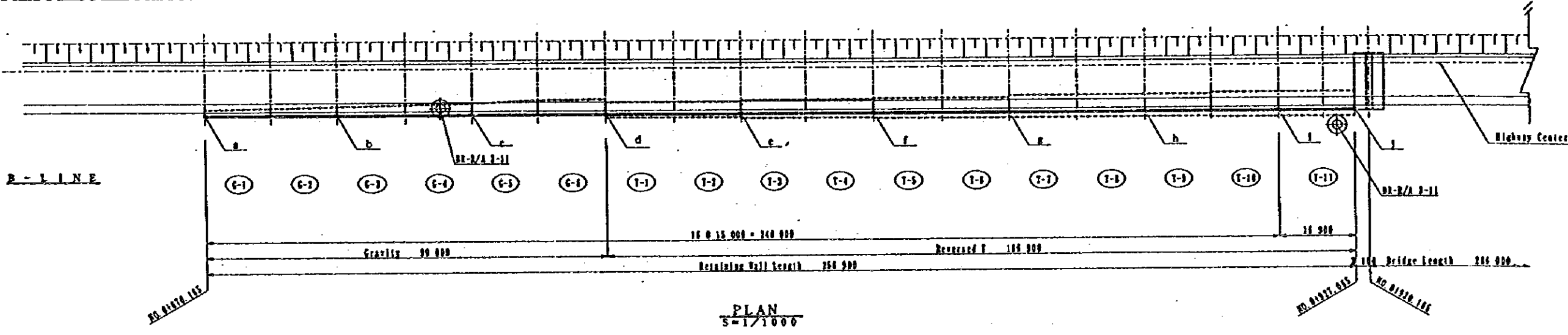
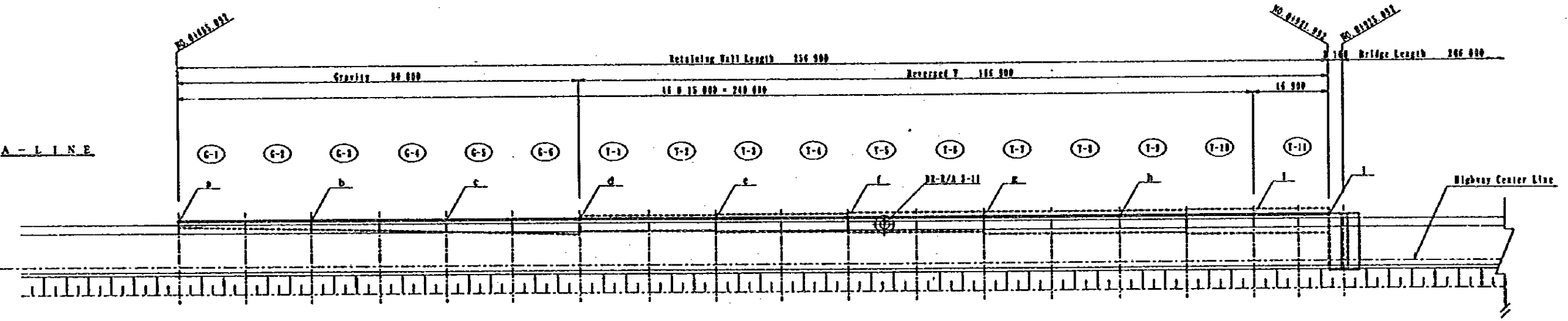
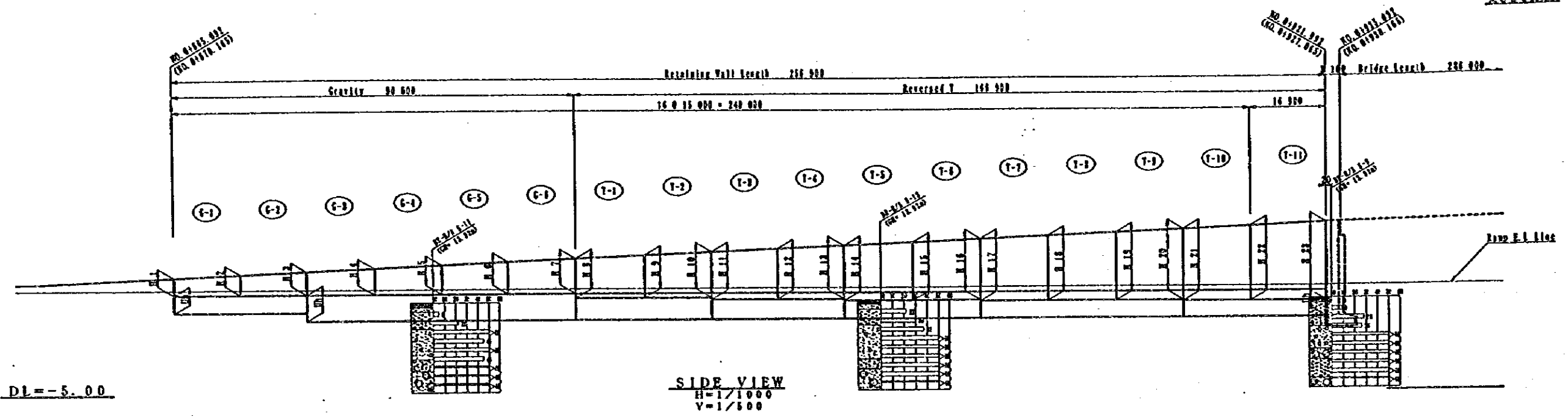


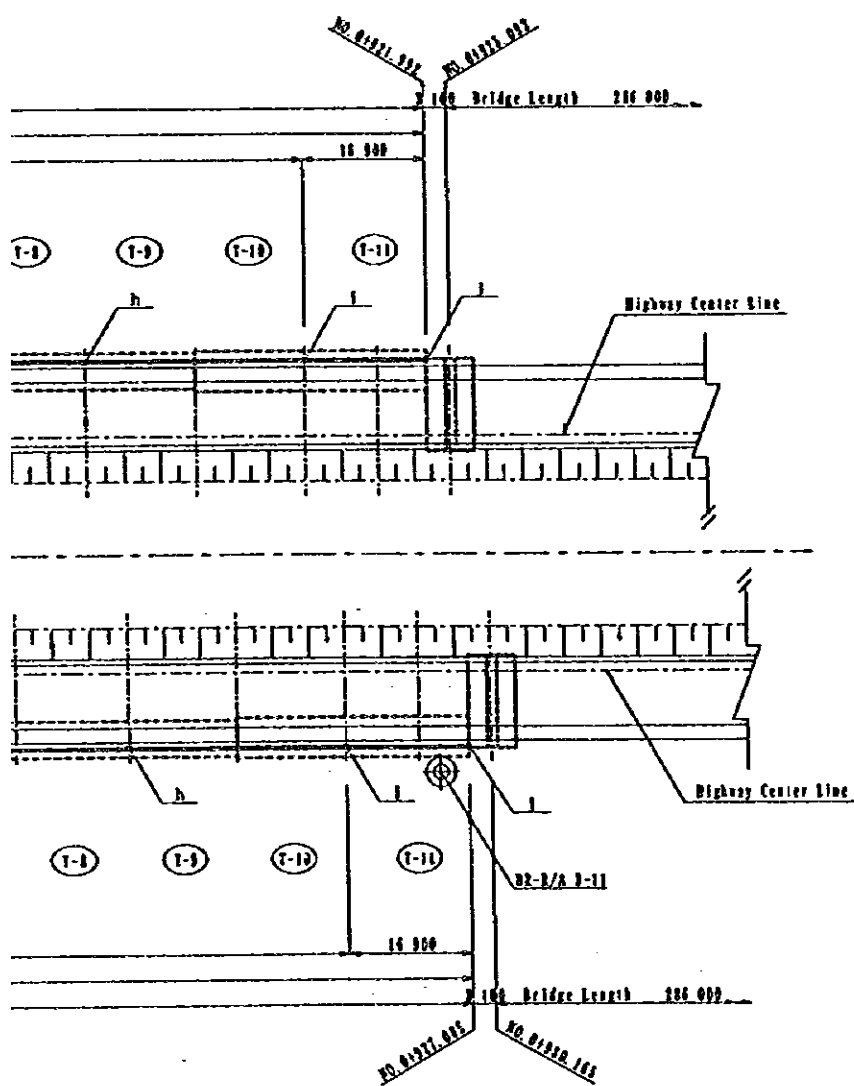
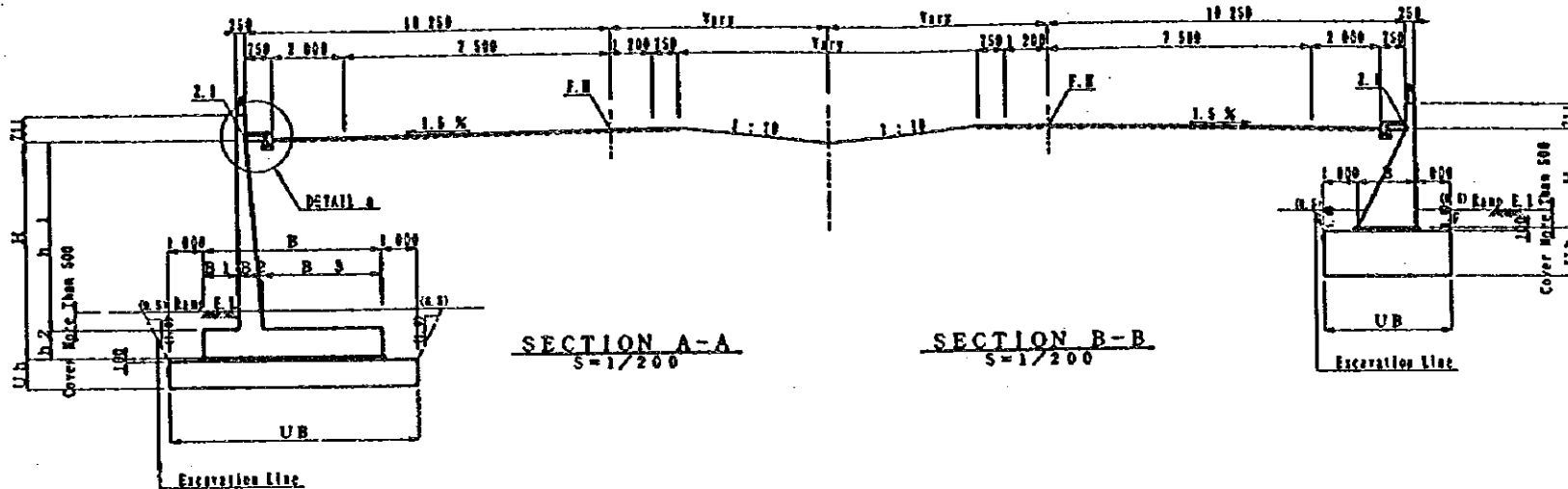
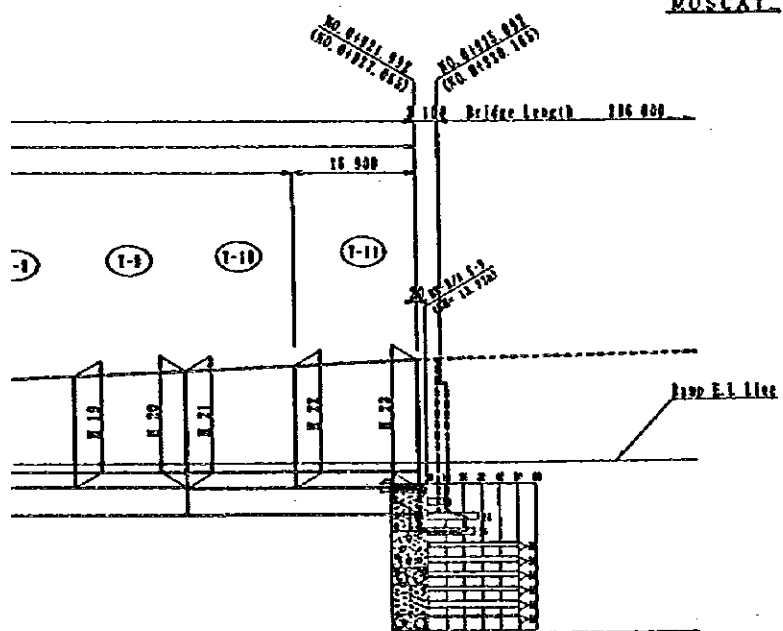
STRUCTURE
-RETAINING WALL



PLAN
S=1/1000

NOTES:

MUSCAT

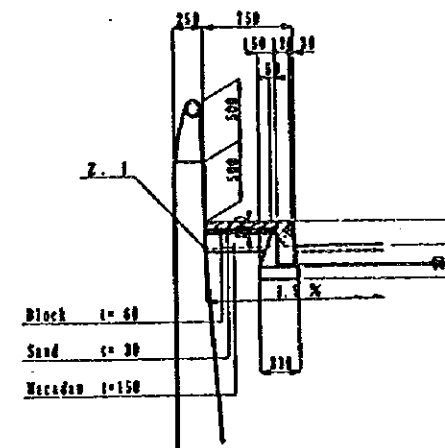


Reversed T

MARK TYPE	H	h 1	h 2	B	B 1	B 2	B 3	U h	U B	
A I L I N E	T-1	8-4 069	3 569	500	3 500	600	448	2 452	2 400	6 500
	T-2	9-4 507	4 007				473	2 427		
	T-3	10-4 944	4 444				497	2 403		
	T-4	11-5 144	4 844	700	4 000	800	543	2 657	2 200	6 000
	T-5	12-5 546	4 846				570	2 630		
	T-6	13-5 948	5 248				597	2 603		
	T-7	14-6 148	5 608	900	4 500	1 000	637	2 863	2 000	6 500
	T-8	15-6 505	5 605				663	2 837		
	T-9	16-6 862	5 962				690	2 810		
	T-10	17-6 962	6 962	1 000	6 000	1 000	718	3 282	1 900	7 000
	T-11	18-7 274	6 274				743	3 257		
B I L I N E	T-1	8-4 072	3 572	500	3 500	600	448	2 452	2 400	6 500
	T-2	9-4 510	4 010				473	2 427		
	T-3	10-4 947	4 447				497	2 403		
	T-4	11-5 147	4 847	700	4 000	800	544	2 656	2 200	6 000
	T-5	12-5 549	4 849				570	2 630		
	T-6	13-5 951	5 251				597	2 603		
	T-7	14-6 151	5 611	900	4 500	1 000	637	2 863	2 000	6 500
	T-8	15-6 508	5 608				664	2 836		
	T-9	16-6 865	5 965				690	2 810		
	T-10	17-6 965	6 965	1 000	6 000	1 000	719	3 281	1 900	7 000
	T-11	18-7 277	6 277				743	3 257		
C A L C U L A T I O N	T-1	8-4 072	3 572	500	3 500	600	448	2 452	2 400	6 500
	T-2	9-4 510	4 010				473	2 427		
	T-3	10-4 947	4 447				497	2 403		
	T-4	11-5 147	4 847	700	4 000	800	544	2 656	2 200	6 000
	T-5	12-5 549	4 849				570	2 630		
	T-6	13-5 951	5 251				597	2 603		
	T-7	14-6 151	5 611	900	4 500	1 000	637	2 863	2 000	6 500
	T-8	15-6 508	5 608				664	2 836		
	T-9	16-6 865	5 965				690	2 810		
	T-10	17-6 965	6 965	1 000	6 000	1 000	719	3 281	1 900	7 000
	T-11	18-7 277	6 277				743	3 257		

Gravity

MARK TYPE	H	B	U h	U B	
A I L I N E	G-1	8-1 546	1 236	2 000	3 236
	G-2	1-1 825	1 413		3 413
	G-3	1-2 104	1 591	2 900	3 591
	G-4	4-2 441	1 806		3 806
	G-5	5-2 778	2 021		4 023
	G-6	6-3 174	2 213		4 273
B I L I N E	G-1	1-1 549	1 237	2 000	3 237
	G-2	2-1 828	1 415		3 415
	G-3	3-2 107	1 593	2 900	3 593
	G-4	4-2 444	1 808		3 808
	G-5	5-2 781	2 023		4 023
	G-6	6-3 177	2 275		4 275



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUJUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-5, AL MULADDAH GENERAL VIEW FOR WALL (1)-1

DATE : DTG NO. W-1

Point	a	b	c	d	e	f	g	h	i	j	
A L I N E	N	+2627123.64909	+2627128.56462	+2627133.48015	+2627138.39568	+2627143.31120	+2627148.22673	+2627153.14226	+2627158.05778	+2627162.97331	+2627166.25033
	E	+558352.91179	+558382.50634	+558412.10090	+558441.69545	+558471.29000	+558500.88456	+558530.47911	+558560.07366	+558589.66822	+558609.39792
	Z	7.690	8.248	8.922	9.713	10.588	11.392	12.106	12.730	13.264	13.570
B L I N E	N	+2627095.13917	+2627100.05470	+2627104.97022	+2627109.88575	+2627114.80128	+2627119.71681	+2627124.63234	+2627129.54786	+2627134.46339	+2627137.74041
	E	+558357.64414	+558387.23869	+558416.83325	+558446.42780	+558476.02235	+558505.61691	+558535.21146	+558564.80601	+558594.40057	+558614.13027
	Z	7.690	8.248	8.922	9.713	10.588	11.392	12.106	12.730	13.264	13.570

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

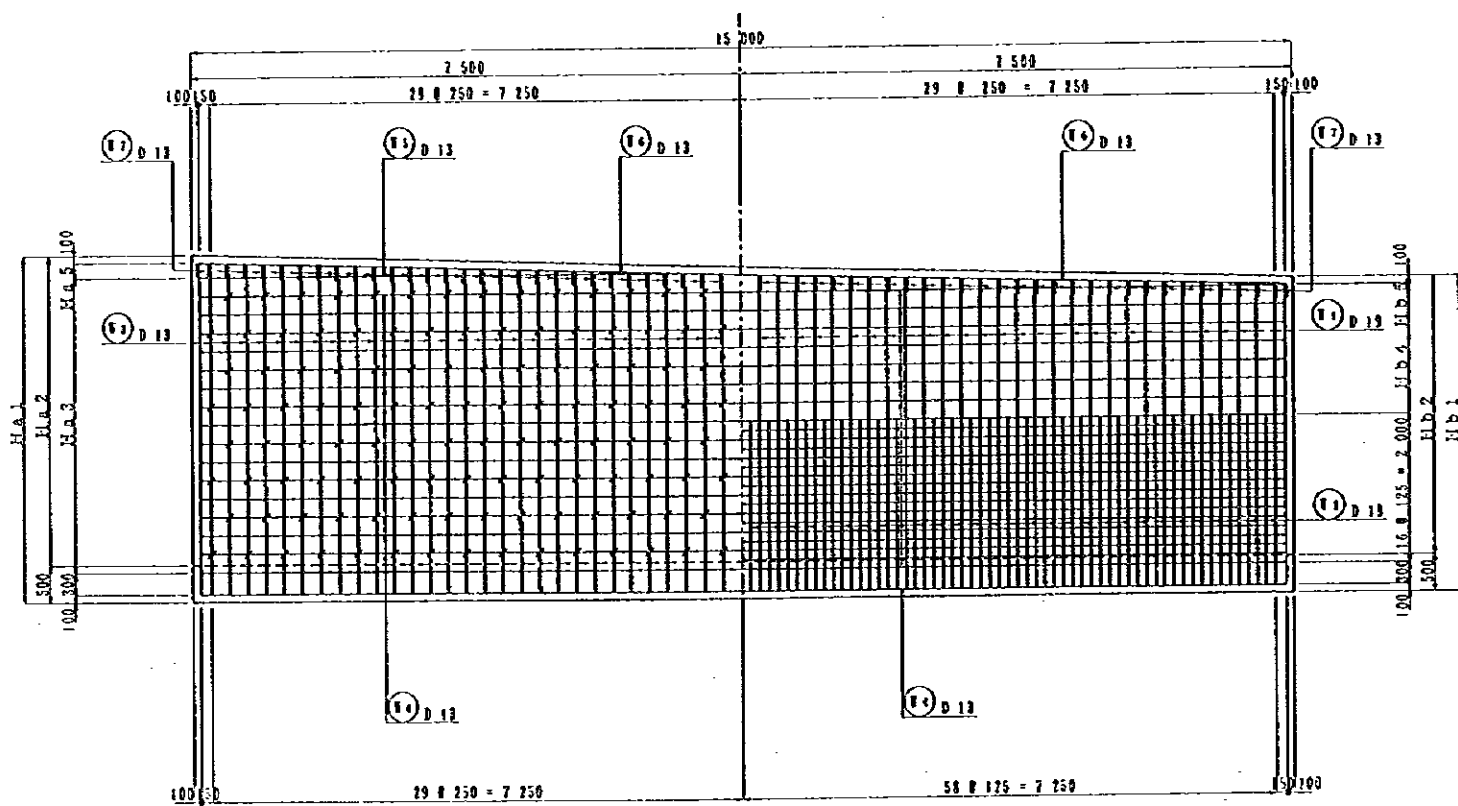
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

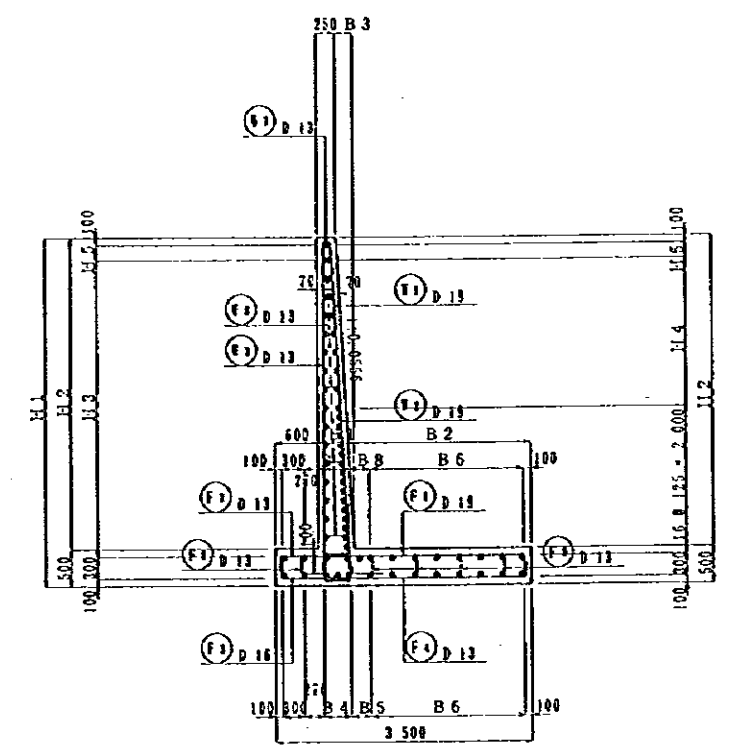
TITLE : P/U-5, AL MULADDAH GENERAL VIEW FOR WALL (1)-2

DATE

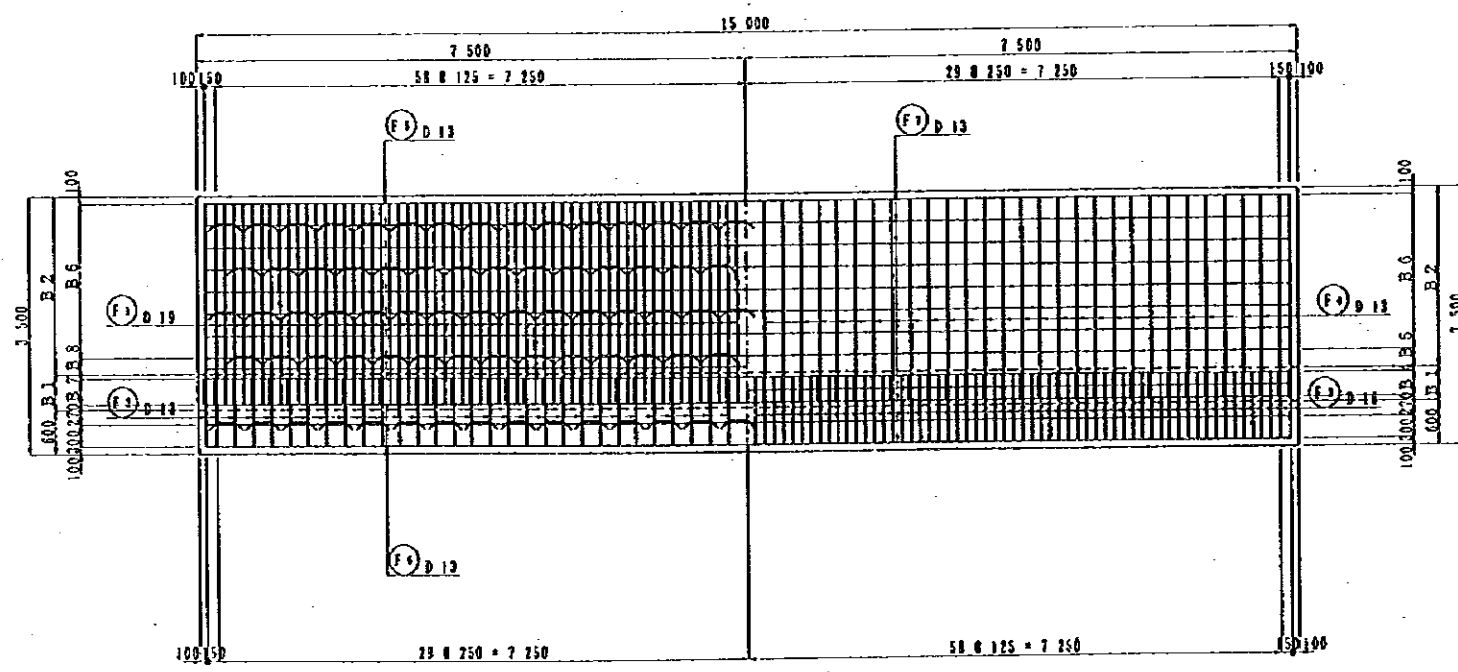
DTG NO. W-2



SIDE VIEW
S=1/100



SECTION
S=1/100

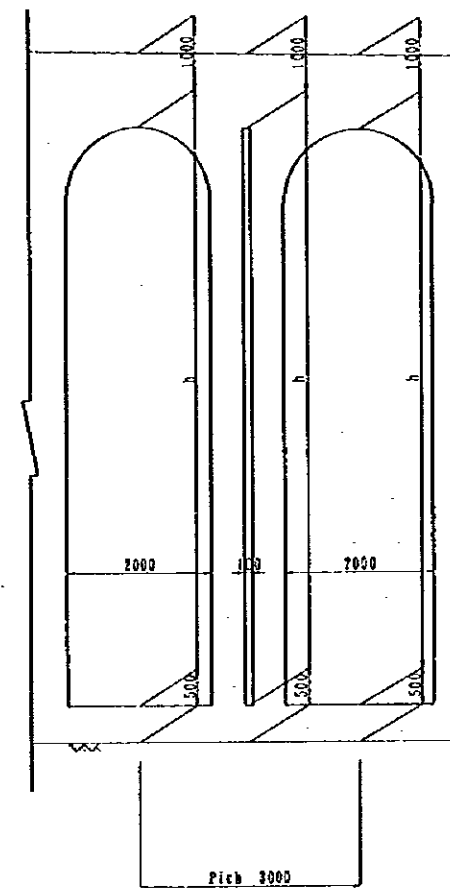


PLAN
S=1/100

NOTES:	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUJUKAWA CONSULTANTS INTERNATIONAL	PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
		TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (1)
		DATE : _____ DWG NO. W-3

A L I N E	T-1				T-2			
	a - a		b - b		a - a		b - b	
	Ha1	4 069	Hb1	4 507	Ha1	4 507	Hb1	4 944
Ha2	3 569	Hb2	4 007	Ha2	4 007	Hb2	4 444	
Ha3	14@250 = 3 500	Hb3	15@250 = 3 750	Ha3	16@250 = 4 000	Hb3	17@250 = 4 250	
Ha4	6@250 = 1 500	Hb4	7@250 = 1 750	Ha4	8@250 = 2 000	Hb4	9@250 = 2 250	
Ha5	69	Hb5	2@125.5 = 257	Ha5	7	Hb5	194	
Ba1	448	Bb1	472	Ba1	472	Bb1	497	
Ba2	2 452	Bb2	2 428	Ba2	2 428	Bb2	2 403	
Ba3	198	Bb3	222	Ba3	222	Bb3	247	
Ba4	2@165 = 330	Bb4	2@177.5 = 355	Ba4	2@177.5 = 355	Bb4	2@189.5 = 379	
Ba5	300	Bb5	276	Ba5	276	Bb5	251	
Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	
Ba7	313	Bb7	338	Ba7	338	Bb7	362	
Ba8	2@158.5 = 317	Bb8	2@146.5 = 293	Ba8	293	Bb8	268	

B L I N E	T-1				T-2			
	a - a		b - b		a - a		b - b	
	Ha1	4 072	Hb1	4 510	Ha1	4 510	Hb1	4 947
Ha2	3 572	Hb2	4 010	Ha2	4 010	Hb2	4 447	
Ha3	14@250 = 3 500	Hb3	15@250 = 3 750	Ha3	16@250 = 4 000	Hb3	17@250 = 4 250	
Ha4	6@250 = 1 500	Hb4	7@250 = 1 750	Ha4	8@250 = 2 000	Hb4	9@250 = 2 250	
Ha5	72	Hb5	2@130 = 260	Ha5	10	Hb5	197	
Ba1	448	Bb1	473	Ba1	473	Bb1	497	
Ba2	2 452	Bb2	2 427	Ba2	2 427	Bb2	2 403	
Ba3	198	Bb3	223	Ba3	223	Bb3	247	
Ba4	2@165 = 330	Bb4	2@177 = 354	Ba4	2@177 = 354	Bb4	2@189.5 = 379	
Ba5	300	Bb5	276	Ba5	276	Bb5	251	
Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	
Ba7	313	Bb7	338	Ba7	338	Bb7	362	
Ba8	2@158.5 = 317	Bb8	2@146 = 292	Ba8	292	Bb8	268	



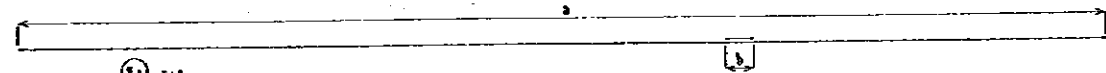
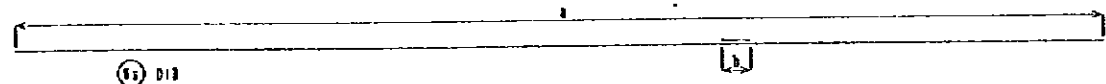
Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

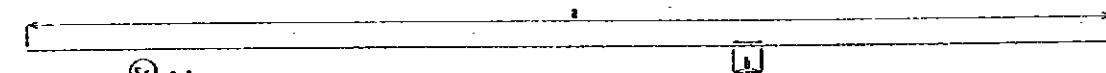
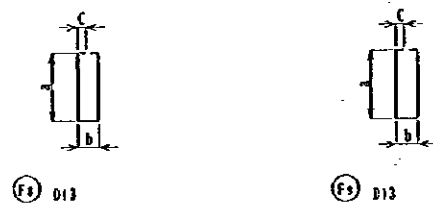
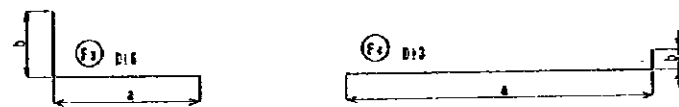
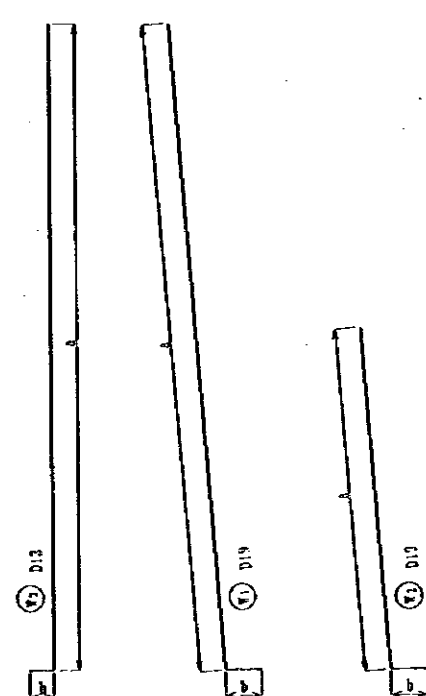
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

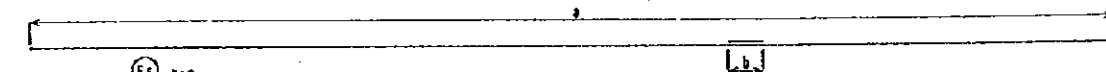
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (2)
DATE : _____ DWG NO. W-4



(E3) D13
(E4) D13



(E6) D13
(E7) D13



(E8) D13

REIN NO.	φ (mm)	LENGTE (mm)	a	b	c
T 1					
1	D 13	4 330	4 314~3 875	285	---
2	"	2 590	2 304	285	---
3	D 13	4 290	4 307~3 869	195	---
4	"	15 190	14 800	390	---
5	"	6 610	4 401~3 801	---	---
6	"	15 200	14 806	390	---
7	"	500	110	195	---
8	"	500	353~187	111	---
F 1	D 13	3 270	2 963	300	---
2	D 13	1 110	908	195	---
3	D 16	1 350	1 050	300	---
4	D 13	2 930	2 730	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 160	328	279	111
9	"	1 170	329	281	111
T 2					
1	D 13	4 820	4 751~4 314	285	---
2	"	2 590	2 304	285	---
3	D 13	4 790	4 744~4 307	195	---
4	"	15 190	14 800	390	---
5	"	6 680	6 653	---	---
6	"	15 200	14 806	390	---
7	"	500	110	195	---
8	"	510	377~183	111	---
F 1	D 13	3 240	2 938	300	---
2	D 13	1 130	932	195	---
3	D 16	1 350	1 050	300	---
4	D 13	2 930	2 730	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 160	328	279	111
9	"	1 170	329	281	111

REIN NO.	φ (mm)	LENGTE (mm)	a	b	c
T 1					
1	D 13	4 330	4 317~3 878	285	---
2	"	2 590	2 304	285	---
3	D 13	4 290	4 310~3 872	195	---
4	"	15 190	14 800	390	---
5	"	6 680	4 452~3 904	---	---
6	"	15 200	14 806	390	---
7	"	500	110	195	---
8	"	500	353~187	111	---
F 1	D 13	3 270	2 962	300	---
2	D 13	1 110	908	195	---
3	D 16	1 350	1 050	300	---
4	D 13	2 930	2 730	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 160	328	279	111
9	"	1 170	329	281	111
T 2					
1	D 13	4 830	4 754~4 317	285	---
2	"	2 590	2 304	285	---
3	D 13	4 790	4 747~4 310	195	---
4	"	15 190	14 800	390	---
5	"	6 710	6 743	---	---
6	"	15 200	14 806	390	---
7	"	500	110	195	---
8	"	510	377~183	111	---
F 1	D 13	3 240	2 938	300	---
2	D 13	1 130	932	195	---
3	D 16	1 350	1 050	300	---
4	D 13	2 930	2 730	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 160	328	279	111
9	"	1 170	329	281	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

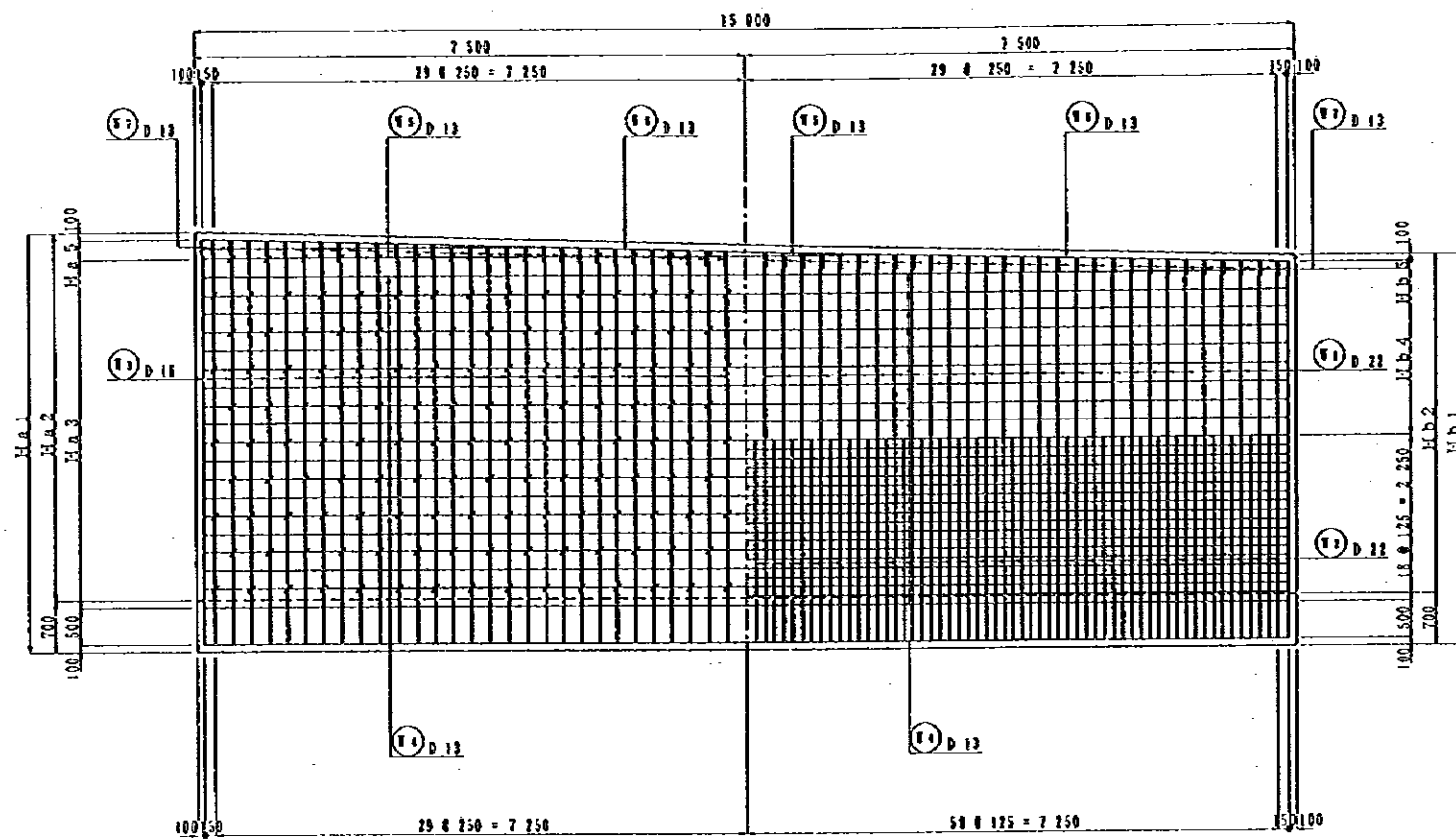
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

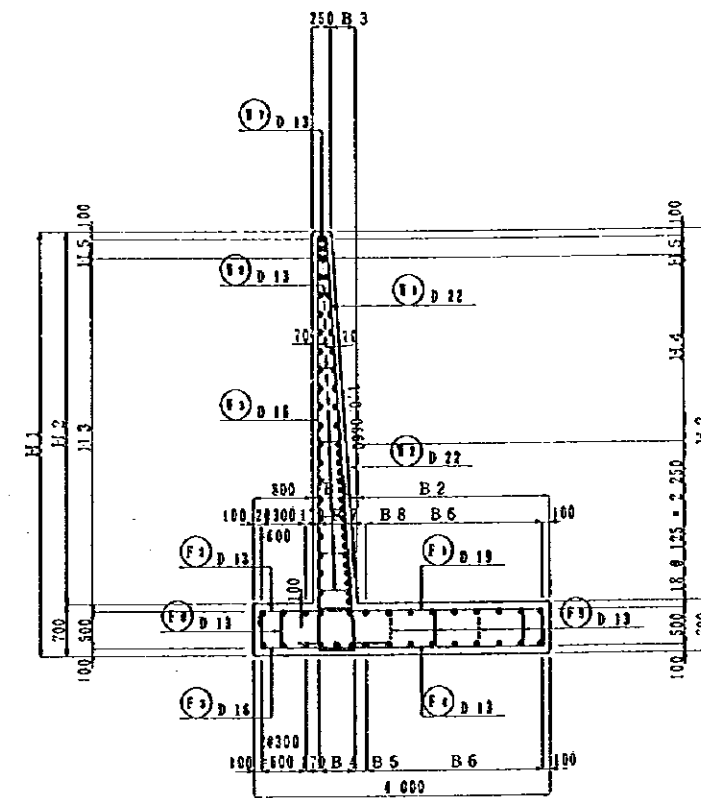
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (3)

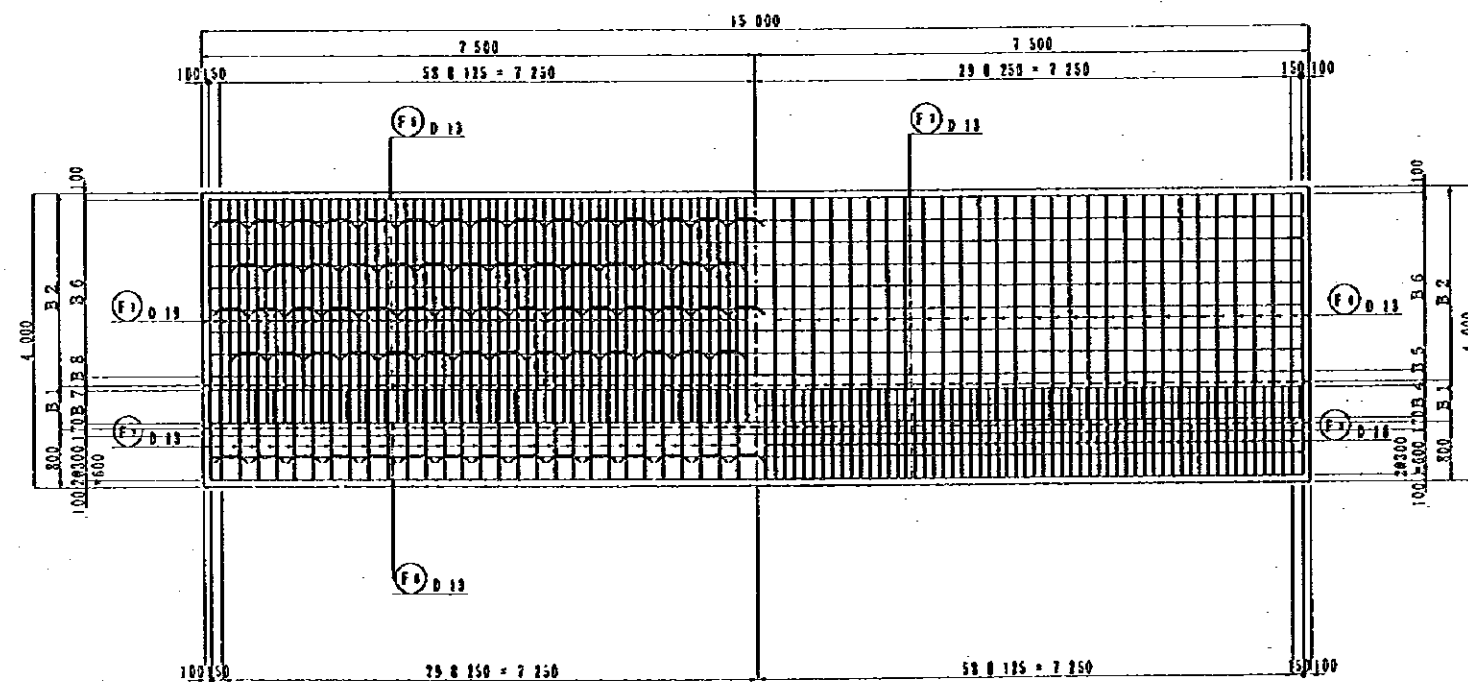
DATE : _____ DWG NO. W-5



SIDE VIEW
S=1/100



SECTION
S=1/100



PLAN
S=1/100

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

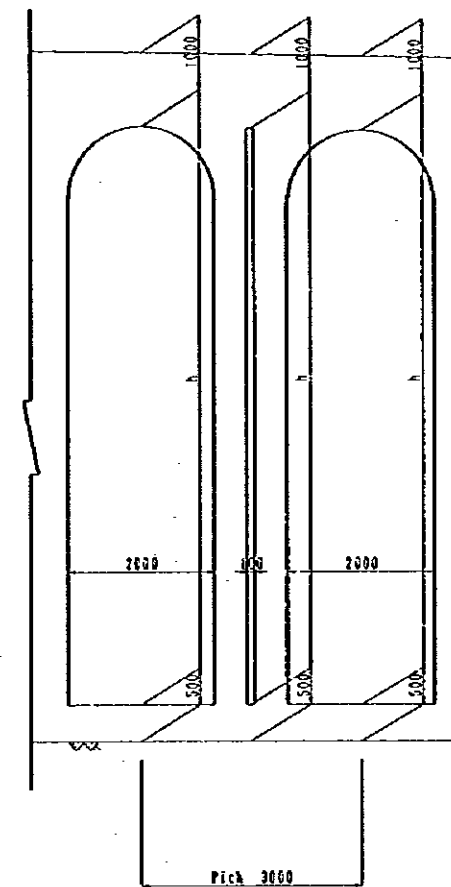
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (4)

DATE

DWG NO. W-6

A L I N E	T-3				T-4				
	a - a		b - b		a - a		b - b		
	Ha	Hb	Ha	Hb	Ha	Hb	Ha	Hb	
Ha1	5 144	Hb1	5 546	Ha1	5 546	Hb1	5 948		
Ha2	4 444	Hb2	4 846	Ha2	4 846	Hb2	5 248		
Ha3	17@250 = 4 250	Hb3	19@250 = 4 750	Ha3	19@250 = 4 750	Hb3	20@250 = 5 000		
Ha4	9@250 = 2 250	Hb4	10@250 = 2 500	Ha4	10@250 = 2 500	Hb4	11@250 = 2 750		
Ha5	194	Hb5	96	Ha5	96	Hb5	248		
Ba1	543	Bb1	570	Ba1	570	Bb1	597		
Ba2	2 657	Bb2	2 630	Ba2	2 630	Bb2	2 603		
Ba3	293	Bb3	320	Ba3	320	Bb3	347		
Ba4	2@221 = 442	Bb4	2@234.5 = 469	Ba4	2@234.5 = 469	Bb4	2@248 = 496		
Ba5	188	Bb5	161	Ba5	161	Bb5	134		
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	Ba6	8@300 = 2 400	Bb6	8@300 = 2 400		
Ba7	409	Bb7	436	Ba7	436	Bb7	463		
Ba8	221	Bb8	194	Ba8	194	Bb8	167		

B L I N E	T-3				T-4				
	a - a		b - b		a - a		b - b		
	Ha	Hb	Ha	Hb	Ha	Hb	Ha	Hb	
Ha1	5 147	Hb1	5 549	Ha1	5 549	Hb1	5 951		
Ha2	4 447	Hb2	4 849	Ha2	4 849	Hb2	5 251		
Ha3	17@250 = 4 250	Hb3	19@250 = 4 750	Ha3	19@250 = 4 750	Hb3	20@250 = 5 000		
Ha4	9@250 = 2 250	Hb4	10@250 = 2 500	Ha4	10@250 = 2 500	Hb4	11@250 = 2 750		
Ha5	197	Hb5	99	Ha5	99	Hb5	2@125.5 = 251		
Ba1	544	Bb1	570	Ba1	570	Bb1	597		
Ba2	2 656	Bb2	2 630	Ba2	2 630	Bb2	2 603		
Ba3	294	Bb3	320	Ba3	320	Bb3	347		
Ba4	2@221.5 = 443	Bb4	2@234.5 = 469	Ba4	2@234.5 = 469	Bb4	2@248 = 496		
Ba5	187	Bb5	161	Ba5	161	Bb5	134		
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	Ba6	8@300 = 2 400	Bb6	8@300 = 2 400		
Ba7	410	Bb7	436	Ba7	436	Bb7	463		
Ba8	220	Bb8	194	Ba8	194	Bb8	167		



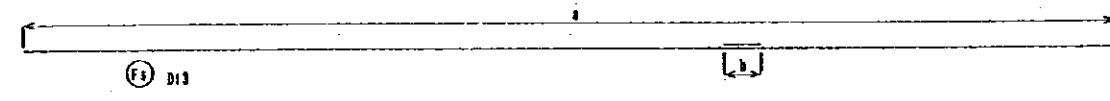
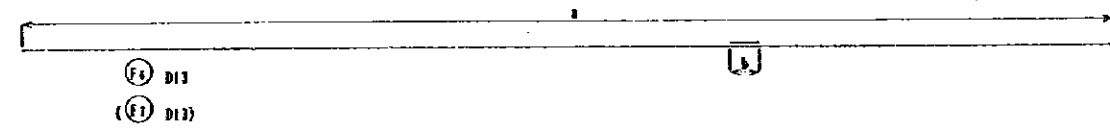
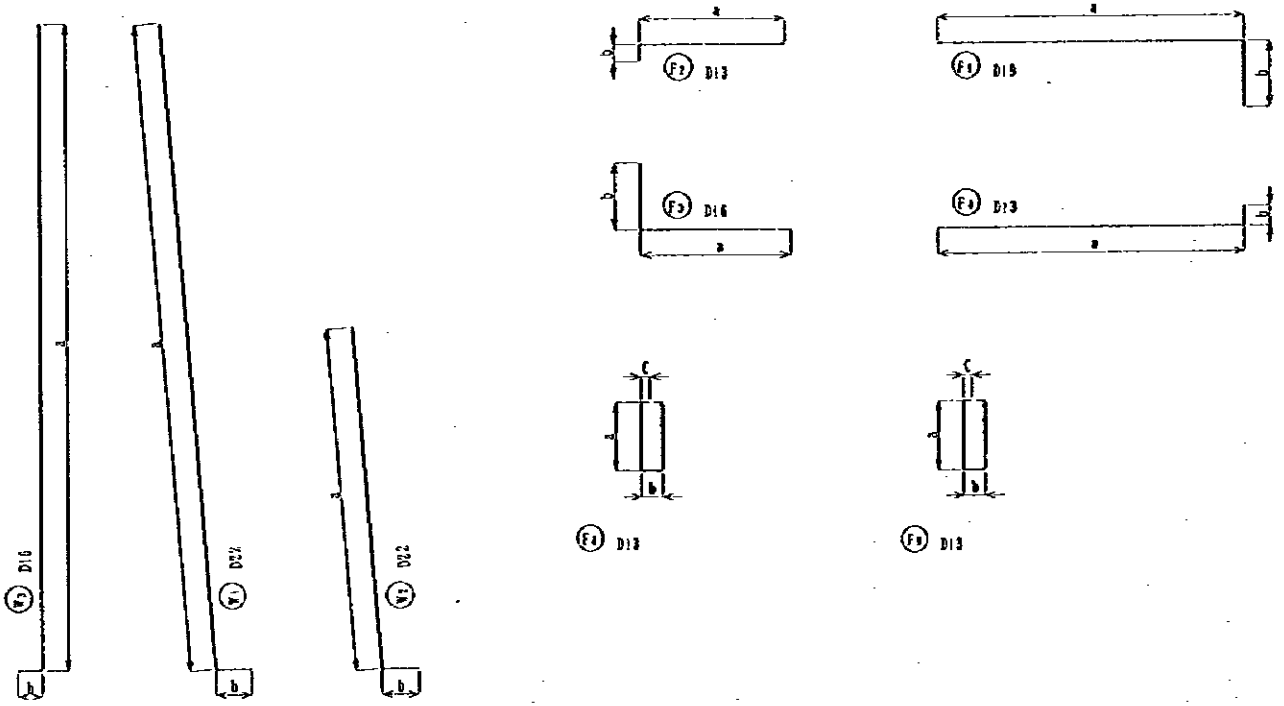
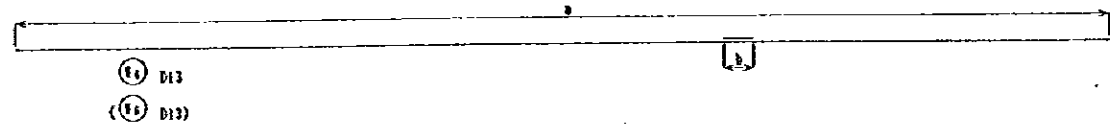
Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

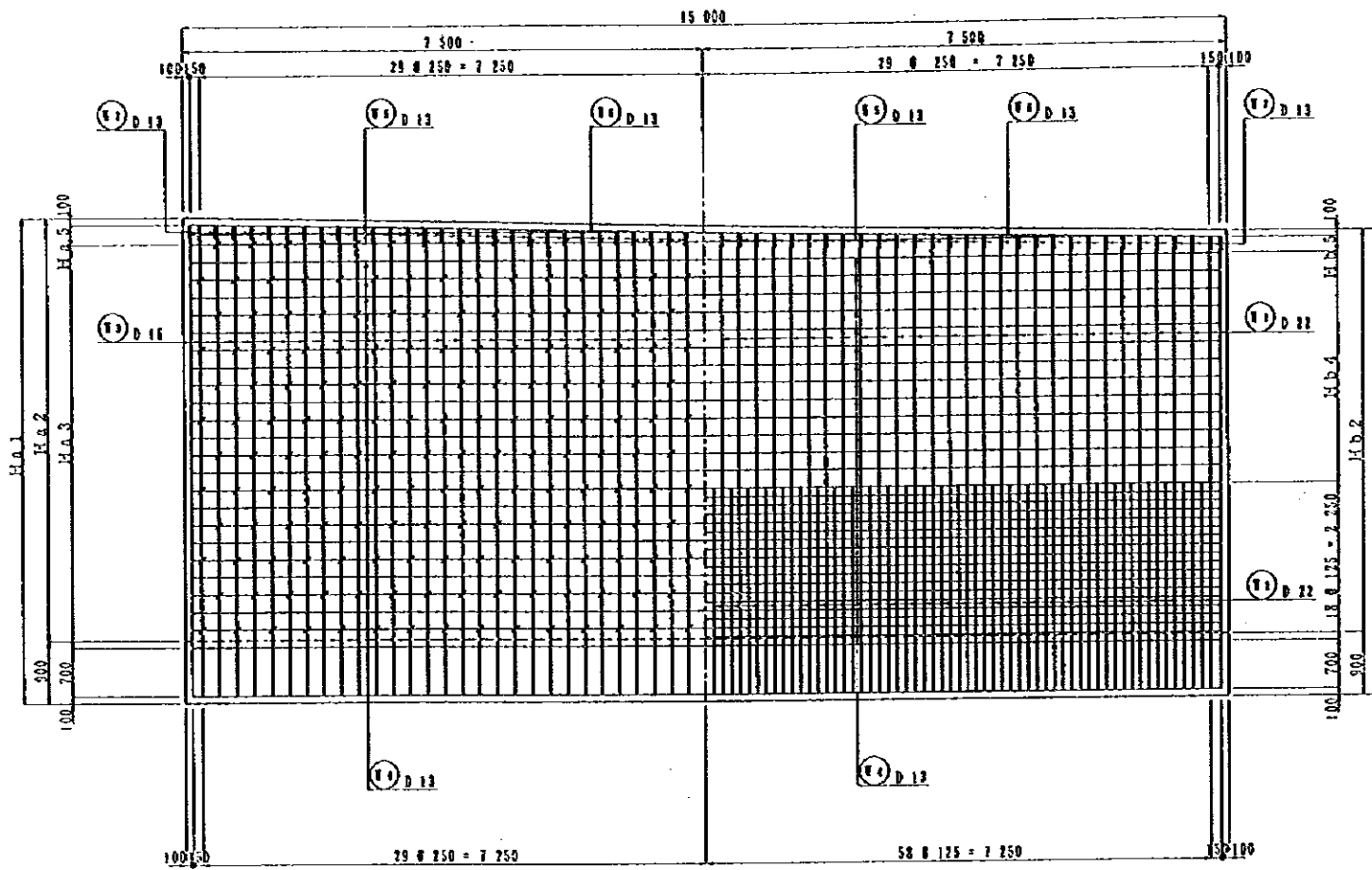
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
PEKUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (5)
DATE :
DWG NO. W-7

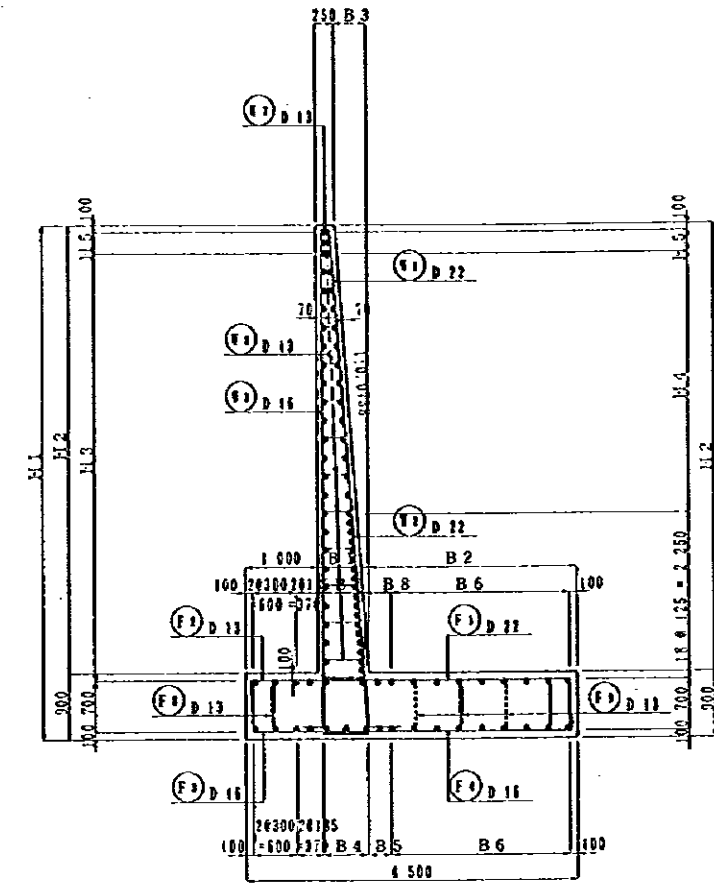


REIN. NO.	φ (mm)	LENGTH (mm)	a	b	c
T 3					
W 1	D 22	5 450	5 358~4 955	330	---
2	"	3 090	2 756	330	---
3	D 16	5 390	5 346~4 944	240	---
4	D 13	15 190	14 800	390	---
5	"	8 450	3 582~12 910	390	---
6	"	15 200	14 805	390	---
7	"	500	110	195	---
8	"	550	452~188	111	---
F 1	D 19	3 670	3 164	500	---
2	D 13	1 410	1 206	195	---
3	D 16	1 750	1 250	500	---
4	D 13	3 230	3 030	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 560	528	279	111
9	"	1 570	529	282	111
T 4					
W 1	D 22	5 890	5 764~5 358	330	---
2	"	3 090	2 756	330	---
3	D 16	5 790	5 748~5 346	240	---
4	D 13	15 190	14 800	390	---
5	"	9 260	9 254	---	---
6	"	15 200	14 805	390	---
7	"	500	110	195	---
8	"	570	479~214	111	---
F 1	D 19	3 640	3 137	500	---
2	D 13	1 430	1 233	195	---
3	D 16	1 750	1 250	500	---
4	D 13	3 230	3 030	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 560	528	279	111
9	"	1 570	529	282	111

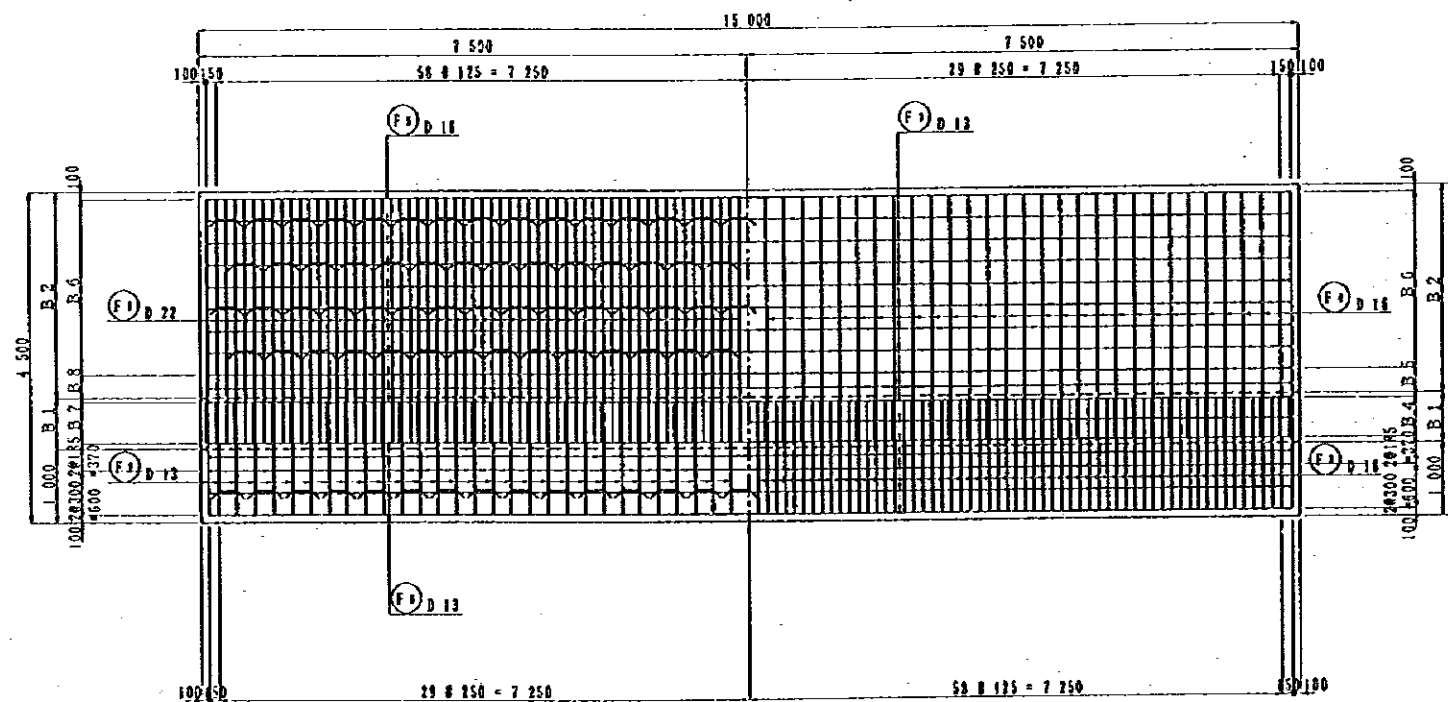
REIN. NO.	φ (mm)	LENGTH (mm)	a	b	c
T 3					
W 1	D 22	5 490	5 361~4 958	330	---
2	"	3 090	2 756	330	---
3	D 16	5 390	5 349~4 947	240	---
4	D 13	15 190	14 800	390	---
5	"	8 560	3 694~13 022	390	---
6	"	15 200	14 805	390	---
7	"	500	110	195	---
8	"	550	452~188	111	---
F 1	D 19	3 670	3 164	500	---
2	D 13	1 410	1 206	195	---
3	D 16	1 750	1 250	500	---
4	D 13	3 230	3 030	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 560	528	279	111
9	"	1 570	529	282	111
T 4					
W 1	D 22	5 900	5 764~5 361	330	---
2	"	3 090	2 756	330	---
3	D 16	5 790	5 751~5 349	240	---
4	D 13	15 190	14 800	390	---
5	"	7 030	4 683~9 366	---	---
6	"	15 200	14 805	390	---
7	"	500	110	195	---
8	"	570	479~215	111	---
F 1	D 19	3 640	3 137	500	---
2	D 13	1 430	1 233	195	---
3	D 16	1 750	1 250	500	---
4	D 13	3 230	3 030	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 560	528	279	111
9	"	1 570	529	282	111



SIDE VIEW
S=1/100



SECTION
S=1/100



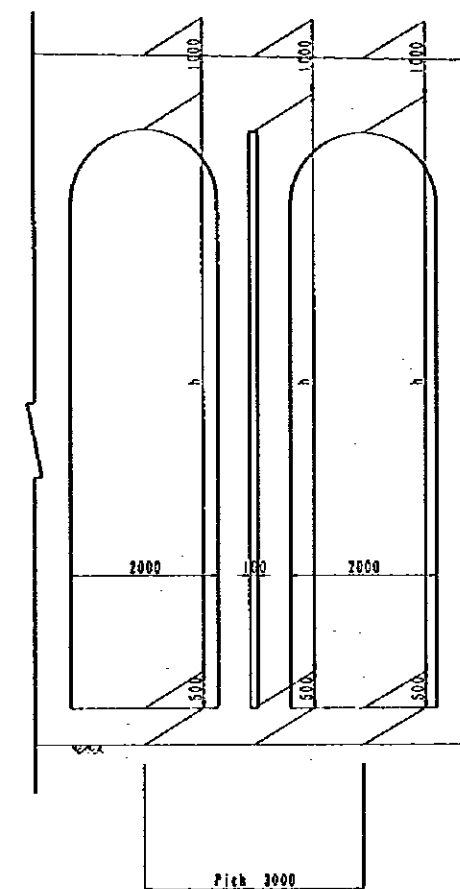
PLAN
S=1/100

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 : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (?)
DATE :
DWG NO. W-9

		T-5		T-6	
		a - a	b - b	a - a	b - b
A I L I N E	Ha1	6 148	Hb1 6 505	Ha1 6 505	Hb1 6 862
	Ha2	5 248	Hb2 5 605	Ha2 5 605	Hb2 5 962
	Ha3	20@250 = 5 000	Hb3 22@250 = 5 500	Ha3 22@250 = 5 500	Hb3 23@250 = 5 750
	Ha4	11@250 = 2 750	Hb4 13@250 = 3 250	Ha4 13@250 = 3 250	Hb4 14@250 = 3 500
	Ha5	248	Hb5 105	Ha5 105	Hb5 212
	Ba1	637	Bb1 663	Ba1 663	Bb1 690
	Ba2	2 863	Bb2 2 837	Ba2 2 837	Bb2 2 810
	Ba3	387	Bb3 413	Ba3 413	Bb3 440
Ba4	2@278 = 556	Bb4 2@291 = 582	Ba4 2@291 = 582	Bb4 2@304 = 608	
Ba5	2@187 = 374	Bb5 2@174 = 348	Ba5 2@174 = 348	Bb5 2@161 = 322	
Ba6	8@300 = 2 400	Bb6 8@300 = 2 400	Ba6 8@300 = 2 400	Bb6 8@300 = 2 400	
Ba7	504	Bb7 530	Ba7 530	Bb7 557	
Ba8	2@213 = 426	Bb8 2@200 = 400	Ba8 2@200 = 400	Bb8 2@186.5 = 373	
		T-5		T-6	
		a - a	b - b	a - a	b - b
B I L I N E	Ha1	6 151	Hb1 6 508	Ha1 6 508	Hb1 6 865
	Ha2	5 251	Hb2 5 608	Ha2 5 608	Hb2 5 965
	Ha3	21@250 = 5 250	Hb3 22@250 = 5 500	Ha3 22@250 = 5 500	Hb3 23@250 = 5 750
	Ha4	12@250 = 3 000	Hb4 13@250 = 3 250	Ha4 13@250 = 3 250	Hb4 14@250 = 3 500
	Ha5	1	Hb5 108	Ha5 108	Hb5 215
	Ba1	637	Bb1 669	Ba1 669	Bb1 690
	Ba2	2 863	Bb2 2 836	Ba2 2 836	Bb2 2 810
	Ba3	387	Bb3 414	Ba3 414	Bb3 440
Ba4	2@278 = 556	Bb4 2@291 = 582	Ba4 2@291 = 582	Bb4 2@304.5 = 609	
Ba5	2@187 = 374	Bb5 2@174 = 348	Ba5 2@174 = 348	Bb5 2@160.5 = 321	
Ba6	8@300 = 2 400	Bb6 8@300 = 2 400	Ba6 8@300 = 2 400	Bb6 8@300 = 2 400	
Ba7	504	Bb7 531	Ba7 531	Bb7 557	
Ba8	2@213 = 426	Bb8 2@199.5 = 399	Ba8 2@199.5 = 399	Bb8 2@186.5 = 373	



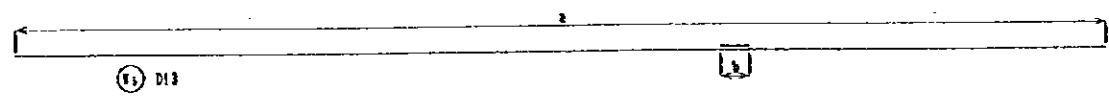
Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

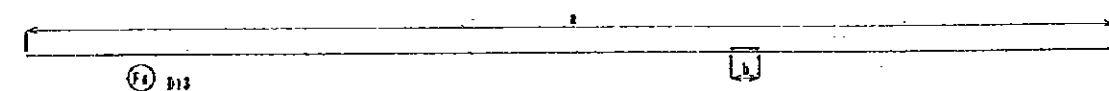
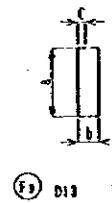
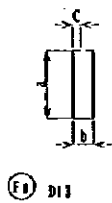
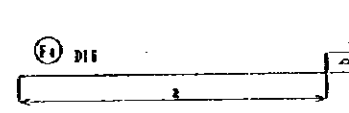
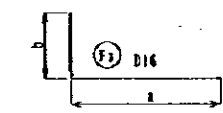
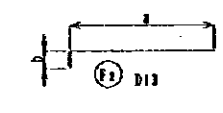
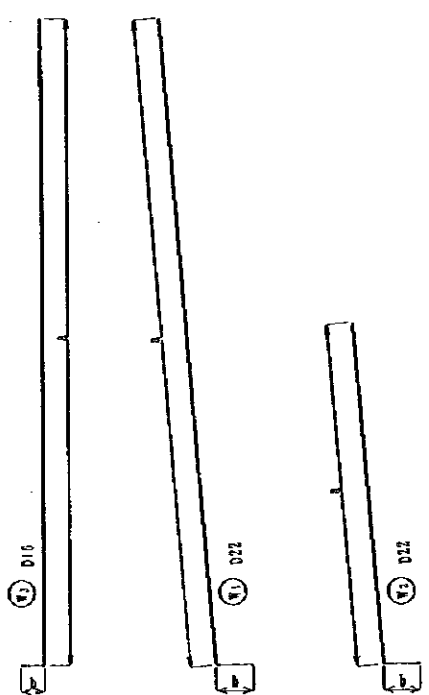
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JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

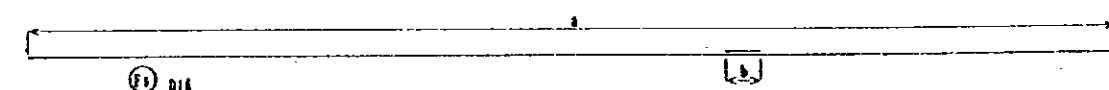
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (8)
DATE :
DWG NO. W-10



(E) D13
(E) D13



(E) D13
(E) D13



(E) D16

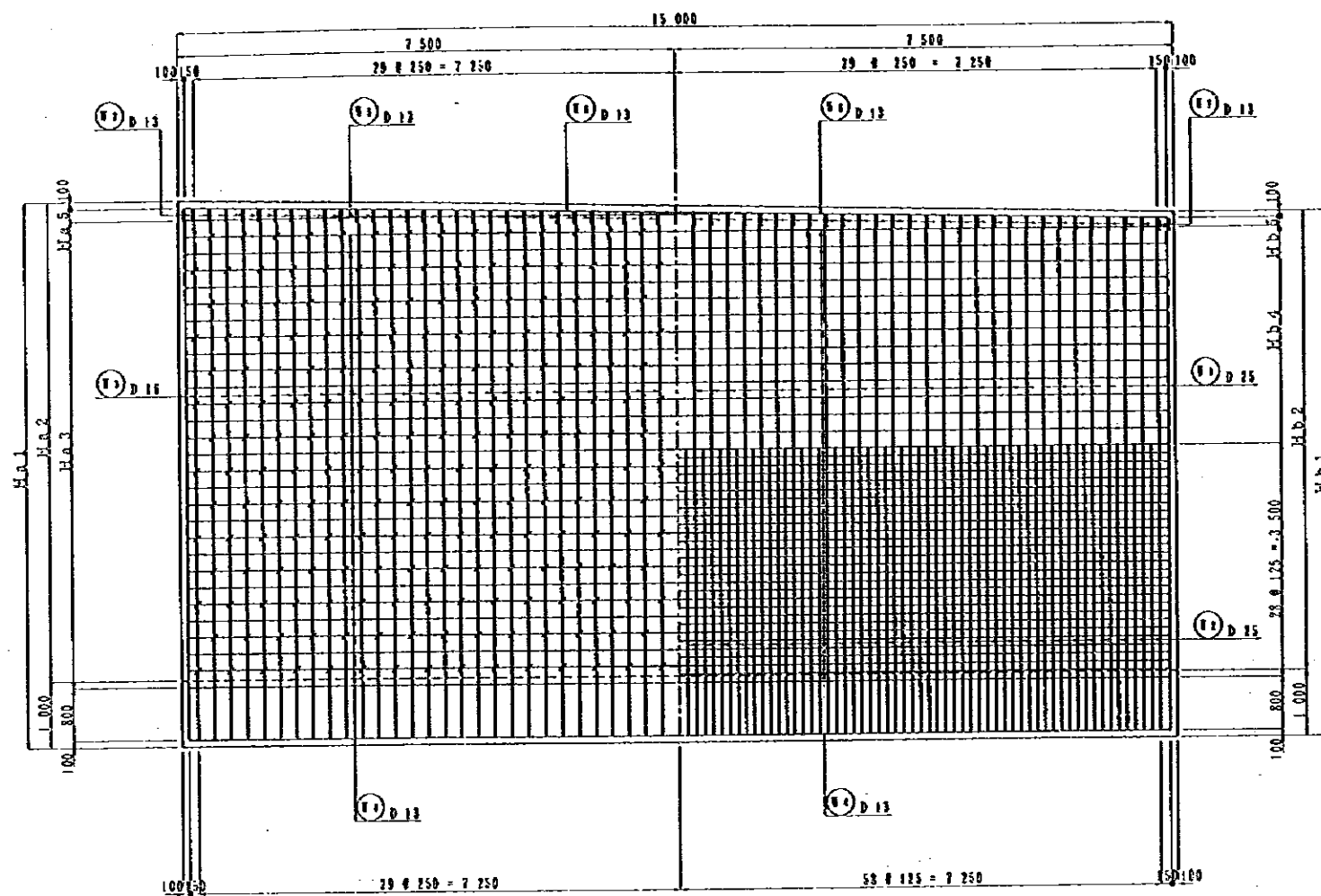
REIN. NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 5					
W 1	D 22	6 480	6 322~5 964	330	---
2	"	3 290	2 958	330	---
3	D 16	6 370	6 305~5 948	240	---
4	D 13	15 190	14 800	390	---
5	"	9 800	4 412~14 750	390	---
6	"	15 200	14 804	390	---
7	"	500	110	195	---
8	"	610	544~213	111	---
F 1	D 22	4 160	3 459	700	---
2	D 13	1 700	1 500	195	---
3	D 16	2 150	1 450	200	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111
T 6					
W 1	D 22	6 840	6 630~6 322	330	---
2	"	3 290	2 958	330	---
3	D 16	6 730	6 662~6 305	240	---
4	D 13	15 190	14 800	390	---
5	"	9 910	8 908	---	---
6	"	15 200	14 804	390	---
7	"	500	110	195	---
8	"	610	571~202	111	---
F 1	D 22	4 160	3 433	700	---
2	D 13	1 730	1 527	195	---
3	D 16	2 150	1 450	200	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111

REIN. NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 5					
W 1	D 22	6 480	6 325~5 967	330	---
2	"	3 290	2 958	330	---
3	D 16	6 370	6 308~5 951	240	---
4	D 13	15 190	14 800	390	---
5	"	4 510	4 538	---	---
6	"	15 202	14 804	390	---
7	"	500	110	195	---
8	"	610	545~213	111	---
F 1	D 22	4 160	3 459	700	---
2	D 13	1 700	1 501	195	---
3	D 16	2 150	1 450	200	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111
T 6					
W 1	D 22	6 840	6 633~6 325	330	---
2	"	3 290	2 958	330	---
3	D 16	6 730	6 665~6 308	240	---
4	D 13	15 190	14 800	390	---
5	"	9 940	9 934	---	---
6	"	15 200	14 804	390	---
7	"	500	110	195	---
8	"	610	571~202	111	---
F 1	D 22	4 160	3 433	700	---
2	D 13	1 730	1 527	195	---
3	D 16	2 150	1 450	200	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111

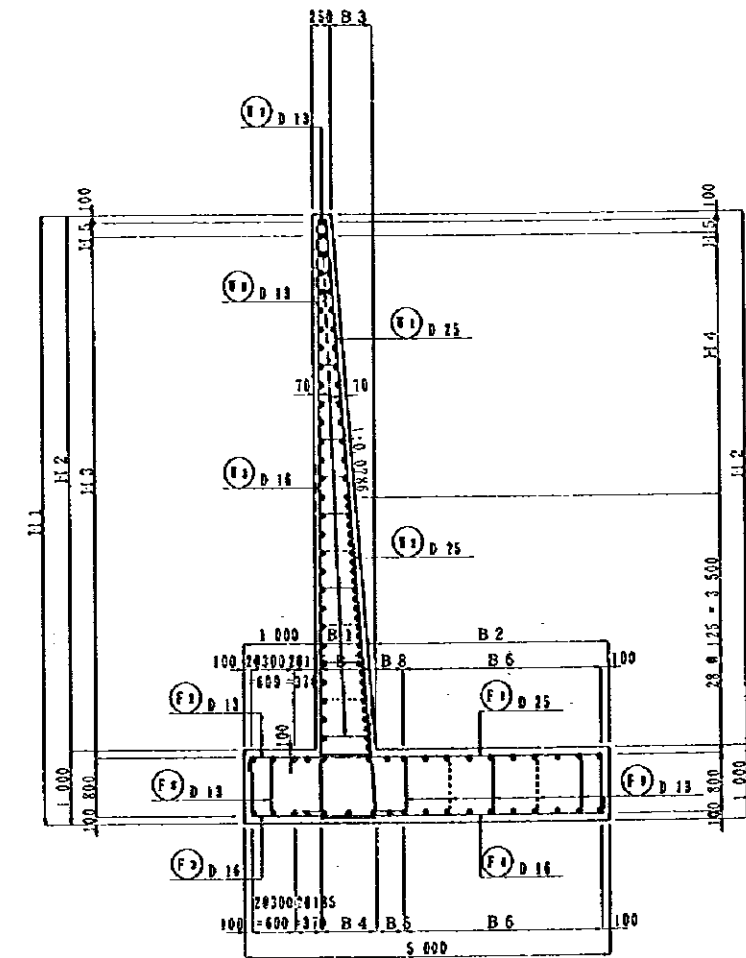
NOTES:

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

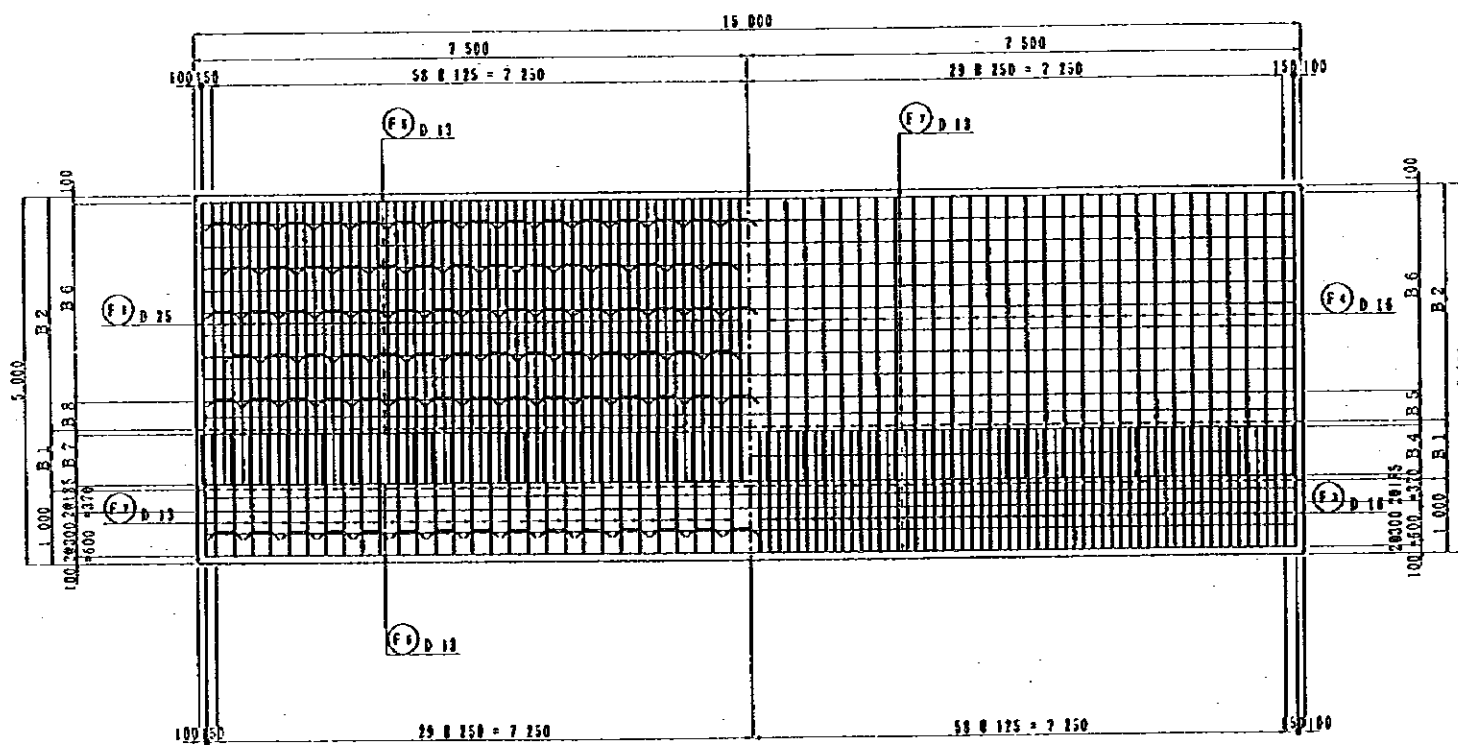
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
 PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
 TITLE : R/A-5. AL MULADDAH RE-BAR ARRANGEMENT (9)
 DATE : _____ DWG NO. W-11



SIDE VIEW
S=1/100



SECTION
S=1/100



PLAN
S=1/100

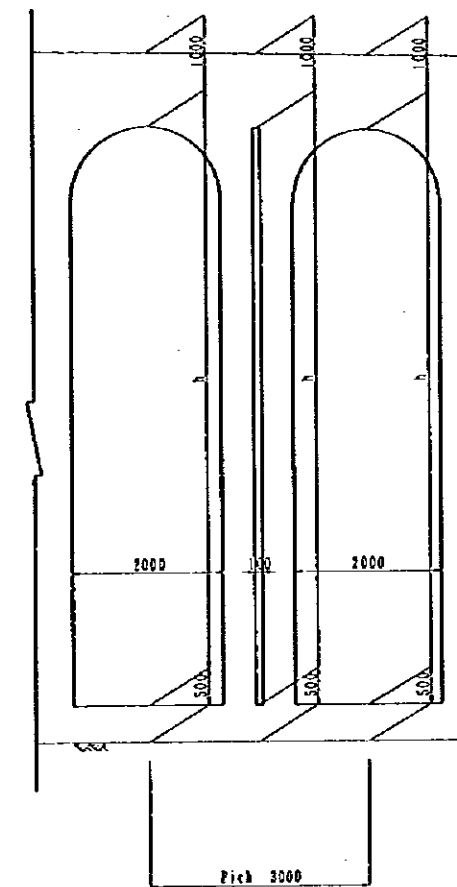
NOTES:

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 : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (10)
DATE : DTG NO.W-12

A L I N E	T-7		T-8		T-9	
	a - a	b - b	a - a	b - b	a - a	b - b
	Ha1	6 962	Hb1 7 274	Ha1 7 274	Hb1 7 586	Ha1 7 586
Ha2	5 962	Hb2 6 274	Ha2 6 274	Hb2 6 586	Ha2 6 586	Hb2 6 853
Ha3	23@250 = 5 750	Hb3 24@250 = 6 000	Ha3 24@250 = 6 000	Hb3 25@250 = 6 250	Ha3 25@250 = 6 250	Hb3 26@250 = 6 500
Ha4	9@250 = 2 250	Hb4 10@250 = 2 500	Ha4 10@250 = 2 500	Hb4 11@250 = 2 750	Ha4 11@250 = 2 750	Hb4 12@250 = 3 000
Ha5	212	Hb5 2@137 = 274	Ha5 2@137 = 274	Hb5 2@168 = 336	Ha5 2@168 = 336	Hb5 2@176.5 = 353
Ba1	718	Bb1 743	Ba1 743	Bb1 767	Ba1 767	Bb1 788
Ba2	3 282	Bb2 3 257	Ba2 3 257	Bb2 3 233	Ba2 3 233	Bb2 3 212
Ba3	468	Bb3 493	Ba3 493	Bb3 517	Ba3 517	Bb3 538
Ba4	2@324.5 = 649	Bb4 2@337 = 674	Ba4 2@337 = 674	Bb4 2@349 = 698	Ba4 2@349 = 698	Bb4 2@359.5 = 719
Ba5	2@240.5 = 481	Bb5 2@228 = 456	Ba5 2@228 = 456	Bb5 2@216 = 432	Ba5 2@216 = 432	Bb5 2@237 = 474
Ba6	9@300 = 2 700	Bb6 9@300 = 2 700	Ba6 9@300 = 2 700	Bb6 9@300 = 2 700	Ba6 9@300 = 2 700	Bb6 9@300 = 2 700
Ba7	586	Bb7 611	Ba7 611	Bb7 635	Ba7 635	Bb7 656
Ba8	2@272 = 544	Bb8 2@259.5 = 519	Ba8 2@259.5 = 519	Bb8 2@247.5 = 495	Ba8 2@247.5 = 495	Bb8 2@237 = 474
B L I N E	T-7		T-8		T-9	
	a - a	b - b	a - a	b - b	a - a	b - b
	Ha1	6 965	Hb1 7 277	Ha1 7 277	Hb1 7 589	Ha1 7 589
Ha2	5 965	Hb2 6 277	Ha2 6 277	Hb2 6 589	Ha2 6 589	Hb2 6 856
Ha3	23@250 = 5 750	Hb3 24@250 = 6 000	Ha3 24@250 = 6 000	Hb3 25@250 = 6 250	Ha3 25@250 = 6 250	Hb3 26@250 = 6 500
Ha4	9@250 = 2 250	Hb4 10@250 = 2 500	Ha4 10@250 = 2 500	Hb4 11@250 = 2 750	Ha4 11@250 = 2 750	Hb4 12@250 = 3 000
Ha5	215	Hb5 2@138.5 = 277	Ha5 2@138.5 = 277	Hb5 2@169.5 = 339	Ha5 2@169.5 = 339	Hb5 2@178 = 356
Ba1	719	Bb1 743	Ba1 743	Bb1 768	Ba1 768	Bb1 789
Ba2	3 281	Bb2 3 257	Ba2 3 257	Bb2 3 232	Ba2 3 232	Bb2 3 211
Ba3	469	Bb3 493	Ba3 493	Bb3 518	Ba3 518	Bb3 539
Ba4	2@325 = 650	Bb4 2@337 = 674	Ba4 2@337 = 674	Bb4 2@349.5 = 699	Ba4 2@349.5 = 699	Bb4 2@360 = 720
Ba5	2@240 = 480	Bb5 2@228 = 456	Ba5 2@228 = 456	Bb5 2@215.5 = 431	Ba5 2@215.5 = 431	Bb5 2@205 = 410
Ba6	9@300 = 2 700	Bb6 9@300 = 2 700	Ba6 9@300 = 2 700	Bb6 9@300 = 2 700	Ba6 9@300 = 2 700	Bb6 9@300 = 2 700
Ba7	587	Bb7 611	Ba7 611	Bb7 636	Ba7 636	Bb7 657
Ba8	2@271.5 = 543	Bb8 2@259.5 = 519	Ba8 2@259.5 = 519	Bb8 2@247 = 494	Ba8 2@247 = 494	Bb8 2@236.5 = 473



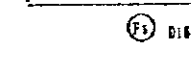
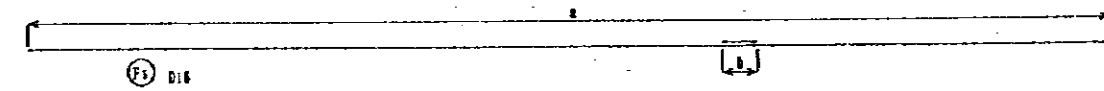
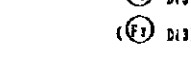
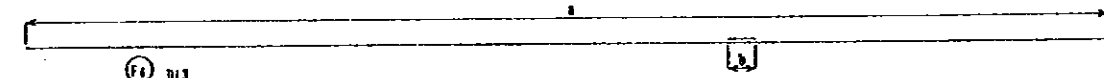
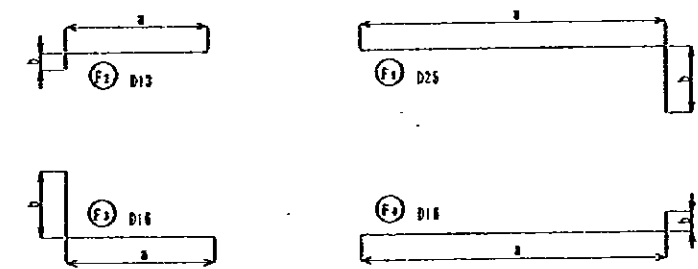
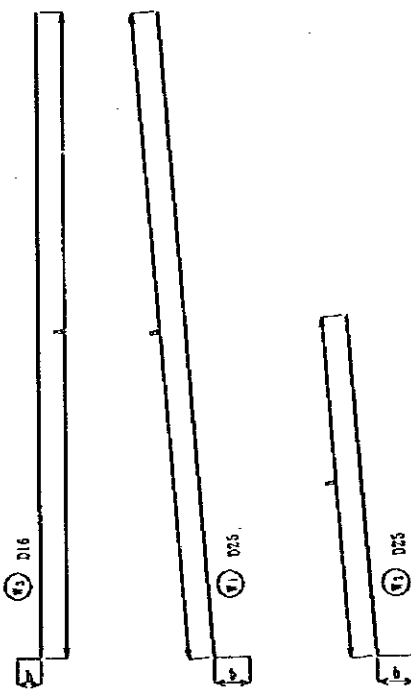
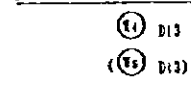
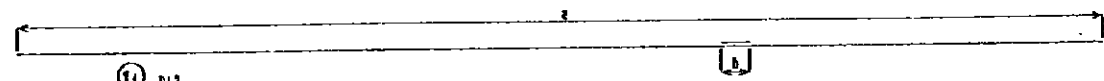
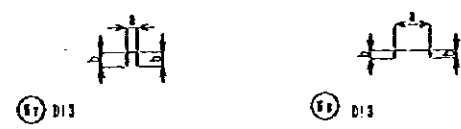
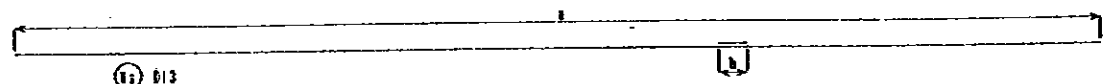
Still Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUJUKAWA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (11)
DATE : DGC NO. W-13



REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 7					
1	D 25	7 320	7 096~6 763	375	---
2	"	4 690	4 313	375	---
3	D 16	7 160	7 024~6 762	240	---
4	D 13	15 190	14 800	390	---
5	"	10 080	6 587~13 173	390	---
6	"	15 200	14 803	390	---
7	"	500	110	195	---
8	"	660	625~193	111	---
F 1	D 25	4 770	3 965	800	---
2	D 13	1 780	1 581	195	---
3	D 16	2 250	1 459	800	---
4	"	4 070	3 830	240	---
5	"	15 280	14 800	480	---
6	D 13	15 150	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 8					
1	D 25	7 620	7 409~7 056	375	---
2	"	4 690	4 313	375	---
3	D 16	7 470	7 386~7 074	240	---
4	D 13	15 150	14 800	390	---
5	"	8 080	6 077	---	---
6	"	15 200	14 803	390	---
7	"	500	110	195	---
8	"	660	649~217	111	---
F 1	D 25	4 750	3 945	800	---
2	D 13	1 800	1 605	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 9					
1	D 25	7 920	7 677~7 409	375	---
2	"	4 690	4 313	375	---
3	D 16	7 260	7 053~7 386	240	---
4	D 13	15 190	14 800	390	---
5	"	9 920	8 916	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	660	670~193	111	---
F 1	D 25	4 730	3 924	800	---
2	D 13	1 830	1 626	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 280	14 800	480	---
6	D 13	15 150	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

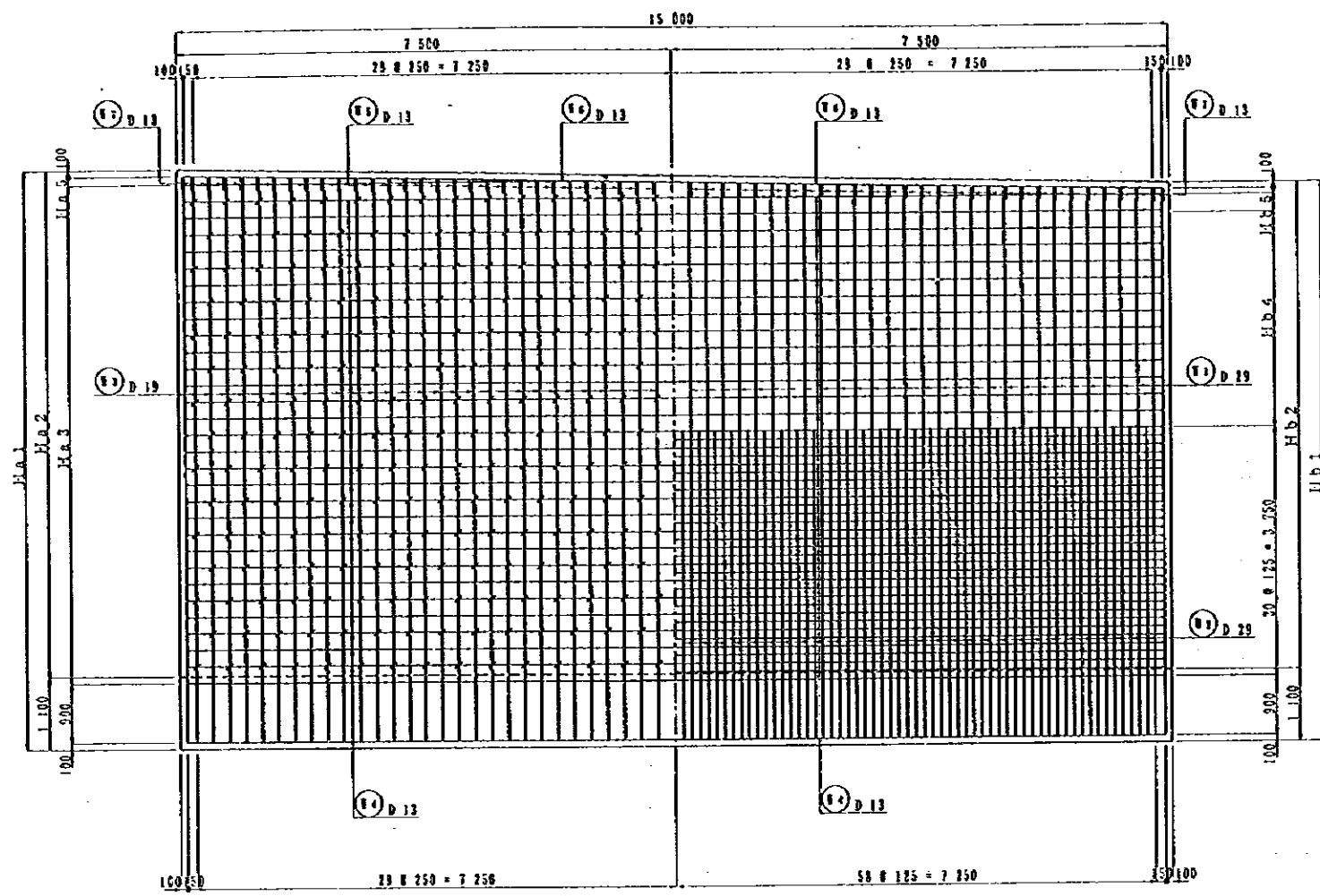
REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 7					
1	D 25	7 320	7 096~6 766	375	---
2	"	4 690	4 313	375	---
3	D 16	7 170	7 027~6 765	240	---
4	D 13	15 190	14 800	390	---
5	"	10 190	6 659~13 317	390	---
6	"	15 200	14 803	390	---
7	"	500	110	195	---
8	"	640	625~193	111	---
F 1	D 25	4 770	3 965	800	---
2	D 13	1 780	1 581	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 8					
1	D 25	7 640	7 412~7 059	375	---
2	"	4 690	4 313	375	---
3	D 16	7 480	7 385~7 072	240	---
4	D 13	15 190	14 800	390	---
5	"	8 150	6 149	---	---
6	"	15 200	14 803	390	---
7	"	500	110	195	---
8	"	660	650~217	111	---
F 1	D 25	4 750	3 944	800	---
2	D 13	1 810	1 606	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

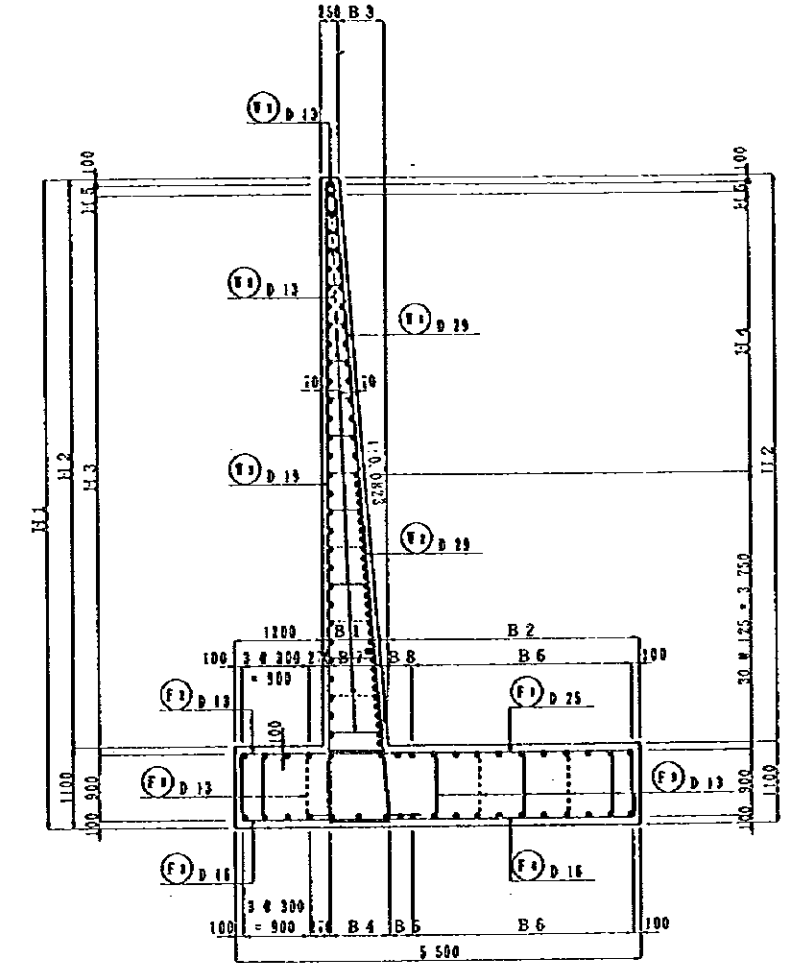
REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 9					
1	D 25	7 930	7 680~7 412	375	---
2	"	4 690	4 313	375	---
3	D 16	7 270	7 056~7 389	240	---
4	D 13	15 190	14 800	390	---
5	"	10 000	10 000	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	660	671~193	111	---
F 1	D 25	4 730	3 923	800	---
2	D 13	1 830	1 627	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

NOTES:

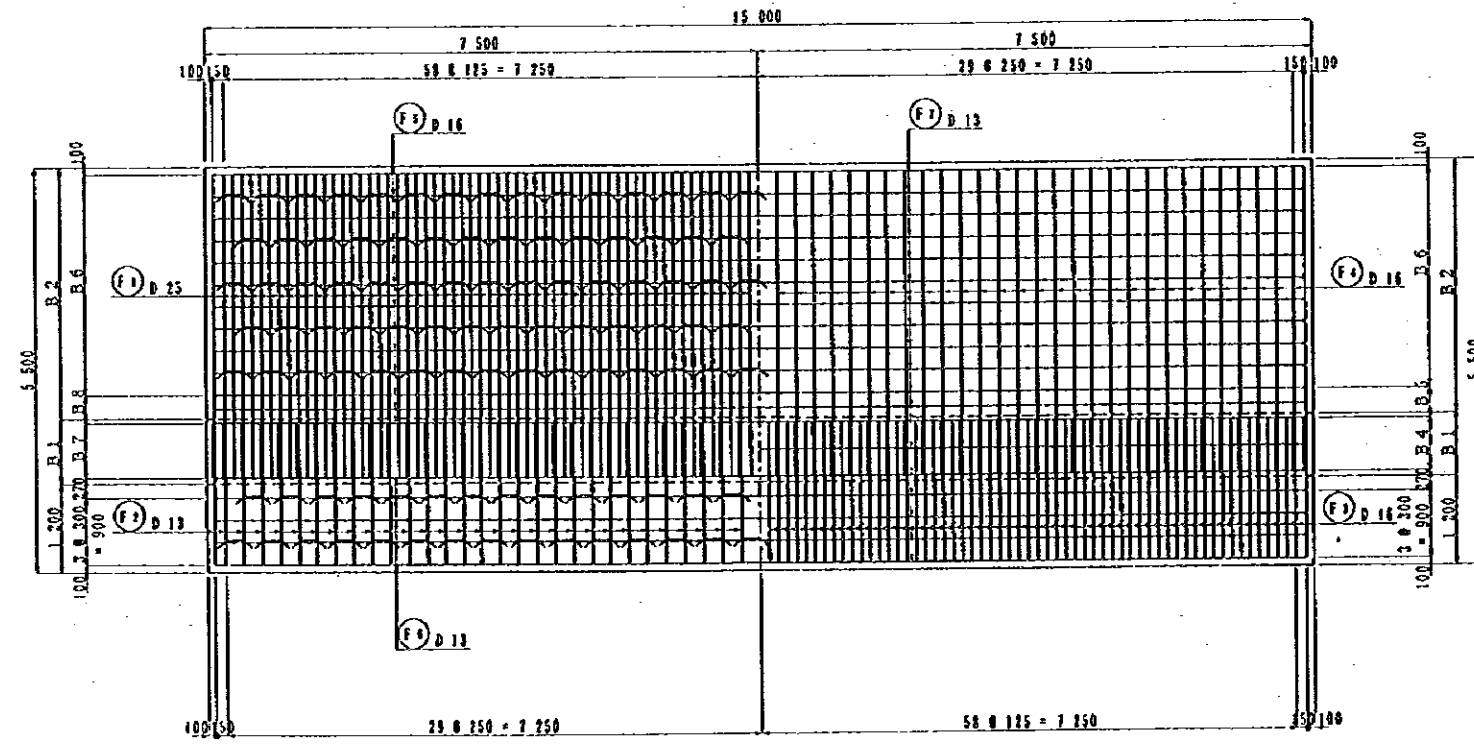
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL ELKRYAMA CONSULTANTS INTERNATIONAL	CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
	TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (12)
	DATE : _____ DWG NO. W-14



SIDE VIEW
S=1/100



SECTION
S=1/100



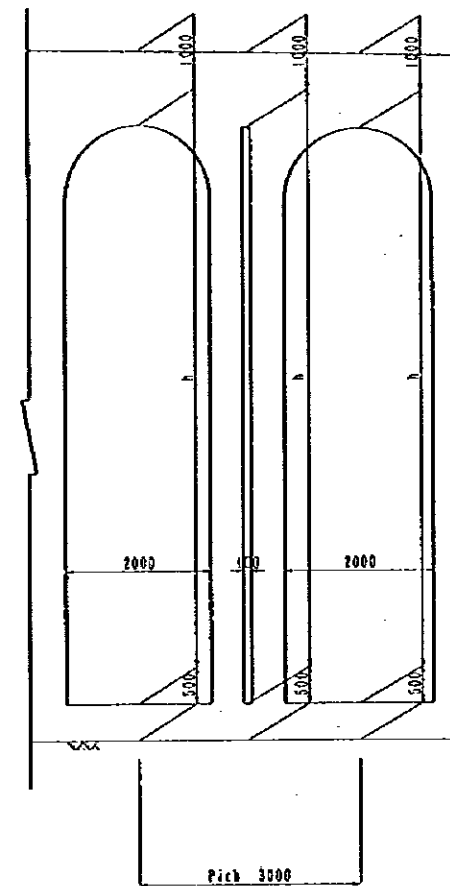
PLAN
S=1/100

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUJYAMA CONSULTANTS INTERNATIONAL	TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (13)
DATE	DWG NO. W-15

A I L I N E	T-10				T-11			
	a - a		b - b		a - a		b - b	
	Ha1	7 953	Hb1	8 220	Ha1	8 220	Hb1	8 478
Ha2	6 853	Hb2	7 120	Ha2	7 120	Hb2	7 378	
Ha3	27@250 = 6 750	Hb3	28@250 = 7 000	Ha3	28@250 = 7 000	Hb3	29@250 = 7 250	
Ha4	12@250 = 3 000	Hb4	13@250 = 3 250	Ha4	13@250 = 3 250	Hb4	14@250 = 3 500	
Ha5	103	Hb5	120	Ha5	120	Hb5	128	
Ba1	814	Bb1	836	Ba1	836	Bb1	857	
Ba2	3 486	Bb2	3 464	Ba2	3 464	Bb2	3 443	
Ba3	564	Bb3	586	Ba3	586	Bb3	607	
Ba4	2@378 = 756	Bb4	2@389 = 778	Ba4	2@389 = 778	Bb4	2@399.5 = 799	
Ba5	2@187 = 374	Bb5	2@176 = 352	Ba5	2@176 = 352	Bb5	2@165.5 = 331	
Ba6	10@300 = 3 000	Bb6	10@300 = 3 000	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000	
Ba7	682	Bb7	704	Ba7	704	Bb7	725	
Ba8	2@224 = 448	Bb8	2@213 = 426	Ba8	2@213 = 426	Bb8	2@202.5 = 405	

B I L I N E	T-10				T-11			
	a - a		b - b		a - a		b - b	
	Ha1	7 956	Hb1	8 223	Ha1	8 223	Hb1	8 481
Ha2	6 856	Hb2	7 123	Ha2	7 123	Hb2	7 381	
Ha3	27@250 = 6 750	Hb3	28@250 = 7 000	Ha3	28@250 = 7 000	Hb3	29@250 = 7 250	
Ha4	12@250 = 3 000	Hb4	13@250 = 3 250	Ha4	13@250 = 3 250	Hb4	14@250 = 3 500	
Ha5	106	Hb5	123	Ha5	123	Hb5	131	
Ba1	814	Bb1	836	Ba1	836	Bb1	857	
Ba2	3 486	Bb2	3 464	Ba2	3 464	Bb2	3 443	
Ba3	564	Bb3	586	Ba3	586	Bb3	607	
Ba4	2@378 = 756	Bb4	2@389 = 778	Ba4	2@389 = 778	Bb4	2@399.5 = 799	
Ba5	2@187 = 374	Bb5	2@176 = 352	Ba5	2@176 = 352	Bb5	2@165.5 = 331	
Ba6	10@300 = 3 000	Bb6	10@300 = 3 000	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000	
Ba7	682	Bb7	704	Ba7	704	Bb7	725	
Ba8	2@224 = 448	Bb8	2@213 = 426	Ba8	2@213 = 426	Bb8	2@202.5 = 405	



Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

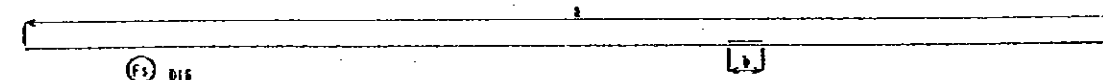
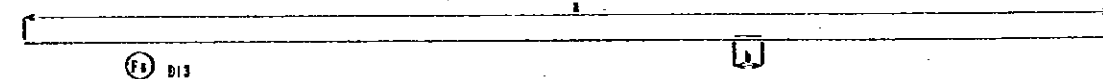
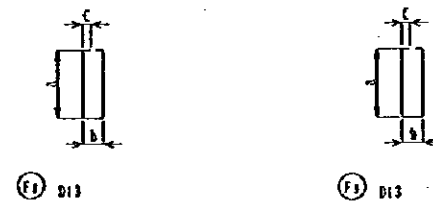
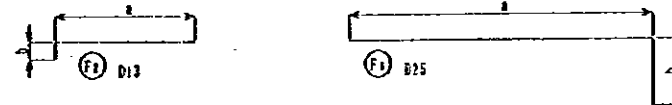
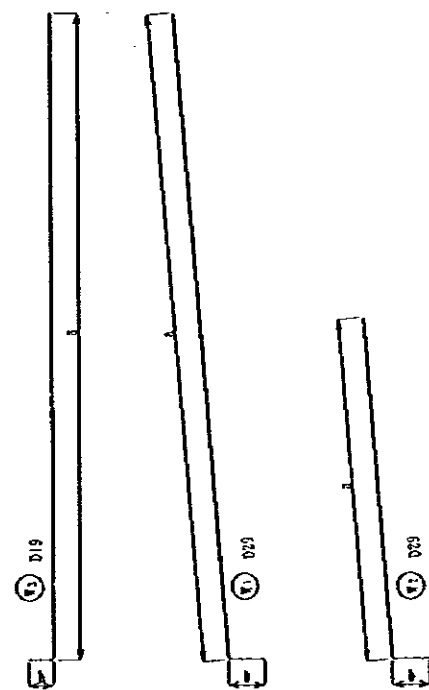
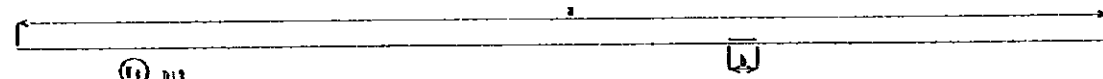
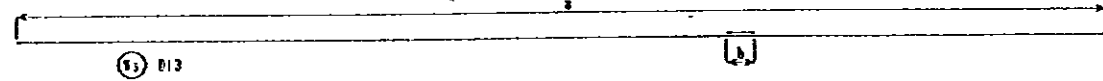
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (14)

DATE

DFG NO. W-16



REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 10					
W 1	D 29	8 350	8 047~7 273	435	---
2	"	5 110	4 666	435	---
3	D 19	8 180	8 020~7 253	285	---
4	D 13	15 190	14 800	350	---
5	"	6 750	6 742	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	630	720~186	111	---
F 1	D 25	5 060	4 176	900	---
2	D 13	2 070	1 874	195	---
3	D 16	2 550	1 650	900	---
4	"	4 370	4 130	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	350	---
8	"	2 360	928	279	111
9	"	2 380	934	288	111
T 11					
W 1	D 29	8 620	8 306~8 047	435	---
2	"	5 110	4 666	435	---
3	D 19	8 440	8 278~8 020	285	---
4	D 13	15 190	14 800	390	---
5	"	7 450	7 442	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	700	741~207	111	---
F 1	D 25	5 060	4 155	900	---
2	D 13	2 090	1 895	195	---
3	D 16	2 550	1 650	900	---
4	"	4 370	4 130	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	350	---
8	"	2 360	928	279	111
9	"	2 380	934	288	111

REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 10					
W 1	D 29	8 360	8 050~7 282	435	---
2	"	5 110	4 666	435	---
3	D 19	8 180	8 020~7 256	285	---
4	D 13	15 190	14 800	390	---
5	"	6 910	6 910	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	680	720~186	111	---
F 1	D 25	5 070	4 176	900	---
2	D 13	2 070	1 874	195	---
3	D 16	2 550	1 650	900	---
4	"	4 378	4 130	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 360	928	279	111
9	"	2 380	934	288	111
T 11					
W 1	D 29	8 620	8 309~8 050	435	---
2	"	5 110	4 666	435	---
3	D 19	8 440	8 281~8 023	285	---
4	D 13	15 190	14 800	390	---
5	"	7 620	7 616	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	700	741~207	111	---
F 1	D 25	5 060	4 155	900	---
2	D 13	2 090	1 895	195	---
3	D 16	2 550	1 650	900	---
4	"	4 370	4 130	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	350	---
8	"	2 360	928	279	111
9	"	2 380	934	288	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUJUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (15)

DATE : DWG NO. W-17

A - LINE

REIN NO.	Ø (mm)	LENGTH (m)	NOMINAL WEIGHT	NLMB	U WEIGHT	WEIGHT	REMARKS
T 1							
1	D 19	4 380	2.235	61	9.789	597.1	L
2	"	2 590	"	58	5.789	335.8	L
3	D 13	4 290	0.994	61	4.264	260.1	J
4	"	15 190	"	26	15.059	543.6	---
5	"	6 610	"	4	6.518	26.3	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	500	"	207	0.497	102.9	---
F 1	D 19	3 270	2.235	119	7.308	869.7	---
2	D 13	1 110	0.994	61	1.103	67.3	---
3	D 16	1 350	1.552	119	2.095	249.3	L
4	D 13	2 930	0.994	61	2.912	177.6	---
5	"	15 190	"	10	15.059	151.0	---
6	"	15 190	"	3	15.059	45.3	---
7	"	15 190	"	13	15.059	196.3	---
8	"	1 160	"	29	1.153	33.4	U
9	"	1 170	"	116	1.163	134.9	U
						3851.1	
T 2							
1	D 19	4 820	2.235	61	10.773	657.2	L
2	"	2 590	"	58	5.789	335.8	L
3	D 13	4 730	0.994	61	4.702	288.8	J
4	"	15 190	"	40	15.059	604.0	---
5	"	6 680	"	2	6.629	13.2	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	510	"	236	0.507	119.7	---
F 1	D 19	3 240	2.235	119	7.241	861.7	---
2	D 13	1 130	0.994	61	1.123	68.5	---
3	D 16	1 350	1.552	119	2.095	249.3	L
4	D 13	2 930	0.994	61	2.912	177.6	---
5	"	15 190	"	9	15.059	135.9	---
6	"	15 190	"	3	15.059	45.3	---
7	"	15 190	"	13	15.059	196.3	---
8	"	1 160	"	29	1.153	33.4	U
9	"	1 170	"	116	1.163	134.9	U
						3980.1	
						D 19	3657.3
						D 16	498.6
						D 13	3675.3
						TOTAL WEIGHT	7831.2

B - LINE

REIN NO.	Ø (mm)	LENGTH (m)	NOMINAL WEIGHT	NLMB	U WEIGHT	WEIGHT	REMARKS
T 1							
1	D 19	4 390	2.235	61	9.812	598.5	L
2	"	2 590	"	58	5.789	335.8	L
3	D 13	4 290	0.994	61	4.264	260.1	J
4	"	15 190	"	26	15.059	543.6	---
5	"	6 650	"	4	6.640	26.6	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	500	"	207	0.497	102.9	---
F 1	D 19	3 270	2.235	119	7.308	869.7	---
2	D 13	1 110	0.994	61	1.103	67.3	---
3	D 16	1 350	1.552	119	2.095	249.3	L
4	D 13	2 930	0.994	61	2.912	177.6	---
5	"	15 190	"	10	15.059	151.0	---
6	"	15 190	"	3	15.059	45.3	---
7	"	15 190	"	13	15.059	196.3	---
8	"	1 160	"	29	1.153	33.4	U
9	"	1 170	"	116	1.163	134.9	U
						3852.8	
T 2							
1	D 19	4 830	2.235	61	10.795	658.5	L
2	"	2 590	"	58	5.789	335.8	L
3	D 13	4 730	0.994	61	4.702	288.8	J
4	"	15 190	"	40	15.059	604.0	---
5	"	6 770	"	2	6.729	13.5	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	510	"	236	0.507	119.7	---
F 1	D 19	3 240	2.235	119	7.241	861.7	---
2	D 13	1 130	0.994	61	1.123	68.5	---
3	D 16	1 350	1.552	119	2.095	249.3	L
4	D 13	2 930	0.994	61	2.912	177.6	---
5	"	15 190	"	9	15.059	135.9	---
6	"	15 190	"	3	15.059	45.3	---
7	"	15 190	"	13	15.059	196.3	---
8	"	1 160	"	29	1.153	33.4	U
9	"	1 170	"	116	1.163	134.9	U
						3981.7	
						D 19	3660.0
						D 16	498.6
						D 13	3675.9
						TOTAL WEIGHT	7834.5

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 : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (16)
DATE : DWG NO. W-18

A-LINE

REIN NO.	Ø (mm)	LENGTH (mm)	NOMINAL WEIGHT	NO. OF	U WEIGHT	WEIGHT	REMARKS
T 3							
1	D 22	5 430	3.042	61	16.701	1 018.8	L
2	"	3 090	"	58	9.400	545.2	L
3	D 16	5 390	1.552	61	8.365	510.3	J
4	D 13	15 190	0.994	43	15.099	649.3	---
5	"	8 450	"	4	8.399	33.6	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	550	"	266	0.547	145.5	"
F 1	D 19	3 670	2.235	119	8.202	976.0	---
2	D 13	1 410	0.994	61	1.402	85.5	---
3	D 16	1 750	1.552	119	2.716	323.2	L
4	D 13	3 230	0.994	61	3.211	195.9	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	4	15.099	60.4	---
7	"	15 190	"	15	15.099	226.5	---
8	"	1 560	"	29	1.551	45.0	□
9	"	1 570	"	116	1.561	181.1	□
						5207.8	
T 4							
1	D 22	5 850	3.042	61	17.917	1 092.9	L
2	"	3 090	"	58	9.400	545.2	L
3	D 16	5 790	1.552	61	8.986	548.1	J
4	D 13	15 190	0.994	47	15.099	709.7	---
5	"	9 240	"	4	9.204	36.8	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	570	"	266	0.567	150.8	"
F 1	D 19	3 640	2.235	119	8.135	968.1	---
2	D 13	1 430	0.994	61	1.421	86.7	---
3	D 16	1 750	1.552	119	2.716	323.2	L
4	D 13	3 230	0.994	61	3.211	195.9	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	4	15.099	60.4	---
7	"	15 190	"	15	15.099	226.5	---
8	"	1 560	"	29	1.551	45.0	□
9	"	1 570	"	116	1.561	181.1	□
						5387.9	
D 22						3202.1	
D 19						1944.1	
D 16						1704.8	
D 13						3736.7	
TOTAL WEIGHT						10589.7	

B-LINE

REIN NO.	Ø (mm)	LENGTH (mm)	NOMINAL WEIGHT	NO. OF	U WEIGHT	WEIGHT	REMARKS
T 3							
1	D 22	5 490	3.042	61	16.701	1 018.8	L
2	"	3 090	"	58	9.400	545.2	L
3	D 16	5 390	1.552	61	8.365	510.3	J
4	D 13	15 190	0.994	43	15.099	649.3	---
5	"	8 560	"	4	8.509	34.0	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	550	"	266	0.547	145.5	"
F 1	D 19	3 670	2.235	119	8.202	976.0	---
2	D 13	1 410	0.994	61	1.402	85.5	---
3	D 16	1 750	1.552	119	2.716	323.2	L
4	D 13	3 230	0.994	61	3.211	195.9	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	4	15.099	60.4	---
7	"	15 190	"	15	15.099	226.5	---
8	"	1 560	"	29	1.551	45.0	□
9	"	1 570	"	116	1.561	181.1	□
						5208.2	
T 4							
1	D 22	5 900	3.042	61	17.918	1 094.8	L
2	"	3 090	"	58	9.400	545.2	L
3	D 16	5 790	1.552	61	8.986	548.1	J
4	D 13	15 190	0.994	47	15.099	709.7	---
5	"	7 030	"	4	6.988	28.0	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	570	"	266	0.567	150.8	"
F 1	D 19	3 640	2.235	119	8.135	968.1	---
2	D 13	1 430	0.994	61	1.421	86.7	---
3	D 16	1 750	1.552	119	2.716	323.2	L
4	D 13	3 230	0.994	61	3.211	195.9	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	4	15.099	60.4	---
7	"	15 190	"	15	15.099	226.5	---
8	"	1 560	"	29	1.551	45.0	□
9	"	1 570	"	116	1.561	181.1	□
						5375.0	
D 22						3204.0	
D 19						1944.1	
D 16						1704.8	
D 13						3736.7	
TOTAL WEIGHT						10589.2	

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 : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (17)
DATE : DYG NO. W-19

A-LINE

REIN. NO.	Ø (mm)	LENGTH (m)	NOMINAL WEIGHT	NO.	U WEIGHT	WEIGHT	REMARKS
T 5							
1	D 22	6 480	3.042	61	19.718	1 282.4	L
2	"	3 290	"	58	18.008	589.5	L
3	D 16	6 370	1.552	61	9.866	602.0	J
4	D 13	15 190	0.994	49	15.099	739.9	---
5	"	9 800	"	4	9.741	39.0	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	600	"	295	0.606	178.8	"
F 1	D 22	4 160	3.042	119	12.655	1 505.9	---
2	D 13	1 700	0.994	61	1.690	103.1	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 280	"	11	23.715	260.9	---
6	D 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	□
9	"	1 960	"	116	1.968	228.3	□
						6672.1	
T 6							
1	D 22	6 840	3.042	61	20.807	1 269.2	L
2	"	3 290	"	58	18.008	589.5	L
3	D 16	6 730	1.552	61	10.445	637.1	J
4	D 13	15 190	0.994	53	15.099	800.2	---
5	"	9 910	"	2	9.857	17.7	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	600	"	325	0.606	197.0	"
F 1	D 22	4 140	3.042	119	12.594	1 498.7	---
2	D 13	1 720	0.994	61	1.720	104.9	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 280	"	11	23.715	260.9	---
6	D 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	□
9	"	1 960	"	116	1.968	228.3	□
						6778.8	
						D 22	6637.2
						D 16	3232.1
						D 13	3532.8
						TOTAL WEIGHT	13491.9

B-LINE

REIN. NO.	Ø (mm)	LENGTH (m)	NOMINAL WEIGHT	NO.	U WEIGHT	WEIGHT	REMARKS
T 5							
1	D 22	6 480	3.042	61	19.718	1 282.4	L
2	"	3 290	"	58	18.008	589.5	L
3	D 16	6 370	1.552	61	9.866	602.0	J
4	D 13	15 190	0.994	49	15.099	739.9	---
5	"	4 540	"	2	4.513	9.0	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	600	"	295	0.606	178.8	"
F 1	D 22	4 160	3.042	119	12.655	1 505.9	---
2	D 13	1 700	0.994	61	1.690	103.1	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 280	"	11	23.715	260.9	---
6	D 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	□
9	"	1 960	"	116	1.968	228.3	□
						6598.1	
T 6							
1	D 22	6 840	3.042	61	20.807	1 269.2	L
2	"	3 290	"	58	18.008	589.5	L
3	D 16	6 730	1.552	61	10.445	637.1	J
4	D 13	15 190	0.994	53	15.099	800.2	---
5	"	9 940	"	2	9.936	18.0	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	600	"	325	0.606	197.0	"
F 1	D 22	4 140	3.042	119	12.594	1 498.7	---
2	D 13	1 720	0.994	61	1.720	104.9	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 280	"	11	23.715	260.9	---
6	D 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	□
9	"	1 960	"	116	1.968	228.3	□
						6778.8	
						D 22	6637.2
						D 16	3232.1
						D 13	3505.9
						TOTAL WEIGHT	13375.2

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 : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (18)
DATE : _____ DWG NO. W-20

A-LINE

REIN. NO.	Ø (mm)	LENGTH (mm)	NO. OF REIN. WEIGHT	NO. OF REIN.	U WEIGHT	WEIGHT	REMARKS
T 7							
1	Ø 25	7 370	3.973	61	29.032	1 274.0	⌋
2	"	4 699	"	58	18.633	1 080.7	⌋
3	Ø 16	7 160	1.552	61	11.128	678.8	⌋
4	Ø 13	15 190	0.994	60	15.099	905.9	---
5	"	10 000	"	4	10.020	40.1	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	⊘
8	"	660	"	354	0.656	232.2	⊘
F 1	Ø 25	4 770	3.973	119	18.951	2 255.2	⌋
2	Ø 16	1 760	0.994	61	1.769	107.9	⌋
3	Ø 16	2 250	1.552	119	3.492	415.5	⌋
4	"	4 070	"	61	6.317	385.3	⌋
5	"	15 280	"	12	23.715	284.6	---
6	Ø 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	18	15.099	271.8	---
8	"	2 160	"	29	2.147	62.3	⊘
9	"	2 180	"	145	2.167	314.2	⊘
						8936.4	
T 8							
1	Ø 25	7 630	3.973	61	30.314	1 849.2	⌋
2	"	4 690	"	58	18.633	1 080.7	⌋
3	Ø 16	7 470	1.552	61	11.593	707.2	⌋
4	Ø 13	15 190	0.994	60	15.099	905.9	---
5	"	8 030	"	2	8.031	16.1	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	⊘
8	"	660	"	354	0.656	232.2	⊘
F 1	Ø 25	4 750	3.973	119	18.972	2 245.8	⌋
2	Ø 13	1 800	0.994	61	1.789	109.1	⌋
3	Ø 16	2 250	1.552	119	3.492	415.5	⌋
4	"	4 070	"	61	6.317	385.3	⌋
5	"	15 280	"	12	23.715	284.6	---
6	Ø 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	18	15.099	271.8	---
8	"	2 160	"	29	2.147	62.3	⊘
9	"	2 180	"	145	2.167	314.2	⊘
						5925.9	
T 9							
1	Ø 25	7 920	3.973	61	31.466	1 919.4	⌋
2	"	4 690	"	58	18.633	1 080.7	⌋
3	Ø 16	7 760	1.552	61	12.044	734.7	⌋
4	Ø 13	15 190	0.994	66	15.099	996.5	---
5	"	5 920	"	2	9.460	19.7	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	⊘
8	"	660	"	384	0.656	251.9	⊘
F 1	Ø 25	4 730	3.973	119	18.792	2 236.2	⌋
2	Ø 13	1 830	0.994	61	1.819	111.0	⌋
3	Ø 16	2 250	1.552	119	3.492	415.5	⌋
4	"	4 070	"	61	6.317	385.3	⌋
5	"	15 280	"	12	23.715	284.6	---
6	Ø 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	18	15.099	271.8	---
8	"	2 160	"	29	2.147	62.3	⊘
9	"	2 180	"	145	2.167	314.2	⊘
						5219.8	
						Ø 25	15521.8
						Ø 16	5975.9
						Ø 13	6274.8
						TOTAL WEIGHT	27177.1

B-LINE

REIN. NO.	Ø (mm)	LENGTH (mm)	NO. OF REIN. WEIGHT	NO. OF REIN.	U WEIGHT	WEIGHT	REMARKS
T 7							
1	Ø 25	7 370	3.973	61	29.032	1 274.0	⌋
2	"	4 690	"	58	18.633	1 080.7	⌋
3	Ø 16	7 170	1.552	61	11.128	678.8	⌋
4	Ø 13	15 190	0.994	60	15.099	905.9	---
5	"	10 190	"	4	10.129	40.5	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	⊘
8	"	660	"	354	0.656	232.1	⊘
F 1	Ø 25	4 770	3.973	119	18.951	2 255.2	⌋
2	Ø 13	1 780	0.994	61	1.769	107.9	⌋
3	Ø 16	2 250	1.552	119	3.492	415.5	⌋
4	"	4 070	"	61	6.317	385.3	⌋
5	"	15 280	"	12	23.715	284.6	---
6	Ø 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	18	15.099	271.8	---
8	"	2 160	"	29	2.147	62.3	⊘
9	"	2 180	"	145	2.167	314.2	⊘
						8937.8	
T 8							
1	Ø 25	7 640	3.973	61	30.354	1 851.6	⌋
2	"	4 690	"	58	18.633	1 080.7	⌋
3	Ø 16	7 480	1.552	61	11.609	708.1	⌋
4	Ø 13	15 190	0.994	64	15.099	966.3	---
5	"	8 150	"	2	8.101	16.2	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	⊘
8	"	660	"	354	0.656	232.2	⊘
F 1	Ø 25	4 750	3.973	119	18.972	2 245.8	⌋
2	Ø 13	1 810	0.994	61	1.789	109.1	⌋
3	Ø 16	2 250	1.552	119	3.492	415.5	⌋
4	"	4 070	"	61	6.317	385.3	⌋
5	"	15 280	"	12	23.715	284.6	---
6	Ø 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	18	15.099	271.8	---
8	"	2 160	"	29	2.147	62.3	⊘
9	"	2 180	"	145	2.167	314.2	⊘
						5980.3	
T 9							
1	Ø 25	7 930	3.973	61	31.506	1 921.9	⌋
2	"	4 690	"	58	18.633	1 080.7	⌋
3	Ø 16	7 770	1.552	61	12.059	735.6	⌋
4	Ø 13	15 190	0.994	66	15.099	996.5	---
5	"	10 000	"	2	9.940	19.9	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	⊘
8	"	660	"	384	0.656	251.9	⊘
F 1	Ø 25	4 730	3.973	119	18.792	2 236.2	⌋
2	Ø 13	1 830	0.994	61	1.819	111.0	⌋
3	Ø 16	2 250	1.552	119	3.492	415.5	⌋
4	"	4 070	"	61	6.317	385.3	⌋
5	"	15 280	"	12	23.715	284.6	---
6	Ø 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	18	15.099	271.8	---
8	"	2 160	"	29	2.147	62.3	⊘
9	"	2 180	"	145	2.167	314.2	⊘
						5223.4	
						Ø 25	15526.8
						Ø 16	5978.7
						Ø 13	6274.8
						TOTAL WEIGHT	27241.5

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 : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (19)
DATE : DTG NO. W-21

A-LINE

REIN NO.	φ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NLMB	E WEIGHT	WEIGHT	REMARKS
T 10							
1	D 23	8 350	5.059	61	42.243	2 578.8	L
2	"	5 110	"	58	25.851	1 499.4	L
3	D 19	8 440	2.235	61	18.282	1 115.2	J
4	D 13	15 190	0.994	69	15.099	1 041.8	---
5	"	8 750	"	2	6.710	13.4	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	700	"	413	0.676	279.2	"
F 1	D 25	5 080	3.973	119	20.183	2 401.8	L
2	D 13	2 070	0.994	61	2.058	125.5	L
3	D 16	2 550	1.552	119	3.958	471.0	L
4	"	4 370	"	61	6.782	413.7	L
5	"	15 280	"	13	23.715	308.3	---
6	D 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	19	15.099	286.9	---
8	"	2 360	"	29	2.346	68.0	U
9	"	2 380	"	145	2.366	343.1	U
						11080.1	
T 11							
1	D 23	8 620	5.059	61	43.609	2 660.1	L
2	"	5 110	"	58	25.851	1 499.4	L
3	D 19	8 440	2.235	61	18.883	1 150.6	J
4	D 13	15 190	0.994	71	15.099	1 072.0	---
5	"	7 450	"	2	7.405	14.8	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	700	"	413	0.676	287.4	"
F 1	D 25	5 060	3.973	119	20.183	2 392.3	L
2	D 13	2 090	0.994	61	2.077	126.7	L
3	D 16	2 550	1.552	119	3.958	471.0	L
4	"	4 370	"	61	6.782	413.7	L
5	"	15 280	"	13	23.715	308.3	---
6	D 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	19	15.099	286.9	---
8	"	2 360	"	29	2.346	68.0	U
9	"	2 380	"	145	2.366	343.1	U
						11220.3	
D 23						8235.7	
D 25						4794.1	
D 19						2265.8	
D 16						2386.0	
D 13						4628.8	
TOTAL WEIGHT						22310.4	

B-LINE

REIN NO.	φ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NLMB	E WEIGHT	WEIGHT	REMARKS
T 10							
1	D 23	8 360	5.059	61	42.293	2 579.9	L
2	"	5 110	"	58	25.851	1 499.4	L
3	D 19	8 180	2.235	61	18.282	1 115.2	J
4	D 13	15 190	0.994	69	15.099	1 041.8	---
5	"	8 910	"	2	6.865	13.7	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	680	"	413	0.676	279.2	"
F 1	D 25	5 080	3.973	119	20.183	2 401.8	L
2	D 13	2 070	0.994	61	2.058	125.5	L
3	D 16	2 550	1.552	119	3.958	471.0	L
4	"	4 370	"	61	6.782	413.7	L
5	"	15 280	"	13	23.715	308.3	---
6	D 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	19	15.099	286.9	---
8	"	2 360	"	29	2.346	68.0	U
9	"	2 380	"	145	2.366	343.1	U
						11082.5	
T 11							
1	D 23	8 620	5.059	61	43.609	2 660.1	L
2	"	5 110	"	58	25.851	1 499.4	L
3	D 19	8 440	2.235	61	18.883	1 150.6	J
4	D 13	15 190	0.994	71	15.099	1 072.0	---
5	"	7 620	"	2	7.574	15.1	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	700	"	413	0.676	287.4	"
F 1	D 25	5 060	3.973	119	20.183	2 392.3	L
2	D 13	2 090	0.994	61	2.077	126.7	L
3	D 16	2 550	1.552	119	3.958	471.0	L
4	"	4 370	"	61	6.782	413.7	L
5	"	15 280	"	13	23.715	308.3	---
6	D 13	15 190	0.994	5	15.099	75.5	---
7	"	15 190	"	19	15.099	286.9	---
8	"	2 360	"	29	2.346	68.0	U
9	"	2 380	"	145	2.366	343.1	U
						11230.6	
D 23						8236.8	
D 25						4794.1	
D 19						2265.8	
D 16						2386.0	
D 13						4629.6	
TOTAL WEIGHT						22314.1	

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
EKKYAMA CONSULTANTS INTERNATIONAL

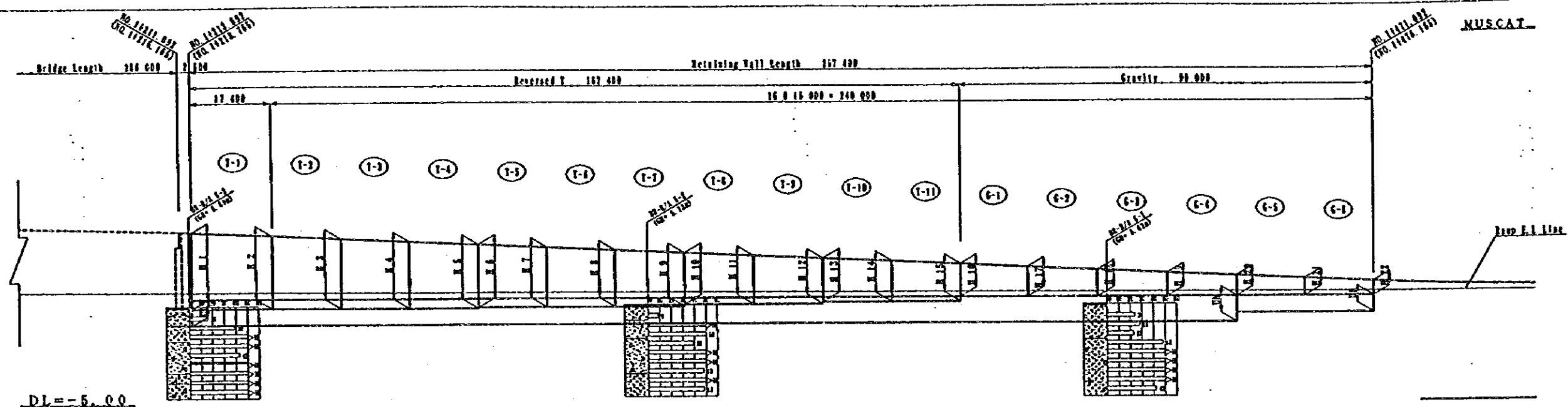
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

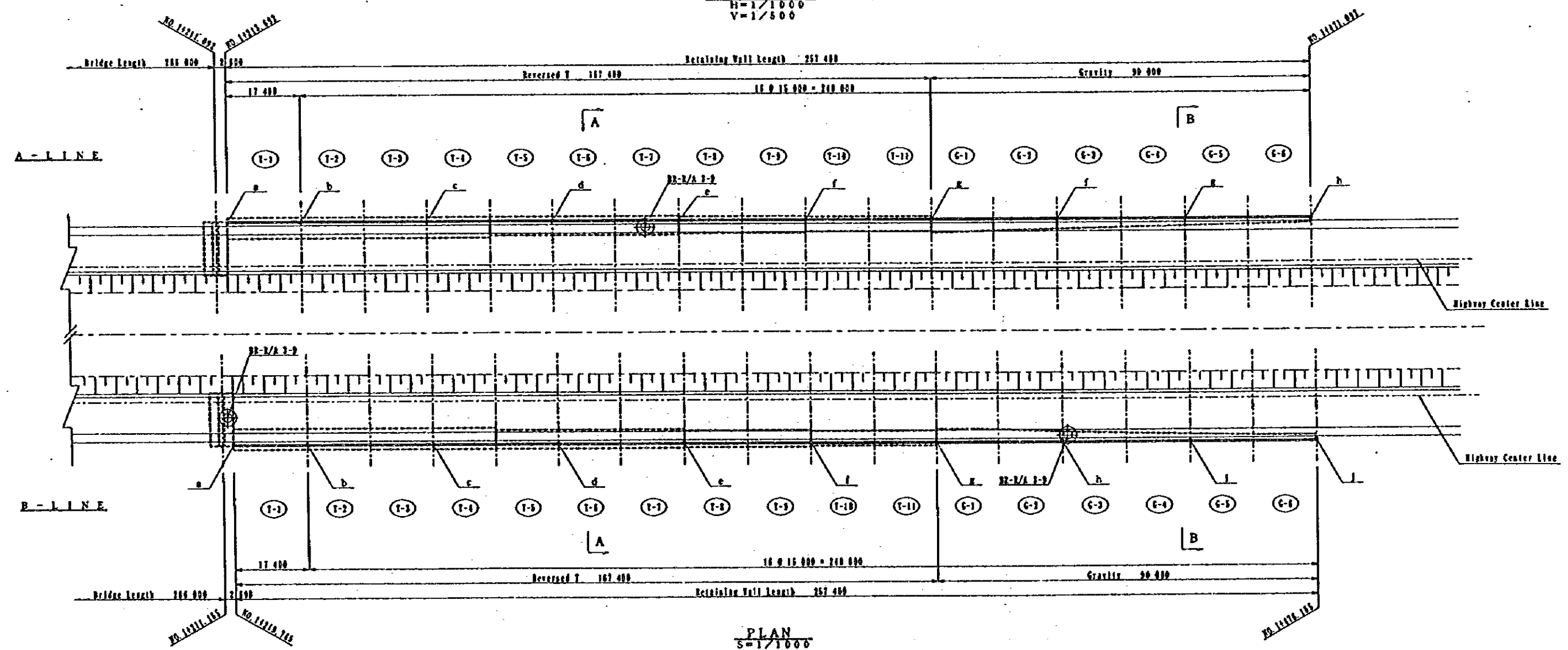
TITLE : R/A-5, AL MULAADAH RE-BAR ARRANGEMENT (20)

DATE

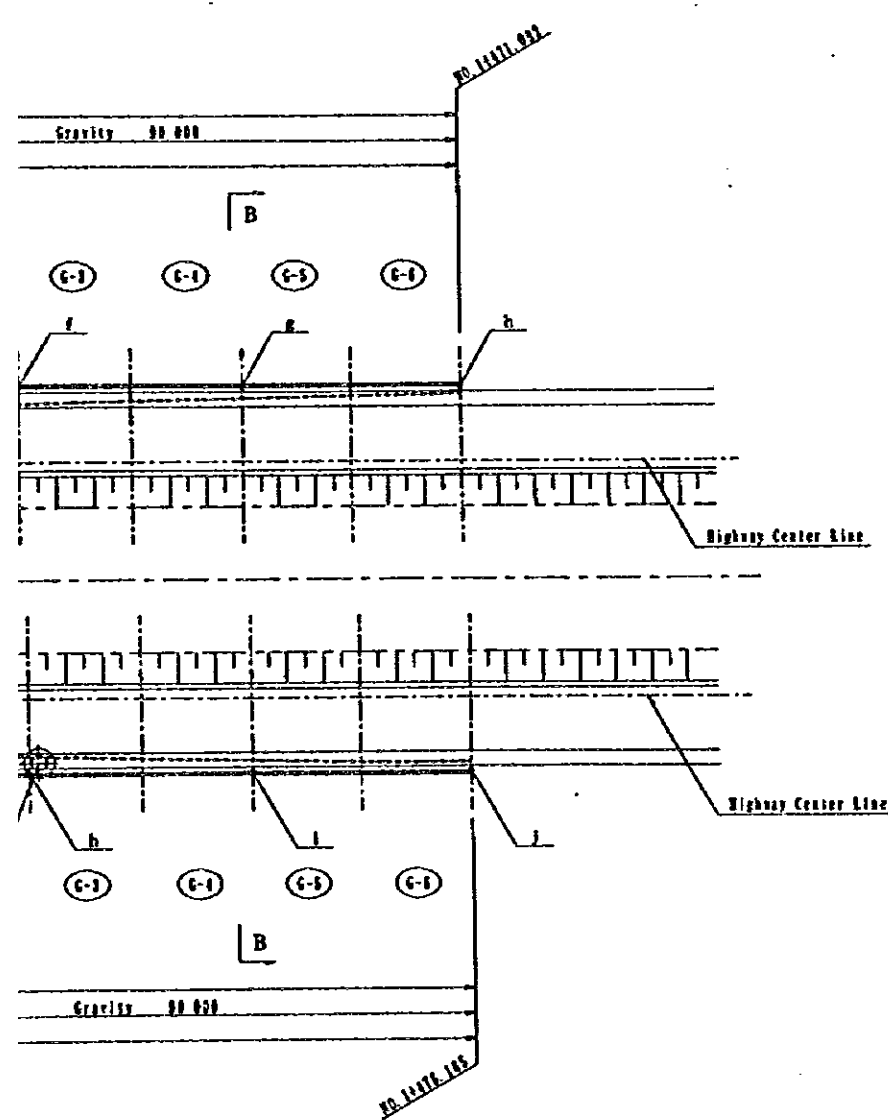
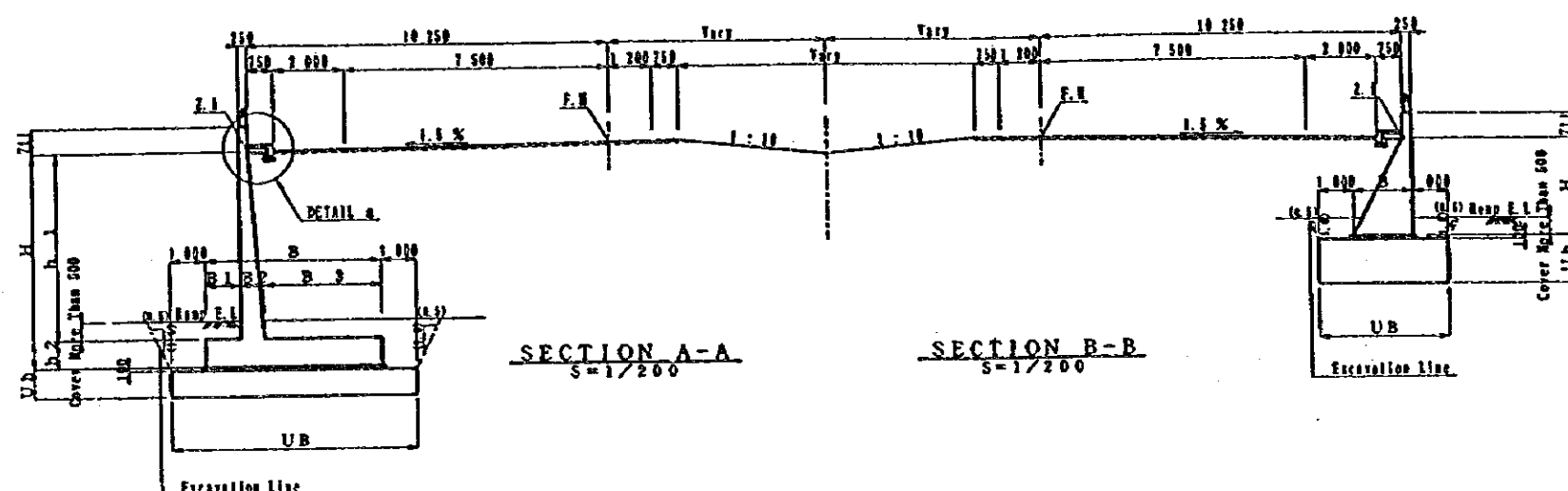
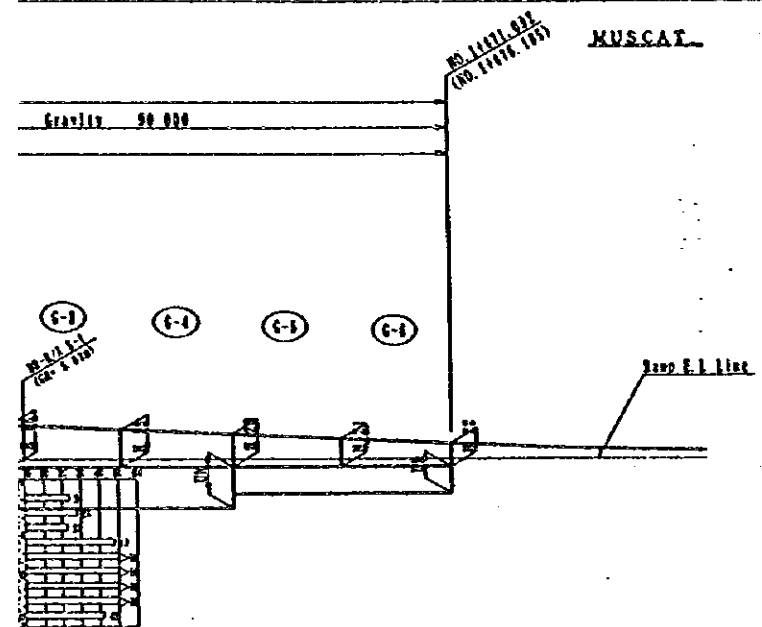
DWG NO. W-22



SIDE VIEW
H=1/1000
V=1/500



NOTES:

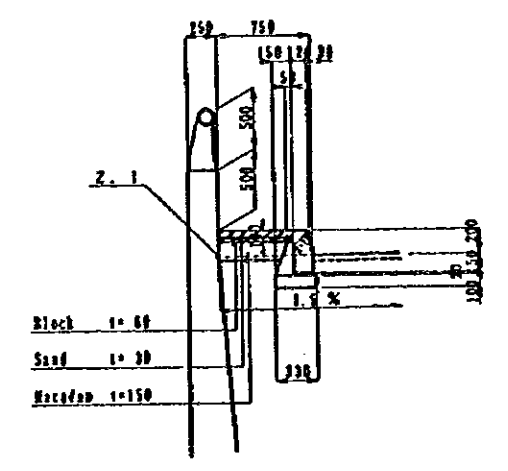


Reversed T

MARK TYPE	H	h 1	h 2	B	B 1	B 2	B 3	U h	U B
A I L I N E	T-1	8+8 109	7 109	1 000	5 000	1 000	809 3 191	1 800	7 000
	T-2	9+7 843	6 843				788 3 212		
	T-3	9+7 576	6 576				767 3 233		
	T-4	10+7 309	6 309				746 3 254		
	T-5	10+6 997	5 997				721 3 279		
	T-6	11+6 897	5 897	900	4 500	1 000	692 3 308	1 900	6 500
	T-7	11+6 585	5 685				669 3 331		
	T-8	11+6 228	5 328				643 3 357		
	T-9	11+5 871	4 971				617 3 383		
	T-10	11+5 673	4 971	700	4 000	800	578 3 422	2 100	6 000
	T-11	11+4 269	4 569				552 3 448		
B I L I N E	T-1	11+4 867	4 167				525 3 475		
	T-2	11+4 667	4 167	500	3 500	600	482 3 418	2 300	5 500
	T-3	11+4 230	3 730				457 3 443		
	T-4	11+3 793	3 293				433 3 467		
	T-5	11+3 152	2 752	1 000	5 000	1 000	812 3 388	1 800	7 000
	T-6	11+7 886	6 886				791 3 209		
	T-7	11+7 619	6 619				770 3 230		
	T-8	11+7 352	6 352				749 3 251		
	T-9	11+7 040	6 040				725 3 275		
	T-10	11+6 940	6 040	900	4 500	1 000	696 3 304	1 900	6 500
	T-11	11+6 628	5 728				673 3 327		
E I L I N E	T-1	11+6 271	6 371				646 3 354		
	T-2	11+5 914	5 014				620 3 380		
	T-3	11+5 714	4 612	700	4 000	800	581 3 419	2 100	6 000
	T-4	11+5 312	4 612				555 3 445		
	T-5	11+4 910	4 210				528 3 472		
	T-6	11+4 710	4 210	500	3 500	600	484 3 416	2 300	5 500
	T-7	11+4 273	3 773				460 3 440		
	T-8	11+3 836	3 336				436 3 466		

Gravity

MARK TYPE	H	B	U h	U B	
A I L I N E	G-1	11+3 293	2 349	2 800	4 349
	G-2	11+2 903	2 099		4 099
	G-3	11+2 509	1 849		3 849
	G-4	11+2 179	1 639		3 639
	G-5	11+1 849	1 429	1 800	3 429
	G-6	11+1 582	1 258		3 258
B I L I N E	G-1	11+3 335	2 376	2 800	4 376
	G-2	11+2 943	2 126		4 126
	G-3	11+2 550	1 876		3 876
	G-4	11+2 219	1 665		3 665
	G-5	11+1 887	1 453	1 800	3 453
	G-6	11+1 617	1 281		3 281



DETAIL a
S=1/60

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 : R/A-5, AL MULADDAH GENERAL VIEW FOR WALL (2)-1	DATE
	DWG NO. W-23

Point		a	b	c	d	e	f	g	h	i	j
A L L I N E	N	+2627213.11169	+2627216.38871	+2627221.30424	+2627226.21976	+2627231.13529	+2627236.05082	+2627240.96635	+2627245.88188	+2627250.79740	+2627255.71293
	E	+ 558891.53266	+ 558911.26236	+ 558940.85692	+ 558970.45147	+ 559000.04602	+ 559029.64058	+ 559059.23513	+ 559088.82968	+ 559118.42424	+ 559148.01879
	Z	13.570	13.264	12.730	12.106	11.392	10.588	9.714	8.930	8.270	7.735
B I L L I N E	N	+2627184.60177	+2627187.87879	+2627192.79432	+2627197.70984	+2627202.62537	+2627207.54090	+2627212.45642	+2627217.37195	+2627222.28748	+2627227.20301
	E	+ 558896.26501	+ 558915.99471	+ 558945.58927	+ 558975.18382	+ 559004.77837	+ 559034.37293	+ 559063.96748	+ 559093.56203	+ 559123.15659	+ 559152.75114
	Z	13.570	13.264	12.730	12.106	11.392	10.588	9.713	8.928	8.265	7.724

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUJUYAMA CONSULTANTS INTERNATIONAL

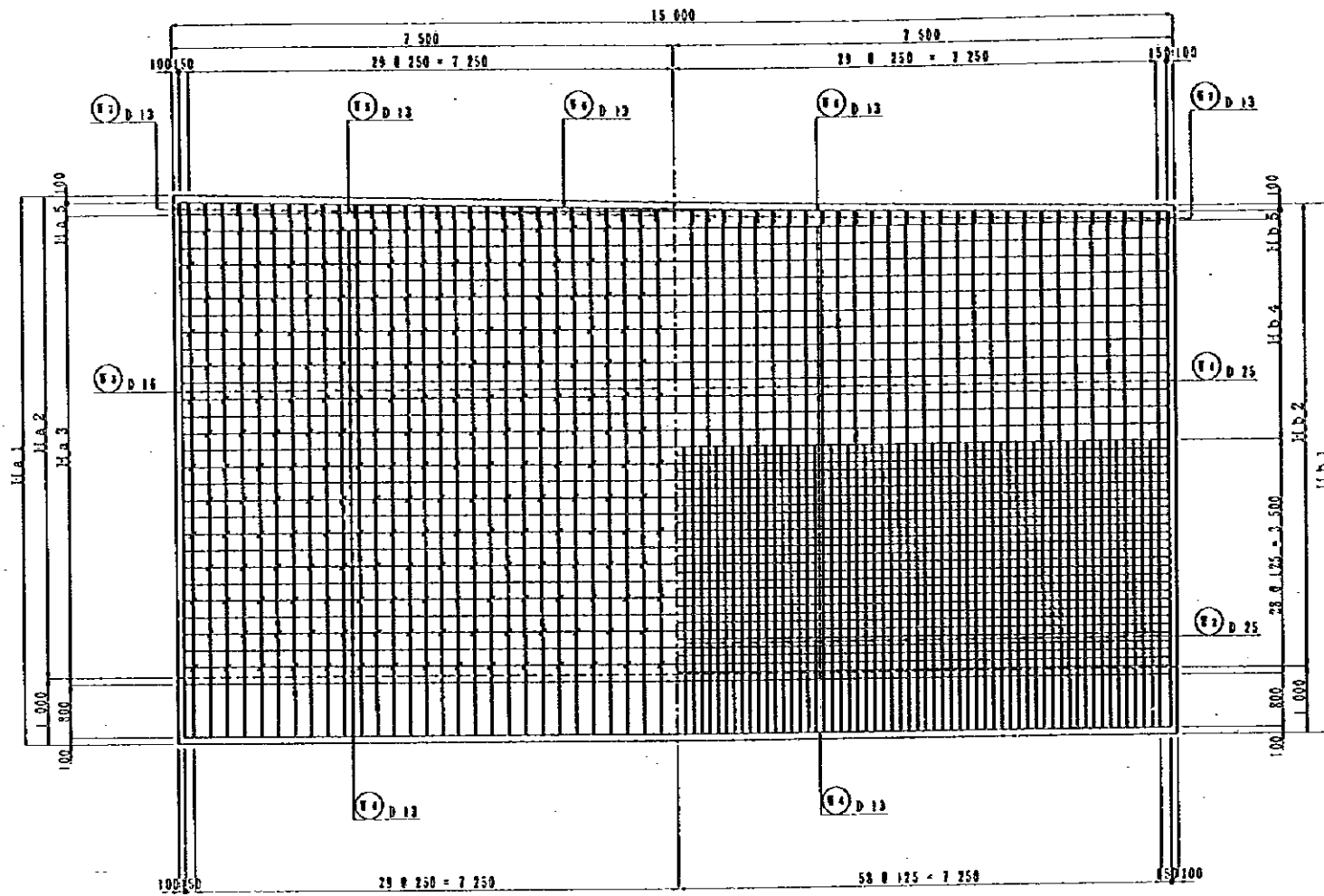
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

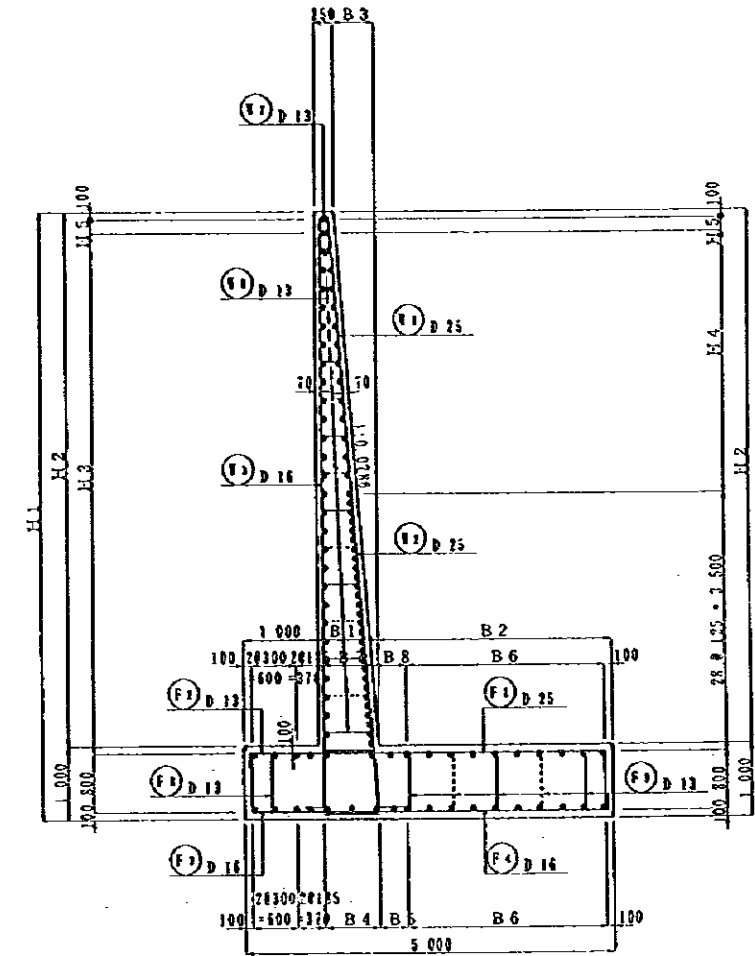
TITLE : R/A-5. AL MULADDAH GENERAL VIEW FOR WALL (2)-2

DATE

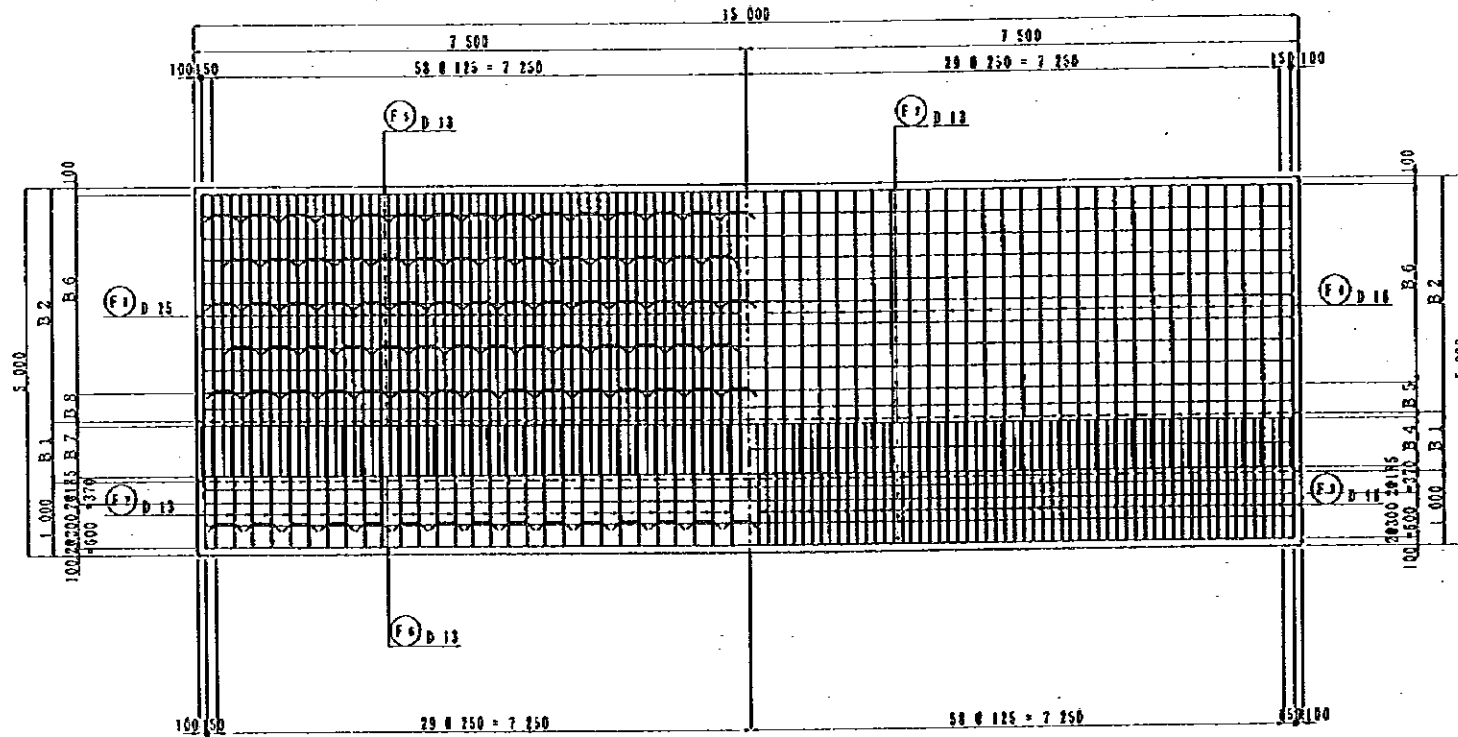
DWG NO. W-24



SIDE VIEW
S=1/100



SECTION
S=1/100



PLAN
S=1/100

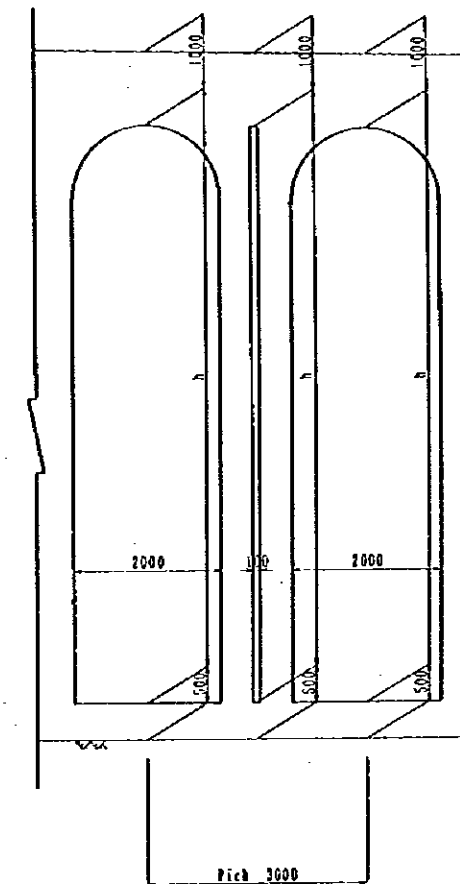
NOTES:

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 : R/A-5. AL MULADDAH RE-BAR ARRANGEMENT (1)
DATE : _____ DWG NO. W-25

A L I N E	T-1		T-2		T-3		T-4	
	a - a	b - b	a - a	b - b	a - a	b - b	a - a	b - b
	Ha1	8 109	Hb1 7 843	Ha1 7 843	Hb1 7 576	Ha1 7 576	Hb1 7 309	Ha1 7 309
Ha2	7 109	Hb2 6 843	Ha2 6 843	Hb2 6 576	Ha2 6 576	Hb2 6 309	Ha2 6 309	Hb2 5 997
Ha3	280250 = 7 000	Hb3 270250 = 6 750	Ha3 270250 = 6 750	Hb3 260250 = 6 500	Ha3 260250 = 6 500	Hb3 250250 = 6 250	Ha3 250250 = 6 250	Hb3 230250 = 5 750
Ha4	140250 = 3 500	Hb4 130250 = 3 250	Ha4 130250 = 3 250	Hb4 120250 = 3 000	Ha4 120250 = 3 000	Hb4 110250 = 2 750	Ha4 110250 = 2 750	Hb4 90250 = 2 250
Ha5	109	Hb5 93	Ha5 93	Hb5 76	Ha5 76	Hb5 59	Ha5 59	Hb5 247
Ba1	809	Bb1 788	Ba1 788	Bb1 767	Ba1 767	Bb1 746	Ba1 746	Bb1 721
Ba2	3 191	Bb2 3 212	Ba2 3 212	Bb2 3 233	Ba2 3 233	Bb2 3 254	Ba2 3 254	Bb2 3 279
Ba3	559	Bb3 538	Ba3 538	Bb3 517	Ba3 517	Bb3 496	Ba3 496	Bb3 471
Ba4	20369.5 = 739	Bb4 20359.5 = 719	Ba4 20359.5 = 719	Bb4 20349 = 698	Ba4 20349 = 698	Bb4 20338.5 = 677	Ba4 20338.5 = 677	Bb4 20326 = 652
Ba5	20195.5 = 391	Bb5 20205.5 = 411	Ba5 20205.5 = 411	Bb5 20216 = 432	Ba5 20216 = 432	Bb5 20226.5 = 453	Ba5 20226.5 = 453	Bb5 20239 = 478
Ba6	90300 = 2 700	Bb6 90300 = 2 700	Ba6 90300 = 2 700	Bb6 90300 = 2 700	Ba6 90300 = 2 700	Bb6 90300 = 2 700	Ba6 90300 = 2 700	Bb6 90300 = 2 700
Ba7	677	Bb7 656	Ba7 656	Bb7 635	Ba7 635	Bb7 614	Ba7 614	Bb7 589
Ba8	20226.5 = 453	Bb8 20237 = 474	Ba8 20237 = 474	Bb8 20247.5 = 495	Ba8 20247.5 = 495	Bb8 20258 = 516	Ba8 20258 = 516	Bb8 20270.5 = 541
B I L I N E	T-1		T-2		T-3		T-4	
	a - a	b - b	a - a	b - b	a - a	b - b	a - a	b - b
	Ha1	8 152	Hb1 7 886	Ha1 7 886	Hb1 7 619	Ha1 7 619	Hb1 7 352	Ha1 7 352
Ha2	7 152	Hb2 6 886	Ha2 6 886	Hb2 6 619	Ha2 6 619	Hb2 6 352	Ha2 6 352	Hb2 6 040
Ha3	280250 = 7 000	Hb3 270250 = 6 750	Ha3 270250 = 6 750	Hb3 260250 = 6 500	Ha3 260250 = 6 500	Hb3 250250 = 6 250	Ha3 250250 = 6 250	Hb3 240250 = 6 000
Ha4	140250 = 3 500	Hb4 130250 = 3 250	Ha4 130250 = 3 250	Hb4 120250 = 3 000	Ha4 120250 = 3 000	Hb4 110250 = 2 750	Ha4 110250 = 2 750	Hb4 100250 = 2 500
Ha5	152	Hb5 136	Ha5 136	Hb5 119	Ha5 119	Hb5 102	Ha5 102	Hb5 40
Ba1	812	Bb1 791	Ba1 791	Bb1 770	Ba1 770	Bb1 749	Ba1 749	Bb1 725
Ba2	3 188	Bb2 3 209	Ba2 3 209	Bb2 3 230	Ba2 3 230	Bb2 3 251	Ba2 3 251	Bb2 3 275
Ba3	562	Bb3 541	Ba3 541	Bb3 520	Ba3 520	Bb3 499	Ba3 499	Bb3 475
Ba4	20371.5 = 743	Bb4 20361 = 722	Ba4 20361 = 722	Bb4 20350.5 = 701	Ba4 20350.5 = 701	Bb4 20340 = 680	Ba4 20340 = 680	Bb4 20327.5 = 655
Ba5	20193.5 = 387	Bb5 20204 = 408	Ba5 20204 = 408	Bb5 20214.5 = 429	Ba5 20214.5 = 429	Bb5 20225 = 450	Ba5 20225 = 450	Bb5 20237.5 = 475
Ba6	90300 = 2 700	Bb6 90300 = 2 700	Ba6 90300 = 2 700	Bb6 90300 = 2 700	Ba6 90300 = 2 700	Bb6 90300 = 2 700	Ba6 90300 = 2 700	Bb6 90300 = 2 700
Ba7	680	Bb7 659	Ba7 659	Bb7 638	Ba7 638	Bb7 617	Ba7 617	Bb7 593
Ba8	20225 = 450	Bb8 20235.5 = 471	Ba8 20235.5 = 471	Bb8 20246 = 492	Ba8 20246 = 492	Bb8 20256.5 = 513	Ba8 20256.5 = 513	Bb8 20268.5 = 537



NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	TITLE :	R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (2)
	DATE :	DWG NO. W-26

REIN NO.	φ (mm)	LENGTB (mm)	a	b	c
T 1					
W 1	D 25	8 100	7 932~7 667	375	---
2	"	4 630	4 313	375	---
3	D 16	8 020	7 909~7 643	240	---
4	D 13	15 190	14 800	390	---
5	"	6 150	6 147	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	660	691~219	111	---
F 1	D 25	4 710	3 903	800	---
2	D 13	1 850	1 647	195	---
3	D 16	2 850	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 200	14 800	490	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111
T 2					
W 1	D 25	7 910	7 667~7 399	375	---
2	"	4 690	4 313	375	---
3	D 16	7 150	7 043~7 376	240	---
4	D 13	15 190	14 800	390	---
5	"	5 230	5 229	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	660	670~198	111	---
F 1	D 25	4 730	3 924	800	---
2	D 13	1 830	1 626	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 200	14 800	490	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

REIN NO.	φ (mm)	LENGTB (mm)	a	b	c
T 3					
W 1	D 25	7 640	7 399~7 131	375	---
2	"	4 690	4 313	375	---
3	D 16	7 490	7 376~7 109	240	---
4	D 13	15 190	14 800	390	---
5	"	4 270	4 270	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	660	619~218	111	---
F 1	D 25	4 750	3 945	800	---
2	D 13	1 800	1 605	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 200	14 800	490	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111
T 4					
W 1	D 25	7 350	7 131~6 818	375	---
2	"	4 690	4 313	375	---
3	D 16	7 200	7 109~6 792	240	---
4	D 13	15 190	14 800	390	---
5	"	8 070	2 837~14 711	390	---
6	"	15 200	14 803	390	---
7	"	500	110	195	---
8	"	660	629~195	111	---
F 1	D 25	4 770	3 966	800	---
2	D 13	1 790	1 594	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 200	14 800	490	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

REIN NO.	φ (mm)	LENGTB (mm)	a	b	c
T 1					
W 1	D 25	8 220	7 977~7 710	375	---
2	"	4 690	4 313	375	---
3	D 16	8 060	7 957~7 686	240	---
4	D 13	15 190	14 800	390	---
5	"	8 500	8 571	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	670	691~183	111	---
F 1	D 25	4 700	3 900	800	---
2	D 13	1 850	1 650	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 200	14 800	490	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111
T 2					
W 1	D 25	7 960	7 710~7 442	375	---
2	"	4 690	4 313	375	---
3	D 16	7 800	7 696~7 419	240	---
4	D 13	15 190	14 800	390	---
5	"	7 610	7 610	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	660	673~201	111	---
F 1	D 25	4 730	3 921	800	---
2	D 13	1 830	1 629	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 200	14 800	490	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

REIN NO.	φ (mm)	LENGTB (mm)	a	b	c
T 3					
W 1	D 25	2 690	2 442~2 174	375	---
2	"	4 690	4 313	375	---
3	D 16	7 530	7 419~7 152	240	---
4	D 13	15 190	14 800	390	---
5	"	6 630	6 685	---	---
6	"	15 200	14 802	390	---
7	"	500	110	195	---
8	"	640	652~180	111	---
F 1	D 25	4 750	3 942	800	---
2	D 13	1 810	1 608	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 200	14 800	490	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111
T 4					
W 1	D 25	7 499	7 174~6 861	375	---
2	"	4 690	4 313	375	---
3	D 16	7 210	7 152~6 840	240	---
4	D 13	15 190	14 800	390	---
5	"	4 910	4 901	---	---
6	"	15 200	14 803	390	---
7	"	500	110	195	---
8	"	610	621~199	111	---
F 1	D 25	4 770	3 963	800	---
2	D 13	1 790	1 587	195	---
3	D 16	2 250	1 450	800	---
4	"	4 070	3 830	240	---
5	"	15 200	14 800	490	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	2 160	828	279	111
9	"	2 180	834	288	111

NOTES:

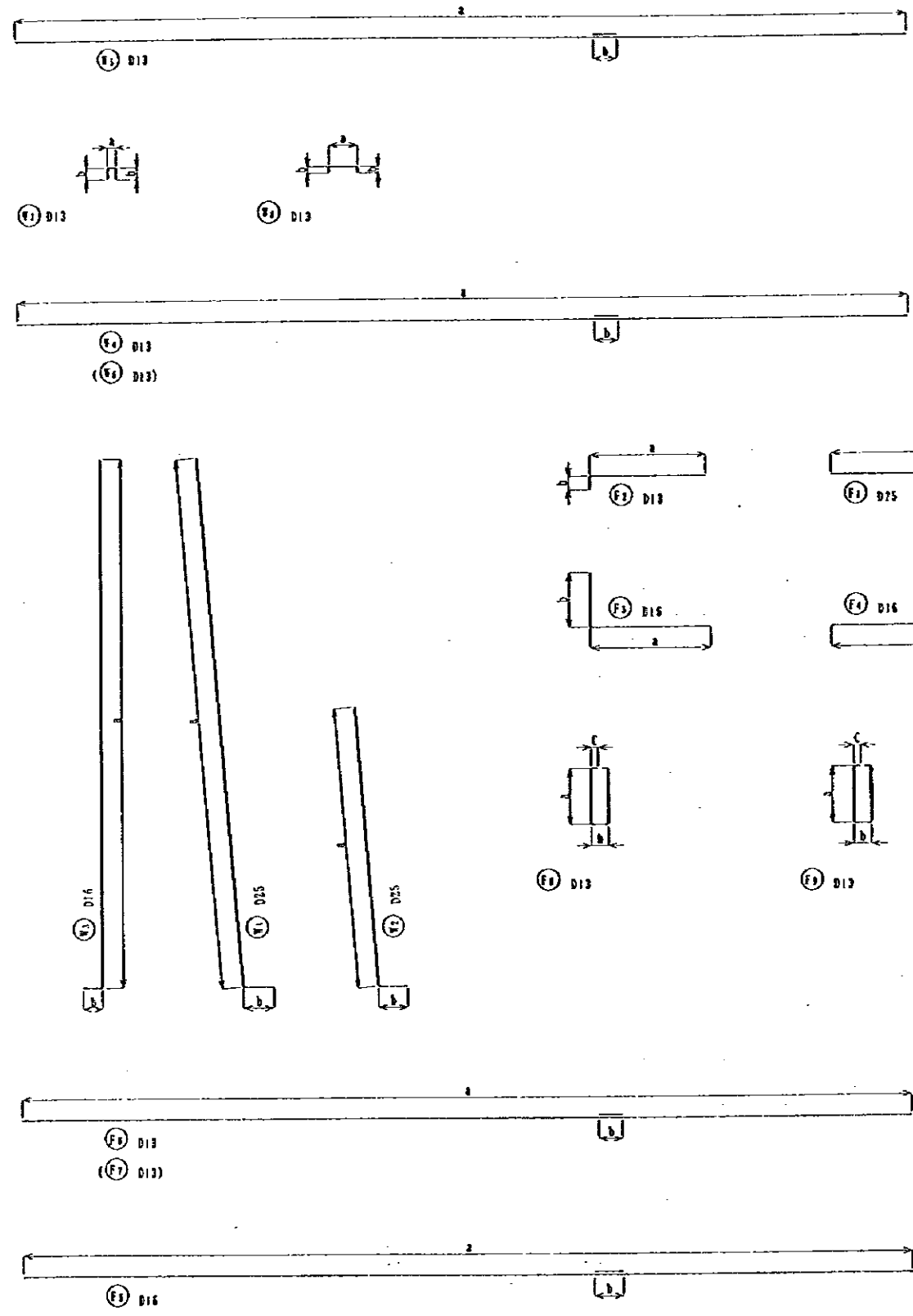
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUJUYAMA CONSULTANTS INTERNATIONAL

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

TITLE : R/A-S. AL MULADDAH RE-BAR ARRANGEMENT (3)

DATE : _____
DWG NO. W-27



NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FLUKYAMA CONSULTANTS INTERNATIONAL

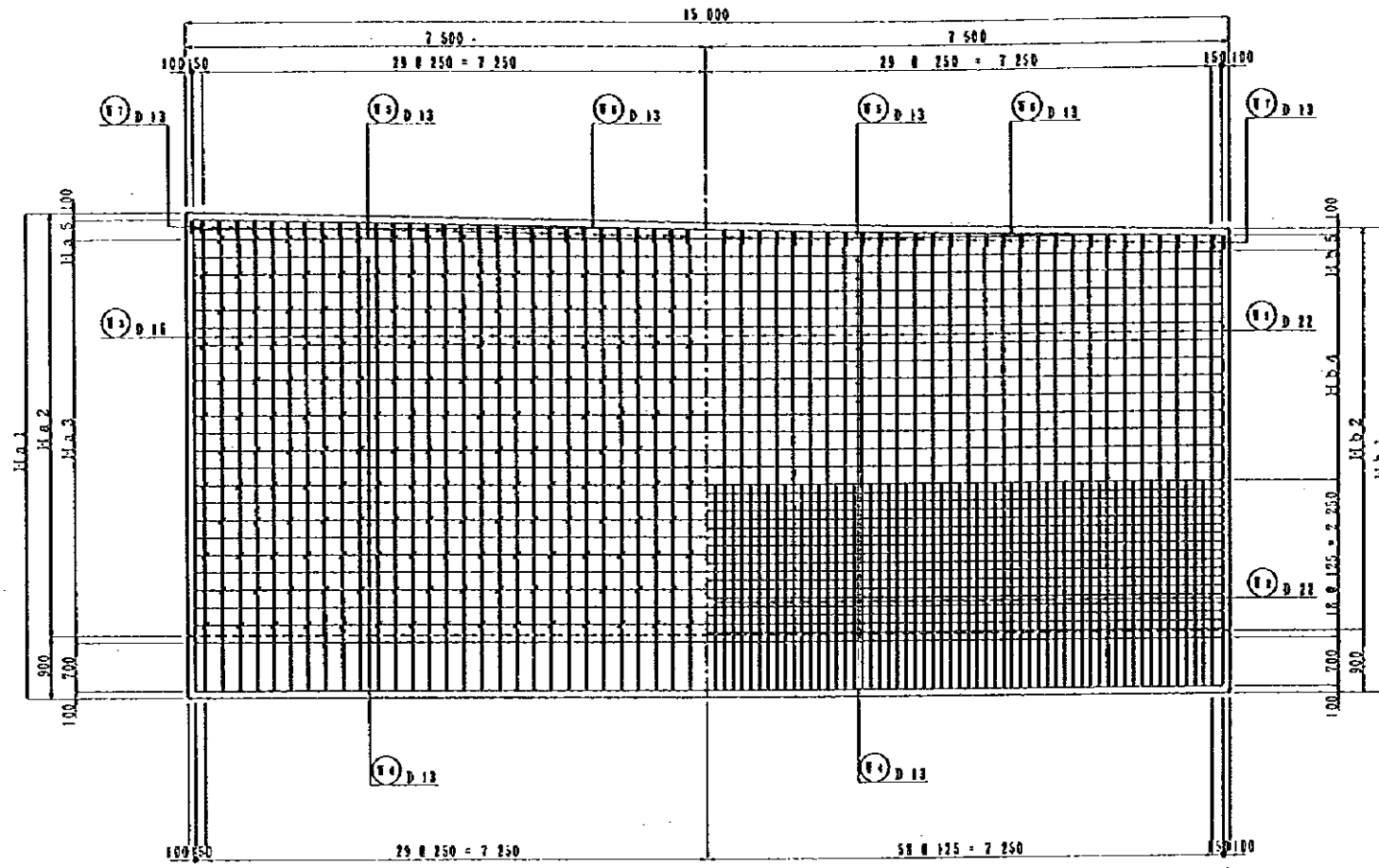
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

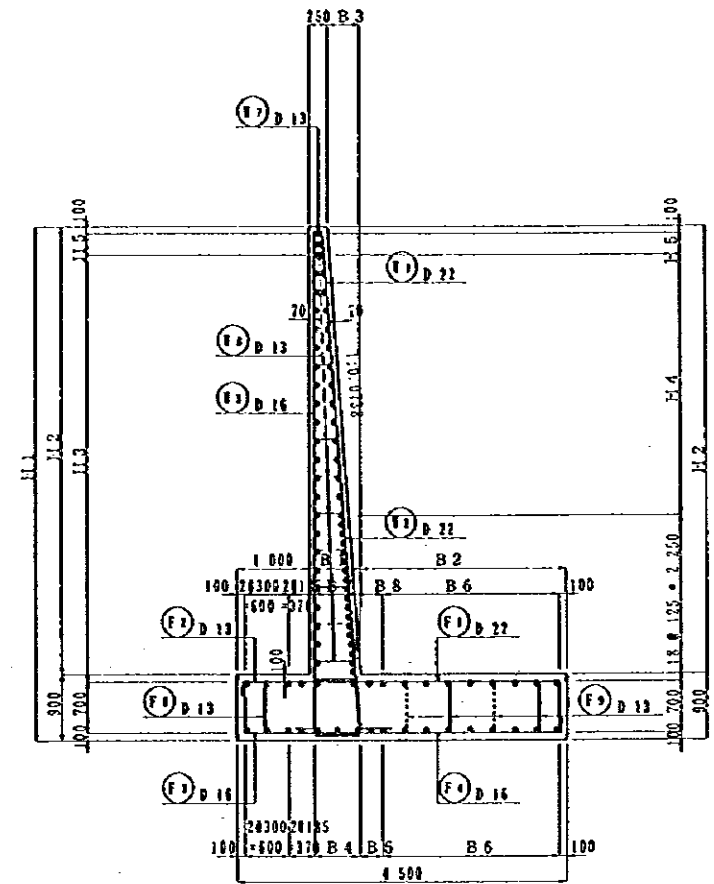
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (4)

DATE

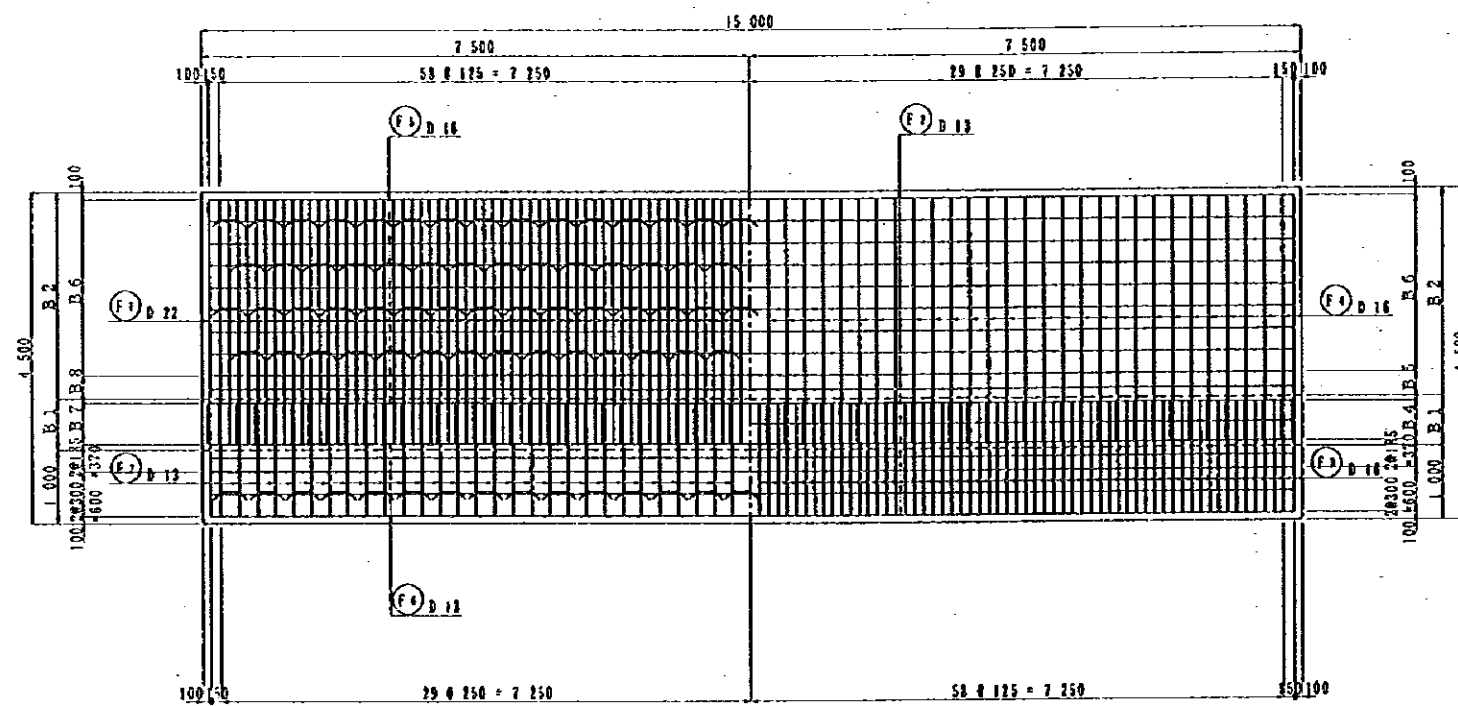
DWG NO. W-28



SIDE VIEW
S=1/100



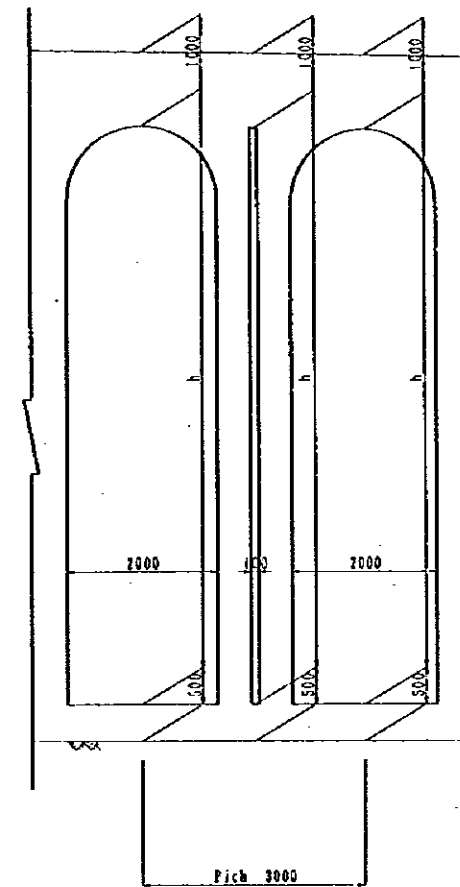
SECTION
S=1/100



PLAN
S=1/100

NOTES:	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUJYAMA CONSULTANTS INTERNATIONAL	PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
		TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (S)
		DATE : _____ DWG NO. W-29

A I L I N E	T-5		T-6		T-7	
	a - a	b - b	a - a	b - b	a - a	b - b
	Ha1	6 897	Hb1 6 585	Ha1 6 585	Hb1 6 226	Ha1 6 228
Ha2	5 997	Hb2 5 685	Ha2 5 685	Hb2 5 328	Ha2 5 328	Hb2 4 971
Ha3	230250 = 5 750	Hb3 220250 = 5 500	Ha3 220250 = 5 500	Hb3 210250 = 5 250	Ha3 210250 = 5 250	Hb3 190250 = 4 750
Ha4	140250 = 3 500	Hb4 130250 = 3 250	Ha4 130250 = 3 250	Hb4 120250 = 3 000	Ha4 120250 = 3 000	Hb4 100250 = 2 500
Ha5	247	Hb5 185	Ha5 185	Hb5 78	Ha5 78	Hb5 221
Ba1	692	Bb1 669	Ba1 669	Bb1 643	Ba1 643	Bb1 617
Ba2	2 808	Bb2 2 831	Ba2 2 831	Bb2 2 857	Ba2 2 857	Bb2 2 883
Ba3	442	Bb3 419	Ba3 419	Bb3 393	Ba3 393	Bb3 367
Ba4	20305.5 = 611	Bb4 20294 = 588	Ba4 20294 = 588	Bb4 20281 = 562	Ba4 20281 = 562	Bb4 20267.5 = 535
Ba5	20159.5 = 319	Bb5 20171 = 342	Ba5 20171 = 342	Bb5 20184 = 368	Ba5 20184 = 368	Bb5 20197.5 = 395
Ba6	80300 = 2 400	Bb6 80300 = 2 400	Ba6 80300 = 2 400	Bb6 80300 = 2 400	Ba6 80300 = 2 400	Bb6 80300 = 2 400
Ba7	559	Bb7 536	Ba7 536	Bb7 510	Ba7 510	Bb7 484
Ba8	20185.5 = 371	Bb8 20197 = 394	Ba8 20197 = 394	Bb8 20210 = 420	Ba8 20210 = 420	Bb8 20223 = 446
B I L I N E	T-5		T-6		T-7	
	a - a	b - b	a - a	b - b	a - a	b - b
	Ha1	6 940	Hb1 6 628	Ha1 6 628	Hb1 6 271	Ha1 6 271
Ha2	6 040	Hb2 5 728	Ha2 5 728	Hb2 5 371	Ha2 5 371	Hb2 5 014
Ha3	240250 = 6 000	Hb3 220250 = 5 500	Ha3 220250 = 5 500	Hb3 210250 = 5 250	Ha3 210250 = 5 250	Hb3 200250 = 5 000
Ha4	100250 = 2 500	Hb4 130250 = 3 250	Ha4 130250 = 3 250	Hb4 120250 = 3 000	Ha4 120250 = 3 000	Hb4 110250 = 2 750
Ha5	40	Hb5 228	Ha5 228	Hb5 121	Ha5 121	Hb5 14
Ba1	696	Bb1 673	Ba1 673	Bb1 646	Ba1 646	Bb1 620
Ba2	2 804	Bb2 2 827	Ba2 2 827	Bb2 2 854	Ba2 2 854	Bb2 2 880
Ba3	446	Bb3 423	Ba3 423	Bb3 396	Ba3 396	Bb3 370
Ba4	20307 = 614	Bb4 20295.5 = 591	Ba4 20295.5 = 591	Bb4 20282.5 = 565	Ba4 20282.5 = 565	Bb4 20269.5 = 539
Ba5	20158 = 316	Bb5 20169.5 = 339	Ba5 20169.5 = 339	Bb5 20182.5 = 365	Ba5 20182.5 = 365	Bb5 20195.5 = 391
Ba6	80300 = 2 400	Bb6 80300 = 2 400	Ba6 80300 = 2 400	Bb6 80300 = 2 400	Ba6 80300 = 2 400	Bb6 80300 = 2 400
Ba7	563	Bb7 540	Ba7 540	Bb7 513	Ba7 513	Bb7 487
Ba8	20183.5 = 367	Bb8 20195 = 390	Ba8 20195 = 390	Bb8 20208.5 = 417	Ba8 20208.5 = 417	Bb8 20221.5 = 443



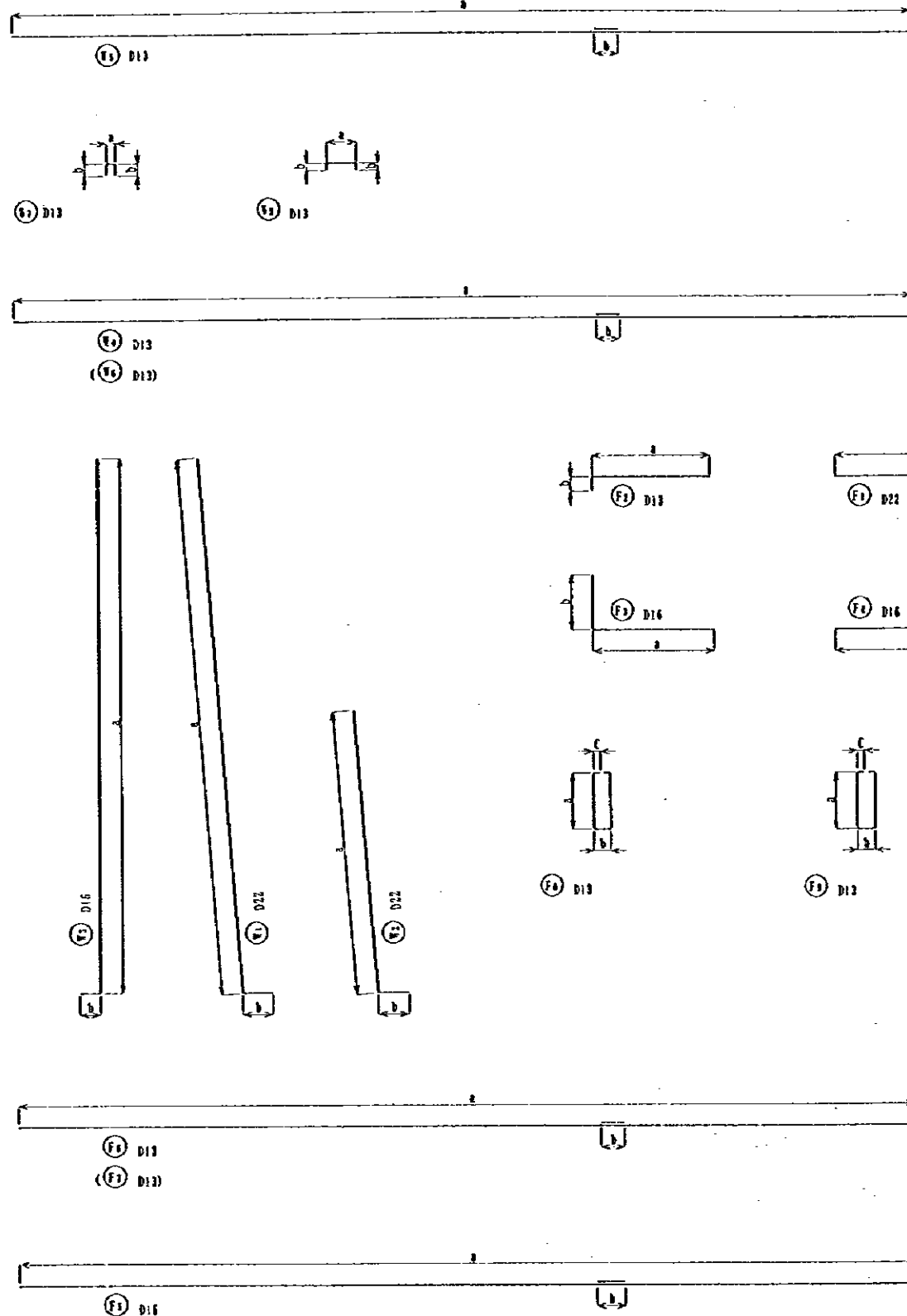
Slit Shape in Front of Wall
(Thickness 1=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUJYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (6)
DATE : DTG NO. W-30



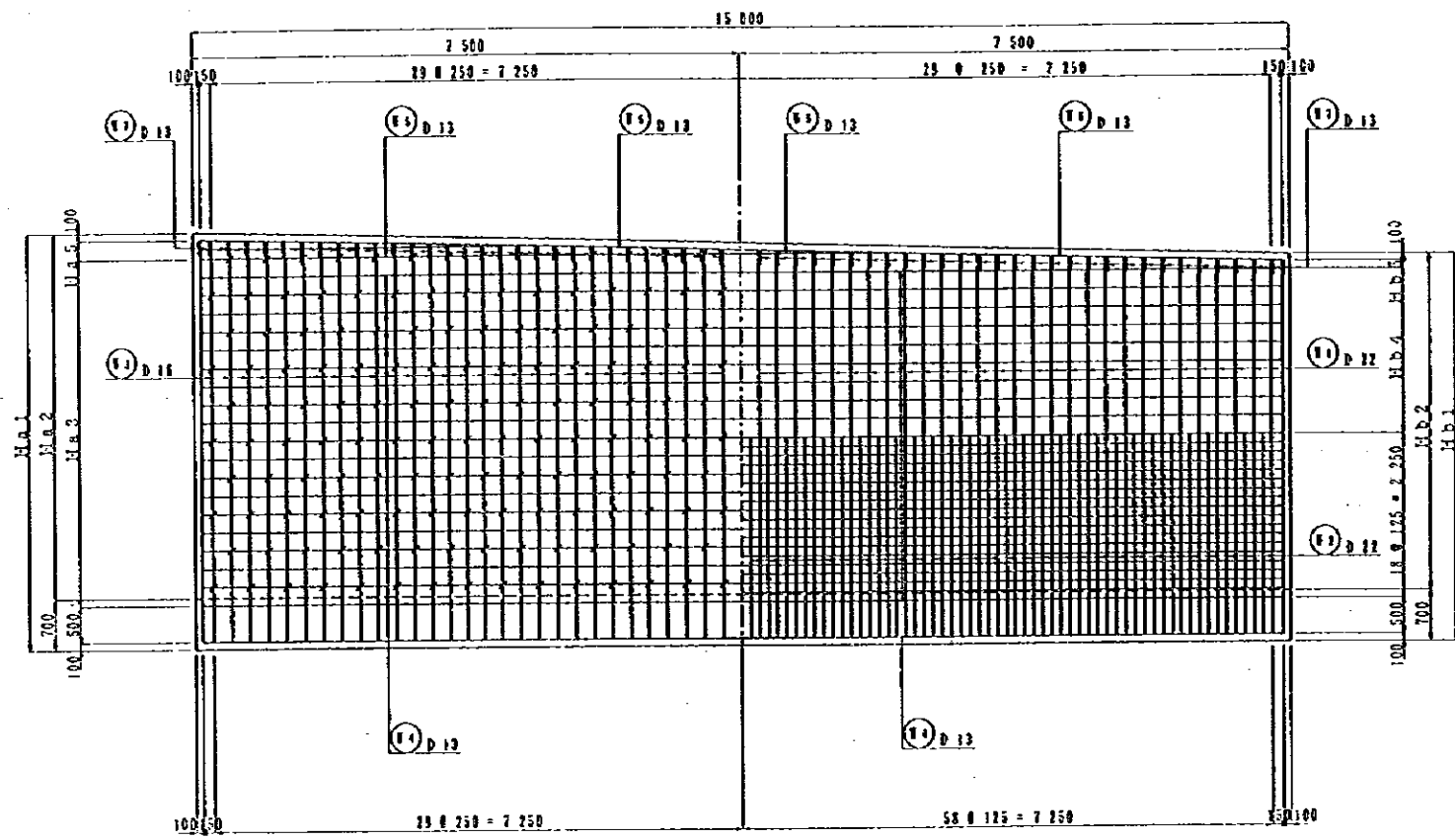
REIN NO.	Ø (mm)	DESCR (mm)	a	b	c
T 5					
1	D 22	6 690	6 715~6 401	330	---
2	"	3 290	2 958	330	---
3	D 16	6 290	6 697~6 305	240	---
4	D 13	15 190	14 800	390	---
5	"	11 880	11 875	---	---
6	"	15 200	14 803	390	---
7	"	500	110	195	---
8	"	620	573~205	111	---
F 1	D 22	4 140	3 431	700	---
2	D 13	1 230	1 529	195	---
3	D 16	2 150	1 450	700	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111
T 6					
1	D 22	6 560	6 402~6 044	330	---
2	"	3 290	2 958	330	---
3	D 16	6 450	6 365~6 028	240	---
4	D 13	15 190	14 800	390	---
5	"	7 780	7 773	---	---
6	"	15 200	14 804	390	---
7	"	500	110	195	---
8	"	610	550~210	111	---
F 1	D 22	4 180	3 454	700	---
2	D 13	1 710	1 506	195	---
3	D 16	2 150	1 450	700	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111
T 7					
1	D 22	6 250	6 064~5 656	330	---
2	"	3 290	2 958	330	---
3	D 16	6 090	6 028~5 671	240	---
4	D 13	15 190	14 800	390	---
5	"	8 750	8 277~13 282	390	---
6	"	15 200	14 804	390	---
7	"	500	110	195	---
8	"	580	524~192	111	---
F 1	D 22	4 180	3 480	700	---
2	D 13	1 480	1 480	195	---
3	D 16	2 150	1 450	700	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111

REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 5					
1	D 22	6 940	6 758~6 445	330	---
2	"	3 290	2 958	330	---
3	D 16	6 830	6 740~6 420	240	---
4	D 13	15 190	14 800	390	---
5	"	8 120	1 973~13 942	390	---
6	"	15 200	14 803	390	---
7	"	500	110	195	---
8	"	620	573~208	111	---
F 1	D 22	4 130	3 427	700	---
2	D 13	1 230	1 523	195	---
3	D 16	2 150	1 450	700	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111
T 6					
1	D 22	6 600	6 445~6 068	330	---
2	"	3 290	2 958	330	---
3	D 16	6 490	6 428~6 071	240	---
4	D 13	15 190	14 800	390	---
5	"	9 580	9 580	---	---
6	"	15 200	14 804	390	---
7	"	500	110	195	---
8	"	600	554~185	111	---
F 1	D 22	4 150	3 450	700	---
2	D 13	1 710	1 510	195	---
3	D 16	2 150	1 450	700	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111
T 7					
1	D 22	6 240	6 035~5 730	330	---
2	"	3 290	2 958	330	---
3	D 16	6 140	6 071~5 714	240	---
4	D 13	15 190	14 800	390	---
5	"	5 050	5 054	---	---
6	"	15 200	14 804	390	---
7	"	500	110	195	---
8	"	590	527~195	111	---
F 1	D 22	4 180	3 477	700	---
2	D 13	1 680	1 483	195	---
3	D 16	2 150	1 450	700	---
4	"	3 570	3 330	240	---
5	"	15 280	14 800	480	---
6	D 13	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 960	728	279	111
9	"	1 980	732	285	111

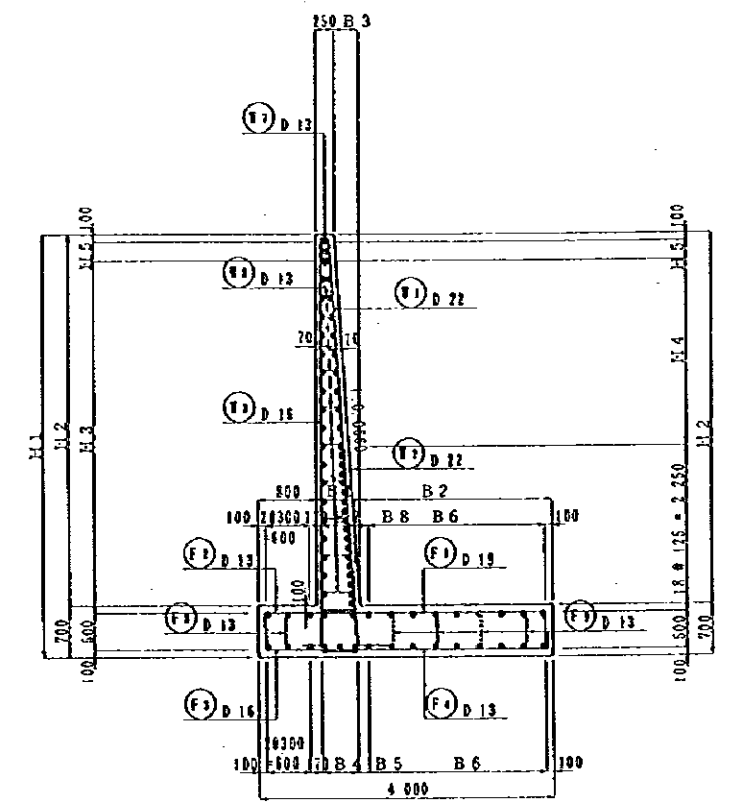
NOTES:

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

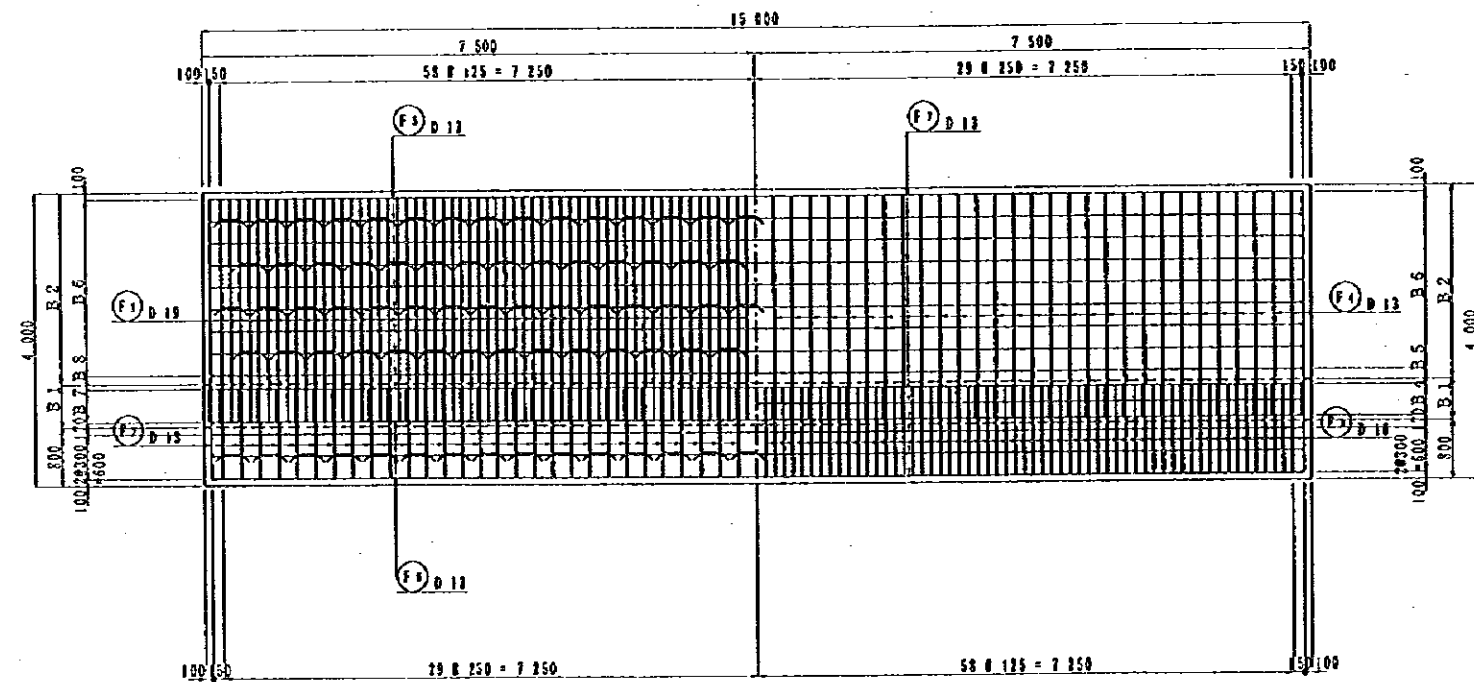
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
 PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
 TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (7)
 DATE : _____
 DWG NO. W-31



SIDE VIEW
S=1/100



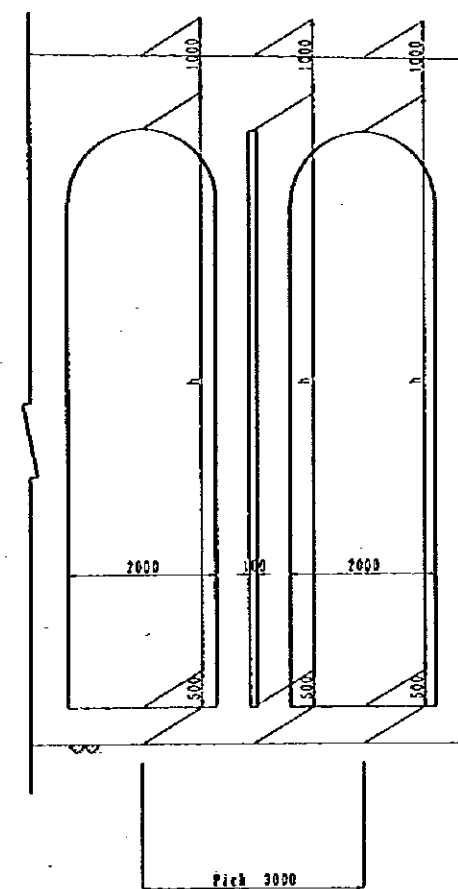
SECTION
S-1/100



PLAN
S=1/100

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 : R/A-5, AL MURADDAH RE-BAR ARRANGEMENT (8)
		DATE : _____ DWG NO. W-32

A I L I N E	T-8				T-9			
	a - a		b - b		a - a		b - b	
	Ha	Hb	Ha	Hb	Ha	Hb	Ha	Hb
	Ha1	5 671	Hb1	5 269	Ha1	5 269	Hb1	4 867
	Ha2	4 971	Hb2	4 569	Ha2	4 569	Hb2	4 167
	Ha3	19@250 = 4 750	Hb3	18@250 = 4 500	Ha3	18@250 = 4 500	Hb3	16@250 = 4 000
	Ha4	10@250 = 2 500	Hb4	9@250 = 2 250	Ha4	9@250 = 2 250	Hb4	7@250 = 1 750
	Ha5	221	Hb5	69	Ha5	69	Hb5	167
	Ba1	578	Bb1	552	Ba1	552	Bb1	525
	Ba2	2 622	Bb2	2 648	Ba2	2 648	Bb2	2 675
	Ba3	328	Bb3	302	Ba3	302	Bb3	275
	Ba4	2@238.5 = 477	Bb4	2@225.5 = 451	Ba4	2@225.5 = 451	Bb4	2@212 = 424
	Ba5	153	Bb5	179	Ba5	179	Bb5	206
	Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	Ba6	8@300 = 2 400	Bb6	8@300 = 2 400
	Ba7	444	Bb7	418	Ba7	418	Bb7	391
	Ba8	186	Bb8	212	Ba8	212	Bb8	239
B I L I N E	T-8				T-9			
	a - a		b - b		a - a		b - b	
	Ha	Hb	Ha	Hb	Ha	Hb	Ha	Hb
	Ha1	5 714	Hb1	5 312	Ha1	5 312	Hb1	4 910
	Ha2	5 014	Hb2	4 612	Ha2	4 612	Hb2	4 210
	Ha3	20@250 = 5 000	Hb3	18@250 = 4 500	Ha3	18@250 = 4 500	Hb3	16@250 = 4 000
	Ha4	11@250 = 2 750	Hb4	9@250 = 2 250	Ha4	9@250 = 2 250	Hb4	7@250 = 1 750
	Ha5	14	Hb5	112	Ha5	112	Hb5	210
	Ba1	561	Bb1	555	Ba1	555	Bb1	528
	Ba2	2 619	Bb2	2 645	Ba2	2 645	Bb2	2 672
	Ba3	331	Bb3	305	Ba3	305	Bb3	278
	Ba4	2@240 = 480	Bb4	2@227 = 454	Ba4	2@227 = 454	Bb4	2@213.5 = 427
	Ba5	150	Bb5	176	Ba5	176	Bb5	203
	Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	Ba6	8@300 = 2 400	Bb6	8@300 = 2 400
	Ba7	447	Bb7	421	Ba7	421	Bb7	394
	Ba8	183	Bb8	209	Ba8	209	Bb8	236

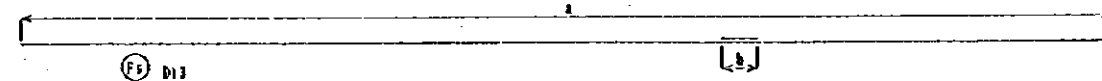
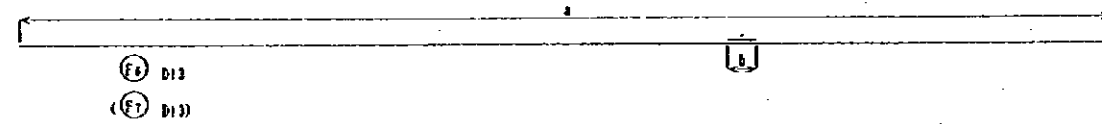
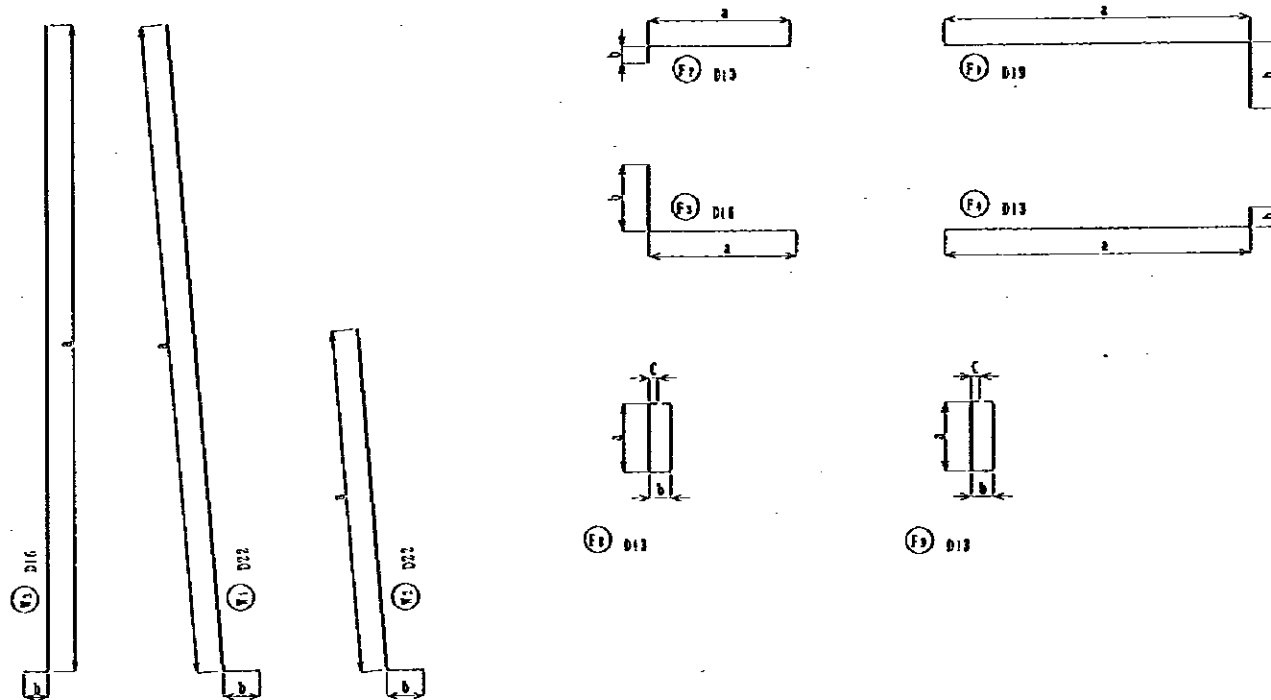
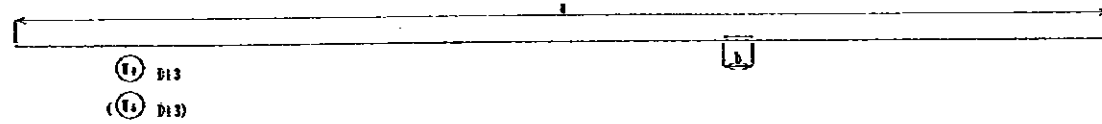


Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

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

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (9)
DATE : DFC NO. W-33



REIN. NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 8					
V 1	D 21	5 620	5 483~5 630	330	---
2	"	3 090	2 756	330	---
3	D 16	5 510	5 471~5 669	240	---
4	D 13	15 190	14 800	390	---
5	"	8 250	8 246	---	---
6	"	15 200	14 805	390	---
7	"	500	110	195	---
8	"	550	460~196	111	---
F 1	D 13	3 660	3 156	500	---
2	D 13	1 410	1 214	195	---
3	D 16	1 750	1 250	500	---
4	D 13	3 230	3 030	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 560	528	279	111
9	"	1 570	529	282	111
T 9					
V 1	D 22	5 220	5 080~4 687	330	---
2	"	3 090	2 756	330	---
3	D 16	5 110	5 069~4 687	240	---
4	D 13	15 190	14 800	390	---
5	"	7 240	2 576~11 903	---	---
6	"	15 200	14 805	390	---
7	"	500	110	195	---
8	"	550	434~203	111	---
F 1	D 13	3 660	3 182	500	---
2	D 13	1 390	1 188	195	---
3	D 16	1 750	1 250	500	---
4	D 13	3 230	3 030	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 560	528	279	111
9	"	1 570	529	282	111

REIN. NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 8					
V 1	D 22	5 660	5 526~5 123	330	---
2	"	3 090	2 756	330	---
3	D 16	5 560	5 514~5 112	240	---
4	D 13	15 190	14 800	390	---
5	"	5 190	522~9 851	---	---
6	"	15 200	14 805	390	---
7	"	500	110	195	---
8	"	560	483~193	111	---
F 1	D 13	3 660	3 153	500	---
2	D 13	1 420	1 217	195	---
3	D 16	1 750	1 250	500	---
4	D 13	3 230	3 030	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 560	528	279	111
9	"	1 570	529	282	111
T 9					
V 1	D 22	5 260	5 123~4 720	330	---
2	"	3 090	2 756	330	---
3	D 16	5 160	5 112~4 710	240	---
4	D 13	15 190	14 800	390	---
5	"	9 040	4 179~13 507	---	---
6	"	15 200	14 805	390	---
7	"	500	110	195	---
8	"	550	437~205	111	---
F 1	D 13	3 660	3 178	500	---
2	D 13	1 390	1 191	195	---
3	D 16	1 750	1 250	500	---
4	D 13	3 230	3 030	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 560	528	279	111
9	"	1 570	529	282	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

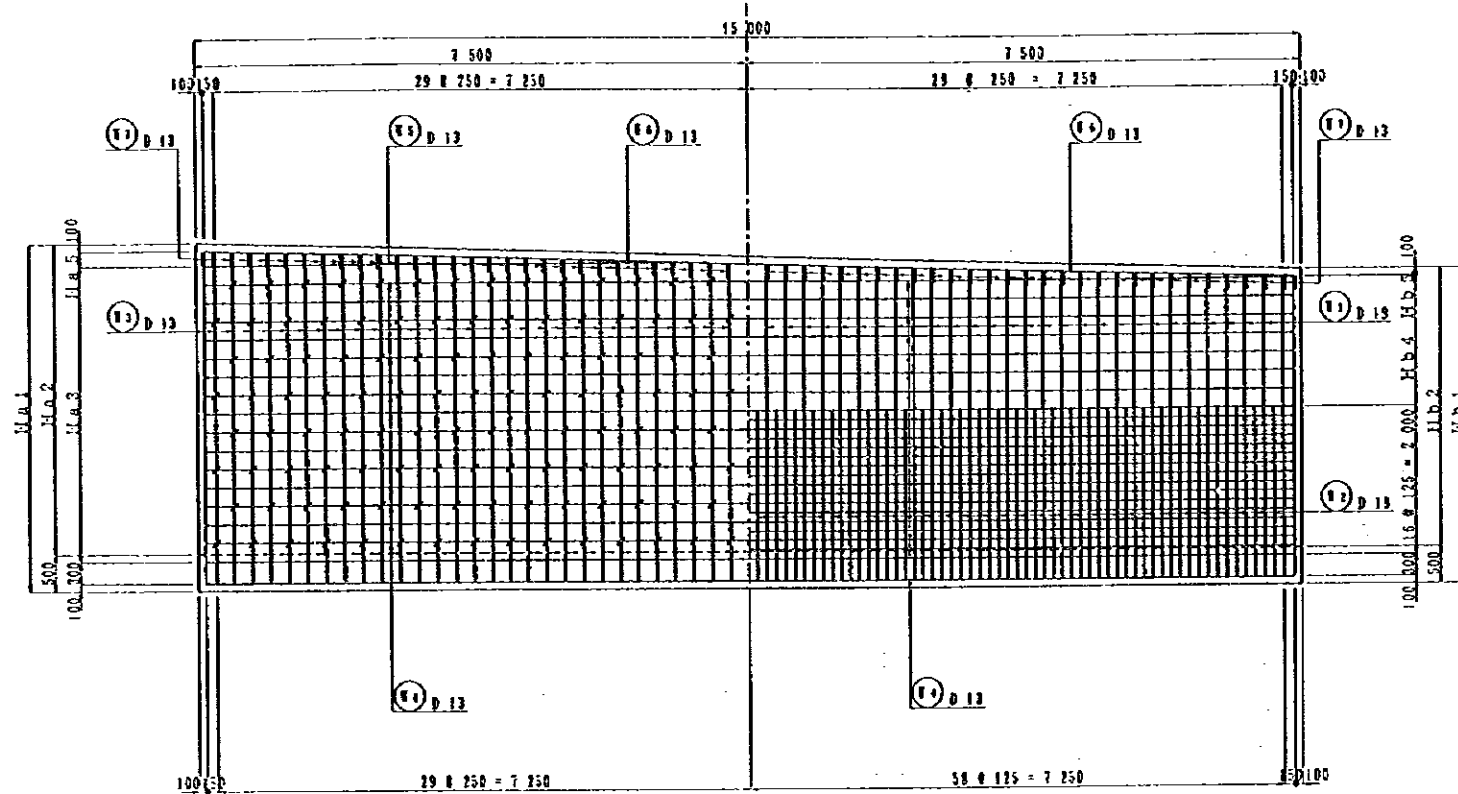
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

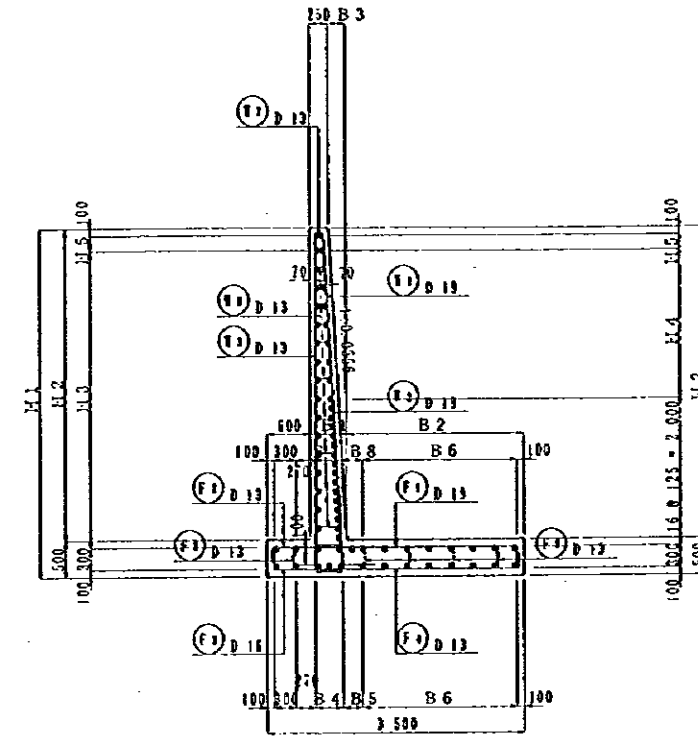
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (10)

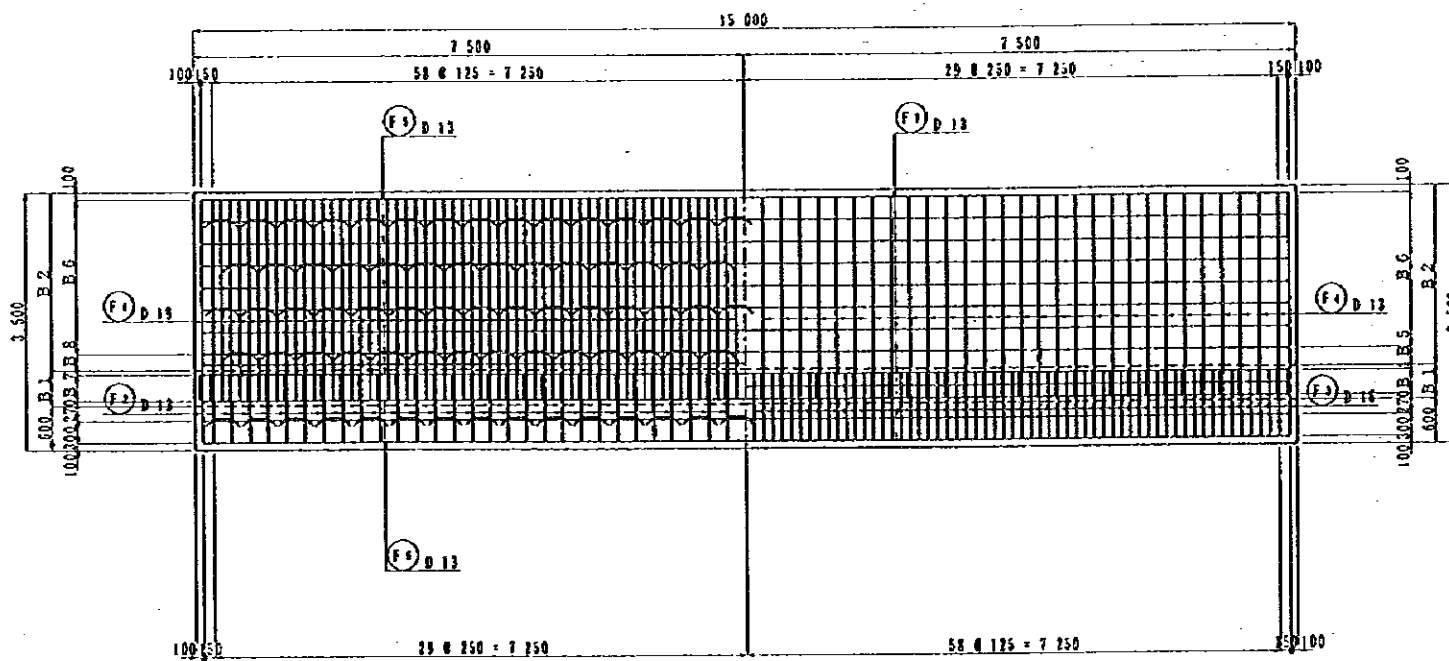
DATE : DXG NO. W-34



SIDE VIEW
S=1/100



SECTION
S=1/100



PLAN
S=1/100

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUJUYAMA CONSULTANTS INTERNATIONAL

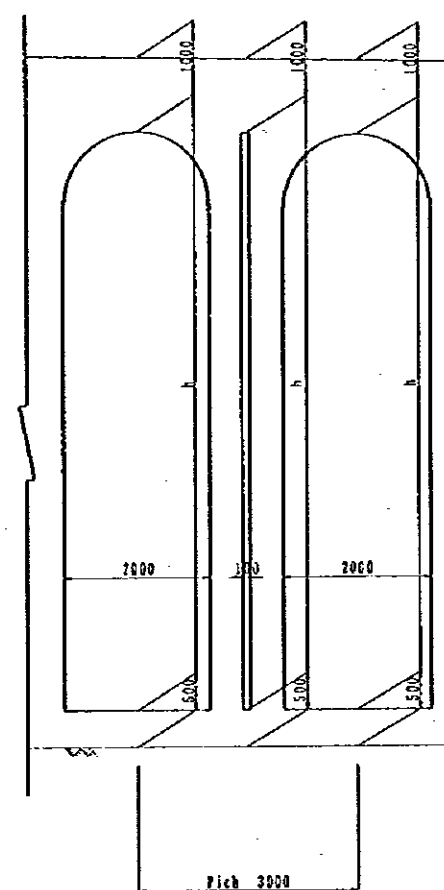
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (11)

DATE : DWG NO. W-35

A I L I N E	T-10				T-11			
	a - a		b - b		a - a		b - b	
	Ha	Hb	Ha	Hb	Ha	Hb	Ha	Hb
	Ha1	4 667	Hb1	4 230	Ha1	4 230	Hb1	3 793
	Ha2	4 167	Hb2	3 730	Ha2	3 730	Hb2	3 293
	Ha3	16@250 = 4 000	Hb3	14@250 = 3 500	Ha3	14@250 = 3 500	Hb3	13@250 = 3 250
	Ha4	8@250 = 2 000	Hb4	6@250 = 1 500	Ha4	6@250 = 1 500	Hb4	5@250 = 1 250
	Ha5	167	Hb5	230	Ha5	230	Hb5	43
	Ba1	482	Bb1	457	Ba1	457	Bb1	433
	Ba2	2 419	Bb2	2 443	Ba2	2 443	Bb2	2 467
	Ba3	232	Bb3	207	Ba3	207	Bb3	183
	Ba4	2@181.5 = 363	Bb4	2@169.5 = 339	Ba4	2@169.5 = 339	Bb4	2@157.5 = 315
	Ba5	267	Bb5	291	Ba5	2@145.5 = 291	Bb5	2@157.5 = 315
	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100
	Ba7	347	Bb7	322	Ba7	322	Bb7	298
	Ba8	2@141.5 = 283	Bb8	2@154 = 308	Ba8	2@154 = 308	Bb8	2@166 = 332
B I L I N E	T-10				T-11			
	a - a		b - b		a - a		b - b	
	Ha	Hb	Ha	Hb	Ha	Hb	Ha	Hb
	Ha1	4 710	Hb1	4 273	Ha1	4 273	Hb1	3 865
	Ha2	4 210	Hb2	3 773	Ha2	3 773	Hb2	3 335
	Ha3	16@250 = 4 000	Hb3	15@250 = 3 750	Ha3	15@250 = 3 750	Hb3	13@250 = 3 250
	Ha4	8@250 = 2 000	Hb4	7@250 = 1 750	Ha4	7@250 = 1 750	Hb4	5@250 = 1 250
	Ha5	210	Hb5	23	Ha5	23	Hb5	115
	Ba1	484	Bb1	460	Ba1	460	Bb1	435
	Ba2	2 416	Bb2	2 440	Ba2	2 440	Bb2	2 465
	Ba3	234	Bb3	210	Ba3	210	Bb3	185
	Ba4	2@183 = 366	Bb4	2@170.5 = 341	Ba4	2@170.5 = 341	Bb4	2@158.5 = 317
	Ba5	264	Bb5	289	Ba5	2@144.5 = 289	Bb5	2@156.5 = 313
	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100
	Ba7	349	Bb7	325	Ba7	325	Bb7	300
	Ba8	2@140.5 = 281	Bb8	2@152.5 = 305	Ba8	2@152.5 = 305	Bb8	2@165 = 330



Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FLKLYAMA CONSULTANTS INTERNATIONAL

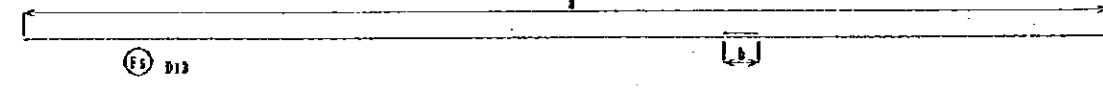
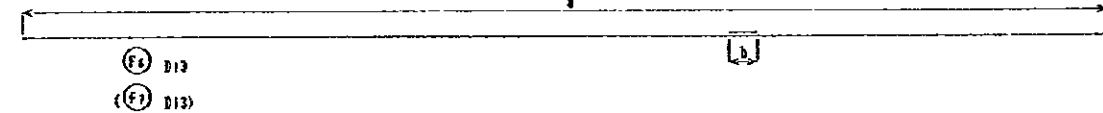
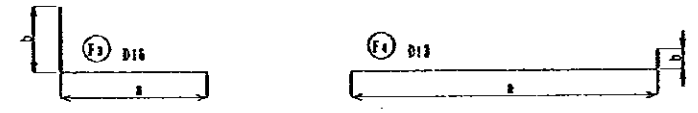
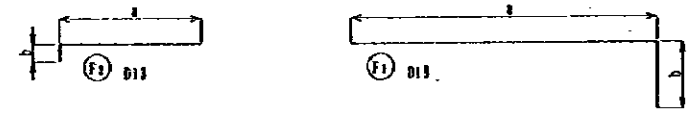
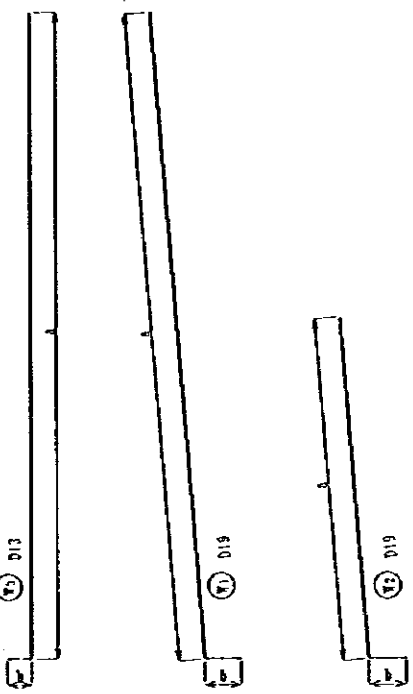
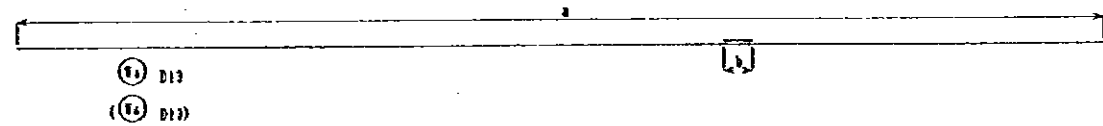
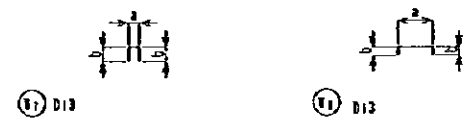
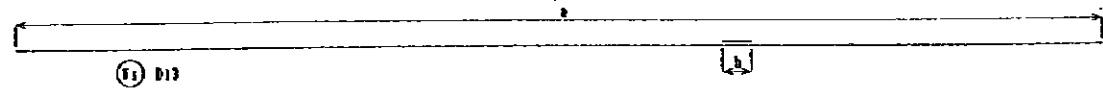
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (12)

DATE

DWG NO. W-36



REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 10					
T 1	D 13	4 548	4 474~4 036	285	---
2	"	2 590	1 304	285	---
3	D 13	4 450	4 467~4 030	195	---
4	"	15 190	14 800	390	---
5	"	10 320	5 737~14 314	390	---
6	"	15 200	14 806	390	---
7	"	500	110	195	---
8	"	510	362~196	111	---
F 1	D 13	3 260	2 953	300	---
2	D 13	1 170	917	195	---
3	D 14	1 350	1 050	300	---
4	D 13	2 930	2 730	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 160	328	279	111
9	"	1 170	329	282	111
T 11					
T 1	D 13	4 110	4 036~3 593	285	---
2	"	2 590	2 304	285	---
3	D 13	4 010	4 030~3 593	195	---
4	"	15 190	14 800	390	---
5	"	7 900	7 895	---	---
6	"	15 200	14 806	390	---
7	"	500	110	195	---
8	"	490	337~199	111	---
F 1	D 13	2 260	2 978	300	---
2	D 13	1 090	892	195	---
3	D 14	1 350	1 050	300	---
4	D 13	2 930	2 730	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 160	328	279	111
9	"	1 170	329	282	111

REIN NO.	Ø (mm)	LENGTH (mm)	a	b	c
T 10					
T 1	D 13	4 590	4 517~4 079	285	---
2	"	2 590	2 304	285	---
3	D 13	4 490	4 510~4 073	195	---
4	"	15 150	14 800	390	---
5	"	7 210	7 208	---	---
6	"	15 200	14 806	390	---
7	"	500	110	195	---
8	"	510	364~198	111	---
F 1	D 13	3 260	2 951	300	---
2	D 13	1 170	919	195	---
3	D 14	1 350	1 050	300	---
4	D 13	2 930	2 730	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 160	328	279	111
9	"	1 170	329	282	111
T 11					
T 1	D 13	4 160	4 079~3 671	285	---
2	"	2 590	2 304	285	---
3	D 13	4 070	4 073~3 665	195	---
4	"	15 150	14 800	390	---
5	"	5 450	546~10 037	---	---
6	"	15 200	14 806	390	---
7	"	500	110	195	---
8	"	490	340~188	111	---
F 1	D 13	3 280	2 975	300	---
2	D 13	1 090	895	195	---
3	D 14	1 350	1 050	300	---
4	D 13	2 930	2 730	195	---
5	"	15 190	14 800	390	---
6	"	15 190	14 800	390	---
7	"	15 190	14 800	390	---
8	"	1 160	328	279	111
9	"	1 170	329	282	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FERUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-S, AL MULADDAH RE-BAR ARRANGEMENT (13)

DATE : DWG NO. W-37

A-LINE

REIN. NO.	Ø (mm)	LENGTH (mm)	NOMINAL HEIGHT	NO. OF BARS	C. HEIGHT	WEIGHT	REMARKS
T 5							
1	D 22	6 800	3.042	61	20.959	1 270.5	L
2	"	3 200	"	58	10.008	580.5	L
3	D 16	6 700	1.552	61	10.538	642.8	J
4	D 13	15 100	0.994	53	15.099	800.2	---
5	"	11 800	"	2	11.124	22.2	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	610	"	295	0.616	200.2	"
F 1	D 22	4 100	3.042	119	12.594	1 490.2	---
2	D 13	1 700	0.994	61	1.720	104.9	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 200	"	11	23.715	260.9	---
6	D 13	15 100	0.994	5	15.099	75.5	---
7	"	15 100	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	U
9	"	1 960	"	116	1.968	228.3	U
						6881.5	
T 6							
1	D 22	6 500	3.042	61	19.956	1 217.3	L
2	"	3 200	"	58	10.008	580.5	L
3	D 16	6 450	1.552	61	10.010	610.6	J
4	D 13	15 100	0.994	51	15.099	770.0	---
5	"	7 700	"	2	7.733	15.5	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	610	"	295	0.616	178.8	"
F 1	D 22	4 100	3.042	119	12.655	1 505.9	---
2	D 13	1 710	0.994	61	1.700	103.7	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 200	"	11	23.715	260.9	---
6	D 13	15 100	0.994	5	15.099	75.5	---
7	"	15 100	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	U
9	"	1 960	"	116	1.968	228.3	U
						6655.8	
T 7							
1	D 22	6 200	3.042	61	18.880	1 150.5	L
2	"	3 200	"	58	10.008	580.5	L
3	D 16	6 000	1.552	61	9.452	576.6	J
4	D 13	15 100	0.994	47	15.099	709.7	---
5	"	8 700	"	4	8.878	34.7	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	580	"	295	0.616	170.2	"
F 1	D 22	4 100	3.042	119	12.718	1 518.2	---
2	D 13	1 600	0.994	61	1.670	101.9	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 200	"	11	23.715	260.9	---
6	D 13	15 100	0.994	5	15.099	75.5	---
7	"	15 100	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	U
9	"	1 960	"	116	1.968	228.3	U
						6510.8	
						D 22	9305.6
						D 16	4818.0
						D 13	5244.5
						TOTAL WEIGHT	(9318.1)

B-LINE

REIN. NO.	Ø (mm)	LENGTH (mm)	NOMINAL HEIGHT	NO. OF BARS	C. HEIGHT	WEIGHT	REMARKS
T 5							
1	D 22	6 900	3.042	61	21.111	1 287.8	L
2	"	3 200	"	58	10.008	580.5	L
3	D 16	6 800	1.552	61	10.600	616.4	J
4	D 13	15 100	0.994	53	15.099	800.2	---
5	"	8 100	"	4	8.081	32.9	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	610	"	295	0.616	200.2	"
F 1	D 22	4 100	3.042	119	12.716	1 513.2	---
2	D 13	1 700	0.994	61	1.720	104.9	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 200	"	11	23.715	260.9	---
6	D 13	15 100	0.994	5	15.099	75.5	---
7	"	15 100	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	U
9	"	1 960	"	116	1.968	228.3	U
						6839.2	
T 6							
1	D 22	6 600	3.042	61	20.977	1 224.7	L
2	"	3 200	"	58	10.008	580.5	L
3	D 16	6 400	1.552	61	10.072	614.4	J
4	D 13	15 100	0.994	51	15.099	770.0	---
5	"	9 500	"	2	9.523	19.0	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	600	"	295	0.616	175.8	"
F 1	D 22	4 150	3.042	119	12.624	1 502.3	---
2	D 13	1 710	0.994	61	1.700	103.7	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 200	"	11	23.715	260.9	---
6	D 13	15 100	0.994	5	15.099	75.5	---
7	"	15 100	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	U
9	"	1 960	"	116	1.968	228.3	U
						6642.9	
T 7							
1	D 22	6 200	3.042	61	20.959	1 152.9	L
2	"	3 200	"	58	10.008	580.5	L
3	D 16	6 100	1.552	61	10.538	581.3	J
4	D 13	15 100	0.994	49	15.099	739.9	---
5	"	5 000	"	2	11.124	10.1	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	580	"	295	0.616	172.9	"
F 1	D 22	4 100	3.042	119	12.594	1 518.2	---
2	D 13	1 600	0.994	61	1.720	101.9	---
3	D 16	2 150	1.552	119	3.337	397.1	---
4	"	3 570	"	61	5.541	338.0	---
5	"	15 200	"	11	23.715	260.9	---
6	D 13	15 100	0.994	5	15.099	75.5	---
7	"	15 100	"	17	15.099	256.7	---
8	"	1 960	"	29	1.948	56.5	U
9	"	1 960	"	116	1.968	228.3	U
						6531.2	
						D 22	9340.6
						D 16	4830.3
						D 13	5263.4
						TOTAL WEIGHT	20034.3

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUJYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (15)
DATE : DWG NO. W-39

A-LINE

REIN NO.	Ø (mm)	LENGTH (mm)	NOMINAL WEIGHT	NLWS	U WEIGHT	WEIGHT	REMARKS
T 8							
1	D 22	5 620	3.042	61	17.098	1 042.9	L
2	"	3 090	"	58	9.400	545.2	L
3	D 16	5 510	1.552	61	8.552	521.7	L
4	D 13	15 190	0.994	45	15.099	679.5	---
5	"	8 250	"	2	8.201	16.4	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	550	"	266	0.547	145.5	"
F 1	D 19	3 660	2.235	119	8.180	973.4	---
2	D 13	1 410	0.994	61	1.402	85.5	---
3	D 16	1 750	1.552	119	2.716	323.2	---
4	D 13	3 230	0.994	61	5.013	305.8	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	4	15.099	60.4	---
7	"	15 190	"	15	15.099	226.5	---
8	"	1 560	"	29	1.551	45.0	□
9	"	1 570	"	116	1.561	181.1	□
						5363.6	
T 9							
1	D 22	5 220	3.042	61	15.019	968.6	L
2	"	3 090	"	58	9.400	545.2	L
3	D 16	5 110	1.552	61	7.931	483.8	L
4	D 13	15 190	0.994	41	15.099	619.1	---
5	"	7 240	"	4	7.197	28.0	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	550	"	236	0.547	129.1	"
F 1	D 19	3 690	2.235	119	8.247	981.4	---
2	D 13	1 390	0.994	61	1.387	84.2	---
3	D 16	1 750	1.552	119	2.716	323.2	---
4	D 13	3 230	0.994	61	5.013	305.8	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	4	15.099	60.4	---
7	"	15 190	"	15	15.099	226.5	---
8	"	1 560	"	29	1.551	45.0	□
9	"	1 570	"	116	1.561	181.1	□
						5193.8	
						D 22	3101.9
						D 19	1952.3
						D 16	2272.9
						D 13	2237.7
						TOTAL WEIGHT	10557.4

B-LINE

REIN NO.	Ø (mm)	LENGTH (mm)	NOMINAL WEIGHT	NLWS	U WEIGHT	WEIGHT	REMARKS
T 8							
1	D 22	5 650	3.042	61	17.216	1 050.2	L
2	"	3 090	"	58	9.400	545.2	L
3	D 16	5 560	1.552	61	8.629	526.4	L
4	D 13	15 190	0.994	45	15.099	679.5	---
5	"	5 190	"	2	5.155	10.3	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	560	"	266	0.557	148.2	"
F 1	D 19	3 660	2.235	119	8.180	973.4	---
2	D 13	1 420	0.994	61	1.411	86.1	---
3	D 16	1 750	1.552	119	2.716	323.2	---
4	D 13	3 230	0.994	61	5.013	305.8	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	4	15.099	60.4	---
7	"	15 190	"	15	15.099	226.5	---
8	"	1 560	"	29	1.551	45.0	□
9	"	1 570	"	116	1.561	181.1	□
						5372.9	
T 9							
1	D 22	5 260	3.042	61	16.091	976.1	L
2	"	3 090	"	58	9.400	545.2	L
3	D 16	5 160	1.552	61	8.003	488.5	L
4	D 13	15 190	0.994	41	15.099	619.1	---
5	"	9 010	"	4	8.968	35.9	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	550	"	236	0.547	129.1	"
F 1	D 19	3 690	2.235	119	8.225	978.8	---
2	D 13	1 390	0.994	61	1.382	84.3	---
3	D 16	1 750	1.552	119	2.716	323.2	---
4	D 13	3 230	0.994	61	5.013	305.8	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	4	15.099	60.4	---
7	"	15 190	"	15	15.099	226.5	---
8	"	1 560	"	29	1.551	45.0	□
9	"	1 570	"	116	1.561	181.1	□
						5210.5	
						D 22	3116.8
						D 19	1952.3
						D 16	2272.9
						D 13	2241.5
						TOTAL WEIGHT	10589.4

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 : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (16)
DATE : DWG NO. W-40

A - LINE

REIN NO.	Ø (mm)	LENGTH (mm)	SOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 10							
1	D 19	4 540	2.235	61	10.147	619.0	L
2	"	2 590	"	58	5.789	335.8	L
3	D 13	4 450	0.994	61	4.423	269.8	J
4	"	15 190	"	36	15.099	543.6	---
5	"	10 220	"	4	10.159	40.6	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	510	"	207	0.507	104.9	"
F 1	D 19	3 260	2.235	119	7.286	867.0	U
2	D 13	1 120	0.994	61	1.112	67.9	---
3	D 16	1 350	1.552	119	2.095	249.3	L
4	D 13	2 930	0.994	61	2.912	177.6	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	3	15.099	45.3	---
7	"	15 190	"	13	15.099	196.3	---
8	"	1 160	"	29	1.153	33.4	U
9	"	1 170	"	116	1.163	134.9	U
						3854.9	
T 11							
1	D 19	4 110	2.235	61	9.186	560.3	L
2	"	2 590	"	58	5.789	335.8	L
3	D 13	4 010	0.994	61	3.986	243.1	J
4	"	15 190	"	34	15.099	513.4	---
5	"	7 900	"	2	7.853	15.7	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	490	"	177	0.487	86.1	"
F 1	D 19	3 260	2.235	119	7.331	872.4	U
2	D 13	1 090	0.994	61	1.083	66.1	---
3	D 16	1 350	1.552	119	2.095	249.3	L
4	D 13	2 930	0.994	61	2.912	177.6	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	3	15.099	45.3	---
7	"	15 190	"	14	15.099	211.4	---
8	"	1 160	"	29	1.153	33.4	U
9	"	1 170	"	116	1.163	134.9	U
						3741.3	
						D 19	3590.3
						D 16	498.6
						D 13	3549.3
TOTAL WEIGHT						7638.2	

B - LINE

REIN NO.	Ø (mm)	LENGTH (mm)	SOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 10							
1	D 19	4 590	2.235	61	10.259	675.8	L
2	"	2 590	"	58	5.789	335.8	L
3	D 13	4 490	0.994	61	4.443	272.2	J
4	"	15 190	"	38	15.099	573.8	---
5	"	7 210	"	2	7.167	14.3	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	510	"	207	0.507	104.9	"
F 1	D 19	3 260	2.235	119	7.286	867.0	U
2	D 13	1 120	0.994	61	1.113	67.9	---
3	D 16	1 350	1.552	119	2.095	249.3	L
4	D 13	2 930	0.994	61	2.912	177.6	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	3	15.099	45.3	---
7	"	15 190	"	13	15.099	196.3	---
8	"	1 160	"	29	1.153	33.4	U
9	"	1 170	"	116	1.163	134.9	U
						3918.0	
T 11							
1	D 19	4 160	2.235	61	9.298	567.2	L
2	"	2 590	"	58	5.789	335.8	L
3	D 13	4 070	0.994	61	4.046	248.8	J
4	"	15 190	"	34	15.099	513.4	---
5	"	5 450	"	4	5.417	21.7	---
6	"	15 200	"	2	15.109	30.2	---
7	"	500	"	61	0.497	30.3	"
8	"	490	"	207	0.487	100.8	"
F 1	D 19	3 260	2.235	119	7.331	872.4	U
2	D 13	1 090	0.994	61	1.083	66.1	---
3	D 16	1 350	1.552	119	2.095	249.3	L
4	D 13	2 930	0.994	61	2.912	177.6	---
5	"	15 190	"	10	15.099	151.0	---
6	"	15 190	"	3	15.099	45.3	---
7	"	15 190	"	14	15.099	211.4	---
8	"	1 160	"	29	1.153	33.4	U
9	"	1 170	"	116	1.163	134.9	U
						3782.6	
						D 19	3684.0
						D 16	498.6
						D 13	3595.0
TOTAL WEIGHT						7697.6	

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FYCUYAMA CONSULTANTS INTERNATIONAL

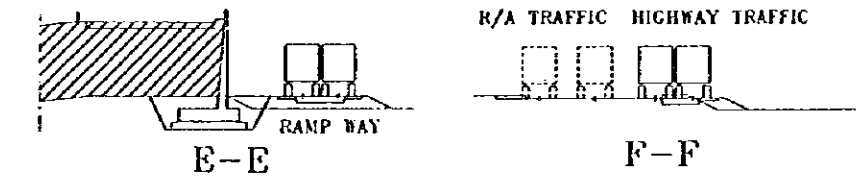
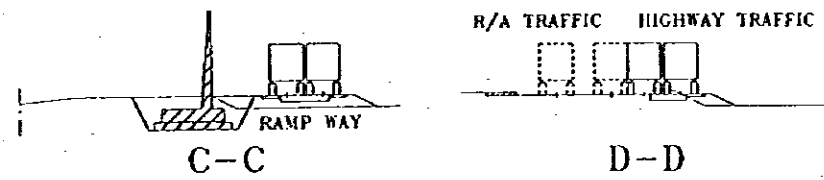
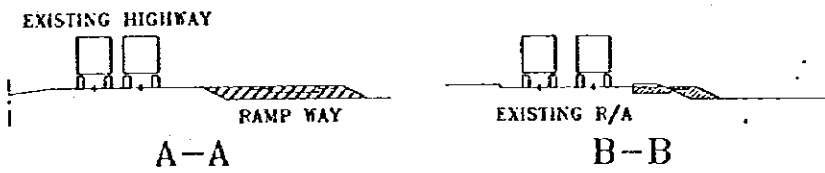
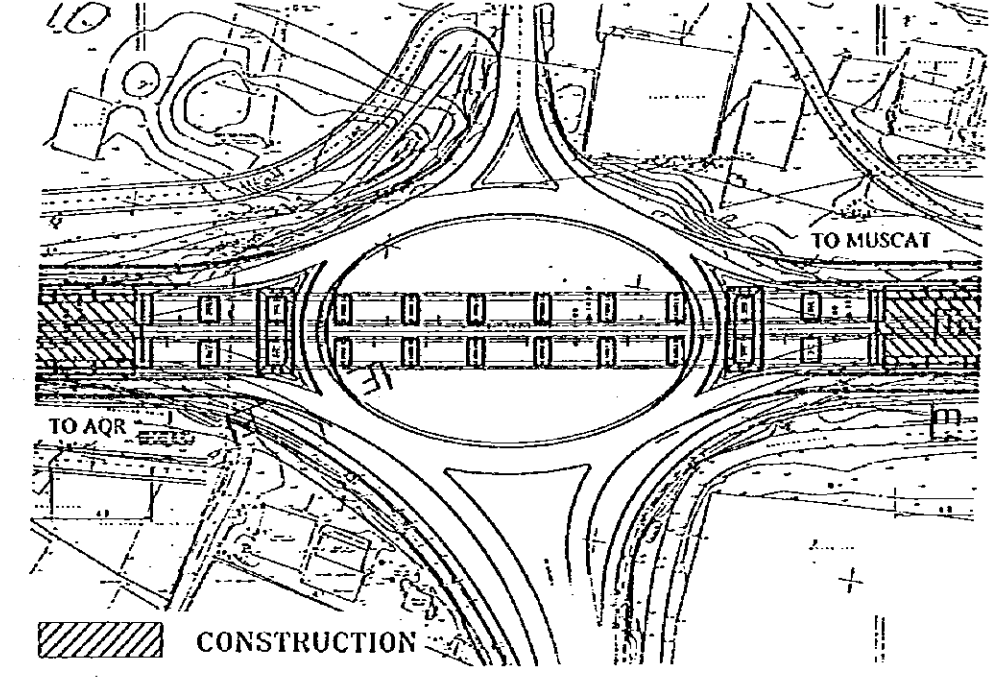
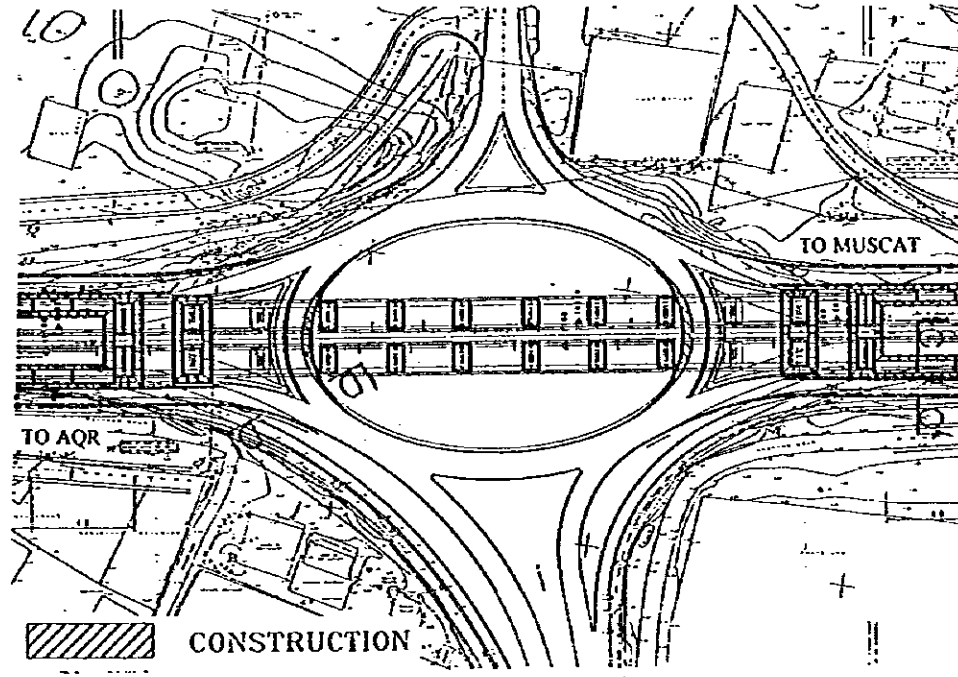
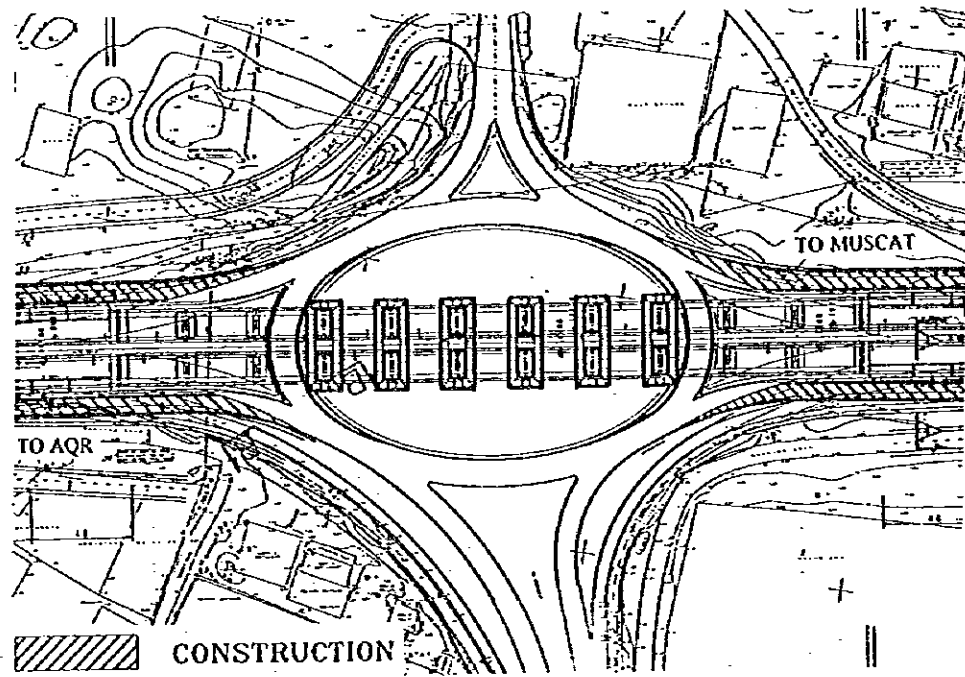
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-5, AL MULADDAH RE-BAR ARRANGEMENT (17)
DATE : _____ DWG NO. W-41

TEMPORARY WORKS

FIRST CONSTRUCTION STAGE

SECOND CONSTRUCTION STAGE

THIRD CONSTRUCTION STAGE



The traffic on the existing highway

Construction of ramp way (For temporary road)
Construction of substructure (Internal area of existing R/A)

The traffic detour to ramp way

Construction of substructure (External area of existing R/A)
Construction of retaining wall

The traffic shift to internal area of existing R/A

Construction of substructure (External area of remaining section)
Embankment for retaining wall section

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: SEQUENCE OF AL MULAADAH F/O CONSTRUCTION

DATE

DWGNO.

T-1

