16	kg	93.60	93.60
	ØD16	kg	60.84	53.04
RECESS CONCRETE	HIGH-EARLY STRENGTH CONCRETE	m ³	1.143	0.964
COLORING AGENT OF THE FACE	3 kg/m ²	kg	16.0	15.0
POLYURETHANE FORM		m	10.0	10.0
TRANSIENT FILLING MATERIAL	SAND	m ³	0.66	0.53
	ASPHALT CONCRETE	m ³	0.73	0.60

QUANTITY LIST

	PIER	ABUTMENT
AL KHABURAHN	20	4
TOTAL LENGTH	222.0	44.4



JOINT LENGTH PER 1 PLACE

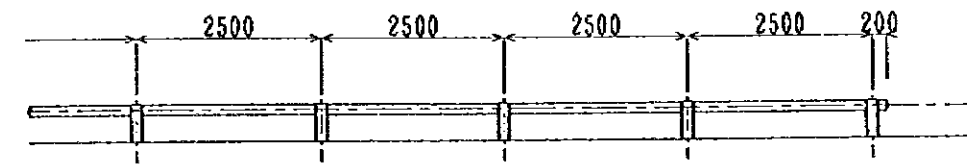
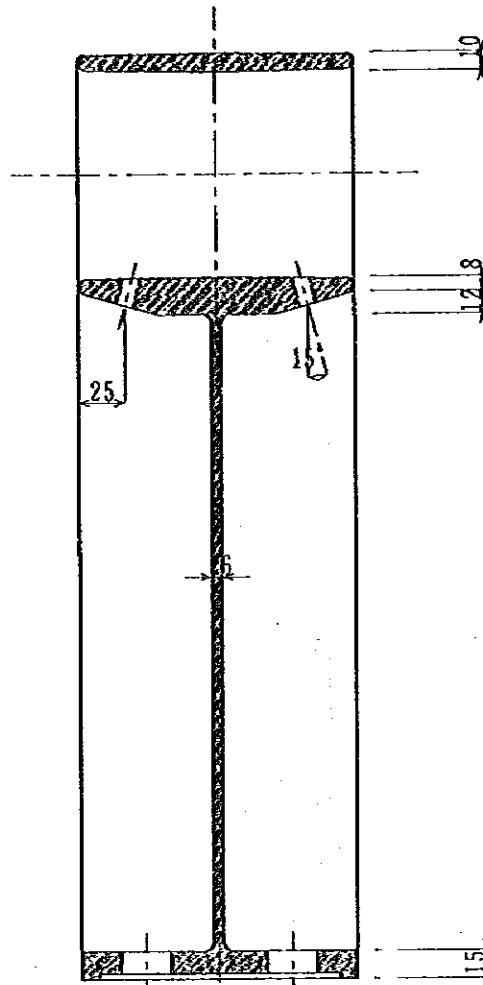
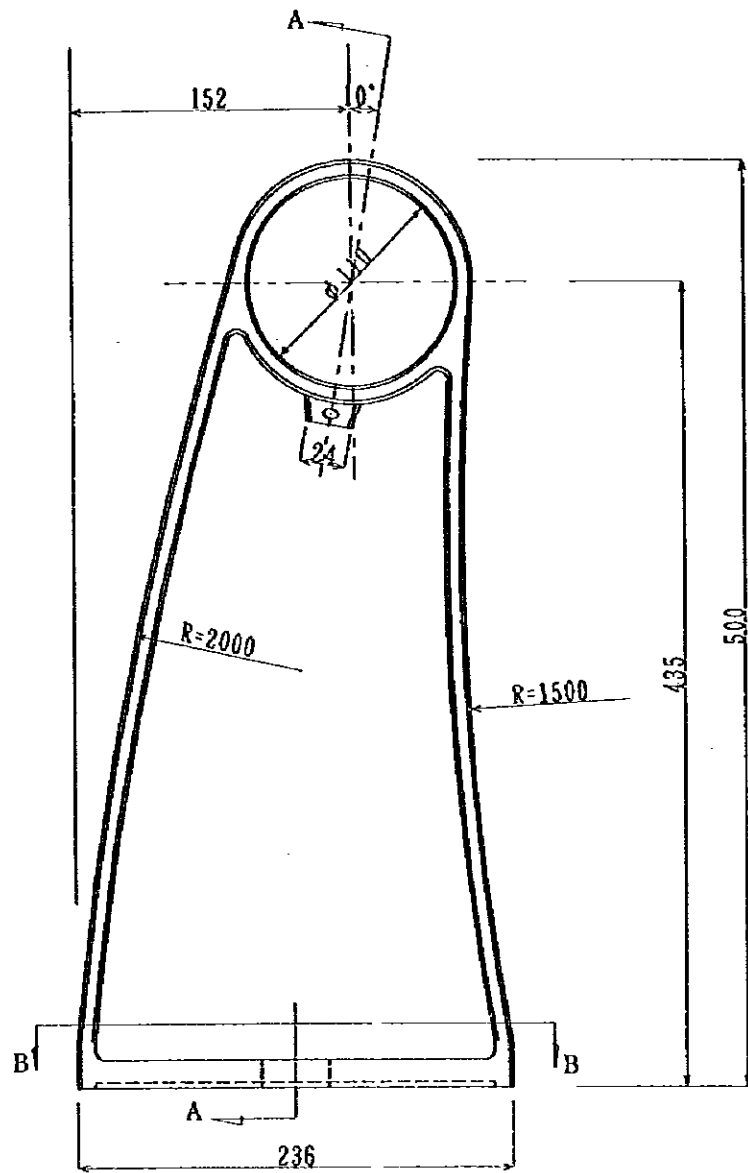
TRANSFLEX JOINT S- 1/10

NOTES:

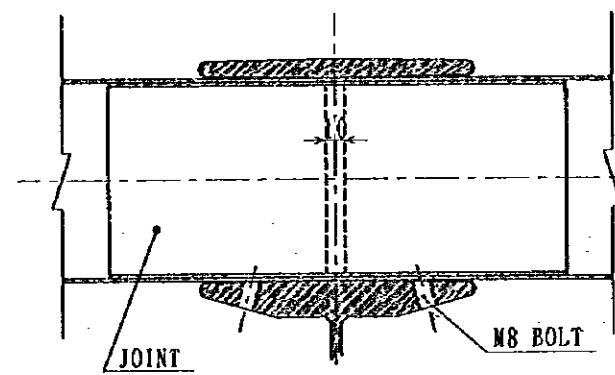
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: EXPANSION JOINT
DATE: _____ DWGNO. B-23

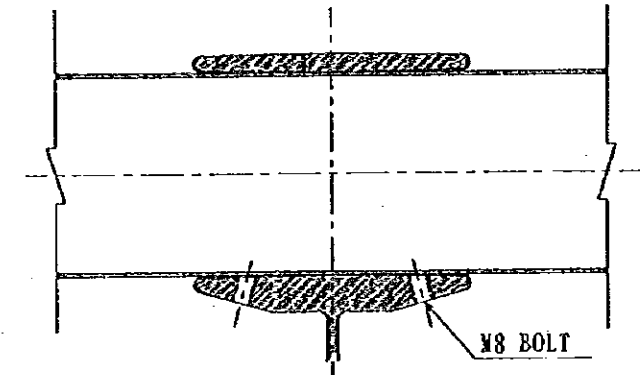
AL MULADDAH



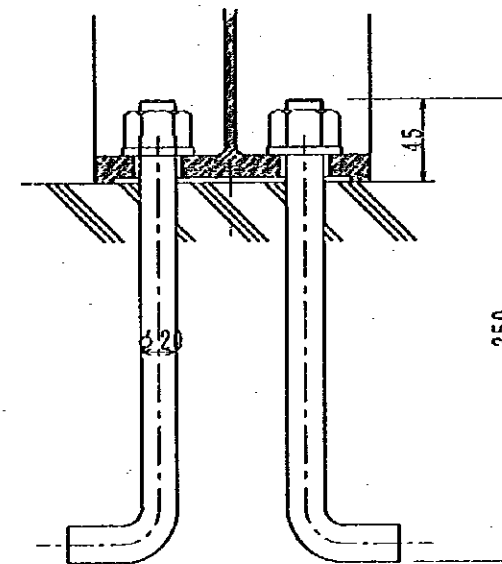
POST ARRANGEMENT



RAIL JOINT SECTION



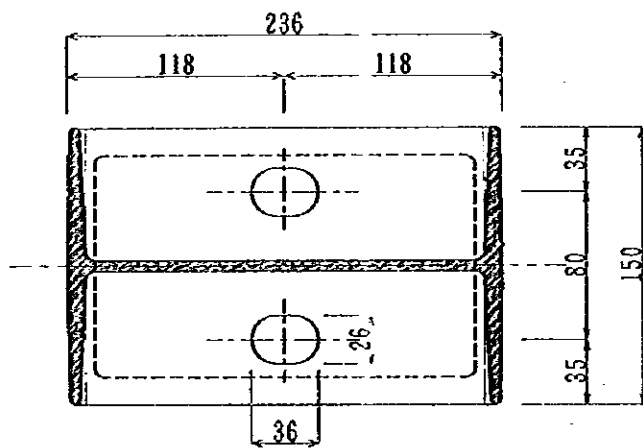
RAIL PENETRATING SECTION



ANCHOR BOLT



HANDRAIL LOCATION



B-B SECTION

POST SCALE

HANDRAIL S=1:4
ALUMINIUM PRODUCTS

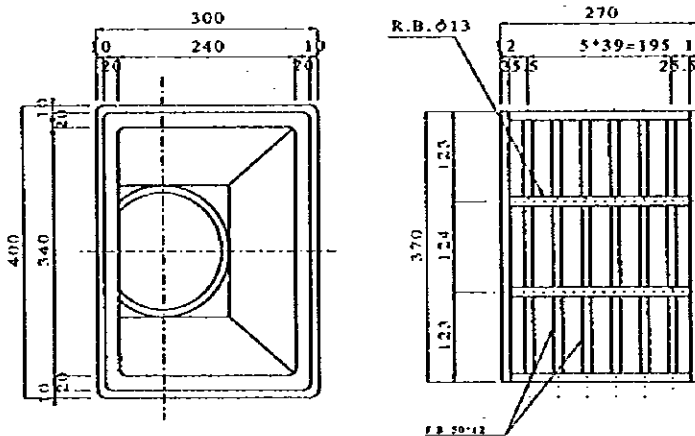
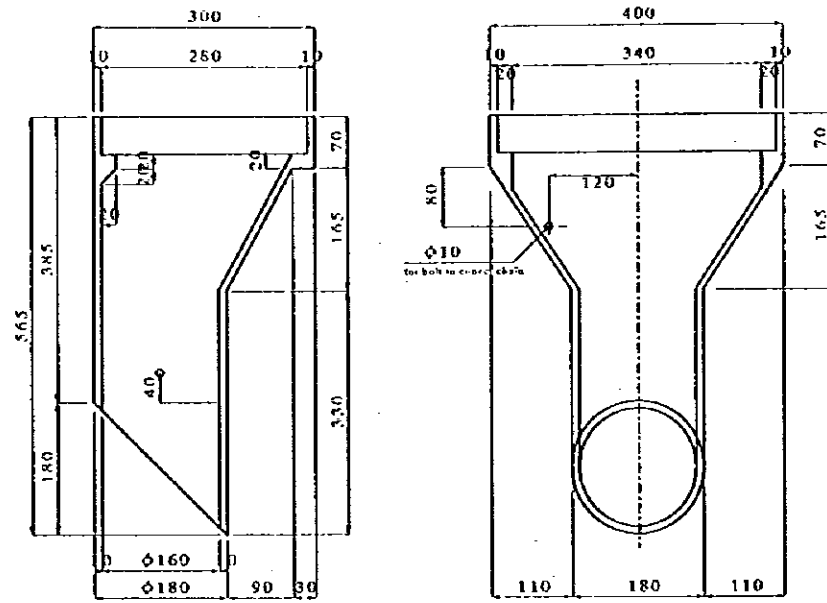
NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

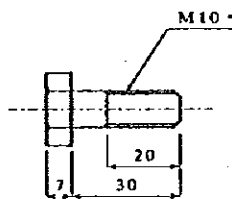
CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: HANDRAIL
DATE: _____ DWGNO. B-24

BRIDGE DRAINAGE DETAILS (AL MULADDAH FLYOVER)

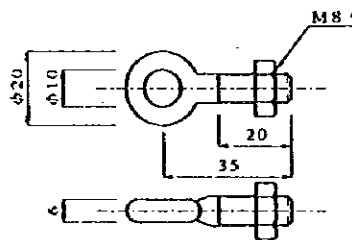
CATCH BASIN (S=1:5)



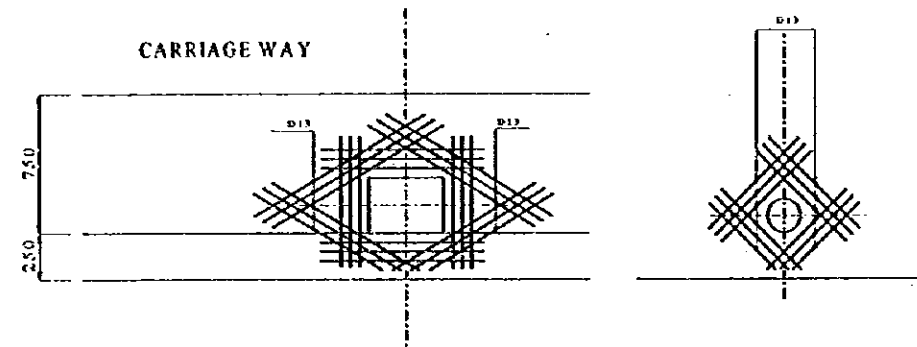
BISS (S=1:1)



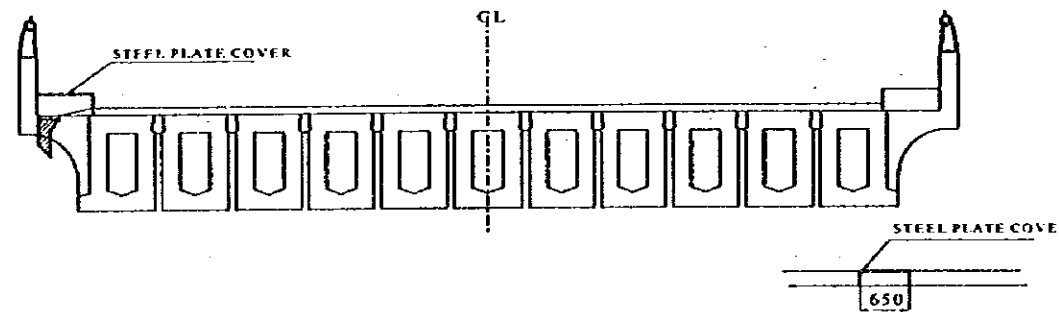
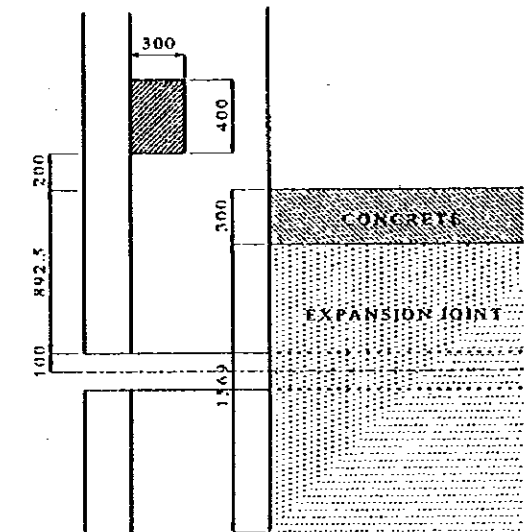
BOLT TO CONNECT CHAIN (S=1:1)



REINFORCING (S=1:20)

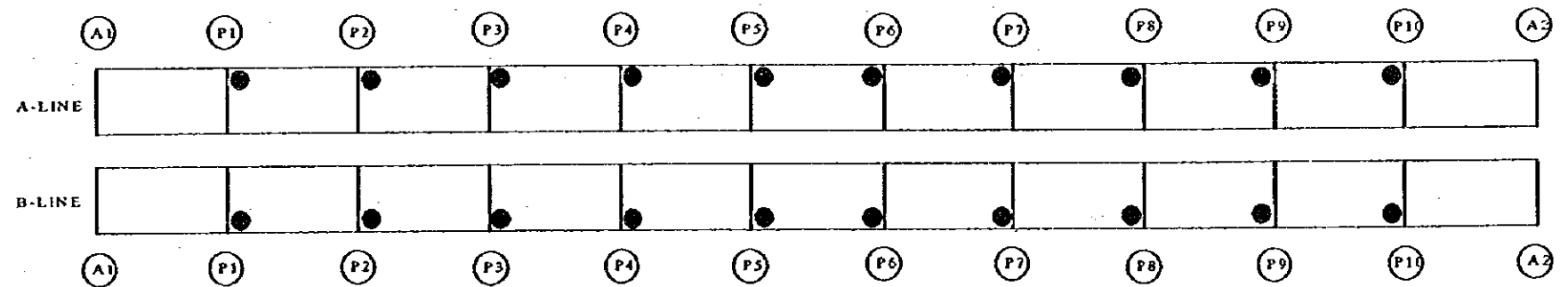


INSTALLING LOCATION DETAIL



CROSS SECTIONAL LOCATION

INSTALLING LOCATIONS



NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

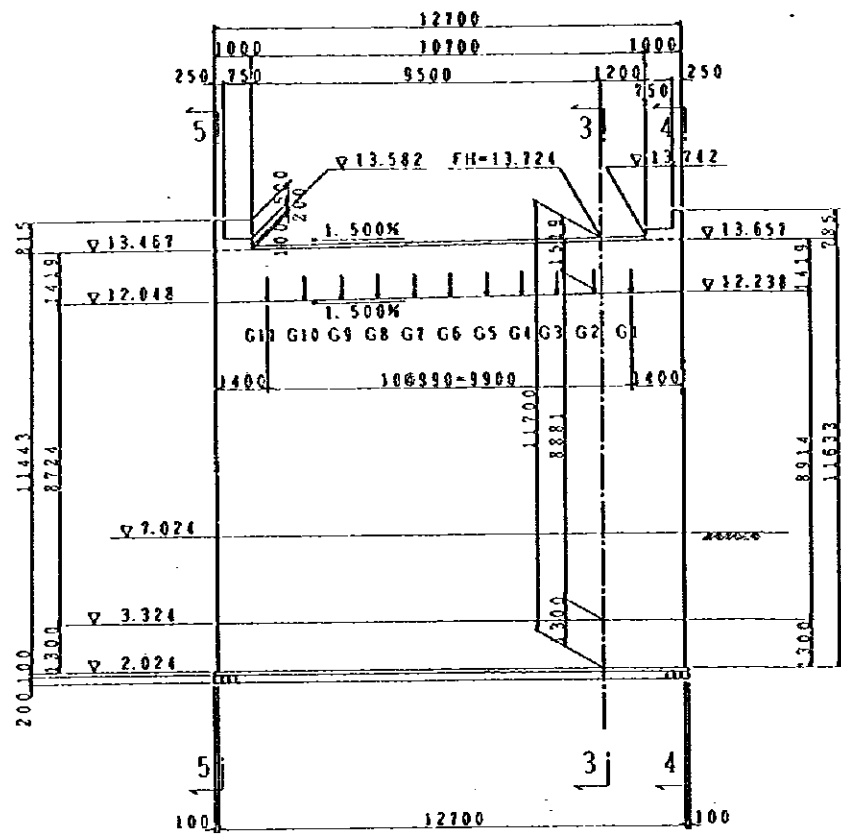
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

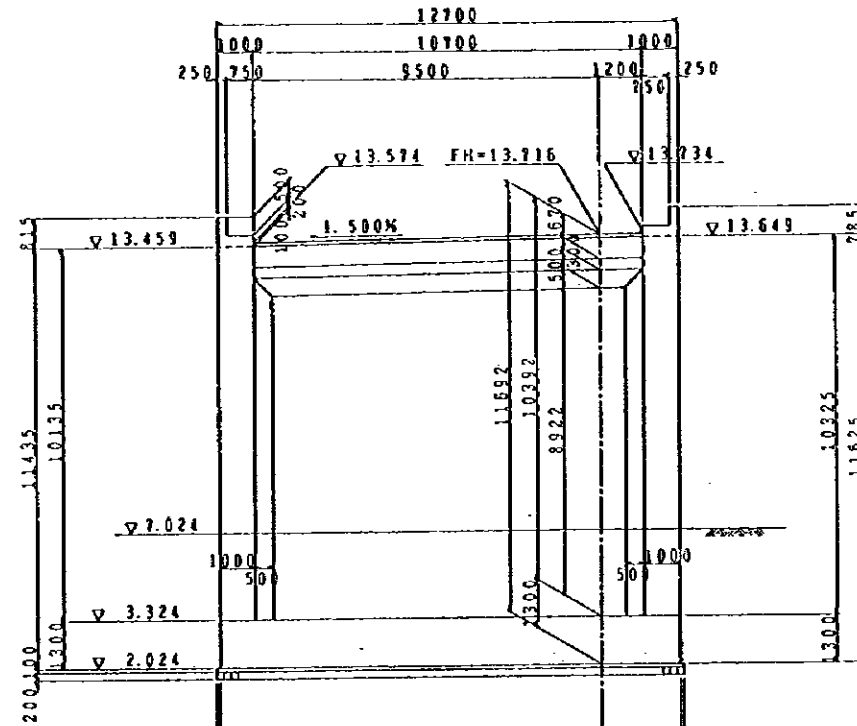
TITLE: BRIDGE DRAINAGE DETAILS (AL MULADDAH)

DATE: DWG. NO. B-25

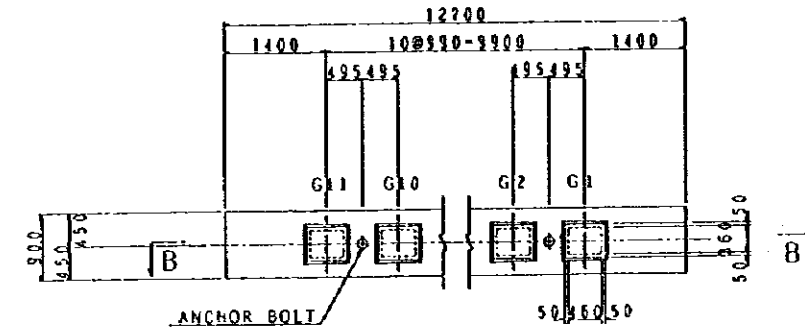
RA/5 AL MULADDAH



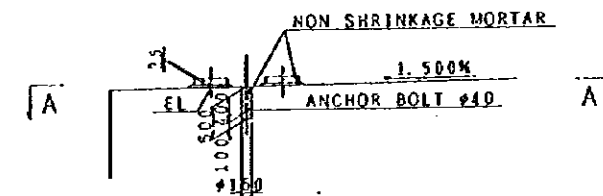
SECTION 1-1 S= 1/200



SECTION 2-2 S= 1/200



SECTION A-A S= 1/100



SECTION B-B S= 1/100

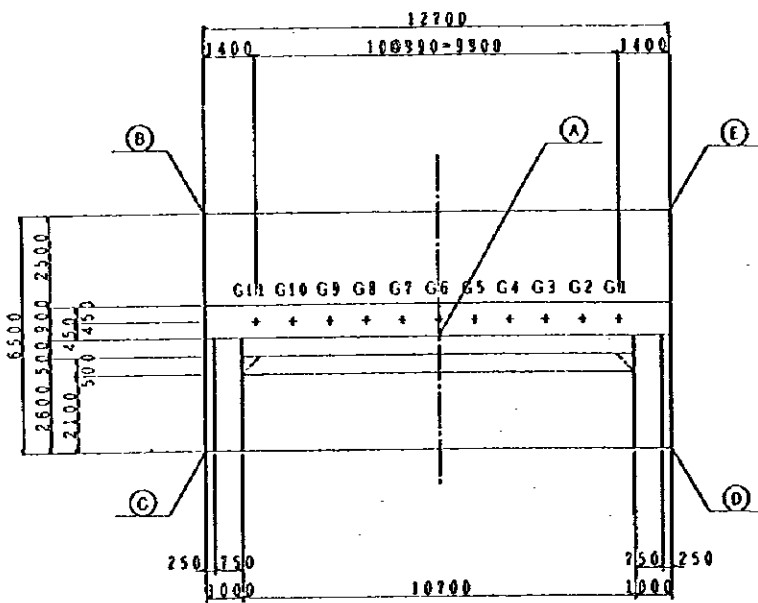
DETAIL OF SHOE BED

SHOE ELEVATION (EL) TABLE

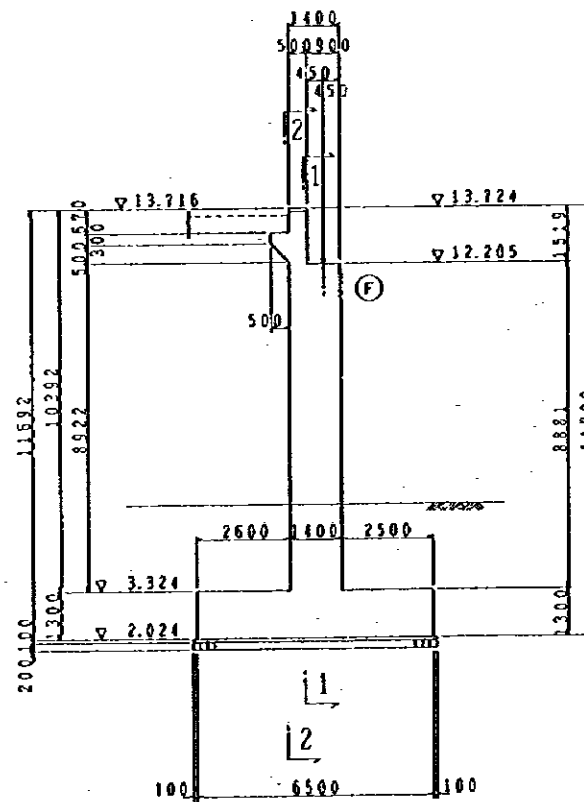
	G 1	G11
A-LINE	12.217	12.069
B-LINE	12.217	12.069

CO-ORDINATES LIST

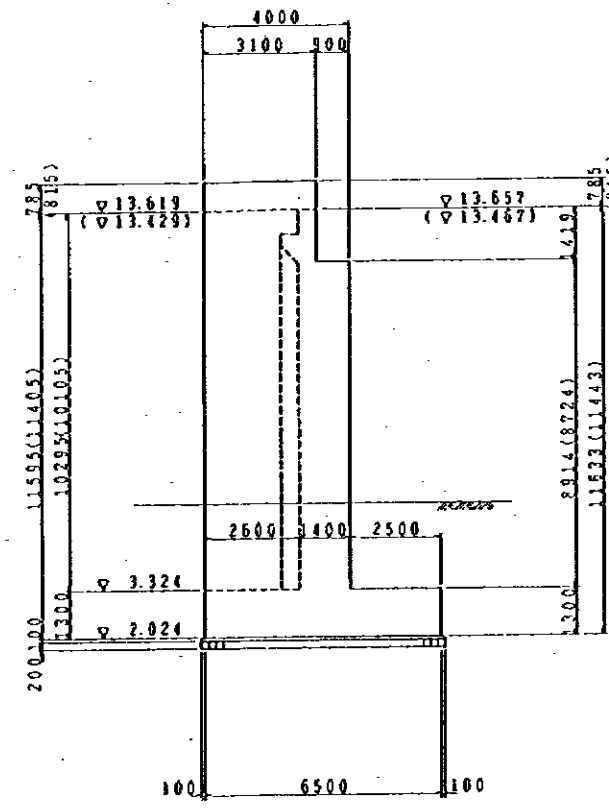
		A-LINE	B-LINE
A	X	27160.2328	27143.7579
	Y	8618.3975	8613.1308
B	X	27167.6541	27150.5792
	Y	8612.7118	8615.4413
C	X	27185.6990	27189.5743
	Y	8606.2968	8609.0322
D	X	27153.4507	27135.8854
	Y	8608.3798	8611.1131
E	X	27158.5257	27135.6509
	Y	8614.7919	8617.5253



PLAN S= 1/200

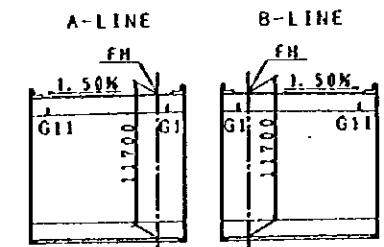


SECTION 3-3 S= 1/200



SECTION 4-4 (5-5) S= 1/200

STRUCTURAL DETAIL OF A1 ABUTMENT AT A-B-LINE



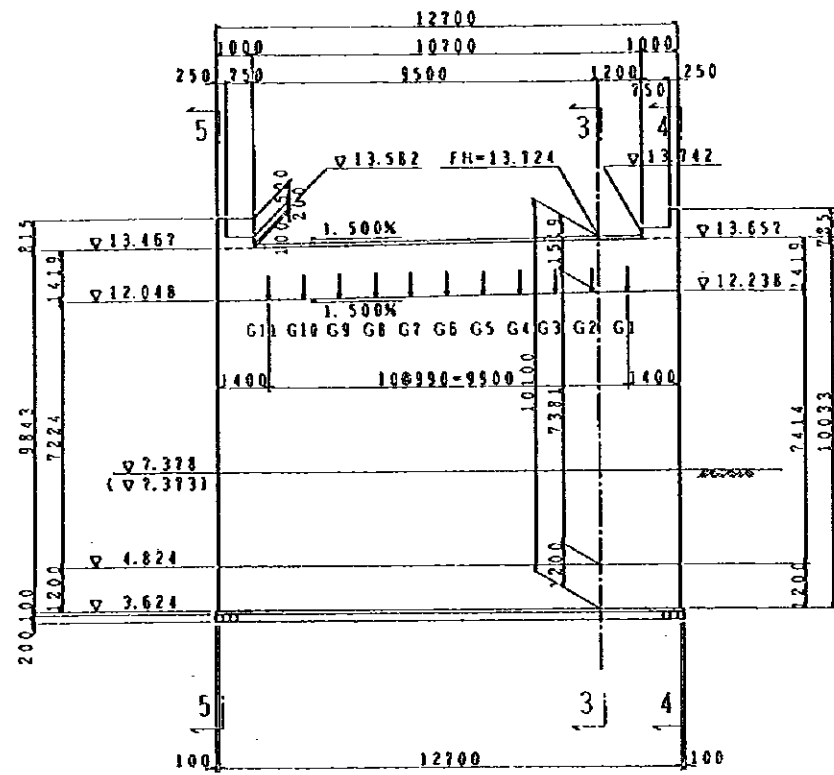
KEY PLAN

NOTES:

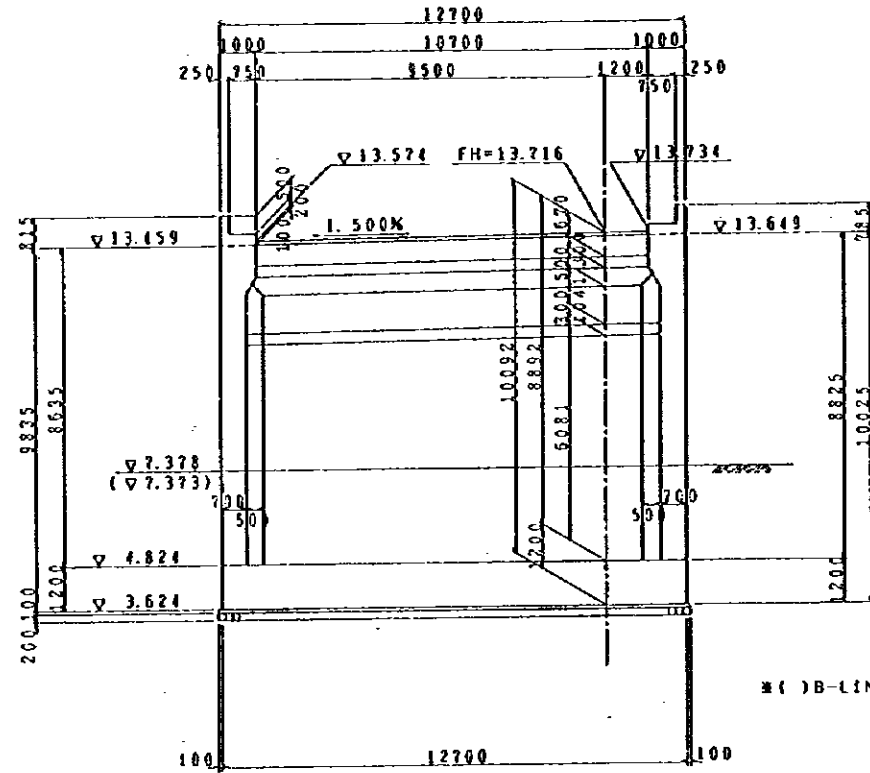
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: STRUCTURAL DETAIL OF A1 ABUTMENT AT A-B-LINE
DATE: _____ DWGNO. B-26

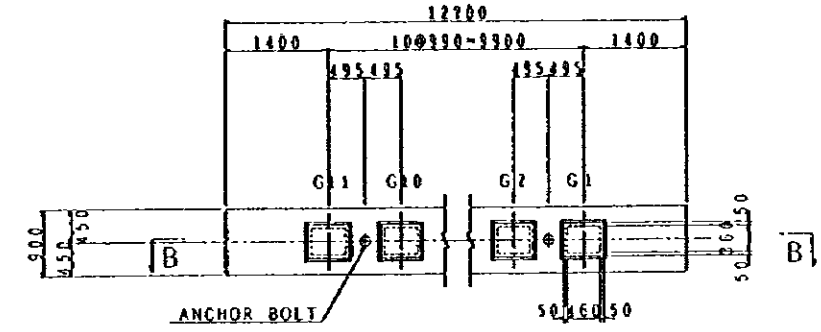
RA/5 AL MULADDAH



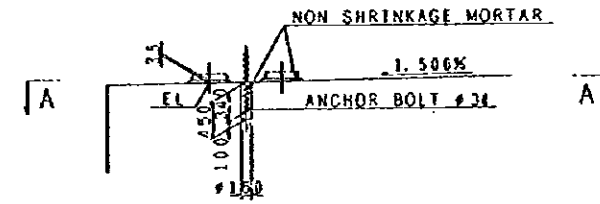
SECTION 1-1 S= 1/200



SECTION 2-2 S= 1/200



SECTION A-A S= 1/100



SECTION B-B S= 1/100

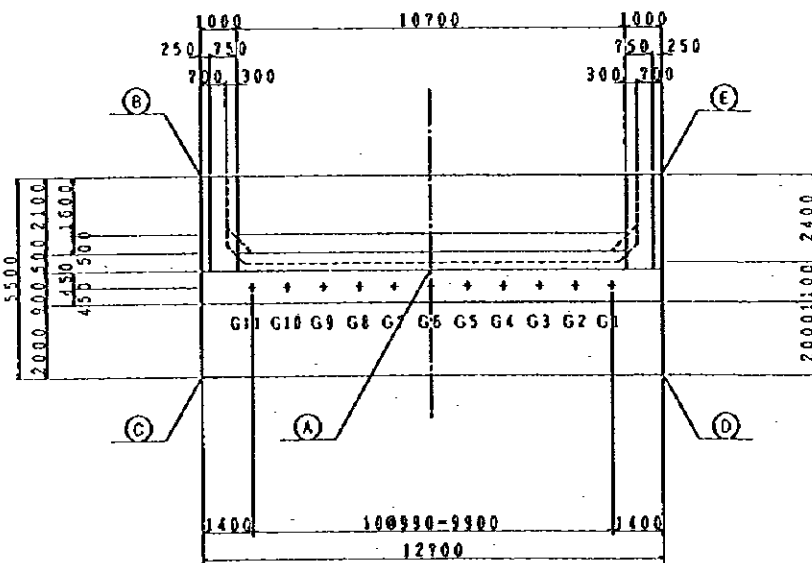
DETAIL OF SHOE BED

SHOE ELEVATION (EL) TABLE

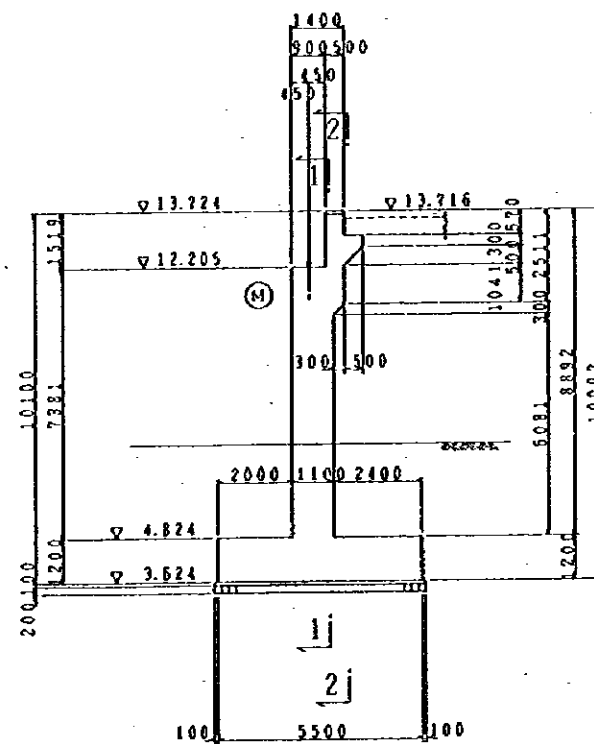
	G 1	G11
A-LINE	12.217	12.069
B-LINE	12.217	12.069

CO-ORDINATES LIST

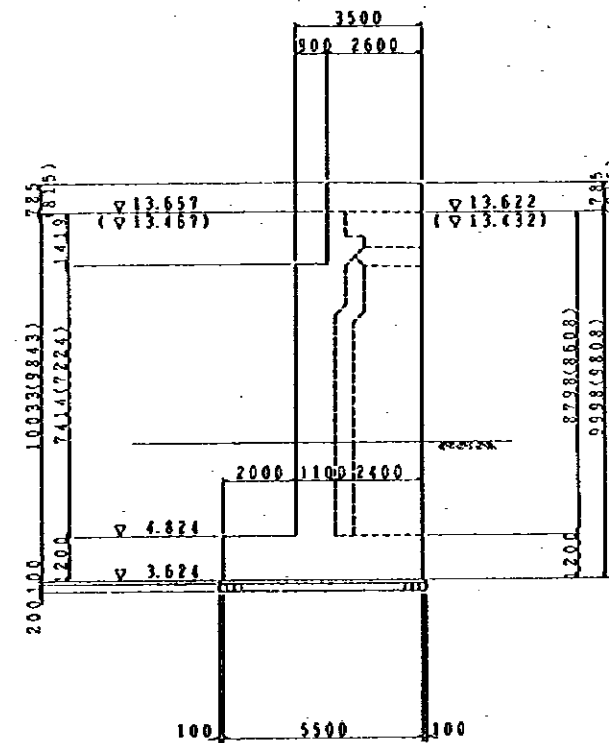
	A-LINE	B-LINE
A X	27207.8642	27199.8183
A Y	8892.5522	8935.2658
B X	27218.7843	27187.3065
B Y	8884.0556	8956.7899
C X	27212.8632	27196.4063
C Y	8888.8508	8891.3643
D X	27208.9546	27183.8300
D Y	8880.7118	8893.4452
E X	27201.2569	27184.7812
E Y	8898.1375	8858.8703



PLAN S= 1/200

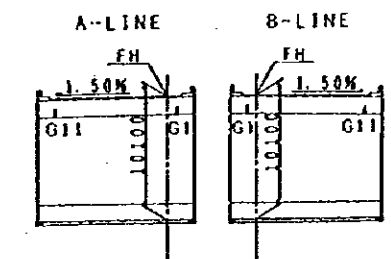


SECTION 3-3 S= 1/200



SECTION 4-4 (5-5) S= 1/200

STRUCTURAL DETAIL OF A2 ABUTMENT AT A-B-LINE



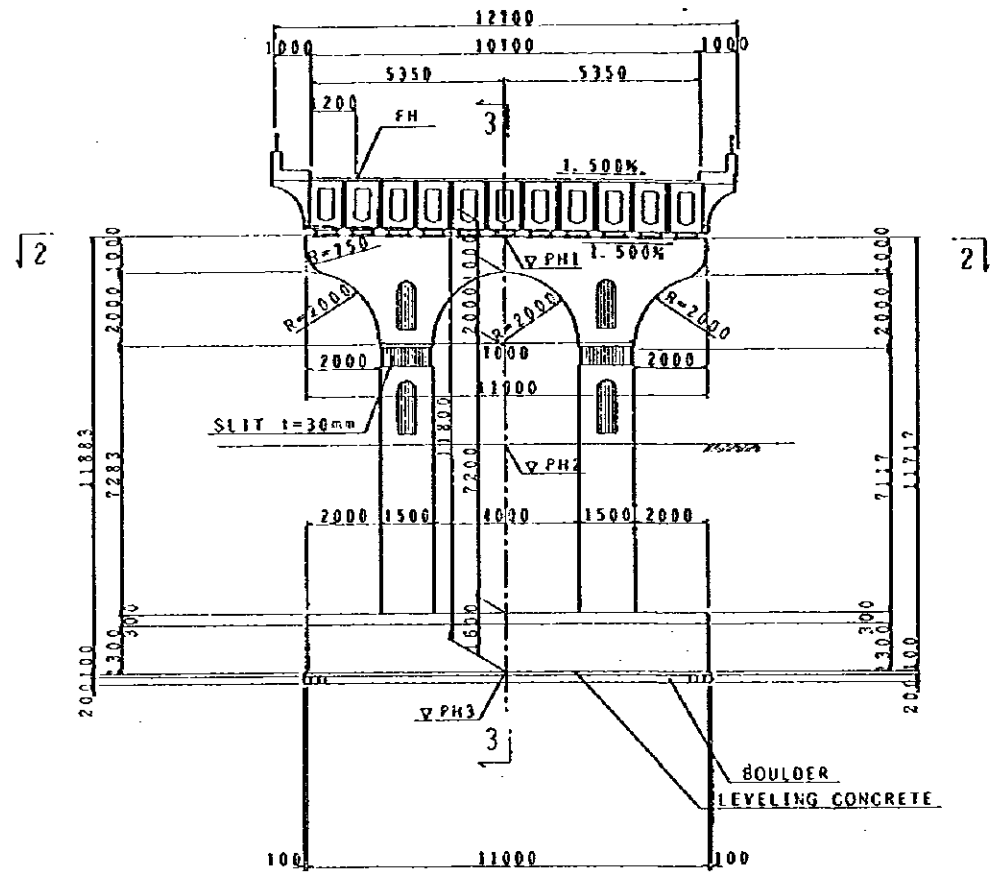
KEY PLAN

NOTES:

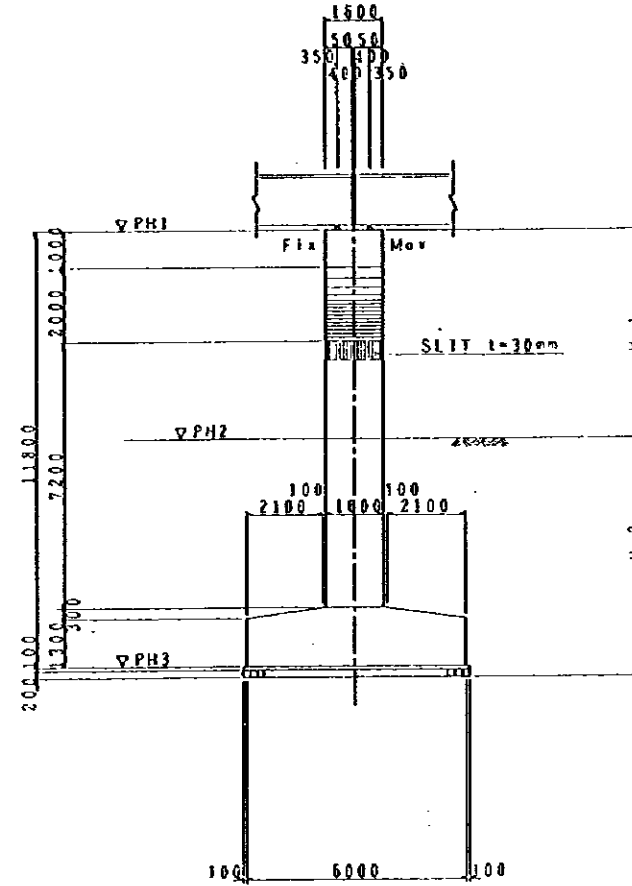
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: STRUCTURAL DETAIL OF A2 ABUTMENT AT A-B-LINE
DATE: _____ DWGNO. B-27

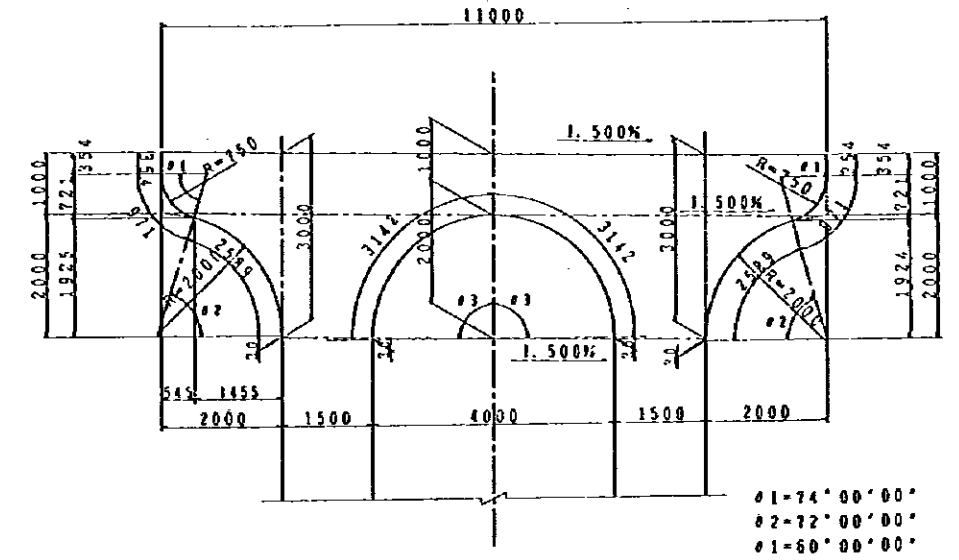
RA/5 AL MULADDAH



SECTION 1-1 S= 1/200



SECTION 3-3 S= 1/200



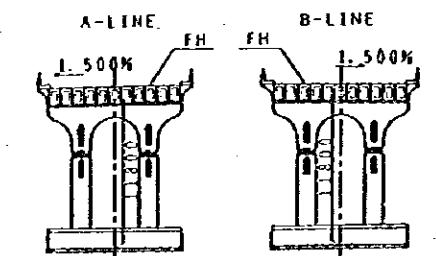
BEAM DETAIL S= 1/120

DIMENSION TABLE

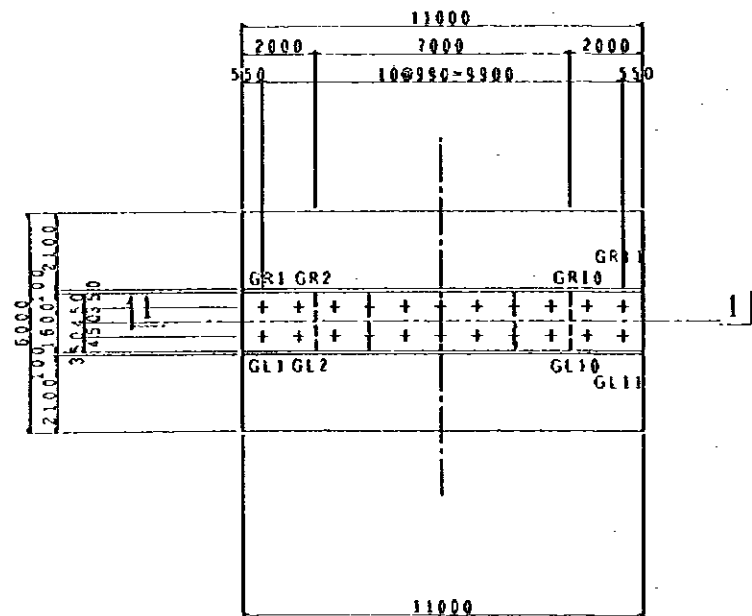
		PH1	PH2	PH3	H 1	H 2	
A L I N E	P 3	12.938	7.215	1.138	5.723	6.077	
	P 4	13.073	7.215	1.273	5.858	5.942	
	P 5	13.141	7.215	1.341	5.926	5.874	
	P 6	13.141	7.215	1.341	5.926	5.874	
	P 7	13.073	7.215	1.273	5.858	5.942	
	P 8	12.938	7.215	1.138	5.723	6.077	
	B L I N E	P 3	12.938	7.215	1.138	5.723	6.077
		P 4	13.073	7.215	1.273	5.858	5.942
P 5		13.141	7.215	1.341	5.926	5.874	
P 6		13.141	7.215	1.341	5.926	5.874	
P 7		13.073	7.215	1.273	5.858	5.942	
P 8		12.938	7.215	1.138	5.723	6.077	

SHOE ELEVATION (EL) TABLE

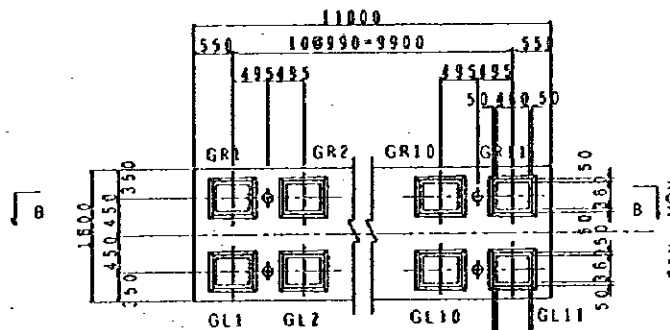
	G1L (G1R)	G11L (G11R)
P 3	13.012	12.864
P 4	13.147	12.999
P 5	13.215	13.067
P 6	13.215	13.067
P 7	13.147	12.999
P 8	13.012	12.864



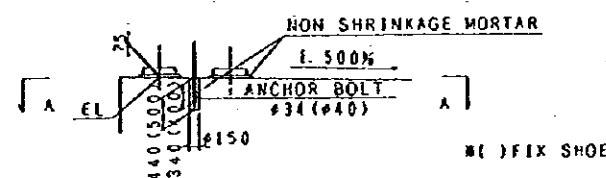
KEY PLAN



SECTION 2-2 S= 1/200



SECTION A-A S= 1/100



SECTION B-B S= 1/100

DETAIL OF SHOE BED

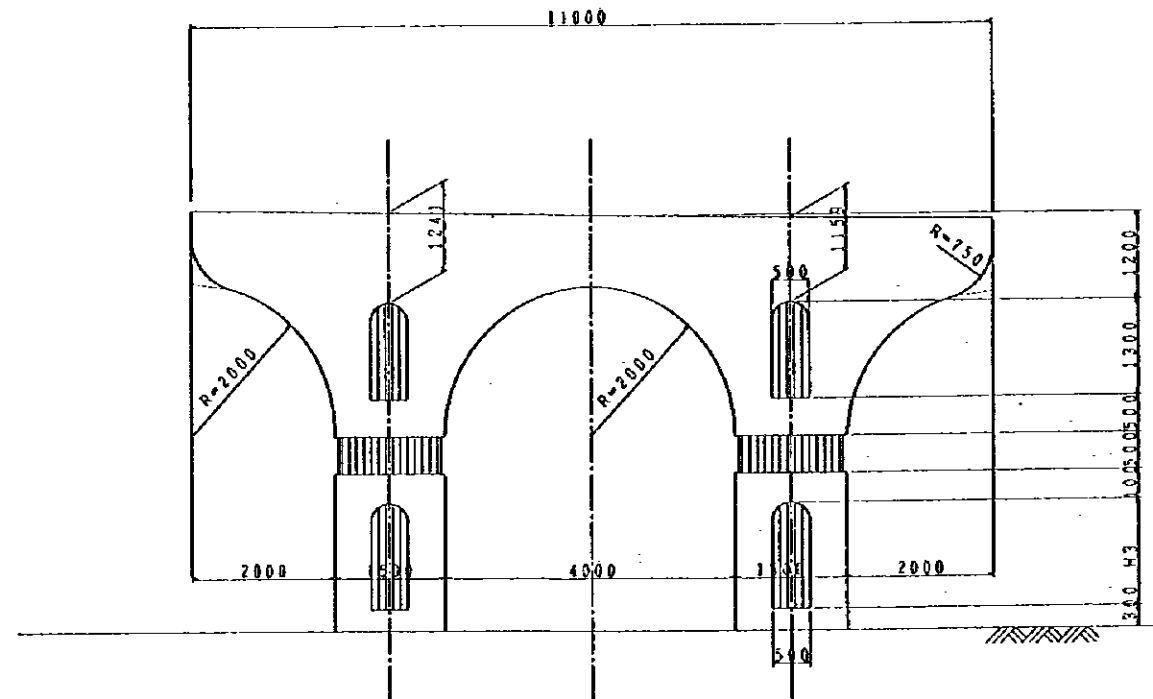
STRUCTURAL DETAIL OF TWO-COLUMN PIER FOR P3~P8 AT A·B-LINE (1/2)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
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PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: STRUCTURAL DETAIL OF TWO-COLUMN PIER(P3~P8) AT A,B-LINE (1/2)
DATE: _____ DWGNO. B-28

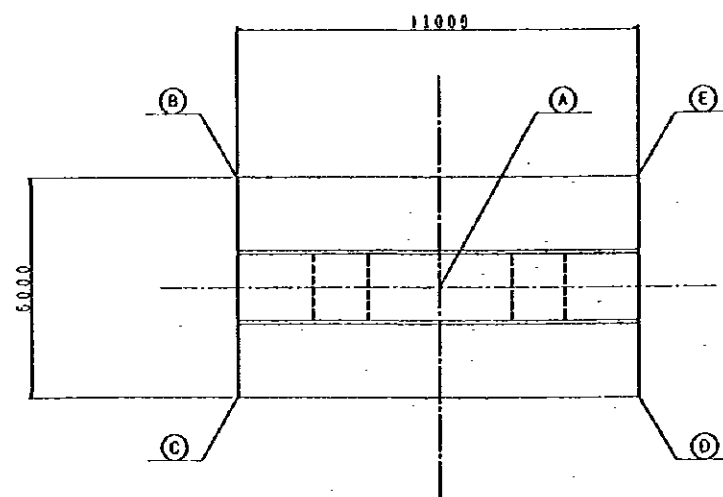
RA/5 AL MULADDAH



SLIT OF PLAN S= 1/100

DIMENSION (H₃) TABLE

	A-LINE	B-LINE
P 3	1523	1523
P 4	1658	1658
P 5	1726	1726
P 6	1726	1726
P 7	1658	1658
P 8	1523	1523



FRAMING PLAN S= 1/200

CO-ORDINATES LIST

		A	B	C	D	E
A	P3	X	27172.0732	27178.8304	27177.8473	27187.8959
		Y	8687.8433	8688.4015	8685.4829	8695.2859
	P4	X	27177.8739	27183.1905	27182.2374	27171.2661
		Y	8712.8919	8715.0501	8709.1812	8718.5356
B	P5	X	27181.5354	27187.4506	27186.4675	27175.4112
		Y	8738.4405	8740.6587	8734.7769	8756.1812
	P6	X	27185.7935	27191.7107	27190.7276	27179.8769
		Y	8764.2891	8766.5474	8760.6284	8762.2369
C	P7	X	27190.0537	27195.9709	27194.9878	27184.1364
		Y	8789.8377	8791.0960	8785.1771	8787.8791
	P8	X	27194.3138	27200.2310	27199.2479	27188.2965
		Y	8815.5883	8817.8466	8811.9257	8818.5269
D	P3	X	27158.5324	27162.4556	27161.4724	27158.8211
		Y	8690.0766	8692.1549	8695.2160	8698.5183
	P4	X	27160.7985	27168.7157	27167.7326	27154.8812
		Y	8715.7253	8717.7835	8711.8548	8749.6673
E	P5	X	27165.0586	27170.9758	27169.9927	27159.1414
		Y	8741.3739	8743.4321	8737.5132	8753.3156
	P6	X	27169.3187	27175.2359	27174.2528	27163.4015
		Y	8767.8225	8769.8807	8763.1018	8764.8642
F	P7	X	27173.5789	27179.4961	27178.5129	27167.6618
		Y	8793.8711	8794.7269	8788.8104	8790.6128
	P8	X	27177.8390	27183.7562	27182.7731	27171.9217
		Y	8818.9197	8820.2780	8814.4590	8816.2614

STRUCTURAL DETAIL OF TWO-COLUMN PIER FOR P3~P8 AT A-B-LINE (2/2)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
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JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

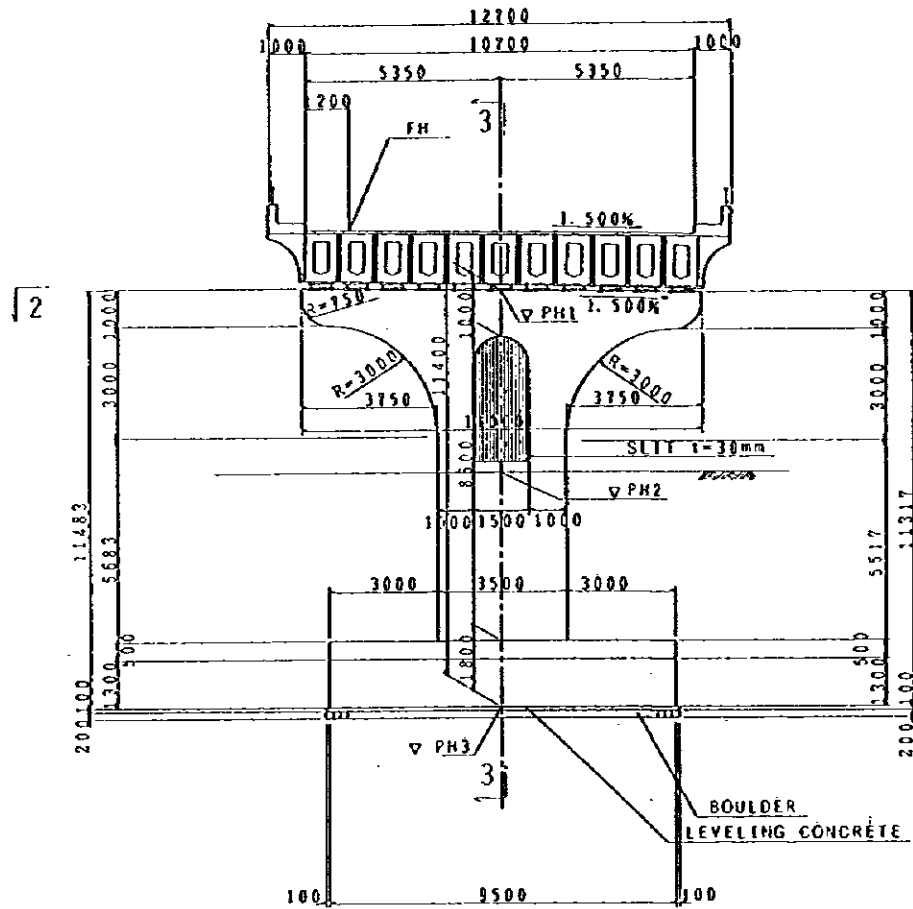
TITLE STRUCTURAL DETAIL OF TWO-COLUMN PIER(P3~P8) AT A,B-LINE (2/2)

DATE

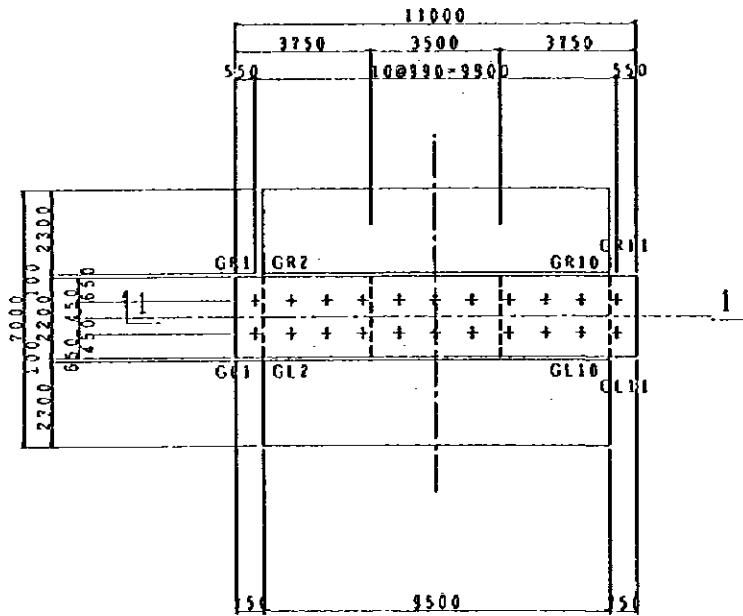
DWGNO.

B-29

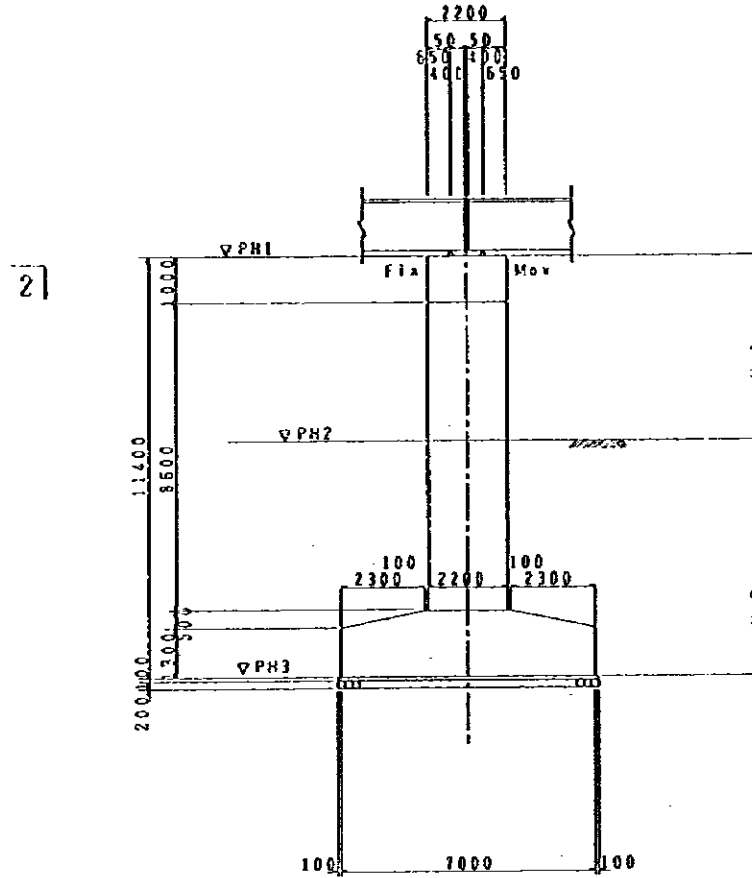
RA/5 AL MULADDAH



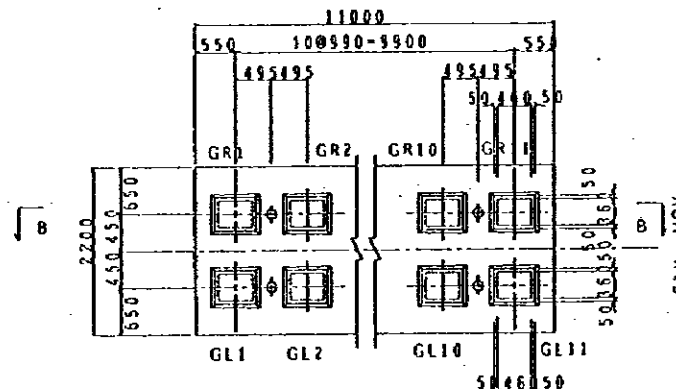
SECTION 1-1 S= 1/200



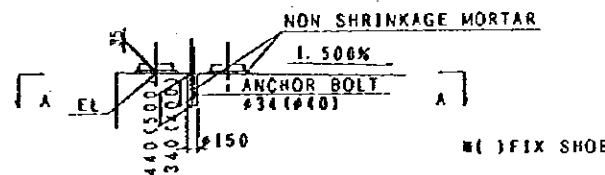
SECTION 2-2 S= 1/200



SECTION 3-3 S= 1/200

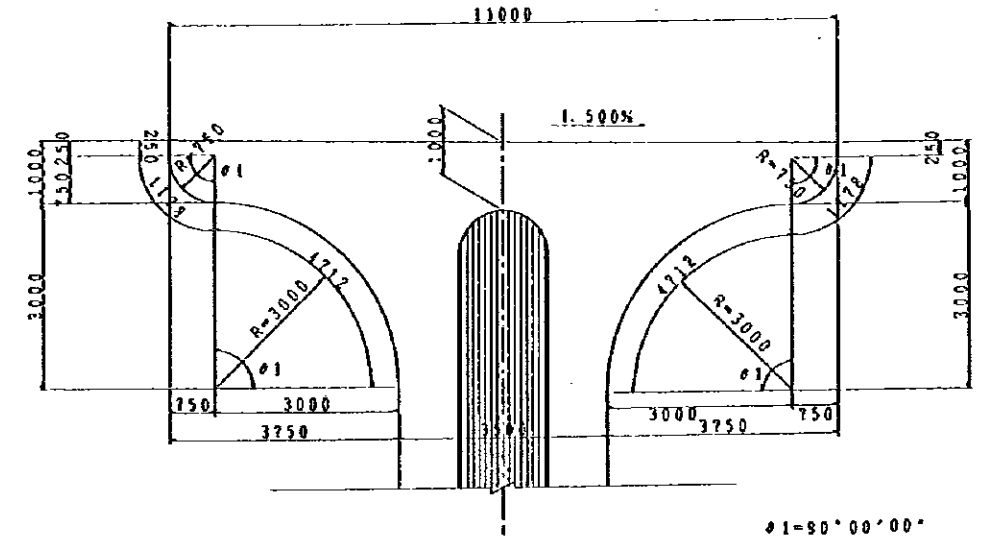


SECTION A-A S= 1/100



SECTION B-B S= 1/100

DETAIL OF SHOE BED



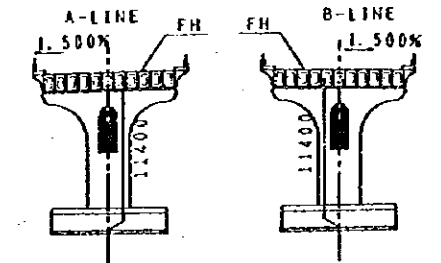
BEAM DETAIL S= 1/120

DIMENSION TABLE

		PH1	PH2	PH3	H 1	H 2
A L I N E	P 1	12.465	7.041	1.065	5.424	5.976
	P 2	12.735	7.057	1.335	5.678	5.722
	P 9	12.735	7.430	1.335	5.305	6.095
	P 10	12.465	7.404	1.065	5.061	6.339
B I L I N E	P 1	12.465	7.041	1.065	5.424	5.976
	P 2	12.735	7.057	1.335	5.678	5.722
	P 9	12.735	7.430	1.335	5.305	6.095
	P 10	12.465	7.461	1.065	5.004	6.396

SHOE ELEVATION (EL) TABLE

	G1L (G1R)	G11L (G11R)
P 1	12.539	12.391
P 2	12.809	12.661
P 9	12.809	12.661
P 10	12.539	12.391



KEY PLAN

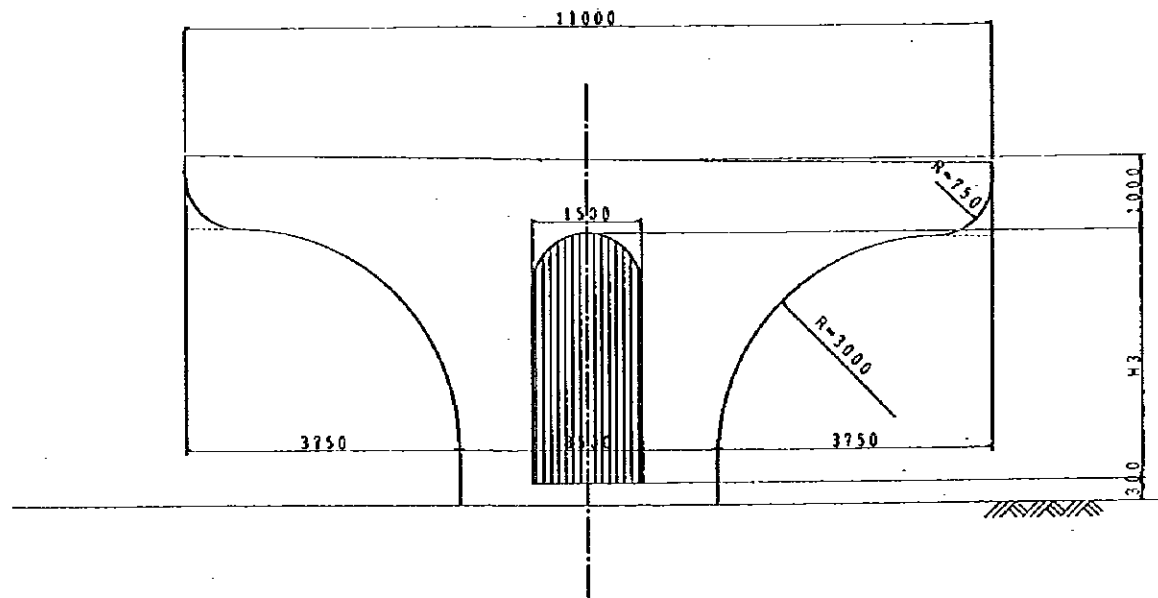
STRUCTURAL DETAIL OF T-WALL PIER FOR P1,P2,P9,P10 AT A-B-LINE (1/2)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: STRUCTURAL DETAIL OF T-WALL PIER (P1,P2,P9,P10) AT A-B-LINE (1/2)
DATE: _____ DWGNO. B-30

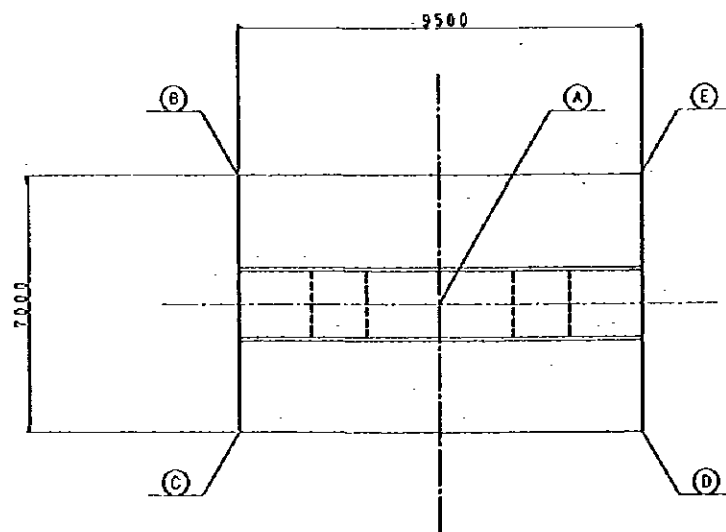
RA/5 AL MULADDAH



SLIT OF PLAN S= 1/100

DIMENSION (H₃) TABLE

	A-LINE	B-LINE
P 1	4124	4124
P 2	4378	4378
P 9	4005	4005
P10	3761	3704



FRAMING PLAN S= 1/200

CO-ORDINATES LIST

		A	B	C	D	E
A	P1	X 27164.4929	27159.7522	27169.8052	27159.8036	27160.5626
	Y	8636.6480	8635.7224	8631.8159	8649.9718	8650.9772
I	P2	X 27166.7593	27174.0122	27172.8556	27165.4537	27164.6427
	Y	8661.6945	8661.3628	8557.4826	8659.8232	8565.9256
L	P9	X 27158.5783	27283.8322	27283.6822	27193.9128	27194.4616
	Y	8541.2313	8613.9083	8537.9233	8558.5605	8545.4659
N	P10	X 27202.6949	27208.0933	27209.9463	27197.6747	27198.7217
	Y	8556.8835	8669.5578	8662.6525	8561.8531	8671.1145
B	P1	X 27138.9184	27159.2774	27152.1354	27149.7588	27149.6058
	Y	8635.7784	8541.4538	8634.5464	8636.1050	8645.8184
I	P2	X 27152.2782	27157.5375	27156.2865	27147.8188	27148.1658
	Y	8624.4282	8667.1824	8660.1878	8581.7536	8668.6580
L	P9	X 27182.0591	27187.3584	27185.2118	27176.8238	27177.8987
	Y	8643.8565	8616.6427	8639.7578	8541.2238	8518.1283
N	P10	X 27186.3583	27191.6185	27193.4745	27181.8938	27182.2465
	Y	8568.8168	8672.2518	8565.3559	8668.6425	8673.8478

STRUCTURAL DETAIL OF T-WALL PIER FOR P1,P2,P9,P10 AT A-B-LINE (2/2)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

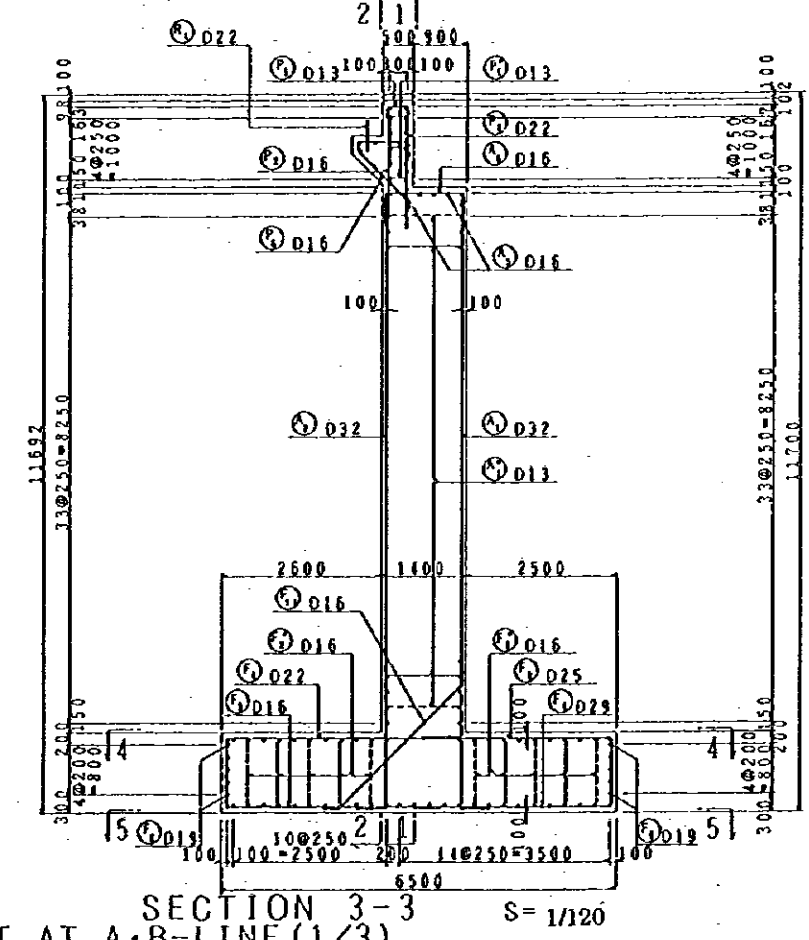
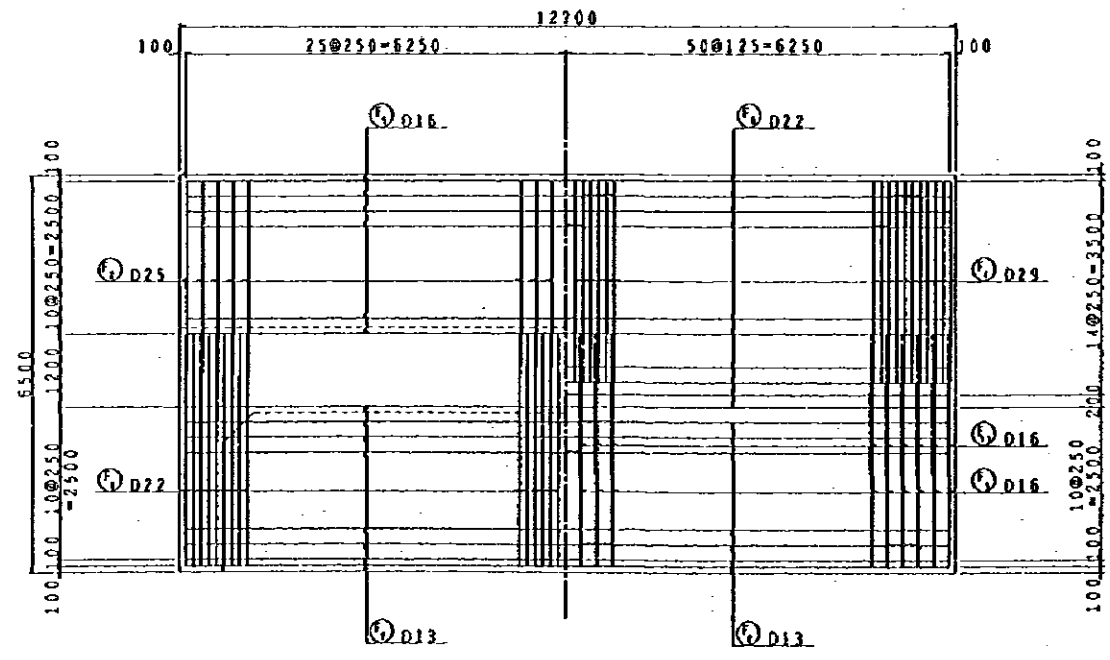
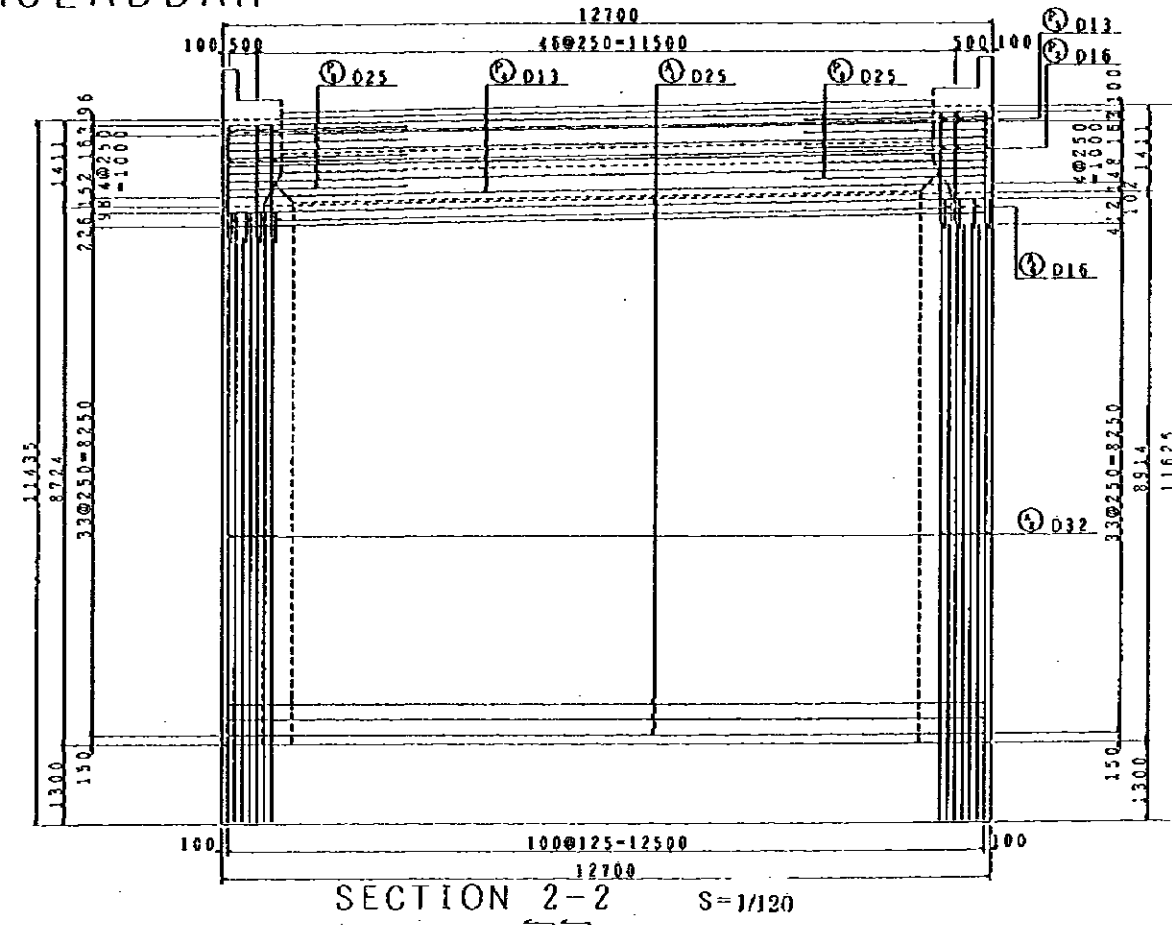
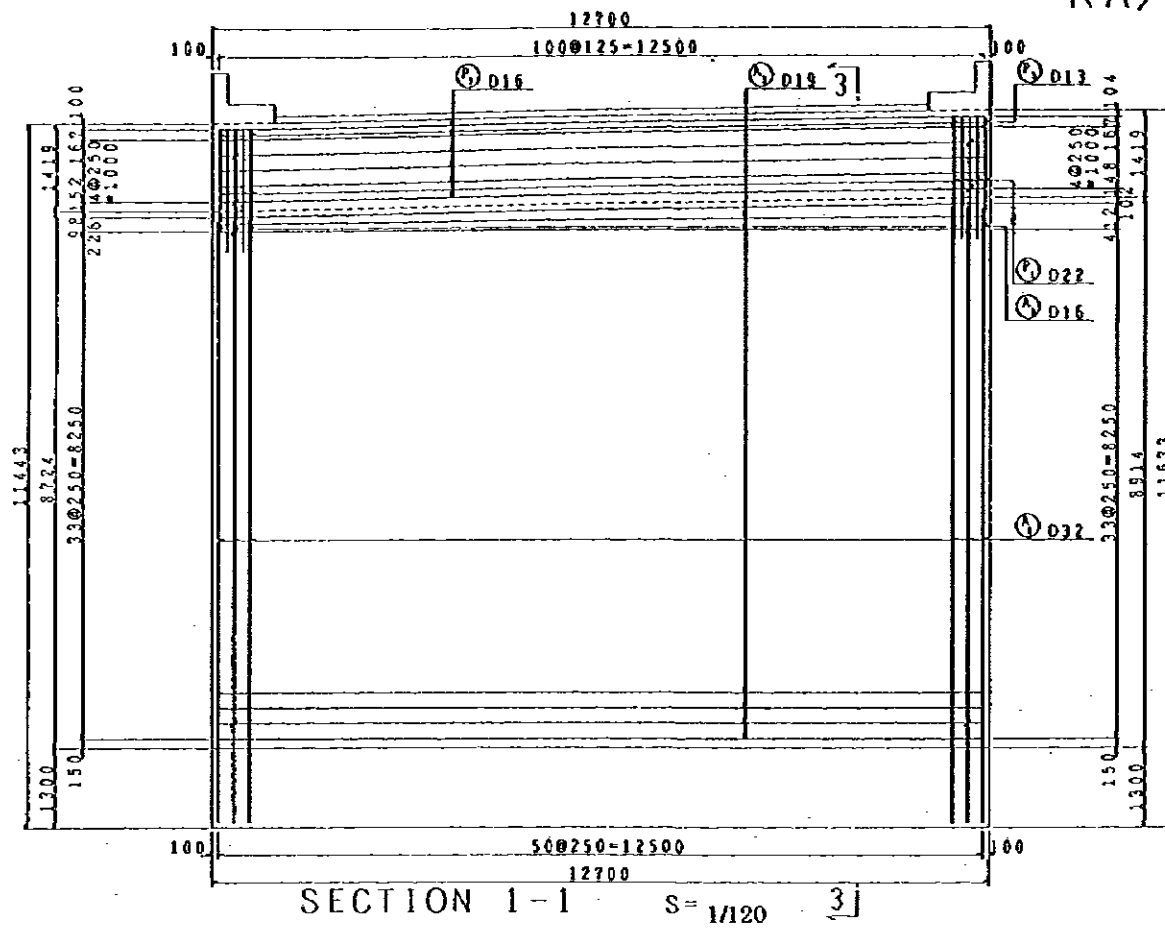
TITLE STRUCTURAL DETAIL OF T-WALL PIER(P1,P2,P9,P10) AT A,B-LINE (2/2)

DATE

DWGNO.

B-31

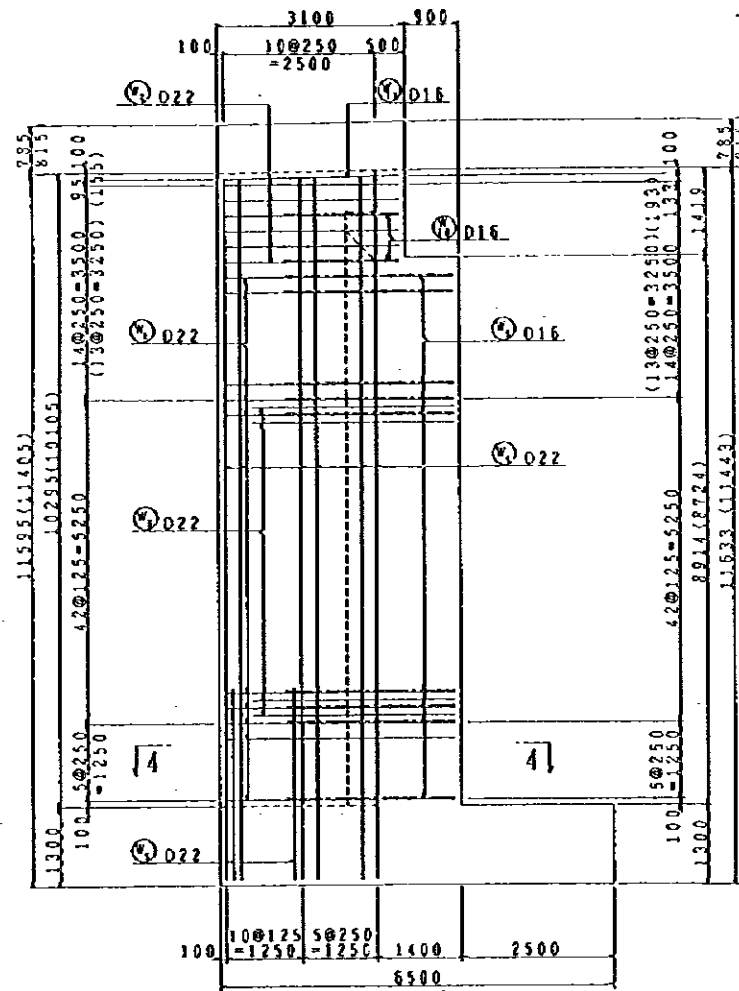
RA/5 AL MULADDAH



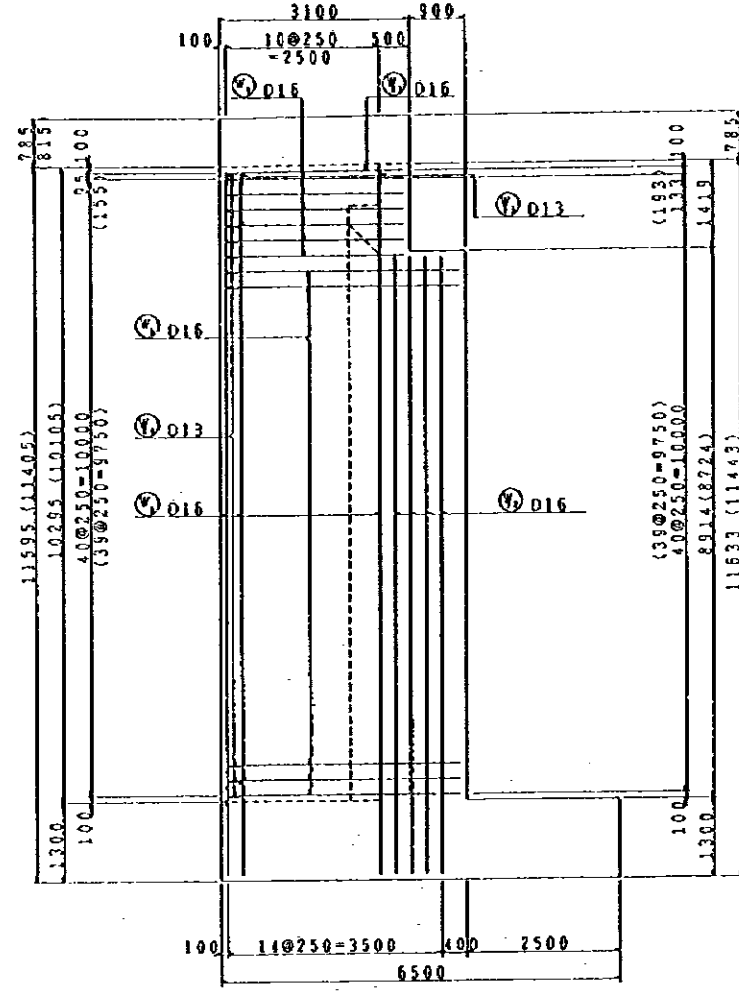
RE-BAR ARRANGEMENT OF A1 ABUTMENT AT A-B-LINE (1/3)

NOTES:	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
		TITLE: RE-BAR ARRANGEMENT OF A1 ABUTMENT AT A-B-LINE (1/3)
		DATE: _____ DWGNO. B-32

RA/5 AL MULADDAH

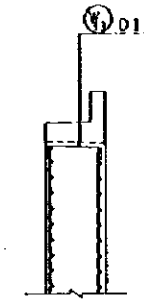


SECTION 1-1 S=1/120

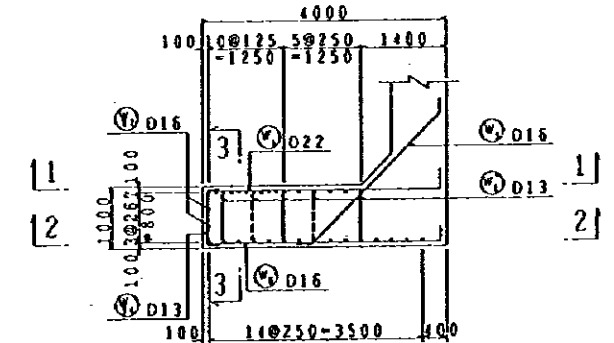


SECTION 2-2 S=1/120

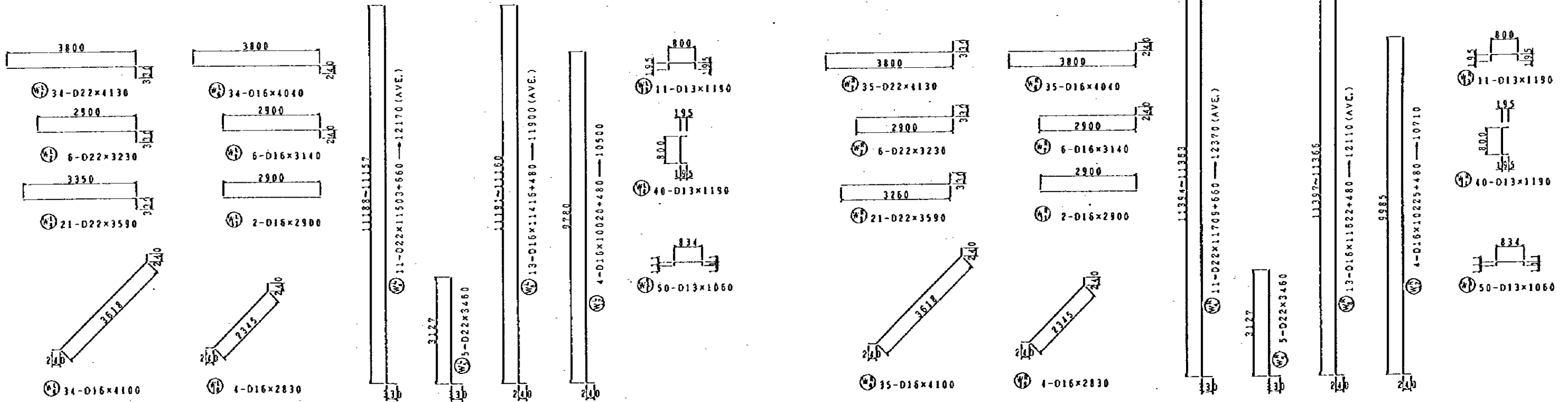
NOTE: () LEFT WING



SECTION 3-3 S=1/120



SECTION 4-4 S=1/120



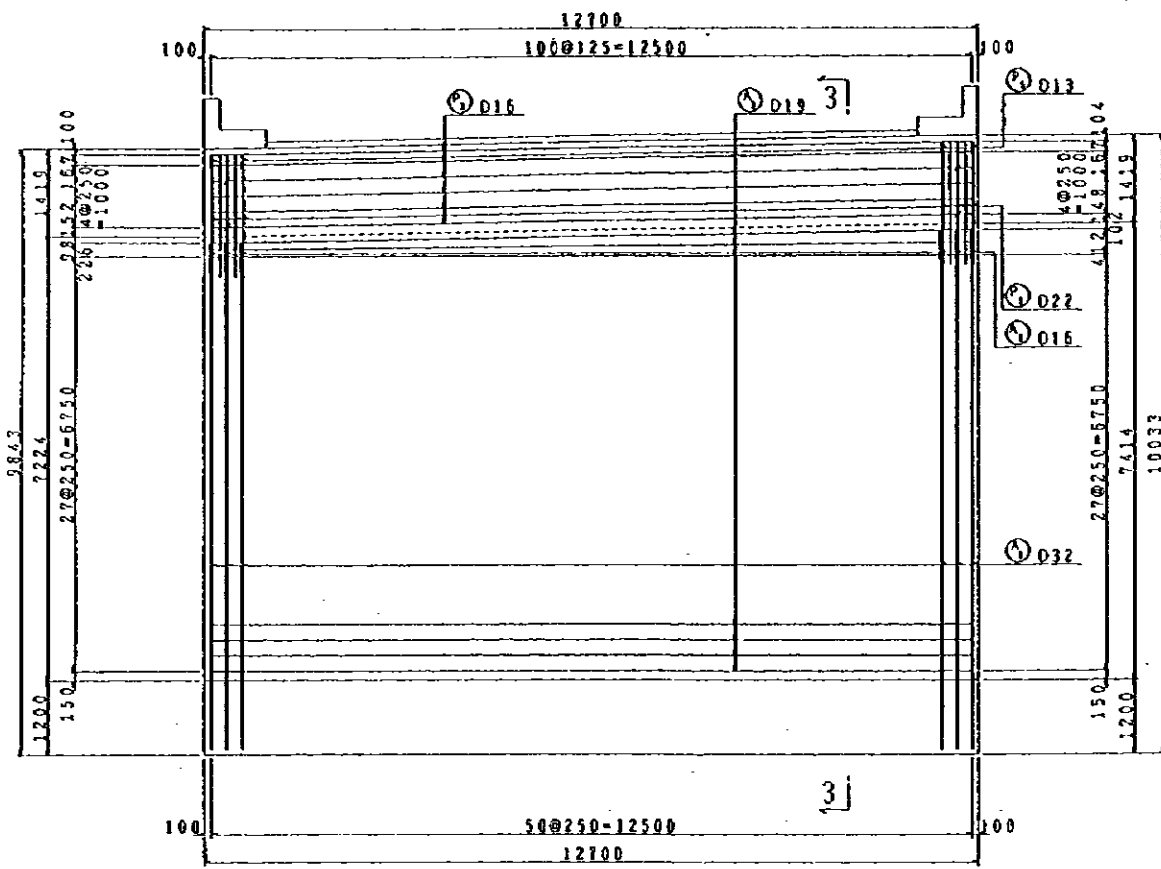
RE-BAR ARRANGEMENT OF A1 ABUTMENT AT A·B-LINE (2/3)

NOTES:

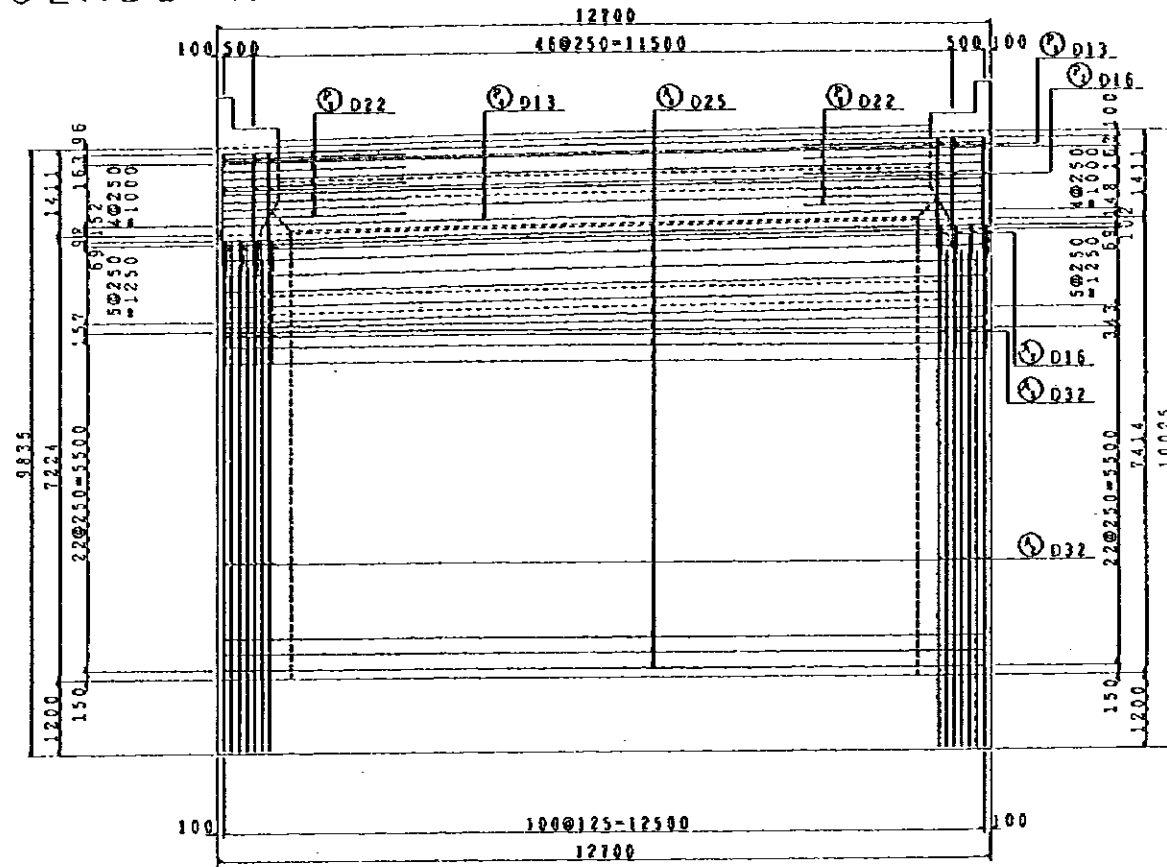
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RE-BAR ARRANGEMENT OF A1 ABUTMENT AT A·B-LINE (2/3)
DATE: _____ DWGNO. B-33

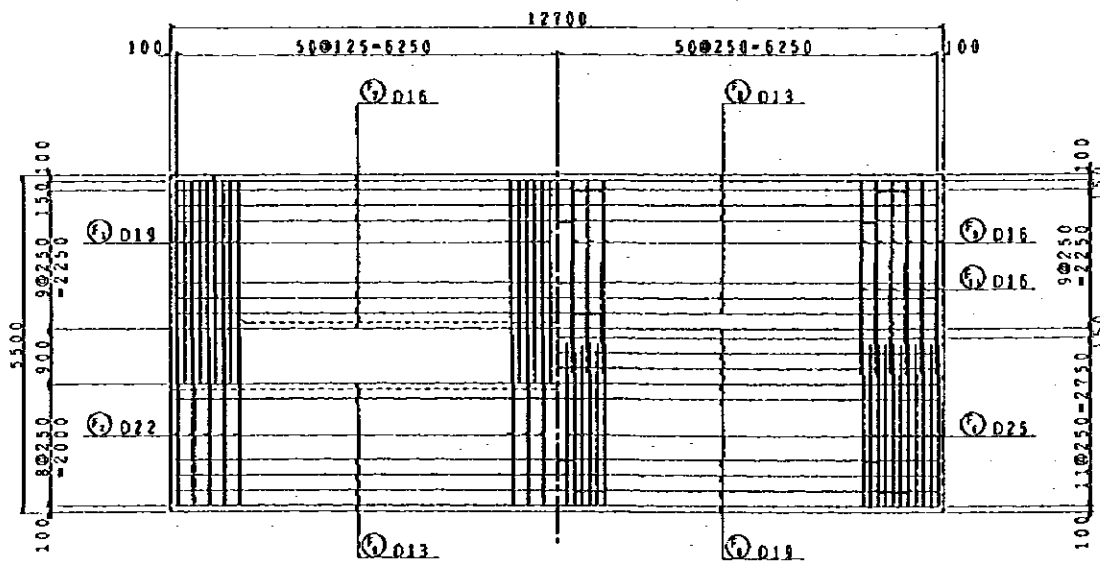
RA/5 AL MULADDAH



SECTION 1-1 S= 1/120

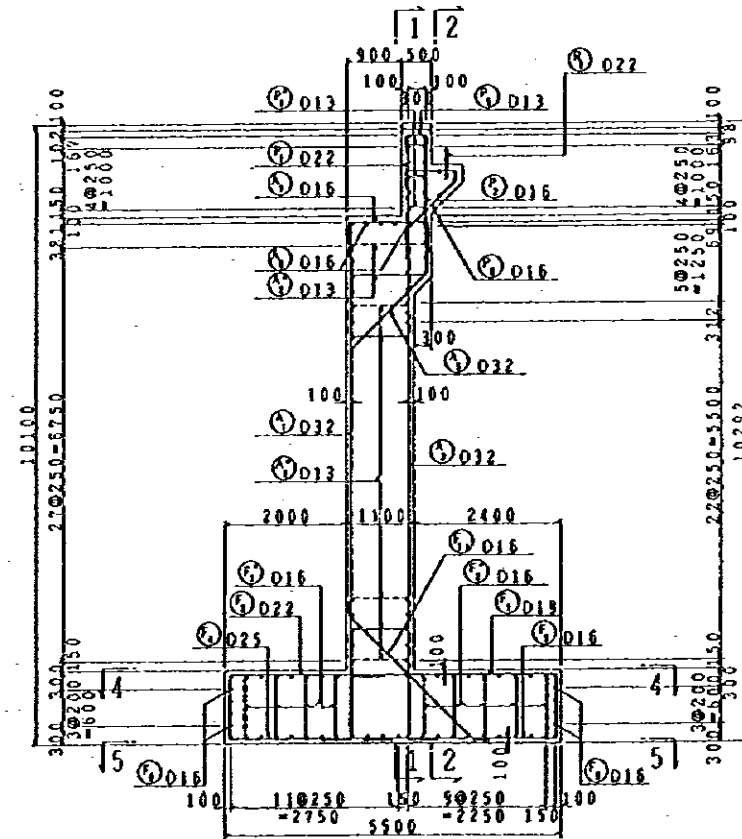


SECTION 2-2 S= 1/120



SECTION 4-4 S=1/120

SECTION 5-5 S= 1/120



SECTION 3-3 S= 1/120

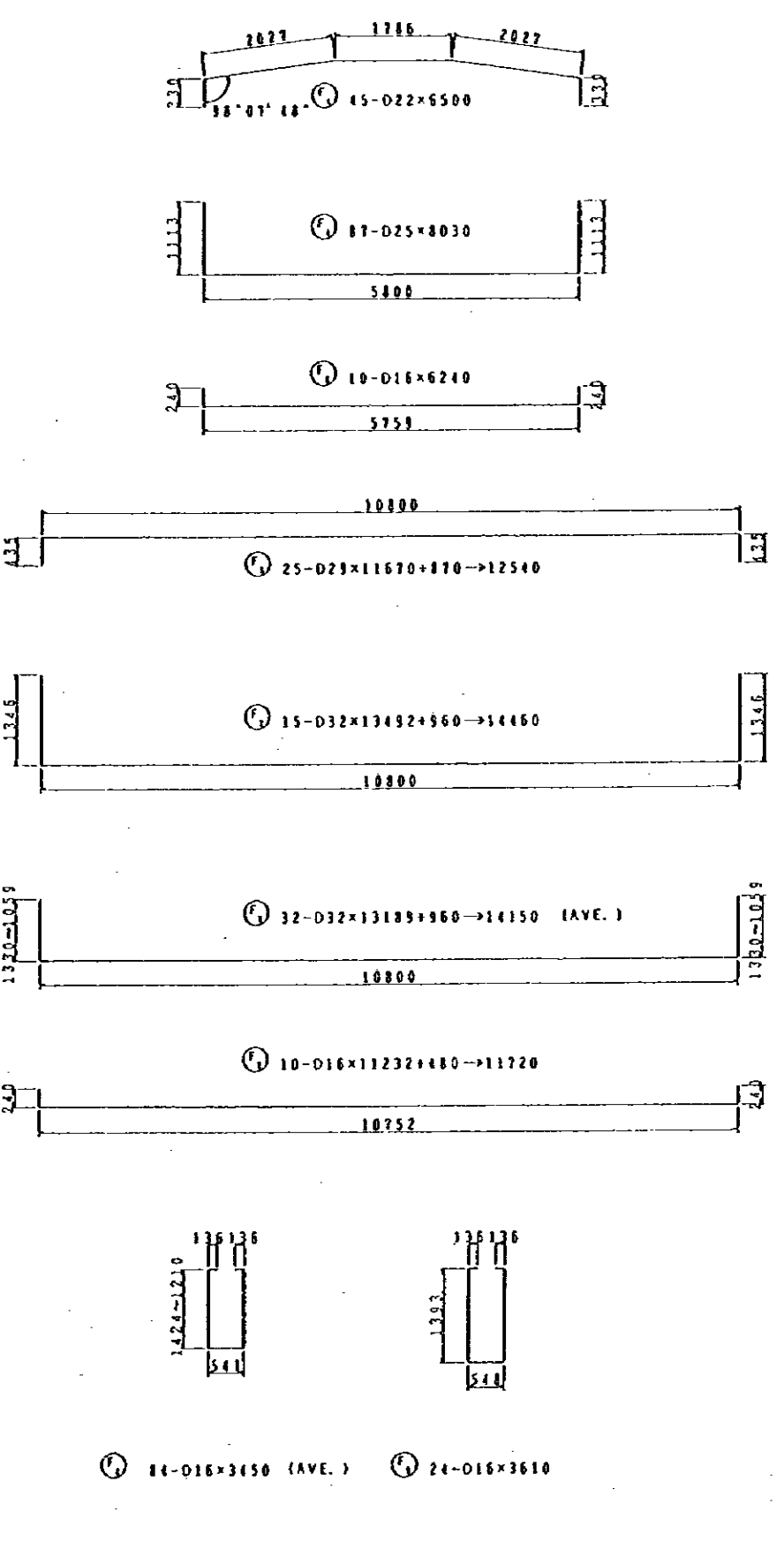
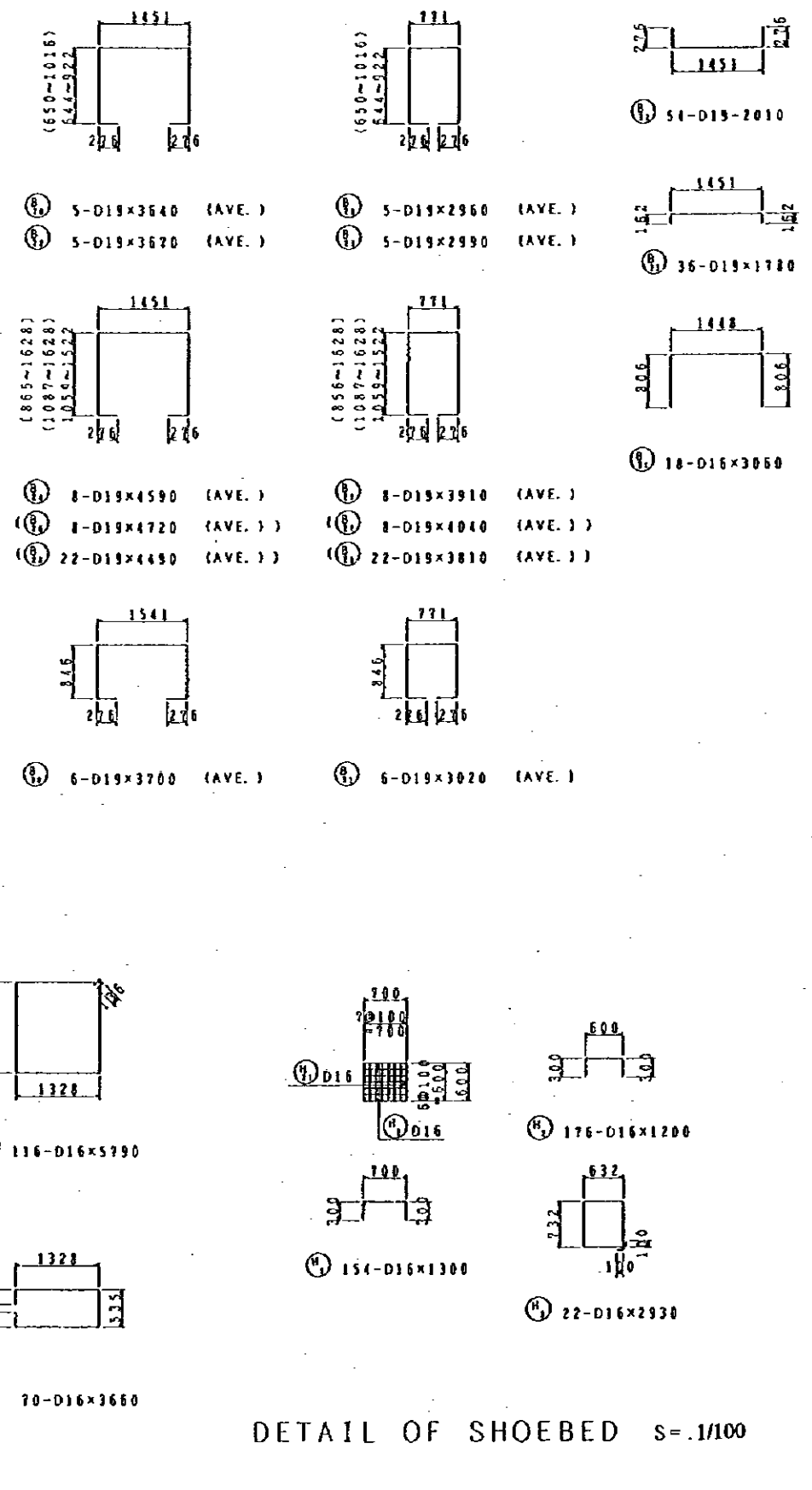
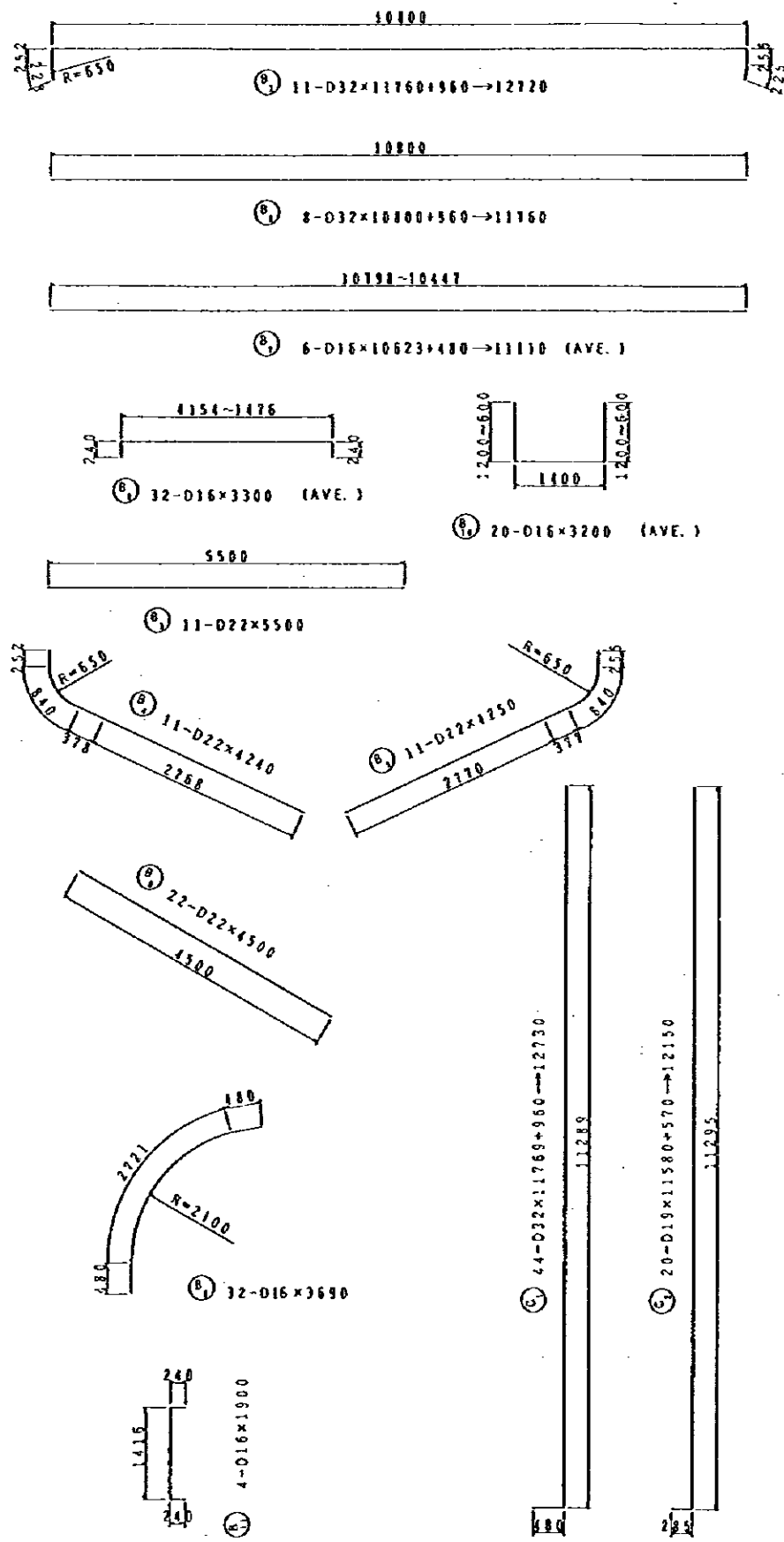
RE-BAR ARRANGEMENT OF A2 ABUTMENT AT A·B-LINE (1/3)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RE-BAR ARRANGEMENT OF A2 ABUTMENT AT A·B-LINE (1/3)
DATE: _____
DWGNO. B-35

RA/5 AL MULADDAH

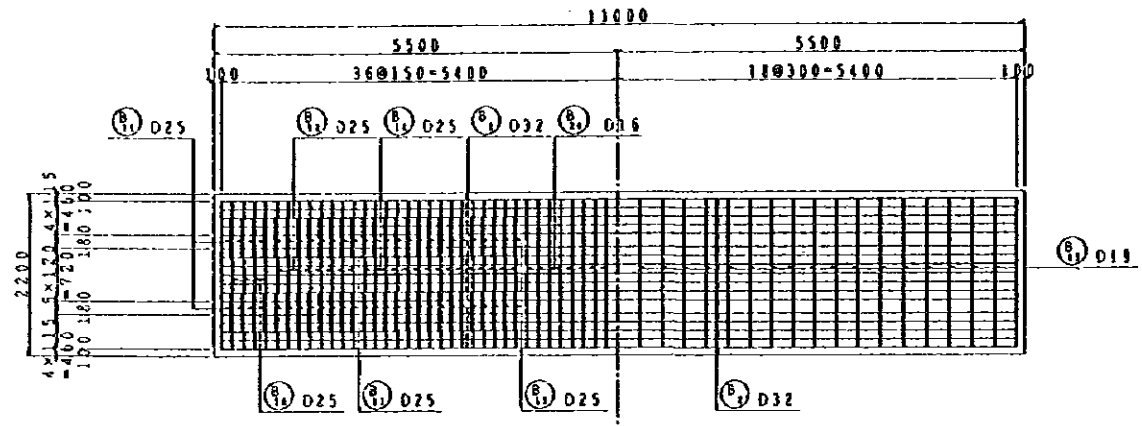


DETAIL OF SHOEBED S=.1/100

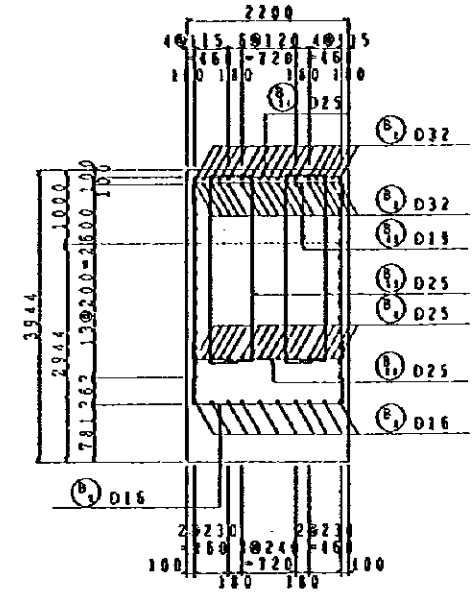
RE-BAR ARRANGEMENT OF TWO-COLUMN PIER FOR P3~P8 AT A,B-LINE (2/2)

NOTES:	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
		TITLE RE-BAR ARRANGEMENT OF TWO-COLUMN PIER(P3~P8) AT A,B-LINE (2/2)
		DATE _____ DWGNO. _____ B-39

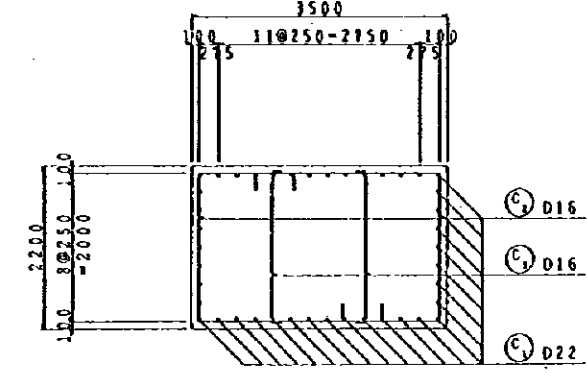
RA/4 AL MULADDAH



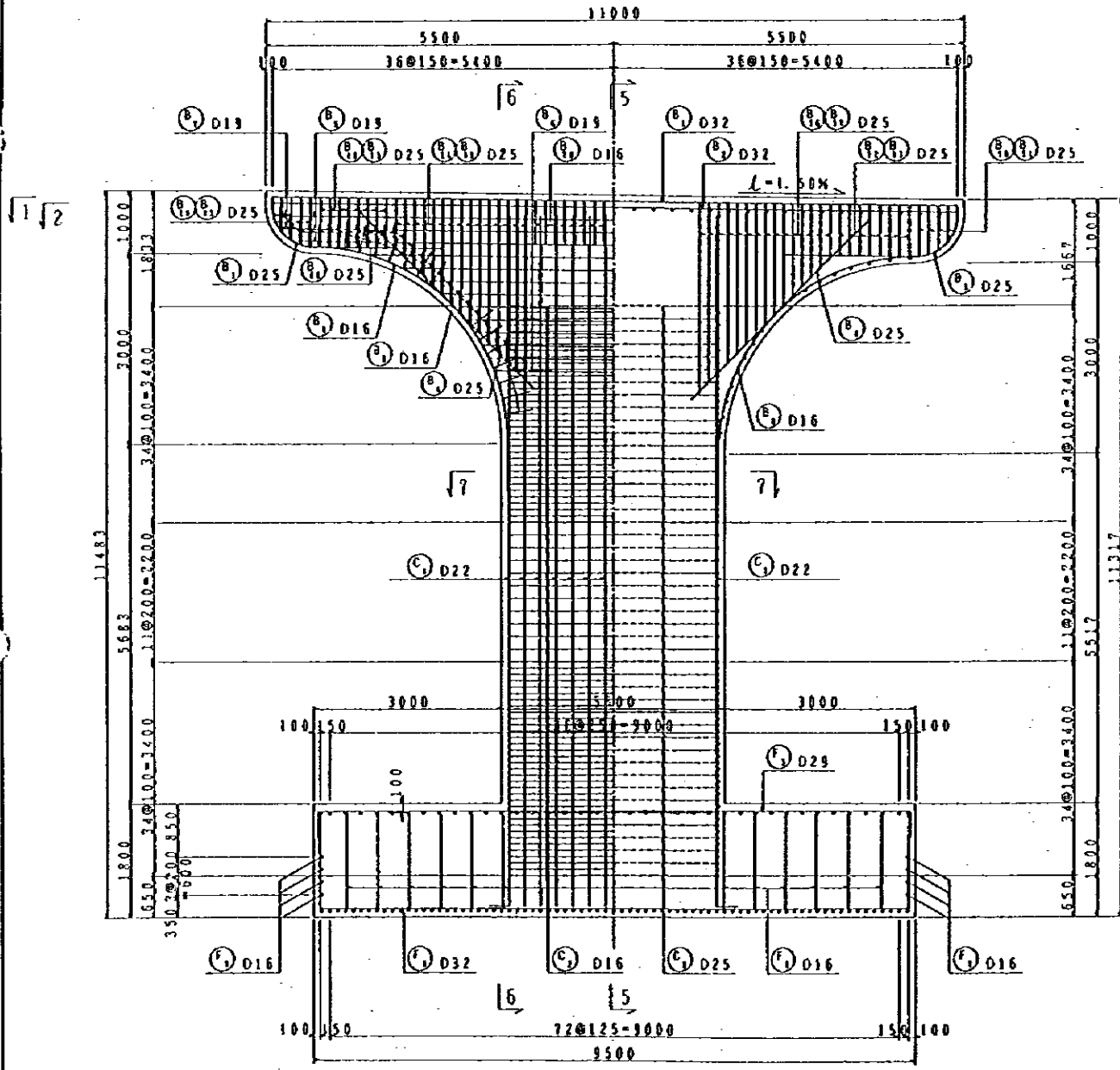
SECTION 1 - 1 S= 1/100 SECTION 2 - 2 S= 1/100



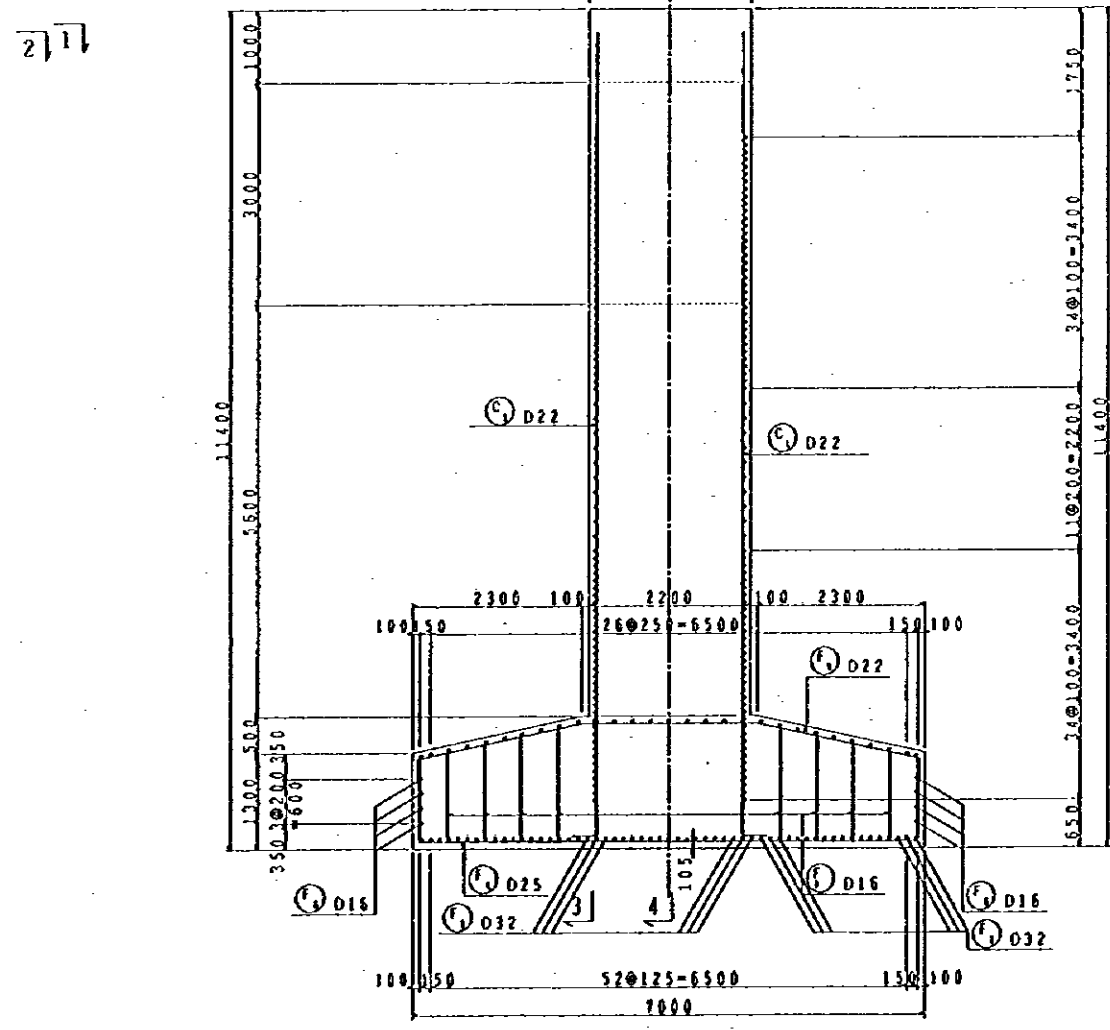
SECTION 6 - 6 S= 1/100



SECTION 7 - 7 S= 1/100



SECTION 3 - 3 S= 1/100 SECTION 4 - 4 S= 1/100

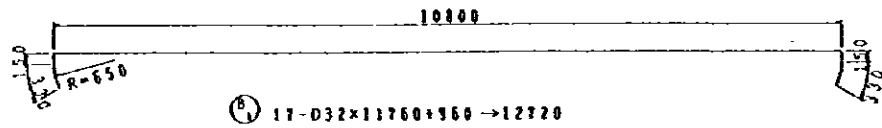


SECTION 5 - 5 S= 1/100

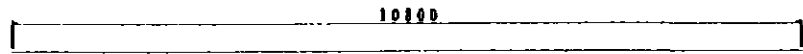
RE-BARARRANGEMENT OF T-WALL PIER FOR P1,P2,P9,P10 AT A,B-LINE (1/2)

NOTES:	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
		TITLE RE-BAR ARRANGEMENT OF T-WALL PIER(P1,P2,P9,P10) AT A,B-LINE (1/2)
		DATE _____ DWGNO. B-40

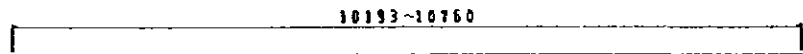
RA/5 AL MULADDAH



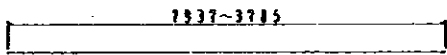
17-D32x11760+960-12720



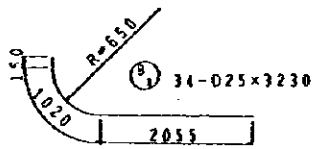
17-D32x10800+960-11760



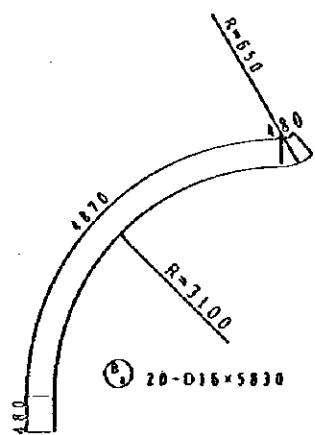
6-D19x10477+570-11050 (AVE.)



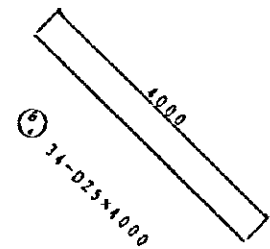
20-D19x5870 (AVE.)



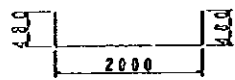
34-D25x3230



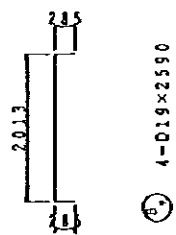
20-D16x5830



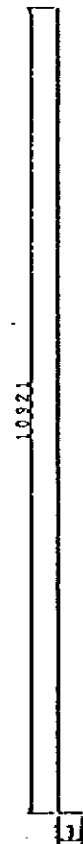
31-D25x4000



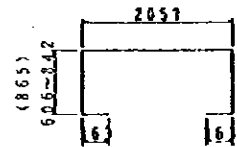
28-D16x2960



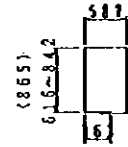
4-D19x2550



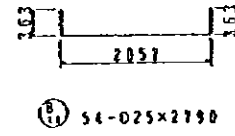
42-D22x11206+570-11780



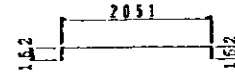
8-D25x4257 (AVE.)
16-D25x4520



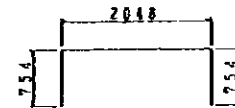
16-D25x2790 (AVE.)
32-D25x3050



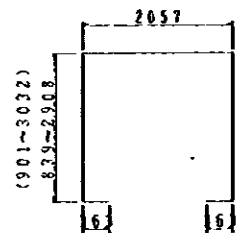
54-D25x2790



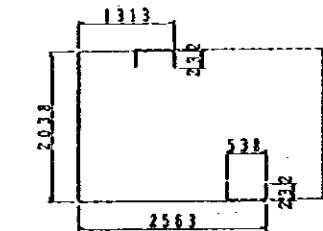
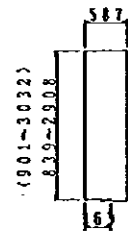
35-D19x2380



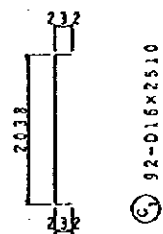
11-D16x3560



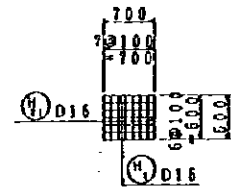
15-D25x6530 (AVE.) 30-D25x5060 (AVE.)
15-D25x6720 (AVE.) 30-D25x5250 (AVE.)



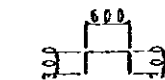
160-D16x6380



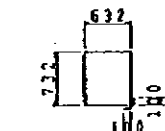
92-D16x2510



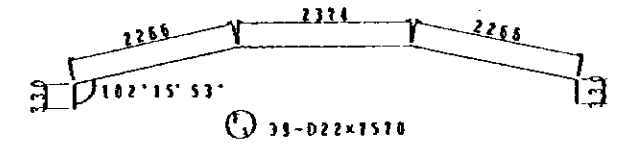
154-D16x1300



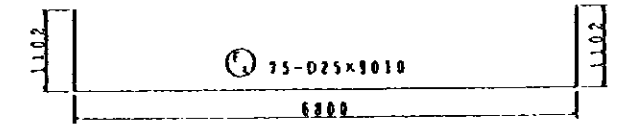
176-D16x1200



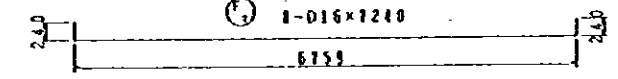
22-D16x2930



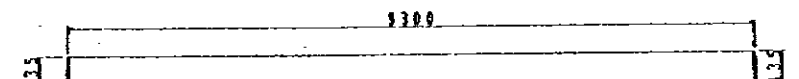
39-D22x1570



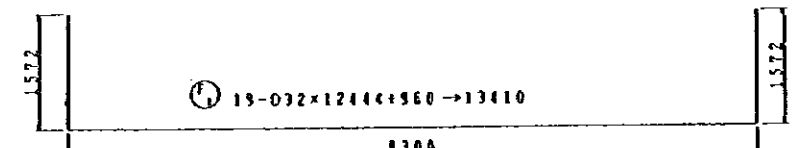
75-D25x9010



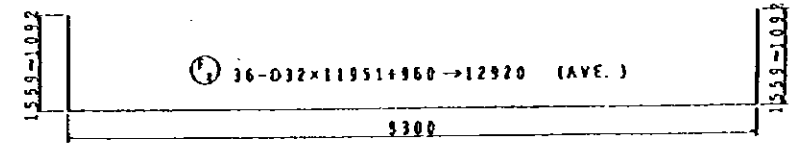
8-D16x1240



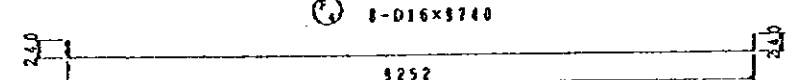
29-D29x10170+870-11040



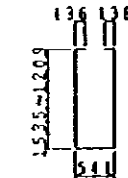
19-D32x12444+960-13410



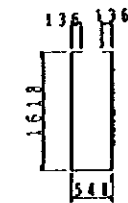
36-D32x11951+960-12920 (AVE.)



8-D16x9740



68-D16x3560 (AVE.)



16-D16x4060

DETAIL OF SHOEBED S=1/100

RE-BAR ARRANGEMENT OF T-WALL PIER FOR P1,P2,P9,P10 AT A,B-LINE (2/2)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

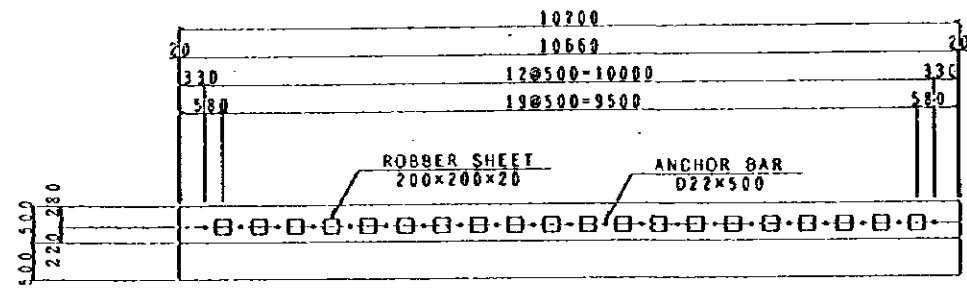
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

TITLE RE-BAR ARRANGEMENT OF T-WALL PIER(P1,P2,P9,P10) AT A,B-LINE (2/2)

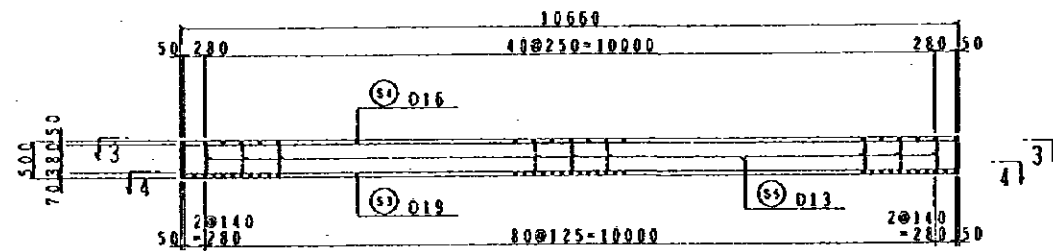
DATE

DWGNO.

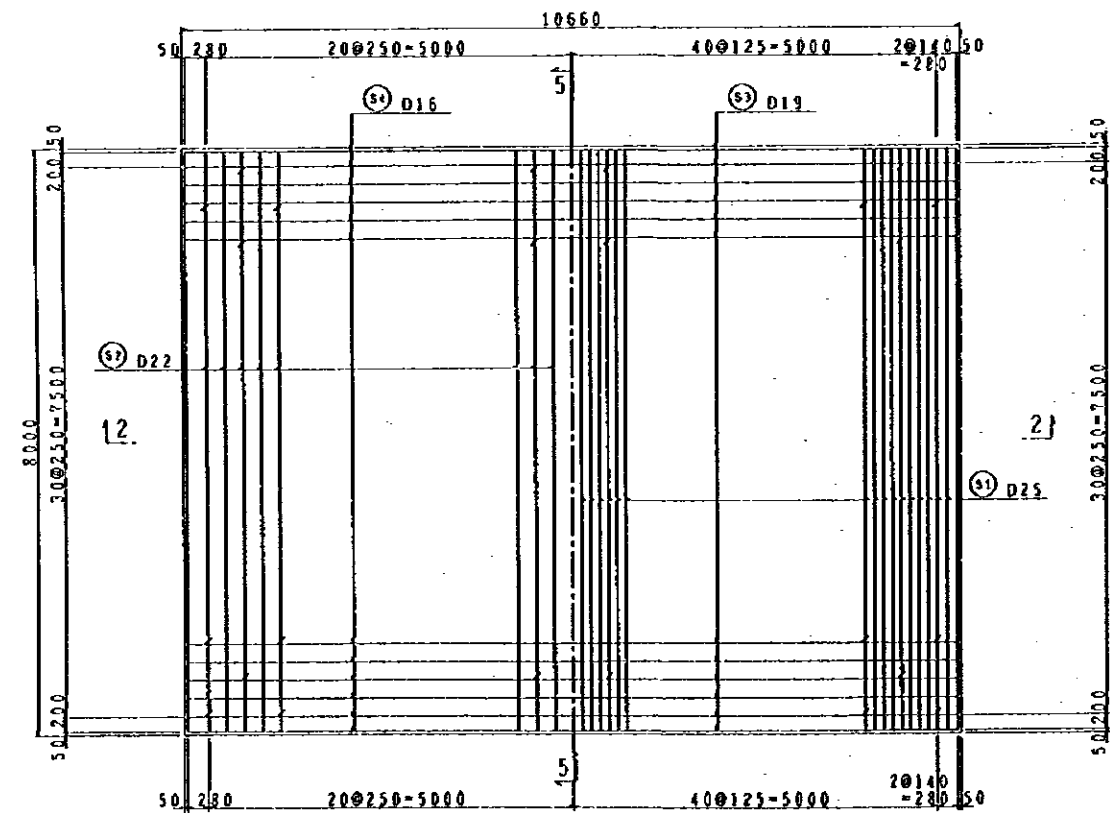
B-41



SECTION 1-1 S=1/100

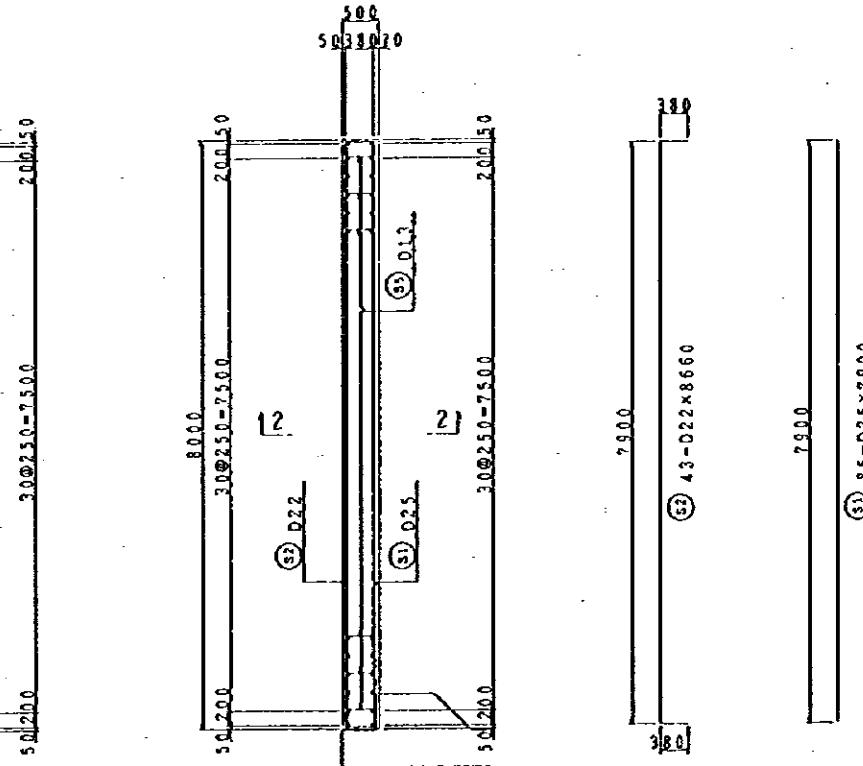


SECTION 2-2 S=1/100

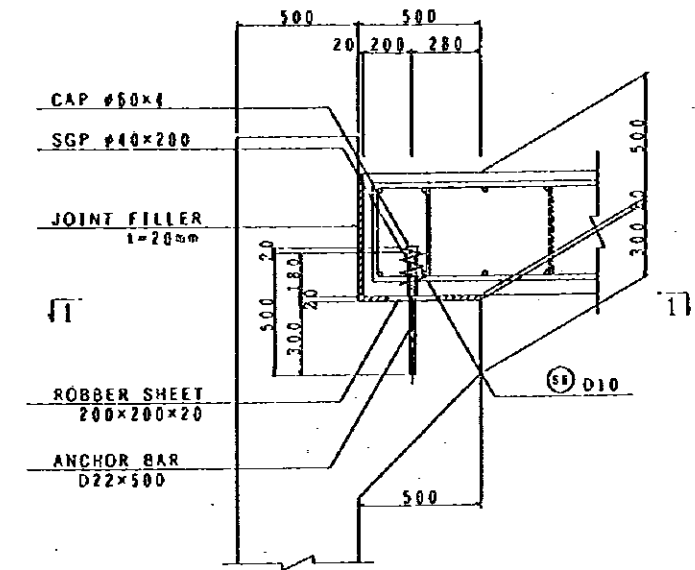
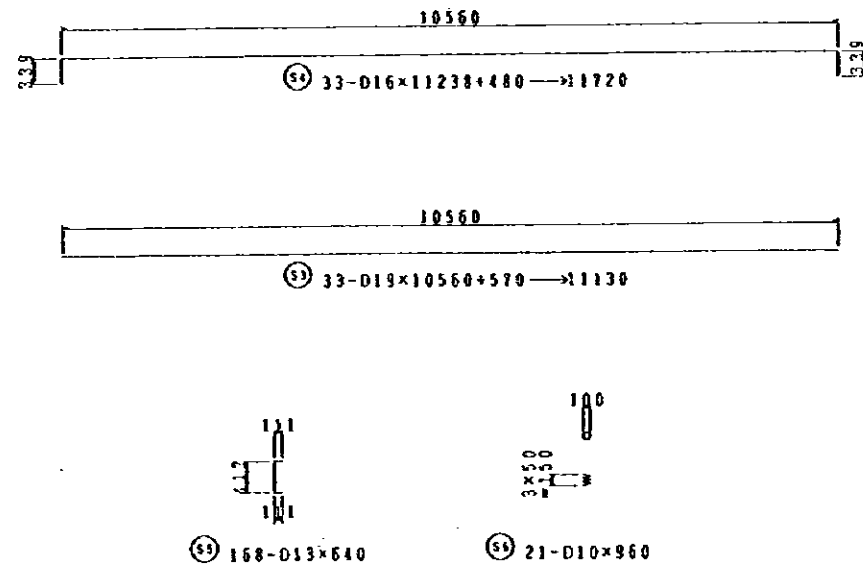


SECTION 3-3 S=1/100

SECTION 4-4 S=1/100



SECTION 5-5 S=1/100



PLAN S=1/30

RE-BAR ARRANGEMENT OF APPROACH SLAB

NOTES:

This drawing shows one approach slab. This is applied for all 4 abutments. So the total number of approach slabs are 4.


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CLIENT:	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT:	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE:	RE-BAR ARRANGEMENT OF APPROACH SLAB
DATE:	DWGNO. B-42

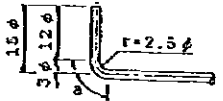
BAR BENDING DIAGRAM

LAP JOINT LENGTH


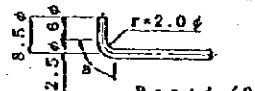
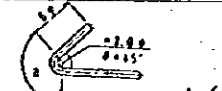
φ	a	LAP JOINT LENGTH
D13	390	
D16	480	
D19	570	
D22	660	
D25	750	
D29	870	
D32	960	

	JAPAN		OMAN	
	CROSS-SECTIONAL AREA (cm ²)	NOMINAL WEIGHT (kg/m)	CROSS-SECTIONAL AREA (cm ²)	NOMINAL WEIGHT (kg/m)
D13	1.297	0.995	1.290	0.994
D16	1.988	1.56	2.000	1.552
D19	2.865	2.25	2.839	2.235
D22	3.871	3.04	3.871	3.042
D25	5.067	3.98	5.037	3.973
D29	6.424	5.01	6.452	5.059
D32	7.912	6.23	8.194	6.403

BENDING DIMENSION (MAIN REINFORCEMENT)

φ	HOOK LENGTH		
	θ ≤ 90° R = 3φ	θ > 90° R = 5.5φ	
D13	39	71.5	$R = r + \phi / 2$
D16	48	88	
D19	57	104.5	
D22	66	121	
D25	75	137.5	
D29	87	159.5	
D32	96	176	

BENDING DIMENSION (STIRRUP, ERECTION BAR)

φ	θ = 90° θ = 45°			HOOK LENGTH		
	R = 2.5φ	a	a	STIRRUP	ERECTION BAR	HOOP
D13	32.5	51	77			
D16	40	63	94			
D19	47.5	75	112			
D22	55	86	130			

NOTES:

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CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE	BAR BENDING DIAGRAM
DATE	DWGNO. B-43